

# High Capacity Radio (HCR)

## Features & Benefits

- Single box mast-mounted Band 4 radio
- Innovative RF technology support Frequency Duplex (FD) and Time Duplex (TD) waveforms:
- Waveforms up to 200 Mbps aggregate in FD mode (upgradeable to 400 Mbps)
- Up to 16 Mbps aggregate ECCM frequency hopping in TD mode
- SCA software architecture
- High spectral efficiency
- ECCM: full band 2,000 hops/sec adaptive with frequency diversity
- 100BaseT (optional 1000BaseT)
- Up to 100 m from shelter, and up to 1.2 km remoting with optional AC/DC and media converter
- Meets MIL-STD-810G
- Product modularity enables future technology insertions and growth in mission capability
- External port for positioner and smart antenna integration
- Extensive BITE, for fast and sure MTTR
- Radio-Aware Routing
- Precision Timing Protocol

## Combining high-capacity, long range, interoperability and full-band frequency hopping ECCM to suit various deployment scenarios.

The HCR point-to-point radio is a state-of-the-art software-defined radio (SDR) using the Software Communications Architecture (SCA) open framework. The HCR provides both a hardware and software scalable architecture that supports the Common Operating Environment (COE), new technology introductions, and everything over IP (EoIP) networks to meet evolving mission requirements.

The HCR radio incorporates and improves the best features of the battle-proven spectrally efficient AN/GRC-245 radio and the ECCM features of the AN/GRC-512 radio to form a software-defined radio platform that can perform multiple roles.

The HCR provides several radio modes in a single common platform enabling each radio relay vehicle to quickly mix and match each radio's mode to suit the battlefield conditions. HCR allows militaries to take on more missions at once, with fewer assets requiring less logistics.

The single box mast-mounted radio can serve as a high-capacity line-of-sight radio relay with both spectrum efficient and long range waveforms. It can also be used as a true full-band ECCM radio relay.

The HCR ECCM waveform uses time duplex to provide Adapt & Aware full band frequency hopping together with a Frequency Diversity mode, providing the array of electronic counter counter measures (ECCM) required to survive the toughest EW environments. In addition to Ultra TCS' industry leading adaptive ECCM waveforms, the HCR benefits from other cognitive radio features such as full band spectrum scan and an inter-nodal data channel.

The radio will maintain 34 Mbps of full duplex, spectrally efficient traffic over ranges greater than 40 km. The radio also offers sustained operation at 200 Mbps (upgradeable to 400 Mbps) aggregate data rates. A special orderwire-only mode provides a robust high system gain during antenna alignment.

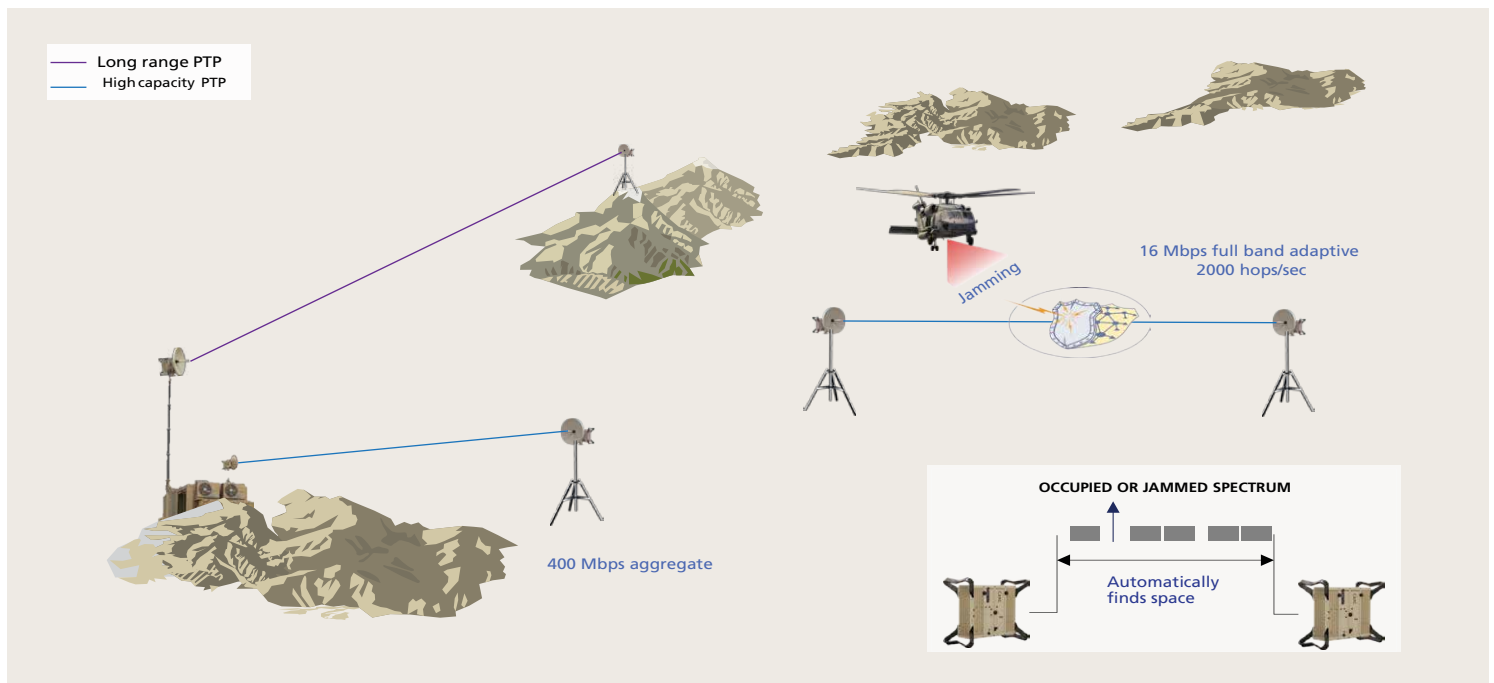


For separation distances beyond 100 m, an optional base-of-the-mast AC/DC and media converter unit allows the radio to operate up to 1.2 km away from the communications shelter. The radio is controlled using its secure web server or its SNMP interface. This may be done using a local computer or via a remote NMS. Voice orderwire is provided for coordination at all points in the link. The web server delivers full band spectrum scan capability to ease operation in today's difficult spectrum environments.

The mast-mounted unit interfaces to an external dish or a flat panel antenna depending upon the application. Sector antennas can also be used to support at-the-quick-halt operations with set-up in less than 90 seconds. The radio is interoperable with many current mainstream heavy and lightweight masts.

TCS

**Ultra**  
ELECTRONICS



## Specifications

Parameter	Specification
Frequency	Band 4 (4400 – 5000 MHz)
Throughput	Up to 200 Mbps aggregate (optional 400 Mb/s in FD mode) / Up to 16 Mbps aggregate in TD ECCM mode
Range	Up to 64 km in tactical deployments
ECCM	Frequency hopping (2000h/s) – Diversity & Adaptive modes / Automatic Power Control (APC), Automatic Frequency Control (AFC), Random framing & Spectrum Scan, Interleaver
Spectrum Efficiency	Up to 5.4 b/s/Hz
Security	AES Customer approved external IP encryption
Waveforms	FD and TD waveforms: software selectable on same platform - spectrally efficient long range and full-band ECCM waveforms
Modulation	Up to 256 QAM
Interface	EoIP: 100 Base T traffic & management interfaces / Remote Control using standard based SNMP
Interoperability	HCLoS interoperable
Antenna	External flat, parabolic, omni-directional or smart antenna / Automatic self-aligning antenna system
Size (HxWxD)	365 x 404 x 134 mm
Weight	17 kg
Power	48 VDC, optional 115/220 VAC
Temperature	Operating -40 °C to +55 °C



making a difference