

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

GPS-702-GG, GPS-701-GG and GPS-702-GG-N

USER GUIDE



The GPS-702-GG, GPS-701-GG and GPS-702-GG-N are active antennas designed to operate at the following frequencies (in MHz):

GPS L1 (1575.42) and L2 (1227.60)

Glonass L1 (1598 - 1611.5) and L2 (1242.5 - 1254.3)

This guide provides the basic information you need to install and begin using your new antenna.

ADDITIONAL EQUIPMENT REQUIRED

The equipment listed below is required to set up the GPS-702-GG, GPS-701-GG or GPS-702-GG-N antenna:

- A mount, such as a range pole, tribrach, or tripod, with a 5/8" x 11 thread that extends between 3/8" and 7/8" (9 mm and 22 mm)
- A 1" open-end wrench
- Coaxial cable with a male TNC connector (N-Type connector for GPS-702-GG-N).
- A device with an antenna input port that both receives the RF signal and provides 4.5 - 18.0 VDC to the antenna (All NovAtel GPS receivers provide the necessary power through their antenna RF connectors.)

SITE SELECTION GUIDELINES

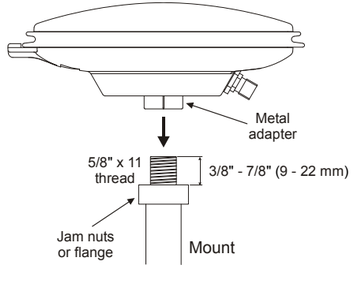
Before installing the antenna, select a site that as closely as possible meets the following conditions for optimal performance:

- 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
- 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

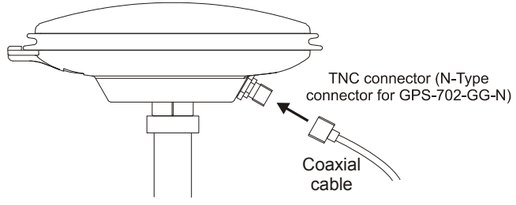
After a site has been selected, install the antenna as follows.

1. Verify that the thread on the mount does not extend more than 7/8" (22 mm) to ensure the plastic inside 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. Using a wrench, tighten the adapter to the mount.



✉ The metal adapter on the bottom of the antenna is fixed in place. Do not attempt to remove it.

3. Remove the dust cap from the antenna's TNC connector (N-Type connector for GPS-702-GG-N).
4. Attach the male TNC (or N-Type) connector of the coaxial cable to the antenna's TNC connector (N-Type for GPS-702-GG-N).

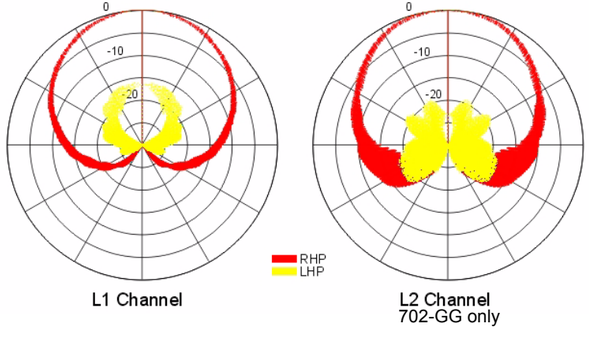


5. Attach the other end of the coaxial cable to the antenna input port of the receiving device, which must provide power as detailed in the *SPECIFICATIONS* section of this guide. All NovAtel GPS receivers provide the necessary power through their antenna RF connectors.

ANTENNA CARE

The GPS-702-GG, GPS-701-GG and GPS-702-GG-N are designed to withstand the elements, including rain, snow, and dust. However, to ensure your antenna performs optimally, keep the radome (top surface of the antenna) clean and brush off any ice and snow. In addition, ensure the TNC (or N-Type) connector remains clean and dry and replace the dust cap when a cable is not connected.

ELEVATION GAIN PATTERN

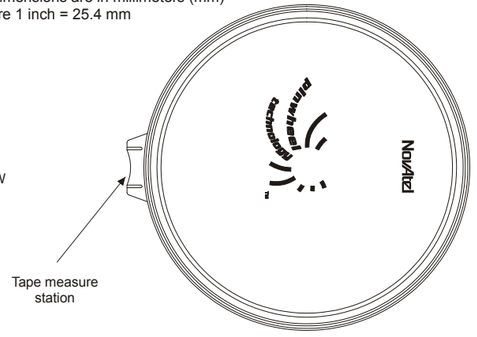


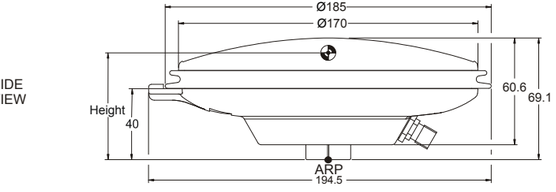
SPECIFICATIONS

RF	
3 dB pass band (typical)	L1: 1588.5 ± 23.0 MHz L2: 1236.0 ± 18.3 MHz
Out-of-band rejection (typical) ± 100 MHz ± 200 MHz	 30 dBc 50 dBc
Gain at zenith (θ = 90°) (min)	L1: +5 dBic L2: +2 dBic
Gain roll-off (zenith to horizon)	L1: 13 dB L2: 11 dB
LNA gain (typical)	27 dB
Polarization	Right-hand circular
Noise figure (typical)	2.5 dB
L1-L2 differential propagation delay (maximum)	5 ns
Nominal impedance	50 Ω
VSWR	≤ 2.0 : 1
POWER	
Input voltage	4.5 - 18.0 VDC
Current (typical)	35 mA
PHYSICAL	
Diameter	185 mm (7.28")
Weight	500 g (17.6 oz)
ENVIRONMENTAL	
Maximum altitude	9000 m (29527.5 ft)
Operating temperature	-40°C to +85°C (-40°F to +185°F)
Storage temperature	-55°C to +85°C (-67°F to +185°F)
Vibration	Random: MIL-STD-202F Method 214, Test Curve A Sine: SAEJ1211, Section 4.7
Salt spray	MIL-STD-810F Method 509.4
Ingress protection	IPX6 and IPX7

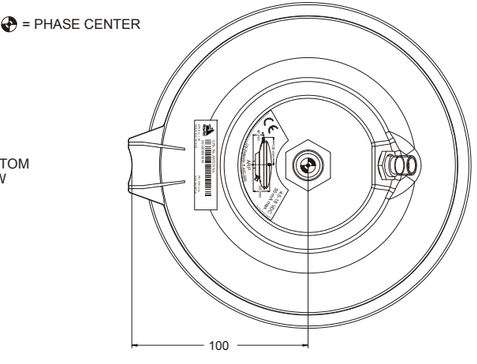
MECHANICAL DRAWINGS

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





= PHASE CENTER



PHASE CENTER

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



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

✉ 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, 2.04, 2.12 and so on.

Table 1 shows typical absolute and relative offset numbers for the current GPS-702-GG antenna model.

Table 1: Height

	Absolute (GEO++)	Relative (NGS/IGS)
L1	66 mm (2.60”)	83 mm (3.27”)
L2	63 mm (2.48”)	77 mm (3.03”)
Avg.	65 mm (2.56”)	N/A

If you need any further advice on this matter, please visit our website at www.novatel.com. Other methods of contacting Customer Service 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 cause 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 or 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 GPSAntenna 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 Service 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. You may also visit our website at http://www.novatel.com and select *Support* | *Repair Request* from the menu.

WEEE NOTICE

If you purchased your 701-GG/702-GG/702-GG-N 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 recognised by their wheeled bin label.

RoHS NOTICE

The 701-GG, 702-GG and 702-GG-N are compliant with the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC.

PATENT NOTICE

The 701-GG, 702-GG and 702-GG-N are manufactured and protected under U.S. Patents #6,445,354 B1, #6,452,560 B2 and (patent pending) File No 16437-0225.

QUESTIONS OR COMMENTS

If you have any questions or comments regarding your GPS-701-GG, GPS-702-GG or GPS-702-GG-N antenna, please contact NovAtel Customer Service using one of methods provided below.

Email: support@novatel.ca
Web: www.novatel.com
Phone: 1-800-NOVATEL (U.S. & Canada)
403-295-4900 (International)
Fax: 403-295-4901

© Copyright 2006-2009 NovAtel Inc. All rights reserved. Unpublished rights reserved under international copyright laws. Recyclable.

OM-20000095 Rev 2 August 11, 2009

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP