



Spectrum Research & Testing Lab., Inc.

No.167, Ln. 780, Shan-Tong Rd., Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan County 320, Taiwan (R.O.C.)

TEST REPORT

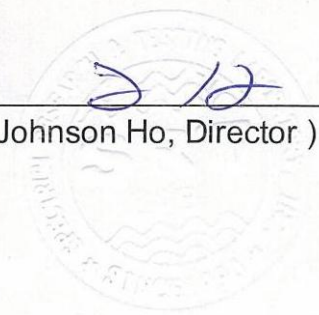
Reference No.: A14031501
Report No.: FCCA14031501
FCC ID : ZME-MLWG2
Page: 1 of 123
Date: Mar. 27, 2014

Product Name: MobileLite WIRELESS G2
Model No.: MLWG2
Applicant: Kingston Digital, Inc.
17600 Newhope Street Fountain Valley, CA 92708, U.S.A
Date of Receipt: Mar. 15, 2014
Finished date of Test: Mar. 27, 2014
Applicable Standards: 47 CFR Part 15, Subpart C, 15.247
ANSI C63.4: 2003
KDB 558074-D01; Oct 2012” The FCC has made this KDB a requirement went testing DTS devices.

We, **Spectrum Research & Testing Laboratory Inc.**, hereby certify that one sample of the above was tested in our laboratory with positive results according to the above-mentioned standards. The records in the report are an accurate account of the results. Details of the results are given in the subsequent pages of this report.

Tested By : Richard Lin , Date: 3/27/2014
(Richard Lin)

Approved By : [Signature] , Date: 3/27/2014
(Johnson Ho, Director)





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Revisions History

Report No.	Issue Date	Revisions
FCCA14031501	Mar. 27, 2014	Initial issue
FCCA14031501	Mar. 27, 2014	1. 4.2 Radiated emission test change (4.2.1 ~ 4.2.5) number. 2. 4.2.2 Test equipment add loop antenna. (P.25) 3. 4.6.2 Test equipment change spectrum analyzer dut date of cal. & cal. center. (P.109) 4. 4.5.6 Band edge test result add test plots. (P.95, 96, 99, 100, 103, 104, 107, 108)



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1. DOCUMENT POLICY AND TEST STATEMENT

1.1 DOCUMENT POLICY

- The report shall not be reproduced except in full, without the written approval of SRT Lab, Inc.

1.2 TEST STATEMENT

- The test results in the report apply only to the unit tested by SRT Lab.
- There was no deviation from the requirements of test standards during the test.
- DC power source, DC 3.8V of charge battery or DC 5.0V from PC USB Port, was used during the test.

1.3 EUT MODIFICATION

- No modification in SRT Lab.



2. DESCRIPTION OF EUT AND TEST MODE

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	MobileLite WIRELESS G2
MODEL NO.	MLWG2
POWER SUPPLY	DC power source, DC 3.8V of charge battery or DC 5.0V from PC USB Port
CABLE	NA
FREQUENCY BAND	2.4 GHz ~ 2.4835 GHz
CARRIER FREQUENCY	2.412 GHz ~ 2.462 GHz
NUMBER OF CHANNEL	11 (802.11b/g/n – HT20) 7 (802.11n – HT40)
RATED RF OUTPUT POWER	2.4 GHz 802.11b : 6.69 dBm (4.67 mW) 802.11g : 6.55 dBm (4.52 mW) 802.11n – HT20 : 6.42 dBm (4.39 mW) 802.11n – HT40 : 3.01 dBm (2.00 mW)
MODULATION TYPE	IEEE802.11b/g/n – HT20/n – HT40 SISO-OFDM (BPSK/16QAM/64QAM)
MODE OF OPERATION	Duplex
BIT RATE OF TRANSMISSION	802.11b : 1, 2, 5.5, 11 Mbps; 802.11g : 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n - HT20 : MCS0 ~ MCS7 (Max. 72.2 Mbps) 802.11n - HT40 : MCS0 ~ MCS7 (Max. 150 Mbps)
ANTENNA TYPE	PCB Printed Antenna
ANTENNA GAIN	-0.83 dBi
CHANNEL BANDWIDTH	20/40 MHz

NOTE:

For more detailed information, please refer to the EUT's specification or user's manual provided by manufacturer.



2.2 DESCRIPTION OF EUT INTERNAL DEVICE

DEVICE	BRAND / MAKER	MODEL #	FCC ID / DOC	REMARK
Micro USB Cable	N/A	N/A	N/A	0.5m unshielded power cable
Internal Battery	Sanyo	GT-4640	N/A	DC 3.8 V, 4640 mAh

2.3 DESCRIPTION OF TEST MODE

11 channels are provided by EUT of wireless. The 3 channels of lower, medium and higher were chosen for test. There are test modes for each test configuration as below:

Mode	Modulation Type	Channel	Frequency (MHz)	
1	802.11b	CCK	CH01	2412
2		QPSK	CH06	2437
3		BPSK	CH11	2462
4	802.11g	64QAM (OFDM)	CH01	2412
5			CH06	2437
6			CH11	2462
7	802.11n – HT20	64QAM (OFDM)	CH01	2412
8			CH06	2437
9			CH11	2462
10	802.11n – HT40	64QAM SISO-(OFDM)	CH05	2422
11			CH08	2437
12			CH11	2452

NOTE:

- Below 1 GHz, the channel 1, 6 and 11 were pre-tested in chamber and chosen the worst case for conducted and radiated emission test.
- Above 1 GHz, the channel 1, 6 and 11 were tested individually.
- The axis X,Y and Z we evaluate in chamber, the X axis is worst case.

X axis:

Y axis:

Z axis:





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2.4 DESCRIPTION OF SUPPORT UNIT

The EUT was configured by the requirement of ANSI C63.4:2003. All interface ports were connected to the appropriate support units via specific cables. The support units and cables are listed below.

NO	DEVICE	BRAND	MODEL #	FCC ID/DOC	CABLE
1	PC	ASUS	AS-D755	DoC	1.5m unshielded power cable
2	LCD Monitor	ASUS	MM17D	DoC	1.8m unshielded power cord 1.5m shielded data cable. with one core.
3	Keyboard	WinTEK	WM530	DoC	1.8m unshielded data cable.
4	Mouse	WinTEK	WSS30	DoC	1.5m unshielded data cable.
5	Modem	ACEEX	DM-1414	DoC	1.5m unshielded power cord 1.5m shielded data cable.
6	Printer	EPSON	STYLUS C20SX	N/A	1.5m unshielded power cord 1.2m shielded data cable.
7	USB-serial cable	Acroname Inc.	S27-USB-SERIAL	DoC	0.3m unshielded data cord 1.8m shielded data cable.
8	SD Card	SanDisk	N/A	N/A	4GB
9	USB Storage	Kingston	N/A	N/A	8GB

NOTE:

For the actual test configuration, please refer to the photos of testing.

2.5 EUT OPERATING CONDITION

1. Setup the EUT and all peripheral devices .
2. Turn on the power of all equipment and EUT.
3. Based on customer provided continuous program & Program instructions.
4. Set the EUT under continuous transmission mode.



3. DESCRIPTION OF APPLIED STANDARDS

The EUT is a wireless product. According to the specifications provided by the applicant, it must comply with the requirements of the following standards:

47 CFR Part 15, Subpart C, 15.247

ANSI C63.4: 2003

KDB 558074-D01; Oct 2012” The FCC has made this KDB a requirement went testing DTS devices.

All tests have been performed and recorded as the above standards.

3.1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

STANDARD SECTION	TEST TYPE AND LIMIT RESULTS	RESULTS
15.203	Antenna requirement Limit : max. 6dBi	PASS
15.207	AC Power Conducted Emission	PASS
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit : min. 500kHz	PASS
15.247(b)	Maximum Peak Conducted Output Power Limit: max. 30dBm	PASS
15.247(d)	Transmitter Radiated Emissions Limit: Table 15.209	PASS
15.247(e)	Power Density Limit: max. 8dBm	PASS
15.247(d)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS



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4.1 CONDUCTED EMISSION TEST

4.1.1 LIMIT

Frequency (MHz)	Class A (dB μ V)		Class B (dB μ V)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.1.2 TEST EQUIPMENT

The following test equipment was used for the test:

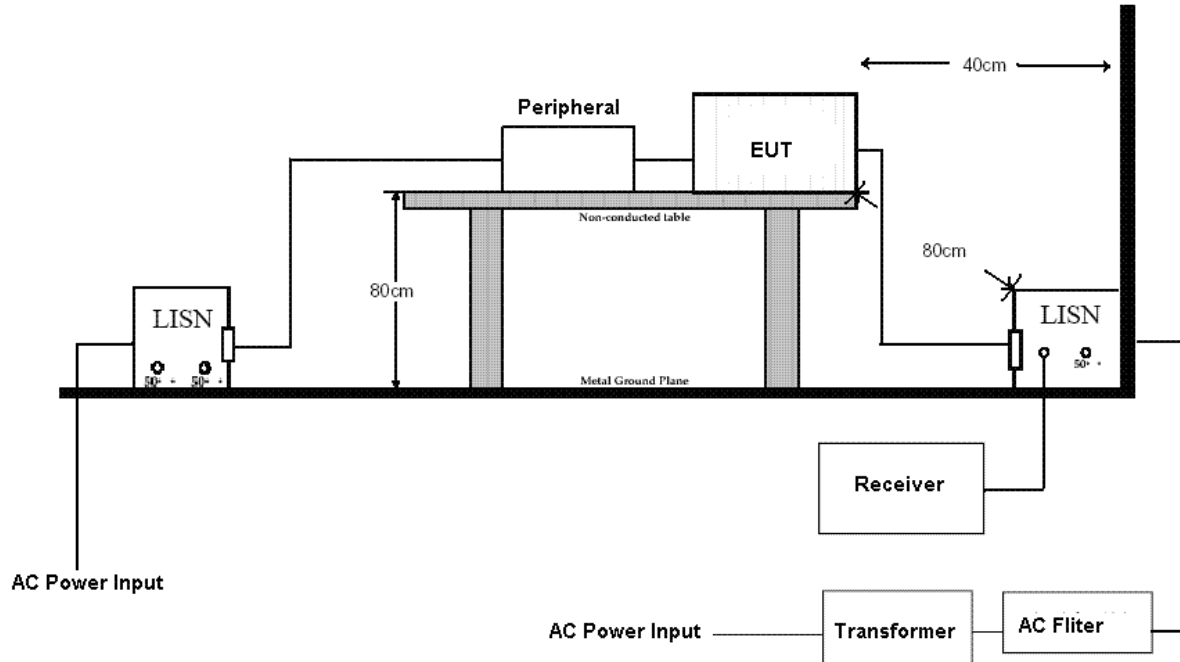
EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DUE DATE OF CAL. & CAL. CENTER
EMI TEST RECEIVER	9 kHz ~ 2.75 GHz	ROHDE & SCHWARZ	ESCS30 / 100376	JAN. 12, 2015 ETC
EMI TEST RECEIVER	9 kHz ~ 30 MHz	ROHDE & SCHWARZ	ESHS30 / 826003/008	JAN. 21, 2015 ETC
LISN	50 μ H, 50 ohm	FCC	FCC-LISN-50-25-2 / 01017	JUN. 16, 2014 ETC
LISN	50 μ H, 50 ohm	SOLAR	9252-50-R-24-BNC/ 951315	NOV. 13, 2014 ETC
LISN	50 μ H, 50 ohm	EMCO	3825/2/ 9204-1952	MAY 30, 2014 ETC
50 Ω BNC TYPE TERMINATOR	50 ohm	N/A	11593A/ L1TEQU005	DEC. 08, 2014 ETC
50 Ω BNC TYPE TERMINATOR	50 ohm	N/A	B00-CD-357/ L1TEQU009	JUN. 17, 2014 ETC
COAXIAL CABLE	5 m	HUBER+SUHNER	RG214/U / #5M(L1TCAB013)	MAY. 21, 2014 ETC
FILTER	2 LINE, 30 A	FIL.COIL	FC-943 / 771	NCR
GROUND PLANE	2 m (H) x 3 m (W)	SRT	N/A	NCR
GROUND PLANE	2.5 m (H) x 3 m (W)	SRT	N/A	NCR
PULSE LIMITER	9 kHz ~ 30 MHz Insertion Loss= 10dB \pm 0.3dB	ROHDE & SCHWARZ	ESH3Z2/ L1TTES010	JAN. 02, 2015 ETC

NOTE:

The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.



4.1.3 TEST SETUP



NOTE :

1. The EUT was put on a wooden table with 0.8m heights above ground plane, and 0.4m away from reference ground plane (> 2mx2m).
2. For the actual test configuration, please refer to the photos of testing.

4.1.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.4:2003 and CISPR22:2003. The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm/50 μ H as specified. All readings were quasi-peak and average values with 10 kHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. Both lines of the power mains of EUT were measured and the cables connected to EUT and support units were moved to find the maximum emission levels for each frequency. First, find the margin or higher points at least 6 points by software, then use manual to find the maximum data. The procedure is referred on the test procedure of SRT LAB.



4.1.5 TEST RESULT

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11b_CH01
Receiver Detector:	Q.P. and AV.	Modulation Type:	QPSK
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	38.39	36.62	38.38	36.61	59.09	49.09	-20.71	-12.48
0.348	-0.01	38.79	37.16	38.78	37.15	59.01	49.01	-20.23	-11.86
2.725	-0.01	36.31	34.57	36.30	34.56	56.00	46.00	-19.70	-11.44
14.480	0.22	38.87	31.70	39.09	31.92	60.00	50.00	-20.91	-18.08
14.754	0.23	40.61	33.08	40.84	33.31	60.00	50.00	-19.16	-16.69
15.287	0.23	38.86	31.78	39.09	32.01	60.00	50.00	-20.91	-17.99

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.606	-0.01	31.56	30.92	31.55	30.91	56.00	46.00	-24.45	-15.09
2.725	0.02	36.37	34.21	36.39	34.23	56.00	46.00	-19.61	-11.77
4.764	0.06	33.80	31.86	33.86	31.92	56.00	46.00	-22.14	-14.08
14.399	0.28	36.67	29.30	36.95	29.58	60.00	50.00	-23.05	-20.42
14.500	0.28	37.27	29.55	37.55	29.83	60.00	50.00	-22.45	-20.17
15.307	0.30	37.59	32.58	37.89	32.88	60.00	50.00	-22.11	-17.12

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
 Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.



TEST REPORT

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11b_CH06
Receiver Detector:	Q.P. and AV.	Modulation Type:	QPSK
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	38.55	36.22	38.54	36.21	59.09	49.09	-20.55	-12.88
0.348	-0.01	39.62	38.27	39.61	38.26	59.01	49.01	-19.40	-10.75
3.932	0.01	34.25	33.03	34.26	33.04	56.00	46.00	-21.74	-12.96
4.992	0.03	33.92	32.77	33.95	32.80	56.00	46.00	-22.05	-13.20
14.896	0.23	40.75	33.32	40.98	33.55	60.00	50.00	-19.02	-16.45
15.123	0.23	40.93	33.78	41.16	34.01	60.00	50.00	-18.84	-15.99

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.606	-0.01	31.70	31.05	31.69	31.04	56.00	46.00	-24.31	-14.96
2.794	0.02	34.23	32.25	34.25	32.27	56.00	46.00	-21.75	-13.73
4.764	0.06	34.60	33.35	34.66	33.41	56.00	46.00	-21.34	-12.59
14.835	0.29	36.73	29.97	37.02	30.26	60.00	50.00	-22.98	-19.74
14.967	0.29	36.40	29.60	36.69	29.89	60.00	50.00	-23.31	-20.11
15.021	0.29	35.90	28.87	36.19	29.16	60.00	50.00	-23.81	-20.84

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
 Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

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Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11b_CH11
Receiver Detector:	Q.P. and AV.	Modulation Type:	QPSK
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBµV)		Emission Level (dBµV)		Limit (dBµV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	38.99	37.64	38.98	37.63	59.09	49.09	-20.11	-11.46
0.348	-0.01	39.56	38.09	39.55	38.08	59.01	49.01	-19.46	-10.93
3.932	0.01	34.45	33.44	34.46	33.45	56.00	46.00	-21.54	-12.55
14.845	0.23	38.88	31.42	39.11	31.65	60.00	50.00	-20.89	-18.35
15.008	0.23	38.23	31.49	38.46	31.72	60.00	50.00	-21.54	-18.28
15.226	0.23	40.26	33.45	40.49	33.68	60.00	50.00	-19.51	-16.32

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBµV)		Emission Level (dBµV)		Limit (dBµV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.606	-0.01	31.99	31.32	31.98	31.31	56.00	46.00	-24.02	-14.69
3.932	0.04	34.79	33.86	34.83	33.90	56.00	46.00	-21.17	-12.10
4.764	0.06	34.34	33.24	34.40	33.30	56.00	46.00	-21.60	-12.70
14.947	0.29	35.89	29.34	36.18	29.63	60.00	50.00	-23.82	-20.37
14.957	0.29	35.87	29.04	36.16	29.33	60.00	50.00	-23.84	-20.67
15.041	0.29	36.11	28.91	36.40	29.20	60.00	50.00	-23.60	-20.80

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.



TEST REPORT

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11g_CH01
Receiver Detector:	Q.P. and AV.	Modulation Type:	OFDM
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB μ V)		Emission Level (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	38.23	36.33	38.22	36.32	59.09	49.09	-20.87	-12.77
0.348	-0.01	38.77	37.31	38.76	37.30	59.01	49.01	-20.25	-11.71
2.725	-0.01	36.23	33.84	36.22	33.83	56.00	46.00	-19.78	-12.17
3.932	0.01	34.67	33.27	34.68	33.28	56.00	46.00	-21.32	-12.72
8.552	0.11	35.92	29.33	36.03	29.44	60.00	50.00	-23.97	-20.56
20.084	0.32	44.15	32.80	44.47	33.12	60.00	50.00	-15.53	-16.88

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB μ V)		Emission Level (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.606	-0.01	31.95	31.33	31.94	31.32	56.00	46.00	-24.06	-14.68
3.932	0.04	35.40	34.05	35.44	34.09	56.00	46.00	-20.56	-11.91
4.764	0.06	34.82	33.58	34.88	33.64	56.00	46.00	-21.12	-12.36
8.319	0.15	35.48	32.95	35.63	33.10	60.00	50.00	-24.37	-16.90
8.471	0.15	35.85	33.24	36.00	33.39	60.00	50.00	-24.00	-16.61
20.135	0.40	44.13	32.21	44.53	32.61	60.00	50.00	-15.47	-17.39

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
 Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

**Spectrum Research & Testing Lab., Inc.**

No.167, Ln. 780, Shan-Tong Rd., Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan County 320, Taiwan (R.O.C.)

TEST REPORTReference No.: A14031501
Report No.: FCCA14031501
FCC ID : ZME-MLWG2
Page: 16 of 123
Date: Mar. 27, 2014

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11g_CH06
Receiver Detector:	Q.P. and AV.	Modulation Type:	OFDM
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB μ V)		Emission Level (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	39.34	37.63	39.33	37.62	59.09	49.09	-19.76	-11.47
0.348	-0.01	39.70	38.17	39.69	38.16	59.01	49.01	-19.32	-10.85
4.764	0.03	34.42	33.00	34.45	33.03	56.00	46.00	-21.55	-12.97
4.992	0.03	33.92	32.85	33.95	32.88	56.00	46.00	-22.05	-13.12
8.471	0.11	35.67	33.22	35.78	33.33	60.00	50.00	-24.22	-16.67
20.135	0.32	41.32	30.49	41.64	30.81	60.00	50.00	-18.36	-19.19

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB μ V)		Emission Level (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	0.02	38.45	36.83	38.47	36.85	59.09	49.09	-20.62	-12.24
0.348	0.02	38.31	36.66	38.33	36.68	59.01	49.01	-20.68	-12.33
0.606	-0.01	31.75	31.10	31.74	31.09	56.00	46.00	-24.26	-14.91
3.932	0.04	34.79	33.72	34.83	33.76	56.00	46.00	-21.17	-12.24
4.160	0.04	33.88	32.90	33.92	32.94	56.00	46.00	-22.08	-13.06
16.107	0.31	42.29	28.09	42.60	28.40	60.00	50.00	-17.40	-21.60

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

**Spectrum Research & Testing Lab., Inc.**

No.167,Ln. 780, Shan-Tong Rd.,Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan County 320, Taiwan (R.O.C.)

TEST REPORTReference No.: A14031501
Report No.: FCCA14031501
FCC ID : ZME-MLWG2
Page: 17 of 123
Date: Mar. 27, 2014

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11g_CH11
Receiver Detector:	Q.P. and AV.	Modulation Type:	OFDM
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	40.39	38.18	40.38	38.17	59.09	49.09	-18.71	-10.92
0.348	-0.01	40.93	39.03	40.92	39.02	59.01	49.01	-18.09	-9.99
3.932	0.01	34.07	33.25	34.08	33.26	56.00	46.00	-21.92	-12.74
4.764	0.03	33.82	32.52	33.85	32.55	56.00	46.00	-22.15	-13.45
13.516	0.21	35.02	32.51	35.23	32.72	60.00	50.00	-24.77	-17.28
16.056	0.25	41.90	31.91	42.15	32.16	60.00	50.00	-17.85	-17.84

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.300	0.02	38.39	34.50	38.41	34.52	60.25	50.25	-21.84	-15.73
0.345	0.02	37.46	35.89	37.48	35.91	59.09	49.09	-21.61	-13.18
2.794	0.02	35.98	34.21	36.00	34.23	56.00	46.00	-20.00	-11.77
4.764	0.06	33.96	32.61	34.02	32.67	56.00	46.00	-21.98	-13.33
8.542	0.15	35.58	32.97	35.73	33.12	60.00	50.00	-24.27	-16.88
20.135	0.40	41.38	29.47	41.78	29.87	60.00	50.00	-18.22	-20.13

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

**Spectrum Research & Testing Lab., Inc.**

No.167, Ln. 780, Shan-Tong Rd., Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan County 320, Taiwan (R.O.C.)

TEST REPORTReference No.: A14031501
Report No.: FCCA14031501
FCC ID : ZME-MLWG2
Page: 18 of 123
Date: Mar. 27, 2014

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11n – HT20_CH01
Receiver Detector:	Q.P. and AV.	Modulation Type:	OFDM
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	40.73	39.32	40.72	39.31	59.09	49.09	-18.37	-9.78
0.348	-0.01	40.37	37.94	40.36	37.93	59.01	49.01	-18.65	-11.08
2.794	-0.01	35.64	33.88	35.63	33.87	56.00	46.00	-20.37	-12.13
3.932	0.01	33.77	32.87	33.78	32.88	56.00	46.00	-22.22	-13.12
8.238	0.11	35.30	32.79	35.41	32.90	60.00	50.00	-24.59	-17.10
16.056	0.25	41.43	31.20	41.68	31.45	60.00	50.00	-18.32	-18.55

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	0.02	39.30	37.50	39.32	37.52	59.09	49.09	-19.77	-11.57
0.348	0.02	39.62	37.97	39.64	37.99	59.01	49.01	-19.37	-11.02
0.606	-0.01	31.46	30.81	31.45	30.80	56.00	46.00	-24.55	-15.20
2.794	0.02	36.15	34.54	36.17	34.56	56.00	46.00	-19.83	-11.44
3.932	0.04	34.07	33.12	34.11	33.16	56.00	46.00	-21.89	-12.84
20.187	0.40	39.50	26.69	39.90	27.09	60.00	50.00	-20.10	-22.91

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.



TEST REPORT

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11n – HT20_CH06
Receiver Detector:	Q.P. and AV.	Modulation Type:	OFDM
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB μ V)		Emission Level (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	41.42	39.68	41.41	39.67	59.09	49.09	-17.68	-9.42
0.348	-0.01	41.32	39.33	41.31	39.32	59.01	49.01	-17.70	-9.69
2.794	-0.01	35.18	33.80	35.17	33.79	56.00	46.00	-20.83	-12.21
3.932	0.01	33.40	31.84	33.41	31.85	56.00	46.00	-22.59	-14.15
8.238	0.11	35.24	33.15	35.35	33.26	60.00	50.00	-24.65	-16.74
17.029	0.27	36.83	29.65	37.10	29.92	60.00	50.00	-22.90	-20.08

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB μ V)		Emission Level (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	0.02	38.13	36.49	38.15	36.51	59.09	49.09	-20.94	-12.58
0.348	0.02	37.97	35.86	37.99	35.88	59.01	49.01	-21.02	-13.13
0.606	-0.01	31.46	30.81	31.45	30.80	56.00	46.00	-24.55	-15.20
2.794	0.02	36.15	34.74	36.17	34.76	56.00	46.00	-19.83	-11.24
3.853	0.04	33.50	32.29	33.54	32.33	56.00	46.00	-22.46	-13.67
16.056	0.31	37.75	26.32	38.06	26.63	60.00	50.00	-21.94	-23.37

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
 Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.



TEST REPORT

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11n – HT20_CH11
Receiver Detector:	Q.P. and AV.	Modulation Type:	OFDM
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB μ V)		Emission Level (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	42.23	40.41	42.22	40.40	59.09	49.09	-16.87	-8.69
0.348	-0.01	42.21	40.14	42.20	40.13	59.01	49.01	-16.81	-8.88
0.634	-0.05	32.19	31.09	32.14	31.04	56.00	46.00	-23.86	-14.96
2.794	-0.01	34.87	33.46	34.86	33.45	56.00	46.00	-21.14	-12.55
4.685	0.02	33.88	32.14	33.90	32.16	56.00	46.00	-22.10	-13.84
16.107	0.25	40.11	30.50	40.36	30.75	60.00	50.00	-19.64	-19.25

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB μ V)		Emission Level (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	0.02	38.79	37.18	38.81	37.20	59.09	49.09	-20.28	-11.89
0.348	0.02	39.62	37.95	39.64	37.97	59.01	49.01	-19.37	-11.04
0.606	-0.01	31.93	31.20	31.92	31.19	56.00	46.00	-24.08	-14.81
2.794	0.02	35.92	34.26	35.94	34.28	56.00	46.00	-20.06	-11.72
3.853	0.04	33.67	32.35	33.71	32.39	56.00	46.00	-22.29	-13.61
15.256	0.29	32.16	24.75	32.45	25.04	60.00	50.00	-27.55	-24.96

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
 Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.



TEST REPORT

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11n – HT40_CH05
Receiver Detector:	Q.P. and AV.	Modulation Type:	OFDM
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB μ V)		Emission Level (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.348	-0.01	42.83	41.11	42.82	41.10	59.01	49.01	-16.19	-7.91
0.351	-0.01	41.50	36.44	41.49	36.43	58.94	48.94	-17.45	-12.51
2.794	-0.01	35.06	33.65	35.05	33.64	56.00	46.00	-20.95	-12.36
4.764	0.03	32.99	29.02	33.02	29.05	56.00	46.00	-22.98	-16.95
14.988	0.23	39.19	31.94	39.42	32.17	60.00	50.00	-20.58	-17.83
15.789	0.24	40.08	32.42	40.32	32.66	60.00	50.00	-19.68	-17.34

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB μ V)		Emission Level (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	0.02	38.83	36.66	38.85	36.68	59.09	49.09	-20.24	-12.41
0.348	0.02	39.18	37.65	39.20	37.67	59.01	49.01	-19.81	-11.34
2.794	0.02	35.60	34.05	35.62	34.07	56.00	46.00	-20.38	-11.93
3.853	0.04	33.32	32.13	33.36	32.17	56.00	46.00	-22.64	-13.83
14.896	0.29	36.80	28.92	37.09	29.21	60.00	50.00	-22.91	-20.79
20.084	0.40	40.17	27.70	40.57	28.10	60.00	50.00	-19.43	-21.90

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
 Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.



TEST REPORT

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11n – HT40_CH08
Receiver Detector:	Q.P. and AV.	Modulation Type:	OFDM
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	40.51	39.12	40.50	39.11	59.09	49.09	-18.59	-9.98
0.348	-0.01	41.48	39.74	41.47	39.73	59.01	49.01	-17.54	-9.28
2.794	-0.01	35.26	33.72	35.25	33.71	56.00	46.00	-20.75	-12.29
4.457	0.02	32.87	31.42	32.89	31.44	56.00	46.00	-23.11	-14.56
14.917	0.23	37.88	30.72	38.11	30.95	60.00	50.00	-21.89	-19.05
15.666	0.24	41.31	34.14	41.55	34.38	60.00	50.00	-18.45	-15.62

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	0.02	38.29	36.72	38.31	36.74	59.09	49.09	-20.78	-12.35
0.348	0.02	38.39	36.79	38.41	36.81	59.01	49.01	-20.60	-12.20
2.794	0.02	35.84	34.27	35.86	34.29	56.00	46.00	-20.14	-11.71
14.947	0.29	37.43	29.34	37.72	29.63	60.00	50.00	-22.28	-20.37
14.957	0.29	37.35	29.83	37.64	30.12	60.00	50.00	-22.36	-19.88
15.277	0.29	37.25	29.57	37.54	29.86	60.00	50.00	-22.46	-20.14

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
 Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.



TEST REPORT

Temperature:	23 °C	Humidity:	63 %RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	802.11n – HT40_CH11
Receiver Detector:	Q.P. and AV.	Modulation Type:	OFDM
Tested By:	Richard Lin	Tested Date:	Mar. 19, 2014

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.345	-0.01	39.36	37.50	39.35	37.49	59.09	49.09	-19.74	-11.60
0.348	-0.01	39.80	37.85	39.79	37.84	59.01	49.01	-19.22	-11.17
2.794	-0.01	35.84	34.07	35.83	34.06	56.00	46.00	-20.17	-11.94
14.957	0.23	38.06	30.97	38.29	31.20	60.00	50.00	-21.71	-18.80
15.008	0.23	38.49	31.67	38.72	31.90	60.00	50.00	-21.28	-18.10
15.144	0.23	40.29	32.85	40.52	33.08	60.00	50.00	-19.48	-16.92

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBμV)		Emission Level (dBμV)		Limit (dBμV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.348	0.02	37.10	34.76	37.12	34.78	59.01	49.01	-21.89	-14.23
2.794	0.02	35.62	34.13	35.64	34.15	56.00	46.00	-20.36	-11.85
4.457	0.05	33.04	31.35	33.09	31.40	56.00	46.00	-22.91	-14.60
14.917	0.29	37.36	29.64	37.65	29.93	60.00	50.00	-22.35	-20.07
14.967	0.29	37.41	30.73	37.70	31.02	60.00	50.00	-22.30	-18.98
15.195	0.29	37.82	29.82	38.11	30.11	60.00	50.00	-21.89	-19.89

NOTE :

1. Measurement uncertainty is 3.61dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
 Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

**Spectrum Research & Testing Lab., Inc.**

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Date: Mar. 27, 2014**4.2 RADIATED EMISSION TEST****4.2.1 LIMIT**

FCC Part15, Subpart C Section 15.209 limit of radiated emission for frequency below1000MHz. The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

FREQUENCY (MHz)	DISTANCE (m)	FIELD STRENGTH (dBmV/m)
0.009 - 0.490	300	2400/F(KHz)
0.490 - 1.705	30	24000/F(KHz)
1.705 - 30	30	30
30 - 88	3	40.0
88 - 216	3	43.5
216 - 960	3	46.0
Above 960	3	54.0

NOTE:

- 30 dBuV (in 30m) = 70 dBuV (in 3m).
- In the emission tables above , the tighter limit applies at the band edges.
- Distance refers to the distance between measuring instrument, antenna, and the closest point of any part of the device or system.

FCC Part 15, Section15.35(b) limit of radiated emission for frequency above 1000 MHz

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0



4.2.2 TEST EQUIPMENT

The following test equipment was used during the radiated emission test:

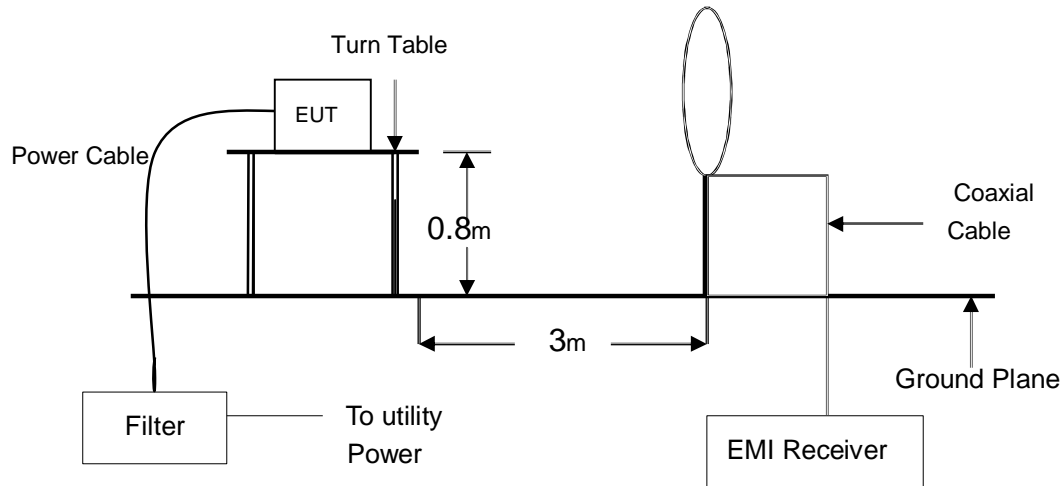
EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DUE DATE OF CAL. & CAL. CENTER
EMI TEST RECEIVER	9 kHz ~ 2.75 GHz	ROHDE & SCHWARZ	ESCS30 / 100376	JAN. 12, 2015 ETC
EMI TEST RECEIVER	20 MHz ~ 1000 MHz	ROHDE & SCHWARZ	ESVS30 / 841977/003	DEC. 08, 2014 ETC
SPECTRUM ANALYZER	9 kHz ~ 7GHz	ROHDE & SCHWARZ	FSP7 / 100289	APR. 12, 2014 ETC
SPECTRUM ANALYZER	9 kHz ~ 40GHz	ROHDE & SCHWARZ	FSP40 / 100093	DEC 08, 2014 ETC
EMI TEST RECEIVER (INCLUDE SPECTRUM ANALYZER)	9 KHz ~ 6 GHz	ROHDE & SCHWARZ	ESL /100176	MAR. 28, 2014 ETC
LOOP ANTENNA	9 kHz ~ 30 MHz	ETS.LINDGREN	HFH2-Z2/ 860605/002 (1162 1/2)	MAR. 17, 2015 ETC
BI-LOG ANTENNA	30 MHz ~ 2 GHz	SCHAFFNER	CBL6141A / 4181	JUN. 25, 2014 ETC
HORN ANTENNA	1 GHz ~ 18 GHz	EMCO	3115/ 9602-4681	DEC. 12, 2014 ETC
HORN ANTENNA	18 ~ 40 GHZ	ETS-LINDGREN	3116 /00032255	JAN. 10, 2015 ETC
PRE-AMPLIFIER	1 GHz ~ 26.5 GHz	AGILENT	8449B/ 3008A01995	DEC. 10, 2014 ETC
OPEN AREA TEST SITE	3 – 10 M MEASUREMENT	SRT	A02 / SRT002	MAR. 08, 2015 SRT
ANECHOIC CHAMBER	3 M MEASUREMENT	SRT	A01 / SRT001	MAY. 13, 2014 SRT
COAXIAL CABLE	30 M	TIMES	LMR-400 / #30M(L1TCAB014)	MAY. 21, 2014 ETC
FILTER	2 LINE, 30 A	FIL.COIL	FC-943 / 869	NCR
K-TYPE CABLE	UP TO 40 GHz 3 m	HUBER+SUHNER	SF102-46/2*11SK 252 /MY2611/2	MAR. 09, 2015 ETC
K-TYPE CABLE	UP TO 40 GHz, 1 m	HUBER+SUHNER	SF 102-40/2*11 /23934/2	OCT. 20, 2014 ETC
CDN	0.15 MHz ~ 300 MHz	LUTHI	CDN L-801 M2/M3 / 2790	MAY. 24, 2014 ETC

NOTE: The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

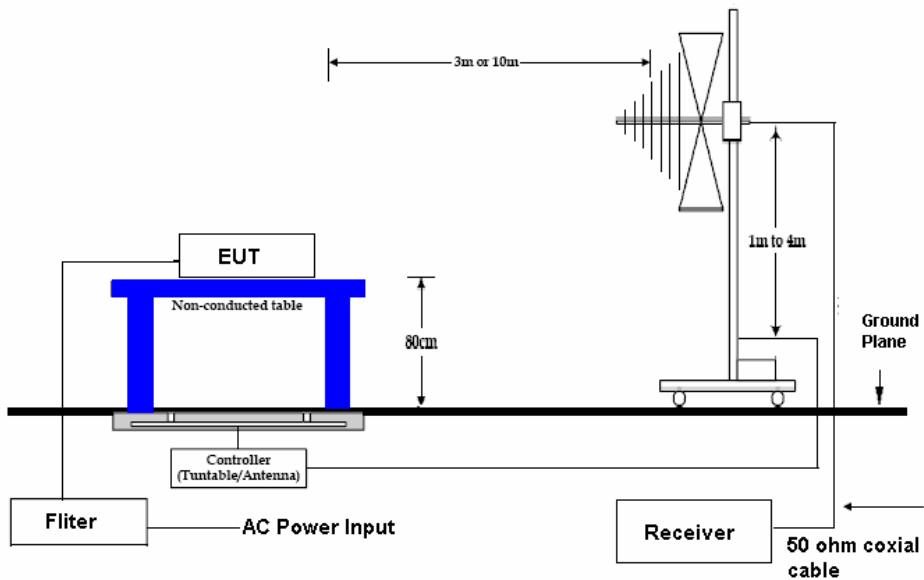


4.2.3 TEST SET-UP

9KHz ~ 30MHz

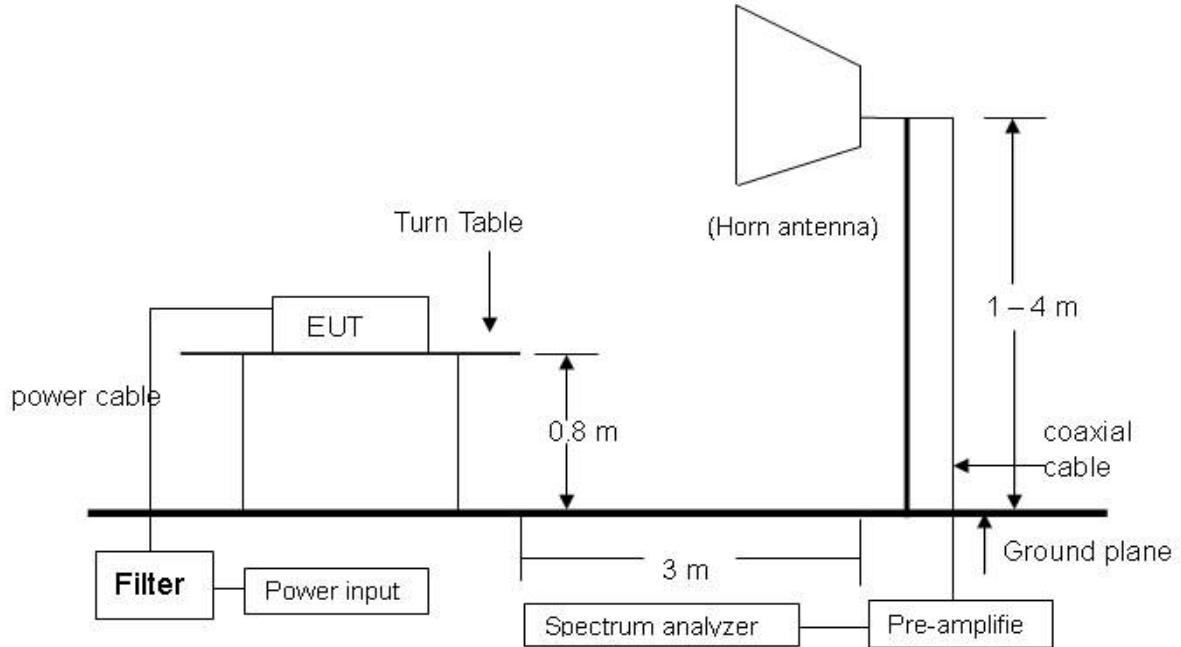


30 MHz ~ 1 GHz





Above 1 GHz



NOTE: The EUT system was put on a wooden table with 0.8m heights above a ground plane.
For the actual test configuration, please refer to the photos of testing.



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4.2.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.4:2003 and CISPR 22:2003.

When the frequency spectrum measured started from 9 kHz to 30 MHz, then use antenna is a loop antenna.

The measurements were made at an open area test site with 3 meter measurement distance under 1 GHz and with 3m distance above 1GHz.

The frequency spectrum measured started from 9 kHz to 30MHz and 30 MHz to 1 GHz, all readings were quasi-peak values with 120 kHz resolution bandwidth of the test receiver.

Above 1 GHz, the measurements were made at an open area test site with 3 meter measurement distance and all readings were peak or average values with 1 MHz resolution bandwidth of the test receiver.

The EUT system was operated in all typical methods by users.

The cables connected to EUT and support units were moved to find the maximum emission levels for each frequency.

First, find the margin or higher points at least 6 points by software, then use manual to find the maximum data.

The procedure is referred on the test procedure of SRT LAB.



4.2.5 TEST RESULT

Temperature:	23 °C	Humidity:	60 %RH
Frequency Range:	9 kHz – 30 MHz	Measured Distance:	3 m
Receiver Detector:	AV.	Tested Mode:	802.11b_CH01
Tested By:	Richard Lin	Tested Date:	Mar. 27, 2014

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBμV)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
3.72	0.34	20.24	4.87	25.44	70.00	-44.56
8.31	0.51	20.43	5.01	25.95	70.00	-44.05
19.63	0.76	20.98	3.89	25.63	70.00	-44.37
24.05	0.83	21.20	4.95	26.99	70.00	-43.01
27.42	0.89	21.37	8.62	30.88	70.00	-39.12
28.64	0.91	21.43	8.44	30.78	70.00	-39.22

Temperature:	23 °C	Humidity:	60 %RH
Frequency Range:	9 kHz – 30 MHz	Measured Distance:	3 m
Receiver Detector:	AV.	Tested Mode:	802.11b_CH06
Tested By:	Richard Lin	Tested Date:	Mar. 27, 2014

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBμV)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5.18	0.41	20.31	5.18	25.89	70.00	-44.11
5.83	0.43	20.33	5.60	26.36	70.00	-43.64
13.31	0.63	20.66	4.56	25.86	70.00	-44.14
24.06	0.83	21.20	5.27	27.31	70.00	-42.69
26.12	0.87	21.31	6.87	29.04	70.00	-40.96
28.91	0.91	21.45	8.06	30.42	70.00	-39.58

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Temperature:	23 °C	Humidity:	60 %RH
Frequency Range:	9 kHz – 30 MHz	Measured Distance:	3 m
Receiver Detector:	AV.	Tested Mode:	802.11b_CH11
Tested By:	Richard Lin	Tested Date:	Mar. 27, 2014

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBμV)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10.37	0.57	20.52	4.93	26.02	70.00	-43.98
17.19	0.71	20.86	4.37	25.94	70.00	-44.06
21.42	0.79	21.07	4.24	26.10	70.00	-43.90
24.01	0.83	21.20	4.49	26.52	70.00	-43.48
27.95	0.90	21.40	11.12	33.41	70.00	-36.59
28.94	0.91	21.45	7.15	29.51	70.00	-40.49

Temperature:	23 °C	Humidity:	60 %RH
Frequency Range:	9 kHz – 30 MHz	Measured Distance:	3 m
Receiver Detector:	AV.	Tested Mode:	802.11g_CH01
Tested By:	Richard Lin	Tested Date:	Mar. 27, 2014

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBμV)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5.21	0.41	20.31	5.35	26.06	70.00	-43.94
18.78	0.75	20.94	4.32	26.00	70.00	-44.00
21.32	0.79	21.07	4.17	26.03	70.00	-43.97
22.84	0.82	21.14	5.18	27.14	70.00	-42.86
25.37	0.86	21.27	6.51	28.63	70.00	-41.37
27.92	0.90	21.40	10.12	32.41	70.00	-37.59

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Temperature:	23 °C	Humidity:	60 %RH
Frequency Range:	9 kHz – 30 MHz	Measured Distance:	3 m
Receiver Detector:	AV.	Tested Mode:	802.11g_CH06
Tested By:	Richard Lin	Tested Date:	Mar. 27, 2014

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBµV)	Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
6.13	0.44	20.35	5.05	25.83	70.00	-44.17
11.87	0.60	20.59	4.53	25.72	70.00	-44.28
12.71	0.62	20.63	4.48	25.73	70.00	-44.27
24.03	0.83	21.20	4.29	26.33	70.00	-43.67
27.98	0.90	21.40	11.91	34.21	70.00	-35.79
28.82	0.91	21.44	8.52	30.87	70.00	-39.13

Temperature:	23 °C	Humidity:	60 %RH
Frequency Range:	9 kHz – 30 MHz	Measured Distance:	3 m
Receiver Detector:	AV.	Tested Mode:	802.11g_CH11
Tested By:	Richard Lin	Tested Date:	Mar. 27, 2014

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBµV)	Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
3.67	0.33	20.23	5.19	25.76	70.00	-44.24
17.50	0.72	20.87	3.91	25.50	70.00	-44.50
18.62	0.74	20.93	4.49	26.16	70.00	-43.84
25.56	0.86	21.28	5.02	27.16	70.00	-42.84
26.28	0.87	21.31	8.41	30.59	70.00	-39.41
27.91	0.90	21.39	12.24	34.53	70.00	-35.47

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Temperature:	23 °C	Humidity:	60 %RH
Frequency Range:	9 kHz – 30 MHz	Measured Distance:	3 m
Receiver Detector:	AV.	Tested Mode:	802.11n – HT20_CH01
Tested By:	Richard Lin	Tested Date:	Mar. 27, 2014

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBμV)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
16.33	0.70	20.81	4.08	25.59	70.00	-44.41
17.41	0.72	20.87	4.12	25.70	70.00	-44.30
19.94	0.77	20.99	4.59	26.35	70.00	-43.65
25.05	0.85	21.25	7.03	29.13	70.00	-40.87
27.53	0.89	21.38	9.23	31.50	70.00	-38.50
27.91	0.90	21.40	10.78	33.07	70.00	-36.93

Temperature:	23 °C	Humidity:	60 %RH
Frequency Range:	9 kHz – 30 MHz	Measured Distance:	3 m
Receiver Detector:	AV.	Tested Mode:	802.11n – HT20_CH06
Tested By:	Richard Lin	Tested Date:	Mar. 27, 2014

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBμV)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6.45	0.45	20.36	4.78	25.58	70.00	-44.42
10.03	0.56	20.50	3.75	24.81	70.00	-45.19
21.09	0.79	21.05	3.65	25.49	70.00	-44.51
25.33	0.86	21.27	6.60	28.72	70.00	-41.28
26.58	0.88	21.33	7.77	29.97	70.00	-40.03
27.96	0.90	21.40	6.90	29.20	70.00	-40.80



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Temperature:	<u>23 °C</u>	Humidity:	<u>60 %RH</u>
Frequency Range:	<u>9 kHz – 30 MHz</u>	Measured Distance:	<u>3 m</u>
Receiver Detector:	<u>AV.</u>	Tested Mode:	<u>802.11n – HT20_CH11</u>
Tested By:	<u>Richard Lin</u>	Tested Date:	<u>Mar. 27, 2014</u>

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBμV)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
7.14	0.47	20.39	4.75	25.60	70.00	-44.40
12.96	0.62	20.65	4.28	25.55	70.00	-44.45
22.41	0.81	21.12	3.96	25.89	70.00	-44.11
26.39	0.87	21.32	6.65	28.84	70.00	-41.16
27.90	0.90	21.39	10.61	32.90	70.00	-37.10
28.99	0.91	21.45	7.34	29.70	70.00	-40.30

Temperature:	<u>23 °C</u>	Humidity:	<u>60 %RH</u>
Frequency Range:	<u>9 kHz – 30 MHz</u>	Measured Distance:	<u>3 m</u>
Receiver Detector:	<u>AV.</u>	Tested Mode:	<u>802.11n – HT40_CH05</u>
Tested By:	<u>Richard Lin</u>	Tested Date:	<u>Mar. 27, 2014</u>

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBμV)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
17.83	0.73	20.89	4.23	25.85	70.00	-44.15
21.07	0.79	21.05	3.75	25.59	70.00	-44.41
24.05	0.83	21.20	5.37	27.41	70.00	-42.59
26.30	0.87	21.31	7.06	29.25	70.00	-40.75
27.98	0.90	21.40	10.66	32.96	70.00	-37.04
29.02	0.91	21.45	7.75	30.11	70.00	-39.89



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Temperature:	23 °C	Humidity:	60 %RH
Frequency Range:	9 kHz – 30 MHz	Measured Distance:	3 m
Receiver Detector:	AV.	Tested Mode:	802.11n – HT40_CH08
Tested By:	Richard Lin	Tested Date:	Mar. 27, 2014

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBμV)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15.34	0.68	20.76	4.16	25.60	70.00	-44.40
21.49	0.79	21.07	4.02	25.89	70.00	-44.11
24.09	0.84	21.20	4.95	26.99	70.00	-43.01
26.31	0.87	21.32	7.81	30.00	70.00	-40.00
27.95	0.90	21.40	12.67	34.96	70.00	-35.04
28.97	0.91	21.45	9.44	31.80	70.00	-38.20

Temperature:	23 °C	Humidity:	60 %RH
Frequency Range:	9 kHz – 30 MHz	Measured Distance:	3 m
Receiver Detector:	AV.	Tested Mode:	802.11n – HT40_CH11
Tested By:	Richard Lin	Tested Date:	Mar. 27, 2014

Frequency (MHz)	Cable Loss (dB)	Ant. Fac. (dB/m)	Reading (dBμV)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5.42	0.41	20.32	4.85	25.58	70.00	-44.42
14.84	0.66	20.74	4.96	26.36	70.00	-43.64
18.06	0.73	20.90	5.04	26.67	70.00	-43.33
25.32	0.86	21.27	5.51	27.63	70.00	-42.37
26.29	0.87	21.31	8.82	31.01	70.00	-38.99
27.94	0.90	21.40	11.59	33.88	70.00	-36.12

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Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11b_CH01
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.82	1.34	8.10	24.57	34.01	40	-5.99	102	3.57
347.28	3.14	15.13	21.35	39.62	46	-6.38	326	3.12
532.95	4.15	18.45	14.82	37.41	46	-8.59	175	2.45
600.74	4.44	19.60	16.47	40.51	46	-5.49	197	2.29
668.95	4.76	20.61	12.79	38.16	46	-7.84	69	2.01
902.20	5.83	23.16	8.43	37.42	46	-8.58	224	1.35

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.26	1.34	8.10	26.94	36.38	40	-3.62	35	1.16
534.71	4.16	18.48	13.37	36.00	46	-10.00	168	2.57
597.67	4.43	19.55	14.83	38.80	46	-7.20	255	2.74
622.17	4.55	20.00	11.18	35.72	46	-10.28	74	2.82
739.44	5.10	21.66	10.67	37.43	46	-8.57	184	3.18
798.05	5.38	22.00	12.22	39.60	46	-6.40	299	3.47

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11b_CH06
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.51	1.34	8.10	25.64	35.08	40	-4.92	73	3.61
155.39	1.96	12.25	20.13	34.34	44	-9.16	225	3.42
347.88	3.14	15.13	20.07	38.34	46	-7.66	157	3.07
600.75	4.44	19.60	16.98	41.02	46	-4.98	47	2.25
666.43	4.75	20.60	12.27	37.62	46	-8.38	275	2.09
724.92	5.03	21.33	9.90	36.25	46	-9.75	187	1.84

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.62	1.34	8.10	26.65	36.09	40	-3.91	246	1.13
364.18	3.24	15.54	16.12	34.89	46	-11.11	103	2.06
594.72	4.42	19.49	16.05	39.96	46	-6.04	270	2.77
665.90	4.75	20.59	10.07	35.41	46	-10.59	294	2.90
738.82	5.09	21.64	10.28	37.01	46	-8.99	118	3.18
797.41	5.38	21.99	11.39	38.76	46	-7.24	293	3.39

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.

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Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11b_CH11
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.53	1.34	8.10	23.37	32.81	40	-7.19	274	3.57
347.75	3.14	15.13	20.48	38.75	46	-7.25	203	3.01
533.29	4.15	18.46	14.74	37.35	46	-8.65	165	2.48
600.49	4.44	19.60	16.63	40.67	46	-5.33	197	2.22
622.18	4.55	20.00	15.46	40.00	46	-6.00	223	2.10
667.51	4.76	20.60	12.83	38.19	46	-7.81	159	1.95

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.49	1.34	8.10	26.53	35.97	40	-4.03	46	1.15
137.24	1.84	12.64	22.34	36.82	44	-6.68	86	1.34
534.07	4.16	18.48	13.47	36.10	46	-9.90	328	2.57
597.12	4.43	19.55	14.01	37.98	46	-8.02	250	2.78
738.65	5.09	21.64	10.50	37.23	46	-8.77	184	3.12
798.25	5.38	22.00	11.29	38.67	46	-7.33	292	3.39

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11g_CH01
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.74	1.34	8.10	24.54	33.98	40	-6.02	235	3.57
215.39	2.35	13.00	20.06	35.41	44	-8.09	147	3.33
347.16	3.14	15.13	21.18	39.45	46	-6.55	258	3.12
600.71	4.44	19.60	17.36	41.40	46	-4.60	177	2.24
623.37	4.55	20.01	14.48	39.04	46	-6.96	62	2.07
667.56	4.76	20.60	12.01	37.37	46	-8.63	70	1.95

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.72	1.34	8.10	26.95	36.39	40	-3.61	304	1.14
534.17	4.16	18.48	13.37	36.00	46	-10.00	165	2.58
597.36	4.43	19.55	13.84	37.81	46	-8.19	296	2.74
664.53	4.74	20.58	10.17	35.50	46	-10.50	47	2.97
719.75	5.00	21.22	11.59	37.81	46	-8.19	245	3.14
797.06	5.38	21.99	11.83	39.20	46	-6.80	91	3.41

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11g_CH06
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.66	1.34	8.10	25.92	35.36	40	-4.64	153	3.57
215.18	2.35	13.00	19.91	35.26	44	-8.24	242	3.42
347.51	3.14	15.13	20.69	38.96	46	-7.04	305	3.01
358.41	3.20	15.39	18.24	36.84	46	-9.16	75	2.84
600.75	4.44	19.60	15.93	39.97	46	-6.03	196	2.25
669.88	4.77	20.61	12.18	37.56	46	-8.44	170	1.83

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.40	1.34	8.10	27.02	36.46	40	-3.54	248	1.15
534.16	4.16	18.48	13.18	35.81	46	-10.19	169	2.43
600.71	4.44	19.60	13.94	37.98	46	-8.02	273	2.57
667.80	4.76	20.60	10.13	35.49	46	-10.51	45	2.95
719.57	5.00	21.22	11.59	37.81	46	-8.19	282	3.12
797.45	5.38	21.99	10.40	37.77	46	-8.23	238	3.39

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11g_CH11
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
59.80	1.24	10.97	24.63	36.84	40	-3.16	170	3.57
215.77	2.35	13.00	19.19	34.54	44	-8.96	242	3.42
347.37	3.14	15.13	20.28	38.55	46	-7.45	155	3.05
364.15	3.24	15.54	17.62	36.39	46	-9.61	257	2.91
600.88	4.44	19.60	14.98	39.02	46	-6.98	195	2.25
667.55	4.76	20.60	11.24	36.60	46	-9.40	173	2.01

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.61	1.34	8.10	27.08	36.52	40	-3.48	48	1.15
366.51	3.25	15.58	15.94	34.77	46	-11.23	110	2.07
600.82	4.44	19.60	13.67	37.71	46	-8.29	273	2.74
719.74	5.00	21.22	9.92	36.14	46	-9.86	285	3.12
736.18	5.08	21.59	9.61	36.28	46	-9.72	299	3.27
802.93	5.40	22.04	10.20	37.64	46	-8.36	311	3.38

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11n – HT20_CH01
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBµV)	Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	AZ(°)	EL(m)
70.10	1.34	8.10	24.02	33.46	40	-6.54	106	3.58
155.67	1.96	12.25	19.75	33.96	44	-9.54	238	3.44
215.45	2.35	13.00	19.17	34.52	44	-8.98	41	3.32
347.25	3.14	15.13	20.28	38.55	46	-7.45	157	3.01
600.75	4.44	19.60	16.01	40.05	46	-5.95	276	2.25
668.09	4.76	20.61	12.57	37.94	46	-8.06	198	2.01

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBµV)	Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	AZ(°)	EL(m)
70.15	1.34	8.10	27.42	36.86	40	-3.14	57	1.15
600.72	4.44	19.60	13.58	37.62	46	-8.38	283	2.79
622.56	4.55	20.00	10.95	35.49	46	-10.51	215	2.84
737.27	5.09	21.61	10.21	36.91	46	-9.09	287	3.18
801.94	5.39	22.02	10.77	38.18	46	-7.82	299	3.37
841.11	5.56	22.82	9.13	37.51	46	-8.49	65	3.52

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.

**Spectrum Research & Testing Lab., Inc.**

No.167, Ln. 780, Shan-Tong Rd., Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan County 320, Taiwan (R.O.C.)

TEST REPORTReference No.: A14031501
Report No.: FCCA14031501
FCC ID : ZME-MLWG2
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Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11n – HT20_CH06
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBµV)	Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	AZ(°)	EL(m)
58.53	1.23	11.34	21.54	34.11	40	-5.89	155	3.62
155.84	1.96	12.25	21.07	35.28	44	-8.22	307	3.50
347.13	3.14	15.13	20.25	38.52	46	-7.48	51	3.14
597.34	4.43	19.55	16.78	40.75	46	-5.25	268	2.27
623.93	4.55	20.01	12.85	37.41	46	-8.59	179	2.19
668.50	4.76	20.61	12.61	37.98	46	-8.02	43	2.01

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBµV)	Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	AZ(°)	EL(m)
70.90	1.34	8.10	26.69	36.13	40	-3.87	68	1.15
600.51	4.44	19.60	14.25	38.29	46	-7.71	270	2.74
622.75	4.55	20.00	10.97	35.51	46	-10.49	285	2.80
736.22	5.08	21.59	9.31	35.98	46	-10.02	312	3.15
797.15	5.38	21.99	10.46	37.83	46	-8.17	290	3.38
902.33	5.83	23.16	6.04	35.03	46	-10.97	138	3.54

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.

**Spectrum Research & Testing Lab., Inc.**

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TEST REPORTReference No.: A14031501
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Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11n – HT20_CH11
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dB μ V)	Emission Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	AZ(°)	EL(m)
59.27	1.24	10.97	24.67	36.88	40	-3.12	144	3.62
70.36	1.34	8.10	25.19	34.63	40	-5.37	263	3.45
215.07	2.35	13.00	18.35	33.70	44	-9.80	107	3.38
347.83	3.14	15.13	19.72	37.99	46	-8.01	258	3.01
600.56	4.44	19.60	15.41	39.45	46	-6.55	173	2.28
664.15	4.74	20.58	12.77	38.10	46	-7.90	229	2.01

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dB μ V)	Emission Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	AZ(°)	EL(m)
59.24	1.24	10.97	23.18	35.39	40	-4.61	38	1.08
70.39	1.34	8.10	26.58	36.02	40	-3.98	165	1.15
185.06	2.16	10.65	22.29	35.10	44	-8.40	252	1.44
200.74	2.25	11.80	19.82	33.87	44	-9.63	43	1.58
598.47	4.43	19.56	14.15	38.15	46	-7.85	271	2.71
797.82	5.38	21.99	9.53	36.90	46	-9.10	280	3.38

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.

**Spectrum Research & Testing Lab., Inc.**

No.167, Ln. 780, Shan-Tong Rd., Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan County 320, Taiwan (R.O.C.)

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Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11n – HT20_CH05
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBµV)	Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	AZ(°)	EL(m)
59.32	1.24	10.97	20.93	33.14	40	-6.86	136	3.63
70.75	1.34	8.10	24.60	34.04	40	-5.96	302	3.47
215.95	2.35	13.00	22.27	37.62	44	-5.88	74	3.35
335.03	3.07	14.84	21.68	39.59	46	-6.41	157	3.08
347.29	3.14	15.13	20.95	39.22	46	-6.78	250	2.98
600.89	4.44	19.60	14.65	38.69	46	-7.31	197	2.22

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBµV)	Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	AZ(°)	EL(m)
70.92	1.34	8.10	27.17	36.61	40	-3.39	224	1.14
195.32	2.22	11.30	20.38	33.90	44	-9.60	60	1.53
533.70	4.15	18.46	13.91	36.52	46	-9.48	168	2.57
600.82	4.44	19.60	15.44	39.48	46	-6.52	279	2.73
738.17	5.09	21.64	9.35	36.08	46	-9.92	43	3.18
802.84	5.40	22.04	11.73	39.17	46	-6.83	291	3.35

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.

**Spectrum Research & Testing Lab., Inc.**

No.167, Ln. 780, Shan-Tong Rd., Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan County 320, Taiwan (R.O.C.)

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Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11n – HT20_CH08
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBµV)	Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	AZ(°)	EL(m)
70.50	1.34	8.10	26.07	35.51	40	-4.49	114	3.57
215.89	2.35	13.00	19.83	35.18	44	-8.32	285	3.41
335.18	3.07	14.84	20.29	38.20	46	-7.80	104	3.08
347.63	3.14	15.13	20.13	38.40	46	-7.60	259	2.97
600.30	4.44	19.60	14.75	38.79	46	-7.21	178	2.21
664.75	4.74	20.58	11.19	36.52	46	-9.48	68	2.05

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBµV)	Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	AZ(°)	EL(m)
70.56	1.34	8.10	27.38	36.82	40	-3.18	75	1.17
534.91	4.16	18.48	13.95	36.58	46	-9.42	96	2.58
597.24	4.43	19.55	14.80	38.77	46	-7.23	270	2.73
719.07	5.00	21.22	9.14	35.36	46	-10.64	315	3.14
739.19	5.10	21.66	9.17	35.93	46	-10.07	287	3.22
797.56	5.38	21.99	12.37	39.74	46	-6.26	297	3.46

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



Spectrum Research & Testing Lab., Inc.
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TEST REPORT

Reference No.: A14031501
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 Date: Mar. 27, 2014

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	30 M – 1 GHz	Tested Mode:	802.11n – HT20_CH11
Receiver Detector:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.91	1.34	8.10	24.91	34.35	40	-5.65	192	3.67
197.38	2.23	11.50	21.58	35.31	44	-8.19	47	3.45
215.46	2.35	13.00	20.56	35.91	44	-7.59	341	3.32
335.85	3.07	14.84	19.77	37.68	46	-8.32	250	3.06
347.16	3.14	15.13	19.64	37.91	46	-8.09	184	2.87
600.74	4.44	19.60	13.81	37.85	46	-8.15	227	2.21

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
70.94	1.34	8.10	27.32	36.76	40	-3.24	275	1.15
191.36	2.20	10.90	24.68	37.78	44	-5.72	64	1.57
534.78	4.16	18.48	14.69	37.32	46	-8.68	98	2.58
600.71	4.44	19.60	13.90	37.94	46	-8.06	123	2.73
739.06	5.10	21.66	9.74	36.50	46	-9.50	255	3.18
797.51	5.38	21.99	11.28	38.65	46	-7.35	73	3.45

NOTE :

1. Measurement uncertainty is 4.73dB.
2. "**": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11b_CH01
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1197.92	-33.59	24.88	51.78	41.22	43.07	32.51	74	54	-30.93	-21.49	50	2.46
1591.30	-32.44	25.63	51.03	40.58	44.21	33.76	74	54	-29.79	-20.24	163	2.31
3279.65	-30.59	30.81	43.16	32.67	43.39	32.90	74	54	-30.61	-21.10	271	1.87
4167.88	-29.29	32.50	42.11	31.69	45.32	34.90	74	54	-28.68	-19.10	45	1.56
4592.94	-28.77	32.70	43.20	32.71	47.13	36.64	74	54	-26.87	-17.36	78	1.43
5248.03	-27.87	33.90	41.39	30.88	47.42	36.91	74	54	-26.58	-17.09	199	1.22

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1192.31	-33.60	24.87	54.04	43.57	45.31	34.84	74	54	-28.69	-19.16	64	1.09
1604.74	-32.42	25.67	49.83	39.34	43.08	32.59	74	54	-30.92	-21.41	248	1.17
1997.85	-31.83	27.09	46.79	36.28	42.04	31.53	74	54	-31.96	-22.47	139	1.32
3176.95	-30.76	30.59	43.52	33.01	43.35	32.84	74	54	-30.65	-21.16	228	1.60
3657.38	-29.99	31.68	43.50	32.96	45.18	34.64	74	54	-28.82	-19.36	103	1.87
5177.51	-27.99	33.81	40.96	30.48	46.78	36.30	74	54	-27.22	-17.70	295	2.24

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "**": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11b_CH01 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2412.00 (F)	-31.37	28.25	88.65	76.19	85.54	73.08	114	94	-28.46	-20.92	85	1.51
4824.00	-28.50	33.21	40.41	29.94	45.12	34.65	74	54	-28.88	-19.35	173	1.44
7236.00	-26.56	35.77	37.02	26.57	46.22	35.77	74	54	-27.78	-18.23	324	1.63
9648.00	-25.68	37.82	36.87	26.36	49.00	38.49	74	54	-25.00	-15.51	197	1.58
12060.0	-23.81	39.16	34.74	24.22	50.10	39.58	74	54	-23.90	-14.42	69	1.52
14472.0	-20.86	41.96	29.85	19.29	50.95	40.39	74	54	-23.05	-13.61	227	1.60

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2412.00 (F)	-31.37	28.25	86.52	74.27	83.41	71.16	114	94	-30.59	-22.84	40	1.47
4824.00	-28.50	33.21	41.17	30.68	45.88	35.39	74	54	-28.12	-18.61	158	1.48
7236.00	-26.56	35.77	37.03	26.56	46.23	35.76	74	54	-27.77	-18.24	72	1.55
9648.00	-25.68	37.82	36.75	26.29	48.88	38.42	74	54	-25.12	-15.58	335	1.38
12060.0	-23.81	39.16	34.81	24.31	50.17	39.67	74	54	-23.83	-14.33	106	1.70
14472.0	-20.86	41.96	29.80	19.25	50.90	40.35	74	54	-23.10	-13.65	78	1.42

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11b_CH06
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dBμV)		Emission Level (dBμV/m)		Limit (dBμV/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1193.82	-33.60	24.87	51.07	40.58	42.34	31.85	74	54	-31.66	-22.15	255	2.43
1599.40	-32.43	25.66	51.65	41.12	44.87	34.34	74	54	-29.13	-19.66	307	2.30
3012.47	-31.03	30.23	44.32	33.84	43.52	33.04	74	54	-30.48	-20.96	194	1.95
3727.12	-29.89	31.84	42.39	31.87	44.34	33.82	74	54	-29.66	-20.18	201	1.64
4325.33	-29.10	32.50	41.70	31.22	45.10	34.62	74	54	-28.90	-19.38	76	1.57
5472.89	-27.48	34.17	40.43	29.96	47.12	36.65	74	54	-26.88	-17.35	88	1.18

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dBμV)		Emission Level (dBμV/m)		Limit (dBμV/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1196.14	-33.59	24.87	52.61	42.10	43.90	33.39	74	54	-30.10	-20.61	157	1.07
1932.79	-31.93	26.86	48.24	37.75	43.16	32.67	74	54	-30.84	-21.33	294	1.29
1996.43	-31.84	27.09	46.37	35.88	41.62	31.13	74	54	-32.38	-22.87	178	1.35
3614.89	-30.06	31.57	43.64	33.14	45.16	34.66	74	54	-28.84	-19.34	324	1.77
4290.52	-29.14	32.50	42.69	32.15	46.05	35.51	74	54	-27.95	-18.49	200	1.94
5399.16	-27.61	34.08	41.45	30.97	47.92	37.44	74	54	-26.08	-16.56	286	2.33

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11b_CH06 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2437.00 (F)	-31.34	28.32	88.12	76.34	85.10	73.32	114	94	-28.90	-20.68	133	1.52
4874.00	-28.45	33.32	40.14	29.71	45.02	34.59	74	54	-28.98	-19.41	316	1.49
7311.00	-26.52	35.95	37.65	27.25	47.07	36.67	74	54	-26.93	-17.33	72	1.57
9748.00	-25.63	37.90	36.79	26.19	49.06	38.46	74	54	-24.94	-15.54	140	1.43
12185.0	-23.42	39.09	34.34	23.86	50.01	39.53	74	54	-23.99	-14.47	273	1.39
14622.0	-20.92	41.63	28.15	17.61	48.86	38.32	74	54	-25.14	-15.68	220	1.46

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2437.00 (F)	-31.34	28.32	88.13	76.29	85.11	73.27	114	94	-28.89	-20.73	196	1.72
4874.00	-28.45	33.32	41.26	30.75	46.14	35.63	74	54	-27.86	-18.37	94	1.68
7311.00	-26.52	35.95	37.65	27.16	47.07	36.58	74	54	-26.93	-17.42	175	1.37
9748.00	-25.63	37.90	36.92	26.47	49.19	38.74	74	54	-24.81	-15.26	302	1.49
12185.0	-23.42	39.09	33.79	23.38	49.46	39.05	74	54	-24.54	-14.95	240	1.58
14622.0	-20.92	41.63	27.85	17.44	48.56	38.15	74	54	-25.44	-15.85	158	1.63

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11b_CH11
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1198.52	-33.58	24.88	52.22	41.75	43.51	33.04	74	54	-30.49	-20.96	102	2.43
1599.11	-32.43	25.66	49.97	39.52	43.19	32.74	74	54	-30.81	-21.26	84	2.31
1931.78	-31.93	26.85	49.64	39.12	44.56	34.04	74	54	-29.44	-19.96	335	2.27
3596.09	-30.08	31.53	42.81	32.35	44.26	33.80	74	54	-29.74	-20.20	137	1.75
4292.75	-29.14	32.50	41.70	31.26	45.06	34.62	74	54	-28.94	-19.38	59	1.54
5653.92	-27.49	34.17	40.49	29.97	47.17	36.65	74	54	-26.83	-17.35	168	1.15

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1198.58	-33.58	24.88	51.67	41.13	42.96	32.42	74	54	-31.04	-21.58	90	1.08
1996.70	-31.84	27.09	47.92	37.48	43.17	32.73	74	54	-30.83	-21.27	318	1.32
3029.11	-31.00	30.26	43.49	32.87	42.75	32.13	74	54	-31.25	-21.87	43	1.67
3624.88	-30.04	31.60	42.98	32.51	44.54	34.07	74	54	-29.46	-19.93	107	1.78
4438.25	-28.96	32.50	42.47	31.89	46.01	35.43	74	54	-27.99	-18.57	195	2.02
5297.02	-27.78	33.96	41.06	30.56	47.23	36.73	74	54	-26.77	-17.27	287	2.31

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11b_CH11 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2462.00 (F)	-31.31	28.39	88.54	76.87	85.62	73.95	114	94	-28.38	-20.05	80	1.46
4924.00	-28.39	33.43	39.82	29.34	44.86	34.38	74	54	-29.14	-19.62	122	1.57
7386.00	-26.49	36.13	37.63	27.10	47.27	36.74	74	54	-26.73	-17.26	75	1.50
9848.00	-25.57	37.98	36.86	26.34	49.27	38.75	74	54	-24.73	-15.25	170	1.62
12310.0	-23.04	39.01	34.10	23.58	50.08	39.56	74	54	-23.92	-14.44	313	1.67
14772.0	-21.01	41.18	28.35	17.85	48.53	38.03	74	54	-25.47	-15.97	291	1.35

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2462.00 (F)	-31.31	28.39	88.81	77.15	85.89	74.23	114	94	-28.11	-19.77	144	1.38
4924.00	-28.39	33.43	43.72	33.26	48.76	38.30	74	54	-25.24	-15.70	268	1.49
7386.00	-26.49	36.13	37.65	27.17	47.29	36.81	74	54	-26.71	-17.19	53	1.44
9848.00	-25.57	37.98	37.03	26.59	49.44	39.00	74	54	-24.56	-15.00	97	1.56
12310.0	-23.04	39.01	34.01	23.53	49.99	39.51	74	54	-24.01	-14.49	158	1.59
14772.0	-21.01	41.18	28.34	17.81	48.52	37.99	74	54	-25.48	-16.01	44	1.42

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11g_CH01
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1195.30	-33.59	24.87	52.16	41.68	43.44	32.96	74	54	-30.56	-21.04	151	2.45
1597.17	-32.43	25.65	50.47	40.02	43.68	33.23	74	54	-30.32	-20.77	332	2.33
3254.70	-30.63	30.76	43.06	32.59	43.19	32.72	74	54	-30.81	-21.28	217	1.80
3618.44	-30.05	31.58	42.91	32.45	44.44	33.98	74	54	-29.56	-20.02	108	1.72
4006.94	-29.49	32.50	42.34	31.83	45.35	34.84	74	54	-28.65	-19.16	56	1.65
5213.86	-27.93	33.86	40.62	30.15	46.55	36.08	74	54	-27.45	-17.92	204	1.23

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1193.30	-33.60	24.87	51.72	41.23	42.99	32.50	74	54	-31.01	-21.50	150	1.07
1997.51	-31.83	27.09	46.15	35.68	41.40	30.93	74	54	-32.60	-23.07	234	1.32
3364.19	-30.45	31.00	42.38	31.87	42.94	32.43	74	54	-31.06	-21.57	108	1.74
3711.99	-29.92	31.81	42.80	32.31	44.69	34.20	74	54	-29.31	-19.80	255	1.89
4153.59	-29.31	32.50	42.03	31.56	45.22	34.75	74	54	-28.78	-19.25	271	1.92
5362.01	-27.67	34.03	41.28	30.77	47.64	37.13	74	54	-26.36	-16.87	198	2.33

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "F": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11g_CH01 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2412.00 (F)	-31.37	28.25	89.37	77.50	86.26	74.39	114	94	-27.74	-19.61	78	1.42
4824.00	-28.50	33.21	40.28	29.75	44.99	34.46	74	54	-29.01	-19.54	112	1.39
7236.00	-26.56	35.77	36.91	26.44	46.11	35.64	74	54	-27.89	-18.36	325	1.57
9648.00	-25.68	37.82	36.75	26.27	48.88	38.40	74	54	-25.12	-15.60	301	1.59
12060.0	-23.81	39.16	34.53	24.05	49.89	39.41	74	54	-24.11	-14.59	92	1.36
14472.0	-20.86	41.96	29.71	19.22	50.81	40.32	74	54	-23.19	-13.68	156	1.45

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2412.00 (F)	-31.37	28.25	88.20	76.31	85.09	73.20	114	94	-28.91	-20.80	188	1.48
4824.00	-28.50	33.21	40.58	30.13	45.29	34.84	74	54	-28.71	-19.16	254	1.51
7236.00	-26.56	35.77	36.91	26.42	46.11	35.62	74	54	-27.89	-18.38	296	1.50
9648.00	-25.68	37.82	36.45	25.96	48.58	38.09	74	54	-25.42	-15.91	66	1.56
12060.0	-23.81	39.16	33.97	23.58	49.33	38.94	74	54	-24.67	-15.06	100	1.48
14472.0	-20.86	41.96	29.52	19.06	50.62	40.16	74	54	-23.38	-13.84	339	1.39

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



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TEST REPORT

Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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 Date: Mar. 27, 2014

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11g_CH06
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1198.31	-33.58	24.88	51.62	41.10	42.91	32.39	74	54	-31.09	-21.61	140	2.43
1592.83	-32.44	25.63	52.97	42.48	46.16	35.67	74	54	-27.84	-18.33	317	2.30
3104.18	-30.88	30.43	42.95	32.51	42.50	32.06	74	54	-31.50	-21.94	215	1.85
3935.01	-29.59	32.34	42.61	32.15	45.36	34.90	74	54	-28.64	-19.10	118	1.61
4369.66	-29.04	32.50	42.37	31.86	45.83	35.32	74	54	-28.17	-18.68	49	1.48
5376.51	-27.65	34.05	40.54	30.03	46.95	36.44	74	54	-27.05	-17.56	63	1.17

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1194.26	-33.60	24.87	52.87	42.39	44.15	33.67	74	54	-29.85	-20.33	152	1.08
1391.66	-32.94	25.15	49.35	38.87	41.56	31.08	74	54	-32.44	-22.92	247	1.15
2893.57	-31.10	29.84	43.94	33.45	42.68	32.19	74	54	-31.32	-21.81	119	1.57
3618.90	-30.05	31.58	42.63	31.12	44.16	32.65	74	54	-29.84	-21.35	102	1.73
4639.15	-28.72	32.81	41.88	31.30	45.97	35.39	74	54	-28.03	-18.61	195	2.07
5550.83	-27.45	34.19	40.05	29.55	46.79	36.29	74	54	-27.21	-17.71	283	2.38

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11g_CH06 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2437.00 (F)	-31.34	28.32	88.87	76.54	85.85	73.52	114	94	-28.15	-20.48	104	1.55
4874.00	-28.45	33.32	39.93	29.48	44.81	34.36	74	54	-29.19	-19.64	308	1.48
7311.00	-26.52	35.95	37.54	27.02	46.96	36.44	74	54	-27.04	-17.56	46	1.37
9748.00	-25.63	37.90	36.61	26.08	48.88	38.35	74	54	-25.12	-15.65	257	1.51
12185.0	-23.42	39.09	33.70	23.36	49.37	39.03	74	54	-24.63	-14.97	299	1.59
14622.0	-20.92	41.63	28.02	17.58	48.73	38.29	74	54	-25.27	-15.71	143	1.42

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2437.00 (F)	-31.34	28.32	88.71	76.30	85.69	73.28	114	94	-28.31	-20.72	75	1.35
4874.00	-28.45	33.32	40.34	29.89	45.22	34.77	74	54	-28.78	-19.23	168	1.46
7311.00	-26.52	35.95	37.43	26.94	46.85	36.36	74	54	-27.15	-17.64	248	1.56
9748.00	-25.63	37.90	36.52	26.01	48.79	38.28	74	54	-25.21	-15.72	201	1.50
12185.0	-23.42	39.09	33.67	23.16	49.34	38.83	74	54	-24.66	-15.17	172	1.43
14622.0	-20.92	41.63	28.05	17.57	48.76	38.28	74	54	-25.24	-15.72	334	1.64

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11g_CH11
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1194.87	-33.60	24.87	50.96	40.43	42.24	31.71	74	54	-31.76	-22.29	124	2.45
1591.43	-32.44	25.63	50.89	40.37	44.07	33.55	74	54	-29.93	-20.45	237	2.31
3293.35	-30.56	30.84	43.35	32.85	43.63	33.13	74	54	-30.37	-20.87	210	1.85
3847.15	-29.72	32.13	42.91	32.48	45.32	34.89	74	54	-28.68	-19.11	108	1.67
4313.89	-29.11	32.50	42.47	31.97	45.86	35.36	74	54	-28.14	-18.64	96	1.52
5449.95	-27.52	34.14	40.38	29.87	47.00	36.49	74	54	-27.00	-17.51	104	1.19

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1194.83	-33.60	24.87	55.58	45.02	46.86	36.30	74	54	-27.14	-17.70	70	1.05
1596.10	-32.44	25.65	54.23	43.75	47.44	36.96	74	54	-26.56	-17.04	195	1.16
2762.50	-31.15	29.39	45.05	34.53	43.29	32.77	74	54	-30.71	-21.23	114	1.52
3924.73	-29.61	32.32	42.92	32.47	45.63	35.18	74	54	-28.37	-18.82	37	1.87
4649.29	-28.71	32.83	42.47	31.99	46.59	36.11	74	54	-27.41	-17.89	195	2.08
5821.99	-27.56	34.14	41.49	31.04	48.06	37.61	74	54	-25.94	-16.39	314	2.44

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11g_CH11 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2462.00 (F)	-31.31	28.39	87.73	75.47	84.81	72.55	114	94	-29.19	-21.45	152	1.48
4924.00	-28.39	33.43	41.02	30.56	46.06	35.60	74	54	-27.94	-18.40	330	1.62
7386.00	-26.49	36.13	38.67	28.15	48.31	37.79	74	54	-25.69	-16.21	197	1.56
9848.00	-25.57	37.98	37.81	27.36	50.22	39.77	74	54	-23.78	-14.23	234	1.55
12310.0	-23.04	39.01	34.45	23.92	50.43	39.90	74	54	-23.57	-14.10	291	1.43
14772.0	-21.01	41.18	28.96	18.47	49.14	38.65	74	54	-24.86	-15.35	90	1.60

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2462.00 (F)	-31.31	28.39	89.42	77.65	86.50	74.73	114	94	-27.50	-19.27	173	1.61
4924.00	-28.39	33.43	41.13	30.68	46.17	35.72	74	54	-27.83	-18.28	45	1.53
7386.00	-26.49	36.13	38.53	28.04	48.17	37.68	74	54	-25.83	-16.32	268	1.59
9848.00	-25.57	37.98	37.67	27.18	50.08	39.59	74	54	-23.92	-14.41	55	1.46
12310.0	-23.04	39.01	33.69	23.27	49.67	39.25	74	54	-24.33	-14.75	182	1.57
14772.0	-21.01	41.18	28.65	18.15	48.83	38.33	74	54	-25.17	-15.67	58	1.55

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.: Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F): The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT20_CH01
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1196.47	-33.59	24.87	52.24	41.76	43.53	33.05	74	54	-30.47	-20.95	126	2.45
1997.88	-31.83	27.09	47.61	37.15	42.86	32.40	74	54	-31.14	-21.60	319	2.21
3031.06	-31.00	30.27	43.87	33.39	43.14	32.66	74	54	-30.86	-21.34	215	1.87
3672.98	-29.97	31.71	43.89	33.35	45.63	35.09	74	54	-28.37	-18.91	108	1.73
4657.02	-28.70	32.85	43.10	32.61	47.25	36.76	74	54	-26.75	-17.24	94	1.45
5098.55	-28.13	33.72	42.25	31.78	47.84	37.37	74	54	-26.16	-16.63	227	1.28

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1193.43	-33.60	24.87	54.93	44.47	46.20	35.74	74	54	-27.80	-18.26	50	1.07
1601.81	-32.43	25.66	50.82	40.32	44.06	33.56	74	54	-29.94	-20.44	48	1.19
3687.55	-29.95	31.75	43.71	33.25	45.51	35.05	74	54	-28.49	-18.95	208	1.83
4088.16	-29.39	32.50	42.75	32.29	45.86	35.40	74	54	-28.14	-18.60	201	1.97
4639.47	-28.72	32.81	42.60	32.08	46.69	36.17	74	54	-27.31	-17.83	197	2.08
5442.89	-27.53	34.13	40.78	30.26	47.38	36.86	74	54	-26.62	-17.14	283	2.36

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT20_CH01 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2412.00 (F)	-31.37	28.25	89.74	77.45	86.63	74.34	114	94	-27.37	-19.66	315	1.58
4824.00	-28.50	33.21	41.07	30.58	45.78	35.29	74	54	-28.22	-18.71	48	1.43
7236.00	-26.56	35.77	37.79	27.35	46.99	36.55	74	54	-27.01	-17.45	127	1.56
9648.00	-25.68	37.82	37.15	26.62	49.28	38.75	74	54	-24.72	-15.25	284	1.72
12060.0	-23.81	39.16	34.45	23.95	49.81	39.31	74	54	-24.19	-14.69	195	1.39
14472.0	-20.86	41.96	30.24	19.77	51.34	40.87	74	54	-22.66	-13.13	224	1.44

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2412.00 (F)	-31.37	28.25	88.95	77.12	85.84	74.01	114	94	-28.16	-19.99	61	1.59
4824.00	-28.50	33.21	40.90	30.41	45.61	35.12	74	54	-28.39	-18.88	79	1.42
7236.00	-26.56	35.77	37.75	27.21	46.95	36.41	74	54	-27.05	-17.59	340	1.50
9648.00	-25.68	37.82	36.98	26.42	49.11	38.55	74	54	-24.89	-15.45	256	1.35
12060.0	-23.81	39.16	34.48	23.96	49.84	39.32	74	54	-24.16	-14.68	175	1.47
14472.0	-20.86	41.96	30.01	19.54	51.11	40.64	74	54	-22.89	-13.36	92	1.54

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT20_CH06
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1199.53	-33.58	24.88	51.95	41.43	43.25	32.73	74	54	-30.75	-21.27	145	2.43
1996.80	-31.84	27.09	47.84	37.35	43.09	32.60	74	54	-30.91	-21.40	318	2.21
3677.17	-29.97	31.72	43.41	32.96	45.17	34.72	74	54	-28.83	-19.28	109	1.73
4329.09	-29.09	32.50	42.48	31.98	45.89	35.39	74	54	-28.11	-18.61	79	1.57
5293.23	-27.79	33.95	40.87	30.31	47.03	36.47	74	54	-26.97	-17.53	205	1.26
5734.01	-27.53	34.15	40.32	29.89	46.94	36.51	74	54	-27.06	-17.49	72	1.05

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1192.20	-33.60	24.87	55.50	44.95	46.77	36.22	74	54	-27.23	-17.78	50	1.09
1604.91	-32.42	25.67	55.37	44.83	48.62	38.08	74	54	-25.38	-15.92	247	1.17
3036.63	-30.99	30.28	43.86	33.39	43.15	32.68	74	54	-30.85	-21.32	118	1.62
3614.99	-30.06	31.57	43.35	32.86	44.87	34.38	74	54	-29.13	-19.62	57	1.73
4452.54	-28.94	32.50	42.39	31.83	45.95	35.39	74	54	-28.05	-18.61	196	2.05
5286.18	-27.80	33.94	41.18	30.67	47.32	36.81	74	54	-26.68	-17.19	298	2.32

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "F": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.: Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F): The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT20_CH06 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2437.00 (F)	-31.34	28.32	88.79	76.55	85.77	73.53	114	94	-28.23	-20.47	115	1.47
4874.00	-28.45	33.32	41.32	30.86	46.20	35.74	74	54	-27.80	-18.26	59	1.44
7311.00	-26.52	35.95	38.35	27.81	47.77	37.23	74	54	-26.23	-16.77	302	1.53
9748.00	-25.63	37.90	37.29	26.75	49.56	39.02	74	54	-24.44	-14.98	197	1.56
12185.0	-23.42	39.09	33.91	23.49	49.58	39.16	74	54	-24.42	-14.84	244	1.49
14622.0	-20.92	41.63	28.53	18.02	49.24	38.73	74	54	-24.76	-15.27	89	1.50

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2437.00 (F)	-31.34	28.32	89.21	77.46	86.19	74.44	114	94	-27.81	-19.56	71	1.39
4874.00	-28.45	33.32	41.37	30.85	46.25	35.73	74	54	-27.75	-18.27	178	1.36
7311.00	-26.52	35.95	38.14	27.63	47.56	37.05	74	54	-26.44	-16.95	267	1.57
9748.00	-25.63	37.90	37.20	26.68	49.47	38.95	74	54	-24.53	-15.05	40	1.43
12185.0	-23.42	39.09	33.89	23.37	49.56	39.04	74	54	-24.44	-14.96	322	1.60
14622.0	-20.92	41.63	28.47	17.95	49.18	38.66	74	54	-24.82	-15.34	94	1.62

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT20_CH11
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1197.55	-33.59	24.88	51.83	41.36	43.12	32.65	74	54	-30.88	-21.35	142	2.44
1593.39	-32.44	25.63	48.91	38.48	42.10	31.67	74	54	-31.90	-22.33	337	2.37
3079.17	-30.92	30.37	43.97	33.41	43.42	32.86	74	54	-30.58	-21.14	210	1.84
3614.71	-30.06	31.57	42.93	32.40	44.45	33.92	74	54	-29.55	-20.08	109	1.75
4166.10	-29.29	32.50	42.38	31.87	45.59	35.08	74	54	-28.41	-18.92	301	1.52
5465.58	-27.49	34.16	40.69	30.13	47.36	36.80	74	54	-26.64	-17.20	45	1.17

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1191.41	-33.61	24.87	55.26	44.79	46.52	36.05	74	54	-27.48	-17.95	90	1.08
1593.31	-32.44	25.63	55.01	44.53	48.20	37.72	74	54	-25.80	-16.28	250	1.19
3557.82	-30.14	31.44	43.30	32.82	44.60	34.12	74	54	-29.40	-19.88	107	1.75
4244.93	-29.20	32.50	42.67	32.17	45.97	35.47	74	54	-28.03	-18.53	278	1.94
5395.13	-27.61	34.07	40.68	30.15	47.14	36.61	74	54	-26.86	-17.39	98	2.31
5786.51	-27.55	34.14	40.85	30.38	47.44	36.97	74	54	-26.56	-17.03	280	2.47

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT20_CH11 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2462.00 (F)	-31.31	28.39	86.78	74.19	83.86	71.27	114	94	-30.14	-22.73	300	1.55
4924.00	-28.39	33.43	41.13	30.67	46.17	35.71	74	54	-27.83	-18.29	149	1.61
7386.00	-26.49	36.13	38.15	27.64	47.79	37.28	74	54	-26.21	-16.72	257	1.52
9848.00	-25.57	37.98	37.22	26.70	49.63	39.11	74	54	-24.37	-14.89	81	1.48
12310.0	-23.04	39.01	33.48	22.93	49.46	38.91	74	54	-24.54	-15.09	119	1.57
14772.0	-21.01	41.18	28.75	18.19	48.93	38.37	74	54	-25.07	-15.63	270	1.49

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2462.00 (F)	-31.31	28.39	88.00	77.42	85.08	74.50	114	94	-28.92	-19.50	67	1.63
4924.00	-28.39	33.43	40.82	30.34	45.86	35.38	74	54	-28.14	-18.62	183	1.65
7386.00	-26.49	36.13	37.91	27.47	47.55	37.11	74	54	-26.45	-16.89	204	1.44
9848.00	-25.57	37.98	37.23	26.70	49.64	39.11	74	54	-24.36	-14.89	195	1.47
12310.0	-23.04	39.01	33.45	22.94	49.43	38.92	74	54	-24.57	-15.08	75	1.52
14772.0	-21.01	41.18	28.57	18.04	48.75	38.22	74	54	-25.25	-15.78	43	1.56

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT40_CH05
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1196.62	-33.59	24.87	52.27	41.78	43.56	33.07	74	54	-30.44	-20.93	281	2.43
3264.72	-30.61	30.78	43.46	32.93	43.63	33.10	74	54	-30.37	-20.90	301	1.83
3619.86	-30.05	31.59	42.59	32.07	44.13	33.61	74	54	-29.87	-20.39	76	1.75
4241.75	-29.20	32.50	42.37	31.89	45.67	35.19	74	54	-28.33	-18.81	55	1.54
5128.56	-28.08	33.75	40.61	30.14	46.29	35.82	74	54	-27.71	-18.18	127	1.27
5457.06	-27.50	34.15	41.58	31.02	48.22	37.66	74	54	-25.78	-16.34	63	1.15

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1196.69	-33.59	24.87	54.94	44.48	46.23	35.77	74	54	-27.77	-18.23	158	1.07
1595.70	-32.44	25.64	49.14	38.67	42.34	31.87	74	54	-31.66	-22.13	243	1.19
3084.79	-30.91	30.38	43.62	33.13	43.09	32.60	74	54	-30.91	-21.40	110	1.65
3551.95	-30.15	31.42	43.06	32.58	44.34	33.86	74	54	-29.66	-20.14	98	1.73
4012.67	-29.49	32.50	42.27	31.75	45.28	34.76	74	54	-28.72	-19.24	245	1.90
5473.92	-27.48	34.17	40.84	30.38	47.53	37.07	74	54	-26.47	-16.93	29	2.35

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT40_CH05 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2422.00 (F)	-31.36	28.28	85.76	73.98	82.68	70.90	114	94	-31.32	-23.10	237	1.46
4844.00	-28.48	33.26	39.95	29.37	44.73	34.15	74	54	-29.27	-19.85	105	1.52
7266.00	-26.55	35.84	37.89	27.35	47.18	36.64	74	54	-26.82	-17.36	98	1.59
9688.00	-25.66	37.85	36.74	26.21	48.93	38.40	74	54	-25.07	-15.60	311	1.63
12110.0	-23.65	39.13	34.01	23.59	49.49	39.07	74	54	-24.51	-14.93	47	1.50
14532.0	-20.87	41.90	29.32	18.76	50.36	39.80	74	54	-23.64	-14.20	157	1.55

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2422.00 (F)	-31.36	28.28	85.40	73.65	82.32	70.57	114	94	-31.68	-23.43	248	1.48
4844.00	-28.48	33.26	40.96	30.41	45.74	35.19	74	54	-28.26	-18.81	66	1.39
7266.00	-26.55	35.84	37.67	27.18	46.96	36.47	74	54	-27.04	-17.53	191	1.37
9688.00	-25.66	37.85	36.81	26.23	49.00	38.42	74	54	-25.00	-15.58	250	1.60
12110.0	-23.65	39.13	34.02	23.57	49.50	39.05	74	54	-24.50	-14.95	78	1.55
14532.0	-20.87	41.90	29.13	18.60	50.17	39.64	74	54	-23.83	-14.36	101	1.54

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.

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TEST REPORTReference No.: A14031501
Report No.: FCCA14031501
FCC ID : ZME-MLWG2
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Date: Mar. 27, 2014

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT40_CH08
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1198.31	-33.58	24.88	51.73	40.22	43.02	31.51	74	54	-30.98	-22.49	140	2.43
1997.07	-31.83	27.09	48.01	37.57	43.26	32.82	74	54	-30.74	-21.18	320	2.21
3042.20	-30.98	30.29	44.49	33.97	43.80	33.28	74	54	-30.20	-20.72	215	1.87
3278.47	-30.59	30.81	43.38	32.84	43.60	33.06	74	54	-30.40	-20.94	71	1.75
4401.99	-29.00	32.50	42.80	32.35	46.30	35.85	74	54	-27.70	-18.15	96	1.43
5652.50	-27.49	34.17	40.55	30.03	47.23	36.71	74	54	-26.77	-17.29	26	1.12

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1193.78	-33.60	24.87	54.51	44.08	45.78	35.35	74	54	-28.22	-18.65	158	1.09
1599.02	-32.43	25.66	51.73	41.24	44.95	34.46	74	54	-29.05	-19.54	306	1.15
3157.28	-30.79	30.55	43.64	33.11	43.40	32.87	74	54	-30.60	-21.13	242	1.68
3509.15	-30.21	31.32	43.41	32.98	44.52	34.09	74	54	-29.48	-19.91	107	1.74
4236.34	-29.21	32.50	42.04	31.56	45.33	34.85	74	54	-28.67	-19.15	267	1.99
5134.94	-28.07	33.76	41.95	31.47	47.64	37.16	74	54	-26.36	-16.84	290	2.28

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.: Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F): The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT40_CH08 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2437.00 (F)	-31.34	28.32	87.12	75.34	84.10	72.32	114	94	-29.90	-21.68	57	1.42
4874.00	-28.45	33.32	40.15	29.67	45.03	34.55	74	54	-28.97	-19.45	129	1.63
7311.00	-26.52	35.95	38.35	27.71	47.77	37.13	74	54	-26.23	-16.87	329	1.58
9748.00	-25.63	37.90	36.81	26.38	49.08	38.65	74	54	-24.92	-15.35	71	1.50
12185.0	-23.42	39.09	34.15	23.69	49.82	39.36	74	54	-24.18	-14.64	169	1.47
14622.0	-20.92	41.63	28.30	17.83	49.01	38.54	74	54	-24.99	-15.46	203	1.36

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2437.00 (F)	-31.34	28.32	85.21	73.29	82.19	70.27	114	94	-31.81	-23.73	274	1.48
4874.00	-28.45	33.32	40.27	29.76	45.15	34.64	74	54	-28.85	-19.36	305	1.55
7311.00	-26.52	35.95	37.84	27.31	47.26	36.73	74	54	-26.74	-17.27	88	1.51
9748.00	-25.63	37.90	36.95	26.44	49.22	38.71	74	54	-24.78	-15.29	140	1.46
12185.0	-23.42	39.09	34.01	23.58	49.68	39.25	74	54	-24.32	-14.75	91	1.39
14622.0	-20.92	41.63	28.48	17.96	49.19	38.67	74	54	-24.81	-15.33	138	1.64

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT40_CH11
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1198.41	-33.58	24.88	51.67	41.12	42.96	32.41	74	54	-31.04	-21.59	245	2.43
1995.86	-31.84	27.08	46.75	36.30	41.99	31.54	74	54	-32.01	-22.46	335	2.20
3027.16	-31.01	30.26	43.48	32.95	42.73	32.20	74	54	-31.27	-21.80	103	1.87
3468.74	-30.27	31.23	42.67	32.18	43.63	33.14	74	54	-30.37	-20.86	245	1.79
3787.27	-29.81	31.99	42.90	32.46	45.08	34.64	74	54	-28.92	-19.36	85	1.65
5439.13	-27.54	34.13	40.83	30.32	47.42	36.91	74	54	-26.58	-17.09	46	1.15

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1191.62	-33.61	24.87	54.50	44.01	45.76	35.27	74	54	-28.24	-18.73	159	1.07
1596.73	-32.44	25.65	49.77	39.24	42.98	32.45	74	54	-31.02	-21.55	49	1.19
3214.93	-30.69	30.67	43.51	33.02	43.49	33.00	74	54	-30.51	-21.00	114	1.67
3562.78	-30.13	31.45	42.56	32.08	43.88	33.40	74	54	-30.12	-20.60	206	1.79
4174.05	-29.28	32.50	42.28	31.76	45.50	34.98	74	54	-28.50	-19.02	317	1.93
5457.29	-27.50	34.15	40.42	29.96	47.06	36.60	74	54	-26.94	-17.40	280	2.33

NOTE :

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



TEST REPORT

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	1 GHz – 25 GHz	Tested Mode:	802.11n – HT40_CH11 (Fundamental)
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2452.00 (F)	-31.32	28.37	86.55	74.17	83.59	71.21	114	94	-30.41	-22.79	194	1.57
4904.00	-28.41	33.39	40.63	30.11	45.61	35.09	74	54	-28.39	-18.91	83	1.50
7356.00	-26.50	36.05	37.88	27.39	47.43	36.94	74	54	-26.57	-17.06	155	1.63
9808.00	-25.59	37.95	36.91	26.34	49.27	38.70	74	54	-24.73	-15.30	317	1.47
12260.0	-23.19	39.04	33.74	23.25	49.59	39.10	74	54	-24.41	-14.90	42	1.45
14712.0	-20.97	41.36	28.31	17.79	48.70	38.18	74	54	-25.30	-15.82	255	1.56

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
2452.00 (F)	-31.32	28.37	85.34	73.62	82.38	70.66	114	94	-31.62	-23.34	207	1.69
4904.00	-28.41	33.39	40.01	29.57	44.99	34.55	74	54	-29.01	-19.45	199	1.61
7356.00	-26.50	36.05	37.89	27.34	47.44	36.89	74	54	-26.56	-17.11	96	1.55
9808.00	-25.59	37.95	36.75	26.36	49.11	38.72	74	54	-24.89	-15.28	134	1.53
12260.0	-23.19	39.04	34.12	23.60	49.97	39.45	74	54	-24.03	-14.55	177	1.43
14712.0	-20.97	41.36	28.18	17.68	48.57	38.07	74	54	-25.43	-15.93	54	1.59

NOTE:

1. Measurement uncertainty is 3.92dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



4.3 BANDWIDTH TEST

4.3.1 LIMIT

FCC Part15, Subpart C Section 15.247 (a)(2). The minimum 6dB bandwidth shall be at least 500 kHz.

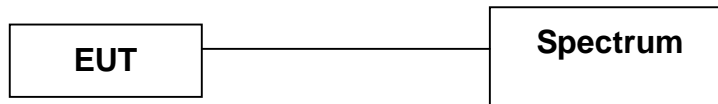
4.3.2 TEST EQUIPMENT

The following test equipment was used during the test :

EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DUE DATE OF CAL. & CAL. CENTER
EMI TEST RECEIVER (INCLUDE SPECTRUM ANALYZER)	9 KHz ~ 6 GHz	ROHDE & SCHWARZ	ESL /100176	MAR. 28, 2014 ETC

NOTE: The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST SET-UP



The EUT was connected to a spectrum through a 50Ω RF cable.

4.3.4 TEST PROCEDURE

The EUT was operated in continuous transmission mode or any specific channel. Printed out the test result from the spectrum by hard copy function.

4.3.5 EUT OPERATING CONDITION

1. Set the EUT under continuous transmission condition.
2. The EUT was set to the highest available power level.



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TEST REPORT

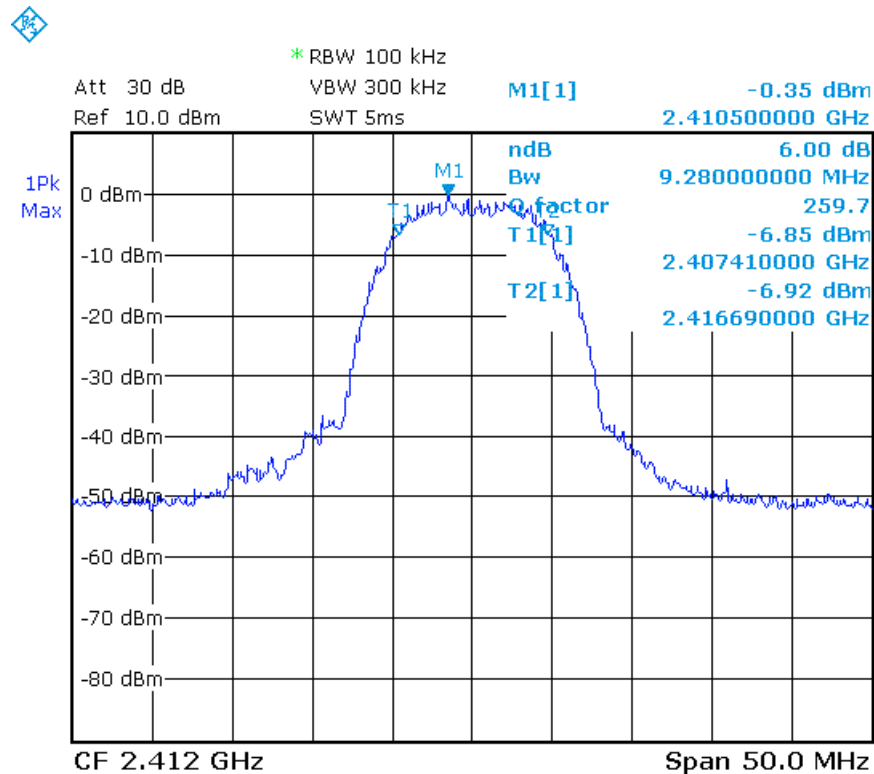
Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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 Date: Mar. 27, 2014

4.3.6 TEST RESULT

Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Tesr Mode:	802.11b
RBW:	100 kHz	VBW:	300 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

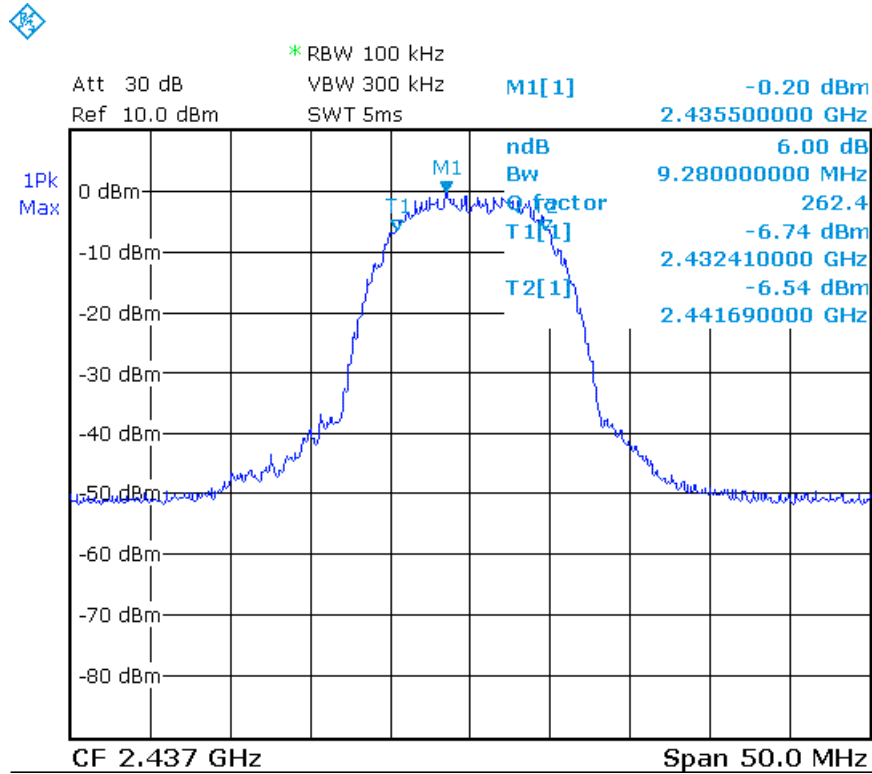
Channel Number	Channel Frequency (MHz)	6dB Down BW (MHz)	Minimum Limit (MHz)
CH01	2412	9.28	0.5
CH06	2437	9.28	0.5
CH11	2462	9.28	0.5

CH01 :

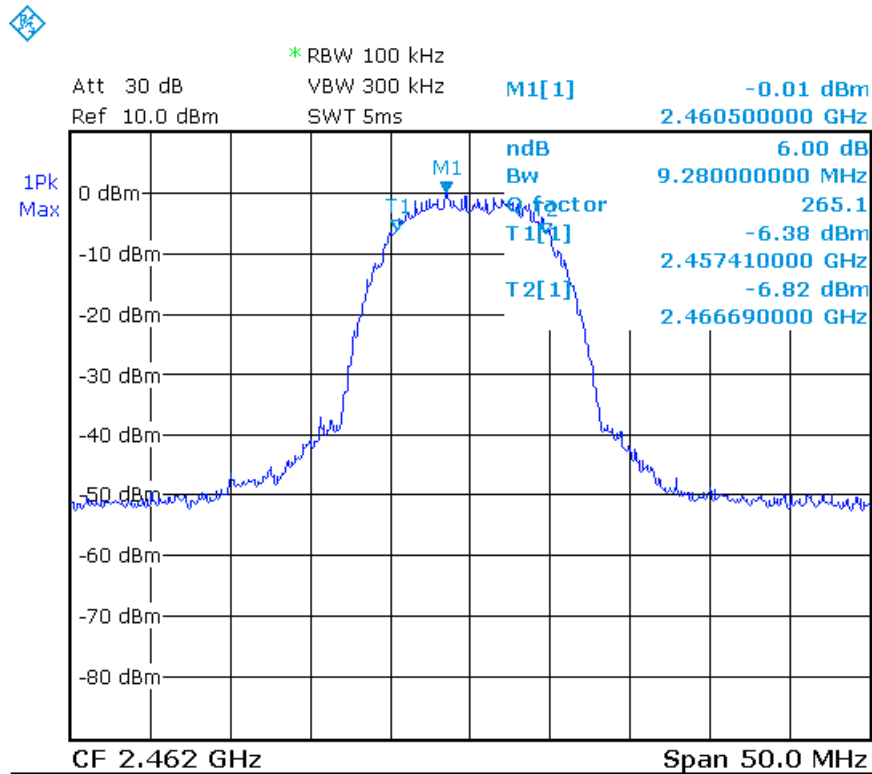




CH06 :



CH11 :





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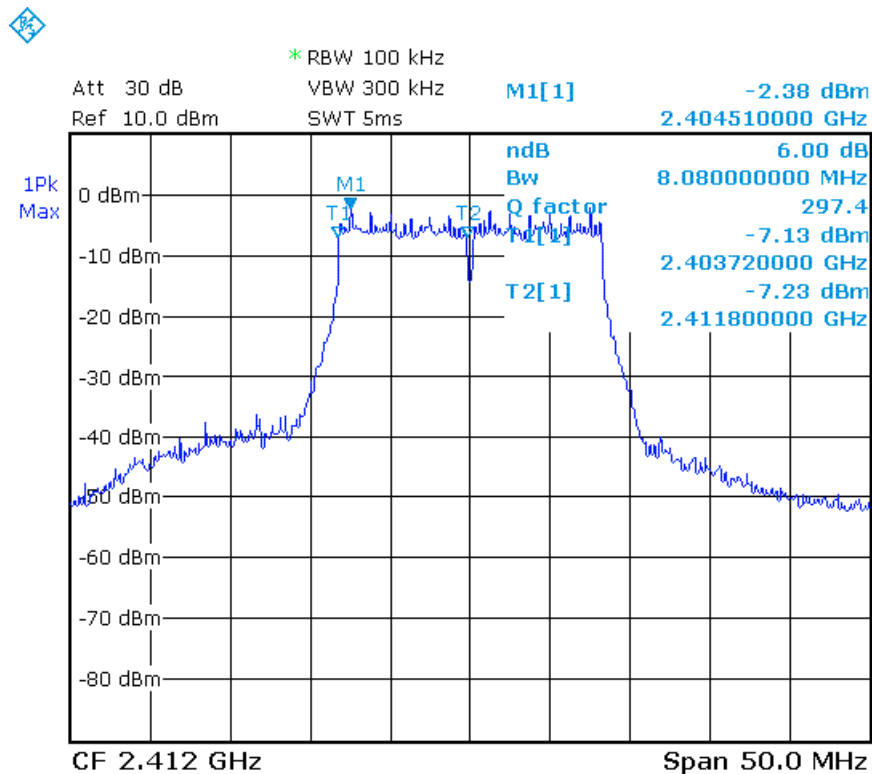
TEST REPORT

Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Tesr Mode:	802.11g
RBW:	100 kHz	VBW:	300 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

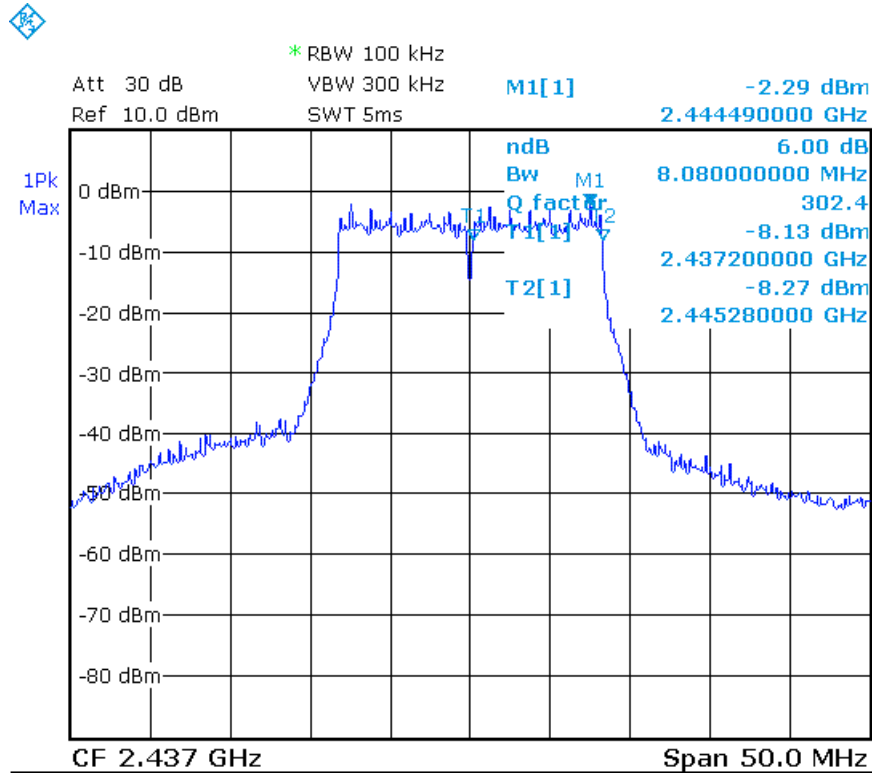
Channel Number	Channel Frequency (MHz)	6dB Down BW (MHz)	Minimum Limit (MHz)
CH01	2412	8.08	0.5
CH06	2437	8.08	0.5
CH11	2462	8.08	0.5

CH01 :

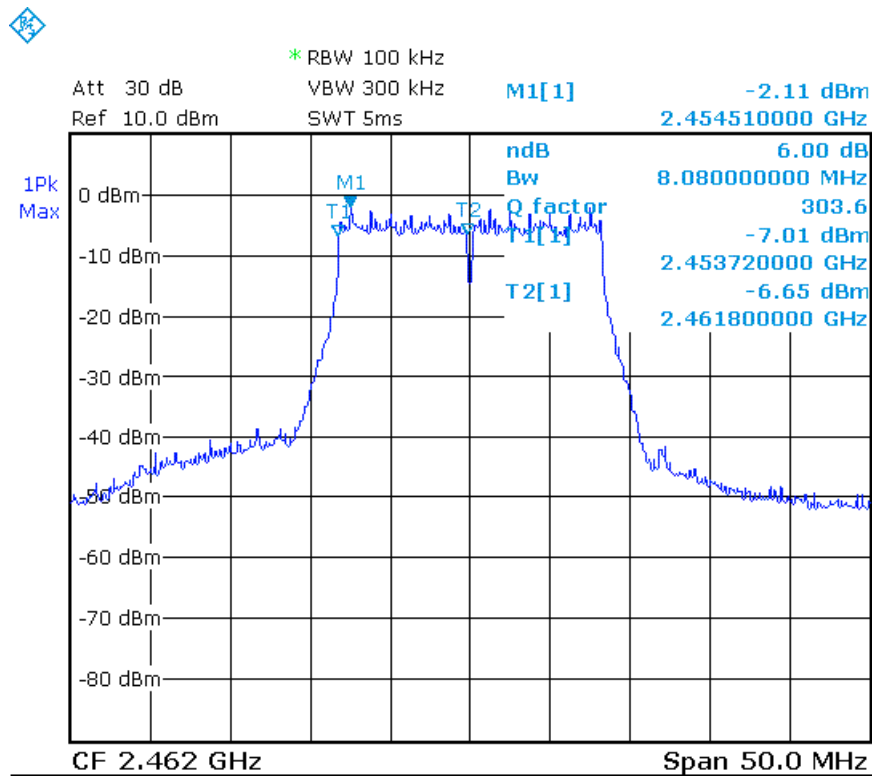




CH06 :



CH11 :





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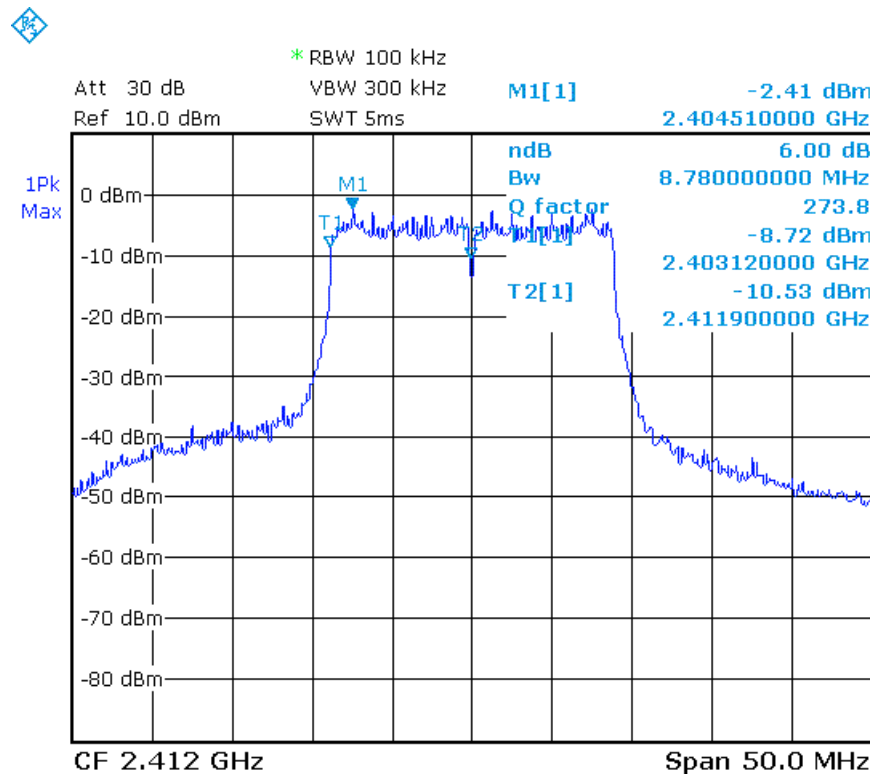
TEST REPORT

Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Test Mode:	802.11n – HT20
RBW:	100 kHz	VBW:	300 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

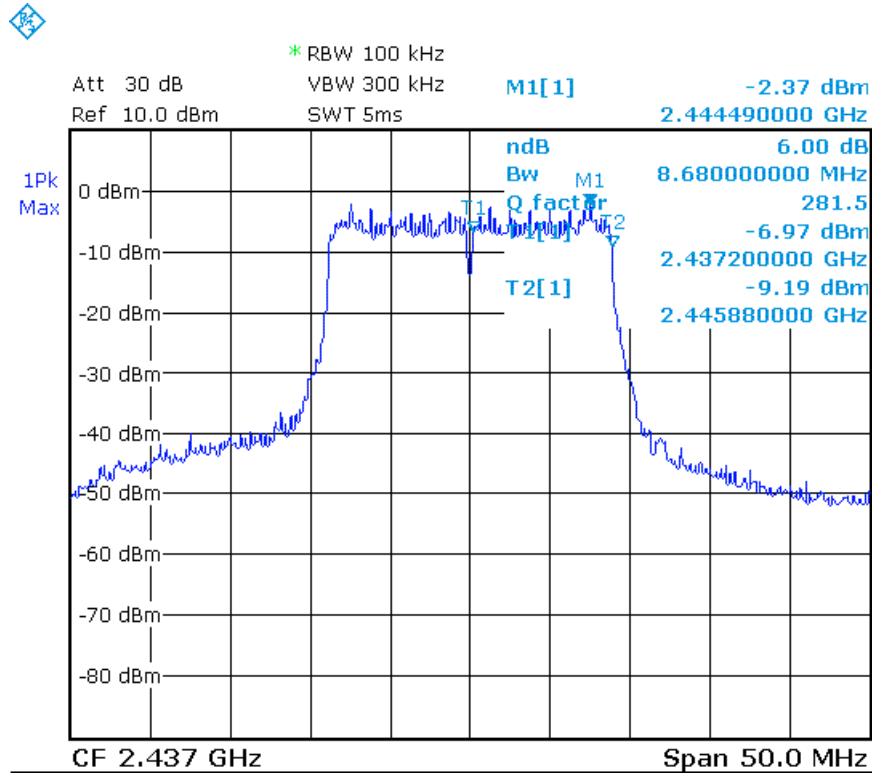
Channel Number	Channel Frequency (MHz)	6dB Down BW (MHz)	Minimum Limit (MHz)
CH01	2412	8.78	0.5
CH06	2437	8.68	0.5
CH11	2462	8.68	0.5

CH01 :

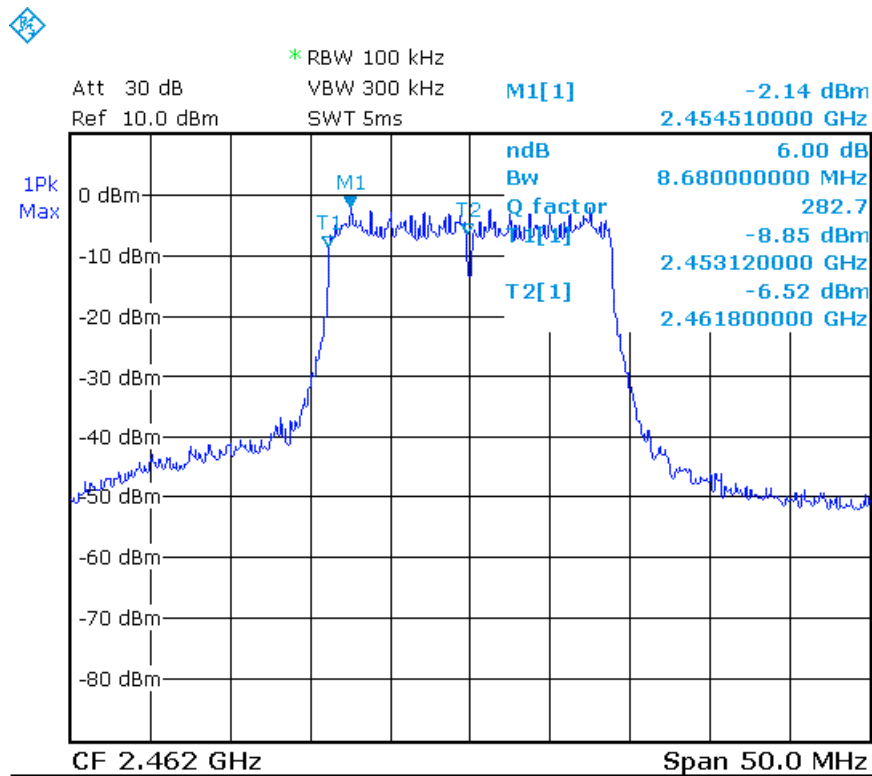




CH06 :



CH11 :





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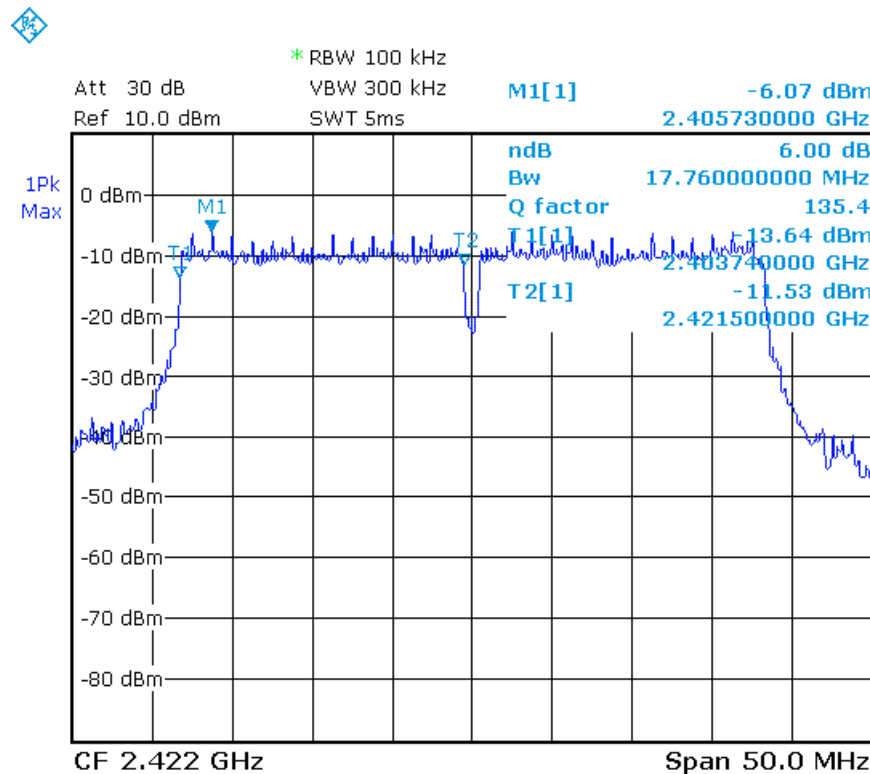
TEST REPORT

Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Tesr Mode:	802.11n – HT40
RBW:	100 kHz	VBW:	300 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

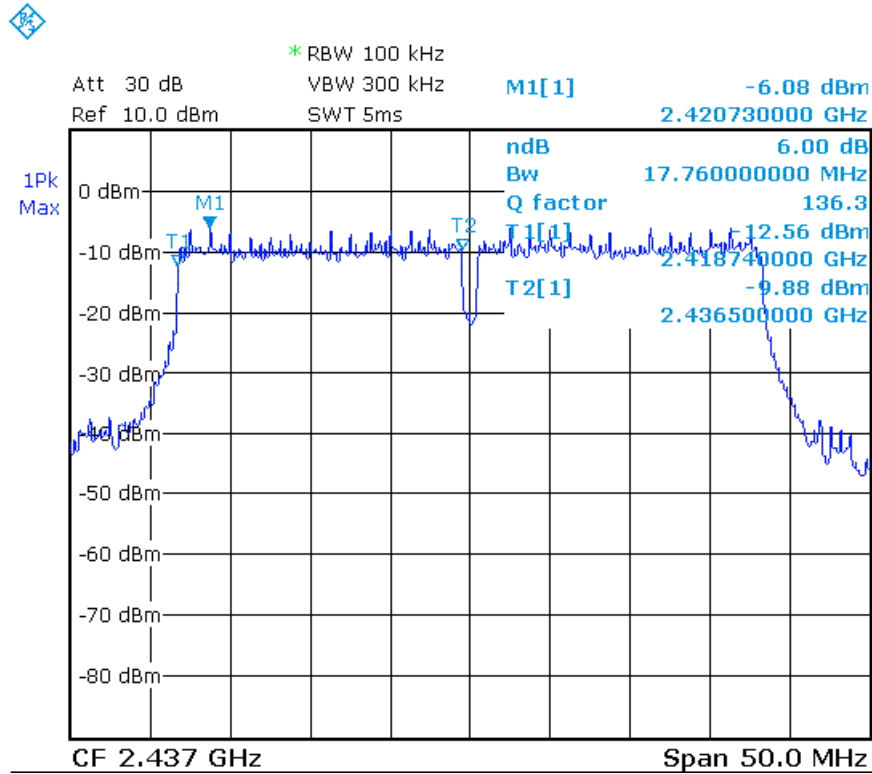
Channel Number	Channel Frequency (MHz)	6dB Down BW (MHz)	Minimum Limit (MHz)
CH05	2422	17.76	0.5
CH08	2437	17.76	0.5
CH11	2452	17.76	0.5

CH05 :

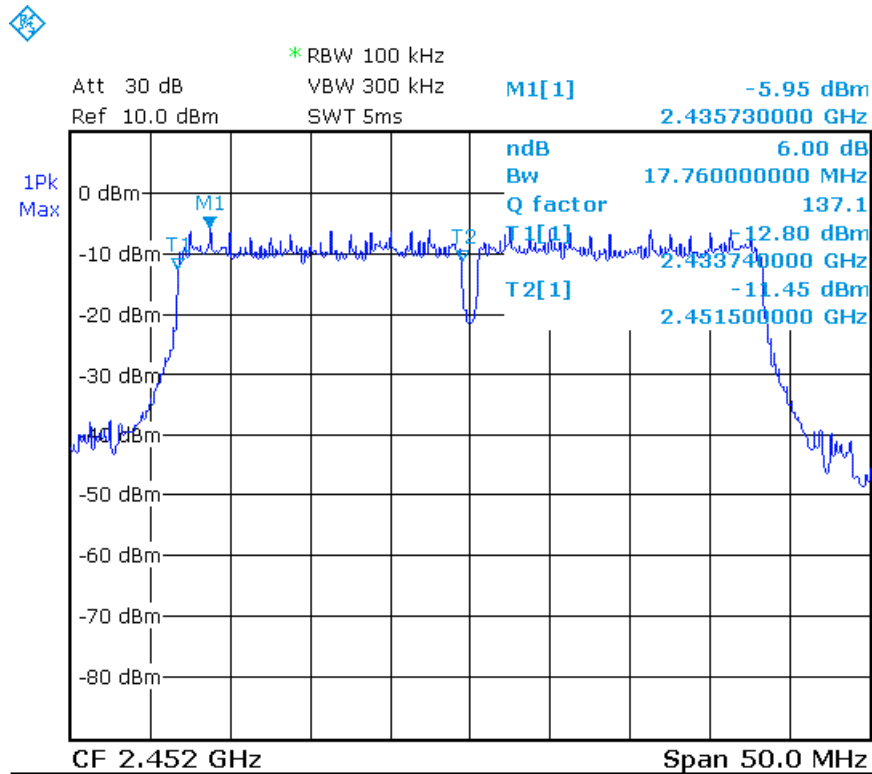




CH08 :



CH11 :





4.4 PEAK POWER TEST

4.4.1 LIMIT

FCC Part15, Subpart C Section 15.247(b).

Frequency Range (MHz)	The maximum (peak) conducted output power Limit(W)				
	Quantity of Hopping Channel	50	25	15	75
902-928		1(30 dBm)	0.125(21 dBm)	NA	NA
2400-2483.5		NA	NA	0.125(21dBm)	1(30 dBm)
5725-5850		NA	NA	NA	1(30 dBm)

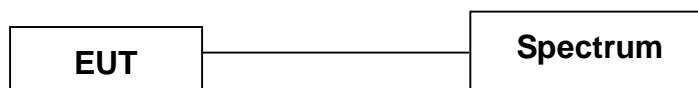
4.4.2 TEST EQUIPMENT

The following test equipment was used during the test :

Equipment/ Facilities	Specifications	Manufacturer	Model#/ Serial#	Due Date of Cal. & Cal. Center
EMI TEST RECEIVER (INCLUDE SPECTRUM ANALYZER)	9 KHz ~ 6 GHz	ROHDE & SCHWARZ	ESL /100176	MAR. 28, 2014 ETC

NOTE: The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

4.4.3 TEST SET-UP



The EUT was connected to a spectrum through a 50Ω RF cable.

4.4.4 TEST PROCEDURE

The EUT was operating in continuous transmission mode or could control its channel. Printed out the test result from the spectrum by hard copy function.



4.4.5 EUT OPERATING CONDITION

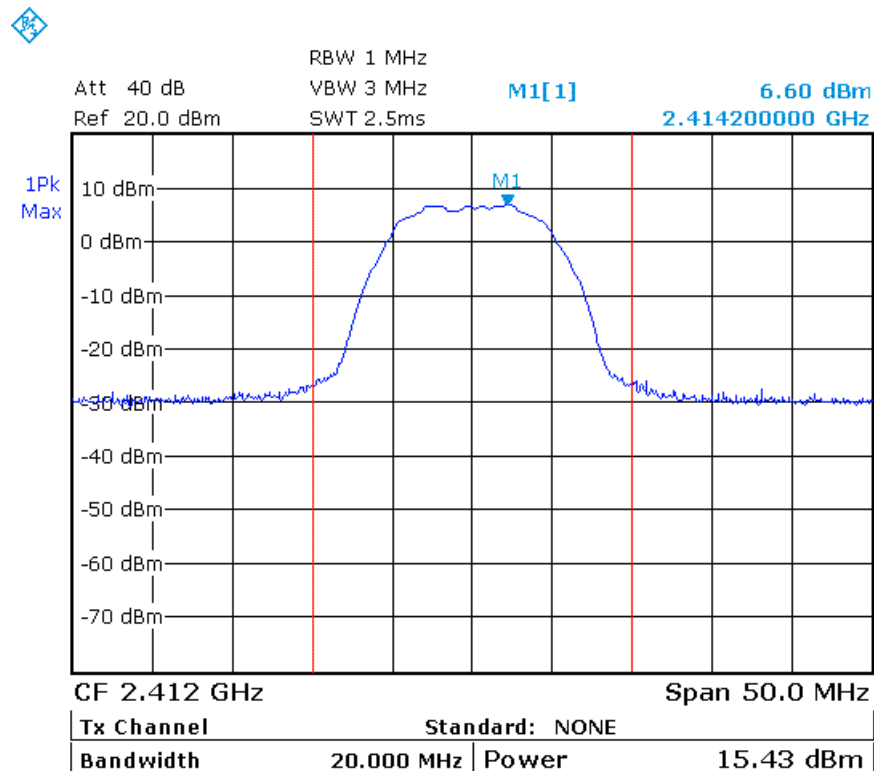
1. Set the EUT under continuous transmission condition.
2. The EUT was set to the highest available power level.

4.4.6 TEST RESULT

Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Test Mode:	802.11b
RBW:	1 MHz	VBW:	3 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

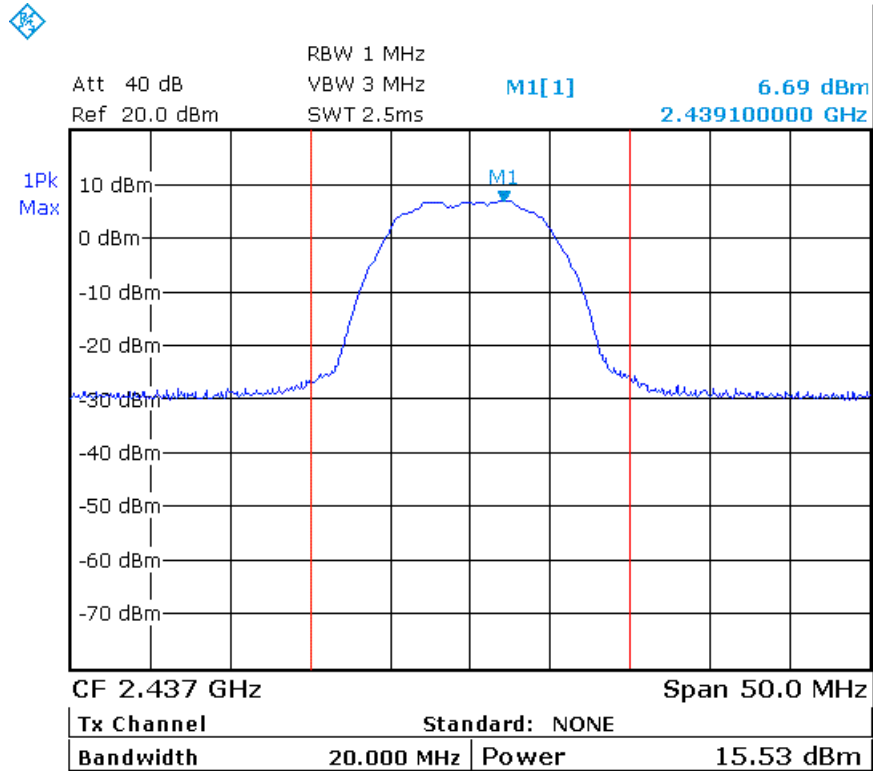
Channel Number	Channel Frequency (MHz)	Peak Power Output		Limit (dBm)
		(dBm)	(mW)	
CH01	2412	6.60	4.57	30
CH06	2437	6.69	4.67	30
CH11	2462	6.67	4.65	30

CH01 :

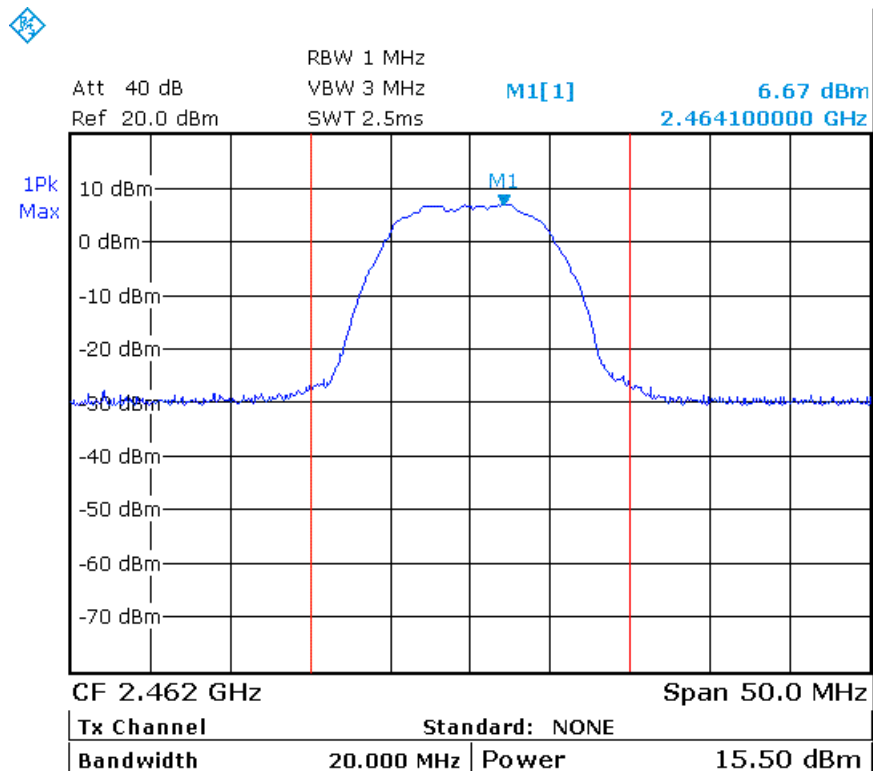




CH06 :



CH11 :





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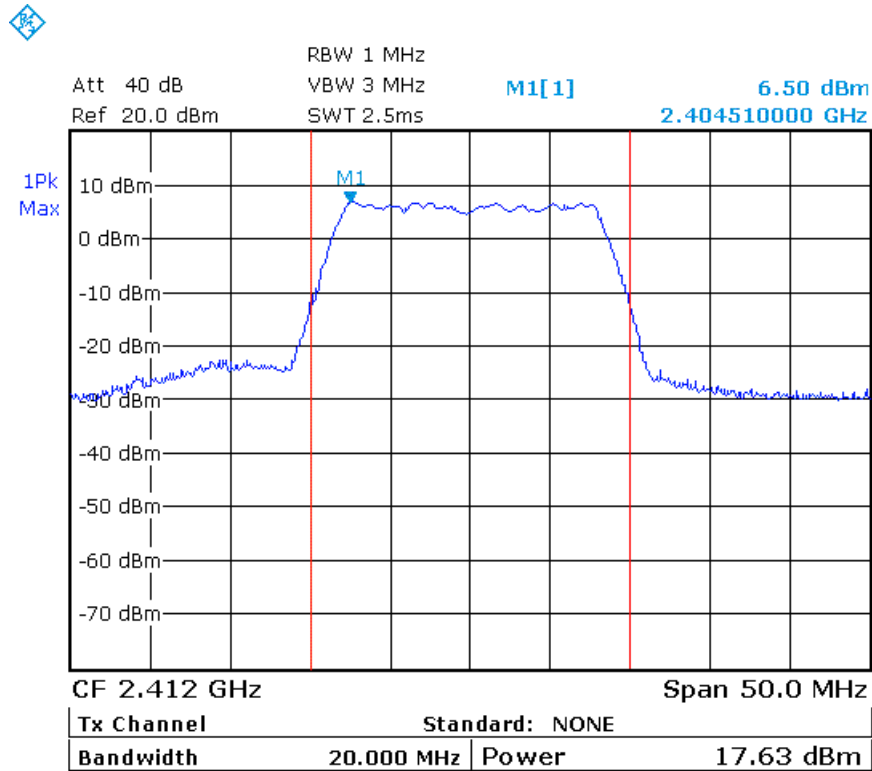
TEST REPORT

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Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Tesr Mode:	802.11g
RBW:	1 MHz	VBW:	3 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

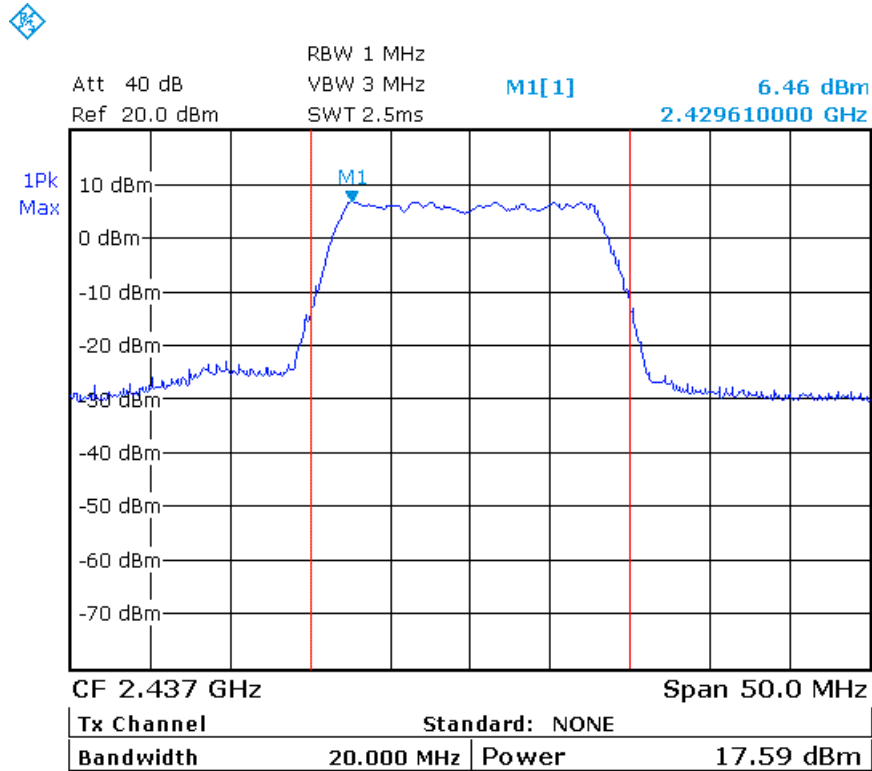
Channel Number	Channel Frequency (MHz)	Peak Power Output		Limit (dBm)
		(dBm)	(mW)	
CH01	2412	6.50	4.47	30
CH06	2437	6.46	4.43	30
CH11	2462	6.55	4.52	30

CH01 :

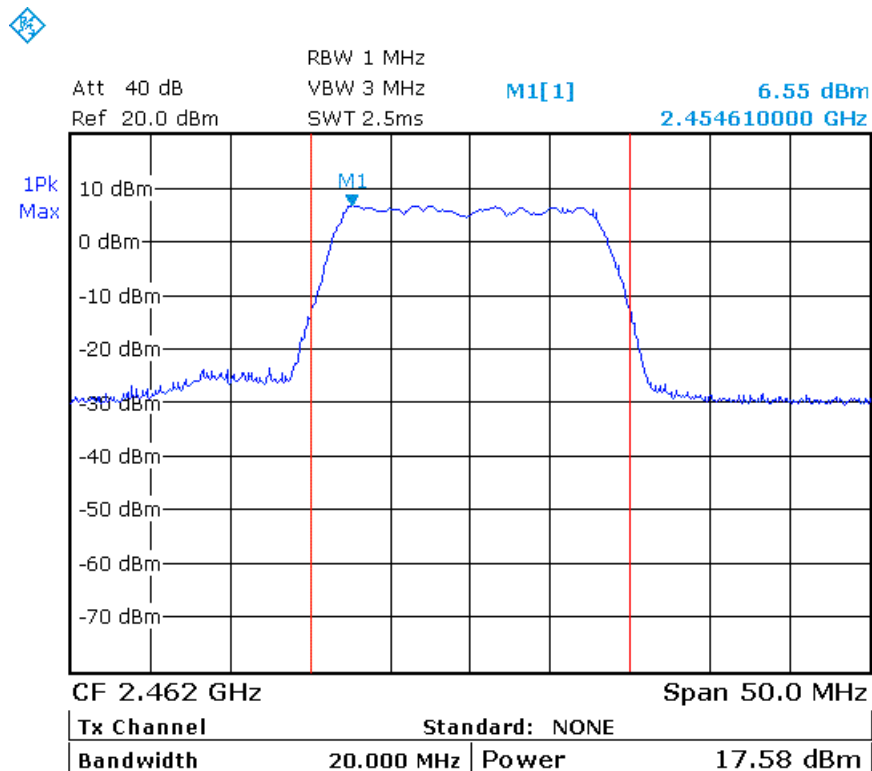




CH06 :



CH11 :





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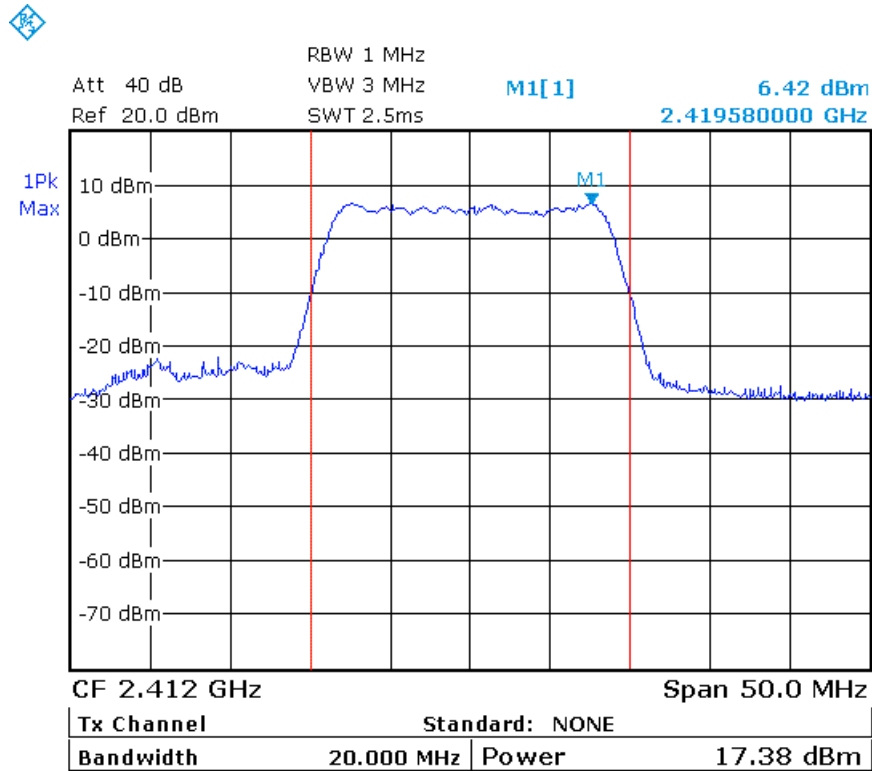
TEST REPORT

Reference No.: A14031501
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 FCC ID : ZME-MLWG2
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Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Tesr Mode:	802.11n – HT20
RBW:	1 MHz	VBW:	3 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

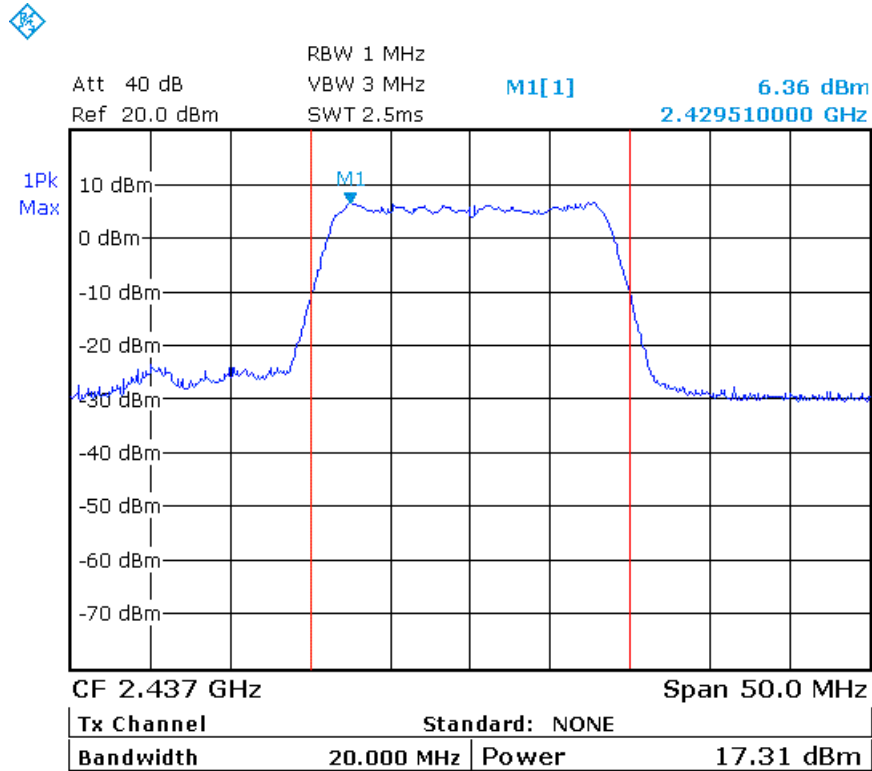
Channel Number	Channel Frequency (MHz)	Peak Power Output		Limit (dBm)
		(dBm)	(mW)	
CH01	2412	6.42	4.39	30
CH06	2437	6.36	4.33	30
CH11	2462	6.23	4.20	30

CH01 :

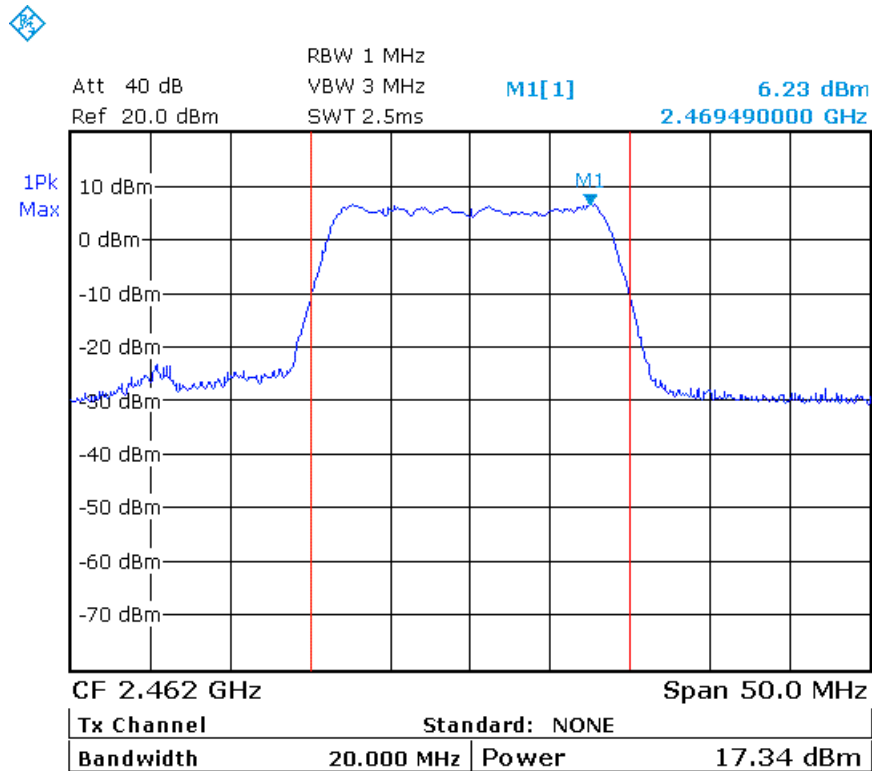




CH06 :



CH11 :





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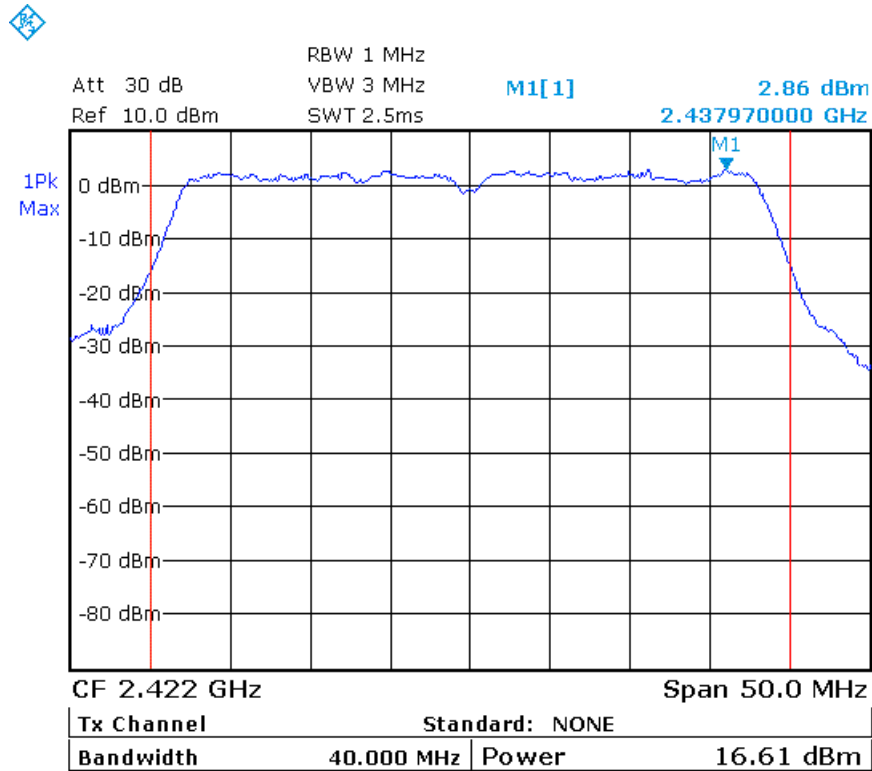
TEST REPORT

Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Tesr Mode:	802.11n – HT40
RBW:	1 MHz	VBW:	3 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

Channel Number	Channel Frequency (MHz)	Peak Power Output		Limit (dBm)
		(dBm)	(mW)	
CH05	2422	2.86	1.93	30
CH08	2437	3.01	2.00	30
CH11	2452	2.99	2.00	30

CH05 :





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4.5 BAND EDGE TEST

4.5.1 LIMIT

FCC Part15, Subpart C Section 15.247(d). In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

OPERATING FREQUENCY RANGE (MHz)	SPURIOUS EMISSION FREQUENCY (MHz)	LIMIT	
		Peak power ration to emission(dBc)	Emission level(dBuV/m)
902 - 928	<902	>20	NA
	>928	>20	NA
	960-1240	NA	54
2400 - 2483.5	<2400	>20	NA
	>2483.5-2500	NA	54
5725 - 5850	<5350-5460	NA	54
	<5725	>20	NA
	>5850	>20	NA

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TEST REPORTReference No.: A14031501
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FCC ID : ZME-MLWG2
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Date: Mar. 27, 2014**4.5.2 TEST EQUIPMENT**

The following test equipment was used during the test:

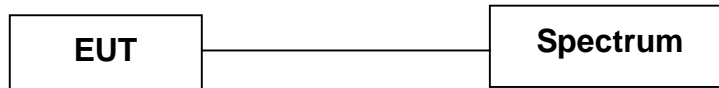
EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DUE DATE OF CAL. & CAL. CENTER
EMI TEST RECEIVER (INCLUDE SPECTRUM ANALYZER)	9 KHz ~ 6 GHz	ROHDE & SCHWARZ	ESL /100176	MAR. 28, 2014 ETC
SPECTRUM ANALYZER	9 kHz ~ 40GHz	ROHDE & SCHWARZ	FSP40 / 100093	DEC 08, 2014 ETC
HORN ANTENNA	1 GHz ~ 18 GHz	EMCO	3115/ 9602-4681	DEC. 12, 2014 ETC
PRE-AMPLIFIER	1 GHz ~ 26.5 GHz	AGILENT	8449B/ 3008A01995	DEC. 10, 2014 ETC
HORN ANTENNA	1 GHz ~ 18 GHz	EMCO	3115/ 9602-4681	DEC. 12, 2014 ETC
PRE-AMPLIFIER	1 GHz ~ 26.5 GHz	AGILENT	8449B/ 3008A01995	DEC. 10, 2014 ETC
K-TYPE CABLE	UP TO 40 GHz 3 m	HUBER+SUHNE R	SF102-46/2*11SK 252 /MY2611/2	MAR. 09, 2015 ETC
K-TYPE CABLE	UP TO 40 GHz, 1 m	HUBER+SUHNE R	SF 102-40/2*11 /23934/2	OCT. 20, 2014 ETC

NOTE: The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.



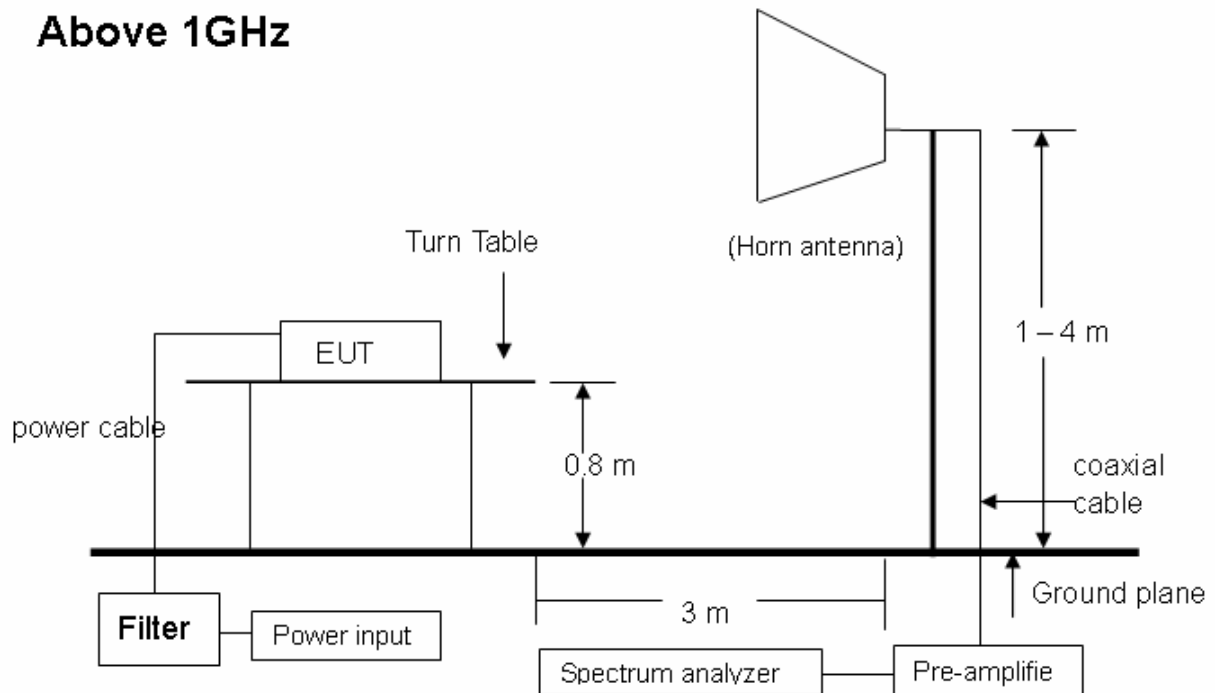
4.5.3 TEST SETUP

FOR RF CONDUCTED TEST (dBc)



The EUT was connected to a spectrum through a 50Ω RF cable.

Above 1GHz



NOTE: The EUT system was put on a wooden table with 0.8m heights above a ground plane. For the actual test configuration, please refer to the photos of testing.



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TEST REPORT

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4.5.4 TEST PROCEDURE

1. The EUT was operating in continuous transmission mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.
2. The EUT was tested according to the requirement of ANSI C63.4 and CISPR 22. The measurements were made at an open area test site with 3 meter measurement distance under 1 GHz and with 3m distance above 1GHz. The frequency spectrum measured started from 30 MHz. Under 1 GHz. All readings were quasi-peak values with 120 kHz resolution bandwidth of the test receiver. Above 1 GHz, the measurements were made at an open area test site with 3 meter measurement distance and all readings were peak and average values with 1 MHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. The cables connected to EUT and support units were moved to find the maximum emission levels for each frequency.

4.5.5 EUT OPERATING CONDITION

1. Set the EUT under continuous transmission condition.
2. The EUT was set to the highest available power level.



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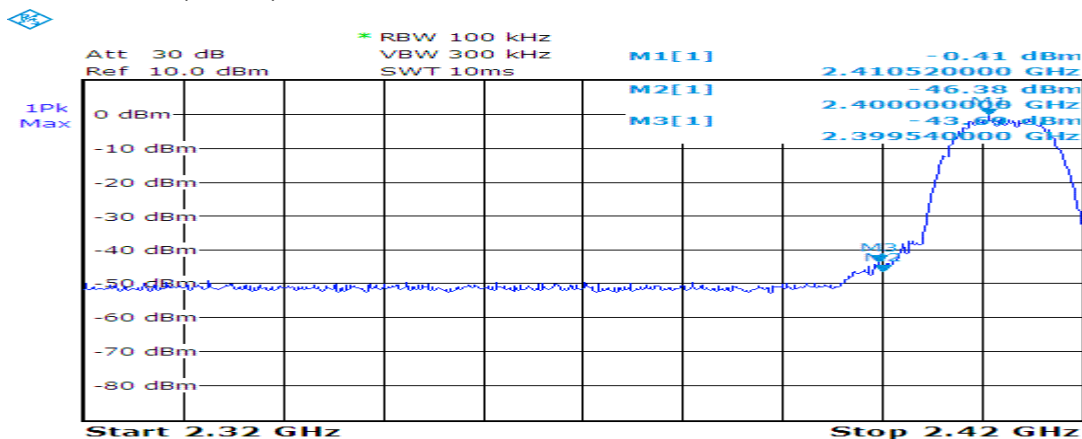
4.5.6 TEST RESULT

Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Tesr Mode:	802.11b
RBW:	100 kHz	VBW:	300 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

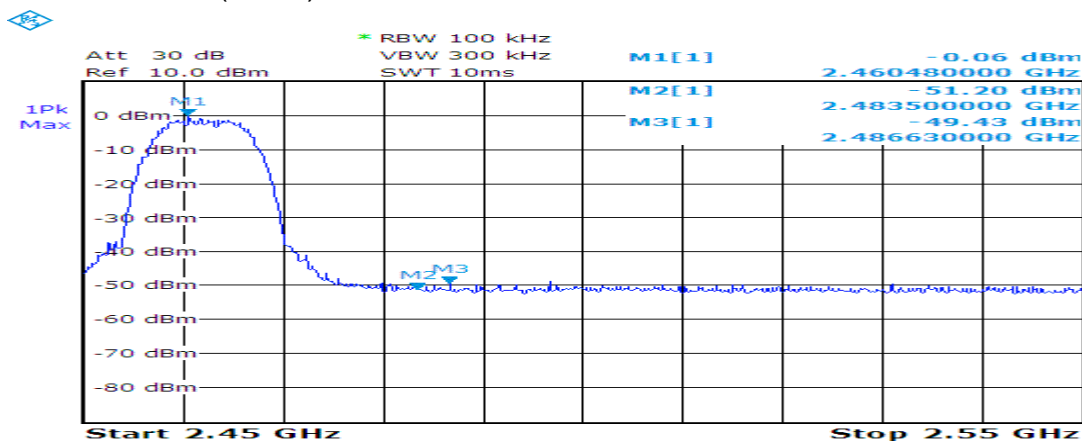
1. Conducted test

Frequency (MHz)	PEAK POWER OUTPUT (dBm)	Emission read Value(dBm)	Result of Band edge (dBc)	Band edge LIMIT (dBc)
< 2400	-0.41	-43.69	43.28	> 20 dBc
> 2483.5	-0.06	-49.43	49.37	> 20 dBc

Below 2400MHz (CH01) :



Above 2483.5 MHz (CH11) :





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TEST REPORT

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2. Radiated emission test :

Below 2400MHz (CH01)

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	2.32 GHz – 2.42 GHz	Tested Mode:	802.11b
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Frequency (MHz)	Correct Factor (dB)	Ant. Fac. (dB)	Ant. Pol. (H/V)	Reading (dBuV)		Emission (dBuV/m)		Limit Line (dBuV/m)		Over Limit (dBuV/m)	
				PK	AV	PK	AV	PK	AV	PK	AV
2399.28	-31.38	28.22	H	49.43	38.81	46.26	35.64	74	54	-27.74	-18.36
2399.51	-31.38	28.22	V	48.12	37.69	44.95	34.52	74	54	-29.05	-19.48
2400.00	-31.38	28.22	H	47.05	36.55	43.89	33.39	74	54	-30.11	-20.61
2400.00	-31.38	28.22	V	46.78	36.26	43.62	33.10	74	54	-30.38	-20.90

About 2483.5MHz (CH11)

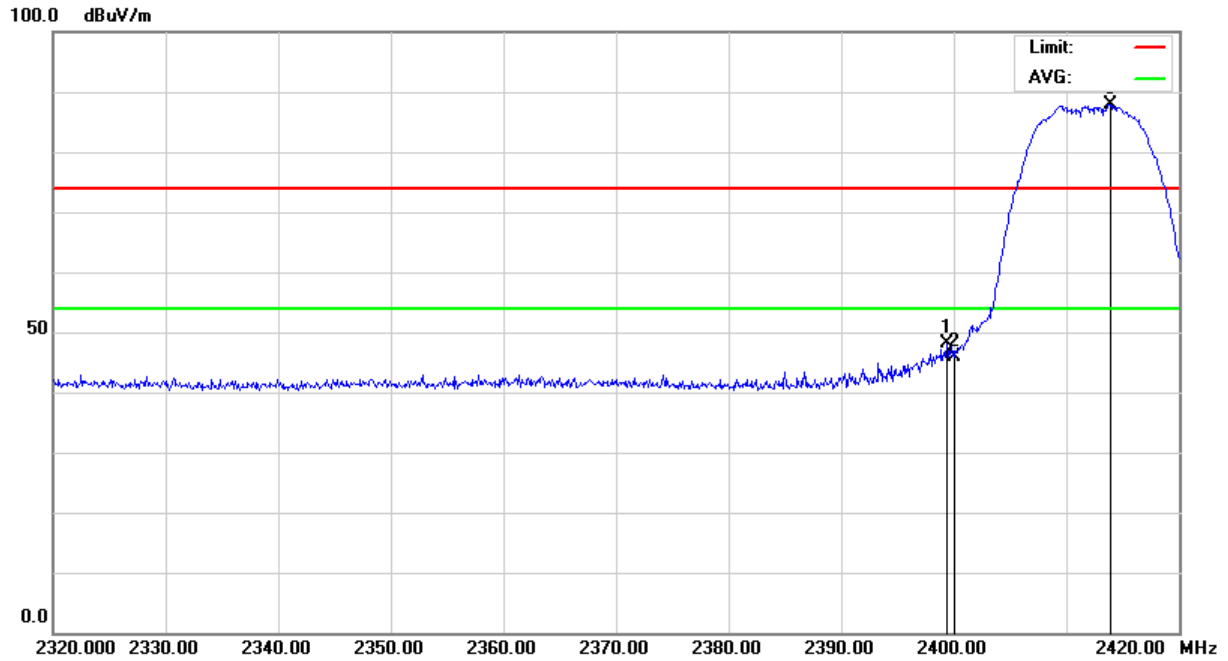
Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	2.45 GHz – 2.55 GHz	Tested Mode:	802.11b
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Frequency (MHz)	Correct Factor (dB)	Ant. Fac. (dB)	Ant. Pol. (H/V)	Reading (dBuV)		Emission (dBuV/m)		Limit Line (dBuV/m)		Over Limit (dBuV/m)	
				PK	AV	PK	AV	PK	AV	PK	AV
2483.50	-31.29	28.45	H	42.19	31.65	39.35	28.81	74	54	-34.65	-25.19
2483.50	-31.29	28.45	V	42.27	31.78	39.43	28.94	74	54	-34.57	-25.06
2486.33	-31.29	28.46	H	43.65	33.10	40.83	30.28	74	54	-33.17	-23.72
2488.08	-31.28	28.47	V	42.12	31.69	39.30	28.87	74	54	-34.70	-25.13

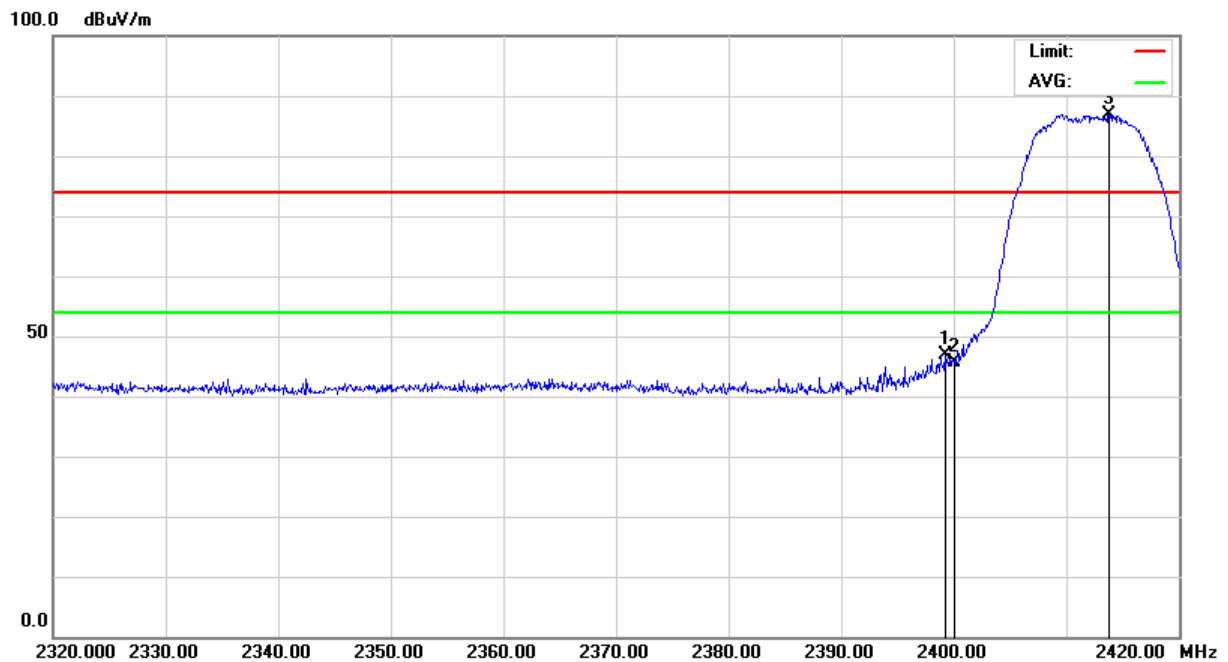


Below 2400MHz (CH01)

Antenna Polarization : Horizontal



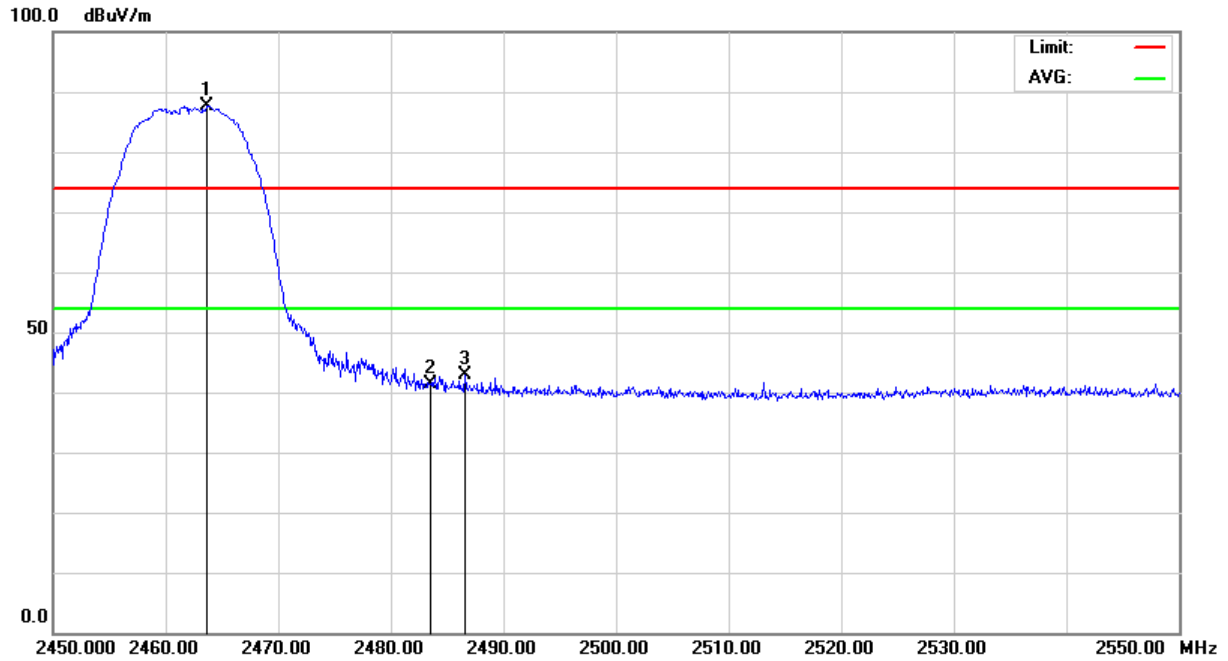
Antenna Polarization : Vertical



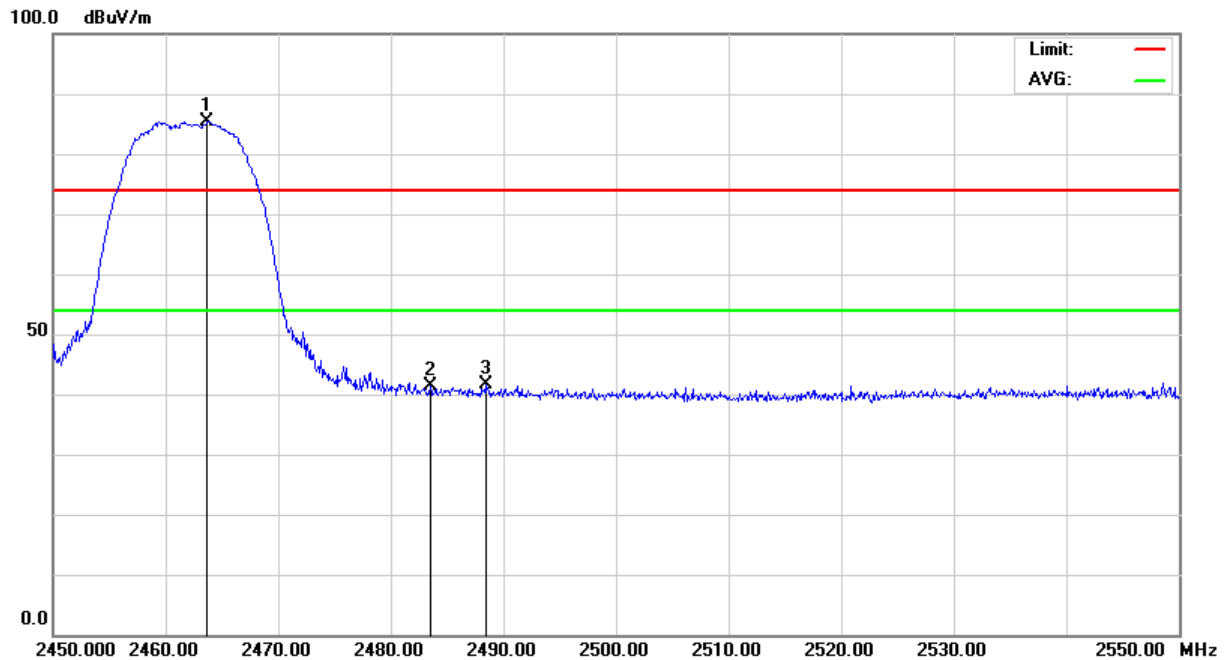


About 2483.5MHz (CH11)

Antenna Polarization : Horizontal



Antenna Polarization : Vertical





Spectrum Research & Testing Lab., Inc.
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TEST REPORT

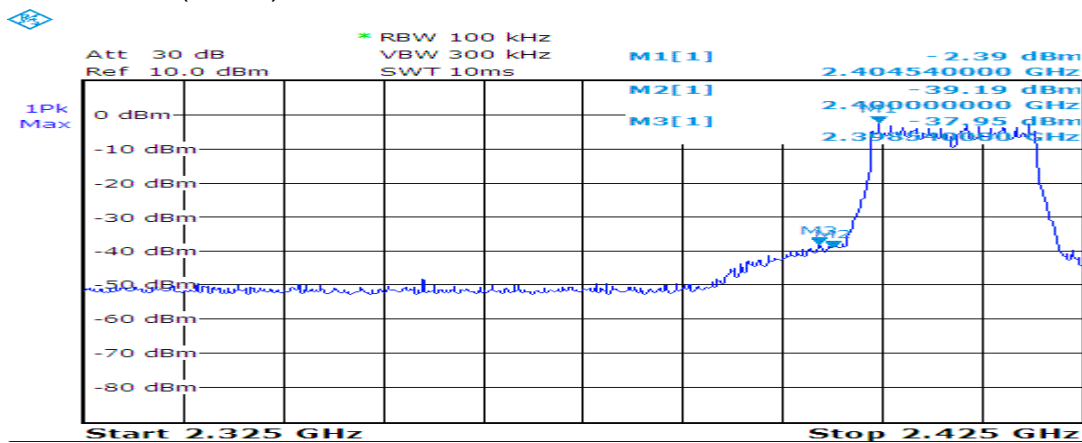
Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
 Page: 97 of 123
 Date: Mar. 27, 2014

Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Test Mode:	802.11g
RBW:	100 kHz	VBW:	300 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

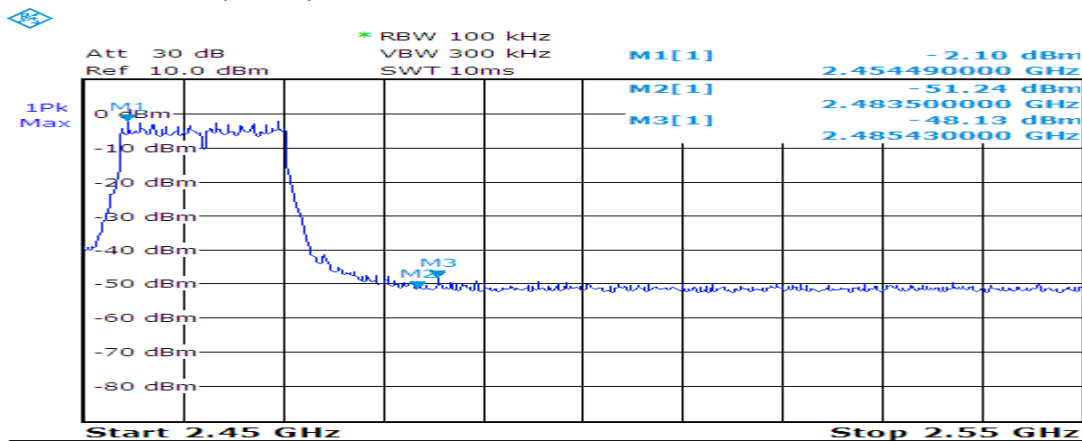
1. Conducted test

Frequency (MHz)	PEAK POWER OUTPUT (dBm)	Emission read Value(dBm)	Result of Band edge (dBc)	Band edge LIMIT (dBc)
< 2400	-2.39	-37.95	35.56	> 20 dBc
> 2483.5	-2.10	-48.13	46.03	> 20 dBc

Below 2400MHz (CH01) :



Above 2483.5 MHz (CH11) :



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TEST REPORTReference No.: A14031501
Report No.: FCCA14031501
FCC ID : ZME-MLWG2
Page: 98 of 123
Date: Mar. 27, 2014**2. Radiated emission test :**

Below 2400MHz (CH01)

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	2.325 GHz – 2.425 GHz	Tested Mode:	802.11g
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Frequency (MHz)	Correct Factor (dB)	Ant. Fac. (dB)	Ant. Pol. (H/V)	Reading (dBuV)		Emission (dBuV/m)		Limit Line (dBuV/m)		Over Limit (dBuV/m)	
				PK	AV	PK	AV	PK	AV	PK	AV
2396.18	-31.39	28.21	H	57.02	46.53	53.84	43.35	74.00	54.00	-20.16	-10.65
2396.56	-31.39	28.21	V	56.71	46.19	53.53	43.01	74.00	54.00	-20.47	-10.99
2400.00	-31.38	28.22	H	55.50	44.87	52.34	41.71	74.00	54.00	-21.66	-12.29
2400.00	-31.38	28.22	V	54.53	43.98	51.37	40.82	74.00	54.00	-22.63	-13.18

About 2483.5MHz (CH11)

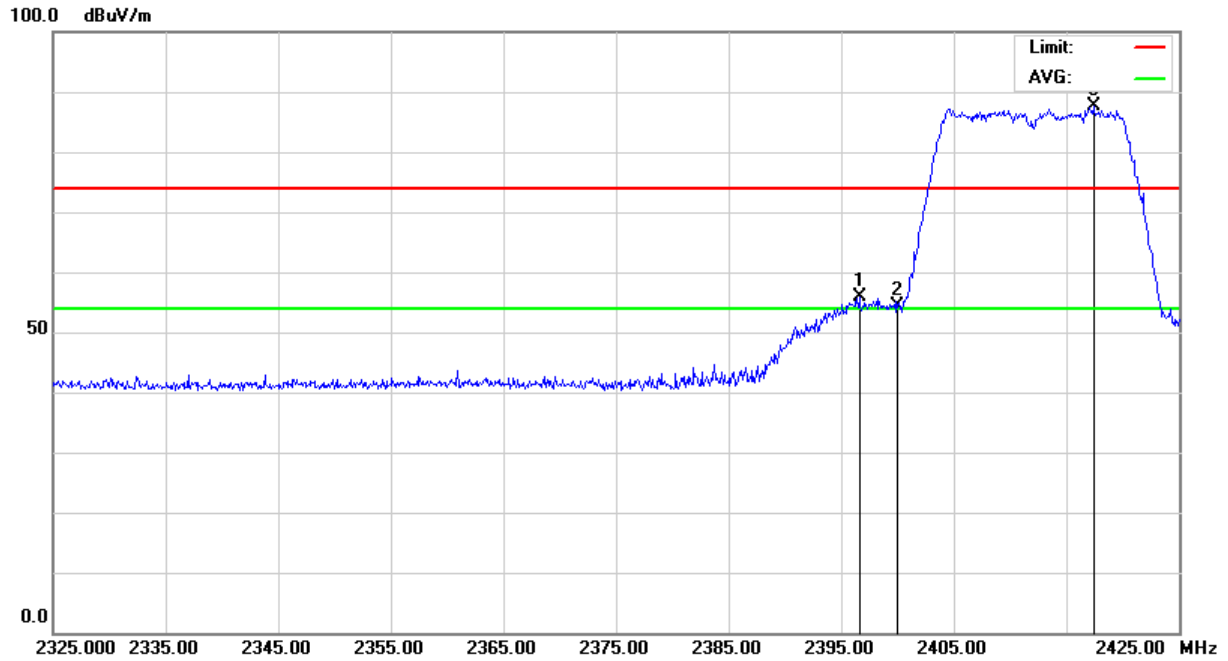
Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	2.45 GHz – 2.55 GHz	Tested Mode:	802.11g
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Frequency (MHz)	Correct Factor (dB)	Ant. Fac. (dB)	Ant. Pol. (H/V)	Reading (dBuV)		Emission (dBuV/m)		Limit Line (dBuV/m)		Over Limit (dBuV/m)	
				PK	AV	PK	AV	PK	AV	PK	AV
2483.50	-31.29	28.45	H	43.78	33.25	40.94	30.41	74.00	54.00	-33.06	-23.59
2483.50	-31.29	28.45	V	43.12	32.69	40.28	29.85	74.00	54.00	-33.72	-24.15
2490.82	-31.28	28.47	H	43.06	32.51	40.25	29.70	74.00	54.00	-33.75	-24.30
2485.42	-31.29	28.46	V	44.25	33.82	41.42	30.99	74.00	54.00	-32.58	-23.01

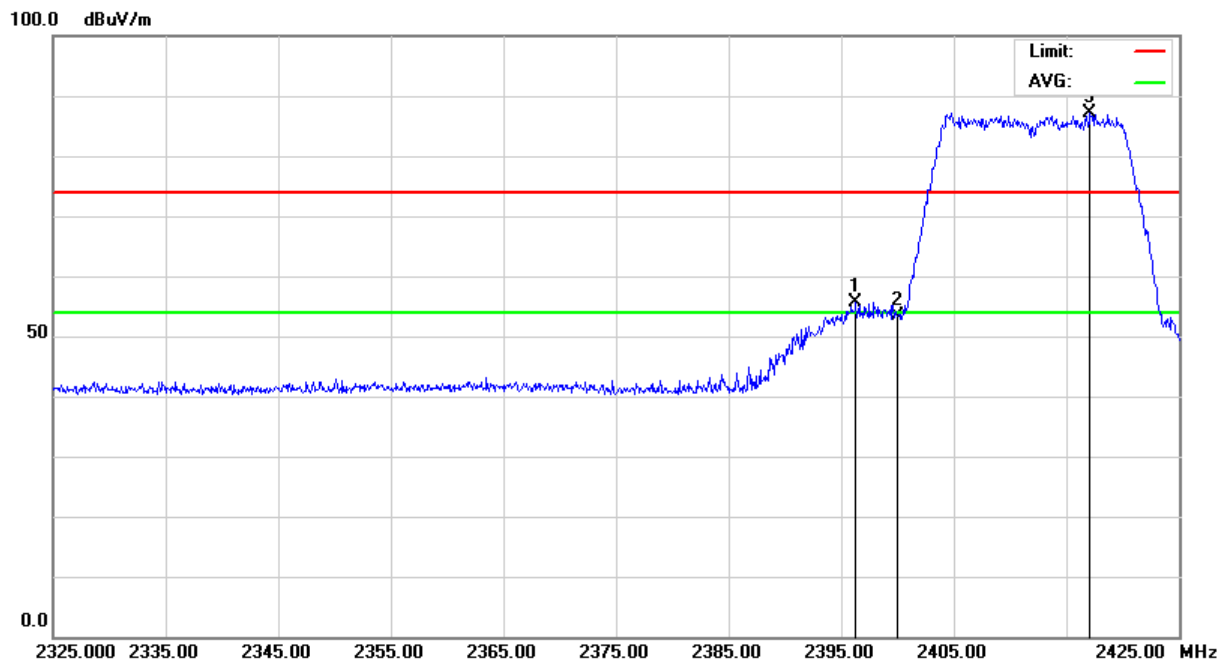


Below 2400MHz (CH01)

Antenna Polarization : Horizontal



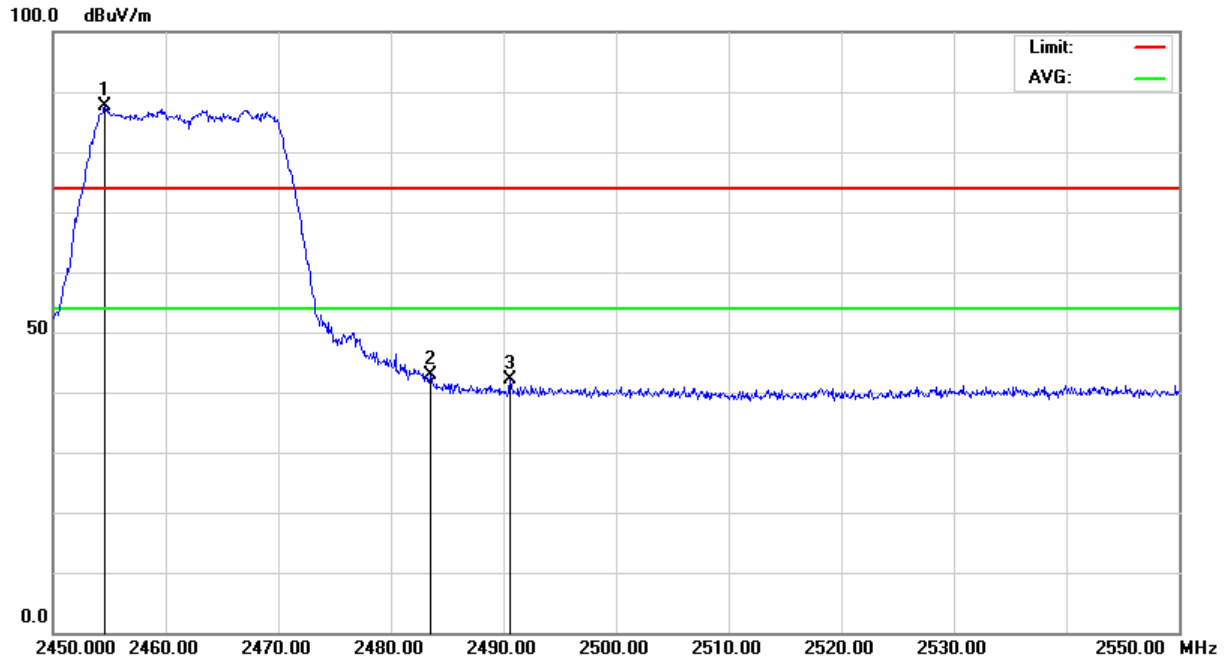
Antenna Polarization : Vertical



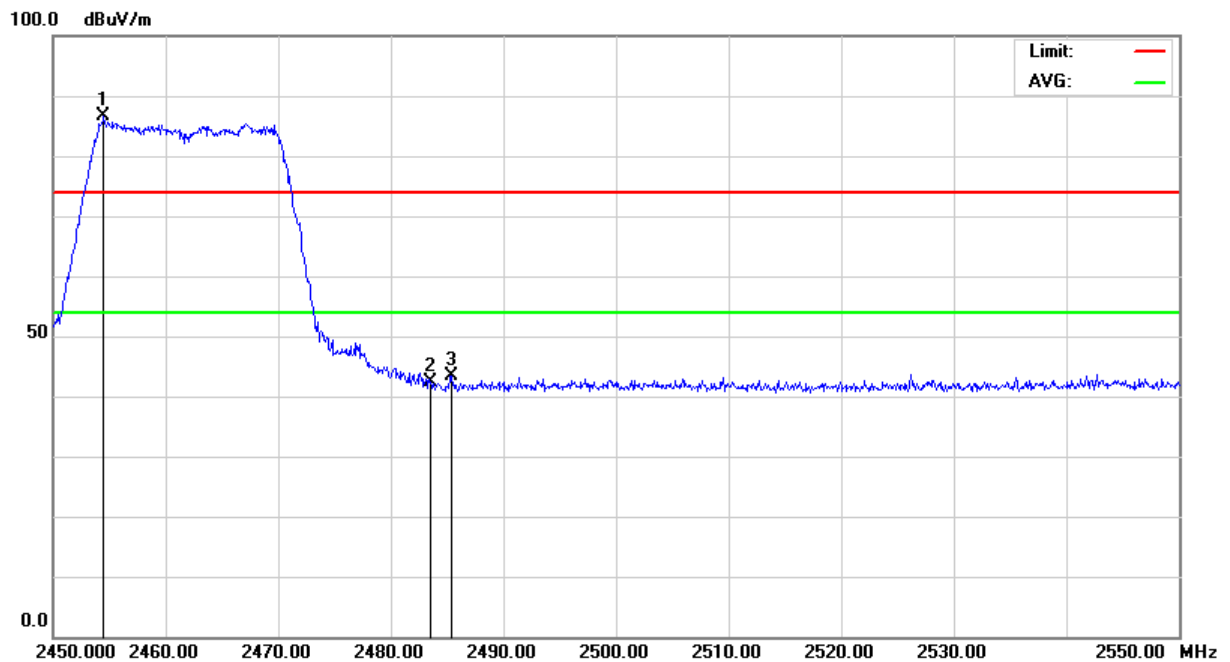


About 2483.5MHz (CH11)

Antenna Polarization : Horizontal



Antenna Polarization : Vertical





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TEST REPORT

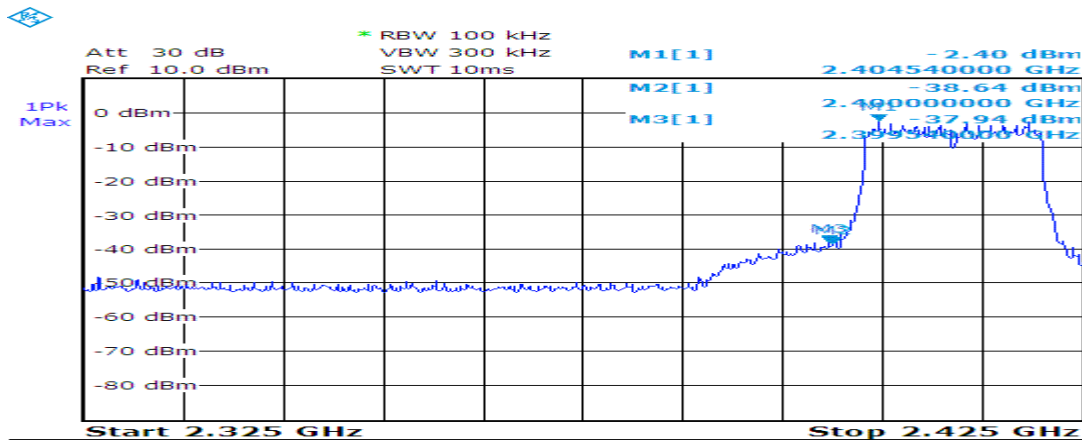
Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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 Date: Mar. 27, 2014

Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Test Mode:	802.11n – HT20
RBW:	100 kHz	VBW:	300 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

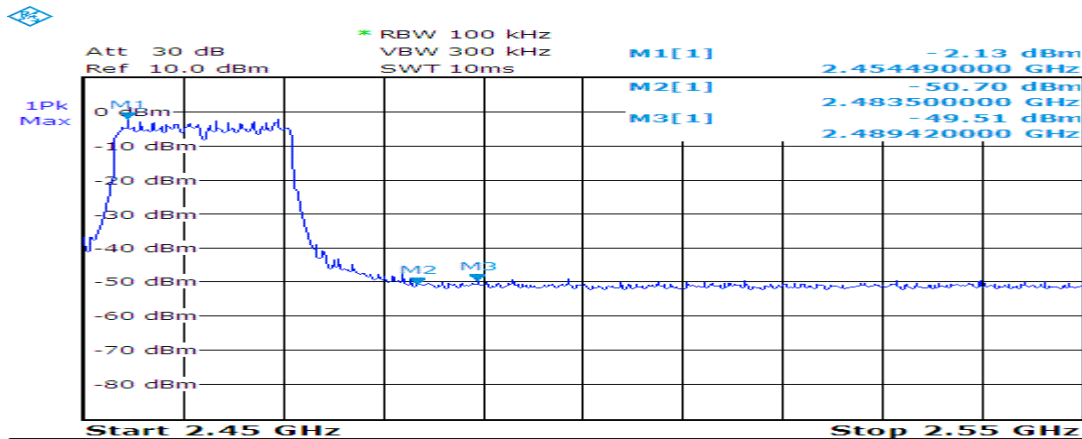
1. Conducted test

Frequency (MHz)	PEAK POWER OUTPUT (dBm)	Emission read Value(dBm)	Result of Band edge (dBc)	Band edge LIMIT (dBc)
< 2400	-2.40	-37.94	35.54	> 20 dBc
> 2483.5	-2.13	-49.51	47.38	> 20 dBc

Below 2400MHz (CH01) :



Above 2483.5 MHz (CH11) :



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TEST REPORTReference No.: A14031501
Report No.: FCCA14031501
FCC ID : ZME-MLWG2
Page: 102 of 123
Date: Mar. 27, 2014**2. Radiated emission test :**

Below 2400MHz (CH01)

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	2.325 GHz – 2.425 GHz	Tested Mode:	802.11n – HT20_CH01
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Frequency (MHz)	Correct Factor (dB)	Ant. Fac. (dB)	Ant. Pol. (H/V)	Reading (dBuV)		Emission (dBuV/m)		Limit Line (dBuV/m)		Over Limit (dBuV/m)	
				PK	AV	PK	AV	PK	AV	PK	AV
2397.21	-31.39	28.21	H	57.72	47.19	54.55	44.02	74.00	54.00	-19.45	-9.98
2397.92	-31.39	28.21	V	56.93	46.48	53.76	43.31	74.00	54.00	-20.24	-10.69
2400.00	-31.38	28.22	H	56.38	45.83	53.22	42.67	74.00	54.00	-20.78	-11.33
2400.00	-31.38	28.22	V	55.87	45.36	52.71	42.20	74.00	54.00	-21.29	-11.80

About 2483.5MHz (CH11)

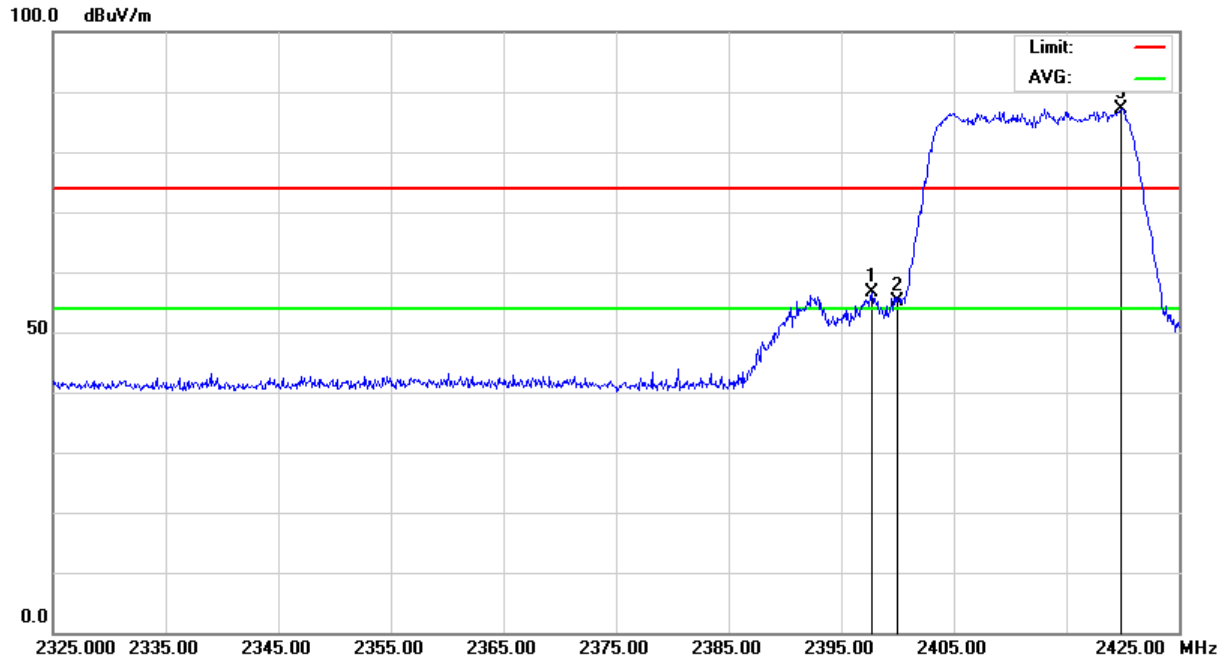
Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	2.45 GHz – 2.55 GHz	Tested Mode:	802.11n – HT20_CH11
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Frequency (MHz)	Correct Factor (dB)	Ant. Fac. (dB)	Ant. Pol. (H/V)	Reading (dBuV)		Emission (dBuV/m)		Limit Line (dBuV/m)		Over Limit (dBuV/m)	
				PK	AV	PK	AV	PK	AV	PK	AV
2483.50	-31.29	28.45	H	43.75	33.18	40.91	30.34	74.00	54.00	-33.09	-23.66
2483.50	-31.29	28.45	V	43.24	32.79	40.40	29.95	74.00	54.00	-33.60	-24.05
2483.90	-31.29	28.45	H	45.27	34.75	42.43	31.91	74.00	54.00	-31.57	-22.09
2486.49	-31.29	28.46	V	44.71	34.15	41.89	31.33	74.00	54.00	-32.11	-22.67

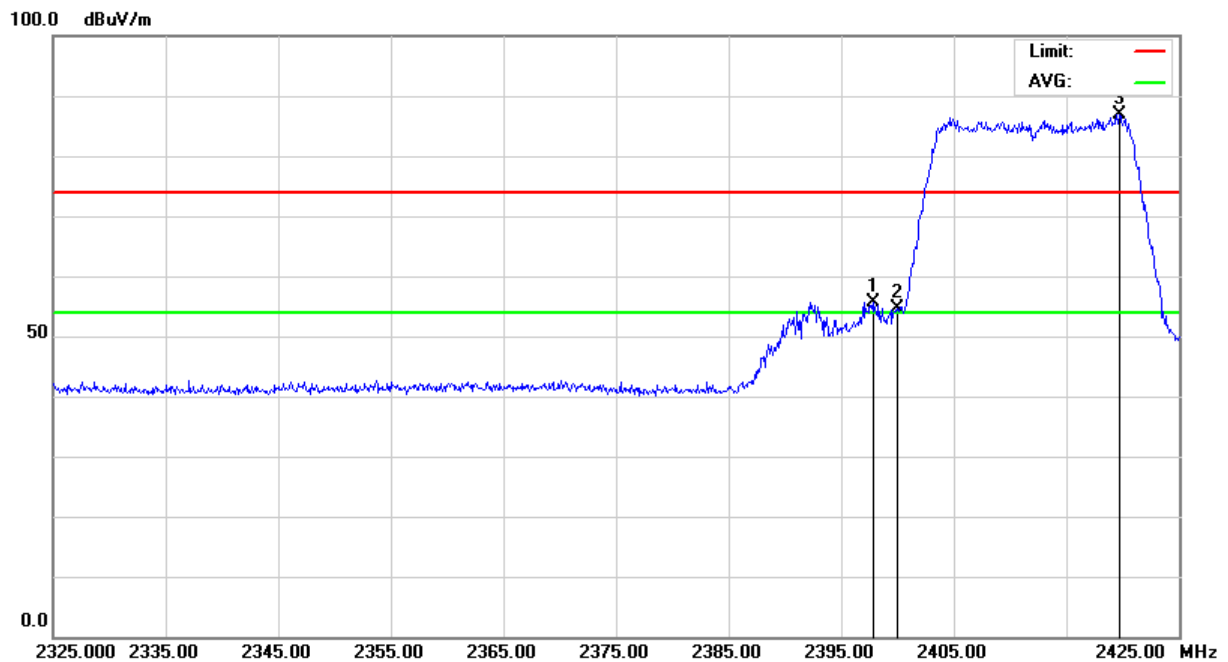


Below 2400MHz (CH01)

Antenna Polarization : Horizontal



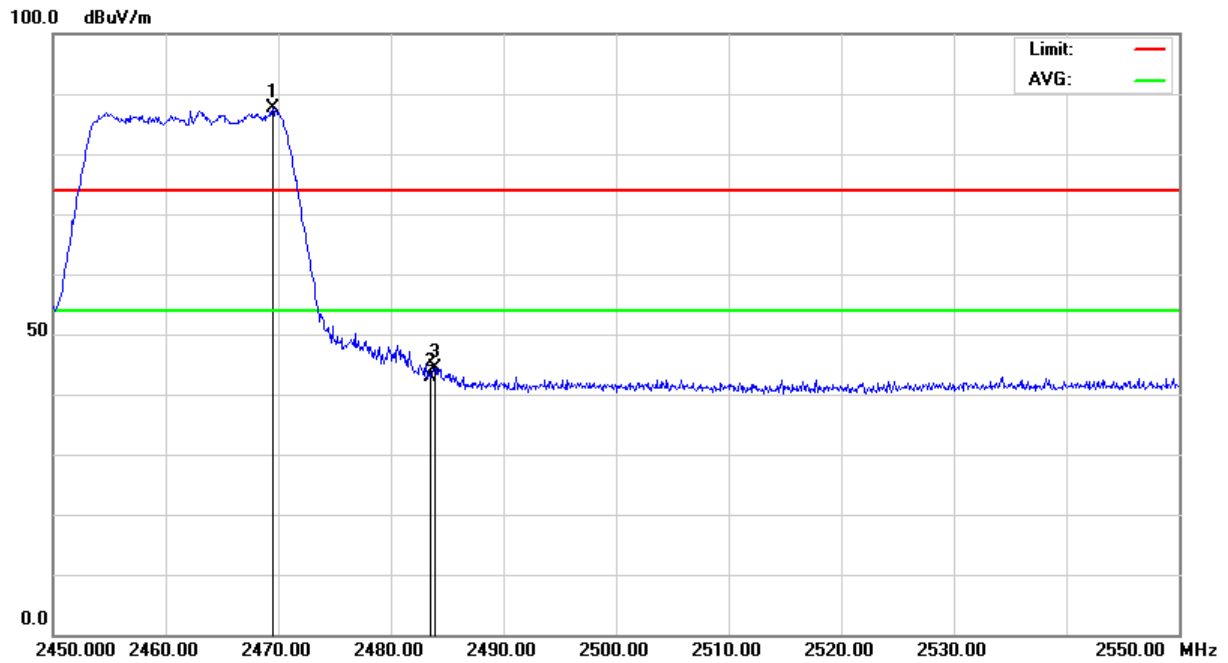
Antenna Polarization : Vertical



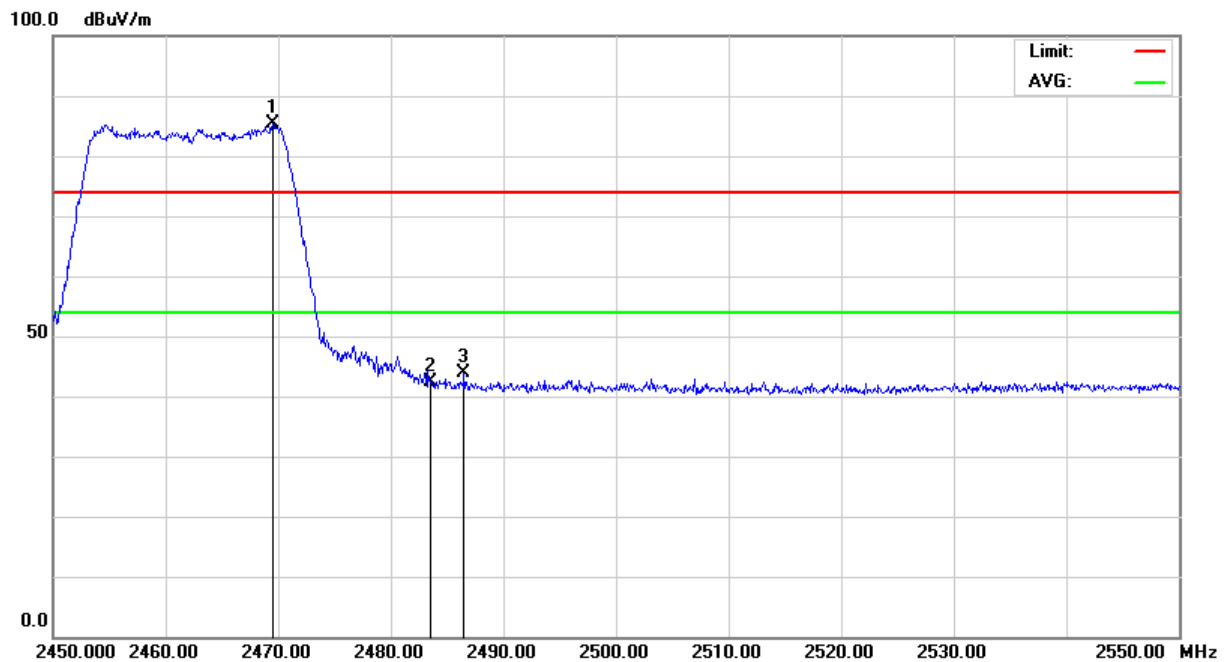


About 2483.5MHz (CH11)

Antenna Polarization : Horizontal



Antenna Polarization : Vertical





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TEST REPORT

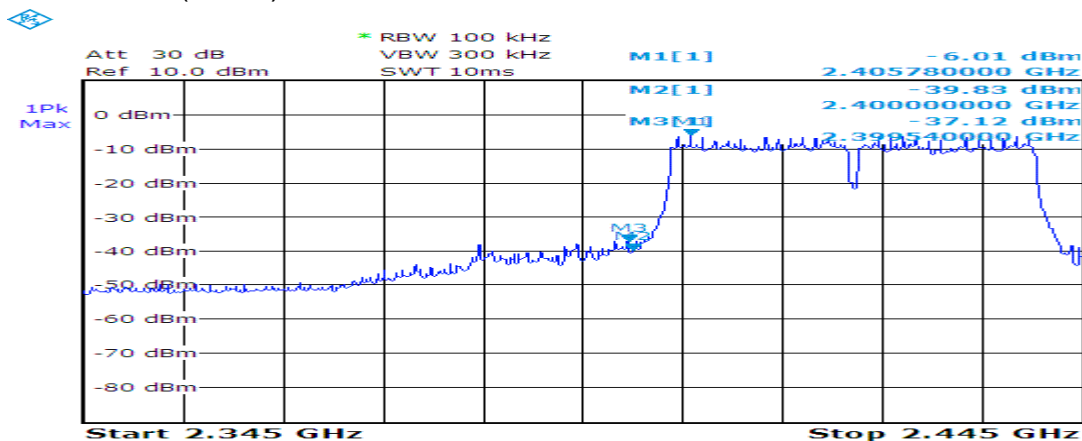
Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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 Date: Mar. 27, 2014

Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Tesr Mode:	802.11n – HT40
RBW:	100 kHz	VBW:	300 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

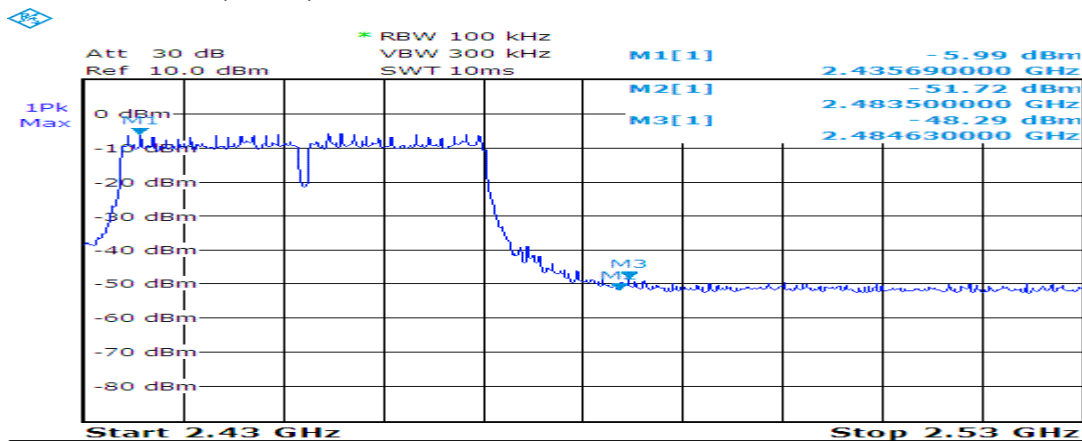
1. Conducted test

Frequency (MHz)	PEAK POWER OUTPUT (dBm)	Emission read Value(dBm)	Result of Band edge (dBc)	Band edge LIMIT (dBc)
< 2400	-6.01	-37.12	31.11	> 20 dBc
> 2483.5	-5.99	-48.29	42.30	> 20 dBc

Below 2400MHz (CH05) :



Above 2483.5 MHz (CH11) :



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TEST REPORTReference No.: A14031501
Report No.: FCCA14031501
FCC ID : ZME-MLWG2
Page: 106 of 123
Date: Mar. 27, 2014**2. Radiated emission test :**

Below 2400MHz (CH05)

Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	2.345 GHz – 2.445 GHz	Tested Mode:	802.11n – HT40_CH05
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Frequency (MHz)	Correct Factor (dB)	Ant. Fac. (dB)	Ant. Pol. (H/V)	Reading (dBuV)		Emission (dBuV/m)		Limit Line (dBuV/m)		Over Limit (dBuV/m)	
				PK	AV	PK	AV	PK	AV	PK	AV
2399.22	-31.38	28.22	H	55.28	44.75	52.11	41.58	74.00	54.00	-21.89	-12.42
2399.38	-31.38	28.22	V	55.47	44.96	52.30	41.79	74.00	54.00	-21.70	-12.21
2400.00	-31.38	28.22	H	55.83	45.38	52.67	42.22	74.00	54.00	-21.33	-11.78
2400.00	-31.38	28.22	V	56.10	45.72	52.94	42.56	74.00	54.00	-21.06	-11.44

About 2483.5MHz (CH11)

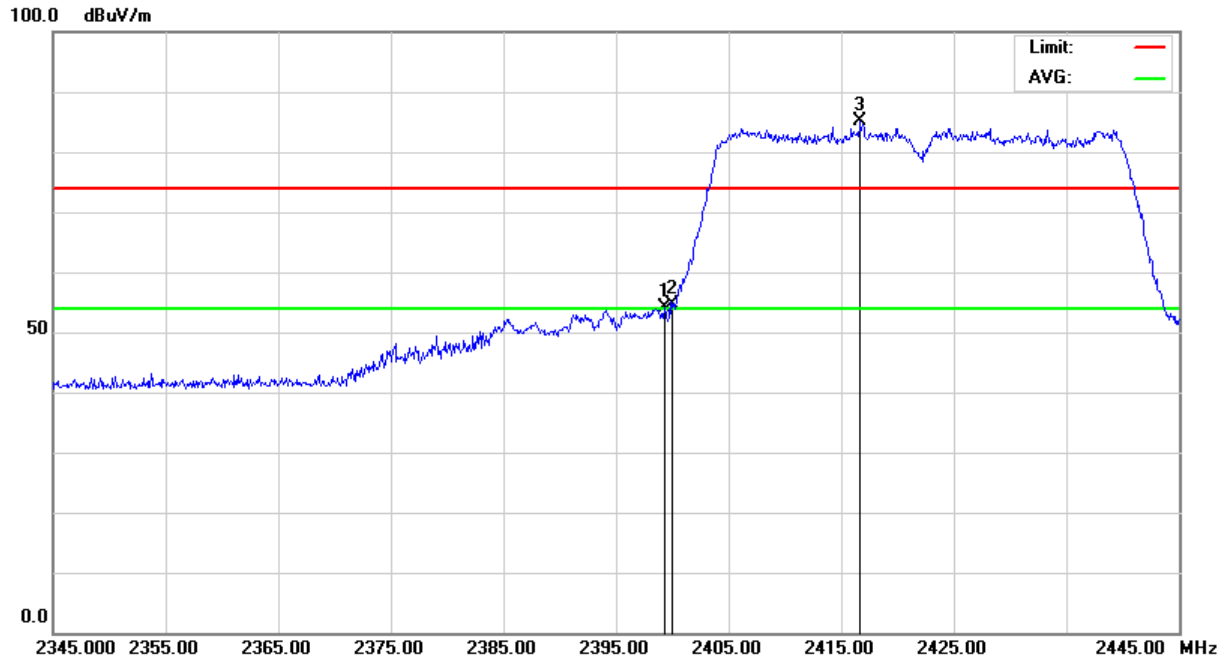
Temperature:	22 °C	Humidity:	62 %RH
Frequency Range:	2.43 GHz – 2.53 GHz	Tested Mode:	802.11n – HT40_CH11
Receiver Detector:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	Richard Lin	Tested Date:	Mar. 20, 2014

Frequency (MHz)	Correct Factor (dB)	Ant. Fac. (dB)	Ant. Pol. (H/V)	Reading (dBuV)		Emission (dBuV/m)		Limit Line (dBuV/m)		Over Limit (dBuV/m)	
				PK	AV	PK	AV	PK	AV	PK	AV
2483.50	-31.29	28.45	H	43.85	33.34	41.01	30.50	74.00	54.00	-32.99	-23.50
2483.50	-31.29	28.45	V	43.54	33.06	40.70	30.22	74.00	54.00	-33.30	-23.78
2484.38	-31.29	28.46	H	46.13	35.67	43.30	32.84	74.00	54.00	-30.70	-21.16
2487.67	-31.28	28.46	V	44.93	34.45	42.11	31.63	74.00	54.00	-31.89	-22.37

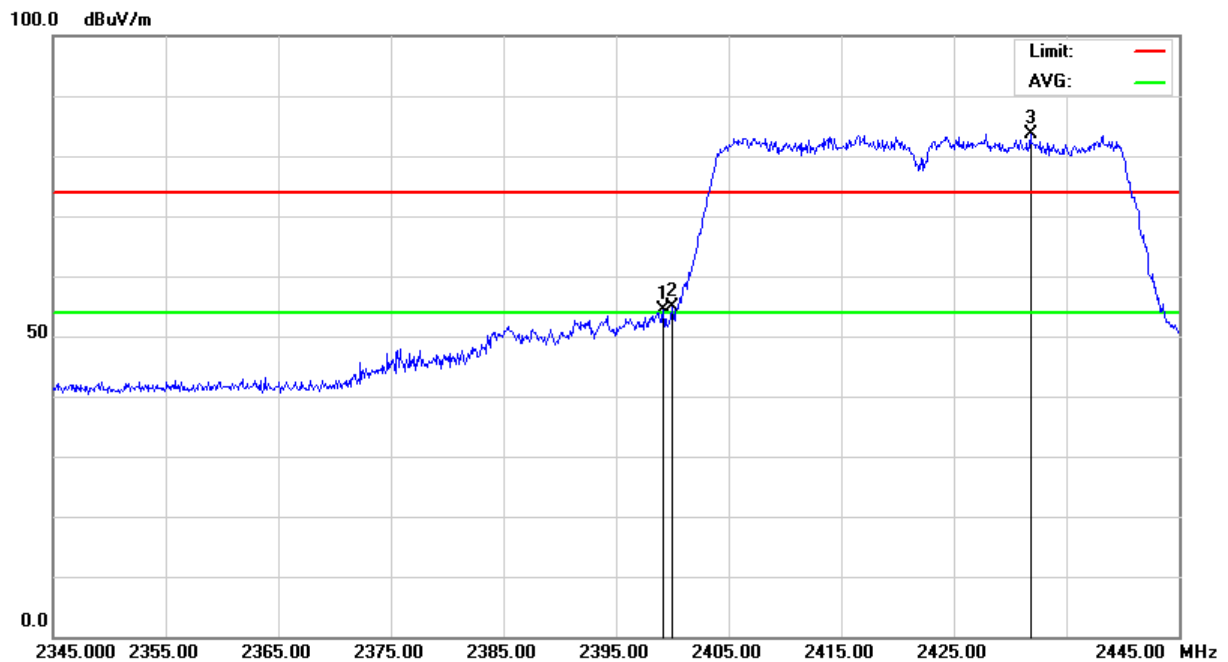


Below 2400MHz (CH05)

Antenna Polarization : Horizontal



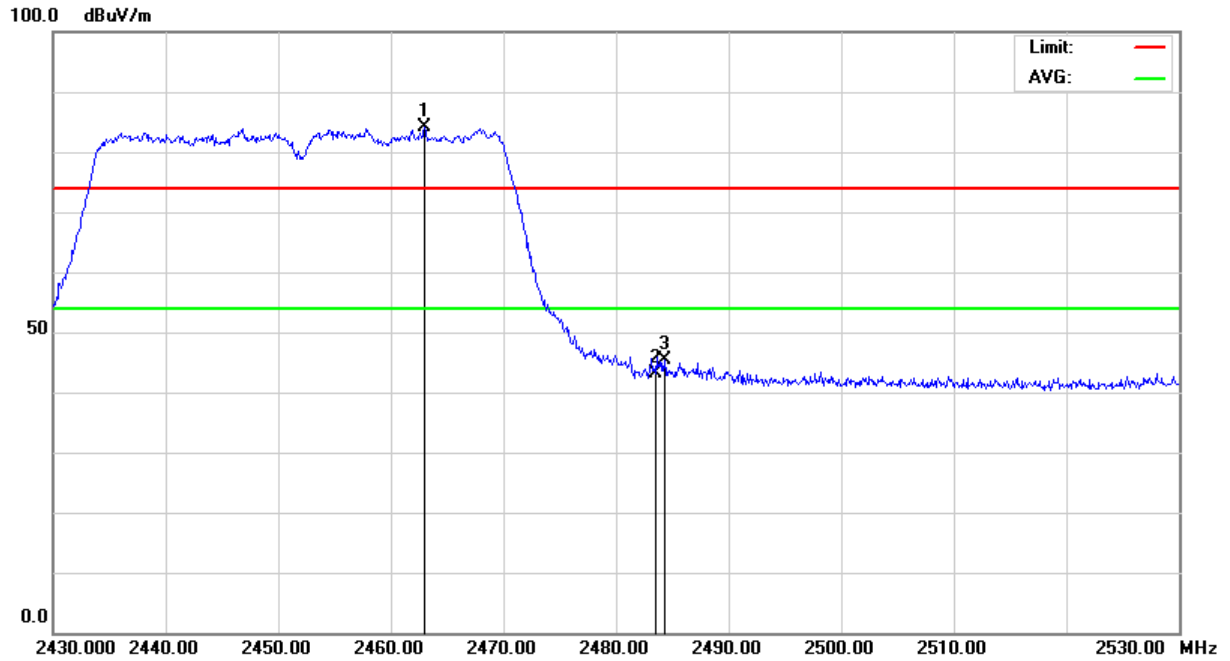
Antenna Polarization : Vertical



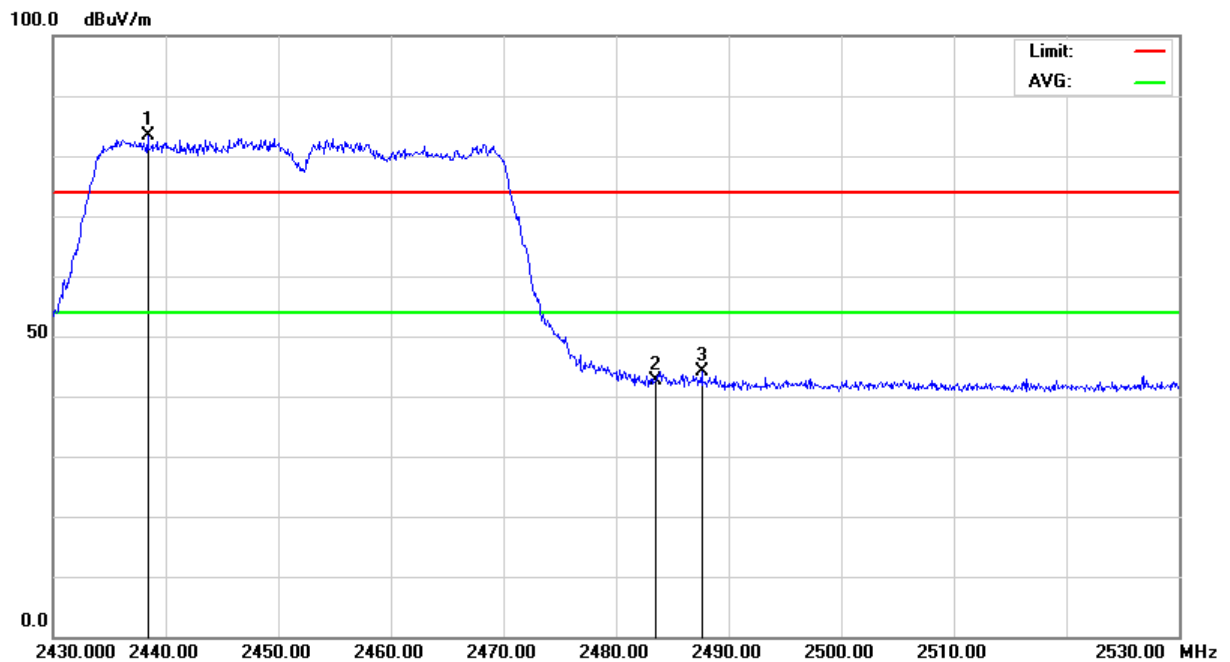


About 2483.5MHz (CH11)

Antenna Polarization : Horizontal



Antenna Polarization : Vertical





4.6 POWER DENSITY TEST

4.6.1 LIMIT

FCC Part15, Subpart C Section 15.247(e)

FREQUENCY RANGE (MHz)	Limit (dBm / kHz)
902-928	8 dBm / 3 kHz
2400-2483.5	
5725-5850	

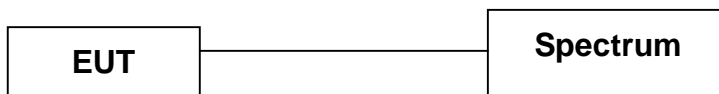
4.6.2 TEST EQUIPMENT

The following test equipment was used during the radiated emission test:

EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DUE DATE OF CAL. & CAL. CENTER
SPECTRUM ANALYZER	9 kHz ~ 40GHz	ROHDE & SCHWARZ	FSP40 / 100093	DEC 08, 2014 ETC
EMI TEST RECEIVER (INCLUDE SPECTRUM ANALYZER)	9 KHz ~ 6 GHz	ROHDE & SCHWARZ	ESL /100176	MAR. 28, 2014 ETC

NOTE: The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.3 TEST SET-UP



The EUT was connected to a spectrum through a 50Ω RF cable.

4.6.4 TEST PROCEDURE

The EUT was operating in transmitter mode and could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

4.6.5 EUT OPERATING CONDITION

1. Set the EUT under continuous transmission condition.
2. The EUT was set to the highest available power level.



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TEST REPORT

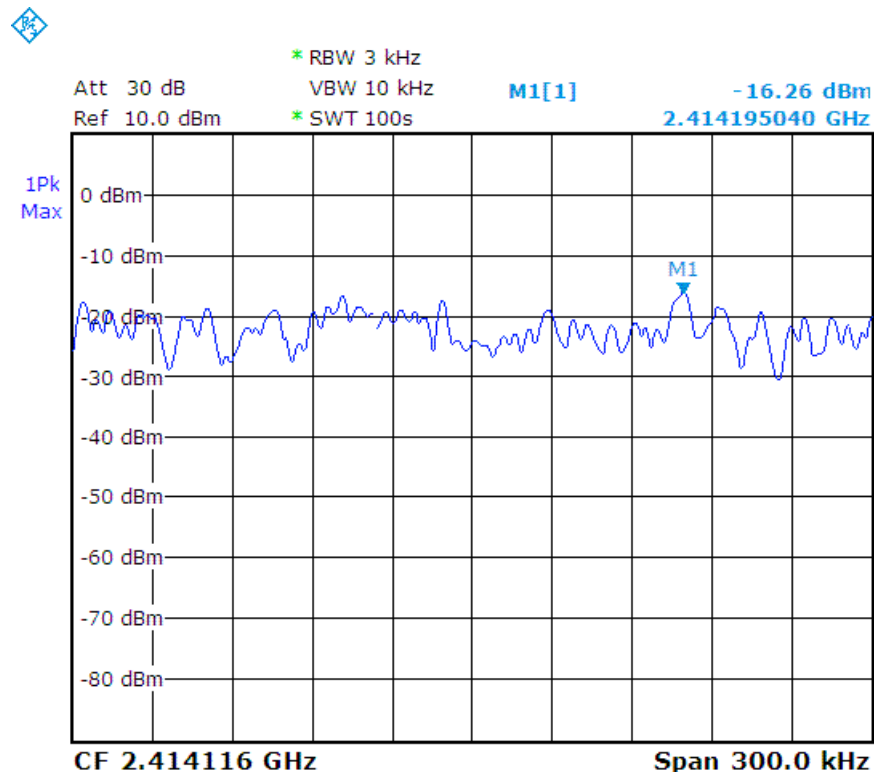
Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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4.6.6 TEST RESULT

Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Test Mode:	802.11b
RBW:	3 kHz	VBW:	10 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

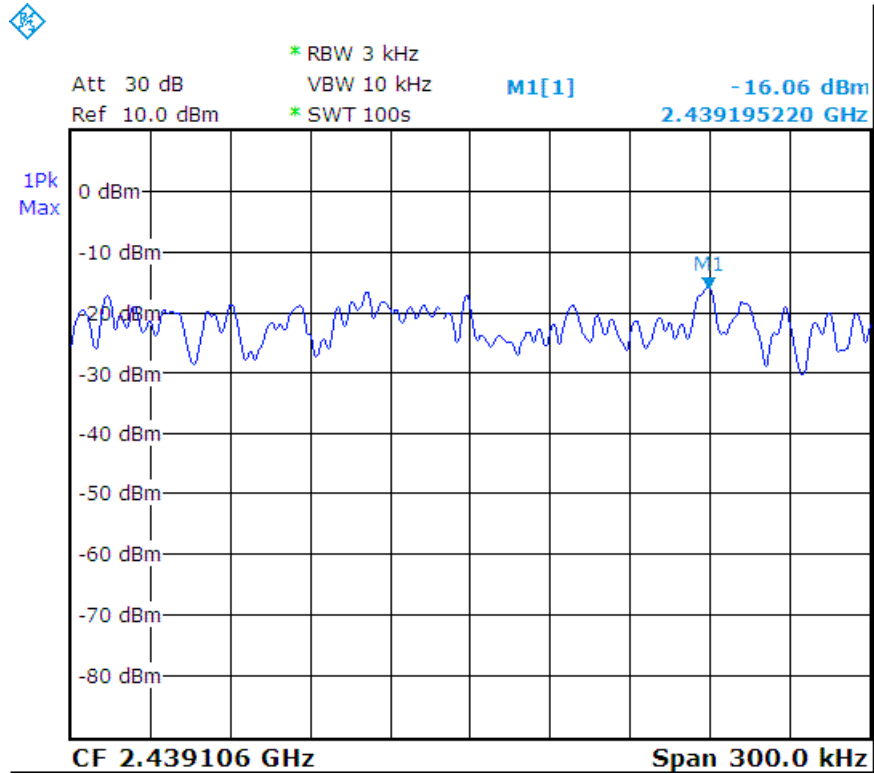
Channel Number	Channel Frequency (MHz)	RF Power Level in 3 KHz BW (dBm/3kHz)	Maximum Limit (dBm/3kHz)
CH01	2412	-16.26	8
CH06	2437	-16.06	8
CH11	2462	-15.97	8

CH01 :

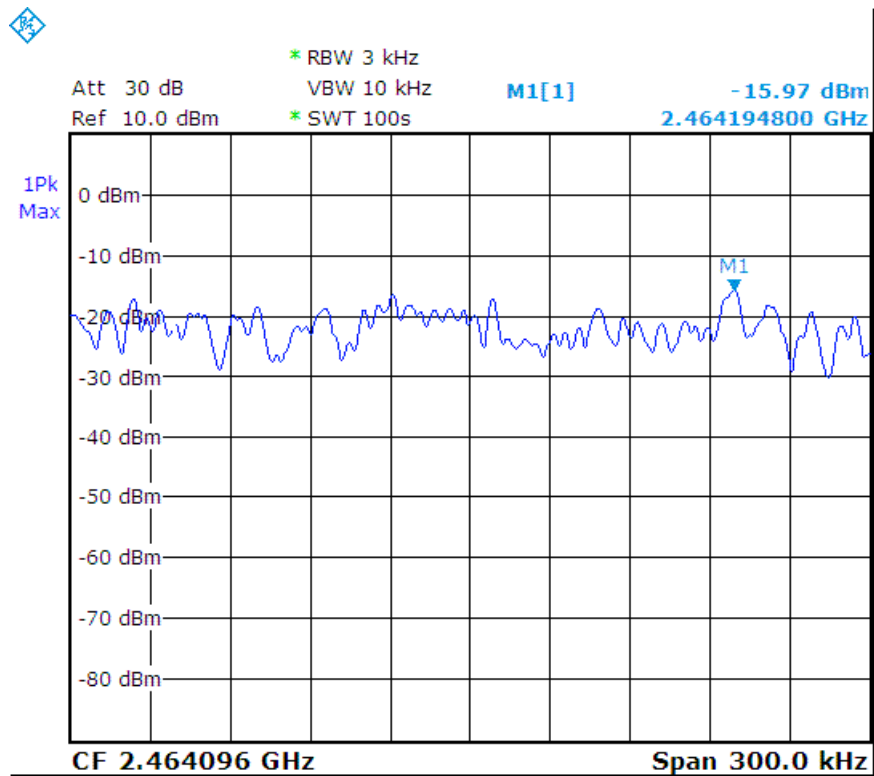




CH06 :



CH11 :





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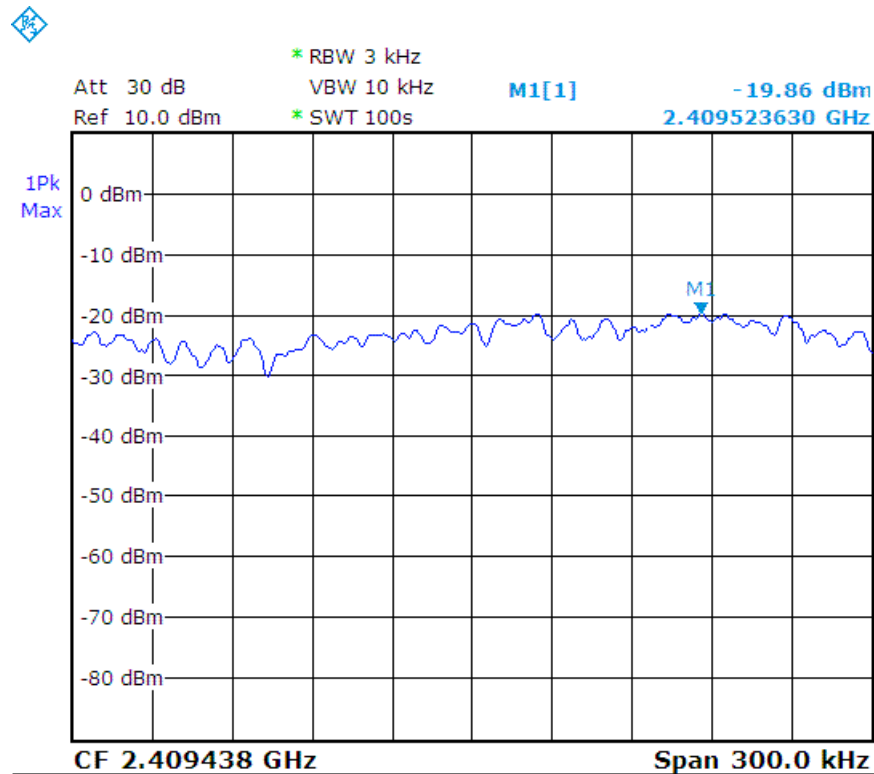
TEST REPORT

Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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 Date: Mar. 27, 2014

Temperature:	<u>21°C</u>	Humidity:	<u>65%RH</u>
Spectrum Detector:	<u>PK.</u>	Tesr Mode:	<u>802.11g</u>
RBW:	<u>3 kHz</u>	VBW:	<u>10 kHz</u>
Tested By:	<u>Richard Lin</u>	Tested Date:	<u>Mar. 18, 2014</u>

Channel Number	Channel Frequency (MHz)	RF Power Level in 3 KHz BW (dBm/3kHz)	Maximum Limit (dBm/3kHz)
CH01	2412	-19.86	8
CH06	2437	-19.61	8
CH11	2462	-19.41	8

CH01 :





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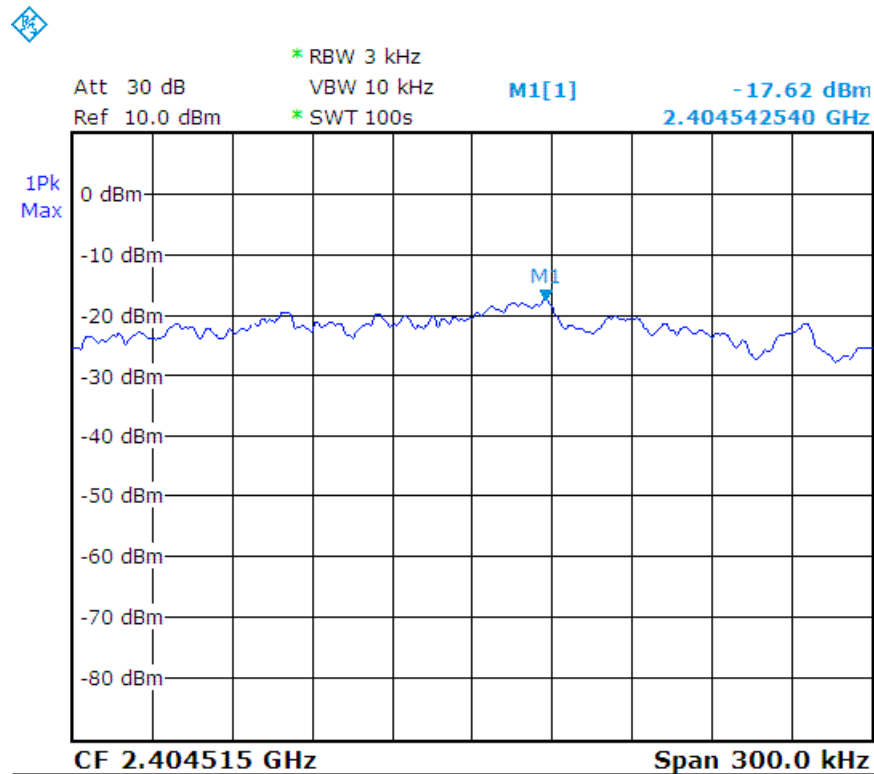
TEST REPORT

Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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 Date: Mar. 27, 2014

Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Tesr Mode:	802.11n – HT20
RBW:	3 kHz	VBW:	10 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

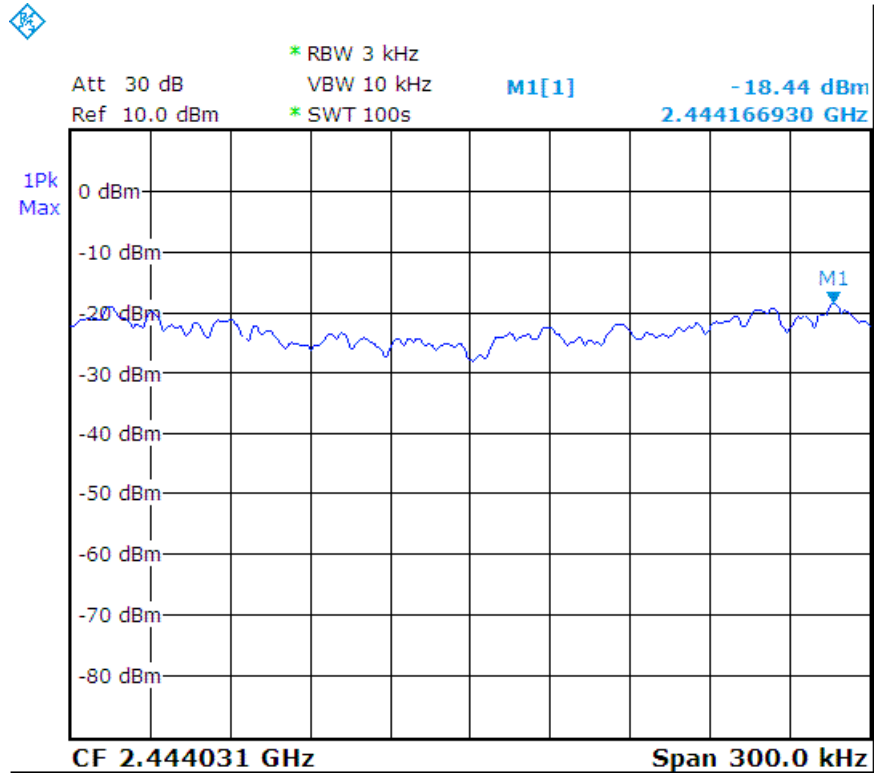
Channel Number	Channel Frequency (MHz)	RF Power Level in 3 KHz BW (dBm/3kHz)	Maximum Limit (dBm/3kHz)
CH01	2412	-17.62	8
CH06	2437	-18.44	8
CH11	2462	-19.88	8

CH01 :

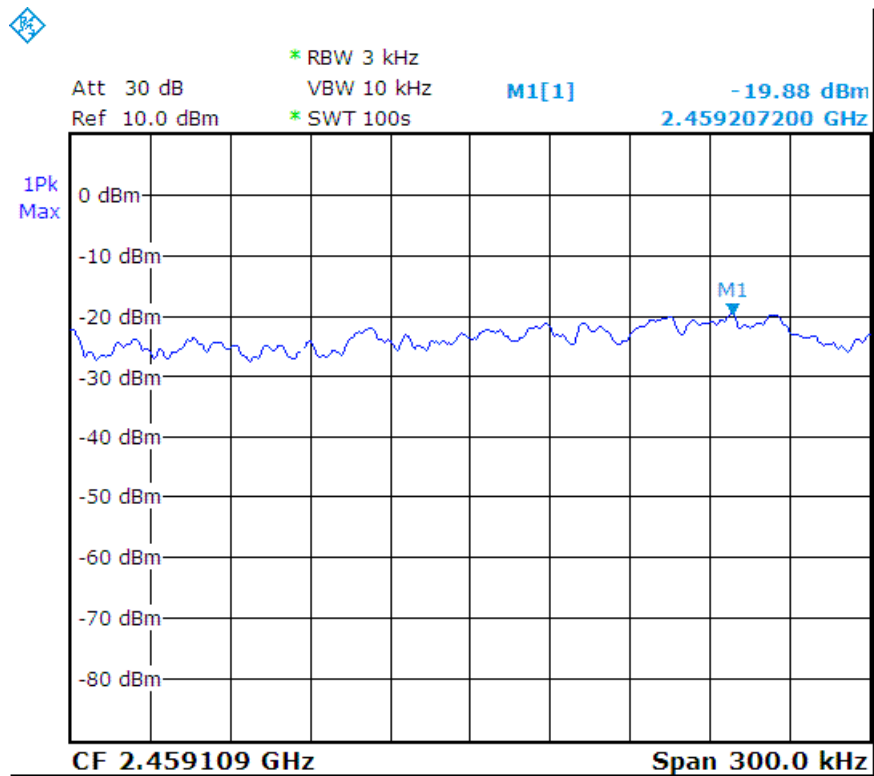




CH06 :



CH11 :





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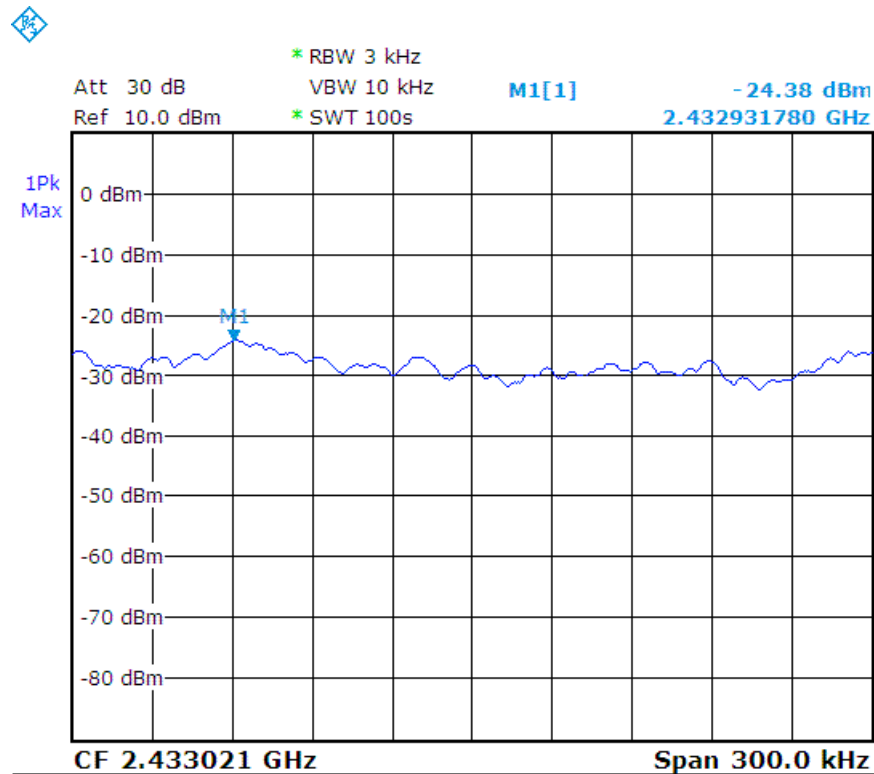
TEST REPORT

Reference No.: A14031501
 Report No.: FCCA14031501
 FCC ID : ZME-MLWG2
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 Date: Mar. 27, 2014

Temperature:	21°C	Humidity:	65%RH
Spectrum Detector:	PK.	Tesr Mode:	802.11n – HT40
RBW:	3 kHz	VBW:	10 kHz
Tested By:	Richard Lin	Tested Date:	Mar. 18, 2014

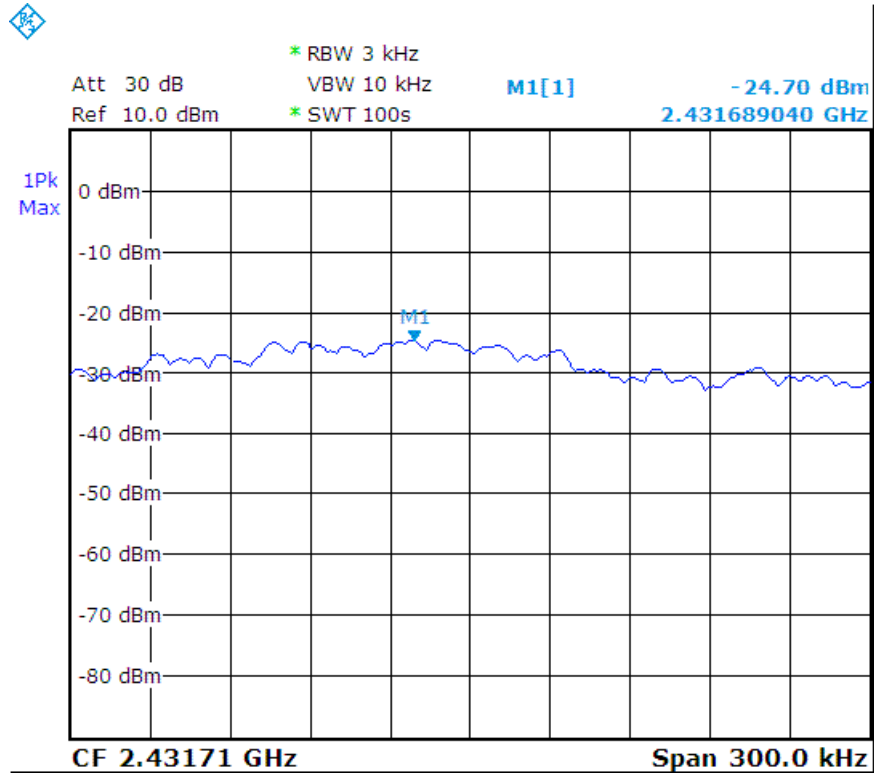
Channel Number	Channel Frequency (MHz)	RF Power Level in 3 KHz BW (dBm/3kHz)	Maximum Limit (dBm/3kHz)
CH05	2422	-24.38	8
CH08	2437	-24.70	8
CH11	2452	-24.37	8

CH05 :

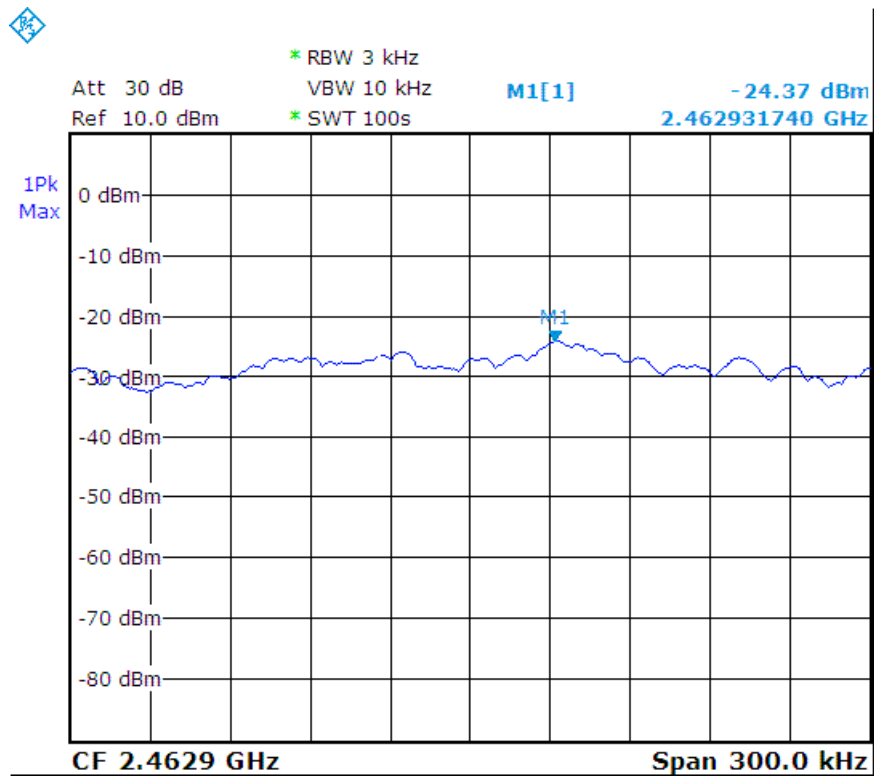




CH08 :



CH11 :





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TEST REPORT

Reference No.: A14031501
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5. Antenna application

5.1 Antenna requirement

The EUT's antenna is met the requirement of FCC Part 15C section 15.203 and 15.204.

FCC Part 15C section 15.247 requirement:

Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

5.2 Result

The EUT's antenna used a PCB Printed Antenna. Gain of antenna types is -0.83 dBi that meet the requirement.

5.3 Description of RF Exposure

SAR compliance has been evaluated in the product(s), and can be used in host product(s) with substantially similar physical dimensions, construction, and electrical and RF characteristics. End-users must be provided with specific information required to satisfy RF exposure compliance for all final host devices. Compliance of this device in all final host configurations is the responsibility of the Grantee.

- I The separation distance -20 cm must be clearly stated in the operating and/or installation manual that is supplied to the User.
- I This application is being made on behalf of the "Grantee".



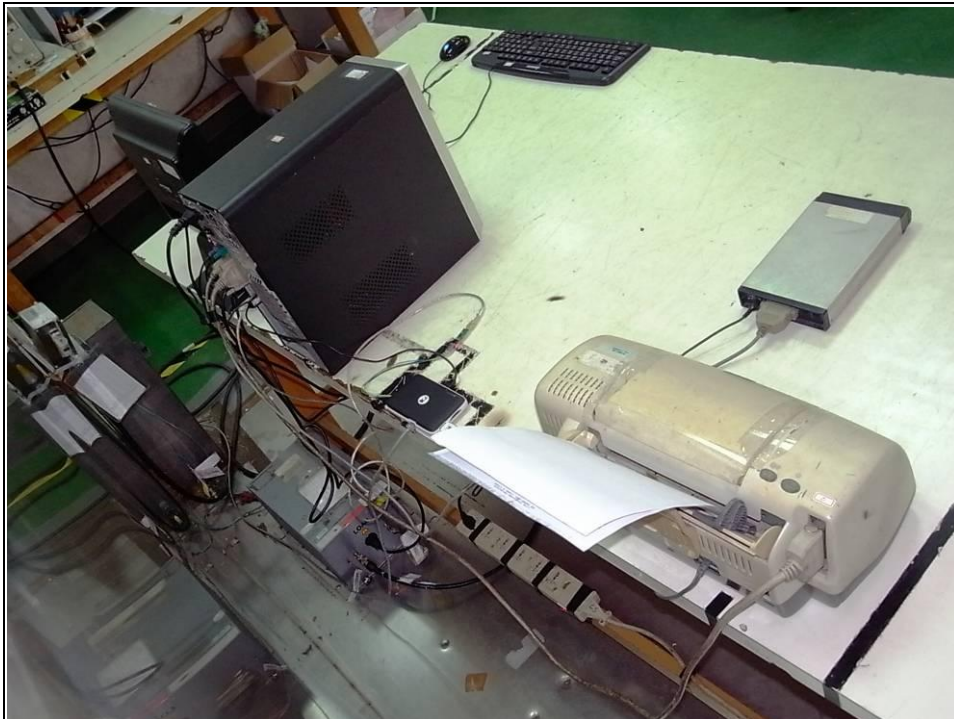
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TEST REPORT

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6. PHOTOS OF TESTING

- Conducted test





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- Radiated test (below 30M)





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- Radiated test (below 1G)





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- Radiated test (above 1G)





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7. TERMS OF ABBREVIATION

AV.	Average detection
AZ(°)	Turn table azimuth
Correct.	Correction
EL(m)	Antenna height (meter)
EUT	Equipment Under Test
Horiz.	Horizontal direction
LISN	Line Impedance Stabilization Network
NSA	Normalized Site Attenuation
Q.P.	Quasi-peak detection
SRT Lab	Spectrum Research & Testing Laboratory, Inc.
Vert.	Vertical direction