



MODEL: DCC-800/1000-50/1000

TRIPLE INPUT BAND

MODEL: DCC-50/1000-800/1000

TRIPLE OUTPUT BAND

SYNTHESIZED, TRIPLE BAND DUAL-CONVERSION UPCONVERTER AND DOWNCONVERTER

High Performance



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

The DCC-800/1000-50/1000 and the DCC-50/1000-800/1000 are high performance synthesized, triple band dual-conversion up- and downconverter systems. The DCC-800/1000-50/1000 accepts a 900 ± 25 , 50 or 100 MHz spectrum and converts up or down to anywhere from 50 to 1000 MHz in 1 MHz steps. The DCC-50/1000-800/1000 system accepts a 50 to 1000 MHz spectrum and converts up or down any ± 25 , 50 or 100 MHz band in 1 MHz step to center frequency of 900 MHz. The systems can be provided with fixed or programmable gain and mute options. Signal monitors for system input and output and local oscillators are provided at the front panel. All functions are local and remote programmable.

OPTIONS

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

SPECIFICATIONS

SPECIFICATION		MODEL NUMBERS	
		DCC-800/1000-50/1000	DCC-50/1000-800/1000
Input frequency	Band 1	900 $\pm$ 25 MHz	75 to 975 $\pm$ 25 MHz
	Band 2	900 $\pm$ 50 MHz	100 to 950 $\pm$ 50 MHz
	Band 3	900 $\pm$ 100 MHz	150 to 900 $\pm$ 100 MHz
Output frequency	Band 1	75 to 975 $\pm$ 25 MHz	900 $\pm$ 25 MHz
	Band 2	100 to 950 $\pm$ 50 MHz	900 $\pm$ 50 MHz
	Band 3	150 to 900 $\pm$ 100 MHz	900 $\pm$ 100 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
Signal monitor..... -20 dBc (nominal)

OUTPUT CHARACTERISTICS

Frequency..... See table above
Impedance..... 50 ohms
Return loss 15 dB typical
Power output (1 dB compression) See table above

TRANSFER CHARACTERISTICS

Gain..... See table above
Gain slope
 $\pm$ 100 MHz..... .01 dB/MHz maximum
 $\pm$ 50 MHz..... .015 dB/MHz maximum
 $\pm$ 25 MHz..... .03 dB/MHz maximum
Image rejection > 70 dB typical
Level stability $\pm$ 0.5 dB/day maximum at constant temperature
Noise figure 15 dB maximum
Amplitude response..... $\pm$ 0.5 dB typical, $\pm$ 1 dB/ $\pm$ 80 MHz maximum
Group delay
900 $\pm$ 80 MHz (band 1)
Linear1 ns/MHz maximum
Parabolic003 ns/MHz²
Ripple 1.5 ns peak-to-peak
900 $\pm$ 40 MHz (band 2)
Linear1 ns/MHz maximum
Parabolic006 ns/MHz²
Ripple 2.5 ns peak-to-peak
900 $\pm$ 12.5 MHz (band 3)
Linear1 ns/MHz maximum
Parabolic04 ns/MHz²
Ripple 3.5 ns peak-to-peak
IP³ (out) See table above

GENERAL SPECIFICATIONS

SPURIOUS OUTPUTS

Signal related.....	60 dBc minimum from 50–925 MHz, 55 dBc minimum from 925–1000 MHz
Signal independent.....	-80 dBm typical, -70 dBm maximum
LO leakage	-70 dBm typical, -60 dBm maximum
Output harmonics	60 dBc typical, 50 dBc minimum from 50–550 MHz, 70 dBc typical, 60 dBc minimum from 550–1000 MHz
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)
Upconverter mute	60 dB
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 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

SUMMARY ALARM

Dry contacts for DC voltage and LO alarms

REMOTE INTERFACE

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

RF TEST POINTS

IF signal monitor
RF LO monitor
IF LO monitor

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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



100 Davids Drive, Hauppauge, NY 11788
TEL.: (631) 436-7400 • FAX: (631) 436-9219/436-7430
www.miteq.com