



MANET Radios for Critical Platforms

Platforms

UAV, RPAS, Drones
Rotary & Fixed-Wing Platforms
Control Stations, Vehicles, Rovers
Vessels, Maritime Radios
Launchers, Balloons
Stratospheric Platforms
High-Altitude Stations (HAPS)

Applications

Tactical ISR Data Links
Telemetry & Video Streaming
Command and Control (C2)
Intra-Flight Data Links
Wireless Backhails
Swarm and Mesh Networks

P6000 are defence-grade IP data links that provide a light, compact, robust, and affordable solution for airborne, maritime, and ground communications. A higher power version delivering up to 8W is available for long-range missions.

FDMA and TDMA multiplexing allow point-to-point, point-to-multipoint, and mesh networks (MANET) with configurable time slots and dynamic routing. Any network topology can be deployed without the need for external infrastructure.

P6000 radios implement unique frequency offset compensation algorithms that keep communication performance at hypersonic speeds.

Multiple devices can be connected simultaneously to the Ethernet and serial interfaces, centralising data links for C2, telemetry, audio, and video in a single device.

The Transmission Security option enables Frequency Hopping Spread Spectrum (FHSS), adding low probability of interception (LPI) and detection (LPD) capabilities.

Superior Performance

- Up to 120 Mbps at UHF, L, S, and C-bands.
- FDMA and TDMA operational modes.
- Up to 8W of RF output power.
- COFDM with configurable channel bandwidth.
- FHSS with up to 512 frequencies.
- Hypersonic Mobility up to Mach 5 (>6000 km/h).

Mesh Networking

- Robust MANET with configurable nodes.
- Mesh, Star, and Mixed network topologies.
- Internally synchronised, GPS not needed.
- Dynamic Packet Routing between nodes beyond LoS.
- IP Filtering, Wireless Bridge, IP Multicast.

Transmission Security

- Frequency Hopping Spread Spectrum (FHSS).
- AES-256 Encryption.
- Zeroization of TRANSEC parameters.

Defence-grade Qualification

- Qualified for harsh environmental conditions.
- Extremely rugged IP67-rated design.
- Nickel-plated aluminium enclosure.
- Any point on the surface is valid for Electrical Bonding.
- Built-in self-tests (BIST).
- Over-temperature monitoring and protection.
- Robust power supply with EMI filtering, overcurrent, and reverse voltage protections.

Data Interfaces

- A single unit for Commanding & Control (C2), telemetry, audio, and video streaming.
- Simultaneous connection of multiple devices via Ethernet and serial data interfaces.
- Plug-and-play with most autopilots, radio controls, gimbals, and IP cameras.
- +5 VDC output to supply external devices.

Configuration and Diagnostics

- Link Commander: cutting-edge application for data link and mission control.
- Open protocol for local and remote configuration.
- Network and signal status monitoring.
- Real-time constellation.
- Multiple video players and Geo-positioning map.
- Spectrum Analyzer, Scanning Mode.

Specifications

Signal		P6000	P6000+
Frequency Band	Min	225 MHz	
	Max	3 GHz	6 GHz
Max. RF Output Power		≥ 2 W	> 5 W
Waveform		COFDM	
Modulations		QPSK, 16QAM	
Channel Bandwidth		5,10,15,30 MHz	
Data Rate		Up to 120 Mbps	
Multiple Access		FDMA, TDMA	
Networking		Scalable Mesh, MANET	
Transmission Security ^{-SE}			
Frequency Hopping ^{Option}		Up to 25 hops/s	
Data Encryption ^{Option}		AES-256	
Interfaces			
RF Connectors		2x SMA 50Ω	
Ethernet ^{Data & Control}		10/100/1000BASE-T, RJ-45	
Circular Connector <small>MIL-DTL D38999</small>	Input Power Supply	+24 to +30 VDC	
	Serial ^{Data}	RS232, RS422/485, UART, SBUS	
	External Supply	+5 VDC Out ^{300 mA max.}	
Current Consumption ^{@28VDC}		≤ 0.7A	≤ 1.8A
Mechanical			
Dimensions		118x107x48 mm	118x166x59 mm
Weight		0.7 kg	1.3 kg
Material		Aluminium 6082, Nickel Plating	
Environmental & Operational Conditions			
Operating Temperature		-40°C...+75°C	
Storage Temperature		-55°C...+85°C	
Waterproofness		IP67	
Temperature, Humidity, Vibration, Shock, ESD		MIL-STD-810 RTCA DO-160	
EMC		MIL-STD-461	
Environmental Protection		RoHS, REACH	
Export Classification	Standard ^{-ST}	EAR99 ^{No License Required}	
	Security ^{-SE}	5A001.b.3, 5A002.a.2	

Ordering Information

Part Numbering P6000 ⁺ **CO** - **S3** - **R2** - **ST**

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Contact us for non-listed RF band or serial interface.