L1/L2FPDC

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GPS NETWORKING

GPS L1 & L2 Filter Technical Product Data

Features

- Low Insertion Loss
  - 1.75 dB typical for L1 & L2.
- Powerful Low Frequency Rejection
  - >40 dB typical below 1150 MHz
- Higher RF Power Handling
  - Minimum 1W continuous.
- L1 & L2 GNSS Compatible
  - Supports all L1 and L2 GNSS frequencies.

Description

This **L1** and **L2 F**ilter **P**ass **DC (L1/L2FPDC)** is a one input, one output passive RF filter for all common L1 and L2 GNSS signals. Ceramic resonators are utilized for enhanced high-power performance. The L1/L2FPDC 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 GNSS receivers from out-of-band interference.
- To protect GNSS receivers from high-power signals.
- As part of a receiver test and measurement setup in a lab environment.

L1/L2FPDC

Electrical Specifications, TA=25°C

General Specification

Parameter	Notes	Min	Typ	Max	Unit
L1 Frequency Range	Covers all major L1 GNSS constellations.	1.530		1.615	GHz
L2 Frequency Range	Covers L2 GPS and QZSS constellations.	1.206		1.238	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 at the L1 & L2 center frequencies.	-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	-
L1 Bandwidth	The 3dB bandwidth of the filter for the L1 band.		85		MHz
L1 Rejection	Rejection at L1 ± 100 MHz	17	25	>40	dB
L2 Bandwidth	The 3dB bandwidth of the filter for the L1 band.		32		MHz
L2 Rejection	Rejection at L2 ± 100 MHz	25	30	>40	dB
Ripple	Passband Amplitude Ripple at L1 & L2 ± 10 MHz		0.5	1.25	dB
Max DC Input V.	Maximum Input Voltage Range.			32	VDC
Max Current	Maximum through current.			300	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 (2)	**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

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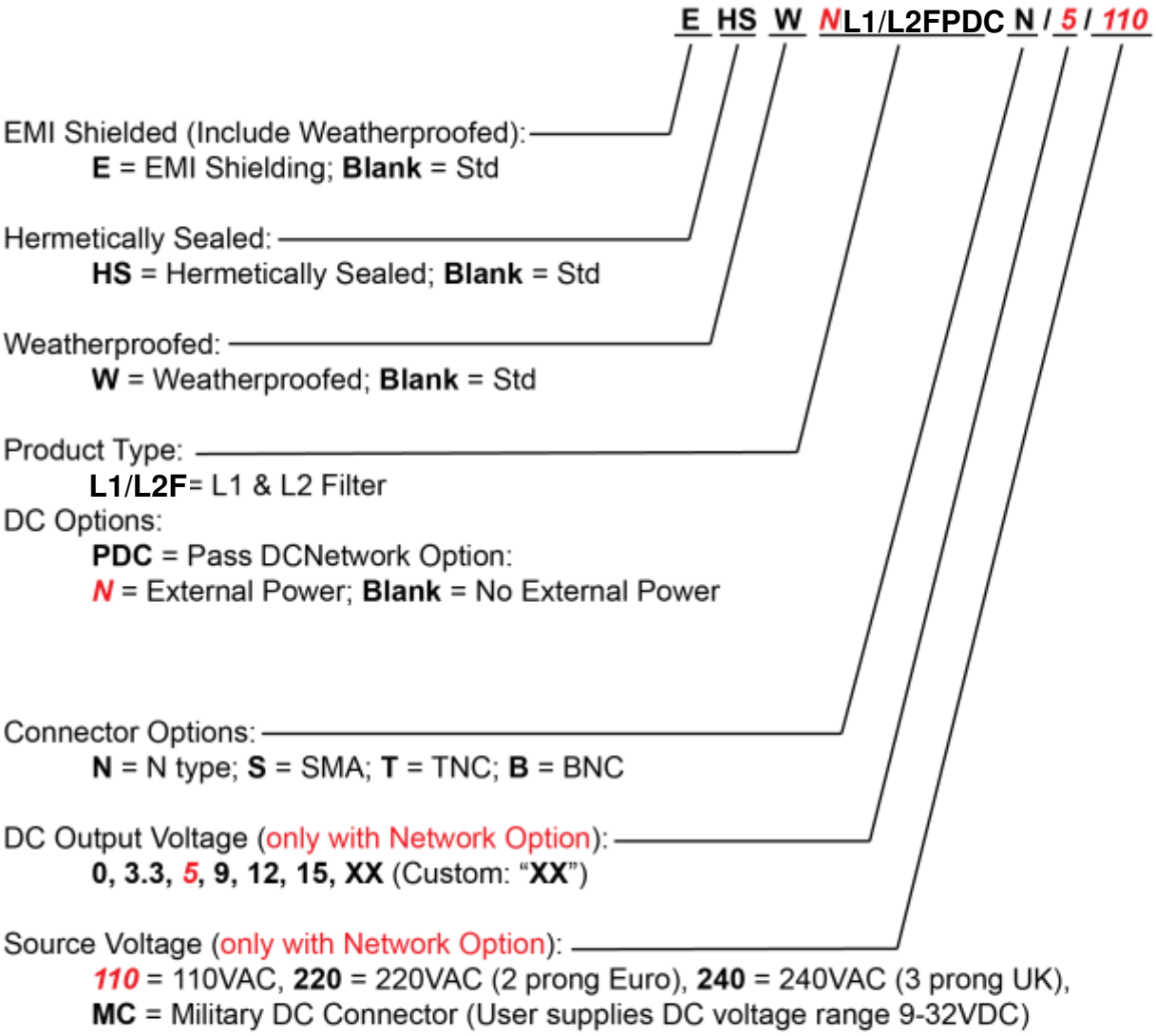
Part Number Configuration



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

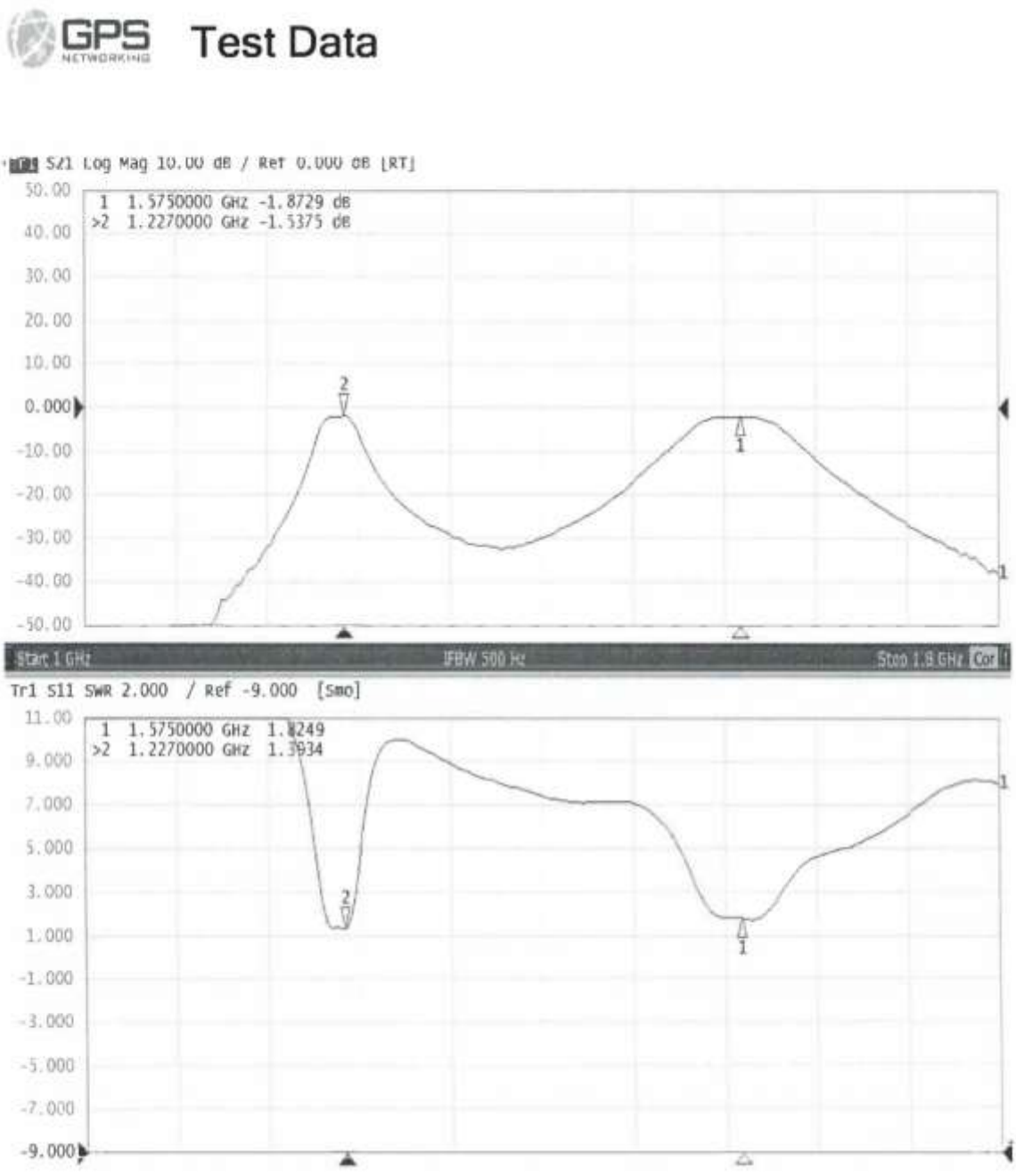
Contact GPS Networking Technical Support at 1-800-463-3063 or salestech@gpsnetworking.com for any questions regarding non-standard configurations and corresponding part numbers.

L1/L2FPDC

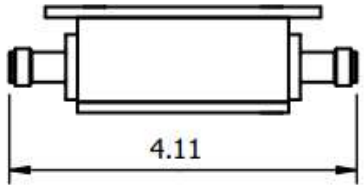
Performance

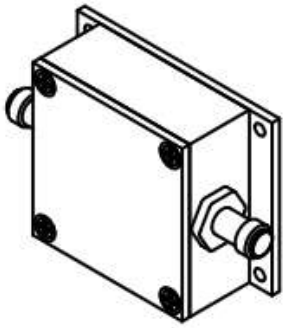
L1/L2FPDC

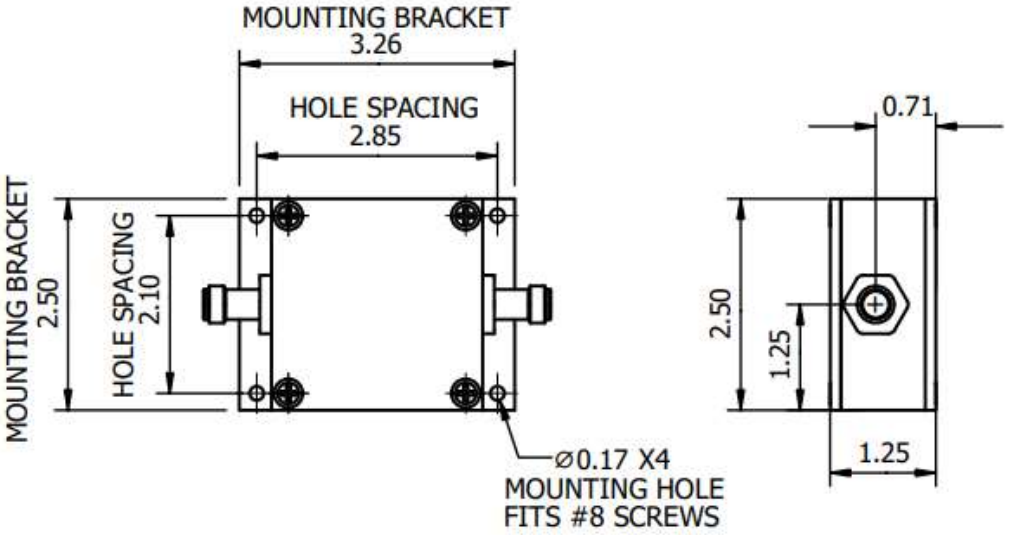
Each L1/L2FPDC ships with a test sheet that verifies critical performance characteristics, such as gain, input VSWR, and amplitude balance; a typical VNA test sheet is shown below.



Mechanical







Mechanical
Dimensions:
Depth: 1.3"
Height: Body: 2.5"
Baseplate: 3.25"
Width: 2.5"
Dimensions listed above do not include connectors
Weight: 9.2oz (260g) MAX
Maximum weight is with female N-connector option
Weight will vary by connector type
Operating Temperature Range: -57°C to +87°C
Housing and Baseplate Finish: Electroless Nickel Plated (MIL-C-26074C, Class 1 0.0001-0.0003 MAX)
Lid Finish: Anodize, Type II, Class 2, Black, per MIL-A-8625

Female TNC connectors shown, other options available
EMI shielding may increase dimension by 0.02 inches per axis

GPS NETWORKING
373 E. Industrial Blvd.
Pueblo West, CO 81007

L1/L2FPDC-TNC					
L1/L2 GPS Filter					
8-3-20	NW	Scale: 1:2	Rev: 1	Sheet 1 of 1	Units are inches and degrees

Tolerances:
X±0.030
XX±0.015
XXX±0.005
Angle±1°