

7-450-14

CHELTON

TETRA Airborne Transceiver (no SIM Card Facility)

Chelton's 7-450-14 TETRA Airborne Transceiver without SIM Card Facility provides airborne users with access to TETRA (TErrestrial Trunk Radio) communications networks.



The transceiver uses the feature-rich Sepura® SRG3900TM core radio, and operates in one of the standard TETRA frequency bands, from 380 MHz to 430 MHz.

The connector interfaces are accessible from the front faceplate of the unit. The unit is designed to be rack mounted in a short tray.

The 7-450-14 includes a mechanically sealed access port for the insertion and removal of a SIM card. The SIM card facilitates storage of radio "personality" and end-to-end cryptographic information.*

Operational Features

- Designed specifically for airborne use
 - Compatible with common aircraft audio distribution system signal levels and impedances
 - In-circuit RF bandpass filter provides immunity from on board transmitters in the VHF and IFF bands and protection to existing aircraft systems, particularly the VHF communications and navigation receivers
 - Differential transmission of CDU-transceiver control signals ensures noise immunity
 - Transient suppression and regulation of aircraft 28 V power supply provides a stabilised supply to the core radio module even during momentary supply interruptions
 - Provides 5 V on the RF coax to power a GPS antenna
- Radio "personality" and end-to-end cryptographic information delivered through the SIM card.*

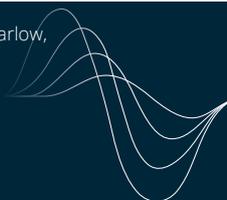
The 7-450-14 interfaces directly to standard aircraft audio systems and is compatible with Chelton CH150 and CH250 Control and Display Units (CDU) and the optional RH150 remote CDU.

The transceiver operates with a UHF antenna; recommended types are Chelton 21-68 or 21-174.

All 7-450-14 transceivers feature integrated Global Positioning System (GPS) receivers, which provide own-platform position information onto the TETRA network and to the CDU. Recommended GPS antennas are the Chelton Type 20-41 or Chelton SatCOM's CI 408-20.

The unit is housed in a ¼ ATR size black aluminium alloy enclosure with a hold down point and a carrying handle on the front face.

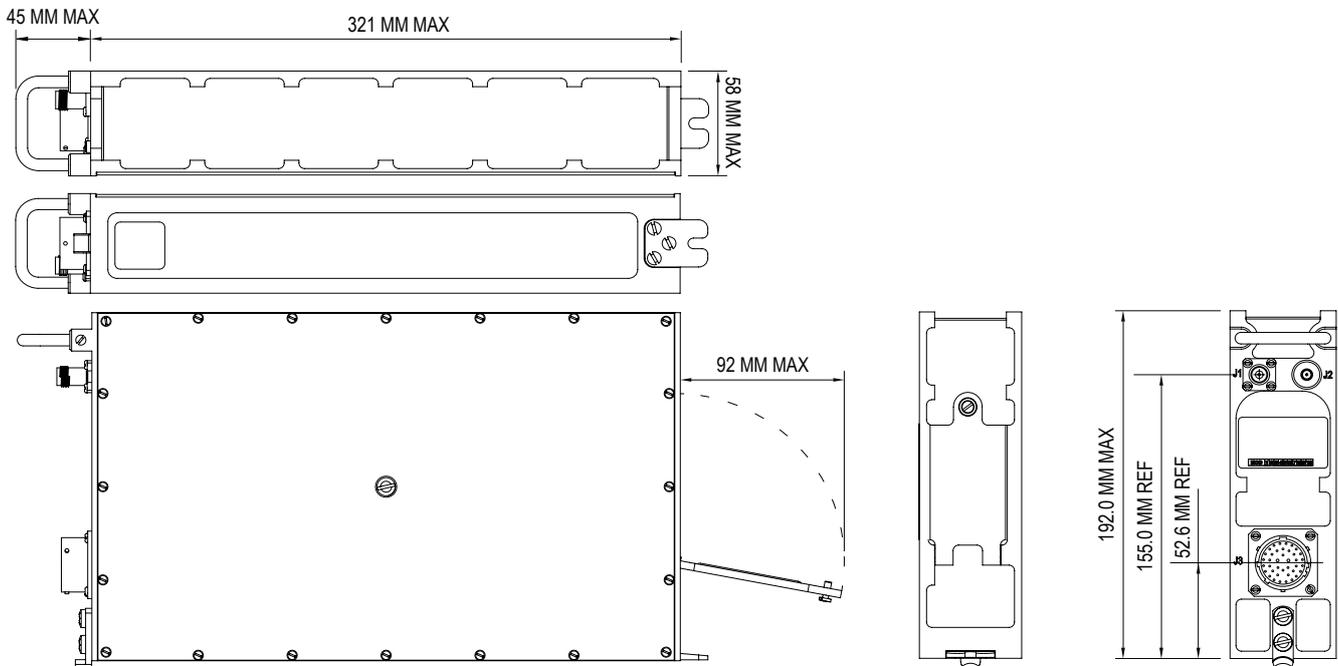
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TETRA Features Supported

- Air Interface Encryption
 - TETRA Encryption Algorithms (TEA) 1, 2, 3 and 4
 - TETRA Security Class 1, 2 and 3
 - Trunked and Direct Modes of Operation (TMO and DMO)
- End to End encryption
- Highly Preferred Subscriber Class (HPSC) operation for airborne use
- DMO Repeater (enabled by feature licence code)
- DMO Gateway (enabled by feature licence code)
- Voice services - point to point, multi-point and telephone calls
- Emergency and Priority calls
- Data Services - Status and Short Data Service (SDS) messaging, SDS Store and Forward, multi-slot packet data
- Stun and Kill
- Integrated GPS Receiver
- Configurable to specific national TETRA networks using the Sepura® software management suite
- Serial data port (PEI) facilitates data transfer

* No SIM facility with 7-450-14

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ELECTRICAL

Power Consumption	
Receive:	6 W typical
Transmit:	20 W typical (70 W absolute max. for max.)
Standby (OFF):	Tx power) 0.5 W typical
Receive Characteristics	
Frequency Range	380 MHz to 430 MHz
Channel Spacing	25 kHz
Sensitivity: Typical	Dynamic - 103 dBm, Static - 112 dBm
Frequency Accuracy	EN 303 035-1 (TMO) and EN 303 035-2 (DMO)
Audio Output Level	6.0 Vrms nom. into 600 Ohm (adjustable)
Sidetone Level	-2 dB with respect to nom. Audio Output Level, (adjustable)
Control Interface to CDU	Split Rx/Tx RS422 serial, proprietary
Transmitter Characteristics	
Frequency Range	380 MHz to 430 MHz
Channel Spacing	25 kHz
Modulation	Pi/4 DQPSK
RF Power Output	Pre-settable to a maximum of 39 dBm Peak max, adjustable in steps of 5 dB. Adaptive power control. (DMO max power settable independently to TMO max power)
Adjacent Channel Power	In accordance with: ETSI EN 303 035-1 (TMO) and EN 303 035-2 (DMO)
Microphone AF Input Level	800 mV rms input should not cause limiting
Connectors	
RF (Main Tx/Rx RF)	TNC Female
RF (GPS)	SMA Female
Multipin	MS3112E20-39P

MECHANICAL

Dimensions	192 x 58 x 366 * (maximum) * including carrying handle
Weight	3.63 kg (maximum)
Aerodynamic Load	6300 kgf/m ² proof (9 psi) 9500 kgf/m ² minimum ultimate (13.5 psi)

ENVIRONMENTAL

Temperature	EUROCAE ED-14C / DO-160C, Section 4, Cat B1 modified Operational: -30°C to +70°C Short Time (Powered up): +85°C Ground Survival: (Powered down) -40°C to +85°C
Altitude	25,000 feet
Temperature Variation	EUROCAE ED-14C / RTCA DO-160C Section 5, Cat B
Humidity	EUROCAE ED-14C / RTCA DO-160C Section 6, Cat B
Shock	EUROCAE ED-14C / RTCA DO-160C Section 7 Operational shock: 6 g, 11 ms Crash Safety (Impulse): 15 g, 11 ms Crash Safety (Sustained): 12 g, 3 secs
Vibration	EUROCAE ED-14C / RTCA DO-160C Section 8 Cat B Fixed Wing Cat M Fixed Wing Cat N Helicopter
Explosion Proofness	EUROCAE ED-14C / DO-160C, Section 9, Cat X
Waterproofness	EUROCAE ED-14C / DO-160C, Section 10, Cat W
Fluids Susceptibility	EUROCAE ED-14C / DO-160C, Section 11, Cat F
Sand and Dust	EUROCAE ED-14C / DO-160C, Section 12, Cat D
Fungus	EUROCAE ED-14C / DO-160C, Section 13, Cat F
Salt Spray	EUROCAE ED-14C / DO-160C, Section 14, Cat S
Magnetic Effect	EUROCAE ED-14C / DO-160C, Section 15, Cat Z
Power Input	EUROCAE ED-14C / DO-160C, Section 16, Cat B
Voltage Spike	EUROCAE ED-14C / RTCA DO-160C, Section 17, Cat B
Audio Frequency Susceptibility	EUROCAE ED-14C / RTCA DO-160C, Section 18, Cat Z
Emission Of Radio Frequency Energy	EUROCAE ED-14C / RTCA DO-160C, Section 21, Cat B
Noise Radiation	Transceiver will not radiate noises in excess of 60 dB(A)
Fire Protection	Transceiver contains flame retardant components

