



## BRIDGING THE DIGITAL DIVIDE WITH 5G AND OPEN RAN

*Supermicro's unparalleled expertise in optimized, industry-standard servers has enabled the company to grow rapidly in the fast-moving 5G segment.*

*In this interview with Mobile World Live's Justin Springham, telecom veteran Michael Clegg discusses how open-standard hardware and software are transforming the mobile industry.*

**Can you give us a short overview about Open RAN (radio access network)? What does it mean to you?**

I think probably the biggest confusion with Open RAN is that there are really two axes that people are looking at. On one axis is the concept of disaggregated hardware and software. The idea behind that is that you can run virtualized software for performance, and you can run it on standardized hardware. And that's often when we write about Open RAN, the term tends to come from that, and it came out of the telecom infrastructure project initiative that Facebook started.

The second one is a little more industry-directed and comes out of the O-RAN Alliance. And what the O-RAN Alliance wants to do is create standardized interfaces between the centralized unit (CU), which sits at the edge of the network, the distributed unit (DU), which performs the layer one processing, and the radio unit (RU). So the idea behind this is that you could use company A's radio with company B's DU and company C's CU. And those are the sort of separate layers. This is often called Open RAN, and is driven by the O-RAN Alliance, an operator-led standards body and initiative.

Now you get four quadrants out of this, and you can do all combinations. So you can have a proprietary RAN implementation that runs on disaggregated hardware and software. And you can have an Open RAN implementation that runs on proprietary hardware. You can do either those two, or you can have a completely open implementation with standardized interfaces, but not running on commercially available hardware. So for us at Supermicro in particular, we are most interested in the disaggregated hardware and software, because we want to go after that standardized server model. And it's really the standardized server model that ties back to the 5G cloud-native architecture. So when you put those two together, you really get the benefits of 5G Open RAN.

### MICHAEL CLEGG | VICE PRESIDENT AND GENERAL MANAGER FOR 5G, EMBEDDED AND IOT AT SUPERMICRO

Michael has secured market leadership for Supermicro in the product categories covering Cloud SaaS, fixed and mobile broadband, wi-fi, video, and IoT.



He also acts as an executive advisor and board member at Amino Communications and advises startups pioneering and commercializing broadband internet across DSL, FTTH, fixed wireless, and mobile data.

Before Supermicro he served as VP of Global Sales at Plume Design; COO at Morro Data, a provider of cached cloud file storage-as-a-service; and SVP & GM for NETGEAR's service provider business unit growing the business tenfold and achieving #1 market share in wi-fi gateways.

## How would you describe the state of the Open-RAN market today?

It's happening very quickly now. Originally, there was a lot of skepticism, and different degrees of buy-in as to whether people would really adopt Open RAN, and was it providing the benefits. And now we really see that there is an industry-wide adoption at different levels. Ericsson, who has the most proprietary equipment, was probably the last one to come in. But they've been fairly open now that they are going to do Open RAN. Open RAN won't be the optimum solution in every single case – it's not that it's going to be 100% that the model is going to move to Open RAN. And I think once people have started to recognize that as well, the adoption gets a little easier, because it really becomes about when is this the optimal solution and when is the best place to use it.

Now we've really seen two pioneers in the Open RAN space. The first one happened with 4G networks, particularly in rural areas. In the older networks, a lot of the voice still runs over TDM 2G network. So you end up having to run three networks: a 2G, a 3G, and a 4G network, and each one has its own proprietary equipment that gets very expensive, particularly where your population density is not that high. We saw Open RAN really being adopted by the 4G industry in rural markets, where the processing power, you could argue, wasn't too complicated. But it validated the systemic principle and validated the whole idea, the concept. Translating that into 5G networks, again we've really seen the early adoption happening again in these more rural markets, but also by two greenfield operators, notably Rakuten and DISH Network. Now for them, it's easier to adopt a new technology because they have no legacy and they don't have to worry about backwards compatibility or interoperability between the two. So unsurprisingly they've gone ahead the fastest. Now we're starting to see it go mainstream, and you'll hear more and more announcements daily.

**You highlighted two operators, in particular with regards to 5G. When we think of new technology, we do often think of advanced markets like the US and Asia as you've just done so. But the fact is that half the world's population remains offline. Do you think Open RAN can actually help improve global connectivity so that we can bridge the digital divide that is still quite prevalent?**

We have definitely seen this already; once you softwareize everything, it becomes a lot easier to distribute and run on standardized hardware, which is available in many more markets. And we have seen some recent announcements. Another session we did with Mobile World Live is with Parallel Wireless, and Etisalat for example, deployed in Afghanistan. So we've seen some quite remote areas that are adopting this, and they've been able to adopt it with an Open RAN model.

## SUPERMICRO SERVER FOR OPEN RAN



**Supermicro Hyper-E 220HE-FTNR Server with 3rd Gen Intel® Xeon® Scalable Processors**

## What is Supermicro's involvement in Open RAN?

### SUPERMICRO

As a global leader in high performance, high efficiency server technology and innovation, we develop and provide end-to-end green computing solutions to the data center, cloud computing, enterprise IT, big data, HPC, and IoT markets.

Our Building Block Solutions® approach allows us to provide a broad range of SKUs, and enables us to build and deliver application-optimized solutions based upon your requirements.

We have been involved very early, right from the beginning. The inception of running the software on disaggregated hardware, Intel was really in a way the creator and pioneer of this. We have worked very closely with them from the beginning. Many of the early reference designs have been built on Supermicro hardware. And we continue to expand and engage with all the main industry players, the independent software vendors, as well as a number of operator networks. So for us, 5G RAN is another edge network application, and it fits beautifully with our standardized server technology.

For more information, please visit [www.supermicro.com/5g](http://www.supermicro.com/5g)