



SATYA KUMAR, CORPORATE VICE PRESIDENT, INVESTOR RELATIONS AND TREASURY

Thank you, and welcome to Micron Technology's fiscal third-quarter 2024 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 can 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 may be attending. You can also follow us on X at MicronTech.

As a reminder, the matters we are discussing today include forward-looking statements regarding market demand and supply, market and pricing trends and drivers, the impact of new technologies such as AI, product ramp plans and market position, our expected results and guidance, 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, including our most recent Form 10-Q and upcoming 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, Satya.

Good afternoon, everyone.

Intro and FQ3 Results

I am pleased to report that Micron delivered fiscal Q3 revenue, gross margin and EPS (earnings per share) all above the high end of guidance ranges. Micron drove robust price increases as industry supply-demand conditions continued to improve. This improved pricing, combined with our strengthening product mix, resulted in increased profitability across all our end markets. In data center, rapidly growing AI (artificial intelligence) demand enabled us to grow our revenue by over 50% on a sequential basis, and



we grew share in high-margin AI-related product categories such as HBM (high-bandwidth memory), high-capacity DIMMs and data center SSDs.

Our mix of data center revenue is on track to reach record levels in fiscal 2024 and to grow significantly from there in fiscal 2025. Robust AI-driven demand for data center products is causing tightness on our leading-edge nodes. Consequently, we expect continued price increases throughout calendar 2024 despite only steady near-term demand in PCs and smartphones. As we look ahead to 2025, demand for AI PCs and AI smartphones and continued growth of AI in the data center create a favorable setup that gives us confidence that we can deliver a substantial revenue record in fiscal 2025, with significantly improved profitability underpinned by our ongoing portfolio shift to higher-margin products.

Technology and Operations

Micron is ramping the industry's most advanced technology nodes in both DRAM and NAND. Over 80% of our DRAM bit production is now on leading-edge 1 α (1-alpha) and 1 β (1-beta) nodes. Over 90% of our NAND bit production is on our two leading-edge NAND nodes.

1 γ (1-gamma) DRAM pilot production using extreme ultraviolet (EUV) lithography is progressing well, and we are on track for volume production in calendar 2025. Our next-generation NAND node is also on track, with high-volume production planned for calendar 2025.

We experienced some operational disruptions after the recent Taiwan earthquake but were able to recover quickly, thanks to diligent efforts from Micron Taiwan team members working together with our global operations teams. Despite impacts from the earthquake, we now expect our fiscal 2024 DRAM front-end cost reductions, excluding HBM, to be in the high single-digits percentage range. We expect our fiscal 2024 NAND front-end cost reductions to be in the low-teens percentage range. These cost reductions are supported by our industry-leading 1 β DRAM and 232-layer NAND nodes.

CHIPS

During the quarter, Micron signed a nonbinding preliminary memorandum of terms, or PMT, with the U.S. government for \$6.1 billion in grants under the CHIPS and Science Act. These grants support our planned leading-edge memory manufacturing expansions in Idaho and New York. Federal and state incentives, projected power-cost advantages, and R&D (research and development) co-location synergies will enable Micron to achieve cost-competitive, leading-edge memory manufacturing in the United States when these projects reach efficient manufacturing scale. Fab construction in Idaho is underway, and we are working diligently to complete the regulatory and permitting processes in New York. This additional leading-edge greenfield capacity, along with continued technology transition investments in our Asia facilities, is required to meet long-term demand in the second half of this decade and beyond. These investments support our objective to maintain our current bit share over time and to grow our memory bit supply in line with long-term industry bit demand. Micron retains flexibility under the PMT to manage



construction and timing of supply growth in a manner that allows us to remain responsive to market conditions.

End Markets

Now turning to our end markets.

We are in the early innings of a multiyear race to enable artificial general intelligence, or AGI, which will revolutionize all aspects of life. Enabling AGI will require training ever-increasing model sizes with trillions of parameters and sophisticated servers for inferencing. AI will also permeate to the edge via AI PCs and AI smartphones, as well as smart automobiles and intelligent industrial systems. These trends will drive significant growth in the demand for DRAM and NAND, and we believe that Micron will be one of the biggest beneficiaries in the semiconductor industry of the multiyear growth opportunity driven by AI.

Customer Inventories

Most data center customer inventories have normalized, and demand from customers continues to strengthen. PC and smartphone customers have built additional inventories due to the rising price trajectory, the anticipated growth in AI PCs and AI smartphones, as well as the expectation of tight supply as an increasing portion of DRAM and NAND output is dedicated to meeting growing data center demand. Due to expectations for continued leading-edge node tightness, we are seeing increased interest from many customers across market segments to secure 2025 long-term agreements ahead of their typical schedule.

Data Center

In data center, industry server unit shipments are expected to grow in the mid to high single digits in calendar 2024, driven by strong growth for AI servers and a return to modest growth for traditional servers. Micron is well positioned with our portfolio of HBM, D5, LP5, high-capacity DIMM, CXL and data center SSD products.

Recently, our customers have announced their long-term AI server product roadmaps, with an annual cadence of new products with significantly improved capabilities for the next several years. Micron's technology and product leadership puts us in an excellent position to support this growth.

Customers continue to provide feedback that our HBM3E solution has 30% lower power consumption compared to competitors' solutions. Our HBM shipment ramp began in fiscal Q3, and we generated over \$100 million in HBM3E revenue in the quarter, at margins accretive to DRAM and overall company margins. We expect to generate several hundred million dollars of revenue from HBM in fiscal 2024 and multiple billions of dollars in revenue from HBM in fiscal 2025. We expect to achieve HBM market share commensurate with our overall DRAM market share sometime in calendar 2025. Our HBM is sold out for calendar 2024 and 2025, with pricing already contracted for the overwhelming majority of our 2025



supply. We are making significant strides toward expanding our HBM customer base in calendar 2025, as we design-in our industry-leading HBM technology with major HBM customers.

We have sampled our 12-high HBM3E product and expect to ramp it into high-volume production in calendar 2025 and increase in mix throughout 2025. We have a robust roadmap for HBM and are confident we will maintain our technology leadership with HBM4 and HBM4E. Our next generations of HBM will provide further performance and capacity enhancements while we continue to evolve our industry-leading low-power innovations.

We achieved full validation on our 1β 32Gb monolithic-die-based 128GB high-capacity server DIMM products and are on track to achieve several hundred million dollars of revenue from high-capacity DIMMs in the second half of fiscal 2024. Additionally, we continue to see strong interest in our industry-leading 1β LPDRAM in data center applications.

Data center SSD is in the midst of a strong demand recovery as customers have worked through their 2023 inventory. Hyperscale demand is improving, driven primarily by AI training and inference infrastructure, and supplemented by the start of a recovery of traditional compute and storage infrastructure demand. Micron is gaining share in data center SSDs as we reach new revenue and market share records in this important product category. During the quarter, we more than tripled bit shipments of our 232-layer-based 6500 30TB SSDs, which offer best-in-class performance, reliability and endurance for AI data lake applications. We continued our leadership and innovation by becoming the first NAND vendor to supply 200-plus-layer QLC for the enterprise storage market.

PC

In PC, unit volumes remain on track to grow in the low single-digit range for calendar 2024. We are optimistic that the planned Windows 10 end of life in 2025, the launch of Windows 12 and the introduction of a new generation of AI PCs will accelerate the PC replacement cycle starting in late calendar 2024. The PC replacement cycle should gather momentum through calendar 2025 as new AI applications are rolled out.

During Computex in Taiwan, we saw several announcements of next-generation chipsets and AI PCs. These devices feature high-performance neural processing unit chipsets, and we expect these devices will have 40% to 80% more DRAM content than today's average PC. Microsoft's minimum system requirement for Copilot+ PCs, such as the Surface Pro, is 16GB of DRAM. We expect next-gen AI PCs to make up a meaningful portion of total PC units in calendar 2025, growing each year until most PCs ultimately support next-gen AI PC specs.

AI PCs are also likely to require higher performance and higher average capacity SSDs than traditional PCs, aligning well with our leading technology portfolio on our 232-layer NAND with our performance 3500 SSD and our industry-leading value QLC 2500 NVMe SSDs.



Mobile

Turning to mobile. Smartphone unit volumes in calendar 2024 remain on track to grow in the low- to mid-single-digit percentage range.

Leading smartphone OEMs recently announced new AI capabilities, and we are optimistic that delivering high-quality AI experiences can accelerate the smartphone refresh cycle. Smartphones have tremendous potential for personalized AI capabilities that offer greater security and responsiveness when executed on device. Micron's leading LP5X is enabling the recent 12GB and 16GB AI phone releases at all Android tier 1 customers, representing a 50% to 100% increase over last year's flagship models.

Micron's leading mobile solutions provide the critical performance, capacity and power efficiency needed to unlock AI capability. Our mobile DRAM and NAND solutions are now widely adopted in industry-leading flagship smartphones. In calendar Q1, we received recognition for being #1 in quality by five of the world's leading smartphone OEMs. Qualifications are on track for our second-generation 1β LP5X products, and we see broadening use of our 232-layer NAND, moving beyond flagship phones into high-capacity high- and mid-tier phones.

Auto and Industrial

Turning to auto and industrial.

The automotive sector continued to experience robust demand for memory and storage, and Micron achieved a record quarter for automotive revenues. Car production volumes are returning to pre-pandemic levels, and broader adoption of intelligent digital cockpits and more advanced driver-assistance capabilities are driving content growth. We anticipate further content growth as additional intelligence, including generative AI-based technologies, is adopted in vehicles. Micron continues to be a leader in automotive with high quality and industry-first product introductions. In the fiscal third quarter, we launched the world's first multiport Gen 4 NVMe SSD in support of next-generation centralized compute architectures.

In industrial and retail consumer segments, which are a smaller part of our business, we are seeing some near-term demand uncertainty from our distribution partners and end customers. We remain confident in the long-term fundamentals and growth drivers of these businesses, especially with the increasing adoption of AI in a variety of applications.

Market Outlook

Now, turning to our market outlook.

We forecast calendar 2024 bit demand growth for the industry to be in the mid-teens percentage range for both DRAM and NAND.



Over the medium term, we expect industry bit demand growth CAGRs (compound annual growth rate) of mid-teens in DRAM and high teens in NAND.

Turning to supply.

We expect calendar 2024 industry supply to be below demand for both DRAM and NAND.

As discussed previously, the ramp of HBM production will constrain industry supply growth in non-HBM products. Industrywide, HBM3E consumes approximately three times the wafer supply as D5 to produce a given number of bits in the same technology node. With increased performance and packaging complexity, across the industry, we expect this trade ratio for HBM4 to be even higher than the trade ratio for HBM3E. We anticipate strong HBM demand due to AI, combined with increasing silicon intensity of the HBM roadmap, to contribute to tight supply conditions for DRAM across all end markets. As the memory industry is still recovering from the challenging environment in 2023, this tight supply environment will help drive the considerable improvements in profitability and ROI (return on investment) that are needed to enable the investments required to support future growth.

Micron's bit supply growth in fiscal 2024 remains below our demand growth for both DRAM and NAND.

Micron will continue to exercise supply and capex (capital expenditure) discipline and focus on improving profitability while maintaining our bit market share for DRAM and NAND. We continue to project we will end fiscal 2024 with low double-digit percentage less wafer capacity in both DRAM and NAND than our peak levels in fiscal 2022. We intend to use our existing inventory to drive a portion of the bit growth supporting our revenue in fiscal 2025 to enable a more optimized use of our capex investments.

Micron's fiscal 2024 capex plan will be approximately \$8.0 billion, and WFE (wafer fab equipment) spending will be down year on year in fiscal 2024.

We expect to increase our capital spending materially next year, with capex around mid-30s percentage range of revenue for fiscal 2025, which will support HBM assembly and test equipment, fab and back-end facility construction as well as technology transition investment to support demand growth. The construction capex in the planned Idaho and New York greenfield fabs in fiscal 2025 will be half or more of the expected increase in total capex. In fact, the growth in both greenfield fab construction and HBM capex investments, is projected to make up the overwhelming majority of the year-over-year capex increase. These fab construction investments are necessary to support supply growth for the latter half of this decade. This Idaho fab will not contribute to meaningful bit supply until fiscal 2027, and the New York construction capex is not expected to contribute to bit supply growth until fiscal 2028 or later. The timing of future WFE spend in these fabs will be managed to align supply growth with expected demand growth.

I will now turn it over to Mark for our financial results and outlook.



MARK MURPHY, EXECUTIVE VICE PRESIDENT AND CHIEF FINANCIAL OFFICER

Thanks, Sanjay, and good afternoon, everyone.

Opening

Micron delivered strong results in fiscal Q3 with revenue, gross margin and EPS above the high end of the guidance ranges provided in our last earnings call. Improving market conditions and strong price and cost execution drove the financial outperformance.

Revenue

Total fiscal Q3 revenue was \$6.8 billion, up 17% sequentially and up 82% year over year.

DRAM

Fiscal Q3 DRAM revenue was approximately \$4.7 billion, representing 69% of total revenue. DRAM revenue increased 13% sequentially, with bit shipments declining in the mid-single-digit percentage range and prices increasing by approximately 20%.

NAND

Fiscal Q3 NAND revenue was approximately \$2.1 billion, representing 30% of Micron's total revenue. NAND revenue increased 32% sequentially, with bit shipments increasing in the high-single-digit percentage range and prices increasing by approximately 20%.

Revenue by Business Unit

Now turning to revenue by business unit.

Compute and Networking Business Unit revenue was \$2.6 billion, up 18% sequentially. DRAM data center revenue more than doubled year over year.

Revenue for the Mobile Business Unit was \$1.6 billion, down 1% sequentially as a planned decline in volume was partially offset by improved pricing.

Embedded Business Unit revenue was \$1.3 billion, up 16% sequentially driven by record revenue in automotive.

Revenue for the Storage Business Unit was \$1.4 billion, up 50% sequentially with growth across all end markets. We achieved record data center SSD revenue, which nearly doubled sequentially.

Operating Results



Gross Margin

The consolidated gross margin for fiscal Q3 was approximately 28%, up over eight percentage points sequentially driven primarily by higher pricing and helped by product mix and cost reductions. Excluding the effects of previously written-down inventories on fiscal Q2 gross margin, the sequential improvement in fiscal Q3 would have been 15 percentage points.

As a reminder, previously written-down inventories had no impact on fiscal Q3 gross margin and will not affect our gross margin moving forward.

Opex

Operating expenses in fiscal Q3 were \$976 million, up \$17 million quarter over quarter. Continued spend discipline and ongoing operational efficiencies helped deliver operating expenses at the low end of the guidance range.

Operating Income

We generated operating income of \$941 million in fiscal Q3, resulting in an operating margin of 14%, which was up 10 percentage points sequentially and up 53 percentage points from the year-ago quarter.

Fiscal Q3 adjusted EBITDA was \$2.9 billion, resulting in an EBITDA (earnings before interest, taxes, depreciation and amortization) margin of 43%, up six percentage points sequentially and up 30 percentage points or \$2.4 billion from the year-ago quarter.

Taxes

Fiscal Q3 taxes were \$227 million, lower than expectations at the time of our guidance, driven by one-time discrete items.

Earnings Per Share

Non-GAAP diluted earnings per share in fiscal Q3 was \$0.62, compared to \$0.42 in the prior quarter and a loss per share of \$1.43 in the year-ago quarter. Fiscal Q3 non-GAAP EPS exceeded the high end of our guidance range by \$0.10, driven by better revenue and profitability.

Cash Flow

Turning to cash flows and capital spending, our operating cash flows were \$2.5 billion in fiscal Q3, representing 36% of revenue. Capital expenditures were \$2.1 billion during the quarter, and we generated free cash flow of \$425 million.



Inventory

Our fiscal Q3 ending inventory was \$8.5 billion or 155 days, a decline of five days from the prior quarter. Our leading-edge supply continues to be very tight for both DRAM and NAND.

Total Cash/Debt

On the balance sheet, we held \$9.2 billion of cash and investments at quarter end and maintained near \$12 billion of liquidity when including our untapped credit facility. Considering our ample liquidity, return to free cash flow generation and strong outlook, during the quarter, we repaid \$650 million of debt maturing in November 2025. We ended the quarter with \$13.3 billion in total debt, low net leverage and a weighted average maturity on our debt of 2031.

Outlook

Now turning to our outlook for the fiscal fourth quarter.

We expect DRAM bit shipments to be flattish and NAND shipments to be up slightly in fiscal Q4. We forecast shipment growth to strengthen modestly in the November quarter.

We project continued gross margin expansion. Pricing trends remain positive, supported by favorable supply-demand conditions. Portfolio mix will be an important contributor over time as HBM, high-capacity DIMMs, data center SSDs and other high-value products increase as a portion of our mix. The high mix for our leading-edge nodes supports front-end cost reductions in line with our long-term cost-reduction CAGRs, excluding HBM on DRAM. Keep in mind that higher mix of HBM will offset non-HBM DRAM cost reductions, but HBM will be at accretive gross margins.

We forecast operating expenses to increase sequentially in the fiscal fourth quarter due to an increase in R&D program expenses and a nonrecurring Q3 asset sale gain contemplated in our Q3 guidance.

We estimate fiscal Q4 tax expense of approximately \$320 million. For fiscal 2025, we estimate our non-GAAP tax rate to be in the mid-teens percent range.

We project days of inventory outstanding (DIO) to decline through fiscal 2025 and DIO to approach our target by the end of fiscal year 2025.

We forecast capital expenditures to increase sequentially in the fiscal fourth quarter to approximately \$3.0 billion. Despite this increase in capex, we project continued positive free cash flow in fiscal Q4. We expect full-year fiscal 2024 capex of around \$8.0 billion.

Record revenue and significantly improved profitability in fiscal 2025 will help support average quarterly capex in fiscal 2025 to be meaningfully above the fiscal Q4 2024 level of ~\$3 billion. We expect capex



around mid-30s percentage range of revenue for fiscal 2025, which will support HBM assembly and test equipment, fab and back-end facility construction as well as technology transition investment to support demand growth. As noted earlier, half or more of the expected capex increase in fiscal 2025 will be to support U.S. greenfield fab construction. As we have noted in the past, the CHIPS grants, ITC (investment tax credit) and state incentives offset a significant portion of the U.S. fab capex investments. Receipt of some of these incentive reimbursements occurs well after when we incur the spend, resulting in higher capex for a period while we ramp our greenfield U.S. investments. Micron will remain disciplined in our capital spending and will modulate our WFE investments to grow bit supply in line with industry demand.

Non-GAAP Guidance

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

We expect revenue to be \$7.6 billion, plus or minus \$200 million; gross margin to be in the range of 34.5%, plus or minus 100 basis points; and operating expenses to be approximately \$1.06 billion, plus or minus \$15 million. We expect tax expenses of approximately \$320 million.

Based on a share count of approximately 1.1 billion shares, we expect EPS to be \$1.08 per share, plus or minus \$0.08.

Closing

In closing, market conditions are improving, with price increases driven by favorable supply-demand trends and tightness on the leading edge. Micron is executing well on leveraging our technology leadership to grow our mix of high-value solutions, especially in products that support AI applications. Finally, our leading-edge investments and productivity initiatives are delivering cost-downs and operating leverage during this market recovery. We expect record revenue and significantly better profitability in fiscal 2025 to support disciplined investment to maintain stable bit share and deliver free cash flow growth.

I will now turn it back over to Sanjay.

SANJAY MEHROTRA, PRESIDENT AND CHIEF EXECUTIVE OFFICER

Thank you, Mark.

I want to close by commending our team in Taiwan for their response to the significant earthquake in fiscal Q3. In many ways, that response exemplifies Micron: an agile, prepared team that assesses and reacts quickly, supported by a brilliant network of colleagues around the globe. That collaboration, planning, discipline and experience are precisely what ensures Micron is so well positioned today. I look forward to our teams accelerating Micron's memory and storage leadership as AI solutions present increasing opportunities to provide greater value, from data centers to the edge.



Thank you for joining us today. We will now open for questions.