



ALDCBS1X4

GPS Amplified 1X4 Splitter

Technical Product Data



Features

- **Excellent Gain Flatness**
 $|J1-J4| < 1.0\text{dB}$
- **Extremely Flat Group Delay**
Less than 1ns variation
- **Amplifier 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**
Phase (J1-J4) $< 1.0^\circ$
- **Special Configurations Available By Request**

Description

The ALDCBS1X4 GPS Amplified Splitter (GNSS Splitter) is a one input, four output device based on the Wilkinson splitter design. The frequency response covers the entire L-band (all GNSS frequencies) with excellent gain flatness. In the standard configuration, one of the splitter RF outputs (J1) passes DC from the connected GPS device through the splitter to the input or antenna port, allowing the GPS receiver to power both the antenna and the splitter's amplifier. The other RF outputs (J2, J3 and J4) are DC blocked and 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.

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

Parameter	Conditions	Min	Typ.	Max	Units
Freq. Range	Antenna – Any Output, Unused Outputs - 50Ω	1.1		1.7	GHz
In/Out Imped.	Antenna, J1, J2, J3, J4		50		Ω
Gain	Normal Configuration, Antenna–Any Output	17.0	18.5	20.0	dB
Input SWR	All ports - 50Ω			2.0:1	-
Output SWR	Normal Configuration , All ports - 50Ω			1.8:1	-
Noise Figure	Normal Config., Ant – Any Output, Unused Outputs - 50Ω		4.2	4.5	dB
Gain Flatness	L1 – L2 ; Ant – Any Output, Unused Outputs - 50Ω		0.5	1.5	dB
Amplitude Balance	J1 – J4 ; Ant – Any Output, Unused Outputs - 50Ω			0.5	dB
Phase Balance	Phase (J1 – J4) ; Ant – Any Output, Unused Outputs - 50Ω			1.0	deg
Isolation	Normal Config., Adjacent Ports, Ant - 50Ω (see plots)	15			dB
Group delay Flatness	$\tau_{d,max} - \tau_{d,min}$: Antenna – J1, J2, J3, J4 - 50Ω			1	ns
Req. DC Input V.	Non-Network Configuration, DC Input on J1	3.6		15	Vdc
P _i dB	Output Power @ 1dB Gain Compression (f = 1.5GHz)		-14		dBm
Current Draw ⁽¹⁾	Amplifier Current Draw, All ports - 50Ω			15	mA

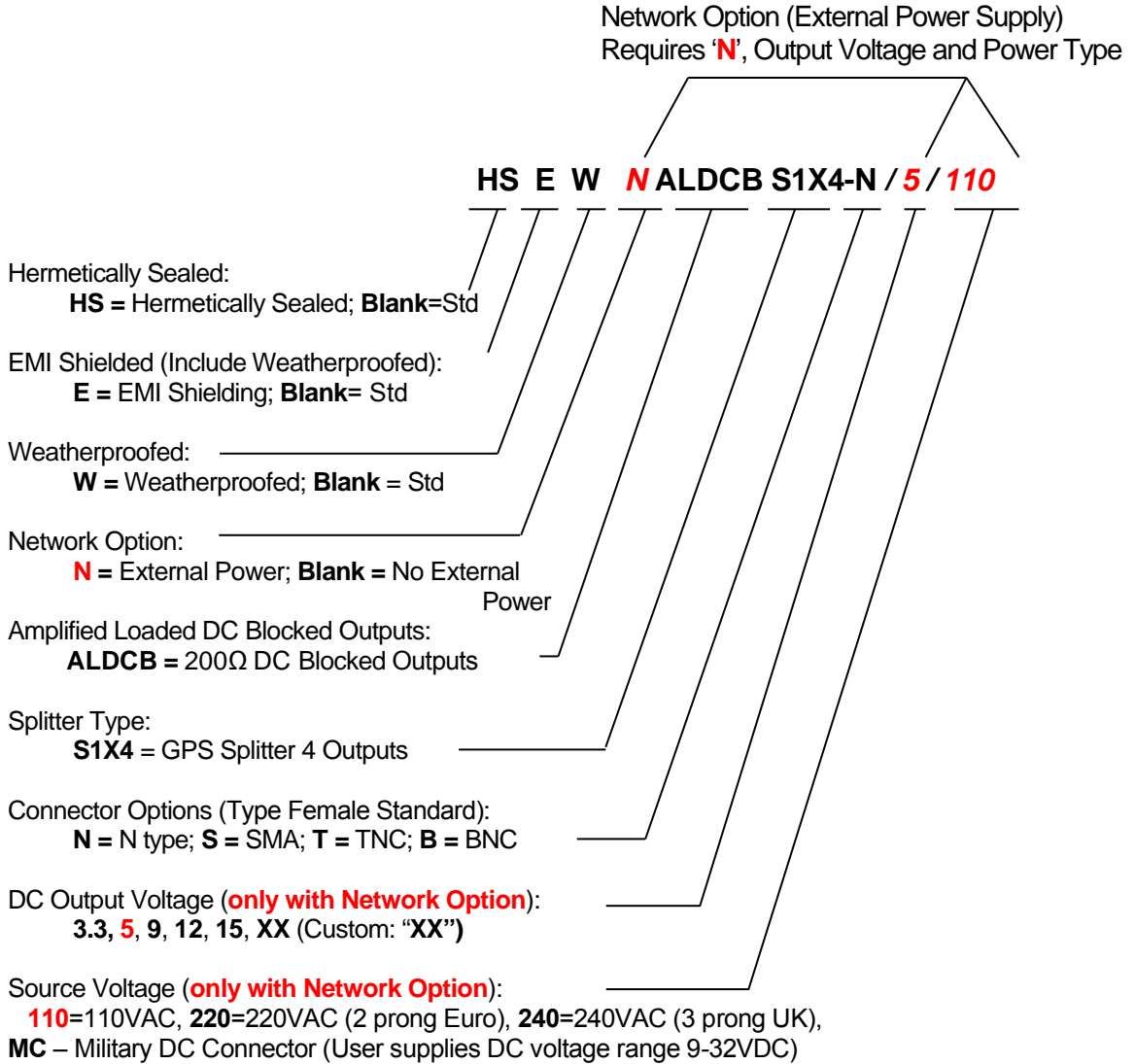
(1). Current draw on input DC port in the non-networked configuration @ 5vdc.

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)
Output Voltage Options ⁽¹⁾	DC VOLTAGE OUT	
	MAX CURRENT OUT FOR CORRESPONDING Vout ⁽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-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	
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 Network Option, any RF port (input or output) can be specified to Pass DC or Block DC

(2). $T_A = +50^{\circ}\text{C}$. Assuming Source of 110V or 220V Wall Mount Transformer. In general, maximum output current can be determined by: $I_{out} \leq 2.9 / (V_{sourceDC} - V_{out})$ A

Part Number Configuration



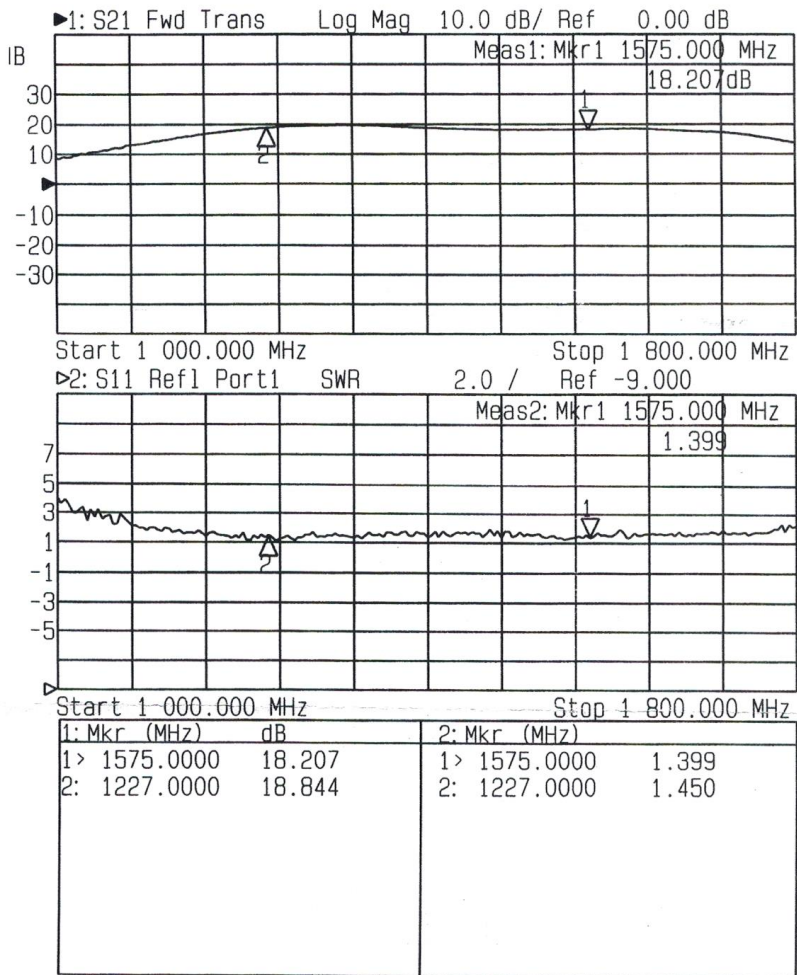
When no external power supply option (AC or DC) is selected, Output 1/J1 is Pass DC standard.
Whenever an external power supply option is selected, all outputs are DC blocked standard.

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

Performance:

ALDCBS1X4 (Standard Gain, typical)

Input SWR (Ant. Port) and Frequency Response: Ant. To J1, J2, J3, J4) (Typical, type N connector):



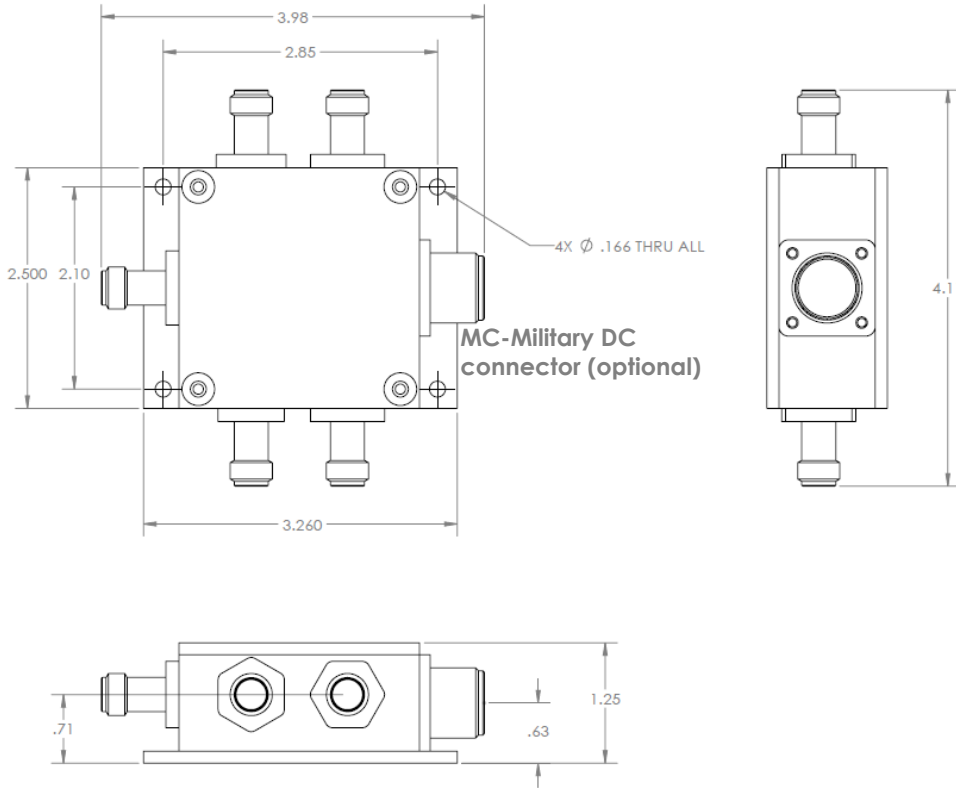
Mechanical

Dimensions: Height: 1.3"
 Length (not including connectors) Body: 2.5"
 Base Plate: 3.25"
 Width (not including connectors): 2.5"
Weight: 12 oz. (345 grams)

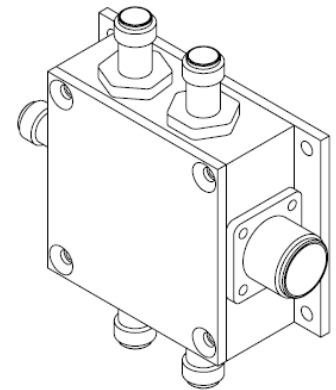
Operating Temp. Range: -40° to + 75°C

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

NOTES:
 1. CAD FILES AVAILABLE.



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 .020 Rad Max
PROJECT:	BPC	DATE:	07/02/15	DESIGNED BY:	
CHECKED BY:		DATE:		PLANNING:	
SCALE:		QUANTITY / PER ASSY:		MANUFACTURED:	
MATERIAL SPECIFICATION:		MATERIAL:		SEE NOTE	
DWG NUMBER:		SIZE:	B	REV:	1 OF 1
				SHEET:	