Shenzhen Global Test Service Co.,Ltd.
No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong

FCC PART 15 SUBPART C TEST REPORT

FCC PART 15.247

Report Reference No......:	**GTSR18102024-WLAN**
FCC ID..... :	**2ART3-K518ISE**
Compiled by (position+printed name+signature)..:	File administrators Jimmy Wang
Supervised by (position+printed name+signature)..:	Test Engineer Aaron Tan
Approved by (position+printed name+signature)..:	Manager Jason Hu
Date of issue.....:	Nov.16, 2018
Representative Laboratory Name .:	**Shenzhen Global Test Service Co.,Ltd.**
Address.....:	No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong, China
Applicant's name.....:	**Shenzhen Lonsdor Technology Co., Ltd.**
Address .....:	No.702, Block B, JunTaiHao Business Center, No.120 Yongfu Rd., Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China
Test specification .....**:**	
Standard .....:	**FCC Part 15.247**
TRF Originator.....:	Shenzhen Global Test Service Co.,Ltd.
Master TRF.....:	Dated 2014-12

Test item description .....:	Key Programmer
Trade Mark .....:	Lonsdor®
Manufacturer .....:	Shenzhen Lonsdor Technology Co., Ltd.
Model/Type reference.....:	K518ISE
Listed Models .....:	K518S, K518USA, K518RSA, K518THA, K518MSV, K518POL, K518RUS, K518FRA, K518TUR
Modulation Type .....:	CCK/DSSS, OFDM
Operation Frequency.....:	From 2412 - 2462MHz
Hardware Version .....:	V3.5.1
Software Version .....:	V1.0
Rating .....:	DC 3.78V from battery
Result.....:	**PASS**

T E S T R E P O R T

Test Report No. :	**GTSR18102024-WLAN**	Nov. 16, 2018 Date of issue

Equipment under Test	:	Key Programmer
Model /Type	:	K518ISE
Listed Models	:	K518S, K518USA, K518RSA, K518THA, K518MSV, K518POL, K518RUS, K518FRA, K518TUR
Applicant	:	**Shenzhen Lonsdor Technology Co., Ltd.**
Address	:	No.702, Block B, JunTaiHao Business Center, No.120 Yongfu Rd., Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China
Manufacturer	:	**Shenzhen Lonsdor Technology Co., Ltd.**
Address	:	No.702, Block B, JunTaiHao Business Center, No.120 Yongfu Rd., Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.
ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices
KDB558074 D01 V05: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247

2 SUMMARY

2.1 General Remarks

Date of receipt of test sample	:	Nov. 1, 2018
Testing commenced on	:	Nov. 2, 2018
Testing concluded on	:	Nov. 15, 2018

2.2 Product Description

Product Name:	Key Programmer
Model/Type reference:	K518ISE
Power supply:	DC 3.78V from battery
Adapter information :	Model: JHD-AP012U-120100AA Input: 100-240V~, 50/60Hz 0.35A Output:DC12V⎓1000m A
WIFI :	
Supported type:	802.11b/802.11g/802.11n(H20)/802.11n(H40)
Modulation:	802.11b: DSSS 802.11g/802.11n(H20)/802.11n(H40): OFDM
Operation frequency:	802.11b/802.11g/802.11n(H20): 2412MHz~2462MHz 802.11n(H40): 2422MHz~2452MHz
Channel number:	802.11b/802.11g/802.11n(H20): 11 802.11n(H40): 7
Channel separation:	5MHz
Antenna type:	Ceramic antenna
Antenna gain:	2.00dBi

2.3 Equipment Under Test

Power supply system utilised

Power supply voltage	:	○	230V / 50 Hz	○	120V / 60Hz
		○	12 V DC	○	24 V DC
		●	Other (specified in blank below)		

DC 3.78V

2.4 Short description of the Equipment under Test (EUT)

This is a Key Programmer.

For more details, refer to the user's manual of the EUT.

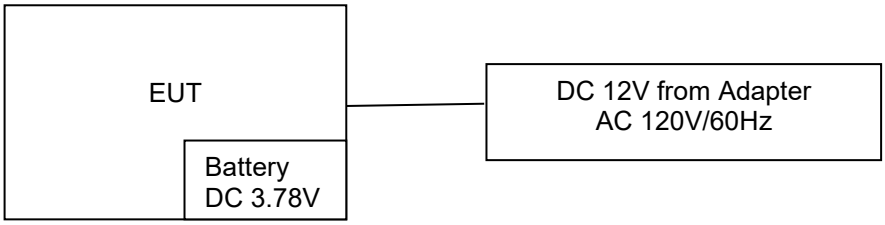
2.5 EUT operation mode

The application provider specific test software(Realtek MPtool) to control sample in continuous TX and RX (Duty Cycle >98%)
for testing meet KDB558074 test requirement.

IEEE 802.11b/g/n: Thirteen channels are provided to the EUT.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432		
6	2437		
7	2442		

2.6 Block Diagram of Test Setup



2.7 Special Accessories

Manufacturer	Description	Model	Serial Number	Certificate
Jihongda	AC/DC adapter	JHD-AP012U-120100AA	---	SDOC

2.8 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID:2ART3-K518ISE** filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

2.9 Modifications

No modifications were implemented to meet testing criteria.

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen Global Test Service Co.,Ltd.
No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4:2014 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

3.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 165725

Shenzhen Global Test Service Co.,Ltd EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

A2LA-Lab Cert. No.: 4758.01

Shenzhen Global Test Service Co.,Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

CNAS-Lab Code: L8169

Shenzhen Global Test Service Co.,Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories. Date of Registration: Dec. 11, 2015. Valid time is until Dec. 10, 2018.

3.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.4 Test Description

FCC PART 15.247		
FCC Part 15.207	AC Power Conducted Emission	PASS
FCC Part 15.247(a)(2)	6dB Bandwidth	PASS
FCC Part 15.247(d)	Spurious RF Conducted Emission	PASS
FCC Part 15.247(b)	Maximum Conducted Output Power	PASS
FCC Part 15.247(e)	Power Spectral Density	PASS
FCC Part 15.109/ 15.205/ 15.209	Radiated Emissions	PASS
FCC Part 15.247(d)	Band Edge	PASS
FCC Part 15.203/15.247 (b)	Antenna Requirement	PASS

Data Rate Used:
Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. 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	Data Rate	Channel
Maximum Peak Conducted Output Power Power Spectral Density 6dB Bandwidth Spurious RF conducted emission Radiated Emission 9KHz~1GHz& Radiated Emission 1GHz~10th Harmonic	11b/DSSS	1 Mbps	1/6/11
	11g/OFDM	6 Mbps	1/6/11
	11n(20MHz)/OFDM	6.5Mbps	1/6/11
	11n(40MHz)/OFDM	13.5Mbps	3/6/9
Band Edge	11b/DSSS	1 Mbps	1/11
	11g/OFDM	6 Mbps	1/11
	11n(20MHz)/OFDM	6.5Mbps	1/11
	11n(40MHz)/OFDM	13.5Mbps	3/9

3.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Global Test Service Co.,Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen GTS laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10 dB	(1)
Radiated Emission	1~18GHz	4.32 dB	(1)
Radiated Emission	18-40GHz	5.54 dB	(1)
Conducted Disturbance	0.15~30MHz	3.12 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6 Equipments Used during the Test

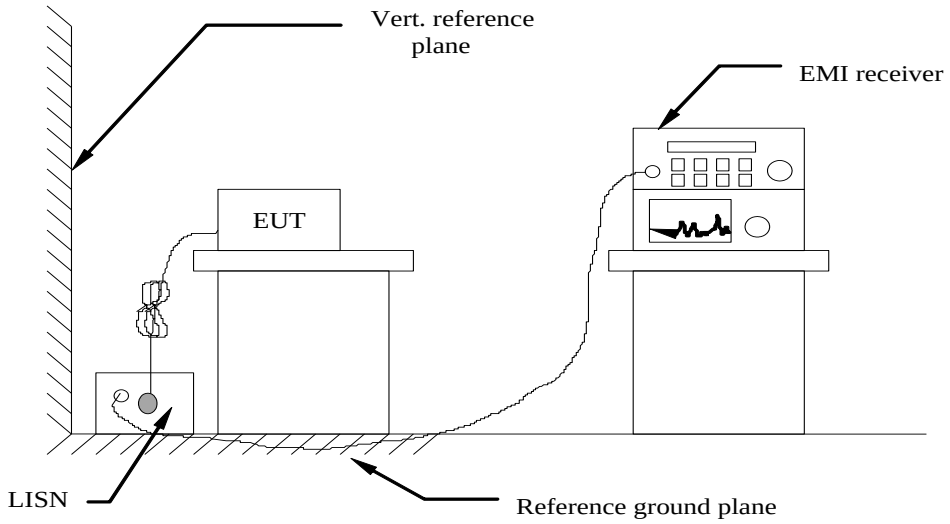
Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
LISN	R&S	ENV216	3560.6550.08	2018/09/20	2019/09/19
LISN	R&S	ESH2-Z5	893606/008	2018/09/20	2019/09/19
Bilog Antenna	Schwarzbeck	VULB9163	976	2018/09/20	2019/09/19
EMI Test Receiver	R&S	ESCI7	101102	2018/09/20	2019/09/19
Spectrum Analyzer	Agilent	N9020A	MY48010425	2018/09/20	2019/09/19
Spectrum Analyzer	R&S	FSP40	100019	2018/06/05	2019/06/04
Controller	EM Electronics	Controller EM 1000	N/A	N/A	N/A
Horn Antenna	Schwarzbeck	BBHA 9120D	01622	2018/09/20	2019/09/19
Active Loop Antenna	SCHWARZBECK	FMZB1519	1519-037	2018/09/20	2019/09/19
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	971	2018/09/20	2019/09/19
Amplifier	Schwarzbeck	BBV 9743	#202	2018/09/20	2019/09/19
Amplifier	EMCI	EMC051845B	980355	2018/09/20	2019/09/19
Temperature/Humidity Meter	Gangxing	CTH-608	02	2018/09/20	2019/09/19
High-Pass Filter	K&L	9SH10-2700/X12750-O/O	KL142031	2018/09/20	2019/09/19
High-Pass Filter	K&L	41H10-1375/U12750-O/O	KL142032	2018/09/20	2019/09/19
RF Cable(below 1GHz)	HUBER+SUHNER	RG214	RE01	2018/09/20	2019/09/19
RF Cable(above 1GHz)	HUBER+SUHNER	RG214	RE02	2018/09/20	2019/09/19
Data acquisition card	Agilent	U2531A	TW53323507	2018/09/20	2019/09/19
Power Sensor	Agilent	U2021XA	MY5365004	2018/09/20	2019/09/19
EMI Test Software	R&S	ES-K1	V1.7.1	2018/09/20	2019/09/19
EMI Test Software	JS Tonscend	JS32-RE	2.0.1.5	2018/09/20	2019/09/19

Note: The Cal.Interval was one year.

4 TEST CONDITIONS AND RESULTS

4.1 AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10-2013.
2 Support equipment, if needed, was placed as per ANSI C63.10-2013
3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2013
4 The EUT received DC 12V power from adapter, the adapter received AC120V/60Hz and AC 240V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5 All support equipments received AC power from a second LISN, if any.
6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT.The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8 During the above scans, the emissions were maximized by cable manipulation.

AC Power Conducted Emission Limit

For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following：

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

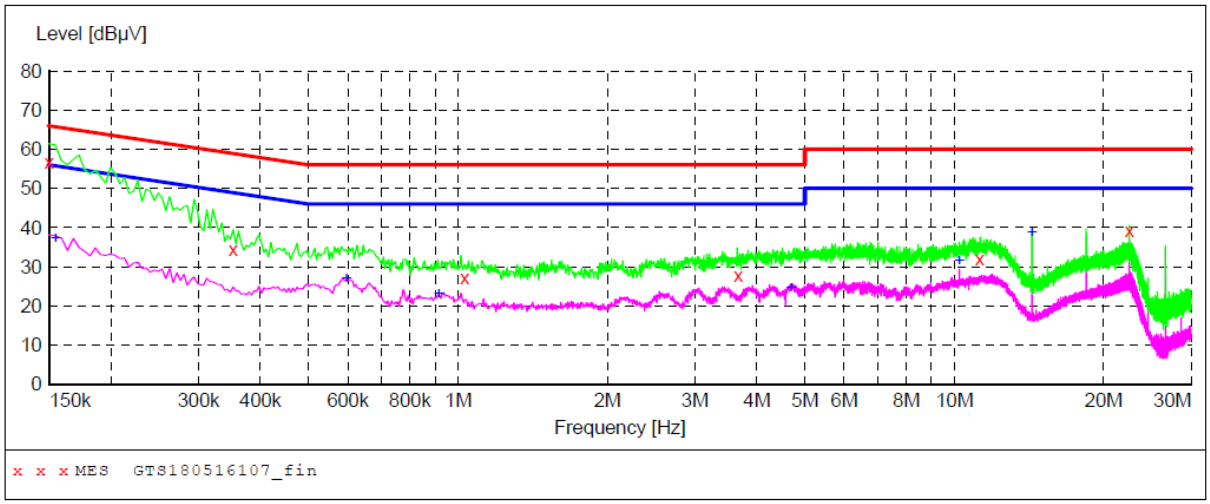
TEST RESULTS

Remark:

1. All modes of 802.11b/g/n were tested at Low, Middle, and High channel; only the worst result of 802.11b CH11 was reported as below:
2. Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:.

Power supply:	AC 120V/60Hz(adapter)	Polarization	L

SCAN TABLE: "Voltage (9K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "GTS180516107_fin"

5/16/2018 10:14AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	56.60	10.1	66	9.4	QP	L1	GND
0.352500	34.40	9.9	59	24.5	QP	L1	GND
1.032000	27.30	9.6	56	28.7	QP	L1	GND
3.669000	27.90	9.4	56	28.1	QP	L1	GND
11.247000	31.90	8.7	60	28.1	QP	L1	GND
22.528500	39.30	9.0	60	20.7	QP	L1	GND

MEASUREMENT RESULT: "GTS180516107_fin2"

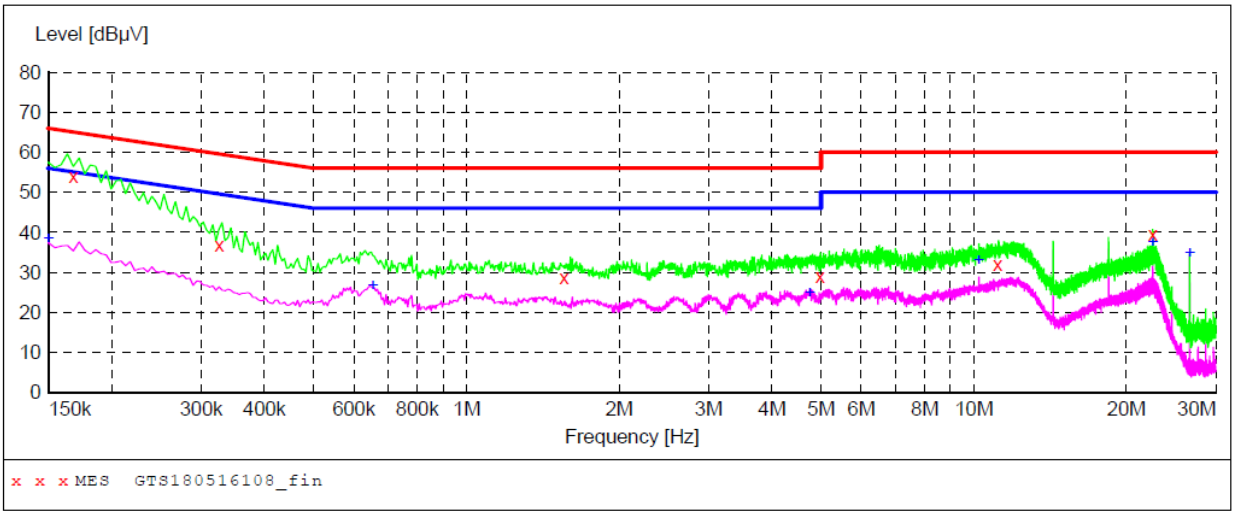
5/16/2018 10:14AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.154500	37.00	10.1	56	18.8	AV	L1	GND
0.595500	26.90	9.7	46	19.1	AV	L1	GND
0.915000	22.90	9.6	46	23.1	AV	L1	GND
4.686000	24.60	9.3	46	21.4	AV	L1	GND
10.239000	31.40	8.9	50	18.6	AV	L1	GND
14.334000	38.80	8.3	50	11.2	AV	L1	GND

Power supply:	AC 120V/60Hz(adapter)	Polarization	N

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "GTS180516108_fin"

5/16/2018 10:17AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.168000	53.90	10.0	65	11.2	QP	N	GND
0.325500	36.90	9.9	60	22.7	QP	N	GND
1.558500	28.70	9.5	56	27.3	QP	N	GND
4.978500	29.10	9.3	56	26.9	QP	N	GND
11.157000	32.10	8.7	60	27.9	QP	N	GND
22.528500	39.60	9.0	60	20.4	QP	N	GND

MEASUREMENT RESULT: "GTS180516108_fin2"

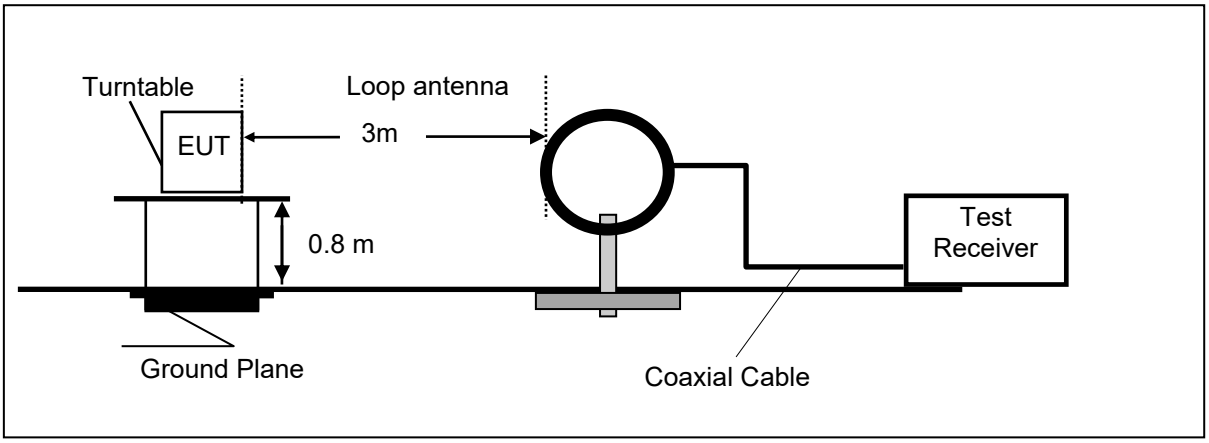
5/16/2018 10:17AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	38.30	10.1	56	17.7	AV	N	GND
0.654000	26.70	9.7	46	19.3	AV	N	GND
4.744500	24.70	9.3	46	21.3	AV	N	GND
10.239000	32.90	8.9	50	17.1	AV	N	GND
22.528500	37.40	9.0	50	12.6	AV	N	GND
26.623500	34.70	9.0	50	15.3	AV	N	GND

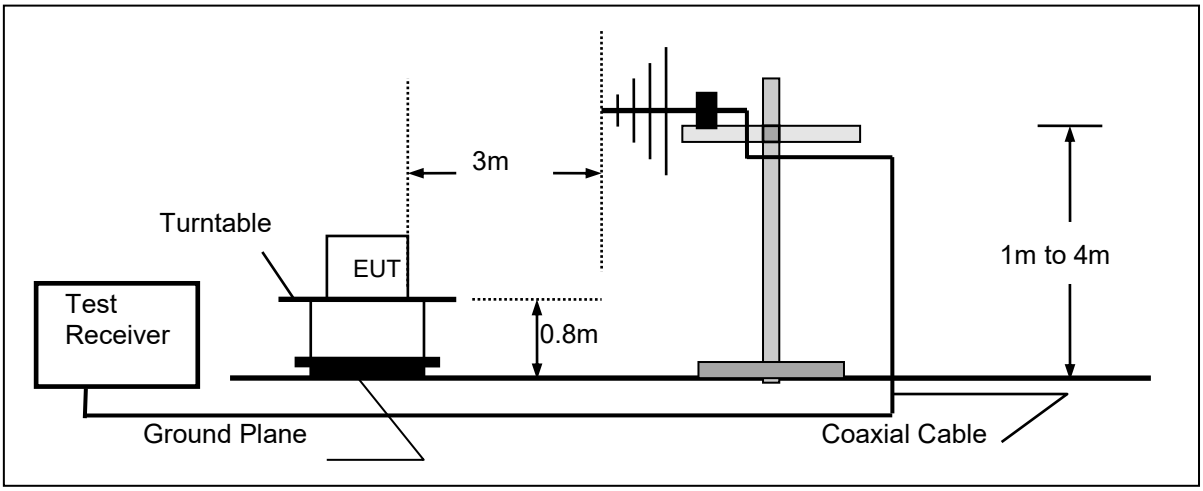
4.2 Radiated Emission

TEST CONFIGURATION

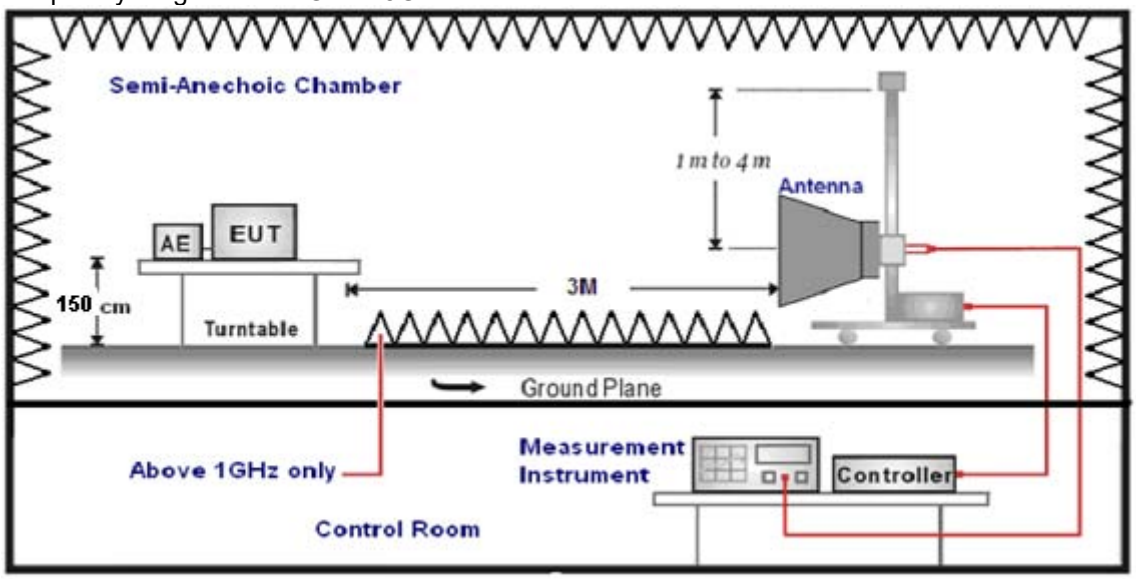
Frequency range 9 KHz – 30MHz



Frequency range 30MHz – 1000MHz



Frequency range above 1GHz-25GHz



TEST PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane when testing frequency range 9 KHz –1GHz;the EUT was placed on a turn table which is 1.5m above ground plane when testing frequency range 1GHz – 25GHz.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. Radiated emission test frequency band from 9KHz to 25GHz.
6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Ultra-Broadband Antenna	3
1GHz-18GHz	Double Ridged Horn Antenna	3
18GHz-25GHz	Horn Anternna	1

7. Setting test receiver/spectrum as following table states:

Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz,Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz,Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz,Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

Transd=AF +CL-AG

RADIATION LIMIT

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission from intentional radiators at a distance of 3 meters shall not exceed the following table. According to § 15.247(d), in any 100kHz bandwidth outside the frequency band in which the EUT is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the100kHz bandwidth within the band that contains the highest level of desired power.

The pre-test have done for the EUT in three axes and found the worst emission at position shown in test setup photos.

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

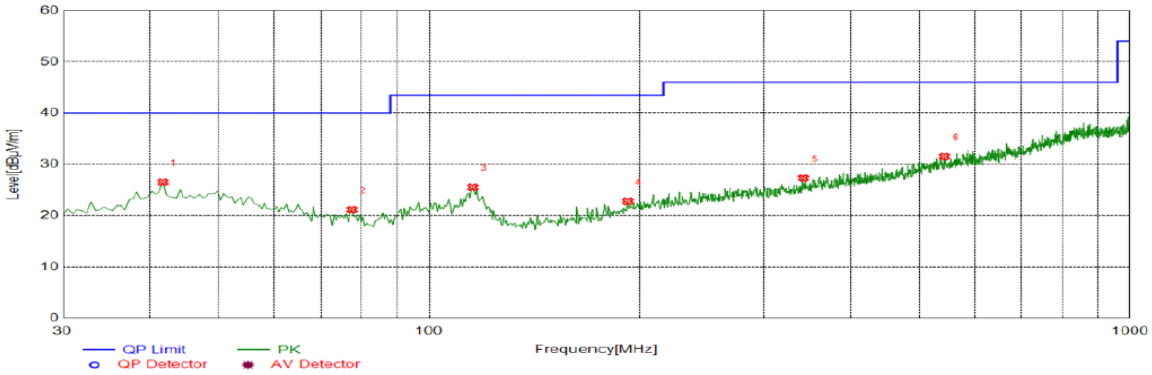
TEST RESULTS

Remark:

1. This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.
2. All three channels (lowest/middle/highest) of each mode were measured below 1GHz and recorded worst case at 802.11b low channel.
3. All three channels (lowest/middle/highest) of each mode were measured above1GHz and recorded worst case at 802.11b mode.
4. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.

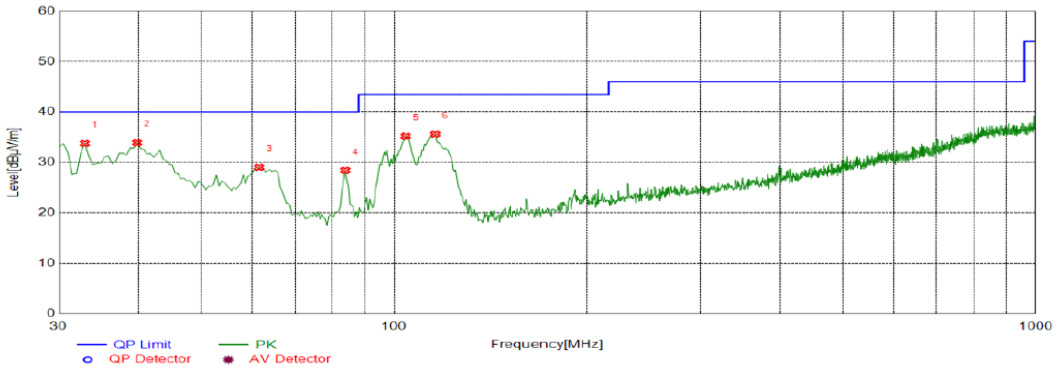
For 30MHz-1GHz

Horizontal



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Reading [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	41.6400	26.53	-15.56	42.09	40.00	13.47	100	22	Horizonta
2	77.5300	21.20	-20.41	41.61	40.00	18.80	100	138	Horizonta
3	115.3600	25.54	-17.83	43.37	43.50	17.96	100	127	Horizonta
4	191.9900	22.81	-17.33	40.14	43.50	20.69	100	257	Horizonta
5	341.8550	27.34	-13.22	40.56	46.00	18.66	100	22	Horizonta
6	543.6150	31.55	-9.12	40.67	46.00	14.45	100	36	Horizonta

Vertical



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Reading [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	32.9100	33.81	-17.21	51.02	40.00	6.19	100	177	Vertical
2	39.7000	33.95	-16.02	49.97	40.00	6.05	100	235	Vertical
3	61.5250	29.05	-17.63	46.68	40.00	10.95	100	281	Vertical
4	83.8350	28.46	-19.96	48.42	40.00	11.54	100	60	Vertical
5	104.2050	35.25	-16.95	52.20	43.50	8.25	100	174	Vertical
6	115.8450	35.63	-17.89	53.52	43.50	7.87	100	313	Vertical

For 1GHz to 25GHz

Note: 802.11b/802.11g/802.11n (H20)/802.11n (H40) all have been tested, only worse case 802.11b mode 1Mbps is reported

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable loss (dB)	Preamp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
802.11b-2412MHz									
V	4824	39.68	30.28	7.01	26.63	50.34	74	23.66	PK
V	--	--	--	--	--	--	54	--	AV
H	4824	37.47	30.28	7.01	26.63	48.13	74	25.87	PK
H	--	--	--	--	--	--	54	--	AV
V	7236	26.04	36.59	8.91	24.98	46.56	74	27.44	PK
V	--	--	--	--	--	--	54	--	AV
H	7236	25.46	36.59	8.91	24.98	45.98	74	28.02	PK
H	--	--	--	--	--	--	54	--	AV
802.11b-2437MHz									
V	4874	39.41	30.36	7.62	26.63	50.76	74	23.24	PK
V	--	--	--	--	--	--	54	--	AV
H	4874	38.19	30.36	7.62	26.63	49.54	74	24.46	PK
H	--	--	--	--	--	--	54	--	AV
V	7311	26.97	36.61	8.84	24.98	47.44	74	26.56	PK
V	--	--	--	--	--	--	54	--	AV
H	7311	25.76	36.61	8.84	24.98	46.23	74	27.77	PK
H	--	--	--	--	--	--	54	--	AV
802.11b-2462MHz									
V	4924	39.93	30.43	7.94	26.63	51.67	74	26.46	PK
V	--	--	--	--	--	--	54	--	AV
H	4924	37.35	30.43	7.94	26.63	49.09	74	27.2	PK
H	--	--	--	--	--	--	54	--	AV
V	7386	27.29	36.78	8.45	24.98	47.54	74	26.46	PK
V	--	--	--	--	--	--	54	--	AV
H	7386	26.55	36.78	8.45	24.98	46.80	74	27.20	PK
H	--	--	--	--	--	--	54	--	AV

Note：

1) Emission level (dBuV/m) = Meter Reading+ antenna Factor+ cable loss- preamp factor.
2) Margin value = Limits-Emission level.
3) -- Mean the PK detector measured value is below average limit.
4) The other emission levels were very low against the limit.
5) RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

Results of Band Edges Test (Radiated)

Note: 802.11b/802.11g/802.11n (H20) /802.11n (H40) all have been tested, only worse case 802.11b is reported

Polar (H/V)	Frequency	Meter Reading	Antenna Factor	Cable loss	Preamp factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
802.11b-2412MHz									
V	2390	46.31	28.72	5.11	28.48	51.66	74	22.34	PK
V	--	--	--	--	--	--	54	--	AV
H	2390	44.21	28.72	5.11	28.48	49.56	74	24.44	PK
H	--	--	--	--	--	--	54	--	AV
V	2400	38.97	28.78	5.25	27.65	45.35	74	28.65	PK
V	--	--	--	--	--	--	54	--	AV
H	2400	38.57	28.78	5.25	27.65	44.95	74	29.05	PK
H	--	--	--	--	--	--	54	--	AV
802.11b-2462MHz									
V	2483.50	43.67	28.93	5.34	27.49	50.45	74	23.55	PK
V	--	--	--	--	--	--	54	--	AV
H	2483.50	42.20	28.93	5.34	27.49	48.98	74	25.02	PK
H	--	--	--	--	--	--	54	--	AV
V	2500.00	38.97	28.96	5.75	27.32	46.36	74	27.64	PK
V	--	--	--	--	--	--	54	--	AV
H	2500.00	38.33	28.96	5.75	27.32	45.72	74	28.28	PK
H	--	--	--	--	--	--	54	--	AV

Note：

1) Emission level (dBuV/m) = Meter Reading+ antenna Factor+ cable loss- preamp factor.
2) Margin value = Limits-Emission level.
3) -- Mean the PK detector measured value is below average limit.
4) The other emission levels were very low against the limit.
5) RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

4.3 Maximum Conducted Output Power

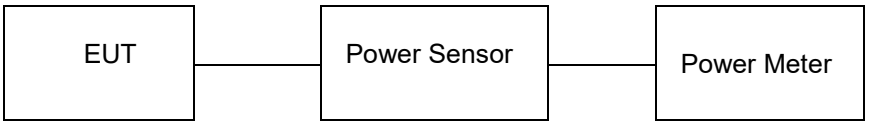
Limit

The Maximum Peak Output Power Measurement is 30dBm.

Test Procedure

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power sensor.

Test Configuration



Test Results

WIFI

Type	Channel	Output power PK (dBm)	Limit (dBm)	Result
802.11b	01	9.36	30.00	Pass
	06	9.46		
	11	9.37		
802.11g	01	8.90	30.00	Pass
	06	8.93		
	11	8.88		
802.11n(HT20)	01	8.75	30.00	Pass
	06	8.77		
	11	8.70		
802.11n(HT40)	03	8.14	30.00	Pass
	06	8.20		
	09	8.21		

Note:
1) Measured output power at difference data rate for each mode and recorded worst case for each mode.
2) Test results including cable loss.
3) Worst case data at 1Mbps at IEEE 802.11b; 6Mbps at IEEE 802.11g; 6.5Mbps at IEEE 802.11n HT20; 13.5Mbps at IEEE 802.11n HT40.

4.4 Power Spectral Density

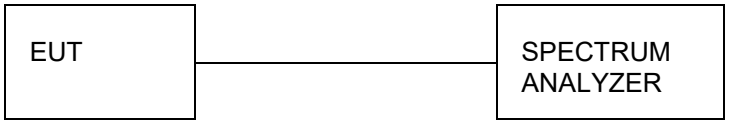
Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW ≥ 3 kHz.
3. Set the VBW ≥ 3× RBW.
4. Set the span to 1.5 times the DTS channel bandwidth.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum power level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
11. The resulting peak PSD level must be 8dBm.

Test Configuration

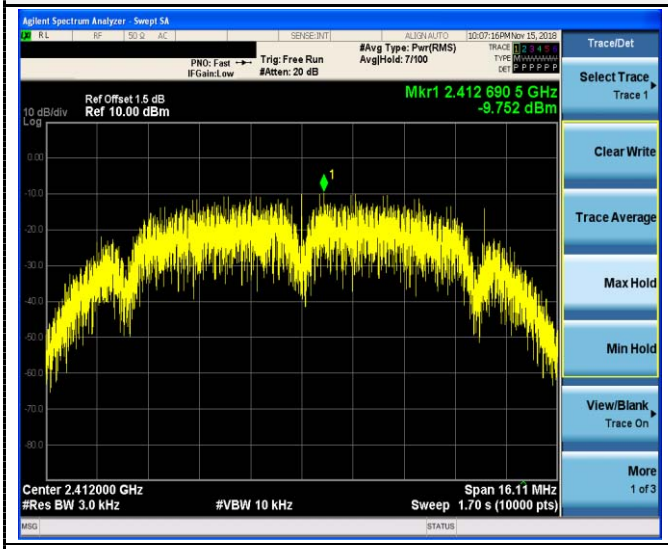
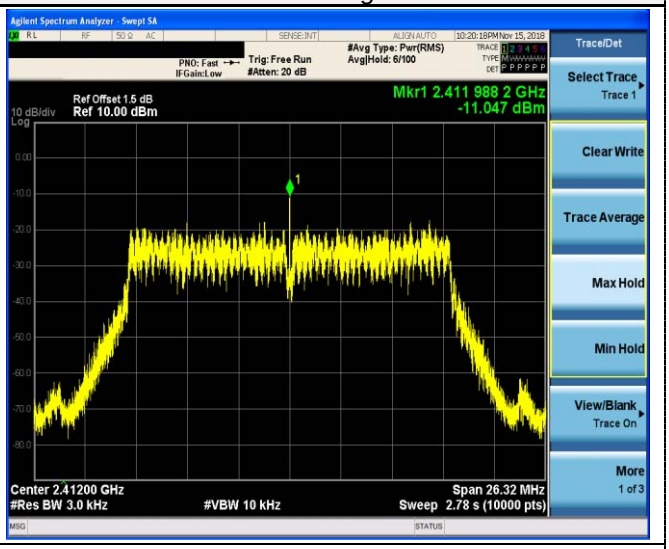
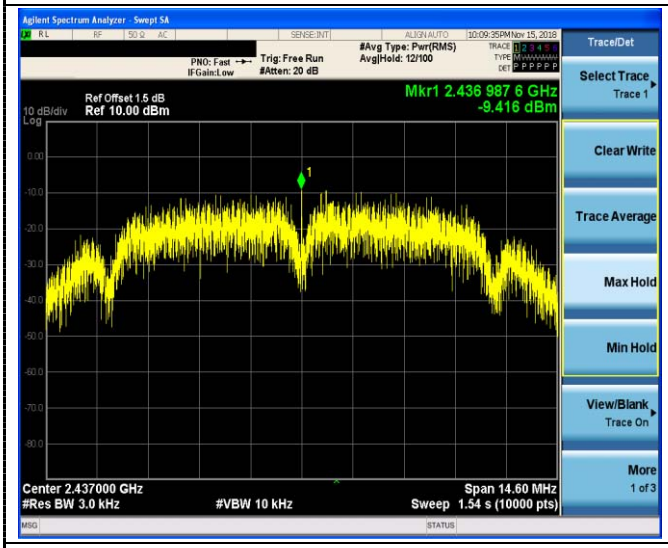
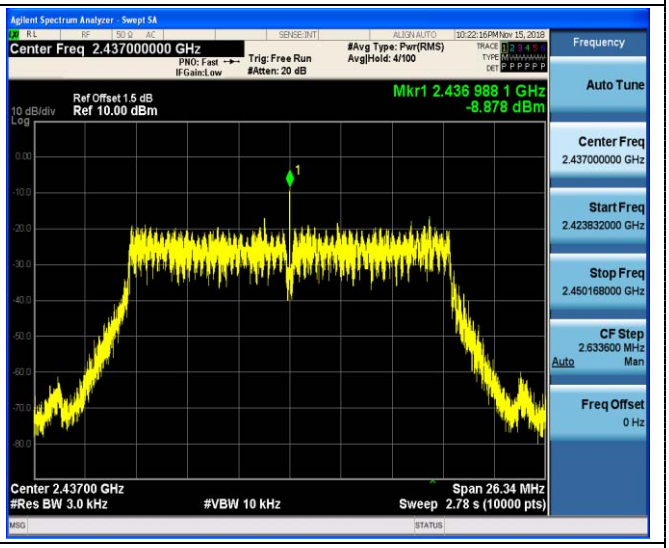
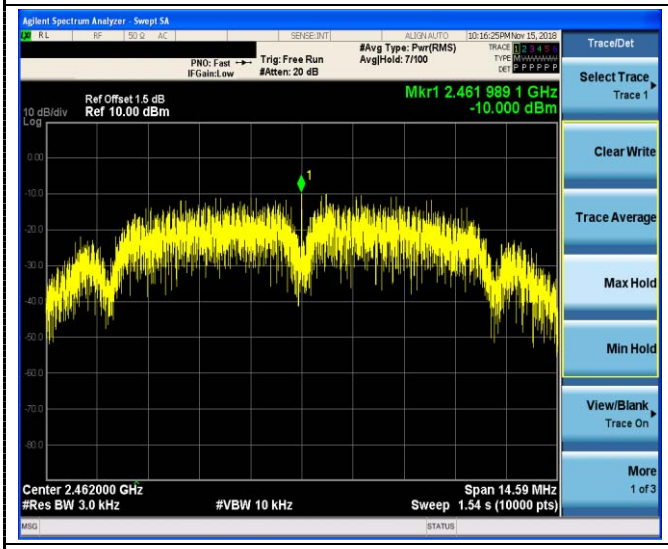
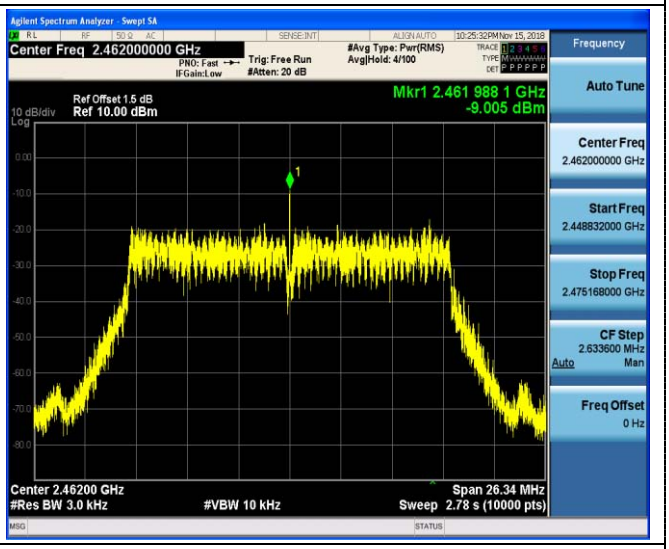


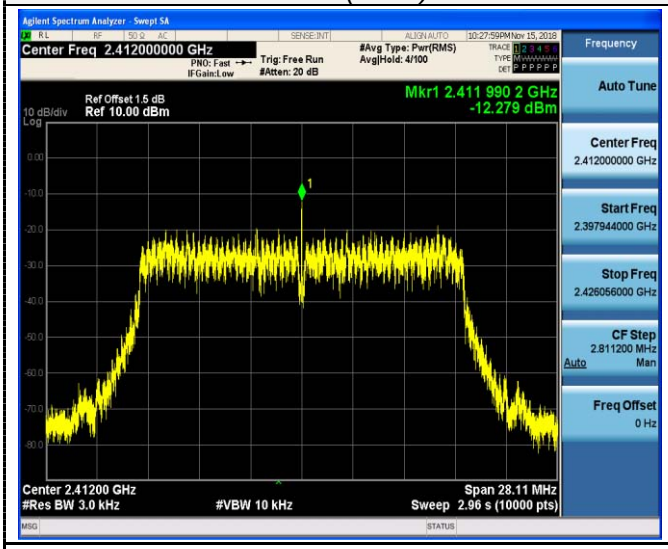
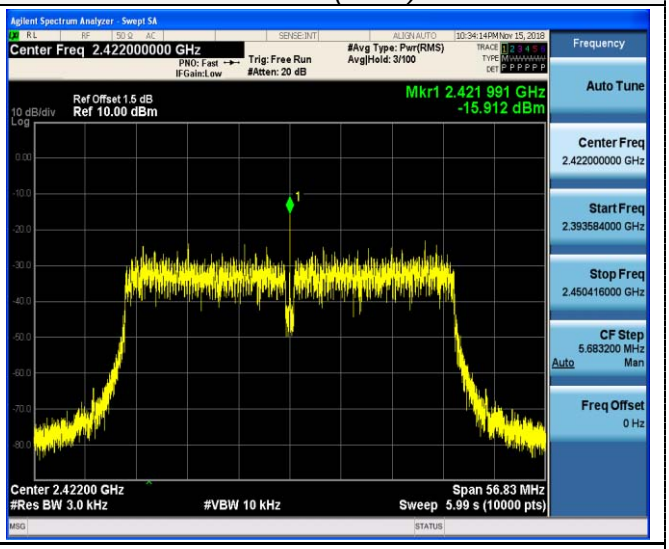
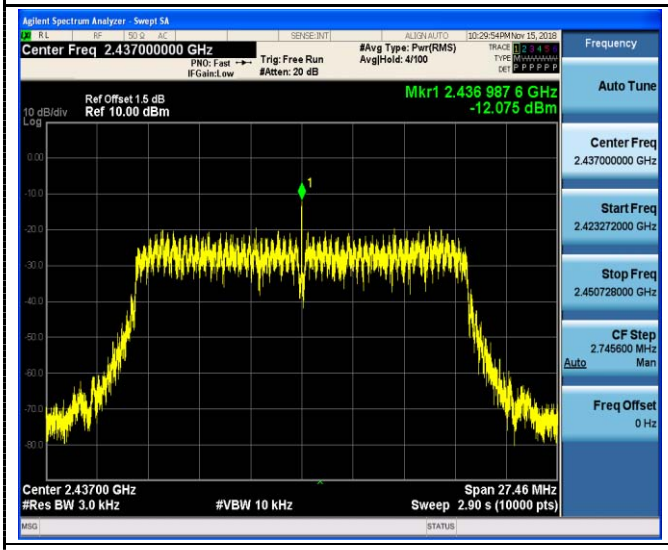
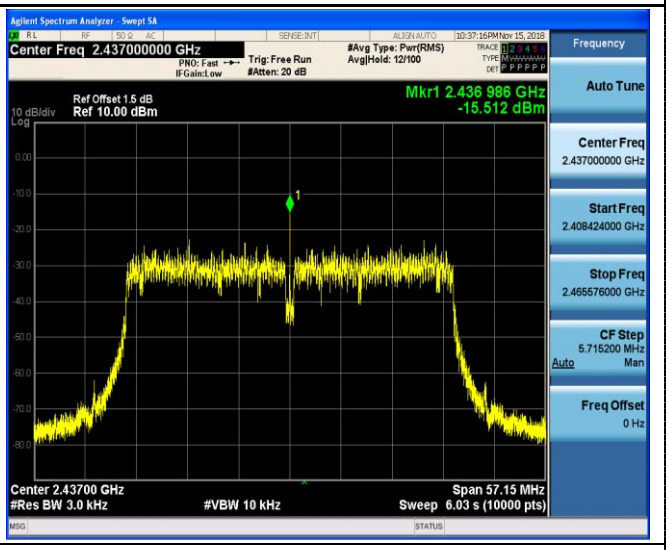
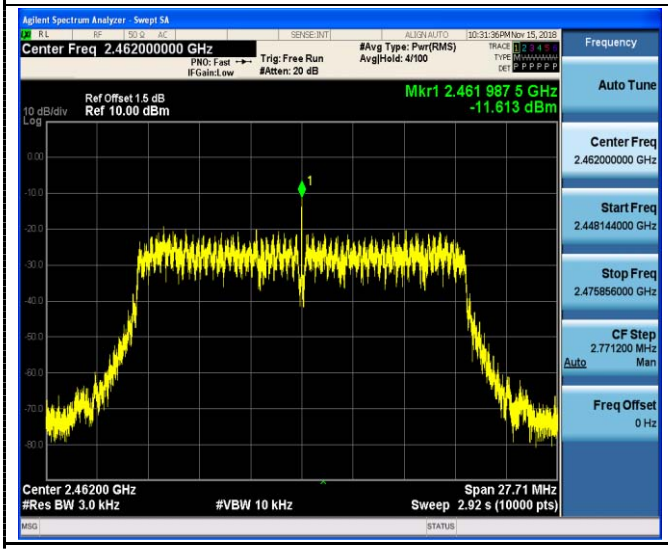
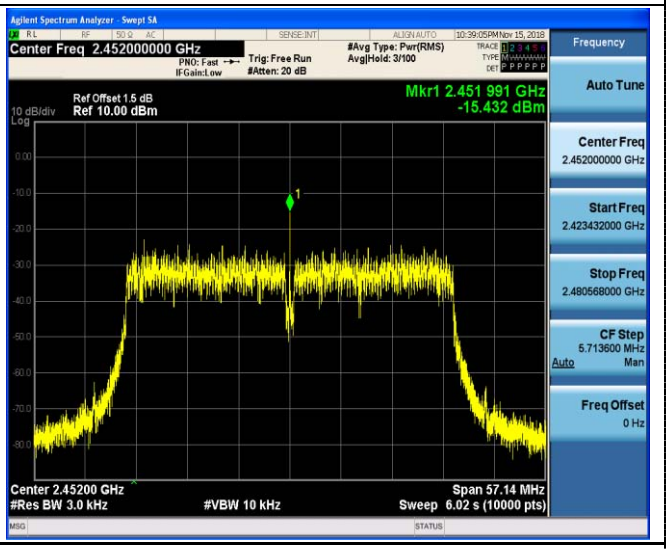
Test Results

WIFI

Type	Channel	Power Spectral Density (dBm/3KHz)	Limit (dBm/3KHz)	Result
802.11b	01	-9.752	8.00	Pass
	06	-9.416		
	11	-10.000		
802.11g	01	-11.047	8.00	Pass
	06	-8.878		
	11	-9.005		
802.11n(HT20)	01	-12.279	8.00	Pass
	06	-12.075		
	11	-11.613		
802.11n(HT40)	03	-15.912	8.00	Pass
	06	-15.512		
	09	-15.432		

Note:
1) Measured peak power spectrum density at difference data rate for each mode and recorded worst case for each mode.
2) Test results including cable loss;
3) Worst case data at 1Mbps at IEEE 802.11b; 6Mbps at IEEE 802.11g; 6.5Mbps at IEEE 802.11n HT20; 13.5Mbps at IEEE 802.11n HT40.
4) Please refer to following plots;

802.11b	802.11g
	
CH01	CH01
	
CH06	CH06
	
CH11	CH11

802.11n(HT20)	*802.11n(HT40)*
	
CH01	*CH03*
	
CH06	*CH06*
	
CH11	*CH09*