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San Jose, CA 95134
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“Dual Xmit” radiated Emissions Test Results

Supplemental EMI Test Report
on the
Airespace Access Point
Model 1200

FCC ID: QTZAMAP1200AB

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General Information

Per a request received from the FCC, the Airespace access point was tested for radiated emissions in restricted bands while transmitting on both 2.4 GHz and 5 GHz at simultaneously.

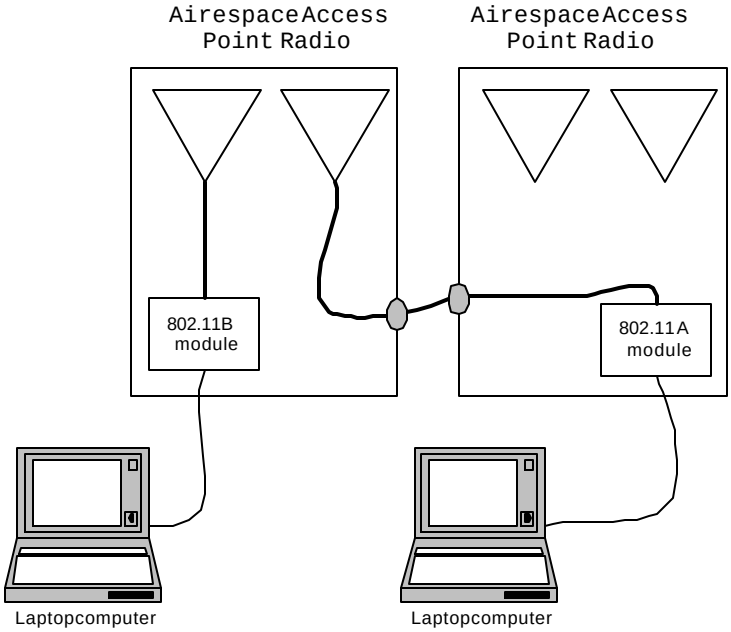
The test was conducted at Elliott Labs in Fremont CA, in anechoic chamber #5 on 18 Dec 2003

Test Methods

The access point was tested for out of band radiated emissions with the unit transmitting on 2.4 GHz 802.11 B, 2462 MHz and 802.11 A on 5180 MHz.

The unit was set to transmit at the same power level as was used in the initial radiated emissions tests.

Because the test software used to control the access pointes is not capable of commanding the access point to transmit on 802.11 A and 802.11 B at the same time, it was necessary to use two laptop computers to control two access points and jumper the 5GHz RF from one unit into the other unit. Thus, while the modules were in two different units, they transmitting antennas were in a single unit.



Test Facilities

The certification tests were performed at:

Elliott Labs
684 West Maude Ave
Sunnyvale, CA 94086

General:

Final radiated test measurements were taken in Dec 2003 at the Elliott Laboratories Anechoic Chamber #5.

The test site contains separate areas for radiated and conducted emissions testing. Pursuant to section 2.948 of the Rules, construction, calibration, and equipment data has been filed with the Commission.

The FCC recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement with the exception of predictable local TV, radio, and mobile communications traffic. The test site contains separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent FCC requirements.

Antenna, Antenna Mast and Turntable

The Horn antennas that are use to measure radiated emissions above 1000MHz are amounted on a non-conductive antenna mast equipped with a motor drive to vary the antenna height.

ANSI C63.4 specifies that the test height above the ground plane shall be 80cm unless the equipment is intended to be floor mounted. During the radiated emissions tests the equipment is positioned on a motorized turntable in conformance with the ANSI requirement.

Equipment Lists

Instrument Calibration

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

The following test equipment was used to perform the testing

Elliott Test Equipment

Manufacturer	Description	Model #	Assett #	Cal interval	Last Calibrated	Cal Due
EMCO	Horn Antenna, D. Ridge 1-18GHz	3115	868	12	3/14/2003	3/14/2004
Hewlett Packard	Microwave EMI test system (SA40, 30Hz - 40GHz), system 2	84125C	1410	12	4/2/2003	4/2/2004

Dual Xmit, Radiated Emissions in Restricted bands

Specifications:

FCC Part 15 Paragraph 15.247(c) / 15.407

Procedure:

This test was conducted in a 5 meter anechoic chamber at Elliott Laboratories Fremont, California facility. The unit was placed on a rotating wooden table 80cm above the ground plane. A Horn antenna was secured to a mast 3 meters away. The unit was tested for out of band / restricted band emissions at the Low, Mid and High test channels. The UUT was configured set to transmit continuous data packets. The test equipment was configured as shown below.

The emissions up to 26 GHz were examined. Those emission falling within a restricted band were evaluated against the "restricted band emission limit" (54 dBµV / 74 dBµV), while those outside of a restricted band were evaluated against the "out of band emissions" limit (-20 dBc)

The EUT was rotated 360 degrees and the height of the antenna adjusted from 1 to 4 meters above the ground plane to determine the maximum level of the emission. The level of the emission was measured in two modes, "Peak" and "Average" using the following measurement bandwidths

```
Restricted Band Peak Measurements: RBW & VBW: 1 MHz
Restricted Band Average Measurements: RBW:1MHz & VBW:10 Hz.
All other measurements, RBW = 1MHz & VBW = 3MHz
   video averaging on (100 samples).
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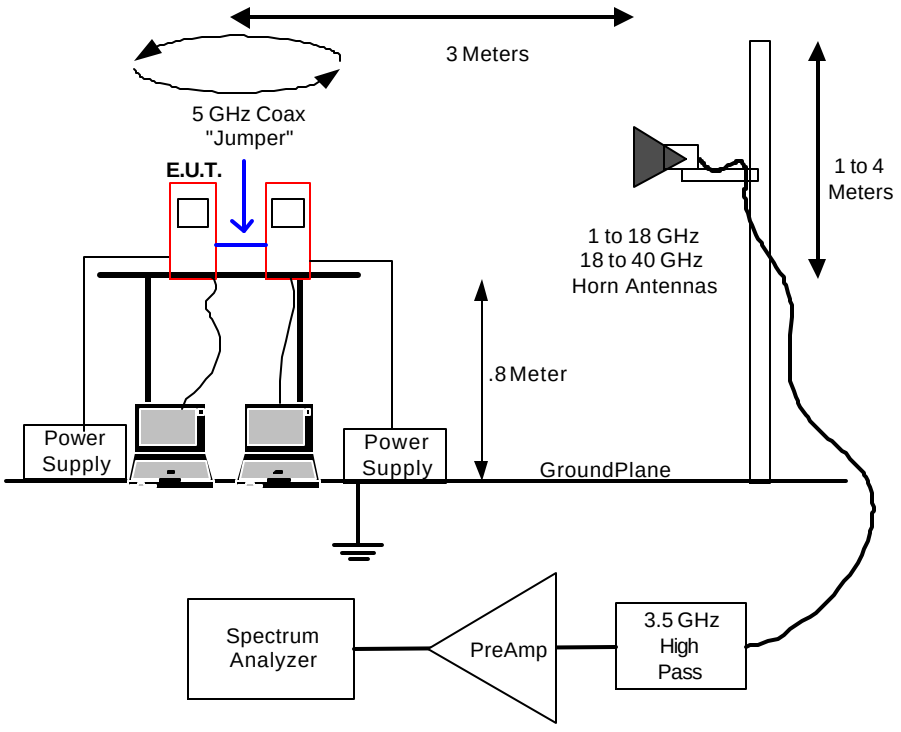
The spectrum analyzer reading was corrected by the measurement software to take into account the various equipment characteristics (antenna factor, cable loss, pre-amplifier gain, HPF loss...) to obtain a final corrected measurement.



Dual Xmit Radiated Emissions Test Setup

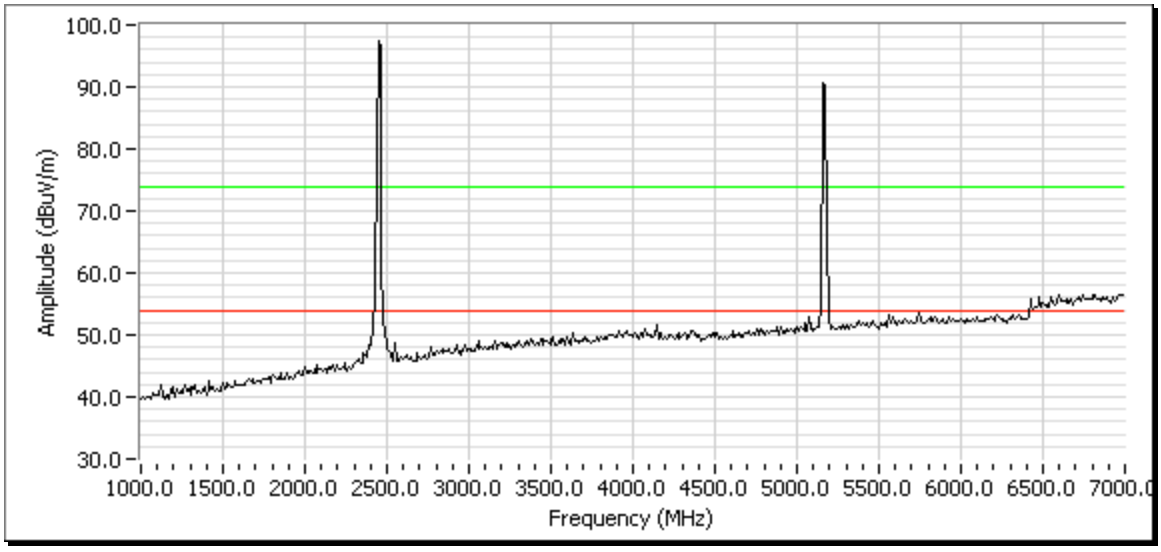
Support Equipment

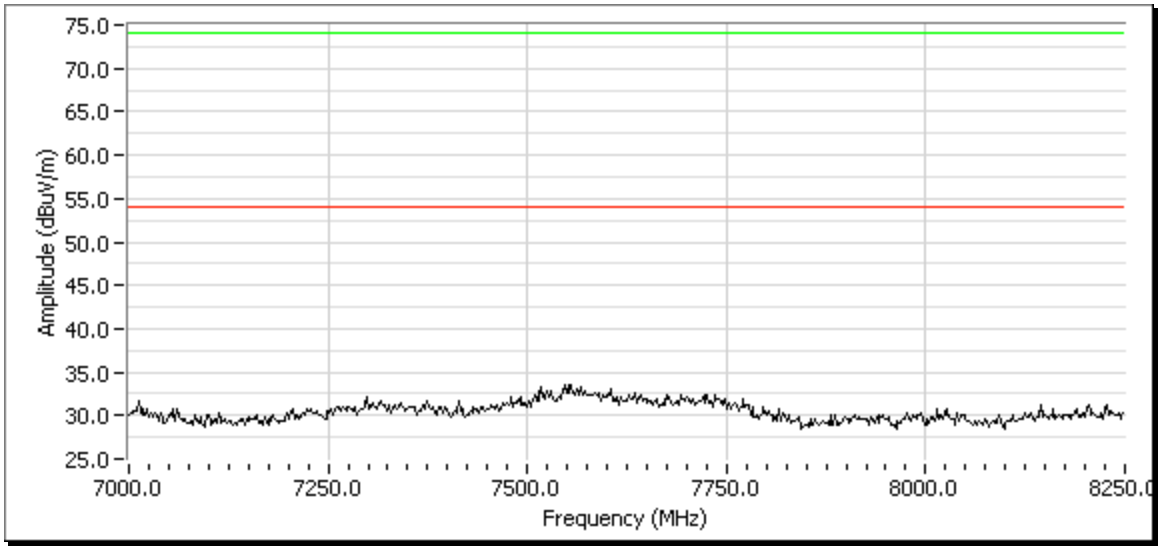
Description	Model number	FCC ID or SN	Mfg	Power Cable
Two Laptop	Armada E 500	P31000T4X20DC12N2	Compaq	Laptop PS
Two Test Software	Atheros Radio Test		Atheros	
Two 48VDC AC adapter	Generic		Generic	Std Twin lead DC wire

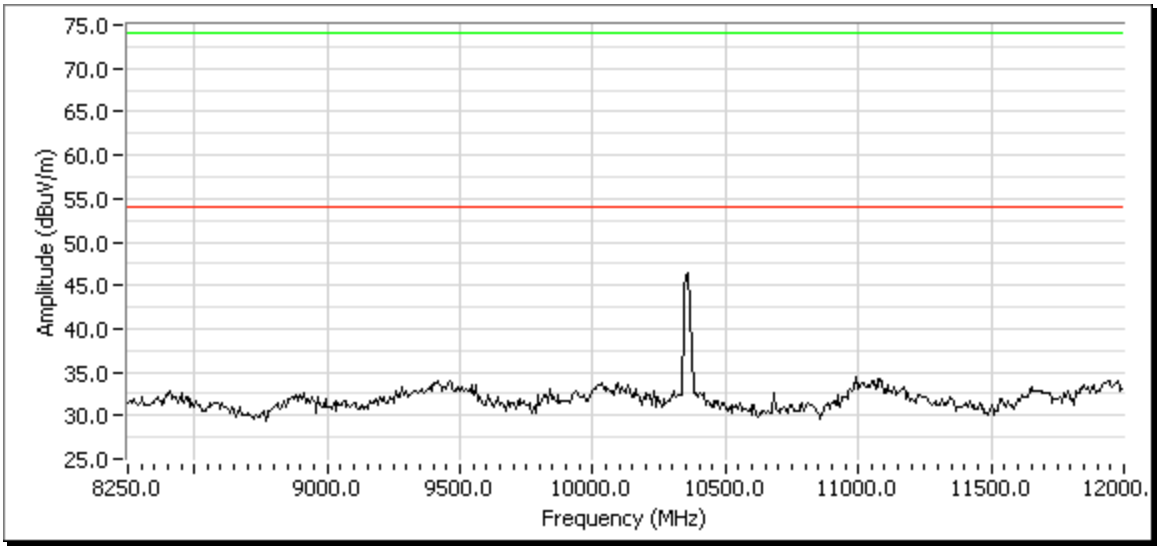
Test Conditions			
Temperature	Approx 19C	**Humidity:**	Approx 30%
ATM pressure	Approx 1003 mBar	**Grounding:**	None
Tested By	Trinh Waitt, Chris David Waitt, Marissa Faustion	**Date of Test:**	18 Dec 2003
Test Reference	FCC Part 15.205		
Setup Method	ANSI C63.4		
Tested Range	1 GHz to 40 GHz		
Test Voltage	120 VAC / 60 Hz		
Modifications	No modifications were made to the unit		

Test Results:

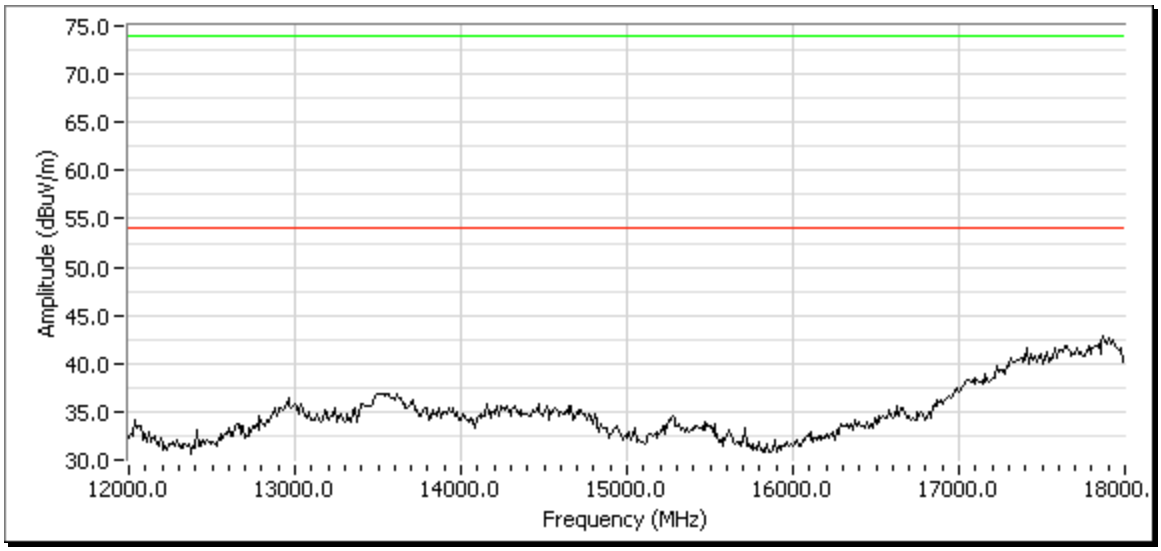
Only one spurious emission was detected during the test. (See graph and data table)
No spurious emissions were visible above 18 GHz



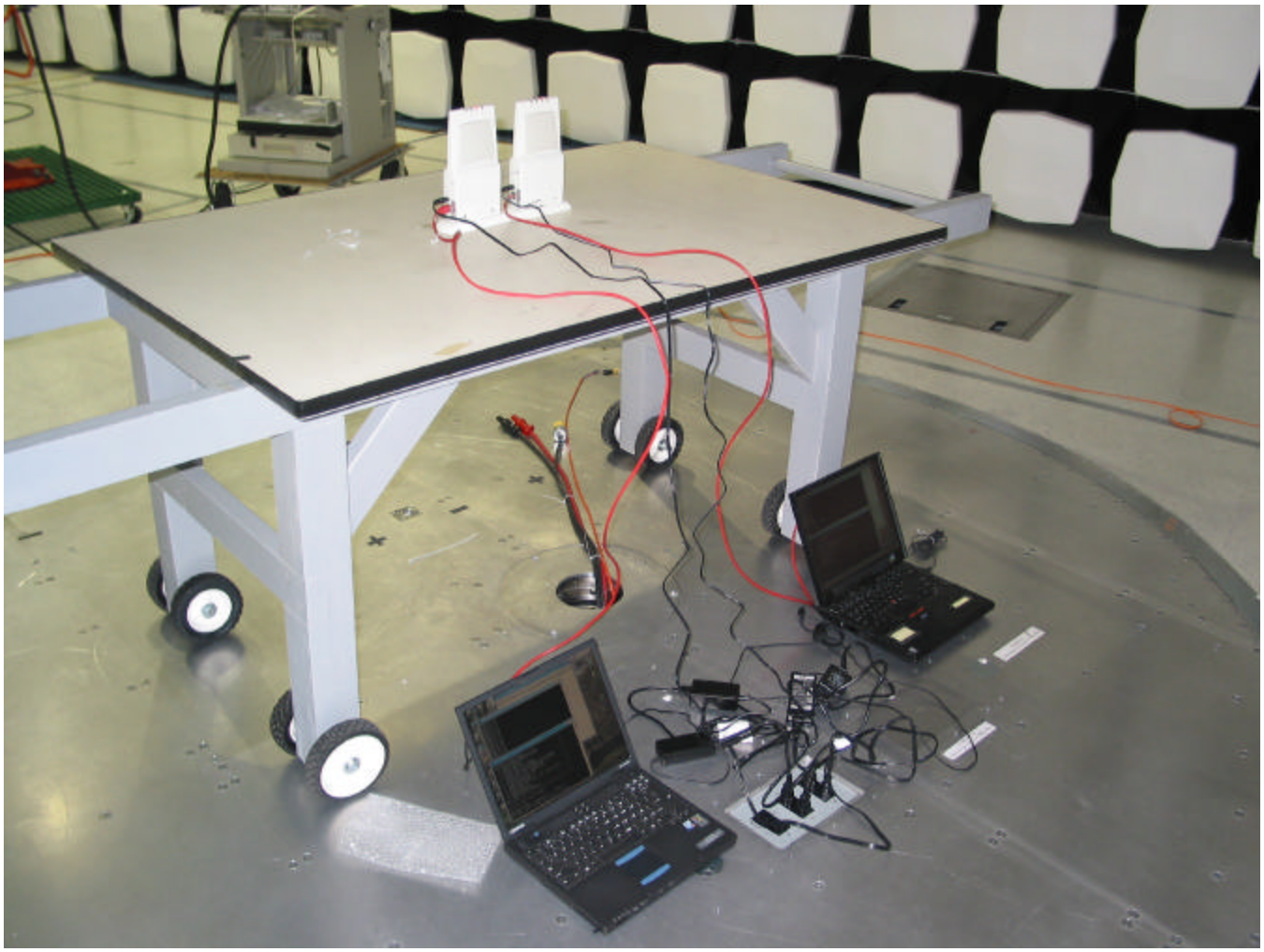




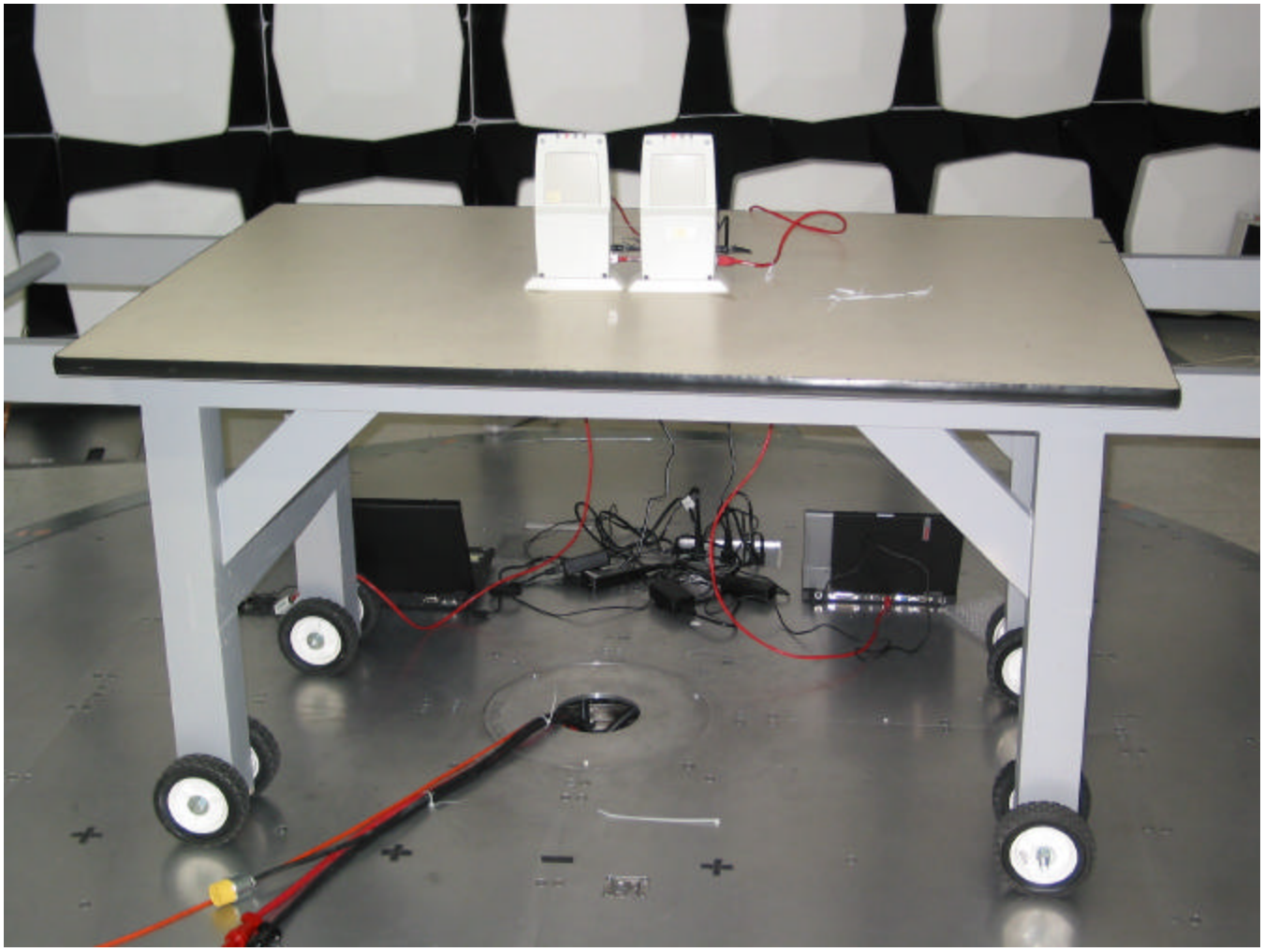
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
10361.48	43.5	H	54.0	-10.5	PK	143	1.0	Peak Reading, Avg limit



Test Setup Photos



Dual Xmit, Radiated Emissions Test Setup



Dual Xmit Radiated Emissions test setup

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