

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2022

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: 001-33852

VirnetX Holding Corporation

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

77-0390628

(I.R.S. Employer Identification No.)

308 Dorla Court, Suite 206

Zephyr Cove, Nevada

(Address of principal executive offices)

89448

(Zip Code)

Registrant's telephone number, including area code: 775-548-1785

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.0001 per share	VHC	NYSE

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

Emerging growth company

Smaller reporting 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.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes  No

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant as of June 30, 2022, was \$73,662,208 based upon the closing price of the common shares of the registrant on June 30, 2022. This calculation does not reflect a determination that certain persons are affiliates of the registrant for any other purpose.

71,424,650 shares of the registrant's Common Stock were outstanding as of March 27, 2023.

#### **DOCUMENTS INCORPORATED BY REFERENCE**

The information required by Part III of this Annual Report on Form 10-K, to the extent not set forth herein, is incorporated by reference from the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission not later than 120 days after December 31, 2022 relating to the registrant's 2023 Annual Meeting of Stockholders.

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## SPECIAL NOTE REGARDING FORWARD LOOKING STATEMENTS

We have included or incorporated by reference in this Annual Report on Form 10-K (this “Report”), and from time to time we may make statements that may constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). These forward-looking statements are based upon our current expectations, estimates, assumptions, and beliefs concerning future events and conditions and may discuss, among other things, anticipated future performance (including sales and earnings), products, expected growth, future business plans and costs and the impact of potential, ongoing litigation and the expectation of future stockholder distributions. Any statement that is not historical in nature is a forward- looking statement and may be identified by the use of words and phrases such as “anticipates,” “believes,” “estimates,” “expects,” “intends,” “plans,” “predicts,” “projects,” “will be,” “will continue,” “will likely result in,” and similar expressions. These statements include our beliefs and statements regarding general industry and market conditions and growth rates, as well as general domestic and international economic conditions. Readers are cautioned not to place undue reliance on forward-looking statements. Forward-looking statements are necessarily subject to risks, uncertainties, and other factors, many of which are outside our control, which could cause actual results to differ materially from such statements and from our historical results and experience. These risks, uncertainties and other factors include, but are not limited to those described in Item 1A - Risk Factors of this Report and elsewhere in this Report and those described from time to time in our future reports filed with the Securities and Exchange Commission (the “SEC”). Readers are cautioned that it is not possible to predict or identify all the risks, uncertainties and other factors that may affect future results and that the risks described herein should not be considered a complete list. Any forward-looking statement speaks only as of the date on which such statement is made, and we undertake no obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

Among others, the forward-looking statements appearing in this Report that may not occur include statements that:

- In the *VirnetX Inc. v. Apple, Inc.* (Case Nos. 6:11-cv-00563-RWS, 6:12-cv-00855-RWS) (“Apple II”) litigation, the United States Court of Appeals for the Federal Circuit (the “Federal Circuit”) in November 2019, affirmed-in-part, and reversed-in-part the judgment issued by the United States District Court for the Eastern District of Texas (the “district court”) in the case awarding VirnetX damages of \$595.9 million. On October 30, 2020, after a trial in the district court, a jury returned a verdict in favor of VirnetX, awarding VirnetX over \$502 million in damages. On January 15, 2021, the district court denied Apple’s motion for judgment as a matter of law and affirmed the jury findings. This may imply that VirnetX may soon receive over \$500 million in cash; however, Apple has appealed to the Federal Circuit with regards to the judgement from the district court. Oral arguments for this appeal were heard on September 8, 2022. On March 31, 2023, the Federal Circuit issued its decision vacating the district court’s judgement in this matter and remanding it back to the district court with instructions to dismiss the case as moot. We are evaluating all of our available options in this matter, including potentially seeking rehearing or certiorari review. In addition, the patents in this case are being challenged in the United States Patent and Trademark Office. If those challenges are successful, the award in the case may be reduced, eliminated and/or delayed for a lengthy period. The continuation of this litigation is distracting to our management, expensive, and these distractions and expenses may continue.
- We have undertaken activities to commercialize our products and patent portfolio in and outside the United States including VirnetX One™, War Room™, VirnetX Matrix™, GABRIEL Connection Technology™ and our Secured Domain Names. These statements may imply that the worldwide market for our commercialized products is large and will result in significant future licensing or software revenue for us. However, commercialization of products such as ours is subject to significant obstacles and risks, including but not limited to a perception by some potential partners and customers that they should await the outcome of the Apple II litigation before entering or considering entering any agreement with us, and that or other factors may prevent significant future revenues for us.

**EXCEPT AS REQUIRED BY LAW, WE UNDERTAKE NO OBLIGATION TO UPDATE OR REVISE ANY FORWARD- LOOKING STATEMENT AS A RESULT OF NEW INFORMATION, FUTURE EVENTS OR OTHERWISE.**

## PART I

### Item 1. Business

#### The Company

We are an Internet security software and technology company with industry-leading, patented technology for Zero Trust Network Access (“ZTNA”) based secure network communications. VirnetX’s software and technology solutions, including its Secure Domain Name Registry and Technology, VirnetX One™, War Room™, VirnetX Matrix™, and Gabriel Connection Technology™, are designed to be device- and location-independent, and enable a secure real-time communication environment for all types of enterprise applications, services, and critical infrastructures. Our technology generates secure connections on a “single-click” basis, significantly simplifying the deployment of secure real-time communication solutions by eliminating the need for end-users to enter any encryption information. Our portfolio of intellectual property is the foundation of our business model. We currently own approximately 205 total patents and pending applications, including 72 U.S. patents/patent applications and 133 foreign patents/validations/pending applications. Our patent portfolio is primarily focused on securing real-time communications over the Internet, and related services, and is used in all our technology and products, some of which were acquired by our principal operating subsidiary; VirnetX, Inc., from Leidos, Inc., or Leidos, (f/k/a Science Applications International Corporation, or SAIC) in 2006.

Our product portfolio includes sophisticated technologies, products and services that are available for sale worldwide. Our next-generation, VirnetX One™ platform builds upon our patented Secure Domain Names and GABRIEL Connection Technology™ to further enhance the security and efficiency of our patented secure communication links. VirnetX One™ is a security-as-a-service platform that protects enterprise applications, services, and infrastructure from cyber-attacks. Our platform allows businesses and other enterprises of all sizes to add a “security umbrella” as an added layer on top of their existing infrastructure to further reduce risk and bolster security against ever-growing cyberthreats to data, operating systems, other infrastructure products and gateway security controllers.

Our War Room™ software product provides an industry leading, safe, and secure video conferencing meeting environment where sensitive communications and data is invisible to those not authorized to view it. War Room™ validates permissions of all the users, and devices requesting access to any secure meeting room prior to granting access. We believe our War Room™ will be an attractive solution for government and law enforcement agencies as well as all professional sectors such as legal, financial, and medical where limiting access to confidential data is a critical requirement.

Our VirnetX Matrix™ product provides superior security for internet-enabled enterprise applications and their connected devices, and for control systems currently deployed by those enterprises (e.g., file servers, data back-up systems, VPN/firewalls). VirnetX Matrix™ provides a true “zero-trust” access protection, “single-click” ease of use, and is a highly-effective added layer of protection that is deployed simply, without the need for changes to an enterprise’s existing, in-place infrastructure. We believe VirnetX Matrix™ is an attractive solution for all businesses, cloud and on-premise application service providers, and OEMs, looking to improve visibility and management of their networks to mitigate morphing attacks on their networks and for real time access and control of their users.

Our GABRIEL Collaboration Suite™ is a set of communication applications and tools that use our GABRIEL Secure Communication Platform™. It enables seamless and secure cross platform communications between devices that are enrolled in our “VIRNETX SECURED” network and have our software installed. Our GABRIEL Collaboration Suite™ is available for download and free trial, for Android, iOS, Windows, Linux, and Mac OS X platforms, at <https://virnetx.com>.

During the fourth quarter of 2022 and the first quarter of 2023, the Company engaged in discussions with certain third-parties to pitch the capabilities of VirnetX One™. The Company believes that these parties have interest to secure devices and systems in areas such as healthcare, finance, legal, oil and gas, medical, law enforcement, national defense and related support industries. Although there can be no assurance in this regard, the Company believes that there are opportunities for Company products sales directly to, resale arrangements with and/or adoption as vendor standards by, one or more of these third parties.

We have an ongoing licensing program under which we offer licenses to a portion of our patent portfolio, technology, and software, including our secure domain name registry service, to domain infrastructure providers, communication service providers as well as to system integrators. Our GABRIEL Connection Technology™ License is offered to original equipment manufacturer (“OEM”) customers who want to adopt the GABRIEL Connection Technology™ as their solution for establishing secure connections using secure domain names within their products. We have developed GABRIEL Connection Technology™ Software Development Kit (“SDK”) to assist with rapid integration of these techniques into existing software implementations. Customers who want to develop their own implementation of the VirnetX patented techniques for supporting secure domain names, or other techniques that are covered by our patent portfolio for establishing secure communication links, can purchase a patent license. The number of patents licensed, and therefore the cost of the patent license to the customer, will depend upon which of the patents are used in a particular product or service. These licenses will typically include an initial license fee, as well as an ongoing royalty.

We expect to continue to launch new and enhanced security platforms, software products, and services based on our GABRIEL Connection Technology™. We will provide updates to new and existing customers as they are released to the public. Many small and medium businesses have installed our software products in their corporate networks. We intend to continue to expand our customer base with targeted promotions and direct sales initiatives.

Our employees include the core development team behind our patent portfolio, technology, and software. Some members of this team have worked together for over twenty years and were on same team that invented and developed this technology while working at Leidos. The team has continued its research and development work and expanded the set of patents we acquired in 2006 from Leidos, into a larger patent portfolio. This portfolio now serves as the foundation of our products, services, and our licensing business. It is expected to generate most of our future revenue in license fees and royalties. We intend to continue our efforts to develop new products and technologies and further strengthen and expand our patent portfolio. We intend to continue using an outsourced and leveraged model to maintain efficiency and manage costs as we grow our licensing business by, for example, offering incentives to early licensing targets or asserting our rights for use of our patents.

## Industry Overview & Trends

We believe that the rapid growth in remote work has accelerated digital business transformation initiatives that would have taken years, into a matter of months. The demand to work remotely, explosive growth of video conferencing tools and rapid growth in the cloud has created an opportunity to secure communications regardless of a user's location, network, or BYOD (bring your own device).

The shift to remote work and expansion of the enterprise network perimeter has driven the growth of ZTNA solutions. The Zero Trust concept treats all networks like the Internet, where all users and devices are untrusted by default. Their location within the network is not a factor for deciding trust. Each user and device on the network requires authentication and authorization, based on policy, prior to accessing any applications or resources on the network. ZTNA facilitates security around remote work, because Zero Trust policies enable granular access control, end-to-end encryption of network communications and remove application visibility from the public Internet which reduces the potential attack surface. Based on our estimates, using publicly available market data, we believe that the Zero Trust security market size is projected to grow from \$24.8 billion in 2022 to over \$60 billion by 2027, at a Compound Annual Growth Rate (CAGR) of 19.4% during the forecast period. We believe Zero Trust represents a growing market and an ideal fit for our technology and products.

The global coronavirus COVID-19 pandemic forced many organizations to shift their business processes – and their employees are having to embrace a work-from-home or “hybrid” culture on a scale never before attempted. Remote work has accelerated the adoption of video conferencing and meeting applications across all industries making them essential tools for connection with remote customers, workforces, and employees to limit person-to-person direct contact. Based on our estimates, using publicly available market data, we believe that the worldwide video conferencing market size is projected to grow from \$7.69 billion in 2022 to \$18.1 billion by 2027, at a CAGR of 18.7% during the forecast period. This rapid adoption, learning curve and demand to continue working remotely has created significant security concerns and breaches for enterprises. Our market research has focused on security conscious verticals such as healthcare, banking, legal and government where security breaches can significantly impact outcomes. In many cases, these enterprises adopted industry standard video conferencing tools and are now looking at more secure alternative solutions. Enterprises want video conferencing solutions that protect their information and allow them greater security control and visibility, while continuing to be reliable, easy to use and cost effective. Enterprises in these verticals are also looking for video conferencing solutions that integrate into their existing workflows and better align with specific use cases instead of forcing them to adapt to more one size fits all solutions on the market. We believe our War Room™ represents a starting point to offer secure video conferencing tools built on a Zero Trust architecture.

Cloud computing growth has rapidly expanded as enterprises continue to move applications and services to the cloud. The cloud offers scalability, operations and development efficiency and remote access benefits for their workforce. The cloud technology adoption is expected to continue to increase quite significantly in industries where the work-from-home initiative is helped to sustain enterprise business functions. However, shifting critical data to the cloud has resulted in security concerns and the need for enterprises to control access and gain visibility into how information is being used, who is accessing it and where it is going. Based on our estimates, using publicly available market data, we believe that the global cloud computing security market size is expected to grow from approximately \$43.6 billion in 2022 to over \$92.7 billion by 2028, at a CAGR of 13.4% during the forecast period. We believe our scalable technology allows enterprises to secure applications and services regardless of whether hosting is on-premise or in the cloud.

As billions of connected Internet of Things (“IoT”) devices come online in support of enterprise operations, products, and industrial controls they will need to be secured and integrated into the enterprise. Facilitated by advancements in 4G/Advanced LTE and high-speed 5G networks, IoT devices will be able to operate from any network, transmit higher volumes of data including video streaming and sensor data collection and require real-time decisions based on that data. Without next generation security, these IoT devices represent a large attack surface that manages and controls critical enterprise infrastructure. These IoT devices can operate from anywhere, and will need to be secured with the same level of network security and ZTNA solutions enterprises are already deploying for their remote workforce. We believe that the market opportunity for our software and technology solutions is large and expanding as secure domain names are now an integral part of securing the next generation 5G and 4G/LTE Advanced wireless networks and IoT communications. Based on our estimates, using publicly available market data, we believe that the size of the global Industrial IoT security market is projected to grow from \$4.76 billion in 2022 to approximately \$23.17 billion by 2028 at a CAGR of 30.2% during the forecasted period with a growing investment in securing the infrastructure around these devices.

## Our Approach & Strategy

We believe that VirnetX One™ software products are positioned to help enterprises adapt to the rapidly evolving threat landscape in work environments and the growing need to secure communications regardless of a user's location, network, or device using our GABRIEL Connection Technology™.

VirnetX One™ products deliver ZTNA, allowing enterprises to secure their information, control access and gain visibility into how information is being used, who is accessing it and where it is going. Our patented technology allows enterprises to license our technology for integration into their products and services, easily deploy our technology through our VirnetX One™ family of products for endpoint security or securing their communications with our mobile and desktop applications.

Our strategy is to become the market leader in securing real-time communications over the Internet and to establish our VirnetX One™ and GABRIEL Connection Technology™ as the industry standard security platforms. Key elements of our strategy are to:

- Actively recruit partners in various vertical markets, including healthcare, finance, legal, government to help us expand our enterprise customer base.
- Promote our next-generation VirnetX One™ platform as a solution for delivering ZTNA, and securing enterprise applications, services, and infrastructure.
- Continue to grow our technology licensing program to commercialize our intellectual property, including our GABRIEL Connection Technology™.
- Grow registration of VirnetX Secure Domain Names as the network segmentation component of our ZTNA solution. Establish VirnetX as the exclusive, universal registry of secure domain names and enable our customers to act as registrars for their users and broker secure communication between devices.
- Promote War Room™ video conferencing product in the general market for sale to end-user enterprises, directly and with partners, with targeted promotions and other marketing programs to assist remote workers and offer an industry leading secure meeting solution.
- Promote VirnetX Matrix™ enterprise applications, services, and infrastructure.

Our patent portfolio serves as the foundation of our GABRIEL Connection Technology™, software products, services, and our licensing business. We currently own approximately 205 total patents and pending applications, including 72 U.S. patents/patent applications and 133 foreign patents/validations/pending applications. It is expected to generate the majority of our future revenue in license fees and royalties.

### Competitive Strengths

We believe the following competitive strengths will enable our success in the marketplace:

- **Unique patented technology.** We are focused on developing innovative technology for securing real-time communications over the Internet and establishing the exclusive secure domain name registry in the United States and other key markets around the world. Our unique solutions combine industry standard encryption methods and communication protocols with our patented techniques for automated DNS lookup mechanisms. Our technology and patented approach enable users to create a secure communication link by generating secure domain names. We currently own approximately 205 total patents and pending applications, including 72 U.S. patents/patent applications and 133 foreign patents/validations/pending applications. Our portfolio includes patents and pending patent applications in the United States and other key markets that support our secure domain name registry service for the Internet.
- **Scalable licensing business model.** We are actively engaged in pursuing additional licensing agreements with industry participants OEMs, service providers and system integrators within the IP-telephony, mobility, mobile-to-mobile communications, fixed-mobile convergence, and unified communications end-markets.
- **Highly experienced research and development team.** Our research and development team is comprised of nationally recognized network security and encryption technology scientists and experts that have worked together as a team for over ten years. During their careers, this team has developed several cutting-edge technologies for U.S. national defense, intelligence, and civilian agencies, many of which remain critical to our national security today. Prior to joining VirnetX, our team worked for Leidos, during which time they invented the core technology that is the foundation of our current technology and software. Based on the collective knowledge and experience of our development team, we believe that we have one of the most experienced and sophisticated groups of security experts researching vulnerability and threats to real-time communication over the Internet and developing solutions to mitigate these problems.

### License and Service Offerings

We offer a diversified portfolio of licenses, software and service offerings focused on securing real-time communications over the Internet. We believe software products will allow enterprises to seamlessly integrate ZTNA protection into their networks to secure their applications, services, virtualized resources, and data as it moves into the cloud. Enterprises can quickly deploy VirnetX One software products to protect legacy applications, secure new cloud-based services and remove application visibility from the public Internet. Enterprises can move towards more granular network access control to protect their network at the edge and away from legacy VPN technologies. VirnetX One family of software products enables remote employees to securely interact with on-premise and cloud-based applications, regardless of their location. Enterprises can use VirnetX One platform to secure open-source applications powering communications, data and analytics, infrastructure, and business services with a focus on making those applications easier to secure, access and manage.

We believe our software products and technologies provide the foundation for securing real-time communications and collaboration applications for the enterprise remote workforce. We are exploring creating a marketplace of applications secured by our VirnetX One platform. This approach will allow us to offer a portfolio of certified applications that can be deployed by the enterprise customers in their business networks with confidence in keeping their confidential data and communications secure. This marketplace strategy will allow us to offer more flexible licensing options to solve specific customer use-cases, align with partner product offerings and create upsell opportunities for our products.

## **Customers**

Our software products are available for download and free trial, for Android, iOS, Windows, Linux, and Mac OS X platforms, at <http://www.virnetx.com/>. We continue to enhance our products and add new functionality to our products. Small and medium businesses have installed our software products in their corporate networks. We continue to expand our customer base with targeted promotions and direct sales initiatives.

We have signed Patent License Agreements with Aastra USA, Inc. Avaya, Inc., Microsoft Corporation, Mitel Networks Corporation, NEC Corporation and NEC Corporation of America, Siemens Enterprise Communications GmbH & Co. KG, and Siemens Enterprise Communications Inc. to license certain of our patents, for a one-time payment and an ongoing royalty for all future sales through the expiration of the licensed patents with respect to certain current and future IP-encrypted products.

We are seeking further licensing of our technology, to developers and original equipment manufacturers, or OEMs, of chips, servers, Desktop, mobile devices such as smart phones, tablets, laptops, net books, and other devices, within the IP-telephony, mobility, fixed- mobile convergence, and unified communications markets including 5G and 4G/LTE. We have published our royalty rates and guidelines on our website. All forward moving licenses have adhered to these guidelines and have met or exceeded these rates and we will use these rates and guidelines in all future license negotiations.

## **Marketing and Sales**

We employ a leveraged, partner-oriented, marketing strategy for our technology licenses and software product offerings. We have successfully signed a number of Resellers & Managed Service Provider Agreements in various market segments, including, healthcare, finance, legal, government, etc., to assist us in selling our software products to their customers. A list of our partners can be found on our website at <https://virnetx.com/partners>. We plan to continue working on a number of sales and marketing promotions, in the U.S. and Japan, to recruit more resellers and partners along with direct sales programs as we seek to extend out our customer base internationally.

We plan to directly market our software products, domain name registry services to our service provider and system integrator customers. We market our software products directly to small and medium businesses using online marketing programs and tools.

We expect to leverage our relationship with Leidos, to extend our offering to departments and agencies within the federal government. Leidos is a FORTUNE 500® scientific, engineering and technology applications company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world, in national security, energy and the environment, critical infrastructure, and health. We intend to leverage our sales team for managing current accounts and pursuing sales opportunities with new customers. We continue to rapidly expand our customer base with targeted promotions and direct sales initiatives.

We added a Chief Operating Officer to our Japanese team to further our technology licensing efforts in Japan. We have signed a non-exclusive Distribution and Service Agreement with IP Dream, a Japanese based strategic technology developer and service provider, to sell our software products as well as VirnetX's Secure Domain Name technology to its clients in Japan and greater Asia. Jointly with IP Dream, we are currently pursuing several OEM opportunities with some of the largest services providers in Japan. Along with our efforts with IP Dream, we continue to explore alternative strategies to pursue opportunities to work with other third parties in Japan, and elsewhere, using an approach that will seek to capitalize on these opportunities in part by placing more emphasis on the use of our own employees.

We intend to continue to license our patent portfolio, technology, and software, including our secure domain name registry service, to domain infrastructure providers, communication service providers as well as to system integrators. We intend to seek further license of our technology and software products, to enterprise customers, developers and original equipment manufacturers, or OEMs, of chips, servers, Desktop, mobile devices such as smart phones, tablets, laptops, net books, and other devices, within the IP-telephony, mobility, fixed- mobile convergence, and unified communications markets including 5G and 4G/LTE. We have published our royalty rates and guidelines on our website at <https://virnetx.com/licensing>. All forward moving licenses have adhered to these guidelines and have met or exceeded these rates and we will use these rates and guidelines in all future license negotiations.

## **Intellectual Property and Patent Rights**

Our intellectual property is primarily comprised of trade secrets, patented know-how, issued and pending patents, copyrights and technological innovation.

We currently own approximately 205 total patents and pending applications, including 72 U.S. patents/patent applications and 133 foreign patents/validations/pending applications. Our portfolio includes many patents that describe unique systems and methods for securing real-time communications over the Internet, as well as related services such as the establishment and maintenance of a secure domain name registry. Our software and technology solutions also may have additional applications relating to operating systems and network security. A complete list of our U.S. patents is available on our website located at <http://www.virnetx.com>. Each patent is publicly accessible on U.S. Patent and Trademark Office website at <http://www.uspto.gov>. Some of our issued U.S. and foreign patents expire at various times during the period from 2023 to 2034.

Notwithstanding anything to the contrary set forth in any of our filings under the Securities Act or the Exchange Act that might incorporate future filings, the information set forth on the United States Patent and Trademark Office (the "USPTO") website, shall not be deemed to be a part of or incorporated by reference into any such filings. We do not warrant the accuracy, or completeness or adequacy of the USPTO website, and expressly disclaim liability for errors or omissions on such website.

### Assignment of Patents

Some of our issued patents and pending patent applications were acquired by our principal operating subsidiary, VirnetX, Inc., from Leidos, pursuant to an Assignment Agreement dated December 21, 2006, and a Patent License and Assignment Agreement dated August 12, 2005, as amended on November 2, 2006, including documents prepared pursuant to the November amendment, and as further amended on March 12, 2008. We recorded the assignment from Leidos, with the U.S. Patent Office on December 21, 2006.

Key terms of these agreements are as follows:

- **Patent Assignment.** Leidos, unconditionally and irrevocably conveyed, transferred, assigned, and quitclaimed all its right, title, and interest in and to the patents and patent applications, as specifically set forth in the assignment document recorded with the U.S. Patent Office, including, without limitation, the right to sue for past infringement.
- **License to Leidos, Outside the Field of Use.** Effective March 12, 2008, we granted to Leidos, a non-exclusive, royalty free, fully paid, perpetual, worldwide, irrevocable, sub licensable and transferable right and license permitting Leidos, and its assignees to make, have made, import, use, offer for sale, and sell products and services covered by, and to make improvements to, the patents and patent applications we acquired from Leidos, solely outside our field of use.
- **Compensation Obligations.** As consideration for the assignment of the patents and for the rights we obtained from Leidos, as amended, we are required to make payments to Leidos, based on cash or certain other values generated from those patents. The amount of such payments depends upon the type of value generated, and certain categories are subject to maximums and other limitations. In 2010, we met our maximum royalty payment requirement; however, Leidos is also entitled under certain circumstances to receive a portion of the proceeds paid to us for certain acquisitions of VirnetX and the settlement of certain patent infringement claims of ours.

### Government Regulation

We are subject to various federal, state, local, and foreign laws and regulations, including those relating to privacy, data protection and security, intellectual property, employment and labor, workplace safety, consumer protection, anti-bribery, import and export controls, immigration, federal securities, and tax. Additional laws and regulations relating to these areas likely will be passed in the future, and these or existing laws and regulations may be interpreted or enforced in new or expanded manners, each of which could result in significant limitations on how we operate our business.

In particular, the laws governing online secure communications remain unsettled in various respects, even in areas where there has been legislative action. Uncertainty regarding the interpretation and enforcement of laws governing matters such as intellectual property, privacy, data protection and libel in the context of online communications and media is likely to remain. New and existing legislation, or changes in its interpretation and enforcement, may interfere with the growth in use of online secure communications and decrease the acceptance of online secure communications as a viable solution, which could adversely affect our business.

Due to the Internet's increasing and evolving use, new laws regulating secure communications may be adopted. These laws and regulations may cover, among other things, issues relating to privacy, data protection, cybersecurity, pricing, taxation, telecommunications over the Internet, content, copyrights, distribution and quality of products and services. We intend to work to comply with all new applicable laws and regulations as they are adopted and put in force. New and evolving laws and regulations, and changes in their enforcement and interpretation, may have material impacts upon our development and commercialization plans or business practices, and may significantly increase our compliance costs and otherwise adversely affect our business, financial condition, and results of operations.

The U.S. government has controlled the authoritative domain name system, or DNS, root server since the inception of the Internet. On July 1, 1997, the President of the United States directed the U.S. Secretary of Commerce to privatize the management of the domain name system in a manner that increases competition and facilitates international participation in its management.

On September 29, 2006, the U.S. Department of Commerce extended its delegation of authority by entering into a new agreement with the Internet Corporation for Assigned Names and Numbers, or ICANN, a California non-profit corporation headquartered in Marina Del Rey, California. ICANN is responsible for managing the accreditation of registry providers and registrars that manage the assignment of top-level domain names associated with the authoritative DNS root directory. Although it is possible to create and manage other DNS root directories privately without accreditation from ICANN, the possibility of conflicting name and number assignments makes it less likely that users would widely adopt a top-level domain name associated with an alternative DNS root directory provided by a non-ICANN-accredited registry service.

## **Employees and Human Capital**

As of December 31, 2022, we had 25 full and part time employees, most of whom work remotely from our corporate offices. We have had a work-from-home workforce since our inception. The emphasis of our employees is on our technology research and product development with 14 employees focused on this effort. Our team has been working on enhancing our products and adding new functionality along with successfully filing several new patent applications in 2022. We also continue building our sales and marketing teams to expand our product-lines and customer base. In 2021, we added a Chief Operating Officer to our team in Japan who will be focused on growing our market and products in that region.

In addition to our regular employees, we also engage with consultants on a regular basis. These consultants can be involved in our product development, customer relations, legal, and/or regulatory compliance and reporting. We have experienced low employee turnover rates over the years with both employees and consultants participating in our equity incentive plan.

## **Available Information**

We file or furnish various reports, such as registration statements, periodic and current reports, proxy statements and other materials with the SEC. Our website address is <http://www.virnetx.com>. You may obtain, free of charge on our website, copies of our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The information we post is intended for reference purposes only; none of the information posted on our website is part of this report or incorporated by reference herein.

The SEC also maintains website at <http://www.sec.gov> that contains reports, proxy and other information statements, and other information regarding issuers, including us, that file electronically with the SEC.

## **Item 1A. Risk Factors**

Our operations and financial results are subject to various risks and uncertainties, including those described below, which could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common and capital stock. You should carefully consider the risks and uncertainties described below in addition to the other information set forth in this Report, including in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and related notes, before making any investment in our common stock. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business. If any of these risk factors occur, you could lose substantial value or your entire investment in our shares.

### **Summary Risk Factors**

An investment in our common stock involves a high degree of risk, and the following is a summary of key risk factors when considering an investment.

You should read this summary together with the more detailed description of each risk factor contained in the subheadings further below.

- Our business has been, and may continue to be, negatively affected by shareholders intent upon alternate business strategies.
- We may not generate significant sales revenues from our new software products and services.
- We are involved and will continue to be involved in litigation defending our patent portfolio, which can be time-consuming and costly, and we cannot anticipate the results.
- We may not be able to capitalize on market opportunities related to our product strategy, our licensing strategy or our patent portfolio.

- If we are not able to adequately protect our patent rights and trade secrets, our business would be negatively impacted.
- Because our business is conducted or expected to be conducted in an environment that is subject to rapid change, we may be subject to various developments in regulation, law, and consumer preferences to which we may not be able to adapt successfully.
- Our exposure to outside influences beyond our control, including new legislation, court rulings or actions by the USPTO could adversely affect our licensing and enforcement activities and results of operations.
- New legislation, regulations or court rulings related to enforcing patents could harm our business and operating results.
- Privacy and data security concerns, and data collection and transfer restrictions and related domestic or foreign regulations may limit the use and adoption of our solutions and adversely affect our business.
- If we are unable to expand our revenue sources or establish, sustain, grow, or replace relationships with a diversified customer base, our revenues may be limited.
- We have limited technical resources and are at an early stage in commercialization of our software products.
- Our international expansion will subject us to additional costs and risks, and our plans may not be successful.
- We have had to restate our previously issued financial statements and in connection with such process identified a material weakness in our internal control over financial reporting.
- We may face litigation over the restatement of our previously issued financial statements.

### ***Risks Related to Our Business and Our Financial Reporting***

#### ***Our business has been, and may continue to be, negatively affected by shareholders intent upon alternate business strategies.***

Responding to actions by activist shareholders is costly and time-consuming, has diverted some the attention of management, our board of directors and our employees, and may be disruptive to our operations. Additionally, perceived uncertainties as to our future direction as a result of shareholder activism or changes to the composition of our board of directors may lead to the perception of a change in the direction of our business or other instability, which may be exploited by our competitors, cause concern to our current or potential customers, and make it more difficult to attract and retain qualified personnel. The change in composition of our board of directors could jeopardize our ability to execute our strategic plan and materially harm our business. Due to the current status of our ongoing litigation proceedings, it is critical for us to retain our current board members for proper and timely execution of our strategy in this matter for maximizing shareholder equity value. Additionally, if customers choose to delay, defer or reduce transactions with us or do business with our competitors instead of us, then our business, financial condition and operating results would be adversely affected. In addition, our share price could experience periods of increased volatility as a result of shareholder activism.

#### ***We may not generate significant sales revenues from our new software products and services.***

In March and April 2022, we launched War Room™ and VirnetX Matrix™ on our VirnetX One™ platform in the U.S. We currently expect to launch these products in Asia Pacific and Europe in fiscal year 2023. We also intend to continue to introduce new products on our VirnetX One™ platform in the future. The introduction and launch of new products is subject to significant costs, risks of slow market acceptance, and variable costs and timing of customer acquisition. While we believe our software products will be attractive to businesses, government agencies, cloud and on-premise application service providers, and OEMs, if we are unable to overcome these risks, we may never generate significant revenue from the sales of these products.

#### ***We are involved and will continue to be involved in litigation defending our patent portfolio, which can be time-consuming and costly, and we cannot anticipate the results.***

We spend a significant amount of our financial and management resources to pursue our current litigation. We believe that this litigation and others that we may pursue in the future could continue for years and consume significant financial and management resources. The counterparties to our litigation include large, well-financed companies with substantially greater resources than us. Patent litigation is risky, and the outcome is uncertain, and we cannot assure you that any of our current or future litigation matters will result in a favorable outcome for us. In addition, even if we obtain favorable interim rulings or verdicts, they may be inconsistent with the ultimate resolution of the dispute. Furthermore, any awards we receive may be subject to obligations to Leidos and fee arrangements with outside counsel. Also, we cannot assure you that we will not be exposed to claims or sanctions against us which may be costly or impossible for us to defend. Unfavorable or adverse outcomes may result in losses, exhaustion of financial resources or other adverse effects, which could reduce our ability to return cash to our shareholders by way of distributions or otherwise to develop and commercialize our products.

***We may not be able to capitalize on market opportunities related to our product strategy, our licensing strategy or our patent portfolio.***

A large part of our business strategy includes licensing our patents and technology to other companies in order to reach a larger end-user base than we could reach through direct sales and marketing efforts; as such, our business strategy and revenues may depend on intellectual property licensing fees and royalties for the majority of our revenues. We currently derive minimal revenue from licensing activities, and royalties, and we cannot assure you that we will successfully capitalize on our market opportunities or that this portion of our business strategy will succeed.

Although to date we have entered into a limited number of settlement and license agreements, we may not be successful in entering into further licensing relationships, or if we are successful in entering into such relationships, the acquisition of them may be expensive, and they, as well as our existing settlement and our existing and pending license agreements may not generate the financial results, we expect.

Factors that may affect our ability to execute our current business strategy include, but are not limited to, the following:

- Third parties may challenge the validity of our patents;
- The pendency of our various litigations may cause potential licensees not to do business with us;
- Our patents may expire before we can make our business strategy successful;
- We face, and we expect to continue to face, intense competition from new and established competitors who may have superior products and services or better marketing, financial or other capacities than we do; and
- It is possible that one or more of our potential customers or licensees develops or otherwise sources products or technologies similar to, competitive with or superior to ours.

***If we are not able to adequately protect our patent rights and trade secrets, our business would be negatively impacted.***

We believe our patents are valid, enforceable, and valuable. Notwithstanding this belief, third parties may make claims of infringement or invalidity claims with respect to our patents or become aware of our trade secrets by way of leaks from bad actors within or outside of our employee base or otherwise, and such claims could give rise to material cost for defense or settlement or both, and such claims or leaks could jeopardize or substantially delay a successful outcome of litigation we are or may become involved in, divert resources away from our other activities, limit or cease our related revenues, or otherwise materially and adversely affect our business. Additionally, several of our patents are currently, and other patents may in the future be, subject to USPTO post-grant inter partes review proceedings (“IPR”) which may result in all, or part of these patents being invalidated, or the claims of our patents being limited. Unfavorable or adverse outcomes in our litigation or IPRs or material leaks of trade secrets may result in losses, exhaustion of financial resources, reduction in our ability to protect our intellectual property rights, or other adverse effects, which could encumber our ability to develop and commercialize our products. Even if we are successful in protecting our intellectual property rights, they may not ultimately provide us with any competitive advantages and may be less valuable than we currently expect. These risks may be heightened in countries other than the United States where laws regarding patent protection are less developed and may be negatively affected by the fact that legal standards in the United States and elsewhere for protection of intellectual property rights in Internet-related businesses are uncertain and still evolving. In addition, there are a significant number of United States and foreign patents and patent applications in our areas of interest, and we expect that significant litigation in these areas will continue and will add uncertainty to the value of certain patents and other intellectual property rights in our areas of interest. If we are unable to protect our intellectual property rights or otherwise realize value from them, our business would be negatively affected.

***We can provide no assurances that the licensing of our essential security patents under FRAND will be successful.***

At the request of the European Telecommunications Standards Institute (“ETSI”), and the Alliance for Telecommunications Industry Solutions (“ATIS”), we agreed to update our licensing declaration to ETSI and ATIS under their respective Intellectual Property Rights policies. This was in response to our Statement of Patent Holder identifying a group of our patents and patent applications that we believe are or may become essential to certain developing specifications in the 3rd Generation Partnership Project Long Term Evolution (“LTE”), Systems Architecture Evolution project. We will make available a non-exclusive patent license under FRAND (fair, reasonable and non-discriminatory terms, and conditions, with compensation) for the patents identified by us that are or become essential to applicants desiring to implement the Technical Specifications identified by us, as set forth in the updated licensing declaration under the ATIS and ETSI Intellectual Property Rights policies. Our licensing declarations under the ATIS and ETSI Intellectual Property Rights policies may limit our flexibility in determining royalties and license terms for certain of our patents. Consequently, we cannot assure you that the licensing of the essential security patents will be successful or that third parties will be willing to enter into licenses with us on reasonable terms or at all, which could have an adverse effect on our business and harm our competitive position.

***Because our business is conducted or expected to be conducted in an environment that is subject to rapid change, we may be subject to various developments in regulation, law, and consumer preferences to which we may not be able to adapt successfully.***

The current regulatory environment for our products and services remains unclear. We can give no assurance that our planned product offerings will be in compliance with laws and regulations of local, state, United States federal or foreign authorities. Further, we can give no assurance that we will not unintentionally violate such laws or regulations or that such laws or regulations will not be modified, or that new laws or regulations will be enacted in the future which would cause us to be in violation of such laws or regulations. For example, Voice-Over-Internet Protocol (“VoIP”) services are not currently subject to all the same regulations that apply to traditional telephony, but it is possible that similar regulations may be applied to VoIP in the future and that these could result in substantial costs to us which could adversely affect the marketability of our products and planned products related to VoIP. For further example, the use of the Internet and private Internet Protocol (“IP”) networks for communication is largely unregulated within the United States, but may become regulated in the future; additionally, several foreign governments have enacted measures that could restrict or prohibit voice communications services over the Internet or private IP networks.

Our business depends on the growth of instant messaging, VoIP, mobile services, streaming video, file transfer and remote desktop and other next-generation Internet-based applications. A decline in the use of these applications due to complexity or cost relative to alternate traditional or newly developed communications channels, or development of alternative technologies, could cause a material decline in the number of users in these areas.

More aggressive domestic or international regulation of the Internet in general, and Internet telephony providers and services specifically may materially and adversely affect our business, financial condition, operating results, and future prospects.

***Our exposure to outside influences beyond our control, including new legislation, court rulings or actions by the USPTO, could adversely affect our licensing and enforcement activities and results of operations.***

Our licensing and enforcement activities are subject to numerous risks from outside influences, including the following:

- New legislation, regulations or rules related to obtaining patents or enforcing patents could significantly increase our operating costs and decrease our revenue. For instance, the United States Supreme Court has modified some tests used by the USPTO in granting patents during the past 20 years which may decrease the likelihood that we will be able to obtain patents and increase the likelihood of challenge of any patents we obtain or license. In addition, in 2012, the United States enacted sweeping changes to the United States patent system under the Leahy-Smith America Invents Act, including changes that transition the United States from a “first-to-invent” system to a “first to file” system and alter the processes for challenging issued patents;
- More patent applications are filed each year resulting in longer delays in getting patents issued by the USPTO;
- Federal courts are becoming more crowded, and as a result, patent enforcement litigation is taking longer; and
- As patent enforcement becomes more prevalent, it may become more difficult for us to voluntarily license our patents.

***New legislation, regulations or court rulings related to enforcing patents could harm our business and operating results.***

Intellectual property is the subject of intense scrutiny by the courts, legislatures, and executive branches of governments around the world. Various patent offices, governments or intergovernmental bodies may implement new legislation, regulations or rulings that impact the patent enforcement process, or the rights of patent holders and such changes could negatively affect licensing efforts and/or litigations. For example, limitations on the ability to bring patent enforcement claims, limitations on potential liability for patent infringement, lower evidentiary standards for invalidating patents, increases in the cost to resolve patent disputes and other similar developments could negatively affect our ability to assert our patent or other intellectual property rights.

It is impossible to determine the extent of the impact of any new laws, regulations or initiatives that may be proposed, or whether any of the proposals will become enacted as laws. Compliance with any new or existing laws or regulations could be difficult and expensive, affect the manner in which we conduct our business and negatively impact our business, prospects, financial condition, and results of operations.

***If we experience security breaches or incidents, we could be exposed to liability and our reputation and business could suffer.***

We expect to retain certain confidential and proprietary customer information in our secure data centers and secure domain name registry, as well as personal data and other confidential and proprietary information relating to our business. It will be critical to our business strategy that our facilities and infrastructure remain secure and are perceived by the marketplace to be secure. Our secure domain name registry operations will also depend on our ability to maintain our computer and telecommunications equipment in effective working order and to reasonably protect our systems against interruption, and potentially depend on protection by other registrars in the shared registration system. The secure domain name servers that we will operate will be critical hardware to our registry services operations. Additionally, we maintain confidential and proprietary business information, including trade secrets. We expect to have to expend significant time and money to maintain or increase the security of our products, facilities, and infrastructure. Security technologies are constantly being tested by computer professionals, academics and “hackers.” Advances in computer capabilities and the techniques for attacking security solutions, new discoveries in the field of cryptography or other events or developments could result in compromises or breaches of our security measures and could make some or all our products obsolete or unmarketable. Likewise, we may need to dedicate engineering and other resources to eliminate security vulnerabilities and may find it necessary or appropriate to repair or replace products already sold or licensed to our customers. Despite the security measures that we and our service providers utilize, our infrastructure and that of our service providers may be vulnerable to physical break-ins, ransomware, computer viruses, other malicious code attacks by hackers, phishing attacks, social engineering, or similar disruptive problems. Any disruption or security breach or incident that we or our service providers suffer or are perceived to suffer, including any such disruption, breach or incident resulting in a loss of, or damage to, data or systems, or inappropriate disclosure, access, loss, or other processing of confidential, financial, proprietary or personal information, including data related to our personnel, could result in loss, disclosure or other unauthorized processing of such data, could delay our research and development or commercialization efforts, could compel us to comply with breach notification laws and regulations, subject us to mandatory corrective action, and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal information. It is possible that we may have to expend additional financial and other resources to address such problems. The COVID-19 pandemic has resulted in increasing vulnerability to cyber-attacks, as more individuals and companies work online, which increases these risks. As a provider of Internet security software and technology, we may be the target of dedicated efforts by hackers and other third parties to overcome or defeat our security measures. Any physical or electronic break-in or other security breach or incident or compromise impacting our products or any information stored at our secure data centers and domain name registration systems, including any compromise due to human error or employee or contractor malfeasance, may jeopardize the security of information stored on our premises or in the computer systems and networks of our customers. Additionally, any such data security incident, or the perception that one has occurred could also result in adverse publicity, harm to our reputation and competitive position, and therefore adversely affect the market’s perception of the security of electronic commerce and communications over IP networks as well as the security or reliability of our services.

A security breach or other security incident, or the perception any such event has occurred, could require a substantial level of financial resources to address and otherwise respond to, may be difficult to identify or address in a timely manner, and could result in claims, investigations, inquiries, and other proceedings or actions by private parties or governmental entities that may divert management’s attention and require the expenditure of significant time and resources, and which may cause us to incur substantial fines, penalties, or other liability and related legal and other costs. Any actual or perceived security breach or other security incident may also harm our reputation, result in a loss of customers, and make it more difficult or impossible for us to successfully market to others. Any of the foregoing matters could harm our operating results and financial condition.

***Privacy and data security concerns, and data collection and transfer restrictions and related domestic or foreign regulations may limit the use and adoption of our solutions and adversely affect our business.***

Personal privacy, information security, and data protection are significant issues in the United States, Europe, and many other jurisdictions where we have operations or offer our products. The regulatory framework governing the collection, processing, storage and use of confidential and proprietary business information and personal data is rapidly evolving. The United States federal and various state and foreign governments have adopted or proposed requirements regarding the collection, distribution, use, security and storage of personally identifiable information and other data relating to individuals, and federal and state consumer protection laws are being applied to enforce regulations related to the online collection, use and dissemination of data.

Further, many foreign countries and governmental bodies, including the European Union (“EU”), where we conduct business, have laws and regulations concerning the collection and use of personal data obtained from their residents or by businesses operating within their jurisdiction. These laws and regulations often are more restrictive than those in the United States. Laws and regulations in these jurisdictions apply broadly to the collection, use, storage, disclosure, and security of data that identifies or may be used to identify or locate an individual, such as names, email addresses and, in some jurisdictions, IP addresses.

We also expect that there will continue to be new proposed laws, regulations and industry standards concerning privacy, data protection and information security in the United States, the EU, and other jurisdictions. For example, the European Commission adopted a General Data Protection Regulation (the “GDPR”) that became fully effective on May 25, 2018, superseding prior EU data protection legislation, imposing more stringent EU data protection requirements, and providing for greater penalties for noncompliance. The United Kingdom has enacted a Data Protection Act and legislation referred to as the UK GDPR that substantially implements the GDPR. We are evaluating obligations imposed on us by the GDPR and we may be required to incur substantial expense in order to make significant changes to our product and business operations in connection with obtaining and maintaining compliance with the GDPR and similar legislation, such as the UK GDPR and UK Data Protection Act, all of which may adversely affect our revenue and product sales. California has enacted legislation, the California Consumer Privacy Act (the “CCPA”) that, among other things, requires covered companies to provide disclosures to California consumers, and afford such consumers abilities to opt-out of certain sales of personal information. Additionally, the California Privacy Rights Act (the “CPRA”), was approved by California voters in the November 2020 election. The CPRA significantly modifies the CCPA, creating obligations relating to consumer data which began on January 1, 2022, with enforcement beginning July 1, 2023. Additionally, other U.S. states continue to propose, and in certain cases adopt, privacy-focused legislation. For example, Virginia, Colorado, Utah, and Connecticut have all enacted legislation that has become, or will become, effective in 2023. We cannot yet fully determine the impact these or future laws, regulations and standards may have on our business, but they may require us to modify our data processing practices and policies and to incur substantial costs and expenses in an effort to comply. Privacy, data protection and information security laws and regulations are often subject to differing interpretations, may be inconsistent among jurisdictions, and may be alleged to be inconsistent with our current or future practices. Additionally, we may be bound by contractual requirements applicable to our collection, use, processing, and disclosure of various types of data, including personal data, and may be bound by, or voluntarily comply with, self-regulatory or other industry standards relating to these matters. These and other requirements could reduce demand for our products, increase our costs, impair our ability to grow our business, or restrict our ability to store and process data or, in some cases, impact our ability to offer our service in some locations and may subject us to liability. Any failure or perceived failure to comply with applicable laws, regulations, industry standards, and contractual obligations may adversely affect our business. Further, in view of new or modified federal, state, or foreign laws and regulations, industry standards, contractual obligations and other legal obligations, or any changes in their interpretation, we may find it necessary or desirable to fundamentally change our business activities and practices or to expend significant resources to modify our product and otherwise adapt to these changes. We may be unable to make such changes and modifications in a commercially reasonable manner or at all, and our ability to develop new products and features could be limited.

The costs of compliance with and other burdens imposed by laws, regulations and standards may limit the use and adoption of our service and reduce overall demand for it, or lead to significant fines, penalties, or liabilities for any noncompliance. Privacy, information security, and data protection concerns, whether valid or not valid, may inhibit market adoption of our platform, particularly in certain industries and foreign countries.

***We expect that we will experience long and unpredictable sales cycles, which may impact our operating results.***

The sales cycle between initial customer contact and execution of a contract or license agreement with a customer or purchaser of our products can vary widely. We expect that our sales cycles will be long and unpredictable due to several factors, including but not limited to:

- The need to educate potential customers about our patent rights and our product and service capabilities;

- Our customers' willingness to invest potentially substantial resources and modify their network infrastructures to take advantage of our products;
- Our customers' budgetary constraints;
- The timing of our customers' budget cycles;
- Delays caused by customers' internal review processes; and
- Long sales cycles that may increase the risk that our financial resources are exhausted before we are able to generate significant revenue.

In addition, potential customers of our products include local, state, federal and foreign government authorities. Sales to government authorities can be extended and unpredictable. Government authorities generally have complex budgeting, purchasing, and regulatory processes that govern their capital spending, and their spending is likely to be adversely impacted by economic conditions. In addition, in many instances, sales to government authorities may require field trials and may be delayed by the time it takes for government officials to evaluate multiple competing bids, negotiate terms, and award contracts.

For these reasons, the sales cycle associated with our products is subject to a number of significant risks that are beyond our control. Consequently, if customer orders are not realized or delayed, our revenues and results of operations could be materially and adversely affected.

***If we are unable to expand our revenue sources or establish, sustain, grow, or replace relationships with a diversified customer base, our revenues may be limited.***

We currently generate revenue from a limited number of customers that have entered settlement and license agreements. Our software products and services currently generating limited revenue, and it will take time for us to grow our installed user base and generate new customers. Additionally, there is no guarantee that we will be able to derive revenue from new customers, sustain or increase revenue from existing customers or replace customers from whom we currently generate revenue. As a result, our revenue may be limited or static.

***We have limited technical resources and are at an early stage in commercialization of our VirnetX One™ platform and software products.***

Part of our business includes the internal development of commercial products we seek to monetize. This aspect of our business may require significant capital, time and resources and we cannot guarantee that it will be successful or meet our expectations. As such, we have a small technical team, which may limit our ability to rapidly adapt our product to customer requirements or add new product features to maintain our competitive edge and drive adoption.

Based on the scale of our technical resources, our limited historical financial data upon which to base our projected revenue or planned operating expenses related to our software products and services, we may not be able to effectively:

- Generate revenues or profit from product sales;
- Drive adoption of our products;
- Attract and retain customers for our products;
- Provide appropriate levels of customer training and support for our products;
- Implement an effective marketing strategy to promote awareness of our products;
- Focus our research and development efforts in areas that generate returns on our efforts;
- Anticipate and adapt to changes in our market; or
- Protect our products from any system failures or other breaches.

In addition, a high percentage of our expenses are and will continue to be fixed. Accordingly, if we do not generate revenue as and when anticipated, our losses may be greater than expected and our operating results will suffer.

***Our products are highly technical and may contain undetected errors, which could cause harm to our reputation and adversely affect our business.***

Our products are highly technical and complex and, when deployed, may contain errors or defects. Despite testing, some errors in our products may only be discovered after a product has been installed and used by customers. Any errors or defects discovered in our products after commercial release could result in failure to achieve market acceptance, loss of revenue or delay in revenue recognition, loss of customers and increased service and warranty cost, any of which could adversely affect our business, operating results, and financial condition. In addition, we could face claims for product liability, tort, or breach of warranty, including claims relating to changes to our products made by our channel partners. The performance of our products could have unforeseen or unknown adverse effects on the networks over which they are delivered as well as on third-party applications and services that utilize our services, which could result in legal claims against us, harming our business. Furthermore, we expect to provide implementation, consulting, and other technical services in connection with the implementation and ongoing maintenance of our products, which typically involves working with sophisticated software, computing, and communications systems. We expect that our contracts with customers will contain provisions relating to warranty disclaimers and liability limitations, which may not be upheld. Defending a lawsuit, regardless of its merit, is costly and may divert management's attention and adversely affect the market's perception of us and our products. In addition, if our business liability insurance coverage proves inadequate or future coverage is unavailable on acceptable terms or at all, our business, operating results, and financial condition could be adversely impacted.

***Malfunctions of third-party communications infrastructure, hardware and software expose us to a variety of risks that we cannot control.***

Our business will depend upon, among other things, the capacity, reliability, security, and unimpeded access of the infrastructure owned by third parties that we will use to deploy our offerings. We have no control over the operation, quality, or maintenance of a significant portion of that infrastructure or whether those third parties will upgrade or improve their equipment. We depend on these companies to maintain the operational integrity of our connections. If one or more of these companies is unable or unwilling to supply or expand its levels of service to us in the future, our operations could be severely interrupted. Also, to the extent that the number of users of networks utilizing our current or future products suddenly increases, the technology platform and secure hosting services which will be required to accommodate a higher volume of traffic may result in slower response times or service interruptions. System interruptions or increases in response time could result in a loss of potential or existing users and, if sustained or repeated, could reduce the appeal of the networks to users. In addition, users depend on real-time communications; outages caused by increased traffic could result in delays and system failures. These types of occurrences could cause users to perceive that our solution does not function properly and could therefore adversely affect our ability to attract and retain licensees, strategic partners, and customers.

***System failure or interruption or our failure to meet increasing demands on our systems could harm our business.***

The success of our license and service offerings will depend on the uninterrupted operation of various systems, secure data centers and other computer and communication networks that we establish. To the extent, the number of users of networks utilizing our future products suddenly increases, the technology platform and hosting services which will be required to accommodate a higher volume of traffic may result in slower response times, service interruptions or delays or system failures. Our systems and operations will also be vulnerable to damage or interruption from, among other things:

- Power loss, transmission cable cuts and other telecommunications failures;
- Damage or interruption caused by fire, earthquake, and other natural disasters;
- Computer viruses or software defects; and
- Physical or electronic break-ins, sabotage, intentional acts of vandalism, terrorist attacks and other events beyond our control.

System interruptions or failures and increases or delays in response time could result in a loss of potential or existing users and, if sustained or repeated, could reduce the appeal of the networks to users. These types of occurrences could cause users to perceive that our solution does not function properly and could therefore adversely affect our ability to attract and retain licensees, strategic partners, and customers.

Any significant problem with our systems or operations could result in lost revenue, customer dissatisfaction or lawsuits against us. A failure in the operation of our secure domain name registration system could result in the inability of one or more registrars to register and maintain secure domain names for a period of time. A failure in the operation or update of the master directory that we plan to maintain could result in deletion or discontinuation of assigned secure domain names for a period of time. The inability of the registrar systems we establish, including our back-office billing and collections infrastructure, and telecommunications systems to meet the demands of an increasing number of secure domain name requests could result in substantial degradation in our customer support service and our ability to process registration requests in a timely manner.

***Our ability to sell our solutions will be dependent on the quality of our technical support, and our failure to deliver high-quality technical support services could have a material adverse effect on our sales and results of operations.***

If we do not effectively assist our customers in deploying our products, succeed in helping our customers quickly resolve post deployment issues and provide effective ongoing support, or if potential customers perceive that we may not be able to achieve to the foregoing, our ability to sell our products would be adversely affected, and our reputation with current and potential customers could be harmed. In addition, as we expand our operations internationally, our technical support team will face additional challenges, including those associated with delivering support, training, and documentation in languages other than English. Our failure to deliver and maintain high-quality technical support services to our customers could result in customers choosing to use our competitors' products and support services instead of ours in the future.

***Our international expansion will subject us to additional costs and risks, and our plans may not be successful.***

We expect to expand our presence internationally in Japan and elsewhere through third party arrangements such as international partnerships, joint ventures and potentially establishing international subsidiaries and offices. Our international expansion may present challenges and risks, including those inherent in international operations, to us and may require significant attention from management. For example, the COVID-19 pandemic has and could continue to disrupt and slow our international expansion and partnership efforts, as our international partners' businesses could continue to be disrupted. We may not be successful in our international partnerships, expansion efforts, and we may incur significant operating expenses in our efforts to expand internationally.

***The global COVID-19 pandemic may harm our business, financial condition, and results of operations.***

The COVID-19 pandemic continues to impact worldwide economic activity and financial markets. In light of the uncertain and rapidly evolving situation relating to the spread of COVID-19, we continue to take precautionary measures intended to minimize the risk of the virus to our employees, our customers, and other third parties with whom we interact. We continue to require all employees to work remotely and have also suspended all non-essential travel worldwide for our employees. While we have a distributed workforce and our employees are accustomed to working remotely or working with other remote employees, our workforce is not fully remote. Our employees and consultants travel frequently to establish and maintain relationships with one another, our customers and prospective customers, partners, and investors. Although we continue to monitor the situation and may adjust our current policies as more information and public health guidance becomes available, temporarily suspending travel and restricting the ability to do business in person could negatively affect our customer success efforts, sales and marketing efforts, challenge our ability to enter into customer contracts in a timely manner, slow down our recruiting efforts, or create operational or other challenges, any of which could harm our business, financial condition and results of operations. Furthermore, if a natural disaster, power outage, connectivity issue, or other event occurred that impacted our employees' ability to work remotely, it may be difficult or, in certain cases, not possible, for us to continue our business for a substantial period of time. The increase in remote working may also result in consumer privacy, IT security and fraud concerns as well as increase our exposure to potential wage and hour issues. In addition, the COVID-19 pandemic may disrupt the operations of our customers, partners, suppliers, and other third-party providers for an indefinite period of time, including as a result of travel restrictions, adverse effects on budget planning processes, and/or business shutdowns, all of which could negatively impact our business, financial condition, and results of operations. More generally, despite continued actions taken by governments and businesses to attempt to contain and treat the disease, and related variants, including the distribution and administration of effective vaccines, the COVID-19 pandemic could continue to adversely affect economies and financial markets globally, potentially leading to an economic downturn, which could decrease technology spending and adversely affect our business.

#### ***Risks Related to Ownership of Our Common Stock***

***We do not regularly pay dividends on our common stock and thus stockholders must look to appreciation of our common stock to realize a gain on their investments.***

Our dividend policy is within the discretion of our Board of Directors and will depend upon various factors, including our business, financial condition, results of operations, capital requirements, and investment opportunities. We therefore cannot make assurances that our Board of Directors will determine to pay regular or special dividends in the future. Accordingly, unless our Board of Directors determines to pay dividends, stockholders will be required to look to appreciation of our common stock to realize a gain on their investment, which may not occur.

***The exercise of our outstanding stock options, warrants, and RSUs and issuance of new shares would result in a dilution of our current stockholders' voting power and an increase in the number of shares eligible for future resale in the public market which may negatively impact the market price of our stock.***

The exercise of our outstanding vested stock options, warrants, and RSUs would dilute the ownership interests of our existing stockholders. As of December 31, 2022, we had outstanding options, warrants and RSUs to purchase an aggregate of 7,393,130 shares of common stock representing approximately 10% of our total shares outstanding of which 5,260,355 were vested and therefore exercisable. To the extent outstanding stock options or warrants are exercised, additional shares of common stock will be issued, existing stockholders' percentage voting interests will decline and the number of shares eligible for resale in the public market will increase. Such increase may have a negative effect on the value or market trading price of our common stock.

***Because ownership of our common stock is concentrated, investors may have limited influence on stockholder decisions.***

As of December 31, 2022, our executive officers and directors beneficially owned approximately 14% of our outstanding common stock. Because of their beneficial ownership interest, our officers and directors could significantly influence stockholder actions of which you disapprove or that are contrary to your interests. This ability to exercise significant influence could prevent or significantly delay another company from acquiring or merging with us.

***Our protective provisions in our amended and restated certificate of incorporation and bylaws could make it difficult for a third party to successfully acquire us even if you would like to sell your stock to them.***

We have a number of protective provisions in our amended and restated certificate of incorporation and bylaws that could delay, discourage, or prevent a third party from acquiring control of us without the approval of our Board of Directors. These protective provisions include:

- **A staggered Board of Directors:** This means that only one or two directors (since we have a five-person Board of Directors) will be up for election at any given annual meeting. This has the effect of delaying the ability of stockholders to affect a change in control of us because it would take two annual meetings to effectively replace a majority of the Board of Directors.
- **Blank check preferred stock:** Our Board of Directors has the authority to establish the rights, preferences, and privileges of our 10,000,000 authorized, but unissued, shares of preferred stock. Therefore, this stock may be issued at the discretion of our Board of Directors with preferences over your shares of our common stock in a manner that is materially dilutive to you. In addition, blank check preferred stock can be used to create a "poison pill" which is designed to deter a hostile bidder from buying a controlling interest in our stock without the approval of our Board of Directors. We have not adopted such a "poison pill;" but our Board of Directors has the ability to do so in the future, very rapidly and without stockholder approval.
- **Advance notice requirements for director nominations and for business to be brought before stockholder meetings:** Stockholders wishing to submit director nominations or raise matters to a vote of the stockholders must provide notice to us within very specific date windows and in very specific form in order to have the matter voted on at a stockholder meeting. This has the effect of giving our Board of Directors and management more time to react to stockholder proposals generally and could also have the effect of permitting us to disregard a stockholder proposal to the extent such proposal is not submitted in accordance with the bylaws.
- **No stockholder actions by written consent:** No stockholder or group of stockholders may take action by written consent. Along with the advance notice requirements described above, this provision also gives our Board of Directors and management more time to react to proposed stockholder actions.
- **Super majority requirement for stockholder amendments to the bylaws:** Stockholder proposals to alter or amend our bylaws or to adopt new bylaws can only be approved by the affirmative vote of at least 66 2/3% of the outstanding shares of our common stock.
- **No ability of stockholders to call a special meeting of the stockholders:** A special meeting of the stockholders, other than as required by statute, may be called at any time by the Board of Directors, or by the chairman of the board, or by the president, but a special meeting may not be called by any other person or persons and any power of stockholders to call a special meeting of stockholders is specifically denied. This could mean that stockholders, even those who represent a significant percentage of our shares of common stock, may need to wait for the annual meeting before nominating directors or raising other business proposals to be voted on by the stockholders.

In addition, the provisions of Section 203 of the Delaware General Corporation Law govern us. These provisions may prohibit large stockholders, particularly those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time.

These and other provisions in our amended and restated certificate of incorporation, our bylaws and under Delaware law could discourage potential takeover attempts, reduce the price that investors might be willing to pay for shares of our common stock in the future and result in the market price being lower than it would be without these provisions.

***Our amended and restated bylaws designate a state or federal court located within the State of Delaware as the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to choose the judicial forum for disputes with us or our directors, officers, or employees.***

Our amended and restated bylaws provide that, unless we consent in writing to the selection of an alternative forum, the sole and exclusive forum for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, stockholders, officers, or other employees to us or our stockholders, (3) any action arising pursuant to any provision of the Delaware General Corporation Law, or our amended and restated certificate of incorporation or amended and restated bylaws or (4) any other action asserting a claim that is governed by the internal affairs doctrine shall be the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, another State court in Delaware or the federal district court for the District of Delaware), in all cases subject to the court having jurisdiction over indispensable parties named as defendants.

However, notwithstanding the exclusive forum provisions, our amended and restated bylaws explicitly state that they would not preclude the filing of claims brought to enforce any liability or duty created under federal securities laws, including the Securities Act or the Exchange Act.

Any person or entity purchasing or otherwise acquiring any interest in any of our securities shall be deemed to have notice of and consented to this provision. This exclusive-forum provision may limit a stockholder's ability to bring a claim in a judicial forum of its choosing for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers, and other employees. If a court were to find this exclusive-forum provision in our amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could harm our results of operations.

***Our failure to meet the continued listing requirements of the NYSE could result in a delisting of our common stock.***

If we fail to satisfy the continued listing requirements of the NYSE, such as the corporate governance requirements or the minimum closing bid price requirement, the NYSE may take steps to delist our common stock. Such a delisting would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. In the event of a delisting, we can provide no assurance that any action taken by us to restore compliance with listing requirements would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the NYSE minimum bid price requirement or prevent future non-compliance with NYSE's listing requirements.

## **General Risk Factors**

***We may need to raise additional capital to support our business growth, and this capital may be dilutive, may cause our stock price to drop or may not be available on acceptable terms, if at all.***

We may need to raise additional capital, which may not be available to us when needed or may not be available on terms acceptable to us, to support our business growth or to respond to business opportunities, challenges, or unforeseen circumstances, including sales under our past and any future shelf registration statements. Our ability to obtain additional capital, if and when required, will depend on our business plans, investor demand, our operating performance, the condition of the capital markets, the terms of our current contractual obligations and other factors.

If we raise additional funds through the issuance of equity, equity-linked or debt securities, including those under our past and any future shelf registration statements, those securities may have rights, preferences, or privileges senior to the rights of our common stock, and our existing stockholders may experience dilution. Additionally, we are unable to predict the future success of any future offerings. Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales or other financings might occur, could depress the market price of our common stock, and could also impair our ability to raise capital through the sale of additional equity securities. If we issue debt securities or incur indebtedness, we could experience increased future payment obligations and a need to comply with restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. If we are unable to obtain additional capital or are unable to obtain additional capital on satisfactory terms, our ability to continue to support our business growth or to respond to business opportunities, challenges, or other circumstances could be adversely affected, and our business may be harmed.

***The departure of Kendall Larsen, our Chief Executive Officer and President, and/or other key personnel could compromise our ability to execute our strategic plan and materially harm our business.***

Our success depends on the skills, experience, and performance of our key personnel. Due to the specialized nature of our business and limited staff, we are particularly dependent on Kendall Larsen, our Chief Executive Officer and President. We have no employment agreements with any of our key executives that prevent them from leaving us at any time. In addition, we do not maintain key person life insurance for any of our officers or key employees. The loss of Mr. Larsen, or our failure to retain other key personnel or plan for the succession of key personnel, would jeopardize our ability to execute our strategic plan and materially harm our business.

***We will need to recruit and retain additional qualified personnel to successfully grow our business.***

Our future success will depend, in part, on our ability to attract and retain qualified engineering, operations, marketing, sales and executive personnel. Inability to attract and retain such personnel could adversely affect our business. Competition for engineering, operations, marketing, sales, and executive personnel is intense, particularly in the technology and Internet sectors and in the regions where we conduct our business. We may need to invest significant amounts of cash and equity to attract and retain employees and expend significant time and resources to identify, recruit, train and integrate such employees, and we may never realize returns on these investments. Additionally, we can provide no assurance that we will attract or retain such personnel.

***We have incurred and will continue to incur significant costs as a result of operating as a public company, and our management will be required to continue to devote substantial time to various compliance initiatives.***

The Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, as well as other rules implemented by the SEC and the New York Stock Exchange (“NYSE”), impose various requirements on public companies, including requiring changes in corporate governance practices. These and proposed corporate governance laws and regulations under consideration may further increase our compliance costs. If compliance with these various legal and regulatory requirements diverts our management’s attention from other business concerns, it could have a material adverse effect on our business, financial condition, and operating results. The Sarbanes-Oxley Act requires, among other things, that we assess the effectiveness of our internal control over financial reporting annually and disclosure controls and procedures quarterly. If we are unable to assert in any future reporting periods that our internal control over financial reporting is effective (or if our independent registered public accounting firm is unable to express an opinion on the effectiveness of our internal controls), such as our restatement of our previously issued consolidated financial statements, we could lose investor confidence in the accuracy and completeness of our financial reports, which would have an adverse effect on our share price.

Although we believe that we currently maintain effective control over our disclosures and procedures and internal control over financial reporting, we have identified in the past and may identify in the future deficiencies regarding the design and effectiveness of our system of internal control over financial reporting. If we experience any material weaknesses in our internal control over financial reporting in the future or are unable to provide unqualified management or attestation reports about our internal controls, we may be unable to meet financial and other reporting deadlines and may incur costs associated with remediation, and any of which could cause our share price to decline. Moreover, if we identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses in future periods, the market price of our common stock could decline, and we could be subject to potential delisting by the NYSE and review by the NYSE, the SEC, or other regulatory authorities, which would require the expenditure by us of additional financial and management resources. As a result, our shareholders could lose confidence in our financial reporting, which would harm our business and the market price of our common stock.

***There are inherent uncertainties involved in estimates, judgments and assumptions used in the preparation of financial statements in accordance with U.S. GAAP. Any changes in estimates, judgments and assumptions could have a material adverse effect on our business, financial condition, and operating results.***

The preparation of financial statements in accordance with U.S. GAAP involves making estimates, judgments and assumptions that affect reported amounts of assets (including intangible assets), liabilities and related reserves, revenues, expenses, and income. Estimates, judgments, and assumptions are inherently subject to change in the future, and any such changes could result in corresponding changes to the amounts of assets, liabilities, revenues, expenses, and income. Any such changes could have a material adverse effect on our business, financial condition, and operating results.

***Our results of operations and financial condition could be materially affected by the enactment of legislation implementing changes in the U.S. or foreign taxation of international business activities or the adoption of other tax reform policies.***

As we expand the scale of our international business activities, any changes in the U.S. or foreign taxation of such activities may increase our worldwide effective tax rate and harm our business, results of operations, and financial condition. For example, the current administration has proposed to increase the U.S. corporate income tax rate, increase U.S. taxation of international business operations, and impose a global minimum tax which has agreement from many countries and the Organization for Economic Cooperation and Development. Also, starting in fiscal year 2022, the Tax Cuts and Jobs Act requires taxpayers to capitalize research and development expenditures and to amortize domestic expenditures over five years and foreign expenditures over fifteen years. If Congress does not modify or repeal this provision, it may reduce our cash flows beginning in fiscal year 2022. Other countries have recently proposed or recommended changes to existing tax laws or have enacted new laws that could impact our tax obligations in countries where we do business or cause us to change the way we operate our business. The impact of future changes to U.S. and foreign tax law on our business is uncertain and could be adverse, and we will continue to monitor and assess the impact of any such changes on our future tax provisions.

***War, terrorism, other acts of violence, or natural or manmade disasters may affect the markets in which we operate, our clients and our service delivery.***

Our business may be adversely affected by instability, disruption, or destruction in a geographic region in which we operate, regardless of cause, including war, terrorism, riot, civil insurrection, or social unrest, and natural or manmade disasters, including famine, flood, fire, earthquake, storm, or pandemic events and spread of disease, such as the COVID-19 pandemic and the Russian invasion of Ukraine. Such events may cause our customers to delay their decisions on spending for the services we provide and give rise to sudden significant changes in regional and global economic conditions and cycles. These events may also pose risks to our personnel and to physical facilities and operations, which could adversely affect our financial results.

***Trading in our common stock is limited and the price of our common shares may be subject to substantial volatility.***

Our common stock is currently listed on the NYSE and was previously listed on the NYSE American LLC (formerly the NYSE MKT LLC). Over the past years, the market price of our common stock has experienced significant fluctuations. Between January 1, 2022, and December 31, 2022, the adjusted closing price on the NYSE for our common stock ranged between \$1.03 and \$2.69 per share. The price of our common stock may continue to be volatile as a result of several factors, some of which are beyond our control. These factors include, but not limited to, the following:

- Developments or lack thereof in any then-outstanding litigation;
- Quarterly variations in our operating results;
- Large purchases or sales of common stock or derivative transactions related to our stock;
- Actual or anticipated announcements of new products or services by us or competitors;
- General conditions in the markets in which we compete; and
- General social, political, economic, and financial conditions, including the significant volatility in the global financial markets.

In addition, we believe there has been and may continue to be substantial trading in derivatives of our stock, including short selling activity or related similar activities, which are beyond our control, and which may be beyond the full control of the SEC and Financial Institutions Regulatory Authority or “FINRA.” While the SEC and FINRA rules prohibit some forms of short selling and other activities that may result in stock price manipulation, such activity may nonetheless occur without detection or enforcement. We have held conversations with regulators concerning trading activity in our stock; however, there can be no assurance that should there be any illegal manipulation in the trading of our stock, it will be detected, prosecuted, or successfully eradicated. Significant short selling market manipulation could cause our stock trading price to decline, to become more volatile, or both.

***The market price of our common stock has been and may continue to be volatile, and you could lose all or part of your investment.***

The trading price of our common stock has been historically volatile and is likely to continue to be volatile. Factors that could cause fluctuations in the market price of our common stock include, but are not limited to the following:

- Price and volume fluctuations in the overall stock market from time to time, including fluctuations due to general economic uncertainty or negative market sentiment;
- Volatility in the market prices and trading volumes of companies in our industry or companies that investors consider comparable;
- Changes in operating performance and stock market valuations of other companies generally, or those in our industry;

- Sales of shares of our common stock by us or our stockholders;
- Failure of securities analysts to maintain coverage of us, changes in financial estimates by securities analysts who follow us, or our failure to meet these estimates or the expectations of investors;
- The financial projections we may provide to the public, any changes in those projections or our failure to meet those projections;
- Announcements by us or our competitors of new products or services;
- The public's reaction to court rulings, our press releases, other public announcements, and filings with the SEC;
- Rumors and market speculation involving us or other companies in our industry;
- Actual or anticipated changes in our results of operations;
- Actual or anticipated developments in our business, our competitors' businesses, or the competitive landscape generally;
- Litigation involving us, our industry or both, or investigations by regulators into our operations or those of our competitors;
- Announced or completed acquisitions of businesses or technologies by us or our competitors;
- New laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- Changes in accounting standards, policies, guidelines, interpretations, or principles;
- Any significant change in our management;
- Other events or factors, including those resulting from war, incidents of terrorism, pandemics, including the COVID-19 pandemic, or responses to these events; and
- General economic conditions such as rising inflation or interest rates in the United States and slow or negative growth of our markets.

Further, in recent years the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. In addition, the stock prices of many technology companies have experienced wide fluctuations that have often been unrelated to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, government shutdowns, global pandemics (such as the COVID-19 pandemic), interest rate changes, the stability of the EU including, but not limited to, effects from the exit of the United Kingdom, the Russia-Ukraine conflict or international currency fluctuations, may cause the market price of our common stock to decline. In the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instituted against these companies.

***We have broad discretion in how we apply our funds, and we may not use these funds effectively, which could affect our results of operations and cause our stock price to decline.***

Our management has broad discretion in the application of our existing cash, cash equivalents and investments and could spend these funds in ways that do not improve our results of operations or enhance the value of our common stock. Pending their use, we may invest our available funds in a manner that does not produce income or that loses value. The failure by our management to apply our available funds effectively could result in financial losses that could cause the price of our common stock to decline and delay the development of our products.

In addition, an entity that, among other things, is or holds itself out as being engaged primarily, or proposes to engage primarily, in the business of investing, reinvesting, owning, trading, or holding certain types of securities would be deemed an Investment Company under the Investment Company Act of 1940 (the "1940 Act"). If we do not manage our investments and business in a manner that meets the requirements for an exemption under the 1940 Act, we may be deemed to be an investment company under the 1940 Act and subject to additional limitations on operating our business including limitations on the issuance of securities, which may make it difficult for us to raise capital.

***The market price of our common stock may decline because our operating results may not be consistent and may be difficult to predict.***

Our operating results have fluctuated in the past due to several factors. We expect that our future operating results may also fluctuate due to the same or similar factors. We had a net loss of \$36.3 million for the year ended December 31, 2022. We had a net loss of \$42.9 million for the year ended December 31, 2021 and net income of \$280.4 million for the year ended December 31, 2020. As of December 31, 2022, we had an accumulated deficit of \$87.2 million. The following include some of the factors that may cause our operating results to fluctuate:

- The outcome of actions to enforce our intellectual property rights currently in progress or that we may undertake in the future, and the timing thereof;
- The impact of the COVID-19 pandemic on our sales cycle and results;
- The amount and timing of receipt of license fees from potential infringers, licensees, or customers;
- The rate of adoption of our patented technologies;
- The number of new license arrangements we may execute, or that may expire, within a particular period and the scope of those licenses, including the number of our patents which are licensed, the extent of prior infringement of our patent rights, royalty rates, timing of payment obligations, expiration date etc.;
- The success of a licensee in selling products that use our patented technologies; and
- The amount and timing of expenses related to our patent filings and enforcement proceedings, including litigation, related to our intellectual property rights.

These fluctuations may make our business particularly difficult to manage, adversely affect our business and operating results, make our operating results difficult for investors to predict and, further, cause our results to fall below investor's expectations and adversely affect the market price of our common stock.

#### **Risks Related to Restatement of our Consolidated Financial Statements**

***We have had to restate our previously issued consolidated financial statements and as part of that process identified a material weakness in our internal control over financial reporting as of December 31, 2021. If we are unable to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results in a timely manner, which may adversely affect investor confidence in us and materially and adversely affect our business and results of operations.***

On May 9, 2022, the audit committee of our board of directors concluded, after discussion with our management and Farber Hass Hurley LLP, our auditors, that the previously issued financial statements during the year ended December 31, 2021 (1) should no longer be relied upon due to an overstatement of the Company's deferred tax asset, as described in the Amendment, and (2) require restatement. As part of the restatement process, we identified a material weakness in our internal control over financial reporting. We remediated our procedures to address the material weakness and believe the enhanced control is operating effectively. Any failure to maintain effective internal controls could adversely impact our ability to report our financial position and results of operations on a timely and accurate basis. If our financial statements are not accurate, investors may not have a complete understanding of our operations. Likewise, if our financial statements are not filed on a timely basis, we could be subject to sanctions or investigations by the stock exchange on which our ordinary shares and other securities are listed, the SEC or other regulatory authorities. In either case, there could result a material adverse effect on our business. Ineffective internal controls could also cause investors to lose confidence in our reported financial information which could have a negative effect on the trading price of our stock. There is also the potential for litigation or other disputes which may include, among others, claims invoking the federal and state securities laws, contractual claims or other claims arising from the restatement and the material weakness in our internal control over financial reporting and the preparation of our financial statements.

**Item 1B. Unresolved Staff Comments.**

None.

**Item 2. Properties**

Our principal executive offices are located at 308 Dorla Court, Suite 206, Zephyr Cove, Nevada, 89448. We lease this property, which comprises approximately 2,090 square feet of office space, from a third party for a term that ends in October 2023. We have no other properties and believe that our office facility is suitable and appropriately supports our current business needs.

**Item 3. Legal Proceedings**

See Note 12 in the notes to our consolidated financial statements.

**Item 4. Mine Safety Disclosure**

Not applicable.

**PART II**

**Item 5. Market for the Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities**

**Market Information**

Our common stock currently trades under the symbol “VHC” on the NYSE.

**Holders of Record**

As of March 28, 2023, we had 56 stockholders of record. Because many of our shares of common stock are held of record by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of beneficial stockholders represented by such record holders.

**Dividend Policy**

See Note 8 in the notes to our consolidated financial statements.

Since our founding as a public company in 2007, each time we have been successful in generating cash relating to the successful outcome of litigation, we have made a special distribution to common shareholders. In 2010, a distribution of \$0.50 per common share closely followed a litigation outcome that resulted in our receipt of \$200 million. In 2020, a distribution of \$1.00 per share closely followed a litigation outcome that resulted in our receipt of \$454 million. On March 30, 2023, we declared a special cash dividend of \$1.00 per common share to be paid on or about April 17, 2023 to shareholders of record on April 10, 2023. Including this special dividend, over the course of VirnetX’s history as a public company VirnetX will have distributed over \$165.9 million in cash to shareholders. If the final outcome of the Apple II litigation described elsewhere in this Form 10-K results in proceeds to us, we are committed to distribute to our shareholders a substantial portion of the net proceeds (after legal costs, licensing costs and taxes), after the case concludes.

**Securities Authorized for Issuance under Equity Compensation Plan**

See Item 12, Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters for information regarding securities authorized for issuance.

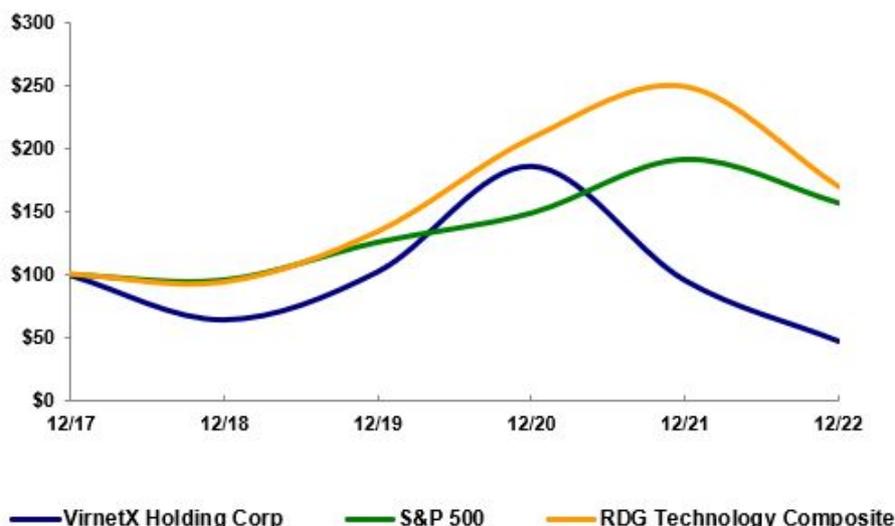
**Stock Performance Graph**

This performance graph shall not be deemed “filed” for purposes of Section 18 of the Exchange Act, or incorporated by reference into any filing of VirnetX Holding Corporation under the Securities Act or the Exchange Act, except as shall be expressly set forth by specific reference in such filing. The stock price performance reflected on this graph is not necessarily indicative of future stock price performance. See the disclosure in part I, Item 1A. “Risk Factors” for more information regarding the risks in investing in our common stock.

The graph below matches VirnetX Holding Corp’s cumulative 5-Year total shareholder return on common stock with the cumulative total returns of the S&P 500 index and the RDG Technology Composite index. The graph tracks the performance of a \$100 investment in our common stock and in each index (with the reinvestment of all dividends) from 12/31/2017 to 12/31/2022.

## COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN\*

Among VirnetX Holding Corp, the S&P 500 Index  
and the RDG Technology Composite Index



\*\$100 invested on 12/31/17 in stock or index, including reinvestment of dividends.  
Fiscal year ending December 31.

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	12/17	12/18	12/19	12/20	12/21	12/22
<b>VirnetX Holding Corp</b>	<b>100.00</b>	<b>64.86</b>	<b>102.70</b>	<b>186.05</b>	<b>95.98</b>	<b>47.99</b>
<b>S&amp;P 500</b>	<b>100.00</b>	<b>95.62</b>	<b>125.72</b>	<b>148.85</b>	<b>191.58</b>	<b>156.89</b>
<b>RDG Technology Composite</b>	<b>100.00</b>	<b>93.54</b>	<b>133.70</b>	<b>208.19</b>	<b>249.39</b>	<b>169.48</b>

### Recent Sales of Unregistered Securities

None.

**Item 6.** [Reserved]

### **Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations**

#### **The Company**

We are an Internet security software and technology company with industry-leading, patented technology for Zero Trust Network Access (“ZTNA”) based secure network communications. VirnetX’s software and technology solutions, including its Secure Domain Name Registry and Technology, VirnetX One™, War Room™, VirnetX Matrix™, and Gabriel Connection Technology™, are designed to be device- and location-independent, and enable a secure real-time communication environment for all types of enterprise applications, services, and critical infrastructures. Our technology generates secure connections on a “single-click” basis, significantly simplifying the deployment network security solutions by eliminating the need for end-users to enter any encryption information. Our portfolio of intellectual property is the foundation of our business model. We currently own approximately 205 total patents and pending applications, including 72 U.S. patents/patent applications and 133 foreign patents/validations/pending applications. Our patent portfolio is primarily focused on securing real-time communications over the Internet, and related services, and is used in all our technology and products, some of which were acquired by our principal operating subsidiary; VirnetX, Inc., from Leidos, Inc., or Leidos, (f/k/a Science Applications International Corporation, or SAIC) in 2006.

Our product portfolio includes sophisticated technologies, products and services that are available for sale worldwide. Our next-generation, VirnetX One™ platform builds upon our patented Secure Domain Names and GABRIEL Connection Technology™ to further enhance the security and efficiency of our patented secure communication links. VirnetX One™ is a security-as-a-service platform that protects enterprise applications, services, and infrastructure from cyber-attacks. Our platform allows enterprises of all sizes to add a “security umbrella” as an added layer on top of their existing infrastructure to further reduce risk and bolster security against ever-growing cyberthreats to data, operating systems, other infrastructure products and gateway security controllers.

Our War Room™ software product provides an industry leading, safe, and secure video conferencing meeting environment where sensitive communications and data is invisible to those not authorized to view it. War Room™ validates permissions of all the users, and devices requesting access to any secure meeting room prior to granting access. We believe our War Room™ will be an attractive solution for government agencies and law enforcement as well as all professional sectors such as legal, financial, and medical where limiting access to confidential data is a critical requirement.

Our VirnetX Matrix™ product provides superior security for internet-enabled enterprise applications and their connected devices, and for control systems currently deployed by those enterprises (e.g., file servers, data back-up systems, VPN/firewalls). VirnetX Matrix™ provides a true “zero-trust” access protection, “single-click” ease of use, and is a highly-effective added layer of protection that is deployed simply, without the need for changes to an enterprise’s existing, in-place infrastructure. We believe VirnetX Matrix™ is an attractive solution for all businesses, cloud and on-premise application service providers, and OEMs, looking to improve visibility and management of their networks to mitigate morphing attacks on their networks and for real time access and control of their users.

Our GABRIEL Collaboration Suite™ is a set of communication applications and tools that use our GABRIEL Secure Communication Platform™. It enables seamless and secure cross platform communications between devices that are enrolled in our “VIRNETX SECURED” network and have our software installed. Our GABRIEL Collaboration Suite™ is available for download and free trial, for Android, iOS, Windows, Linux, and Mac OS X platforms, at <https://virnetx.com>.

During the fourth quarter of 2022 and the first quarter of 2023, the Company engaged in discussions with certain third-parties to pitch the capabilities of VirnetX One™. The Company believes that these parties have interest to secure devices and systems in areas such as healthcare, finance, legal, oil and gas, medical, law enforcement, national defense and related support industries. Although there can be no assurance in this regard, the Company believes that there are opportunities for Company products sales directly to, resale arrangements with and/or adoption as vendor standards by, one or more of these third parties.

We have an ongoing licensing program under which we offer licenses to a portion of our patent portfolio, technology, and software, including our secure domain name registry service, to domain infrastructure providers, communication service providers as well as to system integrators. Our GABRIEL Connection Technology™ License is offered to original equipment manufacturer (“OEM”) customers who want to adopt the GABRIEL Connection Technology™ as their solution for establishing secure connections using secure domain names within their products. We have developed GABRIEL Connection Technology™ Software Development Kit (“SDK”) to assist with rapid integration of these techniques into existing software implementations. Customers who want to develop their own implementation of the VirnetX patented techniques for supporting secure domain names, or other techniques that are covered by our patent portfolio for establishing secure communication links, can purchase a patent license. The number of patents licensed, and therefore the cost of the patent license to the customer, will depend upon which of the patents are used in a particular product or service. These licenses will typically include an initial license fee, as well as an ongoing royalty.

We expect to continue to launch new and enhanced security platforms, software products, and services based on our GABRIEL Connection Technology™. We expect to provide updates to new and existing customers as they are released to the public. Many small and medium businesses have installed our software products in their corporate networks. We intend to continue to expand our customer base with targeted promotions and direct sales initiatives.

Our employees include the core development team behind our patent portfolio, technology, and software. Some members of this team have worked together for over twenty years and were on same team that invented and developed this technology while working at Leidos. The team has continued its research and development work and expanded the set of patents we acquired in 2006 from Leidos, into a larger patent portfolio. This portfolio now serves as the foundation of our products, services, and our licensing business. It is expected to generate most of our future revenue in license fees and royalties. We intend to continue our efforts to develop new products and technologies and further strengthen and expand our patent portfolio. We intend to continue using an outsourced and leveraged model to maintain efficiency and manage costs as we grow our licensing business by, for example, offering incentives to early licensing targets or asserting our rights forum of our patents.

Our employees include the core development team behind our patent portfolio, technology, and software. Some members of this team have worked together for over twenty years and were on same team that invented and developed this technology while working at Leidos. The team has continued its research and development work and expanded the set of patents we acquired in 2006 from Leidos, into a larger patent portfolio. This portfolio now serves as the foundation of our products, services, and our licensing business. It is expected to generate most of our future revenue in license fees and royalties. We intend to continue our efforts to develop new products and technologies and further strengthen and expand our patent portfolio. We intend to continue using an outsourced and leveraged model to maintain efficiency and manage costs as we grow our licensing business by, for example, offering incentives to early licensing targets or asserting our rights for use of our patents.

## **Litigation**

We are subject to various legal proceedings, the outcomes of which are inherently uncertain. We record any potential gains related to legal proceedings only after cash is collected. We record a liability when it is probable that a loss has been incurred and the amount is reasonably estimable, the determination of which requires significant judgment. Resolution of legal matters in a manner inconsistent with management's expectations could have a material impact on our financial condition and operating results. See Note 12 in the notes to our consolidated financial statements for more information.

## **Commitments and Related Party Transactions**

We lease our offices under an operating lease with a third party expiring in October 2023. We recognize rent expense on a straight-line basis over the term of the lease.

We entered into a service agreement for the use of an aircraft from K2 Investment Fund LLC ("LLC") for business travel for our employees. We incurred approximately \$1,123, \$791, and \$324 in rental fees and reimbursements to the LLC in 2022, 2021 and 2020, respectively. We pay for the Company's business usage of the aircraft and have no right to purchase. Our Chief Executive Officer and Chief Administrative Officer are the managing partners of the LLC and control the equity interests of the LLC. We entered into a 12-month non-exclusive agreement with the LLC for use of the plane at a rate of \$8 per flight hour, with no minimum usage requirement. The agreement contains other terms and conditions normal in such transactions and can be cancelled by either us or the LLC with 30 days' notice. The agreement renews on an annual basis unless terminated by either party. Neither party has exercised their termination rights.

## **Critical Accounting Policies and Estimates**

The preparation of financial statements in conformity with U.S. GAAP requires us to 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 revenues and expenses during the reported period. The critical accounting policies we employ in the preparation of our consolidated financial statements are those which involve income taxes, fair value of financial instruments and stock-based compensation.

### ***Use of Estimates***

We prepare our consolidated financial statements in accordance with U.S. GAAP. In doing so, we have to make estimates and assumptions that affect our reported amounts of assets, liabilities, revenues, and expenses, as well as related disclosure of contingent assets and liabilities. In some cases, we could reasonably have used different accounting policies and estimates. In some cases, changes in the accounting estimates are reasonably likely to occur from period to period. Accordingly, actual results could differ materially from our estimates. To the extent that there are material differences between these estimates and actual results, our financial condition or results of operations will be affected. We base our estimates on past experience and other assumptions that we believe are reasonable under the circumstances, and we evaluate these estimates on an ongoing basis. We refer to accounting estimates of this type as critical accounting policies and estimates, which we discuss further below. We have reviewed our critical accounting policies and estimates with the Audit Committee of our Board of Directors.

## **Income Taxes**

We account for income taxes using the asset and liability method. The asset and liability method require the recognition of deferred tax assets and liabilities for expected future tax consequences of temporary differences that currently exist between the tax basis and financial reporting basis of our assets and liabilities. We calculate current and deferred tax provisions based on estimates and assumptions that could differ from actual results reflected on the income tax returns filed during the following years. Adjustments based on filed returns are recorded when identified in the subsequent years. The effect on deferred taxes for a change in tax rates is recognized in income in the period that the tax rate change is enacted. In assessing our deferred tax assets, we consider whether it is more likely than not that all or some portion of the deferred tax assets will not be realized.

A valuation allowance is provided for deferred income tax assets when, in our judgment, based upon currently available information and other factors, it is more likely than not that all or a portion of such deferred income tax assets will not be realized. The determination of the need for a valuation allowance is based on an on-going evaluation of current information including, among other things, historical operating results, estimates of future earnings in different taxing jurisdictions and the expected timing of the reversals of temporary differences. We believe the determination to record a valuation allowance to reduce a deferred income tax asset is a significant accounting estimate because it is based, among other things, on an estimate of future taxable income in the United States and certain other jurisdictions, which is susceptible to change and may or may not occur, and because the impact of adjusting a valuation allowance may be material. In determining when to release the valuation allowance established against our net deferred income tax assets, we consider all available evidence, both positive and negative. We continually assess our ability to generate sufficient taxable income during future periods in which our deferred tax assets may be realized. If and when we believe it is more likely than not that we will recover our deferred tax assets, we will reverse the valuation allowance if any, as an income tax benefit in our statements of operations.

We account for our uncertain tax positions in accordance with U.S. GAAP. The U.S. GAAP method of accounting for uncertain tax positions utilizes a two-step approach to evaluate tax positions. Step one, recognition, requires evaluation of the tax position to determine if based solely on technical merits it is more likely than not to be sustained upon examination. Step two, measurement, is addressed only if a position is more likely than not to be sustained. In step two, the tax benefit is measured as the largest amount of benefit, determined on a cumulative probability basis, which is more likely than not to be realized upon ultimate settlement with tax authorities. If a position does not meet the more likely than not threshold for recognition in step one, no benefit is recorded until the first subsequent period in which the more likely than not standard is met, the issue is resolved with the taxing authority, or the statute of limitations expires. Positions previously recognized are derecognized when we subsequently determine the position no longer is more likely than not to be sustained. Evaluation of tax positions, their technical merits, and measurements using cumulative probability are highly subjective management estimates. Actual results could differ materially from these estimates.

## **Fair Value**

Fair value is the price that would result from an orderly transaction between market participants at the measurement date. A fair value hierarchy prioritizes the inputs used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurement) and the lowest priority to unobservable inputs (Level 3 measurement). Level 2 measurements utilize either directly or indirectly observable inputs in markets other than quoted prices in active markets.

Our financial instruments are stated at amounts that equal, or approximate, fair value. When we estimate fair value, we utilize market data or assumptions that we believe market participants would use in pricing the financial instrument, including assumptions about risk and inputs to the valuation technique. We use valuation techniques, primarily the income and market approach, which maximizes the use of observable inputs and minimize the use of unobservable inputs for recurring fair value measurements.

## **Stock-based Compensation**

We account for stock-based compensation using the fair value recognition method in accordance with U.S. GAAP. We recognize these compensation costs on a straight-line basis over the requisite service period of the award, which is generally a vesting term of 4 years. We recognize forfeitures, if any, when they occur. In addition, we record stock-based compensation expense for awards granted to non-employees at fair value of the consideration received or the fair value of the equity instruments issued, as they vest, over the performance period. See Note 6 in the notes to our consolidated financial statements for more information.

**Results of Operations** (all amounts in this section are expressed in thousands)**Revenue**

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Revenue	\$ 48	\$ 35	\$ 302,636

Revenue generated in 2022 was \$48, compared to \$35 in 2021 and \$302,636 in 2020. In 2020, we collected a lump sum payment of \$454,034 from Apple, Inc., as a result of a favorable court decision relating to a patent infringement case. The one-time payment included past royalties, damages for willful infringement, interest, court costs and attorneys' fees. See Note 2 in the notes to our consolidated financial statements for more information.

We recognized royalty revenue as part of license agreements entered into with customers during the patent infringement actions (see "Litigation"). These revenues relate to payment for use of our patented technology prior to the signing of a license agreement, and royalty payments after the execution of the license agreements.

**Licensing Costs**

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Licensing costs	\$ (4)	\$ (9,083)	\$ 90,101

Included in operating expenses for 2020 was \$90,101 in licensing costs we incurred in conjunction with the proceeds received in the case regarding Apple, Inc. discussed above. Accrued licensing costs of \$9,083 were reversed in the year ended December 31, 2021, as a result of litigation. See Note 12 in the notes to our consolidated financial statements for more information.

**Research and Development Expenses**

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Research and Development	\$ 6,406	\$ 5,577	\$ 8,830

Research and development costs include expenses paid to outside development consultants and compensation-related expenses for our engineering staff. Research and development costs are expensed as incurred.

Our research and development expenses in 2022 were \$6,406 compared to \$5,577 in 2021 and \$8,830 in 2020. The fluctuation in 2022 compared to 2021 and 2020 was primarily due to changes in engineering staff compensation costs.

**Selling, General and Administrative Expenses**

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Selling, General and Administrative	\$ 15,722	\$ 52,715	\$ 45,812

Selling, general and administrative expenses include compensation costs for management and administrative personnel, as well as expenses for outside legal, accounting, and consulting services.

Our selling, general and administrative expenses in 2022 were \$15,722 compared to \$52,715 in 2021 and \$45,812 in 2020. The volatility within selling, general and administrative expenses was primarily due to legal fees related to cases involving the defense of our patents. Legal fees were \$3,305, \$41,828, and \$30,699 in 2022, 2021 and 2020, respectively and represented approximately 21% of selling, general and administrative expenses for 2022 compared to 80% for 2021 and 67% for 2020.

**Gain on Settlement**

In 2020, we recorded a gain of \$41,271 pursuant to a favorable court ruling in the case regarding Apple, Inc. discussed above. See Note 2 in the notes to our consolidated financial statements for more information.

**Interest and Other Income, net**

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Interest and Other Income	\$ 1,848	\$ 48	\$ 108,288

Interest and other income in 2022 was \$1,848 compared to \$48 in 2021 and \$108,288 in 2020. During 2020 we received interest of \$108,221 pursuant to a favorable court ruling in the case with Apple, Inc. discussed above. See Note 2 in the notes to our consolidated financial statements for more information.

**Effective Income Tax Rate**

A reconciliation of the United States federal statutory income tax rate to our effective income tax rate is as follows:

	<u>Year Ended December 31, 2022</u>	<u>Year Ended December 31, 2021</u>	<u>Year Ended December 31, 2020</u>
United States federal statutory rate	21.00%	21.00%	21.00%
State taxes, net of federal benefit	(0.55)%	(0.31)%	0.17%
Valuation allowance	(91.21)%	—%	(12.22)%
Stock based compensation	(9.44)%	(6.68)%	(0.01)%
R&D Credit	1.22%	0.19%	(0.21)%
Other	(0.29)%	(1.57)%	0.06%
Effective income tax rate	<u>(79.27)%</u>	<u>12.63%</u>	<u>8.79%</u>

The Company's effective tax rate for 2022 and 2020 was substantially lower than the statutory Federal income tax rate primarily due to the change in valuation allowance. The Company's effective tax rate for 2021 was substantially lower than the statutory Federal income tax rate primarily due to the effect of stock based compensation, including expiring options.

**Liquidity and Capital Resources**

As of December 31, 2022, our cash and cash equivalents totaled \$86,561 and our short-term investments totaled \$65,462 compared to \$142,018 and \$27,254, respectively, as of December 31, 2021.

We expect that our cash and cash equivalents and short-term investments as of December 31, 2022, will be sufficient to fund our current level of selling, general and administration costs, including legal expenses and provide related working capital for the foreseeable future. Over the longer term, we expect to derive the majority of our future revenue from license fees and royalties associated with our patent portfolio, technology, software and secure domain name registry and product sales in the United States and other markets around the world.

**Universal Shelf Registration and ATM Offering**

On July 30, 2018 we filed a universal shelf registration statement on SEC Form S-3. This replacement registration statement was declared effective by the SEC on August 16, 2018. We used the universal shelf proceeds for development and marketing of our software product and services, and general corporate purposes. The universal shelf registration expired August 16, 2021.

**Item 7A. Quantitative and Qualitative Disclosures about Market Risk**

Consistent with the rules applicable to "smaller reporting companies," we have omitted the information required by Item 7A.

**Item 8. Financial Statements and Supplementary Data**

Set forth below, are the audited consolidated financial statements for our company accompanied by all reports thereon of Farber Hass Hurley LLP (PCAOB No. 223)

**FINANCIAL STATEMENTS****Financial Statements Index**

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<a href="#">Consolidated Balance Sheets of VirnetX Holding Corporation as of December 31, 2022 and December 31, 2021</a>	34
<a href="#">Consolidated Statements of Operations of VirnetX Holding Corporation for the years ended December 31, 2022, December 31, 2021 and, December 31, 2020</a>	35
<a href="#">Consolidated Statements of Comprehensive (Loss) Income of VirnetX Holding Corporation for the years ended December 31, 2022, December 31, 2021, and December 31, 2020</a>	36
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## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and  
Stockholders of VirnetX Holding Corporation

**Opinion on the Financial Statements**

We have audited the accompanying consolidated balance sheets of VirnetX Holding Corporation (the “Company”) as of December 31, 2022 and 2021, and the related consolidated statements of operations, comprehensive income (loss), stockholders’ equity, and cash flows for each of the years in the three-year period ended December 31, 2022, 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, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022, 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 the Company’s financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

**Critical Audit Matter**

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

*Deferred Taxes*

*Description of the Matter*

As discussed in Notes 2 and 10 to the financial statements, the Company recorded a full valuation allowance against the deferred tax assets as of December 31, 2022. Valuation allowances are established when necessary to reduce deferred tax assets to the amounts expected to be realized in the future. In assessing the ability to realize the deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The valuation allowance is based on management's estimates of future taxable income and available evidence, both positive and negative.

Our determination that valuation of deferred taxes is a critical audit matter results from the significant judgment by management when assessing the ability to realize the deferred tax assets, particularly as it relates to estimates of future taxable income. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures relating to management's assessment of the realizability of deferred tax assets.

*Audit Procedures*

Our principal audit procedures related to the Company's deferred taxes included the following:

- We evaluated management's estimates of future taxable income which involved evaluating whether the estimates used by management were reasonable considering the current and past performance of the respective entity and whether the estimates were consistent with evidence obtained in other areas of the audit.
- We evaluated management's assessment of all relevant data that would affect management's estimate of future taxable income to determine whether a deferred tax asset would be realized in the future.

*/s/ Farber Hass Hurley LLP*

We have served as the Company's auditor since 2008.

Chatsworth, California  
March 31, 2023

**VIRNETX HOLDING CORPORATION**  
**CONSOLIDATED BALANCE SHEETS**  
(in thousands, except share amounts)

ASSETS	As of <u>December 31, 2022</u>	As of <u>December 31, 2021</u>
Current assets:		
Cash and cash equivalents	\$ 86,561	\$ 142,018
Investments available for sale	65,462	27,254
Accounts receivables	14	17
Prepaid income tax	—	—
Prepaid expenses and other current assets	224	203
<b>Total current assets</b>	<u>152,261</u>	<u>169,492</u>
Prepaid expenses and other assets	703	1,056
Property and equipment, net	11	18
Deferred tax asset	—	15,950
<b>Total assets</b>	<u>\$ 152,975</u>	<u>\$ 186,516</u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable and accrued liabilities	\$ 373	\$ 338
Accrued payroll and related expenses	311	270
Accrued licensing costs	—	355
Other liabilities, current	47	58
<b>Total current liabilities</b>	<u>731</u>	<u>1,021</u>
Other liabilities	—	46
<b>Total liabilities</b>	<u>731</u>	<u>1,067</u>
Commitments and contingencies (Note 4)		
Stockholders' equity:		
Preferred stock, par value \$0.0001 per share Authorized: 10,000,000 shares at December 31, 2022 and December 31, 2021, Issued and outstanding: 0 shares at December 31, 2022 and December 31, 2021	—	—
Common stock, par value \$0.0001 per share Authorized: 100,000,000 shares at December 31, 2022 and December 31, 2021, Issued and outstanding: 71,424,650 and 71,232,856 shares, at December 31, 2022 and December 31, 2021, respectively	7	7
Additional paid-in capital	239,746	236,445
Accumulated deficit	(87,195)	(50,935)
Accumulated other comprehensive loss	(314)	(68)
<b>Total stockholders' equity</b>	<u>152,244</u>	<u>185,449</u>
<b>Total liabilities and stockholders' equity</b>	<u>\$ 152,975</u>	<u>\$ 186,516</u>

See accompanying notes to consolidated financial statements.

**VIRNETX HOLDING CORPORATION**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**  
(in thousands, except share and per share amounts)

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Revenue	\$ 48	\$ 35	\$ 302,636
Operating expense:			
Licensing costs	(4)	(9,083)	90,101
Research and development	6,406	5,577	8,830
Selling, general and administrative expenses	15,722	52,715	45,812
Total operating expense	22,124	49,209	144,743
(Loss) income from operations	(22,076)	(49,174)	157,893
Gain on settlement	—	—	41,271
Interest and other income, net	1,848	48	108,288
(Loss) income before taxes	(20,228)	(49,126)	307,452
Income tax (provision) benefit	(16,032)	6,205	(27,023)
<b>Net (loss) income</b>	<b>\$ (36,260)</b>	<b>\$ (42,921)</b>	<b>\$ 280,429</b>
Basic (loss) earnings per share	\$ (0.51)	\$ (0.60)	\$ 3.96
Diluted (loss) earnings per share	\$ (0.51)	\$ (0.60)	\$ 3.92
Weighted average shares outstanding basic	71,335,046	71,159,458	70,850,311
Weighted average shares outstanding diluted	71,335,046	71,159,458	71,615,843

See accompanying notes to consolidated financial statements.

**VIRNETX HOLDING CORPORATION**  
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME**  
**(in thousands)**

	<b>Year Ended</b>	<b>Year Ended</b>	<b>Year Ended</b>
	<b>December 31, 2022</b>	<b>December 31, 2021</b>	<b>December 31, 2020</b>
Net (loss) income	\$ (36,260)	\$ (42,921)	\$ 280,429
Other comprehensive (loss) income, net of tax:			
Change in unrealized (loss) gain on investments, net	(246)	(51)	—
Change in foreign currency translation, net	—	(4)	1
Total other comprehensive (loss) gain, net of tax	(246)	(55)	1
Comprehensive (loss) income	<u>\$ (36,506)</u>	<u>\$ (42,976)</u>	<u>\$ 280,430</u>

See accompanying notes to consolidated financial statements.

**VIRNETX HOLDING CORPORATION**  
**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**  
(in thousands, except share amounts)

	Year Ended		
	December 31,		
	2022	2021	2020
<b>Total shareholders' equity, beginning balances</b>	<b>\$ 185,449</b>	<b>\$ 224,437</b>	<b>\$ 5,628</b>
<b>Common stock and additional paid-in capital:</b>			
Beginning balances	236,452	232,464	223,244
Common stock issued for cash, net	—	—	4,488
Common stock issued for options/RsUs, net	(29)	(196)	690
Warrants issued for services	—	—	104
Stock-based compensation	3,330	4,184	3,938
Ending balances	239,753	236,452	232,464
<b>Accumulated deficit (retained earnings)</b>			
Beginning balances	(50,935)	(8,014)	(217,602)
Net (loss) income	(36,260)	(42,921)	280,429
Dividends	—	—	(70,841)
Ending balances	(87,195)	(50,935)	(8,014)
<b>Accumulated other comprehensive loss:</b>			
Beginning balances	(68)	(13)	(14)
Change in unrealized investment (loss) gain, net	(246)	(51)	—
Change in foreign currency translation, net	—	(4)	1
Ending balances	(314)	(68)	(13)
<b>Total shareholders' equity, ending balances</b>	<b>\$ 152,244</b>	<b>\$ 185,449</b>	<b>\$ 224,437</b>
<b>Dividends per share</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ 1.00</b>

See accompanying notes to consolidated financial statements.

**VIRNETX HOLDING CORPORATION**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(in thousands)

	<u>Year Ended</u> <u>December 31, 2022</u>	<u>Year Ended</u> <u>December 31, 2021</u>	<u>Year Ended</u> <u>December 31, 2020</u>
<b>Cash flows from operating activities:</b>			
Net (loss) income	\$ (36,260)	\$ (42,921)	\$ 280,429
Adjustments to reconcile net (loss) income to net cash from operating activities:			
Depreciation	7	4	5
Stock-based compensation	3,330	4,184	3,938
Amortization of warrants issuance costs	—	34	69
Deferred income taxes	16,032	(6,901)	(9,049)
Changes in assets and liabilities:			
Prepaid expenses and other current assets	331	271	419
Accounts payable and accrued liabilities	35	(316)	(692)
Other liabilities	(54)	60	(193)
Accrued payroll and related expenses	41	50	(67)
Accrued licensing costs	(355)	(9,083)	9,438
Accounts receivable	3	(9)	(3)
Prepaid income taxes	(3)	2,905	(2,905)
Net cash (used in) provided by operating activities	<u>(16,893)</u>	<u>(51,722)</u>	<u>281,389</u>
Cash flows from investing activities:			
Purchase of property and equipment	—	(11)	—
Purchase of investments	(67,070)	(26,332)	(33,065)
Proceeds from sale or maturity of investments	28,535	27,371	7,112
Net cash (used in) provided by investing activities	<u>(38,535)</u>	<u>1,028</u>	<u>(25,953)</u>
Cash flows from financing activities:			
Proceeds from exercise of options	—	—	1,046
Proceeds from sale of common stock	—	—	4,488
Dividends paid on common stock	—	—	(70,841)
Taxes paid on cashless exercise of restricted stock units	(29)	(196)	(356)
Net cash used in financing activities	<u>(29)</u>	<u>(196)</u>	<u>(65,663)</u>
Net (decrease) increase in cash and cash equivalents	(55,457)	(50,890)	189,773
Cash and cash equivalents, beginning of period	142,018	192,908	3,135
Cash and cash equivalents, end of period	<u>\$ 86,561</u>	<u>\$ 142,018</u>	<u>\$ 192,908</u>
Cash paid for income taxes	<u>\$ 2</u>	<u>\$ 2</u>	<u>\$ 38,977</u>

See accompanying notes to consolidated financial statements.

**VIRNETX HOLDING CORPORATION**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
**(in thousands except share, per share and per device amounts)**

**Note 1 – Formation and Business of the Company**

VirnetX Holding Corporation, which we refer to as “we”, “us”, “our”, “the Company” or “VirnetX”, is engaged in the business of commercializing a portfolio of patents. We seek to derive revenue from selling our software products including VirnetX War Room™ and VirnetX Matrix™ and licensing our technology, including VirnetX One™, and our secure domain name technology GABRIEL Connection Technology™, to various original equipment manufacturers (“OEMs”) and others, that use our technologies in the development and manufacturing of their own products within the IP-telephony, mobility, fixed-mobile convergence, and unified communications markets or who seek to secure their systems and applications. During 2020, we had revenues from settlement of a patent infringement dispute whereby we received consideration for past sales of licensee that utilized our technology, where there was no prior patent license agreement.

Our portfolio of intellectual property is the foundation of our business model. We currently own approximately 205 total patents and pending applications, including 72 U.S. patents/patent applications and 133 foreign patents/validations/pending applications. Our patent portfolio is primarily focused on securing real-time communications over the Internet, as well as related services such as the establishment and maintenance of a secure domain name registry. Our patented methods also have additional applications in the key areas of device operating systems and network security. The subject matter of all our U.S and foreign patents and pending applications relates generally to securing communications over the Internet and such covers all our technology and other products. Some of our issued U.S. and foreign patents expire at various times during the period from 2023 to 2034.

**Note 2 – Summary of Significant Accounting Policies**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires us to 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 revenues and expenses during the reported period. The critical accounting policies we employ in the preparation of our consolidated financial statements are those which involve impairment of long-lived assets, income taxes, fair value of financial instruments and stock-based compensation.

***Use of Estimates***

We prepare our consolidated financial statements in accordance with U.S. GAAP. In doing so, we have to make estimates and assumptions that affect our reported amounts of assets, liabilities, revenues, and expenses, as well as related disclosure of contingent assets and liabilities. In some cases, we could reasonably have used different accounting policies and estimates. In some cases, changes in the accounting estimates are reasonably likely to occur from period to period. Accordingly, actual results could differ materially from our estimates. To the extent that there are material differences between these estimates and actual results, our financial condition or results of operations will be affected. We base our estimates on past experience and other assumptions that we believe are reasonable under the circumstances, and we evaluate these estimates on an ongoing basis. We refer to accounting estimates of this type as critical accounting policies and estimates, which we discuss further below. We have reviewed our critical accounting policies and estimates with the Audit Committee of our Board of Directors.

***Basis of Consolidation***

The consolidated financial statements include the accounts of VirnetX Holding Corporation and our wholly owned subsidiaries. All intercompany balances and transactions have been eliminated.

**Revenue Recognition**

The Company derives revenue from licensing and royalty fees from contracts with customers which often span several years. We account for this revenue in accordance with Accounting Standards Codification (“ASC”) Topic 606, Revenue from Contracts with Customers. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer. A contract’s transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. Our revenue arrangements may consist of multiple-element arrangements, with revenue for each unit of accounting recognized as the product or service is delivered to the customer.

With the licensing of our patents, performance obligations are generally satisfied at a point in time as work is complete when our patent rights are transferred to our customers. We generally have no further obligation to our customers regarding our technology.

Certain contracts may require our customers to enter into a hosting arrangement with us and for these arrangements, revenue is recognized over time, generally over the life of the servicing contract.

The Company actively monitors and enforces its intellectual property (“IP”) rights, including seeking appropriate compensation from third parties that utilize the Company’s IP without a license. As a result, the Company may, from time to time, receive payments as part of a settlement or compensation for a patent infringement dispute. Proceeds received are allocated to each element identified in the settlement or compensation, based on the fair value of each element. Generally, settlements and compensation may include the following elements: the value of a license or royalty agreement, cost reimbursement, damages, and interest. Elements identified related to licensing and royalty are recognized as revenue. Elements identified as reimbursed costs are generally recorded as a reduction to the reported expenses. Elements identified as damages or interest are generally recorded in other income in the condensed consolidated statement of operations. During the year ended December 31, 2020, the Company collected a lump sum payment of \$454,034 from Apple, Inc., because of a favorable court decision relating to a patent infringement case. The court decision identified the following as the basis of the award: \$302,428 for past royalties, \$41,271 in damages for willful infringement, \$108,221 for interest, and \$2,114 in reimbursement for court costs and attorney’s fees. Elements of the payment were recognized in the Company’s condensed consolidated statement of operations as follows:

**Classification of Payment Received in the Company’s Condensed Consolidated Statement of Operations****Year Ended:**

	<b>December 31, 2020</b>
Revenue (royalties)	\$ 302,428
Operating expenses: selling, general and administrative (reimbursed litigation costs)	2,114
Other income: gain (willful infringement)	41,271
Other income: interest income (pre- and post-judgment interest)	108,221
Total cash received	<u>\$ 454,034</u>

**Licensing Costs**

Included in operating expenses are licensing costs we incurred in conjunction with the proceeds received from Apple Inc., pursuant to a favorable court decision relating to a patent infringement case.

**Contingent Gains**

ASC Topic 450-30-25, Contingent Gains, prohibits recognition of contingent gains until realized. Accordingly, we do not record contingent gains ahead of such realization. Management generally considers any such gains as realized only upon the collection of cash.

**Cash and Cash Equivalents**

We consider all highly liquid investments purchased with original maturities of three months or less at the date of purchase to be cash equivalents. Our cash and cash equivalents are not subject to significant interest rate risk due to the short maturities of these investments.

**Investments**

Investments are classified as available-for-sale and are recorded at fair market value. Unrealized gains and losses are reported as other comprehensive income. Realized gains and losses are recorded in income in the period they are realized using specific identification of each security’s cost basis. We invest our excess cash primarily in highly liquid debt instruments including corporate, government and federal agency securities, with contractual maturities less than two years. By policy, we limit the amount of credit exposure to any one issuer.

### ***Concentration of Credit Risk and Other Risks and Uncertainties***

Our cash and cash equivalents are primarily maintained at two major financial institutions in the United States. Deposits held with these financial institutions may exceed the amount of insurance provided on such deposits. A portion of those balances are insured by the Federal Deposit Insurance Corporation, or FDIC. In 2022, we had, at times, funds that were uninsured. We do not believe that we are subject to any unusual financial risk beyond the normal risk associated with commercial banking relationships. We have not experienced any losses on our deposits of cash and cash equivalents.

### ***Fair Value***

The carrying amounts of our financial instruments, including cash equivalents, accounts payable, and accrued liabilities, approximate fair value because of their generally short maturities.

### ***Property and Equipment***

Property and equipment are stated at historical cost, less accumulated depreciation, and amortization. Depreciation and amortization are computed using the accelerated and straight-line methods over the estimated useful lives of the assets, which range from five to seven years. Repair and maintenance costs are charged to expense as incurred.

### ***Leases***

The Company determines if an arrangement is a lease at inception in accordance with ASC Topic 842. Operating lease right-of-use (“ROU”) assets are included in Prepaid expenses, and other assets on the Condensed Consolidated Balance Sheets. ROU assets represent the Company’s right to use an underlying asset for the lease term and lease liabilities represent the Company’s obligation to make lease payments arising from the lease. ROU assets and lease liabilities are recognized at the commencement date based on the present value of lease payments over the lease term.

### ***Intangible Assets***

We record intangible assets at cost, less accumulated amortization. Amortization of intangible assets is provided over their estimated useful lives, which can range from 3 to 15 years, on either a straight-line basis or as revenue is generated by the assets.

### ***Impairment of Long-Lived Assets***

We identify and record impairment losses on long-lived assets used in operations when events and changes in circumstances indicate that the carrying amount of an asset might not be recoverable, but not less than annually. Recoverability is measured by comparison of the anticipated future net undiscounted cash flows to the related assets’ carrying value. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the projected discounted future net cash flows arising from the asset.

### ***Research and Development***

Research and development costs include expenses paid to outside development consultants and compensation related expenses for our engineering staff. Research and development costs are expensed as incurred.

## **Income Taxes**

We account for income taxes using the asset and liability method. The asset and liability method requires the recognition of deferred tax assets and liabilities for expected future tax consequences of temporary differences that currently exist between the tax basis and financial reporting basis of our assets and liabilities. We calculate current and deferred tax provisions based on estimates and assumptions that could differ from actual results reflected on the income tax returns filed during the following years. Adjustments based on filed returns are recorded when identified in the subsequent years. The effect on deferred taxes for a change in tax rates is recognized in income in the period that the tax rate change is enacted. In assessing our deferred tax assets, we consider whether it is more likely than not that all or some portion of the deferred tax assets will not be realized.

The 2017 U.S. Tax Cuts and Jobs Act changes IRC Section 174, regarding capitalization of book research and development (“R&D”) expenses for income tax purposes. Effective for tax years beginning in 2022 IRC Section 174 requires the capitalization of book R&D expenses which are capitalized and amortized over 5 years for domestic R&D expenses and over 15 years for foreign R&D expenses. To date there has been limited guidance from the IRS on how to quantify the amount of book R&D expenses subject to capitalization, including the indirect expenses supporting the R&D function. Due to the limited guidance, some assumptions were made in our estimates.

A valuation allowance is provided for deferred income tax assets when, in our judgment, based upon currently available information and other factors, it is more likely than not that all or a portion of such deferred income tax assets will not be realized. The determination of the need for a valuation allowance is based on an on-going evaluation of current information including, among other things, historical operating results, estimates of future earnings in different taxing jurisdictions and the expected timing of the reversals of temporary differences. We believe the determination to record a valuation allowance to reduce a deferred income tax asset is a significant accounting estimate because it is based, among other things, on an estimate of future taxable income in the United States and certain other jurisdictions, which is susceptible to change and may or may not occur, and because the impact of adjusting a valuation allowance may be material. In determining when to release the valuation allowance established against our net deferred income tax assets, we consider all available evidence, both positive and negative. We continually assess our ability to generate sufficient taxable income during future periods in which our deferred tax assets may be realized. If and when we believe it is more likely than not that we will recover our deferred tax assets, we will reverse the valuation allowance as an income tax benefit in our statements of operations.

We account for our uncertain tax positions in accordance with U.S. GAAP, which utilizes a two-step approach to evaluate tax positions. Step one, recognition, requires evaluation of the tax position to determine if based solely on technical merits it is more likely than not to be sustained upon examination. Step two, measurement, is addressed only if a position is more likely than not to be sustained. In step two, the tax benefit is measured as the largest amount of benefit, determined on a cumulative probability basis, which is more likely than not to be realized upon ultimate settlement with tax authorities. If a position does not meet the more likely than not threshold for recognition in step one, no benefit is recorded until the first subsequent period in which the more likely than not standard is met, the issue is resolved with the taxing authority, or the statute of limitations expires. Positions previously recognized are derecognized when we subsequently determine the position no longer is more likely than not to be sustained. Evaluation of tax positions, their technical merits, and measurements using cumulative probability are highly subjective management estimates. Actual results could differ materially from these estimates.

## **Stock-Based Compensation**

We account for stock-based compensation using the fair value recognition method in accordance with U.S. GAAP. We recognize these compensation costs on a straight-line basis over the requisite service period of the award, which is generally a vesting term of 4 years. We recognize forfeitures, if any, when they occur. In addition, we record stock-based compensation expense for awards granted to non-employees at fair value of the consideration received or the fair value of the equity instruments issued, as they vest, over the performance period (See Note 6 - Stock-Based Compensation).

## **Earnings per Share**

Basic earnings per share are computed by dividing earnings available to common stockholders by the weighted average number of outstanding common shares during the period. Diluted earnings per share is computed by dividing net income by the weighted average number of shares outstanding during the period increased to include the number of additional shares of common stock that would have been outstanding if the potentially dilutive securities had been issued.

**New Accounting Pronouncements**

In December 2019, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2019-12 Income Taxes (Topic 740). The amendments in this ASU simplify the accounting for income taxes by removing certain exceptions to the general principles in Topic 740. The amendments also improve consistent application of and simplify U. S. GAAP for other areas of Topic 740 by clarifying and amending existing guidance. The amendments in this ASU are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020. We adopted this ASU on January 1, 2021 and there was no material impact on our financial position or cash flows as a result.

**Note 3 – Property and Equipment**

Our major classes of property and equipment were as follows:

	<b>December 31</b>	
	<b>2022</b>	<b>2021</b>
Office furniture	\$ 79	\$ 79
Computer equipment	92	92
<b>Total</b>	<b>171</b>	<b>171</b>
Less accumulated depreciation	(160)	(153)
<b>Total property and equipment, net</b>	<b>\$ 11</b>	<b>\$ 18</b>

Depreciation expense for 2022, 2021 and 2020 was \$7, \$4, and \$5, respectively.

**Note 4 – Commitments, Contingencies and Related Party Transactions**

We lease our offices under an operating lease with a third party expiring in October 2023. We recognize rent expense on a straight-line basis over the term of the lease. Rent expense was \$54 in 2022 and \$56 for both 2021 and 2020. Future minimum rents due under the lease total \$46 in 2023, when the lease expires.

We entered into a service agreement for the use of an aircraft from K2 Investment Fund LLC (“LLC”) for business travel for our employees. We incurred approximately \$1,123, \$791, and \$324 in rental fees and reimbursements to the LLC in 2022, 2021 and 2020, respectively. We pay for the Company’s business usage of the aircraft and have no right to purchase. Our Chief Executive Officer and Chief Administrative Officer are the managing partners of the LLC and control the equity interests of the LLC. We entered into a 12-month non-exclusive agreement with the LLC for use of the plane at a rate of \$8 per flight hour, with no minimum usage requirement. The agreement contains other terms and conditions normal in such transactions and can be cancelled by either us or the LLC with 30 days’ notice. The agreement renews on an annual basis unless terminated by either party. Neither party has exercised their termination rights.

**Note 5 – Stock Plan**

We have an equity incentive plan for employees and others called the VirnetX Holding Corporation 2013 Equity Incentive Plan (the “2013 Plan”), which has been approved by our stockholders. To the extent that any award should expire, become un-exercisable or is otherwise forfeited, the shares subject to such award will again become available for issuance under the 2013 Plan. The 2013 Plan provides for the granting of stock options and restricted stock units purchase rights (“RSUs”) to our employees and consultants. Stock options granted under the 2013 Plan may be incentive stock options or nonqualified stock options. Incentive stock options (“ISOs”) may only be granted to our employees (including officers and directors). Nonqualified stock options (“NSOs”) and stock purchase rights may be granted to our employees and consultants. The 2013 Plan expires in 2023.

In April 2021, the Board approved an amendment and restatement of the 2013 Plan to, among other things, increase the shares reserved under the Plan by 2,500,000 shares (the “Plan Amendment”). Our stockholders approved the Plan Amendment at the 2021 Annual Meeting of the Stockholders held on June 3, 2021. The 2013 Plan generally provides for the granting of shares of our common stock, including stock options and RSUs. Options may be granted under the 2013 Plan with an exercise price determined by our Board of Directors, or a duly appointed committee thereof, provided, however, that the exercise price of an option granted to any employee shall be not less than 100% of the fair market value at the date of grant in the case of ISOs or 85% of the fair market value at the date of grant in the case of an NSO. The exercise price of an ISO or NSO granted to one of our Named Executive Officers shall not be less than 100% fair market value of the shares at the date of grant and the exercise price of an ISO granted to a 10% shareholder shall not be less than 110% of the fair market value of the shares on the date of grant. Stock options granted under the 2013 Plan typically vest over four years and have a 10-year term. All RSUs are considered to be granted at the fair value of our stock on the date of grant because they have no exercise price. RSUs typically vest over four years. As of December 31, 2022, there were 1,563,345 shares available for grant under the 2013 Plan.

## Note 6 – Stock-Based Compensation

The following tables summarize information and activity under the plan for the indicated periods.

Options Outstanding				Options Vested and Exercisable		
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Number Exercisable	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price
\$ 1.22 - 1.58	801,004	9.40	\$ 1.48	122,001	9.38	\$ 1.45
\$ 2.35 - 6.95	5,504,396	5.66	\$ 4.50	4,602,729	5.17	\$ 4.42
\$ 14.52 - 35.05	510,625	0.93	\$ 20.32	510,625	0.93	\$ 20.32
	<u>6,816,025</u>	<u>5.75</u>	<u>\$ 5.33</u>	<u>5,235,355</u>	<u>4.86</u>	<u>\$ 5.90</u>

	Options			
	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value
Outstanding at December 31, 2019	5,630,021	\$ 8.49	—	\$ —
Options granted	747,500	6.07	—	—
Options exercised	(262,031)	3.99	—	—
Options cancelled	(302,969)	5.30	—	—
Outstanding at December 31, 2020	5,812,521	\$ 8.55	—	\$ —
Options granted	999,500	4.43	—	—
Options exercised	—	—	—	—
Options cancelled	(414,584)	22.54	—	—
Outstanding at December 31, 2021	6,397,437	\$ 6.99	—	\$ —
Options granted	801,004	1.48	—	—
Options exercised	—	—	—	—
Options cancelled	(382,416)	25.06	—	—
Outstanding at December 31, 2022	<u>6,816,025</u>	<u>\$ 5.33</u>	<u>5.75</u>	<u>\$ 3</u>
Options exercisable at December 31, 2022	<u>5,235,355</u>	<u>\$ 5.90</u>	<u>4.86</u>	<u>\$ 2</u>

	RSUs		
	Number of RSUs	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value
Outstanding at December 31, 2019	498,489	\$ 4.71	\$ —
RSUs granted	218,329	6.89	—
RSUs vested	(212,495)	4.63	—
RSUs cancelled	—	—	—
Outstanding at December 31, 2020	504,323	\$ 5.69	\$ —
RSUs granted	236,661	4.61	—
RSUs vested	(215,165)	5.23	—
RSUs cancelled	(16,664)	5.45	—
Outstanding at December 31, 2021	509,155	\$ 5.38	\$ —
RSUs granted	258,363	1.46	—
RSUs vested	(215,413)	5.15	—
RSUs cancelled	—	—	—
Outstanding at December 31, 2022	552,105	\$ 3.65	\$ —

Intrinsic value is calculated as the difference between the per-share market price of our common stock on the last trading day of 2022, which was \$1.30 and the exercise price of the options. For options exercised, the intrinsic value is the difference between market price and the exercise price on the date of exercise. In 2022 and 2021, no options were exercised. In 2020, we received cash proceeds of \$1,046 from stock options exercised. The total intrinsic value of options exercised was \$151 in 2020.

Stock-based compensation expense is included in operating expense for each period as follows:

<b>Stock-Based Compensation by Type of Award</b>	<b>Year Ended December 31, 2022</b>	<b>Year Ended December 31, 2021</b>	<b>Year Ended December 31, 2020</b>
Stock options	\$ 2,303	\$ 3,067	\$ 2,872
RSUs	1,027	1,117	1,066
Total stock-based compensation expense	\$ 3,330	\$ 4,184	\$ 3,938

As of December 31, 2022, there was \$3,972 of unrecognized stock-based compensation expense related to unvested stock options and \$1,449 of unrecognized stock-based compensation expense related to unvested RSUs. These costs are expected to be recognized over a weighted-average period of 2.66 and 2.43 years, respectively.

The fair value of each option grant was estimated on the date of grant using the Black-Scholes option pricing model using the following weighted average assumptions:

	<b>Year Ended December 31, 2022</b>	<b>Year Ended December 31, 2021</b>	<b>Year Ended December 31, 2020</b>
Expected stock price volatility	85.39%	90.58%	93.45%
Risk-free interest rate	3.09%	1.06%	0.63%
Expected life term	6.2 years	6.2 years	6.2 years
Expected dividends	0%	0%	0%

Based on the Black-Scholes option pricing model, the weighted average estimated fair value of employee stock options granted was \$1.09, \$3.32 and \$4.62 per share during 2022, 2021 and 2020, respectively.

The expected life was determined using the simplified method outlined in ASC 718, “*Compensation - Stock Compensation*”. Expected volatility of the stock options was based upon historical data and other relevant factors.

## Note 7 – Earnings Per Share

Basic earnings per share are based on the weighted average number of shares outstanding for a period. Diluted earnings per share are based upon the weighted average number of shares and potentially dilutive common shares outstanding. Potential common shares outstanding principally include stock options and RSUs under our stock plan and warrants. During 2022 and 2021, we incurred losses; therefore, the effect of any common stock equivalent would be anti-dilutive during those years.

The table below sets forth the basic and diluted loss per share calculations:

	Year Ended December 31,		
	2022	2021	2020
Net (loss) income	\$ (36,260)	\$ (42,921)	\$ 280,429
Basic weighted average number of shares outstanding	71,335	71,159	70,850
Effect of dilutive securities	—	—	766
Diluted weighted average number of shares outstanding	71,335	71,159	71,616
Basic (loss) earnings per share	\$ (0.51)	\$ (0.60)	\$ 3.96
Diluted (loss) earnings per share	\$ (0.51)	\$ (0.60)	\$ 3.92

#### Note 8 – Common Stock

Each share of common stock has the right to one vote. The holders of common stock are entitled to receive dividends whenever funds are legally available and when declared by our Board of Directors, subject to the prior rights of holders of all classes of stock outstanding having priority rights as to dividends. Our restated articles of incorporation authorize us to issue up to 100,000,000 shares of \$0.0001 par value common stock.

On July 30, 2018 we filed a universal shelf registration statement on SEC Form S-3. This replacement registration statement was declared effective by the SEC on August 16, 2018. We used the universal shelf proceeds for development and marketing of our software product and services, and general corporate purposes. The universal shelf registration expired August 16, 2021.

#### Dividends

On May 8, 2020, we declared a special cash dividend to shareholders of record as of the close of business on May 18, 2020 of \$1 per share of common stock, payable on May 26, 2020. The timing and amounts of future dividends, if any, will depend on market conditions, corporate business and financial considerations and regulatory requirements.

#### Warrants

In 2020, we issued warrants for the purchase of 25,000 shares of common stock at an exercise price of \$5.75 per share, exercisable on the date of grant expiring in April 2025. The weighted average fair value at the grant date was \$4.16 per warrant. The fair value at the grant date was estimated utilizing the Black-Scholes valuation model with the following weighted average assumptions (i) dividend yield on our common stock of 0 percent (ii) expected stock price volatility of 97 percent (iii) a risk-free interest rate of 0.27 percent and (iv) and expected option term of 5 years.

Warrants Issued	Exercise Price	Outstanding and Exercisable		Terminated / Cancelled	Outstanding and Exercisable		Expiration Date
		December 31, 2021	Issued		Exercised	December 31, 2022	
25,000	\$ 5.75	25,000	—	—	25,000	—	April 30, 2025

In April 2020, 25,000 warrants with an exercise price of \$7.00 per share expired.

#### Note 9 – Employee Benefit Plan

We sponsor a defined contribution 401k plan covering substantially all our employees. Our matching contribution to the plan was approximately \$179, \$145, and \$112 in 2022, 2021 and 2020, respectively.

**Note 10 – Income Taxes**

The income tax provision (benefit) is comprised of the following:

	<u>Year Ended</u> <u>December 31, 2022</u>	<u>Year Ended</u> <u>December 31, 2021</u>	<u>Year Ended</u> <u>December 31, 2020</u>
Current:			
Federal	\$ —	\$ 661	\$ 35,122
State	3	35	950
Foreign	—	—	—
	<u>3</u>	<u>696</u>	<u>36,072</u>
Deferred:			
Federal	15,920	(7,025)	(8,816)
State	109	124	(233)
	<u>16,029</u>	<u>(6,901)</u>	<u>(9,049)</u>
Total income tax (benefit) provision	<u>\$ 16,032</u>	<u>\$ (6,205)</u>	<u>\$ 27,023</u>

A reconciliation of the United States federal statutory income tax rate to our effective income tax rate is as follows:

	<u>Year Ended</u> <u>December 31, 2022</u>	<u>Year Ended</u> <u>December 31, 2021</u>	<u>Year Ended</u> <u>December 31, 2020</u>
United States federal statutory rate	21.00%	21.00%	21.00%
State taxes, net of federal benefit	(0.55)%	(0.31)%	0.17%
Valuation allowance	(91.21)%	—	(12.22)%
Stock based compensation	(9.44)%	(6.68)%	(0.01)%
R&D Credit	1.22%	0.19%	(0.21)%
Other	(0.29)%	(1.57)%	0.06%
Effective income tax rate	<u>(79.27)%</u>	<u>12.63%</u>	<u>8.79%</u>

The Company's effective tax rate for 2022 and 2020 was substantially lower than the statutory Federal income tax rate primarily due to the change in valuation allowance. The Company's effective tax rate for 2021 was substantially lower than the statutory Federal income tax rate primarily due to the effect of stock based compensation, including expiring options.

Deferred tax assets (liabilities) consist of the following:

	<u>As of</u> <u>December 31, 2022</u>	<u>As of</u> <u>December 31, 2021</u>
Deferred tax assets:		
Reserves and accruals	\$ 147	\$ 58
Research and development credits and other credits	430	92
Net operating loss carry forward	11,988	9,519
Stock based compensation	5,018	6,287
Other	970	—
Total deferred tax assets	<u>\$ 18,553</u>	<u>\$ 15,956</u>
Valuation allowance	(18,553)	—
Deferred tax assets after valuation allowance	<u>—</u>	<u>15,956</u>
Total deferred tax liability – depreciation and amortization	<u>—</u>	<u>(6)</u>
Net deferred tax assets	<u>\$ —</u>	<u>\$ 15,950</u>

Pursuant to changes in IRC Section 174 effective for 2022, we capitalized direct and indirect research and development costs in our tax return totaling \$5,140; \$514 of these expenses will be amortized in our 2022 tax return. At December 31, 2022, we had federal and state net operating loss carryforwards of approximately \$57,085 and \$108,745, respectively. Federal net operating loss carryforwards do not expire. None of the state net operating loss carryforward is apportioned to a deferred tax asset, because currently we do not have operations in states where losses accumulated. The state net operating loss carryforward begins expiring in 2029.

We are required to recognize the financial statement effects of a tax position when it is more likely than not, based on the technical merits, that the position will be sustained upon examination. At December 31, 2022, we have no uncertain tax positions.

Our tax years for 2005 and forward are subject to examination by the U.S. tax authority and various state tax authorities. These years are open due to NOLs and tax credits generated in these years were utilized in 2020. The statute of limitation for these years shall expire three years after the date of filing 2020 income tax returns, which is October 2024.

Our policy is to recognize interest and penalties, if any, accrued on any unrecognized tax benefits, as a component of income tax expense. We had no interest or penalties accrued in 2022.

#### Note 11 – Fair Value Measurement

Fair value is the price that would result from an orderly transaction between market participants at the measurement date. A fair value hierarchy prioritizes the inputs used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurement) and the lowest priority to unobservable inputs (Level 3 measurement). Level 2 measurements utilize either directly or indirectly observable inputs in markets other than quoted prices in active markets.

Our financial instruments are stated at amounts that equal, or approximate, fair value. When we estimate fair value, we utilize market data or assumptions that we believe market participants would use in pricing the financial instrument, including assumptions about risk and inputs to the valuation technique. We use valuation techniques, primarily the income and market approach, which maximizes the use of observable inputs and minimize the use of unobservable inputs for recurring fair value measurements.

*Mutual funds:* Valued at the quoted net asset value (NAV) of shares held.

*U.S. agency and treasury securities:* Fair value measured at the closing price reported on the active market on which the individual securities are traded.

The following table shows the adjusted cost, gross unrealized gains, gross unrealized losses, and fair value of our financial assets as of December 31, 2022 and 2021 (in thousands):

	December 31, 2022					
	Adjusted Cost	Unrealized Gains	Unrealized Losses	Fair Value	Cash and Cash Equivalents	Investments Available for Sale
Cash	\$ 16,949	\$ —	\$ —	\$ 16,949	\$ 16,949	\$ —
Level 1:						
Mutual funds	66,493	—	—	66,493	66,493	—
U.S. agency and treasury securities	68,958	9	(386)	68,581	3,119	65,462
	135,451	9	(386)	135,074	69,612	65,462
Total	\$ 152,400	\$ 9	\$ (386)	\$ 152,023	\$ 86,561	\$ 65,462

**December 31, 2021**

	Adjusted Cost	Unrealized Gains	Unrealized Losses	Fair Value	Cash and Cash Equivalents	Investments Available for Sale
Cash	\$ 35,428	\$ —	\$ —	\$ 35,428	\$ 35,428	\$ —
Level 1:						
Mutual funds	106,590	—	—	106,590	106,590	—
U.S. agency and treasury securities	27,304	—	(50)	27,254	—	27,254
	<u>133,894</u>	<u>—</u>	<u>(50)</u>	<u>133,844</u>	<u>106,590</u>	<u>27,254</u>
Total	<u>\$ 169,322</u>	<u>\$ —</u>	<u>\$ (50)</u>	<u>\$ 169,272</u>	<u>\$ 142,018</u>	<u>\$ 27,254</u>

The maturities of our investments generally range from within one to two years. Actual maturities could differ from contractual maturities due to call or prepayment provisions.

**Note 12 – Litigation (all dollar amounts in this section are expressed in thousands except for rates per device)**

We have several intellectual property infringement lawsuits pending in the United States Court of Appeals for the Federal Circuit (“USCAFC”).

**VirnetX Inc. v. Apple, Inc. (Case 6:12-CV-00855-LED) (“Apple II”)**

This case began on November 6, 2012, when we filed a complaint against Apple in United States District Court (“USDC”) in which we alleged that Apple infringed on certain of our patents, (U.S. Patent Nos. 6,502,135, 7,418,504, 7,921,211 and 7,490,151). We sought damages and injunctive relief. The accused products include the iPhone 5, iPod Touch 5th Generation, iPad 4th Generation, iPad mini, and the latest Macintosh computers. Post-trial motions hearing was held on July 18, 2018. On August 31, 2018, the USDC entered a Final Judgment and issued its Memorandum Opinion and Order regarding post-trial motions, affirming the jury’s verdict of \$502,600 and granting VirnetX motions for supplemental damages, a sunset royalty, and the royalty rate of \$1.20 per infringing iPhone, iPad and Mac products, pre-judgment and post-judgment interest and costs. Apple filed a notice of appeal with the United States Court of Appeals for the Federal Circuit (“USCAFC”) in the Apple II case.

On October 9, 2018, USCAFC docketed the appeal as Case No. 19-1050 - VirnetX Inc. v. Apple Inc. On January 24, 2019 Apple filed its opening brief. We filed our response brief on March 1, 2019. Apple filed its reply brief on April 5, 2019. The oral arguments were heard on October 4, 2019. On November 22, 2019, the USCAFC issued an opinion affirming the district court’s findings that Apple is precluded from making certain invalidity arguments and that Apple infringed the ‘135 and ‘151 patents; reversing the USDC’s finding that Apple infringed the ‘504 and ‘211 patents; and remanding the case for proceedings on damages. Apple sought panel and en banc rehearing, which the USCAFC denied on February 10, 2020.

On February 22, 2020, the USDC issued a scheduling order for the parties to brief the court about the need for a new trial for recalculating the damages. We filed our motion for entry of judgment on February 28, 2020. The arguments on this matter were heard on April 14, 2020. In its order, unsealed on May 1, 2020, the USDC denied VirnetX’s motion for entry of a new judgment based on the prior jury verdict and ordered a new jury trial on damages. On August 10, 2020, the USDC granted Apple’s motion for continuance and reset the date to October 26, 2020. On October 30, 2020, a jury returned a \$502,800 verdict in favor of VirnetX based on Apple’s infringement of two network security patents: VirnetX US Patents No. 6,502,135 and No. 7,490,151. The jury verdict called for damages of \$0.84 per accused device since the 2013 launch of Apple’s iOS 7 operating system and represents 598,629,580 infringing units from US sales only. On January 15, 2021, the district court denied Apple’s motion for judgment as a matter of law, and on February 4, 2021, Apple filed a notice of appeal to the USCAFC.

On February 22, 2021, USCAFC docketed the appeal as Case No. 19-1672. Apple’s opening brief was filed on June 2, 2021. VirnetX filed its responsive brief on July 26, 2021. Apple filed its reply brief on September 13, 2021. The briefing is complete, and oral arguments were held on September 8, 2022. On March 31, 2023, the Federal Circuit issued its decision vacating the district court’s judgement in this matter and remanding it back to the district court with instructions to dismiss the case as moot. We are evaluating all of our available options in this matter, including potentially seeking rehearing or certiorari review.

**VirnetX Inc. v. Mangrove Partners Master Fund, Ltd., Apple Inc. (USCAFC Case 20-2271) and VirnetX Inc. v. Mangrove Partners Master Fund, Ltd., Apple Inc., and Black Swamp, LLC (USCAFC Case 20-2272)**

On September 15, 2020, we filed with the USCAFC an appeal of the invalidity findings by the Patent Trial and Appeal Board (“PTAB”) in inter-partes review proceedings IPR2015-01046 and IPR2016-00062 involving our U.S. Patent No. 6,502,135, and an appeal of the invalidity findings by the PTAB in inter-partes review proceedings IPR2015-1047, IPR2016- 00063, and IPR2016-00167 involving our U.S. Patent No. 7,490,151. On September 25, 2020, the USCAFC issued an order consolidating the two appeals. On December 15, 2020, we filed a motion to vacate the PTAB decisions below and to remand these appeals to the PTAB. On March 16, 2021, the USCAFC denied the motion without prejudice to us raising the challenges made in the motion in our opening brief. Our opening brief was filed on June 7, 2021.

On June 23, 2021, the USCAFC entered an order directing us (and parties in other appeals that raised Appointments Clause challenges) to file a brief explaining how they believe their cases should proceed in light of the Supreme Court’s decision in *United States v. Arthrex, Inc.*, 141 S. Ct. 1970 (2021). On July 7, 2021, we filed a brief in response to the court’s order. Other parties, including the U.S. Patent and Trademark Office (“USPTO”) filed their responses on July 21, 2021. On August 19, 2021, USCAFC issued an order remanding these appeals for the limited purpose of allowing VirnetX the opportunity to request rehearing of the PTAB’s final written decisions by the Director of the USPTO. The USCAFC retained jurisdiction over the appeals in the meantime. On September 20, 2021, we filed our requests for Director rehearing with the USPTO. On October 29, 2021, our requests for Director rehearing were denied. We subsequently filed an amended opening brief to the USCAFC on December 10, 2021, the other parties filed response briefs on February 2, 2022, and we filed a reply brief on February 22, 2022. All the briefings have been completed. The oral arguments in this matter were held on September 8, 2022. On March 30, 2023, the USCAFC issued its decision affirming PTAB’s decisions finding certain claims of the ‘135 patent and the ‘151 patent to be unpatentable. We are evaluating all of our available options in this matter, including potentially seeking rehearing or certiorari review.

**VirnetX Inc. v. Hirshfeld (USCAFC Case 17-2593, -2594)**

On September 22, 2017, we filed with the USCAFC an appeal of the invalidity findings by the PTAB in inter-partes review proceeding IPR2016-00693 involving our U.S. Patent No. 7,418,504, and an appeal of the invalidity findings by the PTAB in inter-partes review proceeding IPR2016-00957 involving our U.S. Patent No. 7,921,211. On September 16, 2021, USCAFC issued an order remanding these appeals for the limited purpose of allowing VirnetX the opportunity to request rehearing of the PTAB’s final written decisions by the Director of the USPTO. The USCAFC retained jurisdiction over the appeals in the meantime. On October 18, 2021, we filed our requests for Director rehearing with the USPTO. On January 7, 2022, our requests for Director rehearing were denied. On January 21, 2022, we informed the USCAFC about the denial of Director rehearing and requested that the court dismiss the appeal involving IPR2016-00957 as moot and vacate the PTAB’s underlying decision. On April 4, 2022, the USCAFC vacated the PTAB’s decision in IPR2016-00957 and remanded Appeal No. 17-2594 with instructions to dismiss. In the April 4, 2022 order, the USCAFC further set a briefing schedule, in Appeal No. 17-2593. VirnetX filed its opening brief on September 12, 2022. The USPTO filed its response brief on December 20, 2022. VirnetX filed its reply brief on February 14, 2023, and we currently await scheduling of oral arguments.

**VirnetX Inc. v. Cisco Systems, Inc. (USCAFC Case 19-1671)**

On March 18, 2019, we filed with the USCAFC an appeal of the invalidity findings by the PTAB in inter-partes re-examination proceeding 95/001,679 involving our U.S. Patent No. 6,502,135. On October 5, 2021, USCAFC issued an order remanding these appeals for the limited purpose of allowing VirnetX the opportunity to request rehearing of the PTAB’s final written decisions by the Director of the PTO. The USCAFC retained jurisdiction over the appeals in the meantime. Our request for Director rehearing with the PTO was filed on November 5, 2021. On January 10, 2022, our request for Director rehearing was denied. We informed the USCAFC about the denial of Director rehearing. VirnetX’s opening brief was filed on June 23, 2022. The USPTO’s response brief was filed on August 2, 2022, and Cisco’s response brief was filed on September 2, 2022. VirnetX filed its reply brief on October 7, 2022, and we currently await scheduling of oral arguments.

**VirnetX Inc. v. Apple Inc. (USCAFC Case 22-1523) (“Apple Reexam I”)**

On March 10, 2022, we filed with the USCAFC an appeal of the invalidity findings by the PTAB in inter-partes re-examination proceeding 95/001,682 involving our U.S. Patent No. 6,502,135. Our opening brief was filed on August 22, 2022. Apple and USPTO each filed a response brief on December 28, 2022. VirnetX filed its reply brief on February 8, 2023, and we currently await scheduling of oral arguments.

**VirnetX Inc. v. Apple Inc. (USCAFC Case 22-1997) (“Apple Reexam II”)**

On July 6, 2022, we filed with the USCAFC an appeal of the invalidity findings by the PTAB in inter-partes re-examination proceeding 95/001,697 involving our U.S. Patent No. 7,490,151. On October 17, 2022, we filed a motion to remand the appeal in light of the PTAB’s refusal to permit Director rehearing. On January 23, 2023, the USCAFC denied that motion without prejudice to the parties raising their arguments in the merits briefs. VirnetX’s opening brief is currently due April 24, 2023.

**VirnetX Inc. v. Cisco Systems, Inc. (USCAFC Case 22-2234)**

On September 16, 2022, we filed with the USCAFC an appeal of the invalidity findings by the PTAB in inter-partes re-examination proceeding 95/001,851 involving our U.S. Patent No. 7,418,504. We filed our opening brief on February 28, 2023.

**McKool Smith P.C. v. VirnetX, Inc., AAA Case No. 01-20-0003-7975**

On March 23, 2020, the law firm of McKool Smith, P.C. (“McKool”) filed a Demand for Arbitration against VirnetX, Inc. with the American Arbitration Association (“AAA”). In its demand, McKool claimed that a retention agreement it entered into in 2010 with VirnetX entitled it to a contingency fee arising from the recent 2020 payment made in the Apple I case. McKool claimed it was owed approximately \$36,300 (or 8% of the Apple I payment). We filed a general response with the AAA denying McKool’s claim and contested the matter vigorously. An evidentiary hearing was held on the matter during the week of February 22, 2021 and the parties submitted additional briefings. On April 19, 2021, the arbitrator awarded McKool \$36,323 in damages, plus pre-judgment interest in the amount of 5% simple interest from March 23, 2020 to April 18, 2021, and post-judgment interest in the amount of 5%, compounded annually, until payment of the award. We accrued the resulting \$38,284 as of March 31, 2021 and paid that amount to McKool on April 20, 2021. **This matter is now closed.**

**Other Legal Matters**

One or more potential intellectual property infringement claims may also be available to us against certain other companies who have the resources to defend against any such claims. Although we believe these potential claims are likely valid, commencing a lawsuit can be expensive and time-consuming, and there is no assurance that we could prevail on such potential claims if we made them. In addition, bringing a lawsuit may lead to potential counterclaims which may distract our management and our other resources, including capital resources, from efforts to successfully commercialize our products.

Currently, we are not a party to any other pending legal proceedings and are not aware of any proceeding threatened or contemplated against us.

**Note 13 – Leases**

We lease office space under an operating lease which expires on October 31, 2023. At December 31, 2022, the underlying ROU asset and lease liability totaled \$45. At December 31, 2021, the underlying ROU asset and lease liability totaled \$98. Lease expense totaled \$54 in 2022 and \$56 in 2021 and 2020.

We also lease a facility for corporate promotional and marketing purposes which was prepaid at inception and originally expired in 2024. In September 2020, the lease was extended for one year to 2025, due to COVID use-restrictions. No other terms of the original agreement were affected and there was no impact on cash flow. At December 31, 2022 and 2021, the ROU asset totaled \$648 and \$948, respectively; lease expense totaled \$300, \$300 and \$356, during 2022, 2021 and 2020, respectively.

**Note 14 – Subsequent Event**

On March 30, 2023, we declared a special cash dividend of \$1.00 per common share to be paid on or about April 17, 2023 to shareholders of record on April 10, 2023. If the final outcome of the Apple II litigation described elsewhere in this Form 10-K results in proceeds to us, we are committed to distribute to our shareholders a substantial portion of the net proceeds (after legal costs, licensing costs and taxes), after the case concludes.

**Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure**

None.

**Item 9A. Controls and Procedures****Evaluation of Disclosure Controls and Procedures**

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, December 31, 2022.

The purpose of this evaluation was to determine whether as of December 31, 2022 our disclosure controls and procedures were effective to provide reasonable assurance that the information we are required to disclose in our filings with the SEC, (i) is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and (ii) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Based on their evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that as of December 31, 2022, our disclosure controls and procedures were effective.

**Changes in Internal Control Over Financial Reporting**

We modified supervisory review procedures over the tax professionals who perform the accounting and reporting of deferred taxes, to include detailed discussions of current operations and changes in accounting standards and tax law that could affect our calculations, and detailed review including walkthrough of infrequent transactions and complex matters affecting deferred tax calculations. We have tested these procedures and believe the enhanced control is operating effectively. Additionally, our accounting professionals participated in deferred tax accounting training to further enhance our in-house technical abilities. There were no other changes in our internal controls over financial reporting (as such term is defined in rules 13a-15(f) under the Securities Exchange Act of 1934, as amended) during the fiscal year ended December 31, 2022, that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

We have not experienced any material impact to our internal controls over financial reporting despite the fact that most of our employees are working remotely; we are continually monitoring and assessing the impact on our internal controls to minimize the impact on their design and operating effectiveness.

**Management's Report on Internal Control Over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Internal control over financial reporting is a process to provide reasonable assurance regarding the reliability of our financial reporting for external purposes in accordance with accounting principles generally accepted in the United States of America. Internal control over financial reporting includes maintaining records that in reasonable detail accurately and fairly reflect our transactions; providing reasonable assurance that transactions are recorded as necessary for preparation of our financial statements; providing reasonable assurance that receipts and expenditures of Company assets are made in accordance with management authorization; and providing reasonable assurance that unauthorized acquisition, use or disposition of Company assets that could have a material effect on our financial statements would be prevented or detected on a timely basis. Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our financial statements would be prevented or detected.

Management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control – Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management concluded that the Company's internal control over financial reporting was effective as of December 31, 2022. Changes made in our internal control over financial reporting during the period ended December 31, 2022 are discussed above; no other change were made to our internal control over financial reporting during the period, that have materially affected, or are 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**

None.

**PART III**

**Item 10. Directors, Executive Officers and Corporate Governance**

The information required by this item will be contained in our definitive proxy statement to be filed with the SEC in connection with our 2022 Annual Meeting of Stockholders (the “Proxy Statement”), which is expected to be filed not later than 120 days after the end of our fiscal year ended December 31, 2022 and is incorporated in this report by reference.

**Item 11. Executive Compensation**

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

**Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters**

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

**Securities Authorized for Issuance Under the Equity Compensation Plans**

We have an equity incentive plan for employees and others called the VirnetX Holding Corporation 2013 Equity Incentive Plan (the “2013 Plan”), which has been approved by our stockholders. To the extent that any award should expire, become un-exercisable or is otherwise forfeited, the shares subject to such award will again become available for issuance under the 2013 Plan. The 2013 Plan provides for the granting of stock options and restricted stock units purchase rights (“RSUs”) to our employees and consultants. Stock options granted under the 2013 Plan may be incentive stock options or nonqualified stock options. Incentive stock options (“ISOs”) may only be granted to our employees (including officers and directors). Nonqualified stock options (“NSOs”) and stock purchase rights may be granted to our employees and consultants. The 2013 Plan expires in 2023. In April 2021, our Board of Directors approved an amendment and restatement of the 2013 Plan to, among other things, increase the shares reserved under the Plan by 2,500,000 shares (the “Plan Amendment”). Our stockholders approved the Plan Amendment at the 2021 Annual Meeting of the Stockholders held on June 3, 2021.

As of December 31, 2022, there were 1,563,345 shares available to be granted under the Plan. We had 6,816,025 and 6,397,437 options outstanding as of December 31, 2022 and December 31, 2021, respectively, with an average exercise price of \$5.33 and \$6.99, respectively. We had 552,105 and 509,155 RSUs outstanding as of December 31, 2022 and December 31, 2021, respectively, with a weighted average grant price of \$3.65 and \$5.38, respectively.

<b>Plan Category</b>	<b>Number of Securities to be Issued Upon Exercise of Outstanding Options and RSUs</b>	<b>Weighted-Average Exercise Price of Outstanding Options and RSUs</b>	<b>Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans</b>
Equity compensation plans approved by security holders	7,368,130	\$ 5.21	1,563,345
Equity compensation plans not approved by security holders	—	—	—
<b>Total</b>	<b>7,368,130</b>	<b>\$ 5.21</b>	<b>1,563,345</b>

On June 3, 2022, the Compensation Committee of our Board of Directors (the “Compensation Committee”) granted 37,500 stock options and 24,999 RSUs to members of our Board of Directors. On June 7, 2022, the Compensation Committee granted 763,504 stock options and 233,364 RSUs to our employees.

**Item 13. Certain Relationships and Related Transactions, and Director Independence**

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

**Item 14. Principal Accountant Fees and Services**

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

**PART IV**

**Item 15. Exhibits and Financial Statement Schedules**

(a) The following documents are filed as part of this Annual Report on Form 10-K

(1) *Financial Statements*: See the Index to Consolidated Financial Statements under Item 8 of this Annual Report on Form 10-K.

(2) *Financial Statement Schedule*: Financial statement schedules are omitted because they are not applicable, or the required information is shown in the financial statements or notes thereto. All other schedules are omitted because of the absence of conditions under which they are required or because the required information is given in the financial statements or the notes thereto.

(3) *Exhibits*: The documents listed in the Exhibit Index of this Annual Report on Form 10-K are incorporated by reference or are filed with this Annual Report on Form 10-K, in each case as indicated therein (numbered in accordance with Item 601 of Regulation S-K).

## EXHIBIT INDEX

Exhibit Number	Description	Incorporated by reference herein				Filed Herewith
		Form	Exhibit No.	Filing Date	File No.	
3.1	<a href="#">Certificate of Incorporation of the Company.</a>	8-K	3.1	11/01/2007	000-26895	
3.2	<a href="#">Amended and Restated Bylaws of the Company.</a>	8-K	3.1	1/27/2023	001-33852	
4.2	<a href="#">Specimen Common Stock Certificate.</a>	S-3	4.1	07/30/2018	333-226413	
4.3	<a href="#">Form of Senior Indenture.</a>	S-3	4.2	07/30/2018	333-226413	
4.4	<a href="#">Form of Subordinated Indenture.</a>	S-3	4.4	07/30/2018	333-226413	
4.5	<a href="#">Description of Capital Stock.</a>	10-K	4.6	03/16/2020	001-33852	
10.1	<a href="#">Form of Indemnification Agreement.</a>	10-K	10.1	03/18/2019	001-33852	
10.2*	<a href="#">2007 Stock Plan, as amended.</a>	10-Q	10.2	05/10/2012	001-33852	
10.3*	<a href="#">Amended Form of Stock Option Agreement – 2007 Stock Plan.</a>	10-Q	4.5	05/10/2011	001-33852	
10.4*	<a href="#">Form of Restricted Stock Unit Award Agreement – 2007 Stock Plan.</a>	10-Q	10.3	05/10/2012	001-33852	
10.5*	<a href="#">2013 Equity Incentive Plan, as amended.</a>	DEF 14A	Appendix A	04/13/2021	001-33852	
10.6*	<a href="#">Form of Stock Option Agreement – 2013 Equity Incentive Plan.</a>	10-K	10.6	03/02/2015	001-33852	
10.7*	<a href="#">Form of Restricted Stock Unit Agreement – 2013 Equity Incentive Plan.</a>	10-K	10.7	03/02/2015	001-33852	
10.12	<a href="#">Patent License and Assignment Agreement by and between the Company and Leidos, Inc. (formerly Science Applications International Corporation) dated as of August 12, 2005.</a>	8-K	10.4	07/12/2007	000-26895	
10.13**	<a href="#">Amendment No. 1 to Patent License and Assignment Agreement by and between the Company and Leidos, Inc. dated as of November 2, 2006.</a>	8-K	10.6	07/12/2007	000-26895	
10.14	<a href="#">Amendment No. 2 to Patent License and Assignment Agreement by and between VirnetX, Inc. and Leidos, Inc. dated as of March 12, 2008.</a>	8-K	10.1	03/18/2008	001-33852	
10.15	<a href="#">Security Agreement by and between the Company and Leidos, Inc. dated as of August 12, 2005.</a>	8-K	10.5	07/12/2007	000-26895	
10.16	<a href="#">Assignment Agreement between the Company and Leidos, Inc. dated as of December 21, 2006.</a>	8-K	10.7	07/12/2007	000-26895	
10.17	<a href="#">Professional Services Agreement by and between the Company and Leidos, Inc. dated as of August 12, 2005.</a>	8-K	10.8	07/12/2007	000-26895	
10.18**	<a href="#">Settlement and License Agreement, by and between Microsoft Corporation and VirnetX, Inc., dated May 14, 2010.</a>	10-Q/A	10.1	01/31/2011	001-33852	
10.19**	<a href="#">Amended Settlement and License Agreement, by and between Microsoft Corporation and VirnetX, Inc., dated December 17, 2014.</a>	10-K	10.23	03/02/2015	001-33852	
10.20**	<a href="#">Amended and Restated Revenue Sharing Agreement by and between the Company and Public Intelligence Technology Associates, dated October 18, 2017.</a>	10-Q	10.1	11/09/2017	001-33852	
10.21	<a href="#">Amended and Restated Gabriel License Agreement by and between the Company and Public Intelligence Technology Associates, dated October 18, 2017.</a>	10-Q	10.2	11/09/2017	001-33852	
10.22	<a href="#">Sales Agreement, dated August 31, 2018, by and between the Company and Cowen and Company, LLC.</a>	8-K	10.1	08/31/2018	001-33852	
10.23*	<a href="#">Hire Letter by and between Katherine Allanson and the Company, dated as of September 1, 2021.</a>	10-Q	10.1	11/08/2021	001-33852	
21.1	<a href="#">Subsidiaries of VirnetX Holding Corporation.</a>	10-K	21.1	03/16/2021	001-33852	

<a href="#">23.1</a>	Consent of Farber Hass Hurley LLP, Independent Registered Public Accounting Firm.	X
<a href="#">24.1</a>	Power of Attorney (contained on signature page hereto)	X
<a href="#">31.1</a>	Chief Executive Officer Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act.	X
<a href="#">31.2</a>	Chief Financial Officer Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act.	X
<a href="#">32.1†</a>	Chief Executive Officer Certification pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X
<a href="#">32.2†</a>	Chief Financial Officer Certification pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	X
101.INS	XBRL Instance Document	X
101.SCH	XBRL Taxonomy Extension Schema Document	X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	X
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)	X

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\* Indicates management contract or compensatory plan.

\*\* Confidential treatment has been granted by the SEC as to certain portions of this exhibit.

\*\*\* Portions of this exhibit have been omitted pending a determination by the SEC as to whether these portions should be granted confidential treatment.

† The certifications attached as Exhibit 32.1 and 32.2 that accompany this Report are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of VirnetX Holding Corporation under the Securities Act or the Exchange Act, whether before or after the date of this Report, irrespective of any general incorporation language contained in such filing.

**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

**VirnetX Holding Corporation**

By: /s/ Kendall Larsen

Name: Kendall Larsen

Title: Chief Executive Officer and President

Dated: March 31, 2023

**POWER OF ATTORNEY**

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Kendall Larsen as his attorney-in-fact, with full power of substitution, for him in any and all capacities, to sign any amendments to this Annual Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith with the Securities and Exchange Commission, hereby ratifying and confirming all that said attorney-in-fact, or his substitute or substitutes may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the registrant and in the capacities indicated.

<b>Name</b>	<b>Capacity</b>	<b>Date</b>
<u>/s/Kendall Larsen</u> Kendall Larsen	Director, Chief Executive Officer and President <i>(Principal Executive Officer)</i>	March 31, 2023
<u>/s/Katherine Allanson</u> Katherine Allanson	Chief Financial Officer <i>(Principal Financial Officer and Principal Accounting Officer)</i>	March 31, 2023
<u>/s/Robert D. Short III</u> Robert D. Short III	Director	March 31, 2023
<u>/s/Gary Feiner</u> Gary Feiner	Director	March 31, 2023
<u>/s/Michael F. Angelo</u> Michael F. Angelo	Director	March 31, 2023
<u>/s/Thomas M. O'Brien</u> Thomas M. O'Brien	Director	March 31, 2023

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-149883, 333-196064, 333-218467, and 333-258131) of our reports dated March 31, 2023, relating to the consolidated financial statements of VirnetX Holding Corporation (the “Company”), appearing in this Annual Report on Form 10-K of the Company for the year ended December 31, 2022.

/s/ Farber Hass Hurley LLP

Chatsworth, California  
March 31, 2023

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## CERTIFICATIONS

I, Kendall Larsen, certify that:

1. I have reviewed this Annual Report on Form 10-K of VirmetX Holding Corporation for the fiscal year ended December 31, 2022;
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 registrant as of, and for, the periods presented in this report;
4. The registrant'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 registrant 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 registrant, 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 registrant'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 registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant'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 registrant'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 registrant's internal control over financial reporting.

/s/ Kendall Larsen  
Kendall Larsen  
*President and Chief Executive Officer*  
*(Principal Executive Officer)*

Date: March 31, 2023

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## CERTIFICATIONS

I, Katherine Allanson, certify that:

1. I have reviewed this Annual Report on Form 10-K of VirmetX Holding Corporation for the fiscal year ended December 31, 2022;
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 registrant as of, and for, the periods presented in this report;
4. The registrant'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 registrant 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 registrant, 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 registrant'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 registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant'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 registrant'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 registrant's internal control over financial reporting.

/s/ Katherine Allanson  
Katherine Allanson  
Chief Financial Officer  
(Principal Accounting and Financial Officer)

Date: March 31, 2023

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**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 VirnetX Holding Corporation (the “Company”) on Form 10-K for the fiscal year ended December 31, 2022 as filed with the Securities and Exchange Commission on March 31, 2023 (the “Report”), I, Kendall Larsen, President and 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 results of operations of the Company.

/s/ Kendall Larsen  
Kendall Larsen  
*President and Chief Executive Officer*  
*(Principal Executive Officer)*

Date: March 31, 2023

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**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 VirnetX Holding Corporation (the “Company”) on Form 10-K for the fiscal year ended December 31, 2022 as filed with the Securities and Exchange Commission on March 31, 2023 (the “Report”), I, Katherine Allanson, 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 results of operations of the Company.

/s/ Katherine Allanson  
Katherine Allanson  
*Chief Financial Officer*  
*(Principal Accounting and Financial Officer)*

Date: March 31, 2023

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