



FILTRONiC

Shaping the future of
high-capacity, high-reliability
connectivity and sensing

filtronic.com

Advancing high-speed, high-frequency connectivity

Filtronic designs and manufactures the high-performance radio frequency (RF) technologies that enable seamless connectivity and precision sensing in the complex communication systems that shape our world.

PUSHING THE FRONTIERS OF RF TECHNOLOGY

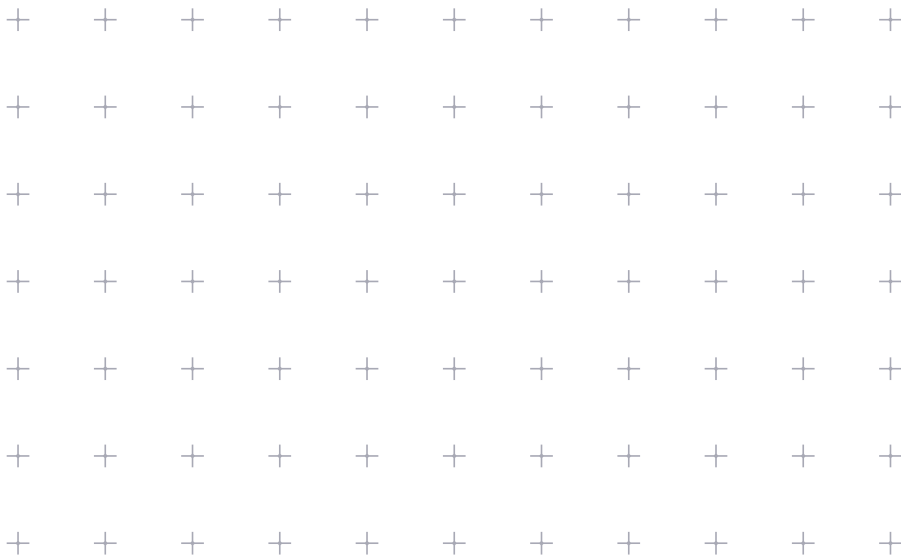
Innovation has driven Filtronic from the very beginning. From pioneering RF filter technology more than 50 years ago to becoming a trusted leader in the critical technologies. Enabling advanced space, defence and telecommunications systems, we have continuously pushed the boundaries of RF technology.

HIDDEN TECHNOLOGY, TRANSFORMATIONAL IMPACT

Our impact today is measured by the far-reaching connections that our technology enables. By extending ultra-fast, low-latency data communications to every corner of the planet and far into space, our technologies have become the hidden power behind transformational applications that are changing the world.



HIGH PERFORMANCE HIGH FREQUENCY HIGH RELIABILITY



HOW WE STAY AHEAD

High performance: We focus on constantly improving the critical performance parameters for RF technologies, from latency, linearity and longevity to power, speed and efficiency.

High frequency: We constantly extend the limits of RF performance by shifting into higher-frequency mmWave bands – such as Ka, Q, V, E, W and D – to unlock greater speed and capacity.

High reliability: Our products are precision-engineered for performance, resilience and unmatched stability in critical high-frequency applications across space, defence and telecommunications.

PRECISION MICROELECTRONIC MANUFACTURING

From prototype development and process engineering through to volume production and testing, our vertically integrated manufacturing capabilities give customers complete assurance in the quality, traceability and resilience of the systems we produce for their mission-critical applications.

PROGRESS BUILT ON PARTNERSHIP

At Filtronic, we work collaboratively with each customer. Every solution we develop with our partners plays a key role in accelerating global connectivity, helping to shape the way people, systems and nations communicate.

RELENTLESS PURSUIT OF NEW POSSIBILITIES

As communications technologies and demand for connectivity continue to evolve, Filtronic remains focused on enabling our customers to build a better-connected, more secure world, equipped to solve the future challenges of humankind.

Building a better-connected world



Our impact

Filtronic creates unique, high-capacity data communication solutions for space, defence and telecommunications networks – underpinning the critical systems that connect people, platforms and nations every second of every day.



SPACE – LAUNCHPAD FOR MULTI-ORBIT COMMUNICATIONS

Filtronic technology is critical to the high-performance communication systems used in satellite networks to transform global connectivity, earth observation and space exploration. Our mmWave technologies facilitate high-volume, low-latency connections between ground stations and orbiting satellites, while our powerful space-qualified payload transceivers, filters and amplifiers support high-bandwidth inter-satellite, direct-to-device and satellite-to-Earth communications.

Our technologies are enhancing data links for HAPs, VLEO, LEO, MEO and GEO satellites and could ultimately support deep space missions and RF networks on the moon.

DEFENCE – SECURING NATIONS WITH SUPERIOR CONNECTIVITY

Filtronic RF technologies support mission-critical datalinks for the defence sector. We work with leading defence primes to develop secure, interoperable systems for tactical communications, electronic warfare detection and jamming systems, advanced AESA radar and multi-functional search, track and target systems.

TELECOMMUNICATIONS – POWERING CONNECTIONS AROUND THE GLOBE

From urban centres to the most remote environments, reliable telecommunications enable individuals, communities and businesses to thrive. Filtronic technologies power the high-capacity wireless systems that keep people all over the world connected through reliable, high-speed, high-throughput 4G, 5G and emerging 6G networks.

Our technologies

Our boundary-breaking technologies are the hidden power behind the advanced communications systems of today and the ubiquitous global connectivity of tomorrow.

Four core product groups form the essential building blocks for modern high-speed, high-capacity communication systems:

SOLID-STATE POWER AMPLIFIERS (SSPAs)

SSPAs boost low-power RF signals to significantly higher power levels – a critical function for reliable, long-range data transmission in modern mmWave applications, such as 5G and satellite communications. We have developed mmWave SSPAs for high-data-rate communications, and pioneered the use of gallium nitride (GaN) semiconductors to achieve new levels of output power, efficiency and linearity.

FREQUENCY CONVERTERS

Modern communication systems depend on the ability to move signals accurately between frequencies while preserving performance, stability and quality. Our frequency conversion technologies include block upconverters (BUCs) and low-noise block downconverters (LNBs), which support complex RF architectures and reliable uplink and downlink communications across space, defence and terrestrial applications.

TRANSMIT AND RECEIVE (Tx/Rx)

Our TxRx technologies support reliable signal handling across satellite, radar, electronic warfare and secure sensing systems. Our bespoke Transmit/Receive Modules (TRMs) are critical components for high-performance phased array antennas, radar systems and advanced communication platforms, while our ready-to-deploy mmWave transceivers combine TxRx functions alongside amplifiers, frequency converters and filters in fully packaged systems.

FILTERS

With communications systems operating at higher frequencies and in increasingly congested spectrum environments, maintaining clean, reliable signals is vital. Our RF filters include digitally tuneable devices engineered for precision signal filtering, switched filter banks designed for improved insertion loss, flatness and low power consumption, and other complex filters to provide enhanced signal integrity and clarity in challenging applications.

Engineered for agility, power and resilience

MOVING AHEAD: OPTIMISING DIGITAL OPPORTUNITIES

Always looking to the future, Filtronic is developing 'RF-over-IP' platforms to support the transition from analogue RF systems to fully virtualised, cloud-ready satellite ground architectures.

Digitising RF signals and transporting them securely over IP networks will eliminate a whole swathe of analogue hardware currently used to process signals. It will reduce capital expenditure and operating costs, simplify operation and maintenance, improve signal quality and security, and increase network capacity – providing essential capabilities for a future of exponential data growth.





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