

20 TO 40 GHz Ultra-Wideband Block Downconverter

DC Series Model DC-20/40G



The DC-20/40G is a high-performance single conversion inverting ultra-wideband block downconverter system. The system converts an input signal in a 20–40 GHz band to an output of 3.2–16.8 GHz, and allows an input of 0.5–20 GHz to pass through with no conversion. This block downconverter is designed to be used with MITEQ's Model DC-0.5/20G ultra broadband 2 Hz resolution tunable downconverter to extend the input receive band to 0.5–40 GHz.

Features

- 20 to 40 GHz RF input
- Very low phase noise
- Extends input receive bands of DC-0.5/20G to 40 GHz

Specifications

Input characteristics		
Input frequency	20–40 GHz	
Level	to -35 dBm fully compliant	
Impedance	50 ohms	
Input VSWR	2.0:1 typical, 2.5:1 maximum	
Noise figure	15 dB typical, 18 dB maximum	
Output characteristics		
	RF Input Bands	RF Output Bands
	20–26.5 GHz	10.3–16.8 GHz
	26.5–40 GHz	3.2–16.7 GHz
	0.5–20 GHz	Pass-Thru
Power output (1 dB compression)	-15 dBm	
Impedance	50 ohms	
Output VSWR	2.0:1 typical, 2.2:1 maximum	
Transfer characteristics		
Conversion type	Single	
Frequency sense	Inverting	
Gain	0 ±2 dB	
Gain flatness	1.4 dB maximum in any 500 MHz slot	
Inband spurious	-55 dBc typical	
Image rejection	55 dB typical	
LO leakage	-70 dBm maximum	
Single sideband phase noise		
Phase noise	Offset from carrier	dBc/Hz (typ.)
	100 Hz	-62 dBc
	1 kHz	-87 dBc
	10 kHz	-98 dBc
	100 kHz	-103 dBc
	1 MHz	-123 dBc

General Specifications

Primary Power Requirements

Voltage..... 90–250 VAC
Frequency..... 47–63 Hz

Physical

Weight 19 pounds (8.62 kg) nominal
Dimensions..... 19" [482.60mm] x 1.75" [44.45mm] x 22" [558.80mm]
Rear panel connectors
RF IN 2.92 mm female
RF OUT SMA female
Remote interface DEM-9S for RS422/485/232
Summary alarm DE-9P
External reference input BNC female
Reference output..... BNC female
Opto interface to DC-8/20G and
DC-0.5/20G 10-pin header with ejector

Environmental

Operating
Temperature 0 to 50°C
Full compliance temperature range..... 10 to 40°C
Relative humidity Up to 95% at 30°C, noncondensing
Atmospheric pressure..... Up to 10,000 feet
Nonoperating
Temperature -50 to +70°C
Relative humidity Up to 95% at 40°C, noncondensing
Atmospheric pressure..... Up to 40,000 feet
Shock and vibration..... Rough handling

Typical Rear Panel View



Ordering Information

Specify by part number: DC-20/40G

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