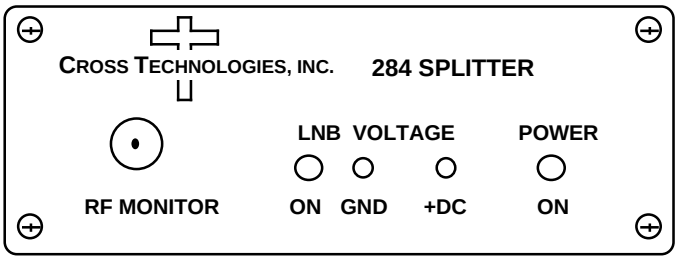
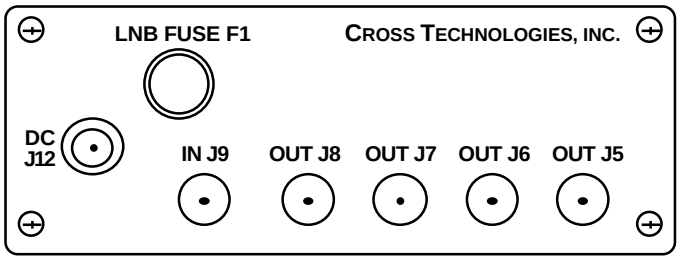
Instruction Manual

Model 284-15
RF Splitter

January 2012, Rev. C





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.

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

TABLE OF CONTENTS **PAGE**

WARRANTY - The following warranty applies to all Cross Technologies, Inc. products.

All Cross Technologies, Inc. products are warranted against defective materials and workmanship for a period of one year after shipment to customer. Cross Technologies, Inc.'s obligation under this warranty is limited to repairing or, at Cross Technologies, Inc.'s option, replacing parts, subassemblies, or entire assemblies. Cross Technologies, Inc. shall not be liable for any special, indirect, or consequential damages. This warranty does not cover parts or equipment which have been subject to misuse, negligence, or accident by the customer during use. All shipping costs for warranty repairs will be prepaid by the customer. There are not other warranties, express or implied, except as stated herein.

CROSS TECHNOLOGIES, INC.

6170 Shiloh Road
Alpharetta, Georgia 30005

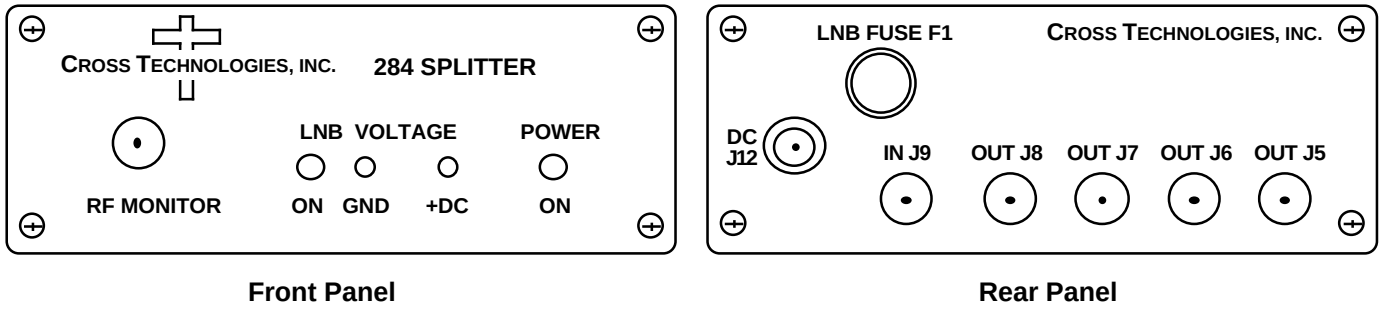
(770) 886-8005
FAX (770) 886-7964
Toll Free 888-900-5588

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

MODEL 284-18 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).



Front Panel **Rear Panel**

FIGURE 1.1 MODEL 284-15 Front and Rear Panels

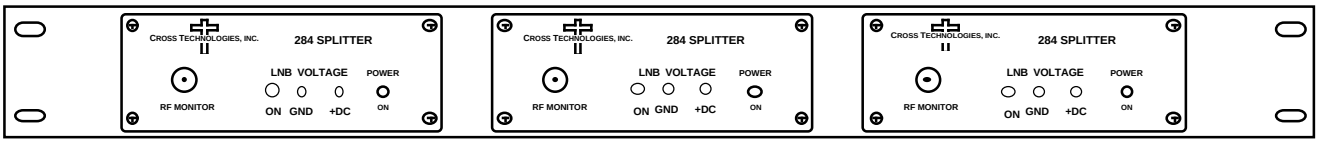


FIGURE 1.2 Three 284s Mounted on Optional -R3 Rack Panel

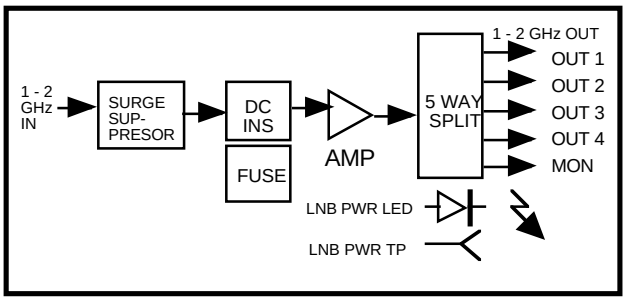


FIGURE 1.3 Model 284-15 RF Splitter Block Diagram

1.2 Technical Characteristics

TABLE 1.1 284-15 RF SPLITTER SPECIFICATIONS

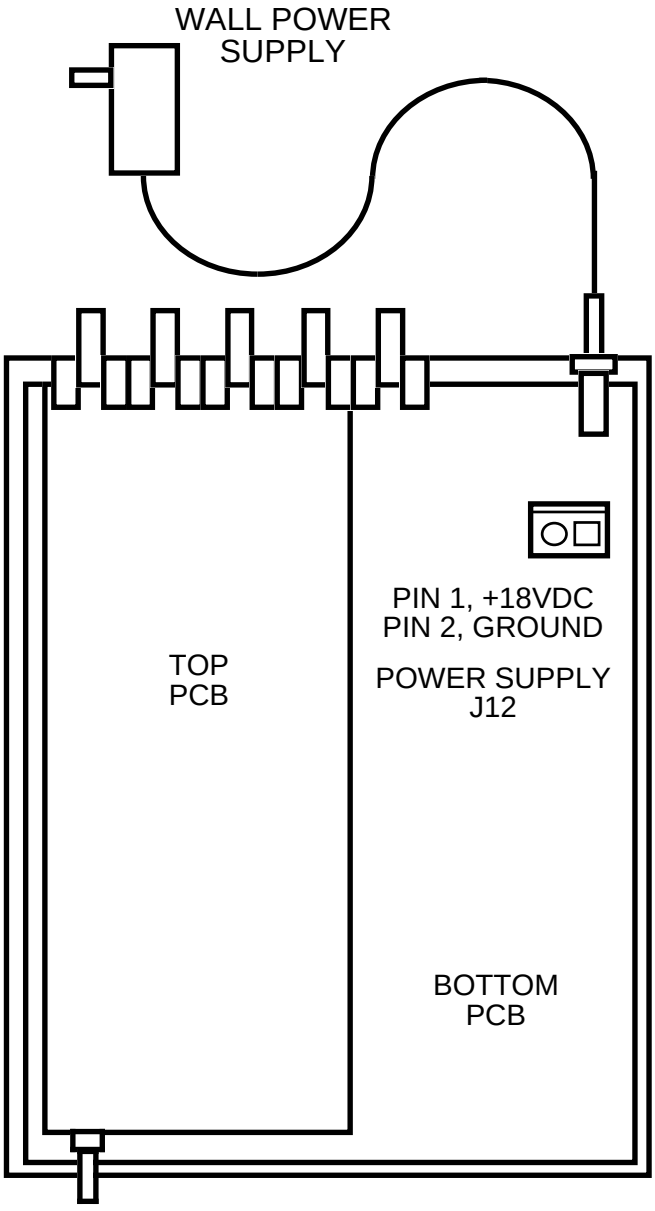
Characteristics	Specifications*
Input Characteristics	
Input Impedance/RL	75 Ω /10dB, min, 0.95-2.05 GHz
	12dB min.,14dB typical, 0.95-1.75 GHz
Input Level	-20 dBm total maximum
Output Characteristics	
Impedance/RL	75 Ω /10dB, min, 0.95-2.05 GHz
	12dB min., 14 dB, typical 0.95-1.75 GHz
In-Band Characteristics	
Gain	+0 dB ± 1.0 dB
Frequency Response	± 1.0 dB, 0.95 - 2.05 GHz; ± 0.5 dB, any 20 MHz increment
Port to Port Isolation	> 18 dB, min., 20 dB typical
Indicators	
Power	Green LEDs indicate DC voltage prior to diode OR
LNB DC Voltage	Green LED indicates LNB power insertion on splitter input (J9)
Other	
LNB DC Voltage	18 ±2 VDC
Output LNB Current	300 ma, max.
Surge Suppressor	SiDACTOR
RF Connectors	Type F (female)
AC Power	115 VAC, 60 Hz, 10W 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
Options	
-R1, -R2, or -R3	Rack Mounitng (1RU)
-C	No Wall Mount Power Supply (use Model 2000-02 Power Supply)
-P2	100-240 ±10% Vac Wall Mount Power Supply
-B	75Ω BNC RF Connectors
-D	50Ω BNC RF Connectors
-W9	10MHz pass through (J9 to J8)
Models	
284-15	One 5-way splitter
284-19	One 9-way splitter

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

2.0 Installation

2.1 Mechanical - The 284-15 consists of two RF printed circuit boards (PCBs) attached through a RF coaxial cable, and is housed in a 4.7”W x 1.75”H x 6.5”D bench top chassis. A 115 VAC, 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. 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.

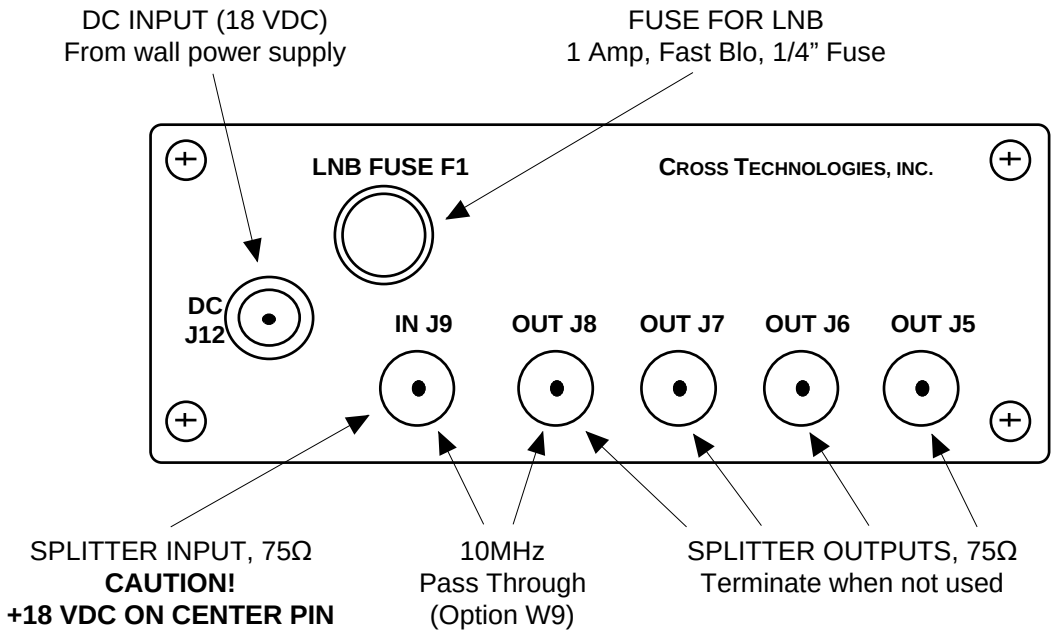


FIGURE 2.2 284-15 Rear Panel

2.3 Front Panel Monitors and Indicators

Figure 2.3 shows the front panel monitors and indicators.

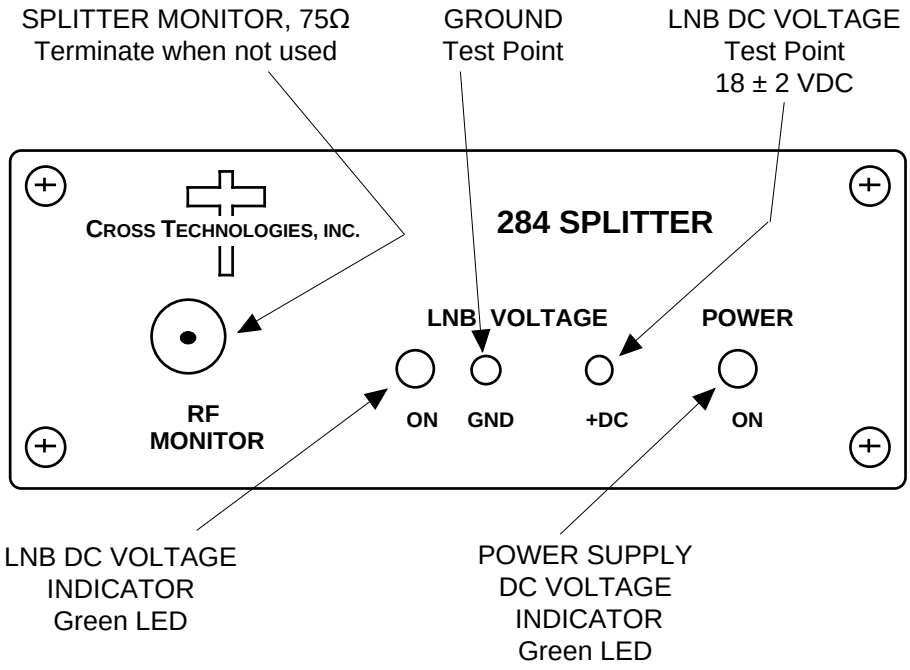


FIGURE 2.3 284-15 Front Panel

2.4 Operation

1.) Connect RF cables to the 284-15 (See Sections 2.2 and 2.3).

2.) Connect the wall power supply to the DC connector (J12) on the rear panel of the 284-15 and then to a 115 VAC, 60Hz power outlet, and observe that the POWER LED is lit on the front panel.

3.) Monitor the RF signal on the front panel monitor to insure proper signal.

NOTE: FOR OPTIMUM PERFORMANCE, THE MONITOR PORT AND SPLITTER OUTPUT PORTS SHOULD BE TERMINATED WITH 75Ω 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) re-attach 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).

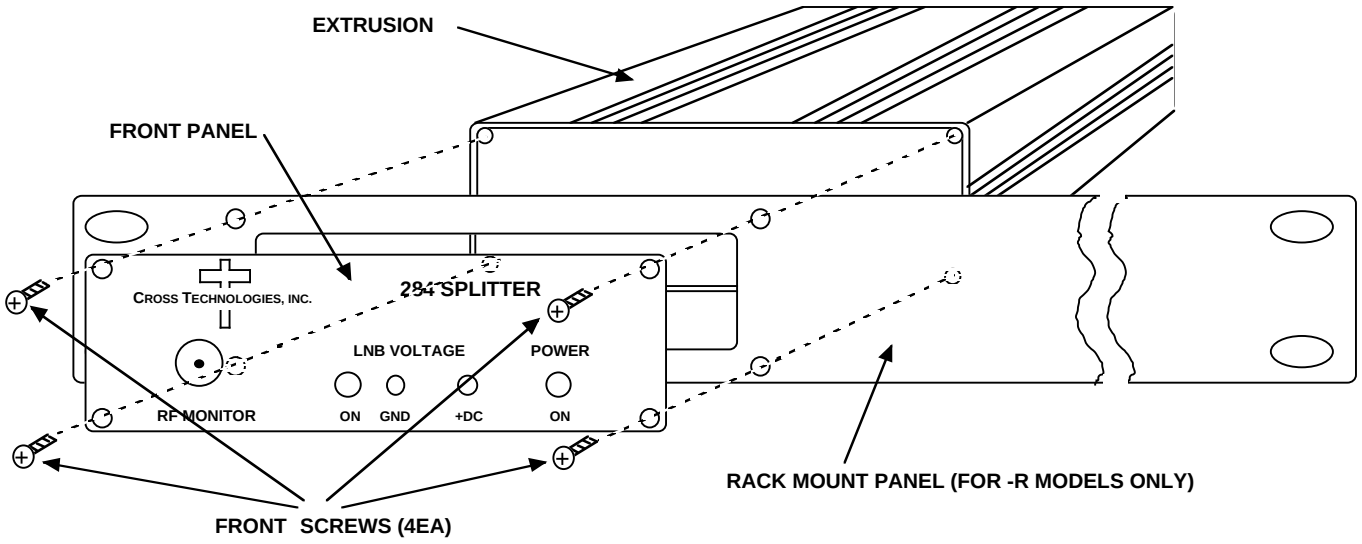


FIGURE 2.5 Rack Mounting The 284-15

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 multi-unit 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 REINSTALLED prior to Top Cover screw replacement. FAILURE TO DO this may cause INGRESS and/or EGRESS emission problems.

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

Printed in USA