

Ladies and gentlemen, thank you for standing by. Welcome to the Qualcomm Second Quarter Fiscal 2020 Earnings Conference Call.

At this time, all participants are in a listen-only mode. Later we'll conduct a question-and-answer session. [Operator instructions] As a reminder, this conference is being recorded, April 29, 2020. The playback number for today's call is (877) 660-6853. International callers, please dial (201) 612-7415. The playback reservation number is 13700396.

I would now like to turn the call over to Mauricio Lopez-Hodoyan, Vice President of Investor Relations. Mr. Lopez-Hodoyan, please go ahead.

Mauricio Lopez-Hodoyan

Thank you and good afternoon, everyone. Today's call will include prepared remarks by Steve Mollenkopf and Akash Palkhiwala. In addition, Cristiano Amon, Alex Rogers and Don Rosenberg will join the question-and-answer session.

You can access our earnings release and a slide presentation that accompany this call on our Investor Relations website. In addition, this call is being webcast on qualcomm.com and a replay will be available on our website later today.

During the call today, we will use non-GAAP financial measures as defined in Regulation G, and you can find the related reconciliations to GAAP on our website. We will also make forward-looking statements, including projections and estimates of future events, business, industry trends or business or financial results. Actual events or results could differ materially from those projected in our forward-looking statements.

Please refer to our SEC filings, including our most recent 10-K, which contain important factors that could cause actual results to differ materially from the forward-looking statements.

And now to comments from Qualcomm's, Chief Executive Officer, Steve Mollenkopf.

Steve Mollenkopf

Thank you, Mauricio, and good afternoon, everyone. This sudden and dramatic change in how we are living today has impacted nearly every citizen on the planet. On behalf of the 37,000 people in the Qualcomm family, I would like to extend our best wishes around the world, as we collectively manage through this unprecedented time.

The global stay-at-home orders highlight the critical role that broadband has played in facilitating remote workforce, distance learning, entertainment, telemedicine, communications and many other things. With billions of people around the world using Qualcomm technology, our mission to invent and commercialize breakthrough wireless technologies like 5G has been reinforced and amplified.

Over the last three months I have seen countless examples of our resilient and strong culture, working together to solve the daily challenges we face. Our response to the pandemic has been evident in the exceptional execution of our team on all fronts. In Q2, we transitioned to a totally different working environment with the safety of our employees as our highest priority.

As a result of the many operational changes we have made over the last several years, we were able to respond quickly when the work-from-home orders began in mid-March with minimal disruption to our operations. Importantly, we were able to limit our on-site essential workforce to a very small number and remain on schedule with our product commitments.

From an engineering and operations perspective we have maintained very high levels of productivity. We continue to advance the 5G road map and support customers while meeting a very complex set of R&D and supply chain requirements.

We have also implemented remote access to labs, transition to cloud-based collaboration and enabled remote device testing without the need for physical access. We were also able to mitigate the COVID-19 impact to our global supply chain.

Despite the challenging environment, where in Q2, we estimate the overall handset market was down approximately 21%, our Q2 non-GAAP earnings of \$0.88 per share was at the midpoint of our guidance range we gave in early February in the early stages of the pandemic.

Our QCT growth drivers of 5G design wins along with higher share of dollar content are very much intact as you can see in our revenue per MSM and as virtually all our 5G design wins continue to be powered by our RF front end solutions.

In our licensing business, we have now signed more than 85 5G license agreements, up from 80 license agreements last quarter. As expected, we recently entered into new long-term global patent license agreements with two leading Chinese handset suppliers OPPO and Vivo to cover 5G multi-mode mobile devices.

Turning to the handset market. Fiscal Q2 China demand saw a sharp decrease coinciding with COVID-19 restrictions followed by month-over-month growth as restrictions subsided. This provides a basis to model rest of world handset demand trends.

As I mentioned earlier, the overall handset market was down approximately 21% in the March quarter, principally from the China impact. In the June quarter, we estimate the overall handset market to be down approximately 30%, driven by the impact of shutdowns in the rest of the world while benefiting from the rebound we are seeing in China. Total demand will depend on the speed of the economic recovery. However, we see no change in our calendar year 2020 5G smartphone forecast.

As we look to the second half of calendar 2020, while there are a few regions with minor delays in 5G network deployments. Overall, 5G is progressing as planned and we continue to be well positioned to drive the rapid adoption of 5G globally.

In closing, Qualcomm is in a strong position and on track with our industry-leading product road map. We continue to add people in key areas and we are executing well with a strong balance sheet.

I would like to turn the call over to Akash, where he will provide more detail in his prepared remarks.

Akash Palkhiwala

Thank you, Steve and good afternoon everyone. Prior to addressing our second fiscal quarter results I want to echo Steve's thoughts and thank our employees' customers and suppliers for their commitment and partnership during these extraordinary circumstances. Our second fiscal quarter results demonstrated strong performance in both QCT and QTL despite the challenging economic environment. We delivered total revenues of \$5.2 billion and non-GAAP earnings per share of \$0.88, which was at the midpoint of the guidance range we provided in February. QTL delivered revenues of \$1.1 billion and EBT margin of 63%, both consistent with the midpoint of our guidance.

We have now entered into new long-term global patent license agreements with OPPO and Vivo. Our ability to finalize these 5G multimode agreements in a challenging environment reiterates the strength of our IP portfolio and the relationship with these customers. In the second fiscal quarter, due to the spread of COVID-19, we saw a reduction in 3G, 4G, 5G handset shipments of approximately 21% compared to our prior expectations and on a year-over-year basis.

This decline was based on two factors. First, pronounced weakness in China in late January and February, followed by a substantial recovery exiting the quarter. And second a decline in demand in many other regions globally starting in March. This negative impact on QTL was partially offset by a benefit related to updates to previous royalty estimates and favorable mix.

In QCT, we delivered revenues of \$4.1 billion, MSM shipments of 129 million units and EBT margin of 16%, which was at the midpoint of our guidance. QCT revenues and EBT increased by 13% and 39% sequentially. This reflects the benefit of the first wave of 5G flagship launches, increased content from our RF front end chipset solutions and improved gross margins. In addition, we saw strength in our IoT and networking products due to increased demand for connectivity in this work-from-home environment.

Consistent with our expectations, our results included a greater than 50% increase in RF front end revenues on both a sequential and a year-over-year basis. Our total non-GAAP combined R&D and SG&A expenses of \$1.7 billion was below the low end of our guidance range including savings in marketing and travel expenses.

With that, I'd like to turn to Global 3G, 4G, 5G device forecast. Given the continued uncertainty around the timing and the pace of the resolution of COVID-19, our third fiscal quarter forecast is based on a planning assumption of approximately 30% reduction in handset shipments relative to our prior expectations. This planning assumption is based on two drivers. First, China sales for the quarter gradually improves from the exit rate of the March quarter; and second, other regions see a recovery starting in June, which is modeled based on the trends we are seeing in China. Our forecast for the first half of 2020 implies a reduction of approximately 10% to the calendar 2020 total device forecast. However, total devices in the second half of 2020 will depend on the speed of the economic recovery.

Turning to 5G device forecast. Launches across all regions remain on track. While we expect some minor changes to the launch timing and sell-through of certain devices, our calendar 2020 estimates remain unchanged at 175 million to 225 million units.

Now, let me walk you through our third fiscal quarter financial guidance. We currently estimate revenues of \$4.4 billion to \$5.2 billion and non-GAAP earnings per share of \$0.60 to \$0.80. This guidance includes a greater than \$0.30 adverse impact attributable to the reduction in handset shipments due to COVID-19.

Given the uncertainty around the time and the scale of the economic recovery, we are providing a wider-than-normal EPS range for the quarter.

In QTL, we estimate third fiscal quarter revenues of \$750 million to \$950 million and EBT margin of 50% to 56%. This guidance reflects a normalized run rate of \$1 billion to \$1.2 billion adjusted for the impact of lower handset shipments due to COVID-19.

As a reminder, our third fiscal quarter forecast for QTL does not include revenues from Huawei. In QCT, we estimate revenues of \$3.6 billion to \$4.2 billion, MSM shipments of 125 million to 145 million units and EBT margins of 14% to 16%. Our guidance reflects the latest demand signals from our customers as they contemplate the global impact on device sales and reconcile their supply chains to the lower sell-through. We expect revenue per MSM to decrease sequentially, reflecting the normal seasonal mix shift, following the 5G flagship handset launches in our second fiscal quarter.

We anticipate third fiscal quarter non-GAAP combined R&D and SG&A expenses to be approximately flat on a sequential basis. We returned approximately \$2.3 billion to stockholders during the second fiscal quarter, including \$705 million in dividends and \$1.6 billion in stock repurchases. Additionally, we announced a 5% increase to our quarterly dividend to \$0.65 per share.

Given the current economic landscape, we have performed scenario planning with a focus on liquidity and we will continue to evaluate our cash flow and capital policy as the situation evolves. In these challenging times, we are glad to have a strong balance sheet, liquidity position and debt rating.

Looking forward, our top priority is the health and safety of our employees, and the communities in which we operate. Our business strategy remains unchanged. We remain confident in the long-term growth opportunities, including 5G adoption, RF front-end content capture, and the expansion of our technologies and adjacent platforms. Thank you.

And I'll now turn the call back to Mauricio.

Mauricio Lopez-Hodoyan

Thank you, Akash. Operator, we are ready for questions.

Question-and-Answer Session

Operator

Thank you. [Operator Instructions] Our first question comes from Mike Walkley with Canaccord. Please proceed.

Mike Walkley

Great. Thank you and congratulations on the strong results in a tough environment. Question's more just big picture. Back in February, before COVID-19 was seen as expanding more around the globe management indicated they expected two inflection points based on timing of 5G launches. Just given your ongoing discussions with customers, do you still see a second inflection point for 5G later this year? Or is it more pushed maybe exiting the year and into calendar 2021? Thank you.

Steve Mollenkopf

Mike, its Steve and thank you. The – in terms of overall timing of handset launches, I would say in general, we're seeing people keep the same slots that they've talked about, been a lot of intensity to maintain those schedules. My guess is you'll see things move around a little bit, because of just people dealing with the environment they're dealing with. But in general, I don't think you're going to see big changes in that. Certainly, for us to reiterate our 5G unit call for the year. I think hopefully that helps you get a sense for how we feel about the second inflection point.

Mike Walkley

Great. Thanks, Steve. Just for my follow-on question then. With your Q2 guidance certainly appears based on your 30% cut on the macro that you're gaining share in terms of MSM shipments strong in terms of that base. Are you seeing maybe what the strength of your portfolio and execution opportunity to gain share as the year plays out? Thank you.

Steve Mollenkopf

Yeah. I think there's a couple of things. I think share picture is pretty good. Assuming – if you use the market assumption that we have my guess is you'll probably come to – you'll probably be surprised on the upside in terms of, how we look in terms of the financials. One key component, I think gross margins continues to be a good story and would be sequentially as well for us. So I think in general with the exception of a big dip in the market, we still like those factors that we're looking at.

Operator

Thank you. Our next question comes from the line of Samik Chatterjee with JPMorgan. Please proceed with you question.

Samik Chatterjee

Hi, good morning – good afternoon. Thanks for taking my question. So it's good to see you reiterating the 5G volume outlook. Just wondering, with the

weaker macro that everyone's expecting are you – what are you seeing in terms of pricing for handsets from the OEMs themselves particularly in China as that market is recovering. If you focus on 5G handsets are you seeing them become more aggressive in terms of pricing? And what implications can that have on the supply chain?

Akash Palkhiwala

Hi, Samik its Akash. Yeah, it's clearly true. The OEMs are being very aggressive. We had a set of launches planned before COVID and the OEMs were able to execute on all those launches in this environment. And if you look at some key metrics that came out of China in the month of March 30% of the devices that were sold into the channel were 5G devices. So that's really much stronger than even we had expected. And so we're seeing tremendous traction across tiers, across OEMs and looking forward to it.

Cristiano Amon

Samik, this is Cristiano. I just want to – also there's another data point, which is worth reiterating. 71% of all models launched in China is 5G. That shows that the market is really preparing for 5G broad penetration across all tiers.

Samik Chatterjee

Got it. And if I can just follow-up on the MSM shipment outlook that you have, which is roughly flat quarter-on-quarter, just wanted to understand that would generally imply that you're seeing order trends remain fairly stable start to improve as you exit – enter into 2Q. So just wanted to understand, if that's fair just given that even with the kind of drop-off in volumes in terms of sell-through you're kind of guiding to flat quarter-on-quarter shipment volumes?

Akash Palkhiwala

That's right. We – there's a little bit of a seasonality. We typically see a slight bump between the quarters. So we're seeing that as well. But even in this environment, we continue to see the strong order pipeline is very good for us too.

Operator

Thank you. Our next question comes from the line of Chris Caso with Raymond James. Please proceed with your question.

Chris Caso

Yes. Thank you. Good afternoon. I guess, the first question is about, how your view has changed versus 90 days ago. You mentioned in your prepared remarks, the 30% reduction. Could you walk us through that bit of about how you got to that assumption? It sounds like there's a different assumption between China and the rest of the world. And as we go into the second half, do you -- are you -- to the extent you have forecast right now expecting some improvement on that as economies start to open up?

Akash Palkhiwala

Yes. Hi, Chris, it's Akash. So the way we looked at the third fiscal quarter for us is we kind of focused on the -- what we saw in the second fiscal quarter, which was we saw weakness in China earlier in the quarter really starting from late January all the way through February, but a strong recovery exiting the quarter. And then outside China, we saw weakness exiting the quarter.

And so we use that as the starting point. And our framework for how to model the June quarter was to use the exit rates and apply the China recovery model to the rest of the world. So as you think about the June quarter the 30% decline that we're expecting in handsets it's a combination of China being not as weak given that they've already gone through a substantial recovery and then the rest of the world seeing more weakness.

As you look beyond the third fiscal quarter, it's really kind of -- it's uncertain at this point as to how and when the recovery happens, but if you look at the 5G number, which is a leading indicator for our business feel very comfortable with the full year guidance. And so we are reiterating the guidance of 175 to 225 and 225 million units for the calendar year.

Chris Caso

Okay. Understood. Second question is on revenue per MSM. And it seemed like that was consistent with what you said previously that seasonally the mix comes down as you go into the June quarter. What about as you go into the second half of the year? You've got some new flagship ramps as you go to the second half of the year and I'd imagine that 5G penetrates some new price points there. What do you expect the trend to be in revenue for MSM as you go to the second half of the calendar year?

Akash Palkhiwala

Yes. So fundamentally nothing has changed versus the guidance we have previously given you. As we go from 4G to 5G, we feel like there's an opportunity for us on the core chipset ASP side, which you've now seen the

evidence of. And then on top of that also on the RF front end attach, which adds to the ASP.

In addition to that what we've now seen in the March quarter results and in our June quarter guidance as well has implied a very strong gross margin performance. So combined the ASP increase with the gross margin strength really kind of delivers for us on the bottom line. And so from a framework perspective, as we look at the rest of the year and the other OEMs that framework should still hold.

Operator

Thank you. Our next question comes from the line of Blayne Curtis with Barclays. Please proceed with your question.

Blayne Curtis

Hi, guys. Thanks for taking my question. Maybe I'm confused here. I'm just curious you're taking a 30% haircut. And I thought when you're explaining QTL; you said the market would be down 30%. So if you could just clarify that that would be helpful.

And then I guess the second part of the question, you signed these two new agreements. I think you noted in your filing you've seen a headwind with the royalty rates in terms of customers just taking the essential patents. I'm just curious if that's what these deals are. And if you can just comment on the body of your patent portfolio the ones that are just taking essential patents versus all your patents?

Akash Palkhiwala

Yeah. Hi, Blayne. From a forecast perspective, the way we forecasted QTL for the June quarter is with the market reduction of 30%, we -- if you think about a normal run rate for the QTL business, it would be in the \$1 billion to \$1.2 billion range midpoint of \$1.1 billion. We applied the handset market reduction of 30% to that to get to a range of -- range with the midpoint of \$850 million for QTL. So it's pretty straightforward methodology really reflecting the weakness in market on the revenue guidance.

Alex Rogers

And Blayne, this is Alex. Look QTL is in a really good position. We expected to get the OPPO and the Vivo license agreements negotiated and signed and we did. So those are long-term worldwide SEP agreements covering multimode products. Those agreements are consistent with the \$1 billion to \$1.2 billion run rate absent COVID-19. And so we basically got all of the top

OEMs, but Huawei. Any major OEM is fully signed up. And so for the next number of years we don't have any renewals that -- so it's a ways out.

So I don't see the SEP agreements that we've signed as being subject to headwinds. I actually kind of see it the opposite way around. We launched the 5G licensing program back in 2017 and we have executed really well on it. And come to a position where we're really in a good position with one negotiation with Huawei still ongoing.

Blayne Curtis

Great. Thanks.

Operator

Thank you. Our next question comes from the line of Tal Liani with Bank of America. Please proceed with your question.

Tal Liani

Hi, guys. I have two questions. Now the first one is pricing -- MSM pricing, it was \$23 two quarters ago, then went up to \$32. And now you're guiding implied for \$29. So the question is what are the puts and takes here? What are the factors that are driving it up so much from only two quarters ago?

And then the second question is, just if you can give some color on your assumptions next quarter. You said, that unit -- for QTL you said that unit shipments you're assuming, it's 30% below your previous guidance. What does it mean? What kind of assumptions do you have for the environment next quarter? Thanks.

Akash Palkhiwala

Hi, Tal. On the revenue per MSM trend, going from our fiscal first quarter, the December quarter to fiscal second quarter, as we had outlined previously, the key drivers there were three factors. First is, the transition from 4G to 5G helping us on the chipset pricing side, the core chipset. Second is RF front end design traction on top of that, along with the 5G launches. And then third is a typical seasonal mix shift that works in our favor when you go from the December to the March quarter, because that's when our new premium and high-tier chips come out and several of our OEMs launch their new phones.

When you go from -- so we outlined these assumptions and we delivered on those results. I'm extremely happy that we were able to do that along with expanding our gross margin percentage. When you look forward to the June

quarter, one of those three factors that I outlined for the March quarter changes, which is the mix shift towards premium and high-tier devices.

So you kind of have a change in that which reduces your revenue per MSM a bit, but it's more a function of which chips are being sold in that quarter rather than a fundamental change in the business. We're still continuing to see extremely high revenue per MSM, given our historical trends and strong gross margins on top of it.

Tal Liani

And is this 29 -- is the high 20s the new environment we need to get used to going forward, going from kind of low-20s to high-20s?

Akash Palkhiwala

So we're not really kind of guiding this number going forward. But if you go back to the framework that we've given, which is, we expect with 5G to see an increase of 1.5x from where we've been in the past, that would lead to a framework very similar to yours.

Tal Liani

Got it.

Akash Palkhiwala

And then on your second question on QTL, the forecast really is -- we're looking at the midpoint of our normal revenue guidance range of \$1.1 billion and the 30% is what we're seeing in terms of reduction of handsets. And so, we're applying that to the overall forecast that we had prior to it, which kind of reflected or was reflected in the annual guidance of 1.8 billion units that we'd given, which was roughly flat for the calendar year. So you should think of it as that's reflective of a market that was similar to last year and we are taking a reduction off of that.

Operator

Thank you. Our next question comes from Ross Seymore with Deutsche Bank. Please proceed with your question.

Ross Seymore

Hi, guys. Thanks for letting me ask a question. I want to start out on the QCT side. Akash, you did a great job in QTL of kind of saying what the moving parts were in the quarter for June guidance, especially relative to the 30% reduction in units. If I take that \$0.30 hit to EPS that you guys said

COVID impact, is that just on the QTL side? Or are there some puts and takes you could walk us through on the QCT side as far as the general market weakness might be applying to Qualcomm as well?

Akash Palkhiwala

Sure, sure. So, Ross, we outlined an impact of greater than \$0.30 and it's a combination of QCT and QTL. So I think you've got the math on QTL. It's really taking the \$1.1 billion midpoint and comparing it to our guidance midpoint of \$850 million. The delta of \$250 million is a part of that \$0.30 calculation.

On the QCT side, we looked at a couple of data points. One is, kind of, how have the signal's changed bottoms-up from the OEMs that we've been receiving over the last three or four weeks, which kind of reflects the weakness they're seeing in the sell-through. We also looked at our OEMs and what their sell-through has been in certain regions where we have higher share. And it's a combination of those factors that we use to estimate the impact on QCT.

Ross Seymore

Got you. And I guess, as my follow-up, just going to the QTL side, one housekeeping item and then a kind of a bigger picture question on this. How is it relatively in line with your \$1 billion to \$1.2 billion estimate if the market was 20% weaker in the March quarter? And then any sort of updates on the Huawei negotiations, now that you successfully got the OPPO and Vivo side done? And then finally anything on the FTC.

Akash Palkhiwala

Yes. So on the QTL side for the March quarter, there are a couple of things that went in our favor. First is the weakness that we saw, the 21% on the handsets. If we look at the mix of the regions on that weakness it was more -- much more so in China and less in other regions. The impact in other regions came later in the quarter. And so, in terms of how that translates into a mix impact from a dollar perspective is a combination of which tier devices got impacted and then which with OEMs. So that's kind of one key factor.

The second factor, as I said in my prepared remarks, was we also had some updates to previous royalty estimates, which kind of is part of our normal licensing program. You see some changes based on updated reporting we received from OEMs. So we had a little bit of that in the quarter that helped as well.

Alex Rogers

So, this is Alex. Let me handle the last two parts of the question. So the Huawei discussions are ongoing and we're still working on trying to negotiate a deal. And as we've discussed previously, both parties have the right to seek a binding arbitration to set new terms for a new deal going forward, but neither party has decided to do that yet. We're still engaged in the negotiation process. With respect to the FTC, look I think the first thing is, we have a lot of confidence in the merits of the appeal. But I think it's also important to go back to a basic touch point and that is the district court decision did not invalidate existing agreements. And so before during and after, we signed up essentially every major OEM and many, many other OEMs in this context. And these agreements are not going to -- the notion that these agreements are going away actually is not a factor, because it never was an issue with this court opinion the way that came out. And the licensees continue to honor their agreements. So again, I think however the FTC matter turns out that aspect of the decision is not going to change.

Operator

Thank you. Our next question comes from Matt Ramsay with Cowen. Please proceed with your question.

Matt Ramsay

Yes. Thank you very much. Good afternoon. Cristiano, I want to follow-up on I think a couple of data points you mentioned earlier just to make sure I got them right. You said 30% of units in China 5G at this point and something like 70% of device launches. And if I have those right maybe you could talk a little bit about the 5G carrier subsidies and promotional environment, and how aggressive the carriers may be in China? And how you think about that kind of aggressive 5G promotion sort of cascading through the rest of the world markets as the rest of the world turns on 5G? Thanks.

Cristiano Amon

Thank you, Matt for your question. So let me address the first one. So the data point is what we saw is 5G sell-in penetration reached 30% in the month of March. That is up from 19% in demand for December. So you can see that the market continued to transition the devices towards 5G. And the other data point which is in the month of March of all the phone models launched in China 71% was 5G, which shows actually 5G getting to all the different price points. So if you remember last quarter, we saw that with some of our platform, which is Snapdragon 700, we saw price points at \$285 for 5G devices. And I think that further validate the total 5G units for the

year and I think China is going to be driving a lot of the volume. And our position with China remains very strong.

Now to your other questions about the 5G rollout. What we -- it's an interesting question. I think while we've seen some delays in places for example like Europe where auctions have not yet been completed in all the countries. What we have seen is acceleration in some other places. For example, in the United States, some carriers are actually ahead of scheduling the build-out, taking advantage of probably less traffic. And important to note that Japan had launched both 5G sub-6 and millimeter wave within the quarter and Korea Telecom announced millimeter wave in Korea before the end of 2020. So you may have some puts and takes. But in general, I think the 5G story remain intact. And if anything this current environment probably underscored the importance of connectivity in telecom. Thank you.

Operator

Thank you. Our next question comes from Stacy Rasgon, Bernstein Research. Please proceed with your question.

Stacy Rasgon

Hi, guys. Thanks for taking my question. I wanted to revisit QTL in the quarter. So I know you mentioned it was -- you had some mix benefits as well as catch ups. But I mean if units for the market were down 21% year-over-year. I know China units were down relative to I don't know 35% year-over-year give or take, 50% sequential. I mean your Q2 revenues were only down \$50 million year-over-year. It was like 4%. I mean, the catch-up or adjustment must have been very sizable. Can you give us an idea of how much that adjustment or catch-up payment-wise and what was the driver of it? Was any of it coming from OPPO and Vivo? Like what would the QTL have been in the quarter without that catch-up?

Akash Palkhiwala

Yeah, hi, Stacy, it's Akash. So maybe just to kind of quickly address the catch-up comments. The way the QTL model works and I think you're very familiar with this. We -- as we get reports from licensees in the past, sometimes we get updates from them in the future, as they kind of finish up their accounting of the units and the ASPs. So that usually results in a catch-up. The second is that if there are audit settlements that would give us catch-ups as well. And then really if we end up finalizing licenses, that would be a factor also. So there are several factors that cause it. And as you know, we've had a couple of these in our history consistently. Usually, the number is smaller. So we don't specifically talk about it. And there is a run rate in

each quarter of these factors. Clearly, we had a larger impact this time. But we –

Stacy Rasgon

[Indiscernible].

Akash Palkhiwala

We are not disclosing the specific number at this point, but it is a significant impact and that's why we clearly highlighted it and outlined it. The other factor that I think I mentioned clearly was the fact that they were China units and there were -- significant portion of it was at the lower end had an impact as well. Also this is a handset decline. If you look at non-handsets, we saw -- we estimate somewhere in the 5% to 7% range on impact of total units. So the weighted average impact across the market was smaller than the 21%.

Stacy Rasgon

Got it. And I guess does that reverse next quarter then, because you're guiding the market 30% below your expectations, but you're only guiding your QTL revenues like 23% below normal expectations. So is that what's driving that boost? Is it the 5G mix? Is it because -- like what's going on there that's actually helping the revenues relative to the unit shortfall in Q3. Is that it?

Akash Palkhiwala

Yeah, that's right Stacy. So there is a factor of that that is the impact to non-handset devices versus handset devices that's benefiting and that's why it's not down the full 30% in the third fiscal quarter.

Stacy Rasgon

It's not one --any one-timers or anything?

Akash Palkhiwala

We are not expecting that. I mean, as we kind of finish the quarter, we might see some benefits but that really happens as we get updated reporting from licensees and not something we forecast.

Operator

Thank you. Our next question comes from Mitch Steves with RBC Capital Markets. Please proceed with your question.

Mitch Steves

Hi, guys. Thanks for taking my question. I'm going to combine two into one because they're kind of related. So it's good to hear that China's coming back online. I just had a couple of questions related to that. So number one is, how do we know that China is not really trying to stockpile a little bit of inventories ahead of a potential additional U.S.-China relationship getting worse?

And then secondly just any, sort of, like eyeball or any sort of rough metric to think about 2021? I think the majority of investors are looking out to next year in terms of what the impact is going to be. I mean, is there any granularity you can give in terms of what you guys think the recovery is going to look like even if it's not quantitative? Thank you.

Akash Palkhiwala

Well, I mean, we obviously spend a lot of time looking at the sell-in of chipsets versus the device sales and matching them and getting a sense of how the inventory profile is shaping out in China. Typically you would see a decline in inventory following Chinese New Year in the March quarter. And we've actually seen it play out consistent with our expectations and there's been a slight decline in inventory through the process.

Steve Mollenkopf

And Mitch this is Steve. With respect to fiscal year 2021, I would say the general view within the company is that we need to be prepared for the opportunity that we think lays ahead. I mean, if you look at fiscal 2021, we think we're in a much better position in terms of the economic situation.

And then the other thing that we've -- we're definitely getting from the market is just this desire to launch 5G and connectivity. I mean the -- I think there'll be some desire to increase infrastructure and some of the telemedicine tele -- the educate-from-home, work-from-home will be served through 5G here in the near-term and we need to be prepared for it. That's really how we're thinking about 2021 at this point.

Mitch Steves

So no comment just in terms of it being like more of a You-shape or any sort of like shape of recovery for the smartphone side?

Steve Mollenkopf

Yeah. We haven't been trying to give a shape other than what we've talked about in terms of our market at this point. And as we've talked about internally in terms of the company, we're really trying to make sure that we are prepared to take advantage of any shape, recovery that appears. And so that's really how we're positioning the company, and then trying to communicate the best we can in terms of how the market looks at least over the next quarter.

Operator

Thank you. Our next question comes from C.J. Muse with Evercore. Please proceed with your question.

C.J. Muse

Yeah, good afternoon, thank you for taking the question. I guess, first question, I was hoping you could perhaps speak to what you're hearing from your customers in China as they recover. What they're seeing, what customers' preference are in terms of mix price points and perhaps I guess what signals you're taking there. And then bringing to the rest of the world that underpins your overall recovery view?

Cristiano Amon

Thanks C.J. for your question. This is Cristiano. Look, we have had a lot of engagement I think very frequent, I think with our customers right now not only China across the globe. But what we're seeing, it's phones are continuing to launch. And as Akash outlined we've kind of be tracking not only sell-in, but sell-out in the market and we see the market started to recover. That's why we believe China, it can be a very good model of what we expect to see in other markets since their shift in time.

C.J. Muse

Okay. That's helpful. And then based on the attach rate on the front-end side and what you do know in terms of flagship launch coming in the back half of the year. Does that 1.5 times content in the move to 5G include what you're seeing both from 5G and RF front-end? Or is there upside there based on what you're seeing on the attach rate side?

Cristiano Amon

Okay. So a couple of updates. We have been tracking a total number of 5G designs. In the quarter that now went up, we have now 375 5G devices announcing. And we repeat, continue to repeat for the absolute majority of those virtually all of them continue to have our modem-to-antenna solution

with RF front-end attach. And I think it got reflected in this quarter that this business is starting to have an inflection for QCT. It started to be meaningful. We're very happy with the results so far in the front end and we expect that to continue.

To your question about the 1.5 metric that holds remain true for us. And that -- even as the market scale down from flagship to the lower tiers like-for-like in the 700 tier or 600 tier or even 400 tiers we'll see that metric of 1.5.

Operator

Thank you. Our next question comes from Timothy Arcuri with UBS. Please proceed with your question.

Timothy Arcuri

Hi, I guess I had 2. First on Huawei, they're really kind of an outlier now because we have OPPO, Vivo and Apple have all signed. And I guess at the same time obviously the U.S. is sort of turning up the heat on Huawei. So why would they sign now, if you're sort of one of the more obvious leverage points that China has in all of this. So the question there is how long do you let this go on with them? And sort of when do you decide to just arbitrate with them?

Alex Rogers

So, this is Alex. Look there are a number of environmental factors some that are -- maybe you can view as in one direction. Others can view in another direction. For example the Phase one outcome is good -- a good environment for moving toward a negotiated resolution here.

Look we're still in this negotiation. And so, we still are looking at this as something that we want to drive to a conclusion. The question of whether or not we have to trigger arbitration is still some months out. And so, we're going to keep moving with this and see if we can get this thing resolved. So I don't have an answer for you other than that.

Timothy Arcuri

Okay. I guess -- and then the second question is on OPPO and Vivo. I know there was a prior question on this but my question is around June. Because in the footnotes it sounds like there are some catch-up payments in June from these two licensees. Can you just help us quantify Akash what the catch-ups are in June specifically? The footnote says near term. So I assume that all of the true-up for those two licensees will be in June? Thanks.

Akash Palkhiwala

Yes. So this is really the accounts receivables that's outstanding that they're going to pay going forward. And so as a part of our license agreement there's an alignment with them on kind of remaining payments that are outstanding and a very near-term schedule for them to finish those payments.

Operator

Thank you. Our next question comes from Christopher Rolland with Susquehanna. Please proceed with your question.

Christopher Rolland

Hi guys, tying into perhaps a earlier question. Can you talk about your adjacencies business? How big it is now and perhaps changes we've seen in the size of that business since the TDK acquisition and then growth in 2019 and any expectation for 2020 in that adjacency business as well?

Akash Palkhiwala

Yes, hi Chris. So at our Analyst Day we had kind of sized the total scale of those businesses when -- for the fiscal year 2019. And then we gave an assumption forecast on how fast the market is going to grow approximately 8% and with our target of matching or beating the market growth. And so that's the framework for forecasting those businesses and we're still kind of on track along those lines.

In this environment one of the things we have seen is several of our businesses including IoT and networking they benefit from the work-from-home environment and we've seen a lot of strength in those areas.

Christopher Rolland

Excellent and then just tying into the RF more specifically. Are there any conditions? Or is it even technically possible for a situation which you would break up the various parts within your antenna module and sell them individually? For example, could you sell just the transceiver? Or is this an all or nothing deal for you guys for millimeter wave or even sub-6? How are you thinking about that?

Cristiano Amon

Hey Chris, it's Cristiano. Thanks for the question. Look we have been very clear about the technical advantages of the modem to antenna. But having said that, we have seen opportunities that we're starting to sell silicon in

some of our competitors' baseband as well. And there is a number of different open interfaces.

So I think you will see flexibility from Qualcomm, but we still feel strongly that you'll probably get the best performance when you actually have an integrated modem to antenna solution.

Operator

Thank you. Our next question comes from Brett Simpson with Arete Research. Please proceed with your question.

Brett Simpson

Yes, thanks very much. A question for Akash. Can you maybe just help us with the split in the MSMs in the March quarter between 5G and 4G? And then just looking into June, which you've guided 125 million to 145 million MSMs, again how would that look between 5G and 4G particularly now that the 765G starts to ramp up?

Akash Palkhiwala

Hi, Brett. Yes. So we've so far not disclosed a breakdown of our MSM units. I mean it's clearly an important metric for us in terms of 5G penetration. The way you should think about it is, if you look at kind of the key launches in the premium and the high tier, we pretty much – premium tier every launch that has happened has used our premium tier chip outside of Huawei. And so it's really a mix of premium tier launches and volume in different regions and that could be one way to kind of back into a number for us for 5G versus 4G.

We will keep – as we go forward we'll look at how we can get additional disclosures so that it gives us a sense – it gives you guys a sense of the traction we have in 5G. Overall very strong design win pipeline across all customers. And we're seeing demand not just at premium tier but across high and mid-tiers as well for our 5G solutions.

Brett Simpson

Okay. Thanks. Thanks, Akash. And maybe my follow-up for Cristiano. On millimeter wave, I just wanted to get your perspective given all the changes in the market in the last 90 days. I think in the past you talked about there's a mandatory – millimeter wave is a mandatory feature for flagship smartphones in the U.S. for many U.S. operators. And we would see a Japanese and a Korean launch for millimeter wave. Is that still on track? And

then how should we think about millimeter wave in the grand scheme of your overall 5G volumes this year? Thanks very much.

Cristiano Amon

Brett, thanks for the question. Yes it remains a reality. And as we have probably mentioned earlier in some cases the current environment had accelerated the build-out of the new millimeter wave market. So it continues to be a requirement for flagships in the United States market.

We expect to see millimeter wave coming down to the high-tier as we're bringing the capability across our chipsets. We saw that IGA [ph] launch in Japan as expected. Korea announced that they will provide millimeter wave service – Korea Telecom announced within the calendar year. And we expect that to continue 2021, you'll start seeing this going to other markets as well.

Operator

Thank you. That concludes today's question-and-answer session. Mr. Mollenkopf, do you have anything further to add before adjourning the call?

Steve Mollenkopf

Yes. Thank you. First of all I just wanted to say thank you to the employees of Qualcomm. We obviously had a very unusual quarter with respect to the work environment. And even with that a very strong execution and I want to thank everyone for their hard work. I also want to remind everyone that I think the technologies we're all working on have probably never been more important than they are today. So thank you very much for your hard work and we look forward to taking advantage of everything that we're putting together. So thank you everybody. See you next quarter.