

# HF Antenna Tuner AT 4002

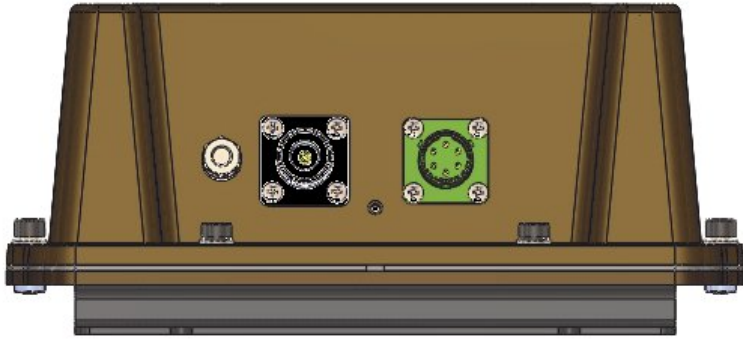
## HF Antenna Tuner AT 4002



### Typical 4002 installation

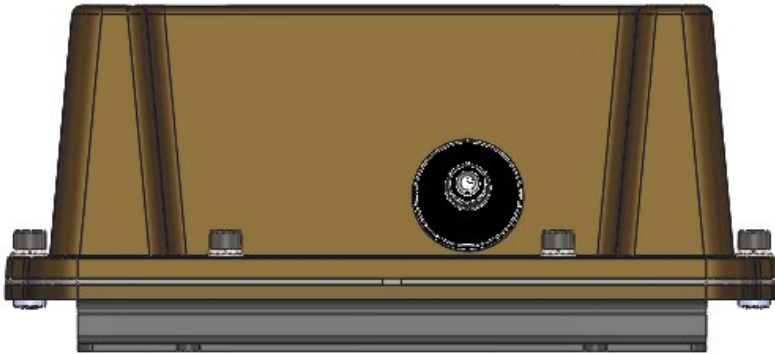
The 4002 is designed specifically for short vehicular whip antennas, and is a rapid, highly efficient, reliable tuner. The 4002 is optimised to tune a 1.6m whip from 2.5-30MHz with a VSWR typically of 1.5:1 or better. An optional 800mm riser enables operation from 2 to 30MHz. The unique tuning algorithm provides a memory-tune location for all frequencies between 2-30MHz. The memory tuning time of <130mS makes the 4002 the ideal tuner for networks using ALE and/or frequency hopping, with tuning times for new frequencies average less than 1 second.

The 4002 is extremely rugged, and meets MIL-STD 810F for waterproofing (IP68), shock, vibration and dust ingress. Available antenna bases are shown on Page 3.

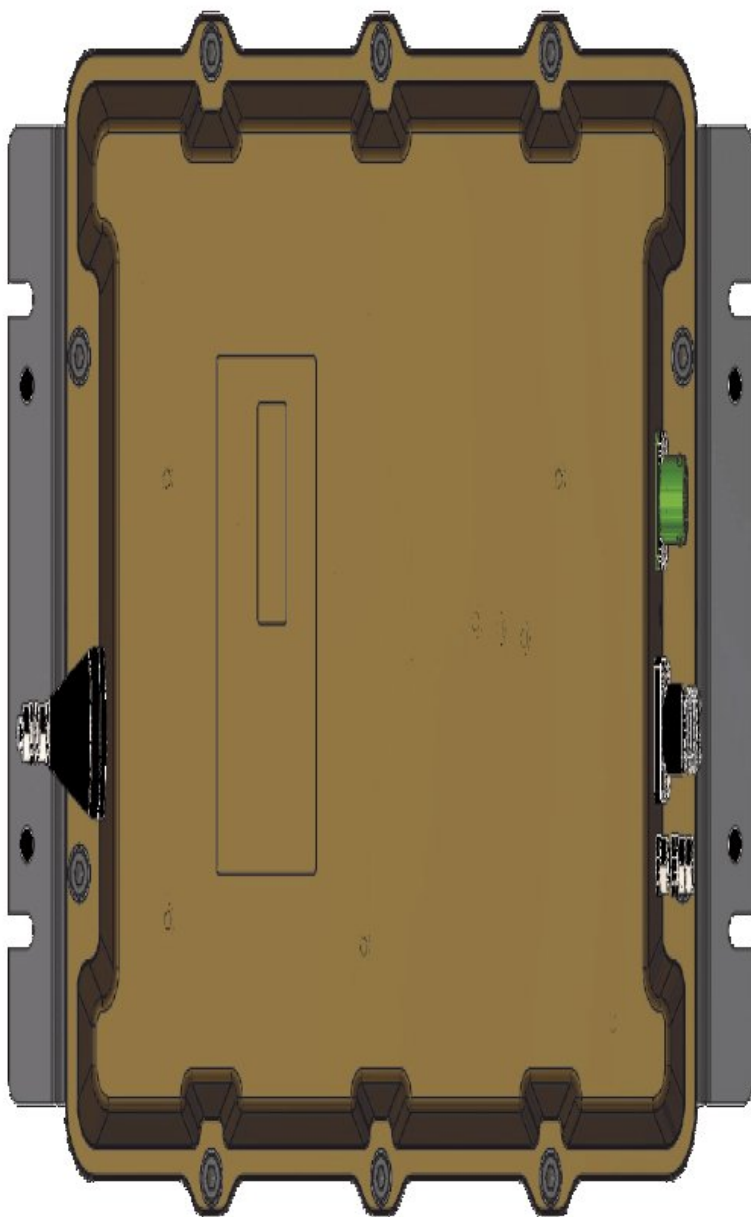


**Figure 1. Connector end of tuner. From the left, the connectors are earth, RF and control.**

[A](#)



**Figure 2. HV end of tuner.**



**Figure 3. Top view of tuner.**



**Fig 4. Flange mount base**

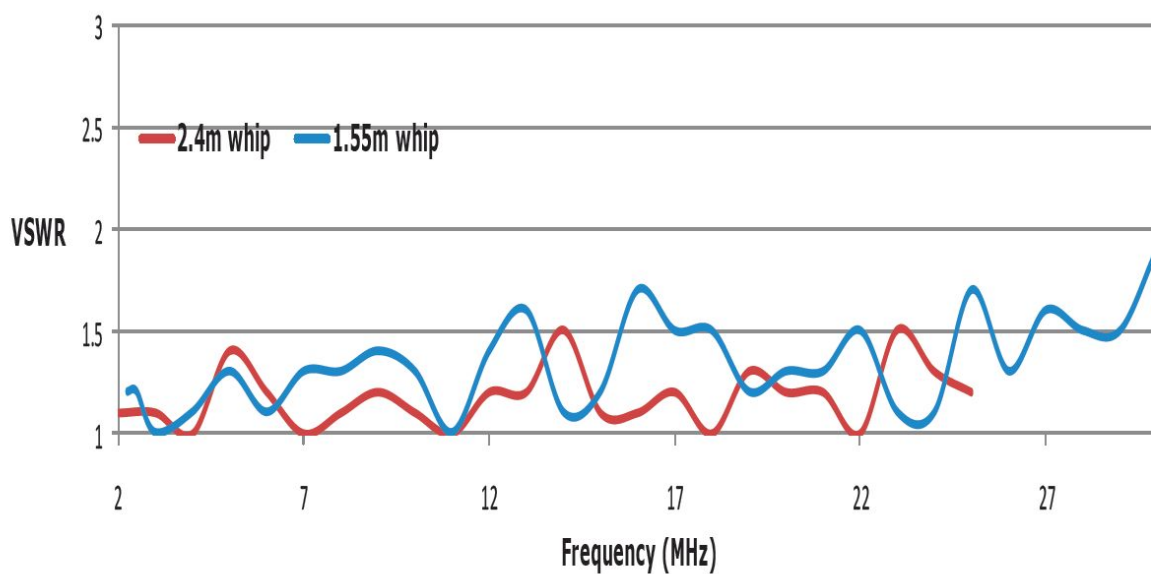


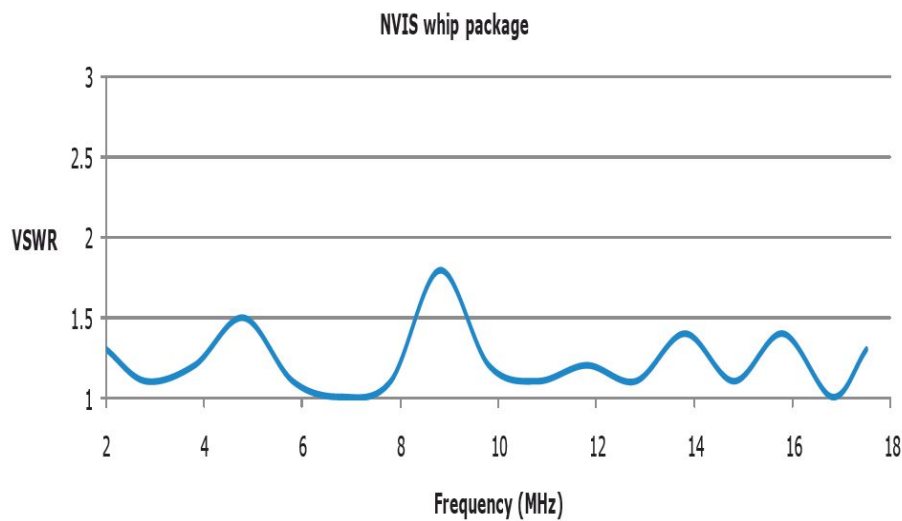
**Fig 5. Single hole mount base**



**Fig 6. NATO Base**

The following plots are of VSWR measurements taken of the actual vehicle installation shown on the front page, using a Codan NGT transceiver. This is considered the optimum placement for an HF mobile antenna.





Near Vertical Incidence Skywave (NVIS) operation has a general upper limit of 15MHz, and the NVIS whip package is designed accordingly.

### Specifications

#### Electrical

Frequency range		1.6m whip: 2.5-30MHz 2.4m whip: 2-30MHz
Power rating		125W PEP
Power consumption	Tuned	Typically 400mA
	Tuning	<800mA
Input Impedance		50Ω
VSWR		Typically 1.5:1
Tuning speed	New frequency	Average < 1 second
	Memory tuning	<130mS
Memory channels		Unlimited - unique non-linear memory allocation
Efficiency		15 to 95%, whip-length de-pendant

#### Mechanical

Temperature Rating	-40 to +80° C
DC operating range	10 to 16VDC
Protection	Open circuit antenna Short circuit antenna Over temperature High VSWR Voltage transients
EMC	Compliant
Shock and vibration	MIL-STD-810F (Dust, vibra-tion, water ingress to IP68) Case pressure-equalisation device fitted
Dimensions	300mm L x 250m W (including connectors) x 95mm H
Weight	2.4kg
Control cable	Codan 3040/9350
Connectors	RF: N socket Control: 6 pin bayonet (Mil-spec)
Case construction	Bespoke diecast aluminium alloy
Colour	White or military green

### Ordering Information

01-1004-	Flange mount base Standard package
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01-1006-001	Single hole mount base Standard package
01-1008-001	NVIS option for Flange mount/Single hole Standard pack-ages
01-1005-001	Flange mount base Extended package
01-1007-001	Single hole mount base Extended package
02-4018-001	NVIS option for Flange mount/Single hole mount Ex-tended packages
02-4016-001	1.55m fibreglass whip option for both Extended pack-ages, replacing the supplied stainless steel whip
02-2174-001	Side-mount bracket option for all packages
46-1010-001	N Plug to UHF Socket Adapter

Standard packages include the 4002, base, spring, stainless steel whip, RF and control cables.

Extended packages add an 800mm riser to extend the lower frequency range.

#### **HF Mobile Antenna Tuner AT 4002**