



21-151-04
Digital Logic Converter Unit (LCU)
Radio - ARC210, TRA6034C21 & M3AR
Antenna 21-140-136 & 21-190-12

FEATURES

- **Suitable for any airborne application**
- **Operates with all versions of the ARC210 including Gen 5, M3AR and TRA6034C21**
- **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 21-151-04 digital Logic Converter Unit (LCU) receives frequency information from all versions of the ARC210, M3AR and TRA6034C21 radios 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, M3AR and TRA6034C21 radios, 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 21-151-04 Digital Logic Converter Unit (LCU)

ELECTRICAL

Radio	Rockwell Collins ARC210 including Gen 5 Thales TRA6034C21 R&S MSAR
Antenna	21-140-136 14.7 inches (374mm) 21-190-12 9.2 inches (234mm)
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
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 : D38999/42 Series IV 13-35 22 pin J2 : D38999/42 Series IV 11-5 5 pin J3 : D38999/42 Series IV 11-35 13 Socket
Electromagnetic Interference	MIL-STD-461F Emissions: CE101, CE102, CE106, RE101, RE102 Susceptibility: CS101, CS114, CS116, RS101, RS103
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
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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.