

NA0103a

Mechanical Mount Antenna



The NA103a permanent mount GPS value antenna provides 28 dB gain and great out-of-band rejection performance. It features a precision tuned custom ceramic patch element for maximum signal reception and 15KV ESD circuit protection. This minimizes GPS loss-of lock even when conditions are less than ideal. Weather proof, all-plastic, non-corrosive low profile package.

General Notes

The NA0103a have been designed to be hard mounted to a flat surface or to a mast. This guide is intended to aid the installer in properly mounting for optimum GPS performance to a flat surface. When installed properly as per the following instructions the installation meets IP67 environmental specifications.

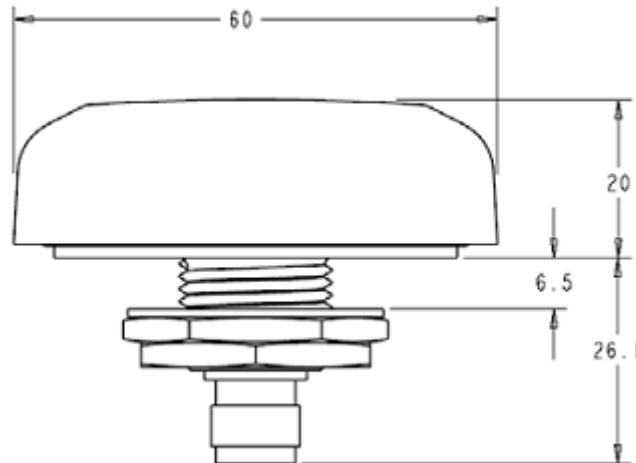
Mounting Surface

The mounting surface must not exceed 6.5mm in thickness. The surface must be flat, clean and free of flaking paint or loose metal debris in order to have a watertight (IP67) installation.

Mounting Angle

There will be very little degradation in GNSS performance with slopes up to 30 degrees from horizontal. The antenna will perform at angles beyond this point but the performance will continue to degrade with increasing slope. It is recommended that the slope not exceed 45 degrees.

Mechanical Specifications



Installation Procedure

For optimum GNSS performance, the antenna must have a clear view of the sky and preferably have a ground plane. A metallic ground plane of 10cm diameter (4 inches) is sufficient to realize virtually all ground plane benefits. A larger ground plane will provide no additional advantages. The antenna will operate without a ground plane with a slightly wider beam-width.

The product comes equipped with all necessary mounting accessories, 1 silicone rubber gasket (attached to the base), 1 metal washer and 2 nickel-plated brass panel nuts $\frac{3}{4}$ inch size.

1. Select the location on the mounting surface. Make a $\frac{3}{4}$ inch diameter hole using the appropriate hole-punch, saw or drill.
2. Remove from the antenna the 2 panel nuts and the metal washer.
3. Carefully insert the antenna in the $\frac{3}{4}$ inch diameter mounting surface opening.
4. Place the metal washer and 1 panel nut on the thread of the antenna, on the inside of the mounting surface and tighten the first panel nut. The recommended torque for the 1st panel nut is 15-20 in-pounds.
5. Screw on and tighten the 2nd panel nut while holding the 1st panel nut in stationary position. The recommended maximum torque for the 2nd panel nut is 35-45 in-pounds. Do not exceed recommended maximum torque.

Company Datasheet #	NA-0103a
Revision #:	B
Date:	07/16/20

Technical specifications

Low Noise Amplifier Specifications

Frequency Band: 1574MHz - 1607MHz
Amplifier Gain: @ 3.0VDC: 26dB (typical)
Noise Figure: < 2.0dB (typical)
Out-of-band Rejection: f0 = 1586MHz f0 +/- 50MHz : ≥ 60dBc f0 +/- 60MHz : ≥ 70dBc
DC Voltage: 2.8-6.0V (operating) ≤ 12.0V (survivability)
DC Current: < 25mA (typical)

RF/Electrical Specifications

Frequency Band	Nominal Gain	Polarization	Nominal Impedance
1574MHz - 1607MHz	2 dBic @ 90°	Right Hand Circular	50 Ohms

Mechanical Specifications

Antenna Dimensions (dia. x mount height)	Weight	Shock	Vibration
2.36" x 0.83" (60 x 21 mm)	0.1 lbs (50 g)	Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min 10 - 200 Hz log sweep: 3G

Radome Material	Connector	Mounting Method
GE Lexan EXL9330	TNC Female	3/4" thru-hole or bracket mount*

Environmental Specifications

Temperature Range	Ingress Protection
-40° C to +85° C operating	IP67*

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