INSTRUCTION MANUAL

MODEL 1200-08
IF AGC AMPLIFIER

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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MODEL 1200-08 IF AGC AMPLIFIER

1.0 General

1.1 Equipment Description

The 1200-08 IF Amplifier provides automatic gain control (AGC) for a 50 to 200 MHz IF signal. It takes a -35 to 0 dBm input signal and automatically adjusts the gain for a 0 to +10 dBm (± 1 dB) output which can be adjusted using the front panel potentiometer. The 1200-08 has a band limiting lowpass filter. It also has capabilities to switch between automatic gain control (AGC) or manual gain control (MGC). A potentiometer on the rear panel allows for manual gain adjustment when in MGC mode. The IF in and out connectors are BNC female. All circuitry is on a single PCB housed in a 1RU X 14" deep chassis. An internal switching power supply powers the unit with a 90-260 VAC, 47-63 Hz input.

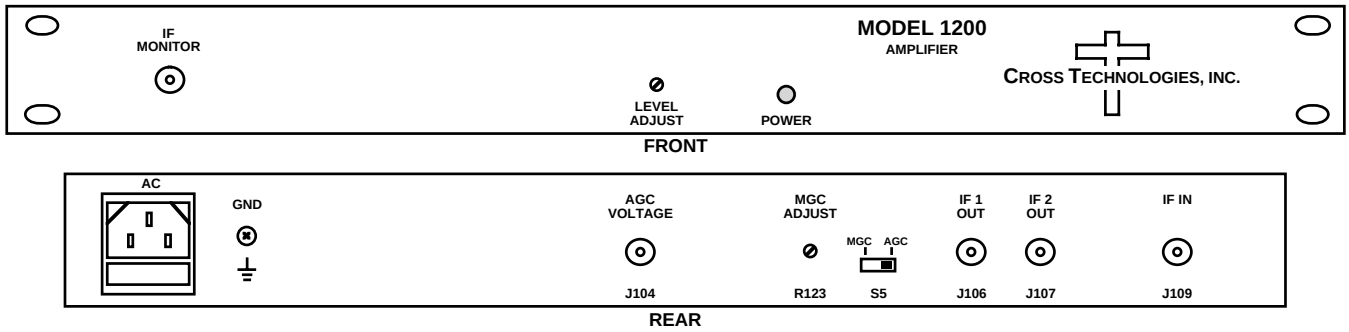

FIGURE 1.1 Model 1200-08 Front and Rear Panels

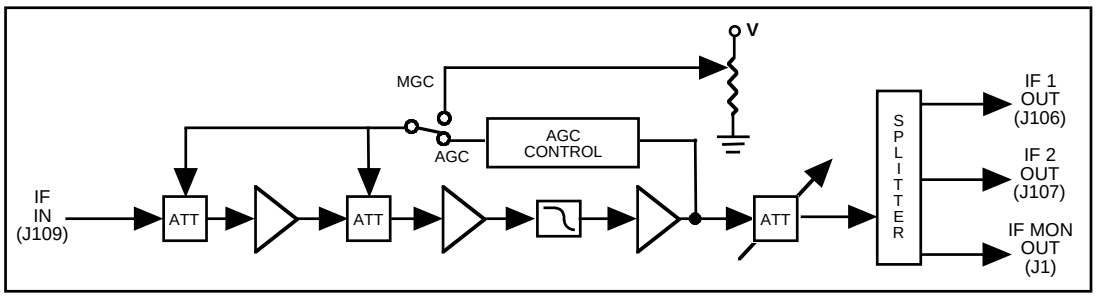

FIGURE 1.2 Model 1200-08 Block Diagram

1.2 Technical Characteristics

TABLE 1.1 1200-08 Specifications*

Input Characteristics

Impedance	50Ω or 75Ω
Return Loss	> 14 dB
Frequency	50 to 200 MHz
Input Level range	-35 to 0 dBm
Input 1 dB comp.	+5 dBm @ min gain

Output Characteristics

Impedance	50Ω or 75Ω
Return Loss	> 14 dB
Output Level	0 to +10 dBm
Output 1 dB comp.	+15 dBm

Channel Characteristics

Gain	0 to +45 dB (AGC)
Frequency Response	± 1.0 dB, 50-200 MHz; ±0.5 dB, ± 20 MHz
Group Delay, max	± 2 ns, max 50-200 MHz

Controls/Indicators

AGC/MGC Switch	Switches between Manual (MGC) or Automatic (AGC) Gain control
Level Adjust	Potentiometer that adjusts output level in AGC mode
MGC Adjust	Potentiometer that adjusts gain in MGC mode
AGC Voltage	Allows for monitoring of the AGC gain (BNC female connector)
Power	Green LED

Other

IF Connectors	BNC (female)
Size	19 inch standard 1RU chassis 1.75”high X 14.0” deep
Power	90-260 VAC, 47-63 Hz, 30 W max

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

2.0 Installation

2.1 Mechanical

The 1200-08 consists of one PCB assembly and one power supply housed in a 1 RU (1 3/4 inch high) by 14 inch deep chassis. An AC power supply provides +15VDC and -15VDC to the PCB. The 1200-08 can be secured to a rack using the 4 holes on the front panel. Figure 2.1 shows how the 1200-08 is assembled.

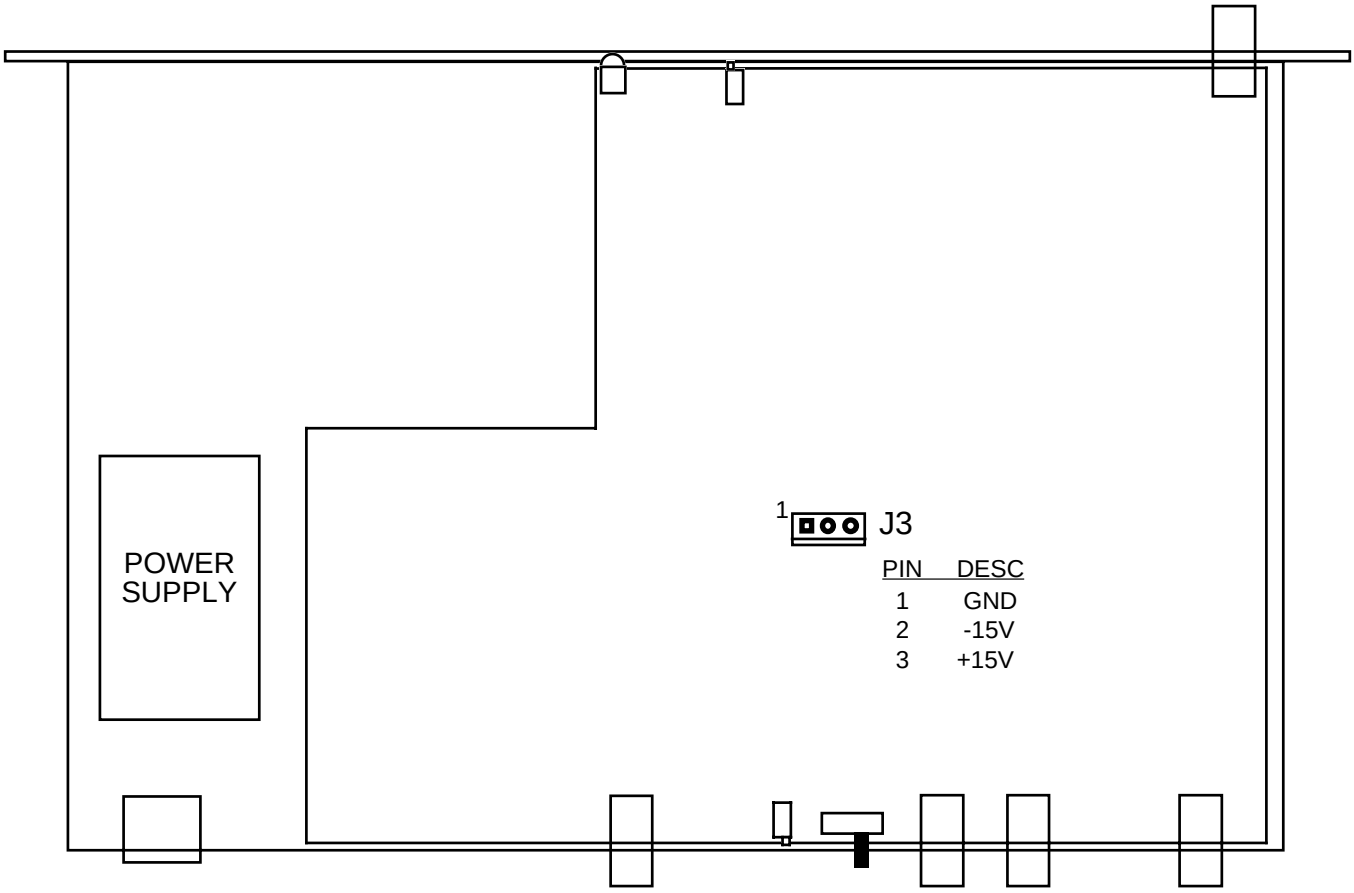

FIGURE 2.1 1200-08 Mechanical Assembly

2.2 Rear Panel Input/Output Signals and Controls

Figure 2.2 shows the input, output. and control connectors on the rear panel.

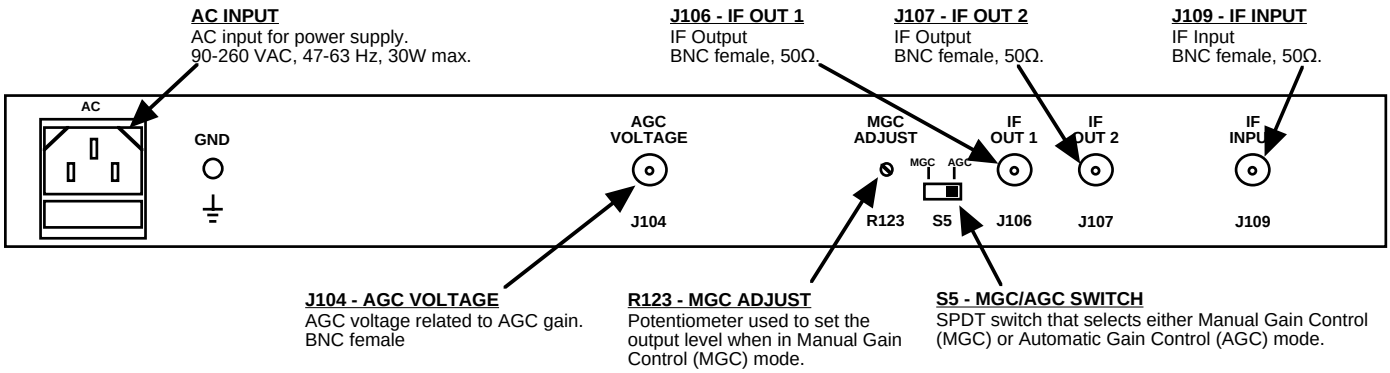

FIGURE 2.2 1200-08 Rear Panel I/Os and Control

2.3 Front Panel Controls and Indicators

Figure 2.3 shows the front panel outputs, controls and indicators.

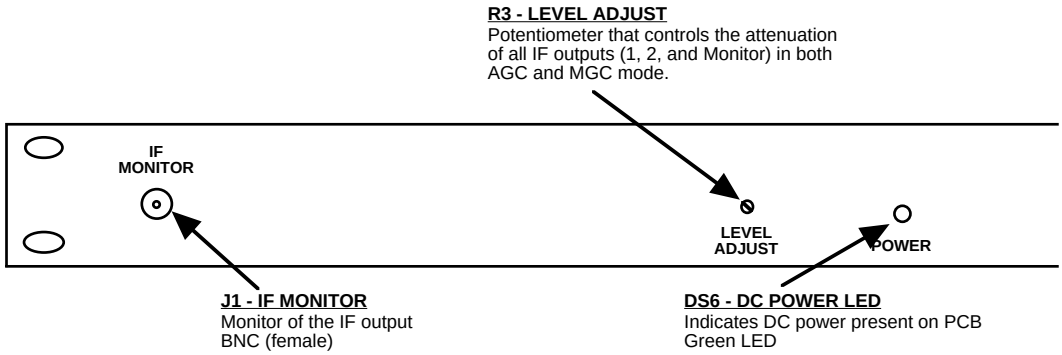

FIGURE 2.3 1200-08 Front Panel Controls and Indicators

2.4 Operation

2.4.1 Installing and Operating the 1200-08

1. Install the 1200-08 in the equipment rack.
2. Connect 90 - 260 VAC, 47 - 63 Hz to AC IN on the back panel (Figure 2.2).
3. Be sure the POWER LED, DS6, is on (Figure 2.3).
4. Connect a -35 to 0 dBm, 50-200 MHz signal to IF INPUT, J109 (Figure 2.2).
5. Select Manual Gain Control (MGC) or Automatic Gain Control using switch, S5 (Figure 2.2).
6. Connect IF OUT 1 and IF OUT 2 (Figure 2.2) to the desired equipment, and check for proper level using IF MONITOR on the front panel (Figure 2.3).
7. If in MGC mode adjust rear panel potentiometer R123 for the desired gain (Figure 2.2).
8. Adjust output to desired level using front panel attenuator pot, R3 (Figure 2.3). Clockwise rotation provides increased output level.
9. 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 2.4. There is a spare fuse in the near slot. If a fuse continues to open, the power supply is most likely defective.

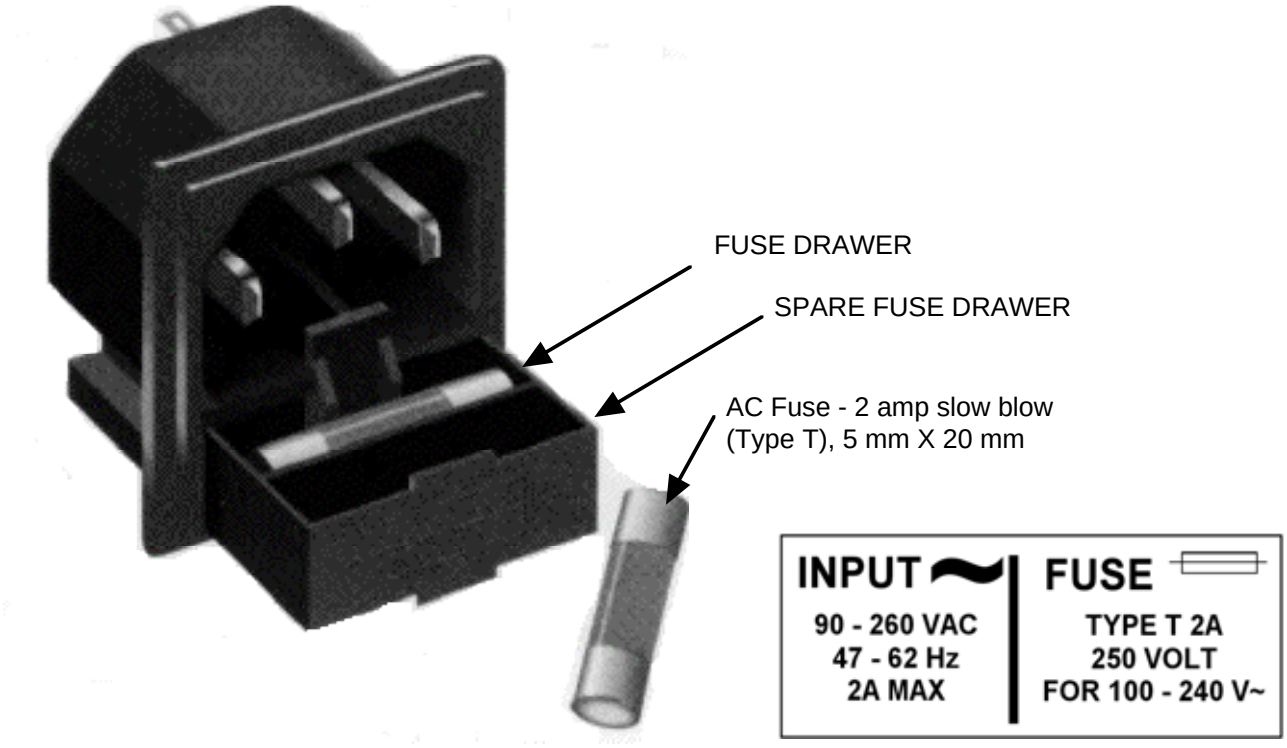

FIGURE 2.4 Fuse Location and Spare Fuse

2.4.2 AGC voltage relating to Gain

The 1200-08 IF AGC Amplifier operates over a 0 to -35 dBm input range. The Automatic Gain Control (AGC) provides a constant 0 to +10 dBm (± 1 dB) IF output level over the entire input range. The AGC VOLTAGE BNC connector, J104, can be monitored to determine the approximate input level (and corresponding gain) in AGC as Table 2.2 shows (this table assumes the AGC level is set to output +4 dBm, which is a typical factory set AGC output).

TABLE 2.1 - Approximate AGC Voltage vs Gain and Input Level

AGC Voltage (J104)	AGC Gain	Input Level
-1.50 VDC	+4 dB	0 dBm
-1.77 VDC	+14 dB	-10 dBm
-1.96 VDC	+24 dB	-20 dBm
-2.12 VDC	+34 dB	-30 dBm

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