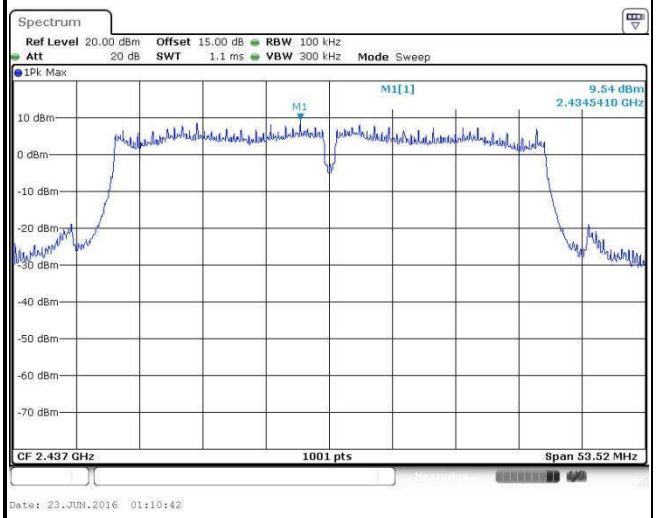
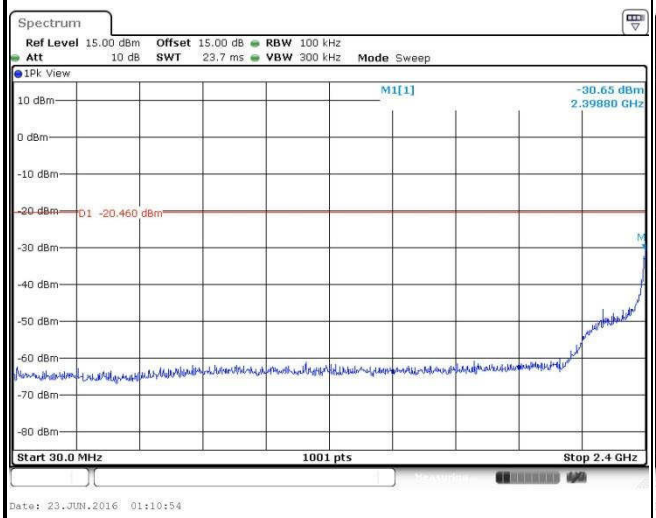
Number of TX :	3	**Ant. :**	2
Test Mode :	802.11n HT40	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	50~53%
Test Channel :	06	**Test Engineer :**	Tiny You

WLAN 802.11n HT40 Channel 06

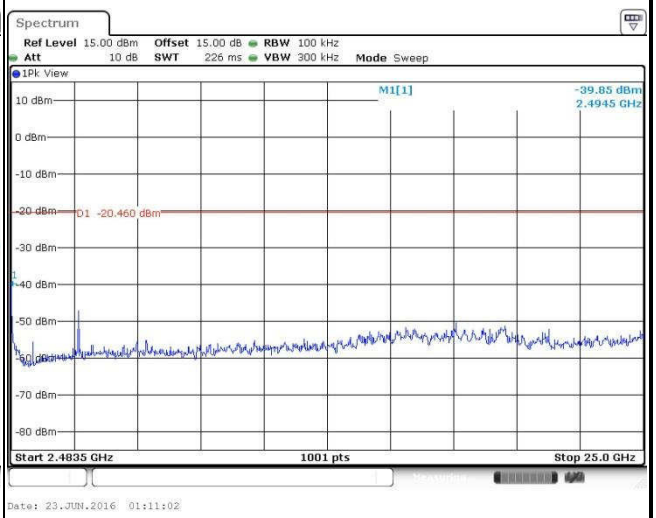
100kHz PSD reference Level



Spurious Emission 30MHz~2.4GHz



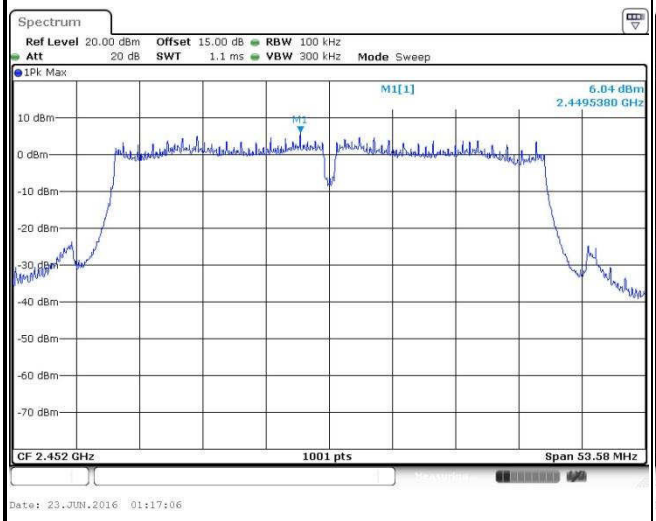
Spurious Emission 2.4835GHz~25GHz



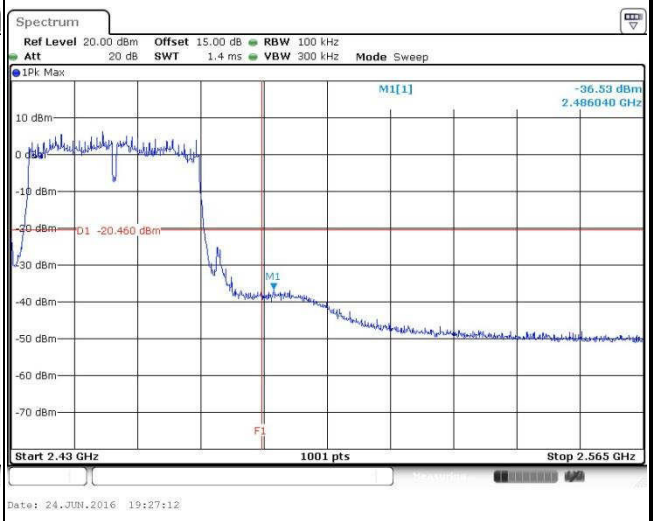
Number of TX :	3	**Ant. :**	2
Test Mode :	802.11n HT40	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	50~53%
Test Channel :	09	**Test Engineer :**	Tiny You

WLAN 802.11n HT40 Channel 09

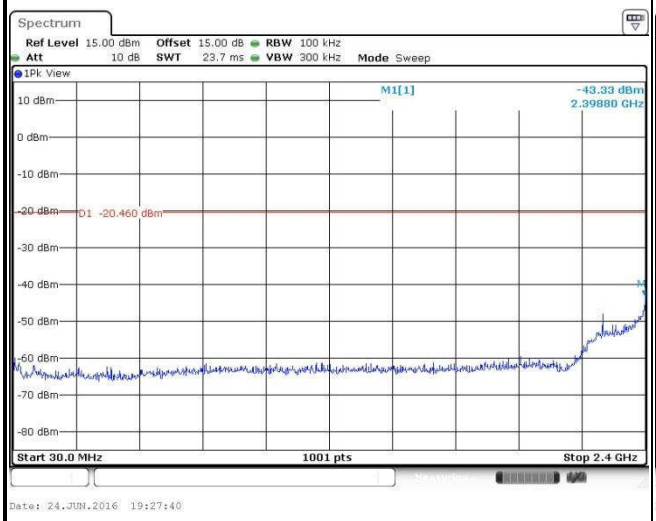
100kHz PSD reference Level



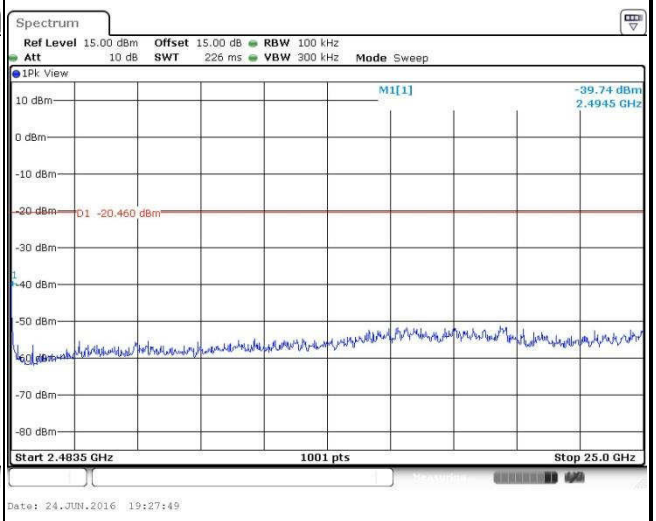
High Channel Plot



Spurious Emission 30MHz~2.4GHz



Spurious Emission 2.4835GHz~25GHz

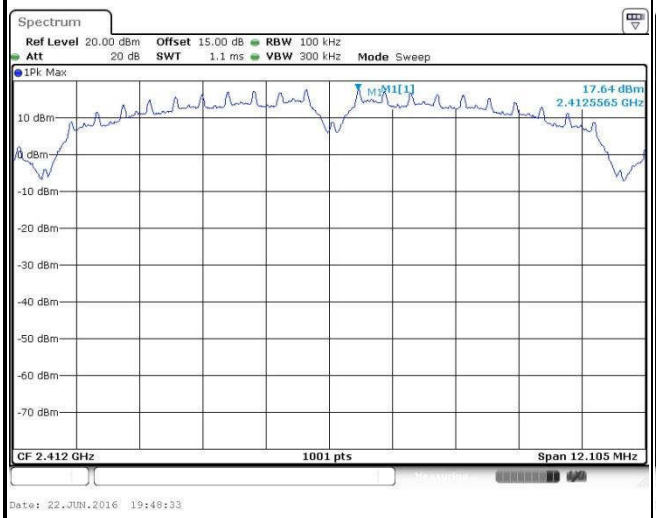


Number of TX = 3, Ant. 3 (Measured)

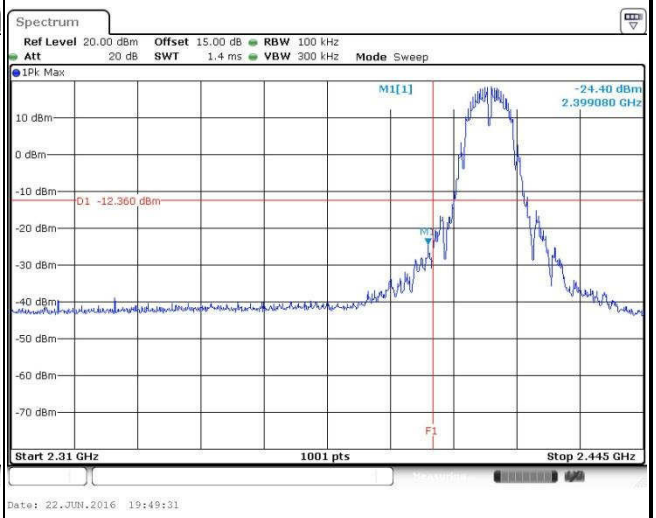
Number of TX	3	**Ant. :**	3
Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	50~53%
Test Channel :	01	**Test Engineer :**	Tiny You

WLAN 802.11b Channel 01

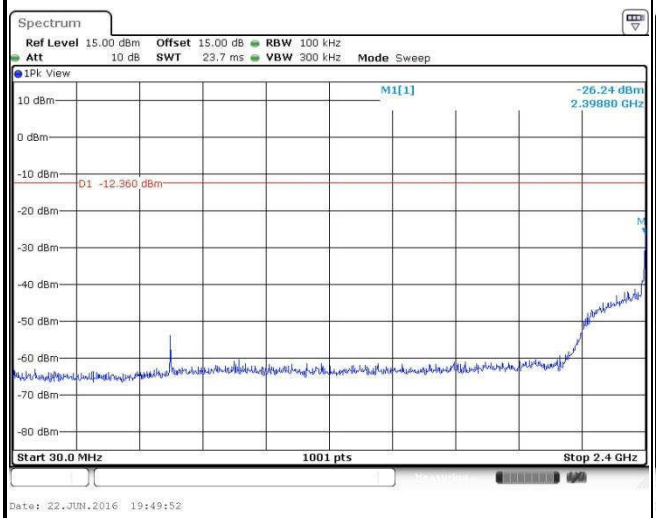
100kHz PSD reference Level



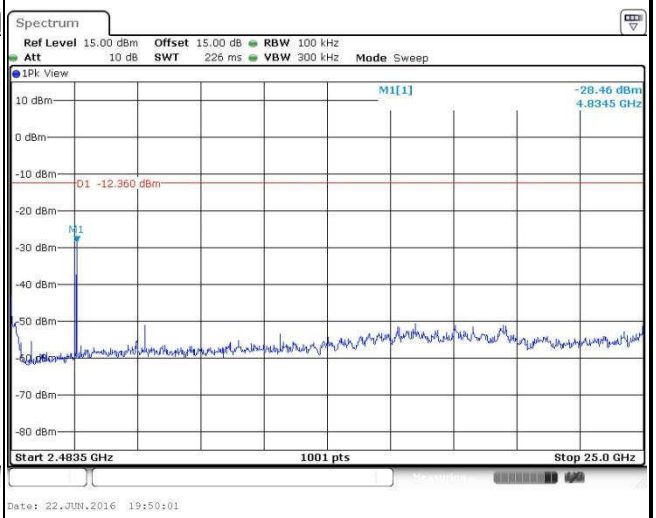
Low Channel Plot



Spurious Emission 30MHz~2.4GHz



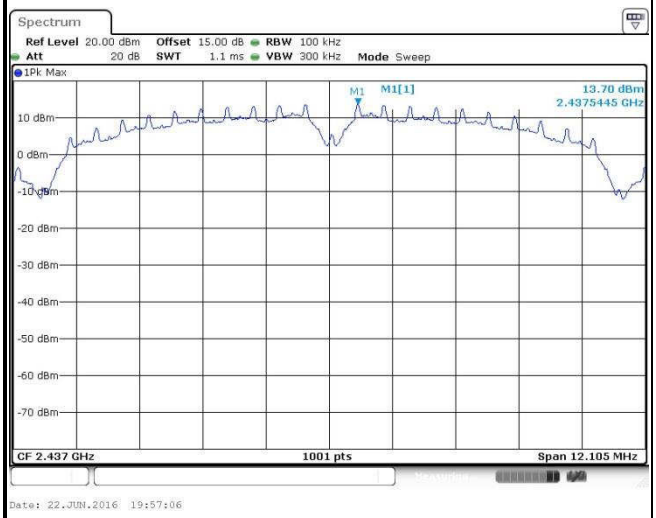
Spurious Emission 2.4835GHz~25GHz



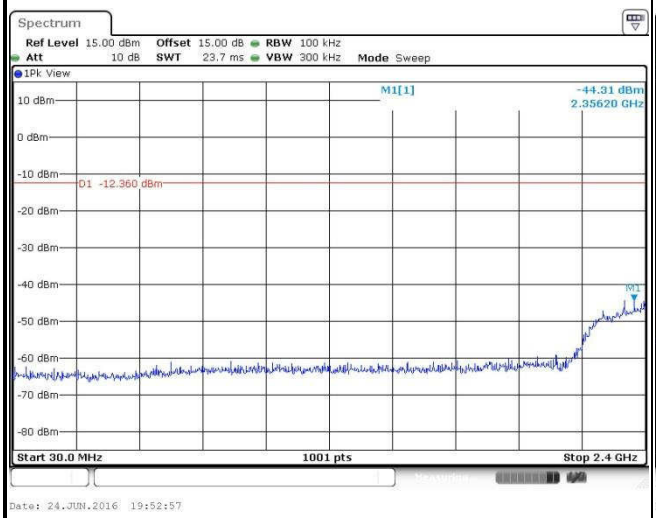
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	50~53%
Test Channel :	06	**Test Engineer :**	Tiny You

WLAN 802.11b Channel 06

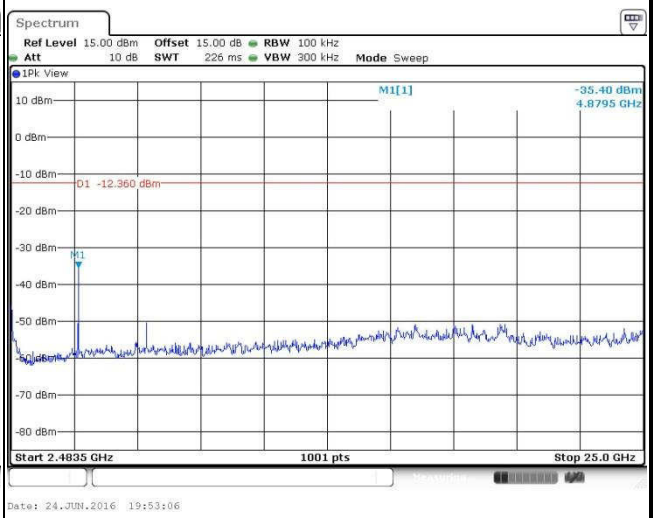
100kHz PSD reference Level



Spurious Emission 30MHz~2.4GHz



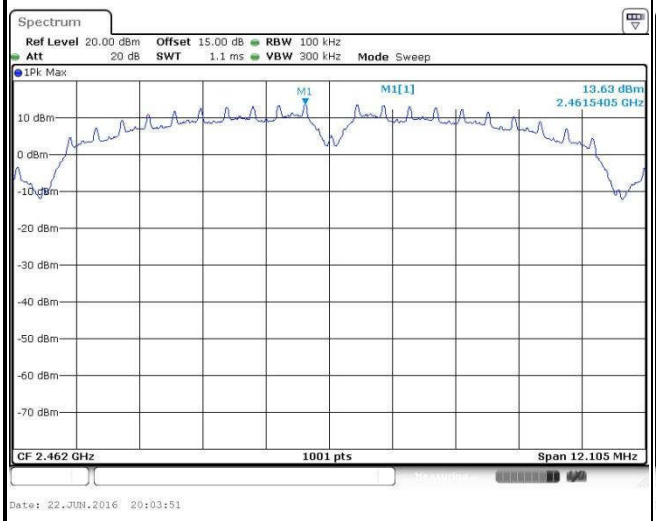
Spurious Emission 2.4835GHz~25GHz



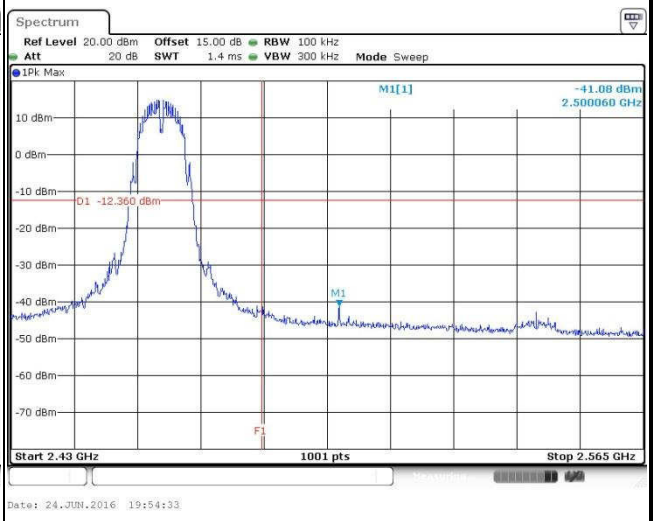
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	50~53%
Test Channel :	11	**Test Engineer :**	Tiny You

WLAN 802.11b Channel 11

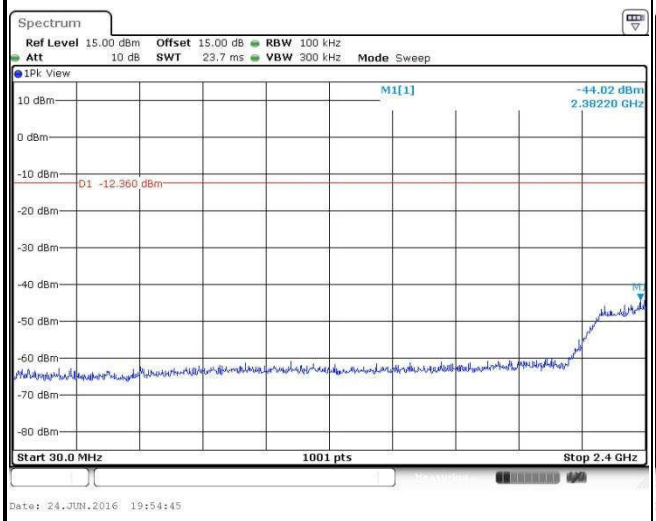
100kHz PSD reference Level



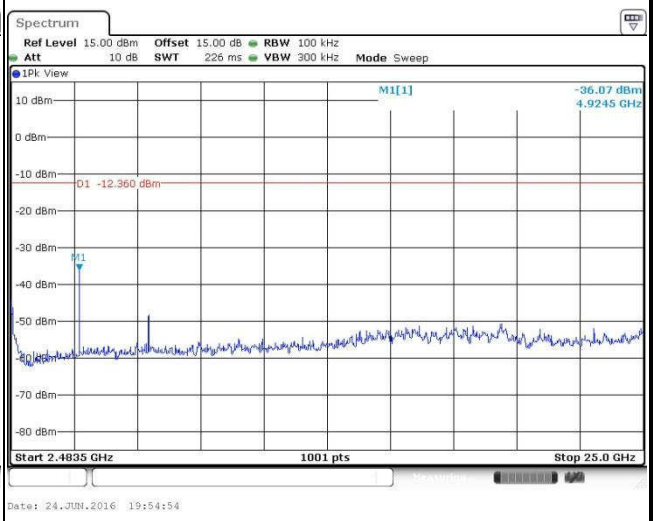
High Channel Plot



Spurious Emission 30MHz~2.4GHz



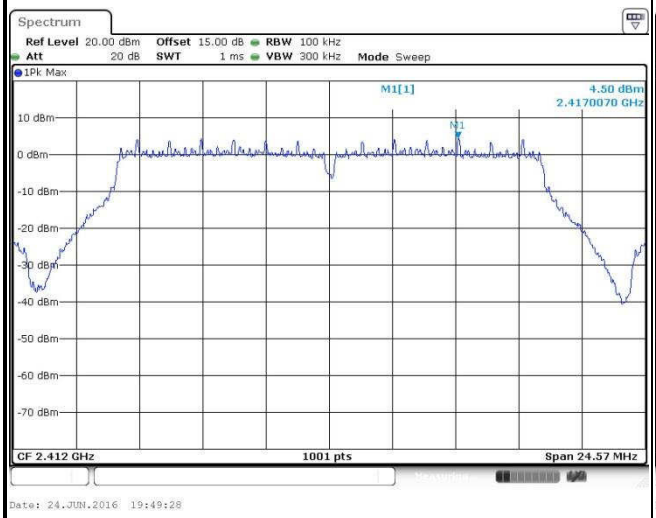
Spurious Emission 2.4835GHz~25GHz



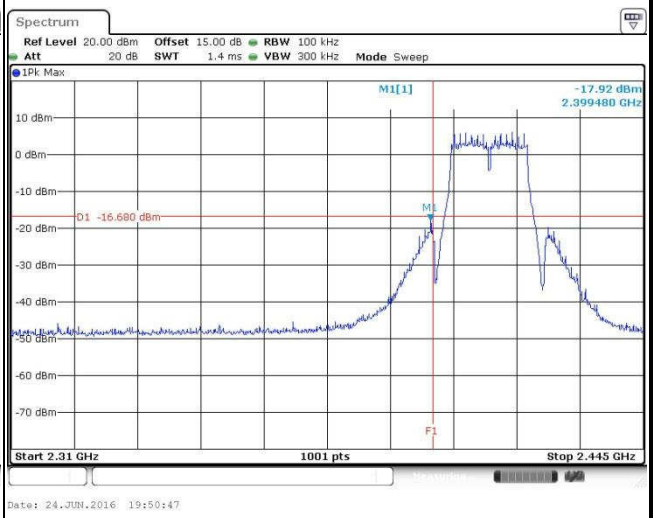
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	50~53%
Test Channel :	01	**Test Engineer :**	Tiny You

WLAN 802.11g Channel 01

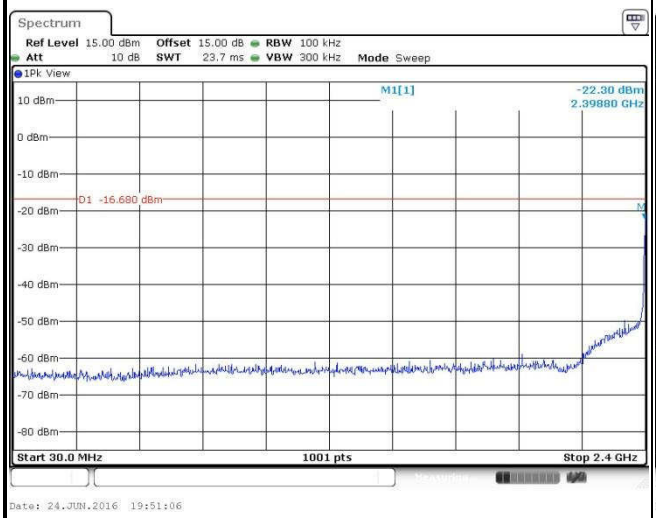
100kHz PSD reference Level



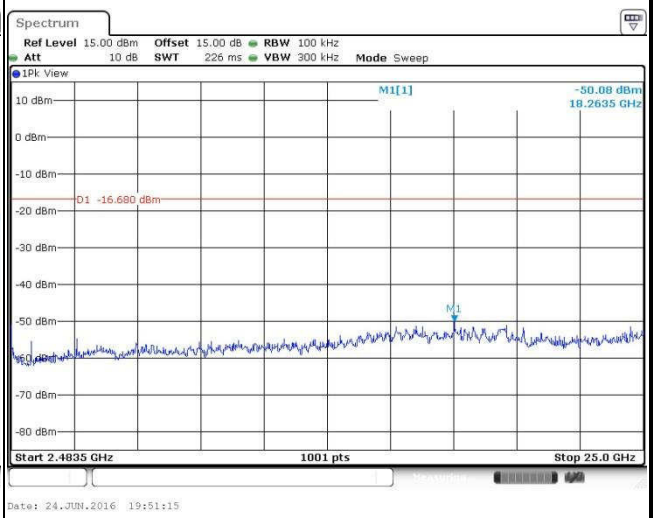
Low Channel Plot



Spurious Emission 30MHz~2.4GHz



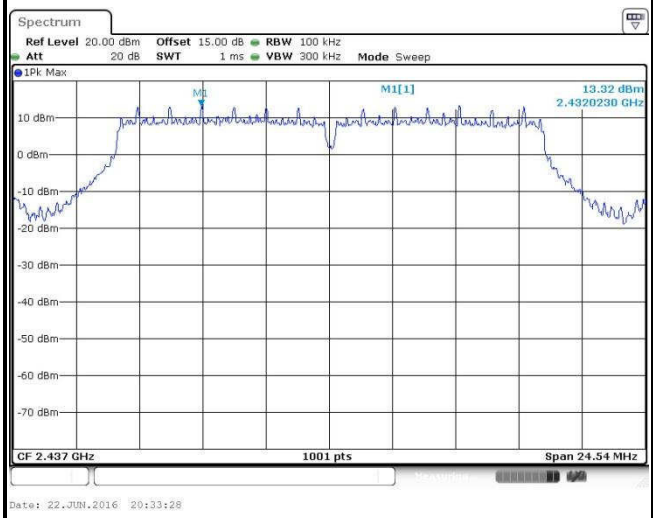
Spurious Emission 2.4835GHz~25GHz



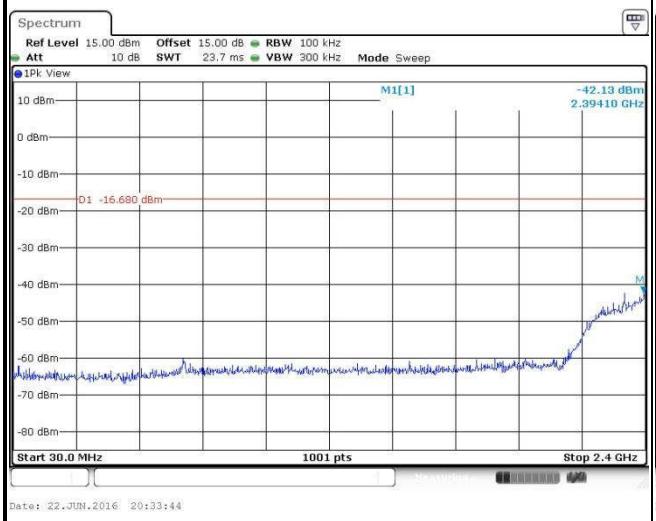
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	50~53%
Test Channel :	06	**Test Engineer :**	Tiny You

WLAN 802.11g Channel 06

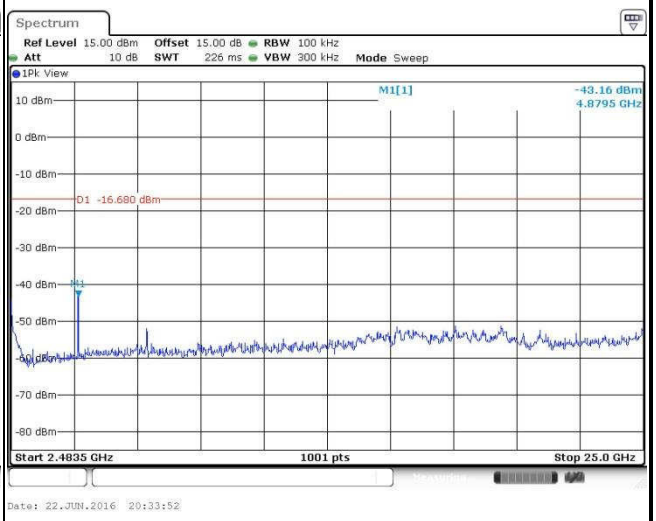
100kHz PSD reference Level



Spurious Emission 30MHz~2.4GHz



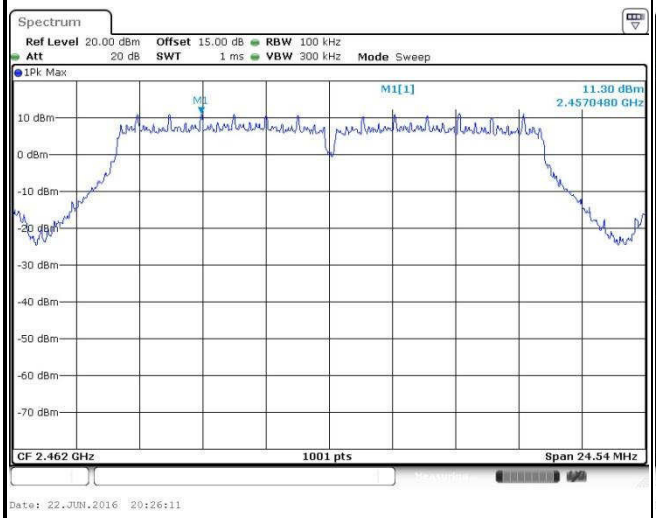
Spurious Emission 2.4835GHz~25GHz



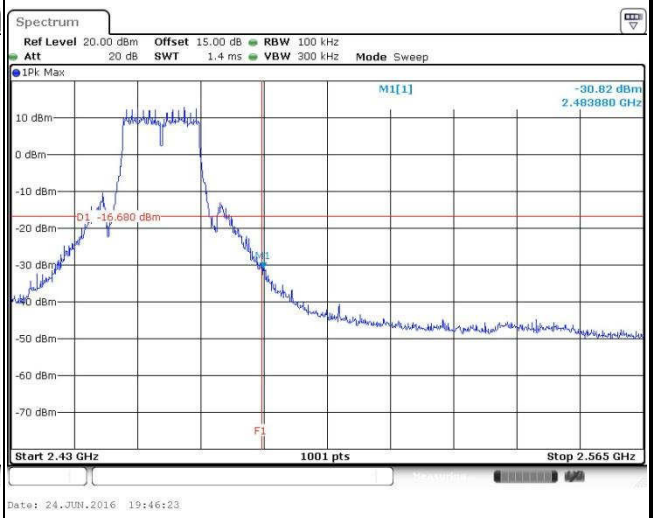
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	50~53%
Test Channel :	11	**Test Engineer :**	Tiny You

WLAN 802.11g Channel 11

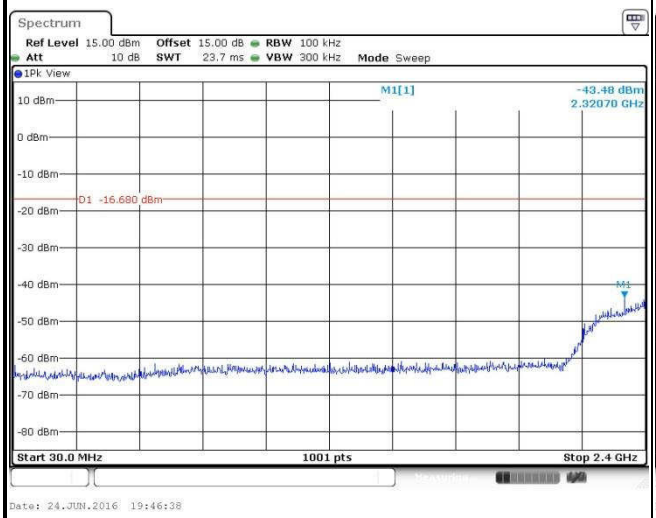
100kHz PSD reference Level



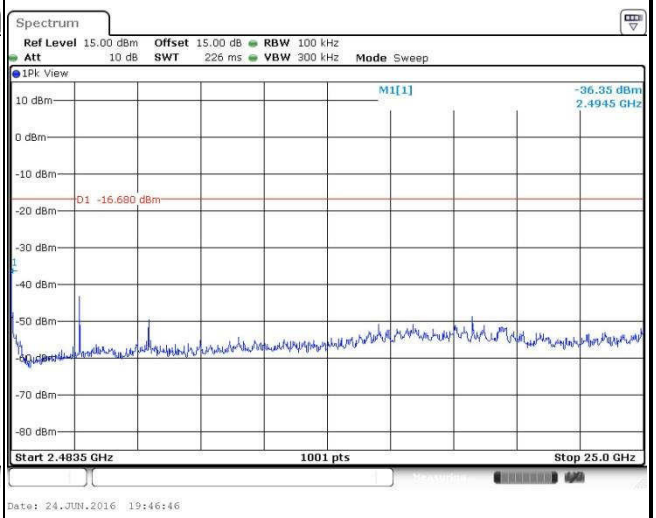
High Channel Plot



Spurious Emission 30MHz~2.4GHz



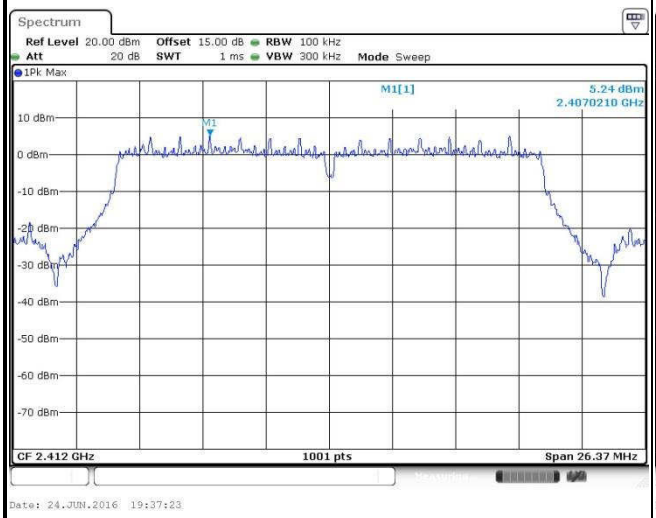
Spurious Emission 2.4835GHz~25GHz



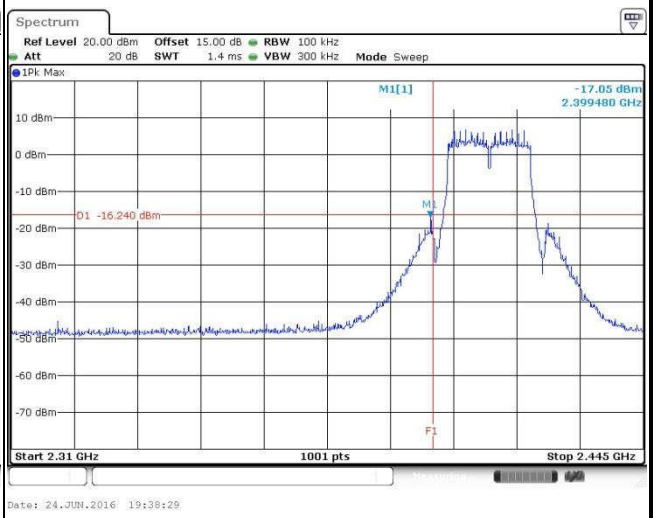
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	50~53%
Test Channel :	01	**Test Engineer :**	Tiny You

WLAN 802.11n HT20 Channel 01

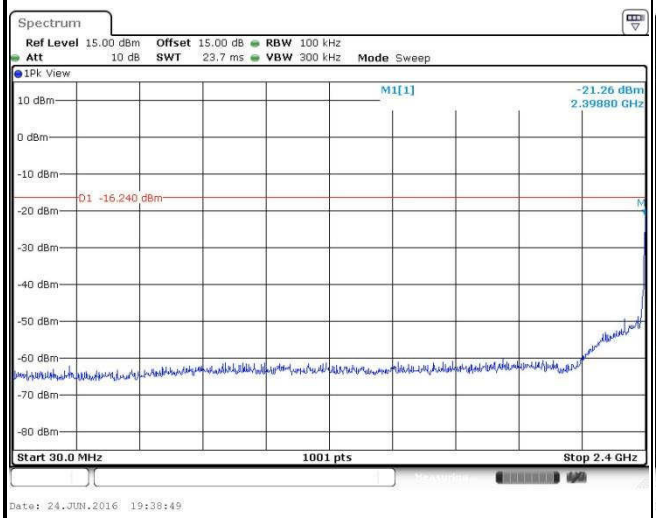
100kHz PSD reference Level



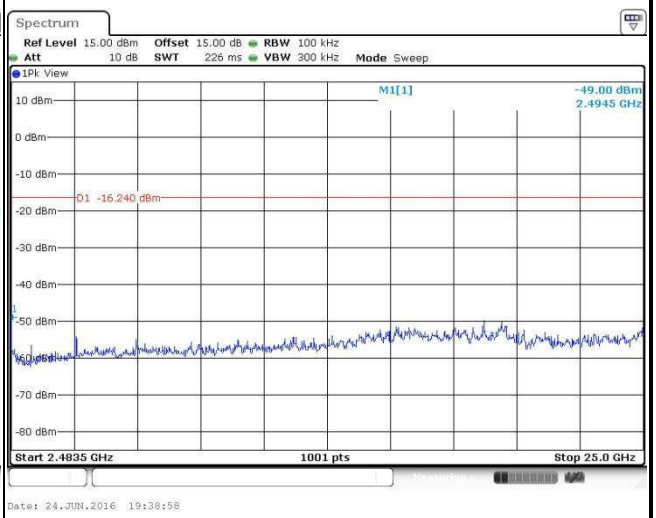
Low Channel Plot



Spurious Emission 30MHz~2.4GHz



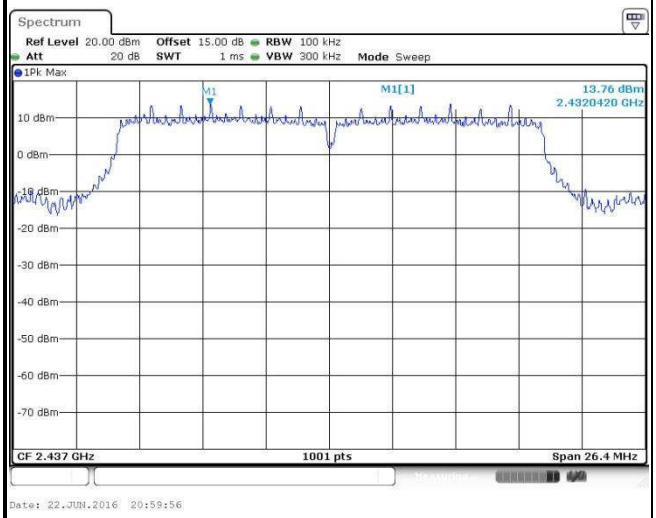
Spurious Emission 2.4835GHz~25GHz



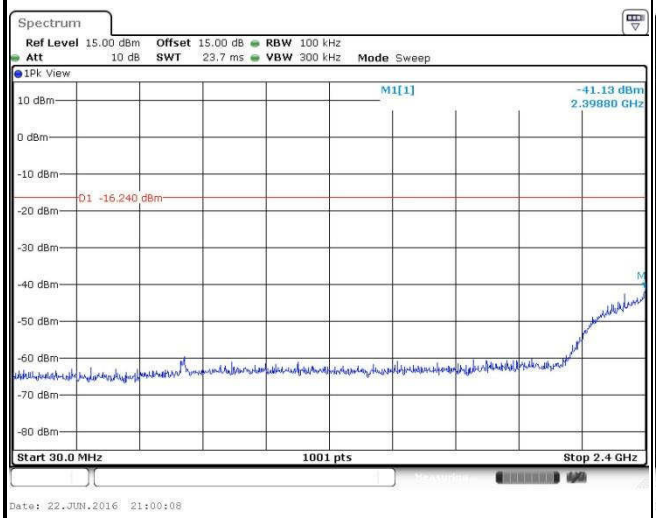
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	50~53%
Test Channel :	06	**Test Engineer :**	Tiny You

WLAN 802.11n HT20 Channel 06

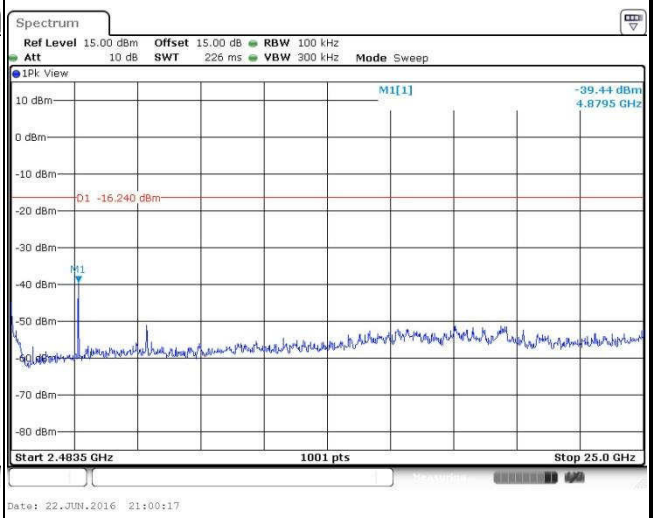
100kHz PSD reference Level



Spurious Emission 30MHz~2.4GHz



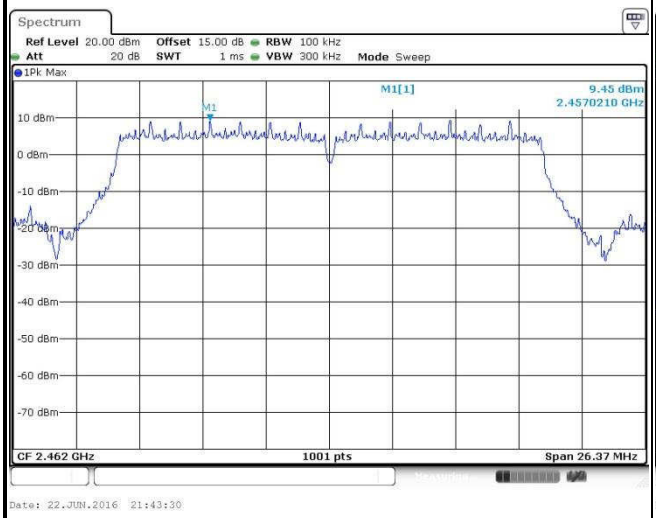
Spurious Emission 2.4835GHz~25GHz



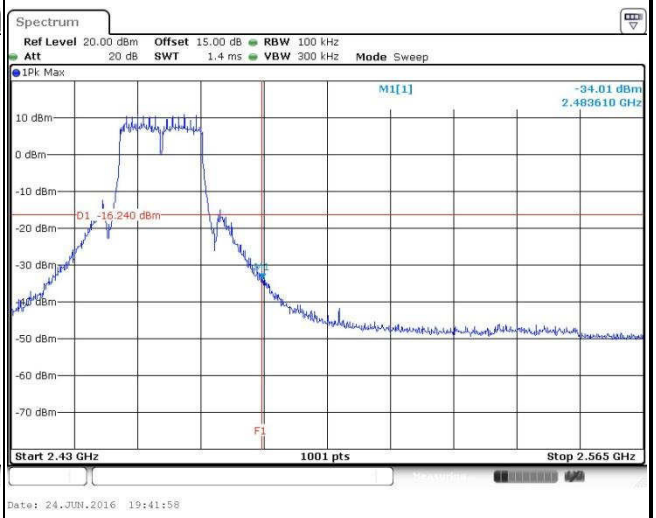
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	50~53%
Test Channel :	11	**Test Engineer :**	Tiny You

WLAN 802.11n HT20 Channel 11

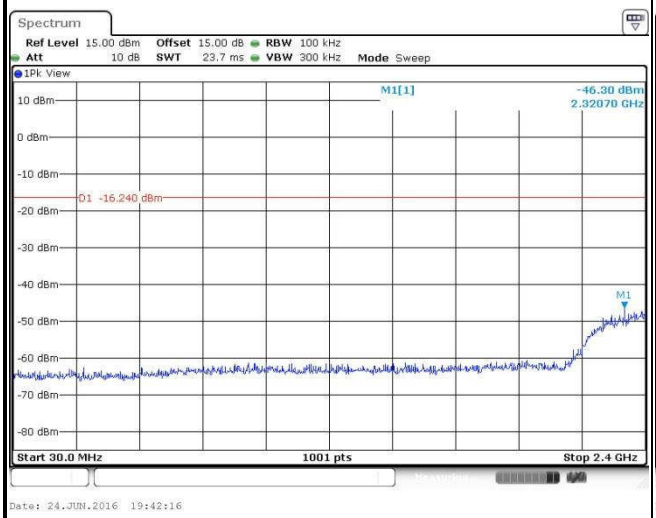
100kHz PSD reference Level



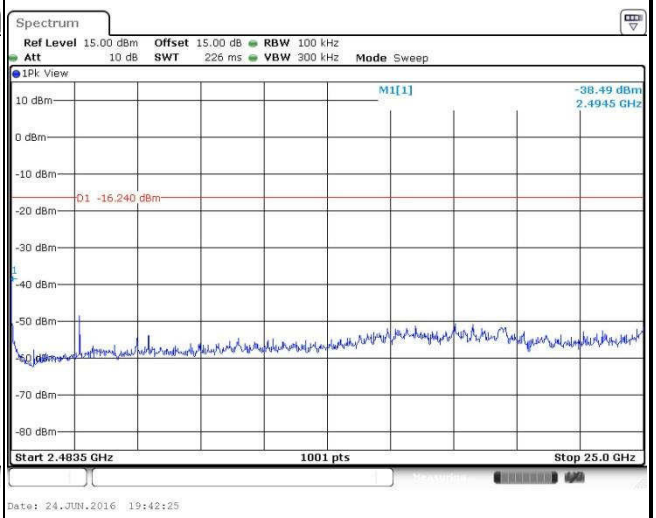
High Channel Plot



Spurious Emission 30MHz~2.4GHz



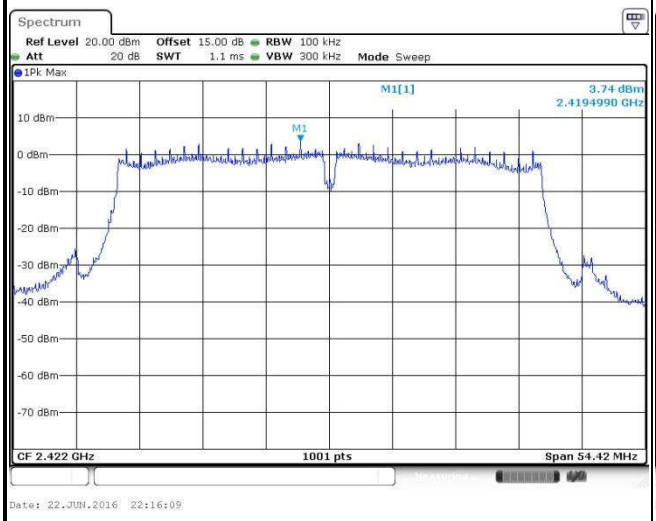
Spurious Emission 2.4835GHz~25GHz



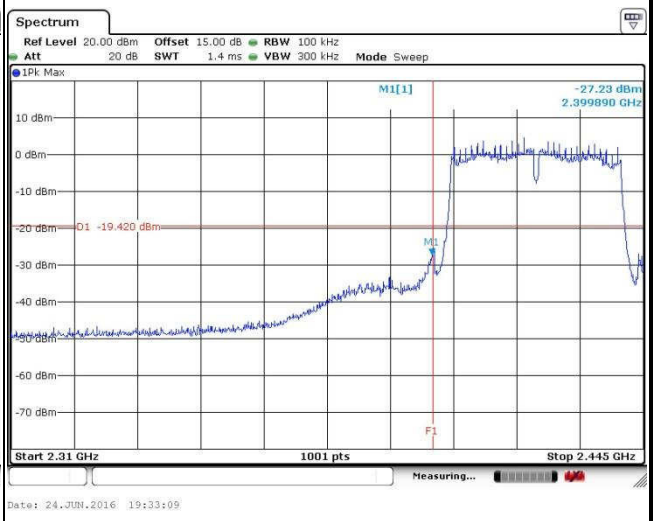
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11n HT40	**Temperature :**	24~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	50~53%
Test Channel :	03	**Test Engineer :**	Tiny You

WLAN 802.11n HT40 Channel 03

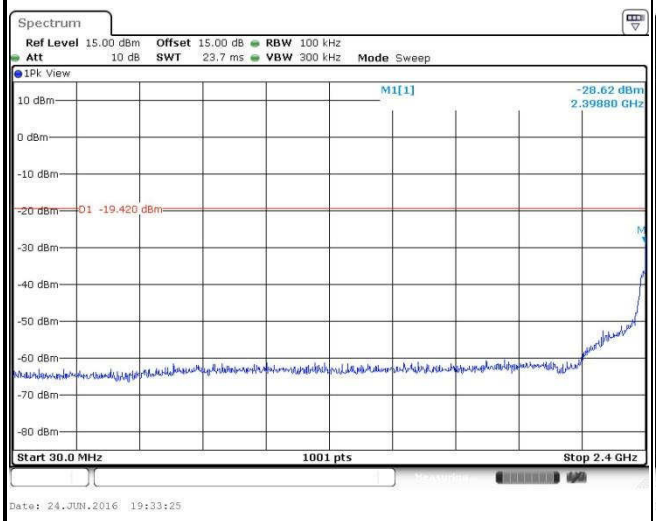
100kHz PSD reference Level



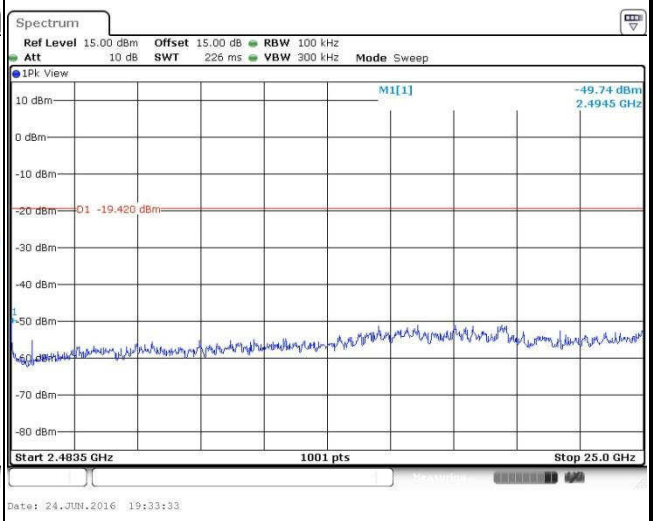
Low Channel Plot



Spurious Emission 30MHz~2.4GHz



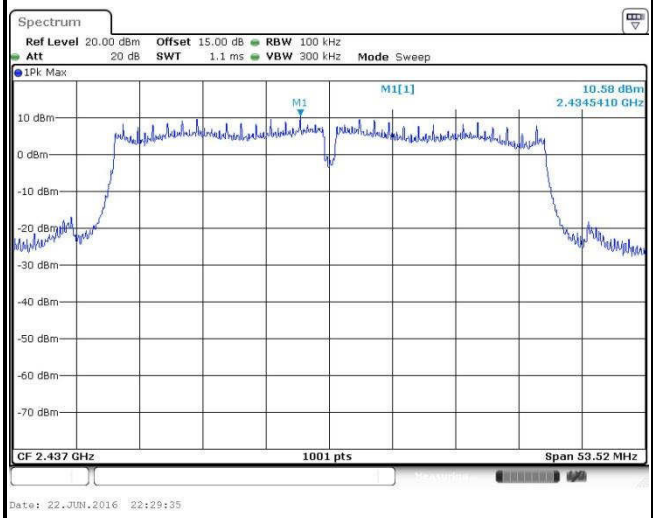
Spurious Emission 2.4835GHz~25GHz



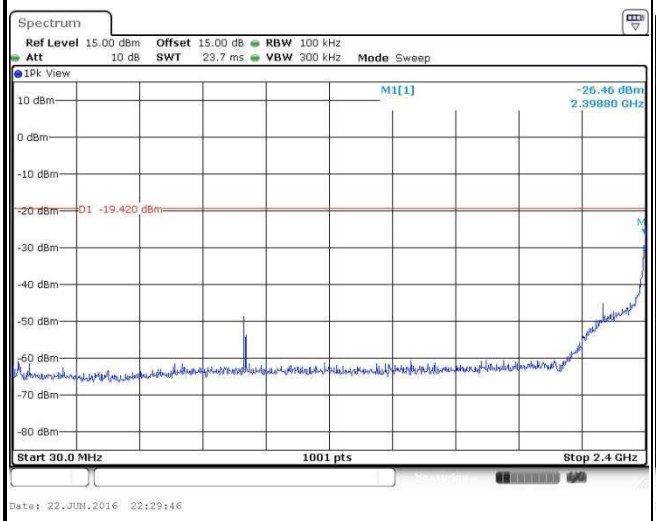
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11n HT40	**Temperature :**	24~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	50~53%
Test Channel :	06	**Test Engineer :**	Tiny You

WLAN 802.11n HT40 Channel 06

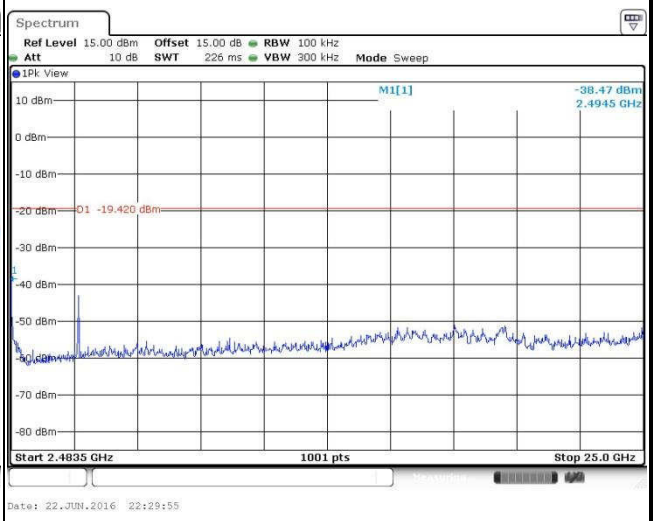
100kHz PSD reference Level



Spurious Emission 30MHz~2.4GHz



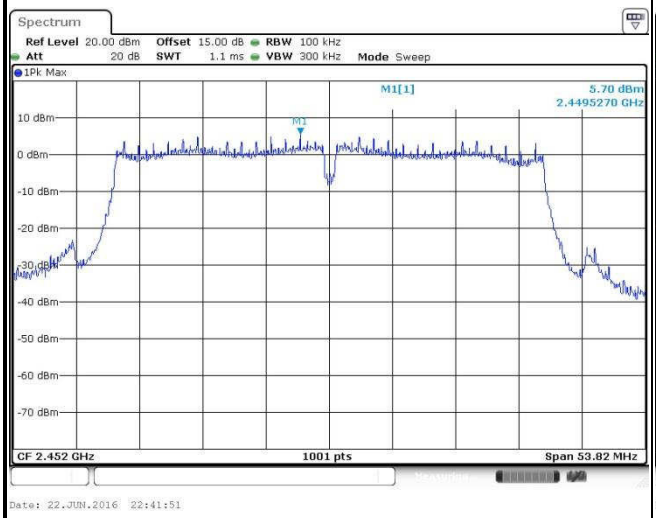
Spurious Emission 2.4835GHz~25GHz



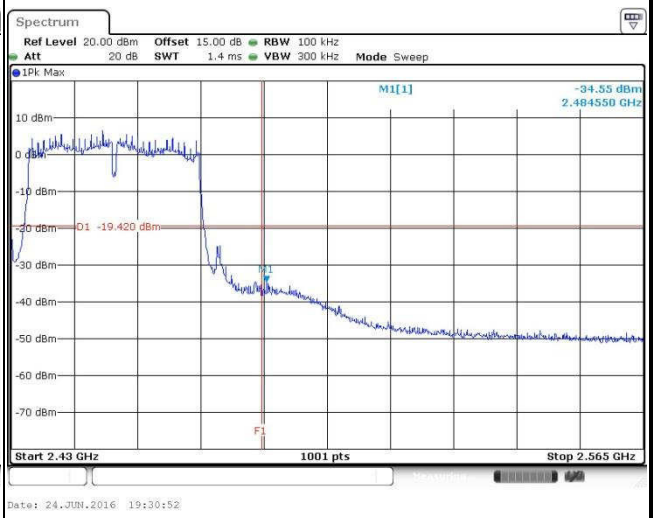
Number of TX :	3	**Ant. :**	3
Test Mode :	802.11n HT40	**Temperature :**	24~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	50~53%
Test Channel :	09	**Test Engineer :**	Tiny You

WLAN 802.11n HT40 Channel 09

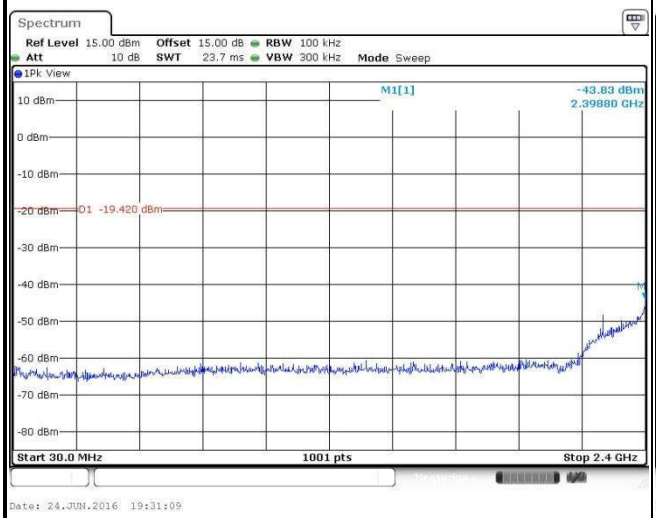
100kHz PSD reference Level



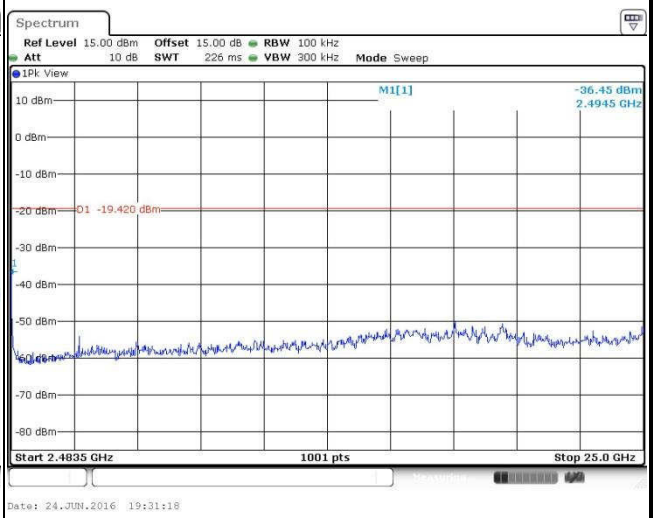
High Channel Plot



Spurious Emission 30MHz~2.4GHz



Spurious Emission 2.4835GHz~25GHz



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

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

3.5.2 Measuring Instruments

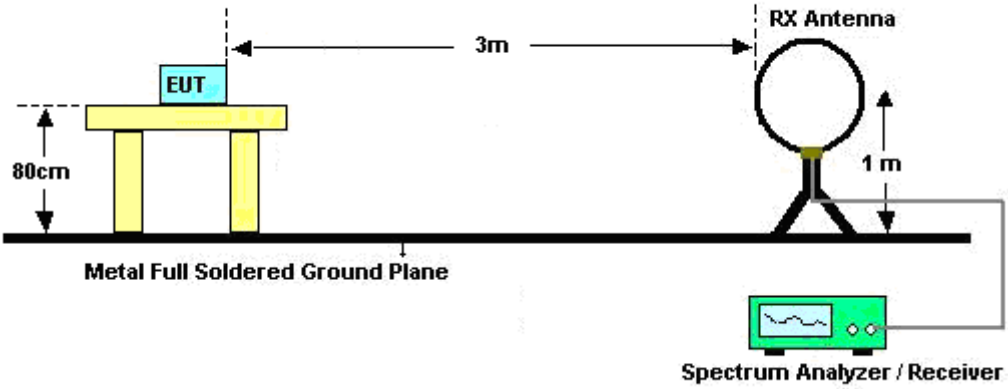
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedure

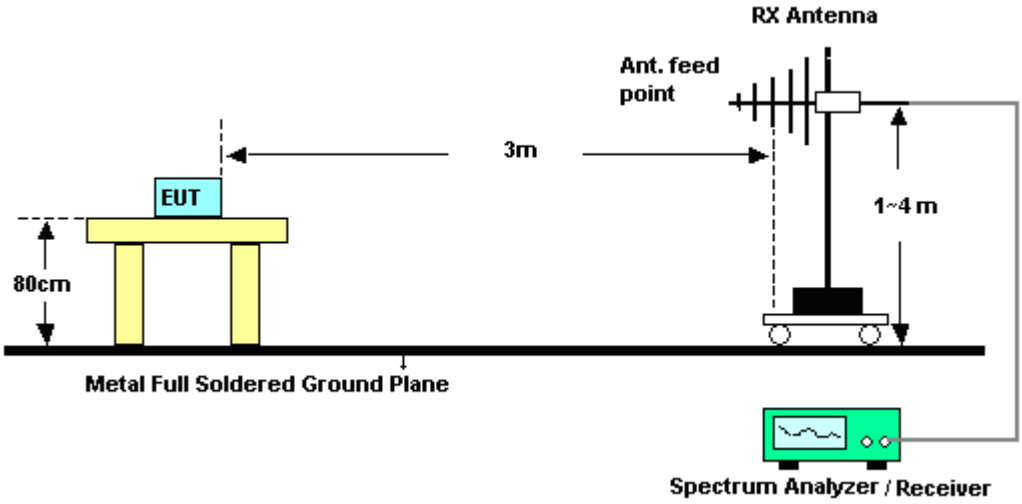
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

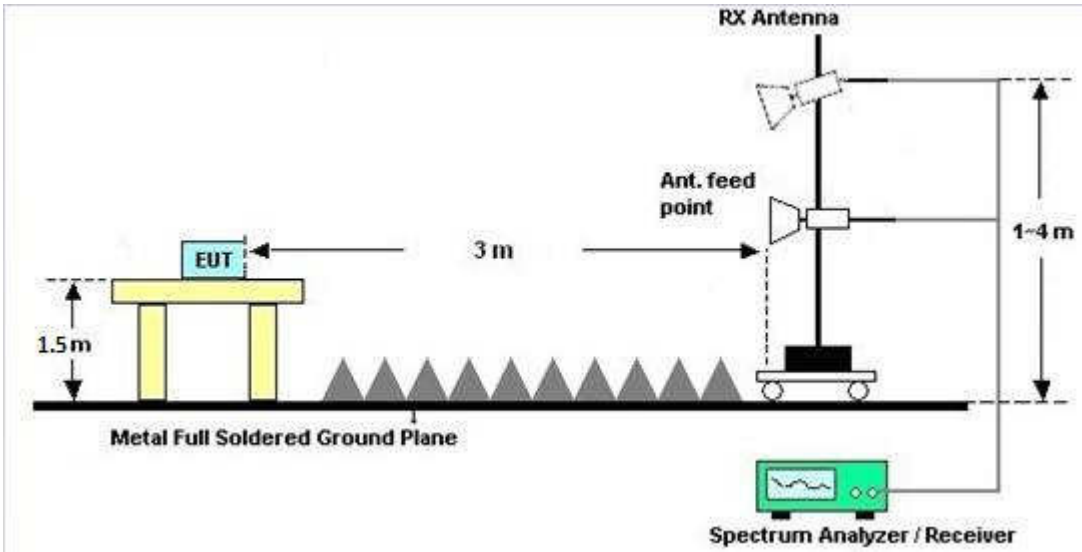
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B of this report.

3.5.7 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B of this report.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	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.

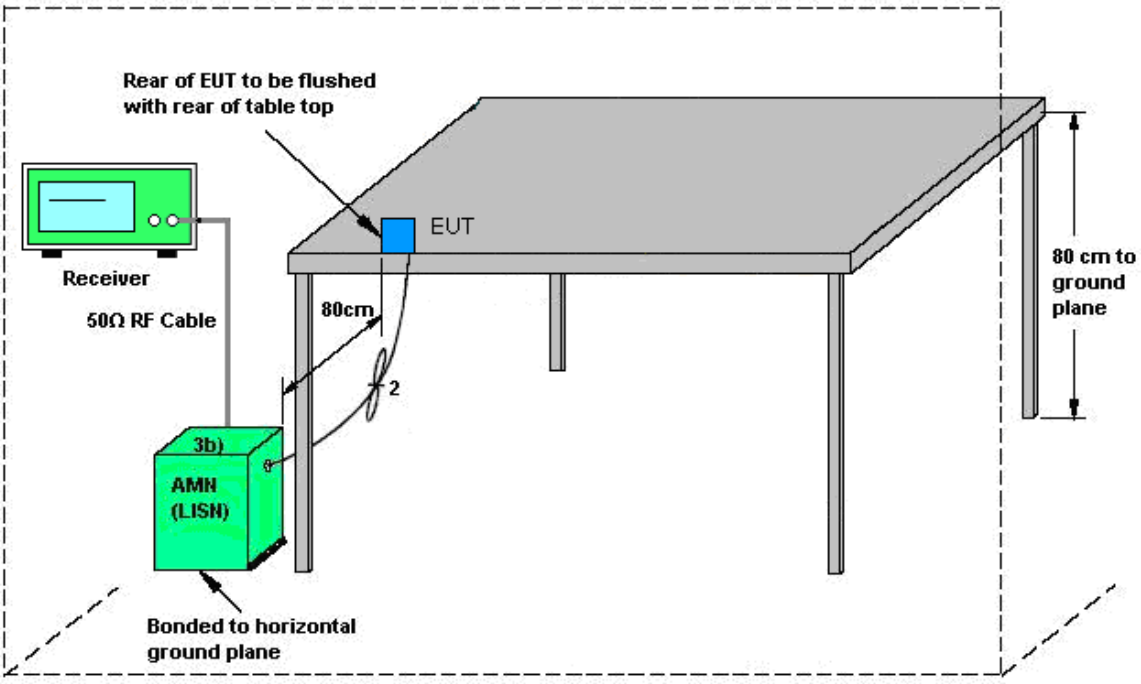
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

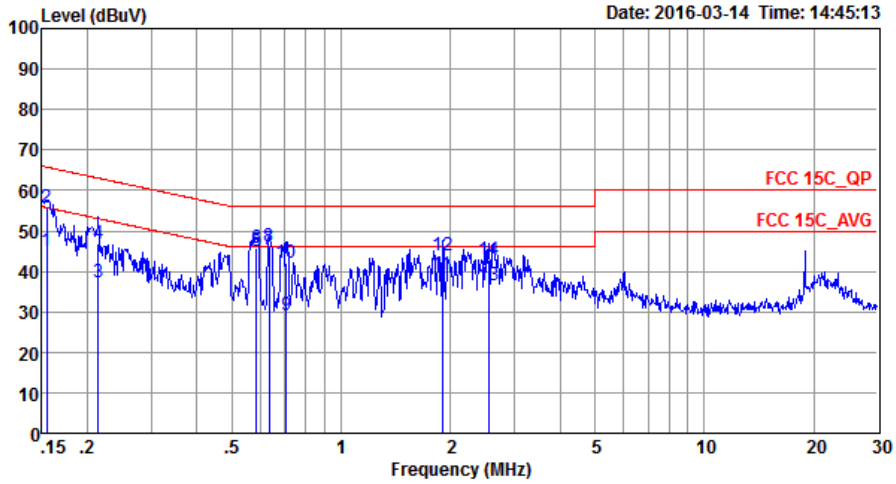
3.6.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	**Temperature :**	21~23℃
Test Engineer :	Jacky Yang	**Relative Humidity :**	41~43%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WLAN (2.4G) Link + Cable Link with Coaxial line port + LAN Link with Notebook + LAN Load + USB Link with U-dish + Adapter		

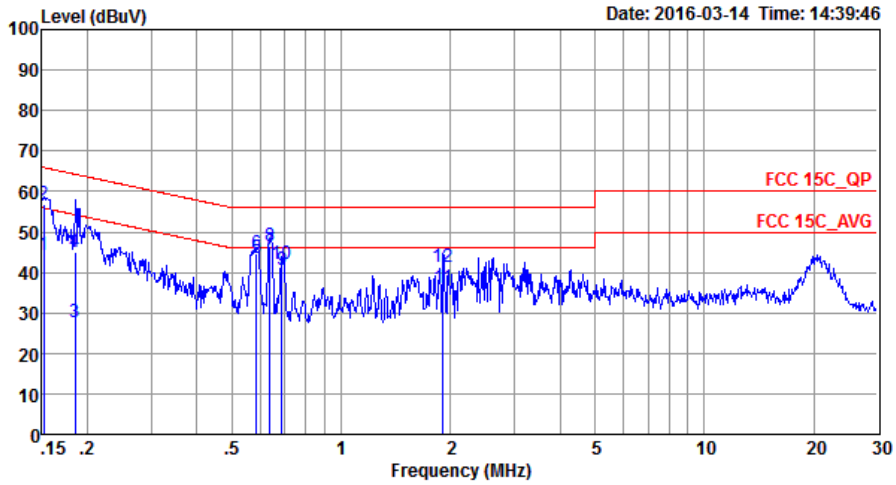


Site : CO01-SZ
Condition: FCC 15C_QP LISN_L_20160112 LINE

Mode : Mode 1
IMEI : N/A

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.15	44.89	-10.85	55.74	34.10	0.44	10.35	Average
2		0.15	55.59	-10.15	65.74	44.80	0.44	10.35	QP
3		0.21	37.41	-15.64	53.05	26.60	0.53	10.28	Average
4		0.21	46.91	-16.14	63.05	36.10	0.53	10.28	QP
5		0.59	44.96	-1.04	46.00	34.20	0.61	10.15	Average
6		0.59	45.86	-10.14	56.00	35.10	0.61	10.15	QP
7	*	0.63	45.33	-0.67	46.00	34.60	0.58	10.15	Average
8		0.63	46.03	-9.97	56.00	35.30	0.58	10.15	QP
9		0.70	28.99	-17.01	46.00	18.30	0.54	10.15	Average
10		0.70	41.99	-14.01	56.00	31.30	0.54	10.15	QP
11		1.90	39.25	-6.75	46.00	28.60	0.46	10.19	Average
12		1.90	43.85	-12.15	56.00	33.20	0.46	10.19	QP
13		2.54	36.61	-9.39	46.00	25.90	0.51	10.20	Average
14		2.54	42.91	-13.09	56.00	32.20	0.51	10.20	QP

Test Mode :	Mode 1	**Temperature :**	21~23℃
Test Engineer :	Jacky Yang	**Relative Humidity :**	41~43%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	WLAN (2.4G) Link + Cable Link with Coaxial line port + LAN Link with Notebook + LAN Load + USB Link with U-dish + Adapter		



Site : CO01-SZ
Condition: FCC 15C_QP LISN_N_20160112 NEUTRAL

Mode : Mode 1
IMEI : N/A

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.15	44.11	-11.80	55.91	33.30	0.45	10.36	Average
2		0.15	57.01	-8.90	65.91	46.20	0.45	10.36	QP
3		0.19	27.61	-26.63	54.24	16.81	0.49	10.31	Average
4		0.19	44.91	-19.33	64.24	34.11	0.49	10.31	QP
5		0.59	43.43	-2.57	46.00	32.70	0.58	10.15	Average
6		0.59	44.73	-11.27	56.00	34.00	0.58	10.15	QP
7	*	0.64	45.42	-0.58	46.00	34.70	0.57	10.15	Average
8		0.64	46.62	-9.38	56.00	35.90	0.57	10.15	QP
9		0.69	40.60	-5.40	46.00	29.90	0.55	10.15	Average
10		0.69	42.20	-13.80	56.00	31.50	0.55	10.15	QP
11		1.91	36.06	-9.94	46.00	25.30	0.57	10.19	Average
12		1.91	41.26	-14.74	56.00	30.50	0.57	10.19	QP

3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the Antenna exceeds 6 dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain “DG” is calculated as following table.

2.4G Band Antenna	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
1	3.20	3.20	0.00	0.00
2	2.10	2.10	0.00	0.00
3	1.60	1.60	0.00	0.00
1+2	3.20	5.68	0.00	0.00
1+3	3.20	5.45	0.00	0.00
2+3	2.10	4.86	0.00	0.00
1+2+3	3.20	7.10	0.00	1.10

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	9kHz~40GHz	May 07, 2016	Jun. 22, 2016~ Jun. 24, 2016	May 06, 2017	Conducted (TH01-SZ)
Pulse Power Senor	Anritsu	MA2411B	1207253	30MHz~40GHz	Jan. 12, 2016	Jun. 22, 2016~ Jun. 24, 2016	Jan. 11, 2017	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Jan. 12, 2016	Jun. 22, 2016~ Jun. 24, 2016	Jan. 11, 2017	Conducted (TH01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	May 07, 2016	Jun. 21, 2016	May 06, 2017	Radiation (03CH03-SZ)
EXA Spectrum Anaiyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	May 07, 2016	Jun. 21, 2016	May 06, 2017	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 07, 2016	Jun. 21, 2016	May 06, 2017	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz~2GHz	May 21, 2016	Jun. 21, 2016	May 20, 2017	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	May 07, 2016	Jun. 21, 2016	May 06, 2017	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Aug. 19, 2015	Jun. 21, 2016	Aug. 18, 2016	Radiation (03CH03-SZ)
Amplifier	PREAMPLIFIER	BPA-530	102210	0.01Hz ~3000MHz	Oct. 20, 2015	Jun. 21, 2016	Oct. 19, 2016	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Jan. 12, 2016	Jun. 21, 2016	Jan. 11, 2017	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 20, 2015	Jun. 21, 2016	Oct. 19, 2016	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 18, 2015	Jun. 21, 2016	Jul. 17, 2016	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Jun. 21, 2016	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jun. 21, 2016	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jun. 21, 2016	NCR	Radiation (03CH03-SZ)
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz;Max 30dBm	Oct. 20, 2015	Mar. 14, 2016	Oct. 19, 2016	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103892	9kHz~30MHz	Jan. 12, 2016	Mar. 14, 2016	Jan. 11, 2017	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	MessTec	3816/2SH	00103912	9kHz~30MHz	Jan. 12, 2016	Mar. 14, 2016	Jan. 11, 2017	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Aug. 07, 2015	Mar. 14, 2016	Aug. 06, 2016	Conduction (CO01-SZ)
Pulse Limiter	COM-POWER	LIT-153 Transient Limiter	53139	150kHz~30MHz	Oct. 20, 2015	Mar. 14, 2016	Oct. 19, 2016	Conduction (CO01-SZ)

NCR: No Calibration Required

5 Uncertainty of Evaluation

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0 dB

Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.8dB

Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB

Appendix A. Conducted Test Results

Report Number : FR631009A

Test Engineer:	Tiny You	Temperature:	24~26	°C
Test Date:	2016/6/22~2016/6/24	Relative Humidity:	50~53	%

Report Number : FR631009A

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)			6dB BW (MHz)			6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3		
11b	1Mbps	1	1	2412	11.59	11.09	11.29	8.53	8.07	8.07	0.50	Pass
11b	1Mbps	1	6	2437	10.94	10.89	10.94	8.05	8.05	8.07	0.50	Pass
11b	1Mbps	1	11	2462	10.94	10.89	10.94	8.07	8.07	8.07	0.50	Pass
11g	6Mbps	1	1	2412	18.38	18.13	18.08	16.34	16.34	16.38	0.50	Pass
11g	6Mbps	1	6	2437	18.73	18.48	18.48	16.34	16.34	16.36	0.50	Pass
11g	6Mbps	1	11	2462	18.38	18.33	18.23	16.34	16.36	16.36	0.50	Pass
HT20	MCS0	1	1	2412	18.88	18.68	18.78	17.58	17.58	17.58	0.50	Pass
HT20	MCS0	1	6	2437	19.53	18.93	19.38	17.58	17.58	17.60	0.50	Pass
HT20	MCS0	1	11	2462	19.08	18.68	18.88	17.58	17.60	17.58	0.50	Pass
HT40	MCS0	1	3	2422	36.76	36.86	36.66	36.08	36.32	36.28	0.50	Pass
HT40	MCS0	1	6	2437	36.86	36.76	36.76	35.68	35.68	35.68	0.50	Pass
HT40	MCS0	1	9	2452	36.96	36.86	36.66	35.88	35.72	35.88	0.50	Pass

TEST RESULTS DATA
Peak Output Power
(Reporting Only)

2.4GHz Band											
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)				DG (dBi)		
					Ant 1	Ant 2	Ant 3	SUM	Ant 1	Ant 2	Ant 3
11b	1Mbps	3	1	2412	28.81	28.06	28.43	33.22	3.20		
11b	1Mbps	3	6	2437	25.03	24.04	24.56	29.33	3.20		
11b	1Mbps	3	11	2462	24.65	23.41	24.14	28.87	3.20		
11g	6Mbps	3	1	2412	25.41	25.23	25.38	30.11	3.20		
11g	6Mbps	3	6	2437	30.47	30.19	30.31	35.10	3.20		
11g	6Mbps	3	11	2462	29.74	29.68	29.67	34.47	3.20		
HT20	MCS0	3	1	2412	25.76	25.37	25.74	30.40	3.20		
HT20	MCS0	3	6	2437	30.65	30.81	30.64	35.47	3.20		
HT20	MCS0	3	11	2462	28.86	28.45	29.04	33.56	3.20		
HT40	MCS0	3	3	2422	25.28	24.95	24.97	29.84	3.20		
HT40	MCS0	3	6	2437	29.46	29.23	29.96	34.33	3.20		
HT40	MCS0	3	9	2452	26.81	26.58	26.55	31.42	3.20		

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Average Output Power

2.4GHz Band																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)			Average Conducted Power with Duty Factor (dBm)				Conducted Power Limit (dBm)			Pass /Fail
					Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3	SUM	Ant 1	Ant 2	Ant 3	
11b	1Mbps	3	1	2412	0.00	0.00	0.00	25.34	24.11	24.83	29.56	30.00			Pass
11b	1Mbps	3	6	2437	0.00	0.00	0.00	20.95	20.07	20.55	25.31	30.00			Pass
11b	1Mbps	3	11	2462	0.00	0.00	0.00	20.84	19.55	20.43	25.08	30.00			Pass
11g	6Mbps	3	1	2412	0.00	0.00	0.00	14.82	14.07	14.21	19.15	30.00			Pass
11g	6Mbps	3	6	2437	0.00	0.00	0.00	23.07	22.06	22.75	27.42	30.00			Pass
11g	6Mbps	3	11	2462	0.00	0.00	0.00	21.37	20.69	21.01	25.80	30.00			Pass
HT20	MCS0	3	1	2412	0.00	0.00	0.00	15.56	14.54	14.72	19.73	30.00			Pass
HT20	MCS0	3	6	2437	0.00	0.00	0.00	23.64	22.60	23.33	27.98	30.00			Pass
HT20	MCS0	3	11	2462	0.00	0.00	0.00	19.67	18.86	19.39	24.09	30.00			Pass
HT40	MCS0	3	3	2422	0.00	0.00	0.00	15.06	14.57	14.70	19.55	30.00			Pass
HT40	MCS0	3	6	2437	0.00	0.00	0.00	21.07	20.11	21.01	25.52	30.00			Pass
HT40	MCS0	3	9	2452	0.00	0.00	0.00	16.80	16.27	16.58	21.33	30.00			Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Average Power Spectral Density

2.4GHz Band															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average PSD (dBm/10kHz)				DG (dBi)			Average PSD Limit (dBm/10kHz)			Pass/Fail
					Ant 1	Ant 2	Ant 3	Worse + 3.01	Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3	
11b	1Mbps	3	1	2412	0.87	-0.64	0.56	5.64	7.10			6.90			Pass
11b	1Mbps	3	6	2437	-2.77	-4.26	-3.59	2.00	7.10			6.90			Pass
11b	1Mbps	3	11	2462	-3.43	-5.15	-3.88	1.34	7.10			6.90			Pass
11g	6Mbps	3	1	2412	-11.00	-11.70	-11.74	-6.23	7.10			6.90			Pass
11g	6Mbps	3	6	2437	-3.51	-5.28	-4.51	1.26	7.10			6.90			Pass
11g	6Mbps	3	11	2462	-4.85	-6.42	-5.87	-0.08	7.10			6.90			Pass
HT20	MCS0	3	1	2412	-10.93	-11.26	-11.55	-6.16	7.10			6.90			Pass
HT20	MCS0	3	6	2437	-3.03	-5.13	-4.08	1.74	7.10			6.90			Pass
HT20	MCS0	3	11	2462	-6.91	-8.40	-7.99	-2.14	7.10			6.90			Pass
HT40	MCS0	3	3	2422	-13.05	-14.25	-13.91	-8.28	7.10			6.90			Pass
HT40	MCS0	3	6	2437	-7.28	-7.52	-8.50	-2.51	7.10			6.90			Pass
HT40	MCS0	3	9	2452	-11.56	-11.90	-12.34	-6.79	7.10			6.90			Pass

Measured power density (dBm) has offset with cable loss.

Appendix B. Radiated Spurious Emission

15C 2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	60.21	-13.79	74	63.17	27.25	4.79	35	218	181	P	H
		2390	52.39	-1.61	54	55.35	27.25	4.79	35	218	181	A	H
	*	2412	114.44	-	-	117.31	27.31	4.82	35	218	181	P	H
	*	2412	110.12	-	-	112.99	27.31	4.82	35	218	181	A	H
		2390	61.96	-12.04	74	64.92	27.25	4.79	35	195	278	P	V
		2389.74	53.43	-0.57	54	56.41	27.25	4.79	35.02	195	278	A	V
	*	2412	114.38	-	-	117.25	27.31	4.82	35	195	278	P	V
	*	2412	110.5	-	-	113.37	27.31	4.82	35	195	278	A	V
802.11b CH 06 2437MHz		2357.16	60.59	-13.41	74	63.69	27.13	4.82	35.05	208	92	P	H
		2357.07	50.85	-3.15	54	53.95	27.13	4.82	35.05	208	92	A	H
	*	2437	115.25	-	-	117.92	27.42	4.88	34.97	208	92	P	H
	*	2437	111.43	-	-	114.1	27.42	4.88	34.97	208	92	A	H
		2484.04	58.32	-15.68	74	60.8	27.54	4.9	34.92	208	92	P	H
		2483.64	46.51	-7.49	54	48.99	27.54	4.9	34.92	208	92	A	H
		2385.15	59.18	-14.82	74	62.15	27.19	4.86	35.02	229	172	P	V
		2357.07	50.17	-3.83	54	53.27	27.13	4.82	35.05	229	172	A	V
	*	2437	116.46	-	-	119.13	27.42	4.88	34.97	229	172	P	V
	*	2437	112.15	-	-	114.82	27.42	4.88	34.97	229	172	A	V
		2488.2	58.48	-15.52	74	60.88	27.6	4.92	34.92	229	172	P	V
		2483.76	46.17	-7.83	54	48.65	27.54	4.9	34.92	229	172	A	V

802.11b CH 11 2462MHz	*	2462	114.48	-	-	117.05	27.48	4.9	34.95	235	92	P	H
	*	2462	110.61	-	-	113.18	27.48	4.9	34.95	235	92	A	H
		2483.6	60.73	-13.27	74	63.21	27.54	4.9	34.92	235	92	P	H
		2483.52	51	-3	54	53.48	27.54	4.9	34.92	235	92	A	H
	*	2462	114.91	-	-	117.48	27.48	4.9	34.95	221	110	P	V
	*	2462	110.99	-	-	113.56	27.48	4.9	34.95	221	110	A	V
		2483.92	60.18	-13.82	74	62.66	27.54	4.9	34.92	221	110	P	V
		2483.52	50.03	-3.97	54	52.51	27.54	4.9	34.92	221	110	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

15C 2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	45.07	-28.93	74	65.44	31.05	6.97	58.39	150	0	P	H
		4824	45.16	-28.84	74	65.53	31.05	6.97	58.39	150	0	P	V
802.11b CH 06 2437MHz		4874	42.96	-31.04	74	63.51	31.12	6.99	58.66	156	0	P	H
		7311	61.13	-12.87	74	74.86	35.96	8.93	58.62	178	116	P	H
		7311	53.17	-0.83	54	66.9	35.96	8.93	58.62	178	116	A	H
		4874	40.42	-33.58	74	60.97	31.12	6.99	58.66	150	0	P	V
		7311	52	-22	74	65.73	35.96	8.93	58.62	150	0	P	V
		7311	45.17	-8.83	54	58.9	35.96	8.93	58.62	207	0	A	V
802.11b CH 11 2462MHz		4924	41.9	-32.1	74	62.23	31.19	7	58.52	250	0	P	H
		7386	56.66	-17.34	74	69.97	36.08	9.15	58.54	150	0	P	H
		7386	53.07	-0.93	54	66.38	36.08	9.15	58.54	150	0	A	H
		4924	42.65	-31.35	74	62.98	31.19	7	58.52	150	360	P	V
		7386	51.7	-22.3	74	65.01	36.08	9.15	58.54	250	0	P	V
		7386	43.59	-10.41	54	56.9	36.08	9.15	58.54	194	193	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

15C 2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2390	70.56	-3.44	74	73.52	27.25	4.79	35	150	85	P	H
		2390	53.18	-0.82	54	56.14	27.25	4.79	35	150	85	A	H
	*	2412	109.85	-	-	112.72	27.31	4.82	35	150	85	P	H
	*	2412	101.67	-	-	104.54	27.31	4.82	35	150	85	A	H
		2385.42	62.6	-11.4	74	65.64	27.19	4.79	35.02	150	179	P	V
		2386.59	47.39	-6.61	54	50.37	27.25	4.79	35.02	150	179	A	V
	*	2412	107.72	-	-	110.59	27.31	4.82	35	150	179	P	V
	*	2412	100.2	-	-	103.07	27.31	4.82	35	150	179	A	V
802.11g CH 06 2437MHz		2385.24	57.8	-16.2	74	60.84	27.19	4.79	35.02	150	82	P	H
		2389.83	46.02	-7.98	54	48.98	27.25	4.79	35	150	82	A	H
	*	2437	114.29	-	-	117.02	27.42	4.82	34.97	150	82	P	H
	*	2437	105.75	-	-	108.48	27.42	4.82	34.97	150	82	A	H
		2486.08	57.98	-16.02	74	60.51	27.54	4.85	34.92	150	82	P	H
		2484.6	44.35	-9.65	54	46.88	27.54	4.85	34.92	150	82	A	H
		2382.36	60.82	-13.18	74	63.86	27.19	4.79	35.02	150	177	P	V
		2390	47.14	-6.86	54	50.1	27.25	4.79	35	150	177	A	V
	*	2437	115.1	-	-	117.83	27.42	4.82	34.97	150	177	P	V
	*	2437	106.93	-	-	109.66	27.42	4.82	34.97	150	177	A	V
		2486.32	59.19	-14.81	74	61.72	27.54	4.85	34.92	150	177	P	V
		2491.2	45.49	-8.51	54	47.92	27.6	4.89	34.92	150	177	A	V

802.11g CH 11 2462MHz	*	2462	113.6	-	-	116.22	27.48	4.85	34.95	150	82	P	H
	*	2462	104.93	-	-	107.55	27.48	4.85	34.95	150	82	A	H
		2484.24	71.65	-2.35	74	74.18	27.54	4.85	34.92	150	82	P	H
		2483.52	52.99	-1.01	54	55.52	27.54	4.85	34.92	150	82	A	H
	*	2462	111.63	-	-	114.25	27.48	4.85	34.95	150	181	P	V
	*	2462	103.21	-	-	105.83	27.48	4.85	34.95	150	181	A	V
		2486	68.63	-5.37	74	71.16	27.54	4.85	34.92	150	181	P	V
		2483.56	53.59	-0.41	54	56.12	27.54	4.85	34.92	150	181	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

15C 2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	40.87	-33.13	74	61.24	31.05	6.97	58.39	250	0	P	H
		4824	38.86	-35.14	74	59.23	31.05	6.97	58.39	250	0	P	V
802.11g CH 06 2437MHz		4874	41.64	-32.36	74	62.19	31.12	6.99	58.66	250	0	P	H
		7311	61.1	-12.9	74	74.83	35.96	8.93	58.62	150	0	P	H
		7311	53.02	-0.98	54	66.75	35.96	8.93	58.62	165	191	A	H
		4874	38.93	-35.07	74	59.48	31.12	6.99	58.66	250	0	P	V
		7311	55.67	-18.33	74	69.4	35.96	8.93	58.62	150	0	P	V
		7311	44.97	-9.03	54	58.7	35.96	8.93	58.62	179	189	A	V
802.11g CH 11 2462MHz		4924	41.57	-32.43	74	61.9	31.19	7	58.52	180	0	P	H
		7386	61.47	-12.53	74	74.78	36.08	9.15	58.54	150	0	P	H
		7386	51.7	-2.3	54	65.01	36.08	9.15	58.54	187	215	A	H
		4924	39.07	-34.93	74	59.4	31.19	7	58.52	150	0	P	V
		7386	55.26	-18.74	74	68.57	36.08	9.15	58.54	180	0	P	V
		7386	43.49	-10.51	54	56.8	36.08	9.15	58.54	174	17	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

15C 2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		2390	67.06	-6.94	74	70.02	27.25	4.79	35	197	86	P	H
		2390	53.65	-0.35	54	56.61	27.25	4.79	35	197	86	A	H
	*	2412	110.8	-	-	113.67	27.31	4.82	35	197	86	P	H
	*	2412	102.42	-	-	105.29	27.31	4.82	35	197	86	A	H
		2390	67.42	-6.58	74	70.38	27.25	4.79	35	150	174	P	V
		2390	53.58	-0.42	54	56.54	27.25	4.79	35	150	174	A	V
	*	2412	107.18	-	-	110.05	27.31	4.82	35	150	174	P	V
	*	2412	99.86	-	-	102.73	27.31	4.82	35	150	174	A	V
802.11n HT20 CH 06 2437MHz		2386.5	64.87	-9.13	74	67.78	27.25	4.86	35.02	240	90	P	H
		2390	52.69	-1.31	54	55.58	27.25	4.86	35	240	90	A	H
	*	2437	119.79	-	-	122.46	27.42	4.88	34.97	240	90	P	H
	*	2437	112.35	-	-	115.02	27.42	4.88	34.97	240	90	A	H
		2486.52	64.94	-9.06	74	67.42	27.54	4.9	34.92	240	90	P	H
		2485.92	50.81	-3.19	54	53.29	27.54	4.9	34.92	240	90	A	H
		2387.31	63.26	-10.74	74	66.17	27.25	4.86	35.02	241	178	P	V
		2390	51.21	-2.79	54	54.1	27.25	4.86	35	241	178	A	V
	*	2437	118	-	-	120.67	27.42	4.88	34.97	241	178	P	V
	*	2437	110.63	-	-	113.3	27.42	4.88	34.97	241	178	A	V
		2486.04	64.37	-9.63	74	66.85	27.54	4.9	34.92	241	178	P	V
		2486.48	49.84	-4.16	54	52.32	27.54	4.9	34.92	241	178	A	V

802.11n HT20 CH 11 2462MHz	*	2462	110.05	-	-	112.67	27.48	4.85	34.95	215	83	P	H
	*	2462	101.9	-	-	104.52	27.48	4.85	34.95	215	83	A	H
		2486	65.84	-8.16	74	68.37	27.54	4.85	34.92	215	83	P	H
		2483.52	51.34	-2.66	54	53.87	27.54	4.85	34.92	215	83	A	H
	*	2462	108.22	-	-	110.84	27.48	4.85	34.95	190	182	P	V
	*	2462	100.01	-	-	102.63	27.48	4.85	34.95	190	182	A	V
		2483.64	70.39	-3.61	74	72.92	27.54	4.85	34.92	190	182	P	V
		2483.52	53.67	-0.33	54	56.2	27.54	4.85	34.92	190	182	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

15C 2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		4824	39.46	-34.54	74	59.83	31.05	6.97	58.39	250	0	P	H
		4824	38.58	-35.42	74	58.95	31.05	6.97	58.39	250	0	P	V
802.11n HT20 CH 06 2437MHz		4874	43.18	-30.82	74	63.73	31.12	6.99	58.66	250	0	P	H
		7311	65.14	-8.86	74	78.87	35.96	8.93	58.62	150	128	P	H
		7311	52.89	-1.11	54	66.62	35.96	8.93	58.62	150	128	A	H
		4874	39.19	-34.81	74	59.74	31.12	6.99	58.66	250	0	P	V
		7311	55.16	-18.84	74	68.89	35.96	8.93	58.62	150	290	P	V
		7311	41.74	-12.26	54	55.47	35.96	8.93	58.62	150	290	A	V
802.11n HT20 CH 11 2462MHz		4924	39.36	-34.64	74	59.69	31.19	7	58.52	250	0	P	H
		7386	60.75	-13.25	74	74.06	36.08	9.15	58.54	150	0	P	H
		7386	47.23	-6.77	54	60.54	36.08	9.15	58.54	150	0	A	H
		4924	39.87	-34.13	74	60.2	31.19	7	58.52	250	0	P	V
		7386	49.04	-24.96	74	62.35	36.08	9.15	58.54	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

15C 2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 03 2422MHz		2386.23	67.66	-6.34	74	70.64	27.25	4.79	35.02	221	83	P	H
		2386.41	53.7	-0.3	54	56.68	27.25	4.79	35.02	221	83	A	H
	*	2422	103.03	-	-	105.81	27.37	4.82	34.97	221	83	P	H
	*	2422	95.94	-	-	98.72	27.37	4.82	34.97	221	83	A	H
		2486.24	51.1	-22.9	74	53.63	27.54	4.85	34.92	221	83	P	H
		2486.72	40.92	-13.08	54	43.45	27.54	4.85	34.92	221	83	A	H
		2387.67	64.52	-9.48	74	67.5	27.25	4.79	35.02	163	179	P	V
		2385.87	50.69	-3.31	54	53.67	27.25	4.79	35.02	163	179	A	V
	*	2422	100.55	-	-	103.33	27.37	4.82	34.97	163	179	P	V
	*	2422	92.64	-	-	95.42	27.37	4.82	34.97	163	179	A	V
		2485.2	51.07	-22.93	74	53.6	27.54	4.85	34.92	163	179	P	V
		2485.68	40.54	-13.46	54	43.07	27.54	4.85	34.92	163	179	A	V
802.11n HT40 CH 06 2437MHz		2386.77	66.24	-7.76	74	69.22	27.25	4.79	35.02	220	86	P	H
		2386.5	53.27	-0.73	54	56.25	27.25	4.79	35.02	220	86	A	H
	*	2437	108.63	-	-	111.36	27.42	4.82	34.97	220	86	P	H
	*	2437	101.06	-	-	103.79	27.42	4.82	34.97	220	86	A	H
		2485.68	65.53	-8.47	74	68.06	27.54	4.85	34.92	220	86	P	H
		2486.04	51.78	-2.22	54	54.31	27.54	4.85	34.92	220	86	A	H
		2385.78	63.91	-10.09	74	66.89	27.25	4.79	35.02	183	175	P	V
		2390	52.93	-1.07	54	55.89	27.25	4.79	35	183	175	A	V
	*	2437	106.89	-	-	109.62	27.42	4.82	34.97	183	175	P	V
	*	2437	99.07	-	-	101.8	27.42	4.82	34.97	183	175	A	V
		2487.32	66.88	-7.12	74	69.41	27.54	4.85	34.92	183	175	P	V
		2483.52	52.6	-1.4	54	55.13	27.54	4.85	34.92	183	175	A	V

802.11n HT40 CH 09 2452MHz		2385.51	52.86	-21.14	74	55.84	27.25	4.79	35.02	232	82	P	H
		2386.95	42.86	-11.14	54	45.84	27.25	4.79	35.02	232	82	A	H
	*	2452	104.75	-	-	107.43	27.42	4.85	34.95	232	82	P	H
	*	2452	97.32	-	-	100	27.42	4.85	34.95	232	82	A	H
		2485.76	70.11	-3.89	74	72.64	27.54	4.85	34.92	232	82	P	H
		2486.2	53.57	-0.43	54	56.1	27.54	4.85	34.92	232	82	A	H
		2386.86	52.53	-21.47	74	55.51	27.25	4.79	35.02	150	175	P	V
		2389.92	41.45	-12.55	54	44.41	27.25	4.79	35	150	175	A	V
	*	2452	104.48	-	-	107.16	27.42	4.85	34.95	150	175	P	V
	*	2452	95.13	-	-	97.81	27.42	4.85	34.95	150	175	A	V
		2486.48	69.83	-4.17	74	72.36	27.54	4.85	34.92	150	175	P	V
		2486.16	51.92	-2.08	54	54.45	27.54	4.85	34.92	150	175	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

15C 2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 03 2422MHz		4844	38.09	-35.91	74	38.09	0	0	0	250	0	P	H
		7266	47.16	-26.84	74	47.16	0	0	0	150	0	P	H
		4844	36.77	-37.23	74	36.77	0	0	0	250	0	P	V
		7266	46.1	-27.9	74	46.1	0	0	0	150	0	P	V
802.11n HT40 CH 06 2437MHz		4874	39.33	-34.67	74	59.88	31.12	6.99	58.66	250	0	P	H
		7311	56.34	-17.66	74	70.07	35.96	8.93	58.62	150	42	P	H
		7311	45.77	-8.23	54	59.5	35.96	8.93	58.62	150	42	A	H
		4874	38.56	-35.44	74	59.11	31.12	6.99	58.66	250	0	P	V
		7311	46.55	-27.45	74	60.28	35.96	8.93	58.62	150	0	P	V
802.11n HT40 CH 09 2452MHz		4904	39.02	-34.98	74	59.49	31.17	7	58.64	250	0	P	H
		7356	49.43	-24.57	74	62.93	36.03	9.04	58.57	150	0	P	H
		4904	39	-35	74	59.47	31.17	7	58.64	250	0	P	V
		7356	46.5	-27.5	74	60	36.03	9.04	58.57	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

15C Emission below 1GHz

2.4GHz WIFI 802.11n HT40 (LF)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11n HT40 LF		158.04	28.79	-14.71	43.5	42.01	17.02	1.15	31.39	-	-	P	H
		253.1	30.11	-15.89	46	41.82	18.08	1.5	31.29	-	-	P	H
		408.3	30.89	-15.11	46	37.68	22.62	1.82	31.23	-	-	P	H
		624.61	32.12	-13.88	46	36.09	24.97	2.3	31.24	-	-	P	H
		801.15	35.78	-10.22	46	38.22	26.21	2.59	31.24	100	200	P	H
		874.87	33.92	-12.08	46	35.61	26.87	2.71	31.27	-	-	P	H
		53.28	33.28	-6.72	40	50.05	14.12	0.83	31.72	100	300	P	V
		137.67	29.19	-14.31	43.5	42.03	17.47	1.15	31.46	-	-	P	V
		223.03	25.57	-20.43	46	38.48	16.96	1.4	31.27	-	-	P	V
		394.72	29.25	-16.75	46	36.3	22.37	1.82	31.24	-	-	P	V
		486.87	30.55	-15.45	46	36.01	23.71	1.99	31.16	-	-	P	V
		874.87	34.45	-11.55	46	36.14	26.87	2.71	31.27	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

*	**Fundamental Frequency** which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency per 15.209(c).
!	Test result is **over limit** line.
P/A	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

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

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

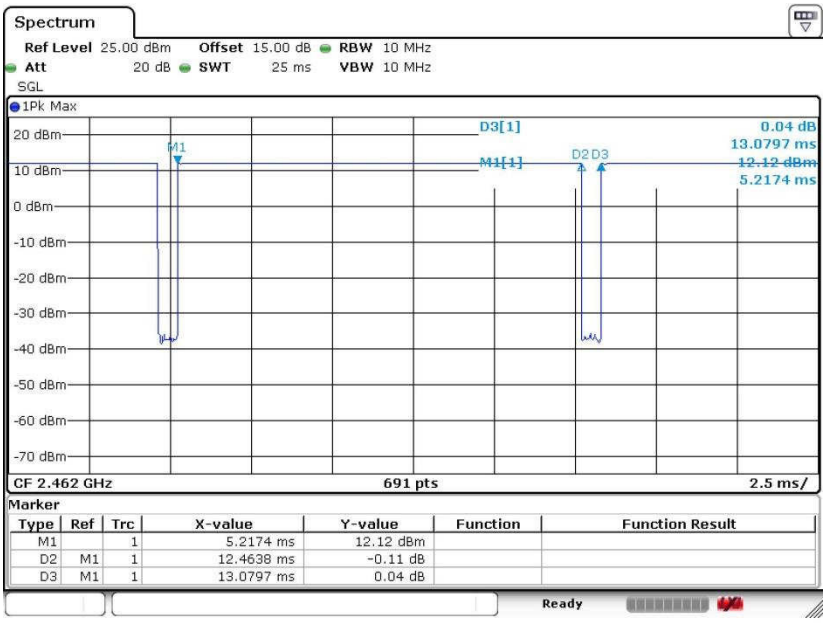
= -10.46(dB)

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

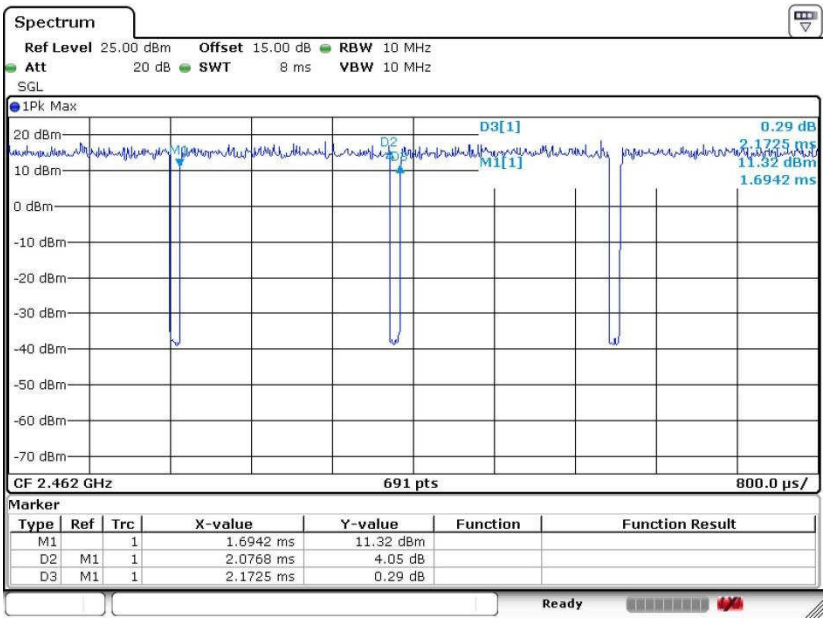
Appendix C. Duty Cycle Plots

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
2.4GHz 802.11b	95.29	12.46	0.08	100Hz
2.4GHz 802.11g	95.59	2.08	0.48	1KHz
2.4GHz 802.11n HT20	95.14	1.92	0.52	1KHz
2.4GHz 802.11n HT40	90.17	0.94	1.06	3KHz

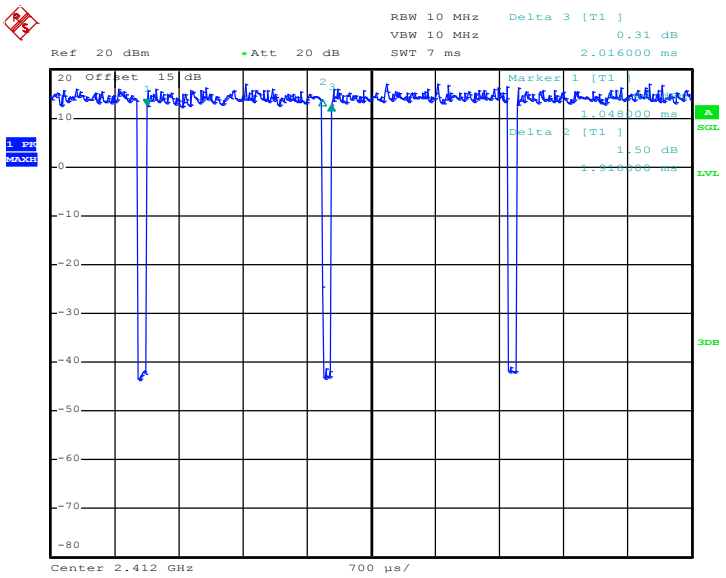
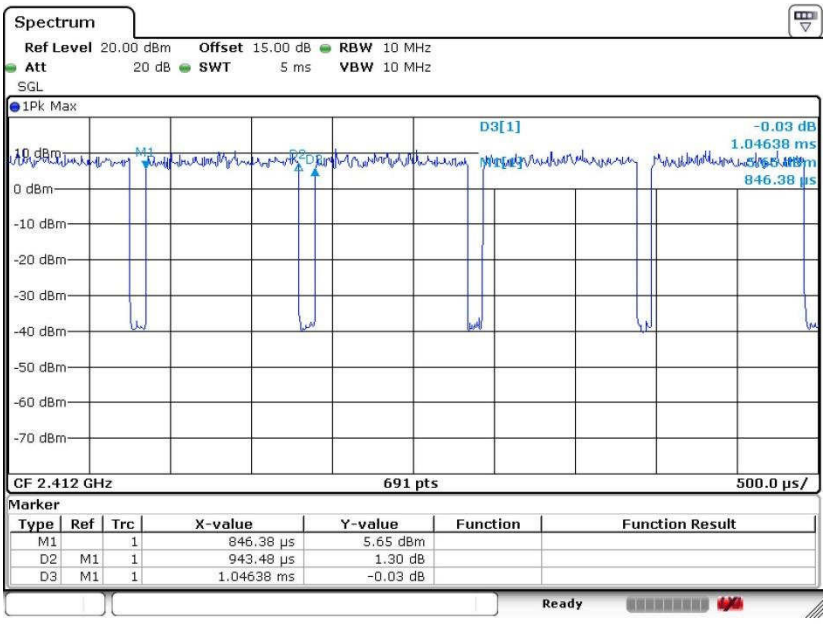
802.11b



802.11g



802.11n HT20



802.11n HT40