



# LDCBS1X4

## Technical Product Data

### Features

- **Excellent Gain Flatness**  
 $|L1 - L2| < 0.5\text{dB}$ ,
- **Extremely Flat Group Delay**  
 Less than 1ns variation
- **Phase Matched Outputs**  
 $\text{Phase (J1 - J2)} < 1.0^\circ$

### Description

The LDCBS1X4 GPS Splitter is a one input, four output device based on the Wilkinson splitter design. 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. The other RF outputs (J2, J3, and J4) are DC loaded with a 200Ω resistor to simulate antenna current draw for receivers on those ports.

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
Input/Output Impedance	Ant, J1, J2, J3, J4		50		Ω
Input SWR	All ports - 50Ω			1.8:1	-
Output SWR	All ports - 50Ω			1.5:1	-
Insertion Loss	Ant – Any Output, Unused Outputs - 50Ω	-8.0	-8.5	-9.0	dB
Gain Flatness	$ L1 - L2 $ ; Ant – Any Output, Unused Outputs - 50Ω			0.5	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 Opposite Ports: Ant - 50Ω	15 22			dB
Group delay Flatness	$\tau_{d,max} - \tau_{d,min}$ : Ant – J1, J2 - 50Ω; Ant – J2, J1 - 50Ω			1	ns

## Available Options

<b>Network Power Supply</b>		
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	Military Style Connector
Output Voltage Options <sup>(1)</sup>	DC VOLTAGE OUT	MAX CURRENT OUT FOR CORRESPONDING Vout <sup>(2)</sup>
	5 V	120mA
	7.5V	140mA
	9V	150mA
	12V	180mA
	15V	220mA
	Custom	TDB
<b>Pass/Block DC Options</b>		
Pass DC <sup>(1)</sup>	All Ports Pass DC	
DC Blocked <sup>(1)</sup>	J2, J3, J4 are DC blocked, Pass DC from J1 to ANT.	
<b>RF Connector Options</b>		
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.

(2) T<sub>A</sub> = +50°C. Assuming Source of 110V or 220V Wall Mount Transformer. In general, maximum output current can be determined by:

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

## Part Number

**N L DCB S1X4- S / 5 / 110**

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

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

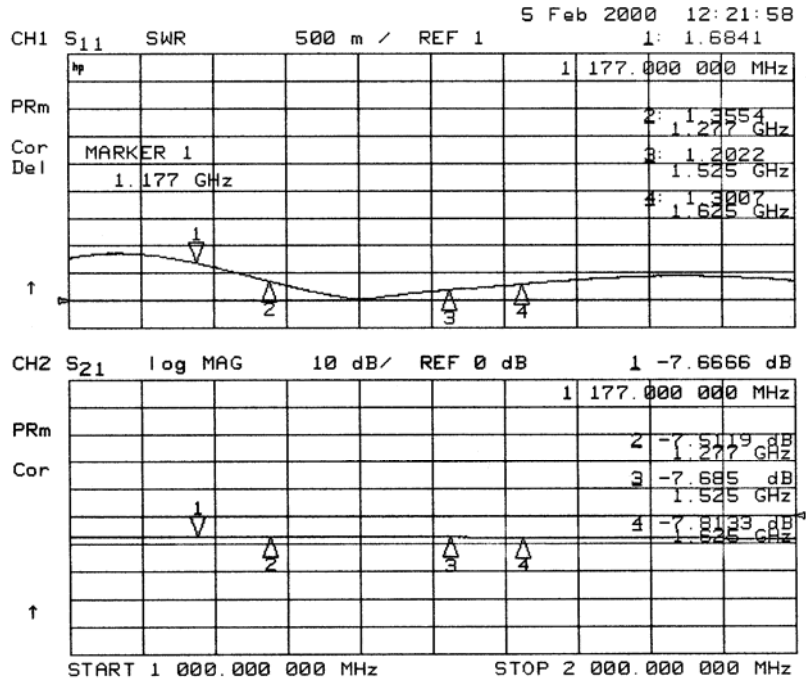
Connector Options:  
**N** = N type; **S** = SMA; **T** = TNC; **B** = BNC

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

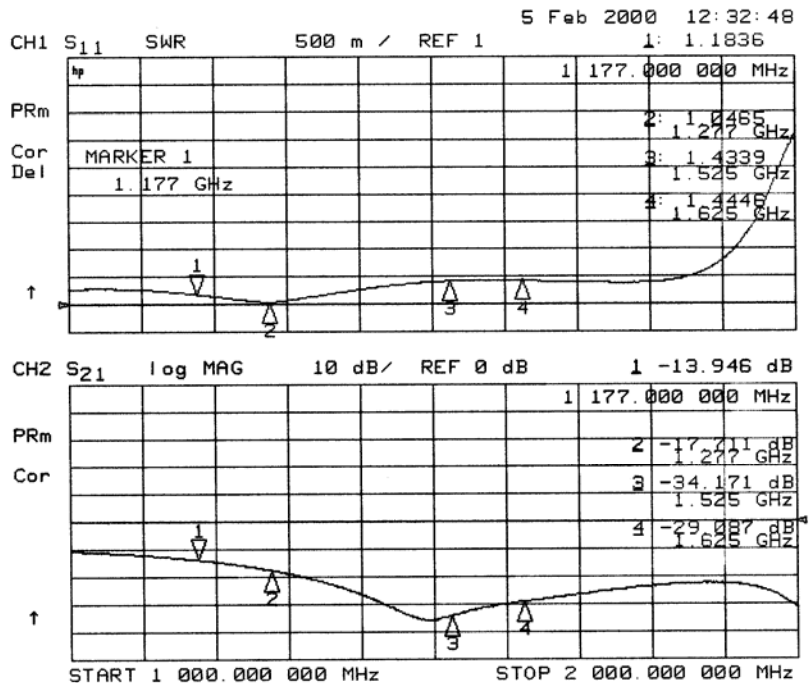
Source Voltage:  
**110** -Transformer, **220** – Transformer, **240** – Transformer, **MC** – Military Conn. (User supplies DC Voltage)

## Performance

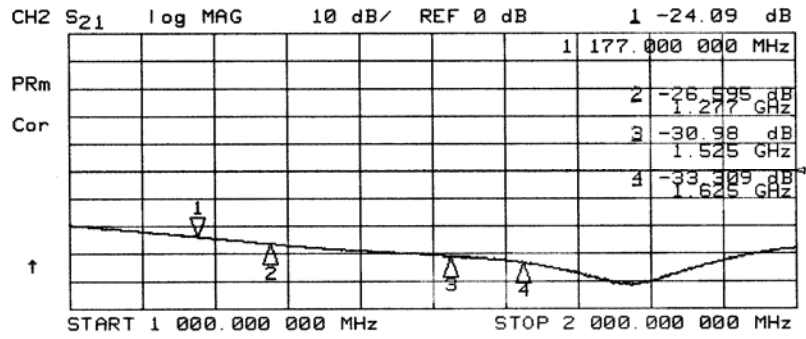
Input SWR: Ant. J1, J2 -50Ω and Freq. Response: Ant. To J1, J2, J3, and J4 (Typical, type N connector):



Output SWR: Any output: all ports - 50Ω and Adjacent Port Isolation (Typical, type N connector):



Opposite Port Isolation (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:

11.8 oz. (340 grams)

Operating Temp. Range: -40° to +75°C