

DATA SYSTEMS



STREAM KA-BAND CONVERTERS

19" 1U/2U, 1 to 6 channels,
Up/Down Ka-band converters



RADIO FREQUENCY EQUIPMENT

STREAM

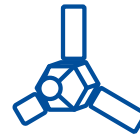
Stream Ka-band UP and DOWN converters are designed to address new needs for **high data rates in wideband transmissions** with up to 1.5 GHz instant bandwidth.

The **Stream modular architecture** enables any requirement from a one channel test bed up to a complex multi up/down/tracking ground station.

Stream Ka-band converters offer reliable and stable performance, even across an **extended temperature** range and allow direct antenna pedestal integration.



EGSE/SCOE
& testbeds



Earth
Observation
Satellites



Scientific
Missions

MODULAR ARCHITECTURE

Up to three channels in a 1U 19" and up to six channels in a 2U 19" rack

WIDE BANDWIDTH

Up to 1.5GHz instant bandwidth

WIDE TEMPERATURE RANGE

-20°C / +50°C
-4°F / +122°F

REDUCED PHASE NOISE

New oscillator module guarantees excellent signal quality

EASILY CONFIGURABLE

Ethernet (TCP/IP), RS485 remote control and front panel control

FLEXIBLE ARCHITECTURE

Allows independent or dependant channels, channel or LO redundancy

STREAM KA-BAND CONVERTERS

▶ HIGH MODULARITY

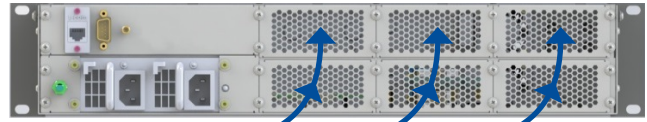
Two 19" rack size: 1U with up to 3 slots and 2U with up to 6 slots
Any mix possible: Up, down, 1+1 or 2+1 (2U only) redundancy, dependant or independant LO, IF

Sample 1U configurations:

- 1 Down 2.4G
- 1 UP 1.2G
- 1+1 Down 1.2G
- 1 Down 1.2G and 1 Down 2.4G

- 1 Down and 1 UP 1.2G with independant LO
- 2 Down 2.4G and 1 UP 2.4G
- Other configurations

Your choice: Down 1.2G/2.4G - Up 1.2G/2.4G
 Redundancy 1+1/2+1 - LO, LO redundancy



Sample 2U configurations:

- 2+1 Down 2.4G and 2 UP 2.4G, LO redundancy
- 4 Down 2.4G, 1 Down 1.2G and 1 UP 2.4G
- 2 Down 2.4G, 2 Down 1.2G, 1 UP 2.4G and 1 UP 1.2G
- Other configurations

▶ UP CONVERTER CHARACTERISTICS

Input characteristics

Bandwidth & IF 1500MHz (2400MHz IF), 750MHz (1200MHz IF)
 Noise figure < 9 dB
 VSWR < 1.4:1 on 50 Ω

Transfer characteristics

Conversion type Single, no inversion
 Gain 44 dB min. @2400MHz, 40 dB min. @1200MHz
 Gain control 0 to 31.75 dB, 0.25 dB steps
 Gain ripple ±2 dB (2400MHz IF), ±1 dB (1200MHz IF)
 Gain slope ≤ 0,03 dB/MHz
 Group delay variation < 1.2 ns
 Mute isolation ≥ 50 dB

Output characteristics

Frequency 25.5 – 27 GHz
 VSWR < 1.5:1 on 50 Ω
 1dB compression point ≥ +3dB (2400MHz IF), ≥ +0dB (1200MHz IF)
 OIP3 ≥ +13dB (2400MHz IF), ≥ +10dB (1200MHz IF)
 In-band dependant spurious (@ max. gain) ≤ -40 dBc
 In-band independant spurious (@max. gain) ≤ -50 dBm

▶ ENVIRONMENT / USER INTERFACES

Chassis size 19-inch rack mountable, 1U or 2U, 20-inches
 Operating temperature -20°C to +50°C
 Power supply Single (1U), Redundant (2U)

Screen 2 x 40 characters LCD display
 LED indicators Local/Remote, Alarm, Mute, CPU

Keyboard 16 keys
 Monitoring Ethernet (RJ45)/Serial RS485 (SubD 9-M)

RF connectors 2.92mm female
 IF/REF connectors SMA female

▶ DOWN CONVERTER CHARACTERISTICS

Input characteristics

Frequency 25.5 – 27 GHz
 Noise figure 9 dB
 VSWR < 1.5:1 on 50 Ω
 LO leakage ≤ -70 dBm

Transfer characteristics

Conversion type Single, no inversion
 Gain 42 dB min. @2400MHz, 40 dB min. @1200MHz
 Gain control 0 to 31.75 dB, 0.25 dB steps
 Gain ripple ±2 dB (2400MHz IF), ±1 dB (1200MHz IF)
 Gain slope ≤ 0,03 dB/MHz
 Group delay variation < 1.2 ns
 Mute isolation ≥ 50 dB

Output characteristics

Bandwidth & IF 1500MHz (2400MHz IF), 750MHz (1200MHz IF)
 VSWR < 1.4:1 on 50 Ω
 1dB compression point ≥ +11dB (2400MHz IF), ≥ +10dB (1200MHz IF)
 OIP3 ≥ +21dB (2400MHz IF), ≥ +20dB (1200MHz IF)
 In-band dependant spurious (@ max. gain) ≤ -40 dBc
 In-band independant spurious (@max. gain) ≤ -50 dBm
 Image rejection > 50 dB (> 40 dB for F ≥ 26,25GHz with 1200GHz IF)

▶ LOCAL OSCILLATORS

Frequency steps 1MHz (or fixed for 2.4GHz IF)
 Phase noise @ frequency offset from carrier: ≤ -70 dBc / Hz @ 100 Hz
 ≤ -80 dBc / Hz @ 1 kHz
 ≤ -85 dBc / Hz @ 10 kHz
 ≤ -90 dBc / Hz @ 100 kHz
 ≤ -115 dBc / Hz @ 1 MHz
 ≤ -115 dBc / Hz @ 10 MHz
 Internal reference stability < ±5 10-8 over full temperature range

GLOBAL SALES

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