# Positive ID

(OTCQB: PSID)

July 18, 2016 Target Price: \$0.54 Recent Price: \$0.13

## **Market Data**

| Fiscal Year          | December         |
|----------------------|------------------|
| Industry             | Security/MedTech |
| Market Cap           | \$2.20M          |
| Price/Earnings (ttm) | N/A              |
| EV/Sales (ttm)       | 1.82x            |
| Insider Ownership*   | 6%               |
| Shares Outstanding   | 16.9M            |
| Equity Float         | 15.0M            |
| Avg. Volume (3 mo.)  | 593,186          |
| As of July 18, 2016  |                  |

# **Income Statement Snapshot**

TTM

| Revenue  | \$4.5M   |
|----------|----------|
| Net Loss | (\$9.9M) |

#### **Balance Sheet Snapshot**

|      | MRQ    |
|------|--------|
| Cash | \$0.2M |
| Debt | \$3.6M |

# **Company Overview**

PositiveID Corporation is a life sciences tools and diagnostics company with an extensive patent portfolio. PositiveID develops biological detection and diagnostics systems and mobile technology vehicles, with a focus on point-of-need bio-threat detection, rapid medical testing, and homeland security. The Company's products lower the cost, reduce the time needed to administer the test/perform the service, and/or provide more sensitive/specific test results relative to current competing solutions.

# **Valuation**

We are valuing PSID using 1.5x EV/Sales multiple applied to our FY2019 sales estimate of \$27.6 million. This derives a target price of \$0.54.

# **Investment Highlights**

- PSID is developing the Firefly Dx, a hand-held point of need molecular diagnostic system that delivers results in under 30 minutes. This cartridge based system, when completed, will be faster, fully automated and far less costly than existing lab based testing.
- The Infectious disease diagnostic market is expected to grow at CAGR 7.9% to reach \$18.16 billion by 2019.
- Acquisitions have led to projected 2016 revenue guidance of \$5-\$6 million, representing a potential YoY revenue increase of 100%
- Increased threats of Bioterrorism sparked the Department of Homeland Security (DHS) to deploy the Bio-watch program for automated bio-threat detection; M-BAND has the potential to generate significant revenue and net income for PSID
- The Firefly Dx System is highly attractive from an economic perspective at an estimated price of \$5,000 per unit, and at volumes, \$1,000 per unit
- Pursuing a government contract or commercial partner to help fund final development of smaller, field-able Firefly Dx prototype for testing by third parties to prepare for commercialization
- Mobile Lab business completed 80 projects in the first half of 2016
- Recently acquired the Caregiver non-contact, infrared thermometer, marketed by Thermomedics; the global thermometer market is projected to reach \$1 billion by 2020, with infrared thermometers experiencing the fastest growth driven in part by concerns over the spread of highly infectious diseases
- Recent global Epidemic outbreaks like Ebola and Zika remain a major public health concern in the United States and around the world

# **Investment Highlights**

PSID is developing the Firefly Dx, a hand-held point of need molecular diagnostic system that delivers results in under 30 minutes. This cartridge based system, when completed, will be faster, fully automated and far less costly than existing lab based testing. Using advanced molecular diagnostic technologies and real-time polymerase chain reaction (PCR) chemistry it will deliver lab quality results faster and more cost-effective than competing solutions

Worldwide demand for accurate and fast PCR testing has increased with the need for faster diagnosis. PCR is a technique used in molecular biology to amplify a single copy of DNA across several orders of magnitude, generating thousands of copies of a particular sequence. It has current applications in DNA cloning, gene composition analysis, and the detection of infectious diseases (this is PSID's focus). The rapid growth of the PCR market is attributed to the increase in diagnostic awareness and personalized medicine, along with the rise in epidemic disease outbreaks. The Company's technologies focus on the increased demand for faster detection of infectious diseases.

PSID is developing two product lines for the detection of infectious diseases and bioterrorism threats and has recently acquired two additional product lines/services that bring established technology, cash flow, and blue chip customers that can also lead to longer-term cross selling opportunities. PSID is developing/has developed Firefly Dx and M-BAND; and has recently acquired E-N-G Mobile Systems ("E-N-G"), a specialty vehicle manufacturer, and Caregiver (non-contact thermometer). M-BAND is a bioaerosol monitor that tests for bio-threats in high traffic locations. This technology was developed with the Department of Homeland Security and was licensed to Boeing in 2013. Firefly Dx is being developed as a handheld device that provides accurate biological detection in less than 30 minutes at the point-of-need.

The Infectious disease diagnostic market(IDD) is expected to grow at CAGR 7.9% to reach 18.16 billion by 2019. According to MarketsandMarkets, the global IDD market was valued at \$12.4 billion in 2014 and is expected to reach \$18.16 billion in 2019. The study indicates the molecular diagnostics market which includes the Polymerase Chain Reaction(PCR) and Isothermal Nucleic Acid Amplification Test(INAA) to be the fastest market segments in the forecast period. The report also concludes that the IDD market is dominated by North America, followed by Europe. However, the Asia specific region is expected to grow at the highest CAGR of 9.9% during the forecast period. In addition to this study, the Transparent Market research estimates the PCR market to reach 9.4 billion in 2020.

PCR has enabled the identification of pathogens within a short span of time and has played a vital role in the management of chronic viral infections. However, given the high costs associated with PCR testing and the longer time for test results, Firefly Dx has a unique opportunity to develop an improved value proposition for end users.

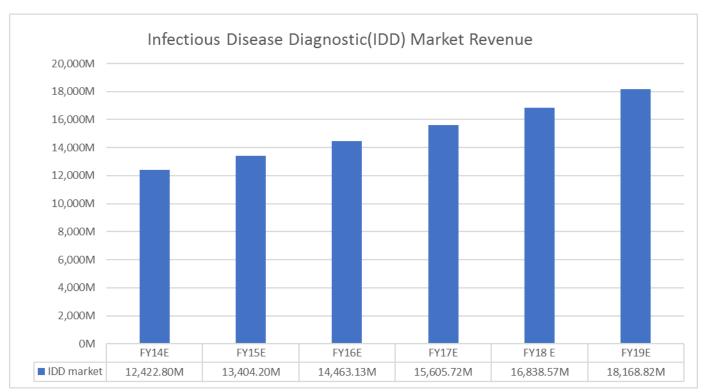


Figure 1: Source MarketsandMarkets

Some of the major players operating in this market include Abbott Laboratories (U.S.), Becton Dickinson & Company (U.S), GE Healthcare (U.S), Agilent Technologies, Inc. (U.S), Sigma Aldrich Corporation (U.S.), Bio-Rad Laboratories (U.S.), GE Healthcare (U.S.), QIAGEN (Netherlands), Promega (U.S.), Roche Diagnostics (Switzerland), Siemens Healthcare (Germany) and Thermo Fischer Scientific (U.S). We believe that the large companies that operate in the PCR market indicate the reliability of PCR technology and the long-term potential in the PCR market.

Acquisitions have led to projected 2016 revenue guidance of \$5-\$6 million, representing a potential YoY revenue increase of 100%. PSID generated revenue of \$2.9 million in FY2015 and \$1.7 million in 1Q16. For FY16E, PSID management has provided revenue guidance of \$5-\$6 million. This revenue growth is attributed to the strong performance of the E-N-G segment of the business. This business also provides strong gross margins of 30%+. We expect stronger growth in FY2017 and beyond, driven by continued growth in E-N-G and the expected launch of Firefly Dx in 2H17.

Increased threats of Bioterrorism sparked the Department of Homeland Security (DHS) to deploy the Bio-watch program for automated bio-threat detection; M-BAND has the potential to generate significant revenue and net income for PSID. The U.S. government started the Bio-watch program in 2003 in response to the increased threats of bioterrorism, sparked initially by the 2001 anthrax attack. Over the past decade, billions of dollars were spent on research and technology to counter biological attacks. Currently, Bio-watch detectors have been installed in 30 major cities. The current system operates via a system of filters that monitor air quality. On a daily basis a technician visits the collection site to collect samples and process it at a DHS lab. The overall process is estimated to take between 36-48 hours from pathogen release to detection from these filters. Considering the extensive time scale involved in the overall process, the U.S. government is focused on more autonomous detection capabilities to yield faster results.

Collaborating with the DHS, PSID developed a bio-aerosol monitor called M-BAND that autonomously tests for airborne threats in high traffic locations. This product was developed with \$30 million of contract funding from the DHS. M-BAND uses industry standard PCR chemistry that takes samples round the clock to detect any airborne bio-threats in high traffic locations.

M-BAND's patented sample preparation technology uses ultrasonic lysis for the rupture of tough cellular membranes. The lysed sample is then microfluidically passed through a purification apparatus that isolates and purifies the nucleic acid.



Figure 2: M-Band Device, Source: PSID

Taking samples round the clock, M-BAND could provide DHS with the next generation of Bio-watch detectors. M-BAND can detect and report bio threats in 3-6 hours, allowing the FBI and other government agencies to take much faster counter-measures in the instance of a bioterrorist attack.

Due to the strong potential of M-BAND, leading aircraft and defense manufacturer Boeing paid PSID a licensing fee of \$2.5 million in 2013 for exclusive manufacturing and distribution rights of M-BAND in North America. If M-BAND is implemented as part of the next generation Bio-watch system, it could mean up to 2,500 units sold by Boeing per year. This could provide recurring revenue of \$90-\$120 million/year with 15%-20% net margins. If this occurred, it would significantly impact PSID's stock price and lead to a substantial increase in revenue and profits for PSID.

The Bio-watch program has had significant issues since its implementation and the government is looking to enhance the technology. However, the U.S government is still evaluating the systems accuracy and whether the system works effectively. Since its implementation, the Bio-watch detectors have trigged several alarms when no threats existed.

While the DHS is continuing to evaluate the next generation of autonomous detection technologies, the GAO recommends that the DHS not pursue any upgrades or enhancements to the current systems until the system's reliability has been established. With the uncertainty revolving around the Bio-watch program, PSID's Bio-Aerosol monitor faces challenges with government approvals and regulations. Conversely, we believe that the need for enhanced bioterrorism detection is clear, and the potential revenue and net profits available to PSID in the event of M-BAND approval are substantial.

Firefly Dx is designed to provide accurate biological detection in less than 30 minutes (competing systems take 5-6 hours) at the point-of-need. Current real-time PCR systems require samples to be tested at a central lab for a confirmatory result. The overall process costs additional time and money and requires skilled labor for performance. The growing disease outbreaks and failure to detect results in a faster time span is hampering the efforts of health officials to treat people.

Current real-time PCR systems consists of three main components. The Thermal Cycler (PCR machine), Optical Module (to detect fluorescence in tubes during the run) and computer to translate the fluorescence data into meaningful results. The overall process of running a sample in the PCR instrument could take a time period of 5-6 hours.



Figure 3: Current PCR System

The key innovation of the Firefly Dx system is the use of microfluidic technology to automate, increase the effectiveness, and reduce the time needed to process samples. Current real-time PCR systems utilize a complicated and time consuming process involving significant amounts of labor and robotics technology. Firefly Dx processes these samples autonomously in 30 minutes within a fully contained and disposable microfluidic cartridge.



Figure 4: Firefly Dx design model, Source PSID

The Firefly Dx System is highly attractive from an economic perspective at an estimated price of \$5,000 per unit, and at volumes, \$1,000 per unit. The cartridge used in Firefly Dx is designed to provide laboratory-grade results in 30 minutes. The reagents used in the cartridge are preloaded and are ready to use with protocols. Each cartridge is expected to cost only \$25-\$35 per sample. The overall operational model is automated and easy to use, thereby limiting user programming. With government regulations, the cartridge has gone through a series of tests during its development, including running a variety of samples and assays. Comparing the cost to traditional lab-based PCR systems, which costs an approximate \$25,000-\$75,000 (including equipment, labor & laboratory service cost), Firefly Dx is very attractive from an economic perspective. Not only is Firefly Dx projected to be more cost effective, it is also faster and easier to use than current systems.

The Firefly Dx system, once fully developed, is expected to be able to test for any pathogen if the cartridge has been loaded with the relevant assays. The Company expects to license the Firefly Dx system to a government or commercial partner that is actively involved in the preparation of assays. We expect PSID to receive a license fee from this, much like in its M-BAND deal with Boeing. Recent global epidemic outbreaks like the Zika virus have been successfully detected by the Firefly Dx prototype. This device can be ultimately used at airports and other border points to screen people coming from disease affected countries. This helps in containing the disease and preventing it from turning into an epidemic.

The Firefly Dx model is applicable to a wide range of users. It can be used as a first responder to a bio threat agent. It can be used to detect human infectious diseases such as Ebola virus, dengue, chikungunya, MRSA, MSSA, C. diff, E. coli, influenza and Zika virus. It can be used in rapid and accurate diagnosis of on-site Foreign Animal Disease outbreaks and invasive crop diseases. The model is applicable in human clinical settings for non-infectious diseases like cancer and radiation exposure. Given FireFly Dx's wide range of potential end users, the Company's recent acquisitions of E-N-G and Caregiver are timely not just for their current and projected future revenues, but for their customer relationships. Possible long-term cross-selling opportunities for Firefly Dx are present.

Pursuing a government contract or commercial partner to help fund final development of smaller, field-able prototype for testing by third parties to prepare for commercialization. The Company has successfully tested their benchmark prototype Firefly Dx on multiple assays and is moving forward with designs to manufacture a handheld PCR device for molecular testing. The Company is also in discussions

with a strategic partner to help the company manufacture these prototype devices for a commercial launch by 2H17.

Mobile Lab business completed 80 projects in the first half of 2016. E-N-G is a leader in specialty technological vehicles with a focus on mobile laboratories, homeland security, command and communications vehicles, and TV and broadcast vans. The Company has built these specialty vehicles that are specifically designed for chemical and biological detection and monitoring and analysis. Overall, E-N-G offers better technology than any other specialty vehicle manufacturer. In addition to building specialty vehicles for the healthcare industry, the Company has delivered more than 100 mobile labs for the U.S army, plus numerous laboratories to other government agencies.



Figure 5: E-N-G Mobil Systems, Source PSID

These vehicles are equipped with state of the art equipment to support procedures ranging from screening to certified EPA testing methods. Partnering with Agilent Technologies, the leading manufacturer of GC and related instruments, E-N-G vehicles have become the primary choice for mobile labs for scientific and environmental agencies throughout the country because of their comprehensive line of specialty vehicles and custom instrument integration. Going forward, there are potential technological synergies between E-N-G and PSID's PCR technology.

In addition to over 400 mobile labs, ENG has delivered more than 1,200 other technical vehicles. These specialty vehicles include communication centers, broadcast news vehicles, radio frequency monitoring and other technical support vehicles. Recording average revenue of \$4 million per year for the last 10 years, E-N-G is the largest segment of the Company. Looking ahead to 2017, E-N-G also provides a built in customer base, particularly in healthcare and government agencies, for Firefly Dx.

Recently acquired Thermomedics; the non-contact thermometer market is the fastest growing segment of the global temperature monitoring device market, which is projected to reach \$1 billion by 2020. The Company also acquired Thermomedics, which markets the Caregiver non-contact thermometer to the professional healthcare market. The product is FDA cleared for clinical usage and uses an infrared thermometer to measure forehead temperature in patients without physical contact. This product reduces the overall contamination risk and is less likely to transmit infectious diseases when compared to traditional thermometers used in the healthcare industry.



Figure 6: Caregiver Non-Contact Thermometer, Source PSID

The Infrared thermometer market is growing due to the demand for quick and safe test results. With growing disease outbreaks throughout the world, contact thermometers risk the control of an epidemic disease outbreak. The Caregiver thermometer measures body temperature in 1-2 seconds and is held between ½ inch and 2 inches away from the forehead skin. With FDA clearance, hospitals and healthcare facilities use this product to reduce contamination and also save money on the usage of probe covers for contact thermometers. Each probe can cost the hospital \$0.05 and this alone can save thousands of dollars to hospitals and healthcare facilities. According to Global Industry Analysts, Inc., the global market for thermometers is forecasted to reach \$1 billion by 2020, with infrared thermometers experiencing the fastest growth. We believe that non-contact thermometers could have particular appeal in overseas markets that have trouble containing infectious diseases.

Recent global Epidemic outbreaks like Ebola and Zika remain a major public health concern in the United States and around the world. A study published in the journal of the Royal Society Interface, "Global Rise in Human Infectious Disease Outbreaks" in 2014 observes that the number of outbreaks since 1980 has increased significantly. The results in the report indicated that bacteria and viruses represented 70% of the 215 diseases in the dataset collected and caused 88% of outbreaks over time. The study also indicated 65% of the diseases were zoonosis (a disease that can be transmitted to human from animals) and caused 56% of outbreaks. The figure below illustrates a timeline of increasing global outbreaks for the nations around the world. Nations with the highest diversity outbreaks are represented by darker shading.

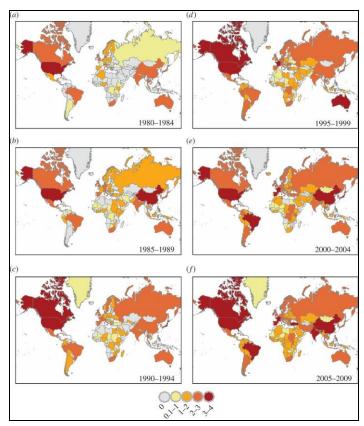


Figure 7: Global Outbreak Diversity 1980-2009, Source Royal Society Interface

According to Philanthropist and billionaire Bill Gates, the world's biggest issue is infectious diseases. The risk of an untreatable epidemic presents a significant risk which many believe that we are unprepared for. As awareness of this risk grows, we believe that the overall market size for PSID's products could grow significantly beyond current market estimates.

In the summer of 2015, 1.5 years after Ebola had broken out in Liberia, more than 11,300 people had been killed by Ebola and world leaders were considering how to prevent or be prepared to tackle the next big epidemic disease. In less than two years, South America's biggest country, Brazil was affected by Zika Virus. Controlling epidemic diseases requires equipment that can detect diseases at a faster rate and mitigate the risk of a disease spreading rapidly. Given this need and the lack of devices that can diagnose diseases quickly and at the point-of-need, PSID could have significant market demand for Firefly Dx and have a first mover advantage in point-of-need biological detection.

Similar companies in PSID's space are being bought at high multiples. Firefly Dx operates in a competitive landscape. IQuum's point of care MDx, with FDA clearance and CE marked, was sold in April 2014 to Roche for \$275 million up front and up to \$175 million in milestone-based payments. QuantaLife's Digital PCR systems were acquired by Bio-Rad Laboratories in October 2011 for \$162 million, plus future milestone payments. BioFire Diagnostics was sold in September 2013 to BioMerieux for \$450 million. GenturaDx's automated real-time PCR bench-top instrument was sold to Luminex in 2012 for \$50 million upfront, plus \$68 million in contingent consideration. The key takeaway from these acquisitions is that companies in PSID's space are being bought by large companies, indicating the long term potential in the molecular diagnostics market.

# **Valuation**

We are valuing PSID using a 1.5x EV/S multiple applied to our 2019 sales estimate of \$27.6 million. This derives a 30-month target price of \$0.54. A 1.5x EV/S multiple values PSID below the low-end of its peer group and we believe that a discount is appropriate, given that PSID is a much smaller company relative to its peer group and is not currently generating net profits. We believe that PSID has strong potential for revenue growth from FY16-FY19 given its recent acquisitions of the E-N-G segment and Caregiver noncontact thermometer, along with projected launch of Firefly Dx in 2H17. Additionally, the potential approval of M-Band by the U.S. government would provide a significant cash flow generating event for the Company that would greatly increase PSID's valuation. M-Band is not currently in our valuation model.

| Company Name                 | Ticker   | Price<br>Close<br>(USD) | Market<br>Cap<br>(USD) | Cash<br>(MRQ) | Total Debt<br>(MRQ) | Revenue<br>(LTM, USD) | Enterprise<br>Value | EV/S<br>(ttm) | EV/S<br>(FY16E) | EV/S<br>(FY17E) | EV/S<br>(FY18E) | EV/S<br>(FY19E) |
|------------------------------|----------|-------------------------|------------------------|---------------|---------------------|-----------------------|---------------------|---------------|-----------------|-----------------|-----------------|-----------------|
| OpGen Inc                    | OPGN.O   | \$1.37                  | 17.28M                 | 3.97M         | 1.51M               | 3.76M                 | 14.82M              | 3.94x         | 3.39x           | 3.12x           | N/A             | N/A             |
| Genetic Signatures Ltd       | GSS.AX   | \$0.38                  | 26.64M                 | N/A           | N/A                 | 2.02M                 | 23.37M              | 11.57x        | N/A             | N/A             | N/A             | N/A             |
| Luminex Corp                 | LMNX.OQ  | \$22.39                 | 970.4M                 | 148.31M       | 0.0M                | 242.95M               | 822.1M              | 3.38x         | 3.27x           | 3.10x           | N/A             | 2.59x           |
| Abaxis Inc                   | ABAX.OQ  | \$53.86                 | 1211.85M               | 129.8M        | .38M                | 218.9M                | 1082.43M            | 4.94x         | 4.44x           | 4.02x           | 3.79x           | 3.54x           |
| Cepheid                      | CPHD.OQ  | \$32.77                 | 2388.46M               | 292.31M       | 284.3M              | 550.72M               | 2380.44M            | 4.32x         | 3.84x           | 3.36x           | 2.99x           | 2.72x           |
| Bio Rad Laboratories Inc     | BIO      | \$144.07                | 4255.8M                | 748.66M       | 434.28M             | 2017.82M              | 3910.18M            | 1.94x         | 1.94x           | 1.87x           | N/A             | N/A             |
| Biomerieux SA                | BIOX.PA  | \$137.59                | 5428.6M                | N/A           | N/A                 | 2159.22M              | 5684.25M            | 2.63x         | 2.47x           | 2.33x           | 2.19x           | 2.05x           |
| Agilent Technologies Inc     | Α        | \$46.67                 | 15234.42M              | 2139.M        | 1889.M              | 4096.0M               | 14945.1M            | 3.65x         | 3.57x           | 3.40x           | 3.25x           | 3.13x           |
| Thermo Fisher Scientific Inc | TMO      | \$157.05                | 61801.1M               | 826.8M        | 15036.M             | 17341.4M              | 76010.3M            | 4.38x         | 4.23x           | 4.05x           | 3.87x           | 3.67x           |
| Abbott Laboratories          | ABT      | \$42.10                 | 61836.61M              | 3957.M        | 8119.M              | 20393.M               | 66133.3M            | 3.24x         | 3.16x           | 2.98x           | 2.82x           | 2.66x           |
|                              |          | Median                  | 3322.13M               | 520.49M       | 359.29M             | 1284.27M              | 3145.31M            | 3.79x         | 3.39x           | 3.12x           | 3.12x           | 2.72x           |
|                              |          | Average                 | 15317.11M              | 1030.73M      | 3220.56M            | 4702.58M              | 17100.63M           | 4.40x         | 3.37x           | 3.14x           | 3.15x           | 2.91x           |
| PositiveID Corp              | PSIDD.PK | \$0.13                  | 1.47M                  | 0.26M         | 6.4M                | 4.47M                 | 7.6M                | 1.70x         | 1.27x           | 1.03x           | 0.50x           | 0.28x           |

Figure 8: PSID Peer Group, Source Thomson Reuters, As of July 18, 2016

## Some notes on our model:

- We are projecting PSID to earn revenues of \$6.0 million in FY16E, \$7.4 million in FY17E, \$15.2 million in FY18E and \$27.6 million in FY19E. We believe revenues will accelerate in FY18-19 due to the launch of Firefly Dx
- We assume Firefly Dx's market penetration rate will begin to significantly increase in 2H18 through FY19, with the Company reaching a peak penetration rate of 0.14% in FY19, representing revenues of \$12.7 million.
- The E-N-G and Caregiver segments of the business provide additional revenues and cash flow to the Company.
- With pending approvals for the M-band detector from the government, the model excludes any revenue estimation in this period from M-band.
- The Company's gross margins continue to increase with the deployment of Firefly Dx in 2H17 and reach an average of 42% in FY19
- We project fully diluted shares outstanding of 58.9 million (reached in 3Q17), as compared to fully diluted shares outstanding of 16.9 million currently. We assume that the Company will raise additional capital through dilutive financing and equity raises.

# **Risks**

There is no guarantee that Firefly Dx will be commercially launched in 2H17. There is no guarantee that the Company will launch Firefly Dx by 2H17. Any delays in launch would likely delay meaningful revenues from Firefly Dx. Additionally, which company PSID selects to help launch Firefly Dx will have a strong impact on results.

The Company's technology has not yet been proven in a commercial, handheld device. The detection capabilities of Firefly Dx have only been tested in a prototype device. Actual test results may vary with the manufactured product.

The Company has extensive convertible debt instruments related to its financing structure. PSID has entered into convertible debt financing with multiple note holders. These notes can be convertible at the lesser of a 37.5% discount to the common stock price on the date the note was issued or a 37.5% discount to the price of the common stock price at the time of conversion. These instruments can increase shares outstanding and dilute current equity holders.

There are other technologies being developed for hand-held PCR testing systems. Some of these technologies may eventually become commercially viable, and represent potential competitors to PSID. However, these technologies are still not being developed at a scale beyond what can be used in research labs, and we believe that this gives Firefly Dx a first-mover advantage.

## Management

#### William J. Caragol, Chairman, Chief Executive Officer and Acting Chief Financial Officer

William J. Caragol was appointed Chairman and CEO of PositiveID in 2011, and has served as the company's president since its inception. Mr. Caragol was also CFO of PositiveID from 2007 to 2011, and was previously president and CFO of VeriChip Corporation. Mr. Caragol also served as Steel Vault Corporation's CEO, president and a member of its board of directors. Prior to that, Mr. Caragol was the vice president of business development and chief financial officer of Millivision Technologies, a technology company focused on security applications. Prior to his role at Millivision Technologies, Mr. Caragol was a consulting partner with East Wind Partners LLP, a technology and telecommunications consulting company, in Washington, D.C, and spent eight years at Deloitte and Touche. He is a member of the American Institute of Certified Public Accountants and graduated from the Washington & Lee University with a bachelor of science in Administration and Accounting. Mr. Caragol has also served on several boards, both public and private.

# Lyle L. Probst, President

Lyle L. Probst has over 15 years of program management experience at MicroFluidic Systems and Lawrence Livermore National Laboratory (LLNL), including a series of bio-detection programs such as the Department of Homeland Security (DHS) Science & Technology (S&T) BAND program, development and deployment of BioWatch Generation 1 at LLNL, and principal investigator/developer of the high-throughput BioWatch mobile laboratory at SAIC. Mr. Probst was previously the Director of Capillary Electrophoresis and Director of Chemistries at the Joint Genome Institute. He holds a B.S. in Biology and an M.B.A in Executive Management.

# Allison Tomek, Senior Vice President, Corporate Development

Allison Tomek joined PositiveID in January 2007 and has served as Senior Vice President, Investor Relations and Corporate Communications since January 2009. Ms. Tomek was previously Vice President of Investor Relations and Corporate Communications at Applied Digital Solutions, Inc. and Digital Angel Corporation, a majority-owned subsidiary. Prior to joining the Applied Digital family of companies, Ms. Tomek was Director of Investor Relations and Corporate Communications of Andrx Corporation, a pharmaceutical manufacturer and distributor. Ms. Tomek holds a B.S. in News/Editorial from the School of Journalism and Mass Communication at the University of Colorado in Boulder.

# Gary O'Hara, Chief Technology Officer, Thermomedics

Gary O'Hara joined PositiveID in December 2015 at the time of the Company's acquisition of Thermomedics. Mr. O'Hara is a Founder of Intelligent Medical Systems, Inc. He has over 25 years of experience in medical device product innovation and business development. Prior to his work in the medical device industry, he co-founded Tryom, Inc. which was a developer and manufacturer of handheld personal information devices and electronic games of strategy such as backgammon, chess and contract bridge. Mr. O'Hara invented the first commercialized infrared tympanic thermometer (FirstTemp® and Genius® brands) for which he was cited as Inventor of the Year by the San Diego Patent Law Association. He has also been active in the seed and startup phases of many ventures through his involvement with the Tech Coast Angels, an organization of 150 individuals that invest in and mentor early-stage technology and biomedical companies. Mr. O'Hara holds numerous patents related to medical devices and electronic computer games, and earned B.S. and M.S. degrees in Electrical Engineering from the University of Michigan as well as an MBA from Eastern Michigan University.

| Molecular Diagnostics market share   | 0           | 0           | 0           | 0           | 0            | 0           | 0           | 1,957,941,144 | 1,957,941,144 | 7,831,764,575 | 2,087,165,259 | 2,087,165,259 | 2,087,165,259 | 2,087,165,259 | 8,348,661,037 | 2,224,918,166 | 2,224,918,166 | 2,224,918,166 | 2,224,918,166 | 8,899,672,665 |
|--|-------------|-------------|-------------|-------------|--------------|-------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Penetration rate by PSI D(Firefly DX)  | %00.0       | %00.0       | 0.00%       | %00.0       | %00.0        | 0.00%       | 0.00%       |               | 0.02%         | 0.02%         | 0.04%         | 0.050%        | 0.080%        | 0.09%         |               | 0.12%         | 0.14%         | 0.15%         | 0.16%         | 0.14%         |
| Revenue from PCR market  |             |             |             |             |              |             |             | 195,794       | 391,588       | 587,382       | 834,866       | 1,043,583     | 1,669,732     | 1,878,449     | 5,426,630     | 2,669,902     | 3,114,885     | 3,337,377     | 3,559,869     | 12,682,034    |
| Medical Devices (Thermomedics)   | 120,000     | 120,120     | 117,718     | 117,835     | 475,673      | 120,192     | 122,896     | 125,662       | 128,803       | 497,553       | 132,023       | 135,654       | 139,045       | 143,216       | 549,938       | 148,229       | 153,788       | 159,555       | 165,937       | 627,508       |
| Mobile Labs(E-N-G Systems)   | 1,544,000   | 1,528,560   | 1,222,848   | 1,235,076   | 5,530,484    | 1,358,584   | 1,494,443   | 1,643,887     | 1,775,398     | 6,272,311     | 1,961,815     | 2,172,710     | 2,411,708     | 2,683,025     | 9,229,256     | 2,991,573     | 3,343,082     | 3,744,252     | 4,202,923     | 14,281,830    |
| Total Revenue  | 1,664,000   | 1,648,680   | 1,340,566   | 1,352,912   | 6,006,157    | 1,478,776   | 1,617,339   | 1,965,342     | 2,295,789     | 7,357,246     | 2,928,704     | 3,351,946     | 4,220,485     | 4,704,690     | 15, 205, 825  | 5,809,703     | 6,611,755     | 7,241,184     | 7,928,729     | 27,591,372    |
|  | 0           |             |             |             |              |             |             | 0             |               |               |               | 0000          |               |               |               |               |               |               |               | 0             |
| Cost of revenues   | 1,135,000   | 1,088,129   | 884,773     | 90b,451     | 4,014,353    | 961,204     | 1,051,270   | 1,238,166     | 1,446,347     | 4,696,988     | 1,815,796     | 2,078,206     | 7,616,/01     | 2,822,814     | 9,333,51/     | 3,421,725     | 3,768,701     | 4,055,063     | 4,360,801     | 15,612,290    |
| Gross profit   | 529,000     | 560,551     | 455,792     | 446,461     | 1,991,804    | 517,572     | 566,069     | 771,127       | 849,442       | 2,660,259     | 1,112,907     | 1,273,739     | 1,603,784     | 1,881,876     | 5,872,307     | 2,381,978     | 2,843,055     | 3,186,121     | 3,567,928     | 11,979,082    |
| Operating expenses:  |             |             |             |             |              |             |             |               |               |               |               |               |               |               |               |               |               |               |               |               |
| Selling, general and administrative  | 1,826,000   | 1,483,812   | 1,139,481   | 1,082,329   | 5,531,622    | 1,256,960   | 1,213,004   | 1,474,007     | 1,721,842     | 5,665,812     | 1,757,222     | 1,843,570     | 2,110,242     | 2,352,345     | 8,063,380     | 2,904,852     | 3,305,878     | 3,258,533     | 3,567,928     | 13,037,190    |
| Research and development   | 95,000      | 100,000     | 100,000     | 100,000     | 395,000      | 118,302     | 129,387     | 157,227       | 183,663       | 588,580       | 205,009       | 201,117       | 253,229       | 282,281       | 941,637       | 348,582       | 396,705       | 434,471       | 475,724       | 1,655,482     |
| Total operating expenses   | 1,921,000   | 1,583,812   | 1,239,481   | 1,182,329   | 5,926,622    | 1,375,262   | 1,342,391   | 1,631,234     | 1,905,505     | 6,254,392     | 1,962,231     | 2,044,687     | 2,363,472     | 2,634,626     | 9,005,016     | 3,253,434     | 3,702,583     | 3,693,004     | 4,043,652     | 14,692,673    |
| Operating income (loss)  | (1,392,000) | (1,023,261) | (783,688)   | (735,869)   | (3,934,818)  | (857,690)   | (776,323)   | (904,058)     | (1,056,063)   | (3,594,133)   | (849,324)     | (770,948)     | (759,687)     | (752,750)     | (3,132,709)   | (871, 456)    | (859,528)     | (506,883)     | (475,724)     | (2,713,590)   |
| Other income (expense):  |             |             |             |             |              |             |             |               |               |               |               |               |               |               |               |               |               |               |               |               |
| Interest expense   | (1 641 000) | (1 641 000) | (1641 000)  | (1 641 000) | (6.564.000)  | (1000 000)  | (1000 000)  | (1 000 000)   | (1000 000)    | (4,000,000)   | (200 000)     | (500 000)     | (500 000)     | (200,000)     | (000,000)     | (250 000)     | (250,000)     | (020 000)     | (022000)      | (1 000 000)   |
| Change in fair value of embedded conversion outline liability  | (000 220)   | 0           | 0           |             | 0            | 0           | 0           | 0             | (2006)        | (2006)        | 0             | 0             | 0             | 0             | 0             | 0             | (2006)        | 0             | 0             | 0             |
| The second secon | (000(100)   |             |             |             |              |             |             |               |               |               |               |               |               |               |               |               |               |               |               |               |
| Loss on extinguishment of debt   | 0           | 0 0         | 0 0         | 0 0         | 0 0          | 0 0         | 0 0         | 0 0           |               |               | 0 0           | 0 0           | 0 0           | 0 0           | 0 0           | 0 0           | 0 0           | 0 0           | 0 0           | 0 0           |
| Other Income (expense), net  | 44,000      | 0 000       | 0           | 0 000       | 0            | 0           | 0           | 0             | 0 000         | 0             | 0             | 0             | 0 000,        | 0             | 0             | 0             | 0             | 0             | 0             | 0 000 000 00  |
| Notal interest and other income (expense), her   | (2,554,000) | (1,641,000) | (1,041,000) | (1,041,000) | (0,304,000)  | (1,000,000) | (1,000,000) | (1,000,000)   | (1,000,000)   | (4,000,000)   | (200,000)     | (300,000)     | (300,000)     | (000,000)     | (2,000,000)   | (1111466)     | (4.100 (28)   | (200,000)     | (250,000)     | (1,000,000)   |
| Net 1055   | (000,926,6) | (7,004,201) | (2,424,000) | (5,370,009) | (10,496,610) | (1,657,690) | (1,776,323) | (oco,+oc,t.)  | (z,use,uss)   | (557,465,1)   | (1,349,324)   | (1,270,340)   | (1,00,002,1)  | (1,232,730)   | (5,752,709)   | (1,121,430)   | (4,109,526)   | (1.30,003)    | (123,124)     | (066'ST/'S)   |
| Net loss attributable to common stockholders   | (3,959,000) | (2,664,261) | (2,424,688) | (2,376,869) | (10,498,818) | (1,857,690) | (1,776,323) | (1,904,058)   | (2,056,063)   | (7,594,133)   | (1,349,324)   | (1,270,948)   | (1,259,687)   | (1,252,750)   | (5,132,709)   | (1,121,456)   | (1,109,528)   | (756,883)     | (725,724)     | (3,713,590)   |
|  |             |             |             |             |              |             |             |               |               |               |               |               |               |               |               |               |               |               |               |               |
| Net Loss per common share attributable to common stockholders – hasic and diluted  | (0.42)      | (0.16)      | (0.10)      | (91200)     | (0.50)       | (0.04)      | (0.03)      | (0.03)        | (0.03)        | (0.14)        | (0.02)        | (0.02)        | (0.02)        | (0.02)        | (8) ()        | (0.02)        | (0.02)        | (10.0)        | (10.0)        | (0.05)        |
|  | (200)       | (21:0)      | (24:0)      | (0.00)      | (0:0)        | (5)         | (50.0)      | (2000)        | (50:0)        | (1.1.0)       | (10:0)        | (20:0)        | (20:0)        | (20.0)        | (20:2)        | (20:0)        | (20:0)        | (1000)        | (10:0)        | (2000)        |
| Weighted average shares outstanding – basic and diluted  | 9,390,502   | 16,946,177  | 23,724,648  | 33,214,507  | 20,818,958   | 43,178,859  | 56,132,517  | 58,939,143    | 62,475,491    | 55,181,502    | 65,599,266    | 68,223,236    | 68,223,236    | 69,587,701    | 67,908,360    | 70,283,578    | 70,283,578    | 70,283,578    | 70,283,578    | 70,283,578    |
| VoV December Grounds   |             |             |             |             | 104%         |             |             |               |               | 22%           |               |               |               |               | 107%          |               |               |               |               | 01%           |
| C C C C C C C C C C C C C C C C C C C  | 7929        | 0 100       | ,000        | ,000        | 704          | ,000        | OFF. O      | 700           | 70.00         | 0/77          | 21 110        | 70.00         | 2000          | , or a 10,    | 701           |               |               |               |               | P/10          |
| COU REVEILUE GLOWIII   | 240.50      | 0.30%       | -3.00%      | -3.00%      |              | 9.30%       | 9.27.10     | 27.3270       | 10.0170       |               | 27:3178       | T4.4370       | 23.3170       | TT:47.70      |               |               |               |               |               |               |
| Gross Margin   | 32%         | 34%         | 34%         | 33%         | 33%          | 32%         | 32%         | 37%           | 37%           | 36%           | 38%           | 38%           | 38%           | 40%           | 39%           | 41%           | 43%           | 44%           | 45%           | 43%           |
| Operating Margin   | -84%        | -62%        | -58%        | -54%        | %99-         | -58%        | -48%        | -46%          | -46%          | -49%          | -59%          | -53%          | -18%          | -16%          | -21%          | -15%          | -13%          | -7%           | %9-           | -10%          |
| G&A % of Rev   | 110%        | %06         | 82%         | %08         | %08          | 82%         | 75%         | 75%           | 75%           | %08           | %09           | 25%           | 20%           | 20%           | 23%           | 20%           | 20%           | 45%           | 45%           | 47%           |
| R&D % of Rev   | %9          | %9          | 7%          | 7%          | 7%           | %8          | %8          | 8%            | %8            | %8            | 7%            | %9            | %9            | %9            | %9            | %9            | %9            | %9            | %9            | %9            |
|  |             |             |             |             |              |             |             |               |               |               |               |               |               |               |               |               |               |               |               |               |

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#### **Additional Information**

Auditor: Salberg & Co.

Legal: Sichenzia Ross Friedman Ference LLP

Company Information
Company Website

#### About RedChip

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PositiveID Corp (OTCQB: PSID) is a client of RedChip Companies, Inc. PSID agreed to pay RedChip Companies, Inc. a monthly cash fee and 435,000 shares of Rule 144 common stock for 12 months of RedChip investor awareness services and consulting services.

Investor awareness services and programs are designed to help small-cap companies communicate their investment characteristics. RedChip investor awareness services include the preparation of a research profile(s), multimedia marketing, and other awareness services.

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