LDCBS1X2

GPS Passive 1X2 Splitter Technical Product Data

Features

- Precise Amplitude Balance
  - Less than 1 dB variation between ports.
- Flat Group Delay
  - Less than 1ns variation between L1 and L2.
- Low Insertion Loss
  - -4.0 dB loss is typical across all operating frequencies.
- Wide Accepted Frequency Range
  - Accepts signals from the entire L-Band, covering all major GNSS constellations.
- Efficiently Blocked Ports
  - Uses 200Ω resistors to prevent antenna alarm faults from connected devices.
- Matched Phase Balance
  - Less than 2° of variation between ports.

Description

This **L**oaded **DC B**locked **S**plitter **1X2 (LDCBS1X2)** is a passive one input, two output RF splitter that splits signals from 1.1 GHz to 1.7 GHz. This equipment is designed to passively split signals within the L-band to provide multiple devices with the signal from a single antenna. In the standard configuration, the J1 port will pass DC voltage from a connected device and pass this power to the antenna or other devices upline from the splitter. The other port (J2) is DC blocked and loaded with a 200Ω resistor to simulate antenna current draw which prevents antenna alarm faults. Custom gain, DC power, and connector configurations are available upon request.

Use Cases

- Splitting a roof antenna signal between 2 GPS/GLONASS/GNSS receivers.
- Splitting a WAAS antenna between WAAS receiver and ADS-B.
- Splitting a roof antenna signal to 2 passive antennas to re-radiate from 2 antennas.
- Usable as a smaller part in larger signal distribution network.

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Electrical Specifications, TA=25°C

General Specification

Parameter	Notes	Min	Typ	Max	Units
Frequency Range	Covers all major GNSS constellations.	1.1		1.7	GHz
Characteristic Impedance	Unused ports should be terminated with 50Ω loads.		50		Ω

GPS L1 & L2 RF Specification (1)

Parameter	Notes	Min	Typ	Max	Units
Input SWR	Input Standing Wave Ratio: S11			2.0:1	-
Output SWR	Output Standing Wave Ratio: S22			2.0:1	-
Insertion Loss	The loss that occurs from the input port to any output port: S21	-3.0	-4.0	-5.0	dB
Gain Flatness	The difference in loss or gain between the L1 and L2 frequencies.		0.25	1.0	dB
Amplitude Balance	The difference in gain or loss between each output port.		0.1	1.0	dB
Phase Balance	The difference in phase variation between each output port.		1.0	2.0	deg
Isolation	The amount of attenuation between two output ports.	L1:22 L2:15			dB
Group Delay Flatness	The difference in signal delay between the L1 and L2 frequencies.		0.1	1.0	ns

(1): Performance may be slightly reduced around GPS L5. If working on sensitive L5 applications, please request performance data.

External Power Options (Networked Option)		
Source Voltage Options	Voltage Input	Style
	110VAC	Transformer (ITA Type A Wall Mount)
	220VAC (Euro)	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
	3.3V	110mA
	5V	130mA
	9V	140mA
	12V	180mA
	15V	220mA
	Custom	Custom
Standard DC Configuration without External Power Option		
J1/Output 1 Pass DC, J2/Output 2 Block DC, Input Port Pass DC		
200Ω loads standard for all DC Blocked outputs		
Standard DC Configuration with any External Power Option (AC/DC or Military DC)		
All DC Blocked Outputs feature 200Ω load in standard configuration		
User selected output DC voltage		
RF Connector Options		
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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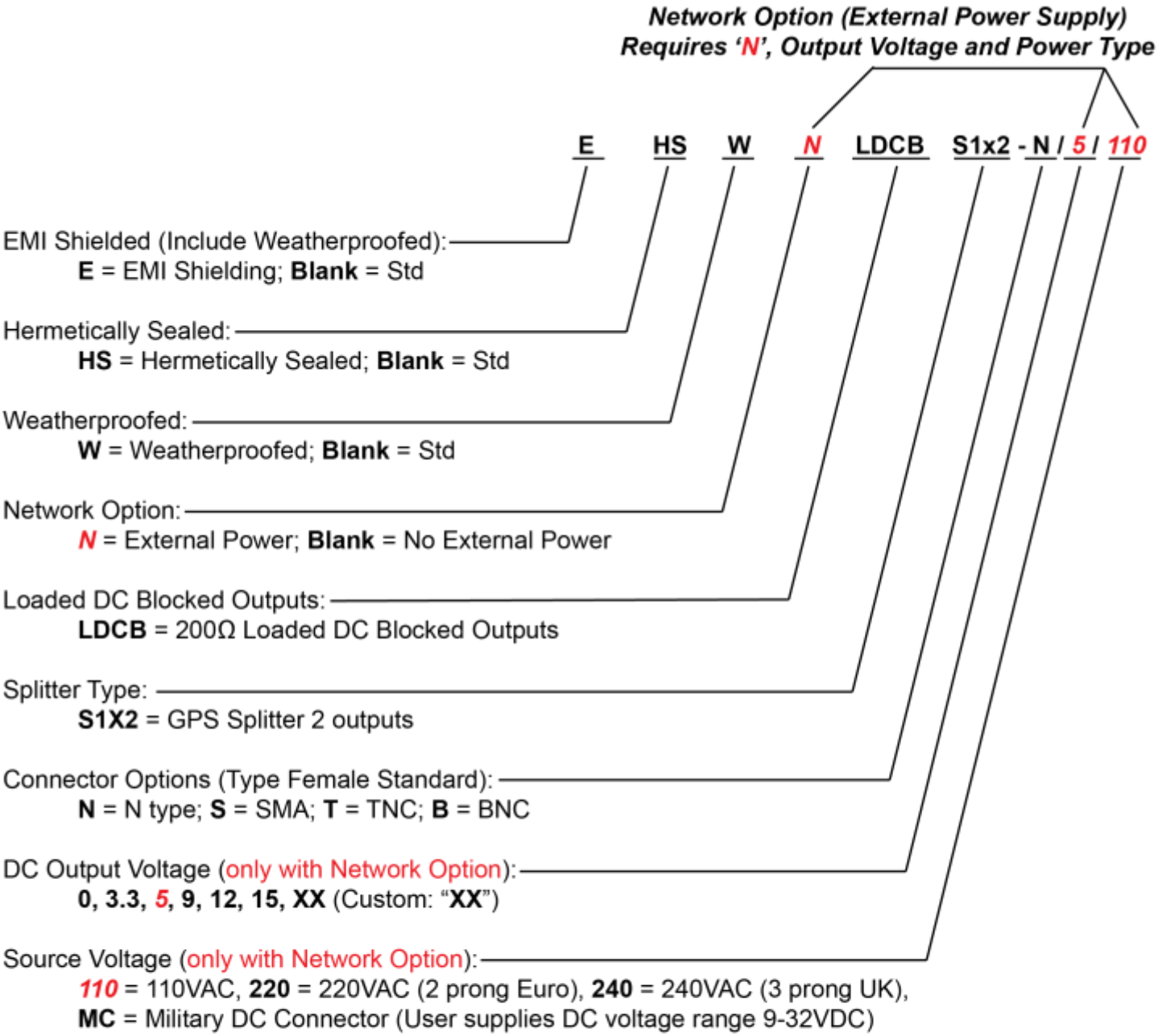
Part Number Configuration



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

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

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

Network Option:
N = External Power; **Blank** = No External Power

Loaded DC Blocked Outputs:
LDCB = 200Ω Loaded DC Blocked Outputs

Splitter Type:
S1X2 = GPS Splitter 2 outputs

Connector Options (Type Female Standard):
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).

When no external power supply option (AC or DC) is selected, Output 1/J1 is Pass DC Standard.
When external power supply option is selected, all outputs are DC blocked standard.

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.

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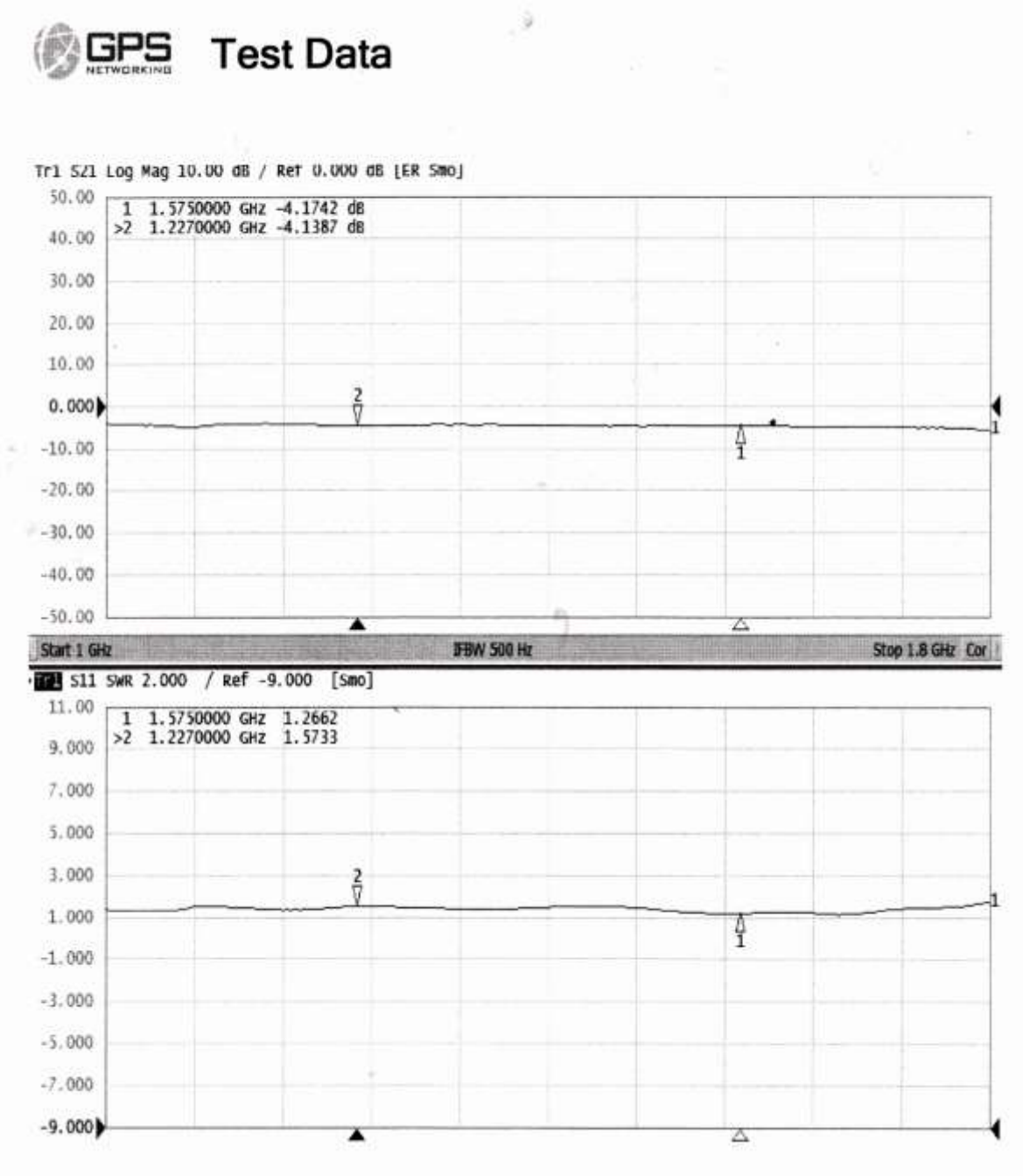
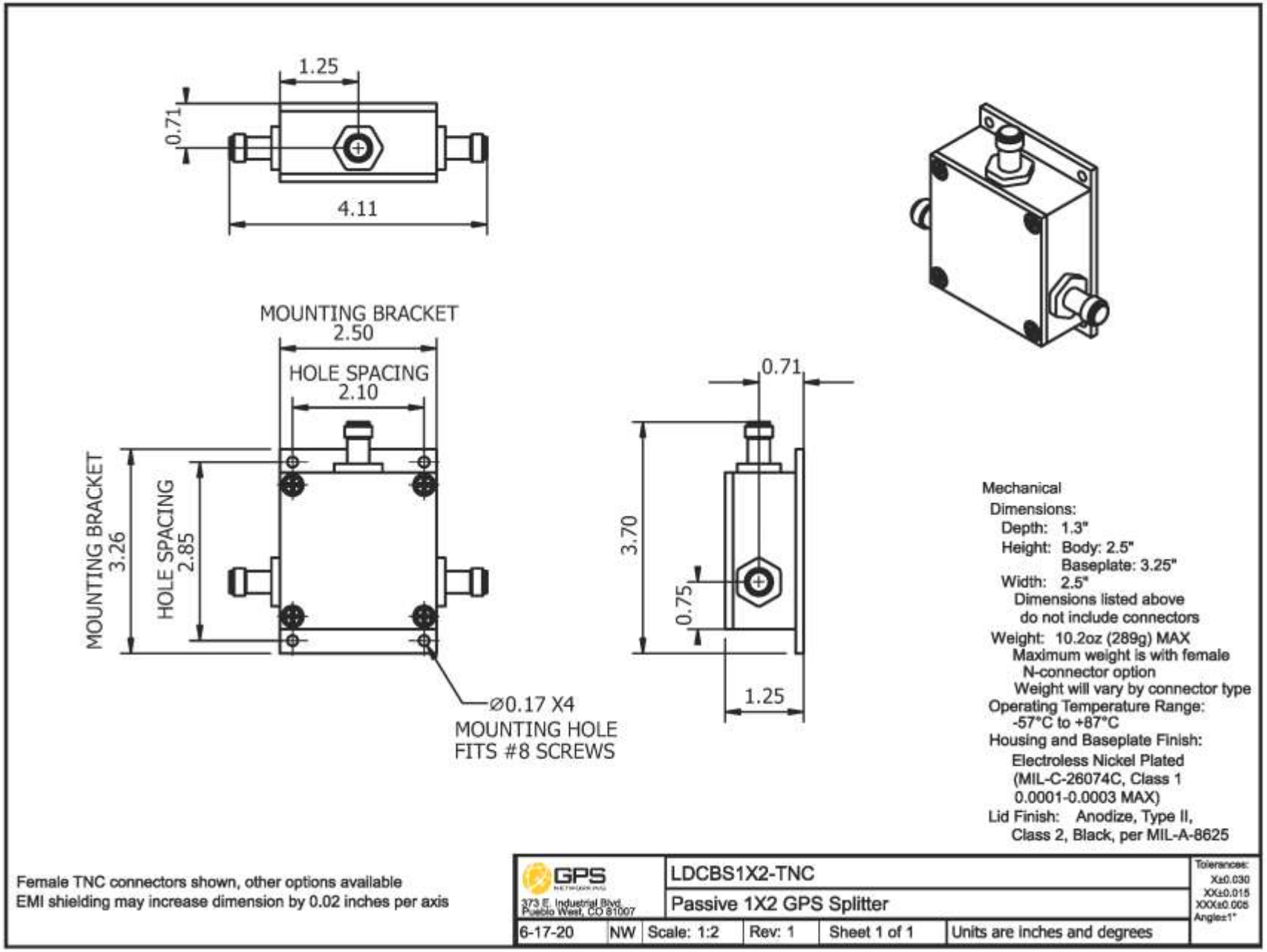
Performance

LDCBS1X2 Standard Gain Typical

Each LDCBS1X2 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.