Ultra ORION X500-G

Multichannel High-Capacity Connectivity Across Networks

Features & Benefits

- Reduces total cost of ownership with 3 radios in 1
- Powerful SDR with library of LOS & NLOS waveforms suitable for land, sea and air applications
- MIMO technology
- Empowers soldiers at the tactical edge
- 4G LTE enabler and edge device integration
- Military & public safety bands all in one radio (Band 3+, Band 4, 4.9 GHz and NII/ISM)
- Option for Band X
- Up to 1 Gbps system
- Embedded crypto (FIPS 140-2 Level 2, AES-256)
- Compatible with external cryptos
- 100/1000BaseT
- Secure and intuitive graphical user interface
- MIL-STD-810G & 461F, IP67
- Optional UltraHop frequency hopping ECCM

The tri-LOS Ultra ORION X500-G is a multiband, point-to-point (PTP), point-to-multipoint (PMP) and mesh radio system. It provides at-the quick-halt communications across multiple echelons and On-the-Move (OTM) access capability. The system offers up to 1 Gbps throughput and operational flexibility within a small mast or vehicle-mounted form factor.

Multiple Missions

The same radio serves as a high-capacity backhaul, backhaul repeater, range extension node, aggregation/distribution and access point, WLAN or remote station at the network's edge. The versatile radio system maximizes flexibility to support different missions while reducing training costs and supporting logistics. The radio can operate in a high-threat environment with the UltraHop frequency hopping waveform.

IP Connectivity

The radio has the capability to converge, cross-connect and relay 3 channels of IP communication. It supports 2 PTP links or a mix of PTP, PMP and mesh for a total of 2 SDR channels. The third channel is a secure 802.11 or LTE access. The PMP and mesh waveforms use MIMO to give excellent performance with multipath or increased throughput. Each channel can be encrypted internally or use an external encryption device.

Wide Band Operation

The radio operates in the Band 3+, Band 4, 4.9 GHz and NII/ISM frequency bands, giving it spectrum flexibility and a cross-band capability. The radio architecture supports waveforms using both time division and frequency division duplexing.

Interoperability

The X500-G is interoperable with the AN/GRC-245 HCLOS radio in either Band 3+ or Band 4 and with HCR in Band 4. This capability allows the extension of the IP network to the lower echelons and to ISR assets.
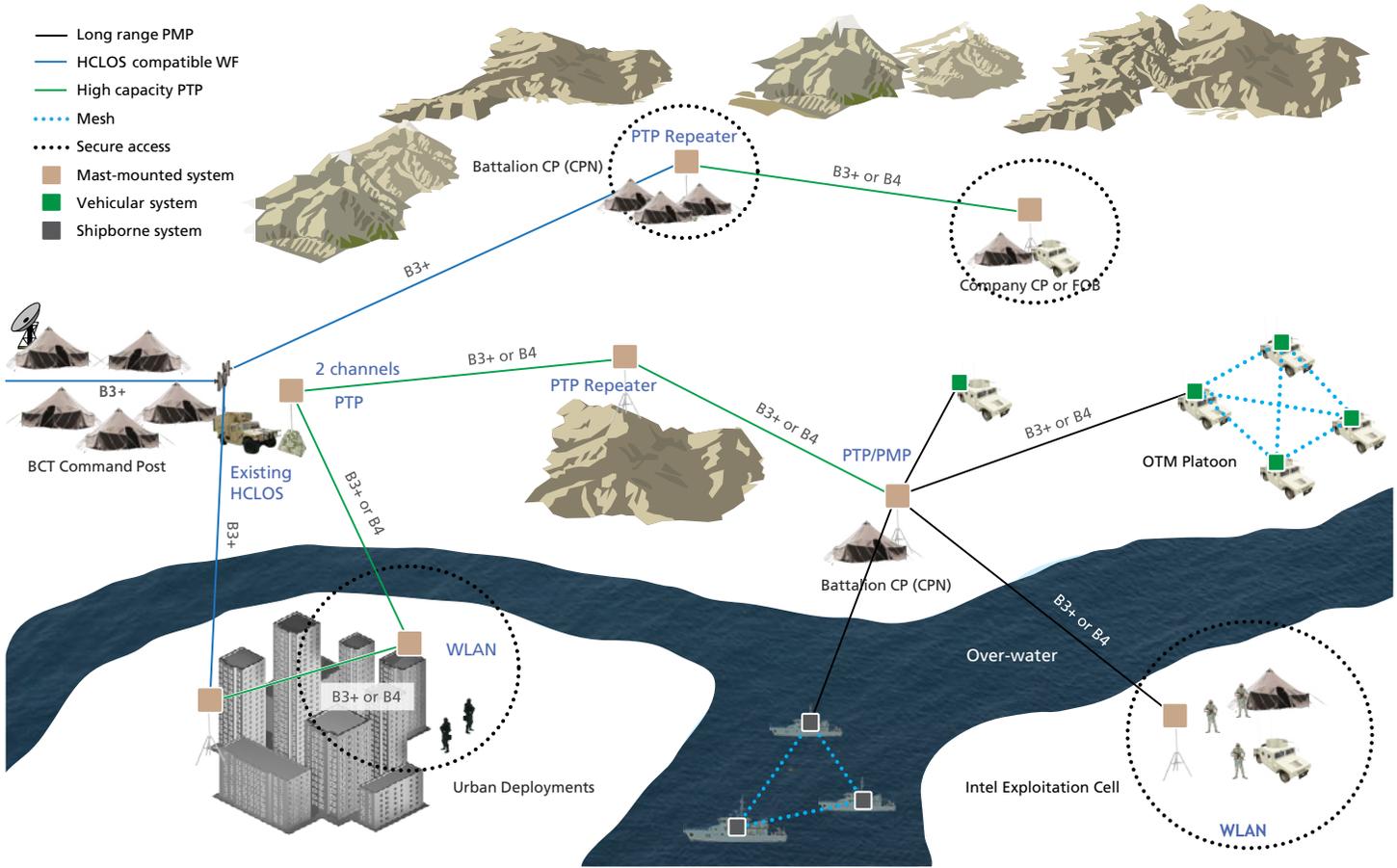
Device Access

X500-G allows connection of smartphones and tablets to push down broadband connectivity to the tactical edge. The radio's 802.11 connectivity also permits the user to securely manage the device with a user friendly COTS device such as a smartphone, tablet or laptop.

System

The radio reduces the size, weight and power (SWaP) requirements of a system by supporting multiple channels and frequency bands in a single-box radio. An optional network interface unit provides additional Ethernet connections and a fiber optic interface to the radio. The unit also provides an AC power capability. Various antennas and masts are available to meet the operational needs and leverage the radio's multi-mission capability. Dual RF heads in both Band 3+ and 4 provide internal spare radio capability.

Ultra ELECTRONICS

making a difference

Legend:
- Long range PMP
- HCLOS compatible WF
- High capacity PTP
- Mesh
- Secure access
- ▢ Mast-mounted system
- ▢ Vehicular system
- ▢ Shipborne system

Diagram labels:

Battalion CP (CPN)

PTP Repeater

B3+ or B4

Company CP or FOB

B3+

2 channels PTP

B3+ or B4

PTP Repeater

B3+ or B4

PTP/PMP

B3+ or B4

OTM Platoon

B3+

BCT Command Post

Existing HCLOS

B3+ or B4

B3+

Battalion CP (CPN)

B3+ or B4

Over-water

WLAN

B3+ or B4

Urban Deployments

Intel Exploitation Cell

WLAN

Specifications

Parameter	Specification
Channels	2 SDR channels + 1 secure access channel
Frequency	Band 3 (1350-1850 MHz), Band 3+ (1350-2690 MHz), Band 4 (4400-5000 MHz), 2.4 GHz ISM and 5.8 GHz NII/ISM
Throughput	Up to 400Mb/s per SDR channel, 1Gb/s for system
Spectrum Efficiency	Up to 5.4bits/s/Hz
Traffic Security	Data traffic AES-256 FIPS-140-2
Transmit Power	+6 to +36 dBm
Sensitivity	Threshold -100 dBm
Channel Size	0.75 - 40 MHz
Waveforms	Library of over 50 LOS and NLOS waveforms including PTP, PMP, Mesh, OTM and interoperability
Management	Intuitive User Interface (HTTPS, SNMPv3)
Interoperability	AN/GRC-245 A/B HCLOS, HCR, Air Defense Networks
Antennas	Omnidirectional, sectorial, flat panel and directional
Size (HxWxD)	4 x 11.8 x 12 " (102 x 304 x 300 mm)
Weight	Up to 21 lbs (9.5 kg)
Power	28 VDC, optional 115/220 VAC
Temperature	-40 to +60°C (operating), -40 to +70°C (storage)
Environmental	MIL-STD-810G & 461F, IP67