





Colin Bolton, Director, SpacePath Communications ●●●



Reacting quickly to market changes

SpacePath Communications was founded in the UK in 2014 to design, manufacture and deliver satellite uplink amplifiers to a global customer base. Its portfolio includes indoor and outdoor products, travelling wave tube amplifiers (TWTAs) and solidstate power amplifiers (SSPAs), using both GaAs and GaN technologies. SpacePath Director Colin Bolton opines on the current state of the amplifier market, and the massive changes underway in the satellite sector.

Question: There's been a great many changes at SpacePath in recent years; what can you tell us about your expanded capabilities and expertise?

Colin Bolton: There have been a lot of changes since we first started the business back in 2014. We saw the core business for the initial company as the broadcast and the SNG markets, and those markets have completely changed over the four years. The good thing is that we've been able to change with the market as demands have moved on in different directions.

Today, SNG for instance, is a very small part of what we do. When we started out on the first day in April 2014, it was a big part of operation. As we acquired e2v Stellar's installed base, which we believe is more than 10,000 amplifiers fielded world-wide, the minute the transfer was completed from one company to the other, we took



responsibility for those amplifiers and the telephone started to ring!

There's been a remarkable transition to our business today. I'd like to be able to say it's all been by design, but much of it has been through reaction. As a small company, we've been able to react quickly to changes in the market, which is really important.

Today, our business is more dominated by our production of highpower ground-based amplifiers and systems. We've introduced a whole range of new amplifiers, some acquired, and others developed organically. We did a lot of listening to what our customers wanted and then developed our range of high-power 'touch screen' indoor rack-type amplifiers. The range covers all frequencies C, X, Ku and DBS, with power levels from 400-2000W. Today, we're shipping amplifiers and redundant/power combined subsystems to major teleports across Europe and across the world. A lot of the major satellite operators have chosen to use SpacePath amplifiers, so that's a real accolade for us as a small company.

Question: Back in 2017, SpacePath acquired the satellite amplifier portfolio of Tango Wave. How have these products complemented SpacePath's own portfolio since the acquisition?

Colin Bolton: We announced the acquisition of Tango Wave products in SpacePath back in September 2017. It was a very unusual situation because technology is usually transferred from Europe to Silicon Valley; for a Silicon





Valley company to transfer back to the UK, is quite unique. The transfer took six months; the factory had to be closed down, and all the assets, like the test equipment, work in progress, materials, etc., had to be transferred along with the IP.

We really didn't get our hands around the products until March 2018, so we've not actually had that long to do anything with it. However, we've made some major steps forward in getting those products into our production, and how that's impacted on the product range and the mix of products has been substantial. The reason for the acquisition was that we knew that our existing power supply designs and those of our competitors have been around for over twenty years. All the Tango Wave amplifier designs were developed over the past two years, used modern state of the art components, featured novel design features which would take us into the next generation of amplifiers, and really enable us to have some unique features to differentiate us from our competitors. These features give our customers smaller, lighter and more efficient product; those elements are very important, particularly in hub mounting millimetre frequency amplifiers, and also for all military applications.

So far, we've managed to get the Kuband and DBS products into production, and we've started getting our first Kaband products from the range into production. That's made a lot of difference to our product range, and we're going to start phasing out some of the older designs in time. Question: SpacePath has recently launched a new range of redundant, high power uplink amplifier systems. What can you tell us about these products, and how they improve upon previous iterations?

Colin Bolton: This development came out of the Tango Wave amplifier acquisition. A lot of time was spent by their development team asking customers what their 'wish list' was. Ka, Q/V amplifiers need to be mounted inside the antenna hub and must be done in a way that you can maintain those amplifiers by removing them or installing them periodically and with ease. In the past, and this still holds true today, many of the suppliers used conventional brackets and bolts, and once you've got them in there, getting them out is an absolute nightmare.



Spacepath's approach features an amplifier easy installation and quick release system for installing the amplifiers in the hub as part of a redundant or power combined system. With this approach, a single person can make an installation into a hub, and that's particularly useful for when there's not much space, such as with Ka, Q/V band operations. These products cover all frequencies, and they're completely interchangeable; it's a universal system so you can start with low power, and upgrade to higher power should the need arise.

The other feature in the package is the controlling element, we've added some touch screen controllers on the front end, as well as ethernet connectivity and a web browser.

Question: The satellite sector is in a great state of change right now, with new technologies and ideas really shaking up the market. What are the opportunities for a company like SpacePath?

Colin Bolton: We've been far more reactive than proactive, but we really need to start to look forward to the opportunities. We can see the increase in demand for millimetre-wave frequencies in the next five to ten years, and beyond Ka-band, we have Q/Vband. We've started to plan for that with the designs of our products.

Although our SNG broadcast uplink business is sadly declining, we still have a hardcore of SNG operators across Europe turning up at SpacePath with a broken amplifier or system, looking for a 'fire station' type service. It's a tough business for the SNG operators today. Being a smaller company, it's easier for us to be a bit more supportive and more flexible in our approach.

One area which is increasing, of course, is disaster recovery. We're working to try to manoeuvre ourselves, using pretty much the same product offering with very few changes, for disaster recovery terminals. These are usually lower power products that mainly consist of GaN SSPA technology to provide them with good efficiency, while maintaining a smaller and lighter form factor. We've got a pretty good range now of GaN-based products ideal for disaster recovery applications, which will help us maintain the company as some of the SNG business falls away.

Question: We're hearing more and more about people getting ready for Q and V-band for satellite communications in the future. What's your take on this development, and how is SpacePath preparing itself?

Colin Bolton: We don't want to be the first company offering Q and V-band amplifier products. There is a lot of technical and financial risk to the introduction of this new technology.

We will probably be the third company to come out with Q/V-band products. We've had several meetings with the travelling wave tube (TWT) suppliers, which is really the key to high power Q/V-band introduction, to find out what's happening and their timelines. Without that technology, the terminals won't get developed.

We see ourselves as getting ready for Q/V-band. All our new designs are compliant with these new TWT designs, the operating voltages are much higher, and the physical size of these terminals needs to be considered as well. We're getting ready and watching the story unfold a bit more.

Question: What's on the horizon for SpacePath in 2019 and beyond?

Colin Bolton: From where we started back in 2014, we've nearly doubled the floor space of our UK facility. We've added some key new engineering and support staff. We're being very cautious about the growth of the business, we want to make sure it's sustainable.

What's really interesting that I've noticed is that we've received a great deal of interest as a European supplier. In many of our products, we've tried to include up to 80 percent European content, and for a lot of applications and customers, that's a really important factor. We see that by having that unique approach, which not many other companies are doing, we gain an important advantage.

Going forwards, we'll be looking for more growth in our current areas, we'll be moving into the millimetre-wave frequency market with our Ka and Q/Vband products, but not forgetting our core business of C, Ku and DBS amplifiers for teleport applications, developing disaster recovery solutions, and looking after what's left of SNG.

