



ALDCBS1X8

Technical Product Data

Features

- **Amplifier Gain of 14dB**
Gain \geq 13dB
- **Extremely Flat Group Delay**
Less than 1ns variation
- **Phase Matched Outputs**
Phase (J1 – J2) $<$ 1.0°

Description

The ALDCBS1X8 GPS Amplified Splitter is a one input, eight output device with 13dB minimum gain. The frequency response covers the GPS L1 & L2 bands with excellent gain flatness. In the normal configuration, one of the splitter RF outputs (J1) passes DC from the connected GPS receiver through the splitter to the antenna, allowing the GPS receiver to power both the antenna and the splitter's amplifier. The other RF outputs (J2, J3, J4, J5, J6, J7 and J8) are DC loaded with 200Ω resistors to simulate antenna current draw to prevent antenna fault readings from connected GPS receivers.

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

Parameter	Conditions	Min	Typ	Max	Units
Freq. Range	Ant – Any Output, Unused Outputs - 50Ω	1.1		1.7	GHz
In/Out Imped.	Ant, J1, J2, J3, J4, J5, J6, J7, J8		50		Ω
Gain	Ant–Any Output, Unused Outputs- 50Ω	13	14.5	16.5	dB
Input SWR	All ports - 50Ω			2.0:1	-
Output SWR	All ports - 50Ω			1.8:1	-
Noise Figure	Normal Config., Ant – Any Output, Unused Outputs - 50Ω		3.8	4.3	dB
Gain Flatness	L1 – L2 ; Ant – Any Output, Unused Outputs - 50Ω		0.5	1	dB
Amplitude Ballance	J1 – J2 ; Ant – Any Output, Unused Outputs - 50Ω			0.5	dB
Phase Ballance	Phase (J1 – J2) ; Ant – Any Output, Unused Outputs - 50Ω			1.0	deg
Isolation	Normal Config., Adjacent Ports, Ant - 50Ω (see plots)	10			dB
Group delay Flatness	$\tau_{d,max} - \tau_{d,min}$: 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
P _i dB	Output Power @ 1dB Gain Compression (f = 1.5GHZ)		-2.0		dBm
Current ⁽¹⁾	Amplifier Current Draw, All ports - 50Ω			15	mA

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

Hi-Isolation Option Specifications

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

Parameter	Conditions	Min	Typ	Max	Units
Freq. Range	Ant – Any Output, Unused Outputs - 50Ω	1.1		1.7	GHz
In/Out Imped.	Ant, J1, J2, J3, J4, J5, J6, J7, J8		50		Ω
Gain	Any Output, Unused Outputs - 50Ω	3	4.5	6.5	dB
Input SWR	All ports - 50Ω			2.0:1	-
Output SWR	All ports - 50Ω			1.3:1	-
Noise Figure	Ant – Any Output, Unused Outputs - 50Ω		4.0	4.5	dB
Gain Flatness	L1 – L2 ; Ant – Any Output, Unused Outputs - 50Ω		0.5	1	dB
Amplitude Balance	J1 – J2 ; Ant – Any Output, Unused Outputs - 50Ω			0.5	dB
Phase Balance	Phase (J1 – J2) ; Ant – Any Output, Unused Outputs - 50Ω			1.0	deg
Isolation	Adjacent Ports, Ant - 50Ω (see plots)	35			dB
Group delay Flatness	$\tau_{d,max} - \tau_{d,min}$: 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
P _i dB	Output Power 1dB Gain Compression (f=1.5GHz)		-2.0		dBm
Current (1)	Amplifier Current Draw, All ports - 50Ω			15	mA

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

Available Options

Network Power Supply		
Source Voltage Options	VOLTAGE INPUT	
	110VAC	Transformer (Wall Mount)
	220 VAC	Transformer (Wall Mount)
	240 VAC (United Kingdom)	Transformer (Wall Mount)
	Input DC Voltage 9 - 32 VDC	Military Style Connector
Output Voltage Options ⁽¹⁾	DC VOLTAGE OUT	
	MAX CURRENT OUT FOR CORRESPONDING V _{out} ⁽²⁾	
	5 V	110mA
	7.5V	130mA
	9V	140mA
	12V	170mA
	15V	210mA
Custom	TDB	
Output Port Isolation Options		
Isolation Options	Normal Isolation, 10dB min. Output Port – to – Output Port	
	High Isolation, 35dB min. Output Port – to – Output Port	
Pass/Block DC Options		
Pass DC ⁽¹⁾	All Ports Pass DC	
DC Blocked ⁽¹⁾	Jx (x=2...8) is DC blocked, Pass DC from J1 to ANT.	
RF Connector Options		
Connector Options	CONNECTOR STYLE	
	CHARGE	
	Type N	NC
	Type SMA	NC
	Type TNC	NC
Type BNC	NC	

(1). With Network Option, any RF port (input or output) can be DC blocked or can pass the network DC voltage.

Part Number

N HI AL DCB S1X8- S / 5 / 110

Network Option:
N = Network Option; **Blank** = No Network

Isolation Option:
HI = Hi Isolation Option; **Blank** = Normal

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

Connector Options:
N = N type; **S** = SMA; **T** = TNC; **B** = BNC

DC Output Voltage:
3.3, 5, 7.5, 9, 12, 15, CXX (Custom: "XX" denotes desired V)

Source Voltage:
110 -Transformer, **220** – Transformer, **240** – Transformer, **MC** – Military DC Connector (User supplies 9-32 VDC)

Mechanical

Dimensions:

Height: 1.3"

Length (not including connectors) Body: 4.5"
Base Plate: 5.25"

Width (not including connectors): 2.5"

Weight:

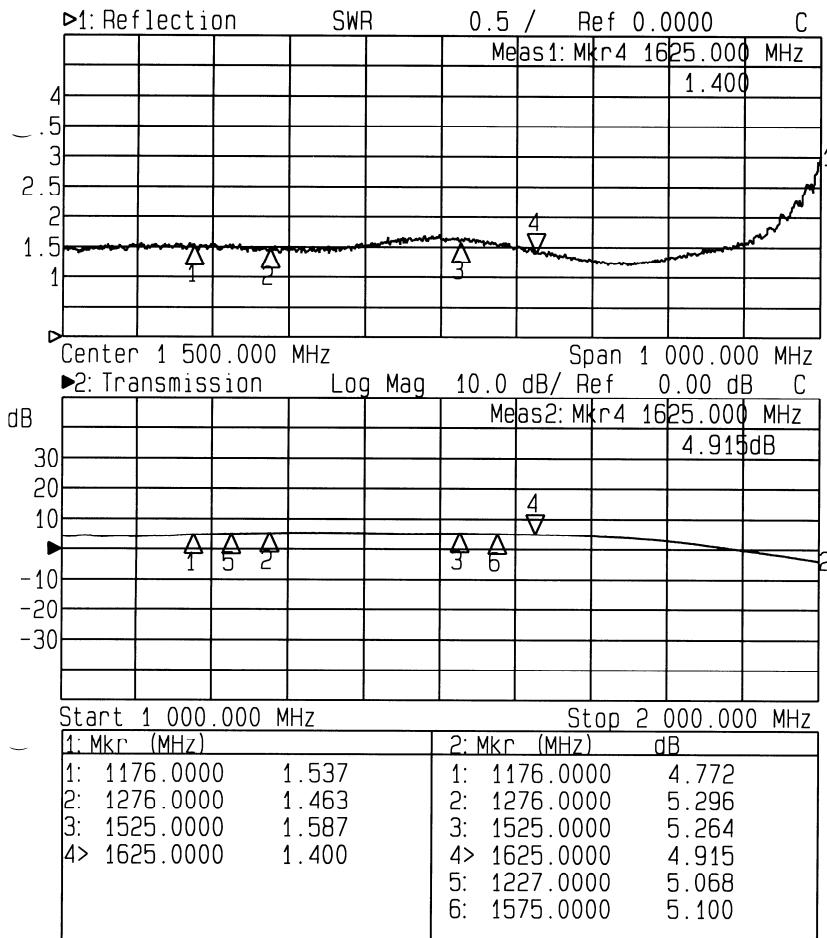
16.2 oz. (459 grams)

Operating Temp. Range: -40° to + 75°C

Performance

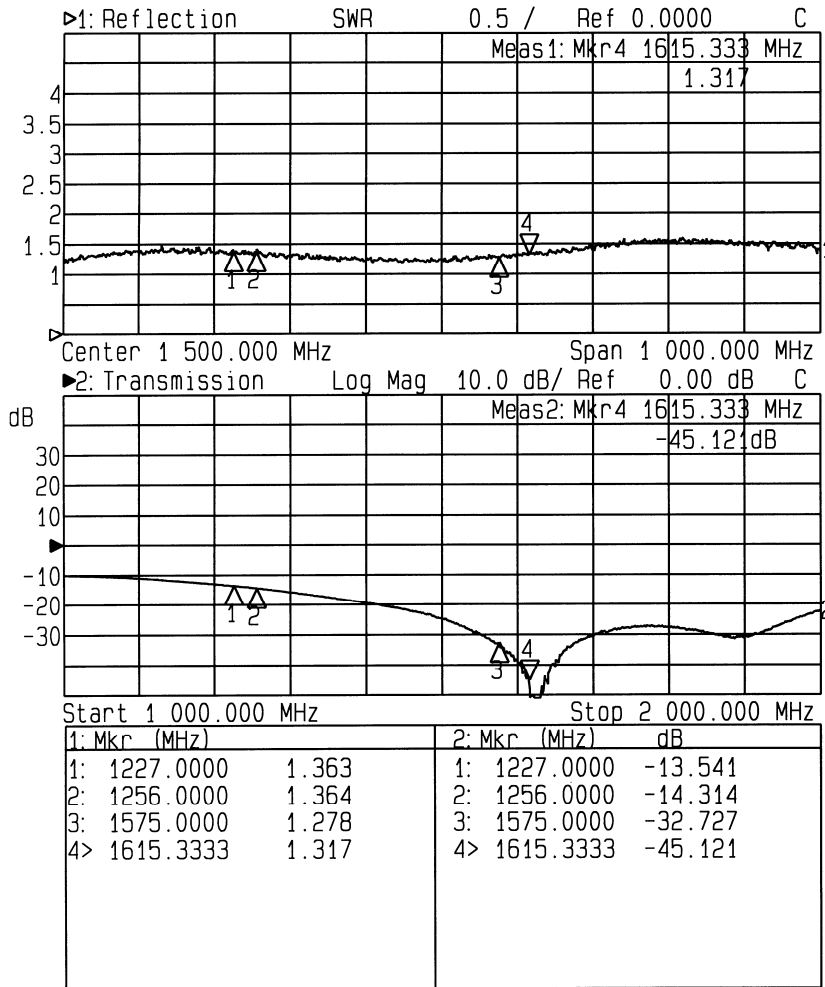
ALDCBS1X8 (Normal Output Isolation Option):

Input SWR (Ant. Port) and Frequency Response: Ant. To JX (X=1...8) (Typical, type N connector):



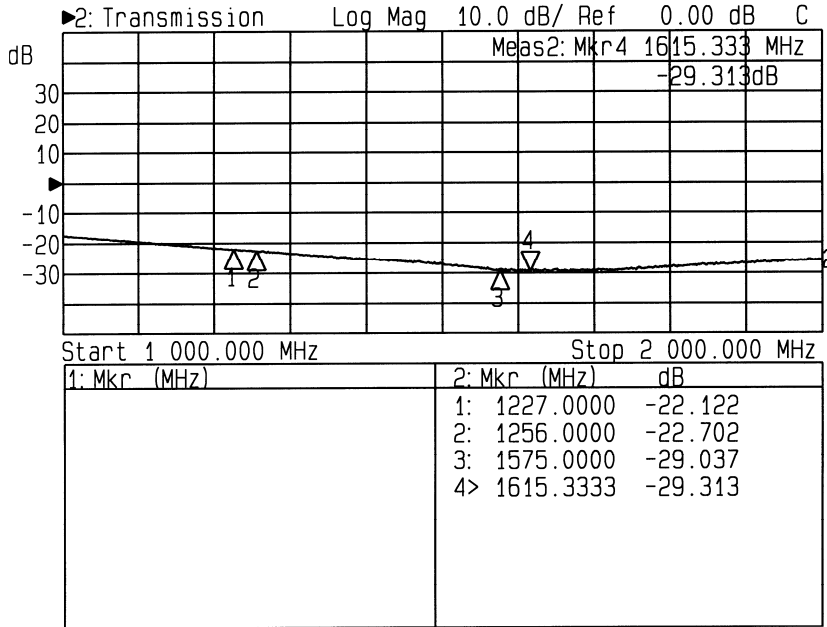
ALDCBS1X8 (Normal Output Isolation Option) (continued):

Output SWR JX (X=1...8) and Adjacent Output Isolation (J1-J3, J2-J4, etc) (Typical, type N connectors):



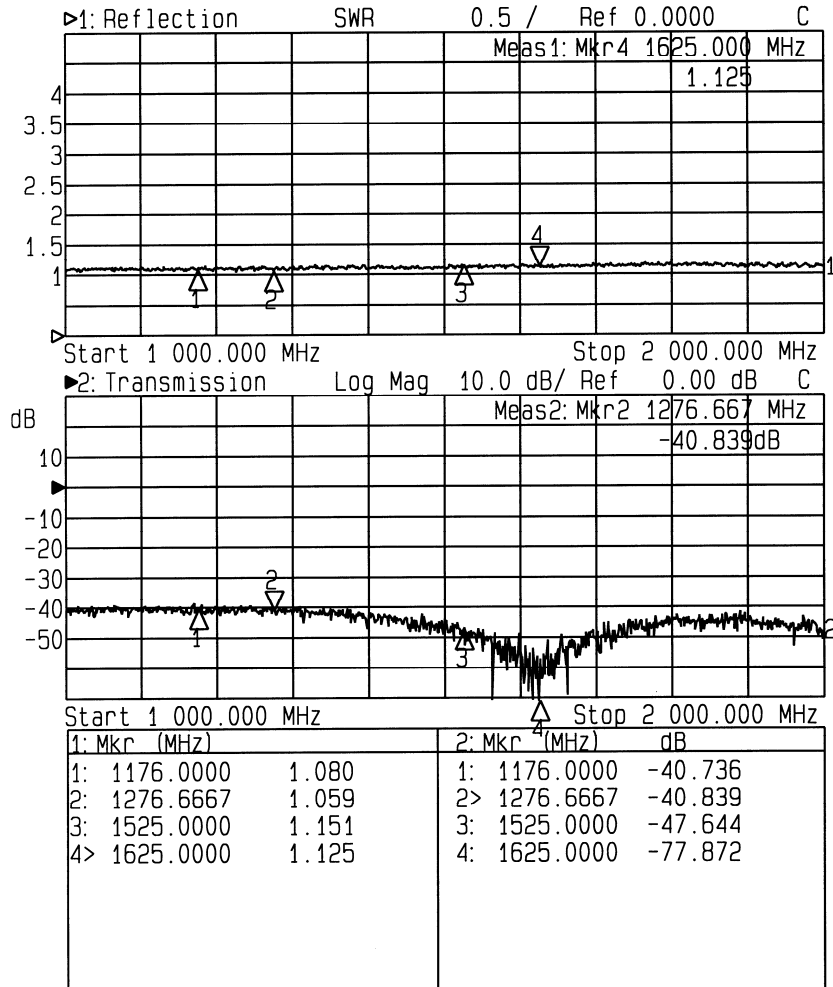
ALDCBS1X8 (Normal Output Isolation Option) (continued):

Opposite Output Isolation (J1-J2,J3-J4, etc) (Typical, type N conn.):



HIALDCBS1X8 (Hi Output Isolation Option) (continued):

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



ALDCBS1X8 (Hi Output Isolation Option) (continued):

Opposite Output Isolation (J1-J2, J3-J4) (Typical, type N connectors):

