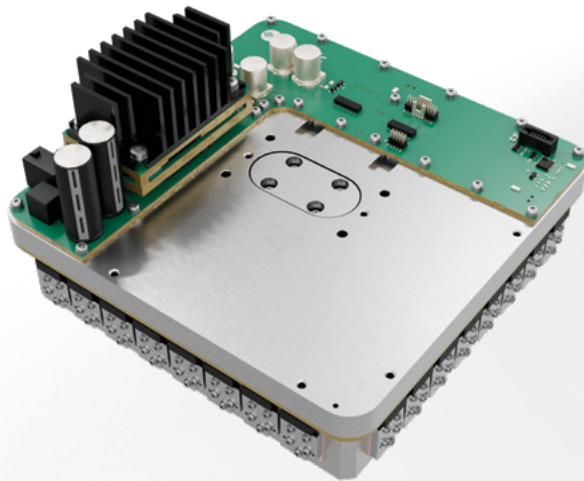


SOLID-STATE POWER AMPLIFIERS (SSPAs)

Extending the reach of high-speed data connectivity



Sending stronger signals



Filtronic solid-state power amplifiers deliver the high-power RF performance that advanced communications demand, extending reach, increasing capacity and maintaining signal integrity at the highest frequencies.

Combining proprietary semiconductor technology with decades of RF engineering expertise, we push the limits of power, performance and efficiency to enable more capable, resilient connectivity across space, defence and next-generation telecommunications.

THE POWER BEHIND LONG-RANGE COMMUNICATIONS

Solid-state power amplifiers (SSPAs) boost low-power radio frequency (RF) signals to significantly higher power levels for transmission over long distances.

At Filtronic, we develop increasingly high-powered SSPAs for high-frequency applications, helping customers in the space and defence sectors keep pace with demand for more and faster data. By harnessing the latest semiconductor technologies, our SSPAs deliver significant advances in power, reliability and linearity at mmWave frequencies.

ADVANCING SSPA CAPABILITIES THROUGH INNOVATION

Filtronic has been setting the standard for innovation in SSPA technology for more than a decade. Our high-power, low-latency SSPAs deliver the consistent performance required to support escalating demand for data and the proliferation of satellite constellations in multiple orbits around the Earth. We have a proven track record of innovation, supporting clear, high-throughput, high-speed communications worldwide and far into space.

AMPLIFIER APPLICATIONS

From ground station feeder links and satellite payloads to electronic warfare and telecommunications systems, our SSPAs support reliable, high-bandwidth, secure communications across all domains.

Sending stronger signals

GROUND STATIONS – COMMUNICATION WITH MULTI-ORBIT SATELLITES

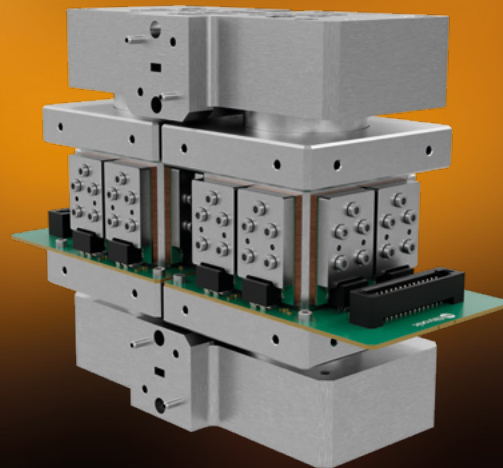
High-power SSPAs enable reliable data communications between the Earth and orbiting satellites. We have pioneered the use of gallium arsenide (GaAs) and gallium nitride (GaN) semiconductors to achieve new levels of power and efficiency for ground station uplinks at mmWave. Our SSPAs combine with frequency converters to support the transmission of large packets of undistorted data to satellites in low Earth orbit (LEO), medium Earth Orbit (MEO) and geostationary Earth orbit (GEO).

PAYLOAD – INTER-SATELLITE AND DOWNLINK CONNECTIONS

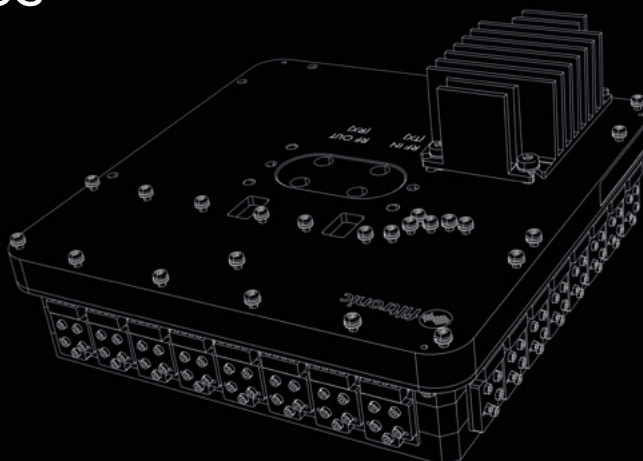
Our mmWave High Power Amplifiers (HPAs) enable high-bandwidth communication between satellites within constellations, and between satellites and ground operations. These high-frequency links provide seamless connectivity, enhancing the efficiency and performance of entire satellite constellations.

TERRESTRIAL – DEFENCE AND TELECOMS APPLICATIONS

SSPAs are fundamental to many defence applications and telecommunications systems. They are essential components in electronic warfare systems, such as jammers, and enable power-intensive radar and sensing systems to achieve longer detection ranges and stronger return signals. In 5G and 6G telecoms backhaul applications, our SSPAs are key to strengthening signal transmission, particularly in dense, high-capacity environments or for low-latency private networks.



Our SSPA technologies



Cerus

Industry-leading mmWave SSPA module for high-capacity, low-latency communications.

The Cerus series offers unmatched power performance at V-band (47–52GHz), E-band (71–76GHz, 81–86GHz) and W-band (92–100GHz, 102–114GHz) frequencies, meeting the growing demand for high-frequency data links across terrestrial and space applications.

This highly customisable series is available in 1, 4, 8, 16 and 32-way amplifier configurations to meet the demands of different applications – from compact, energy-efficient models for payload deployment to high-power versions for long-range, high-capacity satellite communications.

CHOOSE CERUS FOR:

- Scalability – options range from lightweight units for airborne systems to high-output modules for large-scale infrastructure.
- Proven performance – more than 100,000 Filtronic mmWave devices deployed globally.
- Versatility – applications include defence, commercial, HAPS, satellite and 5G backhaul.

Prometheus

Complete plug-and-play V-band amplifier system for high-power, long-range applications.

Prometheus is the latest evolution of our amplifier capability, providing a fully self-contained system ready for deployment in any high-frequency communication network. Packaged into a sealed IP-rated environmental enclosure for outdoor applications, Prometheus incorporates all the cooling, power supply, control and other ancillary systems needed to deliver a complete, plug-and-play solution.

Prometheus combines gallium nitride (GaN) semiconductor technology with our Cerus 32 SSPA. The system supports expansion from single units to multi-module configurations and can be upgraded with linearisers, up-converters, waveguide pressurisation and liquid cooling to meet the needs of specific applications.

CHOOSE PROMETHEUS FOR:

- Unrivalled output power – the highest power V-band SSPA on the market.
- Plug and play – fully self-contained, packaged system ready for rapid deployment.
- Flexibility – customisable to meet the specific demands of mission-critical applications.