



Farhan Ahmad, Vice President, Investor Relations

Thank you, and welcome to Micron Technology's fiscal third-quarter 2022 financial conference call. On the call with me today are Sanjay Mehrotra, our president and CEO, and Mark Murphy, our CFO. Today's call is being webcast from our Investor Relations site at investors.micron.com, including audio and slides. In addition, the press release detailing our quarterly results has been posted on the website, along with the prepared remarks for this call.

Today's discussion of financial results is presented on a non-GAAP financial basis unless otherwise specified. A reconciliation of GAAP to non-GAAP financial measures may be found on our website. We encourage you to visit our website at micron.com throughout the quarter for the most current information on the company, including information on financial conferences that we will be attending. You can also follow us on Twitter at MicronTech.

As a reminder, the matters we are discussing today include forward-looking statements regarding market demand and supply, our expected results, and other matters. These forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from statements made today. We refer you to the documents we file with the SEC, specifically our most recent Form 10-K and 10-Q, for a discussion of risks that may affect our future results. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. We are under no duty to update any of the forward-looking statements to conform these statements to actual results.

I'll now turn the call over to Sanjay.

Sanjay Mehrotra, President and Chief Executive Officer

Thank you, Farhan.

Good afternoon, everyone.

Intro/FQ3 Highlights

Micron delivered record quarterly revenue with strong profitability and free cash flow, enabled by our team's excellent execution and our industry-leading technology and product portfolio. Micron achieved revenue records in the auto, industrial and networking markets, and in SSDs for both data center and client. Our NAND business delivered record quarterly revenue, and our Embedded Business Unit and Storage Business Unit NAND revenues also hit all-time highs. Our 1 α (1-alpha) DRAM and 176-layer NAND ramps are several quarters ahead of the industry and progressing well as we continue to qualify new products that use these nodes. The Micron team delivered these excellent results despite supply



chain challenges and COVID-19 control measures in China, which impacted our business on both the demand side and the supply side.

There are consumer demand and inventory-related headwinds impacting the industry and consequently our fiscal Q4 outlook. However, we remain confident about the secular demand for memory and storage, the attractiveness of our market opportunity, Micron's excellent competitive position and strong execution capabilities, and our cross-cycle financial model.

Technology and Operations

Micron is leading the industry in both DRAM and NAND technology, and we are also well-poised to continue this lead into calendar 2023.

In DRAM, our 1 α node ramp is several quarters ahead of the industry, and in fiscal Q3, 1 α represented the largest DRAM node in our shipment mix. Our newest node, 1 β (1-beta), is on track to ramp in manufacturing by the end of calendar 2022.

In NAND, our industry-leading 176-layer node continues to grow in mix of sales, having previously reached the majority of our NAND bit shipments in fiscal Q2. This technology node is contributing to a competitive cost structure across our product portfolio, and in FQ3, we achieved several important 176-layer product qualifications. We are also making excellent progress on our 232-layer node and expect to ramp production by the end of calendar 2022.

Across the industry, there are cost challenges stemming from supply chain and inflationary pressures; however, we continue to expect our cost reductions to outpace those of the industry this year, driven by excellent productivity improvements in our fabs and the well-executed ramp of our world-class 1 α DRAM and 176-layer NAND nodes.

Despite COVID-19 control measures in China that created challenges for the global electronics supply chain, Micron's strong execution enabled record assembly output in fiscal Q3, supporting record quarterly revenue. However, these COVID-19 control measures in China impacted our outsourced assembly and test subcontractors and led to some impact to fiscal Q3 results.

End Markets

Now turning to our end markets. Artificial intelligence (AI), ongoing cloud adoption, electric vehicles (EVs) and the ubiquitous connectivity offered by 5G are strong secular demand drivers, enabling the memory and storage industry to outpace the broader semiconductor industry. Micron's product portfolio has become significantly stronger, and we have established product momentum in several attractive growth markets. We are also driving a portfolio mix shift toward higher growth and more stable markets. Fiscal



2021's 55/45 revenue split in favor of the more mature mobile, PC and consumer markets is expected to shift, by fiscal 2025, to a 38/62 split in favor of the higher growth data center, auto, industrial, networking and graphics markets. Several of these end markets also exhibit more stable profitability. Our fiscal Q3 new product launches and customer qualifications reflect solid execution toward this portfolio transformation.

Data Center

Data center is the largest market for memory and storage today, and the rapid growth of AI and memory-intensive workloads ensures that it will sustain strong growth through the end of the decade. Corporations around the world are investing in digitization and extracting more value from data, and this approach remains one of the primary ways of improving efficiency and driving competitive advantage. Data center fiscal Q3 revenue grew by a double-digit percentage sequentially and well over 50% year over year.

Data center end demand is expected to remain strong in the second half of calendar 2022, driven by robust cloud capex growth. Despite the strong end demand, we are seeing some enterprise OEM customers wanting to pare back their memory and storage inventory due to non-memory component shortages and macroeconomic concerns.

In fiscal Q3, we achieved several product and customer milestones. We began volume shipments of HBM2E, one of the fastest-growing product categories, driven by the growth in AI and machine-learning workloads. Micron continues to lead in DDR5; however, delays in the rollout of new server CPU platforms have slowed the industry DDR5 ramp versus prior expectations. In data center SSDs, we more than doubled revenue year over year and achieved a new revenue record in the fiscal third quarter. We are excited by the strong reception of our industry-leading 176-layer data center NVMe SSDs, which are already in volume production, and in fiscal Q3, we completed qualifications with three OEMs. We recently launched the world's first 176-layer data center SATA SSD, which will help sustain our industry leadership in this product category.

PC

In fiscal Q3, we achieved client revenue growth in the mid-teens percentage range sequentially, driven by DRAM shipments and share gains in client SSD.

A number of factors have impacted consumer PC demand in various geographies. As a consequence, our forecast for calendar 2022 PC unit sales is now expected to decline by nearly 10% year over year from the very strong unit sales in calendar 2021. This compares to an industry and customer forecast of roughly flat calendar 2022 PC unit sales at the start of this calendar year.



We expect PC per unit memory and storage content growth trends to remain healthy in calendar 2022, driven by a mix shift toward enterprise PCs and the increasing content in new architectures such as Apple's M1 Ultra platform, which features up to 128GB of DRAM. Micron has a strong product portfolio and is well-positioned in this market. We are leading the DDR5 transition and expect our DDR5 revenue to continue to grow as multiple client customers launch next-generation notebooks. Increased availability of non-memory bill of materials will also improve our ability to ship DDR5-based modules. In addition, we continue to lead the industry in client QLC SSD technology and expect QLC to increase as a percentage of 176-layer bit output in fiscal Q4 and beyond.

Graphics

In fiscal Q3, graphics revenue grew at a strong double-digit percentage rate sequentially and year over year, driven by the strength of Micron's products and customer relationships. Micron continues to be the industry performance leader in graphics. We announced volume shipments of our new 1z 16Gb GDDR6X in fiscal Q3, which features twice the capacity and up to 15% higher performance than the previous 1y generation. The 24 Gb/s peak bandwidth of GDDR6X is made possible by Micron's groundbreaking PAM4 signal transmission technology. No other memory vendor offers this capability or level of performance. We also began volume shipments of our newest 1z 16Gb GDDR6 product to our largest graphics customers.

Mobile

Fiscal Q3 mobile revenue declined slightly year over year but grew quarter over quarter due to strong customer partnerships and product execution.

Smartphone unit sales expectations have declined meaningfully for calendar 2022. We are now projecting smartphone unit volume to decline by mid-single-digits percentage range year over year in calendar 2022, well below the industry and customer expectation earlier in the year of mid-single-digit percentage growth. 5G unit sales are expected to grow and reach approximately 50% penetration of the smartphone unit total addressable market (TAM) this year.

The growth of 5G units will also drive higher DRAM and NAND content. We continue to deliver key mobile customer qualifications and strong mobile product ramps on our leading nodes. In fiscal Q3, we expanded our 1 α LPDRAM leadership with the industry's first ramp of 1 α LPDDR5. In addition, 176-layer NAND made up over 90% of our mobile NAND bit shipments.

Auto & Industrial

Micron is the market share and quality leader in the fast-growing auto and industrial end markets, and in fiscal Q3, we achieved record revenue in both. These markets also exhibit higher stability in their gross



margin profile through the cycle. Auto growth has been driven by robust demand that remains constrained by auto unit production. We see robust auto content growth as OEMs adopt significant architectural changes to support advanced driver-assistance systems (ADAS), infotainment and electric vehicles. In fiscal Q3, there were announcements of several new EVs featuring content-rich ADAS, including the Ford F-150 Lightning, Mercedes EQS SUV and EQE sedan, and BMW iX1. We expect the auto market to have a strong long-term bit growth CAGR in DRAM and NAND that is roughly twice the CAGR of the overall DRAM and NAND markets, and consequently our strength in this market will become increasingly important.

Industrial internet of things (IoT) achieved record revenue in fiscal Q3, demonstrating broad-based growth with various end market applications. We continue to see tailwinds from secular growth drivers as industrial customers invest in increasing factory automation and digitization.

Market Outlook

Turning to the market outlook.

Our expectations for calendar 2022 industry bit demand growth have moderated since our last earnings call. Near the end of fiscal Q3, we saw a significant reduction in near-term industry bit demand, primarily attributable to end demand weakness in consumer markets, including PC and smartphone. These consumer markets have been impacted by the weakness in consumer spending in China, the Russia-Ukraine war, and rising inflation around the world.

COVID-19 control measures in China have exacerbated supply chain challenges for some customers, and the macroeconomic environment is also creating some caution among certain customers. Several customers, primarily in PC and smartphone, are adjusting their inventories, and we expect these adjustments to take place mostly in the second half of calendar 2022.

While end demand in the mobile, PC and consumer markets has weakened, cloud, networking, automotive and industrial markets are showing resilience.

Due to weaker demand in the second half of calendar 2022, we now expect year-over-year calendar 2022 industry bit demand growth to be below the long-term CAGRs of mid-to-high-teens percentage for DRAM and high-20s percentage for NAND. Despite the near-term weakness, secular demand trends remain strong, and our view of long-term DRAM and NAND bit demand CAGR remains unchanged from prior expectations.

Turning to supply: Given the change in market conditions, we are taking immediate action to reduce our supply growth trajectory. To protect profitability, we will maintain pricing discipline, manage capacity utilization, and use inventory as a buffer to navigate through this period of demand weakness.



Additionally, we are planning for a reduced level of bit supply growth in fiscal 2023 and will use inventory to supply part of the market demand next year. This approach will enable us to reduce wafer fab equipment capex for fiscal year 2023 versus our prior plans, and we now expect our fiscal 2023 wafer fab equipment capex to decline year over year.

Overall industry supply is also being impacted. Manufacturing equipment shipment delays, challenges for some in the industry in ramping new nodes of technology and DRAM supply discipline evident in the industry are all expected to limit supply growth over the next few quarters. These supply reductions will help offset some impact of the weaker demand.

I will now turn it over to Mark Murphy, Micron's chief financial officer.

Mark Murphy, Executive Vice President and Chief Financial Officer

Thanks, Sanjay.

Opening

Micron delivered strong results in fiscal Q3, marked by record quarterly revenue and \$1.3 billion of free cash flow.

Revenue

Total fiscal Q3 revenue was \$8.6 billion, up 11% sequentially and up 16% year over year. Growth was strong across most end markets.

DRAM

Fiscal Q3 DRAM revenue was \$6.3 billion, representing 73% of total revenue. DRAM revenue increased 10% sequentially and was up 15% year over year. Sequentially, bit shipments increased by slightly over 10% while ASPs declined slightly.

NAND

Fiscal Q3 NAND revenue was \$2.3 billion, representing 26% of Micron's total revenue. NAND revenue increased 17% sequentially and was up 26% year over year. Sequential bit shipments increased in the high-teens percent, and ASPs declined slightly.

Revenue by Business Unit

Now turning to our fiscal Q3 revenue trends by business unit.



Revenue for the Compute and Networking Business Unit was \$3.9 billion, up 13% sequentially and up 18% year over year. Data center, graphics and networking contributed to both year-over-year and sequential growth.

Revenue for the Mobile Business Unit was approximately \$2 billion, up 5% sequentially and down 2% year over year. Strong execution and product momentum allowed MBU to deliver sequential growth in a challenging smartphone market demand environment.

Revenue for the Storage Business Unit was \$1.3 billion, up 15% sequentially and up 33% year over year. We achieved record SSD revenue, with both data center and client SSD revenues reaching all-time highs. Data center SSD revenue more than doubled year over year.

Finally, we achieved record revenue for the Embedded Business Unit at \$1.4 billion, up 12% sequentially and up 30% year over year. Both automotive and industrial revenues set records in the quarter.

Operating Results

Gross Margin

The consolidated gross margin for fiscal Q3 was 47.4%, down approximately 40 basis points sequentially. An increasing mix of NAND contributed to the decline.

Opex

Operating expenses in fiscal Q3 were approximately \$950 million, below the low end of the guidance range and down approximately \$20 million sequentially. Opex benefited from the timing of our technology and product qualifications and from lower variable compensation. Although we are taking actions to reduce opex in light of current market conditions, we expect opex to increase sequentially due to the timing of technology and product qualifications.

Operating Income

Fiscal Q3 operating income was \$3.1 billion, resulting in an operating margin of 36.4%, up approximately 110 basis points sequentially and up 450 basis points from the prior year. Fiscal Q3 adjusted EBITDA was approximately \$5 billion, resulting in an EBITDA margin of 57.4%, down approximately 40 basis points sequentially and up over 400 basis points versus the prior year.

Earnings Per Share

Non-GAAP earnings per share (EPS) in fiscal Q3 were \$2.59, up from \$2.14 in fiscal Q2 and up from \$1.88 in the year-ago quarter.



Operating Cash Flow

Turning to cash flows and capital spending, we generated \$3.8 billion in cash from operations in fiscal Q3, representing 44% of revenue.

Capital Allocation

Capital expenditures were \$2.5 billion during the quarter. We expect fiscal 2022 capex to be approximately \$12 billion. Our free cash flow for fiscal Q3 was \$1.3 billion.

During the quarter, we completed share repurchases of \$981 million or approximately 13.8 million shares. Including our dividend payment, we returned \$1.1 billion to shareholders in fiscal Q3. Since the share repurchase program's inception in fiscal 2019 through the end of FQ3, we have deployed \$5.7 billion toward repurchasing 108 million shares at an average price of approximately \$53 per share. As we discussed at Investor Day, we are committed to returning to shareholders all of the free cash flow generated over the cycle through a combination of dividends and share repurchases. Share repurchases will be both programmatic and opportunistic, and we expect to purchase more as the stock trades at bigger discounts to intrinsic value. On dividends, our board of directors approved a quarterly dividend of \$0.115 per share, a 15% increase over the prior dividend, to be paid on July 26 to shareholders of record on July 11.

Inventory

Our ending fiscal Q3 inventory was \$5.6 billion, and average days of inventory for the quarter were down to 109 days from 113 days last quarter.

Total Cash/Debt

We ended the quarter with \$12 billion of cash and investments and \$14.5 billion of total liquidity. Our fiscal Q3 total debt was \$7 billion.

Outlook

Now turning to our outlook for the fiscal fourth quarter. Long-term demand trends remain constructive; however, select market weakness and macroeconomic uncertainty are impacting our near-term outlook and visibility. Currently, we do project sequential bit shipments to be down for both DRAM and NAND in fiscal Q4. We intend to maintain pricing discipline and walk away from business which doesn't meet our pricing objectives. While we are taking proactive steps to control opex and capex, we expect the impact of these actions to be limited in fiscal Q4 and to become more material in FY23.



Non-GAAP Guidance

With all these factors in mind, our non-GAAP guidance for fiscal Q4 is as follows.

We expect revenue to be \$7.2 billion, plus or minus \$400 million; gross margin to be in the range of 42.5%, plus or minus 150 basis points; and operating expenses to be approximately \$1.05 billion, plus or minus \$25 million. We expect our non-GAAP tax rate to be approximately 9% for fiscal Q4. Based on a share count of approximately 1.13 billion fully diluted shares, we expect EPS to be \$1.63, plus or minus \$0.20. We remain on track to deliver record revenue and solid profitability and free cash flow in fiscal year 2022.

Closing

In closing, we delivered strong results in our fiscal Q3, but near-term headwinds are impacting our fiscal Q4 outlook. Beyond the near term, we project secular growth drivers such as data center, automotive and other areas to support robust DRAM and NAND growth and strong cross-cycle financial performance by Micron. At our Investor Day event last month, we laid out a cross-cycle financial model for the company that reflects the key attributes of our business: a strong revenue growth CAGR of high single digits, robust cross-cycle operating margins of approximately 30%, and healthy free cash flow margins that exceed 10% of revenues. Given our long-term financial outlook and the strength of our balance sheet, we see the current share price as very attractive and, at these levels, intend to repurchase shares more aggressively in FQ4.

I will now turn it back to Sanjay.

Sanjay Mehrotra, President and Chief Executive Officer

Thank you, Mark.

The memory and storage TAM is expected to grow to \$330 billion by 2030 and become an increasing portion of the semiconductor market. The near-term market environment notwithstanding, we are executing extremely well on all aspects of the business that are within our control. Micron's continuing technology, product and manufacturing leadership puts us in an excellent position to capitalize on the long-term opportunity and to extend the frontiers of what is possible with memory and storage. We will continue to exercise supply discipline and take appropriate actions to navigate through the near-term headwinds, and we remain focused on creating value for shareholders and generating healthy free cash flow cross cycle.

Thanks for joining us today. We will now open for questions.