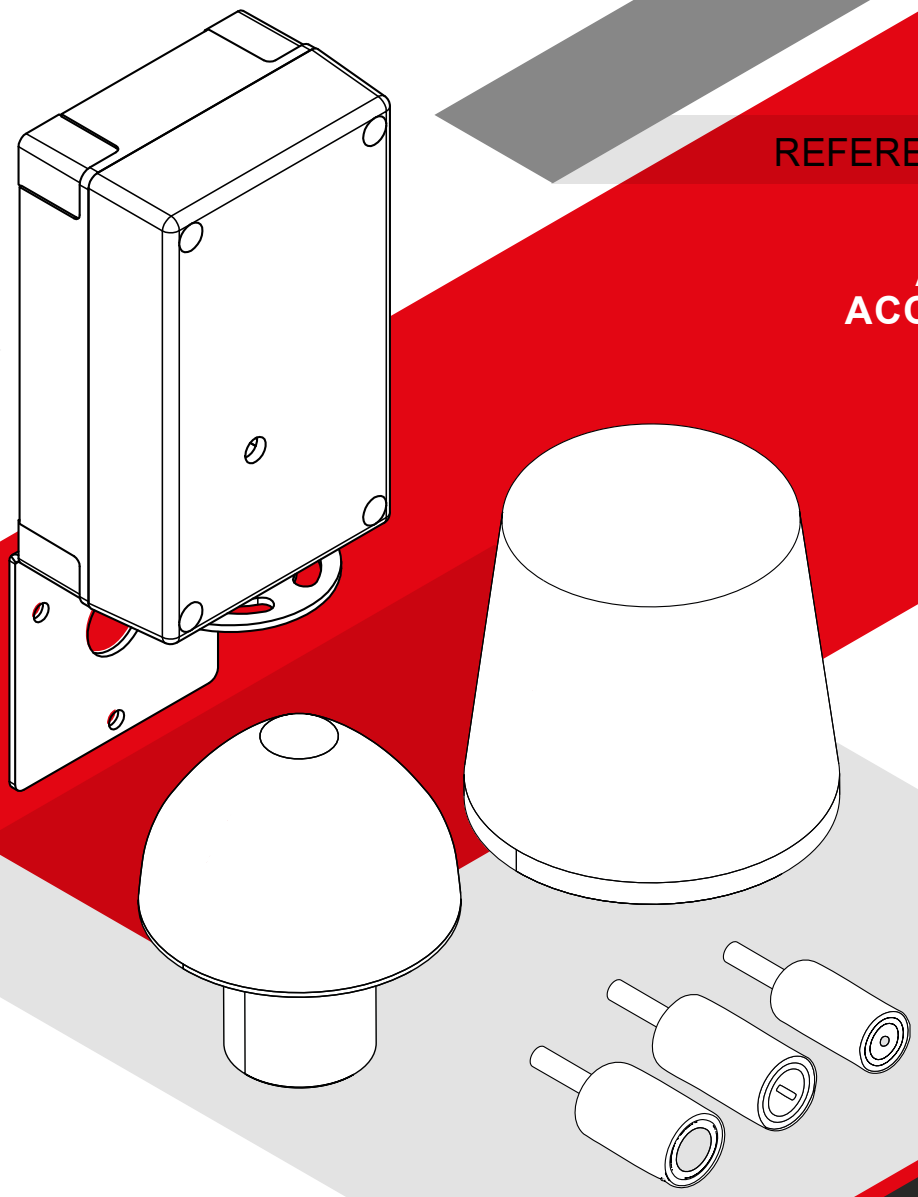
REFERENCES BASE

ANTENNAS ACCESSORIES & CABLES



GORGY TIME

www.gorgy-time.com

MADE IN FRANCE

GPS Antenna Converter

The GPS antenna combines a planar antenna and a frequency converter, which translates the high-frequency phase-modulated spread spectrum signal of the GPS system to an intermediate frequency. This way a standard cable (e.g. AWG22) can be used for the connection with the GPS clock and a distance of up to 120 meters between receiver and antenna is possible without additional amplifier.

Key Features

- 12-channel simultaneous operation
- Ultra-low power consumption: less than 1W
- Holder for Wall Mounting (included)

Specifications techniques

- **Cable:**
  - 1 Pair 22 AWG Shielded Cable
- **Power consumption:** less than 1 W
- **Passive current loop system**
- **DCF 77 transmission format**
- **Acquisition:** less than 4 minutes

Environmental Specifications

- **Operating temperature:** - 40 °C to + 85 °C
- **Storage temperature:** - 55 °C to + 105 °C
- **Vibration:**
  - 0.008 g^2 / Hz de 5 Hz to 20 Hz
  - 0.05 g^2 / Hz de 20 Hz to 100 Hz
  - - 3 dB / octave from 100 Hz to 900 Hz
- **IP code:** 65

Performance Specifications (GPS system)

- **General:**
  - L1 (1575.42 MHz) frequency
  - C / A code
  - 12-channel continuous tracking receiver
- **Update rate: 1 Hz**
- **Accuracy:**
  - Horizontal: < 2.5 m (50 %), < 5 m (90 %)
  - Altitude: < 5 m (50 %), < 8 m (90 %)
  - Velocity: 0,06 m / s
  - PPS (static): ± 25 ns (50%)
- **Acquisition time:**
  - Re-acquisition: 2 s (50%)
  - Hot start: 2 s (50%)
  - Warm start: 35 s (50%)
  - Cold start: 38 s (50%)
- **Operational limits:**
  - Altitude: 18000 m
  - Velocity: 515 m / s
  - Acceleration: 2 g
- **Sensitivity:**
  - Tracking: - 160 dBm
  - Acquisition: - 146 dBm

NB: *the unit is remotely powered by the connected GPS receiver (via the antenna cable) and can be used only with GPS equipment from GORGY TIME.*
Please specify your order, if you need a different cable length

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VERSION	ITEM CODE	
GPS antenna converter unit with a 25m cable	**3G25-V4**	
GPS antenna converter unit with a 50m cable	**3G50-V4**	
GPS antenna converter unit with a 100m cable	**3G100-V4**	

GPS ANTENNA
Option G

Professional quality L1 GPS antenna placed in a compact and conical housing.

The antenna features a custom high performance broadband patch element, a 40dB gain LNA stage and an out-of-band high rejection SAW filter. Equipped with a sharp SAW pre-filter to provide strong protection against out-of-band signals. It offers a bandwidth of ±10 MHz centered on 1575.42 MHz. It offers a large axial ratio, excellent reception of circularly polarized signals, good multipath rejection and high out-of-band rejection.

Key Features

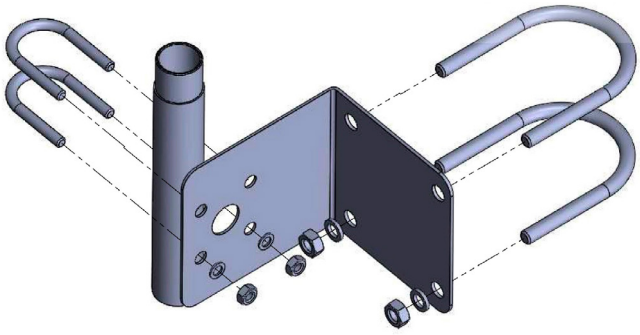
- Weight: 0,15 kg
- Dimensions: 65,5 mm x 21 mm (D x H)
- Coulour: white
- Shape: conical

Mechanical characteristics

- **Vibration:** 3 axis, sweep = 15 min, sweep from 10 to 200 Hz: 3 g
- **Shock:** vertical axis: 50 g, each axis: 30 g
- **Ratio axis:** 4dB at 90°
- **Bracket:** in L or in tube

FASTENING KIT INCLUDING

- 1 hollow tube 20cm long
- 1 plate
- M6 and M8 nuts
- M6 and M8 washers
- Fixing brackets



Environmental characteristics

- **Requirements:** RoHS, REACH, et RED
- **Operating temperature:** -40°C à + 85°C
- **Storage temperature:** -45°C à +85°C
- **Humidity/Salt fog:** MIL-STD-810F Section 509.4
- **Waterproof:** IP67

Electrical characteristics

- **Frequency band:** L1 1575MHz ± 10MHz
- **Polarization:** RHCP
- **Amplification gain (LNA):** 39 dB min.
- **Flatness gain:** +/- 2 dB,1559 to 1606 MHz
- **Out-of-band discharge:**
  - f < 1560 MHz: >50 dB
  - f > 1600 MHz: >50 dB
  - f > 1620 MHz: >70 dB
- **VSWR output:** <1.5:1 typ. 1.8:1 max
- **Maximum noise:** 3 dB
- **DC Voltage:** 2,5 to 16 VDC nominal (max. 12VDC recommended)
- **Direct current:** 15 mA typ.
- **ESD Protection circuit:** 15 KV air discharge

GPS HARDMOUNT ANTENNA

Option Q

Hardmount Antenna provides a permanent-mount antenna. Housed in a compact, low-profile package, the Hardmount Antenna is well-suited to mobile positioning applications.

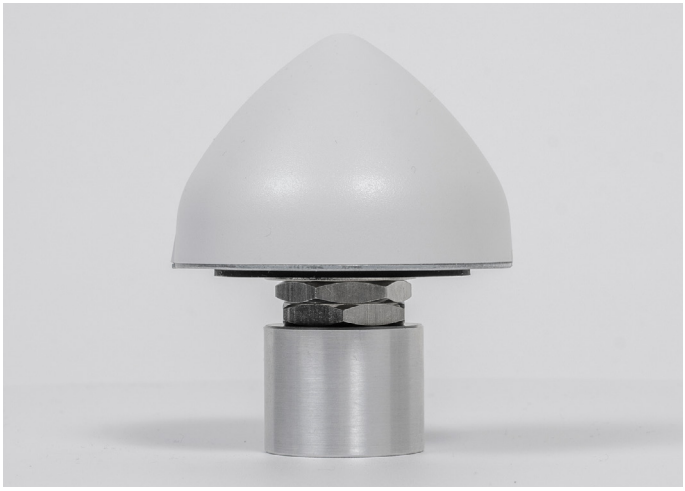
The Hardmount Antenna is a miniature patch antenna with a 25 dB preamplifier. The antenna is designed for installation on vehicles with a 19mm mounting hole.
The antenna comes complete with gasket and mounting nut. May be installed on flat surfaces up to 2.5mm thick.

Hardmount Antenna Technical Data

- **Weight:** 6.4 oz. (180g)
- **Dimensions:** 2.48 inch dia. x 1.6 inch ht. (63mm dia. x 40.5 mm ht.)
- **Connector:** TNC
- **Mounting:** 0.75 inch threaded mount
- **Operating Temp:** -40°C to + 85°C
- **Storage Temp:** -40°C to + 100°C
- **Prime Power:** 4.75 V (+.5 V)
- **Humidity:** 20% to 95% R.H.
- **Waterproof:** Submersible to 1 meter
- **Frequency:** L1 (1575) MHz
- **Power Consumption:** 40mA max
- **Impedance:** 50 OHMS
- **Polarization:** RHCP
- **VSWR:** 2.0 max
- **Vibration:** 10~200 Hz. Log. sweep 3
- **Axial Ratio:** 90° : 3.0 dB min. 20° : 6.0 dB min
- **Gain:** 28.0 dB min
- **Noise:** 2.0 dB max (+23°C) 2.5 dB max. (+80°C)

FASTENING KIT IS INCLUDING

- 1 plate



Multi-constellations ANTENNA

Option B

The high gain precision GNSS antenna covers the BeiDou B1, Galileo E1, GPS L1, GLONASS L1 and SBAS (WAAS, EGNOS, QZSS & MSAS) frequency bands (1557 to 1606 MHz). They use circularly polarized signal reception technology over the entire bandwidth of the antenna.

Key Features

- **Weight:** 0.15 kg
- **Dimensions:** 65,5 mm x 21 mm (D x H)
- **Bandwidth (2dB):** 47 Mhz
- **Coulour:** White
- **Shape:** Conical

Mechanical characteristics

- **Vibration:** 3 axis, sweep = 15 min, sweep from 10 to 200 Hz: 3 g
- **Shock:** Vertical Axis: 50 g, each axe: 30 g
- **Ratio axis:** <2 dB typ., 3 dB max.
- **Mounting:** Permanent ¾» (19mm) through-hole mounting Bracket: in L or in tube

Environmental characteristics

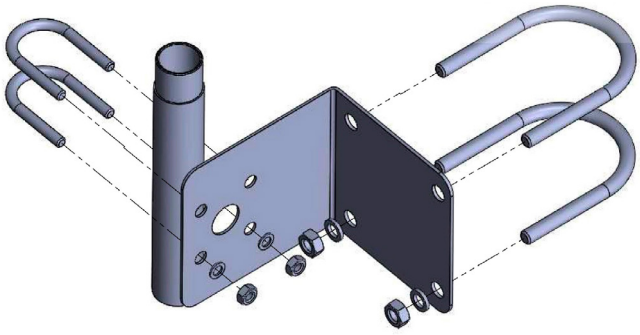
- **Requirements:** RoHS, REACH, et RED
- **Operating temperature:** -40°C to + 85°C
- **Storage temperature:** -45°C to +85°C
- **Humidity/Salt fog:** MIL-STD-810F Section 509,4
- **Waterproof:** IP67

Electrical characteristics

- **Frequency band:** 1559 to 1606 MHz
- **Polarization:** RHCP
- **Amplification gain (LNA):** 40 dB min.,
- **Flatness gain:** +/- 2 dB,1559 à 1606 MHz
- **Out-of-band discharge:**
  - f < 1500 MHz : >50 dB
  - f > 1640 MHz : >70 dB
- **VSWR output:** <1.5:1 typ. 1.8:1 max
- **Maximum noise:** 3 dB typ.
- **Main power:** 2,5 to 16 VDC nominal (max. 12VDC recommended)
- **Direct current:** 19 mA typ.
- **ESD Protection circuit:** 15 KV air discharge

FASTENING KIT INCLUDING

- 1 hollow tube 20cm long
- 1 plate
- M6 and M8 nuts
- M6 and M8 washers
- Fixing brackets

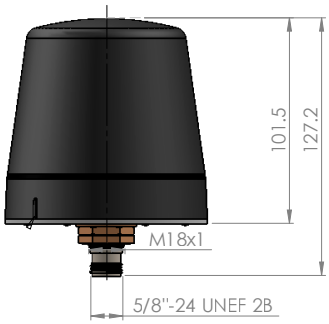


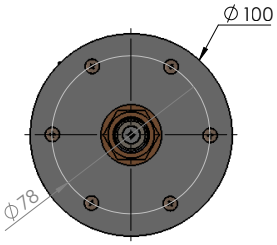
MULTI-CONSTELLATIONS ANTENNA
Single band anti-jamming
Option J

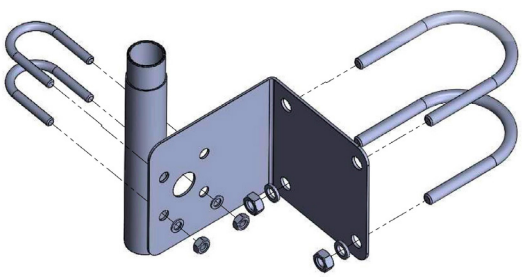
This antenna is a precision high-gain GNSS antenna, providing single-band GPS/QZSS-L1, GLONASS-G1, GalileoE1, and BeiDou-B1 coverage, including the satellite-based augmentation system (SBAS) available in the region of operation [WAAS (North America), EGNOS (Europe), MSAS (Japan), or GAGAN (India)].

The anti-jam feature modifies the radiation pattern of the GNSS antenna such that it is "deaf" to signals arriving from 10 ° below and 15 ° above the horizon while slightly increasing the gain of the antenna at zenith. Since jamming signals typically originate at low elevations, the antenna mitigates signals below 15 °.

The antenna features a precision-tuned, dual-feed patch element. The signals from the two orthogonal feeds are combined in a hybrid combiner, amplified in a wideband LNA, then band-split for narrow filtering and further amplified before recombination at the output. The antenna also has a strong pre-filter to mitigate inter-modulated signal interference from LTE and other cellular bands.
The antenna offers an excellent axial ratio and a tightly grouped phase centre variation.







General characteristics
- **Weight:** 0,370 kg
- **Dimensions:** 100.0 mm (dia.) x 102 mm (h.)
- **Bandwidth (2dB):** 47 Mhz
- **Color:** black

Mechanical characteristics
- **Vibration :** 3 axes, balayage = 15 min, balayage de 10 à 200 Hz : 3 g
- **Shock:** Vertical axis: 50 G, other axes: 30 G
- **Ratio axes:** <2 dB typ., 3 dB max.
- **Fixation:** Permanent ¾" (19mm) through hole mounting
- **Support:** in L or on tube

Environmental specificities
- **Compliance:** IPC-A-610, FCC, RED / CE Mark, RoHS, REACH
- **Operating Temperature:** -40°C to + 85°C
- **Storage Temperature:** -50°C to +95°C
- **Humidity / Salt Fog:** MIL-STD-810F Section 509,4
- **IP Rating:** IP67

Electrical characteristics
- **Architecture:** Pre-filter → LNA stage 1 → filter → LNA stage
- **Gain:** 2 38 dB min.
- **Noise Figure:** 3.0 dB typ
- **VSWR:** < 1.5:1 typ. | 1.8:1 max.
- **Supply Voltage Range:** 2.5 to 16 VDC nominal (12 VDC rec. max..)
- **Supply Curren:** 19 mA typ.
- **ESD Circuit Protection:** 15 kV air discharge
- **P 1dB Output:** 11 dBm:
- **Group Delay Variation:** 17 ns @ GPS-L1 | <1.0 ns @ GLONASS-G1
- **Group Delay:** L1 (1575.42 MHz): 31 ± 1 ns

FASTENING KIT INCLUDING
- 1 hollow tube 20cm long
- 1 plate
- M6 and M8 nuts
- M6 and M8 washers
- Fixing brackets

GPS PATCH ANTENNA

Option N

The Miniature GPS Antenna is a water-resistant, low-profile antenna. It has a magnetic mounting for quick, convenient placement on or inside vehicles, making it ideal for mobile asset management and embedded board products.

Key Features

- **Mounting:** Magnetic Mount - waterproof IP67
- **Impedance:** 50 ohms
- **Frequency:** 1575.42MHz
- **Input voltage:** 3V or 5V (20mA at 3V)
- **Polarization:** RHCP
- **VSWR:** 2.0 max
- **Gain:** 27dB at 5V
- **Cable:** RG174
- **Connector:** SMA
- **Dimension (L x W x H):** 37.4mm x 34mm x 12.95mm
- **Provided with 5 m cable**

SURGE PROTECTOR FOR GPS ANTENNA

Radio Timing BGPS AFNOR

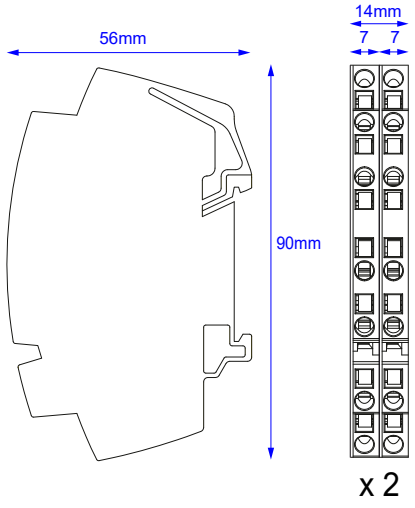
The surge protector is designed to protect a time server or a master clock connected to a GPS antenna. Consisting of two compact modules, the surge protector is designed for indoor installation on a DIN rail.

Lightning arrester consisting of two compact monobloc enclosures (one single-pair enclosure for power and one single-pair enclosure for data). Indoor installation as close as possible to the entry point of the cable connected to the antenna.
DIN rail mounting.

Mechanical characteristics

- **Technologie :** GDT + Diode d'écrêtage
- **Technology:** GDT + Clipping Diode

Surge Protection Configuration: 1 pair + shielding per module
Network Connection: Spring terminal block for max. 1.5 mm² wire
Housing Material: UL94-V0 Thermoplastic
Operating Temperature: -40°C to +85°C
Protection Rating: IP20
Safety Disablement: Short-circuit - Transmission Interruption
Dimensions (1-pair housing): See diagram below



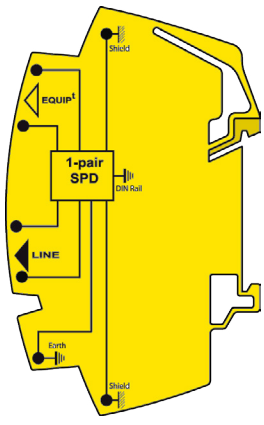
Electrical characteristics

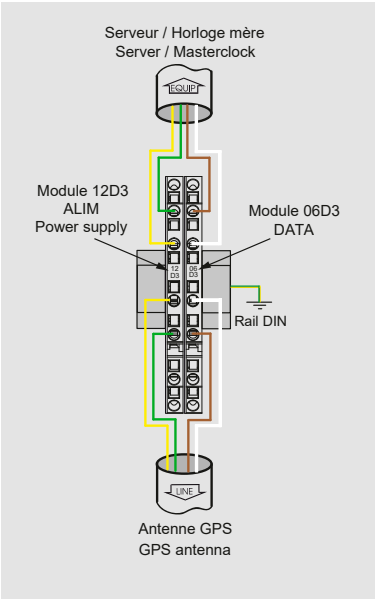
- **Nominal Line Voltage (Power Supply)** 12V
- **Maximum DC Operating Voltage (Power Supply)** 15V
- **Nominal Line Voltage (Data Supply)** 6V
- **Maximum DC Operating Voltage (Data)** 8V
- **Maximum Discharge Current** 10kA
- **Total Maximum Discharge Current** 20kA
- **Protection Mode(s)** Common/Differential
- **Surge Current** 2.5kA
- **Nominal Discharge Current** 5kA

Environmental Specifications

- EN 61643-31
- UL497A

Wiring diagram





SURGE PROTECTOR FOR GPS ANTENNA		
Lightning arrester - to be inserted on the antenna cable - Cable length depending on installation ▣	**ACCE0058**	

MADE IN FRANCE

LIGHTNING SURGE ARRESTOR

Option P

Both connector ports of this unit are equally protected. This provides protection no matter which way it is installed. Either port can face the antenna and either port can face the equipment.

Mechanical characteristics

Components

- Centre contact
- Outer contact
- Other metal parts
- Crimp ferrule
- Insulator
- Gasket

Materials

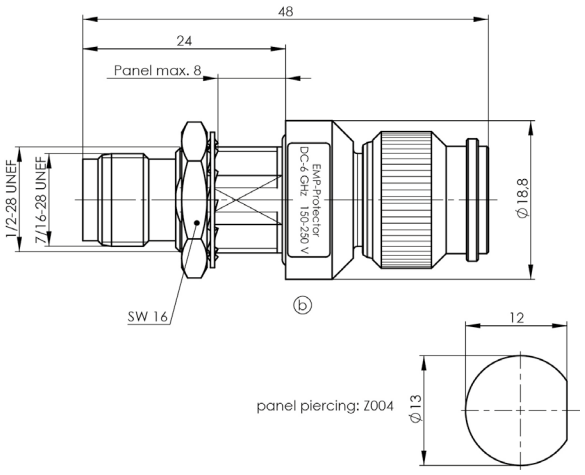
- Copper alloy
- Brass
- PTFE
- MVQ, NBR

Electrical characteristics

- **Impedance:** 50 Ω
- **Frequency:** DC...6 GHz
- **Return loss:** > 20 dB
- **Breakdown voltage:** 150...250 V DC (100 V/s)
- **Impulse discharge current:**
  - 8/20 µs, 5 kA 10 times / 10 mal
  - 8/20 µs, 10 kA 1 time / 1 mal
- **Max. power:** 25 W
- **Residual pulse energy:**
  typ. 400 µJ (4kV, 1.2/50 µs; 2kV, 8/20 µs)

Environmental Specifications

- Operating temp.: -40°C / +85°C
- Protection class: IP 67 (IEC 60529)



GNSS Signal Splitter
1-to-2 Port Smart Power
(+10 dB gain)

Frequency Coverage: Full GNSS Spectrum

The Smart GNSS Signal Splitter is a professional-grade full GNSS band signal splitter that connects one antenna to two receivers, and supports GPS/QZSS-L1/L2/L5, QZSS-L6, GLONASS-G1/G2/G3, BeiDou-B1/B2/B2a/B3, Galileo- E1/E5a/E5b/E6, NavIC-L5, and L-Band correction services.

The design of first-generation GNSS signal splitters suffered from a single point of failure: only one attached receiver powered the splitter and the antenna. If this receiver failed or was unplugged, all attached receivers also failed.

Current-generation Smart GNSS Signal Splitter Smart Power GNSS signal splitter provides two additional key features:

First, it accepts power from all attached GNSS receivers and selects power from a receiver using the following protocol. Port #1 is given priority if its voltage is within the specified range (3.0 V - 12.5 VDC).
However, if port #1's receiver is disconnected or if its receiver power goes below the under-voltage or above the over-voltage specification, the Smart GNSS Signal Splitter will switch to the next port in numerical order, as long as its power and voltage are within the expected range. The switching and port selection is, therefore, deterministic.

Second, if the antenna fails and does not draw current, the Smart GNSS Signal Splitter will provide all connectors with a current draw lower than 1 mA, indicating an antenna fault.

The Smart GNSS Signal Splitter offers the best in-class performance in terms of noise figure, isolation, and linearity. In addition, it is packaged in a robust, compact, lightweight, and water-proof (IP67) corrosion-protected aluminum housing.

The Smart GNSS Signal Splitter is available with either TNC or type-N connectors and offers 10 dB gain over the splitting-loss.
It is recommended that unused ports should be terminated with a 50 Ohm load.

Environmental

- Operating Temperature: -40 °C to 85 °C
- Storage Temperature: -55 °C to 95 °C
- IP Rating IP67
- Compliance: RoHS, REACH and WEEE, EN60950-1, RED / CE Certified MIL-STD-810, FCC Part 15B and R&TTE equivalent.

Key features

- **Accepts power from all attached receivers**
- **Automatically switches on power failure of one receiver**
- **Antenna failure detection/indication**
- **Rugged military-grade aluminum enclosure**
- **Amplification to compensate for signal-splitting loss**
- **Very low noise figure**
- **IP67-compliant**

Applications

- GNSS signal distribution
- GNSS receiver testing
- High-availability applications
- Network and infrastructure timing

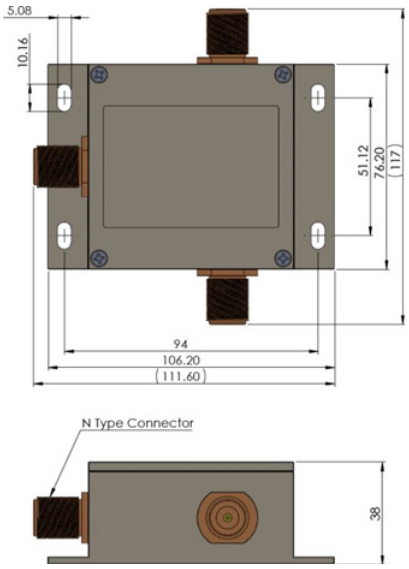
Benefits

- Allows two GNSS receivers to share a single
- antenna
- Fits in-line with antenna cable
- Robust package
- Ideal for harsh environments

Mechanicals

- Size: 117.0 mm (l.) x 111.6 mm (w.) x 38.0 mm (h.)
- Weight: 270 g (TNC)
- Connectors: TNC (female)
- Enclosure: Aluminum 6061-T6

Mechanical Diagram



GNSS Signal Splitter
1-to-2 Port Smart Power
(+10 dB gain)

Electrical Specifications

Parameter	Conditions / Description	Minimum	Typical	Maximum	Units
Frequency Range	Bandwidth supported	1100	-	1700	MHz
Gain	Measured within range: -40 °C to 85 °C	9	10	11	dB
Impedance	-	-	50	-	Ω
Noise Figure	All Receiver Ports	-	1.7	2	dB
Output Isolation	-	27	-	-	dB
Input/Output SWR	-	-	1.3:1 | 1.1:1	1.5:1 | 1.2:1	ratio
Gain Compression Point (P1dB)	Gain of 0 dB	-20	-17	-14	dBm
3rd Order Intercept (IIP3)	Gain of 0 dB	-10	-7	-4	dBm
RF Input (Damage Threshold)	Maximum RF Input without damage	-	-	5	dBm
Amplitude Balance	Between Ports	-	0.1	0.5	dB
Phase Balance	Between Ports	-	2	5	degrees (°)
DC Input Range	DC input on any receiver port	3.3	-	12.5	VDC
Receiver Over-Voltage	-	12.7	14.9	16.9	VDC
Receiver Under-Voltage	-	2.3	2.5	2.8	VDC
Splitter Current	Current consumed by splitter	-	15	25	mA
Antenna Through Current	Maximum current provided to the antenna	-	-	230	mA
Group Delay Variation	Antenna to Ports	1	1.4	2	ns
	Adjacent Ports	0	0.3	0.5	ns
	Opposite Ports	0	0.5	1	ns

VERSION		ITEM CODE	
GNSS Signal Splitter 1-to-2 Port Smart Power (+10 dB gain)	☐	**ANT0053A**	

GPS Inline Amplifier

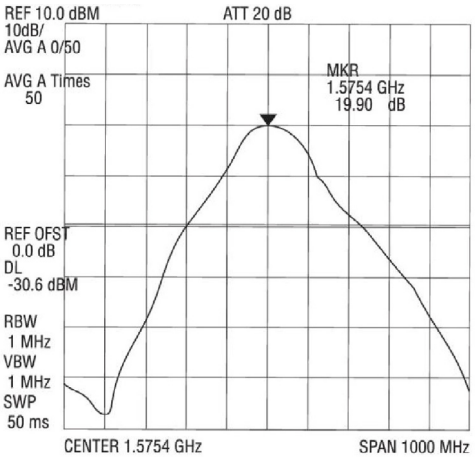
Option A

These inline amplifiers are capable of amplifying both L1 and L2 frequencies and will improve performance on receivers with cable lengths of over 15m (50ft). They're available with TNC connectors and no special wiring is required, making installation a breeze.

The amplifier is compatible with all dual frequency GPS receivers due to its wide operating voltage range, 3VDC to 28VDC, and low power consumption, 8mA. These amplifiers are made with gold plated brass with rugged and watertight packaging. Just plug the amplifier directly in line with your antenna cable. Power to the inline amplifier is already available from your GPS receiver.
The inline amplifier uses the same power as the antenna so no extra wiring is required.

General Information

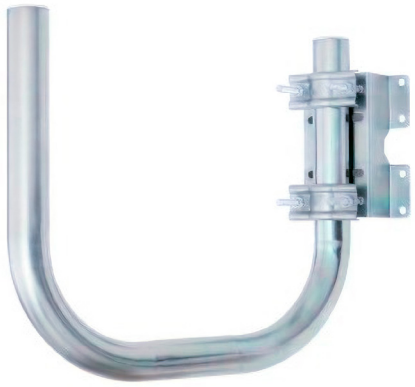
- Inline Amplifiers with TNC connectors are 100mm in length, 16mm in diameter.
- Power consumption 8mA.
- Typical Noise figure for L1 Inline Amplifiers is <3 dB.
- Input voltage for all models is from 3 to 28 VDC. Current draw is <10mA .
- Operating temperature is -55°C to 85°C
- Relative humidity 0-100% condensing



Typical Filtered Line Amp
Freq vs. Gain Plot

U fixing kit

Option D



“U” fixing kit, tube Ø 40 mm, offset 40 cm, height 36 cm, with wall fixing kit

Product features

- GT : ANT0049A

Technical characteristics

- Antenna accessories finish: Blue Zinc
- Antenna accessories diameter: 40.00 mm
- Standards: NF EN 60068
- Product weight: 1600.00 g
- Product height: 40.00 mm
- Product depth 360.00 mm

CABLES – ANTENNAS

The GPS cable is an essential and critical element of the time synchronization chain.
Our low loss cable GPS reduces your installation costs (flexible cable, standard connector) while maintaining high performance.

Our cables can be associated with a line amplifier or a lightning protection.

Advantage

- Flexible cables
- Low loss (shell, strip + braid)
- Stability
- Standard connectors: TNC male - TNC male

SERIE LMR				
		LMR240	**LMR400**	**LMR600**
Impedance characteristics	W	50	50	50
Using frequency	DC-GHz	3,5	3,5	3,5
External diameter	mm	6,1	10,3	14,99
Insertion loss dB/meter	500 MHz	0,18	0,09	0,06
	1 GHz	0,26	0,13	0,08
	1,5 GHz	0,32	0,16	0,11
	2 GHz	0,37	0,19	0,12
	2,5 GHz	0,42	0,22	0,15
	3 GHz	0,46	0,24	0,16
	3,5 GHz	0,51	0,27	0,27
Number of shieldings		2	2	2
Static flexion radius	mm	19,1	25,4	38,2
Dynamic flexion radius	mm	63,1	100	152,4
Average admissible power	wcw à 2 GHz	170	370	590
Capacity	pF/m	79,4	78,4	76,6
Propagation speed	%	84	85	87
Shielding efficiency	dB	90	90	90
Dielectric strength	Veff	1500	2500	4000
Use temperature	°C	-30 / +70	-30 / +70	-30 / +70
Rated mass	g/m	50	100	200

ANTENNAS GPS & GNSS

(Global Navigation Satellite System)

		ITEM CODE										
		92225	/									
Antenna Type												
GPS	■		G									
GPS (Hardmount – only for 25 and 50 meters cable)	■		Q									
BEIDOU / GLONASS / GPS / GALILEO (Multi-constellation) white conical dome	■		B									
Single band multi-constellation antenna - anti-jamming	■		J									
GPS Patch (5 m)	■		N									
Without			0									
Cable Type (LSZH*)												
Without	■			0								
LMR 240 (25m and 50m cable) cable	■			3								
LMR 400 cable	■			4								
Cable number												
Without	■				0							
1	■				1							
2	■				2							
Cable length of first cable												
Without						00						
25 m	■					25						
30 m	■					30						
50 m	■					50						
80 m	■					80						
100 m	■					100						
Cable length of second cable												
Without							00					
25 m	■						25					
30 m	■						30					
50 m	■						50					
80 m	■						80					
100 m	■						100					
OPTIONS												
Lightning Surge Arrestor (+ 10 meters cable)	■									P		
Inline Amplifier	■									A		
“U” fixing kit - offset 40 cm	■									D		

*Low smoke, no halogen.