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PRESENTATION

Operator

Good afternoon, and welcome to MACOM's Second Fiscal Quarter 2019 Financial Results Conference Call. (Operator Instructions) As a reminder, this conference call is being recorded today, Tuesday, May 7, 2019. I will now turn the call to Steve Ferranti, Vice President of Investor Relations at MACOM. Steve, please go ahead.

Stephen Ferranti - *MACOM Technology Solutions Holdings, Inc. - VP of IR*

Thank you, Shannon. Good afternoon, everyone, and welcome to MACOM's Second Fiscal Quarter 2019 Earnings Conference Call. Joining me today are MACOM's President and Chief Executive Officer, John Croteau; and Principal Financial Officer, Conor Hegarty.

If you have not yet received a copy of the earnings press release, you can obtain a copy on MACOM's website at www.macom.com under the Investor Relations section.

Before turning the call over to John, I'd like to remind everyone that management's prepared remarks and answers to your questions contain forward-looking statements, which are subject to certain risks and uncertainties. Because actual results may differ materially from those discussed today, MACOM claims the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995.

For more detailed discussion of the risks and uncertainties that could result in those differences, we refer you to MACOM's filings with the SEC, including its current report on Form 8-K filed today, its annual report on Form 10-K for fiscal year 2018 filed on November 16, 2018, and its quarterly report on Form 10-Q for the fiscal quarter ended December 28, 2018, filed on February 6, 2019.

Any forward-looking statements represent management's views only as of today, May 7, 2019, and MACOM assumes no obligation to update these statements in the future. The company's press release and management's statements during this conference call will include discussions of certain adjusted non-GAAP measures and financial information, including all income statement amounts and percentages referred to on today's call unless otherwise noted.

These financial measures and a reconciliation of GAAP to adjusted non-GAAP results are provided in the company's press release and related Form 8-K, which was filed with the SEC today and can be found at the Investor Relations section of MACOM's website.

For those of you unable to listen to the entire call at this time, a recording will be available via webcast for at least 30 days in the Investor Relations section of MACOM's website.

And with that, I'll turn over the call to John for his comments on the quarter.

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Thanks, Steve. Welcome, everyone, and thanks for joining us today. I'll begin today's call with an overview of our second quarter results for fiscal 2019. I'll then turn the call over to Conor Hegarty who will review our financial performance in further detail. I'll conclude today's prepared remarks by providing an update on our secular growth drivers and cloud data centers, 5G Telecom and global and homeland security including a more in depth discussion of our pending joint venture with Goertek to service the China 5G opportunity. And finally, I'll close the call with guidance for the third fiscal quarter of 2019.

Jumping right into the numbers. Consistent with our preliminary Q2 results that we provided on April 24, adjusted revenue for the fiscal second quarter was $121.5 million, down 19% sequentially driven largely by broad-based weakness among our data center businesses. Adjusted gross margin was 48.7% including an inventory charge of roughly $8 million that accounted for 600 basis points of negative gross margin impacts. Adjusted earnings per share was a loss of $0.18. That said, free cash flow was positive $13 million, and our cash balance was up $6 million sequentially. This was obviously a very challenging quarter. On top of the forecasted softness in China and seasonality in our I&D business, we had a number of unexpected headwinds, which were rooted in the Data Center inventory correction that we discussed in our last earnings call.

For much of 2018, the industry had faced a supply shortage as module suppliers struggled to keep up with demand for major cloud deployments. Service providers had put sustained pressure on their suppliers, our customers, to expedite shipments during this period.

Earlier this year, those cloud operators clamped down on new orders in order to digest inventory. This has been well reported by our customers and peers across the industry. This hard stop in orders following a prolonged period of hyper growth created a whipsaw effect that has reverberated throughout the supply chain over the past few months. To start, inventories of our data center component stacked up at module vendors to levels well beyond what we anticipated 90 days ago. This resulted in a shortfall in product revenue as compared to our original Q2 guidance.

Secondly, cloud operators deprioritized the qualification and ramp of new module suppliers creating uncertain prospects for our white box solutions customers. New entrants usually take the brunt of market downturns as incumbents leverage existing supply agreements to wind down inventory levels more smoothly. We do the exact same thing in product areas where we hold an incumbent position. In light of these market conditions and soft backlog, we believe it prudent to record inventory reserves on certain data center products, which we're in the process of ramping. This resulted in a charge to cost of goods sold of more than $8 million, which accounted for a $0.12 hit to EPS and 600 basis points of negative gross margin impacts. Excluding this unanticipated accounting adjustment, gross margin would have been close to the low end of our guidance range.

It's worth noting that we did bring on a new solutions customers during the quarter. We collected the first tranche of cash associated with the initial milestones but did not recognize revenue as originally anticipated due to current market uncertainties. We may or may not be able to recognize revenue at some point in the future so we're not factoring that into our Q3 guidance. I'll get into this further at the end of my prepared remarks. The magnitude of this correction has been deeper and far more disruptive than we originally anticipated. However, we believe we're at the bottom of the cycle, and our customers remain optimistic for a strong rebound in the second half of the calendar year.

All of the underlying demand drivers for hyperscale connectivity remain in place. Customer and market analyst forecasts call for a pickup in port shipments in the second half of 2019 and again strong growth in 2020. I'll talk more about this later in the call along with our secular growth drivers.

Before I turn it over to Conor for a more in-depth review of our fiscal second quarter financials, I'd like to take a moment to thank Bob McMullan for his service at MACOM. For the past 5 years, Bob was instrumental in rebuilding and reshaping our portfolio through numerous acquisitions, divestitures and corporate financing transactions. We all wish Bob continued success in his future endeavors.

With that, I'll let Conor go through the financials. Take it away, Conor.

Conor Noel Hegarty - *MACOM Technology Solutions Holdings, Inc. - Principal Financial Officer & Principal Accounting Officer*

Thank you, John. Good afternoon, everyone.

Adjusted revenue in fiscal Q2 was $121.5 million, down 19% year-over-year from $150.4 million. I'd like to highlight that our fiscal Q2 GAAP revenue includes $7 million associated with our data center solutions business. This amount was previously included in our non-GAAP revenue in the third fiscal quarter of 2018. Accordingly, this $7 million amount has been excluded from our fiscal Q2 2019 non-GAAP revenue. The revenue amounts and any associated percentages presented and discussed in our call today relate to non-GAAP revenue also referred to as adjusted revenue.

Revenue by end markets. Industrial & Defense was $50 million and 42% of total revenue, up 15% year-over-year and in line with our forecast. Telecom was $47 million and 39% of total revenue, down 26% year-over-year, but in line with our forecast. As a reminder, fiscal Q2 last year included LR4 revenue of $12 million.

Data center was $24 million and 19% of total revenue, down 44% year-over-year. This highlights the magnitude of the data center inventory correction.

Adjusted gross profit and adjusted gross margin in fiscal Q2 were $59.1 million and 48.7% of revenue, respectively, which includes $8 million in inventory reserves primarily associated with data center materials or roughly 600 basis points of gross margin impact. Total adjusted operating expenses were $63.3 million composed of R&D expenses of $40.4 million and SG&A expenses of $22.9 million. Total adjusted operating expenses were up approximately $500,000 or 1% sequentially.

Adjusted loss from operations, $4.2 million, translating into negative 3% operating margin. Adjusted net interest expense was $8.4 million, up $600,000 sequentially, primarily due to approximately $400,000 of charges associated with leased equipment, which is not expected to continue in future periods. Our normalized adjusted income tax rate in fiscal Q2 continued at 8%.

Fiscal Q2 adjusted net loss was $11.6 million, translating into negative $0.18 per fully diluted share. The share count used to calculate fiscal Q2 adjusted EPS was 66 million fully diluted shares.

Adjusted EBITDA, or earnings before interest, taxes, depreciation and amortization, was $3 million.

Moving on to cash flow. GAAP cash flow from operations was $24 million in fiscal Q2 aided by reductions in net working capital of $26 million. Capital expenditures in fiscal Q2 were $11 million or 9% of revenue, and depreciation expense was $8 million. Free cash flow was $13 million, up from negative $9 million sequentially due primarily to the improvements in working capital amounts.

Cash, cash equivalents and short-term investments were $192 million, up from $186 million sequentially.

Accounts receivable were $87 million. Days sales outstanding were 66 days.

Inventories were $120 million. Inventory turns were 2.1x, down from 2.2x sequentially. Long-term debt was $686 million inclusive of capital leases.

Long-term debt of $657 million is termed with minimal annual principal repayment until maturity in May 2024 and covenant light. MACOM has an undrawn $160 million credit line available through November 20, 2021. Back to you, John.

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Thanks, Conor.

For the remainder of my prepared remarks, I'll provide an update on our secular growth drivers and why, despite all of the near term ugliness, I'm as bullish as ever on the opportunity for MACOM that lies ahead. Across our opportunity set, we're better positioned today than we were just 90 days ago.

Starting with cloud data centers. The current inventory correction does not alter the fundamental need for high-speed connectivity in data centers. Cloud operators' revenue streams and future growth initiatives are dependent on ultra high-speed data links between server racks and across their data centers.

As a prime example of this, last quarter, Facebook unveiled its next-generation hyperscale topology called F-16 to cope with massive growth of data traffic inside of its data centers. F-16 is designed to provide 1.6 terabits of bandwidth at the top of the rack switch based on 100 gig CWDM building blocks. This architectural shift is expected to drive a 4x increase in the number of 100 gig CWDM ports at Facebook while also providing a migration path to 200 and 400 gig in the future. We expect other cloud customers to follow a similar path. This is an excellent example of why we continue to believe that 100 gig has a long life cycle ahead. Customer forecasts bear this out, predicting strong growth for both 100 gig CWDM4 and PAM4 in the remainder of 2019 and 2020 while 200 and 400 gig ramp on top of that demand starting next year.

MACOM remains extremely well positioned to capitalize on all of these trends. This year's Optical Fiber Conference in San Diego was a watershed event in terms of highlighting the leadership and production readiness of our broad portfolio of analog, DSP, laser and L-PIC solutions for the cloud.

Our lead PAM4 DSP customer finally unveiled their new 100 gig PAM4 transceiver at OFC, center stage in their booth, which was running live data traffic over a 10-kilometer link using our DSP chip.

Those who attended the conference and had the chance to see that demo can now appreciate the significance that customer ascribes to that product for their overall cloud data center strategy. This is a really big deal for them, and it's a really big deal for the rest of the industry too. This is the first of several customers that are poised to enter production using our DSP.

Broadly speaking, DSP-based PAM4s gain traction within those cloud operators with fiber infrastructure that's rooted in PSM4. Initial 400 gig traction has been in the form of DR4, which much like PSM, breaks out 4 single wavelength streams over 4 fibers to 4 100 gig PAM4 transceivers. That means 4 100 gig transceivers will ship for each 400 gig transceiver, another reason we believe 100 gig has a long life cycle ahead.

Given our deep roots and architectural partnerships with key players in the data center industry, we believe our PAM4 DSP is poised to achieve a preeminent share in those 100 gig DR1 transceivers. That's why we're laser focused ramping production of our flagship PRISM DSP.

While many people equate PAM4 with DSPs, certain cloud operators are sponsoring a whole new dimension to their 200 and 400 gig strategies, Analog, CDR-based PAM4. This approach provides a smooth upgrade path to 200 and 400 gig for those with CWDM-based fiber infrastructure. CWDM multiplexes 4 wavelengths over a single fiber. This initiative plays directly to our strengths and incumbency in high-performance analog components.

Earlier today, we announced the formation of the Open Eye MSA Group, an industry consortium founded by MACOM along with Semtech with participating members including Huawei's HiSilicon, Juniper, Innolight, AOI and Mellanox among nearly a dozen others. A multisource agreement aims to come up with interoperability and accelerated adoption of 200 and 400 gig PAM4 interconnects using an analog approach. Between MACOM, Semtech and other participants, MSA members supply nearly 100% of the CDRs to Cloud customers, demonstrating MSA interoperability across a broad group of electronics, laser and component suppliers thus achieves de facto industry standardization.

Today, we simultaneously announced our portfolio of MSA-targeted CDRs, drivers and TIAs, which add low-cost, low-power features for the PAM4 function. Instead of using a 16- or 7-nanometer DSP, which contains power-hungry A/D and D/A blocks, our PAM4 CDRs add modulation, detection and analog equalization in a much more cost-effective process node. This is inherently lower cost and much lower power consumption staying entirely in the analog domain.

The end result is 25% less power per gigabit and similarly, lower cost per gigabit than CWDM4 and DSP-based PAM4 solutions. Cloud customers expect to double their link rate with only minor incremental power and cost using the analog CDR-based approach. But I want to be clear here. We're not promoting the Open Eye MSA as a replacement for IEEE single-lambda, and we're not promoting CDRs instead of DSPs. We supply both with complete portfolios of analog and photonic components for both PAM4 approaches equally.

As I explained earlier, the 2 approaches coexist serving different parts of the industry with different fiber infrastructure and in their data centers.

At OFC we also announced with GlobalFoundries 12-inch silicon Photonics wafer production to support our L-PIC ramp at hyperscale data center volumes. Our L-PIC portfolio spans PAM4 at 100, 200 and 400 gig covering both analog and DSP approaches.

So we're covered whichever way the industry goes.

Silicon Photonics, in general, including our L-PICs is poised to play a key enabling role for PAM4 in both DSP and analog forms. It obviates the need for otherwise costly and power-hungry EML lasers which have been a major impediment to PAM4 adoption. As part of today's product announcement, our FR4 L-PIC is poised to enable 200 gig transceivers later this year at or below the current costs of 100 gig modules.

By this point, I hope it's evident we believe our secular growth opportunity in data centers is fully intact. Our portfolio is expanding geometrically to include DSPs, lasers and L-PICs and our share's growing in a market that is expected to recover if not snap back in the second half of this calendar year. Separating the short-term cyclical from the long-term secular, our future has never been brighter in cloud data centers.

Next, on to 5G Telecom.

Anyone who attended Mobile World Congress knows that 5G is real, and it's starting in a big way later this year on a global basis in applications ranging from sub-6 gigahertz microcell basestations to millimeter wave fixed wireless networks. We had a great roster of customer meeting in Barcelona with major network operators as well as leading basestation OEMs worldwide.

One clear conclusion from field trials is that GaN is now a requirement for 5G microcell basestations. One major OEM actually tried to use LDMOS because it was all they could source in volume. That failed miserably.

The Chief Technology Officer of one of the largest wireless operators told us that their antennas and field trials were twice the target power consumption and 3x too expensive. Some antennas even had to be liquid cooled. Major players now understand that GaN on silicon uniquely provides it all: target efficiency, costs and a high-volume supply chain. We're now squarely fixated on ramping production with ST in support of the 5G buildout globally.

Marco Monti, President of SD Micro's Automotive and Discrete group, joined us at our investor event in Barcelona. He outlined how their GaN capacity expansion, copy exact in Italy and Singapore will be able to service over 80% of global demand for 5G basestations, exclusively through MACOM and our pending joint venture in China.

That brings me to the really big news this quarter, that JV in China. This is the capstone to MACOM's strategy to become a scale player in the multibillion-dollar 5G opportunity worldwide. We've taken a page out of the semiconductor industry playbook and formed a JV that can credibly and locally service a multibillion-dollar opportunity in China's domestic market. Over the last quarter, we ran a comprehensive process to find a Chinese investment partner. I'm very proud and excited to say that the process concluded with Goertek, a proven success story in China. Goertek is a high-volume supplier of semiconductor components, modules and assembled products to the most demanding, smartphone OEMs and service providers worldwide.

Over the last 10 years, they've grown revenue from around $100 million, peaking at over $4 billion growing at over a 40% compound rate during that period. Our 5G GaN on silicon opportunity fits Goertek's operating model perfectly.

They source proprietary semiconductor products and technology from industry leaders like TI, Broadcom and Infineon. In this case, they'll source MACOM's GaN-on-Silicon wafers directly from STMicro and supply 5G power amplifiers to China-based OEMs.

Okay. Here's the key facts about the transaction. We signed and announced a JV on April 24. We expect the transaction to close in 2 to 4 months. Given Goertek's size, the transaction is subject to antitrust approval from China State Administration for Market Regulation. We've taken great care that the only commodities and technologies that MACOM will share are freely exportable to China under U.S. law. The license products are civil, telecommunications grade or EAR-99. We might as well be selling fountain pens. No technology or existing U.S. business will transfer so we don't expect any issues with U.S. Export Control or CFIUS.

Goertek will provide total consideration to MACOM of up to $134.6 million consisting of an upfront payment of $30 million and revenue and profit-based milestone payments. In exchange for a 51% equity stake in the venture. Separately, Goertek and MACOM will each initially contribute $25 million in working capital to fund the venture. So the net cash benefit to MACOM is up to $110 million. It's worth noting that Goertek's $134.6 million will more than return on our total investment to date in GaN-on-Silicon.

In terms of ongoing economics, MACOM will be entitled to dividend preferences and royalties from the joint venture. Once the transaction closes, MACOM will receive cash payments from the JV of $8 million per quarter and IP license maintenance fees for a period of 2 years post-signing. Those fees began accruing as of April 24, the date of signing, and the accrued cash will be paid when the transaction closes.

MACOM also retains rights to GaN-on-Silicon sales outside of Greater China, which has traditionally comprised half the global market for RF power. So in total, on a combined basis, MACOM retains more than 75% of the global economic opportunity for GaN-on-Silicon in basestations.

Success in China in turn will provide MACOM a fantastic cost structure and supply chain and the ability to invest further in GaN innovation in the U.S., with which we can replicate that earnings power on a global basis.

So in summary, we believe that our progress last quarter -- expanding and adding manufacturing and investment partnerships with companies of the scale and strength of STMicro and Goertek -- forms a powerful combination to unlock the China 5G opportunity and provide tremendous earnings power for MACOM and our shareholders. I'll remind everyone that GaN-on-Silicon power amplifiers is but a subset of our overall 5G opportunity for MACOM. We have similar opportunities with other RF technologies like AlGaAs as well as our high-performance analog, DSP and photonic products in the 5G optical buildout. In the interest of time, I'll defer those discussions to our next earnings call.

Suffice to say that our telecom portfolio is poised for long-term secular growth on the back of 5G infrastructure investments beginning later this year. I look forward to providing more detail and delivering on the vision in the quarters ahead.

Finally, before closing today's scripted remarks, I'd like to touch briefly on noteworthy developments in global and homeland defense. Since our last earnings call, 2 of our major customers, Raytheon and Lockheed Martin, announced a teaming agreement to pursue the SENSR contracts. We believe this greatly simplifies the bidding landscape since combined Raytheon and Lockheed represent 80% of overall ground-based radar deployments globally. While many of the moving pieces are still playing out, we believe that this may ultimately result in a more timely deployment of what is shaping up to be the largest buildout of ground-based radar in the history of the United States.

While SENSR deployment is still a couple of years out, final bids are expected to report full-scale preproduction builds, which we're ready to support in engineering and in manufacturing. Outside of SENSR, the threat from unauthorized drones continues to be a major challenge for open air venues, high-rise apartments and public facilities. Just last month, another unauthorized drone incursion took place over another public venue. This time it was over Fenway Park here in Boston. Now it's getting personal. There's a newfound urgency among government agencies including the FAA, FBI and DHS to address these vulnerabilities. This has driven a surge in interest in our radar tile technology from a wide variety of stakeholders. We've been very active recently with government agencies not only for SENSR but also for opportunities to protect these civil open air venues. After years of investment and development work, we're in the right place at the right time with a novel approach that offers proven field performance.

The world's leading radar customers and government agencies understand the value that we're bringing to bear with Scalable Planar Arrays better than anyone and are teaming with MACOM for precisely that reason. We view global and homeland defense to be a strong, domestic secular growth engine stretching for arguably decades to come.

To conclude, while all of our secular growth opportunities and cloud data centers, 5G Telecom and global and homeland defense remain fully intact, we believe that the current inventory correction in data centers will continue through the June quarter. With that in mind, we're guiding fiscal Q3 to be essentially flat to Q2. More specifically, for the third fiscal quarter ending June 28, 2019, revenue is expected to be in the range of $120 million to $124 million. Gross margin is expected to be between 53% and 55% and adjusted earnings per share between a loss of $0.08 and a loss of $0.04 on an anticipated 66.5 million fully diluted shares outstanding.

Again, our fiscal Q3 guidance anticipates no material recovery in demand before the end of the quarter. Also, not factored into our guidance is potential recognition of licensing revenue from funds that we received last quarter from a new solutions customer, and any benefit of license maintenance fees if our JV with Goertek closes before the end of the quarter. Each of these could represent upside to our current Q3 guidance. We believe the worst is behind us. If not this quarter, we look forward to getting back on track with improving financial performance as the market recovers later this year. Some of our customers indicate they'll be exiting the quarter at more normalized inventory levels, which is a positive leading indicator of recovery.

Despite this temporary, albeit precipitous air pocket in data centers, the fundamental demand drivers for each of our growth opportunities remain intact. In each case, we're positioned with a portfolio of disruptive technologies, protected by strong and proven intellectual property. With the progress we made just in the last quarter, we've never been more optimistic about MACOM's future prospects for growth and profitability.

This air pocket in data centers highlights an interesting challenge for the company that we started dealing with head-on last quarter. Several of our growth initiatives are coming to fruition simultaneously. Our challenge is to deploy sufficient resources to meet our customers' demands within the windows of opportunity. This raises a valid question of affordability. Our JV with Goertek is a great example of a proactive solution to address that challenge. Putting the business in an even better position for success while defraying operating expenses and at the same time retaining substantial earnings power for our shareholders. We believe there are similar opportunities for other parts of our portfolio. Operator, you can now open the call to questions.

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) Our first question comes from Quinn Bolton with Needham.

Michelle Waller - *Needham & Co - Analyst*

This is Michelle on for Quinn. For my first question, I guess on the GaN on Silicon side of things, can you guys give us an update on your confidence level for volume shipments taking place in calendar 4Q of this year? Does that remain on track? And is there any update on the $23 million investment with STMicro and where that stands, too?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Yes. So we have very clear line of sight to the first wave of deployments over in China specifically, and we're completing the product deliveries and qualifications, validations with our lead customer in line with collecting orders and ramping production in support of those 4Q shipments. I'd say, in general, with ST, those -- that capital equipment investment is in the process. There's equipment on order and going to be entering the first ST factory through the course of this year for completing the qualifications. At Mobile World Congress, we actually shared with Marco Monti the production ramp timeframe. It was basically big step-ups as you step through 2020 from both the Italy and the Singapore-based factories in ST.

Michelle Waller - *Needham & Co - Analyst*

Okay. Great. To the PAM4 analog CDR-based chipset you announced today, it sounds like these are solutions are sampling today. Can you give us some more color on how you see those solutions ramping over time and what types of distances you're targeting?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Yes. Actually, it's more than sampling. We've actually been working in the labs with our cloud customers demonstrating interoperability with specifically Semtech products so that's the goal of this multisource agreement, to demonstrate multiple sources for each of the components and transceivers, and that's very far along. We're now in process with the MSA group of documenting specification so that we can actually publish the specs later this year. But yes, those products are real and available, and cloud customers and transceiver guys are actually designing them in. So it's off to the races. It's not concepts. It's actually hard work in the lab demonstrating performance.

Operator

Our next question comes from Mark Lipacis with Jefferies.

Mark John Lipacis - *Jefferies LLC, Research Division - Senior Equity Research Analyst*

First one on the free cash flow, nice to see that up in the quarter. Can you give us a framework for thinking about how we should be modeling free cash flow going forward, either on a -- either on like a projection on what you think it's going to do for the rest of the fiscal year or as how we should think about it in terms of net income conversion? That's the first question. I have a follow-up.

Conor Noel Hegarty - *MACOM Technology Solutions Holdings, Inc. - Principal Financial Officer & Principal Accounting Officer*

In terms of the free cash flow, Mark, for Q2, obviously, a very strong performance with the improved working capital position we posted. So our free cash flow was much better than we expected for Q2 and actually is positive for the year-to-date. In terms of Q3, Mark, there was lots of puts and takes for Q3 and lots of variability around the free cash flow number. We will see a slightly higher CapEx in Q3 and hope to offset that with some further improvements in working capital. In terms of rest of the year, we don't give guidance into the rest of the year.

Mark John Lipacis - *Jefferies LLC, Research Division - Senior Equity Research Analyst*

Fair enough. That's helpful. John, can you describe what is your appetite for M&A today versus 2 years ago, let's say?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Yes, that's a fantastic question. We're actually going the other way right now. What I had referred to at the end of the scripted remarks is this JV is a fantastic construct that we're working not to bring more technology into the company but actually get more leverage. Our big problem that we're dealing with right now, if you go through the scripted remarks, all the stuff in data centers, whether it's the L-PICs, the DSPs, as well as obviously the GaN on Silicon stuff, a lot of our growth initiatives actually come to fruition right now, and they become all-consuming in terms of management focus, operating expense, capital expense and so on. And this JV construct that we came upon in running that process over in China, I think, is a great model. I mean we put that business in China in much better hands to be able to service that domestic market locally. We defray operating expense $8 million per quarter begins accruing April 24 so that's directly offsetting OpEx. And we retain very substantial economic value for our shareholders. I mean between preferred dividends, royalties and the maintenance fees, it's very large share of the economic value in China and 100% outside of China we retain, so it's like well more than 75%, well more than 80% for that matter. So it's a great model and I think we're going to be exercising lots of things that we can do to be able to relieve pressure on the balance sheet and relieve pressure on the P&L.

Operator

Our next question comes from Blayne Curtis with Barclays.

Thomas James O'Malley - *Barclays Bank PLC, Research Division - Research Analyst*

This is Tom O'Malley on for Blayne Curtis. Just looking into June here, can you give us the puts and takes across the businesses? You guys are guiding flattish revenue, but just in terms of segments, do you have any color on which ones are growing or which ones are standing back a bit?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

So they're all within a few percentage points of the same kind of thing, and the visibility is low. In telecom right now, it's China visibility is the issue. In data center it's -- there's zero visibility in terms of recovery. In I&D, we're still dealing with seasonality we were down sequentially but up 15% year-on-year, so that's, really an issue of lumpiness in defense programs, to be honest. But I would say that the precision of our forecasting is greater than the numbers that we have on the wall here.

Thomas James O'Malley - *Barclays Bank PLC, Research Division - Research Analyst*

Great. And then just talking about the broader opportunities and this is more longer term, you've kind of described the GaN opportunity being more Q4 to start and then into next year. The ground-based radar arrays is a little further out as well under the telco market you said, maybe improving slightly, but what's driving the growth in the back half of this calendar year? How do you guys keep growing revenue before some of these bigger opportunities hit?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Well, in the September quarter, you're going to see data centers begin to recover. It's very clear. When we have multiple customers talking about getting back to normalize inventories by the end of this quarter, that's indicative of a lift. It's far too early to call that a strong lift, but there are some out there that's talking about a snapback. So data center will look like growth. I would say in telecom, we're waiting for 5G. And the issue with the GaN on Silicon stuff now is we're working through the accounting treatment with Deloitte. So assuming we don't need to consolidate, which is my expectation, you're going to start getting P&L benefit, certainly $8 million of cash benefit per quarter. And again, that started accruing April 24. So when that transaction closes, we get that cash accrued through this quarter. If we close this quarter, you could get a bluebird on Q3 guidance, but if it goes into next quarter, that snowplows into the next quarter.

Operator

Our next question comes from Mark Delaney with Goldman Sachs.

Mark Trevor Delaney - *Goldman Sachs Group Inc., Research Division - Equity Analyst*

First question, I was hoping to better understand the gross margin guidance for next quarter. I think there wasn't the inventory write-down. Gross margin was about 55 for this quarter, pretty flattish revenues and I think the midpoint of gross margins down a little bit for next quarter. So maybe just help us understand what is being factored in for gross margin for next quarter?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Well we assume similar mix to this quarter excluding the inventory adjustment, the inventory reserves, to be honest, Mark. I mean across the board, we just -- the visibility is so poor that it's difficult to get much more precision than that. I would say the tough part of this downturn is as odd as it sounds our high-performance analog business and our connectivity business are among the highest gross margin in the company, and so it hurts. This depression in data center revenues is actually a pretty material dilution on our gross margin. When it comes back, you'll see a lift. So I'm very hopeful that in the September quarter, especially December quarter, we'll be snapping back and back on our March towards 60.

Mark Trevor Delaney - *Goldman Sachs Group Inc., Research Division - Equity Analyst*

Got it. That's helpful. And then for a follow-up on the telecom segment, if I recall properly last quarter guidance was for the Metro/Long-haul to be up very strongly in March driven by telecom applications. It sounded like that came in line with your expectations. Could you just talk a little bit about to what extent that did in fact come through in the regional -- in the regional drivers for China or other regions and what your view is going forward for that business?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Yes. Good question, Mark. Metro/Long-haul is the shining bright star in the portfolio right now. The Metro and client products were up something like 36% quarter-on-quarter, and I would say that ends up being lost in the telecom numbers with the other parts of the telecom portfolio like backhaul/fronthaul and PON. Because Metro/Long-haul business it's nice. It's just not a large driver that can make up for the big downturn in data center. But outside of the data center, things are looking -- I mean I think we're fully booked through next quarter. Not even this quarter, next quarter. So that's a very strong part of the business right now.

Operator

Our next question comes from Tore Svanberg with Stifel.

Tore Egil Svanberg - *Stifel, Nicolaus & Company, Incorporated, Research Division - MD*

John, could you elaborate a little bit more on the Goertek JV especially as it relates to applications you'll be selling in to. Will Goertek be selling PAs for basestations only? Or could they also be selling into smartphone or other applications?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

The current license agreement is entirely basestations -- 100% basestations. They have ambitions to move beyond that. As we can quantify demand and frankly get consideration for that, then we'll consider expanding it. I'm very bullish -- the Goertek team, Long Jiang, the CEO, University of Maryland grad, Jason Lieu a Stanford grad, he's the CEO of the JV. I think it's going to be a great partnership to have to be able to put a lot of products into China. I think my lesson having worked at NXP, they were very successful setting up very similar JVs. It's one thing to supply boutique 50 -- $50 Million businesses like we traditionally do into China. It's an entirely different thing to ship hundreds of millions of dollars of, if not $1 billion of GaN PAs. So I think we have a long, healthy partnership with those guys before us.

Tore Egil Svanberg - *Stifel, Nicolaus & Company, Incorporated, Research Division - MD*

As my follow-up on the PAM4 analog side, so I understand it's going to coexist with DSP. So what's the size of the market either by dollar terms or maybe millions of ports?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

It ends up that the division of the guys who come at PAM4 from a PSM4 heritage and those who come at it from a CWDM4 heritage. It's about a balance of 50-50. It isn't 80-20. Maybe it's 60-40 and can't quantify it. But if you look into the guys who have been PSM4 consumers, big names and so the IEEE single-lambda absolutely has a lot of traction and a bright future. Likewise, the guys with CWDM4 heritage, very strong names on that side so I mean the common denominator for us to be honest is a chockful of high-performance analog, laser and L-PIC content. We've been quantifying things even in the DSP instantiations 70% of the bill of materials is analog and photonic. So it's -- we've got very interesting position with L-PICs that go 100, 200, 400, 28 gigabaud for the analog, 53 gigabaud for the DSP-based stuff. PAM4 is going to be a very nice growth driver for us for the foreseeable future, frankly, once the industry recovers.

Operator

Our next question comes from Mark Kelleher with D. A. Davidson.

Mark Daniel Kelleher - *D.A. Davidson & Co., Research Division - Senior VP & Senior Research Analyst*

I just wanted to ask about a little clarification. You mentioned your white box module vendors were having some difficulty getting qualification. Can you just kind of revisit that? How important is that that to your data center ramp? And I think you connected that to some -- to the inventory charge if I heard that right. Is that right?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

No. I don't think there was a direct connection to the inventory charge, but the solution stuff, I would put it in context. We run a very, very healthy business of selling components to people who buy components and design and manufacture their own transceiver solutions. That's a very successful business model for us. We do have some customers that have taken higher level deliverables from us and planned ramps, and I'd just put it this way. The whole industry has just gone into a pause. The inventories have built up throughout the supply chain. What tends to happen is the end customers and the transceiver customers, they end up going back on their incumbents because, frankly, they prioritize keeping their incumbent suppliers healthy, and the new entrants have to wait. So I don't necessarily consider it long-term bad news for the new entrants. It's just not good news in the short term while we have this glut with inventory. So it's a pause is the best way to put it.

Mark Daniel Kelleher - *D.A. Davidson & Co., Research Division - Senior VP & Senior Research Analyst*

Okay. And then just as a follow-up. Could you just clarify what the inventory charge was? I might have missed that?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Yes. The biggest part of it was we were ramping our 25-gig DML lasers very aggressively in anticipation of supply shortages, which is what our customers were indicating that they had anticipated this year. And just as we were bringing them to fruition in the first calendar quarter, the whole supply chain turned over on us. I went to OFC and one of our biggest target customers told me that they were sitting on 6 months inventory of lasers, which I almost instantly fainted. But so these inventory reserves, every quarter, we do it the same way. It's a calculation. You look at your backlog, you look at your sales in context of your inventory and it's a straight forward calculation and in this particular instance, we had the ramping whip, right? It's a lot of whip. It's not necessarily finished goods although there is some. It's just we don't have any backdrop because there's no orders to be had. So it's not necessarily scrap. It's just writing down the valuation. It's the reason why we have good cash flow despite the operating loss.

Operator

Our next question comes from Tim Savageaux with Northland Capital.

Timothy Paul Savageaux - *Northland Capital Markets, Research Division - MD & Senior Research Analyst*

First question on the joint venture in China. The $8 million a quarter that you mentioned, is that part of the milestone cash consideration? Is that -- to the extent there's 135 minus the 30 upfront? Or is that something different or incremental?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

That's different. So there's license maintenance fees, which are $8 million, they started accruing April 24. And then separate from that, there's the $30 million upfront and the milestones, which are entirely revenue and profit gross profit-based earnouts. And we'll, as we ramp, we'll be burning through those and ticking off those -- that consideration and the last thing is we actually collect royalties on sales as well. And there's actually preferred dividends. So it's economically speaking, the ongoing economics are very attractive. But the $8 million a quarter (corrected by Company after the call) happens regardless.

Timothy Paul Savageaux - *Northland Capital Markets, Research Division - MD & Senior Research Analyst*

Understood. Did you say that was 2 years for the agreement for that?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Yes, the initial agreement is 2 years. I would fully expect -- there's no reason it won't continue on beyond 2 years. It's just for 2 years there was clearly a dependency on us supplying the product, licensing the product and not just the technology so it made sense to maintain it for 2 years, but there's -- again, I don't want to speculate 2 years out, but I would see no reason why that wouldn't continue.

Timothy Paul Savageaux - *Northland Capital Markets, Research Division - MD & Senior Research Analyst*

Got it. I don't know if we think of that in a similar fashion to the solutions revenue over on the datacom side. Obviously, it's not recurring but for your kind of customers that you license, I wonder if you could maybe drill down a little bit more on the dynamics of being able to recognize revenue from your most recent solutions customer. Is that part of the whole qualifications slowdown process? And wasn't that a (inaudible) ?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

You got a double question there, let me make sure I cover both. So the $8 million per quarter we're going through the accounting treatment right now with Deloitte and first question is consolidate/not consolidate, right, assuming as it doesn't consolidate? Because we're relinquishing control not just equity ownership, but I mean the economics of dealing with the customers in the supply chain are now in the hands of the JV partner. But with that, the $8 million comes into how would it be treated? Is it contra-OpEx, which is the spirit of the maintenance fees? Or is it treated as consulting fee? If you remember when we sold the automotive business with Autoliv, you were covering back then, that showed up as a consulting fee, but so the second thing is do the math. The substantial impact on EPS, again accruing effective April 24 so it's got a material contribution this quarter if it closes. And if it doesn't close this quarter, that snowplows with a full quarter next quarter so that's -- that clock is already ticking. Separately, you asked the question about the license revenue that we did not declare revenue on. We just cleared -- no one's asked the question, but we just cleared the $7 million of non-GAAP revenue and the GAAP revenue recognition from a year ago. And you get into the new accounting standards and, basically, if you have initial milestones and a multi-milestone program, the new accounting standards, at least as we're interpreting them, are -- don't declare revenue, at least GAAP revenue until the completion of the entire program. So that's the reason why it took so long for the $7 million and the initial customer. In this particular instance, we actually got customer acceptance and the initial tranche of milestones, but we said, okay we're not doing non-GAAP revenue again. You can see it sits in liabilities and other liabilities on the balance sheet and we'll declare revenue when we complete that contract. So that could happen this quarter. I mean there's customer completion stuff this quarter. But until it's there, it's not there. So we're not going to declare it as revenue. But that's upside to the Q3 guidance as well.

Timothy Paul Savageaux - *Northland Capital Markets, Research Division - MD & Senior Research Analyst*

Got it. And last question for me, I think at the close of your initial comments, you kind of talked to the model on the GaN on Silicon JV and then maybe the solutions business, too. That's something that might be kind of extensible to the rest of your business. I wonder off the top of your head you'd be willing to share kind of any thoughts on what parts of your business might be -- might also be relevant to the type of opportunity?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Yes. So it's a very good question. So it's obviously too early to provide any specifics but here's the kind of the recipe for success, and the problem statement is this, and I realize and appreciate investors have been waiting a long time whether it's GaN on Silicon or the L-PICs or the DSPs or various growth initiatives that we've been putting money into that have taken longer. They are now coming to fruition. Those were in my scripted remarks in here exactly what the status is of all these things come to fruition. And the problem is they're demanding -- the customers are demanding more deliverables, more effort, more resources, both operating expense and capital expense, and this downturn has just put a big spotlight on the fact that we're burning too rich. It's a valid question of affordability. So I love the JV constructs. If we can do more of that, great. And the recipe is you put the business in the hands in a better position for success. The Goertek JV is a good example. We'd be kidding ourselves, frankly, if we thought we're going to have a $1 billion business per year in China servicing a domestic market. Even suppliers of magnitude of my partner before, NXP, they use the JV construct to address the domestic market. So one thing is you want to put it in better hands for success. Secondly, you absolutely want to the defray operating expense. If you put it into a JV, you can probably transfer the resources out. We couldn't do that with Goertek because there's export control issues so we have to do the maintenance fee structure, and the last thing is retaining substantial earnings power for our investors. And I'll tell you when you start running the numbers and I would suggest people do it. You look at the magnitude of the opportunity over China for instance and the probability of what share and you run the economics and you see what earnings power this unlocks as a good example, it's very eye-opening when we put that way. And I'll tell you, the other things I spoke about in the scripted remarks are coming to fruition as well. There is real GaN on Silicon, there's direct analogous progression that we're making in other parts of the business. So we're taking our situation very seriously. We took the OpEx issue head on. We delivered $8 million per quarter of OpEx defraying expenses. Now until it closes, we can't declare that, but it's accruable as of April 24. If we can pull off more of those deals and be able to get unlocking earnings power for our shareholders, we're going to do so. Because there's certainly limits to what we can fund with our current base of revenue even after recovery. Great question.

Operator

Our next question comes from Harlan Sur with JPMorgan.

Harlan Sur - *JP Morgan Chase & Co, Research Division - Senior Analyst*

On the JV formation with Goertek, obviously, it's a great channel into the China infrastructure market. Where are the China equipment suppliers in the process of evaluating and qualifying new PA vendors? I would have assumed that they're pretty far along in the process much like you with your existing customers. So what is the timeline for you guys getting qualified, potentially getting qualified with your GaN PAs with some of these potential China equipment guys?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

So that's a great question. Let me emphasize something that's perhaps not obvious. There is a crisis over in China with the local OEMs and the European subsidiaries of Nokia and Ericsson to be able to get access to enough GaN material. I had an opportunity one on one with the top sourcing guy and one of the top basestations OEMs over there, he told me exactly how many wafers he got from whom, what, how and so on. They can't source enough GaN, so I want to be clear here. This is great news for us and the JV and ST. It's great news for anybody who can produce GaN wafers in the short to medium term. There's insatiable demand so the customers are very highly motivated. Very, very highly motivated to qualify our products because they appreciate the fact -- I mean they look at ST it's profoundly different than anything else that they look at for GaN sourcing. It's Marco Monti over at the Mobile World Congress, he said, "Catania does 10,000 8-inch wafers a week. Singapore that they're going to be ramping, is 12,000 per day." So it's totally different scale and I don't anticipate any problem with that. Frankly, the entire problem is they want more sooner so it's -- that's a problem none the less to be honest.

Harlan Sur - *JP Morgan Chase & Co, Research Division - Senior Analyst*

And you guys have actually got good success with your front-end modules, your FEM modules. Is this part of the JV partnership as well for them to be a channel for your FEM solutions which oftentimes kind of go hand-in-hand with your PA solutions?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Yes. So it's a very good question. So we kept it clean and easy right now for the whole purpose of export control and so on, not that FEMs are export controlled but right now it's focused on the PAs. There's no question that there are transmit/receive front end modules where the GaN PA is integrated into the FEM and yes, the JV would be the logical channel that we would use to bring those FEMs whether it's transmit/receive or transmit only, because it's different flavors of the same stuff, but yes. So that's for China and the thing I'll emphasize here is half the basestation market, even the Chinese OEMs will tell us to expect half the market outside of China. Because the service providers stick handle share. Obviously, no one wants to end up with a monopolists supply condition in China so there's very healthy business for FEMs that we do with the logical candidates outside of China. But it's -- for the whole 5G build-out it just -- it couldn't be better for us. Our FEM position is almost as strong as our GaN on Silicon position. Probably about half of the bill of materials of a transmit side but it's still half of a very large number is still a very large number. Great question.

Operator

Our next question comes from Richard Shannon with Craig-Hallum.

Richard Cutts Shannon - *Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst*

I'll follow-up on a question on Goertek as well. You referred to the uncertainty in accounting of the $8 million payment accruing by quarter. The rest of the payments I'm assuming those will be recorded revenues and would be 100% gross margin? Or if not, could you help us understand that structure?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

So the $134.6 million would be consideration would be revenue. The $8 million, even if we do not consolidate, which is not a foregone conclusion I should be clear, we're working through that with our auditors. I wouldn't expect the $8 million would be treated as revenue. I would hope the spirit of it is contra-OpEx but if not contra-OpEx, maybe consulting fees like when we had the Autoliv agreement. Did I answer the question?

Richard Cutts Shannon - *Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst*

You did answer the question. I'll follow up with another gross margin question specifically on the manufacturing of the GaN on Silicon PAs. Here obviously you're still in the process of getting equipment both for you and your partner but any update on the thought process of gross margins there? Certainly you've talked about that as in line to better will your longer-term gross margin goals of 60%. What's your current expectation there?

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

That's so we have locked in cost structure from our ST arrangement through the cross license. We've got a very strategic relationship with ST in terms of capacity and costs through enabling them and lots of other markets that they care to address that we don't care to address. And we actually have 5-year price targets from Chinese, the most aggressive the aspirational price targets. And I'll just leave it that we can meet those price targets with the ST cross structure and be accretive to our corporate targets. So it's one of the great benefits of manufacturing and mainstream silicon semiconductor factory. It's fantastic cost structure.

Operator

Thank you. And this concludes the question-and-answer session. I'll now like to turn the conference back over to management for closing remarks.

John Croteau - *MACOM Technology Solutions Holdings, Inc. - President, CEO & Director*

Very good. Before closing out today's call, I'd like to mention several upcoming investor events that we'll be attending this quarter. We'll be at the Cowen TMT conference on May 29 in New York, the Stifel conference, June 11, in Boston and the Piper Jaffray Symposium on June 13, also in Boston. If you'd like to arrange a meeting at any of these events, please email us at ir@macom.com. That concludes today's remarks. We look forward to providing further updates on next quarter's earnings call. Operator, you may now disconnect the call.

Operator

Ladies and gentlemen, this concludes today's conference. Thanks for your participation and have a wonderful day.
