

SPECIFICATIONS

Input Frequency (GHz)	Model Number	Step Size (kHz)	Phase Noise Characteristics
3.4 – 4.2	D2-101-1	125	Curve 1
3.4 – 4.2	D2-101-1-1K	1	Curve 1
4.5 – 4.8	D2-102-2	125	Curve 1
4.5 – 4.8	D2-102-2-1K	1	Curve 1
7.25 – 7.75	D2-105	125	Curve 2
7.25 – 7.75	D2-105-1K	1	Curve 2
10.7 – 12.75	D2-108-6*	125	Curve 3
10.7 – 12.75	D2-108-6-1K*	1	Curve 3

* Refer to noise figure specification.

Type	Dual conversion
Tunability	First local oscillator only
Frequency sense	No inversion
Input characteristics	
Frequency	Refer to model number table
Impedance	50 ohms
Return loss	20 dB minimum
Signal monitor	-20 dBc nominal (Option 2A)
LO leakage	-80 dBm maximum
Output characteristics	
Frequency	70 ±2 MHz
Impedance	75 ohms (50 ohms optional)
Return loss	23 dB minimum
Power output (1 dB compression)	+10 dBm minimum
Signal monitor	-20 dBc nominal
Transfer characteristics	
Noise figure	10 dB typical, 12 dB maximum *12 dB typical, 15 dB maximum
Gain	30 dB nominal (higher gain optional)
Image rejection	80 dB minimum
Level stability	
Constant temperature	±0.25 dB/day at constant temperature
Operating temperature range	±1.5 dB typical
Amplitude response	0.3 dB peak-to-peak/4 MHz
Intermodulation distortion (third order)	With two 0 dBm output signals, 40 dBc minimum
Channel-to-channel isolation	50 dB minimum
Channel-to-channel gain tracking	±1.0 dB/day maximum at constant temperature
Channel-to-channel phase tracking	±2°/day maximum at constant temperature
Spurious outputs	
Signal independent	-90 dBm max. -75 dBm max. (Option 16A), -65 dBm max. (Option 16C)
Signal related	65 dBc min. (for converters with RF frequencies below 8.5 GHz), 60 dBc min. (for converters with RF frequencies above 8.5 GHz)
Gain adjustment	30 dB in 0.2 dB steps
Frequency stability	±5 x 10 ⁻⁸ , -30 to +60°C (higher stability options available), ±5 x 10 ⁻⁹ /day typical (fixed temperature after 24 hour on time)
Automatic reference configuration	External 5 or 10 MHz at +4 ±3 dBm. If external reference is below +1 dBm nominal, the converter will automatically lock to the internal reference.

GENERAL SPECIFICATIONS

PRIMARY POWER REQUIREMENTS

Voltage..... 90–250 VAC
Frequency 47–63 Hz
Power consumption 120 W typical

SUMMARY ALARM

Contact closure/open for DC voltage and/or LO alarm
Status alarm readout on remote control bus

PHYSICAL

Converter enclosure Refer to outline drawing
RF connectors SMA female
IF connectors N female
External reference connector BNC female
LNA interface mating connector MS3116F12-8P*
Redundancy interface mating connector MS3116F14-18P*
Status interface mating connector MS3116F12-10S*
Local control (RS232) interface connector MS3116F10-6P*
AC input connector FCI Clipper series CL1M1102*
(Clipper series is interchangeable with MIL-C-5015 and AMP CPC product)

*Note: Unit supplied with mating connector

Converter enclosure weight 30 pounds typical

ENVIRONMENTAL

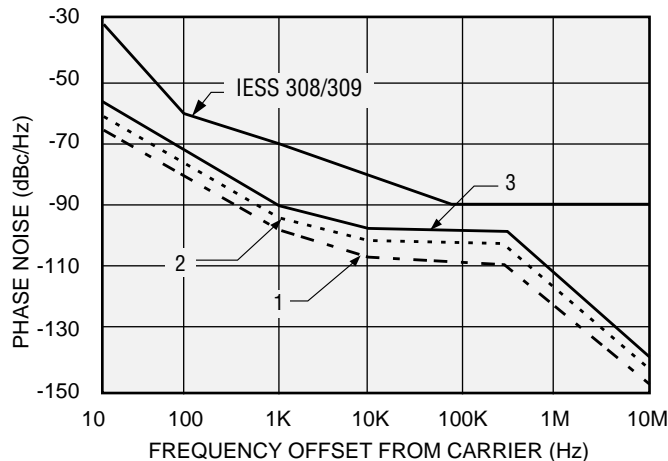
Operating

Ambient temperature -30 to +60°C
Atmospheric pressure Up to 10,000 feet

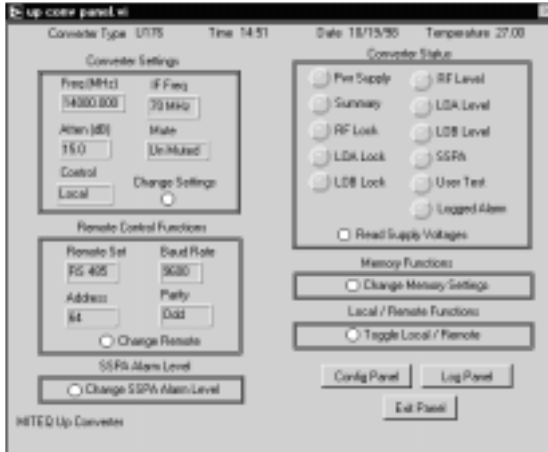
Nonoperating

Temperature -50 to +70°C
Atmospheric pressure Up to 40,000 feet
Shock and vibration Normal handling by commercial carriers

TYPICAL PHASE NOISE CHARACTERISTICS (1.0 Hz BANDWIDTH)



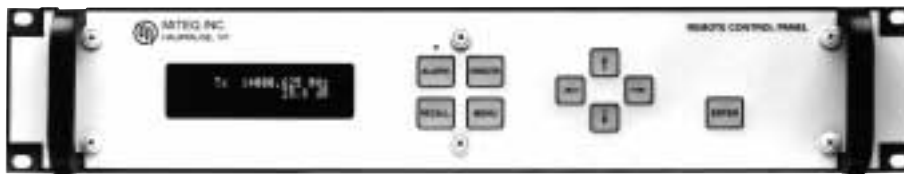
CONTROL ACCESSORIES



Robust software feature set
(supplied as standard)

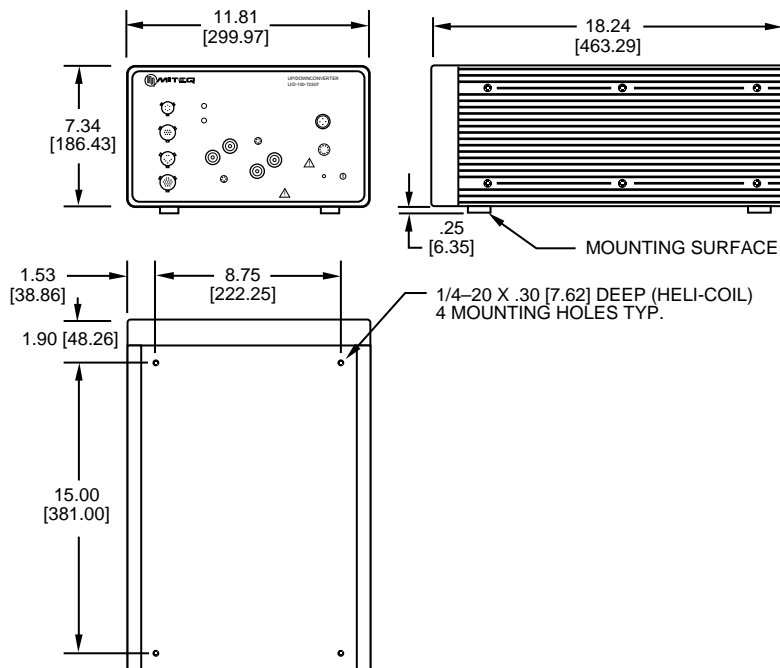


Weather resistant
hand-held control unit
MITEQ Model Number HCT-100
(sold separately)



19" Rack-mount control unit, 2RU
MITEQ Model Number RCT-100
(sold separately)

OUTLINE DRAWING



NOTE: DIMENSIONS IN [] BRACKETS ARE IN MILLIMETERS

OPTIONS

- 2. A.** RF signal monitor (RF connector (SMA) with -20 dBc nominal level).
- 10.** Higher frequency stability reference.
- A.** $\pm 2 \times 10^{-8}$, -30 to +60°C,
5 x 10⁻⁹/day typical (fixed temperature after 24 hour on time).
 - B.** $\pm 1 \times 10^{-8}$, -30 to +60°C,
1 x 10⁻⁹/day typical (fixed temperature after 24 hour on time).
 - C.** $\pm 5 \times 10^{-9}$, -30 to +60°C,
1 x 10⁻⁹/day typical (fixed temperature after 24 hour on time).
- 15.** 50 ohm IF impedance.
- 16.** Higher gain option.
- A.** 45 dB nominal RF/IF gain.
 - C.** 55 dB nominal RF/IF gain.
- Specification of signal independent spurious increases with increase in RF/IF gain (e.g., if without option, specification is -90 dBm maximum, an increase of 15 dB in gain will result in signal independent spurious of -70 dBm maximum).
- 17.** Remote control.
- A.** RS422.
 - B.** RS485 (supplied as standard).
Unit is supplied with an RS232 communications port and an optional secondary remote interface.
- 26.** Pressurization.
Converter enclosures capable of 0.5 PSI.
Leak rate 3.0 standard cubic feet per hour maximum.

Notes: Missing option numbers are not applicable to this product.

For literature describing local control and remote control (bus protocols), refer to MITEQ's Technical Note 25T032.



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