TEST REPORT

according to

FCC Rules and Regulations Part 15 Subpart C

Industry Canada RSS-Gen Issue 3/RSS-210 Issue 8

Applicant	:	Matrix Sound Limited
Address	:	95 High Street Hail Weston St Neots Cambridgeshire PE19 5JS
Equipment	:	Wireless Speaker
Model No.	:	WS 90t
Trademark	:	BLUE AURA
FCC ID	:	OSY-WS90T
IC	:	1015A-WS90T

- The test result refers exclusively to the test presented test model / sample.,
- Without written approval of ***Cerpass Technology Corp***. the test report shall not be reproduced except in full.
- The test report must not be used by the clients to claim product certification approval by **NVLAP** or any agency of the Government.

Contents

History of this test report

■ Original

☐ Additional attachment as following record:

Attachment No.	Issue Date	Description

CERTIFICATE OF COMPLIANCE

According to

FCC Rules and Regulations Part 15 Subpart C
Industry Canada RSS-Gen Issue 3/ RSS-210 Issue 8

Applicant	:	Matrix Sound Limited
Address	:	95 High Street Hail Weston St Neots Cambridgeshire PE19 5JS
Manufacturer	:	Solidex audio corp
Address	:	Room 202, Citic Concorde Bulding, No.556, Chang Tai Road, Dong Cheng District, Dong Guan City, Guang Dong Province, China
Equipment	:	Wireless Speaker
Model No.	:	WS 90t
Trademark	:	BLUE AURA
FCC ID	:	OSY-WS90T
IC	:	1015A-WS90T

I **HEREBY** CERTIFY THAT:

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4** The equipment was ***passed*** the test performed according to **FCC Rules and Regulations Part 15 Subpart C (2010) & Industry Canada RSS-Gen Issue 3/RSS-210 Issue 8.** The test was carried out on Sept. 30~Dec.31, 2013 at ***Cerpass Technology Corp.***

Signature

Miro Chueh/ Technical director

1. Report of Measurements and Examinations

1.1 List of Measurements and Examinations

FCC Rules and Regulations Part 15 Subpart C		
Normative References	Test Parameter	Test Performed
15.207	. Conducted Emission	Pass
15.209	. Radiated Emission	Pass
15.215	. 20dB Bandwidth Measurement	Pass
15.249	. Band Edges Measurement Data	Pass

Industry Canada RSS-Gen Issue 3/RSS-210 Issue 8		
Normative References	Test Parameter	Test Performed
RSS-Gen Issue 3 December 2010 Section 7.2.2	Conducted Emission	Yes
RSS-210 Issue 8 December 2010 Section 2.7 Table 2 and Table 3	Radiated Emission	Yes
RSS-210 Issue 8 December 2010 Section A8.5	Radiated Emission Band Edge	Yes
RSS-Gen Issue 3 December 2010 Section 4.6.1 and 4.6.2 RSS-210 Issue 8 December 2010 Section A8.2(1)	Occupied Bandwidth	Yes

2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Frequency Range	2412 MHz~2464MHz
	5736 MHz~5814MHz
EUT Power Ratings	I/P: 100-240V~, 50/60Hz, 50W
Antenna Specification	2.4GHz with 2.0dBi (Chain 0 and Chain 1) 5.8GHz with 3.0dBi (Chain 0 and Chain 1)
Modulation technology	QPSK / BPSK

Note: 1. The EUT has two Chains on each band (2.4GHz band and 5.8GHz band). Chain 0 and Chain 1 transmit/receive independently.

2. For more details, please refer to the User's manual of the EUT.

2.2 Carrier Frequency of Channels

For 2.4GHz Band

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	02	2438	03	2464

For 5.8GHz Band

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	5736	02	5762	03	5814

2.3 Test Mode & Test Software

a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4

b. The complete test system included EUT for RF test.

c. Adjust the EUT at the test mode and the test channel. Then test. .

d. The following test mode was performed for conduction and radiation test:

- For 2.4GHz Band: CH low :2412MHz, CH Mid: 2438MHz, CH High: 2464MHz.
- For 5.8GHz Band: CH low :5736MHz, CH Mid: 5762MHz, CH High: 5814MHz.

2.4 Description of Test System

No.	Device	Manufacturer	Model No.	Description
1	iPod	APPLE	MA477TA/A	N/A
2	Wireless Transmitter	Solidex	BlueAura Wireless Transmitter	N/A
3	Remote Control	Solidex	N/A	N/A

The cable used

No.	Cable	Quantity	Description
A	Audio Cable	1	1.5m Non Shielding without core
B	USB Cable	1	1.2m Shielding with two core

2.5 General Information of Test

Test Site:	Cerpass Technology Corp.
Performed Location :	No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China
NVLAP LAB Code :	200814-0
FCC Registration Number :	916572, 331395
IC Registration Number :	7290A-1, 7290A-2
VCCI Registration Number :	T-343 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test below 1GHz G-227 for Radiated emission test above 1GHz

Laboratory accreditation

2.6 Measurement Uncertainty

Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30 MHz	LINE/NEUTRAL	±2.71 dB
Radiated Emission	30 MHz ~ 25GHz	Vertical	±4.11 dB
		Horizontal	±4.10 dB
Occupied Bandwidth	---	---	±7500 Hz
Maximum Peak Output Power	---	---	±1.4 dB
Band Edges	---	---	±2.2 dB
Power Spectral Density	---	---	±2.2 dB

3. Test of Conducted Emission

3.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2009 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

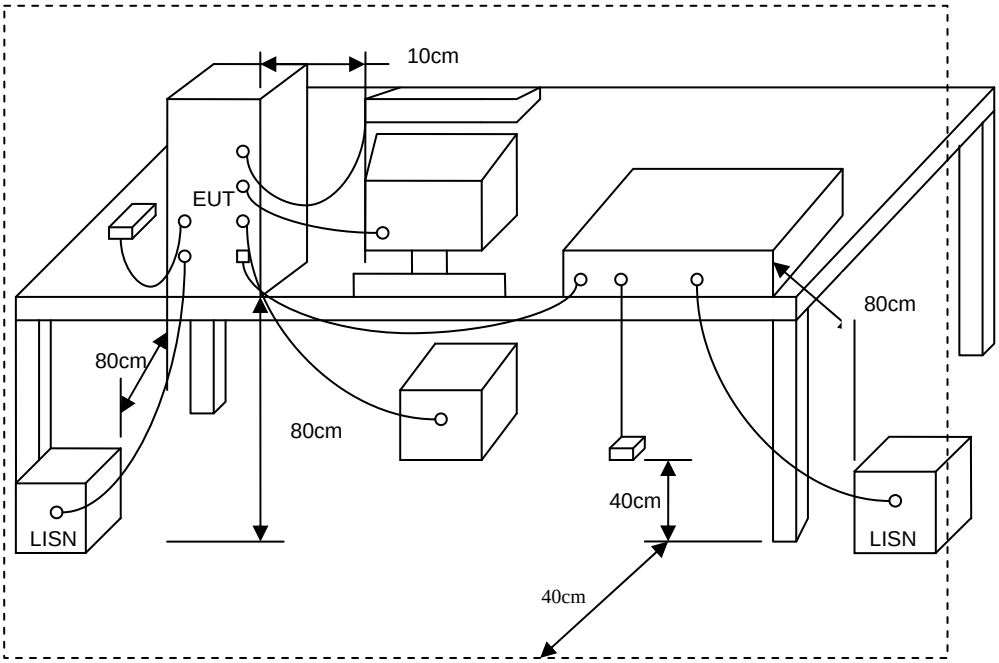
Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

3.2 Test Procedures

a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.
d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
f. Both sides of AC line were checked for maximum conducted interference.
g. The frequency range from 150 kHz to 30 MHz was searched.
h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

3.3 Typical Test Setup

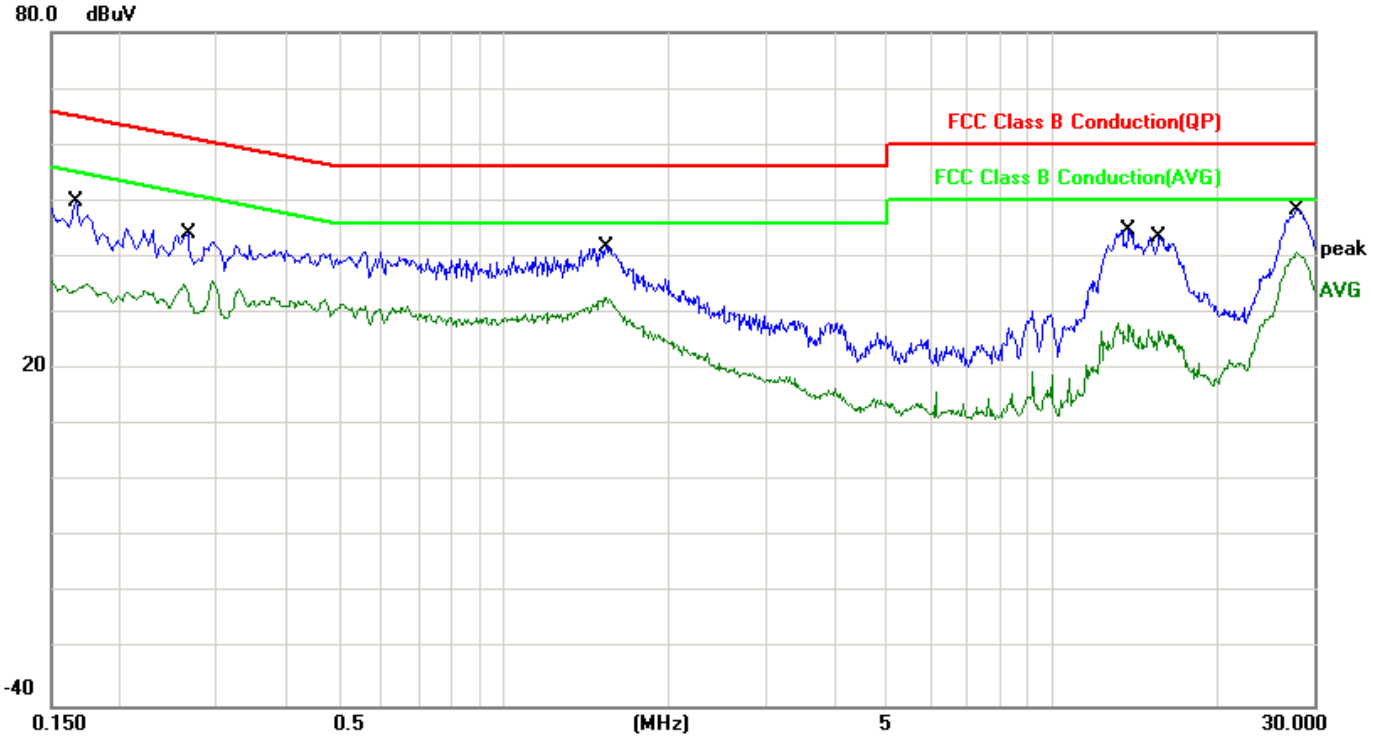


3.4 Measurement equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
Test Receiver	R&S	ESCI	100565	2013.03.10	2014.03.09
AMN	R&S	ESH2-Z5	100182	2013.09.11	2014.09.10
Two-Line V-Network	R&S	ENV216	100325	2013.03.10	2014.03.09
ISN	FCC	FCC-TLISN-T2-02	20379	2013.06.25	2014.06.24
ISN	FCC	FCC-TLISN-T4-02	20380	2013.06.25	2014.06.24
ISN	FCC	FCC-TLISN-T8-02	20381	2013.07.09	2014.07.08
ISN	TESEQ	ISN ST08	30175	2013.09.11	2014.09.10
Current Probe	R&S	EZ-17	100303	2013.03.10	2014.03.09
Passive Voltage Probe	R&S	ESH2-Z3	100026	2013.03.10	2014.03.09
Pulse Limiter	R&S	ESH3-Z2	100529	2013.03.10	2014.03.09
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-004	2013.03.10	2014.03.09

3.5 Test Result and Data

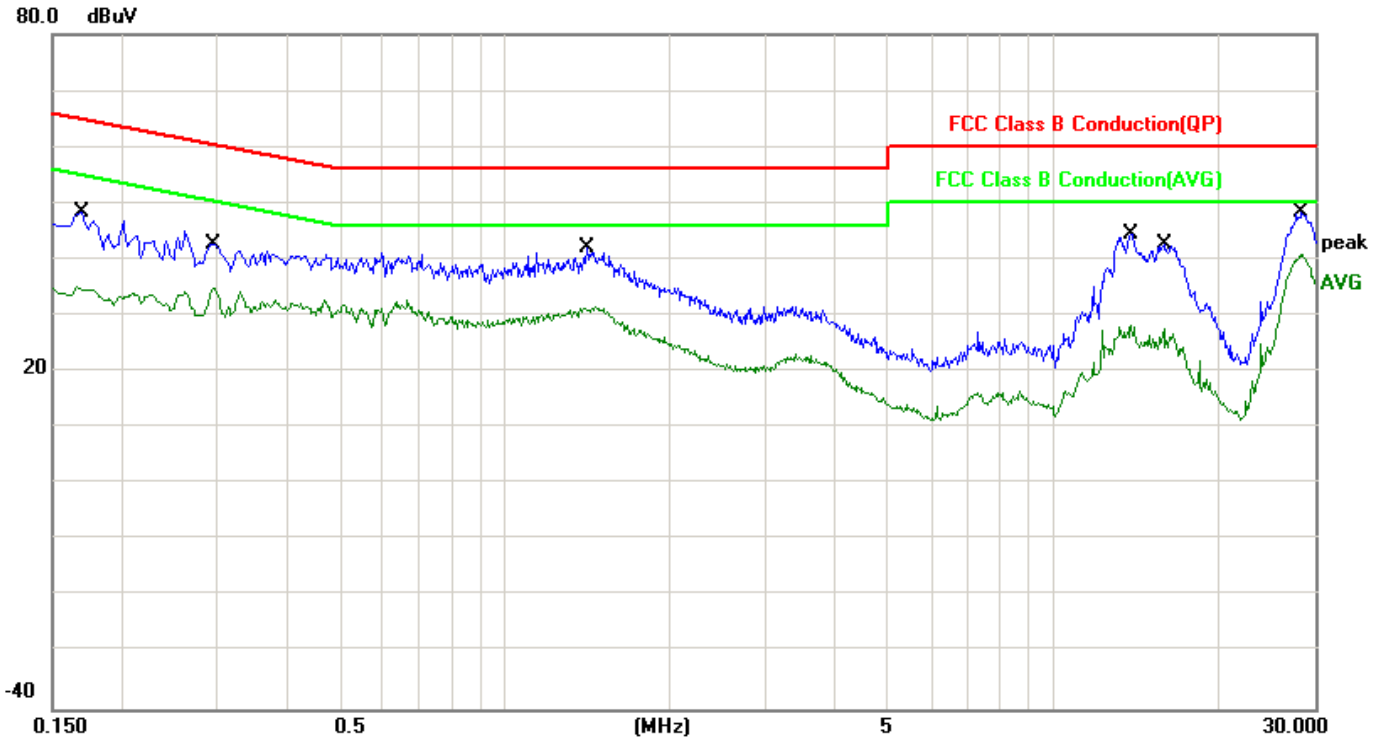
Power	:	AC 120V/60Hz	Pol/Phase	:	LINE
Test Mode	:	Normal Link	Temperature	:	25 °C
Memo	:		Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1660	10.04	32.93	42.97	65.15	-22.18	QP
2	0.1660	10.04	24.13	34.17	55.15	-20.98	AVG
3	0.2660	10.03	29.30	39.33	61.24	-21.91	QP
4	0.2660	10.03	22.93	32.96	51.24	-18.28	AVG
5	1.5380	10.12	27.33	37.45	56.00	-18.55	QP
6	1.5380	10.12	22.32	32.44	46.00	-13.56	AVG
7	13.8340	10.34	29.10	39.44	60.00	-20.56	QP
8	13.8340	10.34	13.51	23.85	50.00	-26.15	AVG
9	15.7060	10.36	28.01	38.37	60.00	-21.63	QP
10	15.7060	10.36	12.89	23.25	50.00	-26.75	AVG
11	27.9060	10.49	33.78	44.27	60.00	-15.73	QP
12	27.9060	10.49	29.05	39.54	50.00	-10.46	AVG

Note: Measurement Level = Reading Level + Correct Factor

Power	:	AC 120V/60Hz	Pol/Phase	:	NEUTRAL
Test Mode	:	Normal Link	Temperature	:	25 °C
Memo	:		Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1700	10.09	32.15	42.24	64.96	-22.72	QP
2	0.1700	10.09	24.28	34.37	54.96	-20.59	AVG
3	0.2940	10.10	29.38	39.48	60.41	-20.93	QP
4	0.2940	10.10	24.69	34.79	50.41	-15.62	AVG
5	1.4180	10.16	26.35	36.51	56.00	-19.49	QP
6	1.4180	10.16	20.79	30.95	46.00	-15.05	AVG
7	13.8420	10.36	28.91	39.27	60.00	-20.73	QP
8	13.8420	10.36	14.76	25.12	50.00	-24.88	AVG
9	15.8860	10.39	27.44	37.83	60.00	-22.17	QP
10	15.8860	10.39	12.60	22.99	50.00	-27.01	AVG
11	28.3100	10.49	33.80	44.29	60.00	-15.71	QP
12	28.3100	10.49	29.22	39.71	50.00	-10.29	AVG

Note: Measurement Level = Reading Level + Correct Factor

4. Test of Radiated Emission

4.1 Test Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto,shall not exceed the level of field strength specified below:

A. FCC Part 15 Subpart C Paragraph 15.249(a) Limit

Frequency (MHz)	Field strength of Fundamental	Field strength of Harmonics	Distance (m)
902~928	50mV/m (94dBμV/m)	500μV/m (54dBμV/m)	3
2400~2483.5	50mV/m (94dBμV/m)	500μV/m (54dBμV/m)	3
5725~5875	50mV/m (94dBμV/m)	500μV/m (54dBμV/m)	3

Note: 1. RF Field Strength (dBuV) = 20 log RF Voltage (uV)

2.Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency range (MHz)	Field Strength		Field Strength Limitation at 3m Measurement Dist	
	μV/m	Dist	(uV/m)	(dBuV/m)
0.009 - 0.490	2400/F(KHz)	300m	10000* 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 - 1.705	2400/F(KHz)	30m	100* 2400/F(KHz)	20log 2400/F(KHz) + 40
1.705 - 30.00	30	30m	100*30	20log 30 + 40
30.0 - 88.0	100	3m	100	20log 100
88.0 - 216.0	150	3m	150	20log 150
216.0 - 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500

Note: 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz.As to 1G-40G, the final emission level got using PK and AV detector.

5. Alternative switch power supply board provided to the EUT. After pre-scan, the worse case was recorded.

4.2 Test Procedures

a. The EUT was placed on a rotatable table top 0.8 meter above ground.

b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.

c. The table was rotated 360 degrees to determine the position of the highest radiation.

d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.

e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.

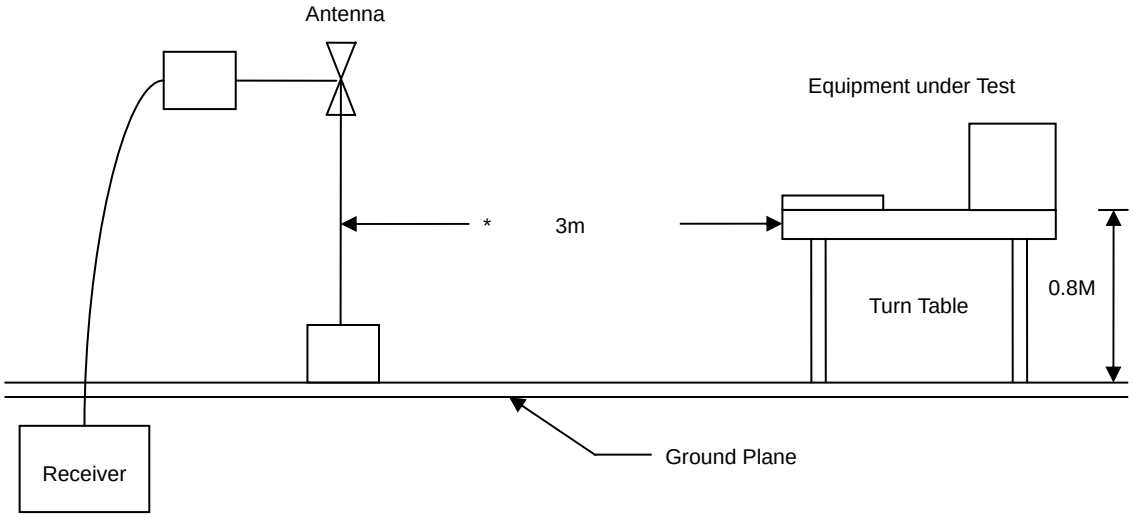
f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

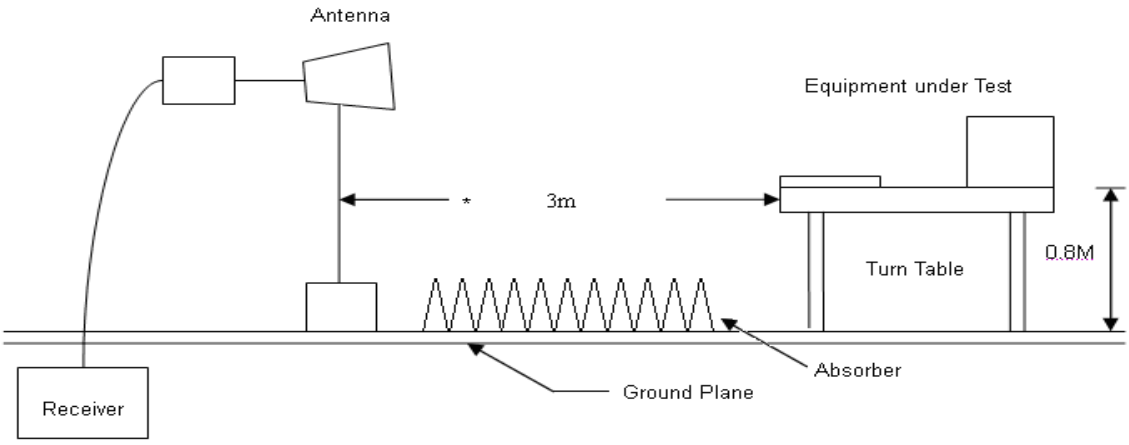
h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

4.3 Typical Test Setup

Below 1GHz Test Setup



Above 1GHz Test Setup



4.4 Measurement equipment

Instrument	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
EMI Test Receiver	ESCI	R&S	101183	2013.03.10	2014.03.09
H64 Amplifier	8447F	HP	3113A05582	2013.03.10	2014.03.09
Preamplifier	8449B	Agilent	3008A02342	2013.03.10	2014.03.09
Ultra Broadband Antenna	HL562	R&S	100363	2013.05.02	2014.05.01
Broad-Band Horn Antenna	BBHA9120D	Schwarzbeck	9120D-619	2013.05.02	2014.05.01
Spectrum Analyzer	FSP40	R&S	100324	2013.03.10	2014.03.09
Temperature/ Humidity Meter	ZC1-11	Zhicheng	CEP-TH-002	2013.03.10	2014.03.09

4.5 Test Result and Data

A . Fundamental & Harmonics Radiated Emission Data

Test Date	:	2013-10-18
Temperature	:	23℃
Humidity	:	65%
Atmospheric Pressure	:	1020 hPa

For 2.4GHz Band (Chain 0)

Fundamental Frequency: 2412 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2412.000	2.020	111.020	113.040	-0.960	114.000	PEAK
2	2412.000	2.020	90.236	92.256	-1.744	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2412.000	1.811	97.524	99.335	-14.665	114.000	PEAK
2	2412.000	1.811	79.325	81.136	-12.864	94.000	AVG

Fundamental Frequency: 2438 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2438.000	1.955	105.236	107.191	-6.809	114.000	PEAK
2	2438.000	1.955	86.337	88.292	-5.708	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2438.000	1.903	98.541	100.444	-13.556	114.000	PEAK
2	2438.000	1.903	79.654	81.557	-12.443	94.000	AVG

Fundamental Frequency: 2464 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2464.000	1.884	107.236	109.120	-4.880	114.000	PEAK
2	2464.000	1.884	87.246	89.130	-4.870	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2464.000	2.030	95.263	97.293	-16.707	114.000	PEAK
2	2464.000	2.030	76.352	78.382	-15.618	94.000	AVG

For 2.4GHz Band (Chain 1)

Fundamental Frequency: 2412 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2412.000	2.020	106.655	108.675	-5.325	114.000	PEAK
2	2412.000	2.020	89.451	91.471	-2.529	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2412.000	1.811	96.654	98.465	-15.535	114.000	PEAK
2	2412.000	1.811	78.581	80.392	-13.608	94.000	AVG

Fundamental Frequency: 2438 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2438.000	1.955	103.263	105.218	-8.782	114.000	PEAK
2	2438.000	1.955	84.674	86.629	-7.371	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2438.000	1.903	99.158	101.061	-12.939	114.000	PEAK
2	2438.000	1.903	78.547	80.450	-13.55	94.000	AVG

Fundamental Frequency: 2464 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2464.000	2.030	105.263	107.293	-6.707	114.000	PEAK
2	2464.000	2.030	84.236	86.266	-7.734	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2464.000	1.884	100.025	101.909	-12.091	114.000	PEAK
2	2464.000	1.884	81.235	83.119	-10.881	94.000	AVG

For 5.8GHz Band (Chain 0)

Fundamental Frequency: 5736 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5736.000	14.352	96.654	111.006	-2.994	114.000	PEAK
2	5736.000	14.352	78.235	92.587	-1.413	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5736.000	13.955	82.125	96.080	-17.920	114.000	PEAK
2	5736.000	13.955	63.321	77.276	-16.724	94.000	AVG

Fundamental Frequency: 5762 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5762.000	14.382	92.658	107.04	-6.960	114.000	PEAK
2	5762.000	14.382	73.152	87.534	-6.466	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5762.000	14.025	85.615	99.64	-14.360	114.000	PEAK
2	5762.000	14.025	66.348	80.373	-13.627	94.000	AVG

Fundamental Frequency: 5814 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5814.000	14.403	93.125	107.528	-6.472	114.000	PEAK
2	5814.000	14.403	75.025	89.428	-4.572	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5814.000	14.436	85.203	99.639	-14.361	114.000	PEAK
2	5814.000	14.436	66.352	80.788	-13.212	94.000	AVG

For 5.8GHz Band (Chain 1)

Fundamental Frequency: 5736 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5736.000	14.352	94.652	109.004	-4.996	114.000	PEAK
2	5736.000	14.352	75.169	89.521	-4.479	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5736.000	13.955	85.652	99.607	-14.393	114.000	PEAK
2	5736.000	13.955	66.352	80.307	-13.693	94.000	AVG

Fundamental Frequency: 5762 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5762.000	14.382	94.189	108.571	-5.429	114.000	PEAK
2	5762.000	14.382	75.035	89.417	-4.583	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5762.000	14.025	86.325	100.350	-13.650	114.000	PEAK
2	5762.000	14.025	67.214	81.239	-12.761	94.000	AVG

Fundamental Frequency: 5814 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5814.000	14.403	92.125	106.528	-7.472	114.000	PEAK
2	5814.000	14.406	73.235	87.641	-6.539	94.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5814.000	14.436	84.122	98.558	-15.442	114.000	PEAK
2	5814.000	14.436	65.325	79.761	-14.239	94.000	AVG

B. General Radiated Emission Data
Transmitter
Under 1GHz

Site : EMC Lab AC 102	**Time : 2013-12-25**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Normal link	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
373.3800	-4.85	37.19	32.34	46.00	-13.66	V	QP
513.0599	-2.51	35.18	32.67	46.00	-13.33	V	QP
551.8600	-2.58	40.00	37.42	46.00	-8.58	V	QP
600.3600	-1.05	36.02	34.97	46.00	-11.03	V	QP
648.8600	-0.31	32.88	32.57	46.00	-13.43	V	QP
768.1700	1.51	32.05	33.56	46.00	-12.44	V	QP
370.4700	-4.71	42.30	37.59	46.00	-8.41	H	QP
389.8700	-5.46	41.65	36.19	46.00	-9.81	H	QP
527.6100	-2.45	40.35	37.90	46.00	-8.10	H	QP
551.8600	-2.58	37.96	35.38	46.00	-10.62	H	QP
624.6100	-1.51	37.16	35.65	46.00	-10.35	H	QP
720.6400	0.24	35.36	35.60	46.00	-10.40	H	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Above 1GHz

For 2.4GHz Band (Chain 0)

Site : EMC Lab AC 102	**Time : 2013-10-17**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 2412MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	4841.000	9.040	43.011	52.051	-21.919	73.970	PEAK	V
2	4841.000	9.040	29.365	38.405	-15.565	53.970	AVG	V
1	4841.000	9.659	40.226	49.885	-24.085	73.970	PEAK	H
2	4840.000	9.659	27.451	37.110	-16.860	53.970	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-17**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 2438MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	4870.000	9.024	42.025	51.049	-22.921	73.970	PEAK	V
2	4870.000	9.024	26.635	35.659	-18.311	53.970	AVG	V
1	4870.000	9.660	40.221	49.881	-24.089	73.970	PEAK	H
2	4870.000	9.660	27.458	37.118	-16.852	53.970	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-17**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 2464MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	4929.000	9.007	42.596	51.603	-22.367	73.970	PEAK	V
2	4929.000	9.007	26.598	35.605	-18.365	53.970	AVG	V
1	4930.000	9.670	41.224	50.894	-23.076	73.970	PEAK	H
2	4930.000	9.670	25.663	35.333	-18.637	53.970	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

For 2.4GHz Band (Chain 1)

Site : EMC Lab AC 102	**Time : 2013-10-18**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 2412MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	4840.000	9.031	45.226	54.257	-19.713	73.970	PEAK	V
2	4840.000	9.031	30.125	39.156	-14.814	53.970	AVG	V
1	4840.000	9.659	39.554	49.213	-24.757	73.970	PEAK	H
2	4840.000	9.659	26.341	36.000	-17.970	53.970	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-18**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 2438MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	4869.000	9.002	41.263	50.265	-23.705	73.970	PEAK	V
2	4869.000	9.002	25.663	34.665	-19.305	53.970	AVG	V
1	4869.000	9.659	43.642	53.301	-20.669	73.970	PEAK	H
2	4869.000	9.659	30.148	39.807	-14.163	53.970	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-18**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 2464MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	4930.000	9.008	38.412	47.420	-26.550	73.970	PEAK	V
2	4930.000	9.008	21.225	30.233	-23.737	53.970	AVG	V
1	4930.000	9.670	40.396	50.066	-23.904	73.970	PEAK	H
2	4930.000	9.670	23.648	33.318	-20.652	53.970	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

For 5.8GHz Band (Chain 0)

Site : EMC Lab AC 102	**Time : 2013-10-18**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 5736MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3847.500	5.975	44.105	50.080	-23.890	73.970	PEAK	V
2	3847.500	5.975	31.650	37.625	-16.345	53.970	AVG	V
3	11472.000	21.960	33.547	55.507	-18.463	73.970	PEAK	V
4	11472.000	21.960	18.547	40.507	-13.463	53.970	AVG	V
1	3847.500	6.405	45.210	51.615	-22.355	73.970	PEAK	H
2	3847.500	6.405	26.977	33.382	-20.588	53.970	AVG	H
3	11472.000	21.960	35.647	57.607	-16.363	73.970	PEAK	H
4	11472.000	21.960	20.448	42.408	-11.562	53.970	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-18**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 5762MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	5547.500	10.465	44.155	54.620	-19.350	73.970	PEAK	V
2	5547.500	10.465	30.497	40.962	-13.008	53.970	AVG	V
3	11524.000	21.927	33.556	55.483	-18.487	73.970	PEAK	V
4	11524.000	21.927	16.473	38.400	-15.570	53.970	AVG	V
1	5547.500	11.105	45.120	56.225	-17.745	73.970	PEAK	H
2	5547.500	11.105	29.412	40.517	-13.453	53.970	AVG	H
3	11524.000	21.958	30.225	52.183	-21.787	73.970	PEAK	H
4	11524.000	21.958	18.410	40.368	-13.602	53.970	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-18**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 5814MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	5335.000	9.600	41.415	51.015	-22.955	73.970	PEAK	V
2	5335.000	9.600	29.005	38.605	-15.365	53.970	AVG	V
3	11625.000	21.630	31.241	52.871	-21.099	73.970	PEAK	V
4	11625.000	21.630	16.475	38.105	-15.865	53.970	AVG	V
1	5462.500	10.845	42.102	52.947	-21.023	73.970	PEAK	H
2	5462.500	10.845	26.335	37.180	-16.790	53.970	AVG	H
3	11625.000	21.720	30.401	52.121	-21.849	73.970	PEAK	H
4	11625.000	21.720	18.571	40.291	-13.679	53.970	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

For 5.8GHz Band (Chain 1)

Site : EMC Lab AC 102	**Time : 2013-10-18**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 5736MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3847.500	5.975	47.254	53.229	-20.741	74.000	PEAK	V
2	11472.000	21.960	30.152	52.112	-21.858	74.000	PEAK	V
1	3847.000	6.445	45.698	52.143	-21.827	74.000	PEAK	H
2	11472.000	21.960	31.263	53.223	-20.747	74.000	PEAK	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-18**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 5762MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3847.500	5.975	47.265	53.240	-20.760	74.000	PEAK	V
2	3847.500	5.975	34.521	40.496	-13.504	54.000	AVG	V
3	11524.000	21.927	30.256	52.183	-21.817	74.000	PEAK	V
1	3847.000	6.445	45.245	51.690	-22.310	74.000	PEAK	H
2	5547.000	11.105	46.256	57.361	-16.639	74.000	PEAK	H
3	5547.000	11.105	30.265	41.370	-12.630	54.000	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-18**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Transmit by 5814MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3890.000	5.850	44.236	50.086	-23.914	74.000	PEAK	V
2	5335.000	9.600	40.122	49.722	-24.278	74.000	PEAK	V
1	3890.000	6.480	46.354	52.834	-21.166	74.000	PEAK	H
2	5462.500	10.845	40.358	51.203	-22.797	74.000	PEAK	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Receiver
Under 1GHz

Site : EMC Lab AC 102	**Time : 2013-12-19**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Normal link	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
55.2200	-16.94	52.47	35.53	40.00	-4.47	V	QP
355.9200	-4.33	41.69	37.36	46.00	-8.64	V	QP
552.8300	-2.55	42.12	39.57	46.00	-6.43	V	QP
565.4400	-2.64	45.52	42.88	46.00	-3.12	V	QP
589.6900	-2.01	39.97	37.96	46.00	-8.04	V	QP
602.3000	-1.13	42.56	41.43	46.00	-4.57	V	QP
62.0099	-17.29	50.29	33.00	40.00	-7.00	H	QP
78.5000	-15.22	48.38	33.16	40.00	-6.84	H	QP
112.4500	-9.77	47.92	38.15	43.50	-5.35	H	QP
565.4400	-2.64	41.17	38.53	46.00	-7.47	H	QP
602.2998	-1.13	37.55	36.42	46.00	-9.58	H	QP
773.9900	1.58	33.96	35.54	46.00	-10.46	H	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Above 1GHz

For 2.4GHz Band (Chain 0)

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 2412MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3010.000	3.916	35.263	39.179	-34.821	74.000	PEAK	V
2	5620.000	10.578	35.210	45.788	-28.212	74.000	PEAK	V
1	1720.000	-2.002	40.202	38.200	-35.800	74.000	PEAK	H
2	1720.000	-2.002	25.126	23.124	-30.876	54.000	AVG	H
3	7900.000	16.519	36.441	52.960	-21.040	74.000	PEAK	H
4	7900.000	16.519	23.125	39.644	-14.356	54.000	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 2438MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3010.000	3.916	38.542	42.458	-31.542	74.000	PEAK	V
2	3010.000	3.916	25.624	29.540	-24.460	54.000	AVG	V
3	5620.000	10.578	36.521	47.099	-26.901	74.000	PEAK	V
4	5620.000	10.578	21.334	31.912	-22.088	54.000	AVG	V
1	4720.000	9.214	37.215	46.429	-27.571	74.000	PEAK	H
2	4720.000	9.214	22.123	31.337	-22.663	54.000	AVG	H
3	6970.000	15.847	36.456	52.303	-21.697	74.000	PEAK	H
4	6970.000	15.847	22.165	38.012	-15.988	54.000	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 2464MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3700.000	4.903	39.265	44.168	-29.832	74.000	PEAK	V
2	3700.000	4.903	21.154	26.057	-27.943	54.000	AVG	V
3	7390.000	16.161	36.451	52.612	-21.388	74.000	PEAK	V
4	7390.000	16.161	20.114	36.275	-17.725	54.000	AVG	V
1	3910.000	6.515	37.145	43.660	-30.340	74.000	PEAK	H
2	3910.000	6.515	22.142	28.657	-25.343	54.000	AVG	H
3	7390.000	16.514	36.415	52.929	-21.071	74.000	PEAK	H
4	7390.000	16.514	21.225	37.739	-16.261	54.000	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

For 2.4GHz Band (Chain 1)

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 2412MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3010.000	3.916	36.242	40.158	-33.842	74.000	PEAK	V
2	5620.000	10.578	33.102	43.680	-30.320	74.000	PEAK	V
1	1720.000	-2.002	41.322	39.320	-34.680	74.000	PEAK	H
2	7900.000	16.519	35.105	51.624	-22.376	74.000	PEAK	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 2438MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3010.000	3.916	38.025	41.941	-32.059	74.000	PEAK	V
2	5620.000	10.578	35.223	45.801	-28.199	74.000	PEAK	V
1	4720.000	9.214	35.201	44.415	-29.585	74.000	PEAK	H
2	6970.000	15.847	33.224	49.071	-24.929	74.000	PEAK	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 2464MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3700.000	4.903	39.515	44.418	-29.582	74.000	PEAK	V
2	7390.000	16.161	35.223	51.384	-22.616	74.000	PEAK	V
3	7390.000	16.161	19.456	35.617	-18.383	54.000	AVG	V
1	3910.000	6.515	38.415	44.930	-29.070	74.000	PEAK	H
2	7390.000	16.514	37.263	53.777	-20.223	74.000	PEAK	H
3	7390.000	16.514	20.363	36.877	-17.123	54.000	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

For 5.8GHz Band (Chain 0)

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 5736MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3847.500	5.975	40.203	46.178	-27.822	74.000	PEAK	V
2	3847.500	5.975	25.663	31.638	-22.362	54.000	AVG	V
3	6992.500	16.000	34.102	50.102	-23.898	74.000	PEAK	V
4	6992.500	16.000	19.642	35.642	-18.358	54.000	AVG	V
1	3847.500	6.405	41.235	47.640	-26.360	74.000	PEAK	H
2	3847.500	6.405	26.335	32.740	-21.260	54.000	AVG	H
3	6907.500	15.095	35.201	50.296	-23.704	74.000	PEAK	H
4	6907.500	15.095	20.115	35.210	-18.790	54.000	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 5762MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3847.500	5.975	42.002	47.977	-26.023	74.000	PEAK	V
2	3847.500	5.975	26.415	32.390	-21.610	54.000	AVG	V
3	6950.000	15.490	36.202	51.692	-22.308	74.000	PEAK	V
4	6950.000	15.490	20.334	35.824	-18.176	54.000	AVG	V
1	3847.500	6.405	40.223	46.628	-27.372	74.000	PEAK	H
2	3847.500	6.405	25.631	32.036	-21.964	54.000	AVG	H
3	6907.500	15.095	35.112	50.207	-23.793	74.000	PEAK	H
4	6907.500	15.095	21.362	36.457	-17.543	54.000	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 5814MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3847.500	5.975	41.203	47.178	-26.822	74.000	PEAK	V
2	3847.500	5.975	25.636	31.611	-22.389	54.000	AVG	V
3	6950.000	15.490	35.102	50.592	-23.408	74.000	PEAK	V
4	6950.000	15.490	19.655	35.145	-18.855	54.000	AVG	V
1	3847.500	6.405	40.325	46.730	-27.270	74.000	PEAK	H
2	3847.500	6.405	25.635	32.040	-21.960	54.000	AVG	H
3	6992.500	16.105	35.661	51.766	-22.234	74.000	PEAK	H
4	6992.500	16.105	20.315	36.420	-17.580	54.000	AVG	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

For 5.8GHz Band (Chain 1)

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 5736MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3847.000	5.975	38.563	44.538	-29.462	74.000	PEAK	V
2	6992.000	16.000	38.441	54.441	-19.559	74.000	PEAK	V
1	3847.500	6.405	42.352	48.757	-25.243	74.000	PEAK	H
2	6907.500	15.095	37.253	52.348	-21.652	74.000	PEAK	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 5762MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3847.500	5.975	42.253	48.228	-25.772	74.000	PEAK	V
2	6907.500	15.490	36.521	52.011	-21.989	74.000	PEAK	V
1	3847.500	6.405	41.336	47.741	-26.259	74.000	PEAK	H
2	6907.500	15.095	36.514	51.609	-22.391	74.000	PEAK	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Site : EMC Lab AC 102	**Time : 2013-10-21**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Test mode: Receive by 5814MHz	**Probe : VERTICAL/ HORIZONTAL**
Power : AC 120V/60Hz	

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Antenna Pole (V/H)
1	3847.500	6.405	41.235	47.640	-26.360	74.000	PEAK	V
2	6950.000	15.495	36.514	52.009	-21.991	74.000	PEAK	V
1	3847.500	6.405	43.122	49.527	-24.473	74.000	PEAK	H
2	6992.500	16.105	35.635	51.740	-22.260	74.000	PEAK	H

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

5. 20dB Bandwidth Measurement Data

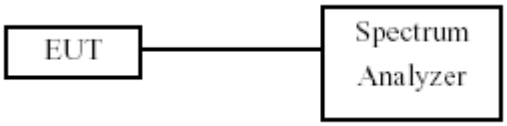
5.1 Test Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than125 mW.

5.2 Test Procedures

a. The transmitter output was connected to the spectrum analyzer.
b. Set RBW of spectrum analyzer to 100 KHz and VBW to 300 KHz.
c. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

5.3 Test Setup Layout



5.4 Measurement equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	FSP40	R&S	100324	2012.03.10	2014.03.09

5.5 Test Result and Data

Test Date: 2013-09-30 Temperature: 25℃

Atmospheric pressure: 1020 hPa Humidity: 55%

For 2.4GHz Band (Chain 0)

Channel	Frequency (MHz)	20dB Bandwidth (KHz)
Low	2412	15580.00
Mid	2438	15671.00
High	2464	15935.00

For 2.4GHz Band (Chain 1)

Channel	Frequency (MHz)	20dB Bandwidth (KHz)
Low	2412	15451.00
Mid	2438	15616.00
High	2464	15212.00

For 5.8GHz Band (Chain 0)

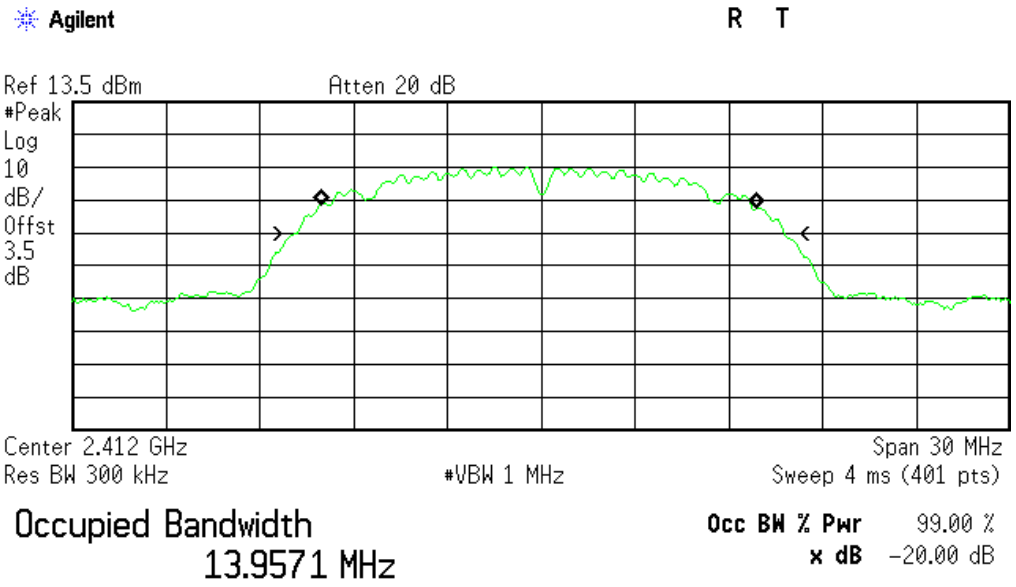
Channel	Frequency (MHz)	20dB Bandwidth (KHz)
Low	5736	13654.00
Mid	5762	14881.00
High	5814	14377.00

For 5.8GHz Band (Chain 1)

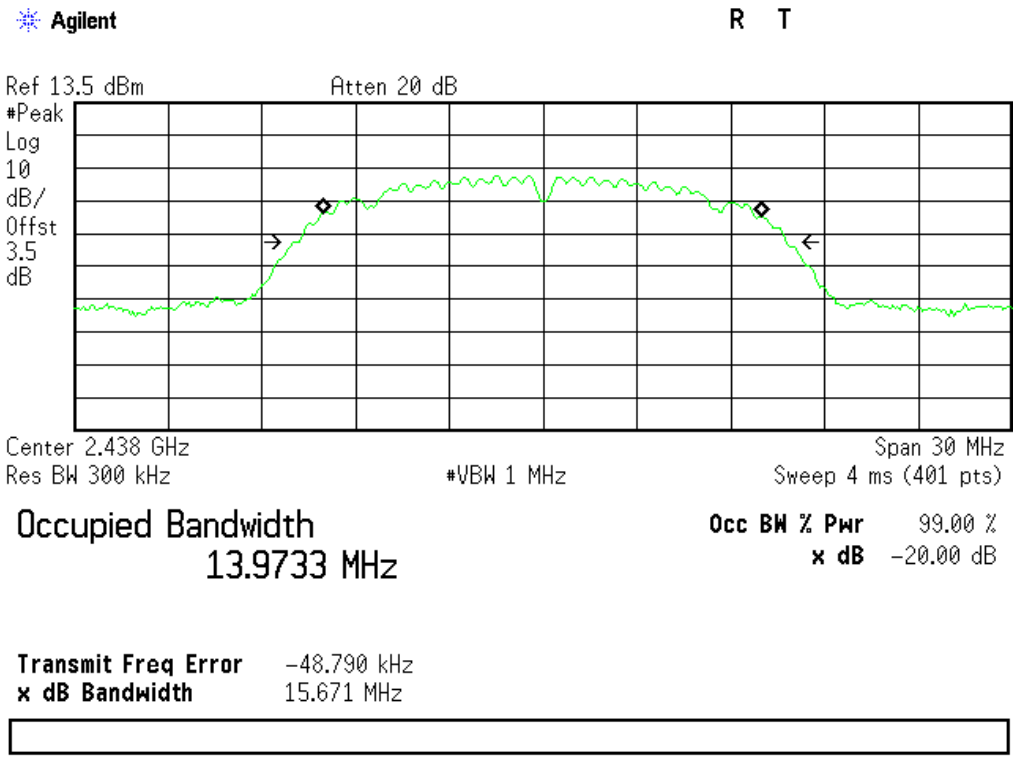
Channel	Frequency (MHz)	20dB Bandwidth (KHz)
Low	5736	13696.00
Mid	5762	13694.00
High	5814	14538.00

For 2.4GHz Band (Chain 0)

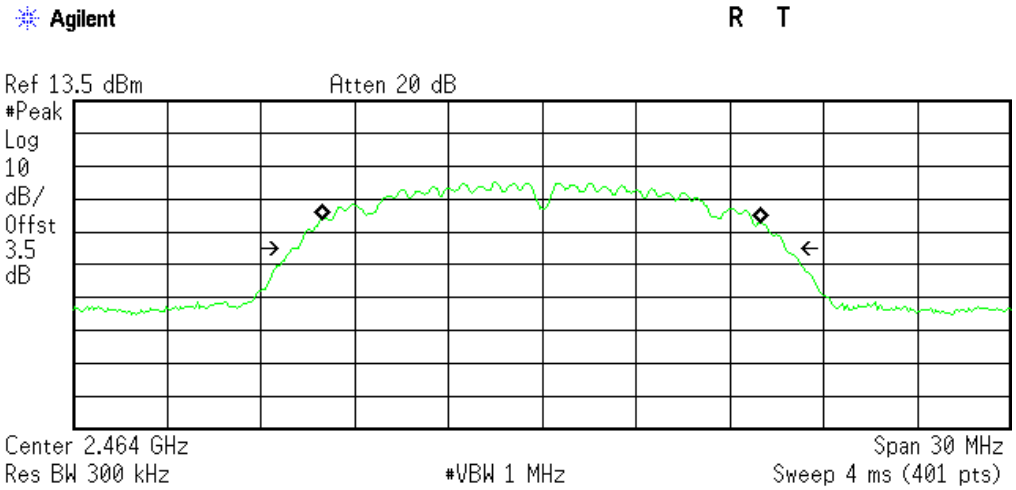
Channel: Low



Channel: Mid

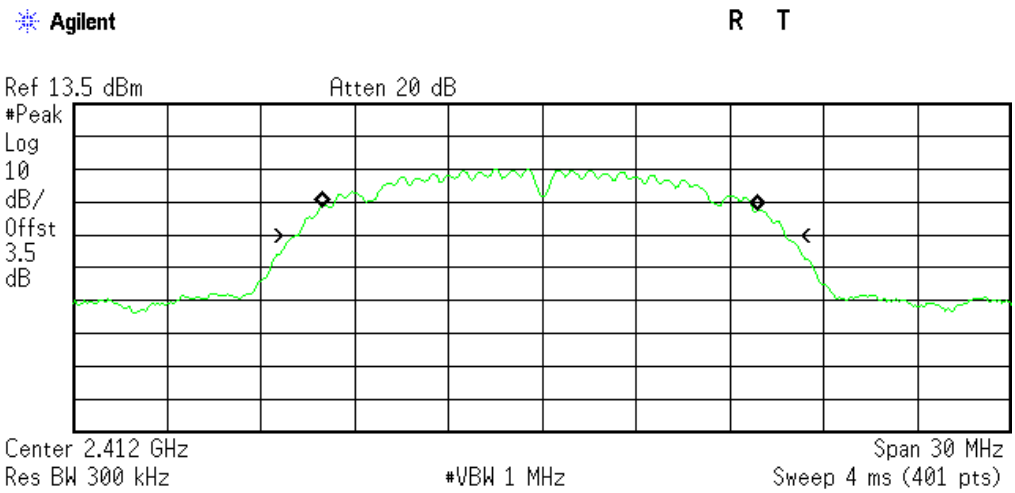


Channel: High

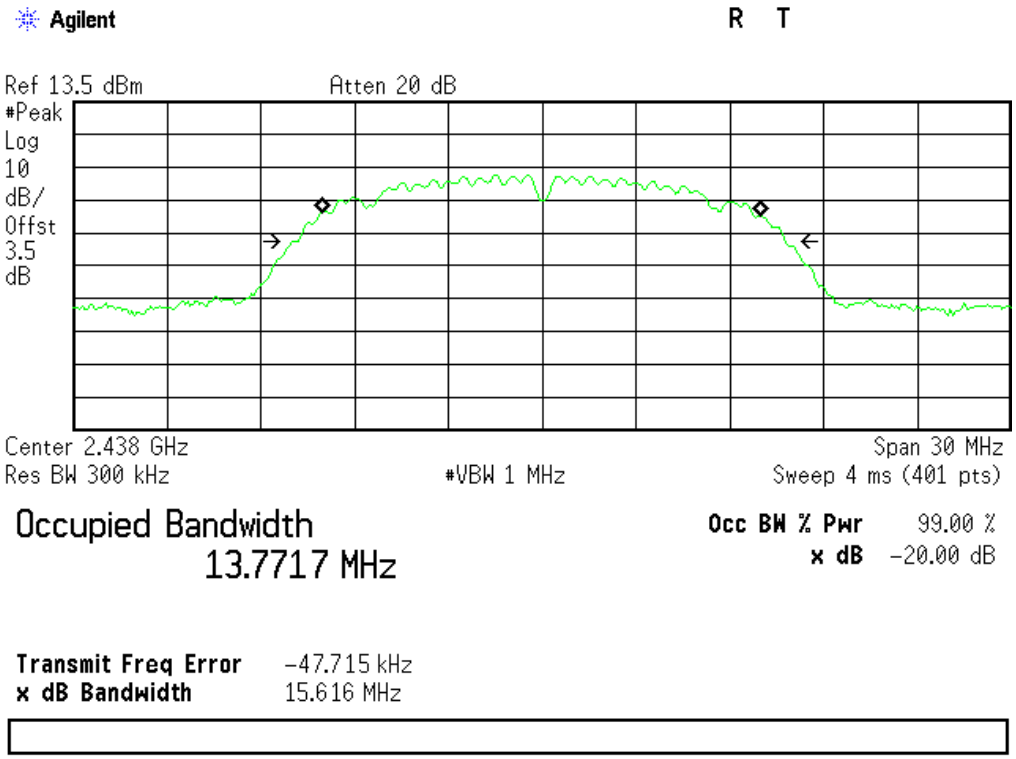


For 2.4GHz Band (Chain 1)

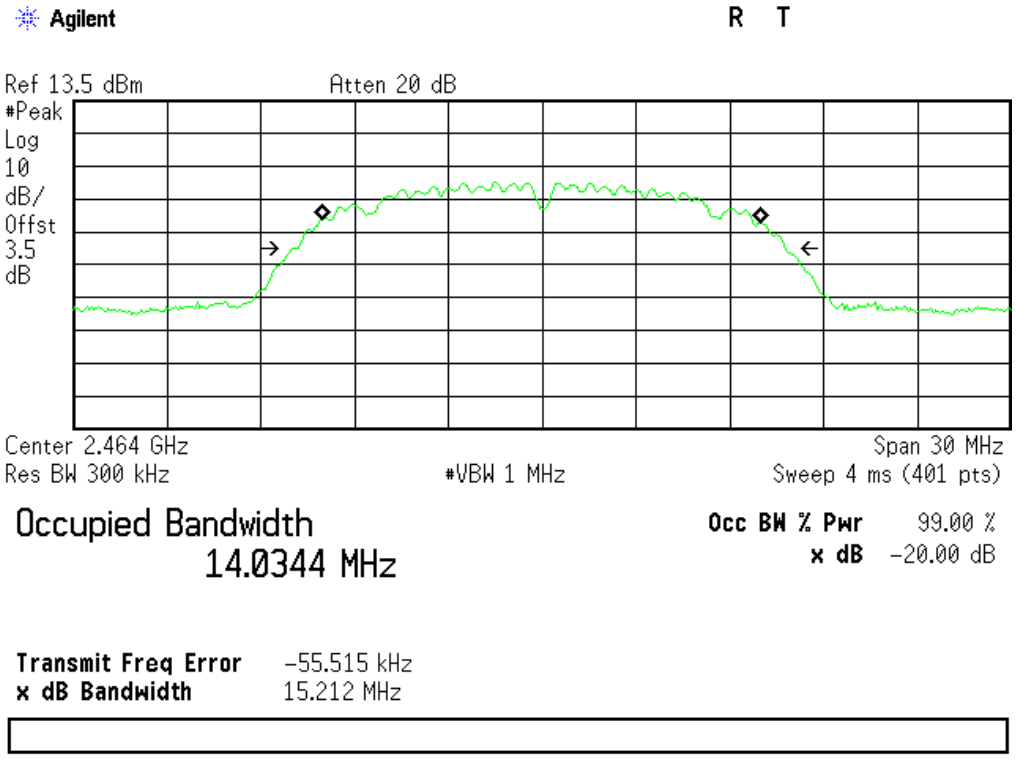
Channel: Low



Channel: Mid

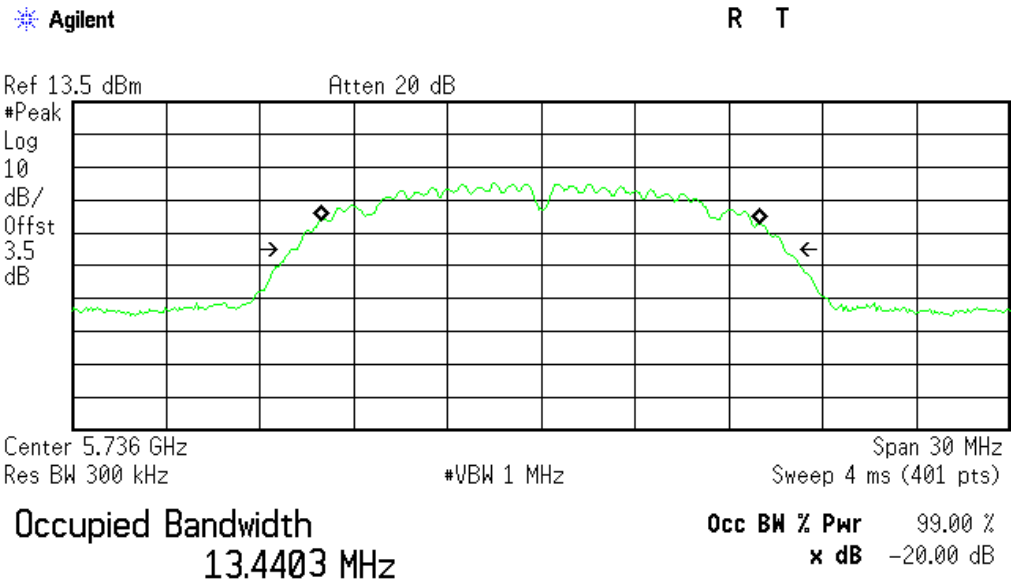


Channel: High

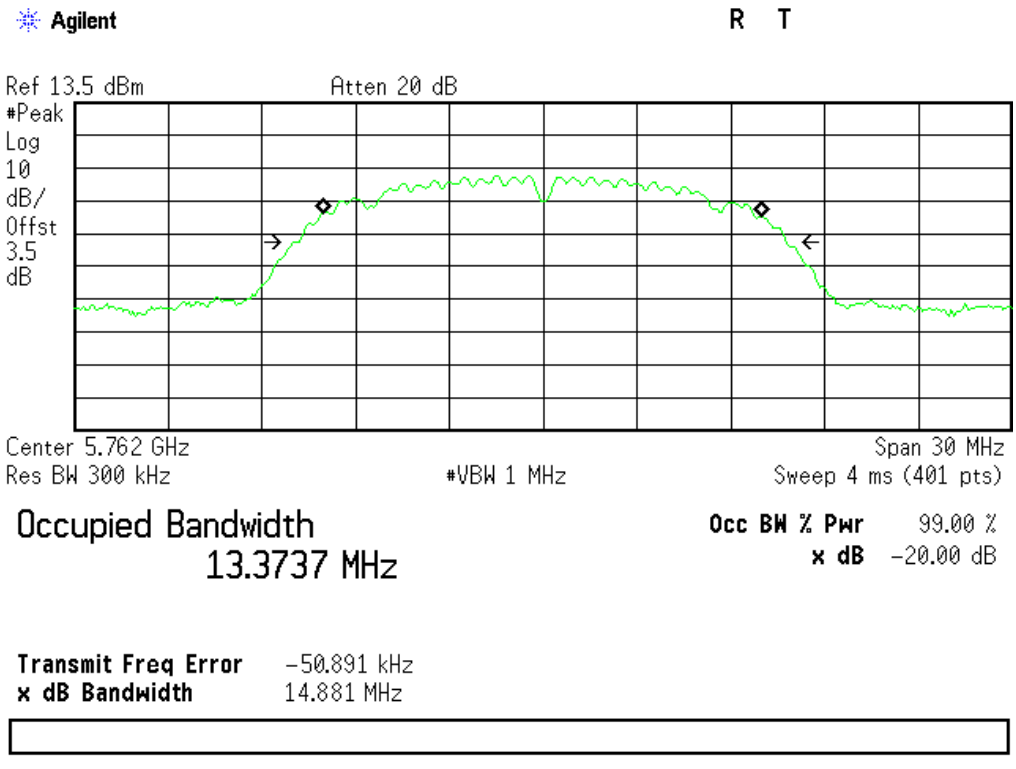


For 5.8GHz Band (Chain 0)

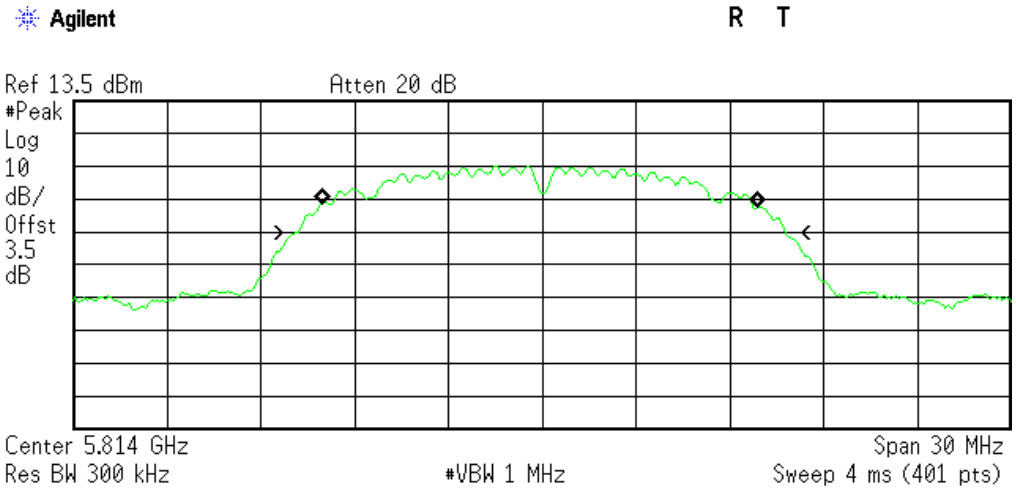
Channel: Low



Channel: Mid

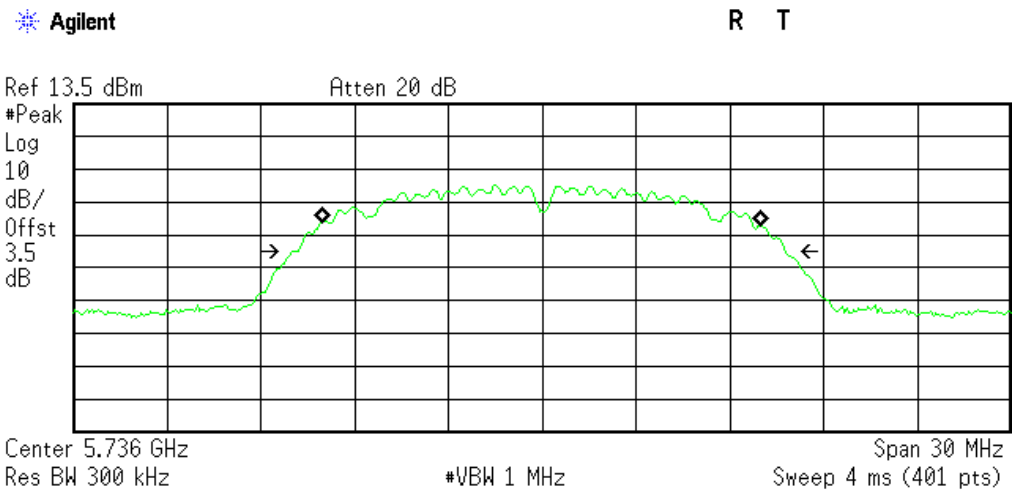


Channel: High

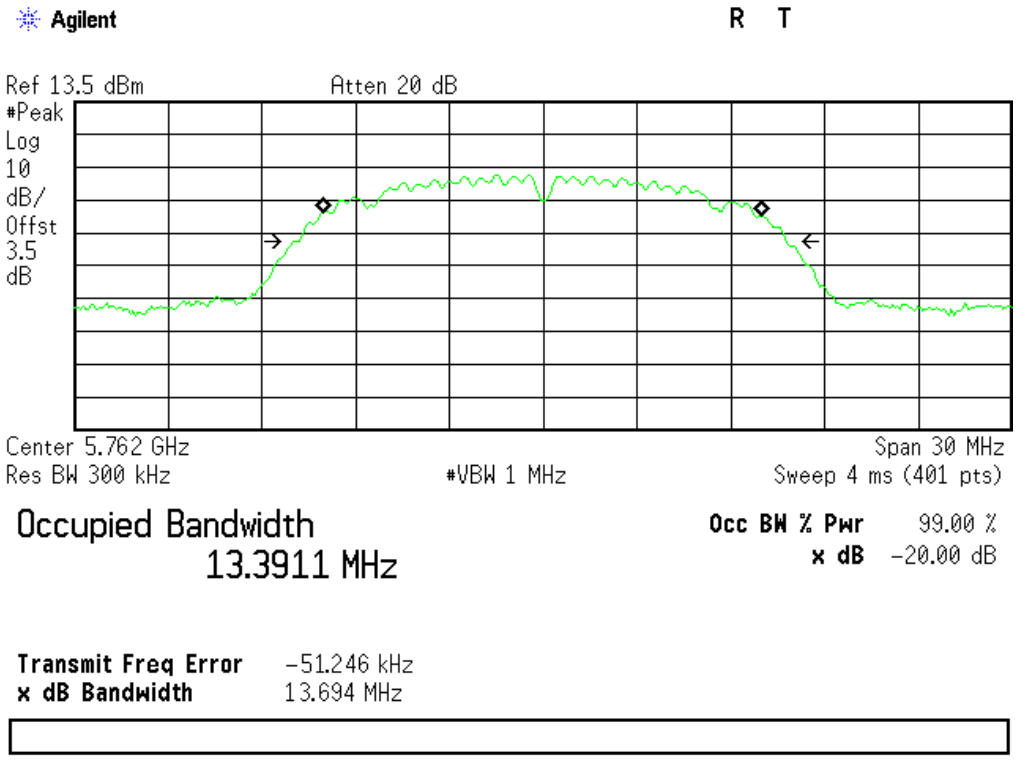


For 5.8GHz Band (Chain 1)

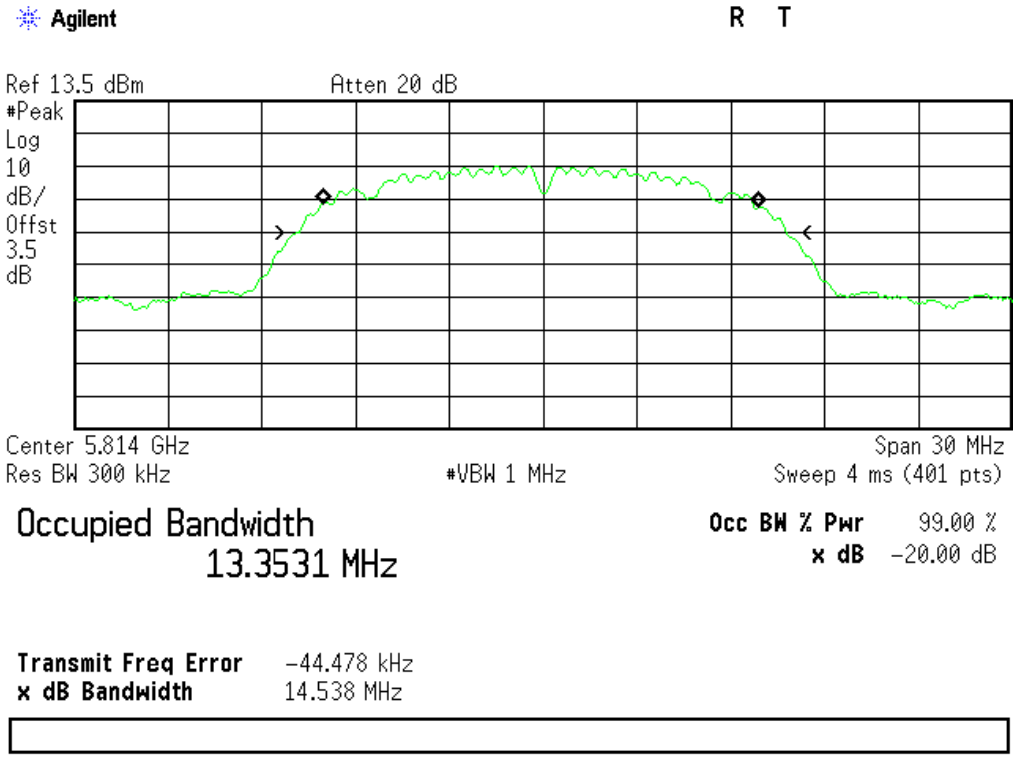
Channel: Low



Channel: Mid



Channel: High



6. 99% Bandwidth

6.1 Test Limit

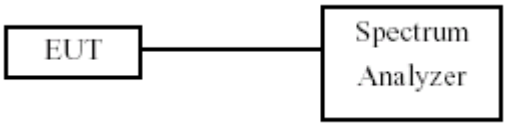
None; for reporting purposes only.

6.2 Test Procedures

a. The transmitter output was connected to the spectrum analyzer.

b. The RBW is set to 1% to 3% of the span, Span greater than RBW.

6.3 Test Setup Layout



6.4 Measurement equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	FSP40	R&S	100324	2012.03.10	2014.03.09

6.5 Test Result and Data

Test Date: 2013-09-30 Temperature: 25℃

Atmospheric pressure: 1020 hPa Humidity: 55%

For 2.4GHz Band (Chain 0)

Channel	Frequency (MHz)	99% Bandwidth (KHz)
Low	2412	13957.10
Mid	2438	13973.30
High	2464	14023.20

For 2.4GHz Band (Chain 1)

Channel	Frequency (MHz)	99% Bandwidth (KHz)
Low	2412	13573.10
Mid	2438	13771.70
High	2464	14034.40

For 5.8GHz Band (Chain 0)

Channel	Frequency (MHz)	99% Bandwidth (KHz)
Low	5736	13440.30
Mid	5762	13373.70
High	5814	13553.10

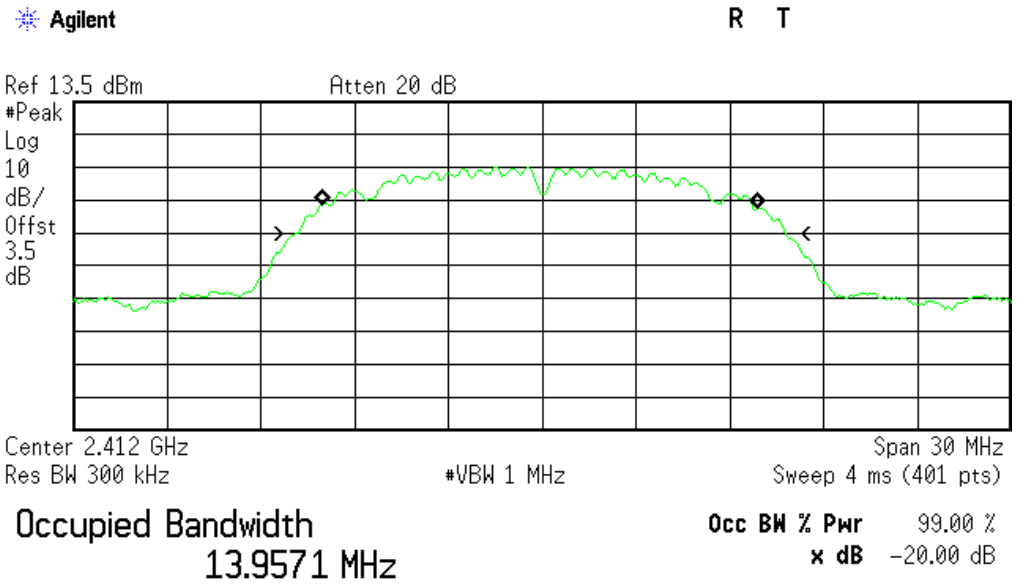
For 5.8GHz Band (Chain 1)

Channel	Frequency (MHz)	99% Bandwidth (KHz)
Low	5736	13013.00
Mid	5762	13391.10
High	5814	13353.10

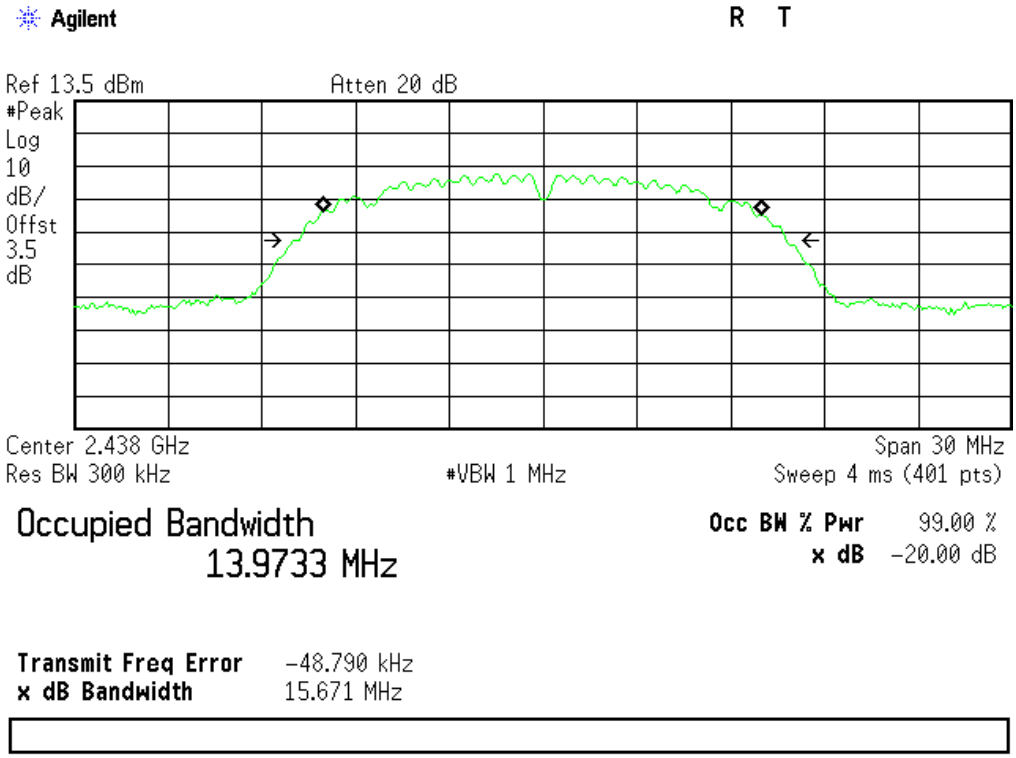
Test Plot

For 2.4GHz Band (Chain 0)

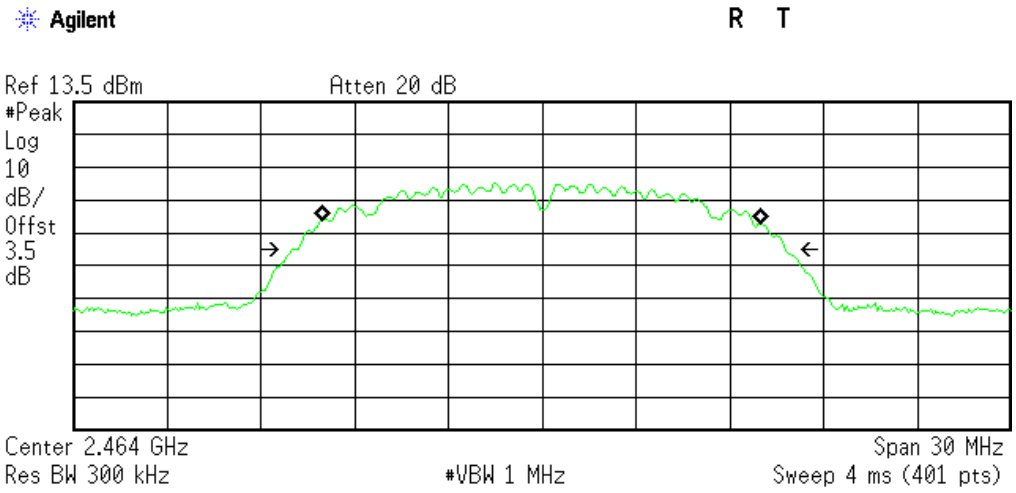
Channel: Low



Channel: Mid

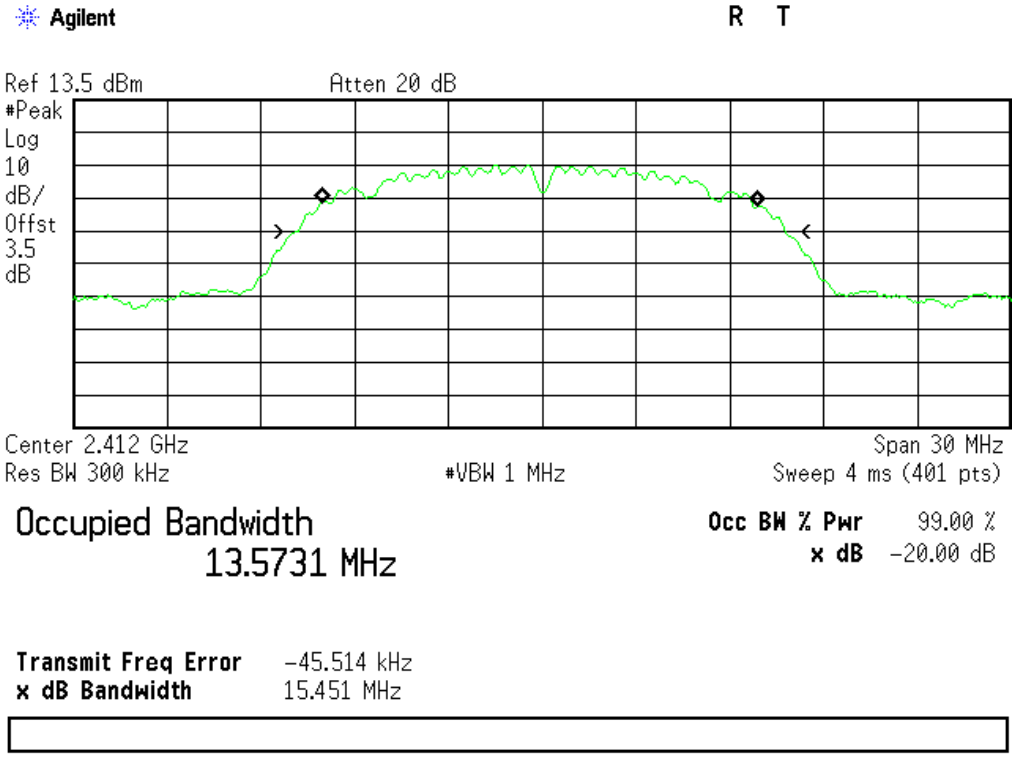


Channel: High

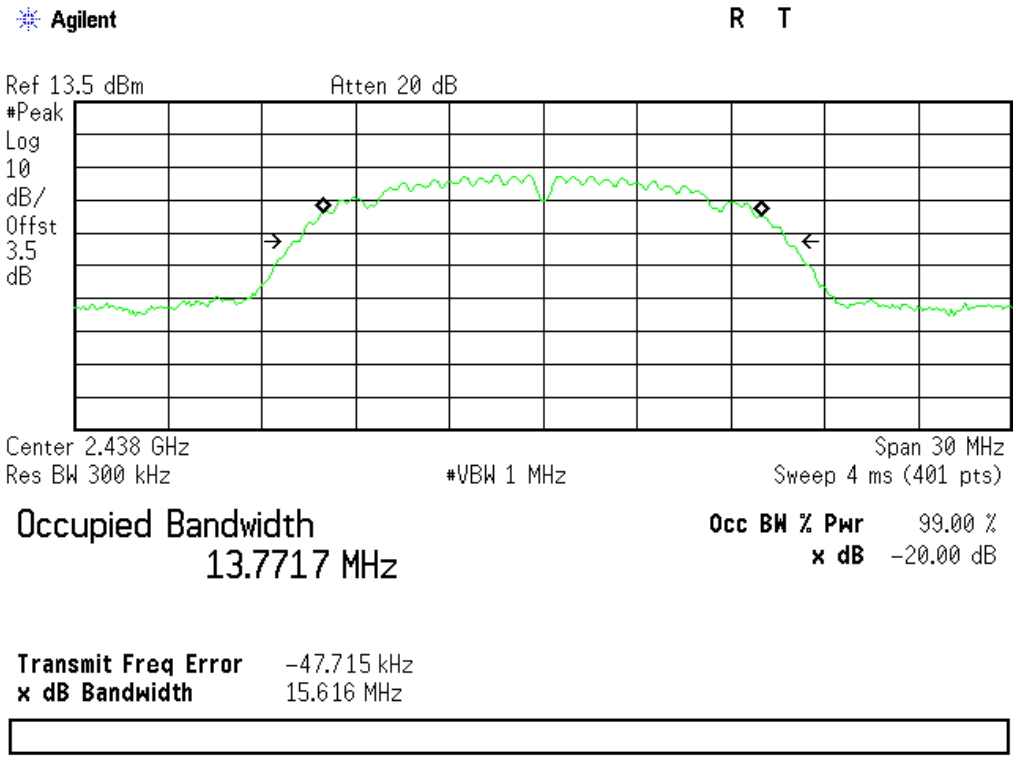


For 2.4GHz Band (Chain 1)

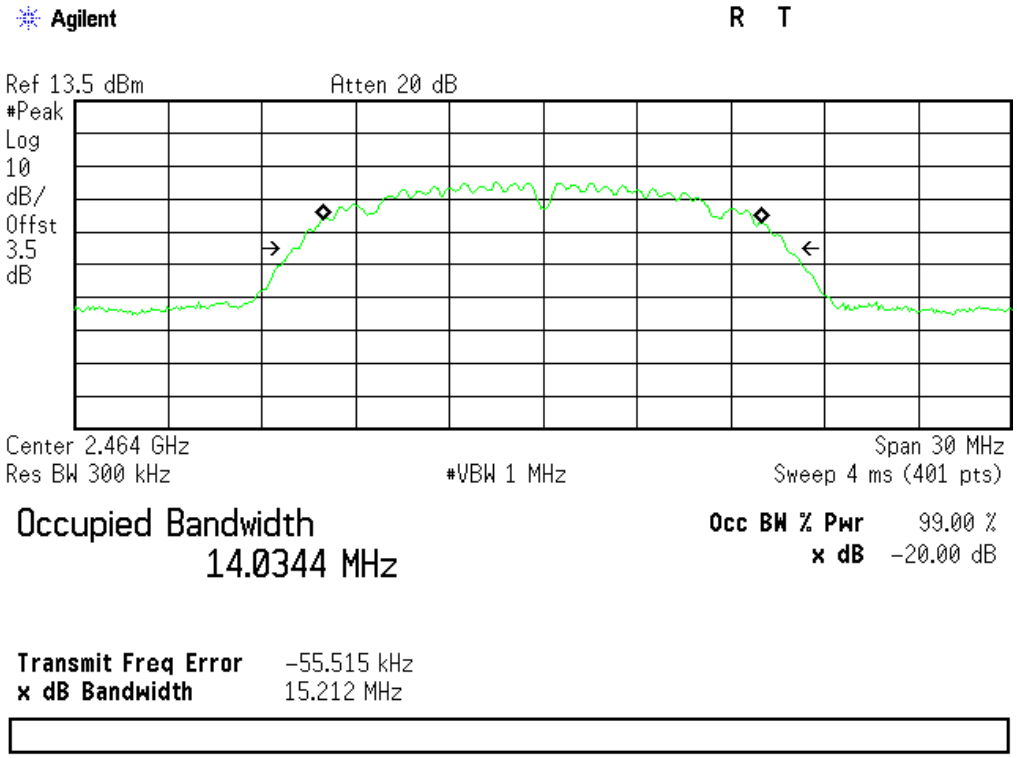
Channel: Low



Channel: Mid

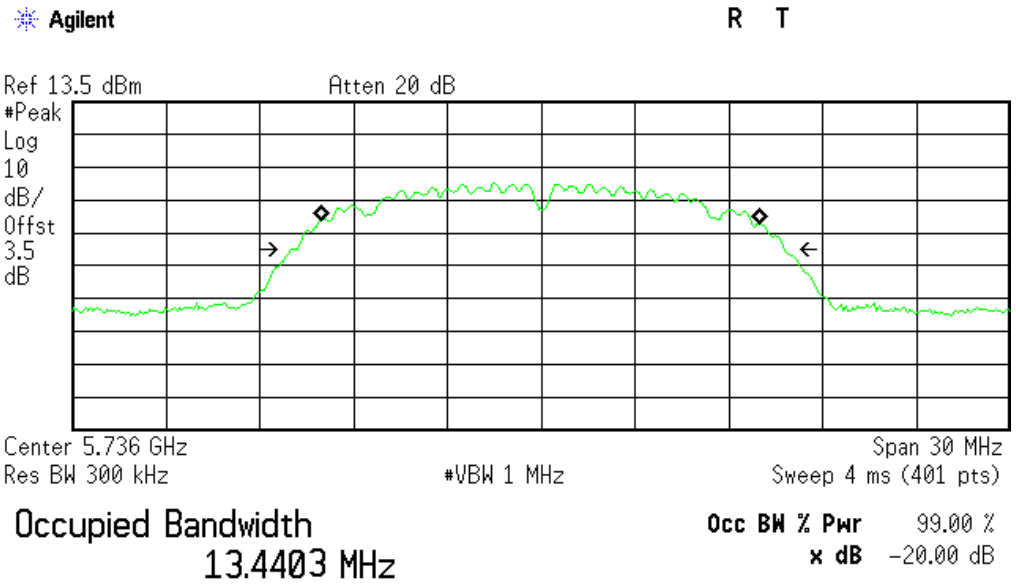


Channel: High

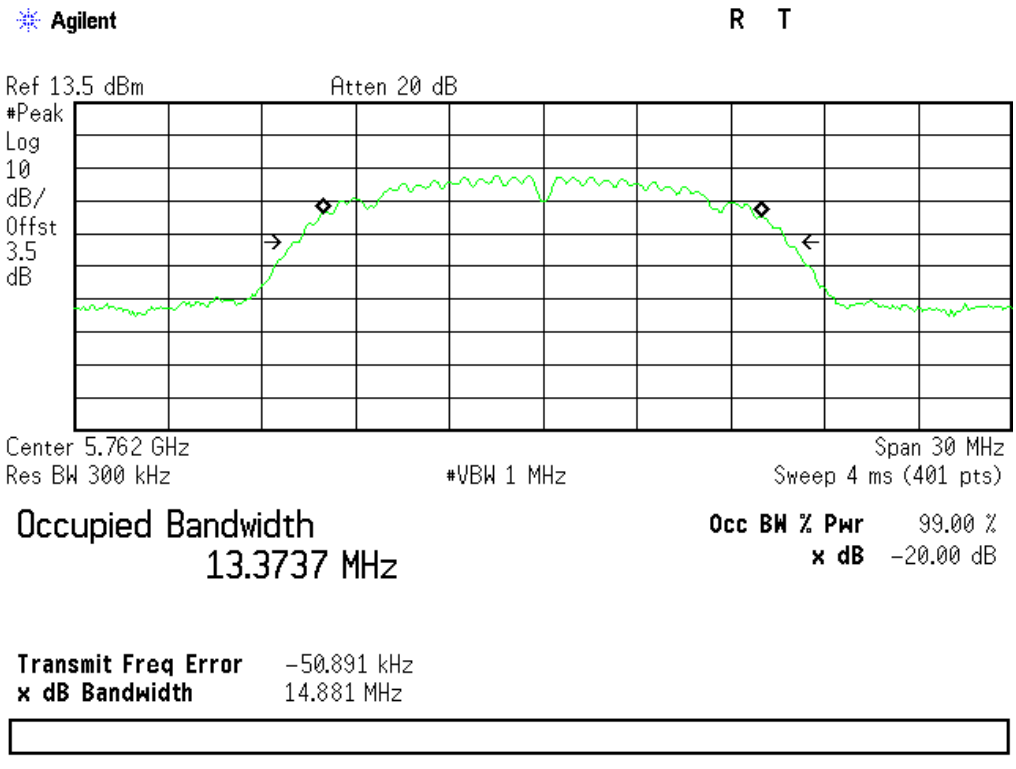


For 5.8GHz Band (Chain 0)

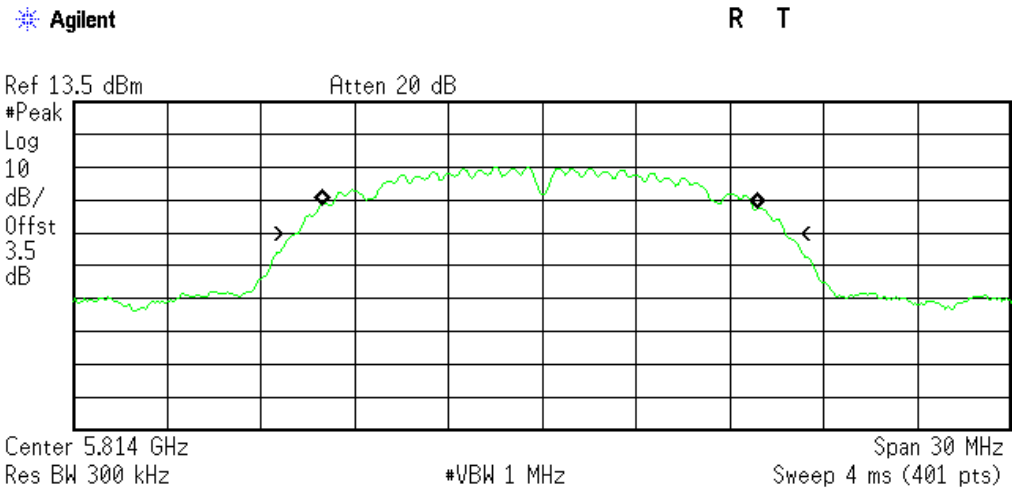
Channel: Low



Channel: Mid

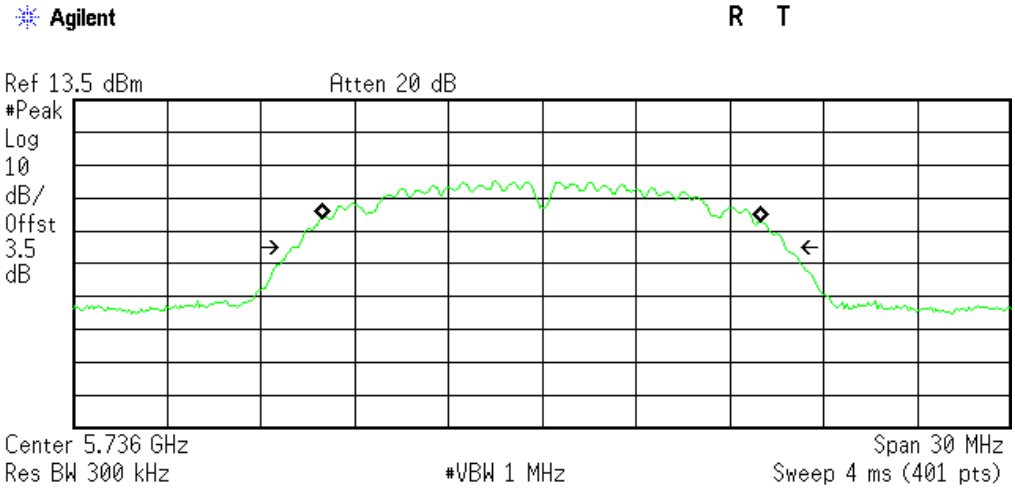


Channel: High

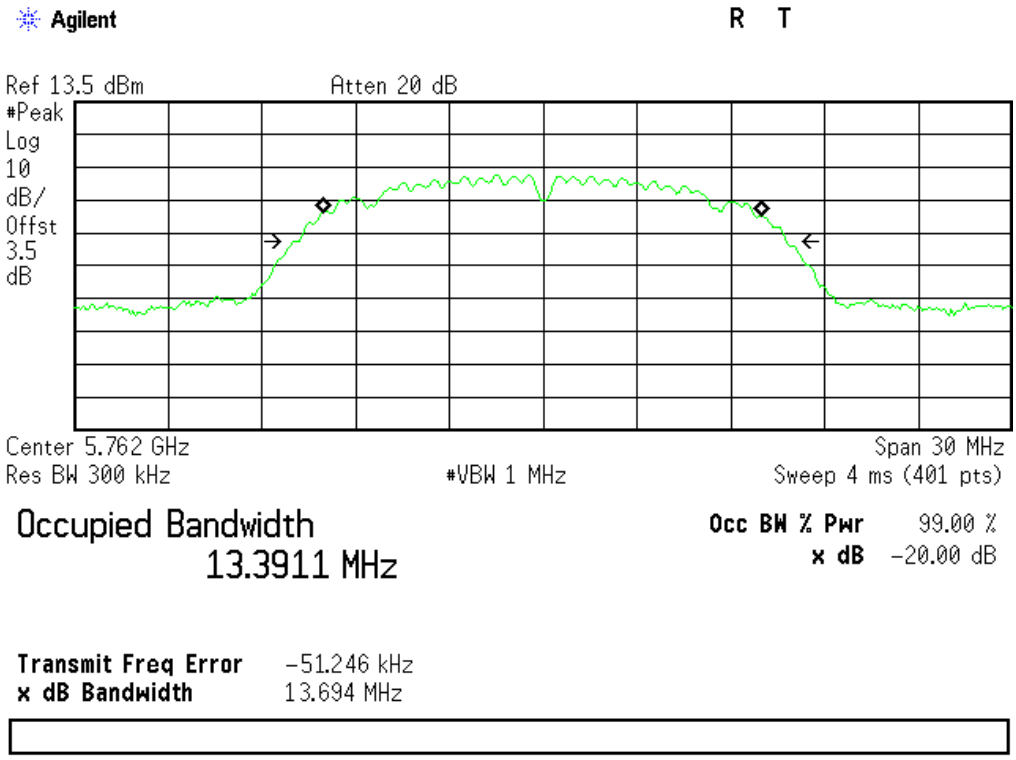


For 5.8GHz Band (Chain 1)

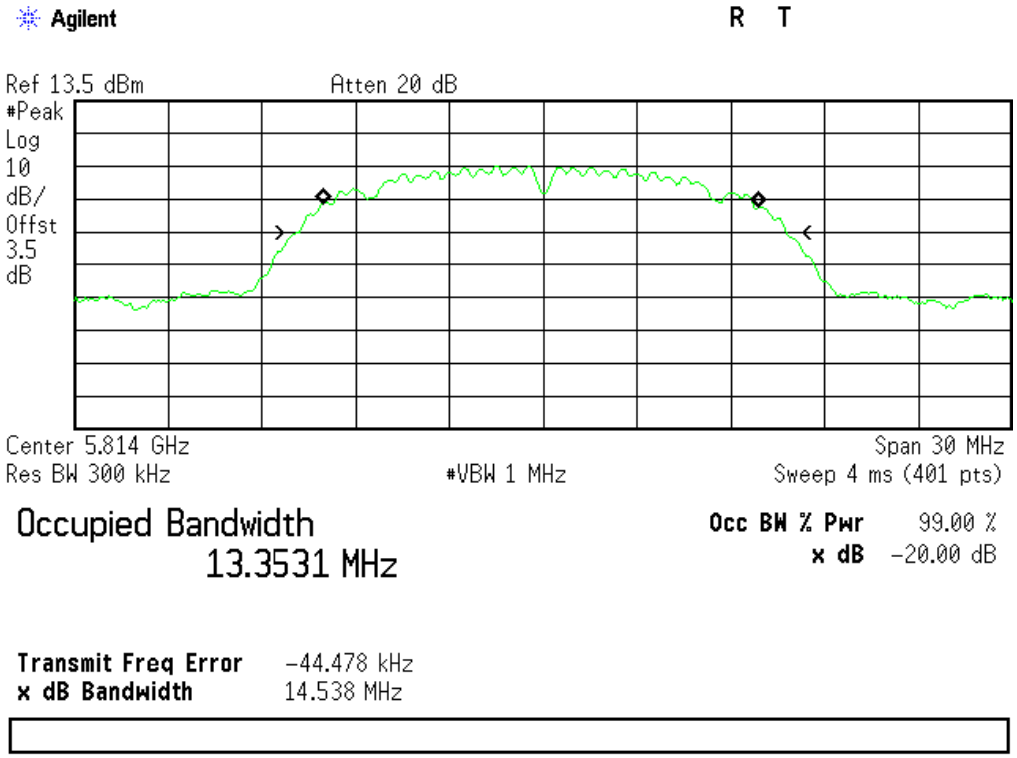
Channel: Low



Channel: Mid



Channel: High



7. Band Edges Measurement

7.1 Test Limit

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

7.2 Test Procedure

1.The EUT is placed on a turntable, which is 0.8m above the ground plane.

2.The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.

3.EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

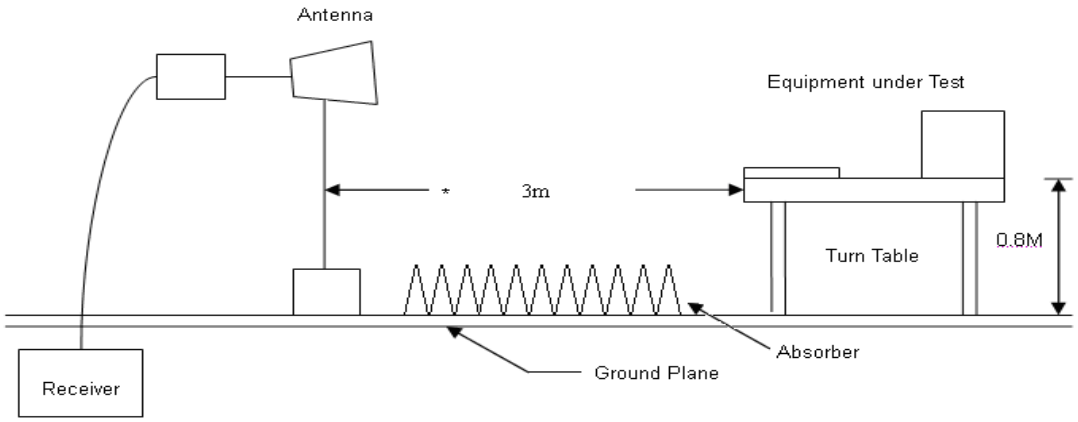
4.Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

(a)PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b)AVERAGE: RBW=1MHz / VBW=510Hz / Sweep=AUTO

5.Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

7.3 Test Setup Layout



7.4 List of Measuring Equipment Used

Instrument	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
EMI Test Receiver	ESCI	R&S	101183	2013.03.10	2014.03.09
H64 Amplifier	8447F	HP	3113A05582	2013.03.10	2014.03.09
Preamplifier	8449B	Agilent	3008A02342	2013.03.10	2014.03.09
Ultra Broadband Antenna	HL562	R&S	100363	2013.05.02	2014.05.01
Broad-Band Horn Antenna	BBHA9120D	Schwarzbeck	9120D-619	2013.05.02	2014.05.01
Spectrum Analyzer	FSP40	R&S	100324	2013.03.10	2014.03.09
Temperature/ Humidity Meter	ZC1-11	Zhicheng	CEP-TH-002	2013.03.10	2014.03.09

7.5 Restrict band emission Measurement Data

Test Date	:	2013-10-18
Temperature	:	23℃
Humidity	:	65%
Atmospheric Pressure	:	1020 hPa

For 2.4GHz Band (Chain 0)

Fundamental Frequency: 2412 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2367.900	1.974	42.325	44.299	-29.701	74.000	PEAK
2	2367.900	1.974	25.112	27.086	-26.914	54.000	AVG
3	2389.950	2.005	50.132	52.137	-21.863	74.000	PEAK
4	2389.950	2.005	34.225	36.230	-17.770	54.000	AVG
5	2390.000	2.005	38.478	40.483	-33.517	74.000	PEAK
6	2390.000	2.005	25.411	27.416	-26.584	54.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2367.900	1.948	39.552	41.500	-32.500	74.000	PEAK
2	2367.900	1.948	26.514	28.462	-25.538	54.000	AVG
3	2389.950	1.839	49.699	51.538	-22.462	74.000	PEAK
4	2389.950	1.839	30.263	32.102	-21.898	54.000	AVG
5	2390.000	1.839	38.442	40.281	-33.719	74.000	PEAK
6	2390.000	1.839	23.156	24.995	-29.005	54.000	AVG

Fundamental Frequency: 2464 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2483.500	1.915	36.655	38.570	-35.430	74.000	PEAK
2	2486.000	1.918	50.236	52.154	-21.846	74.000	PEAK

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2483.500	2.030	36.216	38.246	-35.754	74.000	PEAK
2	2483.500	2.030	23.143	25.173	-28.827	54.000	AVG
3	2486.000	2.030	50.223	52.253	-21.747	74.000	PEAK
4	2486.000	2.030	36.415	38.445	-15.555	54.000	AVG

For 2.4GHz Band (Chain 1)

Fundamental Frequency: 2412 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2389.000	2.005	50.121	52.126	-21.874	74.000	PEAK
2	2389.000	2.005	35.221	37.226	-16.774	54.000	AVG
3	2390.000	2.005	37.458	39.463	-34.537	74.000	PEAK
4	2390.000	2.005	23.036	25.041	-28.959	54.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2389.950	1.839	47.546	49.385	-24.615	74.000	PEAK
2	2389.950	1.839	31.202	33.041	-20.959	54.000	AVG
3	2390.000	1.839	35.552	37.391	-36.609	74.000	PEAK
4	2390.000	1.839	23.184	25.023	-28.977	54.000	AVG

Fundamental Frequency: 2464 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2483.500	2.030	36.526	38.556	-35.444	74.000	PEAK
2	2483.500	2.030	23.315	25.345	-28.655	54.000	AVG
3	2486.000	2.030	50.025	52.055	-21.945	74.000	PEAK
4	2486.000	2.030	37.415	39.445	-14.555	54.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2483.500	1.915	38.524	40.439	-33.561	74.000	PEAK
2	2483.500	1.915	25.214	27.129	-26.871	54.000	AVG
3	2486.000	1.918	50.234	52.152	-21.848	74.000	PEAK
4	2486.000	1.918	37.548	39.466	-14.534	54.000	AVG

For 5.8GHz Band (Chain 0)

Fundamental Frequency: 5736 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5725.000	13.265	42.125	55.390	-18.610	74.000	PEAK
2	5725.000	13.265	29.556	42.821	-11.179	54.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5725.000	13.101	40.212	53.313	-20.687	74.000	PEAK
2	5725.000	13.101	30.325	43.426	-10.574	54.000	AVG

Fundamental Frequency: 5814 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5875.000	14.746	35.623	50.369	-23.631	74.000	PEAK
2	5875.000	14.746	23.335	38.081	-15.919	54.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5875.000	14.867	36.265	51.132	-22.868	74.000	PEAK
2	5875.000	14.867	24.152	39.019	-14.981	54.000	AVG

For 5.8GHz Band (Chain 1)

Fundamental Frequency: 5736 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5725.000	13.265	39.142	52.407	-21.593	74.000	PEAK
2	5725.000	13.265	25.212	38.477	-15.523	54.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5725.000	13.101	40.125	53.226	-20.774	74.000	PEAK
2	5725.000	13.101	23.365	36.466	-17.534	54.000	AVG

Fundamental Frequency: 5814 MHz

VERTICAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5875.000	14.746	35.362	50.108	-23.892	74.000	PEAK
2	5875.000	14.746	28.023	42.769	-11.231	54.000	AVG

HORIZONTAL

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	5875.000	14.867	35.336	50.203	-23.797	74.000	PEAK
2	5875.000	14.867	23.625	38.492	-15.508	54.000	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz

8. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

**: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

8.1 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.