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IOTS - Q4 2018 Adesto Technologies Corp Earnings Call

EVENT DATE/TIME: FEBRUARY 21, 2019 / 10:00PM GMT

THOMSON REUTERS

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PRESENTATION

Operator

Good afternoon, and welcome to the Adesto Technologies 4th Quarter and Full Year 2018 Earnings Conference Call. At this time, all participants are in a listen-only mode. At the conclusion of today's conference call, instructions will be given for the question-and-answer session. As a reminder, this conference call is being recorded today, Thursday, February 21, 2019.

I would now like to turn the call over to Joel Achramowicz of Shelton Group Investor Relations. Joel, please go ahead.

Joel Achramowicz

Thank you, Cherry. Good afternoon, and welcome to Adesto Technologies 4th quarter and full year 2018 earnings conference call. I'm Joel Achramowicz, Managing Director of Shelton Group, Adesto's Investor Relations firm.

Joining me today are Narbeh Derhacobian, Adesto's President and CEO; and Ron Shelton, the company's Chief Financial Officer.

Before I turn the call over to Narbeh, I'd like to remind our listeners that during the course of this conference call, the Company will provide financial guidance, projections, comments and other forward-looking statements regarding future market developments, the future financial performance of the Company, new products or other matters.

These statements are subject to the risks and uncertainties that we discuss in detail in our documents filed with the SEC, specifically the final prospectus related to our initial public offering, our 10-K and our most recent 10-Q, which identify important risk factors that could cause actual results to differ materially from those contained in the forward-looking statements.

Also, the Company's press release and management statements during this conference call will include discussions of certain non-GAAP financial measures. These financial measures and related GAAP to non-GAAP reconciliations are provided in the Company's press release and related current report on Form 8-K, which can be found in the Investor Relations section of Adesto's website at www.adestotech.com. For those of you unable to listen to the entire call at this time, a recording will be available via webcast on the Company's website.

And now, it's my pleasure to turn the call over to Adesto's President and CEO, Narbeh Derhacobian. Narbeh?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

Thank you, Joe, and welcome to everyone joining us today. As we highlighted in our press release, last year we executed on our strategic initiatives making 2018 a transformative year for Adesto. Our acquisitions of S3 Semiconductors and Echelon Corporation have changed our business profile significantly. Consequently, we are entering this new year with meaningfully increased opportunity due to our expanded portfolio of value-added solutions, larger-served available markets, improved gross margin profile, and reach around broader customer base.

Today, our solutions go far beyond memory devices and include application-specific semiconductors for communication and control at the edge of the IoT, smart gateways, network management platforms, and tools for our customers to deploy our solutions within their businesses. To get a glimpse of the new Adesto, it's helpful to look at Q4 2018 more closely, as this was the 1st quarter that all 3 businesses were operating together for the full quarter.

Revenue in the quarter was $28.1 million and non-GAAP gross margin was 48.6%. Our top 20 customers represented 40% of the revenue with our largest customer representing 5% of the total. Over 2,000 customers made up the remaining 60% of our revenue. These acquisitions therefore have broadened our end-customer base and distributed our revenue across a number of product lines. Across our top 20 customers, approximately 51% of our revenue was from the industrial segment, while consumer was approximately 36%. The remaining 13% of the revenue came from communications, medical device and automotive markets.

Exiting 2019, we expect industrial segments will continue to be our largest end market, representing over 55% of our overall revenue. This is a segment where we have a strong entrenched position with Tier 1 customers across all of our divisions, due to our strength as a differentiated and high-quality solutions provider.

Next, let me quickly review our 3 divisions and the products and solutions we now offer to our customers. If you've been following Adesto, then you have a fairly good grasp of our application-specific memory products, DataFlash, Fusion, EcoXiP, Mavriq comprise 4 application-specific memory product families. We designed each of these products with features and architectures that bring system-level improvements such as lower power consumption, higher performance or reduced cost as compared to standard memory devices. And all of these families are primarily targeted towards the IoT edge nodes such as sensors, smart meters, asset trackers, fitness trackers, health monitors and so on. We also have our Standard Serial Flash family the Phoenix line, which we leverage to establish valuable working relationships with our leading Tier 1 OEMs. Over the course of 2018 and beginning of 2019, our memory products division achieved several significant accomplishments. First, I'm pleased to announce that we have secured our 1st design wins for both EcoXiP and Mavriq camera modules. The EcoXiP win is with a leading fitness tracker customer, which is expected to enter volume production late this year and into 2020. The annual unit volumes for this opportunity are expected to be in mid-7 digits.

We continue to be extremely excited about our EcoXiP family as a record number of sampling activities are underway. Additionally, we will be releasing EcoXiP 64 Mb and 128 Mb in the 1st half of this year and already have customers waiting for these devices. These new products should further expand the pipeline for EcoXiP family throughout the year.

MavriqCM design win is the 1st win in the camera module space. And we expect to build on this win as we gain more market share in this segment. We exited 2018 with over 500 design wins, achieved in the year by our memory division, and more importantly, we successfully penetrated several Tier-1 OEM customers and are now seeing multiple design wins for our proprietary products like DataFlash and Fusion, some of which are expected to go into production by end of the year.

We also continued to make solid traction with respect to our metering end markets by securing additional new wins with our leading customers. Along with higher-density EcoXiP product, in 2019, we will be introducing our Fusion HD family. Fusion HD builds upon our Fusion family, but is manufactured on a 65 nanometer node and addresses higher densities 32 megabit, 16 megabit and 8 megabit as compared to Fusion family today.

We have also incorporated some new features into the design that we believe will enhance system performance. We have several customers who have received early samples with a broader rollout to occur in the 2nd half of 2019.

Our ASIC Group specializes in products that include a heavy dose of mixed signal RF and analog blocks. In particular, our solutions are using satellite communication markets including asset and cargo tracking, industrial control, and more recently in consumer markets. The revenue for this division consists of 3 buckets. First, there is NRE revenue we receive for designing the chip for the customer. Once the ASIC chips are designed and delivered to the customer, the customer transitions to production, and as a part of the agreement, we supply actual ASICs for the life of the product.

Finally, the 3rd revenue vector for us is licensing of intellectual property. As a result of our ASIC design projects, we often develop analog and mixed-signal IP cores that we then license to 3rd parties. At any given point in time, we are managing about 4-6 ASIC projects concurrently. As each project is completed and handed off to the end customer, the ASIC team moves onto the next project, while the customers with completed ASICs go through their own qualification cycles in preparation for mass productions within their own end markets. You can see how the ASIC unit growth associated with completed projects sets the stage for a layering of recurring revenue growth for Adesto. Each one of these ASICs projects are expected to last typically 3-5 years while some could go as long as 7 or more. Typical gross margins for these ASICs are in excess of 50%.

Today, vast majority of our revenue from this division is from the ASIC project NREs and IP licensing. The first set of measurable unit sales from our already delivered ASIC designs are expected to start in Q4 of 2019. During the 4th quarter, our ASIC division was hard at work completing a number of projects. One of our ASICs that was delivered to the customer in the satellite communications segment, successfully completed qualification by the customer. So, that particular project now is fully delivered as we await the customers' production ramp. A 2nd ASIC chip in the Cellular Communication segment broadband to the home application was delivered and validated at the end customer. Our expectation is that we should see some volume production from these 2 ASICs by Q4 of this year.

Current activated projects include 2 in the consumer applications, both of which are in the human machine interface space involving voice and touch. Additionally, utilizing Adesto's channel, our ASIC team continues to increase its pipeline. One notable example is an opportunity for ground-based satellite navigation ASIC in the agriculture equipment area. This particular opportunity was sourced by our Global Rep Network, which previously was focused on memory only.

Our Embedded Systems division serves the industrial market with solutions that are comprised of chips or edge devices, smart gateways and modules for connectivity and control, software development kits and tools for management servicing and commissioning. Roughly 60% of the division's revenue comes from edge devices. 30% from modules and gateways, and the remaining 10% from software development kits and management tools.

We serve our end customers in different segments of the industrial vertical, including building automation, factory automation and smart grid. As you might expect, serving the industrial market affords us long product life cycles with each design win. Now, let's briefly discuss what to expect from our embedded system division in the coming year. First is the forthcoming launch of our new edge gateway, which we expect to officially be released to the market in the 1st half of this year. The SmartServer IoT is an extensible and open multi-protocol IoT gateway for industrial building automation, energy management, commercial and lighting apps. It provides out-of-the-box access to industrial device using field protocols including LON, BACnet and Modbus, providing management and monitoring and control services for these devices, thus enabling intelligent use of valuable data that is generated.

SmartServer IoT provides the ability to connect legacy industrial networks to wireless networks such as, Wi-Fi, ZigBee and Bluetooth. It provides the critical connection from broadly deployed legacy industrial networks to newer platforms such as IBM Watson's IoT so businesses and access existing data running in their networks and utilize powerful analytic tools to extract the value from this information. We highlighted this capability in a recent joint press release with IBM.

We expect our collaboration with partners like IBM to expand and provide added opportunities to our pipeline throughout the year. The 2nd new product that will be introduced in the 1st half is the FT6000 series of Smart Transceivers targeting multi-protocol industrial networks that run our LonWorks platform along with BACnet IP.

This chip will allow more cost-effective integration of nodes, specifically in building automation systems where customers want the most cost-effective integration path rather than ripping and replacing existing systems.

Last month, we also announced that our new LON IT protocol was approved by the American National Standards Institute and see the new standard enables native LON communication over any IP transport such as Internet and Wi-Fi. it will speed further adoption of LON technology and continue to expand our LonWorks ecosystem around the world. The opportunity here is to allow our industrial customers to drive greater value from their current network deployments and enhance their experience by seamlessly connecting with cloud and data analytics services. We believe this should set the stage for incremental growth across all of our embedded system solutions.

Next, I'd like to turn to the progress we made on extracting synergies through the tactical integration of the acquisitions. Let's start with the integration of Echelon which, as you already know, now forms the foundation of our Embedded Systems division. During the quarter, we completed the move of Echelon employees to Adesto's headquarters and consolidated all operations into the central location. Additionally, we implemented critical new incentive programs within consolidated sales team to drive incremental business and to leverage the combined sales channel. As a result of these actions and other cost alignment efforts, we met our goal of realizing more than 50% of the $6 million to $8 million of expected annual cost synergies in the 4th quarter with the remainder expected to be realized in the first 3 quarters of 2019. As we have stated in the past, Echelon's lighting business is not strategic to our long-term focus, and throughout Q4 of last year, we have taken appropriate steps to manage it accordingly.

We are now pleased to announce that we recently signed a purchase agreement for the sale of the business for and undisclosed amount. We believe this is an appropriate transaction for the business and its customers. The transaction closing is contingent upon acquirers obtaining shareholder approval, which is expected by mid-March.

When we embarked on these acquisitions last year, I indicated that obvious initial upside opportunities would be cross-selling and bundling of different products to increase our pipeline for the combined business. In Q4, we have already begun to see this cross-fertilization of opportunities within the different business units. First, an ASIC opportunity turned into a design opportunity for EcoXiP, as the customer was excited about the performance enhancement of our EcoXiP product and requested an EcoXiP interface to be built into the ASIC. Separately, a smart meter design win for our power line communication chip included a design win for our Fusion memory for a smart grid win in China.

Another example of cross-selling involved our sales team with access to customers in the consumer market in Asia, where we uncovered an opportunity in the electric bike market for a wired transceiver chip that was originally designed for building automation applications by Echelon. The same value proposition that was used to sell the product in building automation market, which was an architecture requiring less wiring to achieve the same communication bandwidth turn out to be a relevant value proposition in the electric bike application as less wires implies fewer components, lower cost and reduced weight.

These are just few examples of many opportunities that are opening up for the new Adesto. As you can tell from my comments today, I'm very excited about how we are positioned as we enter 2019. We've made a great deal of progress and exciting new opportunities are happening at Adesto. Today, Adesto represents a multi-dimensional IoT semiconductor and embedded systems provider with a broad portfolio of products and a deep set of design competencies from chips to systems to software.

With our expanded product portfolio, we are not able to deliver virtually all of the essential technology-building blocks, the customers need to develop connected IoT applications and systems. Finally, I'd like to announce that we will be hosting our 1st Analyst Day on March 12 in New York City. And we hope that you will join us. This would be a great forum for us to provide our investors and analysts greater insight into our vision and go-forward growth initiatives, long-term model and operating plan.

With that, I will now turn the call over to Ron to review the 4th quarter financial results and our 1st quarter guidance before opening the call to your questions, Ron?

Ronald K. Shelton - *Adesto Technologies Corporation - CFO & Secretary*

Thanks, Narbeh, and thanks, everyone, for joining us today. Just a couple of things before I review the results for the quarter. First, in the interest of aligning our reporting more closely to that of others in the industry, you will note in our presentation of our statement of operations that we now have combined sales, marketing, and G&A into one line item and have also broken out separately the amortization of intangible assets.

In addition, I'll discuss primarily today non-GAAP financial results and I ask that you refer to today's press release for a detailed description of our GAAP results, as well as the reconciliation between GAAP and non-GAAP financial results. The non-GAAP adjustments in those results relate to stock-based comp, purchase accounting adjustments, earn-out adjustments, debt amortization and impairments and other charges.

So, now turning to results. Q4 was another great quarter of execution for the Company. Revenue was $28.1 million and that includes the 1st full quarter of revenue contribution from Echelon. This is an increase of almost 74% over the $16.2 million in the 4th quarter of '17 and a 28% increase from the $21.9 million in the previous quarter and that included $1.9 million from Echelon.

For the full year of 2018, revenue increased 48.8% to $83.5 million that's compared to $56.1 million in 2017. Non-GAAP gross margin in the 4th quarter is 48.6%, this represents a 60 basis point improvement over the non-GAAP gross margin of 48% in the 4th quarter of '17 and a 290 basis point improvement from the 45.7% in the most recent quarter.

For the full year of 2018, non-GAAP gross margins were 46.3% compared to 49.2% in 2017. Non-GAAP operating expenses in the 4rth quarter of 2018 were $13.9 million as compared to $6.8 million during the 4th quarter of 2017 and $10.2 million in the prior quarter. For the full year, non-GAAP operating expenses were $39.8 million and that's compared to $27.7 million in 2017. As Narbeh mentioned, we've achieved substantial portion of the expected $68 million of cost synergies from the Echelon acquisition. In fact, when we look at the spending associated with Echelon in the 4th quarter of 2018 and we compare that to the periods prior to the acquisition, we've reduced the spending by about $6 million on an annualized basis. In addition, we expect to realize an additional $1 million to $2 million of cost synergies in the 1st half of 2019 as a result of the sale of the lighting business.

As we look forward, we'll continue to invest in areas that drive future growth and enhance shareholder value, which will have the effect of partially offsetting the benefits of the cost synergies realized.

Non-GAAP adjustments to net income in the 4th quarter included $2.7 million of impairment and other charges. That's largely related to the consolidation of facilities and impairment of certain equipment, a $2.1 million inventory step-up related to acquisition accounting, $1.8 million of amortization of intangible assets, another $1.1 million of stock-based compensation, $0.4 million of debt amortization costs, $0.2 million of acquisition-related expenses, as well as $2.6 million credit in other income and that's related to revaluation of the earn-out liability.

Total other income in the 4th quarter was $1.2 million and that reflects the $1.4 million of interest expense and the $2.6 million of other income related to the earn-out liability I just discussed.

On a non-GAAP basis, the net loss for the quarter was $1.2 million or a loss of $0.04 per share and that's compared to net income of $0.8 million or $0.03 per share in the 4th quarter of '17 and a net loss of $0.8 million or $0.03 per share in the prior quarter. For the full year 2018, non-GAAP net loss was $3.7 million or $0.15 per share compared to a net loss of $0.9 million or $0.05 per share in 2017.

For the 4th quarter of 2018, our diluted share count was 29.4 million shares and 25.1 million shares for the full year.

Turning to the balance sheet, we ended the quarter with cash, cash equivalents, short-term investments, and restricted cash of $9.1 million. Net accounts receivable declined $1.5 million to $23.2 million and DSOs were 62 days. Net inventory increased $1.1 million or 6.2% to $18.6 million. That's due primarily to 2 things. One, we had a last time buy of inventory from one of our foundry suppliers who discontinued an older process node. And the 2nd was, we increased inventory levels for certain Tier-1 customers production ramp of a new program. Our targeted inventory turns are minimum 4x, and as we work through this, we expect to reach those levels again in the current year. Adjusted EBITDA for the 4th quarters of 2018 was a positive $0.5 million, that now represents our 7th consecutive quarter of positive adjusted EBITDA. This compares to a positive $1.4

million during the 4th quarter of 2017 and a positive $0.5 million in the prior quarter. For the full year 2018, adjusted EBITDA was a positive $1.4 million compared to a positive $1.3 million in 2017. CapEx for the quarter was $0.6 million and depreciation and amortization was $0.7 million.

Now, let me turn to guidance for the 1st quarter of 2019. With regards to revenue, as you know, prior to the acquisitions, we've typically seen a cycle of seasonality in the 1st quarter of the calendar year. However, one of the benefits of the added breadth of our business is that we're seeing minimal impact to revenue from seasonality. As a result, we expect revenue to range between $26 million and $28 million that represents a slight decrease of approximately 4% the midpoint, but about 76% increase year-over-year.

As Narbeh mentioned in his comments, we do have very positive product and customer momentum in all areas of business as we look forward to 2019. Non-GAAP gross margin for the 1st quarter is expected to range between 48% and 50% as we approach our target of achieving sustainable gross margins above 50%. Non-GAAP operating expenses are expected to range between $14 million and $15 million and we currently expect that they will remain relatively flat at those levels through the year of 2019.

As noted earlier, our operating expense structure reflects the benefits from the acquisition-related cost synergies and they are partially offset by continued investment in target areas of the business. So what does this all mean -- the net effect of all of this is the following. One, we expect to be EBITDA positive every quarter this year. In the 2nd half of the year, we expect revenue growth to be more than 30% greater relative to the 2nd half of 2018 in which we had $50 million in revenue. At those levels of revenues that we've talked about in the 2nd half of '19, we expect EBITDA margins to be in excess of 10% of revenue and we will be generating positive free cash flow.

And just a couple other housekeeping items. Stock-based comp in the 1st quarter will be approximately $1.2 million, amortization of intangible assets will be approximately $1.8 million, depreciation and amortization will be approximately $0.8 million. Interest expense and that includes debt amortization cost is expected to be approximately $1.5 million. Weighted average shares outstanding in the 1st quarter are anticipated anticipated to be approximately 29.7 million shares.

So with that, we'll open the call to questions, operator?

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) Our first question comes from Mike Walkley with Canaccord Genuity.

Anthony Nemoto - *Canaccord Genuity Inc - Equity Research Analyst*

This is Anthony on for Mike. Thanks for taking the questions and congrats on the solid quarter. Just a question on -- is there a sense for the breakout across DataFlash, Fusion Flash and Standard Serial Flash if you can provide?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

Ron, you want to take that or you want me to take that one?

Ronald K. Shelton - *Adesto Technologies Corporation - CFO & Secretary*

Yeah, I'll take that. This is Ron. Historically, what we've talked about within the memory aspect of the business is, DataFlash has typically been the majority of the revenue and it continues to be that. So, you know, in the past, it's around 60%, 70% of revenue and it's continuing to be in that range.

Anthony Nemoto - *Canaccord Genuity Inc - Equity Research Analyst*

And then on the guide and they said OpEx is kind of stabilizing around the $14 million, $15 million going forward, but the slight increase relative to this current quarter. What across sales marketing and G&A and if you could provide the color on what-- where the increases are coming from?

Ronald K. Shelton - *Adesto Technologies Corporation - CFO & Secretary*

I mean it's not in any one particular area when you think about our Q1. So, there are a couple of things there. So, first thing is in Q1 every year and it's not an insignificant number, payroll taxes reset. So that all kicks in again in Q1 and we also -- with respect to audit fees, we don't amortize those out for the year, so that all happens in Q1 and shows up as an expense in Q1. So those both kick in in Q1 and they go away as you go through the year. But what we talked about in the call is we have realized all the cost synergies and have done that ahead of the schedule we've previously communicated. And then offsetting some of that -- though we are adding resources, primarily in the embedded business and the ASIC business, because we see tremendous value and opportunities in those businesses. So, the net of all that is, you have the cost synergies, which we've executed on, you have some slight increase in expenses that I've talked about in Q1 for payroll tax, and audit fees, and then during the year, we'll continue to add incremental headcount resources, but OpEx will stay literally relatively flat through the whole year.

Operator

Our next question comes from Karl Ackerman with Cowen & Co.

Karl Fredrick Ackerman - *Cowen and Company, LLC, Research Division - Director & Senior Research Analyst*

My first question is just kind of circling back to cost synergies. I mean it sounds like the lighting business sale should slip into calendar Q2. Once that deal closes, why shouldn't we expect an immediate recognition of the remaining $3 million or $4 million of synergies from the integration? And similarly as integration has progressed, have you seen more opportunity from operating synergies separate from the largely administrative costs you initially targeted? And I have a follow-up.

Ronald K. Shelton - *Adesto Technologies Corporation - CFO & Secretary*

So, this is Ron. Let me touch on the first one and I'll let Narbeh touch on some of the additional synergies. But I think with respect to cost synergies, in my commentary, I specifically said when we looked at spending in the Echelon piece of the business in Q4 and I compared that to the spending in that business prior to the acquisition, it's down about close to $6 million on an annualized basis. So we communicated we could take out $6 million to $8 million of costs, and so we've done a significant piece of that. The remainder is lighting and you're right, there should be a bump in additional synergies off that. And that's between, say, $1 million and $2 million annually. Again, I think part of the lighting, so your expectation would be, well, if that happens, you should see spending come down off the current levels in Q2, let's say. But again, some of that is getting offset by incremental resources we're adding in the embedded and the ASIC business.

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

Let me add on some other integration and synergy questions outside that. So, if you think about the business units and you think about from a cost center perspective, you have R&D and you have operations and of course you have administrative and G&A, which we basically took those cost synergies for administrative functions have been taken care of in Q4. In terms of engineering, we never -- I indicated that these -- from engineering perspective, there is little cost synergies to be had, because these are -- the embedded systems group is more of a systems company focused on complete solutions. Our memory group is a memory designed R&D group and then ASIC group is focused on RF and mixed-signal ASIC. So we never expected any synergies from -- on that R&D. So, to some extent, we are getting a little bit of synergies from our suppliers such as EDA tools, CAD tools, because we're just a larger-scale Company as a result of that. Now, the other area that we have taken some action in terms of streamlining the operations, a big portion of the back-end operations, manufacturing on the hardware side is common sort of functions between the 3 organizations. So that's all being consolidated under one organization at corporate level and some incremental cost synergies and that will continue throughout the year as we are integrating IT functions, business process management functions together, as well as manufacturing. And these -- I would say the synergies to look at is really on the others on the revenue synergy side which I brought some examples of positive traction increasing of the pipeline, because the channels are -- our channel is expanded, our revenue vectors have expanded and we have these other tools of being able to put packages together for the customer that we're able to secure sockets and opportunities for Adesto as a combined Company, so that we are seeing a significant number of upside across the whole business. And I brought some -- I talked about 3 examples of such cases.

Karl Fredrick Ackerman - *Cowen and Company, LLC, Research Division - Director & Senior Research Analyst*

As my follow-up, I was hoping you could discuss additional opportunities you see to expand your MavriqCM products beyond this initial camera module win. And I guess, as a follow-up, how do we think about gross margins trending from here given the ramp of the new products from MavriqCM and EcoXiP? Should we expect margins to remain muted until volume scales more material in the 2nd half or just any color on the linearity of margins for your 50% target that would be great. Thank you.

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

So, from a margin perspective, let's talk about the different businesses separately. So if I look at the ASIC group, their margins are over 50% from all fronts if you are looking at all the 3 buckets of the revenue that I talked about. if you look at our embedded systems group, their margins are also 50% or higher. The memory side has the one that has a bigger mix of the margins and historically we've indicated that depending on the end market, industrial versus consumer, and depending on the product, DataFlash versus standard Flash, the margins can fluctuate from -- over 50% to -- in the 30% range. And as you saw in last year for example, the product mix -- when we were only a memory Company, the product mix of our memory business impacted the margins up or down in significant way. So, part of that volatility of the margin will be leveled off, because the other 2 businesses are a lot more tighter in terms of gross margin and they help level off the fluctuations on the margin on a quarter-to-quarter basis. On the memory side itself, if I look at -- if you look at the products, DataFlash being the highest-margin provider, standard flash being the lowest one. In between, you have the range, right. So you have the Fusion, Fusion HD being at the high end, EcoXiP again is similar to -- it's a very value-added product, it's similar to DataFlash.

Mavriq is the lower gross margin, because it's competing against the low gross margin competitor today at 64 kilobit opportunity, but as we go into -- as the camera module memory requirement goes to higher densities 128k to 56k. We indicated in the past that our cost structure should be significantly better and we should garner gross margins, which are more typical of our blended targeted gross margins in high 40%s.

But again, just put things in perspective, right, from a revenue impact, the ASPs of camera modules are very small. The units are very high, assuming we're able to get more market share. But ASPs are in $0.10, $0.11, $0.12 range for the camera module. But if you look at the EcoXiP, they are significantly higher ASPs, they are north of $0.50 with higher gross margin. So, putting all that together and looking at the product mix again, the memory business through the year -- throughout 2019 will start to ship slowly to -- it's more sort of natural cadence of the gross margins that we had, say, in big portion in 2017 and maybe 1st half of 2018, which is in sort of a mid-40%s range trending a little bit higher.

Operator

Our next question comes from Sujeeva Desilva with Roth Capital.

Sujeeva Desilva - *Roth Capital Partners, LLC, Research Division - Senior Research Analyst*

So, in terms of demand environment, other IoTs that diversified companies have seen, in fact the macro in China. Have you seen any impact on your business specific aspects of your end market exposure there, perhaps making you more immunce to that macro trend?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

Yeah. So I think if I heard the question right, you're breaking out a little bit, you are asking us about the macro environment globally and the impact of situation into -- with respect to China. Yeah, so as you know, I would say from our end customer perspective, 75%, 80% of our business is not China -- is not Asia-centric per se, it's outside Asia. It's Europe and North America. We have always had -- it's always been challenging for us to compete in the Chinese consumer market, which is primarily driven by price essentially. And as you know, that's not where -- even on our memory business, that's not where we had a strong position. It's more of a value-added solution. But we are seeing on the Chinese market on the -- within the industrial sector, we are seeing good opportunities. I indicated about a win in the grid market for a power line communication chip that included a Fusion as a bundling opportunity that went there. That's a pretty good win for us. And also we have one of our first early customers for the SmartServer IoT which we delivered the beta version to them this week, is in China. It's a railroad infrastructure company in China that's looking to deploy the SmartServer within that. So, I think from the industrial perspective, we have the same value proposition we used to sell to our non-Asia customers. It's also valid in China and we should have -- we should see wins in that space in the year. And so to that extent, we are not seeing that sort of an impact. There was a little bit of impact, which I think is, you know, in some of the Smart Home markets that are the product that we were based on reference design wins on the memory side, which we had the slowdown as in 2017 -- sorry in 2018. Some of those end customers that adopt those reference designs are in China. So from that perspective, we are seeing a little bit of slowdown on the Smart Home Z-Wave market, for example, but I don't think we're alone, we've seen several semiconductor companies have announced similar sort of slow down on that slide. But whatever we talked about the current quarter and going forward essentially that's taking that into account.

Sujeeva Desilva - *Roth Capital Partners, LLC, Research Division - Senior Research Analyst*

Now I have the questions on EcoXiP. Congratulations on announcing the wearable win there, what kind of pace of additional wins or pipeline conversion can we expect for EcoXiP, the order of magnitude of customers and wins we can expect to follow them?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

So, what I can tell you is this -- If I look at say beginning of 2018 like about a year ago, we were roughly looking at 17 less than 20 prospects, prospect means that we are coating parts, we're sending samples to the customer. Today, we have 160. And with the introduction of the 2 new densities, I believe that number is even gone to explore further out. So there is no design win -- added design win that I can talk about as advance -- of that one. But I'm absolutely expecting that we should have several market design wins throughout the year.

Operator

Our next question comes from Ari Shusterman with Needham & Co.

Ari Shusterman - *Needham & Company, LLC - Associate Analyst*

So, I wanted to ask about the emphatic life cycles for consumer and communications end market. I recall for industrial, you said the life cycles are pretty long and it's hard to get a feel for the other end markets?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

Consumer typically for us would be about anywhere between 2 to 4 years. I would say 3 years would be typical, probably the sort of volumes would pick in about a year, year-and-half after they ramp into production. On our communication business, when we say communications, really the part that we are very much focused on specifically with our ASIC group is actually satellite communications. So it's a really communication market that's really targeting an industrial end market application like I talked about the example of agriculture or cargo and asset tracking. So those are very much similar to industrial cycle. They are very long product life cycles that continue to be on. So you can think about it if the the satellite is deployed out in space for tracking and monitoring and we're supplying the ground-based units for that system. It's basically -- it's -- the business is for us to if they're doing any new rollouts, it's usually the same reference design that continues. So it's a very long life cycle.

Ari Shusterman - *Needham & Company, LLC - Associate Analyst*

And just a quick follow-up in terms of potential competition. Do you see any competitor threats or pressures for any of your product line, and if so, can you provide some more color?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

I believe you are asking about competitive landscape. So, the most competitors we have would be in our organic memory business, because we have the traditional commodity memory suppliers, in particular we've spoken about in the past Winbond and Macronix, they continue to be the competitors on the standard Flash portion. The proprietary products, once we have designed and we're usually single sourced. So we are okay, but the challenge there is upfront to be able to win that socket by -- with the value proposition on the merits of our products, which is not on standard.

On our 2 other business units. So if I look at the ASIC business, generally there is 2 types of ASIC competitors. If you want to look at them, the big ASICs that usually grab sort of headlines are the ones that are tied to a foundry that are -- basically the business model is to drive wafers in the foundry. These tend to be more digital-centric ASICs and these companies usually are tied to a particular foundry to drive volume.

Then again at the other extreme -- we have very small boutique sort of ASIC companies that address very niche sort of applications. We have a very strong position in the markets that we do our ASICs, which started up as satellite communication markets. We have repeat customers for decade -- for at least a decade that has been coming to S3 and not coming to Adesto for next generation. So we continue to nurture that relationship.

And also in industrial control markets where the quality, reliability and complexity of the design are such that requires companies that are geared towards supplying that sort of markets, which we do very well across all of our divisions. In terms of the embedded systems group, so Echelon historically has been a very strong supplier in building automation and factory automation market and this is our position that even though in the last several years where they didn't focus on that portion of the business, they really never lost any business.

So, it's a very well entrenched and very sticky opportunity for us within the existing customers. So, we are re-engaging these customers for the newer opportunities and with some of our newer products and trying to help -- have them help us define the next roadmap products as we continue to invest in that business for 2020 and beyond.

In terms of new opportunities there for the embedded systems group, we are basically taking -- again re-purposing, some of the products that they've had, the value propositions in the building automation and industrial market and with our broad channel trying to see the other opportunities, I talked about that e-bike opportunity we are chasing in Asia. And our expectation is that all this together for the embedded business, we should start to experience incremental growth this year.

Operator

Our next question comes from Aman Gulani with B. Riley.

Aman Raj Gulani - *B. Riley FBR, Inc., Research Division - Associate Analyst*

So my first question is regarding DataFlash-L. So I know in like the 2nd quarter, it didn't perform in line with your expectations. What about in the 4th quarter, did DataFlash-L perform in line with what you were expecting?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

No, I would say the DataFlash-L, because again I think it's tied to -- there is other companies reporting about the Z-Wave and Smart Home markets slower than taking of late, some of them are referring this to Asia -- to China. But we -- the DataFlash-L, we've continued to get new design wins in the DataFlash-L. Even we got it in Q4 as well. But the ramp as was expected, specifically with the ZWave opportunity, didn't materialize in Q4.

Aman Raj Gulani - *B. Riley FBR, Inc., Research Division - Associate Analyst*

And then just in terms of pricing and inventory levels for Standard Serial Flash, what are you seeing out there?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

Last year, I would say, sort of end of 2017, there was a shortage. There is no new supply coming online. There is no new companies giving a new fab to supply unlike DRAM or NAND. So the supply is sort of limited. So, it's all on the demand side. And in late 2017, there was a supply shortage, the prices did go up, we were able to secure more design wins with proprietary, because the value proposition, became more cost effective for the customers. But what we're seeing now is that prices are returning to their normal level. And again the densities, we do compete with, price erosion from year-over-year is low-single digits, because again there is no migration to a new node or anything like that. What we're excited about on that side is that the EcoXiP, which is -- basically these are the new products that are being introduced on the Fusion HD. They are all on 65-nanometer nodes. So, they have a much better cost structure for us, which means higher gross margin obviously and more competitive for us to be able to win.

Aman Raj Gulani - *B. Riley FBR, Inc., Research Division - Associate Analyst*

And just last question from me, now that you've got a full quarter of both Echelonand S3, how are they performing relative to your internal model?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

In terms of our expectation, when we modeled pre-acquisition?

Aman Raj Gulani - *B. Riley FBR, Inc., Research Division - Associate Analyst*

Yes.

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

They're on target, we had our -- one of our Board members ask me if we had buyers remorse and as it absolutely not, if anything, we're pleasantly surprised in areas where we felt that I never thought that I can take a transceiver chip from former Echelon that everything if you look at that data sheet, everything is targeting in building automation and now we're finding an opportunity in the electrical bike market as an example. So, we think we will uncover this sort of opportunities more and more as we go along, but from a financial perspective and also operational perspective, it's been fantastic. And I think the teams are excited all under one roof and that's, cross-fertilization of different organizations is really reenergizing the teams.

Operator

(Operator Instructions) Our next question comes from Gary Mobley with Benchmark.

Gary Wade Mobley - *The Benchmark Company, LLC, Research Division - Research Analyst*

Ron, could you reiterate your comment about the revenue outlook for the 2nd half of 2019 from your prepared remarks?

Joel Achramowicz

Ron?

Ronald K. Shelton - *Adesto Technologies Corporation - CFO & Secretary*

Sorry about that. It was on mute. So what we've talked about in the 2nd half of '18, consolidated revenue was about -- right at $50 million and what we said is on the various parts of the business, we see momentum across all the businesses and so our expectation is the 2nd half of '19 would be at least 30% growth over that same period in '18.

Gary Wade Mobley - *The Benchmark Company, LLC, Research Division - Research Analyst*

Narbeh, with respect to the opportunities, the half a dozen opportunities that you've been working on to these NRE arrangements for RF and the analog ASICs, one of which you mentioned would ramp in the back half of the year. Could you talk about the volumes here. I know these are what maybe an FPGA migration alternative. Are we talking about tens of thousands of units or 100s of thousands of units and what could one of these opportunities as it ramps generate in terms of annualized revenue?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

So, it varies, Gary, and I can give you some numbers. So, if I look at -- again this is -- these are basically based on customers' forecasts as they've given us, right. And as they approach, they are in not production, these numbers may change, right. So, if I look at that, the ASICs which have been delivered or are close to be delivered to the customer that in the next 12 months or even next 15 months we see, we should start to see some unit volume ramp. The total is around 3 million units, okay. And if I look at the average ASP there, there are some outliers there. But average ASP there is around $5.

Gary Wade Mobley - *The Benchmark Company, LLC, Research Division - Research Analyst*

Okay. Sounds great.

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

It is. And -- sorry, and what I want to emphasize here is that you have 2019 and you know you have first half of 2020 to look at. But if you start to actually model the team that's continuously working on this 4-6 ASICs going forward, then you start to layer this into 2020 -- end of 2020 and beyond, these volume ramps will continue as I indicated at least 5 years. These are all in these markets that have long longevity. But that effect is actually going to be significant, as the team deliveres on more ASICs and this is why in the past I've said that if I look forward, say, 1.5 years, 2 years from now, our ASIC division is most likely because of the strength of these units is going to be a fastest-growing division.

Gary Wade Mobley - *The Benchmark Company, LLC, Research Division - Research Analyst*

I thought you mentioned in your comments that this was a 50% gross margin business. But I thought I heard in the past the IC sales could be potentially 60% gross margins?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

Yeah, I said -- in the remarks I said more than 50%. And you're absolutely right. I mean if I look at the cross section of the different units, different ASICs that have been delivered, some are more than 60%, yeah.

Operator

And our next question comes from Gus Richard with Northland.

Gus Richard

Real quick on the relative growth rates off of the Q4 '18 run rate, could you see handicap your expectations for growth for those -- for the 3 business lines over the year?

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

How is each one growing off of Q4?

Gus Richard

If you just think of Q4 is the run rate for each business, if you're going to do 30% growth in the 2nd half over the 2nd half of this year. There's got to be some growth and I'm just wondering where that -- which one that the price line the growth is coming from.

Ronald K. Shelton - *Adesto Technologies Corporation - CFO & Secretary*

So, maybe the way I would put it is this way. Let me talk about, say, 2nd half to 2nd half comparison, okay, of '18 to '19 for the different business units, as I have those numbers sort of handy. So the memory business should be growing -- the memory and the ASIC business should be growing 30% plus, okay. For a half-to-half comparison. And then the embedded systems group, we expect again with the introduction of these 2 products in the first half that they would get back on, I indicated that our expectation is that in 2019, they would be in low single-digit growth. But as we progress through the year with traction with these new products and more increased pipeline opportunities that we are bringing, we expect that to hit the double-digit growth for that division as well.

Gus Richard

And then just to squeeze one last one in, can you talk a little bit about the volume opportunity for your 1st Mavriq win, is that millions of units -- 10s of millions of units?

Ronald K. Shelton - *Adesto Technologies Corporation - CFO & Secretary*

Yeah, it's less than 10 million, but approaching 10 million.

Operator

Ladies and gentlemen, thank you for participating in today's question-and-answer session. I would now like to turn the call back over to management for any closing remarks.

Narbeh Derhacobian - *Adesto Technologies Corporation - Co-Founder, President, CEO & Director*

Thank you. Before closing the call, in addition to our Analyst Day on March 12, we will also be attending the ROTH Conference in Dana Point on March ' 18. Please contact IR@adestotech.com or the Shelton Group if you would like to meet us at either of these events. Thanks again for joining us today. We look forward to providing a more thorough business overview as part of our Analyst Day. And if you don't see -- if we don't see you there, we look forward to speaking with you again when we announced our 1st quarter '19 financial results in early May. Thank you, and have a good day.

Operator

Ladies and gentlemen, thank you for participating in today's conference. This concludes the program. You may all disconnect and have a wonderful day.