



2 to 30MHz Automatic Antenna Tuning Unit 4002

AT A GLANCE

2 to 30MHz

125W PEP

MIL-STD-810F – Vibration, waterproof (IP68) and dust

Suits all unloaded HF vehicular whip antennas

Suitable for in-vehicle or external installation

Memory tune in <130ms

Tunes to new frequency in an average time of less than 1 second

Unlimited memory channels

ALE compatible

Frequency-hopping compatible



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.

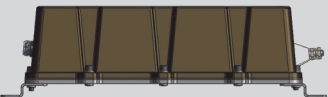
An optional 800mm riser enables operation from 2 to 30MHz.

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.





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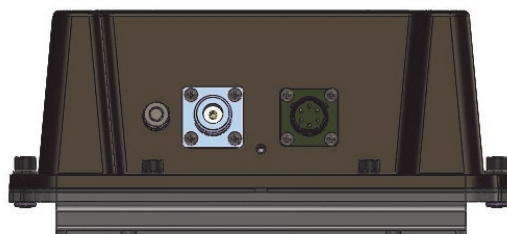


Figure 1. Connector end of tuner. From the left, the connectors are earth, RF and control.

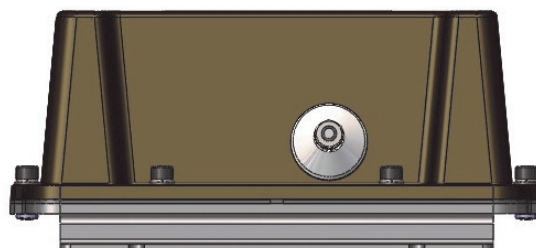


Figure 2. HV end of tuner.

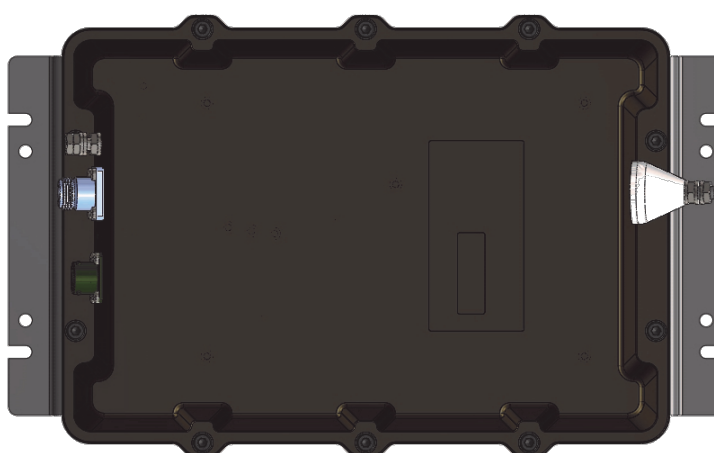


Figure 3. Top view of tuner.

Specifications subject to change without notice

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Fig 4. Flange mount base



Fig 5. Single hole mount base

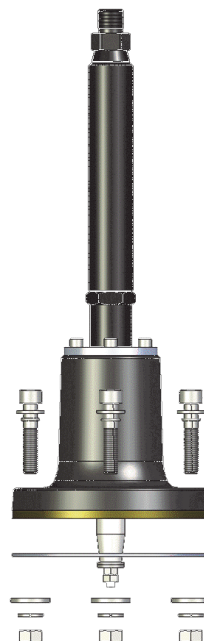
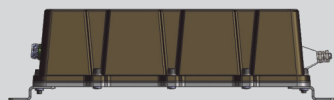


Fig 6. NATO Base



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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.

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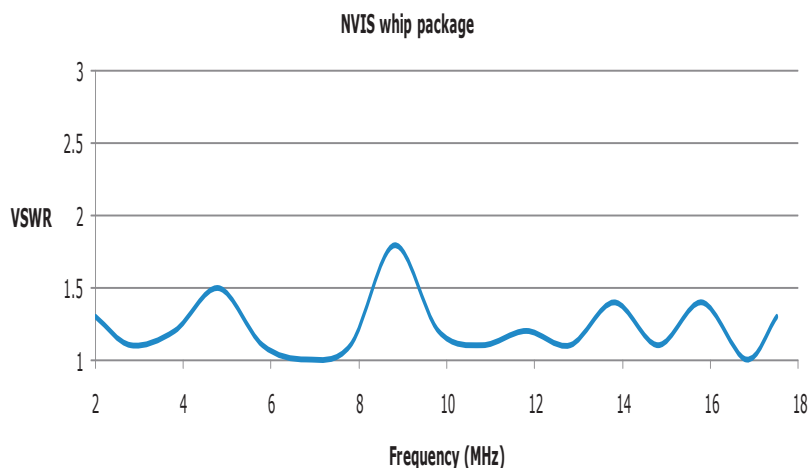
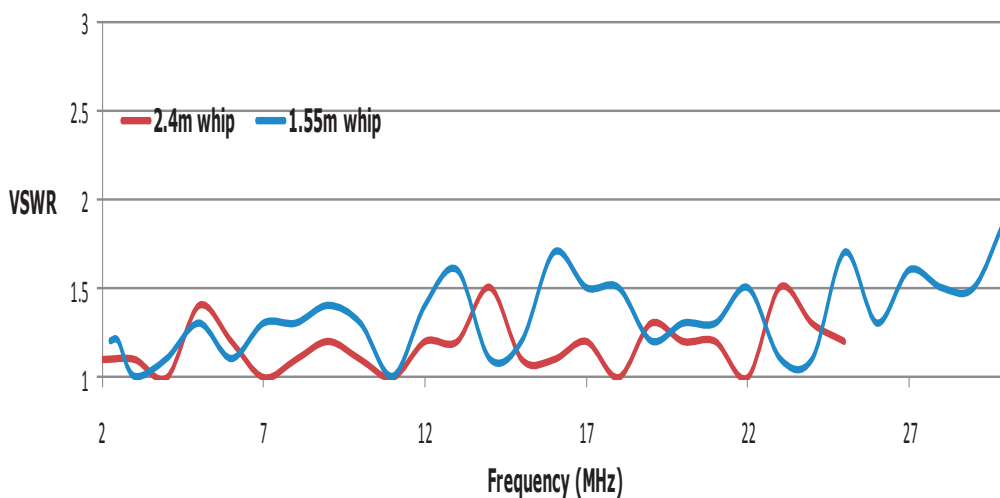
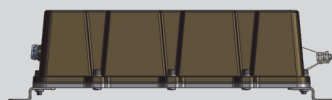
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Near Vertical Incidence Skywave (NVIS) operation has a general upper limit of 15MHz, and the NVIS whip package is designed accordingly.

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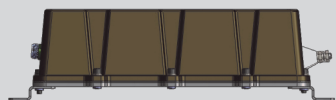
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Specifications

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 dependant	

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, vibration, 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	

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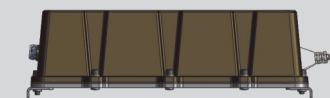
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Ordering Information

Part No.	Description
02-4002-201	4002, White
02-4002-301	4002, Olive Drab
01-1004-001	Flange mount base Standard package
01-1006-001	Single hole mount base Standard package
01-1008-001	NVIS option for Flange mount/Single hole Standard packages
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 Extended packages
02-4016-001	1.55m fibreglass whip option for both Extended packages, 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
07-1001-001	6m RF cable, PL259 one end, N plug other end
07-1002-001	6m control cable

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.

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