FCC RF TEST REPORT

47 CFR FCC Part 15 Subpart C § 15.249

APPLICANT	:	**Lemobile Information Technology (Beijing) Co., Ltd**
EQUIPMENT	:	**mobile phone**
BRAND NAME	:	
MODEL NAME	:	**Le X829**
FCC ID	:	**2AFWMLEX829**

The product was received on Mar. 02, 2016 and testing was completed on Apr. 29, 2016. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

James Huang

Prepared by: James Huang / Manager

Jones Tsai

Approved by: Jones Tsai / Manager

Testing Laboratory 2627

SPORTON INTERNATIONAL (KUNSHAN) INC.

No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR630205D	Rev. 01	Initial issue of report	May 03, 2016

1. SUMMARY OF THE TEST RESULT

Applied Standard:				
Part	**FCC Rule**	**Description of Test**	**Result**	**Under Limit**
3.1	15.207	AC Power Line Conducted Emissions	Complies	8.69 dB at 0.450MHz
3.2	2.1049	20dB & 99% Occupied Bandwidth	Complies	-
3.3	15.249(a)	Field Strength of Fundamental Emissions	Complies	23.06 dB at 2440.915MHz
3.3	15.249(a)(d)	Radiated Spurious Emissions	Complies	8.22 dB at 38.730MHz
3.4	15.203	Antenna Requirements	Complies	-

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.3 dB**

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.1 dB**

2. GENERAL INFORMATION

2.1 Applicant

Lemobile Information Technology (Beijing) Co., Ltd

WENHUAYING NORTH (No.1, LINKONG 2nd St), GAOLIYING, SHUNYI DISTRICT, BEIJING.China

2.2 Manufacturer

Lemobile Information Technology (Beijing) Co., Ltd

WENHUAYING NORTH (No.1, LINKONG 2nd St), GAOLIYING, SHUNYI DISTRICT, BEIJING.China

2.3 Product Details

For more detailed features description, please refer to the manufacturer's specifications or user's manual.

Product Feature	
Equipment	mobile phone
Brand Name	
Model Name	Le X829
FCC ID	2AFWMLEX829
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/ HSPA/DC-HSDPA/ HSPA+(16QAM uplink is not supported)/LTE/ANT+/ WLAN2.4GHz 802.11b/g/n HT20/HT40/ WLAN5GHz 802.11a/n HT20/HT40/ WLAN5GHz 802.11ac VHT20/VHT40/VHT80/ Bluetooth v3.0+EDR/Bluetooth v4.1 LE
IMEI Code	Conducted: 869941020009085/869941020009093 Radiation: 869941020004383/869941020004391 Conduction: 869941020004383/869941020004391
HW Version	X2_NA_DVT1
SW Version	FIXNAOP5517302294D
EUT Stage	Identical Prototype

Items	Description
Modulation	GFSK
Channel Bandwidth (99%)	1.010MHz
Max. Field Strength (Peak)	90.94dBμV/m
Max. Field Strength (Average)	69.00dBμV/m
ANT+ Channel Number	79
ANT+ Frequency Range	2402-2480MHz

2.4 Table for Test Modes

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode
AC Power Line Conducted Emissions	CTX
Field Strength of Fundamental Emissions	CTX
Bandwidth	CTX
Radiated Emissions	CTX

Note:

1. CTX=continuously transmitting.
2. The programmed RF utility, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

2.5 Table for Testing Locations

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			FCC Registration No.
	TH01-KS	03CH02-KS	CO01-KS	418269

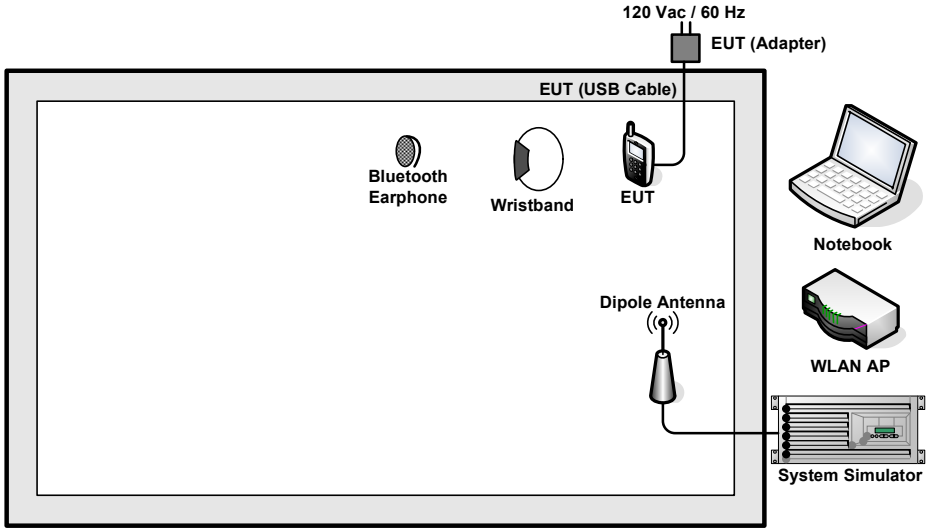
Note: The test site complies with ANSI C63.4 2014 requirement.

2.6 Support Unit used in test configuration and system

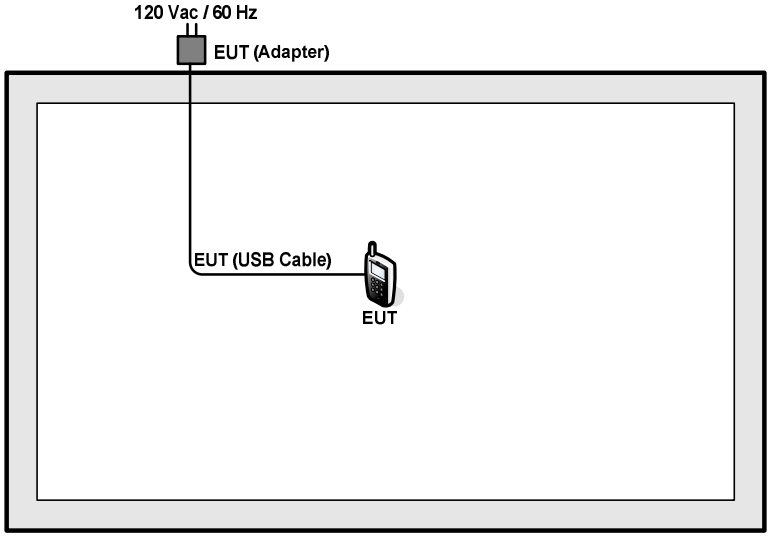
Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
3.	WLAN AP	LINKSYS	WRT600N	Q87-WRT600NV11	N/A	Unshielded,2.7m with Core
4.	Notebook	Lenovo	G480	PRC4	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A
6.	Wristband	mio	Mio Link	N/A	N/A	N/A

2.7 Test Configurations

<AC Conducted Emissions>



<Radiated Spurious Emissions>



3. TEST RESULT

3.1 AC Power Line Conducted Emissions Measurement

3.1.1 Limit

For a Low-power Radio-frequency device which is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBμV)	AV Limit (dBμV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

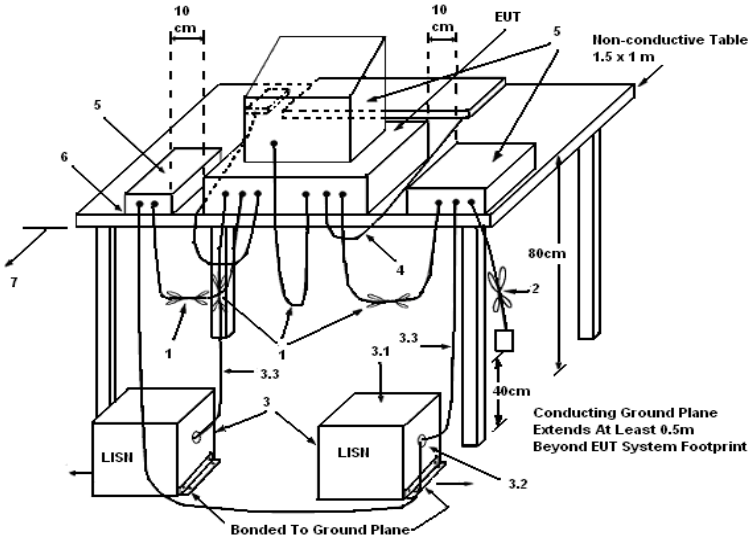
3.1.2 Measuring Instruments

Please refer to section 4 of equipment list in this report.

3.1.3 Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

3.1.4 Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

3.1.5 Test Deviation

There is no deviation with the original standard.

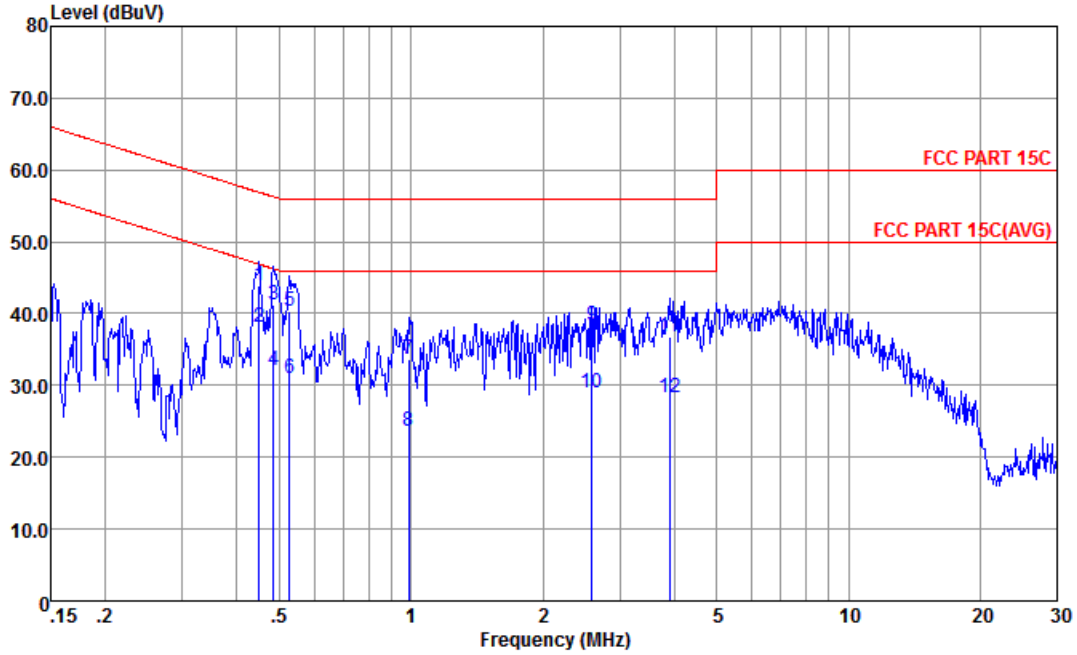
3.1.6 EUT Operation during Test

The EUT was placed on the test table and programmed in transmitting function.

3.1.7 Results of AC Power Line Conducted Emissions Measurement

Test Date	Apr. 25, 2016	Test Site No.	CO01-KS
Temperature	22~24℃	Humidity	44~46%
Test Engineer	Amos Zhang	Configuration	ANT+ Transmitting Mode
Mode	GSM850 Link + Bluetooth Link + WLAN Link(2.4G) + USB Cable (Charging from Adapter 1) + ANT+TX		

Line

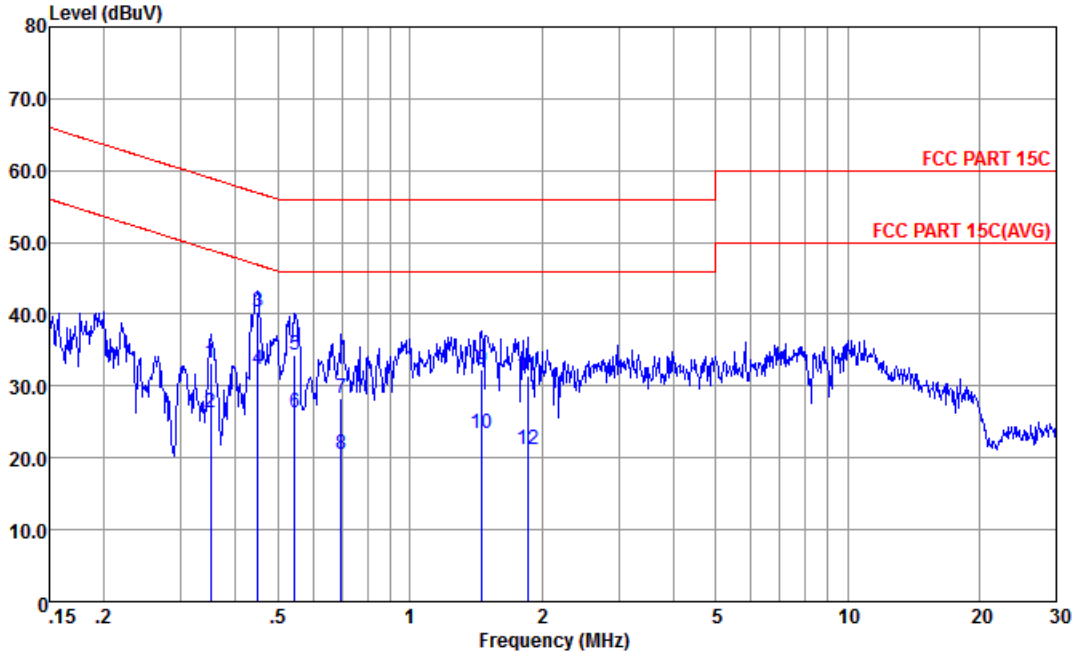


Site : CO01-KS
Condition : FCC PART 15C LISN-L-20151024 LINE

: 869941020004383/869941020004391 #15

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.45	44.00	-12.89	56.89	33.60	0.23	10.17	QP
2	*	0.45	38.20	-8.69	46.89	27.80	0.23	10.17	Average
3		0.48	41.19	-15.08	56.27	30.80	0.23	10.16	QP
4		0.48	32.19	-14.08	46.27	21.80	0.23	10.16	Average
5		0.53	40.29	-15.71	56.00	29.90	0.23	10.16	QP
6		0.53	30.89	-15.11	46.00	20.50	0.23	10.16	Average
7		0.99	33.69	-22.31	56.00	23.30	0.25	10.14	QP
8		0.99	23.59	-22.41	46.00	13.20	0.25	10.14	Average
9		2.59	38.23	-17.77	56.00	27.90	0.18	10.15	QP
10		2.59	28.93	-17.07	46.00	18.60	0.18	10.15	Average
11		3.90	36.85	-19.15	56.00	26.50	0.19	10.16	QP
12		3.90	28.25	-17.75	46.00	17.90	0.19	10.16	Average

Neutral



Site : CO01-KS
Condition : FCC PART 15C LISN-N-20151024 NEUTRAL

: 869941020004383/869941020004391 #15

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.35	33.28	-25.68	58.96	22.80	0.32	10.16	QP
2		0.35	26.38	-22.58	48.96	15.90	0.32	10.16	Average
3		0.45	40.29	-16.60	56.89	29.80	0.32	10.17	QP
4	*	0.45	32.39	-14.50	46.89	21.90	0.32	10.17	Average
5		0.55	34.29	-21.71	56.00	23.80	0.33	10.16	QP
6		0.55	26.29	-19.71	46.00	15.80	0.33	10.16	Average
7		0.70	28.39	-27.61	56.00	17.90	0.34	10.15	QP
8		0.70	20.39	-25.61	46.00	9.90	0.34	10.15	Average
9		1.46	32.41	-23.59	56.00	21.89	0.38	10.14	QP
10		1.46	23.31	-22.69	46.00	12.79	0.38	10.14	Average
11		1.86	31.42	-24.58	56.00	20.90	0.38	10.14	QP
12		1.86	21.22	-24.78	46.00	10.70	0.38	10.14	Average

3.2 20dB and & 99% Occupied Bandwidth

3.2.1 Limit

Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emissions in the specific band.

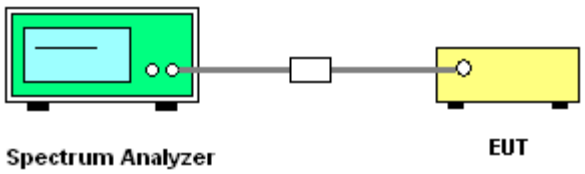
3.2.2 Measuring Instruments

Please refer to section 4 of equipment list in this report.

3.2.3 Test Procedures

1. The transmitter output port was connected to the spectrum analyzer.
2. Measured the spectrum width with highest power setting.

3.2.4 Test Setup Layout



3.2.5 Test Deviation

There is no deviation with the original standard.

3.2.6 EUT Operation during Test

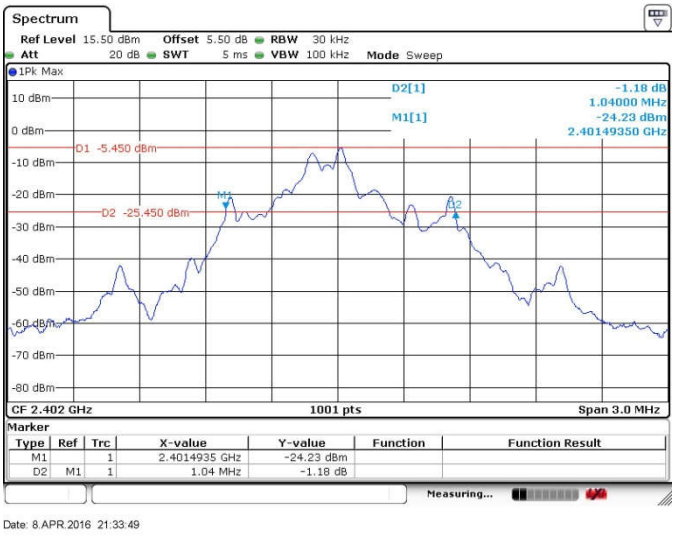
The EUT was programmed to be in continuously transmitting mode.

3.2.7 Test Result of 20dB Spectrum Bandwidth

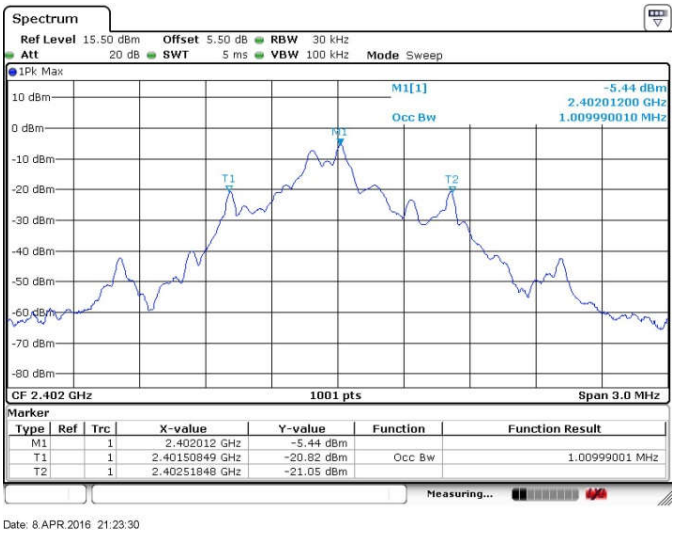
Test Date	Apr. 08, 2016	Test Site No.	TH01-KS
Temperature	22~24℃	Humidity	44~46%
Test Engineer	Amos Zhang		

Frequency	20dB BW (MHz)	99% OBW (MHz)
2402MHz	1.040	1.010
2441MHz	1.040	1.010
2480MHz	1.040	1.010

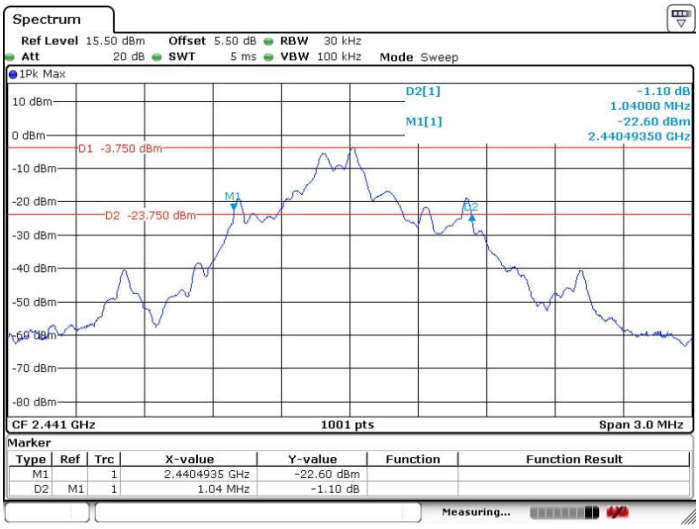
20 dB Bandwidth Plot on 2402MHz



99% Bandwidth Plot on 2402MHz

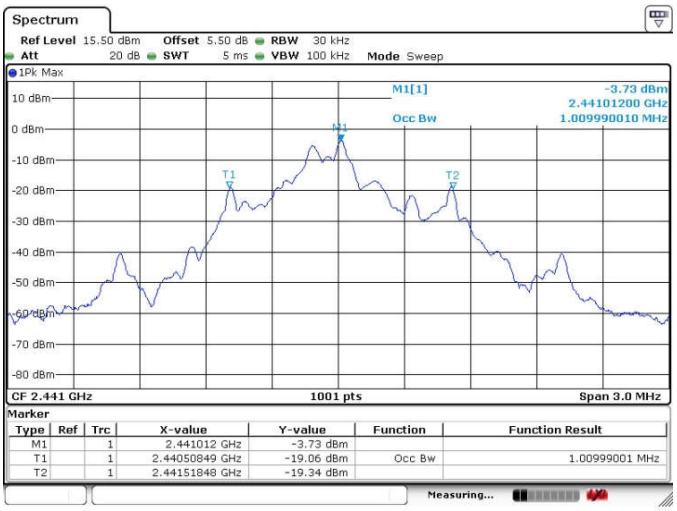


20 dB Bandwidth Plot on 2441MHz



Date: 8.APR.2016 21:30:00

99% Bandwidth Plot on 2441MHz



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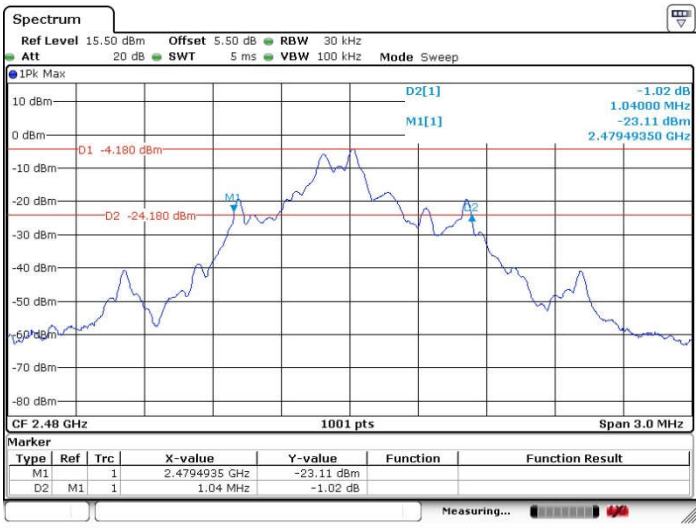
20 dB Bandwidth Plot on 2480MHz



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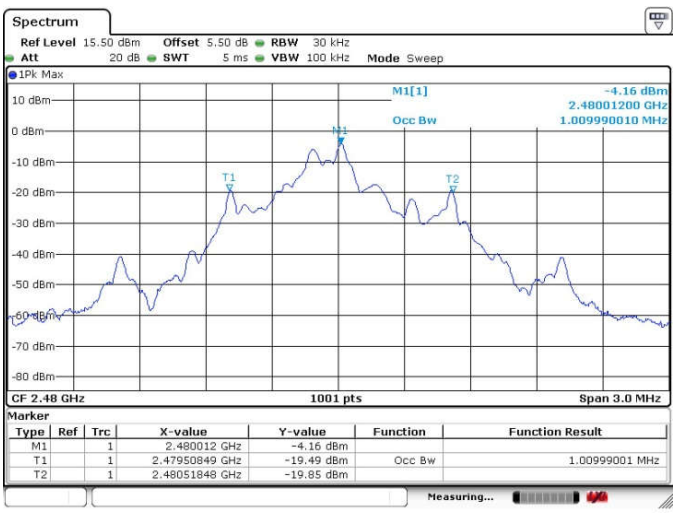
99% Bandwidth Plot on 2480MHz



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3.3 Field Strength of Fundamental Emissions and Radiated Spurious Emissions

3.3.1 Limit

The field strength measured at 3 meters shall not exceed the limits in the following table:

Fundamental Frequencies(MHz)	Field Strength(millivolts/m)	
	Fundamental	Harmonics
902~928	50	0.5
2400~2483.5	50	0.5
5725~5875	50	0.5

Note: The limits shown in the above table are based on measurements using an average detector, except for the fundamental emission in the frequency band 902-928 MHz, which is based on measurements using a CISPR quasi-peak detector.

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general field strength limits listed in 15.209 as below, whichever is less stringent.

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

3.3.2 Measuring Instruments

Please refer to section 4 of equipment list in this report.

3.3.3 Test Procedures

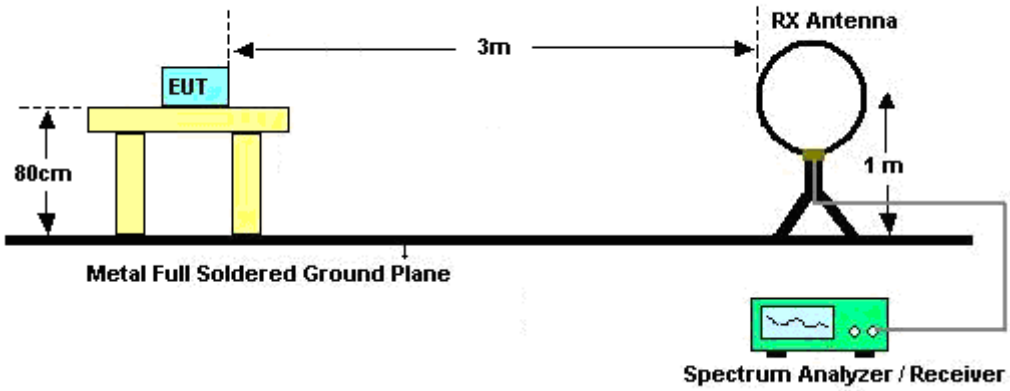
1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
4. Set to the maximum power setting and enable the EUT transmit continuously.

Remark:

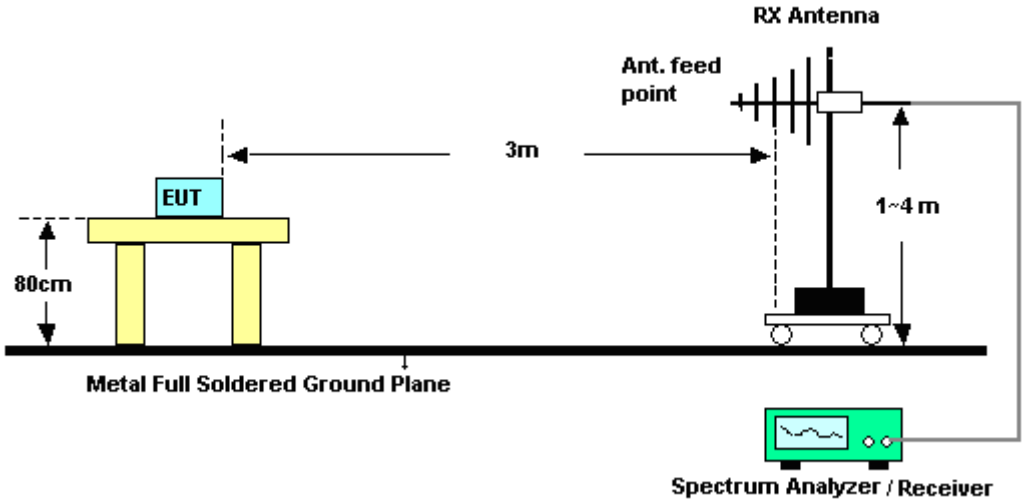
1. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
2. For average measurement: use duty cycle correction factor method per 15.35(c).
   Duty cycle = On time/100 milliseconds
   On time = N1*L1+N2*L2+...+Nn-1*LNn-1+Nn*Ln
   Where N1 is number of type 1 pulses, L1 is length of type 1 pulses, etc.
   Average Emission Level = Peak Emission Level + 20*log(Duty cycle)

3.3.4 Test Setup Layout

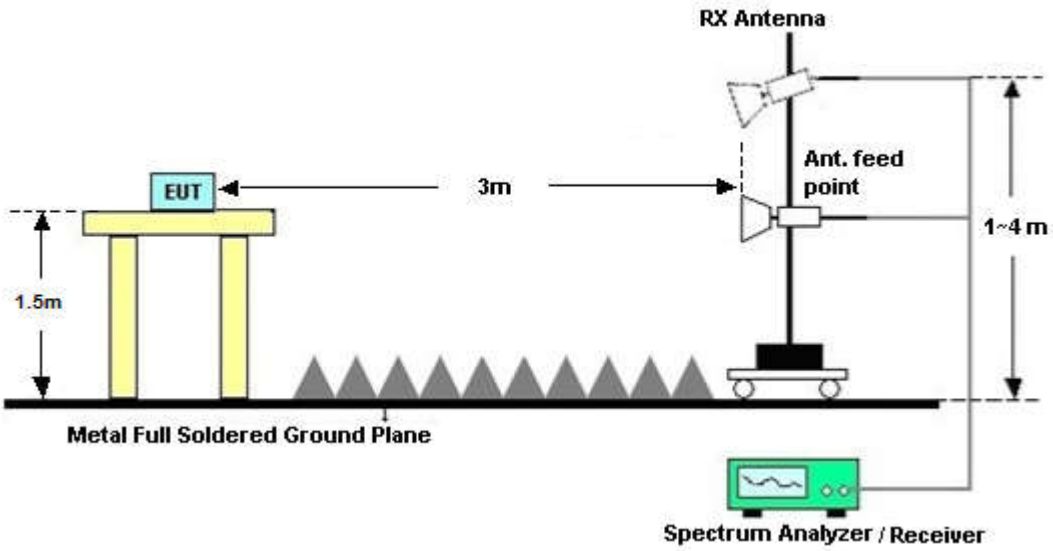
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.3.5 Test Deviation

There is no deviation with the original standard.

3.3.6 EUT Operation during Test

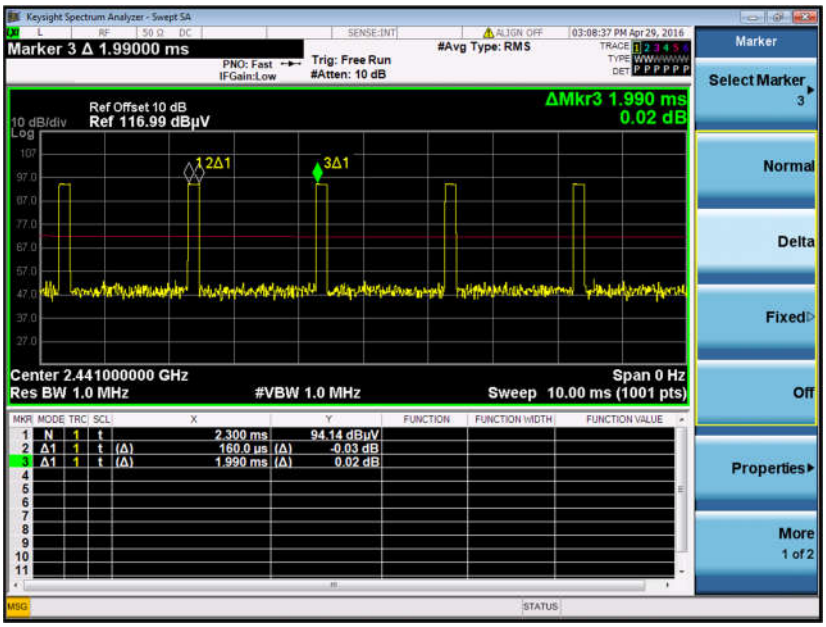
The EUT was programmed to be in continuously transmitting mode.

3.3.7 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

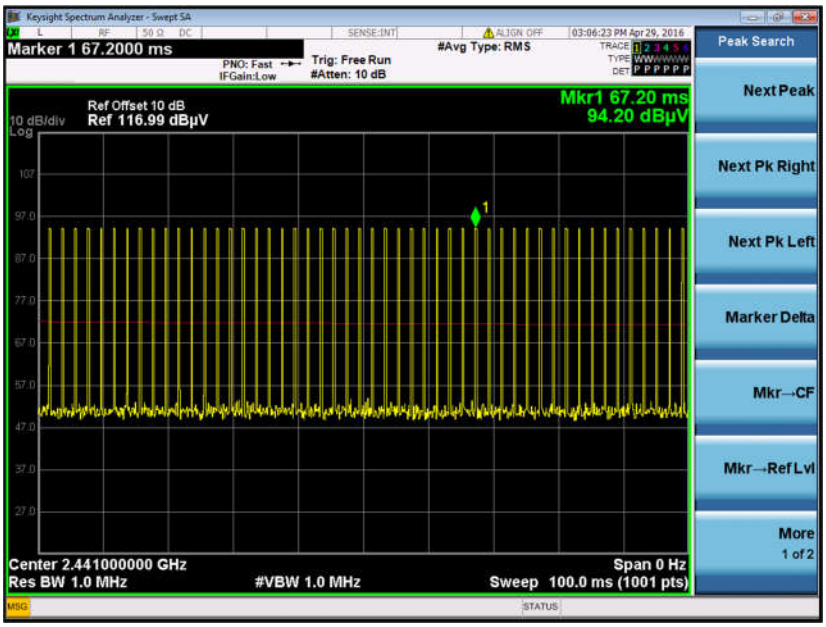
The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.3.8 Duty cycle correction factor for average measurement

On time (One Pulse) Plot on 2441MHz



On time (Count Pulses) Plot on 2441MHz



Note:

1. Worst case Duty cycle = on time/100 milliseconds = 50 * 0.16 / 100 = 8.00 %
2. Worst case Duty cycle correction factor = 20*log(Duty cycle) = -21.94 dB

3.3.9 Test Result of Field Strength of Fundamental Emissions and Spurious Emissions

Please refer to Appendix A.

3.4 Antenna Requirements

3.4.1 Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

3.4.2 Antenna Connector Construction

Enbedded in Antenna.

4. LIST OF MEASURING EQUIPMENT

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Sep. 10, 2015	Apr. 08, 2016	Sep. 09, 2016	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 20, 2016	Apr. 08, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 20, 2016	Apr. 08, 2016	Jan. 19, 2017	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Sep. 10, 2015	Apr. 29, 2016	Sep. 09, 2016	Radiation (03CH02-KS)
Spectrum Analyzer	R&S	FSV40	101040	10kHz~40GHz; Max 30dBm	Sep. 10, 2015	Apr. 29, 2016	Sep. 09, 2016	Radiation (03CH02-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 07, 2015	Apr. 29, 2016	Nov. 06, 2016	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	23182	25MHz-2GHz	Jan. 16, 2016	Apr. 29, 2016	Jan. 15, 2017	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Nov. 07, 2015	Apr. 29, 2016	Nov. 06, 2016	Radiation (03CH02-KS)
high gain Amplifier	MITEQ	AMF-7D-001 01800-30-10 P	1865802	1GHz~18GHz	Jan. 20, 2016	Apr. 29, 2016	Jan. 19, 2017	Radiation (03CH02-KS)
SHF-EHF Horn	com-power	AH-840	101070	18GHz~40Ghz	Oct. 10, 2015	Apr. 29, 2016	Oct. 09, 2016	Radiation (03CH02-KS)
Amplifier	com-power	PA-103A	161069	1kHz~1000MHz / 32 dB	May 04, 2015	Apr. 29, 2016	May 03, 2016	Radiation (03CH02-KS)
Amplifier	Agilent	8449B	3008A02384	1GHz~26.5GHz	Oct. 24, 2015	Apr. 29, 2016	Oct. 23, 2016	Radiation (03CH02-KS)
Amplifier	MITEQ	TTA1840-35-HG	1887435	18GHz~40GHz	Aug. 27, 2015	Apr. 29, 2016	Aug. 26, 2016	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Apr. 29, 2016	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Apr. 29, 2016	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Apr. 29, 2016	NCR	Radiation (03CH02-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	May 04, 2015	Apr. 25, 2016	May 03, 2016	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 24, 2015	Apr. 25, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 24, 2015	Apr. 25, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000081 1	AC 0V~300V, 45Hz~1000Hz	Oct. 24, 2015	Apr. 25, 2016	Oct. 23, 2016	Conduction (CO01-KS)

Note: Test equipment calibration is traceable to the procedure of ISO17025.

Appendix A. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

***ANT+Tx* (Band Edge @ 3m)**

ANT+Tx	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
ANT+Tx CH00 2402MHz		2343.57	49.82	-24.18	74	46.32	31.35	5.64	33.49	100	64	P	H
		2343.57	27.88	-26.12	54	-	-	-	-	-	-	A	H
	*	2402.171	87.75	-26.25	114	84	31.4	5.56	33.21	100	64	P	H
	*	2402.171	65.81	-28.19	94	-	-	-	-	-	-	A	H
		2366.16	49.70	-24.30	74	46.07	31.36	5.62	33.35	275	104	P	V
		2366.16	27.76	-26.24	54	-	-	-	-	-	-	A	V
	*	2402.171	87.23	-26.77	114	83.48	31.4	5.56	33.21	275	104	P	V
	*	2402.171	65.29	-28.71	94	-	-	-	-	-	-	A	V
ANT+Tx CH 39 2441MHz	*	2440.915	90.94	-23.06	114	87.63	31.44	5.11	33.24	188	68	P	H
	*	2440.915	69.00	-25.00	94	-	-	-	-	-	-	A	H
	*	2440.915	89.54	-24.46	114	86.23	31.44	5.11	33.24	304	100	P	V
	*	2440.915	67.60	-26.40	94	-	-	-	-	-	-	A	V

ANT+Tx CH 78 2480MHz	*	2479.993	87.92	-26.08	114	84.83	31.47	4.88	33.26	176	353	P	H
	*	2479.993	65.98	-28.02	94	-	-	-	-	-	-	A	H
		2490.72	48.59	-25.41	74	45.71	31.49	4.65	33.26	176	353	P	H
		2490.72	26.65	-27.35	54	-	-	-	-	-	-	A	H
	*	2480.16	88.49	-25.51	114	85.4	31.47	4.88	33.26	374	112	P	V
	*	2480.16	66.55	-27.45	94	-	-	-	-	-	-	A	V
		2497.72	48.35	-25.65	74	45.48	31.49	4.65	33.27	374	112	P	V
		2497.72	26.41	-27.59	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

ANT+Tx (Harmonic @ 3m)

ANT+Tx	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
ANT+Tx CH 00 2402MHz		4803	45.34	-28.66	74	37.31	35	6.09	33.06	210	95	P	H
		4803	47.34	-26.66	74	39.31	35	6.09	33.06	163	84	P	V
ANT+Tx CH 39 2441MHz		4881	45.82	-28.18	74	39.08	34.93	5.37	33.56	136	251	P	H
		7323	47.83	-26.17	74	39.89	35.83	7.4	35.29	163	0	P	H
		4881	46.21	-27.79	74	39.47	34.93	5.37	33.56	100	236	P	V
		7323	47.2	-26.8	74	39.26	35.83	7.4	35.29	195	63	P	V
ANT+Tx CH 78 2480MHz		4959	46.96	-27.04	74	40.98	34.85	5.19	34.06	274	0	P	H
		7440	45.76	-28.24	74	37.77	35.88	7.49	35.38	150	332	P	H
		4959	46.1	-27.9	74	40.12	34.85	5.19	34.06	136	197	P	V
		7440	46.3	-27.7	74	38.31	35.88	7.49	35.38	230	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz ANT+Tx (LF)

ANT+Tx	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz ANT+Tx LF		87.23	30.24	-9.76	40	44.03	16.5	0.21	30.5	188	63	P	H
		108.57	31.23	-12.27	43.5	43.19	18.19	0.25	30.4	-	-	P	H
		173.56	28.54	-14.96	43.5	42.07	16.5	0.37	30.4	-	-	P	H
		297.72	29.69	-16.31	46	41.81	17.78	0.6	30.5	-	-	P	H
		332.64	29.93	-16.07	46	40.33	19.5	0.67	30.57	-	-	P	H
		548.95	27.65	-18.35	46	32.38	24.71	0.86	30.3	-	-	P	H
		38.73	31.78	-8.22	40	39.46	23.1	0.12	30.9	185	91	P	V
		55.22	23.08	-16.92	40	39.71	13.9	0.15	30.68	-	-	P	V
		107.6	23.43	-20.07	43.5	35.36	18.22	0.25	30.4	-	-	P	V
		173.56	22.82	-20.68	43.5	36.35	16.5	0.37	30.4	-	-	P	V
		223.03	28.4	-17.6	46	42.13	16.27	0.45	30.45	-	-	P	V
		439.34	31.09	-14.91	46	36.07	24.66	0.9	30.54	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

*	**Fundamental Frequency** which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is **over limit** line.
P/A	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.