

# **INSTRUCTION MANUAL**

## **MODEL 1584-161 16-Way Combiner**

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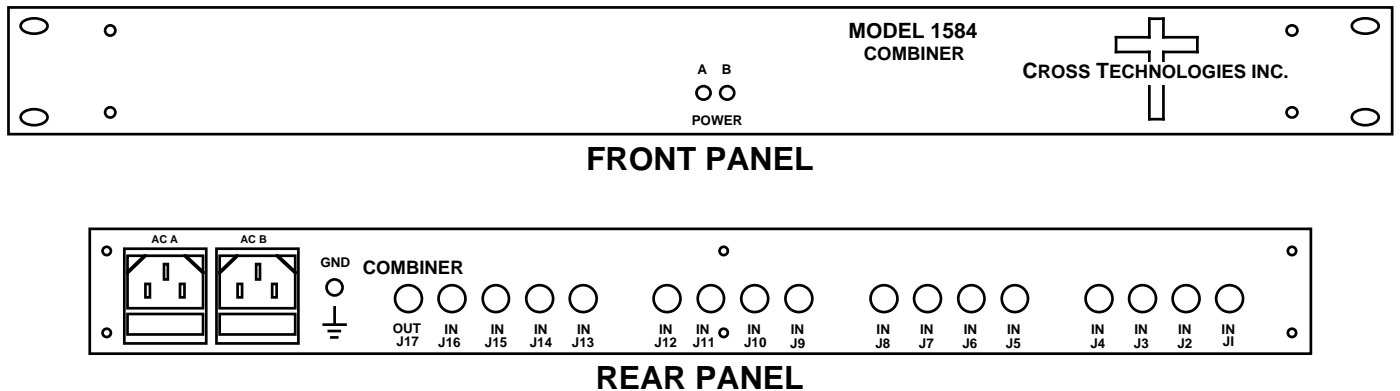
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# MODEL 1584-161 Combiner

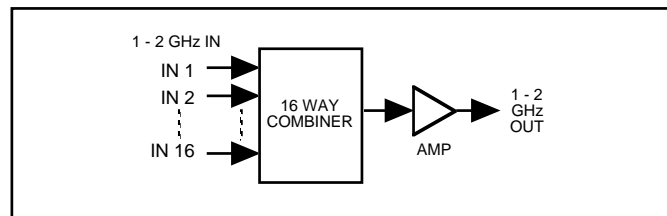
## 1.0 General

### 1.1 Equipment Description

The Model 1584-161 is one sixteen-way, 0.95 - 2.05 GHz, 0 dB gain combiner in a 1RU rack mount chassis with redundant 100-240  $\pm$ 10% VAC power supplies. The combiner provides excellent RF characteristics. It has sixteen inputs and one output on the back panel. Two individual 100-240  $\pm$ 10% VAC input power supplies provide diode OR'd redundant power to the unit. A surge suppressor on the combiner output protects against high voltage transients. On the front panel, two green LED's indicate the presence of DC voltage from each of the two power supplies.



**FIGURE 1.1 MODEL 1584-161 FRONT AND REAR PANELS**



**FIGURE 1.2 MODEL 1584-161 BLOCK DIAGRAM**

## 1.2 Technical Characteristics

**TABLE 1.0 1584-161 SPECIFICATIONS**

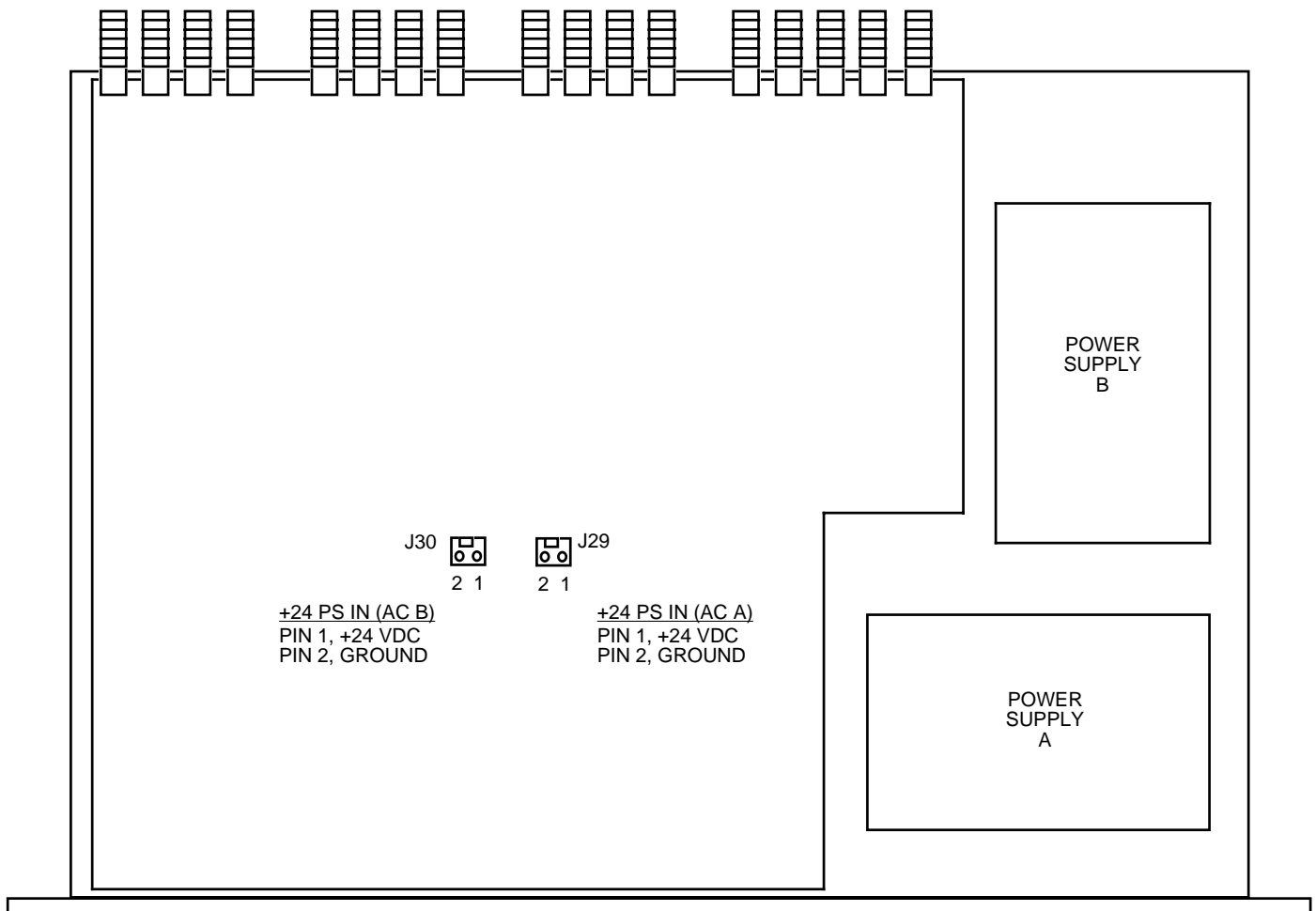
<b><u>Characteristics</u></b>	<b><u>Specifications*</u></b>
<b>Input Characteristics</b>	
Input Impedance	75Ω STD
Return Loss	12 dB min.; 14 dB typ.
Input Level	-20 dBm total maximum
<b>Output Characteristics</b>	
Impedance	75Ω STD
Return Loss	12 dB min.; 14 dB typ.
<b>In-Band Characteristics</b>	
Gain	+0 dB ± 1.0 dB
Frequency Response	± 1.0 dB; 0.95 to 2.05 GHz ± 0.5 dB, any 20 MHz incr.
Port to Port Isolation	> 18 dB, min., 20 dB typ.
<b>Indicators</b>	
AC Power (A & B)	Green LED indicates DC voltage prior to diode OR and to amplifiers
<b>Other</b>	
Surge Suppressor	SiDACTOR
RF connectors	Type F (female) STD
Fuses - AC	5mm, 2 amp, slow blo
AC Power	Redundant power supplies, 100-240 ±10% VAC, 47 -63 Hz, 30 watts max
Mechanical	19 inch standard chassis 1.75" high X 12" deep
<b>Options</b>	
B	75Ω, BNC RF connectors
C	RF out BCN 50Ω, RF in Type F, 75Ω
D	50Ω, BNC RF connectors
W9	10 MHz Pass Through @ J16, J17

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

## 2.0 Installation

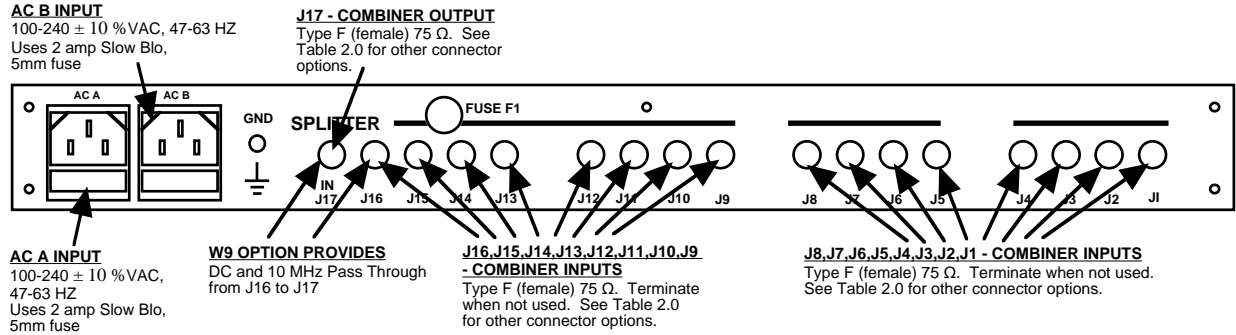
**2.1 Mechanical** - The 1584-161 consists of one RF printed circuit board (PCB) housed in a 1 RU (1 3/4 inch high) by 12 inch deep chassis. Redundant, switching, +24 VDC power supplies with the DC output diode OR'd provide redundant power for the internal and external amplifiers and LEDs. Connectors are type F, female for the RF connections (BNC, female option -B or -D). The 1584-161 can be secured to a rack using the 4 holes on the front panel. Figure 2.1 shows how the 1584-161 is assembled. J25 connects DC Power to the fuse as shown and J30 and J29 connect the DC voltage from the power supplies to the PCB as shown.



**FIGURE 2.0 1584-161 MECHANICAL ASSEMBLY**

## 2.2 Rear Panel Input/Output Connectors

The input and output connectors on the rear panel are shown in Figure 2.1.

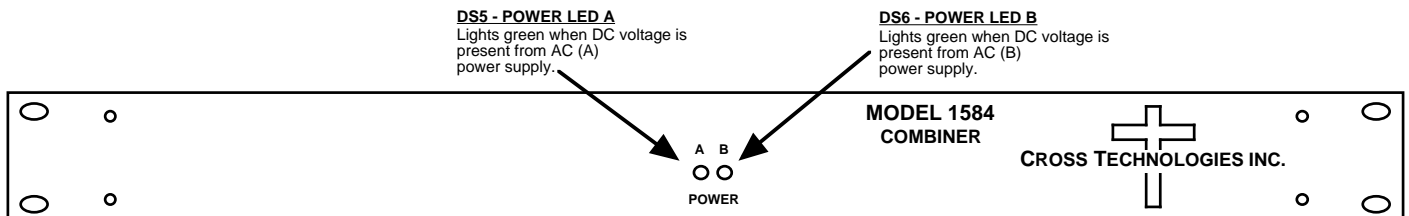


**FIGURE 2.1 1584-161 REAR PANEL**

TABLE 2.0 RF Connector Options	
Option	RF Connectors
STD	Type F, 75Ω
-C	RF out BNC 50Ω, RF in Type F, 75Ω
-B	BNC, 75Ω
-D	BNC, 50Ω
W9	10 MHz Pass Through @ J16, J17

## 2.3 Front Panel Monitors and Indicators

Figure 2.2 shows the front panel monitors and indicators.



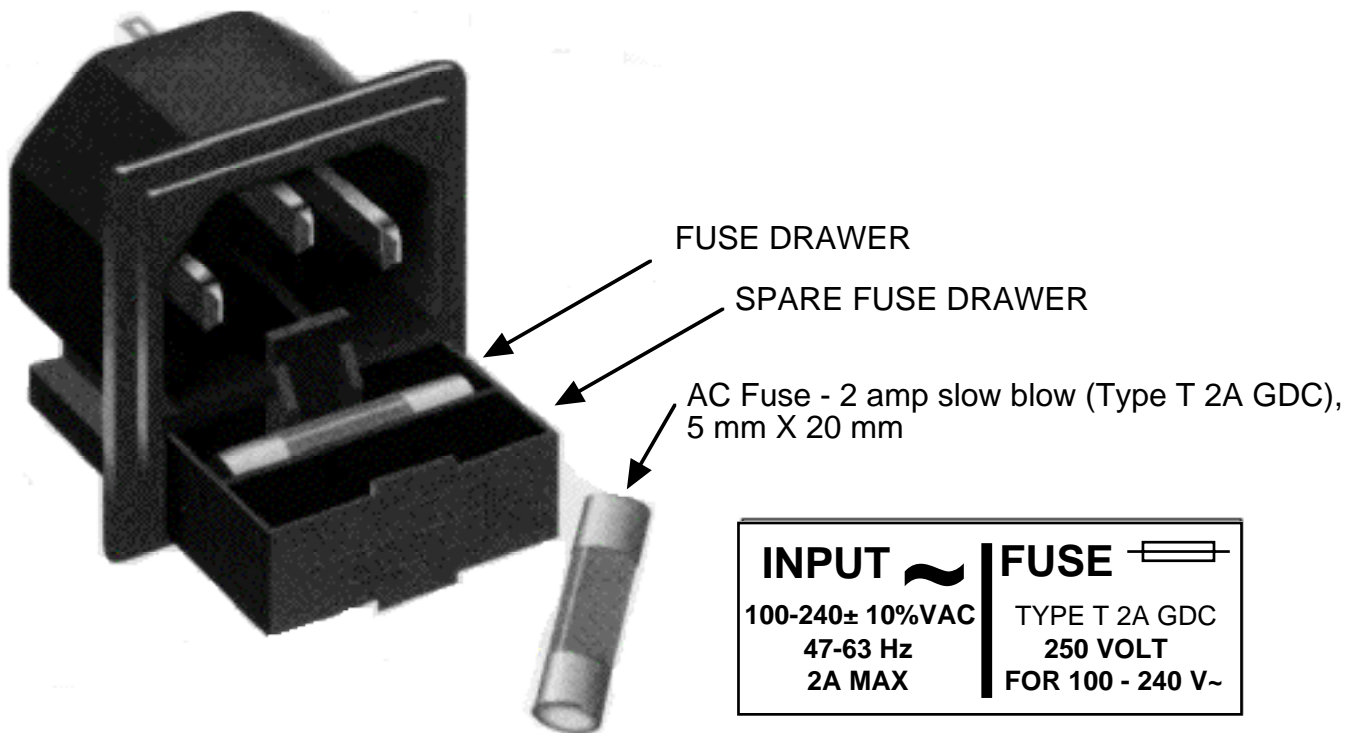
**FIGURE 2.2 1584-161 FRONT PANEL**

## 2.4 Operation

- 1.) Connect RF cables to the 1584-161 (Section 2.2).
- 2.) Connect 100-240  $\pm$ 10% VAC, 47 - 63 Hz to AC A and AC B on the back panel and observe A and B LEDs are lit on the front panel.

**NOTE:** FOR OPTIMUM PERFORMANCE, THE COMBINER PORTS SHOULD BE TERMINATED WITH 75 OHM TYPE F TERMINATIONS WHEN NOT USED.

- 3.) **AC Fuse** - The fuse is a 5mm, 2 amp slow blo and is inserted in the far slot in the drawer below the AC input as shown in Figure 2.6. There is a spare fuse in the near slot. If a fuse continues to open, the power supply is most likely defective. Note that each power supply module within the chassis also has a fuse but failure of this fuse indicates the power supply may be defective.



**FIGURE 2.6 FUSE LOCATION AND SPARE FUSE**