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 E §15.407
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure

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.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory 1190

SPORTON INTERNATIONAL INC.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.

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REVISION HISTORY

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

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.407(a)	Maximum Conducted Output Power	≤ 30 dBm	Pass	-
3.2	15.407(b)	Unwanted Emissions	15.407(b)(4)(i) &15.209(a)	Pass	Under limit 1.32 dB at 30.540 MHz
3.3	15.203 & 15.407(a)	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 1st 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 E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- 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

a. 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 (Y plane) were recorded in this report.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155#	5775	165	5825

Note:

1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "#" were 802.11ac VHT80.

2.2 Test Mode

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

Single Mode

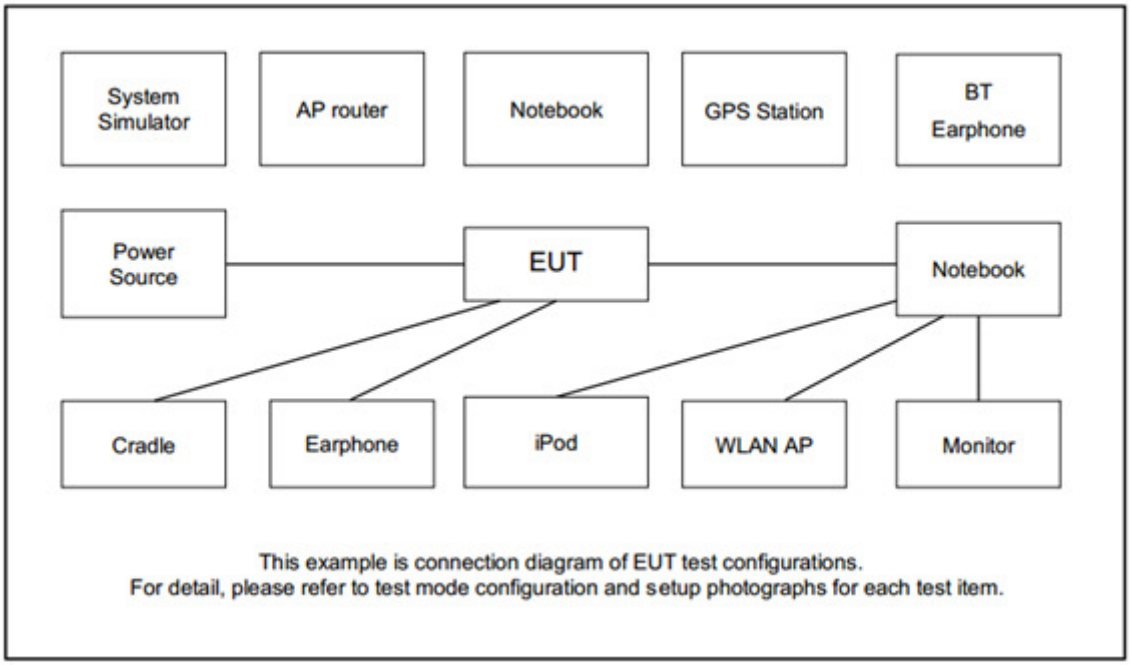
Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20 (Covered by VHT20)	MCS0
802.11n HT40 (Covered by VHT40)	MCS0
802.11ac VHT80	MCS0

MIMO Mode

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20 (Covered by VHT20)	MCS0
802.11n HT40 (Covered by VHT40)	MCS0
802.11ac VHT80	MCS0

Ch. #		Band IV：5725-5850 MHz		
		802.11n HT20	802.11n HT40	802.11ac VHT80
L	Low	-	151	-
M	Middle	157	-	155

2.3 Connection Diagram of Test System



2.4 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 Maximum Conducted Output Power Measurement

3.1.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.1.2 Measuring Instruments

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

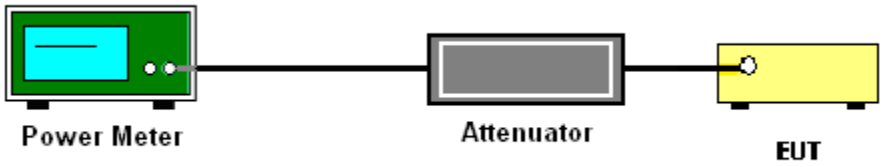
3.1.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, 10 log(1/x), where x is the duty cycle.

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.2 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.2.1 Limit of Unwanted Emissions

(1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table,

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

Note: The following formula is used to convert the EIRP to field strength.

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts)

EIRP (dBm)	Field Strength at 3m (dBµV/m)
-17	78.3
- 27	68.3

(3) KDB789033 D02 v02r01 G)2)c)

(i) Section 15.407(b)(1) to (b)(3) specify the unwanted emission limits for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.[3]

(ii) Section 15.407(b)(4) specifies the unwanted emission limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are in terms of a Peak detector. An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the devices using the alternative limit.[4]

Note 3: An out-of-band emission that complies with both the average and peak limits of Section 15.209 is not required to satisfy the -27 dBm/MHz peak emission limit.

Note 4: Only devices with antenna gains of 10 dBi or less may be approved using the emission limits specified in Section 15.247(d) till March 2, 2018; all other devices operating in this band must use the mask specified in Section 15.407(b)(4)(i).

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 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.

   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz

   - RBW = 120 kHz
   - VBW = 300 kHz
   - Detector = Peak
   - Trace mode = max hold

   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

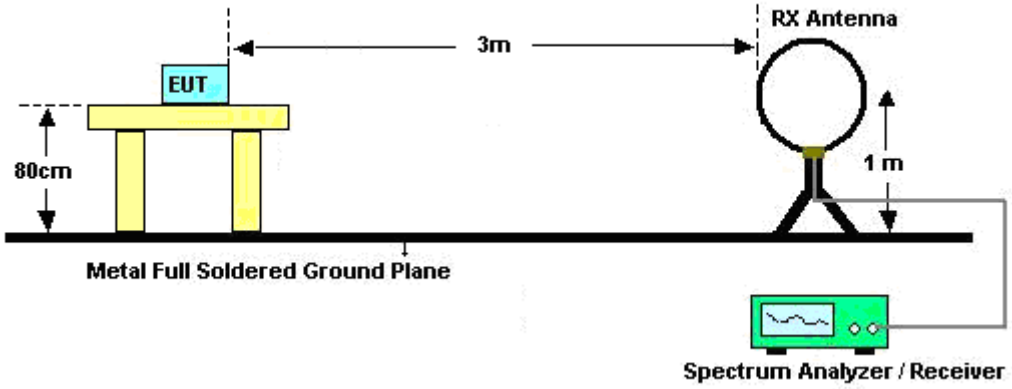
   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

2. 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.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
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.

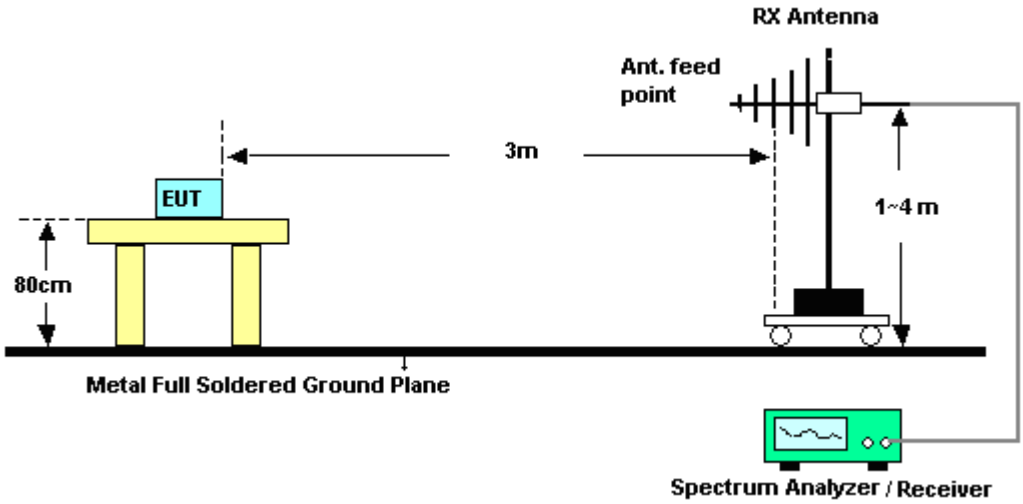
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.2.4 Test Setup

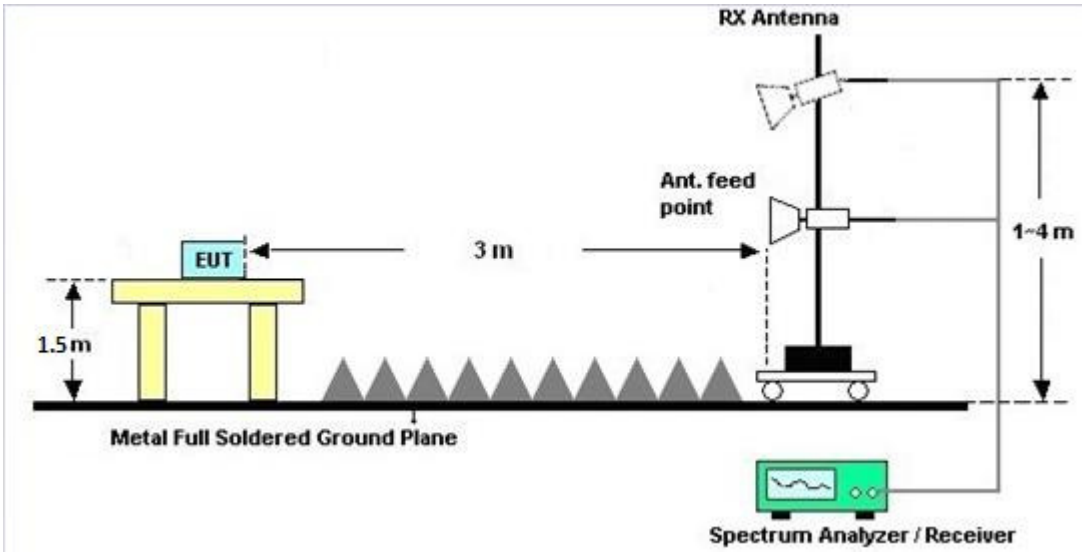
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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 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 Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B and C.

3.3 Antenna Requirements

3.3.1 Standard Applicable

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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 = GANT + Array Gain, where Array Gain is as follows.

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

Array Gain = 10 log(NANT/NSS=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4.

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

The EUT supports CDD mode.

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

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

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

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

<CDD Modes>

			DG for Power	Power Limit Reduction
	Ant. 1 (dBi)	Ant. 2 (dBi)	(dBi)	(dB)
Band IV	1.37	-0.48	1.37	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. 24, 2018~ Feb. 02, 2018	Sep. 25, 2018	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz	Sep. 26, 2017	Jan. 24, 2018~ Feb. 02, 2018	Sep. 25, 2018	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9kHz ~ 30GHz	Nov. 13, 2017	Jan. 24, 2018~ Feb. 02, 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)	MY55420170	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&00800N1D01N-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-1241	1GHz ~ 18GHz	Jun. 15, 2017	Jan. 27, 2018 ~ Feb. 03, 2018	Jun. 14, 2018	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1590074	1GHz~18GHz	May 22, 2017	Jan. 27, 2018 ~ Feb. 03, 2018	May 21, 2018	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY553705326	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	MY532702624	1GHz ~ 26.5GHz	Dec. 05, 2017	Jan. 27, 2018 ~ Feb. 03, 2018	Dec. 04, 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**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.4**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.3**

Appendix A. Test Result of Conducted Test Items

Test Engineer:	White Lin/Shiming Liu	Temperature:	21~25	°C
Test Date:	2018/01/24 ~ 2018/02/02	Relative Humidity:	51~54	%

Report Number : FR7D0727-01E

TEST RESULTS DATA
Average Power Table

Band IV															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)			Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	149	5745	0.07	0.13	13.22	13.21		30.00	30.00	1.37	-0.48		Pass
11a	6Mbps	1	157	5785	0.07	0.13	13.34	13.31		30.00	30.00	1.37	-0.48		Pass
11a	6Mbps	1	165	5825	0.07	0.13	13.41	13.40		30.00	30.00	1.37	-0.48		Pass
HT20	MCS0	1	149	5745	0.07	0.00	13.19	13.14		30.00	30.00	1.37	-0.48		Pass
HT20	MCS0	1	157	5785	0.07	0.00	13.32	13.22		30.00	30.00	1.37	-0.48		Pass
HT20	MCS0	1	165	5825	0.07	0.00	13.38	13.32		30.00	30.00	1.37	-0.48		Pass
HT40	MCS0	1	151	5755	0.15	0.15	13.20	13.13		30.00	30.00	1.37	-0.48		Pass
HT40	MCS0	1	159	5795	0.15	0.15	13.12	13.09		30.00	30.00	1.37	-0.48		Pass
VHT20	MCS0	1	149	5745	0.11	0.07	13.18	13.11		30.00	30.00	1.37	-0.48		Pass
VHT20	MCS0	1	157	5785	0.11	0.07	13.30	13.20		30.00	30.00	1.37	-0.48		Pass
VHT20	MCS0	1	165	5825	0.11	0.07	13.36	13.26		30.00	30.00	1.37	-0.48		Pass
VHT40	MCS0	1	151	5755	0.14	0.14	13.15	13.10		30.00	30.00	1.37	-0.48		Pass
VHT40	MCS0	1	159	5795	0.14	0.14	13.09	13.05		30.00	30.00	1.37	-0.48		Pass
VHT80	MCS0	1	155	5775	0.31	0.31	13.34	13.30		30.00	30.00	1.37	-0.48		Pass
HT20	MCS0	2	149	5745	0.11	0.07	12.03	11.84	14.95	30.00		1.37			Pass
HT20	MCS0	2	157	5785	0.11	0.07	11.85	11.68	14.78	30.00		1.37			Pass
HT20	MCS0	2	165	5825	0.11	0.07	11.76	11.65	14.72	30.00		1.37			Pass
HT40	MCS0	2	151	5755	0.15	0.15	12.30	12.10	15.21	30.00		1.37			Pass
HT40	MCS0	2	159	5795	0.15	0.15	12.26	12.12	15.20	30.00		1.37			Pass
VHT20	MCS0	2	149	5745	0.14	0.14	11.97	11.85	14.92	30.00		1.37			Pass
VHT20	MCS0	2	157	5785	0.14	0.14	11.82	11.70	14.77	30.00		1.37			Pass
VHT20	MCS0	2	165	5825	0.14	0.14	11.75	11.62	14.70	30.00		1.37			Pass
VHT40	MCS0	2	151	5755	0.27	0.24	12.25	12.11	15.19	30.00		1.37			Pass
VHT40	MCS0	2	159	5795	0.27	0.24	12.19	12.13	15.17	30.00		1.37			Pass
VHT80	MCS0	2	155	5775	0.49	0.49	12.44	12.35	15.40	30.00		1.37			Pass

Appendix B. Radiated Spurious Emission

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

Band 4 - 5725~5850MHz

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		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5635	52.89	-15.31	68.2	42.14	32.54	7.72	29.51	298	175	P	H
		5661.8	53.51	-23.45	76.96	42.74	32.56	7.73	29.52	298	175	P	H
		5716.2	52.24	-57.5	109.74	41.38	32.61	7.79	29.54	298	175	P	H
		5724.8	50.86	-70.88	121.74	39.97	32.62	7.81	29.54	298	175	P	H
	*	5785	101.38	-	-	90.42	32.68	7.86	29.58	298	175	P	H
	*	5785	93.49	-	-	82.53	32.68	7.86	29.58	298	175	A	H
		5854.4	50.91	-61.26	112.17	39.87	32.76	7.88	29.6	298	175	P	H
		5871.2	50.85	-55.41	106.26	39.81	32.78	7.88	29.62	298	175	P	H
		5877.2	51.35	-52.22	103.57	40.31	32.78	7.88	29.62	298	175	P	H
		5925.8	50.01	-18.19	68.2	38.93	32.83	7.89	29.64	298	175	P	H
802.11n													H
HT20													H
CH 157		5626	53.94	-14.26	68.2	43.21	32.52	7.7	29.49	227	356	P	V
5785MHz		5662.6	53.49	-24.06	77.55	42.72	32.56	7.73	29.52	227	356	P	V
		5711.6	52.46	-55.99	108.45	41.6	32.61	7.79	29.54	227	356	P	V
		5721	52.38	-60.7	113.08	41.49	32.62	7.81	29.54	227	356	P	V
	*	5785	103.29	-	-	92.33	32.68	7.86	29.58	227	356	P	V
	*	5785	95.43	-	-	84.47	32.68	7.86	29.58	227	356	A	V
		5850.6	50.18	-70.65	120.83	39.16	32.74	7.88	29.6	227	356	P	V
		5856.8	52.35	-57.95	110.3	41.31	32.76	7.88	29.6	227	356	P	V
		5897.6	53.1	-35.34	88.44	42.04	32.8	7.89	29.63	227	356	P	V
		5942	51.07	-17.13	68.2	39.99	32.85	7.89	29.66	227	356	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11n HT20 (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)
		11570	46.87	-27.13	74	51.76	39.73	11.31	56.44	100	0	P	H
		17355	55.86	-12.34	68.2	57.33	40.84	13.52	56.46	100	0	P	H
802.11n													H
HT20													H
CH 157		11570	47.28	-26.72	74	52.17	39.73	11.31	56.44	100	0	P	V
5785MHz		17355	56.54	-11.66	68.2	58.01	40.84	13.52	56.46	100	0	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11n HT40 (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)
		5612	52.77	-15.43	68.2	42.06	32.5	7.7	29.49	282	175	P	H
		5699.4	58.36	-46.4	104.76	47.53	32.59	7.77	29.53	282	175	P	H
		5717.4	69.12	-40.95	110.07	58.26	32.61	7.79	29.54	282	175	P	H
		5724	73.5	-46.42	119.92	62.61	32.62	7.81	29.54	282	175	P	H
	*	5755	99.57	-	-	88.63	32.66	7.84	29.56	282	175	P	H
	*	5755	91.86	-	-	80.92	32.66	7.84	29.56	282	175	A	H
		5853.6	51.71	-62.28	113.99	40.67	32.76	7.88	29.6	282	175	P	H
		5866.2	50.87	-56.79	107.66	39.85	32.76	7.88	29.62	282	175	P	H
		5916	51.45	-23.39	74.84	40.39	32.81	7.89	29.64	282	175	P	H
		5948.2	51.16	-17.04	68.2	40.08	32.85	7.89	29.66	282	175	P	H
802.11n													H
HT40													H
CH 151		5634.6	53.52	-14.68	68.2	42.77	32.54	7.72	29.51	247	359	P	V
5755MHz		5699.4	57.1	-47.66	104.76	46.27	32.59	7.77	29.53	247	359	P	V
		5716.8	71.49	-38.42	109.91	60.63	32.61	7.79	29.54	247	359	P	V
		5723.2	74.26	-43.84	118.1	63.37	32.62	7.81	29.54	247	359	P	V
	*	5755	101.18	-	-	90.24	32.66	7.84	29.56	247	359	P	V
	*	5755	93.59	-	-	82.65	32.66	7.84	29.56	247	359	A	V
		5852.8	49.77	-66.05	115.82	38.75	32.74	7.88	29.6	247	359	P	V
		5857.2	51.16	-59.02	110.18	40.12	32.76	7.88	29.6	247	359	P	V
		5875.4	51.57	-53.33	104.9	40.53	32.78	7.88	29.62	247	359	P	V
		5943	51.3	-16.9	68.2	40.22	32.85	7.89	29.66	247	359	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11n HT40 (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)
		11510	47.11	-26.89	74	51.8	39.9	11.3	56.4	100	0	P	H
		17265	53.37	-14.83	68.2	54.96	40.64	13.46	56.33	100	0	P	H
802.11n													H
HT40													H
CH 151		11510	47.49	-26.51	74	52.18	39.9	11.3	56.4	100	0	P	V
5755MHz		17265	54.02	-14.18	68.2	55.61	40.64	13.46	56.33	100	0	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (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)
		5645.2	65.4	-2.8	68.2	54.65	32.54	7.72	29.51	290	175	P	H
		5696.4	76.4	-26.15	102.55	65.57	32.59	7.77	29.53	290	175	P	H
		5714.2	76.86	-32.32	109.18	66	32.61	7.79	29.54	290	175	P	H
		5722.8	77.61	-39.57	117.18	66.72	32.62	7.81	29.54	290	175	P	H
	*	5775	97.44	-	-	86.47	32.68	7.86	29.57	290	175	P	H
	*	5775	89.59	-	-	78.62	32.68	7.86	29.57	290	175	A	H
		5851.6	68.47	-50.08	118.55	57.45	32.74	7.88	29.6	290	175	P	H
		5858.4	67.56	-42.29	109.85	56.54	32.76	7.88	29.62	290	175	P	H
		5882.8	62.6	-36.81	99.41	51.56	32.78	7.88	29.62	290	175	P	H
		5930.2	53.5	-14.7	68.2	42.42	32.83	7.89	29.64	290	175	P	H
802.11ac													H
VHT80													H
CH 155		5642.2	65.44	-2.76	68.2	54.69	32.54	7.72	29.51	213	355	P	V
5775MHz		5696.6	78.9	-23.79	102.69	68.07	32.59	7.77	29.53	213	355	P	V
		5715.8	80.43	-29.2	109.63	69.57	32.61	7.79	29.54	213	355	P	V
		5720.6	80	-32.17	112.17	69.11	32.62	7.81	29.54	213	355	P	V
	*	5775	100.02	-	-	89.05	32.68	7.86	29.57	213	355	P	V
	*	5775	92.19	-	-	81.22	32.68	7.86	29.57	213	355	A	V
		5850.6	71.9	-48.93	120.83	60.88	32.74	7.88	29.6	213	355	P	V
		5855.4	70.88	-39.81	110.69	59.84	32.76	7.88	29.6	213	355	P	V
		5878.4	63.34	-39.33	102.67	52.3	32.78	7.88	29.62	213	355	P	V
		5927	54.45	-13.75	68.2	43.37	32.83	7.89	29.64	213	355	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (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)
		11550	46.7	-27.3	74	51.53	39.78	11.31	56.43	100	0	P	H
		17325	55.16	-13.04	68.2	56.68	40.76	13.5	56.41	100	0	P	H
802.11ac													H
VHT80													H
CH 155		11550	46.65	-27.35	74	51.48	39.78	11.31	56.43	100	0	P	V
5775MHz		17325	55.43	-12.77	68.2	56.95	40.76	13.5	56.41	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

5GHz WIFI 802.11ac VHT80 (LF @ 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		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		30.54	24.69	-15.31	40	32.5	23.96	0.59	32.34	100	0	P	H
		84.27	20.24	-19.76	40	37.39	14.16	0.95	32.3	-	-	P	H
		227.37	26.98	-19.02	46	41.65	15.95	1.53	32.23	-	-	P	H
		462.4	26.11	-19.89	46	32.65	23.43	2.13	32.18	-	-	P	H
		783	30.67	-15.33	46	31.58	28.25	2.75	32.02	-	-	P	H
		986.7	33.8	-20.2	54	30.74	30.55	3.08	30.72	-	-	P	H
													H
													H
													H
													H
5GHz													H
802.11ac		30.54	36.29	-3.71	40	44.1	23.96	0.59	32.34	100	0	P	H
VHT80		52.41	32	-8	40	49.84	13.72	0.74	32.32	-	-	P	V
LF		94.8	21.54	-21.96	43.5	37.16	15.55	1	32.29	-	-	P	V
		762.7	30.3	-15.7	46	31.4	28.14	2.71	32.06	-	-	P	V
		853.7	32.52	-13.48	46	32.19	29.06	2.87	31.73	-	-	P	V
		955.2	32.91	-13.09	46	29.81	30.91	3.06	31.01	-	-	P	V
													V
													V
													V
													V
													V
													V
													V

Remark

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

Band 4 - 5725~5850MHz

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)
		5623.2	54.01	-14.19	68.2	43.28	32.52	7.7	29.49	100	249	P	H
		5667	53.28	-27.54	80.82	42.48	32.57	7.75	29.52	100	249	P	H
		5716	53.09	-56.59	109.68	42.23	32.61	7.79	29.54	100	249	P	H
		5721.6	53.72	-60.73	114.45	42.83	32.62	7.81	29.54	100	249	P	H
	*	5785	104.47	-	-	93.51	32.68	7.86	29.58	100	249	P	H
	*	5785	96.01	-	-	85.05	32.68	7.86	29.58	100	249	A	H
		5854.2	50.25	-62.37	112.62	39.21	32.76	7.88	29.6	100	249	P	H
		5860	51.42	-57.98	109.4	40.4	32.76	7.88	29.62	100	249	P	H
		5884	51.56	-46.96	98.52	40.53	32.78	7.88	29.63	100	249	P	H
		5941.2	51.38	-16.82	68.2	40.3	32.85	7.89	29.66	100	249	P	H
802.11n													H
HT20													H
CH 157		5648.4	53.95	-14.25	68.2	43.19	32.54	7.73	29.51	389	339	P	V
5785MHz		5654.6	54.48	-17.14	71.62	43.71	32.56	7.73	29.52	389	339	P	V
		5711.2	53.26	-55.08	108.34	42.4	32.61	7.79	29.54	389	339	P	V
		5723.8	53.07	-66.39	119.46	42.18	32.62	7.81	29.54	389	339	P	V
	*	5785	106.62	-	-	95.66	32.68	7.86	29.58	389	339	P	V
	*	5785	98.9	-	-	87.94	32.68	7.86	29.58	389	339	A	V
		5850.6	51.21	-69.62	120.83	40.19	32.74	7.88	29.6	389	339	P	V
		5863	52.51	-56.05	108.56	41.49	32.76	7.88	29.62	389	339	P	V
		5884.4	52.66	-45.56	98.22	41.63	32.78	7.88	29.63	389	339	P	V
		5933.4	51.33	-16.87	68.2	40.25	32.83	7.89	29.64	389	339	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

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)
		11570	46.41	-27.59	74	51.3	39.73	11.31	56.44	100	0	P	H
		17355	57.84	-10.36	68.2	59.31	40.84	13.52	56.46	100	0	P	H
802.11n													H
HT20													H
CH 157		11570	46.63	-27.37	74	51.52	39.73	11.31	56.44	100	0	P	V
5785MHz		17355	57.01	-11.19	68.2	58.48	40.84	13.52	56.46	100	0	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

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)
		5610.2	52.57	-15.63	68.2	41.86	32.5	7.7	29.49	100	250	P	H
		5691	52.93	-45.63	98.56	42.1	32.59	7.77	29.53	100	250	P	H
		5719.6	63.59	-47.1	110.69	52.7	32.62	7.81	29.54	100	250	P	H
		5723.2	63.59	-54.51	118.1	52.7	32.62	7.81	29.54	100	250	P	H
	*	5755	100.3	-	-	89.36	32.66	7.84	29.56	100	250	P	H
	*	5755	92.23	-	-	81.29	32.66	7.84	29.56	100	250	A	H
		5854.4	49.97	-62.2	112.17	38.93	32.76	7.88	29.6	100	250	P	H
		5858.8	51.49	-58.24	109.73	40.47	32.76	7.88	29.62	100	250	P	H
		5905	51.26	-31.7	82.96	40.19	32.81	7.89	29.63	100	250	P	H
		5938.4	50.97	-17.23	68.2	39.91	32.83	7.89	29.66	100	250	P	H
802.11n													H
HT40													H
CH 151		5612.2	53.01	-15.19	68.2	42.3	32.5	7.7	29.49	394	340	P	V
5755MHz		5693.2	54.33	-45.86	100.19	43.5	32.59	7.77	29.53	394	340	P	V
		5718.6	63.93	-46.48	110.41	53.04	32.62	7.81	29.54	394	340	P	V
		5721.8	67.78	-47.12	114.9	56.89	32.62	7.81	29.54	394	340	P	V
	*	5755	101.65	-	-	90.71	32.66	7.84	29.56	394	340	P	V
	*	5755	93.96	-	-	83.02	32.66	7.84	29.56	394	340	A	V
		5853.8	50.63	-62.91	113.54	39.59	32.76	7.88	29.6	394	340	P	V
		5871.6	52.25	-53.9	106.15	41.21	32.78	7.88	29.62	394	340	P	V
		5907.4	51.05	-30.14	81.19	39.98	32.81	7.89	29.63	394	340	P	V
		5945.4	50.95	-17.25	68.2	39.87	32.85	7.89	29.66	394	340	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

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)
		11510	47.79	-26.21	74	52.48	39.9	11.3	56.4	100	0	P	H
		17265	51.79	-16.41	68.2	53.38	40.64	13.46	56.33	100	0	P	H
802.11n													H
HT40													H
CH 151		11510	47.37	-26.63	74	52.06	39.9	11.3	56.4	100	0	P	V
5755MHz		17265	52.04	-16.16	68.2	53.63	40.64	13.46	56.33	100	0	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (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)
		5643.8	52.38	-15.82	68.2	41.63	32.54	7.72	29.51	100	250	P	H
		5692.6	61.01	-38.73	99.74	50.18	32.59	7.77	29.53	100	250	P	H
		5707.2	59.35	-47.87	107.22	48.49	32.61	7.79	29.54	100	250	P	H
		5723	58.03	-59.61	117.64	47.14	32.62	7.81	29.54	100	250	P	H
	*	5775	94.69	-	-	83.72	32.68	7.86	29.57	100	250	P	H
	*	5775	87.1	-	-	76.13	32.68	7.86	29.57	100	250	A	H
		5851.6	55.33	-63.22	118.55	44.31	32.74	7.88	29.6	100	250	P	H
		5857.6	61.34	-48.73	110.07	50.3	32.76	7.88	29.6	100	250	P	H
		5918.4	51.4	-21.67	73.07	40.34	32.81	7.89	29.64	100	250	P	H
		5949.6	52.59	-15.61	68.2	41.51	32.85	7.89	29.66	100	250	P	H
802.11ac													H
VHT80													H
CH 155		5631	52.52	-15.68	68.2	41.79	32.52	7.72	29.51	359	345	P	V
5775MHz		5690	58.76	-39.07	97.83	47.93	32.59	7.77	29.53	359	345	P	V
		5705.8	60.48	-46.35	106.83	49.62	32.61	7.79	29.54	359	345	P	V
		5724.8	59.95	-61.79	121.74	49.06	32.62	7.81	29.54	359	345	P	V
	*	5775	97.17	-	-	86.2	32.68	7.86	29.57	359	345	P	V
	*	5775	89.55	-	-	78.58	32.68	7.86	29.57	359	345	A	V
		5850.8	60.19	-60.19	120.38	49.17	32.74	7.88	29.6	359	345	P	V
		5865.8	56.76	-51.01	107.77	45.74	32.76	7.88	29.62	359	345	P	V
		5875.6	51.37	-53.38	104.75	40.33	32.78	7.88	29.62	359	345	P	V
		5940.6	51.25	-16.95	68.2	40.17	32.85	7.89	29.66	359	345	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (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)
		11550	46.63	-27.37	74	51.46	39.78	11.31	56.43	100	0	P	H
		17325	49.12	-19.08	68.2	50.64	40.76	13.5	56.41	100	0	P	H
802.11ac													H
VHT80													H
CH 155		11550	46	-28	74	50.83	39.78	11.31	56.43	100	0	P	V
5775MHz		17325	47.77	-20.43	68.2	49.29	40.76	13.5	56.41	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

5GHz WIFI 802.11n HT20 (LF @ 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)
		30.54	25.06	-14.94	40	32.87	23.96	0.59	32.34	-	-	P	H
		212.52	25.79	-17.71	43.5	41.3	15.19	1.48	32.25	-	-	P	H
		231.96	27.43	-18.57	46	41.59	16.46	1.53	32.23	-	-	P	H
		799.8	30.48	-15.52	46	31.5	28.07	2.78	31.99	-	-	P	H
		838.3	31.09	-14.91	46	31.07	28.86	2.84	31.81	-	-	P	H
		944.7	34.1	-11.9	46	31.66	30.34	3.06	31.1	100	0	P	H
													H
													H
													H
													H
5GHz													H
802.11n													H
HT20		30.54	38.68	-1.32	40	46.49	23.96	0.59	32.34	100	156	QP	V
LF	*	30.54	42.11	2.11	40	49.92	23.96	0.59	32.34	100	156	P	V
		49.44	28.08	-11.92	40	44.73	14.91	0.74	32.32	-	-	P	V
		52.68	29.04	-10.96	40	46.88	13.72	0.74	32.32	-	-	P	V
		836.2	31.31	-14.69	46	31.39	28.77	2.84	31.82	-	-	P	V
		901.3	31.57	-14.43	46	30.98	29.04	2.94	31.5	-	-	P	V
		965	33.38	-20.62	54	30.05	31.04	3.07	30.92	-	-	P	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	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)
802.11b 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

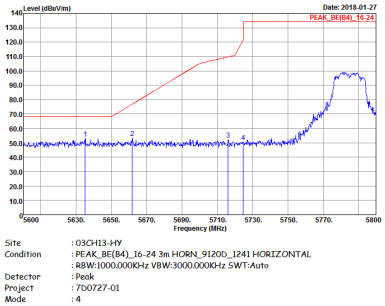
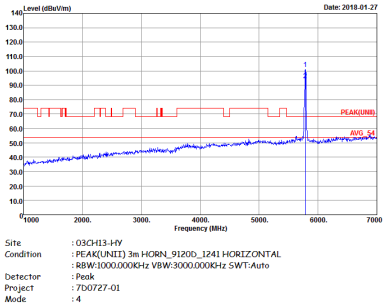
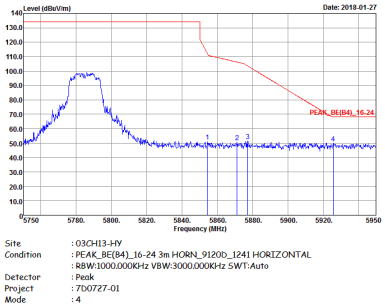
Test Engineer :	Alex Jheng, Bill Chang, and Wilson Wu	**Temperature :**	24.7~25.2°C
		Relative Humidity :	48~52%

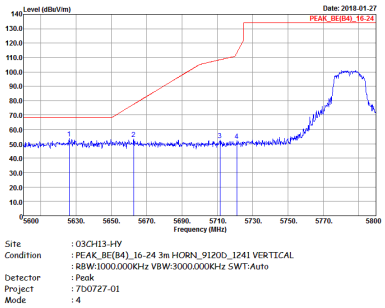
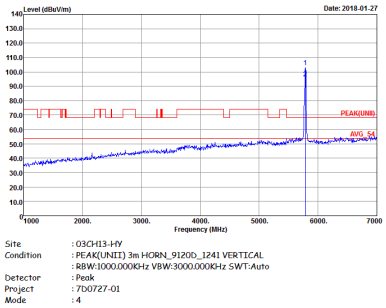
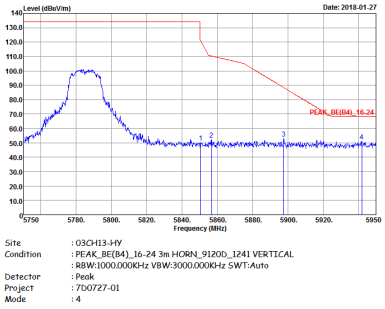
Note symbol

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

Band 4 - 5725~5850MHz

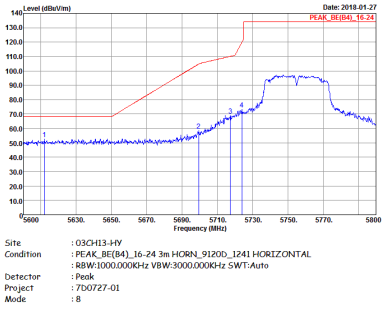
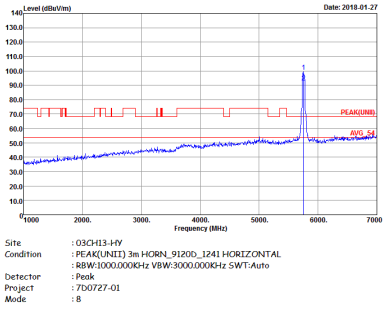
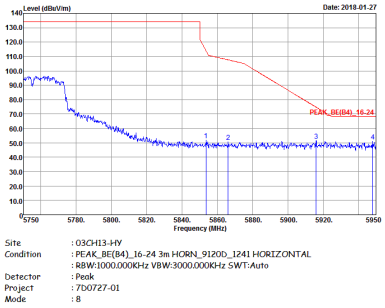
WIFI 802.11n HT20 (Band Edge @ 3m)

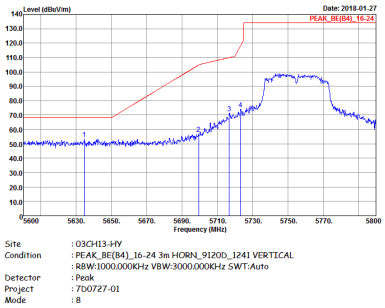
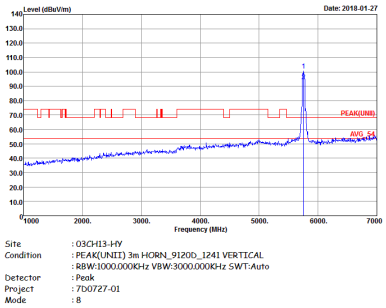
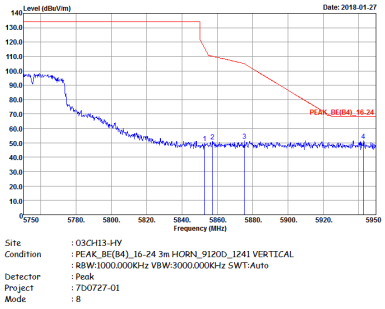
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak		
Peak		Left blank

Band 4 5725~5850MHz

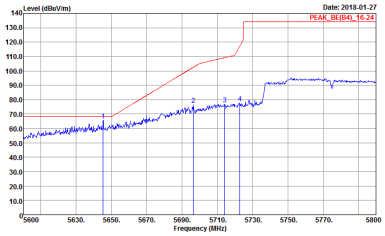
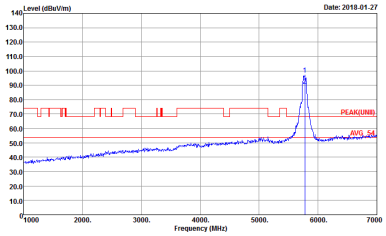
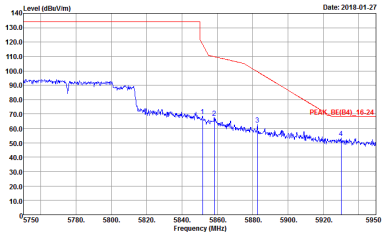
WIFI 802.11n HT40 (Band Edge @ 3m)

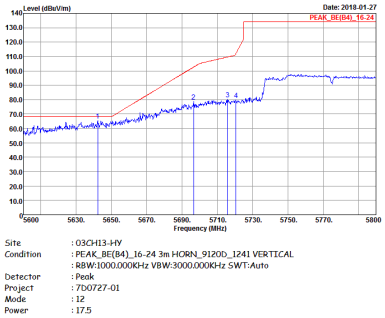
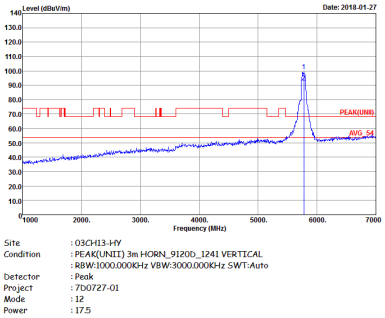
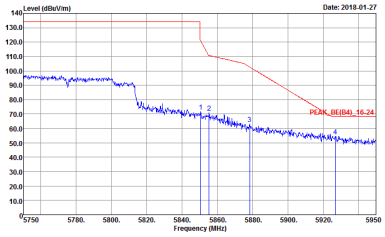
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Vertical	Fundamental
Peak		
Peak		Left blank

Band 4 5725~5850MHz

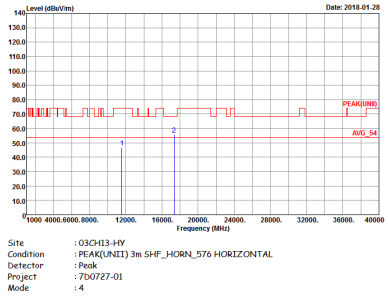
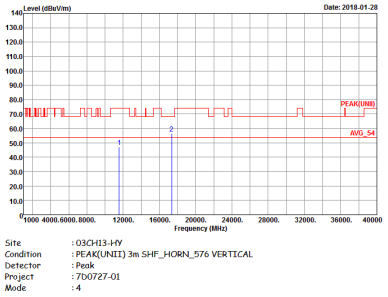
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 12 Power : 17.5	 Site : 03CH13-HV Condition : PEAK(UNII) 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 12 Power : 17.5
Peak	 Site : 03CH13-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 12 Power : 17.5	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 12 Power : 17.5	 Site : 03CH13-HV Condition : PEAK(UNII) 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 12 Power : 17.5
Peak	 Site : 03CH13-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 12 Power : 17.5	Left blank

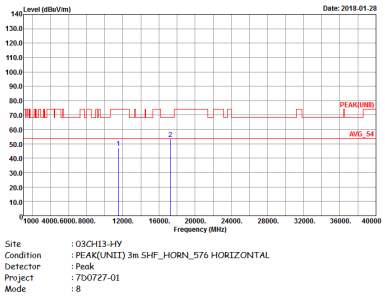
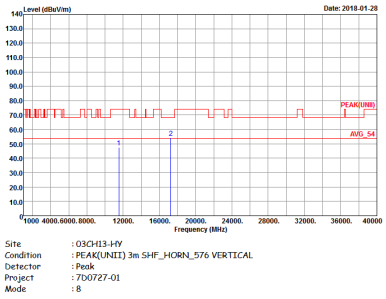
Band 4 - 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
Peak Avg.		

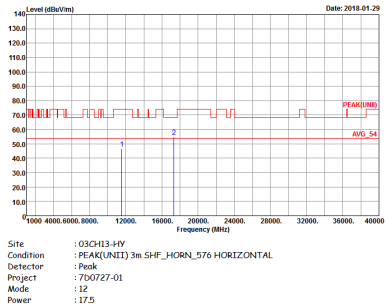
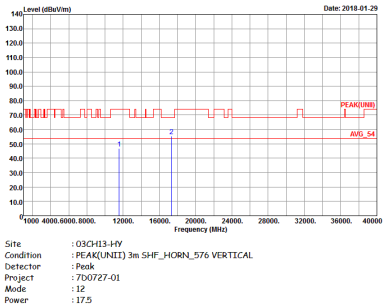
Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1	Horizontal	Vertical
Peak Avg.		

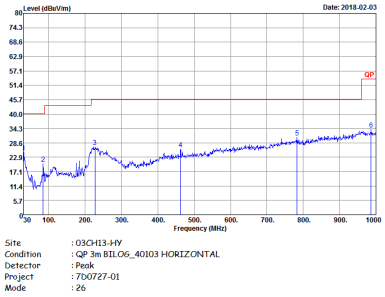
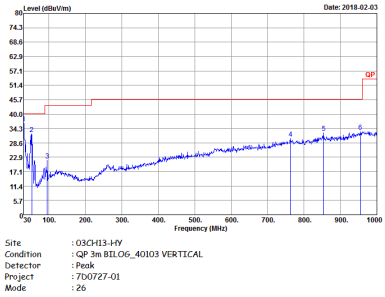
Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Vertical
Peak Avg.		

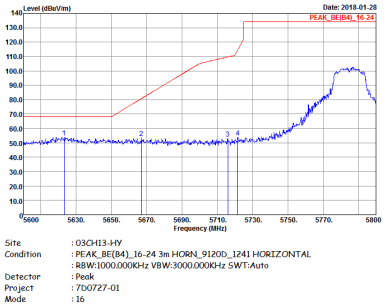
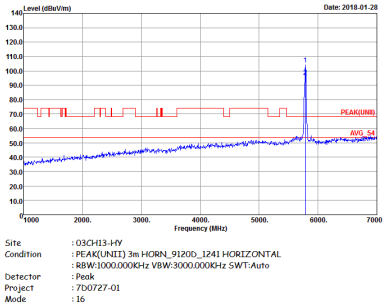
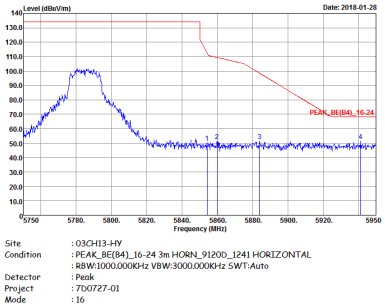
Emission below 1GHz

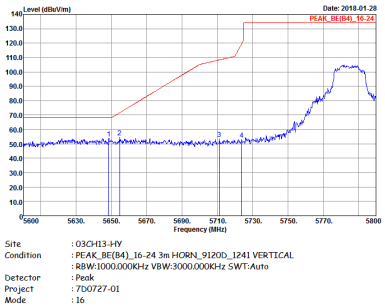
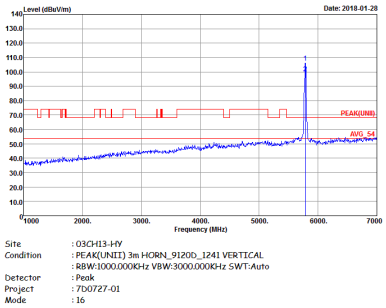
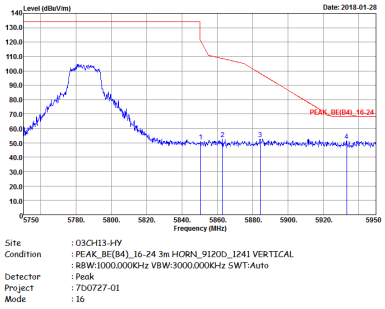
5GHz WIFI 802.11ac VHT80 (LF)

WIFI	5GHz 5725~5850MHz	
ANT	802.11ac VHT80 LF	
1	Horizontal	Vertical
QP / Peak		

Band 4 - 5725~5850MHz

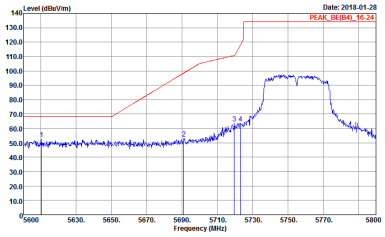
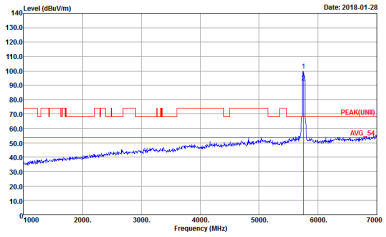
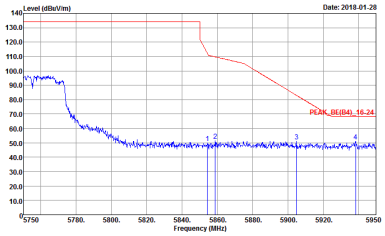
WIFI 802.11n HT20 (Band Edge @ 3m)

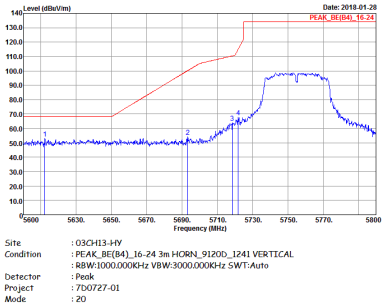
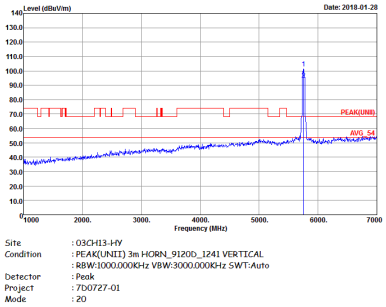
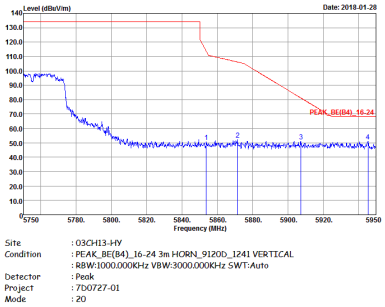
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Vertical	Fundamental
Peak		
Peak		Left blank

Band 4 5725~5850MHz

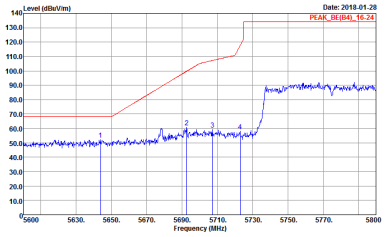
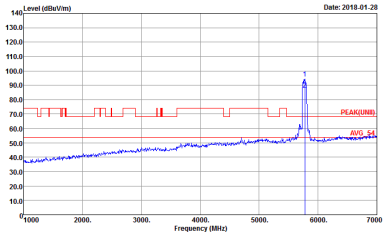
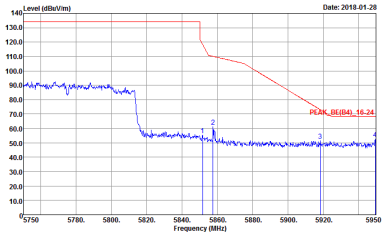
WIFI 802.11n HT40 (Band Edge @ 3m)

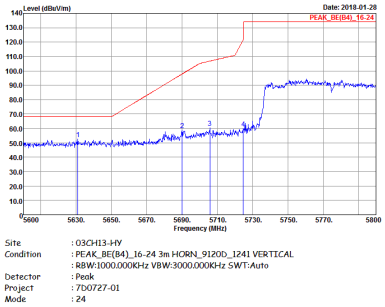
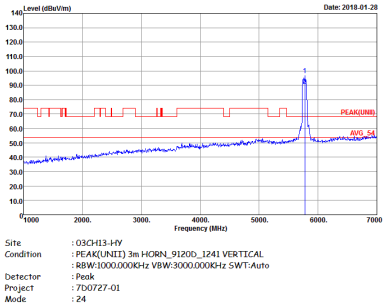
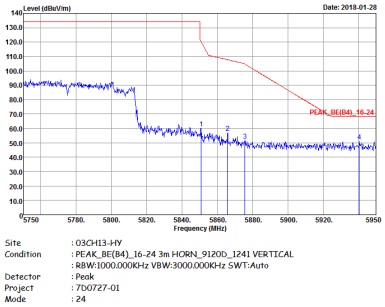
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 20	 Site : 03CH13-HV Condition : PEAK(UNII) 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 20
Peak	 Site : 03CH13-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 20	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Vertical	Fundamental
Peak		
Peak		Left blank

Band 4 5725~5850MHz

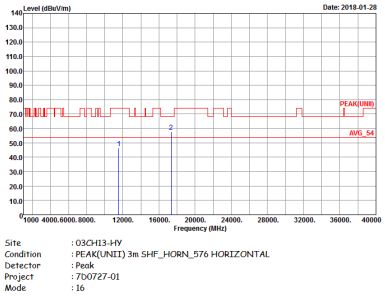
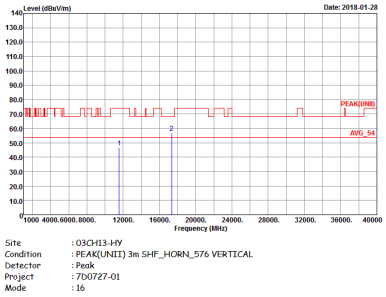
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 24	 Site : 03CH13-HV Condition : PEAK(UNII) 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 24
Peak	 Site : 03CH13-HV Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0727-01 Mode : 24	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak		
Peak		Left blank

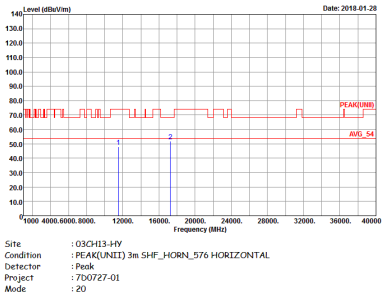
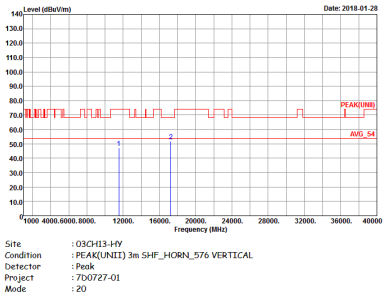
Band 4 - 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.		

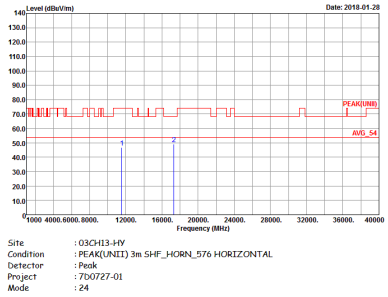
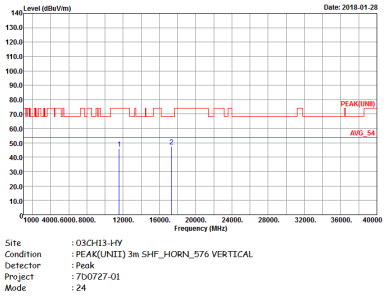
Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.		

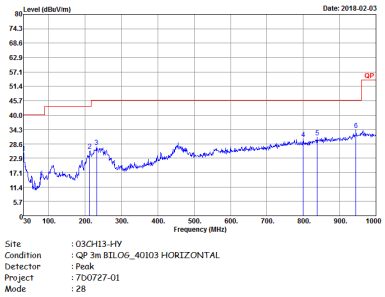
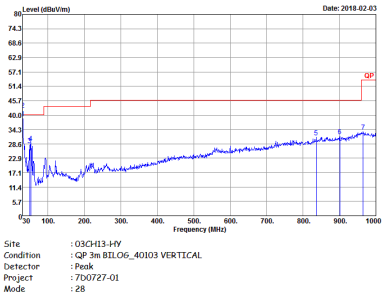
Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

5GHz WIFI 802.11n HT20 (LF)

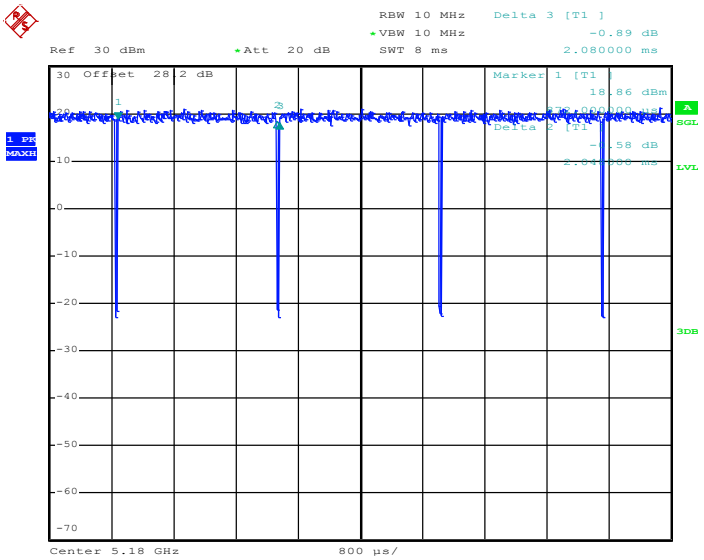
WIFI	5GHz 5725~5850MHz	
ANT	802.11n HT20 LF	
1+2	Horizontal	Vertical
QP / Peak		

Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle (%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor (dB)
1	802.11a	98.46	-	-	10Hz	0.07
2	802.11a	96.97	2048.00	0.49	1kHz	0.13
1	5GHz 802.11n HT20	98.35	-	-	10Hz	0.07
2	5GHz 802.11n HT20	98.35	-	-	10Hz	0.07
1+2	5GHz 802.11n HT20 for Ant. 1	97.54	1904.00	0.53	1kHz	0.11
1+2	5GHz 802.11n HT20 for Ant. 2	98.35	-	-	10Hz	0.07
1	5GHz 802.11n HT40	96.67	928.00	1.08	3kHz	0.15
2	5GHz 802.11n HT40	96.67	928.00	1.08	3kHz	0.15
1+2	5GHz 802.11n HT40	96.69	936.00	1.07	3kHz	0.15
1+2	5GHz 802.11n HT40	96.67	928.00	1.08	3kHz	0.15
1	5GHz 802.11ac VHT20	97.54	1904.00	0.53	1kHz	0.11
2	5GHz 802.11ac VHT20	98.36	1920.00	0.52	10Hz	0.07
1+2	5GHz 802.11ac VHT20	96.85	984.00	1.02	3kHz	0.14
1+2	5GHz 802.11ac VHT20	96.83	976.00	1.02	3kHz	0.14
1	5GHz 802.11ac VHT40	96.72	944.00	1.06	3kHz	0.14
2	5GHz 802.11ac VHT40	96.74	948.00	1.05	3kHz	0.14
1+2	5GHz 802.11ac VHT40 Ant. 1	93.89	492.00	2.03	3kHz	0.27
1+2	5GHz 802.11ac VHT40 Ant. 2	94.66	496.00	2.02	3kHz	0.24
1	5GHz 802.11ac VHT80	93.10	432.00	2.31	3kHz	0.31
2	5GHz 802.11ac VHT80	93.10	432.00	2.31	3kHz	0.31
1+2	5GHz 802.11ac VHT80	89.36	252.00	3.97	10kHz	0.49
1+2	5GHz 802.11ac VHT80	89.36	252.00	3.97	10kHz	0.49

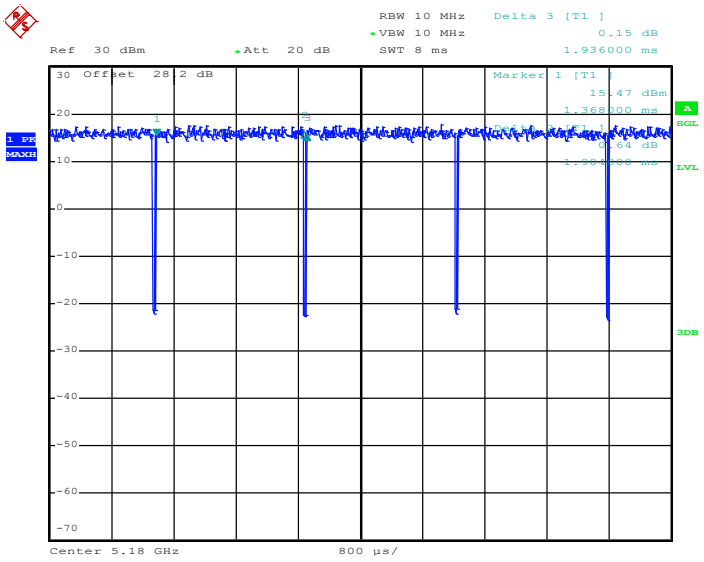
<Ant. 1>

802.11a



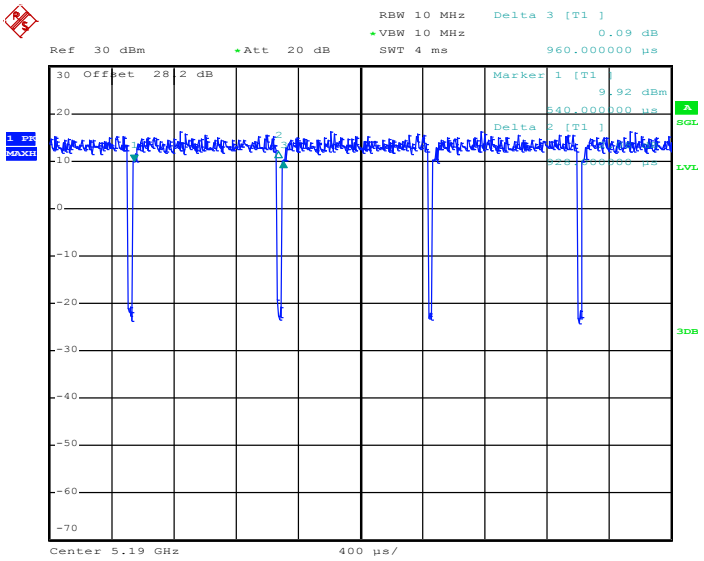
Date: 24.JAN.2018 01:06:38

802.11n HT20



Date: 24.JAN.2018 22:47:41

802.11n HT40



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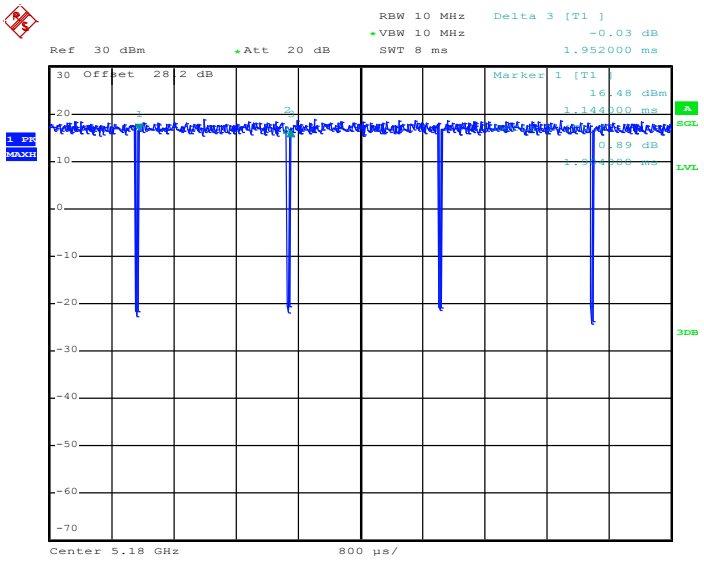
802.11ac VHT20



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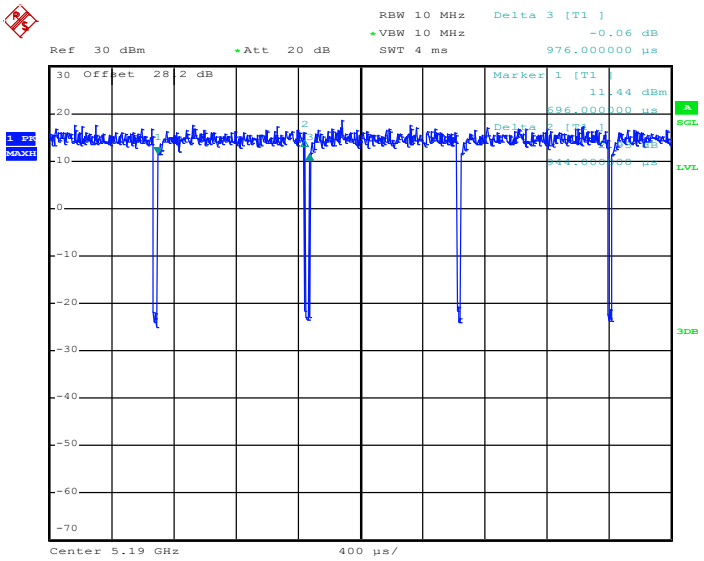

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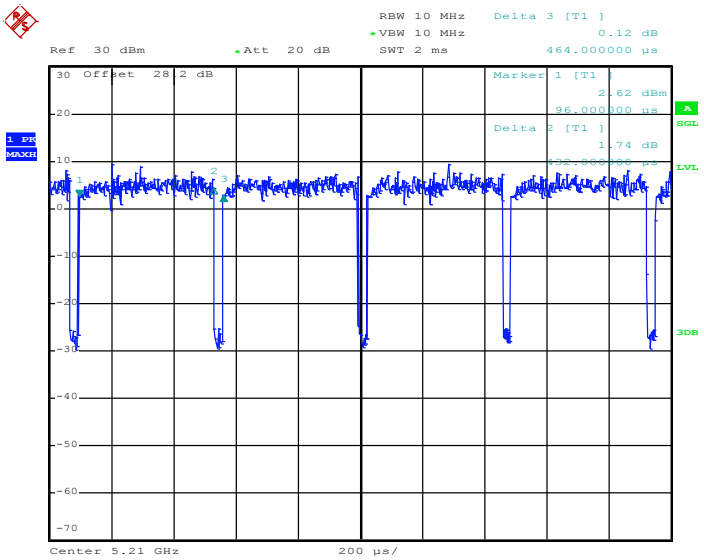
802.11ac VHT80



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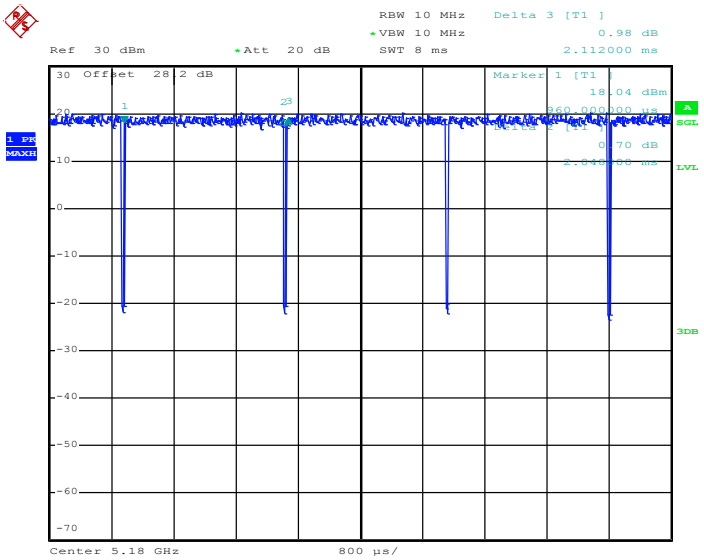
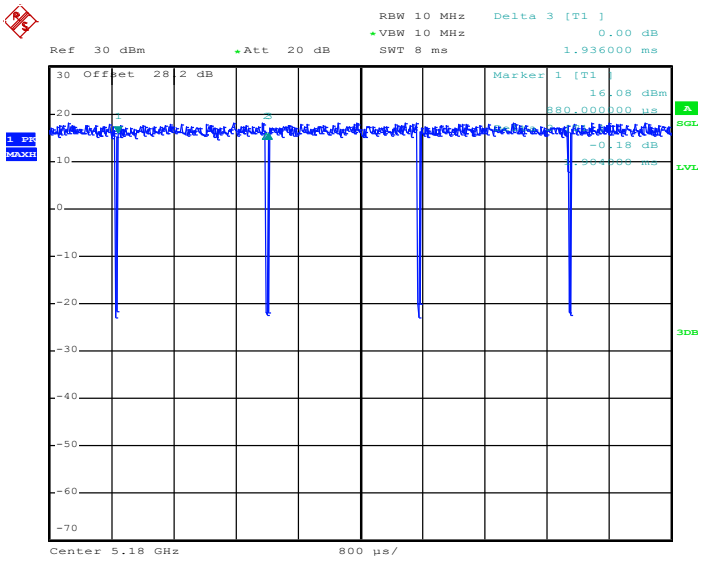
<Ant. 2>

802.11a



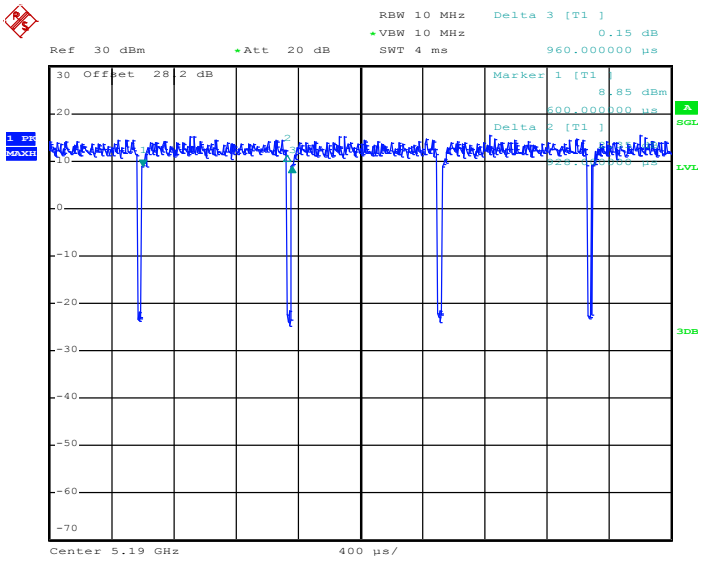
Date: 24.JAN.2018 01:08:32

802.11n HT20



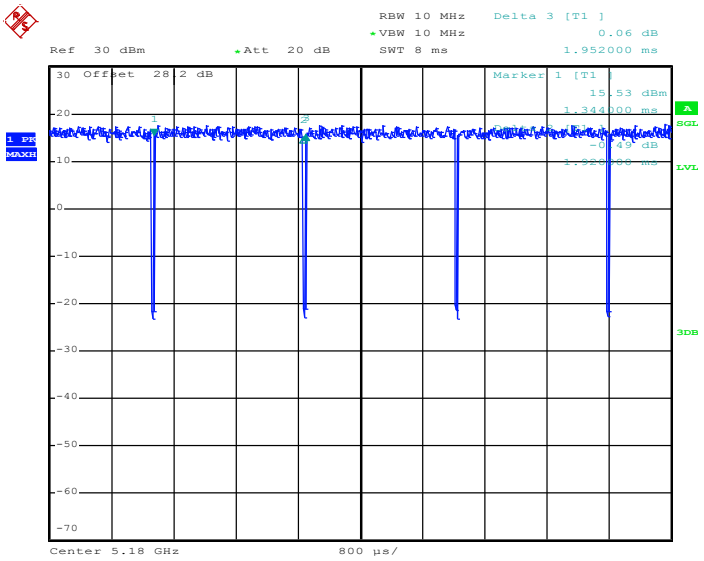
Date: 24.JAN.2018 22:50:05

802.11n HT40



Date: 25.JAN.2018 01:02:14

802.11ac VHT20



Date: 25.JAN.2018 00:03:30

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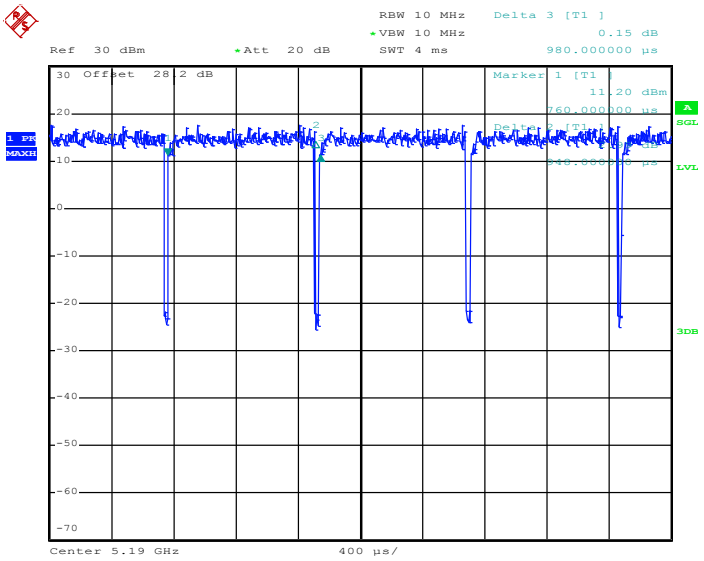

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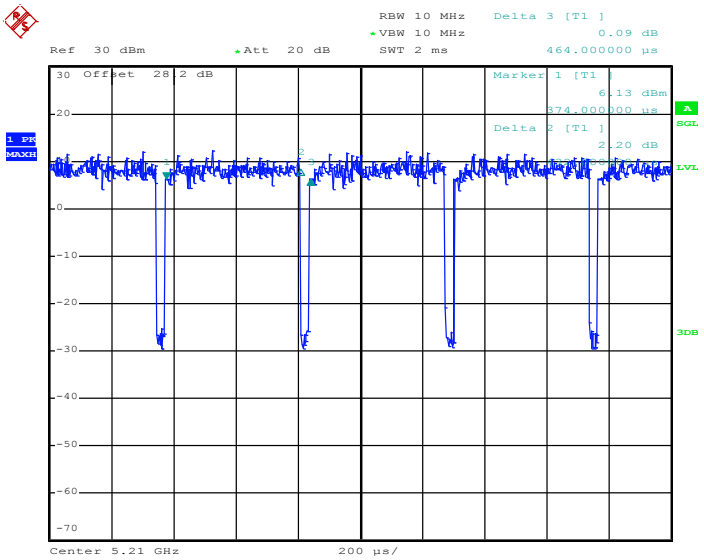
802.11ac VHT80



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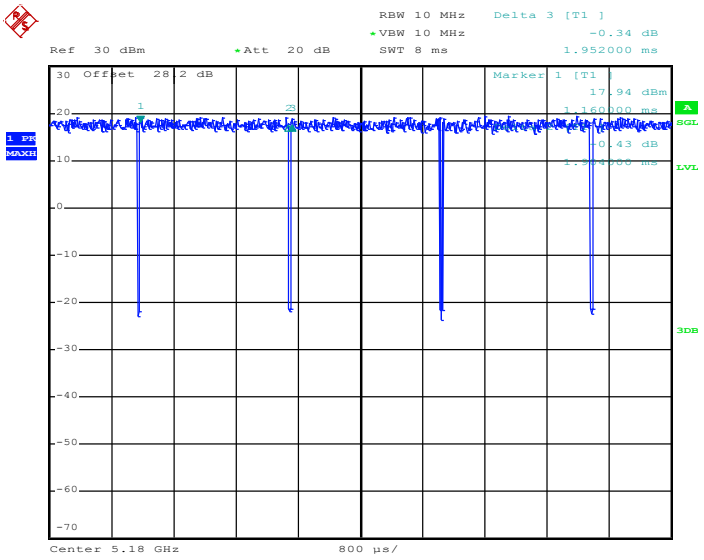
MIMO <Ant. 1>

802.11n HT20



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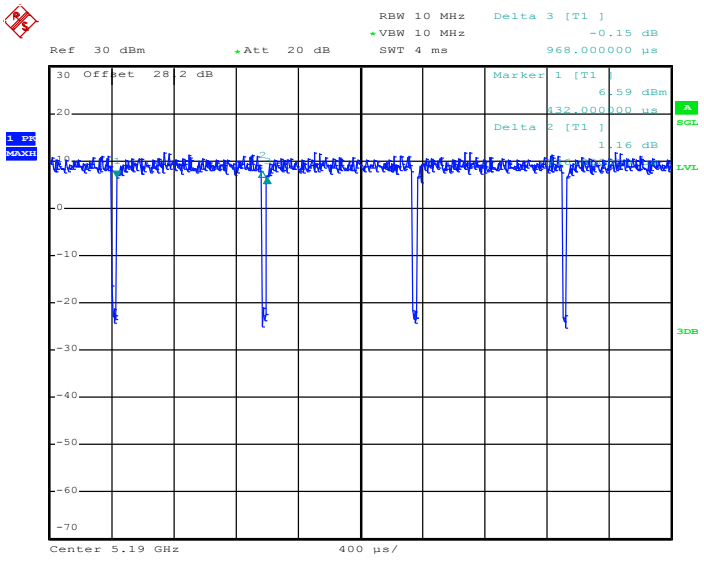
802.11n HT40



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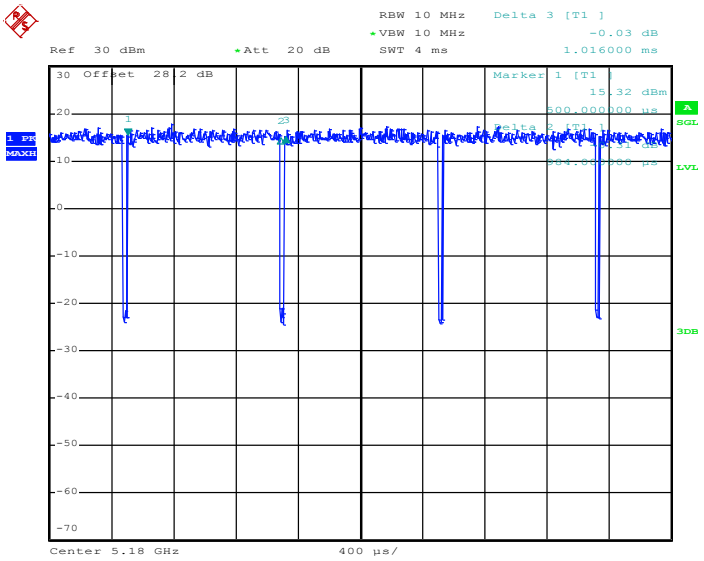
802.11ac VHT20



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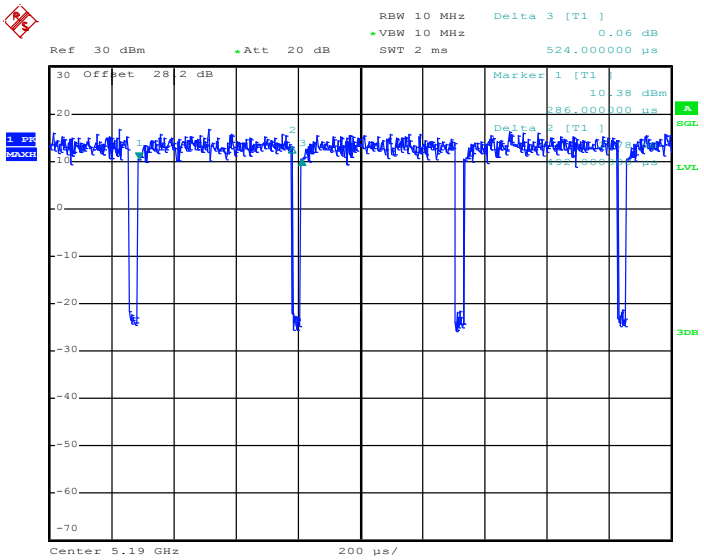
802.11ac VHT40



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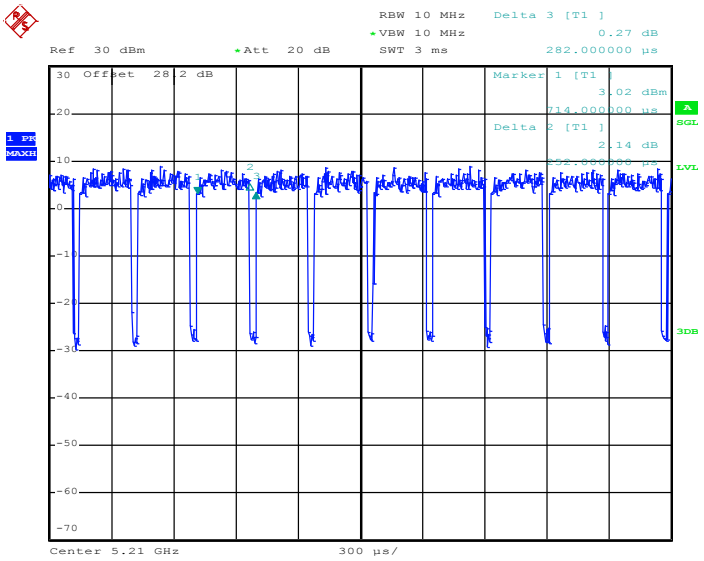
802.11ac VHT80



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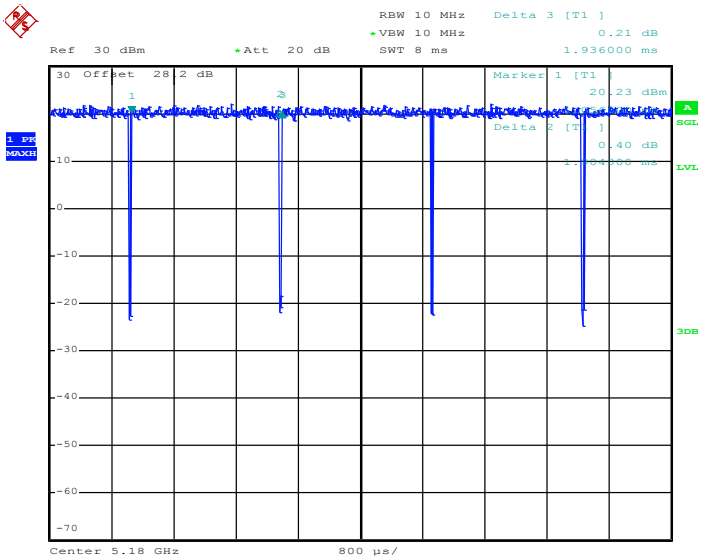
MIMO <Ant. 2>

802.11n HT20



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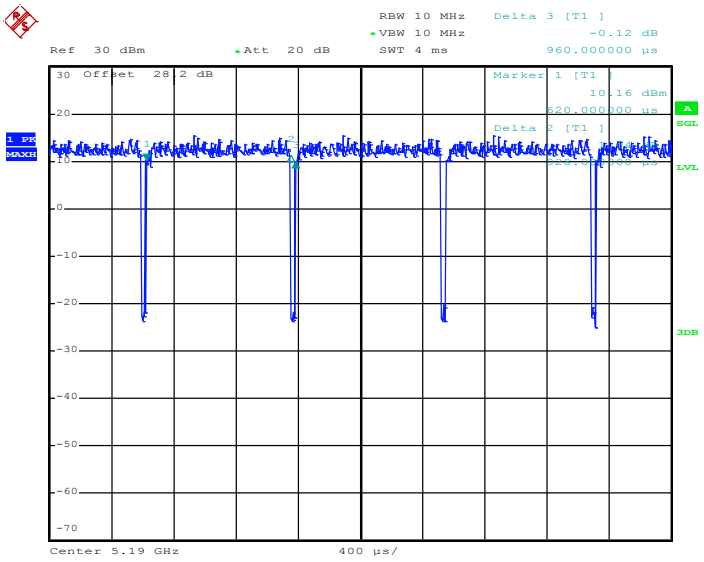
802.11n HT40



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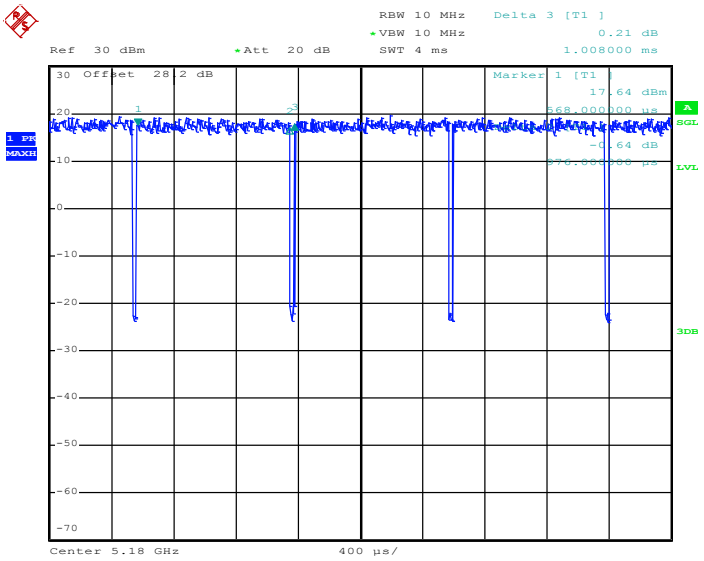

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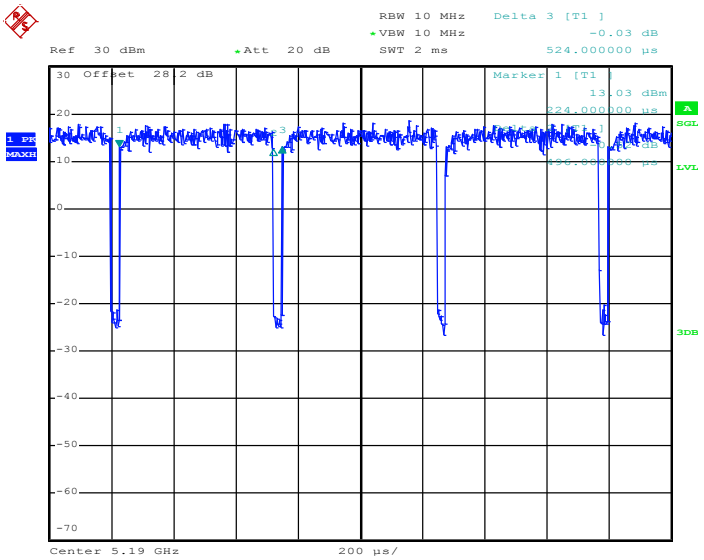

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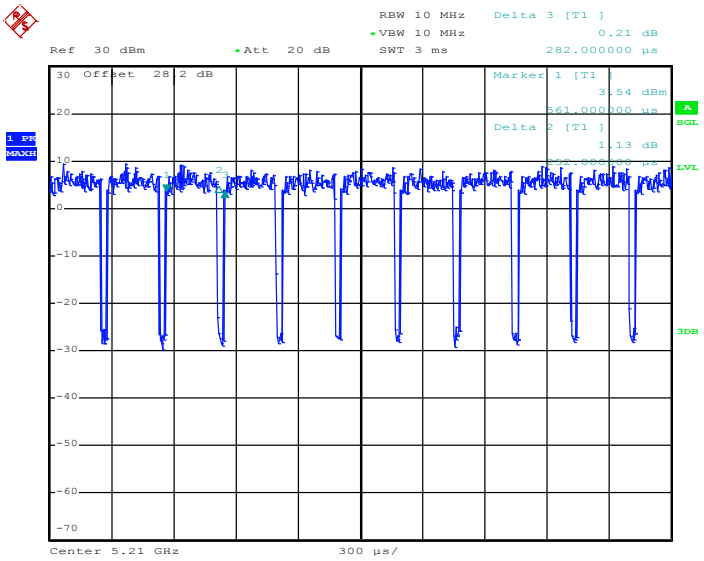
802.11ac VHT80



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