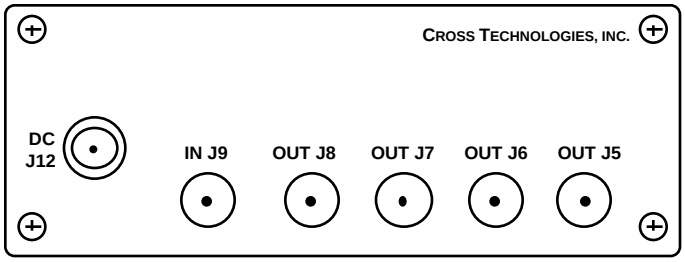
# Instruction Manual

# Model 284-05
## RF Splitter

**December 2010 Rev B**


**FRONT**




**REAR**



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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**INSTRUCTION MANUAL**

# MODEL 284-05 RF Splitter

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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.


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# MODEL 284-05 RF Splitter

## 1.0 General

**1.1 Equipment Description-** The Model 284-05 is a five way, 0.95 - 2.05 GHz, 0 dB gain splitter with excellent RF characteristics in a 4.7”W x 1.75”H x 6.5”D bench top chassis (or mounted on an optional 1 Rack Unit panel) with a 115 VAC wall power supply. The splitter has a monitor connector on the front panel and four outputs on the back panel. The 115 VAC wall power supply provides +18 VDC voltage for an internal amplifier. All splitter outputs are AC coupled so no DC appears on their center conductors. 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).

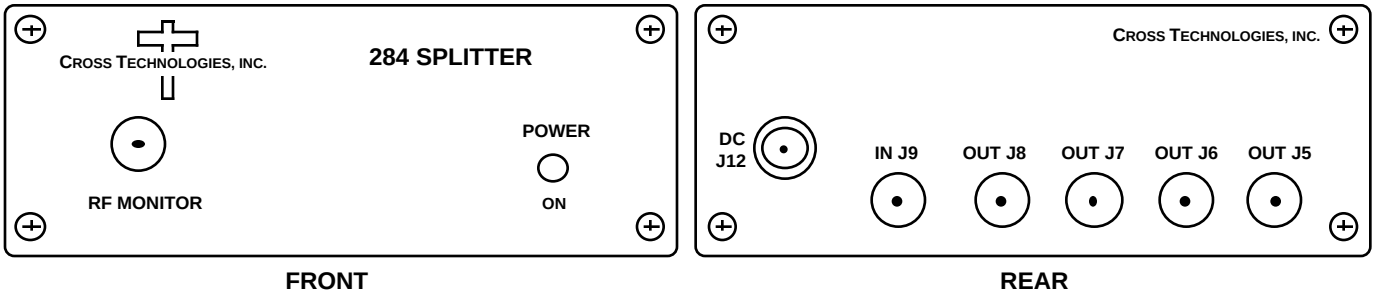



**FIGURE 1.1 Model 284-05 Front and Rear Panels**

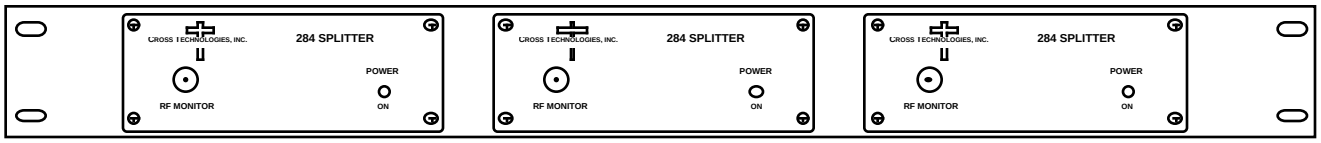



**FIGURE 1.2 Three 284s Mounted On Optional -R3 Rack Panel**

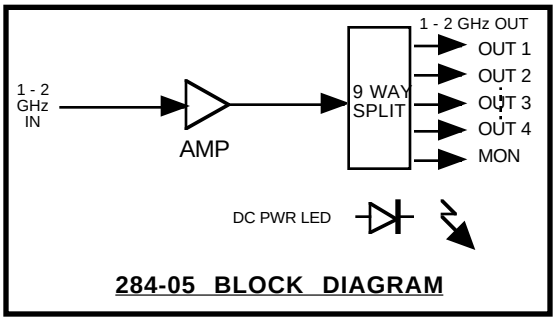



**FIGURE 1.3 Model 284-05 RF Splitter Block Diagram**

## 1.2 Technical Characteristics

**TABLE 1.1 284-05 RF Splitter Specifications**

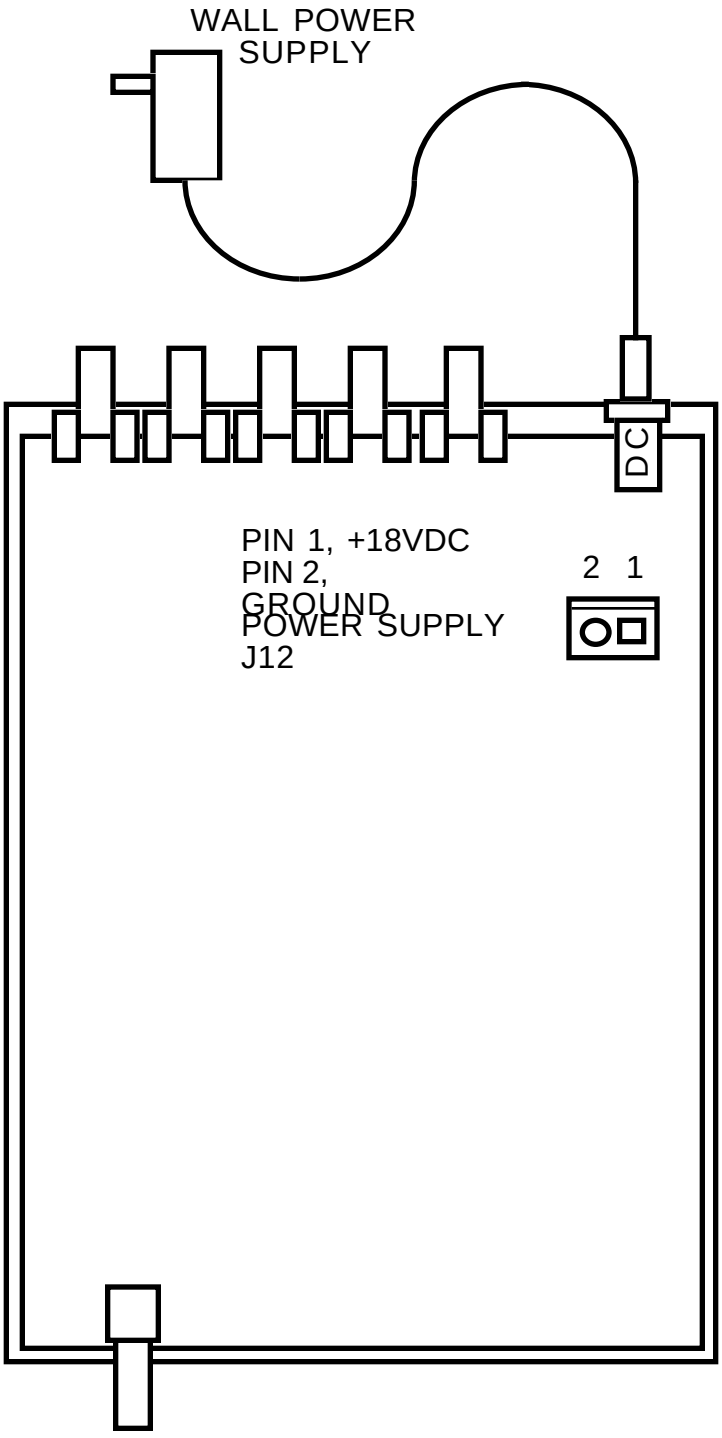
| **Characteristics** | **Specifications*** |
|---|---|
| **Input Characteristics** | |
| Input Impedance | 75Ω /10dB, min, 0.95-2.05 GHz |
| Return Loss | 12dB min., 14dB, typical 0.95-1.75 GHz |
| Input Level | -20 dBm total maximum |
| **Output Characteristics** | |
| Impedance/RL | 75 Ω /10dB, min, 0.95-2.05 GHz; |
| Return Loss | 12dB min., 14dB, typical, 0.95-1.75 GHz |
| **In-Band Characteristics** | |
| Gain | +0 dB ± 1.0 dB |
| Frequency Response | ± 1.0 dB, 950 - 2150 MHz; ± 0.5 dB, any 20 MHz incr. |
| Port to Port Isolation | > 18 dB, min., 20 dB typical |
| **Indicators** | |
| Power | Green LED indicates DC voltage prior to diode OR |
| **Other** | |
| Surge Suppressor | SiDACTOR |
| RF Connectors | Type F, female |
| AC Power | 115 VAC, 60 Hz, 10 W max, Wall Power Supply |
| Size, Bench Top | 4.7”wide x 1.75”high x 6.5”deep |
| Size, Rack Mount (-R) | 19” standard chassis, 1.75”high X 7.0”deep |
| **Options** | |
| -R1, -R2, or -R3 | Rack Mounitng (1RU) |
| -C | No Wall Mount Power Supply (Use 2000-02 Power Supply) |
| -P2 | 100-240 ±10% Vac Wall Mount Power Supply |
| -B | 50Ω BNC RF Connectors |
| -W9 | 10MHz pass through (J9 to J8) |
| **Models** | |
| 284-05 | One 5-way splitter |
| 284-09 | One 9-way splitter |

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

## 2.0 Installation

**2.1 Mechanical** - The 284-05 consists of one RF printed circuit board (PCB), and is 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 amplifier and LED. RF connectors are type F, female. The 284-05 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 284-05 is assembled. J12 connects the DC voltage from the power supply to the PCB as shown.

**FIGURE 2.1 284-05 Mechanical Assembly**



## 2.2 Rear Panel Input/Output Connectors

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

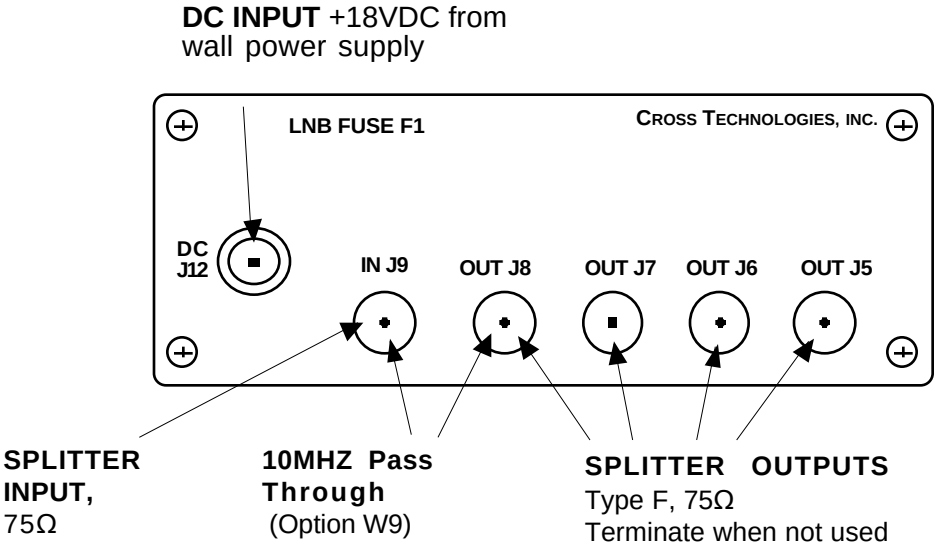



**FIGURE 2.2 284-05 Rear Panel**

## 2.3 Front Panel Monitors and Indicators

Figure 2.3 shows the front panel monitor and DC Voltage Indicator.

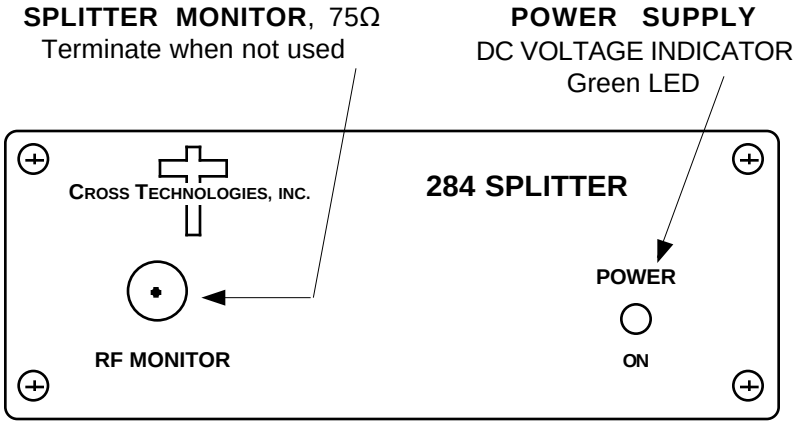



**FIGURE 2.3 284-05 Front Panel**

## 2.4 Operation

1.) Connect RF cables to the 284-05 (See Sections 2.2 and 2.3).

2.) Connect the wall power supply to the DC connector (J12) on the rear panel of the 284-05 and then to a 115VAC, 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 284-05 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 284-05 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).

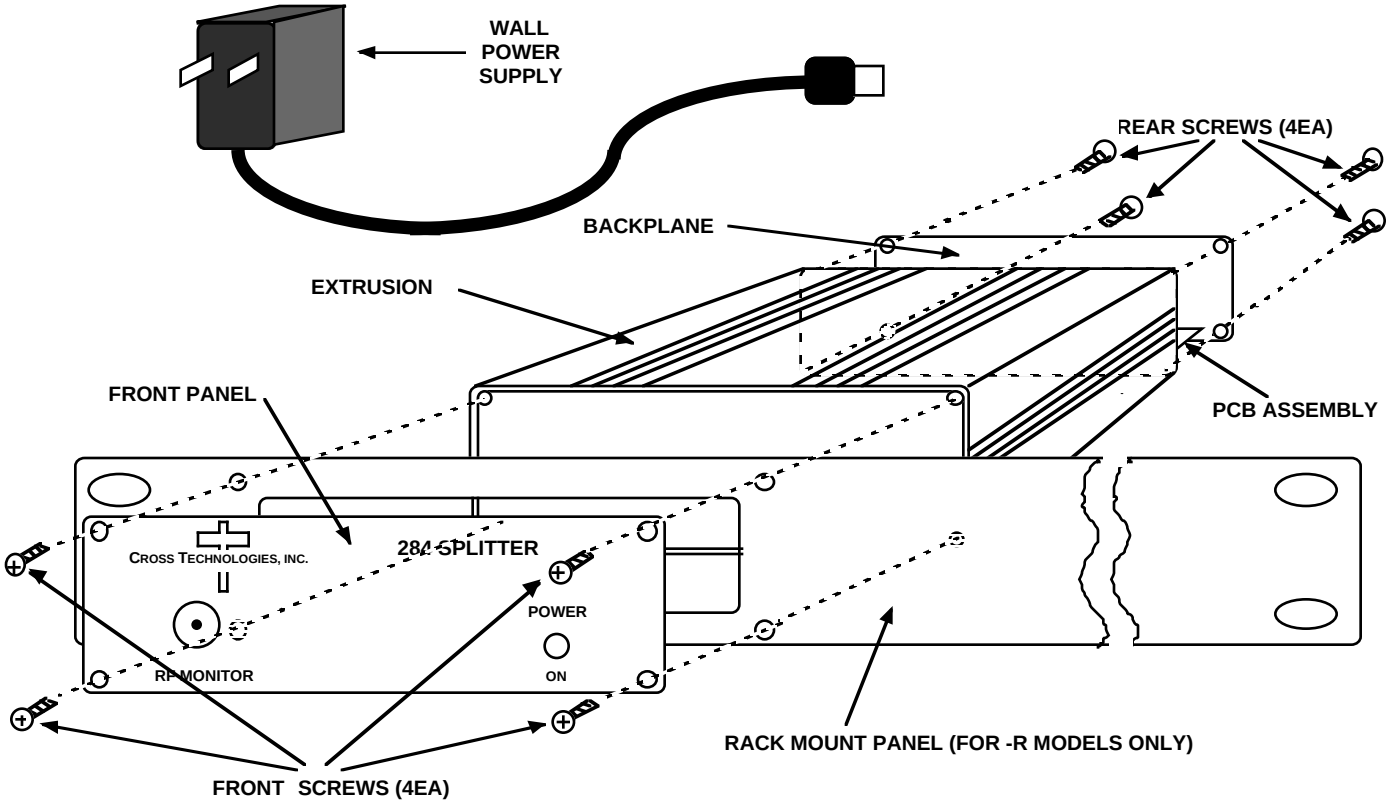



**FIGURE 2.5 Rack Mounting the 284-05**

## 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. (See figure 2.5)

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

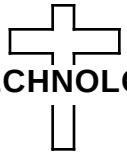
**C**. **Elevated Operating Ambient Temperature** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack may be greater than room ambient temperature. Therefore, consideration should be given to Tmra.

**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.



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