Chapter 12 Test Setup Photos

Overview

This section contains test setup photos.

Contents

12.1 Radiated Emissions Test Setup

Radiated emissions measurements shall be made over the frequency range specified by the regulatory agency. In this case, per FCC Part 15, subpart 15.207. Measurements shall be made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This was accomplished using both an automated 360 degree turntable and 1 to 4 meter height antenna positioners. Sixteen azimuth cuts at 22.5 degrees and 1 to 4 meter antenna scans in both polarizations were utilized. The Remote Unit was setup in a typical field configuration, as shown in Figure 12.1, consisting of the RU being attached to the mounting bracket and the bracket be mounted to a vertical piece of typical house siding which was placed on the center of a wooden table located in the center of the turntable. Proper interconnecting cable was utilized from the RU to the system power supply via the network interface device (NID). Various cable lengths were utilized to determine worse case configuration and a Base Station antenna was placed in the chamber for RU wireless communication. All radiated emissions testing was completed in three configurations; 1) with only one continuous voice channel, 2) with both voice channels continuously utilized, and 3) with both voice channels and the high speed data (HSD) be continuously utilized. Testing was completed from 30 MHz to 26 GHz. When testing close to or over the fundamental frequency range, a notch filter tuned to the RU and Base Station fundamental frequencies was utilized to prevent receiver overload and/or damage.

The test fixture utilized to mount the RU during testing was designed and built to create an actual installation scenario, as shown in figures Figure 12.2, Figure 12.3, and Figure 12.4. The power and telco test fixtures were mounted and located outside the anechoic chamber, as shown in Figure 12.5. The power supply and NID have already completed the appropriate FCC testing and have an FCC Identification Number assigned.

Figure 12.1 Radiated Emissions Test Setup

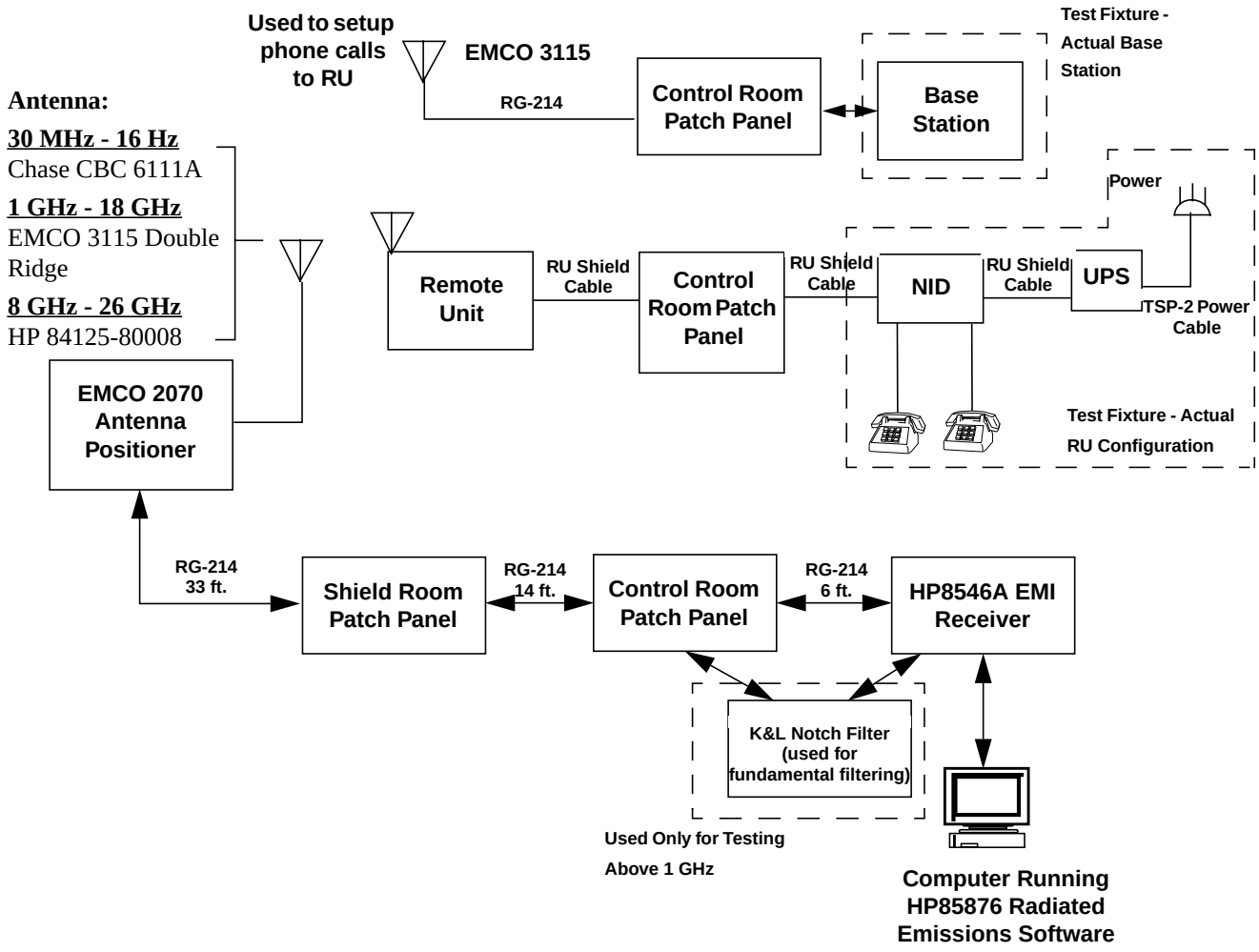

Figure 12.2 RU Radiated Emission Setup - Front

Figure 12.3 RU Radiated Setup - Side

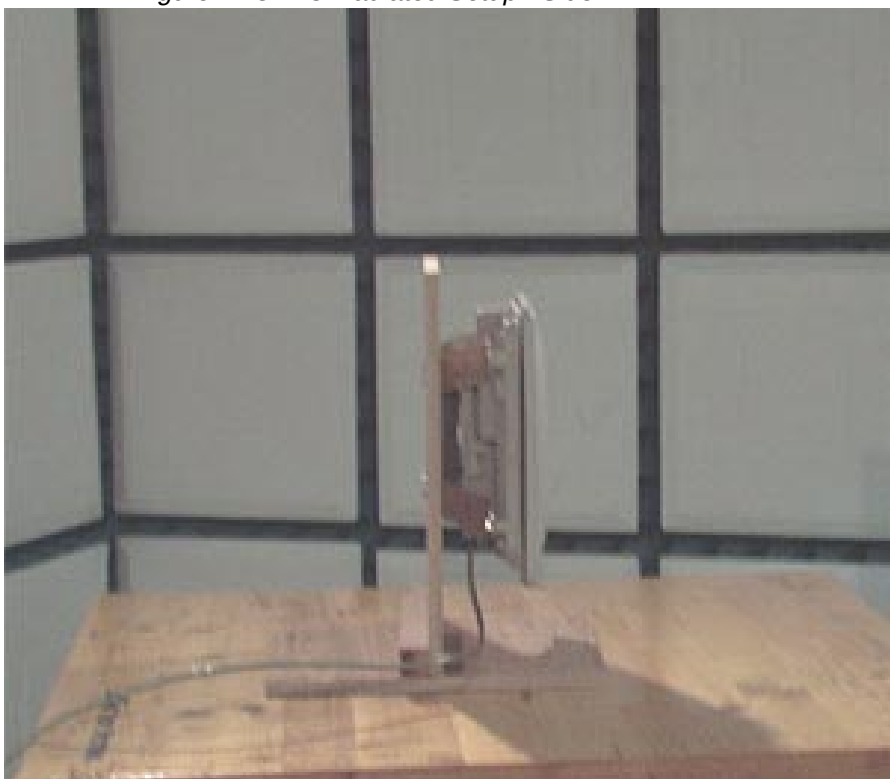

Figure 12.4 RU Radiated Setup - Back

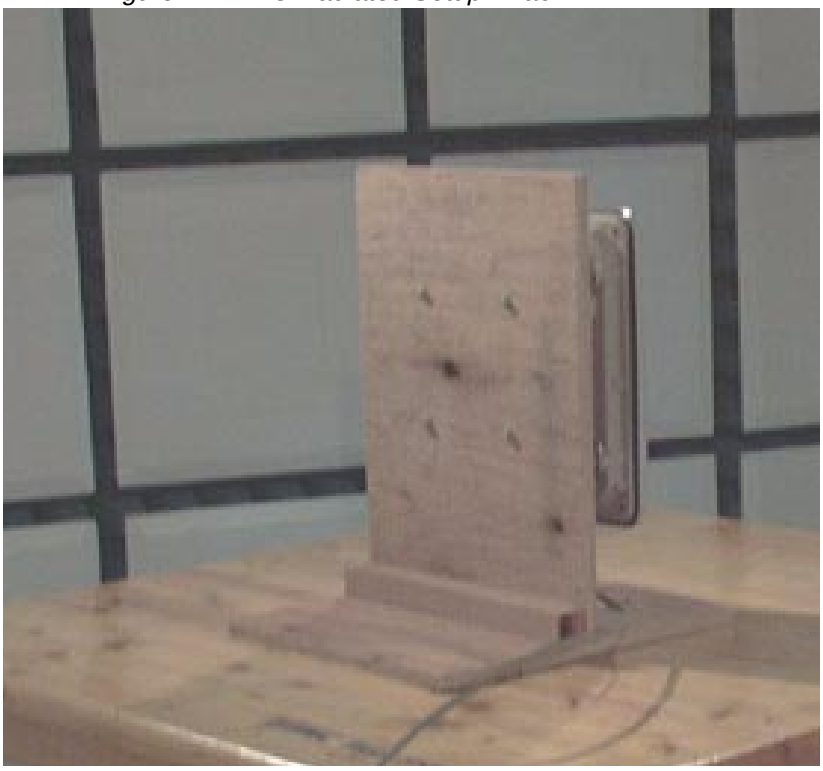

Figure 12.5 RU Radiated Emission Setup - Power and Phone Interface

12.1.1 Testing Facility and Location

During the month of December 1998, a series of radio frequency interference measurements were performed on the AT&T Remote Unit Version R1, consisting of the following boards: RU 2.6 Digital S/N 981022, RU 2.27 RF S/N 981218, RU 0.8 RUDY S/N 98120. For Class B digital devices/intentional radiator, the tests were performed according to the procedures of the FCC as stated in the “Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz” found in the American National Standards Institute, ANSI C63.4-1992 (Revision of the ANSI C63.4-1988). These tests were performed by personnel of AT&T, located at the AT&T Wireless Services EMC Laboratory on Willows Road in Redmond, Washington. Additionally, FCC Part 15 radiated emissions testing was completed at same location within an FCC certified 3 meter semi-anechoic chamber.