

Ka-BAND BLOCK UP CONVERTER (BUC)

ACTX-Ka Low Power Series (5W)



Ed. 07

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ACTX-Ka series are designed for Ka-band satellite communication systems. ACTX-Ka BUCs are integrated with power supply, phase locked oscillator, power amplifier and frequency converter.

ACTX-Ka series BUCs have been tested between -20°C and +55°C, 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 Ω |
| Input L-band VSWR..... | < 1.8:1 |
| Output frequency..... | 29.5 to 31.0 GHz (See options) |
| Output impedance..... | 50 Ω |
| Output Ka-band VSWR..... | < 2.0:1 |
| Spectrum inversion..... | None |

| Transmitter Characteristics @ 25°C | P1 dB typ. | Gain | Power Consumption | Size (LxWxH) | Weight |
|------------------------------------|------------|-----------|-------------------|-------------------|--------|
| ACTX-Ka5W | 37.0 dBm | 65 dB min | 60 W @ P1 dB | 195 x 135 x 50 mm | 1.8 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 +55°C) ± 2 dB over the whole range (-40 to +55°C) |
| Attenuation adjustment range..... | 20 dB, with 0.5 dB steps |

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|-------------------------------|--|
| Mute | > 50 dB |
| Noise figure..... | ≤ 15 dB (at maximum gain) |
| Output noise..... | < -100 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..... | < -20dBc QPSK modulation at 1.0 x rate offset from carrier |

LOCAL OSCILLATOR

Output phase noise (IESS-308/309 – 2 dB):

| | |
|--|--|
| 100 Hz | -62 dBc/Hz |
| 1 kHz..... | -72 dBc/Hz |
| 10 kHz..... | -82 dBc/Hz |
| 100 kHz..... | -92 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 – 2 dB): | |
| 100 Hz | -135 dBc/Hz |
| 1 kHz..... | -145 dBc/Hz |
| 10 kHz..... | -155 dBc/Hz |

POWER SUPPLY

| | | |
|---|-------|--------------------|
| DC input voltage (multiplexed on L-band input)..... | 48VDC | (24 VDC as option) |
|---|-------|--------------------|

ENVIRONMENTAL SPECIFICATIONS

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

MECHANICAL SPECIFICATIONS

Interfaces:

| | |
|--------------------------------------|----------------|
| TX input (L-Band+DC+Ext. Ref.):..... | Type N(F) 50 Ω |
| TX output (Ka-Band): | WR28 grooved |
| Monitoring & Control: | MS3112E12-14S |
| Cooling system..... | None |
| 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-KaxxW-E2-xxx |
| 30.0 to 31.0 GHz | 950 to 1950 MHz | 29.050 GHz | ACTX-KaxxW-E6-xxx |
| 30.0 to 31.0 GHz | 1000 to 2000 MHz | 29.000 GHz | ACTX-KaxxW-E66-xxx |

| | |
|------------|--|
| LP1: | 24 VDC power supply |
| LP2: | Internal reference (with automatic external selection on presence) |
| LP3: | Operating temperature (-40 to +55°C) |
| LP4: | Ethernet interface (TCP/IP) |
| LP5: | SNMP Agent |
| LP6: | NATO green IR finish |
| LP7: | Desert sand finish (RAL 1019) |