

GNSS-750

USER GUIDE

The GNSS-750 is an active antenna designed to receive signals from the GPS, Galileo and GLONASS satellites as well as L-band signals. This antenna is designed to operate for GPS L1/L2/L2C/L5, GLONASS L1/L2/L3 and L-band frequency bands. The GNSS-750 is also designed to operate for Galileo L1/E5a/E5b and E6 frequency bands and receives Compass B1/B2/B3. This guide provides the basic information you need to install and begin using your new antenna.

ADDITIONAL EQUIPMENT REQUIRED

The following equipment is required to set up the GNSS-750:

- A sturdy pillar or mount with a 5/8" x 11 thread that extends between 3/8" and 7/8" (9 mm and 22 mm)
- Coaxial cable with a male N connector
- A device with an antenna input port that both receives the RF signal and provides 3.3 - 12.0 VDC to the antenna¹

ACCESSORIES

Additional available accessories include the following:

- A radome (NovAtel part number 01018195)
- N to TNC adaptor (NovAtel part number 21723240)

SITE SELECTION GUIDELINES

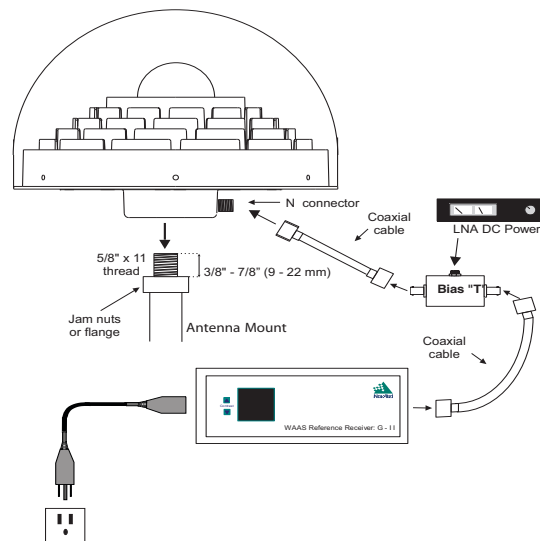
Before installing the antenna, select a site that as closely as possible meets the following conditions for optimal performance:

- An unobstructed line-of-sight from horizon to horizon and at all bearings and elevation angles.
- As far as possible from reflective objects, especially those that are above the antenna and any water bodies, which can be a strong source of multipath reflections.

1. Most NovAtel GNSS receivers provide the necessary power through their antenna RF connectors. Check the applicable receiver user manual for details.

- If obstructions and reflective surfaces are within 30 m, ensure the site is as high as possible. Otherwise, mount the antenna as low as possible.

INSTALLING THE ANTENNA



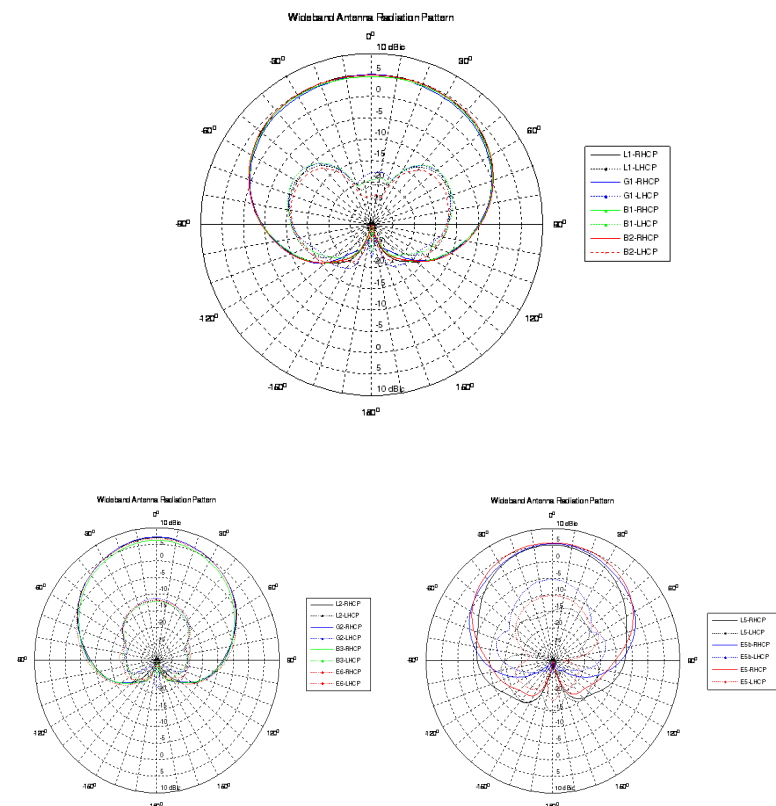
After a site has been selected, install the antenna as follows:

1. Verify that the thread on the mount does not extend more than 7/8" (22 mm) to ensure the antenna receptacle is not damaged when the mount is inserted. If it extends further than 7/8" (22 mm), add two jam nuts to shorten the exposed thread, ensuring the nuts are well tightened.
2. Align the mount thread with the metal adapter on the bottom of the antenna and rotate the antenna clockwise until it is securely screwed to the mount.
3. Remove the dust cap from the antenna's N connector.
4. Attach the male N connector of the coaxial cable to the antenna's N connector.
5. Attach the other end of the coaxial cable to the antenna input port of the receiving device, which must provide power as detailed in the *Specifications* section of this guide.

ANTENNA CARE

The GNSS-750 is designed to withstand the elements, including rain, snow, and dust. However, to ensure your antenna performs optimally, keep the top surface and the choke rings of the antenna clean and brush off any ice and snow. A radome is recommended. In addition, ensure the N connector remains clean and dry and replace the dust cap when a cable is not connected.

ELEVATION GAIN PATTERNS

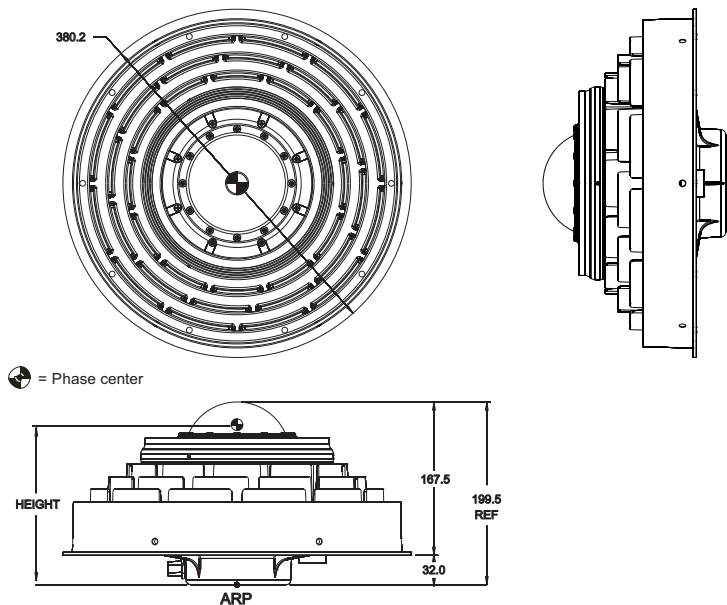


SPECIFICATIONS

RF	
3 dB pass band (typical)	Upper: 1525-1612 MHz Lower: 1164-1301 MHz
Out-of-band rejection (typical)	80 dB
0 ~ 900	70 dB
900 ~ 1002.5 MHz	50 dB
1002.5 ~ 1062.5 MHz	30 dB
1062.5 ~ 1102.5 MHz	30 dB
1102.5 ~ 1164 MHz	50 dB
1164 ~ 1215 MHz	30 dB
1215 ~ 1276.5 MHz	50 dB
1276.5 ~ 1338 MHz	30 dB
1338 ~ 1400 MHz	50 dB
1400 ~ 1461.5 MHz	30 dB
1461.5 ~ 1523 MHz	50 dB
1523 ~ 1584.5 MHz	70 dB
1584.5 ~ 1646 MHz	80 dB
1646 ~ 1707.5 MHz	
1707.5 ~ 1769 MHz	
1769 ~ 1830.5 MHz	
1830.5 ~ 1892 MHz	
1892 ~ 1953.5 MHz	
1953.5 ~ 2015 MHz	
2015 ~ 2076.5 MHz	
2076.5 ~ 2138 MHz	
2138 ~ 2199.5 MHz	
2199.5 ~ 2261 MHz	
2261 ~ 2322.5 MHz	
2322.5 ~ 2384 MHz	
2384 ~ 2445.5 MHz	
2445.5 ~ 2507 MHz	
2507 ~ 2568.5 MHz	
2568.5 ~ 2630 MHz	
2630 ~ 2691.5 MHz	
2691.5 ~ 2753 MHz	
2753 ~ 2814.5 MHz	
2814.5 ~ 2876 MHz	
2876 ~ 2937.5 MHz	
2937.5 ~ 2999 MHz	
2999 ~ 3060.5 MHz	
3060.5 ~ 3122 MHz	
3122 ~ 3183.5 MHz	
3183.5 ~ 3245 MHz	
3245 ~ 3306.5 MHz	
3306.5 ~ 3368 MHz	
3368 ~ 3429.5 MHz	
3429.5 ~ 3491 MHz	
3491 ~ 3552.5 MHz	
3552.5 ~ 3614 MHz	
3614 ~ 3675.5 MHz	
3675.5 ~ 3737 MHz	
3737 ~ 3798.5 MHz	
3798.5 ~ 3860 MHz	
3860 ~ 3921.5 MHz	
3921.5 ~ 3983 MHz	
3983 ~ 4044.5 MHz	
4044.5 ~ 4106 MHz	
4106 ~ 4167.5 MHz	
4167.5 ~ 4229 MHz	
4229 ~ 4290.5 MHz	
4290.5 ~ 4352 MHz	
4352 ~ 4413.5 MHz	
4413.5 ~ 4475 MHz	
4475 ~ 4536.5 MHz	
4536.5 ~ 4598 MHz	
4598 ~ 4659.5 MHz	
4659.5 ~ 4721 MHz	
4721 ~ 4782.5 MHz	
4782.5 ~ 4844 MHz	
4844 ~ 4905.5 MHz	
4905.5 ~ 4967 MHz	
4967 ~ 5028.5 MHz	
5028.5 ~ 5090 MHz	
5090 ~ 5151.5 MHz	
5151.5 ~ 5213 MHz	
5213 ~ 5274.5 MHz	
5274.5 ~ 5336 MHz	
5336 ~ 5397.5 MHz	
5397.5 ~ 5459 MHz	
5459 ~ 5520.5 MHz	
5520.5 ~ 5582 MHz	
5582 ~ 5643.5 MHz	
5643.5 ~ 5705 MHz	
5705 ~ 5766.5 MHz	
5766.5 ~ 5828 MHz	
5828 ~ 5889.5 MHz	
5889.5 ~ 5951 MHz	
5951 ~ 6012.5 MHz	
6012.5 ~ 6074 MHz	
6074 ~ 6135.5 MHz	
6135.5 ~ 6197 MHz	
6197 ~ 6258.5 MHz	
6258.5 ~ 6320 MHz	
6320 ~ 6381.5 MHz	
6381.5 ~ 6443 MHz	
6443 ~ 6504.5 MHz	
6504.5 ~ 6566 MHz	
6566 ~ 6627.5 MHz	
6627.5 ~ 6689 MHz	
6689 ~ 6750.5 MHz	
6750.5 ~ 6812 MHz	
6812 ~ 6873.5 MHz	
6873.5 ~ 6935 MHz	
6935 ~ 6996.5 MHz	
6996.5 ~ 7058 MHz	
7058 ~ 7119.5 MHz	
7119.5 ~ 7181 MHz	
7181 ~ 7242.5 MHz	
7242.5 ~ 7304 MHz	
7304 ~ 7365.5 MHz	
7365.5 ~ 7427 MHz	
7427 ~ 7488.5 MHz	
7488.5 ~ 7550 MHz	
7550 ~ 7611.5 MHz	
7611.5 ~ 7673 MHz	
7673 ~ 7734.5 MHz	
7734.5 ~ 7796 MHz	
7796 ~ 7857.5 MHz	
7857.5 ~ 7919 MHz	
7919 ~ 7980.5 MHz	
7980.5 ~ 8042 MHz	
8042 ~ 8103.5 MHz	
8103.5 ~ 8165 MHz	
8165 ~ 8226.5 MHz	
8226.5 ~ 8288 MHz	
8288 ~ 8349.5 MHz	
8349.5 ~ 8411 MHz	
8411 ~ 8472.5 MHz	
8472.5 ~ 8534 MHz	
8534 ~ 8595.5 MHz	
8595.5 ~ 8657 MHz	
8657 ~ 8718.5 MHz	
8718.5 ~ 8780 MHz	
8780 ~ 8841.5 MHz	
8841.5 ~ 8903 MHz	
8903 ~ 8964.5 MHz	
8964.5 ~ 9026 MHz	
9026 ~ 9087.5 MHz	
9087.5 ~ 9149 MHz	
9149 ~ 9210.5 MHz	
9210.5 ~ 9272 MHz	
9272 ~ 9333.5 MHz	
9333.5 ~ 9395 MHz	
9395 ~ 9456.5 MHz	
9456.5 ~ 9518 MHz	
9518 ~ 9579.5 MHz	
9579.5 ~ 9641 MHz	
9641 ~ 9702.5 MHz	
9702.5 ~ 9764 MHz	
9764 ~ 9825.5 MHz	
9825.5 ~ 9887 MHz	
9887 ~ 9948.5 MHz	
9948.5 ~ 10010 MHz	
10010 ~ 10071.5 MHz	
10071.5 ~ 10133 MHz	
10133 ~ 10194.5 MHz	
10194.5 ~ 10256 MHz	
10256 ~ 10317.5 MHz	
10317.5 ~ 10379 MHz	
10379 ~ 10440.5 MHz	
10440.5 ~ 10502 MHz	
10502 ~ 10563.5 MHz	
10563.5 ~ 10625 MHz	
10625 ~ 10686.5 MHz	
10686.5 ~ 10748 MHz	
10748 ~ 10809.5 MHz	
10809.5 ~ 10871 MHz	
10871 ~ 10932.5 MHz	
10932.5 ~ 10994 MHz	
10994 ~ 11055.5 MHz	
11055.5 ~ 11117 MHz	
11117 ~ 11178.5 MHz	
11178.5 ~ 11240 MHz	
11240 ~ 11301.5 MHz	
11301.5 ~ 11363 MHz	
11363 ~ 11424.5 MHz	
11424.5 ~ 11486 MHz	
11486 ~ 11547.5 MHz	
11547.5 ~ 11609 MHz	
11609 ~ 11670.5 MHz	
11670.5 ~ 11732 MHz	
11732 ~ 11793.5 MHz	
11793.5 ~ 11855 MHz	
11855 ~ 11916.5 MHz	
11916.5 ~ 11978 MHz	
11978 ~ 12039.5 MHz	
12039.5 ~ 12101 MHz	
12101 ~ 12162.5 MHz	
12162.5 ~ 12224 MHz	
12224 ~ 12285.5 MHz	
12285.5 ~ 12347 MHz	
12347 ~ 12408.5 MHz	
12408.5 ~ 12470 MHz	
12470 ~ 12531.5 MHz	
12531.5 ~ 12593 MHz	
12593 ~ 12654.5 MHz	
12654.5 ~ 12716 MHz	
12716 ~ 12777.5 MHz	
12777.5 ~ 12839 MHz	
12839 ~ 12900.5 MHz	
12900.5 ~ 12962 MHz	
12962 ~ 13023.5 MHz	
13023.5 ~ 13085 MHz	
13085 ~ 13146.5 MHz	
13146.5 ~ 13208 MHz	
13208 ~ 13269.5 MHz	
13269.5 ~ 13331 MHz	
13331 ~ 13392.5 MHz	
13392.5 ~ 13454 MHz	
13454 ~ 13515.5 MHz	
13515.5 ~ 13577 MHz	
13577 ~ 13638.5 MHz	
13638.5 ~ 13700 MHz	
13700 ~ 13761.5 MHz	
13761.5 ~ 13823 MHz	
13823 ~ 13884.5 MHz	
13884.5 ~ 13946 MHz	
13946 ~ 14007.5 MHz	
14007.5 ~ 14069 MHz	
14069 ~ 14130.5 MHz	
14130.5 ~ 14192 MHz	
14192 ~ 14253.5 MHz	
14253.5 ~ 14315 MHz	
14315 ~ 14376.5 MHz	
14376.5 ~ 14438 MHz	
14438 ~ 14499.5 MHz	
14499.5 ~ 14561 MHz	
14561 ~ 14622.5 MHz	
14622.5 ~ 14684 MHz	
14684 ~ 14745.5 MHz	
14745.5 ~ 14807 MHz	
14807 ~ 14868.5 MHz	
14868.5 ~ 14930 MHz	
14930 ~ 14991.5 MHz	
14991.5 ~ 15053 MHz	
15053 ~ 15114.5 MHz	
15114.5 ~ 15176 MHz	
15176 ~ 15237.5 MHz	
15237.5 ~ 15299 MHz	
15299 ~ 15360.5 MHz	
15360.5 ~ 15422 MHz	
15422 ~ 15483.5 MHz	
15483.5 ~ 15545 MHz	
15545 ~ 15606.5 MHz	
15606.5 ~ 15668 MHz	
15668 ~ 15729.5 MHz	
15729.5 ~ 15791 MHz	
15791 ~ 15852.5 MHz	
15852.5 ~ 15914 MHz	
15914 ~ 15975.5 MHz	
15975.5 ~ 16037 MHz	
16037 ~ 16098.5 MHz	
16098.5 ~ 16160 MHz	
16160 ~ 16221.5 MHz	
16221.5 ~ 16283 MHz	
16283 ~ 16344.5 MHz	
16344.5 ~ 16406 MHz	
16406 ~ 16467.5 MHz	
16467.5 ~ 16529 MHz	
16529 ~ 16590.5 MHz	
16590.5 ~ 16652 MHz	
16652 ~ 16713.5 MHz	
16713.5 ~ 16775 MHz	
16775 ~ 16836.5 MHz	
16836.5 ~ 16898 MHz	
16898 ~ 16959.5 MHz	
16959.5 ~ 17021 MHz	
17021 ~ 17082.5 MHz	
17082.5 ~ 17144 MHz	
17144 ~ 17205.5 MHz	
17205.5 ~ 17267 MHz	
17267 ~ 17328.5 MHz	
17328.5 ~ 17390 MHz	
17390 ~ 17451.5 MHz	
17451.5 ~ 17513 MHz	
17513 ~ 17574.5 MHz	
17574.5 ~ 17636 MHz	
17636 ~ 17697.5 MHz	
17697.5 ~ 17759 MHz	
17759 ~ 17820.5 MHz	
17820.5 ~ 17882 MHz	
17882 ~ 17943.5 MHz	
17943.5 ~ 18005 MHz	
18005 ~ 18066.5 MHz	
18066.5 ~ 18128 MHz	
18128 ~ 18189.5 MHz	
18189.5 ~ 18251 MHz	
18251 ~ 18312.5 MHz	
18312.5 ~ 18374 MHz	
18374 ~ 18435.5 MHz	
18435.5 ~ 18497 MHz	
18497 ~ 18558.5 MHz	
18558.5 ~ 18620 MHz	
18620 ~ 18681.5 MHz	
18681.5 ~ 18743 MHz	
18743 ~ 18804.5 MHz	
18804.5 ~ 18866 MHz	
18866 ~ 18927.5 MHz	
18927.5 ~ 18989 MHz	
18989 ~ 19050.5 MHz	
19050.5 ~ 19112 MHz	
19112 ~ 19173.5 MHz	
19173.5 ~ 19235 MHz	
19235 ~ 19296.5 MHz	
19296.5 ~ 19358 MHz	
19358 ~ 19419.5 MHz	
19419.5 ~ 19481 MHz	
19481 ~ 19542.5 MHz	
19542.5 ~ 19604 MHz	
19604 ~ 19665.5 MHz	
19665.5 ~ 19727 MHz	
19727 ~ 19788.5 MHz	
19788.5 ~ 19850 MHz	
19850 ~ 19911.5 MHz	
19911.5 ~ 19973 MHz	
19973 ~ 20034.5 MHz	
20034.5 ~ 20096 MHz	
20096 ~ 20157.5 MHz	
20157.5 ~ 20219 MHz	
20219 ~ 20280.5 MHz	
20280.5 ~ 20342 MHz	
20342 ~ 20403.5 MHz	
20403.5 ~ 20465 MHz	
20465 ~ 20526.5 MHz	
20526.5 ~ 20588 MHz	
20588 ~ 20649.5 MHz	
20649.5 ~ 20711 MHz	
20711 ~ 2077	

MECHANICAL DRAWINGS

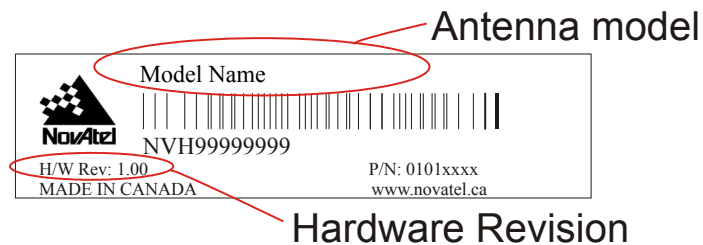
All dimensions are in millimetres (mm) where 1 inch = 25.4 mm.



Height = Vertical phase center offset from antenna reference point or antenna reference plane (ARP)

PHASE CENTER

Please see the *Mechanical Drawings* section on the previous panel and the close-up of the label below before reading this section.



For absolute offset numbers and to download PCV (phase center offsets and variations) tables, please visit the GEO++ Web site at www.geopp.com.

When using the Web site mentioned above, look for the NovAtel listing of your antenna model **and** its hardware revision.

Only integer hardware revisions affect the phase center offsets. For example, the numbers given for hardware revision 2.02 are applicable to an antenna labelled H/W Rev: 2.00, 2.05, 2.12 and so on.

Table 1 shows typical absolute and relative offset numbers for the current 750 antenna model.

Table 1: Height

	Absolute (GEO++) with Radome	Absolute (GEO++) without Radome
L1	170 mm	162 mm
L2	157 mm	159 mm

If you need any further advice on this matter, please visit our Web site at www.novatel.com. Other methods of contacting Customer Support can be found on the last panel of this guide.

WARRANTY POLICY

NovAtel Inc. warrants that its Global Positioning System (GPS) products are free from defects in materials and workmanship, subject to the conditions set forth below, for the following periods of time:

GPSAntenna™ Modules: One (1) Year
Cables and Accessories: Ninety (90) Days

Date of sale shall mean the date of the invoice to the original customer for the product. NovAtel's responsibility respecting this warranty is limited solely to product repair at an authorized NovAtel location only. Determination of repair will be made by NovAtel personnel or by technical personnel expressly authorized by NovAtel for this purpose.

The foregoing warranties do not extend to

(i) nonconformities, defects or errors in the products due to accident, abuse, misuse or negligent use of the products or use in other than a normal and customary manner, environmental conditions not conforming to NovAtel's specifications, or failure to follow prescribed installation, operating and maintenance procedures, (ii) defects, errors or nonconformities in the products due to modifications, alterations, additions or changes not made in accordance with NovAtel's specifications or authorized by NovAtel, (iii) normal wear and tear, (iv) damage caused by force of nature or act of any third person, (v) shipping damage; or (vi) service or repair of product by the dealer without prior written consent from NovAtel.

In addition, the foregoing warranties shall not apply to products designated by NovAtel as beta site test samples, experimental, developmental, preproduction, sample, incomplete or out of specification products or to returned products if the original identification marks have been removed or altered.

The warranties and remedies are exclusive and all other warranties, express or implied, written or oral, including the implied warranties of merchantability or fitness for any particular purpose are excluded.

NovAtel shall not be liable for any loss, damage or expense arising directly or indirectly out of the purchase, installation, operation, use or licensing of products or services. In no event shall NovAtel be liable for special, indirect, incidental or consequential damages of any kind or nature due to any cause.

There are no user-serviceable parts in the GPS Antenna and no maintenance is required. If the unit is faulty, replace with another unit and return the faulty unit to NovAtel Inc. You must obtain a RETURN MATERIAL AUTHORIZATION (RMA) number by calling NovAtel Customer Support at 1-800-NOVATEL (U.S. and Canada only) or 403-295-4900 before

shipping any product to NovAtel or a dealer. Once you have obtained an RMA number, you will be advised of proper shipping procedures to return any defective product. When returning any product to NovAtel, please return the defective product in the original packaging to avoid damage.

Before shipping any material to NovAtel or Dealer, please obtain a Return Material Authorization (RMA) number from the point of purchase or NovAtel's Customer Support.

WEEE NOTICE

If you purchased your GNSS-750 in Europe, please return it to your dealer or supplier at the end of its life. The objectives of the European Community's environment policy are, in particular, to preserve, protect and improve the quality of the environment, protect human health and utilise natural resources prudently and rationally. Sustainable development advocates the reduction of wasteful consumption of natural resources and the prevention of pollution. Waste electrical and electronic equipment (WEEE) is a regulated area. Where the generation of waste cannot be avoided, it should be reused or recovered for its material or energy. WEEE products may be recognized by their wheeled bin label.

QUESTIONS OR COMMENTS

If you have any questions or comments regarding your GNSS-750, please contact NovAtel Customer Support using one of methods provided below.

E-mail: support@novatel.com

Web: www.novatel.com

Phone: 1-800-NOVATEL (International)

403-295-4900 (U.S. & Canada)

Fax: 403-295-4901

