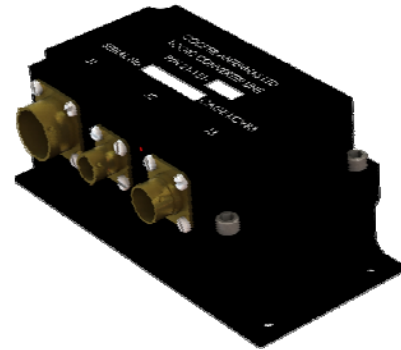




## 21-151-202 Digital Logic Converter Unit (LCU)

### 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 21-151-202 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.

**Cooper Antennas Ltd for non-USA customers**  
Thames Industrial Estate, Unit K, Fieldhouse Lane,  
Buckinghamshire SL7 1TB, UK  
Tel: +44 (0) 1628 482 360  
Email: [sales@cooperantennas.com](mailto:sales@cooperantennas.com)  
[www.cooperantennas.com](http://www.cooperantennas.com)



**Australian Representatives**  
**ROJONE, PTY LTD.**  
Tel: 02 9829 1555  
E: [sales@rojone.com.au](mailto:sales@rojone.com.au)  
[www.rojone.com.au](http://www.rojone.com.au)

# SPECIFICATIONS

## Cooper Antennas Model 21-151-202 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.