



Farhan Ahmad, Senior Director, Investor Relations

Thank you, and welcome to Micron Technology's third fiscal quarter 2019 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, 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, along with a convertible debt and capped call dilution table. As a reminder, the prepared remarks from this call and 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](https://twitter.com/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 the actual results to differ materially from statements made today. We refer you to the documents we file with the SEC, specifically our most recent 10-K and Form 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

Micron delivered solid FQ3 results despite headwinds from industry oversupply and steeper-than-expected price declines. This financial performance reflects our continued strong execution on technology advancement, product cost reduction, and pricing discipline. Our healthy balance sheet, structurally improved profitability, and winning team set the foundation for us to emerge even stronger when the industry environment recovers.

We are confident that the long-term demand outlook for memory and storage is compelling, driven by broad secular trends such as AI, autonomous vehicles, 5G, and IoT. The new Micron is well positioned to



take advantage of these trends, with innovative products, a responsive supply chain, and well-established relationships with customers worldwide.

Over the last few months, customer inventory improvements have progressed largely in line with our expectations in most end markets. This reinforces our confidence that bit demand for DRAM will return to healthy year-over-year growth in the second half of calendar 2019. NAND bit demand is also increasing in most markets as elasticity kicks in, in response to price declines over the last year.

Even as customer inventory levels of DRAM and NAND improve across most end markets, producer inventory levels are elevated. Although previously announced capex cuts will start to impact industry supply in the second half of the calendar year, our assessment is that further cuts in capex and bit supply will be required to return the industry to a healthy supply-demand balance. I will discuss our actions on this front shortly, but first, let me provide an overview of our FQ3 results.

At our 2018 Analyst Day, we discussed our priorities related to technology, cost competitiveness, and high-value solutions. Solid execution on these strategies has now yielded over 2000 basis points of EBITDA margin improvement relative to our peers since 2016. Unlike the last downturn during which Micron's relative profitability declined, in this downturn our relative profitability has continued to improve.

In DRAM, we are on track to deliver good cost declines in fiscal 2019. We continue to increase the mix of 1Y nanometer and are making excellent progress toward ramping 1Z next fiscal year. In April we broke ground on our new cleanroom in Taichung, Taiwan, and earlier this month we announced the opening of a new cleanroom in Hiroshima, Japan. These cleanroom expansions will enable future DRAM node transitions of our existing wafer capacity.

In NAND, we continue to ramp our 96-layer 3D NAND and are on track to achieve healthy cost declines in fiscal 2019. We continue to make progress on our 128-layer 3D NAND, which uses replacement gate technology. As we discussed on the last call, we expect a partial transition to this node, with the full portfolio transition occurring on the second generation replacement gate node.

In addition to these node transitions in DRAM and NAND, we are also improving our cost structure by increasing the percentage of products produced through captive back-end packaging facilities. These facilities now account for more than half of our total assembly requirements. Our captive back-end operations are tightly integrated with our front-end systems, enabling greater product customization, tighter quality control, improved responsiveness to shifts in demand, and lower costs.

High-value solutions now account for over two-thirds of NAND revenues. We made further progress in strengthening our SSD portfolio with the launch of our 9300 data center NVMe SSDs for cloud and enterprise markets. We more than doubled revenue shipments of our new NVMe client SSD to large PC



OEMs, and more customer qualifications are in progress. As a reminder, this new NVME drive is built with our own controller technology. QLC SSD bit shipments increased approximately 75% sequentially, driven by growth of our consumer NVMe SSDs.

Overall, the Micron team continues to execute well on cost reductions and on high-value solutions. While we are operating in a difficult industry environment today, our progress is visible in our reported profitability and increases our confidence in our ability to drive long-term shareholder value.

Now turning to highlights by end markets:

Our mobile business was impacted by US trade restrictions, which Dave and I will discuss later in the call. Looking ahead, innovations such as 5G, foldable phones, and advanced cameras will drive growth for our products. Our portfolio of Mobile DRAM products features best-in-class power consumption. On low-power DDR5, we are leading the industry and recently started sampling the highest-density die in the market. We continue to make good progress on our managed NAND products as well, and recently launched our second-generation UFS product with best-in-class endurance.

Within the data center market, cloud customers are turning the corner on inventories, and most are approaching normal inventory levels. Our cloud DRAM bit shipments grew sequentially in the fiscal third quarter, exceeding our expectations, and early trends suggest strong sequential growth for the FQ4. Enterprise customer inventories are taking somewhat longer to normalize than we had previously expected. We continue to sample and secure qualifications on 64GB DDR4 server modules built with our 1Ynm DRAM.

In graphics, we saw robust sequential growth as customer inventories normalized. We expanded our customer base for our high-performance GDDR6, which positions us well for strong growth in the second half of calendar 2019.

In the PC market, DRAM bit shipments returned to growth as CPU shortages started to improve. Looking ahead, we expect strong sequential DRAM bit growth in our FQ4 as laptop sales improve.

In automotive, while global auto sales are slow, content growth remains strong, driven by innovations in ADAS and infotainment systems. Micron is well positioned to benefit from the growth opportunity in this market given our leading market share, deep customer relationships, and high-quality products. We recently began ramping shipments with an industry-leading OEM for their most advanced autonomous system, which uses 16 gigabytes of our low-power DRAM.

Before talking about the market outlook, I want to provide some comments related to Huawei.

As you know, effective May 16, the US Commerce Department's Bureau of Industry and Security, or "BIS," added Huawei and 68 of its non-US affiliates to the BIS Entity List. To ensure compliance, Micron



immediately suspended shipments to Huawei and began a review of Micron products sold to Huawei to determine whether they are subject to the imposed restrictions. Through this review, we determined that we could lawfully resume shipping a subset of current products because they are not subject to Export Administration Regulations and Entity List restrictions. We have started shipping some orders of those products to Huawei in the last two weeks. However, there is considerable ongoing uncertainty surrounding the Huawei situation, and we are unable to predict the volumes or time periods over which we'll be able to ship products to Huawei. Micron will continue to comply with all government and legal requirements, just as we do in all our operations globally. Of course, we cannot predict whether additional government actions may further impact our ability to ship to Huawei.

Now turning to the market outlook for DRAM.

As I mentioned earlier, we have seen early signs of bit demand recovery in most DRAM end markets. Based on our assessment of customer inventory improvement, we anticipate robust bit demand growth for the industry in the second half of the calendar year, compared to the weak demand levels in the first half where the industry saw sequential declines. Our view of calendar 2019 industry DRAM bit demand growth is in the mid-teens, with industry supply growing mid- to high teens.

Despite the early signs of recovery in DRAM bit demand, the excess supply and resulting higher producer inventory levels have created a challenging pricing environment. We expect that the strengthening demand growth will begin to contribute to an improving trend in producer inventory later in calendar 2019.

Turning to our supply, at Micron our focus continues to be on taking prudent steps to help bring the DRAM market back to stabilization. We are continuing the previously announced wafer start reductions of approximately 5%, which we expect will bring our DRAM bit supply growth for calendar 2019 close to market demand growth.

The overall NAND market remains oversupplied from the accelerated supply growth driven by the industry transition from 2D NAND production to 3D NAND.

Our NAND industry bit demand growth expectations for calendar 2019 are unchanged at the mid-30% range. We continue to target our bit shipments to be close to the industry demand growth rate. Since our last earnings call, we have taken actions to further adjust wafer starts from the previously announced 5% reduction to now approximately 10%, which will result in lower supply growth in the second half of the calendar year. These reductions are the result of both capital optimizations to reuse more existing equipment for our 96-layer conversion, as well as lowering some of our legacy 2D NAND capacity, which we announced previously.



While we still believe the NAND industry supply is growing above demand this year, the market is showing signs of increased elasticity stemming from recent price declines. We are optimistic that the overall NAND market will start to stabilize in the second half of calendar 2019.

With the higher levels of macro uncertainty and the relatively high levels of inventory on our balance sheet, we are taking decisive action to manage our DRAM and NAND bit production. In addition to the wafer start reductions that we discussed, we are also taking action on capex. Earlier this year, we announced a reduction in fiscal 2019 capex forecast from \$10.5 billion plus or minus 5% at the start of the year, to approximately \$9 billion now. For fiscal 2020, we plan for capex to be meaningfully lower than fiscal 2019. While our capex plans are still being finalized, we seek to balance our manufacturing investments with our free cash flow objectives.

I'll now turn it over to Dave to provide financial results of our FQ3 and guidance for the fourth quarter.

Dave Zinsner, Senior Vice President and Chief Financial Officer

Micron's FQ3 results were within the guided revenue range and above the guided EPS range that we provided on our last call. We also generated healthy levels of free cash flow and made further progress on our share repurchase program.

Total FQ3 revenue of approximately \$4.8 billion was at the midpoint of our guidance range and was down 39% on a year-over-year basis and down 18% sequentially from FQ2. Both DRAM and NAND revenue were negatively impacted by restriction on sales to Huawei, without which we would have reached the high end of our revenue guidance.

DRAM revenue was approximately \$3.0 billion, representing 64% percent of total revenue. DRAM revenue declined 45% year-over-year and 19% sequentially from FQ2. Compared to the prior quarter, the DRAM ASP decline approached 20%, while bit shipments were roughly flat. If not for the impact of Huawei, bit shipments in DRAM would have increased sequentially as we had guided on our last quarter's earnings call.

NAND revenue was approximately \$1.5 billion, representing 31% of total revenue. NAND revenue declined 25% relative to FQ3 2018 and declined 18% sequentially from the FQ2. Overall NAND ASPs declined in the mid-teens percent range, while shipment quantities declined in the mid-single-digit percent range compared to the prior quarter. Adjusting for the Huawei impact, bit shipments came in better than our expectation due to stronger component sales.

Now turning to our revenue trends by business unit.



Revenue for the Compute and Networking Business Unit was \$2.1 billion, down 48% year-over-year and 13% from the prior quarter. Lower pricing across major market segments continued to be the leading cause of lower revenue; however, normalized customer inventory levels led to shipment volume growth in FQ3, particularly in graphics and client.

Revenue for the Mobile Business Unit was \$1.2 billion, down 33% year-over-year and down 27% from FQ2 due in part to lower shipments to Huawei. Lower pricing and DRAM volume drove the quarter-over-quarter decline. Our managed NAND portfolio continued to show strength in FQ3 with bit shipments increasing by over 200% year-over-year.

The Embedded Business Unit revenue of \$700 million was down 22% from the prior year and down 12% from FQ2. Revenue was adversely impacted by broad macroeconomic weakness, weaker pricing, and inventory adjustments in the consumer segment. Automotive and industrial which represented almost 75% of EBU revenue showed strong margin resilience, with gross margins down only 300 bps basis points from the last fiscal quarter.

Finally, the Storage Business Unit FQ3 revenue was \$813 million, down 29% year-over-year and down 20% quarter-over-quarter. The sequential decline was driven by competitive pricing and an unfavorable comparison on component volumes coming off a large one-time sale we completed in the prior fiscal quarter.

The consolidated gross margin for FQ3 was 39% compared to 61% in the prior year and 50% in FQ2. Lower pricing in both DRAM and NAND was the primary driver of the lower margin in the fiscal quarter. Gross margins were also negatively impacted by approximately 200 basis points due to underutilization charges related to IMFT. US tariffs on imports from China were less than 30 bps basis point impact to gross margins, as we have successfully mitigated approximately 90% of the impact from tariffs. FQ3 NAND gross margins remained above 25%.

Operating expenses of \$774 million were well within our guided range. As we've said on prior calls, our goal with OPEX is to remain disciplined with respect to expense control while continuing to invest in future products and technologies throughout the market cycle. Operating expenses also benefited from strong execution on qualification of our 1Znm mobile-DRAM product ahead of our internal schedule.

We delivered solid profitability in FQ3 with operating income of \$1.1 billion, representing 23% of revenue. This margin is down 28 percentage points year-over-year and down 13 percentage points from FQ2.

Non-GAAP taxes included \$162 million of benefits in FQ3 due to a favorable state tax law change and a change in our annual tax rate from 10.5% to 9%.



Non-GAAP earnings per share in FQ3 were \$1.05, down from \$3.15 in the year-ago quarter and down from \$1.71 in the prior quarter. FQ3 non-GAAP EPS was \$0.15 higher due to the \$162 million of tax benefits.

Turning to cash flows and capital spending, we generated \$2.7 billion in cash from operations in FQ3, representing 57% of revenues.

Capital spending, net of third-party contributions, was approximately \$2.2 billion, down from \$2.4 billion in the prior quarter. We still expect fiscal 2019 capex at approximately \$9 billion, however we expect meaningfully lower CAPEX in fiscal 2020.

In FQ3, our adjusted free cash flow, defined as Cash Flow from Operations less Net CAPEX, was approximately \$500 million compared to \$2.2 billion in the year-ago quarter and \$1.0 billion in FQ2.

We bought back approximately \$157 million of stock in FQ3, representing 3.8 million shares. For the fiscal year-to-date, we've returned \$2.7 billion to shareholders in the form of share buybacks, which represents approximately 70% of our year-to-date free cash flow. Combined with the redemptions of outstanding converts, we have reduced outstanding share count by over 8% since FQ3 2018.

We will continue to prudently manage capital according to our philosophy of maintaining liquidity throughout the cycle, investing in capital assets to enable cost-effective node transitions and back-end cost competitiveness, and returning over 50% of free cash flow to shareholders.

Inventory ended the quarter at \$4.9 billion, increasing from \$4.4 billion at the end of FQ2. FQ3 ended with 151 days of inventory outstanding, or 143 days using our average inventory balance for FQ3. As we mentioned on the last call, calendar 2020 NAND bit supply will be constrained as we make the transition to replacement gate. To meet expected bit demand growth, we are carrying higher levels of NAND inventory in calendar 2019 and 2020. We also project to carry higher-than-normal levels of DRAM inventory in calendar 2019 as industry supply and demand work toward getting into balance.

Total cash ended the quarter at \$7.9 billion, down quarter-over-quarter, largely as a result of our \$1.4 billion redemption of our Series G convertible notes announced last quarter and completed in FQ3. Total liquidity exceeded \$10 billion at quarter end while we maintained a healthy balance sheet.

In the quarter, we announced that the close of the IMFT joint venture acquisition will be October 31st, which is during our first fiscal first quarter of 2020. We expect to pay approximately \$1.4 billion for Intel's share of IMFT. A portion of the payment will also be used to repay member debt financing, which at the end of FQ3 was approximately \$860 million.

Now turning to our financial outlook. Both the DRAM and NAND markets remain over-supplied. Having said that, we are starting to see some signs of bit demand improvement. As Sanjay mentioned, we expect



strong growth in our DRAM bit shipments for the cloud, graphics, and PC markets in FQ4, followed by more normal bit growth in the fiscal first quarter. In NAND, while the industry is benefitting from elasticity kicking in, our bit shipment growth in FQ4 will be limited due to the ongoing transition of our SSD portfolio.

With that in mind, our non-GAAP guidance for FQ4 is as follows. We expect revenue to be in the range of \$4.5 billion, plus or minus \$200 million, gross margin to be in the range of 29% plus or minus 150 basis points, and operating expenses to be approximately \$785 million, plus or minus \$25 million. Based on a share count of approximately 1.13 billion fully diluted shares, we expect EPS to be \$0.45, plus or minus \$0.07.

In closing, despite the industry and geopolitical challenges, Micron continues to execute on our key initiatives and remains on strong financial footing. We will continue to draw on our strong relationships with our customers and manage through this cycle with a focus on gross margins and free cash flow.

I will now turn the call over to Sanjay for concluding remarks.

Sanjay Mehrotra, President and Chief Executive Officer

Clearly, fiscal 2019 has been challenging for both Micron and the industry. While we continue to believe that the industry is structurally stronger, the confluence of events that impacted this year was unprecedented. Still, we have fared better due to the tremendous progress we have made on improving our product costs, advancing our technology, and increasing the mix of high value solutions. Recent industry financial results show that Micron's profitability and balance sheet are best-in-class. Having said that, we are not resting on our recent accomplishments and are continuing to raise the bar for ourselves. Our CAPEX and expense controls reflect our focus on profitability and free cash flow.

With the economic and trade challenges facing the industry, the near term continues to be uncertain. But looking beyond these challenges, I am excited about Micron's future. We are in the early innings of growth in cloud computing, and the value of data in the new economy is going to drive secular growth in numerous memory and storage-intensive applications. AI, autonomous vehicles, 5G, and IoT will drive significant improvements in our lives, and we look forward to bringing the value of our innovative, market-leading solutions to our customers. In April, we issued our fourth annual sustainability report, which details Micron's commitment to enhancing the world we live in through our products and our business practices. We achieved perfect scores on industry-standard environmental and social audits of our facilities in 2018 and 2019. Our ongoing focus and improvements in sustainable practices is a competitive differentiator for both our customers and our employees, and an important part of the transformation we are driving at Micron. I am energized by the potential ahead of us and proud of the culture of innovation and execution that we are building.



We will now open for questions.