INSTRUCTION MANUAL

MODEL 5089 Downconverter

When ordering parts from Cross Technologies, Inc., be sure to include the equipment model number, equipment serial number, and a description of the part.

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TABLE OF CONTENTS **PAGE**

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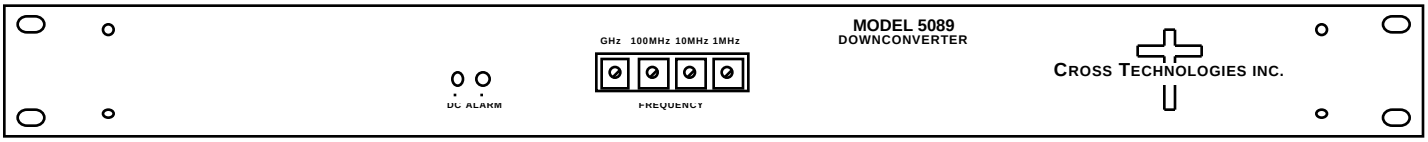
MODEL 5089 Downconverter

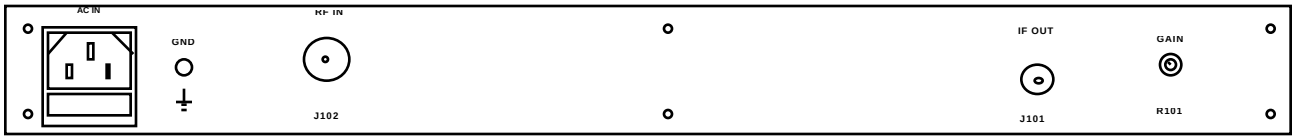
SECTION 1 GENERAL

1.1 Equipment Description- The Series 5089 5 GHz Downconverters convert 5 GHz to IF with no spectrum inversion and flat frequency response. For the 5089-07, the 5.30 GHz input is mixed with synthesized local oscillator (LO) signals, first to 1500 MHz and finally to 70 MHz IF. The 5089-17 has a 170 MHz IF output and 5.725 to 5.825 GHz input frequency. Other frequencies can be provided. Front panel LEDs indicate DC power is applied (green) and if a PLL alarm occurs (red). The gain is 10 dB. Connectors are type N female for the RF input and type F female for the IF output. The 5089 Converters are housed in an 1 3/4" X 19 " X 14 " deep rack mount chassis.

The 5089 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, ± 15 VDC power supply provides power for the assemblies.



FRONT PANEL



REAR PANEL

Figure 1.1 Model 5089 Front and Rear Panels

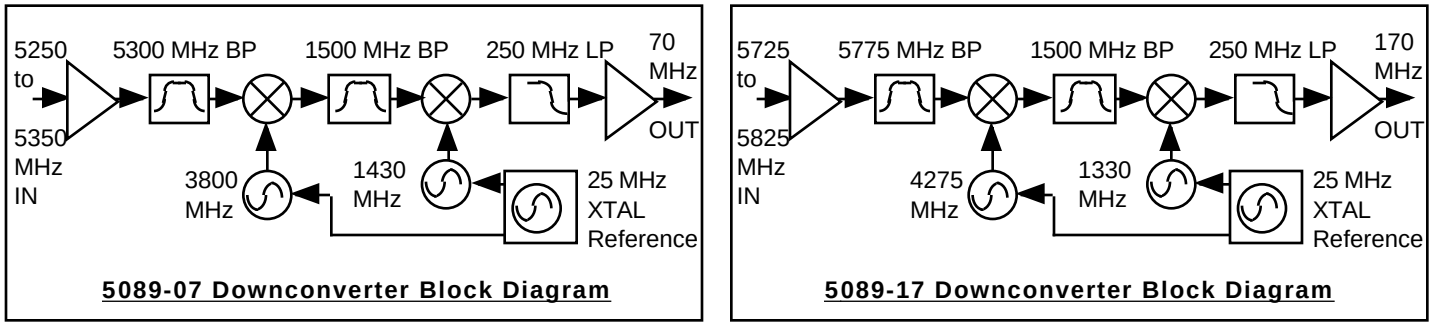


Figure 1.2 Model 5089 Downconverter Block Diagrams

1.2 Technical Characteristics

TABLE 1.0 5089 Downconverter SPECIFICATIONS*

Input Characteristics	
Impedance/RL	50 Ω/10 dB
Frequency 5089-07	5300 ± 20 MHZ
Frequency 5089-17	5775 ± 50 MHZ
Noise Figure, Max.	15 dB
Input Level range	-25 to -45 dBm
Input 1 dB/3RD ORDER	-15 / -5 dBm
Output Characteristics	
Impedance/RL	75 Ω /15 dB
Frequency 5089-07	70 ± 20 MHZ
Frequency 5089-17	170 ± 50 MHZ
Channel Characteristics	
Gain	10 ± 1.0 dB
Image Rejection	< -50 dBC
Frequency Response	± 1.0 dB, entire band; ± 0.5 dB, any 10 MHz increment
Synthesizer Characteristics	
Frequency Accuracy	±10 kHz max over temp
Phase Noise (dBC/Hz)	<= -70, 10 kHz; <=-90, 100 kHz; <=-100, 1 MHz
Controls	
Frequency	BDC Switches select input frequency in 1 MHz steps
Indicators	
DC Power; PLL Alarm	Green LED; Red LED
Other	
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.
Model Numbers	
5089-07	70 MHz IF output and 5300 ± 20 MHZ intput
5089-17	170 MHz IF output and 5775 ± 50 MHz intput
Call for other frequencies	

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

2.0 Installation

2.1 Mechanical - The 5089 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, ± 15 VDC power supply provides power for the assemblies. The 5089 can be secured to a rack using the 4 holes on the front panel. Figure 2.0 shows how the 5089 is assembled.

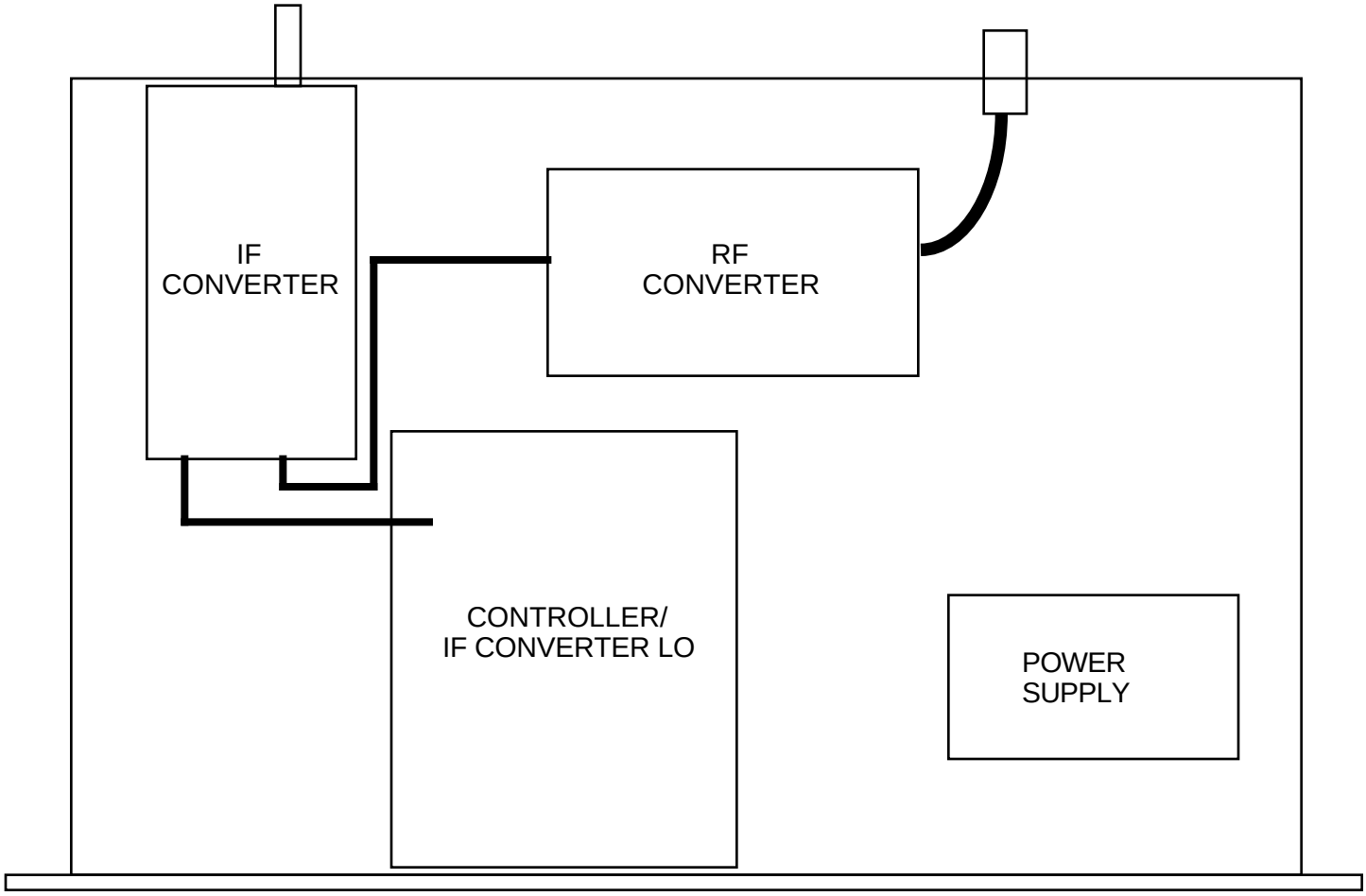


FIGURE 2.0 5089 MECHANICAL ASSEMBLY

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

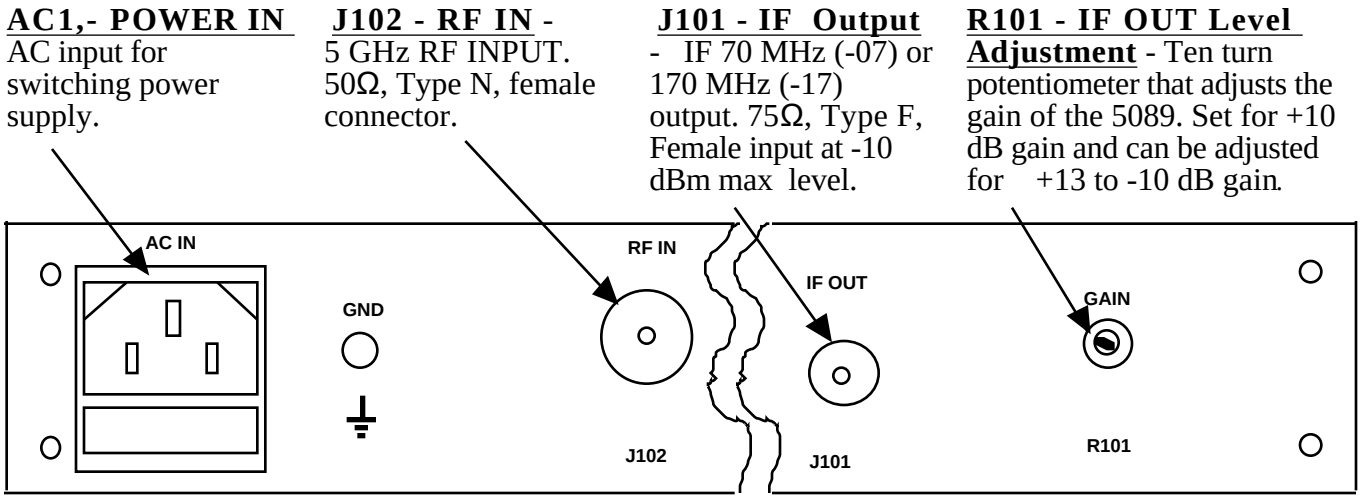


FIGURE 2.1 5089 REAR PANEL I/Os and LEVEL CONTROL

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

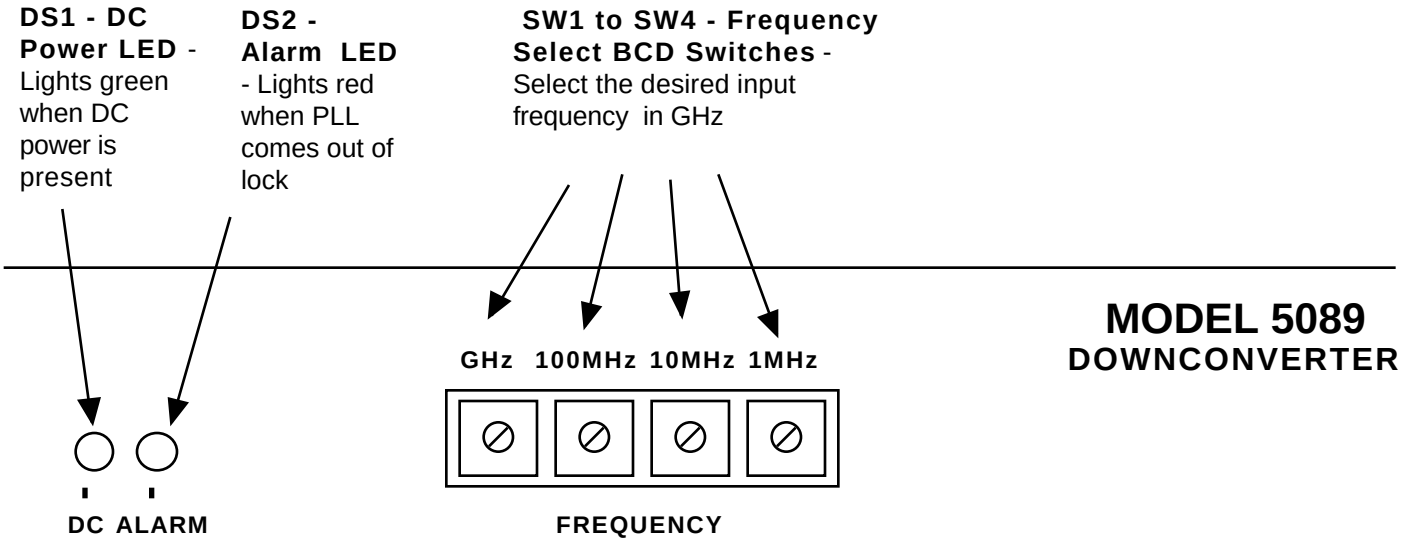


FIGURE 2.2 5089 FRONT PANEL CONTROLS AND INDICATORS

2.4 Installation / Operation -

2.4.1 Installing and Operating the 2005 -

1.) Connect a -25 to -45 dBm signal to RF In, J102 (Figure 2.1)
2.) Connect the IF OUT, J101, to the external equipment
3.) Set BCD switches SW1 to SW4 to the desired 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 input 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 input frequency with 70 (-07) or 170 MHz (-17) IF center frequency output. If the switches are set to an invalid frequency, alarm LED DS2 will light.

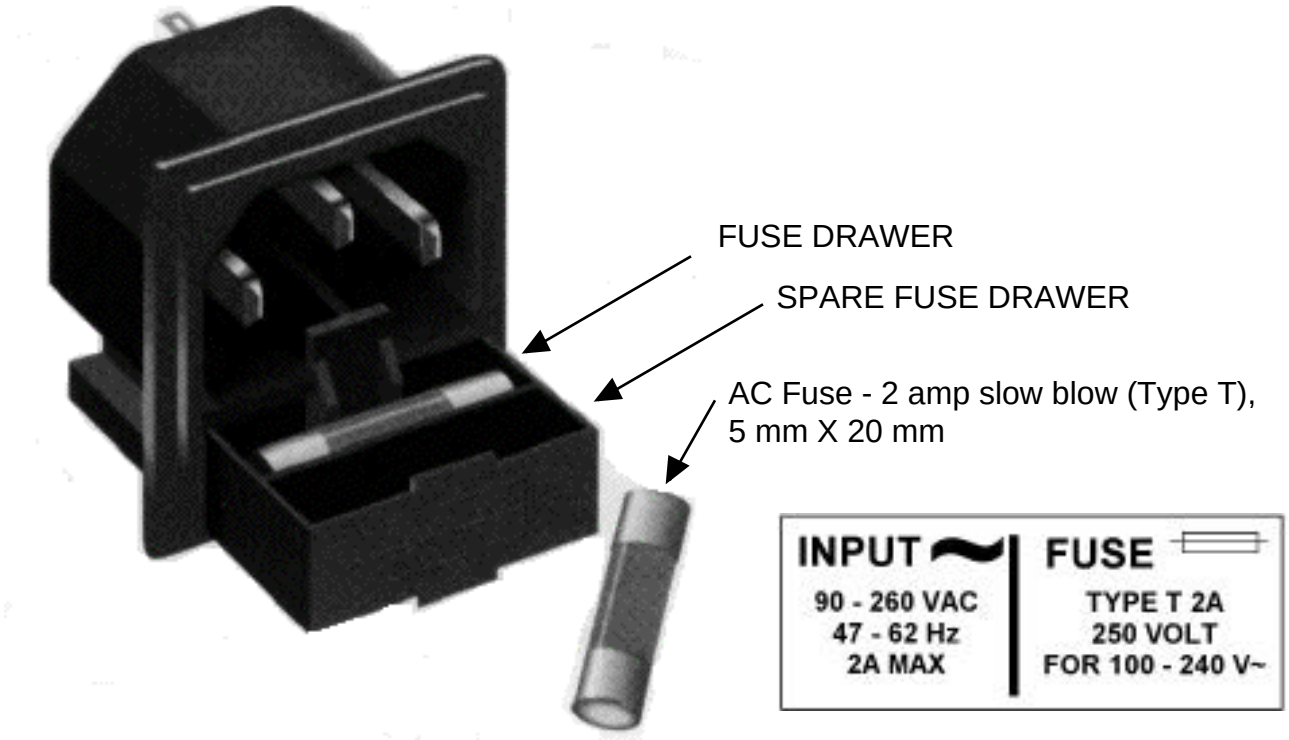


FIGURE 2.3 FUSE LOCATION AND SPARE FUSE