COMTECH

CONNECTIONS THAT MATTER®

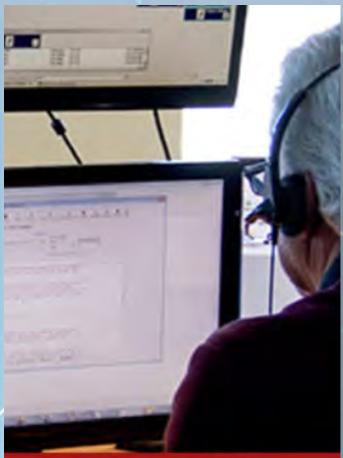
ANNUAL REPORT 2021

CONNECTIONS THAT MATTER®

With a passion for customer success, Comtech is a leading global provider of next-generation 911 emergency systems and critical wireless communication technologies.

911 Public Safety and Security

Next Generation
911 Technologies



Solacom Call
Handling Solutions

Trusted Location™
& Messaging Solutions

Cyber Training
and Security

Satellite and Space Communications

Satellite Modem and
Amplifier Technologies

Troposcatter and
Tactical Mobile VSATs

Space Components
and Antennas

High Power Amplifiers
and Switches

To Our Fellow Shareholders

I am incredibly proud of our many accomplishments during fiscal 2021. Our results for the year demonstrate the strong market leadership positions we have and the resilience of our business. Despite the headwind of COVID-19 and related issues impacting almost all of our global customers, we achieved consolidated net sales of $581.7 million in fiscal 2021. Additionally, fueled by over $200.0 million of next generation 911 ("NG-911") contract awards, we experienced strong bookings of $623.1 million, achieved a book-to-bill ratio of 1.07x and ended the fiscal year with healthy backlog of $658.9 million, which represents a $38.0 million improvement as compared to last fiscal year end.

Also, in fiscal 2021, we were successful in winning a highly coveted multi-year contract from a large new customer to customize our next generation broadband satellite technologies to be used with thousands of Low Earth Orbit satellites reported to be launch over the next several years. When adding our backlog and the total unfunded value of multi-year contracts that we have received, our future revenue visibility exceeds well over $1.0 billion, and that does not include the several hundreds of millions of dollars of potential LEO opportunities associated with our large new customer. It's visibility like that which makes me confident in our future.

Having added revolutionary TDMA technologies to our satellite ground station business through the acquisition of UHP Networks Inc., and with our continued success in winning large statewide deployments of our NG-911 core services, we have further expanded our market leadership positions. But don't just take my word for it. Frost & Sullivan, a leading industry research firm, recognized Comtech for achieving the most significant year-over-year market share increase among all NG-911 contract holders and Northern Sky Research, another leading consulting firm, recognized us as a leader in the growing satellite cellular backhaul market. As we look to fiscal 2022 and beyond, I don't believe our work here is finished, as I believe we have many opportunities to continue advancing our growing dominance in these secure wireless communications markets. With our proven track record of innovation and strengthening positions on large developing near-term opportunities, I continue to be excited about our long term prospects.

As part of our ongoing Board refreshment process, we recently announced that three of our longest-serving outside directors will be retiring as of the upcoming annual meeting. These directors have been wise stewards of our business and, on behalf of our shareholders, I want to personally thank them for their tireless efforts. At the same time, I would like to welcome our newest Board member, Judy Chambers, who is already making invaluable contributions to Comtech. Finally, we also recently announced, as part of our ongoing succession plan, that Michael D. Porcelain, our President and Chief Operating Officer, will become Chief Executive Officer by the end of calendar 2021, at which point Mr. Porcelain will also join our Board of Directors and continue as President. I want to personally congratulate Mike on his well-deserved appointment. Mike brings to his new role a track record of professional dedication and achievement and a deep knowledge of Comtech.

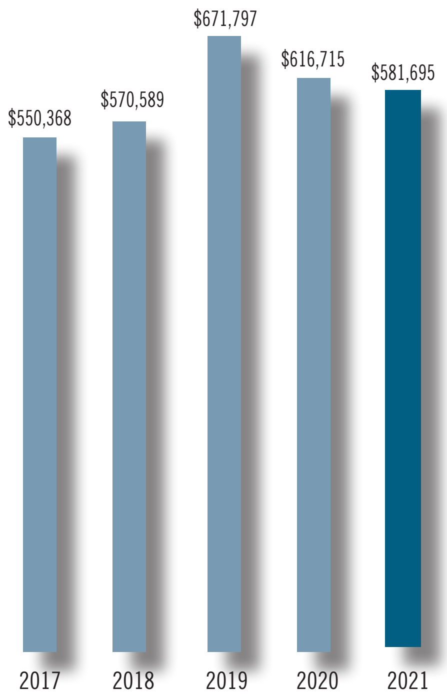
I would like to once again thank our loyal customers and business partners, employees and their leadership teams, the Board of Directors and our shareholders that have supported me throughout all of my years of leadership and service to Comtech. It has truly been an honor to serve in this capacity. As I hand over the reins, I believe we have the right strategy, the right team and the right focus to create long-term value for our shareholders for many years ahead.

Respectfully,

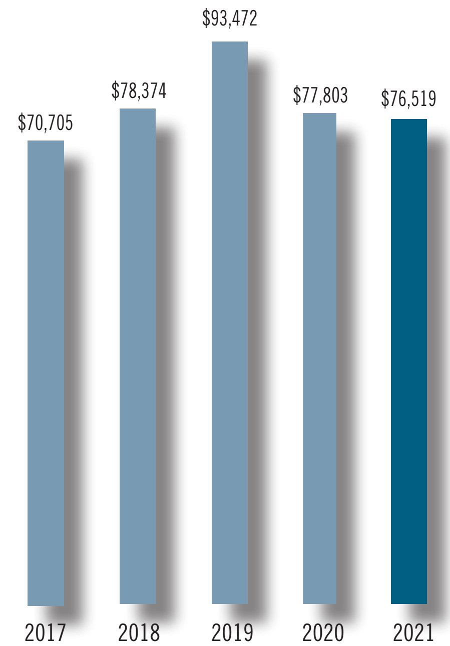
Fred Kornberg
Chairman of the Board and
Chief Executive Officer

SELECTED FINANCIAL DATA

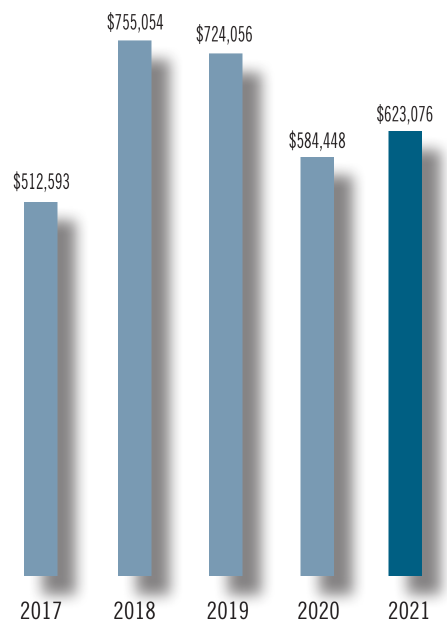
NET SALES



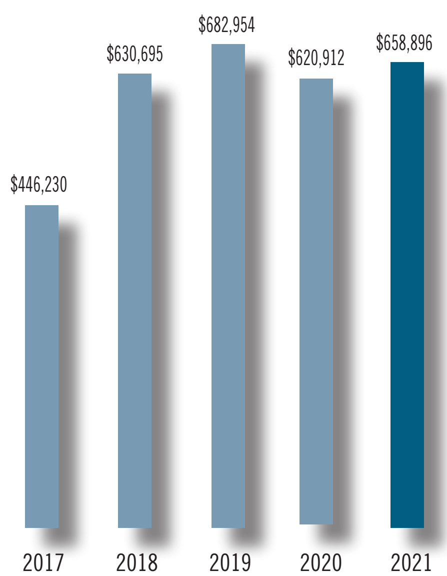
ADJUSTED EBITDA



BOOKINGS



BACKLOG



Note: Comtech's fiscal year end is July 31
$ in thousands

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

For the fiscal year ended July 31, 2021

☐ Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Commission File Number: 0-7928

COMTECH TELECOMMUNICATIONS CORP.

(Exact name of registrant as specified in its charter)

Delaware	**11-2139466**
(State or other jurisdiction of incorporation /organization)	(I.R.S. Employer Identification Number)
68 South Service Road, Suite 230, Melville, NY	**11747**
(Address of principal executive offices)	(Zip Code)

(631) 962-7000
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $.10 per share	**CMTL**	**NASDAQ Stock Market LLC**
Series A Junior Participating Cumulative Preferred Stock, par value $0.10 per share		

Securities registered pursuant to Section 12(g) of the Act:
None
(Title of class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
☐ Yes ☒ No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 of Section 15(d) of the Act.
☐ Yes ☒ No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data file required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

☒ Yes ☐ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☒
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

☒

Indicate by check mark whether registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

☐ Yes ☒ No

The aggregate market value of the registrant's voting stock held by non-affiliates of the registrant, computed by reference to the closing sales price as quoted on the NASDAQ Global Select Market on January 31, 2021 was approximately $523,931,000.

The number of shares of the registrant's common stock outstanding on September 30, 2021 was 26,335,695.

DOCUMENTS INCORPORATED BY REFERENCE.

Certain portions of the document listed below have been incorporated by reference into the indicated Part of this Annual Report on Form 10-K:

Proxy Statement for 2021 Annual Meeting of Stockholders - Part III

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Note: As used in this Annual Report on Form 10-K, the terms "Comtech," "we," "us," "our" and "our Company" mean Comtech Telecommunications Corp. and its subsidiaries.

Note About Forward-Looking Statements

This Form 10-K contains "forward-looking statements," including statements concerning the future of our industry, product development, pending litigation, potential transactions, business strategy, continued acceptance of our products, market demand and growth, and dependence on significant customers. These statements can be identified by the use of forward-looking terminology such as "may," "will," "should," "could," "would," "expect," "plan," "anticipate," "believe," "estimate," "predict," "potential," "continue," the negative of these terms, or other similar words or comparable terminology. In general, all statements of fact in this report other than statements of historical fact are forward-looking information. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements included in this Form 10-K, because these risks and factors could cause our actual results to differ materially from those described in such forward-looking statements. However, the risks described in this Form 10-K are not the only risks that we face. Additional risks and uncertainties, not currently known to us or that do not currently appear to be material, may also materially adversely affect our business, financial condition and/or operating results in the future. We describe risks and uncertainties that could cause actual results and events to differ materially in *"Risk Factors"* (Part I, Item 1A of this Form 10-K), *"Management's Discussion and Analysis of Financial Condition and Results of Operations"* (Part II, Item 7 of this Form 10-K) and *"Quantitative and Qualitative Disclosures about Market Risk"* (Part II, Item 7A of this Form 10-K). We do not intend to update or revise publicly any forward-looking statements, whether because of new information, future events, or otherwise, except as required by law.

PART I
ITEM 1. BUSINESS

We are a leading global provider of next-generation 911 emergency systems ("NG-911") and secure wireless communications technologies. Our solutions fulfill our customers' needs for secure wireless communications in some of the most demanding environments, including those where traditional communications are unavailable or cost-prohibitive, and in mission-critical and other scenarios where performance is crucial. In recent years, an increase in market demand for global voice, video and data usage has contributed to our growth. We provide our solutions to both commercial and governmental customers.

As more fully described elsewhere in this Form 10-K, we navigated the challenges of operating our global business during the period where COVID-19 impacted many of our customers. We achieved fiscal 2021 consolidated net sales of $581.7 million and achieved significant year-over-year bookings and backlog growth. We completed the acquisition of a leading provider of innovative and disruptive satellite ground station technology solutions. We also entered into a multi-year agreement enabling a large new customer to potentially order hundreds of millions of dollars of our next-generation satellite earth station technology that can be used with thousands of Low-Earth-Orbit ("LEO") satellites reportedly being launched over the next several years. Adding to our strength, we won over $200.0 million of new NG-911 contract awards that we believe can provide years of recurring revenue. We believe that as COVID-19 subsides and the global economy fully reopens, our business performance in future periods will improve from current levels.

Our Business Outlook for Fiscal 2022 is discussed further in *Part II - "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Impact of COVID-19 and Business Outlook for Fiscal 2022*." For a definition and explanation of Adjusted EBITDA, see *Part II - "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Comparison of Fiscal 2021 and 2020 - Adjusted EBITDA*."

Our Internet website is www.comtechtel.com and we make available on our website: our filings with the Securities and Exchange Commission ("SEC"), including annual reports, quarterly reports, current reports and any amendments to those filings. The reference to our website address does not constitute incorporation by reference of the information contained therein into this Form 10-K. We also use our website to disseminate other material information to our investors (on the Home Page and in the "Investor Relations" section). Among other things, we post on our website our press releases and information about our public conference calls (including the scheduled dates, times and the methods by which investors and others can listen to those calls), and we make available for replay webcasts of those calls and other presentations for a limited time.

We also use social media channels to communicate with customers and the public about our Company, our products, services and other issues, and we use social media and the Internet to communicate with investors, including information about our stockholder meetings. Information and updates about our Annual Meetings will continue to be posted on our website at www.comtechtel.com in the "Investor Relations" section.

We are incorporated in the state of Delaware and were founded in 1967.

Corporate Strategies

We intend to manage our business with the following principal corporate strategies:

- Seek leadership positions in markets where we can provide differentiated products and technology solutions;
- Identify and participate in emerging technologies that enhance or expand our product portfolio;
- Maximize responsiveness to our customers, including offering more integrated systems and solutions;
- Expand and further penetrate our diversified and balanced customer base; and
- Pursue acquisitions of complementary businesses and technologies.

Competitive Strengths

The successful execution of our principal corporate strategies is based on our competitive strengths, including the following:

(1) We Have Significant Exposure to Large, Growing End Markets

We believe we are well positioned to capitalize on some of the most significant long-term technology trends occurring worldwide and that customers around the world will increasingly turn to us to fulfill their needs for secure wireless communications in some of the most demanding environments, including those where traditional communications are unavailable or cost-prohibitive, and in mission-critical and other scenarios where performance is crucial. These important technology trends include the expansion of 5G mobile networks and the integration of satellite communications into mobile phones, the need for public safety agencies to seamlessly integrate various networks and protocols and utilize precise location to connect individuals with first responders, the expanding breadth of High Definition ("HD") and 4K broadcasting content, and the need for governments to have more modern and mobile communications and transmission equipment to successfully complete mission-critical goals. We believe that all these long-term trends generate growth in global voice, video and data usage that, in turn, drives increased long-term demand for the secure wireless communications solutions that we provide.

We are in the process of further focusing both our research and development and marketing efforts to advance our next-generation satellite technology solution offerings that are targeted for use on new broadband satellite constellations. Thousands of new LEO, medium-earth-orbit ("MEO") and even geosynchronous equatorial orbit ("GEO") satellites are reportedly being launched over the next several years. Satellite constellations will provide internet access across the world, support increasing demand for data transmission, and will be facilitated by solutions that we provide, including ground station equipment such as Single Channel per Carrier ("SCPC") and time division multiple access (“TDMA”) modems, solid-state amplifiers and X/Y steerable antennas. In fiscal 2021, we entered into a strategic and highly valued multi-year agreement enabling a large new customer to potentially order hundreds of millions of dollars of our next-generation satellite earth station technology that can be used with the thousands of LEO satellites reportedly being launched over the next several years. Shortly after we signed this agreement, we received our first order valued at more than $13.0 million to make certain customizations on behalf of this customer. Work on these efforts commenced immediately.

(2) We Believe We Are a Market Leader in the End-Markets That We Serve

Commercial Solutions Segment

Satellite Ground Station Technologies - We believe we are the leading provider of satellite earth station modems, solid-state amplifiers and traveling wave tube amplifiers. Many of our key satellite earth station modems incorporate Turbo Product Code ("TPC") or Low Density Parity Check ("LDPC") forward error correction and bandwidth compression technologies, which enable our customers to optimize their satellite networks by either reducing their satellite transponder lease costs or increasing data throughput. We hold leadership positions in the market for high throughput modems used in cellular backhaul, a market that has been rapidly growing due to increased mobile phone use as well as LTE and 5G deployments. In fiscal 2021, we added to our product portfolio software-defined TDMA technology, which delivers industry-leading bandwidth-efficiency and flexibility to our customers. Our amplifier products are used to amplify signals carrying voice, video or data for air-to-satellite-to-ground communications and are vital to satellite communication applications such as traditional broadcast, direct-to-home ("DTH") broadcast and satellite newsgathering. We differentiate our amplifier product offerings by our ability to develop the most efficient size, weight and power profile. We believe that our expertise complying with regulatory and performance restrictions, particularly in challenging frequency bands such as X, Ka and Q, is a key differentiator. Demand for equipment in these challenging frequency bands is expected to grow over the coming years as new constellations are launched, such as Amazon Kuiper, SpaceX Starlink, Telesat Lightspeed and High Throughput Satellites ("HTS") from other providers. Certain of our amplifiers are DO-160 certified (an airborne quality standard) and when incorporated into an aircraft satellite communication system, can provide passengers, both commercial and military, with email, Internet access and video conferencing.

Public Safety and Location Technologies - In fiscal 2021, we were recognized by Frost & Sullivan, a leading industry research firm, for registering the most significant year-over-year market share increase among all NG-911 primary contract holders, growing our market share from an estimated 17.3% in 2019 to 26.2% in 2020, as calculated by Frost & Sullivan. By closing statewide contracts in Arizona, Iowa, Ohio, Pennsylvania and South Carolina, our direct NG-911 contracts now represent a population of over 60 million in the U.S., and over 25 million in Australia via Next Generation 000 contracts. As such, we believe that we are a leader in public safety communication and location technologies. We meet the ISO 27001 data security standard and believe we have significant market share in the routing of U.S. wireless 911 calls, Voice over Internet Protocol ("VoIP") 911 calls and Text to 911 messaging. We believe we are one of a limited number of companies fulfilling the Federal Communications Commission ("FCC") requirements for Enhanced 911 ("E911") call-routing to Public Safety Answering Points ("PSAPs") for wireless and VoIP network operators. E911 refers to 911 calls for both wireline and wireless telephones that are enhanced to provide the caller's location information. We are focusing our marketing and research and development efforts to meet system standards for NG-911, which refers to an Internet Protocol ("IP") based system that defines how digital information (e.g., voice, photos, videos and text messages) flows seamlessly from the public to the PSAPs, and on to emergency responders. With more than 85 global deployments of our Location Based Services (“LBS”) platform, we are a leading global provider of device location for both public safety and commercial applications. Leveraging decades of our location-based technology expertise, our solutions support the generation and distribution of location information for both indoor and outdoor environments. We have developed industry leading 2G through 5G mobile network and WiFi location functions, robust mapping, navigation and geolocation solutions incorporated by industry verticals such as public safety, automotive manufacturing, mobile network operators (“MNOs”) and retail. We provide a high-capacity, multiprotocol Short-Messaging-Service (“SMS”) platform for Person-to-Person (“P2P”), Application-to-Person (“A2P”) and Machine-to-Machine (“M2M”) communications. In addition, we offer Location Studio®, a complete end-to-end location application platform consisting of maps, map data, geo-services, application program interfaces (“APIs”) and software development kits ("SDKs") enabling MNOs, application developers, public safety ecosystems, and enterprises to build custom and unique applications.

Government Solutions Segment

Tactical Communications Technologies - We are a key supplier to large governments (particularly the U.S. government) and large prime contractors for tactical communications technologies, primarily tactical satellite-based technology solutions, field support services and satellite component supply chain management. We are a prime contractor under several indefinite delivery, indefinite quantity ("IDIQ") defense contract vehicles, including the: (i) U.S. Army's Global Tactical Advanced Communications Systems ("GTACS") contract; (ii) U.S. Army's Global Tactical Advanced Communications Systems ("GTACS II") contract; (iii) U.S. Navy's Seaport Next Generation ("SeaPort-Nxg") contract; (iv) Complex Commercial SATCOM Solutions ("CS3") contract; (v) Communications Electronics Command ("CECOM") Responsive Strategic Sourcing for Services ("RS3") contract with the U.S. Army Contracting Command - Aberdeen Proving Ground ("ACC-APG"); and (vi) Advanced Battle Management System ("ABMS") contract for the Air Force Life Cycle Management Center. We provide field support sustainment services, centralized and deployed depot services and technology insertion services to the U.S. Army's AN/TSC-198 family of communication systems that are commonly referred to as "SNAP" (Secret Internet Protocol Router ("SIPR") and Non-secure Internet Protocol Router ("NIPR") Access Point) Very Small Aperture Terminals ("VSATs"). Our field support services include providing U.S. Department of Defense ("DoD") personnel with curriculum development and training services to support cybersecurity workforce development. We provide high reliability Electrical, Electronic and Electromechanical ("EEE") parts for use in satellite, launch vehicle and manned space applications. We also provide services encompassing all aspects of ground station life cycle to include requirements definition and analysis; design, development and integration of turnkey systems from antenna to data processing; civil works and construction; station installation and verification; operations and maintenance; and decommissioning at end of life. We also provide to customers worldwide a line of X/Y steerable satellite tracking antenna systems ideal for LEO, MEO and GEO constellations.

High-Performance Transmission Technologies - We are a world leader in the design and supply of troposcatter equipment, and a key supplier of radio frequency ("RF") microwave solid-state, high-power amplifier and switching control technologies. We have designed, manufactured and delivered troposcatter systems (sometimes referred to as over-the-horizon ("OTH") microwave products and systems) for over fifty years and are one of the largest independent suppliers of solid-state, high-power RF microwave amplifiers and integrated transmit receive hardware, which reproduce signals with higher power, are extremely complex, and are critical to the performance of the systems into which they are incorporated.

Our CS67PLUS software defined, adaptive troposcatter radio can operate at over 200 megabits per second ("Mbps"). The radio is MIL-STD 461 EMI and MIL-STD 810G environmentally compliant. Our Modular Tactical Transmission System ("MTTS") provides a high capacity, troposcatter and beyond-line-of-sight modular communications system designed for easy and rapid deployment. Our best-in-class troposcatter solutions led to our equipment being chosen to be used on the U.S. Marine Corps' next generation troposcatter system Program of Record. These dual frequency systems are designed to operate in harsh environmental conditions and are protected from Electromagnetic Interference and Electromagnetic Pulse ("EMI/EMP").

Many solid-state RF microwave amplifier and switching control technologies are produced in-house by large companies; however, our expertise has created a cost-effective and technologically superior alternative to in-house sourcing. Some of the companies who have outsourced amplifier development and production to us include Rockwell Collins, Inc., European Aeronautic Defense and Space Company ("EADS"), Lockheed Martin Corporation, L3Harris Technologies, Inc., Northrop Grumman Corporation, BAE Systems Plc, the U.S. Navy and Raytheon Technologies Corporation. Our amplifiers are also used in oncology treatment systems that allow physicians to give cancer patients higher doses of radiation that are more closely focused on cancerous tissue, thereby minimizing damage to healthy tissue.

(3) We Believe We Provide Industry Leading Innovation, Capabilities and Solutions

We have established a leading position of technology innovation in our fields through internal and customer-funded research and development activities, which have yielded significant advances. Examples of our industry-leading innovation include:

Our VSAT Networking Technologies and Platforms – For the past several years, we have developed and manufactured Heights™ ("Heights"). Heights™ is an advanced satellite earth station networking platform that combines our most efficient waveforms, compression engines and the ability to provide dynamic bandwidth and power management to meet the demands of customers operating on traditional fixed satellite service systems ("FSS"), while providing advantages for customers who plan to transition to HTS systems in the future. Heights™ is ideally suited for cellular backhaul, universal service obligation networks and other applications that require high performance in a hub-spoke environment. Heights™ solutions are designed to deliver the highest Internet Protocol bits per Hertz in its class.

In fiscal 2021, we introduced a TDMA technology solution which offers best-in-class support for very large networks. With an estimated 3 billion people globally who are not connected to any wireless services, this technology allows our customers to cost-effectively provide services to end-users with the quality and reassurance of the Comtech brand and service offerings. We also intend to offer a solution that combines our Heights Dynamic Network Access ("H-DNA") and TDMA technologies in a single VSAT platform so that we can deliver a solution that will deliver increased value to our customers. Additionally, at the start of our fiscal 2022, we announced a technology and business development partnership with Kymeta Corporation, a satellite communications company to broaden network offerings by combining the Kymeta™ u8 terminal with our SLM-5650B modem and UHP-200 Universal Satellite Router. This solution will enable new and existing U.S. Department of Defense and commercial customers to operate state-of-the art technologies using cost-effective and seamless VSAT router solutions.

Our Solacom Software Solutions – We offer a best-in-class call handling solution marketed under the Solacom Guardian brand name, which provides an integrated text-to-and-from 911 solution on a unified platform. The solution provides a flexible user interface, adapts to varying customer environments and preferences, provides powerful call conferencing capabilities, enhanced reporting capabilities and offers geospatial 911 location call display directly from a customized map. Because of its advanced features, it allows us to offer an immediate upgrade path to existing and new customers and has expanded our presence in the public safety solutions market. We are investing in product enhancements of the Guardian software, including developing a cloud-based version so that we can offer software as a service ("SaaS") type solutions to our public safety customers.

Our Compact Over-the-horizon Mobile Expeditionary Terminal ("COMET™") – We offer the Comtech COMET™, the world's smallest OTH microwave troposcatter terminal. Our Comtech COMET™ is rapidly deployable, low power and highly portable. Troposcatter technology has long been associated with large antennas and high-power amplifiers that require kilowatts of prime power and large trucks to transport them to the field. The COMET™ has fundamentally changed this paradigm. The COMET™ is capable of being transported in a carrying case by a single individual and set up in under fifteen minutes. The COMET™ is ideally suited for situations where high bandwidth backhaul communications are required, extending critical services into areas where there is no communications infrastructure, or the infrastructure has been destroyed. U.S. Special Forces, as well as non-U.S. NATO forces, have already begun procuring and deploying the COMET™ for high reliability, mission essential communications.

Our "XyPoint®" Mobile Location Platform – Provided to MNOs globally, our virtualized LBS platform is a high availability robust solution with multiple positioning technologies, that allows authorized users to locate and track specific mobile devices and monitor specific areas of interest. MNOs can use this platform for location accuracy to support a wide variety of use cases, including public safety, location intelligence, network optimization and big data analytics. On the legacy front, our LBS platform is compatible within 2G through 4G wireless networks, as well as an enabler to the MNOs to seamlessly migrate to cloud native environments, as they start their migrations to 5G.

(4) We Have a Diverse Global Customer Base

We have established long-standing relationships with thousands of customers worldwide, including leading system and network suppliers in the global satellite (such as Intelsat S.A. and SES S.A.), mobile cellular (such as Verizon Wireless), defense, broadcast and aerospace industries, as well as the U.S. federal government (such as the U.S. Army and Navy), U.S. state and local governments, and foreign governments. Our global commercial and government customers are increasingly seeking integrated solutions to meet their operational needs. We believe that our customers recognize our ability to develop improved technologies and to meet stringent program requirements. Our ability to solve complex problems is well known and we believe we have strong relationships with our customers. We hold prime positions on several key contracts and have had a long history of servicing key programs.

Business Segments

Fundamentally, we offer advanced secure wireless communications technologies with expertise in the satellite communications and cellular markets. We believe these markets are undergoing a period of significant growth and rapid technological change. We manage our business through two reportable operating segments: Commercial Solutions and Government Solutions. Our corporate senior management team supports the business segments by, among other things, actively seeking to exploit potential synergies that exist between the segments, including in areas such as manufacturing, technology, sales, marketing, customer support and finance. The diagram below summarizes our key products, systems and services by our two reportable operating segments:

Commercial Solutions Segment Technologies (approximately 61.9% of fiscal 2021 net sales)		Government Solutions Segment Technologies (approximately 38.1% of fiscal 2021 net sales)	
Satellite Ground Station Technologies	**Public Safety and Location Technologies**	**Tactical Communications Technologies**	**High-Performance Transmission Technologies**
• Satellite ground station technologies such as SCPC modems, TDMA modems and networking platforms that facilitate the transmission of voice, video and data over satellite links including LEO and HTS satellite constellations • Solid-state and traveling wave tube amplifiers used to amplify signals from satellite ground stations	• Wireless/VoIP 911 service for network operators • NextGen 911 solutions • ESInet (Emergency Services IP Network) • Call Handling applications for PSAPs • Software and equipment for location-based and messaging services for various applications, including both public safety and commercial services	• Tactical satellite-based communications, field support and end-to-end integration • Satellite-based mobile communications and tracking systems, including high precision full motion fixed and mobile X/Y satellite tracking antennas, RF feeds, reflectors and radomes • Procurement and supply chain management of high reliability EEE parts for satellite, launch vehicle and manned space applications	• Over-the-horizon microwave equipment that can transmit digitized voice, video and data over distances up to 200 miles using the troposphere and diffraction, including the Comtech COMET™ • Solid-state, RF microwave high-power amplifiers and control components designed for radar, electronic warfare, jamming, medical and aviation applications

Commercial Solutions Segment Representative Customers	Government Solutions Segment Representative Customers
Satellite systems integrators, wireless and other communication service providers and broadcasters Domestic and international defense customers, as well as U.S. and foreign governments, prime contractors and system suppliers, such as General Dynamics Corporation, Lockheed Martin Corporation, L3Harris Technologies, Inc., Raytheon Technologies Corporation, SED Systems (a division of Calian Ltd.), and ViaSat Inc. Satellite broadcasters, such as The DIRECTV Group and EchoStar Corporation U.S. state and local governments, such as Arizona, the Commonwealth of Massachusetts, the Commonwealth of Pennsylvania, Iowa, Maine, South Carolina and the state of Washington End-customers also include AT&T Inc., BT Group plc., China Mobile Limited, CenturyLink, Inc., Claro Argentina, Comcast Corporation, Intelsat S.A., Speedcast International Limited, Nokia Corporation, QUALCOMM Incorporated, SES S.A., T-Mobile USA, Inc. and Verizon Communications Inc.	U.S. Army, the U.S. Marine Corps, the U.S. Navy, prime contractors to the U.S. Armed Forces, NATO and foreign governments (i.e., ministries of defense) Domestic and international defense customers, prime contractors and system suppliers such as Lockheed Martin Corporation, L3 Harris Technologies, Inc., Northrop Grumman Corporation, Raytheon Technologies Corporation., SES S.A., and The Boeing Company Medical equipment companies, such as Varian Medical Systems, Inc., and aviation industry system integrators such as Collins Aerospace (a subsidiary of Raytheon Technologies Corporation) and Telephonics Corporation Foreign government customers in the Middle East, Europe, North Africa, Latin America and Asia Pacific and related prime contractors and systems integrators Oil companies such as Shell Oil Company and PETRONAS

Financial information about our business segments, including net sales, operating income, Adjusted EBITDA (a Non-GAAP financial measure), total assets, and our operations outside the United States, is provided in *"Notes to Consolidated Financial Statements - Note (11) Segment Information"* included in *"Part II - Item 8. - Financial Statements and Supplementary Data."*

The markets and key technologies for each segment are further described below.

Commercial Solutions Segment

Overview

Our Commercial Solutions segment offers satellite ground station technologies (such as SCPC and TDMA modems and amplifiers) and public safety and location technologies (such as 911 call routing, 911 call handling and mapping solutions) to commercial customers and smaller government customers, such as state and local governments. This segment also serves certain large government customers (including the U.S. government) that have requirements for off-the-shelf commercial equipment.

Key Markets and Technology Solutions

Satellite Ground Station Technologies

We offer our customers one-stop-shopping for satellite ground station technologies, including SCPC and TDMA modems, amplifiers, frequency converters and network software for customers who utilize satellite communications. Our products are used to modulate, demodulate and amplify signals, carry voice, video and/or data over networks and are vital to satellite communication applications, including air-to-ground communications, video broadcasting and the backhaul of cellular traffic. Our Commercial Solutions segment manufactures most of the satellite ground station equipment we sell to our customers.

We believe that the overall satellite ground station equipment industry will grow over the next few years, and will be increasingly connected to existing and new cellular networks. This growth is expected to occur as a result of widespread deployment and upgrades of 4G and 5G ground-based systems, including satellite earth stations, as well as the integration of high-performance amplifiers necessary to meet long-term demand for high-performance satellite communications applications, such as satellite-based wireless backhaul, DTH, HD and 4K broadcasting and in-flight connectivity. We believe that Comtech is well positioned to capitalize on this demand through sales of our market leading satellite ground station technologies, including new next-generation satellite earth station technologies that can be used with the thousands of new LEO, MEO and large HTS satellite constellations that are reportedly being launched over the next several years.

Examples of end-market applications that are driving long-term demand for our satellite-based communication technologies include:

- ***Satellite-Based Cellular Backhaul.*** Demand for satellite-based cellular backhaul services is anticipated to grow rapidly as a result of the increased penetration of smart cellular phones and network upgrades to 4G and 5G in developing regions of the world. Ultimately, as 5G services continue to be deployed, mobile data services will become more critical. As mobile data penetration expands and mobile data consumption increases, wireless carriers must invest in their mobile network infrastructure and businesses will require back-up communications. In developing regions of the world and in remote areas where terrestrial network infrastructure is lacking, wireless network operators often backhaul, or transport, their wireless data traffic using satellite-based networking technologies. Comtech is well positioned to serve the high-performance, high availability needs of satellite-based cellular backhaul through sales of our SCPC and TDMA satellite modems as well as our Heights™ and UHP networking platforms.

- ***New LEO, MEO and HTS Satellites.*** There are thousands of new satellites reportedly being launched over the next several years, which believe will lead to increasingly complex satellite networks. As service providers work to offer connectivity to these high-speed, high-bandwidth satellites and expand their networks to handle the demand for new LEO, MEO and HTS applications, we believe our Heights™ and UHP networking platforms, our solid-state amplifiers and our X/Y antennas will ultimately be incorporated into many new installations and necessary upgrades of equipment.

- ***High Definition and Ultra-High Definition Transmission.*** Reports indicate that in recent years, consumers have purchased millions of HD televisions and Ultra-High Definition or "4K" televisions and streaming high-definition videos over mobile devices. We believe this will require a significant amount of satellite bandwidth, which will require satellite service providers to upgrade equipment and find new ways to manage the cost and transmission efficiency of their networks. We believe that these requirements will drive increased demand for our satellite ground station technologies.

- ***Integration of Satellite Systems into 911 Systems.*** 911 service is a vital part of the U.S. government's nationwide emergency response and disaster preparedness system. In recent years, the FCC has taken steps to increase public safety by encouraging and coordinating development of a nationwide, seamless communication system for emergency systems. Increasingly, satellite services are playing a more important role in the nationwide 911 network not only in rural areas but as back-up for Public Safety Answering Points ("PSAP") and individual callers. For instance, in August 2021, it was reported that Apple was developing satellite capabilities for its iPhone models that would allow users to call and/or send texts in emergency situations. We believe that satellite systems, supported by our SCPC and TDMA networking platforms, will be incorporated into 911 systems. Given our expertise in public safety and location technology solutions, we believe we are uniquely positioned to be a leader in this growing market.

Public Safety and Location Technologies

We are a leading provider of public safety and location technologies. Our next generation solutions enable rich, multimedia information to be delivered with 911 calls; our E911 call routing solutions allow cellular carriers and voice over the Internet ("VoIP") carriers to deliver emergency calls to Public Safety emergency call centers nationwide. When someone places an emergency call, our technologies can identify the call as an emergency call, access the user’s location information from the wireless network and route the call to the assigned public safety jurisdiction. Today, we provide public safety and location technologies to many U.S. telecommunication carriers, the largest being Verizon for which we provide their 911 call routing via cellular service. We believe we service a significant portion of the carrier market for 911 cellular call routing applications, along with another leading competitor.

In addition to 911 call routing, we provide systems integration, satellite and location infrastructure terminals, and linkage to NG-911 Emergency Services IP Networks ("ESInet"). We also offer best-in-class 911 call handling solutions under the Solacom brand name. We believe state and local governments have a need to upgrade existing call handling systems and old networks to more modern NG-911 systems, including 911 text messaging services, advanced data, real-time photos and other types of information sharing over IP networks.

As the U.S. adopts upgraded call handling and NG-911 solutions, we believe that other countries will do so as well. Our public safety and location technology solutions have been deployed since 2006 and are utilized by domestic MNOs as well as internationally to provide reliable device location determination for public safety and commercial applications. Many of our technologies, such as positioning, mapping and text messaging, are embedded in our public safety and location offerings to help address mapping, routing and geolocations. We address the FCC mandates for emergency services as it relates to location by supporting precise location in our solutions. Our text messaging platforms are used by wireless carriers to provide SMS to their end-customers and are also used to communicate with 911 PSAPs through major network operators.

In order to maximize market growth opportunities, we have repositioned certain of our location technology solutions to increase our penetration into the public safety space and are focusing on international markets. As satellite services play a more important role in the nationwide 911 network, we believe demand for our location products will grow.

Our Location Studio™ platform enables customers, especially public safety agencies, to build their own applications with end-user functionality, such as maps, search, geocoding, routing and navigation, using their own brand. We believe that customers and prospects are increasingly looking for alternatives to mapping services that are subject to change by the provider and which meet market privacy and security requirements. The Location Studio™ platform is a complete end-to-end location application consisting of maps, map data, including our Trusted OpenStreetMap ("TOSM") geo-services, application program interfaces ("APIs") and software development kits ("SDKs") enabling public safety ecosystems and enterprises to build custom and unique mapping applications. Map data includes positioning, search, enhanced local content, custom maps, navigation, geo-fencing, tracking integrated with third party data sources like camera feeds and Internet of Things ("IoT") sensor data via cross-platform APIs and SDKs supporting all leading operating systems. We believe that as the industry moves toward digital transformation, customers will be looking for situational awareness solutions that are built on top of mapping and geo-services. Our location technology solutions enable the determination of a mobile phone's geospatial position in a variety of environments, leveraging a wide range of signals including Global Positioning System ("GPS"), Global Navigation Satellite Systems ("GNSS") and multiple cellular positioning technologies ranging from 2G through 5G mobile networks. For our installed base of systems, we provide ongoing operational support, including administration of system components, system optimization, configuration management and maintenance services, including tracking customer support issues, troubleshooting and developing and installing maintenance releases.

In fiscal 2022, we have begun marketing Smart Response™, a newly developed cloud-based solution, that offers a common operational picture to first responders for an effective data-driven response for security agencies and first responders. This new solution can offer streaming live feeds from traffic cameras at and near incident location, access caller information like past residences, criminal history, or next-of-kin information at the tap of a button. Offering a bird-eye view of integrated data, the Smart Response™ solution empowers PSAP employees to ensure the appropriate resources are on the scene and to better serve the public in emergency situations.

Government Solutions Segment

Overview

Our Government Solutions segment provides tactical satellite-based networks and ongoing support for complicated communications networks, troposcatter systems and solid-state, high-power amplifiers to large government end-users (including those of foreign countries), large international customers and domestic prime contractors.

Key Markets and Technology Solutions

Tactical Communications Technologies

With persistent threats from state and non-state actors, governments around the world are increasingly seeking ways to mitigate vulnerabilities using information and more reliable communication systems to increase decision-makers' situational awareness. In response to this demand, we offer a variety of mission-critical technologies, including the supply and field support of tactical satellite-based networks (including satellite modems, ruggedized routers and solid-state drives), sustainment services for the AN/TSC-198A SNAP (SIPR and NIPR Access Point) VSATs. Many of our mission-critical technologies are part of integrated communication infrastructure systems such as the U.S. Military Command, Control, Communications, Computers, Cyber Intelligence, Surveillance and Reconnaissance (also known as "C5ISR") systems and similar complicated networks for international governments. We also provide a variety of in-class and on-line training services, labs and assessments to our customers to help them protect networks from cyber attacks.

We are recognized as an industry leader and global supplier of high reliability products. Our solutions include supply chain management and engineering services for high reliability EEE space parts and satellite and launch vehicle tracking solutions in support of critical National Aeronautics and Space Administration ("NASA") programs and for international space and defense agencies. Through our acquisition of CGC Technology Limited, we are also a leading, world-wide provider of high precision, full motion fixed and mobile X/Y satellite tracking antennas, reflectors, RF feeds, radomes and other ground station equipment.

High-Performance Transmission Technologies

We offer several unique high-performance transmission technologies that are used in sophisticated communication systems, such as electronic warfare, radar and identification friend or foe ("IFF"). As our customers push the envelope for mobility, speed and higher frequency, we believe that demand for high-performance transmission products will grow from current levels.

Our troposcatter technologies (sometimes referred to as over-the-horizon or "OTH" microwave systems) are extremely reliable and secure and are a cost-effective alternative or compliment to satellite communication as it does not require the leasing of expensive satellite transponder space with its attendant recurring costs. Our over-the-horizon microwave systems, which include our patented forward error correction technology, can transmit video and other broadband applications at throughputs of up to 200 Mbps. U.S. and foreign governments use our over-the-horizon microwave systems to, among other things, transmit radar tracking, run C4ISR applications and connect to remote border locations. Additionally, energy companies use our systems to enable communication links for offshore oil rigs and other remote locations, as well as for exploration activities. Our MTTS, the first truly modular, rapidly deployable transit case-based troposcatter system, has been purchased by the U.S. Army, incorporated into the SNAP family of products used by the U.S. military and designated the Tactical Transportable TROPO ("SNAP 3T") or AN/TRC 198(V3). We also recently introduced the Comtech COMET™, a rapidly deployable OTH microwave system. The Comtech COMET™ has a medium range (up to 60 km) and high bandwidth (up to 210 Mbps) that fills a void in distances that have long been desired by tactical communications planners. The Comtech COMET™ uniquely addresses the special operations command (or "SOCOM") community's concern of low probability of intercept and low probability of detection ("LPI/LPD"), while providing high reliability, mission essential communications.

Our solid-state, high-power RF microwave amplifiers and related switching control technologies are utilized in several critical applications, including electronic warfare, communications, radar, IFF and medical applications such as oncology cancer treatment systems. In the electronic warfare marketplace, we support a variety of legacy systems and are participating in the ongoing migration to platforms that require smaller and lighter amplifiers integrated with additional signal processing functionality. Our solutions increase the flexibility of systems by providing wider bandwidth capabilities to address communication needs. We also believe that the desire for increased situational awareness of the airspace may create increased opportunities for our radar and IFF products, which are used by government and commercial customers around the world. Our high power and highly reliable Gallium Nitride ("GaN") amplifier technology is increasingly used both to update existing radar systems for improved sensitivity and range as well as for new radar installations. In addition to technologies that enhance performance of primary radars, we also supply solutions for IFF systems that provide positive identification of radar targets for secondary surveillance systems.

Acquisitions

In order to position ourselves to take advantage of additional growth opportunities and meet our strategic objectives, we have followed, and will continue to follow, a disciplined approach in identifying, executing and capitalizing on acquisitions.

Completed Acquisitions

In the past several years, we have acquired businesses and enabling technologies.

On February 23, 2016, we acquired TeleCommunication Systems Inc. ("TCS"), a leading provider of commercial solutions (such as public safety and location technologies) and government solutions (such as tactical communications technologies). The TCS acquisition had an aggregate purchase price for accounting purposes of $340.4 million (also referred to as the transaction equity value) and an enterprise value of $423.6 million. The TCS acquisition, which has been fully integrated into our business, resulted in Comtech entering complementary markets and expanding our domestic and international commercial offerings.

On February 28, 2019, we completed our acquisition of Solacom, a leading provider of NG-911 solutions for public safety agencies. The acquisition of Solacom was a significant step in our strategy of enhancing our public safety and location technologies. The Solacom acquisition had an aggregate purchase price for accounting purposes of $32.9 million and was fully integrated into our Commercial Solutions segment.

On April 29, 2019, we acquired the state and local government NG-911 business from General Dynamics Information Technology, Inc. (the "GD NG-911 business") and at the same time announced a five-year contract award in excess of $100.0 million to develop, implement and operate a NG-911 emergency communications system for a Northeastern state. The acquisition strengthened our position in the growing NG-911 solutions market. The GD NG-911 business had an aggregate purchase price for accounting purposes of $11.0 million and was fully integrated into our Commercial Solutions segment.

On January 27, 2020, we completed the acquisition of CGC Technology Limited ("CGC"), a small privately held company located in the United Kingdom. CGC is a leading provider of high precision full motion fixed and mobile X/Y satellite tracking antennas, reflectors, RF feeds, radomes and other ground station equipment around the world. The acquisition brought established relationships with several top-tier European aerospace companies and other government entities, and we expect it to allow us to participate in the anticipated growth in the number of LEO and MEO satellite constellations. The CGC business had an aggregate purchase price for accounting purposes of $23.7 million and was fully integrated into our Government Solutions segment.

On February 21, 2020, we acquired NG-911, Inc. ("NG-911"), a small privately held company based in Iowa, Illinois and Missouri. NG-911 is a pioneer in providing next generation 911 solutions, including those designed by Solacom, to public safety agencies in the Midwest. The acquisition allows us to cost-effectively expand sales of our industry leading Solacom Guardian call management solutions for public safety. The NG-911 product line had an aggregate purchase price for accounting purposes of $1.2 million and was fully integrated into our Commercial Solutions segment.

On March 2, 2021, we completed our acquisition of UHP Networks Inc. ("UHP"), a leading provider of innovative and disruptive satellite ground station technology solutions. With end-markets for high-speed satellite-based network anticipated to significantly grow, our acquisition allows us to enhance our Commercial Solutions segment's offerings with low cost TDMA satellite modems. The UHP business has a preliminary purchase price for accounting purposes of $37.5 million and was fully integrated into our Commercial Solutions segment.

Sales, Marketing and Customer Support

Sales and marketing strategies include direct sales through sales, marketing and engineering personnel, indirect sales through independent representatives, value-added resellers, and sales through a combination of the foregoing. We devote resources to evaluating and responding to requests for proposals by governmental agencies around the world and, as needed, we employ the use of specialized consultants to develop our proposals and bids.

We intend to continue to expand international marketing efforts by engaging additional independent sales representatives, distributors and value-added resellers and by establishing additional foreign sales offices. In addition, we also leverage our relationships with larger companies (such as prime contractors to the U.S. government and large mobile wireless operators) to market our technology solutions. In fiscal 2022, we expect to significantly expand our social media and Internet presence and develop an updated marketing and branding strategy.

We are pre-qualified as an approved vendor for certain government contracts. We collaborate in sales efforts under various arrangements with integrators. Our marketing efforts also include advertising, public relations, speaking engagements and attending and sponsoring industry conferences.

Our management, technical and marketing personnel establish and maintain relationships with customers. Our sales strategies include a commitment to providing ongoing customer support for our systems and equipment. This support involves providing direct access to engineering staff or trained technical representatives to resolve technical or operational issues.

Our products and services in many of our product lines have long sales cycles. Once a product is designed into a system, customers may be reluctant to change the incumbent supplier due to the extensive qualification process and potential redesign required in using alternative sources. In addition, in recent years, we have found that overall sales cycles for each of our product lines have significantly increased.

Sales by geography and customer type, as a percentage of related net sales, are as follows:

	Fiscal Years Ended July 31,								
	2021	2020	2019	2021	2020	2019	2021	2020	2019
	Commercial Solutions			Government Solutions			Consolidated		
U.S. government	14.7 %	14.8 %	19.2 %	66.8 %	65.0 %	63.8 %	34.6 %	36.2 %	40.1 %
Domestic	58.5 %	58.9 %	53.9 %	14.1 %	15.2 %	12.5 %	41.5 %	40.3 %	34.5 %
Total U.S.	73.2 %	73.7 %	73.1 %	80.9 %	80.2 %	76.3 %	76.1 %	76.5 %	74.6 %
International	26.8 %	26.3 %	26.9 %	19.1 %	19.8 %	23.7 %	23.9 %	23.5 %	25.4 %
Total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %

Sales to U.S. government customers include sales to the DoD, intelligence and civilian agencies, as well as sales directly to or through prime contractors.

Domestic sales include sales to commercial customers, as well as to U.S. state and local governments. Included in domestic sales are sales to Verizon Communications Inc. ("Verizon"), which represented 10.7% of consolidated net sales for fiscal 2021. Except for the U.S. government, there were no customers that represented more than 10.0% of consolidated net sales during fiscal 2020 and 2019.

International sales for fiscal 2021, 2020 and 2019 (which include sales to U.S. domestic companies for inclusion in products that are sold to international customers) were $138.9 million, $145.1 million and $170.6 million, respectively. When we sell internationally, we denominate most of our contracts in U.S. dollars. Some of our sales to international customers are paid for by letters of credit or on an open account. From time to time, some of our international customers may require us to provide performance guarantees.

Except for the U.S., no individual country (including sales to U.S. domestic companies for inclusion in products that are sold to a foreign country) represented more than 10% of consolidated net sales for fiscal 2021, 2020 and 2019.

Backlog

Our backlog as of July 31, 2021 was $658.9 million (of which $526.4 million was attributed to the Commercial Solutions segment and $132.5 million was attributed to the Government Solutions segment). We estimate that a substantial portion of the backlog as of July 31, 2021 will be recognized as sales during the next twenty-four month period, with the rest thereafter.

At July 31, 2021, 79.8% of our backlog consisted of orders for use by U.S. commercial customers, 8.9% consisted of U.S. government contracts, subcontracts and government funded programs and 11.3% consisted of orders for use by international customers (including sales to U.S. domestic companies for inclusion in products that will be sold to international customers).

Our backlog is defined as orders (sometimes also referred to herein as bookings) that we believe to be firm. Backlog that is derived from U.S. government orders relates to U.S. government contracts that have been awarded, signed and funded. Backlog for our U.S. government customers also includes amounts appropriated by Congress and allotted to the contract by the procuring government agency. Our backlog does not include the value of options that may be exercised in the future on multi-year contracts, nor does it include the value of additional purchase orders that we may receive under indefinite delivery/ indefinite quantity ("IDIQ") contracts or basic ordering agreements. In some cases, such as contracts received from large U.S. based telecommunication companies, our backlog is computed by multiplying the most recent month's contract or revenue by the months remaining under the existing long-term agreements, which we consider to be the best available information for anticipating revenue under those agreements. When we acquire a company with existing contracts, we only record bookings for those contracts that meet our definition. Almost all of the contracts in our backlog (including firm orders previously received from the U.S. government) are subject to modification, cancellation at the convenience of the customer, or for default in the event that we are unable to perform under the contract.

A significant portion of the backlog from our U.S. commercial customers relates to large, multi-year contracts to provide state and local governments (and their agencies) with public safety and location technology solutions. Although the contracts themselves represent legal, binding obligations of these governments, funding is often subject to the approval of budgets (for example, on an annual or bi-annual basis). Although funding for these multi-year contracts is dependent on future budgets being approved, we include the full estimated value of these large, multi-year contracts in our backlog given the critical nature of the services being provided and the positive historical experience of our state and local government customers passing their respective budgets.

There can be no assurance that our backlog will result in actual revenue in any particular period, or at all, or that any contract included in backlog will be profitable. There is a higher degree of risk in this regard with respect to unfunded backlog. The actual amount and timing of any revenue is subject to various contingencies, many of which are beyond our control. The actual recognition of revenue on contracts included in backlog may never occur or may change because a program schedule could change, a customer may not follow up with order details (e.g., delivery instructions), fluctuations in currency exchange rates after an order is placed could cause our products to become too expensive for a foreign customer, a customer's program could be canceled, a contract could be reduced, modified or terminated early due to changes in a customer's priorities, funding may not be included in future budgets, actual indirect rates being reimbursed on U.S. government contracts may ultimately be less than those indirect rates included in our initial proposals, or an option that we had assumed would be exercised is not exercised. As a result of these contingencies, we may adjust our backlog if we determine that such orders are no longer firm and or funded. In addition to adjustments from these types of contingencies, variations in backlog from time to time are attributable, in part, to changes in sales mix, the timing of contract proposals, the timing of contract awards, delivery schedules on specific contracts and new bookings obtained through acquisitions. A large majority of the solutions in our satellite ground station technologies product line operate under short lead times. Our Government Solutions segment backlog is highly influenced by the nature and timing of orders received from the U.S. government, which is subject to unpredictable funding, deployment and technology decisions. As a result, we believe our backlog and orders, at any point in time, are not necessarily indicative of the total sales anticipated for any future period.

Manufacturing and Service

Our manufacturing operations consist principally of the assembly and testing of electronic products that we design and build from purchased fabricated parts, printed circuits and electronic components. We consider our facilities to be well maintained and adequate for current and planned production requirements. All our manufacturing facilities, including those that serve the military market, must comply with stringent customer specifications. We employ formal quality management programs and other training programs, including the International Standard Organization's quality procedure registration programs.

To support our long-term business goals, in fiscal 2021, we commenced a 15-year lease for a new 146,000 square foot facility in Chandler, Arizona and began shifting production of our satellite earth station products from our existing Tempe, Arizona locations. We also signed a new 10-year lease in the United Kingdom to expand our Government Solutions segment's manufacturing capabilities. This facility is expected to support the production of X/Y satellite tracking antennas that can be used in connection with the thousands of new LEO, MEO and large HTS satellite constellations reportedly being launched over the next several years. COVID-19 has delayed efforts to get our new technology manufacturing centers operational and has increased our start-up costs. Although things can be further delayed, we anticipate that our new facilities will be operational by the end of our fiscal 2022 or early part of fiscal 2023. Increased usage of our high-volume technology manufacturing centers will allow us to secure volume discounts on key components, better control the quality of our manufacturing process and maximize the utilization of our manufacturing capacity.

All of our other manufacturing facilities are located in the United States.

Our ability to deliver products to customers on a timely basis is dependent, in part, upon the availability and timely delivery by subcontractors and suppliers (including, at times, the U.S. government) of the components and subsystems that we use in manufacturing our products. Electronic components and raw materials used in our products are generally obtained from independent suppliers. Some components are standard items and are available from several suppliers. Others are manufactured to our specifications by subcontractors. Although we obtain certain components and subsystems from a single source or a limited number of sources, we believe that most components and equipment are available from multiple sources. Certain U.S. government contracts may require us to incorporate government furnished parts into our products. Delays in receipt of such parts can adversely impact the timing of our performance on the related contracts. While not individually material, during fiscal 2021, as a result of COVID-19, we have experienced longer lead times for certain components and raw materials from certain suppliers as well as higher freight costs due to an overwhelmed global transport network. We expect that these supply chain issues will ease during the second half of fiscal 2022.

Research and Development

We have established a leading technology position in our fields through internal and customer-funded research and development activities.

Internal research and development expenses are reported as research and development expenses for financial reporting purposes and were $49.1 million, $52.2 million and $56.4 million in fiscal 2021, 2020 and 2019, respectively, representing 8.4%, 8.5% and 8.4% of total consolidated net sales, respectively, for these periods. Customer-funded research and development activities relate to the adaptation of our basic technology to specialized customer requirements which is recoverable under contracts and is reflected in net sales with the related costs included in cost of sales. Certain of our government customers also contract with us from time to time to conduct research on telecommunications software, equipment and systems. During fiscal 2021, 2020 and 2019, we were reimbursed by customers for such activities in the amounts of $13.6 million, $11.9 million and $14.7 million, respectively. During fiscal 2021, we incurred $0.3 million of strategic emerging technology costs for next-generation satellite technology to advance our solutions offerings to be used with new broadband satellite constellations. We are evaluating this new market in relation to our long-term business strategies, and we may incur additional costs in fiscal 2022.

Intellectual Property

We rely upon trade secrets, technical know-how, continuing technological innovation and, with respect to certain technologies, patents to develop and maintain our competitive position. The products we sell require significant engineering design and manufacturing expertise. For technological capabilities that are not protected by patents or licenses, we generally rely on the expertise of our employees and our learned experiences in both the design and manufacture of our products and the delivery of our services.

Some of our key Commercial Solutions segment technology is protected by patents that are significant to protecting our proprietary technology. We have been issued several U.S. patents relating to forward error correction technology that is utilized in our TPC-enabled satellite modems. Due to our market leadership position, we do not expect that upon expiration of these patents, our future results will be negatively impacted.

We have a portfolio of several hundred patents worldwide relating to wireless location services, text messaging, GPS ephemeris data, emergency public safety data routing, electronic commerce and other areas. To-date, our strategy has been to avoid offensive and defensive patent litigation and focus on building meaningful partnerships with other companies through direct licensing, cross licensing, and other forms of agreements. We do not believe that any single patent or group of patents, patent application or patent license agreement is material to our operations.

We have filed additional patent applications for certain apparatus and processes we believe we have invented covering key features of the location services, wireless text alerts, SMS Center, mobile-originated data and E911 network software. There is no assurance that any patent application will result in a patent being issued by the U.S. Patent and Trademark Office or other patent offices, nor is there any guarantee that any issued patent will be valid and enforceable. Additionally, foreign patent rights may or may not be available or pursued in any technology area for which U.S. patent applications have been filed.

Almost all the products and services we sell to the U.S. government include technology and other technical know-how that we have internally developed. In past instances where we have provided government-purpose rights, to our knowledge, the U.S. government has not exercised any of these rights. To the extent that we have provided or will provide government-purpose rights in the future, we believe that given the rapidly changing nature of our technology, our future success will depend primarily on the technical competence and creative skill of our personnel, rather than any contractual protection.

Competition

Our businesses are highly competitive and are characterized by rapid technological change. Some of our competitors are substantially larger, have significantly greater financial, marketing, research and development, technological and operating resources and broader product lines than we have. Other companies are developing new technologies and the shift towards open standards such as IP-based satellite networks will likely result in increased competition. A significant technological breakthrough by others, including new companies, our existing competitors and our customers, could have a material adverse effect on our business. Our future success depends on, among other things, our ability to keep pace with such changes and developments and to respond to the increasing variety of electronic equipment users and transmission technologies.

Some large defense-based companies, such as Northrop Grumman Corporation, have subsidiaries or divisions that compete against us in one or more business segments. In addition, new and potential competitors are always emerging. Certain of our customers, such as prime contractors who currently outsource their engineering and manufacturing requirements to us, have technological capabilities in our product areas and could choose to replace our products with products they develop. In some cases, we partner or team with companies (both large and mid-tier) to compete against other teams for large defense programs. In some cases, these same companies may be among our competitors.

Listed below, in alphabetical order, are some of our competitors in each of our two business segments:

> Commercial Solutions - ACTIA Group, Advantech Co., Ltd., Agilis Satcom, AnaCom, Inc., Bandwidth.com, CalAmp Corp., Codan Limited, CPI International, Inc., Datum Systems, Inc., dB Control Corp. (a subsidiary of HEICO Corp.), 8x8, Inc., ENENSYS Technologies, ETM, Inc., Gilat Satellite Networks Ltd., Google Inc. (a subsidiary of Alphabet Inc.), Here Technologies, Honeywell Aerospace (a subsidiary of Honeywell International Inc.), Infinite Convergence Solutions, Inc., Intermap Technologies Corporation, Intrado Corporation, Iridium Communications Inc., ITS Electronics Inc., KVH Industries Inc., LM Ericsson Telephone Company, L3Harris Technologies, Inc., Mission Microwave Technologies, LLC., Motorola Solutions, Inc., ND Satcom GmbH, Nokia Networks (a subsidiary of Nokia Corporation), NOVELSAT, Novra Technologies Inc., Orbcomm Inc., Panasonic Corporation, Paradise Datacom Ltd. (a subsidiary of Teledyne Technologies Incorporated), Polarity Inc., SatixFy Israel Ltd., SatPath Systems, Inc., Spacepath Communications Limited, Speedcast International Limited, ST Engineering iDirect, Inc. (including Newtec), Telenav, Inc., Terrasat Communications Inc, TMD Technologies LLC., TomTom N.V. and ViaSat, Inc.
>
> Government Solutions - Aethercomm Inc., AMERGINT Technologies, Inc., CACI International Inc., CalAmp Corp., CPI International, Inc., Cubic Corporation, dB Control Corp. (a subsidiary of HEICO Corp.), DXC Technology, Empower RF Systems, Inc., Envistacom, LLC, Escape Communications, Inc., General Dynamics Corporation, International Datacasting Corporation (a subsidiary of Novra Technologies Inc.), Kratos Defense & Security Solutions, Inc., L3Harris Technologies, Inc., Mercury Systems, Inc., NeuStar, Inc., Northrop Grumman Corporation (including the former Orbital ATK, Inc.), Raytheon Technologies Corporation, Teledyne Technologies Incorporated, The KeyW Holding Corporation, Ultra Electronics Holdings plc. and ViaSat, Inc.

We believe that competition in all our markets is based primarily on technology innovation, product performance, reputation, delivery times, customer support and price. Due to our proprietary know-how, we believe we can develop, produce and deliver products and services on a cost-effective basis faster than many of our competitors.

Human Capital

At July 31, 2021, we had 2,038 employees (including temporary employees and contractors), 1,238 of whom were engaged in production and production support, 420 in research and development and other engineering support, and 380 in marketing and administrative functions. None of our U.S. based employees are represented by a labor union. Of our 2,038 employees, 489 employees are based outside of the United States including 217 employees in the United Kingdom. We believe that our employee relations are good.

U.S. Government Contracts and Security Clearances

The U.S. government operates on an October-to-September fiscal year. Generally, in February of each year, the President of the United States presents to the U.S. Congress ("Congress") the proposed budget for the upcoming fiscal year and from February through September of each year, the appropriations and authorization committees of Congress review the President's budget proposals and establish the funding levels for the upcoming fiscal year. Once these levels are enacted into law, the Executive Office of the President administers the funds to the agencies. Thereafter, we can receive orders pursuant to sole-source or competitively awarded contracts, which we describe below.

The U.S. government may be unable to complete its budget process before the end of any given government fiscal year and when the fiscal budget is not approved in a timely manner, the U.S. government is required either to shut down or be funded pursuant to a so-called "continuing resolution" that authorizes agencies of the U.S. government to continue operations but does not authorize new spending initiatives, either of which could result in reduced or delayed orders or payments for products and services we provide.

Sole-source contracts are generally awarded to a single contractor without a formal competition when a single contractor is deemed to have an expertise or technology superior to that of competing contractors or when there is an urgent need by the U.S. government that cannot wait for a full competitive process. Potential suppliers compete informally through research and development and marketing efforts. Competitively-bid contracts are awarded based on a formal proposal evaluation established by the procuring agency and interested contractors prepare bids. Competitively-bid contracts are awarded after a formal bid and proposal competition among suppliers.

The U.S. government has a stated policy direction to reduce the number of sole-source contract awards across all procuring agencies. In addition, the U.S. government is increasing the use of multiple-award IDIQ contracts to increase its procurement options. IDIQ contracts allow the U.S. government to select a group of eligible contractors for the same program. When the government awards IDIQ contracts to multiple bidders under the same program, a company that has already competed to be selected as a participant in the program must subsequently compete for individual delivery orders. As a result of this U.S. government shift toward multiple award IDIQ contracts, we expect to face greater competition for future U.S. government contracts and, at the same time, greater opportunities for us to participate in program areas that we do not currently participate in.

As a U.S. government contractor and subcontractor, we are subject to a variety of rules and regulations, such as the Federal Acquisition Regulations ("FAR"). Individual agencies can also have acquisition regulations. For example, the Department of Defense implements the FAR through the Defense Federal Acquisition Regulation supplement (commonly known as "DFARs"). For all Federal government entities, the FAR regulates the phases of any product or service acquisition, including: acquisition planning, competition requirements, contractor qualifications, protection of source selection and vendor information, and acquisition procedures. In addition, the FAR addresses the allowability of supplier costs, while Cost Accounting Standards address how those costs can be allocated to contracts. The FAR also subjects suppliers to audits and other government reviews. These reviews cover issues such as cost, performance and accounting practices relating to our contracts. The government may challenge a supplier's costs and fees. Suppliers are also required to comply with the National Industrial Security Program Operating Manual which relates to the handling of classified materials and programs and is administered by the Defense Counterintelligence and Security Agency ("DCSA"). Suppliers who do not comply with these various regulations may lose and/or become ineligible for facility security clearances and/or participation in classified programs.

Under firm fixed-price contracts, we perform for an agreed-upon price and we can derive benefits from cost savings, but bear the risk of cost overruns. Our cost-reimbursable type contracts typically provide for reimbursement of allowable costs incurred plus a negotiated fee. Cost-plus-incentive-fee orders typically provide for sharing with the U.S. government savings accrued from orders performed for less than the target costs and costs incurred in excess of targets up to a negotiated ceiling price (which is higher than the target cost), and for the supplier to carry the entire burden of costs exceeding the negotiated ceiling price.

In fiscal 2021, $201.1 million or 34.6% of our consolidated net sales were to the U.S. government (including sales to prime contractors to the U.S. government). Of this amount, firm fixed-price and cost-reimbursable type contracts (including fixed-fee, incentive-fee and time and material type contracts) accounted for approximately $121.8 million and $79.3 million, respectively.

Regulatory Matters

In addition to the rules and regulations that pertain to us as a U.S. government contractor and subcontractor, we are also subject to a variety of local, state and federal governmental regulations.

Our products that are incorporated into wireless communications systems must comply with various government regulations, including those of the FCC. Our manufacturing facilities, which may store, handle, emit, generate and dispose of hazardous substances that are used in the manufacture of our products, are subject to a variety of local, state and federal regulations, including those issued by the Environmental Protection Agency. Our products are also subject to European Union directives related to the recycling of electrical and electronic equipment.

Our international sales are subject to U.S. and foreign regulations such as the Arms Export Control Act, the International Emergency Economic Powers Act ("IEEPA"), the International Traffic in Arms Regulations ("ITAR"), the Export Administration Regulations ("EAR") and the trade sanctions laws and regulations administered by the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC"), the Department of Commerce ("DoC") as well as other applicable laws relating to trade, export controls and foreign corrupt practices, the violation of which could adversely affect our operations. We must comply with all applicable export control laws and regulations of the U.S. and other countries. Certain of our products and systems may require licenses from U.S. government agencies for export from the U.S., and some of our products are not permitted to be exported. We cannot be certain that we will be able to obtain necessary export licenses, and such failure would materially adversely affect our operations. If we are unable to receive appropriate export authorizations in the future, we may be prohibited from selling our products and services internationally, which may limit our sales and have a material adverse effect on our business, results of operations and financial condition. In addition, in certain cases, U.S. export controls also severely limit unlicensed technical discussions, such as discussions with any persons who are not U.S. citizens or permanent residents. As a result, in cases where we may need an export license, our ability to compete against a non-U.S. domiciled foreign company that may not be subject to the same U.S. laws may be materially adversely affected. In addition, we are subject to the Foreign Corrupt Practices Act ("FCPA") and other local laws that generally bar bribes or unreasonable gifts to foreign governments or officials. Violations of these laws or regulations could result in significant sanctions, including disgorgement of profits, fines, and criminal sanctions against us, our officers, our directors, or our employees, more onerous compliance requirements, more extensive debarments from export privileges or loss of authorizations needed to conduct aspects of our international business. A violation of any of the regulations enumerated above could materially adversely affect our business, financial condition and results of operations. Additionally, changes in regulatory requirements which could further restrict our ability to deliver services to our international customers, including the addition of a country to the list of sanctioned countries under the IEEPA or similar legislation could negatively impact our business.

In the past, we have self-reported violations of export control laws or regulations to the U.S. Department of State, Directorate of Defense Trade Controls ("DDTC"), DoC and OFAC. In addition, we have made various commitments to U.S. government agencies that oversee trade and export matters that we will maintain certain policies and procedures including maintaining a company-wide Office of Trade Compliance and conducting ongoing internal assessments and reporting any future violations to those agencies.

Our financial reporting, corporate governance, public disclosure and compliance practices are governed by laws such as the Sarbanes-Oxley Act of 2002, Dodd-Frank Act of 2010, and rules and regulations issued by the SEC. The SEC has adopted rules which require, among other things, public companies to conduct certain inquiries to determine whether or not Conflict Minerals (as that term is defined in the SEC rules) that are necessary to the functionality of their manufactured products or their product's production processes originated in a Covered Country (as that term is defined in the SEC rules) and ultimately file a report with the SEC. Conflict Minerals are widely used in many industries, including the telecommunications industry and almost all of our products include component parts purchased from third-party suppliers and we must rely heavily on information received from suppliers to determine the origin of those materials. We have implemented a due diligence program consistent with the Organization for Economic Co-operation and Development guidelines to collect information concerning the country of origin of Conflict Minerals and in that regard, have adopted a policy that requires our suppliers (both public and private) to commit to a code of conduct relating to the responsible sourcing of minerals and to establish a policy to reasonably assure that the products they manufacture do not contain Conflict Minerals that originated in a Covered Country. Efforts to comply with this SEC rule have resulted in additional costs to us and, we believe, to our suppliers. As such, the availability of raw materials used in our operations could be negatively impacted and/or raw material prices could increase. Further, if we are unable to certify that our products are conflict free, we may face challenges with our customers, which could place us at a competitive disadvantage and could harm our reputation.

Laws and regulations have been enacted that affect companies conducting business on the Internet, including the European General Data Protection Regulation ("GDPR"). The GDPR imposes certain privacy related requirements on companies that receive or process personal data of residents of the European Union that are currently different than those in the United States and include significant penalties for non-compliance. Similarly, there are several legislative proposals in the United States, at both the federal and state level, that could impose new obligations in areas affecting our business, such as liability for personal data protection. In addition, some countries are considering or have passed legislation implementing data protection requirements or requiring local storage and processing of data or similar requirements that could increase the cost and complexity of delivering our services. Our costs to comply with the GDPR as well any other similar laws and regulations that emerge may negatively impact our business.

ITEM 1A. RISK FACTORS

Forward-Looking Statements

The following describes major risks to our business and should be considered carefully. Any of these factors could significantly and negatively affect our business, prospects, financial condition, or operating results, which could cause the trading prices of our equity securities to decline. The risks described below are not the only risks we may face. Additional risks and uncertainties not presently known to us, or risks that we currently consider immaterial, could also negatively affect us.

Summary of Risk Factors

The following is a summary of the principal risks that could significantly and negatively affect our business, prospects, financial conditions, or operating results. For a more complete discussion of the material risks facing our business, please see below:

Global Risks

- We are unable to predict the extent to which the ongoing COVID-19 pandemic and supply chain constraints will continue to adversely impact our business operations, financial performance, results of operations, financial position and the achievement of our strategic objectives.
- Our fiscal 2022 business outlook is difficult to forecast and operating results are subject to significant fluctuations and are likely to be volatile.
- If global economic business and political conditions deteriorate as compared to the current environment it could have a material adverse impact on our business outlook and our business, operating results and financial condition.
- We have significant operations in locations which could be materially and adversely impacted in the event of a terrorist attack or other significant disruptions (including natural disasters).

Business Risks

- Our backlog is subject to customer cancellation or modification.
- Contract cost growth on our firm fixed-price contracts exposes us to reduced profitability and the potential loss of future business and other risks.
- Our business is highly dependent on the budgetary decisions of our government customers.
- Our contracts with the U.S. government are subject to unique business, commercial and government audit risks.
- Our dependence on sales to international customers exposes us to unique business, commercial and export compliance audit risks.
- A change in our relationship with our large wireless carrier customers could have a material adverse effect.
- If our wireless carrier partners change the pricing and other terms by which they offer our products to their end-customers could have a material adversely affect.

Strategic Growth Risks

- We face a number of risks relating to the expected long-term growth of our business.

- We must service the debt and maintain compliance with various covenants under a Credit Facility that imposes restrictions on our business.

- Acquisitions of companies and investments could prove difficult to integrate, disrupt our business, dilute stockholder value or adversely affect operating results or the market price of our common stock.

- Our investments in recorded goodwill and other intangible assets could be impaired as a result of future business conditions, a deterioration of the global economy or if we change our reporting unit structure.

Cybersecurity Risks

- We could be negatively impacted by a system failure, breach, attack or intrusion of our IT networks or those we operate for certain customers, or third-party data center facilities, servers and related systems.

- The measures we have implemented to secure information we collect and store or enable access to may be breached.

Legal, Regulatory and Litigation Risks

- Changes in U.S. tax law could adversely affect our business and financial condition.

- Our U.S. federal, state and foreign tax returns are subject to audit and a resulting tax assessment or settlement could have a material adverse effect on our business, results of operations and financial condition.

- We may be subject to environmental liabilities.

- The success of our business is dependent on compliance with FCC rules and regulations and similar foreign laws and regulations.

- Regulation of the mobile communications industry and VoIP is evolving, and unfavorable changes or our failure to comply with existing and potential new legislation or regulations could harm our business and operating results.

- Ongoing compliance with the provisions of securities laws, related regulations and financial reporting standards could unexpectedly materially increase our costs and compliance related expenses.

- Indemnification provisions in our contracts could have a material adverse effect on our consolidated results of operations, financial position, or cash flows.

- We are, from time to time, and could become a party to additional litigation or subject to claims.

- Protection of our intellectual property is limited and pursuing infringers of our patents and other intellectual property rights can be costly.

- Third parties may claim we are infringing their intellectual property rights and we could be prevented from selling our products, or suffer significant litigation expense, even if these claims have no merit.

Competitive Risks

- All of our business activities are subject to rapid technological change, new entrants, the introduction of other distribution models and long development and testing periods each of which may harm our competitive position.

- Our business is highly competitive, we are reliant upon the success of our partners, and some of our competitors have significantly greater resources than we do, which could result in a loss of customers, market share and/or market acceptance.

- We rely upon various third-party companies and their technology to provide services to our customers.

- Because our software may contain defects or errors, and our hardware products may incorporate defective components, our sales could decrease if these defects or errors adversely affect our reputation or delay shipments of our products.

Risks Related to our Common Stock

- Our stock price is volatile.
- Future issuances of our shares of common stock could dilute a stockholder's ownership interest in Comtech and reduce the market price of our shares of common stock.
- Provisions in our corporate documents and Delaware law could delay or prevent a change in control of Comtech.
- A disruption in our Common Stock dividend program could negatively impact our stock price.

Global Risks

The ongoing COVID-19 pandemic and supply chain constraints have impacted our business, operating results and financial condition, as well as the operations and financial performance of many of the customers and suppliers in industries that we serve. We are unable to predict the extent to which the pandemic, supply chain constraints and related effects will adversely impact our business operations, financial performance, results of operations, financial position and the achievement of our strategic objectives.

The COVID-19 pandemic and related disease control measures have significantly impacted the global economy and has created significant supply chain constraints. These issues have had and could continue to have material adverse effects on our business, financial position, results of operations and cash flows. Although there has been an increase in vaccinations throughout the United States, vaccinations internationally have progressed at a slower rate and the impact of new strains of the virus are uncertain. The situation is changing rapidly and there may be additional impacts of which we are currently unaware. The extent to which the COVID-19 pandemic impacts our business will depend on future developments, which cannot be predicted.

Poor business conditions due to the COVID-19 pandemic have resulted in the suppression of end-market demand for many of our products such as satellite ground station technologies and other short-lead time products. Because the timing, impact, severity and duration of these conditions are impossible to predict and remain ongoing, there is a risk that such conditions will have a material adverse effect on our future consolidated results of operations. The impact of the pandemic on our business has included or could in the future include:

- disruptions to or restrictions on our ability to ensure the continuous manufacture and supply of our products and services, including insufficiency of our existing inventory levels;
- temporary closures or reductions in operational capacity of our facilities or the facilities of our direct or indirect suppliers or customers;
- permanent closures of our direct and indirect suppliers, resulting in adverse effects to our supply chain;
- temporary shortages of skilled employees available to staff manufacturing, production and assembly facilities due to stay at home orders and travel restrictions within as well as into and out of countries;
- increases in operational expenses and other costs related to requirements implemented to mitigate the impact of the pandemic;
- supply chain disruptions, including increased freight costs;
- delays or limitations on the ability of our customers to perform or make timely payments;
- cancellations in our backlog;
- reductions in short- and long-term demand for our products, or other disruptions in technology buying patterns;
- adverse effects on economies and financial markets globally or in various markets throughout the world, potentially leading to a prolonged economic downturn or reductions in business and consumer spending, which may result in decreased net revenue, gross margins, or earnings and/or in increased expenses and difficulty in managing inventory levels;

- delays to and/or lengthening of our sales or development cycles or qualification activity;

- challenges for us, our direct and indirect suppliers and our customers in obtaining financing due to turmoil in financial markets;

- workforce disruptions due to illness, quarantines, governmental actions, other restrictions, and/or the social distancing measures we have taken to mitigate the impact of COVID-19 at certain of our locations around the world in an effort to protect the health and well-being of our employees, customers, suppliers and of the communities in which we operate (including working from home, restricting the number of employees attending events or meetings in person, limiting the number of people in our buildings and factories at any one time, further restricting access to our facilities, suspending employee travel and inability to meet in person with customers);

- increased vulnerability to cyberattacks due to the significant number of employees working remotely; and

- our management team continuing to commit significant time, attention and resources to monitoring the COVID-19 pandemic and seeking to mitigate its effects on our business and workforce.

The ultimate extent of the impact of COVID-19 and supply chain constraints on our business, financial condition and results of operations will depend on future developments, which are highly uncertain and cannot be predicted at this time. These impacts, individually or in the aggregate, could have a material and adverse effect on our business, results of operations and financial condition. Such effect may be exacerbated in the event the pandemic and the measures taken in response to it, and their effects, persist for an extended period of time, or if there are periodic resurgences of the outbreak. Under any of these circumstances, the resumption of normal business operations may be delayed or hampered by lingering effects of COVID-19 on our operations, direct and indirect suppliers, partners, and customers.

Our fiscal 2022 business outlook is difficult to forecast and operating results are subject to significant fluctuations and are likely to be volatile.

Historically, our business outlook is difficult to forecast and backlog (sometimes referred to herein as orders or bookings), net sales and operating results may vary significantly from period to period due to a number of factors including: sales mix; fluctuating market demand; start-up costs associated with the opening of our two new high-volume technology manufacturing centers; price competition; new product introductions by us or our competitors; customer bankruptcies; changing customer partnering procurement strategies; fluctuations in foreign currency exchange rates; unexpected changes in the timing of delivery of components or subsystems; the financial performance and impact of acquisitions; new accounting standards; political instability; regulatory developments; changes in income tax rates or tax credits; the price and expected volatility of our stock (which will impact, among other items, the amount of stock-based compensation expense we may record); general global economic conditions, and the impact of natural disasters or global pandemics.

We have experienced, and will experience in the future, significant fluctuations in bookings, net sales and operating results from period to period. For example, a sudden change in global economic conditions (or a worsening of the COVID-19 pandemic as described above) could have an immediate impact on a large portion of our net sales, a large amount of which are derived from products such as satellite ground station technologies, amplifier products and mission-critical technologies that generally have short order and lead times. Similarly, sales of certain of our public safety and location technologies are subject to sudden changes in wireless carrier procurement strategies, including decisions to sole-source such solutions or to perform such solutions internally. As a result of any such conditions or changes, bookings and backlog related to these solutions are extremely sensitive to short-term fluctuations in customer demand.

In addition, a large portion of our Government Solutions segment's net sales are derived in part from large U.S. government programs or large foreign government opportunities that are subject to lengthy sales cycles (including funding requirements) and are therefore difficult to predict.

If global economic business and political conditions deteriorate as compared to the current environment it could have a material adverse impact on our business outlook and our business, operating results and financial condition.

In addition to the unique business risks related to COVID-19, many of the end-markets for our products and services may be significantly impacted for other issues that result in adverse global economic conditions. For example, many of our international end-customers are in emerging and developing countries that are subject to sweeping economic and political changes. Many governments around the world are under pressure to reduce their spending. In recent years, global oil and natural gas prices have been volatile and significantly impaired the ability of certain of our government customers in the oil and gas producing regions of the world to invest in telecommunications products and infrastructure. Additionally, the relative strength of the U.S. dollar against many international currencies has negatively impacted the purchasing power for many of our international end-customers because most of our sales are denominated in U.S. dollars. We generate significant sales from many emerging and developing countries.

We believe that the current global economic business environment is unstable and sudden negative changes could result in the immediate suppression of end-market demand for many of our products such as satellite ground station technologies and other short-lead time products. The timing, impact, severity and duration of these conditions are impossible to predict.

In addition, many of our international customers (including our Middle Eastern and African customers) rely on European bank financing to procure funding for large systems, many of which include our equipment. We believe that European financing has been and continues to be difficult to obtain. Volatility of financing conditions may cause our customers to be reluctant to spend funds required to purchase our equipment or projects could be postponed or canceled.

The United Kingdom ("U.K.") exited from the European Union ("E.U.") on January 31, 2020. Such exit, commonly referred to as "Brexit," has created and may continue to create economic and political uncertainties and impacts that could have a material adverse effect on our business, operations and profitability. Although the U.K. and E.U. entered a trade agreement for goods that was approved by the European Parliament in April 2021, there is no guarantee that it will remain in force as other cross-border issues remain contested. We maintain production, engineering and sales facilities in the U.K. and adverse consequences concerning Brexit could result in a deterioration in global economic conditions, instability in global financial markets, political uncertainty, volatility in currency exchange rates, or adverse changes in the cross-border agreements currently in place, any of which could have an adverse impact on our financial results in the future.

In the past, our overall business has not been immune from adverse economic conditions. If U.S. or global economic conditions deteriorate further, or political conditions become unstable, or additional economic sanctions are imposed on some of our end-customers, it could adversely impact our business in a number of ways, including:

- Difficulty in forecasting our results of operations - It is difficult to accurately forecast our results of operations during periods of adverse conditions as we cannot predict the severity or the duration of such conditions or the impact it could have on our current and prospective customers. If our current or prospective customers materially postpone, reduce or even forgo purchases of our products and services to a greater extent than we anticipate, or if we are unable to secure certain parts that are currently in limited supply due to supplier constraints, our business outlook will prove to be inaccurate.

- Additional reductions in telecommunications equipment and systems spending may occur - In the past, our businesses have been negatively affected by uncertain economic environments in the overall market and, more specifically, in the telecommunications sector. Our customers have reduced their budgets for spending on telecommunications equipment and systems and in some cases postponed or reduced the purchase of our products and systems. In the future, our customers may again reduce their spending on telecommunications equipment and systems which would negatively impact both of our operating segments. If this occurs, it would adversely affect our business outlook, net sales, profitability and the recoverability of our assets, including intangible assets such as goodwill.

- Our customers may not be able to obtain financing - Although many of our products are relatively inexpensive when compared to the total systems or networks that they are incorporated into, our sales are affected by our customers' ability to obtain the financing they may require to build out their total systems or networks and fund ongoing operations. Many of our emerging market customers obtain financing for network buildouts from European commercial banks and/or governments. Our customers' inability to obtain adequate financing would adversely affect our net sales. In addition, if the economic environment and lack of financing results in insolvencies for our customers, it would adversely impact the recoverability of our accounts receivable which would, in turn, adversely impact our results of operations.

We have significant operations in Arizona, Florida, California, Washington State, Maryland, New York and other locations which could be materially and adversely impacted in the event of a terrorist attack and government responses thereto or significant disruptions (including natural disasters) to our business.

Terrorist attacks, the U.S. and other governments' responses thereto, and threats of war could materially adversely impact our business, results of operations and financial condition. For example, our 911 hosted location-based services and satellite teleport services operations depend on our ability to maintain our computer and equipment and systems in effective working order, and to protect our systems against damage from fire, natural disaster, power loss, telecommunications failure, sabotage, unauthorized access to our system or similar events.

Although many of our mission-critical systems and equipment are designed with built-in redundancy and security, any unanticipated interruption or delay in our operations or breach of security could have a material adverse effect on our business, results of operations and financial condition. Our property and business interruption insurance may not be adequate to compensate us for any losses that may occur in the event of a terrorist attack, threat, system failure or a breach of security. Insurance may not be available to us at all or, if available, may not be available to us on commercially reasonable terms.

We currently, and intend to continue to, operate a high-volume technology manufacturing center located in Arizona. The COVID-19 pandemic, a terrorist attack or similar future event may disrupt our operations or those of our customers or suppliers and may affect the availability of materials needed to manufacture our products or the means to transport those materials to manufacturing facilities and finished products to customers. If a natural disaster or other business interruption occurred with respect to our high-volume technology manufacturing center, we do not have immediate access to other manufacturing facilities and, as a result, our business, results of operations and financial condition would be materially adversely affected. To support our long-term business goals for our satellite earth station product line, in fiscal 2021, we commenced a 15-year lease for a new 146,000 square foot facility in Chandler, Arizona and began shifting production of our satellite earth station products from our existing Tempe, Arizona locations. If we are unable to have a smooth transition to our new facility, production and deliveries of our products may be impacted and we may incur unexpected costs.

We design and manufacture our over-the-horizon microwave equipment and systems in Florida, where major hurricanes have occurred in the past, and amplifiers in Santa Clara, California, an area close to major earthquake fault lines, and also manufacture amplifiers in Melville, New York, an area subject to hurricanes. Additionally, certain of our Commercial Solutions segment activities are conducted in Washington State which is also near a fault line. We maintain operations in Maryland near a U.S. Navy facility which is more prone to a terrorist attack. Our operations in these and other locations (such as in our high-volume technology manufacturing center located in Tempe, Arizona and our antenna production facility in the United Kingdom), could be subject to natural disasters or other significant disruptions, including hurricanes, tornadoes, typhoons, tsunamis, floods, earthquakes, fires, water shortages, other extreme weather conditions, medical epidemics, acts of terrorism, power shortages and blackouts, telecommunications failures, and other natural and man-made disasters or disruptions.

We cannot be sure that our systems will operate appropriately if we experience hardware or software failure, intentional disruptions of service by third parties, an act of God or an act of war. A failure in our systems could cause delays in transmitting data, and as a result we may lose customers or face litigation that could involve material costs and distract management from operating our business.

In the event of any such disaster or other disruption, we could experience disruptions or interruptions to our operations or the operations of our suppliers, distributors, resellers or customers; destruction of facilities; and/or loss of life, all of which could materially increase our costs and expenses and materially adversely affect our business, results of operations and financial condition.

In addition, the ongoing COVID-19 pandemic has resulted in travel restrictions and business shutdowns both domestically and globally, including in locations in which we have significant operations. These or any further political, governmental or other actions to contain the spread or treat the impact of COVID-19, and the resulting developments, are highly uncertain and unpredictable and could result in social, economic and labor instability. These uncertainties could have a material adverse effect on the continuity of our business and our financial condition, the results of operations and cash flows.

Business Risks

Our backlog is subject to customer cancellation or modification and such cancellations could result in a decline in sales and increased provisions for excess and obsolete inventory.

We currently have a backlog of orders, mostly under contracts that our customers may modify or terminate. Almost all of the contracts in our backlog (including firm orders previously received from the U.S. government) are subject to cancellation at the convenience of the customer or for default in the event that we are unable to perform under the contract.

In some cases, such as contracts received from large U.S. based telecommunication companies, our backlog is computed by multiplying the most recent month's contract or revenue by the months remaining under the existing long-term agreements, which we consider to be the best available information for anticipating revenue under those agreements. Also, a significant portion of the backlog from our U.S. commercial customers relates to large, multi-year contracts to provide state and local governments (and their agencies) with public safety and location technology solutions. Although the contracts themselves represent legal, binding obligations of these governments, funding is often subject to the approval of budgets (for example, on an annual or bi-annual basis). Although funding for these multi-year contracts are dependent on future budgets being approved, we include the full estimated value of these large, multi-year contracts in our backlog given the critical nature of the services being provided and the positive historical experience of our state and local government customers passing their respective budgets.

There can be no assurance that our backlog will result in actual revenue in any particular period, or at all, particularly during periods of macroeconomic instability. Nor can there be any assurance that any contract included in backlog will be profitable. The actual amount and timing of any revenue is subject to various contingencies, many of which are beyond our control. The actual recognition of revenue on contracts included in backlog may never occur or may change because a program schedule could change, a customer may not follow up with order details (e.g., delivery instructions), fluctuations in currency exchange rates after an order is placed could cause our products to become too expensive for a foreign customer, a customer's program could be canceled, a contract could be reduced, modified or terminated early due to changes in a customer's priorities, funding may not be included in future budgets, actual indirect rates being reimbursed on U.S. government contracts may ultimately be less than those indirect rates included in our initial proposals, or an option that we had assumed would be exercised is not exercised.

We record a provision for excess and obsolete inventory based on historical and projected usage trends and other factors, including the consideration of the amount of backlog we have on hand at any particular point in time. If orders in our backlog are canceled or modified, our estimates of future product demand may prove to be inaccurate, in which case we may have understated the provision required for excess and obsolete inventory. In the future, if we determine that our inventory is overvalued, we will be required to recognize such costs in our financial statements at the time of such determination. Any such charges could be materially adverse to our results of operations and financial condition.

Contract cost growth on our firm fixed-price contracts, including most of our government contracts, cost reimbursable type contracts and other contracts that cannot be justified as an increase in contract value due from customers exposes us to reduced profitability and the potential loss of future business and other risks.

A substantial portion of our products and services are sold under firm fixed-price contracts. Firm fixed-price contracts inherently have more risk than flexibly priced contracts. This means that we bear the risk of unanticipated technological, manufacturing, supply or other problems, price increases or other increases in the cost of performance. Future events could result in either upward or downward adjustments to those estimates which could negatively impact our profitability. Operating margin is materially adversely affected when contract costs that cannot be billed to the customer are incurred. This cost growth can occur if initial estimates used for calculating the contract price were incorrect, or if estimates to complete increase. To a lesser extent, we provide products and services under cost reimbursable type contracts which carry the entire burden of costs exceeding a negotiated contract ceiling price.

The cost estimation process requires significant judgment and expertise. Reasons for cost growth may include unavailability and productivity of labor, the nature and complexity of the work to be performed, the effect of change orders, the availability of materials, the effect of any delays in performance, availability and timing of funding from the customer, natural disasters, and the inability to recover any claims included in the estimates to complete. A significant change in an estimate on one or more programs could have a material adverse effect on our business, results of operations and financial condition.

Our business is highly dependent on the budgetary decisions of our government customers, including the U.S. government (including prime contractors to the U.S. government), and changes in the U.S. government's fiscal policies or budgetary priorities may have a material adverse effect on our business, operating results and financial condition.

During our fiscal years ended July 31, 2021, 2020 and 2019, sales to the U.S. government (including sales to prime contractors to the U.S. government) were $201.1 million, $223.4 million and $269.2 million or 34.6%, 36.2% and 40.1% of our consolidated net sales, respectively. In addition, a large portion of our existing backlog consists of orders related to U.S. government contracts and our Business Outlook for Fiscal 2022 and beyond depends, in part, on significant new orders from the U.S. government, which undergoes extreme budgetary pressures from time to time.

We rely on particular levels of U.S. government spending on our communication solutions, and our receipt of future orders depends in large part on continued funding by the U.S. government for the programs in which we participate. These spending levels are not generally correlated with any specific economic cycle, but rather follow the cycle of general public policy and political support for this type of spending. Government contracts are conditioned upon the continuing availability of congressional appropriations and Congress's failure to appropriate funds, or Congress's actions to reduce or delay spending on, or reprioritize its spending away from, U.S. government programs which we participate in, could negatively affect our results of operations. Because many of the items we sell to the U.S. government are included in large programs realized over a period of several years, it is difficult, if not impossible, to determine specific amounts that are or will be appropriated for our products and services. As such, our assessments relating to the impact of changes in U.S. government spending may prove to be incorrect.

The federal debt limit continues to be actively debated as plans for long-term national fiscal policy are discussed. The outcome of these discussions could have a significant impact on defense spending broadly and programs we support in particular. The failure of Congress to approve future budgets and/or increase the debt ceiling of the U.S. on a timely basis could delay or result in the loss of contracts for the procurement of our products and services and we may be asked or required to continue to perform for some period of time on certain of our U.S. government contracts, even if the U.S. government is unable to make timely payments. A decrease in Department of Defense or Department of Homeland Security expenditures, the elimination or curtailment of a material program in which we are involved (such as the withdrawal of troops from Afghanistan or other parts of the world), or changes in payment patterns of our customers as a result of changes in U.S. government spending could have a material adverse effect on our business, results of operations and financial condition.

Ultimately, the U.S. government may be unable to timely complete its budget process or fully agree upon spending priorities. As such, it is possible that a shutdown of the U.S. government may occur, or interim budgets may be adopted. As such, we may experience delayed orders, delayed payments and declines in net sales, profitability and cash flows. We may experience related supply chain delays, disruptions or other problems associated with financial constraints faced by our suppliers and subcontractors. Moreover, an outbreak of a pandemic such as the COVID-19 pandemic and associated quarantines, closures and travel restrictions may cause temporary or long-term disruptions in our supply chain and distribution systems. All of the aforementioned conditions and factors could, in the aggregate, have a material adverse effect on our business, results of operations and financial condition. Additionally, cost cutting, efficiency initiatives, reprioritization, other affordability analyses, and changes in budgetary priorities by our governmental customers, including the U.S. government, could adversely impact both of our operating segments. We are unable to predict the impact these or similar events could have on our business, financial position, results of operations or cash flows.

Our contracts with the U.S. government are subject to unique business, commercial and government audit risks.

We depend on the U.S. government for a significant portion of our revenues. Our contracts with the U.S. government are subject to unique business and commercial risks, including:

- unexpected contract or project terminations or suspensions;
- unpredictable order placements, reductions, accelerations, delays or cancellations;
- higher than expected final costs, particularly relating to software and hardware development, for work performed under contracts where we commit to specified deliveries for a fixed-price; and
- unpredictable cash collections of unbilled receivables that may be subject to acceptance of contract deliverables by the customer and contract close out procedures, including government audit and approval of final indirect rates.

Although we take steps to mitigate our risk with respect to contracts with the U.S. government, we may not be able to do so in every instance for any of the following reasons, among others:

- Our U.S. government contracts can easily be terminated by the U.S. government - Our U.S. government contracts can be terminated by the U.S. government for its convenience or upon an event of default by us. Termination for convenience provisions provide us with little to no recourse related to: our potential recovery of costs incurred or costs committed, potential settlement expenses and hypothetical profit on work completed prior to termination.

- Our U.S. government contracts are subject to funding by the U.S. Congress - Our U.S. government contracts are conditioned upon the continuing approval by Congress of the necessary funding. Congress usually appropriates funds for a given program on a fiscal year basis even though contract performance may take more than one year. Consequently, at the beginning of a major program, the contract may not be fully funded, and additional monies are normally committed to the contract only if, and when, appropriations are made by Congress for future fiscal years. Delays or changes in funding can impact the timing of awards or lead to changes in program content. We obtain certain of our U.S. government contracts through a competitive bidding process. There can be no assurance that we will win additional contracts or that actual contracts that are awarded will ultimately be profitable.

- We can be disqualified as a supplier to the U.S. government - As a supplier to the U.S. government, we must comply with numerous regulations, including those governing security, contracting practices and classified information. Failure to comply with these regulations and practices could result in fines being imposed against us or our suspension for a period of time from eligibility for bidding on, or for award of, new government contracts. If we are disqualified as a supplier to government agencies, we would lose most, if not all, of our U.S. government customers and revenues from sales of our products would decline significantly.

- Our employees may not be able to obtain and maintain the required security clearances for the facilities in which we perform sensitive government work - Certain of our U.S. Government contracts require our employees to maintain various levels of security clearances, and we are required to maintain certain facility security clearances. If we cannot maintain or obtain the required security clearances for our facilities and our employees, or obtain these clearances in a timely manner, we may be unable to perform certain U.S. Government contracts. Further, loss of a facility clearance, or an employee's failure to obtain or maintain a security clearance, could result in a U.S. Government customer terminating an existing contract or choosing not to renew a contract. Lack of required clearances could also impede our ability to bid on or win new U.S. Government contracts. This could damage our reputation and adversely affect our business, financial condition and results of operations.

In addition, all of our U.S. government contracts can be audited by the Defense Contract Audit Agency ("DCAA") and other U.S. government agencies and we can be subject to penalties arising from post-award contract audits (sometimes referred to as a Truth in Negotiations Act or "TINA" audit) or cost audits in which the value of our contracts may be reduced. If costs are found to be improperly allocated to a specific contract, those costs will not be reimbursed, and any such costs already reimbursed would be required to be refunded. TCS underwent audits by the DCAA for periods prior to Comtech's fiscal 2016 acquisition of TCS. The DCAA has informed us that it is proposing retroactive contracts adjustments that, if finalized and issued, would result in the need for us to provide a refund to the U.S. government of approximately $2.4 million. We disagree with the DCAA's assessment and would vigorously protest any adjustment. We have not recorded any reserve related to these audits but ultimately an adjustment may be issued. Although we record contract revenues based upon costs we expect to realize upon final audit, we cannot predict the outcome of any such future audits and adjustments, and we may be required to materially reduce our revenues or profits upon completion and final negotiation of audits. Negative audit findings could also result in termination of a contract, forfeiture of profits, suspension of payments, fines and suspension or debarment from U.S. government contracting or subcontracting for a period of time.

Our dependence on sales to international customers exposes us to unique business, commercial and export compliance audit risks.

Sales for use by international customers (including sales to U.S. companies for inclusion in products that will be sold to international customers) represented approximately 23.9%, 23.5% and 25.4% of our consolidated net sales for the fiscal years ended July 31, 2021, 2020 and 2019, respectively, and we expect that international sales will continue to be a significant portion of our consolidated net sales for the foreseeable future. These sales expose us to certain risks, including barriers to trade, fluctuations in foreign currency exchange rates (which may make our products less price-competitive), political and economic instability, exposure to public health epidemics, availability of suitable export financing, tariff regulations, and other U.S. and foreign regulations that may apply to the export of our products. Although we take steps to mitigate our risk with respect to international sales, we may not be able to do so in every instance for any of the following reasons, among others:

- We may not be able to continue to structure our international contracts to reduce risk - We attempt to reduce the risk of doing business in foreign countries by seeking subcontracts with large systems suppliers, contracts denominated in U.S. dollars, advance or milestone payments and irrevocable letters of credit in our favor. However, we may not be able to reduce the economic risk of doing business in foreign countries in all instances. In such cases, billed and unbilled receivables relating to international sales are subject to increased collectability risk and may result in significant write-offs, which could have a material adverse effect on our business, results of operations and financial condition. In addition, foreign defense contracts generally contain provisions relating to termination at the convenience of the government.

- We rely on a limited number of international sales agents - In some countries, we rely upon one or a small number of sales agents, exposing us to risks relating to our contracts with, and related performance of, those agents. We attempt to reduce our risk with respect to sales agents by establishing additional foreign sales offices where it is practical and by engaging, where practicable, more than one independent sales representative in a territory. It is our policy to require all sales agents to operate in compliance with applicable laws, rules and regulations. Violations of any of these laws, rules or regulations, and other business practices that are regarded as unethical, could interrupt the sales of our products and services, result in the cancellation of orders or the termination of customer relationships, and could damage our reputation, any of which developments could have a material adverse effect on our business, results of operations and financial condition.

- We price most of our products in U.S. dollars - Today, most of our sales are denominated in U.S. dollars. Over the last few years, the U.S. dollar has strengthened significantly against many international currencies. As such, many of our international customers experienced a drop in their purchasing power as it relates to their ability to purchase our products. To date, we have not materially changed our selling prices and have experienced lower sales volumes in certain cases. If the U.S. dollar strengthens from current levels against many international currencies, our customers may reduce their spending or postpone purchases of our products and services to a greater extent than we currently anticipate which could have a material adverse effect on our business, results of operations and financial condition.

- We must comply with all applicable export control laws and regulations of the U.S. and other countries - Certain of our products and systems may require licenses from U.S. government agencies for export from the U.S., and some of our products are not permitted to be exported. In addition, in certain cases, U.S. export controls also severely limit unlicensed technical discussions, such as discussions with any persons who are not U.S. citizens or permanent residents. As a result, in cases where we may need a license, our ability to compete against a non-U.S. domiciled foreign company that may not be subject to the same U.S. laws may be materially adversely affected. U.S. laws and regulations applicable to us include the Arms Export Control Act, the IEEPA, the ITAR, the EAR and the trade sanctions laws and regulations administered by the U.S. Treasury Department's OFAC.

- We must comply with the FCPA and similar laws elsewhere - We are subject to the FCPA and other foreign laws prohibiting corrupt payments to government officials, which generally bar bribes or unreasonable gifts to foreign governments or officials. Violations of these laws or regulations could result in significant sanctions, including disgorgement of profits, fines, criminal sanctions against us, our officers, our directors, or our employees, more onerous compliance requirements, more extensive debarments from export privileges or loss of authorizations needed to conduct aspects of our international business. A violation of any of the regulations enumerated above could materially adversely affect our business, financial condition and results of operations. Although we have implemented policies and procedures designed to ensure compliance with these laws and regulations, there can be no assurance that our employees, contractors, agents, or subsidiaries will not violate our policies. Additionally, changes in regulatory requirements which could restrict our ability to deliver services to our international customers, including the addition of a country to the list of sanctioned countries under the IEEPA or similar legislation could negatively impact our business. For the fiscal years ended July 31, 2021, 2020 and 2019, we conducted no business with states designated as sponsors of terrorism.

- We must maintain a company-wide Office of Trade Compliance - In the past, we have self-reported violations of export control laws or regulations to the U.S. Department of State, Directorate of Defense Trade Controls ("DDTC"), DoC and OFAC. In addition, we have made various commitments to U.S. government agencies that oversee trade and export matters and have committed that we will maintain certain policies and procedures including maintaining a company-wide Chief Trade Compliance Officer and Office of Trade Compliance and conducting ongoing internal assessment and reporting any future violations to those agencies. Even though we take precautions to avoid engaging in transactions that may violate U.S. export control laws or regulations, including trade sanctions, those measures may not be effective in every instance. If it is determined that we have violated U.S. export control laws or regulations or trade regulations, civil and criminal penalties could apply, and we may suffer reputational harm.

- We are subject to future export compliance audits - We continue to implement policies and procedures to ensure that we comply with all applicable export control laws and regulations. We may be subject to future compliance audits that uncover improper or illegal activities that would subject us to material remediation costs, civil and criminal fines and/ or penalties and/or an injunction. In addition, we could suffer serious reputational harm if allegations of impropriety were made against us. Each of these outcomes could, individually or in the aggregate, have a material adverse effect on our business, results of operations and financial condition. The absence of comparable restrictions on competitors in other countries may adversely affect our competitive position. In addition, in order to ship our products into and implement our services in some countries, the products must satisfy the technical requirements of that particular country. If we were unable to comply with such requirements with respect to a significant quantity of our products, our sales in those countries could be restricted, which could have a material adverse effect on our business, results of operations and financial condition.

- We may be affected by the future imposition of tariffs and trade restrictions - The current U.S. administration has generally not amended the trade policies and tariffs on imported products from the prior administration, and increased sanctions against Russia. Our inability to effectively manage the negative impacts of U.S. and foreign trade policies, including, in connection with our business with customers outside of the United States or with newly sanctioned entities could adversely affect our business and financial results.

A change in our relationship with our large wireless carrier customers could have a material adverse effect.

Although we have a long history of providing services to many of our wireless carrier partners, a change in purchasing or procurement strategies by a wireless carrier partner could result in the loss of business from that partner. Additionally, from time to time, we routinely perform services without a multi-period contract while we negotiate new and extended contract terms and pricing. These negotiations are complex and may take long periods of time. Even when we successfully negotiate a multi-period contract, our wireless carrier contracts, such as the ones with Verizon which accounted for 10.7% of our sales in fiscal 2021, provide for terminations with notice and provide a mechanism for the wireless carrier to renegotiate lower fees and/or change services. Fee pressure from these carriers is constant and ongoing. Thus, even when we obtain a multi-period contract term, our revenues could be suddenly and materially reduced.

Competitors offer technology that has functionality similar to ours for free, under different business models. Competition from such free offerings may reduce our revenue and harm our business. If our wireless carrier partners or our competition can offer such technology to their subscribers or customers for free, they may elect to cease their relationships with us, alter or reduce the manner or extent to which they market or offer our services or require us to substantially reduce our subscription fees or pursue other business strategies that may not prove successful for us and could have a material adverse effect on our business, results of operations and financial condition.

If our wireless carrier partners change the pricing and other terms by which they offer our products to their end-customers or do not continue to provide our services at all or renegotiate lower fees with us, our business, results of operations, and financial condition could be suddenly and materially adversely affected.

We generate a significant portion of our revenue from customers that are wireless carriers, such as Verizon which accounted for 10.7% of our revenues in fiscal 2021. In addition, a portion of our revenue is derived from subscription fees that we receive from our wireless carrier partners for end-users who subscribe to our service on a standalone basis or in a bundle with other services. Future revenue will depend on the pricing and quality of those services and subscriber demand for those services, which may vary by market, and the level of subscriber turnover experienced by our wireless carrier partners. If subscriber turnover increases more than we anticipate, our financial results could be materially adversely affected.

Poor performance in or disruptions of the services included in our advanced communication solutions could harm our reputation, delay market acceptance of our services and subject us to liabilities (including breach of contract claims brought by our customers and third-party damages claims brought by end-users). Our wireless carrier agreements and certain customers require us to meet specific requirements including operational uptime requirements or be subject to penalties.

If we are unable to meet contractual requirements with our wireless carrier partners, such as Verizon, they could terminate our agreements or we may be required to refund a portion of monthly subscriptions fees they have paid us.

Strategic Growth Risks

We face a number of risks relating to the expected long-term growth of our business. Our business and operating results may be negatively impacted if we are unable to manage this growth.

These risks include:

- The loss of key technical and/or management personnel could adversely affect our business - Our future success depends on the continued contributions of key technical and management personnel. Many of our key and technical management personnel would be difficult to replace and are not subject to employment or non-competition agreements. We currently have research and development employees in areas that are located a great distance away from our U.S. headquarters and some work out of their respective homes. Managing remote product development operations is difficult and we may not be able to manage the employees in these remote centers successfully. Our expected growth and future success will depend, in large part, upon our ability to attract and retain highly qualified engineering, sales and marketing personnel. Competition for such personnel from other companies, academic institutions, government entities and other organizations is intense. Although we believe that we have been successful to-date in recruiting and retaining key personnel, we may not be successful in attracting and retaining the personnel we will need to grow and operate profitably. Also, the management skills that have been appropriate for us in the past may not continue to be appropriate if we grow and diversify.

- We may not be able to improve our processes and systems to keep pace with anticipated growth - The future growth of our business may place significant demands on our managerial, operational, production and financial resources. In order to manage that growth, we must be prepared to improve and expand our management, operational and financial systems and controls, as well as our production capabilities. We also need to continue to recruit and retain personnel and train and manage our employee base. We must carefully manage research and development capabilities and production and inventory levels to meet product demand, new product introductions and product and technology transitions. Our planned moves to new high volume manufacturing facilities in Chandler, Arizona and Basingstoke, U.K. may be delayed and subject to unforeseen costs (both capital and operational), which could impede our ability to complete customer orders and thereby have a material adverse effect on our business, results of operations and financial condition. If we are not able to timely and effectively manage our growth and maintain the quality standards required by our existing and potential customers, it could have a material adverse effect on our business, results of operations and financial condition.

- Our markets are highly competitive and there can be no assurance that we can continue to compete effectively - The markets for our products are highly competitive. There can be no assurance that we will be able to continue to compete successfully on price or other terms, or that our competitors will not develop new technologies and products that are more effective than our own. We expect the Department of Defense's increased use of commercial off-the-shelf products and components in military equipment will encourage new competitors to enter the market. Also, although the implementation of advanced telecommunications services is in its early stages in many developing countries, we believe competition will continue to intensify as businesses and foreign governments realize the market potential of telecommunications services. Many of our competitors have financial, technical, marketing, sales and distribution resources greater than ours. Recently, we have seen increased requests for proposals from large wireless carriers for sole-source solutions and have responded to several such requests. In order to induce retention of existing customer contracts and obtain business on a sole-source basis, we may ultimately agree to adjust pricing on a retroactive basis. If our sole-source proposals are rejected in favor of a competitor's proposal, it could result in the termination of existing contracts, which could have a material adverse effect on our business, results of operations and financial condition.

- We may not be able to obtain sufficient components to meet expected demand - Our dependence on component availability, government furnished equipment, subcontractors and key suppliers, including the core manufacturing expertise of our high-volume technology manufacturing center located in Arizona exposes us to risk. Although we obtain certain components and subsystems from a single source or a limited number of sources, we believe that most components and subsystems are available from alternative suppliers and subcontractors. During the past two years or so, partly driven by the COVID-19 pandemic and as a result of overall increased industry-wide demand, lead times for many components have increased as well as freight costs. In addition, threats of or actual tariffs could limit our ability to obtain certain parts on a cost-effective basis, or at all. A significant interruption in the delivery of such items could have a material adverse effect on our business, results of operations and financial condition. Similarly, if our high-volume technology manufacturing center located in Arizona is unable to produce sufficient product or maintain quality, it could have a material adverse effect on our business, results of operations and financial condition.

- Our ability to maintain affordable credit insurance may become more difficult - In the normal course of our business, we purchase credit insurance to mitigate some of our domestic and international credit risk. Although credit insurance remains generally available, upon renewal, it may become more expensive to obtain or may not be available for existing or new customers in certain international markets and it might require higher deductibles than in the past. If we acquire a company with a different customer base, we may not be able to obtain credit insurance for those sales. As such, there can be no assurance that, in the future, we will be able to obtain credit insurance on a basis consistent with our past practices.

We have incurred indebtedness under a Credit Facility, and may incur substantial additional indebtedness in the future, and may not be able to service that debt in the future and we must maintain compliance with various covenants that impose restrictions on our business.

On October 31, 2018, we entered into a First Amended and Restated Credit Agreement (the "Credit Facility") with a syndicate of lenders, replacing our prior Credit Agreement dated as of February 23, 2016. The Credit Facility provides a senior secured loan facility of up to $550.0 million consisting of: (i) a revolving loan facility with a borrowing limit of $300.0 million; (ii) an accordion feature allowing us to borrow up to an additional $250.0 million; (iii) a $35.0 million letter of credit sublimit; and (iv) a swingline loan credit sublimit of $25.0 million. The obligations under the Credit Facility are secured by substantially all of our tangible and intangible assets.

As of July 31, 2021, the amount outstanding under our Credit Facility was $201.0 million, which is reflected in the non-current portion of long-term debt on our Consolidated Balance Sheet. As of July 31, 2021, we also had $1.5 million of standby letters of credit outstanding under our Credit Facility related to guarantees of future performance on certain customer contracts.

The Credit Facility matures on October 31, 2023. If we do not have sufficient funds to repay our debt when due, it may be necessary to refinance our debt through additional debt or equity financings. If, at the time of any refinancing, prevailing interest rates or other factors result in higher interest rates on such refinancing, increases in interest expense could have a material adverse effect on our business, results of operations and financial condition.

Our Credit Facility contains various affirmative and negative covenants that may restrict our ability to, among other things, permit liens on our property, change the nature of our business, transact business with affiliates and/or merge or consolidate with any other person or sell or convey certain of our assets to any one person.

As of July 31, 2021, our Secured Leverage Ratio (as defined in the Credit Facility) was 2.53x trailing twelve month ("TTM") Consolidated EBITDA (as defined in the Credit Facility) compared to the maximum allowable Leverage Ratio of 3.75x TTM Consolidated EBITDA. Our Interest Expense Coverage Ratio as of July 31, 2021 was 13.05x TTM Adjusted EBITDA compared to the Minimum Interest Expense Coverage Ratio of 3.25x TTM Adjusted EBITDA.

We anticipate maintaining compliance with the terms and financial covenants in our Credit Facility for the foreseeable future, however, there can be no assurance that we will be able to meet these covenants.

Further, our ability to comply with covenants, terms of and conditions our facility may be affected by events beyond our control. Failure to comply with covenants could result in an event of default, which, if not cured or waived, could accelerate our repayment obligations. Our substantial debt obligations could impede, restrict or delay the implementation of our business strategy or prevent us from entering into transactions that would otherwise benefit our business. For example:

- we may be required to dedicate a substantial portion of our cash flows from operations to payments on our indebtedness, thereby reducing the availability of our cash flows for other purposes, including business development efforts, capital expenditures, dividends or strategic acquisitions;
- if we are not able to generate sufficient cash flows to meet our substantial debt service obligations or to fund our other liquidity needs, we may have to take actions such as selling assets or raising additional equity or reducing or delaying capital expenditures, strategic acquisitions, investments and joint ventures, or restructuring our debt;
- we may not be able to fund future working capital, capital investments and other business activities;
- we may not be able to pay dividends or make certain other distributions;
- we may become more vulnerable in the event of a downturn in our business or a worsening of general economic or industry-specific conditions; and
- our flexibility in planning for, or reacting to, changes in our business and industry may be limited, thereby placing us at a competitive disadvantage compared to our competitors that have less indebtedness.

Moreover, we may incur substantial additional indebtedness in the future to fund acquisitions or to fund other activities for general business purposes. If additional new debt is added to the current or planned debt levels, the related risks that we now face could intensify. A substantial increase in our indebtedness could also have a negative impact on our credit ratings. In this regard, failure to maintain our credit ratings could adversely affect the interest rate available to us in future financings, as well as our liquidity, competitive position and access to capital markets. Any decision regarding future borrowings will be based on the facts and circumstances existing at the time, including market conditions and our credit ratings.

Acquisitions of companies and investments could prove difficult to integrate, disrupt our business, dilute stockholder value or adversely affect operating results or the market price of our common stock.

We expect to continue to evaluate other acquisitions and investments as part of our growth plans. Such efforts may not result in an acquisition or ultimately be beneficial to us.

Future acquisitions or investments may result in the use of significant amounts of cash, potentially dilutive issuances of equity securities, incurrence of large amounts of debt, increases to amortization expense and future write-offs of the acquired intangibles. Acquisitions and investments involve risks that include failing to:

- properly evaluate the technology;
- accurately forecast the financial impact of the transaction, including accounting charges and transaction expenses;
- integrate the technologies, products and services, research and development, sales and marketing, support and other operations;
- integrate and retain key management personnel and other key employees;
- retain and cross-sell to acquired customers; and

- combine potentially different corporate cultures.

Acquisitions and investments could also:

- divert management’s attention away from the operation of our businesses;
- result in significant goodwill and intangibles write-offs in the event an acquisition or investment does not meet expectations; and
- increase expenses, including expenses of managing the growth of such acquired businesses.

There can be no assurance that any future acquisition or investment will be successful within the anticipated time frame, or at all, will be as valuable as the amount we eventually pay to acquire it, and will not adversely affect our business, results of operations or financial condition. In addition, if we consummate future acquisitions using our equity securities or securities convertible into our equity securities, existing stockholders may be diluted, which could have a material adverse effect on the market price of our common stock.

Foreign acquisitions and investments are regularly subject to scrutiny by the U.S. government and its agencies, such as the Committee on Foreign Investment in the United States (“CFIUS”) and the Defense Counterintelligence and Security Agency (“DCSA”) and our role as a U.S. federal contractor escalates such scrutiny, in particular, with respect to compliance with industrial security requirements. Failure to comply with the requirements of the U.S. government could result in fines being imposed against us or our suspension for a period of time of authority to operate under certain government programs or from eligibility for bidding on, or for award of, new government contracts, which could have a material adverse effect on our business, results of operations and financial condition.

In connection with our fiscal 2020 acquisition of CGC Technology Limited ("CGC") and our fiscal 2021 acquisition of UHP Networks, Inc. (“UHP”), we now have a facility in Basingstoke, U.K. and opened a new office in Moscow, Russia. We have implemented and submitted for review by DCSA new stringent policies, protocols, procedures and organizational resolutions, including an updated Technology Control Plan, that prescribe the access controls and protective security measures necessary to preclude unauthorized access by foreign-national customers, vendors, visitors, or employees to classified information and unclassified export-controlled information. We have limited experience operating in these foreign jurisdictions and if we are unable to comply with local laws or U.S. laws related to such activity in foreign jurisdictions, or the DCSA or other U.S. government agencies directs us to implement changes, our operations could be restricted and/or we could be subject to fines and penalties, both of which could have a material adverse effect on our business, results of operations and financial condition.

Our investments in recorded goodwill and other intangible assets could be impaired as a result of future business conditions, a deterioration of the global economy or if we change our reporting unit structure.

As of July 31, 2021, goodwill recorded on our Consolidated Balance Sheet aggregated $347.7 million. Additionally, as of July 31, 2021, net intangibles recorded on our Consolidated Balance Sheet aggregated $268.7 million.

For purposes of reviewing impairment and the recoverability of goodwill and other intangible assets, our Commercial Solutions and Government Solutions segment each constitute a reporting unit and we must make various assumptions in determining their estimated fair values. Reporting units are defined by how our Chief Executive Officer ("CEO") manages the business, which includes resource allocation decisions. We may, in the future, change our management approach which in turn may change the way we define our reporting units, as such term is defined by Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 350 "*Intangibles - Goodwill and Other.*" A change to our management approach may require us to perform an interim goodwill impairment test and possibly record impairment charges in a future period.

In accordance with FASB ASC 350, "*Intangibles - Goodwill and Other,"* we perform a goodwill impairment analysis at least annually (in the first quarter of each fiscal year), unless indicators of impairment exist in interim periods. If we fail the quantitative assessment of goodwill impairment ("quantitative assessment"), we would be required to recognize an impairment loss equal to the amount that a reporting unit's carrying value exceeded its fair value; however, any loss recognized should not exceed the total amount of goodwill allocated to that reporting unit.

On August 1, 2021 (the first day of our fiscal 2022), we performed our annual quantitative assessment and estimated the fair value of each of our reporting units using a combination of the income and market approaches. Based on our quantitative evaluation, we determined that our Commercial Solutions and Government Solutions reporting units had estimated fair values in excess of their carrying values of at least 22.7% and 94.1%, respectively, and concluded that our goodwill was not impaired and that neither of our two reporting units was at risk of failing the quantitative assessment.

It is possible that, during fiscal 2022 or beyond, business conditions (both in the U.S. and internationally) could deteriorate from the current state, our current or prospective customers could materially postpone, reduce or even forgo purchases of our products and services to a greater extent than we currently anticipate, or our common stock price could fluctuate. Such fluctuation could be caused by uncertainty about the severity and length of the COVID-19 pandemic, and its impact on global business activity.

A significant decline in our customers' spending that is greater than we anticipate or a shift in funding priorities may also have a negative effect on future orders, sales, income and cash flows and we might be required to perform a quantitative assessment during fiscal 2022 or beyond. If assumed net sales and cash flow projections are not achieved in future periods or our common stock price significantly declines from current levels, our Commercial Solutions and Government Solutions reporting units could be at risk of failing the quantitative assessment and goodwill and intangibles assigned to the respective reporting units could be impaired.

In any event, we are required to perform the next annual goodwill impairment analysis on August 1, 2022 (the start of our fiscal 2023). If our assumptions and related estimates change in the future, or if we change our reporting unit structure or other events and circumstances change (e.g., a sustained decrease in the price of our common stock (considered on both absolute terms and relative to peers)), we may be required to record impairment charges when we perform these tests, or in other future periods. In addition to our impairment analysis of goodwill, we also review net intangibles with finite lives when an event occurs indicating the potential for impairment. We believe that the carrying values of our net intangibles were recoverable as of July 31, 2021. Any impairment charges that we may record in the future could be material to our results of operations and financial condition.

Cybersecurity Risks

We could be negatively impacted by a system failure, lack of or failure of redundant system components, security breach through cyber-attack, cyber intrusion or otherwise, by other significant disruption of our IT networks or those we operate for certain customers, or third-party data center facilities, servers and related systems. If such occurs, in some cases, we may have to reimburse our customers for damages that they may have incurred, pay contract penalties, or provide refunds.

Similar to all companies in our industry, we are under constant cyber-attack and are subject to an ongoing risk of security breaches and disruptions of our IT networks and related systems, including third-party data center facilities, whether through actual breaches, cyber-attacks or cyber intrusions via the Internet, malware, computer viruses, attachments to e-mails, persons inside our organization or persons with access to systems inside our organization. Actual security breaches or disruption, particularly through cyber-attack or cyber intrusion, including by computer hackers, foreign governments and cyber terrorists, have increased in recent years and have become more complex. Our IT networks and systems, as well as third-party data center facilities, have been and, we believe, continue to be under constant attack. We face an added risk of a security breach or other significant disruption to certain of our equipment used on some of our customers' IT networks and related systems which may involve managing and protecting information relating to public safety agencies, wireless carriers as well as national security and other sensitive government functions. Many of our systems have, or are required to have, system redundancies and back-up; in some cases, we may not have sufficient redundancy and/or redundancy and/or back-ups may fail. We may incur significant costs to prevent and respond to system failures, failure of redundant system components, actual breaches, cyber-attacks and other systems disruptions.

As a communications company, and particularly as a government contractor and a provider of public safety and location technologies (including 911 hosted systems), we face a heightened risk of a security breach or disruption from actual breaches, cyber-attacks and other threats to gain unauthorized access to our and our customers' proprietary or classified information on our IT networks, third-party data center facilities and related systems and to certain of our equipment used on some of our customers' IT networks and related systems. These types of information, IT networks and related systems are critical to the operation of our business and essential to our ability to perform day-to-day operations, and, in some cases, are critical to the operations of certain of our customers. Although we make significant efforts to maintain the security and integrity of these types of information, IT networks and related systems, and we have implemented various measures to manage the risk of a security breach or disruption, there can be no assurance that our security efforts and measures will be effective or that actual security breaches or disruptions will not be successful or damaging. Even the most well protected information, networks, data centers, systems and facilities remain potentially vulnerable because security breaches, particularly cyber-attacks and intrusions, and disruptions have occurred and will occur again in the future. Techniques used in such breaches and cyber-attacks are constantly evolving and generally are not recognized until launched against a target, and in some cases are designed not to be detected and, in fact, may not be detected. In some cases, the resources of foreign governments may be behind such attacks. Accordingly, we may be unable to anticipate these techniques or to implement adequate security barriers or other preventative measures, and thus it is virtually impossible for us to entirely mitigate this risk.

A security breach or other significant disruption (including as a result of a lack of redundancy and/or failure of such redundancy) involving these types of information, IT networks and related systems could:

- Disrupt the proper functionality of these networks, data center facilities and systems and therefore our operations and/or those of certain of our customers;

- Result in the unauthorized access to, and destruction, loss, theft, misappropriation or release of proprietary, confidential, sensitive or otherwise valuable information of ours or our customers, including trade secrets, which others could use to compete against us or for disruptive, destructive or otherwise harmful purposes and outcomes;

- Compromise national security and other sensitive government functions;

- Require significant management attention and resources to remedy the damage that results;

- Make payments to our customers to reimburse them for damages, pay them penalties or provide refunds; and

- Damage our reputation with our customers (particularly agencies of the U.S. government) and the public generally.

In addition, the cost of continually defending against cyber-attacks and actual breaches has increased in recent years and future costs and any or all of the foregoing could have a material adverse effect on our business, results of operations and financial condition.

The measures we have implemented to secure information we collect and store or enable access to may be breached, which could cause us to breach agreements with our partners and expose us to potential investigation and penalties by authorities and potential claims for contract breach, product liability damages, credits, penalties or termination by persons whose information was disclosed.

We take reasonable steps to protect the security, integrity and confidentiality of the information we collect and store and to prevent unauthorized access to third-party data to which we enable access through our products, but there is no guarantee that inadvertent or unauthorized disclosure will not occur or that third parties will not gain unauthorized access despite our efforts. If such unauthorized disclosure or access does occur, we may be required to notify persons whose information was disclosed or accessed under existing and proposed laws. Because the techniques used to obtain unauthorized access, disable or degrade service, or sabotage systems change frequently and are often not recognized until launched against a target, we may be unable to anticipate these techniques or implement adequate preventative measures. In the event of such disclosure, we also may be subject to claims of breach of contract, investigation and penalties by regulatory authorities and potential claims by persons whose information was disclosed. If there is a security breach or if there is an inappropriate disclosure of any of these types of information, we could be exposed to investigations, litigation, fines and penalties. Remediation of and liability for loss or misappropriation of end user or employee personal information could have a material adverse effect on our business, results of operations and financial condition. Even if we were not held liable for such event, a security breach or inappropriate disclosure of personal, private or confidential information could harm our reputation and our relationships with current and potential customers and end users. Even the perception of a security risk could inhibit market acceptance of our products and services. We may be required to invest additional resources to protect against damage caused by any actual or perceived disruptions of our services. We may also be required to provide information about the location of an end user's mobile device to government authorities, which could result in public perception that we are providing the government with intelligence information and deter some end users from using our services. Any of these developments could have a material adverse effect on our business, results of operations and financial condition.

Legal, Regulatory and Litigation Risks

Changes in U.S. tax law could adversely affect our business and financial condition.

The laws, rules, and regulations dealing with U.S. federal, state, and local income taxation are constantly under review by persons involved in the legislative process and by the Internal Revenue Service and the U.S. Treasury Department. Changes to tax laws (which changes may have immediate and/or retroactive application) could adversely affect us or holders of our common stock. In recent years, many changes have been made to applicable tax laws and changes are likely to continue to occur in the future. It cannot be predicted whether, when, in what form, or with what effective dates, new tax laws may be enacted, or regulations and rulings may be enacted, promulgated or issued under existing or new tax laws, which could result in an increase in our tax liability or require changes in the manner in which we operate in order to minimize or mitigate any adverse effects of changes in tax law or in the interpretation thereof.

Our U.S. federal, state and foreign tax returns are subject to audit and a resulting tax assessment or settlement could have a material adverse effect on our business, results of operations and financial condition. Significant judgment is required in determining the provision for income taxes.

The final determination of tax examinations and any related litigation could be materially different than what is reflected in historical income tax provisions and accruals.

Our federal income tax returns for fiscal 2018 through 2020 are subject to potential future Internal Revenue Service ("IRS") audit. None of our state income tax returns prior to fiscal 2017 are subject to audit. In addition to income tax audits, TCS is subject to ongoing state excise tax audits by the Washington State Department of Revenue. Although adjustments relating to past audits of our federal income tax returns were immaterial, a resulting tax assessment or settlement for other periods or other jurisdictions that may be selected for future audit could have a material adverse effect on our business, consolidated results of operations and financial condition.

We may be subject to environmental liabilities.

We engage in manufacturing and are subject to a variety of local, state and federal laws and regulations relating to the storage, discharge, handling, emission, generation, manufacture and disposal of toxic or other hazardous substances used to manufacture our products. We are also subject to the Restriction of Hazardous Substance ("RoHS") directive which restricts the use of lead, mercury and other substances in electrical and electronic products. The failure to comply with current or future environmental requirements could result in the imposition of substantial fines, suspension of production, alteration of our manufacturing processes or cessation of operations that could have a material adverse effect on our business, results of operations and financial condition. In addition, the handling, treatment or disposal of hazardous substances by us or our predecessors may have resulted, or could in the future result, in contamination requiring investigation or remediation, or lead to other liabilities, any of which could have a material adverse effect on our business, results of operations and financial condition.

The success of our business is dependent on compliance with FCC rules and regulations and similar foreign laws and regulations.

Many of our products are incorporated into wireless communications systems that must comply with various U.S. government regulations, including those of the FCC, as well as similar international laws and regulations. As a result, our business faces increased risks including the following:

- <u>We must obtain various licenses from the FCC</u> - We operate FCC licensed teleports that are subject to the Communications Act of 1934, as amended, or the FCC Act, and the rules and regulations of the FCC. We cannot guarantee that the FCC will grant renewals when our existing licenses expire, nor are we assured that the FCC will not adopt new or modified technical requirements that will require us to incur expenditures to modify or upgrade our equipment as a condition of retaining our licenses. We may, in the future, be required to seek FCC or other government approval if foreign ownership of our stock exceeds certain specified criteria. Failure to comply with these policies could result in an order to divest the offending foreign ownership, fines, denial of license renewal and/or license revocation proceedings against the licensee by the FCC, or denial of certain contracts from other U.S. government agencies.

- <u>We are dependent on the allocation and availability of frequency spectrum</u> - Adverse regulatory changes related to the allocation and availability of frequency spectrum and in the military standards and specifications that define the current satellite networking environment, could materially harm our business by: (i) restricting development efforts by us and our customers, (ii) making our current products less attractive or obsolete, or (iii) increasing the opportunity for additional competition. The increasing demand for wireless communications has exerted pressure on regulatory bodies worldwide to adopt new standards and reassign bandwidth for these products and services. The reduced number of available frequencies for other products and services and the time delays inherent in the government approval process of new products and services have caused, and may continue to cause, our customers to cancel, postpone or reschedule their installation of communications systems including their satellite, over-the-horizon microwave, or terrestrial line-of-sight microwave communication systems. This, in turn, could have a material adverse effect on our sales of products to our customers. Changes in, or our failure to comply with, applicable laws and regulations could materially adversely harm our business, results of operations, and financial condition.

- <u>Our future growth is dependent, in part, on developing NG-911 compliant products</u> - The FCC requires that certain location information be provided to network operators for public safety answering points when a subscriber makes a 911 call. Technical failures, greater regulation by federal, state or foreign governments or regulatory authorities, time delays or the significant costs associated with developing or installing improved location technology could slow down or stop the deployment of our mobile location products. If deployment of improved location technology is delayed, stopped or never occurs, market acceptance of our products and services may be materially adversely affected. Because we rely on some third-party location technology instead of developing all of the technology ourselves, we have little or no influence over its improvement. The technology employed with NG-911 services generally anticipates a migration to internet-protocol ("IP") based communication. Since many companies are proficient in IP-based communication protocols, the barriers to entry to providing NG-911 products and services are lower than for traditional switch-based protocols. If we are unable to develop unique and proprietary solutions that are superior to and/or more cost effective than other market offers, our 911 business could get replaced by new market entrants, resulting in a material adverse effect on our business, results of operations and financial condition.

- Under the FCC's mandate, our 911 business is dependent on state and local governments - Under the FCC's mandate, wireless carriers are required to provide 911 services only if state and local governments request the service. As part of a state or local government's decision to request 911, they have the authority to develop cost recovery mechanisms. However, cost recovery is no longer a condition to wireless carriers' obligation to deploy the service. If state and local governments do not widely request that 911 services be provided or we become subject to significant pressures from wireless carriers with respect to pricing of 911 services, our 911 business would be harmed and future growth of our business would be reduced.

Regulation of the mobile communications industry and VoIP is evolving, and unfavorable changes or our failure to comply with existing and potential new legislation or regulations could harm our business and operating results.

As the mobile communications industry continues to evolve, we believe greater regulation by federal, state or foreign governments or regulatory authorities is likely and we face certain risks including:

- We must adhere to existing and potentially new privacy rules - We believe increased regulation is likely in the area of data privacy, and laws and regulations applying to the solicitation, collection, processing or use of personal or consumer information could affect our customers' ability to use and share data, potentially reducing our ability to utilize this information in the resale of certain of our products. In order for mobile location products and services to function properly, wireless carriers must locate their subscribers and store information on each subscriber's location. Although data regarding the location of the wireless user resides only on the wireless carrier's systems, users may not feel comfortable with the idea that the wireless carrier knows and can track their location. Carriers will need to obtain subscribers' permission to gather and use the subscribers' personal information, or they may not be able to provide customized mobile location services which those subscribers might otherwise desire. If subscribers view mobile location services as an annoyance or a threat to their privacy, that could reduce demand for our products and services and have a material adverse effect on our business, results of operations and financial condition.

  Over the past several years, there have been a number of laws and regulations enacted that affect companies conducting business on the Internet, including the European General Data Protection Regulation ("GDPR"). The GDPR imposes certain privacy related requirements on companies that receive or process personal data of residents of the European Union that are currently different than those in the United States and include significant penalties for non-compliance. Similarly, there are a number of legislative proposals in the United States, at both the federal and state level, that could impose new obligations in areas affecting our business, such as liability for personal data protection. In addition, some countries are considering or have passed legislation implementing data protection requirements or requiring local storage and processing of data or similar requirements that could increase the cost and complexity of delivering our services. Our costs to comply with the GDPR as well any other similar laws and regulations that emerge may negatively impact our business.

- We may face increased compliance costs in connection with health and safety requirements for mobile devices - If wireless handsets pose health and safety risks, we may be subject to new regulations and demand for our products and services may decrease. Media reports have suggested that certain radio frequency emissions from wireless handsets may be linked to various health concerns, including cancer, and may interfere with various electronic medical devices, including hearing aids and pacemakers. Concerns over radio frequency emissions may have the effect of discouraging the use of wireless handsets, which would decrease demand for our services. In recent years, the FCC and foreign regulatory agencies have updated the guidelines and methods they use for evaluating radio frequency emissions from radio equipment, including wireless handsets. In addition, interest groups have requested that the FCC investigate claims that wireless technologies pose health concerns and cause interference with airbags, hearing aids and other medical devices. There also are some safety risks associated with the use of wireless handsets while driving. Concerns over these safety risks and the effect of any legislation that may be adopted in response to these risks could limit our ability to market and sell our products and services.

- The regulatory environment for VoIP services is developing - The FCC has determined that VoIP services are not subject to the same regulatory scheme as traditional wireline and wireless telephone services. If the regulatory environment for VoIP services evolves in a manner other than the way we anticipate, our 911 business would be significantly harmed and future growth of our business would be significantly reduced. For example, the regulatory scheme for wireless and wireline service providers requires those carriers to allow service providers such as us to have access to certain databases that make the delivery of a 911 call possible. No such requirements exist for VoIP service providers, so carriers could prevent us from continuing to provide VoIP 911 service by denying us access to the required databases.

Ongoing compliance with the provisions of securities laws, related regulations and financial reporting standards could unexpectedly materially increase our costs and compliance related expenses.

Because we are a publicly traded company, we are required to comply with provisions of securities laws, related regulations and financial reporting standards. Because securities laws, related regulations and financial reporting standards pertaining to our business are relatively complex, our business faces increased risks including the following:

- <u>If we identify a material weakness in the future, our costs may unexpectedly increase</u> - Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 and related SEC rules, we are required to furnish a report of management’s assessment of the effectiveness of our internal controls as part of our Annual Report on Form 10-K. Our independent registered public accountants are required to attest to and provide a separate opinion. To issue our report, we document our internal control design and the testing processes that support our evaluation and conclusion, and then we test and evaluate the results. There can be no assurance, however, that we will be able to remediate material weaknesses, if any, that may be identified in future periods, or maintain all of the controls necessary for continued compliance. There likewise can be no assurance that we will be able to retain sufficient skilled finance and accounting personnel, especially in light of the increased demand for such personnel among publicly traded companies.

- <u>Stock-based compensation accounting standards could negatively impact our stock</u> - Since our inception, we have used stock-based awards as a fundamental component of our employee compensation packages. We believe that stock-based awards directly motivate our employees to maximize long-term stockholder value and, through the use of long-term vesting, encourage employees to remain with us. We apply the provisions of ASC 718, "*Compensation - Stock Compensation,*" which requires us to record compensation expense in our statement of operations for employee and director stock-based awards using a fair value method. In the first quarter of fiscal 2018, we adopted FASB ASU No. 2016-09 which modified certain aspects of ASC 718, including the requirement to recognize excess tax benefits and shortfalls in the income statement. The ongoing application of this standard will have a significant effect on our reported earnings, and could adversely impact our ability to provide accurate guidance on our future reported financial results due to the variability of the factors used to estimate the value of stock-based awards (including long-term performance shares which are subject to the achievement of three-year goals which are based on several performance metrics). The ongoing application of this standard could impact the future value of our common stock and may result in greater stock price volatility. To the extent that this accounting standard makes it less attractive to grant stock-based awards to employees, we may incur increased compensation costs, change our equity compensation strategy or find it difficult to attract, retain and motivate employees, each of which could have a material adverse effect on our business, results of operations and financial condition.

Also, the accounting rules and regulations that we must comply with are complex. Accounting rules and regulations are continually changing in ways that could materially impact our financial statements. As further discussed in *"Notes to Consolidated Financial Statements - Note (1) - Summary of Significant Accounting and Reporting Policies"* included in *"Part II - Item 8. - Financial Statements and Supplementary Data,"* included in this Annual Report on Form 10-K, we note the following:

- <u>We must maintain compliance with new complex revenue recognition rules</u> - On August 1, 2018 (our first quarter of fiscal 2019), we adopted ASU No. 2014-09 "Revenue from Contracts with Customers (Topic 606)," which replaces numerous requirements in U.S. GAAP, including industry specific requirements, and provides a single revenue recognition model for contracts with customers. The ASU applies to all open contracts existing as of August 1, 2018. We adopted this ASU using the modified retrospective method and there was no material impact on our business, results of operations and financial condition.

- <u>We must maintain compliance with new complex lease accounting rules</u> - In February 2016, the FASB issued ASU 2016-02, "Leases (Topic 842)," to revise existing lease accounting guidance. The update requires most leases to be recorded on the balance sheet as a lease liability, with a corresponding right-of-use asset. We adopted Topic 842 on August 1, 2019, the beginning of our first quarter of fiscal 2020. Except for recording a total right-of-use asset and corresponding lease liability on our Consolidated Balance Sheet, which amount approximates 4.0% of our total consolidated assets at July 31, 2019, our adoption of Topic 842 did not have a material impact to our statements of operations or cash flows.

We must comply with these new rules on a go-forward basis. Because of the uncertainties of the estimates, judgments and assumptions associated with these new accounting standards, as well as with any future guidance or interpretations related to them, we may incur additional costs and cannot provide any assurances that we will be able to comply with such complex rules.

Our costs to comply with the aforementioned and other regulations continue to increase and we may have to add additional accounting staff, engage consultants or change our internal practices, standards and policies which could significantly increase our costs to comply with ongoing or future requirements. In addition, the NASDAQ Stock Market LLC ("NASDAQ") routinely changes its requirements for companies, such as us, that are listed on NASDAQ. These changes (and potential future changes) have increased and may increase our legal and financial compliance costs, including making it more difficult and more expensive for us to obtain director and officer liability insurance or maintain our current liability coverage. We believe that these new and proposed laws and regulations could make it more difficult for us to attract and retain qualified members of our Board of Directors, particularly to serve on our Audit Committee, and qualified executive officers.

Indemnification provisions in our contracts could have a material adverse effect on our consolidated results of operations, financial position, or cash flows.

In the ordinary course of business, we include indemnification provisions in certain of our customer contracts. Pursuant to these agreements, we have agreed to indemnify, hold harmless and reimburse the indemnified party for losses suffered or incurred by the indemnified party, including but not limited to losses related to third-party intellectual property claims. Some customers seek indemnification under their contractual arrangements with us for claims and other costs associated with defending lawsuits alleging infringement of patents through their use of our products and services, and the use of our products and services in combination with products and services of other vendors.

In some cases, we have agreed to assume the defense of the case. In others, we will negotiate with these customers in good faith because we believe our technology does not infringe the cited patents or due to specific clauses within the customer contractual arrangements that may or may not give rise to an indemnification obligation. It is not possible to determine the maximum potential amount we may spend under these agreements due to the unique facts and circumstances involved in each particular agreement.

Our assessments related to indemnification provisions are based on estimates and assumptions that have been deemed reasonable by management, but that may prove to be incomplete or inaccurate, and unanticipated events and circumstances may occur that might cause us to change those estimates and assumptions. Therefore, it is possible that an unfavorable resolution of one or more of these matters could have a material adverse effect on our consolidated financial statements in a future period.

We are, from time to time, and could become a party to additional litigation or subject to claims, including product liability claims, employee claims, government investigations and other proceedings that could cause us to incur unanticipated expenses and otherwise have a material adverse effect on our business, results of operations and financial condition.

We are, from time to time, involved in commercial disputes and civil litigation relating to our businesses.

Our agreements with customers may require us to indemnify such customers. Direct claims against us or claims against our customers may relate to defects in or non-conformance of our products, or our own acts of negligence and non-performance. Occasionally, we are called upon also to provide information in connection with litigation involving other parties or government investigations. Product liability and other forms of insurance are expensive and may not be available in the future.

We cannot be sure that we will be able to maintain or obtain insurance coverage at acceptable costs or in sufficient amounts or that our insurer will not disclaim coverage as to a future claim. In many cases, we are unable to obtain insurance and are self-insured. Any such claim could have a material adverse effect on our business, results of operations and financial condition.

For additional information related to these lawsuits, see *"Notes to Consolidated Financial Statements - Note (12)(a) - Commitments and Contingencies - Legal Proceedings and Other Matters"* included in *"Part II - Item 8.- Financial Statements and Supplementary Data,"* included in this Annual Report on Form 10-K.

Protection of our intellectual property is limited and pursuing infringers of our patents and other intellectual property rights can be costly.

Our businesses rely, in large part, upon our proprietary scientific and engineering know-how and production techniques. We rely on a combination of patent, copyright, trademark, service mark, trade secret and unfair competition laws, restrictions in licensing agreements, confidentiality provisions and various other contractual provisions to protect our intellectual property and related proprietary rights, but these legal means provide only limited protection. Although a number of patents have been issued to us and we have obtained a number of other patents as a result of our acquisitions, we cannot assure you that our issued patents will be upheld if challenged by another party. Additionally, with respect to any patent applications which we have filed, we cannot assure you that any patents will be issued as a result of these applications.

The departure of any of our key management and technical personnel, the breach of their confidentiality and non-disclosure obligations to us or the failure to achieve our intellectual property objectives could have a material adverse effect on our business, results of operations and financial condition. Our ability to compete successfully and achieve future revenue growth will depend, in part, on our ability to protect our proprietary technology and operate without infringing upon the rights of others. We may fail to do so. In addition, the laws of certain countries in which our products are or may be sold may not protect our products or intellectual property rights to the same extent as the laws of the U.S.

Our ability to protect our intellectual property rights is also subject to the terms of future government contracts. We cannot assure you that the federal government will not demand greater intellectual property rights or restrict our ability to disseminate intellectual property. We are also a member of standards-setting organizations and have agreed to license some of our intellectual property to other members on fair and reasonable terms to the extent that the license is required to develop non-infringing products.

Pursuing infringers of our proprietary rights could result in significant litigation costs, and any failure to pursue infringers could result in our competitors utilizing our technology and offering similar products, potentially resulting in loss of a competitive advantage and decreased revenues. Despite our efforts to protect our proprietary rights, existing patent, copyright, trademark and trade secret laws afford only limited protection. In addition, the laws of some foreign countries do not protect our proprietary rights to the same extent as do the laws of the U.S. Protecting our know-how is difficult especially after our employees or those of our third-party contract service providers end their employment or engagement. Attempts may be made to copy or reverse-engineer aspects of our products or to obtain and use information that we regard as proprietary. Accordingly, we may not be able to prevent the misappropriation of our technology or prevent others from developing similar technology. Furthermore, policing the unauthorized use of our products is difficult and expensive. Litigation may be necessary in the future to enforce our intellectual property rights or to determine the validity and scope of the proprietary rights of others. The costs and diversion of resources could significantly harm our business. If we fail to protect our intellectual property, we may not receive any return on the resources expended to create the intellectual property or generate any competitive advantage based on it.

Third parties may claim we are infringing their intellectual property rights and we could be prevented from selling our products, or suffer significant litigation expense, even if these claims have no merit.

Our competitive position is driven in part by our intellectual property and other proprietary rights. Third parties, however, may claim that we, our products, operations or any products or technology we obtain from other parties are infringing their intellectual property rights, and we may be unaware of intellectual property rights of others that may impact some of our assets, technology and products. From time to time we receive letters from third parties who allege we are infringing their intellectual property and ask us to license such intellectual property. We review the merits of each such letter and respond as we deem appropriate.

From time to time our customers are parties to allegations of intellectual property infringement claims based on our customers' incorporation and use of our products and services, which may lead to demands from our customers for us to indemnify them for costs in defending those allegations. Any litigation regarding patents, trademarks, copyrights or intellectual property rights, even those without merit, and the related indemnification demands of our customers, can be costly and time consuming, and divert our management and key personnel from operating our business. The complexity of the technology involved, and inherent uncertainty and cost of intellectual property litigation increases our risks. If any third party has a meritorious or successful claim that we are infringing its intellectual property rights, we may be forced to change our products or enter into licensing arrangements with third parties, which may be costly or impractical. This also may require us to stop selling our products as currently engineered, which could harm our competitive position. We also may be subject to significant damages or injunctions that prevent the further development and sale of certain of our products or services and may result in a material loss of revenue.

From time to time, there have been claims challenging the ownership of open source software against companies that incorporate open source software into their products. As a result, we could be subject to suits by parties claiming ownership of what we believe to be open source software. Some open source licenses contain requirements that we make available source code for modifications or derivative works under the terms of a particular open source license or other license granting third parties certain rights of further use. If we combine our proprietary software products with open source software in a certain manner, we could under certain of the open source licenses, be required to release our proprietary source code. Open source license terms may be ambiguous and many of the risks associated with usage of open source software cannot be eliminated, and could if not properly addressed, negatively affect our business. If we were found to have inappropriately used open source software, we may be required to release our proprietary source code, re-engineer our products and client applications, discontinue the sale of our products or services in the event re-engineering cannot be accomplished on a timely basis or take other remedial action that may divert resources away from our development efforts, any of which could materially adversely affect our business, results of operations, and financial condition.

Competitive Risks

All of our business activities are subject to rapid technological change, new entrants, the introduction of other distribution models and long development and testing periods each of which may harm our competitive position, render our product or service offerings obsolete and require us to continuously develop technology and/or obtain licensed technology in order to compete successfully.

We are engaged in business activities characterized by rapid technological change, evolving industry standards, frequent new product announcements and enhancements, and changing customer demands. The introduction of products and services or future industry standards embodying new technologies, such as multi-frequency time division multiple access ("MF-TDMA") based technologies could render any of our products and services obsolete or non-competitive. The successful execution of our business strategy is contingent upon wireless network operators launching and maintaining mobile location services, our ability to maintain a technically skilled development and engineering team, our ability to create new network software products and adapt our existing products to rapidly changing technologies, industry standards and customer needs. As a result of the complexities inherent in our product offerings, new technologies may require long development and testing periods. Additionally, new products may not achieve market acceptance or our competitors could develop alternative technologies that gain broader market acceptance than our products. If we are unable to develop and introduce technologically advanced products that respond to evolving industry standards and customer needs, or if we are unable to complete the development and introduction of these products on a timely and cost effective basis, it could have a material adverse effect on our business, results of operations and financial condition or could result in our technology becoming obsolete.

New entrants seeking to gain market share by introducing new technology and new products may make it more difficult for us to sell our products and services and could create increased pricing pressure, reduced profit margins, increased sales and marketing expenses, or the loss of market share or expected market share, any of which could have a material adverse effect on our business, results of operations and financial condition. For example, many companies are developing new technologies and the shift towards open standards such as IP-based satellite networks will likely result in increased competition and some of our products may become commoditized.

Our Commercial Solutions segment provides various technologies that are utilized on mobile phones. Applications from competitors for location-based or text-based messaging platforms may be preloaded on mobile devices by original equipment manufacturers, or OEMs, or offered by OEMs directly. Increased competition from providers of location-based services which do not rely on a wireless carrier may result in fewer wireless carrier subscribers electing to purchase their wireless carrier's branded location-based services, which could harm our business and revenue. In addition, these location-based or text-based services may be offered for free or on a one-time fee basis, which could force us to reduce monthly subscription fees or migrate to a one-time fee model to remain competitive. We may also lose end users or face erosion in our average revenue per user if these competitors deliver their products without charge to the consumer by generating revenue from advertising or as part of other applications or services.

Our expected growth and our financial position depends on, among other things, our ability to keep pace with such changes and developments and to respond to the increasing variety of electronic equipment users and transmission technologies. We may not have the financial or technological resources to keep pace with such changes and developments or be successful in our research and development and we may not be able to identify and respond to technological improvements made by our competitors in a timely or cost-effective fashion. Any delays could result in increased costs of development or redirect resources from other projects. In addition, we cannot provide assurances that the markets for our products, systems, services or technologies will develop as we currently anticipate. The failure of our products, systems, services or technologies to gain market acceptance could significantly reduce our net sales and harm our business.

Our business is highly competitive, we are reliant upon the success of our partners, and some of our competitors have significantly greater resources than we do, which could result in a loss of customers, market share and/or market acceptance.

Our business is highly competitive. We will continue to invest in research and development for the introduction of new and enhanced products and services designed to improve capacity, data processing rates and features. We must also continue to develop new features and to improve functionality of our software. Research and development in our industry is complex, expensive and uncertain. We believe that we must continue to dedicate a significant amount of resources to research and development efforts to maintain our competitive position. If we continue to expend a significant amount of resources on research and development, but our efforts do not lead to the successful introduction of product and service enhancements that are competitive in the marketplace, our business, results of operations and financial condition could be materially adversely affected.

Several of our potential competitors are substantially larger than we are and have greater financial, technical and marketing resources than we do. In particular, larger competitors have certain advantages over us which could cause us to lose customers and impede our ability to attract new customers, including: larger bases of financial, technical, marketing, personnel and other resources; more established relationships with wireless carriers and government customers; more funds to deploy products and services; and the ability to lower prices (or not charge any price) of competitive products and services because they are selling larger volumes. Furthermore, we cannot be sure that our competitors will not develop competing products, systems, services or technologies that gain market acceptance in advance of our products, systems, services or technologies, or that our competitors will not develop new products, systems, services or technologies that cause our existing products, systems, services or technologies to become non-competitive or obsolete, which could adversely affect our results of operations.

Our Commercial Solutions segment provides public safety and location technologies to various state and local municipalities and to a large extent, we are reliant on the success of our wireless partners and distributors to meet our growth objectives. In some cases, our wireless partners may have different objectives, or our distributors may not be successful. We also began an evaluation and repositioning of certain of our location technology solutions within our Commercial Solutions segment in order to focus on providing higher margin solution offerings and increase our penetration into the public safety space. To date, we have ceased offering certain location technology solutions, have worked with customers to wind-down certain legacy contracts and have not renewed certain contracts. Going forward, we intend to continue to work with our partners and expand our direct and indirect sales and distribution channels in this area. If we are not successful in doing so, we may not be able to achieve our long-term business goals.

We rely upon various third-party companies and their technology to provide services to our customers and if we are unable to obtain such services at reasonable prices, or at all, our gross margins and our ability to provide the services of our wireless applications business could be materially adversely affected.

Risks from our reliance with these third parties include:

- The loss of mapping and third-party content - The wireless data services provided to our customers are dependent on real-time, continuous feeds from map data, points of interest data, traffic information, gas prices, theater, event and weather information from vendors and others. Any disruption of this third-party content from our satellite feeds or backup landline feeds or other disruption could result in delays in our subscribers' ability to receive information. We obtain this data that we sell to our customers from companies owned by current and potential competitors, who may act in a manner that is not in our best interest. If our suppliers of this data or content were to enter into exclusive relationships with other providers of location-based services or were to discontinue providing such information and we were unable to replace them cost effectively, or at all, our ability to provide the services of our wireless applications business would be materially adversely affected. Our gross margins may also be materially adversely affected if the cost of third-party data and content increases substantially.

- Third-party data centers or third-party networks may fail - Many products and services of our advanced communication solutions, in particular our public safety and location technology solutions, are provided through a combination of our servers, which are hosted at third-party data centers, and on the networks, as well as within the data centers of our wireless carrier partners. The third-party facilities are in Irvine, California, San Francisco, California, Dallas, Texas and Raleigh, North Carolina, and we may use others as required. We also use third-party data center facilities in the Phoenix, Arizona area to provide for disaster recovery. Additionally, certain non-911 products, technologies, and solutions are currently hosted in cloud-based applications operated by third parties such as Amazon Web Services and Microsoft. As such, our business relies to a significant degree on the efficient and uninterrupted operation of the third-party data centers, customer data centers, and cloud providers we use. Network failures, disruptions or capacity constraints in our third-party data center facilities or in our servers maintained at their location could affect the performance of the products and services of our wireless applications and 911 business and harm our reputation and our revenue. The ability of our subscribers to receive critical location and business information requires timely and uninterrupted connections with our wireless network carriers. Any disruption from our satellite feeds or backup landline feeds could also result in delays in our subscribers' ability to receive information.

- We must integrate our technologies and routinely upgrade them - We may not be able to upgrade our location services platform to support certain advanced features and functionality without obtaining technology licenses from third parties. Obtaining these licenses may be costly and may delay the introduction of such features and functionality, and these licenses may not be available on commercially favorable terms, or at all. Problems and delays in development or delivery as a result of issues with respect to design, technology, licensing and patent rights, labor, learning curve assumptions, or materials and components could prevent us from achieving contractual obligations. In addition, our products cannot be tested and proven in all situations and are otherwise subject to unforeseen problems. The inability to offer advanced features or functionality, or a delay in our ability to upgrade our location-based services platform, may materially adversely affect demand for our products and services and, consequently, have a material adverse effect on our business, results of operations and financial condition.

- We rely upon "open-source" software - We have incorporated some types of open-source software into our products, allowing us to enhance certain solutions without incurring substantial additional research and development costs. Thus far, we have encountered no unanticipated material problems arising from our use of open-source software. However, as the use of open-source software becomes more widespread, certain open-source technology could become competitive with our proprietary technology, which could cause sales of our products to decline or force us to reduce the fees we charge for our products, which could have a material adverse effect on our business, results of operations and financial condition.

Because our software may contain defects or errors, and our hardware products may incorporate defective components, our sales could decrease if these defects or errors adversely affect our reputation or delay shipments of our products.

Products as complex as ours are likely to contain undetected errors or defects, especially when first introduced or when new versions are released. Software products, such as our 911 call handling software solutions, must meet stringent customer technical requirements and we must satisfy our warranty obligations to our customers. Our hardware products are also subject to warranty obligations and integrate a wide variety of components from different vendors.

Our products including software may not be error or defect free after delivery to customers, which could damage our reputation, cause revenue losses, result in the rejection of our products or services, divert development resources and increase service and warranty costs, each of which could have a material adverse effect on our business, results of operations and financial condition.

Risks Related to our Common Stock

Our stock price is volatile.

The stock market in general and the stock prices of technology-based companies, in particular, experience extreme volatility that often is unrelated to the operating performance of any specific public company. The market price of our common stock has fluctuated significantly in the past and is likely to fluctuate significantly in the future as well. Factors that could have a significant impact on the market price of our stock include, among others:

- strategic transactions, such as acquisitions and divestures;
- our ability to successfully integrate and manage recent acquisitions;
- issuance of potentially dilutive equity or equity-type securities;
- issuance of debt;
- future announcements concerning us or our competitors;
- receipt or non-receipt of substantial orders for products and services;
- quality deficiencies in services or products;
- results of technological innovations;
- new commercial products;
- changes in recommendations of securities analysts;
- government regulations;
- changes in the status or outcome of government audits;
- proprietary rights or product or patent litigation;
- changes in U.S. government policies;
- changes in economic conditions generally, particularly in the telecommunications sector;
- changes in securities market conditions, generally;
- changes in the status of litigation and legal matters (including changes in the status of export matters);
- cyber attacks;
- energy blackouts;
- acts of terrorism or war;
- inflation or deflation; and
- rumors or allegations regarding our financial disclosures or practices.

Shortfalls in our sales or earnings in any given period relative to the levels expected by securities analysts could immediately, significantly and adversely affect the trading price of our common stock.

Future issuances of our shares of common stock could dilute a stockholder's ownership interest in Comtech and reduce the market price of our shares of common stock.

In addition to potential issuances of our shares of common stock associated with acquisitions, in the future, we may issue additional securities to raise capital. We may also acquire interests in other companies by using a combination of cash and our common stock or just our common stock. We may also issue securities convertible into our common stock. Any of these events may dilute a stockholder's ownership interest in Comtech and have an adverse impact on the price of our common stock.

Provisions in our corporate documents and Delaware law could delay or prevent a change in control of Comtech.

We have taken a number of actions that could have the effect of discouraging, delaying or preventing a merger, acquisition or divestiture involving Comtech that our stockholders may consider favorable.

For example, we currently have a classified board and the employment contract with our CEO, and agreements with other of our executive officers, provide for substantial payments in certain circumstances or in the event of a change of control of Comtech. In the future, we may adopt a stockholder rights plan which could cause substantial dilution to a stockholder, and substantially increase the cost paid by a stockholder who attempts to acquire us on terms not approved by our Board of Directors.

In addition, we are subject to the provisions of Section 203 of the Delaware General Corporation Law, an anti-takeover law. In general, this statute provides that, except in certain limited circumstances, a corporation shall not engage in any "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner.

A "business combination" includes mergers, asset sales and other transactions resulting in a financial benefit to the interested stockholder. Subject to certain exceptions, for purposes of Section 203 of the Delaware General Corporation Law, an "interested stockholder" is a person who, together with affiliates, owns, or within three years did own, 15% or more of the corporation's voting stock. This provision could have the effect of delaying or preventing a change in control of Comtech.

A disruption in our Common Stock dividend program could negatively impact our stock price.

We have paid quarterly common stock dividends every quarter since September 2010.

Our ability to continue to pay quarterly dividends with respect to our Common Stock will depend on our ability to generate sufficient cash flows from operations in the future and maintain compliance with our Credit Facility. This ability may be subject to certain economic, financial, competitive and other factors that are beyond our control. Future Common Stock dividends remain subject to compliance with financial covenants under our Credit Facility, as well as Board approval. Our Board of Directors may, at its discretion, decrease the targeted annual dividend amount or entirely discontinue the payment of dividends at any time.

Additionally, our ability to declare and pay common stock dividends and make other distributions with respect to our capital stock may also be restricted by the terms of our Credit Facility, and may be restricted by the terms of financing arrangements that we enter into in the future.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Historically, we have not owned any material properties or facilities and have relied upon a strategy of leasing. The following table lists our primary leased facilities at July 31, 2021:

Location		Property Type	Square Footage	Lease Expiration
Commercial Solutions Segment				
Tempe, Arizona	A	Manufacturing and Engineering	152,000	March 2022
Chandler, Arizona	A	Manufacturing and Engineering	146,000	July 2036
Seattle, Washington	B	Network Operations, R&D, Engineering and Sales	57,000	December 2022
Santa Clara, California	C	Manufacturing and Engineering	47,000	April 2026
Stoughton, Massachusetts	D	Network Operations	26,000	March 2025
Various facilities	E	Engineering and General Office	23,000	Various
Lake Forest, California	F	R&D and Engineering	18,000	July 2023
Gatineau, Canada	G	Network Operations, R&D, Engineering, Sales and General Office	15,000	April 2023
Moscow, Idaho	H	Support, Engineering and Sales	13,000	February 2025
Annapolis, Maryland	F	Support, Engineering and Sales	11,000	July 2026
Germantown, Maryland	I	Engineering and General Office	6,000	March 2022
			514,000	
Government Solutions Segment				
Orlando, Florida	J	Manufacturing and Engineering	99,000	April 2026
Hampshire, UK	K	Manufacturing and Engineering	97,000	November 2030
Melville, New York	L	Manufacturing and Engineering	45,000	December 2031
Cypress, California	F	Support, Engineering and Sales	28,000	July 2025
Germantown, Maryland	I	Engineering and General Office	26,000	March 2022
Plano, Texas	F	R&D and Engineering	12,000	August 2025
Various facilities	M	Support, Engineering and Sales	14,000	Various
Annapolis, Maryland	F	Support, Engineering and Sales	6,000	July 2026
			327,000	
Corporate				
Annapolis, Maryland	F	General Office and Common Areas	2,000	July 2026
Melville, New York	N	Corporate Headquarters and General Office	9,600	August 2027
			11,600	
Total Square Footage			852,600	

A. Although primarily used for our satellite earth station product lines, which are part of the Commercial Solutions segment, both of our business segments utilize, from time to time, our high-volume technology manufacturing facilities located in Tempe, Arizona. These manufacturing facilities utilize state-of-the-art design and production techniques, including analog, digital and RF microwave production, hardware assembly and full service engineering. Our leases for these facilities currently expire in March 2022.

To support our long-term business goals, in fiscal 2021, we commenced a 15-year lease for a new 146,000 square foot facility in Chandler, Arizona and began shifting production of our satellite earth station products from our existing Tempe, Arizona locations.

B. Our office in Seattle, Washington is used primarily for servicing and hosting our VoIP and VoWiFi E911 and NG-911 services, and related emerging technologies.

C. Our Commercial Solutions segment manufactures certain amplifiers in a leased manufacturing facility located in Santa Clara, California. Our Commercial Solutions segment also operates a small office in the United Kingdom with a lease that expires in October 2021.

D. Our Commercial Solutions segment maintains office space in Stoughton, Massachusetts used primarily for servicing certain of our state and local municipality NG-911 customers.

E. Our Commercial Solutions segment leases an additional nine facilities, one of which is located in the U.S. The 4,000 square foot U.S. facility is primarily utilized for general office use. Our Commercial Solutions segment also operates eight small offices in Brazil, Canada, China, India, Singapore, Australia and the United Kingdom, all of which aggregate 19,000 square feet and are primarily utilized for customer support, engineering and sales.

F. We have leases for facilities in Annapolis, Maryland and Lake Forest, California used primarily for the design and development of our software-based systems and applications and network operations. Major manufacturing and engineering facilities for our Government Solutions segment include Orlando, Florida, Cypress, California and Plano, Texas.

G. Our Commercial Solutions segment maintains office space in Gatineau, Canada that is utilized for network operations, R&D, engineering and sales of our public safety and location technology solutions.

H. Our office in Moscow, Idaho is primarily used for research and development, engineering and sales of our satellite earth station products.

I. Our Government Solutions segment leases a 32,000 square foot facility located in Germantown, Maryland, which is primarily used to support the U.S. Army's BFT-1 sustainment activities and certain cyber training activities. Our Government Solutions segment occupies 26,000 square feet of the facility with the remainder utilized by our Commercial Solutions segment.

J. Our Government Solutions segment engineers and manufactures our over-the-horizon microwave systems and mission-critical satellite equipment in a leased facility in Orlando, Florida.

K. Our Government Solutions segment currently leases four manufacturing facilities in Hampshire, United Kingdom, three of which were assumed in connection with our acquisition of CGC in fiscal 2020. In fiscal 2021, we commenced a 10-year lease for a 56,000 square foot facility in the United Kingdom to expand our Government Solutions segment's manufacturing capabilities for our high precision full motion fixed and mobile X/Y satellite tracking antennas, RF feeds, reflectors and radomes.

L. Our Government Solutions segment manufactures certain of our solid-state, high-power amplifiers in a 45,000 square foot engineering and manufacturing facility on more than two acres of land in Melville, New York and an 8,000 square foot facility in Topsfield, Massachusetts. We lease the New York facility from a partnership controlled by our CEO and Chairman of the Board of Directors. Our Massachusetts lease is currently on a month-to-month basis and is therefore excluded from the table above.

M. Our Government Solutions segment also leases additional four facilities located in the U.S. that are primarily used for engineering, sales and software development.

N. Our corporate headquarters are located in an office building complex in Melville, New York.

The terms for all of our leased facilities are generally for multi-year periods and we believe that we will be able to renew these leases or find comparable facilities elsewhere.

ITEM 3. LEGAL PROCEEDINGS

Information regarding legal proceedings is incorporated herein by reference to the "*Notes to Consolidated Financial Statements – Note (12)(a) - Commitments and Contingencies – Legal Proceedings and Other Matters*" included in "*Part II - Item 8.- Financial Statements and Supplementary Data,*" included in this Annual Report on Form 10-K.

ITEM 4. MINE SAFETY DISCLOSURES

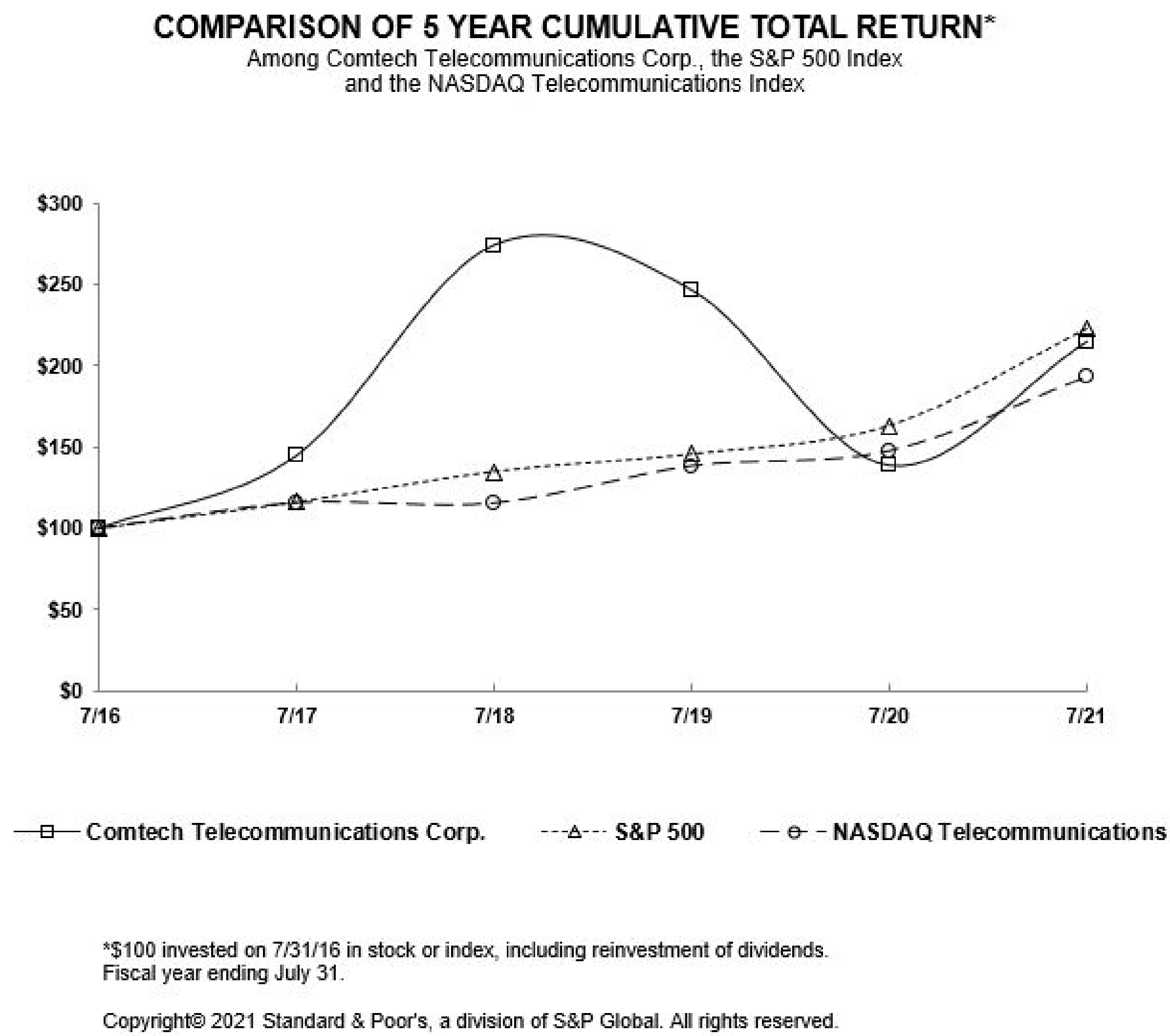
Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Stock Performance Graph and Cumulative Total Return

The graph below compares the cumulative total stockholder return on our common stock with the cumulative total return on the S&P's 500 Index and the NASDAQ Telecommunications Index for each of the last five fiscal years ended July 31, assuming an investment of $100 at the beginning of such period and the reinvestment of any dividends. The comparisons in the graphs below are based upon historical data and are not indicative of, nor intended to forecast, future performance of our common stock.



Our common stock trades on the NASDAQ Stock Market LLC ("NASDAQ") under the symbol "CMTL."

Dividends

Since September 2010, we have paid quarterly dividends. On September 29, 2020, December 9, 2020, March 11, 2021 and June 8, 2021, our Board of Directors declared a dividend of $0.10 per common share, which were paid on October 27, 2020, February 19, 2021, May 21, 2021 and August 20, 2021, respectively.

On October 4, 2021, our Board of Directors declared a dividend of $0.10 per common share, payable on November 12, 2021 to stockholders of record at the close of business on October 13, 2021.

The Board of Directors is currently targeting fiscal 2022 quarterly dividend payments of $0.10 per common share.

Future Common Stock dividends remain subject to compliance with financial covenants under our Credit Facility, as well as Board approval.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

We did not repurchase any of our equity securities during the fiscal year ended July 31, 2021. On September 29, 2020, our Board of Directors authorized a new $100.0 million stock repurchase program, which replaced our prior program. The new $100.0 million stock repurchase program has no time restrictions and repurchases may be made from time to time in open-market or privately negotiated transactions, or by other means in accordance with federal securities laws. We had approximately 26.2 million of Common Stock outstanding as of July 31, 2021.

Approximate Number of Equity Security Holders

As of September 30, 2021, there were approximately 801 holders of our common stock. Such number of record owners was determined from our stockholder records and does not include beneficial owners whose shares of our common stock are held in the name of various security holders, dealers and clearing agencies.

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The following table shows selected historical consolidated financial data for our Company.

Detailed historical financial information is included in the audited consolidated financial statements for fiscal 2021, 2020 and 2019.

	Fiscal Years Ended July 31, (In thousands, except per share amounts)				
	2021	2020	2019	2018	2017
Consolidated Statement of Operations Data:					
Net sales	$ 581,695	616,715	671,797	570,589	550,368
Cost of sales	367,737	389,882	424,357	346,648	332,183
Gross profit	213,958	226,833	247,440	223,941	218,185
Expenses:					
Selling, general and administrative	111,796	117,130	128,639	113,922	116,080
Research and development	49,148	52,180	56,407	53,869	54,260
Amortization of intangibles	21,020	21,595	18,320	21,075	22,823
Settlement of intellectual property litigation	—	—	(3,204)	—	(12,020)
Acquisition plan expenses	100,292	20,754	5,871	—	—
	282,256	211,659	206,033	188,866	181,143
Operating (loss) income	(68,298)	15,174	41,407	35,075	37,042
Other expenses (income):					
Interest expense	6,821	6,054	9,245	10,195	11,629
Write-off of deferred financing costs	—	—	3,217	—	—
Interest (income) and other	(139)	(190)	35	254	(68)
(Loss) income before (benefit from) provision for income taxes	(74,980)	9,310	28,910	24,626	25,481
(Benefit from) provision for income taxes	(1,500)	2,290	3,869	(5,143)	9,654
Net (loss) income	$ (73,480)	7,020	25,041	29,769	15,827
Net (loss) income per share:					
Basic	$ (2.86)	0.28	1.04	1.25	0.68
Diluted	$ (2.86)	0.28	1.03	1.24	0.67
Weighted average number of common shares outstanding – basic	25,685	24,798	24,124	23,825	23,433
Weighted average number of common and common equivalent shares outstanding – diluted	25,685	24,899	24,302	24,040	23,489

	Fiscal Years Ended July 31, (In thousands)				
	2021	2020	2019	2018	2017
Other Consolidated Operating Data:					
Backlog at period-end	$ 658,896	620,912	682,954	630,695	446,230
New orders	623,076	584,448	724,056	755,054	512,593
Research and development expenditures - internal and customer funded	62,783	64,103	71,086	70,793	81,310
Adjusted EBITDA	76,519	77,803	93,472	78,374	70,705

	As of July 31, (In thousands)				
	2021	2020	2019	2018	2017
Consolidated Balance Sheet Data:					
Total assets	$ 993,111	929,647	887,711	845,157	832,063
Working capital	83,935	117,385	134,967	114,477	96,833
Debt, including finance leases and other obligations	201,000	149,500	165,757	167,899	195,802
Other liabilities	14,507	17,831	18,822	4,117	2,655
Stockholders' equity	500,719	549,299	535,082	505,684	480,150

Non-GAAP Financial Data

This Annual Report on Form 10-K contains a Non-GAAP financial metric for the Company titled Adjusted EBITDA, which represents earnings (loss) before income taxes, interest (income) and other expense, write-off of deferred financing costs, interest expense, amortization of stock-based compensation, amortization of intangibles, depreciation expense, estimated contract settlement costs, settlement of intellectual property litigation, acquisition plan expenses, restructuring costs, COVID-19 related costs, strategic emerging technology costs (for next-generation satellite technology), facility exit costs, strategic alternatives analysis expenses and other. In future periods, we expect to incur expenses similar to the aforementioned items and investors should not infer from our presentation of Adjusted EBITDA that these costs are unusual, infrequent or non-recurring. These items, while periodically affecting our results, may vary significantly from period to period and may have a disproportionate effect in a given period, thereby affecting the comparability of results.

Adjusted EBITDA is a Non-GAAP financial measure used by management in assessing Comtech's operating results. Although closely aligned, Comtech's definition of Adjusted EBITDA is different than the Consolidated EBITDA (as such term is defined in our Credit Facility) utilized for financial covenant calculations and also may differ from the definition of EBITDA or Adjusted EBITDA used by other companies and therefore, may not be comparable to similarly titled measures used by other companies. Our Adjusted EBITDA is also a measure frequently requested by Comtech's investors and analysts. We believe that investors and analysts may use Adjusted EBITDA, along with other information contained in our SEC filings, in assessing our performance and comparability of our results with other companies.

Non-GAAP financial measures have limitations as an analytical tool as they exclude the financial impact of transactions necessary to conduct our business, such as the granting of equity compensation awards, and are not intended to be an alternative to financial measures prepared in accordance with GAAP. Non-GAAP financial measures should be considered in addition to, and not as a substitute for or superior to, financial measures determined in accordance with GAAP. Investors are advised to carefully review the GAAP financial results that are disclosed in our SEC filings.

The following is a reconciliation of net income (loss), the most comparable GAAP measure, to Adjusted EBITDA:

	Fiscal Years Ended July 31, (In thousands)				
	2021	2020	2019	2018	2017
Adjusted EBITDA:					
Net (loss) income	$ (73,480)	7,020	25,041	29,769	15,827
(Benefit from) provision for income taxes	(1,500)	2,290	3,869	(5,143)	9,654
Interest (income) and other	(139)	(190)	35	254	(68)
Write-off of deferred financing costs	—	—	3,217	—	—
Interest expense	6,821	6,054	9,245	10,195	11,629
Amortization of stock-based compensation	9,983	9,275	11,427	8,569	8,506
Amortization of intangibles	21,020	21,595	18,320	21,075	22,823
Depreciation	9,379	10,561	11,927	13,655	14,354
Estimated contract settlement costs	—	444	6,351	—	—
Settlement of intellectual property litigation	—	—	(3,204)	—	(12,020)
Acquisition plan expenses	100,292	20,754	5,871	—	—
Facility exit costs	—	—	1,373	—	—
Restructuring costs	2,782	—	—	—	—
Strategic emerging technology costs	315	—	—	—	—
COVID-19 related costs	1,046	—	—	—	—
Adjusted EBITDA	$ 76,519	77,803	93,472	78,374	70,705

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

We are a leading global provider of next-generation 911 emergency systems and secure wireless communications technologies to commercial and government customers around the world. Our solutions fulfill our customers' needs for secure wireless communications in some of the most demanding environments, including those where traditional communications are unavailable or cost-prohibitive, and in mission-critical and other scenarios where performance is crucial.

We manage our business through two reportable operating segments:

- Commercial Solutions - offers satellite ground station technologies (such as Single Channel per Carrier ("SCPC") and time division multiple access ("TDMA") modems and amplifiers) and public safety and location technologies (such as 911 call routing, 911 call handling and mapping solutions) to commercial customers and smaller government customers, such as state and local governments. This segment also serves certain large government customers (including the U.S. government) that have requirements for off-the-shelf commercial equipment.

- Government Solutions - provides tactical satellite-based networks and ongoing support for complicated communications networks, troposcatter systems and solid-state, high-power amplifiers to large government end-users (including those of foreign countries), large international customers and domestic prime contractors.

Our Quarterly Financial Information
Quarterly and period-to-period sales and operating results may be significantly affected by either short-term or long-term contracts with our customers. In addition, our gross profit is affected by a variety of factors, including the mix of products, systems and services sold, production efficiencies, estimates of warranty expense, price competition and general economic conditions. Our gross profit may also be affected by the impact of any cumulative adjustments to contracts that are accounted for over time.

Our contracts with the U.S. government can be terminated for convenience by it at any time and orders are subject to unpredictable funding, deployment and technology decisions by the U.S. government. Some of these contracts are indefinite delivery/indefinite quantity ("IDIQ") contracts and, as such, the U.S. government is not obligated to purchase any equipment or services under these contracts. We have, in the past, experienced and we continue to expect significant fluctuations in sales and operating results from quarter-to-quarter and period-to-period. As such, comparisons between periods and our current results may not be indicative of a trend or future performance.

Critical Accounting Policies

We consider certain accounting policies to be critical due to the estimation process involved in each.

Revenue Recognition. In accordance with FASB ASC 606 - Revenue from Contracts with Customers ("ASC 606"), we record revenue in an amount that reflects the consideration to which we expect to be entitled in exchange for goods or services promised to customers. Under ASC 606, we follow a five-step model to: (1) identify the contract with our customer; (2) identify our performance obligations in our contract; (3) determine the transaction price for our contract; (4) allocate the transaction price to our performance obligations; and (5) recognize revenue using one of the following two methods:

- *Over time* - We recognize revenue using the over time method when there is a continuous transfer of control to the customer over the contractual period of performance. This generally occurs when we enter into a long-term contract relating to the design, development or manufacture of complex equipment or technology platforms to a buyer's specification (or to provide services related to the performance of such contracts). Continuous transfer of control is typically supported by contract clauses which allow our customers to unilaterally terminate a contract for convenience, pay for costs incurred plus a reasonable profit and take control of work-in-process. Revenue recognized over time is generally based on the extent of progress toward completion of the related performance obligations. The selection of the method to measure progress requires judgment and is based on the nature of the products or services provided. In certain instances, typically for firm fixed-price contracts, we use the cost-to-cost measure because it best depicts the transfer of control to the customer which occurs as we incur costs on our contracts. Under the cost-to-cost measure, the extent of progress toward completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion, including warranty costs. Revenues, including estimated fees or profits, are recorded proportionally as costs are incurred. Costs to fulfill generally include direct labor, materials, subcontractor costs, other direct costs and an allocation of indirect costs. When these contracts are modified, the additional goods or services are generally not distinct from those already provided. As a result, these modifications form part of an existing contract and we must update the transaction price and our measure of progress for the single performance obligation and recognize a cumulative catch-up to revenue and gross profits.

  For over time contracts using a cost-to-cost measure of progress, we have an estimate at completion ("EAC") process in which management reviews the progress and execution of our performance obligations. This EAC process requires management judgment relative to assessing risks, estimating contract revenue and costs, and making assumptions for schedule and technical issues. Since certain contracts extend over a long period of time, the impact of revisions in revenue and or cost estimates during the progress of work may impact current period earnings through a cumulative adjustment. Additionally, if the EAC process indicates a loss, a provision is made for the total anticipated loss in the period that it becomes evident. Contract revenue and cost estimates for significant contracts are generally reviewed and reassessed at least quarterly.

  The cost-to-cost method is principally used to account for contracts in our Government Solutions segment and, to a lesser extent, certain location-based and messaging infrastructure contracts in our public safety and location technologies product line within our Commercial Solutions segment. For service-based contracts in our public safety and location technologies product line, we also recognize revenue over time. These services are typically recognized as a series of services performed over the contract term using the straight-line method, or based on our customers' actual usage of the networks and platforms which we provide.

- *Point in time* - When a performance obligation is not satisfied over time, we must record revenue using the point in time accounting method which generally results in revenue being recognized upon shipment or delivery of a promised good or service to a customer. This generally occurs when we enter into short term contracts or purchase orders where items are provided to customers with relatively quick turn-around times. Modifications to such contracts and or purchase orders, which typically provide for additional quantities or services, are accounted for as a new contract because the pricing for these additional quantities or services are based on standalone selling prices.

  Point in time accounting is principally applied to contracts in our satellite ground station technologies product line (which includes satellite modems, solid-state and traveling wave tube amplifiers) and certain contracts for our solid-state, high-power RF amplifiers in our Government Solutions segment. The contracts related to these product lines do not meet the requirements for over time revenue recognition because our customers cannot utilize the equipment for its intended purpose during any phase of our manufacturing process; customers do not simultaneously receive and or consume the benefits provided by our performance; customers do not control the asset (i.e., prior to delivery, customers cannot direct the use of the asset, sell or exchange the equipment, etc.); and, although many of our contracts have termination for convenience clauses and or an enforceable right to payment for performance completed to date, our performance creates an asset with an alternative use through the point of delivery.

  In determining that our equipment has alternative use, we considered the underlying manufacturing process for our products. In the early phases of manufacturing, raw materials and work in process (including subassemblies) consist of common parts that are highly fungible among many different types of products and customer applications. Finished products are either configured to our standard configuration or based on our customers' specifications. Finished products, whether built to our standard specification or to a customers' specification, can be sold to a variety of customers and across many different end use applications with minimal rework, if needed, and without incurring a significant economic loss.

When identifying a contract with our customer, we consider when it has approval and commitment from both parties, if the rights of the parties are identified, if the payment terms are identified, if it has commercial substance and if collectability is probable.

When identifying performance obligations, we consider whether there are multiple promises and how to account for them. In our contracts, multiple promises are separated if they are distinct, both individually and in the context of the contract. If multiple promises in a contract are highly interrelated or comprise a series of distinct services performed over time, they are combined into a single performance obligation. In some cases, we may also provide the customer with an additional service-type warranty, which we recognize as a separate performance obligation. Service-type warranties do not represent a significant portion of our consolidated net sales. When service-type warranties represent a separate performance obligation, the revenue is deferred and recognized ratably over the extended warranty period. Our contracts, from time-to-time, may also include options for additional goods and services. To date, these options have not represented material rights to the customer as the pricing for them reflects standalone selling prices. As a result, we do not consider options we offer to be performance obligations for which we must allocate a portion of the transaction price. In many cases, we provide assurance-type warranty coverage for some of our products for a period of at least one year from the date of delivery.

When identifying the transaction price, we typically utilize the contract's stated price as a starting point. The transaction price in certain arrangements may include estimated amounts of variable consideration, including award fees, incentive fees or other provisions that can either increase or decrease the transaction price. We estimate variable consideration as the amount to which we expect to be entitled, and we include estimated amounts in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the estimation uncertainty is resolved. The estimation of this variable consideration and determination of whether to include estimated amounts in the transaction price are based largely on an assessment of our anticipated performance and all information (e.g., historical, current and forecasted) that is reasonably available to us.

When allocating the contract's transaction price, we consider each distinct performance obligation. For contracts with multiple performance obligations, we allocate the contract's transaction price to each performance obligation using our best estimate of the standalone selling price of each distinct good or service in the contract. We determine standalone selling price based on the price at which the performance obligation is sold separately. If the standalone selling price is not observable through past transactions, we estimate the standalone selling price taking into account available information such as market conditions, including geographic or regional specific factors, competitive positioning, internal costs, profit objectives and internally approved pricing guidelines related to the performance obligations.

Most of our contracts with customers are denominated in U.S. dollars and typically are either firm fixed-price or cost reimbursable type contracts (including fixed-fee, incentive-fee and time-and-material type contracts). In almost all of our contracts with customers, we are the principal in the arrangement and report revenue on a gross basis. Transaction prices for contracts with U.S. domestic and international customers are usually based on specific negotiations with each customer and in the case of the U.S. government, sometimes based on estimated or actual costs of providing the goods or services in accordance with applicable regulations.

The timing of revenue recognition, billings and collections results in receivables, unbilled receivables and contract liabilities on our Consolidated Balance Sheet. Under typical payment terms for our contracts accounted for over time, amounts are billed as work progresses in accordance with agreed-upon contractual terms, either at periodic intervals (e.g., monthly) or upon achievement of contractual milestones. For certain contracts with provisions that are intended to protect customers in the event we do not satisfy our performance obligations, billings occur subsequent to revenue recognition, resulting in unbilled receivables. Under ASC 606, unbilled receivables constitute contract assets. On large long term contracts, and for contracts with international customers that do not do business with us regularly, payment terms typically require advanced payments and deposits. Under ASC 606, payments received from customers in excess of revenue recognized to date results in a contract liability. These contract liabilities are not considered to represent a significant financing component of the contract because we believe these cash advances and deposits are generally used to meet working capital demands which can be higher in the earlier stages of a contract. Also, advanced payments and deposits provide us with some measure of assurance that the customer will perform on its obligations under the contract. Under the typical payment terms for our contracts accounted for at a point in time, costs are accumulated in inventory until the time of billing, which generally coincides with revenue recognition.

We recognize the incremental costs to obtain or fulfill a contract as an expense when incurred if the amortization period of the asset is one year or less. Incremental costs to obtain or fulfill contracts with an amortization period greater than one year were not material.

As commissions payable to our internal sales and marketing employees or contractors are contingent upon multiple factors, such commissions are not considered direct costs to obtain or fulfill a contract with a customer and are expensed as incurred in selling, general and administrative expenses on our Consolidated Statements of Operations. As for commissions payable to our third-party sales representatives related to long-term contracts, we do consider these types of commissions both direct and incremental costs to obtain and fulfill such contracts. Therefore, such types of commissions are included in total estimated costs at completion for such contracts and expensed over time through cost of sales on our Consolidated Statements of Operations.

Remaining performance obligations represent the transaction price of firm orders for which work has not been performed as of the end of a fiscal period. Remaining performance obligations, which we refer to as backlog, exclude unexercised contract options and potential orders under indefinite delivery / indefinite quantity ("IDIQ") contracts.

Impairment of Goodwill and Other Intangible Assets. As of July 31, 2021, total goodwill recorded on our Consolidated Balance Sheet aggregated $347.7 million (of which $270.4 million relates to our Commercial Solutions segment and $77.3 million relates to our Government Solutions segment). Additionally, as of July 31, 2021, net intangibles recorded on our Consolidated Balance Sheet aggregated $268.7 million (of which $222.6 million relates to our Commercial Solutions segment and $46.1 million relates to our Government Solutions segment). Each of our two operating segments constitutes a reporting unit and we must make various assumptions in determining their estimated fair values.

In accordance with FASB ASC 350, we perform a goodwill impairment analysis at least annually (in the first quarter of each fiscal year), unless indicators of impairment exist in interim periods. If we fail the quantitative assessment of goodwill impairment ("quantitative assessment"), we would be required to recognize an impairment loss equal to the amount that a reporting unit's carrying value exceeded its fair value; however, any loss recognized should not exceed the total amount of goodwill allocated to that reporting unit.

On August 1, 2021 (the first day of our fiscal 2022), we performed our annual quantitative assessment using market participant assumptions to determine if the fair value of each of our reporting units with goodwill exceeded its carrying value. In making this assessment, we considered, among other things, expectations of projected net sales and cash flows, assumptions impacting the weighted average cost of capital, trends in trading multiples of comparable companies, changes in our stock price and changes in the carrying values of our reporting units with goodwill. We also considered overall business conditions.

In performing the quantitative assessment, we estimated the fair value of each of our reporting units using a combination of the income and market approaches. The income approach, also known as the discounted cash flow ("DCF") method, utilizes the present value of cash flows to estimate fair value. The future cash flows for our reporting units were projected based on our estimates, at that time, of future revenues, operating income and other factors (such as working capital and capital expenditures). For purposes of conducting our impairment analysis, we assumed revenue growth rates and cash flow projections that are below our actual long-term expectations. The discount rates used in our DCF method were based on a weighted-average cost of capital ("WACC") determined from relevant market comparisons, adjusted upward for specific reporting unit risks (primarily the uncertainty of achieving projected operating cash flows). A terminal value growth rate was applied to the final year of the projected period, which reflects our estimate of stable, perpetual growth. We then calculated a present value of the respective cash flows for each reporting unit to arrive at an estimate of fair value under the income approach. Under the market approach, we estimated a fair value based on comparable companies' market multiples of revenues and earnings before interest, taxes, depreciation and amortization and factored in a control premium. Finally, we compared our estimates of fair values to our August 1, 2021 total public market capitalization and assessed implied control premiums based on our common stock price of $24.97 as of August 1, 2021.

Based on our quantitative evaluation, we determined that our Commercial Solutions and Government Solutions reporting units had estimated fair values in excess of their carrying values of at least 22.7% and 94.1%, respectively, and concluded that our goodwill was not impaired and that neither of our two reporting units was at risk of failing the quantitative assessment.

It is possible that, during fiscal 2022 or beyond, business conditions (both in the U.S. and internationally) could deteriorate from the current state, our current or prospective customers could materially postpone, reduce or even forgo purchases of our products and services to a greater extent than we currently anticipate, or our common stock price could fluctuate. Such fluctuation could be caused by uncertainty about the severity and length of the COVID-19 pandemic, and its impact on global activity.

A significant decline in our customers' spending that is greater than we anticipate or a shift in funding priorities may also have a negative effect on future orders, sales, income and cash flows and we might be required to perform a quantitative assessment during fiscal 2022 or beyond. If assumed net sales and cash flow projections are not achieved in future periods or our common stock price significantly declines from current levels, our Commercial Solutions and Government Solutions reporting units could be at risk of failing the quantitative assessment and goodwill and intangibles assigned to the respective reporting units could be impaired.

In any event, we are required to perform the next annual goodwill impairment analysis on August 1, 2022 (the start of our fiscal 2023). If our assumptions and related estimates change in the future, or if we change our reporting unit structure or other events and circumstances change (e.g., a sustained decrease in the price of our common stock (considered on both absolute terms and relative to peers)), we may be required to record impairment charges when we perform these tests, or in other future periods. In addition to our impairment analysis of goodwill, we also review net intangible assets with finite lives when an event occurs indicating the potential for impairment. We believe that the carrying values of our net intangible assets were recoverable as of July 31, 2021. Any impairment charges that we may record in the future could be material to our results of operations and financial condition.

Provision for Warranty Obligations. We provide warranty coverage for most of our products, including products under long-term contracts, for a period of at least one year from the date of shipment. We record a liability for estimated warranty expense based on historical claims, product failure rates and other factors. Costs associated with some of our warranties that are provided under long-term contracts are incorporated into our estimates of total contract costs. There exist inherent risks and uncertainties in estimating warranty expenses, particularly on larger or longer-term contracts. If we do not accurately estimate our warranty costs, any changes to our original estimates could be material to our results of operations and financial condition.

Accounting for Income Taxes. Our deferred tax assets and liabilities are determined based on temporary differences between financial reporting and tax bases of assets and liabilities and applying enacted tax rates expected to be in effect for the year in which we expect the differences to reverse. Our provision for income taxes is based on domestic (including federal and state) and international statutory income tax rates in the tax jurisdictions where we operate, permanent differences between financial reporting and tax reporting and available credits and incentives. We recognize potential interest and penalties related to uncertain tax positions in income tax expense. The U.S. federal government is our most significant income tax jurisdiction.

Significant judgment is required in determining income tax provisions and tax positions. We may be challenged upon review by the applicable taxing authority and positions taken by us may not be sustained. We recognize all or a portion of the benefit of income tax positions only when we have made a determination that it is more likely than not that the tax position will be sustained upon examination, based upon the technical merits of the position and other factors. For tax positions that are determined as more likely than not to be sustained upon examination, the tax benefit recognized is the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement. The development of valuation allowances for deferred tax assets and reserves for income tax positions requires consideration of timing and judgments about future taxable income, tax issues and potential outcomes, and are subjective critical estimates. A portion of our deferred tax assets consist of federal research and experimentation tax credit carryforwards, some of which was acquired in connection with our acquisition of TCS. No valuation allowance has been established on these deferred tax assets based on our evaluation that our ability to realize such assets has met the criteria of "more likely than not." We continuously evaluate additional facts representing positive and negative evidence in determining our ability to realize these deferred tax assets. In certain circumstances, the ultimate outcome of exposures and risks involves significant uncertainties. If actual outcomes differ materially from these estimates, they could have a material impact on our results of operations and financial condition.

Our U.S. federal income tax returns for fiscal 2018 through 2020 are subject to potential future Internal Revenue Service ("IRS") audit. None of our state income tax returns prior to fiscal 2017 are subject to audit. Future tax assessments or settlements could have a material adverse effect on our consolidated results of operations and financial condition.

Research and Development Costs. We generally expense all research and development costs. Research and development expenses include payroll, employee benefits, stock-based compensation expense, and other personnel-related expenses associated with product development. Research and development expenses also include third-party development and programming costs. Costs incurred internally in researching and developing software to be sold are charged to expense until technological feasibility has been established for the software. Judgment is required in determining when technological feasibility of a product is established. Technological feasibility for our advanced communication software solutions is generally reached after all high-risk development issues have been resolved through coding and testing. Generally, this occurs shortly before the products are released to customers and when we are able to validate the marketability of such product. Once technological feasibility is established, all software costs are capitalized until the product is available for general release to customers. To date, capitalized internally developed software costs were not material.

Provisions for Excess and Obsolete Inventory. We record a provision for excess and obsolete inventory based on historical and projected usage trends. Other factors may also influence our provision, including decisions to exit a product line, technological change and new product development. These factors could result in a change in the amount of excess and obsolete inventory on hand. Additionally, our estimates of future product demand may prove to be inaccurate, in which case we may have understated or overstated the provision required for excess and obsolete inventory. In the future, if we determine that our inventory was overvalued, we would be required to recognize such costs in our financial statements at the time of such determination. Any such charge could be material to our results of operations and financial condition.

Allowance for Doubtful Accounts. We perform credit evaluations of our customers and adjust credit limits based upon customer payment history and current creditworthiness, as determined by our review of our customers' current credit information. Generally, we will require cash in advance or payment secured by irrevocable letters of credit before an order is accepted from an international customer that we do not do business with regularly. In addition, we seek to obtain insurance for certain domestic and international customers.

We monitor collections and payments from our customers and maintain an allowance for doubtful accounts based upon our historical experience and any specific customer collection issues that we have identified. In light of ongoing tight credit market conditions, we continue to see requests from our customers for higher credit limits and longer payment terms. Because of our strong cash position and the nominal amount of interest we are earning on our cash and cash equivalents, we have, on a limited basis, approved certain customer requests. We continue to monitor our accounts receivable credit portfolio. To-date, there has been no material changes in our credit portfolio as a result of the COVID-19 pandemic on worldwide business activities.

Although our overall credit losses have historically been within the allowances we established, we cannot accurately predict our future credit loss experience, given the current poor business environment. Measurement of credit losses requires consideration of historical loss experience, including the need to adjust for changing business conditions, and judgments about the probable effects of relevant observable data, including present economic conditions such as delinquency rates and the financial health of specific customers. Future changes to the estimated allowance for doubtful accounts could be material to our results of operations and financial condition.

Results of Operations

The following table sets forth, for the periods indicated, certain income and expense items expressed as a percentage of our consolidated net sales:

	Fiscal Years Ended July 31,		
	2021	2020	2019
Gross margin	36.8 %	36.8 %	36.8 %
Selling, general and administrative expenses	19.2 %	19.0 %	19.1 %
Research and development expenses	8.4 %	8.5 %	8.4 %
Settlement of intellectual property litigation	— %	— %	(0.5)%
Acquisition plan expenses	17.2 %	3.4 %	0.9 %
Amortization of intangibles	3.6 %	3.5 %	2.7 %
Operating (loss) income	(11.7)%	2.5 %	6.2 %
Interest expense (income) and other	1.2 %	1.0 %	1.4 %
Write-off of deferred financing costs	— %	— %	0.5 %
(Loss) income before (benefit from) provision for income taxes	(12.9)%	1.5 %	4.3 %
Net (loss) income	(12.6)%	1.1 %	3.7 %
Adjusted EBITDA (a Non-GAAP measure)	13.2 %	12.6 %	13.9 %

For a definition and explanation of Adjusted EBITDA, see "*Item 6. Selected Consolidated Financial Data - Non-GAAP Financial Data*" and "*Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Comparison of Fiscal 2021 and 2020 - Adjusted EBITDA.*"

Impact of COVID-19 and Business Outlook for Fiscal 2022

For the fiscal year ended July 31, 2021, we achieved solid operating performance and generated consolidated:

- Net sales of $581.7 million;

- GAAP operating loss of $68.3 million and GAAP net loss of $73.5 million (including $70.0 million paid in cash to Gilat in October 2020);

- Non-GAAP operating income of $36.1 million and Non-GAAP net income of $22.4 million. These Non-GAAP financial measures are reconciled to the most directly comparable GAAP financial measures in the table included in the below section "*Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Comparison of Fiscal 2021 and 2020*;"

- GAAP net cash used in operating activities of $40.6 million (including the aforementioned $70.0 million Gilat payment); and

- Adjusted EBITDA (a Non-GAAP financial measure discussed below) of $76.5 million.

As of July 31, 2021, our cash and cash equivalents were $30.9 million and our total debt outstanding was $201.0 million.

We achieved a fiscal 2021 consolidated book-to-bill ratio (a measure defined as bookings divided by net sales) of 1.07 and ended the year with consolidated backlog of $658.9 million, which represent substantial improvements as compared to our fiscal 2020. During fiscal 2021, we were awarded several multi-year contracts to deploy and operate next generation 911 ("NG-911") services for the states of Arizona, Iowa, Pennsylvania and South Carolina, collectively valued over $200.0 million. In addition, in connection with a multi-year contract award, we received an initial $13.0 million order from a large new customer to customize our next-generation broadband satellite technology that can be used with the thousands of Low Earth Orbit ("LEO") satellites reportedly being launched over the next several years. Our backlog (sometimes referred to herein as orders or bookings) are more fully defined in "*Part I - Item 1. Business*" included in this Annual Report on Form 10-K and the total value of multi-year contracts that we have received is substantially higher than our reported backlog. When adding our backlog and the total unfunded value of multi-year contracts that we have received and for which we expect future orders, our revenue visibility approximates $1.1 billion, excluding potential future orders from this large new customer that could amount to hundreds of millions of dollars.

With COVID-19 continuing to impact global markets and supply chains, reliable forecasting remains challenging. Against that background, Comtech is targeting to achieve fiscal 2022 net sales within a range of $580.0 million to $600.0 million and Adjusted EBITDA between $70.0 million and $76.0 million. These targets reflect the strength of our backlog and a strong sales pipeline, offset by the lingering impacts of COVID-19, timing considerations associated with tightening global supply chain constraints and start-up costs associated with the opening of two new high-volume technology manufacturing facilities. In addition, our fiscal 2022 financial targets reflect the impact of the recently completed withdrawal of U.S. troops from Afghanistan and other U.S. government program changes.

Our consolidated net sales in fiscal 2022 are anticipated to reflect a higher percentage of total Commercial Solutions segment sales due to strong demand for our public safety and location technology solutions, including work on our recent contracts to design, deploy and operate NG-911 services for the states of South Carolina and Pennsylvania, and a higher level of annual sales in our satellite earth station product line as compared to fiscal 2021, including incremental contributions from our recently acquired TDMA modem technologies. In addition, our consolidated net sales in fiscal 2022 are anticipated to reflect strong demand for: (i) high reliability Electrical, Electronic and Electromechanical ("EEE") satellite-based space components and X/Y steerable antennas; (ii) ongoing sustainment services to the U.S. Army for the AN/TSC-198A SNAP terminal; (iii) Joint Cyber Analysis Course ("JCAC") training solutions; and (iv) sustainment services for the U.S. Army's Project Manager Mission Command ("PM MC") Blue Force Tracking ("BFT-1") program. Also, we expect additional orders for the newly introduced Comtech COMET*TM*, the world's smallest deployable troposcatter terminal, and our next generation troposcatter system used by the U.S. Marine Corps.

Our GAAP operating income in fiscal 2022 will be impacted by both start-up manufacturing expenses and restructuring costs associated with the opening of our two new high-volume technology manufacturing centers, as well as COVID-19 related costs. Global supply chain issues make the amount and timing of these expenses difficult to predict. In addition, GAAP operating income in fiscal 2022 is likely to be impacted by greater than normal proxy solicitation related costs, as well as expenses associated with the appointment of a new CEO, as further discussed below. Because the amount and timing of these costs remain largely unpredictable, we are not providing GAAP operating income, GAAP net income or any GAAP EPS guidance or a reconciliation of our projected results to the most comparable GAAP measure, as such a reconciliation cannot be prepared without unreasonable effort. For the same reasons, we are unable to address the probable significance of the unavailable information, which could be material to future results.

On October 4, 2021, we announced that our Board of Directors has appointed Michael D. Porcelain, our President and Chief Operating Officer, to be Chief Executive Officer, taking over from Fred Kornberg after a short transition period. The change of leadership is expected to occur by the end of calendar 2021, at which point Mr. Porcelain will also join our Board of Directors and continue as President. Mr. Kornberg will serve as non-executive Chairman of the Board and is expect to take on a technology advisory role. Costs associated with this leadership transition will be announced once they are finalized.

On October 4, 2021, our Board of Directors declared a dividend of $0.10 per common share, payable on November 12, 2021 to stockholders of record at the close of business on October 13, 2021. Future Common Stock dividends remain subject to compliance with financial covenants under our Credit Facility, as well as Board approval.

Additional information related to our Business Outlook for Fiscal 2022 and a definition and explanation of Adjusted EBITDA is included in the below section *"Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Comparison of Fiscal 2021 and 2020."*

Comparison of Fiscal 2021 and 2020

Net Sales. Consolidated net sales were $581.7 million and $616.7 million for fiscal 2021 and 2020, respectively, representing a decrease of $35.0 million, or 5.7%. The period-over-period decrease in net sales reflects lower net sales in our Government Solutions segment, partially offset by higher net sales in our Commercial Solutions segment. Net sales by operating segment are discussed below.

Commercial Solutions

Net sales in our Commercial Solutions segment were $360.1 million for fiscal 2021, as compared to $353.7 million for fiscal 2020, an increase of $6.4 million, or 1.8%. Our Commercial Solutions segment represented 61.9% of consolidated net sales for fiscal 2021 as compared to 57.4% for fiscal 2020. Our book-to-bill ratio (a measure defined as bookings divided by net sales) for this segment was 1.23. Period-to-period fluctuations in bookings are normal for this segment. As further discussed below, long-term demand for our Commercial Solutions segment's products and technologies appears strong and we believe fiscal 2022 net sales for this segment will be higher than the amount we achieved in fiscal 2021.

Net sales of our satellite ground station technologies for fiscal 2021 were higher than fiscal 2020. Fiscal 2021 benefited from a nominal amount of sales related to our acquisition of UHP Networks Inc. ("UHP") on March 2, 2021, which extended our product offerings to include TDMA satellite modems. We believe UHP developed revolutionary technology, which has the potential to transform the growing Very Small Aperture Terminal ("VSAT") market, as demand for high-speed satellite-based networks are projected to grow significantly. As a result of the acquisition, we believe we are well positioned for long-term growth in this market.

While our satellite ground station product line continues to be impacted by COVID-19's effect on customer demand, particularly in international markets, which historically represents a large majority of end-users for this product line, we benefited during fiscal 2021 from a number of awards, including: (i) $11.4 million in delivery orders from the U.S. Naval Information Warfare Systems Command for our latest generation SLM-5650B satellite modems and firmware; (ii) multiple contracts aggregating $6.3 million for 500W Ka-band traveling wave tube amplifiers ("TWTAs") for both military and commercial high throughput satellite systems; (iii) multiple contracts aggregating $3.6 million from a U.S. system integrator for X-band solid-state power amplifiers ("SSPAs") and block up converters for transportable satellite communication terminals; (iv) a contract valued at more than $3.0 million for QV-band TWTAs to support a new high-speed satellite network; (v) an order valued at more than $2.0 million for state-of-the-art 500W Ka-band high power amplifiers supporting a leading high throughput satellite customer; and (vi) a $2.0 million order for rugged Ka-band high power TWTAs for a U.S. military communications system, among others.

We expect sales of our satellite earth station products in fiscal 2022 to grow as compared to fiscal 2021 due to increased demand. This product line will also benefit from a full twelve months of sales of our new TDMA satellite network platform that we acquired in March 2021. At the same time, recent spikes in COVID-19 infection rates have curtailed travel and business in many parts of the world. In addition, global supply chain constraints have become more prevalent in recent months, with lead times for certain parts extending meaningfully. We believe these issues are suppressing orders from many of our satellite earth station product line customers and impacting the timing of deliveries and installations. Although we are closely monitoring our inventory needs and supplier base, these constraints represent a significant performance headwind as we enter fiscal 2022.

Net sales in fiscal 2021 of our public safety and location technology solutions were slightly higher than fiscal 2020, reflecting increased sales of our NG-911 services and location-based technology solutions, offset in part by the absence of 911 wireless call routing sales to AT&T.

During fiscal 2021, we were awarded several important statewide NG-911 contracts and our strong momentum was acknowledged by Frost & Sullivan, who recognized Comtech for registering the most significant year-over-year market share increase among all NG-911 primary contract holders, growing our market share from an estimated 17.3% in 2019 to 26.2% in 2020, as calculated by Frost & Sullivan.

During fiscal 2021, we were awarded and began work on a statewide contract valued at up to $175.1 million to design, deploy, and operate NG-911 services for the Commonwealth of Pennsylvania. The total contract value includes multi-year contract extension options and was initially funded at $137.4 million, of which $111.6 million was booked in fiscal 2021. This contract was awarded to us shortly after we announced the receipt of a $54.0 million contract to design, deploy and operate NG-911 services for the State of South Carolina, for which we received over $7.5 million of additional funding in fiscal 2021. In addition to these contracts, we were awarded a multi-year statewide contract valued at $35.8 million to design, deploy and operate NG-911 services for the State of Arizona, which includes a multi-year extension option. Excluding such option, the contract is valued at $23.5 million. Also, in fiscal 2021, we were awarded a statewide contract to provide NG-911 services for the State of Iowa. This multi-year contract includes contract extension options, is valued up to $48.5 million and was initially funded $23.0 million. Lastly, although not yet funded, we have also been notified that we were selected as the winner of a multi-year NG-911 contract for the State of Ohio. We anticipate that such contract will be initially funded in fiscal 2022.

Other notable orders received for our public safety and location technology solutions during fiscal 2021 include: (i) a $9.8 million contract with a major tier-one mobile network operator ("MNO") for a broad suite of new capabilities and services centered around virtualized applications and 5G products; (ii) a $7.1 million contract for the deployment of a cellular-based Wireless Emergency Alerts ("WEA") solution with a tier-one MNO, which was our first major award for a WEA solution; (iii) a $5.0 million NG-911 modernization project for a U.S. government end customer; (iv) a contract valued at up to $4.7 million with a channel partner to supply new releases to messaging application software for a U.S. tier-one MNO; (v) a contract renewal worth $4.2 million for location and mapping technologies for a tier-one MNO; (vi) a $4.0 million maintenance agreement with a channel partner to continue providing messaging application support for a U.S. tier-one MNO; (vii) orders exceeding $3.8 million with a tier-one MNO for additional capabilities related to our Virtual Mobility Location Center platform; and (viii) multiple contracts valued over $6.5 million to provide NG-911 services, including our Solacom Guardian Intelligent 911 Workstations, to various police and fire rescue services in Canada, among others.

We are continuing to work on other opportunities and believe there is strong interest in our public safety and location technology solutions. To-date, the business impact of COVID-19 on our public safety and location technology solutions has been relatively muted and long-term demand for our products and services appears strong. Although COVID-19 has resulted in the cancellation of some key public safety trade shows and some states and municipalities have announced budget constraints, we believe that other potential customers are increasing their funding for NG-911 solutions, recognizing the critical importance of upgrading their 911 systems. Although public safety and location technology solutions have long sales cycles and are subject to difficult-to-predict changes in the overall procurement strategies of wireless carrier customers, we believe that sales of our NG-911 solutions will be higher than the amount we achieved in fiscal 2022. Further, we believe we are well positioned for long-term growth in this market.

Overall, we remain optimistic that fiscal 2022 net sales for this segment will be higher than the amount we achieved in fiscal 2021. Bookings, sales and profitability in our Commercial Solutions segment can fluctuate from period-to-period due to many factors, including changes in the general business environment. As such, period-to-period comparisons of our results may not be indicative of a trend or future performance.

Government Solutions
Net sales in our Government Solutions segment were $221.5 million for fiscal 2021 as compared to $263.0 million for fiscal 2020, a decrease of $41.5 million or 15.8%. Our Government Solutions segment represented 38.1% of consolidated net sales for fiscal 2021 as compared to 42.6% for fiscal 2020. Our book-to-bill ratio (a measure defined as bookings divided by net sales) in this segment for fiscal 2021 was 0.82. Period-to-period fluctuations in bookings are normal for this segment.

Fiscal 2021 net sales primarily reflect lower sales of global field support services, advanced VSAT products and other programs for the U.S. Army, offset in part by higher sales of our high reliability Electrical, Electronic and Electromechanical ("EEE") satellite-based space components (including incremental sales of X/Y antenna products that we now offer as a result of our January 2020 acquisition of CGC). Fiscal 2021 net sales also included performance on our 10-year, $211.0 million IDIQ contract awarded to us by a prime contractor to provide next-generation troposcatter systems in support of the U.S. Marine Corps.

During fiscal 2021, we were awarded $27.0 million of orders related to a new contract to provide system refurbishment, sustainment services and baseband equipment to the U.S Army. Such orders support the sustainment of the U.S. Army's AN/TSC-198 SNAP family of ground satellite terminals. This multi-year contract, valued at up to $235.7 million, includes a base year award and three one-year option periods exercisable by the U.S. Army. We expect that additional funding will be authorized over the remaining contract period.

Other notable orders awarded in fiscal 2021 include: (i) $16.3 million of orders from the U.S. government for our JCAC training solutions; (ii) a $10.4 million contract from the U.S. military for the first phase of a full-motion large aperture antenna tracking system; (iii) $7.2 million of funding to support the U.S. Army’s PM MC's BFT-1 program; (iv) $5.5 million of funding on our contract to provide the U.S. Army with global field support services for military satellite communication (“SATCOM”) terminals around the world; (v) a $3.5 million contract for solid-state, high-power RF amplifiers from a major domestic medical instrumentation provider; (vi) a $3.2 million follow-on contract from the Brazilian military to supply additional satellite equipment and services for its Air Traffic Control network; (vii) a $3.0 million order from an overseas agency for maintenance of down range tracking stations; (viii) $3.0 million of additional funding for a 12-month extension on an existing contract to provide the State of Maryland’s Department of Human Services with statewide information technology (“IT”) services; and (ix) $2.9 million of funding on our contract to provide ongoing sustainment services and baseband equipment, among others.

We are seeing strong interest across the board for our Comtech COMET*TM* terminals and other new solutions we are discussing with our customers. During fiscal 2021, we conducted successful in-field demonstrations including our industry leading troposcatter solution that we are currently providing to the U.S. Marine Corps. Other military commands have also shown strong interest and recently, in fiscal 2021, we were awarded a $1.7 million contract by a non-U.S. NATO family customer for multiple COMET*TM* terminals. This represents the second procurement of COMET*TM* terminals by a non-U.S. NATO family customer, in addition to the multiple COMET*TM* terminals already procured by the U.S. Special Operations Command.

In April 2021, the U.S. government announced that it intended to fully withdraw troops from Afghanistan. This change resulted in lower revenues than previously anticipated for certain programs that we currently participate in. In addition, the U.S. presidential administration released its fiscal 2022 budget request. This budget request includes less money for certain legacy programs but additional funding for modernization and new programs. We believe these budget changes will benefit us over the longer-term, but will result in a decline in overall revenues in our Government Solutions segment in fiscal 2022, as compared to fiscal 2021. Although still difficult to predict, we expect that revenues in this segment for each of the first three quarters of fiscal 2022 will be slightly lower than the $46.6 million achieved during the fourth quarter of fiscal 2021. Thereafter, this segment is expected to benefit from higher margin programs, including the receipt of new orders for the Comtech COMET*TM* and other troposcatter solutions.

Bookings, sales and profitability in our Government Solutions segment can fluctuate dramatically from period-to-period due to many factors, including unpredictable funding, deployment and technology decisions by our U.S. and international government customers. As such, period-to-period comparisons of our results may not be indicative of a trend or future performance.

Geography and Customer Type
Sales by geography and customer type, as a percentage of related sales, for the fiscal years ended July 31, 2021 and 2020 are as follows:

	Fiscal Years Ended July 31,					
	2021	2020	2021	2020	2021	2020
	Commercial Solutions		Government Solutions		Consolidated	
U.S. government	14.7 %	14.8 %	66.8 %	65.0 %	34.6 %	36.2 %
Domestic	58.5 %	58.9 %	14.1 %	15.2 %	41.5 %	40.3 %
Total U.S.	73.2 %	73.7 %	80.9 %	80.2 %	76.1 %	76.5 %
International	26.8 %	26.3 %	19.1 %	19.8 %	23.9 %	23.5 %
Total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %

Sales to U.S. government customers include sales to the U.S. Department of Defense ("DoD"), intelligence and civilian agencies, as well as sales directly to or through prime contractors.

Domestic sales include sales to commercial customers, as well as to U.S. state and local governments. Included in domestic sales are sales to Verizon Communications Inc. ("Verizon"), which accounted for 10.7% of consolidated net sales for fiscal 2021. Except for the U.S. government, there were no customers that represented more than 10.0% of consolidated net sales for fiscal 2020.

International sales for fiscal 2021 and 2020 (which include sales to U.S. domestic companies for inclusion in products that are sold to international customers) were $138.9 million and $145.1 million, respectively. Except for the U.S., no individual country (including sales to U.S. domestic companies for inclusion in products that are sold to a foreign country) represented more than 10% of consolidated net sales for fiscal 2021 and 2020.

Gross Profit. Gross profit was $214.0 million and $226.8 million for fiscal 2021 and 2020, respectively. The decrease of $12.8 million primarily reflects the decline in consolidated net sales, as discussed above. Gross profit as a percentage of consolidated net sales was 36.8% for both fiscal periods. Our gross profit in fiscal 2021 reflects a higher percentage of consolidated net sales generated from our Commercial Solutions segment (which historically achieves higher gross margins than our Government Solutions segment), offset by increased costs due to production delays, supply chain disruptions, lower levels of factory utilization and higher logistics and operational costs resulting from the COVID-19 pandemic. In addition, our gross profit reflects start-up costs associated with the opening of our two new high-volume technology manufacturing centers. Our gross profit for fiscal 2021 also reflects a $2.0 million benefit from the refund of historical excise tax paid, which was recorded in our Unallocated segment. Gross profit, as a percentage of related segment net sales, is further discussed below.

Our Commercial Solutions segment's gross profit, as a percentage of related segment net sales, for fiscal 2021 decreased in comparison to fiscal 2020. The decrease in gross profit percentage in fiscal 2021 primarily reflects changes in products and services mix, including the cessation of sales to AT&T for 911 wireless call routing services and an increase in sales related to a recently awarded statewide NG-911 deployment (which has lower margins than our 911 wireless call routing services).

Our Government Solutions segment's gross profit, as a percentage of related segment net sales, for fiscal 2021 decreased in comparison to fiscal 2020. The decrease in gross profit percentage primarily reflects lower segment net sales and changes in products and services mix, as discussed above. Also, during fiscal 2021, we incurred $1.0 million of incremental operating costs for our antenna facility in the United Kingdom due to the impact of the COVID-19 pandemic. Although operations in the United Kingdom have largely resumed, we continue to experience lingering impacts from COVID-19 and the shut-down.

Included in consolidated cost of sales for fiscal 2021 and 2020 are provisions for excess and obsolete inventory of $4.4 million and $1.6 million, respectively. As discussed in *"Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Policies - Provisions for Excess and Obsolete Inventory,"* we regularly review our inventory and record a provision for excess and obsolete inventory based on historical and projected usage trends.

Our consolidated gross profit, as a percentage of consolidated net sales, depends on the volume of sales, sales mix and related gross profit for each segment, and therefore is inherently difficult to forecast.

Selling, General and Administrative Expenses. Selling, general and administrative expenses were $111.8 million and $117.1 million for fiscal 2021 and 2020, respectively, representing a decrease of $5.3 million, or 4.5%. As a percentage of consolidated net sales, selling, general and administrative expenses were 19.2% and 19.0% for fiscal 2021 and 2020, respectively.

In fiscal 2021, we incurred $2.8 million of restructuring costs to streamline our operations, including $1.8 million related to the ongoing relocation of certain of our satellite earth station production facilities to a new 146,000 square foot facility in Chandler, Arizona, and $1.0 million for the consolidation of certain administrative and operating functions in our tactical communications technologies product line. In addition, we received $3.1 million of legal expense recoveries from insurance in fiscal 2021. In fiscal 2020, we incurred estimated contract settlement costs of $0.4 million principally related to the repositioning of our location technologies solutions offerings in our Commercial Solutions segment. Excluding these costs in both periods, our selling, general and administrative expenses would have been $112.1 million, or 19.3% of consolidated net sales in fiscal 2021 and $116.7 million, or 18.9% of consolidated net sales in fiscal 2020. The decrease in our selling, general and administrative expenses, in dollars, is largely attributable to the benefit from our efforts to streamline business operations in both of our segments.

Selling, general and administrative expenses in fiscal 2022 will likely be impacted by greater than normal proxy solicitation costs as well expenses associated with the CEO change that was announced on October 4, 2021.

Amortization of stock-based compensation expenses recorded as selling, general and administrative expenses was $8.1 million in fiscal 2021 as compared to $7.5 million in fiscal 2020. Amortization of stock-based compensation is not allocated to our two reportable operating segments.

Research and Development Expenses. Research and development expenses were $49.1 million and $52.2 million for fiscal 2021 and 2020, respectively, representing a decrease of $3.1 million, or 5.9%. As a percentage of consolidated net sales, research and development expenses were 8.4% and 8.5% for fiscal 2021 and 2020, respectively.

For fiscal 2021 and 2020, research and development expenses of $41.0 million and $45.2 million, respectively, related to our Commercial Solutions segment, and $7.1 million and $6.1 million, respectively, related to our Government Solutions segment. The remaining research and development expenses of $1.0 million and $0.9 million in fiscal 2021 and 2020, respectively, related to the amortization of stock-based compensation expense.

During fiscal 2021, our Government Solutions segment incurred $0.3 million of strategic emerging technology costs for next-generation satellite technology to advance our solutions offerings to be used with new broadband satellite constellations. We are evaluating this new market in relation to our long-term business strategies, and we may incur additional costs in fiscal 2022.

Whenever possible, we seek customer funding for research and development to adapt our products to specialized customer requirements. During fiscal 2021 and 2020, customers reimbursed us $13.6 million and $11.9 million, respectively, which is not reflected in the reported research and development expenses but is included in net sales with the related costs included in cost of sales.

Amortization of Intangibles. Amortization relating to intangible assets with finite lives was $21.0 million (of which $17.1 million was for the Commercial Solutions segment and $4.0 million was for the Government Solutions segment) for fiscal 2021 and $21.6 million (of which $17.3 million was for the Commercial Solutions segment and $4.3 million was for the Government Solutions segment) for fiscal 2020.

Our Business Outlook for Fiscal 2022 assumes total annual amortization of intangible assets of approximately $21.8 million.

Acquisition Plan Expenses. During fiscal 2021 and 2020, we incurred acquisition plan expenses of $100.3 million and $20.8 million, respectively. For fiscal 2021, $88.3 million related to the previously announced litigation and merger termination with Gilat, including $70.0 million paid in cash to Gilat. The remaining costs in fiscal 2021 primarily related to the April 2021 settlement of litigation associated with our 2019 acquisition of GD NG-911 as well as the March 2021 closing of our acquisition of UHP. These expenses are primarily recorded in our Unallocated segment.

Operating (Loss) Income. Operating loss for fiscal 2021 was $68.3 million as compared to operating income of $15.2 million for fiscal 2020. Operating income (loss) by reportable segment is shown in the table below:

	Fiscal Years Ended July 31,							
	2021	2020	2021	2020	2021	2020	2021	2020
($ in millions)	Commercial Solutions		Government Solutions		Unallocated		Consolidated	
Operating income (loss)	$ 41.1	$ 34.8	$ 8.4	$ 20.0	$ (117.8)	$ (39.6)	$ (68.3)	$ 15.2
Percentage of related net sales	11.4 %	9.8 %	3.8 %	7.6 %	NA	NA	NA	2.5 %

The increase in our Commercial Solutions segment operating income, both in dollars and as a percentage of the related segment net sales, for fiscal 2021 was driven primarily by higher net sales, lower research and development expenses and lower amortization of intangibles, offset in part by a lower gross profit percentage and $1.8 million of restructuring costs, as discussed above.

The decrease in our Government Solutions segment operating income, both in dollars and as a percentage of related segment net sales, for fiscal 2021 was driven primarily by lower net sales, a lower gross profit percentage, higher research and development expenses and $1.0 million of restructuring costs, partially offset by lower amortization of intangibles, as discussed above.

The increase in unallocated expenses for fiscal 2021 as compared to fiscal 2020 is primarily due to acquisition plan expenses, as discussed above. Amortization of stock-based compensation was $10.0 million and $9.3 million, respectively, for fiscal 2021 and 2020.

Excluding (i) $100.3 million of acquisition plan expenses; (ii) $2.8 million of restructuring costs; (iii) $1.0 million of incremental operating costs due to the impact of COVID-19; and (iv) $0.3 million of strategic emerging technology costs, consolidated operating income for fiscal 2021 would have been $36.1 million, or 6.2% of consolidated net sales. Excluding $20.8 million of acquisition plan expenses and $0.4 million of estimated contract settlement costs, consolidated operating income for fiscal 2020 would have been $36.4 million, or 5.9% of consolidated net sales. The increase, as a percentage of consolidated net sales, was due primarily to lower selling, general and administrative expenses and lower research and development expenses, offset in part by lower consolidated net sales, as discussed above.

GAAP operating income in fiscal 2022 will be impacted by both start-up expenses and restructuring costs associated with the opening of Comtech's new high-volume technology manufacturing centers, as well as COVID-19 related costs. In addition, as discussed above, we will likely incur greater than normal proxy solicitation costs in fiscal 2022 as well expenses associated with the CEO change that was announced on October 4, 2021.

Interest Expense and Other. Interest expense was $6.8 million and $6.1 million for fiscal 2021 and 2020, respectively. Interest expense for fiscal 2021 includes $1.2 million of incremental interest expense related to a now terminated financing commitment letter. Excluding the $1.2 million, our effective interest rate (including amortization of deferred financing costs) in fiscal 2021 was approximately 2.8%. Our current cash borrowing rate (which excludes the amortization of deferred financing costs) under our existing Credit Facility approximates 2.4%.

Interest (Income) and Other. Interest (income) and other for both fiscal 2021 and 2020 was nominal. All of our available cash and cash equivalents are currently invested in bank deposits and money market deposit accounts which, at this time, are currently yielding an immaterial interest rate.

(Benefit from) Provision for Income Taxes. For fiscal 2021, we recorded a tax benefit of $1.5 million as compared to a tax provision of $2.3 million for fiscal 2020. Our effective tax rate for fiscal 2021 (excluding discrete tax items) was nominal, as compared to 37.0% for fiscal 2020. The decrease from 37.0% is primarily due to the exclusion of the $70.0 million of acquisition plan expense paid to Gilat during our first quarter of fiscal 2021, as such amount was considered an unusual and infrequently occurring item. In addition, given the nature of such item, no financial statement benefit was recorded for the $70.0 million payment to Gilat.

During fiscal 2021, we recorded a net discrete tax benefit of $1.6 million, primarily related to: (i) the release of valuation allowances previously established on deferred tax assets of one of our Canadian subsidiaries; (ii) the finalization of certain tax accounts in connection with the filing of our fiscal 2020 federal, state and foreign income tax returns; and (iii) the settlement of certain stock-based awards during fiscal 2021.

During fiscal 2020, we recorded a net discrete tax benefit of $1.2 million, primarily related to the finalization of certain tax accounts in connection with the filing of our fiscal 2019 federal and state income tax returns. These benefits were offset, in part, by: (i) the remeasurement of certain foreign deferred taxes resulting from the passage of legislation that increased the statutory tax rate in the United Kingdom from 17.0% to 19.0%; and (ii) the settlement of certain stock-based awards during fiscal 2020.

Our federal income tax returns for fiscal 2018 through 2020 are subject to potential future IRS audit. None of our state income tax returns prior to fiscal 2017 are subject to audit. Future tax assessments or settlements could have a material adverse effect on our consolidated results of operations and financial condition.

Net (Loss) Income. During fiscal 2021, our consolidated net loss was $73.5 million as compared to net income of $7.0 million during fiscal 2020.

Adjusted EBITDA. Adjusted EBITDA (both in dollars and as a percentage of related net sales) for both fiscal 2021 and 2020 are shown in the table below (numbers in the table may not foot due to rounding):

	Fiscal Years Ended July 31,							
	2021	2020	2021	2020	2021	2020	2021	2020
($ in millions)	Commercial Solutions		Government Solutions		Unallocated		Consolidated	
Net income (loss)	$ 39.2	34.4	9.6	20.2	(122.2)	(47.6)	$ (73.5)	7.0
Provision for (benefit from) income taxes	1.8	0.4	(1.4)	(0.1)	(1.9)	2.0	(1.5)	2.3
Interest (income) and other	0.1	—	0.2	(0.2)	(0.4)	—	(0.1)	(0.2)
Interest expense	—	—	0.1	—	6.8	6.0	6.8	6.1
Amortization of stock-based compensation	—	—	—	—	10.0	9.3	10.0	9.3
Amortization of intangibles	17.1	17.3	4.0	4.3	—	—	21.0	21.6
Depreciation	7.5	8.3	1.6	1.4	0.3	0.8	9.4	10.6
Estimated contract settlement costs	—	0.4	—	—	—	—	—	0.4
Acquisition plan expenses	(1.1)	0.8	—	—	101.3	20.0	100.3	20.8
Restructuring costs	1.8	—	1.0	—	—	—	2.8	—
COVID-19 related costs	—	—	1.0	—	—	—	1.0	—
Strategic emerging technology costs	—	—	0.3	—	—	—	0.3	—
Adjusted EBITDA	$ 66.3	61.7	16.3	25.7	(6.1)	(9.6)	$ 76.5	77.8
Percentage of related net sales	18.4 %	17.4 %	7.4 %	9.8 %	NA	NA	13.2 %	12.6 %

The increase in consolidated Adjusted EBITDA, as a percentage of consolidated net sales, for fiscal 2021 as compared to fiscal 2020 is primarily attributable to a higher percentage of consolidated net sales in our Commercial Solutions segment, as well as lower consolidated selling, general and administrative expenses and research and development expenses, as discussed above.

The increase in our Commercial Solutions segment's Adjusted EBITDA, both in dollars and as a percentage of related segment net sales, is due to higher segment net sales, lower research and development expense and the benefit from cost savings measures previously implemented, partially offset by a lower gross profit percentage, as discussed above.

The decrease in our Government Solutions segment's Adjusted EBITDA, both in dollars and as a percentage of related segment net sales, was driven primarily by lower segment net sales, a lower gross profit percentage and higher research and development expenses, as discussed above.

Because our consolidated Adjusted EBITDA, as a percentage of consolidated net sales, depends on the volume of sales, sales mix and related gross profit for each individual segment as well as unallocated spending, it is inherently difficult to forecast.

Reconciliations of our GAAP consolidated operating income (loss), net income (loss) and net income (loss) per diluted share for fiscal 2021 and 2020 to the corresponding non-GAAP measures are shown in the tables below (numbers and per share amounts in the table may not foot due to rounding). Non-GAAP net income and EPS reflect non-GAAP provisions for income taxes based on full year results, as adjusted for the non-GAAP reconciling items included in the tables below. We evaluate our non-GAAP effective income tax rate on an ongoing basis, and it can change from time to time. Our non-GAAP effective income tax rate can differ materially from our GAAP effective income tax rate. In addition, due to the GAAP net loss for the period, non-GAAP income per diluted share adjustments for fiscal 2021 were computed using 25,885,000 weighted average diluted shares outstanding during the respective period:

	Fiscal 2021		
($ in millions, except for per share amount)	Operating (Loss) Income	Net (Loss) Income	Net (Loss) Income per Diluted Share
Reconciliation of GAAP to Non-GAAP Earnings:			
GAAP measures, as reported	$(68.3)	$(73.5)	$ (2.86)
Acquisition plan expenses	100.3	93.3	3.60
Restructuring costs	2.8	2.1	0.08
COVID-19 related costs	1.0	0.8	0.03
Strategic emerging technology costs	0.3	0.3	0.01
Interest expense	—	0.9	0.04
Net discrete tax benefit	—	(1.6)	(0.06)
Non-GAAP measures	$ 36.1	$ 22.4	$ 0.86

	Fiscal 2020		
($ in millions, except for per share amount)	Operating Income	Net Income	Net Income per Diluted Share
Reconciliation of GAAP to Non-GAAP Earnings:			
GAAP measures, as reported	$ 15.2	$ 7.0	$ 0.28
Estimated contract settlement costs	0.4	0.3	0.01
Acquisition plan expenses	20.8	13.1	0.53
Net discrete tax benefit	—	(1.2)	(0.05)
Non-GAAP measures	$ 36.4	$ 19.2	$ 0.77

Our Adjusted EBITDA is a Non-GAAP measure that represents earnings (loss) before income taxes, interest (income) and other, write-off of deferred financing costs, interest expense, amortization of stock-based compensation, amortization of intangibles, depreciation expense, estimated contract settlement costs, settlement of intellectual property litigation, acquisition plan expenses, restructuring costs, COVID-19 related costs, strategic emerging technology costs (for next-generation satellite technology), facility exit costs, strategic alternatives analysis expenses and other. Our definition of Adjusted EBITDA may differ from the definition of EBITDA or Adjusted EBITDA used by other companies and therefore may not be comparable to similarly titled measures used by other companies. Adjusted EBITDA is also a measure frequently requested by our investors and analysts. We believe that investors and analysts may use Adjusted EBITDA, along with other information contained in our SEC filings, in assessing our performance and comparability of our results with other companies. Our Non-GAAP measures for consolidated operating income, net income and net income per diluted share reflect the GAAP measures as reported, adjusted for certain items as described. These Non-GAAP financial measures have limitations as an analytical tool as they exclude the financial impact of transactions necessary to conduct our business, such as the granting of equity compensation awards, and are not intended to be an alternative to financial measures prepared in accordance with GAAP. These measures are adjusted as described in the reconciliation of GAAP to Non-GAAP in the above tables, but these adjustments should not be construed as an inference that all of these adjustments or costs are unusual, infrequent or non-recurring. Non-GAAP financial measures should be considered in addition to, and not as a substitute for or superior to, financial measures determined in accordance with GAAP. Investors are advised to carefully review the GAAP financial results that are disclosed in our SEC filings. We have not quantitatively reconciled our fiscal 2022 Adjusted EBITDA target to the most directly comparable GAAP measure because items such as stock-based compensation, adjustments to the provision for income taxes, amortization of intangibles, interest expense and estimated proxy solicitation related costs, which are specific items that impact these measures, have not yet occurred, are out of our control, or cannot be predicted. For example, quantification of stock-based compensation expense requires inputs such as the number of shares granted and market price that are not currently ascertainable. Accordingly, reconciliations to the Non-GAAP forward looking metrics are not available without unreasonable effort and such unavailable reconciling items could significantly impact our financial results.

Comparison of Fiscal 2020 and 2019

Net Sales. Consolidated net sales were $616.7 million and $671.8 million for fiscal 2020 and 2019, respectively, representing a decrease of $55.1 million, or 8.2%. The period-over-period decrease in net sales reflects lower net sales in both our Government Solutions and Commercial Solutions segments. Net sales by operating segment are discussed below.

<u>*Commercial Solutions*</u>
Net sales in our Commercial Solutions segment were $353.7 million for fiscal 2020, as compared to $357.3 million for fiscal 2019, a decrease of $3.6 million, or 1.0%. Our Commercial Solutions segment represented 57.4% of consolidated net sales for fiscal 2020 as compared to 53.2% for fiscal 2019. Our book-to-bill ratio (a measure defined as bookings divided by net sales) for this segment was 0.91. Period-to-period fluctuations in bookings are normal for this segment.

Net sales of our satellite ground station technologies in fiscal 2020 were significantly lower than fiscal 2019, primarily due to the business impact of COVID-19 pandemic.

Net sales of our public safety and location technology solutions were higher in fiscal 2020 as compared to fiscal 2019. Sales in fiscal 2020 of these products included an insignificant amount of sales from our February 2020 acquisition of NG-911. During fiscal 2020, the business impact of COVID-19 on our public safety and location technology solutions was relatively muted.

Bookings, sales and profitability in our Commercial Solutions segment can fluctuate from period-to-period due to many factors, including changes in the general business environment. As such, period-to-period comparisons of our results may not be indicative of a trend or future performance.

<u>*Government Solutions*</u>
Net sales in our Government Solutions segment were $263.0 million for fiscal 2020 as compared to $314.5 million for fiscal 2019, a decrease of $51.5 million or 16.4%. Our Government Solutions segment represented 42.6% of consolidated net sales for fiscal 2020 as compared to 46.8% for fiscal 2019. Our book-to-bill ratio (a measure defined as bookings divided by net sales) in this segment for fiscal 2020 was 1.0. Period-to-period fluctuations in bookings are normal for this segment.

Net sales of our tactical communications technologies during fiscal 2020 were significantly lower as compared to fiscal 2019, due primarily to the timing of and performance on orders related to our $98.6 million U.S. Army global field support contract and lower sales for high reliability Electrical, Electronic and Electromechanical (“EEE”) satellite based space components. While fiscal 2020 benefited from a nominal amount of sales related to our new X/Y satellite tracking antenna product line acquired in connection with our January 2020 acquisition of CGC, it also reflected the absence of sales of our next generation MT-2025 mobile satellite transceivers. In fiscal 2019, we sold $11.7 million of such transceivers.

Net sales of our high-performance transmission technologies in fiscal 2020 were slightly lower as compared to fiscal 2019 with increased sales of solid-state, high-power amplifiers and related switching technologies being offset by lower sales of our over-the-horizon microwave system technologies.

Bookings, sales and profitability in our Government Solutions segment can fluctuate dramatically from period-to-period due to many factors, including unpredictable funding, deployment and technology decisions by our U.S. and international government customers. As such, period-to-period comparisons of our results may not be indicative of a trend or future performance.

Geography and Customer Type
Sales by geography and customer type, as a percentage of related sales, for the fiscal years ended July 31, 2020 and 2019 are as follows:

	Fiscal Years Ended July 31,					
	2020	2019	2020	2019	2020	2019
	Commercial Solutions		Government Solutions		Consolidated	
U.S. government	14.8 %	19.2 %	65.0 %	63.8 %	36.2 %	40.1 %
Domestic	58.9 %	53.9 %	15.2 %	12.5 %	40.3 %	34.5 %
Total U.S.	73.7 %	73.1 %	80.2 %	76.3 %	76.5 %	74.6 %
International	26.3 %	26.9 %	19.8 %	23.7 %	23.5 %	25.4 %
Total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %

Sales to U.S. government customers include sales to the DoD, intelligence and civilian agencies, as well as sales directly to or through prime contractors.

Domestic sales include sales to commercial customers, as well as to U.S. state and local governments. Except for the U.S. government, there were no customers that represented more than 10.0% of consolidated net sales for fiscal 2020 and 2019.

International sales for fiscal 2020 and 2019 (which include sales to U.S. domestic companies for inclusion in products that are sold to international customers) were $145.1 million and $170.6 million, respectively. Except for the U.S., no individual country (including sales to U.S. domestic companies for inclusion in products that are sold to a foreign country) represented more than 10% of consolidated net sales for fiscal 2020 and 2019.

Gross Profit. Gross profit was $226.8 million and $247.4 million for fiscal 2020 and 2019, respectively. The decrease of $20.6 million primarily reflects the decline in consolidated net sales, as discussed above.

Gross profit, as a percentage of consolidated net sales, for both fiscal 2020 and fiscal 2019 was 36.8%. Our gross profit in fiscal 2020 reflects minor increases in costs due to a lower level of factory utilization and higher logistics and operational costs resulting from COVID-19. Gross profit, as a percentage of related segment net sales, is further discussed below.

Our Commercial Solutions segment's gross profit, as a percentage of related segment net sales, for fiscal 2020 decreased in comparison to fiscal 2019. The decrease in gross profit percentage in fiscal 2020 primarily reflects changes in products and services mix, primarily lower net sales of our satellite ground station technologies.

Our Government Solutions segment's gross profit, as a percentage of related segment net sales, for fiscal 2020 increased slightly in comparison to fiscal 2019. The slight increase in gross profit percentage primarily reflects a more favorable mix of mission-critical technology solutions, despite lower fiscal 2020 sales of such solutions.

Included in consolidated cost of sales for fiscal 2020 and 2019 are provisions for excess and obsolete inventory of $1.6 million and $6.0 million, respectively. As discussed in *"Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Policies - Provisions for Excess and Obsolete Inventory,"* we regularly review our inventory and record a provision for excess and obsolete inventory based on historical and projected usage trends.

Selling, General and Administrative Expenses. Selling, general and administrative expenses were $117.1 million and $128.6 million for fiscal 2020 and 2019, respectively, representing a decrease of $11.5 million, or 8.9%. As a percentage of consolidated net sales, selling, general and administrative expenses were 19.0% and 19.1% for fiscal 2020 and 2019, respectively.

Our selling, general and administrative expenses in fiscal 2020 reflect certain cost reduction actions taken in response to lower levels of business activity resulting from COVID-19. These cost savings measures included reducing global headcount, temporarily reducing salaries, suspending merit increases and eliminating certain discretionary expenses. Severance costs related to these actions were not material. Although we incurred lower travel expenses in fiscal 2020 than we did in fiscal 2019, there was a corresponding increase in information technology costs and COVID-19 safety related expenses.

In fiscal 2020, we incurred estimated contract settlement costs of $0.4 million related to the repositioning of our location technologies solutions offerings in our Commercial Solutions segment. In fiscal 2019, we incurred $6.4 million of such costs and also incurred $1.4 million of facility exit costs in our Government Solutions segment. Excluding all of these costs in both periods, our selling, general and administrative expenses would have been $116.7 million, or 18.9% of consolidated net sales for fiscal 2020 and $120.8 million, or 18.0% of consolidated net sales for fiscal 2019.

Amortization of stock-based compensation expenses recorded as selling, general and administrative expenses was $7.5 million in fiscal 2020 as compared to $9.3 million in fiscal 2019. This year-over-year decrease largely occurred due to the temporary suspension of stock-based awards for certain employees to reduce expenses as a response to COVID-19. Amortization of stock-based compensation is not allocated to our two reportable operating segments.

Research and Development Expenses. Research and development expenses were $52.2 million and $56.4 million for fiscal 2020 and 2019, respectively, representing a decrease of $4.2 million, or 7.4%. As a percentage of consolidated net sales, research and development expenses were 8.5% and 8.4% for fiscal 2020 and 2019, respectively.

For fiscal 2020 and 2019, research and development expenses of $45.2 million and $48.2 million, respectively, related to our Commercial Solutions segment, and $6.1 million and $7.2 million, respectively, related to our Government Solutions segment. The remaining research and development expenses of $0.9 million and $1.0 million in fiscal 2020 and 2019, respectively, related to the amortization of stock-based compensation expense.

Whenever possible, we seek customer funding for research and development to adapt our products to specialized customer requirements. During fiscal 2020 and 2019, customers reimbursed us $11.9 million and $14.7 million, respectively, which is not reflected in the reported research and development expenses but is included in net sales with the related costs included in cost of sales.

Amortization of Intangibles. Amortization relating to intangible assets with finite lives was $21.6 million (of which $17.3 million was for the Commercial Solutions segment and $4.3 million was for the Government Solutions segment) for fiscal 2020 and $18.3 million (of which $14.9 million was for the Commercial Solutions segment and $3.4 million was for the Government Solutions segment) for fiscal 2019. The increase of $3.3 million was primarily due to our 2019 acquisitions of Solacom and the GD NG-911 business and our 2020 acquisition of CGC.

Settlement of Intellectual Property Litigation. In fiscal 2019, we recorded a $3.2 million benefit in our Unallocated segment as a result of a favorable ruling issued by the U.S. Court of Appeals for the Federal Circuit related to a legacy TCS intellectual property matter. There was no comparable adjustment in fiscal 2020.

Acquisition Plan Expenses. During fiscal 2020, we incurred acquisition plan expenses of $20.8 million, primarily related to the now terminated acquisition of Gilat (including significant litigation expenses) and our acquisition of UHP, which was completed in March 2021. Fiscal 2020 acquisition plan expenses also include costs associated with our completed acquisitions of CGC and NG-911. In fiscal 2019, our acquisition plan expenses of $5.9 million primarily related to our acquisitions of Solacom and the GD NG-911 business. Except for $0.8 million of fiscal 2020 costs which are reflected in our Commercial Solutions segment, all of these expenses are primarily recorded in our Unallocated segment.

Operating Income. Operating income for fiscal 2020 was $15.2 million as compared $41.4 million for fiscal 2019. Operating income by reportable segment is shown in the table below:

	Fiscal Years Ended July 31,							
	2020	2019	2020	2019	2020	2019	2020	2019
($ in millions)	Commercial Solutions		Government Solutions		Unallocated		Consolidated	
Operating income (loss)	$ 34.8	$ 36.1	$ 20.0	$ 29.0	$ (39.6)	$ (23.6)	$ 15.2	$ 41.4
Percentage of related net sales	9.8 %	10.1 %	7.6 %	9.2 %	NA	NA	2.5 %	6.2 %

The Commercial Solutions segment's operating income for fiscal 2020 and fiscal 2019 reflects $0.4 million and $6.4 million of estimated contract settlement costs, as discussed above. The segment's operating income for fiscal 2020 also reflects $0.8 million of the total acquisition plan expenses, as discussed above. Excluding such charges, operating income in our Commercial Solutions segment would have been $36.0 million, or 10.2% of related segment net sales for fiscal 2020, and $42.5 million, or 11.9% of related segment net sales for fiscal 2019. The decrease in operating income, both in dollars and as a percentage of related segment net sales, was driven primarily by lower net sales and a lower gross profit percentage and increased amortization of intangibles, as discussed above.

The Government Solutions segment's operating income for fiscal 2019 included $1.4 million of facility exit costs, as discussed above. Excluding such facility exist costs, operating income in our Government Solutions segment for fiscal 2019 would have been $30.4 million, or 9.7% of related segment net sales as compared to fiscal 2020 operating income of $20.0 million, or 7.6% of related segment net sales. The decrease in our Government Solutions segment's operating income, both in dollars and as a percentage of related segment net sales, in fiscal 2020 was driven primarily by lower net sales and increased amortization of intangibles, as discussed above.

The increase in unallocated expenses in fiscal 2020 as compared to fiscal 2019 is primarily due to higher acquisition plan expenses and the absence of the $3.2 million benefit related to the fiscal 2019 favorable ruling issued by the U.S. Court of Appeals for the Federal Circuit for a legacy TCS intellectual property matter, as discussed above. Amortization of stock-based compensation was $9.3 million and $11.4 million, respectively, for fiscal 2020 and 2019.

Excluding the $20.8 million of acquisition plan expenses and $0.4 million of estimated contract settlement costs, consolidated operating income for fiscal 2020 would have been $36.4 million, or 5.9% of consolidated net sales. Excluding net costs of $10.5 million, consisting of $6.4 million of estimated contract settlement costs, $1.4 million of facility exit costs, $5.9 million of acquisition plan expenses and a $3.2 million benefit related to a legacy TCS intellectual property matter (all of which are discussed above), consolidated operating income for fiscal 2019 would have been $51.8 million, or 7.7% of consolidated net sales. The decrease in dollars, and as a percentage of consolidated net sales, was due primarily to lower consolidated net sales and increased amortization of intangibles, as discussed above.

Interest Expense and Other. Interest expense was $6.1 million and $9.2 million for fiscal 2020 and 2019, respectively. The decrease is attributable to lower interest rates and lower outstanding indebtedness under our existing Credit Facility. Our effective interest rate (including amortization of deferred financing costs) in fiscal 2020 was approximately 3.9%.

Write-off of Deferred Financing Costs. In connection with the establishment of a new Credit Facility in fiscal 2019, we wrote-off $3.2 million of deferred financing costs which primarily related to the term loan portion of our prior credit facility. There was no comparable charge in fiscal 2020.

Interest (Income) and Other. Interest (income) and other for both fiscal 2020 and 2019 was nominal.

Provision for Income Taxes. The provision for income taxes for fiscal 2020 and 2019 was $2.3 million and $3.9 million, respectively. Our effective tax rate (excluding discrete tax items) for fiscal 2020 and 2019 was 37.0% and 23.25%, respectively. The increase from 23.25% to 37.0% is primarily due to the decrease in fiscal 2020 consolidated net sales.

During fiscal 2020, we recorded a net discrete tax benefit of $1.2 million, primarily related to the finalization of certain tax accounts in connection with the filing of our fiscal 2019 federal and state income tax returns. These benefits were offset, in part, by (i) the remeasurement of certain foreign deferred taxes resulting from the passage of legislation that increased the statutory tax rate in the United Kingdom from 17.0% to 19.0% and (ii) the settlement of certain stock-based awards during fiscal 2020.

During fiscal 2019, we recorded a net discrete tax benefit of $2.9 million, primarily related to: (i) the favorable resolution of the IRS' audit of our fiscal 2016 federal income tax return; (ii) discrete tax benefits for stock-based awards that were settled during fiscal 2019; and (iii) the reversal of tax contingencies no longer required due to the expiration of applicable statutes of limitation.

Net Income. During fiscal 2020, consolidated net income was $7.0 million as compared to $25.0 million during fiscal 2019.

Adjusted EBITDA. Adjusted EBITDA (both in dollars and as a percentage of related net sales) for both fiscal 2020 and 2019 are shown in the table below (numbers in the table may not foot due to rounding):

	Fiscal Years Ended July 31,							
	2020	2019	2020	2019	2020	2019	2020	2019
($ in millions)	Commercial Solutions		Government Solutions		Unallocated		Consolidated	
Net income (loss)	$ 34.4	35.9	20.2	29.0	(47.6)	(39.9)	$ 7.0	25.0
Provision for (benefit from) income taxes	0.4	—	(0.1)	—	2.0	3.9	2.3	3.9
Interest (income) and other	—	0.1	(0.2)	—	—	—	(0.2)	—
Write-off of deferred financing costs	—	—	—	—	—	3.2	—	3.2
Interest expense	—	0.1	—	—	6.0	9.2	6.1	9.2
Amortization of stock-based compensation	—	—	—	—	9.3	11.4	9.3	11.4
Amortization of intangibles	17.3	14.9	4.3	3.4	—	—	21.6	18.3
Depreciation	8.3	9.3	1.4	1.9	0.8	0.8	10.6	11.9
Estimated contract settlement costs	0.4	6.4	—	—	—	—	0.4	6.4
Settlement of intellectual property litigation	—	—	—	—	—	(3.2)	—	(3.2)
Acquisition plan expenses	0.8	—	—	—	20.0	5.9	20.8	5.9
Facility exit costs	—	—	—	1.4	—	—	—	1.4
Adjusted EBITDA	$ 61.7	66.6	25.7	35.6	(9.6)	(8.8)	$ 77.8	93.5
Percentage of related net sales	17.4 %	18.6 %	9.8 %	11.3 %	NA	NA	12.6 %	13.9 %

The decrease in consolidated Adjusted EBITDA, both in dollars and as a percentage of consolidated net sales, for fiscal 2020 as compared to fiscal 2019 is primarily attributable to lower consolidated net sales, as discussed above.

The decrease in our Commercial Solutions segment's Adjusted EBITDA, both in dollars and as a percentage of related segment net sales, is due to lower net sales and a lower gross profit percentage, as discussed above.

The decrease in our Government Solutions segment's Adjusted EBITDA, both in dollars and as a percentage of related segment net sales, was primarily driven by lower net sales, as discussed above.

Reconciliations of our GAAP consolidated operating income, net income and net income per diluted share for fiscal 2020 and 2019 to the corresponding non-GAAP measures are shown in the tables below (numbers and per share amounts in the table may not foot due to rounding). Non-GAAP net income and EPS reflect non-GAAP provisions for income taxes based on full year results, as adjusted for the non-GAAP reconciling items included in the tables below. We evaluate our non-GAAP effective income tax rate on an ongoing basis, and it can change from time to time. Our non-GAAP effective income tax rate can differ materially from our GAAP effective income tax rate:

	Fiscal 2020		
($ in millions, except for per share amount)	Operating Income	Net Income	Net Income per Diluted Share
Reconciliation of GAAP to Non-GAAP Earnings:			
GAAP measures, as reported	$ 15.2	$ 7.0	$ 0.28
Estimated contract settlement costs	0.4	0.3	0.01
Acquisition plan expenses	20.8	13.1	0.53
Net discrete tax benefit	—	(1.2)	(0.05)
Non-GAAP measures	$ 36.4	$ 19.2	$ 0.77

	Fiscal 2019		
($ in millions, except for per share amount)	Operating Income	Net Income	Net Income per Diluted Share
Reconciliation of GAAP to Non-GAAP Earnings:			
GAAP measures, as reported	$ 41.4	$ 25.0	$ 1.03
Estimated contract settlement costs	6.4	4.9	0.20
Settlement of intellectual property litigation	(3.2)	(2.5)	(0.10)
Facility exit costs	1.4	1.1	0.04
Acquisition plan expenses	5.9	4.5	0.19
Write-off of deferred financing costs	—	2.5	0.10
Net discrete tax benefit	—	(2.9)	(0.12)
Non-GAAP measures	$ 51.8	$ 32.6	$ 1.34

Our Adjusted EBITDA is a Non-GAAP measure that represents earnings (loss) before income taxes, interest (income) and other, write-off of deferred financing costs, interest expense, amortization of stock-based compensation, amortization of intangibles, depreciation expense, estimated contract settlement costs, settlement of intellectual property litigation, acquisition plan expenses, restructuring costs, COVID-19 related costs, strategic emerging technology costs (for next-generation satellite technology), facility exit costs, strategic alternatives analysis expenses, proxy solicitation related costs and other. Our definition of Adjusted EBITDA may differ from the definition of EBITDA or Adjusted EBITDA used by other companies and therefore may not be comparable to similarly titled measures used by other companies. Adjusted EBITDA is also a measure frequently requested by our investors and analysts. We believe that investors and analysts may use Adjusted EBITDA, along with other information contained in our SEC filings, in assessing our performance and comparability of our results with other companies. Our Non-GAAP measures for consolidated operating income, net income and net income per diluted share reflect the GAAP measures as reported, adjusted for certain items as described. These Non-GAAP financial measures have limitations as an analytical tool as they exclude the financial impact of transactions necessary to conduct our business, such as the granting of equity compensation awards, and are not intended to be an alternative to financial measures prepared in accordance with GAAP. These measures are adjusted as described in the reconciliation of GAAP to Non-GAAP in the above tables, but these adjustments should not be construed as an inference that all of these adjustments or costs are unusual, infrequent or non-recurring. Non-GAAP financial measures should be considered in addition to, and not as a substitute for or superior to, financial measures determined in accordance with GAAP. Investors are advised to carefully review the GAAP financial results that are disclosed in our SEC filings.

Liquidity and Capital Resources

Our cash and cash equivalents were $30.9 million at July 31, 2021 as compared to $47.9 million at July 31, 2020, a decrease of $17.0 million. The decrease in cash and cash equivalents during fiscal 2021 was driven by the following:

- Net cash used in operating activities was $40.6 million for fiscal 2021 as compared to net cash provided by operating activities of $52.8 million for fiscal 2020. During fiscal 2021, in connection with an agreement to terminate our acquisition of Gilat, we made a $70.0 million payment to Gilat. Excluding such payment, net cash provided by operating activities would have been $29.4 million. The period-over-period decrease in cash flow from operating activities (excluding the $70.0 million payment to Gilat) reflects lower consolidated net sales and overall changes in net working capital requirements, principally the timing of shipments, billings and payments.

- Net cash used in investing activities for fiscal 2021 was $15.5 million as compared to $20.2 million for fiscal 2020. During fiscal 2021, we paid $0.8 million in connection with our acquisition of CGC Technology Limited ("CGC"). During fiscal 2020, we paid $13.0 million in connection with our acquisitions of CGC and NG-911, net of cash acquired. The remaining portion of net cash used in both periods relates to expenditures for property, plant and equipment upgrades and enhancements. Also, offsetting cash used during the most recent period is $1.3 million of net cash acquired from our acquisition of UHP, as discussed further in "*Notes to Consolidated Financial Statements - Note (2) - Acquisitions - UHP Networks Inc.*" included in "*Part II - Item 8. - Financial Statements and Supplementary Data*" included in this Annual Report on Form 10-K.

- Net cash provided by financing activities was $39.1 million for fiscal 2021 as compared to net cash used in financing activities of $30.3 million for fiscal 2020. During fiscal 2021, we had net borrowings under our Credit Facility of $51.5 million, primarily due to the $70.0 million payment we made to Gilat. During fiscal 2021 and 2020, we paid $10.3 million and $10.0 million, respectively, in cash dividends to our stockholders. We also made $2.8 million and $5.3 million of payments to remit employees' statutory tax withholding requirements related to the net settlement of stock-based awards during the fiscal 2021 and 2020, respectively.

The Credit Facility is discussed below and in *"Notes to Consolidated Financial Statements - Note (7) - Credit Facility"* included in *"Part II - Item 8. - Financial Statements and Supplementary Data"* included in this Annual Report on Form 10-K.

Our investment policy relating to our cash and cash equivalents is intended to minimize principal loss while at the same time maximize the income we receive without significantly increasing risk. To minimize risk, we generally invest our cash and cash equivalents in money market mutual funds (both government and commercial), certificates of deposit, bank deposits, and U.S. Treasury securities. Many of our money market mutual funds invest in direct obligations of the U.S. government, bank securities guaranteed by the Federal Deposit Insurance Corporation, certificates of deposit and commercial paper and other securities issued by other companies. While we cannot predict future market conditions or market liquidity, we believe our investment policies are appropriate in the current environment. Ultimately, the availability of our cash and cash equivalents is dependent on a well-functioning liquid market.

As of July 31, 2021, our material short-term cash requirements primarily consist of: (i) capital investments and tenant improvements in connection with the opening of our two new high-volume technology manufacturing centers, (ii) interest payments under our Credit Facility; (iii) payments related to lease commitments; (iv) our ongoing working capital needs, including income tax payments and other capital expenditures; and (v) payment of accrued quarterly dividends.

In addition to making fiscal 2022 capital investments for our two new high-volume manufacturing centers, we plan to make significant capital expenditures to build-out cloud-based computer networks to support our NG-911 contract wins for the states of Pennsylvania, South Carolina and Arizona. Aggregate capital investments for these and other initiatives in fiscal 2022 are expected to approximate $30.0 million.

As discussed further in "*Notes to Consolidated Financial Statements - Note (2) - Acquisitions - UHP Networks Inc.*" included in "*Part II - Item 8. - Financial Statements and Supplementary Data*" included in this Annual Report on Form 10-K, we completed our acquisition of UHP on March 2, 2021. Pursuant to the stock purchase agreement, the initial upfront payment of approximately $24.0 million was paid mostly in shares of our common stock, with a nominal amount paid in cash. In August 2021, approximately $4.0 million of the $5.0 million hold back amount previously placed into escrow at closing, was paid to the seller in shares of our common stock, as the conditions pursuant to the stock purchase agreement were met. The stock purchase agreement also provides for an earn-out payment of up to $9.0 million, also payable at our option in cash and or shares of our common stock, if specified sales milestones are reached during the eighteen-month period ending September 30, 2022.

On March 3, 2021, we filed a shelf registration statement with the SEC for the sale of 1,381,567 shares of our common stock by the selling shareholder of UHP. The shelf registration statement was declared effective by the SEC as of March 15, 2021. To-date, we issued 1,026,567 shares pursuant to this shelf registration statement to satisfy initial payment and escrow arrangements under the terms of the stock purchase agreement.

In December 2018, we filed a $400.0 million shelf registration statement with the SEC for the sale of various types of securities, including debt. The shelf registration statement was declared effective by the SEC as of December 14, 2018.

As of July 31, 2021, we were authorized to repurchase up to an additional $100.0 million of our common stock, pursuant to a $100.0 million stock repurchase program. The new $100.0 million stock repurchase program has no time restrictions and repurchases may be made from time to time in open-market or privately negotiated transactions, or by other means in accordance with federal securities laws. There were no repurchases of our common stock during fiscal 2021 and 2020.

On September 29, 2020, December 9, 2020, March 11, 2021 and June 8, 2021, our Board of Directors declared a dividend of $0.10 per common share, which was paid on October 27, 2020, February 19, 2021, May 21, 2021 and August 20, 2021, respectively.

On October 4, 2021, our Board of Directors declared a dividend of $0.10 per common share, payable on November 12, 2021 to stockholders of record at the close of business on October 13, 2021. Future Common Stock dividends remain subject to compliance with financial covenants under our Credit Facility, as well as Board approval.

Our material long-term cash requirements primarily consist of mandatory interest payments pursuant to our Credit Facility and lease commitments.

We have historically met both our short-term and long-term cash requirements with funds provided by a combination of cash and cash equivalent balances, cash generated from operating activities and cash generated from financing transactions. Based on our anticipated level of future sales and operating income, we believe that our existing cash and cash equivalent balances, our cash generated from operating activities and amounts potentially available under our Credit Facility will be sufficient to meet both our currently anticipated short-term and long-term operating cash requirements.

Although it is difficult to predict the terms and conditions of financing that may be available in the future, should our short-term or long-term cash requirements increase beyond our current expectations, we believe that we would have sufficient access to credit from financial institutions and/or financing from public and private debt and equity markets.

Credit Facility

On October 31, 2018, we entered into a First Amended and Restated Credit Agreement (the "Credit Facility") with a syndicate of lenders.

The Credit Facility provides a senior secured loan facility of up to $550.0 million consisting of: (i) a revolving loan facility ("Revolving Loan Facility") with a borrowing limit of $300.0 million; (ii) an accordion feature allowing us to borrow up to an additional $250.0 million; (iii) a $35.0 million letter of credit sublimit; and (iv) a swingline loan credit sublimit of $25.0 million.

The Credit Facility matures on October 31, 2023 (the "Revolving Maturity Date"). If we issue new unsecured debt in excess of $5.0 million with a maturity date that is less than 91 days from October 31, 2023, the Revolving Maturity Date would automatically accelerate so that it would be 91 days earlier than the maturity date of the new unsecured debt.

As of July 31, 2021, the amount outstanding under our Credit Facility was $201.0 million, which is reflected in the non-current portion of long-term debt on our Consolidated Balance Sheet. At July 31, 2021, we had $1.5 million of standby letters of credit outstanding under our Credit Facility related to our guarantees of future performance on certain customer contracts and no outstanding commercial letters of credit. During fiscal 2021, we had outstanding balances under the Credit Facility ranging from $125.0 million to $219.0 million.

Borrowings under the Credit Facility shall be either: (i) Alternate Base Rate borrowings, which bear interest from the applicable borrowing date at a rate per annum equal to (x) the greatest of (a) the Prime Rate (as defined) in effect on such day, (b) the Federal Funds Effective Rate (as defined) in effect on such day plus 1/2 of 1.00% per annum and (c) the Adjusted LIBO Rate (as defined) on such day (or, if such day is not a business day, the immediately preceding business day) plus 1.00% per annum, plus (y) the Applicable Rate (as defined), or (ii) Eurodollar borrowings, which bear interest from the applicable borrowing date at a rate per annum equal to (x) the Adjusted LIBO Rate for such interest period plus (y) the Applicable Rate. Determination of the Applicable Rate is based on a pricing grid that is dependent upon our Secured Leverage Ratio (as defined) as of the end of each fiscal quarter for which consolidated financial statements have been most recently delivered.

The Credit Facility contains customary representations, warranties and affirmative covenants. The Credit Facility also contains customary negative covenants, subject to negotiated exceptions, including but not limited to: (i) liens, (ii) investments, (iii) indebtedness, (iv) significant corporate changes, including mergers and acquisitions, (v) dispositions, (vi) restricted payments, including stockholder dividends, and (vii) certain other restrictive agreements. The Credit Facility also contains certain financial covenants and customary events of default (subject to grace periods, as appropriate), such as payment defaults, cross-defaults to other material indebtedness, bankruptcy and insolvency, the occurrence of a defined change in control and the failure to observe the negative covenants and other covenants related to the operation of our business. In addition, under certain circumstances, we may be required to enter into amendments to the Credit Facility in connection with any further syndication of the Credit Facility.

The Credit Facility provides for, among other things: (i) no scheduled payments of principal until maturity; (ii) a maximum Secured Leverage Ratio of 3.75x trailing twelve months ("TTM") Adjusted Earnings Before Interest, Taxes, Depreciation and Amortization ("Adjusted EBITDA") and a Maximum Total Leverage Ratio of 4.50x TTM Adjusted EBITDA, each with no step downs; and (iii) a Minimum Interest Expense Coverage Ratio of 3.25x TTM Adjusted EBITDA.

As of July 31, 2021, our Secured Leverage Ratio was 2.53x TTM Adjusted EBITDA compared to the maximum allowable Secured Leverage Ratio of 3.75x TTM Adjusted EBITDA. Our Interest Expense Coverage Ratio as of July 31, 2021 was 13.05x TTM Adjusted EBITDA compared to the Minimum Interest Expense Coverage Ratio of 3.25x TTM Adjusted EBITDA.

The obligations under the Credit Facility are guaranteed by certain of our domestic and foreign subsidiaries (the "Guarantors"). As collateral security under the Credit Facility and the guarantees thereof, we and the Guarantors have granted to the administrative agent, for the benefit of the lenders, a lien on, and first priority security interest in, substantially all of our tangible and intangible assets.

Capitalized terms used but not defined herein have the meanings set forth for such terms in the Credit Facility and the Prior Credit Facility, which have been documented and filed with the SEC.

Off-Balance Sheet Arrangements
As of July 31, 2021, we did not have any off-balance sheet arrangements within the meaning of Item 303 of Regulation S-K.

Commitments

In the normal course of business, other than as discussed below, we routinely enter into binding and non-binding purchase obligations primarily covering anticipated purchases of inventory and equipment. We do not expect that these commitments, as of July 31, 2021, will materially adversely affect our liquidity.

At July 31, 2021, cash payments due under long-term obligations (including estimated interest expense on our Credit Facility), excluding purchase orders that we entered into in our normal course of business, are as follows:

	Obligations Due by Fiscal Years or Maturity Date (in thousands)				
	Total	2022	2023 and 2024	2025 and 2026	After 2026
Credit Facility - principal payments	$ 201,000	—	201,000	—	—
Credit Facility - interest payments	11,537	5,133	6,404	—	—
Operating and finance lease obligations	56,705	10,408	14,689	10,798	20,810
Contractual cash obligations	$ 269,242	15,541	222,093	10,798	20,810

As discussed further in "*Notes to Consolidated Financial Statements - Note (7) - Credit Facility*" included in "*Part II - Item 8. - Financial Statements and Supplementary Data,*" included in this Annual Report on Form 10-K, our Credit Facility provides a senior secured loan facility of up to $550.0 million consisting of: (i) a revolving loan facility ("Revolving Loan Facility") with a borrowing limit of $300.0 million; (ii) an accordion feature allowing us to borrow up to an additional $250.0 million; (iii) a $35.0 million letter of credit sublimit; and (iv) a swingline loan credit sublimit of $25.0 million. The Credit Facility matures on October 31, 2023 (the "Revolving Maturity Date"). In addition, if we issue new unsecured debt in excess of $5.0 million with a maturity date that is less than 91 days from October 31, 2023, the Revolving Maturity Date would automatically accelerate so that it would be 91 days earlier than the maturity date of the new unsecured debt. At July 31, 2021, we have approximately $1.5 million of standby letters of credit outstanding under our Credit Facility related to our guarantees of future performance on certain customer contracts. Such amounts are not included in the above table.

As discussed further in "*Notes to Consolidated Financial Statements - Note (15) - Stockholders' Equity*" included in "*Part II - Item 8. - Financial Statements and Supplementary Data,*" included in this Annual Report on Form 10-K, on October 4, 2021, our Board of Directors declared a dividend of $0.10 per common share, payable on November 12, 2021 to stockholders of record at the close of business on October 13, 2021. Future Common Stock dividends remain subject to compliance with financial covenants under our Credit Facility, as well as Board approval.

As discussed further in "*Notes to Consolidated Financial Statements - Note (2) - Acquisitions - UHP Networks Inc.*" included in "*Part II - Item 8. - Financial Statements and Supplementary Data*" included in this Annual Report on Form 10-K, we completed our acquisition of UHP on March 2, 2021. Pursuant to the stock purchase agreement, the initial upfront payment of approximately $24.0 million was paid mostly in shares of our common stock, with a nominal amount paid in cash. In August 2021, approximately $4.0 million of the $5.0 million hold back amount previously placed into escrow at closing, was paid to the seller in shares of our common stock, as the conditions pursuant to the stock purchase agreement were met. The stock purchase agreement also provides for an earn-out payment of up to $9.0 million, also payable at our option in cash and or shares of our common stock, if specified sales milestones are reached during the eighteen-month period ending September 30, 2022.

In the ordinary course of business, we include indemnification provisions in certain of our customer contracts. Pursuant to these agreements, we have agreed to indemnify, hold harmless and reimburse the indemnified party for certain losses suffered or incurred by the indemnified party, including but not limited to losses related to third-party intellectual property claims. It is not possible to determine the maximum potential amount under these agreements due to a history of nominal claims in the Comtech legacy business and the unique facts and circumstances involved in each particular agreement.

As discussed further in "*Notes to Consolidated Financial Statements - Note (12) - Commitments and Contingencies,*" included in "*Part II - Item 8.- Financial Statements and Supplementary Data*," included in this Annual Report on Form 10-K, we are subject to a number of indemnification demands and we are incurring ongoing legal expenses in connection with these matters. Our insurance policies may not cover the cost of defending indemnification claims or providing indemnification. As a result, pending or future claims asserted against us by a party that we have agreed to indemnify could result in legal costs and damages that could have a material adverse effect on our consolidated results of operations and financial condition.

We have change in control agreements, severance agreements and indemnification agreements with certain of our executive officers and certain key employees. All of these agreements may require payments by us, in certain circumstances, including, but not limited to, a change in control of our Company or an involuntary termination of employment without cause. These costs are not included in the above table.

Our Consolidated Balance Sheet at July 31, 2021 includes total liabilities of $9.2 million for uncertain tax positions, including interest, any or all of which may result in a cash payment. The future payments related to uncertain tax positions have not been presented in the table above due to the uncertainty of the amounts and timing of any potential cash settlement with the taxing authorities.

Recent Accounting Pronouncements

We are required to prepare our consolidated financial statements in accordance with the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") which is the source for all authoritative U.S. generally accepted accounting principles, which is commonly referred to as "GAAP." The FASB ASC is subject to updates by the FASB, which are known as Accounting Standards Updates ("ASUs").

As further discussed in "*Notes to Consolidated Financial Statements – Note (1)(n) - Adoption of Accounting Standards and Updates*" included in "*Part II - Item 8. - Financial Statements and Supplementary Data,*" included in this Annual Report on Form 10-K, during fiscal 2021, we adopted:

- FASB ASU No. 2016-13, which requires companies to utilize an impairment model (current expected credit loss ("CECL")) for most financial assets measured at amortized cost and certain other financial instruments, which include, but are not limited to trade receivables and contract assets. This accounting standard replaced the incurred loss model with a model that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to estimate those losses. On August 1, 2020, we adopted this ASU on a modified-retrospective basis and recorded a $0.2 million decrease to opening retained earnings.

- FASB ASU No. 2018-13, which modifies the disclosure requirements for fair value measurements in Topic 820. On August 1, 2020, we adopted this ASU. Our adoption of this ASU did not have any impact on our consolidated financial statements or disclosures.

- FASB ASU No. 2018-15, which aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal use software (and hosting arrangements that include an internal use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected by the amendments in this ASU. On August 1, 2020, we adopted this ASU. Our adoption of this ASU did not have any impact on our consolidated financial statements or disclosures.

- FASB ASU No. 2018-17, which requires entities to consider indirect interests held through related parties under common control on a proportional basis, rather than as the equivalent of a direct interest in its entirety, when determining whether a decision-making fee is a variable interest. On August 1, 2020, we adopted this ASU. Our adoption of this ASU did not have any impact on our consolidated financial statements or disclosures.

- FASB ASU No. 2018-18, which clarifies when certain transactions between collaborative arrangement participants should be accounted for under ASC 606 and incorporates unit-of-account guidance consistent with ASC 606 to aid in this determination. The ASU also precludes entities from presenting consideration from transactions with a collaborator that is not a customer together with revenue recognized from contracts with customers. On August 1, 2020, we adopted this ASU. Our adoption of this ASU did not have any impact on our consolidated financial statements or disclosures.

- FASB ASU No. 2019-08, which requires that an entity measure and classify share-based payment awards granted to a customer by applying the guidance in Topic 718. The amount recorded as a reduction of the transaction price is required to be measured on the basis of the grant-date fair value of the share-based payment award. On August 1, 2020, we adopted this ASU. Our adoption of this ASU did not have any impact on our consolidated financial statements or disclosures.

In addition, the following FASB ASUs have been issued and incorporated into the FASB ASC and have not yet been adopted by us as of July 31, 2021:

- FASB ASU No. 2019-12, issued in December 2019 is intended to simplify various aspects related to accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improve consistent application. This ASU is effective for fiscal years beginning after December 15, 2020. Our adoption of this ASU on August 1, 2021 did not have a material impact on our consolidated financial statements or disclosures.

- FASB ASU No. 2020-01, issued in January 2020, clarifies the interactions between Topics 321, 323 and 815. This ASU clarifies that an entity should consider observable transactions that require it to either apply or discontinue the equity method of accounting for the purposes of applying the measurement alternative in accordance with Topic 321 immediately before applying or upon discontinuing the equity method. In addition, the amendments clarify the accounting for certain forward contracts and purchased options accounted for under Topic 815. This ASU is effective for fiscal years beginning after December 15, 2020. Our adoption of this ASU on August 1, 2021 did not impact our consolidated financial statements or disclosures.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our earnings and cash flows are subject to fluctuations due to changes in interest rates primarily from borrowings under our Credit Facility. Based on the amount of outstanding debt under our Credit Facility, a hypothetical change in interest rates by 10% would change interest expense by approximately $0.5 million over a one-year period. Although we do not currently use interest rate derivative instruments to manage exposure to interest rate changes, we may choose to do so in the future in connection with our Credit Facility.

Our earnings and cash flows are also subject to fluctuations due to changes in interest rates on our investment of available cash balances. As of July 31, 2021, we had cash and cash equivalents of $30.9 million, which consisted of cash and highly-liquid money market deposit accounts. Many of these investments are subject to fluctuations in interest rates, which could impact our results. Based on our investment portfolio balance as of July 31, 2021, a hypothetical change in interest rates of 10% would have a nominal impact on interest income over a one-year period. Ultimately, the availability of our cash and cash equivalents is dependent on a well-functioning liquid market.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Reports of Independent Registered Public Accounting Firm, Consolidated Financial Statements, Notes to Consolidated Financial Statements and Related Financial Schedule are listed in the Index to Consolidated Financial Statements and Schedule annexed hereto.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this Annual Report on Form 10-K, an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures was carried out by us under the supervision and with the participation of our management, including our Chief Executive Officer and Chairman and Chief Financial Officer. Based on that evaluation, our Chief Executive Officer and Chairman and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by the report to provide reasonable assurance that the information required to be disclosed by us in reports filed under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms and is accumulated and communicated to management, as appropriate, to allow timely decisions regarding required disclosure. A system of controls, no matter how well designed and operated, cannot provide absolute assurance that the objectives of the system of controls are met, and no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within a company have been detected.

Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of our internal control over financial reporting as of July 31, 2021. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in *Internal Control – Integrated Framework (2013)*. Based on our assessment, we determined that, as of July 31, 2021, our internal control over financial reporting was effective based on those criteria.

Deloitte and Touche LLP, our independent registered public accounting firm, has performed an audit of our internal control over financial reporting as of July 31, 2021 based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the COSO. This audit is required to be performed in accordance with the standards of the Public Company Accounting Oversight Board (United States). Our independent auditors were given unrestricted access to all financial records and related data. Deloitte's audit reports appear on pages F-2 and F-3 of this annual report.

Changes In Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act that occurred during our fiscal quarter ended July 31, 2021, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

As described in the supplement to the Company's Proxy Statement for Fiscal 2020 Annual Meeting of Stockholders filed with the SEC on December 1, 2020, on November 30, 2020, our Executive Compensation Committee approved amending all existing change-in-control agreements to reflect feedback and recommendations of Institutional Shareholder Services regarding payments and benefits provided under such agreements (the "2020 Amendments"). In addition to the changes previously disclosed, the 2020 Amendments also provided that, for our executive officers who are parties to Tier 1 change-in-control agreements (including Messrs. Fred Kornberg, Michael Porcelain and Michael Bondi) (such agreements, the "Amended CIC Agreements"), in the event that the officer's employment is terminated by us without cause or terminated by the officer for "good reason" or "modified good reason" (as defined in the agreement), the "performance awards" (as defined in the agreement) will vest at the maximum level of performance.

The foregoing description of the Amended CIC Agreements in this Annual Report on Form 10-K is a summary of, and is qualified in its entirety by, the terms of the Amended CIC Agreement. A copy of the form of the Amended CIC Agreement is attached hereto as Exhibit 10.(l)(1) and incorporated herein by reference.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Certain information concerning directors and officers is incorporated by reference to our Proxy Statement for the Annual Meeting of Stockholders (the "Proxy Statement") which will be filed with the Securities and Exchange Commission no more than 120 days after the close of our fiscal year.

ITEM 11. EXECUTIVE COMPENSATION

Information regarding executive compensation is incorporated by reference to the Proxy Statement, which will be filed with the Securities and Exchange Commission no more than 120 days after the close of our fiscal year.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information regarding securities authorized for issuance under equity compensation plans and certain information regarding security ownership of certain beneficial owners and management is incorporated by reference to the Proxy Statement, which will be filed with the Securities and Exchange Commission no more than 120 days after the close of our fiscal year.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information regarding certain relationships and related transactions is incorporated by reference to the Proxy Statement, which will be filed with the Securities and Exchange Commission no more than 120 days after the close of our fiscal year.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Information regarding principal accountant fees and services is incorporated by reference to the Proxy Statement, which will be filed with the Securities and Exchange Commission no more than 120 days after the close of our fiscal year.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) (1) The Registrant's financial statements together with a separate index are annexed hereto.
(2) The Financial Statement Schedule listed in a separate index is annexed hereto.
(3) Exhibits required by Item 601 of Regulation S-K are listed below.

Exhibit Number	Description of Exhibit	Incorporated By Reference to Exhibit
3(a)(i)	Restated Certificate of Incorporation of the Registrant	Exhibit 3(a)(i) to the Registrant's 2006 Form 10-K
3(a)(ii)	Third Amended and Restated By-Laws of the Registrant, as of September 26, 2017	Exhibit 3(a)(ii) to the Registrant's 2017 Form 10-K
4(a)(vi)	Description of Comtech Telecommunication Corp.'s Securities Registered Pursuant to Section 12 of the Exchange Act	
10(a)(1)*	Seventh Amended and Restated Employment Agreement, dated March 4, 2020, between the Registrant and Fred Kornberg	Exhibit 10.1 to the Registrant's Form 8-K, filed March 4, 2020
10(a)(2)*	Lease agreement, dated September 23, 2011, on the Melville, New York Facility	Exhibit 10(s) to the Registrant's 2011 Form 10-K
10(b)*	Second Amended and Restated 2001 Employee Stock Purchase Plan	Exhibit A to the Registrant's Proxy Statement, filed November 16, 2018
10(c)*	2000 Stock Incentive Plan, Amended and Restated, Effective November 15, 2019, as amended effective August 4, 2020, as further amended August 10, 2021	
10(d)(1)*	Form of Stock Option Agreement pursuant to the 2000 Stock Incentive Plan	Exhibit 10(f)(7) to the Registrant's 2005 Form 10-K
10(d)(2)*	Form of Stock Option Agreement for Non-employee Directors pursuant to the 2000 Stock Incentive Plan - 2020	Exhibit 10(d)(3) to the Registrant's Form 2020 Form 10-K
10(e)*	Form of Performance Share Agreement pursuant to the 2000 Stock Incentive Plan	Exhibit 10(s) to the Registrant's 2012 Form 10-K
10(f)(1)*	Form of Long-Term Performance Share Award Agreement pursuant to the 2000 Stock Incentive Plan - 2018	Exhibit 10(f)(2) to the Registrant's 2019 Form 10-K
10(g)(1)*	Form of Restricted Stock Agreement for Employees pursuant to the 2000 Stock Incentive Plan	Exhibit 10(y) to the Registrant's 2016 Form 10-K
10(g)(2)*	Form of Restricted Stock Agreement for Non-employee Directors pursuant to the 2000 Stock Incentive Plan	Exhibit 10(ab) to the Registrant's 2016 Form 10-K
10(g)(3)*	Form of Restricted Stock Agreement (eligible for dividend equivalents) for Non-employee Directors pursuant to the 2000 Stock Incentive Plan - 2019	Exhibit 10(g)(3) to the Registrant's 2019 Form 10-K
10(h)(1)*	Form of Restricted Stock Unit Agreement for Employees pursuant to the 2000 Stock Incentive Plan - 2017	Exhibit 10(h)(1) to the Registrant's 2017 Form 10-K
10(h)(2)*	Form of Restricted Stock Unit Agreement for Employees pursuant to the 2000 Stock Incentive Plan - 2016	Exhibit 10(z) to the Registrant's 2016 Form 10-K
10(h)(3)*	Form of Restricted Stock Unit Agreement for Non-employee Directors pursuant to the 2000 Stock Incentive Plan	Exhibit 10.2 to the Registrant's Form 10-Q, filed June 7, 2012
10(h)(4)*	Form of Restricted Stock Unit Agreement (eligible for dividend equivalents) for Non-employee Directors pursuant to the 2000 Stock Incentive Plan	Exhibit 10(aa) to the Registrant's 2016 Form 10-K
10(h)(5)*	Form of Restricted Stock Unit Agreement (eligible for dividend equivalents) for Non-employee Directors pursuant to the 2000 Stock Incentive Plan - 2013	Exhibit 10(x) to the Registrant's 2013 Form 10-K

Exhibit Number	Description of Exhibit	Incorporated By Reference to Exhibit
10(h)(6)*	Form of Restricted Stock Unit Agreement (eligible for dividend equivalents) for Non-employee Directors pursuant to the 2000 Stock Incentive Plan - 2020	Exhibit 10.1 to the Registrant's Form 10-Q, filed June 3, 2020
10(i)(1)*	Form of Stock Unit Agreement for Non-employee Directors pursuant to the 2000 Stock Incentive Plan	Exhibit 10.1 to the Registrant's Form 10-Q, filed June 7, 2012
10(i)(2)*	Form of Stock Unit Agreement (eligible for dividend equivalents) for Non-employee Directors pursuant to the 2000 Stock Incentive Plan	Exhibit 10(v) to the Registrant's 2013 Form 10-K
10(j)(1)*	Form of Share Unit Agreement (eligible for dividend equivalents) for Employees pursuant to the 2000 Stock Incentive Plan	Exhibit 10.2 to the Registrant's Form 10-Q, filed December 9, 2013
10(j)(2)*	Form of Share Unit Agreement (eligible for dividend equivalents) for Employees pursuant to the 2000 Stock Incentive Plan - 2018	Exhibit 10(j)(2) to the Registrant's 2018 Form 10-K
10(k)*	Form of Indemnification Agreement between the Registrant and the Named Executive Officers and Certain Other Executive Officers	Exhibit 10.1 to Registrant’s Form 8-K, filed on March 8, 2007
10(l)(1)*	Form of Change-in-Control Agreement (Tier 1)	
10(l)(2)*	Form of Change-in-Control Agreement (Tier 2) between the Registrant and Certain Named Executive Officers (other than the CEO) and Certain Other Executive Officers	
10(l)(3)*	Form of Change-in-Control Agreement (Tier 2) between the Registrant and Certain Named Executive Officers (other than the CEO) and Certain Other Executive Officers (California Employees)	Exhibit 10.3 to the Registrant’s Form 8-K, filed June 7, 2017
10(l)(4)*	Form of Change-in-Control Agreement (Tier 2) between the Registrant and Certain Named Executive Officers (other than the CEO) and Certain Other Executive Officers (Divisional/ Subsidiary Presidents)	Exhibit 10.4 to the Registrant’s Form 8-K, filed June 7, 2017
10(l)(5)*	Form of Change-in-Control Agreement (Tier 2) between the Registrant and Certain Named Executive Officers (other than the CEO) and Certain Other Executive Officers (California Divisional/Subsidiary Presidents)	Exhibit 10.5 to the Registrant’s Form 8-K, filed June 7, 2017
10(l)(6)*	Form of Change-in-Control Agreement (Tier 3) between the Registrant and Certain Non-Executive Officers	Exhibit 10.6 to the Registrant’s Form 8-K, filed June 7, 2017
10(m)*	Retirement and Transition Agreement	Exhibit 10.1 to the Registrant's Form 10-Q, filed December 4, 2019
10(n)	Agreement and Plan of Merger, dated as of November 22, 2015, among Comtech Telecommunications Corp., Typhoon Acquisition Corp. and TeleCommunication Systems, Inc.	Exhibit 2.1 to the Registrant’s Form 8-K, filed November 23, 2015
10(o)	First Amended and Restated Credit Agreement, dated as of October 31, 2018, among Comtech Telecommunications Corp., the lenders party thereto and Citibank N.A., as administrative agent, issuing bank and swingline lender.	Exhibit 10.1 to the Registrant’s Form 8-K, filed November 5, 2018
21	Subsidiaries of the Registrant	
23.1	Consent of Independent Registered Public Accounting Firm	

Exhibit Number	Description of Exhibit	Incorporated By Reference to Exhibit
31.1	Certification of CEO and Chairman pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	
32.1	Certification of CEO and Chairman pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	
32.2	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	
101.INS	The following financial statements from the Company's Annual Report on Form 10-K for the fiscal year ended July 31, 2021, formatted in inline XBRL: (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Stockholders' Equity, (iv) Consolidated Statement of Cash Flows, and (v) Notes to Consolidated Financial Statements	
101.SCH	Inline XBRL Taxonomy Extension Schema Document	
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase Document	
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	
104	Cover Page Interactive Data File (embedded within the Inline XBRL document and contained in Exhibit 101)	

* Management contract or compensatory plan or arrangement.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities and Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

COMTECH TELECOMMUNICATIONS CORP.

October 4, 2021	By: /s/Fred Kornberg
(Date)	Fred Kornberg, Chairman of the Board and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

	Signature	Title
October 4, 2021	/s/Fred Kornberg	Chairman of the Board
(Date)	Fred Kornberg	Chief Executive Officer (Principal Executive Officer)
October 4, 2021	/s/Michael A. Bondi	Chief Financial Officer
(Date)	Michael A. Bondi	(Principal Financial and Accounting Officer)
October 4, 2021	/s/Judy Chambers	Director
(Date)	Judy Chambers	
October 4, 2021	/s/Edwin Kantor	Director
(Date)	Edwin Kantor	
October 4, 2021	/s/Ira S. Kaplan	Director
(Date)	Ira S. Kaplan	
October 4, 2021	/s/Lisa Lesavoy	Director
(Date)	Lisa Lesavoy	
October 4, 2021	/s/Robert G. Paul	Director
(Date)	Robert G. Paul	
October 4, 2021	/s/Dr. Yacov A. Shamash	Director
(Date)	Dr. Yacov A. Shamash	
October 4, 2021	/s/Lawrence J. Waldman	Director
(Date)	Lawrence J. Waldman	

COMTECH TELECOMMUNICATIONS CORP. AND SUBSIDIARIES

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Schedules not listed above have been omitted because they are either not applicable or the required information has been provided elsewhere in the consolidated financial statements or notes thereto.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of
Comtech Telecommunications Corp.
Melville, New York

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Comtech Telecommunications Corp. and subsidiaries (the "Company") as of July 31, 2021 and 2020, the related consolidated statements of operations, stockholders' equity, and cash flows, for each of the three years in the period ended July 31, 2021, and the related notes and the schedule listed in the Index at Item 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of July 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended July 31, 2021, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of July 31, 2021, based on criteria established in *Internal Control — Integrated Framework* (*2013*) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated October 4, 2021, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Net Sales – Over Time Accounting Using the Cost-to-Cost Measure for Specific Identified Material Contracts — Refer to Note 1 to the financial statements.

Critical Audit Matter Description

The Company's determination of revenue recognition for specific identified material contracts accounted for over time involves estimating the total costs needed to complete the specific identified contracts and updating those estimates throughout the life of those specific identified contracts. This requires management to make significant estimates related to forecasts of future costs for the identified specific contracts. Changes in these estimates for the identified specific contracts could have a significant impact on the Company's results of operations.

Given the significant judgment and estimates used in management's projections, auditing the Company's estimates at completion and estimates to completion involved especially subjective judgment.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the Company’s determination of revenue recognition for specific identified material contracts accounted for over time included the following, among others:

- We tested the design and operating effectiveness of the controls over the development of the initial contract cost to complete estimate and monitoring of estimates at completion and estimates to completion.

- For each specific identified material contract selected, we performed the following:

  - Evaluated whether the contract was properly included in management’s calculation of overtime revenue based on the terms and conditions of each contract, including whether continuous transfer of control to the customer occurred as progress was made toward fulfilling the performance obligation.

  - Compared the transaction prices to the consideration expected to be received based on current rights and obligations under the contracts and any modifications that were agreed upon with the customers.

  - Tested management’s identification of distinct performance obligations by evaluating whether the underlying goods, services, or both were highly interdependent and interrelated.

  - Evaluated the estimates of total cost and profit for the performance obligation by:

    - Performing a retrospective review by comparing the estimated margins at contract inception to the actual margins as of year-end in order to assess management’s ability to accurately estimate costs.

    - Inquiring and corroborating the estimates to complete and the estimates at completion with the Project Manager (i.e., someone outside of Finance/Accounting) to understand significant variances in costs and completeness of the estimates at completion and estimates to completion.

    - Testing the estimates to complete through a combination of tests of details, in which we selected individual costs within the estimate to complete and obtained supporting documentation, and where we developed an expectation of the estimate to complete and compared it to the recorded balance.

  - Tested the accuracy and completeness of costs incurred during the current fiscal year. This testing included agreeing labor costs to employee timesheets and agreeing the labor rate to either rates agreed upon with the customer in the contract or rates from the Company's payroll records.

  - Tested the mathematical accuracy of management’s calculation of revenue for the performance obligation.

/s/ DELOITTE & TOUCHE LLP

Jericho, New York
October 4, 2021

We have served as the Company’s auditor since 2015.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of
Comtech Telecommunications Corp.
Melville, New York

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Comtech Telecommunications Corp. and subsidiaries (the "Company") as of July 31, 2021, based on criteria established in *Internal Control — Integrated Framework* (*2013*) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of July 31, 2021, based on criteria established in *Internal Control — Integrated Framework* (*2013*) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements and financial statement schedule as of and for the year ended July 31, 2021, of the Company and our report dated October 4, 2021, expressed an unqualified opinion on those financial statements and financial statement schedule.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ DELOITTE & TOUCHE LLP

Jericho, New York
October 4, 2021

COMTECH TELECOMMUNICATIONS CORP.
AND SUBSIDIARIES
Consolidated Balance Sheets
As of July 31, 2021 and 2020

Assets	2021	2020
Current assets:		
Cash and cash equivalents	$ 30,861,000	47,878,000
Accounts receivable, net	158,110,000	126,816,000
Inventories, net	80,358,000	82,302,000
Prepaid expenses and other current assets	18,167,000	20,101,000
Total current assets	287,496,000	277,097,000
Property, plant and equipment, net	35,286,000	27,037,000
Operating lease right-of-use assets, net	44,486,000	30,033,000
Goodwill	347,698,000	330,519,000
Intangibles with finite lives, net	268,699,000	258,019,000
Deferred financing costs, net	1,824,000	2,391,000
Other assets, net	7,622,000	4,551,000
Total assets	$ 993,111,000	929,647,000
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 36,193,000	23,423,000
Accrued expenses and other current liabilities	89,601,000	85,161,000
Operating lease liabilities, current	8,841,000	8,247,000
Dividends payable	2,601,000	2,468,000
Contract liabilities	66,130,000	40,250,000
Interest payable	195,000	163,000
Total current liabilities	203,561,000	159,712,000
Non-current portion of long-term debt, net	201,000,000	149,500,000
Operating lease liabilities, non-current	39,569,000	24,109,000
Income taxes payable	2,717,000	1,963,000
Deferred tax liability, net	21,230,000	17,637,000
Long-term contract liabilities	9,808,000	9,596,000
Other liabilities	14,507,000	17,831,000
Total liabilities	492,392,000	380,348,000
Commitments and contingencies (See Note 12)		
Stockholders' equity:		
Preferred stock, par value $0.10 per share; shares authorized and unissued 2,000,000	—	—
Common stock, par value $0.10 per share; authorized 100,000,000 shares; issued 41,281,812 shares and 39,924,439 shares at July 31, 2021 and 2020, respectively	4,128,000	3,992,000
Additional paid-in capital	605,439,000	569,891,000
Retained earnings	333,001,000	417,265,000
	942,568,000	991,148,000
Less:		
Treasury stock, at cost (15,033,317 shares at July 31, 2021 and 2020)	(441,849,000)	(441,849,000)
Total stockholders' equity	500,719,000	549,299,000
Total liabilities and stockholders' equity	$ 993,111,000	929,647,000

See accompanying notes to consolidated financial statements.

COMTECH TELECOMMUNICATIONS CORP.
AND SUBSIDIARIES
Consolidated Statements of Operations
Fiscal Years Ended July 31, 2021, 2020 and 2019

	2021	2020	2019
Net sales	$ 581,695,000	616,715,000	671,797,000
Cost of sales	367,737,000	389,882,000	424,357,000
Gross profit	213,958,000	226,833,000	247,440,000
Expenses:			
Selling, general and administrative	111,796,000	117,130,000	128,639,000
Research and development	49,148,000	52,180,000	56,407,000
Amortization of intangibles	21,020,000	21,595,000	18,320,000
Settlement of intellectual property litigation	—	—	(3,204,000)
Acquisition plan expenses	100,292,000	20,754,000	5,871,000
	282,256,000	211,659,000	206,033,000
Operating (loss) income	(68,298,000)	15,174,000	41,407,000
Other expenses (income):			
Interest expense	6,821,000	6,054,000	9,245,000
Write-off of deferred financing costs	—	—	3,217,000
Interest (income) and other	(139,000)	(190,000)	35,000
(Loss) income before (benefit from) provision for income taxes	(74,980,000)	9,310,000	28,910,000
(Benefit from) provision for income taxes	(1,500,000)	2,290,000	3,869,000
Net (loss) income	$ (73,480,000)	7,020,000	25,041,000
Net (loss) income per share:			
Basic	$ (2.86)	0.28	1.04
Diluted	$ (2.86)	0.28	1.03
Weighted average number of common shares outstanding – basic	25,685,000	24,798,000	24,124,000
Weighted average number of common and common equivalent shares outstanding – diluted	25,685,000	24,899,000	24,302,000

See accompanying notes to consolidated financial statements.

COMTECH TELECOMMUNICATIONS CORP.
AND SUBSIDIARIES
Consolidated Statements of Stockholders' Equity
Fiscal Years Ended July 31, 2021, 2020 and 2019

	Common Stock		Additional	Retained	Treasury Stock		Stockholders'
	Shares	Amount	Paid-in Capital	Earnings	Shares	Amount	Equity
Balance as of July 31, 2018	38,860,571	$ 3,886,000	$ 538,453,000	$ 405,194,000	15,033,317	$ (441,849,000)	$ 505,684,000
Equity-classified stock award compensation	—	—	11,427,000	—	—	—	11,427,000
Proceeds from exercises of stock options	8,100	1,000	215,000	—	—	—	216,000
Proceeds from issuance of employee stock purchase plan shares	43,316	4,000	922,000	—	—	—	926,000
Issuance of restricted stock	10,386	1,000	(1,000)	—	—	—	—
Net settlement of stock-based awards	145,119	15,000	(3,931,000)	—	—	—	(3,916,000)
Common stock issued for acquisition of Solacom Technologies, Inc. ("Solacom")	208,669	21,000	5,585,000	—	—	—	5,606,000
Cash dividends declared ($0.40 per share)	—	—	—	(9,575,000)	—	—	(9,575,000)
Accrual of dividend equivalents, net of reversal ($0.40 per share)	—	—	—	(327,000)	—	—	(327,000)
Net income	—	—	—	25,041,000	—	—	25,041,000
Balance as of July 31, 2019	39,276,161	3,928,000	552,670,000	420,333,000	15,033,317	(441,849,000)	535,082,000
Equity-classified stock award compensation	—	—	9,275,000	—	—	—	9,275,000
Proceeds from exercises of stock options	16,700	2,000	466,000	—	—	—	468,000
Proceeds from issuance of employee stock purchase plan shares	52,958	5,000	850,000	—	—	—	855,000
Issuance of restricted stock	3,319	—	—	—	—	—	—
Net settlement of stock-based awards	251,797	25,000	(4,913,000)	—	—	—	(4,888,000)
Common stock issued for acquisition of CGC Technology Limited ("CGC")	323,504	32,000	11,543,000	—	—	—	11,575,000
Cash dividends declared, net ($0.40 per share)	—	—	—	(9,794,000)	—	—	(9,794,000)
Accrual of dividend equivalents, net of reversal ($0.40 per share)	—	—	—	(294,000)	—	—	(294,000)
Net income	—	—	—	7,020,000	—	—	7,020,000
Balance as of July 31, 2020	39,924,439	3,992,000	569,891,000	417,265,000	15,033,317	(441,849,000)	549,299,000
Equity-classified stock award compensation	—	—	9,983,000	—	—	—	9,983,000
Proceeds from issuance of employee stock purchase plan shares	54,762	5,000	804,000	—	—	—	809,000
Issuance of restricted stock, net of forfeiture	35,495	4,000	(4,000)	—	—	—	—
Net settlement of stock-based awards	240,549	24,000	(4,024,000)	—	—	—	(4,000,000)
Common stock issued for acquisition of UHP Networks Inc. ("UHP")	1,026,567	103,000	28,789,000	—	—	—	28,892,000
Cash dividends declared, net ($0.40 per share)	—	—	—	(10,189,000)	—	—	(10,189,000)
Accrual of dividend equivalents, net of reversal ($0.40 per share)	—	—	—	(380,000)	—	—	(380,000)
Adoption of current expected credit loss standard	—	—	—	(215,000)	—	—	(215,000)
Net loss	—	—	—	(73,480,000)	—	—	(73,480,000)
Balance as of July 31, 2021	41,281,812	$ 4,128,000	$ 605,439,000	$ 333,001,000	15,033,317	$ (441,849,000)	$ 500,719,000

See accompanying notes to consolidated financial statements.

COMTECH TELECOMMUNICATIONS CORP.
AND SUBSIDIARIES
Consolidated Statements of Cash Flows
Fiscal Years Ended July 31, 2021, 2020 and 2019

	2021	2020	2019
Cash flows from operating activities:			
Net (loss) income	$ (73,480,000)	7,020,000	25,041,000
Adjustments to reconcile net (loss) income to net cash (used in) provided by operating activities:			
Depreciation and amortization of property, plant and equipment	9,379,000	10,561,000	11,927,000
Amortization of intangible assets with finite lives	21,020,000	21,595,000	18,320,000
Amortization of stock-based compensation	9,983,000	9,275,000	11,427,000
Amortization of deferred financing costs	736,000	737,000	1,099,000
Estimated contract settlement costs	—	444,000	6,351,000
Write-off of deferred financing costs	—	—	3,217,000
Settlement of intellectual property litigation	—	—	(3,204,000)
Changes in other liabilities	(6,633,000)	(4,133,000)	(1,056,000)
Loss on disposal of property, plant and equipment	215,000	—	144,000
(Benefit from) provision for allowance for doubtful accounts	(18,000)	(431,000)	1,136,000
Provision for excess and obsolete inventory	4,364,000	1,647,000	6,015,000
Deferred income tax (benefit) expense	(3,263,000)	860,000	4,283,000
Other	(225,000)	—	—
Changes in assets and liabilities, net of effects of business acquisitions:			
Accounts receivable	(31,223,000)	20,929,000	6,315,000
Inventories	(2,338,000)	(9,132,000)	(3,787,000)
Prepaid expenses and other current assets	(265,000)	(2,261,000)	915,000
Other assets	(4,215,000)	(719,000)	102,000
Accounts payable	11,016,000	(2,206,000)	(21,290,000)
Accrued expenses and other current liabilities	(7,886,000)	4,292,000	3,554,000
Contract liabilities	25,444,000	(6,312,000)	(127,000)
Other liabilities, non-current	3,583,000	2,422,000	(84,000)
Interest payable	32,000	(397,000)	151,000
Income taxes payable	3,136,000	(1,427,000)	(2,418,000)
Net cash (used in) provided by operating activities	(40,638,000)	52,764,000	68,031,000
Cash flows from investing activities:			
Net cash acquired from acquisition of UHP	1,304,000	—	—
Payment for acquisition of CGC, net of cash acquired	(750,000)	(11,165,000)	—
Payment for acquisition of Solacom, net of cash acquired	—	—	(25,883,000)
Payment for acquisition of the GD NG-911 business	—	(1,013,000)	(10,000,000)
Payment for acquisition of NG-911 Inc.	—	(781,000)	—
Purchases of property, plant and equipment	(16,037,000)	(7,225,000)	(8,785,000)
Net cash used in investing activities	(15,483,000)	(20,184,000)	(44,668,000)
Cash flows from financing activities:			
Net borrowings (payments) of long-term debt under Credit Facility	51,500,000	(15,500,000)	165,000,000
Net payments under Revolving Loan portion of Prior Credit Facility	—	—	(48,603,000)
Repayment of debt under Term Loan portion of Prior Credit Facility	—	—	(120,121,000)
Remittance of employees' statutory tax withholding for stock awards	(2,803,000)	(5,276,000)	(5,042,000)
Cash dividends paid	(10,334,000)	(10,020,000)	(9,789,000)
Repayment of principal amounts under finance lease and other obligations	(38,000)	(805,000)	(1,906,000)
Payment of deferred financing costs	(30,000)	—	(1,813,000)
Proceeds from issuance of employee stock purchase plan shares	809,000	855,000	935,000
Proceeds from exercises of stock options	—	468,000	216,000
Payment of shelf registration costs	—	—	(148,000)
Net cash provided by (used in) financing activities	39,104,000	(30,278,000)	(21,271,000)
			(Continued)

COMTECH TELECOMMUNICATIONS CORP.
AND SUBSIDIARIES
Consolidated Statements of Cash Flows (continued)
Fiscal Years Ended July 31, 2021, 2020 and 2019

	2021	2020	2019
Net (decrease) increase in cash and cash equivalents	$ (17,017,000)	2,302,000	2,092,000
Cash and cash equivalents at beginning of year	47,878,000	45,576,000	43,484,000
Cash and cash equivalents at end of year	$ 30,861,000	47,878,000	45,576,000
Supplemental cash flow disclosure			
Cash paid (received) during the year for:			
Interest	$ 5,987,000	5,549,000	7,669,000
Income taxes, net	$ (1,373,000)	2,875,000	2,005,000
Non-cash investing and financing activities:			
Reclass of finance lease right-of-use assets to property, plant and equipment	$ —	698,000	—
Accrued remittance of employees' statutory tax withholdings for fully-vested share units	$ 2,596,000	1,399,000	1,787,000
Cash dividends declared but unpaid (including accrual of dividend equivalents)	$ 2,981,000	2,762,000	2,733,000
Accrued additions to property, plant and equipment	$ 2,466,000	1,408,000	902,000
Issuance of restricted stock	$ 4,000	—	1,000
Common stock issued for acquisitions	$ 28,892,000	11,575,000	5,606,000
Fair value of UHP acquisition contingent earn-out consideration	$ 8,500,000	—	—
Accrued deferred financing costs	$ 139,000	—	—
Accruals related to acquisitions	$ —	1,157,000	—

See accompanying notes to consolidated financial statements.

(1) Summary of Significant Accounting and Reporting Policies

(a) Principles of Consolidation

The accompanying consolidated financial statements include the accounts of Comtech Telecommunications Corp. and its subsidiaries ("Comtech," "we," "us," or "our"), all of which are wholly-owned. All significant intercompany balances and transactions have been eliminated in consolidation.

(b) Nature of Business

We design, develop, produce and market innovative products, systems and services for advanced communications solutions. We conduct our business through two reportable operating segments: Commercial Solutions and Government Solutions.

Our business is highly competitive and characterized by rapid technological change. Our growth and financial position depends on our ability to keep pace with such changes and developments and to respond to the sophisticated requirements of an increasing variety of secure wireless communications technology users, among other things. Many of our competitors are substantially larger, and have significantly greater financial, marketing and operating resources and broader product lines than our own. A significant technological or sales breakthrough by others, including smaller competitors or new companies, could have a material adverse effect on our business. In addition, certain of our customers have technological capabilities in our product areas and could choose to replace our products with their own.

International sales expose us to certain risks, including barriers to trade, fluctuations in foreign currency exchange rates (which may make our products less price competitive), political and economic instability, availability of suitable export financing, export license requirements, tariff regulations, and other United States ("U.S.") and foreign regulations that may apply to the export of our products, as well as the generally greater difficulties of doing business abroad. We attempt to reduce the risk of doing business in foreign countries by seeking contracts denominated in U.S. dollars, advance or milestone payments, credit insurance and irrevocable letters of credit in our favor.

On October 4, 2021, we announced that our Board of Directors has appointed Michael D. Porcelain, our President and Chief Operating Officer, to be Chief Executive Officer, taking over from Fred Kornberg after a short transition period. The change of leadership is expected to occur by the end of calendar 2021, at which point Mr. Porcelain will also join our Board of Directors and continue as President. Mr. Kornberg will serve as non-executive Chairman of the Board and is expect to take on a technology advisory role. Costs associated with this leadership transition will be announced once they are finalized.

(c) Revenue Recognition

In accordance with FASB ASC 606 - Revenue from Contracts with Customers ("ASC 606"), we record revenue in an amount that reflects the consideration to which we expect to be entitled in exchange for goods or services promised to customers. Under ASC 606, we follow a five-step model to: (1) identify the contract with our customer; (2) identify our performance obligations in our contract; (3) determine the transaction price for our contract; (4) allocate the transaction price to our performance obligations; and (5) recognize revenue using one of the following two methods:

- *Over time* - We recognize revenue using the over time method when there is a continuous transfer of control to the customer over the contractual period of performance. This generally occurs when we enter into a long-term contract relating to the design, development or manufacture of complex equipment or technology platforms to a buyer's specification (or to provide services related to the performance of such contracts). Continuous transfer of control is typically supported by contract clauses which allow our customers to unilaterally terminate a contract for convenience, pay for costs incurred plus a reasonable profit and take control of work-in-process. Revenue recognized over time is generally based on the extent of progress toward completion of the related performance obligations. The selection of the method to measure progress requires judgment and is based on the nature of the products or services provided. In certain instances, typically for firm fixed-price contracts, we use the cost-to-cost measure because it best depicts the transfer of control to the customer which occurs as we incur costs on our contracts. Under the cost-to-cost measure, the extent of progress toward completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion, including warranty costs. Revenues, including estimated fees or profits, are recorded proportionally as costs are incurred. Costs to fulfill generally include direct labor, materials, subcontractor costs, other direct costs and an allocation of indirect costs. When these contracts are modified, the additional goods or services are generally not distinct from those already provided. As a result, these modifications form part of an existing contract and we must update the transaction price and our measure of progress for the single performance obligation and recognize a cumulative catch-up to revenue and gross profits.

  For over time contracts using a cost-to-cost measure of progress, we have an estimate at completion ("EAC") process in which management reviews the progress and execution of our performance obligations. This EAC process requires management judgment relative to assessing risks, estimating contract revenue and costs, and making assumptions for schedule and technical issues. Since certain contracts extend over a long period of time, the impact of revisions in revenue and or cost estimates during the progress of work may impact current period earnings through a cumulative adjustment. Additionally, if the EAC process indicates a loss, a provision is made for the total anticipated loss in the period that it becomes evident. Contract revenue and cost estimates for significant contracts are generally reviewed and reassessed at least quarterly.

  The cost-to-cost method is principally used to account for contracts in our Government Solutions segment and, to a lesser extent, certain location-based and messaging infrastructure contracts in our public safety and location technologies product line within our Commercial Solutions segment. For service-based contracts in our public safety and location technologies product line, we also recognize revenue over time. These services are typically recognized as a series of services performed over the contract term using the straight-line method, or based on our customers' actual usage of the networks and platforms which we provide.

- *Point in time* - When a performance obligation is not satisfied over time, we must record revenue using the point in time accounting method which generally results in revenue being recognized upon shipment or delivery of a promised good or service to a customer. This generally occurs when we enter into short term contracts or purchase orders where items are provided to customers with relatively quick turn-around times. Modifications to such contracts and or purchase orders, which typically provide for additional quantities or services, are accounted for as a new contract because the pricing for these additional quantities or services are based on standalone selling prices.

Point in time accounting is principally applied to contracts in our satellite ground station technologies product line (which includes satellite modems, solid-state and traveling wave tube amplifiers) and certain contracts for our solid-state, high-power RF amplifiers in our Government Solutions segment. The contracts related to these product lines do not meet the requirements for over time revenue recognition because our customers cannot utilize the equipment for its intended purpose during any phase of our manufacturing process; customers do not simultaneously receive and or consume the benefits provided by our performance; customers do not control the asset (i.e., prior to delivery, customers cannot direct the use of the asset, sell or exchange the equipment, etc.); and, although many of our contracts have termination for convenience clauses and or an enforceable right to payment for performance completed to date, our performance creates an asset with an alternative use through the point of delivery.

In determining that our equipment has alternative use, we considered the underlying manufacturing process for our products. In the early phases of manufacturing, raw materials and work in process (including subassemblies) consist of common parts that are highly fungible among many different types of products and customer applications. Finished products are either configured to our standard configuration or based on our customers' specifications. Finished products, whether built to our standard specification or to a customers' specification, can be sold to a variety of customers and across many different end use applications with minimal rework, if needed, and without incurring a significant economic loss.

When identifying a contract with our customer, we consider when it has approval and commitment from both parties, if the rights of the parties are identified, if the payment terms are identified, if it has commercial substance and if collectability is probable.

When identifying performance obligations, we consider whether there are multiple promises and how to account for them. In our contracts, multiple promises are separated if they are distinct, both individually and in the context of the contract. If multiple promises in a contract are highly interrelated or comprise a series of distinct services performed over time, they are combined into a single performance obligation. In some cases, we may also provide the customer with an additional service-type warranty, which we recognize as a separate performance obligation. Service-type warranties do not represent a significant portion of our consolidated net sales. When service-type warranties represent a separate performance obligation, the revenue is deferred and recognized ratably over the extended warranty period. Our contracts, from time-to-time, may also include options for additional goods and services. To date, these options have not represented material rights to the customer as the pricing for them reflects standalone selling prices. As a result, we do not consider options we offer to be performance obligations for which we must allocate a portion of the transaction price. In many cases, we provide assurance-type warranty coverage for some of our products for a period of at least one year from the date of delivery.

When identifying the transaction price, we typically utilize the contract's stated price as a starting point. The transaction price in certain arrangements may include estimated amounts of variable consideration, including award fees, incentive fees or other provisions that can either increase or decrease the transaction price. We estimate variable consideration as the amount to which we expect to be entitled, and we include estimated amounts in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the estimation uncertainty is resolved. The estimation of this variable consideration and determination of whether to include estimated amounts in the transaction price are based largely on an assessment of our anticipated performance and all information (e.g., historical, current and forecasted) that is reasonably available to us.

When allocating the contract's transaction price, we consider each distinct performance obligation. For contracts with multiple performance obligations, we allocate the contract's transaction price to each performance obligation using our best estimate of the standalone selling price of each distinct good or service in the contract. We determine standalone selling price based on the price at which the performance obligation is sold separately. If the standalone selling price is not observable through past transactions, we estimate the standalone selling price taking into account available information such as market conditions, including geographic or regional specific factors, competitive positioning, internal costs, profit objectives and internally approved pricing guidelines related to the performance obligations.

Most of our contracts with customers are denominated in U.S. dollars and typically are either firm fixed-price or cost reimbursable type contracts (including fixed-fee, incentive-fee and time-and-material type contracts). In almost all of our contracts with customers, we are the principal in the arrangement and report revenue on a gross basis. Transaction prices for contracts with U.S. domestic and international customers are usually based on specific negotiations with each customer and in the case of the U.S. government, sometimes based on estimated or actual costs of providing the goods or services in accordance with applicable regulations. Sales by geography and customer type, as a percentage of consolidated net sales, are as follows:

	Fiscal Years Ended July 31,		
	2021	2020	2019
United States			
U.S. government	34.6 %	36.2 %	40.1 %
Domestic	41.5 %	40.3 %	34.5 %
Total United States	76.1 %	76.5 %	74.6 %
International	23.9 %	23.5 %	25.4 %
Total	100.0 %	100.0 %	100.0 %

Sales to U.S. government customers include sales to the U.S. Department of Defense ("DoD"), intelligence and civilian agencies, as well as sales directly to or through prime contractors. Domestic sales include sales to commercial customers, as well as to U.S. state and local governments. Included in domestic sales are sales to Verizon Communications Inc. ("Verizon"). Sales to Verizon were 10.7% of consolidated net sales for fiscal 2021. Except for the U.S. government, there were no customers that represented more than 10.0% of consolidated net sales during fiscal 2020 and 2019. International sales for fiscal 2021, 2020 and 2019 (which include sales to U.S. domestic companies for inclusion in products that are sold to international customers) were $138,942,000, $145,107,000 and $170,607,000, respectively. Except for the U.S., no individual country (including sales to U.S. domestic companies for inclusion in products that are sold to a foreign country) represented more than 10.0% of consolidated net sales for fiscal 2021, 2020 and 2019.

The following tables summarize our disaggregation of revenue consistent with information reviewed by our chief operating decision-maker ("CODM") for the fiscal years ended July 31, 2021, 2020 and 2019. We believe these categories best depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors which impact our business:

	Fiscal Year Ended July 31, 2021		
	Commercial Solutions	Government Solutions	Total
Geographical region and customer type			
U.S. government	$ 52,976,000	148,105,000	$ 201,081,000
Domestic	210,493,000	31,178,000	241,671,000
Total United States	263,469,000	179,283,000	442,752,000
International	96,677,000	42,266,000	138,943,000
Total	$ 360,146,000	221,549,000	$ 581,695,000
Contract type			
Firm fixed-price	$ 357,521,000	141,367,000	$ 498,888,000
Cost reimbursable	2,625,000	80,182,000	82,807,000
Total	$ 360,146,000	221,549,000	$ 581,695,000
Transfer of control			
Point in time	$ 141,707,000	94,687,000	$ 236,394,000
Over time	218,439,000	126,862,000	345,301,000
Total	$ 360,146,000	221,549,000	$ 581,695,000

	Fiscal Year Ended July 31, 2020		
	Commercial Solutions	Government Solutions	Total
Geographical region and customer type			
U.S. government	$ 52,327,000	171,036,000	$ 223,363,000
Domestic	208,284,000	39,961,000	248,245,000
Total United States	260,611,000	210,997,000	471,608,000
International	93,119,000	51,988,000	145,107,000
Total	$ 353,730,000	262,985,000	$ 616,715,000
Contract type			
Firm fixed-price	$ 349,855,000	178,237,000	$ 528,092,000
Cost reimbursable	3,875,000	84,748,000	88,623,000
Total	$ 353,730,000	262,985,000	$ 616,715,000
Transfer of control			
Point in time	$ 142,448,000	136,518,000	$ 278,966,000
Over time	211,282,000	126,467,000	337,749,000
Total	$ 353,730,000	262,985,000	$ 616,715,000

	Fiscal Year Ended July 31, 2019		
	Commercial Solutions	Government Solutions	Total
Geographical region and customer type			
U.S. government	$ 68,534,000	200,708,000	$ 269,242,000
Domestic	192,516,000	39,432,000	231,948,000
Total United States	261,050,000	240,140,000	501,190,000
International	96,243,000	74,364,000	170,607,000
Total	$ 357,293,000	314,504,000	$ 671,797,000
Contract type			
Firm fixed-price	$ 350,850,000	231,400,000	$ 582,250,000
Cost reimbursable	6,443,000	83,104,000	89,547,000
Total	$ 357,293,000	314,504,000	$ 671,797,000
Transfer of control			
Point in time	$ 177,090,000	176,067,000	$ 353,157,000
Over time	180,203,000	138,437,000	318,640,000
Total	$ 357,293,000	314,504,000	$ 671,797,000

The timing of revenue recognition, billings and collections results in receivables, unbilled receivables and contract liabilities on our Consolidated Balance Sheet. Under typical payment terms for our contracts accounted for over time, amounts are billed as work progresses in accordance with agreed-upon contractual terms, either at periodic intervals (e.g., monthly) or upon achievement of contractual milestones. For certain contracts with provisions that are intended to protect customers in the event we do not satisfy our performance obligations, billings occur subsequent to revenue recognition, resulting in unbilled receivables. Under ASC 606, unbilled receivables constitute contract assets. There were no material impairment losses recognized on contract assets during the fiscal years ended July 31, 2021, 2020 and 2019, respectively. On large long-term contracts, and for contracts with international customers that do not do business with us regularly, payment terms typically require advanced payments and deposits. Under ASC 606, payments received from customers in excess of revenue recognized to-date results in a contract liability. These contract liabilities are not considered to represent a significant financing component of the contract because we believe these cash advances and deposits are generally used to meet working capital demands which can be higher in the earlier stages of a contract. Also, advanced payments and deposits provide us with some measure of assurance that the customer will perform on its obligations under the contract. Under the typical payment terms for our contracts accounted for at a point in time, costs are accumulated in inventory until the time of billing, which generally coincides with revenue recognition. Of the contract liability balance at July 31, 2020 and July 31, 2019, $34,545,000 and $34,225,000 was recognized as revenue during fiscal years 2021 and 2020, respectively. In fiscal 2021 and 2020, contract liabilities increased $648,000 and $6,890,000, respectively, due to business combinations discussed in *Note (2)* - "*Acquisitions*."

We recognize the incremental costs to obtain or fulfill a contract as an expense when incurred if the amortization period of the asset is one year or less. Incremental costs to obtain or fulfill contracts with an amortization period greater than one year were not material.

As commissions payable to our internal sales and marketing employees or contractors are contingent upon multiple factors, such commissions are not considered direct costs to obtain or fulfill a contract with a customer and are expensed as incurred in selling, general and administrative expenses on our Consolidated Statements of Operations. As for commissions payable to our third-party sales representatives related to large long-term contracts, we do consider these types of commissions both direct and incremental costs to obtain and fulfill such contracts. Therefore, such commissions are included in total estimated costs at completion for such contracts and expensed over time through cost of sales on our Consolidated Statements of Operations.

Remaining performance obligations represent the transaction price of firm orders for which work has not been performed as of the end of a fiscal period. Remaining performance obligations, which we refer to as backlog, exclude unexercised contract options and potential orders under indefinite delivery / indefinite quantity ("IDIQ") contracts. As of July 31, 2021, the aggregate amount of the transaction price allocated to remaining performance obligations was $658,896,000 (which represents the amount of our consolidated backlog). We estimate that a substantial portion of our remaining performance obligations at July 31, 2021 will be completed and recognized as revenue during the next twenty-four month period, with the rest thereafter. During fiscal 2021, revenue recognized from performance obligations satisfied, or partially satisfied, in previous periods (for example due to changes in the transaction price) was not material.

(d) Cash and Cash Equivalents

Our cash equivalents are short-term, highly liquid investments that are both readily convertible to known amounts of cash and have insignificant risk of change in value as a result of changes in interest rates. Our cash and cash equivalents, as of July 31, 2021 and 2020, amounted to $30,861,000 and $47,878,000, respectively, and primarily consist of bank deposits and money market deposit accounts insured by the Federal Deposit Insurance Corporation. Cash equivalents are carried at cost, which approximates fair value.

(e) Inventories

Our inventories are stated at the lower of cost and net realizable value, the latter of which is defined as the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. Our inventories are reduced to their estimated net realizable value by a charge to cost of sales in the period such excess costs are determined. Our inventories are principally recorded using either average or standard costing methods.

Work-in-process (including our contracts-in-progress) and finished goods inventory reflect all accumulated production costs, which are comprised of direct production costs and overhead, and is reduced by amounts recorded in cost of sales as the related revenue is recognized. Indirect costs relating to long-term contracts, which include expenses such as general and administrative, are charged to expense as incurred and are not included in our cost of sales or work-in-process (including our contracts-in-progress) and finished goods inventory.

(f) Long-Lived Assets

Our machinery and equipment, which are recorded at cost, are depreciated or amortized over their estimated useful lives (three to eight years) under the straight-line method. Capitalized values of properties and leasehold improvements under leases are amortized over the life of the lease or the estimated life of the asset, whichever is less.

Goodwill represents the excess cost of a business acquisition over the fair value of the net assets acquired. In accordance with FASB ASC 350 "*Intangibles - Goodwill and Other*" goodwill is not amortized. We periodically, at least on an annual basis in the first quarter of each fiscal year, review goodwill, considering factors such as projected cash flows and revenue and earnings multiples, to determine whether the carrying value of the goodwill is impaired. If we fail the quantitative assessment of goodwill impairment ("quantitative assessment"), we would be required to recognize an impairment loss equal to the amount that a reporting unit's carrying value exceeded its fair value; however, any loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. We define our reporting units to be the same as our operating segments.

We performed our annual goodwill impairment assessment for fiscal 2022 on August 1, 2021 (the first day of our fiscal 2022). See *Note (13)* - "*Goodwill*" for more information. Unless there are future indicators that the fair value of a reporting unit is more likely than not less than its carrying value, such as a significant adverse change in our future financial performance, our next impairment assessment for goodwill will be performed and completed in the first quarter of fiscal 2023. Any impairment charges that we may record in the future could be material to our results of operations and financial condition.

We assess the recoverability of the carrying value of our other long-lived assets, including identifiable intangible assets with finite useful lives, whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. We evaluate the recoverability of such assets based upon the expectations of undiscounted cash flows from such assets. If the sum of the expected future undiscounted cash flows were less than the carrying amount of the asset, a loss would be recognized for the difference between the fair value and the carrying amount.

(g) Research and Development Costs

We charge research and development costs to operations as incurred, except in those cases in which such costs are reimbursable under customer funded contracts. In fiscal 2021, 2020 and 2019, we were reimbursed by customers for such activities in the amount of $13,635,000, $11,923,000 and $14,679,000, respectively. These amounts are not reflected in the reported research and development expenses in each of the respective periods but are included in net sales with the related costs included in cost of sales in each of the respective periods.

(h) Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using the enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

We determine the uncertain tax positions taken or expected to be taken in income tax returns in accordance with the provisions of FASB ASC 740-10-25 "*Income Taxes,*" which prescribes a two-step evaluation process for tax positions. The first step is recognition based on a determination of whether it is more-likely-than-not that a tax position will be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The second step is to measure a tax position that meets the more-likely-than-not threshold. The tax position is measured as the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement. If a tax position does not meet the more-likely-than-not recognition threshold, the benefit of that position is not recognized in the financial statements. Our policy is to recognize potential interest and penalties related to uncertain tax positions in income tax expense.

(i) Earnings Per Share

Our basic earnings per share ("EPS") is computed based on the weighted average number of common shares (including vested but unissued stock units, share units, performance shares and restricted stock units ("RSUs")) outstanding during each respective period. Our diluted EPS reflects the dilution from potential common stock issuable pursuant to the exercise of equity-classified stock-based awards, if dilutive, outstanding during each respective period. Pursuant to FASB ASC 260 "*Earnings Per Share,*" equity-classified stock-based awards that are subject to performance conditions are not considered in our diluted EPS calculations until the respective performance conditions have been satisfied. When calculating our diluted earnings per share, we consider the amount an employee must pay upon assumed exercise of stock-based awards and the amount of stock-based compensation cost attributed to future services and not yet recognized.

There were no repurchases of our common stock during the fiscal years ended July 31, 2021, 2020 and 2019. See *Note (15)* - "*Stockholders' Equity*" for more information.

Weighted average stock options, RSUs and restricted stock outstanding of 1,440,000, 1,348,000 and 1,347,000 shares for fiscal 2021, 2020 and 2019, respectively, were not included in our diluted EPS calculation because their effect would have been anti-dilutive.

Our EPS calculations exclude 232,000, 201,000 and 243,000 weighted average performance shares outstanding for fiscal 2021, 2020 and 2019, respectively, as the performance conditions have not yet been satisfied. However, net income (loss) (the numerator) for EPS calculations for each respective period, is reduced by the compensation expense related to these awards.

The following table reconciles the numerators and denominators used in the basic and diluted EPS calculations:

	Fiscal Years Ended July 31,		
	2021	2020	2019
Numerator:			
Net (loss) income for basic calculation	$ (73,480,000)	7,020,000	25,041,000
Numerator for diluted calculation	$ (73,480,000)	7,020,000	25,041,000
Denominator:			
Denominator for basic calculation	25,685,000	24,798,000	24,124,000
Effect of dilutive securities:			
Stock-based awards	—	101,000	178,000
Denominator for diluted calculation	25,685,000	24,899,000	24,302,000

(j) Fair Value Measurements and Financial Instruments

Using the fair value hierarchy described in FASB ASC 820 "*Fair Value Measurements and Disclosures,"* we valued our cash and cash equivalents using Level 1 inputs that were based on quoted market prices.

We believe that the carrying amounts of our other current financial assets (such as accounts receivable) and other current liabilities (including accounts payable and accrued expenses) approximate their fair values due to their short-term maturities.

The fair value of our Credit Facility that we entered into on October 31, 2018 approximates its carrying amount due to its variable interest rate and pricing grid that is dependent upon our leverage ratio as of the end of each fiscal quarter.

As of July 31, 2021 and 2020, other than the financial instruments discussed above, we had no other significant assets or liabilities included in our Consolidated Balance Sheets recorded at fair value, as such term is defined by FASB ASC 820.

(k) Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amount of assets and liabilities, and disclosure of contingent assets and liabilities, at the date of the consolidated financial statements and the reported amounts of net sales and expenses during the reported period. We make significant estimates in many areas of our accounting, including but not limited to the following: long-term contracts, stock-based compensation, intangible assets and liabilities including goodwill, provision for excess and obsolete inventory, allowance for doubtful accounts, warranty obligations and income taxes. Actual results may differ from those estimates.

(l) Comprehensive Income

In accordance with FASB ASC 220 "*Comprehensive Income*," we report all changes in equity during a period, except those resulting from investment by owners and distribution to owners, for the period in which they are recognized. Comprehensive income is the total of net income and all other non-owner changes in equity (or other comprehensive income) such as unrealized gains/losses on securities classified as available-for-sale, foreign currency translation adjustments and minimum pension liability adjustments. Comprehensive income was the same as our net income in fiscal 2021, 2020 and 2019.

(m) Reclassifications

Certain reclassifications have been made to previously reported consolidated financial statements to conform to the fiscal 2021 presentation.

(n) Adoption of Accounting Standards and Updates

We are required to prepare our consolidated financial statements in accordance with the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") which is the source for all authoritative U.S. generally accepted accounting principles, which are commonly referred to as "GAAP." The FASB ASC is subject to updates by the FASB, which are known as Accounting Standards Updates ("ASUs"). During fiscal 2021, we adopted:

- FASB ASU No. 2016-13, which requires companies to utilize an impairment model (current expected credit loss ("CECL”)) for most financial assets measured at amortized cost and certain other financial instruments, which include, but are not limited to trade receivables and contract assets. This accounting standard replaced the incurred loss model with a model that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to estimate those losses. On August 1, 2020, we adopted this ASU on a modified-retrospective basis and recorded a $215,000 decrease to opening retained earnings.

- FASB ASU No. 2018-13, which modifies the disclosure requirements for fair value measurements in Topic 820. On August 1, 2020, we adopted this ASU. Our adoption of this ASU did not have any impact on our consolidated financial statements or disclosures.

- FASB ASU No. 2018-15, which aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal use software (and hosting arrangements that include an internal use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected by the amendments in this ASU. On August 1, 2020, we adopted this ASU. Our adoption of this ASU did not have any impact on our consolidated financial statements or disclosures.

- FASB ASU No. 2018-17, which requires entities to consider indirect interests held through related parties under common control on a proportional basis, rather than as the equivalent of a direct interest in its entirety, when determining whether a decision-making fee is a variable interest. On August 1, 2020, we adopted this ASU. Our adoption of this ASU did not have any impact on our consolidated financial statements or disclosures.

- FASB ASU No. 2018-18, which clarifies when certain transactions between collaborative arrangement participants should be accounted for under ASC 606 and incorporates unit-of-account guidance consistent with ASC 606 to aid in this determination. The ASU also precludes entities from presenting consideration from transactions with a collaborator that is not a customer together with revenue recognized from contracts with customers. On August 1, 2020, we adopted this ASU. Our adoption of this ASU did not have any impact on our consolidated financial statements or disclosures.

- FASB ASU No. 2019-08, which requires that an entity measure and classify share-based payment awards granted to a customer by applying the guidance in Topic 718. The amount recorded as a reduction of the transaction price is required to be measured based on the grant-date fair value of the share-based payment award. On August 1, 2020, we adopted this ASU. Our adoption of this ASU did not have any impact on our consolidated financial statements or disclosures.

(2) Acquisitions

UHP Networks Inc.

On March 2, 2021, we completed our acquisition of UHP Networks Inc. ("UHP"), a leading provider of innovative and disruptive satellite ground station technology solutions, pursuant to a stock purchase agreement initially entered into in November 2019 and amended in June 2020 and on March 1, 2021, respectively. With end-markets for high-speed satellite-based networks anticipated to significantly grow, our acquisition allows us to enhance our Commercial Solutions segment's offerings with low cost time division multiple access ("TDMA") satellite modems.

The acquisition has a preliminary purchase price for accounting purposes of $37,470,000. Pursuant to the stock purchase agreement, during fiscal 2021, the initial upfront payment of approximately $23,979,000 was paid mostly in shares of our common stock, with $87,000 paid in cash. In August 2021, $3,991,000 of the $4,991,000 hold back amount previously placed into escrow at closing was paid to the seller in shares of our Common Stock, as the conditions pursuant to the stock purchase agreement were met. The stock purchase agreement also provides for an earn-out payment of up to $9,000,000, also payable at our option in cash and or shares of our common stock, if specified sales milestones are reached during the eighteen-month period ending September 30, 2022. The preliminary estimated fair value of such contingent earn-out consideration at the acquisition date was $8,500,000.

Of the $23,979,000 paid at closing, $4,560,000 was placed into escrow to be released ratably over three years upon settlement of potential indemnification obligations of the seller.

We issued 1,026,567 shares of our common stock at closing, based on a volume weighted average stock price of approximately $28.14 per share, in satisfaction of initial payment and escrow arrangements under the terms of the stock purchase agreement.

We are accounting for the acquisition under the acquisition method of accounting in accordance with FASB ASC 805, "Business Combinations" ("ASC 805"). The purchase price was allocated to the assets acquired and liabilities assumed, based on their preliminary fair value as of March 2, 2021 pursuant to the business combination accounting rules. Acquisition plan expenses were not included as a component of consideration transferred and were expensed in the period incurred. Our consolidated statements of operations for the fiscal year ended July 31, 2021 include a nominal amount of revenue contribution from the acquisition. Pro forma financial information is not disclosed, as the acquisition is not material.

The following table summarizes the preliminary fair value of the assets acquired and liabilities assumed in connection with the acquisition:

	Purchase Price Allocation [(1)]	Measurement Period Adjustments	Purchase Price Allocation (As adjusted)	
Initial upfront payment	$ 23,902,000	$ 77,000	$ 23,979,000	
Hold back amount	5,000,000	(9,000)	4,991,000	
Contingent earn-out consideration	8,500,000	—	8,500,000	
Preliminary purchase price at fair value	$ 37,402,000	$ 68,000	$ 37,470,000	
Preliminary allocation of aggregate purchase price:				
Cash and cash equivalents	$ 1,391,000	$ —	$ 1,391,000	
Current assets	1,235,000	123,000	1,358,000	
Property, plant and equipment	10,000	—	10,000	
Deferred tax assets	286,000	27,000	313,000	
Contract liabilities	(657,000)	9,000	(648,000)	
Accrued warranty obligations	(750,000)	—	(750,000)	
Other current liabilities	(1,166,000)	(9,000)	(1,175,000)	
Non-current liabilities	(160,000)	—	(160,000)	
Net tangible assets at preliminary fair value	$ 189,000	150,000	$ 339,000	
Identifiable intangibles, deferred taxes and goodwill:				Estimated Useful Lives
Technology	$ 15,300,000	$ —	$ 15,300,000	15 years
Customer relationships	15,500,000	—	15,500,000	15 years
Trade name	800,000	—	800,000	20 years
Deferred tax liabilities	(8,374,000)	—	(8,374,000)	
Goodwill	13,987,000	(82,000)	13,905,000	Indefinite
Preliminary allocation of aggregate purchase price	$ 37,402,000	$ 68,000	$ 37,470,000	

(1) As reported in the Company's Quarterly Report on Form 10-Q for the three and nine months ended April 30, 2021.

The acquired identifiable intangible assets are being amortized on a straight-line basis, which we believe approximates the pattern in which the assets are utilized over their estimated useful lives. The preliminary fair value of customer relationships was primarily based on the value of the discounted cash flows that the related intangible asset could be expected to generate in the future. The preliminary fair value of technology and trade name was based on the discounted capitalization of royalty expense saved because we now own the assets. The preliminary estimated fair value of contingent earn-out consideration represents the present value of the estimated amount payable, based on a probability-weighted amount of net sales, as defined, during the earn-out period, which reflects significant management estimates and assumptions using unobservable Level 3 inputs, including: (i) possible outcomes for targeted net sales during the earn-out period; (ii) timing of each possible outcome; (iii) probability of each possible outcome; and (vi) discount rate reflecting the credit risk of the Company. Among the factors contributing to the recognition of goodwill, as a component of the preliminary purchase price allocation, were synergies in products and technologies and the addition of a skilled, assembled workforce. This goodwill has been assigned to our Commercial Solutions segment based on specific identification and is generally not deductible for income tax purposes.

The allocation of the preliminary purchase price shown in the above table was based upon a preliminary valuation and estimates and assumptions that are subject to change within the purchase price allocation period, generally one year from the acquisition date. The primary areas of the purchase price allocation not yet finalized include the purchase price (due to customary adjustments for potential indemnification obligations of the seller under the stock purchase agreement and contingent earn-out consideration), a final assessment of assets acquired and liabilities assumed, accrued warranty obligations, income taxes and residual goodwill.

CGC Technology Limited

On January 27, 2020, we completed the acquisition of CGC Technology Limited ("CGC"), a privately held company located in the United Kingdom, pursuant to the Share Purchase Agreement, dated as of January 27, 2020. CGC is a leading provider of high precision full motion fixed and mobile X/Y satellite tracking antennas, reflectors, RF feeds, radomes and other ground station equipment around the world.

The acquisition had an aggregate purchase price for accounting purposes of $23,650,000, of which $12,075,000 was paid in cash and $11,575,000 was paid by the issuance of 323,504 shares of our common stock at a volume weighted average stock price of $35.78. The fair value of consideration transferred in connection with this acquisition was $23,490,000, which was net of $160,000 of cash acquired. We accounted for the acquisition of CGC under the acquisition method of accounting in accordance with FASB ASC 805. The purchase price was allocated to the assets acquired and liabilities assumed, based on their fair value as of January 27, 2020, pursuant to the business combination accounting rules. Acquisition plan expenses were not included as a component of consideration transferred and were expensed in the period incurred. Pro forma financial information is not disclosed, as the acquisition was not material.

Acquisition Plan Expenses

During fiscal 2021, 2020 and 2019, we incurred acquisition plan expenses of $100,292,000, $20,754,000 and $5,871,000, respectively. Of the amount recorded in fiscal 2021, $88,343,000 related to the previously announced litigation and merger termination with Gilat Satellite Networks, Ltd. ("Gilat"), including $70,000,000 paid in cash to Gilat. The remaining costs primarily related to the April 2021 settlement of litigation associated with the 2019 acquisition of GD NG-911 as well as our acquisition of UHP, which closed in March 2021. Additionally, we recorded $1,178,000 of incremental interest expenses in fiscal 2021 related to a now terminated financing commitment letter.

(3) Accounts Receivable

Accounts receivable consist of the following at July 31, 2021 and 2020:

	2021	2020
Receivables from commercial and international customers	$ 86,890,000	67,109,000
Unbilled receivables from commercial and international customers	36,131,000	21,588,000
Receivables from the U.S. government and its agencies	33,381,000	32,870,000
Unbilled receivables from the U.S. government and its agencies	3,356,000	7,018,000
Total accounts receivable	159,758,000	128,585,000
Less allowance for doubtful accounts	1,648,000	1,769,000
Accounts receivable, net	$ 158,110,000	126,816,000

Unbilled receivables as of July 31, 2021 relate to contracts-in-progress for which revenue has been recognized, but for which we have not yet earned the right to bill the customer for work performed to-date. Under ASC 606, unbilled receivables constitute contract assets. Management estimates that a substantial portion of the amounts not yet billed at July 31, 2021 will be billed and collected within one year.

As of July 31, 2021, 23.0%, 12.7% and 12.1% of total accounts receivable related to U.S. government and its agencies, AT&T, Inc. and Verizon Communications Inc., respectively. Except for the U.S. government and its agencies, which represented 31.0%, respectively, no other customers accounted for greater than 10.0% of total accounts receivable as of July 31, 2020.

(4) Inventories

Inventories consist of the following at July 31, 2021 and 2020:

	2021	2020
Raw materials and components	$ 62,249,000	59,175,000
Work-in-process and finished goods	38,338,000	42,203,000
Total inventories	100,587,000	101,378,000
Less reserve for excess and obsolete inventories	20,229,000	19,076,000
Inventories, net	$ 80,358,000	82,302,000

As of July 31, 2021 and 2020, the amount of inventory directly related to long-term contracts (including contracts-in-progress) was $7,028,000 and $7,215,000, respectively, and the amount of inventory related to contracts from third-party commercial customers who outsource their manufacturing to us was $1,509,000 and $1,387,000, respectively.

(5) Property, Plant and Equipment

Property, plant and equipment consist of the following at July 31, 2021 and 2020:

	2021	2020
Machinery and equipment	$ 170,600,000	156,314,000
Leasehold improvements	15,726,000	15,596,000
	186,326,000	171,910,000
Less accumulated depreciation and amortization	151,040,000	144,873,000
Property, plant and equipment, net	$ 35,286,000	27,037,000

Depreciation and amortization expense on property, plant and equipment amounted to $9,343,000, $10,386,000 and $11,927,000 for the fiscal years ended July 31, 2021, 2020 and 2019, respectively.

(6) Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consist of the following at July 31, 2021 and 2020:

	2021	2020
Accrued wages and benefits	$ 26,367,000	20,857,000
Accrued warranty obligations	17,600,000	15,200,000
Accrued contract costs	12,750,000	15,306,000
Accrued acquisition-related costs	9,222,000	7,014,000
Accrued commissions and royalties	5,342,000	4,621,000
Accrued legal costs	2,854,000	2,539,000
Other	15,466,000	19,624,000
Accrued expenses and other current liabilities	$ 89,601,000	85,161,000

Accrued contract costs represent direct and indirect costs on contracts as well as estimates of amounts owed for invoices not yet received from vendors or reflected in accounts payable.

Accrued acquisition-related costs as of July 31, 2021 include $8,705,000 of contingent earn-out consideration related to our acquisition of UHP. See *Note (2)* - "*Acquisitions - UHP Networks Inc.*" for further discussion.

Accrued warranty obligations as of July 31, 2021 relate to estimated liabilities for assurance type warranty coverage that we provide to our customers. We generally provide warranty coverage for some of our products for a period of at least one year from the date of delivery. We record a liability for estimated warranty expense based on historical claims, product failure rates, consideration of contractual obligations, future costs to resolve software issues and other factors. Some of our product warranties are provided under long-term contracts, the costs of which are incorporated into our estimates of total contract costs.

Changes in our accrued warranty obligations during the fiscal years ended July 31, 2021 and 2020 were as follows:

	2021	2020
Balance at beginning of year	$ 15,200,000	15,968,000
Provision for warranty obligations	4,360,000	2,277,000
Additions (in connection with acquisitions)	750,000	1,000,000
Charges incurred	(2,710,000)	(4,347,000)
Reclassification of non-current liabilities	—	302,000
Balance at end of year	$ 17,600,000	15,200,000

(7) Credit Facility

On October 31, 2018, we entered into a First Amended and Restated Credit Agreement (the "Credit Facility") with a syndicate of lenders.

The Credit Facility provides a senior secured loan facility of up to $550,000,000 consisting of: (i) a revolving loan facility ("Revolving Loan Facility") with a borrowing limit of $300,000,000; (ii) an accordion feature allowing us to borrow up to an additional $250,000,000; (iii) a $35,000,000 letter of credit sublimit; and (iv) a swingline loan credit sublimit of $25,000,000.

The Credit Facility matures on October 31, 2023 (the "Revolving Maturity Date"). If we issue new unsecured debt in excess of $5,000,000 with a maturity date that is less than 91 days from October 31, 2023, the Revolving Maturity Date would automatically accelerate so that it would be 91 days earlier than the maturity date of the new unsecured debt.

As of July 31, 2021, the amount outstanding under our Credit Facility was $201,000,000 which is reflected in the non-current portion of long-term debt on our Consolidated Balance Sheet. At July 31, 2021, we had $1,503,000 of standby letters of credit outstanding under our Credit Facility related to guarantees of future performance on certain customer contracts and no outstanding commercial letters of credit. During the fiscal year ended July 31, 2021, we had outstanding balances under the Credit Facility ranging from $125,000,000 to $219,000,000.

As of July 31, 2021, total net deferred financing costs related to the Credit Facility were $1,824,000 and are being amortized over the term of our Credit Facility through October 31, 2023. In fiscal 2019, we wrote off $3,217,000 of deferred financing costs primarily related to the Term Loan Facility of our Prior Credit Facility.

Interest expense related to our Credit Facility, including amortization of deferred financing costs, recorded during the fiscal years ended July 31, 2021, 2020 and 2019 was $5,628,000, $5,905,000 and $8,859,000, respectively. The amount for the fiscal year ended July 31, 2019 relates to both our Prior Credit Facility and our existing Credit Facility. Our blended interest rate approximated 2.84%, 3.87% and 5.25%, respectively, for fiscal 2021, 2020 and 2019.

Borrowings under the Credit Facility shall be either: (i) Alternate Base Rate borrowings, which bear interest from the applicable borrowing date at a rate per annum equal to (x) the greatest of (a) the Prime Rate (as defined) in effect on such day, (b) the Federal Funds Effective Rate (as defined) in effect on such day plus 1/2 of 1.00% per annum and (c) the Adjusted LIBO Rate (as defined) on such day (or, if such day is not a business day, the immediately preceding business day) plus 1.00% per annum, plus (y) the Applicable Rate (as defined), or (ii) Eurodollar borrowings, which bear interest from the applicable borrowing date at a rate per annum equal to (x) the Adjusted LIBO Rate for such interest period plus (y) the Applicable Rate. Determination of the Applicable Rate is based on a pricing grid that is dependent upon our Secured Leverage Ratio (as defined) as of the end of each fiscal quarter for which consolidated financial statements have been most recently delivered.

The Credit Facility contains customary representations, warranties and affirmative covenants. The Credit Facility also contains customary negative covenants, subject to negotiated exceptions, including but not limited to: (i) liens, (ii) investments, (iii) indebtedness, (iv) significant corporate changes, including mergers and acquisitions, (v) dispositions, (vi) restricted payments, including stockholder dividends, and (vii) certain other restrictive agreements. The Credit Facility also contains certain financial covenants and customary events of default (subject to grace periods, as appropriate), such as payment defaults, cross-defaults to other material indebtedness, bankruptcy and insolvency, the occurrence of a defined change in control and the failure to observe the negative covenants and other covenants related to the operation of our business. In addition, under certain circumstances, we may be required to enter into amendments to the Credit Facility in connection with any further syndication of the Credit Facility.

The Credit Facility provides for, among other things: (i) no scheduled payments of principal until maturity; (ii) a maximum Secured Leverage Ratio of 3.75x trailing twelve months ("TTM") Adjusted Earnings Before Interest, Taxes, Depreciation and Amortization ("Adjusted EBITDA") and a Maximum Total Leverage Ratio of 4.50x TTM Adjusted EBITDA, each with no step downs; and (iii) a Minimum Interest Expense Coverage Ratio of 3.25x TTM Adjusted EBITDA.

As of July 31, 2021, our Secured Leverage Ratio was 2.53x TTM Adjusted EBITDA compared to the maximum allowable Secured Leverage Ratio of 3.75x TTM Adjusted EBITDA. Our Interest Expense Coverage Ratio as of July 31, 2021 was 13.05x TTM Adjusted EBITDA compared to the Minimum Interest Expense Coverage Ratio of 3.25x TTM Adjusted EBITDA. Given our expected future business performance, we anticipate maintaining compliance with the terms and financial covenants in our Credit Facility for the foreseeable future.

The obligations under the Credit Facility are guaranteed by certain of our domestic and foreign subsidiaries (the "Guarantors"). As collateral security under the Credit Facility and the guarantees thereof, we and the Guarantors have granted to the administrative agent, for the benefit of the lenders, a lien on, and first priority security interest in, substantially all of our tangible and intangible assets.

On December 6, 2018, we entered into an amendment to the Credit Facility to provide for a mechanism to replace the LIBO Rate for Eurodollar borrowings with an alternative benchmark interest rate, should the LIBO Rate generally become unavailable in the future on an other-than-temporary basis. On January 14, 2021, we entered into a further amendment of the Credit Facility to update the LIBO Rate replacement mechanism language and other definitional items. On July 30, 2021, we entered into an amendment to incorporate certain foreign subsidiaries as loan parties and Guarantors into the Credit Facility and added certain definitional items.

Capitalized terms used but not defined herein have the meanings set forth for such terms in the Credit Facility and the Prior Credit Facility, which have been documented and filed with the SEC.

(8) Leases

Our leases historically relate to the leasing of facilities and equipment. In accordance with FASB ASC 842 - "Leases" ("ASC 842"), we determine at inception whether an arrangement is, or contains, a lease and whether the lease should be classified as an operating or a financing lease. At lease commencement, we recognize a right-of-use ("ROU") asset and lease liability based on the present value of the future lease payments over the estimated lease term. We have elected to not recognize a ROU asset or lease liability for any leases with terms of twelve months or less. Instead, for such short-term leases, we recognize lease expense on a straight-line basis over the lease term. Certain of our leases include options to extend the term of the lease or to terminate the lease early. When it is reasonably certain that we will exercise a renewal option or will not exercise a termination option, we include the impact of exercising or not exercising such option, respectively, in the estimate of the lease term. As our lease agreements do not explicitly state the discount rate implicit in the lease, we use our incremental borrowing rate ("IBR") on the commencement date to calculate the present value of future lease payments. Such IBR represents our estimated rate of interest to borrow on a collateralized basis over a term commensurate with the expected lease term.

Some of our leases include payments that are based on the Consumer Price Index ("CPI") or other similar indices. These variable lease payments are included in the calculation of the ROU asset and lease liability using the index as of the lease commencement date. Other variable lease payments, such as common area maintenance, property taxes, and usage-based amounts, are required by ASC 842 to be excluded from the ROU asset and lease liability and expensed as incurred. In addition to the present value of the future lease payments, the calculation of the ROU asset would also consider, to the extent applicable, any deferred rent upon adoption, lease pre-payments or initial direct costs of obtaining the lease (e.g., such as commissions).

For all classes of leased assets, we elected the practical expedient to not separate lease components (i.e., the actual item being leased, such as the facility or piece of equipment) from non-lease components (i.e., the distinct elements of a contract not related to securing the use of the leased asset, such as common area maintenance and consumable supplies).

Certain of our facility lease agreements (which are classified as operating leases) contain rent holidays or rent escalation clauses. For rent holidays and rent escalation clauses during the lease term, we record rental expense on a straight-line basis over the term of the lease. As of July 31, 2021, none of our leases contained a residual value guarantee and covenants included in our lease agreements are customary for the types of facilities and equipment being leased.

The components of lease expense are as follows:

	Fiscal years ended July 31,	
	2021	2020
Finance lease expense:		
Amortization of ROU assets	$ 36,000	$ 175,000
Interest on lease liabilities	3,000	4,000
Operating lease expense	12,152,000	10,728,000
Short-term lease expense	819,000	3,045,000
Variable lease expense	4,523,000	4,033,000
Sublease income	(67,000)	(22,000)
Total lease expense	$ 17,466,000	$ 17,963,000

Additional information related to leases is as follows:

	Fiscal years ended July 31,	
	2021	2020
Cash paid for amounts included in the measurement of lease liabilities:		
Operating leases - Operating cash outflows	$ 10,868,000	$ 11,437,000
Finance leases - Operating cash outflows	3,000	4,000
Finance leases - Financing cash outflows	38,000	322,000
ROU assets obtained in the exchange for lease liabilities (non-cash):		
Operating leases	$ 24,987,000	$ 3,561,000

The following table is a reconciliation of future cash flows relating to operating and financing lease liabilities presented on our Consolidated Balance Sheet as of July 31, 2021:

	Operating	Finance	Total
Fiscal 2022	$ 10,376,000	$ 32,000	$ 10,408,000
Fiscal 2023	8,029,000	3,000	8,032,000
Fiscal 2024	6,657,000	—	6,657,000
Fiscal 2025	6,123,000	—	6,123,000
Fiscal 2026	4,675,000	—	4,675,000
Thereafter	20,810,000	—	20,810,000
Total future undiscounted cash flows	56,670,000	35,000	56,705,000
Less: Present value discount	8,260,000	1,000	8,261,000
Lease liabilities	$ 48,410,000	$ 34,000	$ 48,444,000
Weighted-average remaining lease terms (in years)	8.89	1.49	
Weighted-average discount rate	3.52 %	7.37 %	

In fiscal 2021, we commenced a 15-year operating lease for a facility in Chandler, Arizona and a 10-year operating lease for a facility in the United Kingdom. Accordingly, amounts related to both leases are reflected as an operating lease right-of-use asset or related operating lease liability in our Consolidated Balance Sheet as of July 31, 2021.

We lease our Melville, New York production facility from a partnership controlled by our CEO and Chairman. Lease payments made during the fiscal year ended July 31, 2021 and 2020 were $660,000 and $649,000, respectively. The current lease provides for our use of the premises as they exist through December 2031. The annual rent of the facility for calendar year 2022 is $665,000 and is subject to customary adjustments. We have a right of first refusal in the event of a sale of the facility.

As of July 31, 2021, we do not have any rental commitments that have not commenced.

(9) Income Taxes

(Loss) income before (benefit from) provision for income taxes consists of the following:

	Fiscal Years Ended July 31,		
	2021	2020	2019
U.S.	$ (73,153,000)	7,226,000	28,813,000
Foreign	(1,827,000)	2,084,000	97,000
	$ (74,980,000)	9,310,000	28,910,000

The (benefit from) provision for income taxes included in the accompanying Consolidated Statements of Operations consists of the following:

	Fiscal Years Ended July 31,		
	2021	2020	2019
Federal – current	$ 608,000	1,053,000	(2,190,000)
Federal – deferred	(877,000)	721,000	4,782,000
State and local – current	466,000	1,137,000	1,715,000
State and local – deferred	(598,000)	(1,312,000)	(321,000)
Foreign – current	688,000	298,000	62,000
Foreign – deferred	(1,787,000)	393,000	(179,000)
(Benefit from) provision for income taxes	$ (1,500,000)	2,290,000	3,869,000

The (benefit from) provision for income taxes differed from the amounts computed by applying the U.S. Federal income tax rate as a result of the following:

	Fiscal Years Ended July 31,					
	2021		2020		2019	
	Amount	Rate	Amount	Rate	Amount	Rate
Computed "expected" tax expense (benefit)	$ (15,746,000)	21.0 %	1,955,000	21.0 %	6,071,000	21.0 %
Increase (reduction) in income taxes resulting from:						
State and local income taxes, net of federal benefit	(1,371,000)	1.8	(278,000)	(3.0)	967,000	3.3
Stock-based compensation	(20,000)	—	308,000	3.3	(44,000)	(0.1)
Research and experimentation credits	(1,018,000)	1.4	(1,210,000)	(13.0)	(1,129,000)	(3.9)
Foreign-derived intangible income deduction	164,000	(0.2)	(162,000)	(1.7)	(632,000)	(2.2)
Nondeductible transaction costs	402,000	(0.5)	301,000	3.2	394,000	1.4
Nondeductible executive compensation	628,000	(0.8)	595,000	6.4	330,000	1.1
Fines and penalties	—	—	189,000	2.0	2,000	—
Audit settlements	6,000	—	1,000	—	(2,081,000)	(7.2)
Change in the beginning of the year valuation allowance for deferred tax assets	(805,000)	1.1	—	—	—	—
Change in valuation allowance	15,582,000	(20.8)	—	—	—	—
Remeasurement of deferred taxes	(224,000)	0.3	(135,000)	(1.5)	—	—
Foreign income taxes	676,000	(0.9)	453,000	4.9	5,000	—
Other, net	226,000	(0.4)	273,000	3.0	(14,000)	—
(Benefit from) provision for income taxes	$ (1,500,000)	2.0 %	2,290,000	24.6 %	3,869,000	13.4 %

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and liabilities at July 31, 2021 and 2020 are presented below:

	2021	2020
Deferred tax assets:		
Inventory and warranty reserves	$ 6,774,000	5,786,000
Compensation and commissions	4,338,000	3,210,000
Federal, state and foreign research and experimentation credits	19,324,000	19,656,000
Stock-based compensation	4,979,000	4,955,000
Foreign scientific research and experimental development expenditures	1,496,000	1,765,000
Federal, state and foreign net operating losses	5,413,000	3,942,000
Federal and state capital losses	15,582,000	28,000
Lease liabilities	10,980,000	7,335,000
Other	4,550,000	6,572,000
Less: valuation allowance	(28,384,000)	(11,471,000)
Total deferred tax assets	45,052,000	41,778,000
Deferred tax liabilities:		
Plant and equipment	(1,146,000)	(801,000)
Lease right-of-use assets	(10,085,000)	(7,080,000)
Intangibles	(54,635,000)	(50,368,000)
Total deferred tax liabilities	(65,866,000)	(58,249,000)
Net deferred tax liabilities	$ (20,814,000)	(16,471,000)

At July 31, 2021, our net deferred tax liability of $20,814,000 includes $416,000 of foreign net deferred tax assets that were recorded as other assets, net in our Consolidated Balance Sheets. At July 31, 2020, our net deferred tax liability of $16,471,000 includes $1,166,000 of foreign net deferred tax assets that were recorded as other assets, net in our Consolidated Balance Sheets.

We provide for income taxes under the provisions of ASC 740 which requires an asset and liability based approach in accounting for income taxes. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of them will not be realized. If management determines that it is more likely than not that some or all of its deferred tax assets will not be realized, a valuation allowance will be recorded against such deferred tax assets.

At July 31, 2021, we have federal research and experimentation credits of $9,471,000 that will begin to expire in 2028. The timing and manner in which we may utilize tax credits in future tax years will be limited by the amounts and timing of future taxable income and by the application of the ownership change rules under Section 383 of the Internal Revenue Code.

We have state net operating loss carryforwards available of $3,267,000, which expire through 2040, utilization of which will be limited by the amounts and timing of future taxable income and by the application of the ownership change rules under Section 382 of the Internal Revenue Code. We believe that it is more likely than not that the benefit from certain state net operating loss carryforwards will not be realized. In recognition of this risk, we have provided a valuation allowance of $3,178,000 on the deferred tax assets relating to these state net operating loss carryforwards. We have state research and experimentation credit carryforwards of $8,038,000, which expire through 2040. We believe that it is more likely than not that the benefit from certain state research and experimentation credits will not be realized. In recognition of this risk, we have provided a valuation allowance of $7,451,000 on the deferred tax assets relating to these state credits. We have federal and state capital loss carryforwards of $15,582,000, which begin to expire in 2026. We believe that it is more likely than not that the benefit from these capital losses will not be realized. In recognition of this risk, we have provided a valuation allowance of $15,582,000 on the deferred tax assets relating to these capital losses.

At July 31, 2021, we had foreign deferred tax assets relating to net operating loss carryforwards of $2,116,000, which will begin to expire in 2032. We believe that it is more likely than not that certain net operating loss carryforwards may not be realized. In recognition of this risk, we have provided a valuation allowance of $656,000 on the deferred tax assets relating to these net operating loss carryforwards. We have foreign deferred tax assets relating to research and experimentation credits of $1,814,000, which will begin to expire in 2024. Our foreign earnings and profits are insignificant and, as such, we have not recorded any deferred tax liability on unremitted foreign earnings.

We must generate $193,800,000 of taxable income in the future to fully utilize our net deferred tax assets as of July 31, 2021. Management believes it is more likely than not that the results of future operations will generate sufficient taxable income to realize the net deferred tax assets.

At July 31, 2021 and 2020, total unrecognized tax benefits were $9,172,000 and $8,345,000, respectively, including interest of $163,000 and $75,000, respectively. At July 31, 2021 and 2020, $2,717,000 and 1,963,000, respectively, of our unrecognized tax benefits were recorded as non-current income taxes payable on our Consolidated Balance Sheets. The remaining unrecognized tax benefits of $6,455,000 and $6,382,000 at July 31, 2021 and 2020, respectively, were presented as an offset to the associated non-current deferred tax assets on our Consolidated Balance Sheets. Of the total unrecognized tax benefits, $8,408,000 and $7,700,000 at July 31, 2021 and 2020, respectively, net of the reversal of the federal benefit recognized as a deferred tax asset relating to state reserves, would favorably impact our effective tax rate, if recognized. Unrecognized tax benefits result from income tax positions taken or expected to be taken on our income tax returns for which a tax benefit has not been recorded in our consolidated financial statements. We do not expect that there will be any significant changes to our total unrecognized tax benefits within the next twelve months.

Our policy is to recognize potential interest and penalties relating to uncertain tax positions in income tax expense. The following table summarizes the activity related to our unrecognized tax benefits for fiscal years 2021, 2020 and 2019 (excluding interest):

	2021	2020	2019
Balance at beginning of period	$ 8,270,000	7,203,000	9,137,000
Increase related to current period	528,000	684,000	893,000
Increase related to prior periods	338,000	464,000	17,000
Expiration of statute of limitations	(48,000)	(73,000)	(394,000)
Decrease related to prior periods	(79,000)	(8,000)	(2,450,000)
Balance at end of period	$ 9,009,000	8,270,000	7,203,000

Our U.S. federal income tax returns for fiscal 2018 through 2020 are subject to potential future Internal Revenue Service ("IRS") audit. None of our state income tax returns prior to fiscal 2017 are subject to audit. Future tax assessments or settlements could have a material adverse effect on our consolidated results of operations and financial condition.

(10) Stock-Based Compensation

Overview

We issue stock-based awards to certain of our employees and our Board of Directors pursuant to our 2000 Stock Incentive Plan, as amended and/or restated from time to time (the "Plan") and our 2001 Employee Stock Purchase Plan, as amended and/or restated from time to time (the "ESPP"), and recognize related stock-based compensation in our consolidated financial statements. The Plan provides for the granting to employees and consultants of Comtech (including prospective employees and consultants): (i) incentive and non-qualified stock options, (ii) restricted stock units ("RSUs"), (iii) RSUs with performance measures (which we refer to as "performance shares"), (iv) restricted stock, (v) stock units (reserved for issuance to non-employee directors) and share units (reserved for issuance to employees) (collectively, "share units") and (vi) stock appreciation rights ("SARs"), among other types of awards. Our non-employee directors are eligible to receive non-discretionary grants of stock-based awards, subject to certain limitations.

As of July 31, 2021, the aggregate number of shares of common stock which may be issued, pursuant to the Plan, may not exceed 10,962,500. Stock options granted may not have a term exceeding ten years or, in the case of an incentive stock award granted to a stockholder who owns stock representing more than 10.0% of the voting power, no more than five years. We expect to settle all outstanding awards under the Plan and employee purchases under the ESPP with the issuance of new shares of our common stock.

As of July 31, 2021, we had granted stock-based awards pursuant to the Plan representing the right to purchase and/or acquire an aggregate of 9,350,696 shares (net of 4,716,649 expired and canceled awards), of which an aggregate of 7,208,891 have been exercised or settled.

As of July 31, 2021, the following stock-based awards, by award type, were outstanding:

	July 31, 2021
Stock options	1,073,435
Performance shares	236,464
RSUs and restricted stock	568,399
Share units	263,507
Total	2,141,805

Our ESPP provides for the issuance of up to 1,050,000 shares of our common stock. Our ESPP is intended to provide our eligible employees the opportunity to acquire our common stock at 85% of fair market value at the date of issuance. Through July 31, 2021, we have cumulatively issued 894,771 shares of our common stock to participating employees in connection with our ESPP.

Stock-based compensation for awards issued is reflected in the following line items in our Consolidated Statements of Operations:

	Fiscal Years Ended July 31,		
	2021	2020	2019
Cost of sales	$ 929,000	823,000	1,047,000
Selling, general and administrative expenses	8,091,000	7,527,000	9,336,000
Research and development expenses	963,000	925,000	1,044,000
Stock-based compensation expense before income tax benefit	9,983,000	9,275,000	11,427,000
Estimated income tax benefit	(2,164,000)	(2,042,000)	(2,553,000)
Net stock-based compensation expense	$ 7,819,000	7,233,000	8,874,000

Stock-based compensation for equity-classified awards is measured at the date of grant, based on an estimate of the fair value of the award and is generally expensed over the vesting period of the award. At July 31, 2021, unrecognized stock-based compensation of $9,625,000, net of estimated forfeitures of $1,040,000, is expected to be recognized over a weighted average period of 3.0 years. Total stock-based compensation capitalized and included in ending inventory at both July 31, 2021 and 2020 was $48,000. There are no liability-classified stock-based awards outstanding as of July 31, 2021 or 2020.

Stock-based compensation expense (benefit), by award type, is summarized as follows:

	Fiscal Years Ended July 31,		
	2021	2020	2019
Stock options	$ 370,000	442,000	739,000
Performance shares	1,345,000	1,491,000	1,554,000
RSUs and restricted stock	2,985,000	2,543,000	2,149,000
ESPP	208,000	222,000	215,000
Share units	5,075,000	4,577,000	6,770,000
Stock-based compensation expense before income tax benefit	9,983,000	9,275,000	11,427,000
Estimated income tax benefit	(2,164,000)	(2,042,000)	(2,553,000)
Net stock-based compensation expense	$ 7,819,000	7,233,000	8,874,000

ESPP stock-based compensation expense primarily relates to the 15% discount offered to participants in the ESPP.

During the fiscal years ended July 31, 2021, 2020 and 2019 we recorded benefits of $616,000, $310,000 and $130,000 respectively, which primarily represents the recoupment of certain share units.

The estimated income tax benefit as shown in the above table was computed using income tax rates expected to apply when the awards are settled. Such deferred tax asset was recorded net as part of our non-current deferred tax liability on our Consolidated Balance Sheet as of July 31, 2021 and 2020. The actual income tax benefit recognized for tax reporting is based on the fair market value of our common stock at the time of settlement and can significantly differ from the estimated income tax benefit recorded for financial reporting.

Stock Options

The following table summarizes the Plan's activity:

	Awards (in Shares)	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding at July 31, 2018	1,668,975	$ 28.72		
Expired/canceled	(32,490)	30.11		
Exercised	(80,930)	28.18		
Outstanding at July 31, 2019	1,555,555	28.72		
Granted	327,100	17.88		
Expired/canceled	(174,840)	29.06		
Exercised	(285,790)	28.82		
Outstanding at July 31, 2020	1,422,025	26.17		
Expired/canceled	(348,590)	27.44		
Outstanding at July 31, 2021	1,073,435	$ 25.76	4.31	$ 2,178,000
Exercisable at July 31, 2021	835,755	$ 28.00	3.03	$ 492,000
Vested and expected to vest at July 31, 2021	1,060,830	$ 25.85	4.26	$ 2,088,000

Stock options outstanding as of July 31, 2021 have exercise prices ranging from $17.88 - $33.94, representing the fair market value of our common stock on the date of grant, a contractual term of ten years and a vesting period of five years. The total intrinsic value relating to stock options exercised during the fiscal years ended July 31 2020 and 2019 was $1,869,000 and $576,000, respectively. There were no stock options exercised during the fiscal year ended July 31, 2021.

During fiscal 2020 and 2019, at the election of certain holders of vested stock options, 269,090 and 72,830, respectively, of stock options were net settled upon exercise. As a result, 27,994 and 9,345 shares of our common stock were issued during the fiscal years ended July 31, 2020 and 2019, respectively, net of shares retained to satisfy the exercise price and minimum statutory tax withholding requirements.

There were no stock options granted during fiscal years ended July 31, 2021 or 2019. The estimated per-share weighted average grant-date fair value of stock options granted during fiscal 2020 was $5.52, which was determined using the Black-Scholes option pricing model, and included weighted average assumptions as follows: (i) expected dividend yield of 2.24%, (ii) expected volatility of 40.03%, (iii) risk-free interest rate of 0.54%, and (iv) expected life of 6.5 years.

Expected dividend yield is the expected annual dividend as a percentage of the fair market value of our common stock on the date of grant, based on our Board's annual dividend target at the time of grant. We estimate expected volatility by considering the historical volatility of our stock and the implied volatility of publicly-traded call options on our stock. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for an instrument which closely approximates the expected term. The expected term is the number of years we estimate that awards will be outstanding prior to exercise and is determined by employee groups with sufficiently distinct behavior patterns. Assumptions used in computing the fair value of stock-based awards reflect our best estimates, but involve uncertainties relating to market and other conditions, many of which are outside of our control. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by recipients of stock-based awards.

Performance Shares, RSUs, Restricted Stock and Share Unit Awards

The following table summarizes the Plan's activity relating to performance shares, RSUs, restricted stock and share units:

	Awards (in Shares)	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value
Outstanding at July 31, 2018	818,438	$ 19.78	
Granted	442,363	29.76	
Settled	(275,619)	26.05	
Canceled/Forfeited	(30,506)	25.52	
Outstanding at July 31, 2019	954,676	22.40	
Granted	560,361	19.93	
Settled	(431,581)	22.02	
Canceled/Forfeited	(83,882)	22.84	
Outstanding at July 31, 2020	999,574	21.15	
Granted	644,272	19.06	
Settled	(455,564)	17.09	
Canceled/Forfeited	(119,912)	18.42	
Outstanding at July 31, 2021	1,068,370	$ 21.93	$ 26,677,000
Vested at July 31, 2021	373,522	$ 21.84	$ 9,327,000
Vested and expected to vest at July 31, 2021	1,023,923	$ 21.93	$ 25,567,000

The total intrinsic value relating to fully-vested awards settled during the fiscal years ended July 31, 2021, 2020 and 2019 was $9,878,000, $9,635,000 and $8,772,000 respectively.

The performance shares granted to employees principally vest over a three-year performance period, if pre-established performance goals are attained, or as specified pursuant to the Plan and related agreements. As of July 31, 2021, the number of outstanding performance shares included in the above table, and the related compensation expense prior to consideration of estimated pre-vesting forfeitures, assume achievement of the pre-established goals at a target level.

RSUs and restricted stock granted to non-employee directors prior to July 31, 2019 have a vesting period of three years and are convertible into shares of our common stock generally at the time of termination, on a one-for-one basis for no cash consideration, or earlier under certain circumstances. RSUs and restricted stock granted to non-employee directors after July 31, 2019 have a vesting period of five years. RSUs granted to employees have a vesting period of five years and are convertible into shares of our common stock generally at the time of vesting, on a one-for-one basis for no cash consideration.

Share units granted prior to July 31, 2017 were vested when issued and are convertible into shares of our common stock, generally at the time of termination, on a one-for-one basis for no cash consideration, or earlier under certain circumstances. Share units granted on or after July 31, 2017 were granted to certain employees in lieu of non-equity incentive compensation and are convertible into shares of our common stock on the one-year anniversary of the respective grant date.

On July 31, 2021, 253,257 fully vested share units were granted to certain employees in lieu of fiscal 2021 non-equity incentive compensation. Also, on July 31, 2021, 266,354 fully vested share units (previously granted in lieu of fiscal 2020 non-equity incentive compensation) were settled by delivery of 98,502 shares of our common stock after reduction of share units retained to satisfy employees' statutory tax withholding requirements. Cumulatively, through July 31, 2021, 949,357 share units granted have been settled.

The fair value of performance shares, RSUs, restricted stock and share units is determined using the closing market price of our common stock on the date of grant, less the present value of any estimated future dividend equivalents such awards are not entitled to receive and an applicable estimated discount for any post-vesting transfer restrictions. RSUs, performance shares and restricted stock granted since fiscal 2013 are entitled to dividend equivalents unless forfeited before vesting occurs. Share units granted since fiscal 2014 are entitled to dividend equivalents while the underlying shares are unissued.

Dividend equivalents are subject to forfeiture, similar to the terms of the underlying stock-based awards, and are payable in cash generally at the time of settlement of the underlying award. During fiscal 2021, 2020 and 2019, we accrued $380,000, $294,000 and $327,000, respectively, of dividend equivalents (net of forfeitures) and paid out $279,000, $288,000 and $263,000, respectively. Accrued dividend equivalents were recorded as a reduction to retained earnings. As of July 31, 2021 and 2020, accrued dividend equivalents were $884,000 and $783,000, respectively.

With respect to the actual settlement of stock-based awards for income tax reporting, during the fiscal year ended July 31, 2021, we recorded an income tax benefit of $142,000, and during the fiscal years ended July 31, 2020 and 2019 we recorded an income tax expense of $224,000 and an income tax benefit of $479,000, respectively.

Subsequent Events

In the first quarter of fiscal 2022, our Board of Directors authorized the issuance of stock-based awards with a total unrecognized compensation expense, net of estimated forfeitures, of approximately $6,185,000.

(11) Segment Information

Reportable operating segments are determined based on Comtech's management approach. The management approach, as defined by FASB ASC 280 *"Segment Reporting"* is based on the way that the CODM organizes the segments within an enterprise for making decisions about resources to be allocated and assessing their performance. Our CODM, for purposes of FASB ASC 280, is our Chief Executive Officer. We manage our business through the following reportable operating segments:

Our Commercial Solutions segment offers satellite ground station technologies (such as modems and amplifiers) and public safety and location technologies (such as 911 call routing, 911 call handling and mapping solutions) to commercial customers and smaller government customers, such as state and local governments. This segment also serves certain large government customers (including the U.S. government) that have requirements for off-the-shelf commercial equipment.

Our Government Solutions segment provides tactical satellite-based networks and ongoing support for complicated communications networks, troposcatter systems and solid-state, high-power amplifiers to large government end-users (including those of foreign countries), large international customers and domestic prime contractors.

Our CODM primarily uses a metric that we refer to as Adjusted EBITDA to measure an operating segment's performance and to make decisions about resources to be allocated. Our Adjusted EBITDA metric for the Commercial Solutions and Government Solutions segments do not consider any allocation of indirect expense, or any of the following: income taxes, interest (income) and other, write-off of deferred financing costs, interest expense, amortization of stock-based compensation, amortization of intangible assets, depreciation expense, estimated contract settlement costs, settlement of intellectual property litigation, acquisition plan expenses, restructuring costs, COVID-19 related costs, strategic emerging technology costs (for next-generation satellite technology), facility exit costs, strategic alternatives expenses, proxy solicitation related costs and other. These items, while periodically affecting our results, may vary significantly from period to period and may have a disproportionate effect in a given period, thereby affecting the comparability of results. Any amounts shown in the Adjusted EBITDA calculation for our Commercial Solutions and Government Solutions segments are directly attributable to those segments. Our Adjusted EBITDA is also used by our management in assessing the Company's operating results. Although closely aligned, the Company's definition of Adjusted EBITDA is different than the Consolidated EBITDA (as such term is defined in our Credit Facility) utilized for financial covenant calculations and also may differ from the definition of EBITDA or Adjusted EBITDA used by other companies and, therefore, may not be comparable to similarly titled measures used by other companies.

Operating segment information, along with a reconciliation of segment net income (loss) and consolidated net income to Adjusted EBITDA is presented in the tables below:

	Fiscal Year Ended July 31, 2021			
	Commercial Solutions	Government Solutions	Unallocated	Total
Net sales	$ 360,146,000	221,549,000	—	$ 581,695,000
Operating income (loss)	$ 41,064,000	8,402,000	(117,764,000)	$ (68,298,000)
Net income (loss)	$ 39,200,000	9,553,000	(122,233,000)	$ (73,480,000)
Provision for (benefit from) income taxes	1,794,000	(1,376,000)	(1,918,000)	(1,500,000)
Interest (income) and other	68,000	161,000	(368,000)	(139,000)
Interest expense	2,000	64,000	6,755,000	6,821,000
Amortization of stock-based compensation	—	—	9,983,000	9,983,000
Amortization of intangibles	17,054,000	3,966,000	—	21,020,000
Depreciation	7,451,000	1,586,000	342,000	9,379,000
Acquisition plan expenses	(1,052,000)	—	101,344,000	100,292,000
Restructuring costs	1,804,000	978,000	—	2,782,000
COVID-19 related costs	—	1,046,000	—	1,046,000
Strategic emerging technology costs	—	315,000	—	315,000
Adjusted EBITDA	$ 66,321,000	16,293,000	(6,095,000)	$ 76,519,000
Purchases of property, plant and equipment	$ 10,899,000	5,055,000	83,000	$ 16,037,000
Long-lived assets acquired in connection with acquisitions	$ 45,515,000	2,443,000	—	$ 47,958,000
Total assets at July 31, 2021	$ 738,095,000	232,763,000	22,253,000	$ 993,111,000

	Fiscal Year Ended July 31, 2020			
	Commercial Solutions	Government Solutions	Unallocated	Total
Net sales	$ 353,730,000	262,985,000	—	$ 616,715,000
Operating income (loss)	$ 34,820,000	19,988,000	(39,634,000)	$ 15,174,000
Net income (loss)	$ 34,414,000	20,232,000	(47,626,000)	$ 7,020,000
Provision for (benefit from) income taxes	410,000	(100,000)	1,980,000	2,290,000
Interest (income) and other	(31,000)	(169,000)	10,000	(190,000)
Interest expense	27,000	25,000	6,002,000	6,054,000
Amortization of stock-based compensation	—	—	9,275,000	9,275,000
Amortization of intangibles	17,325,000	4,270,000	—	21,595,000
Depreciation	8,347,000	1,446,000	768,000	10,561,000
Estimated contract settlement costs	444,000	—	—	444,000
Acquisition plan expenses	751,000	—	20,003,000	20,754,000
Adjusted EBITDA	$ 61,687,000	$ 25,704,000	$ (9,588,000)	$ 77,803,000
Purchases of property, plant and equipment	$ 5,281,000	1,617,000	327,000	$ 7,225,000
Long-lived assets acquired in connection with acquisitions	$ 6,060,000	32,391,000	—	$ 38,451,000
Total assets at July 31, 2020	$ 647,964,000	232,052,000	49,631,000	$ 929,647,000

	Fiscal Year Ended July 31, 2019			
	Commercial Solutions	Government Solutions	Unallocated	Total
Net sales	$ 357,293,000	314,504,000	—	$ 671,797,000
Operating income (loss)	$ 36,053,000	28,997,000	(23,643,000)	$ 41,407,000
Net income (loss)	$ 35,888,000	29,029,000	(39,876,000)	$ 25,041,000
Provision for income taxes	19,000	—	3,850,000	3,869,000
Interest (income) and other	75,000	(41,000)	1,000	35,000
Write-off of deferred financing costs	—	—	3,217,000	3,217,000
Interest expense	71,000	9,000	9,165,000	9,245,000
Amortization of stock-based compensation	—	—	11,427,000	11,427,000
Amortization of intangibles	14,944,000	3,376,000	—	18,320,000
Depreciation	9,265,000	1,891,000	771,000	11,927,000
Estimated contract settlement costs	6,351,000	—	—	6,351,000
Settlement of intellectual property litigation	—	—	(3,204,000)	(3,204,000)
Acquisition plan expenses	—	—	5,871,000	5,871,000
Facility exit costs	—	1,373,000	—	1,373,000
Adjusted EBITDA	$ 66,613,000	35,637,000	(8,778,000)	$ 93,472,000
Purchases of property, plant and equipment	$ 6,293,000	1,902,000	590,000	$ 8,785,000
Long-lived assets acquired in connection with acquisitions	$ 60,693,000	—	—	$ 60,693,000
Total assets at July 31, 2019	$ 662,580,000	186,438,000	38,693,000	$ 887,711,000

Unallocated expenses result from corporate expenses such as executive compensation, accounting, legal and other regulatory compliance related costs and also includes all of our amortization of stock-based compensation. During fiscal 2021, 2020 and 2019, we recorded $100,292,000, $20,754,000 and $5,871,000 of acquisition plan expenses, respectively, most of which were recorded primarily in our unallocated expenses. See *Note (2)* -"*Acquisitions*" for further information. In addition, offsetting unallocated expenses in fiscal 2019 is a $3,204,000 benefit as a result of a favorable ruling issued by the U.S. Court of Appeals for the Federal Circuit related to a legacy TCS intellectual property matter.

During fiscal 2021, our Commercial Solutions segment recorded $1,804,000 of restructuring costs incurred to shift production of our key satellite earth station products to a new 146,000 square foot facility in Chandler, Arizona. There were no such charges recorded in fiscal 2020 or 2019.

During fiscal 2021, our Government Solutions segment recorded $978,000 of restructuring costs incurred to consolidate certain administrative and operating functions in our tactical communications technologies product line. In addition, during fiscal 2021, this segment also recorded $1,046,000 of incremental operating costs related to our antenna facility located in the United Kingdom due to the impact of the COVID-19 pandemic, which resulted in a temporary but complete shut-down of this facility. There were no such charges recorded in fiscal 2020 or 2019.

Interest expense in the tables above primarily relates to our Credit Facility, and includes the amortization of deferred financing costs. See *Note (7)* - "*Credit Facility*" for further discussion. In addition, interest expense for fiscal 2021 includes $1,178,000 of incremental interest expense related to a now terminated financing commitment letter, as discussed in more detail in *Note (2)* - "*Acquisitions*." During fiscal 2019, we recorded a $3,217,000 loss from the write-off of deferred financing costs primarily related to the Term Loan Facility portion of our Prior Credit Facility. See *Note (7)* - "*Credit Facility*" for further discussion.

Intersegment sales in fiscal 2021, 2020 and 2019 by the Commercial Solutions segment to the Government Solutions segment were $3,481,000, $9,837,000 and $17,371,000, respectively. There were nominal sales by the Government Solutions segment to the Commercial Solutions segment for these fiscal periods. All intersegment sales are eliminated in consolidation and are excluded from the tables above.

Unallocated assets at July 31, 2021 consist principally of cash and cash equivalents, income taxes receivable, corporate property, plant and equipment and deferred financing costs. The large majority of our long-lived assets are located in the U.S.

(12) Commitments and Contingencies

(a) Legal Proceedings and Other Matters

April 2021 Settlement of Litigation Related to the 2019 Acquisition of GD NG-911
In April 2021, we fully and finally settled two related lawsuits with a former employee and Motorola Solutions, Inc. ("Motorola"), and the cases were dismissed with the Court's approval. The resolution of this litigation, which related to our 2019 acquisition of GD NG-911, did not have a material negative impact on our consolidated results of operations, cash flows, or financial position.

Other Matters
In March 2021, Comtech Xicom Technology, Inc. (“Xicom”) reached an agreement with the U.S. Department of Commerce’s Bureau of Industry and Security (“BIS”) resolving a previously disclosed matter pending since 2017, which we made a voluntarily disclosure to the U.S. Department of Commerce Office of Export Enforcement (“OEE”). Based on our own audit of approximately 7,800 transactions, it was determined that for three (3) separate transactions between December 2015 and March 2017, Xicom engaged in conduct prohibited by the Export Administration Regulations (the “Regulations”) when it exported items subject to the Regulations from the United States to Russia, the United Arab Emirates, and Brazil without obtaining the necessary BIS authorizations required for exports to each of these countries. The exports were valued at $154,000. Upon discovery of this issue, we implemented additional controls and procedures and increased awareness of these specific export requirements throughout Comtech to help avoid similar occurrences in the future. Pursuant to the agreement with BIS, Xicom made a payment to BIS of $122,000 in April 2021. No other actions are to be taken by BIS or required of Xicom or Comtech in connection with this matter and we now considered the matter closed.

In the ordinary course of business, we include indemnification provisions in certain of our customer contracts to indemnify, hold harmless and reimburse such customers for certain losses, including but not limited to losses related to third-party claims of intellectual property infringement arising from the customer’s use of our products or services. We may also, from time to time, receive indemnification requests from customers related to third-party claims that 911 calls were improperly routed during an emergency. We evaluate such claims as and when they arise. We do not always agree with customers that they are entitled to indemnification and in such cases reject their claims. Despite maintaining that we have properly carried out our duties, we may seek coverage under our various insurance policies; however, we cannot be sure that we will be able to maintain or obtain insurance coverage at acceptable costs or in sufficient amounts or that our insurer will not disclaim coverage as to such claims. Accordingly, pending or future claims asserted against us by a party that we agree to indemnify could result in legal costs and damages that could have a material adverse effect on our consolidated results of operations and financial condition.

There are certain other pending and threatened legal actions which arise in the normal course of business. Although the ultimate outcome of litigation is difficult to accurately predict, we believe that the outcome of these other pending and threatened actions will not have a material adverse effect on our consolidated financial condition or results of operations.

(b) Employment Change of Control and Indemnification Agreements

We have an employment agreement with our CEO and Chairman. The employment agreement generally provides for an annual salary and bonus award. We have also entered into change of control agreements with certain of our executive officers and certain key employees. All of these agreements may require payments by us, in certain circumstances, including, but not limited to, a change in control of our Company or termination of the employee.

(13) Goodwill

The following table represents goodwill by reportable operating segment, including the changes in the net carrying value of goodwill as of July 31, 2021:

	Commercial Solutions	Government Solutions	Total
Balance as of July 31, 2020	$ 255,432,000	75,087,000	$ 330,519,000
Changes related to CGC acquisition	—	2,222,000	2,222,000
Changes related to Solacom Technologies Inc. ("Solacom")	1,052,000	—	1,052,000
UHP acquisition	13,905,000	—	13,905,000
Balance as of July 31, 2021	$ 270,389,000	77,309,000	$ 347,698,000

During fiscal 2021, we recorded an adjustment to Solacom's goodwill to correct an immaterial item.

In accordance with FASB ASC 350, we perform a goodwill impairment analysis at least annually (in the first quarter of each fiscal year), unless indicators of impairment exist in interim periods. If we fail the quantitative assessment of goodwill impairment ("quantitative assessment"), we would be required to recognize an impairment loss equal to the amount that a reporting unit's carrying value exceeded its fair value; however, any loss recognized should not exceed the total amount of goodwill allocated to that reporting unit.

On August 1, 2021 (the first day of our fiscal 2022), we performed our annual quantitative assessment using market participant assumptions to determine if the fair value of each of our reporting units with goodwill exceeded its carrying value. In making this assessment, we considered, among other things, expectations of projected net sales and cash flows, assumptions impacting the weighted average cost of capital, trends in trading multiples of comparable companies, changes in our stock price and changes in the carrying values of our reporting units with goodwill. We also considered overall business conditions.

In performing the quantitative assessment, we estimated the fair value of each of our reporting units using a combination of the income and market approaches. The income approach, also known as the discounted cash flow ("DCF") method, utilizes the present value of cash flows to estimate fair value. The future cash flows for our reporting units were projected based on our estimates, at that time, of future revenues, operating income and other factors (such as working capital and capital expenditures). For purposes of conducting our impairment analysis, we assumed revenue growth rates and cash flow projections that are below our actual long-term expectations. The discount rates used in our DCF method were based on a weighted-average cost of capital ("WACC") determined from relevant market comparisons, adjusted upward for specific reporting unit risks (primarily the uncertainty of achieving projected operating cash flows). A terminal value growth rate was applied to the final year of the projected period, which reflects our estimate of stable, perpetual growth. We then calculated a present value of the respective cash flows for each reporting unit to arrive at an estimate of fair value under the income approach. Under the market approach, we estimated a fair value based on comparable companies' market multiples of revenues and earnings before interest, taxes, depreciation and amortization and factored in a control premium. Finally, we compared our estimates of fair values to our August 1, 2021 total public market capitalization and assessed implied control premiums based on our common stock price of $24.97 as of August 1, 2021.

Based on our quantitative evaluation, we determined that our Commercial Solutions and Government Solutions reporting units had estimated fair values in excess of their carrying values of at least 22.7% and 94.1%, respectively, and concluded that our goodwill was not impaired and that neither of our two reporting units was at risk of failing the quantitative assessment.

It is possible that, during fiscal 2022 or beyond, business conditions (both in the U.S. and internationally) could deteriorate from the current state, our current or prospective customers could materially postpone, reduce or even forgo purchases of our products and services to a greater extent than we currently anticipate, or our common stock price could fluctuate. Such fluctuation could be caused by uncertainty about the severity and length of the COVID-19 pandemic, and its impact on global activity.

A significant decline in our customers' spending that is greater than we anticipate or a shift in funding priorities may also have a negative effect on future orders, sales, income and cash flows and we might be required to perform a quantitative assessment during fiscal 2022 or beyond. If assumed net sales and cash flow projections are not achieved in future periods or our common stock price significantly declines from current levels, our Commercial Solutions and Government Solutions reporting units could be at risk of failing the quantitative assessment and goodwill assigned to the respective reporting units could be impaired.

In any event, we are required to perform the next annual goodwill impairment analysis on August 1, 2022 (the start of our fiscal 2023). If our assumptions and related estimates change in the future, or if we change our reporting unit structure or other events and circumstances change (e.g., a sustained decrease in the price of our common stock (considered on both absolute terms and relative to peers)), we may be required to record impairment charges when we perform these tests, or in other future periods. Any impairment charges that we may record in the future could be material to our results of operations and financial condition.

(14) Intangible Assets

Intangible assets with finite lives as of July 31, 2021 and 2020 are as follows:

	July 31, 2021			
	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Customer relationships	20.2	$ 302,058,000	93,215,000	$ 208,843,000
Technologies	14.8	114,949,000	70,924,000	44,025,000
Trademarks and other	16.7	32,926,000	17,095,000	15,831,000
Total		$ 449,933,000	181,234,000	$ 268,699,000

	July 31, 2020			
	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Customer relationships	20.4	$ 286,058,000	79,534,000	$ 206,524,000
Technologies	14.0	99,349,000	65,398,000	33,951,000
Trademarks and other	16.6	32,826,000	15,282,000	17,544,000
Total		$ 418,233,000	160,214,000	$ 258,019,000

The weighted average amortization period in the above table excludes fully amortized intangible assets.

Amortization expense for the fiscal years ended July 31, 2021, 2020 and 2019 was $21,020,000, $21,595,000 and $18,320,000, respectively.

The estimated amortization expense consists of the following for the fiscal years ending July 31:

2022	$ 21,781,000
2023	21,781,000
2024	21,154,000
2025	21,041,000
2026	19,888,000

We review net intangible assets with finite lives for impairment when an event occurs indicating the potential for impairment. Based on our last assessment, we believe that the carrying values of our net intangible assets were recoverable as of July 31, 2021. However, if business conditions deteriorate, we may be required to record impairment losses, and or increase the amortization of intangibles in the future. Any impairment charges that we may record in the future could be material to our results of operations and financial condition.

(15) Stockholders' Equity

Sale of Common Stock
In December 2018, we filed a $400,000,000 shelf registration statement with the SEC for the sale of various types of securities, including debt. The shelf registration was declared effective by the SEC as of December 14, 2018. To-date, we have not issued any securities pursuant to our $400,000,000 shelf registration statement.

On March 3, 2021, in connection with our acquisition of UHP, we filed a shelf registration statement with the SEC for the sale by the selling stockholder of UHP of up to 1,381,567 shares of our common stock. See *Note (2)* - "*Acquisitions - UHP Networks Inc.*" for further information.

Stock Repurchase Program
On September 29, 2020, our Board of Directors authorized a new $100,000,000 stock repurchase program, which replaced our prior program. The new $100,000,000 stock repurchase program has no time restrictions and repurchases may be made from time to time in open-market or privately negotiated transactions, or by other means in accordance with federal securities laws. There were no repurchases made during the fiscal years ended July 31, 2021 or 2020.

Dividends
Since September 2010, we have paid quarterly dividends pursuant to an annual targeted dividend amount that was established by our Board of Directors. On September 29, 2020, December 9, 2020, March 11, 2021 and June 8, 2021, our Board of Directors declared a dividend of $0.10 per common share, which were paid on October 27, 2020, February 19, 2021, May 21, 2021 and August 20, 2021, respectively.

On October 4, 2021, our Board of Directors declared a dividend of $0.10 per common share, payable on November 12, 2021 to stockholders of record at the close of business on October 13, 2021. Future Common Stock dividends remain subject to compliance with financial covenants under our Credit Facility, as well as Board approval.

(16) Unaudited Quarterly Financial Data

The following is a summary of unaudited quarterly operating results:

Fiscal 2021	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total	
Net sales	$ 135,218,000	161,292,000	139,376,000	145,809,000	$ 581,695,000	
Gross profit	50,208,000	55,680,000	53,016,000	55,054,000	213,958,000	
Net (loss) income	(85,840,000)	4,205,000	792,000	7,363,000	(73,480,000)	
Diluted (loss) income per share	(3.39)	0.17	0.03	0.28	(2.86)	*
Fiscal 2020	**First Quarter**	**Second Quarter**	**Third Quarter**	**Fourth Quarter**	**Total**	
Net sales	$ 170,267,000	161,654,000	135,121,000	149,673,000	$ 616,715,000	
Gross profit	63,567,000	60,602,000	53,001,000	49,663,000	226,833,000	
Net income (loss)	6,388,000	3,495,000	(3,989,000)	1,126,000	7,020,000	
Diluted income (loss) per share	0.26	0.14	(0.16)	0.04	0.28	*
Fiscal 2019	**First Quarter**	**Second Quarter**	**Third Quarter**	**Fourth Quarter**	**Total**	
Net sales	$ 160,844,000	164,133,000	170,448,000	176,372,000	$ 671,797,000	
Gross profit	57,769,000	61,245,000	64,416,000	64,010,000	247,440,000	
Net income	3,468,000	7,826,000	7,612,000	6,135,000	25,041,000	
Diluted income per share	0.14	0.32	0.31	0.25	1.03	*

* The per share information is computed independently for each quarter and the full year based on the respective weighted average number of common shares outstanding. Therefore, income per share information for the full fiscal year may not equal the total of the quarters within the year.

Schedule II

COMTECH TELECOMMUNICATIONS CORP.
AND SUBSIDIARIES

Valuation and Qualifying Accounts and Reserves

Fiscal Years Ended July 31, 2021, 2020 and 2019

Column A	Column B	Column C Additions				Column D		Column E
Description	Balance at beginning of period	Charged to cost and expenses		Charged to other accounts - describe		Transfers (deductions) - describe		Balance at end of period
Allowance for doubtful accounts receivable:								
Year ended July 31,								
2021	$ 1,769,000	(18,000)	(A)	215,000	(B)	(318,000)	(C)	$ 1,648,000
2020	1,867,000	45,000	(A)	—		(143,000)	(C)	1,769,000
2019	1,761,000	1,136,000	(A)	—		(1,030,000)	(C)	1,867,000
Inventory reserves:								
Year ended July 31,								
2021	$ 19,076,000	4,364,000	(D)	—		(3,211,000)	(E)	$ 20,229,000
2020	19,696,000	1,647,000	(D)	—		(2,267,000)	(E)	19,076,000
2019	17,427,000	6,015,000	(D)	—		(3,746,000)	(E)	19,696,000
Valuation allowance for deferred tax assets:								
Year ended July 31,								
2021	$ 11,471,000	17,750,000	(F)	—		(837,000)	(F)	$ 28,384,000
2020	12,568,000	750,000	(F)	—		(1,847,000)	(F)	11,471,000
2019	11,854,000	58,000	(F)	656,000	(G)	—		12,568,000

(A) Provision for doubtful accounts.
(B) Increase due to our adoption FASB ASU No. 2016-13 ("CECL"). See Note (1)(n) "Summary of Significant Accounting and Reporting Policies" for further discussion
(C) Write-off of uncollectible receivables.
(D) Provision for excess and obsolete inventory.
(E) Write-off of inventory.
(F) Change in valuation allowance. See Note (9) - "Income Taxes" for further discussion.
(G) Acquisition related valuation allowance charged to goodwill.

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CORPORATE INFORMATION

BOARD OF DIRECTORS

Fred Kornberg
Chairman of the Board and
Chief Executive Officer

(*Listed Below Alphabetically)*
Judy Chambers
Managing Principal and a Member of the
Board of Meketa Investment Group

Lisa Lesavoy
Owner, Lesavoy Financial
Perspectives, Inc.

Dr. Yacov A. Shamash
Professor of Electrical and Computer
Engineering at Stony Brook University

Lawrence J. Waldman
Non-Executive Chairman of the Board
CVD Equipment Corporation

RETIRING DIRECTORS

Edwin Kantor
Lead Independent Director
Executive Director of S2K Financial LLC

Ira Kaplan
Private Investor

Robert G. Paul
Private Investor

INDEPENDENT REGISTERED PUBLIC ACCOUNTANTS

Deloitte & Touche LLP
Jericho, New York 11753

MARKET FOR COMMON STOCK

Common Stock is traded on the NASDAQ Stock
Market LLC under the stock symbol CMTL

CORPORATE MANAGEMENT

Fred Kornberg
Chief Executive Officer

Michael D. Porcelain
President and Chief Operating Officer

Michael A. Bondi
Chief Financial Officer

Yelena Simonyuk
Managing Counsel

Nancy Stallone
Treasurer and Corporate Secretary

Michael Plourde
Vice President of Global Engineering and Programs

Marcus Alston
Chief Trade Compliance Officer

In October 2021, Comtech announced that its President and Chief Operating Officer, Michael Porcelain, will become Chief Executive Officer, succeeding Fred Kornberg, by the end of calendar year 2021. Mr. Porcelain will also continue as President of Comtech and join its Board of Directors. In addition, Comtech announced that Mark Quinlan, a Co-Founder and Managing Partner of White Hat Capital, will be appointed to the Board of Directors at that time. It is anticipated that Mr. Kornberg will become an advisor to the Company on technology matters and continue as a director and a non-executive Chairman of the Board.

REGISTRAR AND TRANSFER AGENT

American Stock Transfer and Trust Co.
6201 15th Avenue
Brooklyn, New York 11219

COMMON STOCK PRICE RANGE

	High	Low
Fiscal Year Ended July 31, 2021		
First Quarter	$ 18.77	$ 12.96
Second Quarter	24.42	14.42
Third Quarter	30.40	21.39
Fourth Quarter	27.15	21.15

INVESTOR RELATIONS AND SHAREHOLDER INFORMATION

Visit us at www.comtechtel.com or call (631) 962-7005. A copy of the Form 10-K Annual Report, exhibits and other reports as filed with the Securities and Exchange Commission are available to shareholders. Requests for information should be made by submitting an email to investors@comtech.com or by writing to us at Comtech Telecommunications Corp., Attention: Corporate Secretary, 68 South Service Road, Suite 230, Melville, NY 11747.

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