UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

FOR THE FISCAL YEAR ENDED DECEMBER 31, 2021

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934**

FOR THE TRANSITION PERIOD FROM ___ TO ___

COMMISSION FILE NUMBER: 1-13463

BIO-KEY INTERNATIONAL, INC.

(Exact name of registrant as specified in its charter)

Delaware	**41-1741861**
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification Number)

3349 HIGHWAY 138, BUILDING A, SUITE E, WALL, NJ 07719
(Address of principal executive offices) (Zip Code)
(732) 359-1100
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, $0.0001 par value per share	BKYI	Nasdaq Capital Market

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

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 or 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, 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 the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 30, 2021 (the last business day of the registrant's most recently completed second fiscal quarter), the aggregate market value of the registrant's common stock held by non-affiliates was approximately $27.6 million based upon the closing price for shares of the registrant's post-split common stock of $3.80 as reported by the Nasdaq Stock Market on that date.

As of March 29, 2022, the registrant had 8,405,209 shares of common stock outstanding.

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PRIVATE SECURITIES LITIGATION REFORM ACT

All statements other than statements of historical facts contained in this Annual Report on Form 10-K, including statements regarding our future financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. The words “anticipate,” “believe,” “should,” “estimate,” “will,” “may,” “future,” “plan,” “intend” and “expect” and similar expressions generally identify forward-looking statements. Although we believe our plans, intentions, assumptions and expectations reflected in the forward-looking statements are reasonable, we cannot be sure they will be achieved. Additionally, the duration and severity of the current COVID-19 pandemic and the conflict between Ukraine and Russia and their effects on our business operations, sales cycles, personnel, and the geographic markets in which we operate, and numerous other matters of national, regional and global scale, including those of a political, economic, business and competitive nature could cause our actual results to be materially different than those expressed in our forward looking statements. We caution that it is very difficult to predict the impact of known factors, it is impossible for us to anticipate all factors that could affect our actual results, and that actual results may differ materially and adversely from the forward-looking statements contained herein due to a number of factors, including but not limited to those factors set forth under the caption “Risk Factors” in Item 1A of this Annual Report and other filings with the Securities and Exchange Commission. These factors are not intended to represent a complete list of the general or specific factors that may affect us. It should be recognized that other factors, including general economic factors and business strategies, may be significant, presently or in the future. Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

PART I

ITEM 1. BUSINESS

Solely for convenience, trademarks and tradenames referred to in this Annual Report on Form 10-K appear (after the first usage) without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trademarks and tradenames.

Overview

BIO-key International, Inc. (the “Company,” “BIO-key,” “we,” or “us”) is a leading identity and access management (IAM) platform provider enabling secure work-from-anywhere for enterprise, education, and government customers. Our vision is to enable any organization to secure streamlined and passwordless workforce, customer, citizen and student access to any online service, workstation, or mobile application, without a requirement to use tokens or phones. Our products include PortalGuard® and PortalGuard Identity-as-a-Service (IDaaS) enterprise IAM, WEB-key® biometric civil and large-scale ID infrastructure, and high-quality, low-cost accessory hardware to provide a full and complete solution for identity-innovating customers.

BIO-key PortalGuard empowers organizations to maximize the power of cloud, mobile and web technologies by securing users’ identities and connecting them with the applications they rely on, while keeping cyber-intruders and unauthorized delegates (proxy) out.

Millions of users trust BIO-key® to secure access to a variety of cloud, mobile and web applications, on-premise and cloud-based hypervisor servers from all of their devices. Employees and contractors sign into BIO-key PortalGuard to seamlessly and securely access the applications of need to do their work, and customers sign into BIO-key PortalGuard to access online services. Organizations use PortalGuard to securely collaborate and communicate with their partners and to provide their customers with flexible, resilient user experiences online and while using mobile devices.

BIO-key’s WEB-key is a scalable biometric service management platform, incorporating key functions for regulatory compliance, enrollment, authentication or identification, and integrity in a multi-tenant private or public cloud delivery platform. Government agencies use BIO-key for their large-scale civil ID projects, because WEB-key underpins a biometric identity ecosystem, is cloud-ready, and provides a scalable, high-integrity trust platform which can be operated anywhere and supports over 30 fingerprint scanners interchangeably.

We also deliver biometric software integration application programming interfaces, or APIs, allowing software developers to leverage our platform to securely and efficiently embed biometric multi-factor authentication, or MFA, into their own products. This allows software developers to focus on their core functionality while BIO-key ensures users enter the application without requiring they carry their phone or any token.

Even the most security-focused organizations are suffering breaches as a result of human error or improper conduct. As enterprises scale the number of software as a service, or SaaS applications, and multi-cloud services they rely on and the interconnections between them increase, assured identity has emerged as a critical component of an organization’s security framework, directly affecting each triad of cybersecurity – confidentiality, integrity, and availability. As access perimeters dissolve, organizations must evolve from network-based security models to Zero Trust and Continuous Authentication and Risk Trust Assessment (CARTA) security models, focusing on adaptive and context-aware controls. True server-secured biometric verification removes the human nature vulnerability at the root of many security compromises creating a more reliable means to manage user access and protect digital assets against rogue users willing to hand over their credentials to a proxy. Our global identity as a service, or IDaaS, hosting capability allows our customers to simplify and efficiently scale their security infrastructures across internal IT systems and external customer facing applications without installation overhead, security or uptime management efforts.

We designed BIO-key PortalGuard IDaaS and WEB-key to provide organizations an integrated approach to managing and securing all of their identities using the technologies they already use while providing capacity for future needs through the strategic use of biometrics to limit vulnerability and contain authentication costs. Our platform allows users to authenticate their customers, employees, contractors, and partners. It enables any user to connect to any device, cloud or application, all with a simple, customizable, intuitive and consumer-friendly user experience. We utilize server-secured biometrics to support roving users without requiring them to carry their phone or a token. As of December 31, 2021, more than 300 customers across multiple industries use BIO-key to secure and manage access for users around the world.

Development of Business

We were founded in 1993 to develop and market advanced fingerprint biometric technology and related security software solutions. First incorporated as BBG Engineering, the company was renamed SAC Technologies in 1994 and renamed BIO-key International, Inc. in 2002. Our principal executive office is located at 3349 Highway 138, Building A, Suite E, Wall, New Jersey 07719.

We were pioneers in developing automated, finger identification technology that supplements or compliments other methods of identification and verification, such as personal inspection identification, passwords, tokens, smart cards, ID cards, credit card, passports, driver’s licenses, or other form of possession or knowledge-based credentialing. Our advanced technology has been, and is, used to improve both the accuracy and speed of competing fingerprint biometrics in some of the largest biometric systems in the world.

On June 30, 2020, we enhanced our product offering by acquiring PistolStar, Inc. (“PistolStar”) for $2.5 million. PistolStar provides enterprise-ready identity access management solutions to commercial, government and education customers throughout the United States and internationally. PistolStar develops and markets our PortalGuard line of software and services.

On March 8, 2022, we expanded our sales and support operation into Europe, Africa and the Middle East (“EMEA”) by acquiring Swivel Secure Europe, SA for up to $2.25 million. Swivel Secure Europe is a Madrid, Spain based provider of IAM solutions serving over 300 customers through a network of dozens of channel partners throughout EMEA. Swivel Secure Europe is the exclusive distributer of AuthControl® Sentry, AuthControl Enterprise and AuthControl MSP product line in Europe, Middle East, and Africa, excluding the United Kingdom. Swivel Secure maintains a direct sales force with offices in Madrid, Spain and Lisbon, Portugal.

Our Products

BIO-key PortalGuard and PortalGuard IDaaS

BIO-key PortalGuard is an independent, customer-controlled and neutral-by-design cloud-based identity platform that allows our customers to integrate with any cloud or on-premise SaaS application, service or cloud host, as well as Windows device authentication through a single secure, reliable and scalable IAM platform. It provides identical capabilities in both a SaaS (PortalGuard IDaaS) or on-premise (PortalGuard) delivery model. PortalGuard integrates BIO-key’s Identity Bound Biometric biometric (IBB) authentication as a first-class authentication options that are not tied to a device or “what you have” authentication, allowing relying parties to positively identify who is accessing their systems, not the device they might have handed off. Our three-way IAM neutrality consists of:

- seventeen MFA authentication factor choices, including our server-secured IBB, via fingerprint scanners, or using a palm scan, facial selfie, or voice biometric via a mobile phone.
- open user directory choices including on premise, hybrid or full-Azure Active Directory, LDAP, IBM Domino, or custom SQL user directory; and
- multiple single sign on, or SSO, federation options, including SAML, OIDC, CAS and WS-Fed.

The forgoing allows our customers to combine and authenticate legacy and future technologies and to securely connect users to the technology that they choose. We design transparent compatibility of the BIO-key PortalGuard IDaaS with on-premise infrastructures and public and hybrid clouds.

Our customers use the BIO-key PortalGuard IDaaS to secure their workforces and student populations and make their partner networks more collaborative. PortalGuard IDaaS provides more and secure experiences for their customers and end users, which enables our customers to future-proof their environments. PortalGuard IDaaS can be used as the central system for an organization’s connectivity, access, authentication and identity lifecycle management needs across all of its users, technology and applications. We enable our customers to easily deploy, manage and secure applications and devices, and offer provisioning services using open source tools.

Developers can leverage an extensive suite of API and modular SDK tools to build custom cloud, mobile and web application enrollment and authentication experiences that leverage BIO-key PortalGuard and WEB-key as the underlying identity management platform. Once deployed, PortalGuard allows administrators to enforce contextual access management decisions based on conditions such as user identity, device, geolocation, application destination identity, IP range, and time of day.

Our customers use BIO-key to (i) manage and secure work-related IT access of their employees, contractors and supply chain partners, which we call workforce identity; and (ii) manage and secure the identities of users of their web properties, which we call customer identity.

<u>BIO-key PortalGuard and PortalGuard IDaaS for Workforce Identity</u>. PortalGuard streamlines the way an organization’s employees, contractors and supply chain partners connect to its applications and data from any device, while increasing user efficiency, preventing unauthorized delegation, credential sharing, and keeping digital environments secure through our MFA capabilities. We enable organizations to provide their workforces with immediate and secure access to every application from any device they use, without maintaining multiple credentials. Our multi-directory support interfaces with the directories in place at an organization, while allowing SQL-based custom directories where none presently exist. BIO-key PortalGuard Desktop allows customers to extend the BIO-key PortalGuard IDaaS to their existing on-premises and remote workstation Windows sign in.

BIO-key PortalGuard and PortalGuard IDaaS for Customer Identity. BIO-key PortalGuard allows organizations to secure access to their online properties, while upgrading their customers' user experience by delivering self-enrollment and management for customer-facing cloud, mobile or web applications. We enable an organization's product team to layer BIO-key's MFA, SSO and self-service password reset, or SSPR, functionality into their cloud, web and mobile applications through federation standards or using our APIs. Our customers are able to centrally manage policies, audit and log access across their properties, leading to more seamless customer experiences.

BIO-key VST and WEB-key; Products; Civil and Large-Scale ID Infrastructure

We have developed what we believe is the most discriminating and effective commercially available finger-based biometric technology. This technology is embedded in our PortalGuard product for enterprise security, providing customers with a unique capability to authenticate users without a phone or token, where appropriate, such as manufacturing, retail, call centers, and health care workers. Other markets for scalable biometric engines include government markets, large scale identity projects such as voter's registration, driver's license, national ID programs, and SIM card registration.

We also offer a full line of easy to use finger scanners for both enterprise and consumer markets. Our SideSwipe®, EcoID® and SidePass® finger readers can be used on any laptop, tablet or other device which contains a USB A or C port. We market and sell these fingerprint scanners through distributors and directly to end users via Amazon.

Impact of COVID-19

The COVID-19 outbreak has led us to migrate to a remote business model for our sales, marketing, administrative and executive teams. Research and development and production have adjusting to the situation to maintain production as best as possible considering the conditions and regulations. Our transition to remote work was highly successful, and our teams operated efficiently using our own IAM software to authenticate video conferencing applications and other collaboration tools. The COVID-19 pandemic has extended sales cycles and delayed deployments in most markets in which we operate, particularly in Africa. We continue to conduct business daily, some still from home, and others in office occasionally, as we are actively closing transactions throughout the continuing climate, with no changes to personnel.

Markets

Identity and Access Management, User Multi-Factor Authentication, Single Sign On, Privilege Entitlement and Access Control

Our products simplify the authentication process for enterprise users and consumers, while raising security levels. This allows our customers to meet new, stronger authentication requirements and security best practices across many industries, while delivering a superior end-user experience. Customers use our products to reduce risk of theft, fraud, loss, account takeover attacks, and unauthorized account sharing by limiting access to valuable assets, privileges, data, services, networks and places to only authorized individuals. Our products provide stronger identity binding and a superior user experience versus traditional credentialing systems, which utilize a physical or knowledge-based electronic credential to authenticate the holder but fail to authenticate the actual user in addition to the token. Both commercial enterprises and the public sector have seen a shift in the requirement for stronger authentication, and the FBI, NIST and industry thought leaders such as SalesForce and Microsoft have encouraged entities to enhance their security posture by implementing stronger 2-factor authentication (2FA) or MFA. We believe the market for advanced user MFA, including fingerprint biometrics, extends to nearly every industry segment and the market opportunity for our products is massive, global and growing.

Historically, our largest market has been identity and access management for highly regulated industries like government and healthcare. However, we are witnessing a change in the landscape as organizations within all industries and of all sizes are embracing biometric technology and MFA as a security and workflow solution. Championed by the millions of users that have been successfully introduced to biometrics by companies such as Apple and Samsung, today's users have witnessed the security and convenience benefits of biometric technology in their phones and welcome the same user experience to access applications without passwords.

More recently, in connection with the acquisition of PistolStar we have developed a large customer base in the higher education vertical. Colleges and universities throughout the United States use our PortalGuard single sign on platform. As colleges and universities continue to operate in remote environments, we have seen additional demand for our solutions.

Upon introducing a series of compact fingerprint readers, we saw an immediate increase in inquiries from both commercial companies seeking an alternative to passwords, and from consumers recognizing that they could use SidePass, SideSwipe or EcoID to replace their Windows passwords and enable Windows Hello without replacing or upgrading laptops or tablets.

In October 2015, we established BIO-key Hong Kong for purposes of establishing relationships and conducting business is the Asia Pacific Region. Through our Hong Kong subsidiary, we support the growing demand for secure identification and authentication in the region.

We believe there is potential for significant market growth in the following key areas:

- Corporate network access control, corporate campuses, computer networks, and applications.
- Large scale identification projects, especially in Africa and the surrounding regions.
- Government funded initiatives, including the state board of elections.
- International law enforcement use case applications as prospects see us as a global leader in the biometric technology space as witnessed by our agreement with the Israeli Defense Force, and the Singapore and Dubai Police departments.
- Consumer mobile credentialing, including mobile payments, credit and payment card programs, data and application access, and commercial loyalty programs.
- Demand for BIO-key hardware products from Windows 10 users and Fortune 500 companies.
- Government services and highly regulated industries including, Medicare, Medicaid, Social Security, drivers' licenses, campus and school ID, passports/visas.
- New remote authentication challenges, including those created by the COVID-19 pandemic.

Business Model

Our business model is focused on the following key areas:

Market Drivers	Frequent announcements of supply chain breaches, ransomware attacks, and administrative access compromises highlight the shortcomings of mainstream MFA and security approaches, which leave far too much responsibility on end-users to comply with cyber-hygiene policies. BIO-key's biometric authentication process prevents human error and human nature from undermining secure authentication, while making the end user's access easier than ever. The current climate of broad enterprise adoption of MFA to replace passwords presents opportunities for us to leverage our unique differentiators and exploit the gaps in existing IAM technology approaches. One of those gaps is the challenge of authenticating users that "rove" among workstations. A second gap is preventing unauthorized account sharing and delegation.
OEM Customers	We will continue to prioritize securing agreements with OEM customers. The history of success supporting NCR, McKesson, Omnicell, and LexisNexis provides an established footprint that we intend to build upon. As OEM customers embed our solutions within their products, the customer benefits from the enhanced security and workflow, and frees them from investing in R&D to manage an IAM infrastructure of their own. OEM customers' ordering patterns are more predictable and OEM customers generally require lower service and support resourcing.
Highly Regulated Industries	Government ID projects and healthcare organizations, including hospitals, clinics, and small private practices present a strong opportunity for us. Additionally, the financial services industry, including banks and credit unions has grown substantially.
Partner Model	In 2021, we continued to grow our Channel Alliance Partner program (CAP) focused on partnering with select value added resellers, integrators, and resellers. We added Intellisys and other master agent distributors to our partners. We partner with leading application, managed service and infrastructure vendors, such as Insight, NGEN, Amazon Web Services, UCROO Campus, Software House International (SHI), Virtual Graffiti, Atlassian, and ProCirrus.
Microsoft Partnership	We are a Microsoft Partner and our line of compact fingerprint scanners has been tested and qualified by Microsoft to support Windows Hello and Windows Hello for Business.

Hardware Hardware products generated 25% of our revenue in 2021. EcoID has emerged as our most popular scanner for enterprise deployments. For customers that require the highest level of security, PIV-Pro is a FIPS compliant fingerprint scanner, suitable for highly regulated industries and organizations that want a best-in-class solution.

We have grown our business through a combination of organic growth and the strategic acquisitions of PistolStar and Swivel Secure Europe. We expect to continue to pursue strategic acquisitions of select businesses and assets in the IAM space. In furtherance of this strategy, we are active in the industry and regularly evaluate businesses that we believe will either provide an entry into new market verticals or be synergistic with our existing operations and in either case, be accretive to earnings. We cannot provide any assurance as to whether we will be able to complete any acquisition and if completed, successfully integrate any business we acquire into our operations. Please see the section captioned "**RISK FACTORS**" for additional information regarding acquisition risks.

Marketing and Distribution

We sell our products directly through our field and inside sales teams, as well as indirectly through our network of channel partners. Through our Channel Alliance Program, we have partnered with more than 40 resellers, system integrators and other distribution partners. We are committed to continue to aggressively grow this program in 2022.

We partner with leading application, managed service and infrastructure vendors, such as Insight, NGEN, Amazon Web Services, Pathify (formerly Ucroo Campus), Software House International (SHI), Virtual Graffiti, Atlassian, and ProCirrus.

We offer our software under a SaaS term license and generate annual recurring revenue (ARR) primarily by selling multi-year subscriptions to our software. We employ a customer success team, focused on customer satisfaction and early remediation.

In 2020, we announced two contracts with our partner Technology Transfer Institute for large-scale identification projects in Nigeria. We received our first purchase, related to this project, which we shipped in the first quarter of 2021. The COVID-19 pandemic has and may continue to delay the rollout of these programs.

Intellectual Property Rights

We develop and own significant intellectual property and believe that our intellectual property is fundamental to our biometric and IAM product operation:

Patents

We own patented technologies and trade secrets developed or acquired by us.

In May 2005, the U.S. Patent & Trademark Office issued patent 6,895,104 for our Vector Segment fingerprint technology (VST), our core biometric analysis and identification technology. With the payment of all maintenance fees, this patent will expire on March 4, 2023.

On October 3, 2006, we announced that our patent for a biometric authentication security framework had been granted by the U.S. Patent & Trademark Office. The patent No. 7,117,356 was issued to us for a biometric authentication security framework that enhances commercial and civil biometric use. Our authentication security framework protects privacy and security of cloud or network-based authentications while also facilitates ease of use of biometric systems. The technology that this patent is based on is the foundation for the authentication security incorporated in our WEB-key product line. WEB-key is a mature enterprise authentication solution that functions in a wide variety of application environments. The solution supports a variety of implementation alternatives including card technologies for "two-factor" authentication and also supports "single-factor" authentication. Partners and customers implementing our WEB-key software to provide convenient and secure user identity include a number of institutions including the Allscripts Healthcare Solutions, Computer Associates Site Minder, Oracle Access Manager and many other enterprise and solutions-based systems. With the payment of all maintenance fees, this patent will expire on May 20, 2023.

On December 26, 2006, we were issued US patent No. 7,155,040 covering our unique image processing technology, which is critical for enhancing information used in the extraction of biometric minutiae. The issued patent protects a critical part of an innovative four-phase image enhancement process developed by us. With the payment of all maintenance fees, this patent will expire on January 29, 2025.

On April 15, 2008, we were issued US patent No. 7,359,553 covering our image enhancement and data extraction core algorithm components. The solution protected under this patent provides the capability to quickly and accurately transform a fingerprint image into a computer image that can be analyzed to determine the critical data elements. With the payment of all maintenance fees, this patent will expire on January 3, 2025.

On August 19, 2008, we were issued US patent No. 7,415,605 for our “Biometric Identification Network Security” method. The solution protected under this patent provides a defense against hackers and system attacks, while leveraging the industry standard Trusted Platform Module (TPM) specification for encryption key management. With the payment of all maintenance fees, this patent will expire on May 20, 2023.

On November 18, 2008, we were issued US patent No. 7,454,624 for our “Match Template Protection within a Biometric Security System” method. The solution protected under this patent limits the scope of enrollment templates usage and also eliminates the need for revocation or encryption processes, which can be expensive and time consuming. With the payment of all maintenance fees, this patent will expire on May 17, 2025.

On March 10, 2009, we were issued US patent No. 7,502,938 for our “Trusted Biometric Device” which covers a simple, yet secure method of protecting a user’s biometric information. It covers the transmission of information from the point the information is collected at the biometric reader until the data reaches the computer or device that is authenticating the user’s identity. With the payment of all maintenance fees, this patent will expire on October 25, 2025.

On May 26, 2009, we were issued US patent No. 7,539,331 for our “Image Identification System” method for improving the performance and reliability of image analysis within an image identification system. With the payment of all maintenance fees, this patent will expire on March 22, 2022.

On November 8, 2011, we were issued US Patent No. 8,055,027 for our “Generation of Directional Information in the Context of Image Processing” method for image enhancement and processing. With the payment of all maintenance fees, this patent will expire on October 10, 2027.

On June 5, 2012, PistolStar was issued US Patent No. 8,196,193 for “Method For Retrofitting Password Enabled Computer Software with a Redirectional User Authentication Method”, where a device, method, and system may be used to integrate and control authentication and passwords among various applications and platforms. With the payment of all maintenance fees, this patent will expire on November 1, 2030.

On July 3, 2012, we were issued US Patent No. 8,214,652 for our “Biometric Identification Network Security”, an expanded method of network and related network authentication security systems utilizing hardware-based support for encryption and key management for authentication purposes. With the payment of all maintenance fees, this patent will expire on April 24, 2024.

On March 12, 2013, PistolStar was issued US Patent No. 8,397,077 for “Client Side Authentication Redirection”, where user specific attributes may be accessed and used to produce a generated password, using an algorithm and the user attributes. With the payment of all maintenance fees, this patent will expire on August 7, 2030.

On May 3, 2017, we were issued US Patent No. 9,646,146 for our “Utilization of Biometric Data”, a method enables existing small area sensors to capture substantially more fingerprint surface area, leading to a higher degree of accuracy when performing a match. With the payment of all maintenance fees, this patent will expire on March 6, 2035.

On June 19, 2018 we were issued U.S. Patent No. 10,002,244 for our “Utilization of Biometric Data” to allow continuous, passive user authentication on a mobile device. With the payment of all maintenance fees, this patent will expire on March 6, 2035.

On July 27, 2018 we were issued U.S. Patent No. 10,025,831 for “Adaptive Short Lists and Acceleration of Biometric Database Search”, a method to quickly and iteratively search a database of biometric data. With the payment of all maintenance fees, this patent will expire on August 10, 2036.

On September 3, 2019 we were issued U.S. Patent No. 10,400,481 for “Fingerprint Lock”, a lock design method of the shackle and spring integration to electronics. With the payment of all maintenance fees, this patent will expire on June 27, 2037.

On September 10, 2019 we were issued U.S Patent No. 10,410,040 for “Fingerprint Lock Control method and Fingerprint Lock System”, a lock design method of the control process of scanning, and server communications for user profile management. With the payment of all maintenance fees, this patent will expire on July 26, 2037.

On April 20, 2021 we were issued U.S. Patent No. 10,984,085 for “Biometric Recognition for Uncontrolled Acquisition Environments”, expected to be deployed in mobile devices, the patent provides a method of continuous capture of the users biometric data before the need of the authentication or enrollment, as well as during an active session with a user, to assure the user has not changed.

We have also been granted parallel patents to the US Patent portfolio to certain of our patents in many foreign countries offering protection of our intellectual property rights around the world.

Trademarks

We have registered our trademarks “BIO-key”, “True User Identification”, “Intelligent Image Indexing”, “WEB-key”, “SideSwipe”, “SidePass”, “EcoID”, “PistolStar®”, “PortalGuard”, “MobileAuth”, and “PASSIVEKEY®” with the U.S. Patent & Trademark Office, as well as many foreign countries, protecting our companies name and key technology offering names.

Through our subsidiary PistolStar, we own the following additional registered trademarks: “PortalGuard®”, “PASSIVEKEY®”, and “PISTOLSTAR®”. We also acquired the following unregistered trademarks: “PortalGuard Nebula™”, “Password Power™” and “Scooch™”.

Copyrights and trade secrets

We take measures to ensure copyright and license protection for our software releases prior to distribution. When possible, the software is licensed in an attempt to ensure that only licensed and activated software functions to its full potential. We also take measures to protect the confidentiality of our trade secrets.

Research and Development

Our PortalGuard IAM product line is mature, with hundreds of active customers, and we are adding additional factors and capabilities to the product, as well as enhancing the self-management for the functionally equivalent PortalGuard IDaaS offering. A significant new authentication factor set will come via our MobileAuth application for users to experience multiple biometric secure authentication via their mobile phone devices. Our VST and WEB-key biometric platforms are mature, stable, and widely-deployed. We concentrate our research and development efforts on enhancing the functionality, reliability and integration of our current products as well as acquiring and developing new and innovative products and solutions for providing broader access to the BIO-key user experience.

Although we believe that our identification technology is one of the most advanced and discriminating fingerprint technologies available today, the markets in which we compete are characterized by rapid technological change and evolving standards and use-cases. In order to maintain our position in the market, we will need to continue to upgrade and refine our existing technologies as new standards become relevant to our customers and markets.

During the years ended December 31, 2021 and 2020, we incurred expenses of $2,355,056 and $1,396,436, respectively, for research and development.

In future periods our R&D efforts will remain focused on updating and advancing our core software products including PortalGuard and PortalGuard IDaaS, MobileAuth, WEB-key and VST. These products are critical to support the anticipated growth in enterprise IAM and large-scale ID projects.

Competition

The IAM MFA and SSO market has many providers of solutions in either standalone or IAM suite delivery models. We believe that our unique differentiator in this market is the incorporation of an unparalleled server-secured biometric authentication capability among our 17 authentication factors. There are numerous companies involved in the development, manufacturing and marketing of fingerprint biometrics products to commercial, government, law enforcement and prison markets. These companies include, but are not limited to, IDEMIA, Thales, NEC, Neurotechnology, and Innovatrics.

The majority of sales for automated fingerprint identification products in the market to date have been deployed for government agencies, healthcare facilities, and law enforcement applications. The consumer and commercial markets represent areas of growth potential for biometrics, led by the use of mobile devices.

The epidemic of security and data breaches reported over the past few years is one of the driving factors for identifying new methods of protecting valuable data. After attempting to create a more sophisticated password, or more efficient token or PIN, it has become apparent that each of these methods are easily compromised, and the downside risks are significant.

We have also seen FIDO-compliant keys enter the market, led by Yubico's YubiKey, a USB key that acts as a credential for access. Keys alone do not meet the needs of large organizations for which key sharing and lost keys are concerns. We have introduced a line of low-cost USB keys and they do not offer the security benefits of biometric technology as they can be easily lost or stolen and replacement costs / managing the product becomes a growing expense.

With respect to competing biometrics technologies, each has its strengths and weaknesses and none has emerged as a market leader:

- *Fingerprint identification* is generally viewed as very accurate, inexpensive and non-intrusive and is the dominant biometric in use today and will be for the foreseeable future;

- *Palm Vein scanning* is expensive, technique-sensitive, and offers mobility challenges;

- *Iris scanning* is viewed as accurate, but the hardware is significantly more expensive; and

- *Facial recognition* can have privacy concerns with work-from-home use, and is typically highly dependent on ambient lighting conditions, angle of view, and other factors.

Government Regulations

Various state, federal and EU privacy laws govern the collection, storage, use and any sale of biometric-related data. To the extent that BIO-key's IDaaS offerings include the collection and storage of customer users' personal or biometric data, we operate as a processor of such data. Our WEB-key platform includes compliance features to ensure automated compliance with these laws including collection of informed written consent during enrollment workflows and robust auditing to control and report on the retention of biometric data and removal requests. Additionally, our customers have access to these tools to maintain their own compliance, including deletion of user data when business relationships terminate.

We believe in biometric privacy rights, and that both users and their organizations benefit from a responsibly operated biometric identity infrastructure. We actively participate in industry privacy workgroups as recognized biometric subject matter experts in order to influence and keep abreast of any proposed changes to these regulations. Beyond these regulations, we are not currently subject to direct regulation by any government agency, other than regulations generally applicable to businesses or related to specific project requirements. In the event of any international sales, we would be subject to various domestic and foreign laws regulating such exports and export activities.

Environmental Regulations

As of the date of this report, we have not incurred any material expenses relating to our compliance with federal, state, or local environmental laws and do not expect to incur any material expenses in the foreseeable future.

Seasonality

Generally, our revenues do not exhibit a seasonal pattern, however, revenue is affected by customer budgeting, government fiscal year planning, and capital budgets.

Human Capital Resources

As of the date of this report, we employed fifty-one individuals on a full-time basis as follows: (i) twenty-two in engineering, customer support, and research and development; (ii) nine in finance and administration; and (iii) twenty in sales and marketing. We also have one employee who provides engineering services and one employee who provides administrative services, both on a part-time basis, and two part-time factory contractors in China. None of our employees are represented by a labor union and we believe that our relationship with our employees is good.

Available Information

We maintain a website with the address www.BIO-key.com. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports are available on our website, without charge, as soon as reasonably practicable after they are filed electronically with the SEC. The SEC also maintains a website that contains reports, proxy and information statements and other information statements and other information regarding issuers who file electronically with the SEC. The SEC's website address is www.sec.gov.

ITEM 1A. RISK FACTORS

Set forth below are the risks that we believe are material to our investors. This section contains forward-looking statements. You should refer to the explanation of the qualifications and limitations on forward-looking statements appearing just before the section captioned "**BUSINESS**" in Item 1 above. Effective November 20, 2020, we implemented a reverse stock split of our outstanding common stock at a ratio of 1-for-8. All share figures are reflected on a post-split basis.

BUSINESS AND FINANCIAL RISKS

We have historically not generated significant revenue and have sustained substantial operating losses.

In order to increase revenue, we have developed a direct sales force and anticipate the need to retain additional sales, marketing and technical support personnel and may need to incur substantial expenses. We cannot assure you that we will be able to secure these necessary resources, that a significant market for our technologies will develop, or that we will be able to achieve our targeted revenue. If we are unable to achieve revenue or raise capital sufficient to cover our ongoing operating expenses, we will be required to scale back operations, including marketing and research initiatives, or in the extreme case, discontinue operations. As of December 31, 2021, we had an accumulated deficit of approximately $105 million.

Our biometric technology has yet to gain widespread market acceptance and we do not know how large of a market will develop for our technology.

Biometric technology has received only limited market acceptance, particularly in the private sector. Our technology represents a novel security solution and we have not yet generated significant sales. Although recent security concerns relating to identification of individuals and appearance of biometric readers on popular consumer products, including the Apple iPhone, have increased interest in biometrics generally, it remains an undeveloped, evolving market. Biometric based solutions compete with more traditional security methods including keys, cards, personal identification numbers and security personnel. Acceptance of biometrics as an alternative to such traditional methods depends upon a number of factors including:

- national or international events which may affect the need for or interest in biometric solutions;
- the performance and reliability of biometric solutions;
- marketing efforts and publicity regarding these solutions;
- public perception regarding privacy concerns;
- costs involved in adopting and integrating biometric solutions;
- proposed or enacted legislation related to privacy of information; and
- competition from non-biometric technologies that provide more affordable, but less robust, authentication (such as tokens and smart cards).

For these reasons, we are uncertain whether our biometric technology will gain widespread acceptance in any commercial markets or that demand will be sufficient to create a market large enough to produce significant revenue or earnings. Our future success depends, in part, upon business customers adopting biometrics generally, and our solution specifically.

Biometric technology is a new approach to Internet security, which must be accepted in order for our WEB-key solution to generate significant revenue.

Our WEB-key authentication initiative represents a new approach to Internet security, which has been adopted on a limited basis by companies that distribute goods, content or software applications over the Internet. The implementation of our WEB-key solution requires the distribution and use of a finger scanning device and integration of database and server side software. Although we believe our solutions provide a higher level of security for information transmitted over the Internet than existing traditional methods, unless business and consumer markets embrace the use of a scanning device and believe the benefits of increased accuracy outweigh implementation costs, our solution will not gain market acceptance.

The market for our solutions is still developing and if the biometrics industry adopts standards or a platform different from our standards or platform, our competitive position would be negatively affected.

The market for identity solutions is still developing. The evolution of this market may result in the development of different technologies and industry standards that are not compatible with our current solutions, products or technologies. Several organizations set standards for biometrics to be used in identification and documentation. Although we believe that our biometric technologies comply with existing standards, these standards may change and any standards adopted could prove disadvantageous to or incompatible with our business model and current or future solutions, products and services.

Our software products may contain defects which will make it more difficult for us to establish and maintain customers.

Although we have completed the development of our core biometric technology, it has only been used by a limited number of business customers. Despite extensive testing during development, our software may contain undetected design faults and software errors, or “bugs” that are discovered only after it has been installed and used by a greater number of customers. Any such defect or error in new or existing software or applications could cause delays in delivering our technology or require design modifications. These could adversely affect our competitive position and cause us to lose potential customers or opportunities. Since our technologies are intended to be utilized to secure physical and electronic access, the effect of any such bugs or delays will likely have a detrimental impact on us. In addition, given that biometric technology generally, and our biometric technology specifically, has yet to gain widespread acceptance in the market, any delays would likely have a more detrimental impact on our business than if we were a more established company.

In order to generate revenue from our biometric products, we are dependent upon independent original equipment manufacturers, system integrators and application developers, which we do not control. As a result, it may be more difficult to generate sales.

We market our technology through licensing arrangements with:

- original equipment manufacturers (OEMs), system integrators and application developers which develop and market products and applications which can then be sold to end users; and

- companies which distribute goods, services or software applications over the Internet.

As a technology licensing company, our success will depend upon the ability of these manufacturers and developers to effectively integrate our technology into products and services which they market and sell. We have no control over these licensees and cannot assure you that they have the financial, marketing or technical resources to successfully develop and distribute products or applications acceptable to end users or generate any meaningful revenue for us. These third parties may also offer the products of our competitors to end users. While we have commenced a significant sales and marketing effort, we have only begun to develop a significant distribution channel and may not have the resources or ability to sustain these efforts or generate any meaningful sales.

We face intense competition and may not have the financial and human resources necessary to keep up with rapid technological changes, which may result in our technology becoming obsolete.

The Internet, facility access control, and information security markets are subject to rapid technological change and intense competition. We compete with both established biometric companies and a significant number of startup enterprises as well as providers of more traditional methods of access control. Most of our competitors have substantially greater financial and marketing resources than we do and may independently develop superior technologies, which may result in our technology becoming less competitive or obsolete. We may not be able to keep pace with this change. If we are unable to develop new applications or enhance our existing technology in a timely manner in response to technological changes, we will be unable to compete in our chosen markets. In addition, if one or more other biometric technologies such as voice, face, iris, hand geometry or blood vessel recognition are widely adopted, it would significantly reduce the potential market for our fingerprint identification technology.

We recognized revenues from Africa in 2021 and expect continued revenues from Africa and the European Union in future periods. Our financial performance will be subject to risks associated with changes in the value of the U.S. dollar versus local currencies.

Owing to the international scope of our operations, including our recent acquisition of Swivel Secure Europe, SA, we are exposed to foreign exchange risk. Our primary exposure to movements in foreign currency exchange rates relates to non-U.S. dollar-denominated sales and operating expenses worldwide. Weakening of foreign currencies relative to the U.S. dollar will adversely affect the U.S. dollar value of our foreign currency-denominated sales and earnings, if any, and could lead to us raising international pricing, potentially reducing the demand for our products. In addition, margins on sales of our products in foreign countries and on sales of products that include components obtained from foreign suppliers could be materially adversely affected by foreign currency exchange rate fluctuations. As a result, our business and the price of our common stock may be affected by fluctuations in foreign exchange rates, which may have a significant impact on our results of operations and cash flows from period to period. Currently, we do not have any exchange rate hedging arrangements in place.

Although we have made significant sales of our products throughout Asia and Africa in prior years, we have not been able to consistently enforce our contract rights and collect all receivables which has resulted in material write-offs.

Our ability to enforce our international contracts is contingent on our relationships with foreign resellers, and their financial viability. Although we are making efforts to better enforce our contract rights, there can be no assurance that we will be able to fully collect all receivables originating in Asia and Africa or that will not have to write-off future receivables which may be material in amount. Any such write-offs have in the past and will negatively impact our financial position and results of operation.

We depend on key employees and members of our management team, including our Chairman of the Board and Chief Executive Officer, Chief Financial Officer, and our Chief Legal Officer, in order to achieve our goals. We cannot assure you that we will be able to retain or attract such persons.

Our employment contracts with Michael W. DePasquale, our Chairman of the Board and Chief Executive Officer, Cecilia C. Welch, our Chief Financial Officer, and James D. Sullivan, our Chief Legal Officer, expire annually, and renew automatically for successive one year periods unless notice of non-renewal is provided by the Company. Although the contracts do not prevent them from resigning, they do contain confidentiality and non-compete clauses, which are intended to prevent them from working for a competitor within one year after leaving our Company. Our success depends on our ability to attract, train and retain employees with expertise in developing, marketing and selling software solutions. In order to successfully market our technology, we will need to retain additional engineering, technical support and marketing personnel. The market for such persons remains highly competitive and our limited financial resources will make it more difficult for us to recruit and retain qualified persons.

We cannot assure you that the intellectual property protection for our core technology provides a sustainable competitive advantage or barrier to entry against our competitors.

Our success and ability to compete is dependent in part upon proprietary rights to our technology. We rely primarily on a combination of patent, copyright and trademark laws, trade secrets and technical measures to protect our propriety rights. We have filed a patent application relating to both the optic technology and biometrics solution components of our technology wherein several claims have been allowed. The U.S. Patent and Trademark Office has issued us a series of patents for our Vector Segment fingerprint technology (VST), and our other core biometric analysis and identification technologies. However, we cannot assure you that we will be able to adequately protect our technology or other intellectual property from misappropriation in the U.S. and abroad. Any patent issued to us could be challenged, invalidated or circumvented or rights granted thereunder may not provide a competitive advantage to us. Furthermore, patent applications that we file may not result in issuance of a patent or, if a patent is issued, the patent may not be issued in a form that is advantageous to us. Despite our efforts to protect our intellectual property rights, others may independently develop similar products, duplicate our products or design around our patents and other rights. In addition, it is difficult to monitor compliance with, and enforce, our intellectual property rights on a worldwide basis in a cost-effective manner. In jurisdictions where foreign laws provide less intellectual property protection than afforded in the U.S. and abroad, our technology or other intellectual property may be compromised, and our business would be materially adversely affected. If any of our proprietary rights are misappropriated or we are forced to defend our intellectual property rights, we will have to incur substantial costs. Such litigation could result in substantial costs and diversion of our resources, including diverting the time and effort of our senior management, and could disrupt our business, as well as have a material adverse effect on our business, prospects, financial condition and results of operations. We can provide no assurance that we will have the financial resources to oppose any actual or threatened infringement by any third party. Furthermore, any patent or copyrights that we may be granted may be held by a court to infringe on the intellectual property rights of others and subject us to the payment of damage awards.

We may be subject to claims with respect to the infringement of intellectual property rights of others, which could result in substantial costs and diversion of our financial and management resources.

Third parties may claim that we are infringing on their intellectual property rights. We may violate the rights of others without our knowledge. We may expose ourselves to additional liability if we agree to indemnify our customers against third party infringement claims. While we know of no basis for any claims of this type, the existence of and ownership of intellectual property can be difficult to verify, and we have not made an exhaustive search of all patent filings. Additionally, most patent applications are kept confidential for twelve to eighteen months, or longer, and we would not be aware of potentially conflicting claims that they make. We may become subject to legal proceedings and claims from time to time relating to the intellectual property of others in the ordinary course of our business. If we are found to have violated the intellectual property rights of others, we may be enjoined from using such intellectual property, and we may incur licensing fees or be forced to develop alternative technology or obtain other licenses. In addition, we may incur substantial expenses in defending against these third party infringement claims and be diverted from devoting time to our business and operational issues, regardless of the merits of any such claim.

In addition, in the event that we recruit employees from other technology companies, including certain potential competitors, and these employees are engaged in the development of portions of products which are similar to the development in which they were involved at their former employers, we may become subject to claims that such employees have improperly used or disclosed trade secrets or other proprietary information. If any such claims were to arise in the future, litigation or other dispute resolution procedures might be necessary to retain our ability to offer our current and future services, which could result in substantial costs and diversion of our financial and management resources. Successful infringement or licensing claims against us may result in substantial monetary damages, which may materially disrupt the conduct of our business and have a material adverse effect on our reputation, business, financial condition and results of operations. Even if intellectual property claims brought against us are without merit, they could result in costly and time consuming litigation, and may divert our management and key personnel from operating our business.

If we are unable to effectively protect our intellectual property rights on a worldwide basis, we may not be successful in the international expansion of our business.

Access to worldwide markets depends in part on the strength of our intellectual property portfolio. There can be no assurance that, as our business expands into new areas, we will be able to independently develop the technology, software or know-how necessary to conduct our business or that we can do so without infringing the intellectual property rights of others. To the extent that we have to rely on licensed technology from others, there can be no assurance that we will be able to obtain licenses at all or on terms we consider reasonable. The lack of a necessary license could expose us to claims for damages and/or injunction from third parties, as well as claims for indemnification by our customers in instances where we have a contractual or other legal obligation to indemnify them against damages resulting from infringement claims. With regard to our own intellectual property, we actively enforce and protect our rights. However, there can be no assurance that our efforts will be adequate to prevent the misappropriation or improper use of our protected technology in international markets.

We face inherent product liability or other liability risks that could result in large claims against us.

We have inherent risk of exposure to product liability and other liability claims resulting from the use of our products, especially to the extent customers may depend on our products in public safety situations that may involve physical harm or even death to individuals, as well as exposure to potential loss or damage to property. Despite quality control systems and inspection, there remains an ever-present risk of an accident resulting from a faulty manufacture or maintenance of products, or an act of an agent outside of our or our supplier’s control. Even if our products perform properly, we may become subject to claims and costly litigation due to the catastrophic nature of the potential injury and loss. A product liability claim, or other legal claims based on theories including personal injury or wrongful death, made against us could adversely affect operations and financial condition. Although we may have insurance to cover product liability claims, the amount of coverage may not be sufficient.

We may need to obtain additional financing to execute our business plan over the long-term, which may not be available. If we are unable to raise additional capital or generate significant revenue, we may not be able to continue operations.

We have historically financed our operations through access to the capital markets by issuing secured and convertible debt securities, convertible preferred stock, common stock, and through factoring receivables. We currently require approximately $735,000 per month to conduct our operations, a monthly amount that we have been unable to consistently achieve through revenue generation. During 2021, we generated approximately $5.1 million of revenue, which is below our average monthly requirements. If we are unable to generate sufficient revenue to cover operating expenses and fund our business plan, we will need to obtain additional third-party financing. We may, therefore, need to obtain additional financing through the issuance of debt or equity securities. We cannot assure you that we will be able to secure any such additional financing on terms acceptable to us or at all. If we cannot obtain such financing, we will not be able to execute our business plan, will be required to reduce operating expenses, and in the extreme case, discontinue operations.

We may not achieve profitability if we are unable to maintain, improve our offerings.

We believe that our future business prospects depend in part on our ability to maintain and improve our current services and to develop new ones on a timely basis. Our services will have to achieve market acceptance, maintain technological competitiveness, and meet an expanding range of customer requirements. As a result of the complexities inherent in our service offerings, major new wireless data services and service enhancements require long development and testing periods. We may experience difficulties that could delay or prevent the successful development, introduction or marketing of new services and service enhancements. Additionally, our new services and service enhancements may not achieve market acceptance. If we cannot effectively develop and improve services, we may not be able to recover our fixed costs or otherwise become profitable.

If we fail to adequately manage our resources, it could have a severe negative impact on our financial results or stock price.

We could be subject to fluctuations in technology spending by existing and potential customers. Accordingly, we will have to actively manage expenses in a rapidly changing economic environment. This could require reducing costs during economic downturns and selectively growing in periods of economic expansion. If we do not properly manage our resources in response to these conditions, our results of operations could be negatively impacted.

We are subject to risks and uncertainties associated with the continued growth of our international operations, which may harm our business.

We have international operation, recently expanded our international operations when we acquired Swivel Secure Europe SA, and plan to continue expanding abroad. Accordingly, our business is subject to risks and uncertainties associated with doing business outside of the United States and could be adversely affected by a variety of factors, including:

- multiple, conflicting and changing laws and regulations such as privacy, security, and data use regulations, tax laws, export and import restrictions, economic and trade sanctions and embargoes, employment laws, anticorruption laws, regulatory requirements, reimbursement or payer regimes and other governmental approvals, permits and licenses;
- failure by us, our collaborators or our distributors to obtain regulatory clearance, authorization or approval for the use of our product candidates in various countries;
- additional potentially relevant third-party patent rights;
- complexities and difficulties in obtaining intellectual property protection and enforcing our intellectual property;
- difficulties in staffing and managing foreign operations;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our product candidates and exposure to foreign currency exchange rate fluctuations;
- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions;
- regulatory and compliance risks that relate to maintaining accurate information and control over sales and distributors' activities that may fall within the purview of the U.S. Foreign Corrupt Practices Act (FCPA), its books and records provisions, or its anti-bribery provisions, or laws similar to the FCPA in other jurisdictions in which we may now or in the future operate; and
- anti-bribery requirements of several Member States in the European Union and other countries that may change and require disclosure of information to which U.S. legal privilege may not extend.

Any of these factors could significantly harm our business, operating results, financial condition or prospects.

The outbreak of COVID-19 has and may continue to have a negative impact on our business, sales, results of operations and financial condition.

The global outbreak of COVID-19 has led to severe disruptions in general economic activities, particularly retail operations and travel, as businesses and federal, state, and local governments take increasingly broad actions to mitigate this public health crisis. Individually and collectively, the consequences of the COVID-19 outbreak have and could continue to have a material adverse effect on our business, sales, results of operations and financial condition. Although our employees have been accustomed to working remotely prior to the COVID-19 pandemic, the uncertainty has extended sales cycles, extended payment terms, impacted access to inventory overseas, and delayed the start of planned deployments.

The extent to which the COVID-19 outbreak ultimately impacts our business, sales, results of operations and financial condition will depend on future developments, which are highly uncertain and cannot be predicted, including, but not limited to, the duration and spread of new variants, its severity, the actions to contain the virus or treat its impact, and how quickly and to what extent normal economic and operating conditions can resume. Even after the COVID-19 outbreak has subsided, we may continue to experience significant impacts to our business as a result of its global economic impact, including any economic downturn or recession that has occurred or may occur in the future.

We have taken measures to minimize the health risks of COVID-19 to our employees, as their safety and well-being are a top priority. Our U.S. employees are working from both the office and remotely. The extent to which COVID-19 impacts our business, sales and results of operations will depend on future developments, which are highly uncertain and cannot be predicted.

Our business could be negatively impacted by security threats, including cybersecurity threats, ransomware, and other disruptions.

As a technology company, we face various security threats, including cybersecurity threats to gain unauthorized access to sensitive information. Although we utilize various procedures and controls to monitor these threats and mitigate our exposure to such threats, there can be no assurance that these procedures and controls will be sufficient in preventing security threats from materializing. If any of these events were to materialize, they could lead to losses of sensitive information, critical infrastructure, personnel or capabilities, essential to our operations and could have a material adverse effect on our reputation, financial position, results of operations, or cash flows.

Cybersecurity attacks in particular are evolving and include but are not limited to, malicious software, attempts to gain unauthorized access to data, and other electronic security breaches that could lead to disruptions in critical systems, unauthorized release of confidential or otherwise protected information and corruption of data. Although we have implemented systems and procedures that are designed to protect customer, employee, vendor and Company information, prevent data loss and other security breaches, and otherwise identify, assess, and analyze cybersecurity risks, these measures may not be effective. Development and maintenance of these systems is costly and requires ongoing monitoring and updating as technologies change and efforts to overcome security measures increase and become more sophisticated. We face an evolving threat landscape in which cybercriminals, among others, employ a complex array of techniques designed to access personal data and other information, including, for example, the use of fraudulent or stolen access credentials, malware, ransomware, phishing, denial of service and other types of attacks. While, to the best of our knowledge, we have not experienced any material misappropriation, loss or other unauthorized disclosure of confidential or personally identifiable information as a result of a security breach or cyberattack that could materially increase financial risk to the Company or our customers, such a security breach or cyberattack could adversely affect our business and operations, including by damaging our reputation and our relationships with our customers, employees and investors, exposing us to litigation, fines, penalties or remediation costs.

Our failure to maintain appropriate environmental, social, and governance ("ESG") practices and disclosures could result in reputational harm, a loss of customer and investor confidence, and adverse business and financial results.

There is an increasing focus from certain investors, employees, customers and other stakeholders concerning corporate responsibility, specifically related to environmental, social and governance matters (“ESG”). Some investors may use these non-financial performance factors to guide their investment strategies and, in some cases, may choose not to invest in us if they believe our policies and actions relating to corporate responsibility are inadequate. The growing investor demand for measurement of non-financial performance is addressed by third-party providers of sustainability assessment and ratings on companies. The criteria by which our corporate responsibility practices are assessed may change due to the constant evolution of the sustainability landscape, which could result in greater expectations of us and cause us to undertake costly initiatives to satisfy such new criteria. If we elect not to or are unable to satisfy such new criteria, investors may conclude that our policies and/or actions with respect to corporate social responsibility are inadequate. We may face reputational damage in the event that we do not meet the ESG standards set by various constituencies.

Furthermore, if our competitors’ corporate social responsibility performance is perceived to be better than ours, potential or current investors may elect to invest with our competitors instead. In addition, in the event that we communicate certain initiatives and goals regarding environmental, social and governance matters, we could fail, or be perceived to fail, in our achievement of such initiatives or goals, or we could be criticized for the scope of such initiatives or goals. If we fail to satisfy the expectations of investors, employees and other stakeholders or our initiatives are not executed as planned, our reputation and business, operating results and financial condition could be adversely impacted.

Russia’s recent military intervention in Ukraine and the international community’s response have created substantial political and economic disruption, uncertainty, and risk.

Russia’s military intervention in Ukraine in late February 2022, Ukraine’s widespread resistance, and the NATO led and United States coordinated economic, financial, communications, and other sanctions imposed by other countries have created significant political and economic world uncertainty. There is significant risk of expanded military confrontation between Russia and other countries. It is not possible to predict the broader consequences of the conflict, including related geopolitical tensions, and the measures and retaliatory actions taken by the U.S. and other countries in respect thereof, as well as any counter measures or retaliatory actions by Russia in response. At a minimum, the continuing conflict is likely to cause regional instability, geopolitical shifts and could materially adversely affect global trade, currency exchange rates, regional economies and the global economy, which could materially adversely affect our financial condition or results of operations. Current and likely additional international sanctions against Russia may contribute to higher costs, particularly for petroleum-based products. These and related actions, responses, and consequences that cannot now be predicted or controlled may contribute to world-wide economic reversals.

There is a scarcity of and competition for acquisition opportunities.

There are a limited number of operating companies available for acquisition that we deem to be desirable targets. In addition, there is a very high level of competition among companies seeking to acquire these operating companies. Many established and well-financed entities are active in acquiring interests in companies that we may find to be desirable acquisition candidates. Many of these entities have significantly greater financial resources, technical expertise and managerial capabilities than us. Consequently, we will be at a competitive disadvantage in negotiating and executing possible acquisitions of these businesses. Even if we are able to successfully compete with these entities, this competition may affect the terms of completed transactions and, as a result, we may pay more or receive less favorable terms than we expected for potential acquisitions. We may not be able to identify operating companies that complement our strategy, and even if we identify a company that complements our strategy, we may be unable to complete an acquisition of such a company for many reasons, including:

- failure to agree on the terms necessary for a transaction, such as the purchase price;
- incompatibility between our operational strategies or management philosophies with those of the potential acquiree;
- competition from other acquirers of operating companies;
- lack of sufficient capital to acquire a profitable distribution company; and
- unwillingness of a potential acquiree to work with our management.

Risks related to acquisition financing.

We have a limited amount of financial resources and our ability to make additional acquisitions without securing additional financing from outside sources is limited. In order to continue to pursue our acquisition strategy, we may be required to obtain additional financing. We may obtain such financing through a combination of traditional debt financing or the placement of debt and equity securities. We may finance some portion of our future acquisitions by either issuing equity or by using shares of our common stock for all or a portion of the purchase price for such businesses. In the event that our common stock does not attain or maintain a sufficient market value, or potential acquisition candidates are otherwise unwilling to accept our common stock as part of the purchase price for the sale of their businesses, we may be required to use more of our cash resources, if available, in order to maintain our acquisition program. If we do not have sufficient cash resources, we will not be able to complete acquisitions and our growth could be limited unless we are able to obtain additional capital through debt or equity financings.

We may experience difficulties in integrating the operations, personnel and assets of any business we acquire which may disrupt our business, dilute stockholder value, and adversely affect our operating results.

A component of our business plan is to acquire businesses and assets in the biometric and identity access management industry. There can be no assurance that we will be able to identify, acquire or profitably manage businesses or successfully integrate acquired businesses into the Company without substantial costs, delays or other operational or financial problems. Such acquisitions also involve numerous operational risks, including:

- difficulties in integrating operations, technologies, services and personnel;
- the diversion of financial and management resources from existing operations;
- the risk of entering new markets;
- difficulties in retaining the existing customers;
- the potential loss of existing or acquired strategic operating partners following an acquisition;
- the potential loss of key employees following an acquisition and the associated risk of competitive efforts from such departed personnel;
- assumed or unforeseen liabilities that arise in connection with the acquired business
- possible legal disputes with the acquired company following an acquisition; and
- the inability to generate sufficient revenue to offset acquisition or investment costs.

As a result, if we fail to properly evaluate and execute any acquisitions or investments, our business and prospects may be seriously harmed.

To the extent we make any material acquisitions, our earnings may adversely affected by non-cash charges relating to the amortization of intangible assets.

Under applicable accounting standards, purchasers are required to allocate the total consideration paid in a business combination to the identified acquired assets and liabilities based on their fair values at the time of acquisition. The excess of the consideration paid to acquire a business over the fair value of the identifiable tangible assets acquired must be allocated among identifiable intangible assets including goodwill. The amount allocated to goodwill is not subject to amortization. However, it is tested at least annually for impairment. The amount allocated to identifiable intangible assets, such as customer relationships and the like, is amortized over the life of these intangible assets. We expect that this will subject us to periodic charges against our earnings to the extent of the amortization incurred for that period. Because our business strategy focuses, in part, on growth through acquisitions, our future earnings may be subject to greater non-cash amortization charges than a company whose earnings are derived solely from organic growth. As a result, we may experience an increase in non-cash charges related to the amortization of intangible assets acquired in our acquisitions. Our financial statements will show that our intangible assets are diminishing in value, even if the acquired businesses are increasing (or not diminishing) in value.

RISKS RELATED TO OUR COMMON STOCK

We have issued a substantial number of options and warrants exercisable into shares of our common stock which could result in substantial dilution to the ownership interests of our existing stockholders.

As of the date of this report, approximately 4,902,000 shares of our common stock were reserved for issuance upon exercise or conversion of outstanding stock options and warrants. The exercise or conversion of these securities will result in a significant increase in the number of outstanding shares and substantially dilute the ownership interests of our existing stockholders.

An active trading market for our common stock may not be sustained.

Although our common stock is listed on the Nasdaq Capital Market, an active trading market for our shares may not be developed and if developed, sustained. If an active market for our common stock is not developed or sustained, it may be difficult for you to sell your shares without depressing the market price for the shares or sell your shares at all. Any inactive trading market for our common stock may also impair our ability to raise capital to continue to fund our operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

If we fail to comply with the continued minimum closing bid requirements of the Nasdaq or other requirements for continued listing, our Common Stock may be delisted and the price of our Common Stock and our ability to access the capital markets could be negatively impacted.

Our common stock is listed for trading on Nasdaq. We must satisfy Nasdaq’s continued listing requirements, including, among other things, a minimum closing bid price requirement of $1.00 per share and minimum stockholders’ agreement. A delisting of our common stock from Nasdaq could materially reduce the liquidity of our common stock and result in a corresponding material reduction in the price of our Common Stock. In addition, delisting could harm our ability to raise capital through alternative financing sources on terms acceptable to us, or at all, and may result in the potential loss of confidence by investors, employees and fewer business development opportunities.

We may need to raise additional funds in the future through issuances of securities and such additional funding may be dilutive to stockholders or impose operational restrictions.

We may need to raise additional capital in the future to help fund our operations through sales of shares of our common stock or securities convertible into shares of our common stock, as well as issuances of debt. Such additional financing may be dilutive to our stockholders, and debt financing, if available, and may involve restrictive covenants which may limit our operating flexibility. If additional capital is raised through the issuance of shares of our common stock or securities convertible into shares of our common stock, the percentage ownership of existing stockholders will be reduced. These stockholders may experience additional dilution in net book value per share and any additional equity securities may have rights, preferences and privileges senior to those of the holders of our common stock.

Because we do not expect to pay dividends for the foreseeable future, investors seeking cash dividends should not purchase our shares of common stock.

We have never declared or paid any cash dividends on our common stock, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future. Payment of any future dividends will be at the discretion of our board of directors after taking into account various factors, including but not limited to our financial condition, operating results, cash needs, growth plans and the terms of any credit agreements that we may be a party to at the time. Accordingly, investors seeking cash dividends should not purchase shares of our common stock.

Provisions of our certificate of incorporation, bylaws and Delaware law may make a contested takeover of our Company more difficult.

Certain provisions of our certificate of incorporation, bylaws and the General Corporation Law of the State of Delaware (“DGCL”) could deter a change in our management or render more difficult an attempt to obtain control of us, even if such a proposal is favored by a majority of our stockholders. For example, we are subject to the provisions of the DGCL that prohibit a public Delaware corporation from engaging in a broad range of business combinations with a person who, together with affiliates and associates, owns 15% or more of the corporation’s outstanding voting shares (an “interested stockholder”) for three years after the person became an interested stockholder, unless the business combination is approved in a prescribed manner. Our certificate of incorporation also includes undesignated preferred stock, which may enable our board of directors to discourage an attempt to obtain control of us by means of a tender offer, proxy contest, merger or otherwise. Finally, our bylaws include an advance notice procedure for stockholders to nominate directors or submit proposals at a stockholders meeting. Delaware law and our charter may, therefore, inhibit a takeover.

The trading price of our common stock may be volatile.

The trading price of our shares has from time to time fluctuated widely and in the future may be subject to similar fluctuations. The trading price may be affected by a number of factors including the risk factors set forth in this Annual Report on Form 10-K as well as our operating results, financial condition, announcements of innovations or new products by us or our competitors, general conditions in the biometrics and access control industries, and other events or factors. We cannot assure you that any of the broker-dealers that currently make a market in our common stock will continue to serve as market makers or have the financial capability to stabilize or support our common stock. A reduction in the number of market makers or the financial capability of any of these market makers could also result in a decrease in the trading volume of and price of our shares. In recent years broad stock market indices, in general, and the securities of technology companies, in particular, have experienced substantial price fluctuations. Such broad market fluctuations may adversely affect the future-trading price of our common stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTY

We do not own any real estate. We conduct operations from leased premises in Eagan, Minnesota (5,544 square feet), Bedford, New Hampshire (3,364 square feet), and Wall, New Jersey (4,517 square feet). Internationally, we conduct operations from leased premises in Tsuen Wan, Hong Kong (1,098 square feet), in Jiangmen, China (3,267 square feet) and in Madrid, Spain (459 square feet). Our Eagan, Minnesota and Bedford, New Hampshire offices provide research and development, and customer support, for BIO-key software and PistolStar software, respectively. Our Wall, New Jersey location serves as our corporate headquarters. Our Hong Kong location is a small warehouse for finished goods as well as administrative and sales support. Our Jiangmen, China facility provides our hardware research and development, contract manufacturing and warehousing of raw materials, work-in-process, and finished goods. Our Madrid, Spain office serves as our sales organization for Europe, the Middle East, and parts Africa.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we may be involved in litigation relating to claims arising out of our operations in the normal course of business. As of the date of this report, we are not a party to any pending lawsuit.

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

Our common stock currently trades on the Nasdaq Capital Market under the symbol "BKYI".

Holders

As of March 29, 2022, the number of stockholders of record of our common stock was 126.

Dividends

We have not paid any cash dividends on our common stock to-date and have no intention of paying any cash dividends on our common stock in the foreseeable future. The declaration and payment of dividends on our common stock is also subject to the discretion of our Board of Directors and certain limitations imposed under the Delaware General Corporation Law. The timing, amount, and form of dividends, if any, will depend on, among other things, our results of operations, financial condition, cash requirements and other factors deemed relevant by our Board of Directors.

Securities Authorized for Issuance under Equity Compensation Plans

For information on securities authorized for issuance under the Company's equity compensation plans, see "Item 12 - Security Ownership of Certain Beneficial Owners and Related Stockholder Matters."

Unregistered Sales of Equity Securities

There were no unregistered sales of the Company's equity securities during 2021 that were not previously disclosed in a Quarterly Report on Form 10-Q or in a Current Report on Form 8-K.

Rule 10b-18 Transactions

None.

ITEM 6. RESERVED

Not Applicable.

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations, and other parts of this Report contain forward-looking statements that involve risks and uncertainties. All forward-looking statements included in this Report are based on information available to us on the date hereof, and we assume no obligation to update any such forward-looking statements. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of a number of factors, including those set forth in the section captioned "**RISK FACTORS**" in Item 1A and elsewhere in this Report.

The following Management's Discussion and Analysis of Financial Condition and Results of Operations is intended to help you understand our Company. This discussion is provided as a supplement to and should be read in conjunction with our consolidated financial statements for the years ended December 31, 2021 and 2020 and the accompanying notes included elsewhere in this Report.

Effective November 20, 2020, we implemented a reverse stock split of our outstanding common stock at a ratio of 1-for-8. All share figures are reflected on a post-split basis.

Overview

We are a leading identity access management (IAM) platform provider for the enterprise and large-scale customer and civil ID solutions. Built to leverage BIO-key's world-class biometric core platform among 16 other strong authentication factors, BIO-key PortalGuard and hosted PortalGuard IDaaS are platforms that enable our customers to securely and easily assure that only the right people can access the right systems. PortalGuard goes beyond traditional multifactor authentication (MFA) solutions by addressing sizeable gaps, such as allowing roving users to biometrically authenticate at any workstation without using their phones or tokens, eliminating unauthorized account delegation, detecting duplicate users, and accommodating in-person identification.

Millions of people use BIO-key every day to securely access a variety of cloud, mobile and web applications, on-premise and cloud-based servers from all of their devices. Employees, contractors, students and faculty sign in through PortalGuard to seamlessly and securely access the applications they need to do their important work, without relying on personal phone use or per-user tokens. Organizations use our platform to securely collaborate with their supply chain and partners, and to provide their customers with flexible, resilient user experiences online or in-person.

Large-scale customer and civil ID customers use our scalable biometric management platform and FBI-certified scanner hardware to manage enrollment, de-duplication and authentication for millions of users. One large bank has enrolled and identifies over 19 million of their customers in branches on a daily basis.

We sell our branded biometric and FIDO authentication hardware as accessories to our IAM platforms, so that customers can have a single vendor providing all components of their IAM solution. We do not mandate the use of BIO-key hardware with our software and services. Our NIST-certified fingerprint biometric platform is unique in that it supports interoperable mixing and matching combinations of different manufactures' fingerprint scanners in a deployment, so that the right scanner can be selected for the right use case, without mandating the user of a particular scanner.

Security-conscious software developers leverage our platform APIs and federation interfaces to securely and efficiently embed biometric and MFA identity capabilities into their software. Our approach to IDaaS allows our customers to efficiently scale their security and identity infrastructures to protect both internal cloud workforce- and external customer-facing applications.

We operate a SaaS business model with customers subscribing to term use of our software for annual recurring revenue. We sell our products directly through our field and inside sales teams, as well as indirectly through our network of channel partners including resellers, system integrators, master agents and other distribution partners. Our subscription fees include a term license of hosted or on-premise product and technical support and maintenance of our platform. We base subscription fees primarily on the products used and the number of users enrolled in our platform. We generate subscription fees pursuant to noncancelable contracts with a weighted average duration of approximately one year.

PortalGuard is used by our customers to manage and secure IT access by their employees, contractors and partners, which we call workforce identity. PortalGuard is also used to manage and secure the identities of an organization's customers through integration of APIs we have developed and industry-standard federation standards, which we call customer identity. We invoice customers in advance in annual and multi-year prepaid installments for subscriptions to our platforms.

Strategic Outlook

Historically, our largest market has been access control within highly regulated industries such as government, financial services, and healthcare. In 2019 we became the go-to biometric authentication provider for board of election offices which continue to deploy our hardware and software to secure internal access to the voter registration database. We have and expect to continue to extend this footprint in 2022 and beyond.

In 2020, we announced that we had secured two contracts with our partner Technology Transfer Institute. The contracts are for large-scale identification projects in Africa and Nigeria. Under the first contract, we will provide biometric authentication to support the infrastructure of a new e-commerce project developed with the expectation to generate more than one million jobs in Nigeria. The second contract provides for BIO-key hardware and software to be used by a leading African telecommunications company to secure internal access to customer data. Currently Africa and the surrounding regions are receiving government funding to expand the use of biometric authentication solutions to help establish trustworthy government programs and reduce fraud. We received our first purchase order related to these contracts in the fourth quarter of 2020 which we shipped in the first quarter of 2021. The COVID-19 pandemic has and may continue to delay the rollout of these programs.

We plan to have a more significant role in the IAM market which continues to expand. We plan to offer customers a suite of authentication options that complement our biometric solutions. The more well-rounded offerings of authentication options will allow customers to customize their approach to authentication all under one umbrella.

We expect to grow our business within government services and highly-regulated industries in which we have historically had a strong presence including financial services, higher education, and healthcare. We believe that continued heightened security and privacy requirements in these industries, and as colleges and universities continue operating in remote environments, we will generate increased demand for security solutions, including biometrics. In addition, we expect that the compatible, yet superior portable biometric user experience offered by our technology for Windows 10 users will accelerate the demand for our computer network log-on solutions and fingerprint readers. Through value add-offerings via direct sales, resellers, and strategic partnerships with leading higher education platform providers, we will continue to grow our installed base.

Our primary sales strategies are focused on (i) increased marketing efforts into the IAM market, (ii) dedicated pursuit of large-scale identification projects across the globe and (iii) growing our channel alliance program which we have grown to more than one hundred and fifty participants and continues to generate incremental revenues.

A second component of our growth strategy is to pursue strategic acquisitions of select businesses and assets in the IAM space. In furtherance of this strategy, we are active in the industry and regularly evaluate businesses that we believe will either provide an entry into new market verticals or be synergistic with our existing operations and in either case, be accretive to earnings. We cannot provide any assurance as to whether we will be able to complete any acquisition and if completed, successfully integrate any business we acquire into our operations.

Recent Developments

As discussed under "Item 1A. Risk Factors" given the uncertainty of the duration and severity of the current COVID-19 pandemic and the conflict between Ukraine and Russia and their effects on our business operations, sales cycles, personnel, and the geographic markets in which we operate, and numerous other matters of national, regional and global scale, including those of a political, economic, business and competitive nature, the related financial impact cannot be reasonably estimated at this time.

The complications caused by COVID-19 has forced organizations to quickly adapt to a work from home remote business model. This increases the risk of unauthorized users, phishing attacks, and hackers who are eager to take advantage of the challenges of securing remote workers. We believe that biometrics should continue to play a key role in remote user authentication.

On March 8, 2022, we expanded our sales and support operation into Europe, Africa and the Middle East ("EMEA") by acquiring Swivel Secure Europe, SA for up to $2.25 million. Swivel Secure Europe is a Madrid, Spain based provider of IAM solutions serving over 300 customers through a network of channel partners throughout EMEA. Swivel Secure the exclusive distributer of AuthControl Sentry, AuthControl Enterprise and AuthControl MSP product line in Europe, Middle East, and Africa, excluding the United Kingdom. Swivel Secure maintains a direct sales force with offices in Madrid, Spain and Lisbon, Portugal. There can be no assurance that we will be able to manage Swivel Secure Europe, SA's business or successfully integrate the business with our historic operations without substantial costs, delays or other operational or financial problems.

RESULTS OF OPERATIONS

Consolidated Results of Operations

Two Year % trend

	Years ended December 31,	
	2021	**2020**
Revenues		
Services	25%	50%
License fees	50%	34%
Hardware	25%	16%
	100%	100%
Costs and other expenses		
Cost of services	13%	18%
Cost of license fees	4%	2%
Cost of hardware	16%	9%
	33%	29%
Gross Profit	67%	71%
Operating expenses		
Selling, general and administrative	118%	206%
Research, development and engineering	46%	49%
Total operating expenses	164%	255%
Operating loss	-97%	-184%
Other income (expense)		
Total other income (expense)	-2%	-158%
Net loss	-99%	-342%

Revenues and Costs and other expenses

	2021	2020	2021 - 2020 $ Chg	2021 - 2020 % Chg
Revenues				
Services	$ 1,273,354	$ 1,432,228	$ (158,874)	-11%
License fees	2,555,809	962,038	1,593,771	166%
Hardware	1,285,326	442,516	842,810	190%
Total Revenue	$ 5,114,489	$ 2,836,782	$ 2,277,707	80%
Costs and other expenses				
Services	$ 686,175	$ 502,214	$ 183,961	37%
License fees	183,199	49,891	133,308	267%
Hardware	803,555	242,721	560,834	231%
Total Costs and other expenses	$ 1,672,929	$ 794,826	$ 878,103	117%

Revenues

Revenue increased $2,277,707 or 80% to $5,114,489 in 2021 as compared to $2,836,782 in 2020 due to the factors stated below.

For the years ended December 31, 2021, and 2020, service revenues included approximately $1,100,000 and $1,383,000, respectively, of recurring maintenance and support revenue, and approximately $173,000 and $49,000, respectively, of non-recurring custom services revenue. Recurring service revenue decreased 20% from 2020 to 2021 due largely to the decreased maintenance as PistolStar acquired customer maintenance agreements expired by June 30, 2021. Non-recurring custom services increased 252% due to increased new customer installations and conversion to the cloud platform. As our customer base continues to grow, we expect the service revenue to increase in future periods.

For the years ended December 31, 2021 and 2020, license revenue increased approximately $1,594,000 or 166% to $2,555,809, due primarily to new customer orders and cloud conversion customers, in addition to existing recurring revenue contracts.

Hardware sales increased by approximately $843,000, or 190%, to $1,285,326 in 2021 from $442,516 in 2020. The increase was attributable largely to sales in Nigeria for an international government agency during the first quarter of 2021.

Costs of goods sold

For the year ended December 31, 2021, cost of service increased approximately 37% to $686,175, due to the increased revenue and the direct support for the PortalGuard installations.

License costs for the year ended December 31, 2021 increased $133,308, or approximately 267%, to $183,199 related to increased license revenue and the resale of associated third party software.

Hardware costs for the year ended December 31, 2021 increased $560,834, or approximately 231%, to $803,555. The increase was associated with the increased hardware sales and hardware mix.

Selling, general and administrative

2021	2020	2021 - 2020 $ Chg	2021 - 2020 % Chg
$ 6,028,360	$ 5,848,687	$ 179,673	3%

Selling, general and administrative costs for year ended December 31, 2021 were $6,028,360 representing 3% increase from 2020. The increase included higher administrative personnel expenses, marketing expenses, Delaware franchise taxes, and bad debt expense related to the reserve on the note receivable of $100,000 and an allowance for doubtful accounts of $200,000. These were offset by lower factoring fees, contract and temporary labor, non-cash compensation, the absence of one-time expenses incurred in 2020 for integration costs incurred in connection the acquisition of Pistol Star, as well as accounting and legal fees.

Research, development and engineering

2021	2020	2021 - 2020 $ Chg	2021 - 2020 % Chg
$ 2,355,056	$ 1,396,436	$ 958,620	69%

For the year ended December 31, 2021, research, development and engineering costs were $2,355,056 representing a 69% increase over 2020. Included in the increase were personnel costs associated with PistolStar, new hires and recruiting fees, increased professional fees, and increased amortization of intangible assets acquired from PistolStar. These amounts were offset by a decrease and non-cash compensation.

Other income (expense)

	2021	2020	2021 - 2020 $ Chg	2021 - 2020 % Chg
Interest income	4,075	30,649	(26,574)	-87%
Foreign currency loss	(50,000)	-	50,000	N/A
Investment-debt security reserve	(60,000)	-	60,000	N/A
Government grant – Paycheck Protection Program	-	340,819	(340,819)	-100%
Interest expense	(18,000)	(4,343,212)	4,325,212	-100%
Loss of extinguishment of debt	-	(499,076)	499,076	-100%
	$ (123,925)	$ (4,470,820)	$ 4,346,895	-97%

Other expense for 2021 consisted of interest expense from the amortization of debt discounts of $18,000, a reserve on the investment-debt security as adjustment for collections of such security of $60,000, and a foreign currency adjustment to an accounts receivable invoice of $50,000, offset by interest income of $4,075. Interest expense for 2020 related to the amortization of debt discounts and debt issuance costs relating to convertible notes of approximately $3,574,000, as well as the amortization of a beneficial conversion feature of approximately $641,000. Also included in other income (expense) for 2020 was a loss on the extinguishment of a convertible note in the approximate amount of $500,000 resulting from the issuance of an amended and restated convertible note, for which the issuer did not grant a concession. These amounts were partially offset by amounts received under the Payment Protection Program (the “Program”) the Coronavirus Aid, Relief, and Economic Security Act (“CARES Act”) administered by the U.S. Small Business Administration of approximately $341,000 and interest income of approximately $31,000.

LIQUIDITY AND CAPITAL RESOURCES

Operating activities overview

Net cash used for operations during the year ended December 31, 2021 was approximately $8,942,000. Items of note included:

- Net positive cash flows related to non-cash expenses of approximately $1,367,000.
- Net negative cash flows related to changes in accounts receivable, prepayments, inventory, accruals, lease liabilities, and deferred revenue in the aggregate amount of approximately $5,601,000 and our net loss for the period.

Investing activities overview

Approximately $42,000 was used for investing in capital expenditures during the year ended December 31, 2021.

Financing activities overview

Approximately $219,000 was used in financing activities during the year ended December 31, 2021 consisting of repayment of notes payable, and costs associated with the issuance of our securities, net of proceeds from common stock sold to employees under the Company's employee stock purchase plan.

Sources of Liquidity

Since our inception, our capital needs have been principally met through proceeds from the sale of equity and debt securities. We expect capital expenditures to be less than $100,000 during the next twelve months.

The following sets forth our primary sources of capital during the previous two years:

We entered into an accounts receivable factoring arrangement with a financial institution (the “Factor”) which has been extended to October 31, 2022 and may be discontinued at that time. Pursuant to the terms of the arrangement, from time to time, we sell to the Factor a minimum of $150,000 per quarter of certain of our accounts receivable balances on a non-recourse basis for credit approved accounts. The Factor remits 35% of the foreign and 75% of the domestic accounts receivable balance to us (the “Advance Amount”), with the remaining balance, less fees, forwarded to us once the Factor collects the full accounts receivable balance from the customer. In addition, from time to time, we receive over advances from the Factor. Factoring fees range from 2.75% to 15% of the face value of the invoice factored and are determined by the number of days required for collection of the invoice. We expect to continue to use this factoring arrangement periodically to assist with our general working capital requirements due to contractual requirements.

On April 20, 2020, we entered into a Paycheck Protection Program Term Note (the “SVB Note”) with Silicon Valley Bank (“SVB”) pursuant to the Program. We received total proceeds of approximately $341,000 which was used in accordance with the requirements of the CARES Act. The full amount of the SVB Note was forgiven.

On July 23, 2020, we completed an underwritten public offering of shares of common stock and warrants resulting in net proceeds of approximately $22.7 million, inclusive of the over-allotment and after deducting underwriting discounts and commissions and estimated offering expenses. We used approximately $4.2 million of the net proceeds to repay all outstanding amounts due under outstanding convertible promissory notes at that time.

Liquidity Outlook

At December 31, 2021, our total cash and cash equivalents were approximately $7,800,000, as compared to $16,993,096 at December 31, 2020. At December 31, 2021, we had working capital of approximately $12,013,000.

As discussed above, we have historically financed our operations through access to the capital markets by issuing secured and convertible debt securities, convertible preferred stock, common stock, and through factoring receivables. We currently require approximately $735,000 per month to conduct our operations, a monthly amount that we have been unable to consistently achieve through revenue generation. During 2021, we generated approximately $5,114,000 of revenue, which is below our average monthly requirements. We expect that Swivel Secure Europe will generate positive cash flow in 2022. If we are unable to generate sufficient revenue to fund current operations and execute our business plan, we may need to obtain additional third-party financing. As of the date of this report, we do not expect that we will need to obtain additional financing during the next twelve months.

Our long-term viability and growth will depend upon the successful commercialization of our technologies and our ability to obtain adequate financing. To the extent that we require such additional financing, no assurance can be given that any form of additional financing will be available on terms acceptable to us, that adequate financing will be obtained to meet our needs, or that such financing would not be dilutive to existing stockholders. If available financing is insufficient or unavailable or we fail to continue to generate sufficient revenue, we may be required to further reduce operating expenses, delay the expansion of operations, be unable to pursue merger or acquisition candidates, or in the extreme case, not continue as a going concern.

OFF-BALANCE SHEET ARRANGEMENTS

We do not have any off-balance sheet arrangements that have or, are in the opinion of management reasonably likely to have, a current or future effect on our financial condition or results of operations.

CRITICAL ACCOUNTING POLICIES

Our financial statements are prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires that we make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting periods. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ significantly from these estimates under different assumptions or conditions. There have been no material changes to these estimates for the periods presented in this Annual Report on Form 10-K.

We believe that of our significant accounting policies, which are described in Note A of the notes to our consolidated financial statements included in this Annual Report on Form 10-K, the following accounting policies involve a greater degree of judgment and complexity. Accordingly, these are the policies we believe are the most critical to aid in fully understanding and evaluating our financial condition and results of operations, as listed below:

1. Revenue Recognition

2. Business Combinations

3. Goodwill and acquired intangible assets

4. Impairment or Disposal of Long Lived Assets, including Intangible Assets

5. Research and Development Expenditures

6. Income Taxes

7. Accounting for Stock-Based Compensation

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Not Applicable.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

See financial statements appearing at pages 37-64 of this Annual Report on Form 10-K.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer (“CEO”) and Chief Financial Officer (“CFO”), evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2021. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Based on the evaluation of our disclosure controls and procedures as of December 31, 2021, our CEO and CFO concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management’s Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, the risk. 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.

Under the supervision and with the participation of our management, including our CEO and CFO, we have conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2021, based upon the framework in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2021.

As we are a smaller reporting company, this annual report does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Management’s report was not subject to attestation by our registered public accounting firm pursuant to rules of the Securities and Exchange Commission that permit the Company to provide only management’s report in this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

No change in our internal control over financial reporting occurred during the quarter ended December 31, 2021 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not Applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The following sets forth certain information about each director and executive officer of the Company.

NAME	AGE	POSITIONS HELD
Michael W. DePasquale	67	Chairman of the Board of Directors and Chief Executive Officer
Thomas E. Bush, III (a)* (c)	69	Director
Robert J. Michel (a) (b)*	65	Director
Thomas Gilley (c)*	62	Director
Wong Kwok Fong (Kelvin)	58	Director and Vice-Chairman of the Board of Directors
Pieter Knook (b)	61	Director
Emmanual Alia (Manny) (b)	54	Director
Cecilia C. Welch	62	Chief Financial Officer
Mira K. LaCous	59	Chief Technology Officer
James D. Sullivan	54	Vice President of Strategy and Compliance, Chief Legal Officer

(a) Compensation Committee Member

(b) Audit Committee Member

(c) Nominating Committee Member

* Indicates chair of committee

Set forth below is a brief description of the background and business experience of our directors and executive officers for the past five years.

Directors

Michael W. DePasquale has served as our Chief Executive Officer and a Director since January 3, 2003, and Chairman of the Board since January 29, 2014. He served as Co-Chief Executive Officer of the Company from July 2005 to August 2006. Mr. DePasquale brings more than 30 years of executive management, sales and marketing experience to the Company. Prior to joining us, Mr. DePasquale served as the President and Chief Executive Officer of Prism eSolutions, Inc., a Pennsylvania-based provider of professional consulting services and online solutions for ISO-9001/14000 certification for customers in manufacturing, healthcare and government markets, since February 2001. From December 1999 through December 2000, Mr. DePasquale served as Group Vice President for WRC Media, a New York-based distributor of supplemental education products and software. From January 1996 until December 1999, Mr. DePasquale served as Senior Vice President of Jostens Learning Corp., a California-based provider of multimedia curriculum. Prior to Jostens, Mr. DePasquale held sales and marketing management positions with McGraw-Hill and Digital Equipment Corporation. Mr. DePasquale earned a Bachelor of Science degree from the New Jersey Institute of Technology. He serves as the Vice Chairman on the Board of Directors of the International Biometrics and Identification Industry Association. We believe Mr. DePasquale's qualifications to sit on the board of directors include his extensive executive management experience in the technology sector and biometric industry expertise which strengthen the board's collective qualifications, skills and experience.

Thomas E. Bush, III has served as a Director of the Company since January 29, 2014. Since 2009, Mr. Bush has provided business consulting services through his firm, Tom Bush Consulting. Prior to that, Mr. Bush served with the Federal Bureau of Investigation for over 33 years. Mr. Bush joined the FBI in September 1975, ultimately becoming the Director of the CJIS division, with over 2,500 employees and a budget of approximately one billion dollars. Mr. Bush is known for providing critical services in support of the criminal justice community, including two significant IT projects, Next Generation Identification and N-Dex, which were awarded by CJIS during his tenure at the FBI. Mr. Bush has received many awards during his career, most notably a Presidential Rank Award for Meritorious Service in 2007. We believe Mr. Bush's qualifications to sit on the board of directors include his extensive experience in law enforcement, security matters, and the use of biometric technologies in the government sector, which provide the board with a unique perspective on security and public sector matters.

Robert J. Michel has served as a Director of the Company since April 10, 2017. He has over 30 years of accounting and financial management experience. Since September, 2018, he has served as the Chief Financial Officer of Daxor Corporation (Nasdaq: DXR), a medical device manufacturing company specializing in blood volume analysis. Prior to Daxor, from November, 2017 until September 2018, Mr. Michel served as the CFO of Roadway Moving, Inc., a transportation, moving and storage company located in New York City. Immediately prior to Roadway Moving, Inc., Mr. Michel served as a consultant with Feuer & Orlando, LLP, a New York City based CPA firm, from May, 2016 until November 2017. From 2009 until March, 2016, Mr. Michel was the Chief Financial Officer of Asta Funding, Inc. (Nasdaq: ASFI), a diversified financial services company where he was responsible for all financial matters and SEC reporting. From 2004 until 2009, Mr. Michel served as the Controller and the Director of Financial Reporting and Compliance for Asta Funding. Mr. Michel is a certified public accountant, earned a MBA in Taxation from St. John's University, and a BS in Business Administration from Villanova University. Mr. Michel gained his public accounting experience at PricewaterhouseCoopers in New York. We believe Mr. Michel's qualifications to sit on the board of directors include his substantial experience in accounting and financial management for public companies which provide the board with a deep knowledge of financial and SEC reporting and strengthen the board's collective qualifications, skills, and experience.

Thomas Gilley has served as a Director of the Company since January 29, 2014. Mr. Gilley is an entrepreneur, investor and advisor in the connected product Internet of Things (IoT) industry with 37 patents. Since founding his Enterprise Software IoT company in 2012 and selling it in 2016, Mr. Gilley invests in technology companies, serves as growth strategy advisor, and independent board member to companies in the connected industry. Mr. Gilley was previously employed at Apple Computer, in the Advance Technology Group, Portable Products Group and Strategy Advisor. Before and after Apple, Mr. Gilley founded several successful companies including PicoStar, a Silicon Valley incubator-technology investment company, and an on-demand web media company he sold to Vignette. Mr. Gilley acted as CTO throughout the transaction until the company's ultimate acquisition by OpenText. We believe Mr. Gilley's qualifications to sit on the board of directors include his substantial experience in starting, operating and financing technology companies which provides the board with a deep knowledge of the sales and development cycles applicable to growth businesses in the technology industry.

Wong Kwok Fong (Kelvin) has served as a Director of the Company since December 4, 2015, as Managing Director of our Hong Kong Subsidiary since August 2016, and as Vice-Chairman of the Board of Directors since March 2019. He is the co-founder of China Goldjoy Group (previously World Wide Touch Technology Holdings Limited), a company listed on The Stock Exchange of Hong Kong. From 1997 until August, 2015, Mr. Wong served as the Chairman of China Goldjoy Group and served as its Chief Technology Officer through October 2016. During this time, Kelvin played a significant role in the substantial growth of the business. Kelvin brings over 20 years of senior management experience in manufacturing, supply chain, and marketing functions in the electronics and technology industries, including establishing manufacturing plants in Hong Kong and China, and building an extensive network in the electronics and technology industries. We believe Kelvin's qualifications to sit on the board of directors include his substantial experience in the technology industry, including biometrics and payment systems, and serving the Asian markets, which broaden and strengthen the board's collective qualifications, skills, and experience.

Pieter Knook, has served as a Director of the Company since May 2, 2016. Mr. Knook has over 30 years of experience in mobility and software technology in Europe, Asia and the United States. Since 2010, Mr. Knook has served on the boards of a number of private equity backed and publicly traded early stage technology companies, including Altitude Angel in Reading, the London Internet Exchange, BroadHorizon in the Netherlands and Telenor in Norway. Mr. Knook served as the Director of Internet Services at Vodafone Group in London from March 2008 through October 2010. Prior to joining Vodafone, Mr. Knook spent 18 years at Microsoft. As President of Microsoft Asia from 1997 to 2001, Mr. Knook led the company's efforts in opening and expanding Asian markets. He subsequently served as Senior Vice President of Microsoft's mobile communication business from 2001 through 2008. We believe Mr. Knook's qualifications to sit on the board of directors include his extensive technology industry experience, which further broaden and strengthen the board's collective qualifications, skills, and experience.

Emmanual Alia (Manny), was appointed Director of the Company on April 3, 2020. Since 2018 Mr. Alia has been providing management consulting services as an advisor to businesses seeking market entry strategies to emerging markets such as Africa and the Caribbean. From 2011 to 2018, Mr. Alia served as an Executive Director at the Corporate and Investment division of JPMorgan, and as a Senior Vice-President at CHASE Bank's Consumer and Community Banking specializing in the financial and banking services industry and opportunities in Africa. During Mr. Alia's tenure with JPMorgan, he served as head of WholeSale Operations in the Receivables Operations of the Global banking operations in the US and Canada, head of Retail Banking in the Greater Detroit area, and head of branches in the New York and New Jersey areas. For two years Mr. Alia was co-chair of the Black Organizational Leadership Development, an employee networking group in JPMorgan that works with firm's leadership to strengthen the firm's message, strategies and community outreach globally. Mr. Alia received a Bachelor of Arts in Accounting from SouthEastern University and a Master's of Business Administration (MBA) from Cornell University. We believe Mr. Alia's qualifications to sit on the board of directors include his extensive industry experience and connection and networking abilities in the African communities and markets which further broaden and strengthen the board's collective qualifications, skills, and experience.

Non-director Executive Officers

Cecilia C. Welch has served as the Chief Financial Officer of the Company since December 21, 2009. Ms. Welch joined the Company in 2007 as Corporate Controller. Prior to joining the Company, from January 2006 to December 2006, she was the Controller for Savaje Technologies (acquired by Sun Microsystems), a developer of advanced mobile telephone software. From October 2004 to January 2006, she was Controller for Crystal Systems, a manufacturer of sapphire crystals used for industrial, semiconductor, defense, and medical applications. From December 1988 to July 2004, she was the Controller for ATN Microwave (acquired by Agilent Technologies), a manufacturer of automated test equipment. Ms. Welch has a Bachelor's degree in Accounting from Franklin Pierce University.

Mira K. LaCous has served as Chief Technology Officer of the Company since March 13, 2014. Prior to her appointment as Chief Technology Officer, she served as Senior Vice President of Technology & Development since 2012, and as our Vice President of Technology and Development since 2000. Ms. LaCous has over 35 years of product/project management, solution architecture, software development, team leadership and customer relations experience, with a background that includes successfully bringing numerous innovative products and technologies to market, including automated voice response systems, automated building control systems, software piracy protection, internet training materials and testing, page layout and design software, image scanning software and systems, biometric security systems, automated national ID systems using biometrics, and biometric algorithms. Ms. LaCous has been a speaker at multiple events/conferences and has worked with teams around the globe bringing biometric technology deployments to life. Ms. LaCous is the author of eight (8) US patented technologies, multiple international patents and lead the engineering team in developing other patents and inventive technologies. Ms. LaCous has a Bachelor's in Computer Science, with mathematics and physics from North Dakota State University.

James D. Sullivan has served as BIO-key's Senior Vice President of Strategy and Compliance and BIO-key's Chief Legal Officer since February 2020, as Senior Vice President of Strategy and Business Development from April 2012 through December 2018, and the dual role as Senior Vice President of Global Sales from August 2015 through December of 2016. Mr. Sullivan is a recognized expert in biometric authentication, cyberlaw and privacy for consumer and mobile applications. During over 18 years with the Company, Mr. Sullivan has directly worked with dozens of the Company's customers, including AT&T, Israel Defense Forces, LexisNexis, NCR and Omnicell, as well as large-scale biometric-centered identity management projects that interface daily with millions of corporate and consumer users. Mr. Sullivan earned a Juris Doctor cum laude from Georgia State University College of Law, is a member of the Georgia Bar, and enrolled to practice before the IRS. Mr. Sullivan has an undergraduate degree in Computer Science from Brown University and has over 25 years of experience in IT projects and implementation, including directly working with security and identity management solutions at the Company, Computer Associates, Platinum Technology, and Memco Software.

Committees of the Board of Directors

Audit Committee

Our audit committee is comprised of Robert J. Michel (Chair), Pieter Knook, and Emmanual Alia, all of whom meet the independence standards for purposes of serving on an audit committee established by NASDAQ and under the Exchange Act. Our audit committee (i) assists the board of directors in its oversight of the integrity of our financial statements, compliance with legal and regulatory requirements, and corporate policies and controls, (ii) has the sole authority to retain and terminate our independent registered public accounting firm, approve all auditing services and related fees and the terms thereof, and pre-approve any non-audit services to be rendered by our independent registered public accounting firm, and (iii) is responsible for confirming the independence and objectivity of our independent registered public accounting firm. Our independent registered public accounting firm has unrestricted access to our audit committee. Our board of directors has determined that Robert J. Michel qualifies as an "audit committee financial expert," as such term is defined in Item 407 of Regulation S-K.

Our audit committee operates under a written charter that is reviewed annually. The charter is available on our website at *www.bio-key.com*.

Compensation Committee

Our compensation committee is comprised of Thomas Bush, III (Chair) and Robert Michel, both of whom meet the independence standards established by NASDAQ and under the Exchange Act. The compensation committee's duties include overseeing our overall compensation philosophy, policies and programs. This includes reviewing and analyzing the design and function of our various compensation components, establishing salaries, incentives and other forms of compensation for officers and non-employee directors, and administering our equity incentive plan. In fulfilling its responsibilities, the compensation committee has the authority to delegate any or all of its responsibilities to a subcommittee of the compensation committee.

Our compensation committee operates under a written charter that is reviewed annually. The charter is available on our website at *www.bio-key.com*.

Code of Ethics

We have adopted a Code of Ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, and persons performing similar functions. Our Code of Ethics is designed to deter wrongdoing and promote: (i) honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships; (ii) full, fair, accurate, timely and understandable disclosure in reports and documents that we file with, or submit to, the SEC and in our other public communications; (iii) compliance with applicable governmental laws, rules, and regulations; (iv) the prompt internal reporting of violations of the code to an appropriate person or persons identified in the code; and (v) accountability for adherence to the code. We intend to disclose amendments or waivers of the Code of Ethics on our website within four business days. Any person may obtain a copy of our Code of Ethics free of charge by sending a written request for such to the attention of the Chief Financial Officer of the Company, 3349 Highway 138, Building A Suite E, Wall, NJ 07719.

Term of Office

Our directors are elected at the annual meeting of stockholders and hold office until the annual meeting of the stockholders next succeeding his or her election, or until his or her prior death, resignation or removal in accordance with our bylaws. Our officers are appointed by the Board and hold office until the annual meeting of the Board next succeeding his or her election, and until his or her successor shall have been duly elected and qualified, subject to earlier termination by his or her death, resignation or removal.

Delinquent Section 16(a) Reports

Reports of all transactions in our common stock by officers, directors and ten percent (10%) stockholders are required to be filed with the SEC pursuant to Section 16(a) of the Exchange Act. Based solely on our review of copies of the reports received, or representations of such reporting persons, we believe that during the year ended December 31, 2021, all Section 16(a) filing requirements applicable to our officers, directors and ten percent (10%) stockholders were satisfied in a timely fashion, except for one late Form 4 filing by Mr. Sullivan reporting an open market purchase.

ITEM 11. EXECUTIVE COMPENSATION

The following table sets forth a summary of the compensation paid to or accrued by our chief executive officer and the two most highly compensated executive officers other than our chief executive officer, for the fiscal years ended December 31, 2021 and 2020:

SUMMARY COMPENSATION TABLE

Name and Principal Position	Fiscal Year	Salary ($)	Bonus ($)	Stock Awards ($) (1)	All Other Compensation ($) (2)	Total ($)
Michael W. DePasquale	2021	275,000	-	-	1,944	276,944
Chief Executive Officer	2020	275,000	50,000	21,450	2,219	348,669
Mira K. LaCous	2021	216,333	-	-	3,092	219,425
Chief Technology Officer	2020	213,000	-	21,450	2,493	236,943
James Sullivan	2021	225,000	-	-	10,241 (3)	235,241
Chief Legal Officer	2020	150,000	35,000	21,450	137,238 (4)	343,688

(1) The aggregate grant date fair value of the restricted shares is calculated by the multiplying the quantity of shares issued by the closing trading price of the shares on the date of issuance calculated under FASB ASC 718.
(2) Consists of life insurance premiums paid by the Company except as otherwise noted.
(3) Consists of $8,987 of sales commissions and $1,254 of life insurance premiums paid by the Company.
(4) Consists of $135,383 of sales commissions and $1,855 of life insurance premiums paid by the Company.

Narrative Disclosure to Summary Compensation Table

Compensation for our executives is comprised of three main components: base salary, annual performance-based cash bonus, and long-term equity awards. We do not target a specific weighting of these three components or use a prescribed formula to establish pay levels. Rather, the board of directors and compensation committee considers changes in the business, external market factors and our financial position each year when determining pay levels and allocating between long-term and current compensation for the named executive officers.

Cash compensation is comprised of base salary and an annual performance-based cash bonus opportunity. The compensation committee generally seeks to set a named executive officer's targeted total cash compensation opportunity within a range that is the average of the applicable peer company and/or general industry compensation survey data, adjusted as appropriate for individual performance and internal pay equity and labor market conditions.

In setting cash compensation levels, we favor a balance in which base salaries are generally targeted at slightly below the peer average and a bonus opportunity that is targeted at slightly above the average. The base salary of our CEO has not been increased since 2018. Effective January 1, 2021, we increased the base salary of Mr. Sullivan to $225,000 to compensate for the fact that in connection with his promotion to Chief Legal Officer, he would be limited to sales commissions on only three of his existing long term accounts.

Performance-based bonuses have historically been based upon the achievement of certain revenue milestones established by the compensation committee. The committee believes that this higher emphasis on performance-based cash bonuses places an appropriate linkage between a named executive officer's pay, his or her individual performance, and the achievement of specific business goals by placing a higher proportion of annual cash compensation at risk, thereby aligning executive opportunity with the interests of stockholders.

In 2020, due to extraordinary efforts in maintaining operations during the pandemic, acquiring PistolStar, and the completing an underwritten public offering, Mr. DePasquale and Mr. Sullivan were awarded cash bonuses of $50,000 and $35,000, respectively.

We also include an equity component as part of our compensation package because we believe that equity-based compensation aligns the long-term interests of our named executive officers with those of stockholders. In August 2020, we issued 4,125 shares of restricted stock to Mr. DePasquale, Mr. Sullivan, and Ms. LaCous. These shares vest in equal annual installments over a three-year period from the date of grant. We did not issue any stock options or restricted shares to our named executive officers in 2021.

These cash and equity compensation components of pay are supplemented by various benefit plans that provide health, life, accident, disability and severance benefits, most of which are the same as the benefits provided to all of our US based employees.

Employment Agreements

On March 26, 2010, we entered into an employment agreement, effective as of March 25, 2010, with Michael W. DePasquale to serve as our Chief Executive Officer until March 24, 2011. The agreement automatically renews for subsequent one-year terms, unless the employment relationship is terminated by either party, or modified in accordance with the terms and conditions of the agreement. Since 2018, Mr. DePasquale's annual base salary has been $275,000, subject to adjustment by the compensation committee. In addition to the base salary, a "Performance Bonus" may be awarded to Mr. DePasquale on the basis of the Company achieving certain corporate and strategic performance goals, as determined by the compensation committee in its sole discretion. The employment agreement contains standard and customary confidentiality, non-solicitation and "work made for hire" provisions as well as a covenant not to compete which prohibits Mr. DePasquale from doing business with any current or prospective customer of the Company or engaging in a business competitive with that of the Company during the term of his employment and for the one-year period thereafter. This agreement also contains a number of termination and change in control provisions as described under the captions "***Termination Arrangements***" and "***Change in Control Arrangements***" below.

On April 5, 2017, we entered into an employment agreement with James Sullivan. The agreement automatically renews for subsequent one-year terms, unless terminated by the Company upon at least two months prior written notice which is treated as termination without cause. Since 2021, Mr. Sullivan's annual base salary has been $225,000, subject to adjustment by the compensation committee. The agreement contains standard and customary confidentiality, technical invention provisions as well as non-competition and non-solicitation covenants which prohibit Mr. Sullivan from doing business with any current or prospective customer of the Company or engaging in any business competitive with that of the Company during the term or his employment and for the one-year period thereafter. The agreement also contains a number of termination provisions as described under the caption "***Termination Agreements***" below.

On November 20, 2001, we entered into an employment agreement with Mira LaCous. The agreement automatically renews for subsequent one-year terms, unless terminated by the Company upon at least one-month prior written notice which is treated as termination without cause and provides for a discretionary bonus which shall not exceed 50% of base salary. The agreement contains standard and customary confidentiality, technical invention provisions as well as non-competition and non-solicitation covenants which prohibit Ms. LaCous from doing business with any current or prospective customer of the Company or engaging in any business competitive with that of the Company during the term or her employment and for the one-year period thereafter. The agreement also contains a number of termination provisions as described under the caption "***Termination Agreements***" below.

Stock Option Grants and Restricted Stock Awards

In the event of any change in the outstanding shares of our common stock by reason of a stock dividend, stock split, combination of shares, recapitalization, merger, consolidation, transfer of assets, reorganization, conversion or what the board deems to be similar circumstances, the number and kind of shares subject to outstanding options and restricted stock awards, and the exercise price of such options shall be appropriately adjusted. Restricted Furthermore, option agreements and restricted stock award agreements contain change of control provisions as described under the caption "***Change in Control Provisions***" below.

OUTSTANDING EQUITY AWARDS AT FISCAL YEAR END

DECEMBER 31, 2021

The following table sets forth for each named executive officer, information regarding outstanding equity awards as at December 31, 2021. The option awards and per share amounts for all periods reflect our 1-for-8 reverse stock split, which was effective November 20, 2020.

	Option Awards				Stock Awards	
Name	**Number of securities underlying unexercised options exercisable (#)**	**Number of securities underlying unexercised options unexercisable (#)**	**Option exercise price ($)**	**Option expiration date**	**Number of shares or units of stock that have not vested (#)**	**Market value of shares of units of stock that have not vested ($)(1)**
Michael W. DePasquale	2,605		17.27	8/13/2022	2,750	6,078
	31,250		21.20	3/16/2024		
	4,167		15.68	3/23/2025		
	2,778	1,389(2)	9.44	3/21/2026		
Mira LaCous	1,042		17.27	8/13/2022	2,750	6,078
	12,500		21.20	3/16/2024		
	1,563		15.68	3/23/2025		
	1,042	521(2)	9.44	3/21/2026		
James Sullivan	2,084		17.27	8/13/2022	2,750	6,078
	12,500		21.20	3/16/2024		
	3,125		15.68	3/23/2025		
	2,084	1,041(2)	9.44	3/21/2026		

(1) Calculated based on the closing market price of the Company's common stock on December 31, 2021 of $2.21 per share.
(2) The options vest equally in three annual installments commencing March 21, 2020.

Narrative Disclosure to Outstanding Equity Awards at Fiscal Year End Table

The following are the material terms of each agreement, contract, plan or arrangement that provide for payments to one or more of our named executive officers at, following or pursuant to their resignation, retirement or termination, or in connection with a change in control of the Company.

Termination Arrangements

We may terminate our employment agreement with Mr. DePasquale at any time with or without cause. In the event of termination by us without cause, we will continue to pay Mr. DePasquale his then current base salary for the greater of nine months from the date of such termination or the number of months remaining until the end of the term of the agreement.

We may terminate our employment agreement with Mr. Sullivan at any time with or without cause. In the event of termination by us without cause, we will continue to pay Mr. Sullivan his then current base salary, plus earned commissions, for the greater of six months from the date of such termination or the number of months remaining until the end of the term of the agreement.

We may terminate our employment agreement with Ms. LaCous at any time with or without cause. In the event of termination by us without cause, we will continue to pay Ms. LaCous her then current base salary for nine months from the date of such termination.

Change in Control Provisions

Our 2015 Equity Incentive Plan (the "Plan") provides for the acceleration of vesting of unvested options and termination of any restriction or forfeiture provisions applicable to restricted stock awards upon a "Change in Control" of the Company. A Change in Control is defined in the Plans to include (i) a sale or transfer of substantially all of the Company's assets; (ii) the dissolution or liquidation of the Company; (iii) a merger or consolidation to which the Company is a party and after which the prior stockholders of the Company hold less than 50% of the combined voting power of the surviving corporation's outstanding securities; (iv) the incumbent directors cease to constitute at least a majority of the Board of Directors; or (v) a change in control of the Company which would otherwise be reportable under Section 13 or 15(d) of the Exchange Act. In the event of a "Change In Control" the Plan provides for the immediate vesting of all options issued thereunder and termination of all forfeiture provisions applicable to restricted stock award issued thereunder. Options issued to executive officers outside of the Plans contain change in control provisions substantially similar to those contained in the Plans.

Our employment agreement with Mr. DePasquale contains a change in control provision that is triggered if Mr. DePasquale is not offered continued employment with us or any successor, or within five years following such Change of Control, we or any successor terminate Mr. DePasquale's employment without cause. If this occurs, then we will pay Mr. DePasquale his base salary and benefits earned but unpaid through the date of termination, and any prorated bonus earned during the then current bonus year, plus two times his then current base salary.

DIRECTOR COMPENSATION FOR THE FISCAL YEAR ENDED DECEMBER 31, 2021

The following table sets forth for each director, information regarding their compensation for the year ended December 31, 2021:

Name (1)	Stock Awards ($) (2)	Total ($)
Thomas E. Bush, III (3)	4,505	4,505
Thomas Gilley (3)	3,505	3,505
Pieter Knook (4)	6,009	6,009
Robert J Michel (4)	6,009	6,009
Emmanual Alia (5)	5,508	5,508

(1) Mr. DePasquale and Kelvin Wong have been omitted from the above table because they do not receive any additional compensation for serving on our Board of Directors.
(2) The aggregate fair value of the common stock issued was calculated based on the closing price of our common stock on the date of issuance in accordance with FASB ASC 718.
(3) At December 31, 2021, Messrs. Bush and Gilley each held options to purchase 2,325 shares of common stock.
(4) At December 31, 2021, Messrs. Knook and Michel each held options to purchase 2,064 shares of common stock.
(5) At December 31, 2021, Mr. Alia held options to purchase 313 shares of common stock.

Narrative Disclosure to Director Compensation Table

During 2021, we had a policy to pay to each non-employee director $3,000 per board meeting, $1,000 per telephonic board meeting, and $500 per board committee meeting attended. Fees for attendance at regular quarterly board meetings held during the first three quarters of each fiscal year are paid through the issuance of common stock and payments for the last meeting of the year are paid in cash or, at the option of the director, in shares of common stock. All of our directors elected to receive payment in common stock for the last board meeting in 2021. We recently revised our policy regarding non-employee director fees to provide for payment of $3,000 per board meeting and $1,000 per board committee meeting attended payable in the manner described above. All directors will be indemnified by us for actions associated with being a director to the fullest extent permitted under Delaware law. We reimburse each of our non-employee directors for their reasonable expenses incurred in connection with attending meetings of the board of directors and related committees.

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

The following table sets forth, as of March 29, 2022, information with respect to the securities holdings of all persons that we, pursuant to filings with the SEC and our stock transfer records, have reason to believe may be deemed the beneficial owner of more than 5% of our common stock. The following table also sets forth, as of such date, the beneficial ownership of our common stock by all of our current officers and directors, both individually and as a group.

The beneficial owners and amount of securities beneficially owned have been determined in accordance with Rule 13d-3 under the Exchange Act and, in accordance therewith, include all shares of our common stock that may be acquired by such beneficial owners within 60 days of March 29, 2022 upon the exercise or conversion of any options, warrants or other convertible securities. This table has been prepared based on 8,405,209 shares of common stock outstanding on March 28, 2022.

Name and Address of Beneficial Owner (1)	Amount and Nature of Beneficial Ownership	Percentage of Class
Michael W. DePasquale	103,258(2)	1.2%
Cecilia Welch	56,626(3)	*
Mira LaCous	30,272(4)	*
James Sullivan	79,293(5)	*
Thomas Gilley	13,283(6)	*
Robert J. Michel	14,110(7)	*
Thomas E. Bush, III	13,591(8)	*
Pieter Knook	13,122(9)	*
Emmanual Alia	8,793(10)	*
Wong Kwok Fong (Kelvin)	583,659(11)	6.9%
All officers and directors as a group ten (10) persons	916,007	10.9%
Lind Global Micro Fund, LP	833,125(12)	9.9%

* Less than 1%

(1) Unless otherwise indicated, the address of each person listed below is c/o BIO-key International, Inc., 3349 Highway 138, Building A, Suite E, Wall, NJ 07719.

(2) Includes 40,800 shares issuable on exercise of options and 39,125 shares of restricted stock of which 37,750 remain subject to vesting. Does not include 1,389 shares issuable upon exercise of options subject to vesting.

(3) Includes 22,501 of shares issuable upon exercise of options and 34,125 shares of restricted stock of which 32,750 remain subject to vesting. Does not include 1,041 shares issuable upon exercise of options subject to vesting.

(4) Includes 16,147 of shares issuable upon exercise of options and 11,625 shares of restricted stock of which 10,250 remain subject to vesting. Does not include 521 shares issuable upon exercise of options subject to vesting.

(5) Includes 19,793 of shares issuable on exercise of options and 34,125 shares of restricted stock of which 32,750 remain subject to vesting. Does not include 1,041 shares issuable upon exercise of options subject to vesting.

(6) Includes 2,013 of shares issuable on exercise of options and 5,000 shares of restricted stock which remain subject to vesting. Does not include 312 shares issuable upon exercise of options subject to vesting.

(7) Includes 1,752 of shares issuable on exercise of options and 5,000 shares of restricted stock which remain subject to vesting. Does not include 312 shares issuable upon exercise of options subject to vesting.

(8) Includes 2,013 of shares issuable on exercise of options and 5,000 shares of restricted stock which remain subject to vesting. Does not include 312 shares issuable upon exercise of options subject to vesting.

(9) Includes 1,752 of shares issuable on exercise of options and 5,000 shares of restricted stock which 5, remain subject to vesting. Does not include 312 shares issuable upon exercise of options subject to vesting.

(10) Includes 105 of shares issuable on exercise of options and 5,000 shares of restricted stock which remain subject to vesting. Does not include 208 shares issuable upon exercise of options subject to vesting.

(11) Includes 25,695 of shares issuable on exercise of options and 9,125 shares of restricted stock of which 7,750 remain subject to vesting. Does not include 1,389 shares issuable upon exercise of options subject to vesting.The address of Kelvin is Flat C, 27/F, Block 5, Grand Pacific Views, Siu Lam, Hong Kong N7.

(12) Consists of shares issuable upon exercise of warrants. The address of Lind Global Capital Micro Fund, LP is 444 Madison Ave, Floor 41, New York, NY 10022

EQUITY COMPENSATION PLAN INFORMATION

The following table sets forth, as of December 31, 2021, information with respect to securities authorized for issuance under equity compensation plans. The shares and per share amounts reflect BIO-key's 1-for-8 reverse stock split, which was effective November 20, 2020.

On January 27, 2016, the stockholders approved the 2015 Equity Incentive Plan, which was amended on June 13, 2019 by vote of stockholders, and amended and restated by vote of stockholders on June 18, 2021 (as amended and restated, the "2015 Plan"). The 2015 Plan reserves 789,000 shares of common stock for issuance of options, restricted stock, and other equity based awards to employees, officers, directors, and consultants of the Company. Options are issued at exercise prices which may not be below 100-110% of fair market value and have terms not to exceed ten years. Options issued under the 2015 Plan vest pursuant to the terms of stock option agreements with the recipients. In the event of a change in control, certain stock awards issued under this plan may be subject to additional acceleration of vesting as may be provided in the participants' written agreement. The 2015 Plan expires in December 2025.

In addition to options issued under the 2015 Plan, we have issued options to purchase common stock to employees, officers, directors and consultants outside of the plan. As of December 31, 2021, there were outstanding non-plan options to purchase 121,653 shares of common stock. The terms of these outstanding options are substantially similar to the provisions of the 2015 Plan and options issued thereunder. In the event of change in control, as defined, certain of the non-plan options outstanding vest immediately.

On June 18, 2021, the stockholders approved the 2021 Employee Stock Purchase Plan ("ESPP"). Under the terms of this plan, 789,000 shares of common stock are reserved for issuance and sale to employees and officers of the Company at a purchase price equal to 85% of the lower of the closing price of our common stock as reported on the Nasdaq Capital Market on the first day or the last day of the offering period. Eligible employees are granted an option to purchase shares of common stock funded by payroll deductions. The Board may suspend or terminate the plan at any time, otherwise the plan expires June 17, 2031.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	90,808 (1)(2)	11.01	1,391,260 (3)
Equity compensation plans not approved by security holders	121,653	$ 18.44	—
Total	212,461 (1)(2)	$ 16.65	1,391,260 (3)

(1) Consists of shares of common stock issuable upon the exercise of options outstanding as of December 31, 2021 under the 2015 Plan.

(2) Excludes employee stock purchase rights accruing under the ESPP.

(3) Amount includes 621,744 shares of common stock available as of December 31, 2021 for future issuance under the 2015 Plan and 769,516 shares of common stock available as of December 31, 2021 for future issuance under the ESPP.

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

Standstill Agreement with Principal Stockholder

Pursuant to separate securities purchase agreements dated October 29, 2015 and November 11, 2015 with each of Wong Kwok Fong (Kelvin), Micron, and Giant Leap we issued and sold shares of series A-1 stock to Kelvin and shares of series B-1 stock to Micron and Giant Leap, which were subsequently converted into shares of our common stock. The forgoing agreements contain a standstill provision (the "Standstill") which prohibits each of these investors either alone or together with any other person, from acquiring additional shares of our common stock or any of our assets, soliciting proxies, or seeking representation on our board of directors. Kelvin is the Co-Chairman of the board of directors, and an executive officer.

Loans from Wong Kwok Fong (Kelvin)

Between March 2019 and February 2020, we received a series of non-interest-bearing advances from Mr. Wong Kwok Fong (Kelvin) in the aggregate amount of $217,360 to pay current liabilities. The amounts were repaid in their entirety during the 2020 fiscal year. Mr. Wong is the Vice-Chairman of the Board, an executive officer, and a principal stockholder of the Company.

Loans from Michael W. DePasquale

In December 2019, we received two non-interest-bearing advances from Michael DePasquale in the aggregate amount of $114,000 to pay current liabilities. The amounts were repaid in their entirety during the 2020 fiscal year. Mr. DePasquale serves as the Chairman of the Board and Chief Executive Officer of the Company.

Sales Incentive Agreement with Technology Transfer Institute ("TTI")

On March 25, 2020, we entered into a sales incentive agreement TTI. The agreement provides that for each $5,000,000 in revenue (up to a maximum of $20,000,000), TTI generates for the Company during the first year that generate net income (calculated under U.S. generally accepted accounting principles) of at least 20%, we will pay TTI a sales incentive fee of $500,000 payable by the issuance of 62,500 shares of common stock. In the event that TTI generates revenue for the Company in excess of $20,000,000 during first year, we will issue TTI a five-year warrant to purchase 12,500 shares of Common Stock at an exercise price of $12.00 per share for each $1,000,000 of revenue in excess of $20,000,000 (up to a maximum of $25,000,000). In no event will we be obligated to issue more than 250,000 shares of common stock or warrants to purchase more than 62,500 shares of common stock pursuant to this agreement. Emmanual Alia, a member of our board of directors, served as the Chief Executive Officer of TTI until August 12, 2020.

Director Independence

As required under the NASDAQ Marketplace Rules, a majority of the members of a listed company's board of directors must qualify as "independent," as affirmatively determined by the board of directors. Our board considered certain relationships between our directors and us when determining each director's status as an "independent director" under Rule 5605(a)(2) of the NASDAQ Marketplace Rules. Based upon such definition and SEC regulations, we have determined that Robert Michel, Pieter Knook, Emmanual Alia, Thomas Bush, III, and Thomas Gilley are "independent" under NASDAQ standards.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table shows fees for professional services and quarterly audit fees billed to us by Rotenberg Meril Solomon Bertiger & Guttilla, P.C. ("RMSBG") for the audit of our annual consolidated financial statements for the years ended December 31, 2021 and 2020:

	2021	2020
Audit Fees	$ 123,900	$ 151,584
Audit-Related Fees	9,795	76,925
Tax Fees	17,000	20,053
Total Fees	$ 150,695	$ 248,562

Audit Fees consist of fees billed for professional services rendered for the audit of our financial statements and review of the interim financial statements included in quarterly reports and services that are normally provided by our auditors in connection with statutory and regulatory filings or engagements.

Audit-Related Fees consist of fees billed for assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and which are not reported under audit fees. These fees relate primarily to services provided in connection with registration of securities and review of documents filed with the SEC.

Tax Fees consist of fees billed for professional services for tax compliance assistance rendered during the fiscal year.

Audit Committee Pre-Approval Procedures

The audit committee of our board of directors consists of Robert J. Michel (Chairman), Pieter Knook, and Emmanual Alia. The audit committee approves the engagement of our independent auditors to render audit and non-audit services before they are engaged. All of the fees for 2021 and 2020 shown above were pre-approved by the audit committee.

The audit committee pre-approves all audit and other permitted non-audit services provided by our independent auditors. Pre-approval is generally provided for up to one year, is detailed as to the particular category of services and is subject to a monetary limit. Our independent auditors and senior management periodically report to the audit committee the extent of services provided by the independent auditors in accordance with the pre-approval, and the fees for the services performed to date. The audit committee may also pre-approve particular services on a case-by-case basis.

Our audit committee will not approve engagements of our independent registered public accounting firm to perform non-audit services for us if doing so will cause our independent registered public accounting firm to cease to be independent within the meaning of applicable SEC rules. In addition, our audit committee considers, among other things, whether our independent registered public accounting firm is able to provide the required services in a more or less effective and efficient manner than other available service providers.

PART IV

ITEM 15. – EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this Report. Portions of Item 15 are submitted as separate sections of this Report:

(1) Financial statements filed as part of this Report:

Report of Independent Registered Public Accounting Firm (Rotenberg Meril Solomon Bertiger & Guttilla, P.C., Saddle Brook, NJ, PCAOB ID:361

Consolidated Balance Sheets as at December 31, 2021 and 2020

Consolidated Statements of Operations—Years ended December 31, 2021 and 2020

Consolidated Statements of Stockholders’ Equity (Deficit)—Years ended December 31, 2021 and 2020

Consolidated Statements of Cash Flows—Years ended December 31, 2021 and 2020

Notes to Consolidated Financial Statements—December 31, 2021 and 2020

(b) The exhibits listed in the Exhibits Index immediately preceding such exhibits are filed as part of this Report

ITEM 16. – FORM 10-K SUMMARY

None.

FINANCIAL STATEMENTS

The following financial statements of BIO-key International, Inc. are included herein at the indicated page numbers:

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of
BIO-key International, Inc.
Wall, NJ

Opinion on the Financial Statements
We have audited the accompanying consolidated balance sheets of BIO-key International, Inc. and Subsidiaries (the “Company”) as of December 31, 2021 and 2020, and the related consolidated statements of operations, stockholders’ equity (deficit) and cash flows for the years then ended, and the related notes (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 December 31, 2021 and 2020, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion
These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“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. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

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 Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) are especially challenging, subjective, or complex judgements. 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 matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Revenue Recognition – Refer to Notes A and B of the consolidated financial statements

Description of the Matter

The Company’s revenues are generated pursuant to written contractual arrangements to provide software licenses and/or hardware and to provide related maintenance and support services or professional services. The Company’s performance obligations are either satisfied at a point in time when the customer obtains control of the hardware or is granted the software license or satisfied over time for maintenance revenue over the contractual period. Software licenses may be sold as perpetual licenses or subscription licenses. Contracts may include multiple performance obligations.

Significant judgment is exercised by the Company in determining revenue recognition for these contractual arrangements, and includes the following:

- Determination of whether products and services are considered distinct performance obligations that should be accounted for separately versus together, such as software licenses and related services that are sold with cloud-based services.
- The pattern of delivery (i.e., timing of when revenue is recognized) for each distinct performance obligation.
- Identification and treatment of contract terms that may impact the timing and amount of revenue recognized (e.g., variable consideration and/or optional purchases).
- Determination of stand-alone selling prices for each distinct performance obligation and for products and services that are not sold separately.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures included:

- We obtained an understanding of the Company’s revenue recognition process including the various product and service offerings;
- We reviewed management’s assessment of the terms and conditions of contracts with customers which included an analysis of the distinct performance obligations and a review of the conclusion as to whether revenue from such performance obligations should be recognized over time or at a point in time;
- We selected a sample of contracts with customers and performed the following:
  - Obtained and read customer sales orders and/or sales invoices and other documents that are part of the agreement;
  - Tested management’s process for identifying distinct performance obligation(s) in the contract;
  - Tested the allocation between software revenue and maintenance revenue including testing any carve out of maintenance from subscription based software and maintenance sales.

The outcome of the audit procedures resulted in determining the amounts of revenue and the application of ASC 606 is reasonable.

/s/ ROTENBERG MERIL SOLOMON BERTIGER & GUTTILLA, P.C.

ROTENBERG MERIL SOLOMON BERTIGER & GUTTILLA, P.C.

We have served as the Company's auditor since 2010.

Saddle Brook, New Jersey
March 31, 2022

BIO-key International, Inc. and Subsidiaries
CONSOLIDATED BALANCE SHEETS

	December 31, 2021	December 31, 2020
ASSETS		
Cash and cash equivalents	$ 7,754,046	$ 16,993,096
Accounts receivable, net	970,626	548,049
Due from factor	49,500	60,453
Note receivable, net of allowance	82,000	295,000
Inventory	4,940,660	330,947
Prepaid expenses and other	216,041	201,507
Investment – debt security	-	512,821
Total current assets	14,012,873	18,941,873
Resalable software license rights	48,752	58,882
Investment – debt security, net	452,821	-
Equipment and leasehold improvements, net	69,168	81,793
Capitalized contract costs, net	249,012	165,315
Deposits and other assets	8,712	8,712
Note receivable, net of allowance	113,000	-
Operating lease right-of-use assets	254,100	487,325
Intangible assets, net	1,298,077	1,514,146
Goodwill	1,262,526	1,262,526
Total non-current assets	3,756,168	3,578,699
TOTAL ASSETS	$ 17,769,041	$ 22,520,572
LIABILITIES		
Accounts payable	$ 427,772	$ 244,158
Accrued liabilities	828,997	508,487
Note payable – PistolStar acquisition, net of debt discount	-	232,000
Deferred revenue - current	565,355	657,349
Operating lease liabilities, current portion	177,188	234,309
Total current liabilities	1,999,312	1,876,303
Deferred revenue, net of current portion	67,300	44,987
Operating lease liabilities, net of current portion	86,974	264,163
Total non-current liabilities	154,274	309,150
TOTAL LIABILITIES	2,153,586	2,185,453
Commitments		
STOCKHOLDERS' EQUITY		
Common stock — authorized, 170,000,000 shares; issued and outstanding; 7,853,759 and 7,814,572 of $.0001 par value at December 31, 2021 and December 31, 2020, respectively	786	782
Additional paid-in capital	120,190,139	119,844,026
Accumulated deficit	(104,575,470)	(99,509,689)
TOTAL STOCKHOLDERS' EQUITY	15,615,455	20,335,119
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 17,769,041	$ 22,520,572

All BIO-key shares issued and outstanding for all periods reflect BIO-key's 1-for-8 reverse stock split, which was effective November 20, 2020.

The accompanying notes are an integral part of these statements.

BIO-key International, Inc. and Subsidiaries
CONSOLIDATED STATEMENTS OF OPERATIONS

	Years ended December 31, 2021	Years ended December 31, 2020
Revenues		
Services	$ 1,273,354	$ 1,432,228
License fees	2,555,809	962,038
Hardware	1,285,326	442,516
Total revenues	5,114,489	2,836,782
Costs and other expenses		
Cost of services	686,175	502,214
Cost of license fees	183,199	49,891
Cost of hardware	803,555	242,721
Total costs and other expenses	1,672,929	794,826
Gross Profit	3,441,560	2,041,956
Operating expenses		
Selling, general and administrative	6,028,360	5,848,687
Research, development and engineering	2,355,056	1,396,436
Total operating expenses	8,383,416	7,245,123
Operating loss	(4,941,856)	(5,203,167)
Other income (expense)		
Interest income	4,075	30,649
Foreign currency loss	(50,000)	-
Investment-debt security reserve	(60,000)	-
Government grant – Paycheck Protection Program	-	340,819
Interest expense	(18,000)	(4,343,212)
Loss on extinguishment of debt	-	(499,076)
Total other income (expense)	(123,925)	(4,470,820)
Net loss	(5,065,781)	(9,673,987)
Deemed dividend from trigger of anti-dilution provision feature	-	(112,686)
Net loss available to common stockholders	(5,065,781)	(9,786,673)
Basic and Diluted Loss per Common Share	$ (0.65)	$ (2.08)
Weighted Average Shares Outstanding:		
Basic and Diluted	7,791,741	4,700,787

All BIO-key shares issued and outstanding for all periods reflect BIO-key's 1-for-8 reverse stock split, which was effective November 20, 2020.

The accompanying notes are an integral part of these statements.

BIO-key International, Inc. and Subsidiaries
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total
	Shares	Amount			
Balance as of December 31, 2019	**1,812,483**	**$ 182**	**$ 87,437,661**	**$ (89,723,016)**	**$ (2,285,173)**
Issuance of common stock for directors' fees	5,270	-	28,511	-	28,511
Issuance of common stock pursuant to securities purchase agreements	43,939	5	277,828	-	277,833
Issuance of common stock pursuant to public offering	4,264,313	426	22,173,999	-	22,174,425
Issuance of common stock pursuant to warrant exercises	918,538	92	5,602,503	-	5,602,595
Issuance of common stock for conversion of convertible note payable	728,654	73	3,788,927	-	3,789,000
Issuance of restricted common stock to employees	41,375	4	(4)	-	-
Warrants issued with convertible notes	-	-	1,388,339	-	1,388,339
Warrant issued for consulting fees	-	-	107,576	-	107,576
Legal and commitment fees	-	-	(2,371,223)	-	(2,371,223)
Beneficial conversion feature	-	-	641,215	-	641,215
Deemed dividends related to down-round features	-	-	112,686	(112,686)	-
Share-based compensation	-	-	656,008	-	656,008
Net loss	-	-	-	(9,673,987)	(9,673,987)
Balance as of December, 2020	**7,814,572**	**$ 782**	**$ 119,844,026**	**$ (99,509,689)**	**$ 20,335,119**
Issuance of common stock for directors' fees	7,828	1	25,535	-	25,536
Issuance of restricted common stock to employees	13,125	1	(1)	-	-
Forfeiture of restricted stock	(1,250)	-	-	-	-
Legal fees	-	-	(5,228)	-	(5,228)
Issuance of common stock for Employee stock purchase plan	19,484	2	36,628	-	36,630
Share based compensation for employee stock purchase plan	-	-	10,680	-	10,680
Share-based compensation	-	-	278,499	-	278,499
Net loss	-	-	-	(5,065,781)	(5,065,781)
Balance as of December, 2021	**7,853,759**	**$ 786**	**$ 120,190,139**	**$ (104,575,470)**	**$ 15,615,455**

All BIO-key shares issued and outstanding for all periods reflect BIO-key's 1-for-8 reverse stock split, which was effective November 20, 2020.

The accompanying notes are an integral part of these statements.

BIO-key International, Inc. and Subsidiaries
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years ended December 31, 2021	Years ended December 31, 2020
CASH FLOW FROM OPERATING ACTIVITIES:		
Net loss	$ (5,065,781)	$ (9,673,987)
Adjustments to reconcile net loss to cash used for operating activities:		
Depreciation	54,649	85,751
Amortization of intangible assets and write-off	216,069	120,240
Amortization of resalable software license rights	10,130	-
Loss on foreign currency	50,000	-
Reserve for investment security	60,000	-
Allowance for note receivable	100,000	-
Allowance for doubtful account	200,000	-
Amortization of debt discount	18,000	1,425,040
Amortization of capitalized contract costs	110,681	152,714
Amortization of debt issuance costs	-	2,166,650
Loss on extinguishment of debt	-	499,076
Amortization of beneficial conversion feature	-	641,215
Share based and warrant compensation for employees and consultants	289,179	763,584
Stock based fees to directors	25,536	28,511
Amortization of operating lease right-of-use assets	233,225	220,915
Change in assets and liabilities:		
Accounts receivable	(672,577)	(237,257)
Due from factor	10,953	50,488
Capitalized contract costs	(194,378)	(86,510)
Inventory	(4,609,713)	98,172
Resalable software license rights	-	14,920
Prepaid expenses and other	(14,534)	(83,625)
Accounts payable	183,614	(600,399)
Accrued liabilities	320,510	(84,415)
Deferred revenue	(69,681)	(246,876)
Operating lease liabilities	(234,310)	(204,315)
Net cash used for operating activities	(8,978,428)	(4,950,108)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Capital expenditures	(42,024)	(35,568)
Issuance of note receivable	-	(295,000)
Purchase of PistolStar	-	(2,000,000)
Cash acquired from purchase of PistolStar	-	100,747
Proceeds from maturity of debt security	-	512,821
Purchase of debt security	-	(512,821)
Net cash used for investing activities	(42,024)	(2,229,821)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from public offering	-	22,174,425
Proceeds from issuance of convertible notes	-	3,958,000
Proceeds from Employee Stock Purchase Plan	36,630	-
Repayment of convertible notes	-	(4,509,250)
Proceeds from the exercise of warrants	-	5,602,595
Costs to issue notes and common stock	-	(2,693,021)
Repayment of note payable - PistolStar	(250,000)	(250,000)
Legal fees	(5,228)	-
Net repayments of loans payable to related parties	-	(188,737)
Net cash (used in) provided by financing activities	(218,598)	24,094,012
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	(9,239,050)	16,914,083
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	16,993,096	79,013
CASH AND CASH EQUIVALENTS, END OF YEAR	$ 7,754,046	$ 16,993,096

The accompanying notes are an integral part of these statements.

SUPPLEMENTARY DISCLOSURES OF CASH FLOW INFORMATION

	Years ended December 31,	
	2021	2020
Cash paid for:		
Interest	$ 18,000	$ 109,426
Income taxes	$ -	$ -
Noncash investing and financing activities:		
Accounts receivable acquired from PistolStar	$ -	$ 184,792
Prepaid expenses acquired from PistolStar	$ -	$ 9,485
Equipment acquired from PistolStar	$ -	$ 36,467
Intangible assets acquired from PistolStar	$ -	$ 1,480,000
Goodwill related to PistolStar acquisition	$ -	$ 1,262,526
Issuance of note payable for PistolStar acquisition, net of discount	$ -	$ 464,000
Accrued expenses acquired from PistolStar	$ -	$ 20,017
Deferred revenue acquired from PistolStar	$ -	$ 590,000
Right-of-use asset addition under ASC 842	$ -	$ 141,761
Operating lease liabilities under ASC 842	$ -	$ 141,761
Issuance of common stock for conversion of note payable	$ -	$ 3,789,000
Issuance of common stock pursuant to securities purchase agreements	$ -	$ 277,833
Warrants issued with convertible notes	$ -	$ 1,388,339
Beneficial conversion feature	$ -	$ 641,215
Deemed dividends related to down-round features	$ -	$ 112,686

The accompanying notes are an integral part of these statements.

NOTE A —THE COMPANY AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Business

The Company, founded in 1993, develops and markets proprietary fingerprint identification biometric technology and software solutions enterprise-ready identity access management solutions to commercial, government and education customers throughout the United States and internationally. The Company was a pioneer in developing automated, finger identification technology that supplements or compliments other methods of identification and verification, such as personal inspection identification, passwords, tokens, smart cards, ID cards, PKI, credit cards, passports, driver's licenses, OTP or other form of possession or knowledge-based credentialing. Additionally, advanced BIO-key® technology has been, and is, used to improve both the accuracy and speed of competing finger-based biometrics.

Going Concern and Basis of Presentation

The Company has historically financed our operations through access to the capital markets by issuing secured and convertible debt securities, convertible preferred stock, common stock, and through factoring receivables. The Company currently requires approximately $735,000 per month to conduct operations, a monthly amount that it has been unable to consistently achieve through revenue generation. During 2021, the Company generated approximately $5,114,000 of revenue, which is below its average monthly requirements. During 2020, the Company raised approximately $24,000,000 from financing activities and at December 31, 2021 had approximately $7,800,000 in cash. With the addition of the Swivel Secure Europe, SA (see Note W), the Company expects $1,000,000 of additional cash flow, based on Swivel Secure's current recurring revenue and expenses, to provide additional operating income. As of the date of this report, the Company has enough cash and receivables for twelve months of operations.

Effective November 20, 2020, the Company implemented a reverse stock split of its outstanding common stock at a ratio of 1-for-8. All share figures and results are reflected on a post-split basis.

Foreign Currency

The Company accounts for foreign currency transactions pursuant to ASC 830, *Foreign Currency Matters* ("ASC 830"). The functional currency of the Company is the U.S. dollar, which is the currency of the primary economic environment in which it operates. In accordance with ASC 830, monetary balances denominated in or linked to foreign currency are stated on the basis of the exchange rates prevailing at the applicable balance sheet date. For foreign currency transactions included in the statement of operations, the exchange rates applicable on the relevant transaction dates are used. Gains or losses arising from changes in the exchange rates used in the translation of such transactions and from the remeasurement of the monetary balance sheet items are recorded as gain (loss) on foreign currency transactions.

Summary of Significant Accounting Policies

A summary of the significant accounting policies consistently applied in the preparation of the accompanying consolidated financial statements follows:

1. *Principles of Consolidation*

The accompanying consolidated financial statements include the accounts of BIO-key International, Inc. and its wholly-owned subsidiaries (collectively, the "Company"). Intercompany accounts and transactions have been eliminated in consolidation.

2. *Use of Estimates*

Our consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America (GAAP) as set forth in the Financial Accounting Standards Board's (FASB) Accounting Standards Codification (ASC) and consider the various staff accounting bulletins and other applicable guidance issued by the U.S. Securities and Exchange Commission (SEC). These accounting principles require us to make certain estimates, judgments and assumptions. The Company believes that the estimates, judgments and assumptions upon which it relies are reasonable based upon information available to us at the time that these estimates, judgments and assumptions are made. These estimates, judgments and assumptions can affect the reported amounts of assets and liabilities as of the date of the financial statements as well as the reported amounts of revenues and expenses during the periods presented. Certain significant accounting policies that contain subjective management estimates and assumptions include those related to revenue recognition, accounts receivable, inventory, intangible assets and long-lived assets, and income taxes. To the extent there are material differences between these estimates, judgments or assumptions and actual results, its consolidated financial statements will be affected. In many cases, the accounting treatment of a particular transaction is specifically dictated by GAAP and does not require management's judgment in its application. There are also areas in which management's judgment in selecting among available alternatives would not produce a materially different result.

3. *Revenue Recognition*

In accordance with ASC 606, revenue is recognized when a customer obtains control of promised goods or services. The amount of revenue recognized reflects the consideration to which the Company expects to be entitled to receive in exchange for these services. To achieve this core principle, the Company applies the following five steps:

- Identify the contract with a customer
- Identify the performance obligations in the contract
- Determine the transaction price
- Allocate the transaction price to performance obligations in the contract
- Recognize revenue when or as the Company satisfies a performance obligation

All of the Company's performance obligations, and associated revenues, are generally transferred to customers at a point in time, with the exception of support and maintenance, and professional services, which are generally transferred to the customer over time.

Software licenses

Software license revenue consist of fees for perpetual and subscription licenses for one or more of the Company’s biometric fingerprint solutions or identity access management solutions. Revenue is recognized at a point in time once the software is available to the customer for download. Software license contracts are generally invoiced in full on execution of the arrangement.

Hardware

Hardware revenue consists of fees for associated equipment sold with or without a software license arrangement, such as servers, locks and fingerprint readers. Customers are not obligated to buy third party hardware from the Company, and may procure these items from a number of suppliers. Revenue is recognized at a point in time once the hardware is shipped to the customer. Hardware items are generally invoiced in full on execution of the arrangement.

Support and Maintenance

Support and maintenance revenue consists of fees for unspecified upgrades, telephone assistance and bug fixes. The Company satisfies its support and maintenance performance obligation by providing “stand-ready” assistance as required over the contract period. The Company records deferred revenue (contract liability) at time of prepayment until the contracts term occurs. Revenue is recognized over time on a ratable basis over the contract term. Support and maintenance contracts are one to five years in length and are generally invoiced in advance at the beginning of the term. Support and Maintenance revenue for subscription licenses is carved out of the total license cost at 18% and recognized on a ratable basis over the license term.

Professional Services

Professional services revenues consist primarily of fees for deployment and optimization services, as well as training. The majority of the Company’s consulting contracts are billed on a time and materials basis, and revenue is recognized based on the amount billable to the customer in accordance with practical expedient ASC 606-10-55-18. For other professional services contracts, the Company utilizes an input method and recognizes revenue based on labor hours expended to date relative to the total labor hours expected to be required to satisfy its performance obligation.

Contracts with Multiple Performance Obligations

Some contracts with customers contain multiple performance obligations. For these contracts, the Company accounts for individual performance obligations separately if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. The standalone selling prices are determined based on overall pricing objectives, taking into consideration market conditions and other factors, including the value of the contracts, the cloud applications sold, customer demographics, geographic locations, and the number and types of users within the contracts.

The Company considered several factors in determining that control transfers to the customer upon shipment of hardware and availability of download of software. These factors include that legal title transfers to the customer, the Company has a present right to payment, and the customer has assumed the risks and rewards of ownership.

Accounts receivable from customers are typically due within 30 days of invoicing. The Company does not record a reserve for product returns or warranties as amounts are deemed immaterial based on historical experience.

Costs to Obtain and Fulfill a Contract

Costs to obtain and fulfill a contract are predominantly sales commissions earned by the sales force and are considered incremental and recoverable costs of obtaining a contract with a customer. These costs are deferred and then amortized over a period of benefit determined to be four years. These costs are included as capitalized contract costs on the balance sheet. The period of benefit was determined by taking into consideration customer contracts, technology, and other factors based on historical evidence. Amortization expense is included in selling, general and administrative expenses in the accompanying consolidated statements of operations.

Deferred Revenue

Deferred revenue includes customer advances and amounts that have been paid by customer for which the contractual maintenance terms have not yet occurred. The majority of these amounts are related to maintenance contracts for which the revenue is recognized ratably over the applicable term, which generally is 12-60 months. Contracts greater than 12 months are segregated as long term deferred revenue. Maintenance contracts include provisions for unspecified when-and-if available product updates and customer telephone support services. At December 31, 2021 and 2020, amounts in deferred revenue were approximately $633,000 and $702,000, respectively.

4. *Business Combinations*

In accordance with ASC 805, *Business Combinations* (ASC 805), the Company recognizes the tangible and intangible assets acquired and liabilities assumed based on their estimated fair values. Determining these fair values requires management to make significant estimates and assumptions, especially with respect to intangible assets.

The Company recognizes identifiable assets acquired and liabilities assumed at their acquisition date fair value. Goodwill as of the acquisition date is measured as the excess of consideration transferred over the net acquisition date fair value of the assets acquired and the liabilities assumed and represents the expected future economic benefits arising from other assets acquired that are not individually identified and separately recognized. While the Company uses its best estimates and assumptions as part of the purchase price allocation process to accurately value assets acquired and liabilities assumed at the acquisition date, its estimates are inherently uncertain and subject to refinement. Assumptions may be incomplete or inaccurate, and unanticipated events or circumstances may occur, which may affect the accuracy or validity of such assumptions, estimates or actual results. As a result, during the measurement period, which may be up to one year from the acquisition date, the Company records adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill to the extent that it identifies adjustments to the preliminary purchase price allocation. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to the consolidated statements of operations.

5. *Goodwill and acquired intangible assets*

Goodwill is not amortized, but is evaluated for impairment annually, or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. The Company has determined that there is a single reporting unit for the purpose of conducting this goodwill impairment assessment. For purposes of assessing potential impairment, the Company estimates the fair value of the reporting unit, based on the Company’s market capitalization, and compares this amount to the carrying value of the reporting unit. If the Company determines that the carrying value of the reporting unit exceeds its fair value, an impairment charge would be required. The annual goodwill impairment test will be performed as of December 31st of each year. To date, the Company has not identified any impairment to goodwill.

Intangible assets acquired in a business combination are recorded at their estimated fair values at the date of acquisition. The Company amortizes acquired definite-lived intangible assets over their estimated useful lives based on the pattern of consumption of the economic benefits or, if that pattern cannot be readily determined, on a straight-line basis.

6. *Cash Equivalents*

Cash equivalents consist of liquid investments with original maturities of three months or less. At December 31, 2021 and 2020, cash equivalents consisted of a money market account.

7. *Accounts Receivable*

Accounts receivable are carried at original amount less an estimate made for doubtful receivables based on a review of all outstanding amounts on a monthly basis. Management determines the allowance for doubtful receivables by regularly evaluating individual customer receivables and considering a customer’s financial condition, credit history, and current economic conditions. Accounts receivable are written off when deemed uncollectible.

Accounts receivable at December 31, 2021 and 2020 consisted of the following:

	December 31, 2021	December 31, 2020
Accounts receivable	$ 1,234,411	$ 561,834
Loss on foreign currency	(50,000)	-
Allowance for doubtful accounts	(213,785)	(13,785)
Accounts receivable, net of allowances for doubtful accounts	$ 970,626	$ 548,049

Bad debt expenses (if any) are recorded in selling, general, and administrative expense.

8. *Equipment and Leasehold Improvements, Intangible Assets and Depreciation and Amortization*

Equipment and leasehold improvements are stated at cost. Depreciation is provided for in amounts sufficient to relate the cost of depreciable assets to operations over the estimated service lives, principally using straight-line methods. Leasehold improvements are amortized over the shorter of the life of the improvement or the lease term, using the straight-line method.

The estimated useful lives used to compute depreciation and amortization for financial reporting purposes are as follows:

	Years
Equipment and leasehold improvements	
Equipment (years)	3 - 5
Furniture and fixtures (years)	3 - 5
Software (years)	3
Leasehold improvements	life or lease term

Intangible assets other than goodwill consist of patents, trade name, proprietary software, and customer relationships. Patent costs are capitalized until patents are awarded. Upon award, such costs are amortized using the straight-line method over their respective economic lives. If a patent is denied, all costs are charged to operations in that year. Trade names, proprietary software, and customer relationships are amortized over the economic useful life.

9. *Impairment or Disposal of Long Lived Assets, including Intangible Assets*

The Company reviews long-lived assets, including intangible assets subject to amortization, whenever events or changes in circumstances indicate that the carrying amount of such an asset may not be recoverable. Recoverability of these assets is measured by comparison of their carrying amount to the future undiscounted cash flows the assets are expected to generate. If such assets are considered impaired, the impairment to be recognized is equal to the amount by which the carrying value of the assets exceeds their fair value determined by either a quoted market price, if any, or a value determined by utilizing a discounted cash flow technique. In assessing recoverability, the Company must make assumptions regarding estimated future cash flows and discount factors. If these estimates or related assumptions change in the future, the Company may be required to record impairment charges. Intangible assets with determinable lives are amortized over their estimated useful lives, based upon the pattern in which the expected benefits will be realized, or on a straight-line basis, whichever is greater.

10. *Advertising Expense*

The Company expenses the costs of advertising as incurred. Advertising expenses for 2021 and 2020 were approximately $527,000 and $494,000, respectively.

11. *Research and Development Expenditures*

Research and development expenses include costs directly attributable to the conduct of research and development programs primarily related to the development of our software products and improving the efficiency and capabilities of our existing software. Such costs include salaries, payroll taxes, employee benefit costs, materials, supplies, depreciation on research equipment, services provided by outside contractors, and the allocable portions of facility costs, such as rent, utilities, insurance, repairs and maintenance, depreciation and general support services. All costs associated with research and development are expensed as incurred.

12. *Earnings Per Share of Common Stock (“EPS”)*

The Company’s EPS is calculated by dividing net income (loss) applicable to common stockholders by the weighted-average number of common shares outstanding during the reporting period. Diluted EPS includes the effect from potential issuances of common stock, such as stock issuable pursuant to the exercise of stock options and warrants, when the effect of their inclusion is dilutive.

13. *Accounting for Stock-Based Compensation*

The Company accounts for share based compensation in accordance with the provisions of ASC 718-10, “Compensation — Stock Compensation,” which requires measurement of compensation cost for all stock awards at fair value on date of grant and recognition of compensation over the service period for awards expected to vest. The majority of its share-based compensation arrangements vest over either a three or four year vesting schedule. The Company expenses its share-based compensation under the ratable method, which treats each vesting tranche as if it were an individual grant. The fair value of stock options is determined using the Black-Scholes valuation model and requires the input of highly subjective assumptions. These assumptions include estimating the length of time employees will retain their vested stock options before exercising them (the “expected option term”), the estimated volatility of its common stock price over the option’s expected term, the risk-free interest rate over the option’s expected term, and the Company’s expected annual dividend yield. Changes in these subjective assumptions can materially affect the estimate of fair value of stock-based compensation and consequently, the related amount recognized as an expense in the consolidated statements of operations. As required under the accounting rules, the Company reviews its valuation assumptions at each grant date and, as a result, the Company is likely to change its valuation assumptions used to value employee stock-based awards granted in future periods. The values derived from using the Black-Scholes model are recognized as expense over the service period, net of estimated forfeitures (the number of individuals that will ultimately not complete their vesting requirements). The estimation of stock awards that will ultimately vest requires significant judgment. The Company considers many factors when estimating expected forfeitures, including types of awards, employee class, and historical experience. Actual results, and future changes in estimates, may differ substantially from current estimates. Options and warrants to outsiders are accounted for under ASC 718.

The following table presents share-based compensation expenses included in the Company’s consolidated statements of operations:

	Year ended December 31,	
	2021	**2020**
Selling, general and administrative	$ 269,368	$ 705,971
Research, development and engineering	45,347	86,124
	$ 314,715	$ 792,095

Valuation Assumptions for Stock Options

In 2020, 28,440 stock options were granted. No options were granted in 2021. The fair value of each option was estimated on the date of grant using the Black-Scholes option-pricing model with the following assumptions:

	Year ended December 31,	
	2021	**2020**
Weighted average Risk free interest rate	-	0.30%
Expected life of options (in years)	-	4.50
Expected dividends	-	0%
Weighted average Volatility of stock price	-	115%

The stock volatility for each grant is determined based on the review of the experience of the weighted average of historical daily price changes of the Company’s common stock over the expected option term. The expected term was determined using the simplified method for estimating expected option life, which qualify as “plain-vanilla” options; and the risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant for periods corresponding with the expected life of the option.

14. *Derivative Liabilities*

In connection with the issuances of equity instruments or debt, the Company may issue options or warrants to purchase common stock. In certain circumstances, these options or warrants may be classified as liabilities, rather than as equity. In addition, the equity instrument or debt may contain embedded derivative instruments, such as conversion options or listing requirements, which in certain circumstances may be required to be bifurcated from the associated host instrument and accounted for separately as a derivative liability instrument. The Company early-adopted the new provisions issued July 2017, for derivative liability instruments under FASB ASU 2017-11, Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480) and Derivatives and Hedging (Topic 815): I. Accounting for Certain Financial Instruments with Down Round Features; II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Non-controlling Interests with a Scope Exception. Under ASU 2017-11, down round features do not meet the criteria for derivative accounting and no liability is to be recorded until an actual issuance of securities triggers the down-round feature. Prior to these provisions, the liabilities were recorded without the actual issuance of the securities triggering the down-round feature.

15. *Income Taxes*

The provision for, or benefit from, income taxes includes deferred taxes resulting from the temporary differences in income for financial and tax purposes using the liability method. Such temporary differences result primarily from the differences in the carrying value of assets and liabilities. Future realization of deferred income tax assets requires sufficient taxable income within the carryback, carryforward period available under tax law. The Company evaluates, on a quarterly basis whether, based on all available evidence, if it is probable that the deferred income tax assets are realizable. Valuation allowances are established when it is more likely than not that the tax benefit of the deferred tax asset will not be realized. The evaluation, as prescribed by ASC 740-10, “Income Taxes,” includes the consideration of all available evidence, both positive and negative, regarding historical operating results including recent years with reported losses, the estimated timing of future reversals of existing taxable temporary differences, estimated future taxable income exclusive of reversing temporary differences and carryforwards, and potential tax planning strategies which may be employed to prevent an operating loss or tax credit carryforward from expiring unused. Because of the Company’s historical performance and estimated future taxable income, a full valuation allowance has been established.

The Company accounts for uncertain tax provisions in accordance with ASC 740-10-05, “Accounting for Uncertainty in Income Taxes.” The ASC clarifies the accounting for uncertainty in income taxes recognized in an enterprise’s financial statements. The ASC prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The ASC provides guidance on de-recognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

16. *Leases*

In accordance with ASC 842, *Lease*s (ASC 842), the Company records a right-of-use (ROU) asset and a lease liability on the balance sheet for all leases with terms longer than 12 months and classifies them as either operating or finance leases.

At the inception of an arrangement, the Company determines whether the arrangement is or contains a lease based on the unique facts and circumstances present and the classification of the lease including whether the contract involves the use of a distinct identified asset, whether the Company obtains the right to substantially all the economic benefit from the use of the asset, and whether the Company has the right to direct the use of the asset. Leases with a term greater than one year are recognized on the balance sheet as ROU assets, lease liabilities and, if applicable, long-term lease liabilities. The Company has elected not to recognize on the balance sheet leases with terms of one year or less under practical expedient in paragraph ASC 842-20-25-2. For contracts with lease and non-lease components, the Company has elected not to allocate the contract consideration, and to account for the lease and non-lease components as a single lease component.

Lease liabilities and their corresponding ROU assets are recorded based on the present value of lease payments over the expected lease term. The implicit rate within our operating leases are generally not determinable and, therefore, the Company uses the incremental borrowing rate at the lease commencement date to determine the present value of lease payments. The determination of the Company’s incremental borrowing rate requires judgment. The Company determines the incremental borrowing rate for each lease using our estimated borrowing rate, adjusted for various factors including level of collateralization, term and currency to align with the terms of the lease. The operating lease ROU asset also includes any lease prepayments, offset by lease incentives.

An option to extend the lease is considered in connection with determining the ROU asset and lease liability when it is reasonably certain we will exercise that option. An option to terminate is considered unless it is reasonably certain we will not exercise the option.

17. *Recent Accounting Pronouncements*

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments-Credit Losses* (Topic 326), referred to herein as ASU 2016-13, which significantly changes how entities will account for credit losses for most financial assets and certain other instruments that are not measured at fair value through net income. ASU 2016-13 replaces the existing incurred loss model with an expected credit loss model that requires entities to estimate an expected lifetime credit loss on most financial assets and certain other instruments. Under ASU 2016-13 credit impairment is recognized as an allowance for credit losses, rather than as a direct write-down of the amortized cost basis of a financial asset. The impairment allowance is a valuation account deducted from the amortized cost basis of financial assets to present the net amount expected to be collected on the financial asset. Once the new pronouncement is adopted by the Company, the allowance for credit losses must be adjusted for management’s current estimate at each reporting date. The new guidance provides no threshold for recognition of impairment allowance. Therefore, entities must also measure expected credit losses on assets that have a low risk of loss. For instance, trade receivables that are either current or not yet due may not require an allowance reserve under currently generally accepted accounting principles, but under the new standard, the Company will have to estimate an allowance for expected credit losses on trade receivables under ASU 2016-13. ASU 2016-13 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2022 for smaller reporting companies. Early adoption is permitted. The Company is currently assessing the impact ASU 2016-13 will have on its consolidated financial statements.

Effective January 1, 2021, the Company adopted ASU 2019-12, Simplifying the Accounting for Income Taxes (“ASU 2019-12”) to reduce the cost and complexity in accounting for income taxes. ASU 2019-12 removes certain exceptions related to the approach for intra-period tax allocation, the methodology for calculating income taxes in an interim period, and the recognition of deferred tax liabilities for outside basis differences. ASU 2019-12 also amends other aspects of the guidance to help simplify and promote consistent application of U.S. GAAP. Most amendments within ASU 2019-12 are required to be applied on a prospective basis, while certain amendments must be applied on a retrospective or modified retrospective basis. The adoption of ASU 2019-12 did not have a significant impact on the Company’s consolidated financial statements.

Management does not believe that any other recently issued, but not yet effective, accounting standard if currently adopted would have a material effect on the accompanying consolidated financial statements.

NOTE B—REVENUE FROM CONTRACTS WITH CUSTOMERS

Disaggregation of Revenue

The following table summarizes revenue from contracts with customers for the years ended December 31, 2021 and 2020:

	North America	Africa	EMESA*	Asia	December 31, 2021
License fees	$ 1,854,088	$ 521,751	$ 105,314	$ 74,656	$ 2,555,809
Hardware	278,655	698,264	265,996	42,411	1,285,326
Services	1,162,526	42,000	54,918	13,910	1,273,354
Total Revenues	$ 3,295,269	$ 1,262,015	$ 426,228	$ 130,977	$ 5,114,489

	North America	Africa	EMESA*	Asia	December 31, 2020
License fees	$ 842,307	$ -	$ 46,922	$ 72,809	$ 962,038
Hardware	267,996	-	144,647	29,873	442,516
Services	1,296,696	44,228	68,196	23,108	1,432,228
Total Revenues	$ 2,406,999	$ 44,228	$ 259,765	$ 125,790	$ 2,836,782

* EMESA – Europe, Middle East, South America

Revenue recognized during the year ended December 31, 2021 from amounts included in deferred revenue at the beginning of the year was approximately $529,000. Revenue recognized during the year ended December 31, 2020 from amounts included in deferred revenue at the beginning of the year was approximately $290,000. The Company did not recognize any revenue from performance obligations satisfied in prior periods. Total deferred revenue (contract liability) was $632,655 and $702,336 at December 31, 2021 and 2020, respectively.

Transaction Price Allocated to the Remaining Performance Obligations

ASC 606 requires that the Company disclose the aggregate amount of transaction price that is allocated to performance obligations that have not yet been satisfied as at December 31, 2021. The guidance provides certain practical expedients that limit this requirement, which the Company's contracts meet as follows:

- The performance obligation is part of a contract that has an original expected duration of one year or less, in accordance with ASC 606-10-50-14.

Deferred revenue represents the Company's remaining performance obligations related to prepaid support and maintenance, all of which is expected to be recognized from one to five years.

NOTE C—PISTOLSTAR, INC. ACQUISITION

On June 30, 2020, the Company acquired PistolStar, Inc., a private company based in the United States, which provides enterprise-ready identity access management solutions, including multi-factor authentication, identity-as-a-service, single sign-on and self-service password reset to commercial, government and education customers throughout the United States and internationally.

From April 10, 2020 until the Company acquired PistolStar, it licensed PortalGuard®, PistolStar's authentication software, which the Company combines with its biometric authentication solutions offered to existing and prospective customers.

The total purchase price of $2.5 million included cash payment of $2.0 million and the issuance of a $500,000 promissory note.

The acquisition of PistolStar was accounted for as a business combination and, in accordance with ASC 805, the Company recorded the assets acquired and liabilities assumed at their respective fair values as of the acquisition date. The following table summarizes the final purchase price allocation:

Purchase consideration:	
Total cash paid, net of acquired cash	$ 2,000,000
Present value of 4% Promissory note	464,000
Total purchase price consideration	$ 2,464,000
Fair value of assets acquired and liabilities assumed:	
Cash and cash equivalents	$ 100,747
Accounts receivable	184,792
Prepaid expenses and other current assets	9,485
Fixed assets	36,467
Intangible assets	1,480,000
Goodwill	1,262,526
Total assets acquired	3,074,017

Accrued expenses and other current liabilities		738
Accrued payroll		19,279
Deferred revenue		590,000
Total fair value of assets acquired and liabilities assumed	$	2,464,000

The promissory note accrued interest at 4% per annum and was payable in four installments over the 12-month period following the closing. The balance of the note at December 31, 2020 was $232,000, net of the unamortized debt discount. On January 21, 2021, the Company paid the $250,000 balance due on the note.

The fair value of the assets acquired and liabilities assumed was less than the purchase price, resulting in the recognition of goodwill. The goodwill reflected the value of the synergies the Company expected to realize and the assembled workforce.

The significant intangible assets identified in the purchase price allocation discussed above include the trade name, proprietary software, and customer relationships. To value the trade name and proprietary software, the Company utilized the Relief from Royalty Method, which quantifies the cost savings associated with asset ownership via a discounted cash flow analysis. To value the customer relationships, the Company utilized the Excess Earnings Method, which isolates the value of the specific intangible asset by discounting its income stream to present value.

The fair value of the assets acquired and liabilities assumed reflected in the tables above is less than the purchase price, resulting in the recognition of goodwill. The goodwill reflects the value of the synergies the Company expects to realize and the assembled workforce.

The following table presents the final fair values and useful lives of the identifiable intangible assets acquired:

		Amount	**Estimated useful life (in years)**
Trade Name	$	130,000	15
Proprietary Software		420,000	5
Customer relationships		930,000	8 - 10
Total identifiable intangible assets	$	1,480,000	

NOTE D—FACTORING

Due from factor consisted of the following as of December 31:

	Original Invoice Value	Factored Amount	Factored Balance due
Year Ended December 31, 2021			
Factored accounts receivable	$ 99,000	$ 49,500	$ 49,500
Year Ended December 31, 2020			
Factored accounts receivable	$ 241,715	$ 181,262	$ 60,453

The Company entered into an accounts receivable factoring arrangement with a financial institution (the "Factor") which has been extended to October 31, 2022. Pursuant to the terms of the arrangement, the Company, from time to time, sells to the Factor a minimum of $150,000 per quarter of certain of its accounts receivable balances on a non-recourse basis for credit approved accounts. The Factor remits 35% of the foreign and 75% of the domestic accounts receivable balance to the Company (the "Advance Amount"), with the remaining balance, less fees, forwarded to the Company once the Factor collects the full accounts receivable balance from the customer. In addition, the Company, from time to time, receives over advances from the Factor. Factoring fees range from 2.75% to 15% of the face value of the invoice factored and are determined by the number of days required for collection of the invoice. The cost of factoring is included in selling, general and administrative expenses. The cost of factoring was as follows:

	Years Ended December 31,	
	2021	**2020**
Factoring fees	$ 50,132	$ 98,748

NOTE E—FAIR VALUES OF FINANCIAL INSTRUMENTS

Cash and cash equivalents, accounts receivable, due from factor, accounts payable and accrued liabilities are carried at, or approximate, fair value because of their short-term nature. The carrying value of the Company's notes and loan payables approximated fair value as the interest rates related to the financial instruments approximated market.

NOTE F—CONCENTRATION OF RISK

Financial instruments which potentially subject the Company to risk primarily consist of cash, and cash equivalents, investment in debt security, and accounts receivables.

The Company maintains its cash and cash equivalents with various financial institutions, which, at times may exceed insured limits. The exposure to the Company is solely dependent upon daily bank balances and the respective strength of the financial institutions. The Company was in excess of coverage of approximately $7,057,000 and $16,020,000 at December 31, 2021 and 2020, respectively. The Company has not incurred any losses on these accounts.

The Company extends credit to customers on an unsecured basis in the normal course of business. The Company's policy is to perform an analysis of the recoverability of its receivables at the end of each reporting period and to establish allowances where appropriate. The Company analyzes historical bad debts and contract losses, customer concentrations, and customer credit-worthiness when evaluating the adequacy of the allowances.

For the year ended December 31, 2021 and 2020, one customer accounted for 13% and 18% of total revenue, respectively.

Three customers accounted for 87% and one customer accounted for 31% of total accounts receivable, as of December 31, 2021 and 2020, respectively.

NOTE G—NOTE RECEIVABLE

During the third quarter 2020, the Company loaned $295,000 as an advance to Technology Transfer Institute ("TTI") to aid in fulfilling the African contracts. The note does not bear any interest if paid within the nine (9) monthly installments beginning December 31, 2020. The note bears a default rate of 5%. Due to the ongoing delays in payment, the Company reserved $100,000 of the note as an allowance. On February 17, 2022, the Company amended the note to modify the payment terms to provide for lower monthly payments, with an updated maturity date on, or before December 6, 2023. A member of our board of directors served as Chief Executive Officer off TTI until August 12, 2020.

	December 31, 2021	**December 31, 2020**
Note receivable	$ 295,000	$ 295,000
Allowance for doubtful account	(100,000)	-
Note receivable, net of allowance	195,000	295,000
Current portion, net of allowance	$ 82,000	$ 295,000
Noncurrent portion, net of allowance	$ 113,000	$ -

NOTE H—INVENTORY

Inventory is stated at the lower of cost, determined on a first in, first out basis, or realizable value, and consists primarily of fabricated assemblies and finished goods. Inventory is comprised of the following as of December 31:

	2021	2020
Finished goods	$ 4,798,203	$ 221,130
Fabricated assemblies	142,457	109,817
Total inventory	$ 4,940,660	$ 330,947

NOTE I—RESALABLE SOFTWARE LICENSES RIGHTS

On December 31, 2015, the Company purchased third-party software licenses in the amount of $180,000 in anticipation of a large pending deployment that has yet to materialize. The Company is amortizing the total cost at the greater of the actual unit cost per license sold or straight line amortization over 10 years. A total of $10,130 and $14,920 was charged to cost of sales during the years ended December 31, 2021 and 2020, respectively. Since the license purchase, the actual per unit cost (actual usage) of such license rights in the cumulative amount of $131,248 has been charged to cost of sales, with a carrying balance of $48,752 and $58,882 as of December 31, 2021 and 2020, respectively.

The Company has classified the balance as non-current until a larger deployment occurs.

Estimated minimum amortization expense based on straight line amortization of the software license rights over the remaining useful life approximates the following:

Years ending December 31	
2022	$ 18,000
2023	18,000
2024	12,752
Total	$ 48,752

NOTE J—INVESTMENT IN DEBT SECURITY

During 2019, the Company purchased a 4,000,000 Hong Kong dollar denominated Bond Certificate with a financial institution in Hong Kong. The Bond Certificate translated to $512,821 U.S. Dollars on the June 2019 purchase date. The bond had a one-year term which matured in June 2020, bearing interest at 5% per annum. The Company redeemed the bond and recorded interest income of approximately $25,800.

The Company then purchased a new 4,000,000 Hong Kong dollar denominated Bond Certificate with a financial institution in Hong Kong in June 2020. The new Bond Certificate translated to $512,821 U.S. Dollars, based on the exchange rate at the purchase date. The Company can invest up to 20,000,000 Hong Kong dollars under the terms of the certificate, bearing interest at 5% per annum. The investment is recorded at amortized cost which approximates fair value was held to maturity. The Company has yet to receive the proceeds and accrued interest from the investment. The Company has sent a legal letter of demand to confirm the status of the bond, and as such, the debt security was classified as noncurrent. In addition, due to the delay in the receipt of the proceeds, the Company recorded a $60,000 reserve.

NOTE K—EQUIPMENT AND LEASEHOLD IMPROVEMENTS

Equipment and leasehold improvements consisted of the following as of December 31:

	2021	2020
Equipment	$ 831,784	$ 789,760
Furniture and fixtures	164,079	164,079
Software	32,045	32,045
Leasehold improvements	25,135	25,135
	1,053,043	1,011,019
Less accumulated depreciation and amortization	(983,875)	(929,226)
Total	$ 69,168	$ 81,793

Depreciation was $54,649 and $85,751 for 2021 and 2020, respectively. Amounts are recorded in selling, general, and administrative expense as well as in cost of services.

NOTE L—INTANGIBLE ASSETS

Intangible assets consisted of the following as of December 31:

	2021 Gross Carrying Amount	Accumulated Amortization	12/31/21 Net Carrying Amount	2020 Gross Carrying Amount	Accumulated Amortization	12/31/20 Net Carrying Amount
Trade name	$ 130,000	$ (12,960)	$ 117,040	$ 130,000	$ (4,333)	$ 125,667
Proprietary software	420,000	(126,000)	294,000	420,000	(42,000)	378,000
Customer relationships	930,000	(155,000)	775,000	930,000	(51,667)	878,333
Patents and patents pending	365,080	(253,043)	112,037	365,080	(232,934)	132,146
Total	$ 1,845,080	$ (547,003)	$ 1,298,077	$ 1,845,080	$ (330,934)	$ 1,514,146

Aggregate amortization expense for 2021 and 2020 was approximately $216,000 and $120,000, respectively. Estimated minimum amortization expense based on straight line amortization of the software license rights for each of the next five years and thereafter approximates the following:

Years ending December 31	
2022	$ 215,000
2023	213,000
2024	209,000
2025	165,000
2026	121,000
Thereafter	375,077
Total	$ 1,298,077

NOTE M—ACCRUED LIABILITIES

Accrued liabilities consisted of the following as of December 31:

	2021	2020
Compensation	$ 254,433	$ 87,015
Compensated absences	293,297	227,147
Accrued legal and accounting fees	95,738	83,738
Franchise taxes	40,000	-
Employee expenses reimbursement	76,000	67,000
Sales tax payable	18,548	17,544
Factoring fees	495	5,495
Other	50,486	20,548
Total	$ 828,997	$ 508,487

NOTE N—RELATED PARTY TRANSACTIONS

Non-Interest-Bearing Advances

During the 2019 fiscal year, the Company received a series of non-interest-bearing advances from Mr. Wong Kwok Fong, and Mr. Michael DePasquale, to pay current liabilities. The balance of the advances as at December 31, 2019 was $74,737 and $114,000, respectively, which were both repaid in full during 2020.

NOTE O—CONVERTIBLE NOTES PAYABLE

There was no balance outstanding for convertible notes payable as of December 31, 2021 and 2020. Details for Notes that were either converted or redeemed during the 2020 fiscal year were as follows:

Securities Purchase Agreement dated July 10, 2019

On July 10, 2019, the Company issued a $3,060,000 principal amount senior secured convertible note (the "Original Note"). At closing, a total of $2,550,000 was funded. The original issue discount was $510,000. The principal amount due of the Original Note was due and payable as follows: $918,000 was due 180 days after funding, $1,071,000 was due 270 days after funding, and the remaining balance due 12 months after the date of funding.

The Original Note was secured by a lien on substantially all of the Company's assets and properties and was convertible at the option of the Investor in shares of common stock at a fixed conversion price of $12.00 per share.

In connection with the closing of the Original Note, the Company issued a five-year warrant to the Investor to purchase 250,000 shares of common stock at a fixed exercise price of $12.00 per share, paid a $50,000 commitment fee, and issued 33,334 shares of common stock in payment of a $400,000 due diligence fee. The Company also paid banker fees of $193,500 and legal fees of $71,330. The valuation of the warrant of $595,662 was recorded to debt discount and was amortized over the life of the Original Note. The fees associated with the agreement were allocated to debt issuance costs and additional paid-in capital based on the respective ratio of the valuation of the note and warrant. Amortization of the debt issuance costs and debt discount are included in interest expense on the statement of operations.

On March 12, 2020, the Company issued a $3,789,000 principal amount senior secured convertible note (the "Amended Note"), which replaced the Original Note and included an additional $729,000 in interest due to the debt restructuring. The principal amount was due and payable in full on April 13, 2020. The Amended Note was secured by a lien on substantially all of the Company's assets and properties and was convertible at the option of the Investor into shares of common stock at a fixed conversion price of $5.20 per share. The Company accounted for the transaction as a debt extinguishment and, therefore, the balance of the fees and unamortized discount associated with the Original Note were written off and included as loss on extinguishment of debt. On the day of the amendment, the closing stock price for the day was $6.08, which resulted in a beneficial conversion of $0.88 per share outstanding or $641,215 to be amortized to interest expense over the term of the Amended Note, as adjusted for any debt conversion.

On April 12, 2020 and May 6, 2020, the Company entered into amendments (the "Amendments") to the Amended Note. The Amendments extended the maturity date to June 12, 2020 and extended the Investor's right to convert the Amended Note into shares of the Company's common stock at a price of $5.20 per share through June 12, 2020. All other provisions of the Amended Note remained the same.

On June 10, 2020, the investor converted the last of the remaining principal into shares of common stock for payment in full, and the remaining principal balance was $0. The Amended Note amount of $3,789,000 was converted into 728,654 shares of common stock in 2020.

January 2020 Note

On January 13, 2020, the Company issued a $157,000 principal amount secured 10% convertible redeemable note (the "January 2020 Note") to an institutional investor with a maturity date of June 13, 2020 which was convertible into common stock at a conversion price of $12.00 per share. At the closing, the Company agreed to issue 81,250 shares of common stock in lieu of payment of a $75,000 commitment fee which was reduced to 6,250 shares as the January 2020 Note was repaid prior to the maturity date.

On June 12, 2020, the January 2020 Note was paid in full by payment of $211,984.

February 2020 Note

On February 13, 2020, the Company issued a $126,000 principal amount secured 10% convertible redeemable note (the "February 2020 Note") to an institutional investor with a maturity date of July 13, 2020 which was convertible into common stock at a conversion price of $9.20 per share. On March 12, 2020, the Original Note was amended to reduce the conversion price to $5.20 per share, which reduced the conversion price of the February Note to $5.20 and resulted in a deemed dividend of $70,998. The February 2020 Note was redeemable at any time by payment of a premium to the principal balance starting at 10% and increasing to 30%. The Company issued 6,250 shares of common stock to the investor in lieu of payment of a $57,500 commitment fee. The Company paid $6,000 of legal fees in connection with the issuance of February 2020 Note. The February 2020 Note was paid in full on July 10, 2020 by payment of $170,442.

May 2020 Note

On May 6, 2020, the Company issued a $2,415,000 principal amount senior secured convertible note (the "May 2020 Note"). At closing, $2,100,000 was funded. The principal amount was due and payable in five equal monthly installments of $268,333 beginning seven months after the funding date with the remaining balance due on the twelfth month after the date of funding. The May 2020 Note was convertible at a fixed convertible price of $9.28 per share. In connection with the issuance of the May 2020 Note, the Company paid a $133,333 due diligence fee by issuing 14,368 shares of common stock to the Investor priced at $9.28 per share. The Company also paid a placement fee of 7% of the gross proceeds to a placement agent. In connection with the closing of the May 2020 Note, the Company issued a five-year warrant to the investor to purchase 237,500 shares of common stock at a fixed exercise price of $9.28 and was immediately exercisable. The valuation of the warrant of $876,937 was recorded to debt discount and was amortized over the life of the May 2020 Note. The fees associated with the agreement were allocated to debt issuance costs and additional paid-in-capital based on the respective ratio of the valuation of the note and warrant. Amortization of the debt issuance costs and debt discount were included in the interest expense on the statement of operations.

Following the completion of the underwritten offering in July 2020, the principal balance of $2,415,000 was paid in full during the third quarter of 2020. As a result of the repayment, the Company expensed the remaining debt discounts and issuance costs of $1,218,163 in July 2020.

June 2020 Note

On June 29, 2020, the Company issued a $1,811,250 principal amount senior secured convertible note (the "June 2020 Note"). At closing, $1,575,000 was funded. The principal amount was due and payable in nine equal monthly installments of $201,250 beginning four months after the funding date with the remaining balance due on the twelfth month after the date of funding. The June 2020 Note was convertible at a fixed convertible price of $9.28 per share. In connection with the issuance of the June 2020 Note, the Company paid a $100,000 due diligence fee by issuing 17,071 shares to the Investor priced at $5.86 per share. The Company also paid a placement fee of 7% of the gross proceeds to a placement agent.

In connection with the closing of the June 2020 Note, the Company issued a five-year warrant to the Investor to purchase 178,125 shares of common stock at a fixed exercise price of $9.28 per share and was immediately exercisable. The valuation of the warrant of $511,402 was recorded to debt discount and is was amortized over the life of the June 2020 Note. The fees associated with the agreement were allocated to debt issuance costs and additional paid-in capital based on the respective ratio of the valuation of the note and warrant. Amortization of the debt issuance costs and debt discount are included in interest expense on the statement of operations.

Following the completion of the underwritten offering in July 2020, the principal balance of $1,811,250 was paid in full during the third quarter of 2020. As a result of the repayment, the Company expensed the remaining debt discounts and issuance costs of $957,919 in July 2020.

NOTE P—LEASES

The Company's leases office space in New Jersey under a lease terminating in 2023 and Hong Kong, Minnesota, and New Hampshire with lease termination dates in 2022. The property leased in China is paid monthly as used, without a formal agreement. The leases include non-lease components with variable payments. The following tables present the components of lease expense and supplemental balance sheet information related to the operating leases were:

	Year ended December 31, 2021	Year ended December 31, 2020
Lease cost		
Operating lease cost	$ 255,892	$ 239,192
Short-term lease cost	-	-
Total lease cost	$ 255,892	$ 239,192
Balance sheet information		
Operating right-of-use assets	$ 254,100	$ 487,325
Operating lease liabilities, current portion	$ 177,188	$ 234,309
Operating lease liabilities, non-current portion	86,974	264,163
Total operating lease liabilities	$ 264,162	$ 498,472
Weighted average remaining lease term (in years) – operating leases	1.45	2.26
Weighted average discount rate – operating leases	5.50%	5.50%
Supplemental cash flow information related to leases were as follows:		
Cash paid for amounts included in the measurement of operating lease liabilities	$ 256,977	$ 235,186
Maturities of operating lease liabilities were as follows as of December 31, 2021:		
2022	$ 187,594	
2023	89,225	
Total future lease payments	$ 276,819	
Less: imputed interest	(12,657)	
Total	$ 264,162	

NOTE Q—COMMITMENTS AND CONTINGENCIES

Sales Incentive Agreement with TTI

On March 25, 2020, the Company entered into a sales incentive agreement Technology Transfer Institute ("TTI"). Terms of the agreement include the following:

1. The original term of the agreement was one year and has been automatically extended for an additional one-year term.

2. For each $5,000,000 in revenue (up to a maximum of $20,000,000) the Company generates from contracts sourced by TTI which are executed during the original term and generate net income of at least 20% (as defined) within eighteen months after the date such contract is executed, the Company will pay TTI a sales incentive fee of $500,000 payable by the issuance of 62,500 shares of common stock.

3. In the event that the Company generates revenue in excess of $20,000,000 from contracts sourced by TTI which are executed during the original term and generate net income of at least 20% (as defined) within eighteen months after the date such contract is executed, the Company will issue TTI a five-year warrant to purchase 12,500 shares of Common Stock at an exercise price of $12.00 per share for each $1,000,000 of revenue in excess of $20,000,000 (up to a maximum of $25,000,000).

In no event will the Company be obligated to issue more than 250,000 shares of common stock or warrants to purchase more than 62,500 shares of common stock pursuant to this agreement.

There has been no revenue generated nor sales incentive fees paid during the periods ended December 31, 2021 and 2020.

Litigation

From time to time, we may be involved in litigation relating to claims arising out of our operations in the normal course of business. As of December 31, 2021, the Company was not a party to any pending lawsuits.

NOTE R— EQUITY

1. Preferred Stock

Within the limits and restrictions provided in the Company's Certificate of Incorporation, the Board of Directors has the authority, without further action by the shareholders, to issue up to 5,000,000 shares of preferred stock, $.0001 par value per share, in one or more series, and to fix, as to any such series, any dividend rate, redemption price, preference on liquidation or dissolution, sinking fund terms, conversion rights, voting rights, and any other preference or special rights and qualifications.

2. Common Stock

Effective November 20, 2020, the Company implemented a reverse stock split of its outstanding common stock at a ratio of 1-for-8. The number of authorized shares and the par value of the Company's common stock and preferred stock were not affected by the reverse stock split. Stockholders who otherwise would be entitled to receive fractional shares were rounded up to the nearest whole share. The reverse stock split became effective at the opening of trading on November 20, 2020.

Holders of common stock have equal rights to receive dividends when, as and if declared by the Board of Directors, out of funds legally available therefor. Holders of common stock have one vote for each share held of record and do not have cumulative voting rights.

Holders of common stock are entitled, upon liquidation of the Company, to share ratably in the net assets available for distribution, subject to the rights, if any, of holders of any preferred stock then outstanding. Shares of common stock are not redeemable and have no preemptive or similar rights. All outstanding shares of common stock are fully paid and nonassessable.

Issuances of Common Stock

On June 18, 2021, the stockholders approved the Employee Stock Purchase Plan. Under the terms of this plan, 789,000 shares of common stock are reserved for issuance to employees and officers of the Company at 85% of the lower of the closing price of the common stock as reported on the Nasdaq Capital Market at the first day or the last day of the offering period. Eligible employees are granted an option to purchase shares under the plan funded by payroll deductions. The Board may suspend or terminate the plan at any time, otherwise the plan expires June 17, 2031. On December 31, 2021, 19,484 shares were issued to employees which resulted in a $10,680 non-cash compensation expense for the Company.

On July 23, 2020, the Company completed an underwritten public offering of shares of common stock and warrants resulting in net proceeds of approximately $22.7 million, after deducting underwriting discounts and commissions and estimated offering expenses. 4,264,313 shares of common stock were issued as a result of this offering, and a further 797,038 shares of common stock were issued upon the exercise of 512,500 prefunded warrants and 284,538 warrants exercised in conjunction with the offering.

On March 30, 2020, the Company issued 121,500 shares of common stock upon exercise of warrants at $12.00 per share, resulting in proceeds of $1,458,000 to the Company.

See Note O Convertible Notes Payable for common stock issuances related to conversion of convertible notes payable and shares of common stock issued for fees in connection with the agreements during fiscal 2020.

Issuances of Restricted Stock

Restricted stock consists of shares of common stock that are subject to restrictions on transfer and risk of forfeiture until the fulfillment of specified conditions. The fair value of nonvested shares is determined based on the market price of the Company's common stock on the grant date. Restricted stock is expensed ratably over the term of the restriction period.

The Company issued 13,125 shares of restricted common stock to certain employees of the Company and 1,250 of shares of restricted common stock were forfeited during fiscal year 2021. These shares vest in equal annual installments over a three-year period from the date of grant and had a fair value on the date of issuance of $44,025.

The Company issued 38,250 and 3,125 shares of restricted common stock in August and November of 2020, respectively to certain employees and directors of the Company. These shares vest in equal annual installments over a three-year period from the date of grant and had a fair value on the date of issuance of $198,900, and $11,250, respectively.

Restricted stock compensation for the years ended December 31, 2021 and 2020 was $71,819 and $23,764, respectively.

Issuances to Directors, Executive Officers & Consultants

During the year ended December 31, 2021, the Company issued 7,828 shares of common stock to its directors in lieu of payment of board fees, valued at $25,536.

During the year ended December 31, 2020, the Company issued 5,270 shares of common stock to its directors in lieu of payment of board fees, valued at $28,511.

Employees' exercise options

During 2021 and 2020, no employee stock options were exercised.

3. Warrants

There were no warrants issued during fiscal 2021.

Warrants Issued for Services:

During the second quarter of 2020, the Company issued a warrant to purchase 15,625 shares of common stock to an investor in payment for a business referral valued at $94,655.

During the third quarter of 2020, the Company issued a warrant to purchase 3,125 shares of common stock to a former employee for a business referral valued at $12,921.

Warrants Issued with Convertible Notes:

See Note O Convertible Notes Payable for warrants issued with convertible notes in connection with the agreements during fiscal 2020.

Valuation Assumptions for Warrants:

The Company records the warrants at their fair value which is determined using the Black-Scholes valuation model on the date of the grant. The fair value of each warrant was estimated with the following assumptions:

	Year ended December 31,	
	2021	2020
Weighted average Risk free interest rate	-%	0.33%
Weighted average price	$ -	$ 9.25
Weighted average exercise period	-	5
Weighted average Volatility of stock price	-%	110%

The warrant volatility for each issuance is determined based on the review of the experience of the weighted average of historical daily price changes of the Company's common stock over the expected exercise period. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant for periods corresponding with the years to maturity.

A summary of warrant activity is as follows:

	Total Warrants	Weighted average exercise price	Weighted average remaining life (in years)	Aggregate intrinsic value
Outstanding, as of December 31, 2019	423,559	12.80	3.94	—
Granted – public offering	4,264,313	5.20		
Granted – prefunded warrants from the public offering	512,500	0.08		
Granted – other	434,375	9.25		
Increase due to trigger of anti-dilution provision feature	27,244	5.20		
Exercised – public offering	(284,538)	5.20		
Exercised – prefunded warranted from the public offering	(512,500)	0.08		
Exercised – other	(121,500)	12.00		
Forfeited	—	—		
Expired	(54,066)	6.86		
Outstanding, as of December 31, 2020	4,689,387	6.04	4.48	—
Granted	—	—		
Exercised	—	—		
Forfeited	—	—		
Expired	—	—		
Outstanding, as of December 31, 2021	4,689,387	6.04	3.48	—

The aggregate intrinsic value in the table above represents the total intrinsic value, based on the Company's closing stock price of $2.21, $3.52 and $4.00 as of December 31, 2021, 2020 and 2019, respectively, which would have been received by the warrant holders had all warrant holders exercised their options as of that date. There were no in-the-money warrants exercisable as of December 31, 2021, 2020 and 2019.

4. Securities Purchase Agreement dated September 23, 2015

On September 23, 2015, the Company issued warrants (the "2015 Warrants") to purchase 8,681 shares of common stock in connection with the issuance of a promissory note. The warrants were immediately exercisable at an initial exercise price of $28.80 per share and had a term of five years. The 2015 Warrants expired in September 2020.

The 2015 Warrants had a "full ratchet" anti-dilution adjustment provision. The anti-dilution adjustment provision was triggered in the first quarter of 2020 from the February 2020 Note and amendments to the Original Note. As a result of the forgoing transactions, the number of shares of common stock issuable upon the full exercise of the 2015 Warrants increased to 48,078, the exercise price was reduced to $5.20 per share, and the Company recorded a non-cash deemed dividend in amount of $41,688.

NOTE S—STOCK OPTIONS

2004 *Stock Option Plan*

On October 12, 2004, the Board of Directors of the Company approved the 2004 Stock Option Plan (the “2004 Plan”). The 2004 Plan was not presented to stockholders for approval and thus incentive stock options were not available under this plan. Under the terms of this plan, 20,834 shares of common stock were reserved for issuance to employees, officers, directors, and consultants of the Company at exercise prices which may not be below 85% of fair market value. The term of stock options granted may not exceed ten years. Options issued under the 2004 Plan vest pursuant to the terms of stock option agreements with the recipients. In the event of a change in control, as defined, all options outstanding vest immediately. The 2004 Plan expired in October 2014.

2015 *Stock Option Plan*

On January 27, 2016, the stockholders approved the 2015 Equity Incentive Plan (the “2015 Plan”). The 2015 Plan initially reserved 187,500 shares of common stock for issuance of options, restricted stock, and other equity based awards to employees, officers, directors, and consultants of the Company. In 2019, the stockholders approved an amendment to the 2015 Plan which increases the number of shares of common stock authorized for issuance under the 2015 Plan from 83,334 shares to 187,500 shares and also effected certain changes in light of the Tax Cuts and Jobs Act of 2017 and its impact on Section 162(m) of the United States Internal Revenue Code of 1986, as amended. In 2021, the stockholders approved an amendment to the 2015 to increase the shares of common stock authorized for issuance under the 2015 Plan from 187,500 shares to 789,000 shares together with other technical changes. In 2021, the stockholders approved an amendment to the 2015 to increase the shares of common stock authorized for issuance under the 2015 Plan from 187,500 shares to 789,000 shares together with other technical changes. The term of stock options granted under the 2015 Plan, may not exceed ten years, exercise prices may not be below 100-110% of fair market value, and vesting occurs over time periods set forth in written agreements with the recipients. In the event of a change in control, certain stock awards issued under the 2015 Plan may be subject to additional acceleration of vesting as may be provided in the participants’ written agreement. The 2015 Plan expires in December 2025.

Non-Plan Stock Options

Periodically, the Company has granted options outside of the 2004 and 2015 Plans to various employees and consultants. In the event of change in control, as defined, certain of the non-plan options outstanding vest immediately.

Stock Option Activity

Information summarizing option activity is as follows:

	Number of Options				Weighted average exercise price	Weighted average remaining life (in years)	Aggregate intrinsic value
	2004 Plan	2015 Plan	Non Plan	Total			
Outstanding, as of December 31, 2019	**3,906**	**70,991**	**144,070**	**218,967**	**$ 20.08**	**5.00**	**$ 0**
Granted	—	28,440	—	28,440	5.04		
Exercised	—	—	—	—	—		
Forfeited	—	(4,545)	—	(4,545)	17.34		
Expired	(3,906)	(703)	(10,979)	(15,588)	29.17		
Outstanding, as of December 31, 2020	—	**94,183**	**133,091**	**227,274**	**$ 17.61**	**3.87**	**$ 0**
Granted	—	—	—	—	-—		
Exercised	—	—	—	—	—		
Forfeited	—	(3,291)	—	(3,291)	3.87		
Expired	—	(84)	(11,438)	(11,522)	39.13		
Outstanding, as of December 31, 2021	—	**90,808**	**121,653**	**212,461**	**$ 16.65**	**3.03**	**$ 0**
Vested or expected to vest at December 31, 2021				**206,283**	**$ 16.98**	**2.95**	**$ 0**
Exercisable at December 31, 2021				**186,538**	**$ 18.04**	**2.73**	**$ 0**

The options outstanding and exercisable at December 31, 2021 were in the following exercise price ranges:

Range of exercise prices				Options Outstanding: Number of shares	Options Outstanding: Weighted average exercise price		Options Outstanding: Weighted average remaining life (in years)	Options Exercisable: Number exercisable	Options Exercisable: Weighted average exercise price	
$	4.08	-	5.20	24,940	$	5.19	5.64	8,402	$	5.17
$	5.21	-	15.68	49,669		12.17	3.79	40,284		12.85
$	15.69	-	39.36	137,852		20.34	2.27	137,852		20.34
$	4.08	-	39.36	212,461				186,538		

The aggregate intrinsic value in the table above represents the total intrinsic value, based on the Company's closing stock price of $2.21, $3.52 and $4.00 as of December 31, 2021, 2020 and 2019, respectively, which would have been received by the option holders had all option holders exercised their options as of that date. There were no in-the-money options exercisable as of December 31, 2021, 2020 and 2019.

The weighted average fair value of options granted during the year ended December 31, 2020 was $3.16 per share. The total intrinsic value of options exercised during the years ended December 31, 2021 and 2020 was $0 as no options were exercised in either year. The total fair value of shares vested during the years ended December 31, 2021 and 2020 was $252,874 and $899,750, respectively.

As of December 31, 2021, future forfeiture adjusted compensation cost related to nonvested stock options is $75,035 and will be recognized over an estimated weighted average period of 0.86 years.

NOTE T—INCOME TAXES

There was no provision for federal or state taxes as at December 31, 2021 and 2020.

The Company has deferred taxes due to income tax credits, net operating loss carryforwards, and the effect of temporary differences between the carrying values of certain assets and liabilities for financial reporting and income tax purposes. Significant components of deferred taxes are as follows at December 31:

	2021		2020	
Accrued compensation	$	135,000	$	81,000
Accounts receivable allowance		75,000		474,000
Stock-based compensation		1,149,000		1,073,000
Basis differences in fixed assets		(10,000)		(14,000)
Basis differences in intangible assets		75,000		65,000
Net operating loss and credit carryforwards		14,467,000		13,337,000
Valuation allowances		(15,891,000)		(15,016,000)
	$	—	$	—

The Company has a valuation allowance against the full amount of its net deferred taxes due to the uncertainty of realization of the deferred tax assets due to operating loss history of the Company. The Company currently provides a valuation allowance against deferred taxes when it is more likely than not that some portion, or all of its deferred tax assets will not be realized. The valuation allowance could be reduced or eliminated based on future earnings and future estimates of taxable income. Similarly, income tax benefits related to stock options exercised have not been recognized in the financial statements.

As of December 31, 2021, the Company has federal net operating loss carryforwards of approximately $61 million. Approximately $46 million are subject to expiration between 2021 and 2037, and $15 million net operating loss carryforwards have no expiration date. These net operating loss carryforwards are subject to the limitations under Section 382 of the Internal Revenue Code due to changes in the equity ownership of the Company.

A reconciliation of the effective income tax rate on operations reflected in the Statements of Operations to the US Federal statutory income tax rate is presented below.

	2021	2020
Federal statutory income tax rate	21%	21%
Permanent differences	-	(9)
Effect of net operating loss	(21)	(12)
Effective tax rate	—%	—%

The Company has not been audited by the Internal Revenue Service ("IRS") or any states in connection with income taxes. The Company files income tax returns in the U.S. federal jurisdiction and various state jurisdictions. The periods from 2018 through 2021 remain open to examination by the IRS and state jurisdictions. The Company believes it is not subject to any tax audit risk beyond those periods. The Company's policy is to recognize interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense. The Company does not have any accrued interest or penalties associated with any unrecognized tax benefits, nor was any interest expense incurred during the years ended December 31, 2021 and 2020.

NOTE U—PROFIT SHARING PLAN

The Company has established a savings plan under section 401(k) of the Internal Revenue Code. All employees of the Company, after completing one day of service, are eligible to enroll in the 401(k) plan. Participating employees may elect to defer a portion of their salary on a pre-tax basis up to the limits as provided by the IRS Code. The Company is not required to match employee contributions but may do so at its discretion. The Company made no contributions during the years ended December 31, 2021 and 2020.

NOTE V—EARNINGS PER SHARE (EPS)

The Company's basic EPS is calculated using net income (loss) available to common shareholders and the weighted-average number of shares outstanding during the reporting period. Diluted EPS includes the effect from potential issuance of common stock, such as stock issuable pursuant to the exercise of stock options and warrants and the assumed conversion of preferred stock.

The reconciliation of the numerator of the basic and diluted EPS calculations for the following fiscal years ended December 31:

	2021	2020
Basic Numerator:		
Net Loss	$ (5,065,781)	$ (9,673,987)
Deemed dividend from trigger of anti-dilution provision feature	-	(112,686)
Net loss available to common stockholders (basic and diluted EPS)	$ (5,065,781)	$ (9,786,673)

The following table summarizes the weighted average securities that were excluded from the diluted per share calculation because the effect of including these potential shares was antidilutive due to net losses.

	Years ended December 31,	
	2021	2020
Stock options	-	1,002
Restricted stock	-	3,098
Potentially dilutive securities	-	4,100

Items excluded from the diluted per share calculation because the exercise price was greater than the average market price of the common shares:

	Years ended December 31,	
	2021	**2020**
Stock options	212,461	223,899
Warrants	4,689,387	4,689,387
Total	4,901,848	4,913,286

NOTE W—SUBSEQUENT EVENTS

On March 8, 2022, the Company completed the acquisition of 100% of the issued and outstanding capital stock of Swivel Secure Europe, SA pursuant to the terms of a stock purchase agreement. The aggregate purchase price consisted of a base purchase price of $1.75 million, subject to closing adjustments based on the closing date working capital, indebtedness and unpaid transaction expenses, and an earn-out of up to $500,000. At the closing, the Company made a cash payment of $1.27 million and issued 269,060 shares of common stock of which 89,687 shares were held back by the Company to secure certain indemnification obligations under the stock purchase agreement.

On March 10, 2022, the Company issued 6,360 shares of common stock to its directors in payment of board fees. Additionally, the Company issued an aggregate of 848 shares of common stock to its directors in payment of board committee fees.

On March 11, 2022, the Company issued 932 shares of common stock to its directors in payment of board committee fees. The Company issued an aggregate of 274,250 shares of restricted common stock to employees and the board of directors which vest in equal annual installments over a three-year period from the date of grant.

The Company has reviewed subsequent events through the date of this filing.

EXHIBIT INDEX

Exhibit No.	Exhibit
2.1	Stock Purchase Agreement by and among the Company, Thomas J. Hoey, and PistolStar, Inc. dated June 6, 2020 (incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K, filed with the SEC on July 7, 2020)
2.2	Stock Purchase Agreement by and among the Company, Alex Rocha and Swivel Secure Europe, SA dated February 2, 2022 (incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K, filed with the SEC on February 3, 2022)
2.3	Amendment No. 1 to Stock Purchase Agreement by and among the Company, Alex Rocha and Swivel Secure Europe, SA dated March 4, 2022 (incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K, filed with the SEC on March 9, 2022)
3.1	Certificate of Incorporation of BIO-key International, Inc., a Delaware corporation (incorporated by reference to Exhibit 3.1 to the current report on Form 8-K, filed with the SEC on January 5, 2005)
3.2	Bylaws (incorporated by reference to Exhibit 3.3 to the current report on Form 8-K, filed with the SEC on January 5, 2005)
3.3	Certificate of Amendment to Certificate of Incorporation (incorporated by reference to Appendix A to the definitive proxy statement, filed with the SEC on January 18, 2006)
3.4	Certificate of Amendment of Certificate of Incorporation of Bio-key International, Inc., a Delaware corporation (incorporated by reference to Exhibit 3.4 to the annual report on Form 10-K, filed with the SEC on March 31, 2015)
3.5	Certificate of Elimination of BIO-key International, Inc. filed October 6, 2015 (incorporated by reference to Exhibit 3.5 to the registration statement on Form S-1 File No. 333-208747 filed with the SEC on December 23, 2015)
3.6	Certificate of Designation of Preferences, Rights and Limitations of Series A-1 Convertible Preferred Stock (incorporated by reference to Exhibit 3.1 to the current report on Form 8-K, filed with the SEC on November 2, 2015)
3.7	Certificate of Designation of Preferences, Rights and Limitations of Series B-1 Convertible Preferred Stock (incorporated by reference to Exhibit 3.1 to the quarterly report on Form 10-Q, filed with the SEC on November 16, 2015)
3.8	Certificate of Amendment of Certificate of Incorporation of Bio-key International, Inc., a Delaware corporation (incorporated by reference to Exhibit 3.1 to the current report on Form 8-K, filed with the SEC on December 28, 2016)
3.9	Certificate of Amendment of Certificate of Incorporation of Bio-Key International, Inc., a Delaware corporation (incorporated by reference to Exhibit 3.1 to the current report on Form 8-K, filed with the SEC on November 19, 2020)
4.1	Specimen Stock Certificate (incorporated by reference to Exhibit 4.1 to the registration statement on Form SB-2, File No. 333-16451)
4.2	Form of Pre-Funded Warrant (incorporated by reference to Exhibit 4.2 to Amendment No. 1 to the Registration Statement on Form S-1/A, filed with the SEC on July 17, 2020)
4.3	Form of Warrant (incorporated by reference to Exhibit 4.3 to Amendment No. 1 to the Registration Statement on Form S-1/A, filed with the SEC on July 17, 2020)
4.4	Form of Warrant Agency Agreement (incorporated by reference to Exhibit 4.4 to Amendment No. 2 to the Registration Statement on Form S-1/A, filed with the SEC on July 20, 2020)
4.5	BIO-key International, Inc. Description of Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934*
10.1	Employment Agreement by and between BIO-key International, Inc. and Mira LaCous dated November 20, 2001 (incorporated by reference to Exhibit 10.39 to the current report on Form 8-K, filed with the SEC on January 22, 2002)***
10.2	BIO-key International, Inc. 2004 Stock Incentive Plan (incorporated by reference to Exhibit 10.48 to amendment no. 1 the registrant's registration statement on Form SB-2, File No. 33-120104, filed with the SEC on December 14, 2004)***
10.3	Employment Agreement, effective March 25, 2010, by and between the Company and Michael W. DePasquale (incorporated by reference to Exhibit 10.93 to the annual report on Form 10-K, filed with the SEC on March 26, 2010)***
10.4	Employment Agreement by and between BIO-key International, Inc. and Cecilia Welch dated May 15, 2013 (incorporated by reference to Exhibit 10.42 to the annual report on Form 10-K, filed with the SEC on March 31, 2014)***
10.5	Employment Agreement by and between BIO-key International, Inc. and James Sullivan dated April 5, 2017 (incorporated by reference to Exhibit 10.42 to the annual report on Form 10-K, filed with the SEC on March 29, 2021)***

10.6	First Amendment to Lease Agreement by and between BIO-key International, Inc. and BRE/DP MN LLC dated September 12, 2013 (incorporated by reference to Exhibit 10.44 to the annual report on Form 10-K, filed with the SEC on March 31, 2014)
10.7	BIO-key International, Inc. 2015 Equity Incentive Plan (incorporated by reference to Appendix B to the definitive proxy statement filed with the SEC on December 15, 2015)***
10.9	Software License Purchase Agreement Dated November 11, 2015 by and among BIO-key Hong Kong Limited, Shining Union Limited, WWTT Technology China, Golden Vast Macao Commercial Offshore Limited, Giant Leap International Limited (incorporated by reference to Exhibit 10.36 to the registration statement on Form S-1 File No. 333-208747 filed with the SEC on December 23, 2015)**
10.11	Form of Registration Rights Agreement (incorporated by reference to Exhibit 10.3 to the current report on Form 8-K, filed with the SEC on May 3, 2017)
10.12	Form Non-Plan Option Agreement between the Company and certain of its directors, officers, employees and contractors (incorporated by reference to Exhibit 10.4 to the quarterly report on Form 10-Q filed with the SEC on May 15, 2017)***
10.13	Securities Purchase Agreement dated April 3, 2018 by and between the Registrant and Wong Kwok Fong (Kelvin) (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K, filed with the SEC on April 4, 2018)
10.14	Securities Purchase Agreement dated May 23, 2018 by and between the Registrant and Giant Leap International Limited (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K, filed with the SEC on May 30, 2018)
10.15	Securities Purchase Agreement dated May 23, 2018 by and between the Registrant and Micron Technology Development Limited (incorporated by reference to Exhibit 10.2 to the current report on Form 8-K, filed with the SEC on May 30, 2018)
10.16	Securities Purchase Agreement dated May 31, 2018 by and between the Registrant and Wong Kwok Fong (Kelvin) (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K, filed with the SEC on June 4, 2018)
10.17	Underwriting Agreement dated August 22, 2018 by and between the Registrant and Maxim Group LLP (incorporated by reference to Exhibit 1.1 to the current report on Form 8-K, filed with the SEC on August 27, 2018)
10.18	Form of Common Stock Purchase Warrant dated August 24, 2018 (incorporated by reference to Exhibit 4.1 to the current report on Form 8-K, filed with the SEC on August 27, 2018)
10.19	GLP 2nd Amendment to Lease dated July 27, 2018 (incorporated by reference to Exhibit 10.26 to the annual report on Form 10-K, filed with the SEC on April 1, 2019)
10.20	Marlen 4th Amendment to Lease dated June 2, 2018 (incorporated by reference to Exhibit 10.27 to the annual report on Form 10-K, filed with the SEC on April 1, 2019)
10.21	Securities Purchase Agreement dated July 10, 2019 by and between the Registrant and Lind Global Macro Fund, LP. (incorporated by reference to Exhibit 10.1 to the quarterly report on Form 10-Q, filed with the SEC on August 14, 2019)
10.22	Security Agreement dated July 10, 2019 by and between the Registrant and Lind Global Macro Fund, LP. (incorporated by reference to Exhibit 10.2 to the quarterly report on Form 10-Q, filed with the SEC on August 14, 2019)
10.23	Collateral Sharing Agreement dated July 10, 2019 by and among the Registrant, Lind Global Macro Fund, LP and Versant Funding LLC (incorporated by reference to Exhibit 10.3 to the quarterly report on Form 10-Q, filed with the SEC on August 14, 2019)
10.24	$3,060,00 Senior Secured Convertible Promissory Note dated July 10, 2019 (incorporated by reference to Exhibit 10.4 to the quarterly report on Form 10-Q, filed with the SEC on August 14, 2019)
10.25	Common Stock Purchase Warrant dated July 10, 2019 (incorporated by reference to Exhibit 10.5 to the quarterly report on Form 10-Q, filed with the SEC on August 14, 2019)
10.26	BIO-key International, Inc. Amended and Restated 2015 Equity Incentive Plan (incorporated by reference to Appendix A to the definitive proxy statement filed with the SEC on April 30, 2019)***

10.27	Sales Incentive Agreement with Technology Transfer Institute dated March 25, 2020. (incorporated by reference to Exhibit 10.1 to the quarterly report on Form 10-Q, filed with the SEC on June 8, 2020)
10.28	Form of Technology Transfer Institute Warrant. (incorporated by reference to Exhibit 10.2 to the quarterly report on Form 10-Q, filed with the SEC on June 8, 2020)
10.29	Amended and Restated Senior Secured Convertible Promissory Note, due April 13, 2020 issued by the Company to Lind Global Macro Fund, LP. (incorporated by reference to Exhibit 10.3 to the quarterly report on Form 10-Q, filed with the SEC on June 8, 2020)
10.30	Amendment to Amended and Restated Senior Secured Convertible Promissory Note, due April 13, 2020 by and between the Company and Lind Global Macro Fund, LP dated April 12, 2020. (incorporated by reference to Exhibit 10.4 to the quarterly report on Form 10-Q, filed with the SEC on June 8, 2020)
10.31	Securities Purchase Agreement dated May 6, 2020 by and between the Company and Lind Global Macro Fund, LP. (incorporated by reference to Exhibit 10.5 to the quarterly report on Form 10-Q, filed with the SEC on June 8, 2020)
10.32	$2,415,000 Senior Secured Convertible Promissory Note dated May 6, 2020. (incorporated by reference to Exhibit 10.6 to the quarterly report on Form 10-Q, filed with the SEC on June 8, 2020)
10.33	Common Stock Purchase Warrant dated May 6, 2020. (incorporated by reference to Exhibit 10.7 to the quarterly report on Form 10-Q, filed with the SEC on June 8, 2020)
10.34	Amended and Restated Security Agreement dated May 6, 2020 by and between the Company and Lind Global Macro Fund, LP. (incorporated by reference to Exhibit 10.8 to the quarterly report on Form 10-Q, filed with the SEC on June 8, 2020)
10.35	Amendment No. 2 to Amended and Restated Senior Secured Convertible Promissory Note, due April 13, 2020 by and between the Company and Lind Global Macro Fund, LP dated May 13, 2020. (incorporated by reference to Exhibit 10.9 to the quarterly report on Form 10-Q, filed with the SEC on June 8, 2020)
10.36	Securities Purchase Agreement dated June 29, 2020 by and between the Company and Lind Global Macro Fund, LP (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K, filed with the SEC on July 1, 2020)
10.37	$1,811,250 Senior Secured Convertible Promissory Note dated June 29, 2020. (incorporated by reference to Exhibit 10.2 to the current report on Form 8-K, filed with the SEC on July 1, 2020)
10.38	Common Stock Purchase Warrant dated May 6, 2020. (incorporated by reference to Exhibit 10.3 to the current report on Form 8-K, filed with the SEC on July 1, 2020)
10.39	Second Amended and Restated Security Agreement dated June 29, 2020 by and between the Company and Lind Global Macro Fund, LP (incorporated by reference to Exhibit 10.4 to the current report on Form 8-K, filed with the SEC on July 1, 2020)
10.40	$500,000 Promissory note, dated June 30, 2020 (Incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K, filed with the SEC on July 7, 2020)
10.41	Form of Restricted Stock Award Agreement under the BIO-key International, Inc. Amended & Restated 2015 Equity Incentive Plan (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K, filed with the SEC on August 28, 2020)***
10.42	BIO-key International, Inc. 2021 Employee Stock Purchase Plan (incorporated by reference to Appendix A to the definitive proxy statement filed with the SEC on May 4, 2021)
10.43	BIO-key International, Inc. Amended and Restated 2015 Equity Incentive Plan (incorporated by reference to Appendix B to the definitive proxy statement filed with the SEC on May 4, 2021)
21.1*	List of subsidiaries of BIO-key International, Inc.
23.1*	Consent of RMSBG
31.1*	Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Certification of the Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2*	Certification of the Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

101.INS*	Inline XBRL Instance
101.SCH*	Inline XBRL Taxonomy Extension Schema
101.CAL*	Inline XBRL Taxonomy Extension Calculation
101.DEF*	Inline XBRL Taxonomy Extension Definition
101.LAB*	Inline XBRL Taxonomy Extension Labels
101.PRE*	Inline XBRL Taxonomy Extension Presentation
104	Cover Page Interactive Data File (embedded within the Inline XBRL and contained in Exhibit 101)

* filed herewith

** Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted sections have been filed separately with the Securities and Exchange Commission

*** Management compensatory plan.

SIGNATURES

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

	BIO-KEY INTERNATIONAL, INC.
Date: March 31, 2022	By: /s/ MICHAEL W. DEPASQUALE Michael W. DePasquale CHIEF EXECUTIVE OFFICER (Principal 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 on the dates indicated.

Signature	**Title**	**Date**
/s/ MICHAEL W. DEPASQUALE Michael W. DePasquale	Chairman of the Board of Directors, Chief Executive Officer and Director (Principal Executive Officer)	March 31, 2022
/s/ CECILIA WELCH Cecilia Welch	Chief Financial Officer (Principal Financial and Accounting Officer)	March 31, 2022
/s/ROBERT J. MICHEL Robert J. Michel	Director	March 31, 2022
/s/ THOMAS E. BUSH III Thomas E. Bush	Director	March 31, 2022
/s/ THOMAS GILLEY Thomas Gilley	Director	March 31, 2022
/s/ WONG KWOK FONG Wong Kwok Fong	Director	March 31, 2022
/s/ PIETER KNOOK Pieter Knook	Director	March 31, 2022
/s/ MANNY ALIA Manny Alia	Director	March 31, 2022

Exhibit 4.5

BIO-KEY INTERNATIONAL, INC.
DESCRIPTION OF SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

BIO-key International, Inc., a Delaware corporation ("we," "us" and "our"), has only one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended: our common stock, $0.0001 par value per share ("common stock").

Common Stock

The following summary description of our common stock is based on the provisions of our certificate of incorporation and bylaws, which are incorporated by reference into our most recently filed Annual Report on Form 10-K, and the applicable provisions of the Delaware General Corporation Law ("DGCL"). This information may not be complete in all respects and is qualified in its entirety by reference to the provisions of our certificate of incorporation, our bylaws and the DGCL. We encourage you to read our certificate of incorporation, our bylaws and the applicable provisions of the DGCL for additional information.

Authorized. We currently have authority to issue up to 170,000,000 shares of common stock. From time to time, we may amend our certificate of incorporation to increase the number of authorized shares of common stock. Any such amendment would require the approval of the holders of a majority of the voting power of the shares entitled to vote thereon.

Voting. For all matters submitted to a vote of stockholders, each holder of common stock is entitled to one vote for each share registered in the holder's name on our books. Our common stock does not have cumulative voting rights. Holders of a plurality of our outstanding common stock can elect all of the directors who are up for election in a particular year. Holders of a majority of our outstanding common stock act by a majority for all other matters, except as limited by our certificate of incorporation, our bylaws and the DGCL.

Dividends. If our Board of Directors declares a dividend, holders of common stock will receive payments from our funds that are legally available to pay dividends. However, this dividend right is subject to any preferential dividend rights we may grant to the persons who hold preferred stock, $0.0001 par value per share ("preferred stock"), if any is outstanding.

Liquidation and Dissolution. If we are liquidated or dissolve, the holders of our common stock will be entitled to share ratably in all the assets that remain after we pay our liabilities and any amounts we may owe to the persons who hold preferred stock, if any is outstanding.

Fully Paid and Nonassessable. All shares of our outstanding common stock are fully paid and nonassessable and any additional shares of common stock that we issue will be fully paid and nonassessable.

Other Rights and Restrictions. Holders of our common stock do not have preemptive or subscription rights, and they have no right to convert their common stock into any other securities. Our common stock is not subject to redemption by us, and there are no sinking fund provisions applicable to our common stock. The rights, preferences and privileges of common stockholders are subject to the rights of the stockholders of any series of preferred stock which we may designate in the future. Our certificate of incorporation and bylaws do not restrict the ability of a holder of common stock to transfer his or her shares of common stock.

Listing. Our common stock is listed on The Nasdaq Capital Market under the symbol "BKYI."

Transfer Agent and Registrar. The transfer agent and registrar for our common stock is Broadridge Corporate Issuer Solutions, Inc.

Certain Effects of Delaware Law and Certificate of Incorporation and Bylaw Provisions

Authorized But Unissued Stock. We are authorized to issue 175,000,000 shares of capital stock, consisting of 170,000,000 shares of common stock and 5,000,000 shares of preferred stock. We have shares of common stock and preferred stock available for future issuance without stockholder approval, subject to any limitations imposed by the listing standards of The Nasdaq Capital Market. We may use these additional shares for a variety of corporate purposes, including for future public or private offerings to raise additional capital or facilitate corporate acquisitions or for payment as a dividend on our capital stock. The existence of unissued and unreserved common stock and preferred stock may enable our Board of Directors to issue shares to persons friendly to current management that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management.

Blank Check Preferred Stock. Our Board of Directors is authorized without further stockholder action, to designate any number of series of preferred stock with such rights, preferences and designations as determined by the Board of Directors. Shares of preferred stock issued by the Board of Directors could be utilized, under certain circumstances, to make an attempt to gain control of the Company more difficult or time-consuming. For example, shares of preferred stock could be issued with certain rights that might have the effect of diluting the percentage of common stock owned by a significant stockholder or issued to purchasers who might side with management in opposing a takeover bid that the Board of Directors determines is not in the best interests of the Company and its stockholders. The existence of the preferred stock may, therefore, be viewed as having possible anti-takeover effects.

Advance Notice Requirements for Stockholder Proposals and Director Nominations. Our bylaws provide that stockholders who desire to nominate a person for election to our Board of Directors must comply with specified notice and information provisions. Our bylaws contain similar advance notice provisions for stockholder proposals for action at stockholder meetings. These provisions prevent stockholders from making nominations for directors and stockholder proposals from the floor at any stockholder meeting and require any stockholder making a nomination or proposal to submit the name of the nominees for board seats or the stockholder proposal, together with specified information about the nominee or any stockholder proposal, prior to the meeting at which directors are to be elected or action is to be taken. These provisions ensure that stockholders have adequate time to consider nominations and proposals before action is required, and they may also have the effect of delaying stockholder action.

Supermajority Vote Requirements. Any director may be removed from office only with cause and only by the affirmative vote of the holders of 75% or more of our shares then entitled to vote at an election of directors. Additionally, our bylaws may be amended or repealed by the affirmative vote of at least 75% of the outstanding shares entitled to vote on such amendment or repeal, voting together as a single class. These provisions may prevent stockholders from removing existing directors and amending our bylaws, each of which could have the effect of delaying or preventing a change in control of our company.

Indemnification. Our certificate of incorporation and bylaws contain provisions to indemnify our directors and officers to the fullest extent permitted by the DGCL. These provisions do not limit or eliminate our right or the right of any stockholder of ours to seek non-monetary relief, such as an injunction or rescission in the event of a breach by a director or an officer of his duty of care to us.

Business Combinations. We are subject to the provisions of Section 203 of the DGCL. Subject to certain exceptions, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after 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 exceptions, an “interested stockholder” is a person who, together with affiliates and associates, owns, or within the prior 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 our company.

Exhibit 21.1

Subsidiaries

Name	State/Country of Incorporation
BIO-key Hong Kong Limited	Hong Kong
Public Safety Group, Inc.	Delaware
PistolStar, Inc.	New Hampshire
BIOKEY AFRICA LIMITED	Nigeria
Swivel Secure Europe, SA	Spain
Swivel Secure, Unipessoal LDA.	Portugal

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference into the registration statements of BIO-key International, Inc. on Form S-8 (file nos. 333- 233737, 333-212066, 333-257520 and 333-257754), Form S-1 (file no. 333-239782), and Form S-3 (file nos. 333-233713, 333-225934 and 333-257875) of our report dated March 31, 2022 relating to the financial statements which appear in this Form 10-K for the year ended December 31, 2021.

/s/ Rotenberg Meril Solomon Bertiger & Guttilla, P.C.

ROTENBERG MERIL SOLOMON BERTIGER & GUTTILLA, P.C.
Saddle Brook, New Jersey
March 31, 2022

Exhibit 31.1

CERTIFICATION

I, Michael W. DePasquale, certify that:

1. I have reviewed this annual report on Form 10-K of BIO-key International, Inc. (the “Company”);

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

4. The Company’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the Company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the Company’s internal control over financial reporting that occurred during the Company’s most recent fiscal quarter (the Company’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the company’s internal control over financial reporting; and

5. The Company’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company’s auditors and the audit committee of the Company’s board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company’s ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company’s internal control over financial reporting.

Dated: March 31, 2022

/s/ Michael W. DePasquale

Michael W. DePasquale
Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, Cecilia C. Welch, certify that:

1. I have reviewed this annual report on Form 10-K of BIO-key International, Inc. (the "Company");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

4. The Company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the Company's internal control over financial reporting that occurred during the Company's most recent fiscal quarter (the Company's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and

5. The Company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Dated: March 31, 2022

/s/ CECILIA C. WELCH
Cecilia C. Welch
Chief Financial Officer

Exhibit 32.1

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of BIO-key International, Inc. (the "Company") on Form 10-K for the period ended December 31, 2021, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Michael W. DePasquale, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

BIO-KEY INTERNATIONAL, INC.

By: /s/ Michael W. DePasquale
Michael W. DePasquale
Chief Executive Officer

Dated: March 31, 2022

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of BIO-key International, Inc. (the “Company”) on Form 10-K for the period ended December 31, 2021, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Cecilia Welch, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of The Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

BIO-KEY INTERNATIONAL, INC.

By: /s/ CECILIA C. WELCH
Cecilia C. Welch
Chief Financial Officer

Dated: March 31, 2022