FCC PART 15.407
IC RSS-210, ISSUE 8, DEC 2010
TEST AND MEASUREMENT REPORT

For

Motion Computing, Inc.

8601 Ranch Road 2222 Building II,

Austin, TX 78730, USA

FCC ID: Q3QIHWM6235ANH
IC: 4587A-IM6235AN

Report Type:	**Product Type:**
CIIPC	WLAN/Bluetooth Combo Module

Prepared By:	Bo Li
Report Number:	R1212071-407
Report Date:	2013-01-28
Reviewed By:	Quinn Jiang Test Engineer

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* This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*" (Rev.3)

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1212071-407	CIIPC	2013-01-28

1 General Description

1.1 Product Description for Equipment under Test (EUT)

This test and measurement report was prepared on behalf of *Motion Computing, Inc.,* and their product, FCC ID: *Q3QIHWM6235ANH*, IC: *4587A-IM6235AN,* model: N6235, or the "EUT" as referred to in this report, is a WLAN/Bluetooth combo module which built into Motion Tablet PC with WWAN and GPS Functionalities. Based on the declaration by the manufacture, there're no simultaneous transmissions between WWAN and WLAN + BT radios.

The current Motion Tablet PC J3600, model: T008 is an update version from previous motion tablet PC J3500. The changes made to the current J3600 from the previous J3500 were the WLAN+BT combo card with new antenna type. The WWAN portion remains the same.

1.2 Mechanical Description of EUT

The EUT measures 32cm (L) x 23cm (W) x 2cm (H) and weighs 1750g.

The data gathered are from a production sample provided by the manufacturer, serial number: R1212071-01 (Serial number assigned by BACL)

1.3 Objective

This report is prepared on behalf of *Motion Computing, Inc*., in accordance with FCC CFR47 §15.407 and IC RSS- 210 Issue 8, Dec 2010.

The objective is to add additional antenna with class II permissive change on the original application by determine compliance with FCC/IC rules for Antenna Requirements, AC Line Conducted Emissions, Output Power and Radiated Spurious Emissions. Please refer to the detail antenna list in the antenna requirement section.

1.4 Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS with FCC ID: Q3QIHWM6235ANH
FCC Part 15.247 DSS with FCC ID: Q3QIHWM6235ANH

1.5 Test Methodology

FCC Part 2, Part 15.407 and IC RSS-210 Issue 8, Dec 2010.

1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR16-4-2:2003, The Treatment of Uncertainty in EMC Measurements, the values ranging from $\pm$2.0 dB for Conducted Emissions tests and $\pm$4.0 dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BACL Corp.

1.7 Test Facility

The test site used by BACL Corp. to collect radiated and conducted emissions measurement data is located at its facility in Sunnyvale, California, USA.

The test site at BACL Corp. has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997, and Article 8 of the VCCI regulations on December 25, 1997. The test site also complies with the test methods and procedures set forth in CISPR 22:2008 §10.4 for measurements below 1 GHz and §10.6 for measurements above 1 GHz as well as ANSI C63.4-2003, ANSI C63.4-2009, TIA/EIA-603 & CISPR 24:2010.

The Federal Communications Commission and Voluntary Control Council for Interference have the reports on file and they are listed under FCC registration number: 90464 and VCCI Registration No.: A-0027. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL Corp. is an American Association for laboratory Accreditation (A2LA) accredited laboratory (Lab Code 3297-02). The current scope of accreditations can be found at

http://www.a2la.org/scopepdf/3297-02.pdf?CFID=1132286&CFTOKEN=e42a3240dac3f6ba-6DE17DCB-1851-9E57-477422F667031258&jsessionid=8430d44f1f47cf2996124343c704b367816b

2 EUT Test Configuration

2.1 Justification

The EUT was configured for testing according to ANSI C63.4-2009.

The EUT was tested in a testing mode to represent worst-case results during the final qualification test.

The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the average power, peak power and PPSD across all data rates bandwidths, and modulations.

2.2 EUT Exercise Software

The test utility used was DRTU was provided by Motion Computing., and was verified by Bo Li to comply with the standard requirements being tested against.

2.3 Equipment Modifications

No modifications were made to the EUT.

2.4 Special Accessories

There were no special accessories were required, included, or intended for use with EUT during these tests.

2.5 Local Support Equipment

N/A

2.6 Power Supply and Line Filters

Manufacturer	Description	Model	Serial Number
Delta Electronics Inc	AC/DC Adapter	ADP-50HH REV.B	KOW0819013520

2.7 Interface Ports and Cabling

Cable Description	Length (m)	From	To
RF Cable	< 1	EUT	Spectrum Analyzer

2.8 Internal Parts List and Details

Manufacturer	Description	Model	Serial Number
Motion	Main Board	VCX00 L02T	4619lE36L02
Motion	Cellular Board	MC8355	20VM173P4
Intel	Wireless Board	6235ANH	-
Sandisk	SSD	SDSA5DK-256G	124226400059
Samsung	Memory(x2)	M471B1G73BH0-YK0	-
Motion	I/O Borad	VCX00LS9501P	483CAM
Toshiba	FAN	MCF-J15AM05	-
Motion	Battery(x2)	BATKEX00L4	-

3 Summary of Test Results

FCC & IC Rules	Description of Test	Result
FCC §15.407(f), §2.1093 IC RSS-102	RF Exposure	Compliant
FCC §15.203 IC RSS-Gen §7.1.2	Antenna Requirement	Compliant
FCC §15.207 IC RSS-Gen §7.2.4	AC Power Line Conducted Emissions	Compliant
FCC §15.209(a), 15.407(b) IC RSS-210 §A9.2	Spurious Radiated Emissions	Compliant
FCC §15.407(a) IC RSS-210 §A9.2	26 dB and 99% Emission Bandwidth	Note[1]
FCC §407(a)(1) IC RSS-210 §A9.2	Peak Output Power Measurement	Compliant
FCC §2.1051, §15.407(b) IC RSS-210 §A9.2	Band Edges	Note[1]
FCC §15.407(a)(1) IC RSS-210 §A9.2	Power Spectral Density	Note[1]
FCC §15.407(a)(6)	Peak Excursion Ratio	Note[1]
IC RSS-210 §2.3 IC RSS-Gen §6	Receiver Spurious Radiated Emissions	Compliant
FCC §2.1051, §15.407(b) IC RSS-210 §A9.2	Spurious Emissions at Antenna Terminals	Note[1]
FCC §15.407(h) IC RSS-210 §A9.3	DFS	Compliant

Note1: please Module report with FCC ID: PD96235ANH

4 FCC §15.407(f), §2.1093 & IC RSS-102 - RF Exposure

4.1 Applicable Standard

According to FCC §15.407(f) and §2.1093, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

4.2 Test Result

Compliant: please refer to the SAR report: R1212071-FCC-SAR

5 FCC §15.203 & IC RSS-Gen §7.1.2 – Antenna Requirements

5.1 Applicable Standard

According to FCC §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to FCC §15.247 (b)(4), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

As per IC RSS-Gen §7.1.2: Transmitter Antenna
A transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest-gain antenna of each combination of transmitter and antenna type for which certification is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type and having equal or lesser gain as an antenna that had been successfully tested for certification with the transmitter, will also be considered certified with the transmitter, and may be used and marketed with the transmitter. The manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.
When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. Any antenna gain in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power before using the power limits specified in RSS-210 or RSS-310 for devices of RF output powers of 10 milliwatts or less. For devices of output powers greater than 10 milliwatts, except devices subject to RSS-210 Annex 8 (Frequency Hopping and Digital Modulation Systems Operating in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz Bands) or RSS-210 Annex 9 (Local Area Network Devices), the total antenna gain shall be added to the measured RF output power before using the specified power limits. For devices subject to RSS-210 Annex 8 or Annex 9, the antenna gain shall not be added.

5.2 Antenna List

Manufacturers	Models/Name	Antenna Gain (dBi) @ 5150-5350 MHz
Ethertronics	CP001_1_ASM	5.33
Ethertronics	CP001_2_ASM	5.01

Manufacturers	Models/Name	Antenna Gain (dBi) @ 5470-5725MHz
Ethertronics	CP001_1_ASM	5.59
Ethertronics	CP001_2_ASM	5.66

Note: The power setting was controlled by manufacture with different antenna configuration. The power setting of the different antenna will be set with the corresponded value and no more then the level reported.

The antenna consists of UFL connectors with less 6 dBi gain; therefore, it complies with the antenna requirement.

6 FCC §15.207 & IC RSS-Gen §7.2.4 - AC Power Line Conducted Emissions

6.1 Applicable Standards

As per FCC §15.207 and IC RSS-Gen §7.2.4 Conducted limits:

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 Note 1	56 to 46 Note 1
0.5-5	56	46
5-30	60	50

Note 1 Decreases with the logarithm of the frequency.

6.2 Test Setup

The measurement was performed at shield room, using the setup per ANSI C63.4-2003 measurement procedure. The specification used was FCC §15.207 and IC RSS-Gen §7.2.4 limits.

External I/O cables were draped along the edge of the test table and bundle when necessary.

The AC/DC power adapter of the test support board was connected with LISN-1 which provided 120 V / 60 Hz AC power.

6.3 Test Procedure

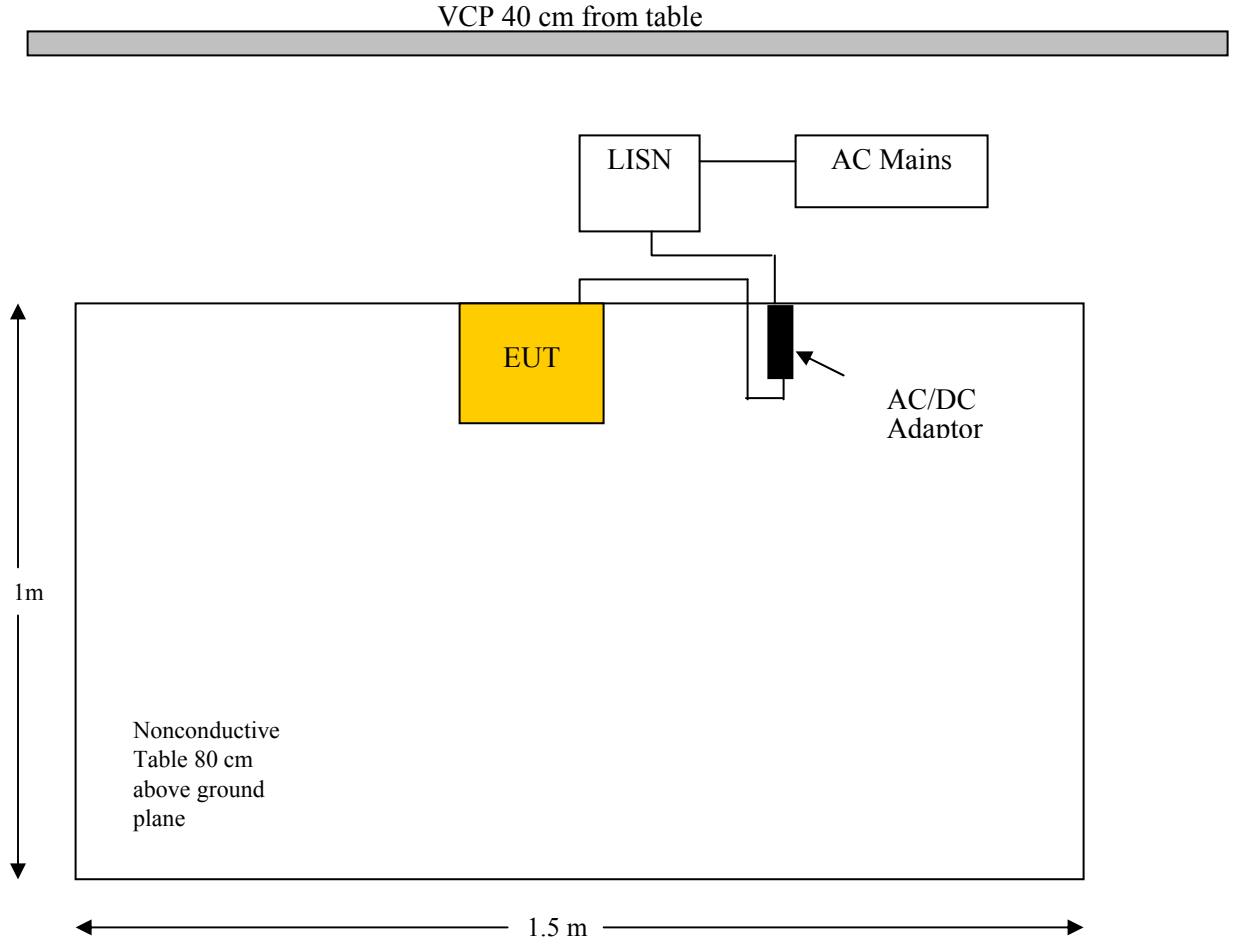
During the conducted emissions test, the power cord of the EUT host system was connected to the mains outlet of the LISN-2.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the peak detection mode, quasi-peak and average. Quasi-Peak readings are distinguished with a “QP.” Average readings are distinguished with an “Ave”.

6.4 Test Setup Block Diagram

AC/DC Adaptor:



6.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Cable Loss (CL), the Attenuator Factor (Atten) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + CL + Atten

For example, a corrected amplitude of 46.2 dBuV = Indicated Reading (32.5 dBuV) + Cable Loss (3.7 dB) + Attenuator (10 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude - Limit

6.6 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100044	2012-04-18	1 year
Solar Electronics	LISN	9252-R-24-BNC	511205	2012-06-25	1 year
TTE	Filter, High Pass	H9962-150K-50-21378	K7133	2012-05-30	1 year

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.*

6.7 Test Environmental Conditions

Temperature:	21 ºC
Relative Humidity:	52%
ATM Pressure:	103.58 kPa

The testing was performed by BO LI on 2013-01-08 in 5 m chamber 3.

6.8 Summary of Test Results

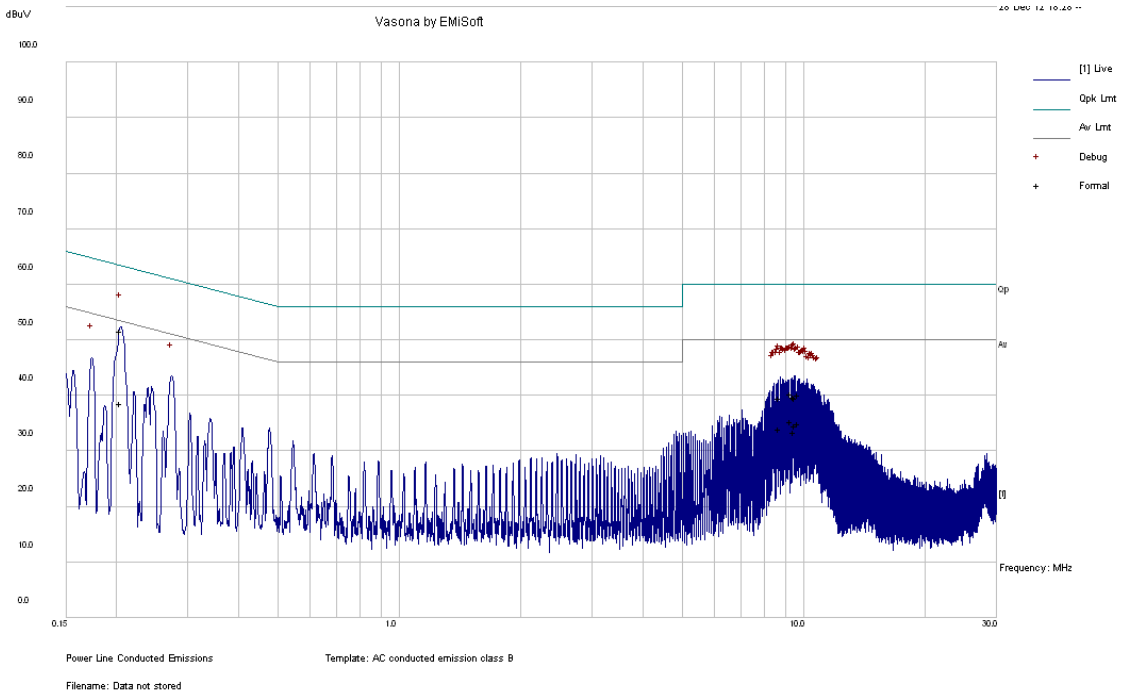
According to the recorded data in following table, the EUT complied with the FCC/IC standard's conducted emissions limits, with the margin reading of:

Connection: 120 V/60 Hz, AC			
Margin (dB)	**Frequency (MHz)**	**Conductor (Line/Neutral)**	**Range (MHz)**
-5.27	20.809991	Line	0.15-30

6.9 Conducted Emissions Test Plots and Data

5150-5250 MHz: (Worst Case)

120 V, 60 Hz – Line, AC/DC Adaptor

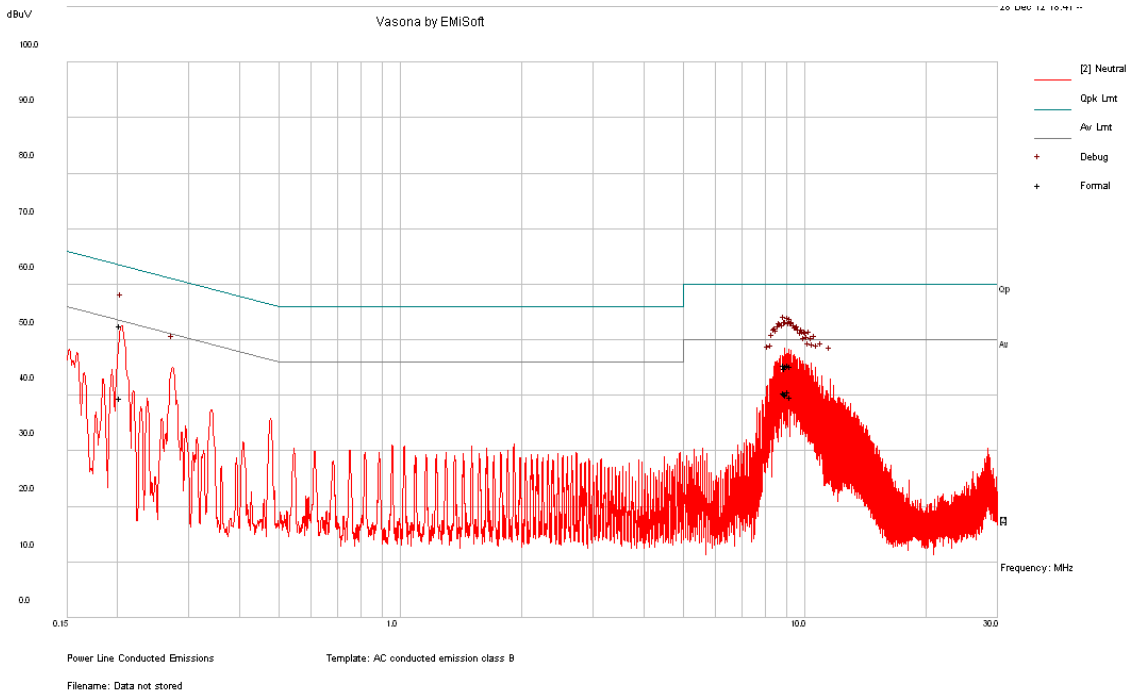


Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.204651	51.63	Line	63.42	-11.79	QP
9.538066	39.64	Line	60	-20.36	QP
9.469274	39.79	Line	60	-20.21	QP
8.715623	39.6	Line	60	-20.4	QP
9.330162	40.39	Line	60	-19.61	QP
9.736921	40.08	Line	60	-19.92	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.204651	38.62	Line	53.42	-14.8	Ave.
9.538066	34.54	Line	50	-15.46	Ave.
9.469274	33.41	Line	50	-16.59	Ave.
8.715623	34	Line	50	-16	Ave.
9.330162	35.37	Line	50	-14.63	Ave.
9.736921	34.97	Line	50	-15.03	Ave.

5150-5250 MHz: (Worst Case)

120 V, 60 Hz – Neutral, AC/DC Adaptor

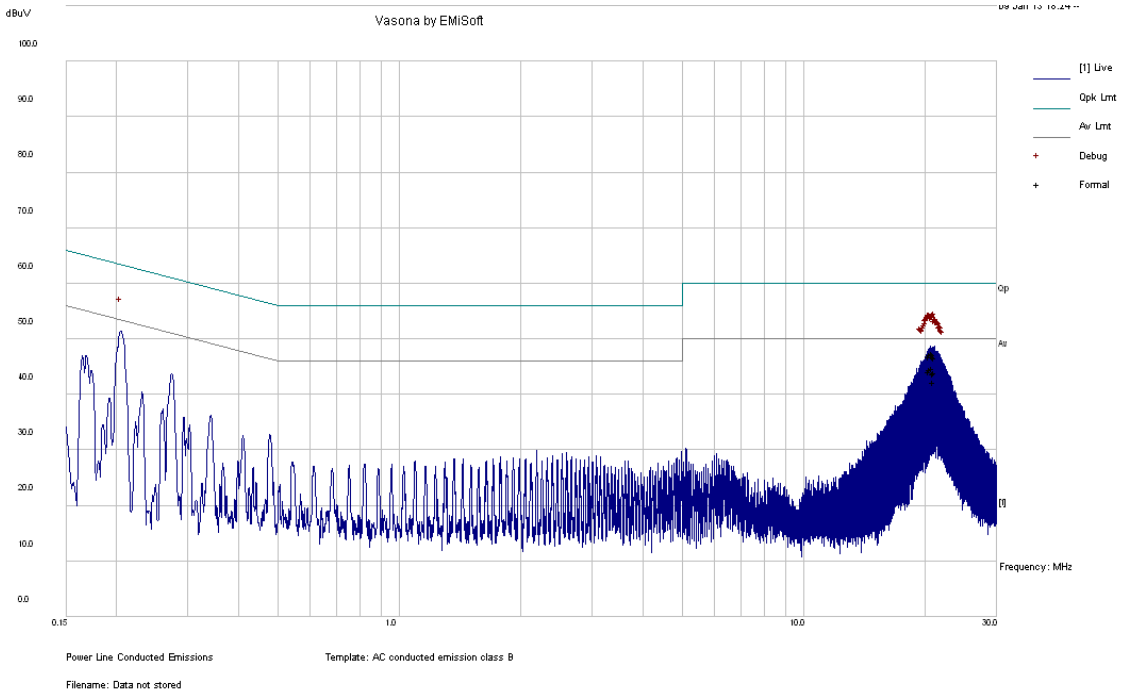


Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.204021	52.62	Neutral	63.45	-10.82	QP
8.918522	45.6	Neutral	60	-14.4	QP
9.122462	45.59	Neutral	60	-14.41	QP
9.256419	45.36	Neutral	60	-14.64	QP
9.052997	45.32	Neutral	60	-14.68	QP
8.985209	44.93	Neutral	60	-15.07	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.204021	39.53	Neutral	53.45	-13.91	Ave.
8.918522	40.45	Neutral	50	-9.55	Ave.
9.122462	40.65	Neutral	50	-9.35	Ave.
9.256419	39.76	Neutral	50	-10.24	Ave.
9.052997	40.17	Neutral	50	-9.83	Ave.
8.985209	40.25	Neutral	50	-9.75	Ave.

5250-5350 MHz: (Worst Case)

120 V, 60 Hz – Line, AC/DC Adaptor

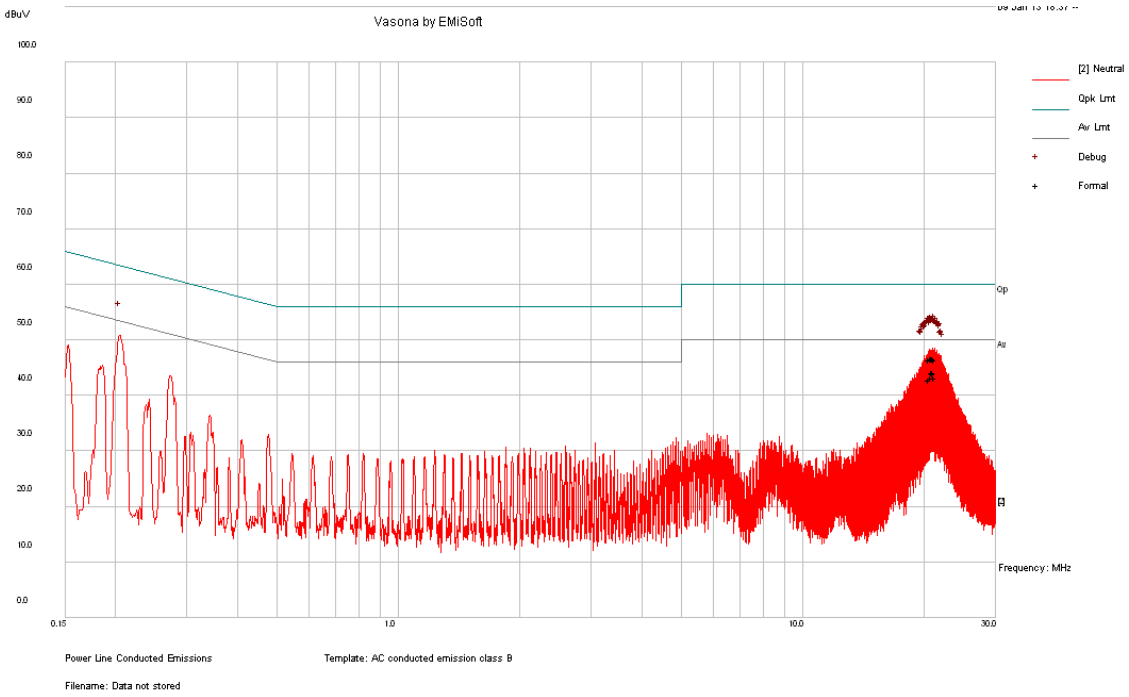


Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
21.080816	46.74	Line	60	-13.26	QP
20.535365	46.83	Line	60	-13.17	QP
21.017246	46.83	Line	60	-13.17	QP
20.603594	47.14	Line	60	-12.86	QP
20.948408	47.28	Line	60	-12.72	QP
20.809991	47.36	Line	60	-12.64	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
21.080816	44.04	Line	50	-5.96	Ave.
20.535365	44.22	Line	50	-5.78	Ave.
21.017246	42.26	Line	50	-7.74	Ave.
20.603594	44.47	Line	50	-5.53	Ave.
20.948408	43.72	Line	50	-6.28	Ave.
20.809991	44.73	Line	50	-5.27	Ave.

5250-5350 MHz: (Worst Case)

120 V, 60 Hz – Neutral, AC/DC Adaptor

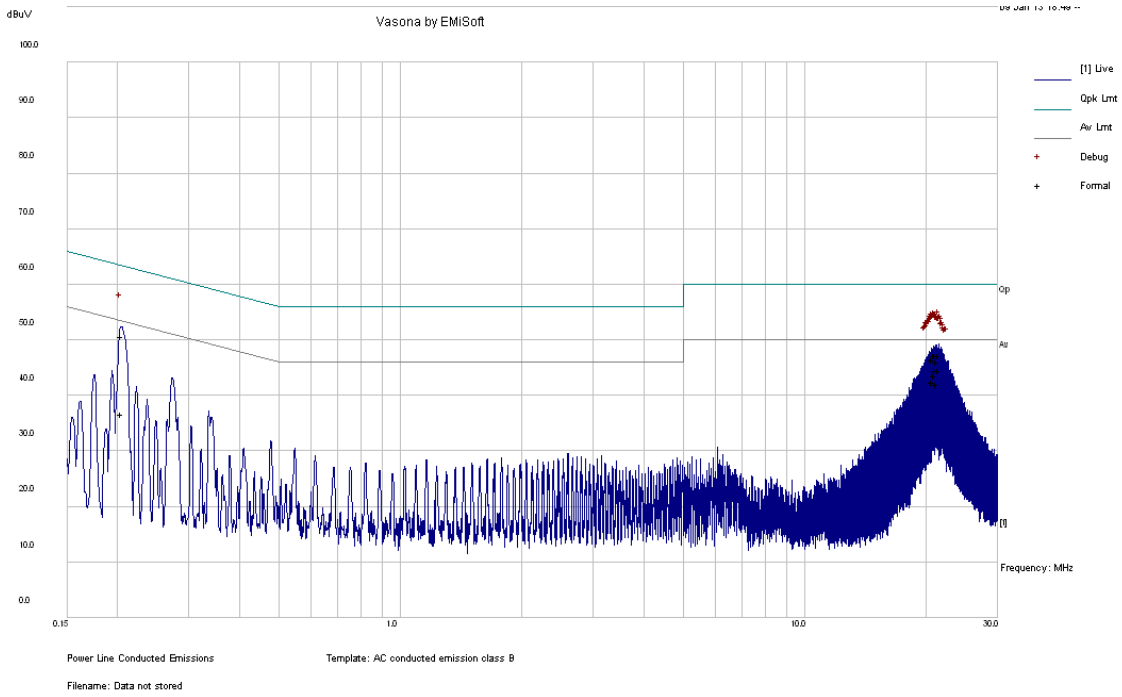


Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
21.22571	46.41	Neutral	60	-13.59	QP
20.885009	46.61	Neutral	60	-13.39	QP
20.612	46.49	Neutral	60	-13.51	QP
21.017732	46.74	Neutral	60	-13.26	QP
21.0878	46.73	Neutral	60	-13.27	QP
21.157076	46.69	Neutral	60	-13.31	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
21.22571	43.13	Neutral	50	-6.87	Ave.
20.885009	43.25	Neutral	50	-6.75	Ave.
20.612	42.82	Neutral	50	-7.18	Ave.
21.017732	44.14	Neutral	50	-5.86	Ave.
21.0878	44.13	Neutral	50	-5.87	Ave.
21.157076	43.93	Neutral	50	-6.07	Ave.

5470-5725 MHz: (Worst Case)

120 V, 60 Hz – Line, AC/DC Adaptor

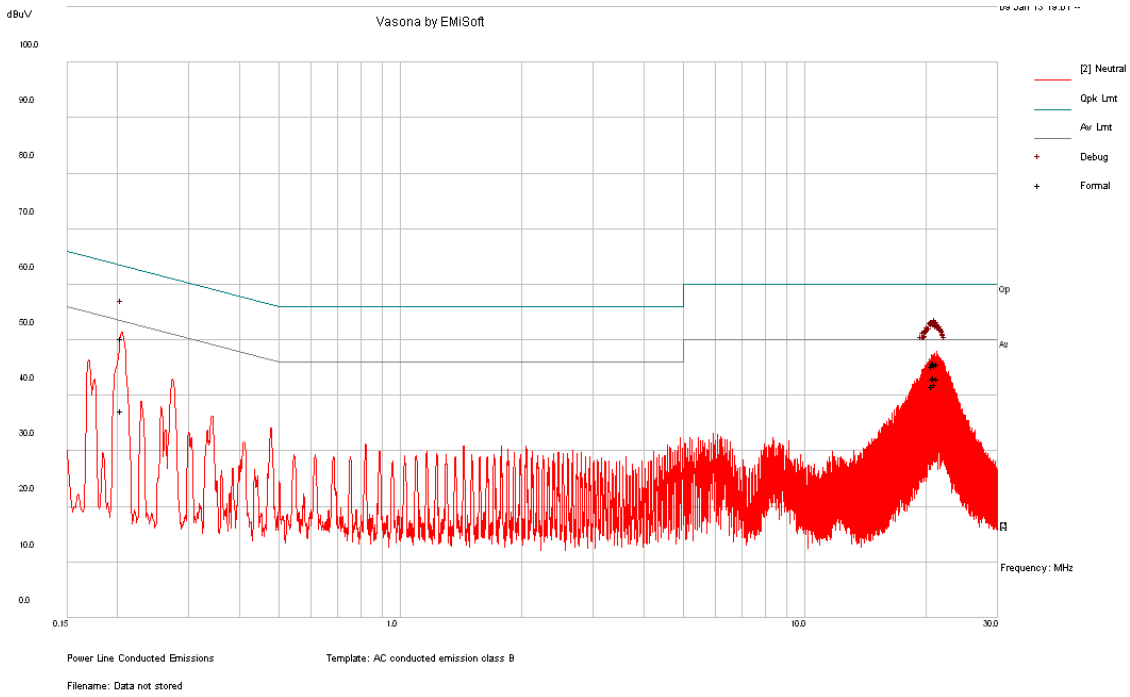


Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
21.429863	47.22	Line	60	-12.78	QP
21.018332	47.25	Line	60	-12.75	QP
21.229772	46.12	Line	60	-13.88	QP
20.743934	46.39	Line	60	-13.61	QP
0.204924	50.7	Line	63.41	-12.71	QP
21.15986	47.27	Line	60	-12.73	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
21.429863	44.58	Line	50	-5.42	Ave.
21.018332	43.66	Line	50	-6.34	Ave.
21.229772	42.08	Line	50	-7.92	Ave.
20.743934	42.51	Line	50	-7.49	Ave.
0.204924	36.77	Line	53.41	-16.64	Ave.
21.15986	44.51	Line	50	-5.49	Ave.

5470-5725 MHz: (Worst Case)

120 V, 60 Hz – Neutral, AC/DC Adaptor



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.204597	50.24	Neutral	63.42	-13.18	QP
21.16064	45.59	Neutral	60	-14.41	QP
20.883425	45.86	Neutral	60	-14.14	QP
20.953061	45.83	Neutral	60	-14.17	QP
21.362408	45.74	Neutral	60	-14.26	QP
20.746907	45.28	Neutral	60	-14.72	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.204597	37.3	Neutral	53.42	-16.12	Ave.
21.16064	42.04	Neutral	50	-7.96	Ave.
20.883425	43.07	Neutral	50	-6.93	Ave.
20.953061	43.17	Neutral	50	-6.83	Ave.
21.362408	42.99	Neutral	50	-7.01	Ave.
20.746907	41.7	Neutral	50	-8.3	Ave.

7 FCC §15.209, §15.407(b) & IC RSS-210 §A9.2 - Spurious Radiated Emissions

7.1 Applicable Standard

As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz.

As per FCC §15.209(a) and IC RSS-210: Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

Frequency (MHz)	Field Strength (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100 Note 1	3
88 - 216	150 Note 1	3
216 - 960	200 Note 1	3
Above 960	500	3

Note 1: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	960 – 1240	4. 5 – 5. 15
0.495 – 0.505	16.69475 – 16.69525	1300 – 1427	5. 35 – 5. 46
2.1735 – 2.1905	25.5 – 25.67	1435 – 1626.5	7.25 – 7.75
4.125 – 4.128	37.5 – 38.25	1645.5 – 1646.5	8.025 – 8.5
4.17725 – 4.17775	73 – 74.6	1660 – 1710	9.0 – 9.2
4.20725 – 4.20775	74.8 – 75.2	1718.8 – 1722.2	9.3 – 9.5
6.215 – 6.218	108 – 121.94	2200 – 2300	10.6 – 12.7
6.26775 – 6.26825	123 – 138	2310 – 2390	13.25 – 13.4
6.31175 – 6.31225	149.9 – 150.05	2483.5 – 2500	14.47 – 14.5
8.291 – 8.294	156.52475 – 156.52525	2690 – 2900	15.35 – 16.2
8.362 – 8.366	156.7 – 156.9	3260 – 3267	17.7 – 21.4
8.37625 – 8.38675	162.0125 –167.17	3.332 – 3.339	22.01 – 23.12
8.41425 – 8.41475	167.72 – 173.2	3 3458 – 3 358	23.6 – 24.0
12.29 – 12.293	240 – 285	3.600 – 4.400	31.2 – 31.8
12.51975 – 12.52025	322 – 335.4		36.43 – 36.5
12.57675 – 12.57725	399.9 – 410		Above 38.6
13.36 – 13.41	608 – 614		

According to FCC §15.407(b)

(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in th in the 5.15-5.25 GHz band.

(3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.e 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz

7.2 Test Setup

The radiated emissions tests were performed in the 5-meter Chamber, using the setup in accordance with ANSI C63.4-2009. The specification used was the FCC 15C/15E and IC RSS-210/RSS-Gen limits.

The spacing between the peripherals was 10 centimeters.

External I/O cables were draped along the edge of the test table and bundle when necessary.

7.3 Test Procedure

For the radiated emissions test, the EUT host, and all support equipment power cords was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

The spectrum analyzer or receiver is set as:

Below 1000 MHz:

RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000 MHz:

(1) Peak: RBW = 1MHz / VBW = 1MHz / Sweep = Auto
(2) Average: RBW = 1MHz / VBW = 10Hz / Sweep = Auto

7.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Cable Loss (CL), the Attenuator Factor (Atten) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + CL + Atten

For example, a corrected amplitude of 46.2 dBuV = Indicated Reading (32.5 dBuV) + Cable Loss (3.7 dB) + Attenuator (10 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude - Limit

7.5 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	N/R
Sunol Science Corp	Combination Antenna	JB3	A020106-2	2012-08-15	1 year
Hewlett Packard	Pre-amplifier	8447D	2944A06639	2012-06-09	1 year
Mini-Circuits	Pre-amplifier	ZVA-183-S	570400946	2012-05-09	1 year
Agilent	Spectrum Analyzer	E4440A	US42221851	2012-02-28	1 year
EMCO	Horn Antenna	3315	9511-4627	2012-10-17	1 year
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2012-03-22	1 year

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.*

7.6 Test Environmental Conditions

Temperature:	21-24°C
Relative Humidity:	43-47%
ATM Pressure:	101-103kPa

The testing was performed by Bo Li on 2013-01-02 to 2013-01-09 at 5 meter 3.

7.7 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Part 15.205, 15.209 and 15.407 & IC RSS-210, RSS-Gen standard's radiated emissions limits, and had the worst margin of:

5150-5250 MHz

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Channel, Range**
-0.304	5150	Vertical	30 MHz -40 GHz

5250-5350 MHz

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Channel, Range**
-0.151	5350	Vertical	30 MHz -40 GHz

5470-5725 MHz

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Channel, Range**
-0.329	5460	Vertical	30 MHz -40 GHz

Note: pre-scans were performed; radiated emissions were performed on Aux antenna (worst case) for single chain

7.8 Radiated Emissions Test Results

1) Radiated Emission at 3 meters,

5150-5250 MHz Band:

802.11a Mode, Low Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
271.1433	31.42	98	H	192	46	-14.58	QP
997.5535	22.75	359	V	298	54	-31.25	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5180 MHz, measured at 3 meters											
5180	68.75	219	147	V	34.256	4.55	0	107.556	-	-	Peak
5180	63.92	258	133	H	34.256	4.55	0	102.726	-	-	Peak
5180	58.102	219	147	V	34.256	4.55	0	96.908	-	-	Ave
5180	52.74	258	133	H	34.256	4.55	0	91.546	-	-	Ave
4752	27.59	0	100	V	33.097	4.42	0	65.107	74	-8.893	Peak
4639.8	27.39	0	100	H	32.585	4.35	0	64.325	74	-9.675	Peak
4752	13.02	0	100	V	33.097	4.42	0	50.537	54	-3.463	Ave
4639.8	12.81	0	100	H	32.585	4.35	0	49.745	54	-4.255	Ave
10360	32.44	0	100	V	38.329	7.02	26.98	50.809	74	-23.191	Peak
10360	32.16	0	100	H	38.329	7.02	26.98	50.529	74	-23.471	Peak
10360	16.79	0	100	V	38.329	7.02	26.98	35.159	54	-18.841	Ave
10360	16.72	0	100	H	38.329	7.02	26.98	35.089	54	-18.911	Ave
15540	32.32	0	100	V	38.432	8.38	25.92	53.212	74	-20.788	Peak
15540	32.56	0	100	H	38.432	8.38	25.92	53.452	74	-20.548	Peak
15540	17.63	0	100	V	38.432	8.38	25.92	38.522	54	-15.478	Ave
15540	17.5	0	100	H	38.432	8.38	25.92	38.392	54	-15.608	Ave
20720	31.95	0	100	V	49.9	9.68	29	62.53	74	-11.47	Peak
20720	31.79	0	100	H	49.9	9.68	29	62.37	74	-11.63	Peak
20720	16.96	0	100	V	49.9	9.68	29	47.54	54	-6.46	Ave
20720	16.94	0	100	H	49.9	9.68	29	47.52	54	-6.48	Ave

802.11a Mode, Middle Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
950.5983	22.68	303	V	94	46	-23.32	QP
271.2745	30.92	98	H	350	46	-15.08	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5200 MHz, measured at 3 meters											
5200	69.93	212	104	V	34.256	4.55	0	108.736	-	-	Peak
5200	64.57	254	134	H	34.256	4.55	0	103.376	-	-	Peak
5200	59.43	212	104	V	34.256	4.55	0	98.236	-	-	Ave
5200	54.52	254	134	H	34.256	4.55	0	93.326	-	-	Ave
10400	31.16	0	100	V	38.329	6.99	26.97	49.509	74	-24.491	Peak
10400	31.57	0	100	H	38.329	6.99	26.97	49.919	74	-24.081	Peak
10400	16.63	0	100	V	38.329	6.99	26.97	34.979	54	-19.021	Ave
10400	16.59	0	100	H	38.329	6.99	26.97	34.939	54	-19.061	Ave
15600	32.32	0	100	V	38.325	8.4	25.92	53.125	74	-20.875	Peak
15600	33.43	0	100	H	38.325	8.4	25.92	54.235	74	-19.765	Peak
15600	17.92	0	100	V	38.325	8.4	25.92	38.725	54	-15.275	Ave
15600	17.65	0	100	H	38.325	8.4	25.92	38.455	54	-15.545	Ave
20800	31.75	0	100	V	49.9	9.8	28.9	62.55	74	-11.45	Peak
20800	32.5	0	100	H	49.9	9.8	28.9	63.3	74	-10.7	Peak
20800	16.959	0	100	V	49.9	9.8	28.9	47.759	54	-6.241	Ave
20800	16.98	0	100	H	49.9	9.8	28.9	47.78	54	-6.22	Ave

802.11a Mode, High Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
271.1188	31.23	98	H	196	46	-14.77	QP
976.0135	22.52	193	H	270	54	-31.48	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5240 MHz, measured at 3 meters											
5240	72.16	192	124	V	34.256	4.6	0	111.016	-	-	Peak
5240	64.49	38	100	H	34.256	4.6	0	103.346	-	-	Peak
5240	61.12	192	124	V	34.256	4.6	0	99.976	-	-	Ave
5240	52.51	38	100	H	34.256	4.6	0	91.366	-	-	Ave
5452.48	27.84	0	100	V	34.821	4.76	0	67.421	74	-6.579	Peak
5353.48	27.67	0	100	H	35	4.71	0	67.38	74	-6.62	Peak
5452.48	12.72	0	100	V	34.821	4.76	0	52.301	54	-1.699	Ave
5353.48	12.83	0	100	H	35	4.71	0	52.54	54	-1.46	Ave
10480	31.92	0	100	V	38.343	7	27.83	49.433	74	-24.567	Peak
10480	31.01	0	100	H	38.343	7	27.83	48.523	74	-25.477	Peak
10480	16.73	0	100	V	38.343	7	27.83	34.243	54	-19.757	Ave
10480	16.49	0	100	H	38.343	7	27.83	34.003	54	-19.997	Ave
15720	35.46	330	100	V	38.188	8.38	25.57	56.458	74	-17.542	Peak
15720	36.39	189	100	H	38.188	8.38	25.57	57.388	74	-16.612	Peak
15720	20.14	330	100	V	38.188	8.38	25.57	41.138	54	-12.862	Ave
15720	20.84	189	100	H	38.188	8.38	25.57	41.838	54	-12.162	Ave
20960	32.1	0	100	V	49.9	9.81	29	62.81	74	-11.19	Peak
20960	31.77	0	100	H	49.9	9.81	29	62.48	74	-11.52	Peak
20960	17.21	0	100	V	49.9	9.81	29	47.92	54	-6.08	Ave
20960	17.24	0	100	H	49.9	9.81	29	47.95	54	-6.05	Ave

802.11n-HT20 Mode, Low Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
271.2377	31.23	98	H	199	46	-14.77	QP
997.4712	22.55	147	V	334	54	-31.45	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5180 MHz, measured at 3 meters											
5180	70.3	196	162	V	34.256	4.55	0	109.106	-	-	Peak
5180	63.29	254	182	H	34.256	4.55	0	102.096	-	-	Peak
5180	59.6	196	162	V	34.256	4.55	0	98.406	-	-	Ave
5180	52.98	254	182	H	34.256	4.55	0	91.786	-	-	Ave
5150	30.15	189	100	V	34.256	4.56	0	68.966	74	-5.034	Peak
4524.9	27.79	0	100	H	32.547	4.36	0	64.697	74	-9.303	Peak
5150	14.17	189	100	V	34.256	4.56	0	52.986	54	-1.014	Ave
4524.9	12.89	0	100	H	32.547	4.36	0	49.797	54	-4.203	Ave
10360	31.55	0	100	V	38.329	7.02	26.98	49.919	74	-24.081	Peak
10360	31.54	0	100	H	38.329	7.02	26.98	49.909	74	-24.091	Peak
10360	16.89	0	100	V	38.329	7.02	26.98	35.259	54	-18.741	Ave
10360	16.79	0	100	H	38.329	7.02	26.98	35.159	54	-18.841	Ave
15540	32.53	0	100	V	38.432	8.38	25.92	53.422	74	-20.578	Peak
15540	32.43	0	100	H	38.432	8.38	25.92	53.322	74	-20.678	Peak
15540	17.67	0	100	V	38.432	8.38	25.92	38.562	54	-15.438	Ave
15540	17.61	0	100	H	38.432	8.38	25.92	38.502	54	-15.498	Ave
20720	31.66	0	100	V	49.9	9.68	29	62.24	74	-11.76	Peak
20720	31.99	0	100	H	49.9	9.68	29	62.57	74	-11.43	Peak
20720	17.09	0	100	V	49.9	9.68	29	47.67	54	-6.33	Ave
20720	17.08	0	100	H	49.9	9.68	29	47.66	54	-6.34	Ave

802.11n-HT20 Mode, Middle Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
270.2147	31.27	100	H	304	46	-14.73	QP
984.5153	22.57	207	H	124	54	-31.43	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5200 MHz, measured at 3 meters											
5200	70.15	188	125	V	34.256	4.55	0	108.956	-	-	Peak
5200	63.59	42	100	H	34.256	4.55	0	102.396	-	-	Peak
5200	59.66	188	125	V	34.256	4.55	0	98.466	-	-	Ave
5200	53.149	42	100	H	34.256	4.55	0	91.955	-	-	Ave
10400	31.63	0	100	V	38.329	6.99	26.97	49.979	74	-24.021	Peak
10400	31.75	0	100	H	38.329	6.99	26.97	50.099	74	-23.901	Peak
10400	16.8	0	100	V	38.329	6.99	26.97	35.149	54	-18.851	Ave
10400	16.73	0	100	H	38.329	6.99	26.97	35.079	54	-18.921	Ave
15600	32.34	0	100	V	38.325	8.4	25.92	53.145	74	-20.855	Peak
15600	32.71	0	100	H	38.325	8.4	25.92	53.515	74	-20.485	Peak
15600	17.96	0	100	V	38.325	8.4	25.92	38.765	54	-15.235	Ave
15600	17.75	0	100	H	38.325	8.4	25.92	38.555	54	-15.445	Ave
20800	31.71	0	100	V	49.9	9.8	28.9	62.51	74	-11.49	Peak
20800	32.62	0	100	H	49.9	9.8	28.9	63.42	74	-10.58	Peak
20800	17.1	0	100	V	49.9	9.8	28.9	47.9	54	-6.1	Ave
20800	17.13	0	100	H	49.9	9.8	28.9	47.93	54	-6.07	Ave

802.11n-HT20 Mode, High Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
271.2119	31.17	98	H	191	46	-14.83	QP
972.6471	22.63	210	H	315	54	-31.37	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5240 MHz, measured at 3 meters											
5240	71.64	195	115	V	34.256	4.6	0	110.496	-	-	Peak
5240	64.26	38	100	H	34.256	4.6	0	103.116	-	-	Peak
5240	60.56	195	115	V	34.256	4.6	0	99.416	-	-	Ave
5240	53.02	38	100	H	34.256	4.6	0	91.876	-	-	Ave
5457.43	27.38	0	100	V	34.821	4.76	0	66.961	74	-7.039	Peak
5415.45	27.35	0	100	H	35	4.76	0	67.11	74	-6.89	Peak
5457.43	12.7	0	100	V	34.821	4.76	0	52.281	54	-1.719	Ave
5415.45	12.74	0	100	H	35	4.76	0	52.5	54	-1.5	Ave
10480	31.32	0	100	V	38.343	7	27.83	48.833	74	-25.167	Peak
10480	31.14	0	100	H	38.343	7	27.83	48.653	74	-25.347	Peak
10480	16.6	0	100	V	38.343	7	27.83	34.113	54	-19.887	Ave
10480	16.5	0	100	H	38.343	7	27.83	34.013	54	-19.987	Ave
15720	35.8	308	100	V	38.188	8.38	25.57	56.798	74	-17.202	Peak
15720	35.3	126	123	H	38.188	8.38	25.57	56.298	74	-17.702	Peak
15720	20.14	308	100	V	38.188	8.38	25.57	41.138	54	-12.862	Ave
15720	20.48	126	123	H	38.188	8.38	25.57	41.478	54	-12.522	Ave
20960	31.86	0	100	V	49.9	9.81	29	62.57	74	-11.43	Peak
20960	32.52	0	100	H	49.9	9.81	29	63.23	74	-10.77	Peak
20960	17.15	0	100	V	49.9	9.81	29	47.86	54	-6.14	Ave
20960	17.14	0	100	H	49.9	9.81	29	47.85	54	-6.15	Ave

802.11n-HT40 Mode, Low Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
271.2983	31.43	104	H	205	46	-14.57	QP
971.4322	22.73	223	V	233	54	-31.27	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5190 MHz, measured at 3 meters											
5190	63.27	194	125	V	34.256	4.55	0	102.076	-	-	Peak
5190	56.69	255	122	H	34.256	4.55	0	95.496	-	-	Peak
5190	52.25	194	125	V	34.256	4.55	0	91.056	-	-	Ave
5190	45.87	255	122	H	34.256	4.55	0	84.676	-	-	Ave
5150	29.29	188	163	V	34.256	4.56	0	68.106	74	-5.894	Peak
5148.9	27.66	0	100	H	34.256	4.56	0	66.476	74	-7.524	Peak
5150	14.88	188	163	V	34.256	4.56	0	53.696	54	-0.304	Ave
5148.9	13.12	0	100	H	34.256	4.56	0	51.936	54	-2.064	Ave
10380	31.27	0	100	V	38.329	7.02	27.8	48.819	74	-25.181	Peak
10380	31.6	0	100	H	38.329	7.02	27.8	49.149	74	-24.851	Peak
10380	16.798	0	100	V	38.329	7.02	27.8	34.347	54	-19.653	Ave
10380	16.8	0	100	H	38.329	7.02	27.8	34.349	54	-19.651	Ave
15570	32.38	0	100	V	38.325	8.4	25.66	53.445	74	-20.555	Peak
15570	31.93	0	100	H	38.325	8.4	25.66	52.995	74	-21.005	Peak
15570	17.65	0	100	V	38.325	8.4	25.66	38.715	54	-15.285	Ave
15570	17.69	0	100	H	38.325	8.4	25.66	38.755	54	-15.245	Ave
20760	31.68	0	100	V	49.9	9.75	29	62.33	74	-11.67	Peak
20760	31.7	0	100	H	49.9	9.75	29	62.35	74	-11.65	Peak
20760	17.12	0	100	V	49.9	9.75	29	47.77	54	-6.23	Ave
20760	17.09	0	100	H	49.9	9.75	29	47.74	54	-6.26	Ave

802.11n-HT40 Mode, High Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
271.3573	31.54	108	H	274	46	-14.46	QP
964.5776	22.57	199	H	213	54	-31.43	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5230 MHz, measured at 3 meters											
5230	68.2	194	137	V	34.256	4.55	0	107.006	-	-	Peak
5230	61.52	259	122	H	34.256	4.55	0	100.326	-	-	Peak
5230	56.78	194	137	V	34.256	4.55	0	95.586	-	-	Ave
5230	50.19	259	122	H	34.256	4.55	0	88.996	-	-	Ave
5433.23	27.75	0	100	V	35	4.76	0	67.51	74	-6.49	Peak
5436.9	27.39	0	100	H	35	4.76	0	67.15	74	-6.85	Peak
5433.23	12.98	0	100	V	35	4.76	0	52.74	54	-1.26	Ave
5436.9	12.97	0	100	H	35	4.76	0	52.73	54	-1.27	Ave
10460	30.81	0	100	V	38.343	6.99	27.83	48.313	74	-25.687	Peak
10460	31.35	0	100	H	38.343	6.99	27.83	48.853	74	-25.147	Peak
10460	16.43	0	100	V	38.343	6.99	27.83	33.933	54	-20.067	Ave
10460	16.46	0	100	H	38.343	6.99	27.83	33.963	54	-20.037	Ave
15690	33.43	0	100	V	38.188	8.44	25.46	54.598	74	-19.402	Peak
15690	32.91	0	100	H	38.188	8.44	25.46	54.078	74	-19.922	Peak
15690	18.462	0	100	V	38.188	8.44	25.46	39.63	54	-14.37	Ave
15690	18.21	0	100	H	38.188	8.44	25.46	39.378	54	-14.622	Ave
20920	31.89	0	100	V	49.9	9.76	29	62.55	74	-11.45	Peak
20920	32.14	0	100	H	49.9	9.76	29	62.8	74	-11.2	Peak
20920	17.15	0	100	V	49.9	9.76	29	47.81	54	-6.19	Ave
20920	17.12	0	100	H	49.9	9.76	29	47.78	54	-6.22	Ave

802.11n-HT20 Mode, Low Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
272.2228	31.15	106	H	212	46	-14.85	QP
999.036	22.71	93	V	134	54	-31.29	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5180 MHz, measured at 3 meters											
5180	70.8	187	128	V	34.256	4.55	0	109.606	-	-	Peak
5180	68.12	156	169	H	34.256	4.55	0	106.926	-	-	Peak
5180	58.02	187	128	V	34.256	4.55	0	96.826	-	-	Ave
5180	55.45	156	169	H	34.256	4.55	0	94.256	-	-	Ave
5145.7	27.84	0	100	V	34.256	4.56	0	66.656	74	-7.344	Peak
4593.2	27.78	0	100	H	32.585	4.33	0	64.695	74	-9.305	Peak
5145.7	13.003	0	100	V	34.256	4.56	0	51.819	54	-2.181	Ave
4593.2	13.01	0	100	H	32.585	4.33	0	49.925	54	-4.075	Ave
10360	31.76	0	100	V	38.329	7.02	26.98	50.129	74	-23.871	Peak
10360	31.59	0	100	H	38.329	7.02	26.98	49.959	74	-24.041	Peak
10360	16.9	0	100	V	38.329	7.02	26.98	35.269	54	-18.731	Ave
10360	16.9	0	100	H	38.329	7.02	26.98	35.269	54	-18.731	Ave
15540	32.51	0	100	V	38.432	8.38	25.92	53.402	74	-20.598	Peak
15540	32.18	0	100	H	38.432	8.38	25.92	53.072	74	-20.928	Peak
15540	17.62	0	100	V	38.432	8.38	25.92	38.512	54	-15.488	Ave
15540	17.64	0	100	H	38.432	8.38	25.92	38.532	54	-15.468	Ave
20720	31.3	0	100	V	49.9	9.68	29	61.88	74	-12.12	Peak
20720	31.6	0	100	H	49.9	9.68	29	62.18	74	-11.82	Peak
20720	17.136	0	100	V	49.9	9.68	29	47.716	54	-6.284	Ave
20720	17.1	0	100	H	49.9	9.68	29	47.68	54	-6.32	Ave

802.11n-HT20 Mode, Middle Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
273.22	30.49	126	H	204	46	-15.51	QP
986.5195	23.04	196	H	192	54	-30.96	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5200 MHz, measured at 3 meters											
5200	70.28	193	136	V	34.256	4.55	0	109.086	-	-	Peak
5200	67.71	155	156	H	34.256	4.55	0	106.516	-	-	Peak
5200	57.43	193	136	V	34.256	4.55	0	96.236	-	-	Ave
5200	54.84	155	156	H	34.256	4.55	0	93.646	-	-	Ave
10400	31.2	0	100	V	38.329	6.99	26.97	49.549	74	-24.451	Peak
10400	31.66	0	100	H	38.329	6.99	26.97	50.009	74	-23.991	Peak
10400	16.8	0	100	V	38.329	6.99	26.97	35.149	54	-18.851	Ave
10400	16.83	0	100	H	38.329	6.99	26.97	35.179	54	-18.821	Ave
15600	32.31	0	100	V	38.325	8.4	25.92	53.115	74	-20.885	Peak
15600	33.02	0	100	H	38.325	8.4	25.92	53.825	74	-20.175	Peak
15600	17.83	0	100	V	38.325	8.4	25.92	38.635	54	-15.365	Ave
15600	17.82	0	100	H	38.325	8.4	25.92	38.625	54	-15.375	Ave
20800	31.72	0	100	V	49.9	9.8	28.9	62.52	74	-11.48	Peak
20800	31.77	0	100	H	49.9	9.8	28.9	62.57	74	-11.43	Peak
20800	17.13	0	100	V	49.9	9.8	28.9	47.93	54	-6.07	Ave
20800	17.13	0	100	H	49.9	9.8	28.9	47.93	54	-6.07	Ave

802.11n-HT20 Mode, High Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
275.4751	30.99	99	H	105	46	-15.01	QP
985.3445	22.74	107	H	334	54	-31.26	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5240 MHz, measured at 3 meters											
5240	70.5	193	125	V	34.256	4.6	0	109.356	-	-	Peak
5240	67.16	154	162	H	34.256	4.6	0	106.016	-	-	Peak
5240	57.81	193	125	V	34.256	4.6	0	96.666	-	-	Ave
5240	53.76	154	162	H	34.256	4.6	0	92.616	-	-	Ave
5429.57	27.58	0	100	V	35	4.76	0	67.34	74	-6.66	Peak
5398.22	27.43	0	100	H	35	4.76	0	67.19	74	-6.81	Peak
5429.57	12.96	0	100	V	35	4.76	0	52.72	54	-1.28	Ave
5398.22	12.94	0	100	H	35	4.76	0	52.7	54	-1.3	Ave
10480	31.28	0	100	V	38.343	7	27.83	48.793	74	-25.207	Peak
10480	31.25	0	100	H	38.343	7	27.83	48.763	74	-25.237	Peak
10480	16.51	0	100	V	38.343	7	27.83	34.023	54	-19.977	Ave
10480	16.57	0	100	H	38.343	7	27.83	34.083	54	-19.917	Ave
15720	33.02	0	100	V	38.188	8.38	25.57	54.018	74	-19.982	Peak
15720	33.76	0	100	H	38.188	8.38	25.57	54.758	74	-19.242	Peak
15720	18.36	0	100	V	38.188	8.38	25.57	39.358	54	-14.642	Ave
15720	18.23	0	100	H	38.188	8.38	25.57	39.228	54	-14.772	Ave
20960	32.3	0	100	V	49.9	9.81	29	63.01	74	-10.99	Peak
20960	31.71	0	100	H	49.9	9.81	29	62.42	74	-11.58	Peak
20960	17.22	0	100	V	49.9	9.81	29	47.93	54	-6.07	Ave
20960	17.28	0	100	H	49.9	9.81	29	47.99	54	-6.01	Ave

802.11n-HT40 Mode, Low Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
267.3356	31.48	122	H	277	46	-14.52	QP
982.4171	22.53	107	V	274	54	-31.47	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5190 MHz, measured at 3 meters											
5190	66.34	195	114	V	34.256	4.55	0	105.146	-	-	Peak
5190	63.31	180	171	H	34.256	4.55	0	102.116	-	-	Peak
5190	52.23	195	114	V	34.256	4.55	0	91.036	-	-	Ave
5190	49.71	180	171	H	34.256	4.55	0	88.516	-	-	Ave
5147.8	28.65	0	100	V	34.256	4.56	0	67.466	74	-6.534	Peak
4883.5	27.46	0	100	H	33.327	4.54	0	65.327	74	-8.673	Peak
5147.8	13.31	0	100	V	34.256	4.56	0	52.126	54	-1.874	Ave
4883.5	13.09	0	100	H	33.327	4.54	0	50.957	54	-3.043	Ave
10380	31.65	0	100	V	38.329	7.02	27.8	49.199	74	-24.801	Peak
10380	31.74	0	100	H	38.329	7.02	27.8	49.289	74	-24.711	Peak
10380	16.87	0	100	V	38.329	7.02	27.8	34.419	54	-19.581	Ave
10380	16.87	0	100	H	38.329	7.02	27.8	34.419	54	-19.581	Ave
15570	32.16	0	100	V	38.325	8.4	25.66	53.225	74	-20.775	Peak
15570	32.27	0	100	H	38.325	8.4	25.66	53.335	74	-20.665	Peak
15570	17.72	0	100	V	38.325	8.4	25.66	38.785	54	-15.215	Ave
15570	17.68	0	100	H	38.325	8.4	25.66	38.745	54	-15.255	Ave
20760	31.81	0	100	V	49.9	9.75	29	62.46	74	-11.54	Peak
20760	31.87	0	100	H	49.9	9.75	29	62.52	74	-11.48	Peak
20760	17.12	0	100	V	49.9	9.75	29	47.77	54	-6.23	Ave
20760	17.08	0	100	H	49.9	9.75	29	47.73	54	-6.27	Ave

802.11nH-T40 Mode, High Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
269.4852	31.37	106	H	167	46	-14.63	QP
964.5776	22.67	153	H	159	54	-31.33	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5230 MHz, measured at 3 meters											
5230	68.94	194	171	V	34.256	4.55	0	107.746	-	-	Peak
5230	65.5	177	180	H	34.256	4.55	0	104.306	-	-	Peak
5230	54.44	194	171	V	34.256	4.55	0	93.246	-	-	Ave
5230	51.88	177	180	H	34.256	4.55	0	90.686	-	-	Ave
5403.53	27.63	0	100	V	35	4.76	0	67.39	74	-6.61	Peak
5382.45	27.76	0	100	H	35	4.76	0	67.52	74	-6.48	Peak
5403.53	13.01	0	100	V	35	4.76	0	52.77	54	-1.23	Ave
5382.45	13.01	0	100	H	35	4.76	0	52.77	54	-1.23	Ave
10460	31.13	0	100	V	38.343	6.99	27.83	48.633	74	-25.367	Peak
10460	31.35	0	100	H	38.343	6.99	27.83	48.853	74	-25.147	Peak
10460	16.47	0	100	V	38.343	6.99	27.83	33.973	54	-20.027	Ave
10460	16.5	0	100	H	38.343	6.99	27.83	34.003	54	-19.997	Ave
15690	33.43	0	100	V	38.188	8.44	25.46	54.598	74	-19.402	Peak
15690	32.64	0	100	H	38.188	8.44	25.46	53.808	74	-20.192	Peak
15690	18.24	0	100	V	38.188	8.44	25.46	39.408	54	-14.592	Ave
15690	18.08	0	100	H	38.188	8.44	25.46	39.248	54	-14.752	Ave
20920	32.28	0	100	V	49.9	9.76	29	62.94	74	-11.06	Peak
20920	31.73	0	100	H	49.9	9.76	29	62.39	74	-11.61	Peak
20920	17.139	0	100	V	49.9	9.76	29	47.799	54	-6.201	Ave
20920	17.17	0	100	H	49.9	9.76	29	47.83	54	-6.17	Ave

5250-5350 MHz Band:

802.11a Mode, Low Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
257.373	29.96	106	H	12	46	-16.04	QP
987.5174	21.95	157	V	255	54	-32.05	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz, measured at 3 meters											
5260	72.08	192	132	V	34.853	4.6	0	111.533	-	-	Peak
5260	64.51	248	146	H	34.853	4.6	0	103.963	-	-	Peak
5260	61.17	192	132	V	34.853	4.6	0	100.623	-	-	Ave
5260	53.96	248	146	H	34.853	4.6	0	93.413	-	-	Ave
4846.7	28.12	0	100	V	33.097	4.56	0	65.777	74	-8.223	Peak
4703.7	27.45	0	100	H	32.816	4.45	0	64.716	74	-9.284	Peak
4846.7	12.86	0	100	V	33.097	4.56	0	50.517	54	-3.483	Ave
4703.7	12.83	0	100	H	32.816	4.45	0	50.096	54	-3.904	Ave
10520	31.15	0	100	V	38.343	7	27.93	48.563	74	-25.437	Peak
10520	31.46	0	100	H	38.343	7	27.93	48.873	74	-25.127	Peak
10520	16.57	0	100	V	38.343	7	27.93	33.983	54	-20.017	Ave
10520	16.54	0	100	H	38.343	7	27.93	33.953	54	-20.047	Ave
15780	33.94	112	100	V	37.928	8.35	25.51	54.708	74	-19.292	Peak
15780	35.09	191	100	H	37.928	8.35	25.51	55.858	74	-18.142	Peak
15780	19.66	112	100	V	37.928	8.35	25.51	40.428	54	-13.572	Ave
15780	20.71	191	100	H	37.928	8.35	25.51	41.478	54	-12.522	Ave
21040	31.91	0	100	V	49.9	9.79	29	62.6	74	-11.4	Peak
21040	32.33	0	100	H	49.9	9.79	29	63.02	74	-10.98	Peak
21040	17.3	0	100	V	49.9	9.79	29	47.99	54	-6.01	Ave
21040	17.28	0	100	H	49.9	9.79	29	47.97	54	-6.03	Ave

802.11a Mode, Middle Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
273.27725	29.41	99	H	359	46	-16.59	QP
988.5035	22.35	100	V	144	54	-31.65	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5300 MHz, measured at 3 meters											
5300	71.75	197	100	V	34.853	4.6	0	111.203	-	-	Peak
5300	64.17	252	144	H	34.853	4.6	0	103.623	-	-	Peak
5300	60.82	197	100	V	34.853	4.6	0	100.273	-	-	Ave
5300	53.27	252	144	H	34.853	4.6	0	92.723	-	-	Ave
10600	31.06	0	100	V	38.418	7.07	27.93	48.618	74	-25.382	Peak
10600	31.27	0	100	H	38.418	7.07	27.93	48.828	74	-25.172	Peak
10600	16.41	0	100	V	38.418	7.07	27.93	33.968	54	-20.032	Ave
10600	16.43	0	100	H	38.418	7.07	27.93	33.988	54	-20.012	Ave
15900	37.07	311	100	V	37.914	8.38	25.5	57.864	74	-16.136	Peak
15900	39.06	192	100	H	37.914	8.38	25.5	59.854	74	-14.146	Peak
15900	22.08	311	100	V	37.914	8.38	25.5	42.874	54	-11.126	Ave
15900	23.17	192	100	H	37.914	8.38	25.5	43.964	54	-10.036	Ave
21200	33.07	0	100	V	49.9	9.8	29.1	63.67	74	-10.33	Peak
21200	32.86	0	100	H	49.9	9.8	29.1	63.46	74	-10.54	Peak
21200	17.34	0	100	V	49.9	9.8	29.1	47.94	54	-6.06	Ave
21200	17.33	0	100	H	49.9	9.8	29.1	47.93	54	-6.07	Ave

802.11a Mode, High Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
282.18875	24.5	98	H	10	46	-21.5	QP
967.5535	21.75	304	H	316	54	-32.25	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5320 MHz, measured at 3 meters											
5320	70.18	193	100	V	34.853	4.71	0	109.743	-	-	Peak
5320	63.75	256	130	H	34.853	4.71	0	103.313	-	-	Peak
5320	58.39	193	100	V	34.853	4.71	0	97.953	-	-	Ave
5320	53.05	256	130	H	34.853	4.71	0	92.613	-	-	Ave
5444.78	27.66	0	100	V	35	4.76	0	67.42	74	-6.58	Peak
5359.35	27.51	0	100	H	35	4.71	0	67.22	74	-6.78	Peak
5444.78	12.69	0	100	V	35	4.76	0	52.45	54	-1.55	Ave
5359.35	12.92	0	100	H	35	4.71	0	52.63	54	-1.37	Ave
10640	31.68	0	100	V	38.418	7.07	27.74	49.428	74	-24.572	Peak
10640	31.06	0	100	H	38.418	7.07	27.74	48.808	74	-25.192	Peak
10640	16.808	0	100	V	38.418	7.07	27.74	34.556	54	-19.444	Ave
10640	16.82	0	100	H	38.418	7.07	27.74	34.568	54	-19.432	Ave
15960	39.7	313	100	V	37.902	8.39	25.4	60.592	74	-13.408	Peak
15960	42.16	190	115	H	37.902	8.39	25.4	63.052	74	-10.948	Peak
15960	25.39	313	100	V	37.902	8.39	25.4	46.282	54	-7.718	Ave
15960	27.69	190	115	H	37.902	8.39	25.4	48.582	54	-5.418	Ave
21280	32.79	0	100	V	49.9	9.79	29	63.48	74	-10.52	Peak
21280	32.89	0	100	H	49.9	9.79	29	63.58	74	-10.42	Peak
21280	17.24	0	100	V	49.9	9.79	29	47.93	54	-6.07	Ave
21280	17.26	0	100	H	49.9	9.79	29	47.95	54	-6.05	Ave

802.11n-HT20 Mode, Low Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
274.1231	31.57	103	H	355	46	-14.43	QP
974.515	22.21	276	H	167	54	-31.79	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz, measured at 3 meters											
5260	69.98	192	107	V	34.853	4.6	0	109.433	-	-	Peak
5260	64.07	259	131	H	34.853	4.6	0	103.523	-	-	Peak
5260	58.93	192	107	V	34.853	4.6	0	98.383	-	-	Ave
5260	53.19	259	131	H	34.853	4.6	0	92.643	-	-	Ave
4898.7	27.87	0	100	V	33.327	4.54	0	65.737	74	-8.263	Peak
4520.6	27.51	0	100	H	32.585	4.36	0	64.455	74	-9.545	Peak
4898.7	13.17	0	100	V	33.327	4.54	0	51.037	54	-2.963	Ave
4520.6	13.16	0	100	H	32.585	4.36	0	50.105	54	-3.895	Ave
10520	31.6	0	100	V	38.343	7	27.93	49.013	74	-24.987	Peak
10520	31.24	0	100	H	38.343	7	27.93	48.653	74	-25.347	Peak
10520	16.76	0	100	V	38.343	7	27.93	34.173	54	-19.827	Ave
10520	16.8	0	100	H	38.343	7	27.93	34.213	54	-19.787	Ave
15780	34.48	310	100	V	37.928	8.35	25.51	55.248	74	-18.752	Peak
15780	36.3	191	100	H	37.928	8.35	25.51	57.068	74	-16.932	Peak
15780	19.933	310	100	V	37.928	8.35	25.51	40.701	54	-13.299	Ave
15780	20.59	191	100	H	37.928	8.35	25.51	41.358	54	-12.642	Ave
21040	31.77	0	100	V	49.9	9.79	29	62.46	74	-11.54	Peak
21040	31.89	0	100	H	49.9	9.79	29	62.58	74	-11.42	Peak
21040	17.28	0	100	V	49.9	9.79	29	47.97	54	-6.03	Ave
21040	17.3	0	100	H	49.9	9.79	29	47.99	54	-6.01	Ave

802.11n-HT20 Mode, Middle Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
257.1134	30.41	99	H	14	46	-15.59	QP
988.1735	21.45	257	H	192	54	-32.55	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5300 MHz, measured at 3 meters											
5300	69.16	192	100	V	34.853	4.6	0	108.613	-	-	Peak
5300	62.7	256	136	H	34.853	4.6	0	102.153	-	-	Peak
5300	57.79	192	100	V	34.853	4.6	0	97.243	-	-	Ave
5300	52.55	256	136	H	34.853	4.6	0	92.003	-	-	Ave
10600	31.2	0	100	V	38.418	7.07	27.93	48.758	74	-25.242	Peak
10600	31.58	0	100	H	38.418	7.07	27.93	49.138	74	-24.862	Peak
10600	16.78	0	100	V	38.418	7.07	27.93	34.338	54	-19.662	Ave
10600	16.79	0	100	H	38.418	7.07	27.93	34.348	54	-19.652	Ave
15900	37.44	312	100	V	37.914	8.38	25.5	58.234	74	-15.766	Peak
15900	37.88	127	105	H	37.914	8.38	25.5	58.674	74	-15.326	Peak
15900	21.9	312	100	V	37.914	8.38	25.5	42.694	54	-11.306	Ave
15900	22.54	127	105	H	37.914	8.38	25.5	43.334	54	-10.666	Ave
21200	32.25	0	100	V	49.9	9.8	29.1	62.85	74	-11.15	Peak
21200	32.31	0	100	H	49.9	9.8	29.1	62.91	74	-11.09	Peak
21200	17.37	0	100	V	49.9	9.8	29.1	47.97	54	-6.03	Ave
21200	17.35	0	100	H	49.9	9.8	29.1	47.95	54	-6.05	Ave

802.11n-HT20 Mode, High Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
277.5277	30.93	105	H	24	46	-15.07	QP
995.479	21.58	346	H	301	54	-32.42	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5320 MHz, measured at 3 meters											
5320	69.26	193	162	V	34.853	4.71	0	108.823	-	-	Peak
5320	63.85	256	128	H	34.853	4.71	0	103.413	-	-	Peak
5320	58.6	193	162	V	34.853	4.71	0	98.163	-	-	Ave
5320	53.29	256	128	H	34.853	4.71	0	92.853	-	-	Ave
5353.3	29.69	192	100	V	34.853	4.71	0	69.253	74	-4.747	Peak
5395.83	28.28	0	100	H	35	4.76	0	68.04	74	-5.96	Peak
5353.3	13.95	192	100	V	34.853	4.71	0	53.513	54	-0.487	Ave
5395.83	13.04	0	100	H	35	4.76	0	52.8	54	-1.2	Ave
10640	31.2	0	100	V	38.418	7.07	27.74	48.948	74	-25.052	Peak
10640	31	0	100	H	38.418	7.07	27.74	48.748	74	-25.252	Peak
10640	16.78	0	100	V	38.418	7.07	27.74	34.528	54	-19.472	Ave
10640	16.72	0	100	H	38.418	7.07	27.74	34.468	54	-19.532	Ave
15960	39.54	315	100	V	37.902	8.39	25.4	60.432	74	-13.568	Peak
15960	41.28	127	100	H	37.902	8.39	25.4	62.172	74	-11.828	Peak
15960	24.08	315	100	V	37.902	8.39	25.4	44.972	54	-9.028	Ave
15960	25.08	127	100	H	37.902	8.39	25.4	45.972	54	-8.028	Ave
21280	32.48	0	100	V	49.9	9.79	29	63.17	74	-10.83	Peak
21280	32.51	0	100	H	49.9	9.79	29	63.2	74	-10.8	Peak
21280	17.25	0	100	V	49.9	9.79	29	47.94	54	-6.06	Ave
21280	17.25	0	100	H	49.9	9.79	29	47.94	54	-6.06	Ave

802.11n-HT40 Mode, Low Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
259.4427	30.89	99	H	177	46	-15.11	QP
966.7904	22.84	350	H	169	54	-31.16	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5270 MHz, measured at 3 meters											
5270	67.53	194	109	V	34.853	4.6	0	106.983	-	-	Peak
5270	61.58	254	127	H	34.853	4.6	0	101.033	-	-	Peak
5270	55.97	194	109	V	34.853	4.6	0	95.423	-	-	Ave
5270	50.23	254	127	H	34.853	4.6	0	89.683	-	-	Ave
4769.8	27.27	0	100	V	33.097	4.42	0	64.787	74	-9.213	Peak
4819.6	27.9	0	100	H	33.097	4.56	0	65.557	74	-8.443	Peak
4769.8	13.13	0	100	V	33.097	4.42	0	50.647	54	-3.353	Ave
4819.6	13.15	0	100	H	33.097	4.56	0	50.807	54	-3.193	Ave
10540	31.59	0	100	V	38.343	7.05	27.93	49.053	74	-24.947	Peak
10540	31.29	0	100	H	38.343	7.05	27.93	48.753	74	-25.247	Peak
10540	16.84	0	100	V	38.343	7.05	27.93	34.303	54	-19.697	Ave
10540	16.82	0	100	H	38.343	7.05	27.93	34.283	54	-19.717	Ave
15810	32.9	0	100	V	37.928	8.35	25.44	53.738	74	-20.262	Peak
15810	32.94	0	100	H	37.928	8.35	25.44	53.778	74	-20.222	Peak
15810	18.92	0	100	V	37.928	8.35	25.44	39.758	54	-14.242	Ave
15810	18.54	0	100	H	37.928	8.35	25.44	39.378	54	-14.622	Ave
21080	31.53	0	100	V	49.9	9.84	29	62.27	74	-11.73	Peak
21080	32.12	0	100	H	49.9	9.84	29	62.86	74	-11.14	Peak
21080	17.17	0	100	V	49.9	9.84	29	47.91	54	-6.09	Ave
21080	17.14	0	100	H	49.9	9.84	29	47.88	54	-6.12	Ave

802.11n-HT40 Mode, High Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
277.4856	30.82	98	H	192	46	-15.18	QP
982.104	20.76	185	V	44	54	-33.24	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5310 MHz, measured at 3 meters											
5310	61.49	193	104	V	34.853	4.71	0	101.053	-	-	Peak
5310	54.56	259	139	H	34.853	4.71	0	94.123	-	-	Peak
5310	50.71	193	104	V	34.853	4.71	0	90.273	-	-	Ave
5310	43.99	259	139	H	34.853	4.71	0	83.553	-	-	Ave
5350.92	27.58	193	100	V	34.853	4.71	0	67.143	74	-6.857	Peak
5354.95	27.53	0	100	H	34.853	4.71	0	67.093	74	-6.907	Peak
5350.92	14.22	193	100	V	34.853	4.71	0	53.783	54	-0.217	Ave
5354.95	13.05	0	100	H	34.853	4.71	0	52.613	54	-1.387	Ave
10620	31.14	0	100	V	38.418	7.07	27.93	48.698	74	-25.302	Peak
10620	31.82	0	100	H	38.418	7.07	27.93	49.378	74	-24.622	Peak
10620	16.66	0	100	V	38.418	7.07	27.93	34.218	54	-19.782	Ave
10620	16.64	0	100	H	38.418	7.07	27.93	34.198	54	-19.802	Ave
15930	33.41	0	100	V	37.914	8.38	25.56	54.144	74	-19.856	Peak
15930	32.79	0	100	H	37.914	8.38	25.56	53.524	74	-20.476	Peak
15930	18.47	0	100	V	37.914	8.38	25.56	39.204	54	-14.796	Ave
15930	18.45	0	100	H	37.914	8.38	25.56	39.184	54	-14.816	Ave
21240	32.41	0	100	V	49.9	9.79	29	63.1	74	-10.9	Peak
21240	32.25	0	100	H	49.9	9.79	29	62.94	74	-11.06	Peak
21240	17.13	0	100	V	49.9	9.79	29	47.82	54	-6.18	Ave
21240	17.12	0	100	H	49.9	9.79	29	47.81	54	-6.19	Ave

802.11n-HT20 Mode, Low Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
256.4917	29.98	99	H	187	46	-16.02	QP
969.6358	21.89	238	H	84	54	-32.11	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz, measured at 3 meters											
5260	70.11	195	104	V	34.853	4.6	0	109.563	-	-	Peak
5260	66.64	169	177	H	34.853	4.6	0	106.093	-	-	Peak
5260	57.23	195	104	V	34.853	4.6	0	96.683	-	-	Ave
5260	53.13	169	177	H	34.853	4.6	0	92.583	-	-	Ave
4705	28.04	0	100	V	32.816	4.45	0	65.306	74	-8.694	Peak
4704.8	27.61	0	100	H	32.816	4.45	0	64.876	74	-9.124	Peak
4705	13.08	0	100	V	32.816	4.45	0	50.346	54	-3.654	Ave
4704.8	13.11	0	100	H	32.816	4.45	0	50.376	54	-3.624	Ave
10520	31.16	0	100	V	38.343	7	27.93	48.573	74	-25.427	Peak
10520	31.64	0	100	H	38.343	7	27.93	49.053	74	-24.947	Peak
10520	17.01	0	100	V	38.343	7	27.93	34.423	54	-19.577	Ave
10520	17.1	0	100	H	38.343	7	27.93	34.513	54	-19.487	Ave
15780	33.47	0	100	V	37.928	8.35	25.51	54.238	74	-19.762	Peak
15780	33.43	0	100	H	37.928	8.35	25.51	54.198	74	-19.802	Peak
15780	18.87	0	100	V	37.928	8.35	25.51	39.638	54	-14.362	Ave
15780	18.6	0	100	H	37.928	8.35	25.51	39.368	54	-14.632	Ave
21040	32.08	0	100	V	49.9	9.79	29	62.77	74	-11.23	Peak
21040	32.02	0	100	H	49.9	9.79	29	62.71	74	-11.29	Peak
21040	17.28	0	100	V	49.9	9.79	29	47.97	54	-6.03	Ave
21040	17.27	0	100	H	49.9	9.79	29	47.96	54	-6.04	Ave

802.11n-HT20 Mode, Middle Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
271.895	30.74	102	H	199	46	-15.26	QP
998.4828	22.84	308	V	224	54	-31.16	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5300 MHz, measured at 3 meters											
5300	70.15	197	111	V	34.853	4.6	0	109.603	-	-	Peak
5300	66.48	157	201	H	34.853	4.6	0	105.933	-	-	Peak
5300	56.98	197	111	V	34.853	4.6	0	96.433	-	-	Ave
5300	53.83	157	201	H	34.853	4.6	0	93.283	-	-	Ave
10600	31.55	0	100	V	38.418	7.07	27.93	49.108	74	-24.892	Peak
10600	31.14	0	100	H	38.418	7.07	27.93	48.698	74	-25.302	Peak
10600	17.01	0	100	V	38.418	7.07	27.93	34.568	54	-19.432	Ave
10600	16.95	0	100	H	38.418	7.07	27.93	34.508	54	-19.492	Ave
15900	36.8	172	125	V	37.914	8.38	25.5	57.594	74	-16.406	Peak
15900	37.44	193	110	H	37.914	8.38	25.5	58.234	74	-15.766	Peak
15900	22.49	172	125	V	37.914	8.38	25.5	43.284	54	-10.716	Ave
15900	22.81	193	110	H	37.914	8.38	25.5	43.604	54	-10.396	Ave
21200	32.38	0	100	V	49.9	9.8	29.1	62.98	74	-11.02	Peak
21200	32.2	0	100	H	49.9	9.8	29.1	62.8	74	-11.2	Peak
21200	17.37	0	100	V	49.9	9.8	29.1	47.97	54	-6.03	Ave
21200	17.37	0	100	H	49.9	9.8	29.1	47.97	54	-6.03	Ave

802.11n-HT20 Mode, High Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
280.7053	30.71	100	H	154	46	-15.29	QP
988.2459	21.82	267	H	240	54	-32.18	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5320 MHz, measured at 3 meters											
5320	70.75	199	117	V	34.853	4.71	0	110.313	-	-	Peak
5320	66.38	195	154	H	34.853	4.71	0	105.943	-	-	Peak
5320	57.37	199	117	V	34.853	4.71	0	96.933	-	-	Ave
5320	53.29	195	154	H	34.853	4.71	0	92.853	-	-	Ave
5357.88	27.54	0	100	V	34.853	4.71	0	67.103	74	-6.897	Peak
5451.93	27.83	0	100	H	35	4.76	0	67.59	74	-6.41	Peak
5357.88	13.05	0	100	V	34.853	4.71	0	52.613	54	-1.387	Ave
5451.93	12.93	0	100	H	35	4.76	0	52.69	54	-1.31	Ave
10640	31.11	0	100	V	38.418	7.07	27.74	48.858	74	-25.142	Peak
10640	31.75	0	100	H	38.418	7.07	27.74	49.498	74	-24.502	Peak
10640	16.79	0	100	V	38.418	7.07	27.74	34.538	54	-19.462	Ave
10640	16.9	0	100	H	38.418	7.07	27.74	34.648	54	-19.352	Ave
15960	37.44	318	100	V	37.902	8.39	25.4	58.332	74	-15.668	Peak
15960	39.38	129	100	H	37.902	8.39	25.4	60.272	74	-13.728	Peak
15960	23.04	318	100	V	37.902	8.39	25.4	43.932	54	-10.068	Ave
15960	24.47	129	100	H	37.902	8.39	25.4	45.362	54	-8.638	Ave
21280	32.17	0	100	V	49.9	9.79	29	62.86	74	-11.14	Peak
21280	32.13	0	100	H	49.9	9.79	29	62.82	74	-11.18	Peak
21280	17.25	0	100	V	49.9	9.79	29	47.94	54	-6.06	Ave
21280	17.25	0	100	H	49.9	9.79	29	47.94	54	-6.06	Ave

802.11n-HT40 Mode, Low Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
273.3893	30.89	99	H	331	46	-15.11	QP
972.5574	22.66	174	V	208	54	-31.34	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5270 MHz, measured at 3 meters											
5270	67.49	188	100	V	34.853	4.6	0	106.943	-	-	Peak
5270	63.49	191	141	H	34.853	4.6	0	102.943	-	-	Peak
5270	53.46	188	100	V	34.853	4.6	0	92.913	-	-	Ave
5270	50.46	191	141	H	34.853	4.6	0	89.913	-	-	Ave
4644.1	27.68	0	100	V	32.585	4.35	0	64.615	74	-9.385	Peak
4764.3	28.03	0	100	H	33.097	4.42	0	65.547	74	-8.453	Peak
4644.1	13.08	0	100	V	32.585	4.35	0	50.015	54	-3.985	Ave
4764.3	13.12	0	100	H	33.097	4.42	0	50.637	54	-3.363	Ave
10540	31.58	0	100	V	38.343	7.05	27.93	49.043	74	-24.957	Peak
10540	31.36	0	100	H	38.343	7.05	27.93	48.823	74	-25.177	Peak
10540	17.32	0	100	V	38.343	7.05	27.93	34.783	54	-19.217	Ave
10540	17.04	0	100	H	38.343	7.05	27.93	34.503	54	-19.497	Ave
15810	33.66	0	100	V	37.928	8.35	25.44	54.498	74	-19.502	Peak
15810	33.83	0	100	H	37.928	8.35	25.44	54.668	74	-19.332	Peak
15810	18.75	0	100	V	37.928	8.35	25.44	39.588	54	-14.412	Ave
15810	18.66	0	100	H	37.928	8.35	25.44	39.498	54	-14.502	Ave
21080	31.27	0	100	V	49.9	9.84	29	62.01	74	-11.99	Peak
21080	31.48	0	100	H	49.9	9.84	29	62.22	74	-11.78	Peak
21080	17.12	0	100	V	49.9	9.84	29	47.86	54	-6.14	Ave
21080	17.12	0	100	H	49.9	9.84	29	47.86	54	-6.14	Ave

802.11n-HT40 Mode, High Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
260.4882	30.89	98	H	189	46	-15.11	QP
969.5805	22.75	342	V	298	54	-31.25	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5310 MHz, measured at 3 meters											
5310	64.59	193	100	V	34.853	4.71	0	104.153	-	-	Peak
5310	61.05	22	133	H	34.853	4.71	0	100.613	-	-	Peak
5310	51.14	193	100	V	34.853	4.71	0	90.703	-	-	Ave
5310	47.69	22	133	H	34.853	4.71	0	87.253	-	-	Ave
5350	27.23	194	100	V	34.853	4.71	0	66.793	74	-7.207	Peak
5416.55	27.89	0	100	H	35	4.76	0	67.65	74	-6.35	Peak
5350	14.286	194	100	V	34.853	4.71	0	53.849	54	-0.151	Ave
5416.55	13.02	0	100	H	35	4.76	0	52.78	54	-1.22	Ave
10620	31.02	0	100	V	38.418	7.07	27.93	48.578	74	-25.422	Peak
10620	31.27	0	100	H	38.418	7.07	27.93	48.828	74	-25.172	Peak
10620	16.7	0	100	V	38.418	7.07	27.93	34.258	54	-19.742	Ave
10620	16.75	0	100	H	38.418	7.07	27.93	34.308	54	-19.692	Ave
15930	33.33	0	100	V	37.914	8.38	25.56	54.064	74	-19.936	Peak
15930	34.04	0	100	H	37.914	8.38	25.56	54.774	74	-19.226	Peak
15930	18.63	0	100	V	37.914	8.38	25.56	39.364	54	-14.636	Ave
15930	18.54	0	100	H	37.914	8.38	25.56	39.274	54	-14.726	Ave
21240	32.27	0	100	V	49.9	9.79	29	62.96	74	-11.04	Peak
21240	32.34	0	100	H	49.9	9.79	29	63.03	74	-10.97	Peak
21240	17.17	0	100	V	49.9	9.79	29	47.86	54	-6.14	Ave
21240	17.15	0	100	H	49.9	9.79	29	47.84	54	-6.16	Ave

5470-5725 MHz Band

802.11a Mode, Low Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
260.1375	30.15	98	H	186	46	-15.85	QP
967.40475	22.78	323	H	298	54	-31.22	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz, measured at 3 meters											
5500	72.97	190	113	V	34.821	4.76	0	112.551	-	-	Peak
5500	67.67	260	124	H	34.821	4.76	0	107.251	-	-	Peak
5500	62.29	190	113	V	34.821	4.76	0	101.871	-	-	Ave
5500	57.15	260	124	H	34.821	4.76	0	96.731	-	-	Ave
5455.42	27.93	0	100	V	34.821	4.76	0	67.511	74	-6.489	Peak
5392.53	27.36	0	100	H	35	4.76	0	67.12	74	-6.88	Peak
5455.42	13.04	0	100	V	34.821	4.76	0	52.621	54	-1.379	Ave
5392.53	12.67	0	100	H	35	4.76	0	52.43	54	-1.57	Ave
11000	31.06	0	100	V	38.382	7.36	26.92	49.882	74	-24.118	Peak
11000	31.34	0	100	H	38.382	7.36	26.92	50.162	74	-23.838	Peak
11000	16.73	0	100	V	38.382	7.36	26.92	35.552	54	-18.448	Ave
11000	16.82	0	100	H	38.382	7.36	26.92	35.642	54	-18.358	Ave
16500	36.88	311	100	V	38.768	8.5	26.1	58.048	74	-15.952	Peak
16500	39	220	118	H	38.768	8.5	26.1	60.168	74	-13.832	Peak
16500	22.1	311	100	V	38.768	8.5	26.1	43.268	54	-10.732	Ave
16500	23.73	220	118	H	38.768	8.5	26.1	44.898	54	-9.102	Ave
22000	31.79	0	100	V	49.9	9.94	29.1	62.53	74	-11.47	Peak
22000	31.61	0	100	H	49.9	9.94	29.1	62.35	74	-11.65	Peak
22000	16.56	0	100	V	49.9	9.94	29.1	47.3	54	-6.7	Ave
22000	16.58	0	100	H	49.9	9.94	29.1	47.32	54	-6.68	Ave

802.11a Mode, Middle Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
271.12825	28.12	106	H	203	46	-17.88	QP
984.675	22.78	382	H	70	54	-31.22	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5580 MHz, measured at 3 meters											
5580	72.04	191	124	V	34.524	4.84	0	111.404	-	-	Peak
5580	65.77	262	176	H	34.524	4.84	0	105.134	-	-	Peak
5580	61.3	191	124	V	34.524	4.84	0	100.664	-	-	Ave
5580	55.39	262	176	H	34.524	4.84	0	94.754	-	-	Ave
11160	31.02	0	100	V	38.511	7.52	26.94	50.111	74	-23.889	Peak
11160	31.12	0	100	H	38.511	7.52	26.94	50.211	74	-23.789	Peak
11160	16.75	0	100	V	38.511	7.52	26.94	35.841	54	-18.159	Ave
11160	16.74	0	100	H	38.511	7.52	26.94	35.831	54	-18.169	Ave
16740	33.04	0	100	V	39.94	8.63	26.12	55.49	74	-18.51	Peak
16740	33.2	0	100	H	39.94	8.63	26.12	55.65	74	-18.35	Peak
16740	18.48	0	100	V	39.94	8.63	26.12	40.93	54	-13.07	Ave
16740	18.73	0	100	H	39.94	8.63	26.12	41.18	54	-12.82	Ave
22320	31.45	0	100	V	49.9	9.92	29.1	62.17	74	-11.83	Peak
22320	31.76	0	100	H	49.9	9.92	29.1	62.48	74	-11.52	Peak
22320	17.19	0	100	V	49.9	9.92	29.1	47.91	54	-6.09	Ave
22320	17.2	0	100	H	49.9	9.92	29.1	47.92	54	-6.08	Ave

802.11a Mode, High Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
259.1645	30.23	98	H	323	46	-15.77	QP
996.59825	22.89	292	H	276	54	-31.11	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5700 MHz, measured at 3 meters											
5700	71.73	195	114	V	34.392	4.85	0	110.972	-	-	Peak
5700	65.52	185	112	H	34.392	4.85	0	104.762	-	-	Peak
5700	60.77	195	114	V	34.392	4.85	0	100.012	-	-	Ave
5700	54.94	185	112	H	34.392	4.85	0	94.182	-	-	Ave
11400	31.16	0	100	V	38.882	7.57	27	50.612	74	-23.388	Peak
11400	31.36	0	100	H	38.882	7.57	27	50.812	74	-23.188	Peak
11400	16.93	0	100	V	38.882	7.57	27	36.382	54	-17.618	Ave
11400	17.38	0	100	H	38.882	7.57	27	36.832	54	-17.168	Ave
17100	32.1	0	100	V	42.637	8.66	26.03	57.367	74	-16.633	Peak
17100	32.99	0	100	H	42.637	8.66	26.03	58.257	74	-15.743	Peak
17100	17.72	0	100	V	42.637	8.66	26.03	42.987	54	-11.013	Ave
17100	17.76	0	100	H	42.637	8.66	26.03	43.027	54	-10.973	Ave
22800	31.87	0	100	V	49.9	10.17	28.9	63.04	74	-10.96	Peak
22800	31.98	0	100	H	49.9	10.17	28.9	63.15	74	-10.85	Peak
22800	16.78	0	100	V	49.9	10.17	28.9	47.95	54	-6.05	Ave

802.11n-HT20 Mode, Low Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
951.34125	22.71	208	V	305	46	-23.29	QP
261.58775	25.57	132	H	301	46	-20.43	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz, measured at 3 meters											
5500	71.95	197	163	V	34.821	4.76	0	111.531	-	-	Peak
5500	65.93	272	109	H	34.821	4.76	0	105.511	-	-	Peak
5500	60.83	197	163	V	34.821	4.76	0	100.411	-	-	Ave
5500	54.69	272	109	H	34.821	4.76	0	94.271	-	-	Ave
5396.93	27.66	0	100	V	35	4.76	0	67.42	74	-6.58	Peak
5384.28	27.2	0	100	H	35	4.76	0	66.96	74	-7.04	Peak
5396.93	12.65	0	100	V	35	4.76	0	52.41	54	-1.59	Ave
5384.28	12.65	0	100	H	35	4.76	0	52.41	54	-1.59	Ave
11000	31.03	0	100	V	38.382	7.36	26.92	49.852	74	-24.148	Peak
11000	31.72	0	100	H	38.382	7.36	26.92	50.542	74	-23.458	Peak
11000	16.89	0	100	V	38.382	7.36	26.92	35.712	54	-18.288	Ave
11000	16.85	0	100	H	38.382	7.36	26.92	35.672	54	-18.328	Ave
16500	39.31	314	100	V	38.768	8.5	26.1	60.478	74	-13.522	Peak
16500	40.15	222	110	H	38.768	8.5	26.1	61.318	74	-12.682	Peak
16500	22.5	314	100	V	38.768	8.5	26.1	43.668	54	-10.332	Ave
16500	24.41	222	110	H	38.768	8.5	26.1	45.578	54	-8.422	Ave
22000	31.24	0	100	V	49.9	9.94	29.1	61.98	74	-12.02	Peak
22000	31.35	0	100	H	49.9	9.94	29.1	62.09	74	-11.91	Peak
22000	17.02	0	100	V	49.9	9.94	29.1	47.76	54	-6.24	Ave
22000	17	0	100	H	49.9	9.94	29.1	47.74	54	-6.26	Ave

802.11n-HT20 Mode, Middle Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
267.22475	28.39	102	H	359	46	-17.61	QP
984.0645	22.77	349	V	229	54	-31.23	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5580 MHz, measured at 3 meters											
5580	71.8	195	111	V	34.524	4.84	0	111.164	-	-	Peak
5580	65.17	259	132	H	34.524	4.84	0	104.534	-	-	Peak
5580	60.97	195	111	V	34.524	4.84	0	100.334	-	-	Ave
5580	54.61	259	132	H	34.524	4.84	0	93.974	-	-	Ave
11160	31.09	0	100	V	38.511	7.52	26.94	50.181	74	-23.819	Peak
11160	31.38	0	100	H	38.511	7.52	26.94	50.471	74	-23.529	Peak
11160	16.67	0	100	V	38.511	7.52	26.94	35.761	54	-18.239	Ave
11160	16.76	0	100	H	38.511	7.52	26.94	35.851	54	-18.149	Ave
16740	32.99	0	100	V	39.94	8.63	26.12	55.44	74	-18.56	Peak
16740	33.15	0	100	H	39.94	8.63	26.12	55.6	74	-18.4	Peak
16740	18.41	0	100	V	39.94	8.63	26.12	40.86	54	-13.14	Ave
16740	18.08	0	100	H	39.94	8.63	26.12	40.53	54	-13.47	Ave
22320	31.68	0	100	V	49.9	9.92	29.1	62.4	74	-11.6	Peak
22320	32.3	0	100	H	49.9	9.92	29.1	63.02	74	-10.98	Peak
22320	17.22	0	100	V	49.9	9.92	29.1	47.94	54	-6.06	Ave
22320	17.22	0	100	H	49.9	9.92	29.1	47.94	54	-6.06	Ave

802.11n-HT20 Mode, High Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
949.58725	22.76	114	H	194	46	-23.24	QP
279.1845	26.52	98	H	358	46	-19.48	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5700 MHz, measured at 3 meters											
5700	71.49	194	116	V	34.392	4.85	0	110.732	-	-	Peak
5700	64.68	184	112	H	34.392	4.85	0	103.922	-	-	Peak
5700	60.74	194	116	V	34.392	4.85	0	99.982	-	-	Ave
5700	54.2	184	112	H	34.392	4.85	0	93.442	-	-	Ave
11400	31.12	0	100	V	38.882	7.57	27	50.572	74	-23.428	Peak
11400	31.07	0	100	H	38.882	7.57	27	50.522	74	-23.478	Peak
11400	16.77	0	100	V	38.882	7.57	27	36.222	54	-17.778	Ave
11400	16.68	0	100	H	38.882	7.57	27	36.132	54	-17.868	Ave
17100	32.16	0	100	V	42.637	8.66	26.03	57.427	74	-16.573	Peak
17100	31.98	0	100	H	42.637	8.66	26.03	57.247	74	-16.753	Peak
17100	17.83	0	100	V	42.637	8.66	26.03	43.097	54	-10.903	Ave
17100	17.74	0	100	H	42.637	8.66	26.03	43.007	54	-10.993	Ave
22800	32.17	0	100	V	49.9	10.17	28.9	63.34	74	-10.66	Peak
22800	32.07	0	100	H	49.9	10.17	28.9	63.24	74	-10.76	Peak
22800	16.77	0	100	V	49.9	10.17	28.9	47.94	54	-6.06	Ave
22800	16.81	0	100	H	49.9	10.17	28.9	47.98	54	-6.02	Ave

802.11n-HT40 Mode, Low Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
270.2535	25.74	154	H	188	46	-20.26	QP
987.587	23.07	357	H	92	54	-30.93	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5510 MHz, measured at 3 meters											
5510	65.96	194	115	V	34.821	4.76	0	105.541	-	-	Peak
5510	60.81	256	126	H	34.821	4.76	0	100.391	-	-	Peak
5510	54.56	194	115	V	34.821	4.76	0	94.141	-	-	Ave
5510	49.51	256	126	H	34.821	4.76	0	89.091	-	-	Ave
5460	26.49	194	100	V	34.821	4.76	0	66.071	74	-7.929	Peak
5377.87	27.91	0	100	H	35	4.76	0	67.67	74	-6.33	Peak
5460	13.9	194	100	V	34.821	4.76	0	53.481	54	-0.519	Ave
5377.87	13.06	0	100	H	35	4.76	0	52.82	54	-1.18	Ave
11020	31.42	0	100	V	38.382	7.36	26.92	50.242	74	-23.758	Peak
11020	30.98	0	100	H	38.382	7.36	26.92	49.802	74	-24.198	Peak
11020	16.9	0	100	V	38.382	7.36	26.92	35.722	54	-18.278	Ave
11020	16.99	0	100	H	38.382	7.36	26.92	35.812	54	-18.188	Ave
16530	32.77	0	100	V	38.768	8.5	26.12	53.918	74	-20.082	Peak
16530	33.82	0	100	H	38.768	8.5	26.12	54.968	74	-19.032	Peak
16530	18.3	0	100	V	38.768	8.5	26.12	39.448	54	-14.552	Ave
16530	18.29	0	100	H	38.768	8.5	26.12	39.438	54	-14.562	Ave
22040	31.14	0	100	V	49.9	9.76	29.1	61.7	74	-12.3	Peak
22040	31.27	0	100	H	49.9	9.76	29.1	61.83	74	-12.17	Peak
22040	16.87	0	100	V	49.9	9.76	29.1	47.43	54	-6.57	Ave
22040	16.87	0	100	H	49.9	9.76	29.1	47.43	54	-6.57	Ave

802.11n-HT40 Mode, Middle Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
266.14325	29.21	102	H	326	46	-16.79	QP
972.4475	22.65	174	V	228	54	-31.35	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5550 MHz, measured at 3 meters											
5550	69.79	190	112	V	34.821	4.76	0	109.371	-	-	Peak
5550	63.75	270	129	H	34.821	4.76	0	103.331	-	-	Peak
5550	58.03	190	112	V	34.821	4.76	0	97.611	-	-	Ave
5550	52.09	270	129	H	34.821	4.76	0	91.671	-	-	Ave
11100	31.46	0	100	V	38.511	7.39	26.92	50.441	74	-23.559	Peak
11100	31.93	0	100	H	38.511	7.39	26.92	50.911	74	-23.089	Peak
11100	17.3	0	100	V	38.511	7.39	26.92	36.281	54	-17.719	Ave
11100	17.307	0	100	H	38.511	7.39	26.92	36.288	54	-17.712	Ave
16650	33.3	0	100	V	39.256	8.55	26.11	54.996	74	-19.004	Peak
16650	33.6	0	100	H	39.256	8.55	26.11	55.296	74	-18.704	Peak
16650	18.76	0	100	V	39.256	8.55	26.11	40.456	54	-13.544	Ave
16650	18.16	0	100	H	39.256	8.55	26.11	39.856	54	-14.144	Ave
22200	32.09	0	100	V	49.9	9.91	29.1	62.8	74	-11.2	Peak
22200	32.81	0	100	H	49.9	9.91	29.1	63.52	74	-10.48	Peak
22200	17.23	0	100	V	49.9	9.91	29.1	47.94	54	-6.06	Ave
22200	17.14	0	100	H	49.9	9.91	29.1	47.85	54	-6.15	Ave

802.11n-HT40 Mode, High Channel

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
273.28275	27.85	98	H	330	46	-18.15	QP
985.86875	23.07	276	H	167	54	-30.93	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5670 MHz, measured at 3 meters											
5670	68.68	193	119	V	34.392	4.93	0	108.002	-	-	Peak
5670	62.1	227	216	H	34.392	4.93	0	101.422	-	-	Peak
5670	57.03	193	119	V	34.392	4.93	0	96.352	-	-	Ave
5670	50.19	227	216	H	34.392	4.93	0	89.512	-	-	Ave
11340	31.11	0	100	V	38.844	7.52	26.97	50.504	74	-23.496	Peak
11340	32.17	0	100	H	38.844	7.52	26.97	51.564	74	-22.436	Peak
11340	17.13	0	100	V	38.844	7.52	26.97	36.524	54	-17.476	Ave
11340	17.12	0	100	H	38.844	7.52	26.97	36.514	54	-17.486	Ave
17010	32.42	0	100	V	41.889	8.61	25.99	56.929	74	-17.071	Peak
17010	32.38	0	100	H	41.889	8.61	25.99	56.889	74	-17.111	Peak
17010	17.8	0	100	V	41.889	8.61	25.99	42.309	54	-11.691	Ave
17010	17.8	0	100	H	41.889	8.61	25.99	42.309	54	-11.691	Ave
22680	31.77	0	100	V	49.9	10.07	29	62.74	74	-11.26	Peak
22680	32.19	0	100	H	49.9	10.07	29	63.16	74	-10.84	Peak
22680	17	0	100	V	49.9	10.07	29	47.97	54	-6.03	Ave
22680	16.98	0	100	H	49.9	10.07	29	47.95	54	-6.05	Ave

802.11n-HT20 Mode, Low Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
251.7507	30.95	124	H	335	46	-15.05	QP
987.1224	22.83	362	V	39	54	-31.17	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz, measured at 3 meters											
5500	72.86	196	167	V	34.821	4.76	0	112.441	-	-	Peak
5500	66.38	270	129	H	34.821	4.76	0	105.961	-	-	Peak
5500	59.09	196	167	V	34.821	4.76	0	98.671	-	-	Ave
5500	53.56	270	129	H	34.821	4.76	0	93.141	-	-	Ave
5407.38	28.19	0	100	V	35	4.76	0	67.95	74	-6.05	Peak
5354.22	27.85	0	100	H	34.821	4.76	0	67.431	74	-6.569	Peak
5407.38	12.54	0	100	V	35	4.76	0	52.3	54	-1.7	Ave
5354.22	12.61	0	100	H	34.821	4.76	0	52.191	54	-1.809	Ave
11000	31.41	0	100	V	38.382	7.36	26.92	50.232	74	-23.768	Peak
11000	31.53	0	100	H	38.382	7.36	26.92	50.352	74	-23.648	Peak
11000	16.76	0	100	V	38.382	7.36	26.92	35.582	54	-18.418	Ave
11000	16.83	0	100	H	38.382	7.36	26.92	35.652	54	-18.348	Ave
16500	35.38	302	100	V	38.768	8.5	26.1	56.548	74	-17.452	Peak
16500	38.26	222	100	H	38.768	8.5	26.1	59.428	74	-14.572	Peak
16500	21.29	302	100	V	38.768	8.5	26.1	42.458	54	-11.542	Ave
16500	24.07	222	100	H	38.768	8.5	26.1	45.238	54	-8.762	Ave
22000	31.3	0	100	V	49.9	9.94	29.1	62.04	74	-11.96	Peak
22000	30.93	0	100	H	49.9	9.94	29.1	61.67	74	-12.33	Peak
22000	16.9	0	100	V	49.9	9.94	29.1	47.64	54	-6.36	Ave
22000	16.91	0	100	H	49.9	9.94	29.1	47.65	54	-6.35	Ave

802.11n-HT20 Mode, Middle Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
267.784	31.54	115	H	124	46	-14.46	QP
989.8481	20.97	268	V	122	54	-33.03	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5580 MHz, measured at 3 meters											
5580	72.57	190	100	V	34.524	4.84	0	111.934	-	-	Peak
5580	65.69	25	202	H	34.524	4.84	0	105.054	-	-	Peak
5580	58.91	190	100	V	34.524	4.84	0	98.274	-	-	Ave
5580	52.59	25	202	H	34.524	4.84	0	91.954	-	-	Ave
11160	31.67	0	100	V	38.511	7.52	26.94	50.761	74	-23.239	Peak
11160	31.16	0	100	H	38.511	7.52	26.94	50.251	74	-23.749	Peak
11160	16.87	0	100	V	38.511	7.52	26.94	35.961	54	-18.039	Ave
11160	16.82	0	100	H	38.511	7.52	26.94	35.911	54	-18.089	Ave
16740	32.94	0	100	V	39.94	8.63	26.12	55.39	74	-18.61	Peak
16740	32.67	0	100	H	39.94	8.63	26.12	55.12	74	-18.88	Peak
16740	18.18	0	100	V	39.94	8.63	26.12	40.63	54	-13.37	Ave
16740	17.89	0	100	H	39.94	8.63	26.12	40.34	54	-13.66	Ave
22320	31.38	0	100	V	49.9	9.92	29.1	62.1	74	-11.9	Peak
22320	31.66	0	100	H	49.9	9.92	29.1	62.38	74	-11.62	Peak
22320	16.99	0	100	V	49.9	9.92	29.1	47.71	54	-6.29	Ave
22320	17	0	100	H	49.9	9.92	29.1	47.72	54	-6.28	Ave

802.11n-HT20 Mode, High Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
269.745	31.59	99	H	120	46	-14.41	QP
992.4661	21.42	341	H	223	54	-32.58	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5700 MHz, measured at 3 meters											
5700	72.3	193	112	V	34.392	4.85	0	111.542	-	-	Peak
5700	65.62	181	118	H	34.392	4.85	0	104.862	-	-	Peak
5700	59.14	193	112	V	34.392	4.85	0	98.382	-	-	Ave
5700	52.78	181	118	H	34.392	4.85	0	92.022	-	-	Ave
11400	31.75	0	100	V	38.882	7.57	27	51.202	74	-22.798	Peak
11400	32.11	0	100	H	38.882	7.57	27	51.562	74	-22.438	Peak
11400	16.95	0	100	V	38.882	7.57	27	36.402	54	-17.598	Ave
11400	16.87	0	100	H	38.882	7.57	27	36.322	54	-17.678	Ave
17100	31.94	0	100	V	42.637	8.66	26.03	57.207	74	-16.793	Peak
17100	32.94	0	100	H	42.637	8.66	26.03	58.207	74	-15.793	Peak
17100	17.5	0	100	V	42.637	8.66	26.03	42.767	54	-11.233	Ave
17100	17.62	0	100	H	42.637	8.66	26.03	42.887	54	-11.113	Ave
22800	31.61	0	100	V	49.9	10.17	28.9	62.78	74	-11.22	Peak
22800	31.83	0	100	H	49.9	10.17	28.9	63	74	-11	Peak
22800	16.75	0	100	V	49.9	10.17	28.9	47.92	54	-6.08	Ave
22800	16.64	0	100	H	49.9	10.17	28.9	47.81	54	-6.19	Ave

802.11n-HT40 Mode, Low Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
251.2855	30.18	126	H	323	46	-15.82	QP
989.1445	23.03	383	V	22	54	-30.97	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5510 MHz, measured at 3 meters											
5510	67.73	190	127	V	34.821	4.76	0	107.311	-	-	Peak
5510	61.34	268	122	H	34.821	4.76	0	100.921	-	-	Peak
5510	53.63	190	127	V	34.821	4.76	0	93.211	-	-	Ave
5510	48.2	268	122	H	34.821	4.76	0	87.781	-	-	Ave
5460	29.97	186	146	V	34.821	4.76	0	69.551	74	-4.449	Peak
5379.88	27.63	0	100	H	35	4.76	0	67.39	74	-6.61	Peak
5460	14.09	186	146	V	34.821	4.76	0	53.671	54	-0.329	Ave
5379.88	12.56	0	100	H	35	4.76	0	52.32	54	-1.68	Ave
11020	31.27	0	100	V	38.382	7.36	26.92	50.092	74	-23.908	Peak
11020	30.96	0	100	H	38.382	7.36	26.92	49.782	74	-24.218	Peak
11020	16.94	0	100	V	38.382	7.36	26.92	35.762	54	-18.238	Ave
11020	17.07	0	100	H	38.382	7.36	26.92	35.892	54	-18.108	Ave
16530	32.53	0	100	V	38.768	8.5	26.12	53.678	74	-20.322	Peak
16530	33.24	0	100	H	38.768	8.5	26.12	54.388	74	-19.612	Peak
16530	18.48	0	100	V	38.768	8.5	26.12	39.628	54	-14.372	Ave
16530	18.84	0	100	H	38.768	8.5	26.12	39.988	54	-14.012	Ave
22040	31.03	0	100	V	49.9	9.76	29.1	61.59	74	-12.41	Peak
22040	30.89	0	100	H	49.9	9.76	29.1	61.45	74	-12.55	Peak
22040	16.83	0	100	V	49.9	9.76	29.1	47.39	54	-6.61	Ave
22040	16.87	0	100	H	49.9	9.76	29.1	47.43	54	-6.57	Ave

802.11n-HT40 Mode, Middle Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
275.4557	30.32	98	H	234	46	-15.68	QP
981.5477	21.24	274	H	102	54	-32.76	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 5550 MHz, measured at 3 meters											
5550	70.55	186	100	V	34.821	4.76	0	110.131	-	-	Peak
5550	64.58	269	133	H	34.821	4.76	0	104.161	-	-	Peak
5550	55.38	186	100	V	34.821	4.76	0	94.961	-	-	Ave
5550	50.71	269	133	H	34.821	4.76	0	90.291	-	-	Ave
11100	31.47	0	100	V	38.511	7.39	26.92	50.451	74	-23.549	Peak
11100	31.87	0	100	H	38.511	7.39	26.92	50.851	74	-23.149	Peak
11100	17.42	0	100	V	38.511	7.39	26.92	36.401	54	-17.599	Ave
11100	17.37	0	100	H	38.511	7.39	26.92	36.351	54	-17.649	Ave
16650	32.61	0	100	V	39.256	8.55	26.11	54.306	74	-19.694	Peak
16650	33.08	0	100	H	39.256	8.55	26.11	54.776	74	-19.224	Peak
16650	18.37	0	100	V	39.256	8.55	26.11	40.066	54	-13.934	Ave
16650	18.06	0	100	H	39.256	8.55	26.11	39.756	54	-14.244	Ave
22200	31.81	0	100	V	49.9	9.91	29.1	62.52	74	-11.48	Peak
22200	31.69	0	100	H	49.9	9.91	29.1	62.4	74	-11.6	Peak
22200	17.13	0	100	V	49.9	9.91	29.1	47.84	54	-6.16	Ave
22200	17.17	0	100	H	49.9	9.91	29.1	47.88	54	-6.12	Ave

802.11n-HT40 Mode, High Channel - MIMO

Below 1 GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comment
267.1147	30.57	99	H	202	46	-15.43	QP
988.5441	22.34	211	V	317	54	-31.66	QP

Above 1 GHz

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5670 MHz, measured at 3 meters											
5670	69.87	180	100	V	34.392	4.93	0	109.192	-	-	Peak
5670	62.9	180	106	H	34.392	4.93	0	102.222	-	-	Peak
5670	54.79	180	100	V	34.392	4.93	0	94.112	-	-	Ave
5670	48.68	180	106	H	34.392	4.93	0	88.002	-	-	Ave
11340	32.2	0	100	V	38.844	7.52	26.97	51.594	74	-22.406	Peak
11340	31.81	0	100	H	38.844	7.52	26.97	51.204	74	-22.796	Peak
11340	17.13	0	100	V	38.844	7.52	26.97	36.524	54	-17.476	Peak
11340	17.52	0	100	H	38.844	7.52	26.97	36.914	54	-17.086	Peak
17010	32.09	0	100	V	41.889	8.61	25.99	56.599	74	-17.401	Peak
17010	31.84	0	100	H	41.889	8.61	25.99	56.349	74	-17.651	Peak
17010	17.81	0	100	V	41.889	8.61	25.99	42.319	54	-11.681	Ave
17010	17.84	0	100	H	41.889	8.61	25.99	42.349	54	-11.651	Ave
22680	31.64	0	100	V	49.9	10.07	29	62.61	74	-11.39	Peak
22680	31.65	0	100	H	49.9	10.07	29	62.62	74	-11.38	Peak
22680	17	0	100	V	49.9	10.07	29	47.97	54	-6.03	Ave
22680	16.98	0	100	H	49.9	10.07	29	47.95	54	-6.05	Ave

8 FCC §407(a)(1) & IC RSS-210 §A9.2 - Peak Output Power Measurement

8.1 Applicable Standard

According to FCC §15.407(a)(1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

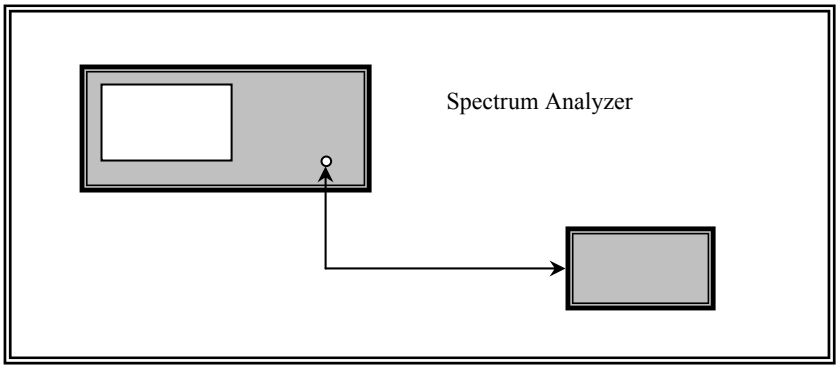
For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to IC RSS-210 §A9.2:

For the 5.15–5.250 GHz bands, the maximum e.i.r.p shall not exceed 200 mW or 10 + 10 log B, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p spectral density shall not exceed 10 dBm in any 1.0 MHz band.

8.2 Measurement Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to a spectrum analyzer.
3. Add a correction factor to the display.



8.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	US42221851	2012-02-28	1 year

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.*

8.4 Test Environmental Conditions

Temperature:	22-25 °C
Relative Humidity:	41-45 %
ATM Pressure:	101-102kPa

The testing was performed by Bo Li from 2012-12-20 to 2012-12-27 at RF site.

8.5 Test Results

5150-5250 MHz Band:

802.11a mode

Channel	Frequency (MHz)	Main Ant Power (dBm)	Limit (dBm)	Main Ant Margin (dB)	Aux Ant Power (dBm)	Limit (dBm)	Aux Ant Margin (dB)
Low	5180	16.45	17	-0.55	16.4	17	-0.6
Middle	5200	16.44	17	-0.56	16.47	17	-0.53
High	5240	16.48	17	-0.52	16.34	17	-0.66

802.11n-HT20 mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Limit (dBm)	Main Ant Margin (dB)	Aux Ant Power (dBm)	Limit (dBm)	Aux Ant Margin (dB)
Low	5180	16.07	17	-0.93	16.4	17	-0.6
Middle	5200	16.16	17	-0.84	16.35	17	-0.65
High	5240	16	17	-1	16.39	17	-0.61

802.11n-HT40 mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Limit (dBm)	Main Ant Margin (dB)	Aux Ant Power (dBm)	Limit (dBm)	Aux Ant Margin (dB)
Low	5190	13.03	17	-3.97	13.2	17	-3.8
High	5230	16.04	17	-0.96	16.28	17	-0.72

802.11n-HT20 MIMO mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Aux Ant Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	5180	13.34	13.4	16.38	17	-0.62
Middle	5200	13.44	13.41	16.44	17	-0.56
High	5240	13.31	12.9	16.12	17	-0.88

802.11n-HT40 MIMO mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Aux Ant Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	5190	10.16	11.06	13.64	17	-3.36
High	5230	13.61	13.61	16.62	17	-0.38

5250-5350 MHz Band:

802.11a mode

Channel	Frequency (MHz)	Main Ant Power (dBm)	Limit (dBm)	Main Ant Margin (dB)	Aux Ant Power (dBm)	Limit (dBm)	Aux Ant Margin (dB)
Low	5260	15.87	24	-8.13	15.41	24	-8.59
Middle	5300	16.42	24	-7.58	15.39	24	-8.61
High	5320	16.35	24	-7.65	16.03	24	-7.97

802.11n-HT20 mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Limit (dBm)	Main Ant Margin (dB)	Aux Ant Power (dBm)	Limit (dBm)	Aux Ant Margin (dB)
Low	5260	16.25	24	-7.75	15.31	24	-8.69
Middle	5300	16.61	24	-7.39	15.31	24	-8.69
High	5320	16.51	24	-7.49	15.65	24	-8.35

802.11n-HT40 mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Limit (dBm)	Main Ant Margin (dB)	Aux Ant Power (dBm)	Limit (dBm)	Aux Ant Margin (dB)
Low	5270	16.09	24	-7.91	15.26	24	-8.74
High	5310	11.5	24	-12.5	12.4	24	-11.6

802.11n-HT20 MIMO mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Aux Ant Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	5260	13.06	12.51	15.80	24	-8.2
Middle	5300	13.46	12.81	16.16	24	-7.84
High	5320	13.1	13.2	16.16	24	-7.84

802.11n-HT40 MIMO mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Aux Ant Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	5270	12.81	12.77	15.80	24	-8.2
High	5310	12.58	12.48	15.54	24	-8.46

5470-5725 MHz Band :

802.11a mode

Channel	Frequency (MHz)	Main Ant Power (dBm)	Limit (dBm)	Main Ant Margin (dB)	Aux Ant Power (dBm)	Limit (dBm)	Aux Ant Margin (dB)
Low	5500	16.3	24	-7.7	15.63	24	-8.37
Middle	5580	16.5	24	-7.5	15.68	24	-8.32
High	5700	16.43	24	-7.57	15.6	24	-8.4

802.11n-HT20 mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Limit (dBm)	Main Ant Margin (dB)	Aux Ant Power (dBm)	Limit (dBm)	Aux Ant Margin (dB)
Low	5500	16.25	24	-7.75	15.52	24	-8.48
Middle	5580	16.46	24	-7.54	15.6	24	-8.4
High	5700	16.11	24	-7.89	15.51	24	-8.49

802.11n-HT40 mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Limit (dBm)	Main Ant Margin (dB)	Aux Ant Power (dBm)	Limit (dBm)	Aux Ant Margin (dB)
Low	5510	15.58	24	-8.42	14.75	24	-9.25
Middle	5550	16.45	24	-7.55	15.65	24	-8.35
High	5670	16.22	24	-7.78	15.51	24	-8.49

802.11n-HT20 MIMO mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Aux Ant Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	5500	12.86	13.23	16.06	24	-7.94
Middle	5580	12.74	13.23	16.00	24	-8
High	5700	12.64	12.43	15.55	24	-8.45

802.11n-HT40 MIMO mode:

Channel	Frequency (MHz)	Main Ant Power (dBm)	Aux Ant Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	5510	13.44	13.21	16.34	24	-7.66
Middle	5550	13.24	13.2	16.23	24	-7.77
High	5670	12.94	12.85	15.91	24	-8.09

9 IC RSS-210 §2.3 & RSS-Gen §6 - Receiver Spurious Radiated Emissions

9.1 Applicable Standard

According to IC RSS-Gen §4.10, the receiver shall be operated in the normal receive mode near the mid-point of the band over which the receiver is designed to operate.

Unless otherwise specified in the applicable RSS, the radiated emission measurement is the standard measurement method (with the device's antenna in place) to measure receiver spurious emissions.

Radiated emission measurements are to be performed using a calibrated open-area test site.

For either method, the search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tuneable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

For emissions below 1 GHz, measurements shall be performed using a CISPR quasi-peak detector and the related measurement bandwidth. As an alternative to CISPR quasi-peak measurement, compliance with the emission limit can be demonstrated using measuring equipment employing a peak detector with the same measurement bandwidth as that for CISPR quasi-peak measurements. Above 1 GHz, measurements shall be performed using an average detector and a resolution bandwidth of 300 kHz to 1 MHz.

According to RSS-Gen §6.1, Table 2, the radiated limit of receiver spurious emissions

Frequency (MHz)	Field Strength (Microvolts/m at 3 meters)
30-88	100
88-216	150
216-960	200
Above 960	500

9.2 EUT Setup

The radiated emissions tests were performed in the 3 meter chamber, using the setup in accordance with ANSI C63.4-2009.

9.3 Test Procedure

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations.

All data were recorded in the peak detection mode. Quasi-peak readings was performed only when an emissions was found to be marginal (within -4 dB of specification limits), and are distinguished with a "**QP**" in the data table.

9.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + AF + CL + Atten – Ga

For example, a corrected amplitude of 40.3 dBuV/m = Indicated Reading (32.5 dBuV) + Antenna Factor (+23.5dB) + Cable Loss (3.7 dB) + Attenuator (10 dB) - Amplifier Gain (29.4 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude - Limit

9.5 Test Equipment Lists and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	N/R
Sunol Science Corp	Combination Antenna	JB3	A020106-2	2012-08-15	1 year
Hewlett Packard	Pre-amplifier	8447D	2944A06639	2012-06-09	1 year
Mini-Circuits	Pre-amplifier	ZVA-183-S	570400946	2012-05-09	1 year
Agilent	Spectrum Analyzer	E4440A	US42221851	2012-02-28	1 year
EMCO	Horn Antenna	3315	9511-4627	2012-10-17	1 year
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2012-03-22	1 year

Statement of Traceability: *BACL attests that all calibrations have been performed per the A2LA requirements, traceable to NIST.*

9.6 Test Environmental Conditions

Temperature:	22 °C
Relative Humidity:	44 %
ATM Pressure:	101.2 kPa

The testing was performed by BO LI on 2013-01-15 at 5 meter 3.

9.7 Summary of Test Results

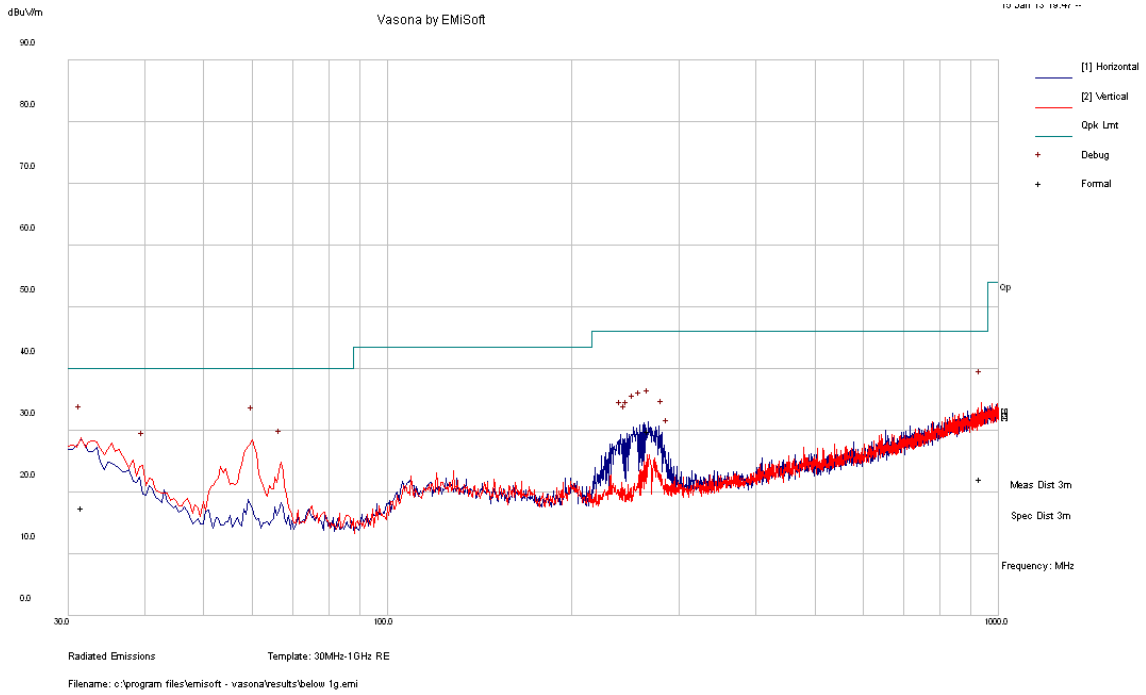
According to the test data, the EUT complied with the with the IC RSS-210, with the closest margins from the limit listed below:

Mode: Receiving			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Range (MHz)**
-1.48	25626.67	Vertical	30MHz - 40GHz

9.8 Radiated Emissions Test Result Data and Plots

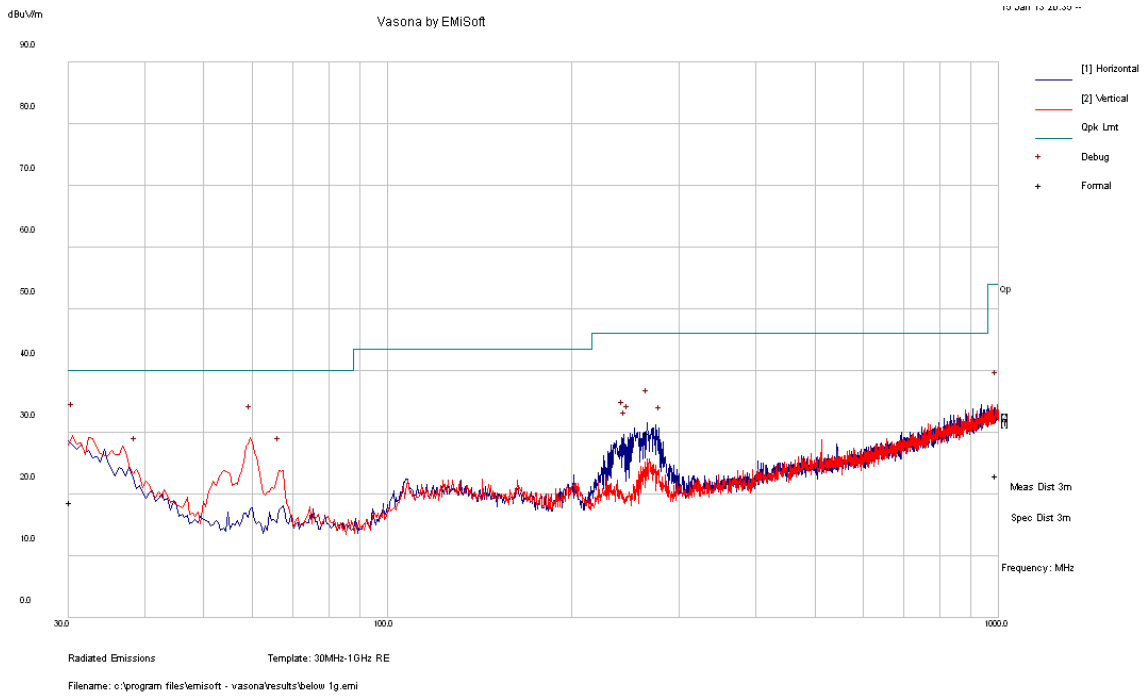
(1) Radiated Emission at 3 meters, 30 MHz – 1 GHz

5150 – 5250 MHz Band



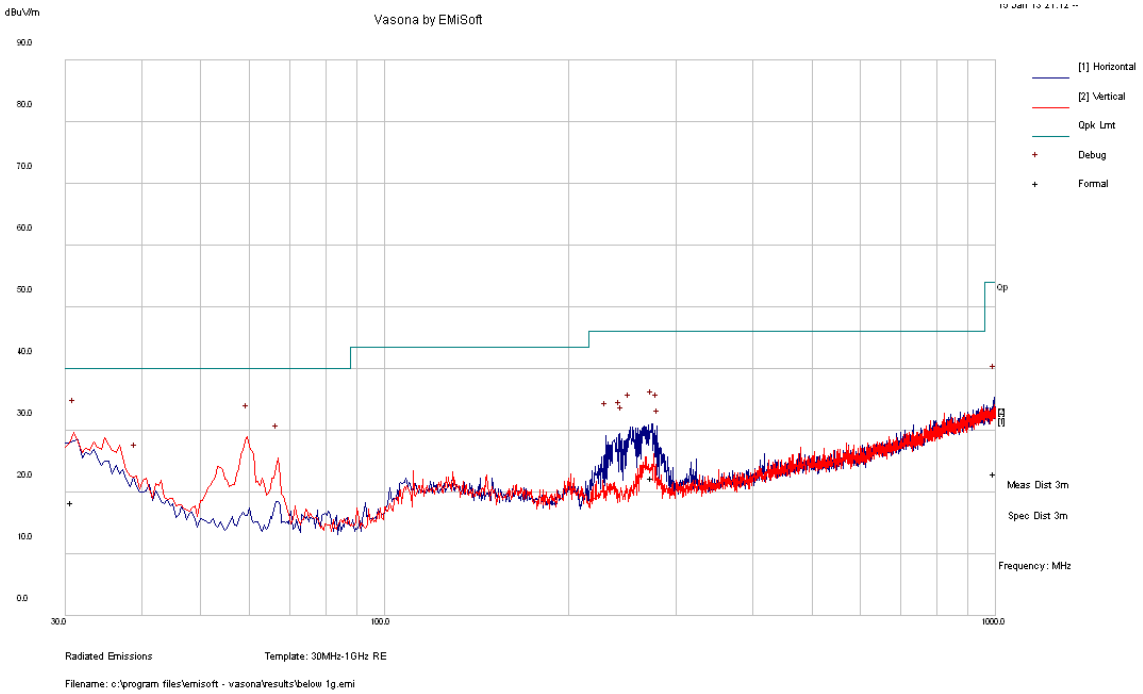
Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (QP/Ave)
31.6265	17.58	292	V	8	40	-22.42	QP
934.2825	22.1	387	V	153	46	-23.9	QP
267.3045	29.98	100	H	188	46	-16.02	QP

5250– 5350 MHz Band



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (QP/Ave)
30.26625	18.66	164	V	280	40	-21.34	QP
266.3695	29.93	116	H	189	46	-16.07	QP
992.962	23.01	318	V	45	54	-30.99	QP

5470 – 5725 MHz Band



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (QP/Ave)
30.75425	18.42	205	V	86	40	-21.58	QP
273.395	22.32	349	H	185	46	-23.68	QP
993.9873	22.97	184	H	177	54	-31.03	QP

(2) Radiated Emission at 3 meters, above 1 GHz

5150 – 5250 MHz Band

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak/Ave)
2455	55.352	100	V	289	74	-18.648	Peak
2455	54.622	100	H	176	74	-19.378	Peak
2455	26.912	100	V	289	54	-27.088	Ave
2455	27.432	100	H	176	54	-26.568	Ave
2826.6	45.126	100	V	0	74	-28.874	Peak
2826.6	42.336	100	H	333	74	-31.664	Peak
2826.6	33.146	100	V	0	54	-20.854	Ave
2826.6	30.346	100	H	333	54	-23.654	Ave
25306.67	66.360	100	V	0	74	-7.64	Peak
25306.67	66.720	100	H	0	74	-7.28	Peak
25306.67	51.980	100	V	0	54	-2.02	Ave
25306.67	51.540	100	H	0	54	-2.46	Ave

5250 – 5350 MHz Band

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak/Ave)
2155	44.520	100	V	0	74	-29.48	Peak
2155	40.900	100	H	0	74	-33.1	Peak
2155	25.560	100	V	0	54	-28.44	Ave
2155	25.190	100	H	0	54	-28.81	Ave
2460	54.642	100	V	213	74	-19.358	Peak
2460	54.192	100	H	0	74	-19.808	Peak
2460	26.132	100	V	213	54	-27.868	Ave
2460	26.542	100	H	0	54	-27.458	Ave
25626.67	66.910	100	V	0	74	-7.09	Peak
25626.67	66.910	100	H	0	74	-7.09	Peak
25626.67	52.070	100	V	0	54	-1.93	Ave
25626.67	52.090	100	H	0	54	-1.91	Ave

5470 – 5725 MHz Band

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak/Ave)
1105	43.612	100	V	0	74	-30.388	Peak
1105	41.532	100	H	171	74	-32.468	Peak
1105	21.302	100	V	0	54	-32.698	Ave
1105	21.202	100	H	171	54	-32.798	Ave
2460	52.862	100	V	346	74	-21.138	Peak
2460	54.842	100	H	200	74	-19.158	Peak
2460	26.752	100	V	346	54	-27.248	Ave
2460	26.912	100	H	200	54	-27.088	Ave
25626.67	67.040	100	V	0	74	-6.96	Peak
25626.67	67.100	100	H	0	74	-6.9	Peak
25626.67	52.520	100	V	0	54	-1.48	Ave
25626.67	52.510	100	H	0	54	-1.49	Ave

10 FCC §15.407(h) - Dynamic Frequency Selecon (DFS)

10.1 DFS Requirement

FCC §15.407 (h) and FCC 06-96 Appendix.

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	**Client (Without radar detection)**	**Client (With radar detection)**
Non-Occupancy Period	Yes	Not Required	Yes
DFS Detection Threshold	Yes	Not Required	Yes
Channel Availability Check Time	Yes	Not Required	Not Required
Uniform Spreading	Yes	Not Required	Not Required
U-NII Detection Bandwidth	Yes	Not Required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	**Client** (Without DFS)	**Client** (With DFS)
DFS Detection Threshold	Yes	Not Required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes

Table 3: Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (See Notes 1 and 2)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.
Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 80% of the UNII 99% transmission power bandwidth. See Note 3.

Note 1: The instant that the *Channel Move Time* and the *Channel Closing Transmission Time* begins is as follows:
- For the Short Pulse Radar Test Signals this instant is the end of the *Burst*.
- For the Frequency Hopping radar Test Signal, this instant is the end of the last radar *Burst* generated.
- For the Long Pulse Radar Test Signal this instant is the end of the 12 second period defining the *Radar Waveform*.

Note 2: The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the *U-NII Detection Bandwidth* detection test, radar type 1 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

Table 5: Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (Microseconds)	PRI (Microseconds)	Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Table 6: Long Pulse Radar Test Signal

Radar Type	Bursts	Chirp Width (MHz)	PRI (usec)	Number of Pulses per *Burst*	Number of *Bursts*	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

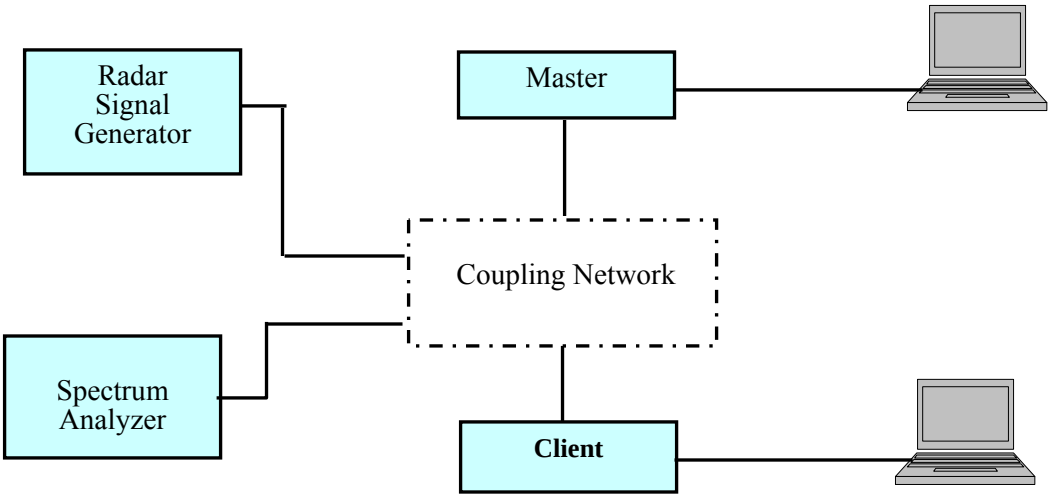
Table 7: Frequency Hopping Radar Test Signal

Radar Type	Pulse Width (usec)	PRI (usec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

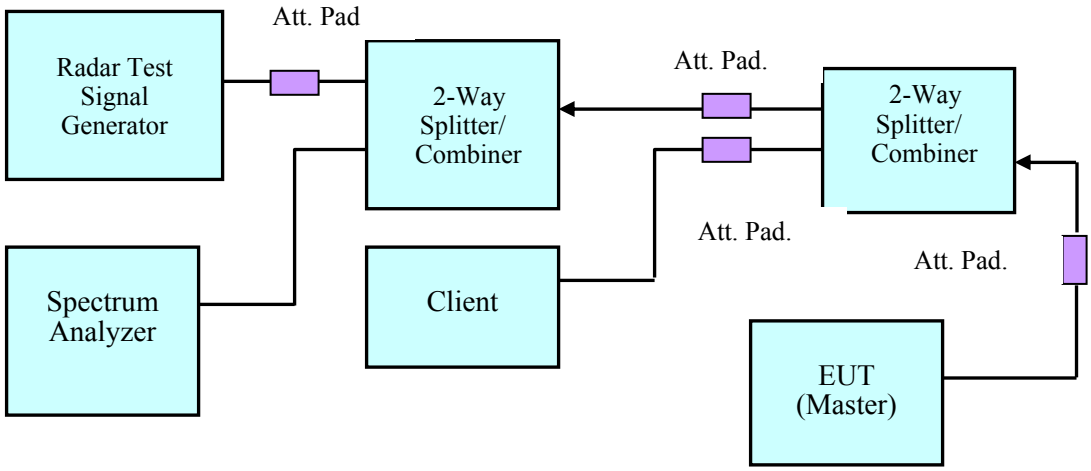
10.2 DFS Measurement System

BACL DFS measurement system consists of two subsystems: (1) The radar signal generating subsystem and (2) the traffic monitoring subsystem.

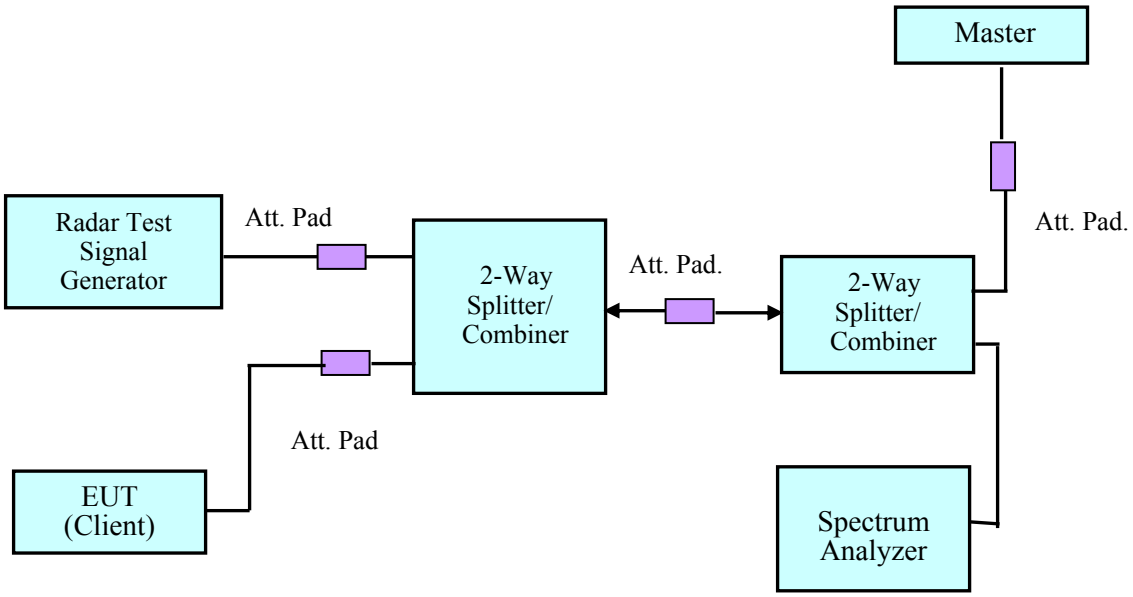
10.3 System Block Diagram



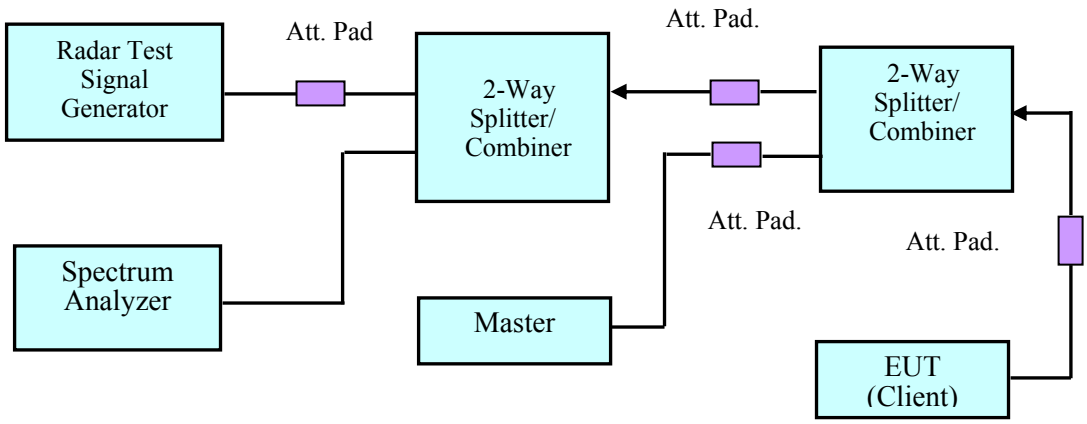
10.4 Conducted Method



Setup for Master with injection at the Master

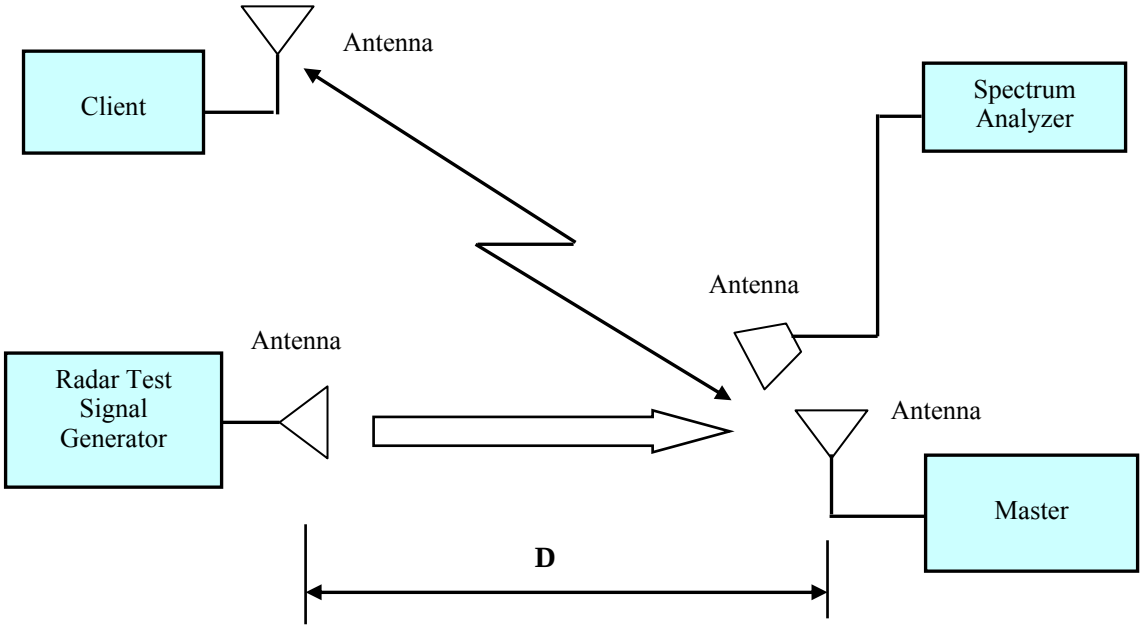


Setup for Client with injection at the Master



Setup for Client with injection at the Client

10.5 Radiated Method



10.6 Test Procedure

A spectrum analyzer is used as a monitor verifies that the EUT status including Channel Closing Transmission Time and Channel Move Time, and does not transmit on a Channel during the Non-Occupancy Period after the diction and Channel move. It is also used to monitor EUT transmissions during the Channel Availability Check Time.

10.7 Test Equipment List Abd Details

Manufacturer	Equipment Description	Model Number	S/N	Calibration Date
National Instruments	NI PXI-1042 8-Slot chassis	PXI-1042	V08X01EE1	N/A
National Instruments	Arbitrary Waveform Generator	PXI-5421	N/A	N/A
National Instruments	RF Upconverter	PXI-5610	N/A	N/A
ASCOR	Upconverter	AS-7206	N/A	N/A
Agilent	Spectrum Analyzer	E4440A	US42221851	2012-02-28
Avantek	Pre-Amplifier	2-8 GHz Lab AMP	218	N/A
Ducommun Technologies	Pre-Amplifier	ALN-09173030-01	990297-02	N/A
Mini-Circuits	Splitter/Combiner	2FSC-2-10G	0349	N/A
Narda	Splitter/Combiner	4326B-2	03514	N/A
Midwest	Attenuator	290-30	N/A	N/A
Mini-Circuits	Attenuator	BW-S30W2	N/A	N/A

Statement of Traceability: BACL Corp. attests that all calibrations have been performed per the A2LA requirements, traceable to the NIST.

10.8 Test Environmental Conditions

Temperature:	20 °C
Relative Humidity:	40.8 %
ATM Pressure:	101.7 mbar

Testing was performed by Ning Ma on 2013-01-22 at the DFS site.

10.9 Channel Move Time and Channel Closeing Transmission Time Test Procedure

Perform one of the type1 to type 4 short pulse radar waveform, BACL use type 1 radar signal, repeat using a long pulse radar type5 waveform.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = N * Dwell Time

N is the number of spectrum analyzer bins showing a device transmission
Dwell Time is the dwell time per bin (i.e. Dwell Time = S/B, S is the sweep time and B is the number of bin, i.e. 8192)

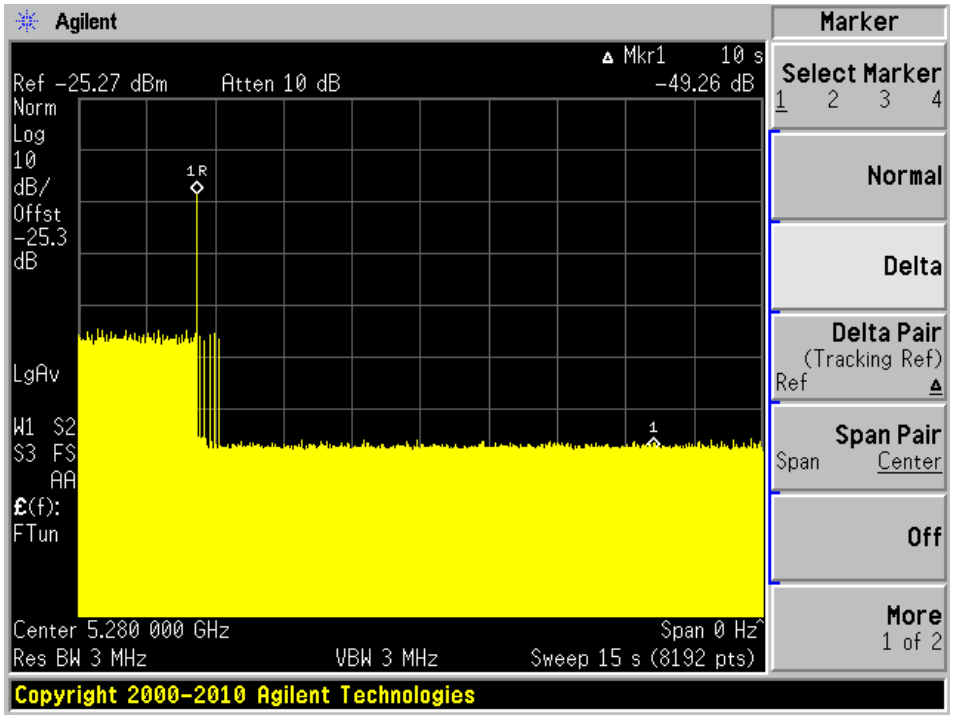
10.10 Test Results

Frequency (MHz)	Bandwidth (MHz)	Radar Type	Results
5280	20	Type 1	Compliant
		Type 5	Compliant
5580	20	Type 1	Compliant
		Type 5	Compliant
5270	40	Type 1	Compliant
		Type 5	Compliant
5550	40	Type 1	Compliant
		Type 5	Compliant

Please refer to the following tables and plots.

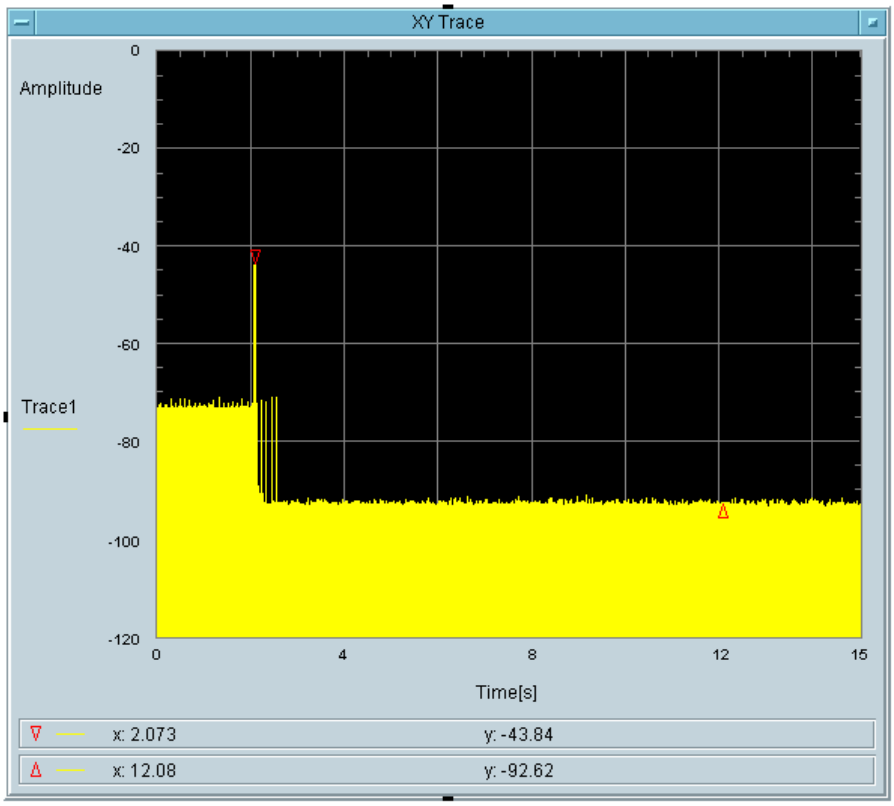
5280 MHz Bandwidth 20 MHz

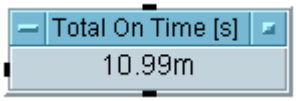
Type 1 radar channel move time result:



Type1 radar channel closing transmission time result:

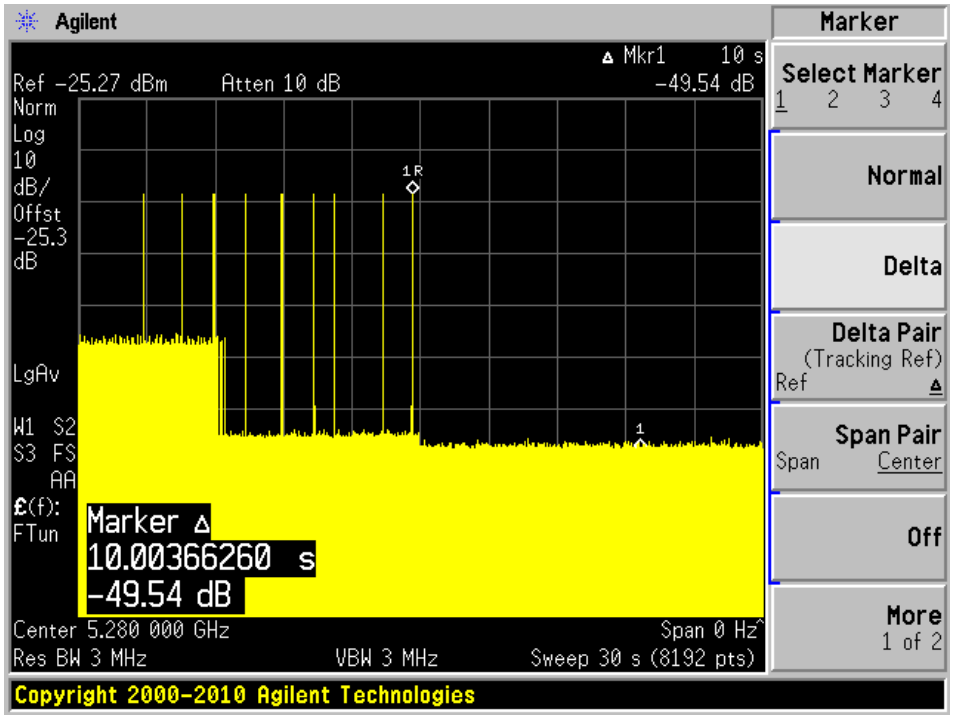
Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
5.493	60	54.507





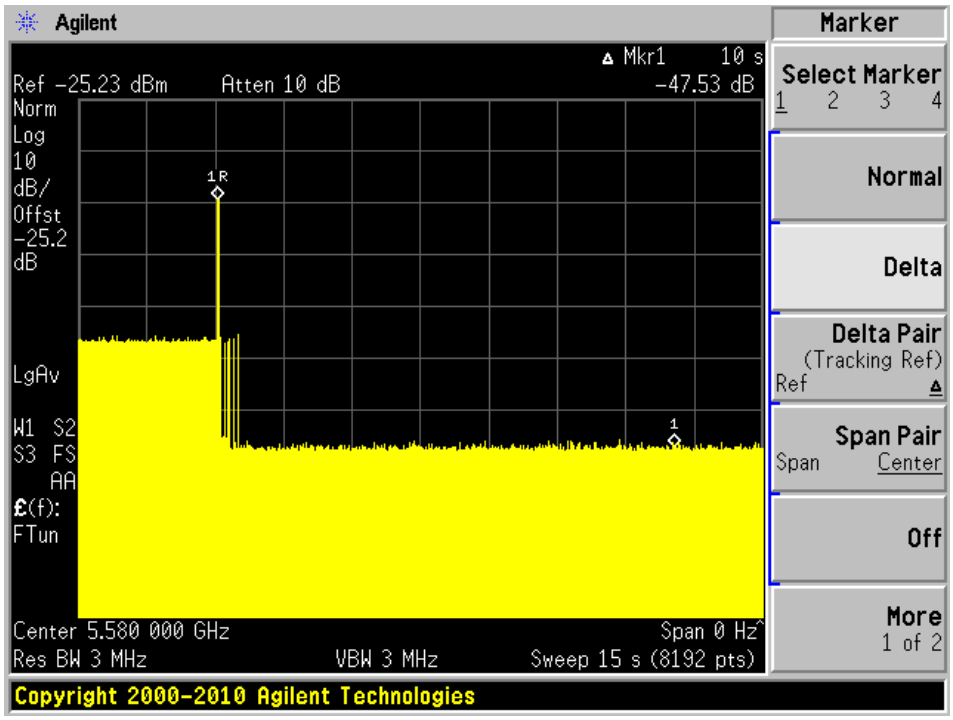
Type 5 radar channel move time result:

The traffic ceases period to the end of the radar waveform, therefore it also ceases period to 10 seconds after of the end of the radar waveform.



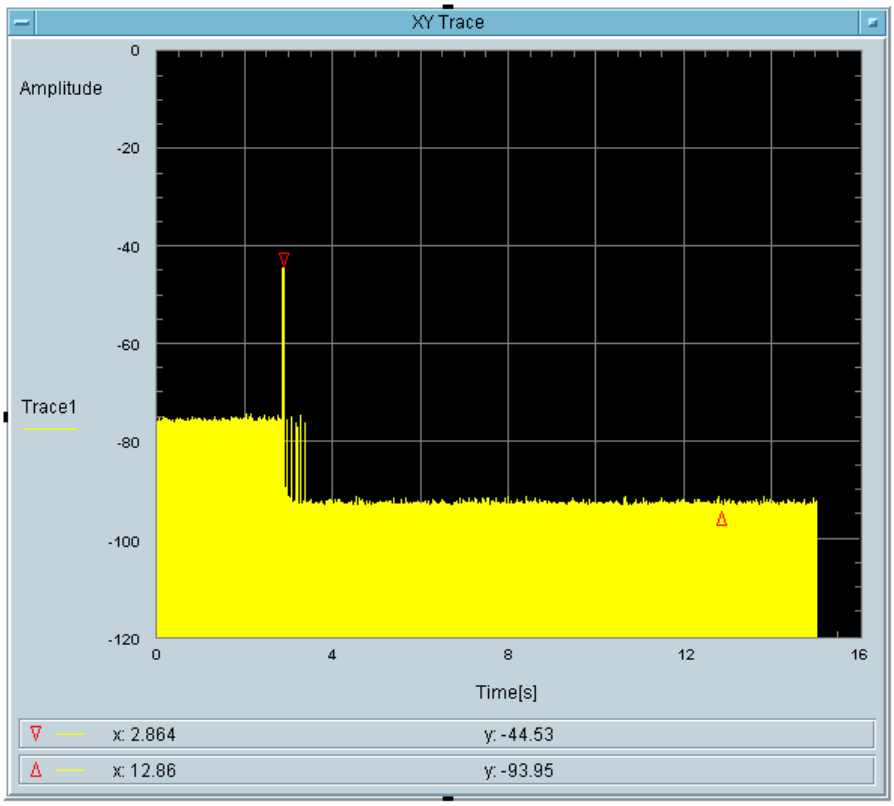
5580 MHz Bandwidth 20 MHz

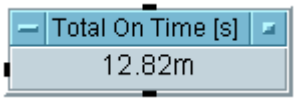
Type 1 radar channel move time result:



Type1 radar channel closing transmission time result:

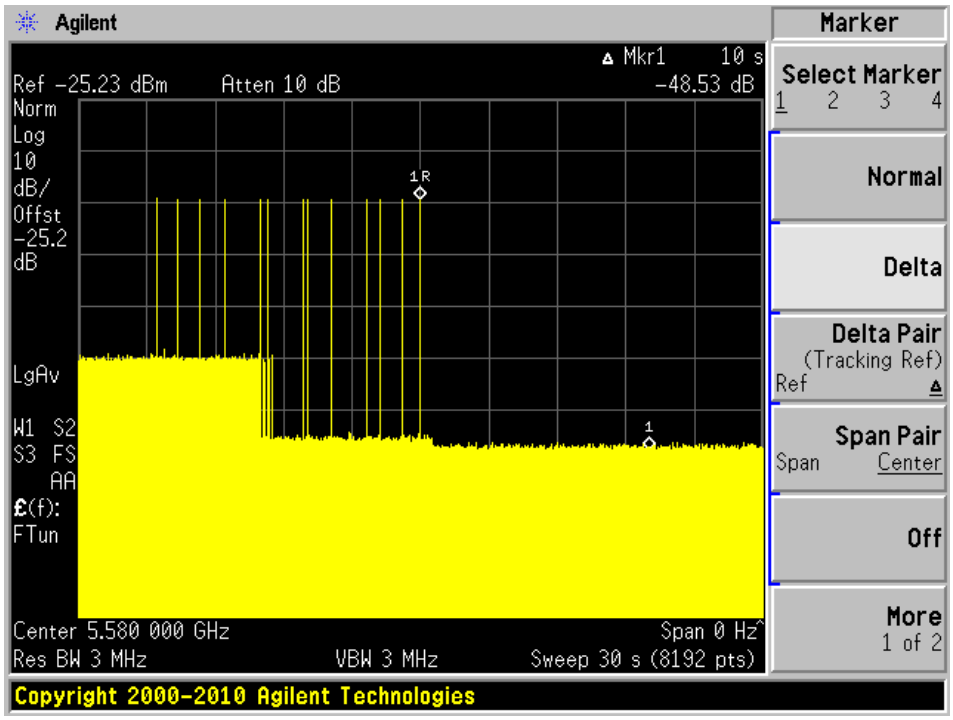
Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
5.493	60	54.507





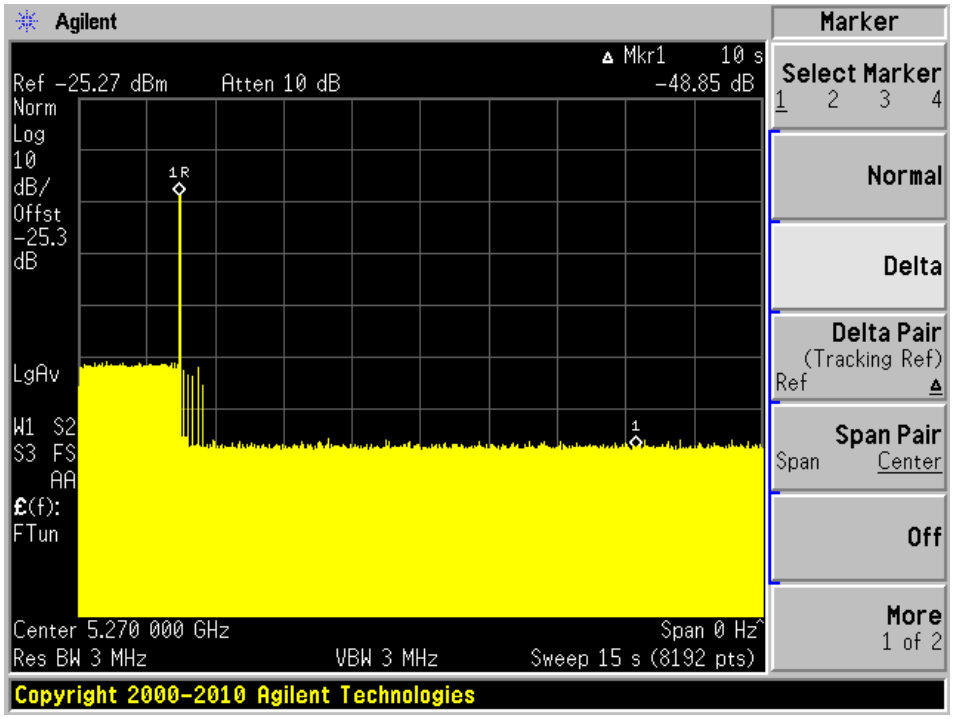
Type 5 radar channel move time result:

The traffic ceases period to the end of the radar waveform, therefore it also ceases period to 10 seconds after of the end of the radar waveform.



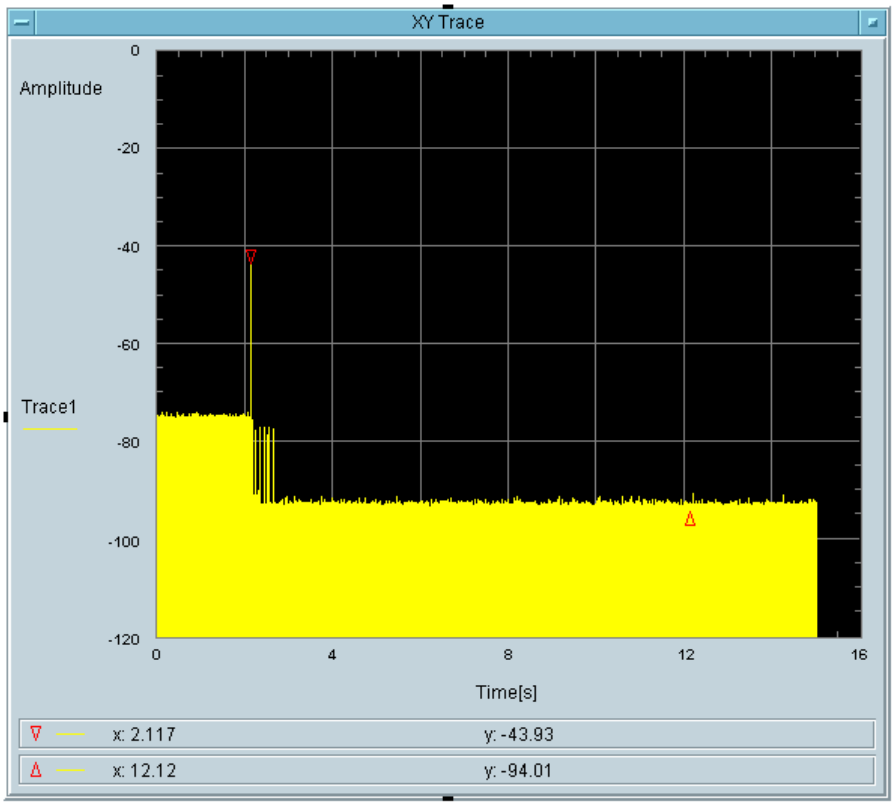
5270 MHz Bandwidth 40 MHz

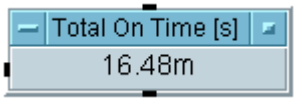
Type 1 radar channel move time result:

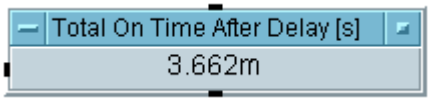


Type1 radar channel closing transmission time result:

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
3.662	60	56.338

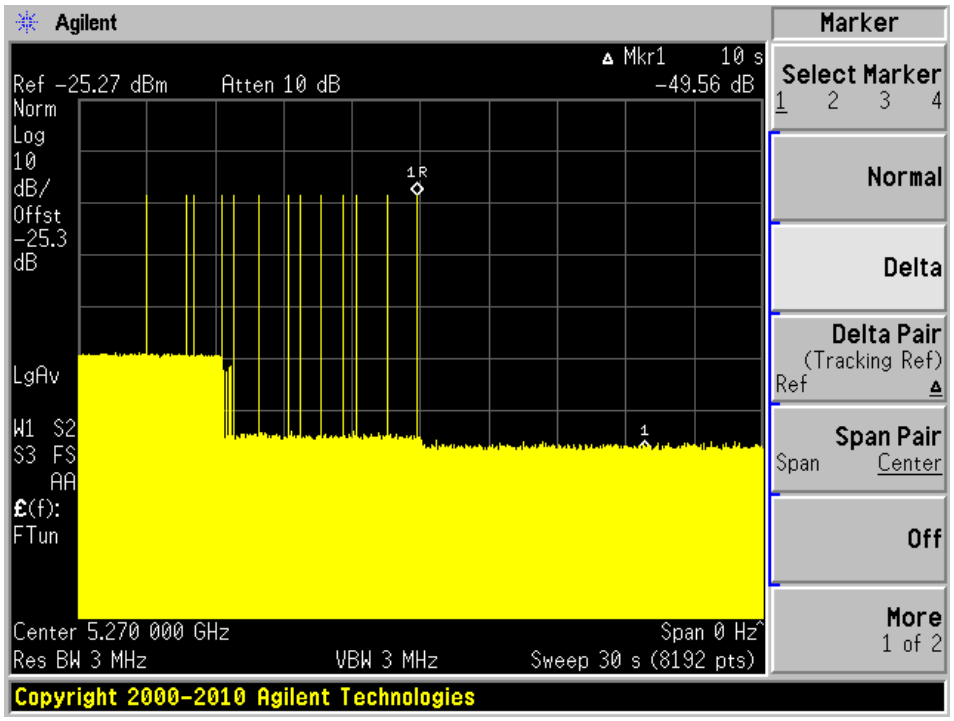






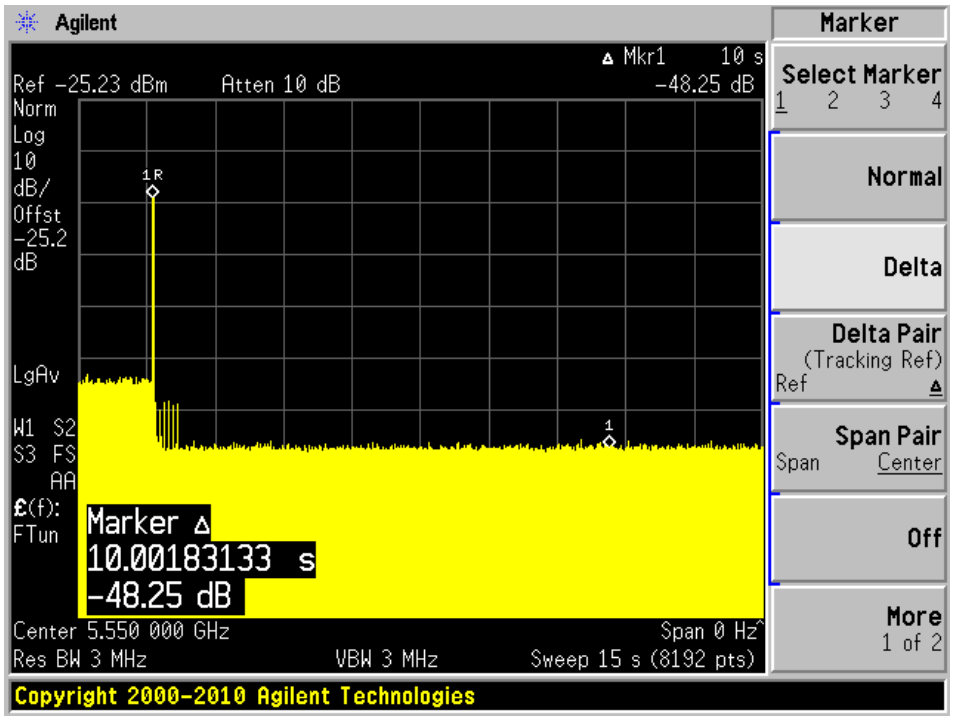
Type 5 radar channel move time result:

The traffic ceases period to the end of the radar waveform, therefore it also ceases period to 10 seconds after of the end of the radar waveform.



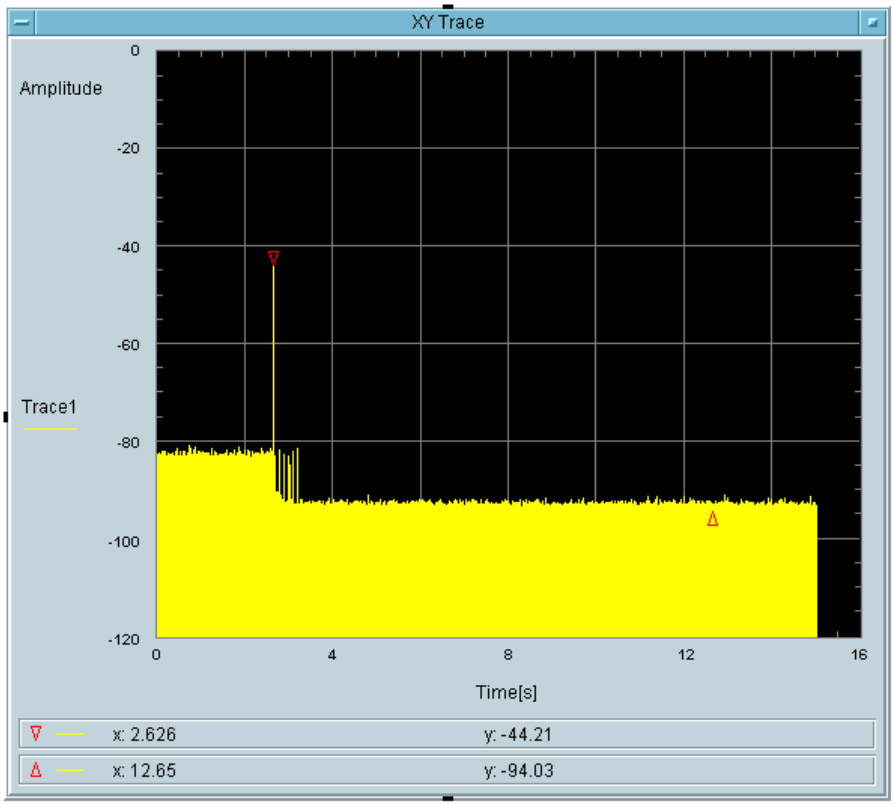
5550 MHz Bandwidth 40 MHz

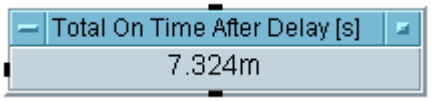
Type 1 radar channel move time result:



Type1 radar channel closing transmission time result:

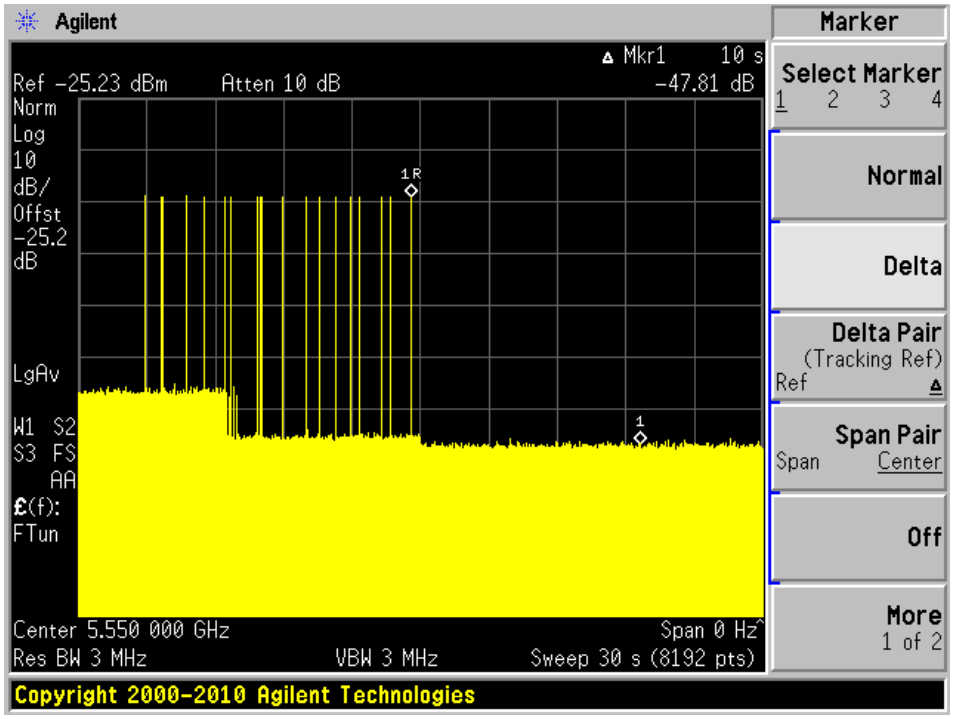
Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
7.324	60	52.676





Type 5 radar channel move time result:

The traffic ceases period to the end of the radar waveform, therefore it also ceases period to 10 seconds after of the end of the radar waveform.



10.11 Non-occupancy Test Procedure

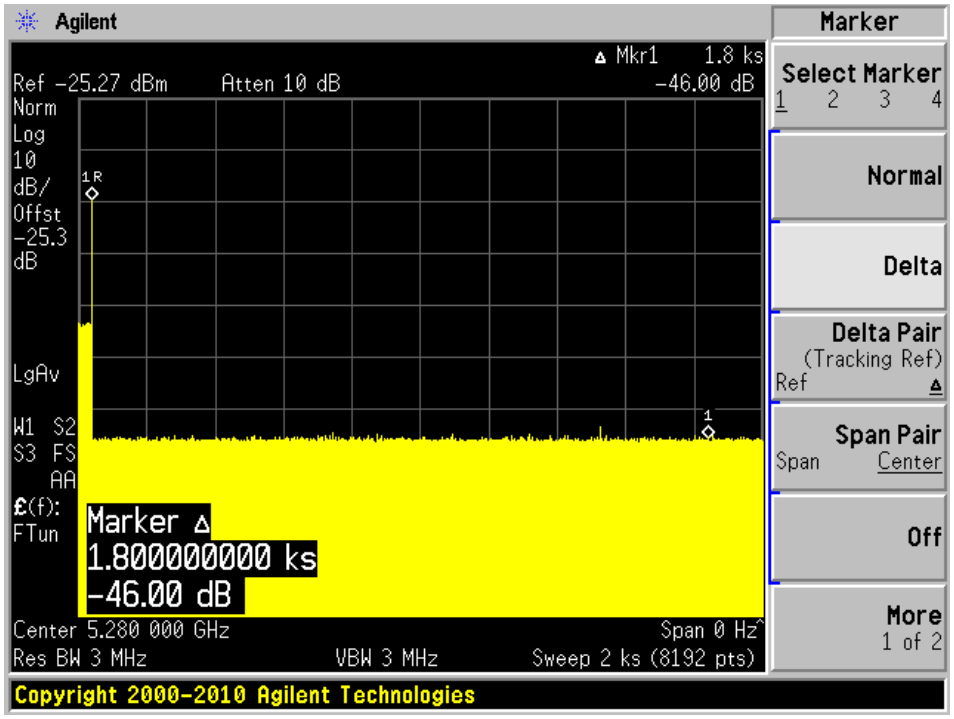
Measure the EUT for more than 30 minutes following the channel close/move time to very that the EUT does not resume any transmissions on this channel. Provide one plot to demonstrate no transmission on the channel for the non-occupancy period (30 minutes observation time)

10.12 Test Results

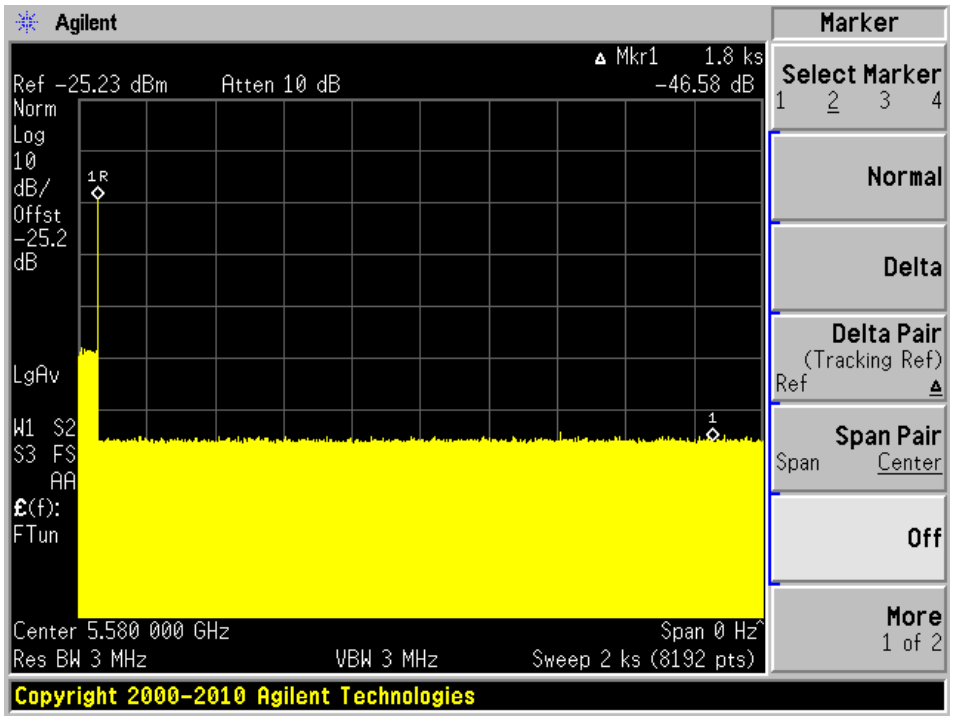
Frequency (MHz)	Bandwidth (MHz)	Spectrum Analyzer Display
5280	20	No transmission within 30 minutes
5580	20	No transmission within 30 minutes
5270	40	No transmission within 30 minutes
5550	40	No transmission within 30 minutes

Please refer to the following tables and plots.

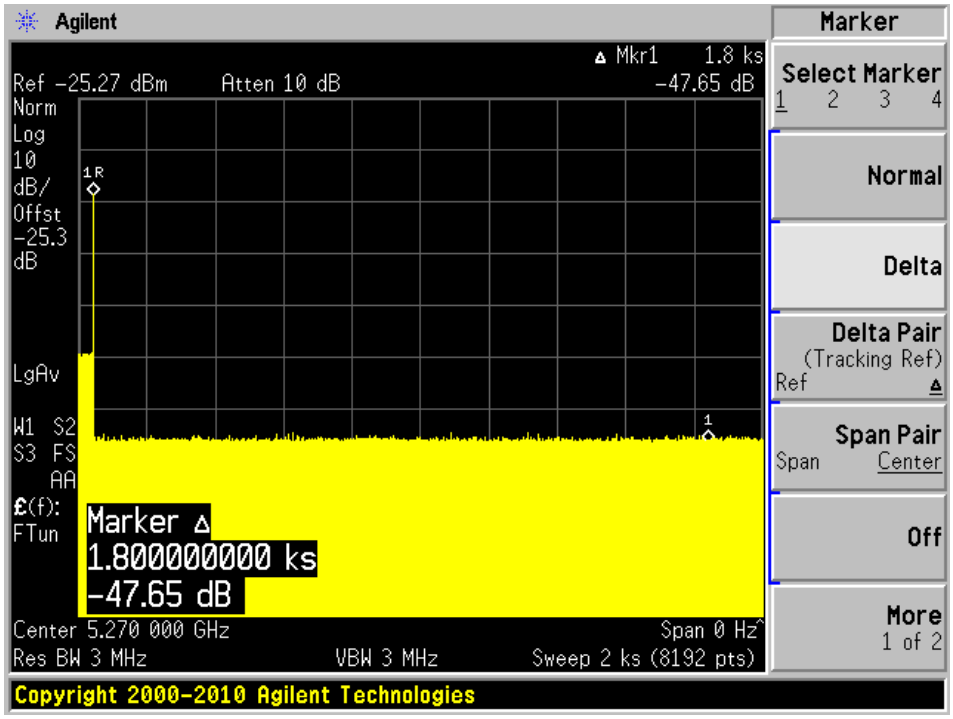
5280 MHz Bandwidth 20 MHz



5580 MHz Bandwidth 20 MHz



5270 MHz Bandwidth 40 MHz



5550 MHz Bandwidth 40 MHz