17-225

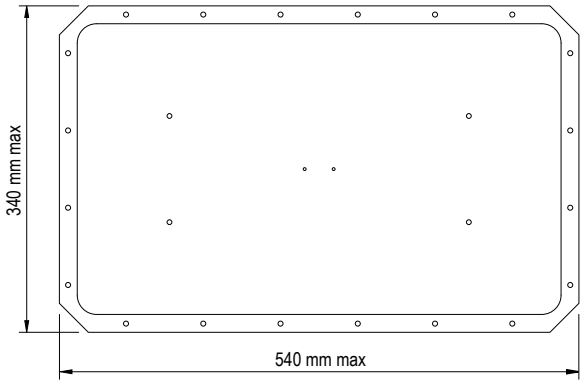
CHELTON

Low Profile VHF/UHF Tunable Antenna

The 17-225 is a low profile, VHF/UHF tunable antenna that operatesin the frequency bands 30 MHz to 88 MHz, 118 MHz to 174 MHz and 225 MHz to 512 MHz. It is designed for use in rotary wing applications.

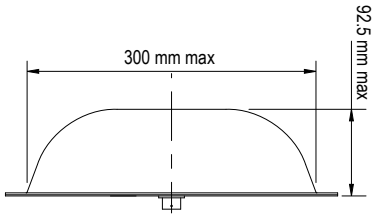
The antenna is configured as two separate radiating elements.

The VHF function is fulfilled by a PIN diode tuned structure. Top loading on the radome provides a capacitance which is tuned to produce a high-efficiency structure with a degree of selectivity, particularly at low FM frequencies.

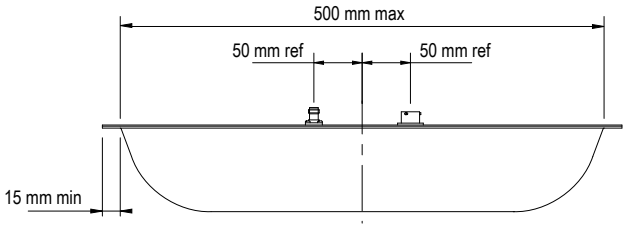


The UHF element is a top loaded, broadband fan monopole positioned so as to minimise corruption from the VHF element.

The VHF and UHF antennas are combined by a contiguous diplexer exhibiting a Tchebyscheff response to a single RF connector.



The **17-225** comprises a moulded radome that incorporates metallised top loading for the VHF element, and an aluminium alloy baseplate.



Drainage holes are included to prevent the retention of moisture.

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ELECTRICAL

Frequency	30 MHz	-	88 MHz
	118 MHz	-	174 MHz
	225 MHz	-	512 MHz
Gain	dBi		MHz
	≥ -18.0		30
	≥ -11		88
	≥ -6*		118 - 174
	≥ 0*		225 - 512
	*average min		
Radiation	Nominally omnidirectional in azimuth		
Power Rating	25 W max over all frequency bands		
Impedance	50 ohm nominal		
VSWR	< 2.5:1 over all frequency bands		
Tuning Time	≤ 60 µsec to 90% tuned		
	≤ 100 µsec fully tuned		
Polarisation	Essentially vertical when mounted vertically		
Connectors			
DC	12-10P		
VHF/UHF	TNC Female		

MECHANICAL

Dimensions (LxWxH)	92.5 x 540 x 340 mm (maximum)
Weight (kg)	2
Mounting	20 holes fixed location

ENVIRONMENTAL

High Temperature	MIL-STD-810E, Method 501.3, Procedures I and II	
	Continuous Operational:	+55°
	Operational:	+71°C
	Storage:	+85°C
Low Temperature	MIL-STD-810E, Method 502.3, Procedures I and II	
	Operational:	-40°C
	Storage:	-57°C
Altitude	MIL-STD-810E, Method 500.3, Procedures I and II	
	Operational:	4572 m
	Storage:	15240 m
Shock	MIL-STD-810E, Method 516.4, Procedures I and V	
	Operational:20 g, 11 ms, sawtooth	
	Crash Hazard:40 g, 11 ms,sawtooth	
Vibration	MIL-STD-810E, Method 514.4, Procedure I, Category 6	
	F1 = 5.4 Hz	A1 = 0.2 g peak
	F2 = 21.7 Hz	A2 = 2.2 g peak
	F3 =43.4 Hz	A3 =2.2 g peak
	F4 = 65.1 Hz	A4 = 1.5 g peak
	W0 = 0.001	W1 = 0.01 ft = 500 Hz
Temperature Shock	MIL-STD-810E, Method 503.3	
Rain	MIL-STD-810E, Method 503.3	
	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 I48 hours exposure to 5% salt solution	
Magnetic Effect	Less than 1% deflection at 300 m	

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