7-163PIN161

CHELTON

Logic Converter Unit (LCU)

Key features:

- **For broadband, frequency hopping V/UHF secure communications**
- **Extensive built in diagnostic facilities (BIT)**
- **Internal filter plates to maximise EMC performance**

High performance military aircraft need to maintain continuity for broadband, frequency hopping V/UHF secure communications. Radios need to integrate seamlessly with antennas to maximize the reliability and resilience of such communications.

In conjunction with Chelton's range of tuneable antennas, the **7-163PIN160 Logic Converter Unit (LCU)** takes frequency information from the radio and matches the performance of the antenna to that frequency.

The **7-163PIN161** can be configured to operate with one of up to six radio types (such as the **ARC210** and **ARC231**) and with one of up to four antenna types (such as the **12-190-160, 12-190-310** or **12-190-530LP**).

The **7-163PIN161** is powered from the 28 Volts dc aircraft supply.

The LCU terminates and validates the control signals from the radio, extracts the frequency information, translates it to a tuning command, and provides the required drive signals to tune the antenna via the parallel bus at the output connector.

ELECTRICAL

DC Power Input Interface	16 V to 32 V Protection: reverse polarity and transient protection are incorporated in the design. Power interrupts shall be in accordance with MIL-STD-704D; the state of the antenna outputs will remain as set but may be reduced in level during the power interruption. Maximum current from aircraft supply: 1.5 A @ 16 Volts supply.
Serial Control Interface	The basis for commonality of the control interfaces for this Logic Converter Unit is that the control data be transferred as differential (0/+5 V signals), or single ended (0/+5 V).
Antenna Drive Interface	Each drive-line gives an output (with respect to the 0 Volts, case), of
High Level	Antenna segment, PIN diode reverse biased: +160 V +40 V/-30 V.
Low Level	Antenna segment, PIN diode forward biased: -180 mA ± 25 mA constant current source.
Connectors	Type KPT 02E 14-19P Type KPT 02E 8-33P Type KPT 02E 12-10S

MECHANICAL

Dimensions (deployed)	67.7 x 159.7 x 77.8 max
Weight	1.0 kg maximum
Mounting	Four holes fixed location

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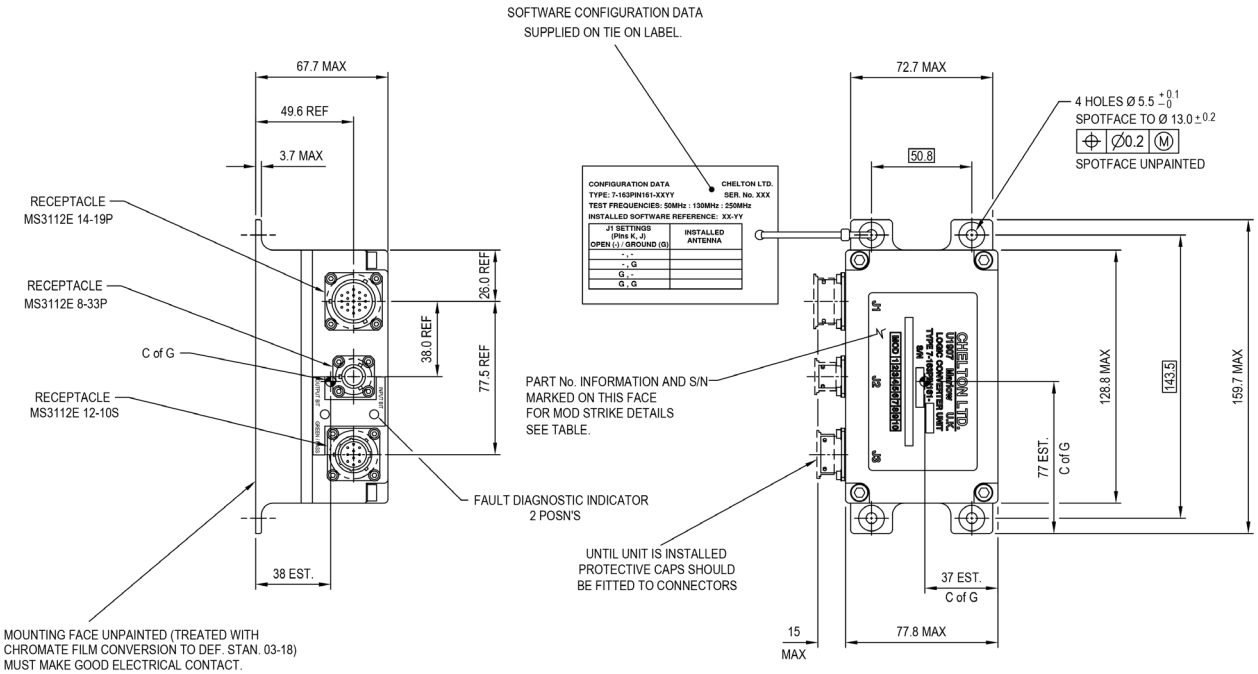
The **7-163PIN161** contains extensive built in diagnostic facilities (BIT) which monitor the input data, PSU status, internal health monitor, in addition to monitoring each of the output drive lines. The BIT status of the unit is fed back to the radio using an 'open-collector' switched ground output. In addition, two LED lamps on the front face of the unit will notify the maintenance crew of operational faults in the antenna system.

The LCU housing is constructed from aluminium alloy with internal filter plates to maximise EMC performance. The base of the unit is flanged with mounting holes for mounting to the airframe.

ENVIRONMENTAL

Temperature	-54°C to +71°C High Operational: MIL-STD-810F, Method 501.4, Procedure II Low Operational: MIL-STD-810F, Method 502.4, Procedure II High Storage: MIL-STD-810F, Method 501.4, Procedure I Low Storage: MIL-STD-810F, Method 502.4, Procedure I
Altitude	MIL-STD-810F, Method 500.4, Procedures I and II Operational and Storage: 70,000 feet
Acceleration	MIL-STD-810F, Method 513.5, Procedures II and III Procedure II - Operational: 15.5 g for 1 minute each axis by analysis Procedure III - Crash Safety: 20.0 g for 1 minute each axis
Mechanical Shock	MIL-STD-810F, Method 516.5, Procedures I and V
Explosive Atmosphere	MIL-STD-810F, Method 511.4, Procedure I
Temperature Shock	MIL-STD-810F, Method 503.4, Procedure I
Salt Fog	MIL-STD-810F, Method 509.4
Fungus	MIL-STD-810F, Method 508.5
Rain	MIL-STD-810F, Method 506.4, Procedure III
Sand and Dust	MIL-STD-810F, Method 510.4, Procedures I and II
Susceptibility	MIL-STD-461F, CS101, CS114, CS106, RS101, RS103, CS115, CS116
Magnetic Effect	RTCA DO-160F, Section 15, Category Z



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