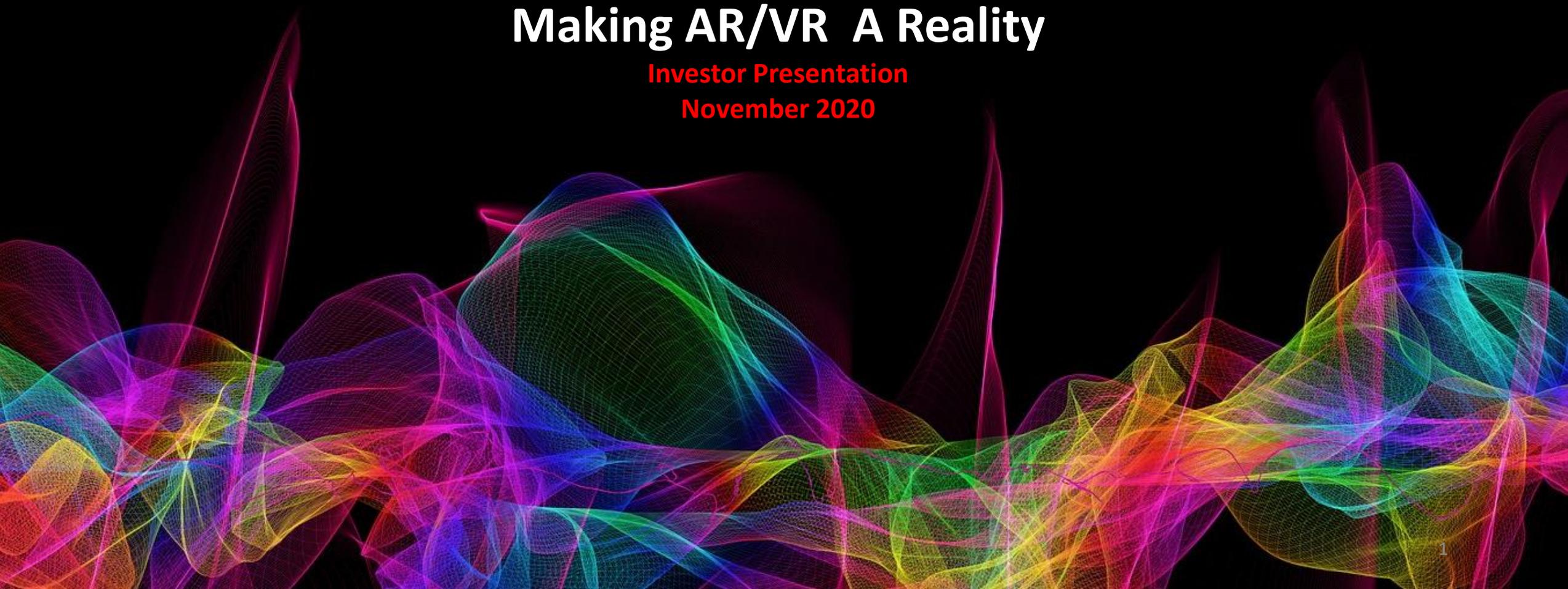




# Making AR/VR A Reality

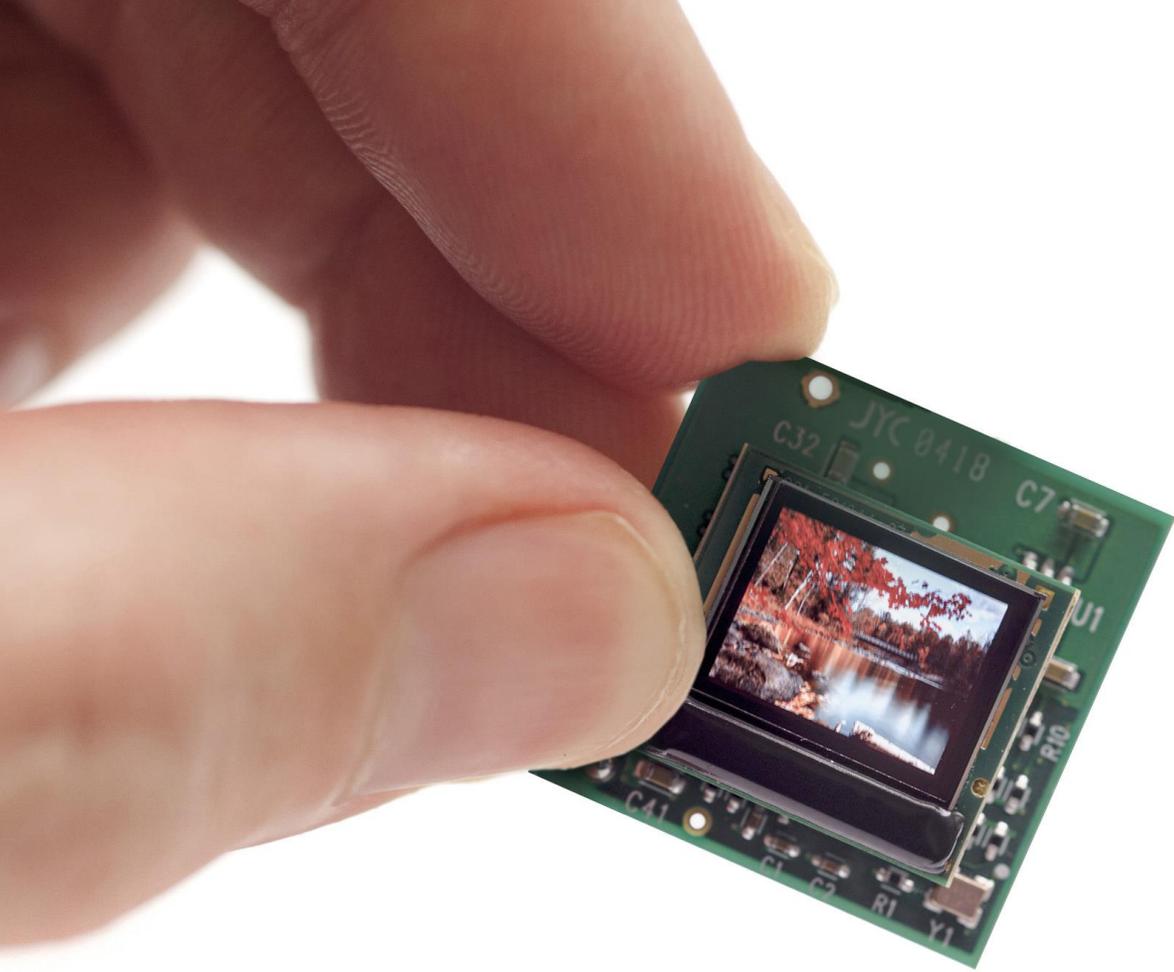
Investor Presentation  
November 2020



# Disclaimer

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Vision:

***Enable the future of  
computing & imaging  
with OLED technology***

# Key Messages

1

The only US manufacturer of OLED microdisplays; a technology leader with proprietary and patented direct patterning technology (dPd™) for ultrahigh brightness in color

2

Uniquely positioned to capitalize on growing addressable markets in military, industrial and consumer for high brightness AR/VR solutions

3

Recent U.S. government funding of approximately \$39 million for manufacturing to support improvement in growth, innovation and productivity

4

Deep applications expertise and broad IP portfolio; aligned with blue-chip customer base and long-term industry trends

5

Well-established military and aviation market presence benefitting from secular and cyclical tailwinds; leverageable platform for high growth opportunities in consumer and commercial end markets

6

Highly experienced management team with industry leading technical expertise enabling a substantial runway for value creation

# eMagin at a Glance

Headquarters: Hopewell Junction, NY  
Manufacturing: U.S. Domiciled   
Employees: 100+

Revenue: **\$26.7M in 2019**

- 92% from Product Sales, 8% Contracts
- 53% U.S., 47% International
- 27 countries served

Market Cap: **\$74M\***  
Exchange: **EMAN on NYSE**

Patents: **45 issued, 41 pending**

**The technology leader in OLED Displays.**



**Making AR/VR a reality.**

\*Based on closing price on 11/19/20 and 67.5 million shares outstanding.

# Growth Strategy



Leverage commercial and consumer electronics customer relationships for AR/VR opportunities

Develop partnerships for high volume manufacturing

Grow commercial and industrial presence

Expand military and aviation market share

Deepen penetration of leading-edge dPd™ technology

Increase capacity and production yields; expand manufacturing capability

# Q3 2020 Highlights: Improving Performance



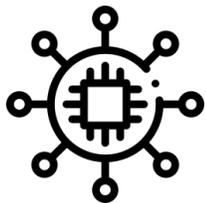
## Financial Trends

- Continued strength in military display business, 19% year-over-year revenue increase
- Non-military display revenue declined (e.g., eye care market, sportsmen's rifle scopes); seeing recovery in eye care market
- Backlog of \$10.0 million of which \$9.4M is shippable within the next 12 months
- Cash and cash equivalents of \$10.3M at 9/30/20



## Operating Trends

- Accelerated support of the ENVG-B program for close combat soldiers and produced displays for the F-35 head mounted display helmet program
- Placed new equipment orders under the first phase of our DoD awards and are in the design/order phase for additional equipment to be provided under this \$39.1M program
- New machine to be delivered in Q4 will help enhance yield beginning in 1Q21



## Advancing Product Development

- Continue to see strong interest in high brightness direct patterned technology
- Steady progress on the development efforts for dPd technology and high brightness product roadmap
- Close to achieving brightness milestone of 10,000cd/m<sup>2</sup> for a full-color display using a single stack architecture



## \$39 million of Department of Defense Awards

- Recognized by DOD as the only domestic manufacturer of OLED microdisplays designated as a cornerstone of the US manufacturing base
- Received \$5.5 million award under the Industrial Base Analysis and Sustainment (IBAS) Program for Organic Light Emitting Diode (OLED) Supply Chain Assistance for procurement and installation of capital equipment at the Hopewell Junction facility to enhance manufacturing capabilities
- Received \$33.6 million DoD funding to sustain and enhance U.S. domestic capability for high resolution, high brightness OLED microdisplays based on proprietary dPd technology



# eMagin's OLED Technology Advantage

## *Lowest Power and Highest Brightness*

- Brightest OLED – monogreen over 28,000 cd/m<sup>2</sup>; full color 7,500 cd/m<sup>2</sup> demonstrated, full color 10,000 cd/m<sup>2</sup> targeted in early 2021
- Very high contrast – greater than 1,000,000:1
- Lower power consumption– longer battery life
- More compact form factor
- Light-weight solution
- Field tested for reliability and performance
- Nausea-free operation
- Superior performance and a competitive cost at higher volumes



## History of Technical Leadership

*Many fundamental innovations in microdisplays*

- Commercial full color SVGA+ Active Matrix OLED microdisplay
- Full color SXGA OLED microdisplay
- High-brightness monochrome SXGA microdisplay (20k+ cd/m<sup>2</sup>)
- High-brightness color SXGA OLED microdisplay (700+ cd/m<sup>2</sup>)



## History of Technical Leadership

### *Promising results of Direct Patterning (dPd)*

- dPd® demonstrated on 2k x 2k display
- dPd enhancements (<7,500 cd/m<sup>2</sup> brightness on a full color WUXGA)
- 4k x 4k microdisplay demonstrated at SID conference

# OLED Provides Superior AR/VR Experience

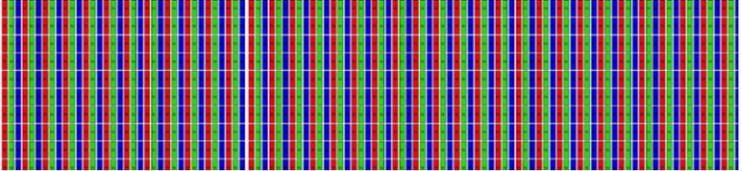
*Magnification Highlights eMagin's Superior Fill Factor*



Samsung Galaxy S5 OLED  
Cell Phone Display / 600 ppi



eMagin OLED Microdisplay  
>2,500 ppi



# The Future of AR/VR Powered by – dPd™



- Conventional OLED microdisplays use white OLED with color filters
  - Color filters absorb ~80% of the useful light; limited brightness and inefficient
- Only eMagin has Direct Patterned microdisplay technology for direct emission of red, green and blue light without color filters
  - Enables significantly higher brightness; targeting 10,000 cd/m<sup>2</sup> in early 2021 and 28,000 cd/m<sup>2</sup> by 2023
  - Higher efficiency, much lower power consumption
- eMagin is ahead today in full color OLED microdisplay brightness and will stay ahead

\*for illustrative purposes only

# Deep Application Expertise & Broad IP Portfolio

## Patents

- 45 patents issued and 41 pending
- Includes silicon backplane, OLED architecture, process and packaging
- Key patents include ultra-high brightness directly patterned OLED displays

## Know-how

- Includes Silicon backplane, OLED architecture, process and packaging
- Back-plane design
- Anode patterning
- Direct patterning of OLED
- Thin film encapsulation
- Packaging methodology

## Significant Barriers to Entry

# Military & Aviation

## Profile

- Predominately sole-source supplier
- Differentiated performance and leader in brightness
  - Visible in bright sunlight
  - High contrast for detail
- First mover in AR/VR for domestic and foreign military applications
- Global market leadership - U.S. Army, Air Force, Special Forces, Navy/Marines
- Proven track record of performing in demanding applications and environments
- Long-standing customer relationships and extended program and product lifecycles
- Favorable secular and cyclical tailwinds
- Military microdisplays addressable market expected to increase five-fold to \$1.3B by 2024<sup>1</sup>
- Accelerating activity and program wins in aviation
- Trend away from LCD to microOLED for better contrast and brightness

## Customers

**BAE SYSTEMS**



**LEONARDO DRS**

**SAGEM**



**L3HARRIS™**



**Rockwell Collins**

**THALES**



## Products



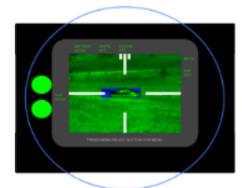
Enhanced Night Vision Goggle



Helmet Display



Laser Range Finder



Simulation Training Devices

# Commercial & Medical

## Profile

- Products provide high reliability in stressful environments
- Visualize digital information and imagery
- Successful in supplying to medical imaging devices, thermal cameras and hunting scopes
- Recent customer wins include:
  - \$780,000 order from an existing medical device customer upgrading their product with our high brightness XLT technology with anticipated follow-on orders
  - Second order from a new customer that is developing/prototyping a non-invasive surgical application device using our displays



Abbott LASIK

## Products



XM Reality AR  
Guidance System



NordicNuroLabs  
Visual System



Bug Bovine  
Ultrasound Goggle



EyeSi  
Surgical Sim



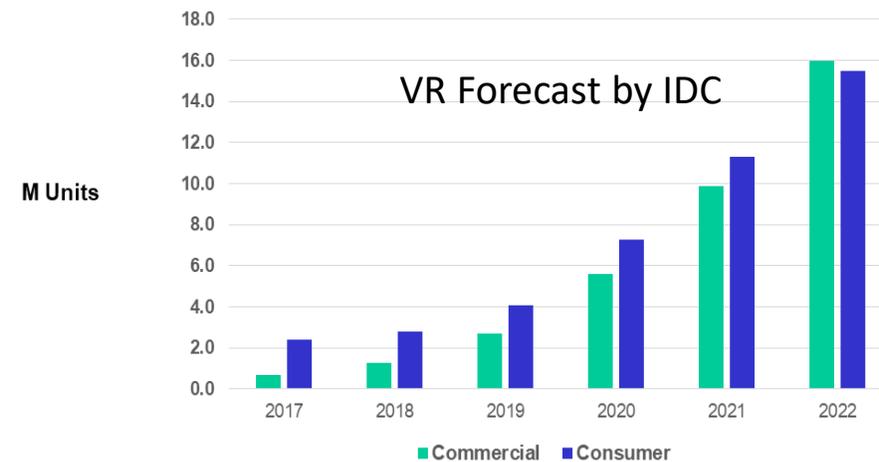
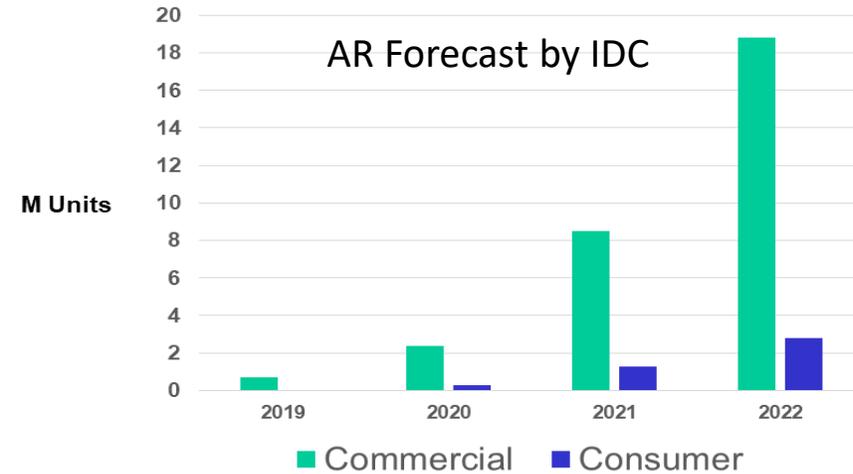
Hunting  
Scopes

## End Market Diversification

# Commercial & Consumer

## Profile

- ✓ Augmented reality for
  - Equipment repair
  - Factory automation
  - Service technicians
- ✓ Virtual reality for
  - Vehicle design
  - Training and simulation
  - Consumer gaming and entertainment
- ✓ eMagin is the only company with technology that satisfies the key requirements:
  - High brightness
  - High speed
  - High pixels per inch
  - High resolution



Well Positioned To Capitalize on Large Market Opportunity

# Manufacturing Footprint - Made in the USA

## Hopewell Junction, NY (Headquarters)

- Lease ~42,000 square feet of space
- Houses own equipment for OLED microdisplay fabrication, assembly operations, R&D and product development functions
- eMagin is the only US-based manufacturer of OLED microdisplays
- Approximately \$39 million in DoD awards for procurement and installation of capital equipment to enhance manufacturing and enhance dPd technology

## Class 10 Clean Room Operations

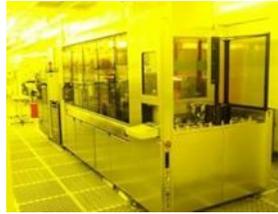


Photo-Lithography



Metal Deposition



OLED Deposition



In-Line Inspection



Glass Lid



Glass Lid Detail



**Advanced Packaging  
Capabilities**

# Senior Management Team

<b>Andrew Sculley</b> <i>CEO</i>	<ul style="list-style-type: none"><li>• Over 20 years experience in OLED technology and manufacturing</li><li>• Led Kodak OLED Systems</li><li>• MS Physics Cornell, MBA Carnegie-Mellon</li></ul>
<b>Dr. Amal Ghosh</b> <i>COO</i>	<ul style="list-style-type: none"><li>• Pioneering inventor of disruptive OLED technology at eMagin and Kodak</li><li>• PhD Physics MIT</li><li>• Past President of the prestigious Society for Information Display (SID)</li></ul>
<b>Mark Koch</b> <i>Acting CFO</i>	<ul style="list-style-type: none"><li>• Previously eMagin's VP of Finance and Corporate Controller</li><li>• +25 years of financial experience</li><li>• Certified Public Accountant; BS Manhattan College</li></ul>
<b>Oliver Prache</b> <i>SVP</i> <i>Product Development</i>	<ul style="list-style-type: none"><li>• OLED product commercialization pioneer at Pixtech (France) and OIS Optical Imaging Systems</li><li>• Diplôme d'Ingénieur from E.N.S.E.R.G. Grenoble France</li></ul>
<b>Joseph Saltarelli</b> <i>SVP Operations</i>	<ul style="list-style-type: none"><li>• Over 25 years of semiconductor, thin films, and packaging manufacturing</li><li>• Senior Director of Manufacturing Operations, GLOBALFOUNDRIES</li><li>• BS Ceramic Engineering and Materials Science Rutgers, MBA in Technology Management</li></ul>
<b>Dr. Scott Bukofsky</b> <i>VP Business Development</i>	<ul style="list-style-type: none"><li>• Over 20 Years experience in semiconductors and sales management</li><li>• Senior Director of Sales at GLOBALFOUNDRIES</li><li>• PhD Electrical Engineering from Yale University</li></ul>

# Key Messages

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The only US manufacturer of OLED microdisplays; a technology leader with proprietary and patented direct patterning technology (dPd™) for ultrahigh brightness in color

2

Uniquely positioned to capitalize on growing addressable markets in military, industrial and consumer for high brightness AR/VR solutions

3

Approximately \$39 million in recent government awards for manufacturing to support improvement in growth, innovation and productivity, including dPd equipment

4

Deep applications expertise and broad IP portfolio; aligned with blue-chip customer base and long-term industry trends

5

Well-established military and aviation market presence benefitting from secular and cyclical tailwinds; leverageable platform for high growth opportunities in consumer and commercial end markets

6

Highly experienced management team with industry leading technical expertise enabling a substantial runway for value creation

# Appendices

# Consolidated Statement of Operations

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
<b>Revenues:</b>				
Product	\$ 6,978	\$ 7,321	\$ 18,872	\$ 17,786
Contract	333	598	2,870	1,606
<b>Total revenues, net</b>	<u>7,311</u>	<u>7,919</u>	<u>21,742</u>	<u>19,392</u>
<b>Cost of revenues:</b>				
Product	5,385	5,112	15,153	14,436
Contract	234	316	1,487	904
<b>Total cost of revenues</b>	<u>5,619</u>	<u>5,428</u>	<u>16,640</u>	<u>15,340</u>
<b>Gross profit</b>	<u>1,692</u>	<u>2,491</u>	<u>5,102</u>	<u>4,052</u>
<b>Operating expenses:</b>				
Research and development	1,734	1,046	4,313	3,943
Selling, general and administrative	1,824	1,839	5,334	5,555
<b>Total operating expenses</b>	<u>3,558</u>	<u>2,885</u>	<u>9,647</u>	<u>9,498</u>
<b>Loss from operations</b>	(1,866)	(394)	(4,545)	(5,446)
<b>Other (expense) income:</b>				
Change in fair value of common stock warrant liability	(1,803)	120	(3,304)	1,450
Interest expense, net	(10)	(41)	(45)	(96)
Other income, net	148	—	163	—
<b>Total other (expense) income</b>	<u>(1,665)</u>	<u>79</u>	<u>(3,186)</u>	<u>1,354</u>
<b>Loss before provision for income taxes</b>	<u>(3,531)</u>	<u>(315)</u>	<u>(7,731)</u>	<u>(4,092)</u>
Income taxes	—	—	—	—
<b>Net loss</b>	<u>\$ (3,531)</u>	<u>\$ (315)</u>	<u>\$ (7,731)</u>	<u>\$ (4,092)</u>
Loss per share, basic and diluted	<u>\$ (0.06)</u>	<u>\$ (0.01)</u>	<u>\$ (0.14)</u>	<u>\$ (0.09)</u>
<b>Weighted average number of shares outstanding:</b>				
Basic and Diluted	<u>57,736</u>	<u>49,174</u>	<u>54,451</u>	<u>47,719</u>

# Adjusted EBITDA

\$ in thousands

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2020	2019	2020	2019
Net loss	\$ (3,531)	\$ (315)	\$ (7,731)	\$ (4,092)
Non-cash compensation	60	165	147	455
Change in fair value of common stock	1,803	(120)	3,304	(1,450)
Depreciation and intangibles amortization	522	493	1,481	1,480
Interest expense	10	41	45	96
Adjusted EBITDA	\$ (1,136)	\$ 264	\$ (2,754)	\$ (3,511)

# Consolidated Balance Sheet

	September 30, 2020	December 31, 2019
<b>ASSETS</b>		
<b>Current assets:</b>		
Cash and cash equivalents	\$ 10,283	\$ 3,515
Restricted cash	1,800	—
Accounts receivable, net	3,178	3,966
Unbilled accounts receivable	31	155
Inventories	8,133	8,832
Prepaid expenses and other current assets	1,796	1,130
<b>Total current assets</b>	<b>25,221</b>	<b>17,598</b>
Equipment, furniture and leasehold improvements, net	8,147	8,100
Operating lease right - of - use assets	3,166	3,729
Intangibles and other assets	128	160
<b>Total assets</b>	<b>\$ 36,662</b>	<b>\$ 29,587</b>
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>		
<b>Current liabilities:</b>		
Accounts payable	\$ 1,009	\$ 1,302
Accrued compensation	1,700	1,778
Paycheck Protection Program loan - current	735	—
Revolving credit facility, net	490	2,891
Common stock warrant liability	3,327	23
Other accrued expenses	1,604	1,401
Deferred revenue	393	277
Operating lease liability - current	826	775
Other current liabilities	632	342
<b>Total current liabilities</b>	<b>10,716</b>	<b>8,789</b>
Other liability - long term	67	24
Paycheck Protection Program loan - long term	1,228	—
Deferred Income - Government awards - long term	2,263	—
Operating lease liability - long term	2,441	3,067
<b>Total liabilities</b>	<b>16,715</b>	<b>11,880</b>
Commitments and contingencies		
<b>Shareholders' equity:</b>		
Preferred stock, \$.001 par value: authorized 10,000,000 shares:		
Series B Convertible Preferred stock, (liquidation preference of \$5,659) stated value \$1,000 per share, \$.001 par value: 10,000 shares designated and 5,659 issued and outstanding as of September 30, 2020 and December 31, 2019.	—	—
Common stock, \$.001 par value: authorized 200,000,000 shares, issued 67,661,668 shares, outstanding 67,499,602 shares as of September 30, 2020 and issued 50,250,378 shares, outstanding 50,088,312 shares as of December 31, 2019.	68	50
Additional paid-in capital	268,720	258,767
Accumulated deficit	(248,341)	(240,610)
Treasury stock, 162,066 shares as of September 30, 2020 and December 31, 2019.	(500)	(500)
<b>Total shareholders' equity</b>	<b>19,947</b>	<b>17,707</b>
<b>Total liabilities and shareholders' equity</b>	<b>\$ 36,662</b>	<b>\$ 29,587</b>