LNFA1X4

GPS Amplified 1X4 Splitter Technical Product Data

Features

- Low Noise
- Amplified Unity Gain 0dB typical
- L1 GPS Filtered
- Extremely Flat Group Delay
  - Less than 1ns variation
- High Isolation Standard
- DC Blocked Outputs Feature 200Ω Loads
- Excellent Gain Flatness

Description

This **L**ow **N**oise **F**iltered **A**mplified **1X4 (LNFA1X4)** splitter is a one input, four output device with 0dB nominal gain. The device features a low noise input section to establish an overall system noise figure. Excellent port-to-port isolation and unity gain are achieved by padded outputs. The device features excellent frequency selectivity around the L1 band to prevent interference from other high power radio frequency sources, such as cellular transmitter stations. The LNFA1X4 device will power itself and an external GPS antenna from a 5.0 VDC source connected on any of the RF Outputs. A “pick and choose” circuit is used to select only one DC input for power in the event that more than one 5v source is connected. The remaining DC inputs are switched to a 200Ω resistor to simulate antenna current draw.

Use Cases

- Utilized in thousands of cell-sites nationally.
- Splitting and amplifying a roof antenna signal between 4 GPS/GLONASS/GNSS receivers.
- Splitting and amplifying WAAS antenna between WASS receiver, ADS-B, and 2 other devices.
- Usable as a small part of a larger signal distribution network.

LNFA1X4

Electrical Specifications, TA=25°C

General Specification

Parameter	Notes	Min	Typ	Max	Unit
Frequency Range	Covers all major GNSS constellations.	1.1		1.7	GHz
Characteristic Impedance	Unused ports should be terminated with 50Ω loads.		50		Ω
Req. DC Input V.	Operating Voltage Range.	3.3		6	VDC
Current Draw	Typical current consumption.		7		mA

GPS L1 RF Specification

Parameter	Notes	Min	Typ	Max	Unit
Gain	The relative increase in signal power provided by the amplifier.	-1.5	0	1.5	dB
Input SWR	Input Standing Wave Ratio: S11.			2.0:1	-
Output SWR	Output Standing Wave Ratio: S22.			2.0:1	-
Filter Bandwidth	The 3dB bandwidth of the L1 filter.		30		MHz
Rejection	Rejection at L1 ± 60 MHz.		-60		dB
L1 Noise Figure	The increase in noise power relative to an ideal amplifier.		4.75		dB
Amplitude Balance	The difference in gain or loss between each output port.			1.0	dB
Phase Balance	The difference in phase variation between each output port.		6		deg
Isolation	The amount of attenuation between two output ports.		50	>61	dB
Input P1dB	The 1dB compression point.		-31.5		dBm

	Connector Style	Charge
Connector Options	Type N-female	No Charge
	Type SMA-female	No Charge
	Type TNC-female	No Charge
	Type BNC-female	No Charge
	Other	Contact GPS Networking

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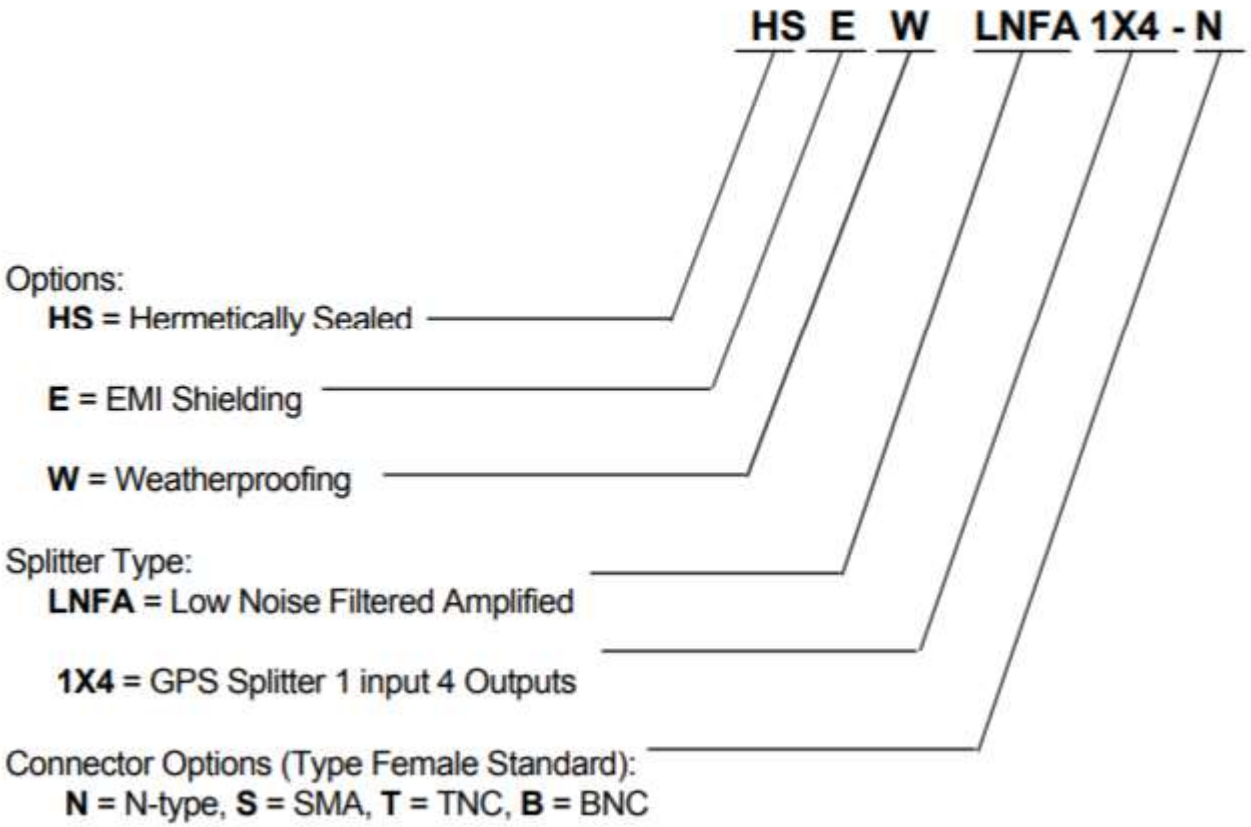
Part Number Configuration



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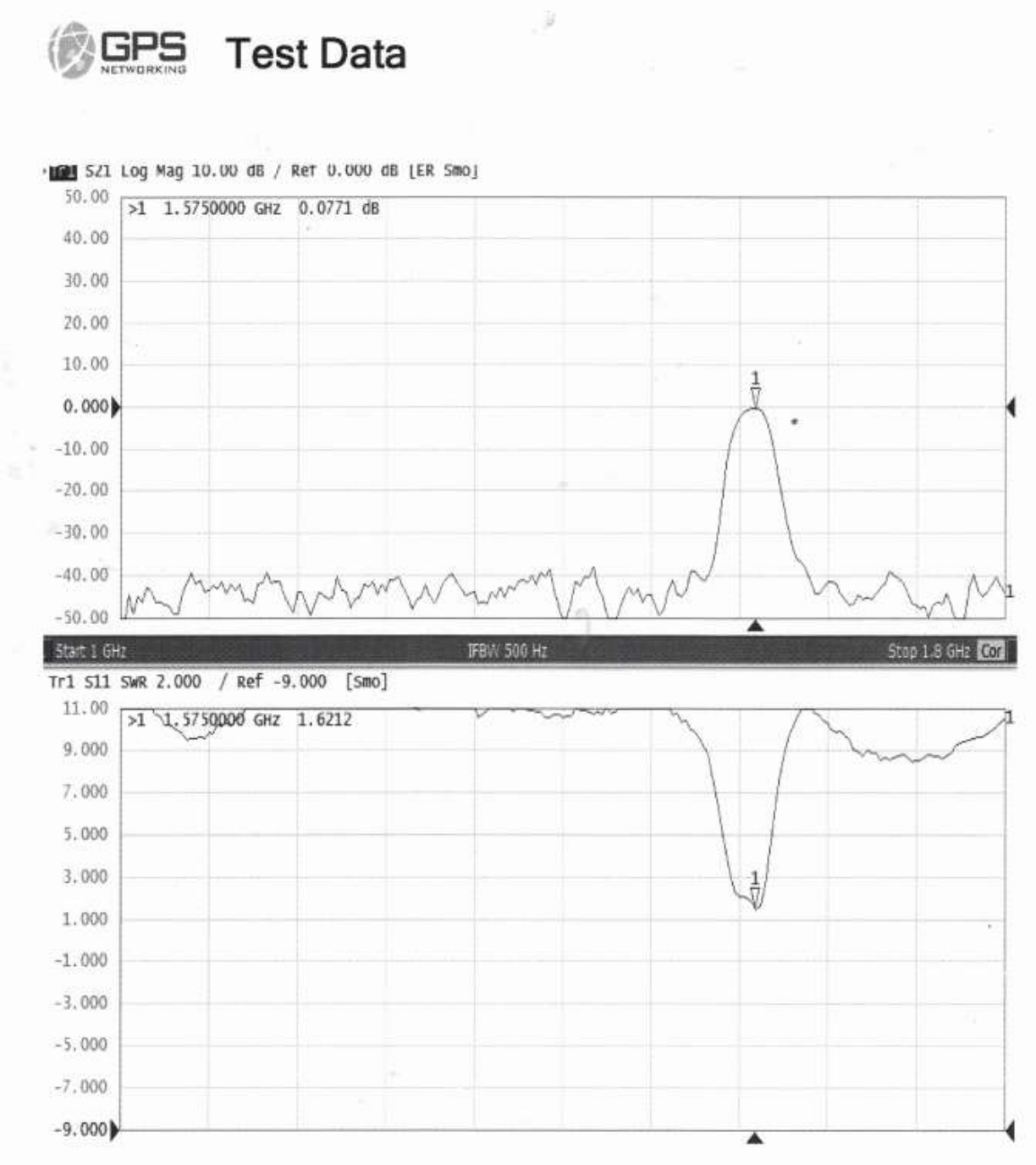
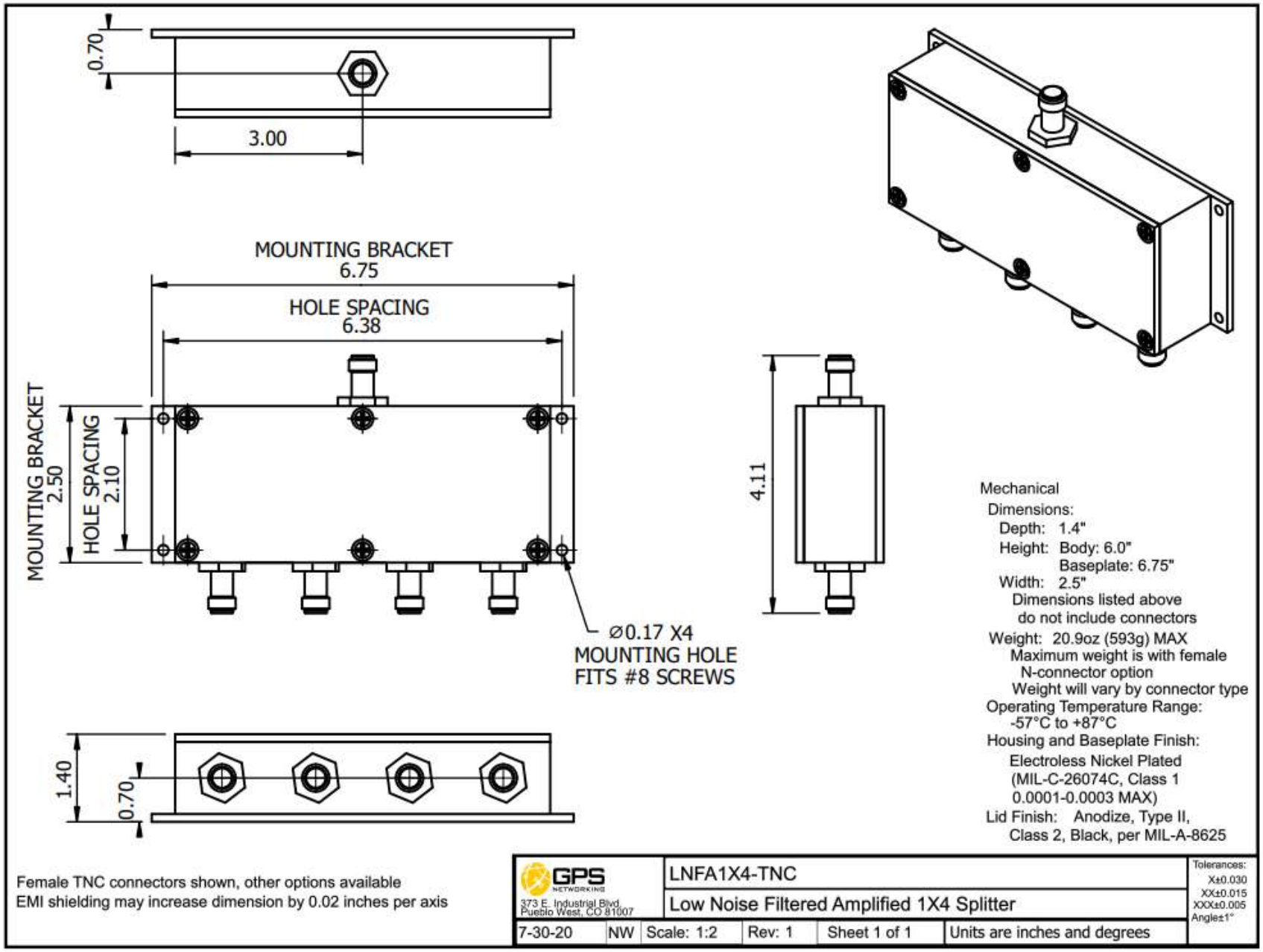
Performance

LNFA1X4 (Standard Gain, typical)

Each LNFA1X4 ships with a test sheet that verifies critical performance characteristics, such as gain, input VSWR, and amplitude balance; a typical VNA test sheet is shown below.



Mechanical



Contact us at salestech@gpsnetworking.com for 3D models or CAD drawings.