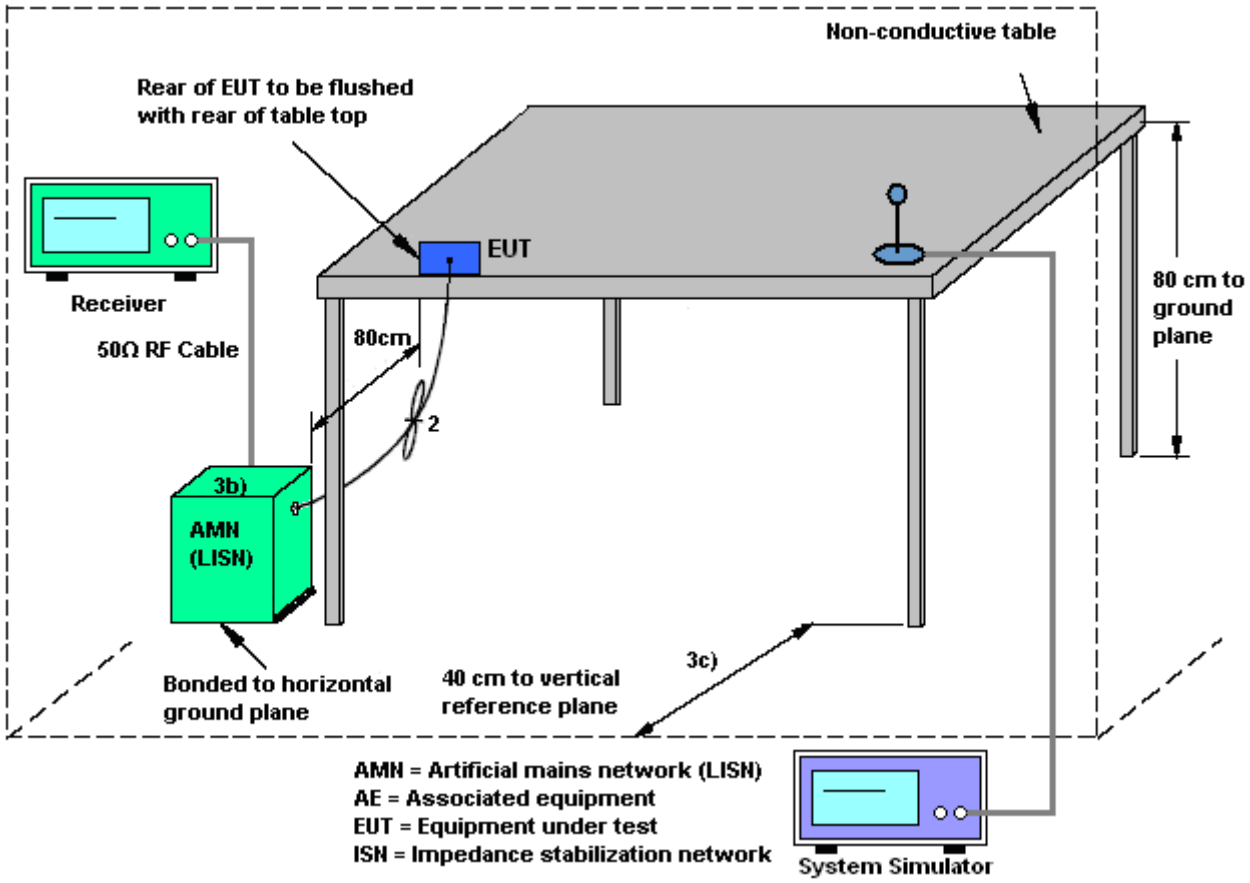
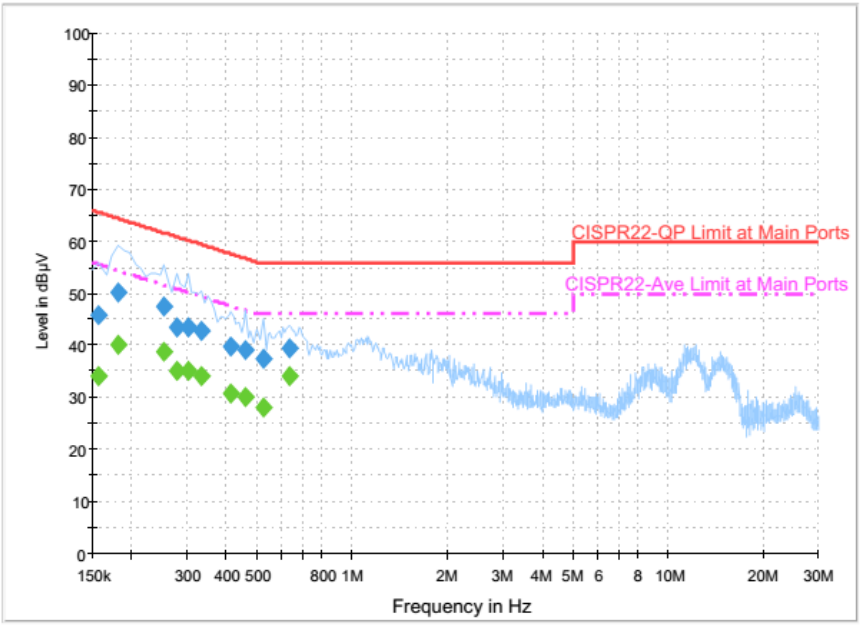
3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

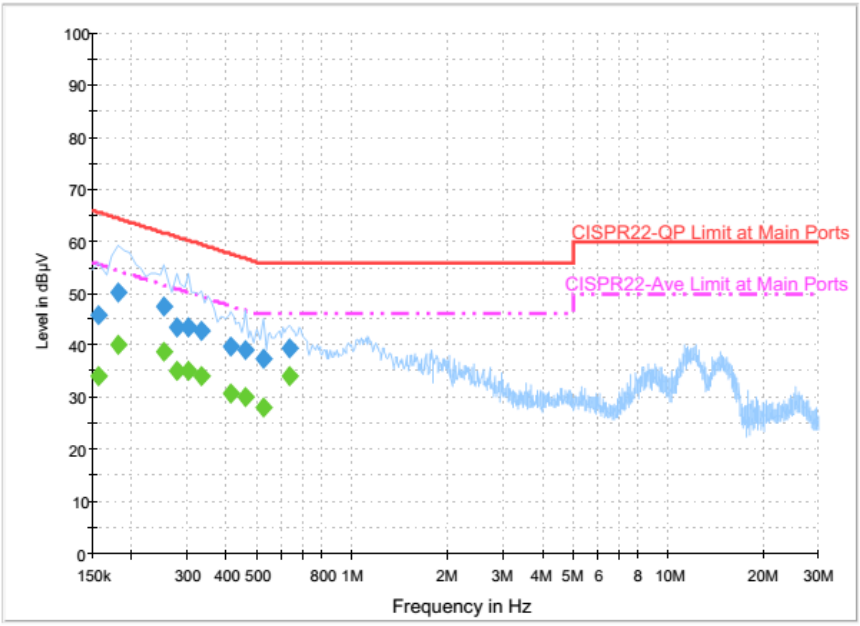
Test Mode :	Mode 1	Temperature :	21~22℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	50~51%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + MP3 + Adapter		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	45.9	Off	L1	19.6	19.7	65.6
0.182000	50.3	Off	L1	19.6	14.1	64.4
0.254000	47.3	Off	L1	19.6	14.3	61.6
0.278000	43.5	Off	L1	19.6	17.4	60.9
0.302000	43.6	Off	L1	19.6	16.6	60.2
0.334000	42.8	Off	L1	19.6	16.6	59.4
0.414000	39.9	Off	L1	19.6	17.7	57.6
0.462000	39.1	Off	L1	19.6	17.6	56.7
0.526000	37.6	Off	L1	19.6	18.4	56.0
0.630000	39.6	Off	L1	19.6	16.4	56.0

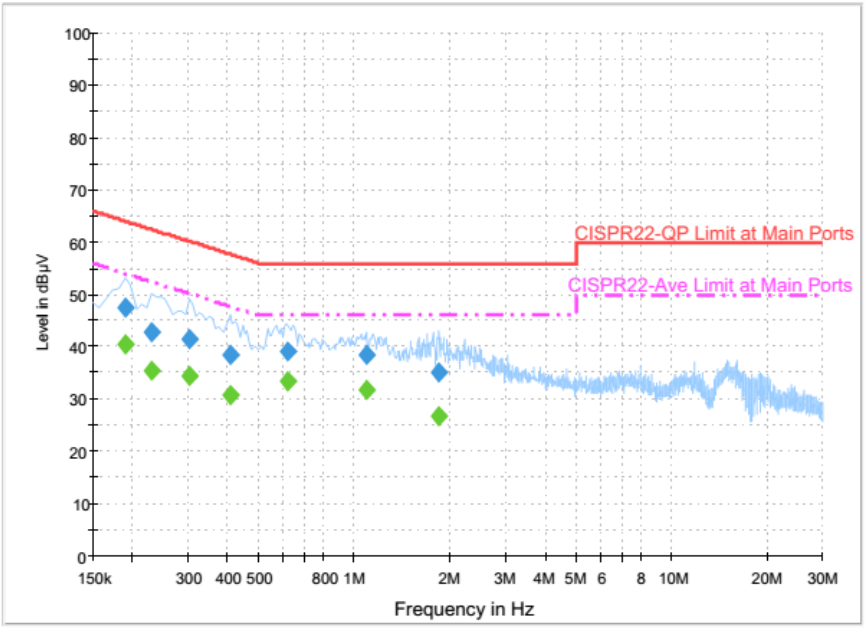
Test Mode :	Mode 1	Temperature :	21~22℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	50~51%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + MP3 + Adapter		



Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	34.2	Off	L1	19.6	21.4	55.6
0.182000	40.2	Off	L1	19.6	14.2	54.4
0.254000	38.8	Off	L1	19.6	12.8	51.6
0.278000	35.2	Off	L1	19.6	15.7	50.9
0.302000	35.3	Off	L1	19.6	14.9	50.2
0.334000	34.1	Off	L1	19.6	15.3	49.4
0.414000	30.7	Off	L1	19.6	16.9	47.6
0.462000	30.2	Off	L1	19.6	16.5	46.7
0.526000	28.0	Off	L1	19.6	18.0	46.0
0.630000	34.0	Off	L1	19.6	12.0	46.0

Test Mode :	Mode 1	Temperature :	21~22℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	50~51%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + MP3 + Adapter		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	47.6	Off	N	19.6	16.4	64.0
0.230000	43.0	Off	N	19.6	19.4	62.4
0.302000	41.6	Off	N	19.6	18.6	60.2
0.406000	38.5	Off	N	19.6	19.2	57.7
0.622000	39.2	Off	N	19.6	16.8	56.0
1.094000	38.6	Off	N	19.6	17.4	56.0
1.854000	35.2	Off	N	19.6	20.8	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	40.6	Off	N	19.6	13.4	54.0
0.230000	35.5	Off	N	19.6	16.9	52.4
0.302000	34.5	Off	N	19.6	15.7	50.2
0.406000	30.9	Off	N	19.6	16.8	47.7
0.622000	33.3	Off	N	19.6	12.7	46.0
1.094000	31.7	Off	N	19.6	14.3	46.0
1.854000	26.7	Off	N	19.6	19.3	46.0

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.

			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant. 1	Ant. 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
2.4 GHz	-1.80	-2.20	-1.80	1.01	0.00	0.00

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
Power Meter	Anritsu	ML2495A	1132003	300MHz~40GHz	Aug. 12, 2015	Apr. 16, 2016 ~ Apr. 28, 2016	Aug. 11, 2016	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1126017	300MHz~40GHz	Aug. 12, 2015	Apr. 16, 2016 ~ Apr. 28, 2016	Aug. 11, 2016	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSQ	200578/026	20Hz~26.5GHz	May. 19, 2015	Apr. 16, 2016 ~ Apr. 28, 2016	May. 18, 2016	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 23, 2015	Apr. 16, 2016 ~ Apr. 28, 2016	Nov. 22, 2016	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SU-241	92003713	-30℃ ~95℃	Jun. 15, 2015	Apr. 16, 2016 ~ Apr. 28, 2016	Jun. 14, 2016	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Apr. 15, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 26, 2015	Apr. 15, 2016	Aug. 25, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	Apr. 15, 2016	Dec. 01, 2016	Conduction (CO05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	Apr. 19, 2016 ~ Apr. 26, 2016	Sep. 01, 2016	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Nov. 20, 2015	Apr. 19, 2016 ~ Apr. 26, 2016	Nov. 19, 2016	Radiation (03CH11-HY)
Bilog Antenna	TESEQ	CBL 6111D	35414	30MHz~1GHz	Nov. 17, 2015	Apr. 19, 2016 ~ Apr. 26, 2016	Nov. 16, 2016	Radiation (03CH11-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1326	1GHz ~ 18GHz	Oct. 08, 2015	Apr. 19, 2016 ~ Apr. 26, 2016	Oct. 07, 2016	Radiation (03CH11-HY)
Preamplifier	Keysight	83017A	MY53270080	1GHz~26.5GHz	Nov. 19, 2015	Apr. 19, 2016 ~ Apr. 26, 2016	Nov. 18, 2016	Radiation (03CH11-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1902247	1GHz~18GHz	Jul. 01, 2015	Apr. 19, 2016 ~ Apr. 26, 2016	Jun. 30, 2016	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz ~ 44GHZ	Sep. 24, 2015	Apr. 19, 2016 ~ Apr. 26, 2016	Sep. 23, 2016	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Apr. 19, 2016 ~ Apr. 26, 2016	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Apr. 19, 2016 ~ Apr. 26, 2016	N/A	Radiation (03CH11-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 02, 2015	Apr. 19, 2016 ~ Apr. 26, 2016	Nov. 01, 2016	Radiation (03CH11-HY)
Preamplifier	MITEQ	JS44-18004000-33-8P	1840917	18GHz ~ 40GHz	Jun. 02, 2015	Apr. 19, 2016 ~ Apr. 26, 2016	Jun. 01, 2016	Radiation (03CH11-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.9**

Appendix A. Conducted Test Results

Report Number : FR640145C

Test Engineer:	AC Chang	Temperature:	21~25	°C
Test Date:	2016/04/16 ~ 2016/04/28	Relative Humidity:	51~54	%

Report Number : FR640145C

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	1Mbps	1	1	2412	14.20	13.80	8.04	8.08	0.50	Pass
11b	1Mbps	1	6	2437	14.20	15.20	8.04	8.08	0.50	Pass
11b	1Mbps	1	11	2462	14.25	15.25	8.04	8.08	0.50	Pass
11g	6Mbps	1	1	2412	17.50	17.20	16.04	16.32	0.50	Pass
11g	6Mbps	1	6	2437	17.40	19.25	16.08	15.72	0.50	Pass
11g	6Mbps	1	11	2462	17.30	17.40	16.12	16.12	0.50	Pass
HT20	MCS0	1	1	2412	18.40	18.25	16.84	16.80	0.50	Pass
HT20	MCS0	1	6	2437	18.40	19.55	16.84	15.08	0.50	Pass
HT20	MCS0	1	11	2462	18.40	18.40	17.20	16.84	0.50	Pass
VHT20	MCS0	1	1	2412	18.30	18.20	16.92	16.88	0.50	Pass
VHT20	MCS0	1	6	2437	18.40	19.80	16.84	16.32	0.50	Pass
VHT20	MCS0	1	11	2462	18.30	18.30	17.20	16.84	0.50	Pass
11b	1Mbps	2	1	2412	14.20	13.80	8.08	8.08	0.50	Pass
11b	1Mbps	2	6	2437	14.15	14.85	8.08	8.08	0.50	Pass
11b	1Mbps	2	11	2462	14.25	15.00	8.08	8.08	0.50	Pass
11g	6Mbps	2	1	2412	17.55	17.20	16.04	16.32	0.50	Pass
11g	6Mbps	2	6	2437	17.45	17.95	15.72	16.08	0.50	Pass
11g	6Mbps	2	11	2462	17.30	17.55	16.32	16.08	0.50	Pass
HT20	MCS0	2	1	2412	18.35	18.20	16.92	16.80	0.50	Pass
HT20	MCS0	2	6	2437	18.35	18.80	16.84	16.32	0.50	Pass
HT20	MCS0	2	11	2462	18.35	18.25	17.24	16.84	0.50	Pass
VHT20	MCS0	2	1	2412	18.30	18.25	16.92	17.04	0.50	Pass
VHT20	MCS0	2	6	2437	18.35	18.95	16.80	16.32	0.50	Pass
VHT20	MCS0	2	11	2462	18.25	18.25	17.32	16.96	0.50	Pass

TEST RESULTS DATA
Peak Output Power

2.4GHz Band											
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2
11b	1Mbps	1	1	2412	20.02	15.44		-1.80	-2.20	18.22	13.24
11b	1Mbps	1	6	2437	21.24	17.06		-1.80	-2.20	19.44	14.86
11b	1Mbps	1	11	2462	21.64	17.55		-1.80	-2.20	19.84	15.35
11g	6Mbps	1	1	2412	21.82	17.54		-1.80	-2.20	20.02	15.34
11g	6Mbps	1	6	2437	22.64	18.27		-1.80	-2.20	20.84	16.07
11g	6Mbps	1	11	2462	21.79	18.09		-1.80	-2.20	19.99	15.89
HT20	MCS0	1	1	2412	21.49	16.63		-1.80	-2.20	19.69	14.43
HT20	MCS0	1	6	2437	22.77	18.31		-1.80	-2.20	20.97	16.11
HT20	MCS0	1	11	2462	22.27	18.20		-1.80	-2.20	20.47	16.00
VHT20	MCS0	1	1	2412	21.40	16.82		-1.80	-2.20	19.60	14.62
VHT20	MCS0	1	6	2437	22.68	18.33		-1.80	-2.20	20.88	16.13
VHT20	MCS0	1	11	2462	21.61	17.92		-1.80	-2.20	19.81	15.72
11b	1Mbps	2	1	2412	19.47	14.85	20.76	-1.80		18.96	
11b	1Mbps	2	6	2437	20.37	16.55	21.88	-1.80		20.08	
11b	1Mbps	2	11	2462	20.68	16.98	22.22	-1.80		20.42	
11g	6Mbps	2	1	2412	21.48	16.74	22.74	-1.80		20.94	
11g	6Mbps	2	6	2437	21.97	17.85	23.39	-1.80		21.59	
11g	6Mbps	2	11	2462	21.31	17.75	22.90	-1.80		21.10	
HT20	MCS0	2	1	2412	21.07	16.47	22.36	-1.80		20.56	
HT20	MCS0	2	6	2437	22.12	17.90	23.51	-1.80		21.71	
HT20	MCS0	2	11	2462	21.64	17.72	23.12	-1.80		21.32	
VHT20	MCS0	2	1	2412	21.12	16.22	22.34	-1.80		20.54	
VHT20	MCS0	2	6	2437	22.05	17.93	23.47	-1.80		21.67	
VHT20	MCS0	2	11	2462	21.22	17.24	22.68	-1.80		20.88	

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)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant 1	Ant 2	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	0.04	0.04	17.90	13.01		30.00	30.00	-1.80	-2.20	16.10	10.81	36.00	36.00	Pass
11b	1Mbps	1	6	2437	0.04	0.04	19.15	15.02		30.00	30.00	-1.80	-2.20	17.35	12.82	36.00	36.00	Pass
11b	1Mbps	1	11	2462	0.04	0.04	19.37	15.50		30.00	30.00	-1.80	-2.20	17.57	13.30	36.00	36.00	Pass
11g	6Mbps	1	1	2412	0.25	0.25	17.02	11.79		30.00	30.00	-1.80	-2.20	15.22	9.59	36.00	36.00	Pass
11g	6Mbps	1	6	2437	0.25	0.25	17.87	14.03		30.00	30.00	-1.80	-2.20	16.07	11.83	36.00	36.00	Pass
11g	6Mbps	1	11	2462	0.25	0.25	16.20	13.11		30.00	30.00	-1.80	-2.20	14.40	10.91	36.00	36.00	Pass
HT20	MCS0	1	1	2412	0.26	0.26	16.10	10.28		30.00	30.00	-1.80	-2.20	14.30	8.08	36.00	36.00	Pass
HT20	MCS0	1	6	2437	0.26	0.26	17.77	13.84		30.00	30.00	-1.80	-2.20	15.97	11.64	36.00	36.00	Pass
HT20	MCS0	1	11	2462	0.26	0.26	16.11	12.93		30.00	30.00	-1.80	-2.20	14.31	10.73	36.00	36.00	Pass
VHT20	MCS0	1	1	2412	0.26	0.26	16.04	10.47		30.00	30.00	-1.80	-2.20	14.24	8.27	36.00	36.00	Pass
VHT20	MCS0	1	6	2437	0.26	0.26	17.77	13.88		30.00	30.00	-1.80	-2.20	15.97	11.68	36.00	36.00	Pass
VHT20	MCS0	1	11	2462	0.26	0.26	15.58	12.58		30.00	30.00	-1.80	-2.20	13.78	10.38	36.00	36.00	Pass
11b	1Mbps	2	1	2412	0.04	0.06	17.29	12.48	18.53	30.00		-1.80		16.73		36.00		Pass
11b	1Mbps	2	6	2437	0.04	0.06	18.25	14.56	19.80	30.00		-1.80		18.00		36.00		Pass
11b	1Mbps	2	11	2462	0.04	0.06	18.62	15.07	20.21	30.00		-1.80		18.41		36.00		Pass
11g	6Mbps	2	1	2412	0.21	0.25	16.60	11.00	17.65	30.00		-1.80		15.85		36.00		Pass
11g	6Mbps	2	6	2437	0.21	0.25	17.04	13.37	18.59	30.00		-1.80		16.79		36.00		Pass
11g	6Mbps	2	11	2462	0.21	0.25	15.69	12.75	17.47	30.00		-1.80		15.67		36.00		Pass
HT20	MCS0	2	1	2412	0.27	0.26	15.58	10.02	16.64	30.00		-1.80		14.84		36.00		Pass
HT20	MCS0	2	6	2437	0.27	0.26	16.83	13.26	18.41	30.00		-1.80		16.61		36.00		Pass
HT20	MCS0	2	11	2462	0.27	0.26	15.51	12.35	17.22	30.00		-1.80		15.42		36.00		Pass
VHT20	MCS0	2	1	2412	0.26	0.26	15.62	9.89	16.65	30.00		-1.80		14.85		36.00		Pass
VHT20	MCS0	2	6	2437	0.26	0.26	17.02	13.24	18.54	30.00		-1.80		16.74		36.00		Pass
VHT20	MCS0	2	11	2462	0.26	0.26	14.98	11.78	16.68	30.00		-1.80		14.88		36.00		Pass

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

Report Number : FR640145C

TEST RESULTS DATA
Average Power Spectral Density

2.4GHz Band													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average PSD (dBm/3kHz)			DG (dBi)		Average PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	-7.27	-11.42	-	-1.80	-2.20	8.00	8.00	Pass
11b	1Mbps	1	6	2437	-9.44	-13.20		-1.80	-2.20	8.00	8.00	Pass
11b	1Mbps	1	11	2462	-9.18	-12.62		-1.80	-2.20	8.00	8.00	Pass
11g	6Mbps	1	1	2412	-15.33	-20.69		-1.80	-2.20	8.00	8.00	Pass
11g	6Mbps	1	6	2437	-14.51	-18.55		-1.80	-2.20	8.00	8.00	Pass
11g	6Mbps	1	11	2462	-16.20	-19.46		-1.80	-2.20	8.00	8.00	Pass
HT20	MCS0	1	1	2412	-17.10	-22.65		-1.80	-2.20	8.00	8.00	Pass
HT20	MCS0	1	6	2437	-15.07	-18.66		-1.80	-2.20	8.00	8.00	Pass
HT20	MCS0	1	11	2462	-16.66	-19.87		-1.80	-2.20	8.00	8.00	Pass
VHT20	MCS0	1	1	2412	-16.76	-22.60		-1.80	-2.20	8.00	8.00	Pass
VHT20	MCS0	1	6	2437	-15.32	-18.97		-1.80	-2.20	8.00	8.00	Pass
VHT20	MCS0	1	11	2462	-17.42	-20.25		-1.80	-2.20	8.00	8.00	Pass
11b	1Mbps	2	1	2412	-8.00	-15.46	-4.99	1.01		8.00		Pass
11b	1Mbps	2	6	2437	-6.94	-9.23	-3.93	1.01		8.00		Pass
11b	1Mbps	2	11	2462	-9.15	-13.49	-6.14	1.01		8.00		Pass
11g	6Mbps	2	1	2412	-15.84	-22.00	-12.83	1.01		8.00		Pass
11g	6Mbps	2	6	2437	-14.77	-18.84	-11.76	1.01		8.00		Pass
11g	6Mbps	2	11	2462	-16.71	-20.13	-13.70	1.01		8.00		Pass
HT20	MCS0	2	1	2412	-17.74	-22.95	-14.73	1.01		8.00		Pass
HT20	MCS0	2	6	2437	-15.79	-19.76	-12.78	1.01		8.00		Pass
HT20	MCS0	2	11	2462	-17.59	-21.11	-14.58	1.01		8.00		Pass
VHT20	MCS0	2	1	2412	-17.75	-22.91	-14.74	1.01		8.00		Pass
VHT20	MCS0	2	6	2437	-15.73	-19.66	-12.72	1.01		8.00		Pass
VHT20	MCS0	2	11	2462	-18.29	-21.35	-15.28	1.01		8.00		Pass

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

Appendix B. Radiated Spurious Emission

Test Engineer :	J.C. Liang, Bill Chang, and Ken Wu	Temperature :	20~23°C
		Relative Humidity :	50~55%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (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)
802.11b CH 01 2412MHz		2332.95	51.9	-22.1	74	52.5	26.82	6.58	34	269	137	P	H
		2389.65	41.24	-12.76	54	41.51	27.01	6.71	33.99	269	137	A	H
	*	2410.86	105.49	-	-	105.7	27.06	6.71	33.98	269	137	P	H
	*	2411.27	102.64	-	-	102.85	27.06	6.71	33.98	269	137	A	H
													H
													H
		2358.96	51.09	-22.91	74	51.52	26.91	6.65	33.99	241	180	P	V
		2389.65	40.98	-13.02	54	41.25	27.01	6.71	33.99	241	180	A	V
	*	2413.19	105.7	-	-	105.91	27.06	6.71	33.98	241	180	P	V
	*	2413.11	103.22	-	-	103.43	27.06	6.71	33.98	241	180	A	V
													V
													V
802.11b CH 06 2437MHz		2387.49	51.51	-22.49	74	51.78	27.01	6.71	33.99	305	135	P	H
		2390	40.85	-13.15	54	41.11	27.01	6.71	33.98	305	135	A	H
	*	2437.07	106.75	-	-	106.82	27.16	6.74	33.97	305	135	P	H
	*	2438.41	103.85	-	-	103.92	27.16	6.74	33.97	305	135	A	H
		2492.12	51.69	-22.31	74	51.56	27.3	6.77	33.94	305	135	P	H
		2483.6	41.1	-12.9	54	41.03	27.25	6.77	33.95	305	135	A	H
		2385.15	51.13	-22.87	74	51.45	26.96	6.71	33.99	100	123	P	V
		2390	40.92	-13.08	54	41.18	27.01	6.71	33.98	100	123	A	V
	*	2436.99	106.37	-	-	106.44	27.16	6.74	33.97	100	123	P	V
	*	2435.91	103.77	-	-	103.89	27.11	6.74	33.97	100	123	A	V
		2484.08	52.21	-21.79	74	52.14	27.25	6.77	33.95	100	123	P	V
		2484.92	41.27	-12.73	54	41.2	27.25	6.77	33.95	100	123	A	V

802.11b CH 11 2462MHz	*	2462.04	106.79	-	-	106.78	27.2	6.77	33.96	301	148	P	H
	*	2460.96	104.17	-	-	104.16	27.2	6.77	33.96	301	148	A	H
		2491.36	52.01	-21.99	74	51.89	27.3	6.77	33.95	301	148	P	H
		2483.52	41.95	-12.05	54	41.88	27.25	6.77	33.95	301	148	A	H
													H
													H
	*	2460.87	107.52	-	-	107.51	27.2	6.77	33.96	213	234	P	V
	*	2460.37	104.23	-	-	104.22	27.2	6.77	33.96	213	234	A	V
		2486.76	52.56	-21.44	74	52.49	27.25	6.77	33.95	213	234	P	V
		2483.52	43.36	-10.64	54	43.29	27.25	6.77	33.95	213	234	A	V
													V
													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+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)
802.11b CH 01 2412MHz		4824	46.28	-27.72	74	69.65	31.12	10.58	65.07	100	0	P	H
													H
													H
													H
		4824	43.13	-30.87	74	66.5	31.12	10.58	65.07	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	42.54	-31.46	74	65.87	31.21	10.48	65.02	100	0	P	H
		7311	42.96	-31.04	74	59.66	36.08	12.28	65.06	100	0	P	H
													H
													H
		4874	42.95	-31.05	74	66.28	31.21	10.48	65.02	100	0	P	V
		7311	42.32	-31.68	74	59.02	36.08	12.28	65.06	100	0	P	V
													V
													V
802.11b CH 11 2462MHz		4924	47.32	-26.68	74	70.61	31.29	10.39	64.97	100	0	P	H
		7386	44.17	-29.83	74	60.49	36.27	12.49	65.08	100	0	P	H
													H
													H
		4924	45.13	-28.87	74	68.42	31.29	10.39	64.97	100	0	P	V
		7386	44.69	-29.31	74	61.01	36.27	12.49	65.08	100	0	P	V
													V
													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		2389.74	60.14	-13.86	74	60.41	27.01	6.71	33.99	270	147	P	H
		2390	50.5	-3.5	54	50.76	27.01	6.71	33.98	270	147	A	H
	*	2412	105.86	-	-	106.07	27.06	6.71	33.98	270	147	P	H
	*	2412	97.99	-	-	98.2	27.06	6.71	33.98	270	147	A	H
													H
													H
		2390	63.18	-10.82	74	63.44	27.01	6.71	33.98	219	235	P	V
		2390	51.23	-2.77	54	51.49	27.01	6.71	33.98	219	235	A	V
	*	2412	106.96	-	-	107.17	27.06	6.71	33.98	219	235	P	V
	*	2412	99.13	-	-	99.34	27.06	6.71	33.98	219	235	A	V
													V
													V
802.11g CH 06 2437MHz		2368.5	51.81	-22.19	74	52.24	26.91	6.65	33.99	267	58	P	H
		2389.29	41.65	-12.35	54	41.92	27.01	6.71	33.99	267	58	A	H
	*	2437	108.16	-	-	108.23	27.16	6.74	33.97	267	58	P	H
	*	2437	100.46	-	-	100.53	27.16	6.74	33.97	267	58	A	H
		2486.64	51.42	-22.58	74	51.35	27.25	6.77	33.95	267	58	P	H
		2483.92	42.35	-11.65	54	42.28	27.25	6.77	33.95	267	58	A	H
		2374.26	51.32	-22.68	74	51.7	26.96	6.65	33.99	264	119	P	V
		2389.92	41.98	-12.02	54	42.24	27.01	6.71	33.98	264	119	A	V
	*	2437	108.14	-	-	108.21	27.16	6.74	33.97	264	119	P	V
	*	2437	100.66	-	-	100.73	27.16	6.74	33.97	264	119	A	V
		2484.32	52.38	-21.62	74	52.31	27.25	6.77	33.95	264	119	P	V
		2484.84	42.76	-11.24	54	42.69	27.25	6.77	33.95	264	119	A	V

802.11g CH 11 2462MHz	*	2462	105.05	-	-	105.04	27.2	6.77	33.96	292	149	P	H
	*	2462	97.75	-	-	97.74	27.2	6.77	33.96	292	149	A	H
		2483.52	61.47	-12.53	74	61.4	27.25	6.77	33.95	292	149	P	H
		2483.52	51.14	-2.86	54	51.07	27.25	6.77	33.95	292	149	A	H
													H
													H
	*	2462	105.75	-	-	105.74	27.2	6.77	33.96	157	59	P	V
	*	2462	98.38	-	-	98.37	27.2	6.77	33.96	157	59	A	V
		2483.6	61.65	-12.35	74	61.58	27.25	6.77	33.95	157	59	P	V
		2483.52	52.25	-1.75	54	52.18	27.25	6.77	33.95	157	59	A	V
													V
													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	49.88	-24.12	74	73.25	31.12	10.58	65.07	100	0	P	H
													H
													H
													H
		4824	43.78	-30.22	74	67.15	31.12	10.58	65.07	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	45.48	-28.52	74	68.81	31.21	10.48	65.02	100	0	P	H
		7311	43.96	-30.04	74	60.66	36.08	12.28	65.06	100	0	P	H
													H
													H
		4874	40.96	-33.04	74	64.29	31.21	10.48	65.02	100	0	P	V
		7311	42.51	-31.49	74	59.21	36.08	12.28	65.06	100	0	P	V
													V
													V
802.11g CH 11 2462MHz		4924	44.53	-29.47	74	67.82	31.29	10.39	64.97	100	0	P	H
		7386	42.69	-31.31	74	59.01	36.27	12.49	65.08	100	0	P	H
													H
													H
		4924	41.26	-32.74	74	64.55	31.29	10.39	64.97	100	0	P	V
		7386	43.79	-30.21	74	60.11	36.27	12.49	65.08	100	0	P	V
													V
													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)
		2390	63.2	-10.8	74	63.46	27.01	6.71	33.98	271	55	P	H
		2389.92	51.86	-2.14	54	52.12	27.01	6.71	33.98	271	55	A	H
	*	2412	106.47	-	-	106.68	27.06	6.71	33.98	271	55	P	H
	*	2412	98.91	-	-	99.12	27.06	6.71	33.98	271	55	A	H
802.11n													H
HT20													H
CH 01		2389.74	62.98	-11.02	74	63.25	27.01	6.71	33.99	225	235	P	V
2412MHz		2390	53.21	-0.79	54	53.47	27.01	6.71	33.98	225	235	A	V
	*	2412	106.13	-	-	106.34	27.06	6.71	33.98	225	235	P	V
	*	2412	98.7	-	-	98.91	27.06	6.71	33.98	225	235	A	V
													V
													V
		2381.82	51.75	-22.25	74	52.07	26.96	6.71	33.99	273	57	P	H
		2389.29	41.85	-12.15	54	42.12	27.01	6.71	33.99	273	57	A	H
	*	2437	107.22	-	-	107.29	27.16	6.74	33.97	273	57	P	H
	*	2437	99.81	-	-	99.88	27.16	6.74	33.97	273	57	A	H
802.11n		2484.72	52.19	-21.81	74	52.12	27.25	6.77	33.95	273	57	P	H
HT20		2483.52	42.25	-11.75	54	42.18	27.25	6.77	33.95	273	57	A	H
CH 06		2384.61	51.24	-22.76	74	51.56	26.96	6.71	33.99	273	235	P	V
2437MHz		2388.93	41.7	-12.3	54	41.97	27.01	6.71	33.99	273	235	A	V
	*	2437	107.84	-	-	107.91	27.16	6.74	33.97	273	235	P	V
	*	2437	100.33	-	-	100.4	27.16	6.74	33.97	273	235	A	V
		2484.24	51.89	-22.11	74	51.82	27.25	6.77	33.95	273	235	P	V
		2485.12	42.44	-11.56	54	42.37	27.25	6.77	33.95	273	235	A	V

	*	2462	106.24	-	-	106.23	27.2	6.77	33.96	260	137	P	H
	*	2462	98.55	-	-	98.54	27.2	6.77	33.96	260	137	A	H
		2484.76	62.16	-11.84	74	62.09	27.25	6.77	33.95	260	137	P	H
		2483.92	51.16	-2.84	54	51.09	27.25	6.77	33.95	260	137	A	H
802.11n													H
HT20													H
CH 11	*	2462	107.29	-	-	107.28	27.2	6.77	33.96	241	105	P	V
2462MHz	*	2462	99.71	-	-	99.7	27.2	6.77	33.96	241	105	A	V
		2483.56	63.15	-10.85	74	63.08	27.25	6.77	33.95	241	105	P	V
		2483.88	52.65	-1.35	54	52.58	27.25	6.77	33.95	241	105	A	V
													V
													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)
		4824	47.85	-26.15	74	71.22	31.12	10.58	65.07	100	0	P	H
													H
802.11n													H
HT20													H
CH 01		4824	44.1	-29.9	74	67.47	31.12	10.58	65.07	100	0	P	V
2412MHz													V
													V
													V
		4874	46.96	-27.04	74	70.29	31.21	10.48	65.02	100	0	P	H
		7311	45.64	-28.36	74	62.34	36.08	12.28	65.06	100	0	P	H
802.11n													H
HT20													H
CH 06		4874	41.33	-32.67	74	64.66	31.21	10.48	65.02	100	0	P	V
2437MHz		7311	43.01	-30.99	74	59.71	36.08	12.28	65.06	100	0	P	V
													V
													V
		4924	44.35	-29.65	74	67.64	31.29	10.39	64.97	100	0	P	H
		7386	44.79	-29.21	74	61.11	36.27	12.49	65.08	100	0	P	H
802.11n													H
HT20													H
CH 11		4924	40.36	-33.64	74	63.65	31.29	10.39	64.97	100	0	P	V
2462MHz		7386	39.44	-34.56	74	55.76	36.27	12.49	65.08	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11ac VHT20 (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)
		2390	61.97	-12.03	74	62.23	27.01	6.71	33.98	271	55	P	H
		2390	51.69	-2.31	54	51.95	27.01	6.71	33.98	271	55	A	H
	*	2412	106.35	-	-	106.56	27.06	6.71	33.98	271	55	P	H
	*	2412	98.81	-	-	99.02	27.06	6.71	33.98	271	55	A	H
802.11ac													H
VHT20													H
CH 01		2390	62.95	-11.05	74	63.21	27.01	6.71	33.98	225	235	P	V
2412MHz		2390	53.15	-0.85	54	53.41	27.01	6.71	33.98	225	235	A	V
	*	2412	106.27	-	-	106.48	27.06	6.71	33.98	225	235	P	V
	*	2412	98.75	-	-	98.96	27.06	6.71	33.98	225	235	A	V
													V
													V
		2372.01	51.38	-22.62	74	51.76	26.96	6.65	33.99	273	57	P	H
		2389.83	41.75	-12.25	54	42.01	27.01	6.71	33.98	273	57	A	H
	*	2437	107.73	-	-	107.8	27.16	6.74	33.97	273	57	P	H
	*	2437	99.95	-	-	100.02	27.16	6.74	33.97	273	57	A	H
802.11ac		2487.2	52.08	-21.92	74	52.01	27.25	6.77	33.95	273	57	P	H
VHT20		2483.96	42.42	-11.58	54	42.35	27.25	6.77	33.95	273	57	A	H
CH 06		2326.74	51.6	-22.4	74	52.2	26.82	6.58	34	273	235	P	V
2437MHz		2387.13	41.7	-12.3	54	41.97	27.01	6.71	33.99	273	235	A	V
	*	2437	107.1	-	-	107.17	27.16	6.74	33.97	273	235	P	V
	*	2437	99.65	-	-	99.72	27.16	6.74	33.97	273	235	A	V
		2485.64	51.72	-22.28	74	51.65	27.25	6.77	33.95	273	235	P	V
		2485.04	42.3	-11.7	54	42.23	27.25	6.77	33.95	273	235	A	V

	*	2462	105.45	-	-	105.44	27.2	6.77	33.96	260	137	P	H
	*	2462	97.89	-	-	97.88	27.2	6.77	33.96	260	137	A	H
		2484.44	60.31	-13.69	74	60.24	27.25	6.77	33.95	260	137	P	H
		2483.6	49.24	-4.76	54	49.17	27.25	6.77	33.95	260	137	A	H
802.11ac													H
VHT20													H
CH 11	*	2462	106.72	-	-	106.71	27.2	6.77	33.96	241	106	P	V
2462MHz	*	2462	99.03	-	-	99.02	27.2	6.77	33.96	241	106	A	V
		2484.08	61.22	-12.78	74	61.15	27.25	6.77	33.95	241	106	P	V
		2483.96	50.45	-3.55	54	50.38	27.25	6.77	33.95	241	106	A	V
													V
													V

Remark

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

2.4GHz 2400~2483.5MHz

WIFI 802.11ac VHT20 (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)
		4824	47.48	-26.52	74	70.85	31.12	10.58	65.07	100	0	P	H
													H
802.11ac													H
VHT20													H
CH 01		4824	42.95	-31.05	74	66.32	31.12	10.58	65.07	100	0	P	V
2412MHz													V
													V
													V
		4874	47.8	-26.2	74	71.13	31.21	10.48	65.02	100	0	P	H
		7311	45.17	-28.83	74	61.87	36.08	12.28	65.06	100	0	P	H
802.11ac													H
VHT20													H
CH 06		4874	42.9	-31.1	74	66.23	31.21	10.48	65.02	100	0	P	V
2437MHz		7311	42.41	-31.59	74	59.11	36.08	12.28	65.06	100	0	P	V
													V
													V
		4924	44.86	-29.14	74	68.15	31.29	10.39	64.97	100	0	P	H
		7386	44.43	-29.57	74	60.75	36.27	12.49	65.08	100	0	P	H
802.11ac													H
VHT20													H
CH 11		4924	42.1	-31.9	74	65.39	31.29	10.39	64.97	100	0	P	V
2462MHz		7386	42.5	-31.5	74	58.82	36.27	12.49	65.08	100	0	P	V
													V
													V

Remark

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

2.4GHz 2400~2483.5MHz
Emission below 1GHz
2.4GHz WIFI 802.11n HT20 (LF)

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)
		84	24.26	-15.74	40	40.7	14.18	1.17	31.79	-	-	P	H
		144.21	31.56	-11.94	43.5	43.99	17.67	1.68	31.78	140	99	P	H
		237.9	25.27	-20.73	46	37.52	17.54	1.98	31.77	-	-	P	H
		448.4	25.58	-20.42	46	30.47	23.27	3.68	31.84	-	-	P	H
		757.1	29.34	-16.66	46	29.9	27.79	3.62	31.97	-	-	P	H
		947.5	32.95	-13.05	46	29.57	30.55	3.89	31.06	-	-	P	H
													H
													H
													H
													H
2.4GHz													H
802.11n													H
HT20		30	31.48	-8.52	40	36.68	25.7	0.93	31.83	162	110	P	V
LF		91.29	28.68	-14.82	43.5	44.27	15.02	1.17	31.78	-	-	P	V
		232.5	26.41	-19.59	46	39.06	17.14	1.98	31.77	-	-	P	V
		437.9	25.93	-20.07	46	30.99	23.09	3.68	31.83	-	-	P	V
		708.8	29.09	-16.91	46	30.7	26.88	3.54	32.03	-	-	P	V
		931.4	32.94	-13.06	46	30.19	30.08	3.86	31.19	-	-	P	V
													V
													V
													V
													V
													V
													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 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)
802.11b 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".

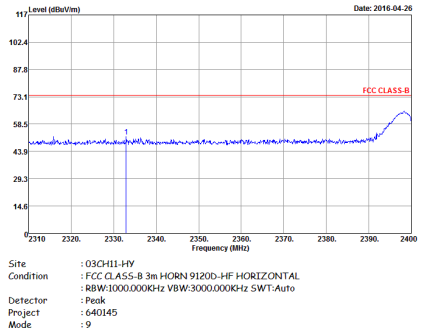
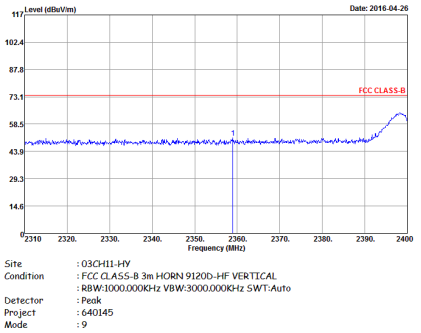
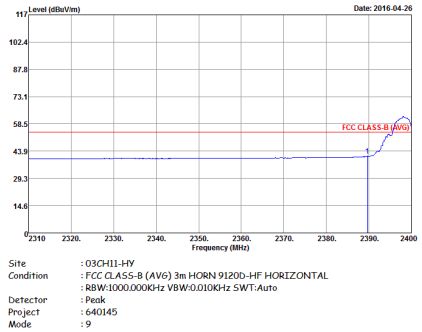
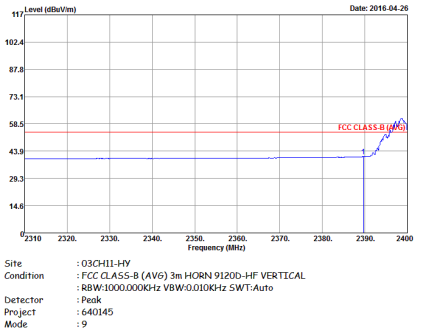
Appendix C. Radiated Spurious Emission Plots

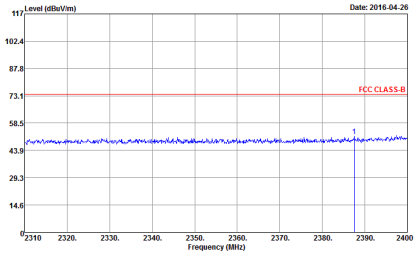
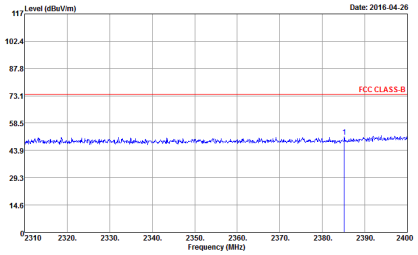
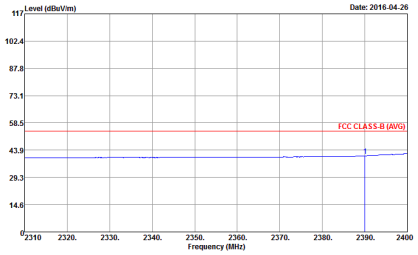
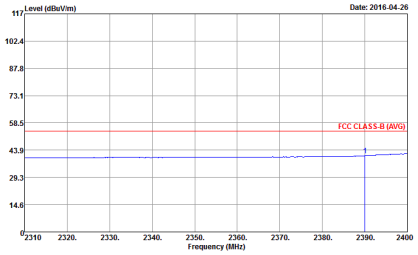
Test Engineer :	J.C. Liang, Bill Chang, and Ken Wu	**Temperature :**	20~23°C
		Relative Humidity :	50~55%

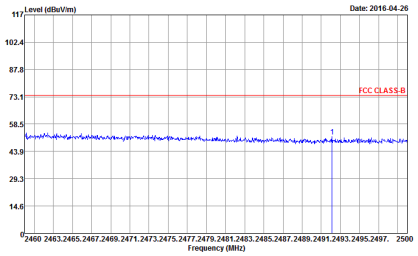
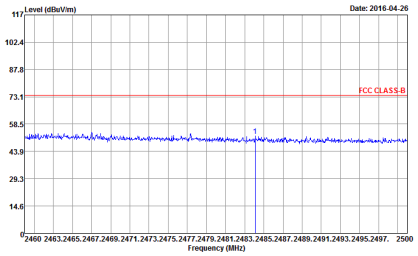
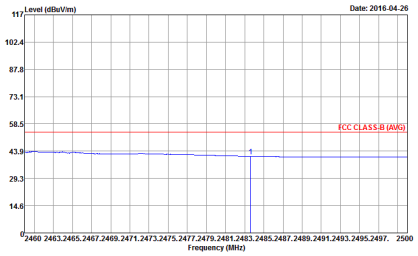
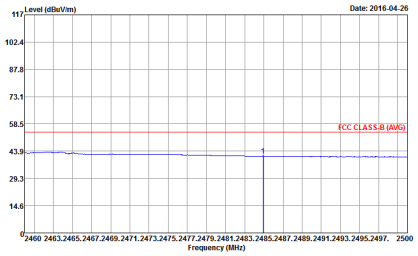
Note symbol

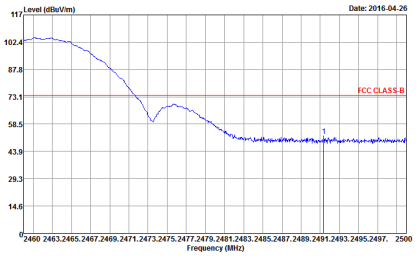
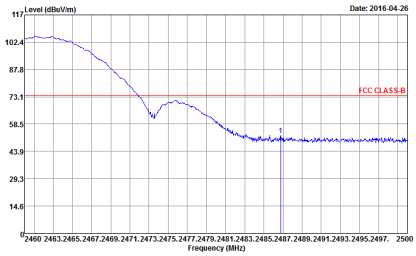
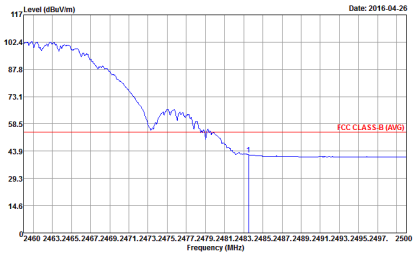
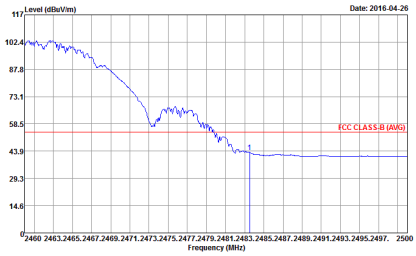
-L	**Low channel location**
-R	**High channel location**

2.4GHz 2400~2483.5MHz
WIFI 802.11b (Band Edge @ 3m)

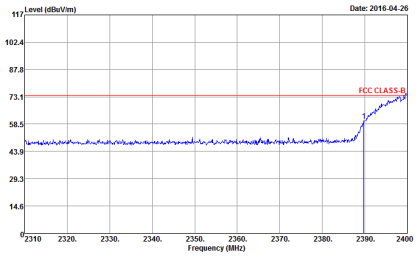
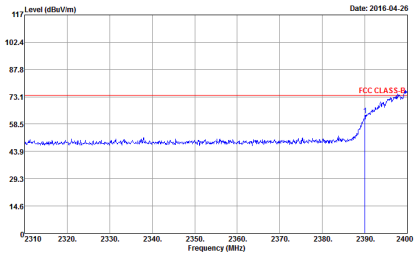
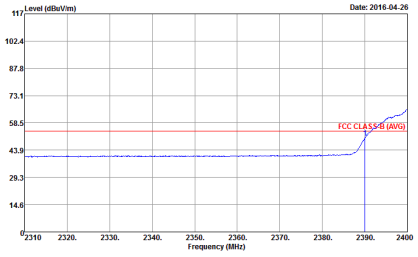
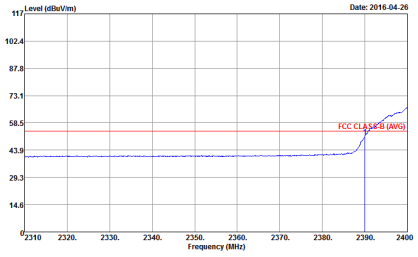
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 9	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 9
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 640145 Mode : 9	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 640145 Mode : 9

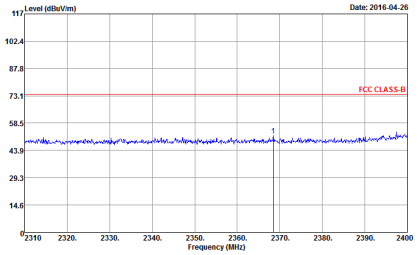
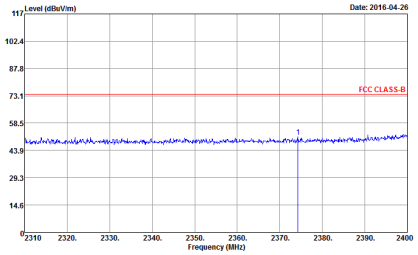
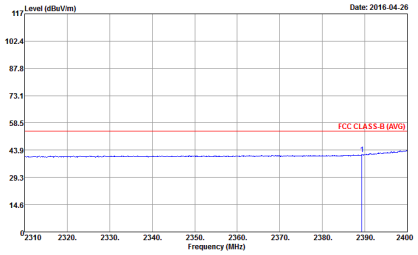
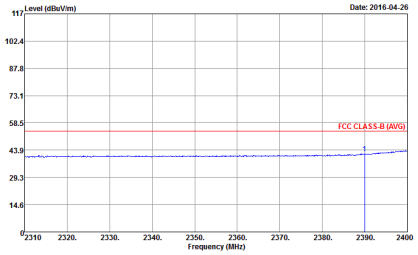
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 10	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 10
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 640145 Mode : 10	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 640145 Mode : 10

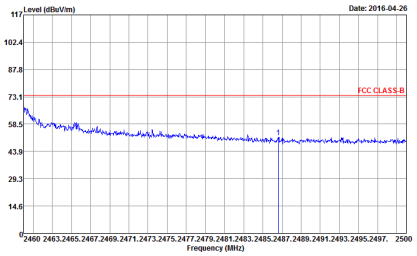
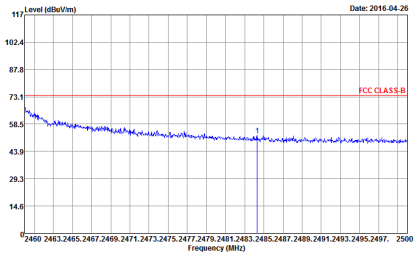
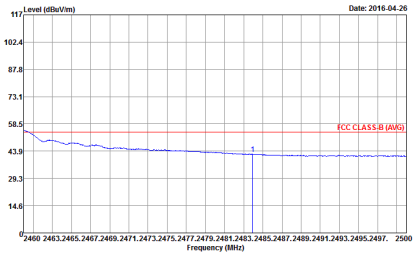
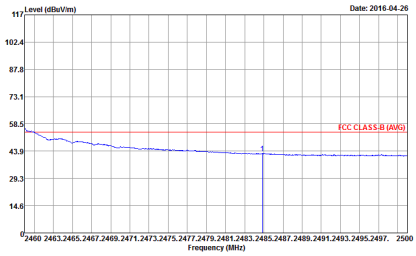
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 10	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 10
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 640145 Mode : 10	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 640145 Mode : 10

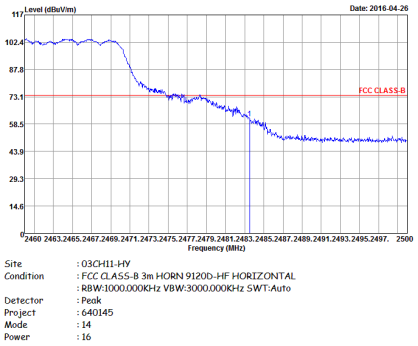
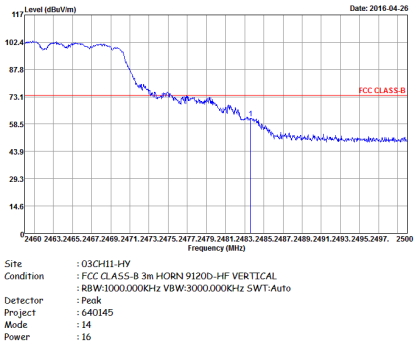
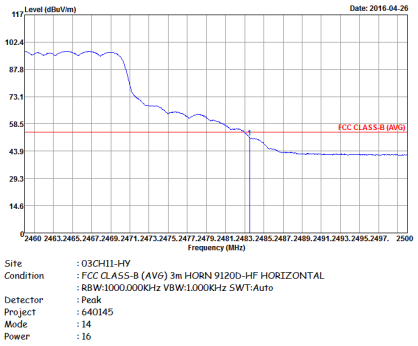
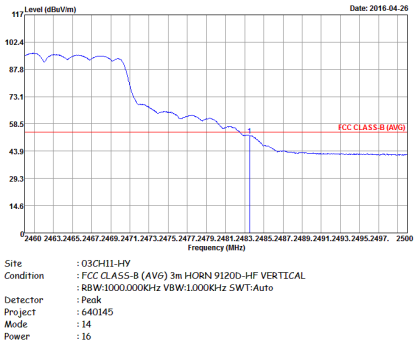
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 11	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 11
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 640145 Mode : 11	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 640145 Mode : 11

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	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 12	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 12
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 12	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 12

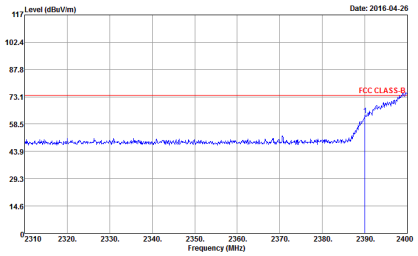
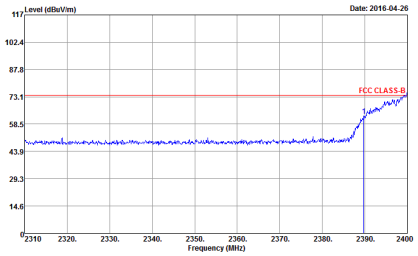
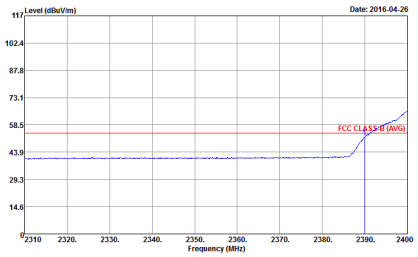
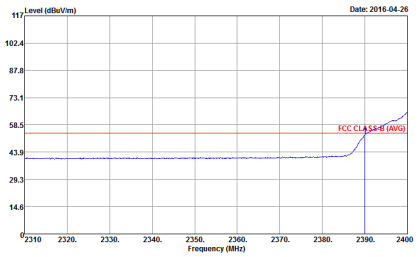
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 13	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 13
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 13	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 13

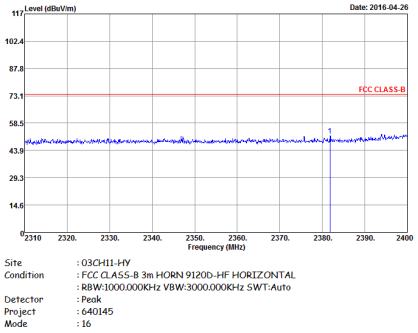
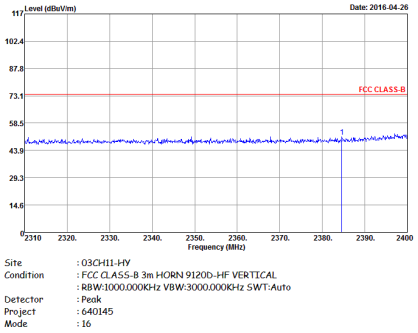
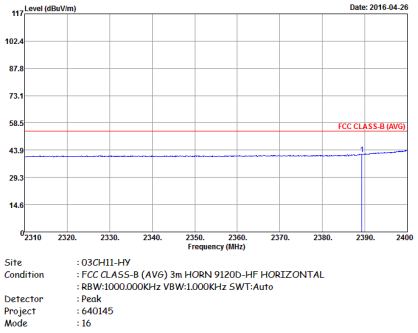
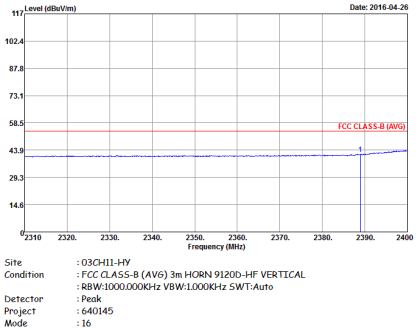
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 13	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 13
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 13	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 13

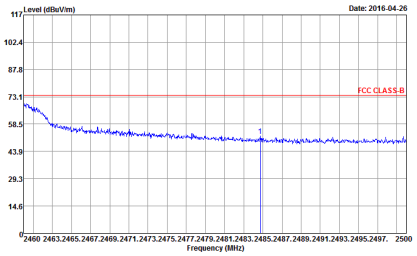
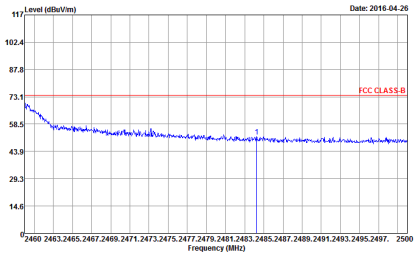
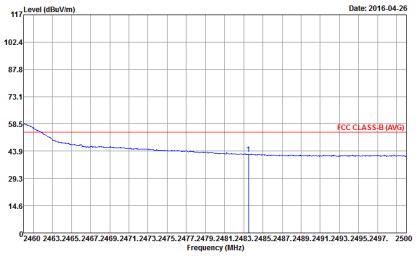
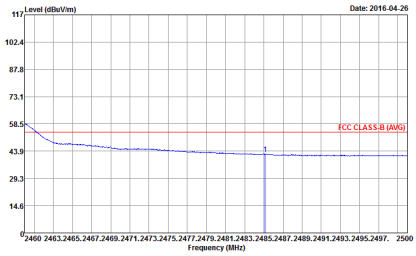
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 14 Power : 16	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 14 Power : 16
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 14 Power : 16	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 14 Power : 16

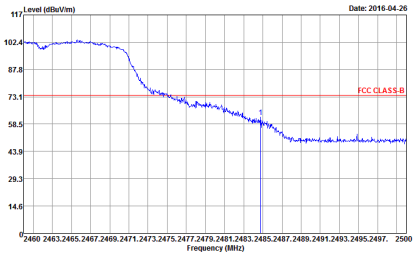
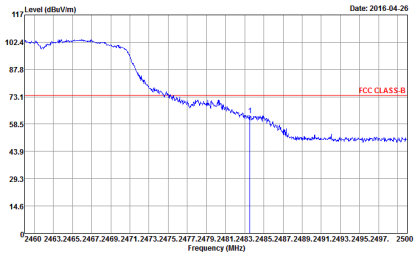
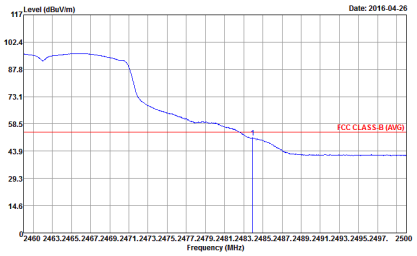
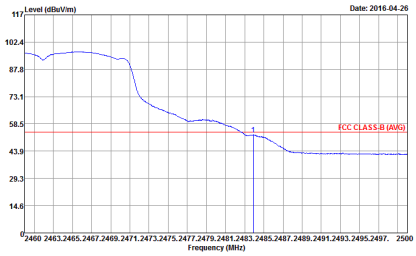
2.4GHz 2400~2483.5MHz

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	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 15 Setting : 16.5	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 15 Setting : 16.5
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 15 Setting : 16.5	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 15 Setting : 16.5

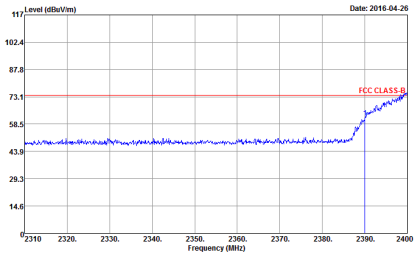
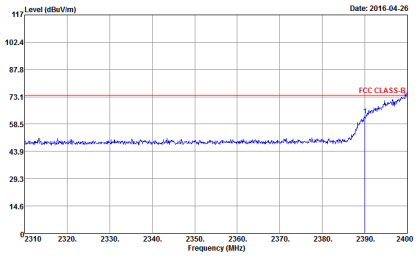
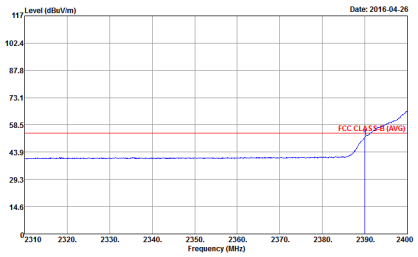
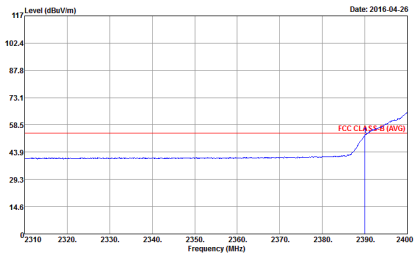
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 16	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 16
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 16	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 16

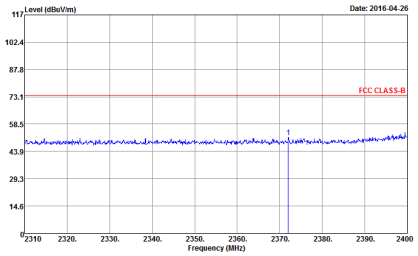
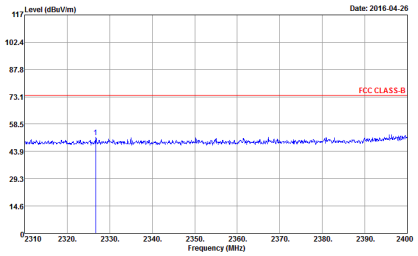
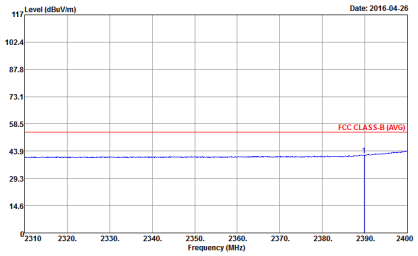
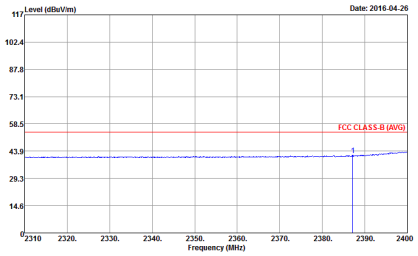
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 16	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 16
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 16	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 16

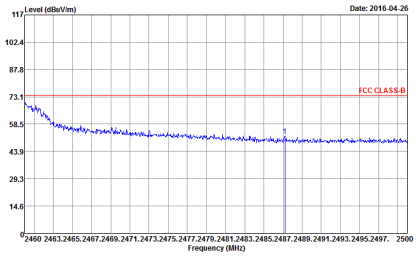
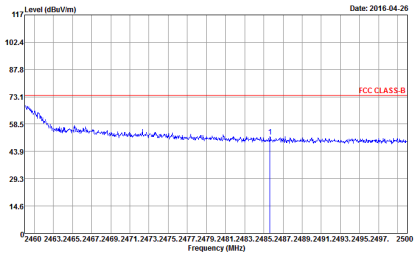
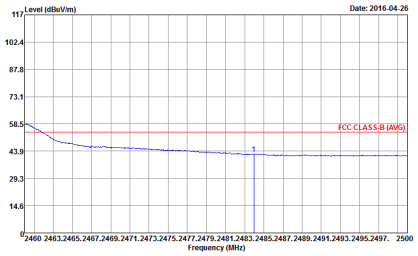
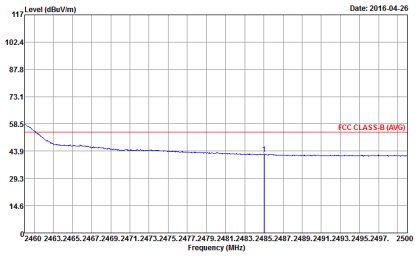
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 17	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 17
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 17	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 17

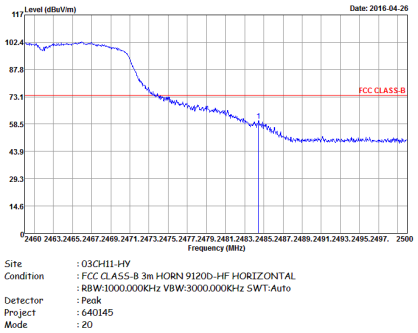
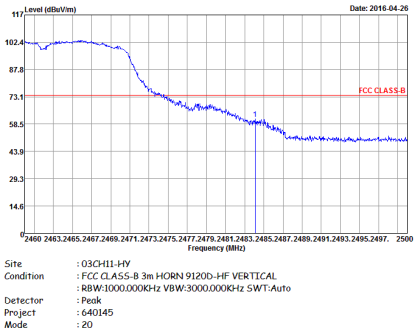
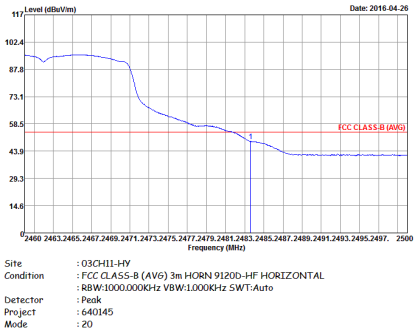
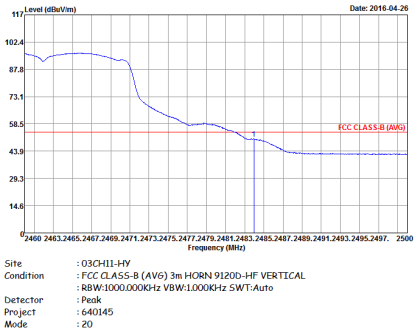
2.4GHz 2400~2483.5MHz

WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH01 2412MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 18 Setting : 16.5	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 18 Setting : 16.5
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 18 Setting : 16.5	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 18 Setting : 16.5

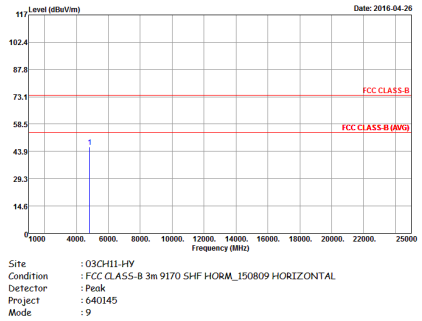
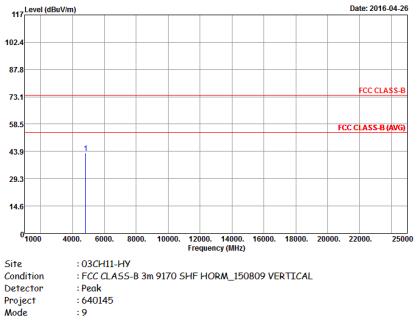
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH06 2437MHz - L	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 19	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 19
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 19	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 19

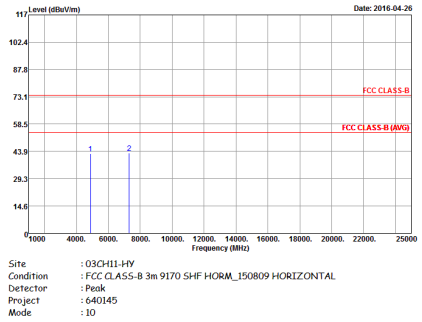
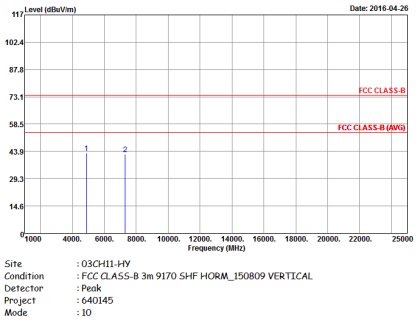
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH06 2437MHz - R	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 19	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 19
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 19	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 19

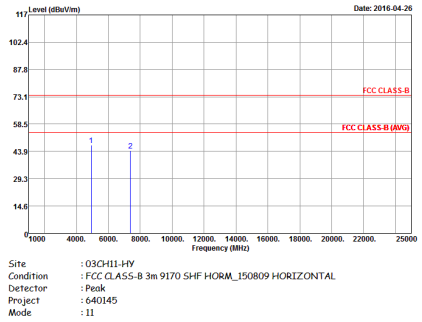
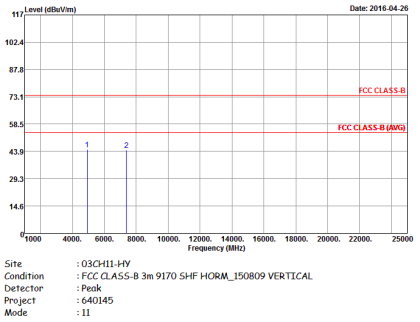
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 20	 Site : 03CH11-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 20
Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 20	 Site : 03CH11-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 640145 Mode : 20

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

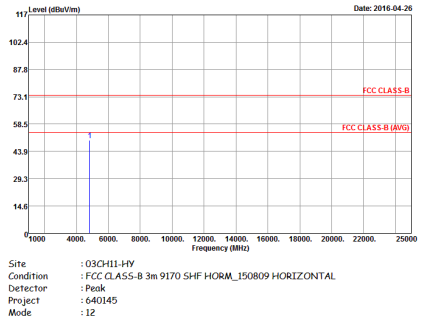
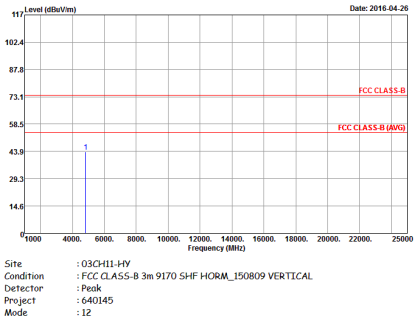
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.		

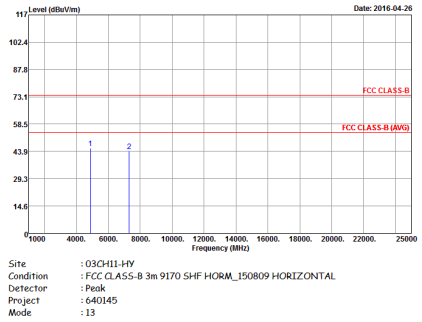
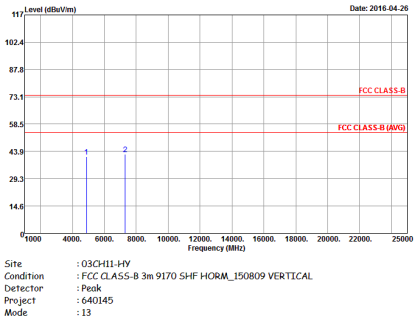
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.		

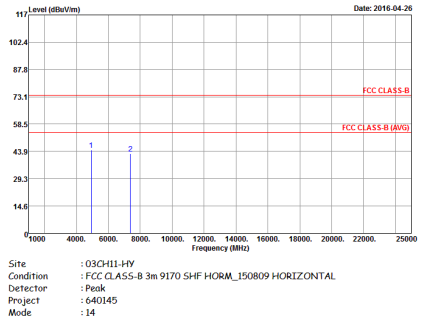
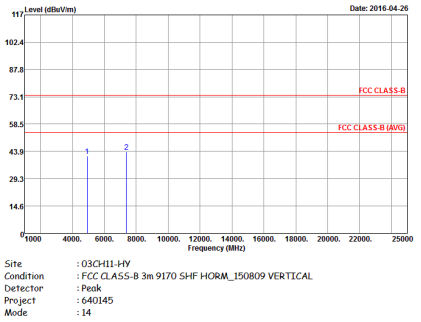
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

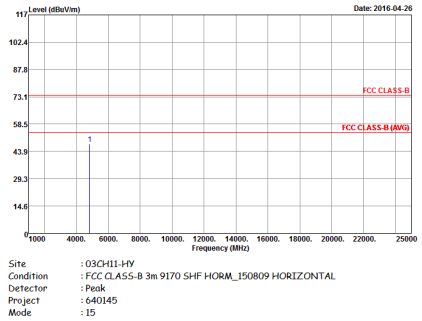
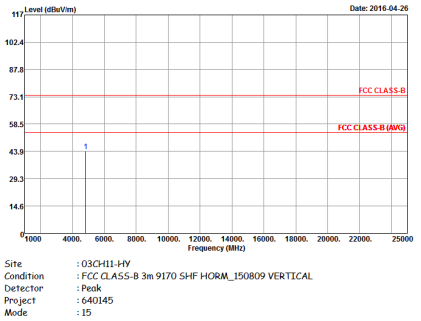
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B 3m 9170 SHF HORM_150809 HORIZONTAL Detector : Peak Project : 640145 Mode : 12	 Site : 03CH11-HY Condition : FCC CLASS-B 3m 9170 SHF HORM_150809 VERTICAL Detector : Peak Project : 640145 Mode : 12

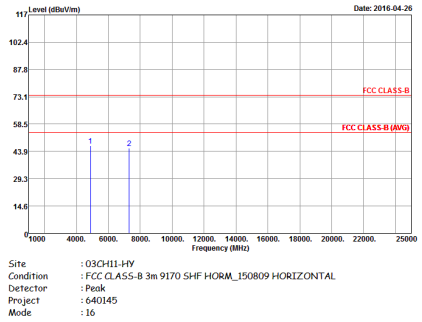
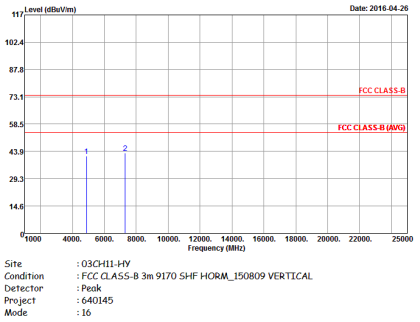
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.		

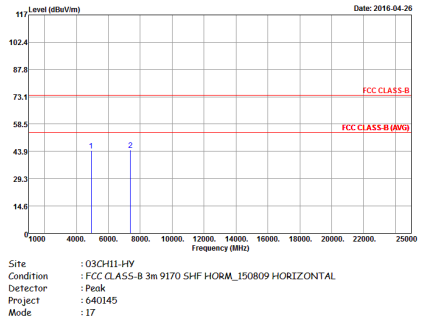
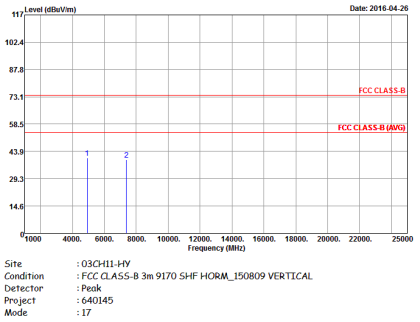
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

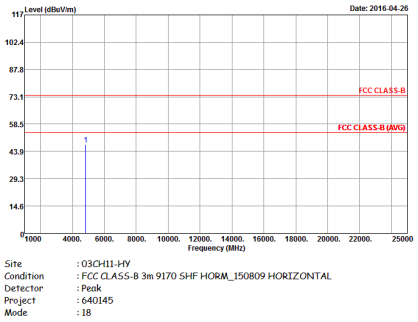
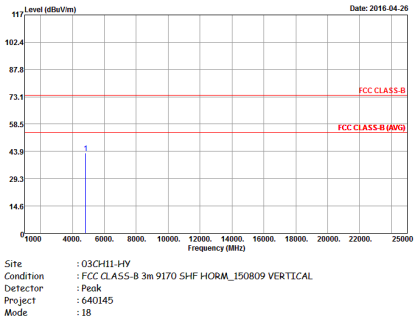
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.		

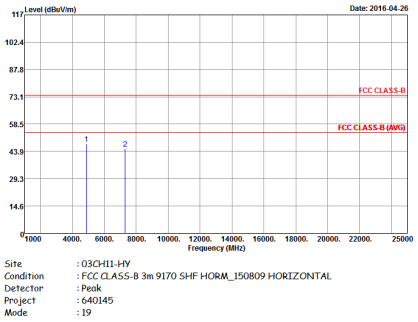
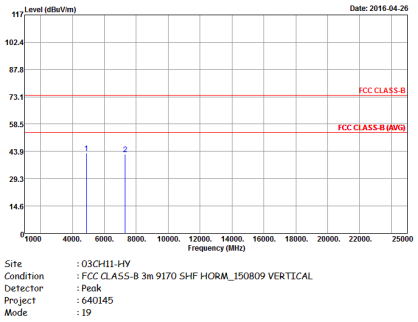
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.		

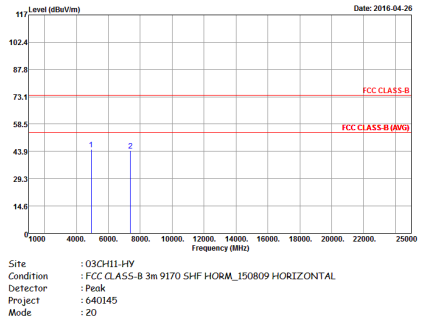
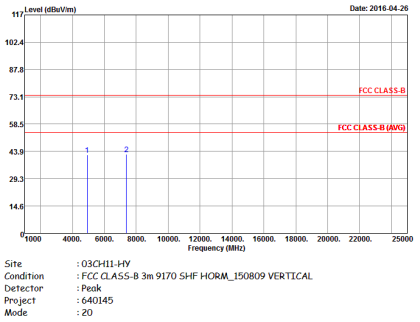
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH11-HY Condition : FCC CLASS-B 3m 9170 SHF HORM_150809 HORIZONTAL Detector : Peak Project : 640145 Mode : 17	 Site : 03CH11-HY Condition : FCC CLASS-B 3m 9170 SHF HORM_150809 VERTICAL Detector : Peak Project : 640145 Mode : 17

2.4GHz 2400~2483.5MHz

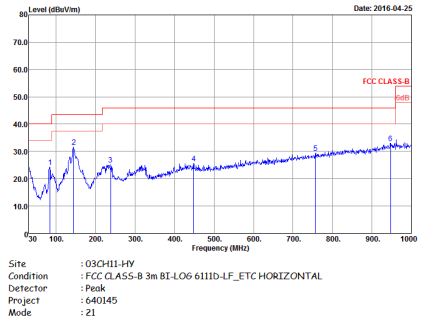
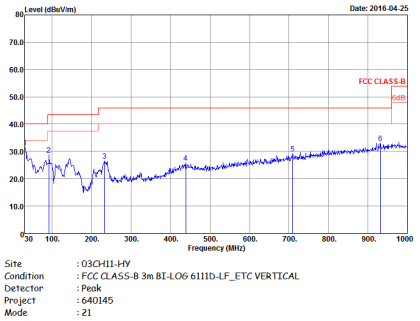
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz
2.4GHz WIFI 802.11n HT20 (LF)

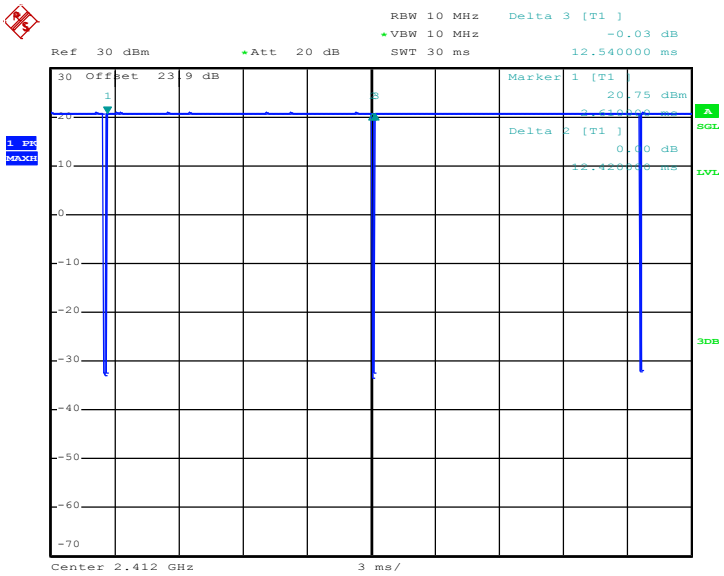
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT20 LF	
1+2	Horizontal	Vertical
QP / Peak		

Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1+2	802.11b for 1	99.04	-	-	10Hz
1+2	802.11b for 2	98.57	-	-	10Hz
1+2	802.11g for 1	95.37	2060	0.49	1kHz
1+2	802.11g for 2	94.50	2060	0.49	1kHz
1+2	2.4GHz 802.11n HT20 for 1	94.06	1900	0.53	1kHz
1+2	2.4GHz 802.11n HT20 for 2	94.12	1920	0.52	1kHz
1+2	2.4GHz 802.11n VHT20 for 1	94.12	1920	0.52	1kHz
1+2	2.4GHz 802.11n VHT20 for 2	94.12	1920	0.52	1kHz

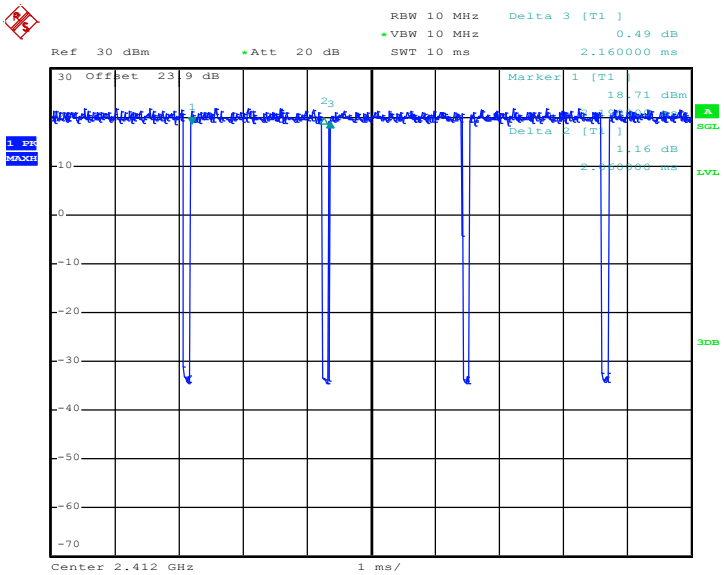
MIMO <Ant. 1+2(1)>

802.11b



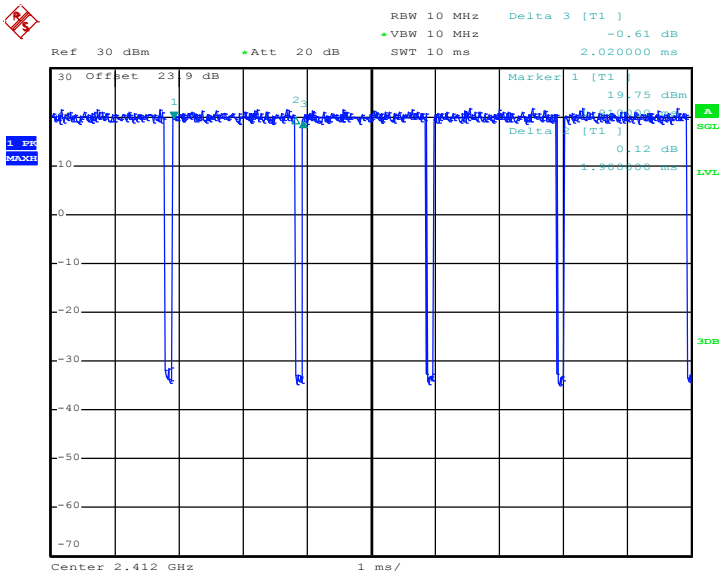
Date: 16.APR.2016 02:37:08

802.11g



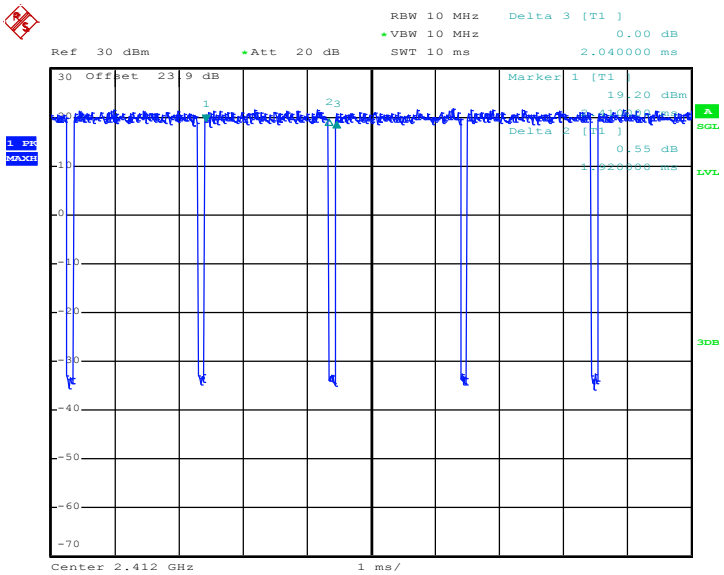
Date: 16.APR.2016 02:56:04

802.11n HT20



Date: 16.APR.2016 03:14:20

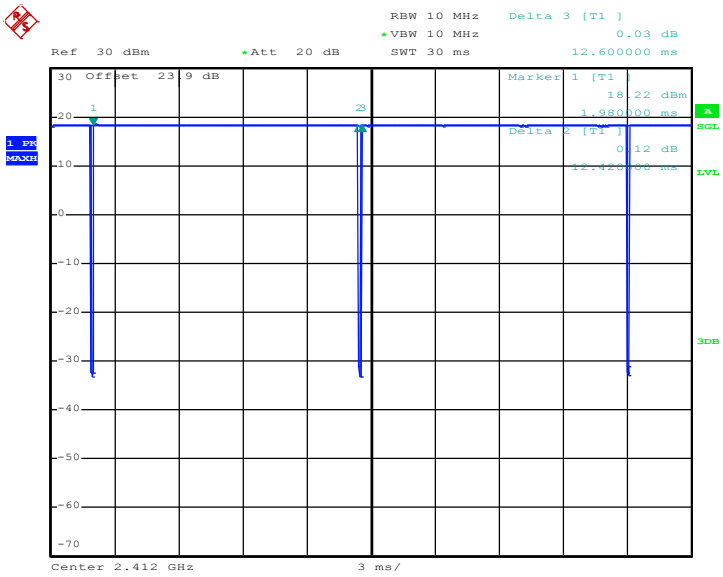
802.11ac VHT20



Date: 16.APR.2016 03:30:51

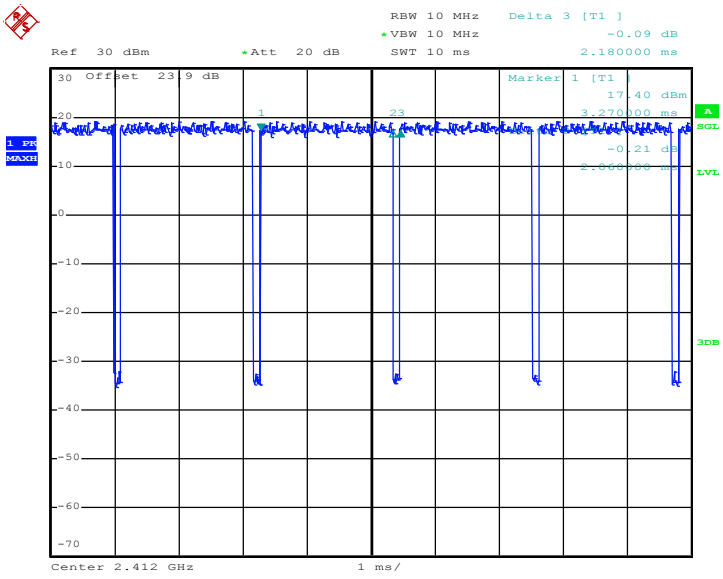
MIMO <Ant. 1+2(2)>

802.11b



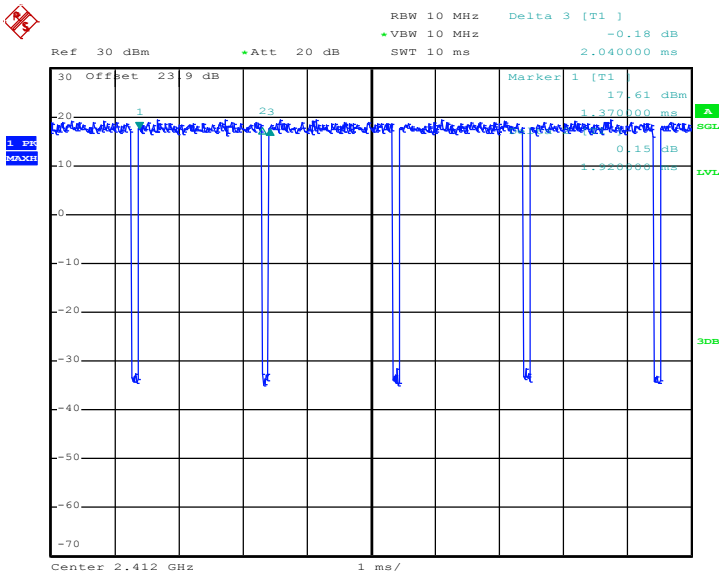
Date: 16.APR.2016 02:38:09

802.11g



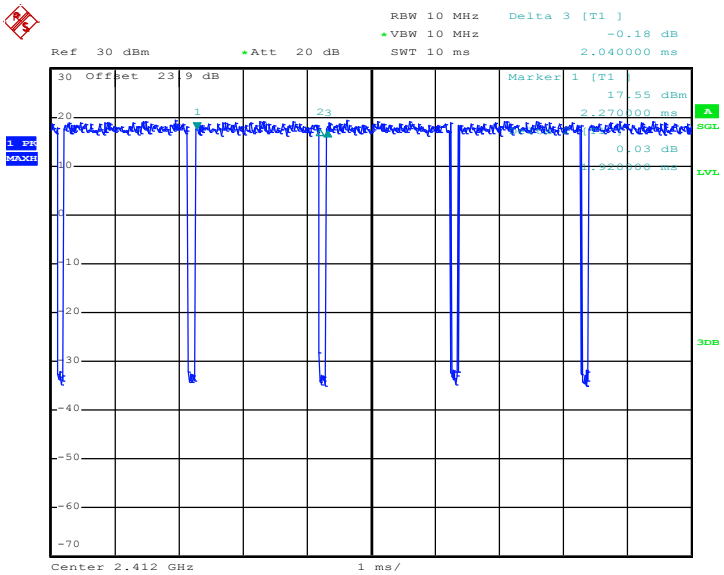
Date: 16.APR.2016 02:57:33

802.11n HT20



Date: 16.APR.2016 03:13:32

802.11ac VHT20



Date: 16.APR.2016 03:29:43