



# Ultra ORION X510-V

## Exchange Critical Data On-the-Move

Part of the Ultra ORION family, the X510-V is a vehicle-mounted radio system with embedded mesh, point-to-multipoint (PMP) and point-to-point (PTP) capabilities providing communications across multiple echelons. It combines high-bandwidth, performance and operational flexibility in a small form factor.

### Multiple Missions

The X510-V is a multiband, dual channel vehicular solution adapted for high speed on-the-move (OTM) and at-the-quick-halt (ATQH) communications. It can operate in mesh, PMP or PTP modes in order to fit in any tactical scenario. With its ability to create a self-organizing OTM network, the radio is ideal for rapid deployments, force projection, command & control (C2) OTM, disaster recovery and any other mission requiring true mobility. It allows exchange of bi-directional, multi-party video and secure connection to smart devices, enabling broadband connectivity to the edge. The X510-V maintains connectivity to C2 tools and ISR products in rapid pace operations.

### The Waveforms

A large library of robust and high mobility waveforms is available to fit customer needs on land, sea and air platforms. The X510-V includes the UNW mesh waveform, powered by Ultra's unique Tactical MIMO Engine (TME), to provide robust mesh communications. The radio can operate in a high threat environment with UltraHop Electronic Counter-Counter Measures (ECCM) frequency hopping waveforms (optional). The X510-V is interoperable with the other Ultra ORION radio variants, such as the X500-G tri channel radio system.

### The Package

The vehicular system includes the X510 series compact and lightweight radio, along with a vehicular mount, a power supply and omnidirectional antennas suited for high speed on-the-move operations.



If needed, the radio can be quickly and easily removed from the vehicle mount for ATQH mast-mounted operations, providing extended communications range using sectorial, panel or directional antennas.

An intuitive graphical user interface helps the operator maximize the radio's capabilities in a series of short and simple steps. With the use of custom presets, the interface can quickly activate the system and seamlessly switch between operating modes.

### The Radio

The X510-V is a versatile and compact radio system. It can operate in multiple NATO bands (Band 3, 3+ or 4) with the software-defined radio (SDR) channel as well as a second channel using high power ISM (HPI) or LTE user equipment (UE) mode. The HPI channel allows long range high power point-to-point (PTP) links in unlicensed bands, wireless relay bridge between two outstations, secure local access and remote control of the radio. The radio offers multiple channel size options and high transmit power.

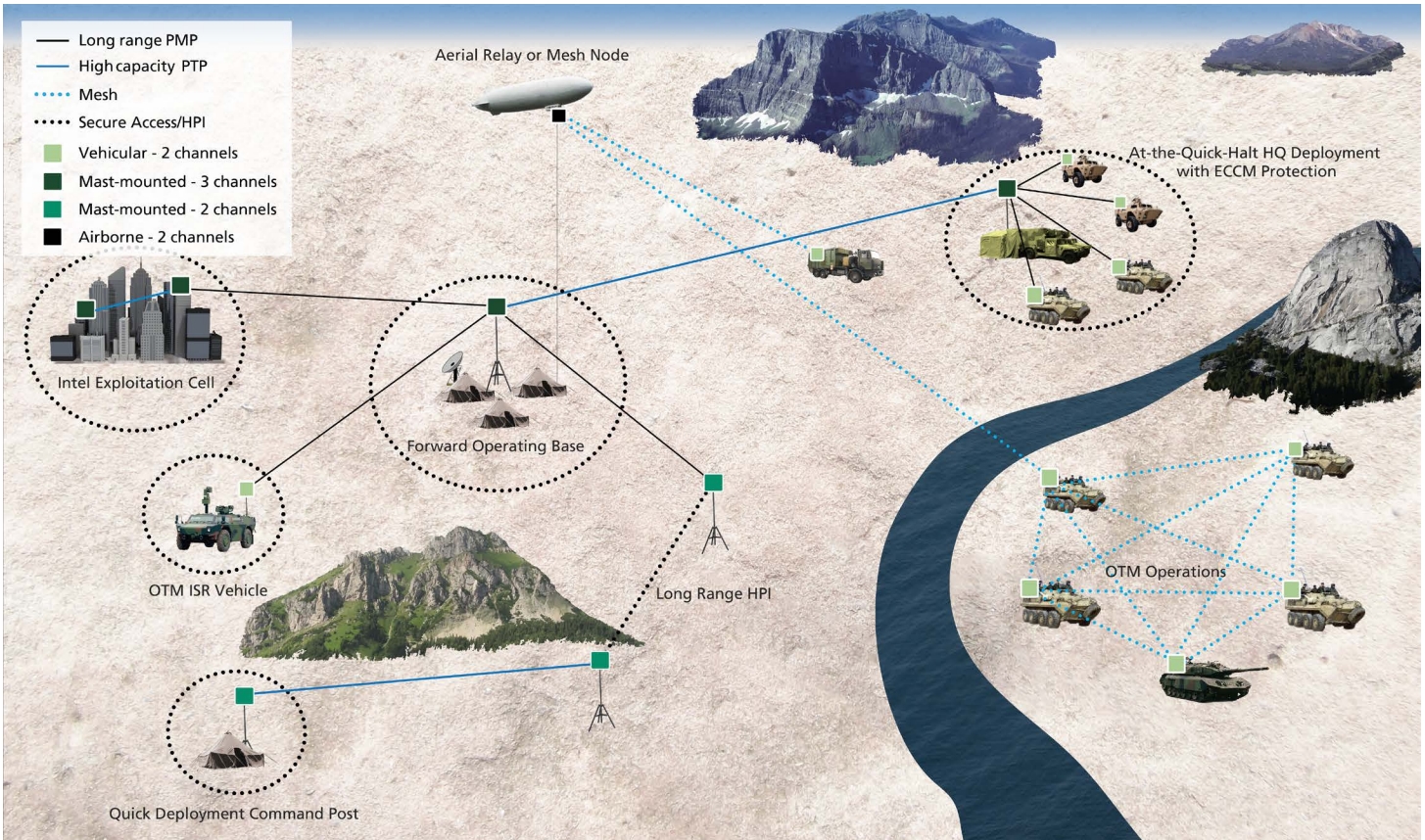
The X510-V provides true end-to-end security, with both channels being secured with AES-256 FIPS 140 level 2 encryption.

## Features & Benefits

- 2 channel software-defined radio system
- Secure and reliable on-the-move communications
- OTM mesh, PMP and PTP capabilities with adaptive MIMO
- NLOS capabilities
- High power NATO Band 3, 3+, 4 and ISM
- HPI or LTE UE mode
- Extended library of waveforms
- Up to 350 Mbps
- Compact and lightweight
- MIL-STD-1275 power supply
- MIL-STD-810G & 461F, IP67

**Ultra**  
ELECTRONICS

making a difference



### Specifications

Parameter	Specification
Frequency	Band 3 (1350-1850 MHz), Band 3+ (1350-2690 MHz), Band 4 (4400-5000 MHz), HPI (2.4, 5.2 & 5.8 GHz), LTE (700 MHz)
Throughput	Up to 200 Mbps for SDR channel, 350 Mbps for system
Number of Channels	2 (1 SDR + 1 HPI or LTE user equipment)
Radio Access Method	TDD
Modulation & Coding	BPSK up to 64QAM with Automatic Modulation & Coding (AMC)
RF Techniques	Adaptive MIMO 2x2 (Transmit Diversity, Spatial Multiplexing, MRC)
Transmit Power	Max. +36 dBm
Channel Size	From 3.5 to 40 MHz
Waveforms	Library of waveforms including point-to-point, point-to-multipoint and high-capacity mesh. Optional frequency hopping waveforms.
Traffic Security	AES-256 - FIPS 140-2 Level 2, optional ECCM features
Antennas	Omnidirectional, sectorial, flat panel and directional
User Interface	100/1000 BaseT Ethernet
Network Management	Intuitive User Interface (HTTPS, SNMPv3)
Size (HxWxD)	6.4 x 11.8 x 11.3" (163 x 300 x 287 mm) (total system dimensions)
Weight	17.8 lbs (8.1 kg) (incl. radio, vehicle mount & power adapter)
Temperature	-40 to +55°C (operating), -40 to +70°C (storage)
Environmental	MIL-STD-810G & 461F, IP67, MIL-STD-1275 power supply
Platforms	Suitable for wheeled and tracked vehicles



**Ultra Electronics**  
 TCS  
 5990 chemin Côte-de-Liesse  
 Montréal, Québec  
 H4T 1V7  
 Canada  
 tel: +1 514 855 6363  
 fax: +1 514 855 6357  
 email: info@ultra-tcs.com  
 www.ultra-tcs.com  
 www.ultra-electronics.com

USA  
 Tel: +1 844 889 6363 (toll-free)

Ultra Electronics reserves the right to vary these specifications without notice.  
 © Ultra Electronics, TCS, Inc. 2016  
 Printed in Canada  
 6095-1104 2016-06-06