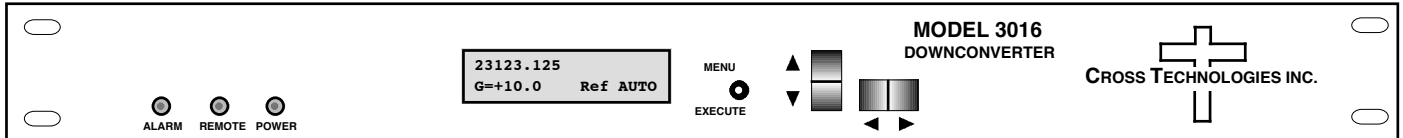


## 3016-2124 Downconverter, 21 - 24 GHz, 70 MHz IF

The 3016-2124 Downconverter converts **21 to 24 GHz** to  $70 \pm 18$  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. Parameter 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  $\pm 10\%$  VAC power supply, and is in a 1 3/4" X 19" X 18" rack mount chassis.



**Front Panel**

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics (RF)

Impedance/Return Loss **50Ω/18 dB typ., 14dB 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 0dBm**  
 Output 1 dB compression **+10 dBm**

#### Channel Characteristics

**Gain Max/range (adj.)** **30 ± 3 dB Max./ 0.0 to +30.0 dB range, 1dB ± 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/MHz<sup>2</sup> parabolic; 0.05ns/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**

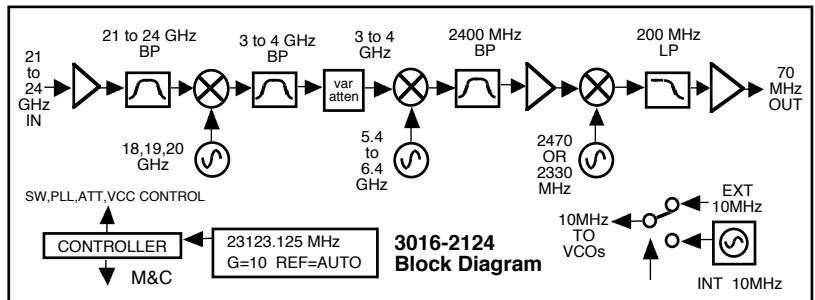
Phase Noise @ Freq	100 Hz	1kHz	10kHz	100kHz	1 MHz
dBc/Hz	60	70	80	90	100

#### 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)**  
 10MHz 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., - 20dB, 50 ohm**  
**W73 - RF Mon., - 3±3dB, 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