



# Investor Presentation

October 2021



# Forward-Looking Statements; Non-GAAP Financial Measures

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This presentation contains forward-looking statements within the meaning of the U.S. Securities Exchange Act of 1934 and the Securities Act of 1933. The forward-looking statements include statements concerning, among other things, our future business model and strategies, our financial model and structure, market and market share growth, industry trends, customer demand and growth opportunities. In some instances, you can identify these statements by forward-looking words, such as "may," "might," "will," "could," "should," "expect," "plan," "anticipate," "believe," "estimate," "predict," "intend" and "continue," the negative or plural of these words and other comparable terminology. The target financial model described in this presentation is intended to aid in the evaluation of long-term potential, and is not guidance or a statement of forecasted performance in a specific future period. The forward-looking statements are only predictions based on our current expectations and our projections about future events. All information and forward-looking statements included in this presentation and the related discussions are based upon information available to us as of October 27, 2021. You should not place undue reliance on these forward-looking statements. These forward-looking statements are subject to known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to differ materially from those expressed or implied by these statements, including risks related to technology and market trends; the benefits of acquisitions and investments; macroeconomic conditions; uncertainties related to the COVID-19 pandemic and the impacts of our responses to it; the interpretation and impacts of changes in export controls and other trade barriers; our success in executing our business strategies and other risks discussed in the section titled "Risk Factors" and elsewhere in our Annual Report on Form 10-K for the year ended December 26, 2020 and in our other filings with the U.S. Securities and Exchange Commission copies of which may be obtained by visiting the Investor Relations section of our website at <http://investors.formfactor.com> or at [www.sec.gov](http://www.sec.gov).

This presentation and related discussions contain non-GAAP measures relating to our financial performance. These measures may be different from non-GAAP financial measures used by other companies. The presentation of this financial information is not intended to be considered in isolation of, or as a substitute for, financial information prepared and presented in accordance with generally accepted accounting principles. You can find the reconciliation of non-GAAP financial measures to the most directly comparable U.S. GAAP measures in the Supplemental Information contained in this presentation.

# FormFactor At a Glance

TTM Revenue\*  
**\$762M**



Advanced Probe Cards  
for Chip Production



60,000,000+  
MEMS PROBES/YEAR

Engineering Systems



10,000+  
INSTALLED PROBERS

Global Manufacturing, Design  
and Customer Service Presence



~ **2,200**  
**PEOPLE**



Recognized by  
Industry Leaders\*\*

Intel

TSMC

Micron

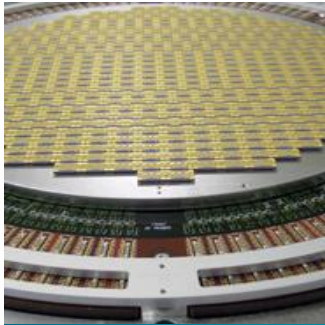
SK hynix

Samsung

\*As of 10/27/21

\*\* Customers that have accounted for >10% of revenue for one or more quarters since Q1 FY18

# Compelling Investment Thesis



Market leader in large and growing semiconductor test and measurement sector



Benefits from powerful secular trends:

- Exponential growth in semiconductor content, increased 5G and data center spending
- Adoption of advanced packaging to counter slowdown in Moore's Law



Technology leadership enables customers' most critical roadmap advancements, from R&D through Production



Profitable financial model with earnings growth and strong cash flow

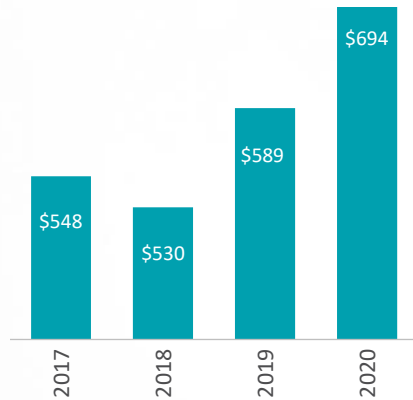


Active execution of acquisition strategy increases scale and diversification

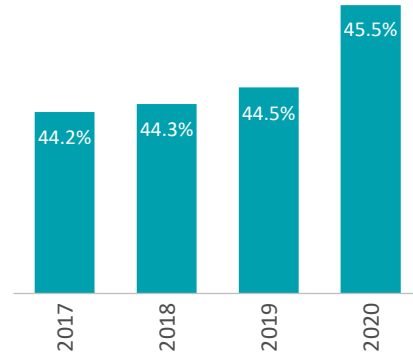
# Proven Track Record

## Revenue

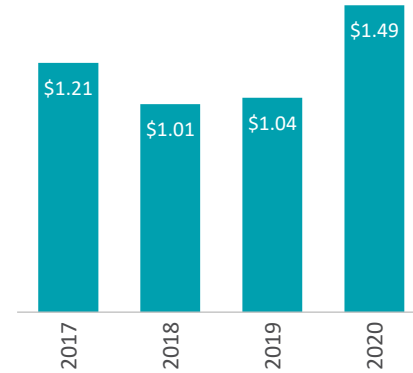
\$ IN MILLIONS



## Non-GAAP Gross Margin

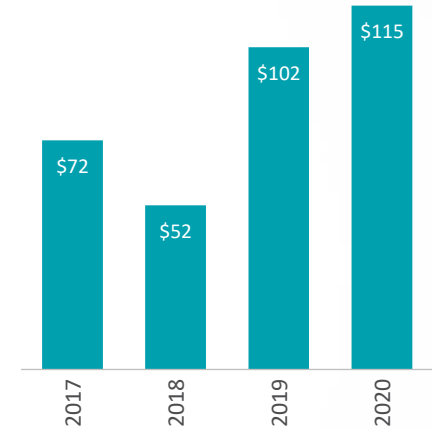


## Non-GAAP EPS\*



## Free Cash Flow

\$ IN MILLIONS



Expanding Market Share Leadership

Benefits From Scale and Operational Execution

Significant Operating Leverage

Cash Generative Business Model

See Supplemental Information for reconciliations of non-GAAP financial measures to the most directly comparable GAAP financial measures.

\*Reflects inclusion of deferred tax expenses in Non-GAAP EPS starting Q1'19. All references to EPS are on a diluted basis.

Sources: Historical information, company SEC filings and press releases.

# Recognized Industry Leader



2014 • 2015 • 2016  
2017 • 2018 • 2019  
2020 • 2021



## FormFactor Receives Five Star Rating in Annual VLSIresearch Customer Satisfaction Survey

LIVERMORE, Calif., May 13, 2021 (GLOBE NEWSWIRE) — FormFactor, Inc. (NASDAQ: FORM), a leading semiconductor test and measurement supplier, announced that it has once again been named a 10 BEST and THE BEST Supplier in VLSIresearch’s annual customer satisfaction survey, with five of five stars in three categories;

- 10 BEST Focused Suppliers of Semiconductor Equipment,
- THE BEST Suppliers of Test Equipment, and
- THE BEST Suppliers of Test Subsystems.

The survey includes the feedback of worldwide semiconductor manufacturing companies, rating suppliers in 14 categories, and measuring in each – supplier performance, customer service, and product performance. The results mark eight consecutive years that FormFactor has been selected in THE BEST Suppliers of Test Subsystems which includes manufacturers of probe cards, test sockets, and device interface boards. In April, the company was also ranked as the world’s top supplier of semiconductor probe cards in a separate VLSIresearch report.

“Customers give FormFactor high rankings for quality of results and product performance,” said G. Dan Hutcheson, CEO of VLSIresearch. “The survey provides insights into customer sentiments, measuring critical factors for customers. In multiple categories, FormFactor was rated as a 5 VLSI Star supplier.”

Trusted by leading semiconductor designers and foundries

# How FormFactor Wins

Early Customer Engagement  
Creates Competitive Advantage  
and High Barriers to Entry



Technology and Applications  
Leadership Relied Upon  
by Customers



Deliver Market-Leading  
Products with World-Class  
Cycle Times and Quality



Largest R&D Budget in  
Served Markets, Enabled  
by Industry-Leading Scale



# FormFactor Occupies a Unique Place in Semiconductor Industry

## Front-End: Wafer Fabrication Equipment



Industry: \$55 Billion

- 6% CAGR
- Highly cyclical, tied to capital spending
- Highly consolidated

## Wafer Test & Measurement



Industry: \$1.9 Billion

Advanced Probe Cards: \$1.5B; Engineering Systems: \$0.4B

- 6% CAGR for Advanced Probe Cards, device-specific consumables
- 3% CAGR for Engineering Systems, driven by R&D budgets
- Demand driven by design releases on both new and existing nodes
- Moderate cyclicity
- Consolidated industry

## Back-End: Wafer Assembly and Final Test



Industry: \$3.5 Billion

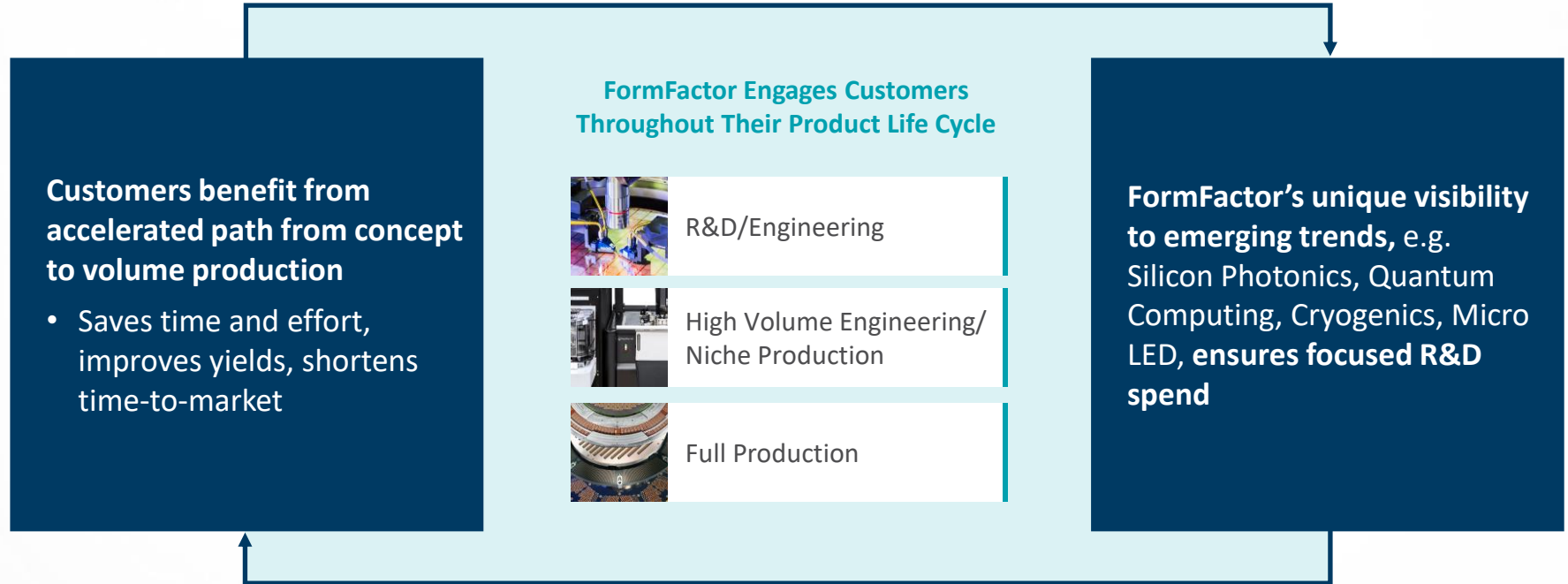
- 7% CAGR
- Highly cyclical, tied to capital spending
- Highly fragmented

Customers' shorter product cycles and faster times-to-market amplify secular growth in silicon devices

Sources: All market size and growth rates are VLSIresearch estimates, except for Engineering Systems which are company estimates.

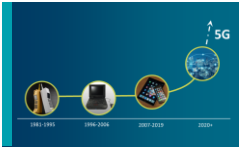


# Customers Value, FormFactor Benefits From “Lab to Fab” Capabilities

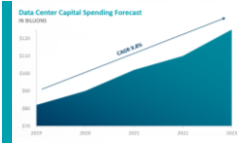


# FormFactor Benefits from Two Industry Dynamics

## Secular Growth in the Semiconductor Industry



Exponential Growth in Semiconductor Use

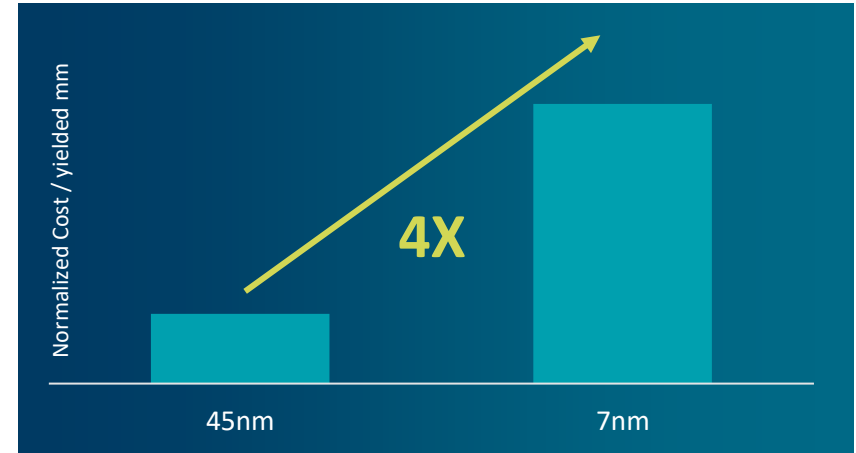


Increased Infrastructure and Enterprise Spending



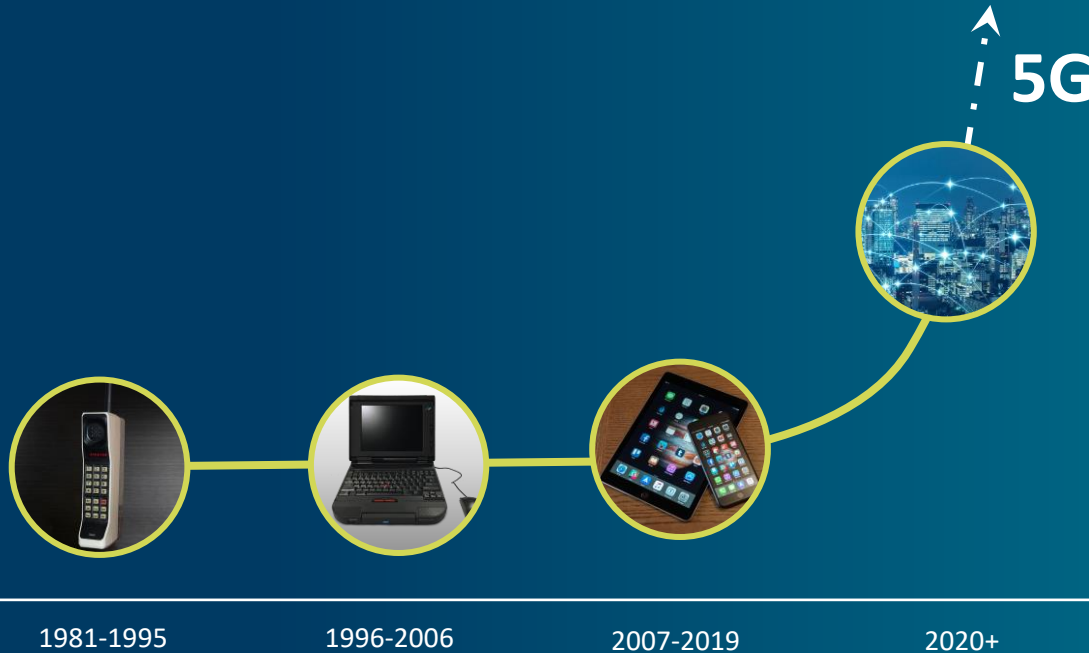
5G Applications in Mobility and Automotive

## Slowing of Moore's Law: Node shrinks no longer provide cost reduction



Source: Su (AMD), IEDM 2017.

# Exponential Growth in Silicon Devices Will Be Accelerated by 5G



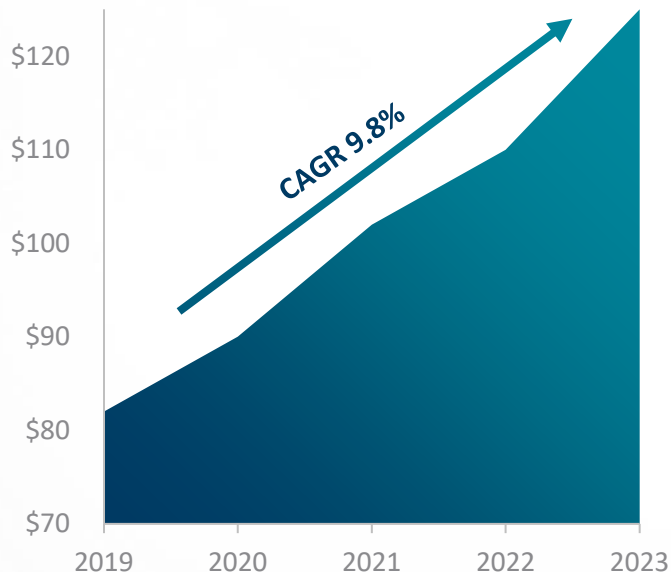
## Key Factors for 5G Success

- RF expertise
- R&D-intensity
- Dependable supplier
- Customer intimacy

# Infrastructure Spending and 5G Adoption Are Spurring Semiconductor and Probe Card Use

## Data Center Capital Spending Forecast<sup>1</sup>

IN BILLIONS



Source:

1. Omdia
2. Cisco "Annual Internet Report"
3. Lear Corporation, IHS Automotive for industry production.

## 5G Will Drive Increased Content in Mobility and Automotive Applications



Mobility<sup>2</sup>

**10%** ▶

Connected Devices  
2018-2023  
CAGR

**≈30B**

Connected devices by 2023

	M2M	Smartphones	TVs	Other (tablets, PCs, etc.)
CAGR	<b>50%</b>	<b>23%</b>	<b>11%</b>	<b>16%</b>



Automotive<sup>3</sup>

### Trends Driving Semiconductor Content and Sensor Growth

Autonomous

**≈ \$50B**

2035 Market Size

Electrification

**≈ \$44B**

2027 Market Size

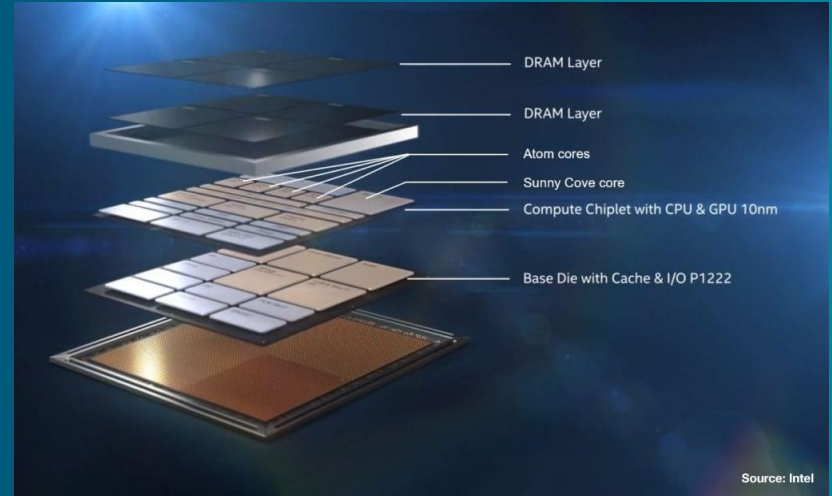
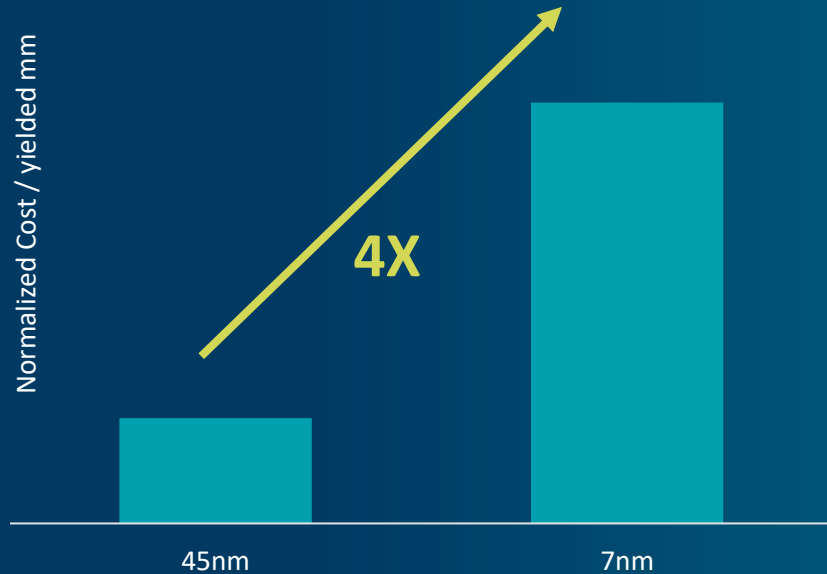
Connectivity

**≈ \$9B**

2027 Market Size

# Advanced Packaging Addresses Scaling Challenges As Moore's Law Slows

Node shrinks no longer provide cost reduction




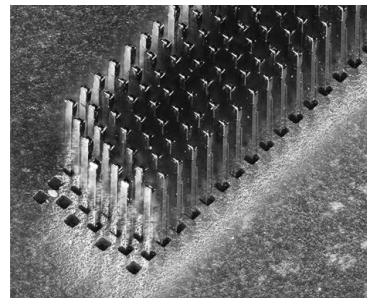
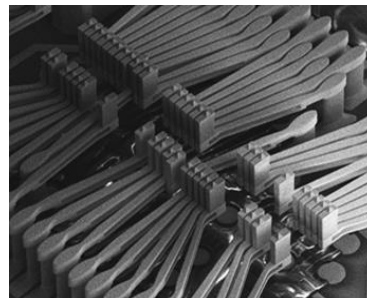
Advanced Packaging improves product-level performance, power and density

Source: Su (AMD), IEDM 2017.

Note: Cost per yielded mm<sup>2</sup> for a 250 mm<sup>2</sup> die.

# Probe Cards are Critical to Advanced Packaging

TEST INTENSITY		Cost of the Advanced Packaging Solution	
		Low	High
Semiconductor Die Yield	Low	Some	<b>LOTS!</b> 
	High	Little	Some



Test intensity, and therefore probe card demand, increases as advanced packaging becomes widespread

# FormFactor's Markets Offer Attractive Growth Opportunities

Growth From FormFactor's Industry-Leading Position in Fast-Growing Markets



Incremental Growth from Advanced Packaging and 5G



Data Center



Mobility



Automotive



\$650M\* → \$850M  
\$200 MILLION  
Incremental Revenue  
By ~2023\*\*

\*\$650M was a previous target model achieved in 2020

\*\*Based on VLSIresearch estimates and company estimates

# Unique Capabilities Position FormFactor for Faster Growth in Advanced Probe Cards

**8%+** CAGR\*\*

## FormFactor

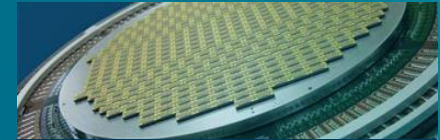
- Proprietary Technologies
- Strong Customer Relationships
- Productive R&D Spend

**6%** CAGR\*

Advanced Probe Card Market

**5%** CAGR\*

Probe Card Market



Memory



High Frequency (RF)



Logic

**\$2 Billion Advanced Probe Card Market In 2023**

Source: \*2020 VLSIresearch estimates.

\*\*Company estimates.



# Poised for Above-Market Growth in Engineering Systems

**5%+** CAGR\*\*

## FormFactor

- Largest Installed Base
- Autonomous Measurement Solutions Leader
- Broadest Portfolio

**3%** CAGR\*

Engineering Systems Market

3D Surface  
Metrology



200 mm  
Automated



300 mm  
Automated

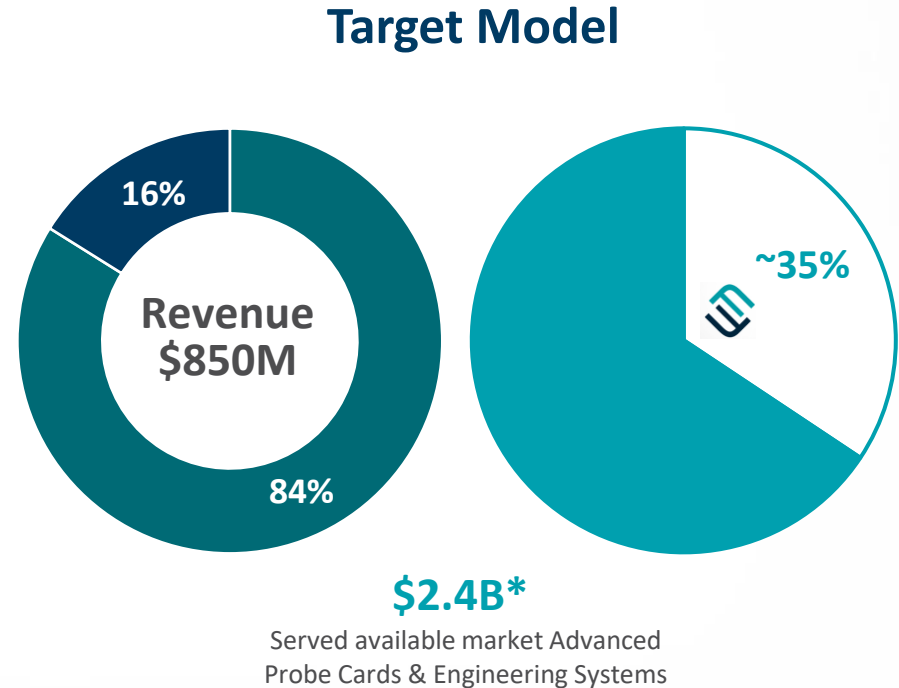
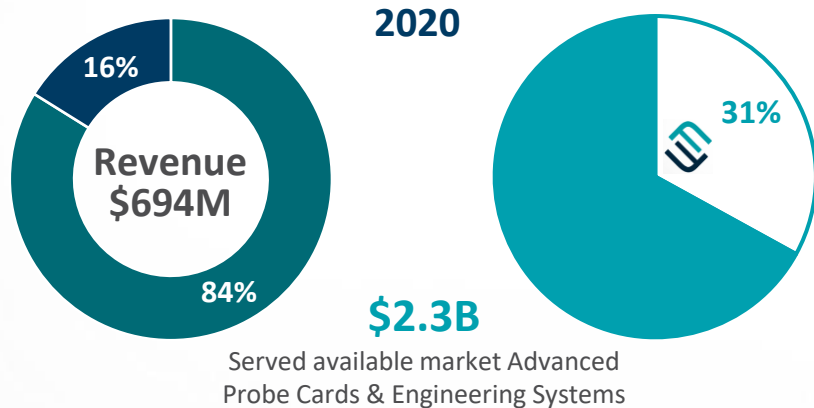


Technology Leadership and Worldwide Infrastructure Lead to Customer Intimacy and Early Involvement

Source: \*2020 VLSIresearch estimates.

\*\*Company estimates.

# FormFactor's New Target Model



■ Probe Cards   ■ Engineering Systems

## Growth to \$850M Target Model Revenue, Delivers \$2.00 Non-GAAP EPS

	2020 Actuals	Target Model
Revenue	\$694M	\$850M
Non-GAAP Gross Margin	45.5%	47.0%
Non-GAAP Operating Margin	19.4%	22.0%
Non-GAAP Effective Tax Rate	13.4%	17.0%
Non-GAAP Diluted Earnings Per Share	\$1.49	\$2.00
Free Cash Flow	\$115M	\$160M

See Supplemental Information below for reconciliations of non-GAAP financial measures to the most directly comparable GAAP financial measures.  
Sources: Historical information, company SEC filings and press releases.

# Drivers of Shareholder Value Creation

## Revenue Growth

- Underlying growth in semiconductor applications
- Participation in Advanced Packaging and 5G mega trends
- Diversification of customers

## Operating Leverage

- Gross Margin expansion
- Disciplined operating structure
- Robust Operating Cash Flow and Free Cash Flow
- Profitable growth

## Capital Allocation

### Focused reinvestment

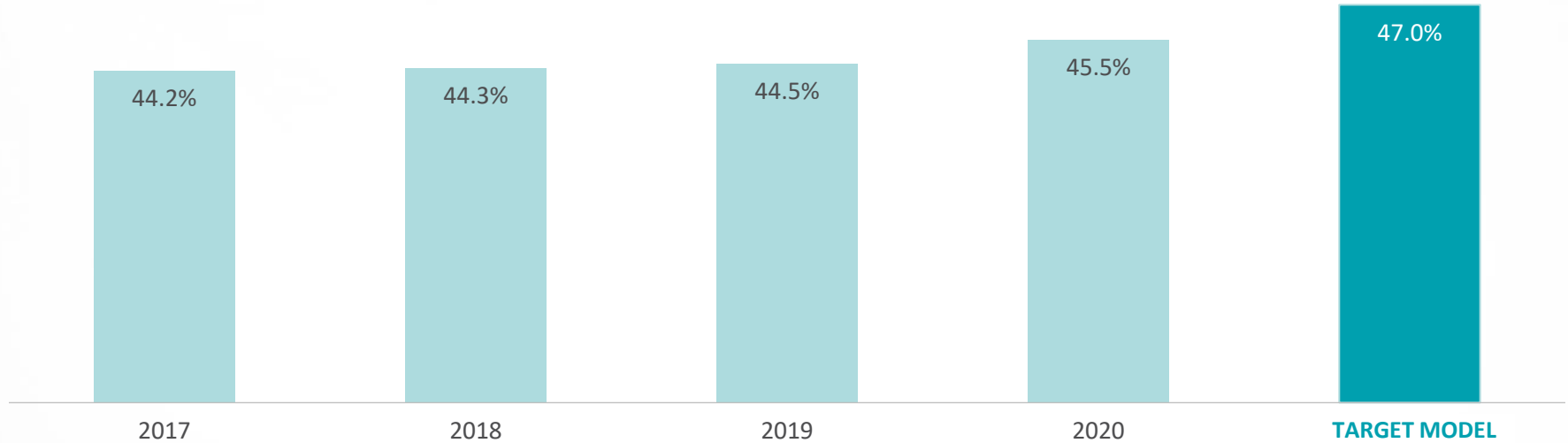
- R&D
- Capacity expansion
- Fund organic growth

### M&A

- Increase served addressable market
- Acquire attractive technologies
- Patient, deliberate approach
  - Complementary to organic growth
  - Diversifies revenue stream
  - Accretive to earnings

# Revenue Growth Drives Increased Profitability

## Non-GAAP Gross Margin

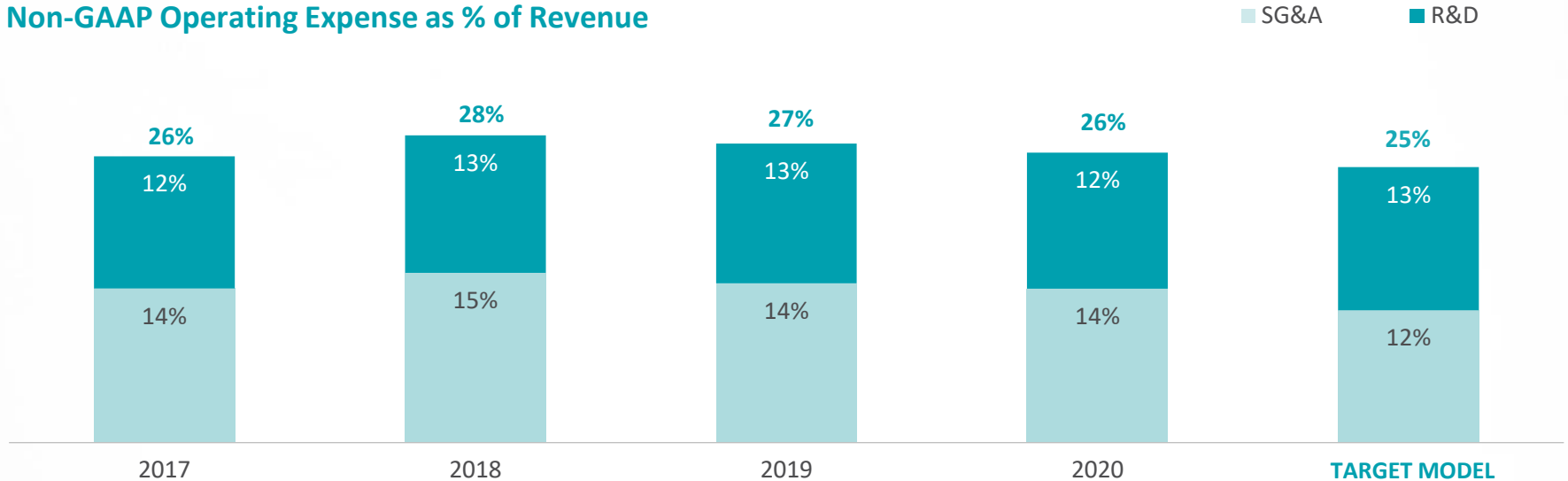


Improving operating efficiency and factory utilization will drive gross margin expansion

See Supplemental Information below for reconciliations of non-GAAP financial measures to the most directly comparable GAAP financial measures.  
Sources: Historical information, company SEC filings and press releases.

# Scale Enhances Margins, Finances Differentiating R&D

## Non-GAAP Operating Expense as % of Revenue

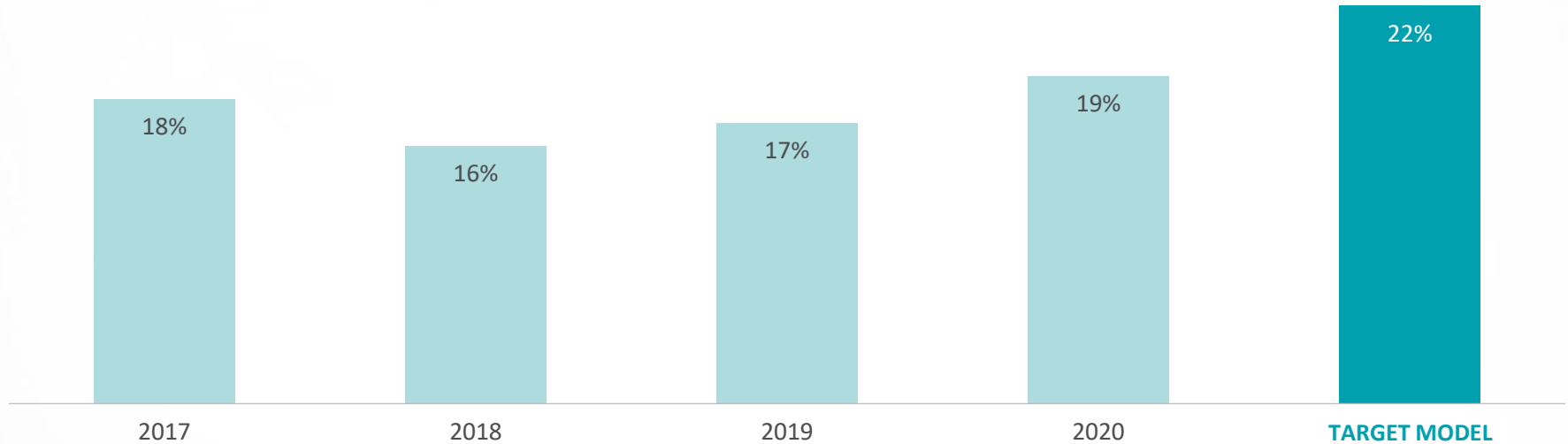


**Capitalize on scale to leverage our operating expense infrastructure.  
Continued significant R&D investment creates new organic growth opportunities.**

See Supplemental Information below for reconciliations of non-GAAP financial measures to the most directly comparable GAAP financial measures.  
Sources: Historical information, company SEC filings and press releases.

# Driving Operating Leverage Through Scale

## Non-GAAP Operating Margin



**Disciplined spending and increasing scale will continue to enhance profitability**

See Supplemental Information below for reconciliations of non-GAAP financial measures to the most directly comparable GAAP financial measures.  
Sources: Historical information, company SEC filings and press releases.

# Capital Expenditures to Support Organic Growth

	2017	2018	2019	2020	2021	Target CapEx Model
CapEx	\$18M	\$20M	\$21M	\$56M	\$70M-\$80M Capacity Expansion	\$30M - \$35M
Revenue	\$548M	\$530M	\$590M	\$694M		\$850M
CapEx as % of Revenue	3.2%	3.8%	3.5%	8.0%		3.5%-4.0%



New Livermore Facility



Highly Automated Manufacturing



Factory Expansions



# Acquisition Strategy Adds Scale and Diversification

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## Established process focused on extending long-term industry leadership

- Acquisition priorities
  - Market leader in growing market
  - Compelling technical capabilities
  - Accretive
  - Focus on tuck-ins as well as larger scale companies
- Leveraging FormFactor's key capabilities and infrastructure to achieve synergies

## Opportunistic tuck-in acquisitions aligned with our long-term strategy and M&A principles

- Provide critical enabling technologies reinforcing FormFactor's leadership
- Create potential opportunity to increase served available market

Proven track record of identifying and integrating accretive acquisitions



Year: 2012

Amount: \$117M



Year: 2016

Amount: \$352M



Year: 2019

Amount: €19.7M

*Acquisition of Advantest's probe card assets*

Year: 2020

Amount: \$35M



Year: 2020

Amount: \$15M



# Highly Resilient Business Model

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## Enabled by Flexible Cost Structure

- 100% of employees with variable pay component
- Flexible staffing model

## Strong and Healthy Balance Sheet

- Supported by strong free cash flows
- History of successfully managing debt and significant borrowing capacity available if needed



## Recent Results (non-GAAP)

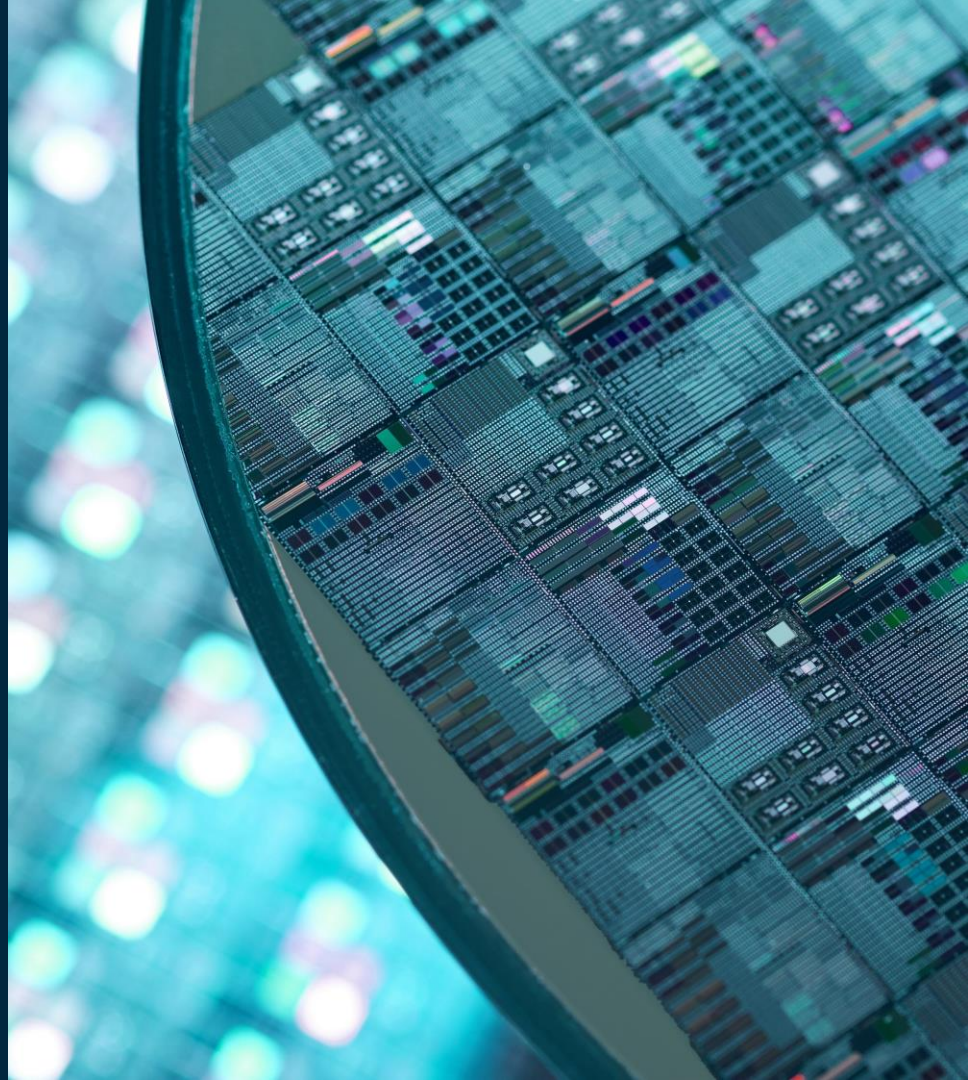
	Revenue	Gross Margin	Diluted EPS	Free Cash Flow
Q2'21 ACTUAL	\$188.1M	44.4%	\$0.36	\$16.2M
Q3'21 ACTUAL	\$190.0M	46.0%	\$0.40	\$14.4M
Q4'21 OUTLOOK	\$192M-\$204M	44%-47%	\$0.37-\$0.45	

### Q3'21 and Q4'21 Themes:

- Q3 results driven by strong demand in all our businesses coupled with favorable product mix within specific markets
- Q4 outlook - generally strong demand to continue and with added production capacity now coming online, positioned to deliver sequential growth



# Supplemental Information



# FY 2020 GAAP to Non-GAAP Reconciliation

	GAAP	Adjustments				Non-GAAP	
	Twelve Months Ended December 26, 2020	Stock-based Compensation	Amortization of Intangibles	Amortization of Acquisition Fair Value Adjustments	Acquisition Related Expenses	Contingent Consideration Adjustments	Twelve Months Ended December 26, 2020
Revenues	693,616	-	-	109	-	-	693,725
Cost of revenues	405,696	(3,951)	(21,609)	(1,570)	-	-	378,566
Gross profit	287,920	3,951	21,609	1,679	-	-	315,159
<b>Operating expenses:</b>							
Research and development	89,034	(5,824)	-	-	-	-	83,210
Sales and marketing	68,754	(7,131)	(6,382)	-	-	-	55,241
General and administrative	46,344	(6,924)	-	-	(509)	2,879	41,790
<b>Total operating expenses</b>	204,132	(19,879)	(6,382)	-	(509)	2,879	180,241
Operating profit	83,788	23,830	27,991	1,679	509	(2,879)	134,918
Interest income	1,501	-	-	-	-	-	1,501
Interest expense	(864)	-	-	-	-	-	(864)
Other income (expense), net	750	-	-	-	-	-	750
Income before income taxes	85,175	23,830	27,991	1,679	509	(2,879)	136,305
Provision for income taxes	6,652	5,439	6,388	383	116	(657)	18,321
Net income	78,523	18,391	21,603	1,296	393	(2,222)	117,984
<b>Net income per share:</b>							
Basic	\$1.02	\$0.24	\$0.28	\$0.02	\$0.01	\$(0.03)	\$1.54
Diluted	\$0.99	\$0.23	\$0.27	\$0.02	\$-	\$(0.03)	\$1.49
<b>Weighted-average number of shares</b>							
Basic	76,681	76,681	76,681	76,681	76,681	76,681	76,681
Diluted	79,001	79,001	79,001	79,001	79,001	79,001	79,001

# Free Cash Flow Reconciliation

in thousands

	2015	2016	2017	2018	2019	2020
Net cash provided by (used in operating activities)	\$ 36,122	\$ 17,423	\$ 86,323	\$ 68,700	\$ 121,048	\$ 169,256
Add: Cash paid for interest	-	2,110	3,836	3,113	1,405	867
Add: Cash paid for acquisition related expenses	-	15,446	-	-	213	509
Capital expenditures	(8,640)	(11,521)	(17,756)	(19,869)	(20,847)	(55,865)
Free cash flow	\$ 27,482	\$ 23,458	\$ 72,403	\$ 51,944	\$ 101,819	\$ 114,767

# About Non-GAAP Financial Measures

We believe that the presentation of non-GAAP earnings per fully-diluted share, free cash flow and other non-GAAP measures in this presentation provides supplemental information that is important to understanding financial and business trends and other factors relating to our financial condition and results of operations. These non-GAAP measures are among the primary indicators used by management as a basis for planning and forecasting future periods, and by management and our board of directors to determine whether our operating performance has met certain targets and thresholds. Management uses non-GAAP operating income (loss), non-GAAP earnings per fully-diluted share and other non-GAAP measures when evaluating operating performance because it believes that the exclusion of the items indicated herein, for which the amounts or timing may vary significantly depending upon our activities and other factors, facilitates comparability of our operating performance from period to period. We use free cash flow to conduct and evaluate our business as an additional way of viewing our liquidity that, when viewed with our GAAP results, provides a more complete understanding of factors and trends affecting our cash flows. Many investors also prefer to track free cash flow, as opposed to only GAAP earnings. Free cash flow has limitations due to the fact that it does not represent the residual cash flow available for discretionary expenditures, and therefore it is important to view free cash flow as a complement to our entire consolidated statements of cash flows. We have chosen to provide non-GAAP information to investors so they can analyze our operating results closer to the way that management does, and use this information in their assessment of our business and the valuation of our company. We compute non-GAAP operating income (loss) and non-GAAP fully-diluted earnings per share by adjusting GAAP operating income (loss) and GAAP earnings per fully-diluted share to remove the impact of certain items and the tax effect of those adjustments. These and other non-GAAP measures are not in accordance with, or an alternative to, GAAP and may be materially different from other non-GAAP measures, including similarly titled non-GAAP measures used by other companies. The presentation of this additional information should not be considered in isolation from, as a substitute for, or superior to, operating income (loss) or earnings per fully-diluted share and other measures prepared in accordance with GAAP. Non-GAAP financial measures have limitations in that they do not reflect certain items that may have a material impact upon our reported financial results. We may expect to continue to incur expenses of a nature similar to these non-GAAP adjustments, and exclusion of these items should not be construed as an inference that these costs are unusual, infrequent or non-recurring.

For more information on non-GAAP measures and adjustments, please see the Supplemental Information in this presentation and available at <http://investors.formfactor.com> for reconciliations of non-GAAP financial measures to the most directly comparable GAAP financial measures.