

IPAF125

High-Gain Tri-Band Antenna

IPAF125 is a high-performance antenna for the reception of signals in the **L1** (1575.42 MHz), **L2** (1227.60 MHz) and **L5** (1176.50 MHz) bands transmitted by the **GPS/Galileo/Glonass/Beidou/QZSS/IRNSS/SBAS** satellite systems.

Expressly designed to operate in environments with strong electromagnetic and radio frequency interference, this antenna stands out for a structural robustness that makes it suitable for extreme installations, including military applications. The design assumes predominantly stationary use, in conditions where mechanical strength is a decisive requirement for the operation of the entire system. The result is reliable performance in a wide range of operating contexts, including avionics and maritime environments.

Its shape and fully waterproof construction make it a dependable reference in extreme weather conditions. The radome dome completely covers the antenna with a profile that prevents snow accumulation and water infiltration into the supporting pole. The careful selection of materials (aluminium and stainless steel) and construction details has led to a quality standard of absolute excellence, with a virtually zero rate of returns due to failure. The mounting system allows the antenna to be fixed simply and quickly to bracketed poles, both vertically and horizontally.

The antenna can be paired with any GPS/Galileo/Glonass/Beidou/QZSS/IRNSS/SBAS receiver or module capable of supplying a voltage between 3 and 5 Volts, with minimal gain variations in the low-noise amplification section. Available as an option, **ELSE250** is a device that, placed between the antenna and the receiver, provides increased system protection against electrical transients induced by lightning strikes in the surrounding area.

Options

- Low-loss coaxial antenna cable, 50 Ohm
- ELSE250 Electrical Surge Protection



Main features

- Waterproof construction
- Quick and easy installation
- Low noise and high gain
- Proven reliability and ruggedness
- Extended input voltage range from 3 to 5 Vdc or, optionally, up to 12 Vdc
- N-type connector

Fields of application

- Timing
- Network synchronization
- Avionics
- Defence and security
- Scientific research and environmental monitoring
- Maritime and offshore
- Smart cities & advanced IoT



IPAF125



High-Gain Active Tri-Band Antenna

General

Installation	Outdoor mounting
Operating temperature	-40 °C to +80 °C
Relative humidity	95%
Height (antenna + mast)	320 mm
Diameter (antenna + mounting)	86 mm
Total weight (antenna + mast + mounting)	800 g
Mounting pole diameter	30 mm ~ 38 mm
Output connector	N-type
Supply voltage	3 Vdc to 5 Vdc 12 Vdc (optional)
Current absorption	20 mA max

Antenna – Electrical specifications

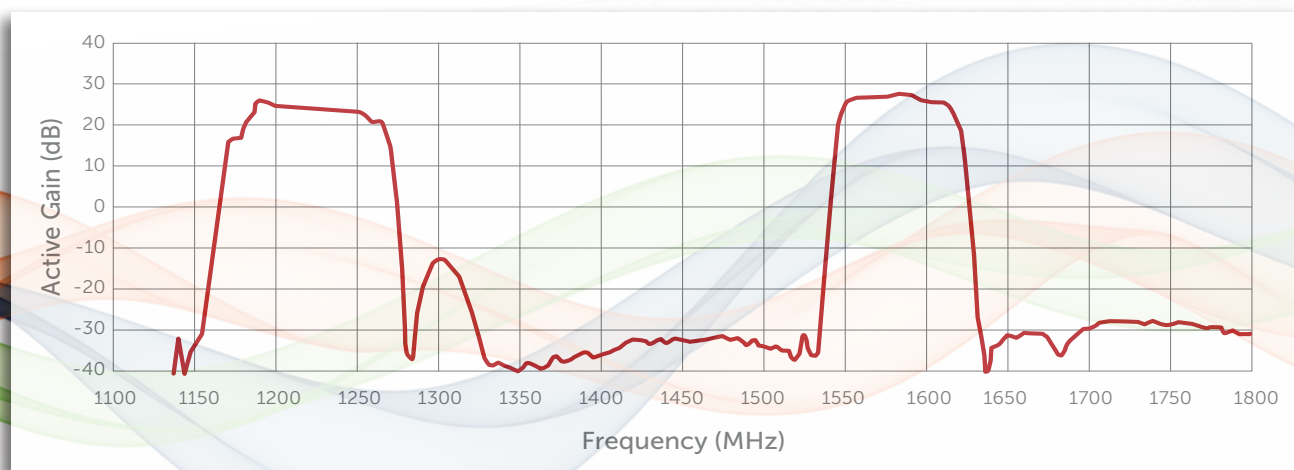
Center Frequency L1	1575,42 MHz +/- 4 MHz
Center Frequency L2	1227,60 MHz +/- 4 MHz
Center Frequency L5	1176,50 MHz +/- 4 MHz
Band Width L1-L2-L5	40 MHz min (@ return loss -10 dB Point)
Absolute Gain	3 dBi typical (@ elevation 90°, 1574,42 ~ 1576,42 MHz) 3 dBi typical (@ elevation 90°, 1598,625 ~ 1605,89 MHz)
Axial Ratio	4.0 dB typical (@ elevation 90°, center frequency)
Return Loss	10 dB min (@ 1574,42 ~ 1576,42 MHz) 10 dB min (@ 1598,625 ~ 1605,89 MHz)
Polarization	RHCP
Output Impedance	50 Ohm

Electrical specifications, low-power amplifier

Frequency range	1150 to 1650 MHz
Gain	28 dB typical (@3Vdc)
Noise figure	1,6 dB typical (@3Vdc)
VSWR	~2,1:1 (@ 1176,45 MHz) ~1,8:1 (@ 1227,60 MHz) ~1,4:1 (@ 1561,09 MHz) ~1,4:1 (@ 1575,42 MHz) ~1,4:1 (@ 1602,00 MHz)
Characteristic impedance	50 Ohm

ELSE250 Electrical Surge Protection (optional)

Nominal impedance	50 Ohm
Frequency range	3 GHz
VSWR	1:1,5 max
Insertion loss	0,3 dB
Impulse breakdown voltage	1000 V 5 kV/μS max
Insulation resistance	10000 MOhm
Maximum discharge current	5000 A 8/20 μS
Maximum power	200 W
Breakdown voltage	90 Vdc
In – Out connectors	N female – N male
Dimensions	86x45x20 mm



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