

Cirrus Logic Inc

ADAM GONZALEZ: OK. Good morning, everyone, and good afternoon to some of you out there. Thanks for joining us today. My name is Adam Gonzalez. And I covered the US semiconductor and electronic design automation sectors on the Beck Arias team here at Bank America Securities. Today we're really excited to have Thurman Case, CFO of Cirrus Logic, as well as Carl Alberty, the VP of Cirrus's Mixed Signal Products Division join us. We'll start off with a little bit of an introduction before diving into some Q&A.

You know, we'd like to keep this session as interactive as possible. So if you have any questions, please feel free to submit them to me in the web portal. And I'd be glad to ask them as time permits. And with that, let's just get started. So to kick things off, Carl or Thurman, can you just give us a high level overview and history of the company for those who aren't familiar with you? What markets do you serve? What products you supply? And what are some of your core or differentiating strengths in terms of IP?

CARL ALBERTY: Sure, Adam. Yeah, thanks. I'll take that. So the company has been around since the mid 80s. And obviously we've seen a lot of evolution in the company and the strategy and the culture over nearly four decades. But over the last 15 years or so, we've been pretty hyper focused on high precision, high performance, mixed signal processing solutions. The bulk of that has been voice and audio centric in terms of technology focus. And a lot of that, 15 years ago a lot of that focus was really to get back vectored on low power battery, battery powered portable devices.

So and that continues to be the lion's share of our revenue and continues to drive a meaningful portion of the opportunity looking forward for growth as well as just our R&D investments. And that covers the entire signal chain for audio. So on the front end, voice or audio capture side, the data conversion to allow for processing of voice signals or audio signals, be it for things like voice recognition or noise cancelation. And then also on the output side of rendering, we have digital to analog conversion to get that signal back into something that people can actually hear and listen and enjoy. And that can be funneled through headphone drivers for headset applications, speaker amps for speakers, line outputs.

So it's traditionally covered that entire signal chain. We call those devices Code X. They both up to amplifiers, et cetera. So again, so that's been the lion's share of our focus. I think more recently as we've built out a really broad portfolio of low power IP, we've used that to gain entry into new adjacent markets, haptics being a really good example of that. I'm sure we'll talk about that throughout the course of the discussion here.

But years of execution with big customers on tough mix signal products has given us the credibility and the IP portfolio to move into some of these adjacent spaces, to really drive meaningful growth opportunity for us beyond just audio as we look out into the future. Again, handset has been a big driver of that but we've seen more recent market share gains and other portable consumer products, from tablets and mobile computing to wearables and headsets and hearables.

But again, as we look at the opportunity for growth in audio and we're excited. We look at the opportunity, the new adjacent spaces, and we get really excited about what that looks like for Cirrus long term.

ADAM GONZALEZ: Great. Thanks. Thanks for that overview. And you touched on this a little bit and you spoke about the haptics and amplifier momentum. And you've really consistently highlighted strong momentum in that market, especially in the Android area over the last several years. And you're designed into eight of the top 10 handset OEMs currently. Can you just recap some of the progress you've made there to date. Has the growth come more from new sockets or competitive displacements or a bit of both? Again, just to amplify your haptic opportunities. Thanks.

CARL ALBERTY: Yeah. I mean, we've certainly seen a lot of market share gains in Android. Apps as a bit more mature relative to haptics. The haptics trend has been emerging over the last year and a half or so. I mean, in amplifiers, certainly the majority of those games have been competitive displacements. And I think that's reflective of us developing products that are really laser focused on that particular application space. I mean, Android handsets and our move to 55 nanometer technology for the amplifiers. The Code X have been in that process for quite some time.

But the move to integrate processing with the high voltage amplifier capability allowed us to deliver a product to market that was all self-contained and had the closed loop feedback for measuring and monitoring and protecting speakers with ultra low power integrated processing capability, that when you looked at competitive solutions from TI or Maxim or NXP, our process mode and the combination of our IP just represented itself in a really compelling product that was smaller, lower power, and ultimately through our acoustic and personnel expertise, being able to help customers along that design process and make these things sound as good as they possibly can came together and allowed us to really leapfrog competition and just deliver a better product that's resulted in meaningful market share gains and displacement of other solutions over the last 18 to 24 months.

So the haptic side of that is a little bit earlier, just with the trend toward displacing mechanical switches and notably with the home button replacement that's been going on for quite some time in handsets. And so that's a bit earlier. And there's a lot of innovation happening in that space of replacing buttons. I mean, not just on the haptic feedback that mimics the feel of an actual button, but obviously the system itself or the phone needs to detect that a button press event has actually occurred.

And so for us being able to integrate more of that touch sensing capability into a complete system solution to minimize chip count and cost and power has positioned us pretty well with our latest haptic solutions to capitalize on that growing trend, much like we did with amplifiers a couple years ago.

ADAM GONZALEZ: Got it. And then just double clicking on the haptics trends that you started to talk about, if I recall correctly, I think you had a press release out late last week where you

announced a new suite of haptics driver products there. Can you just talk briefly on know what's new there and if there's anything to be excited about. Thanks.

CARL ALBERTY: Yeah, sure. So I think it's a lot of what I was just talking about. I think obviously the trend really was on the back of home button replacement. And that's necessarily becoming pretty standard at this point. And frankly, if you do a side by side comparison of a basic haptic solution versus our more high definition fully customizable haptic driver solutions to be able to really allow customers to model and customize the feel of whatever use case they want to provide for a user, it's that customizable, high performance, closed loop system that allows us to measure and monitor the position of the vibrator, which in this case is typically an LRA, or linear resonant actuator.

The high voltage drive capability, much like we see in our speaker amplifiers, allows us to accelerate the mass very quickly and break it very, very quickly and allow that to be tunable, such that, again, a system designer can deliver whatever experience they want. And doing a side by side comparison with the basic haptic solution, it maybe existed for five years in terms of vibrating a device for notification purposes, is night and day. And that night and day difference is hugely critical on the customer experience if they think they're pressing a button.

And so that's the foundational piece of it. I mean, the more interesting evolution, I guess, this is touch sensing capability. There's a variety of different techniques a system designer might use to be able to detect, is the user trying to press what used to be a mechanical switch and how do I sense that? How do I allow for what used to be a single purpose button, volume up or volume down, that can now be a programmable surface to do pretty much anything the system designer may want. And how do you integrate that with the haptic feel to make the user feel like they've pressed a button and then to have a low latency experience that yields what somebody is going to expect when they're pressing virtual buttons on a device?

So again, the products we introduced over the last week are products that are shipping in high volume handsets today. And we allude in that same kind of news about products coming out that leverage more of this capability on the touch sensing and allow for full system integration to ease that design process for customers wanting to take advantage of these virtual button opportunities to have that blank canvas to start creating unique user experiences for customers.

ADAM GONZALEZ: Great. I want to circle back on-- you mentioned that word closed loop in your response to my prior question. And that takes me to my next question. When we look beyond the Android market and haptics and amplifiers, what are some of the growth opportunities that you're most excited about, particularly in the non audio and voice domain?

There's been a lot of buzz around the closed loop controller socket that you could be on track to win in a premium handset later this year. And it's been a bit difficult to decipher what exact features this chip is going to enable. And I think the term loop is really meant to be more of an architectural description. It applies to your haptic drivers versus the real name of the product. Can you help us understand what this closed loop chip is designed to do, what you mean by that, and how it potentially foreshadows what we can expect to see from Cirrus in the coming years?

CARL ALBERTY: Yeah, sure. I mean, it's certainly-- the phrase took on a life of its own to a degree. We certainly did intend for that to reflect architecture of product types. Certainly did not intend for that to be a noun. Proper form. But that being said, our speaker amplifiers, our haptic drivers have elements of closed loop control where we are taking an input signal, we are driving something on the output, an actuator of some sort, be it a vibrator or be it a speaker, and we are measuring and monitoring the output and feeding information back into the system to correct or to shape what we're doing on the processing side of that.

So again, we do use that as an architectural kind of framework. And typically where our value really shines is applications where they're super sensitive to the time it takes to process the signal, to render that signal, and to provide feedback into the subsystem, be able to compensate and deal with variations in the driver that we're actuating.

So obviously, we've spoken about that in the context of amps for audio and haptic drivers. And what we've been alluding to for this fall, which we appreciate can be really frustrating in terms of the vague nature of how we describe it, but that's a necessity based on the confidentiality of what we're up to, it's another example of us having built this IP portfolio and credibility over almost 10 to 15 years and seeing opportunity for another actuator in the system where we can take our IP portfolio and 55 nanometer and stitch together in a way that provides high performance control and actuation of a transducer with feedback and ultra low processing center around this portfolio of IP and 55 nanometer to allow our customers to control and deliver performance in non audio applications.

That is just a capability that's beyond what traditional suppliers, which may be analog or power related suppliers for these domains. They're just, they're really good. It's just a really good capability of taking our IP and repurposing it and the new applications. So there's not too much clarity we can provide in terms of the specific use cases and features that these closed loop controllers represent. But we're excited about the robust nature of the roadmap beyond the products that will get introduced this fall. Just the roadmap for how that evolves over time and the demands that we see for products within that product line that can really add value by combining that low latency, low power signal processing.

And beyond that, again, as I mentioned, this credibility that we've established over a long period of time, a flawless execution, has positioned us to be a trusted supplier of mixed signal components. Again, we've talked about some of these adjacent moves and we've got other in-flight investment opportunities that look beyond this year and next year that will continue to fuel opportunity for content gains over the mid to long term.

ADAM GONZALEZ: Great. I think it's a nice tie-in to my next question. And it's really about your relationship with your largest customer, which accounts for about 80% of your sales. I know oftentimes there's a lot of speculation around what you're winning and not winning at that customer in any given product cycle. There could be concern expressed as your lack of diversification from a customer perspective, although the company has done a nice job diversifying from a product perspective.

Without getting into too many specifics given the sensitive nature of that relationship, how would you describe your relationship and visibility, multi-year visibility into the designs that you have in place? And how would you address some of the concerns that investors might have around sustainability of your content from generation to generation, as well as the risk of insourcing?

CARL ALBERTY: Yeah, sure. Well, I mean, I think the sustainability of the business. I mean, I think we've got a pretty good long term track record of, as I mentioned a minute ago, execution of really difficult, complex, mixed signal products. Often very difficult schedules. And so what started out as a basic Hi Fi audio product that was under \$1 and music players has evolved into a wide swath of technology and product types that we're typically working on several years in advance of commercialization, just given the long term nature of IP development and collaboration around bespoke products that take us anywhere from nine to 12 months to develop and customers to wrap product around.

It takes an additional nine to 12 months. We've got obviously pretty good visibility into what's coming down in terms of the roadmap. Sustainability, I think, again, we don't choose when to be a partner or when not to be a partner as it relates to our big customer. And that comes with doing a whole bunch of different things.

But we've got a long term partnership that has served us both really well in terms of us providing technology that allows them to differentiate and being a trusted supplier. So as long as we remain really focused on execution and bringing new technology and capability to bear, I think we'll remain a trusted supplier. And I think that that's hugely valuable.

So it's often difficult to predict what the end products may end up looking like. And there's obviously a cyclical nature to developing products for consumer products. There's definite price pressure and just the need to be able to cost produce products. And obviously the fit and form and function of these end devices evolves with time and evolves with the market.

So we see a shift and a cyclical way of how we're investing. From one cycle to the next, we may be investing in cost reduction. We may be investing in purpose fitting or optimizing the device based on end product architecture. We've seen that in the past with transition to digital microphones from analog microphones in the Android ecosystem. We've seen that with the removal of the 3 1/2 millimeter headset jack. And so we will see design cycles where we're optimizing, making things smaller, making things cheaper. But at the same time, we see these incremental opportunities for content gains and additional functionality, the addition of extra speaker amps.

And so I think if you zoom out a bit, you'll see a long term history of slow and steady content gains. And I think when we look at our long term opportunity set, we're excited about the expansion into non audio and non voice domains, which again is a testament to our credibility and trust as a supplier of mixed signal components.

So that's to say there is not a shortage of products that are interesting to problems we're solving in the audio and voice domain. There certainly are. But now the ability to supplement that and

expand to sound with these other adjacent spaces is really exciting for the long term growth. I mean, as it relates to insourcing, which you commented on at the end, I mean, certainly that's something that looms around as a potential risk. I mean, certainly, our customers can decide to go about developing their technologies in certain ways.

I mean, I think for us it comes back to just focusing on execution and staying several steps ahead in terms of the product requirements and expectations, especially if we're delivering on everything they ask for and everything they need in a way that they probably would deem we could do better than they can do internally. Just obviously not something we can definitively say. But we feel really good about our position of being their go to supplier they look to when they need what used to be traditionally audio and voice, but I think it's expanding based on that long term track record of execution.

ADAM GONZALEZ: Right. Just to follow up on that, is there something unique about-- because if I look back at your history, there has really hasn't been a strong history of content losses or being designed out of anything. The biggest headwind you guys faced was really the removal of the headset dongle, which was really just the accessorizing of a particular stock, for lack of a better term. But is there something unique about your mixed signal IP and that protects that from being insourced relative to something else that might be easier to put on the main applications processor?

CARL ALBERTY: Well, I think if you looked at it in the context of what would be easy to put on the main applications processor, I think you'd see a pretty big divide in the process technologies is inherent in developing APs versus more mixed signal hubs, especially things that require higher voltage like amplifiers.

I mean, we certainly don't blaze the trail on process technology, just given the need for analog high performance circuits. So we continue to see a sweet spot of 55 nanometer IP, which has served us incredibly well and allowed us to deliver products that are really compelling relative to integration of low power, low latency signal processing, as evidenced by these closed loop controllers coming out that we've been speaking about.

But I think certainly that's a very different profile from what you might look at in terms of integration into an AP. And if you looked about that content relative to everything that that AP encompasses and the risk associated with it versus, I think, frankly, some of the performance and power optimization by having a separate chip. And we've seen that time and time again across a number of customers that, things like always on voice activation and just always on processing lend themselves very well to having external components, such that you're not firing up the AP or really power hungry chips that very frequently distinguish between noise and voice and a voice uttering certain words. Is it the right user? That sort of thing.

So we still think there's long term advantages to the segmentation or lack of integration and some of the key technologies we provide. So I would say that our customers by and large, especially our big one, we see similar value in that in that context. So yeah, it's always a challenge, but I think there's a big divide and an obvious trade off on performance capability and just the needs of some of these circuits like the amplifiers that the higher voltage that kind of necessitates

separate chips and allow us to make really transparent trade offs on system power and size and integration. So--

ADAM GONZALEZ: Got it. That's helpful. Just wanted to follow up on your decision to exit the men's microphone business, which I think was announced sometime earlier this year or perhaps late last year. It was an area that you've invested in for quite some time. I think the decision to exit that business is really more a reflection of some of the strong growth opportunities you guys see in the pipeline coming the next few years, in relation to some of the growth opportunities that you highlight earlier. Can you talk about what drove that decision to exit the market and how you've sort of redistributed those resources internally?

CARL ALBERTY: Yeah. I mean, certainly, when we looked at all the opportunities that we had and the resources we had at our disposal to go drive those opportunities, yeah, there were certainly some difficult decisions and trade offs to be made relative to the opportunity cost and just shareholder value and just return on investment that we viewed in the various opportunities. So that was certainly a factor. The men's microphone market, as anybody in that space would tell you, is a really, really difficult market.

And obviously Cirrus invested in that space for quite some time even going back to the Wolfson acquisition and their investments that have predated that for quite some time as well. And I think at the end of the day, when we were looking at that market opportunity and what customers would expect from us and what we would expect from ourselves to put our name and our stamp of quality on that product, said we just, we felt like there was just so much there that we still had to do to really get ourselves to a level of comfort that we're going to stand up and we're going to put our name and reputation on the line as it relates to quality and robustness and capability of the products that--

When we looked at that long-- that ongoing investment and we looked at these other opportunities, it was obviously a difficult trade off. But at the end of the day we prioritized things that were more impactful to the company and to our customers and to shareholders, those people, the people by and large were redeployed pretty immediately on really big, meaningful opportunities that will drive a great growth opportunity over the coming years.

So it's certainly a difficult decision to make, especially given the customer engagement that were in place. But at the end of the day, with that combination of us feeling comfortable with the investment and time required to really get it to a product level of quality that we felt good about, and just how that was an opportunity as a comparison to other deals and we are working on.

ADAM GONZALEZ: Got it. And then shifting gears to the digital headset and wearable market, can you just provide an update on that business? I know that Cirrus has been pretty successful in penetrating some of the truly wireless earbud form factors that have come out in last year or so. You've been successful gaining some amplifier content in some of the top tier devices. How should we think about that opportunity moving forward, and particularly as it relates to your Kodak and your active noise cancellation solution?

CARL ALBERTY: Yes. Cirrus has been investing in digital headsets for quite some time, arguably a little bit before the market's time in terms of wired headsets. But I think our traction over the last 12 to 24 months has been a testament to that commitment of underlying investment and technology that spans a variety of form factors from truly wireless to over ear and on ear headsets.

And so I think we've built up a pretty good portfolio as you talked about. We've got really high quality class D ultra low power headphone drivers that represent one opportunity set. And then the more sophisticated Kodaks that add in capability for processing. And those opportunities are really exciting. It's one of the fastest growing segments in consumer right now. And certainly we view as a really great opportunity for customers to deliver new compelling features and capabilities that people have never really experienced in headsets before.

So we're going to continue to invest in those product types from the high quality headphone capability to the more sophisticated Kodaks and start introducing elements. You referenced noise cancellation. Certainly, implementation details will vary by customer. And a lot of that comes down to trade offs of battery life. I mean, these TWS headsets are obviously massively space constrained and really small. And therefore, the batteries are really small, which makes every t just super critical to understand. And so, adding in features like noise cancellation are obviously a trade off as it relates to wa life.

And there's just a bunch of emerging interesting things in the realm of hearing health and hearing augmentation to allow users to seamlessly interact between enjoying content on their headset but also interacting with things and people around them in the world. So those present really cool challenges and problems as it relates to extension of battery life and a really small battery constrained product.

So we're excited about the long term growth opportunities there. We certainly have several irons in the fire across our top customers with products and products and development that we feel really good about. So that's certainly the exciting part of the market, being the wireless space. And so, yeah, we're excited about continuing to push that forward.

ADAM GONZALEZ: Great. Last two questions on products before I shift gears with the remaining time to some financial questions for Thurman. But tablets, that's something that search hasn't really had high penetration in the past, but in the last few shareholder letters you've really highlighted some recent share expansions, particularly in some marquee models. What's changed for the company? Is that an architectural change? And what's really allowed for that greater content penetration in tablets? And then on voice biometrics, you know this is something we've heard about for a few years, but really hasn't come to fruition yet. Can you provide a quick overview of your voice biometric solution, what problem you're trying to solve, and what are some of the big milestones that we should keep an eye out for?

CARL ALBERTY: Sure. Yeah, I mean on the tablet side, I mean, that market falls off pretty rapidly after the first couple share leaders. We certainly don't view that entire market as fertile ground for top line growth. But there's been shifts to more speakers. And as you introduce more speakers, you introduce more strain on the battery. We've got a bunch of interesting investments

in technology and IP that is designed to be friendly towards batteries and to deal with really significant peak power demands.

And so as you start adding speakers and you see evolving architectures and in some of these newer tablets you see a lot more need for those kind of IP and technology sets. So doesn't represent a big shift in our strategy or our view of the market, but it's, look, it's market share opportunity. We have to take and an opportunity shifts on really architectures and the additional speakers. And just our IP playing well into those problems and solving problems that are valuable, once to solve for our customer.

So again. We're going continue to stay focused on some of those architectural evolutions and how are our kind of technology as it likes to being friendly to the battery is relevant. And we'll certainly capitalize on those opportunities. And we see other areas of the market that are getting more and more space constrained and starting to use smaller and smaller speakers, which make those problems exacerbated in terms of delivering good sound quality and doing it in a way that nice to the battery.

So you know, we're excited about those opportunities but again they don't reflect any fundamental shift in our strategy outside of partnering with our big customers and know agreeing on what problems to solve and going off and doing that in the context of taking share and working together to deliver the best product, kn/o on voice Bio, it's certainly been a long and winding road for the last five years as we've started to embark in a brand new kind of Greenfield of space in terms of having secure user authentication on a mobile device or in an embedded kind of implementation.

So that's resulted in us delivering our first product of its type which those are difficult know hugely financially successful, but they're used as tools to validate technology to allow customers to do real world benchmarking and testing and evaluation voiced new technologies and allows has allowed us to work within this industry associations like FIDO to really understand and quantify like how does voice as a modality get used as an authentication methodology that's unique and secure.

And so we've learned a ton. And the product development has been super informative and super helpful in terms of real customer engagement and collaboration. And we're now using all of that to kind of guide the roadmap in terms of how we're developing new products and how we look at the customers we're choosing to work with. A lot of those customers have investments in digital assistants and have investments in natural language processing and complex voice recognition, some of which that resides on device, some of which resides in the cloud.

And so it's a matter of us understanding what we have to work with in a given customer engagement and how do we complement each other, and how do we leverage our strengths in terms of protecting the voice prem and allowing that to be a secure element that doesn't have to leave the device, and how do we prevent against spoofing attacks and things of that nature and ultimately work together with the customer to derive a solution that's based on this technology we've been developing? So we've certainly seen evolution, the roadmap that allows us to

consider integration of some of the key ingredients of this technology we've been investing as we see it in the roadmap for some of our future processors and future smart codecs.

ADAM GONZALEZ: Great. With the last minute that we have, really briefly, Thurman, just wanted to touch on fiscal 21. I know you typically refrain from providing revenue guidance beyond the current quarter, but at a higher level, would you be able to outline some of the puts and takes that can help frame how we should think about your near term growth prospects this year? Thanks.

THURMAN CASE: Well. OK. So going into the year, going into the fiscal year, there were a lot of, there was a lot of choppiness and things that were happening in the supply chains. Lee, in particular, our supply chain is in good shape our major suppliers are not located in mainland China. So they had some challenges. But we really have product. You able to keep our flow of product if you look on the other side the contract manufacturers and a lot of the suppliers out of mainland China. Certainly had some slowdown. So when you look at the rest of the year, though, our products we're going to be able to supply whatever we need. Some of our customers may be still trying to catch up.

There's timing differences between launches across-- we have multiple launches every year and the timing of those can move around. So to be honest, what it gets down to for us is we can't-- the market seems that-- the phone market seems to be strengthening some. And there are some signs that it may not be as dire as some of the earlier discussions on that. But for us, it really starts getting down to demand for the different skews and really consumer demand and the timing of that.

So for us, when you're within a year, that's really what's going to drive it at this point once-- and mainly it's associated with the fact that it feels like that the supply chain is recovering well. And it'll get down to demand.

ADAM GONZALEZ: Great. And with that, we're at the end of our time. I just wanted to thank Thurman and Carl and the search logic team for joining us today. Apologies to anyone in the audience if I didn't get to your question, feel free to follow up with me afterwards. Thanks.

THURMAN CASE: Thanks, Adam.

ADAM GONZALES: Thank you. Appreciate it.

CARL ALBERTY: Yep. Thanks, guys.

SPEAKER 1: Take care. Bye bye.