3016-2124 Downconverter, 21 - 24 GHz, 70 MHz IF

The 3016-2124 Downconverter converts 21 to 24 GHz to 70 ± 18 MHz in 125 kHz steps (1 kHz opt- X1008). This unit combines a multi-band block downconverter with a 3-4 GHz to 70 MHz agile downconverter to obtain the wide tuning range. Synthesized local oscillators (LO) provide frequency selection. Multi-function switches select the input frequency, gain, and other parameters. Front panel LEDs provide indication of DC power, PLL alarm or Remote operation. Gain is adjustable manually (MGC) over a 0 to +30 dB range. The frequency and gain are remotely selectable. Remote selection and frequency and gain settings appear on the LCD display. Connectors are 2.92 mm female for the RF, and BNC female for the IF and external 10 MHz reference input and output. Other connector options are available. It is powered by a 100-240 ±10% VAC power supply, and is in a 1 3/4” X 19” X 18” rack mount chassis.

EQUIPMENT SPECIFICATIONS

Input Characteristics (RF)
- Impedance/Return Loss: 50Ω/18 dB typ., 14 dB min.
- Frequency: 21 to 24 GHz
- Noise Figure, max.: 20 dB (max gain)
- Input Level Range: -50 to -30 dBm

Output Characteristics (IF)
- Impedance/Return Loss: 75Ω/18 dB
- Frequency: 70 ± 18 MHz
- Output level range: -20 to 0 dBm
- Output 1 dB compression: +10 dBm

Channel Characteristics
- Gain Max/range (adj.): 30 ± 3 dB Max/0 to +30.0 dB range, 1 dB ± 1 dB steps
- Image Rejection > 50 dB, min.
- Frequency Response ±3.0 dB, 21-24 GHz; ±1.5 dB, any 1 GHz band; ± 1.0 dB, 36 MHz BW
- Spurious Response < -50 dBc, in band, 21 to 24 GHz
- Intermod < -50 dBc for two carriers each at -5 dBm out
- Group Delay, max.: 0.02 ns/MHz² parabolic; 0.05 ns/MHz linear; 1 ns ripple, 36 MHz BW
- Frequency Sense: Inverting or Non-inverting (user selectable)

Synthesizer Characteristics
- Frequency Accuracy ± 0.01 ppm max over temp internal ref; ext ref. input
- Frequency Step: 125 kHz minimum, (1 kHz opt- X1008)
- 10 MHz In/Out Level: 3 dBm ± 3 dB

Phase Noise @ Freq 100 Hz 1 kHz 10 kHz 100 kHz 1 MHz

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<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
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Controls, Indicators
- Freq/Gain Selection: direct readout LCD; manual or remote selection
- Power, Alarm, Remote: Green LED; Red LED; Yellow LED
- Remote: RS232C, 9600 baud (RS422/485/opt.-Q, Ethernet/opt-W8,18,28)

Other
- RF, IF Connectors: 2.92 mm (female), BNC, 75Ω (female), (50Ω IF opt- S29)
- 10 MHz Connectors: BNC (female) 50Ω, works for 50 or 75 ohms
- Alarm/Remote Connector: DB9 (female) - NO or NC contact closure on Alarm
- Size: 19 inch, 1RU standard chassis 1.75” high X 18.0” deep
- Power: 100-240 ±10% VAC, 47-63 Hz, 60 watts max

Bundled Options:
- Bundle #01 includes: S29, W8, W16, W73, X1008

Available Options
- Q - RS485 Remote Interface
- W8 - Ethernet; w/Web Browser (WB)
- W16 - Test Data
- W18 - Ethernet; w/WB & SNMP
- W28 - Ethernet; w/TCP/IP, Telnet
- W71 - IF Mon., - 20 dB, 50 ohm
- W73 - RF Mon., - 3±3 dB, 50 ohm
- X1008 - 1 kHz steps

Connectors/Impedance
- S29 - 2.92mm (RF), 50Ω BNC (IF)
- SS29 - 2.92mm (RF), SMA (IF)

*10°C to 40°C; Specifications subject to change without notice