



Government Validated Protected Waveform
Adopted by CDL Executive Agent

Features

- Low power requirement and small size and weight footprint provide flexibility and scalability in installation and compatibility from short/medium range tactical UAS and Launched Effects to larger crewed and uncrewed platforms
- Multi-band reception and transmission (L and S with C available) enables operation anywhere in the world
- Compliant encryption (U.S. and Coalition) facilitates flexible and tested secure communications
- Integrated 2-watt power amplifier simplifies integration and further reduces terminal footprint
- Transmit and receive data to provide high-capacity IP channels for voice, data, and video
- CDL Common Control Interface provides open architecture/open standard compliance

Expeditionary-1 (EX-1) Software Defined Radio

Cubic's Expeditionary-1 (EX-1) Software Defined Radio provides front line tactical ISR communications that are crucial for air, ground and maritime forces operating in contested and highly contested Electromagnetic Spectrum threat environments.

The EX-1 is an environmentally rugged and compact data link system. It enables protected datalink communications to a variety of platforms to include Group 2-3 Uncrewed Aircraft Systems (UAS) platforms and Ground and Air Launched Effects (LE) to be compliant with the Department of Defense (DoD) Common Data Link (CDL) standard, while ensuring ISR and Command and Control (C2) data transmissions are secure and joint interoperable.

The EX-1 is a multi-band radio specifically designed to address limited size, weight and power (SWaP) constraints of smaller ISR platforms. The EX-1 can be paired with antennas / amplifiers for longer range, or use an optional integrated 2W PA for manpack / mobile / short range use. The radio supports L and S bands with C band available and includes the latest encryption technology.

Expeditionary-1 (EX-1) Software Defined Radio

Specifications

General Features	
Low SWaP multi-band full duplex CDL radio	
Ethernet over USB	

Encryption	
Embedded Encryption; Type 1 in progress	

Waveforms	
Bandwidth Efficient CDL (Modes 101 and 104)	
BE CDL Mode 300 Series	
Dynamic Multiaccess Networking Waveform (MANET)	

Other Waveforms Available	
Standard CDL	
Bandwidth Efficient CDL (Modes 1-8 and 105)	
Cornerstone	

Physical Specifications	
Size	5.6" L x 3.0" W x 1.17" D
Weight	1.20 lb
Power	10-18W depending on waveform and internal PA output setting

Operational Frequency Ranges	
C-band	4400 MHz – 4990 MHz
S-band	2200 MHz – 2500 MHz
L-band	1710 MHz – 1850 MHz

Transmit output power	
Internal PA in L and S bands with 1W output at connector	

Data Interfaces	
Command Interface: SNMP MIB Compliant to CDL Rev E	
User Data Interface: IPv4/6	

Environmental and EMI/EMC Specifications (Designed – Qual test pending)	
Environmental	Vibration, Shock, Temperature, Humidity MIL-STD-810F
EMI/EMC	MIL-STD-461E
Operating Temperature	-40°C to +71°C (Case Temperature)
Operating Altitude	25,000 ft

The Expeditionary-1 Software Defined Radio is the latest evolution of Cubic’s miniaturized software-defined radios with encryption. For more than two decades, Cubic has designed, manufactured, integrated and deployed radios for the DoD-mandated ISR CDL which is used universally by tactical and strategic airborne, terrestrial and maritime vehicles.