MITEQ

MODELS

DCC-50/1000-140/180
DCC-140/180-50/1000

SYNTHESIZED, DUAL-CONVERSION UPCONVERTER AND DOWNCONVERTER

High Performance

The DCC-50/1000-140/180 and DCC-140/180-50/1000 are high performance synthesized, dual-conversion up- and downconverter systems. The DCC-50/1000-140/180 accepts a 50 to 1000 MHz spectrum and converts up or down any ±20 MHz spectrum in 1 MHz steps to 160 ±20 MHz. The DCC-140/180-50/1000 accepts 160 ±20 MHz spectrum and converts up or down to anywhere from 50 to 1000 MHz in 1 MHz steps. The systems can be provided with fixed or programmable gain and RF mute. Signal monitors for system input and output and local oscillators are provided at the front panel. All functions are local and remote programmable.

FEATURES

- Local or remote control
- Low intermodulation distortion
- Low phase noise
- Front panel/remote status monitoring
- Individual and summary alarm contact closure outputs
- 32 complete parameters setting save/recall
- Nonvolatile memory
- Password protection to prevent program tampering

OPTIONS

- Other frequency ranges
- 60 dB output level programming with 1 dB resolution
- RF mute
- Improved group delay

SPECIFICATIONS

SPECIFICATIONS	MODEL NUMBERS DCC-140/180-50/1000	DCC-50/1000-140/180
Input frequency	160 ±20 MHz	70 to 980 ±20 MHz
Output frequency	70 to 980 ±20 MHz	160 ±20 MHz
Gain	11 dB	27–30 dB
P_{1dB}	0 dBm minimum	+10 dBm minimum
IP^3 (out)	+10 dBm minimum	+24 dBm minimum

Note: For other frequency bands, consult factory.

Type ..... Dual conversion
Frequency sense ..... No inversion
Frequency programming ..... 1 MHz step size

INPUT CHARACTERISTICS

Frequency ..... See table above
Impedance ..... 50 ohms
Return loss ..... 15 dB typical

OUTPUT CHARACTERISTICS

Frequency ..... See table above
Impedance ..... 50 ohms
Return loss ..... 15 dB typical
Power output (1 dB compression) ..... See table above
Signal monitor ..... 20 dB below main output (nominal)

TRANSFER CHARACTERISTICS

Gain ..... See table above
Gain slope ..... .03 dB/MHz maximum (±20 MHz)
Gain programming ..... 10 dB, local and remote control
Gain programming step size ..... 1 dB
Image rejection ..... > 70 dB
Level stability ..... ±0.5 dB/day maximum at constant temperature
Noise figure ..... 15 dB maximum at minimum attenuation
Amplitude response ..... ±0.5 dB/±15 MHz typical, ±1 dB maximum
Group delay (±12.5 MHz)
  Linear ..... .1 ns/MHz maximum
  Parabolic ..... .015 ns/MHz^2
  Ripple ..... 1.5 ns peak-to-peak
IP^3 (out) ..... See table above

GENERAL SPECIFICATIONS

SPURIOUS OUTPUTS

Signal related	60 dBc typical, 55 dBc minimum
Signal independent	-80 dBm typical, -70 dBm maximum
LO leakage	-65 dBm typical, -60 dBm maximum
Frequency stability	$\pm 2 \times 10^{-8}$, 0 to 50°C, $\pm 6 \times 10^{-9}$/day maximum (fixed temperature after 24 hour on time)
Phase noise	-55 dBc/Hz typical at 10 Hz offset, -70 dBc/Hz typical at 100 Hz offset, -70 dBc/Hz typical at 1 kHz offset, -80 dBc/Hz typical, -75 dBc/Hz maximum at 10 kHz offset

LOCAL CONTROL

All the system's parameters can be programmed from the front panel

LOCAL ALARMS (LED/LCD display)

Power supply status
LO lock status
LO level alarm

FAULT ALARMS

Dry contacts for DC voltage and LO alarms and user programmable summary alarm

REMOTE INTERFACE

RS422, RS485 and RS232 programmable
All the local controls/alarm functions will be operated/monitored remotely

IF/RF MONITOR PORTS

IF signal
RF LO
IF LO

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PRIMARY POWER REQUIREMENTS

Voltage	90–250 VAC
Frequency	47–63 Hz
Power consumption	130 watts maximum

PHYSICAL

Weight	33 pounds (15 kg) nominal
Overall dimensions	19" x 3.5" x 22" (48.3 cm x 8.98 cm x 55.9 cm) maximum
Rear panel connectors	
RF	SMA female
IF	N female
IF signal monitor	N female
Remote interface	9-pin male, D connector for RS422, RS485 and RS232
Summary alarm	15-pin male, D connector
Front panel connectors	
IF, RF, LO1 and LO2 monitors	SMA female

ENVIRONMENTAL

Operating	
Ambient temperature	0 to 50°C
Relative humidity	Up to 95% at 30°C, noncondensing
Atmospheric pressure	Up to 10,000 feet
Nonoperating	
Ambient temperature	-50 to +70°C
Relative humidity	Up to 95% at 40°C, noncondensing
Atmospheric pressure	Up to 40,000 feet
Shock and vibration	Normal handling by commercial carriers

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