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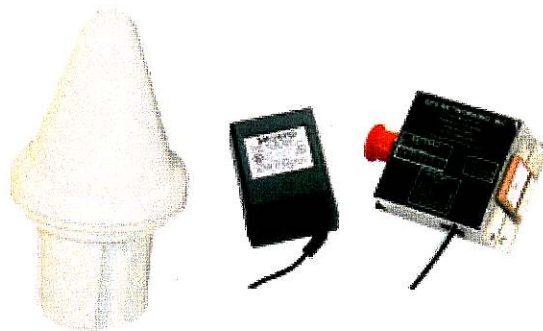
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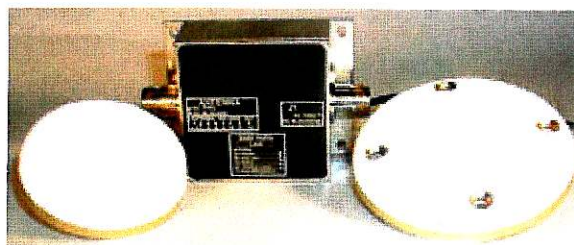
GPS Antenna Re-radiation Kits (Signal Repeaters)

Reradiating the GPS signal indoors can be a significant benefit if your organization performs indoor receiver testing and evaluation or if you need your GPS system ready on-the-fly going from indoors to outdoors. Efficient and convenient, re-radiation kits transmit real time satellite data throughout your facility, directly to an unlimited number of users. No more multiple cable runs, impedance problems, or running outside in foul weather for testing. An Ideal solution for emergency vehicles who need to have their GPS system already up and running when the call comes in! Also excellent for indoor demonstrations and classroom settings. Navtech GPS Supply offers systems for re-radiation of the GPS L1 and L1/L2 frequencies. Shown here are the components of the L1 HNRRKIT. An reradiation line amplifier with AC power adapter (110v or 220v) and a roof antenna with mounting base. The indoor reradiating antenna element is hard mounted directly onto the line amplifier on the L1 kit. The L1/L2 kit has a separate reradiation antenna which is screwed onto the line amplifier.



L1 HNRRKIT - Shown with L1 roof antenna (38dB) and line amplifier with passive patch antenna element and power supply.

The **L1 HNRRKIT (Hangar Network Re-Radiating Kit)** is a complete GPS signal re-radiating system to allow you to re-radiate the GPS L1 carrier indoors. The HNRRKIT consists of a Roof Antenna, a plug-in re-radiating amplifier with a re-radiating antenna element. The roof antenna is a 40db Gain, 50 ohm antenna. The Re-radiating amplifier has a choice of either 110V or 220V plug-in transformer which powers the amplifier and the roof antenna. The signal from the roof antenna is amplified and radiated out the re-radiating antenna. If the receiving antenna has line of sight with the re-radiating antenna, it will receive the signal up to 100 feet away or more. Please note that antenna cable is not included, but the system is designed to allow a 100 foot cable length between the roof antenna and re-reradiating antenna when using RG-213 or longer when using LMR 400. Cable is available from Navtech GPS Supply. N-type connectors are standard on reradiating kits with SMA or TNC connectors available upon request. Please [call](#) our technical support department to order, or [e-mail](#) our re-radiating kit specialist if you have additional questions. **\$570.00**



The **L1/L2 HNRRKIT (L1/L2 Hangar Network Re-Radiating Kit)** is a complete GPS signal re-radiating system to allow you to re-radiate the GPS L1/L2 carrier indoors. The L1/L2HNRRKIT consists of a roof antenna, a plug-in re-radiating amplifier and a re-radiating antenna. The roof antenna is a Trimble L1/L2 40db Gain, 50 ohm antenna. The re-radiating

amplifier has a choice of a 110V or a 220V plug-in transformer which powers the amplifier and the roof antenna. The signal from the roof antenna is amplified and radiated out the re-radiating antenna. If the receiving antenna has line of sight with the re-radiating antenna, it will receive the signal up to 100 feet away. Please note that antenna cable is not included, but the system is designed to allow a 100 foot cable length between the roof antenna and

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re-reradiating antenna when using RG8 or RG-213. Cable is available from Navtech GPS Supply. GPS re-radiating kits are available with N-type, SMA or TNC connectors. Please [call](#) our technical support department to order, or [e-mail](#) our re-radiating kit specialist if you have additional questions. **\$1900.00**

The **PNRRKIT** (Portable Network Re-Radiating Kit) is a re-radiating system which allows you to re-radiate the GPS L1 carrier indoors. The PNRRKIT consists of a plug-in re-radiating amplifier and a Re-Radiating Antenna. It differs from the HNRRKIT in that it does not provide a roof antenna. The PNRRKIT provides 5v DC to user supplied GPS antenna. The re-radiating amplifier has either a 110 or 220V Plug-in transformer which powers the amplifier. A GPS signal must be provided (from a GPS antenna splitter for example) at the front end of the PNRRKIT, it is then amplified and radiated out the re-radiating antenna. The radiated signal strength is determined by the strength of the supplied signal. Use this kit if you already have a rooftop antenna or other permanently installed antenna, such as a DGPS reference station antenna. **\$380.00**

The **L1 and the L1/L2 Reradiating Kits** are available with variable gain at the reradiating line amplifier. This allows the user to customize the gain output from the indoor reradiating antenna with just the turn of a screw driver. The VG (Variable Gain) option is \$100.00 and can be ordered on either the HNRRKIT or the PNRRKIT and for both the L1 and L1/L2 Kits.

GPS re-radiating Kits are available with N-type, SMA or TNC connectors. Please [call](#) our technical support department to order, or [e-mail](#) our re-radiating kit specialist if you have additional questions.



The internal reradiating amplifier mount (shown at left) is available for both the L1 and L1/L2 reradiating kits and is optional but highly recommended. It allows the user to "swivel" the indoor antenna and aim the signal in a custom direction. **Part # WRUMT**



Mounting bracket for the L1 roof antenna.

Provides an easy pole mount solution with mounting base.

Part # RAMBL1

We also recommend adding a lightning arrestor to protect your components. The Surge Pro is inserted "inline" between the roof antenna and the line amplifier. Check [HERE](#) for additional details.

Navtech can provide all the cabling required to get your reradiating kit up and running. Cable runs from roof antenna to the reradiating line amp can be up to 100 feet without additional line amplification. We use LMR-400 (Low Loss) or RG-213, 50 ohm coax cable. We will build your cable to any length and terminate it with the appropriate connectors (N-type is most common).

The basic set-up of a reradiation system is fairly straight forward but includes several variables. Please contact our sales staff and let us recommend the best system for your needs. Custom configurations and installation are also available.

PLEASE NOTE:

GPS re-radiator devices may be sold only to foreign parties or those domestic parties operating under direction of an agency of the U.S. Federal Government. Domestic customers must provide proof of authorization obtained from the National Telecommunications and Information Administration (NTIA) before a transaction can be completed. For further information regarding NTIA requirements, see Chapter 8.3.28 of the NTIA manual,

<http://www.ntia.doc.gov/osmhome/redbook/8.pdf>. (Large File)

As of August 2006:

You may review the latest standards issued by the NTIA [HERE](#)

Visit the FCC web address below for application information.

<https://gulfoss2.fcc.gov/prod/oet/cf/els/index.cfm>

Link budget information for compliance is listed below.

[Link Budget Data](#)

Please be advised that these link budgets pertain to reradiation kits manufactured by GPS Networking only and not for any other manufacturer.

If you can not satisfy the above requirements to purchase a reradiation kit, we can suggest, as an alternative, bringing the GPS signal indoors by using a roof antenna with a cable run into your facility. Signal splitters, line amplifiers and extra cabling can be used to run the signal with a direct connection to the equipment being tested. We can help you design a system.

Ordering: *All kits come standard with N-type connectors. Kits with SMA and TNC connectors are available as a special order.*

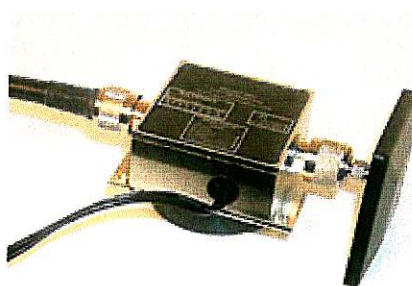
Part	Part Number	Price	
<i>Kits with 110v Power Supply</i>			
L1 Reradiation Kit (Roof Antenna)	HNRRKIT L/1	\$570.00	ORDER
L1 Reradiation Kit (w/o Roof Antenna)	PNRRKIT	\$380.00	ORDER
L1/L2 Reradiation Kit (Roof Antenna)	L1L2HNRRKIT	\$1900.00	ORDER
L1/L2 Reradiation Kit (w/o Roof Antenna)	L1L2PNRRKIT	\$855.00	ORDER
L1 Reradiation Kit with Variable Gain	VGHNRRKIT	\$665.00	ORDER
L1/L2 Reradiation Kit with Variable Gain	VGL1L2HNRKIT	\$1995.00	ORDER
<i>Kits with 220v Power Supply</i>			
L1 Reradiation Kit	HNRRKIT-N220	\$570.00	ORDER
L1/L2 Reradiation Kit	L1L2HNRRK220	\$1900.00	ORDER
<i>Kit Accessories</i>			
Roof Antenna	L1GPISA	\$190.00	ORDER

Adjustable Line Amp Swivel Mount (Shown above) For both the L1 and L1/L2 Kits	WRUMT	\$75.00	ORDER
Surge Protector	SURGE-PRO	\$150.00	ORDER
Coax Grounding Kit (for surge protector)	456164	\$34.00	ORDER
Mounting Kit for L1 Roof Antenna (Shown Above)	RAMBL1	\$25.00	ORDER
Mounting Bracket for L1/L2 Roof Antenna	RAMB	\$25.00	ORDER
Cables			
200 Feet, LMR-400, N-male connectors	LMR400-200-NM	\$295.00	ORDER
100 Feet, LMR-400, N-male connectors	LMR400-100-NM	\$174.00	ORDER
75 Feet, LMR-400, N-male connectors	LMR400-75-NM	\$136.00	ORDER
50 Feet, LMR-400, N-male connectors	LMR400-50-NM	\$99.00	ORDER

All cables are made to order in our facility. Cables can be made to custom lengths or with other types of coax cable or connectors than the ones Listed above.

If you will be using surge protection in-line, you will need 2 lengths of cable. Keep that in mind when ordering.

Please contact our sales department with any questions, for custom configurations or for full installation services at your facility.



L1 Reradiation Kits are still available with a detachable, passive reradiation antenna instead of the newer hard wired version shown above. This would include an N-type to SMA adapter.

Please specify when ordering if you prefer this configuration.

If ordering online, this can be mentioned in the notes field.

Download "How to choose a system" and the installation instructions [HERE](#)

Download technical drawings for the line amplifier [HERE](#)

Download technical drawings for L1/L2 roof and indoor antennas [HERE](#)

Download technical drawings for WRUMT antenna mount [HERE](#)

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