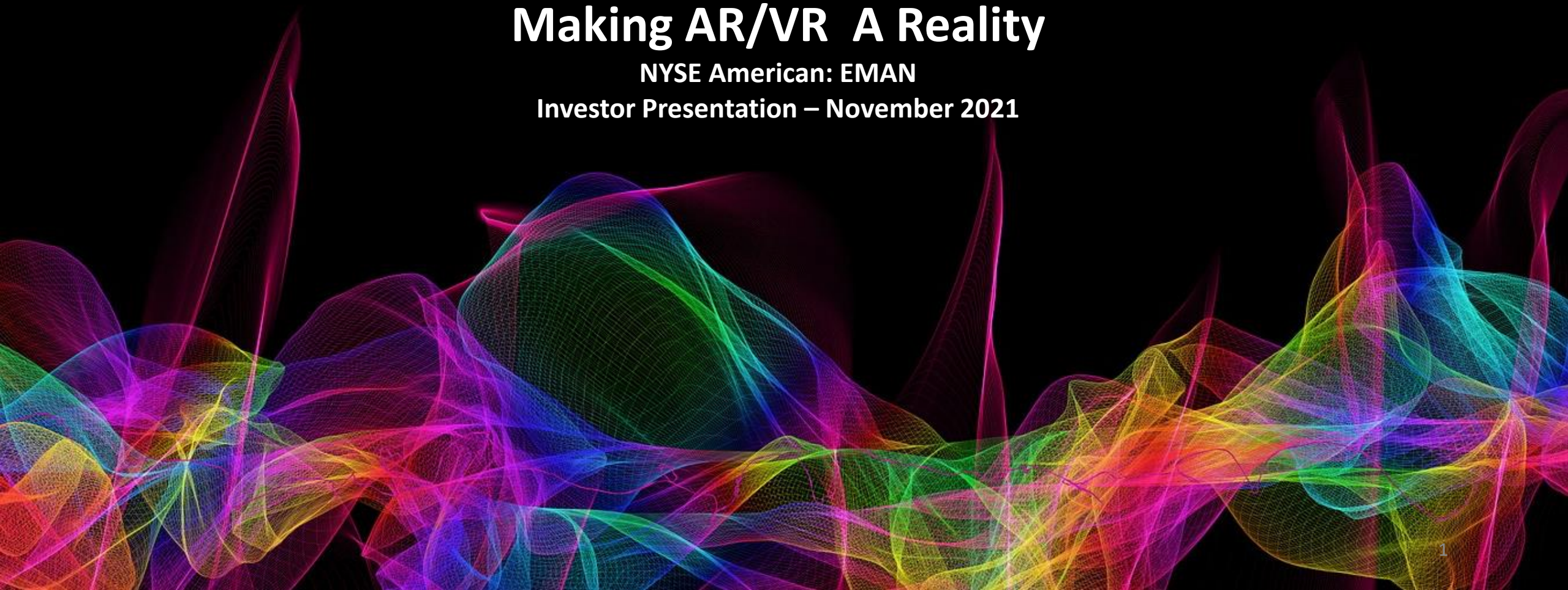
# eMagin

# Making AR/VR  A Reality

**NYSE American: EMAN**

**Investor Presentation – November 2021**



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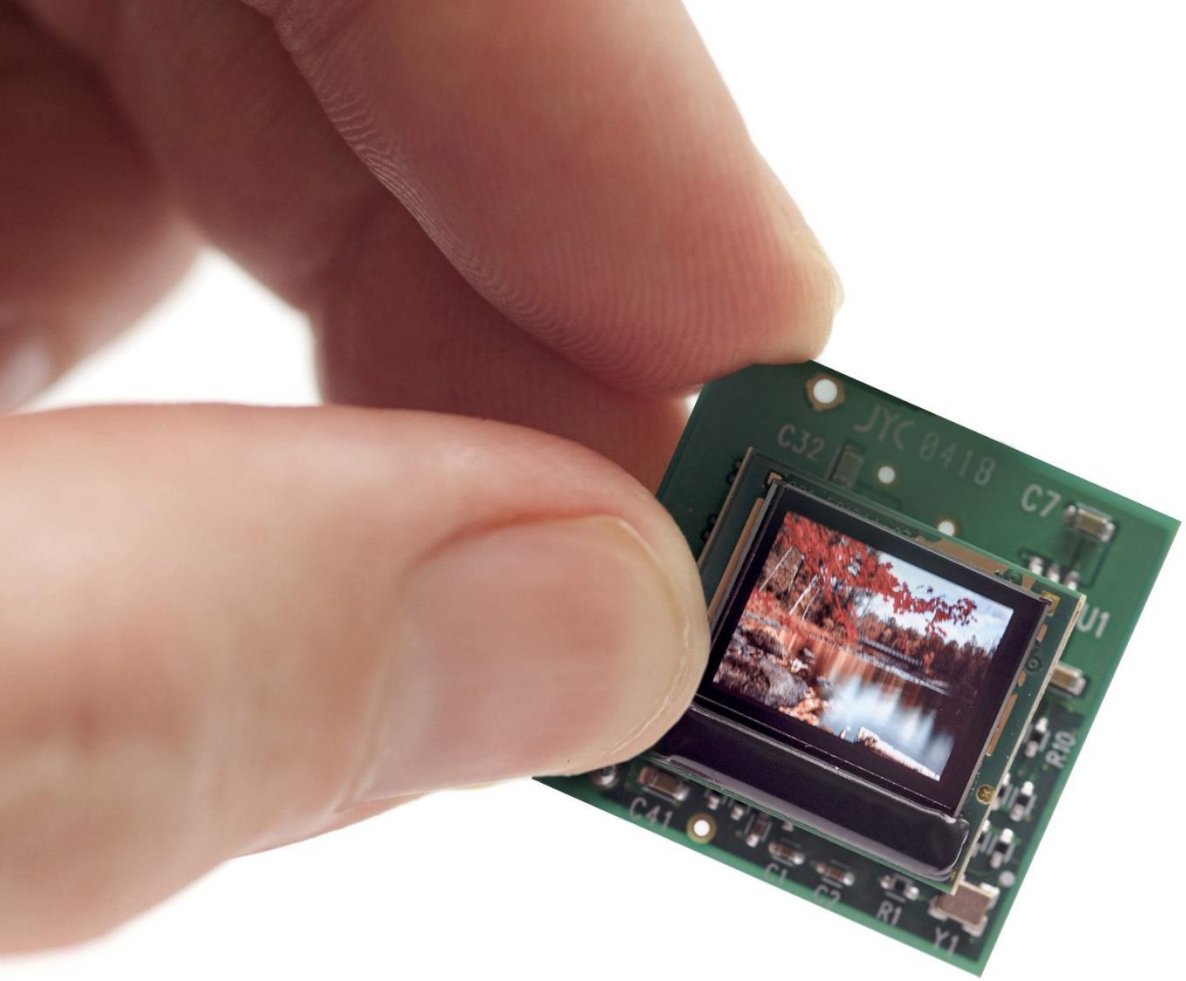


# Vision:

***Enable the visualization of digital information and imagery with OLED technology***

# A Pioneering Technology Leader with a Broad IP Portfolio

1. A technology leader with proprietary and patented direct patterning technology (dPd™) for ultrahigh brightness in color, and the sole U.S. manufacturer of OLED microdisplays

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

3. U.S. government funding of approximately $39 million for manufacturing supports equipment procurement and improvements in growth, innovation and productivity

4. Deep applications expertise and broad IP portfolio that is aligned with diverse customer base and long-term industry trends

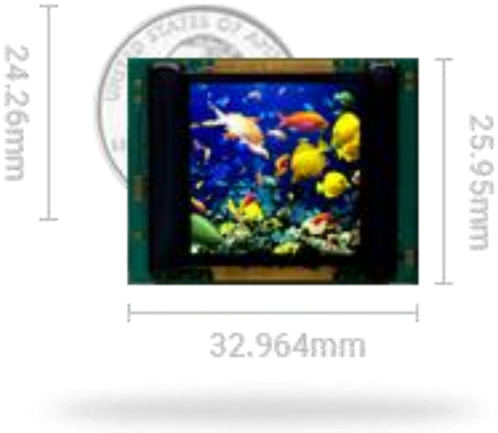
5. Well-established military and aviation market presence benefiting from modernization trends; leverageable platform for high growth opportunities in consumer and commercial end markets

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: | **$29.4M in 2020**<br>• 85% from Product Sales,15% Contracts<br>• 56% U.S., 46% International<br>• 30 countries served |
| Market Cap: | **$207.6M*** |
| Ticker/Exchange: | **EMAN / NYSE American** |
| Patents: | **56 issued, 31 pending** |

**The technology leader in OLED Displays**




**Making AR/VR a reality**

**Based on closing price on 11/8/21 and approximately 72.6 million shares outstanding.*

# Leveraging Our Military Experience to Seize New Opportunities

- Establish partnerships for high-volume manufacturing
- Develop commercial and consumer electronics customer relationships for AR/VR opportunities
- Grow commercial, medical and industrial presence
- Expand military and aviation market share
- Deepen penetration of leading-edge dPd™ technology
- Increase capacity and production yields; expand manufacturing capability

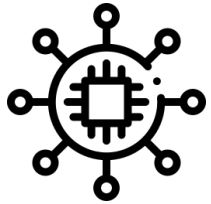
# H1 2021: Improvements in Backlog and Liquidity.

## Financial Trends

- H1 2021 Product revenues totaled $11.8 million, comparable to H1 2020 Product revenues of $11.9 million
- H1 2021 Contract revenues of $1.2 million declined from $2.5 million in H1 2020 reflecting timing of contract deliverables.
- December 31, 2020, backlog of open orders of $12.2 million, grew to $16.0 million in July 2021.
- Cash and cash equivalents of $8.3M as of December 31, 2020 increased to $10.6 million at June 30, 2021.
- Expecting contract revenues to continue with development and scalability of dPd technology for consumer AR/VR

## Operating Trends

- Continuing to supply sole-sourced displays under the Enhance Night Vision Goggle-Binocular (ENVG-B) program as it ramps to volume, as well as other key military programs worldwide
- In December 2020, signed a 10-year lease for 25% of additional space to house the new equipment, including equipment to be purchased for the Company's patented high-brightness dPd production process
- In H1 2021, took delivery of first pieces of equipment under $39.1 million in U.S. government funding awarded to eMagin to enhance its manufacturing capabilities as the only U.S. provider of OLED microdisplays

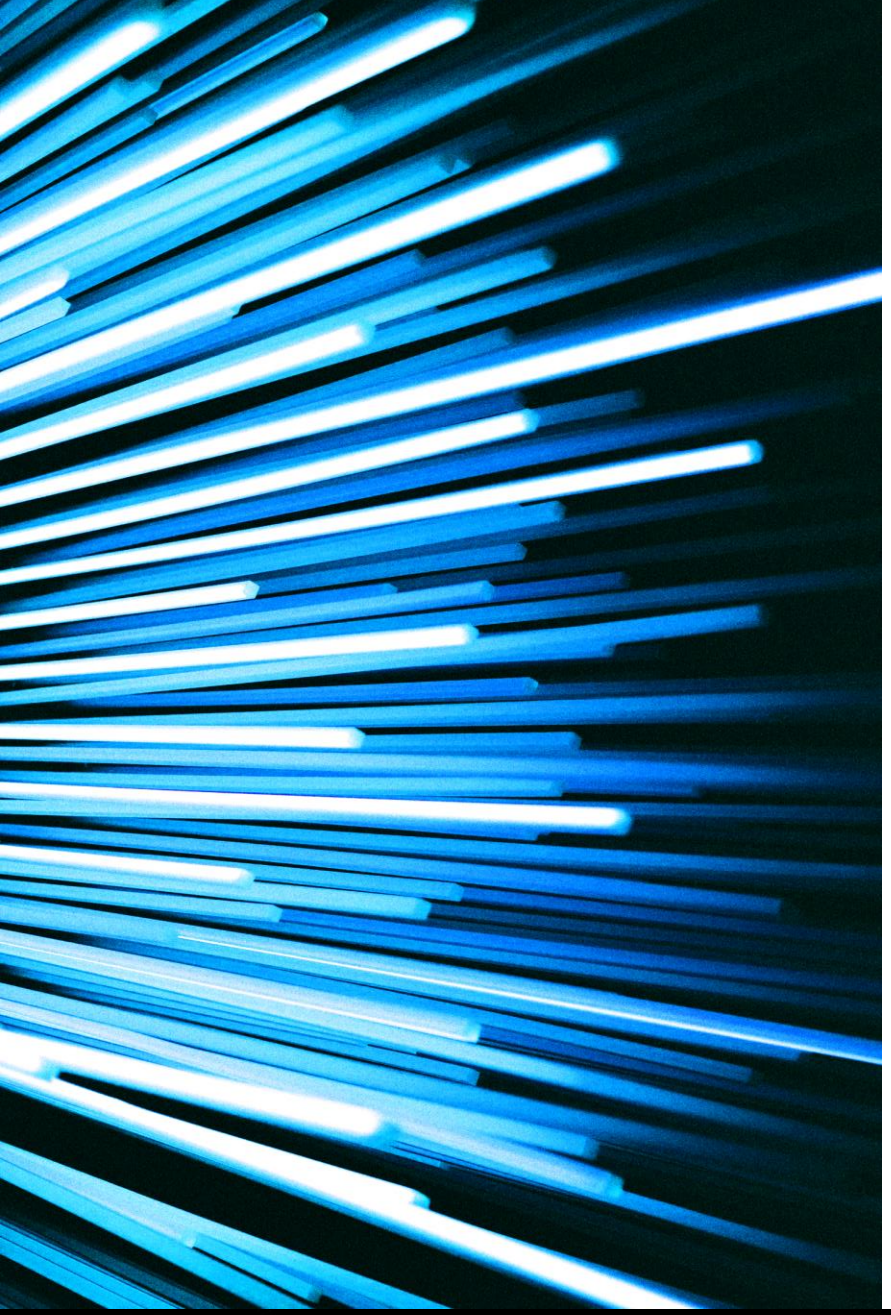


## Advancing Product Development

- Continue to see strong interest in high-brightness XLE and direct patterned technology
- Steady progress on the development efforts for dPd technology and high brightness product roadmap
- Closer to achieving brightness milestone of 10,000cd/m2 for a full-color display using a single stack architecture

# Serving a Critical Need in U.S. Defense Capabilities


- Recognized by the U.S. Department of Defense (DoD) as the only domestic manufacturer of OLED microdisplays and designated as a cornerstone of the U.S. manufacturing base
- Received $39.1 million in DoD funding for procurement and installation of capital equipment at the Hopewell Junction facility to enhance manufacturing capabilities and to sustain and enhance U.S. domestic capability for high-resolution, high-brightness OLED microdisplays based on proprietary dPd technology



# Our OLED Technology Advantage: Lowest Power, Highest Brightness

- Brightest OLED commercially available – monogreen with peak luminance over 40,000 cd/$m^2$
- Full-color over 10,000 cd/$m^2$ demonstrated
- Very high contrast – greater than 1,000,000:1
- Lower power consumption yields longer battery life
- More compact form factor
- Lightweight solution
- Field tested for reliability and performance
- Nausea-free operation
- Superior performance and a competitive cost at higher volumes


# A History of Technical Leadership Through Fundamental Innovations in Microdisplays

- Developed and shipped first full-color Active Matrix OLED in 2001

- Introduced sequentially higher resolution displays:
  - VGA 640x480
  - SVGA+ 852x600
  - DSVGA 800x600
  - SXGA096 1280x1024
  - SXGA120 1280x1024
  - WUXGA 1920x1200
  - 2Kx2K 2048x2048
  - 4Kx4K

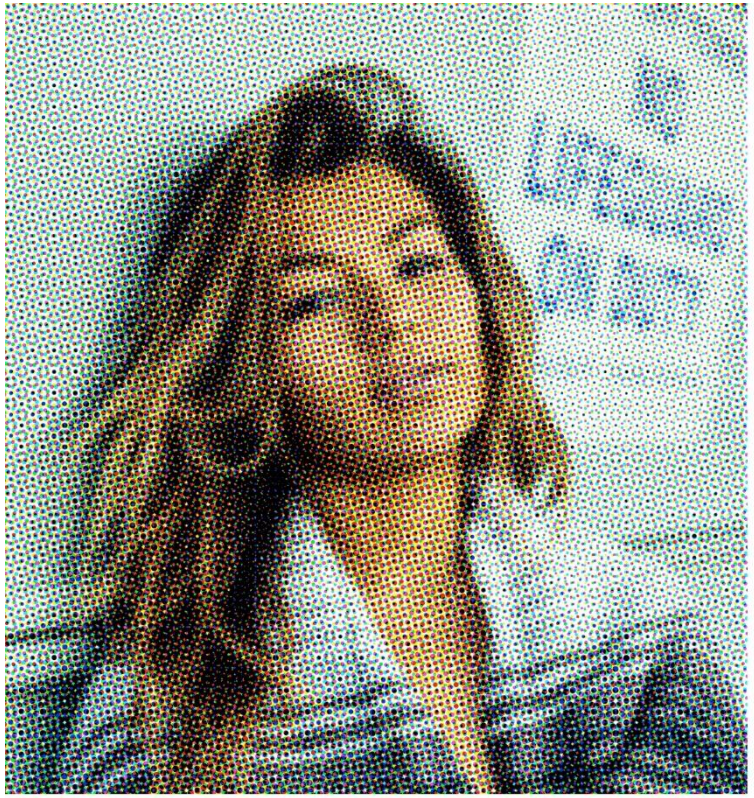
- Full-color SXGA OLED microdisplay
- First to develop 20k cd/m2 monochrome green in 2011
- First to develop 700 cd/m2 in full color in 2013
- Recent white with color filter displays exceed 1,500 cd/m2
- Demonstrated unique and proprietary full-color direct patterned dPd™ microdisplay of over 10,000 cd/m2

# Direct Patterning: The Best Display Solution for AR/VR Applications

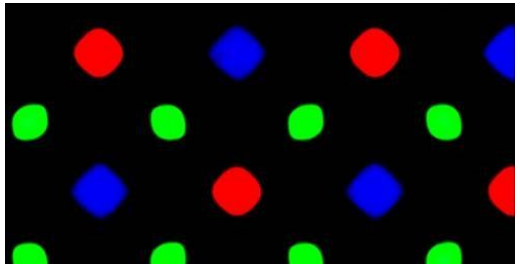
- dPd achieved over 10,000 cd/m2 brightness on a full-color WUXGA
- Full-color 2k x 2k display demonstrated by using dPd
- 4k x 4k full-color dPd microdisplay demonstrated

# OLED Provides a Superior AR/VR Experience

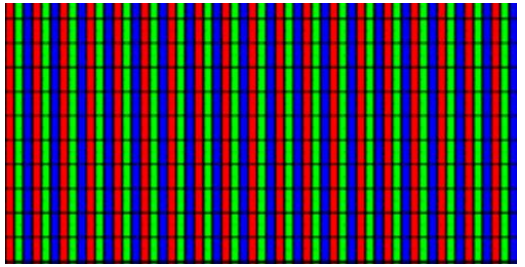
***Magnification Highlights eMagin's Superior Fill Factor***



**OLED Cell Phone Display ~600 ppi**




**eMagin OLED Microdisplay >2,500 ppi**



# The Future of AR/VR Powered by dPd™

Low Brightness AR*

High Brightness AR*

- 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$^2$ at year end and 28,000 cd/m$^2$ by 2023
  - Higher efficiency, much lower power consumption

- eMagin is ahead today in full-color OLED microdisplay brightness and will stay ahead with dPd

*for illustrative purposes only

# Deep Application Expertise and Broad IP Portfolio Create Significant Barriers to Entry

## Patents

- 56 patents issued and 31 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

# Well-established Military and Aviation Business

## 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 – International and 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
- Military microdisplays addressable market expected to increase
- Accelerating activity and program wins in aviation
- Trend away from LCD to OLED for better contrast and brightness

## Customers

BAE SYSTEMS

TATA POWER

Elbit Systems

L3HARRIS™

THALES

LEONARDO DRS

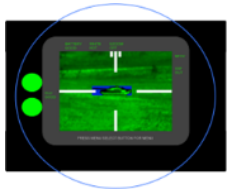
Raytheon Technologies

## Products

Enhanced Night Vision Goggle

Helmet Display

Laser Range Finder



Simulation Training Devices

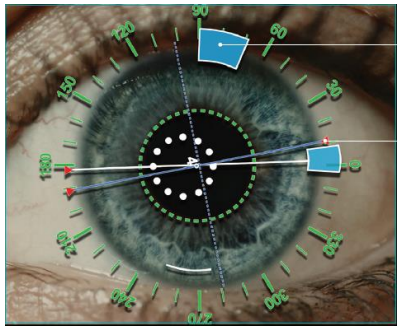
# Commercial and Medical Markets Represent New Growth Opportunities and End-market Diversification

## Profile

- Products provide high reliability in stressful environments
- Visualize digital information and imagery
- Successful in supplying to medical imaging devices, veterinary ultrasound viewers, thermal cameras and hunting scopes

## Products

LASIK Surgery



Cataract Surgery

fMRI
Visual System

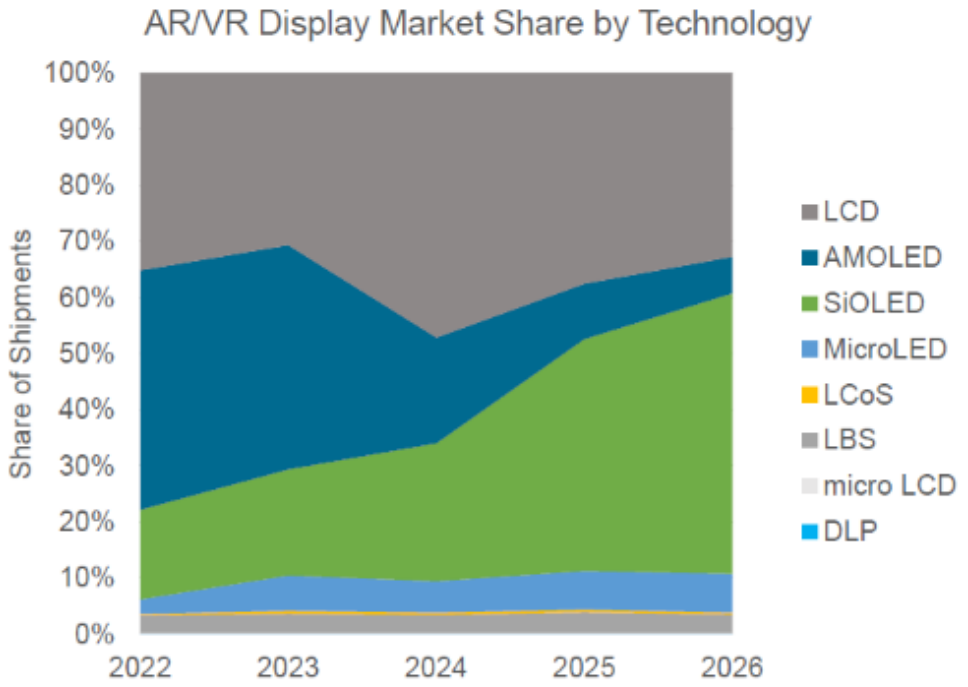
Veterinary Ultrasound

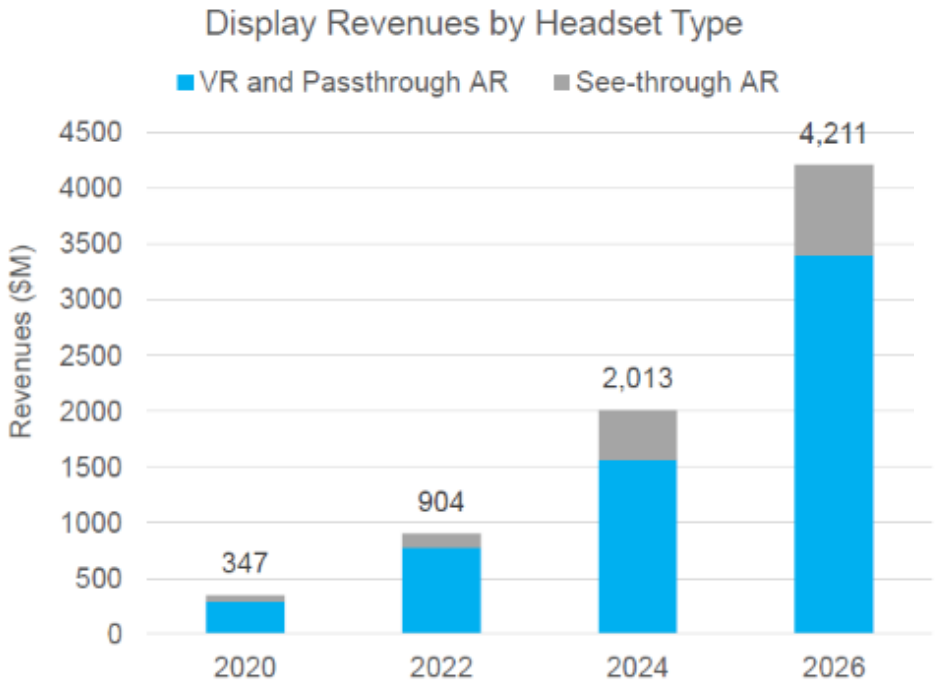
Hunting Scopes

# Display Market Share and Revenues

- OLED on silicon (SiOLED) will capture the largest share of shipments from 2025, with LCD in second place.
- We expect that AMOLED will lose popularity in the long term, due to the limitations in pixel density.
- Revenues for AR/VR displays will grow at a CAGR of 51.6%, from $0.3B in 2020 to $4.2B in 2026.

DSCC charts exclude wearable monitor HMDs for Industrial & Medical applications



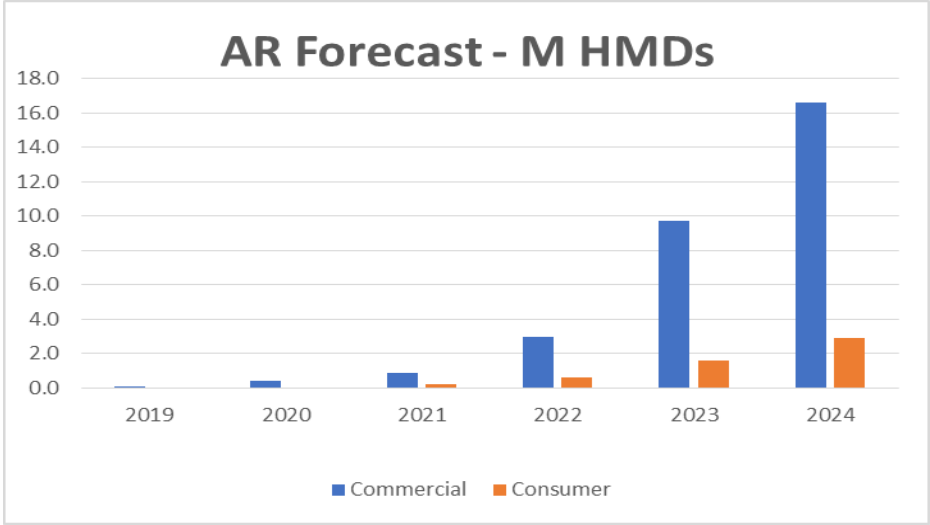



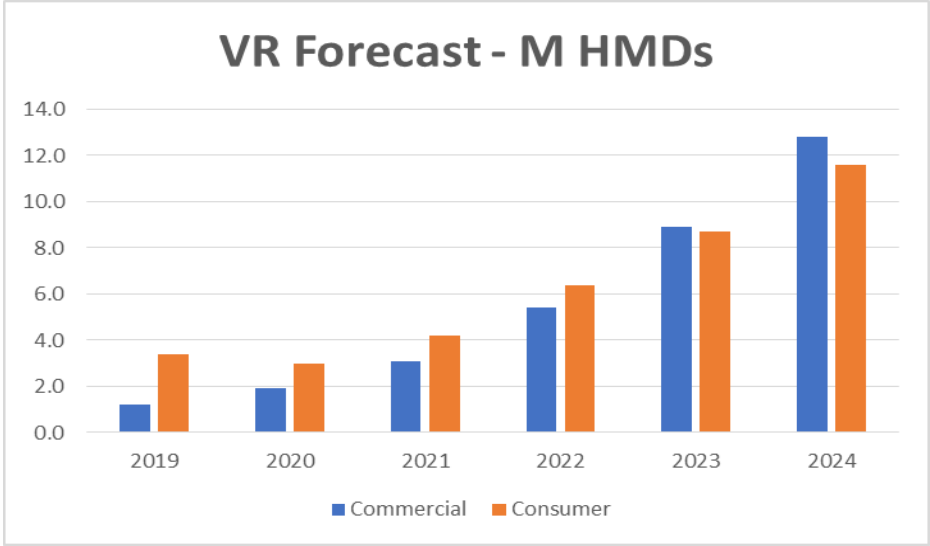

**OLED Microdisplays Dominate**

# Well Positioned to Capitalize on Large Commercial and Consumer Opportunities

## 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




**Source: IDC 2020**

# Our Manufacturing Footprint: We are “Made in the USA”

**Hopewell Junction, NY (Headquarters)**

- 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

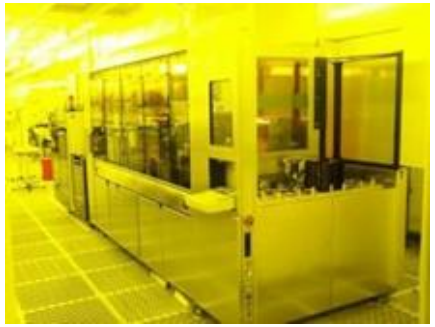


Photo-Lithography

Metal Deposition

OLED Deposition Cluster

In-Line Inspection

Glass Lid

Advanced Packaging Capabilities

# Experienced Management Team of Recognized Industry Experts

| | |
|---|---|
| **Andrew Sculley**<br>*CEO* | • More than 20 years experience in OLED technology and manufacturing<br>• Led Kodak OLED Systems<br>• MS Physics Cornell, MBA Carnegie-Mellon |
| **Dr. Amal Ghosh**<br>*COO* | • Pioneering inventor of disruptive OLED microdisplay technology at eMagin and Kodak<br>• PhD Physics MIT<br>• Past President of the prestigious Society for Information Display (SID) |
| **Mark Koch**<br>*CFO* | • Previously eMagin's VP of Finance and Corporate Controller<br>• +25 years of financial experience<br>• Certified Public Accountant; BS Manhattan College |
| **Oliver Prache**<br>*SVP Product Development* | • OLED product commercialization pioneer at Pixtech (France) and OIS Optical Imaging Systems<br>• Diplôme d'Ingénieur from E.N.S.E.R.G. Grenoble France |
| **Joseph Saltarelli**<br>*SVP Operations* | • More than 25 years of semiconductor, thin films, and packaging manufacturing<br>• Senior Director of Manufacturing Operations, GLOBALFOUNDRIES<br>• BS Ceramic Engineering and Materials Science Rutgers, MBA in Technology Management |

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# Appendices

# Consolidated Statement of Operations

(in thousands, except share data)

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2021 | 2020 | 2021 | 2020 |
| **Revenues:** | | | | |
| Product | $ 5,742 | $ 6,260 | $ 11,847 | $ 11,894 |
| Contract | 537 | 1,440 | 1,205 | 2,537 |
| **Total revenues, net** | 6,279 | 7,700 | 13,052 | 14,431 |
| **Cost of revenues:** | | | | |
| Product | 5,466 | 4,978 | 10,173 | 9,768 |
| Contract | 242 | 746 | 600 | 1,253 |
| **Total cost of revenues** | 5,708 | 5,724 | 10,773 | 11,021 |
| **Gross profit** | 571 | 1,976 | 2,279 | 3,410 |
| **Operating expenses:** | | | | |
| Research and development | 1,788 | 1,599 | 3,630 | 2,579 |
| Selling, general and administrative | 1,690 | 1,712 | 3,514 | 3,510 |
| **Total operating expenses** | 3,478 | 3,311 | 7,144 | 6,089 |
| **Loss from operations** | (2,907) | (1,335) | (4,865) | (2,679) |
| **Other (expense) income:** | | | | |
| Change in fair value of common stock warrant liability | 2,642 | (1,481) | (4,566) | (1,501) |
| Interest expense, net | (205) | (18) | (415) | (35) |
| Gain on forgiveness of debt | — | — | 1,963 | — |
| Other income, net | 192 | 3 | 227 | 15 |
| **Total other (expense)** | 2,629 | (1,496) | (2,791) | (1,521) |
| **Loss before provision for income taxes** | (278) | (2,831) | (7,656) | (4,200) |
| Income taxes | — | — | — | — |
| **Net loss** | $ (278) | $ (2,831) | $ (7,656) | $ (4,200) |
| Loss per share, basic and diluted | $ — | $ (0.05) | $ (0.11) | $ (0.08) |
| **Weighted average number of shares outstanding:** | | | | |
| Basic and Diluted | 72,193 | 56,755 | 71,238 | 54,197 |

# Consolidated Balance Sheet

| (in thousands, except share data) | June 30, 2021 | December 31, 2020 |
|---|---|---|
| **ASSETS** | | |
| **Current assets:** | | |
| Cash and cash equivalents | $ 10,568 | $ 8,315 |
| Restricted cash | 1,491 | 2,111 |
| Accounts receivable, net | 3,117 | 5,314 |
| Account receivable-due from government awards | 77 | 1,013 |
| Unbilled accounts receivable | 783 | 253 |
| Inventories | 8,133 | 8,379 |
| Prepaid expenses and other current assets | 795 | 943 |
| **Total current assets** | 24,964 | 26,328 |
| Property, plant and equipment, net | 25,517 | 21,132 |
| Operating lease right - of - use assets | 21 | 50 |
| Intangibles and other assets | 121 | 126 |
| **Total assets** | $ 50,623 | $ 47,636 |
| **LIABILITIES AND SHAREHOLDERS' EQUITY** | | |
| **Current liabilities:** | | |
| Accounts payable | $ 1,425 | $ 1,206 |
| Accrued compensation | 2,346 | 1,628 |
| Paycheck Protection Program loan - current | — | 982 |
| Revolving credit facility, net | 405 | 1,875 |
| Common stock warrant liability | 9,188 | 4,622 |
| Other accrued expenses | 559 | 1,693 |
| Deferred revenue | 86 | 425 |
| Operating lease liability - current | 21 | 51 |
| Finance lease liability - current | 1,129 | 1,027 |
| Other current liabilities | 825 | 757 |
| **Total current liabilities** | 15,984 | 14,266 |
| Other liability - long term | 42 | 56 |
| Paycheck Protection Program loan - long term | — | 982 |
| Deferred Income - government awards - long term | 7,935 | 4,309 |
| Finance lease liability - long term | 11,631 | 11,783 |
| **Total liabilities** | 35,592 | 31,396 |
| **Shareholders' equity:** | | |
| 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 June 30, 2021 and December 31, 2020. | — | — |
| Common stock, $.001 par value: authorized 200,000,000 shares, issued 72,665,730 shares, outstanding 72,503,664 shares as of June 30, 2021 and issued 68,890,819 shares, outstanding 68,728,753 shares as of December 31, 2020. | 72 | 69 |
| Additional paid-in capital | 275,173 | 268,729 |
| Accumulated deficit | (259,714) | (252,058) |
| Treasury stock, 162,066 shares as of June 30, 2021 and December 31, 2020. | (500) | (500) |
| **Total shareholders' equity** | 15,031 | 16,240 |
| **Total liabilities and shareholders' equity** | $ 50,623 | $ 47,636 |

# Adjusted EBITDA

**$ in thousands**

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | **2021** | **2020** | **2021** | **2020** |
| Net loss | $ (278) | $ (2,831) | $ (7,656) | $ (4,200) |
| Non-cash compensation | 37 | 44 | 50 | 87 |
| Change in fair value of common stock warrant liability | (2,642) | 1,481 | 4,566 | 1,501 |
| Depreciation and intangibles amortization expense | 694 | 479 | 1,427 | 959 |
| Interest expense | 205 | 18 | 415 | 35 |
| Adjusted EBITDA | $ (1,984) | $ (809) | $ (1,198) | $ (1,618) |