



Quad-Band V-Band Block Upconverter for Satellite Earth Stations

MODEL: UC-47A252A4QD-1030-1



INTERFACE

L-BAND INPUT CHARACTERISTICS, 4 PORTS: †

Frequency	Band 1	950 to 2,450 MHz
	Band 2	950 to 2,450 MHz
	Band 3	950 to 1,950 MHz
	Band 4	950 to 1,950 MHz

Return Loss (50 Ohm) 16 dB Minimum

V-BAND OUTPUT CHARACTERISTICS, 1 PORT: †

Frequency	Band 1	47.20 to 48.70 GHz
	Band 2	48.70 to 50.20 GHz
	Band 3	50.40 to 51.40 GHz
	Band 4	51.40 to 52.40 GHz

Return Loss (WR-19) 16 dB Minimum

P_{1dB} @ Min. Atten Setting +10 dBm Minimum

IP3 @ Min. Atten Setting +20 dBm Minimum

EXTERNAL REFERENCE INPUT:

Frequency	10 MHz
Power Level	-10 to +13 dBm
Input SSB Phase Noise	-120 dBc/Hz @ 10 Hz, -145 dBc/Hz @ 100 Hz, -150 dBc/Hz @ 1 kHz, -155 dBc/Hz @ ≥ 10 kHz

REMOTE MONITOR AND CONTROL:

Format / Protocol	ITS Doc. ICD_TBD and Internal Web Server
Interface	10/100 Base-T Ethernet

SUMMARY ALARM:

Interface	Type-C Contact Closure
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AC POWER SUPPLY INPUT:

Voltage	90 to 264 V _{AC}
Frequency	47 to 63 Hz
Power Consumption	100 W Maximum

CONNECTORS:

L-Band Input, 4 Ports	Type N Female, 50 Ohm
V-Band Output	WR-19 Grooved
External Reference	SMA Female
Monitor & Control	Optical Cable Corporation P/N: ECRK0102U00

Summary Alarm Amphenol P/N: PT07E8-3P-027

AC Power Input Binder USA P/N: 09-4223-00-04

Ground Lug #10-32 UNF Set Screw with Nut

LED STATUS INDICATOR:

Powered and without Fault	GREEN
Powered and with Fault	RED

Specifications are Subject to Change without Notice

PERFORMANCE

TRANSFER CHARACTERISTICS:

Conversion Type	Dual Conversion
Frequency Sense	No Inversion
Gain @ Min. Attenuation	+30 ± 2 dB
Gain Control	30 dB in 0.2 dB / step ‡
Gain Stability @ Constant Temperature	≤ ±0.25 dB over 24 hrs
Gain Stability over Temp.	≤ ±1 dB
Gain Flatness	1.5 dB ptp over any 250 MHz 3.5 dB ptp over each sub-band
Image Rejection	80 dB Minimum
Output Mute	60 dB Minimum ‡
Group Delay Variation	5 ns ptp over each sub-band
Output Spurious, Signal Related @ up to 0 dBm Output	LO + Input Harmonics -55 dBc Maximum All Others -60 dBc Maximum
Output Spurious, Signal Independent	-70 dBm Maximum
Output LO Leakage	-70 dBm Maximum
AC Power Spurious	-50 dBc Maximum
Total Spurious Power over 10 kHz to 10 MHz	-50 dBc Maximum
Output SSB Phase Noise	-40 dBc/Hz @ 10 Hz, -70 dBc/Hz @ 100 Hz, -80 dBc/Hz @ 1 kHz, -90 dBc/Hz @ 10 kHz, -100 dBc/Hz @ 100 kHz, -110 dBc/Hz @ 1 MHz, -120 dBc/Hz @ ≥ 10 MHz

INTERNAL REFERENCE CHARACTERISTICS:

The converter automatically operates from its internal reference when the external reference is not present.

Frequency Stability	±5 × 10 ⁻⁸ over 0 to +50 °C ±1 × 10 ⁻⁸ / day @ constant temperature
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MECHANICAL

The converter is supplied in an outdoor enclosure to be installed in a temperature controlled antenna hub.

Dimensions	17.4" × 11.5" × 5.0"
Weight	26 lbs Approx.
Air Leak Rate	< 10 cm ³ / min pressurized @ 1 psig through WG port
Finish	Electroless Nickel Plating per MIL-C-26074, Class 4

ENVIRONMENTAL

OPERATING:

Temperature	-30 to +50 °C functional +10 to +40 °C fully compliant
Humidity	Up to 95% Non-condensing
Altitude	Up to 10,000 Feet AMSL

NON-OPERATING:

Temperature	-40 to +65 °C
Altitude	Up to 50,000 Feet AMSL
Shock and Vibration	Operational after 10G Shock

† All frequency bands are operational simultaneously.

‡ Individual gain and mute adjust per band.