



Tri-Band Q-Band Block Downconverter for Satellite Earth Stations

MODEL: DC-37A542A0TR-1330



INTERFACE

Q-BAND INPUT CHARACTERISTICS, 1 PORT: †

Frequency	Band 1	37.50 to 39.00 GHz
	Band 2	39.00 to 40.50 GHz
	Band 3	40.50 to 42.00 GHz

Return Loss (WR-22) 16 dB Minimum

L-BAND OUTPUT CHARACTERISTICS, 3 PORTS: †

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

Return Loss (50 Ohm) 16 dB Minimum

P_{1dB} @ Min. Atten Setting +13 dBm Minimum

IP3 @ Min. Atten Setting +21 dBm Minimum

EXTERNAL REFERENCE INPUT:

Frequency	10 MHz
Power Level	-10 to +13 dBm
Input SSB Phase Noise	-115 dBc/Hz @ 10 Hz, -140 dBc/Hz @ 100 Hz, -145 dBc/Hz @ 1 kHz, -150 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:

Q-Band Input	WR-22 Grooved
L-Band Output, 3 Ports	Type N Female, 50 Ohm
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
NF @ Min. Atten Setting	18 dB Maximum
Group Delay Variation	5 ns ptp over each sub-band
Output Spurious, Signal Related @ up to 0 dBm Output	Output 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	-45 dBc/Hz @ 10 Hz, -75 dBc/Hz @ 100 Hz, -85 dBc/Hz @ 1 kHz, -95 dBc/Hz @ 10 kHz, -103 dBc/Hz @ 100 kHz, -115 dBc/Hz @ 1 MHz, -130 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	16.9" × 10.5" × 5.0"
Weight	25 lbs Approx.
Air Leak Rate	< 10 cm ³ / min pressurized @ 1 psig through WG port Electroless Nickel Plating per MIL-C-26074, Class 4
Finish	

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 adjusts per band.