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TEST REPORT

FCC PART 15.407

Report Reference No. .....: **CTL1806156012-WF02**

Compiled by: (position+printed name+signature)	Allen Wang (File administrators)	Allen Wang
Tested by: (position+printed name+signature)	Nice Nong (Test Engineer)	Nice Nong
Approved by: (position+printed name+signature)	Ivan Xie (Manager)	Ivan Xie

Product Name.....:	8inch Tablet
Model/Type reference .....:	TG801
List Model(s).....:	/
Trade Mark.....:	N/A
FCC ID.....:	2AGCDJACSTG801
Applicant's name .....:	**JACS SOLUTIONS LLC**
Address of applicant .....:	8808 CentrePark Drive Suite 305 Columbia, MD 21045, USA
Test Firm .....:	**Shenzhen CTL Testing Technology Co., Ltd.**
Address of Test Firm .....:	Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055
Test specification.....:	
Standard.....:	**FCC Part 15 Subpart E—Unlicensed National Information Infrastructure Devices**
TRF Originator .....:	Shenzhen CTL Testing Technology Co., Ltd.
Master TRF .....:	Dated 2011-01
Date of Receipt.....:	Jun. 22, 2018
Date of Test Date.....:	Jun. 23, 2018–Aug. 22, 2018
Data of Issue.....:	Aug. 23, 2018
Result.....:	Pass

TEST REPORT

Test Report No. :	CTL1607252810-WF-01	Aug. 23, 2018 Date of issue

Equipment under Test	:	8inch Tablet
Model /Type	:	TG801
Listed Models	:	N/A
Applicant	:	**JACS SOLUTIONS LLC**
Address	:	8808 CentrePark Drive Suite 305 Columbia, MD 21045, USA
Manufacturer	:	**JACS SOLUTIONS LLC**
Address	:	8808 CentrePark Drive Suite 305 Columbia, MD 21045, USA

Test result	Pass *

* In the configuration tested, the EUT complied with the standards specified page 5.

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

** Modified History **

Revisions	Description	Issued Data	Report No.	Remark
Version 1.0	Initial Test Report Release	2018-08-23	CTL1806156012-WF02	Tracy Qi

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1. SUMMARY

1.1. TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15 Subpart E—Unlicensed National Information Infrastructure Devices
ANSI C63.10:2013 : American National Standard for Testing Unlicensed Wireless Devices

ANSI C63.4: 2014: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz

Range of 9 kHz to 40GHz

KDB789033 D02: General UNII Test Procedures New Rules v01r02

KDB 662911: D01Emissions Testing of Transmitters with Multiple Outputs in the Same Band

1.2. Test Description

FCC Requirement		
FCC Part 15.207	AC Power Conducted Emission	PASS
FCC Part 15.407(a)	Emission Bandwidth(26dBm Bandwidth)	$PASS_{Note1}$
FCC Part 15.407(e)	Minimum Emission Bandwidth(6dBm Bandwidth)	$PASS_{Note2}$
FCC Part 15.407(a)	Maximum Conducted Output Power	PASS
FCC Part 15.407(a)	Peak Power Spectral Density	PASS
FCC Part 15.407(g)	Frequency Stability	PASS
FCC Part 15.407(b)	Undesirable emission	PASS
FCC Part 15.407(b)/15.205/15.209	Radiated Emissions	PASS
FCC Part 15.407(h)	Dynamic Frequency Selection	N/A
FCC Part 15.203/15.247(b)	Antenna Requirement	PASS

Note 1: Apply to U-NII 1, U-NII 2A, and U-NII 2C band.
Note 2: Apply to U-NII 3 band only.

1.3. Test Facility

1.3.1 Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.
Floor 1-A, Baisha Technology Park, No. 3011, Shahexi Road, Nanshan, Shenzhen 518055 China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 22/EN 55022 requirements.

1.3.2 Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

IC Registration No.: 9618B

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration No.: 9618B on November 13, 2013.

FCC-Registration No.: 399832

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 399832, December 08, 2017.

1.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen CTL Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTL laboratory is reported:

Test	Measurement Uncertainty	Notes
Transmitter power conducted	±0.57 dB	(1)
Transmitter power Radiated	±2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	±2.20 dB	(1)
Occupied Bandwidth	±0.01ppm	(1)
Radiated Emission 30~1000MHz	±4.10dB	(1)
Radiated Emission Above 1GHz	±4.32dB	(1)
Conducted Disturbance0.15~30MHz	±3.20dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2. GENERAL INFORMATION

2.1. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2. General Description of EUT

Product Name:	8inch Tablet			
Model:	TG801			
Power supply:	DC 3.7V from battery			
WIFI				
Supported type:	20MHz system	40MHz system	80MHz system	160MHz system
	802.11a 802.11n 802.11ac	802.11n 802.11ac	802.11ac	N/A
Operation frequency:	5180MHz-5240MHz 5745MHz-5825MHz	5190MHz-5230MHz 5755MHz-5795MHz	5210MHz; 5775MHz	N/A
Modulation:	OFDM	OFDM	OFDM	N/A
Channel number:	9	4	2	N/A
Channel separation:	20MHz	40MHz	80MHz	N/A
Antenna type:	FPC Antenna : 2*TX 2*RX			
Antenna gain:	2.0dBi			

Note: For more details, please refer to the user's manual of the EUT.

2.3. Description of Test Modes and Test Frequency

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting (Duty Cycle more than 98%) and receiving mode for testing.

All test performed at the low, middle and high of operational frequency range of each mode.

Operation Frequency List WIFI on 5G Band：

Operating band	20MHz		40MHz		80MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
U-NII 1 (5150MHz-5250MHz)	36	5180	38	5190	42	5210
	40	5200				
	44	5220	46	5230		
	48	5240				
U-NII 3 (5725MHz-5850MHz)	149	5745	151	5755	155	5775
	153	5765				
	157	5785	159	5795		
	161	5805				
	165	5825	--	--	--	--

Note:

1. “--“Means no channel(s) available any more.
2. The line display in grey is those Channels/Frequencies select to test is this report for each operation mode.

Data Rate Used:

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate
Maximum Conducted Output Power Power Spectral Density Emission Bandwidth(26dBm Bandwidth) Minimum Emission Bandwidth(6dBm Bandwidth) Undesirable emission Frequency Stability	11a/OFDM	6 Mbps
	11n(20MHz),11ac(20MHz)/OFDM	7.2 Mbps
	11n(40MHz),11ac(40MHz)/OFDM	15.0Mbps
	11ac(80MHz)/OFDM	65.0Mbps

2.4. Equipments Used during the Test

Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
LISN	R&S	ENV216	3560.6550.12	2018/06/02	2019/06/01
LISN	R&S	ESH2-Z5	860014/010	2018/06/02	2019/06/01
Power Meter	Agilent	U2531A	TW53323507	2018/06/02	2019/06/01
Power Sensor	Agilent	U2021XA	MY5365004	2018/05/21	2019/05/20
EMI Test Receiver	R&S	ESCI	103710	2018/06/02	2019/06/01
Spectrum Analyzer	Agilent	E4407B	MY41440676	2018/05/21	2019/05/20
Spectrum Analyzer	Agilent	N9020	US46220290	2018/01/17	2019/01/16
Controller	EM Electronics	Controller EM 1000	N/A	2018/05/21	2019/05/20
Active Loop Antenna	Daze	ZN30900A	N/A	2018/05/19	2019/05/18
Bilog Antenna	Sunol Sciences Corp.	JB1	A061713	2018/06/02	2019/06/01
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062013	2018/05/19	2019/05/18
Horn Antenna	SCHWARZBACK	BBHA 9170	BBHA9170184	2018/05/19	2019/05/18
Amplifier	Agilent	8349B	3008A02306	2018/05/19	2019/05/18
Amplifier	Agilent	8447D	2944A10176	2018/05/19	2019/05/18
Temperature/Humidity Meter	Gangxing	CTH-608	02	2018/05/20	2019/05/19
High-Pass Filter	K&L	9SH10-2700/X12750-O/O	N/A	2018/05/20	2019/05/19
High-Pass Filter	K&L	41H10-1375/U12750-O/O	N/A	2018/05/20	2019/05/19
Coaxial Cables	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	2018/06/02	2019/06/01
Coaxial Cables	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	2018/06/02	2019/06/01
Coaxial Cables	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	2018/06/02	2019/06/01
RF Cable	Megalon	RF-A303	N/A	2018/06/02	2019/06/01

The calibration interval was one year

2.5. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.

2.6. Modifications

No modifications were implemented to meet testing criteria.

3. TEST CONDITIONS AND RESULTS

3.1. Conducted Emissions Test

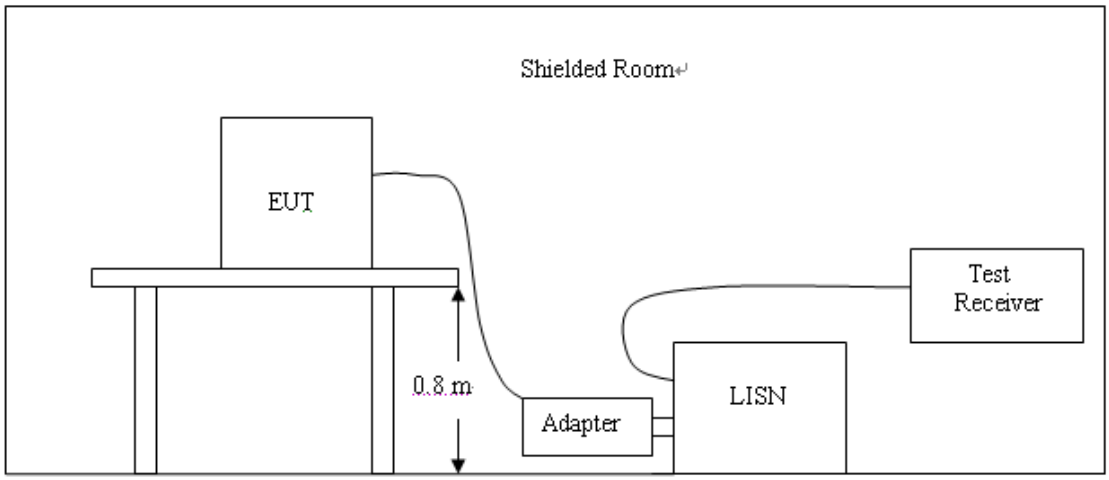
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



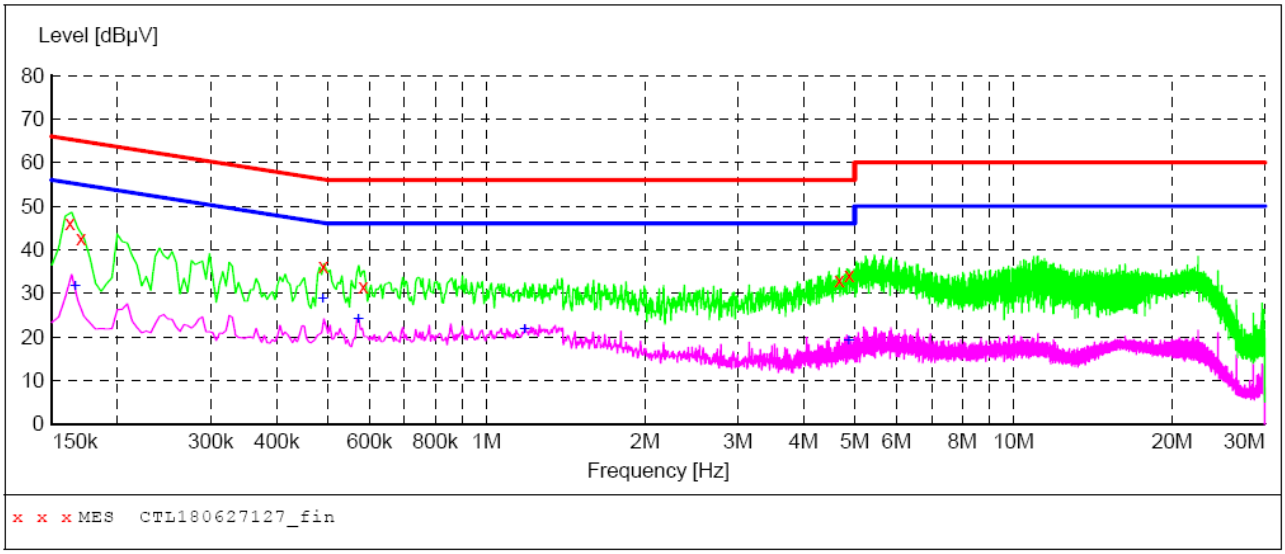
TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. The EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS

Remark: 802.11a / 802.11n (HT20) / 802.11ac (HT20) / 802.11n (HT40) / 802.11ac (HT40) / 802.11ac (HT80) mode all have been tested, only worse case is reported

SCAN TABLE: "Voltage (9K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "CTL180627127_fin"

27/06/2018 16:38

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.162000	46.20	10.2	65	19.2	QP	L1	GND
0.170000	42.70	10.2	65	22.3	QP	L1	GND
0.490000	36.30	10.2	56	19.9	QP	L1	GND
0.584000	31.60	10.2	56	24.4	QP	L1	GND
4.676000	33.00	10.4	56	23.0	QP	L1	GND
4.880000	34.30	10.4	56	21.7	QP	L1	GND

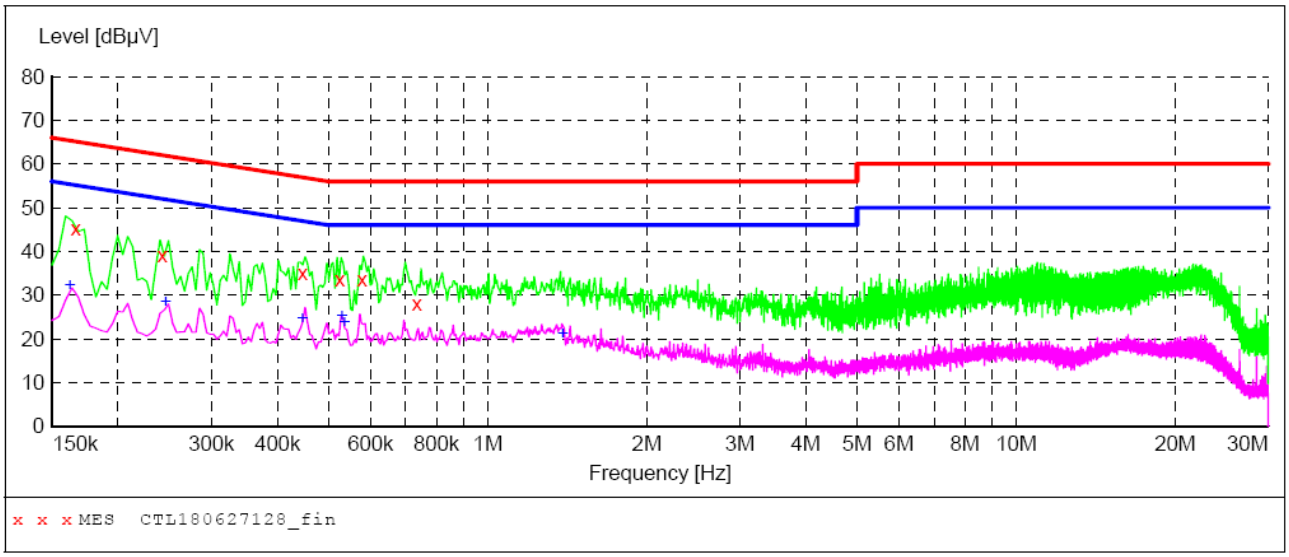
MEASUREMENT RESULT: "CTL180627127_fin2"

27/06/2018 16:38

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.166000	31.40	10.2	55	23.8	AV	L1	GND
0.490000	28.60	10.2	46	17.6	AV	L1	GND
0.572000	24.00	10.2	46	22.0	AV	L1	GND
1.184000	21.70	10.3	46	24.3	AV	L1	GND
4.874000	19.10	10.4	46	26.9	AV	L1	GND

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "CTL180627128_fin"

27/06/2018 16:41

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.166000	45.10	10.2	65	20.1	QP	N	GND
0.242000	39.20	10.2	62	22.8	QP	N	GND
0.446000	34.90	10.2	57	22.0	QP	N	GND
0.524000	33.60	10.2	56	22.4	QP	N	GND
0.578000	33.60	10.2	56	22.4	QP	N	GND
0.734000	28.00	10.2	56	28.0	QP	N	GND

MEASUREMENT RESULT: "CTL180627128_fin2"

27/06/2018 16:41

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.162000	32.00	10.2	55	23.4	AV	N	GND
0.246000	28.20	10.2	52	23.7	AV	N	GND
0.446000	24.70	10.2	47	22.2	AV	N	GND
0.530000	25.10	10.2	46	20.9	AV	N	GND
0.536000	23.70	10.2	46	22.3	AV	N	GND
1.388000	20.90	10.3	46	25.1	AV	N	GND

3.2. Undesirable Radiated Emissions

Limit

The maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

Undesirable emission limits

Requirement	Limit(EIRP)	Limit (Field strength at 3m) Note3
15.407(b)(1)	PK:-27(dBm/MHz)	PK:68.2(dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK:-27(dBm/MHz)Note1 PK:-17(dBm/MHz)Note2	PK:68.2(dBμV/m)Note1 PK:78.2(dBμV/m)Note2

Note1: For frequencies beyond 10MHz of band edge.
Note2: For frequencies within10MHz of band edge.
Note3: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

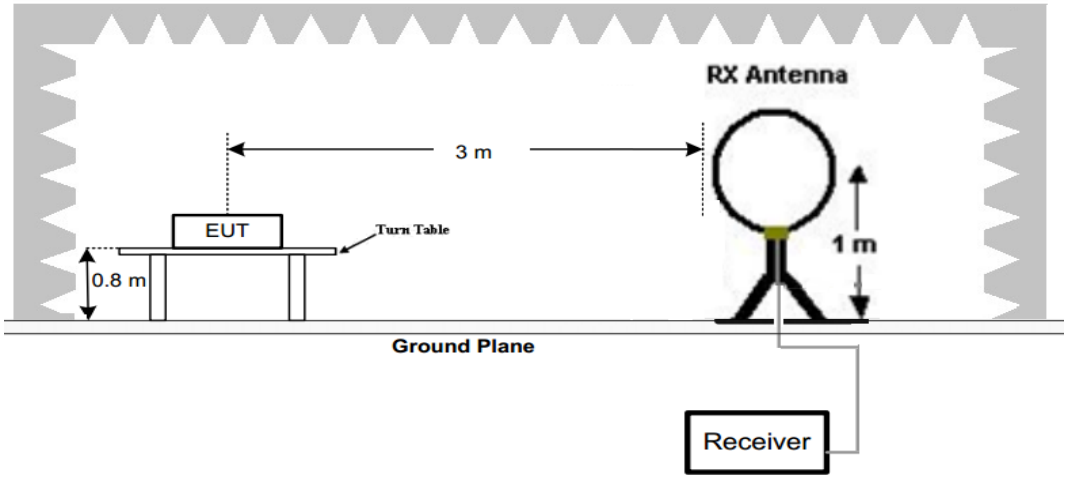
(5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209
(6)In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

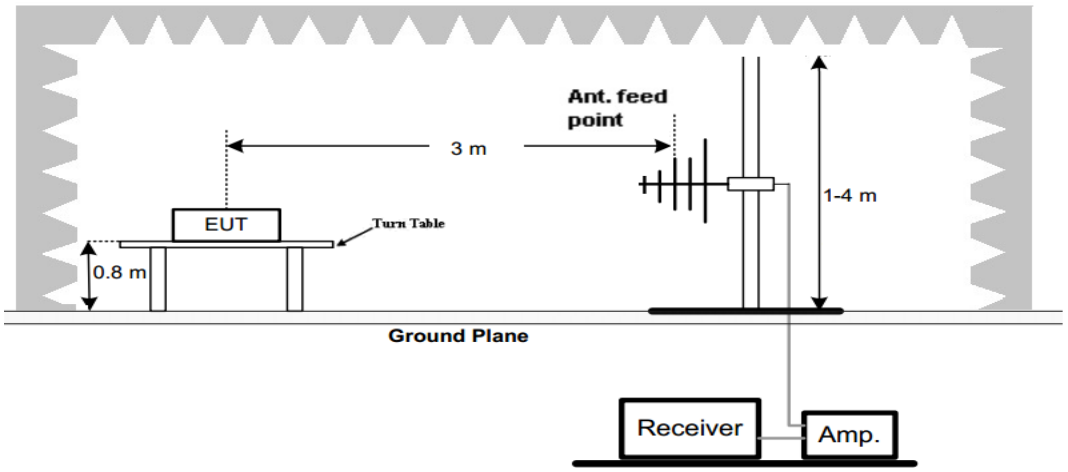
Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

TEST CONFIGURATION

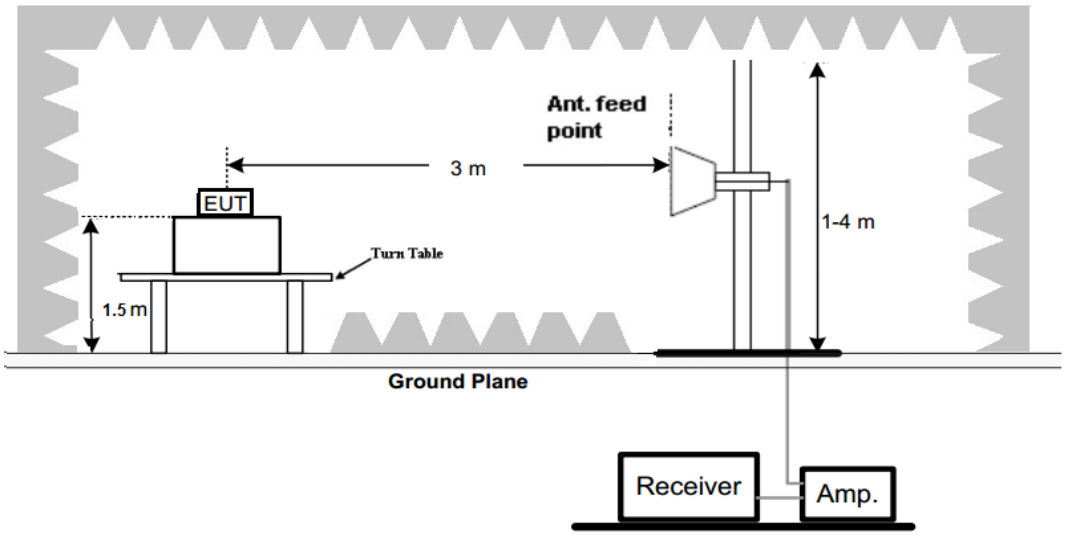
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



Test Procedure

1. Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
4. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.
5. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0℃ to 360℃ to acquire the highest emissions from EUT
6. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. Repeat above procedures until all frequency measurements have been completed.

TEST RESULTS

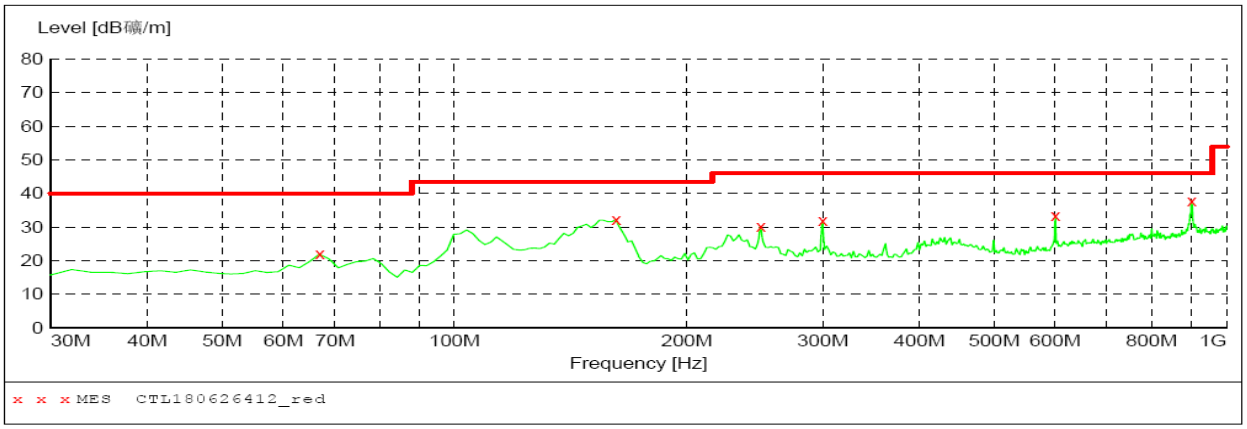
Remark:
1. All 802.11a / 802.11n (HT20) / 802.11ac (HT20) / 802.11n (HT40) / 802.11ac (HT40) / 802.11ac (HT80) modes have been tested for below 1GHz test, only the worst case 802.11ac (HT20) low channel of U-NII 1 band was recorded.
2. All 802.11a / 802.11n (HT20) / 802.11ac (HT20) / 802.11n (HT40) / 802.11ac (HT40) / 802.11ac (HT80) modes have been tested for above 1GHz test, only the worst case 802.11ac (HT20) was recorded.
3. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.

For 30MHz-1GHz

Horizontal

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	200.0 ms	120 kHz	VULB 9168



MEASUREMENT RESULT: "CTL180626412_red"

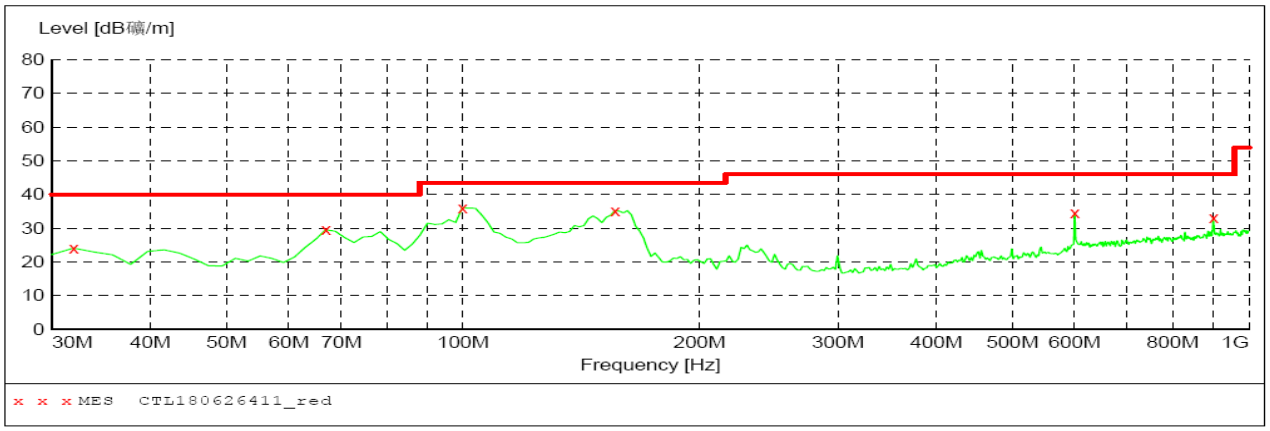
2018-6-26 9:42

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
66.860000	21.90	11.9	40.0	18.1	---	0.0	0.00	HORIZONTAL
161.920000	32.30	15.0	43.5	11.2	---	0.0	0.00	HORIZONTAL
249.220000	30.10	13.0	46.0	15.9	---	0.0	0.00	HORIZONTAL
299.660000	31.90	14.5	46.0	14.1	---	0.0	0.00	HORIZONTAL
600.360000	33.40	21.1	46.0	12.6	---	0.0	0.00	HORIZONTAL
901.060000	37.80	25.2	46.0	8.2	---	0.0	0.00	HORIZONTAL

Vertical

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	200.0 ms	120 kHz	VULB 9168



MEASUREMENT RESULT: "CTL180626411_red"

2018-6-26 9:40

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
31.940000	24.10	13.4	40.0	15.9	---	0.0	0.00	VERTICAL
66.860000	29.50	11.9	40.0	10.5	---	0.0	0.00	VERTICAL
99.840000	36.10	10.7	43.5	7.4	---	0.0	0.00	VERTICAL
156.100000	35.20	15.2	43.5	8.3	---	0.0	0.00	VERTICAL
600.360000	34.60	21.1	46.0	11.4	---	0.0	0.00	VERTICAL
901.060000	33.10	25.2	46.0	12.9	---	0.0	0.00	VERTICAL

For 1GHz to 25GHz

Note: All 802.11a / 802.11n (HT20) / 802.11ac (HT20) / 802.11n (HT40) / 802.11ac (HT40) / 802.11ac (HT80) modes have been tested for above 1GHz test, only the worst case 802.11ac (HT20) was recorded.

U-NII 1 & 802.11ac (HT20) Mode (above 1GHz)

Tested Channel	Frequency (MHz)	Emission Level (dBuV/m)	Detector Mode	ANT Pol	Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre amplifier (dB)	Correction Factor (dB/m)
36 (5180MHz)	5150.00	56.85	PK	V	68.20	11.35	49.58	34.44	7.12	34.28	7.27
	5150.00	48.11	AV	V	54.00	5.89	40.84	34.44	7.12	34.28	7.27
	10360.00	50.36	PK	V	68.20	17.84	34.63	39.20	11.45	34.92	15.73
	--	--	--	--	--	--	--	--	--	--	--
40 (5200MHz)	10400.00	49.87	PK	V	68.20	18.33	34.05	39.22	11.48	34.89	15.82
	--	--	--	--	--	--	--	--	--	--	--
48 (5240MHz)	5350.50	53.65	PK	V	14.55	46.09	34.69	7.23	34.36	7.56	14.55
	10480.00	50.39	PK	V	17.81	43.30	34.69	7.23	34.83	7.09	17.81
	--	--	--	--	--	--	--	--	--	--	--

U-NII 3 & 802.11ac (HT20) Mode (above 1GHz)

Tested Channel	Frequency (MHz)	Emission Level (dBuV/m)	Detector Mode	ANT Pol	Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre amplifier (dB)	Correction Factor (dB/m)
149 (5745MHz)	5712.75	52.16	PK	V	68.20	16.04	44.43	34.79	7.43	34.49	7.73
	5724.50	48.62	PK	V	78.20	29.58	40.89	34.79	7.43	34.49	7.73
	10950.00	51.68	PK	V	74.00	22.32	34.63	39.53	11.97	34.45	17.05
	--	--	--	--	--	--	--	--	--	--	--
157 (5785MHz)	11570.00	51.58	PK	V	74.00	22.42	33.14	39.71	13.05	34.31	18.44
	--	--	--	--	--	--	--	--	--	--	--
165 (5825MHz)	5855.25	51.58	PK	V	78.20	16.62	43.80	34.81	7.51	34.54	7.78
	5865.75	49.98	PK	V	68.20	28.22	42.20	34.81	7.51	34.54	7.78
	11650.00	52.69	PK	V	74.00	21.31	34.07	39.73	13.19	34.30	18.62
	--	--	--	--	--	--	--	--	--	--	--

REMARKS:

1. Emission level (dBuV/m) =Raw Value (dBuV)+Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Limit value- Emission level.
4. -- Mean the other emission levels were very low against the limit.
5. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

3.3. Maximum Conducted Output Power

Limit

For the band 5.15-5.25 GHz.
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

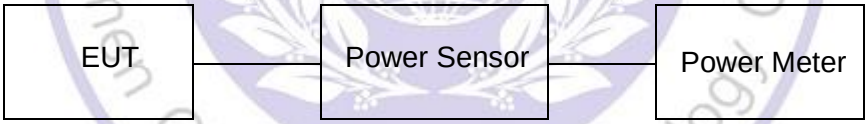
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.

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

Test Procedure

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power sensor.

Test Configuration



Test Results

Type	Bands	Channel	Output power Ant1 (dBm)	Output power Ant2 (dBm)	Output power Total (dBm)	Limit (dBm)	Result
802.11a	U-NII 1	36	6.46	6.83	/	23.98	Pass
		40	6.69	6.84	/		
		48	6.69	6.84	/		
	U-NII 3	149	5.72	6.45	/	30.00	
		157	5.71	5.93	/		
		165	5.85	6.06	/		
802.11n(HT20) MIMO	U-NII 1	36	4.29	4.80	7.56	23.98	Pass
		40	4.39	4.94	7.68		
		48	4.35	4.92	7.65		
	U-NII 3	149	4.07	4.57	7.34	30.00	
		157	3.68	4.70	7.23		
		165	3.75	4.98	7.42		
802.11n(HT40) MIMO	U-NII 1	38	4.24	4.75	7.51	23.98	Pass
		46	4.42	4.88	7.67		
	U-NII 3	151	4.18	4.91	7.57	30.00	
		159	4.10	4.82	7.49		
802.11ac(HT20) MIMO	U-NII 1	36	4.10	4.67	7.40	23.98	Pass
		40	4.20	4.96	7.61		
		48	4.28	4.82	7.57		
	U-NII 3	149	4.24	4.74	7.51	30.00	
		157	4.24	4.85	7.57		
		165	4.32	4.75	7.55		
802.11ac(HT40) MIMO	U-NII 1	38	4.18	4.75	7.48	23.98	Pass
		46	4.26	4.91	7.61		
	U-NII 3	151	4.24	4.38	7.32	30.00	
		159	4.14	4.96	7.58		
802.11ac(HT80) MIMO	U-NII 1	42	4.21	4.82	7.54	23.98	Pass
	U-NII 3	155	4.16	4.81	7.51	30.00	

3.4. Power Spectral Density

Limit

(1) For the band 5.15 - 5.25 GHz.

(i) For an outdoor access point operating in the band 5.15 - 5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 MHz band.note1

(ii) For an indoor access point operating in the band 5.15 - 5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 MHz band.note1

(iii) For fixed point-to-point access points operating in the band 5.15 - 5.25 GHz, transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.

(iv) For mobile and portable client devices in the 5.15 - 5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 MHz band. note1

(2) For the 5.25 - 5.35 GHz and 5.47 - 5.725 GHz bands, the peak power spectral density shall not exceed 11 dBm in any 1 MHz band. note1

(3) For the band 5.725 - 5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500 kHz band. note1, note2

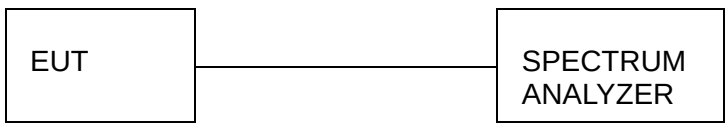
Note1: If transmitting antennas of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note2: Fixed point - to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW = 1MHz for U-NII 1, U-NII 2A, U-NII C band and 510KHz for U-NII 3 band.
3. Set the VBW ≥ 3× RBW.
4. Set the span to encompass the entire EBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum power level.

Test Configuration



Test Results

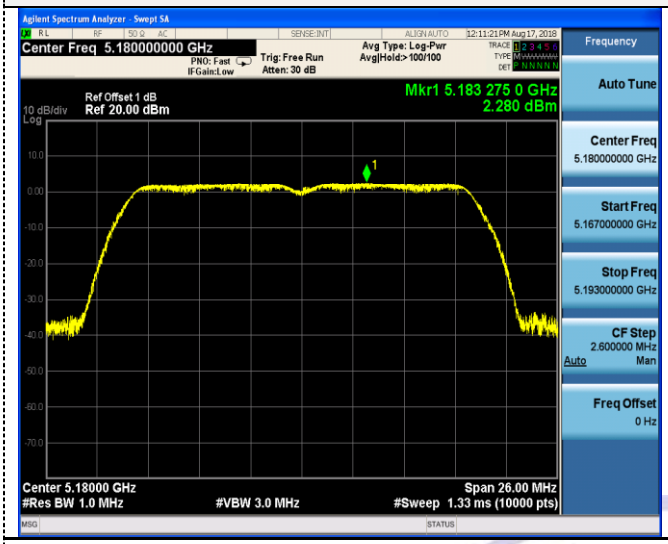
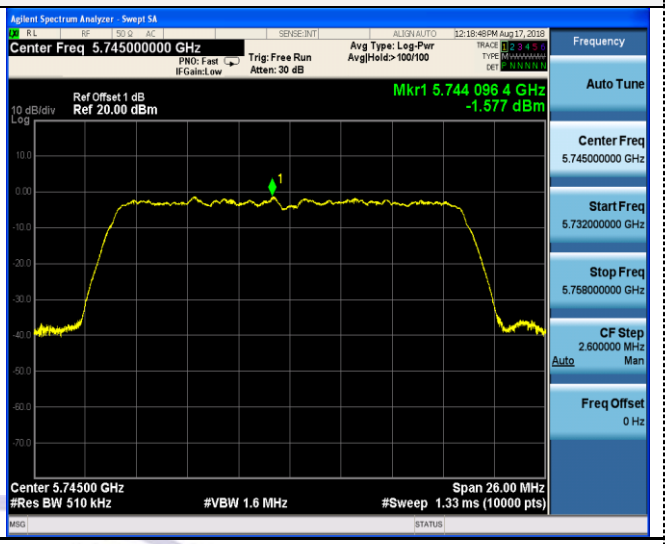
Type	Bands	Channel	Power Spectral Density Ant1 (dBm/MHz)	Power Spectral Density Ant2 (dBm/MHz)	Power Spectral Density Total (dBm/ MHz)	Limit (dBm/MHz)	Result
802.11a SISO	U-NII 1	36	2.280	2.237	/	11	Pass
		40	2.728	2.196	/		
		48	2.693	2.366	/		
802.11n (HT20) MIMO	U-NII 1	36	-0.861	0.051	2.63		
		40	0.254	-2.032	2.27		
		48	0.423	-2.535	2.20		
802.11n (HT40) MIMO	U-NII 1	38	-2.333	-2.525	0.58		
		46	-2.577	-2.583	0.43		
802.11ac (HT20) MIMO	U-NII 1	36	-0.399	-0.065	2.78		
		40	0.272	0.302	3.30		
		48	0.219	0.328	3.28		
802.11ac (HT40) MIMO	U-NII 1	38	-2.735	-2.642	0.32		
		46	-2.713	-2.438	0.44		
802.11ac (HT80) MIMO	U-NII 1	42	-2.687	-1.791	0.79		

Type	Bands	Channel	Power Spectral Density Ant1 (dBm/500KHz)	Power Spectral Density Ant2 (dBm/500KHz)	Power Spectral Density Total (dBm/ 500KHz)	Limit (dBm/500KHz)	Result
802.11a SISO	U-NII 3	149	-1.577	-0.482	/	30	Pass
		157	-2.166	-1.855	/		
		165	-1.909	-1.799	/		
802.11n (HT20) MIMO	U-NII 3	149	-3.300	-2.979	-0.13		
		157	-3.572	-3.488	-0.52		
		165	-4.531	-3.645	-1.06		
802.11n (HT40) MIMO	U-NII 3	151	-6.294	-5.193	-2.70		
		159	-6.140	-5.480	-2.79		
802.11ac (HT20) MIMO	U-NII 3	149	-3.097	-3.788	-0.42		
		157	-4.067	-3.613	-0.82		
		165	-3.526	-3.766	-0.63		
802.11ac (HT40) MIMO	U-NII 3	151	-6.543	-6.309	-3.41		
		159	-6.930	-6.868	-3.89		
802.11ac (HT80) MIMO	U-NII 3	155	-7.763	-7.003	-4.36		

Test plot as follows:

ANT1

802.11a

U-NII 1	*U-NII 3*
	
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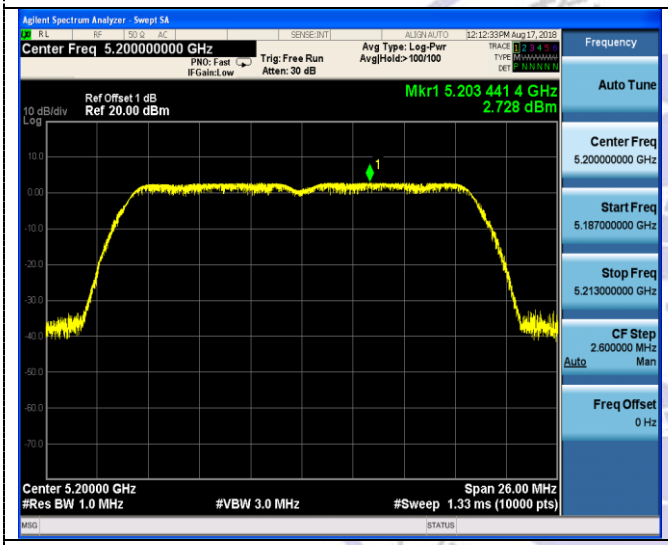	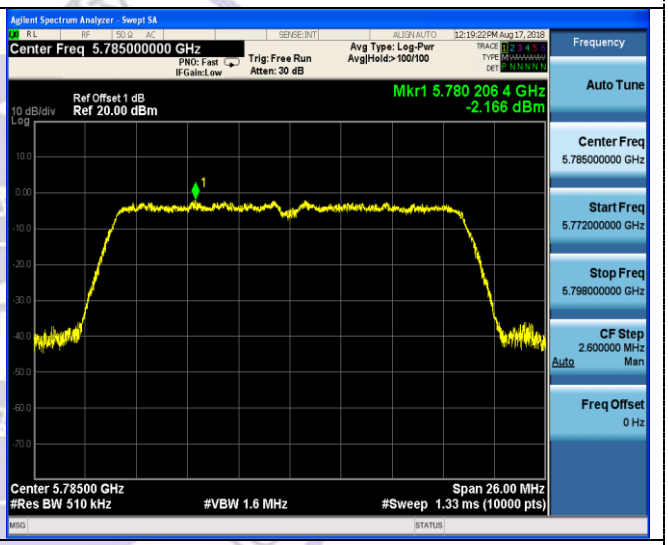
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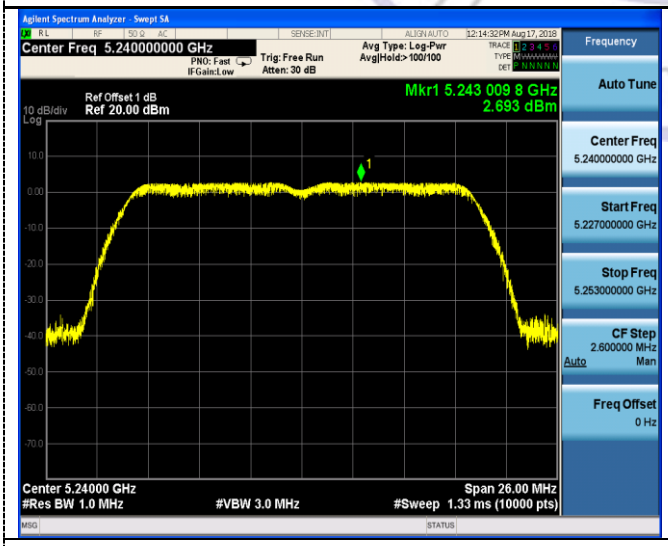	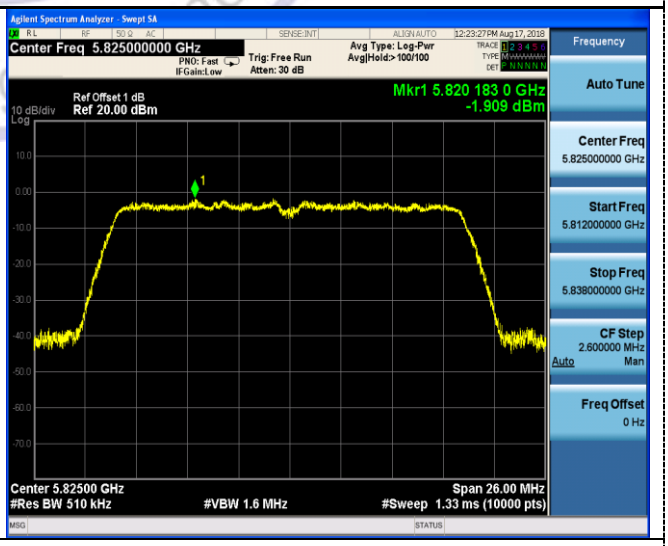
CH48	*CH165*

802.11n(HT20)	
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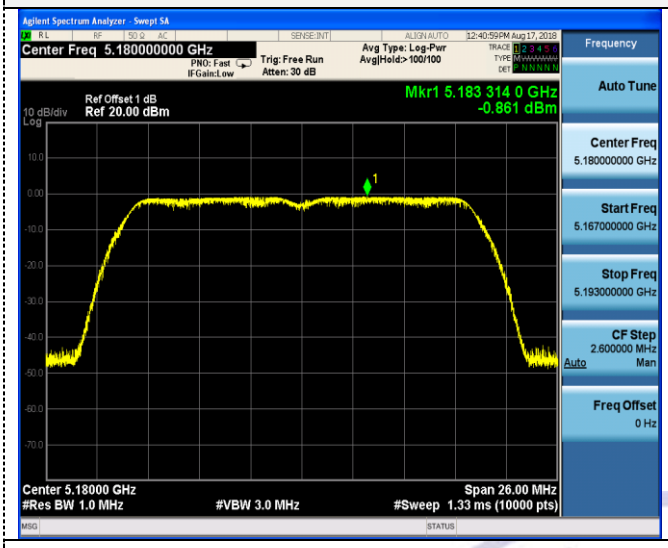	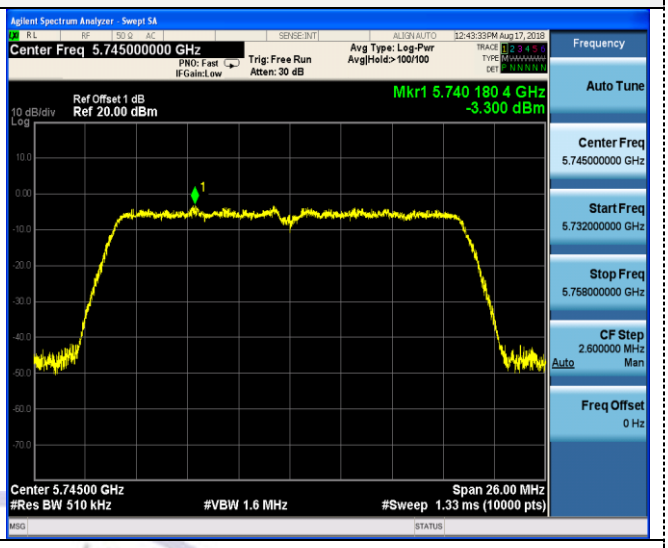
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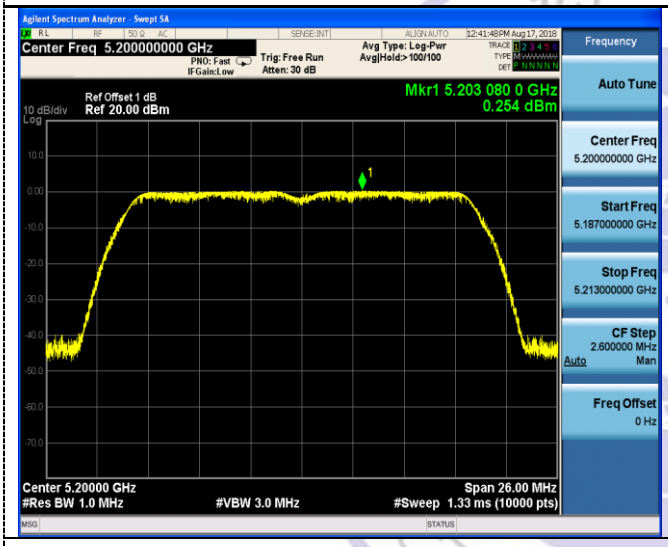	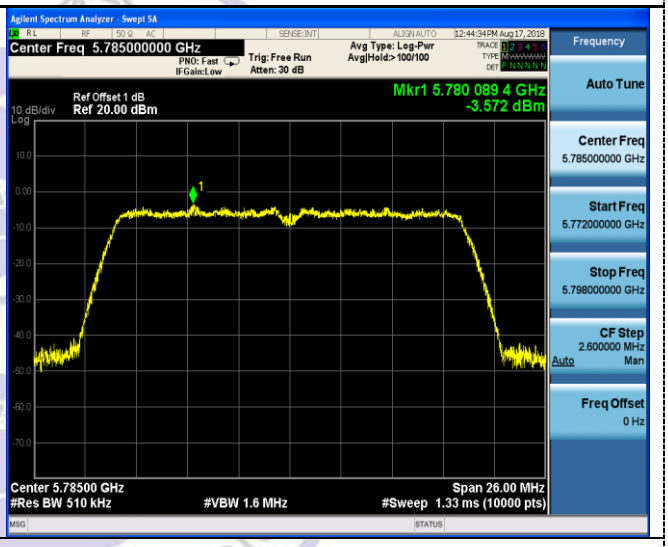
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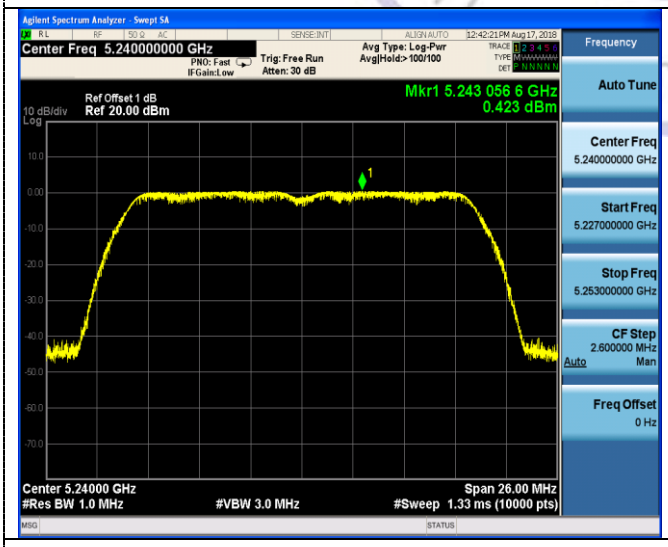	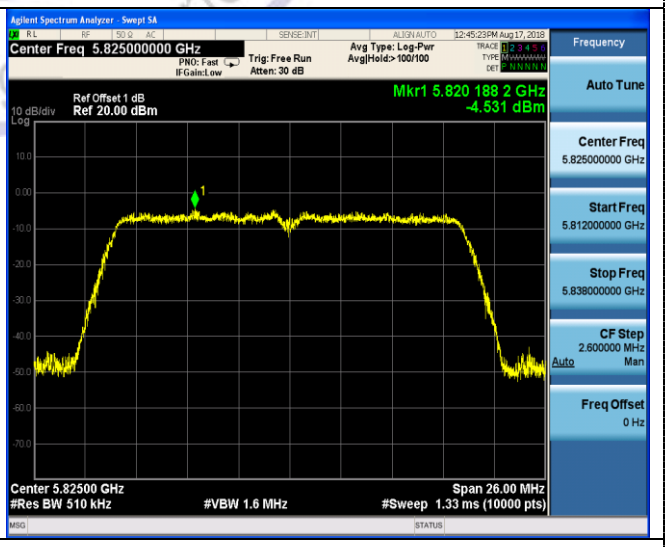
CH48	CH165

802.11n(HT40)	
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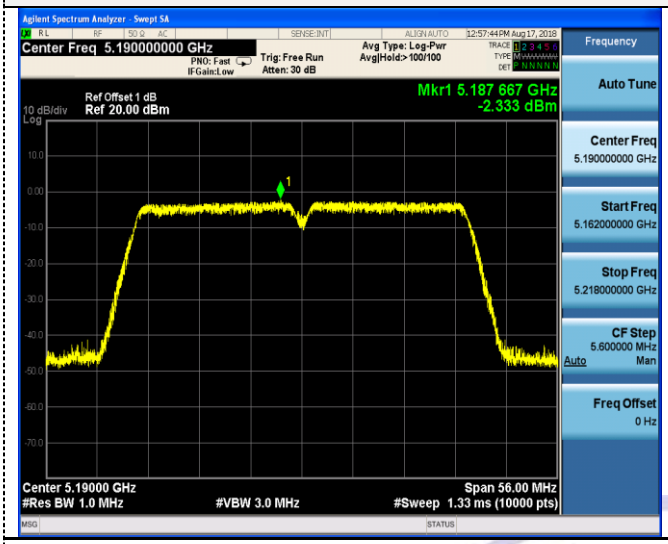	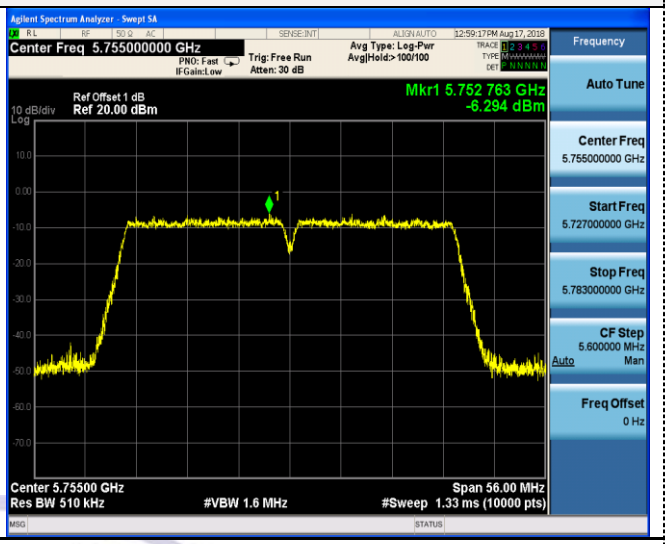
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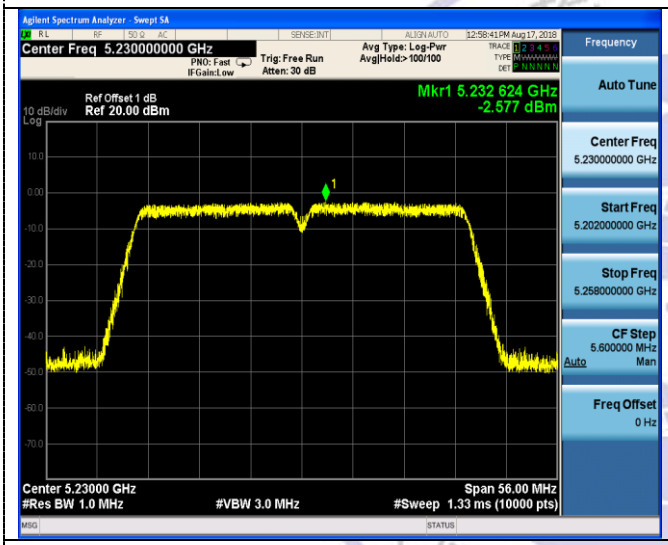	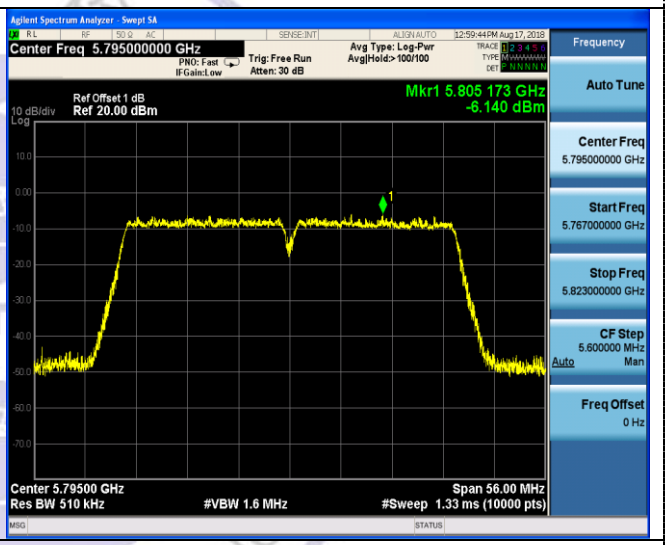
CH46	CH159

802.11ac(HT20)	
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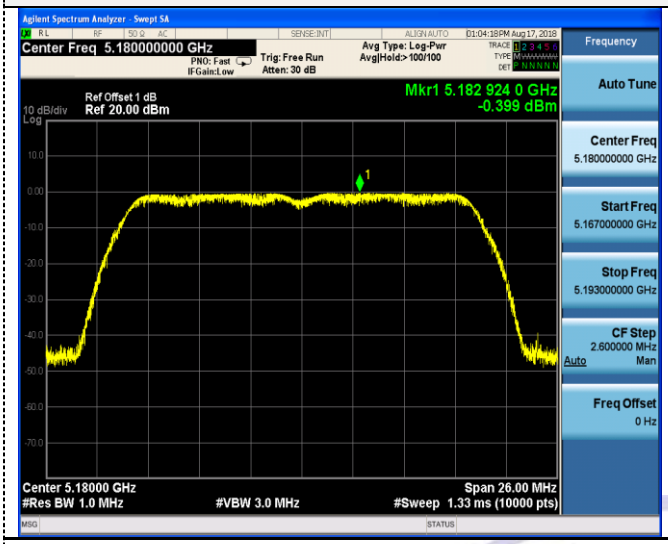	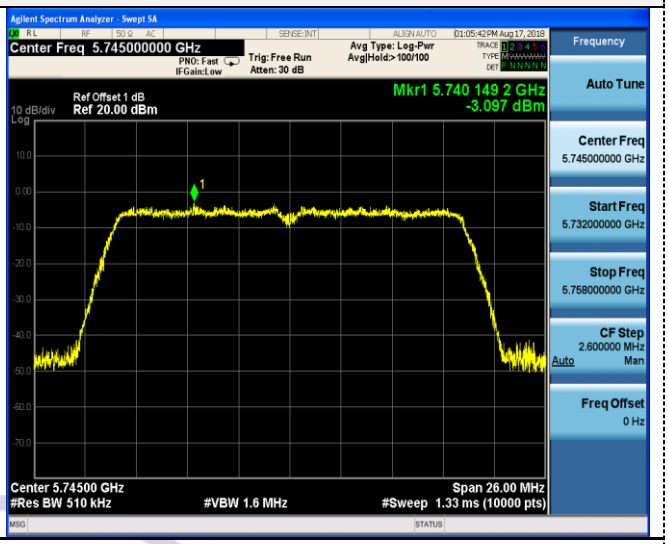
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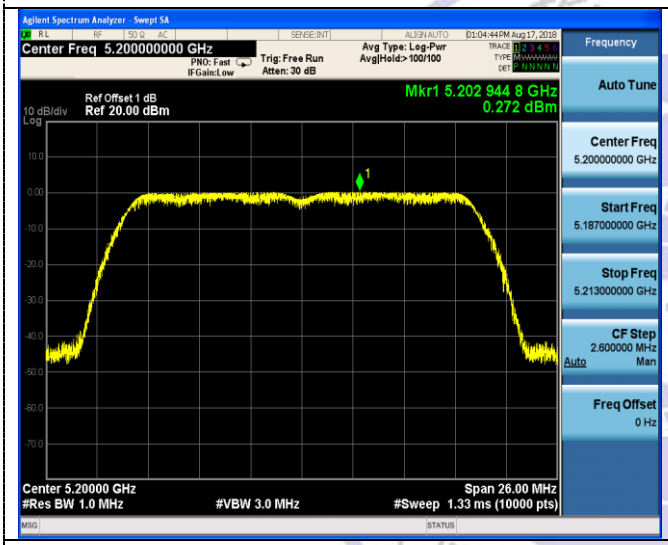	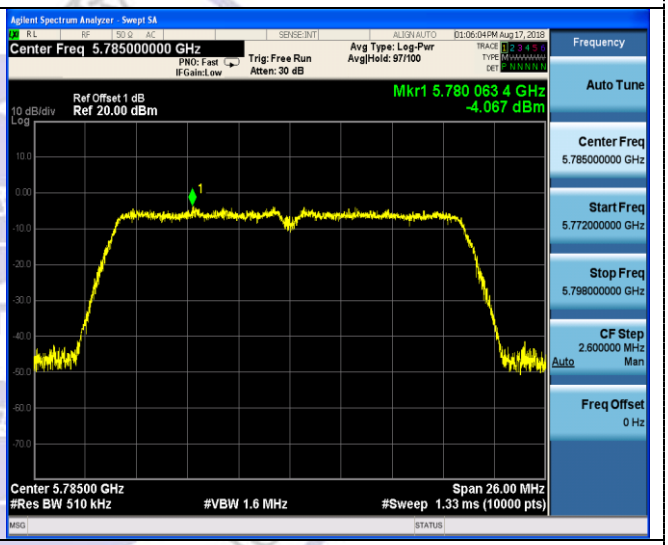
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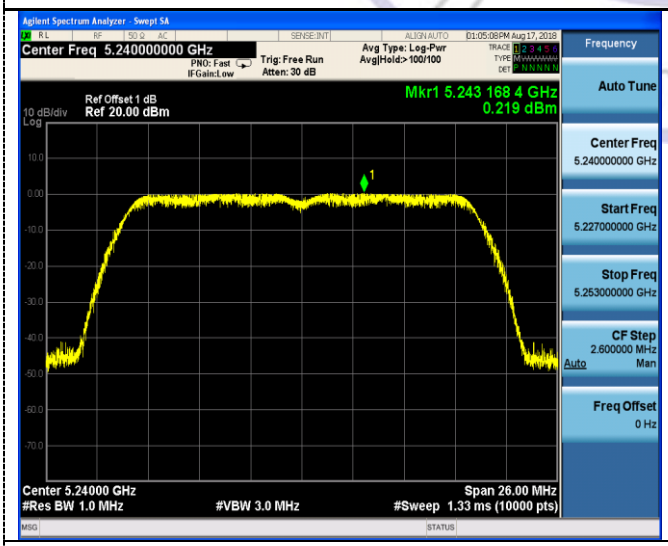	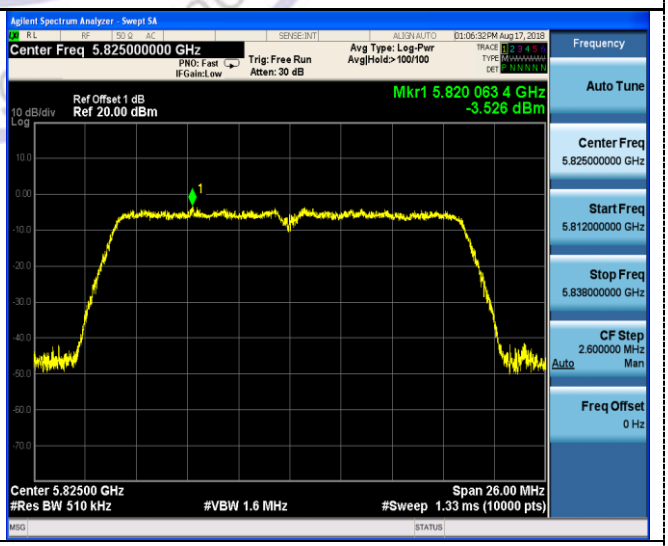
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802.11ac(HT40)	
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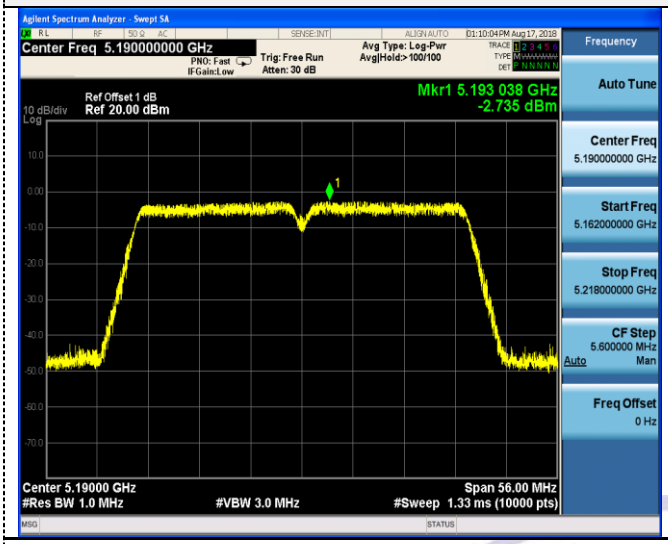	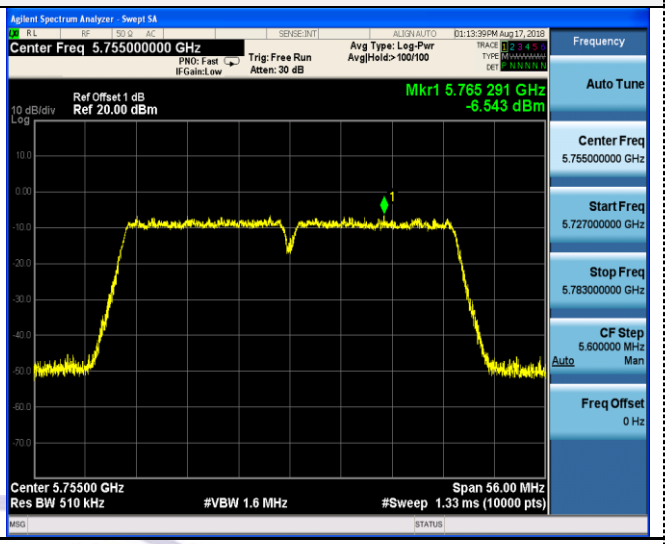
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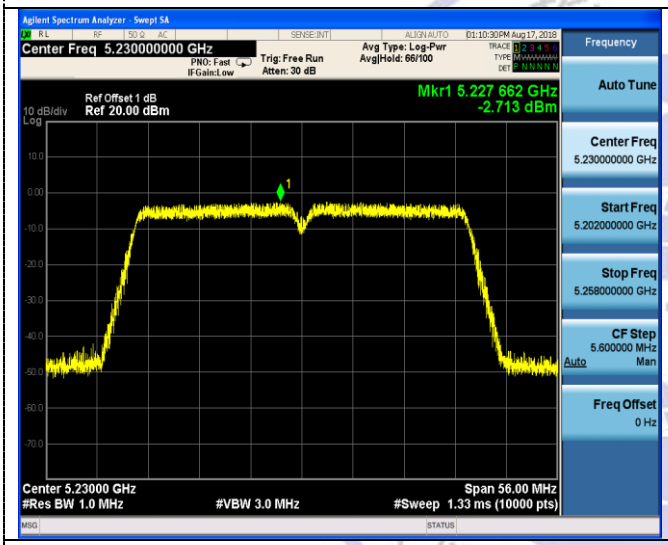	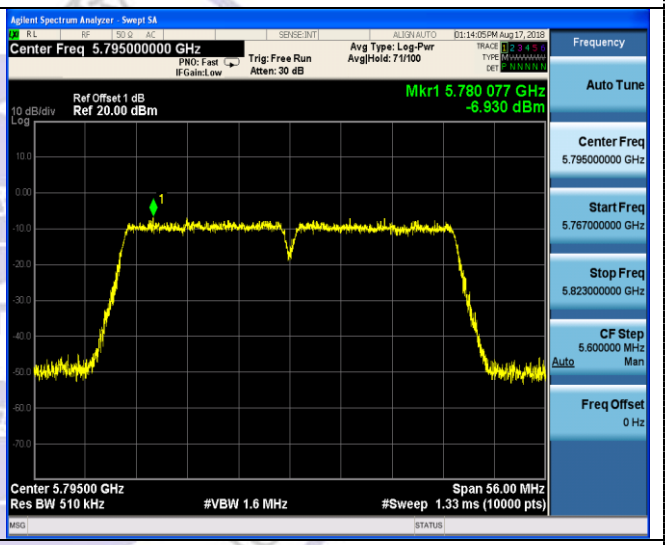
CH46	CH159

802.11ac(HT80)	
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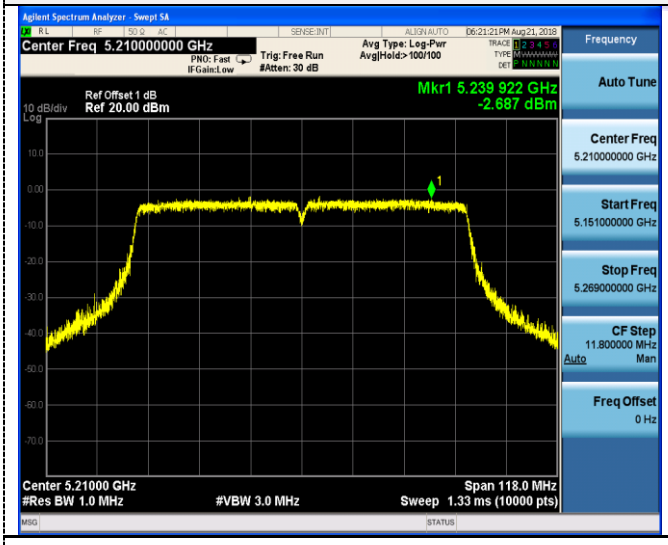	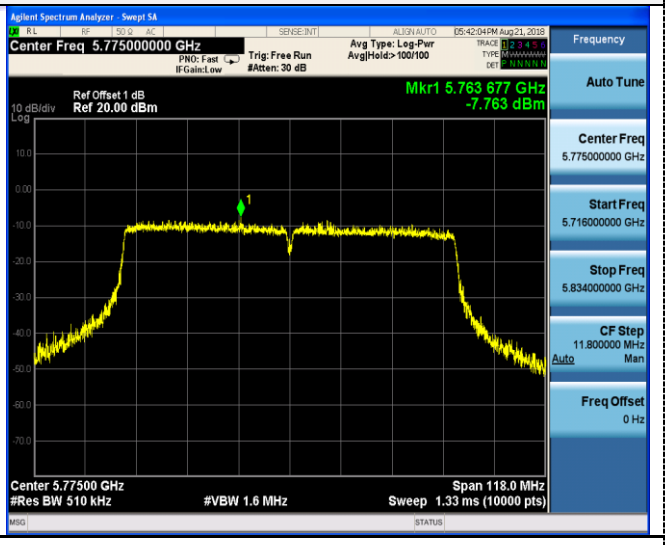
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