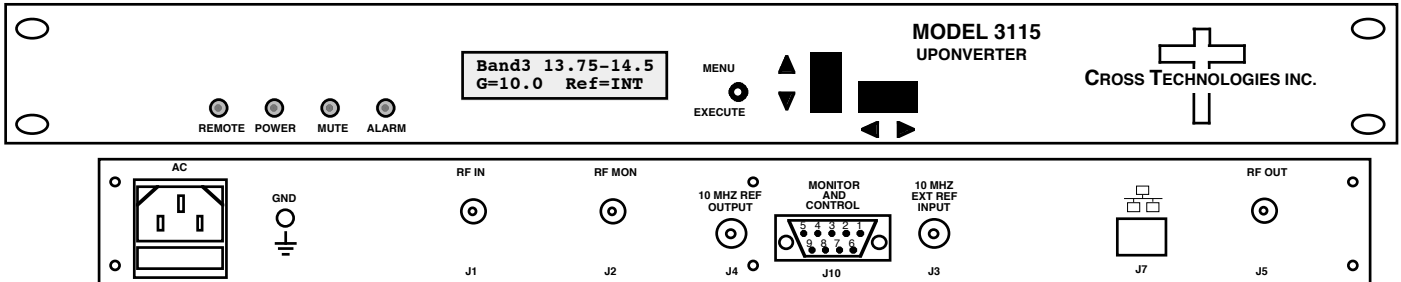


## 3115-41-184 W60 Multi-Band Block Upconverter, with W60 High Gain Option

The 3115-41-184 W60 Block Upconverter converts L-band to one of four RF bands. The L-band to RF gain is **+40 dB, maximum (Option W60)**. Connectors are SMA female for the L-band (RF In), RF Out, and RF Monitor and BNC female for the external reference input and reference output. Front panel LEDs provide indication of Remote Operation, DC Power, Mute, and PLL Alarm. Gain, band select, and internal/external/Auto reference selection are controlled by front panel switches or remote selection (Ethernet M&C or via the RS-232C/485 Monitor and Control connector) and are viewable on the LCD Display. In AUTO, the 10 MHz reference stays in external if the external level is in the +2 to +8 dBm range. The 3115 is powered by a 100-240 ± 10% VAC power supply, and housed in a 1RU rack mount chassis, 1.75" H X 19.0" W X 19.0" deep.



**3115-41-184 FRONT AND REAR PANELS**

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics

Impedance/Return Loss 50Ω/14 dB min.  
 Frequency Band 1,2 0.95-1.825, 0.95-1.95 GHz  
 Frequency Band 3,4 0.95-1.700, 0.95-2.05 GHz  
 Noise Figure, Max. **20 dB at max. gain**  
 Input Level range **-55 to -35 dBm**

#### Non-damage input

**0 dBm at max. gain**

#### Output Characteristics

Impedance/Return Loss 50 Ω /14 dB, Mute/Unmute  
 Frequency Band 1,2 5.85-6.725, 12.75-13.75 GHz  
 Frequency Band 3,4 13.75-14.5, 17.3-18.4 GHz  
 Output Level Range **-10 to +5 dBm**  
 Output 1 dB compr. **+15 dBm, at max. gain**

#### Mute

**>60 dB from +5 dBm unmuted output (RF Mon. not muted)**

#### Channel Characteristics

Gain at  $F_c$ , RF;RF Mon **+40 ±3 dB maximum, (+40 to +10 dB variable in 0.5 ± 0.5 dB steps); RF Mon -20 dBC of RF Out, ±3 dB**  
 Input to Output Isolation **> 45 dB, min, at max. gain and -35 dBm input**  
 Spurious, Inband **SIGNAL RELATED <-55 dBC in band, -10 to +5 dBm out; SIGNAL INDEPENDENT, <-55 dBm, at max. gain**  
 Spurious, Out of band **<-50 dBm spurious, signal independent and signal dependent;  $F_c \pm 1$  GHz, at max. gain**  
 Spurious, LO **<-45 dBm at the output, at max. gain**  
 Intermodulation **<-50 dBC for two carriers at 4 MHz spacing, each at +2 dBm out, at max. gain**  
 Frequency Response **±2 dB, over RF band; ± 0.5 dB, 40 MHz BW**  
 Frequency Sense **Non-inverting**

#### LO Characteristics

LO Frequency Band Specific  
 Frequency Accuracy ± 0.05 ppm max over temp internal reference; ext. ref. input

| Phase Noise @ F (Hz) > | 100 | 1K  | 10K | 100K | 1M   |
|------------------------|-----|-----|-----|------|------|
| Specification dBC/Hz   | -70 | -80 | -85 | -98  | -110 |

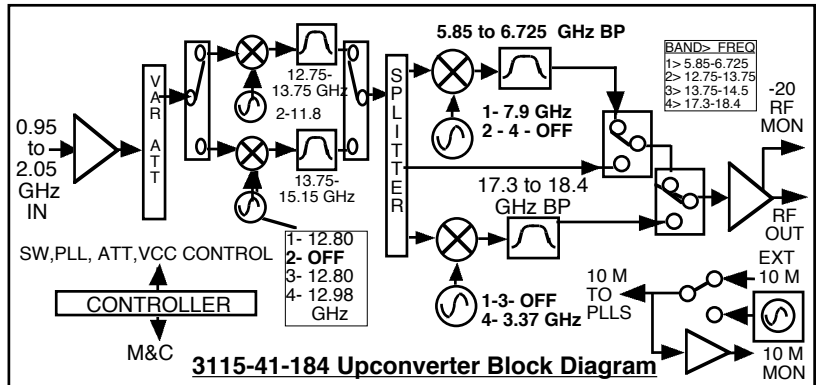
10 MHz level In/Mon Input=+2 to +8 dBm in; Monitor Output = Input Level ± 1.0 dB, 50 ohms

#### Controls, Indicators

Gain, Band, 10M Freq. **Direct readout LCD; pushbutton switches** or via Ethernet M&C or Monitor and Control Connector.  
 PLL Alarm **Red LED, External contact closure**  
 Remote, Power, Mute **Yellow LED: Green LED: Yellow LED**

#### Other

RF In, Out, Mon. Conn. **SMA (female), 50Ω**  
 10 MHz connectors **BNC (female), 50 ohms; Works with 75Ω**  
 Monitor/Control Conn. **RS232C/485, DB9, Female; Ethernet, RJ45, Female, w/Web Browser & SNMP User interfaces.**  
 Size **1RU rack mount chassis, 1.75" H X 19.0" W X 19.0" deep**  
 Power **100-240 ±10% VAC, 47-63 Hz, 25 watts max**



**3115-41-184 Upconverter Block Diagram**

\* **+0 to +50 degrees C Operating; -30 to +60 degrees C Non-operating; 95% relative humidity, non-condensing;**  
 Specifications subject to change without notice