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Operator: Good day and welcome to the Advanced Mixed Signal Webcast. Today's conference is being recorded. After the presentation, there will be an opportunity to ask questions. If you would like to ask a question over the web interface, simply type your question in the Ask a Question box and click send. Or to ask an audio question, please press star one on your telephone keypad. At this time, I would like to turn the conference over to Mr. Jose Cano. Please go ahead, sir.

Jose Cano: Thank you, and I'd like to welcome everyone for joining us on today's webcast. This webcast is hosted by Davin Lee, Senior Vice President and General Manager of Advanced Mixed Signal segment. Before I hand over to Davin, I must remind everyone that today's webcast and some of the answers to your questions may contain forward-looking statements. These statements reflect management's current views and there are risks associated with them. You can find a full explanation of these risks on page two of this presentation. And with that, I'll hand over to Davin. Davin, over to you.

Davin Lee: Thank you, Jose. Let me start by explaining the three main product lines that comprise AMSBG or Analog Mixed Signal Business Group. First, we have our AC/DC products that convert alternating current, or AC, coming out of the wall sockets into direct current, or DC, that power and charge your electronics. We continue to see success in the area of Rapid Charge, especially for smartphones and tablets. If you recall, Rapid Charge enables full duplex communication between the travel adapter and the phone, thereby allowing a very safe and very fast way to charge your smartphone.

The second main product line is LED backlighting. These are products that provide the intelligent lighting control for direct-lit displays. This technology enables a higher quality picture targeted at mainly TVs, gaming monitors, computing and tablet displays, and eventually automotive displays.

The third category that we have is what we call CMICs. This is a new category of products that came from the acquisition of Silego. These products enable customers to customize their mixed single designs and replace several discrete components in their products. By doing this, this also shrinks the solution footprint, reduces the overall BOM and lowers the power consumption. This family is truly a general-purpose product that can be used across numerous applications and end markets. And we expect the growth of CMICs and LED backlighting to contribute to our growth over the next few years.

Today, we are the market leaders in CMICs, LED backlighting and Rapid Charge. We expect to maintain this incumbent position for the foreseeable future. Our investments in these key areas will allow us to see continuing growth over the next few years as more customers adopt these new technologies. Also, we have hit the inflection point of profitability from last year and expect to generate growing profits over the next few years. The AMSBG performance will contribute to the total Group long-term financial targets of mid-teen revenue growth and 20-25% underlying operating margin.

Let me elaborate a little bit on each of the three, starting with AC/DC, in particular, Rapid Charge products. Rapid Charge continues to be a major revenue contributor to AMSBG. We have a very strong position in six of the top seven mobile OEMs and are working very closely with all of them in defining next-generation travel adapter solutions that focus on high power density.

As the phones get larger and faster, bigger batteries are required, but the charging time cannot be any longer as consumers demand similar charging times or faster. As such, travel adapters need to be more powerful without compromising the size. This is why high power density

solutions are needed. And we are seeing more mobile OEMs shipping with higher power travel adapters in-box. Even though the travel adapters are higher power, the size of the travel adapters have not grown and in some cases, have even shrunk.

A good example of this is that we are shipping a 25 Watt USB PD travel adapter in one of our key OEMs today. So, every one of these phones that you buy in-box will have a high power density travel adapter that utilizes Dialog's solutions.

Dialog has been a major supplier of Rapid Charge solutions since day one, and we continue to grow our product portfolio to address this growing market. We offer the broadest range of fast charging protocols while maintaining a low BOM cost. In addition, our proven technology and long history of shipping very high volumes with very high-quality make us a preferred supplier for all Rapid Charge needs.

Moving on to LED backlighting. Over the last couple years, we have seen a huge trend in TVs adopting direct backlighting. Traditional TVs get the backlighting from LEDs that are aligned along the top and bottom and sides of the TVs. The light is then distributed to the entire screen through an optical diffuser. The image you see is then controlled by the LCD panel that manipulate each pixel to form the desired picture.

This solution is not ideal because of the following. First, the backlight is not uniformly distributed across the entire screen. The images that tend to be – that are closer to the edge, tend to be brighter, with images towards the middle because of the ununiformity of the light distribution is less bright.

Second, the blacks on the screen are true or not true blacks and can distort the image. This is because the backlight is always on so you need to block the light in order to create a dark image.

Since the light is always on, the efficiency is also very low. The TV will consume a lot more power than it should.

By moving to direct backlighting, this really addresses all the shortcomings. Direct backlighting moves the LEDs from the edge of the TV to directly behind the actual screen in a very uniform fashion. You can then create several zones by allocating the number of LEDs per zone and each zone can then be individually controlled to create true blacks and enable HDR, which is a feature that is desired in all 4K and 8K TVs.

What direct backlighting enables is, number one, much lower power consumption. How this is achieved is when an area of the screen does not have an image or is black, that local dimming zone can be turned off. So, you're not blocking out the light that create the blacks, you're actually turning off that set of LEDs for that particular local zone. So, overall efficiency increases and power consumption decreases.

Second, because you're now able to individually control each zone, you can achieve much higher contrast ratio. So, the blacks are true blacks and the whites are true whites. And because you can now remove the optical diffuser that brings the light from the edge to the middle of the screen, you can now make the whole panel thinner. This enables a lot of our manufacturers to come up with a much-preferred form factor as now the thickness or the thinness of the screen can be achieved.

Another trend that is happening is the adoption of MiniLED backlighting. What this is, is the – definition of MiniLED backlight is when the number of LEDs hits a certain density per square inch. This is important because you are able then to create more zones, allowing higher control of the overall image on that particular display. With the ability to create more zones, you can, of course, improve the overall image quality, especially the contrast ratio, and also you can continue to –

you can continue to achieve lower power consumption because now you have more zones to control.

We also expect that direct backlighting will become prevalent in automotive displays. Part of the reason is because automotive displays have to work in bright sunlight, and also the darkness of the night. So, in order for your screen to be legible across all these harsh environments, direct backlighting is required to enable that image quality to overcome the environmental obstacles to make the screen a lot more legible.

So, all these trends really play to the strength of Dialog. The convergence of the market demand, along with the evolving technology, coupled with our core IP allows Dialog to truly capitalize on this fast-growing opportunity. As I mentioned before, we have seen direct backlighting being adopted in high-end; we are now seeing that being adopted in the mid-range TVs. So, more and more TVs that you can buy in the retail space will have direct backlighting.

We're also seeing monitors starting to adopt direct backlighting, especially gaming monitors where image quality is highly desired. As I mentioned from the last slide, we're also seeing that trend being adopted in automotive over time. If you take the market demand and you combine it with the evolving technology, it enables the consumers to benefit from this trend. We see HDR becoming now a mainstream in all 8K and 4K TVs.

And as I mentioned earlier, we're also seeing MiniLED backlighting being adopted across the board. We expect that MiniLED backlight will be the majority of the backlighting within the next three to four years.

The other key point here is the more local dimming zones that a display requires, that is an ideal fit into Dialog's core IP. We have a very, very wide and strong patent portfolio that is a combination of Dialog IP, and IP that we acquired from AMS back in 2017. So, the combinations

of market demand, evolving technology, and Dialog core IP allow us to be positioned well to take advantage of this growing market.

Here are some very good examples of current customer engagements for LED backlighting solutions. Starting with TVs, we are the incumbent solution for virtually all direct backlit TVs in retail today. You can look at the names, Samsung, LG Sony, Vizio, all of them have direct backlit TVs that are powered by Dialog ICs.

Another good example is the recent introduction of TCL's 8-Series TV that was just recently announced. The 75-inch version has 900 local dimming zones and uses 60 Dialog ICs per TV. So, this is the type of ratio that you will see. The more local dimming zones a TV has, the higher the image quality and also the higher number of Dialog ICs being used.

We are also shipping into the industry's first gaming monitor with direct backlighting, and more recently, we saw Asus announce their first high-end gaming monitors that utilizes MiniLED backlight. The MiniLED backlight is achieved, again, when you reach a certain density of LEDs per square inch. This allows higher performance in a thinner display. The Asus 30-inch high-end gaming monitor has 1,152 local dimming zones and uses 72 Dialog ICs per monitor. Again, you get a sense of the ratio of the number of Dialog ICs used per display.

We are also engaged with several automotive display suppliers to bring direct backlighting to cars. This enables much higher contrast ratio. This is important, as I explained, because the car displays are used in bright sunlight through dark nights, so the display has to be able to be very legible in all environments. Direct backlighting enables this to be achieved.

We will now show a brief video highlighting the benefits of Dialog's LED backlighting solutions.

[VIDEO]

As you can now see, we supply our products to several customers across the globe. Our AC/DC and LED backlighting products are used universally across many applications. We continue to grow our customer base and are broadening our engagements with each customer.

The next product family I would like to cover is the CMICs. If you look at this visual, the x-axis signifies the programmability, while the y-axis signifies the type of products, digital versus analog. CMICs are a new category that combines the programmability and the analog functionality in a space that is not being addressed by any other supplier out in the market today.

Most of that functionality in the analog domain is done discreetly, and none of them are programmable. What Dialog has brought to the market, is that combination of analog functionality and programmability, creating this new category. If you can think of it as an FPGA with analog functionality, that's probably the best way you can describe the CMICs product family.

The CMICs, initially, were focused on consumer, due to its low-cost structure, fast time to market and proven reliability. We were able to get some pretty good traction and ramp very quickly with a lot of our key consumer customers. CMICs are now beginning to see success in other markets such as industrial, communications and automotive.

As you can see from the SAM chart, the market size continues to grow and we are adding more and more functionality to our CMIC platform, broadening the product portfolio and enabling our customers to do more with the CMIC.

If you look at it from a competitor perspective, as I mentioned, the biggest competition we have is discrete components. There is nothing out in the market that is equivalent in regards to analog functionality and also programmability.

The development platform is fairly unique in the market. CMIC provides a development environment similar to FPGAs. It is a software-based development platform that allows our customers to customize the functions to their needs without having to develop any special hardware. Once the solution is completed and fully simulated in software so that the customers can see the end results, it can then be easily programmed into a small CMIC within just a few hours. The result is a customized solution that they can get within hours with no extra NRE or hardware costs. This is a powerful value proposition that CMICs brings to our end customers.

If you had to summarize that value proposition of CMIC, this is a good visual representation of what they are. First, you can achieve much faster time to market. Again, no specialized hardware development is needed. Just our evaluation board and a computer is all you need. You can quickly and easily put together the functionality you want and program the part and get a customized solution within hours.

Each of our CMICs are in a very small package that contains several functions that can be programmed to address the customer needs. This allows our customers to create a proprietary solution that integrates each of these several discrete components and allows them to differentiate their end products versus their competitors by developing this customized solution.

The other thing that it does, because we are integrating several discrete components into a single package, we are shrinking the overall footprint of the solution. The other benefit by reducing the number of components is that it allows lower power consumption. Each CMIC has also been optimized for lowest power consumption. So, you get the benefit of an optimized IC along with the ability to integrate several functions into one small package, thereby lowering the overall power consumption.

If any product parameters change during the development cycle, the customer can quickly make that appropriate change within the CMIC platform. They don't have to go and modify any existing

hardware. They don't have to go and relay out any board. All these changes can be made in software. It can be re-simulated. The results can be double-checked, and then the part gets programmed again. So, you can do all these changes to compensate for any product requirement changes within hours versus today's industry standard of several weeks.

As a final configuration is pre-programmed into the final product, it provides a very secure product to our end customers. It will be very difficult for anybody to reverse engineer because all of our final products are pre-programmed and ready to go. What you get as the customer is a finished product, a customized solution, if you will, that is already pre-programmed, so you don't have to program them when you get the parts from Dialog.

One of the key benefits of our CMIC product family is that it's a platform. Once the customer gets familiar with the software development environment, it is very easy for the customer to adopt new products or new features, new functionality, as the user interface is the same across the board.

If you look at the picture here, these are some of the current offerings as far as analog functionality. Most recently, we have put in some power management functions like an LDO regulator. We will continue to add more and more functionality into our CMIC platform. The benefit here is as we do that, the learning curve for end customers is actually very low. What they will see is the ability to select these incremental new features without having to learn how to use that development software.

Please remember, all this is done without any NRE, nor do we require additional hardware developments. And it allows our customers to get their customized solution within hours. And by us offering more and more functionality, it really broadens the number of applications or the number of features and the type of complex problems our customers can now solve with the CMIC platform.

We will now show a video highlighting how easy it is to use a CMIC platform.

[VIDEO]

As you can see from the slide, our customer base continues to grow very nicely. We have now over 350 customers growing at a very rapid pace. We have shipped over 4 billion units, with over 3,000 customized designs in production. As we grow the customer-base, you will see that our top-line will grow accordingly. The key thing here is once a customer gets familiar with our CMIC development platform, they tend to adopt more and more CMICs across the board. And within the company, more and more of the engineers will begin using CMICs. So, we expect the growth of CMICs to be above the other product lines as far as market adoption and top-line growth.

Let me now summarize the key takeaways from the presentation. As you have seen, the growth vectors are well positioned to benefit from the opportunities that we have seen over the medium term. Financially, these growth vectors will allow us to hit the long-term financial metrics that you've heard from Dialog.

In the area of Rapid Charge, we continue to support the largest number of protocols. Our incumbent status allows us to be very successful in this space and our focused investment in USB PD and high power density will allow us to maintain this growth going forward.

In the area of LED backlighting, the core IP that Dialog has developed and acquired allows us to really capitalize on the market trends in the area of direct backlighting. As you already saw, TVs are now beginning to adopt direct backlighting more and more as it moves from high-end to mid-end TVs. We are now seeing the emergence of MiniLED backlight, not just in TVs but also in gaming monitors. And we expect that trend will proliferate into other displays, including automotive displays that will drive long-term growth over time.

Last but not least, you heard about the CMIC platform. There is really no direct competition. And the products address a very, very wide customer base across several applications in several markets, consumer, industrial, communications, automotive, and so on. The CMICs allow our customers to deliver products with a faster design cycle and lower development costs. It allows our customers to also replace several discrete components with just a single product with increased functionality and lower power consumption.

The powerful part of the CMIC platform is, again, that it is a platform. As we integrate more and more functionality, especially proven Dialog power management IP into the platform, this will allow our customers to do more with CMICs. It will allow them to address a wider set of applications. And it will allow our customers to be a lot more creative in developing customized solutions that will further differentiate their end products from their competitors.

Jose Cano: So, thank you, Davin. This concludes the presentation and now we open the line for any questions.

Operator: Thank you. If you wish to ask an audio question, please signal by pressing star one on your telephone keypad. Please make sure your mute function is turned off to allow your signal to reach our equipment. Again, that is star one, to ask a question. A voice prompt on the phone line will indicate when your line is open. Please state your name and company before posing your question. We will now take our first audio question. Caller, please go ahead. Your line is open.

Caller, please ensure your mute function is turned off to allow your signal to reach our –

Quan: Hello. Hello, can you hear me?

Jose Cano: Yes, we can hear you now.

Quan: Hi, it's Quan from Credit Suisse. Thank you for taking my question. Just to move back on your CMIC. You said that you expect growth to be above other segments here. I believe you mean that above your AC/DC charging and LED backlighting. And could you please quantify more specifically, what do you mean by growth above other segments?

Davin Lee: Yes, this is Davin, that is correct. We expect CMICs to be one of our higher growth segments within AMSBG. If you compare the CMIC product line to just the mainstream product lines within the company, they will grow a little bit faster than that. But, as a whole, in general, AMSBG will be complying to the long-term growth targets that you've heard from Dialog.

Quan: Thank you.

Operator: As a reminder, it is star one to pose a telephone question.

At this time, we have received no further telephone questions.

Jose Cano: Thank you, Mollie. I have a few questions coming from the webcast. Davin, the first question is about the content for the backlighting drivers, whether they are for traditional LED or MiniLED? And then also as well about the competitive landscape for backlighting LED.

Davin Lee: So, to answer your first question there, Jose, the content of the Dialog ICs, whether it's for traditional backlit TVs or for MiniLED backlit, it just, kind of, depends on the number of zones per TV. As you saw in the presentation, I showed the TCL 8-Series TV that has, you know, a lot more zones than your typical TV. The trend is that more and more TVs are beginning to adopt direct backlighting. As I eluded to, initially, the high-end TVs were the ones that had direct

backlight. If you look at the TVs just recently announced, the mid-end TVs are starting to adopt direct backlit technologies but the number of zones is not as high.

So, really, the difference between high-end TVs and mid-end TVs now, for most of the OEMs, is the higher-end TVs have more zones, which will use more Dialog ICs, where the mid-end TVs also use Dialog ICs for direct backlit but the number of zones will be fewer than what you're seeing in higher-end TVs. For Mini-LED backlight TVs or monitors because of the density of the LEDs, typically that means more zones, therefore translating into more Dialog ICs per TV.

In regards to the competitive landscape, we sometimes run into a few other companies but traditionally we've been a pretty good solid incumbent in this space. Some of the other companies that we run into are O2Micro and Novatech. But other than that, it's been pretty much a major space for Dialog.

Jose Cano: Perfect. Thank you, Davin. And I have another question coming from the webcast. It's about the Rapid Charge business, how do you see the Rapid Charge market evolve from a technology point of view over the coming years?

Davin Lee: As I mentioned in the presentation, in the newer phones that you see today, the battery capacity continues to increase, and as a result of that, it requires higher power AC/DC adapters in order to charge the phone in the same amount of time. This trend for higher power adapters fits our IP very well. It's what differentiates us from our competitors.

So, this value proposition increases as the power levels of these adapters get higher and higher because of the demand for superior performance. Our new generation of the AC/DC products are ideally suited for higher power trends. So, the higher the need for high power density, the better our IP fits this particular area.

This is also the area where we see the possibility of our controllers working with new technologies such as GaN, or silicon carbide powered devices. The combination of our controller and these new technologies enables higher efficiency, therefore enabling customers to have higher power density in travel adapters.

Jose Cano: Perfect. Thank you, Davin. I have another question on the backlighting business – well, actually it's two questions into one. Basically, how fast do you expect the backlighting business to grow over the next few years and when would you expect MiniLEDs – well MacroLEDs to become mainstream?

Davin Lee: So, to answer your first question, the LED business or the backlighting business, for us, performed extremely well so far in 2019. If you look at the whole lighting category for us, it's up 26% year-over-year for the first nine months. That type of growth is what we're expecting for the next few years because there's a lot of opportunities for us to capture more share, and also the emerging areas where direct backlight will be utilized; as I mentioned, mid-end TVs, automotive market, MiniLED backlights and so forth. So, the combination of all those things will allow us to maintain that type of growth rate over the next few years.

In regards to MiniLED backlights, as you saw in the presentation, there all – already is a few TVs and a few gaming monitors that have adopted that technology. But I would say for – in order for it to be prevalent, it will probably be two or three years out.

Jose Cano: Perfect. Thank you, Davin. We've just got another call coming from the webcast. Back again to the Rapid Charge business. This is more around the speed at which – or if you had any views about how fast will gallium nitride or silicon carbide be adopted in the market, either for mobile or any other applications?

Davin Lee: Well, we do know that a lot of our customers are evaluating both these new technologies. But to quantify how fast it will be adopted is very difficult. I mean, we can extrapolate based on what we know today, but it would just be a pure guess. I think it just really comes down to how quickly some of the pricing can come down to meet the BOM cost requirements. But we do know that many of our customers are evaluating both technologies – both GaN and silicon carbide working with Dialog controllers.

Jose Cano: Perfect. Thank you, Davin. Operator, would you like to double-check please, if there's any other questions on the line before I jump into the next question I have on the webcast?

Operator: As a reminder, it is star one to ask a telephone question. We'll pause it for just a moment to allow everyone to the opportunity to signal.

At this time, we have not received any further telephone questions.

Jose Cano: Perfect. Thank you, Molly. I have a final question coming from the webcast. This is about the CMIC business, Davin. Basically, what is the opportunity with the CMIC over the next three years?

Davin Lee: It's pretty good. If you recall, the CMIC business grew 24% in 2018. A large reason for this big jump was the immediate leverage of a wider customer base under the Dialog umbrella. Post-acquisition, they got access to a lot more customers than they previously had. So, the growth going forward is directly tied to increasing the customer base and broadening our product portfolio.

If you if you look at what we've done, we continue to host CMIC technology workshops globally, reaching a wider base of engineers and training them on the ease of use and the programmability of our products. And as we reach more customers, the value proposition of our CMIC products

will create more advocates within our customer base. And as such, we expect to grow at the expected base case rate of 15% and higher.

Jose Cano: Perfect. There's no – other questions coming from the webcast. Operator, anything coming from the audio?

Operator: At this time, we have not received any further questions.

Jose Cano: Perfect. Thanks so much. I just wanted to finally thank everyone for joining the webcast. There will be a replay available and the recording available on the website as well. And thank you for making the time.

Operator: This will conclude today's conference call. Thank you for your participation. You may now disconnect