7-551 SERIES

CHELTON

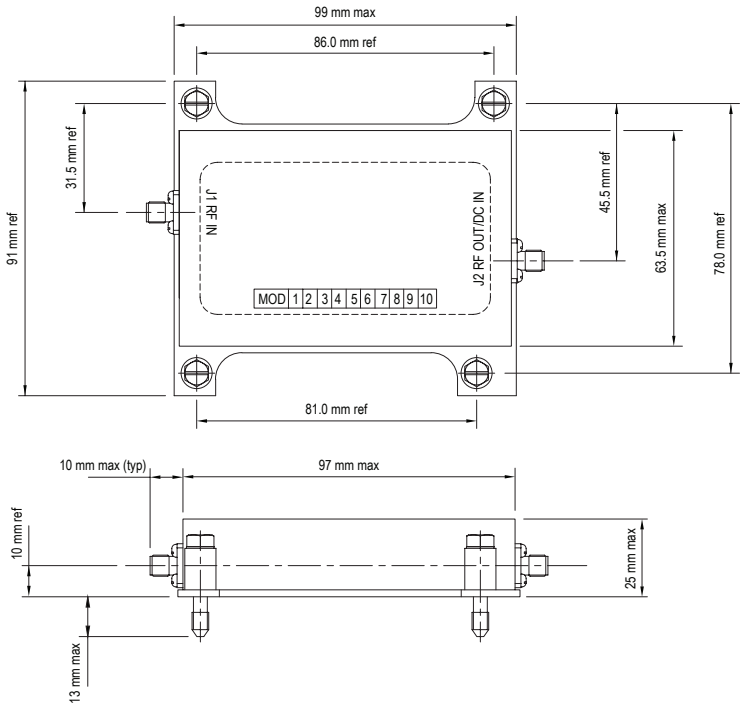
Dual Frequency GPS Antenna Electronic Unit (5V) L1 / L2 Bands

The 7-551 Series of Antenna Electronic Units (AEU) (5V) are dual frequency GPS (Global Positioning Satellite System) pre-amplifiers designed to meet both electrical and environmental military aircraft application requirements.

The pre-amplifier amplifies signals in the two GPS bands (L1 and L2) while rejecting spurious signals outside 60 MHz of centre-bands (60 dB filtering incorporated). The pre-amplifier also incorporates a limiter circuit for high power protection.

The pre-amplifiers are supplied configured to provide factory set antenna electronics gains that range from 4 dB to 24 dB.

The **7-551** is powered from 5 V dc supplied on the RF output connector.



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7-551 SERIES

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Dual Frequency GPS Antenna Electronic Unit (5V)
L1 / L2 Bands

ELECTRICAL

Frequency Ranges	L1: 1575.42 MHz ± 10.23 MHz (M-code) L2: 1227.60 MHz ± 10.23 MHz (M-code)±
Impedance	50 ohm (nominal)
VSWR	< 2.0:1
Gain	The gain is defined by the part number suffix. Part Number — Gain (dB) 7-551-11 — 10.5 ± 2.0 7-551-17 — 16.5 ± 2.5
Noise Figure	The maximum noise figure is defined by the part number suffix. Part Number — NoiseFigure 7-551-11 — 4.2 7-551-17 — 4.1
In-Band Amplitude Ripple	≤ 2 dB
Input 1 dB Gain Compression Point	≥ -30 dBm
In-Band Group Phase Delay Variation	≤ 16 ns over L1 and over L2
Out of Band Rejection	Rejection (dB) — Frequency (MHz) Off-Centre Band L1/L2 > 6 — ± 20 > 40 — ± 40 > 60 — ± 60
Input Power Handling	3 W cw (maximum) 450 W peak (maximum) with a pulse width < 50 µs and a duty cycle < 1% at frequencies < 40 GHz
DC Current Consumption	+4.5 V to +5.5 V, 60 mA (maximum)
Connectors	J1 RF IN: SMA Female J2 RF OUT/DC IN: SMA Female

MECHANICAL

Dimensions (not including captive M5 screws)	25 mm x 99 mm x 91 mm (maximum)
Weight	250 g (maximum)
Mounting	4 holes fixed location, captive screws

ENVIRONMENTAL

Temperature and Altitude	RTCA DO-160F, Section 4, Paragraphs 4.5 and 4.6, Category A2 modified Operational: -40ºC to +70ºC Storage: -55ºC to +85ºC Altitude: 7620 m
Temperature Variation	RTCA DO-160F, Section 5, Category B Rate of change 5º per minute
Vibration	MIL-STD-810D, Method 514.3, Category 5
Acceleration	BS 3G100, Part 2, Section 3.3.6 Normal: Grade C, Class 1A (ii), 3 g Crash: Grade G, Class 12, 11 g
Mould Growth	BS 3G100, Part 2, Section 3.3.3
Tropical Exposure	BS 3G100, Part 2, Section 3.3.7
Salt Mist	BS 3G100, Part 2, Section 3.3.8, Severity 2
Waterproof-ness	BS 3G100, Part 2, Section 3:3.11, Grade B (Drip proof)
Fluid Contamination	BS 3G100, Part 2, Section 3:3.12, Class A
Fire Resistance	BS 3G100, Part 2, Section 3.3.13
Sand and Dust	DEF-STAN 07-55, Sect 4/1, Test D1 (BKRX)
Fungus	MIL-STD-810D, Method 508.3
Electro-magnetic Compatibility	MIL-STD-461A Notice 3 CE01, CE03, RE02, RS02, RS03 (modified: 14 kHz to 40 GHz @ 200 V/m)

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