Exhibit 8 – Users Manual

SpectraPoint Wireless LLC
Customer Premises Equipment Roof Unit

FCC ID: NNSRTU2000-99

Model Number : RTU2000-28-2

Information Provided in this Exhibit:

Operating Instructions for the SpectraPoint CPE Roof Unit Transceiver (Stand-Alone Configuration)

The SpectraPoint Wireless Customer Premises Equipment Roof Unit transceiver, under operational conditions is under control of the SpectraPoint Element Controller and Network Management software which automatically determines the operating frequencies and power levels and monitors the performance of the system.

The User Manuals delivered with the SpectraPoint System describes the installation of the entire system but does not include stand-alone operation of the individual components of the system. Therefore, this document describes the equipment setup and operation employed for stand-alone operation of the CPE Roof Unit transceiver, as applicable to compliance testing.

For stand-alone testing such as functional checkout or compliance testing, this user's manual provides the instructions so that the Roof Unit transceiver may be operated at maximum rated output power with automatic power control disabled. In addition, the Roof Unit may be commanded to various operating frequencies within the allocated band of operation and modulated with actual or simulated IF input signals.

Instructions for Stand-Alone Operation of the CPE Roof Unit Transceiver

1.0 Scope

This document provides the instructions for operation of a single CPE Roof Unit transceiver for test purposes (i.e., without the control of the SpectraPoint System).

2.0 Introduction

The CPE Roof Unit transceivers, when operating under control of the SpectraPoint System, receive an RF reference tone and QPSK modulated RF signals (downstream T1 telephony, digitized video or digital data) from one or more SpectraPoint Node Transmitters (LMDS hub). The CPE Roof Unit likewise transmits a QPSK modulated RF signal (upstream) from the CPE Network Interface Unit (NIU) to the SpectraPoint Node Receivers (LMDS hub).

For test purposes, the QPSK modulated input signal to the Roof Unit transmitter, at the appropriate center frequency, modulation, bandwidth and level must be provided by test hardware and software which is defined in this document.

3.0 Interconnection of Support Equipment

The interconnection of the CPE Roof unit with the test fixture and support equipment is shown in figure 8-1. The support hardware and software is shown in Table 8-1.

Using this support test equipment, the CPE Roof Unit will produce a single QPSK phase modulated output at user-selected bandwidths (as in the SpectraPoint System).

4.0 Description of the Test and Support Equipment

The support equipment required to operate the CPE Roof Unit in a stand-alone mode is shown in Figure 8-1 and consists of:

- DC power source for the Roof Unit electronics card
- transmit enable signal
- DC Blocks for both the transmit and receive cables to protect the signal sources and test equipment
- source of the QPSK digitally-modulated signal (Rohde & Schwarz AMIQ Arbitrary Waveform Generator and SMIQ Vector Signal Generator)
- Personal Computer with WinSim software to generate the QPSK I and Q Signals at the AMIQ

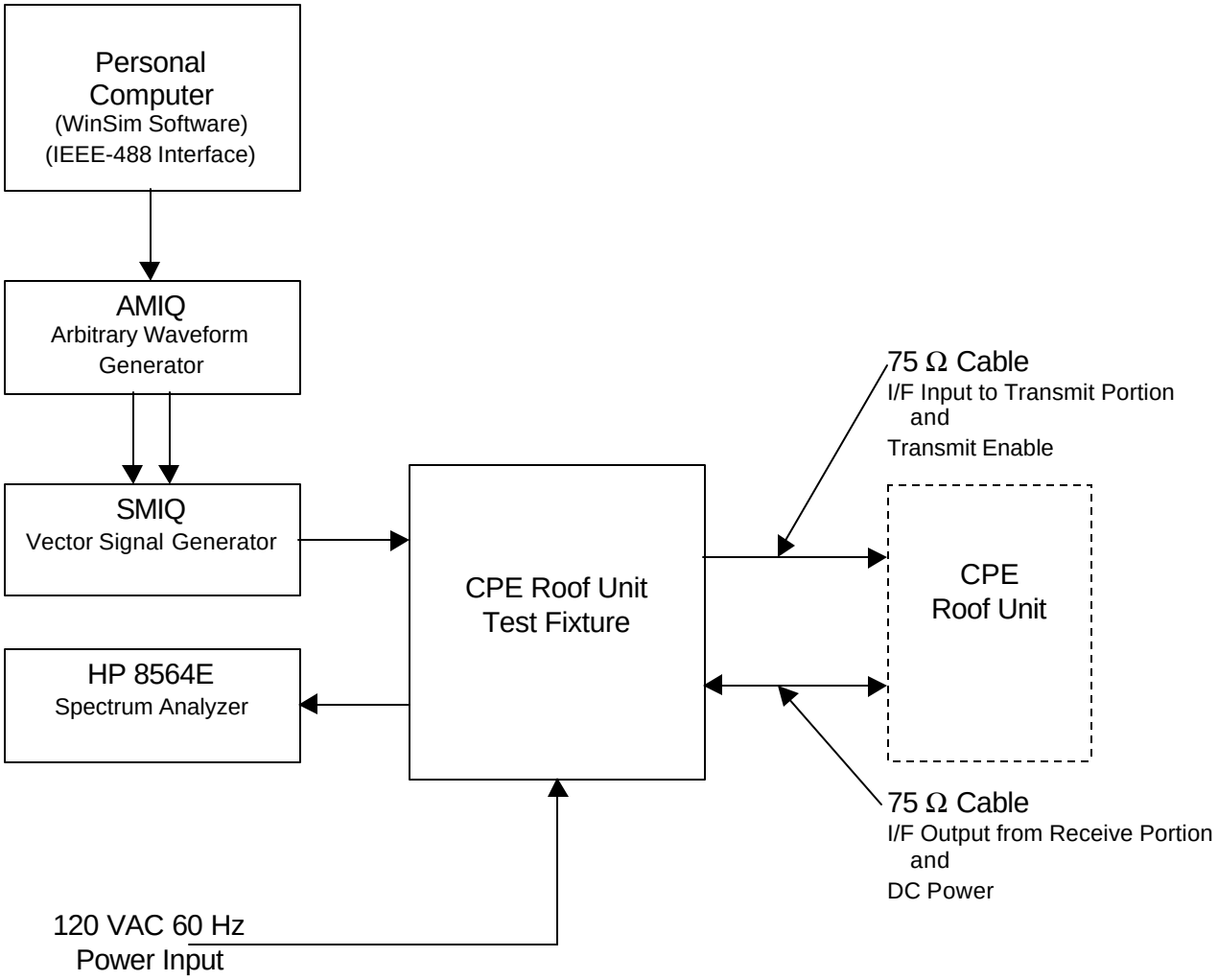

Figure 8-1 CPE Roof Unit Test and Support Equipment

4.1 Generation of QPSK Test Signals

Test signals for the CPE Roof Unit, simulating I/F input from the SpectraPoint Network Interface Unit (NIU), are generated in the AMIQ and transferred by operator command to the SMIQ.

The WinSim software program is launched by double-clicking on the WinSim icon or by selection from the Windows Program Start menu. The modulation parameters may be manually entered through the PC keyboard or recalled from predefined parameters stored on disk.

The NIU is capable of generating QPSK-modulated signals ranging from approximately1.5 MHz bandwidth to 14.5 MHz bandwidth depending on a variety of operating rates and error correction schemes required for reliable operation of an SpectraPoint LMDS installation. The CPE Roof Unit test and support equipment has the capability to simulate these complex signals and provide the DC power and enable command to operate the unit for test and analysis.

4.2 Test Signals

Two standard signals are stored as data files on disk, one having a low data rate representing the narrowest bandwidth signal that will be produced by the NIU in operation, and one having a high data rate representing the widest bandwidth signal that will be produced by the NIU in operation. Refer to Table 8-1 for these parameters.

Table 8.1 Parameters for Rohde & Schwarz AMIQ Modulation Setup

AMIQ Window	**Parameter**	**Setting**
Data Source	PRBS	PRBS 9
Modulation	Coding	None
Modulation	Type	QPSK
Modulation	Sequence Length	10,000
Modulation	Filter Function	Root Cosine
Modulation	Window Function	Rect
Modulation	Symbol Rate	1.240 MSps for min BW 10.851 MSps for max BW
Modulation	Oversampling	3
Main	Sampling Rate	83.700MHz
Main	Samples	30,000