3911D-HR High Rejection Dual Filter Mobile GPS Antenna for High RF Noise Environments

The 3911D-HR low interference GPS Antenna with Dual SAW High Rejection Filters allow excellent performance in high RF noise environments as found on vehicles with multiple antennas. It is ideal for fleet tracking, public safety, transit, precision agricultural and military applications.

The 3911D-HR features ESD circuit protection, an innovative two-stage low noise amplifier and a dual SAW high rejection filter. It also features a custom designed ceramic patch element that minimizes detuning effects caused by adjacent objects. The 3911D-HR provides consistent, clear GPS signal reception while minimizing loss-of-lock in high-RF fields. Housed in a weatherproof magnetic or screw mount enclosure, the 3911D-HR GPS antenna is ideal for demanding vehicle mounted GPS applications.

Features

- High rejection dual SAW filters allow placement near other transmitting antennas
- Low current: 7.5 mA
- Wide voltage input range (2.7 - 5 VDC)
- Robust IP67 housing built for various weather conditions

RF/Electrical Specifications

Center Frequency	Nominal Gain	Polarization	Current Draw
1575.42 MHz ± 10 MHz	3 dBic @ 90° -2 dBic @ 20°	Right Hand Circular	7.5 mA @ 3.3V 11.5 mA @ 5V

Mechanical Specifications

Antenna Dimensions	Weight	Shock	Vibration
2.1" x 2.3" x .53" (45 x 51 x 12 mm)	4.2 oz (120 g)	Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min 10 – 200 Hz log sweep: 3G

Cable	Connector	Mounting Method
9.8' (3 meters) highly-flexible 174 sized cable	SMA standard	Magnetic (5 lb lift-off force) or permanent (pre-threaded for 3 x M2.5 screws)

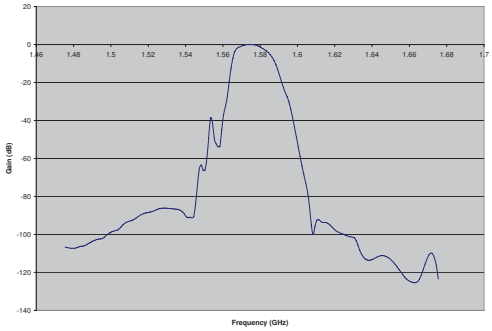
Environmental Specifications

Temperature Range	Weatherproof
-40°C to +85°C operating	IP67

Low Noise Amplifier Specifications

Nominal Gain: 25 dB @ 3.3VDC 25.5 dB @ 5VDC
Noise Figure: 3.1 dB
Voltage: 2.7-5 VDC
ESD Circuit Protection: 15K volts

Out-of-band Filter Rejection



3915D-HR Low Power GPS Antenna with Dual High Rejection SAW Filters

The 3915D-HR Very Low Power "No Interference" GPS Antenna has one of the industry's lowest power consumption and best out-of-band filter performance. The 3915D-HR features ESD circuit protection, an innovative very low power two-stage low noise amplifier and dual high rejection SAW filters. It also features a custom designed ceramic patch element that minimizes detuning effects caused by adjacent objects. The 3915D-HR provides consistent, clear GPS signal reception while minimizing loss-of-lock in high-RF fields. Housed in a weatherproof magnetic or screw mount enclosure, the 3915D-HR is ideal for most demanding, power critical GPS applications.

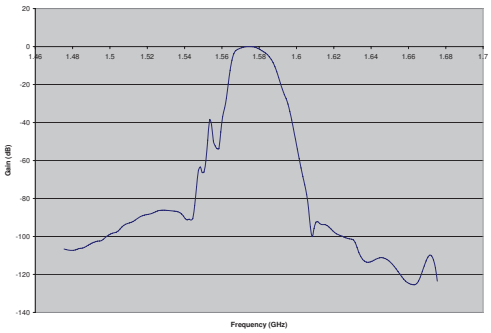
Features

- High rejection dual SAW filters allows placement near other transmitting antennas
- Low current: 1.3 mA
- 20 dB gain
- Wide voltage input range (2.7 - 5 VDC)
- Robust IP67 housing built for various weather conditions

Low Noise Amplifier Specifications

Nominal Gain: 20 dB @ 3.3VDC
Noise Figure: 3.6 dB
Voltage: 2.7-5 VDC
ESD Circuit Protection: 15K volts

Out-of-band Filter Rejection



RF/Electrical Specifications

Center Frequency	Nominal Gain	Polarization	Current Draw
1575.42 MHz ± 10 MHz	3 dBic @ 90° -2 dBic @ 20°	Right Hand Circular	1.3 mA @ 3.3V 2 mA @ 5V

Mechanical Specifications

Antenna Dimensions	Weight	Shock	Vibration
2.1" x 2.3" x .53" (45 x 51 x 12 mm)	4.2 oz (120 g)	Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min 10 – 200 Hz log sweep: 3G

Cable	Connector	Mounting Method
9.8' (3 meters) highly-flexible 174 sized cable	SMA standard	Magnetic (5 lb lift-off force) or permanent (pre-threaded for 3 x M2.5 screws)

Environmental Specifications

Temperature Range	Weatherproof
-40°C to +85°C operating	IP67

3917D High Gain GPS Antenna

The 3917D GPS antenna is a high performance value antenna with a wide voltage range, ideally suited to telematics platforms for use in vehicle-mounted applications. Using internal magnets or screw mount holes, the antenna can be installed almost anywhere on a vehicle allowing for greater flexibility. The 3917D antenna features a high gain (28 dB) low noise amplifier and a SAW filter. With 2.7 to 5 volt operation, the antenna can be used with the vast majority of GPS systems available.

Features

- Voltage range 2.7 – 5 V
- LNA 28 dB gain typical
- Low noise figure 1.5dB
- Outstanding out-of-band signal rejection

RF/Electrical Specifications

Center Frequency	Nominal Gain	Polarization	Current Draw
1575.42 MHz ± 10 MHz	3 dBic @ 90° -2 dBic @ 20°	Right Hand Circular	9 mA @ 3.3V 15 mA @ 5V

Mechanical Specifications

Antenna Dimensions	Weight	Shock	Vibration
2.1” x 2.3” x .5” (45 x 51 x 12 mm)	4.2 oz (120 g)	Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min 10 – 200 Hz log sweep: 3G

Cable	Connector	Mounting Method
16.4’ (5 meters) highly-flexible 174 sized cable	SMA standard	Magnetic (5 lb lift-off force) or permanent (pre-threaded for 3 x M2.5 screws)

Environmental Specifications

Temperature Range	Weatherproof
-40°C to +85°C operating	IP67

Low Noise Amplifier Specifications

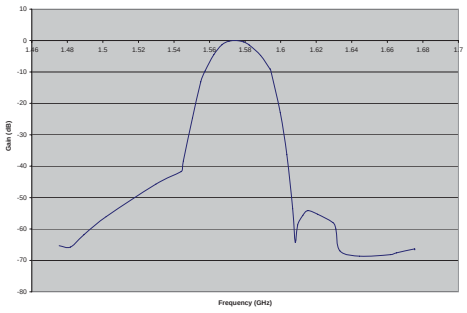
Nominal Gain:
@ 3.3VDC: 28 dB
@ 5VDC: 30 dB

Noise Figure:
1.5 dB (typical)

Out-of-band rejection:
+/- 15 MHz: 5 dB
+/- 20 MHz: 10 dB
+/- 30 MHz: 32 dB
+/- 40 MHz: 40 dB

Voltage:
2.7-5 VDC

Out-of-band Filter Rejection



3927D Low Cost Magnet Mount GPS Antenna

The 3927D is a low cost magnet mount GPS antenna. It features a precisely tuned ceramic patch antenna, 15KV ESD protection, a two stage high gain (28dB) Low Noise Amplifier (LNA) and a mid-section SAW filter that provides superior out-of-band signal rejection. Housed in a very compact all plastic weatherproof enclosure, the 3927D can be installed almost anywhere on a vehicle allowing great flexibility. With its 2.7 to 5 volt operation, the 3927D can be used with any GPS system available in the marketplace.

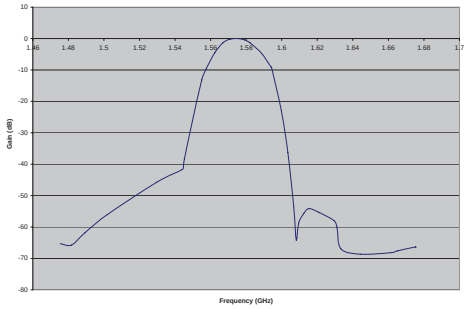
Features

- All plastic weatherproof housing
- 26 dB LNA gain
- Low noise figure 1.5dB

Low Noise Amplifier Specifications

Nominal Gain: @ 3.3VDC: 26 dB @ 5VDC: 28 dB
Noise Figure: 1.5 dB
Voltage: 2.7-5 VDC

Out-of-band Filter Rejection



RF/Electrical Specifications

Center Frequency	Nominal Gain	Polarization	Current Draw
1575.42 MHz ± 10 MHz	3 dBic @ 90° -2 dBic @ 20°	Right Hand Circular	9 mA @ 3.3V 15 mA @ 5V

Mechanical Specifications

Antenna Dimensions	Weight	Shock	Vibration
1.5” x 1.4” x .5” (37.6 x 34.6 x 12.3 mm)	.88 oz (25 g)	Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min 10 – 200 Hz log sweep: 3G

Cable	Connector	Mounting Method
16.4’ (5 meters) RG174	SMA male	Magnetic (5 lb lift-off force) or permanent (pre-threaded for 3 x M2.5 screws)

Environmental Specifications

Temperature Range	Weatherproof
-40°C to +85°C operating	IP67

3938D Ultra Compact 2.4 GHz Covert Mount Antenna

The 3938D Ultra Compact 2.4 GHz Covert Mount Antenna provides exceptional signal reception on the 2.4 GHz ISM band. The 3938D is composed of an ultra compact semi-flexible coated PCB for covert applications and is also available with a Lexan® covered urethane foam package.

Features

- 2.4 GHz ISM Band reception
- Ultra-compact, semi-flexible PCB
- Coated PCB or packaged form factor
- Covert and dash mount
- Easy to install
- Side exit cable

RF/Electrical Specifications

Frequency Range	Nominal Gain	Nominal Impedance	VSWR
2.4-2.5 GHz	2 dBi	50 Ohms	≤ 2.0

Mechanical Specifications

Antenna Dimensions (L x W x H)	Housing Material	Cable	Connector
2.17” x .67” x .025” (55.1 x 17.0 x .64 mm)	Black solder masked PCB; Black Lexan® covered urethane foam	6” (15 cm) RG-174	MCX Right Angle

Environmental Specifications

Temperature Range	Humidity
-40˚C to +85˚C operating	95% max (non condensing)

3947D GPS/Cellular/3G/2.4 GHz Combined Covert/Dash Antenna

The 3947D GPS, Quad Cellular, 3G & 2.4 GHz ISM Band antenna is an excellent choice for Telematics systems requiring dependable and highly accurate positioning data. It is also ideal for clear and consistent host-to-vehicle communications.

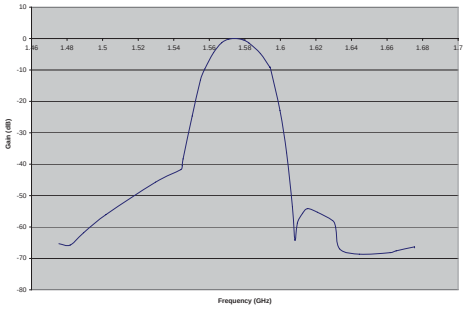
Features

- GPS, Quad-band Cellular & 2.4 GHz band reception
- Semi-flexible for covert installations
- Excellent out-of-band signal rejection
- High gain active GPS antenna
- Easy to install

Antenna Electrical Specifications (Cellular/ 3G/2.4 GHz)

Frequencies: 824-960 MHz 1710-2200 MHz 2400-2500 MHz
Nominal Impedance: 50 Ohm
VSWR: ≤1.5:1
Nominal Gain: 2 dBi

GPS Antenna out-of-band Filter Rejection



Antenna Response (GPS)

Frequency Range	Nominal Gain	Noise Figure (typical)	Polarization	VSWR
1575.42 MHz	28 dB	1.5 dB	Right Hand Circular	≤1.5:1

Antenna Electrical Specifications (GPS)

Voltage	Current Draw
3 - 5 VDC	9.0 mA @ 3.5V

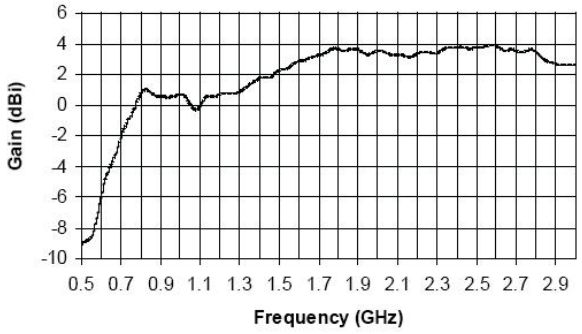
Mechanical Specifications

Antenna Dimensions	Housing	Cable	Connectors
5.2" x 2.3" x .3" (132.1 x 58.9 x 8.5mm)	Lexan® covered urethane foam	Two 9.8' (3 meters) RG174	2 x SMA male

Environmental Specifications

Temperature Range
-40°C to +85°C operating

Cellular/3G/2.4 GHz Antenna Gain



3971D Low Noise Permanent Mount GPS Antenna

The 3971D Low Noise Permanent Mount GPS Antenna has one of the industry's lowest noise figure. It features a precision tuned custom ceramic patch element, ESD circuit protection and a high rejection SAW filter. The 3971D provides clear GPS signal reception while minimizing loss-of-lock even in less than ideal conditions. Available in an all-plastic, non-corrosive low profile package for mobile applications with a dark grey or white low profile radome for mobile installations.

Features

- Weather proof, all-plastic, non-corrosive, low profile enclosure
- Very low noise (0.8 dB) LNA
- 28dB gain
- Low current: 8mA (typ)
- High rejection SAW filter
- 15 KV ESD
- ¾ inch thru-hole or bracket mount
- Voltage range 2.7 to 5.5 V
- Available in a black or white radome

RF/Electrical Specifications

Center Frequency	Nominal Gain	Polarization	Current Draw
1575.42 MHz ± 10 MHz	3 dBic @ 90° -2 dBic @ 20°	Right Hand Circular	8 mA @ 3.3V

Mechanical Specifications

Antenna Dimensions (diameter x height)	Weight	Shock	Vibration
2.4" x 1.7" (60 x 44 mm)	1.8 oz (50 g)	Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min 10 – 200 Hz log sweep: 3G

Environmental Specifications

Housing	Connector	Mounting Method
GE Lexan® EXL9330	TNC female	¾" thru-hole or bracket mount*

Temperature Range	Weatherproof
-40°C to +85°C operating	IP67

Models

Part Number	Description
3917D	Black radome
3917D-W	White radome

***Order MMK1924 bracket for compatible mounting**

Low Noise Amplifier Specifications

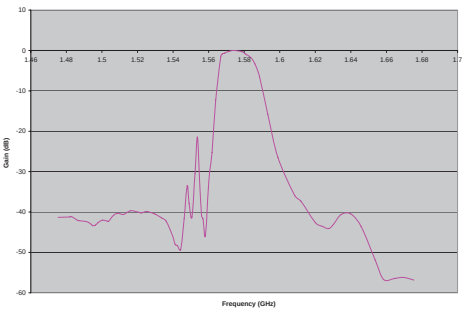
Nominal Gain:
28 dB @ 3.3V

Noise Figure:
.8 dB (typical)

Out-of-band rejection:
+/- 15 MHz: 5 dB
+/- 20 MHz: 10 dB
+/- 30 MHz: 32 dB
+/- 40 MHz: 40 dB

Voltage:
2.7-5 VDC

Out-of-band Filter Rejection



3977D Permanent Mount GPS Antenna

The 3977D permanent mount GPS 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 enables the 3977D to minimize loss-of-lock, even when conditions are less than ideal. Available in an all-plastic, non-corrosive low profile package for vehicle mounting in a white or dark gray housing.

Features

- Weather proof, all-plastic, non-corrosive, low profile enclosure
- ¾ inch thru-hole or bracket mount
- Voltage range: 2.7 to 5.5 V
- High gain: 28 dB
- Low noise figure: 1.5 dB
- High out-of-band signal rejection
- 15 KV ESD circuit protection

RF/Electrical Specifications

Center Frequency	Nominal Gain	Polarization	Current Draw
1575.42 MHz ± 10 MHz	3 dBic @ 90° -2 dBic @ 20°	Right Hand Circular	9 mA @ 3.3V 15 mA @ 5V

Mechanical Specifications

Antenna Dimensions (diameter x height)	Weight	Shock	Vibration
2.4” x 0.8” (60 x 21 mm)	1.8 oz (50 g)	Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min 10 - 200 Hz log sweep: 3G

Housing	Connector	Mounting Method
GE Lexan EXL9330	TNC jack	¾” thru-hole or bracket mount*

Environmental Specifications

Temperature Range	Weatherproof
-40°C to +85°C operating	IP67

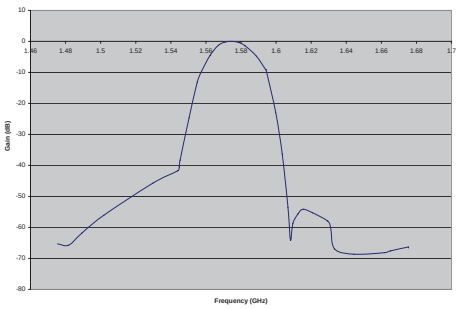
Models

Part Number	Description
3977D	Black radome
3977D-W	White radome

Low Noise Amplifier Specifications

Nominal Gain: @ 3.3VDC: 28 dB @ 5VDC: 30 dB
Noise Figure: 1.5 dB (typical)
Voltage: 2.7-5 VDC

Out-of-band Filter Rejection



***Order MMK1924 bracket for compatible mounting**

3978D High Gain Permanent Mount GPS Antenna

The 3978D high gain permanent mount GPS Antenna provides 40 dB gain and great high out-of-band rejection performance and is the optimum choice for GPS Tracking and Timing applications with long cable runs and stand alone GPS applications. It features a precision tuned custom ceramic patch element for maximum signal reception, 15 KV ESD circuit protection, a very low noise (0.5 dB) 3 stage LNA circuit and a SAW filter. This enables the 3978D to provide a reliable and clear GPS signal while minimizing loss-of-lock, even when conditions are less than ideal. Available in an all-plastic, non-corrosive low profile package for vehicle mounting.

Features

- Weather proof, all-plastic, black, non-corrosive, low profile enclosure
- ¾ inch thru-hole or bracket mount
- Voltage range: 2.7 to 5.5 V
- High gain: 40 dB (typical)
- Very low noise figure: 0.5dB
- 15 KV ESD circuit protection

RF/Electrical Specifications

Center Frequency	Nominal Gain	Polarization	Current Draw
1575.42 MHz ± 10 MHz	3 dBic @ 90° -2 dBic @ 20°	Right Hand Circular	15 mA from 2.7-5.5 VDC

Mechanical Specifications

Antenna Dimensions (diameter x height)	Weight	Shock	Vibration
2.4” x 0.8” (60 x 21 mm)	1.8 oz (50 g)	Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min 10 – 200 Hz log sweep: 3G

Housing	Connector	Mounting Method
GE Lexan EXL9330	TNC jack	¾” thru-hole or bracket mount*

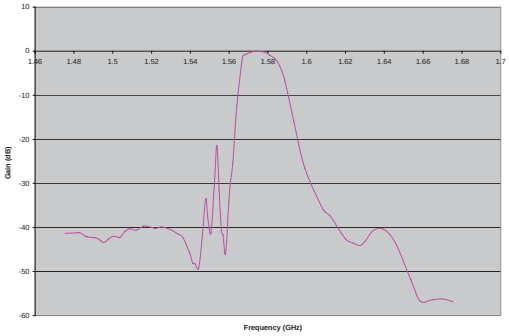
Environmental Specifications

Temperature Range	Weatherproof
-40°C to +85°C operating	IP67

Low Noise Amplifier Specifications

Nominal Gain: 40 dB
Noise Figure: 0.5 dB (typical)
Voltage: 2.7-5 VDC
ESD Circuit Protection: 15K volts

Out-of-band Filter Rejection



***Order MMK1924 bracket for compatible mounting**

3978D-DH-W High Gain Permanent Mount GPS Antenna

The 3978D-DH-W high gain permanent mount GPS Antenna provides 40 dB gain and great high out-of-band rejection performance and is ideal for stand alone GPS applications. It features a precision tuned custom ceramic patch element for maximum signal reception, 15KV ESD circuit protection, a very low noise (0.5 dB) 3 stage LNA circuit and a SAW filter. This enables the 3978D-DH-W to provide a reliable and clear GPS signal while minimizing loss-of-lock, even when conditions are less than ideal. Available in an all-plastic, non-corrosive white cone-shaped radome for fixed installations.

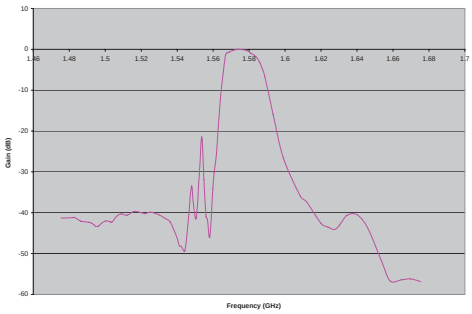
Features

- Weather proof, all-plastic, non-corrosive, cone-shaped enclosure
- ¾ inch thru-hole or bracket mount
- Voltage range: 2.7 to 5.5 V
- High gain: 40 dB (typical)
- Very low noise figure: 0.5dB
- Great out-of-band signal rejection
- 15 KV ESD circuit protection

Low Noise Amplifier Specifications

Nominal Gain: 40 dB
Noise Figure: 0.5 dB (typical)
Voltage: 2.7-5 VDC
ESD Circuit Protection: 15 KV

Out-of-band Filter Rejection



RF/Electrical Specifications

Center Frequency	Nominal Gain	Polarization	Current Draw
1575.42 MHz ± 10 MHz	3 dBic @ 90° -2 dBic @ 20°	Right Hand Circular	15 mA from 2.7-5.5 VDC

Mechanical Specifications

Antenna Dimensions (diameter x height)	Weight	Shock	Vibration
2.4” x 1.7” (60 x 44 mm)	1.8 oz (50 g)	Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min 10 – 200 Hz log sweep: 3G

Housing	Connector	Mounting Method
GE Lexan® EXL9330	TNC jack	¾” thru-hole or bracket mount*

Environmental Specifications

Temperature Range	Weatherproof
-40°C to +85°C operating	IP67

***Order MMK1924 bracket for compatible mounting**

5012D-U Smart GPS Antenna with Integrated Receiver

The 5012D-U GPS Receiver + Antenna incorporates a highly sensitive 16-channel, very quick time-to-fix GPS Receiver, and a high performance active/filtered GPS antenna. It features high performance GPS Engine with embedded flash memory, a Low Noise Amplifier, SAW filter, as well as a precision tuned ceramic patch element for maximum GPS signal reception. The 5012D-U High Sensitivity GPS Receiver + Antenna is housed in a compact, rugged weatherproof magnet or screw mount enclosure.

Features

- Very High Sensitivity: -159dBm tracking
- Quick Time to Fix: 39 sec cold start
- 16 channel GPS Engine
- Standard NMEA 0183 GPS output
- WAAS and EGNOS supported
- Low power & standby modes
- Weatherproof industrial grade enclosure

Antenna Response Specifications

Center Frequency	Nominal Gain	Polarization	Out-of-Band Rejection
1575.42 MHz ± 10 MHz	3 dBic @ 90° -2.0 dBic @ 20°	Right Hand Circular	+15 MHz: 10 dB/- 15 MHz:30dB +20 MHz: 20 dB/- 20 MHz:30dB +40 MHz: 40 dB/- 40 MHz:40dB

Antenna Electrical Specifications

Voltage	Current Draw
5 volts USB comm interface	85 mA max

Mechanical Specifications

Antenna Dimensions	Weight	Mounting
2.1" x 2.3" x .5" (52.1 x 58.9 x 13.6 mm)	120 g (4.2 oz)	Magnetic (5 lb lift-off) or Screw mount (M2.5 pre-threaded)

Shock	Vibration	Cable Length	Interface
Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min; 10 – 200 Hz log sweep: 3G	9.8' (3 meters)	USB

Environmental Specifications

Temperature Range	Weather Proof
-40°C to +85°C operating	IP67

GPS Performance

Frequency:
L1: 1575.42 MHz

Channels:
16 channels parallel

Sensitivity:
Acquisition: -146dBm
Tracking: -159dBm

Accuracy:
2 m (autonomous)
<1 metre (SBAS)

Time to First Fix:
Cold start: 39 sec
Warm start: 34sec
Hot start: 2.5 sec
Reacquisition <1 sec

Serial Protocol:
Output: NMEA 0183
Baud Rate: 4800 bps (default), user configuration up to 115kbps
Update Rate: 1Hz
NMEA Message: GGA, VTG, GSA, GSV, RMC

2901-20D Inline Amplifier

The 2901-20D Inline Amplifier is designed to boost weak L-Band frequency signals including GPS signals, allowing for longer cable lengths between the antenna and receiver. Its low operating current minimizes loading on the receiver and passes DC to the antenna. This innovative design eliminates the requirement for additional hardware such as bias-T and additional power cable.

Features

- Low noise
- Low current draw
- 50 Ohm port impedance
- No external power supply required
- Mounting flanges for easy installation
- Small footprint

Antenna Specifications

Bandwidth	Nominal Gain	Noise Figure	VSWR (1.52-16.62 GHz)	Antenna Max Load
1100-1900 MHz	20 dB	1.9 dB	1.5:1	50 mA

Antenna Electrical Specifications

Voltage	Current Draw
3-5 V	8 mA @ 3V 8.5 mA @ 5V

Mechanical Specifications

Antenna Dimensions	Weight	Mounting Holes
2.1” x 2.3” x .5” (52.1 x 58.9 x 13.6 mm)	120 g (4.2 oz)	4.65 mm dia.

Environmental Specifications

Temperature Range	Weather Proof
-40°C to +85°C operating	IP60

3971D-DH-W Low Noise Permanent Mount GPS Antenna

The 3971D-DH-W Permanent Mount GPS Antenna provides 28 dBd of gain and has one of the industry's lowest noise figure.It features a precision tuned custom ceramic patch element, ESD circuit protection and a high rejection SAW filter. The 3971D-DH-W provides clear GPS signal reception while minimizing loss-of-lock even in less than ideal conditions. Available in an all-plastic, non-corrosive white cone-shaped radome for fixed installations.

Features

- Weather proof, all-plastic, non-corrosive, cone-shaped enclosure
- 28dB gain
- Low current: 8mA (typ)
- ¾ inch thru-hole or bracket mount
- Voltage range 2.7 to 5.5 V

RF/Electrical Specifications

Center Frequency	Nominal Gain	Current Draw
1575.42 MHz ± 10 MHz	3 dBic @ 90° -2 dBic @ 20°	8 mA @ 3.3V

Mechanical Specifications

Antenna Dimensions (diameter x height)	Weight	Shock	Vibration
2.4" x 1.7" (60 x 44 mm)	1.8 oz (50 g)	Vertical axis 50G, other axes 30G	3 axis, sweep = 15 min 10 - 200 Hz log sweep: 3G

Housing	Connector	Mounting Method
GE Lexan® EXL9330	TNC jack	¾" thru-hole or bracket mount*

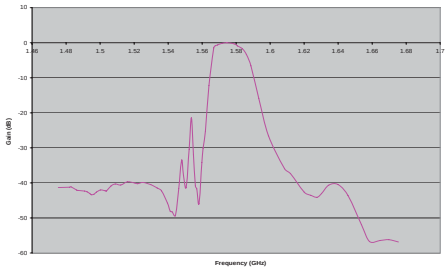
Environmental Specifications

Temperature Range	Weatherproof
-40°C to +85°C operating	IP67

Low Noise Amplifier Specifications

Nominal Gain: 28 dB @ 3.3V
Noise Figure: 3.1 dB (typical)
Voltage: 2.7-5 VDC
ESD Circuit Protection 15 KV

Out-of-band Filter Rejection



***Order MMK1924 bracket for compatible mounting**