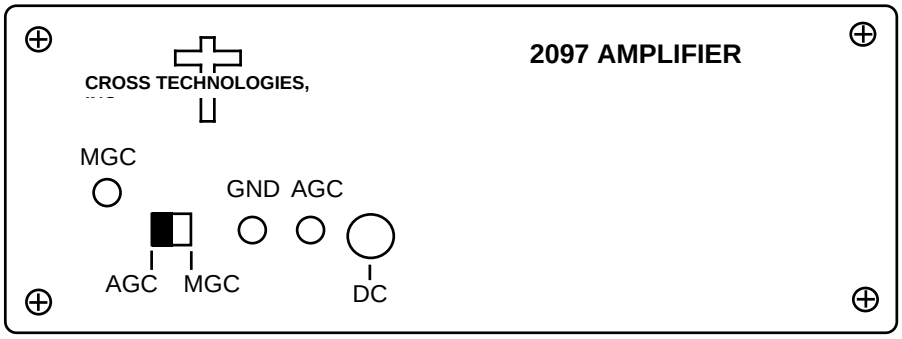
Instruction Manual

Model 2097-07
Amplifier

April 2010 Rev B



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

CROSS TECHNOLOGIES, INC.

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INSTRUCTION MANUAL

MODEL 2097-07 Amplifier

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MODEL 2097-07 AMPLIFIER

1.0 General

1.1 Equipment Description

The 2097-07 IF Amplifier provides automatic Gain Control for a 50 to 100 MHz IF Signal for a -80 to 0 dBm input level to a -35 dBm ±10 dB output. The 2097-07 has a band limiting lowpass filter and automatic gain (AGC) or manual gain (MGC) for a -80 to 0 dBm input range. The 2097-07 is powered by a 120 VAC IN, +15 VAC OUT, unregulated, wall power supply and is housed in an 4.7" Wide x 8.5" High x 12.5" Deep aluminum chassis. **Option-R** provides 1.75" x 19" rack mount panel. **Option-C** has no power for use with a Series 2000 Power Supply.

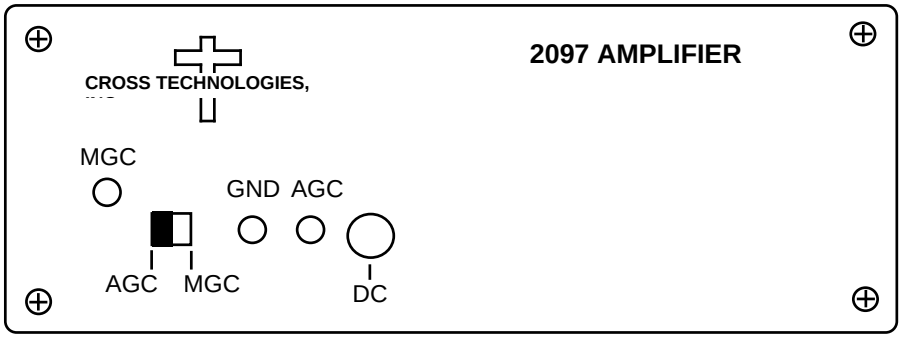
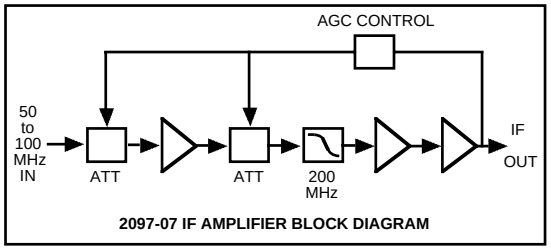


FIGURE 1.1 Model 2097-07 Amplifier Block Diagram and Chassis

1.2 Technical Characteristics

TABLE 1.0 2097-07 Amplifier Specifications*

Input Characteristics	
Impedance/RL	50Ω /10 dB
Frequency	50 to 100 MHz
Input Level Range	0 to 80 dBm
Input 1dB	+5 dBm
Output Characteristics	
Output Impedance/RL	50Ω /18 dB
Output Level Range	-35 ±10 dB
Channel Characteristics	
Gain	-35 to +35, AGC
Frequency Response	±1.0 dB, ± 18 MHz
Group Delay, max.	±5 ns, max. 50 to 100 MH
Controls, Indicators	
MGC/AGC;MGC Pot	Switches between Manual (MGC) or Automatic (AGC) Gain Control; Pot controls manual gain
DC Power	Green LED
Other	
IF, RF Connectors	BNC (female) (see TABLE 2.2 for other options)
Size, Bench Top	4.7" wide X 1.75" high X 8.5" deep
Size, Rack Mount (-R)	19 inch standard chassis, 1.75: high X 9.0" deep
Power	+15 VDC unregulated, 500 mA
Model Numbers	
2097-07	Wall Power Supply
2097-07R	Wall Power Supply, Rack Mount
2097-07C	No power supply, use with Cross model 2000-01 power supply



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

2.0 Installation

2.1 Mechanical: The 2097 is packaged in an aluminum extrusion. The -R Option is mounted on a 1 3/4" x 19" panel that can be mounted to a rack using the 4 holes at the ends. Both units derive + DC from the wall power supply (Option -P) (+15V unregulated). Optionally, the 2097, Option -C is powered from an external +15 VDC power supply like the Cross model 2000-01.

2.1.1 Cleaning Instructions: Wipe the exterior with a dry soft cloth. Use no detergent or cleaning chemicals.

2.2 Controls and Indicators - Figure 2.2 shows front panel controls and indicators.

2.3 Input / Output Signals - Figure 2.3 shows the input and output signals to the 2097.

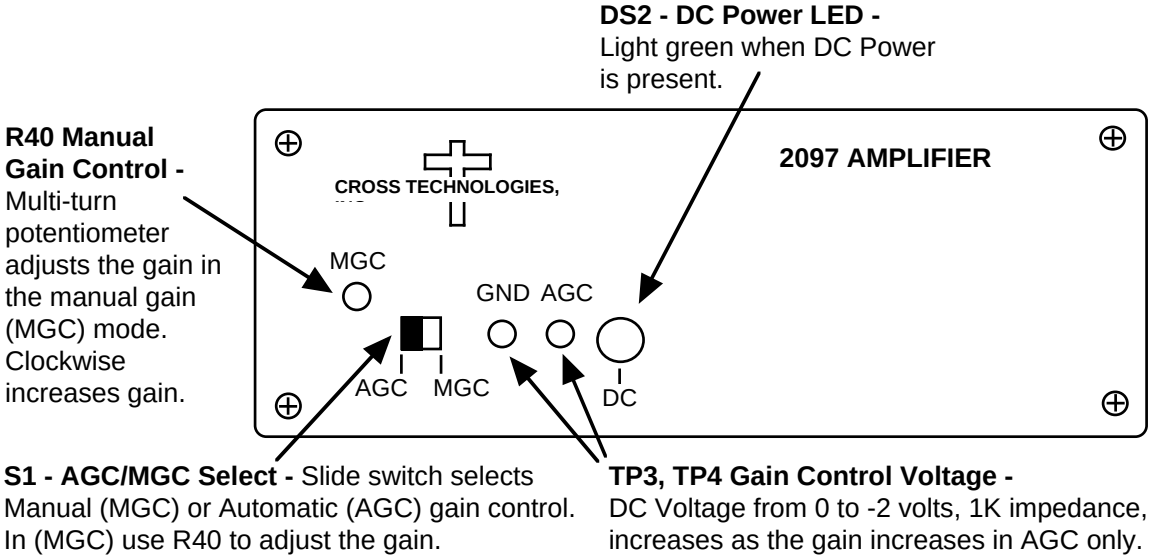


Figure 2.2 2097 Front Panel Controls and Indicators

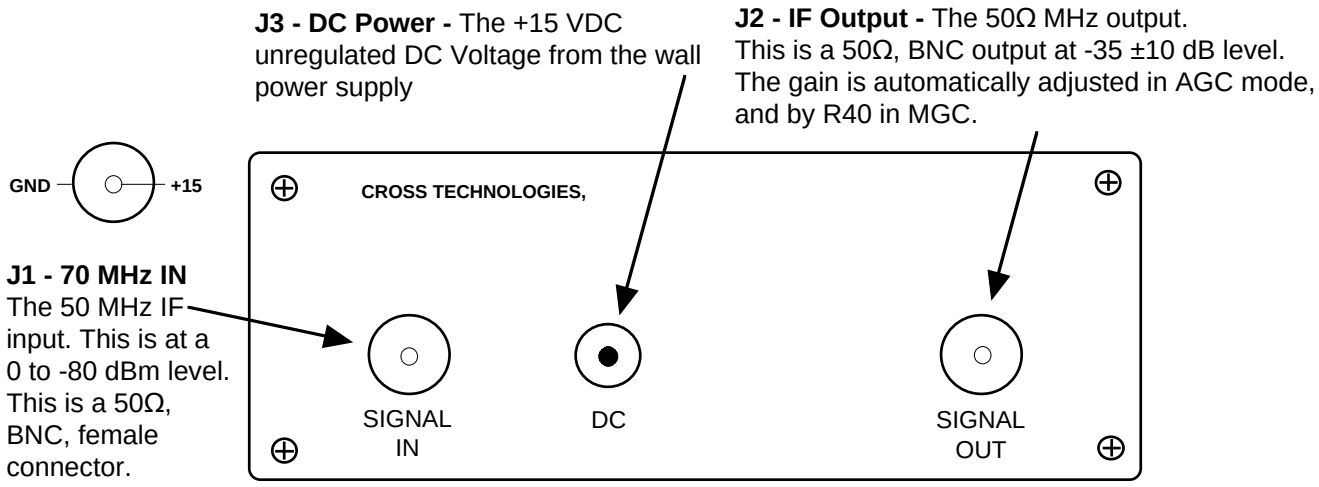


Figure 2.3 2097 Rear Panel Inputs and Outputs

2.4 Installation/Operation

2.4.1 Installing and Operating the 2097-07

1.) Check that S1 is set tot he desired positions. Normal operation is AGC (*Figure 2.2*)
2.) If using the wall power supply, connect it to the 2097 and the wall power supply to 120 VAC, 60 Hz.
3.) Connect a 0 to -80 dBm signal to 70 MHz IF In, J1 (*Figure 2.1*, *Figure 2.3*).
4.) Connect the IF Out, J2 to the external device.
5.) Make sure the DS2 (green, DC Power) is on (*Figure 2.2*).
6.) To check proper operation and adequate signal level, monitor TP3, TP4 with a voltmeter.

2.4.2 AGC Voltage Relating to Gain - The 2097-07 operates over a 0 to -80 input. In Automatic Gain (AGC) with S1 to AGC, the gain is adjusted automatically to provide a constant -35 ±10 dBm output level over the entire 0 to -80 dBm input. In Manual Gain Control (MGC) with S1 to MGC, the gain is adjusted by potentiometer R40 on the front panel. Test points TP3 and TP4 can be monitored to determine the approximate gain and the approximated input level in AGC as the following table shows. This voltage is not available in MGC.

A	B	C	D
Table 2.1 2097 AGC Voltage and Gain and Input Level Information			
AGC Monitor DC Volts	AGC Gain	AGC'd Input Level (dBm)	
<-3	>40	-80	
2.17	35	-70	
-1.9	25	-60	
-1.65	15	-50	
-1.37	5	-40	
-1.01	-5	-30	
-0.55	-15	-20	
0.02	-25	-10	
0.59	-35	0	

3.0 Environmental Use Information

A. **Rack-Mounting** - To mount this equipment in a rack, please refer to the installation instructions located in the user manual furnished by the manufacturer of your equipment rack.

B. **Mechanical loading** - Mounting of equipment in a rack should be such that a hazardous condition does not exist due to uneven weight distribution.

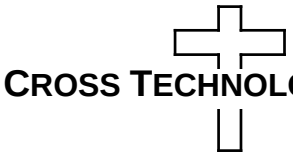
C. **Elevated operating ambient temperature** - If installed in a closed or multiunit rack assembly, the operating ambient temperature of the rack may be greater than room ambient temperature. Therefore, consideration should be given to Tmra.

D. **Reduced air flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. Additional space between unit may be required.

E. **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits could have on over current protection and supply wiring. Appropriate consideration of equipment name plate rating should be used, when addressing this concern.

F. **Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connection to the Branch (use of power strips).

G. **Top Cover** - There are no serviceable parts inside the product so, the Top Cover should not be removed. If the Top Cover is removed the ground strap and associated screw MUST BE RE-INSTALLED prior to Top Cover screw replacement. FAILURE TO DO this may cause INGRESS and/or EGRESS emission problems.



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