Ka-BAND BLOCK UP CONVERTER (BUC)

ACTX-Ka High Power Series (40W)

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ACTX-Ka series are a family of outdoor RF Block-Up Converters (BUC), designed for Ka-band satellite communication systems. ACTX-Ka BUCs are integrated units with power supply, phase locked oscillator, power amplifier and frequency converter.

ACTX-Ka series BUCs have been tested and calibrated between -20ºC and +55ºC, providing very good gain stability with temperature. They also include a temperature alarm and power supply shutdown to protect the amplifier from permanent damages in high temperature conditions. Standard communication is via serial port (RS232/RS485), but TCP/IP and SNMP could be selected as options.

TRANSMITTER SPECIFICATIONS

Input frequency ..... 950 to 1950 MHz (See options)
Input impedance ..... 50 Ohms
Input L-band VSWR ..... < 1.5:1
Output frequency ..... 29.5 to 31.0 GHz (See options)
Output impedance ..... 50 Ohms
Output Ka-band VSWR ..... < 1.5:1
Spectrum inversion ..... None

Transmitter Characteristics @ 25ºC	P1dB (typ.)	Gain	Power Consumption	Size (LxWxH)	Weight
ACTX-Ka40W	46.0 dBm	60 dB min	420 W @ P1dB	250 x 180 x 180 mm	8.0 kg

Maximum input level without damage ..... +10 dBm
Gain flatness over the whole bandwidth ..... ± 1.5 dB BW=500 MHz
± 2 dB BW=1 GHz
Gain flatness over 40 MHz ..... ± 0.5 dB
Gain stability (24 Hours) ..... < 0.5 dB
Gain variation over temperature ..... ± 1.5 dB over the whole range (-20 to +55ºC)
± 2 dB over the whole range (-40 to +55ºC)
Attenuation adjustment range ..... 20 dB, with 0.5 dB steps
Mute ..... > 50 dB

Noise figure ..... ≤ 20 dB (at maximum gain)
Output noise ..... < -90 dBm/Hz (Tx Band 29.5 to 31.0 GHz)
< -140 dBm/Hz (Rx Band 19.2 to 21.2 GHz)
Spurious ..... < -60 dBc at Pout=P1dB dBm
Spectral Regrowth @ P1dB – 2 dB ..... < -30dBc QPSK modulation at 1.0 x rate offset from carrier
Third intermodulation products @ P1dB – 3 dB ..... < -25 dBc Δf=5 MHz relative to combined power of 2 carriers

LOCAL OSCILLATOR

Output phase noise typical (IESS-308/309 – 5 dB):
100 Hz ..... -65 dBc/Hz
1 kHz ..... -75 dBc/Hz
10 kHz ..... -85 dBc/Hz
100 kHz ..... -95 dBc/Hz
Reference frequency ..... 10 MHz
Reference mode ..... External (internal as option)
Reference input level ..... 0 dBm ± 3 dB (multiplexed on L-band input)
LO frequency stability ..... same as external reference
Minimum external reference to compliant typical phase noise (IESS-308/309 – 5 dB):
100 Hz ..... -135 dBc/Hz
1 kHz ..... -145 dBc/Hz
10 kHz ..... -155 dBc/Hz

POWER SUPPLY

AC input voltage ..... 85 - 265 VAC (47-63 Hz) (48 VDC as option)

ENVIRONMENTAL SPECIFICATIONS

Storage temperature ..... -40 to +80ºC
Operating temperature ..... -20 to +55ºC (-40 to +55ºC as option)
Relative humidity ..... up to 95%
Operating altitude ..... up to 3500 m

MECHANICAL SPECIFICATIONS

Interfaces:
TX input (L-Band+Ext. Ref.): ..... Type N(F) 50 ohm
TX output (Ka-Band): ..... WR28 grooved
Monitoring & Control: MS3112E12-14S
Power supply: MS3112E12-3P
Cooling system ..... Forced air integrated
Finish ..... White

OPTIONS

Frequency band:	L-band input	LO frequency	Model Number
29.5 to 30.0 GHz	950 to 1450 MHz	28.550 GHz	ACTX-Ka40W-E2-xxx
30.0 to 31.0 GHz	950 to 1950 MHz	29.050 GHz	ACTX-Ka40W-E6-xxx
30.0 to 31.0 GHz	1000 to 2000 MHz	29.000 GHz	ACTX-Ka40W-E66-xxx

HP1: ..... 48 VDC power supply
HP2: ..... Internal reference (with automatic external selection on presence)
HP3: ..... Operating temperature (-40 to +55ºC)
HP4: ..... Ethernet interface (TCP/IP)
HP5: ..... SNMP Agent

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