

12-224

CHELTON

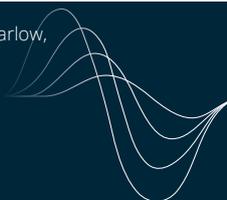
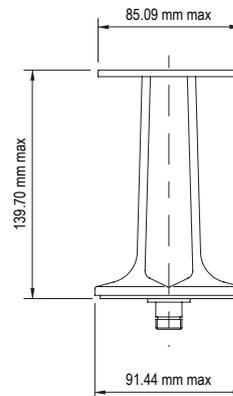
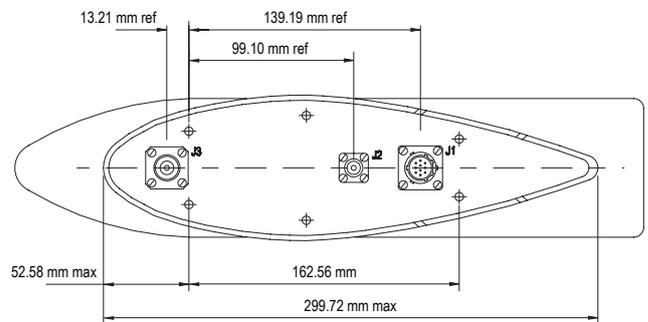
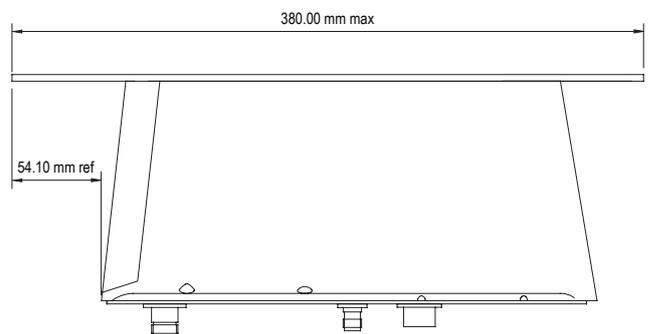
Low Profile Tunable V/UHF Antenna

The 12-224 is a low profile V/UHF blade antenna designed for use with the RT 5000 radio in general subsonic airborne applications. The antenna is tuned by means of a Cobham Antenna Systems Type 7-119PIN9 Logic Convertor Unit.

The antenna comprises three separate radiating structures:

- The VHF section (29.7 MHz to 174 MHz) is configured as an electrically short monopole. The capacitance between the top plate and ground is tuned by a series of essentially binarily related PIN diode switched inductors in accordance with encoded data from the transmitter. This produces a high efficiency structure with a degree of selectivity particularly at low FM frequencies.
- The UHF (225 MHz to 400 MHz) element is a monopole structure. The radiation performance is enhanced in part by tuning from the VHF structure. The UHF element is duplexed with the VHF element to the N Type connector.
- The High Band (400 MHz to 960 MHz) is fulfilled with a singly tuned, reactively matched monopole. Decoupling techniques are invoked to ensure good pattern performance throughout the frequency range.

The blade comprises a moulded composite radome of aerofoil section surmounted by a flat plate. The aluminium alloy baseplate supports the RF and DC connectors.



Low Profile Tunable V/UHF Antenna

ELECTRICAL

Frequency	29.7 MHz - 88 MHz	
	108 MHz - 174 MHz	
	225 MHz - 400 MHz	
	400 MHz - 960 MHz	
Gain	dBi	MHz
	≥ -15.0	30
	≥ -7.5	88
	≥ -3 average	118 - 174
	≥ 0 average	225 - 960
Polarisation	Vertical (when mounted vertically)	
Power Handling	15 W cw max	29.7 MHz - 400 MHz
	10 W cw max	400 MHz - 960 MHz
Impedance	50 ohms nominal	
VSWR	≤ 2.5:1 all bands	
Radiation Pattern	Nominally omnidirectional in azimuth	
Connectors	RF:N Type Female	29.7 MHz - 400 MHz
	RF:TNC Female	400 MHz-960 MHz
	DC:PT02-12-10P	

MECHANICAL

Dimensions (LxWxH)	380 x 139.7 x 91.44 (maximum)
Weight	1.6 kg (maximum)
Connector	6 holes fixed location



ENVIRONMENTAL

Standards	Qualification to RTCA DO-160C
Temperature and Altitude	Section 4, Category D2
Temperature Variation	Section 5, Category A
Humidity	Section 6, Category C
Vibration	Section 8, Categories C, L, M and Y
Explosion Proofness	Section 9, Category X
Waterproofness	Section 10, Category R
Fluids Susceptibility	Section 11, Category F
Sand and Dust	Section 12, Category X
Fungus Resistance	Section 13, Category X
Salt Spray	Section 14, Category X
Magnetic Effect	Section 15, Class Z
Power Input *	Section 16, Category X
Voltage Spike *	Section 17, Category B
Audio Frequency Conducted Susceptibility - Power Inputs *	Section 18, Category B
Induced Signal Susceptibility *	Section 19, Category A
Radio Frequency Susceptibility (Radiated and Conducted) *	Section 20, Category Y
Emission of Radio Frequency Energy *	Section 21, Category A
Lightning Induced Transient Susceptibility	Section 22, Category XXXX
Lightning Direct Effects	Section 23, Category X
Icing	Section 24, Category X

* When used in conjunction with the Type 7-119PIN9 Logic Converter Unit