3015-1820 Upconverter, 70 MHz to 18.2 - 20.2 GHz

The 3015-1820 Upconverter converts 70 ± 18 MHz to 18.2 to 20.2 GHz in 125 kHz steps (1 kHz opt- X1008). This unit combines a 70 MHz to 3.45 GHz upconverter with an agile block upconverter to obtain the wide tuning range. Synthesized local oscillators (LO) provide frequency selection. Multi-function switches select the RF frequency, gain, 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). Variable attenuators for the IF input and output provide a gain range of -5 to +20 dB as adjusted by the front panel multi-function switches. Remote operation allows selection of frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are BNC (female) for IF and external 10MHz reference input and output, and 2.92 mm (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.

**EQUIPMENT SPECIFICATIONS**

**Input Characteristics**
- Impedance: 75 Ω
- Return Loss: 18 dB
- Frequency: 70 ± 18 MHz
- Input Level: -30 to -10 dBm

**Output Characteristics**
- Impedance/Return Loss: 50Ω/18 dB typ., 14dB min.
- Frequency: 18.2 to 20.2 GHz
- Output level: -15 to 0 dBm
- Output 1 dB compr.: +10 dBm

**Channel Characteristics**
- Gain Max/range (adj.): 20 ± 2 dB Max. / -5.0 to +20.0 dB, 0.5 dB ± 0.5 dB steps
- Spurious, Inband: < -50 dBc, at max. gain
- Spurious, Out of band: < -50 dBm, at max. gain
- Intermod: < -50 dBc for two carriers each at -5 dBm out, at max. gain
- Frequency Response: ±3.0 dB, 18.2-20.2 GHz; ±1.5 dB, any 1 GHz band; ± 1.0 dB, 36 MHz BW
- Group Delay, max: 0.02 ns/MHz² parabolic; 0.05ns/MHz linear; 1 ns ripple, 36 MHz BW
- Frequency Sense: Non-inverting

**Synthesizer Characteristics**
- Frequency Accuracy: ± 0.01 ppm max over temp internal ref.; external ref. input
- Frequency Step: 125 kHz minimum, (1 kHz opt- X1008)
- External 10 MHz level: +3 dBm ± 3 dB, 50Ω
- Phase Noise @ Freq: 60 Hz: 100 Hz, 1kHz, 10kHz, 100kHz, 1 MHz

**Controls, Indicators**
- Freq/Gain 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)

**Other**
- RF, IF Connectors: 2.92 mm (female), BNC, 75Ω (female), (50Ω IF opt.-S29)
- 10MHz Connectors: BNC (female) 50Q, 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, 60 watts max.

**Available Options**
- W16 - Test Data
- W71 - IF Mon., - 20dB, 50 ohm
- W70 - RF Mon., - 20dB, 50 ohm
- X1008 - 1 kHz steps

**Remote M&C Interfaces:**
- Q - RS485/422
- W8 - Ethernet; w/Web Browser (WB)
- W18 - Ethernet; w/WT & SNMP
- W28 - Ethernet; w/TCP/IP, Telnet

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

**Contact Cross for other options**