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Inside SATCOM System Design

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Hi, I'm Rachel Jewett, senior managing editor of Via Satellite,

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and I am here back again at Sat-Show Week

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with Ryan Jennings, director of Satcom and Systems Engineering at Qorvo.

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Excited to chat with Ryan more about Qorvo's work and some of the changes

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that we're seeing in the industry.

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So, Ryan, to kick us off,

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can you tell me a little bit about Qorvo and your work with the company?

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Yeah, at Qorvo,

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we're RF centric, focused company,

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we do both devices

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that go in the satellite side as well as in the ground terminals.

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So whether it's, it's large phased arrays that are on the new,

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LEO satellites to the consumer and phased array terminals

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that are used on the ground to communicate,



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and basically any kind of RF part
in those chains.

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We're supporting that today.

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Awesome.

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How is the SATCOM market evolving,
as you mentioned,

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LEO, and more constellations and networks
coming online.

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Are we really seeing a shift to multi-
orbit systems yet?

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We are.

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And that's been one of the biggest topics
I've had at this conference

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and where people

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want the ability
to have connectivity

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and they really don't care how.

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Right, right.

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They just want connectivity
and that that can be most effectively

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achieved by having access to anything.

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You look at your cell phone as an example.

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I can have a cell phone

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that I can go to T-Mobile,
I can go to AT&T, I can go to Verizon,

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it doesn't change the hardware?

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So by having a a terminal solution
that can support both bands

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simultaneously, that gives you the ability
to pick your carrier

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and and run with it.

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So flexibility not locked into one system.

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Correct. Correct.

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Because you see a lot today in the LEO
market where the OEMs are providing

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terminals that are locked to their networks.

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And so once you buy

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that, you're stuck with that until you
unless you want to replace hardware.

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Yeah.

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With all the innovation
happening in the space,

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where do you see
the biggest technical challenges,

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especially on the ground for a company like Qorvo?



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Yeah. So thermal is always usually the biggest thing.

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Generating RF energy generates a lot of heat.

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And so being able to have a terminal that doesn't require

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any special unique cooling solutions is a is always a big challenge.

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And the higher we move in frequency as we move to Ka-band with the Kuipers

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and the Telesats, that becomes even more challenging

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because it's a much smaller footprint of the antenna itself.

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Okay.

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So the the thermal densities become much higher.

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And then as well, everybody wants everything cheap.

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Cost and driving the cost out of these electronic components,

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we've made great strides in that,

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but everybody always wants more. More and more cheaper.

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Cheaper. Yeah.



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So that's a, you know, like you
said, it's really complex engineering.

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And it is it is.

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And and we've seen that through many years of coming to the show.

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There's been

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a lot of different ESA companies
trying to do this, but there's not a lot

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that actually achieve
good volume production because it is hard.

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It is it is a hard problem,
especially hard to try to do it in volume.

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You know, the defense community
has done it for years and years

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with very high,
high cost, high exquisite products.

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Whereas we need something
that's consumer type.

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Okay. Yeah.

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So what types of use
cases?

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Pretty much across the gamut,

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whether it's the terminal
that you would put at your home

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to something



that would be on a fighter jet.

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Okay.

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And so,
so that does bring unique requirements,

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potentially
for those different applications.

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So trying to have something that is, is
universal is good for volume and cost,

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but it doesn't necessarily
always solve every one of the use cases.

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Yeah absolutely.

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So where do you see Qorvo contributing

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most as these more complex
SATCOM systems are deployed.

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So as I mentioned earlier,
on the satellite side,

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we do a lot of work on the
satellite side, whether it's on the high

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throughput payloads
or the direct to device payloads.

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And we continue to innovate,
bringing DC power down,

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bringing performance up,
bringing cost down.

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But then also similarly on the on



the terminal side, we have several

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new products that we've introduced
this year, to support

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Ku, Ka band,
whether it's full duplex or half duplex.

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at Ku-band.

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So just continuing to innovate there,

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bringing down the cost,
increasing performance,

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is where we're headed with our all of our products.

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Absolutely.

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I mean, it sounds like
Qorvo is really at the center

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of a lot of these developments
happening. Yes.

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And you mentioned direct-to-device,
and I think that's very interesting.

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Yeah.

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That's an interesting market
that we'll see how it actually plays out.

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Yeah.

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It's not it's not a clear future yet,
but there's certainly

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a lot of really unique things

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that I think you can do with that
direct-to-device,

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especially for the people
that own their own spectrum,

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where they have that freedom to kind of
do what they want to do.

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It really opens up
a lot of different things.

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And I've heard people
bring up stuff at the show

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like, oh, yeah,
I could do that too with that.

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You know, it's just the use cases are
coming up every day for that application.

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Yeah, great.

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Well, it's been great to talk with you
and here at the end of the week

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to kind of hear
your takeaways from the week. So yeah.

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Thank you. So much.