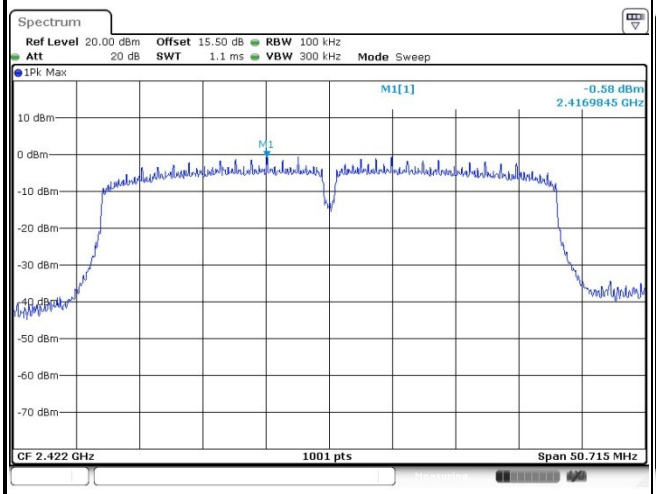
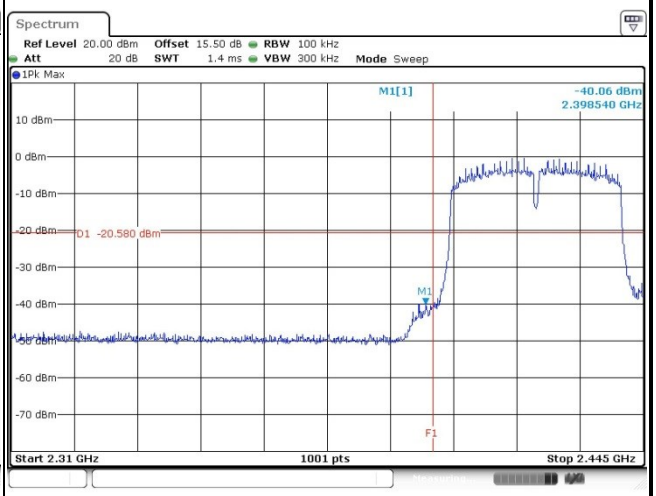
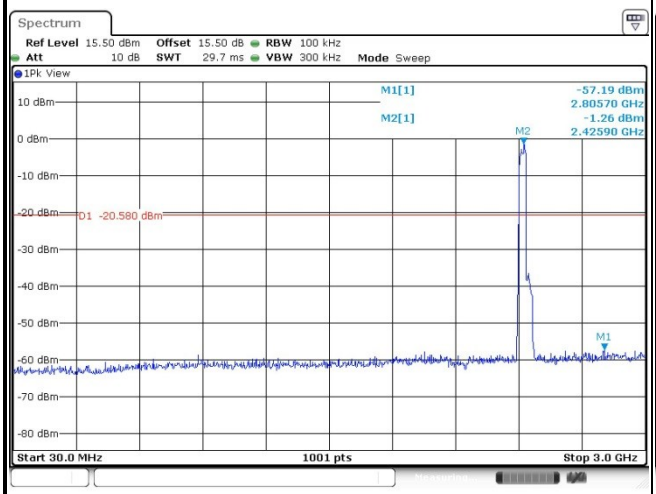
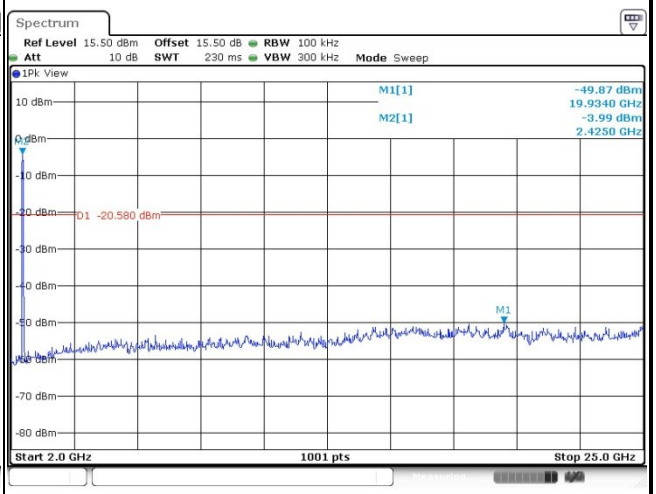
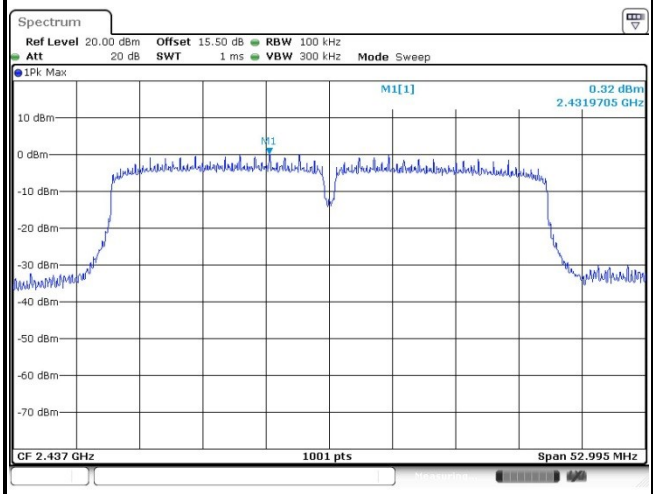
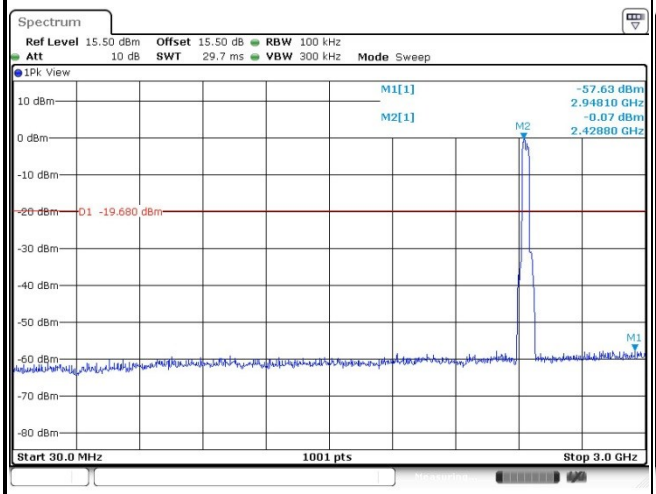
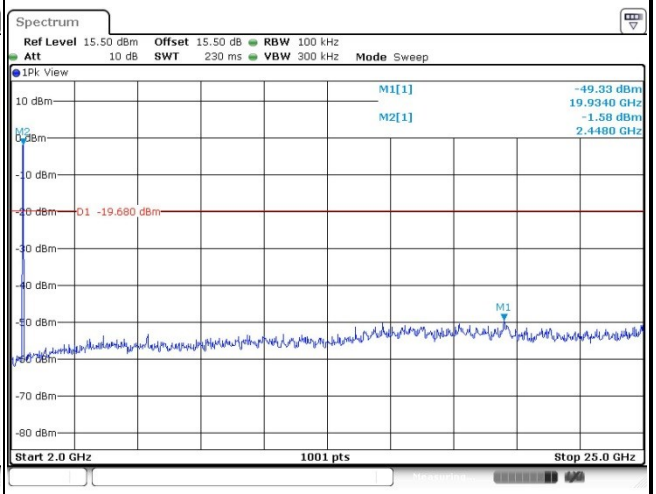
Test Mode :	802.11n HT40	Test Channel :	03

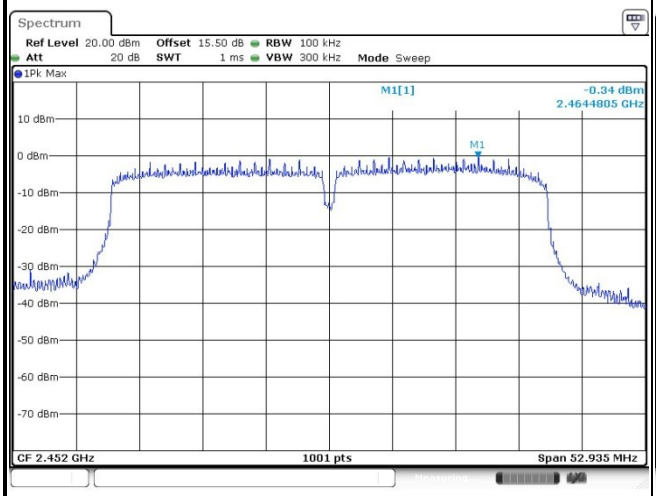
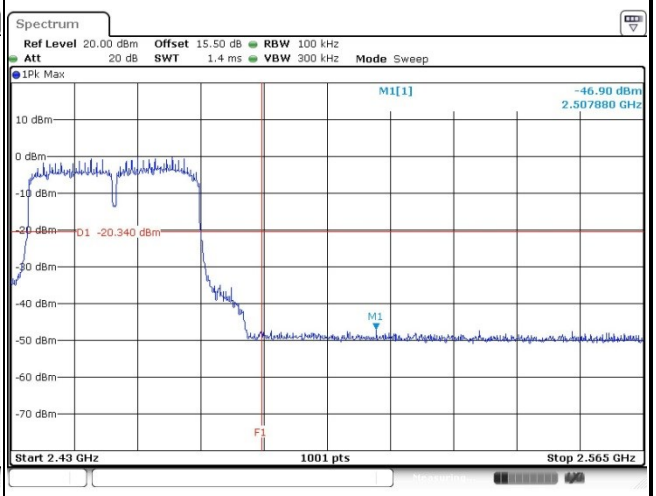
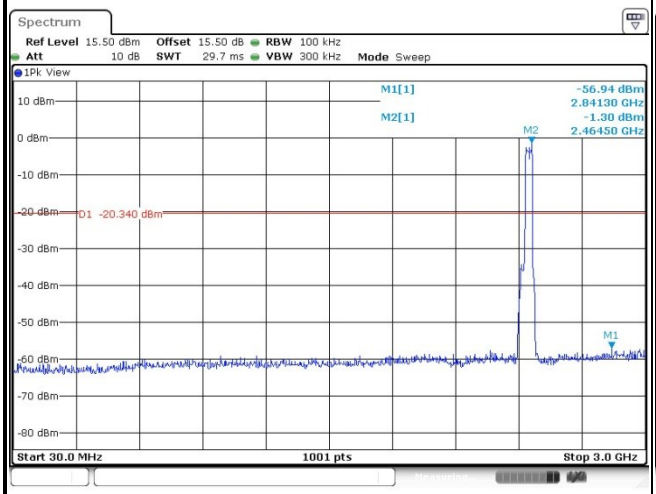
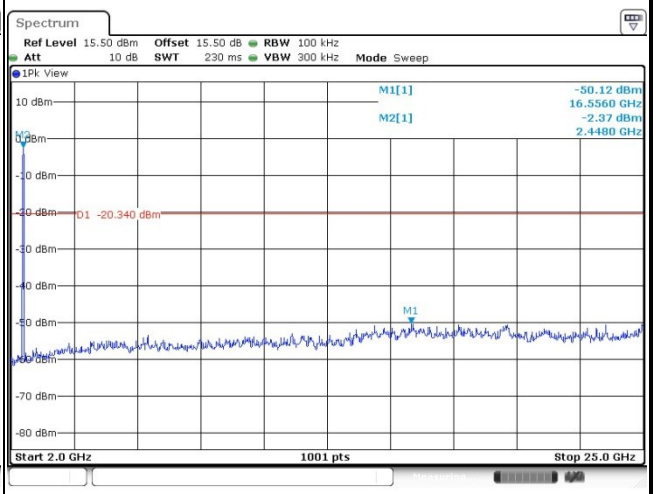
100kHz PSD reference Level	Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

Test Mode :	802.11n HT40	Test Channel :	06

100kHz PSD reference Level	
	

Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

Test Mode :	802.11n HT40	Test Channel :	09

100kHz PSD reference Level	Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~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 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

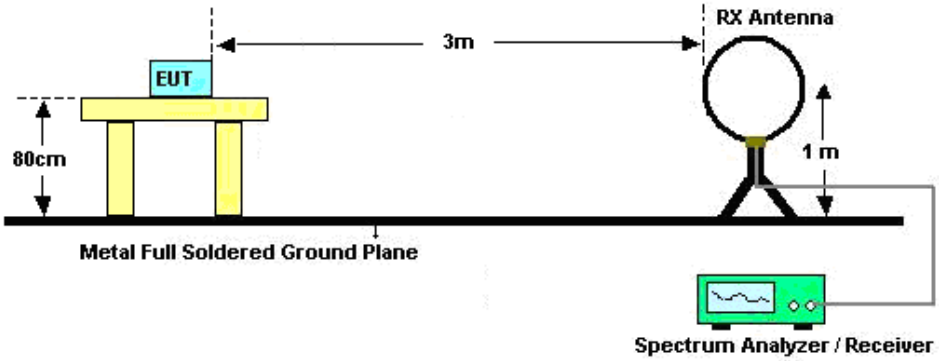
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

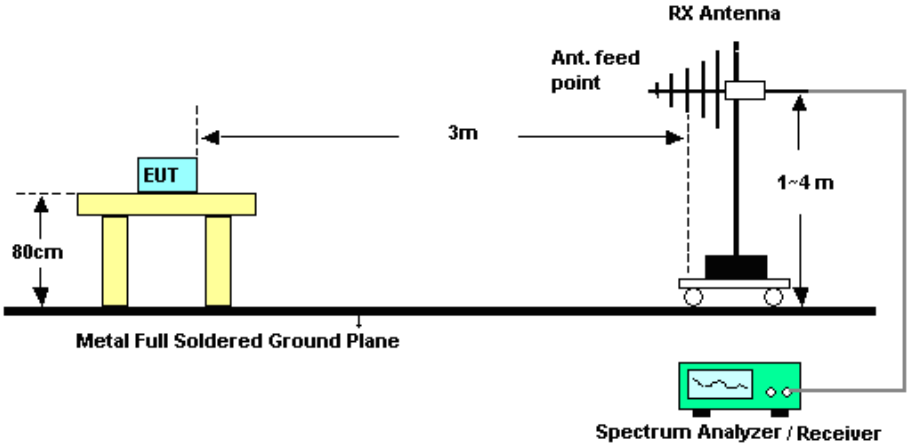
1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better 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 testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. 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

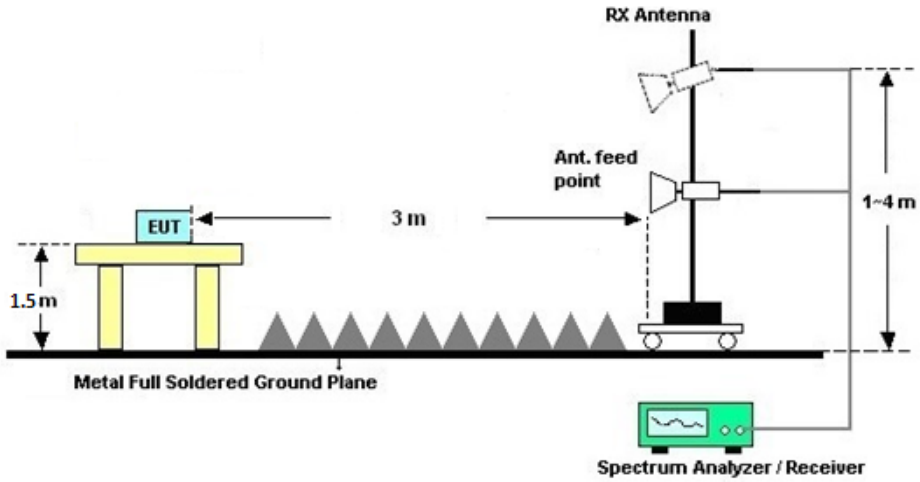
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Spurious 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 was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.

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.

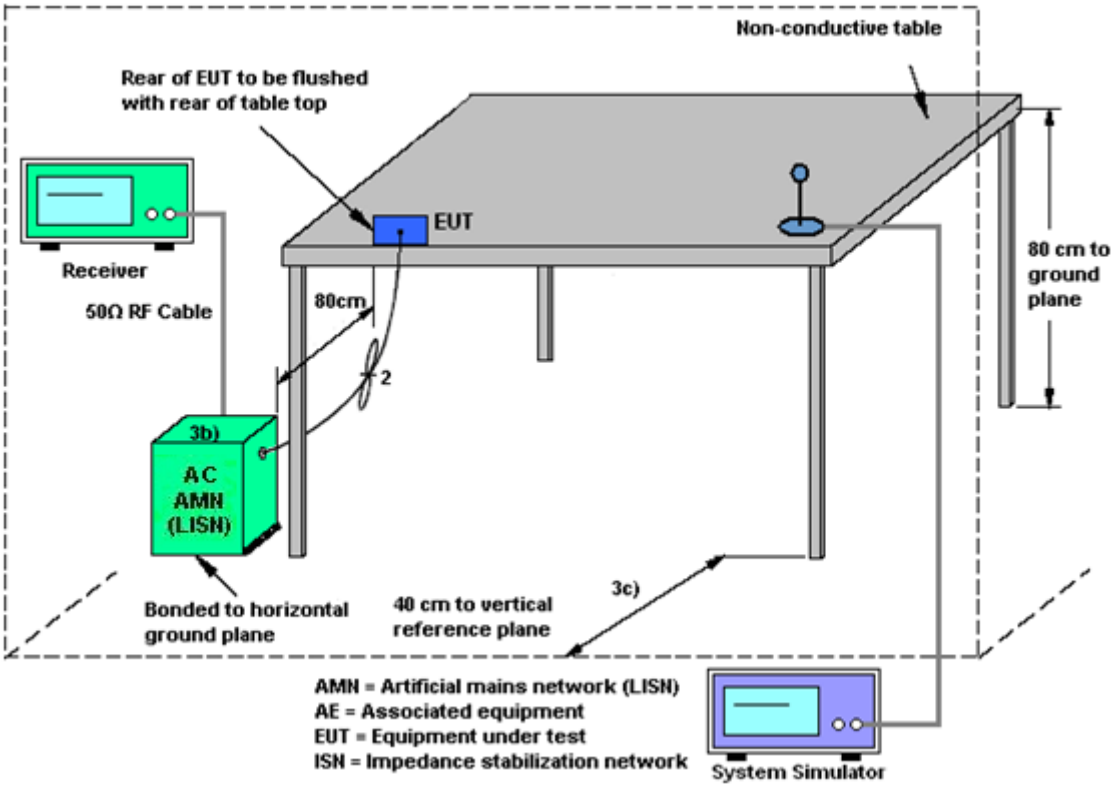
3.6.2 Measuring Instruments

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



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

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. 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 rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

<CDD Modes >

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 GANT set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

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.

<CDD Modes>

	Ant. 1 (dBi)	Ant. 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
2.4 GHz	4.17	3.40	4.17	6.80	0.00	0.80

Power Limit Reduction = DG(Power) – 6dBi

PSD Limit Reduction = DG(PSD) – 6dBi

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	10Hz~40GHz	Apr. 19, 2018	Jan. 09, 2019~ Jan. 10, 2019	Apr. 18, 2019	Conducted (TH01-SZ)
Pulse Power Senor	Anritsu	MA2411B	1207253	30MHz~40GHz	Dec. 22, 2018	Jan. 09, 2019~ Jan. 10, 2019	Dec. 21, 2019	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Dec. 22, 2018	Jan. 09, 2019~ Jan. 10, 2019	Dec. 21, 2019	Conducted (TH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Apr. 19, 2018	Jan. 10, 2019	Apr. 18, 2019	Radiation (03CH02-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 14, 2018	Jan. 10, 2019	May 13, 2019	Radiation (03CH02-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	May 10, 2018	Jan. 10, 2019	May 09, 2019	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1285	1GHz~18GHz	Dec. 12, 2018	Jan. 10, 2019	Dec. 11, 2019	Radiation (03CH02-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Mar. 30, 2018	Jan. 10, 2019	Mar. 29, 2019	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 30, 2018	Jan. 10, 2019	Jul. 29, 2019	Radiation (03CH02-SZ)
LF Amplifier	Burgeon	BPA-530	102211	0.01~3000Mhz	Oct. 20, 2018	Jan. 10, 2019	Oct. 19, 2019	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1707137	1GHz~18GHz	Oct. 20, 2018	Jan. 10, 2019	Oct. 19, 2019	Radiation (03CH02-SZ)
Amplifier	Agilent	8449B	3008A01023	1GHz~26.5GHz	Oct. 20, 2018	Jan. 10, 2019	Oct. 19, 2019	Radiation (03CH02-SZ)
AC Power Source	Chroma	61601	616010002470	N/A	NCR	Jan. 10, 2019	NCR	Radiation (03CH02-SZ)
Turn Table	Chaintek	T-200	N/A	0~360 degree	NCR	Jan. 10, 2019	NCR	Radiation (03CH02-SZ)
Antenna Mast	Chaintek	MBS-400	N/A	1 m~4 m	NCR	Jan. 10, 2019	NCR	Radiation (03CH02-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Dec. 23, 2018	Jan. 08, 2019	Dec. 22, 2019	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Oct. 18, 2018	Jan. 08, 2019	Oct. 17, 2019	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Dec. 23, 2018	Jan. 08, 2019	Dec. 22, 2019	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Jul. 18, 2018	Jan. 08, 2019	Jul. 17, 2019	Conduction (CO01-SZ)

NCR: No Calibration Required

5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.6dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.5dB**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.5dB**

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.4dB**

Appendix A. Conducted Test Results

Report Number : FR8D0505

Test Engineer:	Liu Zhen	Temperature:	24~26	°C
Test Date:	2019/1/9~2019/1/10	Relative Humidity:	50~53	%

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 1	Ant 2		
11b		1	1	2412	11.49		9.01		0.50	Pass
11b		1	6	2437	11.59		8.09		0.50	Pass
11b		1	11	2462	11.54		8.55		0.50	Pass
11g	6Mbps	1	1	2412	17.58	17.58	16.32	15.96	0.50	Pass
11g	6Mbps	1	6	2437	17.58	17.58	16.30	16.32	0.50	Pass
11g	6Mbps	1	11	2462	17.53	17.43	16.28	16.28	0.50	Pass
HT20	MCS0	1	1	2412	18.23	18.13	17.34	17.26	0.50	Pass
HT20	MCS0	1	6	2437	18.18	18.28	17.36	17.42	0.50	Pass
HT20	MCS0	1	11	2462	18.18	18.08	17.16	16.98	0.50	Pass
HT40	MCS0	1	3	2422	35.86	35.76	34.97	33.85	0.50	Pass
HT40	MCS0	1	6	2437	35.96	36.16	35.25	35.33	0.50	Pass
HT40	MCS0	1	9	2452	36.26	36.26	35.96	35.60	0.50	Pass
11g	6Mbps	2	1	2412	17.63	17.38	16.32	16.06	0.50	Pass
11g	6Mbps	2	6	2437	17.63	17.48	16.32	16.32	0.50	Pass
11g	6Mbps	2	11	2462	17.43	17.23	16.28	16.30	0.50	Pass
HT20	MCS0	2	1	2412	18.23	18.13	17.32	16.96	0.50	Pass
HT20	MCS0	2	6	2437	18.18	18.33	17.28	17.56	0.50	Pass
HT20	MCS0	2	11	2462	18.13	18.03	17.02	16.80	0.50	Pass
HT40	MCS0	2	3	2422	35.86	35.76	34.25	33.81	0.50	Pass
HT40	MCS0	2	6	2437	35.96	36.16	34.93	35.33	0.50	Pass
HT40	MCS0	2	9	2452	36.16	36.06	35.88	35.29	0.50	Pass

Report Number : FR8D0505

TEST RESULTS DATA
Peak Output Power

2.4GHz Band																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	20.95			30.00	30.00	4.17	3.40	25.12		36.00	36.00	Pass
11b	1Mbps	1	6	2437	20.43			30.00	30.00	4.17	3.40	24.60		36.00	36.00	Pass
11b	1Mbps	1	11	2462	20.44			30.00	30.00	4.17	3.40	24.61		36.00	36.00	Pass
11g	6Mbps	1	1	2412	25.40	25.28		30.00	30.00	4.17	3.40	29.57	28.68	36.00	36.00	Pass
11g	6Mbps	1	6	2437	24.47	24.96		30.00	30.00	4.17	3.40	28.64	28.36	36.00	36.00	Pass
11g	6Mbps	1	11	2462	25.41	25.31		30.00	30.00	4.17	3.40	29.58	28.71	36.00	36.00	Pass
HT20	MCS0	1	1	2412	22.78	23.31		30.00	30.00	4.17	3.40	26.95	26.71	36.00	36.00	Pass
HT20	MCS0	1	6	2437	22.27	22.40		30.00	30.00	4.17	3.40	26.44	25.80	36.00	36.00	Pass
HT20	MCS0	1	11	2462	23.16	23.07		30.00	30.00	4.17	3.40	27.33	26.47	36.00	36.00	Pass
HT40	MCS0	1	3	2422	23.48	22.93		30.00	30.00	4.17	3.40	27.65	26.33	36.00	36.00	Pass
HT40	MCS0	1	6	2437	22.73	22.33		30.00	30.00	4.17	3.40	26.90	25.73	36.00	36.00	Pass
HT40	MCS0	1	9	2452	22.59	22.26		30.00	30.00	4.17	3.40	26.76	25.66	36.00	36.00	Pass
11g	6Mbps	2	1	2412	25.63	25.35	28.50	30.00		4.17		32.67		36.00		Pass
11g	6Mbps	2	6	2437	24.84	24.67	27.77	30.00		4.17		31.94		36.00		Pass
11g	6Mbps	2	11	2462	25.80	25.72	28.77	30.00		4.17		32.94		36.00		Pass
HT20	MCS0	2	1	2412	22.97	23.45	26.23	30.00		4.17		30.40		36.00		Pass
HT20	MCS0	2	6	2437	24.24	22.37	26.42	30.00		4.17		30.59		36.00		Pass
HT20	MCS0	2	11	2462	23.66	23.05	26.38	30.00		4.17		30.55		36.00		Pass
HT40	MCS0	2	3	2422	22.35	22.60	25.49	30.00		4.17		29.66		36.00		Pass
HT40	MCS0	2	6	2437	22.04	21.62	24.85	30.00		4.17		29.02		36.00		Pass
HT40	MCS0	2	9	2452	21.16	21.57	24.38	30.00		4.17		28.55		36.00		Pass

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 (dBm)		
					Ant 1	Ant 2	Ant 1	Ant 2	SUM
11b	1Mbps	1	1	2412	11.49		17.60	9.01	
11b	1Mbps	1	6	2437	11.59		17.10	8.09	
11b	1Mbps	1	11	2462	11.54		17.20	8.55	
11g	6Mbps	1	1	2412	17.58	0.04	16.59	16.32	
11g	6Mbps	1	6	2437	17.58	0.04	15.68	16.30	
11g	6Mbps	1	11	2462	17.53	0.04	16.81	16.28	
HT20	MCS0	1	1	2412	18.23	0.05	13.40	17.34	
HT20	MCS0	1	6	2437	18.18	0.05	12.75	17.36	
HT20	MCS0	1	11	2462	18.18	0.05	13.97	17.16	
HT40	MCS0	1	3	2422	35.86	0.17	13.86	34.97	
HT40	MCS0	1	6	2437	35.96	0.17	13.18	35.25	
HT40	MCS0	1	9	2452	36.26	0.17	13.24	35.96	
11g	6Mbps	2	1	2412	17.63	0.04	16.74	16.32	19.76
11g	6Mbps	2	6	2437	17.63	0.04	15.88	16.32	19.07
11g	6Mbps	2	11	2462	17.43	0.04	16.98	16.28	19.85
HT20	MCS0	2	1	2412	18.23	0.07	13.55	17.32	16.76
HT20	MCS0	2	6	2437	18.18	0.07	14.66	17.28	16.89
HT20	MCS0	2	11	2462	18.13	0.07	14.18	17.02	17.05
HT40	MCS0	2	3	2422	35.86	0.26	13.65	34.25	17.02
HT40	MCS0	2	6	2437	35.96	0.26	13.47	34.93	16.30
HT40	MCS0	2	9	2452	35.16	0.26	12.70	35.88	15.85

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

Report Number : FR8D0505

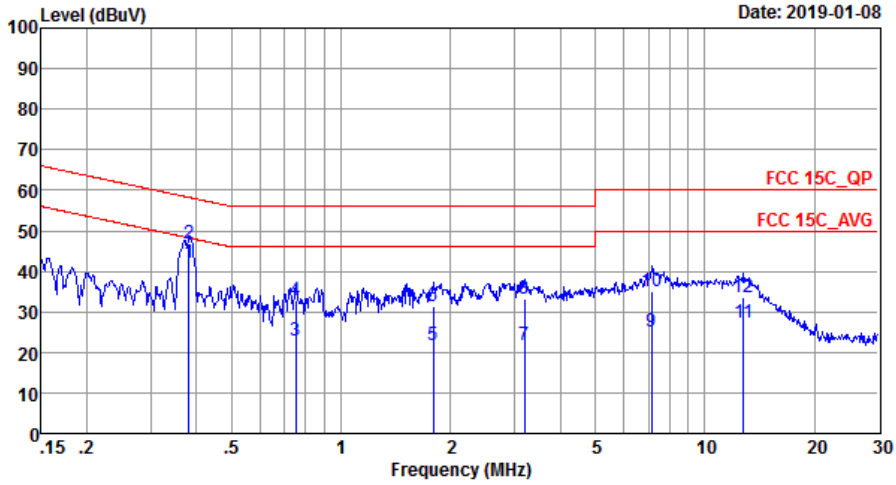
TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b		1	1	2412	-5.10		-	4.17	3.40	8.00	8.00	Pass
11b		1	6	2437	-5.29			4.17	3.40	8.00	8.00	Pass
11b		1	11	2462	-3.48			4.17	3.40	8.00	8.00	Pass
11g	6Mbps	1	1	2412	-7.76	-8.09		4.17	3.40	8.00	8.00	Pass
11g	6Mbps	1	6	2437	-9.49	-8.78		4.17	3.40	8.00	8.00	Pass
11g	6Mbps	1	11	2462	-7.72	-6.10		4.17	3.40	8.00	8.00	Pass
HT20	MCS0	1	1	2412	-11.38	-10.47		4.17	3.40	8.00	8.00	Pass
HT20	MCS0	1	6	2437	-12.19	-12.63		4.17	3.40	8.00	8.00	Pass
HT20	MCS0	1	11	2462	-10.45	-9.99		4.17	3.40	8.00	8.00	Pass
HT40	MCS0	1	3	2422	-13.23	-14.42		4.17	3.40	8.00	8.00	Pass
HT40	MCS0	1	6	2437	-14.27	-15.04		4.17	3.40	8.00	8.00	Pass
HT40	MCS0	1	9	2452	-14.45	-14.44		4.17	3.40	8.00	8.00	Pass
11g	6Mbps	2	1	2412	-7.48	-7.56	-4.47	6.80		7.20		Pass
11g	6Mbps	2	6	2437	-7.76	-8.64	-4.75	6.80		7.20		Pass
11g	6Mbps	2	11	2462	-6.72	-7.89	-3.71	6.80		7.20		Pass
HT20	MCS0	2	1	2412	-11.70	-12.72	-8.69	6.80		7.20		Pass
HT20	MCS0	2	6	2437	-8.18	-11.03	-5.17	6.80		7.20		Pass
HT20	MCS0	2	11	2462	-10.58	-12.42	-7.57	6.80		7.20		Pass
HT40	MCS0	2	3	2422	-14.11	-14.73	-11.10	6.80		7.20		Pass
HT40	MCS0	2	6	2437	-10.71	-14.59	-7.70	6.80		7.20		Pass
HT40	MCS0	2	9	2452	-14.21	-14.47	-11.20	6.80		7.20		Pass

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

Appendix B. AC Conducted Emission Test Results

Test Engineer :	Zhang Xu	Temperature :	22~25℃
		Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line

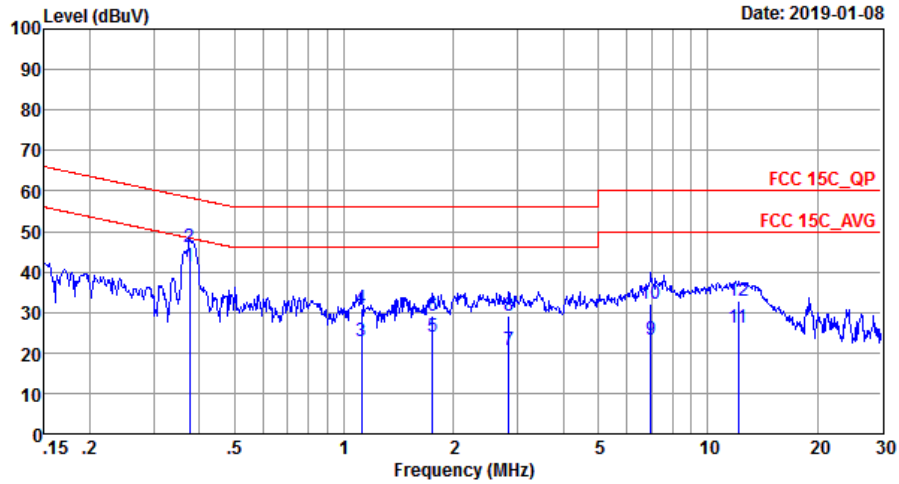


Site : CO01-SZ
Condition: FCC 15C_QP LISN_20180719_L LINE

Mode : Mode 2
IMEI : 867809040001220

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	*	0.38	42.01	-6.24	48.25	31.90	0.03	10.08	Average
2		0.38	46.91	-11.34	58.25	36.80	0.03	10.08	QP
3		0.75	22.71	-23.29	46.00	12.60	0.03	10.08	Average
4		0.75	33.01	-22.99	56.00	22.90	0.03	10.08	QP
5		1.79	21.61	-24.39	46.00	11.40	0.10	10.11	Average
6		1.79	31.21	-24.79	56.00	21.00	0.10	10.11	QP
7		3.19	21.71	-24.29	46.00	11.40	0.16	10.15	Average
8		3.19	33.11	-22.89	56.00	22.80	0.16	10.15	QP
9		7.14	25.19	-24.81	50.00	14.70	0.24	10.25	Average
10		7.14	34.89	-25.11	60.00	24.40	0.24	10.25	QP
11		12.78	27.33	-22.67	50.00	16.50	0.45	10.38	Average
12		12.78	33.73	-26.27	60.00	22.90	0.45	10.38	QP

Test Engineer :	Zhang Xu	**Temperature :**	22~25℃
		Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral



Site : CO01-SZ
Condition: FCC 15C_QP LISN_20180719_N NEUTRAL

Mode : Mode 2
IMEI : 867809040001220

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	*	0.38	41.50	-6.84	48.34	31.40	0.02	10.08	Average
2		0.38	46.00	-12.34	58.34	35.90	0.02	10.08	QP
3		1.12	22.84	-23.16	46.00	12.70	0.05	10.09	Average
4		1.12	31.04	-24.96	56.00	20.90	0.05	10.09	QP
5		1.75	23.86	-22.14	46.00	13.70	0.05	10.11	Average
6		1.75	29.06	-26.94	56.00	18.90	0.05	10.11	QP
7		2.84	20.57	-25.43	46.00	10.40	0.03	10.14	Average
8		2.84	29.17	-26.83	56.00	19.00	0.03	10.14	QP
9		6.99	23.42	-26.58	50.00	13.10	0.07	10.25	Average
10		6.99	32.02	-27.98	60.00	21.70	0.07	10.25	QP
11		12.12	26.31	-23.69	50.00	15.70	0.24	10.37	Average
12		12.12	32.91	-27.09	60.00	22.30	0.24	10.37	QP

Appendix C. Radiated Spurious Emission

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		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2355.67	48.13	-25.87	74	45.19	27.74	6.53	31.33	112	340	P	H
		2389.69	36.91	-17.09	54	33.89	27.7	6.6	31.28	112	340	A	H
	*	2412	98.63	-	-	95.6	27.69	6.6	31.26	112	340	P	H
	*	2412	96.31	-	-	93.28	27.69	6.6	31.26	112	340	A	H
		2361.55	48.67	-25.33	74	45.71	27.74	6.53	31.31	117	73	P	V
		2379.61	37.02	-16.98	54	34.04	27.72	6.57	31.31	117	73	A	V
	*	2412	109.09	-	-	106.06	27.69	6.6	31.26	117	73	P	V
	*	2412	107.03	-	-	104	27.69	6.6	31.26	117	73	A	V
802.11b CH 06 2437MHz		2347.1	47.85	-26.15	74	44.9	27.75	6.53	31.33	112	340	P	H
		2389.94	36.8	-17.2	54	33.78	27.7	6.6	31.28	112	340	A	H
	*	2437	100.74	-	-	97.71	27.66	6.63	31.26	112	340	P	H
	*	2437	98.28	-	-	95.25	27.66	6.63	31.26	112	340	A	H
		2490.41	47.4	-26.6	74	44.26	27.61	6.73	31.2	112	340	P	H
		2489.43	37.1	-16.9	54	33.96	27.61	6.73	31.2	112	340	A	H
		2344.16	48.28	-25.72	74	45.33	27.75	6.53	31.33	112	75	P	V
		2389.66	36.94	-17.06	54	33.92	27.7	6.6	31.28	112	75	A	V
	*	2437	110.11	-	-	107.08	27.66	6.63	31.26	112	75	P	V
	*	2437	107.66	-	-	104.63	27.66	6.63	31.26	112	75	A	V
		2490.55	47.58	-26.42	74	44.44	27.61	6.73	31.2	112	75	P	V
		2488.8	37.28	-16.72	54	34.16	27.61	6.73	31.22	112	75	A	V

802.11b CH 11 2462MHz	*	2462	98.01	-	-	94.94	27.64	6.67	31.24	143	344	P	H
	*	2462	95.84	-	-	92.77	27.64	6.67	31.24	143	344	A	H
		2484.88	48.24	-25.76	74	45.13	27.63	6.7	31.22	143	344	P	H
		2489.12	36.94	-17.06	54	33.8	27.61	6.73	31.2	143	344	A	H
	*	2462	109.97	-	-	106.9	27.64	6.67	31.24	112	75	P	V
	*	2462	107.85	-	-	104.78	27.64	6.67	31.24	112	75	A	V
		2483.96	48.56	-25.44	74	45.45	27.63	6.7	31.22	112	75	P	V
		2491.04	37.17	-16.83	54	34.03	27.61	6.73	31.2	112	75	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1	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	48.24	-25.76	74	65.04	31.03	9.65	57.48	185	255	P	H
		4824	40.64	-13.36	54	57.44	31.03	9.65	57.48	185	255	A	H
		4824	51.76	-22.24	74	68.56	31.03	9.65	57.48	185	255	P	V
		4824	44.38	-9.62	54	61.18	31.03	9.65	57.48	185	255	A	V
802.11b CH 06 2437MHz		4874	48.15	-25.85	74	64.9	31.06	9.71	57.52	165	106	P	H
		4874	41.15	-12.85	54	57.9	31.06	9.71	57.52	165	106	A	H
		7311	47.59	-26.41	74	58.58	35.92	12.01	58.92	174	100	P	H
		4874	51.06	-22.94	74	67.81	31.06	9.71	57.52	165	106	P	V
		4874	43.74	-10.26	54	60.49	31.06	9.71	57.52	165	106	A	V
		7311	47.53	-26.47	74	58.52	35.92	12.01	58.92	174	100	P	V
802.11b CH 11 2462MHz		4924	51.1	-22.9	74	67.78	31.1	9.77	57.55	150	285	P	H
		4924	43.49	-10.51	54	60.17	31.1	9.77	57.55	150	285	A	H
		7386	47.66	-26.34	74	58.39	36.15	12.08	58.96	155	274	P	H
		4924	51.01	-22.99	74	67.69	31.1	9.77	57.55	150	285	P	V
		4924	43.49	-10.51	54	60.17	31.1	9.77	57.55	150	285	A	V
		7386	47.59	-26.41	74	58.32	36.15	12.08	58.96	155	274	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1+2	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		2373.73	47.55	-26.45	74	44.57	27.72	6.57	31.31	143	347	P	H
		2389.8	36.82	-17.18	54	33.8	27.7	6.6	31.28	143	347	A	H
	*	2412	101.08	-	-	98.05	27.69	6.6	31.26	143	347	P	H
	*	2412	92.8	-	-	89.77	27.69	6.6	31.26	143	347	A	H
		2384.34	48.67	-25.33	74	45.69	27.72	6.57	31.31	117	76	P	V
		2381.19	37.8	-16.2	54	34.82	27.72	6.57	31.31	117	76	A	V
	*	2412	111.26	-	-	108.23	27.69	6.6	31.26	117	76	P	V
	*	2412	102.77	-	-	99.74	27.69	6.6	31.26	117	76	A	V
802.11g CH 06 2437MHz		2368.8	47.93	-26.07	74	44.95	27.72	6.57	31.31	114	347	P	H
		2389.52	36.76	-17.24	54	33.74	27.7	6.6	31.28	114	347	A	H
	*	2437	101.26	-	-	98.23	27.66	6.63	31.26	114	347	P	H
	*	2437	93.22	-	-	90.19	27.66	6.63	31.26	114	347	A	H
		2484.74	47.42	-26.58	74	44.31	27.63	6.7	31.22	114	347	P	H
		2494.82	37.1	-16.9	54	33.96	27.61	6.73	31.2	114	347	A	H
		2387.14	48.16	-25.84	74	45.17	27.7	6.57	31.28	105	75	P	V
		2389.8	36.89	-17.11	54	33.87	27.7	6.6	31.28	105	75	A	V
	*	2437	112.34	-	-	109.31	27.66	6.63	31.26	105	75	P	V
	*	2437	104	-	-	100.97	27.66	6.63	31.26	105	75	A	V
		2499.09	47.78	-26.22	74	44.64	27.61	6.73	31.2	105	75	P	V
		2489.5	37.24	-16.76	54	34.1	27.61	6.73	31.2	105	75	A	V

802.11g CH 11 2462MHz	*	2462	101.92	-	-	98.85	27.64	6.67	31.24	114	347	P	H
	*	2462	93.81	-	-	90.74	27.64	6.67	31.24	114	347	A	H
		2498.24	48.07	-25.93	74	44.93	27.61	6.73	31.2	114	347	P	H
		2489.4	36.98	-17.02	54	33.84	27.61	6.73	31.2	114	347	A	H
	*	2462	112.3	-	-	109.23	27.64	6.67	31.24	113	74	P	V
	*	2462	104.88	-	-	101.81	27.64	6.67	31.24	113	74	A	V
		2483.64	51.45	-22.55	74	48.34	27.63	6.7	31.22	113	74	P	V
		2483.52	38.86	-15.14	54	35.75	27.63	6.7	31.22	113	74	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1+2	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	47.19	-26.81	74	63.99	31.03	9.65	57.48	185	255	P	H
		4824	51.13	-22.87	74	67.93	31.03	9.65	57.48	185	255	P	V
		4824	41.36	-12.64	54	58.16	31.03	9.65	57.48	185	255	A	V
802.11g CH 06 2437MHz		4874	44.77	-29.23	74	61.52	31.06	9.71	57.52	165	106	P	H
		7311	47.66	-26.34	74	58.65	35.92	12.01	58.92	174	100	P	H
		4874	48.12	-25.88	74	64.87	31.06	9.71	57.52	165	106	P	V
		4874	38.73	-15.27	54	55.48	31.06	9.71	57.52	165	106	A	V
		7311	47.65	-26.35	74	58.64	35.92	12.01	58.92	174	100	P	V
802.11g CH 11 2462MHz		4924	48.47	-25.53	74	65.15	31.1	9.77	57.55	150	285	P	H
		4924	38.79	-15.21	54	55.47	31.1	9.77	57.55	150	285	A	H
		7386	47.22	-26.78	74	57.95	36.15	12.08	58.96	155	274	P	H
		4924	50.26	-23.74	74	66.94	31.1	9.77	57.55	150	285	P	V
		4924	40.49	-13.51	54	57.17	31.1	9.77	57.55	150	285	A	V
		7386	47.03	-26.97	74	57.76	36.15	12.08	58.96	155	274	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	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)
		2385.39	47.03	-26.97	74	44.71	27.03	6.57	31.28	292	316	P	H
		2390	36.55	-17.45	54	34.16	27.07	6.6	31.28	292	316	A	H
802.11n	*	2412	103.97	-	-	101.51	27.12	6.6	31.26	292	316	P	H
HT20	*	2412	96.48	-	-	94.02	27.12	6.6	31.26	292	316	A	H
CH 01		2390	47.7	-26.3	74	45.31	27.07	6.6	31.28	225	351	P	V
2412MHz		2390	37.99	-16.01	54	35.6	27.07	6.6	31.28	225	351	A	V
	*	2412	111.95	-	-	109.49	27.12	6.6	31.26	225	351	P	V
	*	2412	103.92	-	-	101.46	27.12	6.6	31.26	225	351	A	V
		2362.36	46.57	-27.43	74	44.36	26.99	6.53	31.31	292	316	P	H
		2389.66	36.25	-17.75	54	33.86	27.07	6.6	31.28	292	316	A	H
	*	2437	106.01	-	-	103.44	27.2	6.63	31.26	292	316	P	H
	*	2437	97.67	-	-	95.1	27.2	6.63	31.26	292	316	A	H
802.11n		2490.97	47.17	-26.83	74	44.31	27.33	6.73	31.2	292	316	P	H
HT20		2489.01	36.83	-17.17	54	33.97	27.33	6.73	31.2	292	316	A	H
CH 06		2319.38	46.83	-27.17	74	44.77	26.91	6.5	31.35	220	349	P	V
2437MHz		2389.52	36.21	-17.79	54	33.82	27.07	6.6	31.28	220	349	A	V
	*	2437	112.2	-	-	109.63	27.2	6.63	31.26	220	349	P	V
	*	2437	103.89	-	-	101.32	27.2	6.63	31.26	220	349	A	V
		2495.87	49.24	-24.76	74	46.38	27.33	6.73	31.2	220	349	P	V
		2499.44	36.93	-17.07	54	34.07	27.33	6.73	31.2	220	349	A	V

802.11n HT20 CH 11 2462MHz	*	2462	105.87	-	-	103.2	27.24	6.67	31.24	259	314	P	H
	*	2462	96.48	-	-	93.81	27.24	6.67	31.24	259	314	A	H
		2486.36	47.79	-26.21	74	45.02	27.29	6.7	31.22	259	314	P	H
		2483.52	36.96	-17.04	54	34.19	27.29	6.7	31.22	259	314	A	H
	*	2462	112.05	-	-	109.38	27.24	6.67	31.24	220	349	P	V
	*	2462	104.28	-	-	101.61	27.24	6.67	31.24	220	349	A	V
		2483.72	49.86	-24.14	74	47.09	27.29	6.7	31.22	220	349	P	V
		2483.52	38.87	-15.13	54	36.1	27.29	6.7	31.22	220	349	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	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	46.69	-27.31	74	63.49	31.03	9.65	57.48	185	255	P	H
		4824	49.37	-24.63	74	66.17	31.03	9.65	57.48	185	255	P	V
		4824	40.08	-13.92	54	56.88	31.03	9.65	57.48	185	255	A	V
802.11n HT20 CH 06 2437MHz		4874	46.48	-27.52	74	63.23	31.06	9.71	57.52	165	106	P	H
		7311	49	-25	74	59.99	35.92	12.01	58.92	174	100	P	H
		7311	39.8	-14.2	54	50.79	35.92	12.01	58.92	174	100	A	H
		4874	46.07	-27.93	74	62.82	31.06	9.71	57.52	165	106	P	V
		7311	50.3	-23.7	74	61.29	35.92	12.01	58.92	174	100	P	V
		7311	40.49	-13.51	54	51.48	35.92	12.01	58.92	174	100	A	V
802.11n HT20 CH 11 2462MHz		4924	47.9	-26.1	74	64.58	31.1	9.77	57.55	150	285	P	H
		7386	47.01	-26.99	74	57.74	36.15	12.08	58.96	155	274	P	H
		4924	49.24	-24.76	74	65.92	31.1	9.77	57.55	150	285	P	V
		4924	40.21	-13.79	54	56.89	31.1	9.77	57.55	150	285	A	V
		7386	49.58	-24.42	74	60.31	36.15	12.08	58.96	155	274	P	V
		7386	40.48	-13.52	54	51.21	36.15	12.08	58.96	155	274	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	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)
		2380	49.08	-24.92	74	46.79	27.03	6.57	31.31	259	314	P	H
		2380.14	40.11	-13.89	54	37.82	27.03	6.57	31.31	259	314	A	H
	*	2422	101.86	-	-	99.33	27.16	6.63	31.26	259	314	P	H
	*	2422	96.14	-	-	93.61	27.16	6.63	31.26	259	314	A	H
802.11n		2497.06	47.17	-26.83	74	44.31	27.33	6.73	31.2	259	314	P	H
HT40		2489.71	38.46	-15.54	54	35.6	27.33	6.73	31.2	259	314	A	H
CH 03		2380.7	52.72	-21.28	74	50.43	27.03	6.57	31.31	225	350	P	V
2422MHz		2389.38	43.47	-10.53	54	41.08	27.07	6.6	31.28	225	350	A	V
	*	2422	109.58	-	-	107.05	27.16	6.63	31.26	225	350	P	V
	*	2422	101.84	-	-	99.31	27.16	6.63	31.26	225	350	A	V
		2494.61	47.31	-26.69	74	44.45	27.33	6.73	31.2	225	350	P	V
		2484.88	38.62	-15.38	54	35.85	27.29	6.7	31.22	225	350	A	V
		2377.2	47.23	-26.77	74	44.94	27.03	6.57	31.31	290	319	P	H
		2389.8	38.03	-15.97	54	35.64	27.07	6.6	31.28	290	319	A	H
	*	2437	100.12	-	-	97.55	27.2	6.63	31.26	290	319	P	H
	*	2437	92.21	-	-	89.64	27.2	6.63	31.26	290	319	A	H
802.11n		2499.58	47.39	-26.61	74	44.53	27.33	6.73	31.2	290	319	P	H
HT40		2498.18	38.3	-15.7	54	35.44	27.33	6.73	31.2	290	319	A	H
CH 06		2339.82	47.48	-26.52	74	45.33	26.95	6.53	31.33	225	350	P	V
2437MHz		2389.94	38.1	-15.9	54	35.71	27.07	6.6	31.28	225	350	A	V
	*	2437	109.15	-	-	106.58	27.2	6.63	31.26	225	350	P	V
	*	2437	101.72	-	-	99.15	27.2	6.63	31.26	225	350	A	V
		2492.79	47.64	-26.36	74	44.78	27.33	6.73	31.2	225	350	P	V
		2483.55	39.08	-14.92	54	36.31	27.29	6.7	31.22	225	350	A	V

		2314.34	47.35	-26.65	74	45.34	26.86	6.5	31.35	254	316	P	H
		2379.02	37.71	-16.29	54	35.42	27.03	6.57	31.31	254	316	A	H
	*	2452	100.08	-	-	97.45	27.2	6.67	31.24	254	316	P	H
	*	2452	92.75	-	-	90.12	27.2	6.67	31.24	254	316	A	H
802.11n		2489.85	47.68	-26.32	74	44.82	27.33	6.73	31.2	254	316	P	H
HT40		2485.16	39.04	-14.96	54	36.27	27.29	6.7	31.22	254	316	A	H
CH 09		2371.18	46.73	-27.27	74	44.44	27.03	6.57	31.31	225	347	P	V
2452MHz		2372.02	37.87	-16.13	54	35.58	27.03	6.57	31.31	225	347	A	V
	*	2452	109.58	-	-	106.95	27.2	6.67	31.24	225	347	P	V
	*	2452	101.07	-	-	98.44	27.2	6.67	31.24	225	347	A	V
		2484.53	55.03	-18.97	74	52.26	27.29	6.7	31.22	225	347	P	V
		2484.32	46.21	-7.79	54	43.44	27.29	6.7	31.22	225	347	A	V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	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		4844	45.19	-28.81	74	61.96	31.04	9.68	57.49	150	350	P	H
HT40		7266	47.12	-26.88	74	58.21	35.83	11.99	58.91	200	360	P	H
CH 03		4844	46.19	-27.81	74	62.96	31.04	9.68	57.49	150	350	P	V
2422MHz		7266	47.69	-26.31	74	58.78	35.83	11.99	58.91	200	360	P	V
802.11n		4874	44.31	-29.69	74	61.06	31.06	9.71	57.52	165	230	P	H
HT40		7311	47.73	-26.27	74	58.72	35.92	12.01	58.92	186	323	P	H
CH 06		4874	44.73	-29.27	74	61.48	31.06	9.71	57.52	165	230	P	V
2437MHz		7311	47.44	-26.56	74	58.43	35.92	12.01	58.92	186	323	P	V
802.11n		4904	44.24	-29.76	74	60.95	31.09	9.74	57.54	150	360	P	H
HT40		7356	47.35	-26.65	74	58.17	36.06	12.06	58.94	165	335	P	H
CH 09		4904	44.08	-29.92	74	60.79	31.09	9.74	57.54	150	360	P	V
2452MHz		7356	47.25	-26.75	74	58.07	36.06	12.06	58.94	165	335	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11n HT40 (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11n HT40 LF		30	23	-17	40	29.92	24.8	0.25	31.97	-	-	P	H
		55.22	16.39	-23.61	40	34.53	13	0.78	31.92	-	-	P	H
		115.36	21.04	-22.46	43.5	34.5	17.09	1.12	31.67	-	-	P	H
		261.83	19.17	-26.83	46	28.4	20.27	1.74	31.24	-	-	P	H
		442.25	22.89	-23.11	46	29.19	22.69	2.28	31.27	-	-	P	H
		901.06	30.67	-15.33	46	29.42	29.02	3.39	31.16	120	114	P	H
		30	31.88	-8.12	40	38.8	24.8	0.25	31.97	100	210	P	V
		87.23	23.48	-16.52	40	39.95	14.38	0.95	31.8	-	-	P	V
		155.13	21.64	-21.86	43.5	35.23	16.66	1.28	31.53	-	-	P	V
		250.19	19.1	-26.9	46	29.61	19.02	1.71	31.24	-	-	P	V
		453.89	23.4	-22.6	46	29.45	22.93	2.31	31.29	-	-	P	V
		994.18	31.82	-22.18	54	29.09	30.51	3.55	31.33	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

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

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

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

1. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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

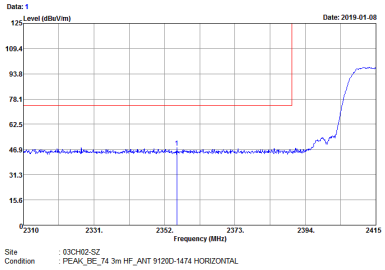
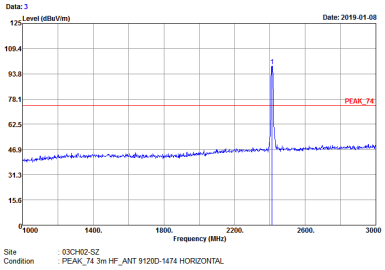
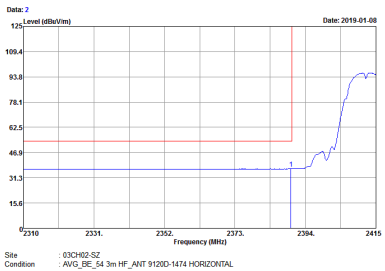
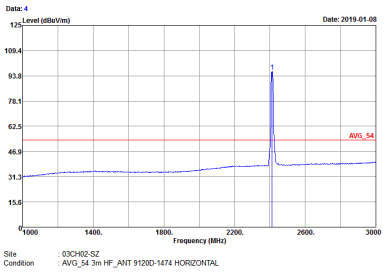
Appendix D. Radiated Spurious Emission Plots

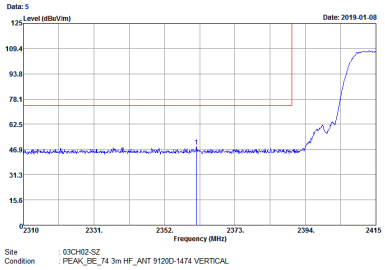
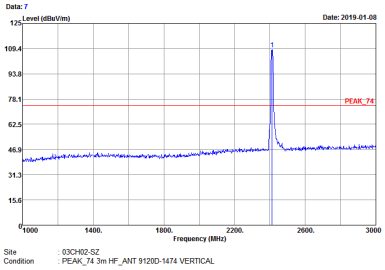
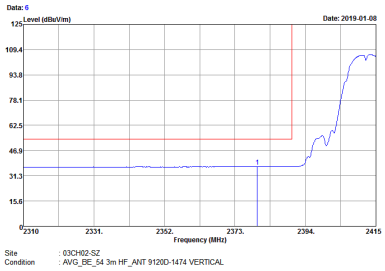
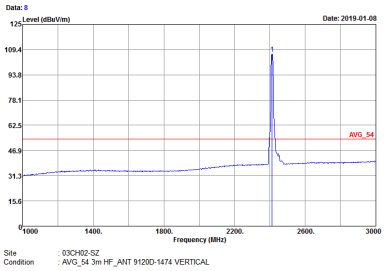
Note symbol

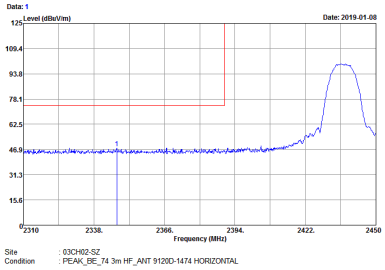
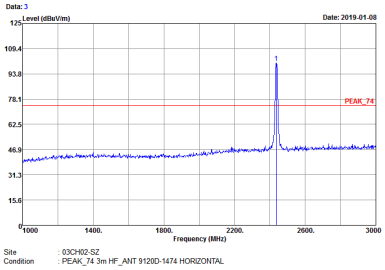
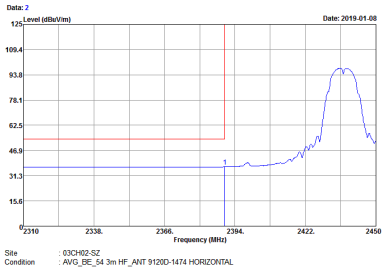
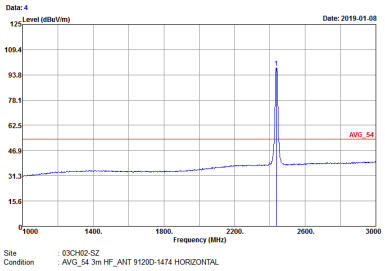
-L	**Low channel location**
-R	**High channel location**

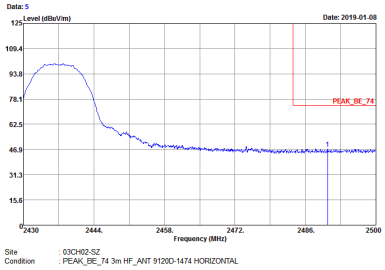
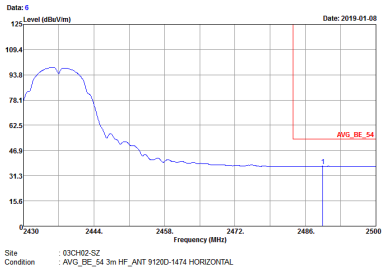
2.4GHz 2400~2483.5MHz

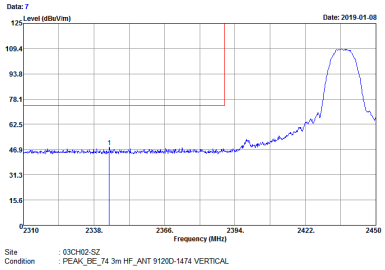
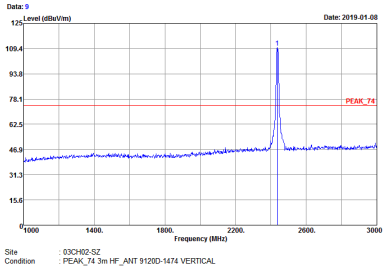
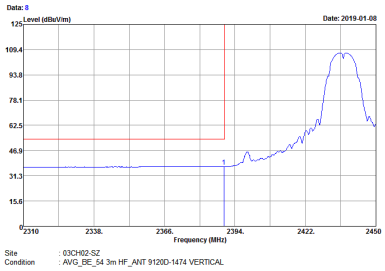
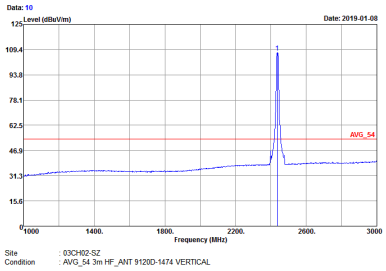
WIFI 802.11b (Band Edge @ 3m)

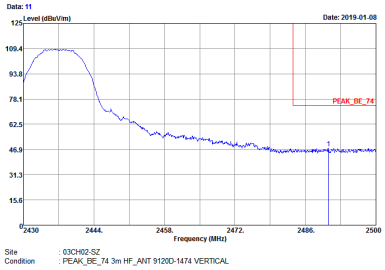
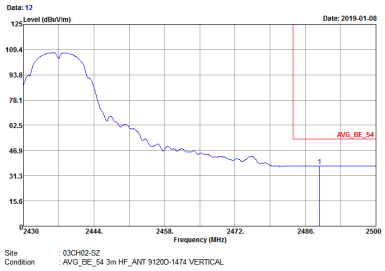
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

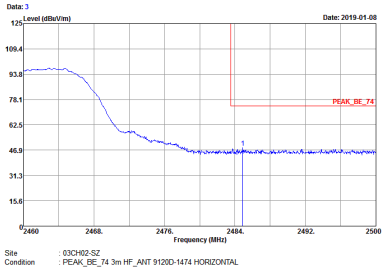
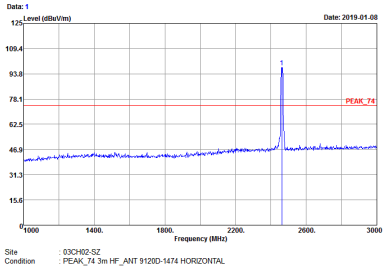
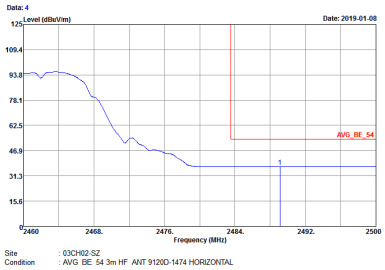
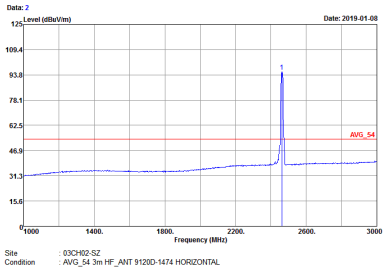
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

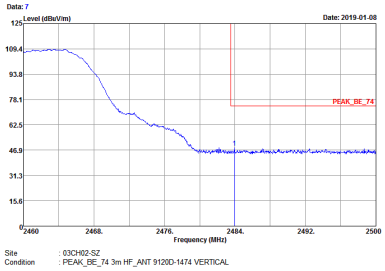
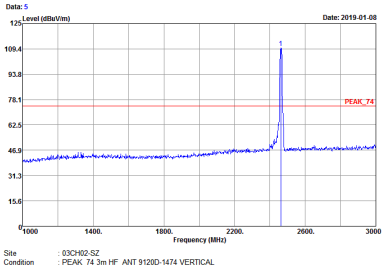
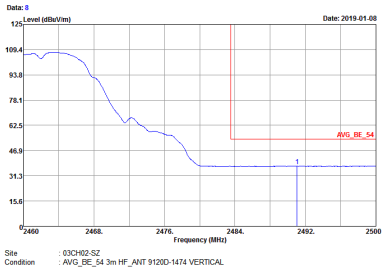
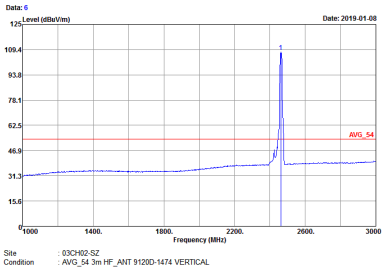
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		-
Avg.		-

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

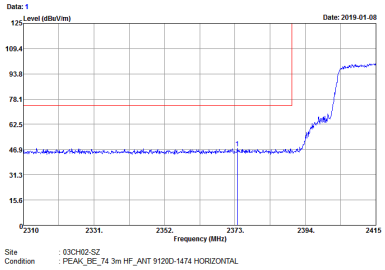
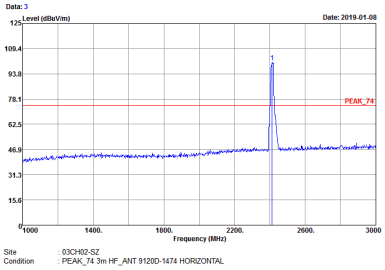
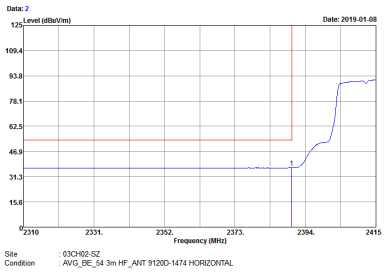
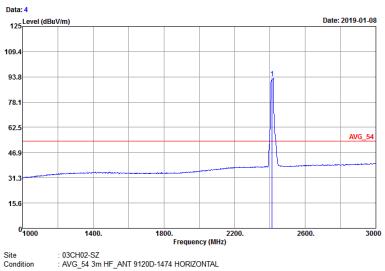
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		-
Avg.		-

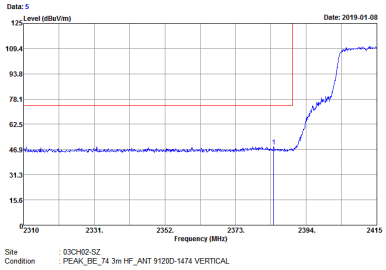
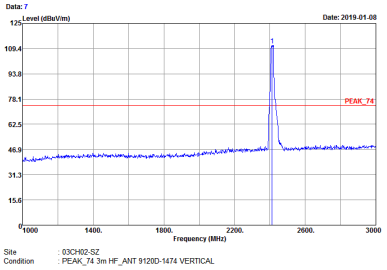
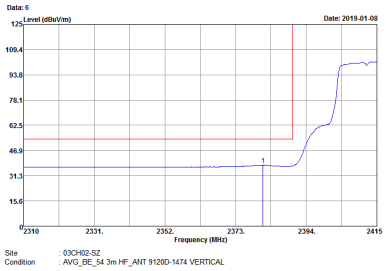
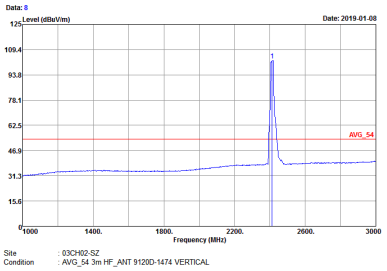
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

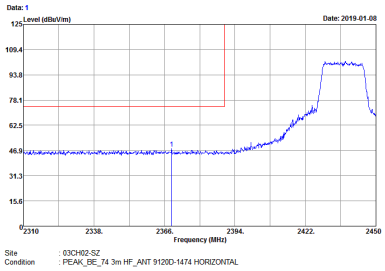
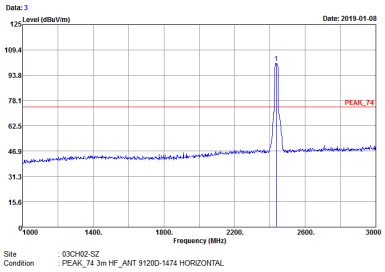
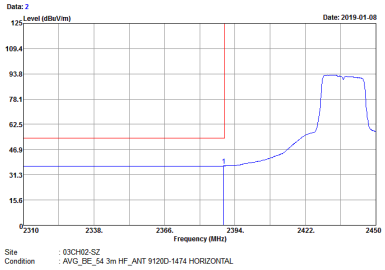
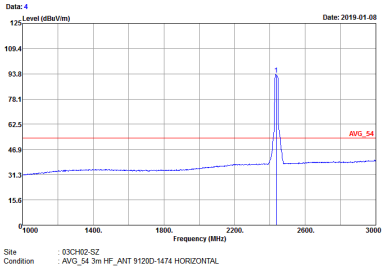
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak		
Avg.		

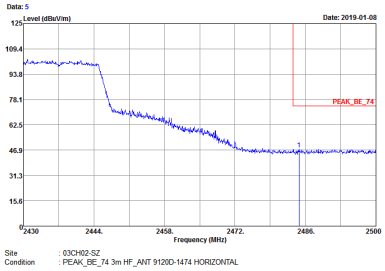
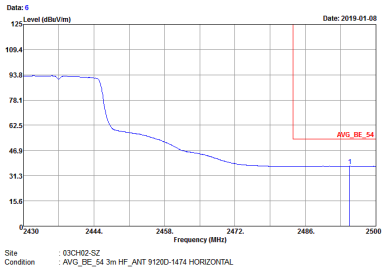
2.4GHz 2400~2483.5MHz

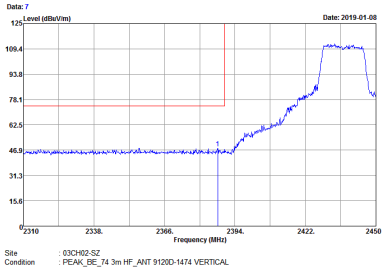
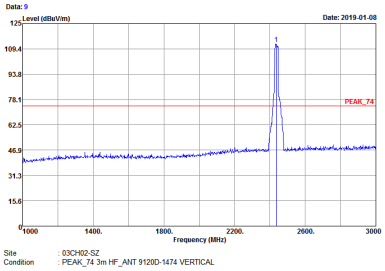
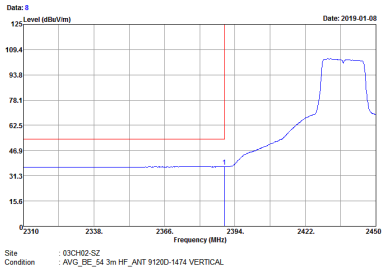
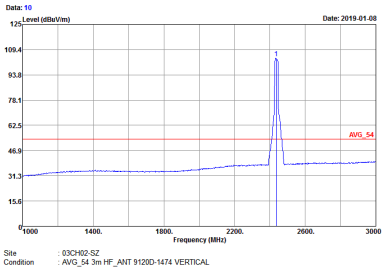
WIFI 802.11g (Band Edge @ 3m)

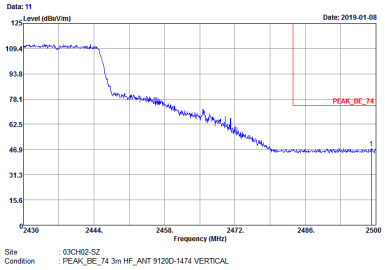
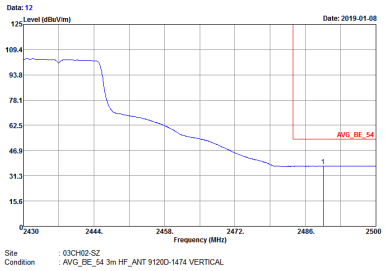
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak		
Avg.		

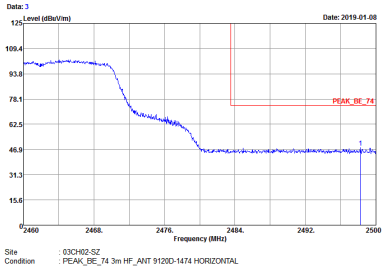
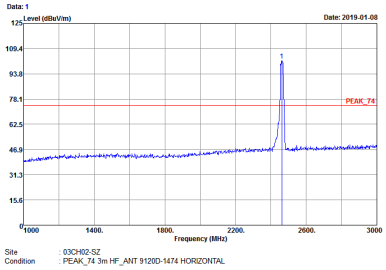
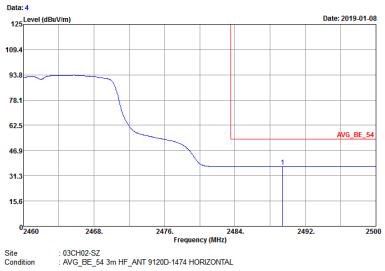
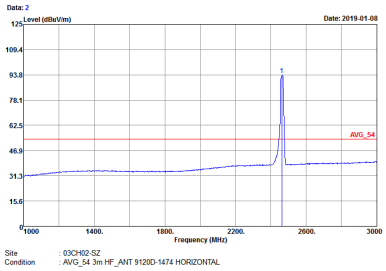
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Vertical	Fundamental
Peak		
Avg.		

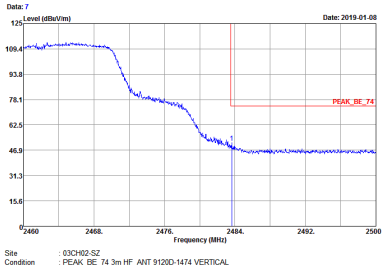
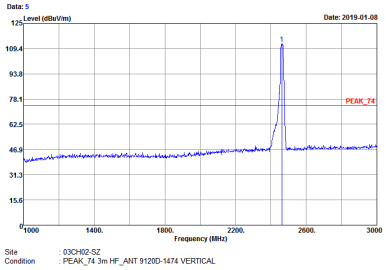
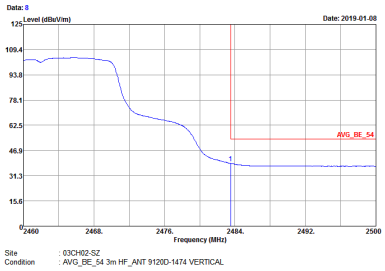
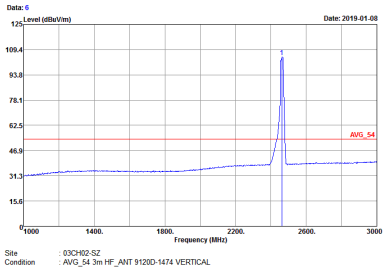
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		-
Avg.		-

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak		
Avg.		

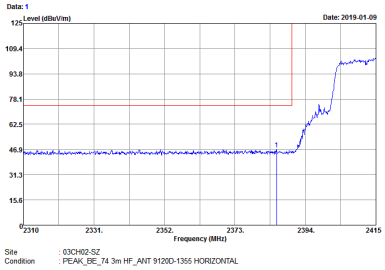
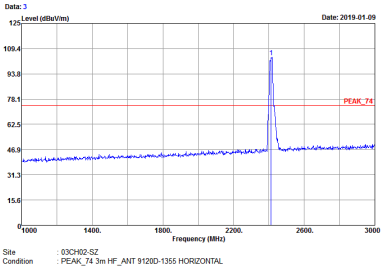
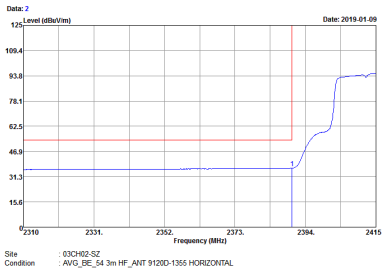
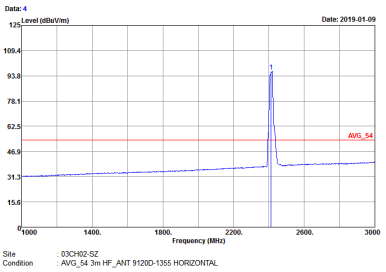
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak		-
Avg.		-

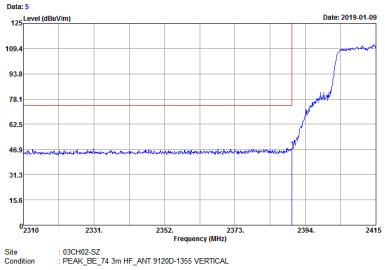
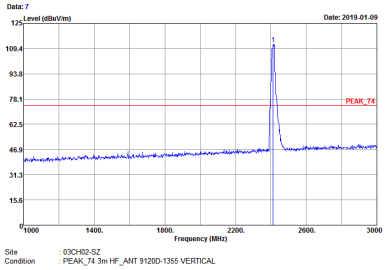
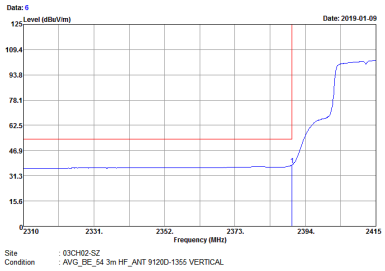
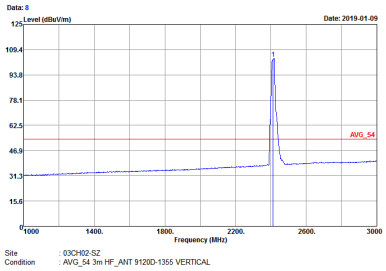
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak		
Avg.		

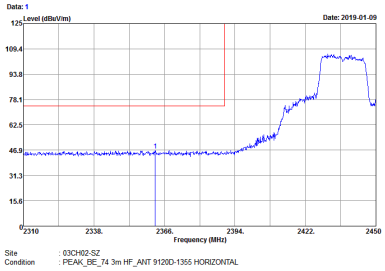
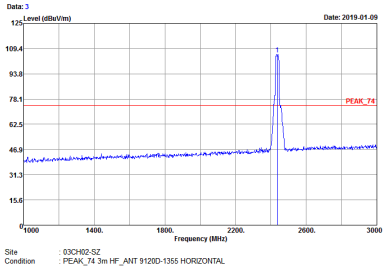
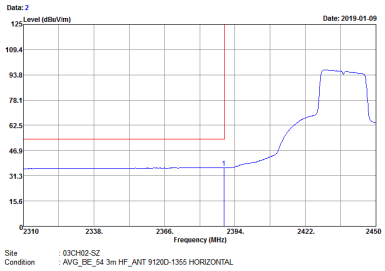
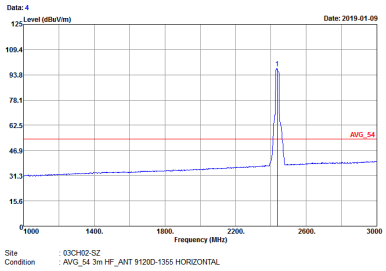
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Vertical	Fundamental
Peak		
Avg.		

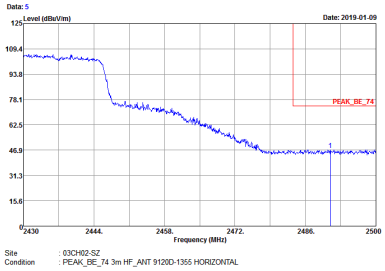
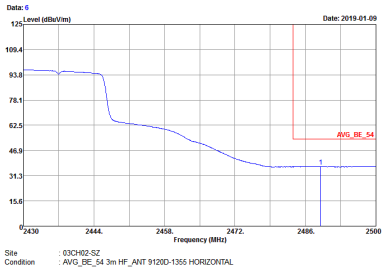
2.4GHz 2400~2483.5MHz

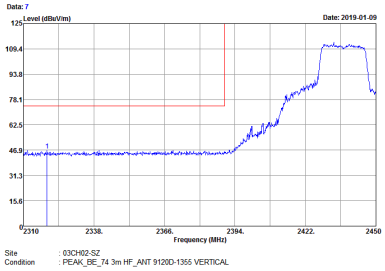
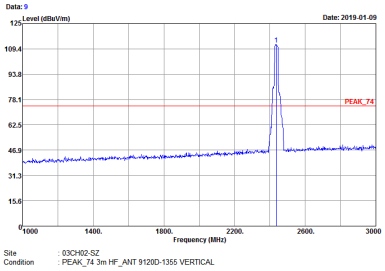
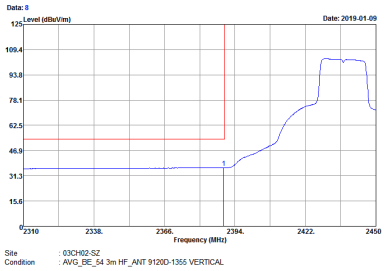
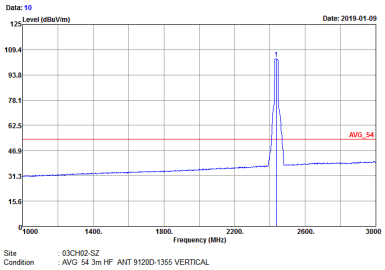
WIFI 802.11n HT20 (Band Edge @ 3m)

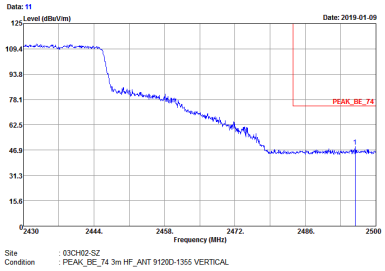
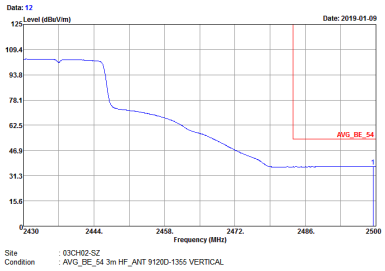
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak		
Avg.		

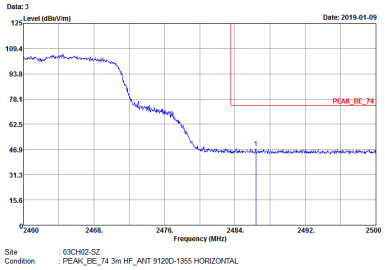
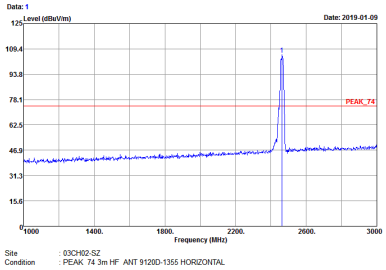
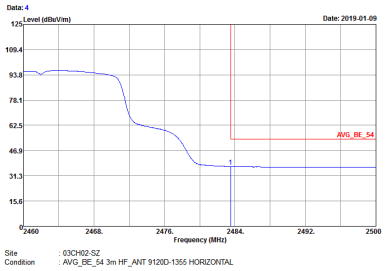
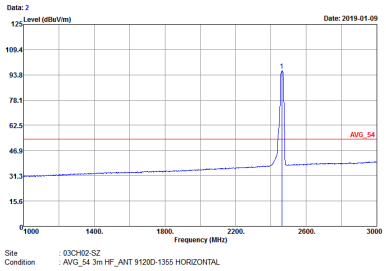
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Vertical	Fundamental
Peak		
Avg.		

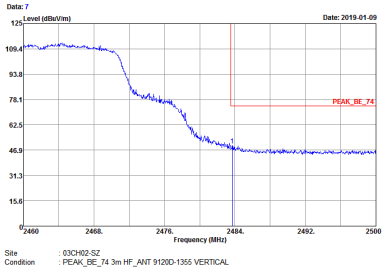
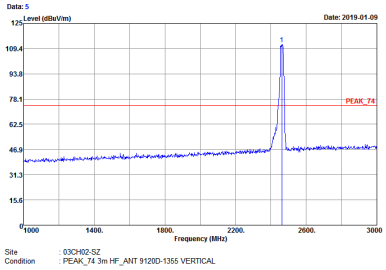
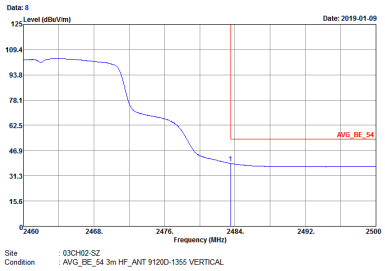
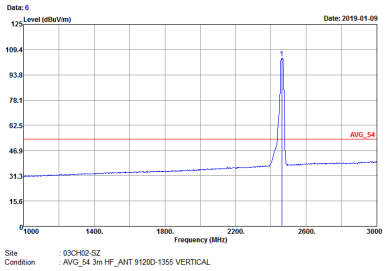
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		-
Avg.		-

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak		
Avg.		

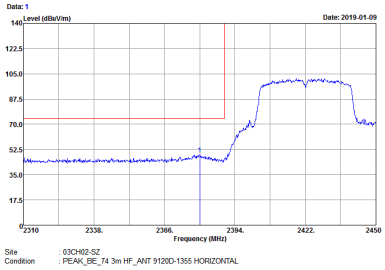
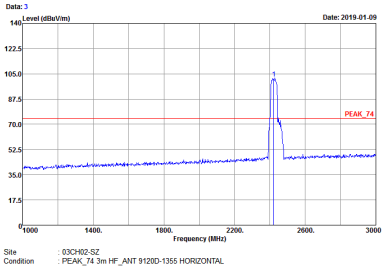
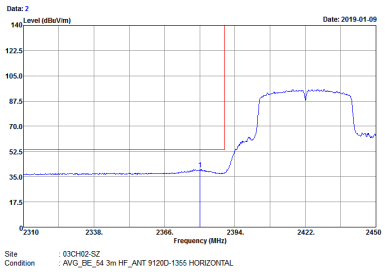
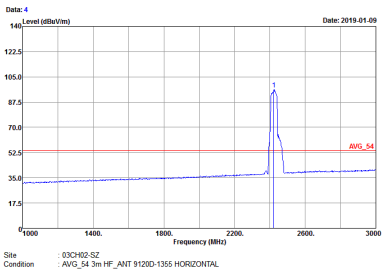
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak		-
Avg.		

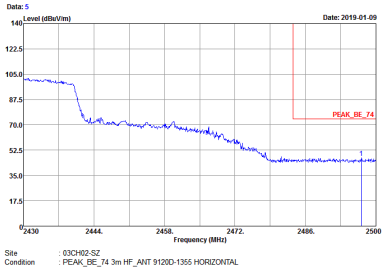
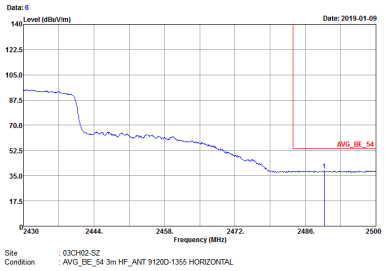
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak		
Avg.		

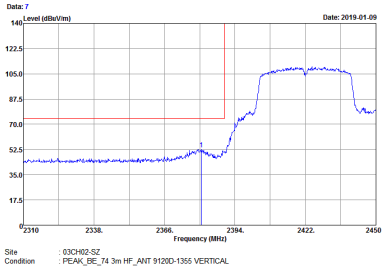
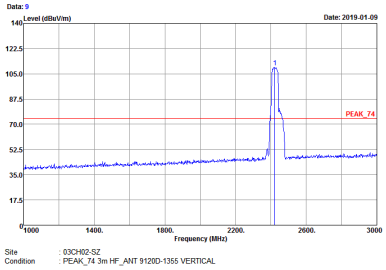
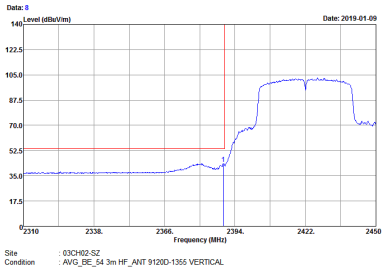
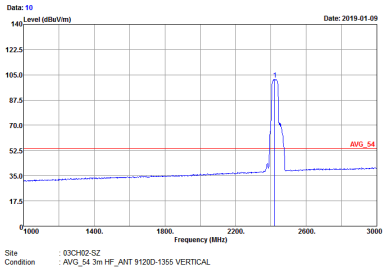
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Vertical	Fundamental
Peak		
Avg.		

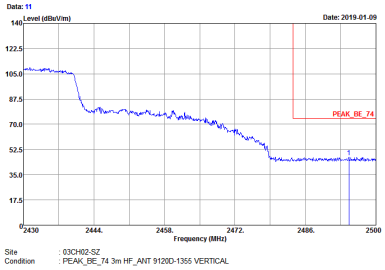
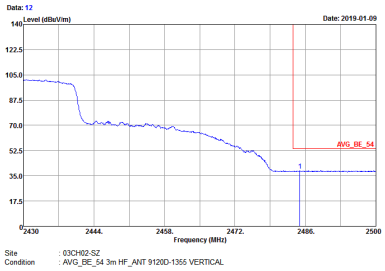
2.4GHz 2400~2483.5MHz

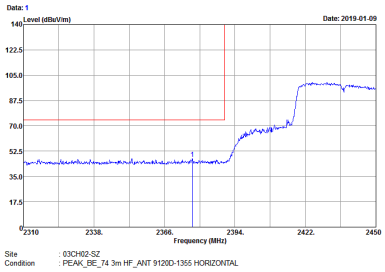
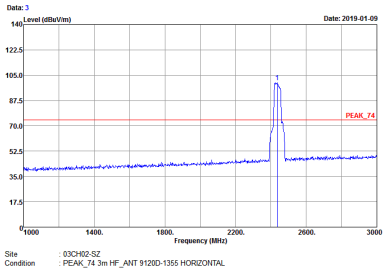
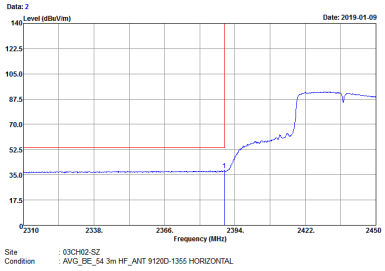
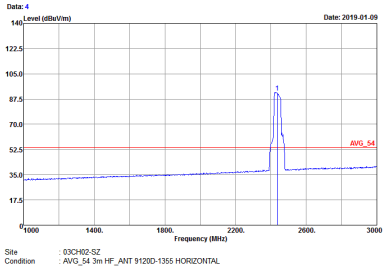
WIFI 802.11n HT40 (Band Edge @ 3m)

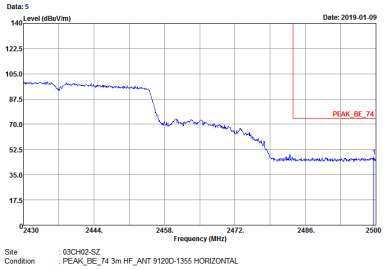
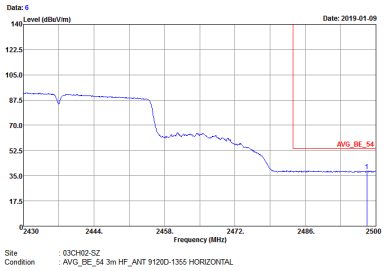
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1+2	Horizontal	Fundamental
Peak		
Avg.		

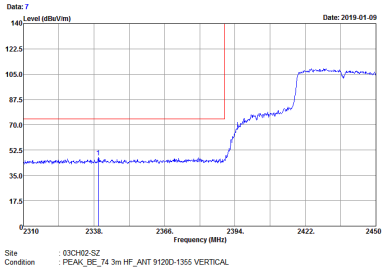
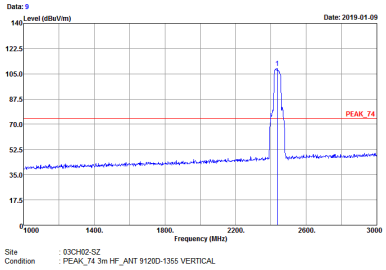
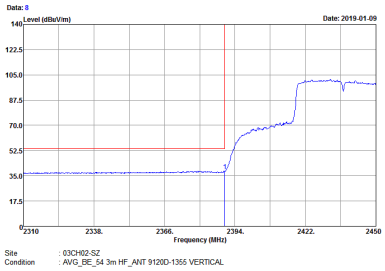
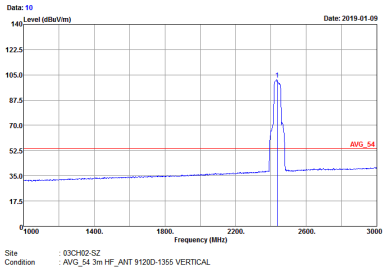
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1+2	Horizontal	Fundamental
Peak		-
Avg.		-

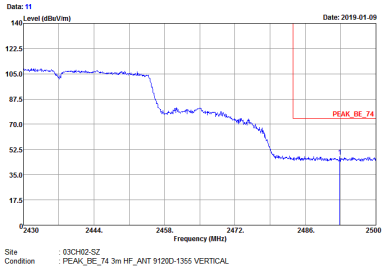
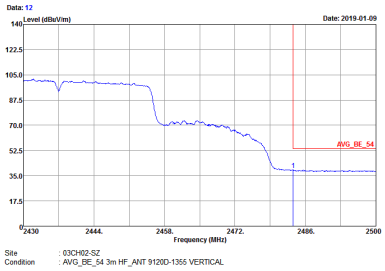
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1+2	Vertical	Fundamental
Peak		
Avg.		

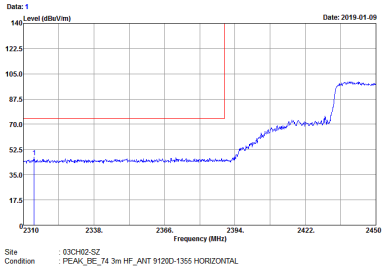
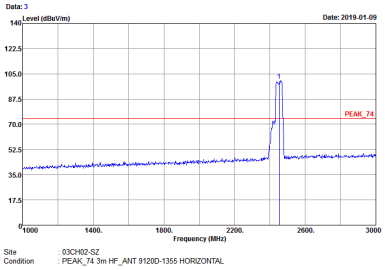
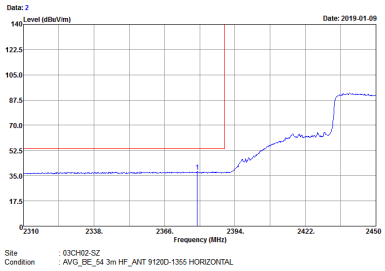
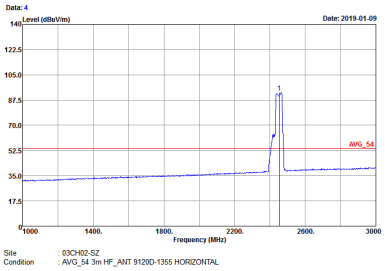
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1+2	Vertical	Fundamental
Peak		-
Avg.		-

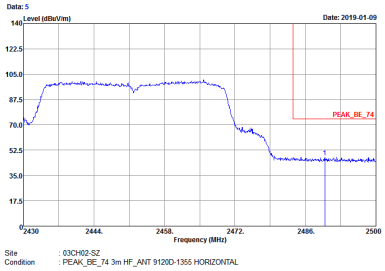
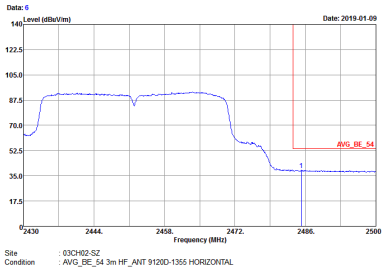
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak		
Avg.		

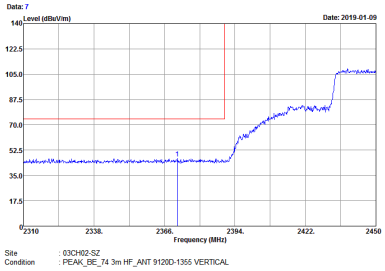
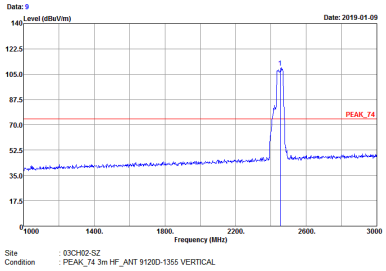
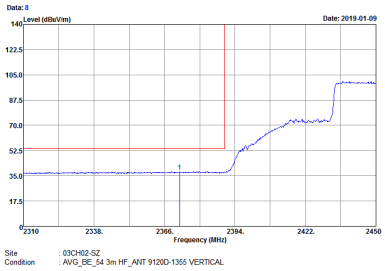
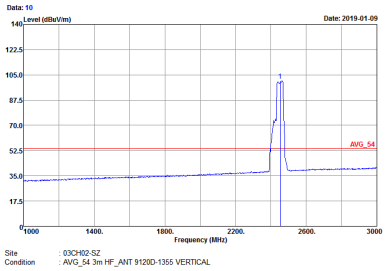
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		
Avg.		-

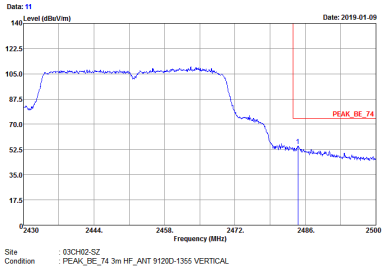
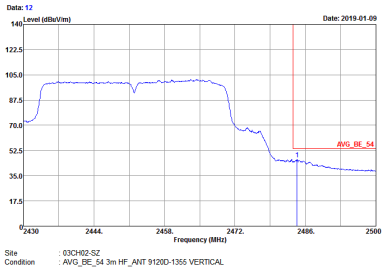
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		-
Avg.		-

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1+2	Horizontal	Fundamental
Peak		
Avg.		

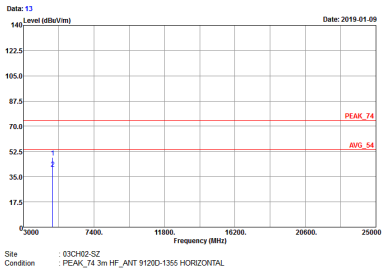
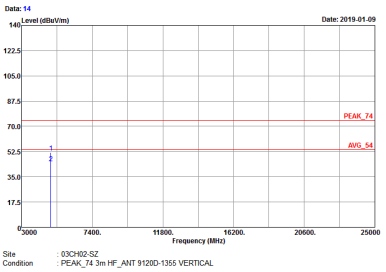
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1+2	Horizontal	Fundamental
Peak		-
Avg.		-

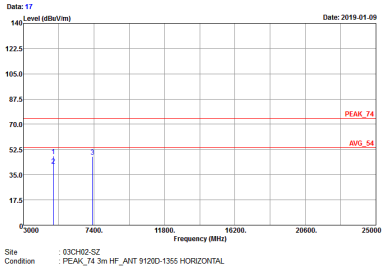
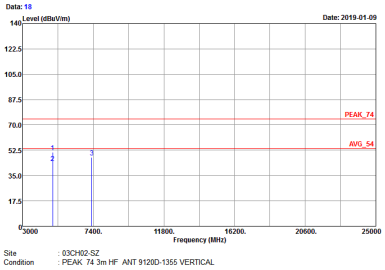
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1+2	Vertical	Fundamental
Peak		
Avg.		

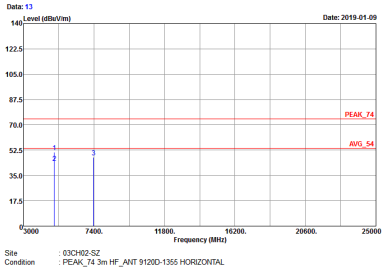
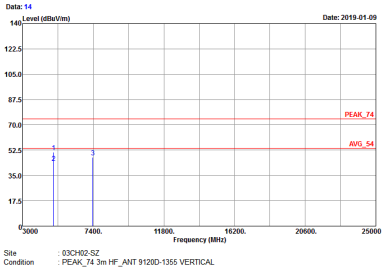
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1+2	Vertical	Fundamental
Peak		-
Avg.		-

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

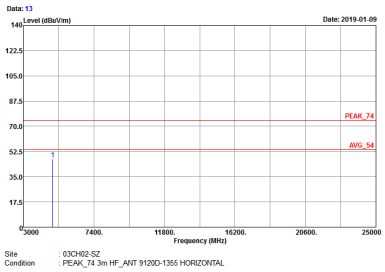
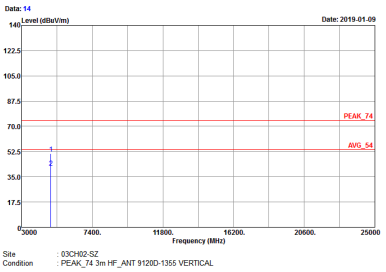
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

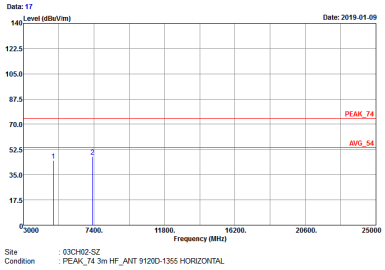
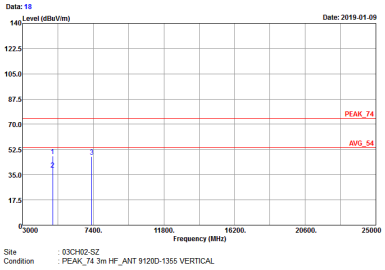
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

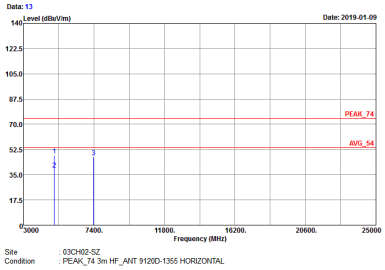
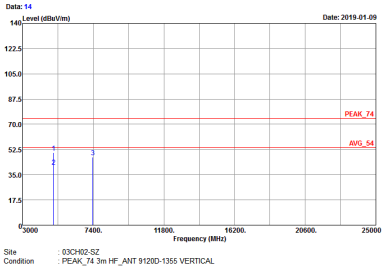
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

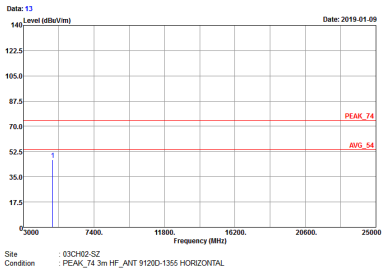
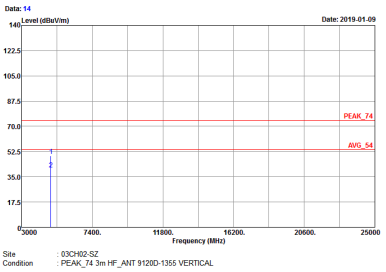
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.		

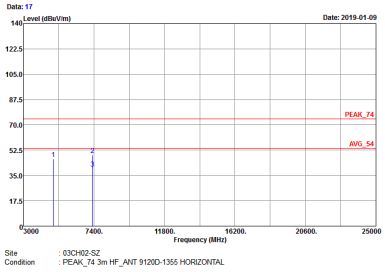
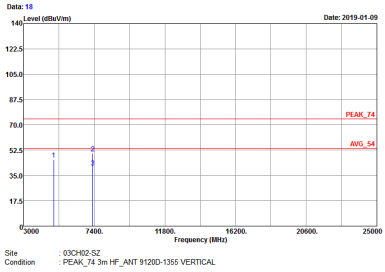
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.		

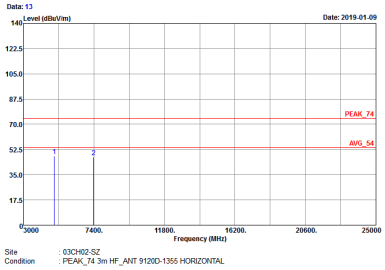
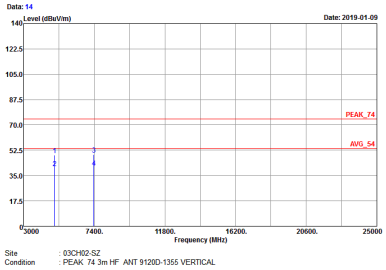
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

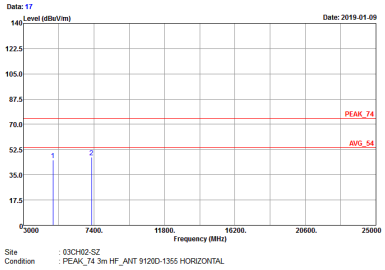
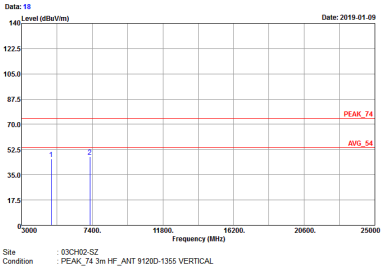
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.		

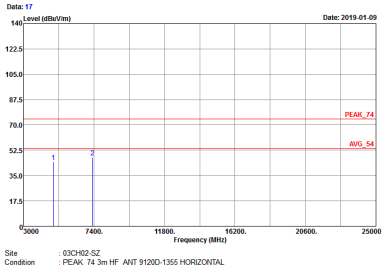
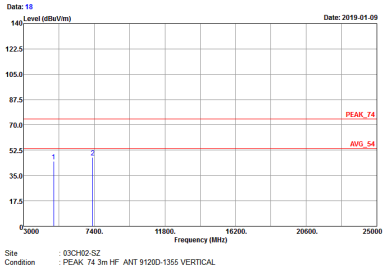
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.		

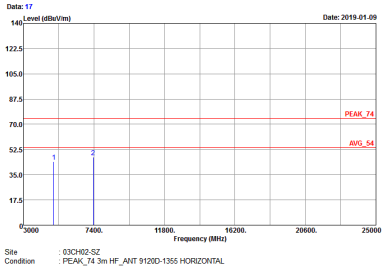
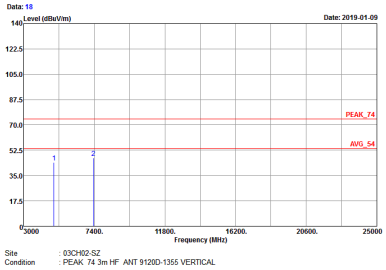
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

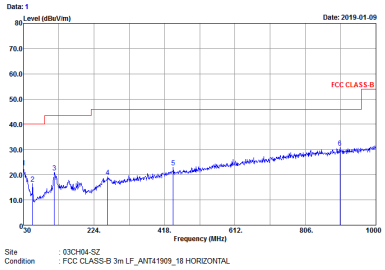
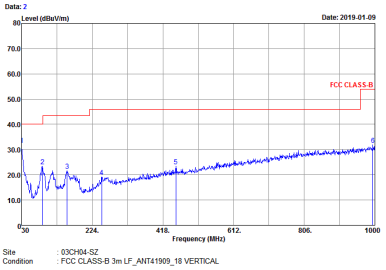
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH03 2422MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH09 2452MHz	
1+2	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

2.4GHz WIFI 802.11n HT40 (LF)

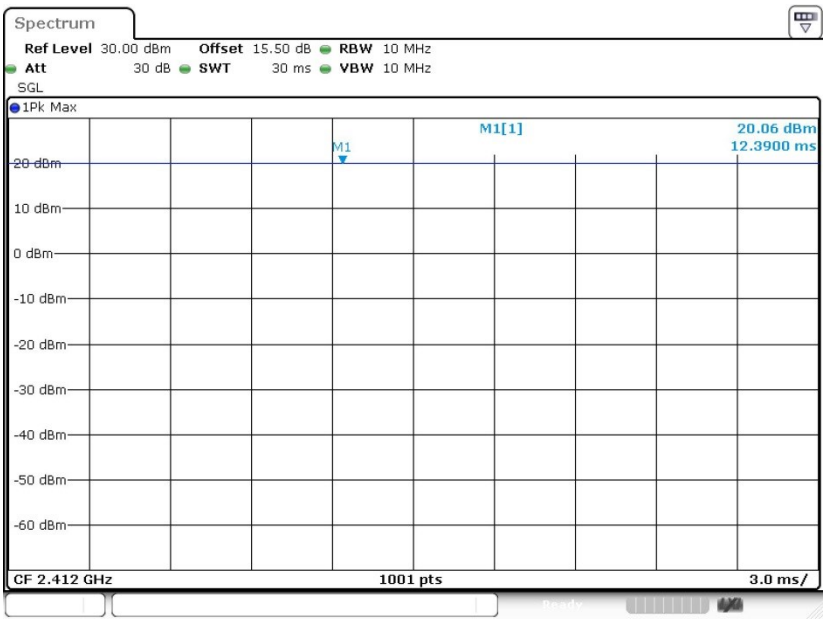
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT40 LF	
1+2	Horizontal	Vertical
QP / Peak		

Appendix E. Duty Cycle Plots

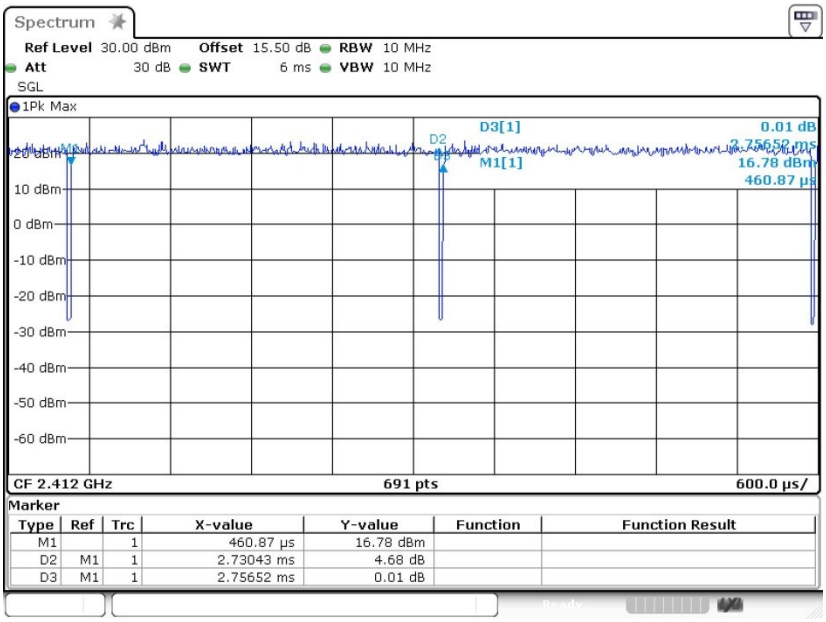
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11b	100	-	-	10Hz
1	802.11g	99.05	-	-	10Hz
2	802.11g	99.05	-	-	10Hz
1	802.11n HT20	98.02	-	-	10Hz
2	802.11n HT20	98.35	-	-	10Hz
1	802.11n HT40	94.49	0.646	1.547	3KHz
2	802.11n HT40	94.09	0.646	1.547	3KHz

Note: RSE tests were performed with the worst VBW settings.

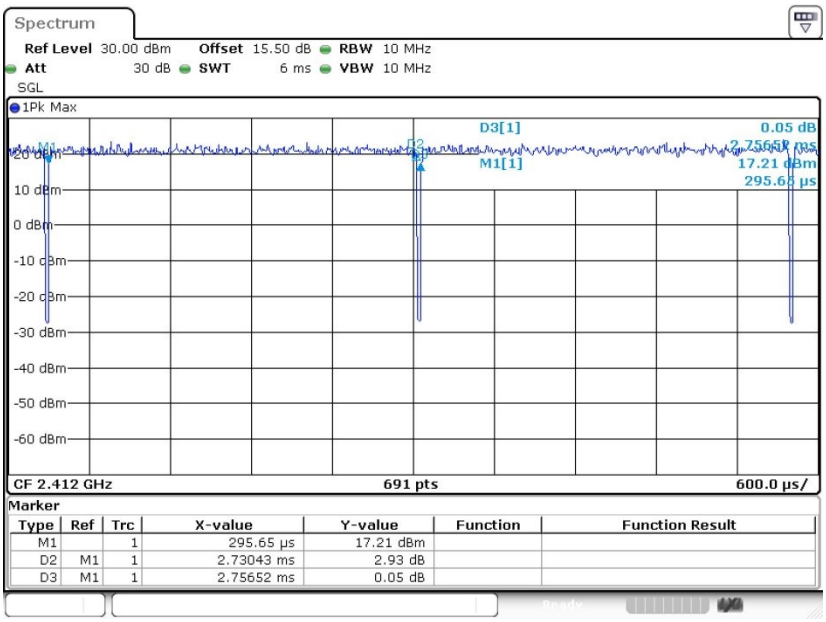
802.11b for Ant.1



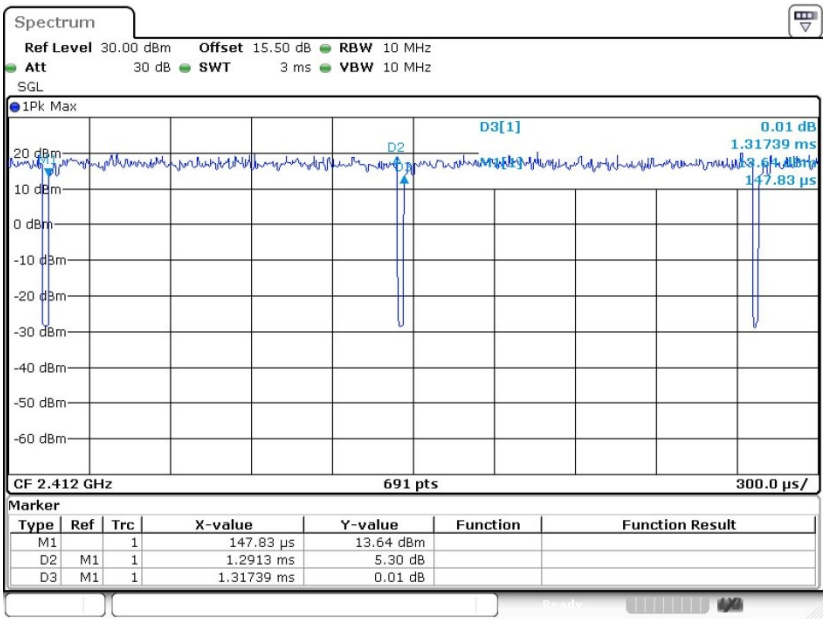
802.11g for Ant.1



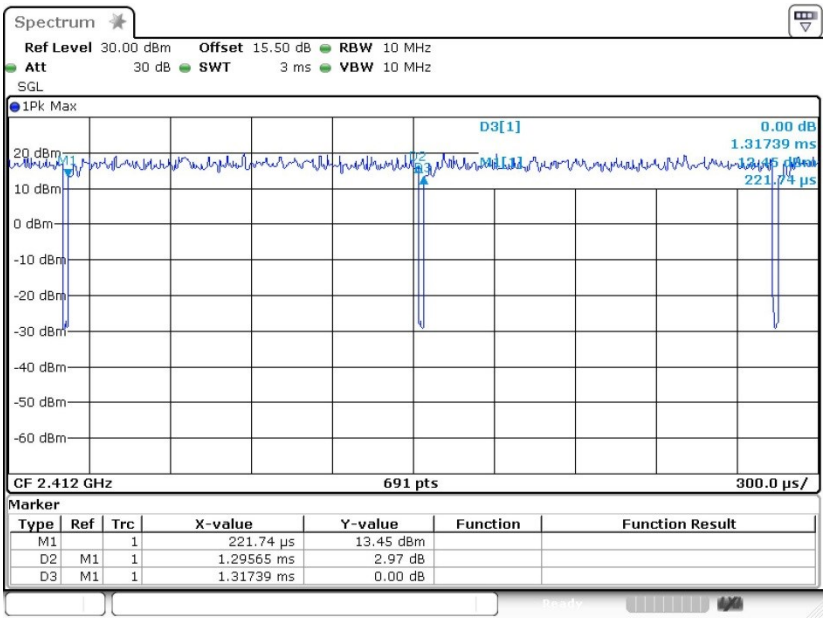
802.11g for Ant.2



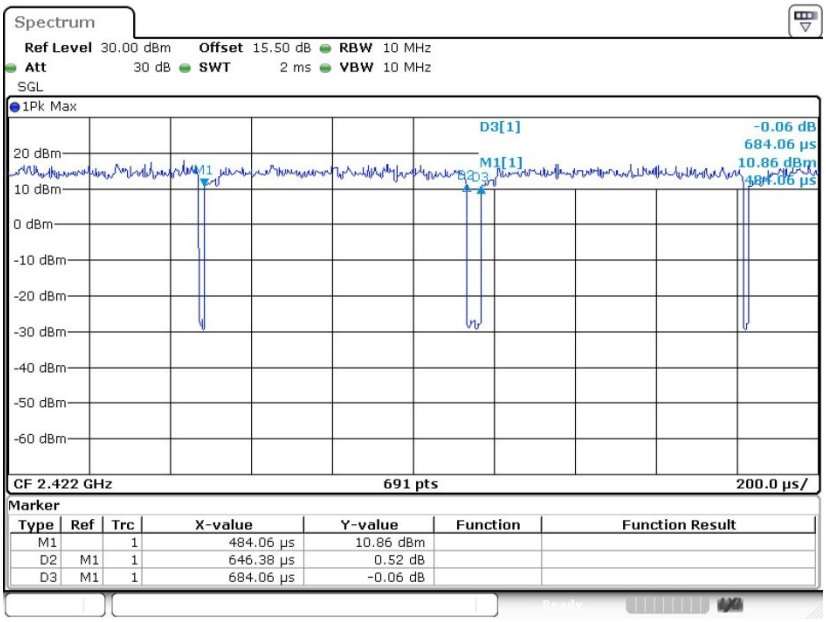
802.11n20 for Ant.1



802.11n20 for Ant.2



802.11n40 for Ant.1



802.11n40 for Ant.2