



# MIL-ALDCBS1X4

## Military Amplified 1X4 GPS Splitter

### Technical Product Data



## Features

- **Extremely Flat Group Delay Less**
- **Excellent Gain Flatness**  
 $|J1 - J4| < 1.0\text{dB}$
- **Military Qualified 1X4 Splitter**  
MIL STD 810F
- **Amplified Splitter Gain 18dB typical**
- **Passes all GNSS Frequencies (Entire L-band)**
- **DC Blocked Outputs Feature 200Ω Loads**  
Prevent antenna alarm faults from connected devices
- **Phase Matched Outputs**  
 $\text{Phase } (J1 - J4) < 1.0^\circ$
- **Special Configurations Available By Request**
- **Qual Test Summary Certification Available**

## Description

The MIL-ALDCBS1X4 GPS Splitter (GNSS Splitter) is a one input, four output 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-ALDCBS1X4 is standard hermetically sealed, EMI Shielded and Weatherproofed. 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](mailto:salestech@gpsnetworking.com) or 1-800-463-3063.

## Electrical Specifications, TA = 25<sup>0</sup>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, J3, J4 - 50Ω		50		Ω
Gain		17.0	18.5	20.0	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		3.3	3.5	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	15	20	25	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)		-14		dBm
Current Draw (5v) <sup>(1)</sup>	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	STYLE
	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 <sup>(1)</sup>	DC VOLTAGE OUT	MAX CURRENT OUT FOR CORRESPONDING Vout <sup>(2)</sup>
	3.3 V	110mA
	5V	130mA
	9V	140mA
	12V	170mA
	15V	210mA
	Custom	TDB
<b>Standard DC Configuration without External Power Option</b>		
J1/Output 1 Pass DC, J2, J3, J4 Block DC, Input Pass DC		
<b>Standard DC Configuration with any External Power Option (AC/DC or Military DC)</b>		
All DC Blocked Outputs include 200Ω Load Standard		
Any port can be custom selected to Pass or Block DC		
<b>RF Connector Options</b>		
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](mailto: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

DC Options:

**DCB**: DC Blocked; **PDC**: Pass DC

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, 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)

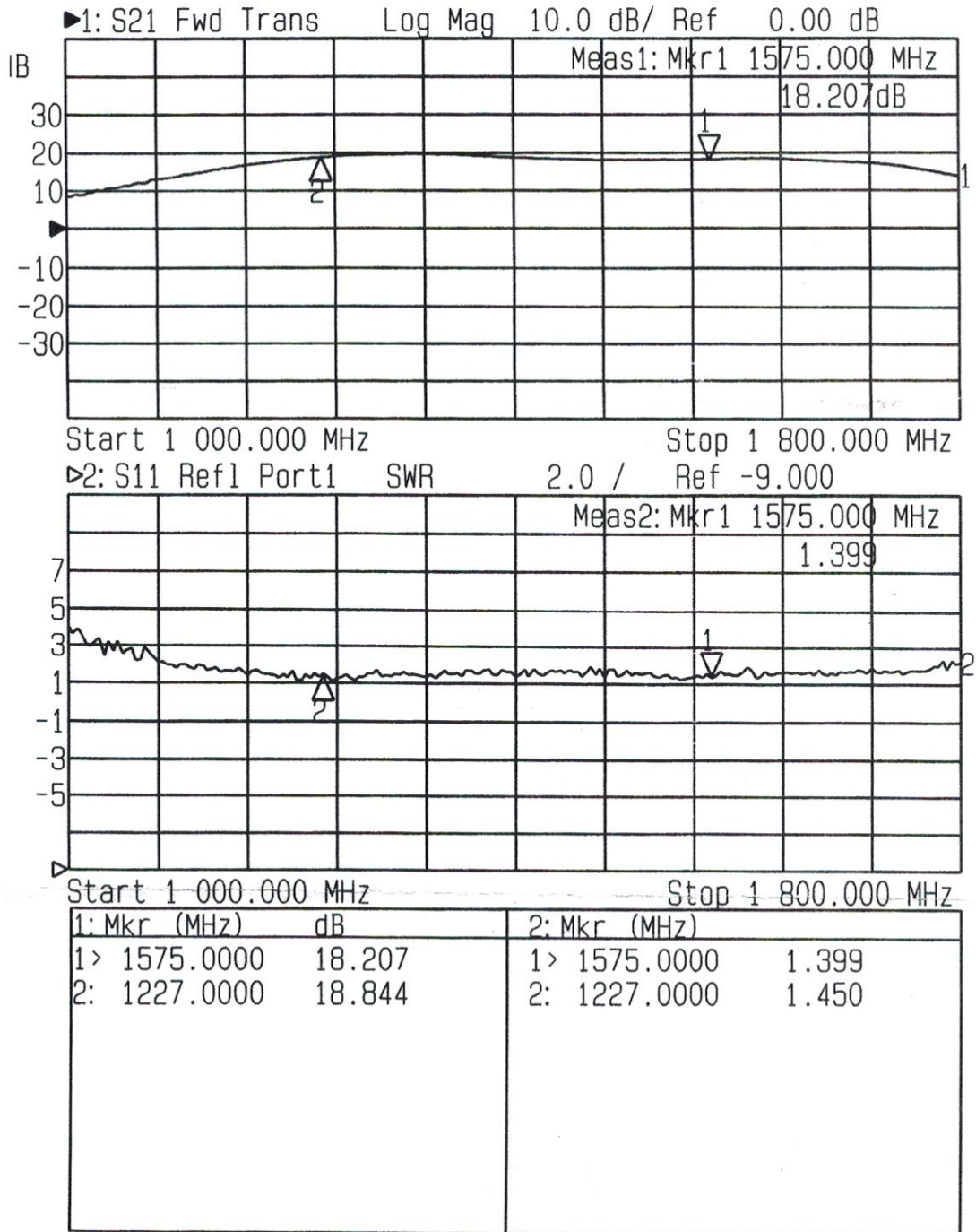
When no external power supply option (AC or DC) is selected, Output 1/J1 is Pass DC standard. Whenever an external power supply option is selected, all outputs are DC blocked standard.

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# Performance

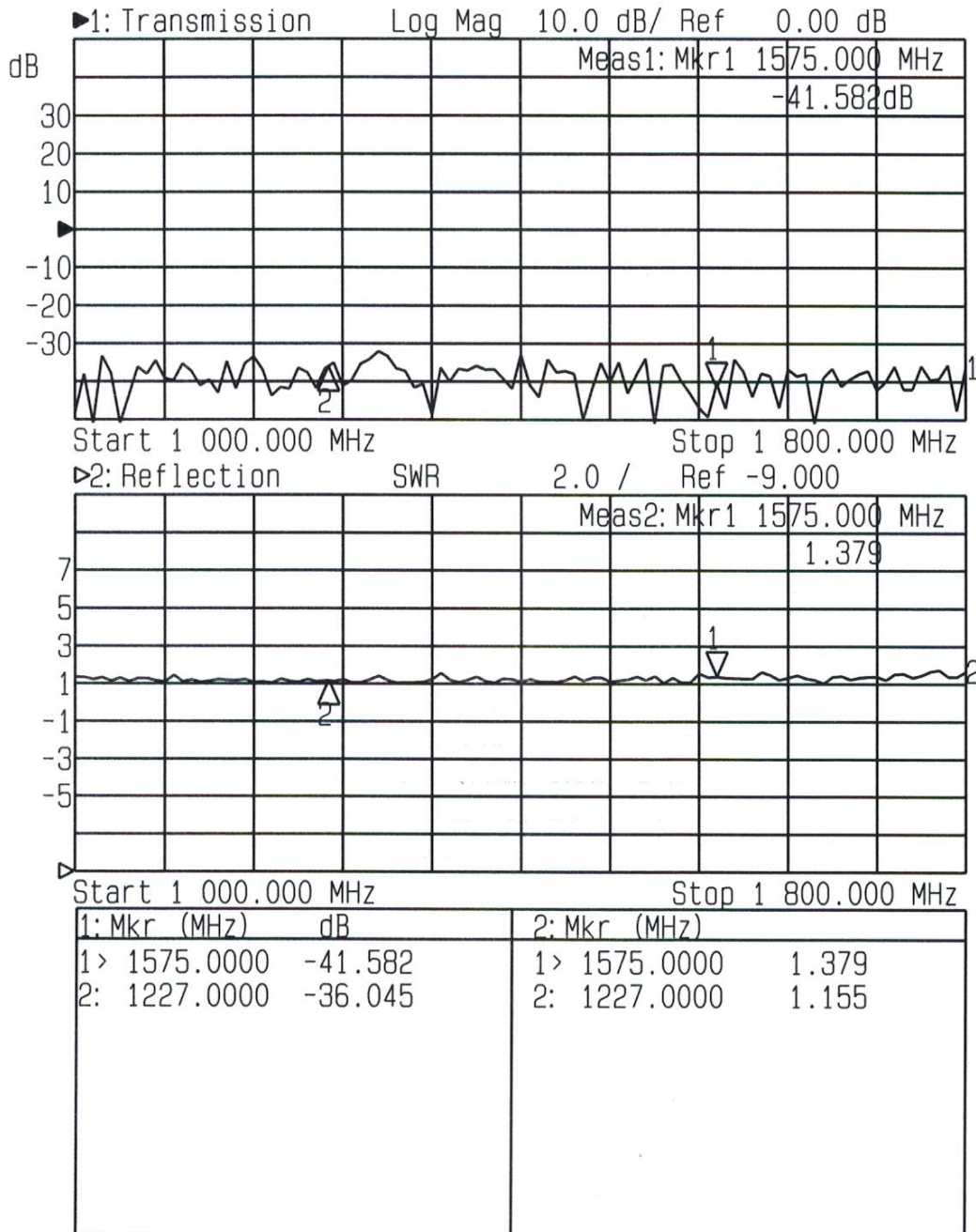
## MIL-ALDCBS1X4 (Typical Gain)

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



**MIL-ALDCBS1X4** (Typical Standard Isolation):

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



# Mechanical

All Measurements are done without connectors

## Dimensions

Height: 1.3"  
 Length: Body 2.5" Base Plate: 3.25"  
 Width: 2.5"

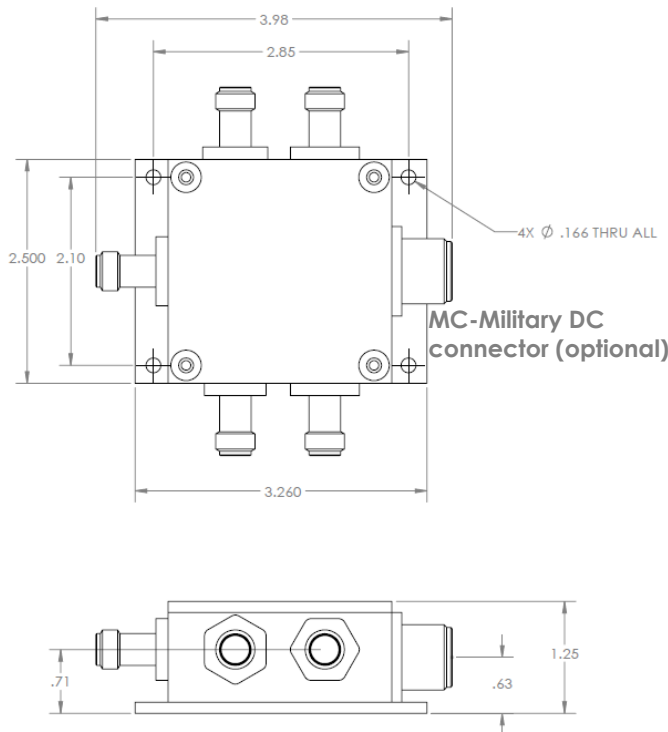
**Weight:** 7.3oz (207grams)

Weight is with gaskets, housing, lid and base. Connector type can add 1-3oz

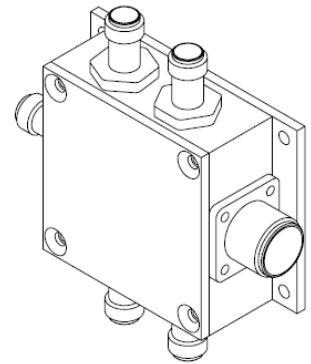
**Operating Temp. Range:** -40<sup>0</sup> to + 75<sup>0</sup>C

**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 Break Out Remove All Burrs And Sharp Edges By 200 Read Axis	
Checked by:	BPC	DATE:	07/02/15	Weight:	g
Scale:	1:1	Part Number:	310-8-000	Material:	3003-T305
Quantity / Unit:	1	See Note		Angle #:	2055
Material:				Surface Finish:	✓
Part Name:				Drawn By:	
Part Number:				Part Description:	
SIZE	REV	SHEET		Drawn By:	
B	-	1 OF 1			

-EMI shielding gaskets can increase listed product dimensions by up to 0.02 inches per axis