

# **INSTRUCTION MANUAL**

## **MODEL 5088 Upconverter**

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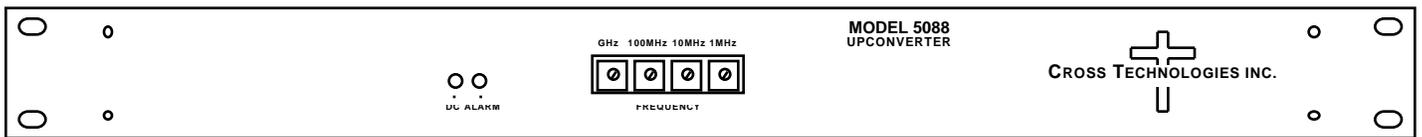
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# MODEL 5088 Upconverter

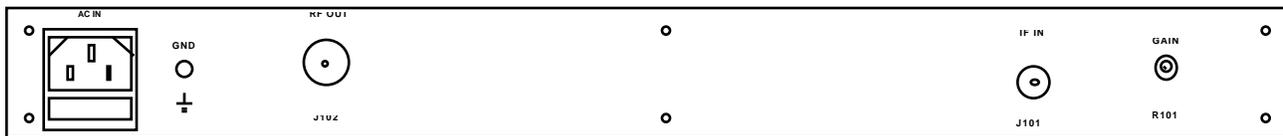
## SECTION 1 GENERAL

**1.1 Equipment Description-** The Series 5088 5 GHz Upconverters convert IF to 5 GHz with no spectrum inversion and flat frequency response. For the 5088-07, the 70 MHz IF input is mixed with synthesized local oscillator (LO) signals, first to 1500 MHz and finally to 5.30 GHz. The 5088-17 has a 170 MHz IF input and 5.725 to 5.825 GHz output frequency. Other frequencies can be provided. Front panel LEDs indicate DC power is applied (green) and if a PLL alarm occurs (red). Gain is 10 dB. Connectors are type F female for the IF input and type N female for the RF output. The 5088 Upconverters are housed in an 1 3/4" X 19" X 14" deep rack mount chassis.

The 5088 consists of two RF Assemblies and one Controller/LO PCB housed in a 1 RU (1 3/4 inch high) by 12 inch deep chassis. A switching,  $\pm 15$  VDC power supply provides power for the assemblies.

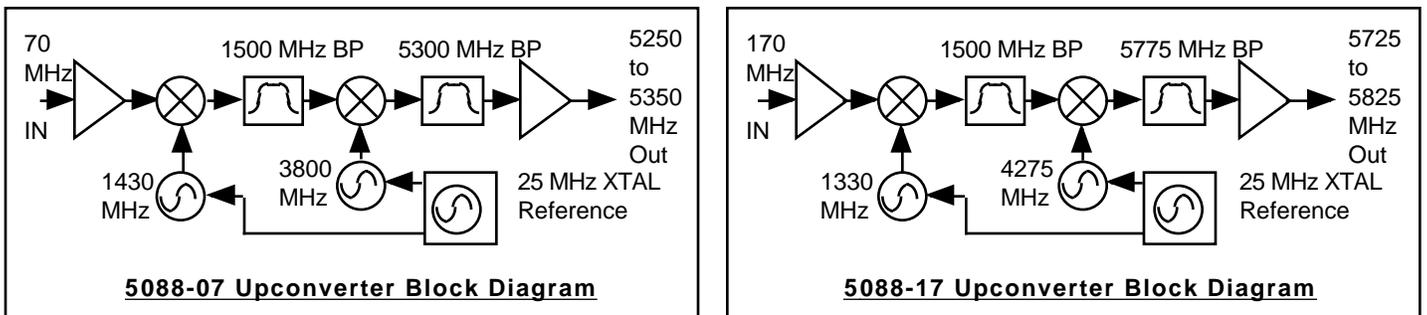


**FRONT PANEL**



**REAR PANEL**

**Figure 1.1 Model 5088 Front and Rear Panels**



**Figure 1.2 Model 5088 Upconverter Block Diagrams**

## 1.2 Technical Characteristics

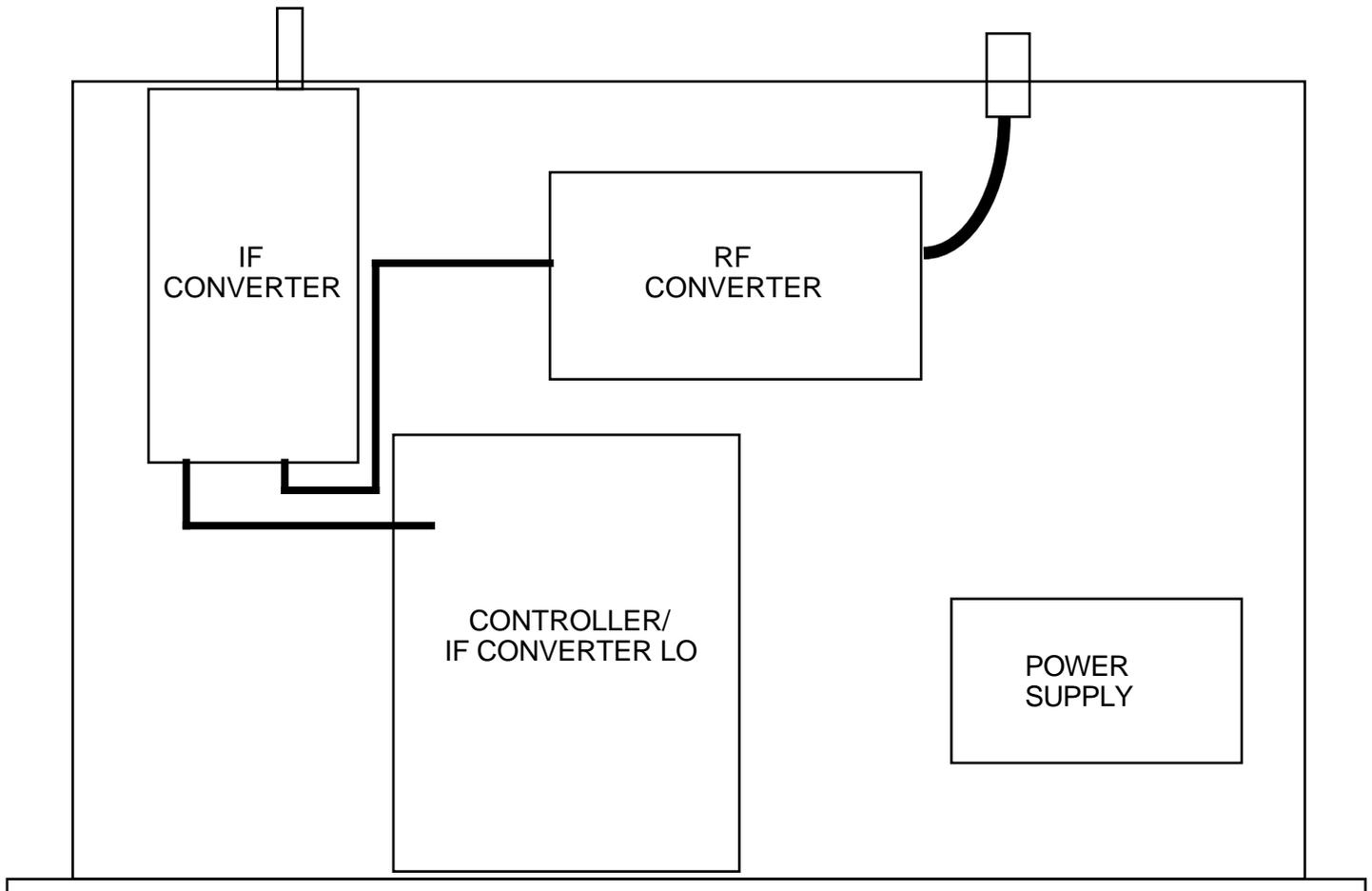
**TABLE 1.0 5088 Upconverter SPECIFICATIONS\***

<b>Input Characteristics</b>	
Impedance/RL	75 /15 dB
Frequency 5088-07	70 ± 20 MHZ
Frequency 5088-17	170 ± 50 MHZ
Input Level range	-25 to -40 dBm
Input 1 dB/3RD ORDER	-5 / +5 dBm
<b>Output Characteristics</b>	
Impedance/RL	50 /10 dB
Frequency 5088-07	5300 ± 20 MHZ
Frequency 5088-17	5775 ± 50 MHZ
<b>Channel Characteristics</b>	
Gain	10 ± 1.0 dB
Spurious Response	<-55 dBC in band ;< -50 dBC out of band
Frequency Response	± 1.0 dB, entire band; ± 0.5 dB, any 10 MHz increment
<b>Synthesizer Characteristics</b>	
Frequency Accuracy	±10 kHz max over temp
Phase Noise (dBC/Hz)	<= -70, 10 kHz; <=-90, 100 kHz; <=-100, 1 MHz
<b>Controls</b>	
None	
<b>Indicators</b>	
DC Power; PLL Alarm	Green LED; Red LED
<b>Other</b>	
IF; RF Connectors	Type F, female; Type N, female
Size	19 inch standard chassis 1.75"high X 14.0" deep
Power	90 - 260 VAC, 47 - 63 Hz, 30 watts max.
<b>Model Numbers</b>	
5088-07	70 MHz IF input and 5300 ± 20 MHZ output
5088-17	170 MHz IF input and 5775 ± 50 MHZ output
Call for other frequencies	

\*+10 to +40 degrees C; Specifications subject to change without notice

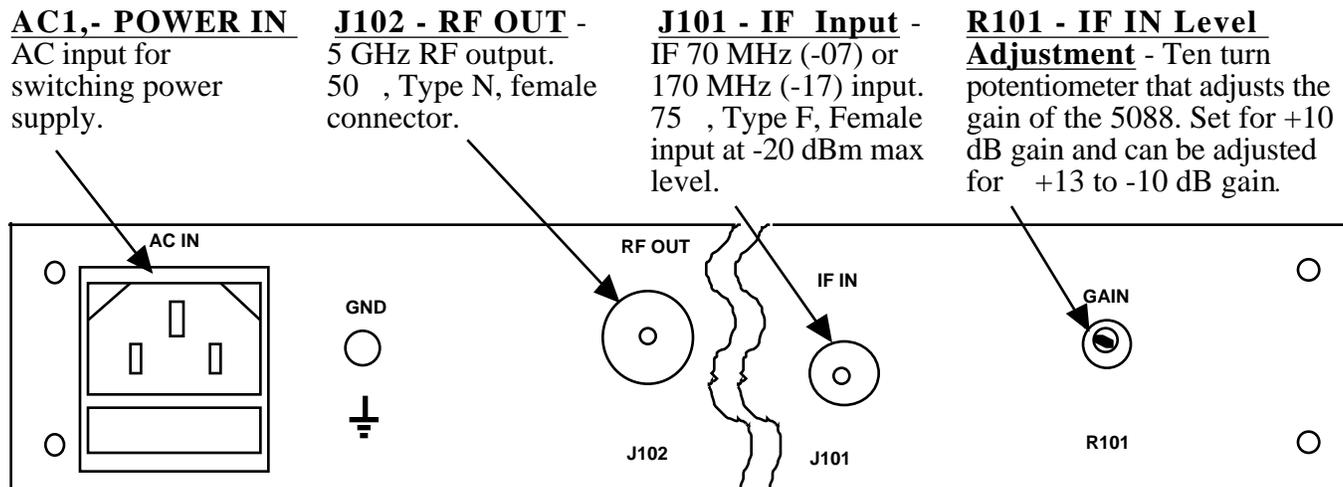
## 2.0 Installation

**2.1 Mechanical** - The 5088 consists of two RF Assemblies and one Controller/LO PCB housed in a 1 RU (1 3/4 inch high) by 12 inch deep chassis. A switching,  $\pm 15$  VDC power supply provides power for the assemblies. The 5088 can be secured to a rack using the 4 holes on the front panel. Figure 2.0 shows how the 5088 is assembled.



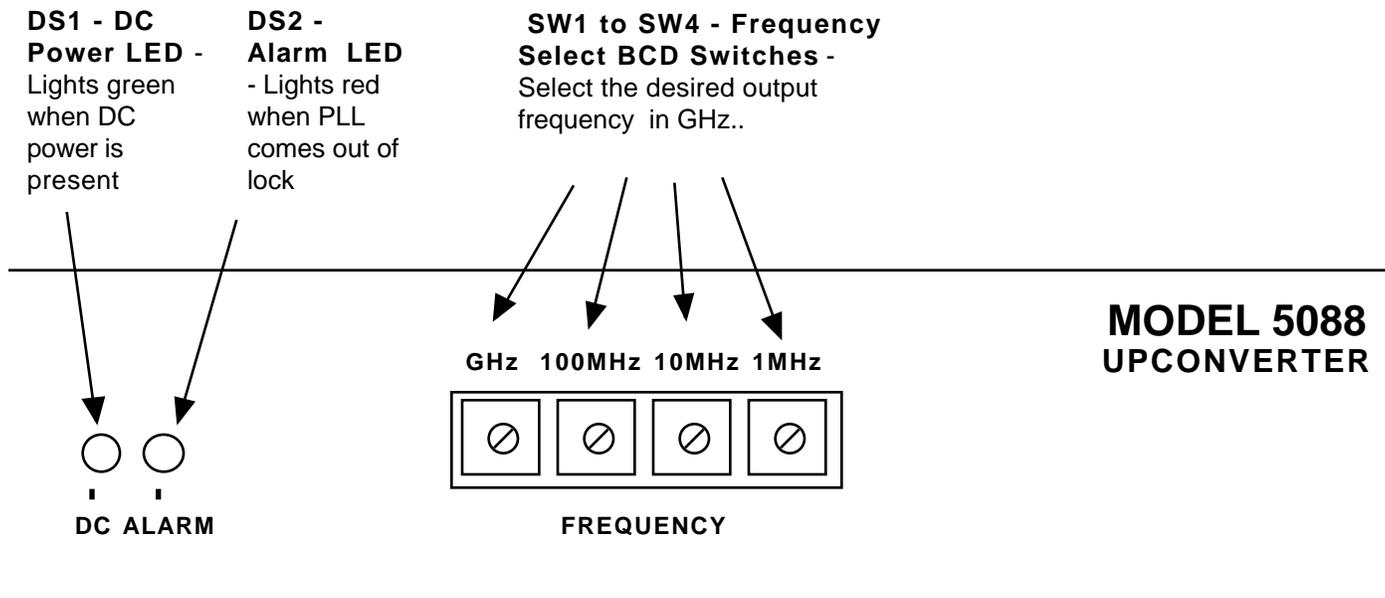
**FIGURE 2.0 5088 MECHANICAL ASSEMBLY**

**2.2 Rear Panel Input/Output Signals and Level Control** - Figure 2.1 shows the input and output connectors on the rear panel.



**FIGURE 2.1 5088 REAR PANEL I/Os and LEVEL CONTROL**

**2.3 Front Panel Controls and Indicators** -The following are the front panel controls and indicators.



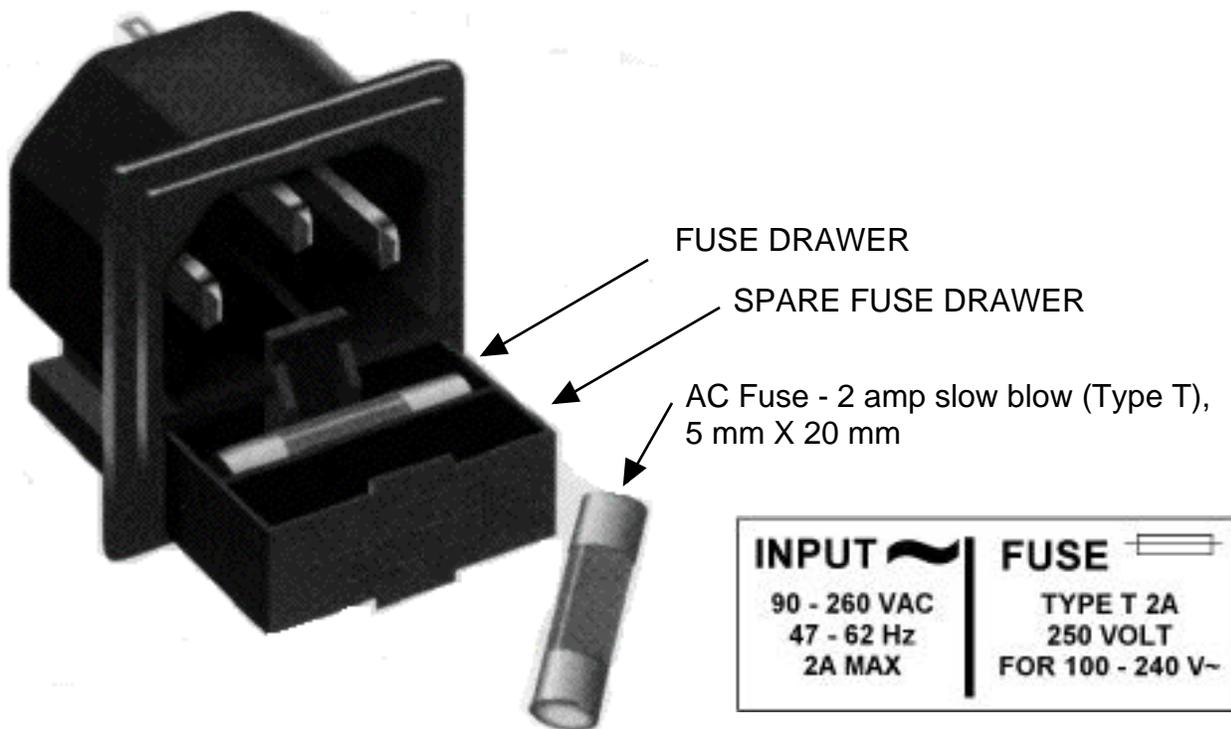
**FIGURE 2.2 5088 FRONT PANEL CONTROLS AND INDICATORS**

## 2.4 Installation / Operation -

### 2.4.1 Installing and Operating the 2005 -

- 1.) Connect a -25 dBm to -45 dBm signal to IF In, J101 (Figure 2.1)
- 2.) Connect the RF OUT, J102, to the external equipment
- 3.) Set BCD switches SW1 to SW4 to the desired output frequency.
- 4.) Connect 90- 260 VAC, 47 - 63 Hz to AC1 on the back panel.
- 5.) Be sure DS1 (green, DC Power) is on and DS2 (red, Alarm) is off (Figure 2.2).
- 6.) **AC Fuse** - The fuse is a 5 mm X 20 mm, 2 amp slow blow (Type T) and is inserted in the far slot in the drawer below the AC input as shown in Figure 2.3. There is a spare fuse in the near slot. If a fuse continues to open, the power supply is most likely defective.

**2.4.2 Frequency Setting, SW1 to SW4** - The RF output frequency is selected by setting the BCD switches (SW1 to SW4) on the front panel to the desired frequency using a small blade screwdriver. The frequency displayed on the BCD switches is the desired output frequency with 70 (-07) or 170 MHz (-17) IF center frequency input. There is no muting of the output carrier during frequency selection. If the switches are set to an invalid frequency, alarm LED DS2 will light.



**FIGURE 2.3 FUSE LOCATION AND SPARE FUSE**