



FCC RF Test Report

APPLICANT : FUJITSU LIMITED
EQUIPMENT : Tablet PC
BRAND NAME : FUJITSU
MODEL NAME : MQ10A
FCC ID : EJE-WB0105
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

This is a partial report. The product was received on Jan. 16, 2018 and testing was completed on Feb. 03, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

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Approved by: Jones Tsai / Manager



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR7D0727-01C	Rev. 01	Initial issue of report	Feb. 13, 2018



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(b)	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.2	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.96 dB at 2389.940 MHz
3.3	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

FUJITSU LIMITED

1-1, Kamikonadaka 4-chome, Nakahara-ku, Kawasaki, 211-8588 Japan

1.2 Manufacturer

FUJITSU LIMITED

1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, 211-8588 Japan

1.3 Product Feature of Equipment Under Test

Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac, and 60GHz.

Product Specification subjective to this standard	
Integrated WLAN Module	Brand Name: Intel Model Name: 7265D2W
Antenna Type	WLAN: <Ant. 1>: PIFA Antenna <Ant. 2>: PIFA Antenna Bluetooth: PIFA Antenna 60GHz: Integral Antenna

1.4 Modification of EUT

No modifications are made to the EUT during all test items.

1.5 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 and TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No.
	TH05-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No.
	03CH13-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

1.6 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X Plane for MIMO Ant. 1+2 / Y Plane for Ant. 1 and Ant. 2) were recorded in this report.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

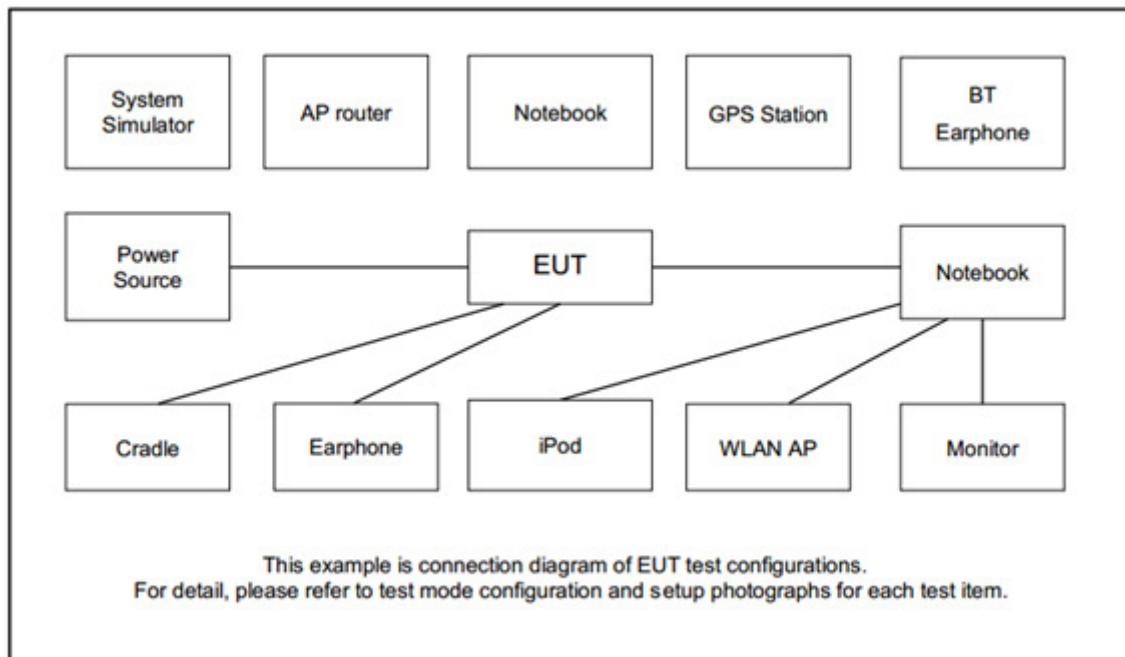
Single Antenna

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

MIMO Antenna

Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	iPod Earphone	Apple	N/A	FCC DoC	Unshielded, 1.0 m	N/A

2.5 EUT Operation Test Setup

The RF test items, utility "DRTU" was installed in EUT which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

3 Test Result

3.1 Output Power Measurement

3.1.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna with directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

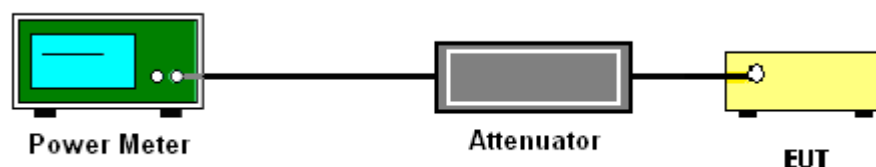
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04 section 9.1.3 PKPM1 Peak power meter method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

3.1.4 Test Setup



3.1.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.1.6 Test Result of Average output Power (Reporting Only)

Please refer to Appendix A.

3.2 Radiated Band Edges and Spurious Emission Measurement

3.2.1 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

3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

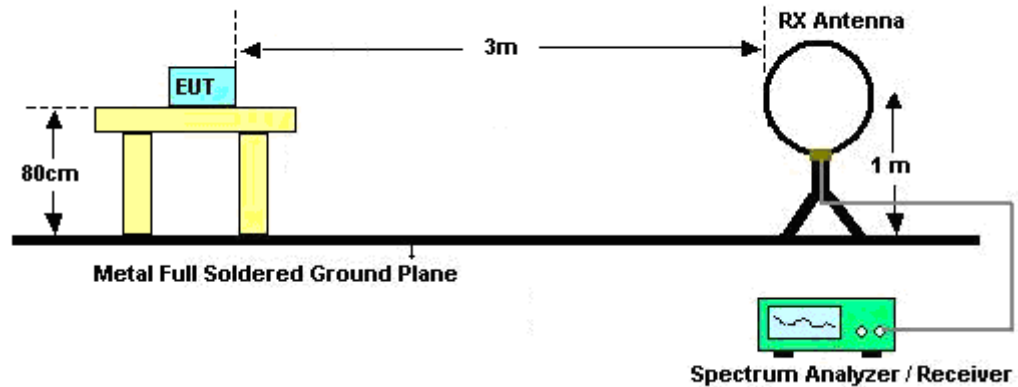
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test 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 $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

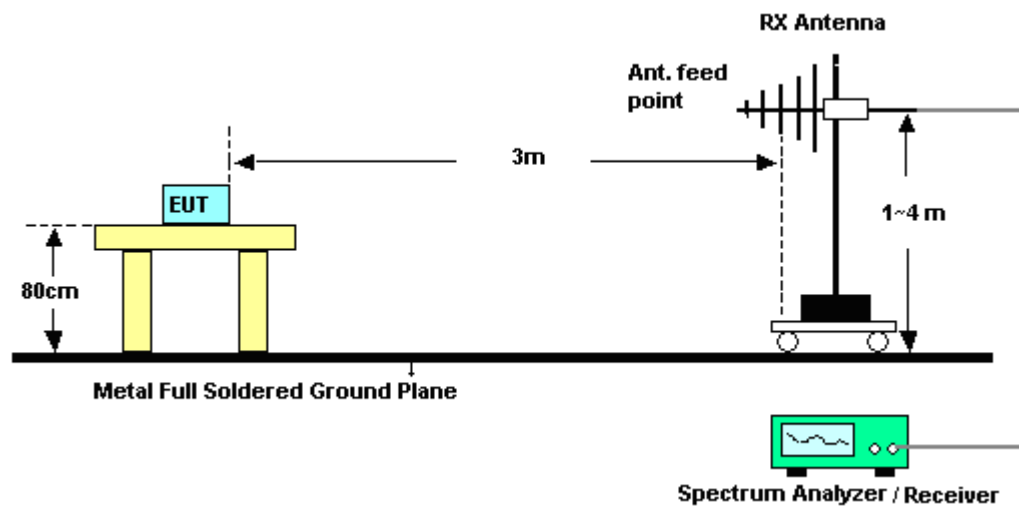
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.2.4 Test Setup

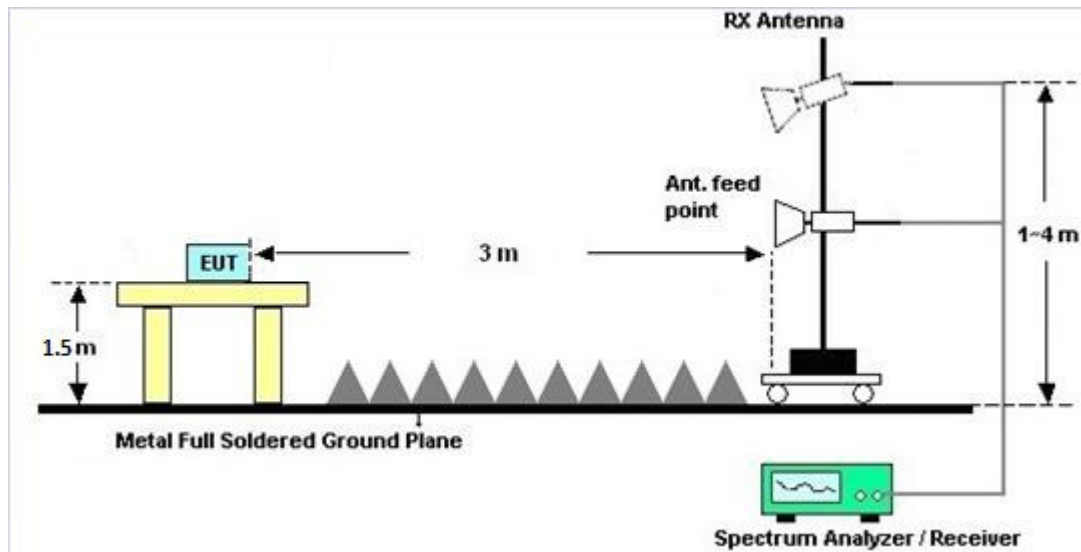
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.2.5 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.

3.2.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B and C.

3.2.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix B and C.

3.3 Antenna Requirements

3.3.1 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.

3.3.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.3.3 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 G_{ANT} 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>						
			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant. 1 (dBi)	Ant. 2 (dBi)				
2.4 GHz	-1.82	-1.25	-1.25	1.48	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	0932001	N/A	Sep. 26, 2017	Jan.19, 2018~ Jan. 31, 2018	Sep. 25, 2018	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz z	Sep. 26, 2017	Jan.19, 2018~ Jan. 31, 2018	Sep. 25, 2018	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9kHz ~ 30GHz	Nov. 13, 2017	Jan.19, 2018~ Jan. 31, 2018	Nov. 12, 2018	Conducted (TH05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Nov. 10, 2017	Jan. 27, 2018~ Feb. 03, 2018	Nov. 09, 2019	Radiation (03CH13-HY)
Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz, VSWR : 2.5:1 max	Jul. 18, 2017	Jan. 27, 2018~ Feb. 03, 2018	Jul. 17, 2018	Radiation (03CH13-HY)
EMI Test Receiver	Keysight	N9038A (MXE)	MY554201 70	N/A	Mar. 03, 2017	Jan. 27, 2018~ Feb. 03, 2018	Mar. 02, 2018	Radiation (03CH13-HY)
Amplifier	Sonoma-Instrument	310 N	187282	9KHz~1GHz	Dec. 21, 2016	Jan. 27, 2018~ Feb. 03, 2018	Dec. 20, 2018	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	40103&07	30MHz to 1GHz	Jan. 10, 2018	Jan. 27, 2018~ Feb. 03, 2018	Jan. 09, 2019	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-124 1	1GHz ~ 18GHz	Jun. 15, 2017	Jan. 27, 2018~ Feb. 03, 2018	Jun. 14, 2018	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 22, 2017	Jan. 27, 2018~ Feb. 03, 2018	May 21, 2018	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY553705 26	10Hz~44GHz	Mar. 15, 2017	Jan. 27, 2018~ Feb. 03, 2018	Mar. 14, 2018	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jan. 27, 2018~ Feb. 03, 2018	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jan. 27, 2018~ Feb. 03, 2018	N/A	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY532702 64	1GHz ~ 26.5GHz	Dec. 05, 2017	Jan. 27, 2018~ Feb. 03, 2018	Dec. 04, 2018	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 584	18GHz- 40GHz	Nov. 27, 2017	Jan. 27, 2018~ Feb. 03, 2018	Nov. 26, 2018	Radiation (03CH13-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.9
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.4
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.3
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Luffy Lin	Temperature:	21~25	°C
Test Date:	2018/1/19~2018/1/31	Relative Humidity:	51~54	%

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	17.57	17.51		30.00	30.00	-1.82	-1.25	15.75	16.26	36.00	36.00	Pass
11b	1Mbps	1	6	2437	17.61	17.58		30.00	30.00	-1.82	-1.25	15.79	16.33	36.00	36.00	Pass
11b	1Mbps	1	11	2462	17.51	17.46		30.00	30.00	-1.82	-1.25	15.69	16.21	36.00	36.00	Pass
11g	6Mbps	1	1	2412	17.15	18.26		30.00	30.00	-1.82	-1.25	15.33	17.01	36.00	36.00	Pass
11g	6Mbps	1	6	2437	20.35	20.31		30.00	30.00	-1.82	-1.25	18.53	19.06	36.00	36.00	Pass
11g	6Mbps	1	11	2462	15.91	15.88		30.00	30.00	-1.82	-1.25	14.09	14.63	36.00	36.00	Pass
HT20	MCS0	1	1	2412	17.37	18.42		30.00	30.00	-1.82	-1.25	15.55	17.17	36.00	36.00	Pass
HT20	MCS0	1	6	2437	20.24	20.15		30.00	30.00	-1.82	-1.25	18.42	18.90	36.00	36.00	Pass
HT20	MCS0	1	11	2462	16.21	16.01		30.00	30.00	-1.82	-1.25	14.39	14.76	36.00	36.00	Pass
HT40	MCS0	1	3	2422	16.26	16.22		30.00	30.00	-1.82	-1.25	14.44	14.97	36.00	36.00	Pass
HT40	MCS0	1	6	2437	19.79	19.77		30.00	30.00	-1.82	-1.25	17.97	18.52	36.00	36.00	Pass
HT40	MCS0	1	9	2452	15.53	14.84		30.00	30.00	-1.82	-1.25	13.71	13.59	36.00	36.00	Pass
HT20	MCS0	2	1	2412	15.26	15.98	18.65	30.00		-1.25		17.40		36.00		Pass
HT20	MCS0	2	6	2437	17.24	17.24	20.25	30.00		-1.25		19.00		36.00		Pass
HT20	MCS0	2	11	2462	14.98	15.92	18.49	30.00		-1.25		17.24		36.00		Pass
HT40	MCS0	2	3	2422	12.43	12.40	15.43	30.00		-1.25		14.18		36.00		Pass
HT40	MCS0	2	6	2437	15.88	16.51	19.22	30.00		-1.25		17.97		36.00		Pass
HT40	MCS0	2	9	2452	12.22	12.32	15.28	30.00		-1.25		14.03		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	0.06	0.06	14.47	14.43	
11b	1Mbps	1	6	2437	0.06	0.06	14.49	14.47	
11b	1Mbps	1	11	2462	0.06	0.06	14.44	14.42	
11g	6Mbps	1	1	2412	0.07	0.06	12.49	12.82	
11g	6Mbps	1	6	2437	0.07	0.06	14.98	14.96	
11g	6Mbps	1	11	2462	0.07	0.06	10.94	10.82	
HT20	MCS0	1	1	2412	0.07	0.07	12.38	12.97	
HT20	MCS0	1	6	2437	0.07	0.07	14.89	14.83	
HT20	MCS0	1	11	2462	0.07	0.07	10.99	10.95	
HT40	MCS0	1	3	2422	0.14	0.14	11.90	11.88	
HT40	MCS0	1	6	2437	0.14	0.14	14.85	14.78	
HT40	MCS0	1	9	2452	0.14	0.14	10.97	9.98	
HT20	MCS0	2	1	2412	0.05	0.11	10.37	10.54	13.47
HT20	MCS0	2	6	2437	0.05	0.11	12.00	11.92	14.97
HT20	MCS0	2	11	2462	0.05	0.11	10.06	10.80	13.46
HT40	MCS0	2	3	2422	0.14	0.18	7.96	7.97	10.98
HT40	MCS0	2	6	2437	0.14	0.18	11.68	12.13	14.92
HT40	MCS0	2	9	2452	0.14	0.18	7.94	7.96	10.96

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



Appendix B. Radiated Spurious Emission

Test Engineer :	Alex Zheng, Bill Chang, and Wilson Wu	Temperature :	24.7 ~ 25.2°C
		Relative Humidity :	48~52%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 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 11 2462MHz	*	2462	99.79	-	-	87.83	27.1	4.9	29.97	113	236	P	H
	*	2462	96.26	-	-	84.3	27.1	4.9	29.97	113	236	A	H
		2487.84	53.87	-20.13	74	41.78	27.2	4.93	29.97	113	236	P	H
		2483.52	44.69	-9.31	54	32.65	27.15	4.93	29.97	113	236	A	H
													H
													H
	*	2462	103.76	-	-	91.8	27.1	4.9	29.97	158	279	P	V
	*	2462	100.84	-	-	88.88	27.1	4.9	29.97	158	279	A	V
		2483.84	55.08	-18.92	74	43.04	27.15	4.93	29.97	158	279	P	V
		2483.52	46.64	-7.36	54	34.6	27.15	4.93	29.97	158	279	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	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 11 2462MHz		4924	44.14	-29.86	74	61.52	31.7	7.52	57.1	100	0	P	H
		7386	44.86	-29.14	74	56.31	36.31	9.18	57.38	100	0	P	H
													H
													H
		4924	45.43	-28.57	74	62.81	31.7	7.52	57.1	100	0	P	V
		7386	44.55	-29.45	74	56	36.31	9.18	57.38	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11b (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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11b LF		30.54	25.06	-14.94	40	32.87	23.96	0.59	32.34	-	-	P	H
		220.89	27.32	-18.68	46	42.62	15.34	1.53	32.24	-	-	P	H
		258.15	27.04	-18.96	46	37.76	19.76	1.63	32.19	-	-	P	H
		462.4	27.28	-18.72	46	33.82	23.43	2.13	32.18	-	-	P	H
		747.3	30.25	-15.75	46	31.61	27.95	2.68	32.09	-	-	P	H
		867.7	32.47	-13.53	46	32.05	29.06	2.9	31.66	100	0	P	H
													H
													H
													H
													H
													H
													H
		30.54	34.2	-5.8	40	42.01	23.96	0.59	32.34	100	0	P	V
		52.68	26.52	-13.48	40	44.36	13.72	0.74	32.32	-	-	P	V
		112.35	29.25	-14.25	43.5	43.23	17.13	1.09	32.29	-	-	P	V
		600.3	28.26	-17.74	46	32.33	25.62	2.42	32.21	-	-	P	V
		733.3	38.43	-7.57	46	40.18	27.6	2.66	32.11	-	-	P	V
		960.1	33.59	-20.41	54	30.17	31.17	3.07	30.96	-	-	P	V
													V
													V
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 01 2412MHz		2389.8	53.39	-20.61	74	41.73	26.89	4.83	29.99	361	307	P	H
		2390	42.86	-11.14	54	31.2	26.89	4.83	29.99	361	307	A	H
	*	2412	98.36	-	-	86.61	26.94	4.87	29.99	361	307	P	H
	*	2412	90.45	-	-	78.7	26.94	4.87	29.99	361	307	A	H
													H
													H
		2389.17	56.26	-17.74	74	44.6	26.89	4.83	29.99	389	173	P	V
		2390	45.03	-8.97	54	33.37	26.89	4.83	29.99	389	173	A	V
	*	2412	102.23	-	-	90.48	26.94	4.87	29.99	389	173	P	V
	*	2412	94.44	-	-	82.69	26.94	4.87	29.99	389	173	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. 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	38.92	-35.08	74	56.76	31.56	7.33	57.24	100	0	P	H
													H
													H
													H
		4824	38.39	-35.61	74	56.23	31.56	7.33	57.24	100	0	P	V
													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 HT40 (Band Edge @ 3m)

WIFI Ant. 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 HT40 CH 03 2422MHz		2388.82	57.91	-16.09	74	46.25	26.89	4.83	29.99	363	320	P	H
		2389.52	48.66	-5.34	54	37	26.89	4.83	29.99	363	320	A	H
	*	2422	96.27	-	-	84.46	26.99	4.87	29.98	363	320	P	H
	*	2422	88.28	-	-	76.47	26.99	4.87	29.98	363	320	A	H
		2496.64	52.95	-21.05	74	40.85	27.2	4.93	29.96	363	320	P	H
		2491.18	43.9	-10.1	54	31.81	27.2	4.93	29.97	363	320	A	H
		2388.68	58.56	-15.44	74	46.9	26.89	4.83	29.99	365	204	P	V
		2389.94	50.04	-3.96	54	38.38	26.89	4.83	29.99	365	204	A	V
	*	2422	96.61	-	-	84.8	26.99	4.87	29.98	365	204	P	V
	*	2422	88.67	-	-	76.86	26.99	4.87	29.98	365	204	A	V
		2492.37	53.32	-20.68	74	41.22	27.2	4.93	29.96	365	204	P	V
		2487.54	44.06	-9.94	54	31.97	27.2	4.93	29.97	365	204	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. 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 HT40 CH 03 2422MHz		4844	36.92	-37.08	74	54.68	31.58	7.37	57.22	100	0	P	H
		7266	44.45	-29.55	74	56	36.1	9.11	57.23	100	0	P	H
													H
													H
		4844	37.57	-36.43	74	55.33	31.58	7.37	57.22	100	0	P	V
		7266	44.31	-29.69	74	55.86	36.1	9.11	57.23	100	0	P	V
													V
													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.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11n HT40 LF		30.54	23.67	-16.33	40	31.48	23.96	0.59	32.34	-	-	P	H
		216.3	27.23	-18.77	46	42.72	15.21	1.48	32.25	-	-	P	H
		238.44	27.38	-18.62	46	40.75	17.18	1.59	32.22	-	-	P	H
		462.4	26.84	-19.16	46	33.38	23.43	2.13	32.18	-	-	P	H
		729.1	35.97	-10.03	46	37.88	27.45	2.66	32.12	100	0	P	H
		963.6	33.47	-20.53	54	30.1	31.09	3.07	30.93	-	-	P	H
													H
													H
													H
													H
													H
													H
		30.54	33.6	-6.4	40	41.41	23.96	0.59	32.34	100	0	P	V
		52.68	28.38	-11.62	40	46.22	13.72	0.74	32.32	-	-	P	V
		87.78	25.22	-14.78	40	41.74	14.75	0.95	32.3	-	-	P	V
		600.3	27.75	-18.25	46	31.82	25.62	2.42	32.21	-	-	P	V
		832.7	30.65	-15.35	46	30.87	28.64	2.84	31.83	-	-	P	V
		962.9	33.95	-20.05	54	30.59	31.09	3.07	30.94	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

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)
802.11n HT20 CH 11 2462MHz	*	2462	103.89	-	-	91.93	27.1	4.9	29.97	112	276	P	H
	*	2462	95.57	-	-	83.61	27.1	4.9	29.97	112	276	A	H
		2483.52	58.61	-15.39	74	46.57	27.15	4.93	29.97	112	276	P	H
		2483.6	45.71	-8.29	54	33.67	27.15	4.93	29.97	112	276	A	H
													H
													H
	*	2462	100.05	-	-	88.09	27.1	4.9	29.97	367	212	P	V
	*	2462	92.21	-	-	80.25	27.1	4.9	29.97	367	212	A	V
		2483.6	55.14	-18.86	74	43.1	27.15	4.93	29.97	367	212	P	V
		2483.92	44.02	-9.98	54	31.98	27.15	4.93	29.97	367	212	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)
802.11n HT20 CH 11 2462MHz		4924	40.39	-33.61	74	57.77	31.7	7.52	57.1	100	0	P	H
		7386	43.92	-30.08	74	55.37	36.31	9.18	57.38	100	0	P	H
													H
													H
		4924	41.2	-32.8	74	58.58	31.7	7.52	57.1	100	0	P	V
		7386	44.77	-29.23	74	56.22	36.31	9.18	57.38	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 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)
802.11n HT40 CH 09 2452MHz		2387.98	52.44	-21.56	74	40.78	26.89	4.83	29.99	100	279	P	H
		2384.06	43.64	-10.36	54	32.03	26.84	4.83	29.99	100	279	A	H
	*	2452	97.13	-	-	85.23	27.04	4.9	29.97	100	279	P	H
	*	2452	89.31	-	-	77.41	27.04	4.9	29.97	100	279	A	H
		2484.67	57.76	-16.24	74	45.72	27.15	4.93	29.97	100	279	P	H
		2484.39	49.02	-4.98	54	36.98	27.15	4.93	29.97	100	279	A	H
		2373	52.41	-21.59	74	40.83	26.84	4.8	29.99	368	210	P	V
		2387.14	43.48	-10.52	54	31.82	26.89	4.83	29.99	368	210	A	V
	*	2452	94.4	-	-	82.5	27.04	4.9	29.97	368	210	P	V
	*	2452	86.52	-	-	74.62	27.04	4.9	29.97	368	210	A	V
		2483.69	55.85	-18.15	74	43.81	27.15	4.93	29.97	368	210	P	V
		2484.53	46.56	-7.44	54	34.52	27.15	4.93	29.97	368	210	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 HT40 CH 09 2452MHz		4904	38.63	-35.37	74	56.09	31.68	7.48	57.12	100	0	P	H
		7356	43.33	-30.67	74	54.79	36.25	9.17	57.33	100	0	P	H
													H
													H
		4904	38.23	-35.77	74	55.69	31.68	7.48	57.12	100	0	P	V
		7356	43.54	-30.46	74	55	36.25	9.17	57.33	100	0	P	V
													V
													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		30.54	23.85	-16.15	40	31.66	23.96	0.59	32.34	-	-	P	H
		53.76	30.03	-9.97	40	48.27	13.32	0.74	32.32	100	0	P	H
		224.13	30.09	-15.91	46	45.07	15.65	1.53	32.24	-	-	P	H
		462.4	29.55	-16.45	46	36.09	23.43	2.13	32.18	-	-	P	H
		860	31	-15	46	30.58	29.12	2.87	31.7	-	-	P	H
		960.1	36.7	-17.3	54	33.28	31.17	3.07	30.96	-	-	P	H
													H
													H
													H
													H
													H
													H
		30.54	34.06	-5.94	40	41.87	23.96	0.59	32.34	100	0	P	V
		54.57	31.13	-8.87	40	49.78	12.91	0.74	32.32	-	-	P	V
		108.3	24.6	-18.9	43.5	38.95	16.83	1	32.29	-	-	P	V
		564.6	26.57	-19.43	46	30.46	25.86	2.36	32.21	-	-	P	V
		729.1	32.6	-13.4	46	34.51	27.45	2.66	32.12	-	-	P	V
		955.2	34.61	-11.39	46	31.51	30.91	3.06	31.01	-	-	P	V
													V
													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	Peak or Average
H/V	Horizontal or Vertical



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		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		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”.



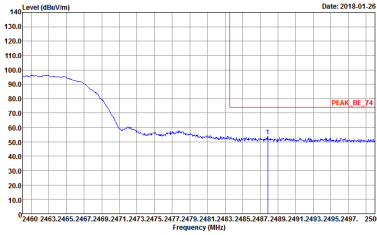
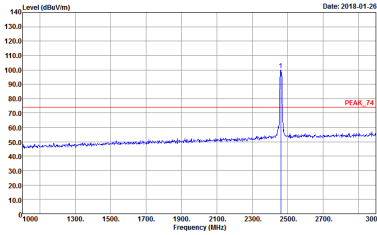
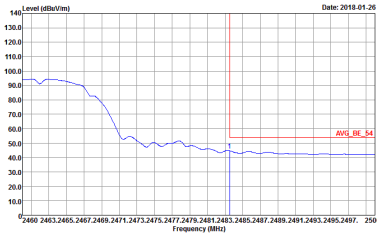
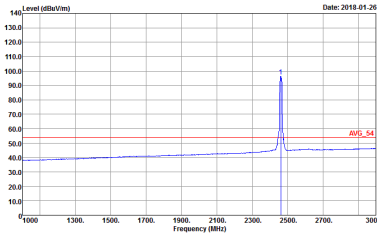
Appendix C. Radiated Spurious Emission Plots

Test Engineer :	Alex Zheng, Bill Chang, and Wilson Wu	Temperature :	24.7 ~ 25.2°C
		Relative Humidity :	48~52%

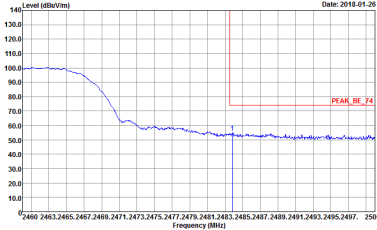
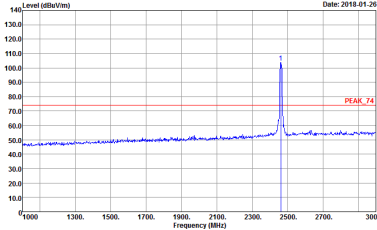
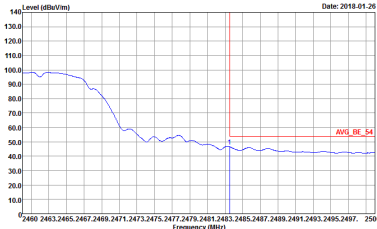
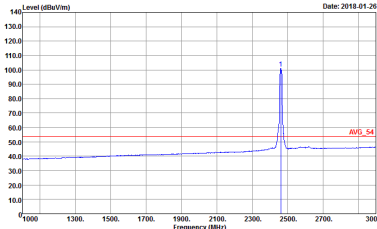
Note symbol

-L	Low channel location
-R	High channel location

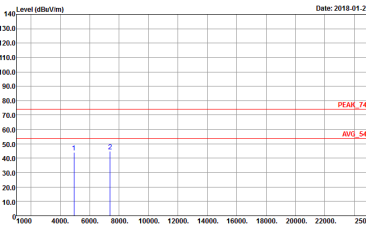
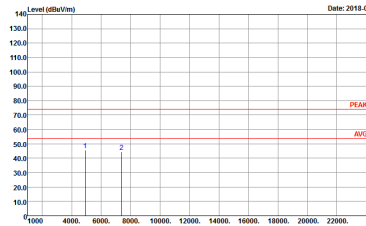
2.4GHz 2400~2483.5MHz
WIFI 802.11b (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 5	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 5
	 Site : 03CH13-HY Condition : AV6_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 5	 Site : 03CH13-HY Condition : AV6_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 5

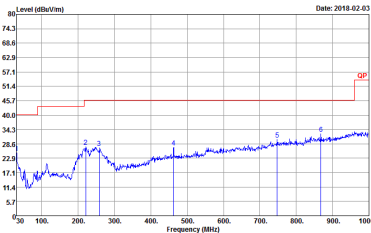
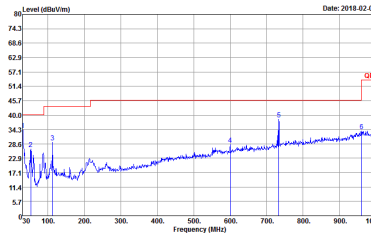


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 5	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 5
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 5	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 5

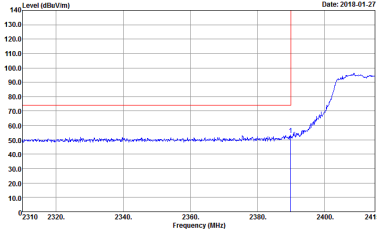
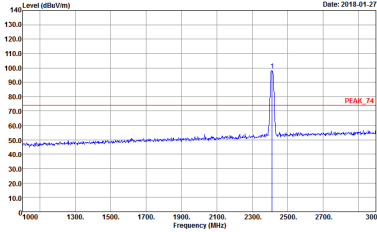
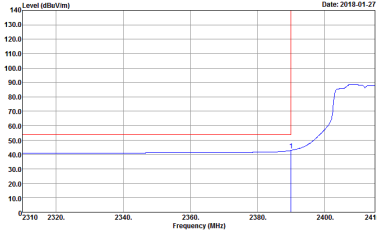
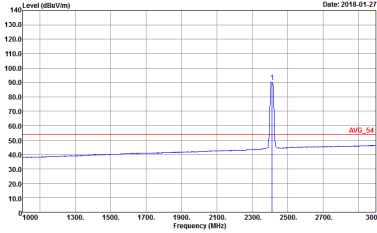
2.4GHz 2400~2483.5MHz
WIFI 802.11b (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 5	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 5

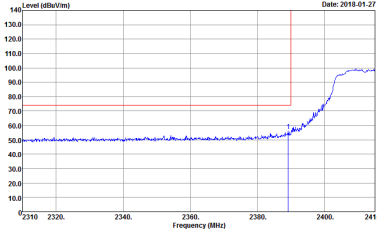
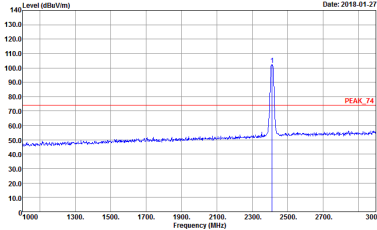
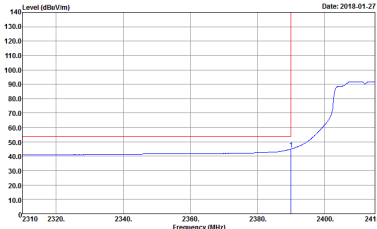
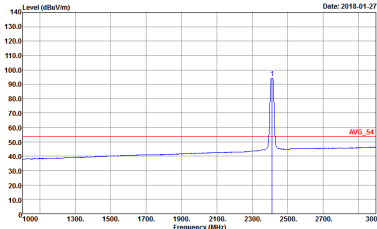
Emission below 1GHz
2.4GHz WIFI 802.11b (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11b LF	
1	Horizontal	Vertical
QP / Peak	 Site : 03CH13-HY Condition : QP 3m BIL06_40103 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 8	 Site : 03CH13-HY Condition : QP 3m BIL06_40103 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 8

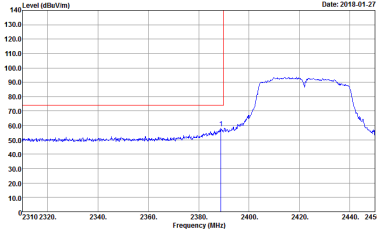
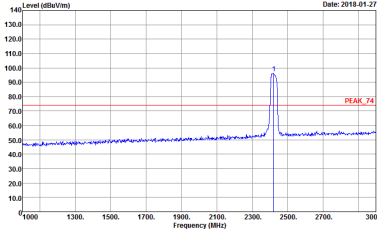
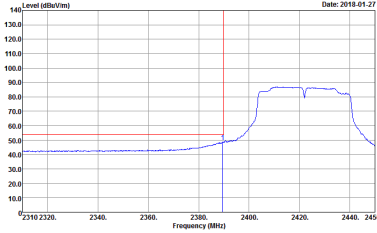
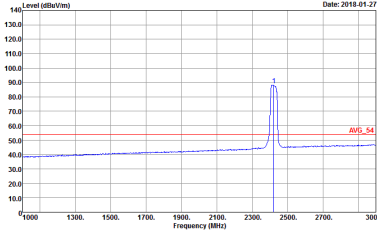
2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 6	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 6
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:0.010kHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 6	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:0.010kHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 6

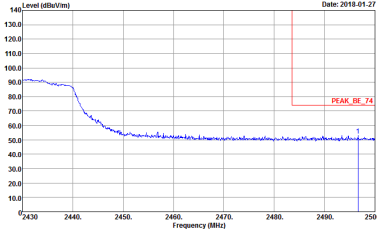
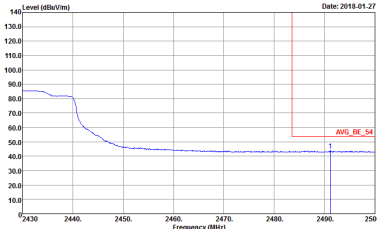


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 6	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 6
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 6	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 6

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	
2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 7	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 7
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 7	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 7

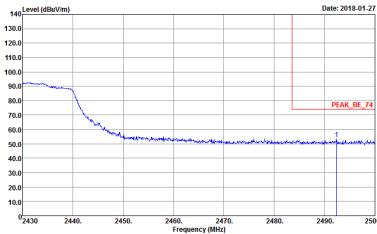
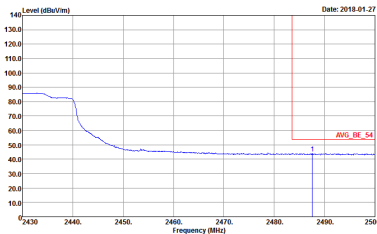


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 7	Left Blank
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 7	Left Blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
2	Vertical	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 7	Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 7
	Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 7	Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 7

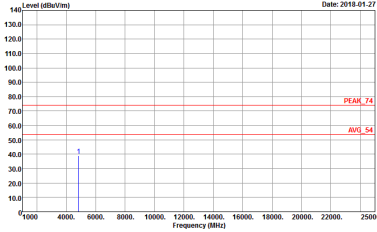
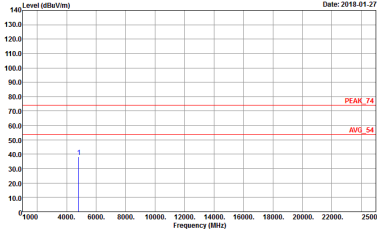


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 7	Left blank
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 7	Left blank



2.4GHz 2400~2483.5MHz

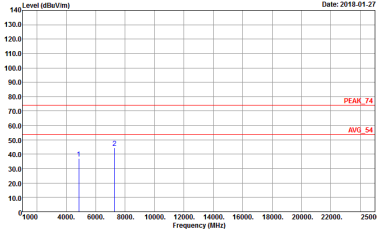
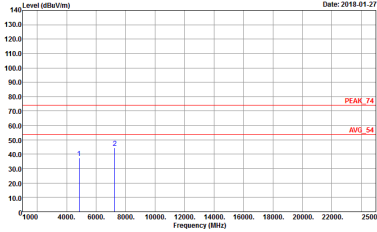
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 6	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 6



2.4GHz 2400~2483.5MHz

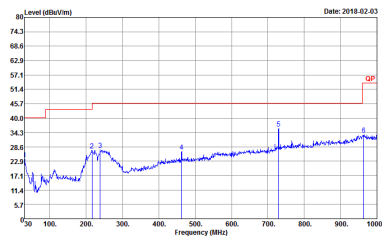
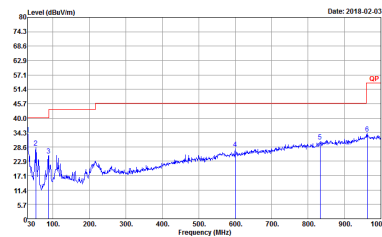
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH03 2422MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 7	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 7

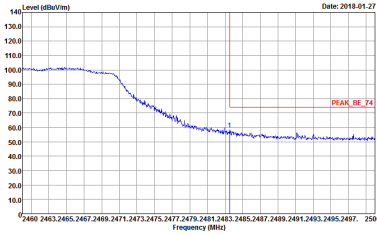
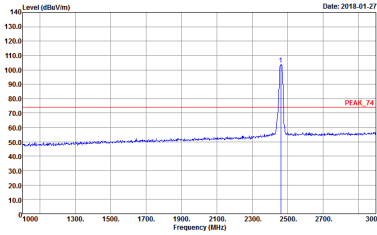
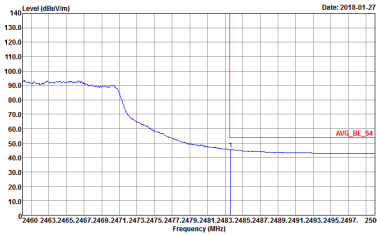
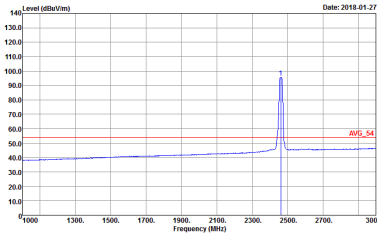


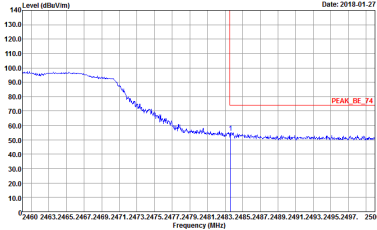
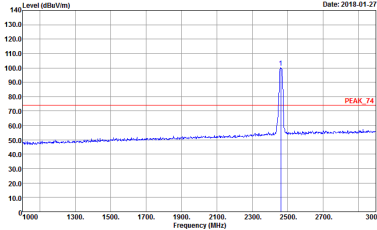
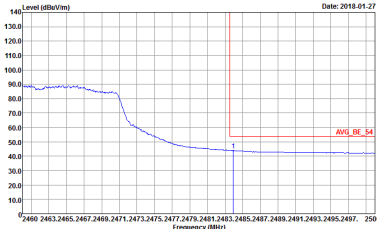
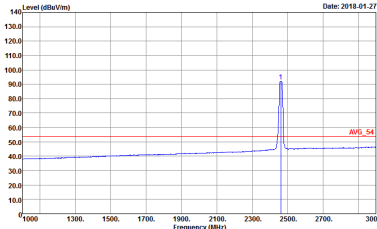
Emission below 1GHz

2.4GHz WIFI 802.11n HT40 (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT40 LF	
2	Horizontal	Vertical
QP / Peak	 Site : 03CH13-HY Condition : QP 3m BTL06_40103 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 9	 Site : 03CH13-HY Condition : QP 3m BTL06_40103 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 9

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

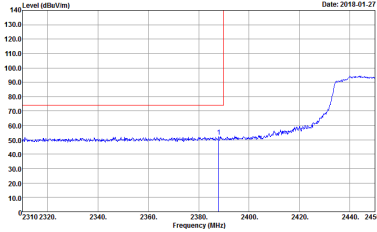
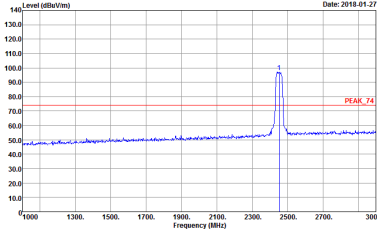
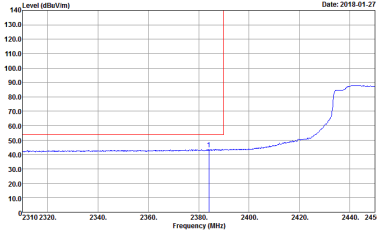
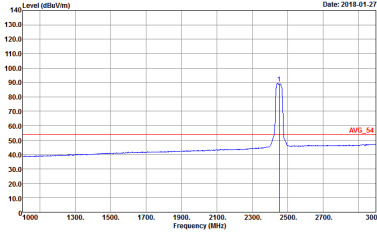
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 10	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 10
	 Site : 03CH13-HY Condition : AV6_BE_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 10	 Site : 03CH13-HY Condition : AV6_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 10

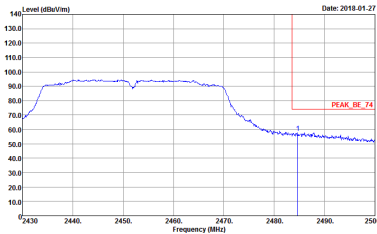
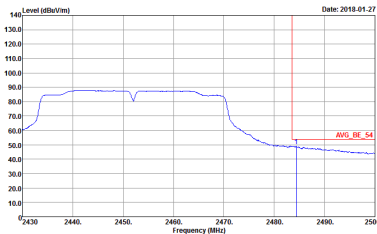
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 10	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 10
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 10	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 10



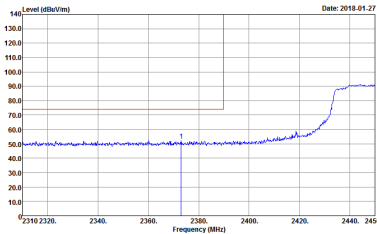
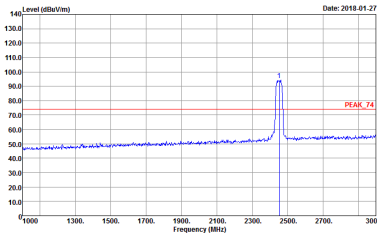
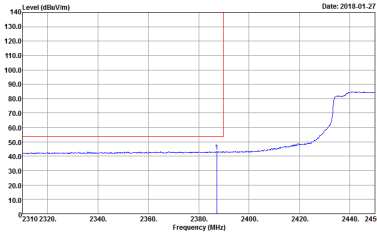
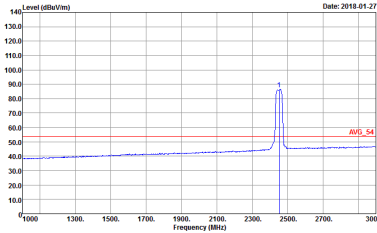
2.4GHz 2400~2483.5MHz

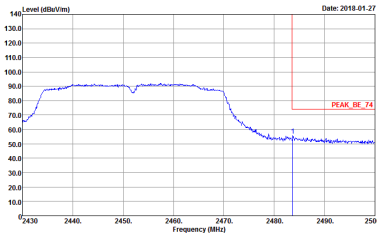
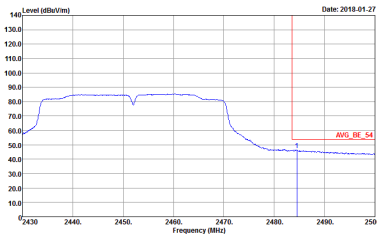
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 11	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 11
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 11	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 11

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 11	Left blank
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 11	Left blank



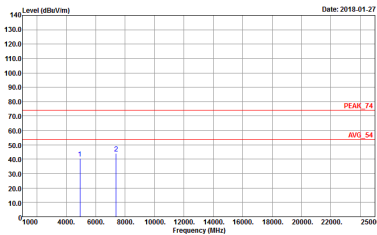
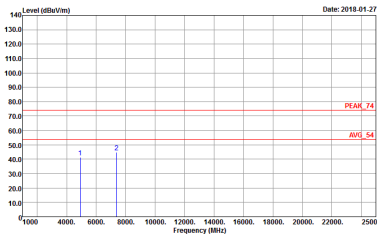
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 11	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 11
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 11	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 11

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 11	Left blank
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 11	Left blank



2.4GHz 2400~2483.5MHz

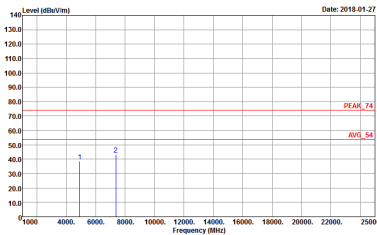
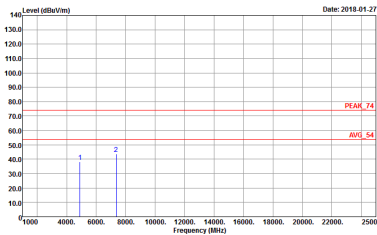
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 10	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 10

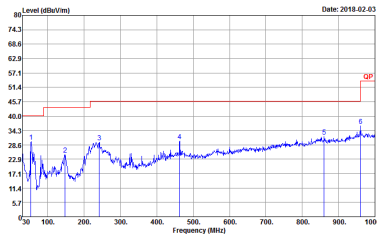
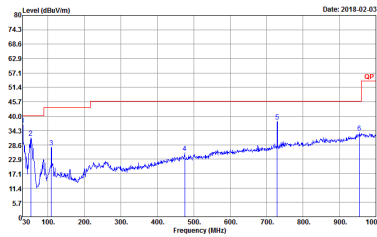


2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

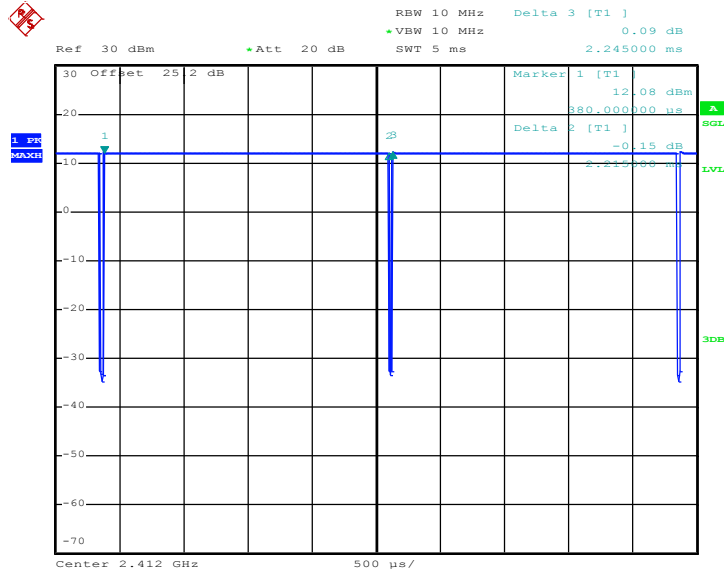
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH09 2452MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 11	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 11

Emission below 1GHz
2.4GHz WIFI 802.11n HT40 (LF)

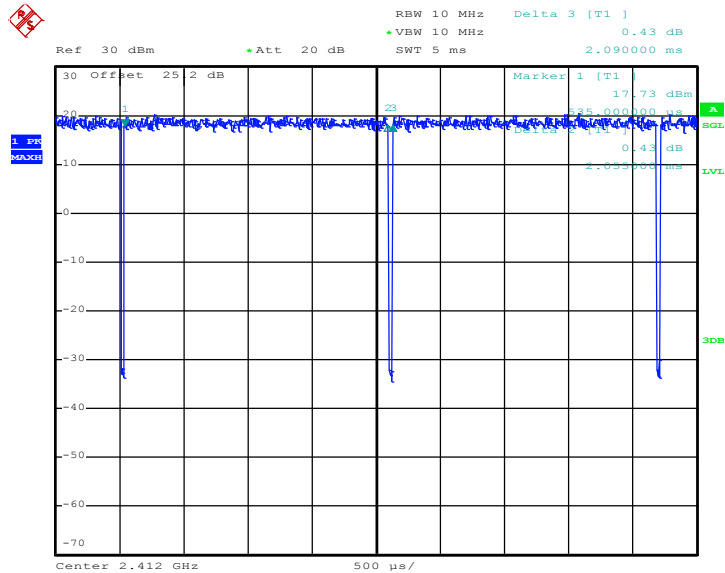
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT40 LF	
1+2	Horizontal	Vertical
QP / Peak	 Site : 03CH13-HY Condition : QP 3m BTL06_40103 HORIZONTAL Detector : Peak Project : 7D0727-01 Mode : 12	 Site : 03CH13-HY Condition : QP 3m BTL06_40103 VERTICAL Detector : Peak Project : 7D0727-01 Mode : 12

Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
1	802.11b	98.66	2215	0.45	10Hz	0.06
1	802.11g	98.33	2055	0.49	10Hz	0.07
1	802.11gn HT20	98.45	1910	0.52	10Hz	0.07
1	802.11gn HT40	96.91	940	1.06	3kHz	0.14
2	802.11b	98.67	2220	0.45	10Hz	0.06
2	802.11g	98.56	2060	0.49	10Hz	0.06
2	802.11gn HT20	98.45	1910	0.52	10Hz	0.07
2	802.11gn HT40	96.91	940	1.06	3kHz	0.14
1+2	802.11gn HT20 for Ant. 1	98.77	1920	0.52	10Hz	0.05
1+2	802.11gn HT40 for Ant. 1	96.91	940	1.06	3kHz	0.14
1+2	802.11gn HT20 for Ant. 2	97.54	1902	0.53	1kHz	0.11
1+2	802.11gn HT40 for Ant. 2	95.88	930	1.08	3kHz	0.18

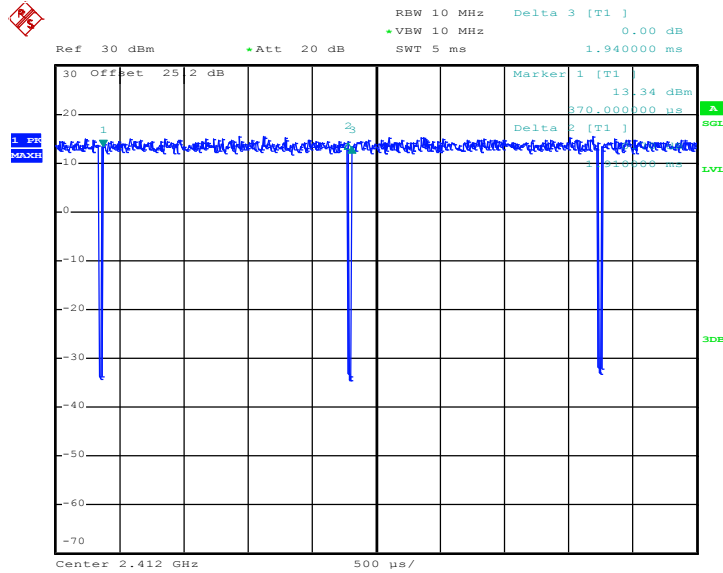
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802.11b


Date: 19.JAN.2018 21:52:38

802.11g


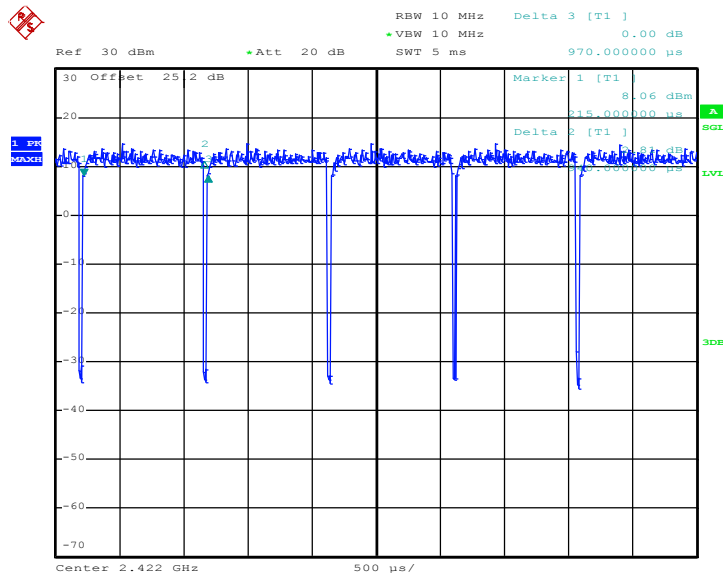
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802.11n HT20

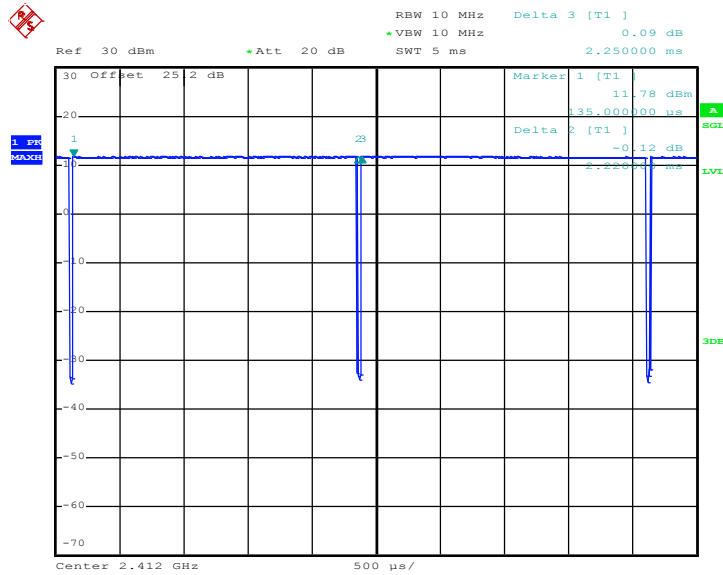


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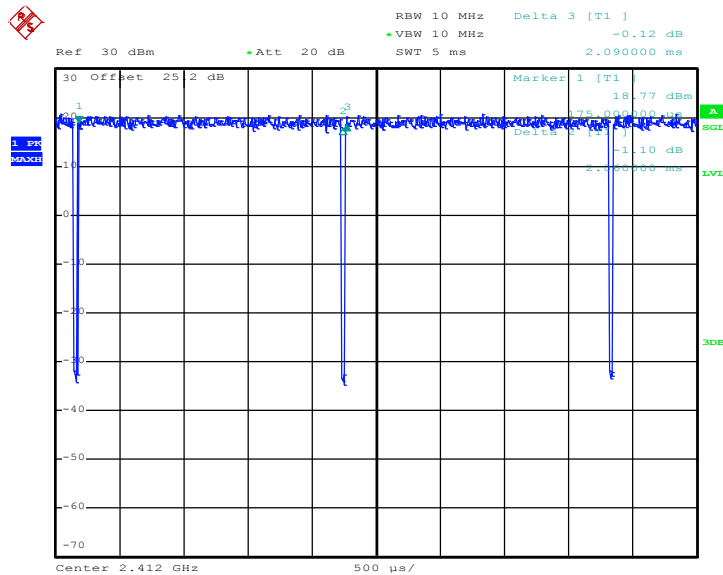
802.11n HT40



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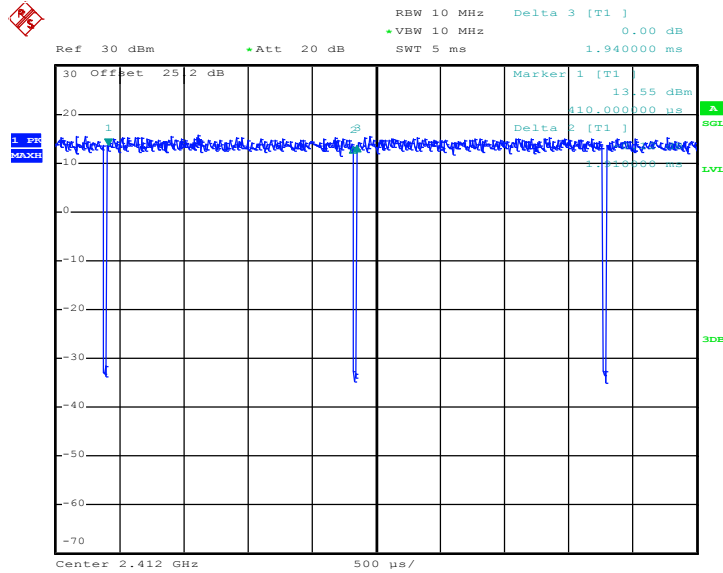
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802.11b


Date: 19.JAN.2018 21:53:50

802.11g


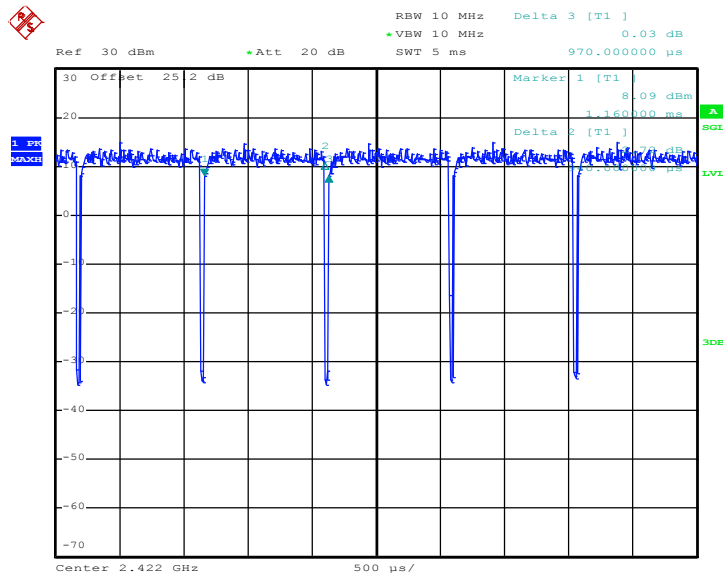
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802.11n HT20



Date: 19.JAN.2018 23:10:15

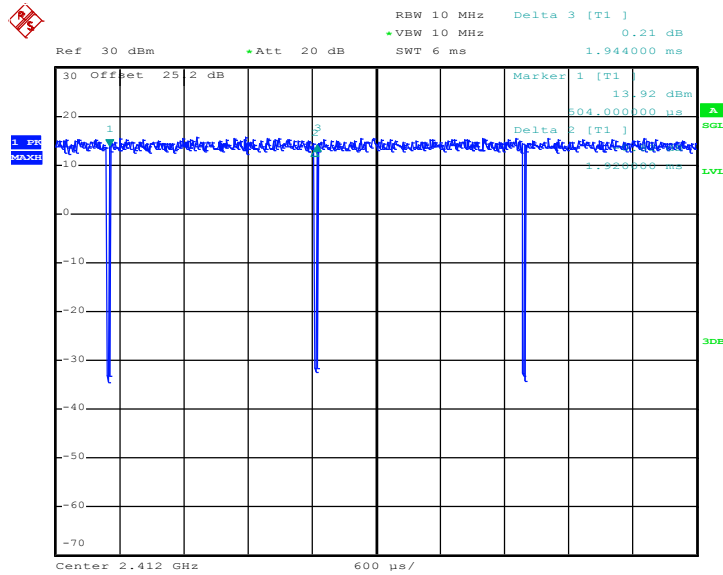
802.11n HT40



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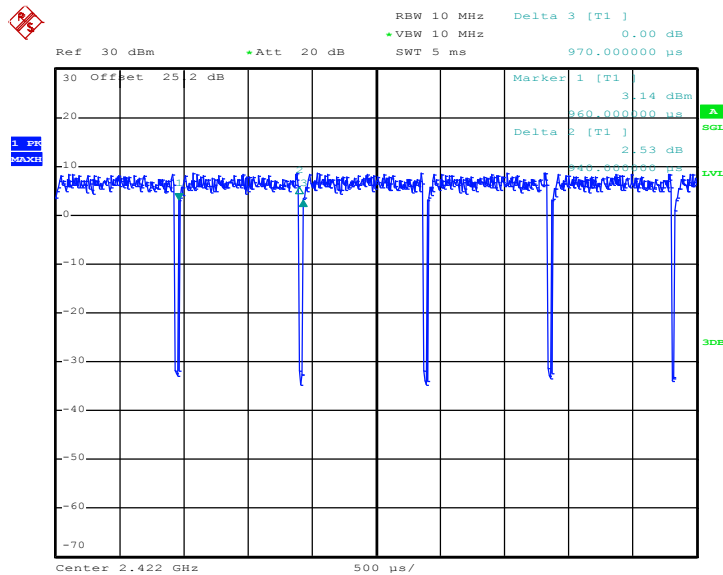
MIMO <Ant. 1>

802.11n HT20

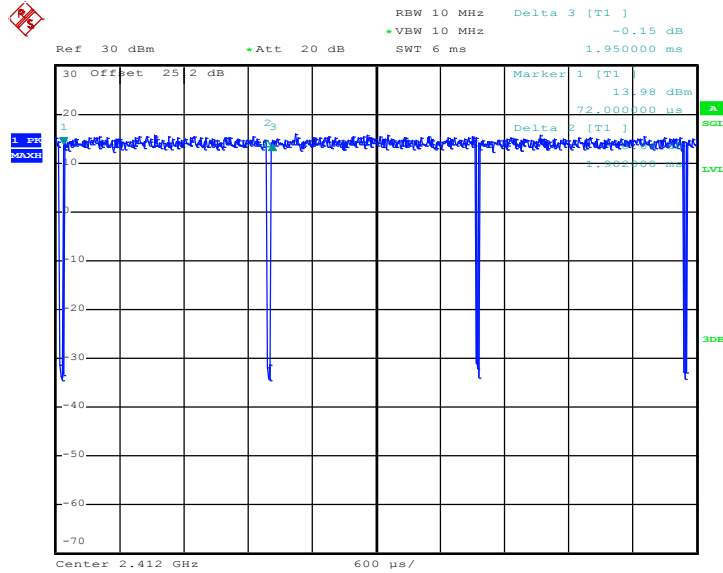


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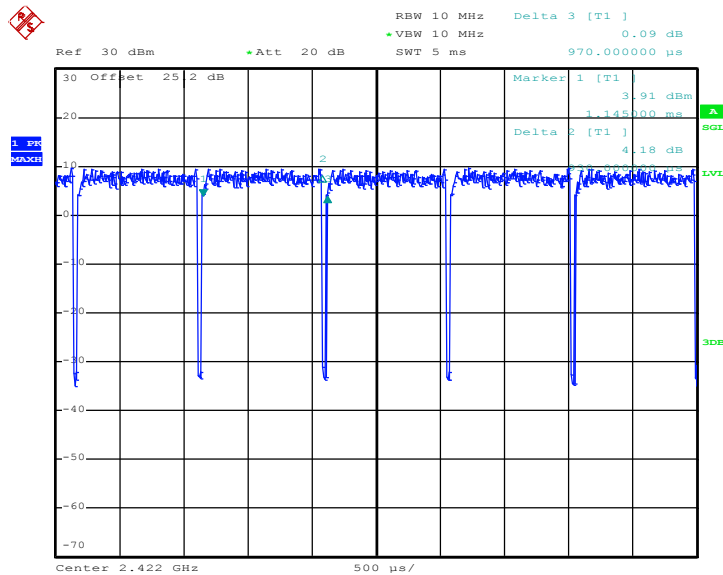
802.11n HT40



Date: 20.JAN.2018 01:04:33

MIMO <Ant. 2>
802.11n HT20


Date: 19.JAN.2018 23:25:33

802.11n HT40


Date: 20.JAN.2018 01:05:18