



GPS
NETWORKING

MIL-HIALDCBS1X4

Military High Isolation Amplified '3Z4' GPS Ur ikwgt Technical Product Data



Features

- **Extremely Flat Group Delay**
Less than 1ns variation
- **Excellent Gain Flatness**
 $|J1 - J4| < 1.0\text{dB}$
- **Military Qualified 1X4 Splitter**
MIL STD 810F, MIL STD 1275B
- **High Isolated Splitter Gain 3dB typical**
- **Passes all GNSS Frequencies (Entire L-band)**
- **DC Blocked Outputs Feature 200Ω Loads**
Prevent antenna alarm faults from connected devices
- **Phase Matched Outputs**
Phase (J1 – J4) < 1.0°
- **Special Configurations Available By Request**
- **Qual Test Summary Certification Available**

Description

The MIL-HIALDCBS1X4 GPS Splitter (GNSS Splitter) is a one input, four output high isolated amplified GPS splitter based on the Wilkinson splitter design. The frequency response covers the entire L-band (all GNSS Frequencies) with excellent gain flatness. All Mil Spec splitters passed rigorous MIL-STD 810F testing detailed in the separate Qual Test Summary Certification. The MIL-HIALDCBS1X4 is standard hermetically sealed, EMI Shielded, Weatherproofed and configured with MIL-STD 1275B compliant power options. Each DC blocked output is loaded with a 200Ω resistor to simulate the antenna current draw to prevent false antenna alarm faults. Contact GPS Networking Technical Support for any questions regarding standard configurations or special configurations at salestech@gpsnetworking.com or 1-800-463-3063.



Contact NavtechGPS for product details. www.NavtechGPS.com
+1-703-256-8900 • 800-628-0885 • info@navtechgps.com

Electrical Specifications, $T_A = 25^{\circ}\text{C}$

Parameter	Conditions	Min	Typ	Max	Units
Freq. Range	Ant – J1, J2, J3, J4 - 50Ω ; J1 - 50Ω	1.1		1.7	GHz
In/Out Imped.	Ant, J1, J2		50		Ω
Gain		1.5	3.0	4.5	dB
Input SWR	All ports - 50Ω			2.0:1	-
Output SWR	All ports - 50Ω			1.5:1	-
Noise Figure	Ant – J1, J2, J3, J4 - 50Ω		3.5	3.7	dB
Gain Flatness	L1 – L2 ; Ant – J1, J2, J3, J4 - 50Ω		0.5	1.5	dB
Amplitude Balance	J1 – J4 ; Ant – J1, J2, J3, J4 - 50Ω			1.0	dB
Phase Balance	Phase (J1 – J4) ; Ant – J1, J2, J3, J4 - 50Ω			1.0	deg
Isolation	J1 – J4, Ant - 50Ω	35	40	45	dB
Group delay Flatness	$\tau_{d,max} - \tau_{d,min}$: Ant – J1, J2, J3, J4 - 50Ω			1	ns
Req. DC Input V.	Non-Network Configuration, DC Input on J1	3.6		15	Vdc
P1 dB	Output Power @ 1dB Gain Compression (f = 1.5GHz)		-29		dBm
Current Draw (5v) ⁽¹⁾	Amplifier Current Draw, All ports - 50Ω			15	mA

(1). Current draw on input DC port in the non-networked configuration.

Available Power Options (Networked Option)

External Power Options (Networked Option)		
Source Voltage Options	VOLTAGE INPUT	
	110VAC	Transformer (Wall Mount)
	220 VAC	Transformer (Wall Mount)
	240 VAC (United Kingdom)	Transformer (Wall Mount)
	Customer Supplied DC 9-32 VDC	Mil DC Connector (includes Mate Std)
Output Voltage Options ⁽¹⁾	DC VOLTAGE OUT	
	MAX CURRENT OUT FOR CORRESPONDING $V_{out}^{(2)}$	
	3.3 V	110mA
	5V	130mA
	9V	140mA
	12V	170mA
	15V	210mA
Custom	TDB	
Standard DC Configuration without External Power Option		
J1/Output 1 Pass DC, J2, J3, J4 Block DC, Input Pass DC		
Standard DC Configuration with any External Power Option (AC/DC or Military DC)		
All DC Blocked Outputs include 200Ω Load Standard		
Any port can be custom selected to Pass or Block DC		
RF Connector Options		
Connector Options	CONNECTOR STYLE	
	CHARGE	
	Type N-female	NC
	Type SMA-female	NC
	Type TNC-female	NC
	Type BNC-female	NC
Other	Contact GPS Networking	

(1) With Networked Option, any RF port (input or output) can be selected Pass DC or Block DC.

(Contact GPS Networking Technical Support at 719-595-9880 or salestech@gpsnetworking.com for any questions regarding non-standard configurations and corresponding part numbers)

Part Number Configuration

Network Option (External Power Supply)
Requires '**N**', Output Voltage and Power Type

MIL 'N' < -ALDCB S1X4-N / 5 / 110

Mil Spec Splitter Option:

MIL = Includes Hermetically Sealed, EMI Shielding, Weatherproofing and Qual

Test Summary Certification

Network Option:

N = External Power; **Blank** = No External Power

High Isolated Amplified Loaded DC Blocked Outputs:
HIALDCB = 200Ω Loaded DC Blocked Outputs

Splitter Type:

S1X4 = GPS Splitter 4 Outputs

Connector Options (Type Female Standard):

N = N type; **S** = SMA; **T** = TNC; **B** = BNC

DC Output Voltage

(**only with Network Option**):

3.3, 5, 9, 12, 15

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)

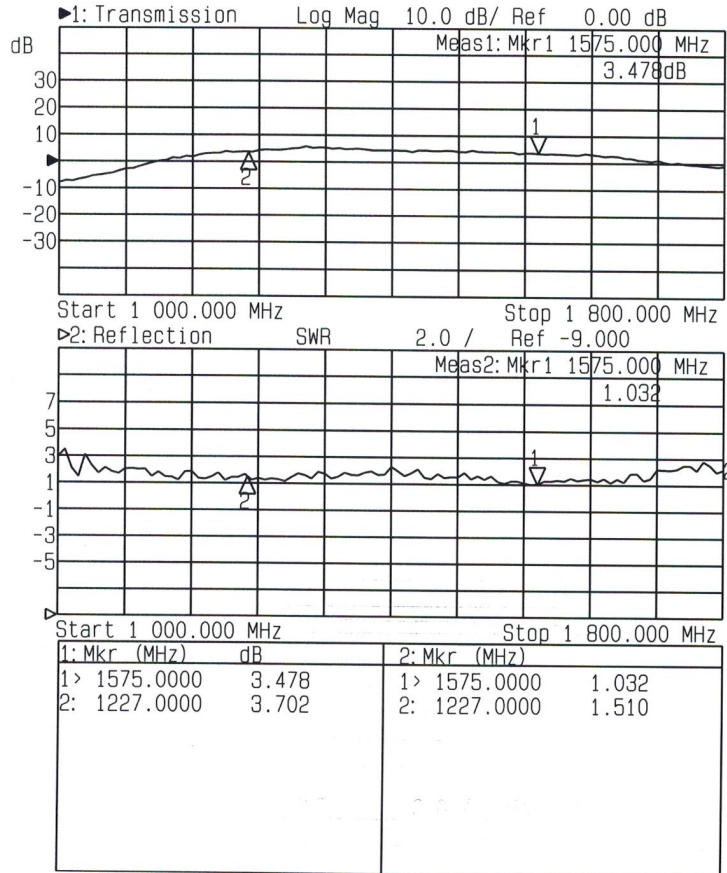
When no external power supply option (AC or DC) is selected, Output 1/J1 is Pass DC standard. Whenever an external power supply option is selected, all outputs are DC blocked standard.

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Performance

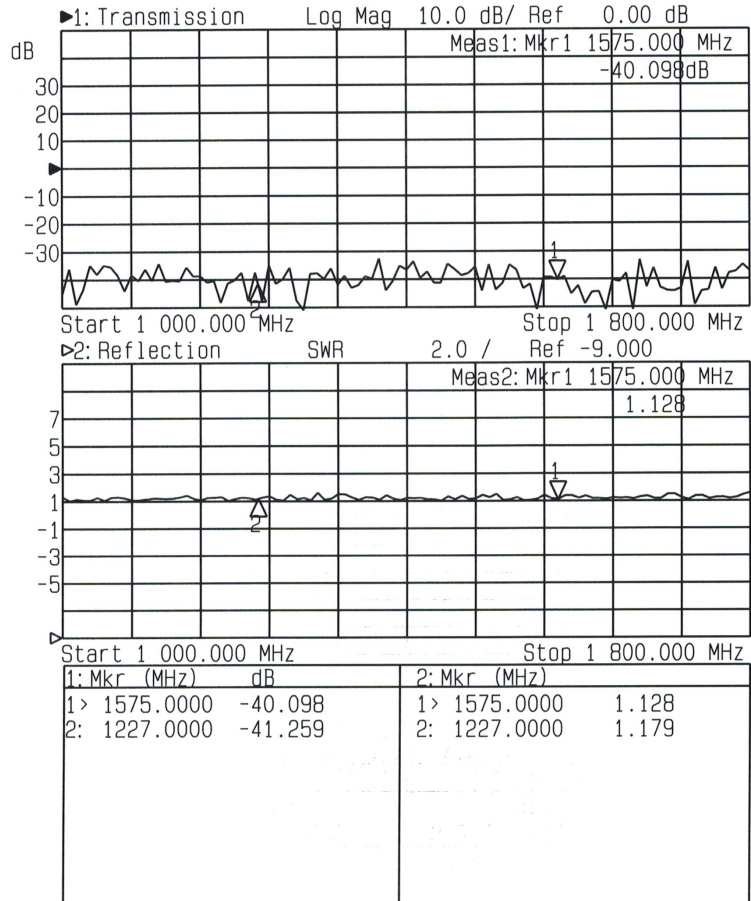
MIL-HIALDCBS1X4 (High Isolation Typical Gain)

Input SWR (Ant. port) and Frequency Response: Ant. To J1 - J4, (Typical Type N connectors)



MIL-HIALDCBS1X4 (High Isolation Option):

Output Isolation (J1-J3, J2-J4) and Output SWR (Typical, type N connector):

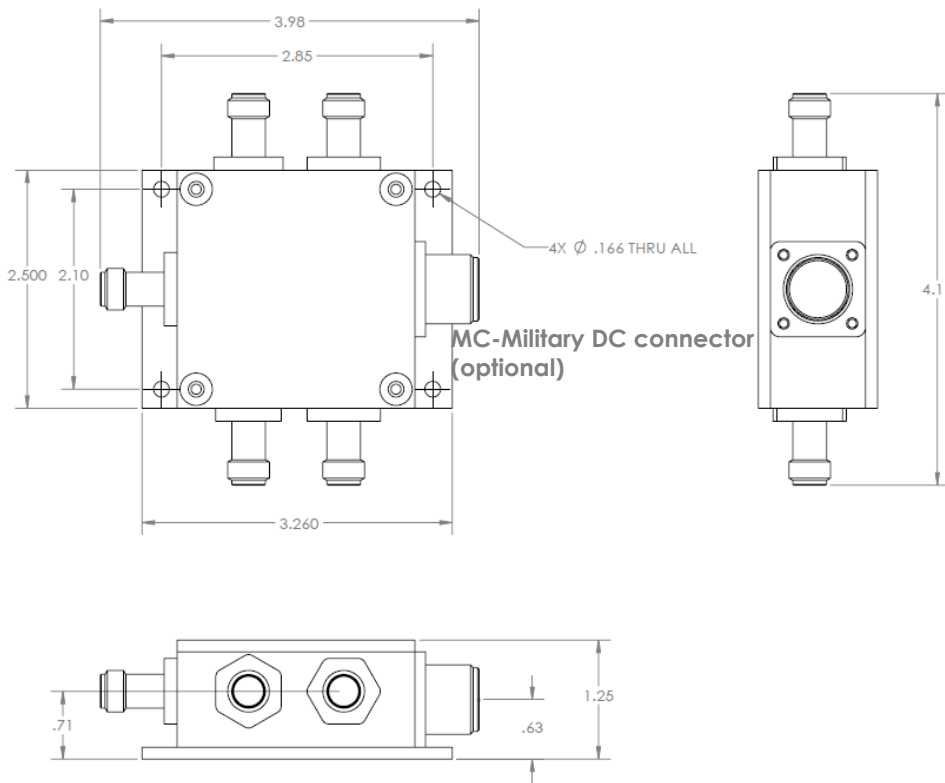


Mechanical

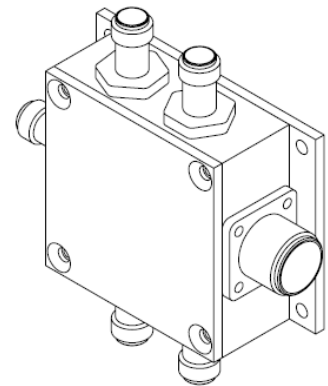
Dimensions: Height: 1.3"
 Length (not including connectors) Body: 2.5"
 Base Plate: 3.25"
 Width (not including connectors): 2.5"
Weight: 13 oz. (370 grams)

Operating Temp. Range: -40° to + 75°C

Finish Housing and Base Plate: ELECTROLESS NICKEL PLATED
 MIL-C-26074C CLASS 1, .0001-.0003 MAX
 Finish Lid: ANODIZE, TYPE II, CLASS 2, BLACK, per MIL-A-8625



REVISIONS				
ZONE	REV.	DESCRIPTION	REV. BY	DATE
-	A	INITIAL RELEASE	-	-



GPS NETWORKING	Assy, 1x4 Military		Do Not Scale Dwg Remove All Burrs And Sharp Edges to .000 Round Max
Checked by BPC	Date 07/02/15	Design by	Material
Scale	Quantity / Unit Qty	Heat Treatment	XX - 0.000 XXX - 0.015 XXX - 0.005
372 E Insulator Brg Pencil Mark CCC Error	Notes See Note	Part Name	Angle 90° Surface Finish Unless Noted
	Dwg Number	SEE Rev SHEET	Full Dimensions Unless Noted
		B - 1 OF 1	