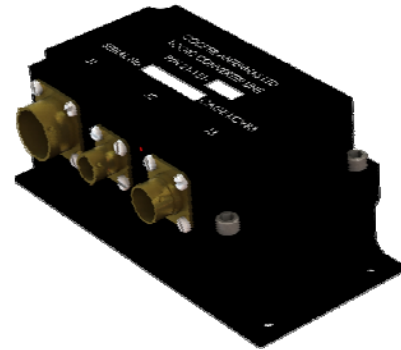




21-171-15-2 Digital Logic Converter Unit (LCU)

FEATURES

- **Suitable for any airborne application**
- **Operates with all versions of the ARC210 including Gen 5, ARC231 and M3AR**
- **Designed to MIL-STD-810, MIL-STD-461 and MIL-STD-704**
- **Incorporates the latest FPGA technology**
- **Incorporates continuous and interruptive BIT functionality**



Military aircraft need to be able to depend on and maintain communications for broadband, frequency hopping V/UHF secure communications. In concert with Cooper Antennas range of tuneable antennas, the 21-171-15-2 digital Logic Converter Unit (LCU) receives frequency information from all versions of the ARC210, ARC231 or M3AR radio and tunes the antenna to the desired frequency which in turn optimizes the gain of the antenna.

The digital LCU validates the control signals from any version of the ARC210, ARC231 or M3AR 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.

The LCU contains extensive built in diagnostic capability (BIT) which monitors 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 transceiver.

The LCU is constructed from aluminium alloy with internal filter and protection PCBs to maximise EMC performance.

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SPECIFICATIONS

Cooper Antennas Model 21-171-15-2 Digital Logic Converter Unit (LCU)

ELECTRICAL

DC Power Input

Normal Working Voltage: 22 to 29 Volts dc
Emergency Working Voltage: 18 to 29 Volts dc
Protection: Reverse polarity and transient protection are incorporated in the design. Power interrupts in accordance with MIL-STD-704F; the state of the antenna outputs will remain as set but may be reduced in level during the power interruption.

Serial Control

The frequency information is transmitted via a 1 MHz Manchester encoded differential serial bit stream

ARC210, ARC231 and M3AR Interfaces

Irrespective of the version or ARC210 that is used, all wiring from the ARC210 and M3AR to the LCU is exactly the same. The LCU interprets the radio version and adjusts automatically. One line is grounded when ARC231 is used.

Antenna Tuning Interface

The antenna tuning interface consists of nine lines of antenna drive signals output on connector J3 and a single return line. Tuning of the antenna is achieved by applying forward or reverse bias to the pin-diode switches in the antenna

High Level +300 V Reverse Bias
Low Level -220 mA Forward Bias constant current source

LCU DC Connectors

J1 : MS3112E 14-19P
J2 : MS3112E 8-33P
J3 : MS3112E 12-10S

Electromagnetic Interference

MIL-STD-461F
Emissions: CE101, CE102, CE106, RE101, RE102
Susceptibility: CS101, CS114, CS106, RS101, RS103
Electromagnetic Pulse: RS105

Operational Temperature

-54°C to +71°C

MECHANICAL

Length x Width x Height

159.7 x 77.8 x 68.6 mm

Weight (max)

0.75 kg

FINISH

Standard

Urethane Lusterless Black

Note: Cooper Antennas Ltd has a policy of continuous product improvement and data herein is therefore subject to change.
Please check with Cooper Antennas Ltd that this data sheet is at latest issue before initiating contract activity.