7-554 SERIES

CHELTON

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

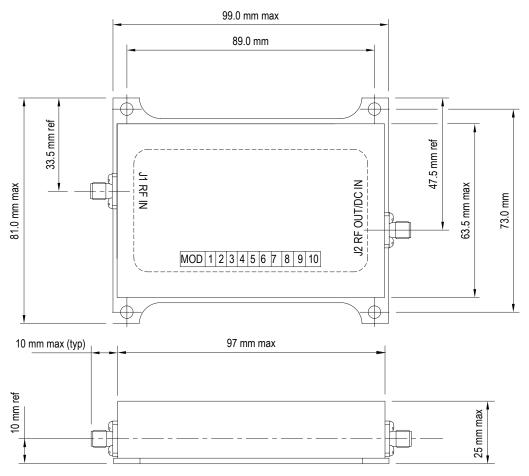
The 7-554 Series of Antenna Electronic Units (AEU) are dual frequency GPS (Global Positioning Satellite System) pre-amplifiers designed to meet both electrical and environmental military aircraft application requirements.

The **7-554** 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 gain that ranges from 12 dB to 24 dB.

The **7-554** is powered from 5 V dc supplied on the RF output connector



Chelton Limited has a policy of continuous development and stress that the information provided is a guide only and does not constitute an offer or contract or part thereof. Whilst every effort is made to ensure the accuracy of the information contained in this Data Sheet, no responsibility can be accepted for any errors or omissions. The copyright of antenna designs and images is copyright protected and owned by Chelton Limited. ©Chelton Limited. The Chelton Centre, Fourth Avenue, Marlow, Buckinghamshire, SL7 1TF, UK T: +44 (0)1628 472072 E: info@chelton.com W:chelton.com

7-554 SERIES

CHELTON

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

ELECTRICAL

Frequency	L1: 1575.42 MHz ± 10.23 MHz (M-code)		
Ranges	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)	
	7-554-12	11.5 ± 2.0	
	7-554-14	13.5 ± 2.5	
	7-554-22	21.5 ± 2.5	
Noise Figure	The maximum noise figure is defined by the part number suffix.		
	Part Number	NoiseFigure	
	7-554-12	4.2	
	7-554-14	4.2	
	7-554-22	3.9	
ln-Band Amplitude Ripple	≤2 dB		
Input 1 dB Gain	≥ -30 dBm		
Compression Point			
	≤ 16 ns over L1 a	and over L2 bands	
Point In-Band Group Phase Delay	≤ 16 ns over L1 a Rejection (dB)	and over L2 bands Frequency (MHz) Off- Centre Band L1/L2	
Point In-Band Group Phase Delay Variation Out of Band		Frequency (MHz) Off-	
Point In-Band Group Phase Delay Variation Out of Band	Rejection (dB)	Frequency (MHz) Off- Centre Band L1/L2	
Point In-Band Group Phase Delay Variation Out of Band	Rejection (dB) > 6	Frequency (MHz) Off- Centre Band L1/L2 ± 20	
Point In-Band Group Phase Delay Variation Out of Band	Rejection (dB) > 6 > 40	Frequency (MHz) Off- Centre Band L1/L2 ± 20 ± 40 ± 60	
Point In-Band Group Phase Delay Variation Out of Band Rejection	Rejection (dB) > 6 > 40 > 60 3 W cw (maximu 450 W peak (max	Frequency (MHz) Off- Centre Band L1/L2 ± 20 ± 40 ± 60	
Point In-Band Group Phase Delay Variation Out of Band Rejection	Rejection (dB) > 6 > 40 > 60 3 W cw (maximu 450 W peak (maximu 450 W peak (maximu < 50 µs and a du < 40 GHz	Frequency (MHz) Off- Centre Band L1/L2 ± 20 ± 40 ± 60 m) ximum) with a pulse width	
Point In-Band Group Phase Delay Variation Out of Band Rejection Input Power Handling DC Current	Rejection (dB) > 6 > 40 > 60 3 W cw (maximu 450 W peak (maximu 450 W peak (maximu < 50 µs and a du < 40 GHz	Frequency (MHz) Off- Centre Band L1/L2 ± 20 ± 40 ± 60 m) ximum) with a pulse width ty cycle < 1% at frequencies 60 mA (maximum) SMA Female	

MECHANICAL

Dimensions (mm)	25 x 99 x 81 (maximum)
Weight	0.24 (maximum)
Mounting	4 holes fixed location

ENVIRONMENTAL

Temperature and Altitude	RTCA DO-160F, Section 4, Paragraphs 4.5 and 4.6, Category A2 modified		
	Operational:	-40°C to +70°C	
	Storage:	-55°C to +85°C	
	Altitude:	7620 m	
Temperature	RTCA DO-160F, Section 5, Category B		
Variation	Rate of change 5° 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	BS 3G100, Part 2, Section 3.3.7		
Exposure			
Salt Mist	BS 3G100, Part 2, Section 3.3.8, Severity 2		
Waterproof-	BS 3G100, Part 2, Section 3:3.11, Grade B		
ness	(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-	MIL-STD-461A Notice 3		
magnetic Compatibility	CE01, CE03, RE02, RS02, RS03 (modified: 14 kHz to 40 GHz @ 200 V/m)		

Chelton Limited has a policy of continuous development and stress that the information provided is a guide only and does not constitute an offer or contract or part thereof. Whilst every effort is made to ensure the accuracy of the information contained in this Data Sheet, no responsibility can be accepted for any errors or omissions. The copyright of antenna designs and images is copyright protected and owned by Chelton Limited. ©Chelton Limited.

T: +44 (0)1628 472072 E: info@chelton.com W:chelton.com