



MARKETS

Space

Proven terrestrial performance and reliability pushing the boundaries of what is possible in non-terrestrial applications.





Mission-critical communication networks depend on us

Filtronic are a developer and manufacturer of RF-to-mmWave components and subsystems for near space applications. Our clients depend on us to deliver high-performance RF solutions solving their challenging requirements. We accelerate their market entry, reduce whole-life & development costs, minimise cost of quality and provide them with a competitive advantage.

Filtronic started as a spin out from Leeds University in 1977 and quickly became one of the largest companies ever to be spun out of a UK university. This spirit of innovation and invention continues today throughout our range of products and services from 300MHz to 175GHz.

Our fully customisable product range includes:

- Transmit and receive modules
- Power-amplifiers,
- Transceivers
- MCPs
- SIPs
- Filters & Combiners

Along with low earth orbit (LEO) satellite constellations, high-altitude pseudo satellites (HAPS) operating in the stratosphere, have the potential to address the challenge of providing ubiquitous connectivity. The speed and capacity demands placed on mobile telecommunications infrastructure are increasing exponentially. By 2023, fixed broadband speeds are expected to more than double, while 5G speeds will be 13 times higher than the average mobile connection. Filtronic plays a vital role in equipping global telecommunications networks for the future. As experts in designing components for 5G XHaul, we support the industry in moving up the frequency spectrum from E-Band to W-Band and D-Band, to deliver the extra bandwidth required.

Filtronic has been a major mmWave technology provider to the non-terrestrial & near space 'HAPS & LEO' industries for several years. Filtronic has a range of class-leading products including our power amplifying family Cerus, plus additionally our Morpheus II transceivers which provide a turn-key transceiver solution for carrier grade mobile XHaul applications.





Where we excel:

- We help our clients get to market quicker – increasing their sales revenues and market share.
- Our capabilities and technologies reduce the overall cost of data communication, lowering the cost per Gbps.
- Taking unique challenges & providing a customised solution, we lower development & NRE costs, minimising the cost of quality for our client.
- We solve problems, engineer to engineer, we drive down whole life costs.
- We like to know our clients inside out, identifying ways to improve their products, increasing their premium & providing them with a competitive advantage.

Pushing the boundaries:

Bridging the digital divide by satellite

To deliver the full promise of 5G and address the 'digital divide', HAPS and LEO solutions are essential to enable coverage in low population areas where terrestrial mobile networks are not viable. Filtronic is a pivotal mmWave technology provider to the near space industry, playing a key role in developing the high-performance RF components required for these communications systems. mmWave frequency bands are expected to form a key part of the solution for the links between satellites, HAPS and ground terminals. Filtronic has participated in successful large-scale trials of long range mmWave links with data rates of up to 40Gbps achieved with multi-channel solutions, supplying transceiver modules customized to interface with our clients' modems in these trial systems.

Commercial off-the-shelf RF components for LEO satellite applications

As satellite networks expand and more people worldwide are connected to the Internet via LEO satellite, the demand for data will increase exponentially – requiring a corresponding increase in bandwidth to boost capacity. Currently, LEO satellites employ Ku and Ka band payloads (~12-30GHz). Second generation mega-constellations will push up to Q and V bands (33-60GHz) where more bandwidth is available. To support these higher frequency bands, gateway links at E-band (71-76GHz / 81-86GHz) are being considered, because E-band provides the wide bandwidth pipe needed to support the increase in user terminal capacity. Furthermore, E-band has been identified as a candidate technology for inter-satellite links to enable mesh networking within constellations.

Our specialists at Filtronic have extensive experience in designing and manufacturing modules at high mmWave frequencies, including Q to E-band. Using variants of our transceiver modules for LEO applications will equip satellites and ground-based gateways with the capacity to meet rapidly growing demand for data as more people worldwide are brought online.





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