CUBIC Mission Solutions

Single Channel Modem (SCM)

Features and Benefits

- **Low power requirement and small size and weight footprint for installation flexibility and compatibility with short-range tactical UAVs and larger manned and unmanned vehicles**
- **Multi-band reception and transmission (L/S/C/Ku) offers mission flexibility for worldwide operations**
- **AES & Type-1 encryption (U.S. only) facilitates flexible and tested secure communications**
- **Integrated video compression/ decompression simplifies integration and further reduces terminal footprint**
- **Transmit and receive data rates up to 45 Mbps provides high-capacity IP channels for voice, data and video**
- **Web-browser operator and SNMP machine-to-machine control eases human or machine control**

Secure Information, Surveillance and Reconnaissance (ISR) data

Cubic's Single Channel Modem (SCM) provides front line tactical ISR communications that are crucial for air, ground and maritime forces during combat. The SCM is an environmentally rugged and compact data link system that is designed to provide ISR data to various platforms and personnel. The modem's EMI protected assembly houses a multiband miniature transceiver (MMT), removable Type 1 encryption module, and an integrated RF switch array that enables various antenna configurations and multi band operations.

The SCM supports multiple waveforms including Standard CDL and Bandwidth-Efficient CDL. Additionally, the SCM can transmit independently in L, S, C and Ku Band. The ability to transmit data to multiple users.

The SCM is the outcome of a successful five-year Mini-CDL development program undertaken for the U.S. Air Force Research Laboratory AFRL in 2006. This development provided a miniaturized software defined radio with removable Type 1 encryption.

The SCM core (MMT) is used as the CDL module inside the U.S. Marine Corps VideoScout terminal and for the U.S. Navy's MQ-8B & C Fire Scout Unmanned Aerial Vehicle (UAV). Cubic has delivered more than 700 MMTs on the VideoScout program and over 50 on the Fire Scout program to date.

Single Channel Modem (SCM)

Specifications

Features	Dual Channel Modem
Frequency bands of operation	L, S, C, Ku
Waveforms (up to 15 stored per modem)	Standard CDL Bandwidth Efficient (BE) CDL Rev B 466 ER Tactical 1.6, 3.2, 6.4 VNW
Number of simultaneous transmit channels	2
Number of transmit data sources	1
Number of receive channels	1
Number of simultaneous receive data sources	1
PCE/SCE reconfigurable mid-mission; relay-enabled	Yes
Type-1 encryption	Yes
Type 3 encryption	NSA-approved AES
Size	1.6" H x 13" W x 5" D
Weight	6 lbs
Power	<40 W
Cooling	Single integrated forced air fans
Open Standard interfaces	28 VDC power Single DS-101/DS-102 for Keyfill Single 10/100 BaseT Ethernet red interfaces Single 10/100 BaseT Ethernet black interfaces Dual Tx multiband configurable RF ports and Dual Rx multiband configurable RF ports Single RS-170 analog video and audio

Single Channel Modem enables secure access of Intelligence, Surveillance, and Reconnaissance data across multiple sensor platforms.

Cubic's SCM Heritage

For more than two decades Cubic has designed, manufactured, integrated, and deployed transceivers for the DoD-mandated ISR Common Data Link (CDL), used universally by tactical and strategic airborne, terrestrial and maritime vehicles.

A ruggedized tablet or laptop can be used to easily display ISR information inside the cockpit.

Various power amplifiers and antenna configurations can be easily integrated into the SCM, depending on the user's concept of operations.

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