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OVERVIEW:

Company Summary

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PRESENTATION

Harlan Sur - *J.P. Morgan - Analyst*

Okay, great. Good morning, and welcome to JPMorgan's 15th annual US All-Stars conference held here in London. My name is Harlan Sur. I'm the semiconductor and semiconductor capital equipment analyst for the firm. Very pleased to have the team from Analog Devices here with us today, which puts your Executive Vice President, Chief Financial Officer. We also have Mike Lucarelli, Vice President of Investor Relations and FP&A, here with us as well.

So for those of you that don't know, the Analog Devices team, leader and high performance mixed signal RF analog semiconductor solutions, strong position in power management and signal chain processing, both digital and analog with which, as we know is the technology that bridges the real world to the physical world, best-in-class growth operating free cash flow margin, a strong capital return program, very diversified business, right, industrial, automotive, comms infrastructure, 85% of total revenue, Rich and Mike, thanks for joining us this morning.

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Good morning, everybody. Thanks for having us.

Harlan Sur - *J.P. Morgan - Analyst*

Great. So if we rewind back the same time last year, second half of your fiscal '23, team was already in the midst of the semiconductor industry cyclical downturn. We're driving about 9% year-over-year declines in the second half of last year.

From there, the business continued to drive lower, you troughed in the April quarter of this year with peak-to-trough and year-over-year revenue decline of about 34%. Since then, right, the team has driven positive inflection in quarter-over-quarter revenue growth, year over year comparisons are improving as well. Take us through the dynamics over the past year and more importantly, your view on the cyclical dynamics in the business going forward.

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Sure. So I mean, we've talked a lot about this. Obviously, we've gone through one of the largest inventory corrections we've seen. I think this is for ADI. The second largest correction. This is the only time larger being and during the dot-com downturn. So another that correction, as we've talked about, we feel like the direction as large of inventory correction has largely happened across most of our businesses, we've talked about, except for auto, still seeing a bit of a correction.

If you look, what we're seeing from a positive science perspective, and if you just look at our most recent results of Q3, we delivered above the midpoint quarter. We also guided to 4% of incremental sequential growth. So we feel very positive about where we're starting to see.

Look, we've talked about this. I think as a broader pace of the recovery is going to continue to be dictated by the broader macroeconomic and geo -- geopolitical issues as we look forward. One of the things we've also talked a lot about is we have clearly been undershipping to demand at our customers for at least a year. So that gives us some confidence that as we look into '25, we could see strong '25 and get back on to our long-term model that we described back in the 2022 Investor Day. So in that 7% to 10% growth range.

Harlan Sur - *J.P. Morgan - Analyst*

Plus, back last year, the analog team, as I think was like this is your third or fourth consecutive year where the team is presenting. Back last year, when we hosted events, he was already talking about stabilization in order rates right. The team then drove three quarters of sequential improvements. However, in July, we did see a slight decline in bookings with growth in all segments, offset by a decline in automotive book-to-bill at parity exiting the July quarter.

Your midway through this quarter -- have the order trends ex auto continuing to improve. And you've said recently that you've seen an inflection a positive inflection in automotive quarters has that continued so far this quarter as well?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

So what we've seen on orders as we mentioned, that continuing increase across broadly other than auto. An auto side, what we started to see in as we went into the summer months is our order rates started to come down on auto.

We did start to see them pick back up as we got to the late part of the quarter. And that has continued quarter to date and the trends we were seeing and then on auto parts continue from a growth perspective, we continue to be a little bit softer in the automation segment of industrial. But as we talked about where we had seen lower reductions than we saw in the prior periods. So we feel like -- but we're on an upward trend on the bookings side. And we've got a number of tailwinds we think behind this from a secular perspective that will help us continue.

Harlan Sur - *J.P. Morgan - Analyst*

So you're continuing to see non-auto order trends sort of continuing to improve sort of quarter to date. Automotive, you saw the negative inflection in June, July, but you've seen the positive inflection since then that sort of continued quarter to date.

Book to bill, I know you guys exited book to bill in the July quarter roughly at about one right. Non-auto bookings being slightly offset by auto, looks like both of them are moving in the right direction. So would you say book-to-bill kind of still tracking towards one, maybe slightly above one so far quarter to date?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Yes. And it's interesting on the auto side, it is also mixed. We've talked about. We've had two strong -- two consecutive strong growth quarters in China from a growth perspective, but we're seeing offsets being weaker now, particularly as we see in the auto space. The forecast for the back half of the year is provided for volumes, the decline relative to the prior guidance, and there is a substantial portion, but about half of our auto business is tied to the legacy auto and volumes.

And that's why we think that this inventory correction could go on a little bit longer on the auto side. And I think we'll see it into certainly into Q4 and probably into Q1, but we do still see an opportunity for growth in '25.

Harlan Sur - *J.P. Morgan - Analyst*

So as you've talked about sort of the quarter the continued improvements in automotive bookings, there's still some inventory correction that's going on with your customers. So what's driving the positive dynamics if you take your auto business and sort of as a whole?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Sure, Sur. The most challenged pieces, the legacy pieces that provide auto, the other area, which we've talked about now for about a year as we've had some pressure on the BMS space. We are starting to see some -- we've seen some design wins in the BMS space, which is positive for us, but if you look across the other parts of our business that are tied to the EV world. So if you think about our GMSL or A to B in our funds, they say power. Those parts of the auto continue to grow double digit.

So that is offsetting some of the downward pressure on the volumes. And also we get this question a lot is we're seeing a much shallower peak to trough in the auto than we saw in the other businesses. And I think a part of that is one, the continuing growth rate, although we're talking about the slowdown in the EV market system growing just not growing as fast so that that's going to be an important part of the dynamic as volumes start to recover and stopping a drag against the growth parts of our business. That's where I see the upside.

Harlan Sur - *J.P. Morgan - Analyst*

And to the credit of the team, and I think we said this in answer to the first question, but in terms, how do we get to where we are today? So the team's credit, I think you guys have been shipping under-shipping your customers' demand profile for a number of quarters, right?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Yeah, I mean, we certainly have been under undershipping for a year and then you can see that right. We've been super focused on managing the inventory, both on our balance sheet as well as inventory in the channel.

Harlan Sur - *J.P. Morgan - Analyst*

When you look at the overall business, what are you seeing from a geographical perspective, you particularly called out about the strength in China in the July quarter. You had some commentary about positiveness in automotive as well out of China, but how are you seeing the business from an overall geographic perspective? And is China still broadly speaking sort of strong quarter to date as well?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Yeah, I think China continues to be strong across across all the end markets, including in auto, which we've talked about, certainly excuse me, Europe continues to be the weakest for us. Now the -- in the industrial there, obviously is tracking pretty similar to what the PMIs of India Europe as we've seen PMI soften over the last couple of months. And obviously, the broader macro in Europe is weaker and then relative stability compared to Europe in the US and the rest of Asia.

Harlan Sur - *J.P. Morgan - Analyst*

It has done a really good job, like I said, of shipping below your customers' consumption levels of the past three quarters to four quarters, both direct as well as your channel customers, right? You exited July with 178 days of inventory on the balance sheet that was down about 7% sequentially. Do you anticipate further work-down of the inventory this quarter? And you've also been extremely disciplined on channel inventories driving them towards the low end of your target range of seven weeks to eight weeks. Where do you see that trending this quarter as well?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

So I give a lot of credit to our operating teams for focus on inventory, both on our balance sheet in the channel. I think we've taken out since the peak about $300 million of balance sheet inventory. I actually think that will remain relatively stable here in the next couple of quarters. Certainly one of the things we learned during the supply fracture and the subsequent rebound is the importance of keeping a bit more inventory on our balance sheet.

We're also being very smart about how we keep it. A lot of the inventories being kept at a die bank level, which gives us a lot of flexibility and also helps helps us manage our cycle times as the demand does start to return.

So I expect our balance sheet inventory to stay were relatively where it is from a dollar perspective. And as we continue to see growth, we'll see days come down. On the channel side, we talked about this very disciplined to get back down to the low end of our model. We talked about it. If we continue to see positive signs, we'd start to shipping, start shipping to end demand.

And we do expect that near term that channel inventories will remain relatively flat to where they are. Obviously, as we see increased growth, we might have to ship more and start shipping more. The current plan is to keep that relatively flat in the near term.

Harlan Sur - *J.P. Morgan - Analyst*

Got it. So putting everything together, right. And given your 13-week lead times, the team had quarter qualitatively describe the forward view that the January quarter was likely to be a seasonal type quarter wide revenues down sort of mid-single digits percentage sequentially, but the seasonal pickup in the April quarter and as you mentioned in your prepared remarks, sort of overall strong sort of fiscal 2025, is that still how you kind of see the profile of the business looking for?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Yes, that right. So with the lead times back in the 13 week period, that means we tend to have visibility out of it, right. So we don't have a ton of visibility yet on Q1. Could Q1 be higher than seasonal. And with that kind of why we've been higher than [CSI], two quarters in a row, but we don't yet have an order book that would tell us we'll be above seasonal. And so the historical pattern is sort of mid to low single digit sequential decline in the seasonal quarter. So that's what we've been talking about only because we don't have a longer-term signal there, but we do still feel that the growth opportunity at '25 for the full year is strong.

Harlan Sur - *J.P. Morgan - Analyst*

Perfect. Before I move on to some of the more mid to longer term focused questions, I want to make sure that we give the audience an opportunity to ask questions. If you have a question, raise your hand and we'll get a mike over to you.

QUESTIONS AND ANSWERS

Unidentified Participant

I interested to know, congratulations your new role. Things have changed a lot in the last few years since your Investor Day with years of prior CFO in your role. And I'd be interested to know what part of that framework. And I think you talked about 15% EPS as a potential target in the future. What part of that framework that was laid out at that Investor Day is relevant still today or not relevant?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Great question. I actually spent a fair amount of my first couple of weeks with Mike going through the Investor Day model to make sure that I was comfortable that we could execute against that and continue to do that.

So I talked a little bit about how I feel about the 7 to 10 -- revenue, seven redemption revenue is still the right way to think about it, even if you just took the historical CAGR of the industrial business and add in some of the tailwinds we've created, I feel good about the 7%, 10% again, given our flex capacity and what we demonstrated.

From a margin perspective, obviously, we did break the 70% floor, which we've talked about in that model. But I also know at the time we built that model, that's the royal week. The time we built that model, we certainly didn't anticipate the severity of the trough that we were going to see. But the ability to hold to a high 60s margin at the trough of our cycle, we feel very good about that.

We're disappointed to break the 70, but we feel very good and give us even more conviction about the agility of our model in both the up and down. So I feel good about that. Still feel good about where we're headed on op margin line, we're going to again at the bottom of the trough, we're going to state our outlook for the rest of this year. We're looking at a 40% op margin in the trough year. So we feel good about getting back into the long-term margin range that we talked about.

The one piece I think is worthy of note is obviously given the severity of the drop in the lower base we're starting from. And I think we had said getting to a CAD15 EPS in the '27, I think was the original model. So I would say it's more likely that that's '28, not '27 just given and the drop was from peak to trough coming out of that. But otherwise, I feel very comfortable with our ability to execute against along the way.

And we continue to be following our miss this one on return of capital policy with 100% of the free cash flow going back to investors over the long term. I think post Maxim, we're including last quarter where we were under the 100% threshold, which still had about 110% of our cash flows. Free cash flow has been distributed and increased our dividend pretty significantly. Our count by about 8% or so. We're pretty good about where we're doing against long term loan.

Harlan Sur - *J.P. Morgan - Analyst*

Any other questions?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

No, the good news that the -- I think the street agrees with you that the severity of this downturn did warn that probably the team getting back to more of a $15 type earnings power target in fiscal '20s. The good news is some sense, is this sort of centered around that fiscal '28 timeframe.

But to your credit, right, looking back over the past 20 years, I mean the analog team has grown their revenues at a 9% CAGR, right you're targeting 7 to 10, your earnings and free cash flow per share over the last 20 years have grown and then 11% to 13% CAGR over that time to write. Some of that inorganic, but most of it organic as well.

And into the team's credit. I mean, in the peak of the last cycle, you guys were already driving $11 of annualized earnings power. So feels like if we are emerging from this downturn and few years of sort of relatively good growth combined with some other product cycles that we're talking about $15 running power strips in a sense within reach of the next few years?

Michael Lucarelli - *Analog Devices Inc - Vice President - Investor Relations and FP&A*

Yeah, I agree. And I think one of those is important, as I alluded to as I'll give you a little bit more detail on my thinking, is it sort of bending that historical growth curve that you're describing getting up into that 7% to 10% range. If you think about what's happened in our space, go back to for us to '22 coming out of the pandemic, significant tailwind from pricing in '22, another year of tip pricing tailwind in '23, '24 has been relatively stable from a pricing perspective, and we expect '25 to be stale.

So if I just take the street, has us at a 10 for the year, next year. We think that the ability to maintain that price versus the historical practices of giving that back is worth about [20 plus]. I think the significant number of concurrent secular growth tailwinds, whether it's in automation, aerospace and defense, AI, Industry 4.0. We think those combined tailwinds are worth about another point of growth to us and the final pieces in at the time of the Maxim acquisition, we talked about the synergies we generate and we expect to have about $1 billion worth of revenue synergies by 2027.

So you think about those three factors has about a 3 point step-up there sort of the historical curve, which is how we get comfortable on how I get comfortable with where we're headed from and EPS and a free cash flow perspective.

Harlan Sur - *J.P. Morgan - Analyst*

Did that end, I mean, we always look at a strong indicator from our perspective of forward revenue build profile is the design win pipeline, right? And you grew your design win pipeline by a double digit percentage rate in fiscal '23 across all of your end markets, right? So how is 2024 tracking so far relative to that number? And what areas of your portfolio or end market exposure are you seeing the strongest expansion and revenue opportunity as you look at that sort of forward pipeline?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

So we are continuing our strong design win. And you're right, that's the best look at our sort depending on market writers, as the design cycles have shortened in a number of places, even the historical data center design cycles have gotten significantly shorter. So I'd say that the design win is a good look out for the next one year to three year growth period. We continue to see growth. We are growing again in double digits in '24.

And actually, we're seeing some really good strength in the auto design win space. And we talked about that. I think we've talked about in a couple of prior calls, getting design wins in that to more of the largest companies. We've got a number of design wins in China with one of the larger new entrants in China. So we feel very good about where we are from a design win perspective.

Harlan Sur - *J.P. Morgan - Analyst*

Perfect. Maybe a question in the crowd.

Unidentified Participant

Hi, just to clarify, so in '22, you said long-term target growth 7% to 10% revenue based -- on revenue base $11.2 billion. So obviously peak to trough revenues come down. So how should we think about the 7% to 10% on what base?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

So I think we're originally outlined was the targets, the 7% to 10% growth, the operating margin profile, the returns are all good metrics. Using '22 as a base year is going to be tough because I was kind of in the upswing cycle, which is a huge inventory build on top of that. I think if you think over the long term, this business should grow 7 to 10. They're off mid to high 40s, up to 50% operating margin and a lot of free cash flow.

And what based here, I think is the easier base of your question of what's a good year start from. I think if you want us to honestly, if you want to look back and say, there's less noise in 2021, '22, '23 sorry 1918, 2018 to 2019 as a base here in the graph, there is a good trend line, you can even see how far we're shipping below that you have online today. And that's what gives us optimism that we have a good year in '25, and we're also not far off from that bogey of $15 of earnings note in 2027. Very hard to do so.

No, reason to think we're not too far after that. If you look at that base year of 19 revenue and you just grow from there, you see where we went to, where we are today and the future growth of this business is what gives us confidence.

Harlan Sur - *J.P. Morgan - Analyst*

Any other questions? Let's focus on your industrial business, right? 45%, 50% of closer to 50% of total revenues, composed of a set of very diversified segments wide across different end markets, factory automation, healthcare instrumentation and test, energy, infrastructure, aerospace, and defense. Help us understand the sizing and growth of the different subsegments as the team moves through the potential upturn and on a go forward basis and what of the subsegments are likely to outperform going forward?

Michael Lucarelli - *Analog Devices Inc - Vice President - Investor Relations and FP&A*

Sure, just broad strokes, if you think about in our industrial business. The instrumentation and test part of the business is about 25%, probably a little bit more than 25%. The automation part of our business is about 25%. If you look at the aerospace and defense and healthcare businesses, that's round numbers about 15%-ish of our business. And then if you look in the -- at that energy is probably in the mid to high single digits. Sort of the rest is other, as we talked about, we're continuing to see growth in all of the end markets in industrial, with the exception of automation and so we've talked a little bit about the activity we're seeing in AI related high-bandwidth memory and test. That's significant.

A green shoot on the aerospace and defense side. We are have a number of design wins there ramping. And obviously with the global macros and pressures in defense spending, we feel really good about where we're going to be on the aerospace and defense side.

Yes, those are the big screen to (inaudible) at this stage.

I think if you have any look at kind of the business automation to week, but there's a lot of trends in that business, though propelling the growth, maybe not this year. And actually, I think we are seeing it, but over the long term that's a very good growth market for us. We don't talk much about. I think the energy franchise and industrial energy for us is our renewable energy, but distribution and transmission of energy. How do you think, well, let EVs, AIs, all of this consumes a lot of energy.

You need an upgrade of the grid. I think what you'll see is that business today, Rich pointed out was like 7% to 8% of industrial. That's why it's small but high where the faster growing areas of industrial own at 5 years, 10 years, and you'll hear us talk more about that over the next couple of years as we build that design win pipeline.

Harlan Sur - *J.P. Morgan - Analyst*

What is going on in the automation side? Is your customers obviously weak right now, not a surprise on a go-forward basis. Obviously, a lot of new manufacturing programs being dialed in by your customers over the next few years, automation is extremely important.

When I think about analog devices that can think about things like robotics, I can think about things like -- if I look at what Maxim but with the programmable logic control and your signal conditioning, a lot of good things happening on that front. But we think about automation, what are some of the sort of key sort of new opportunities there for the team as it is of robotics, really kind of the biggest opportunity?

Michael Lucarelli - *Analog Devices Inc - Vice President - Investor Relations and FP&A*

I think robotics is one of the biggest opportunities that you are continuing to see advancements from the fixed arm robot to the autonomous mobile robot. Eventually more humanized type robots is performing incremental functions. But as a -- we're very confident because we've got a lot of content in all of those areas. But a little bit of what's happening on the automation side is broadly the industrial CapEx, right.

And so look, it would be great to see China pick back up because a lot of our non-China customers are shipping a lot of their automation equipment into China. So as the broader -- a broader economy improves, we'll see some growth, but I do feel like we're very well positioned because as you mentioned earlier on Harlan, it is about the physical real world signals and converting them into actions through the automation process that's going to be valuable and we have and the content in that space.

Harlan Sur - *J.P. Morgan - Analyst*

Let's turn to automotive 20% of your revenues. We did discuss the profile of the business over the past few quarters or quarters improving first half. There is a bit of a step-down in June, July time period, you're seeing the order inflection back again in automotive. So that's a good trend.

And I think you did mention this, but when do you think this segment actually bottoms from revenue and shipment perspective? And how do you think about segments that have been negatively impacted the most versus segments that are doing better, given your leadership in areas like connectivity, like both [8 hours] in cabin connectivity and power management?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Right, I think our view now is that they are the downturn continues into Q1. I'm optimistic that that could be an inflection point for us, but we don't have good enough visibility for me to say that definitively, Harlan. But again, on parts of our business that are growing. We continue to have really strong double digit growth across the other parts of the NAV, the GMSL and functional take power. And on the just if you think about the broader auto, right?

And I sort of carve it up into the three obvious pieces. You need ICE in your plug-in hybrid. You have a full EV, right regardless of which platform there. And we have a lot of content because even your cheapest ICE vehicle has microphones cameras and it needs connectivity for all those systems. So that's positive. But obviously we get a bigger and bigger benefit on auto as you move, right? So we get a little more content. When we get to the plug-in hybrid, we get the most content. When we get into the full EV. There's an interesting dynamic that's been happening in the last couple of quarters.

The plug-in hybrids are significant, growing significantly faster than the full EVs. That is a bit of a that is a bit of a headwind in the moment just because we have much higher content, right? The BMS is a big value add for us in that in the full EV, and that's not as critical in the plug-in hybrids. However, we are still in the camp that we are going to a full EV world, we're still only penetrated. I think the industry analysts say we're penetrated [18%] NAVs and could get to 30% by 2030. So we still think that that's a great long-term growth opportunity. But near term, obviously, there's broad pressure on vehicle units.

Harlan Sur - *J.P. Morgan - Analyst*

But look at the segments that are doing well, A to B, GMSL, functional safety, I think you guys said and continue to say that that business is driving strong year-over-year growth dynamics. What portion of the mix is that of the auto business right now?

Michael Lucarelli - *Analog Devices Inc - Vice President - Investor Relations and FP&A*

Yeah, sure. If you look at sort of the growth areas outlined or by half auto mix, but [half]. So it's interesting. If you look at I know I get the question all time, why would auto be as bad as other markets from peak to trough.

And if that content piece, that 50%, that's still growing the other half of autos, we call it the production part is more tied to software production. That production part will be down over 30% based on our outlook. So it is similar to the other parts of the industrial and consumer. But you have the other part is lifting up that peak to trough the content piece.

So we've digested that inventory between this quarter and next quarter for the -- So our component and the other part is still growing. Why each car every year has more content, more radars, more cameras sees more connectivity, more functionally, safe power. We have new wins coming to market. So that's what gives us comfort that we're pretty much at that trough in auto.

And yes, it got a little soft over the summer, was that falling off a cliff. It got softer rates. As Rich pointed out, things got better from there. Yes, it's not as strong as it was three months ago. Was not going to fall. It's also a good sign here.

Harlan Sur - *J.P. Morgan - Analyst*

What do you seeing in the automotive business from a geographical perspective?

Michael Lucarelli - *Analog Devices Inc - Vice President - Investor Relations and FP&A*

Europe, North America, Asia, China.

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

So as I mentioned, it's been strong. It's been strongest in China. We've actually seen back to strength very strong quarters in China. And obviously, where it's soft, it's softer everywhere. Else, right?

Michael Lucarelli - *Analog Devices Inc - Vice President - Investor Relations and FP&A*

Yes.

Harlan Sur - *J.P. Morgan - Analyst*

Any questions from the audience on industrial and automotive?

Unidentified Participant

You think about the future revenue growth rate of the company, the 7 to 10 you laid out and you mentioned kind of 300 basis points kind of hope you'll get versus history. Are there any areas we should be putting a minus in front markets that might not have developed the way you thought or yes, or has it become more commoditized or something that just is not trending that way? Is anything coming out of the bucket effectively?

Michael Lucarelli - *Analog Devices Inc - Vice President - Investor Relations and FP&A*

I don't think any of these coming out of the bucket that we've talked about this in a number of forms. The one thing I will continue to keep my eye on just from a pricing perspective is the continued increase in capacity that we're going to see from our domestic competitors and the increases in China investments. However, that my counter to that is we feel like we're very well positioned. We are not in high volume chip as much silicon game as possible, right?

We tend to go for the high value complex areas where we need more design in an analog expertise to solve those problems. So I think that we are well positioned and we continue to win even because where we are a bit higher price. So I don't have anything that I think is growing in a worse way than we expected. I just think we have to continue to watch because the pricing pressure is going to be most challenging in China and in auto.

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

And the only -- I would say wireless communications is much worse than we thought two years ago. The 5G standpoint, but that's okay, but ADR, we're so diverse that that is definitely weaker than we thought, but we didn't envision AI two years, three years ago and the wire the wireline piece. I think the wireless part growth comes down. The wireline piece comes up. You'll find the same spot.

That's what the health being diverse. Your goal, we put 10 to 15 growth to our business will be right and wrong and some of those some high, some low, that will give us that comps are the 7 to 10 is a so many different growth drivers. We'll build up. That segment has now one thing, radiates, multiple things that drive that growth.

Harlan Sur - *J.P. Morgan - Analyst*

These design wins that you've seen in China. And can you just give us a bit of a sense what you're seeing in terms of the credibility, global competition in analog and how hard for those design wins more recent?

Michael Lucarelli - *Analog Devices Inc - Vice President - Investor Relations and FP&A*

How hard, that was hard. Even before geopolitics is always harvest China Europe, North America hasn't changed at all. And what give us the most comps, I mean, we get a lot of questions on China as we should is our design wins in China continue to grow, which gives us good confidence that business will continue to grow the next few years.

Design wins won't tell us what happened 5 years, 10 years from now, but the design win pipeline that it keeps expanding in China and globally, it's what gives us the confidence that that business will continue to grow.

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Good example and we've talked about pressure in the BMS space a little over a period here. We have actually gotten incremental design wins in BMS in China. Again, hard fought. And I think I've said this before, the most difficult price challenges and challenging environment is clearly in China. We are continuing to win and we are continuing to get it in some of the largest manufacturers in China.

Harlan Sur - *J.P. Morgan - Analyst*

I guess the question that to your point, we always do get questions relative to the China domestic competition, right for the analog and microcontroller and broad diversified semiconductor companies. Maybe you can provide us with a profile your exposure to China analog's exposure to overall China domestic consumption and which portion of that portfolio is really subject to kind of the more commodity segments of the market. My sense is a very small part of the overall business, but I'm not sure if there's any way that you guys can quantify them.

Michael Lucarelli - *Analog Devices Inc - Vice President - Investor Relations and FP&A*

You're right. I mean, we don't play much in the (inaudible) whether it's China or anywhere in the globe, we've looked at our China revenue only about 5% less consumer. And I think that's a part of going after why it's high volume. You don't need as robust or reliable technology in that market for cellphone sales you get a new one. Robot ourselves across millions of dollars in the line goes down.

So we don't play in those higher volume or the consumer. So I think you're right, China wants to more indigenous. They will over time. We don't really play what they're going after it very much. To say we're completely insulated would be fabrication still trying to do what we do, but they won't ever get to the performance we get and Vince always has a good if you want the best performance chip, we will choose area if you want something else because other suppliers, versatile supplier for our competition.

Harlan Sur - *J.P. Morgan - Analyst*

[NDM], you mentioned it briefly in talking about the infrastructure comm infrastructure, part of the business but the team has -- is exposed to nice trend of artificial intelligence, right? You participate in both compute, memory -- memories, networking segments of the AI market, right?

So for example, you guys mentioned this your high-speed products go into the 80 year automated testers that test the complex in video GPUs, the memory, HBM memory stack. On the flip side, you've got your control solutions which go into these very sophisticated 800 gig, 1.60 optical modules.

And then finally, your power management portfolio, you guys are taking your vertical power delivery to drive these very power hungry sort of GPU. So how big is the AI business for analog? And how fast do you expect this segment to go sort of going forward?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

So that the AI exposed part of our business is about $400 million. Now about -- it's about split about 2/3, 1/3. About 2/3 of that is in that in instrumentation and test and that is that, as you described, that is the high-bandwidth memory testing, which is critical for all of these AI data center builds. That continues to be very strong for us. Matter of fact, we're going to have a record year this year in memory test.

On the -- as you talked about on the connectivity and the power and we've talked about this a little before. We have two design wins that are on coming online. Now we have the -- of the 1.6 terabit optical module that's been designed as one of them large high-performance compute companies.

That is going to start to generate revenue in the back part of '25. And we have a vertical power solution in designing that one of the hyperscalers, and that is expected to generate revenues that are maybe late '25, more likely into '26.

The combination of those two opportunities is worth about $100 million, so sort of 10% overall for the communications business. So pretty significant for us from a go-forward perspective. And we continue to work across the hyperscalers in high-performance and are gaining traction there, so that we are exposed there.

Look, this is we -- and [Vincent] has talked about this a bunch right worst. We are still in this first part of the infrastructure, the AI world, right? This is the infrastructure build out. The next wave, which will be very powerful for ADI in the long term, this when we get the AI out at the edge, right, doing that compute and at the edge where the data is being gathered by that drives a ton of incremental benefits because you get lower latencies, you get lower power consumption, you get better secure, right? And so that's another significant opportunity. If you think about where we're headed from a long-term perspective, from an AI exposure.

Harlan Sur - *J.P. Morgan - Analyst*

In your -- just rewinding back live in the comm infrastructure business, strong leadership in signal processing, RF, power management, DSP well, the strong exposure to 5G infrastructure cloud hyperscale, right, is clear that the overall infrastructure spending is cyclical, influenced heavily by the macro trends. And this segment has been soft for the analog team for over 18 months, right.

The good news is it looks like it did fall off in the first half of this year, down 45% year-over-year grew sequentially last quarter. Expect it to be relatively flattish this quarter. How do you see the potential profile of recovery in infrastructure kind of looking out over the next few quarters?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

So I actually -- we're not seeing a lot in a lot of traction in the traditional wireless and wireline. So I do think the recovery there will be muted, but we will benefit from the pieces I just described and optical modules and power management as we continue to gain more traction there.

Look I also have a view longer term and thus the increase in speed inside the data centers is going to drive the need for increased speed data side data center. So I expect we will start to see a new wave of capital spending there because if you look at where the -- and for providers and telcos, I just haven't been spending on it, and we've talked about that a lot in prior quarters.

Harlan Sur - *J.P. Morgan - Analyst*

Let's talk about the financials in the manufacturing strategy. You did bring this up a couple of times, but the hybrid manufacturing strategy, the flex capacity that it enables has allowed the seem to drive 200 basis points, 300 basis points better gross margin's at the bottom of this current cycle, right?

You have a target to qualify 70% of your products do run both internally in your fab is externally at your foundry partners by the end of next year. First question is, is the team on track with this and where does that sort of mix stand today or a percentage of products that can run both internal and external.

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

So and we've talked about this, you're starting to see our CapEx come down we've talked about getting back to, and that's because we're getting to the end of the resiliency campaign part of this resiliency campaign offline more of our products, internal and external.

Today we're still running about 50% internal and external. But we expect by the end of next year, we will have done the qualification for 70%, which gives us the ability. Now to be clear, it doesn't mean we can run 70% value product access like any one point in time just means it gives us more products and families that we can swing internal and external as we deal with both the other increase and decrease in demand, right? Because obviously, if we saw a steeper acceleration in the demand and we've currently got plants when we look sell our factories and then start to look to scale externally.

So we feel very good where we are the other piece of this resiliency campaign that was really important to us because it was one of the things customers asked for, we've got this partnership. We've talked about with [TSMC] to get capacity in there and new Japan fab. And so when that fab comes online, we'll have the ability to produce 95% of product outside of China, including Taiwan.

Now clearly, we do not want to move our production outside of Taiwan by having the ability to is an important resiliency for our business. Again, that's been a big part of what we've been doing, expanding record amounts of capital over the last couple of years.

Harlan Sur - *J.P. Morgan - Analyst*

Portfolio expansion in your target markets has been a driver of the outsized growth when obviously the team has done a phenomenal job on the organic growth of the portfolio. But you've also got a very, very strong track record of unlocking synergies within the acquisitions that you've done. [Hittite], Linear Tech. Now you're in the midst of a lot unlocking $1 billion of revenue synergies by fiscal 2017, the Maxim acquisition that you completed in 2021, and we can already see some of this unfolding, right, GMSL, Maxim attached to analog A to B connectivity solutions.

We can see the on synergies within the battery management portfolio. We can also see that within the focus on factory automation right, Maxim's leadership and TLC combined with ADI's leadership in signal chain. So where are you in that journey to $1 billion and the confidence level on getting there by fiscal '27 or as the downturn also kind of push out that revenue synergy extraction to maybe fiscal '28?

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

So despite what we've seen in the variability, I think we are still on track for the synergies in 2017. I should get you to write my script. You did a very, very nice job of summarizing where we're gaining traction on the synergies, but we are continuing to see design wins across the portfolio. We are seeing a lot of co-development work with our customers related to the synergies. So we feel very good about where we are on track for the '27 synergy goal.

Harlan Sur - *J.P. Morgan - Analyst*

Any questions from the audience? Almost about out of time, but I did want to ask a question on the US and European chipset builds where you've got fabs in both US and Europe. We are seeing grant disbursements. So what's the status of grant disbursements and timing of incentive tax credits for the analog team.

And more importantly, have you seen an acceleration in customer engagements that are looking to source more of the semiconductor value from the analog team going forward, especially as customers look to not only boost their supply chain, right from a diversification, but also from a resiliency perspective.

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

First, I'll go back onto the [Chips Act] first piece. So at this point, we've got on our balance sheet, about $300 million worth of invest tax credits that will start to. And over time, we have not seen significant amounts of cash where with our year end or off of a different taxes. So look, we'll start to see some of those come in and we're expecting to see about $100 million of that committed in fiscal '25.

We are also going to receive some grant money. We've already been awarded some grant money in Europe. We are in the middle of finalizing our grant process with the US. We expect we'll have more visibility on that in the next quarter or two.

At this date, it hasn't had a material impact on cash for our P&L. We have some minor amounts flowing through our P&L, but I think now little data, it's less intense. So this is a more forward looking for us. Now and clearly what we continue to see with customers, and this is both from resiliency, but just from an overall perspective, as customers are coming to us when you need real domain expertise to solve a complex problem where we excel is the hardest problems, most complicated solutions and delivering stuff performs and lasts. If you look -- you can see in our products, average industrial product less than 15 years.

Harlan Sur - *J.P. Morgan - Analyst*

Well, we're just about out of time, Rich, and Mike, thank you for participation and great insights today, and we look forward to monitoring the execution of the team going forward. Thank you very much.

Richard Puccio - *Analog Devices Inc - Chief Financial Officer, Executive Vice President*

Thanks for having us, Har.

Michael Lucarelli - *Analog Devices Inc - Vice President - Investor Relations and FP&A*

Thanks, everybody.

Harlan Sur - *J.P. Morgan - Analyst*

Thank you.

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