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Microwave - Its part in your network
Real time billing - pay now or pay later
Can handsets suppliers stack up?



What good design co

Andy Singer is general manager of Radio Waves, a company that offers a diverse range of microwave antennas, from dedicated point-to-multipoint fixed wireless networks to point-to-point microwave links providing backhaul for mobile operators. Recently the company has opened a manufacturing facility in the UK to bring it closer to the European market, which Singer views as a natural market for Radio Waves' technically innovative and highly specified designs. Keith Dyer got the lowdown on this antenna manufacturer that is competing on quality and reliability, rather than merely on cost.

Mobile Europe:

Andy, first of all, many readers may not be aware of Radio Waves' company background, and why you are keen to bring an enhanced European focus to Radio Waves.

Andy Singer:

Absolutely. Radio Waves is in some ways very lucky, because we have only one focus, and that is on the design, manufacture and marketing of microwave antenna systems. We eat, sleep and breathe it – it's all we do.

We were founded in the early 1980s and, historically, we came out of being a traditional niche player in the news-gathering marketplace. Then came the tech crash and after that we took our technologies into point-to-point and point-to-multipoint microwave antennas. Since that point we have expanded rapidly and grown a huge focus in that area, which means that we can build products faster and better than our competitors who have more of a general approach. We supply high-quality, competitively priced microwave antennas for unlicensed ISM & UNII bands, Wi-Fi, MMDS (2.5 & 3.5 GHz), LMDS, point-to-multipoint and point-to-point microwave applications.

Mobile Europe: *So, what has that focus delivered in terms of your product portfolio?*

AS:

We design and manufacture microwave antennas covering frequency bands from 1.3 to 60GHz. We have standard parabolic or flat panel antennas for point-to-point and point-to-multipoint deployment. Our Xcelerator® product

line offers the best quality and performance of any 5 GHz flat panel antenna, and our ProLine point-to-point standard parabolic and high performance series antennas give coverage from 2-640 GHz for terrestrial microwave point-to-point applications, including the interconnection of GSM and cellular base stations. Then there are the millimeter microwave LMDS type horn antennas in which we have taken a market lead, globally. We are also responsible for making some associated equipment, such as cables, LMR jumpers, flextwist and most recently our own design of hot standby couplers.

Mobile Europe: *It's an extremely technical field but could you point out some areas in which your focus on design has given you a clear technical advantage?*

AS:

A principal example might be our development of the hybrid Cassegrain Feed System, a more efficient feed system which uses a sub-reflector type feed for high frequency MW antennas. A typical antenna utilises a rectangular waveguide feed system, sometimes called a buttonhook feed. This can mean an antenna which has poor sidelobe performance. In other words, its performance is degraded. A hybrid Cassegrain system is more efficient in that it gives a lower antenna profile and improved pattern performance. Radio Waves was the first to develop that.

An example of the advantage the hybrid Cassegrain can give us is our Discriminator™ antenna. The Discriminator is a one foot dish, moulded out of plastic with a reflective coating, that delivers the side lobe performance of a two foot dish. We optimised the shape of a parabolic reflector by letting software determine the best shape, giving us Category A performance in a one foot dish.

It's something operators find very exciting because they can cut back on the need for large antennas.

Mobile Europe:

Talking of operators, how important a part of their operations would you say microwave is, and do you see its importance growing?

AS:

Clearly the biggest single opportunity for us with mobile operators is for cellular backhaul systems – either from base



station site to base station site or from base station site to the mobile switching centre.

Here their networks are really built on microwave. Whether you are talking about the introduction of UMTS/ EDGE or IxEVDO networks, whatever the technology, operators want to drive users to increase their call minutes and data usage. And technology is allowing them to do more and more all the time. I'm talking about the introduction of Mega pixel camera phones, of video and music players on phones and so on. So it's going to be all about the bandwidth from site to site – and think how clogged they will be when all of this happens. The only answer is more and bigger pipes, and that means either fibre, or EI connections, or Microwave. Even if there is equivalent growth in the other methods, Microwave will grow anyway because of the need to increase pipes so much. It's exciting to be a part of that.

Mobile Europe:

There's a view that Microwave links are more efficient comparatively in less developed networks and economies because there is not as much fibre as in more developed countries. Would you agree?

AS:

You could say it's even more likely in rural or developing countries where there is not as much easy access to fibre. But there are other reasons for the

n add to your business



deployment of Microwave – for instance to do with managing expenditure. Fibre and EI connections are both about leasing, but you can buy your own Microwave systems. So opex is down and you can also attach a ROI to your capital investment in the network.

Mobile Europe:
So, given the opportunity, what are your routes to exploit it?

AS:
We have three main channels. One is through OEM microwave radio manufacturers. For example, Stratex Networks provides a turnkey approach to operator customers. They buy antennas from Radio Wave and sell them as part of a system to end users. Stratex Networks is a large OEM customer and someone we think does a very good job with Eclipse – the first software definable capacity radio – and they started a trend with that. In the 5 GHz unlicensed area we also work with Aperto Networks, who have been very successful because they can offer relatively high capacity even though it's in an unlicensed band.

Our second route is distributors and value added resellers, in which an important area for us will be establishing relationships with suppliers who appreciate the value our systems can add to their customers' own businesses. We provide training to our VARs, and currently have a number of them through

the EMEA region, including the UK and Russia.

The third is going direct to market, like we do with some cellular operators. Some of them like a relationship with a turnkey provider, and others feel they get savings by doing it themselves.

Mobile Europe:
What has been the motivation behind the establishment – and now I understand the expansion – of your UK manufacturing plant, based in North London.

AS:
Our UK manufacturing plant was something we attempted to do about two years ago. Then we began to get serious a little over a year ago. The primary reason behind it is that the growth in the last few months has been significant. If we had the ability to manufacture and ship to customers on a more local basis, we knew that customers would really appreciate this.

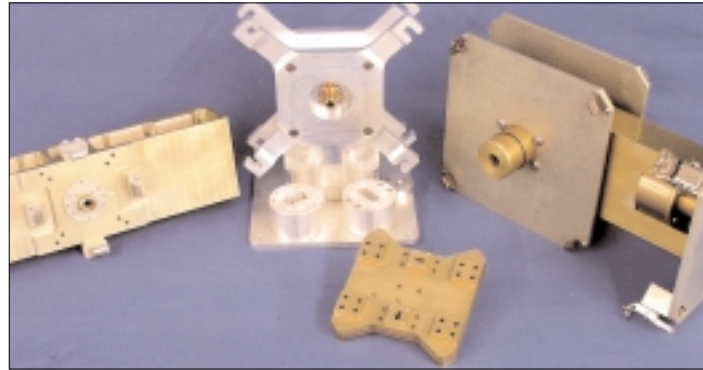
It is easier logistically and financially for them and us compared to shipping equipment out on a boat from half way round the world. Many suppliers have six to eight week manufacturing lead times and we can now do two to three weeks for customers in the territory. So the primary reason for the UK plant was to allow for very efficient delivery whilst keeping our high quality standards of manufacture.

Mobile Europe:
You mentioned sales growth. What level of growth have you been experiencing, and what are the competitive pressures you face?

AS:
Our sales growth has meant that we have expanded to twice our previous headcount in 18 months, bringing us up to 85 people. But it is still a competitive environment.

One of the different things has been in pricing of raw materials. There has been a spike in demand globally, and steel and aluminium costs have rocketed. We have seen a 50% and 25% increase in those two raw materials respectively – and that is against a background where telecoms equipment prices have been very competitive.

But this is relatively new – business has increased significantly recently and we



have increased our market share.

Mobile Europe:
What do you think are the reasons for that growth – both in shares and in market share?


AS:
The reason for our growth is the higher level of service and the quality and reliability of our products.

We have heard some horror stories about the other manufacturers' products which have been shipped to customers. Our manufacturing system allows us to provide a very high level of service to our customers. They really appreciate that.

When you are talking about major group operators our customers are looking for that higher level of service.

Something that is underexposed is ease of installation. If there is less assembly work at the site, and a Radio Wave antenna is simpler to install – what's that worth? Again, it is the same for maintenance costs. So by simplifying our design that is something we offer the marketplace in both those areas.

There has also been global consolidation of operators and most operators have developed groups at corporate HQ to review products and develop rigorous specifications. We're really in favour of that because we do have solutions with excellent specifications. So we can meet their needs, whereas producers at lower costs may not be approved. We see more of that happening and also OEMs need to have a very vigorous approval process.

A Radio Waves antenna goes on the tower and it stays on the tower, and continues to perform and deliver consumer satisfaction for our customers and our customers' customers. 

Radio Waves has recently entered a new business segment – the design and manufacture of hot-standby microwave couplers.