12-190-310

CHELTON

V/UHF Tuneable Antenna

The 12-190-310 V/UHF Tuneable Antenna is a multiband, low profile, blade antenna designed for operation in the frequency bands 30 MHz to 88 MHz, 108 MHz to174 MHz, 225 MHz to 530 MHz and 960 MHz to 1220 MHz.

When operating with the AN/ARC 210 radio, the 12-190-310 should be tuned using a Cobham Antenna Systems Type 7-163PIN160 Logic Control Unit.

The 12-190-310 is configured as three separate radiating elements.

The VHF function is fulfilled by a PIN diode tuned structure. The topplate surmounting the blade provides a capacitance which is tuned by an arrangement of binarily related switched inductive elements,

This produces a high efficiency structure with some degree of selectivity, particularly at low FM frequencies.

The UHF antenna is configured as a broadband passive element. predominantly matched using essentially lossless techniques.

The VHF and UHF antennas are combined within the blade by a contiguous diplexer consisting of two five section filters exhibiting a Tchebyscheff response to a single RF connector.

The L-band antenna comprises a fan monopole. reactively matched and fed via a separate RF port.

The 12-190-310 comprises a blade of aerofoil section surmounted by a capacitive top loading plate. The electronic circuitry is mounted on a circuit board housed within the blade. which is sealed at the base by an aluminium alloy baseplate. The baseplate also supports the three connectors.

The Chelton Centre, Fourth Avenue, Marlow,
Buckinghamshire, SL7 1TF, UK
T: +44 (0)1628 472072
E: info@chelton.com
W: chelton.com

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ELECTRICAL

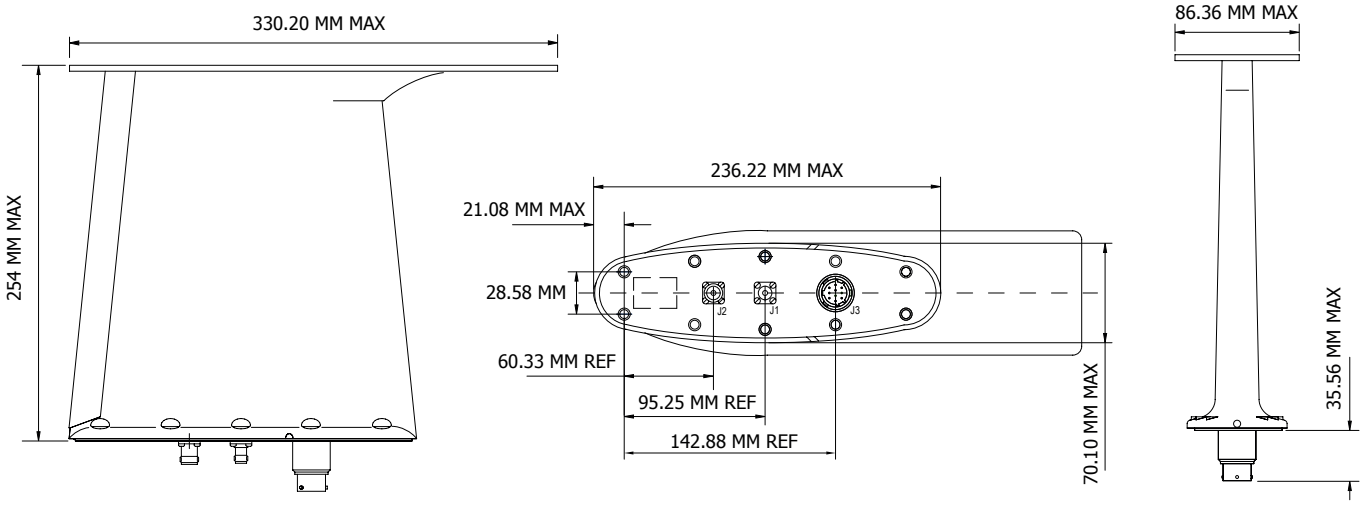
Frequency	MHz 30 - 108 - 225 - 960 -	MHz 88 174 530 1220	
Gain	dBi ≥ -13 ≥ -4 > -3 > 0 > 0 average ≥+2 average	MHz 30 88 108 174 225 - 960 -	 530 1220
Power Rating	RF Power (Watts) 23 23 23 500 peak	Frequency (MHz) 30 - 108 - 225 - 960 -	 88 174 530 1220
Impedance	50 Ohm nominal		
VSWR	VSWR < 2.5:1 < 2.5:1 > 2.5:1 > 2.0:1	Frequency 30 MHz - 108 MHz - 225 MHz - 960 MHz -	 88 MHz 174 MHz 530 MHz 1220 MHz
Radiation Pattern	Nominally omnidirectional in azimuth		
Polarisation	Essentially vertical when mounted vertically		
Connectors	DC: 12 - 10P VHF/UHF: TNC female L-Band: N female		

MECHANICAL

Dimensions	254.00 x 330.20 x 86.36mm
Weight	1.82 kg
Mounting	10 holes fixed location

ENVIRONMENTAL

High Temperature	MIL-STD-810E, Method 501.3, Procedures I and II Continuos Operation: +55°C Intermittent Operation: +71°C Storage: +85°C
Low Temperature	MIL-STD-810E, Method 502.3, Procedures I and II Operation: -54°C Storage: -57°C
Altitude	MIL-STD-810E, Method 500.3. Procedures I and II Operation and storage 50.000 ft
Acceleration	MIL-STD-810E, Method 513.4. Procedure I 13.5 g all axes
Mechanical Shock	MIL-STD-810E, Method 516.4. Procedures I and V Functional: 11 ms, 20 g terminal sawtooth Crach safety: 11 ms. 40 g terminal sawtooth
Vibration	MIL-STD-810E, Method 514.4. Procedures I, Category 4 0.01 g2/Hz IS to 2000 Hz, L1=0, 6 g2/Hz at 68 Hz
Temperature Shock	MIL-STD-810E, Method 503.3
Rain	MIL-STD-810E, Method 506.3, Procedure I Normal operation when exposed to driving rain
Humidity	MIL-STD-810E, Method 507.3, Procedure III 95% relative humidity at 60°C
Salt Fog	MIL-STD-810E, Method 509.3, Procedure I 48 hours exposure to 5% salt solut
Magnetic Effect	Less than 1° deflection at 300 mm



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