



Farhan Ahmad, Vice President, Investor Relations

Thank you, and welcome to Micron Technology's fiscal first-quarter 2022 (FQ1-22) financial conference call. On the call with me today are Sanjay Mehrotra, President and CEO, and Dave Zinsner, Chief Financial Officer. Today's call will be approximately 60 minutes in length. This call, including the audio and slides, is also being webcast from our Investor Relations website at investors.micron.com. In addition, our website contains the earnings press release, and the prepared remarks filed a short while ago.

Today's discussion of financial results will be 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. As a reminder, a webcast replay will be available on our website later today. We encourage you to monitor our website at micron.com throughout the quarter for the most current information on the company, including information on the various financial conferences that we will be attending. You can follow us on Twitter at MicronTech.

As a reminder, the matters we will be discussing today include forward-looking statements. 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 after today's date 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/FQ1 Highlights

Micron delivered outstanding results in fiscal first quarter (Q1), achieving strong year-over-year revenue growth and solid profitability. Our strong start to the year and our product portfolio momentum keep us on track to deliver record revenue and robust profitability in fiscal 2022. We are rapidly ramping our industry-leading 1 α (1-alpha) DRAM and 176-layer NAND products and achieving excellent yields, and these products are now shipping across our major end markets. We achieved significant product advancements and customer wins, including launching our first DDR5 solution, introducing our vertically integrated Gen4 NVMe data center SSD, validating the world's first low-power DDR5X with MediaTek, and



shipping our GDDR6 for AMD's Radeon RX 6000 graphics card. The secular demand for memory and storage, along with Micron's focus on building our technology and product leadership and deepening our customer relationships, continues to strongly position us to create significant shareholder value in fiscal year 2022 (FY22) and beyond.

Technology and Operations

With the successful ramp of 1 α DRAM and 176-layer NAND products across major end markets, we are several quarters ahead of the industry in market deployment of these leading-edge process technologies. The combination of 1 α and 1z DRAM nodes represents the majority of our DRAM bit production, and 176-layer NAND now accounts for the majority of our NAND bit production. Our strong execution on these advanced nodes sets us up for a successful FY22. We are also investing to scale our technology for the next decade. We are planning for volume DRAM production on extreme ultraviolet (EUV) lithography in 2024 with our 1 γ (1-gamma) node. Integrating EUV with our existing multi-patterning immersion lithography expertise will help us maintain DRAM technology leadership for many years to come. And in NAND, we have successfully transitioned to replacement gate and have a roadmap to scale for several generations while leveraging our leadership in CMOS under array and QLC to maintain bit density leadership. In addition to being a technology leader, Micron is the industry quality leader, with two-thirds of our customers ranking us No. 1 in quality.

As a technology and quality leader and as an innovation partner with a strong global manufacturing network, we have become a strategic supplier to our customers. Amid ongoing semiconductor supply chain challenges, Micron has leveraged our deep partnerships with customers and suppliers to support DRAM, NAND and NOR supply continuity. On the customer side, we are seeing greater commitment and collaboration on supply planning, including the use of long-term agreements. Today, over 75% of our revenue comes from volume-based annual agreements, a significant increase from five years ago when they accounted for around 10% of our revenue. On the supplier side, we have entered into strategic agreements to secure supply of certain components that we need to manufacture our products. As a result of these agreements, the current tight supply of these components is expected to gradually improve for us throughout calendar 2022.

End Markets

Now let us review our end markets. Demand for memory and storage is broad, extending from the data center to the intelligent edge and to a growing diversity of user devices. Memory and storage revenue has outpaced the rest of the semiconductor industry over the last two decades, and we expect this trend to continue for years to come, thanks to artificial intelligence (AI), 5G and electric vehicle (EV) adoption. In addition, the buildout of immersive virtual worlds, often referred to as the metaverse, will offer even more opportunity, due to the intensive use of significant memory and storage in these applications.



Our team's execution on strengthening our product portfolio has been outstanding, with several new product launches and customer qualifications in FQ1 — achievements we are very proud of. I will highlight some of these achievements as I discuss our end markets.

Data Center

Data center is the largest market for memory and storage, and we expect it to outpace the broader memory and storage market over the next decade. Memory and storage is growing as a portion of server bill of materials (BOM), supported by new and heterogeneous computing architectures, the growth of data intensive workloads and AI, and the ongoing displacement of HDDs by SSDs. In the fiscal first quarter, data center revenue grew more than 70% year over year as a result of continued cloud demand and a resurgence of enterprise IT investment.

Our strengthening product portfolio also contributed to strong profitability. In FQ1, we launched the 7400 SSD, the first data center NVMe SSD to utilize our internally developed controller and firmware along with our DRAM and NAND. This Gen4 NVMe product has already been qualified by two key customers. Looking ahead, we expect a strong ramp in our data center SSD revenues in FQ2, driven by increased sales of our NVMe SSD products. In addition, we launched the industry's leading DDR5 and see strong demand as customers prepare for new server product launches in calendar 2022.

PC

While PC end demand remains strong, our client revenue declined sequentially due to the PC production impact from ongoing non-memory component shortages and related customer inventory adjustments of DRAM and NAND products. Consistent with the expectations we articulated in our last earnings call, the inventory adjustment at most PC customers is now largely behind us, and we are seeing signs of stabilization in demand in this end market. As we enter calendar year 2022 (CY22), we expect PC unit sales to be in line with those for CY21. Mix of enterprise PCs in CY22 is projected to be higher as companies invest to support hybrid work environments. This shift in the mix of PC unit shipments should increase average PC DRAM and NAND content.

Low-power DRAM has grown to 20% of the PC industry DRAM bit demand today and is projected to become the majority of the PC market in five years. Given our industry-leading solutions in low-power DRAM, we are well positioned to benefit from this trend.

In FQ1, we achieved qualifications and volume production of our 176-layer Gen4 PCIe client SSD at several PC OEMs, as well as our first revenues for DDR5 memory. Across the PC industry, demand for DDR5 products is significantly exceeding supply due to non-memory component shortages impacting memory suppliers' ability to build DDR5 modules. We expect these shortages to moderate through 2022,



enabling bit shipments of DDR5 to grow to meaningful levels in the second half of calendar 2022. We are poised to take advantage of this transition with industry-leading DDR5 solutions for PCs.

Graphics

In the fast-growing graphics market, Micron holds an excellent position, with a broad product portfolio featuring our proprietary GDDR6X product line and deep partnerships with leading GPU suppliers. We increased our revenue sequentially and year over year. Our propriety GDDR6X continues to have market success, including integration on NVIDIA's high-end gaming cards. In FQ1, we were pleased to announce availability of our GDDR6 memory solutions on AMD's Radeon RX 6000 graphics card extending the value of GDDR6 memory to the entire gaming market.

Mobile

FQ1 mobile revenue increased more than 25% year over year. Mobile memory and storage demand continues to strengthen, supported by content-hungry applications and the continued transition from 4G to 5G. Recent 5G phones feature more than 50% higher DRAM and double the NAND content versus 4G phones. 5G smartphone sales are forecast to exceed 500 million units in CY21, with 700 million units forecast for CY22. We expect mobile content to continue increasing as 5G phones benefit from further innovation in 5G-enabled applications.

Following several industry firsts last year, in FQ1, our 1 α -based LPDDR5X, the world's fastest mobile DRAM, was sampled and validated with MediaTek, further demonstrating Micron's leadership in the mobile market.

Auto & Industrial

We expect automotive and industrial to be the fastest-growing memory and storage markets over the next decade, and we are exceptionally well positioned as the market share leader, with over 10% of our revenue coming from these end markets.

In the near term, non-memory component shortages are limiting CY21 auto unit production to be flat year over year, significantly below end-consumer demand. However, our FQ1 year-over-year auto revenue growth remained strong at 25% as a result of content growth from in-vehicle infotainment and driver-assistance applications, which are advancing rapidly, especially as EV adoption accelerates. New EVs are becoming like a data center on wheels, and we are already seeing examples of 2022-model-year EVs supporting level 3 autonomous capability with over 140GB of DRAM and also examples with over 1TB of NAND. In addition to continued content growth, we expect CY22 auto unit production to increase as non-memory component shortages ease. We entered into a new supply agreement with UMC to improve our ability to support our automotive customers with NAND solutions as market demand strengthens in CY22.



In industrial IoT, we saw more than 80% year-over-year revenue growth, fueled by the continued ramp in applications such as factory automation and security systems. In consumer IoT, we saw more than 40% year-over-year revenue growth, driven by applications such as virtual reality (VR) headsets and smart home devices. We expect internet of things (IoT) demand trends to accelerate further as 5G speeds the adoption of data-intensive applications powered by intelligent-edge infrastructure.

Market Outlook

Our view of calendar 2021 and calendar 2022 industry bit demand and supply growth is largely unchanged from last quarter. We expect calendar 2021 DRAM industry bit demand growth to be in the low 20% range and industry NAND bit demand growth to be in the high 30% range. We expect calendar 2022 industry bit demand growth to be in the mid to high teens for DRAM and approximately 30% for NAND, in line with our view of the long-term bit demand growth CAGRs for each.

We anticipate underlying demand in calendar 2022 to be led by increasing volume of data center server deployments, 5G mobile shipments and continued strength in automotive and industrial markets. Non-memory supply shortages have constrained customer builds and pushed out some demand across many end markets. While these shortages may cause some variability to our demand, we expect them to ease through 2022, supporting memory and storage demand growth.

Turning to our bit supply expectations for the year. Given prudent industry capex and very lean supplier inventories, we expect a healthy industry supply-demand balance in CY22. Micron's CY22 bit supply growth for DRAM and NAND will be in line with industry demand. We are planning to deliver record revenue with solid profitability in FY22 with stronger bit shipment growth in the second half of the fiscal year. The stronger second-half bit shipments will be aided by the easing impact of non-memory component shortages on our supply and on customer demand, together with additional product qualifications of our 1 α DRAM and 176-layer NAND-based products.

As expected in FY22, the continued ramps of 1 α DRAM and 176-layer NAND are providing us with good front-end cost reductions. As we mentioned before, our efforts to increase supply chain resilience and provide business continuity to our customers are headwinds for our assembly and packaging costs, consistent with the broader industry. Overall, we expect annual cost-per-bit reductions to be competitive with the industry in FY22 and over the long term.

Turning to capital expenditures. We expect FY22 capex in the range of \$11 billion to \$12 billion. For both DRAM and NAND, we plan to achieve bit supply growth with node transitions alone through the middle of the decade. Beyond this time horizon, we anticipate the need to add greenfield wafer capacity for DRAM. However, for our NAND supply growth, we expect continued 3D scaling to be sufficient to meet industry demand growth without the need for wafer capacity additions. We recently announced our intent to invest more than \$150 billion globally over the next decade in leading-edge memory manufacturing



and research and development (R&D). As part of our commitment to investing in R&D, we announced plans to establish a state-of-the-art memory design center in Atlanta. These announcements reflect our confidence in persistent, long-term demand growth for memory and storage and our ability to generate returns on these investments. We look forward to working with governments around the world, including in the U.S., as we consider sites to support future expansion.

I will now turn it over to Dave.

Dave Zinsner, Senior Vice President and Chief Financial Officer

Thanks, Sanjay.

Opening

Micron delivered outstanding results to start the fiscal year, with revenue, margin and earnings per share (EPS) all coming in within our guidance ranges, while also generating healthy free cash flow.

Revenue

Total FQ1 revenue was approximately \$7.7 billion, down 7% quarter over quarter and up 33% year over year. The sequential revenue decline was predominantly attributable to weakness related to non-memory component shortages at our customers, as Sanjay discussed earlier.

DRAM

FQ1 DRAM revenue was \$5.6 billion, representing 73% of total revenue. DRAM revenue declined 8% quarter over quarter and was up 38% year over year. Sequentially, bit shipments declined in the mid-single-digit percentage range while average selling prices (ASPs) declined in the lower-single-digit percentage range.

NAND

FQ1 NAND revenue was approximately \$1.9 billion, representing 24% of Micron's total revenue. NAND revenue declined 5% quarter over quarter and was up 19% year over year. Sequential bit shipments were approximately flat, and ASPs declined in the mid-single-digit percentage range.

Revenue by Business Unit

Now turning to our FQ1 revenue trends by business unit. Revenue for the Compute and Networking Business Unit was \$3.4 billion, down 10% quarter over quarter and up 34% year over year. Cloud, enterprise and graphics performed well in the quarter, while client revenues declined sequentially.



Revenue for the Mobile Business Unit was \$1.9 billion, up 1% sequentially and up 27% year over year. Micron continues to lead in managed NAND, and MCP revenue surpassed 50% of mobile revenue in FQ1 for the fifth consecutive quarter.

Revenue for the Storage Business Unit was \$1.2 billion, down 4% from the prior quarter and up 26% year over year. SBU profitability benefited in FQ1 from the strong progress made in ramping our 176-layer node.

Finally, revenue for the Embedded Business Unit was \$1.2 billion, the second highest in our history. EBU revenue was up 51% year over year and down 10% from record levels in the prior quarter. EBU gross margin and operating margin improved sequentially, driven by strong execution.

Operating Results

Gross Margin

The consolidated gross margin for FQ1 was 47.0%, at the midpoint of our guidance and down approximately 85 basis points from the prior quarter. A higher mix of NAND sales was a headwind to FQ1 gross margin.

Opex

Operating expenses in FQ1 were \$891 million. We continue to expect FY22 R&D to be up approximately 15% over FY21 as we invest to strengthen our portfolio.

Operating Income

FQ1 operating income was strong at \$2.7 billion, resulting in an operating margin of 35%, down slightly from 37% in FQ4 and up from 17% in the prior year.

FQ1-adjusted EBITDA was \$4.4 billion, resulting in an EBITDA margin of 57%, flat from the prior quarter and up from 43% in the prior year.

Earnings Per Share

Non-GAAP earnings per share in FQ1 were \$2.16, down from \$2.42 in FQ4 and up from \$0.78 in the year-ago quarter. EPS included approximately \$0.01 of gains from Micron Venture's investments.

Operating Cash Flow

Turning to cash flows and capital spending, we generated \$3.9 billion in cash from operations in FQ1, representing 51% of revenue.



Capital Allocation

Net capital spending was \$3.3 billion during the quarter. We continue to expect fiscal 2022 capex to be between \$11 billion and \$12 billion, and it will be front-end-loaded in the fiscal year.

Due to the strong revenue and profitability, we generated approximately \$671 million in free cash flow. In addition, we received approximately \$900 million from the sale of the Lehi fab, which closed in the quarter.

We completed share repurchases of approximately \$260 million, or approximately 3.6 million shares, in FQ1. Including our dividend payment, we returned around \$371 million to shareholders in the quarter, which represented more than 50% of the free cash flow generated during the quarter. In addition, our board of directors approved a quarterly dividend of \$0.10 to be paid on Jan. 18 to shareholders of record on Jan. 3. We remain committed to returning more than 50% of the cross-cycle free cash flow through a combination of dividends and buybacks. As we have mentioned before, we will be opportunistic in share repurchases and more aggressive when the shares are trading at larger discounts to intrinsic value.

Inventory

Our ending FQ1 inventory was \$4.8 billion, and average days for the quarter were 103 days, within our normal target range of 95 to 105 days. We expect to exit FY22 with days of inventory at less than 100 days, as we expect our DRAM and NAND supply to be tight for the year.

Total Cash/Debt

We ended the quarter with \$11.5 billion of total cash and investments and \$14 billion of total liquidity.

Our FQ1 total debt was \$7 billion. Following our successful sustainability-linked credit facility in May and continuing with our strong commitment to enhancing our environmental and social performance, in FQ1, we achieved two important milestones for Micron: our inaugural green bond and inaugural long bonds. The total proceeds from these bonds were \$2 billion, and several nationally recognized minority, disabled-veteran and women-owned financial institutions participated. The \$1 billion green bond proceeds will finance eligible sustainability-focused projects, including reducing the company's greenhouse gas emissions, energy and water use, and waste generation. The \$1 billion proceeds from the long bonds, along with cash on hand, were used to redeem Micron senior notes maturing in 2023 and 2024. The net result from the green and long bond offering was essentially leverage-neutral for Micron while improving our net interest expense and increasing the weighted average maturity of our notes and bank debt from four years to nine years.



Outlook

Now turning to our outlook for the fiscal second quarter. We are starting to see stabilization in demand from PC customers, and end demand remains solid across our markets. On the margin front, we expect that mix improvements are a positive factor for gross margins in NAND. While we continue to have cost headwinds due to COVID-19 mitigation expenses and above-normal assembly/test and component costs, our front-end costs continue to benefit from our ramp of 1 α DRAM and 176-layer NAND. We expect operating expenses to increase sequentially as we invest in next-generation technologies and products for both DRAM and NAND and accelerate our new product roadmap.

Non-GAAP Guidance

With all these factors in mind, our non-GAAP guidance for FQ2 is as follows. We expect revenue to be \$7.5 billion, plus or minus \$200 million; gross margin to be in the range of 46%, plus or minus 100 basis points; and operating expenses to be approximately \$975 million, plus or minus \$25 million. We expect our non-GAAP tax rate to be approximately 10% for FQ2. Based on a share count of approximately 1.14 billion fully diluted shares, we expect EPS to be \$1.95, plus or minus \$0.10. Our FQ1 results and FQ2 outlook keep us on track to deliver record revenue and solid profitability and free cash flow in FY22.

Closing

In closing, our business is delivering strong cross-cycle performance: Revenue growth has significantly outpaced the broader semiconductor industry, gross margins have averaged over 40%, and operating margins have averaged around 30%. The strong product and technology momentum and Micron's solid execution give us confidence that we can sustain solid financial performance in the future.

I will now turn it back to Sanjay.

Sanjay Mehrotra, President and Chief Executive Officer

Thank you, Dave.

Micron's culture has played a significant role in driving our strong results. Our vision, to transform how the world uses information to enrich life *for all*, serves both as an inspiration for our team and as a foundation for everything we do. Earlier this month, we released Micron's 2021 DEI report, entitled "For All," which highlights significant accomplishments across the six DEI commitments that we introduced last year. These accomplishments included achieving comprehensive global pay equity, as well as increasing representation of underrepresented groups among new college graduate hires by 7%. We also publicly disclosed consolidated Equal Employment Opportunity or EEO-1 data for the first time. This report is available on our website.



Demand for memory and storage remains strong. The broad integration of AI, proliferation of the intelligent edge, continued data center growth, EV adoption and 5G deployment are creating expanded opportunities for Micron to innovate and deliver new value to our customers. The strategic importance of semiconductors to economic growth has never been more clear — and ensuring the security of supply for customers across all industries has never been more important. We look forward to working with governments on initiatives to invest in domestic production, both here in the U.S. through the Creating Helpful Incentives to Produce Semiconductors for America (CHIPS) Act and Facilitating American-Built Semiconductors (FABS) Act and in other countries around the world.

It is a truly exciting time in the industry. Our business is robust and growing, and our team is energized to seize the opportunities ahead of us.

We'll now open for questions.