

# L1FPDC

## GPS L1 Filter Technical Product Data

### Features

- Low Insertion Loss
  - 1.75 dB typical.
- High Rejection
  - Greater than 35 dB typical at GPS L1  $\pm$  60 MHz
- Low Ripple
  - Less than 0.5 dB typical @ 1575.42 MHz  $\pm$  12 MHz.
- Compatible with GPS, GALILEO, BeiDou, and QZSS L1 GNSS signals.



### Description

This **L1 Filter Pass DC (L1FPDC)** is a one input, one output passive RF filter for the L1 GPS signal. This equipment is designed to provide additional filtering and protection for GNSS signals centered around 1575.42 MHz, including GALIELO, BeiDou, and QZSS. The L1FPDC features low insertion loss, low ripple, and high rejection. In the standard configuration, the J1 port passes DC voltage from a connected device to the antenna through the ANTENNA port. Custom DC configuration and connector configuration are available upon request.

### Use Cases

- To protect an L1 receiver from out-of-band interference.
- As part of a receiver test and measurement setup in a lab environment.

# L1FPDC

## Electrical Specifications, TA=25°C

### General Specification

Parameter	Notes	Min	Typ	Max	Unit
Frequency Range	Covers all major GNSS constellations.	1.556		1.592	GHz
Characteristic Impedance	Unused ports should be terminated with 50Ω loads.		50		Ω
Insertion Loss	The loss that occurs from the input port to any output port: S21	-1.25	-1.75	-2.5	dB
Input SWR	Input Standing Wave Ratio: S11			2.0:1	-
Output SWR	Output Standing Wave Ratio: S22			2.0:1	-
Bandwidth	The 3dB bandwidth of the filter.		36		MHz
Rejection	Rejection at L1 ± 60 MHz	25	35	>45	dB
Ripple	Passband Amplitude Ripple at L1 ± 12 MHz		0.5		dB
Max DC Input V.	Maximum Input Voltage Range.			50	VDC
Max Current	Maximum through current.			400	mA

External Power Options (Networked Option)		
Source Voltage Options	Voltage Input	Style
	110VAC	Transformer (ITA Type A Wall Mount)
	220VAC	Transformer (ITA Type C Wall Mount)
	240VAC (United Kingdom)	Transformer (ITA Type G Wall Mount)
	Customer Supplied DC 9-32 VDC	MIL-DTL-5015 10SL DC Connector (Includes Mate)
Output Voltage Options <sup>(2)</sup>	DC Voltage Out	Max Current out For Corresponding Vout
	3.3 V	110mA
	5V	130mA
	9V	140mA
	12V	170mA
	15V	210mA
	Custom	Custom
Standard DC Configuration without External Power Option		
J1/Output 1 Pass DC, J2-J4/Output 2-4 Block DC, Input Pass DC		
Standard DC Configuration with any External Power Option (AC/DC or Military DC)		
All Outputs DC Blocked with 200Ω load standard		
Any port can be custom selected to Pass or Block DC		
Connector Options	Connector Style	Charge
	Type N-female	No Charge
	Type SMA-female	No Charge
	Type TNC-female	No Charge
	Type BNC-female	No Charge
	Other	Contact GPS Networking

(2):With Network Option, any RF port (input or output) can be specified to Pass DC or Block DC

# L1FPDC

## Part Number Configuration

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**E HS W NL1FPDC - N / 5 / 110**

EMI Shielded (Include Weatherproofed): \_\_\_\_\_  
**E** = EMI Shielding; **Blank** = Std

Hermetically Sealed: \_\_\_\_\_  
**HS** = Hermetically Sealed; **Blank** = Std

Weatherproofed: \_\_\_\_\_  
**W** = Weatherproofed; **Blank** = Std

Product Type: \_\_\_\_\_  
**L1F** = L1 Filter

DC Options:  
**PDC** = Pass DC Network Option:  
**N** = External Power; **Blank** = No External Power

Connector Options: \_\_\_\_\_  
**N** = N type; **S** = SMA; **T** = TNC; **B** = BNC

DC Output Voltage (only with Network Option): \_\_\_\_\_  
**0, 3.3, 5, 9, 12, 15, XX** (Custom: "XX")

Source Voltage (only with Network Option): \_\_\_\_\_  
**110** = 110VAC, **220** = 220VAC (2 prong Euro), **240** = 240VAC (3 prong UK),  
**MC** = Military DC Connector (User supplies DC voltage range 9-32VDC)

(Military DC Mating Connector is included standard with the MC power option).

Contact GPS Networking Technical Support at 1-800-463-3063 or [salestech@gpsnetworking.com](mailto:salestech@gpsnetworking.com) for any questions regarding non-standard configurations and corresponding part numbers.

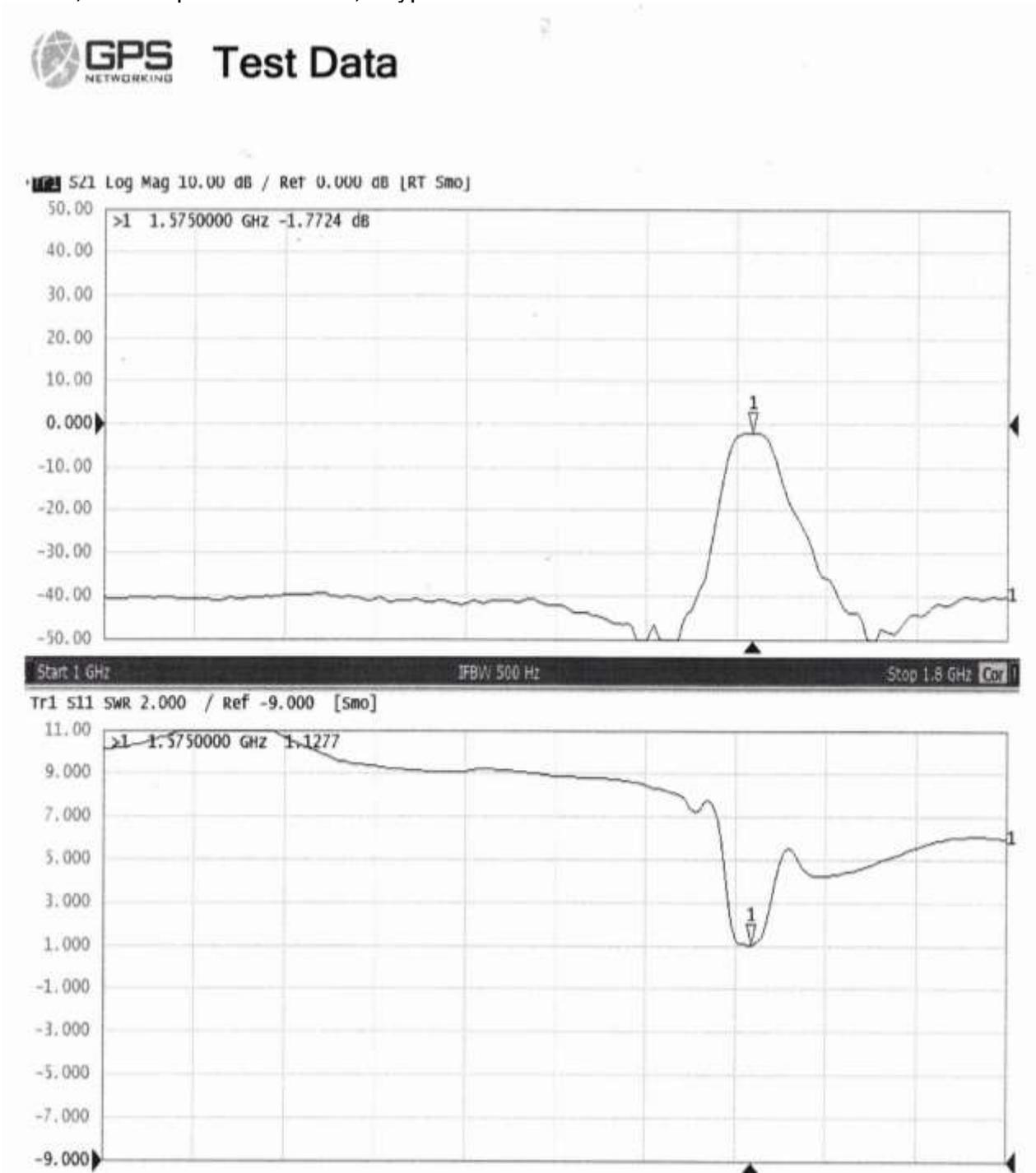
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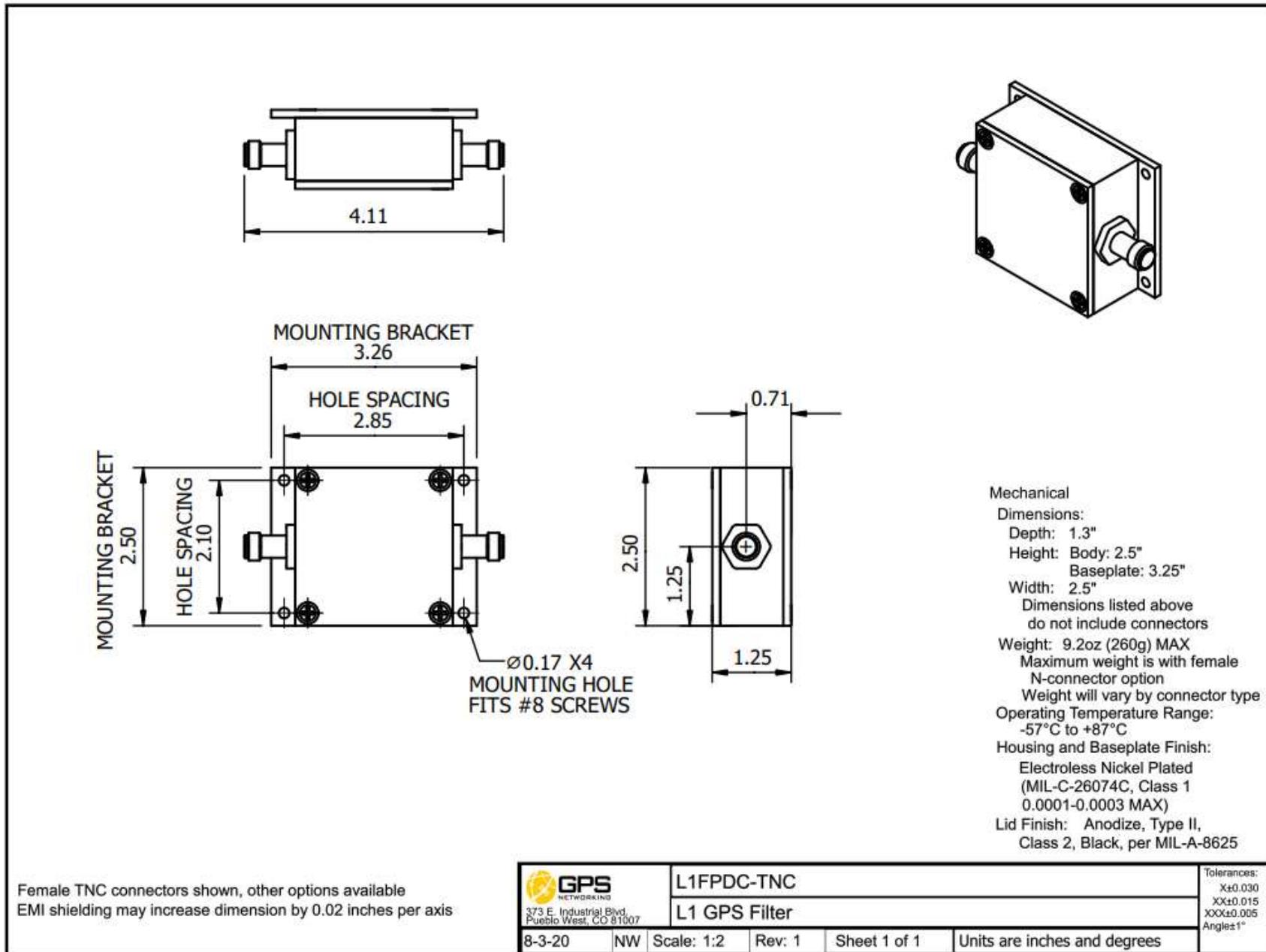
## Performance

### L1FPDC

Each L1FPDC 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](mailto:salestech@gpsnetworking.com) for 3D models or CAD drawings.