Farhan Ahmad, Vice President, Investor Relations

Thank you, and welcome to Micron Technology's fiscal first-quarter 2023 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 may 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 U.S. Securities and Exchange Commission (SEC), including 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/FQ1 Overview

Micron delivered fiscal first-quarter revenue and earnings per share (EPS) within our guidance range despite a pricing environment that deteriorated significantly from our prior call. The industry is experiencing the most severe imbalance between supply and demand in both DRAM and NAND in the last 13 years. Micron is exercising supply discipline by making significant cuts to our capital expenditures (capex) and wafer starts while maintaining our competitive position. We are also taking measures to cut costs and operating expenditures (opex) across the company.

Customer inventory, which is impacting near-term demand, is expected to continue improving, and we expect most customers to have reduced inventory to relatively healthy levels by mid-calendar 2023. Consequently, we expect the fiscal second-half revenue to improve versus the first half of our fiscal year. We expect our days of inventory (DIO) to peak in our current fiscal Q2 and gradually improve over the next few quarters, as our bit shipments improve and our supply growth is significantly reduced. Despite this improving bit shipment and revenue trajectory, we expect industry profitability to remain challenged through calendar 2023.

The combination of our technology leadership, manufacturing expertise, diverse product portfolio, strong balance sheet and decisive actions provide a solid footing to navigate this challenging near-term environment.

Technology

I'll start today with an overview of our technology position. Micron continues to lead the industry in both DRAM and NAND technology. We are first to market with 1ß (1-beta) DRAM and 232-layer NAND. While both 1ß DRAM and 232-layer NAND offer strong cost reductions, we have slowed their ramps to better align our supply with market demand as we previously indicated. Yield trajectory for these nodes is on track, and we are continuing to qualify these nodes across our product portfolio and will be well-positioned to ramp these nodes when industry conditions improve. Our 1ß DRAM node, which we introduced in fiscal Q1, delivers around a 15% power efficiency improvement and more than a 35% bit density improvement vs. 1α (1-alpha). 1ß will be used across our product portfolio including DDR5 (D5), LP5, HBM and graphics.

End Markets

Now turning to our end markets. Across nearly all of our end markets, revenues declined sequentially in fiscal Q1 due to weaker demand and steep decline in pricing. Shipment volumes were impacted by our customers' inventory adjustments, the trajectory of their end demand, and macroeconomic uncertainty. We believe that aggregate customer inventory, while still high, is coming down in absolute volume, as end market consumption outpaces ship-in.

Data Center

In data center, we expect cloud demand for memory in 2023 to grow well below the historical trend due to the significant impact of inventory reductions at key customers. End demand at cloud customers is not immune to macroeconomic challenges but should strengthen once the economic environment improves.

DDR5 is extremely important for data center customers as the industry begins its transition to this new technology in calendar Q1. As modern servers pack more processing cores into CPUs, the memory

bandwidth per CPU core has been decreasing. Micron D5 alleviates this bottleneck by providing higher bandwidth compared to previous generations, enabling improved performance and scaling. Feedback from our customers across the x86 and ARM ecosystem suggests that Micron leads the industry with the best D5 products. We expect server D5 bit shipments to become more meaningful in the second half of calendar 2023, with crossover expected in mid-calendar 2024. Building on our existing D5 products, in fiscal Q1, we began qualifying 1α 24Gb D5, and we announced availability of D5 memory for the data center that is validated for the new AMD EPYC™ 9004 series processors.

In addition, we are also making progress on CXL, and in fiscal Q1, we introduced our first CXL DRAM samples to data center customers.

In data center SSDs, we are continuing to proliferate our 176-layer SSD, and in fiscal Q1, we nearly doubled the number of customers where we are qualified. We have also completed qualification of our 176-layer QLC with an important enterprise customer.

PC

In PCs, we now forecast calendar 2022 units to decline in the high-teens percentage and expect 2023 PC unit volume to decline by low to mid single-digits percentage, to near-2019 levels. Client D5 adoption is expected to gradually increase through calendar 2023 with crossover in mid-calendar 2024, and we are well-positioned for this transition with leading D5 products.

We also continue to lead the industry in QLC, and it is an important competitive advantage for us. In fiscal Q1, client and consumer QLC SSDs had very strong growth, which helped increase our NAND QLC mix to a new record.

Earlier this month, Micron began shipping the world's most advanced client SSD featuring 232-layer NAND technology. As the world's first client SSD to ship using NAND over 200 layers, the Micron 2550 NVMe SSD demonstrates superior speed, density, and power savings — enabled by our industry-leading NAND node.

Graphics

In graphics, we expect bit growth to outpace the broader market in calendar 2023. Micron continues to drive the industry's fastest graphics memory with 24Gbps 16Gb GDDR6X shipping in high-volume production.

Mobile

In mobile, we now expect calendar 2022 smartphone unit volume to decline 10% year over year, versus our high single-digit percentage decline projection in our last earnings call. We forecast calendar 2023

smartphone unit volume to be flattish to slightly up year over year, driven by improvements in China following the reopening of its economy.

Micron continues to build on its strong product momentum in mobile. As of fiscal Q1, 1α comprised nearly 90% of mobile DRAM bits, and 176-layer made up nearly all of our mobile NAND bit shipments. We are also well-positioned for the LP5 transition, and in FQ1, the majority of our mobile DRAM bit shipments were LP5. In fiscal Q1, our LP5X was validated for Qualcomm's latest platform and integrated into Snapdragon 8 Gen2 reference designs. In addition, we shipped the industry's first 1ß DRAM qualification samples with our 16Gb LP5.

Auto & Industrial

Last, I'll cover the auto and industrial end markets.

Micron is well-positioned as the leader in automotive and industrial markets, which offer strong long-term growth and relatively stable margins.

In fiscal Q1, auto revenues grew approximately 30% year over year, just slightly below our quarterly record in Q4 FY22. The automotive industry is showing early signs of supply chain improvement, and auto unit production continues to increase. The macroenvironment does create some uncertainty for the auto market, but we see robust growth in auto memory demand in fiscal 2023. This is driven by the volume ramp of advanced next-generation in-vehicle infotainment systems as well as the broader adoption of more advanced driver-assistance systems. Over the next five years, we expect the bit growth compound annual growth rate (CAGR) for DRAM and NAND in autos to be at approximately twice the rate of the overall DRAM and NAND markets.

The industrial market saw continued softening in Q1, as our distribution channel partners reduced their inventory levels and end-demand weakened for some customers. The fundamentals of industrial internet of things (IoT), artificial intelligence and machine learning (AI/ML), 5G, and Industry 4.0 all remain intact, and we expect volumes to improve in the second half of our fiscal year. In our fiscal first quarter, Micron continued to collaborate closely with customers and achieved advanced product sampling and design-in across automation OEMs, ODMs and integrators with our latest generation of D5, LP5 and 3D NAND solutions.

Market Outlook

Now, turning to our market outlook. We expect calendar 2022 industry bit demand growth in the low to mid single-digit percentage range for both DRAM and NAND. For calendar 2023, we expect industry demand growth of approximately 10% in DRAM and around 20% in NAND. For both years, demand in DRAM and NAND is well below historical trends and future expectations of growth, largely due to

reductions in end demand in most markets, high inventories at customers, the impact of the macroeconomic environment, and the regional factors in Europe and China.

Near term, over the next few months, we expect gradually improving demand trends for memory, as customer inventory levels improve further, new CPU platforms are launched, and China demand starts to grow as its economy reopens.

Longer term, we continue to expect strong demand growth across diverse end markets, with DRAM bit demand CAGR in the mid-teens percentage range and NAND bit demand CAGR in low to mid 20s percentage range. Our long-term demand bit growth expectations for both DRAM and NAND have declined from our expectation earlier this year primarily due to lowered growth expectations from PC and smartphone markets and some moderation in the strong long-term growth in the cloud.

Turning to industry supply growth. Industry supply growth in calendar 2022 for DRAM and NAND is closer to their respective long-term demand CAGRs and well above the industry demand growth in calendar 2022. Given the current pricing and resulting industry margins, we expect a significant decline in industry capital investments as well as a reduction in utilization rates for the industry. We expect that DRAM and NAND industry supply growth in calendar year 2023 will be well below their long-term CAGRs and also well below expected demand growth in 2023.

Due to the significant supply demand mismatch entering calendar 2023, we expect that profitability will remain challenged throughout 2023. The timing of the recovery in profitability will be driven by the rate and pace at which supply and demand are brought into balance and inventories are normalized across the supply chain. We believe that negative year-on-year calendar 2023 industry DRAM bit supply growth and flattish year-on-year calendar 2023 industry NAND bit supply growth will accelerate this recovery.

Micron is taking a number of decisive actions in this environment to align supply with demand and to protect our balance sheet.

First, we are reducing our capex investments to reduce bit supply growth in 2023 and 2024. Our fiscal 2023 capex is being lowered to a range between $7.0 to $7.5 billion from the earlier $8 billion target and from the $12 billion level in FY22. This represents an approximately 40% reduction year on year, and we expect fiscal 2023 wafer fab equipment (WFE) capex to be down more than 50% year on year. We are now significantly reducing our fiscal 2024 capex from earlier plans to align with the supply-demand environment. We expect fiscal 2024 WFE to fall from fiscal 2023 levels, even as construction spending increases year on year.

Second, we have reduced near-term bit supply through a sharp reduction in wafer starts . As we have previously announced, we reduced wafer starts for DRAM and NAND by approximately 20%.

Through a combination of these actions, we expect our calendar 2023 production bit growth to be negative in DRAM and up only slightly in NAND. Given the manufacturing cycle times, the full impact of the wafer start reductions on supply will be realized starting in our fiscal Q3. Due to our reductions to our fiscal 2024 WFE capex, our bit supply levels in 2024 will be materially reduced from the prior trajectory. We continue to target a relatively flat share of industry bit supply.

Third, in response to the decline in expected long-term CAGR for DRAM and NAND bit growth, we are slowing the cadence of our process technology node transitions. This change will help us align our long-term bit supply CAGR with demand and improve the return on investment (ROI) of our research and development (R&D) and capex investments. Given our decision to slow the 1ß DRAM production ramp, we expect that our 1γ (1-gamma) introduction will now be in 2025. Similarly, our next NAND node beyond 232-layer will be delayed to align to the new demand outlook and required supply growth. We expect these changes to the technology node cadence to be an industrywide phenomenon. With our industry-leading technology capability, we expect to remain very well-positioned.

Fourth, we are taking significant steps to reduce our costs and operating expenses. We project our spending to decrease through the year, driven by reductions in external spending, productivity programs across the business, suspension of a 2023 bonus companywide, select product program reductions and lower discretionary spend. Executive salaries are also being cut for the remainder of fiscal 2023, and over the course of calendar year 2023, we are reducing our headcount by approximately 10% through a combination of voluntary attrition and personnel reductions. We expect to exit fiscal 2023 with quarterly opex of around $850 million, with additional savings in cost of goods sold (COGS) in our profit and loss (P&L).

Although we have taken these aggressive steps, we are prepared to make further changes and remain flexible to exercise all levers to control our supply and manage our cost structure.

I will now turn it over to Mark.

Mark Murphy, Executive Vice President and Chief Financial Officer

Thanks, Sanjay.

Opening

Fiscal Q1 revenue and EPS came within our guidance ranges despite worsening market conditions over the course of the quarter.

Revenue

Total fiscal Q1 revenue was approximately $4.1 billion, down 39% sequentially and down 47% year over year.

DRAM

Fiscal Q1 DRAM revenue was $2.8 billion, representing 69% of total revenue. DRAM revenue declined 41% sequentially, with bit shipments decreasing in the mid-20 percentage range and prices declining in the low-20 percentage range.

NAND

Fiscal Q1 NAND revenue was $1.1 billion, representing 27% of Micron's total revenue. NAND revenue declined 35% sequentially, with bit shipments declining in the mid-teens percentage range and prices declining in the low-20 percentage range.

Revenue by Business Unit

Now turning to revenue by business unit. Compute and Networking Business Unit revenue was $1.7 billion with weakness across client, data center, graphics, and networking. Embedded Business Unit revenue was $1.0 billion with automotive staying stronger than consumer and industrial markets. Storage Business Unit revenue was $680 million, while QLC mix increased to a new high. Mobile Business Unit revenue was $655 million, a low level partly due to the timing of shipments between fiscal Q1 and fiscal Q2. We expect mobile revenue to grow through the rest of the fiscal year.

Operating Results

Gross Margin

The consolidated gross margin for fiscal Q1 was 22.9%, down approximately 17 percentage points sequentially, primarily due to lower pricing.

Opex

Operating expenses in fiscal Q1 were down roughly $15 million sequentially to under $1 billion. We are taking significant additional actions to reduce our operating expenses through the remainder of this fiscal year.

Operating Income

We reported an operating loss of $65 million in fiscal Q1, resulting in an operating margin of negative 2%, down from operating margins of 25% in the prior quarter and 35% in the prior year.

Fiscal Q1 adjusted earnings before interest, taxes, depreciation and amortization (EBITDA) was $1.8 billion, resulting in an EBITDA margin of 45%, down 9 percentage points sequentially.

Taxes

Fiscal Q1 taxes were $1 million as a result of profit before tax being close to breakeven.

Earnings Per Share

Non-GAAP loss per share in fiscal Q1 was $0.04, down from earnings per share of $1.45 in fiscal Q4 2022 and $2.16 in the year-ago quarter.

Operating Cash Flow

Turning to cash flows and capital spending, we generated $943 million in cash from operations in fiscal Q1, representing approximately 23% of revenue.

Capital Allocation

Capital expenditures were $2.5 billion during the quarter, and we see capex trending down from these levels through FY23. Free cash flow was negative $1.5 billion in the quarter. Under a 10b5-1 plan in place during the quarter, we completed share repurchases of $425 million or 8.6 million shares at an average price of $49.57.

Inventory

Our ending fiscal Q1 inventory was $8.4 billion, and average DIO for the quarter was 214 days. The rapid decline in bit shipments in fiscal Q4 and fiscal Q1 has driven inventories well above our target levels, and our actions reflect our intent to work these down. We expect our DIO to peak in our fiscal Q2 and then gradually improve.

Total Cash/Debt

We ended the quarter with $12.1 billion of total cash and investments and $14.6 billion of total liquidity.

Given macroeconomic uncertainty and the market environment, we bolstered our liquidity in the quarter through $3.4 billion of added debt, bringing our total fiscal Q1 ending debt to $10.3 billion. With this

additional debt and net of income on our deposits, we project net interest income of approximately $15 million in the fiscal second quarter.

We project and intend to maintain ample liquidity while maintaining leverage consistent with our investment grade rating.

Outlook

Now turning to our outlook for the fiscal second quarter. The near-term market environment remains challenging and negatively impacts our profitability outlook. For both DRAM and NAND, we expect bit shipments to be up in fiscal Q2 but revenue to be down. Included in the fiscal second-quarter guide is an insurance recovery of approximately $120 million, most of which will be recognized as revenue. This insurance recovery is related to an operational disruption in 2017, and settlement occurred in fiscal Q2. Beyond fiscal Q2, we expect revenue and free cash flow to improve in our fiscal second half as we anticipate a continued recovery in demand.

Related to announced wafer start reductions, we forecast approximately $460 million of headwinds to our cost of goods sold in fiscal 2023, most of which we expect to incur in the second half. Excluding these underutilization effects, we expect fiscal 2023 cost per bit reduction to be healthy in DRAM but to be challenged in NAND primarily due to inflation in energy costs unique to Singapore. As higher cost inventories sell through, we expect these underutilization impacts to continue into fiscal 2024.

In this environment and considering the outlook, we continue to aggressively manage costs, and as Sanjay mentioned, we see opex trending down from approximately $1 billion in fiscal Q1 to around $850 million by fiscal Q4.

Below the operating line, we will have lower net interest income, as previously mentioned. While there is still a fixed level of tax, as we discussed last quarter, due to the geographic mix and level of income, we now see fiscal 2023 taxes coming in at less than $250 million.

We are reducing our planned capital expenditures in fiscal 2023 to be in the range of $7 billion to $7.5 billion, with the spending weighted toward the first half of the fiscal year. Fiscal 2023 capex includes an increased level of construction for long-term capacity planning. WFE capex will be down more than 50% year over year. We are also significantly reducing capex in fiscal 2024 compared to prior plans.

Until market conditions and our cash flows improve, we will focus our capital return on dividends and have suspended our share repurchases for now.

Non-GAAP Guidance

With all these factors in mind, our non-GAAP guidance for fiscal Q2 is as follows.

We expect revenue to be $3.8 billion, plus or minus $200 million; gross margin to be in the range of 8.5%, plus or minus 250 basis points; and operating expenses to be approximately $945 million, plus or minus $15 million. We expect tax expense of approximately $60 million.

Based on a share count of approximately 1.09 billion shares, we expect EPS to be a loss of $(0.62), plus or minus $0.10.

Closing

As we work through this period of challenging market conditions, Micron has the benefit of best-in-class technology, a competitive product portfolio, strong operations, a solid balance sheet, and most critically, a tenacious team. Beyond this downturn and over the long-term, we are confident that memory and storage revenue growth will outpace the broader semiconductor industry. This is supported by the combination of strong secular trends, memory content growth and better supply/demand balance. Micron is focused on operating and investing in a responsible and disciplined manner to achieve profitable growth and free cash flow generation consistent with our long-term model.

I will now turn it back to Sanjay.

Sanjay Mehrotra, President and Chief Executive Officer

Thank you, Mark.

In the last several months, we have seen a dramatic drop in demand. Micron has responded quickly to reduce our capex and supply output, and we are taking strong enterprise-wide actions to control our expenses. We have increased liquidity on our balance sheet and adjusted our operational plans. While the environment remains challenging, we currently expect second-half fiscal 2023 revenue to improve from the first half. We are confident that the broad advantages enabled by data-centric technologies will create long-term growth for our industry, and we expect the total available market to reach approximately $300 billion by 2030.

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