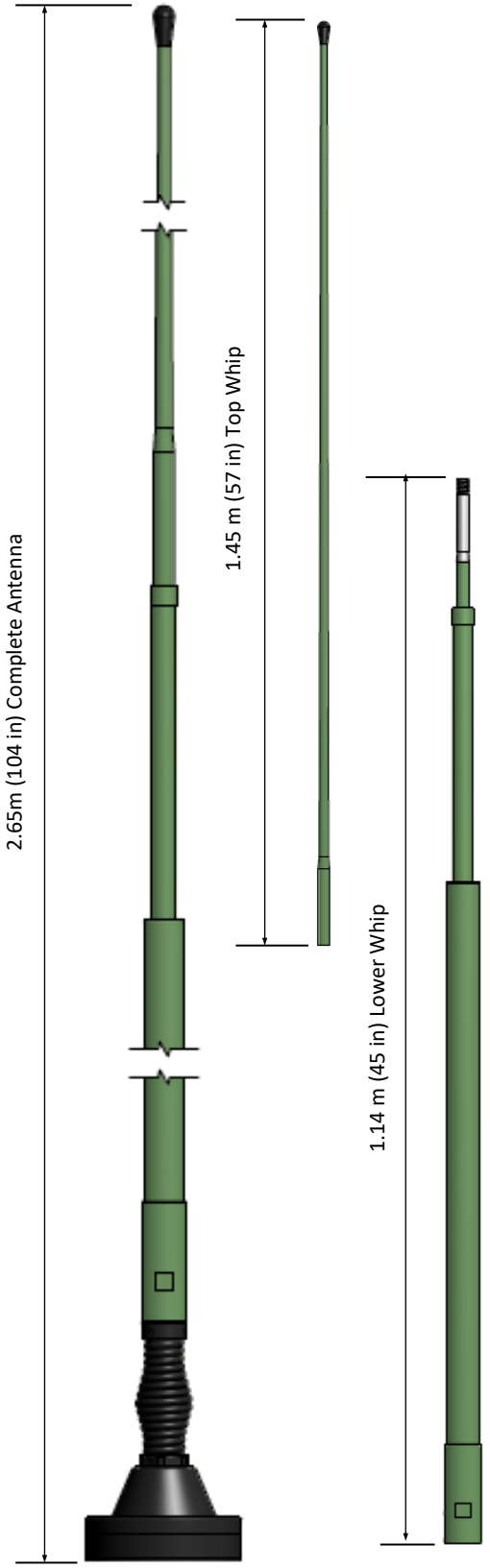
VHF30512CEF

VHF/UHF Broadband Antenna

Base configurations including L1 & L1/L2 GPS



Application

The VHF30512CEF is an ultra wideband vehicle antenna designed for use on all modern in-service military platforms, including armoured or soft skin, metal chassis or composite, wheeled or tracked.

The novel design gives it an excellent gain and radiation pattern across the whole frequency range. The antenna needs no adjustment for different frequencies as all the tuning elements are within the whip.

Bases are available to suit different mounting configurations with optional dual feed connectors and L1 & L1/L2 GPS. Optional EMP protection in the base is also available.

Electrical Specification (Antenna)

Frequency range	30 - 512MHz
VSWR	< 3.5, see diagram
Nominal impedance	50 ohm
Power rating	50 W
Gain	-5 to 1.5 dB rel. ¼ wave dipole see diagram overleaf
Radiation pattern	Azimuth: Omnidirectional
Polarisation	Vertical
Connector	BNC female, others on request

Mechanical specifications:

Design	Centre fed dipole for UHF. End-fed whip for VHF. Radiating element completely enclosed in epoxy/fibreglass laminate. Metal parts are plated brass and stainless steel.	
Length	Total: Lower whip: Upper whip: Base:	2.65m (104 in) 1.14m (45in) 1.45m (57in) 0.24m (9.5in)
Weight	Total: Lower whip: Upper whip: Base:	3.75kg (8.2lbs)* 1.2kg (2.6lbs) 0.3kg (0.7lbs) 2.25kg (5lbs)*
Wind rating	55 m/s = 125 mph	
Finish	Polyurethane lacquer	
Colour	Customer Specified	
Installation	See base option table	
Temperature range	-55 °C, +71°C; -67 °F, +160 °F	

* Weight with standard NATO 4 hole base. Base options specified overleaf.

Description	Antenna Base	Base Image	Feed	VHF Connector	UHF Connector	L1 GPS Option	L1/L2 GPS Option
Broadband 30-512 MHz	NATO 4 Hole	A / F	Single	BNC or TNC Female		✓	✓
Broadband 30-512 MHz	NATO 4 Hole	A / F	Single	N Type Female		✓	✓
Broadband 30-512 MHz	NATO 4 Hole Rigid	E	Single	N Type Female		✓	✓
Broadband 30-512MHz	NATO 6 Hole	B	Single	BNC Female		✓	✓
Broadband 30-512 MHz	NATO 6 Hole	B	Single	N Type Female		✓	✓
Broadband 30-512 MHz	NATO 50mm Thread	C	Single	BNC Female		✓	✓
Broadband 30-512 MHz	Mast Mount	D	Single	BNC Female		X	X
Dual-band 30-88 & 116-512 MHz	NATO 4 Hole	A / F	Dual	BNC Female	BNC Female	✓	✓
Dual-band 30-88 & 116-512 MHz	NATO 6 Hole	B	Dual	BNC Female	BNC Female	✓	✓

Base Options

A

NATO 4-hole
4 x M10 or 3/8" Bolts
on 114mm (4.5in) PCD
Base diameter 140mm (5.5in)

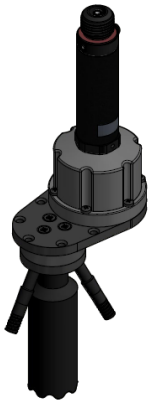
B

NATO 6-hole
6 x M6 or 1/4" Bolts
on 111mm (4.37in) PCD
Base diameter 140mm (5.5in)

C

NATO
50mm Thread
Base diameter 95mm (3.74in)

D



Mast Mount Bracket
Rigid (no spring)
24mm Spigot
50mm Spigot
Customer Specified
VHF requires ground-plane
wires or radials
(see page 3 for details)

E

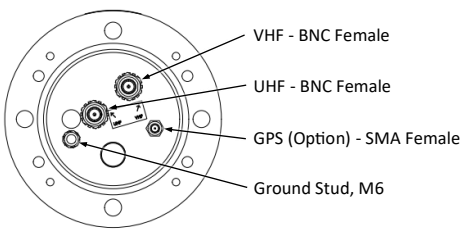
NATO 4-hole
Rigid (no spring)
4 x M10 or 3/8" Bolts
on 114mm (4.5in) PCD
Base diameter 140mm (5.5in)

GPS Electrical Specification

	L1 GPS	L1/L2 GPS
Frequency Band	1575.42 ± 10 MHz	1227.60 ± 10 MHz 1575.42 ± 10 MHz
Supply Voltage	2.7-5.5 V	2.7-5.5 V
Pre-amplifier	25 dB @ 5 V	26.5 dB @ 5 V
Noise Figure	2.5 dB	2.5 dB
Supply Current	< 20 mA	< 42 mA
Polarisation	RHCP	RHCP
Connector	SMA female	SMA female

Dual Feed

Dual feed bases incorporate a diplexer to enable the antenna to operate as a dual band VHF 30-88MHz, UHF 116-512MHz. Below is a typical NATO 4-Hole base with BNC/BNC Dual Feed

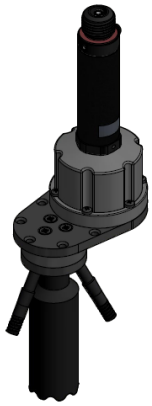


F

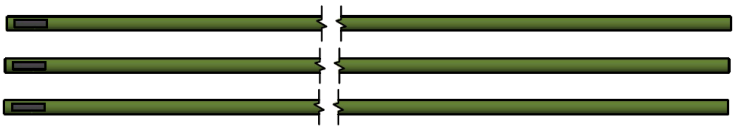
NATO 4-hole Spring GPS Base
L1 & L1/L2 GPS available
4 x M10 or 3/8" Bolts
on 114mm (4.5in) PCD
Base diameter 140mm (5.5in)

Elevated Ground-Plane Kit

The VHF30512CEF antenna is a monopole (VHF) and dipole (UHF) construction. If the antenna is to be elevated, it will need a ground-plane for the VHF to operate correctly. A mounting bracket is available to suit mast and shelter installations. The mast bracket below has a 50mm socket to interface with a mast or pole. Other mast interface sizes are available. The kit is supplied with upper and lower rods to provide a tripod style ground-plane.

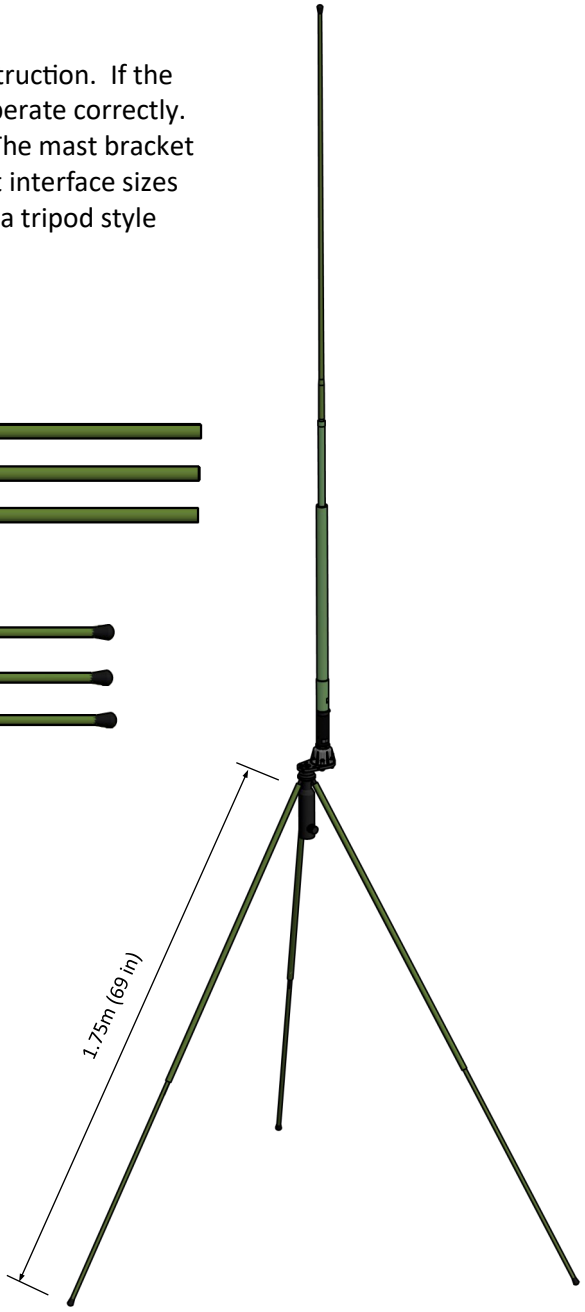


Mast Mount Bracket
Shown with 50mm (1.97 in) Socket
Other mounting sizes available



Upper ground-plane rod (x3)

Lower ground-plane rod (x3)

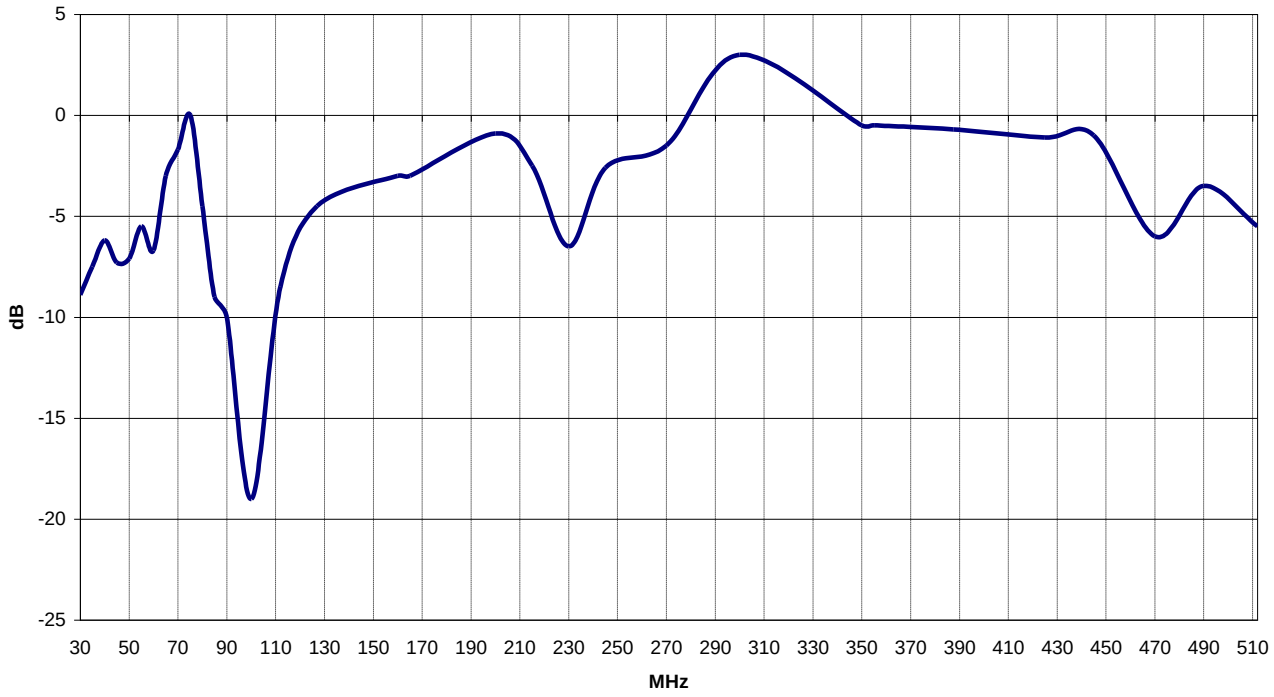


A version of this bracket is also available with attachment points for ground radials (wires). Ground radials can be supplied that attach to existing 3-way or 4-way mast guys. Please contact Comrod with your exact requirement.

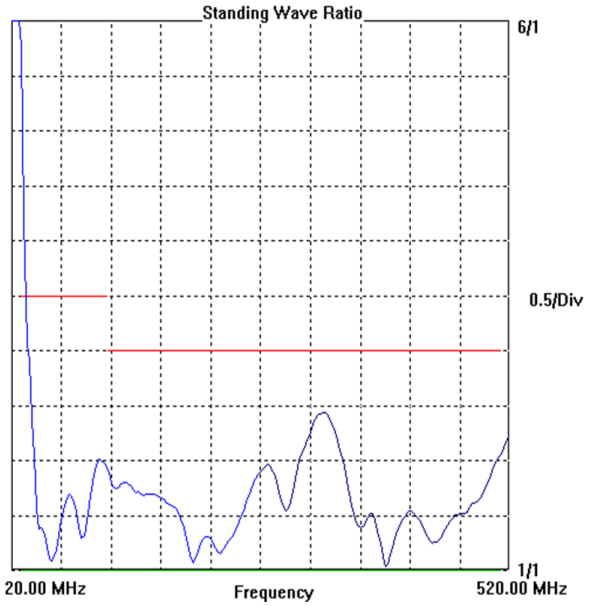
The tripod assembly can also be place directly onto the ground. An optional strap can be supplied to secure the tripod to the ground.

Antenna Options

Product	Description
Whip Bag	Protective carrying bag for upper and lower whip sections.
Tie Down Kit	Allows the whip to be tied down to the vehicle while in motion.
Cables	Comrod has a wide range of cable assemblies. Cable type and length, connectors and strain-relief options are available. Please contact sales@comrod.com for further information.



Typical gain relative to a 1/4 wave whip
Antenna installed in the centre of a 3 x 3m ground plane



VSWR Curve
(Single feed Wideband Configuration)