



Tri-band Block Downconverter for Satellite Earth Stations



The downconverter provides a frequency translation of a three selectable K-band input to an L-band output. It features high linearity and low phase noise performance. Sealed enclosure for hub mounted type installation allows optimization of system performance.

INTERFACE

RF INPUT CHARACTERISTICS:

Frequency Range	18.7 to 21.2 GHz
Band 1	18.7 to 19.6 GHz
Band 2	19.5 to 20.4 GHz
Band 3	20.3 to 21.2 GHz
Return Loss (50 Ohm)	18 dB Minimum

IF OUTPUT CHARACTERISTICS:

Frequency Range	1,000 to 1,900 MHz
Return Loss (50 Ohm)	18 dB Minimum
Power @ 1dB GCP	+18 dBm Minimum
3 rd Order Intercept Point	+22 dBm Minimum

EXTERNAL REFERENCE INPUT:

Frequency	10 MHz
Power Level	-3 $\pm$ 3 dBm
Input SSB Phase Noise	-120 dBc/Hz @ 10 Hz -140 dBc/Hz @ 100 Hz -145 dBc/Hz @ 1 kHz -150 dBc/Hz @ $\geq$ 10 kHz

REMOTE MONITOR AND CONTROL:

Format / Protocol:	ITS Document OM1058
Interface	10/100 Base-T Ethernet

SUMMARY ALARM:

Interface	Contact Closure
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AC POWER SUPPLY INPUT:

Voltage	90 to 250 V _{AC}
Frequency	47 to 63 Hz
Power Consumption	50 W Maximum

CONNECTORS:

RF Input	3.5mm Female
IF Output	Type N Female, 50 Ohm
External Reference	SMA Female
Monitor & Control	Amphenol PN: RJF2SA1G
Summary Alarm	ITT Cannon PN: KPT07E8-3P
AC Power Input	ITT Cannon PN: KPT07E12-3P

MODEL: DC-18A721A2-1820

PERFORMANCE

TRANSFER CHARACTERISTICS:

Conversion Type	Single Conversion
Frequency Sense	No Inversion
Noise Figure	16 dB Maximum @ 25 °C
Constant Gain	+20 $\pm$ 2 dB
Gain Stability @ Constant Temperature	$\pm$ 0.25 dB / 24 hours
Gain Stability vs. Temp.	$\pm$ 1 dB ptp over entire range
Gain Flatness	$\pm$ 1 dB ptp max. over the frequency bands specified

Image Rejection	60 dB Minimum
Group Delay Variation	2 ns ptp Maximum over the frequency bands specified

Spurious, Signal Related and in-band	-50 dBc Maximum
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Spurious, Other (including LO leakage)	-80 dBm Maximum
Output SSB Phase Noise	-50 dBc/Hz @ 10 Hz -72 dBc/Hz @ 100 Hz -87 dBc/Hz @ 1 kHz -90 dBc/Hz @ 10 kHz -100 dBc/Hz @ 100 kHz -110 dBc/Hz @ 1 MHz

Additive Phase Jitter over 100 Hz to 10 MHz	0.75 ° RMS Typical
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INTERNAL REFERENCE CHARACTERISTICS:

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

Frequency Stability	$\pm$ 1 $\times$ 10 ⁻⁷ over -40 to 60 °C $\pm$ 5 $\times$ 10 ⁻¹⁰ /day
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MECHANICAL

Dimensions	12.15" $\times$ 8.15" $\times$ 5.0"
Weight	15 lbs
Finish	White Epoxy Paint

ENVIRONMENTAL

OPERATING:

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

NON-OPERATING:

Temperature	-50 to +70 °C
Altitude	55,000 Feet AMSL Max.
Shock and Vibration	Normal handling by commercial carriers

LED STATUS INDICATOR

Powered and without Fault	GREEN
Powered and with Fault	RED

Specifications are Subject to Change without Notice
Errors & Omissions Excepted