



Ka-Band Block Upconverter for Satellite Earth Stations

MODEL: UC-24A7525A25-1525



INTERFACE

IF INPUT CHARACTERISTICS:

Frequency 950 to 1,450 MHz
Return Loss (50 Ohm) 20 dB Typical,
18 dB Minimum

RF OUTPUT CHARACTERISTICS:

Frequency 24.75 to 25.25 GHz
Return Loss (WR-34) 18 dB Minimum
P_{1dB} @ Min. Attenuation +15 dBm Minimum
+17 dBm Goal
IP3 @ Min. Attenuation +23 dBm Minimum
+25 dBm Goal

Output Monitor Level -20 ± 2 dBc

EXTERNAL REFERENCE INPUT:

Frequency 10 MHz
Power Level -3 ± 3 dBm
Input SSB Phase Noise -120 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 Document OM1026
Interface Serial RS-422

SUMMARY ALARM:

Interface Type-C Contact Closure

AC POWER SUPPLY INPUT:

Voltage 90 – 250 VAC
Frequency 47 – 63 Hz
Power Consumption 100 VA Maximum

CONNECTORS:

IF Input Type N Female, 50 Ohm
RF Output WR-34 Grooved
RF Output Monitor 3.5mm Female
External Reference BNC Female, 50 Ohm
Monitor & Control ITT Cannon PN KPT07E8-4P
Summary Alarm ITT Cannon PN KPT07E8-3P
AC Power Input ITT Cannon PN KPT07E12-3P

PERFORMANCE

TRANSFER CHARACTERISTICS:

Conversion Type	Single Conversion
Frequency Sense	No Inversion
Gain @ Min. Attenuation	+25 ± 2 dB
Attenuation Range	20 dB in 0.2 dB / step
Default Attenuation Setting	20 dB
Gain Stability	±0.25 dB/24 hours @ constant temperature
Gain Stability vs. Temp.	±1.0 dB ptp over entire range
Gain Flatness	±1.0 dB ptp over entire band ±0.25 dB ptp over any 40 MHz
Image Rejection	80 dB Minimum
NF @ Min. Attenuation	15 dB Maximum
Output Mute	60 dB Minimum on command & unit fault
Group Delay Variation	1.5 ns ptp Typical, 2.0 ns ptp Maximum
Spurious, Signal Related	-65 dBc max. upto 0 dBm output
Signal Independent	-70.0 dBm Maximum
LO Leakage at RF Output	-70.0 dBm 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 -115 dBc/Hz @ ≥1MHz

INTERNAL REFERENCE CHARACTERISTICS:

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

Frequency Stability ±1 × 10⁻⁷ over -40 to 60 °C
±5 × 10⁻¹⁰ /day

MECHANICAL

The upconverter is suitable for outdoor use in severe environments.

Dimensions	12.15" x 8.15" x 2.54"
Weight	10 lbs
Air Leak Rate	< 10 cm ³ / min. pressurized @ 3 PSI through WR-34 port
Finish	Chemical conversion coating per MIL-C-5541, class 3. Then, white paint

ENVIRONMENTAL

OPERATING:

Temperature	-40 to +60 °C
Humidity	Up to 100% Condensing
Altitude	10,000 Feet AMSL Maximum

NON-OPERATING:

Temperature	-50 to +70 °C
Altitude	55,000 Feet AMSL Maximum
Shock	Operational after 10G Shock

*Specifications are Subject to Change without Notice
Errors & Omissions Excepted*

Response, Innovation, Craftsmanship

200 Edgeley Boulevard, Unit #24-27, Concord, Ontario, CANADA L4K 3Y8

Tel: (905) 660-0405 Fax: (905) 660-0406

e-mail: sales@itselectronics.com www.itselectronics.com