



# ***RNALDCBS1X8***

## ***Rack Mount Amplified 1X8 GPS Splitter Technical Product Data***

### Features

- **Excellent Gain Flatness**  
[J1-J8] < 1.5dB
- **Extremely Flat Group Delay**  
Less than 1ns variation
- **Amplified 14dB gain typical**  
Custom Gain Available by request
- **High Isolation Option**  
>35dB of isolation between adjacent output ports
- **DC Blocked Outputs feature 200 ohm loads**  
Prevents false antenna alarm faults
- **Phase Matched Outputs**  
Phase (J1 – J8) < 1.0°
- **LED Power Light**
- **48vdc Option Available**
- **Durable Rugged Standard 1U Chassis**
- **Special Configurations available upon request**

### Description

The RNALDCBS1X8 Rack Mount Amplified 1X8 GPS Splitter (GNSS Splitter) is a one input, eight output device. The frequency response covers the entire L-band (all GPS/GNSS frequencies) with excellent gain flatness. In the normal configuration, the splitter is powered by an external DC source that supplies power to the splitter's internal amplifier and outdoor antenna. The outputs are DC blocked and loaded with 200Ω resistors to simulate the antenna current draw to prevent false antenna alarm faults. Product is ideal suited for timing and testing applications where the GPS/GNSS signal is required by as many as 8 devices simultaneously.

Electrical Specifications, T<sub>A</sub> = 25<sup>0</sup>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	16.0-	dB
Gain High Isolation	Ant – Any Output, Unused Outputs - 50Ω	3.0	4.0	5.5	dB
Input SWR	All ports - 50Ω			2.0:1	-
Output SWR	All ports - 50Ω			1.5:1	-
Noise Figure	Normal Config., Ant – Any Output, Unused Outputs - 50Ω		3.6	4.1	dB
Gain Flatness	L1 – L2   ; Ant – Any Output, Unused Outputs - 50Ω		1.0	1.5	dB
Amplitude Balance	J1 – J8   ; Ant – Any Output, Unused Outputs - 50Ω		1.0	1.5	dB
Phase Balance	Phase (J1 – J8) ; Ant – Any Output, Unused Outputs - 50Ω			1.0	deg
Isolation	Hi Isolation Option, Adjacent Ports, Ant - 50Ω		35	40	dB
Group delay Flatness	τ <sub>d,max</sub> - τ <sub>d,min</sub> : Ant – J1 - J8, 50Ω			3	ns
Current	Amplifier Current Draw, All ports - 50Ω (typical @ 5v)			15	mA

Available Options

Network Power Supply		
Source Voltage Options	VOLTAGE INPUT	
	110VAC	Transformer (Wall Mount)
	220 VAC (2 Prong Euro)	Transformer (Wall Mount)
	240 VAC (3 prong UK)	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 V <sub>out</sub> <sup>(2)</sup>	
	3.3 V	110mA
	5V	130mA
	9V	140mA
	12V	170mA
	15V	210mA
Custom	TDB	
<b>Output Port Isolation</b>		
	Standard Isolation 20dB typical; High Isolation 35dB minimum	
<b>Pass/Block DC Options</b>		
DC Blocked <sup>(1)</sup>	All Outputs DC Blocked with any external power option	
<b>RF Connector Options</b>		
Connector Options	CONNECTOR TYPE (Female Std)	
	Type N, TNC, SMA and BNC	No Charge

(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:

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

## Part Number Configuration

Network Option (External Power Supply)  
Requires 'N', Output Voltage and Power Type

**N RM HI A LDCB S1X8 - N / 5 / 110**

Network Option:

**N** = External Power; **Blank** = No External Power

Rack Mount:

**RM** = Rack Mount Chassis 1U (1.75")

High Isolated Option:

**HI** = High Isolation Option (0dB gain typical)

Amplified:

**A** = Amplified 14dB gain typical

Loaded DC Blocked:

**LDCB** = 200 ohm loaded DC blocked outputs

Splitter 1X8:

**S1X8** = Splitter 8 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)

**MC+/-48** - Military DC Connector (User may supply +/-36-72VDC)

*Example Part Number: NRMALDCBS1X8-N/5/MC+/-48*

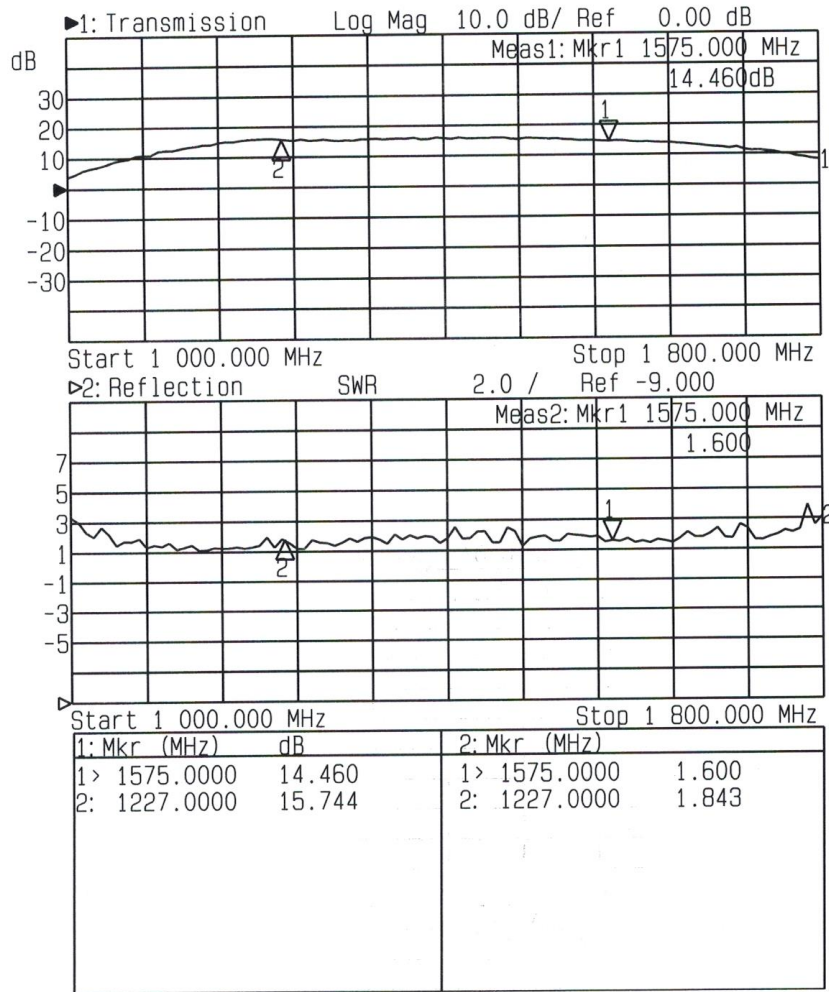
When no external power supply option (AC or DC) is selected, Output 1/J1 is Pass DC standard.  
Whenever an external power supply option is selected, all outputs are DC blocked standard.

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

Performance:

**NRMALDCBS1X8** (Standard Gain)

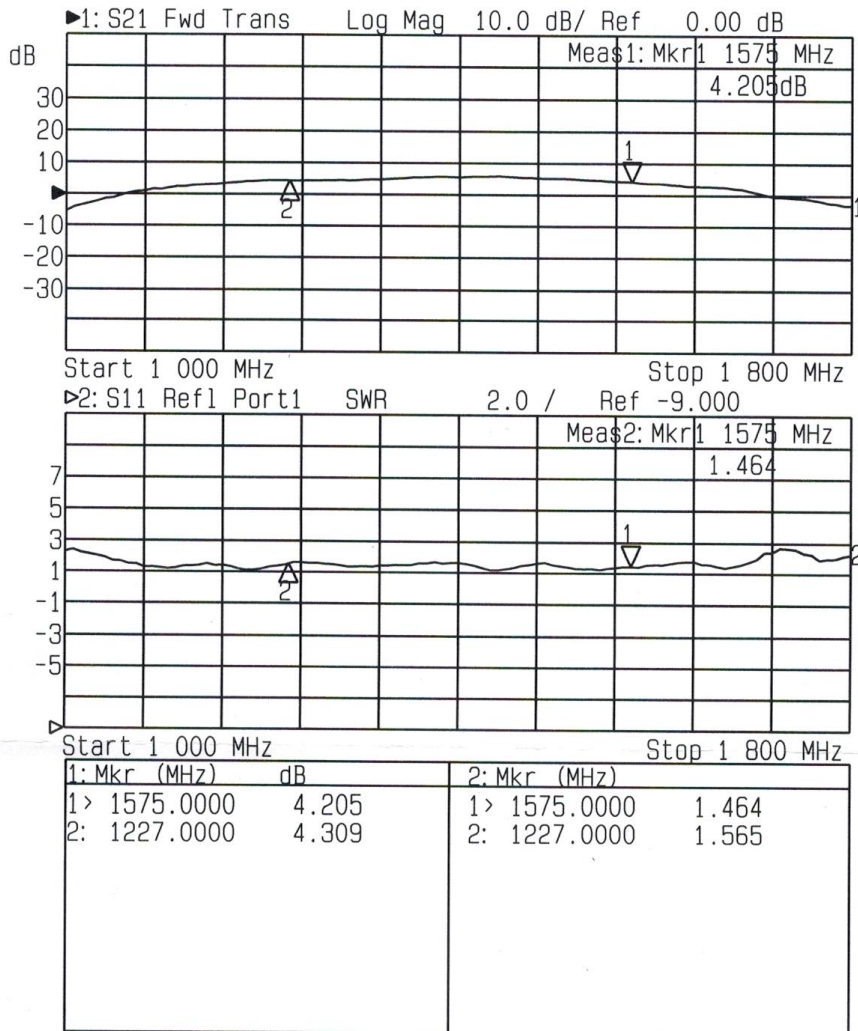
Input SWR (Ant. Port) and Frequency Response: Ant. To J1-J8) (Typical, type N connectors):



Performance:

**NRMHIALDCBS1X8** (High Isolation Typical Gain)

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



## Mechanical

Dimensions: Height: 1.75"

Length: 8.5"

Width: 17.0"

Weight: approximately 12 lbs.

Operating Temp. Range: -40° to + 75°C