

Military Spec. GPS Antenna Splitter



The **MIL-NLDCBS1X3 GPS Antenna Splitter** from GPS Networking, Inc. is a one input, three output device based on the Wilkinson splitter design. The frequency response covers the GPS L1 & L2 bands with excellent gain flatness. The unit is completely MIL Qualified for use in Helicopters. The unit has a 28VDC input which is regulated down to 5VDC to power the GPS Antenna. The 5VDC is sent up to the antenna via the center conductor on the antenna port TNC Connector. The RF outputs (J1, J2, J3) are DC loaded with a 200Ω resistor to simulate antenna current draw for receivers on those ports. The J1 and J2 ports are TNC connectors and the J3 port is an N-type Connector. The J3 port has an 8db attenuator built into it, that attenuation can be removed or adjusted to any level you require. The splitter is actually a 1X4 splitter with one output loaded down internally.

Military qualifying standards:

EMI

MIL-STD 461/462 (EMI): CE01, CE04, CS01, CS02, CS06, RE02, RS02, RS03 @ 200 Volts/Meter from 14Khz to 40Ghz

Environmental

MIL-STD 810D (Environmental):
 Vibration (514.3, Proc. 1)
 Category 6 (helicopters)
 Rain (506.2 Proc. 1)
 Humidity (507.2, Proc. 2, cycle 4)
 Fungus (508.3, Proc. 1)
 Salt/Fog (509.2)
 Explosive Atmosphere (511.2, Proc. 1)
 Bench Handling Shock (516.3 Proc 6)
 Temp/Altitude (520.0 Proc 3)
 Acceleration (513.3, level = 6G's)
 Gunfire Vibration (519.3)

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

Parameter	Conditions	Min	Typ	Max	Units
Frequency Range	Ant – Any Output, Unused Outputs - 50Ω	1.1		1.7	GHz
Input/Output Impedance	Ant, J1, J2, J3, J4		50		Ω
Gain	Normal Configuration Ant–Any Output, Unused Outputs - 50Ω	17	18.4	19	dB
	Hi Isolation Config, Ant–Any Output, Unused Outputs - 50Ω	1.5	3.0	4	dB
Input SWR	All ports - 50Ω			2.0:1	-
Output SWR	All ports - 50Ω			2.0:1	-
Insertion Loss	Ant – J1 or J2 - 50Ω Loss to J3 add 8dB attenuation or if level attenuation specified in Order.		-7.6	-8.2	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	15			dB
	Opposite Ports, Ant - 50Ω	22			dB
Group delay Flatness	$\tau_{d,max} - \tau_{d,min}$; Ant – J1, J2 - 50Ω ; Ant – J2, J1 - 50Ω			1	ns

Mechanical

Dimensions	
Height	32,0 mm
Width (not including connectors)	57,5 mm
Length (not including connectors)	57,5 mm
Length Base Plate	76,5 mm
Weight	286 g