



Installation/Operation Guide

UNITY RF Switch Option

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

In all correspondence with Wegener Communications, Inc., regarding this publication, please refer to Manual Number 800016-13 A.

First Edition: August 2000

1. INTRODUCTION

The UNITY RF Switch is a software-controlled, four-input, single-output, L-band switch. It allows network and local control of antenna feed selection as well as other signal parameters.

Please read the entire set of instructions before beginning the installation.

2. RF SWITCH KIT INVENTORY

In addition to these instructions, the RF Switch Kit will consist of one (1) each of the following items:

- RF Switch mounted in a bracket,
- Ribbon Cable (To connect the Switch to the Receiver Expansion Bus)
- Small Philips Screw, self-tapping (To secure the switch PWB to the chassis bottom)
- F-F coax cable

3. TOOLS REQUIRED

Completion of this installation will require the following tools:

- #1 Philips screwdriver
- #2 Philips screwdriver

4. INSTALLATION

There are two variations of this installation. One is for units that already have a cable from the RF Switch Expansion Bus connector to a connector on the Tuner Board. The other is for units without this cable. The Expansion Bus may also be labeled as the Relay Expansion Bus.

If your unit has the Expansion Bus/tuner cable already installed, make sure there is a 3-connector cable in your kit. If there is not, contact Wegener Communications Customer Service (See rear cover for numbers.) before continuing this installation.

To install the RF Switch Option Card, follow these steps:

A. PREPARE THE UNIT

1. Note the cables and connections for re-installation.
2. Power down the receiver.
3. Move it to a work area.
4. Remove the top cover. Retain the screws for re-installation.

Note: Use the #2 Philips screwdriver for most screws, but some units have #1 Philips screws in one or more locations. On the UNITY401R, remove the 4 screws through each of the mounting brackets in addition to the 2 screws on the rear, and the #1 Philips screw in the top.

B. INSTALL THE RF SWITCH

See [Figure 1](#) (Page 5) and [Figure 2](#) (Page 5) of this guide for views of the module and its installation.

1. Remove the block-out plate from the Module where the switch is to be installed. These screws and holes will be used to mount the RF Switch in a later step. Use the #1 Philips Screwdriver for this.
2. From the inside of the unit, install the RF Switch into position. The “F” Connectors should protrude through the rear panel
3. Install one (1) self-tapping screw through the RF Switch Printed Wiring Board (PWB) into the hole in the bottom of the chassis. Leave it loose at this time. Only one screw will be used in this step, and which hole is used will depend on the module slot. This self-tapping screw “cuts” its own threads in the standoff hole, and may require moderate effort to turn it.
4. Line up the two holes in the rear of the RF Switch Bracket with the holes mentioned in Step # B1. Insert the self-tapping screws retained in Step # B1 through the receiver rear panel into the RF Switch Bracket. Tighten these screws snugly, but do not overtighten.
5. Tighten the Screw inserted in Step # B3 at this time. Do not overtighten.
6. Connect the supplied 10-pin cable from J1 on the RF Switch PWB to the appropriate connector on the receiver motherboard. If there is a cable from the RF Switch Expansion Bus to another board (either the Tuner Board or a Relay Board), note its location and remove that cable. Connect the middle connector of the new cable to the same connector on the previously installed Board.
7. On most units, the motherboard connector will be labeled “RF Switch Expansion Bus” or “Relay Expansion Bus,” and should have a number beside it corresponding to the number in the following table. See [Table 1](#), below, for the various models. Make sure Pin 1 (the Red Line) on each cable connector goes to Pin 1 on each board connector. If you have any questions about this, contact system network control or Wegener Customer Service at 770-814-4057. Additional numbers are shown on the rear cover of this installation guide.

Table 1. Receiver Models and RF Switch Expansion Bus Connector Numbers

Receiver Model	Connector Number
UNITY401R	J7
UNITY500	J11
UNITY4000	J11
UNITY4422	J16
UNITY5000	J49

C. SET RF SWITCH OPTIONS

1. Set Jumpers on the option card to the dotted position.

When setting the jumpers, observe that there are three pins on each header. The jumper covers two of these pins and connects them together electrically. In one position Pin 2 (center pin) is connected to Pin 1, while in the other position Pin 2 is connected to Pin 3. Changing the jumpers changes the configuration of the circuit board and how the board operates.

There is a dot on the board near either pin 1 or pin 3 of each jumper. Setting the jumper so pin 2 is connected to this pin means the jumper is in the “dotted” position. This indicates “Normal” operation of Wegener equipment.

All three of the jumpers on the RF Switch PWB should be in the “Dotted” position.

D. RE-INSTALLING THE UNIT

1. Replace the cover and re-install the screws holding it in place. As with the RF Switch, tighten the screws but do not overtighten.
2. Connect the “Output” connector of the RF Switch with the “RF Input” connector of the receiver it is installed in with the supplied F-F coax cable. Tighten the F-connector “finger tight.” See the Caution below.
3. Install the unit into the equipment rack, following the cautions and instructions in its user manual. Re-install the cables as they were when the unit was removed from the rack, with the exception in Step # D2.
4. Connect the desired RF inputs to the “F” connectors on the RF Switch. Again, observe the caution regarding the force required to tighten these connectors. Normally, the RF Inputs are configured according to instructions from the Network Control, or Uplink. They will need to know which input is connected to which connector so they can intelligently control program content.

***** WARNING *****

When connecting cables to “F” type connectors apply a force of no more than 12 inch lb. (Finger tight). Avoid connecting adapters directly to “F” type connectors. Use at minimum a 1-foot flexible extension cable between “F” type connectors and adapters.

E. OPERATION

To set up and operate a receiver with the RF Switch installed, consult the owner’s manual for that unit. See the “Terminal Commands” or “On Screen Display” section for setup and control.

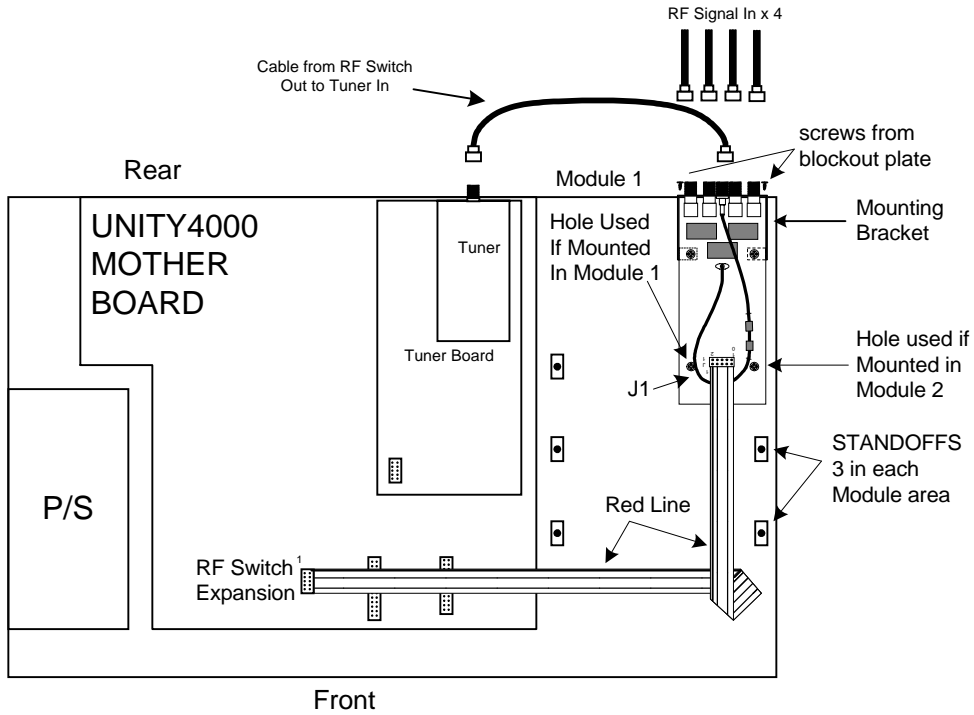


Figure 1. Typical Two-Connector-Cable Installation

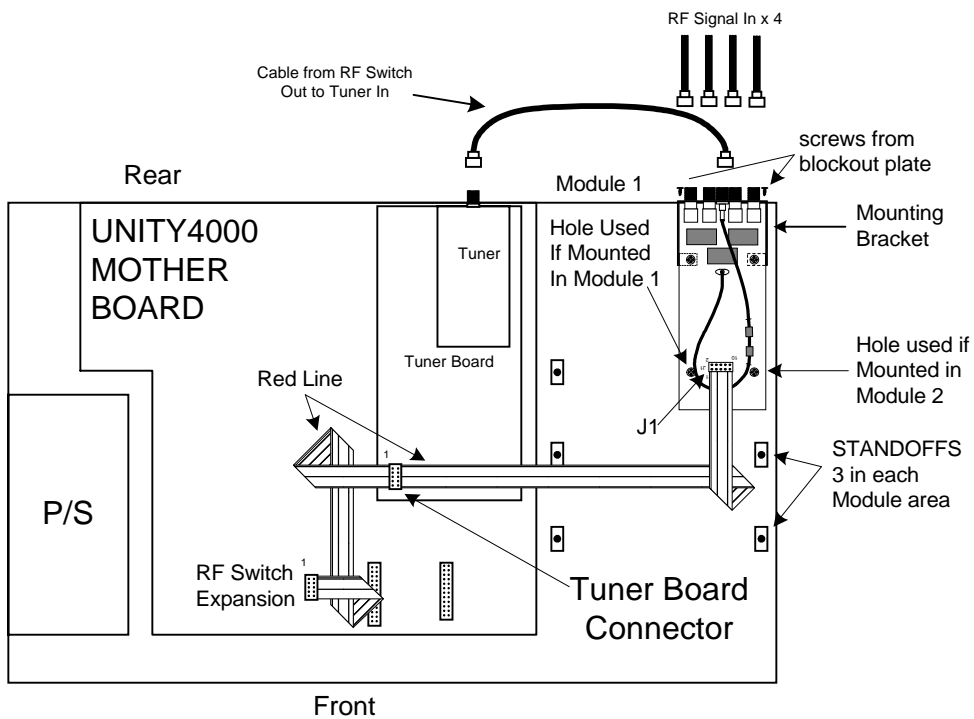


Figure 2. Typical Three-Connector-Cable Installation

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