

## FS31R-15C Remote Repeater Unit Tuning Procedure

### Introduction

The FS31R-15C Very High Frequency (VHF) fiber optic remote repeater unit is a 4 Watt linear fiber optic fed RF Remote Repeater Unit (RRU) for wide-area coverage extension applications. Device provides wireless signal coverage for VHF 2-way radio.

### General Test Practices and Assumptions

1. The RRU is pre-tuned at the factory and will not require frequency, or filter tuning performed. Only gain levels are settable by the user, “tuning” is the process of setting the RRU gain levels.
2. Tuning will be performed by trained Fiber-Span qualified RF personnel.
3. All the unused RRU RF ports are to be terminated with 50 Ohm load with appropriate RF power rating.
4. Verify that all the fiber optic cleaning procedures are adhered to while connecting fiber patch cords.
5. A Fiber-Span compatible Head End Fiber Transceiver Unit (FTU) as part of a Head End system will be used to set RRU levels.

### Tuning Procedure

The RRU is controlled exclusively by software. Connectivity to the RRU control is through an Ethernet connection. This will be referred to as remote access commands. Let RRU be turned on to boot for two minutes.

### Downlink

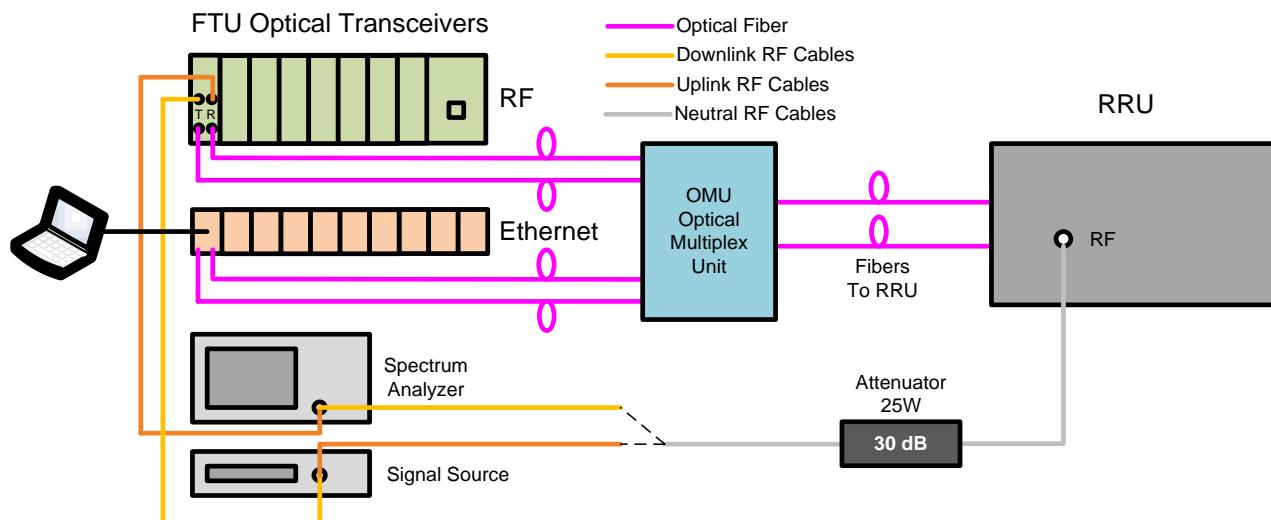
See Diagram for connection information. Before signals are applied, ensure that the RF PA on the downlink is muted and the Downlink RF attenuator is set to maximum attenuation using the appropriate remote access commands. Verify the source generator frequency to desired RF

frequency [169.5 to 173.5 MHz] and source generator RF level to -10 dBm. With remote access control, un-Mute the PA then decrease downlink attenuation to set the downlink RF output composite level to target. Do not set downlink composite RF level output greater than +34.5 dBm.

## Uplink

See Diagram for connection information. Before signals are applied, ensure that the Uplink RF attenuator is set to maximum attenuation using the appropriate remote access commands.

Verify the source generator frequency to desired RF frequency [162.5 to 166.5 MHz] and source generator RF level to -40 dBm (-70 dBm into the RRU). With remote access control, decrease uplink attenuation to set the uplink RF output level to -60dBm (Gain of 10 dB).



Connections Diagram