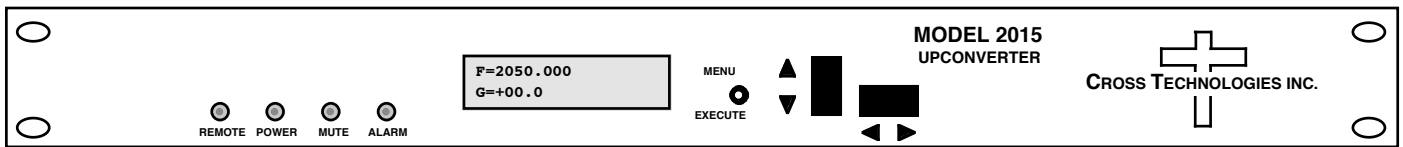


Instruction Manual

Model 284-15 RF Splitter

September 2002 Rev 0



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6170 Shiloh Road
Alpharetta, Georgia 30005

(770) 886-8005
FAX (770) 886-7964
Toll Free 888-900-5588

WEB: www.crosstechnologies.com
E-MAIL: info@crosstechnologies.com

INSTRUCTION MANUAL

MODEL 284-15 RF Splitter

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**CROSS TECHNOLOGIES, INC.
6170 SHILOH ROAD
ALPHARETTA, GEORGIA 30005**

**(770) 886-8005
FAX (770) 886-7964
Toll Free 888-900-5588**

**WEB www.crosstechnologies.com
E-MAIL info@crosstechnologies.com**

MODEL 284-15 RF Splitter

1.0 General

1.1 Equipment Description- The Model 284-15 is a five way, 0.95 - 2 GHz, 0 dB gain splitter in a 4.7”W x 1.75”H x 6.5”D bench top chassis (or mounted on optional 1 Rack Unit panel) with a 115 VAC wall power supply. The splitter provides fused DC power insertion on the RF input connector center pin, surge protection, and excellent RF characteristics. The splitter has a monitor connector on the front panel and four outputs on the back panel. The 115 VAC wall power supply provides a +18 VDC voltage for internal amplifiers and for DC to power an external amplifier (often Low Noise Block converters or LNBs) through a DC power inserter. The LNB power line is separately fused. A surge suppressor on the splitter input protects against high voltage transients. All splitter outputs are AC coupled so no DC appears on their center conductors. On the front panel, a green LED indicates the presence of +18 VDC at the LNB power supply output and DC voltage test points allow monitoring this voltage with a voltmeter. Presence of power from the +18 VDC wall power supply is shown by the green AC Power LED. Up to three 284’s can be mounted on an optional 1 3/4” x 19” rack mount panel (option R1, R2, or R3).

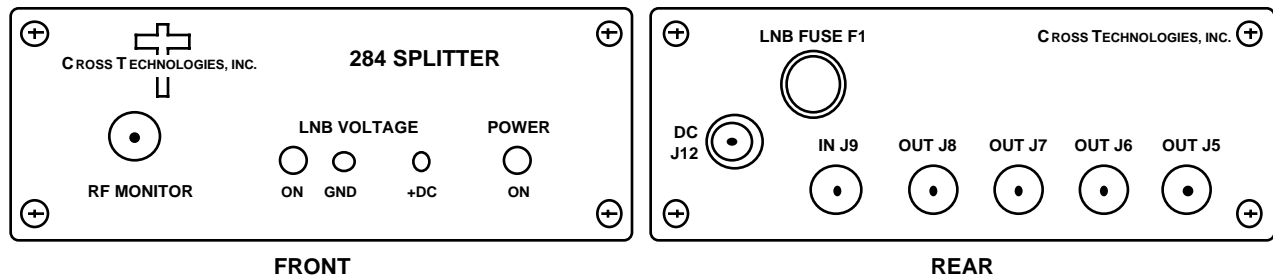


FIGURE 1.1 MODEL 284-15 FRONT AND REAR PANELS

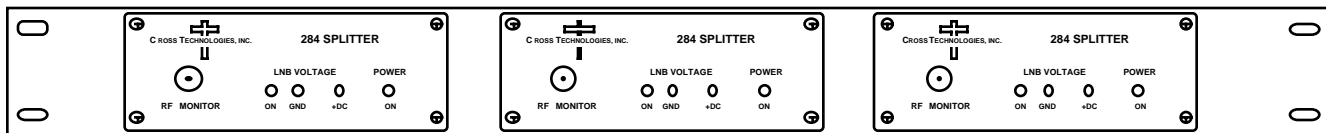


FIGURE 1.2 THREE 284s MOUNTED ON OPTIONAL -R3 RACK PANEL

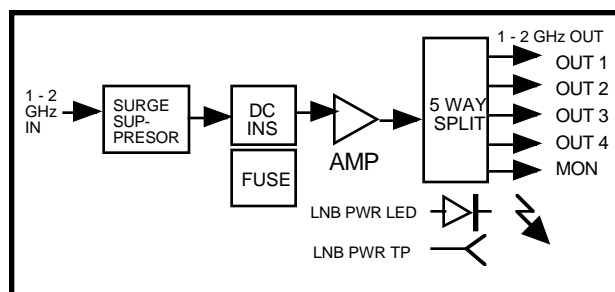


FIGURE 1.3 MODEL 284-15 RF SPLITTER BLOCK DIAGRAM

1.2 Technical Characteristics

TABLE 1.1 284-15 RF SPLITTER SPECIFICATIONS

<u>Characteristics</u>	<u>Specifications*</u>
Input Characteristics	
Input Impedance/RL	75 Ω /10dB, min, 0.95-2.05 GHz; 14dB, typ, 0.95-1.75 GHz
Input Level	-20 dBm total maximum
Output Characteristics	
Impedance/RL	75 Ω /10dB, min, 0.95-2.05 GHz; 14dB, typ, 0.95-1.75 GHz
In-Band Characteristics	
Gain	+0 dB \pm 1.0 dB
Frequency Response	\pm 1.0 dB, 0.95 - 2.05 GHz; \pm 0.5 dB, any 20 MHz incr.
Port to Port Isolation	> 18 dB, min., 20 dB typ.
Indicators	
Power	Green LEDs indicates DC voltage and power to LNB
Other	
LNB DC voltage	18 \pm 2 VDC
Output Amplifier current	300 ma, max.
Surge Suppressor	SiDACTOR
RF connectors	Type F , female
Fuse - LNB Voltage	1/4 “, 1 amp, fast blo
AC Power	115 VAC, 60 Hz, 10 W max, wall power supply
Size, Bench Top	4.7”W x 1.75”H x 6.5”D
Size, Rack Mount (-R)	19 inch standard chassis 1.75”high X 7.0” deep

*+10 to +40 degrees C

2.0 Installation

2.1 Mechanical - The 284-15 consists of one RF printed circuit board (PCB) housed in a 4.7"W x 1.75"H x 6.5"D bench top chassis. A 115VAC, 60Hz wall power supply provides +18VDC power for the internal and external amplifiers and LEDs. RF connectors are type F, female. The 284-15 can also be secured to a rack using the four holes on the optional 1 RU chassis front panel. Figure 2.1 shows how the 284-15 is assembled. J11 connects DC Power to the fuses as shown and J12 connects the DC voltage from the power supply to the PCB as shown.

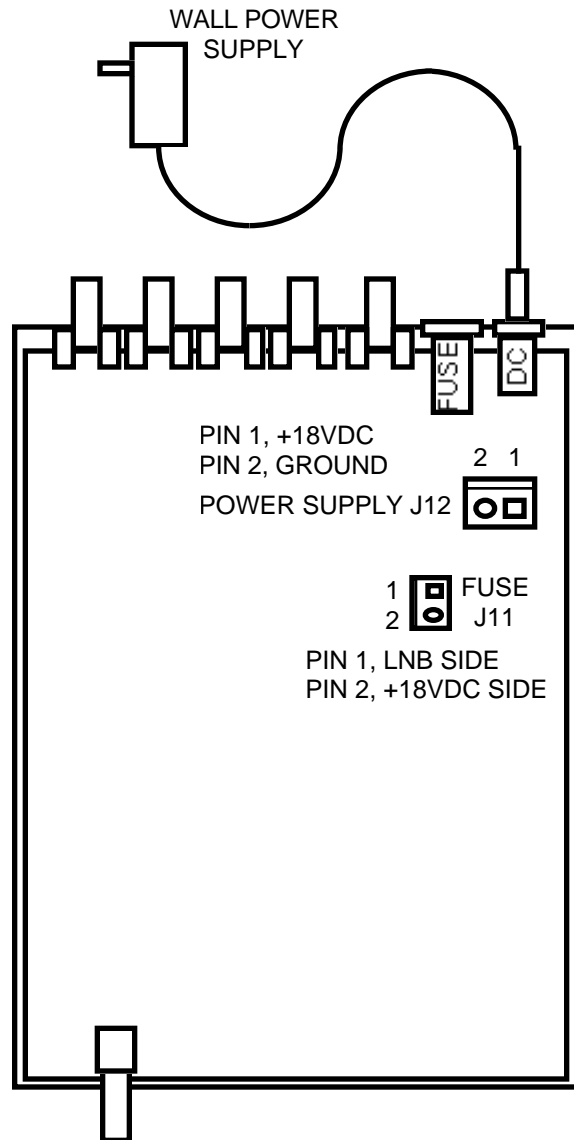


FIGURE 2.1 284-15 MECHANICAL ASSEMBLY

2.2 Rear Panel Input/Output Connectors -

The input and output connectors on the rear panel are shown in Figure 2.2.

CAUTION! IF A FUSE IS INSTALLED IN THE LNB FUSE F1 HOLDER, +18 VDC WILL APPEAR ON THE CENTER PIN OF THE SPLITTER INPUT CONNECTOR.

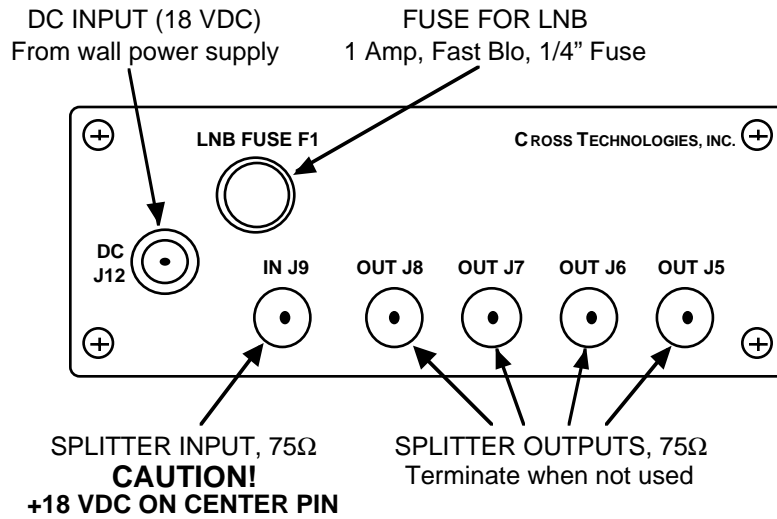


FIGURE 2.2 284-15 REAR PANEL

2.3 Front Panel Monitors and Indicators -

Figure 2.3 shows the front panel monitors and indicators.

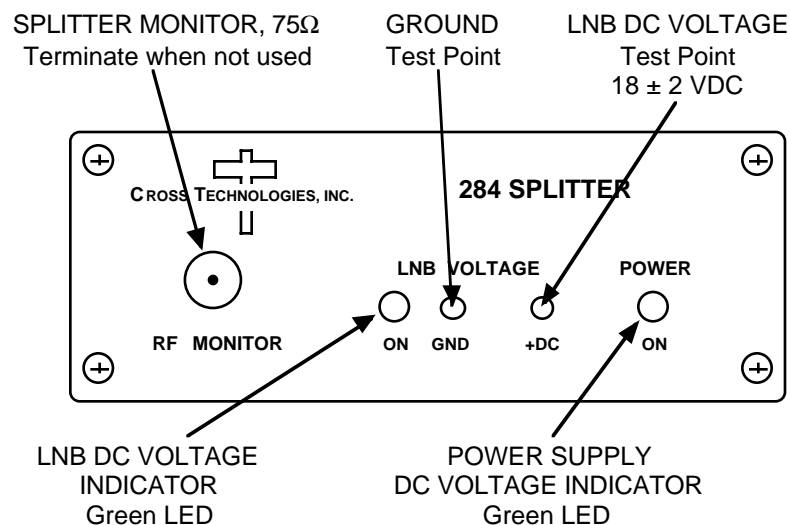


FIGURE 2.3 284-15 FRONT PANEL

2.4 Operation -

- 1.) Connect RF cables to the 284-15 (See Sections 2.2 and 2.3).
- 2.) IF DC VOLTAGE IS REQUIRED ON THE SPLITTER RF INPUT CENTER CONDUCTOR, install a 1/4", 1 amp fast blo fuse in LNB FUSE F1 holder.

CAUTION! IF A FUSE IS INSTALLED IN THE LNB FUSE F1 HOLDER, +18 VDC WILL APPEAR ON THE CENTER PIN OF THE SPLITTER INPUT CONNECTOR.

- 3.) Connect the wall power supply to the DC J12 connector on the rear panel of the 284-15 and then to a 115VAC, 60Hz power outlet, and observe that the POWER LED is lit on the front panel.
- 4.) Monitor the RF signal on the front panel monitor and DC voltage to the external amplifiers (Front panel Green LNB VOLTAGE LED should be lit if a LNB fuse is installed in the rear panel fuse holder) to insure proper signal and voltage.

NOTE: FOR OPTIMUM PERFORMANCE, THE MONITOR PORT AND SPLITTER OUTPUT PORTS SHOULD BE TERMINATED WITH 75 OHM TYPE F TERMINATIONS WHEN NOT USED.

2.5 Rack Mounting - The 284-15 is packaged in an aluminum extrusion. The **-R option** is mounted on a 1 3/4" x 19" rack panel that can be mounted to a rack using the four holes at the ends. To mount a 284-15 unit to a rack panel, remove the four screws attaching the front panel to the extrusion, and then (using the same screws) reattach the front panel to the front of the rack panel with the extrusion (containing the PCB) on the other side of the rack panel (see Figure 2.5).

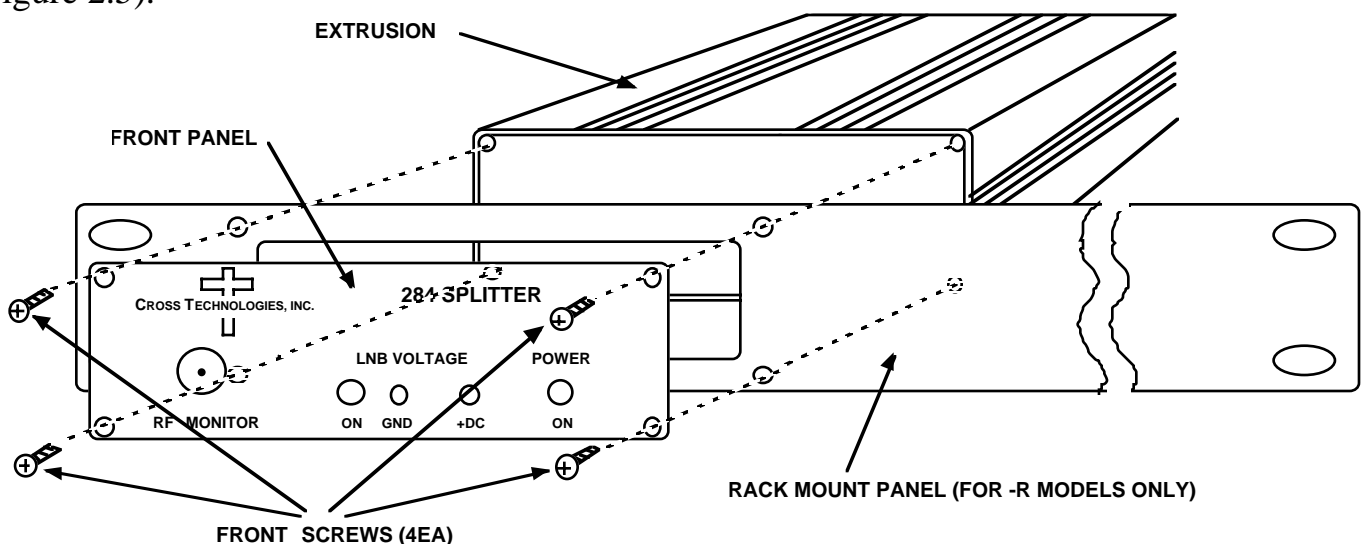


FIGURE 2.5 RACK MOUNTING THE 284-15