

# MIL-NLDCBS1X3



## Military Networked GPS Passive 1X3 Splitter Technical Product Data

### Features

- Military Qualified
  - Tested to MIL-STD-810D, MIL-STD-461C, and MIL-STD-462.
- Dependable
  - Used on military rotorcraft for over 25 years.
- Low Group Delay
  - Less than 1 ns typical.
- Excellent Gain Flatness
  - 0.5 Typical



### Description

This **Military Qualified Networked Loaded DC Blocked Splitter 1X3 (MIL-NLDCBS1X3)** is a one input, three output device. The frequency response covers GPS L1, L2, L5, Galileo, and GLONASS bands with excellent gain flatness. The unit is completely MIL Qualified. It will accept any DC voltage from 8-32 VDC which is regulated down to 5VDC to power the GPS Antenna. The 5 VDC is sent to the antenna via the center conductor on the antenna port. The RF outputs (J2, J3, and J4) are DC Blocked. J2 and J3 ports are TNC connectors and the J4 port is a type N Connector.

### Use Cases

- Splitting a roof antenna signal between 3 GPS/GLONASS/GNSS receivers.
- Splitting a WAAS antenna between WAAS receiver and ADS-B.
- Splitting a roof antenna signal to 3 passive antennas to re-radiate from 3 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

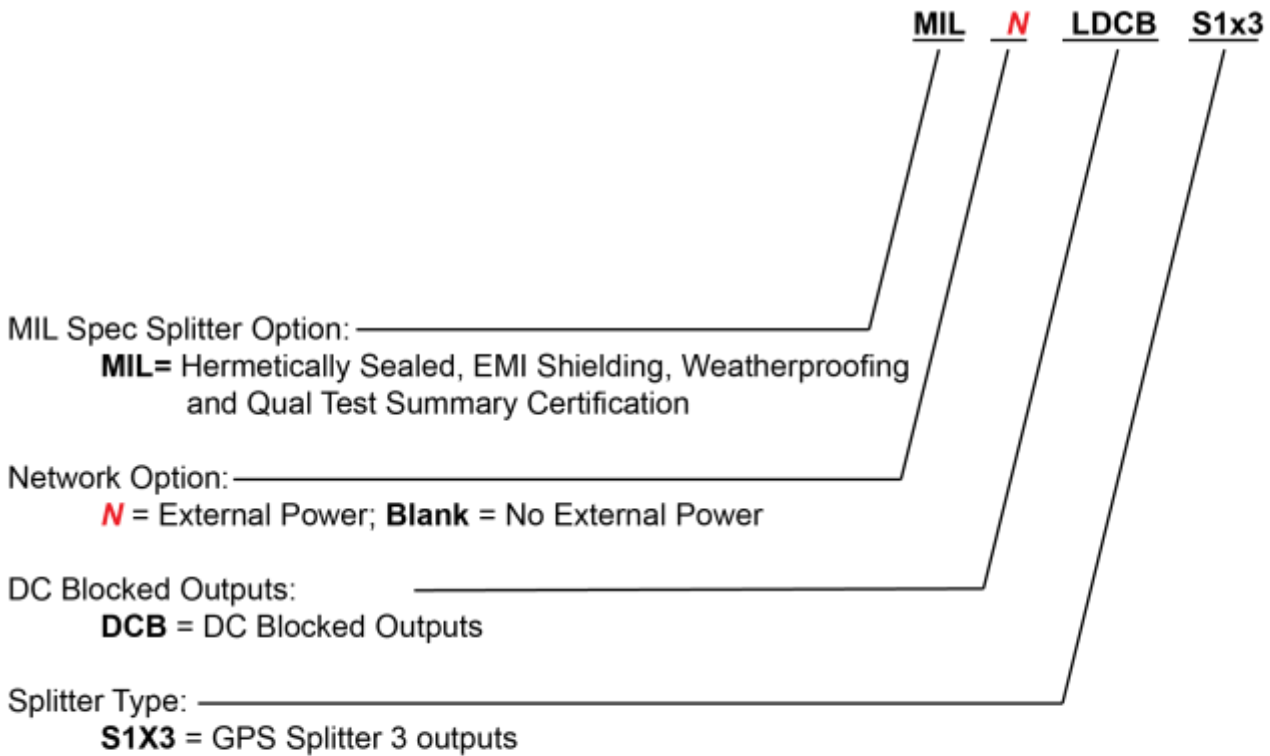
Parameter	Notes	Min	Typ	Max	Units
Input SWR	Input Standing Wave Ratio: S11			2.0:1	-
Output SWR	Output Standing Wave Ratio: S22		1.5:1	2.0:1	-
Insertion Loss	The loss that occurs from the input port to any output port:	-5.7	-6.3	-7.0	dB
	Ant – J2 - 50Ω	-6.4	-7.0	-7.6	dB
	Ant – J3 - 50Ω	-7.9	-8.5	-9.1	dB
	Ant – J4 - 50Ω				
Gain Flatness	The difference in loss or gain between the L1 and L2 frequencies.		0.5	1.0	dB
Isolation	The amount of attenuation between two output ports.	L2: 10 L1: 15			dB
Group Delay Flatness	The difference in signal delay between the L1 and L2 frequencies.		<1		ns

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 <sup>(2)</sup>	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 with any External Power Option (AC/DC or Military DC)		
All Outputs are DC Blocked.		
User selected output DC voltage via Antenna port.		
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

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## Part Number Configuration

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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.

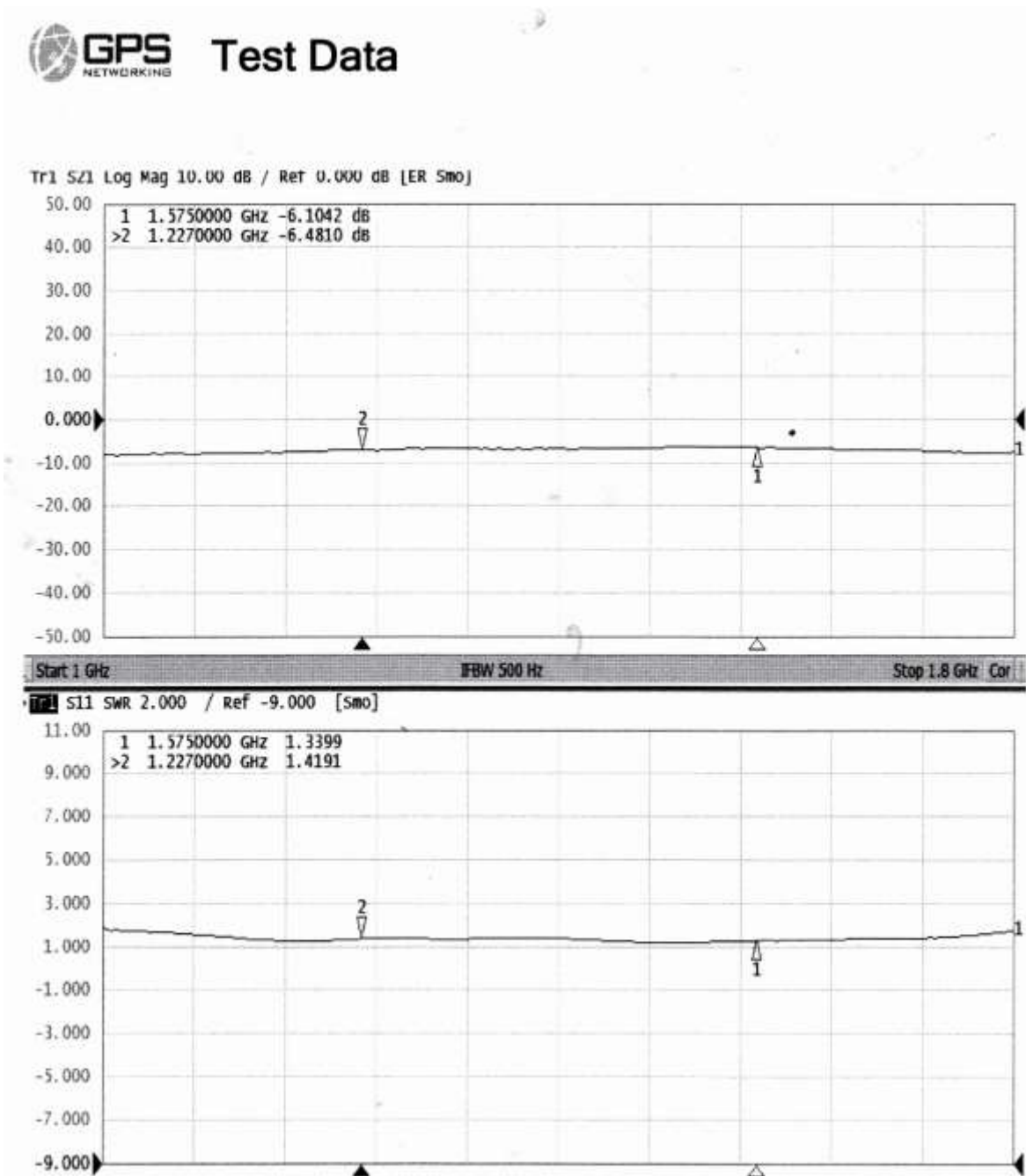
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## Performance

### MIL-NLDCBS1X3

Each MIL-NLDCBS1X3 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.



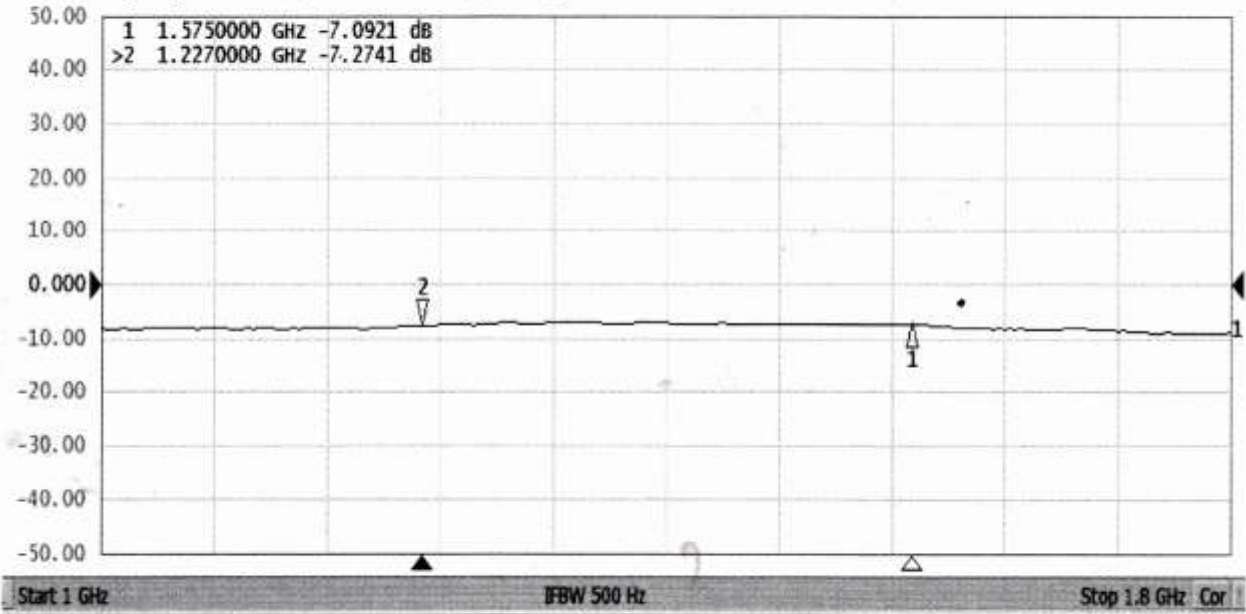
J3

# MIL-NLDCBS1X3

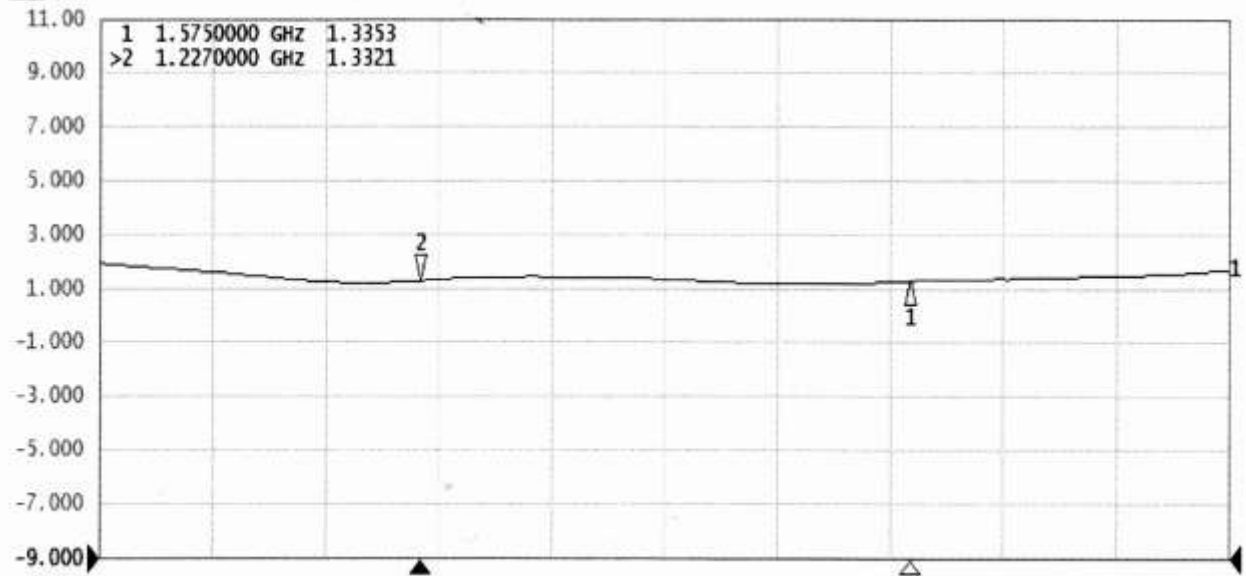


## Test Data

Tr1 S21 Log Mag 10.00 dB / Ref 0.000 dB [ER Smo]



S11 SWR 2.000 / Ref -9.000 [Smo]

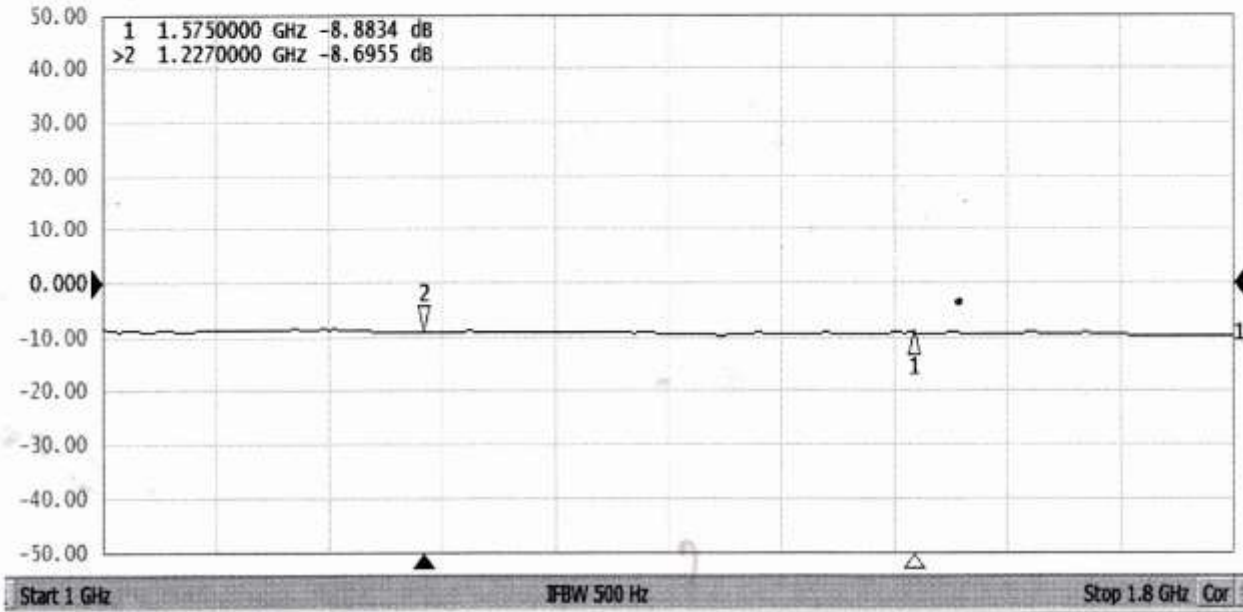


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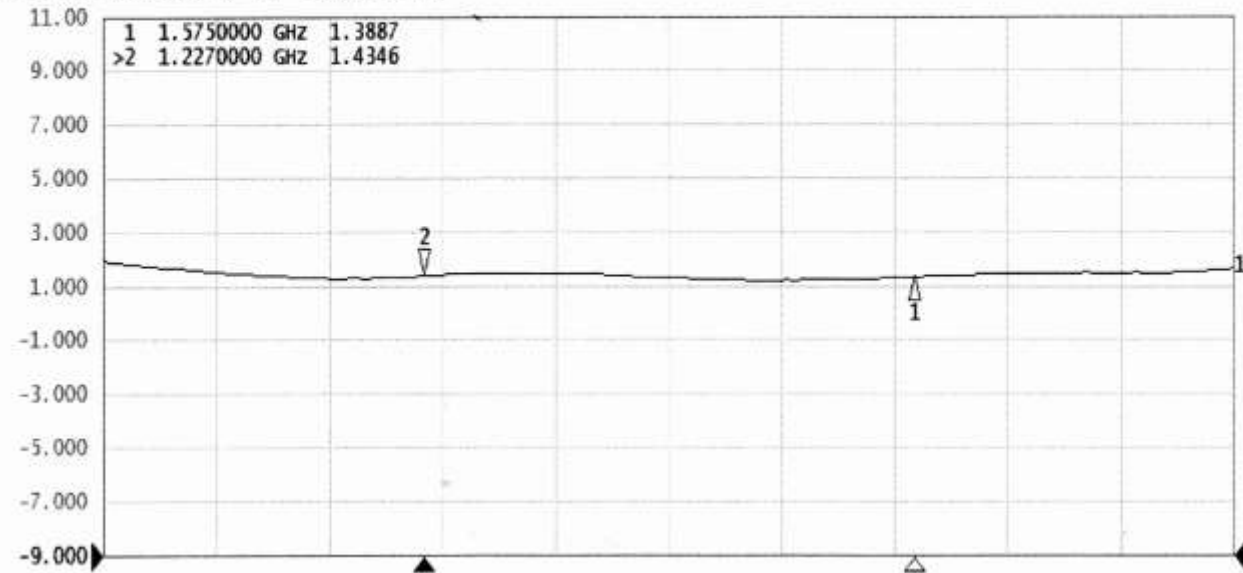


## Test Data

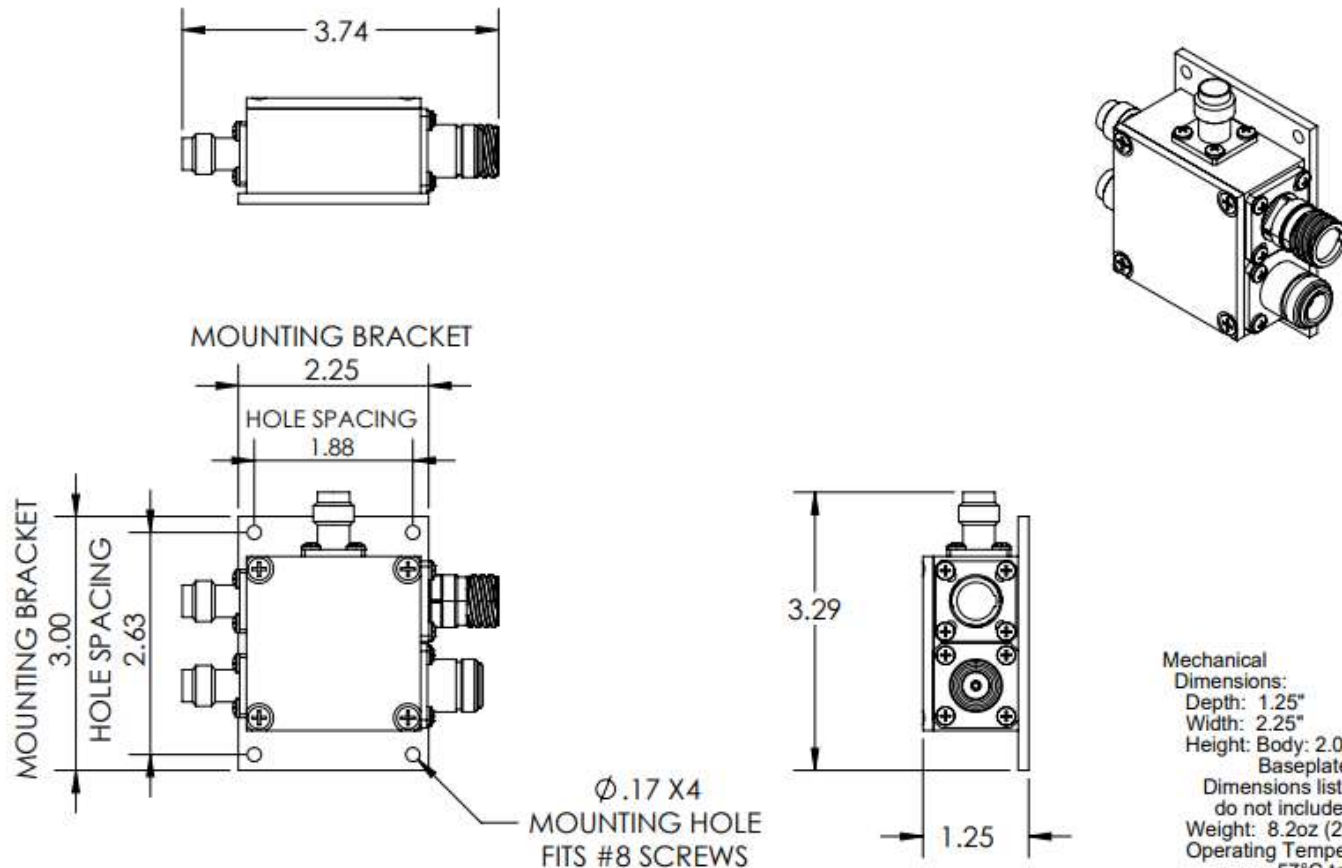
Tr1 S21 Log Mag 10.00 dB / Ref 0.000 dB [ER Smo]



S11 SWR 2.000 / Ref -9.000 [Smo]



# Mechanical



Mechanical  
 Dimensions:  
 Depth: 1.25"  
 Width: 2.25"  
 Height: Body: 2.06"  
 Baseplate: 3.00"  
 Dimensions listed above  
 do not include connectors  
 Weight: 8.2oz (233g) MAX  
 Operating Temperature Range:  
 -57°C to +87  
 Baseplate Finish:  
 Electroless Nickel Plated  
 (MIL-C-26074C, Class 1  
 0.0001-0.0003 MAX)  
 Unpainted for proper grounding  
 Housing and Lid Finish:  
 CARDINAL 6409-1UV GLOSS  
 BLACK

J1-J3 TNC, J4 N



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Military Networked Passive 1X3 GPS Splitter

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

04-19-2021 MM Scale:1:2 Rev: 1 Sheet 1 of 1 Units are inches and degrees