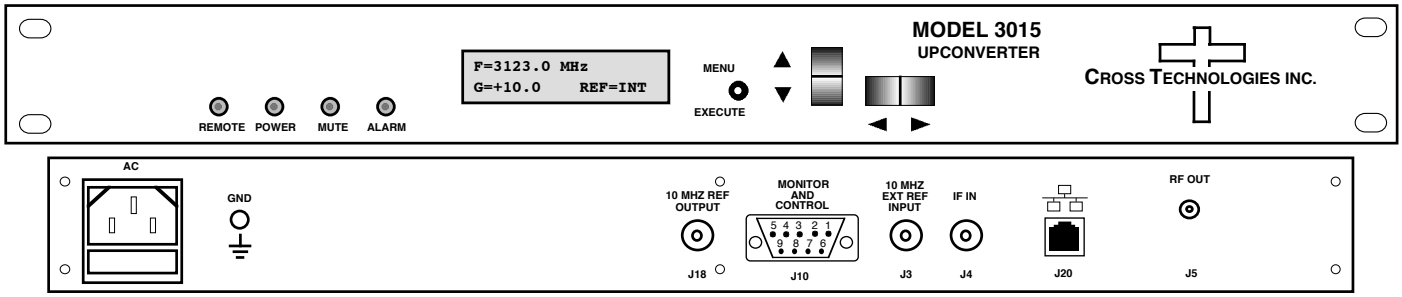
**CROSS TECHNOLOGIES, INC.**

**DATA SHEET**
**REV. 0** 2/26/26

# 3015-0004 Upconverter, 70 ±20 MHz to 0.15 - 4.0 GHz

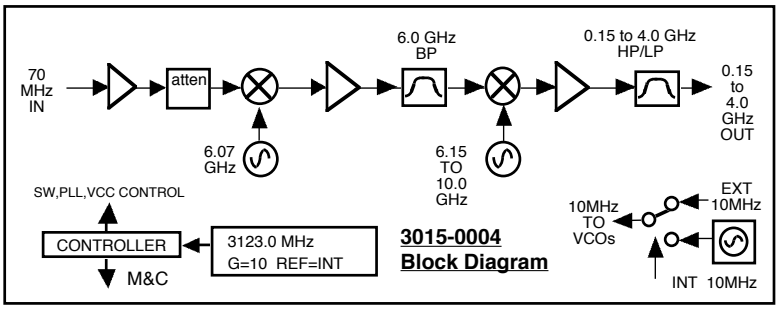
The 3015-0004 Upconverter converts 70 ±20 MHz to 0.15 to 4.0 GHz in 1 MHz steps (125kHz, 100kHz, 1kHz, optional) with +10 dB gain. The 70 MHz is first converted to 6.0 GHz and then to 0.15 to 4 GHz with an agile, high side LO downconverter to obtain the wide tuning range. Synthesized local oscillators (LO) provide frequency selection. Multi-function switches select the RF frequency and other parameters. Front panel LEDs provide indication of DC power (green), PLL alarm (red), remote operation (yellow) or the TX carrier is muted (yellow). Remote operation allows selection of frequency. Parameter selection and frequency settings appear on the LCD display. Connectors are BNC (female) for IF and external 10MHz reference input and output, and SMA (female) for the RF output. The unit is powered by a 100-240 ±10% VAC power supply, and housed in a 1 3/4" X 19" X 18" rack mount chassis.




**Front and Rear Panels (shown with Ethernet option)**

## EQUIPMENT SPECIFICATIONS*

**NOTE 1** - Measured at 2 GHz, applies across the band.




**3015-0004 Block Diagram**

**Input Characteristics**

| | |
|---|---|
| Impedance/Return Loss | 75Ω /14dB min. |
| Frequency | 70 ± 20 MHz |
| Input Level | -35 to -25 dBm |

**Output Characteristics**

| | |
|---|---|
| Impedance/Return Loss | 50Ω /14dB min. |
| Frequency | 0.15 to 4.0 GHz |
| Output level | -25 to -15 dBm, NOTE 1 |
| Output 1 dB compr. | -5 dBm, NOTE 1 |

**Channel Characteristics**

| | |
|---|---|
| Gain | 10 ± 2 dB at 70 MHz in and Fc out, NOTE 1 |
| Frequency Response | ±3.0 dB, Fc out=0.15-4.0 GHz; ±1.5 dB, Fc out over any 1 GHz band; ± 0.5 dB, Fc ± 20 MHz, NOTE 1 |
| Spurious, In Band | SIGNAL RELATED <-50 dBc max., in band, -15 dBm out, 0.15 - 4 GHz, NOTE 1 |
| Spurious, In Band | SIGNAL INDEPENDENT,<-65 dBm max., -15 dBm out, 0.15 - 4.0 GHz, NOTE 1 |
| Spurious, Out of band | < -65 dBm, 0.05 - 0.14 GHz and 4.1 - 6 GHz, NOTE 1 |
| Intermod | < -50 dBc for two carriers, Fc ± 2 MHz, each at -20 dBm out, NOTE 1 |
| Group Delay, max | 4 ns total, Fc ± 20 MHz, NOTE 1 |
| Frequency Sense | Non-inverting |

**Synthesizer Characteristics**

| | |
|---|---|
| Frequency Accuracy | ± 0.01 ppm max over temp internal ref.; external ref. input |
| Frequency Step | 1 MHz minimum; other steps optional |
| 10 MHz In/Out Level | +3 dBm ± 3 dB, 50Ω |

| Phase Noise @ Freq | 100 Hz | 1kHz | 10kHz | 100kHz | 1 MHz |
|---|---|---|---|---|---|
| dBc/Hz | 65 | 70 | 80 | 90 | 100 |

**Controls, Indicators**

| | |
|---|---|
| Frequency Selection | Direct readout LCD; manual or remote selection |
| Pwr; Alm; Remote; Mute | Green LED; Red LED; Yellow LED; Yellow LED |
| Remote | RS232C, 9600 baud (RS422/485/opt.-Q, Ethernet/opt-W8,18,28,828) |

**Other**

| | |
|---|---|
| RF, IF Connectors | SMA (female), BNC,75Ω (female), (Others optional) |
| 10MHz Connectors | BNC (female) 75Ω, works for 50 or 75 ohms |
| Alarm/Remote Conn. | 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, 30 watts max. |

**Available Options**

X - 125 kHz step
X1 - 100 kHz step
X1005 - 1 kHz step

**Remote M&C Interfaces:**

Q - RS485/422
W8 - Ethernet; w/Web Browser (WB)
W18 - Ethernet; w/WB & SNMP
W28 - Ethernet; w/TCP/IP, Telnet
W828 - W8 +W18 +W28

**Connectors/Impedance**

S - 50Ω SMA (RF), 50Ω BNC (IF)
SS - 50Ω SMA (RF), 50Ω SMA (IF)

**Contact Cross for other options**

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

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