ALDCBS1X8

Amplified 1x8 GPS Splitter
Technical Product Data

Features

- **Amplitude Balance**

  |J1-J8| < 1.0dB

- **Extremely Flat Group Delay**

  Less than 1ns variation

- **Amplifier Gain 14dB 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-J8) < 1.0°

  Special Configurations Available By Request

Description

The ALDCBS1X8 GPS Amplified Splitter is a one input, eight 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 without external power, Output 1 (J1) passes DC from the connected GPS device through the splitter to the input (antenna port), allowing the GPS receiver to power both an active antenna and the splitter's internal amplifier. The other RF outputs (J2-J8) are DC blocked and loaded with 200 resistors to simulate the antenna current draw to prevent false antenna alarm faults. Please 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, TA = 25 ^{0} C

Parameter	Conditions	Min	Typ	Max	Units
Freq. Range	Ant – Any Output, Unused Outputs - 50Ω	1.1		1.7	GHz
In/Out Imped. (1)	Ant, J1, J2, J3, J4, J5, J6, J7, J8		50		Ω
Gain (L1)	Any Output, Unused Outputs - 50Ω	13.0	14.0	15.0	dB
Input SWR	All ports - 50Ω			2.0:1	-
Output SWR	All ports - 50Ω			1.5:1	-
Noise Figure	Ant – Any Output, Unused Outputs - 50Ω		3.8	4.3	dB
Gain Flatness	| L1 – L2 | ; Ant – Any Output, Unused Outputs - 50Ω		0.5	1.5	dB
Amplitude Balance	| J1 – J2 | ; Ant – Any Output, Unused Outputs - 50Ω			1.0	dB
Phase Balance	Phase (J1 – J2) ; Ant – Any Output, Unused Outputs - 50Ω			1.0	deg
Isolation	Adjacent Ports, Ant - 50Ω (see plots)	15	20	25	dB
Group delay Flatness	τd,max - τd,min : Ant – J1, J2 - 50Ω ; Ant – J2, J1 - 50Ω			1	ns
Req. DC Input V.	Non-Network Configuration, DC Input on J1	3.6		15	Vdc
Pı dB	Output Power 1dB Gain Compression (f=1.5GHz)		-38		dBm
Current Draw	Amplifier Current Draw, All ports - 50Ω (typical at 5V)		22		mA

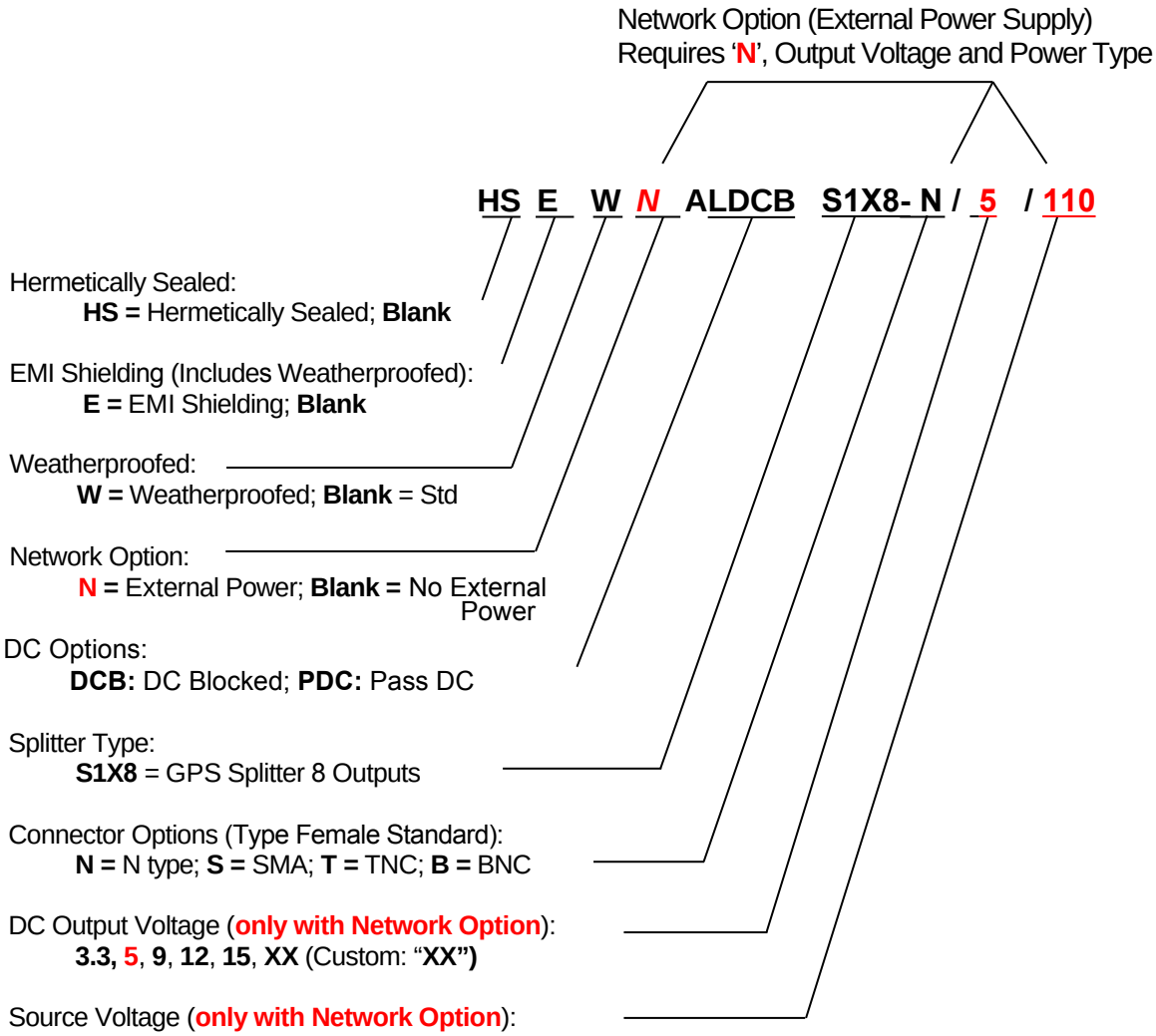
Available Options

Network Power Supply		
Source Voltage Options	VOLTAGE INPUT	STYLE
	110VAC	Transformer (Wall Mount)
	220 VAC	Transformer (Wall Mount)
	240 VAC (United Kingdom)	Transformer (Wall Mount)
	Input DC Voltage 9-32 VDC	Mil DC Connector (includes mate)
Output Voltage Options (1)	DC VOLTAGE OUT	MAX CURRENT OUT FOR CORRESPONDING Vout(1)
	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-J8/Output 2-8 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	
DC Blocked	Any or all ports 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). T_A = +50^{o}C. Assuming Source of 110V or 220V Wall Mount Transformer. In general, maximum output current can be determined by:

$$Iout \leq 2.9 / (V_{sourceDC} - V_{out})\ A$$

Part Configuration



(Military DC Mating Connector is included standard with the MC power option)

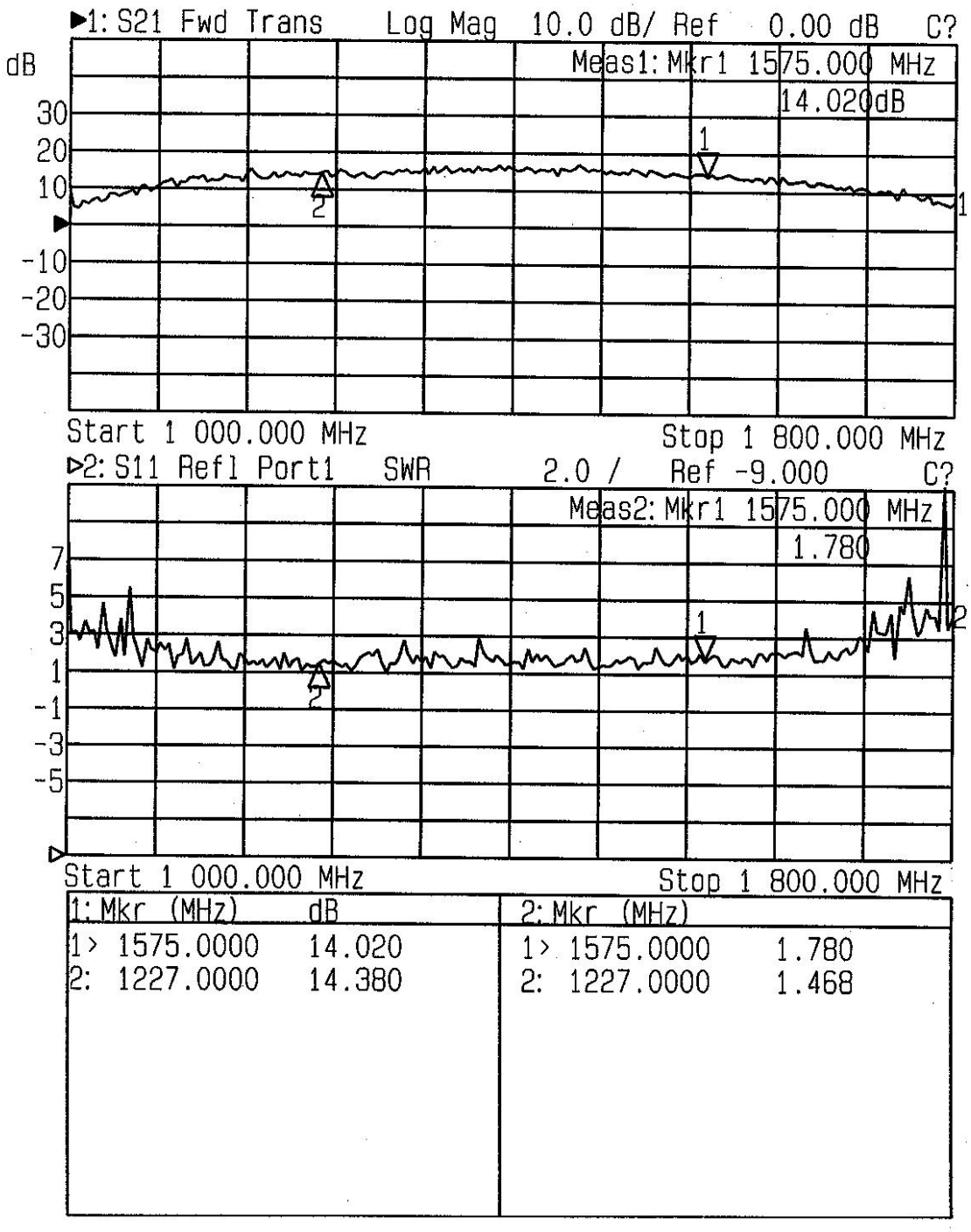
When no external power supply option (AC or DC) is selected, Output 1/J1 is Pass DC standard. Whenever an external power supply option is selected, all outputs are DC blocked standard.

(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:

ALDCBS1X8 (Standard Gain)

Input SWR (Ant. Port) and Frequency Response: Ant. To J1-J8) (Typical, type N connectors):



Mechanical

All Measurements are done without connectors

Dimensions

Height: 1.3"
Length: Body 4.5" Base Plate: 5.25"
Width: 2.5"

Weight: 11.1oz (314.7 grams)
Weight is with housing, lid and base no connector. Connector type can add 1-3oz

Operating Temp. Range: -40^{O} to + 75^{O}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