The **20-200-2 Wide-band VHF/UHF/L-Band Antenna** is a broadband passive blade antenna intended for use over the full VHF and UHF communications bands 30 MHz to 88 MHz, 108 MHz to 174 MHz and 225 MHz to 400 MHz, together with the frequency band 960 MHz to 1220 MHz.

The antenna is fitted with a small, capacitively coupled, top tube which enhances low frequency performance while providing protection to the radiating structure in the event of a lightning strike.

The antenna is essentially configured as a broadband fan for VHF and UHF frequencies. Selective resistive loading is applied to preserve matching at low frequencies. This is progressively reduced with increasing frequency and, at UHF frequencies, is bypassed. At UHF frequencies, the top tube is electrically decoupled to preserve pattern integrity.

The L-band function is served by an elevated feed monopole.

Decoupling techniques are incorporated in the VHF/UHF element to avoid deleterious interaction.

Both radiating elements, together with certain passive matching networks, are implemented on a common PCB. The frequency dependent resistive network is fitted to the base of the antenna to aid dissipation. Series low and high pass filters are fitted to the underside of the baseplate to provide isolation between the VHF/UHF and L-band functions.

These filters are designed to exhibit a Tchebyscheff response and are constructed with low loss components to maintain gain performance.
Type 20-200-2
Wide-band VHF/UHF/L-Band Antenna

Environmental Specification

Temperature and Altitude
MIL-T-5422, Para 4.1, Class 2
Temperature
Operational: -54°C to +71°C
Intermittent: +71°C to +95°C
Storage: -62°C to +71°C
Altitude
70,000 feet
Humidity
MIL-STD-810D, Method 507.2, Procedure III
Shock
MIL-T-5422, Para 4.3
Salt Fog
MIL-STD-810D, Method 509.2, Procedure I
Vibration
MIL-STD-810D, Method 514.3, Procedure I
See profile below.

Electrical Specification

Frequency
30 MHz - 88 MHz
108 MHz - 174 MHz
225 MHz - 400 MHz
960 MHz - 1220 MHz
Gain
≥ -25.5 dBi 30 MHz
≥ -15.0 dBi 88 MHz
≥ -10.5 dBi 108 MHz
≥ -1 dBi 174 MHz
≥ 0 dBi average 225 MHz - 400 MHz
≥ 0 dBi 960 MHz - 1220 MHz
Polarisation
Predominantly vertical (when mounted vertically)
Radiation Pattern
Omnidirectional in azimuth (nominal)
Power Rating
35 W CW max 30 MHz - 88 MHz
120 W CW max 108 MHz - 174 MHz
120 W CW max 225 MHz - 400 MHz
1.5 kW peak, 0.04 duty cycle 960 MHz - 1220 MHz
Impedance
50 ohm (nominal)
VSWR
≤ 2.5:1 30 MHz - 50 MHz
≤ 2.7:1 50 MHz - 88 MHz
≤ 2.5:1 108 MHz - 136 MHz
≤ 2.25:1 136 MHz - 174 MHz
≤ 2.25:1 225 MHz - 400 MHz
≤ 2.0:1 960 MHz - 1000 MHz
≤ 1.8:1 1000 MHz - 1100 MHz
≤ 2.0:1 1100 MHz - 1220 MHz
Isolation
≥ 60 dB 30 MHz - 400 MHz
≥ 60 dB 960 MHz - 1220 MHz
Connectors
VHF/UHF: TNC Type Female
L-Band: N Type Female

Mechanical Specification

Height
304.80 mm
Length
467.36 mm
Width
91.44 mm
Weight
1.8 kg (maximum)

For further information please contact:
Cobham Antenna Systems
The Cobham Centre
Fourth Avenue, Marlow,
Buckinghamshire, SL7 1TF England
Tel: +44 (0)1628 472072
Fax: +44 (0)1628 482255
Email: antennasystems.marlow.marketing@cobham.com