FCC TEST REPORT

According to

CFR47 §15.247

Applicant	:	**Hangzhou Guoguo Technology Co., Ltd.**
Address	:	**No.88 jiangnan avenue, xixing street, binjiang district, Hangzhou, Zhejiang,China.**
Manufacturer	:	**Zhejiang Yusong Technology Co., Ltd.**
Address	:	**No.1 Qixian Road, Science Park, Liangzhu University, Yuhang district, Hangzhou,Zhejiang,China**
Equipment	:	**SMART EXPRESS CABINET**
Model No.	:	**PB1801**
FCC ID	:	**2APPS-PB1801**
Test Period	:	**May.16,2018~ May.24, 2018**

■ The test result refers exclusively to the test presented test model / sample.

■ Without written approval of ***Cerpass Technology Corporation Test Laboratory.*** the test report shall not be reproduced exc- ept in full.

■ The test report must not be used by the clients to claim product certification approval by any agency of the Government.

I HEREBY CERTIFY THAT :
The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.10 – 2013& FCC Part15.247**and the energy emitted by this equipment was ***passed.***

Approved by:

Mark Liao / Assistant Manager

Laboratory Accreditation:

☒ Cerpass Technology Corporation Test Laboratory

TAF LAB Code:	**1439**

Contents

1. Report of Measurements and Examinations 5
2. General Info 6
2.1 Description of EUT 6
2.2 Description of wireless module 7
2.3 Description of Antenna 7
2.4 Carrier Frequency of Channels 8
2.5 The Worst Case Configuration 8
2.6 EUT Exercise Software 8
2.7 Power Parameter Value of the test software 9
2.8 Duty cycle 10
2.9 Support equipment 11
3. General Information of Test Site 12
3.1 Information of Test Site 12
3.2 Measuring Equipment 13
3.3 Measurement Uncertainty 14
4. AC Conducted Emission Measurement 15
4.1 Test Limit 15
4.2 Test Standard 15
4.3 Test Procedures 15
4.4 Test Setup Layout 16
4.5 Test Result 17
5. Radiated Emission Measurement 19
5.1 Test Limit 19
5.2 Test Standard 19
5.3 Test Procedures 20
5.4 Test Setup Layout 21
5.5 Test Result 23
6. 6dB Bandwidth Measurement 35
6.1 Test Limit 35
6.2 Test Standard 35
6.3 Test Procedures 35
6.4 Test Setup Layout 35
6.5 Test Result 36
7. Output Power Measurement 40
7.1 Test Limit 40
7.2 Test Standard 40
7.3 Test Procedures 40
7.4 Test Setup Layout 40
7.5 Test Result 41
8. Power Spectral Density Measurement 42
8.1 Test Limit 42
8.2 Test Standard 42
8.3 Test Procedures 42

8.4 Test Setup Layout 42
8.5 Test Result 43
9. Conducted Band Edge and Out-of-Band Emissions Measurement 48
9.1 Test Limit 48
9.2 Test Standard 48
9.3 Test Procedures 49
9.4 Test Setup Layout 49
9.5 Test Result 50
10.Radiated Emission Band Edge Measurement 59
10.1 Test Limit 59
10.2 Test Standard 59
10.3 Test Procedure 59
10.4 Test Setup Layout 60
10.5 Test Result 61

History of this Test Report

Report No.	Version	Issue Date	Description
TEFI1805011	Rev 01	May.22, 2018	Original.

1. Report of Measurements and Examinations

Performed Test Item	Normative References	Test Performed	Deviation	Result
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2018 Section 15.207	Yes	N/A	Pass
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2018 Section 15.209	Yes	No	Pass
Conducted Spurious Emissions	FCC CFR Title 47 Part 15 Subpart C: 2018 Section 15.247(d)	Yes	No	Pass
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2018 15.247(d)	Yes	No	Pass
6 dB bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2018 15.247(a) (2)	Yes	No	Pass
Output Power	FCC CFR Title 47 Part 15 Subpart C: 2018 Section 15.247(b)(3)	Yes	No	Pass
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2018 Section 15.247(e)	Yes	No	Pass

2. General Info

2.1 Description of EUT

Product name	SMART EXPRESS CABINET	
Model No.	PB1801	
Power supply	S8FS-C15012	
	Input:	50/60Hz 100-120VAC 3.4A 200-240VAC 1.9A
	Output:	12VDC 12.5A

2.2 Description of wireless module

WLAN	RTL8723BU
Spreading	802.11b: CCK, DQPSK, DBPSK 802.11g: 64 QAM, 16 QAM, QPSK, BPSK 802.11n: BPSK, QPSK,16-QAM, 64-QAM
Frequency Range	802.11b/g/n(20MHz): 2412-2462MHz 802.11n(40MHz): 2422-2452MHz
Number of Channels	802.11b/g/n (20MHz):11 802.11n (40MHz): 7
Data Rate	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0~MCS7

Note: For more details, please refer to the EUT User manual.

2.3 Description of Antenna

Antenna	Peak Gain
Dipole Antenna	5dBi for 2.40~2.50GHz band

2.4 Carrier Frequency of Channels

802.11b, 802.11g, 802.11n(20MHz)			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2412	08	2447
02	2417	09	2452
03	2422	10	2457
04	2427	11	2462
05	2432		
06	2437		
07	2442	---	---

802.11n(40MHz)			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	---	08	2447
02	---	09	2452
03	2422	---	---
04	2427	---	---
05	2432	---	---
06	2437	---	---
07	2442	---	---

2.5 The Worst Case Configuration

Data rate Configuration:

Modulation Mode	Worst Data Rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	MCS0
802.11n(HT40)	MCS0

Note: Power output test was verified over all data rates of each mode, and then choose the maximum power output for final test of each channel shown as the table.

2.6 EUT Exercise Software

1	Turn on the power of equipment.
2	Run 'RtkWiFiTest-v1.8.1_20160613.apk', input RF test command and set the test mode and channel, then press Transmit to start continue transmit.

2.7 Power Parameter Value of the test software

Mode	Frequency (MHz)	Power Setting
802.11b	2412	63
	2437	63
	2462	63
802.11g	2412	63
	2437	63
	2462	63
802.11n(20MHz)	2412	63
	2437	63
	2462	63
802.11n(40MHz)	2422	63
	2437	63
	2452	63

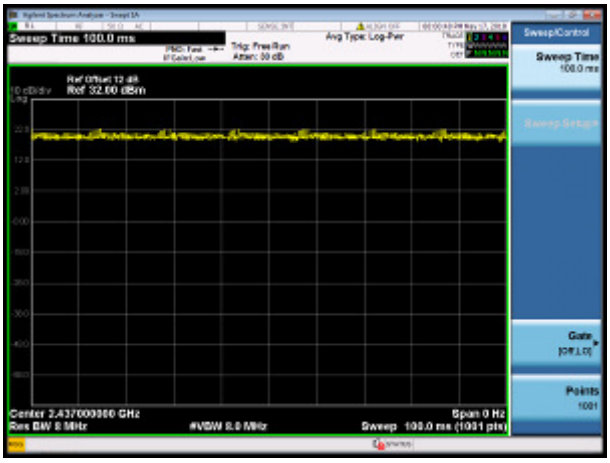
2.8 Duty cycle

Test Item	Duty cycle

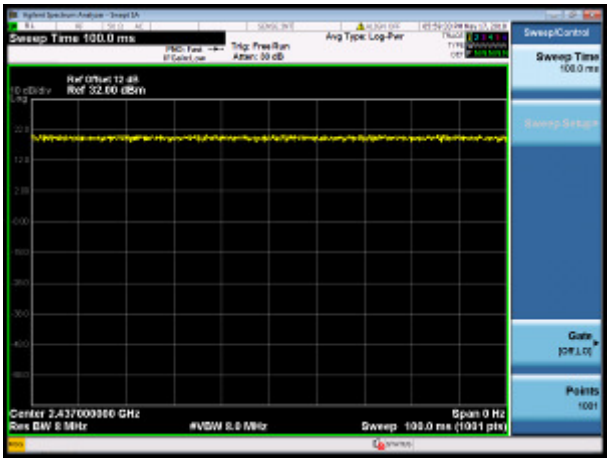
Mode	Frequency (MHz)	Measurement (%)
802.11b	2437	100
802.11g	2437	100
802.11n(20MHz)	2437	100
802.11n(40MHz)	2437	100

802.11b (2437MHz)

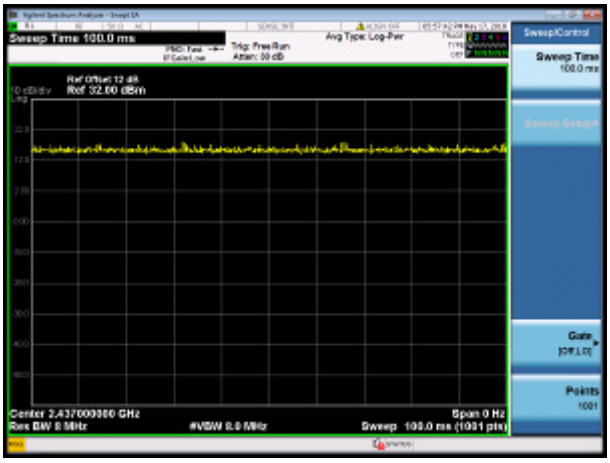
802.11g (2437MHz)



802.11n(20MHz)(2437MHz)



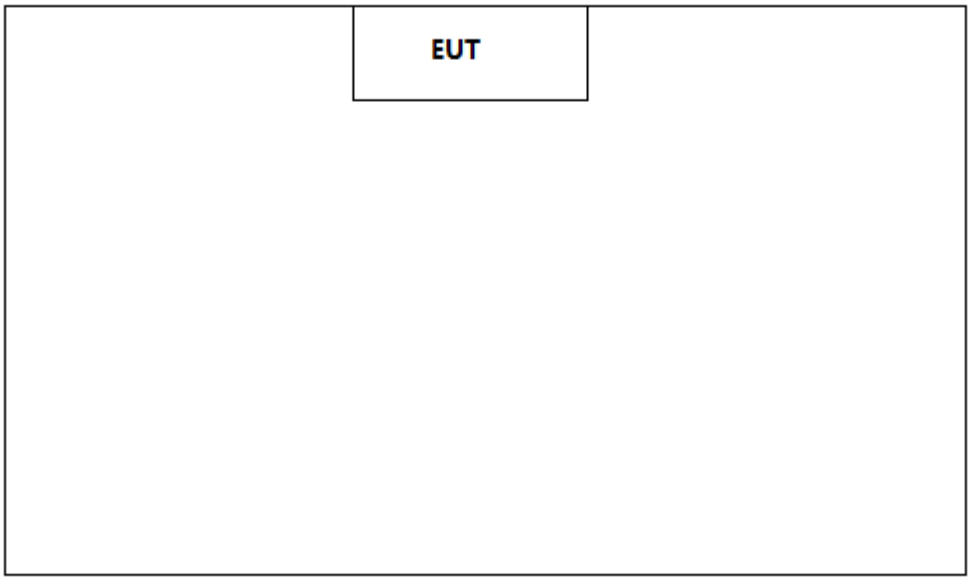
802.11n(40MHz)(2437MHz)



2.9 Support equipment

Product	Manufacturer	Model No.	Serial No.	Power Cord
N/A	N/A	N/A	N/A	N/A

Connection Diagram



Signal Cable Type		Signal cable Description
N/A	N/A	N/A

3. General Information of Test Site

3.1 Information of Test Site

Test Site :	**Cerpass Technology Corporation Test Laboratory** Location: No.10 Lane2 Lianfu Street Luzhu District, Taoyuan City Taiwan ROC Tel:+886-3-3226-888 Fax:+886-3-3226-881
FCC Registration Number :	TW1079, TW1061, TW1439
IC Registration Number :	4934E-1, 4934E-2
VCCI	T-2205 for Telecommunication Test C-4663 for Conducted emission test R-4218 for Radiated emission test G-10812 for radiated disturbance above 1GHz

3.2 Measuring Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
EMI Receiver	R&S	ESCI3	100563	2017/06/21	2018/06/20
LISN	Schwarzbeck	NSLK 8127	8127-920	2017/11/08	2018/11/07
Pulse Limiter	R&S	ESH3-Z2	101933	2018/03/21	2019/03/20
Software	Farad	Ez-EMC	ver.ct3a1	N/A	N/A

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
Bilog Antenna	Sunol	JB1	A020514-2	2017/07/20	2018/07/19
EMI Receiver	R&S	ESCI3	101183	2017/07/07	2018/07/06
EMI Receiver	R&S	ESCI7	100968	2017/10/16	2018/10/15
Preamplifier	EM Electronics corp.	EM330	60618	2018/03/21	2019/03/20
Horn Antenna	Schwarzbeck	BBHA9120 D	9120D-619	2017/07/15	2018/07/14
Horn Antenna	Schwarzbeck	BBHA9170	9170-348	2017/05/27	2018/05/26
Spectrum Analyzer	R&S	FSP40	100324	2017/08/06	2018/08/05
Preamplifier	EMCI	EMCI 030-00-3230	SN016723	2018/03/21	2019/03/20
Preamplifier	EM Electronics corp.	EM01G18G	SN060714	2018/05/08	2019/05/07
Spectrum Analyzer	KEYSIGHT	N9010A	MY53400169	2017.12.12	2018.12.11
Software	E3	AUDIX	Version: 8.14.806b	N/A	N/A

3.3 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2).

Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30 MHz	Line / Neutral	±2.9076 dB
Radiated Emission	9 kHz ~ 40,000 MHz	Vertical / Horizontal	±0.948 dB
Spurious Emission (Conducted)	-	-	±4.011 dB
Maximum Peak and Average Output Power	-	-	±0.322 dB
Power Spectral Density	-	-	±0.322 dB
Bandwidth	-	-	74.224Hz

4. AC Conducted Emission Measurement

4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.10-2013 Section 6.2. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 6.2.2.The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	**Quasi Peak (dB μ V)**	**Average (dB μ V)**
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

4.2 Test Standard

Tested according to ANSI C63.10: 2013 Section 6.2 for compliance to FCC 47CFR 15.247 Part15.207 (a) requirements.

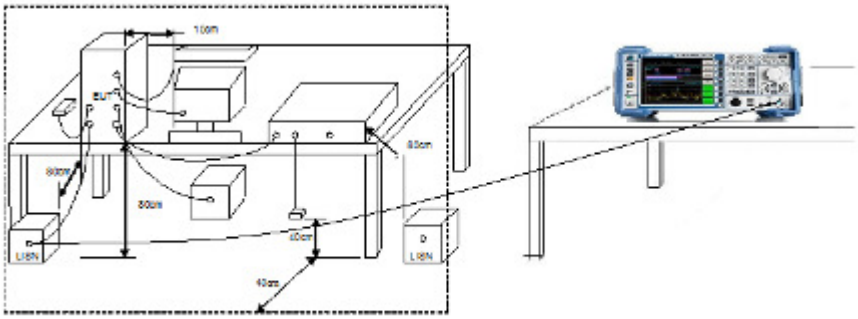
4.3 Test Procedures

The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

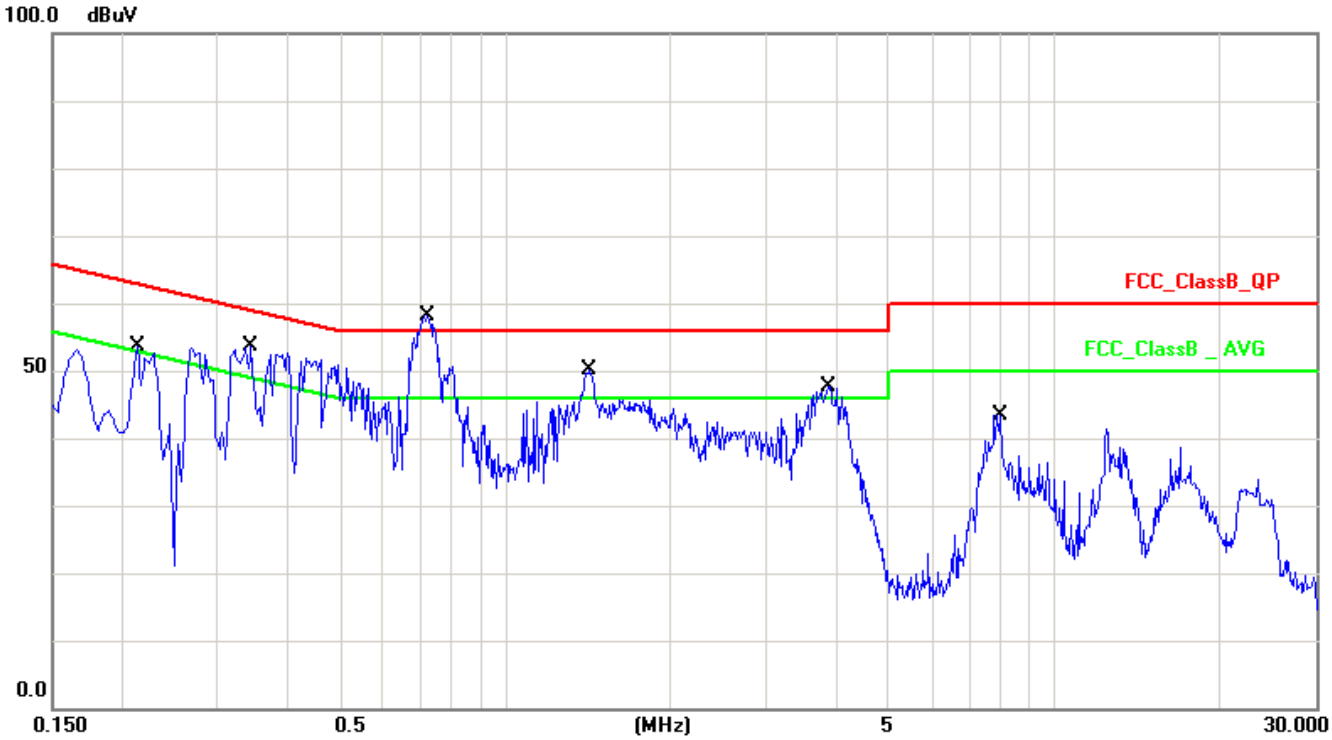
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

4.4 Test Setup Layout



4.5 Test Result

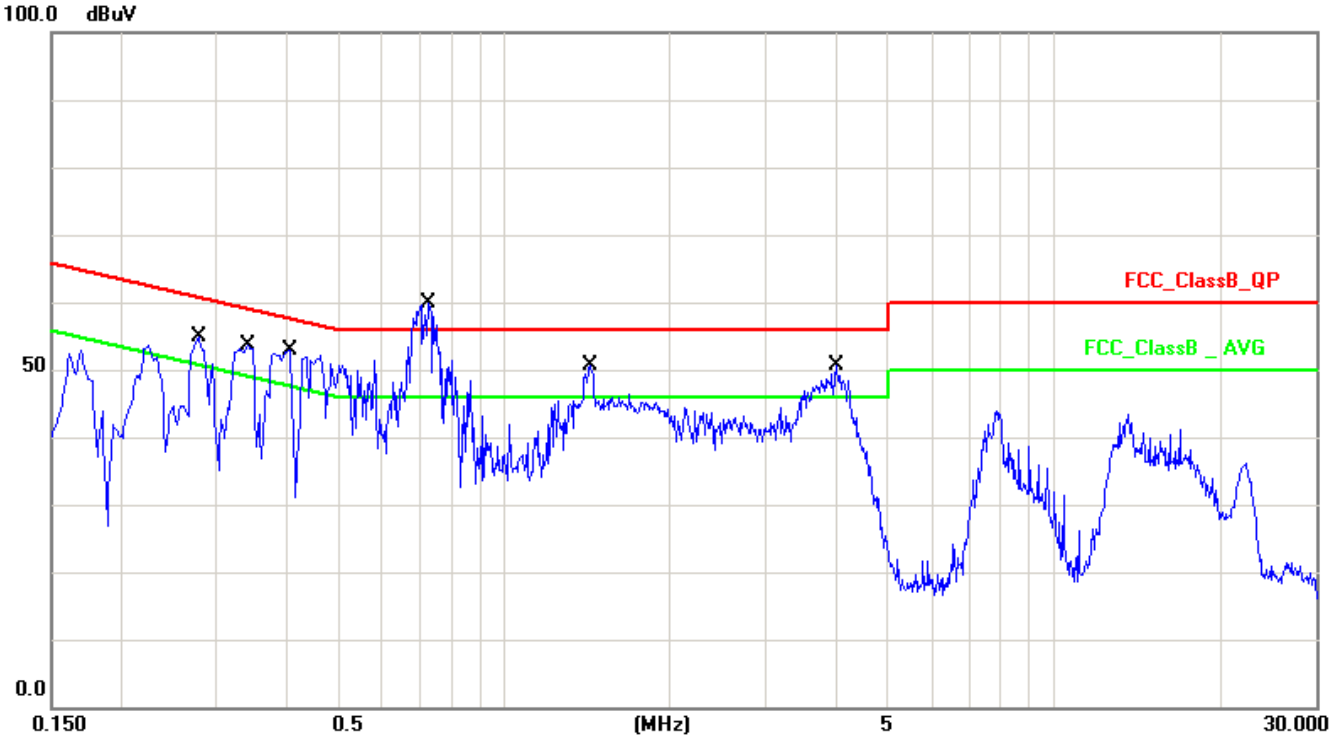
Test Mode :	Mode 1: Normal Operation with WIFI on		
AC Power :	AC 120V/60Hz	Phase:	LINE
Temperature :	26°C	Humidity:	60%
Pressure(mbar) :	1002	Date:	2018/05/09



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2140	10.14	39.68	49.82	63.04	-13.22	QP
2	0.2140	10.14	24.81	34.95	53.04	-18.09	AVG
3	0.3460	10.14	40.48	50.62	59.06	-8.44	QP
4	0.3460	10.14	22.82	32.96	49.06	-16.10	AVG
5	0.7260	10.16	44.69	54.85	56.00	-1.15	QP
6	0.7260	10.16	25.08	35.24	46.00	-10.76	AVG
7	1.4299	10.19	36.09	46.28	56.00	-9.72	QP
8	1.4299	10.19	21.17	31.36	46.00	-14.64	AVG
9	3.8940	10.25	31.09	41.34	56.00	-14.66	QP
10	3.8940	10.25	10.33	20.58	46.00	-25.42	AVG
11	7.9860	10.29	23.75	34.04	60.00	-25.96	QP
12	7.9860	10.29	16.30	26.59	50.00	-23.41	AVG

Note: Measurement Level = Reading Level + Correct Factor

Test Mode :	Mode 1: Normal Operation with WIFI on		
AC Power :	AC 120V/60Hz	Phase :	NEUTRAL
Temperature :	26˚C	Humidity :	60%
Pressure(mbar) :	1002	Date:	2018/05/09



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2779	10.14	40.78	50.92	60.88	-9.96	QP
2	0.2779	10.14	26.74	36.88	50.88	-14.00	AVG
3	0.3420	10.14	40.13	50.27	59.15	-8.88	QP
4	0.3420	10.14	24.39	34.53	49.15	-14.62	AVG
5	0.4100	10.15	38.05	48.20	57.65	-9.45	QP
6	0.4100	10.15	17.18	27.33	47.65	-20.32	AVG
7	0.7300	10.16	45.55	55.71	56.00	-0.29	QP
8	0.7300	10.16	24.35	34.51	46.00	-11.49	AVG
9	1.4340	10.19	35.78	45.97	56.00	-10.03	QP
10	1.4340	10.19	20.18	30.37	46.00	-15.63	AVG
11	4.0260	10.25	32.02	42.27	56.00	-13.73	QP
12	4.0260	10.25	10.74	20.99	46.00	-25.01	AVG

Note: Measurement Level = Reading Level + Correct Factor

5. Radiated Emission Measurement

5.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

FCC Part 15 Subpart C Paragraph 15.209		
FREQUENCIES (MHz)	**FIELD STRENGTH (micro volts/meter)**	**MEASUREMENT DISTANCE (meters)**
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note 1: The lower limit shall apply at the transition frequency.
Note 2: Distance refers to the distance in meters between the measuring instrument Antenna and the closed point of any part of the device or system.
Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)
Note 4: **Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permltted under other sections of this part, e.g., §§15.231 and 15.241.

5.2 Test Standard

KDB 558074 D01v04 - Section 12.2.3 (quasi-peak measurements)
KDB 558074 D01v04 - Section 12.2.4 (peak power measurements)
KDB 558074 D01v04- Section 12.2.5 (average power measurements)

5.3 Test Procedures

Quasi-Peak Field Strength Measurements:

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

Peak Field Strength Measurements:

Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

1. RBW=As specified in Table 1
2. VBW=3×RBW
3. Detector=Peak
4. Trace mode=Max hold
5. Sweep time=Auto couple
6. Allow the trace to stabilize

Table 1-RBW as a function of frequency

Frequency	RBW
9 ~ 150kHz	200 ~ 300Hz
0.15 ~ 30MHz	9 ~ 10kHz
30 ~ 1000MHz	100 ~ 120kHz
＞ 1000MHz	1MHz

AVE Field Strength Measurements:

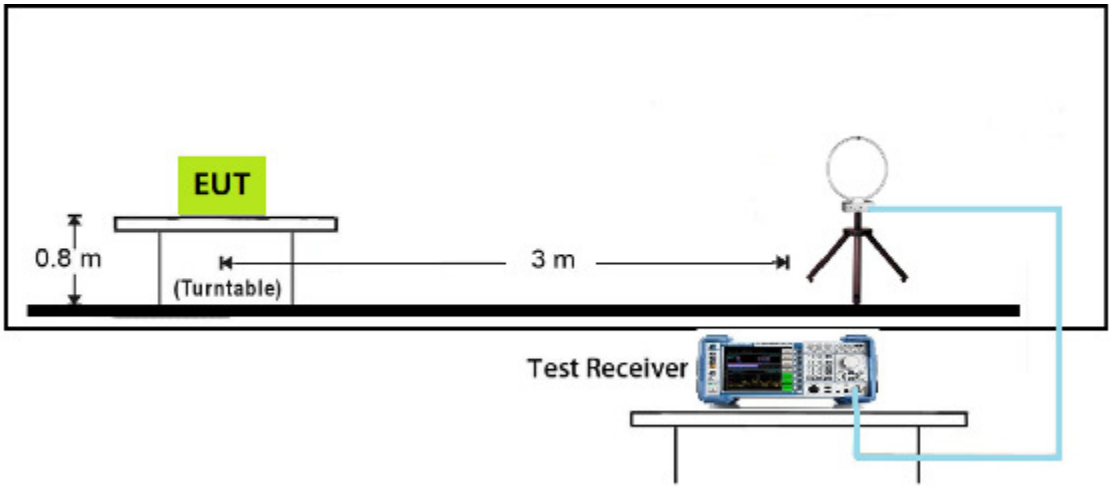
Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

1. RBW= 1MHz
2. VBW≥1/T
3. Detector=Peak
4. Trace mode=Max hold
5. Sweep time=Auto couple
6. Allow max hold to run for at least 50 times(1/duty cycle) trace

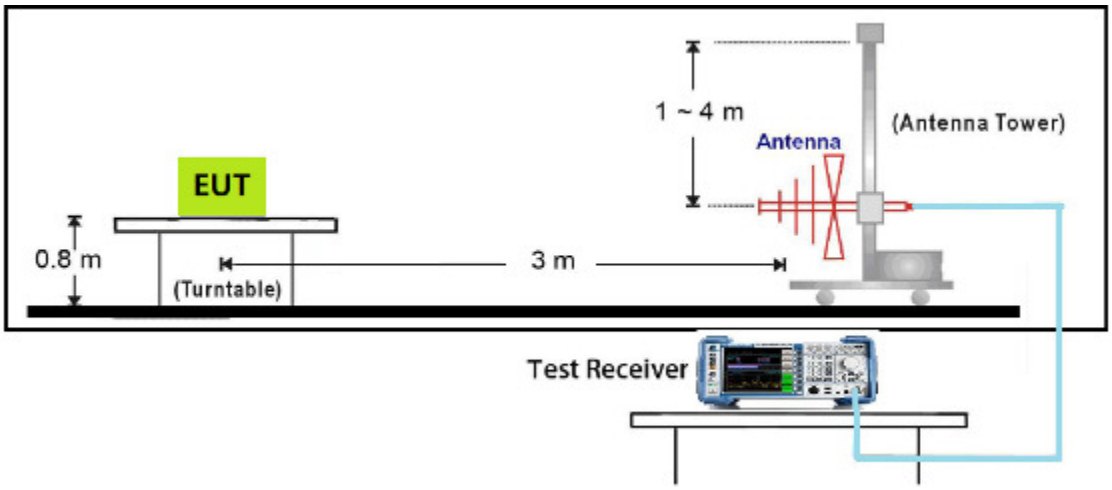
As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode

5.4 Test Setup Layout

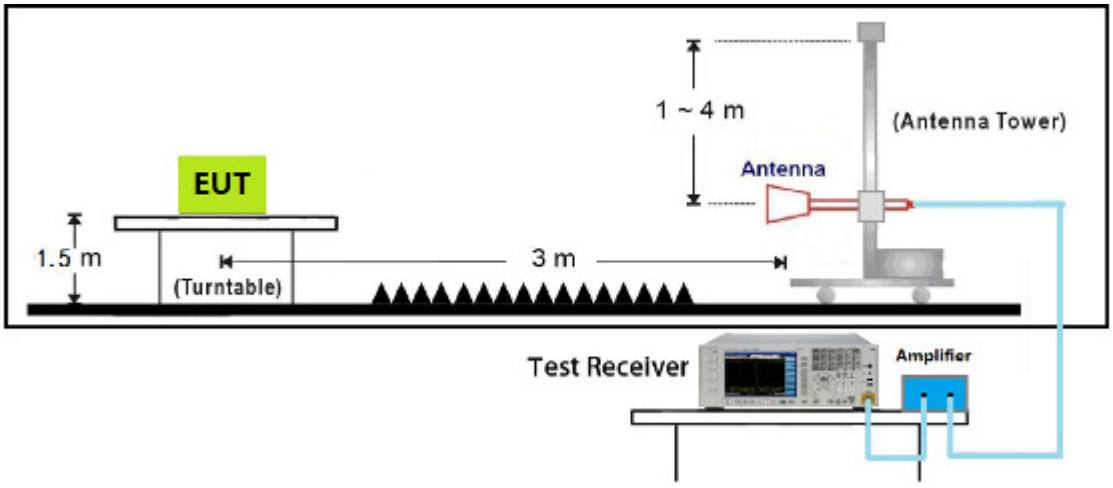
9kHz~30MHz Test Setup



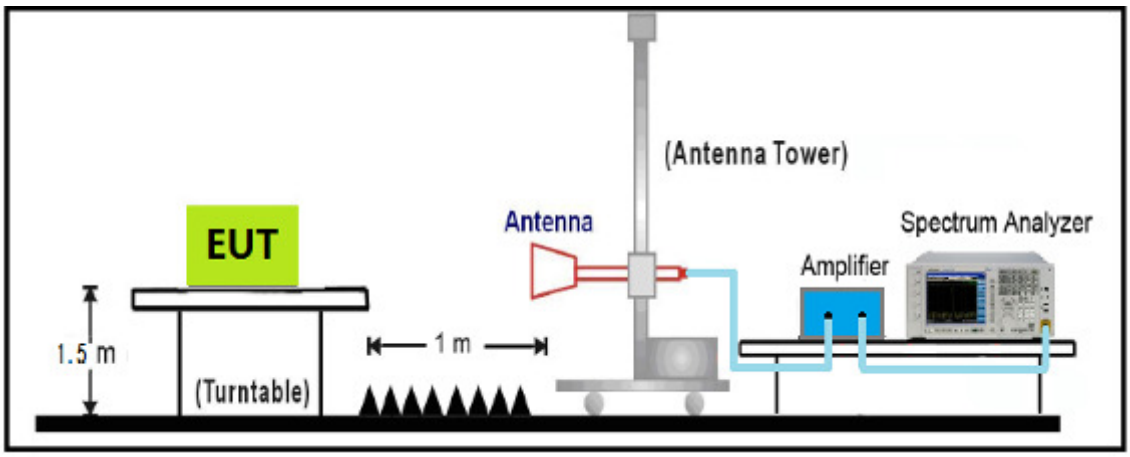
30MHz~1GHz Test Setup



1GHz~18GHz Test Setup



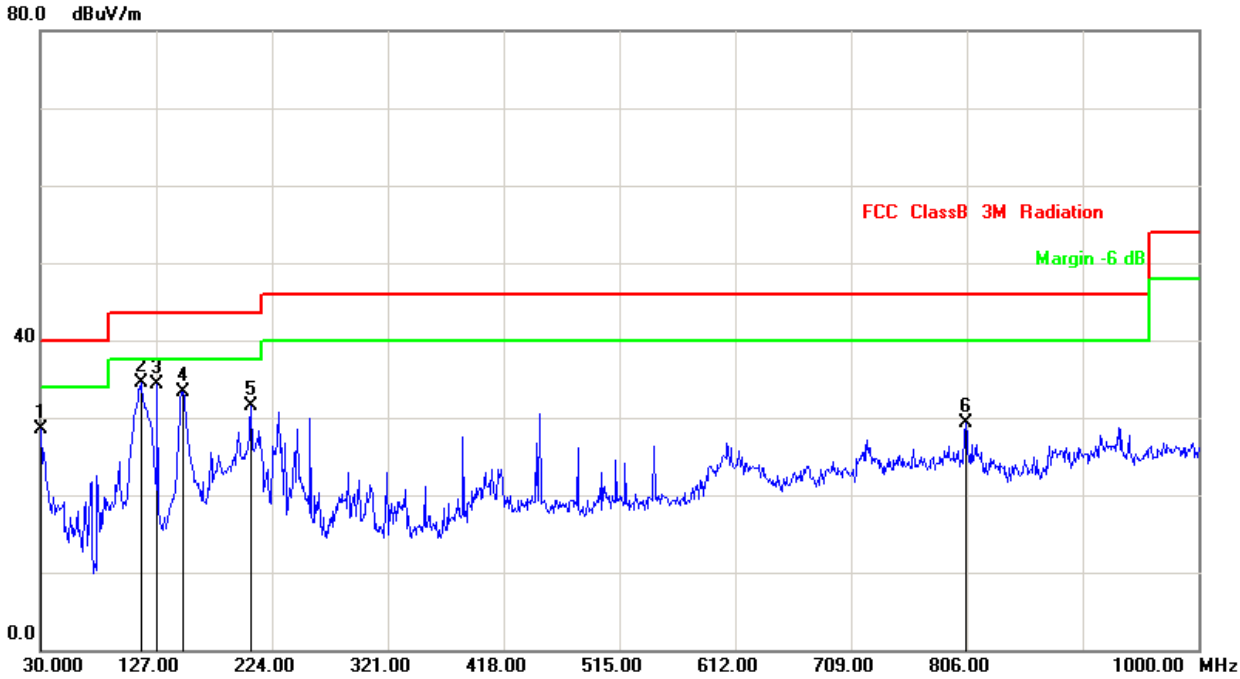
18GHz~40GHz Test Setup



5.5 Test Result

The worst case of Radiated Emission below 1GHz:

Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode1: Transmit at channel 2437MHz by 802.11b	

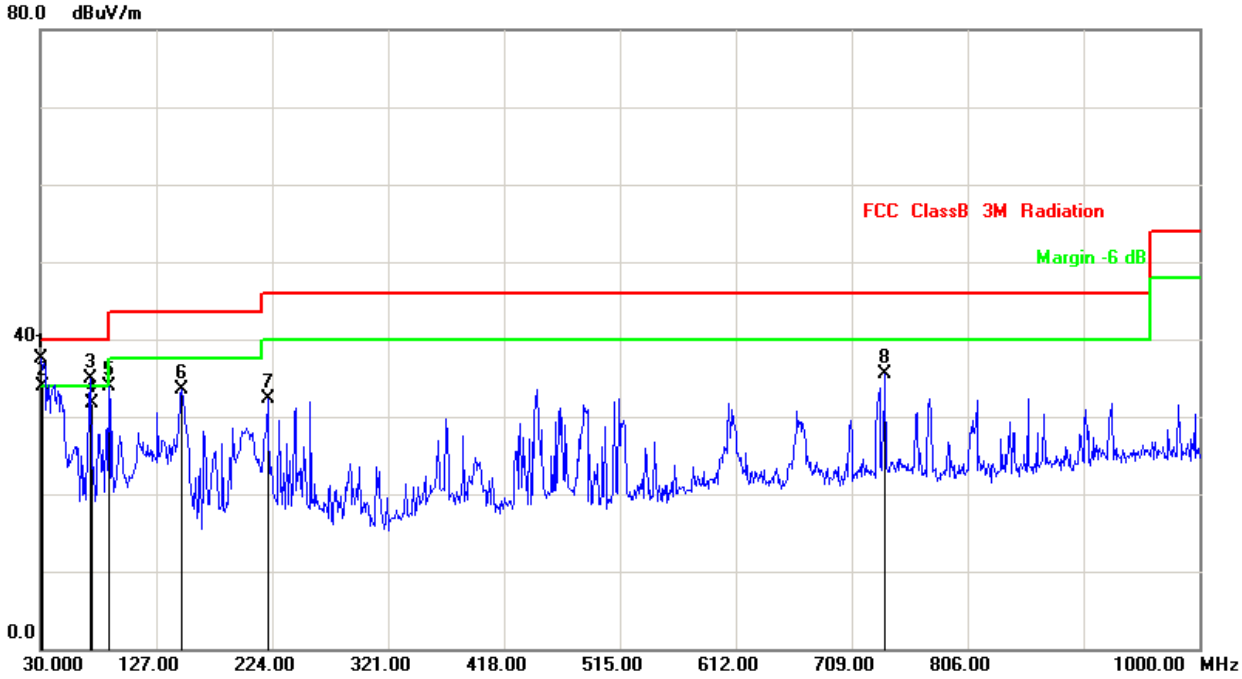


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	30.9699	-7.45	35.90	28.45	40.00	-11.55	QP
2	114.3900	-18.74	52.82	34.08	43.50	-9.42	QP
3	149.3100	-18.62	51.44	32.82	43.50	-10.68	QP
4	205.5699	-18.48	46.61	28.13	43.50	-15.37	QP
5	256.0099	-18.75	48.19	29.44	46.00	-16.56	QP
6	448.0699	-12.60	42.08	29.48	46.00	-16.52	QP

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor(dB).

Factor (dB)=Cable Loss(dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain(dB)

Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode1: Transmit at channel 2437MHz by 802.11b	



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	30.9699	-7.45	45.89	38.44	40.00	-1.56	QP
2	31.9400	-8.63	43.44	34.81	40.00	-5.19	QP
3	41.6400	-19.42	54.07	34.65	40.00	-5.35	QP
4	87.2300	-24.29	55.76	31.47	40.00	-8.53	QP
5	148.3400	-18.60	51.57	32.97	43.50	-10.53	QP
6	737.1299	-7.32	39.87	32.55	46.00	-13.45	QP
6	856.4400	-5.41	36.81	31.40	46.00	-14.60	QP

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor(dB).

Factor (dB)=Cable Loss(dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain(dB)

Radiated Emission above 1GHz:

Radiated Emission above 1GHz:

Mode1: Transmit by 802.11b

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	H	4824.0	40.64	3.32	43.96	54(note3)	-10.04	PK
	H	7236.0	37.98	8.22	46.20	54(note3)	-7.80	PK
	V	4824.0	41.31	3.32	44.63	54(note3)	-9.37	PK
	V	7236.0	38.55	8.22	46.77	54(note3)	-7.23	PK
6	H	4874.0	38.89	3.42	42.31	54(note3)	-11.69	PK
	H	7311.0	37.72	8.27	45.99	54(note3)	-8.01	PK
	V	4874.0	41.83	3.42	45.25	54(note3)	-8.75	PK
	V	7311.0	36.72	8.27	44.99	54(note3)	-9.01	PK
11	H	4924.0	38.93	3.52	42.45	54(note3)	-11.55	PK
	H	7386.0	37.90	8.32	46.22	54(note3)	-7.78	PK
	V	4924.0	40.76	3.52	44.28	54(note3)	-9.72	PK
	V	7386.0	38.21	8.32	46.53	54(note3)	-7.47	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

Mode2: Transmit by 802.11g

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	H	4824.0	39.57	3.32	42.89	54(note3)	-11.11	PK
	H	7236.0	36.42	8.22	44.64	54(note3)	-9.36	PK
	V	4824.0	40.26	3.32	43.58	54(note3)	-10.42	PK
	V	7236.0	37.67	8.22	45.89	54(note3)	-8.11	PK
6	H	4874.0	37.38	3.42	40.80	54(note3)	-13.20	PK
	H	7311.0	36.81	8.27	45.08	54(note3)	-8.92	PK
	V	4874.0	40.29	3.42	43.71	54(note3)	-10.29	PK
	V	7311.0	37.58	8.27	45.85	54(note3)	-8.15	PK
11	H	4924.0	37.46	3.52	40.98	54(note3)	-13.02	PK
	H	7386.0	36.87	8.32	45.19	54(note3)	-8.81	PK
	V	4924.0	39.95	3.52	43.47	54(note3)	-10.53	PK
	V	7386.0	37.54	8.32	45.86	54(note3)	-8.14	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

Mode3: Transmit by 802.11n(20MHz)

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	H	4824.0	39.63	3.32	42.95	54(note3)	-11.05	PK
	H	7236.0	36.49	8.22	44.71	54(note3)	-9.29	PK
	V	4824.0	40.22	3.32	43.54	54(note3)	-10.46	PK
	V	7236.0	37.63	8.22	45.85	54(note3)	-8.15	PK
6	H	4874.0	37.43	3.42	40.85	54(note3)	-13.15	PK
	H	7311.0	36.86	8.27	45.13	54(note3)	-8.87	PK
	V	4874.0	40.28	3.42	43.70	54(note3)	-10.30	PK
	V	7311.0	37.64	8.27	45.91	54(note3)	-8.09	PK
11	H	4924.0	37.54	3.52	41.06	54(note3)	-12.94	PK
	H	7386.0	36.93	8.32	45.25	54(note3)	-8.75	PK
	V	4924.0	40.05	3.52	43.57	54(note3)	-10.43	PK
	V	7386.0	37.61	8.32	45.93	54(note3)	-8.07	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

Mode4: Transmit by 802.11n(40MHz)

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
3	H	4844.0	38.43	3.37	41.80	54(note3)	-12.20	PK
	H	7266.0	35.29	8.25	43.54	54(note3)	-10.46	PK
	V	4844.0	39.36	3.37	42.73	54(note3)	-11.27	PK
	V	7266.0	36.87	8.25	45.12	54(note3)	-8.88	PK
6	H	4874.0	37.82	3.42	41.24	54(note3)	-12.76	PK
	H	7311.0	35.76	8.27	44.03	54(note3)	-9.97	PK
	V	4874.0	39.57	3.42	42.99	54(note3)	-11.01	PK
	V	7311.0	36.80	8.27	45.07	54(note3)	-8.93	PK
9	H	4904.0	37.91	3.47	41.38	54(note3)	-12.62	PK
	H	7356.0	35.84	8.30	44.14	54(note3)	-9.86	PK
	V	4904.0	39.55	3.47	43.02	54(note3)	-10.98	PK
	V	7356.0	36.78	8.30	45.08	54(note3)	-8.92	PK

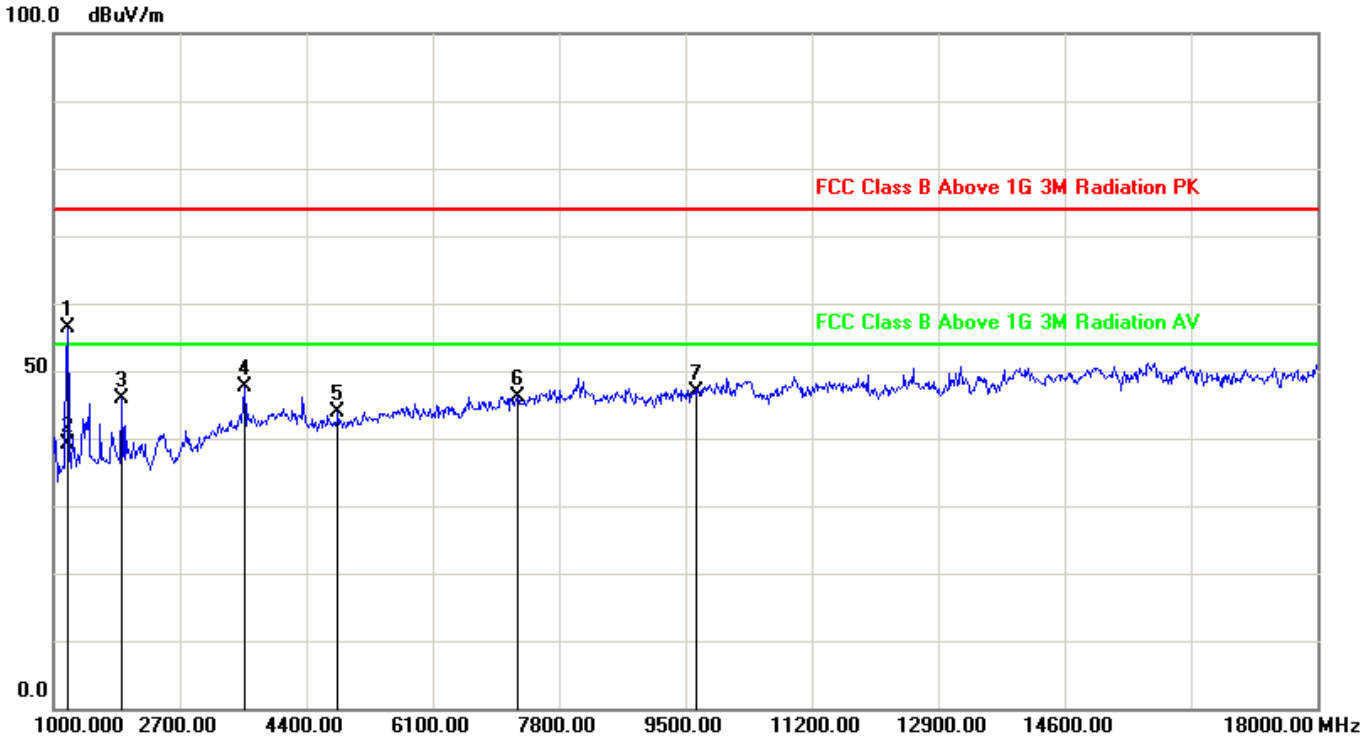
Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

The worst case of Radiated Emission 1~18GHz:

Site:AC102	Time: 2018/05/23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode: Transmit 802.11b at 2412MHz	

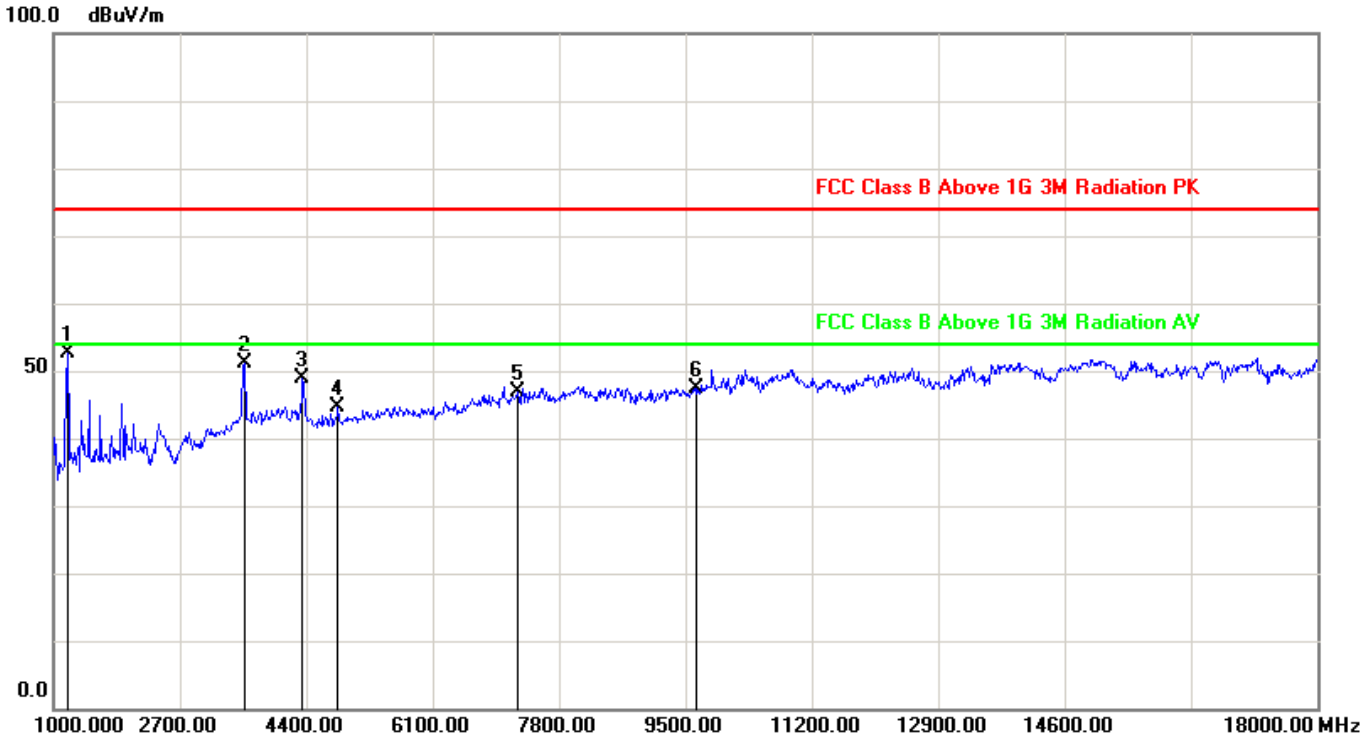


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1187.000	-8.27	64.61	56.34	74.00	-17.66	PK
2	1187.920	-8.27	47.44	39.17	54.00	-14.83	AVG
3	1918.000	-4.04	49.88	45.84	74.00	-28.16	PK
4	3567.000	1.81	45.85	47.66	74.00	-26.34	PK
5	4824.000	3.32	40.64	43.96	74.00	-30.04	PK
6	7236.000	8.22	37.98	46.20	74.00	-27.80	PK
7	9648.000	9.91	36.87	46.78	74.00	-27.22	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor
3. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~40GHz), therefore no data appear in the report.

Site:AC102	Time: 2018/05/23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode: Transmit 802.11b at 2412MHz	

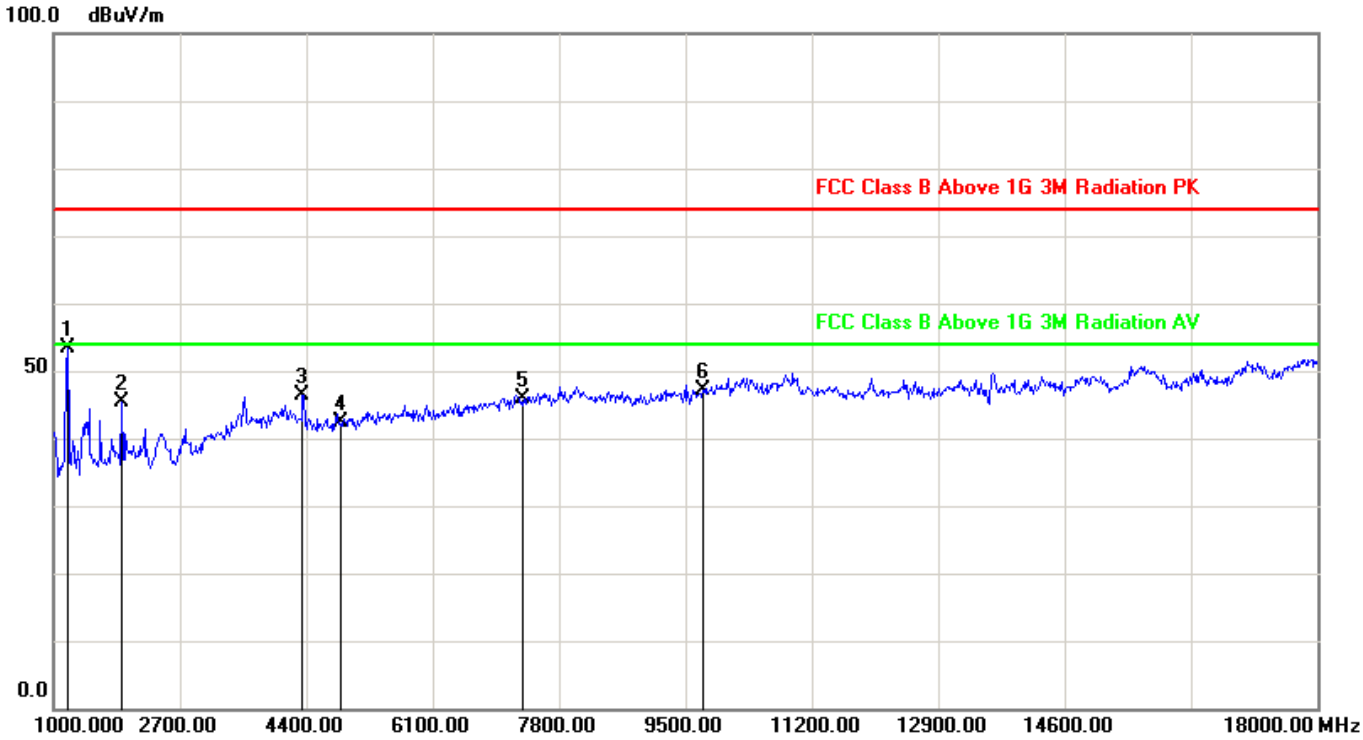


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1187.000	-8.27	60.99	52.72	74.00	-21.28	peak
2	3567.000	1.81	49.30	51.11	74.00	-22.89	peak
3	4349.000	2.92	45.95	48.87	74.00	-25.13	peak
4	4824.000	3.32	41.31	44.63	74.00	-29.37	peak
5	7236.000	8.22	38.55	46.77	74.00	-27.23	peak
6	9648.000	9.91	37.44	47.35	74.00	-26.65	peak

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor
3. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~40GHz), therefore no data appear in the report.

Site:AC102	Time: 2018/05/23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode: Transmit 802.11b at 2437MHz	

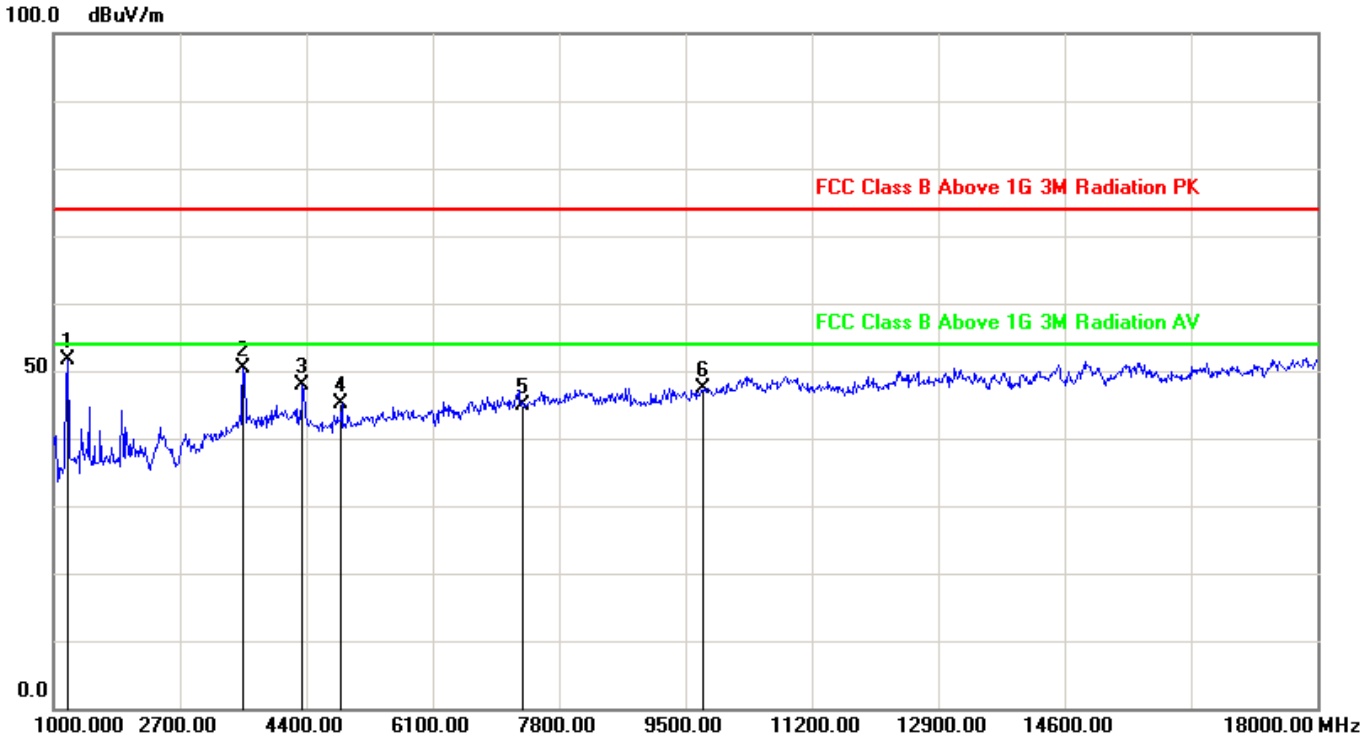


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1187.000	-8.27	61.65	53.38	74.00	-20.62	PK
2	1918.000	-4.04	49.54	45.50	74.00	-28.50	PK
3	4349.000	2.92	43.57	46.49	74.00	-27.51	PK
4	4874.000	3.42	38.89	42.31	74.00	-31.69	PK
5	7311.000	8.27	37.72	45.99	74.00	-28.01	PK
6	9748.000	10.16	36.97	47.13	74.00	-26.87	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor
3. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~40GHz), therefore no data appear in the report.

Site:AC102	Time: 2018/05/23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode: Transmit 802.11b at 2437MHz	

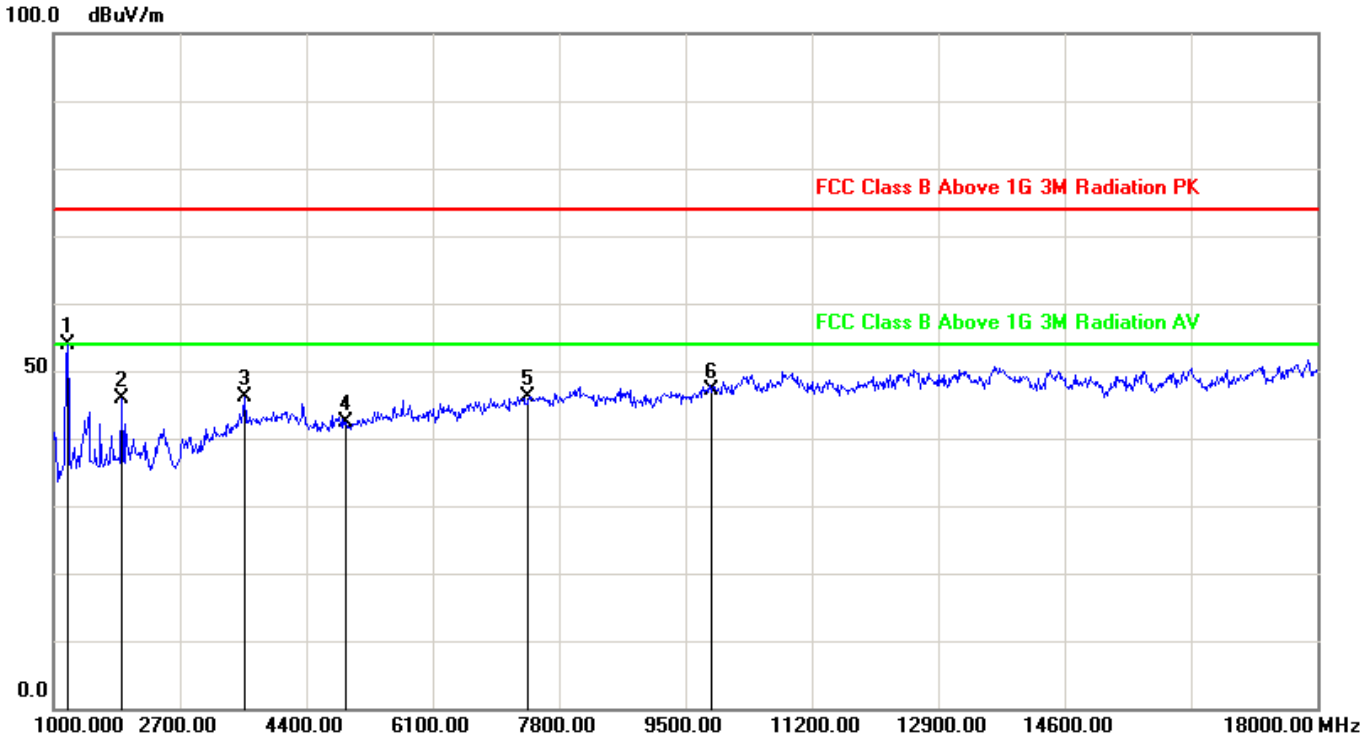


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1187.000	-8.27	59.83	51.56	74.00	-22.44	PK
2	3550.000	1.74	48.58	50.32	74.00	-23.68	PK
3	4349.000	2.92	44.84	47.76	74.00	-26.24	PK
4	4874.000	3.42	41.83	45.25	74.00	-28.75	PK
5	7311.000	8.27	36.72	44.99	74.00	-29.01	PK
6	9748.000	10.16	37.10	47.26	74.00	-26.74	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor
3. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~40GHz), therefore no data appear in the report.

Site:AC102	Time: 2018/05/23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode: Transmit 802.11b at 2462MHz	

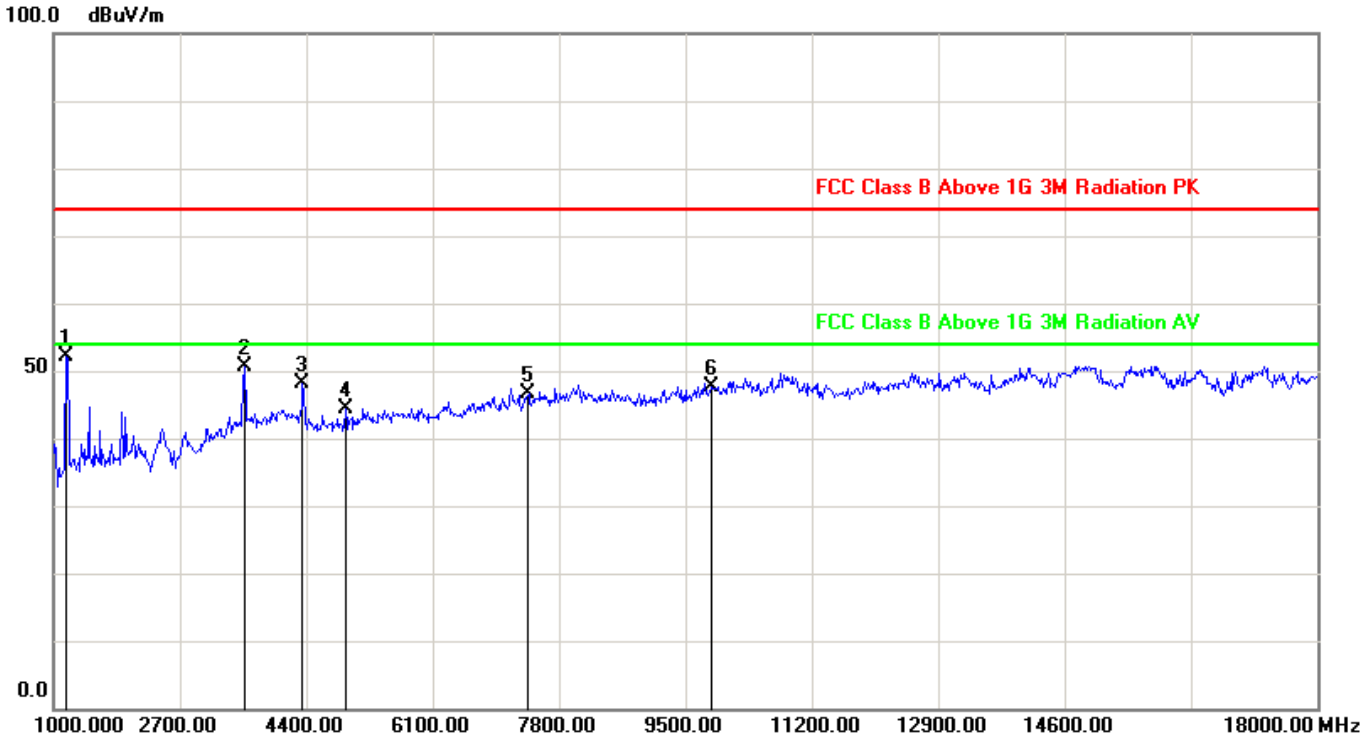


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1187.000	-8.27	62.03	53.76	74.00	-20.24	PK
2	1918.000	-4.04	50.04	46.00	74.00	-28.00	PK
3	3567.000	1.81	44.24	46.05	74.00	-27.95	PK
4	4924.000	3.52	38.93	42.45	74.00	-31.55	PK
5	7386.000	8.32	37.90	46.22	74.00	-27.78	PK
6	9848.000	10.41	36.71	47.12	74.00	-26.88	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor
3. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~40GHz), therefore no data appear in the report.

Site:AC102	Time: 2018/05/23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode: Transmit 802.11b at 2462MHz	



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1170.000	-8.41	60.45	52.04	74.00	-21.96	PK
2	3567.000	1.81	48.93	50.74	74.00	-23.26	PK
3	4349.000	2.92	45.26	48.18	74.00	-25.82	PK
4	4924.000	3.52	40.76	44.28	74.00	-29.72	PK
5	7386.000	8.32	38.21	46.53	74.00	-27.47	PK
6	9848.000	10.41	37.25	47.66	74.00	-26.34	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor
3. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~40GHz), therefore no data appear in the report.

6. 6dB Bandwidth Measurement

6.1 Test Limit

According to FCC part15.247 - Section (a)(2), the minimum 6dB bandwidth shall be at least 500 kHz.

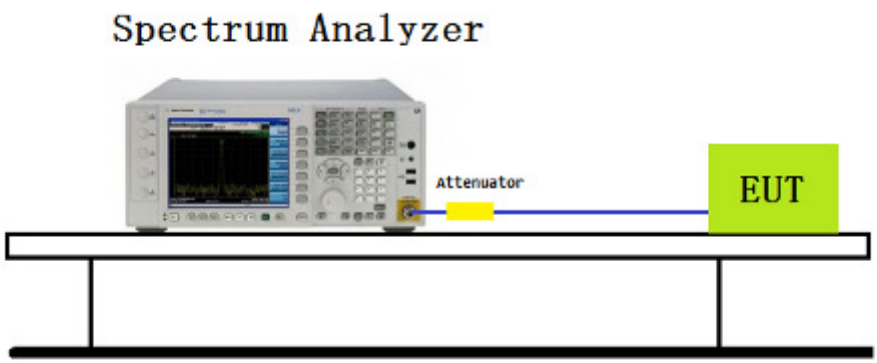
6.2 Test Standard

KDB 558074 D01v04– Section 8.2 Option 2

6.3 Test Procedures

1. Set RBW=100KHz
2. VBW≥3×RBW
3. Detector=Peak
4. Trace mode=Max hold
5. Sweep time=Auto couple
6. Allow the trace to stabilize
7. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.

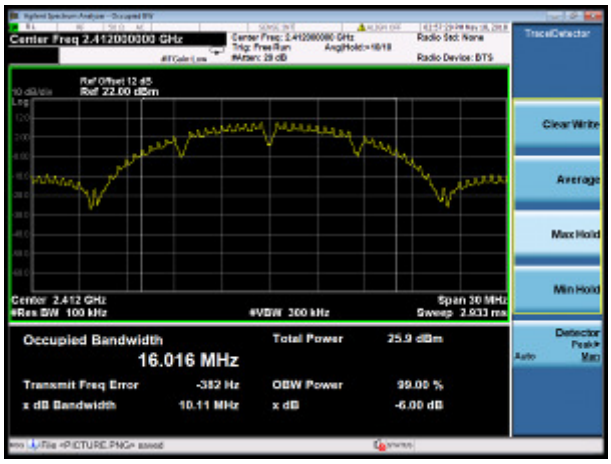
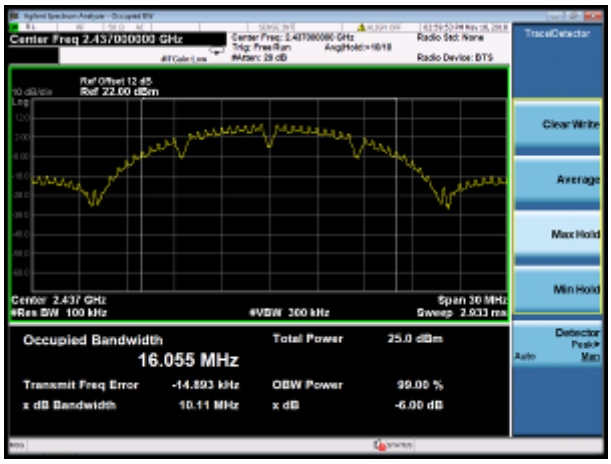
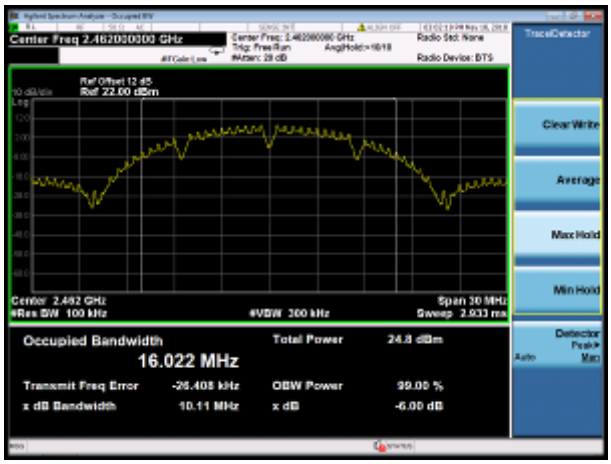
6.4 Test Setup Layout



6.5 Test Result

Test Item	DTS Bandwidth
Test Mode	Mode 1: Transmit by 802.11b

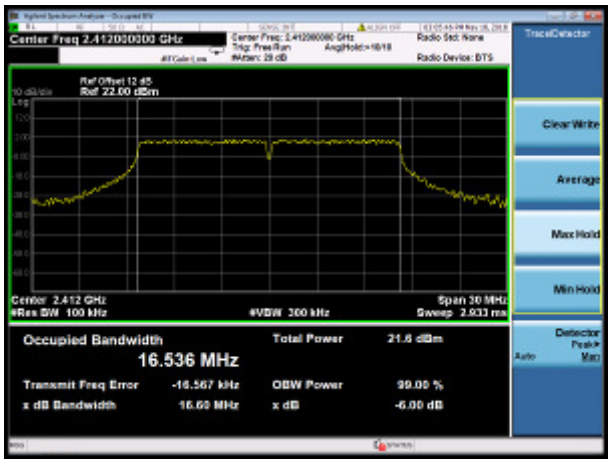
Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(≥500KHz)
1	2412	10.11	Pass
6	2437	10.11	Pass
11	2462	10.11	Pass

Channel 1 (2412MHz)	Channel 6 (2437MHz)
	
Channel 11 (2462MHz)	
	

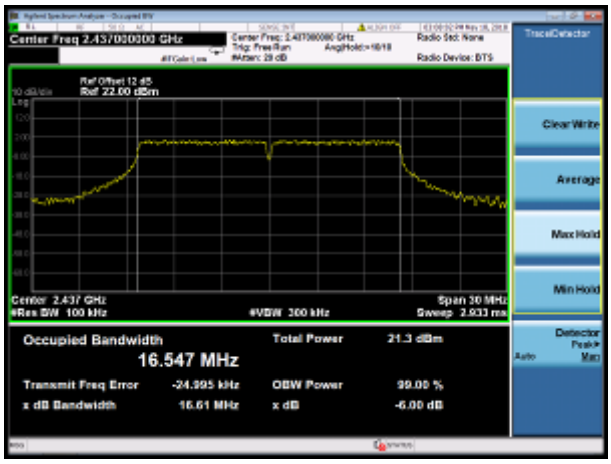
Test Item	DTS Bandwidth
Test Mode	Mode 2: Transmit by 802.11g

Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(≥500KHz)
1	2412	16.60	Pass
6	2437	16.61	Pass
11	2462	16.60	Pass

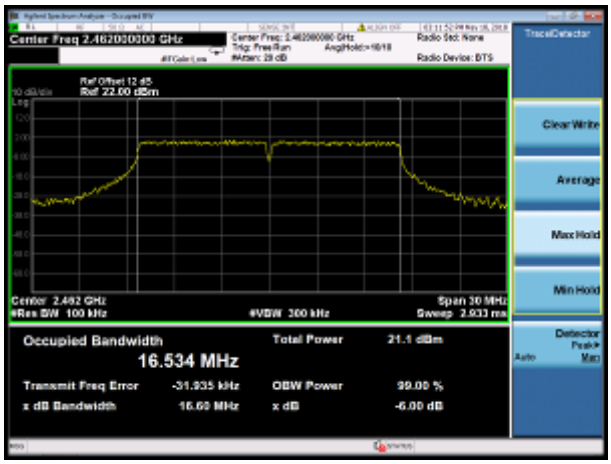
Channel 1 (2412MHz)



Channel 6 (2437MHz)



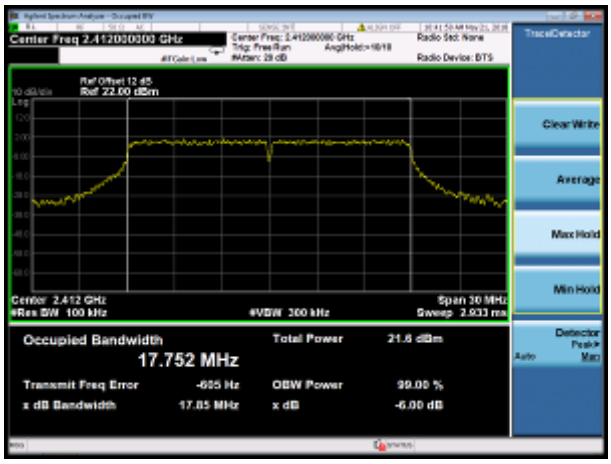
Channel 11 (2462MHz)



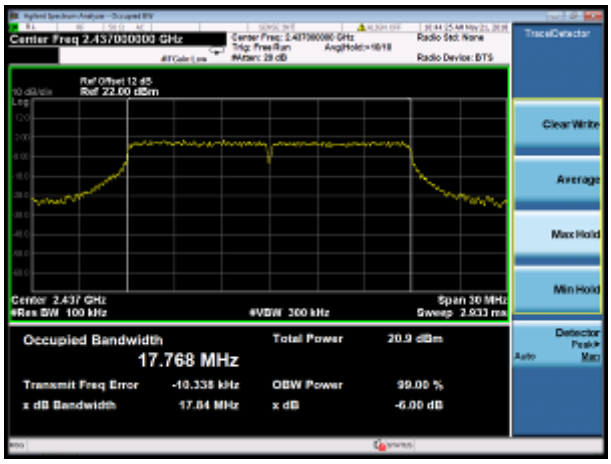
Test Item	DTS Bandwidth
Test Mode	Mode 3: Transmit by 802.11n(20MHz)

Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(≥500KHz)
1	2412	17.85	Pass
6	2437	17.84	Pass
11	2462	17.84	Pass

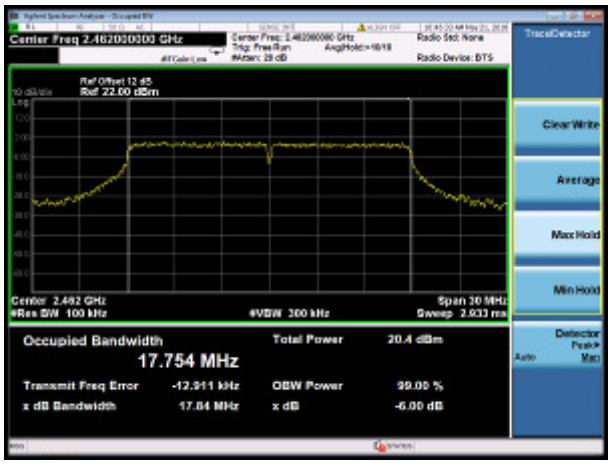
Channel 1 (2412MHz)



Channel 6 (2437MHz)



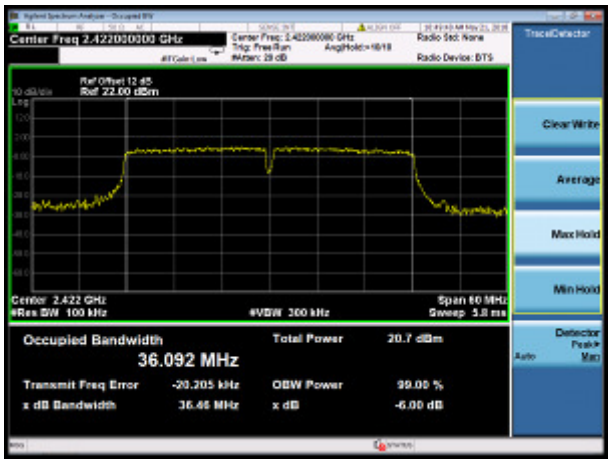
Channel 11 (2462MHz)



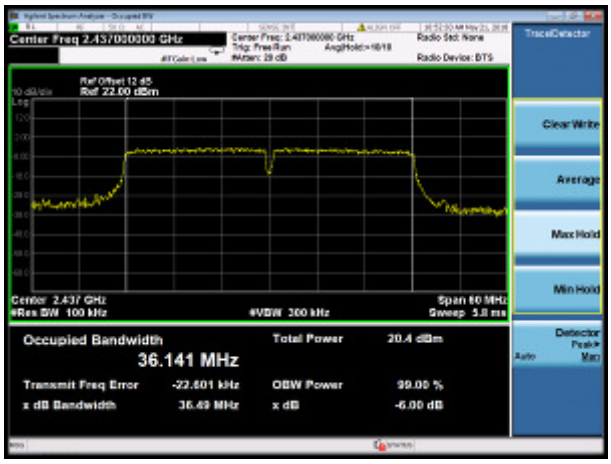
Test Item	DTS Bandwidth
Test Mode	Mode 4: Transmit by 802.11n(40MHz)

Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(≥500KHz)
3	2422	36.46	Pass
6	2437	36.49	Pass
9	2452	36.47	Pass

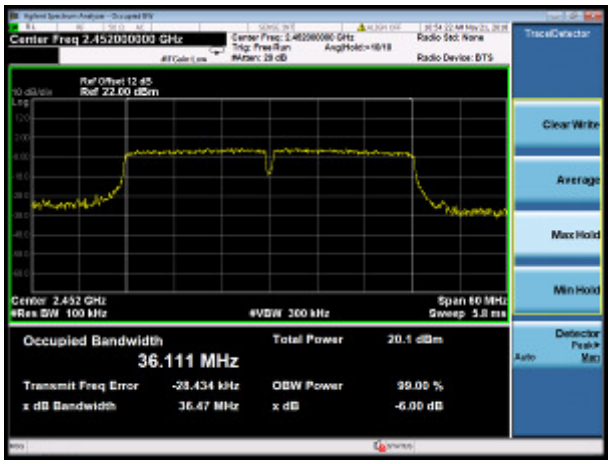
Channel 3 (2422MHz)



Channel 6 (2437MHz)



Channel 9 (2452MHz)



7. Output Power Measurement

7.1 Test Limit

According to FCC part15.247 (b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
Per RSS247 Issue 2 Section 5.4(d), for DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W.

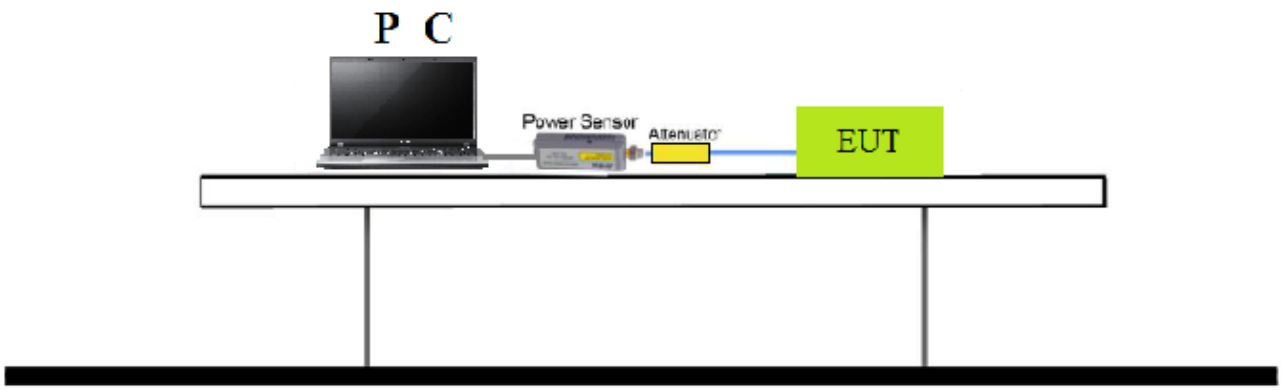
7.2 Test Standard

KDB 558074 D01v04 - Section 9.1.2 PKPM1 Peak Power Method (for signals with BW ≤50MHz)

7.3 Test Procedures

Out power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The pulse sensor employs a VBW = 50MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50MHz.

7.4 Test Setup Layout



7.5 Test Result

For Peak Power :

Test Mode	Channel No.	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Result
802.11b	1	2412	19.40	30	Pass
	6	2437	18.64	30	Pass
	11	2462	18.55	30	Pass
802.11g	1	2412	23.10	30	Pass
	6	2437	22.28	30	Pass
	11	2462	21.90	30	Pass
802.11n(20MHz)	1	2412	23.01	30	Pass
	6	2437	22.24	30	Pass
	11	2462	21.75	30	Pass
802.11n(40MHz)	3	2422	22.79	30	Pass
	6	2437	22.41	30	Pass
	9	2452	21.91	30	Pass

For Average Power :

Test Mode	Channel No.	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)	Result
802.11b	1	2412	17.68	30	Pass
	6	2437	16.96	30	Pass
	11	2462	16.90	30	Pass
802.11g	1	2412	15.45	30	Pass
	6	2437	14.85	30	Pass
	11	2462	14.53	30	Pass
802.11n(20MHz)	1	2412	15.53	30	Pass
	6	2437	14.98	30	Pass
	11	2462	14.54	30	Pass
802.11n(40MHz)	3	2422	14.55	30	Pass
	6	2437	14.34	30	Pass
	9	2452	14.00	30	Pass

8. Power Spectral Density Measurement

8.1 Test Limit

According to FCC part15.247 - Section (e), 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. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

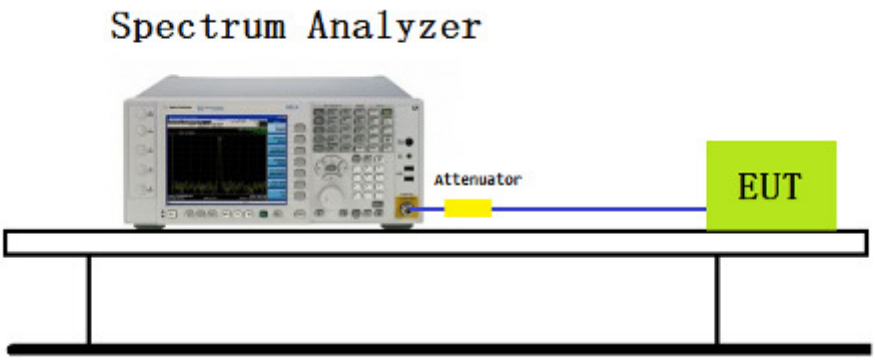
8.2 Test Standard

KDB 558074 D01v04- Section 10.2 Method PKPSD

8.3 Test Procedures

1. Set RBW=3kHz
2. Set RBW=10kHz
3. Span = 1.5 times the DTS channel bandwidth
4. Detector=Peak
5. Trace mode=Max hold
6. Sweep time=Auto couple
7. Allow the trace to stabilize
8. Analyzer was set to the center frequency of the DTS channel under investigation.

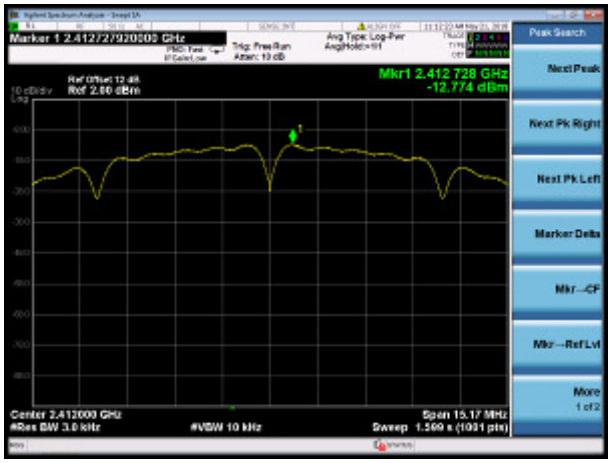
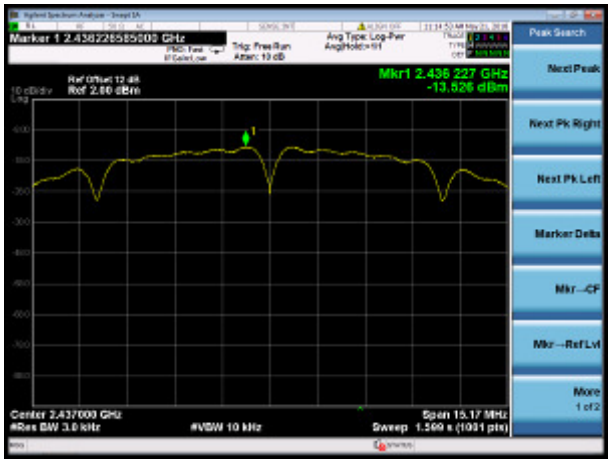
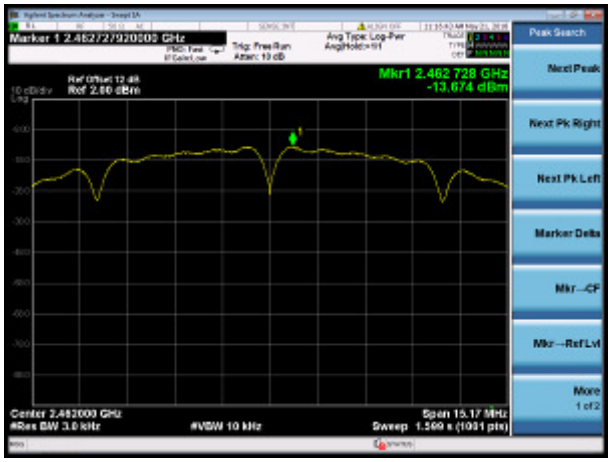
8.4 Test Setup Layout



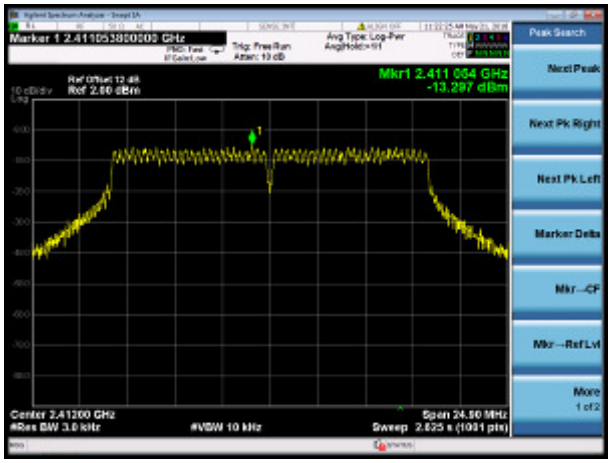
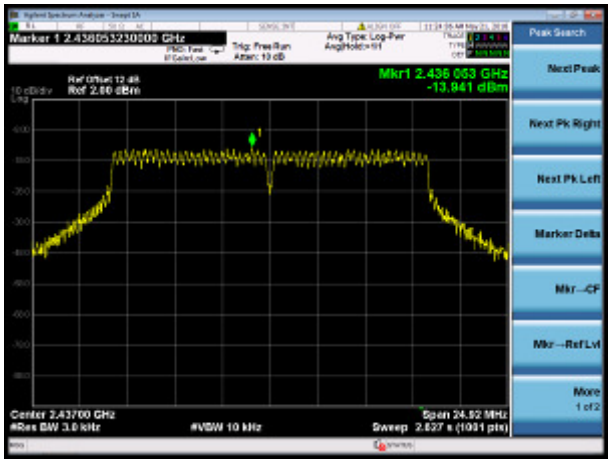
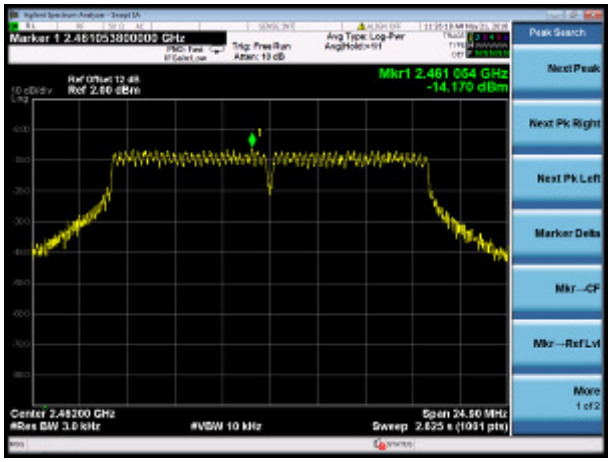
8.5 Test Result

Test Mode	Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
802.11b	1	2412	-12.774	8	Pass
	6	2437	-13.526	8	Pass
	11	2462	-13.674	8	Pass
802.11g	1	2412	-13.297	8	Pass
	6	2437	-13.941	8	Pass
	11	2462	-14.170	8	Pass
802.11n(20MHz)	1	2412	-12.676	8	Pass
	6	2437	-13.168	8	Pass
	11	2462	-13.642	8	Pass
802.11n(40MHz)	3	2422	-13.435	8	Pass
	6	2437	-13.947	8	Pass
	9	2452	-14.251	8	Pass

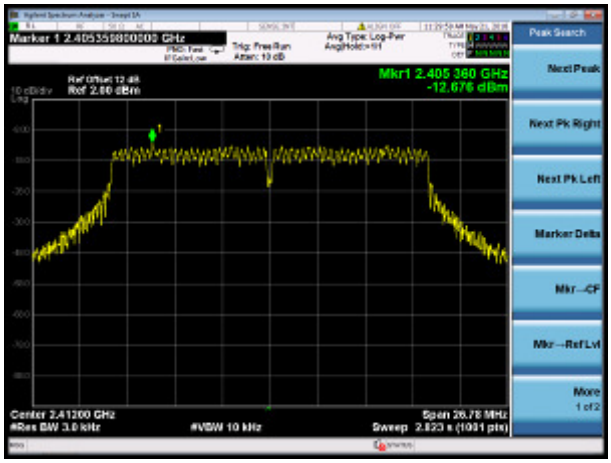
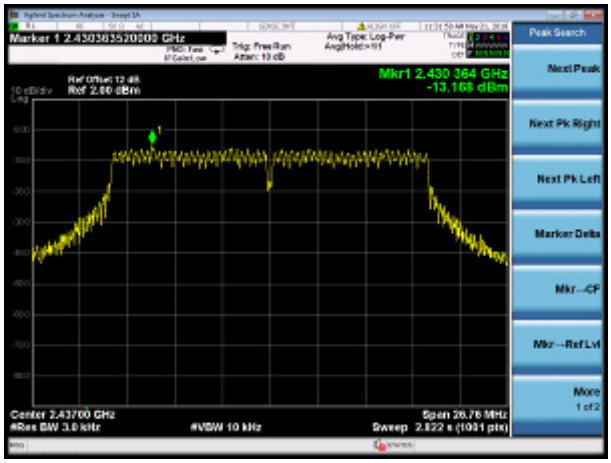
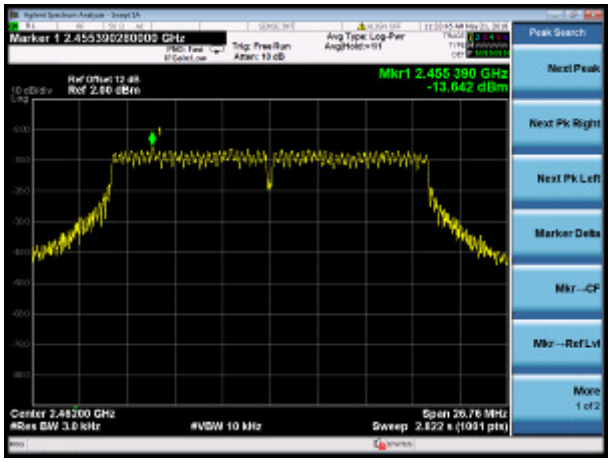
Test Item	Power Spectral Density
Test Mode	Mode 1: Transmit by 802.11b

Channel 1 (2412MHz)	Channel 6 (2437MHz)
	
Channel 11 (2462MHz)	
	

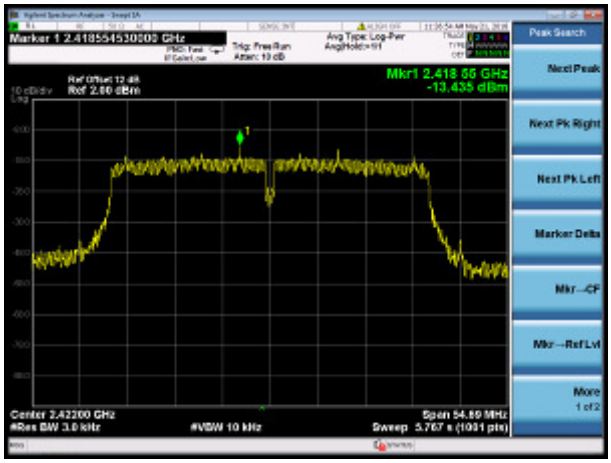
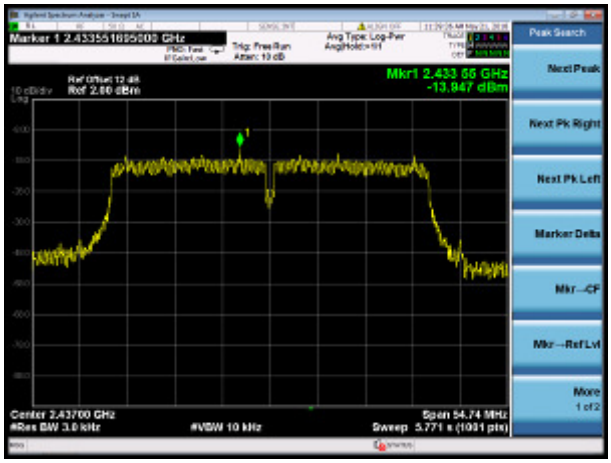
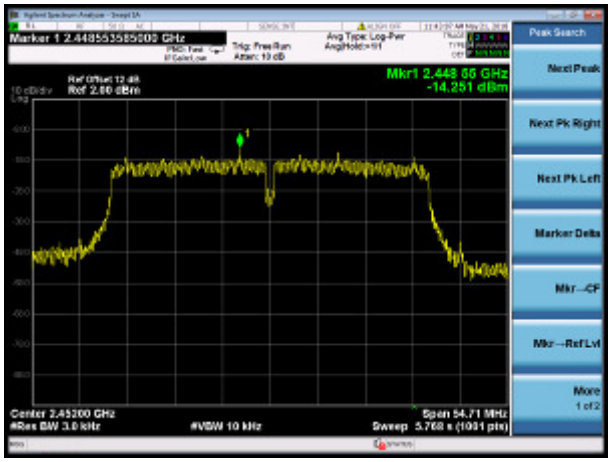
Test Item	Power Spectral Density
Test Mode	Mode 2: Transmit by 802.11g

Channel 1 (2412MHz)	Channel 6 (2437MHz)
	
Channel 11 (2462MHz)	
	

Test Item	Power Spectral Density
Test Mode	Mode 3: Transmit by 802.11n(20MHz)

Channel 1 (2412MHz)	Channel 6 (2437MHz)
	
Channel 11 (2462MHz)	
	

Test Item	Power Spectral Density
Test Mode	Mode 4: Transmit by 802.11n(40MHz)

Channel 3 (2422MHz)	Channel 6 (2437MHz)
	
Channel 9 (2452MHz)	
	

9. Conducted Band Edge and Out-of-Band Emissions Measurement

9.1 Test Limit

According to FCC part 15.247(d) , in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) of FCC part 15 is not required.

9.2 Test Standard

KDB 558074 D01v04 - Section 11.2 & Section 11.3

9.3 Test Procedures

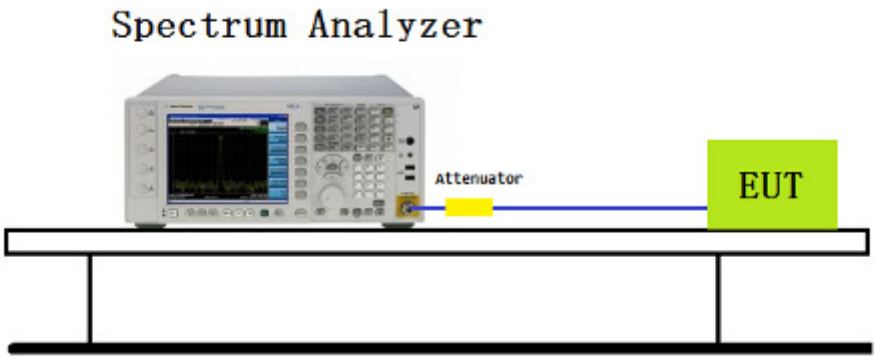
Reference level measurement:

1. Set the RBW = 100 kHz
2. Set the VBW ≥ 3 x RBW
3. Set the span to ≥ 1.5 times the DTS bandwidth
4. Detector = peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. Allow trace to fully stabilize
8. Set instrument center frequency to DTS channel center frequency

Emission level measurement:

1. RBW = 100kHz
2. VBW = 300kHz
3. Detector = Peak
4. Trace mode = max hold
5. Sweep time = auto couple
6. The trace was allowed to stabilize
7. Set the center frequency and span to encompass frequency range to be measured

9.4 Test Setup Layout

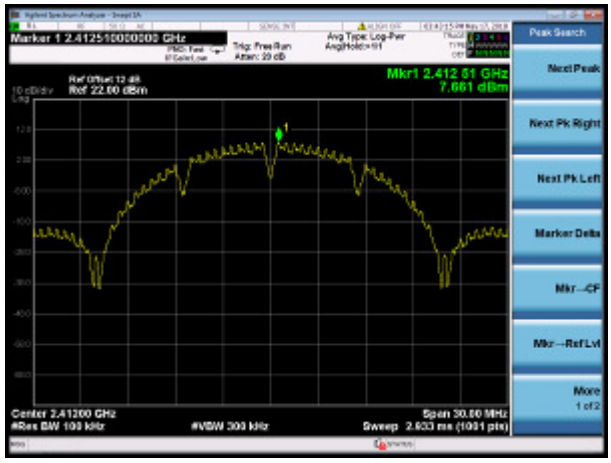


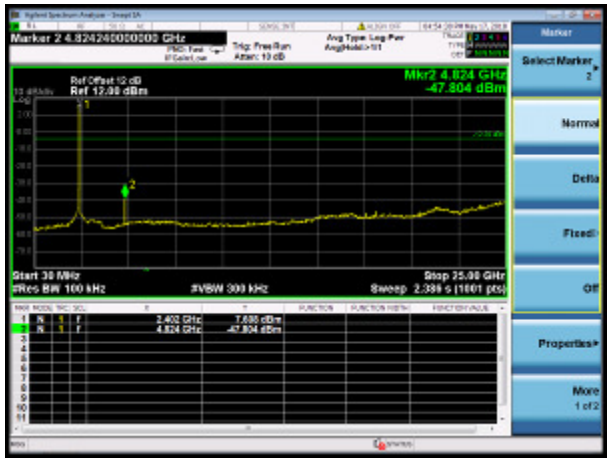
9.5 Test Result

Test Mode	Channel No.	Frequency (MHz)	Limit	Result
802.11b	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11g	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11n(20MHz)	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11n(40MHz)	3	2422	20dBc	Pass
	6	2437	20dBc	Pass
	9	2452	20dBc	Pass

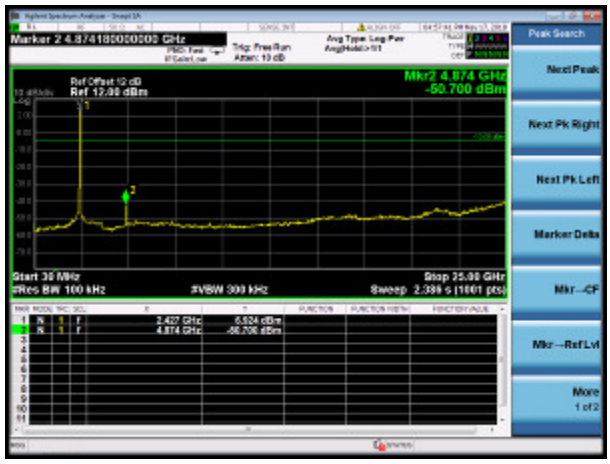
Test Item	:	Conducted Band Edge and Out-of-Band Emissions
Test Mode	:	Mode 1: Transmit by 802.11b

Mode 1: Transmit by 802.11b (2412MHz)

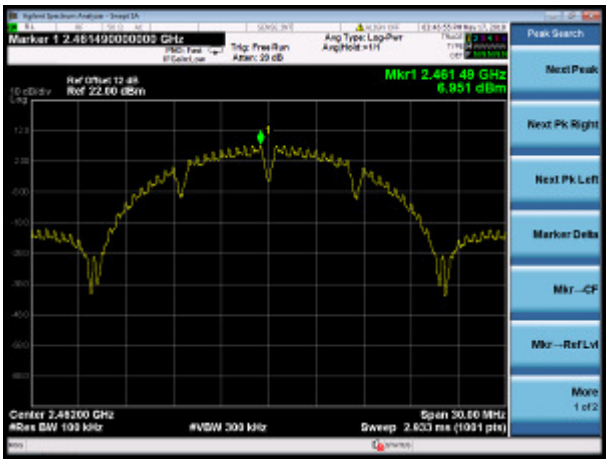


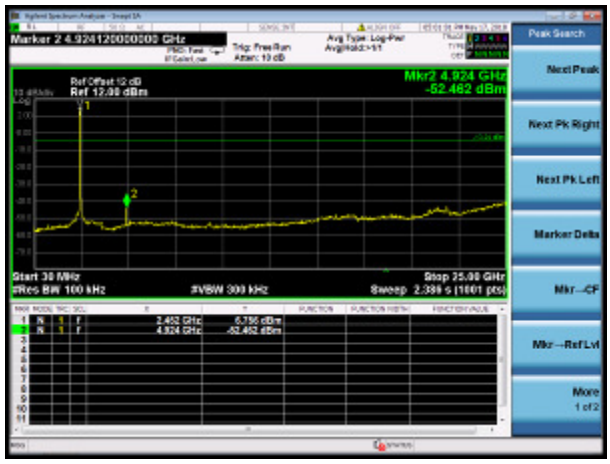


Mode 1: Transmit by 802.11b (2437MHz)



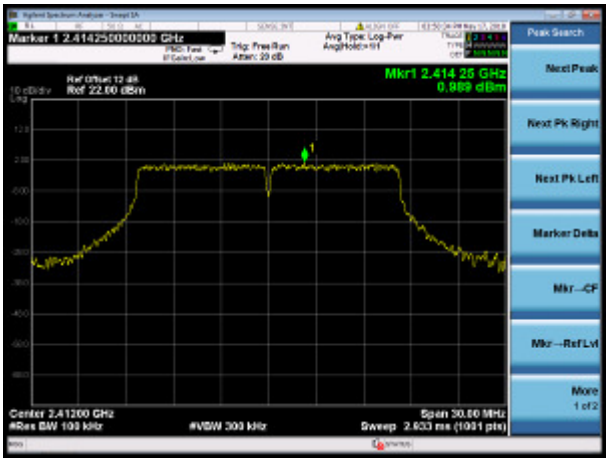
Mode 1: Transmit by 802.11b (2462MHz)



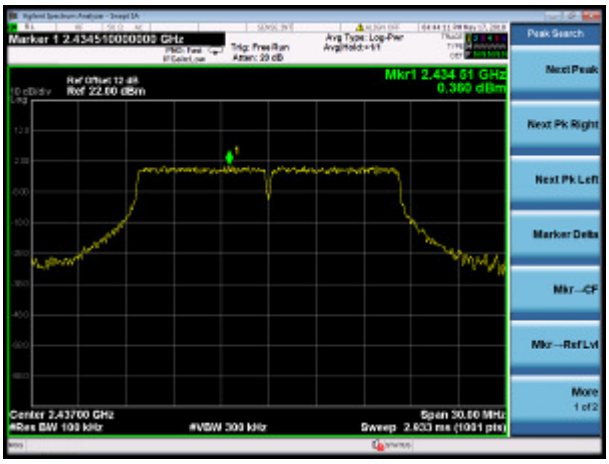


Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 2: Transmit by 802.11g

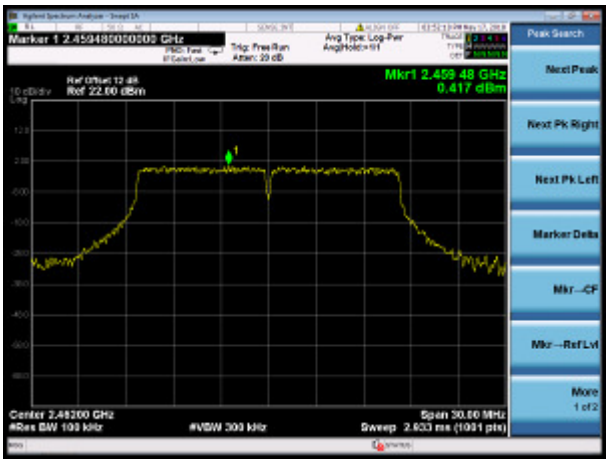
Mode 2: Transmit by 802.11g (2412MHz)



Mode 2: Transmit by 802.11g (2437MHz)

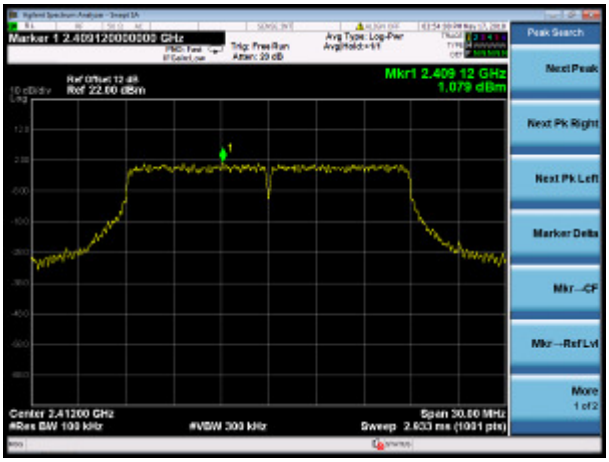


Mode 2: Transmit by 802.11g (2462MHz)

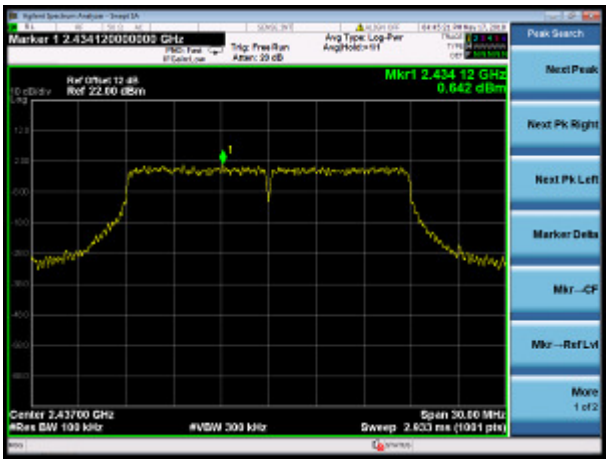


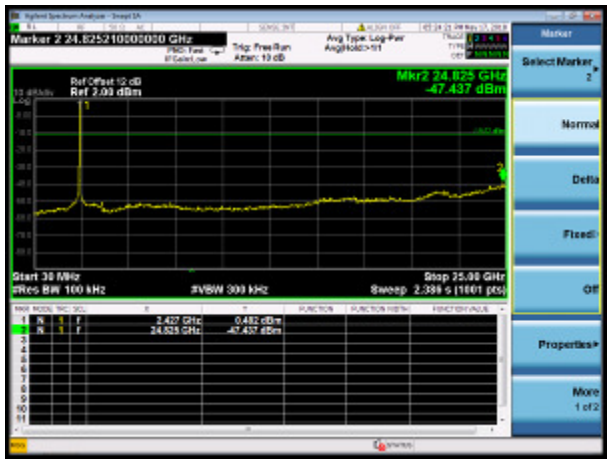
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz)

Mode 3: Transmit by 802.11n(20MHz) (2412MHz)

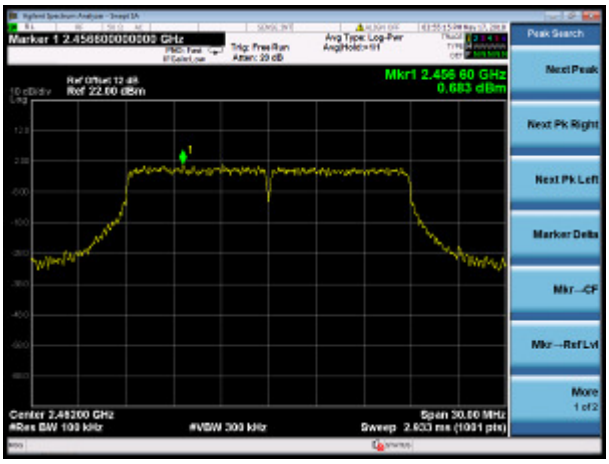


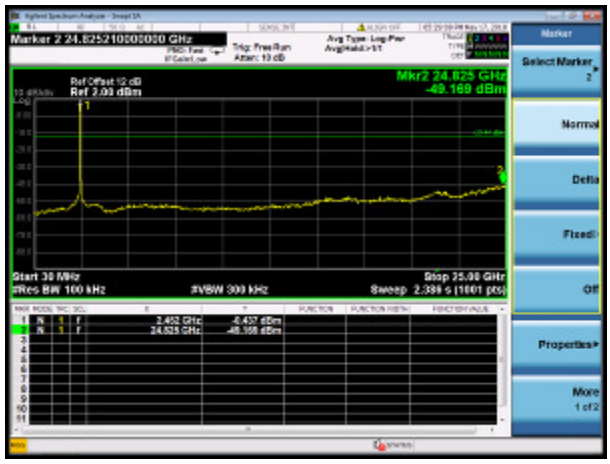
Mode 3: Transmit by 802.11n(20MHz) (2437MHz)

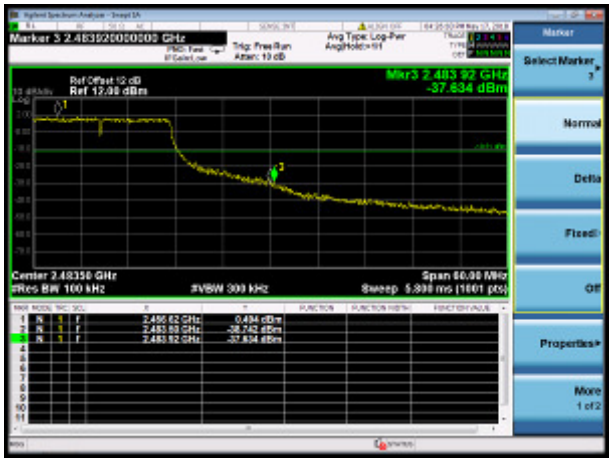




Mode 3: Transmit by 802.11n(20MHz) (2462MHz)

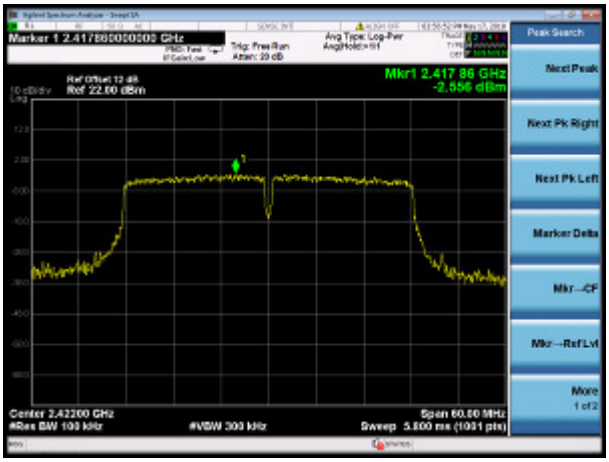


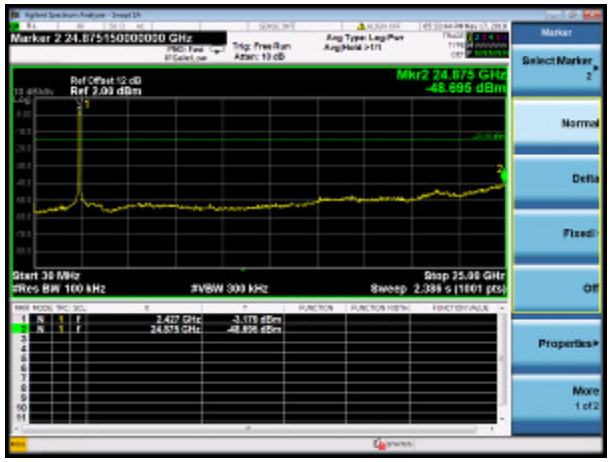




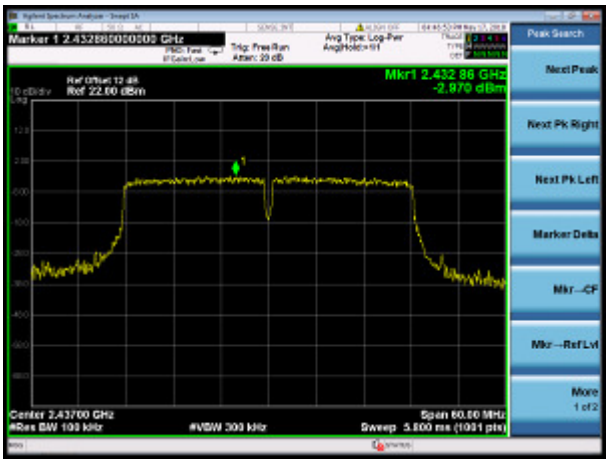
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz)

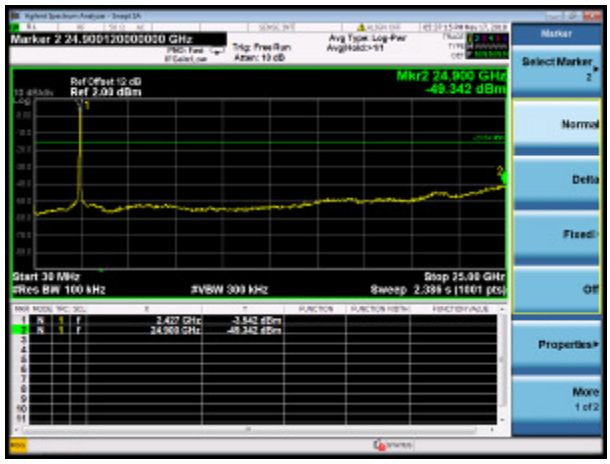
Mode 4: Transmit by 802.11n(40MHz) (2422MHz)



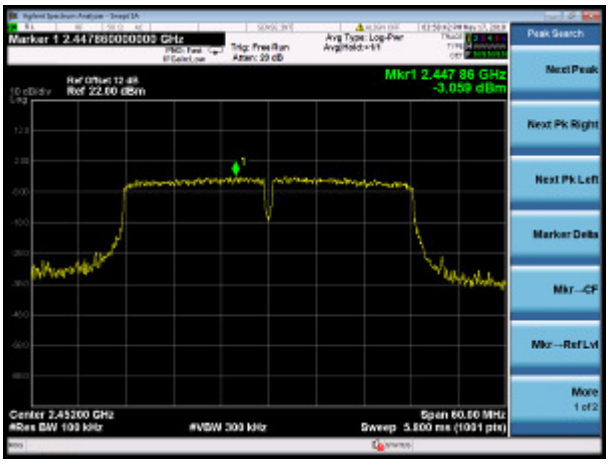


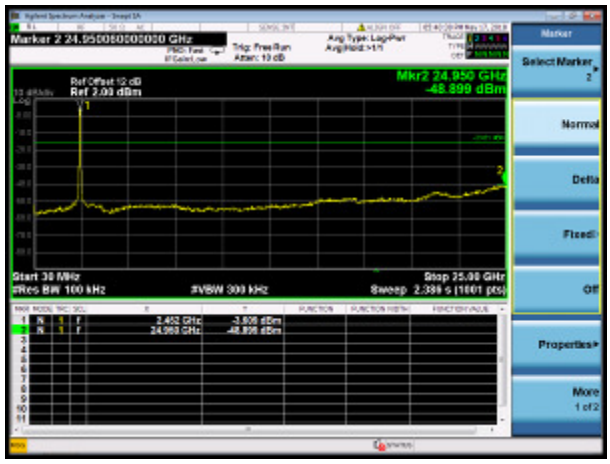
Mode 4: Transmit by 802.11n(40MHz) (2437MHz)





Mode 4: Transmit by 802.11n(40MHz) (2452MHz)





10. Radiated Emission Band Edge Measurement

10.1 Test Limit

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a) of FCC part 15.

10.2Test Standard

ANSI C63.10-2013 Section 6.10.5

10.3 Test Procedure

Peak Field Strength Measurements:

Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

7. RBW=As specified in Table 1
8. VBW=3×RBW
9. Detector=Peak
10. Trace mode=Max hold
11. Sweep time=Auto couple
12. Allow the trace to stabilize

Table 1-RBW as a function of frequency

Frequency	RBW
9 ~ 150kHz	200 ~ 300Hz
0.15 ~ 30MHz	9 ~ 10kHz
30 ~ 1000MHz	100 ~ 120kHz
＞ 1000MHz	1MHz

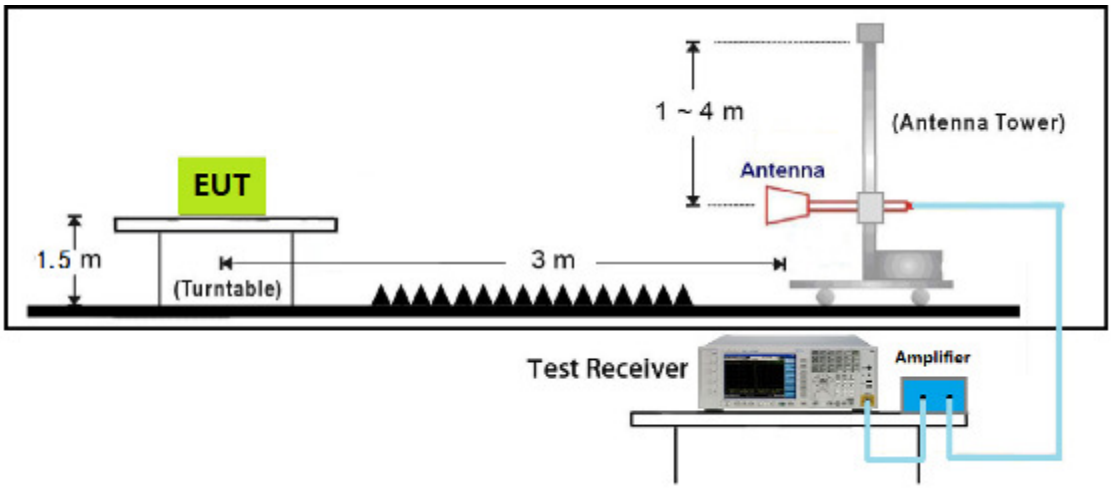
AVE Field Strength Measurements:

Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

7. RBW= 1MHz
8. VBW≥1/T
9. Detector=Peak
10. Trace mode=Max hold
11. Sweep time=Auto couple
12. Allow max hold to run for at least 50 times(1/duty cycle) trace

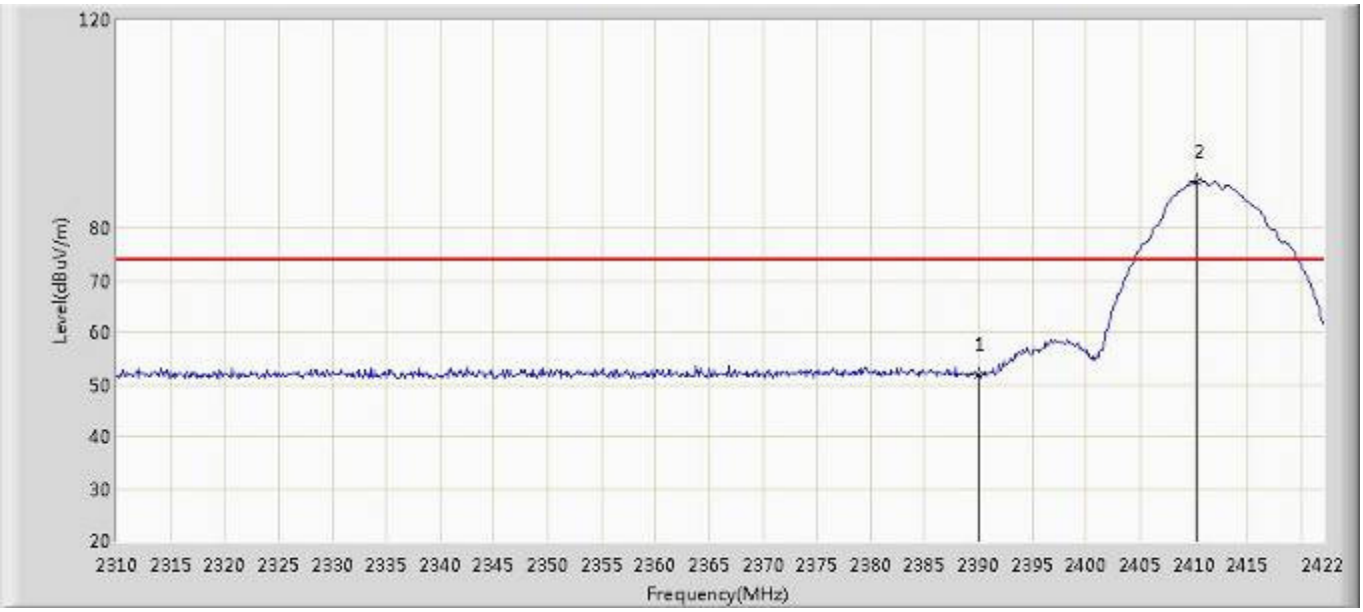
As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode

10.4 Test Setup Layout



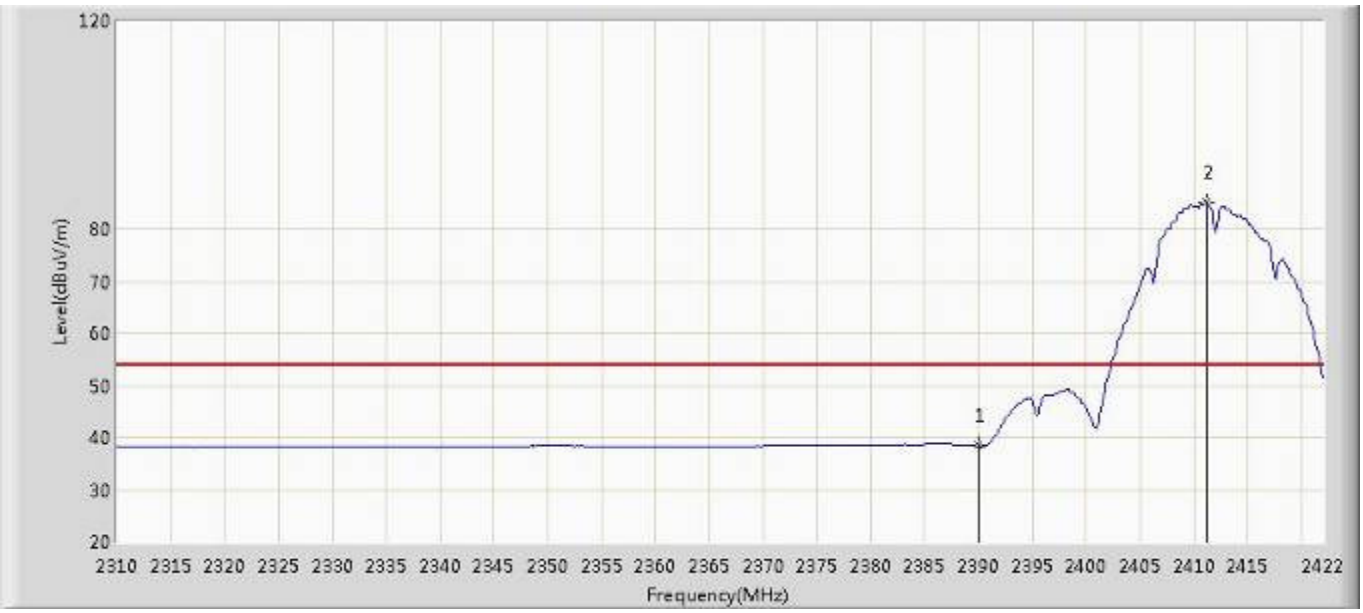
10.5 Test Result

Site: AC102	Time: 2018/05/16 - 09:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode1: Transmit at 2412MHz by 802.11b	



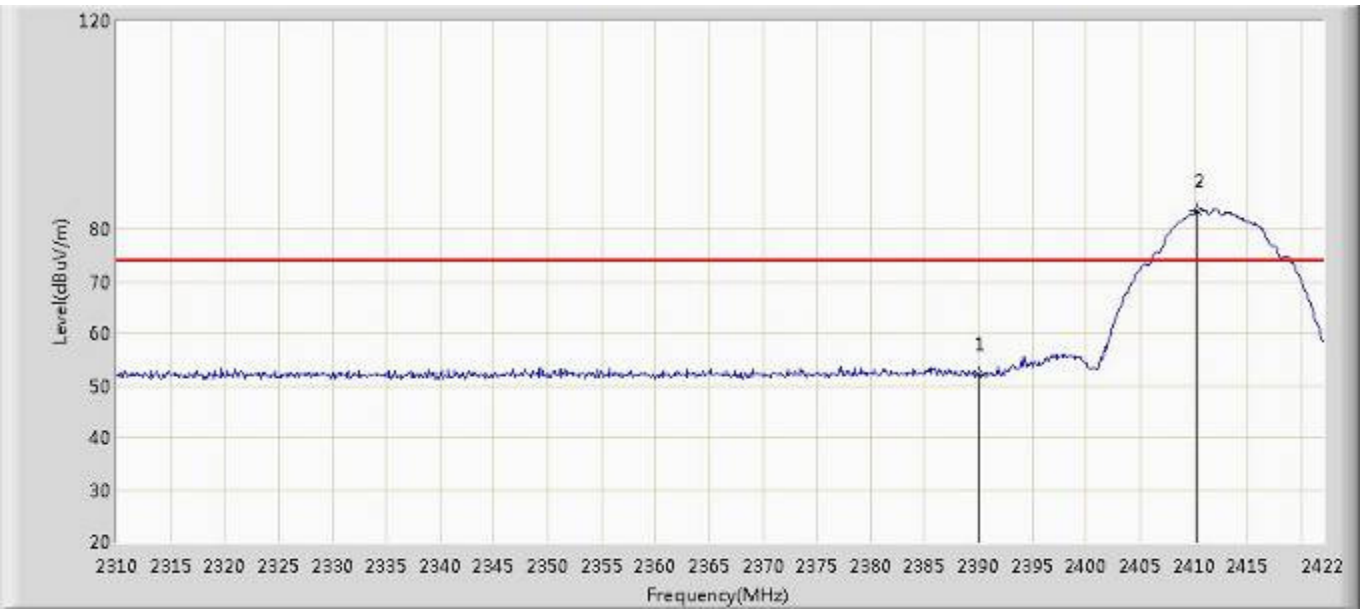
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	51.815	54.056	-22.185	74.000	-2.241	PK
2	*	2410.352	89.110	91.275	N/A	N/A	-2.165	PK

Site: AC102	Time: 2018/05/16 - 19:17
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode1: Transmit at 2412MHz by 802.11b	



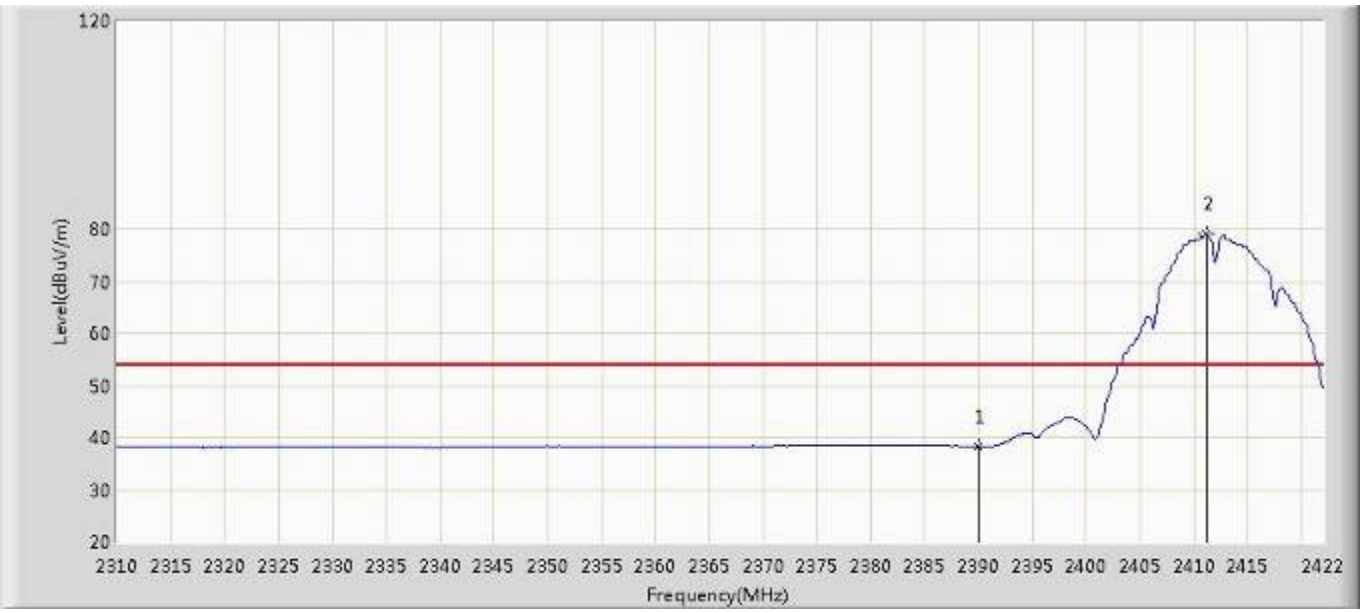
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.406	40.647	-15.594	54.000	-2.241	AV
2	*	2411.248	85.086	87.248	N/A	N/A	-2.162	AV

Site: AC102	Time: 2018/05/16 - 19:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode1: Transmit at 2412MHz by 802.11b	



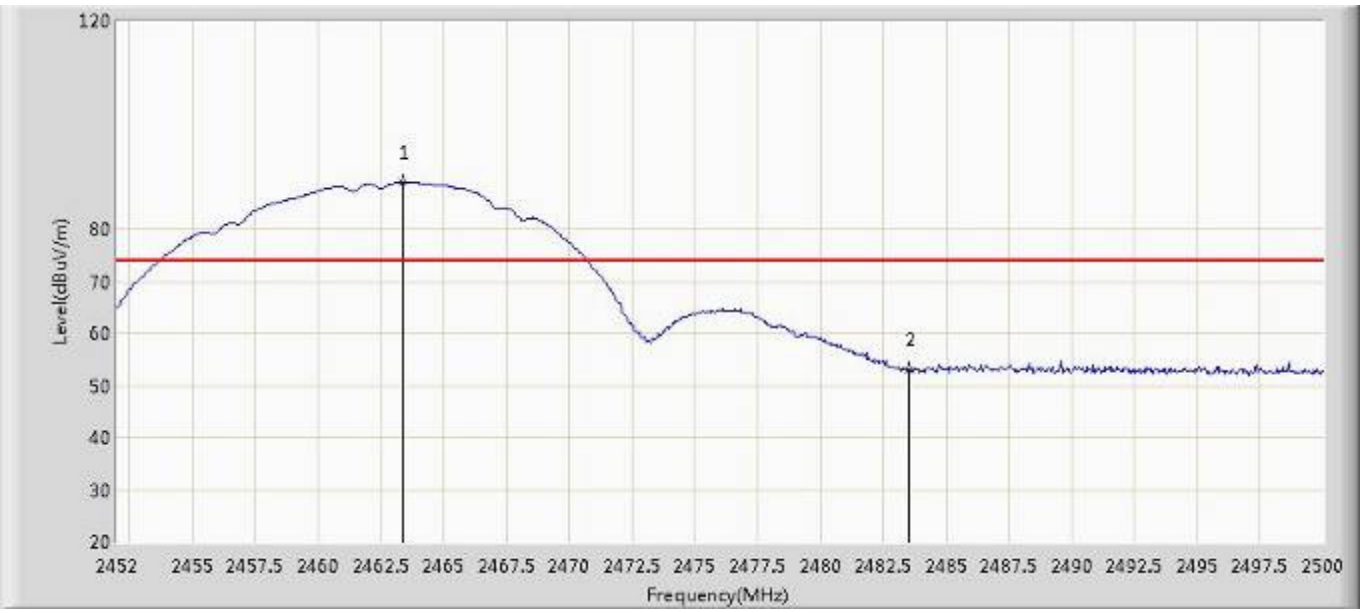
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.170	54.411	-21.830	74.000	-2.241	PK
2	*	2410.352	83.576	85.741	N/A	N/A	-2.165	PK

Site: AC102	Time: 2018/05/16 - 19:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode1: Transmit at 2412MHz by 802.11b	



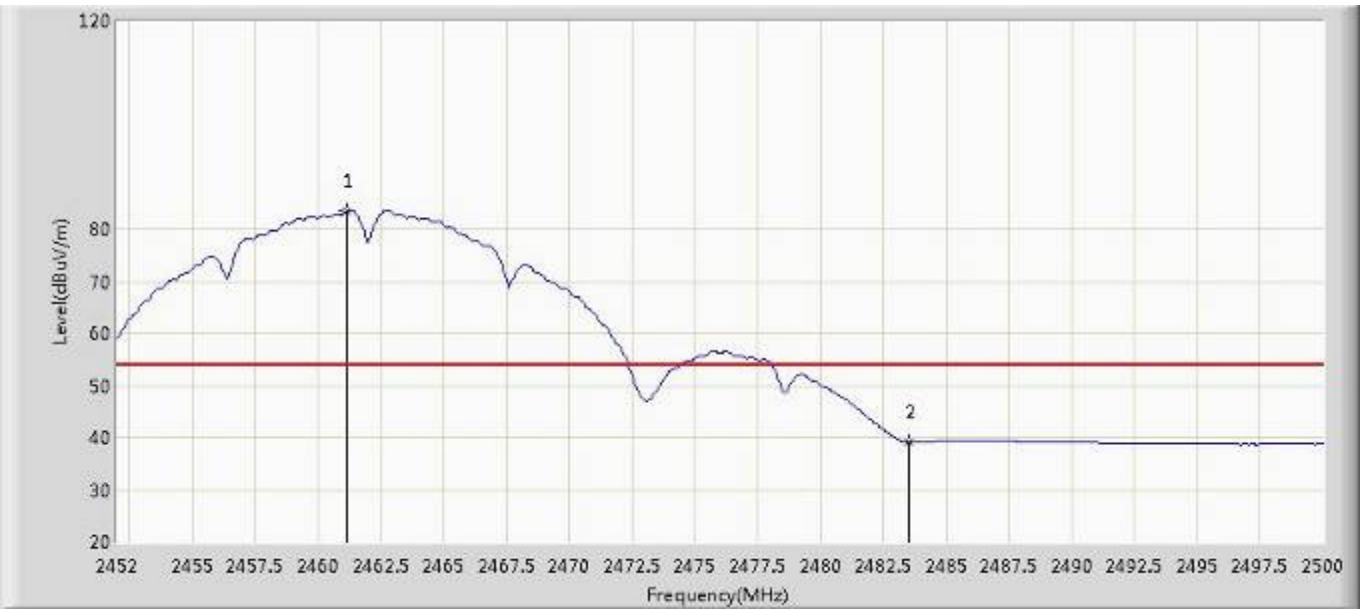
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.217	40.458	-15.783	54.000	-2.241	AV
2	*	2411.248	79.013	81.175	N/A	N/A	-2.162	AV

Site: AC102	Time: 2018/05/16 - 19:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode1: Transmit at 2462MHz by 802.11b	



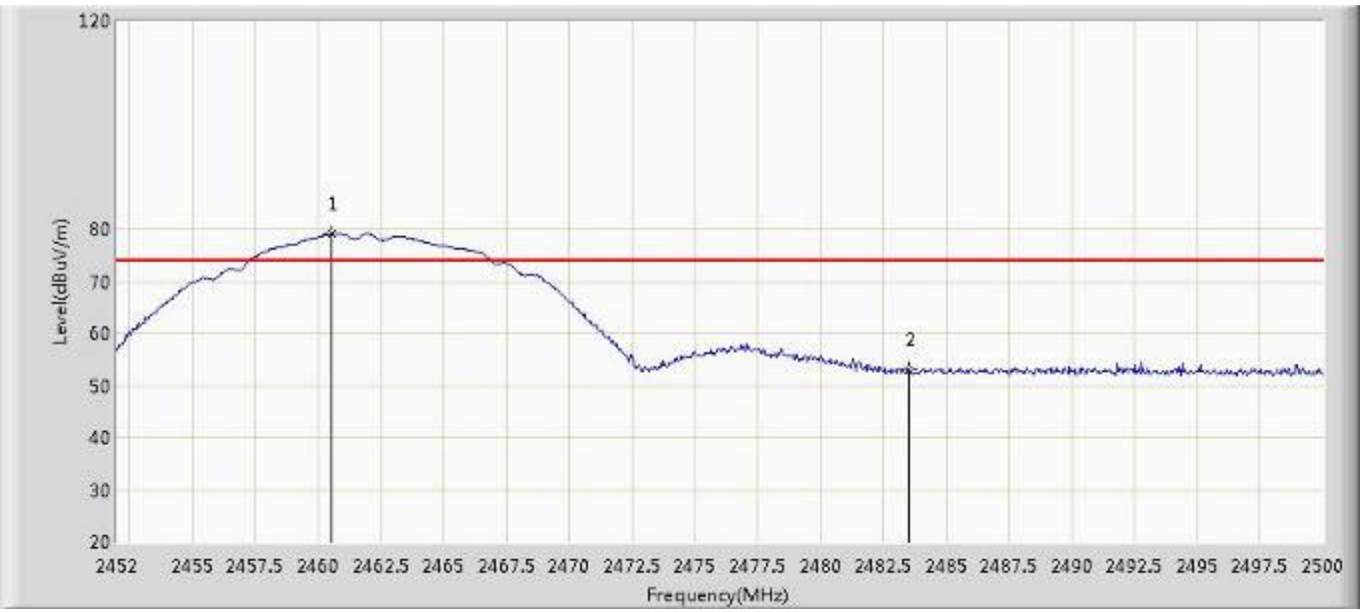
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.376	89.112	91.079	15.112	74.000	-1.967	PK
2		2483.500	52.919	54.811	N/A	N/A	-1.892	PK

Site: AC102	Time: 2018/05/16 - 19:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode1: Transmit at 2462MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.168	83.552	85.527	29.552	54.000	-1.975	AV
2		2483.500	39.084	40.976	N/A	N/A	-1.892	AV

Site: AC102	Time: 2018/05/16 - 19:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode1: Transmit at 2462MHz by 802.11b	

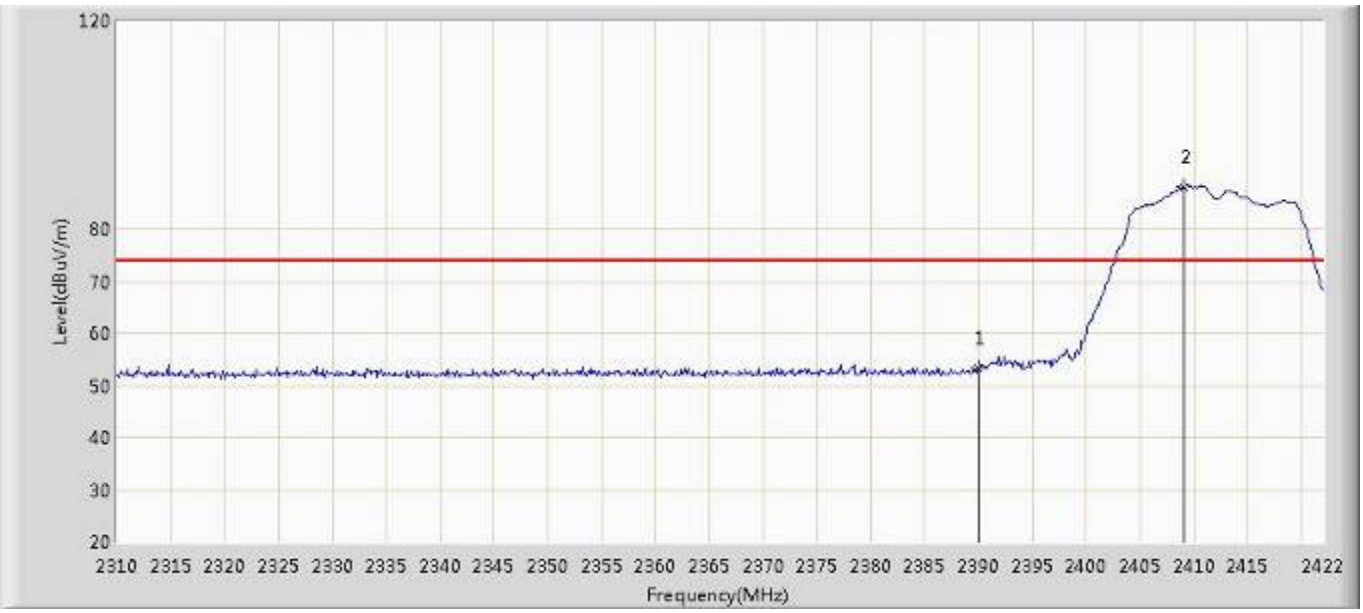


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.544	78.997	80.974	4.997	74.000	-1.977	PK
2		2483.500	52.957	54.849	N/A	N/A	-1.892	PK

Site: AC102	Time: 2018/05/16 - 19:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode1: Transmit at 2462MHz by 802.11b	

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.168	72.954	74.929	18.954	54.000	-1.975	AV
2		2483.500	38.880	40.772	N/A	N/A	-1.892	AV

Site: AC102	Time: 2018/05/16 - 19:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode2: Transmit at 2412MHz by 802.11g	

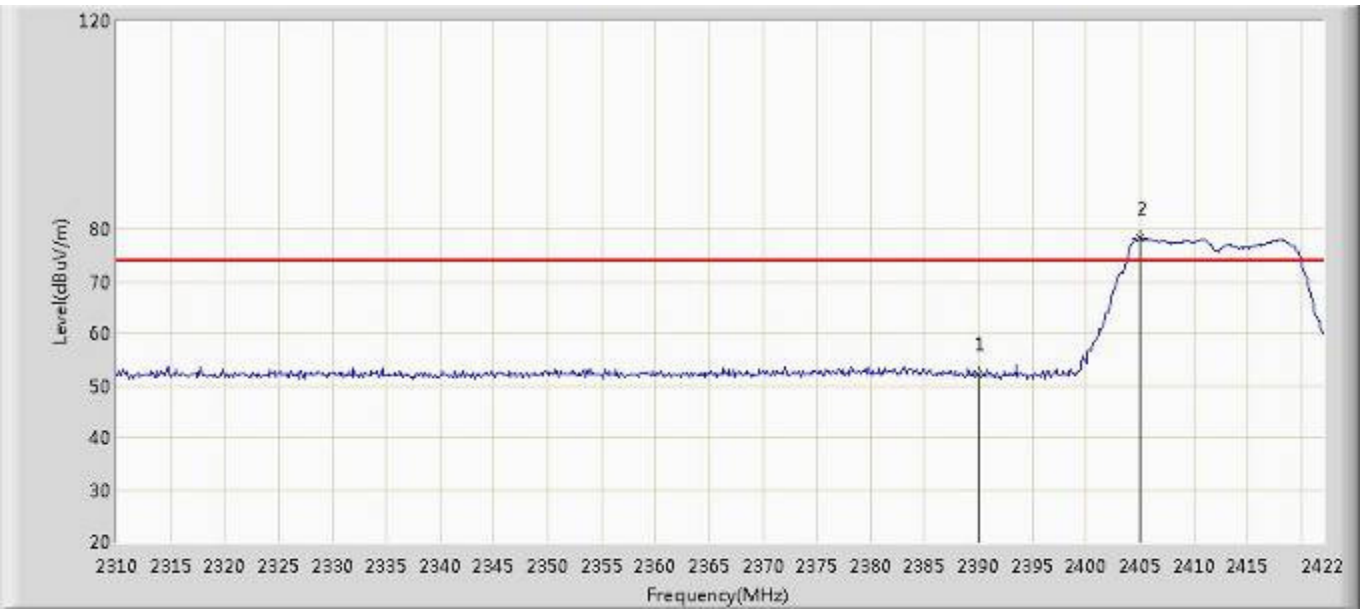


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	53.305	55.546	-20.695	74.000	-2.241	PK
2	*	2409.120	88.248	90.418	N/A	N/A	-2.170	PK

Site: AC102	Time: 2018/05/16 - 20:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode2: Transmit at 2412MHz by 802.11g	

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.763	41.004	-15.237	54.000	-2.241	AV
2	*	2409.344	77.654	79.823	N/A	N/A	-2.169	AV

Site: AC102	Time: 2018/05/16 - 20:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode2: Transmit at 2412MHz by 802.11g	

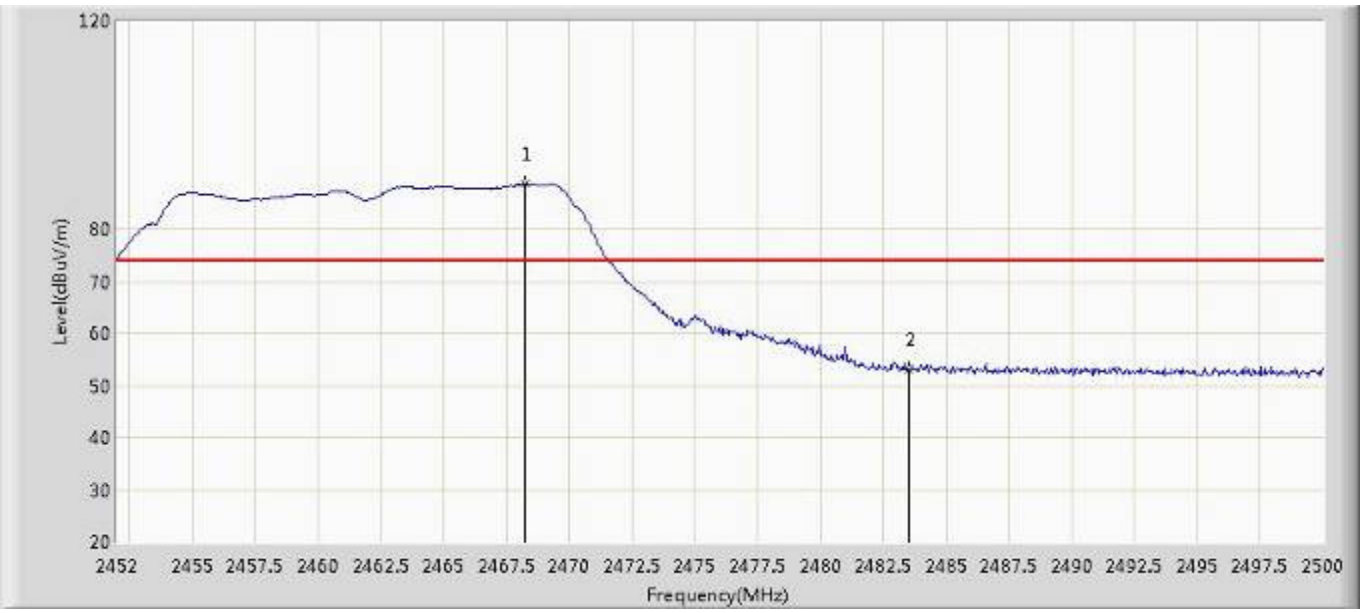


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.168	54.409	-21.832	74.000	-2.241	PK
2	*	2404.976	78.237	80.422	N/A	N/A	-2.185	PK

Site: AC102	Time: 2018/05/16 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode2: Transmit at 2412MHz by 802.11g	

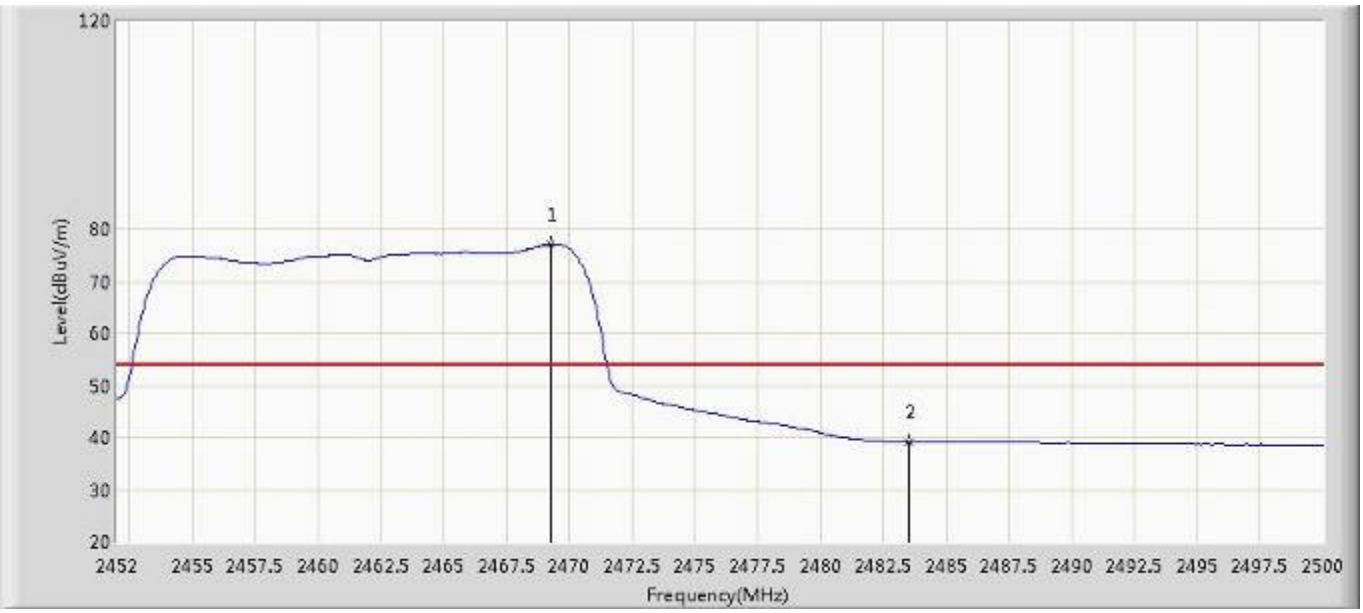
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.231	40.472	-15.769	54.000	-2.241	AV
2	*	2409.680	66.780	68.948	N/A	N/A	-2.168	AV

Site: AC102	Time: 2018/05/16 - 20:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode2: Transmit at 2462MHz by 802.11g	



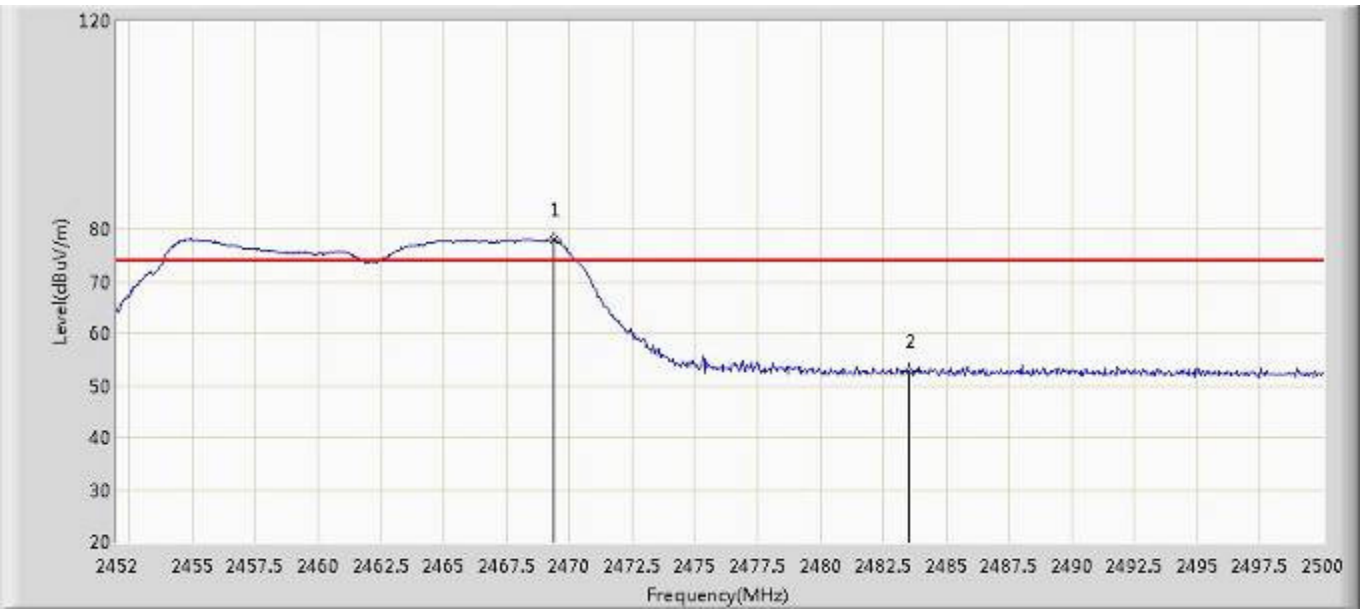
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2468.224	88.742	90.691	14.742	74.000	-1.949	PK
2		2483.500	53.010	54.902	N/A	N/A	-1.892	PK

Site: AC102	Time: 2018/05/16 - 20:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode2: Transmit at 2462MHz by 802.11g	



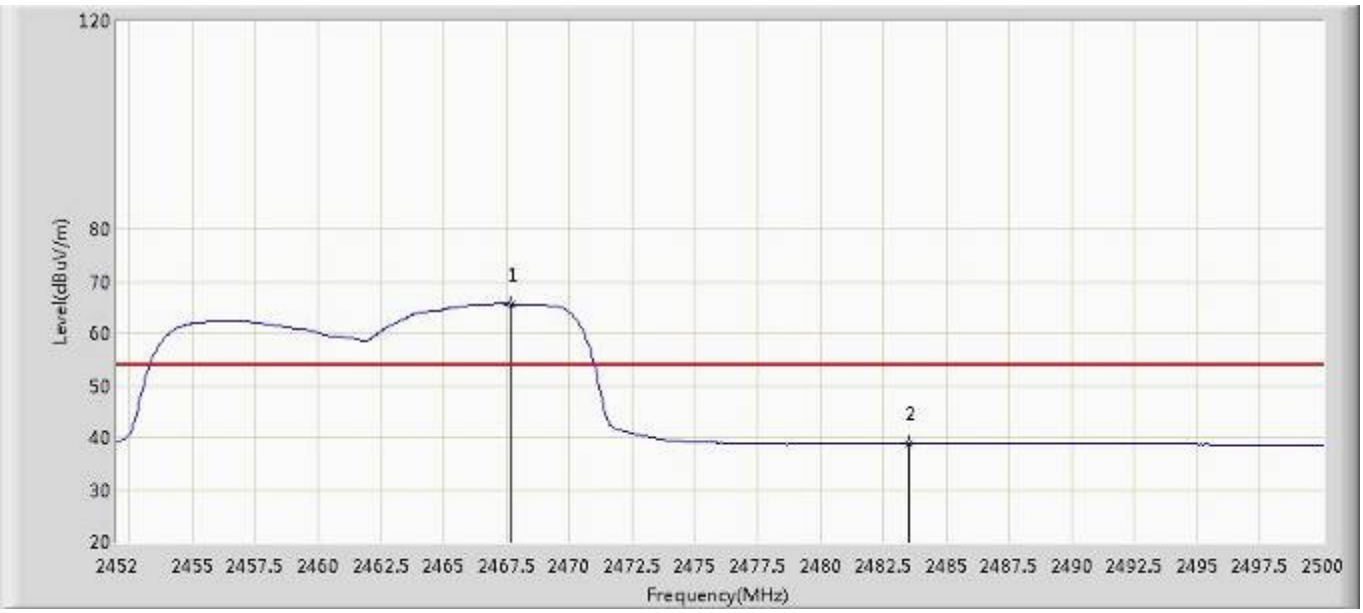
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2469.280	77.092	79.037	23.092	54.000	-1.945	AV
2		2483.500	39.213	41.105	N/A	N/A	-1.892	AV

Site: AC102	Time: 2018/05/16 - 20:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode2: Transmit at 2462MHz by 802.11g	



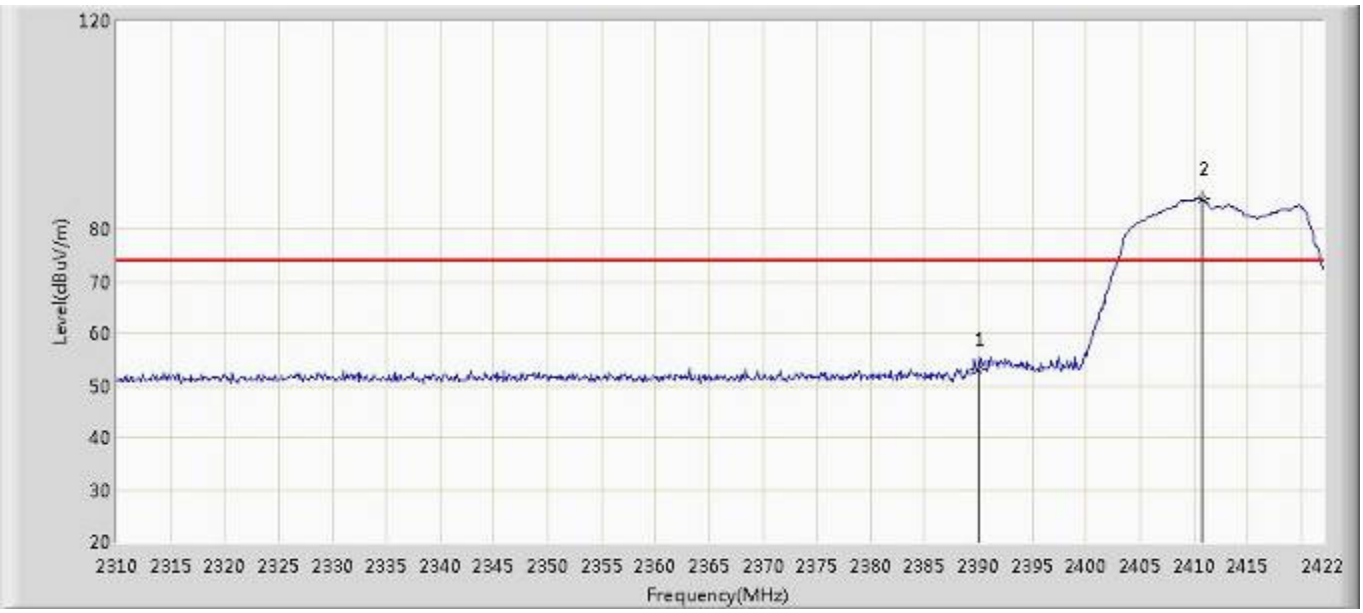
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2469.376	77.929	79.874	3.929	74.000	-1.945	PK
2		2483.500	52.797	54.689	N/A	N/A	-1.892	PK

Site: AC102	Time: 2018/05/16 - 20:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode2: Transmit at 2462MHz by 802.11g	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2467.696	65.636	67.587	11.636	54.000	-1.951	AV
2		2483.500	38.905	40.797	N/A	N/A	-1.892	AV

Site: AC102	Time: 2018/05/16 - 20:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode3: Transmit at 2412MHz by 802.11n(20MHz)	

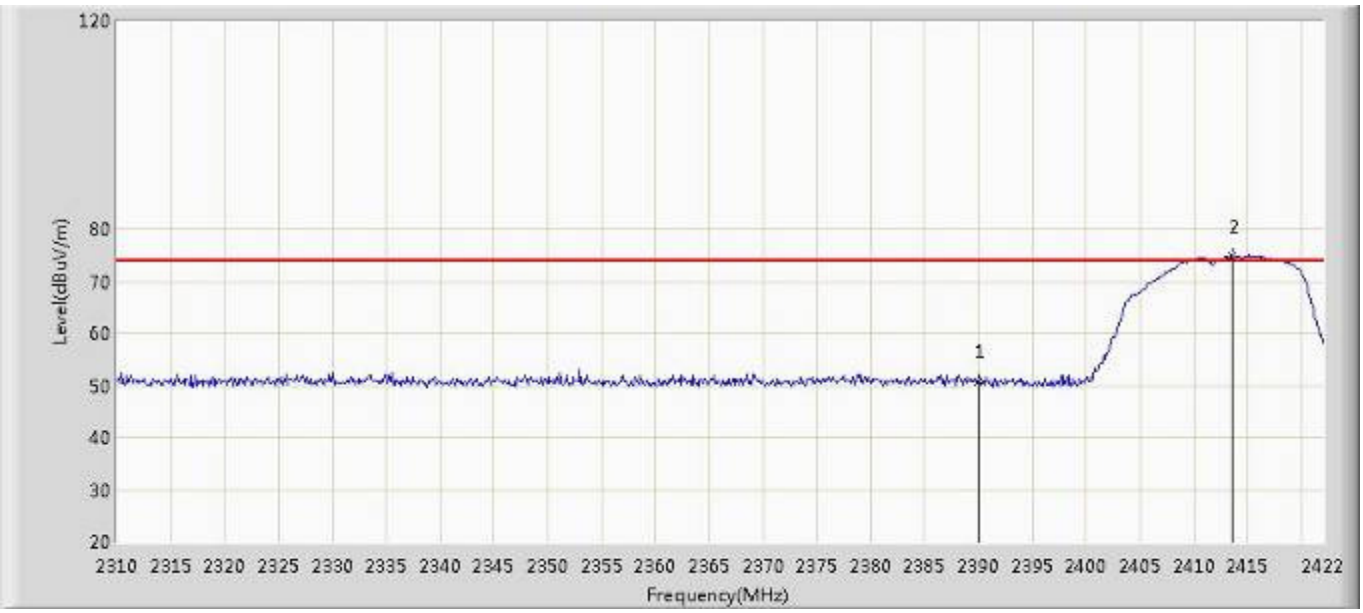


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	53.071	55.312	-20.929	74.000	-2.241	PK
2	*	2410.800	85.712	87.876	N/A	N/A	-2.164	PK

Site: AC102	Time: 2018/05/16 - 20:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode3: Transmit at 2412MHz by 802.11n(20MHz)	

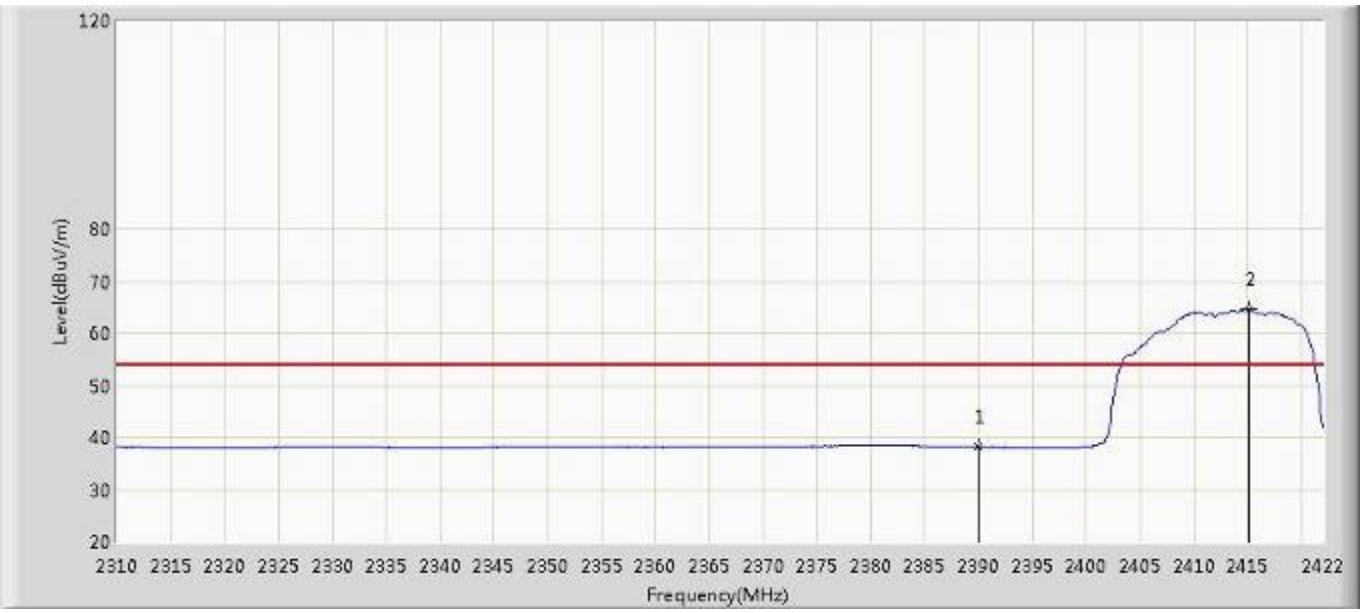
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.874	41.115	-15.126	54.000	-2.241	AV
2	*	2410.576	75.133	77.298	N/A	N/A	-2.165	AV

Site: AC102	Time: 2018/05/16 - 20:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode3: Transmit at 2412MHz by 802.11n(20MHz)	



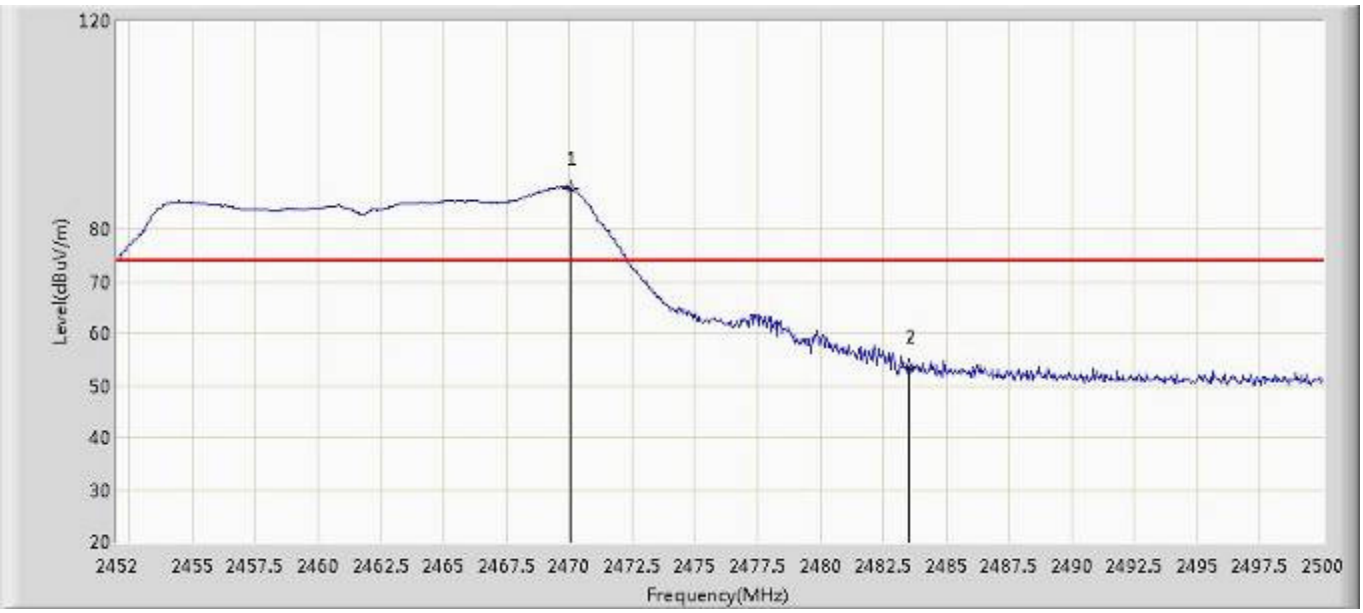
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.635	52.876	-23.365	74.000	-2.241	PK
2	*	2413.600	74.850	77.003	N/A	N/A	-2.153	PK

Site: AC102	Time: 2018/05/16 - 20:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode3: Transmit at 2412MHz by 802.11n(20MHz)	



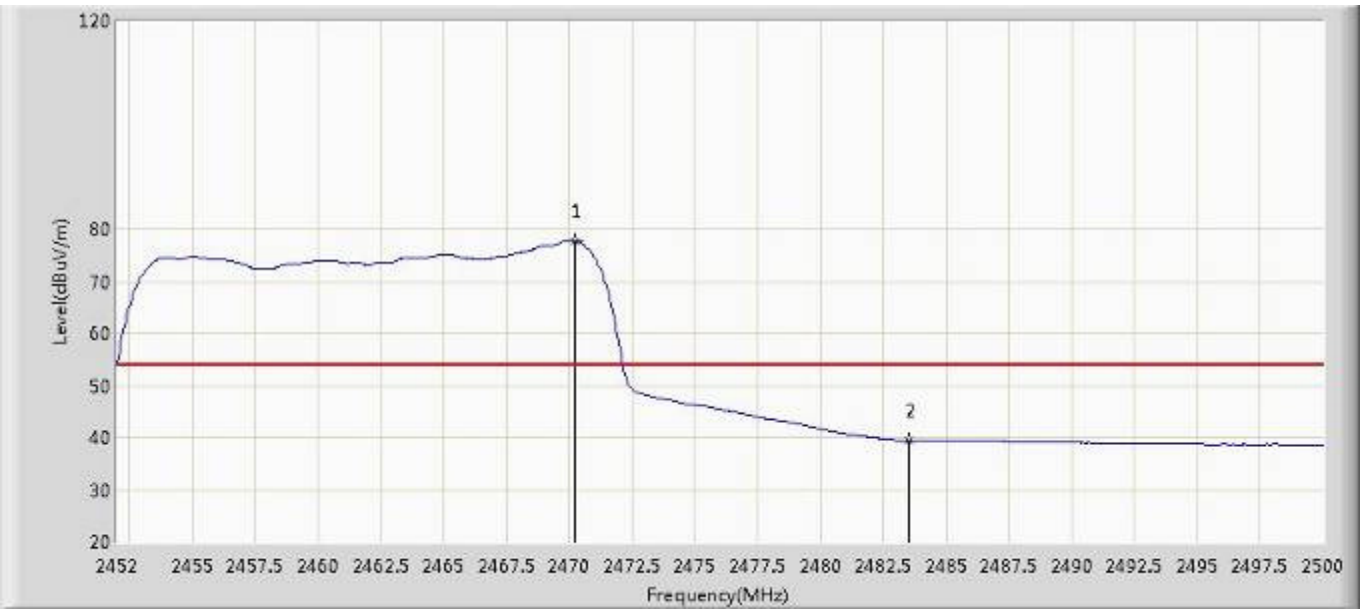
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.160	40.401	-15.840	54.000	-2.241	AV
2	*	2415.168	64.669	66.816	N/A	N/A	-2.147	AV

Site: AC102	Time: 2018/05/16 - 20:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode3: Transmit at 2462MHz by 802.11n(20MHz)	



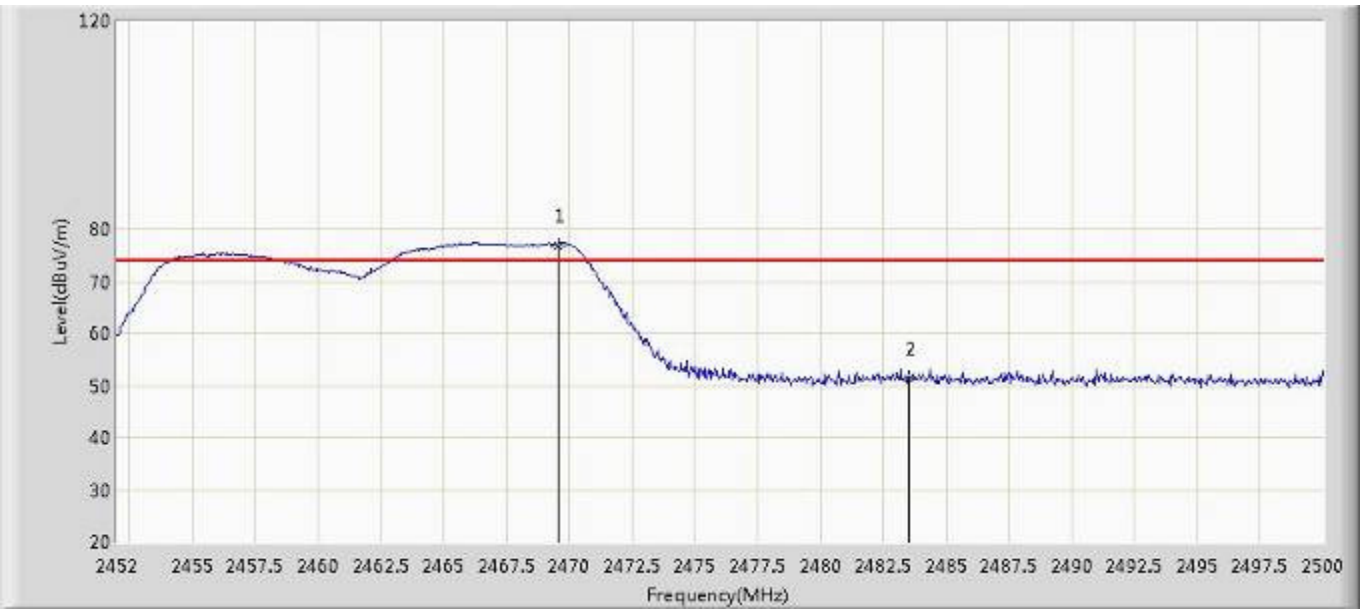
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2470.048	87.867	89.809	13.867	74.000	-1.942	PK
2		2483.500	53.567	55.459	N/A	N/A	-1.892	PK

Site: AC102	Time: 2018/05/16 - 20:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode3: Transmit at 2462MHz by 802.11n(20MHz)	



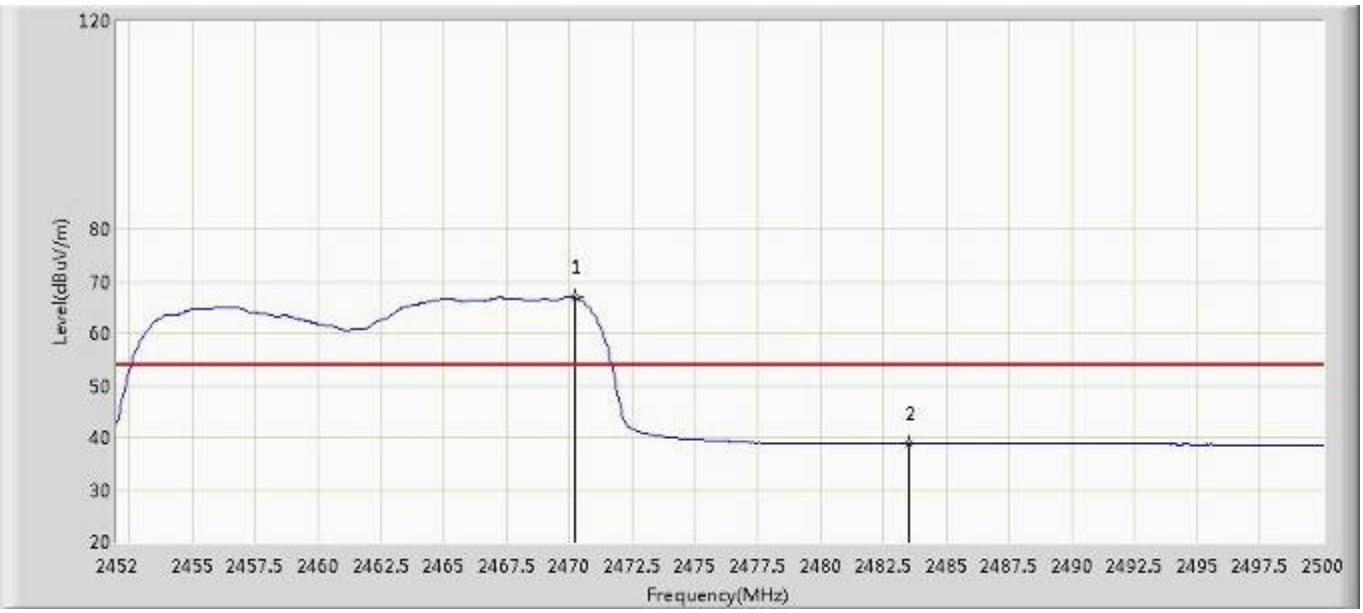
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2470.240	77.787	79.728	23.787	54.000	-1.941	AV
2		2483.500	39.526	41.418	N/A	N/A	-1.892	AV

Site: AC102	Time: 2018/05/16 - 20:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode3: Transmit at 2462MHz by 802.11n(20MHz)	



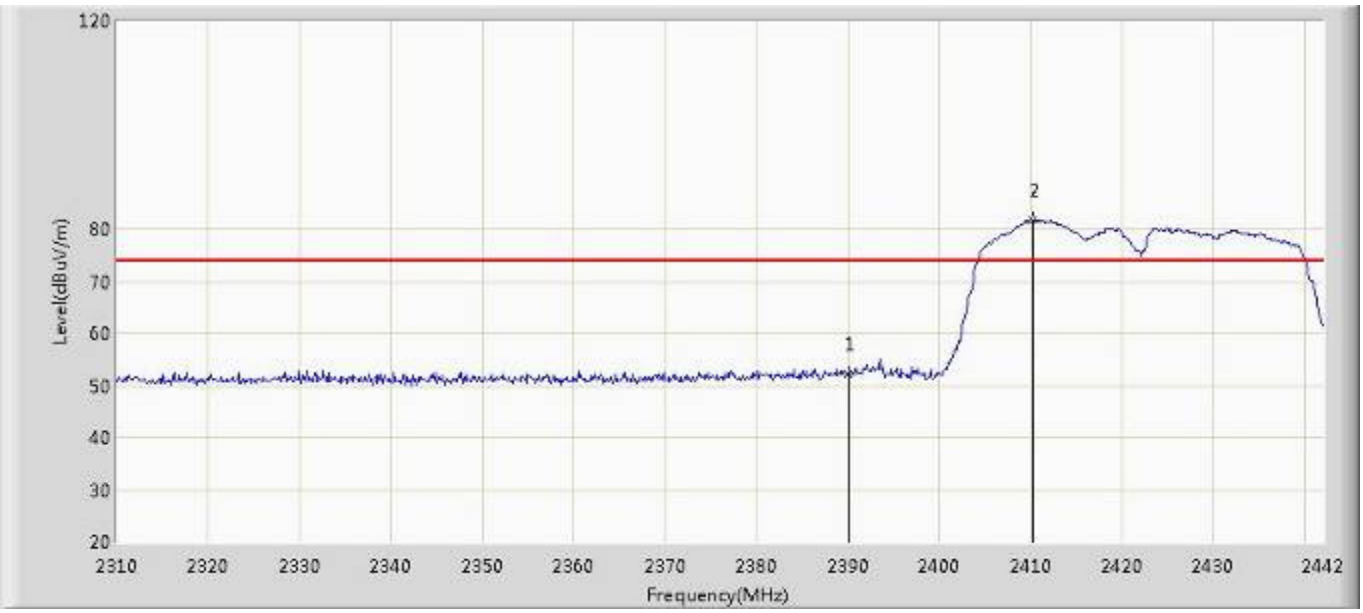
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2469.577	76.752	78.696	2.752	74.000	-1.944	PK
2		2483.500	51.337	53.229	N/A	N/A	-1.892	PK

Site: AC102	Time: 2018/05/16 - 20:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode3: Transmit at 2462MHz by 802.11n(20MHz)	



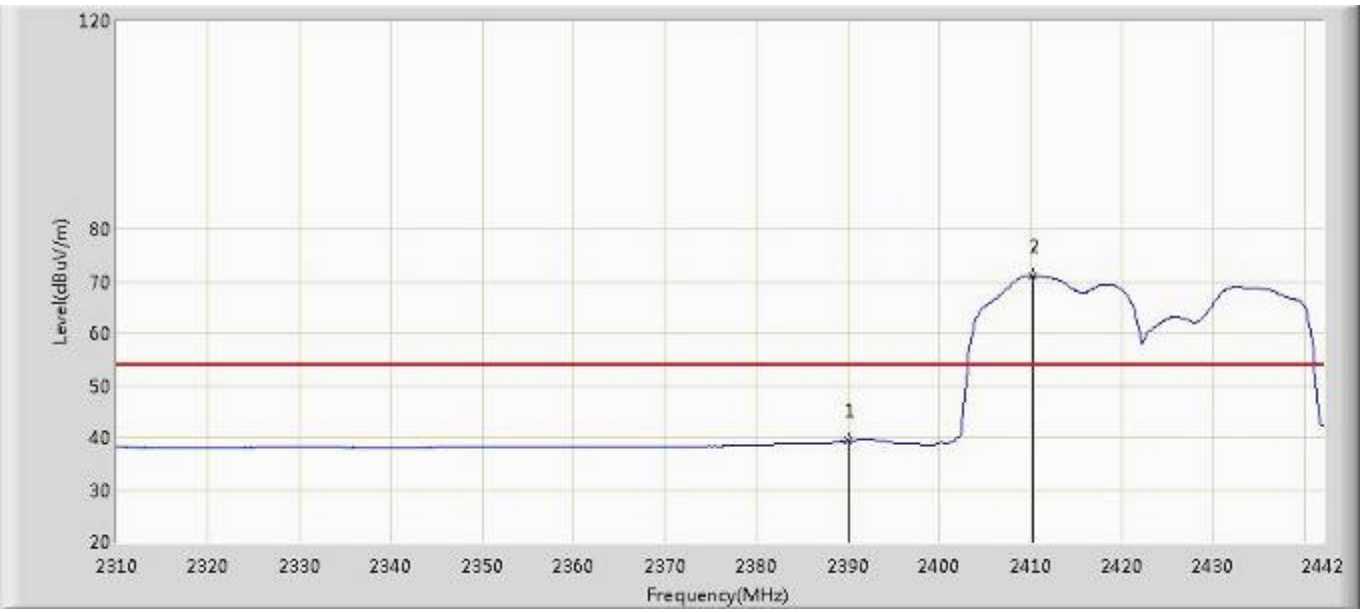
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2470.240	66.820	68.761	12.820	54.000	-1.941	AV
2		2483.500	38.927	40.819	N/A	N/A	-1.892	AV

Site: AC102	Time: 2018/05/16 - 20:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode4: Transmit at 2422MHz by 802.11n(40MHz)	



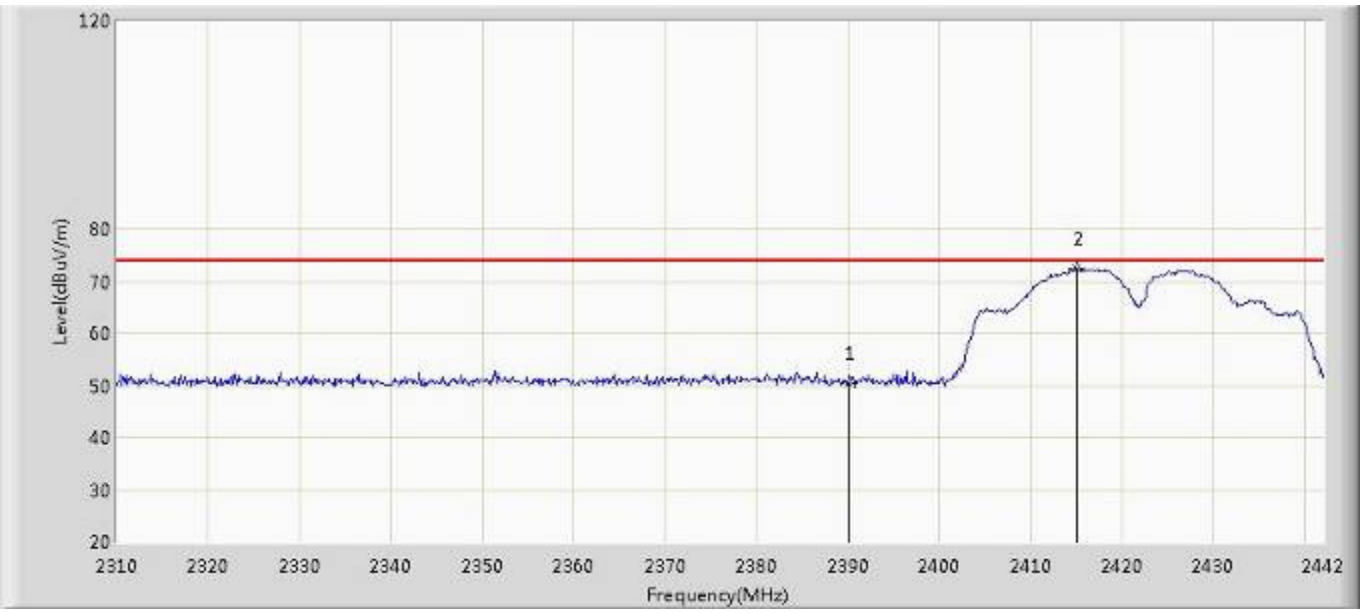
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.110	54.351	-21.890	74.000	-2.241	PK
2	*	2410.320	81.662	83.828	N/A	N/A	-2.166	PK

Site: AC102	Time: 2018/05/16 - 20:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode4: Transmit at 2422MHz by 802.11n(40MHz)	



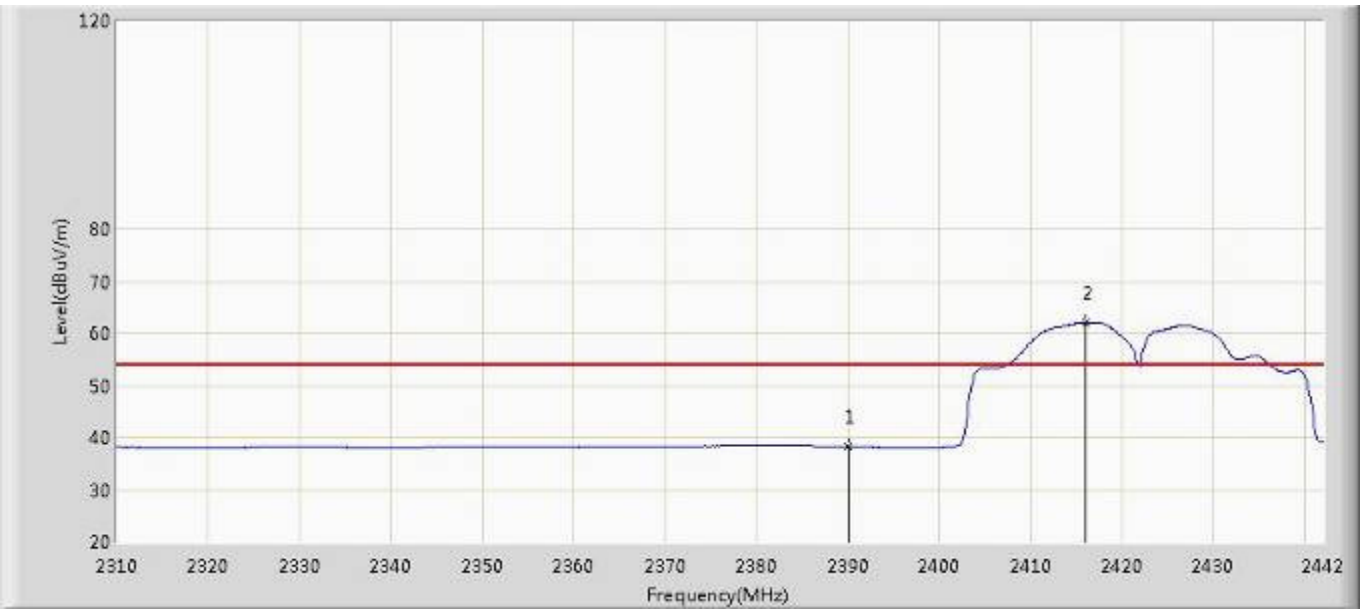
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	39.334	41.575	-14.666	54.000	-2.241	AV
2	*	2410.320	71.091	73.257	N/A	N/A	-2.166	AV

Site: AC102	Time: 2018/05/16 - 20:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode4: Transmit at 2422MHz by 802.11n(40MHz)	



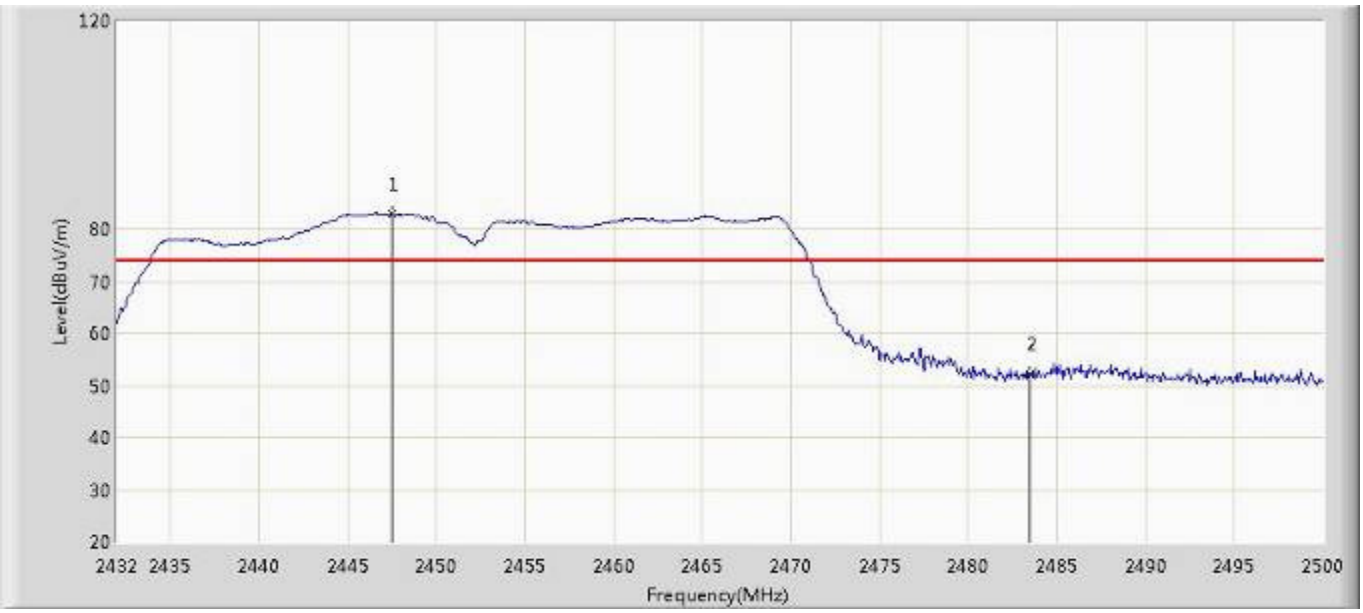
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.561	52.802	-23.439	74.000	-2.241	PK
2	*	2415.072	72.449	74.597	N/A	N/A	-2.148	PK

Site: AC102	Time: 2018/05/16 - 20:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode4: Transmit at 2422MHz by 802.11n(40MHz)	



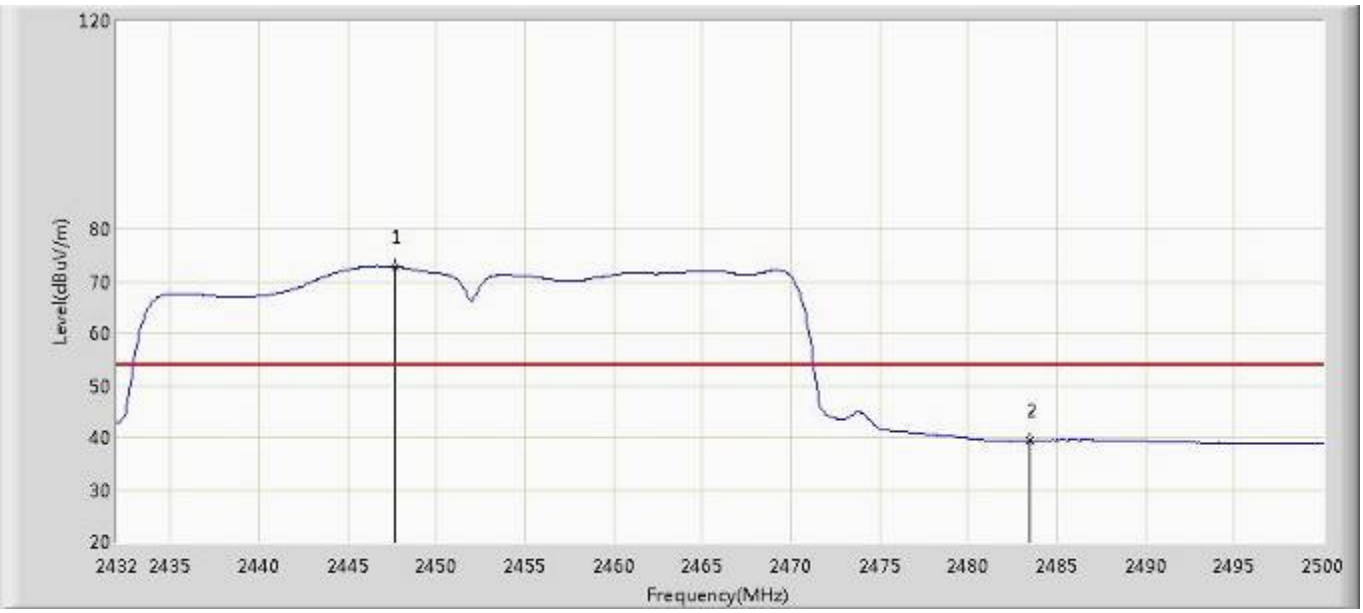
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.229	40.470	-15.771	54.000	-2.241	AV
2	*	2415.996	62.134	64.278	N/A	N/A	-2.144	AV

Site: AC102	Time: 2018/05/16 - 20:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode4: Transmit at 2452MHz by 802.11n(40MHz)	



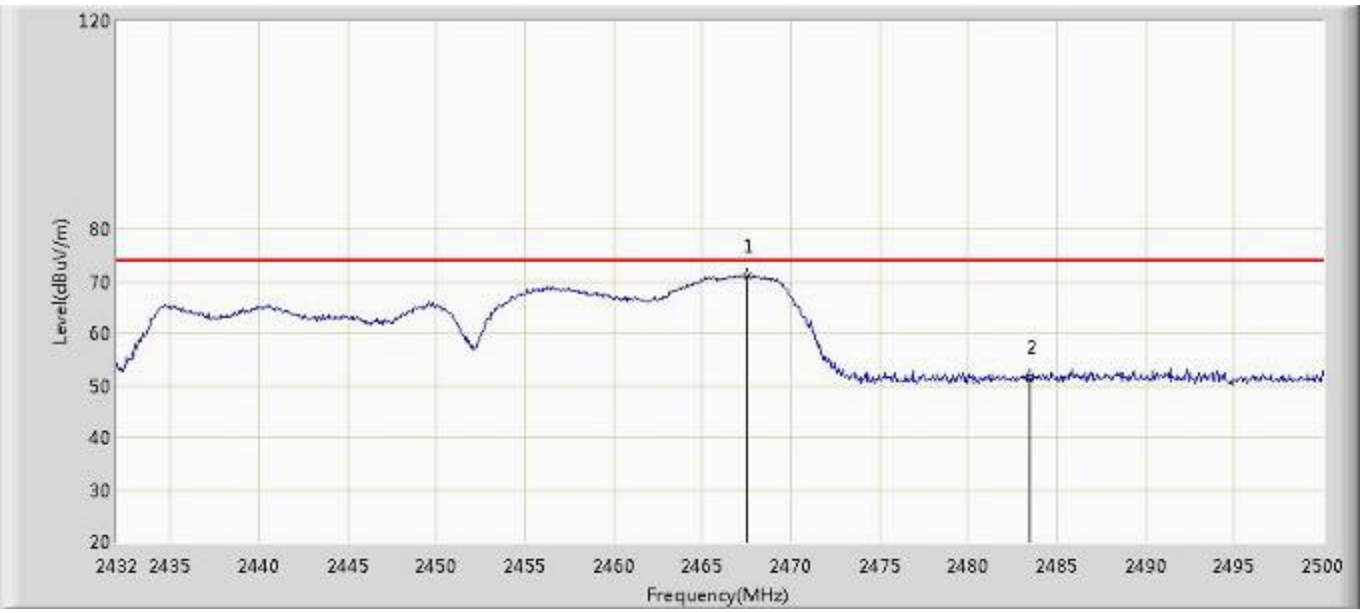
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2447.504	82.895	84.922	8.895	74.000	-2.027	PK
2		2483.500	52.287	54.179	N/A	N/A	-1.892	PK

Site: AC102	Time: 2018/05/16 - 20:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode4: Transmit at 2452MHz by 802.11n(40MHz)	



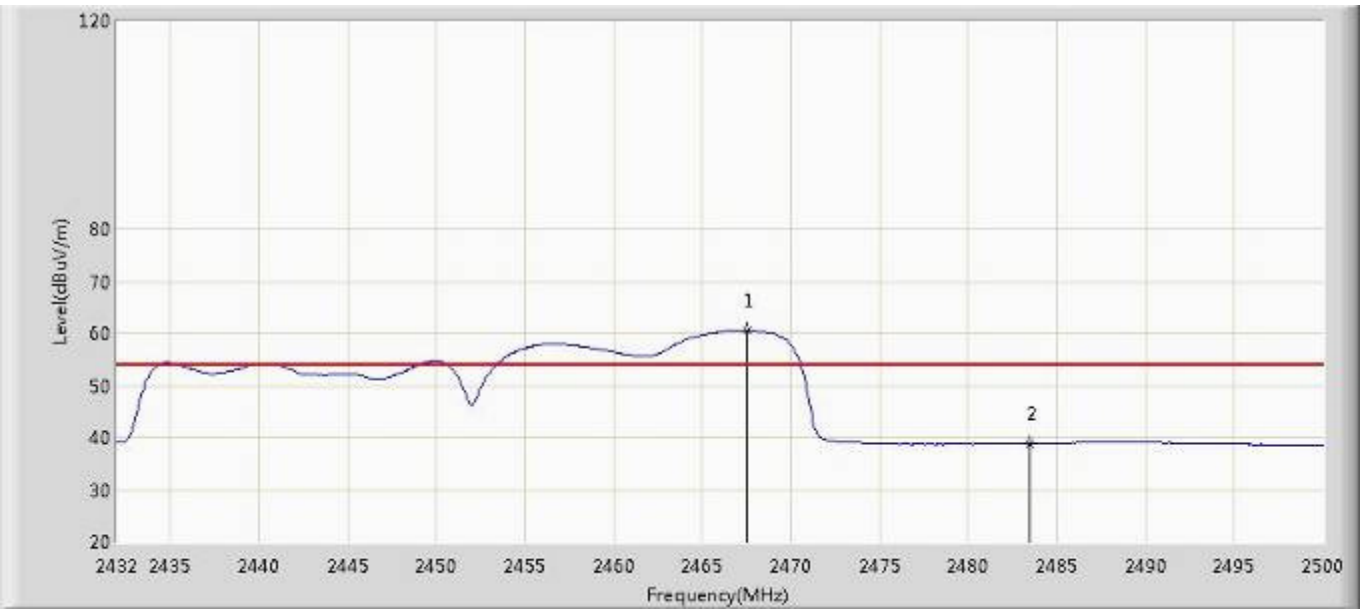
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2447.708	72.832	74.858	18.832	54.000	-2.026	AV
2		2483.500	39.413	41.305	N/A	N/A	-1.892	AV

Site: AC102	Time: 2018/05/16 - 20:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode4: Transmit at 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2467.496	70.979	72.931	-3.021	74.000	-1.952	PK
2		2483.500	51.511	53.403	N/A	N/A	-1.892	PK

Site: AC102	Time: 2018/05/16 - 20:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: Smart Express Cabinet	Power: AC 120V/60Hz
Note: Mode4: Transmit at 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2467.496	60.582	62.534	6.582	54.000	-1.952	AV
2		2483.500	38.872	40.764	N/A	N/A	-1.892	AV

The End