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PRESENTATION

Operator

Welcome to the Q3 2022 Harmonic Earnings Conference Call. My name is Jonathan, and I will be your operator for today's call. (Operator Instructions) Please note that this conference is being recorded. And now I'd like to turn the call over to David Hanover, Investor Relations. David, you may begin.

David Hanover

Thank you, operator. Hello, everyone, and thank you for joining us today for Harmonic's third quarter 2022 financial results conference call. With me today are Patrick Harshman, President and Chief Executive Officer; and Sanjay Kalra, Chief Financial Officer.

Before we begin, I'd like to point out that in addition to the audio portion of the webcast, we've also provided slides for this webcast, which you may view by going to our webcast on our Investor Relations website.

Now turning to Slide 2. During this call, we will provide projections and other forward-looking statements regarding future events or future financial performance of the company. Such statements are only current expectations and actual events or results may differ materially. We refer you to documents Harmonic filed with the SEC, including our most recent 10-Q and 10-K reports and the forward-looking statements section of today's preliminary results press release. These documents identify important risk factors, which can cause actual results to differ materially from those contained in our projections or forward-looking statements. And please note that unless otherwise indicated, the financial metrics we provide you on this call are determined on a non-GAAP basis. These metrics, together with corresponding GAAP numbers and a reconciliation of GAAP, are contained in today's press release, which we have posted on our website and filed with the SEC on Form 8-K.

We will also discuss historical financial and other statistical information regarding our business and operation, and some of this information is included in the press release. The remainder of the information will be available on a recorded version of this call or on our website.

And now I'll turn the call over to our CEO, Patrick Harshman. Patrick?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Well, thanks, David, and welcome, everyone, to our third quarter call. In the third quarter of 2022, Harmonic again delivered excellent business results. Revenue was up 23% year-over-year. New bookings were up 50%. EPS was $0.13 and adjusted EBITDA margin was 13.5%. Both business segments were again solidly profitable and had book-to-bill greater than 1. The cable access segment, which we have recently renamed broadband continues to deliver strong top line growth with revenue up 60% year-over-year. Video segment revenue transformation continues with SaaS revenue up 64% year-over-year.

In mid-September, we updated you on key market trends, our strategy and our enhanced 3-year financial model. Our third quarter results released today further highlight the key points in that presentation and support our confidence in our growth plan. We see robust demand for multi-gigabit broadband and live streaming video. Our associated products and services are winning in the marketplace, and our focused business execution remains resilient despite macroeconomic headwinds.

Taking a closer look now with our broadband segment. We delivered strong financial results and further solidified our technology leadership and growth opportunity outlook. Segment revenue was $91.9 million, up 13% sequentially and 60% year-over-year. Segment gross margin rebounded to 45% and adjusted segment EBITDA margin was 18.4%, demonstrating consistently improving leverage as the business scales. New orders were also strong, contributing to near record backlog and deferred revenue. This sustained growth reflects both a robust broadband market and our strong execution. At quarter end, consumer modems served grew to $10.9 million, up 179% year-over-year, still less than 20% of our existing customers' DOCSIS footprint. We added several new customers during the quarter, bringing the number of customers actively deploying our solution to 85, up 25% year-over-year, and we secured an important new DOCSIS DAA win with an international Tier 1.

We're also making excellent progress with several Tier 1s who have not yet selected us. Aiding us in winning over these new accounts are 2 increasingly compelling technology advantages. First, there's a growing industry consensus that the particular variant of DAA we pioneered with Comcast and other early customers that is virtualized CMTS paired with remote PHY nodes is the most architecturally advantageous and market-proven solution and consequently, the best way to go. Obviously, this growing consensus is good news for us, considering the huge technology and deployment expertise lead we have in virtualized CMTS or remote PHY.

Our second unique advantage, which is increasingly resonating with prospective customers is the way our fiber-to-the-home PON solution is seamlessly converged and integrated in both software and hardware with our DAA DOCSIS solution. This competition from fiber-based service providers continues to intensify a multipronged solution that incorporates fiber on-demand capability is becoming a must-have for our customers. Emphasizing this point, another highlight of the quarter was a significant new fiber win with an existing Tier 1 international cable customer, punctuated by an initial multimillion dollar purchase order.

Complementing our fiber solution, we've also been investing heavily in new DOCSIS 4.0 capability and believe that here again, we are the industry technology leader, which puts us in excellent position to benefit this demand for DOCSIS 4.0 commences in late 2023 and 2024. Putting it altogether, our unique combination of DOCSIS 3.1 DAA DOCSIS 4.0 DAA and 10G fiber, all manage through common cloud-native core software and analytics is simply the right solution at the right time, provided only by our company.

Those of you who had the opportunity to visit the cable industry's premier technology conference in September in Philadelphia saw all of this on display and the tremendous feedback we received from both existing and prospective customers. We left the event feeling even more upbeat about the outlook for our business over the next several years. Referring back to our mid-September Analyst Day, we laid out an aggressive 3-year growth plan that calls for over $800 million of revenue and 28% EBITDA margin in 2025. As we head into the final quarter of 2022 and begin looking ahead to 2023, we remain confident in our ability to deliver on this target and excited about the impact we're having on the global broadband market.

Turning now to our video segment. Here also, we delivered another quarter of solid financial and strategic execution. Third quarter segment revenue was $63.8 million, down 7.1% year-over-year as expected due to the previously discussed movement of a few larger plants orders into the first half of the year and the corresponding Q2 upside. SaaS revenue growth continues to be outstanding, up 64% year-over-year. As Sanjay will discuss momentarily, segment gross margins were again strong. Segment EBITDA was 6.8%, and we're raising our full year segment EBITDA guidance, highlighting our continued focus on profitability as we scale our SaaS business.

As you will recall from our September Analyst Day, our video business strategy has 2 key elements: taking a leading position in the growing streaming sales market, particularly for live sports and maximizing profit from a slowly declining traditional video appliance market. The year-to-date results demonstrate our continued execution of this plan. Specifically, the highlight of the quarter was again streaming SaaS growth, driven principally by larger media accounts expanding their consumer footprints, live sports content rights and usage of our service. We secured several important new SaaS customer wins during the quarter, spanning North America, Latin America and EMEA, expanding our foundation for sustained SaaS growth.

As evidenced by recent demand associated with the upcoming Soccer World Cup, we continue to see live sports streaming and the movement of legacy broadcast workflows to the cloud as attractive and growing opportunities and our associated brand and technology leadership strengthen. While SaaS was the highlight, overall demand, including for video appliances was strong during the quarter with book-to-bill greater than 1 and a solid sales pipeline extending into 2023.

The market seems particularly robust in North and South America, offsetting what we currently see as some possibility of macroeconomic headwind for video in Europe in the coming months, and of course, the loss of our business in Russia. Looking further ahead, we remain confident that our transformation in video to consumption-driven streaming SaaS is working. And then we're on track to achieve the targets we laid out for you at our mid-September Analyst Day. As a reminder, this plan calls for greater than 45% compounded annual SaaS growth through 2025, consistent profitability and a return to mid-teens EBITDA segment margin.

The new wins we've recently secured, the high-profile streaming services we're now powering and our expanding segment gross margins and steady segment profitability demonstrate that we remain on track to achieve these objectives. And with that, let me now turn it over to you, Sanjay, for further discussion of our financial results and our outlook.

Sanjay Kalra *Harmonic Inc. - Senior VP & CFO*

Thanks, Patrick, and thank you all for joining us today. Before I discuss our quarterly results and outlook, I'd like to remind everyone that the financial results I'll be referring to are provided on a non-GAAP basis. As David mentioned earlier, our Q3 press release and earnings presentation includes reconciliations of the non-GAAP financial measures to GAAP that are discussed on this call. Both of these are available on our website.

For the third quarter of 2022, we delivered another period of strong financial results. Before reviewing our quarterly financials in detail, I'll briefly review the key highlights here on Slide 7. We reported September quarter record revenue of $155.7 million, up 23.3% year-over-year, along with strong gross margins of 50.9%. We also generated adjusted EBITDA of 13.6%, up 187 basis points from the prior year and EPS of $0.13.

Our balance sheet remains sturdy with a cash balance of $105.3 million at September 30. We also reported September quarter record bookings of $171.1 million and continue to maintain near-record backlog and deferred revenue of $490.1 million at the quarter end, positioning us well for the remainder of 2022 and into 2023.

Now let's review our third quarter financials in more detail. Turning to Slide 8. As I just mentioned, total company Q3 revenue was $155.7 million, slightly down on a sequential basis and up 23.3% year-over-year. Looking first at our broadband business segment. Revenue for the quarter was $91.9 million, up 13.2% on a sequential basis from Q2 and up 59.6% year-over-year, reflecting both the continued ramp of existing customers and newer customer launches, including modest fiber revenue.

In our video segment, we reported Q3 revenue of $63.8 million, down 16.3% sequentially and 7.1% year-over-year. This decline was attributable to a reduction in our appliance business, including a modest impact from unfavorable foreign exchange rates and a $3 million of shipments that were moved up earlier into Q2 as we discussed in our last earnings call, offset partially by strong SaaS consumption. Our video revenue included SaaS revenue of $8.9 million, up 63.9% from the prior year, ahead of our expectations.

We had 2 customers representing greater than 10% of total revenue during the quarter. Comcast contributed 38% and Vodafone contributed 11% of total revenue. Total company gross margin for Q3 '22 declined 190 basis points to 50.9% compared to 52.8% in both Q2 '22 and Q3 '21. The year-over-year decline was due to increased mix of broadband segment revenue as a portion of total company revenue.

We achieved broadband gross margin of 45% for Q3 '22 compared to 43% in Q2 '22 and 42% in Q3 '21. Broadband gross margin improved both sequentially and year-over-year due to several factors, including our strategic decision to invest in increasing our inventories, enabling us to use more ocean freight rather than airfreight, which is most cost effective. We also saw modest contributions in margins from improvements in freight rates, improved customer pricing and favorable products and services mix. Video segment gross margin was 59.3% in Q3 '22, down 390 basis points sequentially and 260 basis points year-over-year. Q3 '22 was modestly impacted by unfavorable foreign exchange rates. Please note that the period I'm referring to were record video gross margin quarters. We've continued to see a strong overall gross margin improvement trend over the past 2 years as our video gross margins have risen from

54.5% and 58.7% in 2020 and 2021, respectively.

Moving down to the income statement on Slide 9. Q3 '22 operating expenses were $61 million, net of modest foreign exchange benefit, as a result of strong U.S. dollar during the third quarter compared to $61.7 million in Q2 '22 and $54.9 million in Q3 '21. The year-over-year increase was primarily due to increased research and development to support the growth of our broadband business and the ongoing strategic transition of the video segment to SaaS.

Adjusted EBITDA for Q3 '22 was 13.6% of revenue at $21.2 million, comprised of $16.9 million from broadband and $4.3 million from video. This compares to an adjusted EBITDA of $24.3 million or 15.4% of revenue in Q2 '22 and demonstrates year-over-year improvement compared to $14.8 million or 11.7% of revenue in Q3 '21. This all translated into Q3 EPS of $0.13 per share compared to $0.16 per share in Q2 '22 and $0.09 per share for Q3 '21.

We ended the quarter with a diluted weighted average share count of 113.2 million compared to 109 million in Q2 '22 and 106.4 million in Q2 '21. The sequential increase is primarily due to the increase in convertible debt dilution of 2.9 million shares and the dilutive effect of outstanding RSUs and options by 0.7 million shares, both resulting from an increase in our average stock price during the quarter, increased by the issuance of 0.6 million shares to employees for vested RSUs. The year-over-year increase reflects the dilution of our convertible debt by 2.9 million shares and dilutive effect of outstanding RSUs and options by 0.7 million shares, both resulting from an increase in our average stock price during the year and 3.7 million shares due to the weighted effect of stock issued to employees and ESCP shares, offset by the impact of repurchase of approximately 0.6 million shares.

Turning now to the order book. We reported new September quarter record bookings of $171.1 million compared to $140.9 million in Q2 '22 and $114.3 million for Q3 '21. The book-to-bill ratio was 1.1 in the quarter compared to 0.9% in both Q2 '22 and Q3 '21. Book-to-bill was more than 1 for both segments.

Turning to Slide 10. We'll now discuss our liquidity position and balance sheet. We ended Q3 with cash of $105.3 million compared to $121.8 million at the end of Q2 '22 and $128.4 million in Q3 last year. The $16.5 million sequential cash decrease is primarily comprised of $8.2 million cash used in operations, primarily in inventories of $16.4 million and prepaid deposits for suppliers of inventories of $7.4 million. These working capital investments for inventories and related deposits are part of our larger strategy to proactively manage the supply chain landscape, enhancing product availability and providing us flexibility to use a higher mix of ocean freight rather than airfreight, resulting in increased gross margin. We also used $1.9 million of cash and purchase of fixed assets, $1.9 million of cash towards taxes for employees withholding on RSUs vesting and an unfavorable foreign exchange rate impact of $4.3 million.

Turning to days sales outstanding at the end of Q3. DSO was 61 days, same as of Q2 '22 and comparable 54 days in Q3 '21. Our days inventory on hand was 116 days at the end of Q3 compared to 100 days at the end of Q2 '22 and 78 days at the end of Q3 '21. The increase reflects continued investment in inventory as we prepare for heavy shipments during the remainder of this year and into next year.

Regarding capital allocation, our priorities remain unchanged. Harmonic is committed to strategically deploying capital where we believe it can generate value for our shareholders. Our top priority is to drive future growth. As such, we continue to invest in building inventory, which enables us to better manage the supply chain, enabling us to fulfill incoming orders on a timely basis and control inventory transportation costs. At the same time, our capital allocation strategy also considers returning capital to shareholders through share repurchases. The timing and amount of any repurchases will depend on a variety of factors, including the price of Harmonic's common stock, market conditions, corporate needs and regulatory requirements. This balanced capital allocation strategy also takes into consideration anticipated future debt obligations, including our upcoming debt repayment for $37.7 million in December 2022.

At the end of Q3, total backlog and deferred revenue was $490.1 million, up approximately 3% sequentially from $477.8 million in Q2 and up 47% year-over-year from $333.3 million at Q3 '21. This large backlog and deferred revenue reflects strong demand from our large broadband customers and growing video SaaS commitments. Note that approximately 80% of our backlog and deferred revenue has customer request dates for shipments of products and providing services within the next 12 months. As mentioned on previous calls, not included in our backlog is additional contractually agreed CableOS business with 2 of our initial Tier 1 broadband customers. At the end of Q3, this incremental amount was approximately $60 million, down from $96 million last quarter as approximately $36 million went to the purchase of [our assets] and therefore moved into bookings.

Free cash flow was negative in Q3 '22, primarily due to the investments in working capital for inventories and related deposits, as I mentioned earlier.

Now I'll turn to our revised non-GAAP guidance for 2022, beginning on Slide 11. I will also give brief commentary on key changes from our prior annual guidance we gave in August. For the total company for full year 2022, we now expect revenue in the range of USD 612 million to USD 626 million. The midpoint is a slight increase on our prior guidance. Gross margin in the range of 50.6% to 51%, up 75 basis points at the midpoint versus prior guidance due to improved gross margins in both segments. Gross profit to range from USD 310 million to USD 319 million, up 2% at the midpoint versus prior guidance. Operating expenses to range from USD 242 million to USD 244 million, down slightly versus our prior guidance at the midpoint, primarily due to favorable foreign exchange rates.

Adjusted EBITDA to range from USD 79 million to USD 87 million. This represents an 8% increase at the midpoint versus prior guidance. An effective tax rate of 13%, a weighted average diluted share count of approximately 111.2 million, an increase of 1.6 million shares from prior guidance. This is primarily due to increased debt related dilution given the higher average stock trading price. EPS to range from USD 0.49 to USD 0.55 per share. At the midpoint, this is an 8% increase versus prior guidance.

Finally, cash at the end of 2022 is expected to come in between USD 80 million to USD 90 million. The lower cash balance is primarily reflective of $37.7 million debt repayment maturing in December and additional strategic working capital investments, mainly inventory to support our 2023 revenue growth.

Turning to Slide 12. I will review our total company outlook for the fourth quarter of '22. We expect revenue in the range of USD 151 million to USD 165 million, down 1% from the midpoint of previous guidance. This guidance reflects a stronger Q3 result. Gross margin in the range of 51.3% to 52.6% at the midpoint, an increase of 180 basis points versus prior guidance. This reflects higher expected broadband and video gross margins. Gross profit in the range of USD 78 million to USD 87 million, reflecting an increase of 3% from prior guidance at the midpoint. Operating expenses to range from USD 61 million to USD 66 million, nearly flat at the midpoint of prior guidance. Adjusted EBITDA to range from USD 19 million to USD 27 million, up 7% at the midpoint. A weighted average diluted share count of approximately 113.5 million and EPS to range from USD 0.12 to USD 0.18, up 7% at the midpoint of prior guidance.

On Slide 13, I will first review guidance for both the full year and fourth quarter of 2022 for our broadband segment. For the full year 2022, based on our progress to date, we expect broadband to achieve revenue between USD 345 million to USD 350 million, a 2% increase from the midpoint of prior guidance, implying a full year revenue growth of 59% at the midpoint. Given our success navigating capacity constraints through the first 10 months of the year, we are modestly expanding the high end of our outlook. Gross margins between 43.2% to 43.6%. This 60 basis point improvement from prior guidance is due to the reasons mentioned previously, specifically our strategic investments in inventory to reduce freight costs, even as component costs remain high.

Gross profit between USD 149 million to USD 152 million, up 3% from prior guidance at the midpoint, reflecting both higher expected revenues and margins. Operating expenses between USD 100 million to USD 101 million, up 4% versus prior guidance at the midpoint, adjusted EBITDA between USD 55 million to USD 58 million, up 4% from the prior guidance at midpoint, also reflecting higher expected revenue and margins.

For our broadband segment in Q4, we expect revenue in the range of USD 90 million to USD 95 million; gross margin in the range of 46.4% to 47.4%. Gross profit in the range of USD 42 million to USD 45 million, operating expenses in the range of USD 26 million to USD 27 million and adjusted EBITDA to range from USD 17 million to USD 20 million.

Moving to Slide 14. We will review full year and fourth quarter 2022 video segment guidance. Currently, we expect revenue in the range of USD 267 million to USD 276 million, a 2% decrease from the midpoint of prior guidance. Full year 2022 SaaS growth is now expected to exceed our annual SaaS growth expectations of 50%. Gross margins in the range of 60.1% to 60.3%, a 130 basis point improvement versus prior guidance at the midpoint due to improved product mix, partially offset by a continued modest foreign exchange headwind. Gross profit in the range of USD 161 million to USD 167 million, a slight improvement from prior guidance at the midpoint, primarily due to stronger-than-expected Q3 margins. Operating expenses in the range of USD 142 million to USD 143 million, [2.7] better than prior guidance at the midpoint, primarily due to reduced hiring and improved foreign exchange benefit.

Adjusted EBITDA in the range of USD 24 million to USD 29 million, an 18% improvement from prior guidance at the midpoint.

For our video segment in Q4. We expect revenue in the range of USD 61 million to USD 70 million. The broader range for Q4 reflects increased uncertainty in Europe appliance demand and timing of book deals. Gross margin in the range of 58.6% to 59.6%, reflecting a 330 basis point improvement from prior guidance due to improved product mix. Gross profit in the range of USD 36 million to USD 42 million, a slight decrease from prior guidance at midpoint. Operating expenses in the range of USD 35 million to USD 36 million, better than prior guidance at midpoint due to the factors mentioned previously. And adjusted EBITDA to range from USD 2 million to USD 7 million, an improvement from prior guidance.

In summary, during the third quarter, we continued to execute and drive strong momentum in our broadband segment while advancing our strategic transformation in our video segment, which led us to raise our full year adjusted EBITDA guidance for both segments. As a result, we ended the third quarter with near record balances for backlog and deferred revenue. We believe this momentum positions us well for the balance of '22 and into '23, as we continue to execute on our long-term business plan. Thank you, everyone, for your attention today. And now I'll turn it back to Patrick for final remarks before we open up the call for questions.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

All right. Thanks, Sanjay. Look, just before concluding the call, let's review the strategic and execution priorities that have been guiding us this year. For our broadband business, we remain focused on enabling our existing customers to successfully ramp, accelerate deployment and compete. We're also focused on breaking into the Tier 1 operators that we have not yet secured and vitally important, leveraging our fiber solution to expand our addressed market and create additive revenue growth and value.

For video segment, we're driving rapid expansion of our streaming SaaS brand and customer base. We're further extending our streaming SaaS technology and service differentiation, particularly for live sports, and we're leveraging the traditional broadcast appliance business to profitably enable these transformations. In each of these areas, our year-to-date results have been excellent, and we're well positioned to finish 2022 strong and enter 2023 with great market momentum. We're truly excited about the future of our business, and we greatly appreciate your continued support.

With that, I would like to now open up the call for a few questions.

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) And our first question comes from the line of Ryan Koontz from Needham.

Ryan Boyer Koontz ***Needham & Company, LLC, Research Division - MD***

Great. Just a quick clarification, please. About your Tier 1 fiber trials, I know you announced 2 last quarter. And is this a third one this quarter? And how are these kind of scheduled out to ship over the coming quarters?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

I'll take that, Ryan. First, what we've announced here are not trials, but they are at the back end of trials, they're actually purchase order commitments representing planned deployments of a couple of different scales, I would say. And yes, what we're announcing today is a third significant win. The last quarter, we talked about actually a couple of different customers who have selected us and with more of a focus on the domestic market. And we're excited that during the third quarter, we secured our first significant commitment from a Tier 1 international customer.

Ryan Boyer Koontz ***Needham & Company, LLC, Research Division - MD***

That's fantastic. And just maybe stepping back in the big picture here, as we think about cable operator spending, moving away from monolithic legacy systems to next-gen distributed and virtualized like where do you feel like we are in that transition? Or are we maybe 25% to the way shift to next gen? And at what point do you anticipate we might get to see the market surpass 50%?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Well, I think it's an excellent question. There's 2 ways to answer it. I mean one way is what percentage of the operators have kind of embraced and have begun deploying next-gen? And for that, in roughly round numbers, we think something close to maybe 1/3 of the operators not in terms of an aggregate number, but if we look in terms of subscriber base. And there's a nice chart about this back in the Analyst Day deck that we did in September. And it really captures our view of what's happening in the market. We're kind of at the crossing the chasm point. So operators controlling about 1/3 of the global cable operators today, we think, have begun to deploy next-gen architecture. And as I mentioned in my prepared remarks, we think that they're kind of something in the order of a little less than 20% into it.

Then there's the other 2/3 of the cable subscribers in the market. Those operators have yet to really commence next-gen work. And that being said, our pipeline tells a story as well as the feedback at the recent industry event tells the story of really of the chasm beginning to be crossed now. And so we see a lot of activity around that kind of main market, if you will, getting ready, we think, getting much closer to making decisions and moving forward. Let me park here, did that answer the question?

Ryan Boyer Koontz ***Needham & Company, LLC, Research Division - MD***

Yes, you did. Just one more quick clarification. So of the third of operators that have shifted, are they still spending much on legacy? Or have they largely wound that down and are kind of in a pause and ramp mode there?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Yes, it's hard to generalize. There is definitely still spending on legacy. I mean, what's the best way to think about it. Think about an operator that is maybe operating in 2 or 3 cities. Even if they're going as fast as they can on next gen, they may still have an immediate kind of hole to plug in the part of the network being served by legacy equipment. I'm sure you can imagine that. So we think that, for sure, there is some spending on legacy going on even under the umbrella of those who have embraced the next-generation stuff. But what we think the best spend is in general kind of being minimized and is on an as-needed as absolutely needed basis.

Operator

And our next question comes from the line of Simon Leopold from Raymond James.

Simon Matthew Leopold ***Raymond James & Associates, Inc., Research Division - Research Analyst***

A couple, if I might. The first one is you did host the analyst meeting back in September and provided us with some targets for 2025. And I guess I'm just sort of wondering, in 2021, you had given us a target of $830 million for 2024. I guess I just want to put that in perspective. Should we still be thinking about $830 million as sort of a milestone midpoint to the 2025 targets? Or should we sort of think about how to extrapolate between '23 and '25. Just a little bit of advice on how to consider that.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

We don't want this, what I'm not to say to be construed strict guidance. But we see it more or less is kind of linear growth out to 2025. That is we don't expect any significant knee in the curve, I don't know, 1.5 years out. We've been growing strongly, if you look past back over the past 2 years, and we expect that growth rate as we get a little bit larger to maybe be tempered a little bit, hence, the aggregate growth rate that we quoted. But we expect the growth to be more or less linear between now and 2025.

Simon Matthew Leopold ***Raymond James & Associates, Inc., Research Division - Research Analyst***

That's very helpful. And then not to get too deep into the technology weeds, if we can avoid it. But I've been hearing some suggestions that the industry is harmonizing around a remote PHY architecture and not the MAC-PHY choice and I guess 2 parts is, one, is that true? And 2, what are the implications, if any, for Harmonic?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

I would say, yes, it's the first part. There is a growing consensus, which is not complete. There's still an active dialog in the industry, but I would say there is a growing consensus that in terms of overall efficacy, technical as well as the scale and proven and volume advantages. There is a kind of a convergence of opinion around the benefits of virtualized CMTS and Remote PHY. And to the extent that that happens, it's very good news for Harmonic. Now I want to pause and say we have had an active Remote MAC-PHY. So the risk is sounding like I'm talking on both sides of my mouth, we are prepared and capable of supporting MAC 5. That being said, when you think about just the bivariate of the architecture, we are miles ahead of the rest of the industry in both terms of technology understanding, know-how, deployment experience, et cetera. And so to the extent that the industry really converges on Remote-PHY is the architecture of choice. That strengthens our leadership position in the market even further.

Simon Matthew Leopold ***Raymond James & Associates, Inc., Research Division - Research Analyst***

That's very helpful. And that's the kind of answer I was trying to get a good understanding of. And then just one last one. You gave a couple of updates, I believe, on the call about some wins in the fiber-to-the-prem architecture. Is this something where when it gets is there sort of a threshold where you would break it out in terms of dollar contributions? Or how should we be thinking about the implications and modeling for the FTTP traction?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Yes. Well, going back to the Analyst Day, we did give a 2025 target, and we're starting from a small base. And from a multiyear perspective, I think that, that gives you a picture of where we think we're going over the next 3 years. Indeed, it's relatively small numbers today. I think in that chart, if memory serves correct, Sanjay, we estimated maybe $10 million of revenue. We certainly expect order input well above that this year, and so Simon, it remains to be seen when we begin to break that out as it becomes short term a bigger part of the business. But to be clear, we do anticipate at some point breaking it out as it gets to the right scale and the 2025 target that we've given, I think, gives you an idea of where we think we're headed.

Operator

And our next question comes from the line of Steven Frankel from Rosenblatt Securities.

Steven Bruce Frankel ***Rosenblatt Securities Inc., Research Division - Senior Analyst***

So just a follow up on this theme of the industry coalescing behind Remote PHY. To what extent have you seen that either accelerate orders from existing customers or maybe up the urgency among people that were in the pipeline?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

No change, Steve, with existing customers. I mean, frankly, existing customers were already there and they're doing their thing. So this is for those who maybe on the call warrants, first in all of this, there's a couple of permutations on DAA. To be clear, I think everybody in the industry was focused on DAA, there's a couple of permutations and there were some customers out there, I'd say, on the fence between the different permutations. I don't want to suggest, as we discussed a moment ago, that, that debate or discussion is currently is over. But indeed, more of those who are on the fence, I think, are leaning towards Remote PHY. And Steve, I think part of the conversions is the urgency. We are seeing competition not only in the U.S. but really around the world particularly from fiber, but also from fixed wireless broadband competitors. It's just it's becoming a much more competitive market for traditional cable operators.

And so I think some of them are deciding the time to kind of evaluate different technology alternatives is over and the time to begin planning to get on with it is at hand. And if you're an operator feeling some amount of urgency, I think looking to the variant of DAA that has been most widely deployed, it's most mature, has got kind of the most miles underneath. that's certainly advantageous. And that speaks to some of the advantage that I think we're bringing to the market as well. We think that we're in a better position, frankly, above and beyond the technology itself as a partner that can help an operator move quickly. We think we are the premier partner in the industry right now. So it's all still kind of a real time, but yes, we're excited about opportunity to help both existing and new customers really meet the challenge of their fiber and wireless based competition, and we think we've got the tool set to do it.

Steven Bruce Frankel ***Rosenblatt Securities Inc., Research Division - Senior Analyst***

Okay. And in the last few quarters, you've kind of characterized your installed base in broadband as kind of going through a shakedown crews for a bit and figuring out DAA and then accelerating deployment. Could you give us some color on kind of how you think those Tier 1s are today? If you had a material movement to more of those customers getting through the shakedown crews and kind of putting the foot on the accelerator in terms of deployment now?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Well, I think it's the other side of the coin of what we just discussed. We closed, as you saw, a significant new Tier 1 international during the quarter. We're excited about that. And the progress with other Tier 1s that haven't yet made decisions on next-generation architecture. I would characterize it as very good. So I think the urgency is that they feel, yes, they have fantastic broadband businesses. And I think that understandably, they want to work to secure them. I think that there's been a real push to understand the architectural variance and to make decisions and begin to get on with it. So I earlier referenced the crossing the chasm kind of idea. I think we're not quite to the other side of it. But I think we're substantially closer than we were when we spoke to 3 months ago. And as we did in our Analyst Day in September, we expect 2023 to be an important year of a number of significant decisions being made, and we hope several new scale rollouts at commencing.

Operator

And our next question comes from the line of Tim Savageaux from Northland Capital Markets.

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

And congrats on the results, especially on the gross margin side, which is kind of where I wanted to start focusing in broadband, in particular, and Sanjay, you gave us a couple of drivers for the strength in Q3, but you're guiding to a further uptick in Q4 into the high 40s. I wonder if you could talk about what's driving that? I mean, as I look at your results, it seems like you've had an uptick in kind of router or software revenue within cable access, maybe getting a few of your new Tier 1s off the ground here. Obviously, you were strong in Europe this quarter. So I wonder if you can characterize that both for the quarter and the outlook in terms of, but especially the outlook in terms of broadband gross margin.

Sanjay Kalra ***Harmonic Inc. - Senior VP & CFO***

Sure, Tim. So as I said in the prepared remarks, the most important aspect of our gross margin improvement in Q3 and which also is the reason why Q4 guidance is up, is that we are deploying our capital mostly in investing in inventories and related deposits, as I mentioned. And that's basically driving a lot of gross margin improvement. We are able to use more of an ocean freight given the flexibility we have versus the air freight. I mean ocean freight, air freight, the costs are hugely different. They're like one is 8x of the other approximately. That said, we have also seen modest improvements in the freight rates coming down. There are some marginal price increases as well.

So overall, if you look at the entire mix of all these factors, we saw that in Q3 and substantially in Q4, there's the next step further down as we invest more in inventories. And to your point, more Tier 1s are they increasing the ramp? Yes. And that's also contributing. And the mix is working in our favor as well. And this is exactly what we guided right at the beginning of the year, Tim. Our Q1 was supposed to be weakest, and we were expected to march to the highest gross margin quarter by Q4. And it played out exactly as we envisioned and exactly for the same reasons. And we are glad our capital deployment is working effectively to give us those benefits.

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

Great. Thanks very much. And without addressing the elephant in the room here over the last couple of questions, I will ask about your new Tier 1 win that you mentioned at the Analyst Day. And I just want to make sure I have this right. I was looking for a footprint update in terms of your total subscriber footprint that you deferred to this call from the $60 million. So hopefully, you can provide that. Or is that Tier 1 is that relevant? Is it a virtualized CCAP, DOCSIS deal? Or is it a fiber deal? Or is it both? I've kind of heard both here during the call, Fiber one was an existing Tier 1 customer internationally. Is that separate and distinct from what you talked about at the Analyst Day? And can I get that updated footprint number?

Sanjay Kalra ***Harmonic Inc. - Senior VP & CFO***

Yes. I don't have an exact updated footprint number for you. So let me come back and take it in turn. So we announced in the Analyst Day, and we repeated here that earlier in Q3, we secured a new DOCSIS win with a new international Tier 1 cable operator. And indeed, I'd say I don't know exactly off the top of my head, let's say, a couple, several million homes passed, Tim. So that's adding on to, I don't think we said around 60. So that's, let's call it, a 5% or so increase to the address to footprint. And that's just in cable, okay?

Full stop. Second, and distinct from that, new news on this call today is that with a previously kind of announced, if you will, at least from a numbers point of view, international cable operator, not the one I've just mentioned, but one that we secured business with prior to 2022. That customer has now, in addition to rolling out DOCSIS with us, has embraced our fiber-to-the-home PON solution. They're going to begin rolling that out as well in a converged kind of way, and they've given us a first substantial multimillion-dollar order for that fiber business. Does that make sense? Does it clarify?

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

It makes perfect sense. And you kind of hinted at it a couple of times, but in the past, you've talked about kind of assessing where your group of Tier 1s are with regard to moving to meaningful or full deployment. And I think now you have 10, maybe it's about half. Does that remain the case? Or have you seen some progress there? And that will be it for me.

Sanjay Kalra ***Harmonic Inc. - Senior VP & CFO***

We've seen that, Tim. I mean the path we are marching on in terms of the growth this year, we are approximately 60% up year-over-year. I think all that entails the ramp of our existing Tier 1s, and that's playing out as we planned and anticipated.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

To the specific question, Tim had, yes, I think that in terms of announced, well, it's 10 Tier 1s globally. that we have won, that is right. And now a couple of them have also given us scale of fiber-to-the-home. And so we penetrated a couple of them, not only with the DOCSIS solution but with the fiber solution. And to be clear, our objective over time is to penetrate all of them. Our belief is that over time, fiber will become a weapon or a tool, if you will, in the portfolio of every cable operator as they compete. And while our ambitions in fiber are not limited to cable operators, certainly within cable and in particular, with the Tier 1s that have already deployed our DOCSIS solution, our objective is to have them embrace our fiber solution as well. So we'll talk about our progress in that dimension as well as winning new accounts outright.

Operator

(Operator Instructions) Our next question comes from the line of George Notter from Jefferies.

Kyle P. McNealy ***Jefferies LLC, Research Division - Equity Analyst***

This is Kyle on for George. I was interested that you mentioned investing in inventory makes sense given the revenue growth, but we've also heard that some areas of supply chain are getting modestly better. Can you tell us how much of this inventory investment is directly related to revenue growth? And how much might be still related to protecting yourselves for the supply chain? Or could it be the case that you're reacting to a better supply chain and that might be an offsetting factor? Just a little bit more about the moving pieces of inventory.

Sanjay Kalra ***Harmonic Inc. - Senior VP & CFO***

Sure. Kyle, and first thing I'll say that the investment we are making in inventories is purely how we -- is helping our gross margins purely in sense of how we transport the inventory to us. Let me be very clear. The costs of inventories still remain high. Once the costs go up for from our suppliers, it's very hard to see them going down. So they do get big into standard costs and costs get elevated, and they remain there. What else can we do to bring it down, and that's exactly in our control. That's what we are deploying our capital to. So it's primarily the freight benefit, which I mentioned. And other than that, yes, we are seeing modest improvements in the confluence of things. Price increases, we are also seeing software and services mix improvement. All these are contributing to it. That said, going back to the increase in revenue question you asked, definitely, this investment in inventories is giving us an opportunity to address the strong demand we have, the strong backlog we have and to shift the products on time to the customers.

Operator

And our next question is a follow-up question from Ryan Koontz from Needham & Company.

Ryan Boyer Koontz ***Needham & Company, LLC, Research Division - MD***

Thanks for quick follow-up. You mentioned European macro risk there and obviously you had a really great quarter in Q3 here. How should investors think about the risk in Europe, barring an all-out spreading of the war. But just given the energy crisis, what kind of insights can you share with us about the demand picture in Europe next year?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Right, we're not economists. Let me say that first and foremost. To date, we haven't seen any major deterioration. And particularly on the broadband side, the competition is as intense as it is anywhere else in the world. So our current perception is that certainly the broadband part of what we do, we think is going to be relatively immune or macro headwind resistant. We think we may be slightly more susceptible on the video side of our business, slightly higher percentage of our video business happens in Europe, about 30%. Europe, Middle East and Africa is one consideration. And another perhaps slightly more subject to economic macroeconomic headwinds.

Although historically, our video business as well has been somewhat resistant to more challenged consumer spending. So where we are is we have some uncertainty. You've seen that we've given a wider range on the video business for the fourth quarter. That's really simply a reflection of the uncertainty that we have. Our current sales pipeline, the recent orders that we saw in Q3, none of that points to any significant challenge, but we do want to highlight that we see some potential risk, and there's nothing for us to do except for to continue to watch that and execute as aggressively as we can on the opportunities that we do have in front of us.

Operator

And this does conclude the question-and-answer session of today's program. I'd like to hand the program back to management for any further remarks.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Okay. Well, thank you very much all for joining us today. We're pleased to report a solid quarter. We're excited about our momentum. We appreciate your interest and support, and we look forward to driving another strong quarter to talk, thanks very much. Have a good evening.

Operator

Thank you, ladies and gentlemen, for your participation in today's conference. This does conclude the program. You may now disconnect. Good day.