



## DC SERIES

Model DC-20/40G

# 20 TO 40 GHz ULTRA-WIDEBAND BLOCK DOWNCONVERTER



## FEATURES

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

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.



# SPECIFICATIONS

## INPUT CHARACTERISTICS

Input frequency .....	20–40 GHz
Level.....	to -35 dBm operational
Impedance .....	50 ohms
Input VSWR .....	2.0:1 typical, 2.5:1 maximum
Noise figure .....	15 dB typical, 18 dB maximum

## OUTPUT CHARACTERISTICS

<u>RF Input Bands</u>	<u>RF Output Bands</u>
20–26.5 GHz	10.3–16.8 GHz
26.5–40 GHz	3.2–16.7 GHz
0.5–20 GHz	Pass-Thru
Output power (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

<u>Phase noise .....</u>	<u>Offset from carrier</u>	<u>dBc/Hz (typ.)</u>
	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

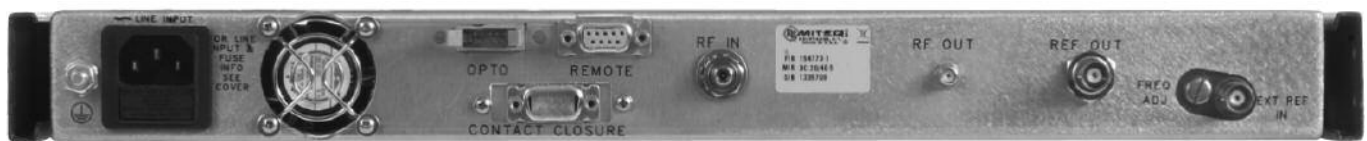
### PHYSICAL

Weight ..... 19 pounds nominal  
Overall dimensions ..... 19" x 1.75" x 22" maximum  
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 w/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

## REAR PANEL VIEW



## ORDERING INFORMATION

Specify by part number: DC-20/40G



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