Certificate Number: 5055.02

TEST REPORT FOR WLAN TESTING

Report No: SRTC2020-9004(F)-20022402(G)

Product Name: LTE/WCDMA/GSM（GPRS） Multi-Mode Wireless Router

Product Model: MF286R

Applicant: ZTE Corporation.

Manufacturer: ZTE Corporation.

Specification: FCC Part 15 Subpart E (2019)

FCC ID: SRQ-MF286R

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30, Shixing Street, Shijingshan District,

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1. GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC). The test results relate only to individual items of the samples which have been tested. The certification and accreditation identifiers used in this report shall not be applicable to the tested or calibrated samples thereof. The manufacturer shall not mark the tested samples or items (or a separate part of the item) with the identifiers of certification and accreditation to mislead relevant parties about the tested samples or items.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
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1.3 Applicant's details

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Country or Region:	China
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1.4 Manufacturer's details

Company:	ZTE Corporation.
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City:	Shenzhen
Country or Region:	China
Contacted person:	Gong Yu
Tel:	021-68895397
Fax:	---
Email:	gongyu@zte.com.cn

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2020-02-24
Testing Start Date:	2020-02-25
Testing End Date:	2020-03-09

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	30
Maximum Extreme	55	---
Minimum Extreme	-20	---

Normal Supply Voltage (V d.c.):	12.0
Maximum Extreme Supply Voltage (V d.c.):	13.2
Minimum Extreme Supply Voltage (V d.c.):	10.8

2. DESCRIPTION OF THE DEVICE UNDER TEST

2.1Final Equipment Build Status

Frequency Band(s)	U-NII-1:5150MHz-5250MHz U-NII-3:5725MHz-5850MHz
Modulation Type	802.11a 802.11n (HT20/HT40) 802.11ac (VHT20/VHT40/VHT80)
Antenna Type	Fixed Internal Antenna
Antenna Gain	Ant0:3.0dBi Ant1:3.0dBi
Power Supply	Battery/AC adapter
Hardware Version	dqdA
Software Version	BD_LAMEIMF286RMODULEV1.0.0B02
IMEI	867709041132919

2.2Wireless Technology and Frequency Range

Wireless Technology		Bandwidth	Channel	Frequency(MHz)
Wi-Fi	U-NII-1	20MHz	36	5180
			40	5200
			44	5220
			48	5240
		40MHz	38	5190
			46	5230
		80MHz	42	5210
	U-NII-3	20MHz	149	5745
			153	5765
			157	5785
			161	5805
			165	5825
		40MHz	151	5755
			159	5795
		80MHz	155	5775

Duty Cycle Result

Mode	Duty Cycle (%)	Correction Factor(dB)	Mode	Duty Cycle (%)	Correction Factor(dB)
11a	98.72%	0.056	11ac VHT20	97.34%	0.117
11n HT20	97.92%	0.091	11ac VHT40	95.87%	0.183
11n HT40	95.94%	0.180	11ac VHT80	92.37%	0.345

Note

Mode	Frequency (MHz)	99%BW (MHz)	Max frequency edge(MHz)	Max frequency edge limit(MHz)
802.11a	5240	16.418	5248.209	5250
802.11n HT20	5240	17.749	5248.875	5250
802.11n HT40	5230	36.119	5248.060	5250
802.11ac VHT80	5210	75.906	5247.953	5250
Max frequency edge(MHz)= Frequency(MHz)+ 99%BW(MHz)/2				

2.3 Support Equipment

The following support equipment was used to exercise the DUT during testing:
NA

2.4 Note

Automatically Discontinue Transmission	
Description	The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.
Result	While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

Antenna requirement (FCC part 15.203)

An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

•The antenna(s) of the EUT are permanently attached.

•There are no provisions for connection to an external antenna.

Note: The antenna provide to the EUT, please refer to the following table:

Brand	Model	Antenna gain	Frequency Bands(GHz)	Antenna type	Connecter Type
N/A	N/A	3.0dBi	5150MHz-5250MHz 5725MHz-5850MHz	Fixed Internal Antenna	N/A
Manufacturers ensure that their designs will not be modified by the user or third parties arbitrary antenna parameters and performance. The EUT complies with the requirement of §15.203.					

3 REFERENCE SPECIFICATION

Specification	Version	Title
FCC part 15 Subpart E	2019	Unlicensed national information infrastructure devices
ANSI C63.10	2013	Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB 644545 D03	August 14, 2014	Guidance for IEEE std 802.11actm devices emission testing
KDB 905462 D03	August 22, 2016	U-NII client devices without radar detection capability
KDB 905462 D02	April 8, 2016	Compliance measurement procedures for unlicensed-national information infrastructure devices operating in the 5250-5350 MHz and 5470-5725 MHz bands incorporating dynamic frequency selection
KDB 662911 D01	October 31, 2013	Emissions testing of transmitters with multiple outputs in the same band
KDB 789033 D02	December 14, 2017	Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) devices part 15, subpart e

4 KEY TO NOTES AND RESULT CODES

The following are the definition of the test result.

Code	Meaning
PASS	Test result shows that the requirements of the relevant specification have been met.
FAIL	Test result shows that the requirements of the relevant specification have not been met.
NT	Normal Temperature
NV	Nominal voltage
HV	High voltage
LV	Low voltage

5. RESULT SUMMARY

No.	Test case	FCC reference	Verdict
1.	26dB Bandwidth	N/A	Pass
2.	6dB Bandwidth	15.407(e)	N/T
3.	Maximum Conducted Output Power	15.407 (a.1.iv),(a.2), (a.3)	Pass
4.	Maximum Power Spectral Density	15.407 (a.1.iv),(a.2), (a.3)	Pass
5.	Unwanted Conducted Emission Measurement	15.407(b)	Pass
6.	Frequency Stability	15.407(g)	Pass
7.	Unwanted Radiated Emission Measurement	15.205 15.209 15.35(b)	Pass
8.	AC Power line Conducted Emission	15.207	Pass
9.	DFS	15.407(h)	N/A
10.	Automatically Discontinue Transmission	15.407(c)	Pass(See 2.4Note)
11.	Antenna Requirements	15.407(a) &15.203	Pass(See 2.4Note)

This Test Report Is Issued by: Mr. Peng Zhen	Checked by: Mr. Li Bin
Tested by: Mr. He Dengshun	Issued date: 20200312

6 TEST RESULT

6.1 26dB Bandwidth

6.1.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.1.2 Test limit

The bandwidth at 26dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26dB bandwidth.
The 26dB bandwidth is used to determine the conducted power limits.

6.1.3 Test Procedure Used

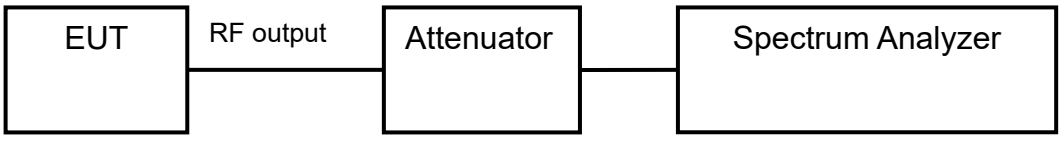
ANSI C63.10-2013 – Section 12.4
KDB 789033 D02 v02r01 – Section C

6.1.4 Test Settings

1. The signal analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 26. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = approximately 1% of the emission bandwidth
3. VBW > 3 x RBW
4. Detector = Peak
5. Trace mode = max hold

6.1.5 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



6.1.6 Test result

The test results are shown in Appendix A.

6.2 6dB Bandwidth

6.2.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.2.2 Test limit

In the 5.725 – 5.850GHz band, the 6dB bandwidth must be ≥ 500 kHz.

6.2.3 Test Procedure Used

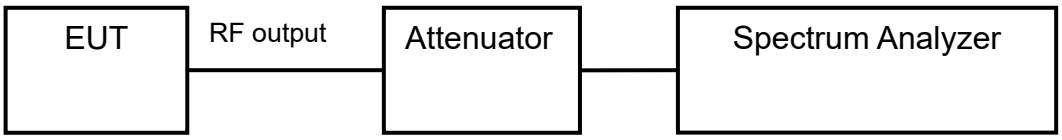
ANSI C63.10-2013 – Section 6.9.2
KDB 789033 D02 v02r01 – Section C

6.2.4 Test Settings

1. The signal analyzers' automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 100 kHz
3. VBW > 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple

6.2.5 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



6.2.6 Test result

The test results are shown in Appendix A.

6.3 Maximum Conducted Output Power

6.3.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.3.2 Test limit

In the 5.15 – 5.25GHz band, the maximum permissible conducted output power is 250mW (23.98dBm). The maximum e.i.r.p. shall not exceed the lesser of 200 mW or 10 + 10 log10B, dBm.
In the 5.25 – 5.35GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) and 11 dBm + 10log10 (26dB BW). The maximum e.i.r.p. shall not exceed the lesser of 1.0 W or 17 + 10 log10B, dBm.
In the 5.47 – 5.725GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) and 11 dBm + 10log10 (26dB BW). The maximum e.i.r.p. shall not exceed the lesser of 1.0 W or 17 + 10 log10B, dBm.
In the 5.725 – 5.850GHz band, the maximum permissible conducted output power is 1W (30dBm). The maximum e.i.r.p. is 36 dBm.

6.3.3 Test Procedure Used

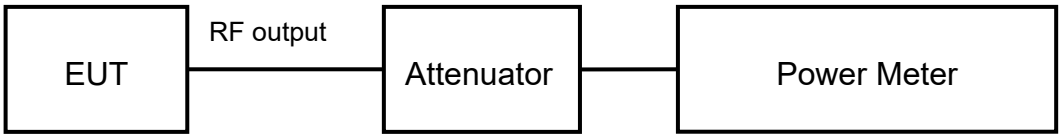
ANSI C63.10-2013 – Section 12.3.3.2 Method PM-G
KDB 789033 D02 v02r01 – Section E)3)b) Method PM-G
ANSI C63.10-2013 – Section 14.2 Measure-and-Sum Technique
KDB 662911 v02r01 – Section E)1) Measure-and-Sum Technique

6.3.4 Test Settings

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

6.3.5 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



6.3.6 Test result

The test results are shown in Appendix A.

6.4 Maximum Power Spectral Density

6.4.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.4.2 Test limit

In the 5.15 – 5.25GHz, 5.25 – 5.35GHz, 5.47 – 5.725GHz bands, the maximum permissible power spectral density is 11dBm/MHz
In the 5.725 – 5.850GHz band, the maximum permissible power spectral density is 30dBm/500kHz.

6.4.3 Test Procedure Used

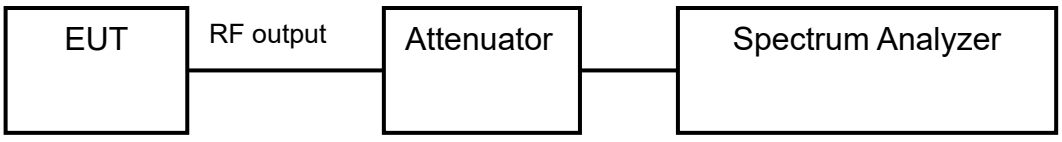
ANSI C63.10-2013 – Section 12.3.2.2
KDB 789033 D02 v02r01 – Section F
ANSI C63.10-2013 – Section 14.3.2.2 Measure-and-Sum Technique
KDB 662911 v02r01 – Section E)2) Measure-and-Sum Technique.

6.4.4 Test Settings

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire emission bandwidth of the signal
3. Set RBW = 500 kHz, VBW =1.5MHz for the band 5.725-5.85 GHz
4. Set RBW = 1 MHz, VBW =3MHz for the band 5.150-5.250 GHz，5.250-5.350 GHz and 5.470-5.725 GHz
5. Number of sweep points > 2 x (span/RBW)
6. Sweep time = auto
7. Detector = power averaging (RMS)
8. Trigger was set to free run for all modes
9. Trace was averaged over 100 sweeps
10. The peak search function of the spectrum analyzer was used to find the peak of the spectrum.

6.4.5 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



6.4.6 Test result

The test results are shown in Appendix A.

6.5 Unwanted Conducted Emission Measurement

6.5.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.5.2 Test limit

FCC Part 15.407(b) ,
Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, 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.

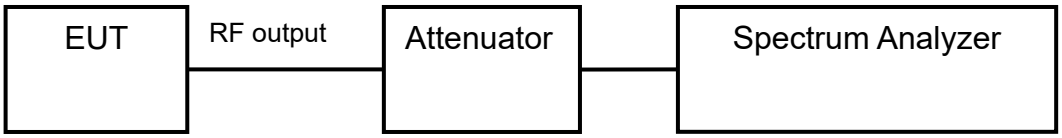
6.5.3 Test Procedure Used

KDB 789033 D02 v02r01,Section G.

6.4.5 Test Settings

a) Set the center frequency and span to encompass frequency range to be measured.
b) Set the RBW = 1 MHz.
c) Set the VBW ≥ 3 MHz.
d) Detector = peak.
e) Set span to encompass the spectrum to be examined
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level.

6.4.6 Test Setup



6.4.7 Test result

The test results are shown in Appendix A.

6.5 Frequency Stability

6.5.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	100.9kPa

6.5.2 Test limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

6.5.3 Test Procedure Used

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two.

6.5.4 Test result

The test results are shown in Appendix A.

6.6 Unwanted Radiated Emission Measurement

6.6.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	100.9kPa

6.6.2 Test Description

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at maximum power and at the appropriate frequencies. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

6.6.3 Test limit

(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.
All spurious emissions that do not lie in a restricted band are subject to a peak limit of −27 dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dBμV/m.
FCC Part15.205, 15.209,;
In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in below Table per Section 15.209. The spectrum shall be investigated from the lowest radio frequency signal generated in the device

Frequency [MHz]	Field strength [μV/m]	Measured 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

Radiated LimitsFCC Part15.35(b):

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit

Used conversion factor: Limit (dBμV/m) = 20 log (Limit (μV/m)/1μV/m)

Frequency [MHz]	Detector	Unit (dBμV/m)
30～88	Quasi-peak	40.0
88～216	Quasi-peak	43.5
216～960	Quasi-peak	46.0
960～1000	Quasi-peak	54.0
1000～5th harmonic of the highest frequency or 40GHz, whichever is lower	Average	54.0
	Peak	74.0

Conversion Radiated limits

6.6.4 Test Procedure Used

KDB 789033 D02 v02r01,Sections G.3, G.4, G.5, and G.6.

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. Both X and Y axes of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Quasi-Peak Detect Function and recorded the reading with Maximum Hold Mode.

NOTE:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer complied the following setting:

Frequency	RBW
9-150kHz	200-300Hz
0.15-30MHz	9-10kHz

For Radiated emission above 30MHz
a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground in chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and recorded the reading with Maximum Hold Mode when the test frequency is below 1 GHz.
f. The test-receiver system was set to peak and average detector and recorded the reading 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.

For the radiated emission test above 1GHz:
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m

above the ground or reference ground plane.

NOTE:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Average detection (AV) at frequency above 1GHz. If duty cycle of test signal is < 98%, the duty factor need added to measured value.
4. All modes of operation were investigated and the worst-case emissions are reported.

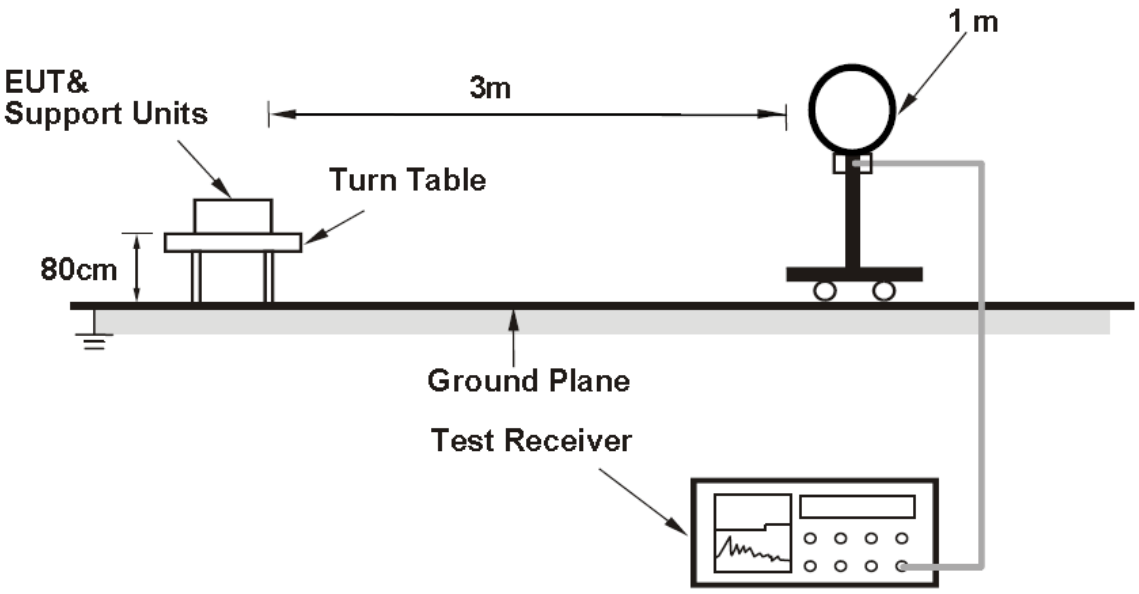
6.6.5 Test Settings

Frequency	Detector
＜1000MHz	Quasi-peak
>1000MHz	Peak and average

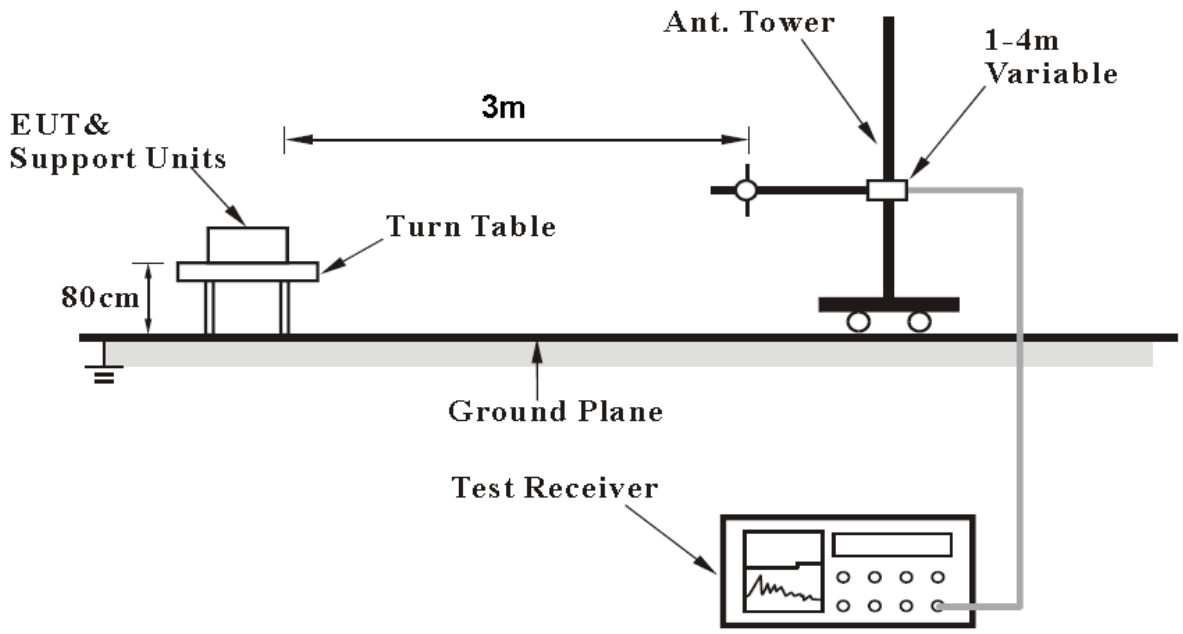
Frequency	RBW
9-150kHz	200-300Hz
0.15-30MHz	9-10kHz
30-1000MHz	100-120kHz
>1000MHz	1MHz

6.6.6 Test Setup

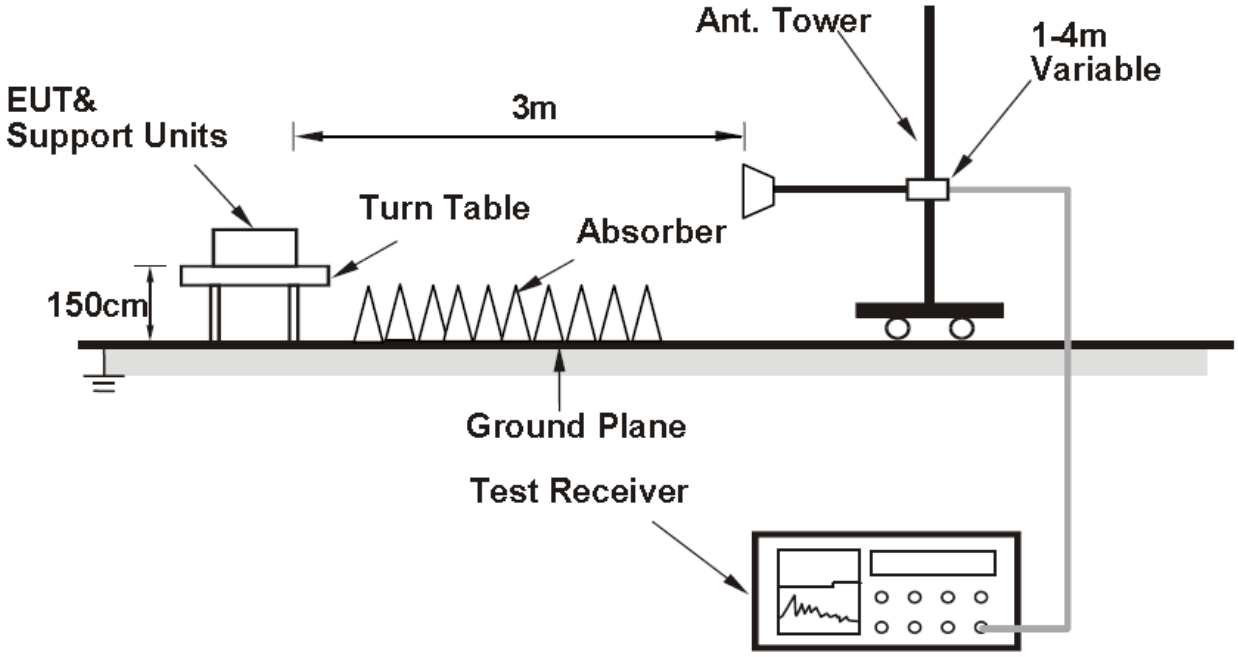
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



6.6.7 Test result

The test results are shown in Appendix B.

6.7 AC Power line Conducted Emission

6.7.1 Ambient condition

Temperature	Relative humidity	Pressure
24°C	36%	100.9kPa

6.7.2 Test limit

FCC Part 15.207(a) ,

Frequency of Emission (MHz)	Conducted 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.

The measurement is made according to ANSI C63.10-2013

6.7.3 Test result

The test results are shown in Appendix B.

6.8 Dynamic Frequency Selection

6.8.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.8.2 Test limit

FCC Part 15.407(h) and FCC 06-96 APPENDIX “COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVCIES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION”.

6.8.3 DFS Overview

Table 1: Applicability of DFS Requirements Prior to Use of a Channel

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	Master Device or Client with Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required

Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.

Table 3: DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

Maximum Transmit Power	**Value (See Notes 1, 2, and 3)**
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. **Note 2:** Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. **Note3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

Table 4: DFS Response Requirement Values

Parameter	**Value**
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
Note 1: *Channel Move Time* and the *Channel Closing Transmission Time* should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. **Note 2:** The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions. **Note 3:** During the *U-NII Detection Bandwidth* detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	Roundup $\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{PRI_{\mu sec}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 µsec, with a minimum increment of 1 µsec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

Table 6 – Long Pulse Radar Test Waveform

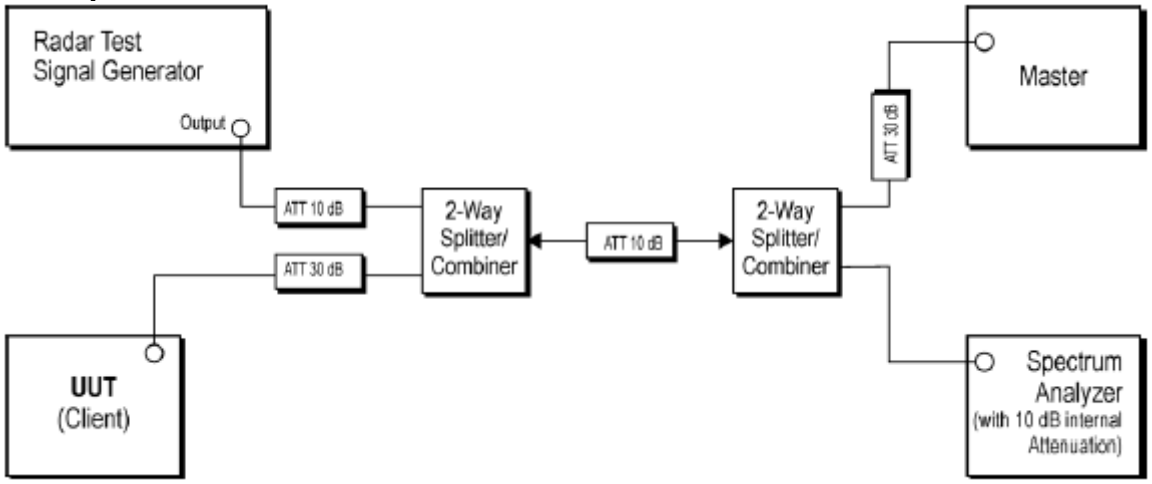
Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per *Burst*	Number of *Bursts*	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 7 – Frequency Hopping Radar Test Waveform

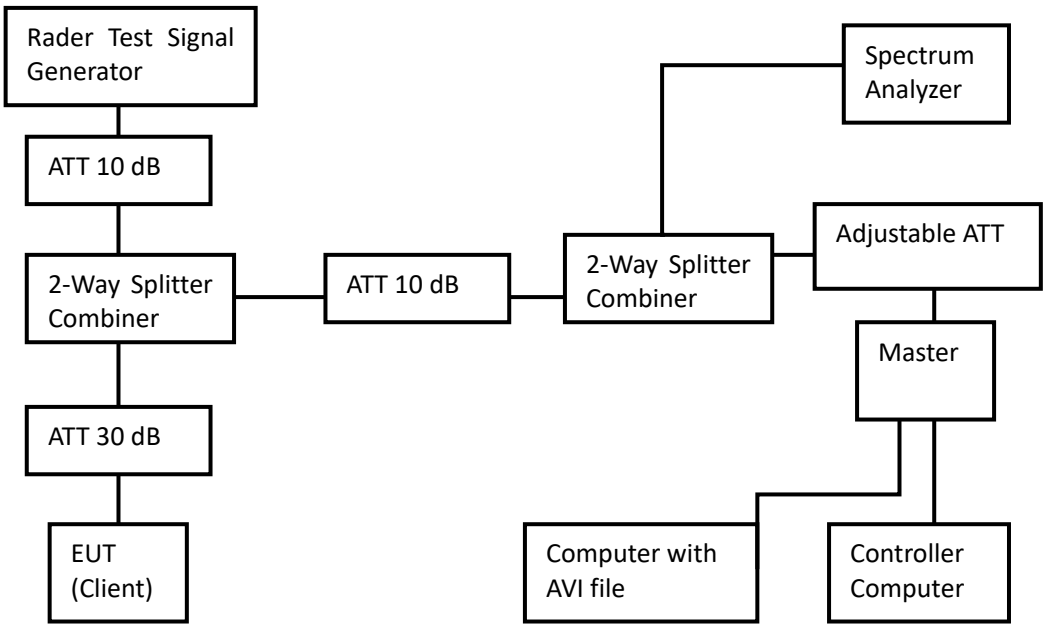
Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

6.8.4 TEST AND MEASUREMENT SYSTEM

Principle



Setup for Client with injection at the Master



Client Devices

a) A Client Device will not transmit before having received appropriate control signals from a Master Device.

b) A Client Device will stop all its transmissions whenever instructed by a Master Device to which it is associated and will meet the Channel Move Time and Channel Closing Transmission Time requirements. The Client Device will not resume any transmissions until it has again received control signals from a Master Device.

c) If a Client Device is performing In-Service Monitoring and detects a Radar Waveform above the DFS Detection Threshold, it will inform the Master Device. This is equivalent to the Master Device detecting the Radar Waveform and d) through f) of section 5.1.1 apply.

d) Irrespective of Client Device or Master Device detection the Channel Move Time and Channel Closing Transmission Time requirements remain the same.

e) The client test frequency must be monitored to ensure no transmission of any type has occurred for 30 minutes. Note: If the client moves with the master, the device is considered compliant if nothing appears in the client non-occupancy period test. For devices that shut down (rather than moving channels), no beacons should appear.

Test Setup Operation

System testing was performed with the designated MPEG-4 (1080P,WEBRip,DD5.1.x264-btbta) test file that streams full motion video from the Access Point to the Client in full motion video mode using the media player with the V2.61 Codec package.

This file is used by IP and Frame based systems for loading the test channel during the In-service compliance testing of the device.

The waveform parameters from within the bounds of the signal type are selected randomly using uniform distribution.

A spectrum analyzer is used as a monitor to verify that the EUT has vacated the Channel within the (Channel Closing Transmission Time and Channel Move Time, and does not transmit on a Channel during the Non-Occupancy Period after the detection and Channel move. It is also used to monitor EUT transmissions during the Channel Availability Check Time.

6.8.5 Test Procedure Used

(i) Operational Modes. The DFS requirement applies to the following operational modes:
(A) The requirement for channel availability check time applies in the master operational mode.
(B) The requirement for channel move time applies in both the master and slave operational modes.
(ii) Channel Availability Check Time. A U-NII device shall check if there is a radar system already operating on the channel before it can initiate a transmission on a channel and when it has to move to a new channel. The U-NII device may start using the channel if no radar signal with a power level greater than the interference threshold values listed in paragraph (h)(2) of this section, is detected within 60 seconds.
(iii) Channel Move Time. After a radar's presence is detected, all transmissions shall cease on the operating channel within 10 seconds. Transmissions during this period shall consist of normal traffic for a maximum of 200 ms after detection of the radar signal. In addition, intermittent management and control signals can be sent during the remaining time to facilitate vacating the operating channel.
(iv) Non-occupancy Period. A channel that has been flagged as containing a radar system, either by a channel availability check or in-service monitoring, is subject to a non-occupancy period of at least 30 minutes. The non-occupancy period starts at the time when the radar system is detected.

6.8.6 Test result

The test results are shown in Appendix A.

7 MEASUREMENT UNCERTAINTIES

Items	Uncertainty	
Occupied Bandwidth	3kHz	
Output Power	0.67dB	
Transmitter Power Spectral Density	0.75dB	
Spurious emissions	30MHz～1GHz	2.83dB
	1GHz～12.75GHz	2.50dB
	12.75GHz～40GHz	2.75dB

8 TEST EQUIPMENTS

No.	Name/ Model	Manufacturer	S/N	Cal date	Cal Due date
1.	Spectrum Analyzer FSV	ROHDE&SCHWARZ	101065	2019.08.20	2020.08.19
2.	Signal Analyzer N9020A	Agilent	MY48010771	2019.08.20	2020.08.19
3.	Chamber SH-241	ESPEC	92013758	2019.08.20	2020.08.19
4.	DC Power Apply E3645A	Agilent	MY40000741	2020.03.01	2021.02.28
5.	Power Meter E4416A	Agilent	MY52370013	2020.03.01	2021.02.28
6.	Power Sensor E9327A	Agilent	MY52420006	2020.03.01	2021.02.28
7.	12.65m×8.03m×7.50m Fully-Anechoic Chamber	FRANKONIA	-----	-----	-----
8.	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	---	-----	-----
9.	Turn table Diameter:1m	HD	-----	-----	-----
10.	Turn table Diameter:5m	HD	-----	-----	-----
11.	Antenna master FAC(MA4.0)	MATURO	-----	-----	-----
12.	Antenna master SAC(MA4.0)	MATURO	-----	-----	-----
13.	9.080m×5.255m×3.525 m Shielding room	FRANKONIA	-----	-----	-----
14.	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	2019.08.20	2020.08.19
15.	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	2019.08.20	2020.08.19
16.	HL562 Ultra log antenna	R&S	100016	2019.08.20	2020.08.19
17.	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2019.08.20	2020.08.19
18.	ESI 40 EMI test receiver	R&S	100015	2019.08.20	2020.08.19
19.	Radio tester	CMU 200	114667	2019.08.20	2020.08.19
20.	ESCS30 EMI test receiver	R&S	100029	2019.08.20	2020.08.19
21.	HL562 Receive antenna	R&S	100167	2019.08.20	2020.08.19
22.	ESH3-Z5 LISN	R&S	100020	2019.08.20	2020.08.19
23.	Spectrum Analyzer N9020A	Agilent	MY48010771	2019.08.20	2020.08.19

24.	Signal Generator SMBV100A	R&S	260910	2019.08.20	2020.08.19
25.	Bluetooth Test Set MT8852B	Anritsu	1142010	2020.03.01	2021.02.28
26.	Cable 104EA	SUCOFLEX	9272/4EA	2020.03.01	2021.02.28
27.	Cable 104EA	SUCOFLEX	9266/4EA	2020.03.01	2021.02.28
28.	WLAN AP WIA3300-20	SKSpruce	81520170607003 39	---	---
29.	Notebook E470c	Lenovo	PF10UZW7	---	---

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

Please refer to the attachment.

APPENDIX B – TEST DATA OF RADIATED EMISSION

Please refer to the attachment.

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

Output Power Result

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Test Mode	Data Rate
802.11a	6Mbps
802.11n HT20	MCS0(6.5 Mbps)
802.11n HT40	MCS0(13.5 Mbps)
802.11ac HT20	MCS0(6.5 Mbps)
802.11ac HT40	MCS0(13.5 Mbps)
802.11ac HT80	MCS0(29.3 Mbps)

Directional Antenna Gain

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Band	Chain0 Antenna Gain(dBi)	Chain1 Antenna Gain(dBi)	Correlated Chains Directional Gain(dBi)
U-NII-1	3.0	3.0	6.0
U-NII-3	3.0	3.0	6.0

Antenna Gain and Limits

Band	Correlated Chains Directional Gain (dBi)	Power Limit (dBm)	PSD Limit
U-NII-1	6.0	30.0	17.0 dBm/MHz
U-NII-3	6.0	30.0	30.0 dBm/500kHz

Output Power

Band	Test Mode	Ant	Average Power(dBm)			Limit (dBm)
			5180MHz	5200MHz	5240MHz	
U-NII-1	802.11a	Ant0	15.26	15.13	14.86	30.0
	802.11a	Ant1	14.85	14.81	14.52	30.0
	802.11n HT20	Ant0	15.23	14.60	14.19	30.0
	802.11n HT20	Ant1	14.88	14.32	13.98	30.0
	802.11n HT20	MIMO Ant0+Ant1	18.07	17.47	17.10	30.0
	802.11ac VHT20	Ant0	15.17	14.54	14.06	30.0
	802.11ac VHT20	Ant1	14.78	14.27	13.86	30.0
	802.11ac VHT20	MIMO Ant0+Ant1	17.99	17.42	16.97	30.0
	Test Mode	Ant	Average Power(dBm)			Limit (dBm)
			5190 MHz	5230 MHz		
	802.11n HT40	Ant0	15.84	15.32		30.0
	802.11n HT40	Ant1	15.39	14.92		30.0
	802.11n HT40	MIMO Ant0+Ant1	18.63	18.13		30.0
	802.11ac VHT40	Ant0	15.72	15.21		30.0
	802.11ac VHT40	Ant1	15.27	14.95		30.0
	802.11ac VHT40	MIMO Ant0+Ant1	18.51	18.09		30.0
	Test Mode	Ant	Average Power(dBm)			Limit (dBm)
			5210 MHz			
	802.11ac VHT80	Ant0	14.47			30.0
	802.11ac VHT80	Ant1	14.12			30.0
	802.11ac VHT80	MIMO Ant0+Ant1	17.31			30.0

Band	Test Mode	Ant	Average Power(dBm)			Limit (dBm)
			5745MHz	5785MHz	5825MHz	
U-NII-3	802.11a	Ant0	15.42	15.63	15.79	30.0
	802.11a	Ant1	15.12	15.21	15.34	30.0
	802.11n HT20	Ant0	15.17	15.43	15.35	30.0
	802.11n HT20	Ant1	14.72	15.02	14.83	30.0
	802.11n HT20	MIMO Ant0+Ant1	17.96	18.24	18.11	30.0
	802.11ac VHT20	Ant0	15.17	15.38	15.28	30.0
	802.11ac VHT20	Ant1	14.68	14.92	14.78	30.0
	802.11ac VHT20	MIMO Ant0+Ant1	17.94	18.17	18.05	30.0
	Test Mode	Ant	Average Power(dBm)			Limit (dBm)
			5755 MHz	5795 MHz		
	802.11n HT40	Ant0	15.96	15.76		30.0
	802.11n HT40	Ant1	15.38	15.27		30.0
	802.11n HT40	MIMO Ant0+Ant1	18.69	18.53		30.0
	802.11ac VHT40	Ant0	15.78	15.54		30.0
	802.11ac VHT40	Ant1	15.24	15.17		30.0
	802.11ac VHT40	MIMO Ant0+Ant1	18.53	18.37		30.0
	Test Mode	Ant	Average Power(dBm)			Limit (dBm)
			5775MHz			
	802.11ac VHT80	Ant0	15.42			30.0
	802.11ac VHT80	Ant1	15.08			30.0
	802.11ac VHT80	MIMO Ant0+Ant1	18.26			30.0

We chose the Worst-modes are shown as following table:

Test Mode	Ant	Note
802.11a	SISO Ant0	---
802.11n HT20	SISO Ant0	Cover 802.11ac VHT20
802.11n HT40	SISO Ant0	Cover 802.11ac VHT40
802.11ac VHT80	SISO Ant0	---
802.11n HT20	MIMO Ant0+Ant1	Cover 802.11ac VHT20
802.11n HT40	MIMO Ant0+Ant1	Cover 802.11ac VHT40
802.11ac VHT80	MIMO Ant0+Ant1	---

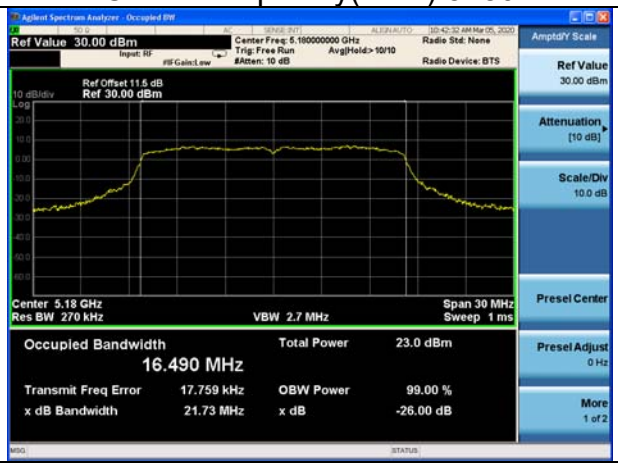
Occupied Bandwidth

Offset 11.5dB = Attenuator 10dB+ Temporary antenna connector loss 0.2dB+ Cable loss 1.3dB

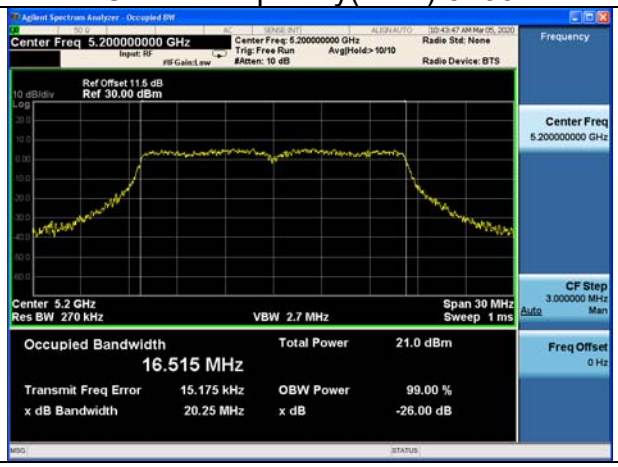
Test Mode: 802.11a (SISO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 26dB Bandwidth(MHz)	Conclusion
5180	16.490	22.73	Pass
5200	16.515	20.25	Pass
5240	16.418	19.48	Pass
5745	16.496	20.01	Pass
5785	16.443	19.41	Pass
5825	16.474	19.71	Pass

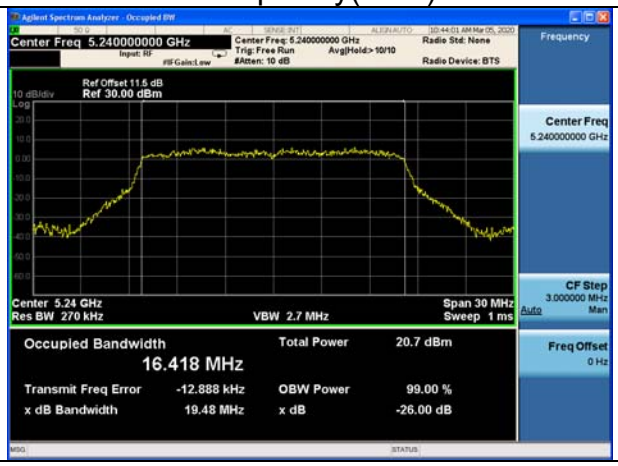
802.11a
Carrier frequency(MHz):5180



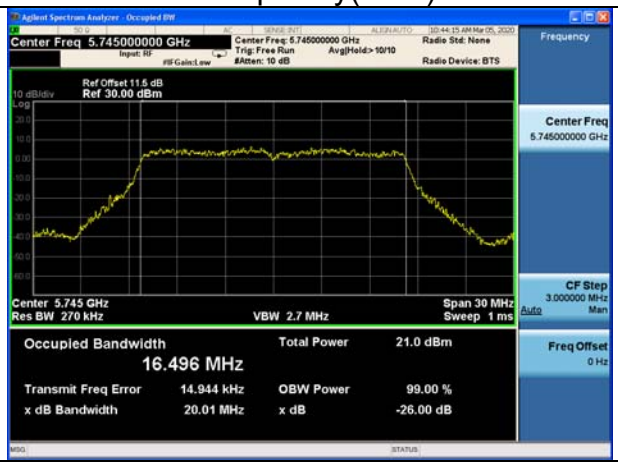
802.11a
Carrier frequency(MHz):5200

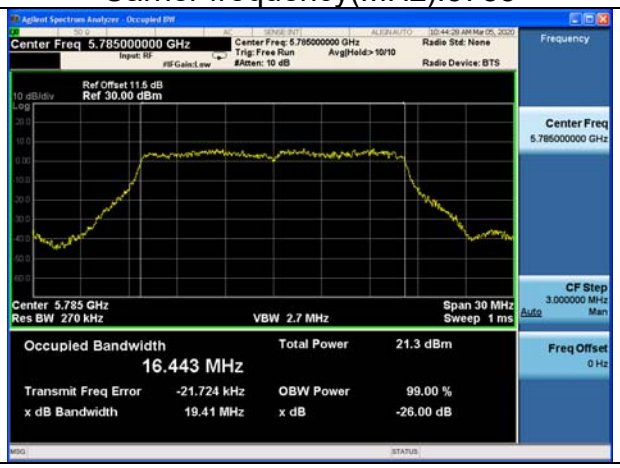
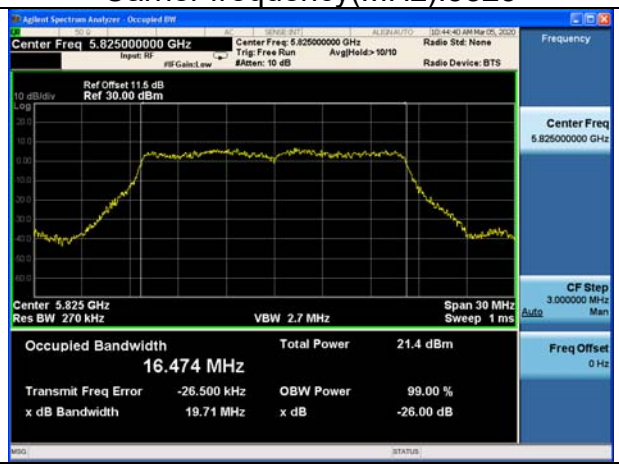


802.11a
Carrier frequency(MHz):5240



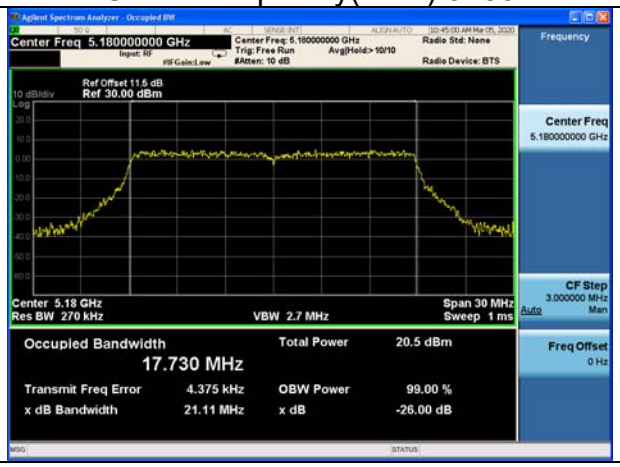
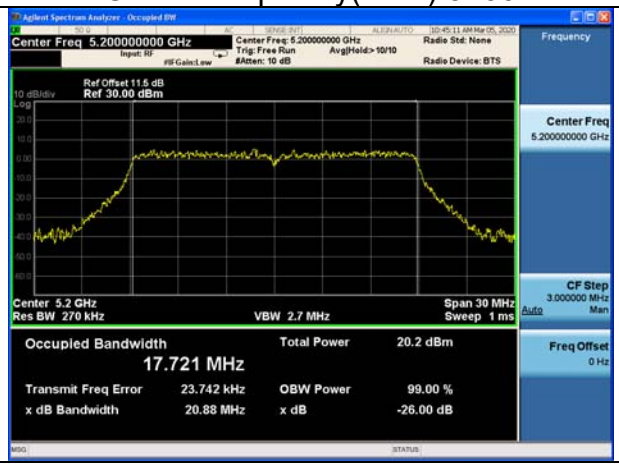
802.11a
Carrier frequency(MHz):5745

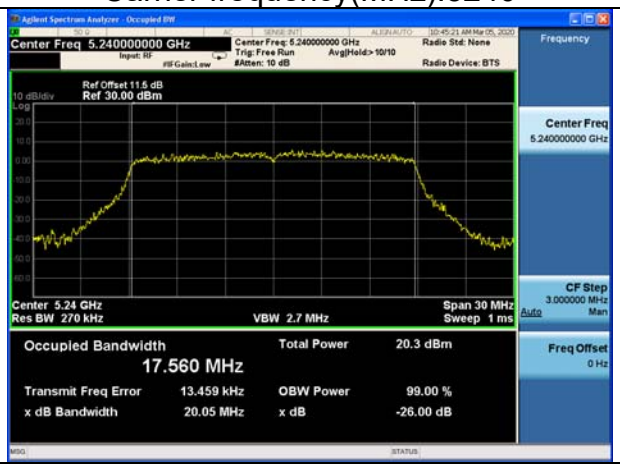
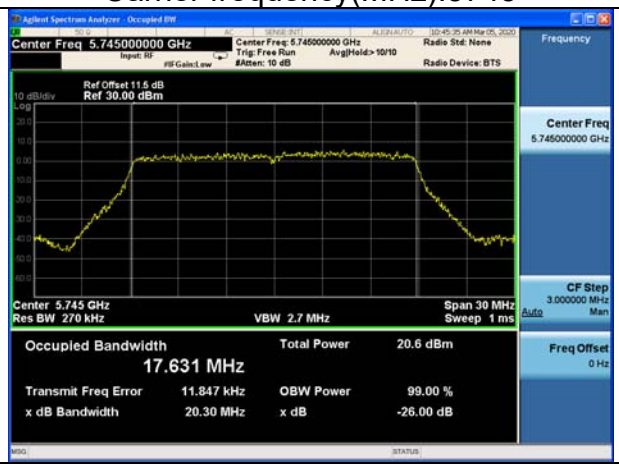
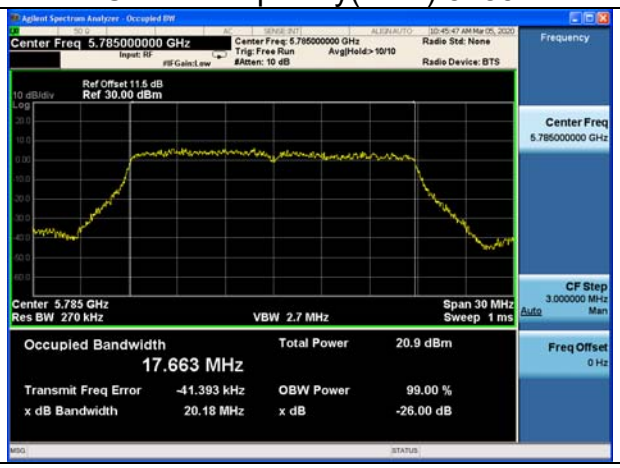
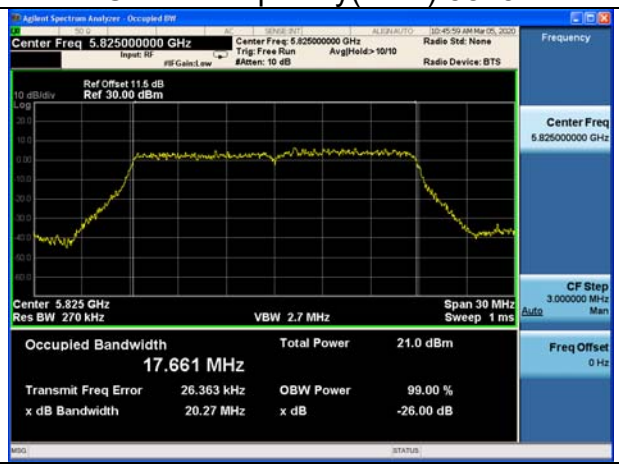


802.11a Carrier frequency(MHz):5785	802.11a Carrier frequency(MHz):5825
	

Test Mode: 802.11n HT20 (SISO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 26dB Bandwidth(MHz)	Conclusion
5180	17.730	21.11	Pass
5200	17.721	20.88	Pass
5240	17.560	20.05	Pass
5745	17.631	20.30	Pass
5785	17.663	20.18	Pass
5825	17.661	20.27	Pass

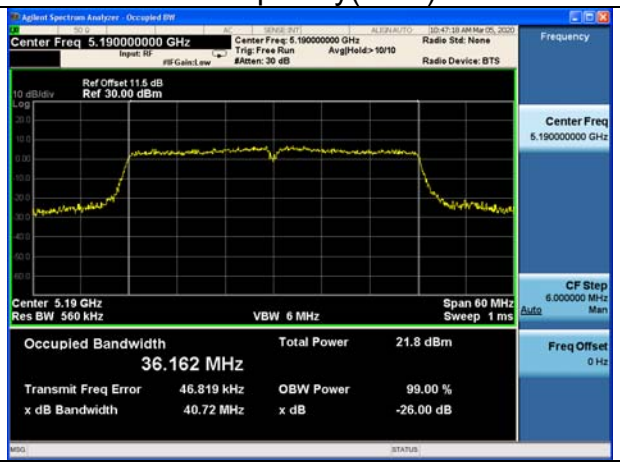
802.11n HT20 Carrier frequency(MHz):5180	802.11n HT20 Carrier frequency(MHz):5200
	

802.11n HT20 Carrier frequency(MHz):5240	802.11n HT20 Carrier frequency(MHz):5745
	
802.11n HT20 Carrier frequency(MHz):5785	802.11n HT20 Carrier frequency(MHz):5825
	

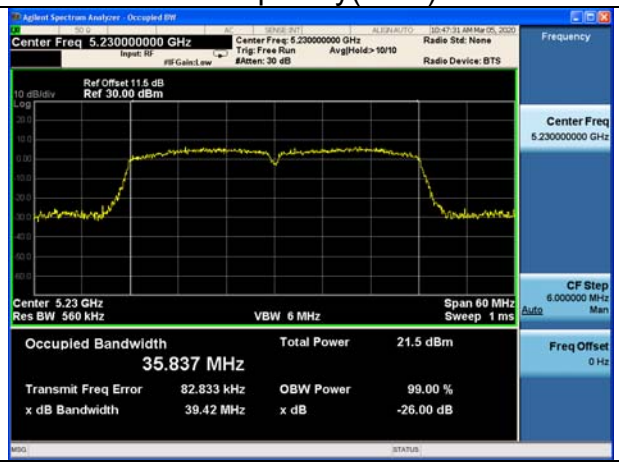
Test Mode: 802.11n HT40 (SISO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 26dB Bandwidth(MHz)	Conclusion
5190	36.162	40.72	Pass
5230	35.837	39.42	Pass
5755	36.039	39.52	Pass
5795	35.993	40.06	Pass

802.11n HT40
Carrier frequency(MHz):5190

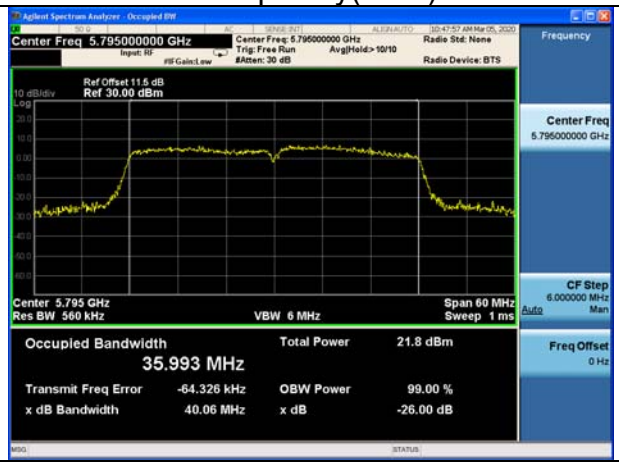


802.11n HT40
Carrier frequency(MHz):5230



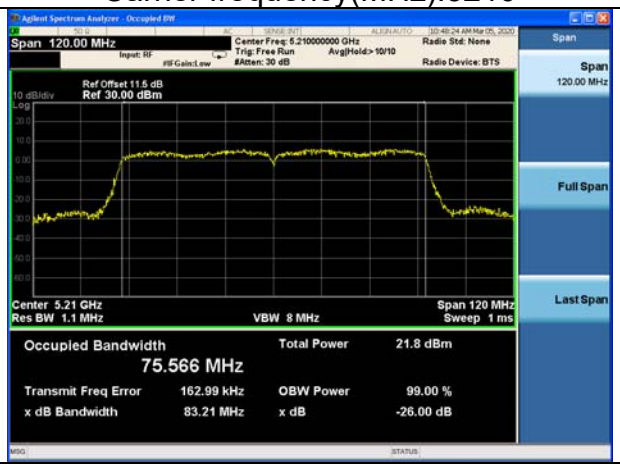
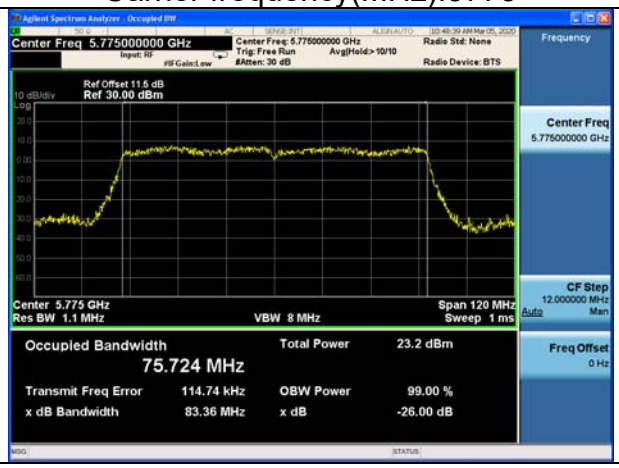
802.11n HT40
Carrier frequency(MHz):5755

802.11n HT40
Carrier frequency(MHz):5795



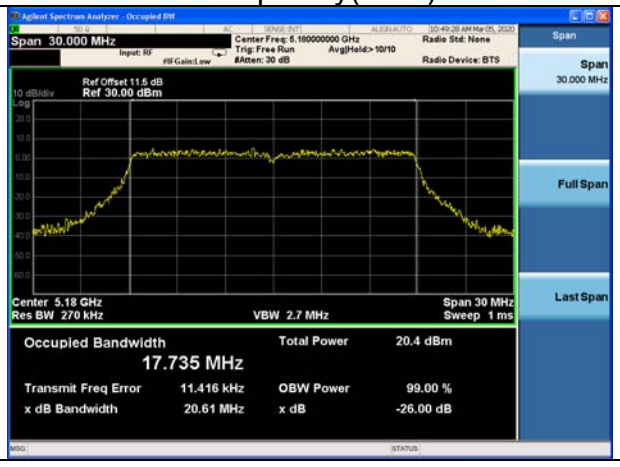
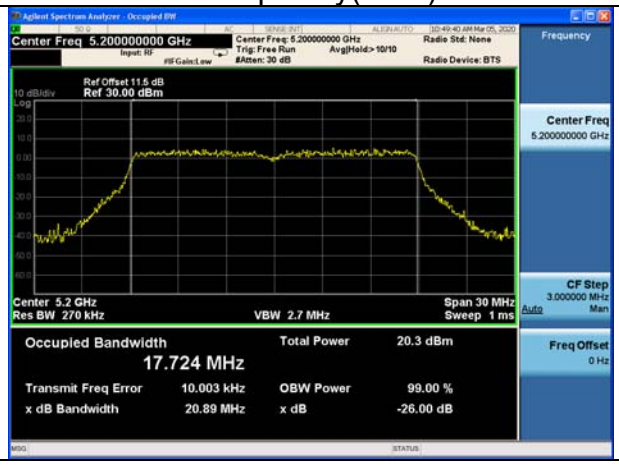
Test Mode: 802.11ac HT80 (SISO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 26dB Bandwidth(MHz)	Conclusion
5210	75.566	83.21	Pass
5775	75.724	83.36	Pass

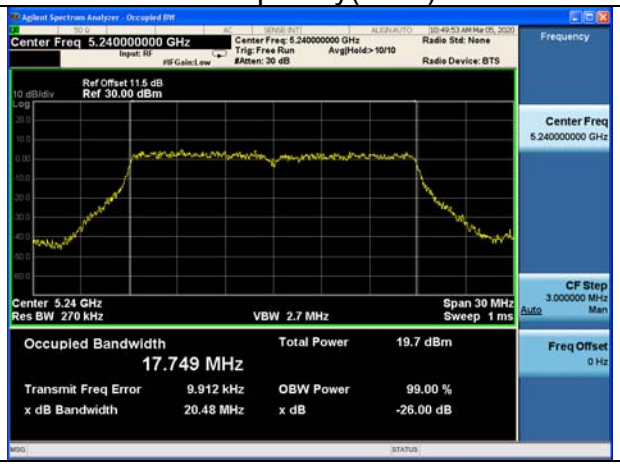
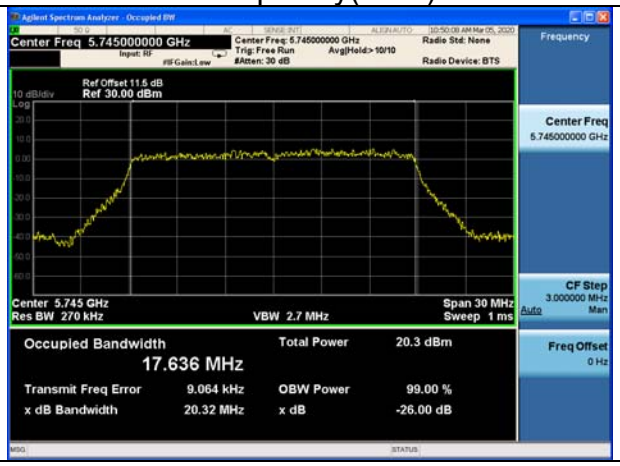
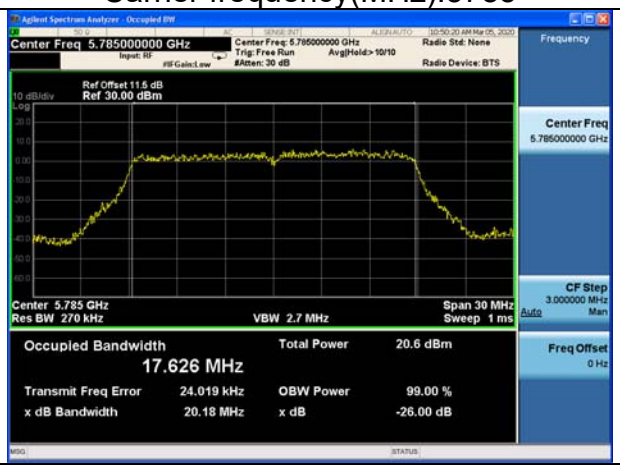
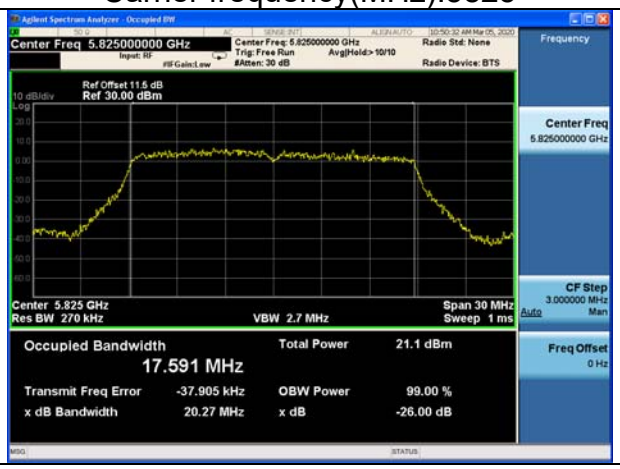
802.11ac HT80 Carrier frequency(MHz):5210	802.11ac HT80 Carrier frequency(MHz):5775
	

Test Mode: 802.11n HT20 (MIMO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 26dB Bandwidth(MHz)	Conclusion
5180	17.735	20.61	Pass
5200	17.724	20.89	Pass
5240	17.749	20.48	Pass
5745	17.636	20.32	Pass
5785	17.626	20.18	Pass
5825	17.591	20.27	Pass

802.11n HT20 Carrier frequency(MHz):5180	802.11n HT20 Carrier frequency(MHz):5200
	

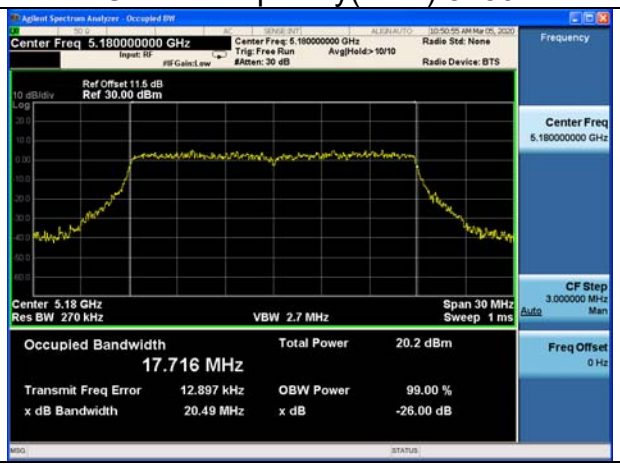
802.11n HT20	802.11n HT20

Carrier frequency(MHz):5240	Carrier frequency(MHz):5745
	
802.11n HT20 Carrier frequency(MHz):5785	**802.11n HT20 Carrier frequency(MHz):5825**
	

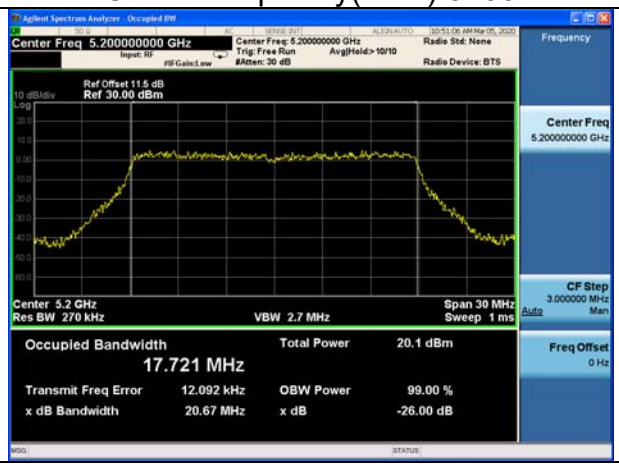
Test Mode: 802.11n HT20 (MIMO Ant1)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 26dB Bandwidth(MHz)	Conclusion
5180	17.716	20.49	Pass
5200	17.721	20.67	Pass
5240	17.524	19.91	Pass
5745	17.654	20.28	Pass
5785	17.666	20.29	Pass
5825	17.692	20.22	Pass

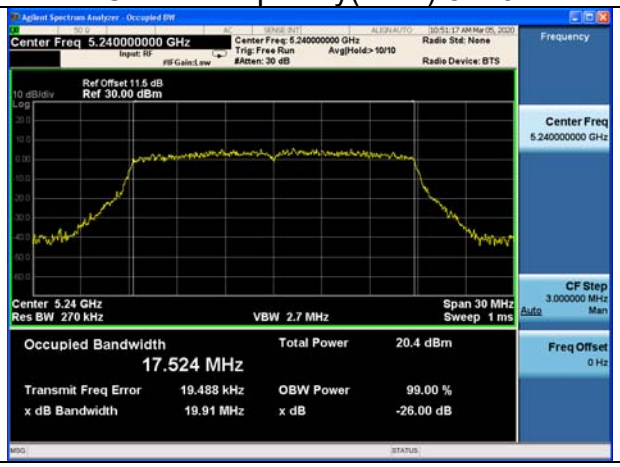
802.11n HT20
Carrier frequency(MHz):5180



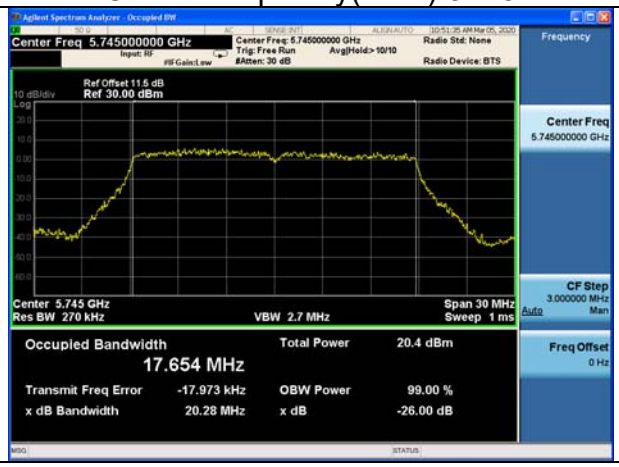
802.11n HT20
Carrier frequency(MHz):5200

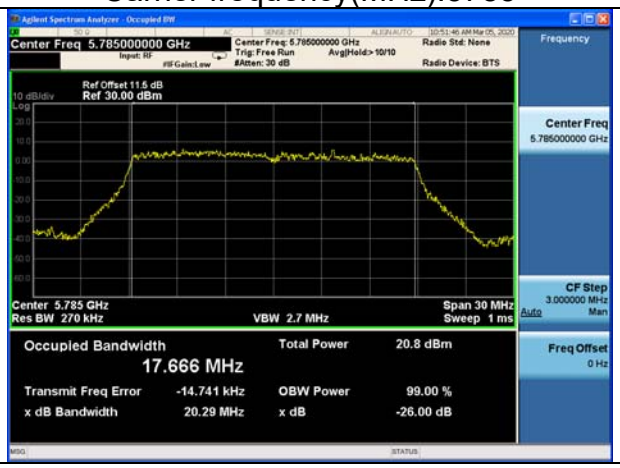
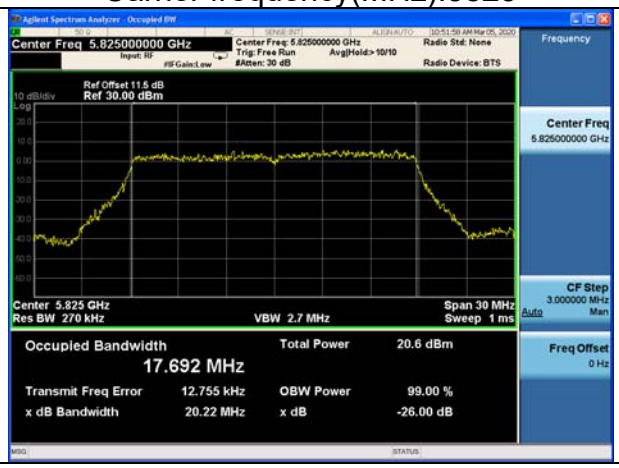


802.11n HT20
Carrier frequency(MHz):5240



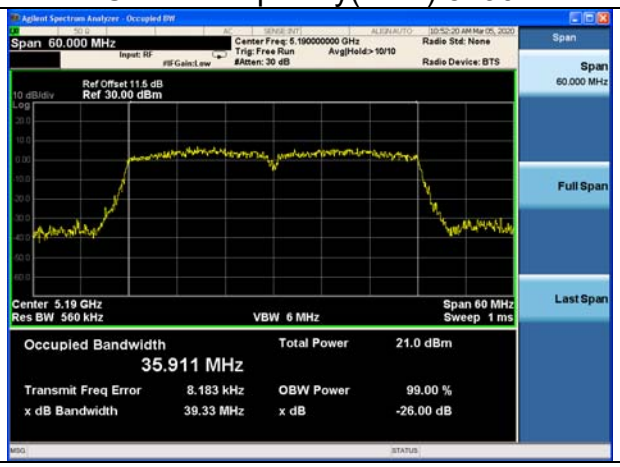
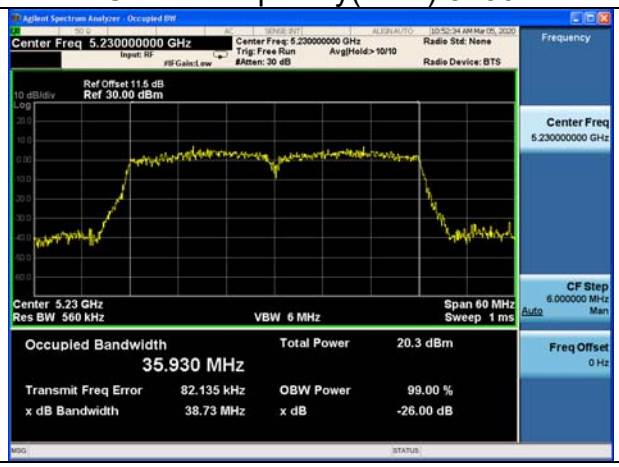
802.11n HT20
Carrier frequency(MHz):5745

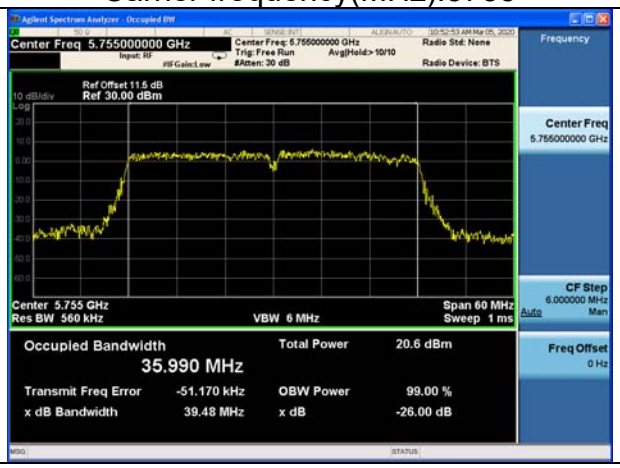
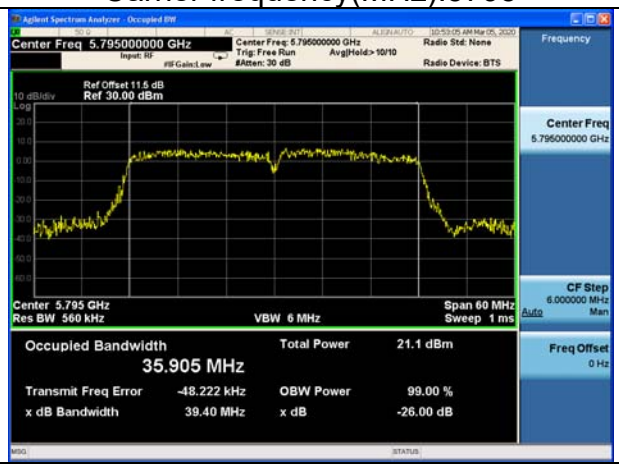


802.11n HT20 Carrier frequency(MHz):5785	802.11n HT20 Carrier frequency(MHz):5825
	

Test Mode: 802.11n HT40 (MIMO Ant0)

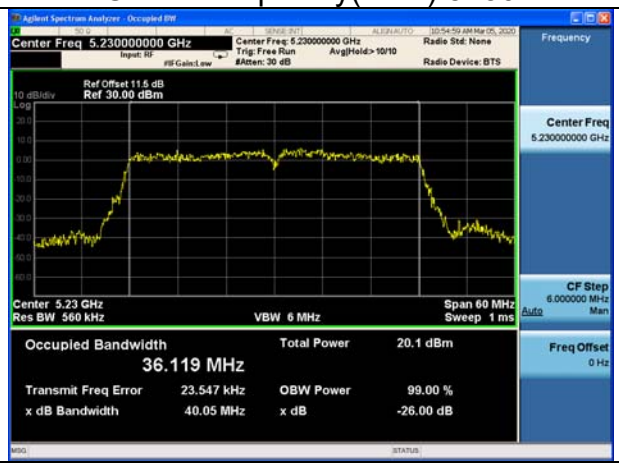
Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 26dB Bandwidth(MHz)	Conclusion
5190	35.911	39.33	Pass
5230	35.930	38.73	Pass
5755	35.990	39.48	Pass
5795	35.905	39.40	Pass

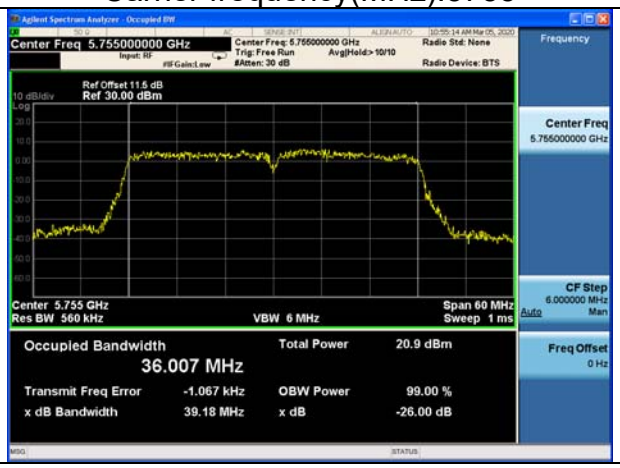
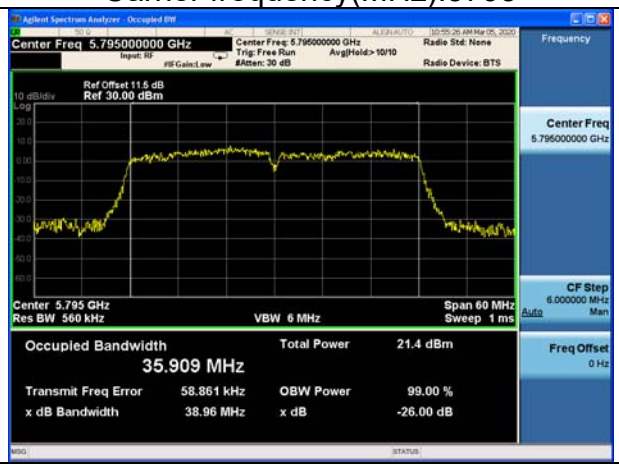
802.11n HT40 Carrier frequency(MHz):5190	802.11n HT40 Carrier frequency(MHz):5230
	

802.11n HT40 Carrier frequency(MHz):5755	802.11n HT40 Carrier frequency(MHz):5795
	

Test Mode: 802.11n HT40 (MIMO Ant1)

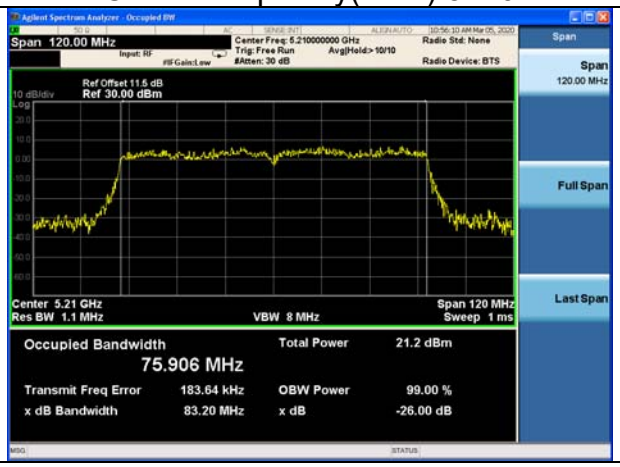
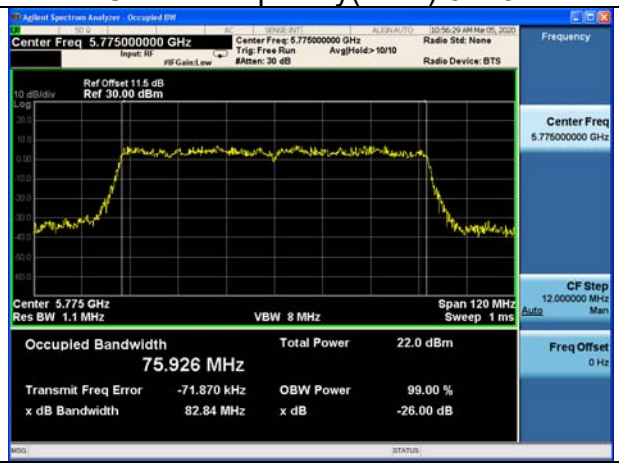
Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 26dB Bandwidth(MHz)	Conclusion
5190	35.873	38.95	Pass
5230	36.119	40.05	Pass
5755	36.007	39.18	Pass
5795	35.909	38.96	Pass

802.11n HT40 Carrier frequency(MHz):5190	802.11n HT40 Carrier frequency(MHz):5230
	

802.11n HT40 Carrier frequency(MHz):5755	802.11n HT40 Carrier frequency(MHz):5795
	

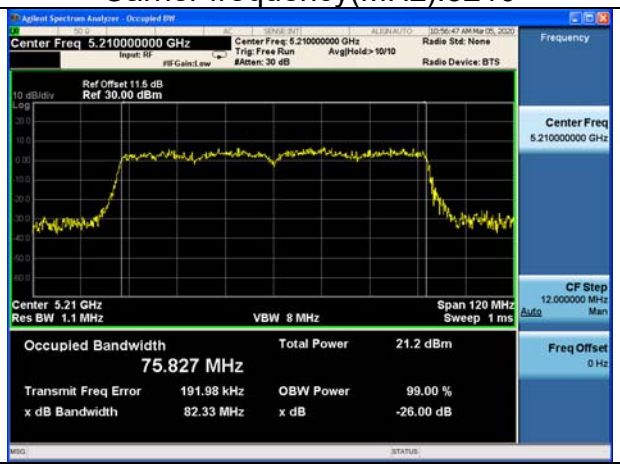
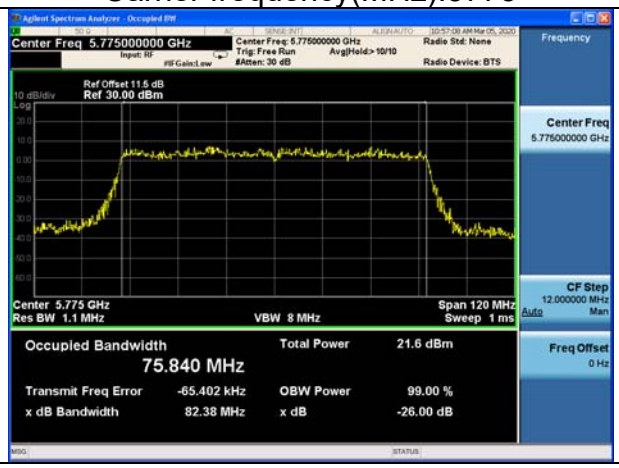
Test Mode: 802.11ac HT80 (MIMO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 26dB Bandwidth(MHz)	Conclusion
5210	75.906	83.20	Pass
5775	75.926	82.84	Pass

802.11ac HT80 Carrier frequency(MHz):5210	802.11ac HT80 Carrier frequency(MHz):5775
	

Test Mode: 802.11ac HT80 (MIMO Ant1)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 26dB Bandwidth(MHz)	Conclusion
5210	75.827	82.33	Pass
5775	75.840	82.38	Pass

802.11ac HT80 Carrier frequency(MHz):5210	802.11ac HT80 Carrier frequency(MHz):5775
	

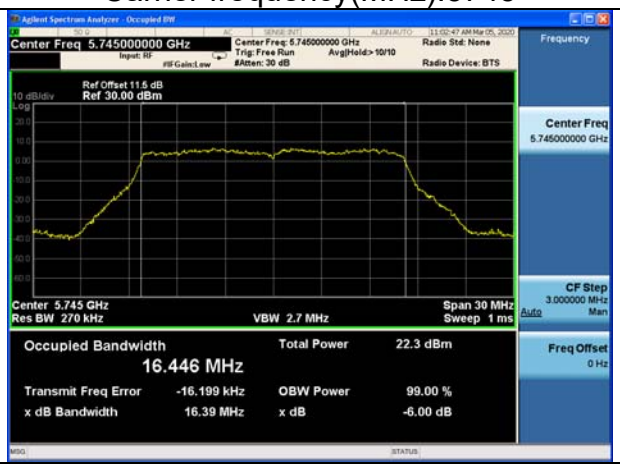
6dB Bandwidth

Offset 11.5dB = Attenuator 10dB+ Temporary antenna connector loss 0.2dB+ Cable loss 1.3dB

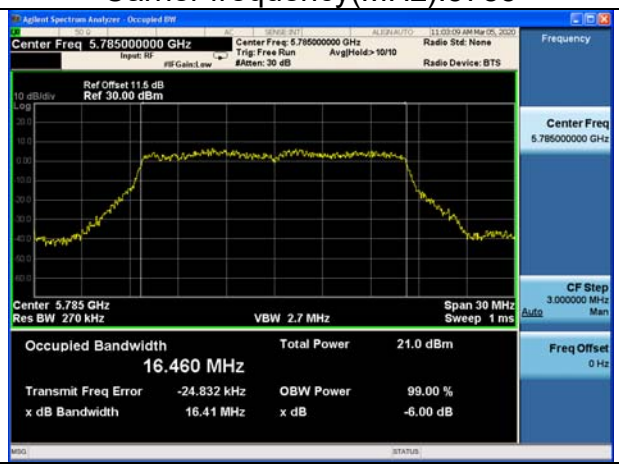
Test Mode: 802.11a (SISO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 6dB Bandwidth(MHz)	Conclusion
5745	16.446	16.39	Pass
5785	16.460	16.41	Pass
5825	16.426	16.30	Pass

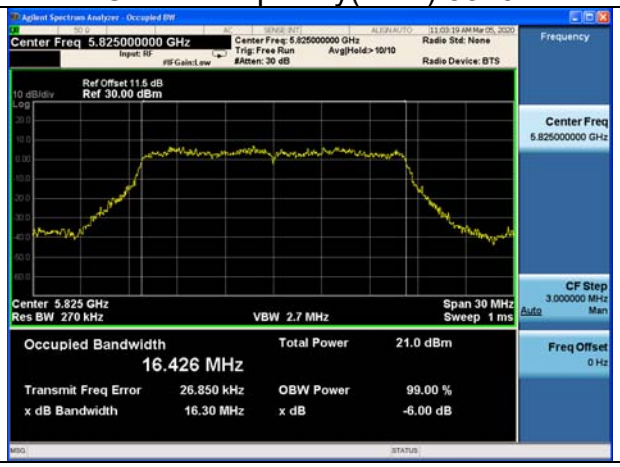
802.11a
Carrier frequency(MHz):5745



802.11a
Carrier frequency(MHz):5785



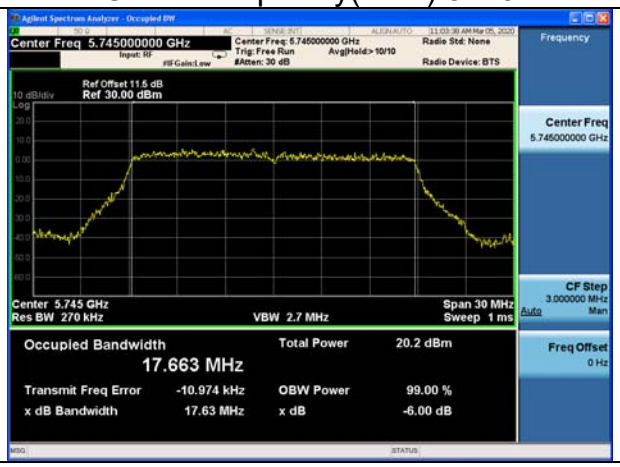
802.11a
Carrier frequency(MHz):5825



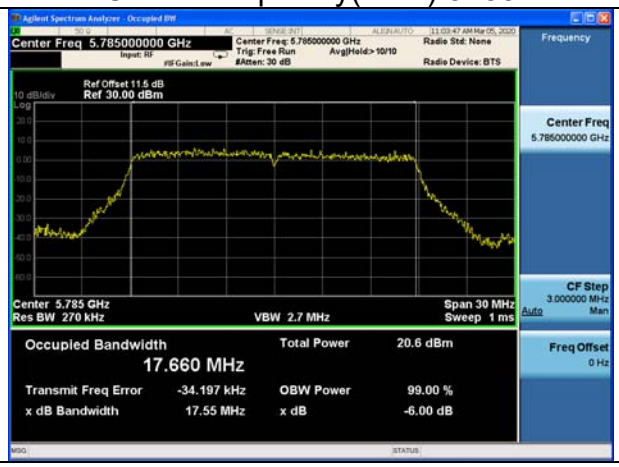
Test Mode: 802.11n HT20 (SISO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 6dB Bandwidth(MHz)	Conclusion
5745	17.663	17.63	Pass
5785	17.660	17.55	Pass
5825	17.564	17.51	Pass

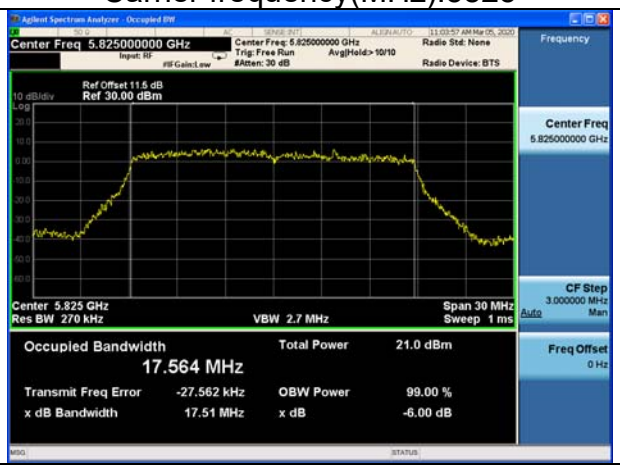
802.11n HT20
Carrier frequency(MHz):5745



802.11n HT20
Carrier frequency(MHz):5785

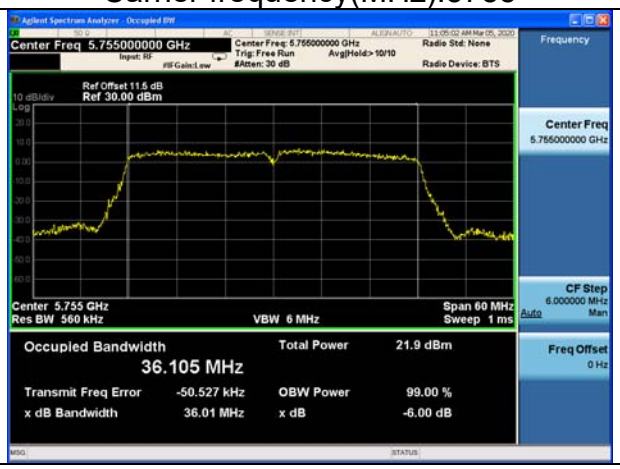
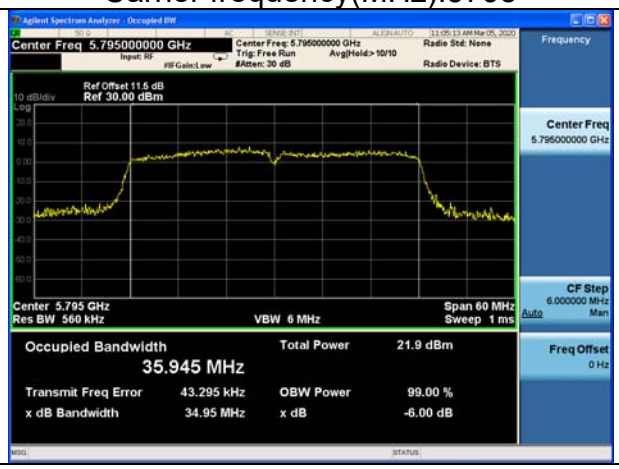


802.11n HT20
Carrier frequency(MHz):5825



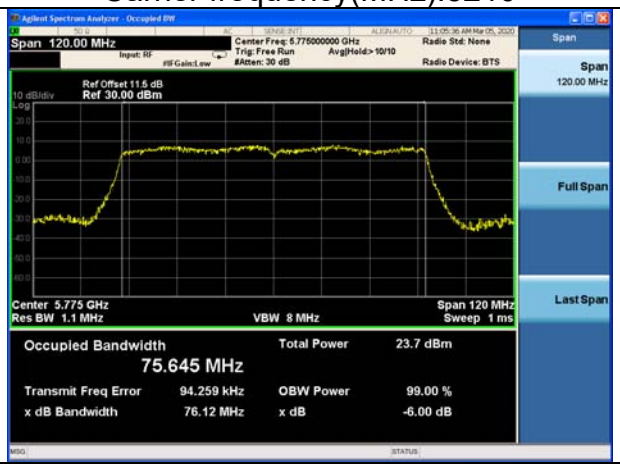
Test Mode: 802.11n HT40 (SISO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 6dB Bandwidth(MHz)	Conclusion
5755	36.105	36.01	Pass
5795	35.945	34.95	Pass

802.11n HT40 Carrier frequency(MHz):5755	802.11n HT40 Carrier frequency(MHz):5795
	

Test Mode: 802.11ac HT80 (SISO Ant0)

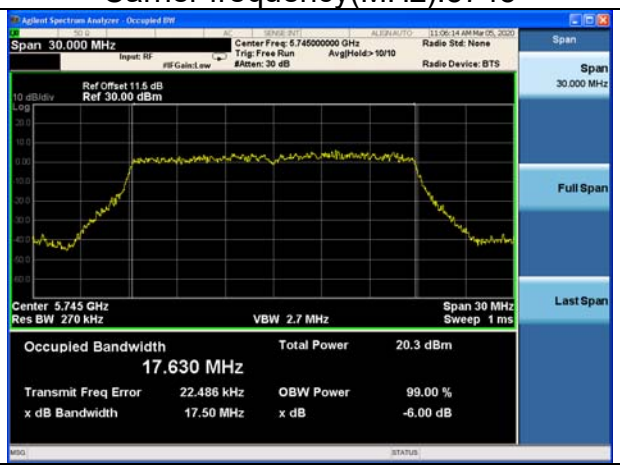
Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 6dB Bandwidth(MHz)	Conclusion
5775	75.645	76.12	Pass

802.11ac HT80 Carrier frequency(MHz):5210	
	

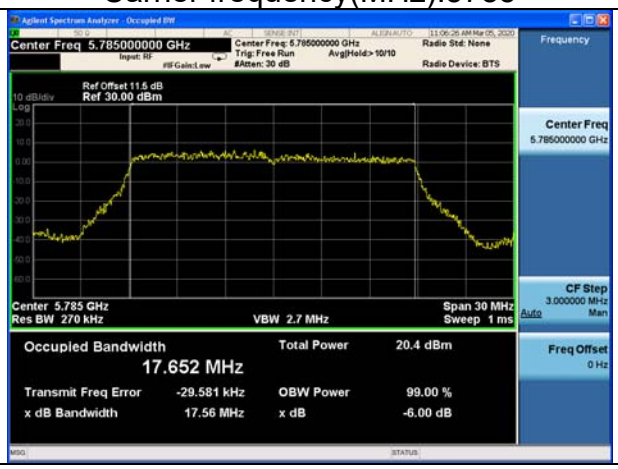
Test Mode: 802.11n HT20 (MIMO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 6dB Bandwidth(MHz)	Conclusion
5745	17.630	17.50	Pass
5785	17.652	17.56	Pass
5825	17.598	17.10	Pass

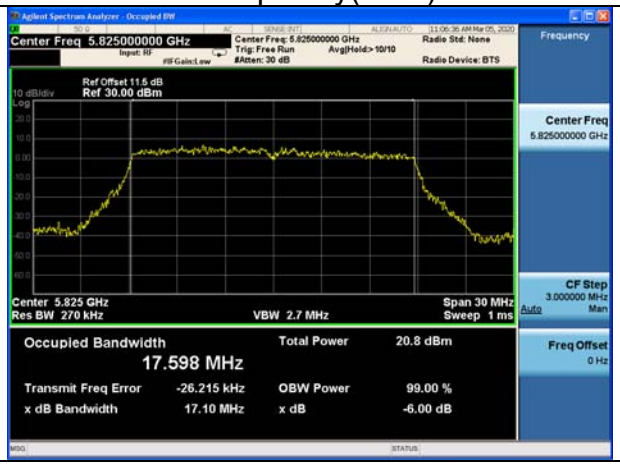
802.11n HT20
Carrier frequency(MHz):5745



802.11n HT20
Carrier frequency(MHz):5785



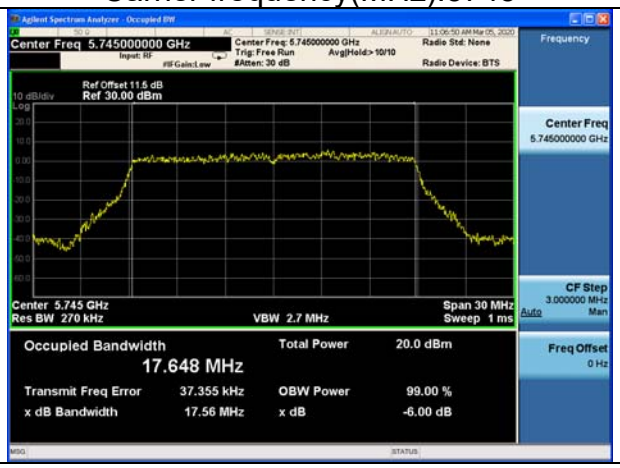
802.11n HT20
Carrier frequency(MHz):5825



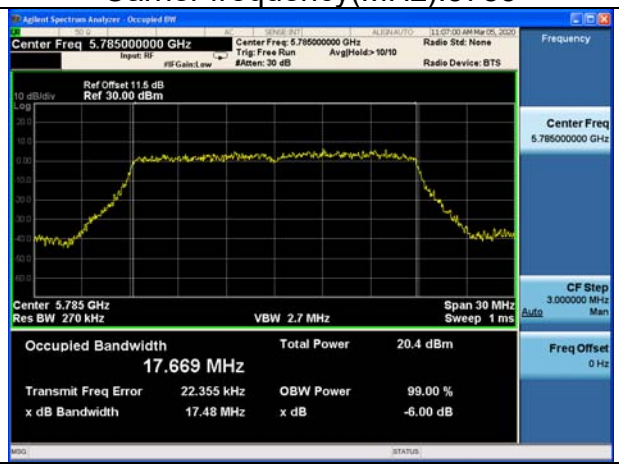
Test Mode: 802.11n HT20 (MIMO Ant1)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 6dB Bandwidth(MHz)	Conclusion
5745	17.648	17.56	Pass
5785	17.669	17.48	Pass
5825	17.684	17.57	Pass

802.11n HT20
Carrier frequency(MHz):5745



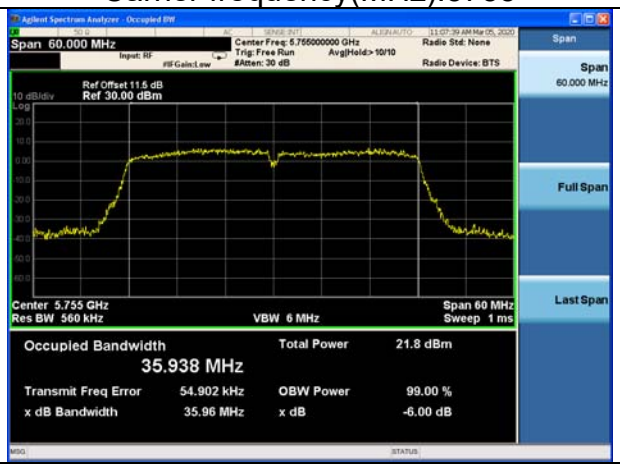
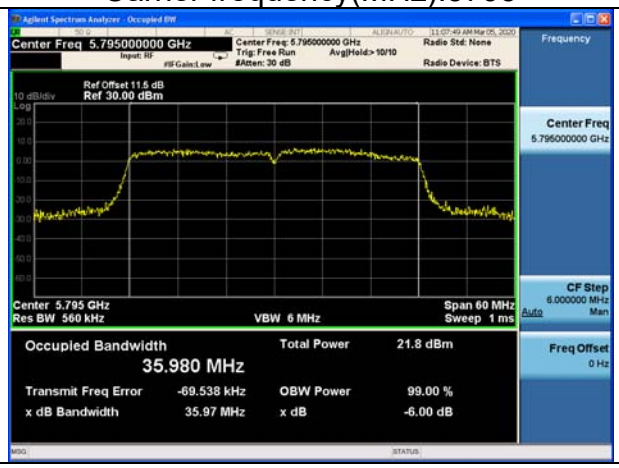
802.11n HT20
Carrier frequency(MHz):5785



802.11n HT20
Carrier frequency(MHz):5825

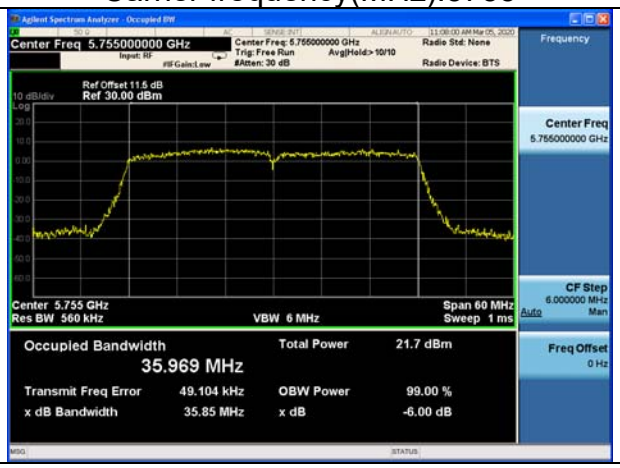
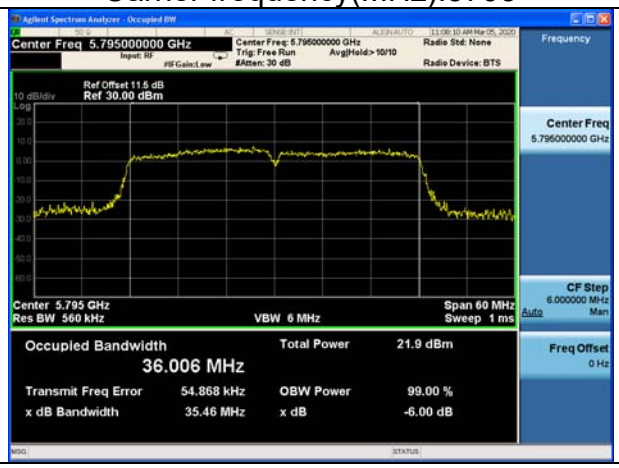
Test Mode: 802.11n HT40 (MIMO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 6dB Bandwidth(MHz)	Conclusion
5755	35.938	35.96	Pass
5795	35.980	35.97	Pass

802.11n HT40 Carrier frequency(MHz):5755	802.11n HT40 Carrier frequency(MHz):5795
	

Test Mode: 802.11n HT40 (MIMO Ant1)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 6dB Bandwidth(MHz)	Conclusion
5755	35.969	35.85	Pass
5795	36.006	35.46	Pass

802.11n HT40 Carrier frequency(MHz):5755	802.11n HT40 Carrier frequency(MHz):5795
	

Test Mode: 802.11ac HT80 (MIMO Ant0)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 6dB Bandwidth(MHz)	Conclusion
5775	75.822	76.15	Pass

802.11ac HT80 Carrier frequency(MHz):5775	
	

Test Mode: 802.11ac HT80 (MIMO Ant1)

Carrier frequency (MHz)	99% Bandwidth(MHz)	Minimum 6dB Bandwidth(MHz)	Conclusion
5775	75.783	76.25	Pass

802.11ac HT80 Carrier frequency(MHz):5775	
	

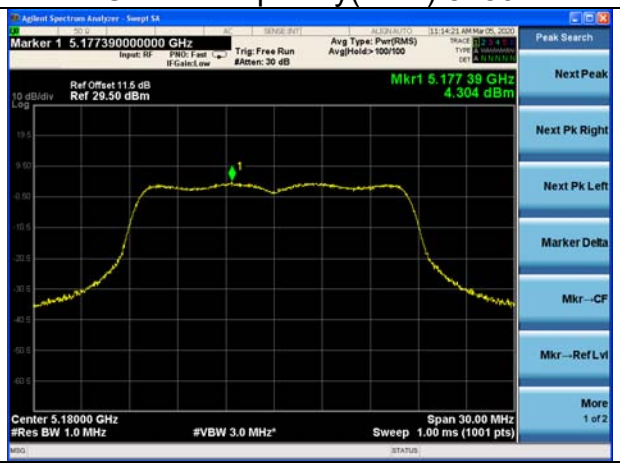
Transmitter Power Spectral Density

Offset 11.5dB = Attenuator 10dB+ Temporary antenna connector loss 0.2dB+ Cable loss 1.3dB

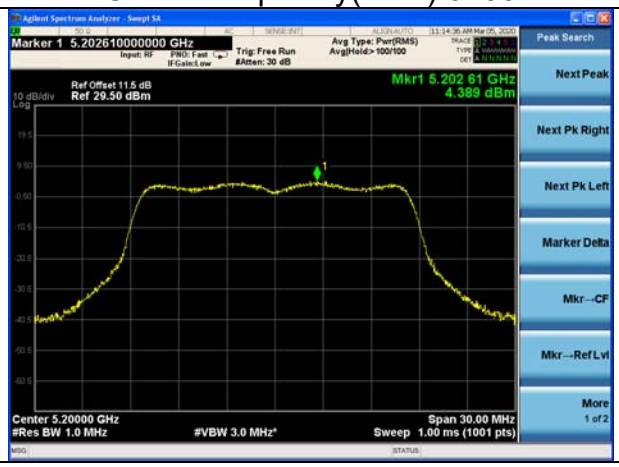
Test Mode: 802.11a (SISO Ant0)

Carrier frequency (MHz)	Duty Cycle Correction Factor(dB)	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Conclusion
5180	0.056	4.360	17.0 dBm/MHz	Pass
5200	0.056	4.445	17.0 dBm/MHz	Pass
5240	0.056	4.703	17.0 dBm/MHz	Pass
5745	0.056	1.409	30.0 dBm/500kHz	Pass
5785	0.056	1.424	30.0 dBm/500kHz	Pass
5825	0.056	1.812	30.0 dBm/500kHz	Pass

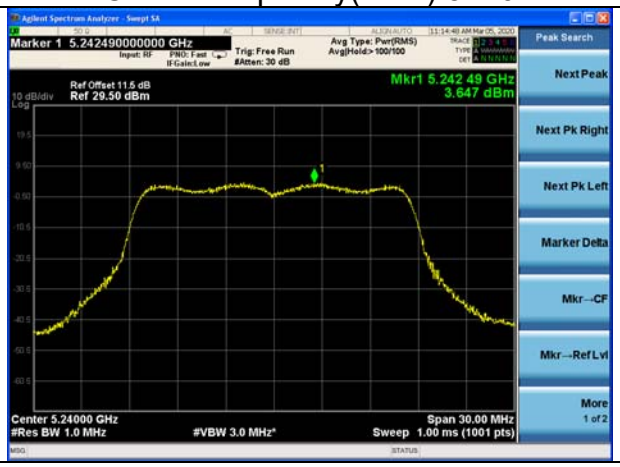
802.11a
Carrier frequency(MHz):5180



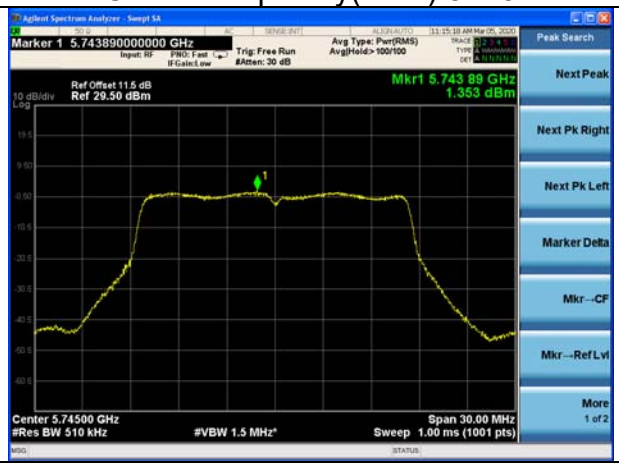
802.11a
Carrier frequency(MHz):5200

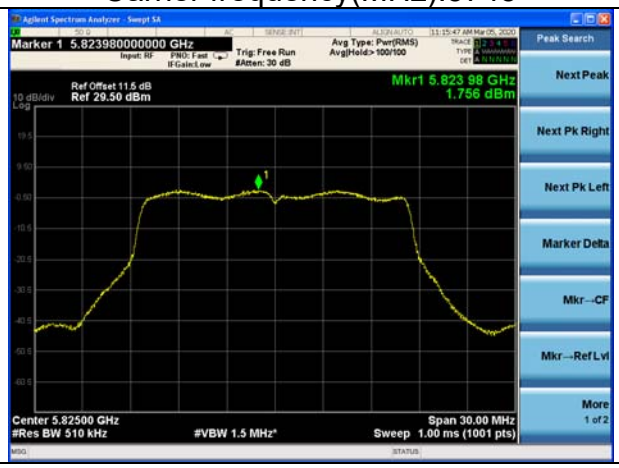


802.11a
Carrier frequency(MHz):5240



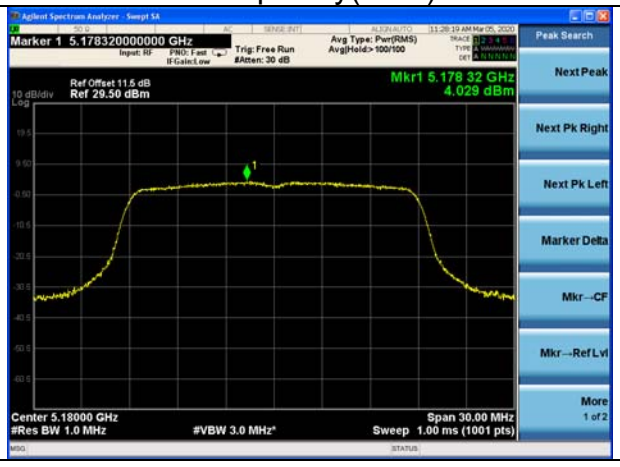
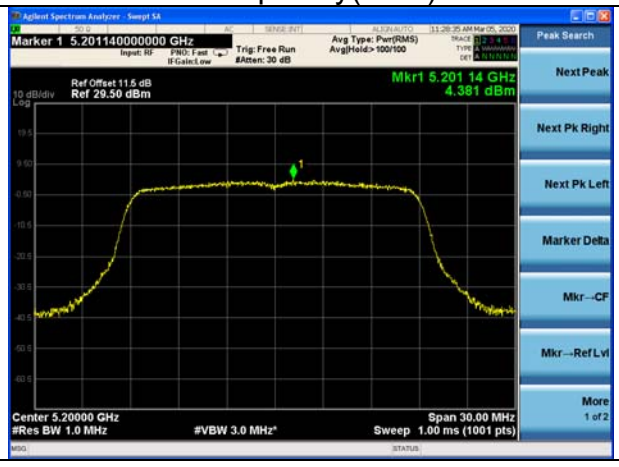
802.11a
Carrier frequency(MHz):5745

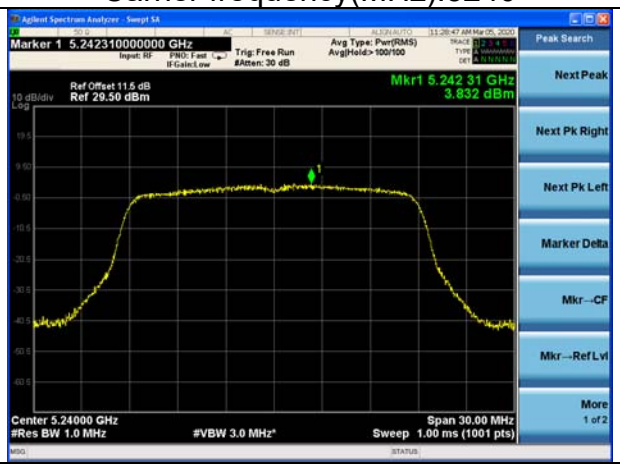
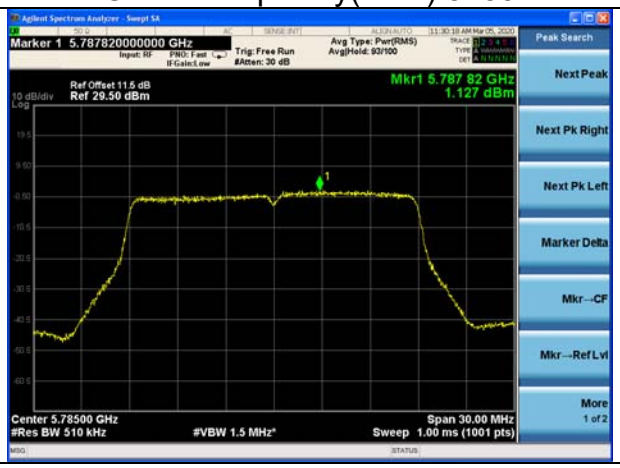
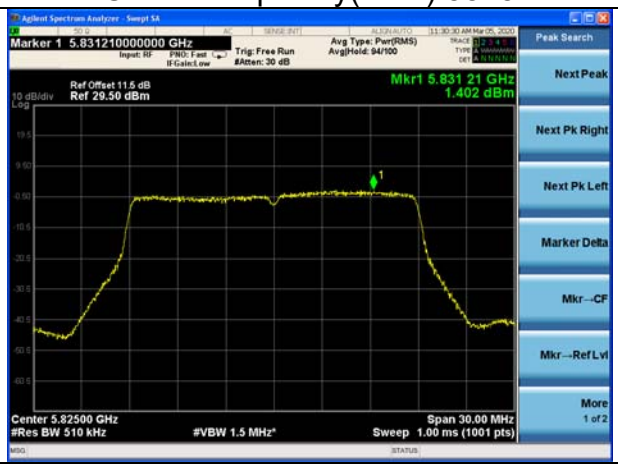


802.11a Carrier frequency(MHz):5785	802.11a Carrier frequency(MHz):5745
	

Test Mode: 802.11n HT20 (SISO Ant0)

Carrier frequency (MHz)	Duty Cycle Correction Factor(dB)	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Conclusion
5180	0.091	4.120	17.0 dBm/MHz	Pass
5200	0.091	4.472	17.0 dBm/MHz	Pass
5240	0.091	3.923	17.0 dBm/MHz	Pass
5745	0.091	1.009	30.0 dBm/500kHz	Pass
5785	0.091	1.218	30.0 dBm/500kHz	Pass
5825	0.091	1.493	30.0 dBm/500kHz	Pass

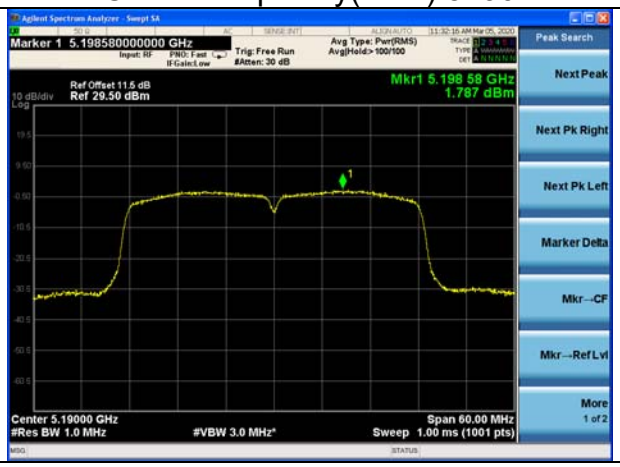
802.11n HT20 Carrier frequency(MHz):5180	802.11n HT20 Carrier frequency(MHz):5200
	

802.11n HT20 Carrier frequency(MHz):5240	802.11n HT20 Carrier frequency(MHz):5745
	
802.11n HT20 Carrier frequency(MHz):5785	802.11n HT20 Carrier frequency(MHz):5825
	

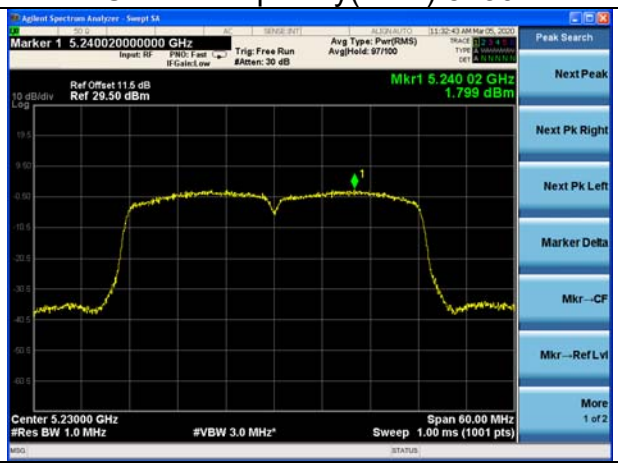
Test Mode: 802.11n HT40 (SISO Ant0)

Carrier frequency (MHz)	Duty Cycle Correction Factor(dB)	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Conclusion
5190	0.180	1.967	17.0 dBm/MHz	Pass
5230	0.180	1.979	17.0 dBm/MHz	Pass
5755	0.180	-0.783	30.0 dBm/500kHz	Pass
5795	0.180	-1.182	30.0 dBm/500kHz	Pass

802.11n HT40
Carrier frequency(MHz):5190

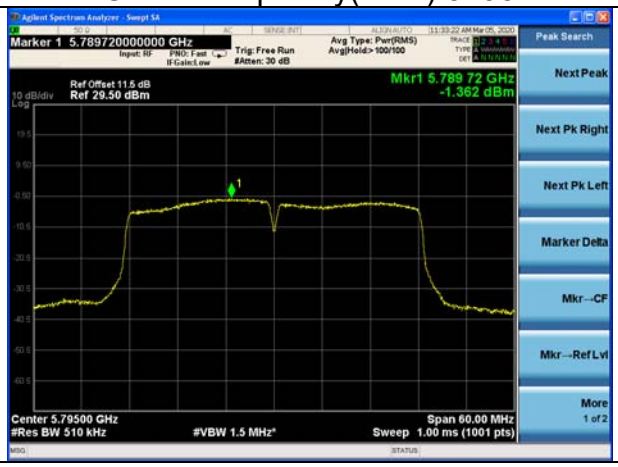


802.11n HT40
Carrier frequency(MHz):5230



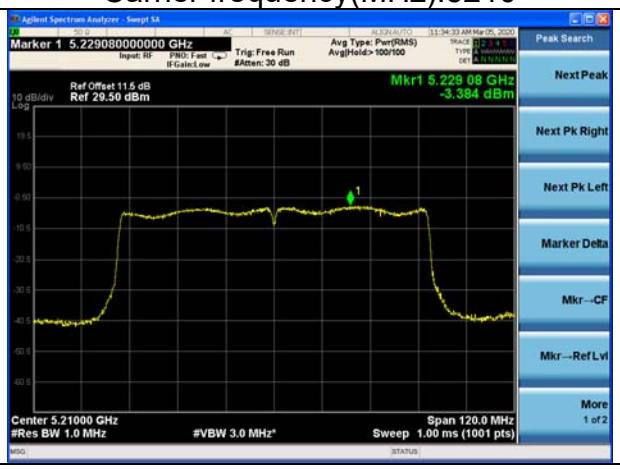
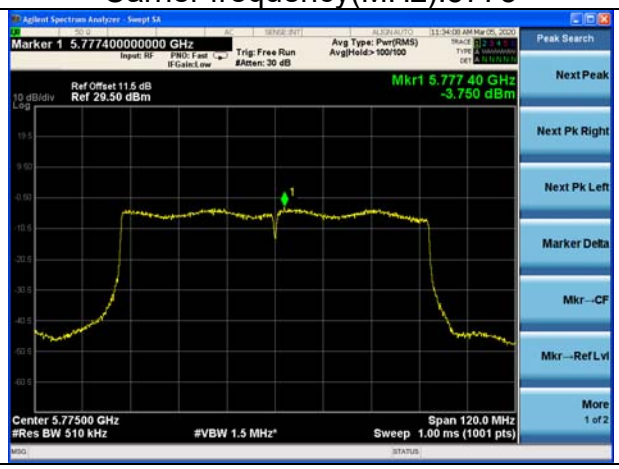
802.11n HT40
Carrier frequency(MHz):5755

802.11n HT40
Carrier frequency(MHz):5795



Test Mode: 802.11ac HT80 (SISO Ant0)

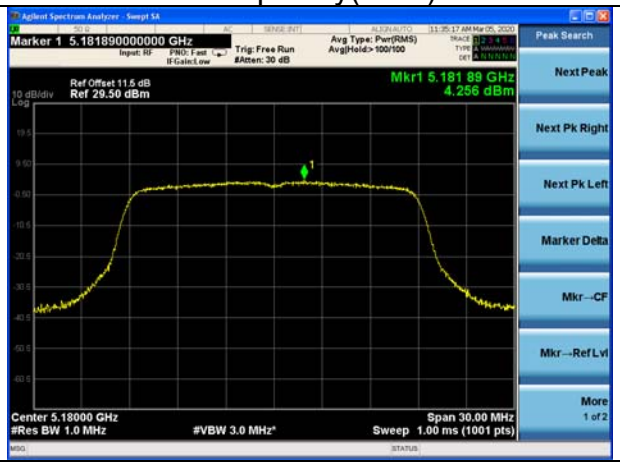
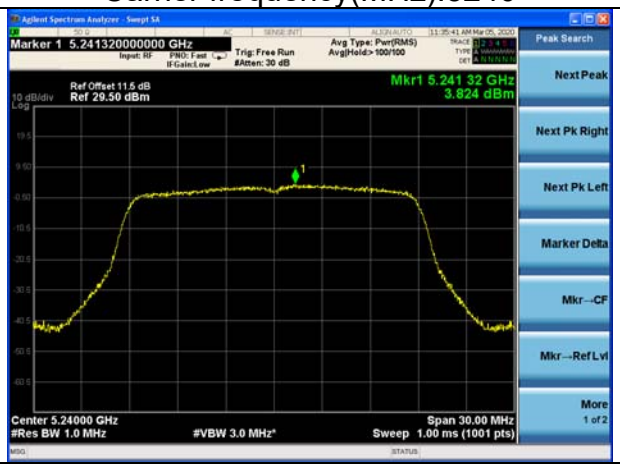
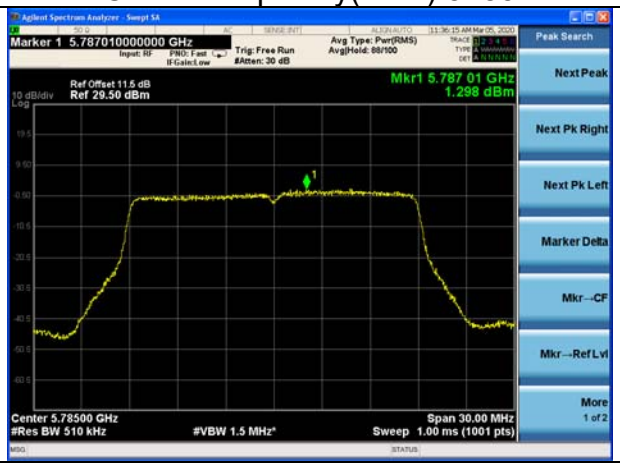
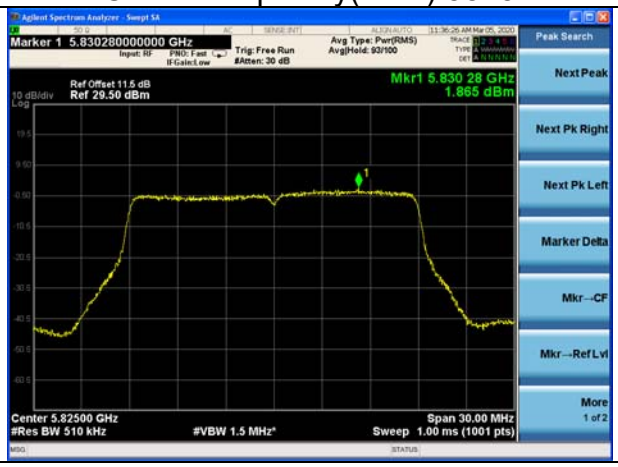
Carrier frequency (MHz)	Duty Cycle Correction Factor(dB)	Power Spectral Density (dBm/MHz)	Limit	Conclusion
5210	0.345	-3.039	17.0 dBm/MHz	Pass
5775	0.345	-3.405	30.0 dBm/500kHz	Pass

802.11ac HT80 Carrier frequency(MHz):5210	802.11ac HT80 Carrier frequency(MHz):5775
	

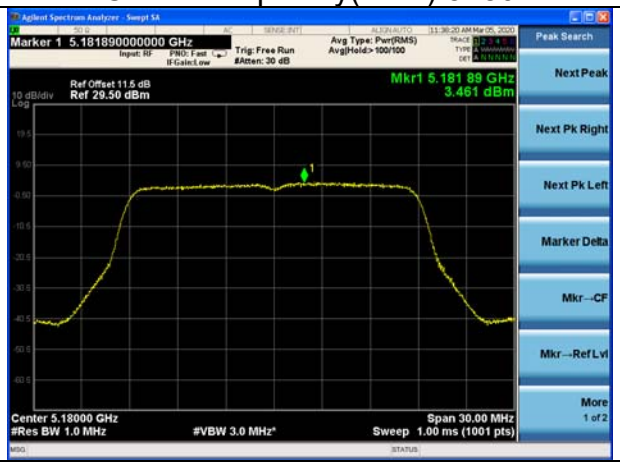
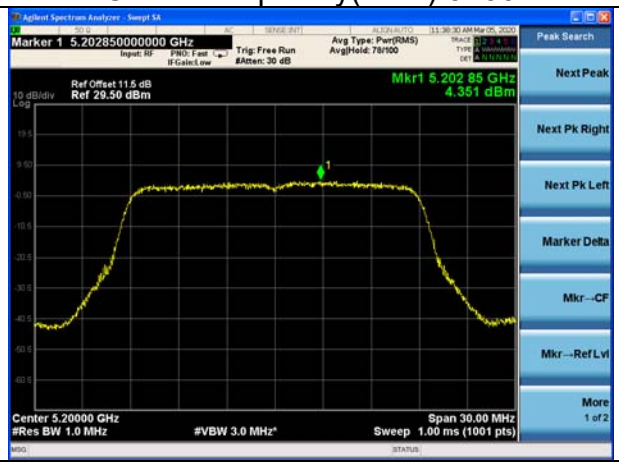
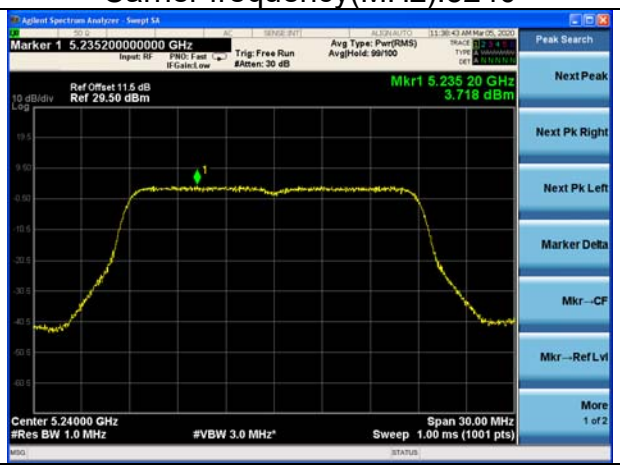
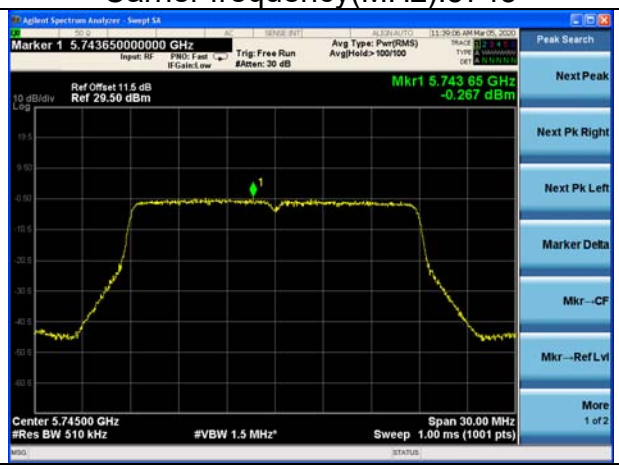
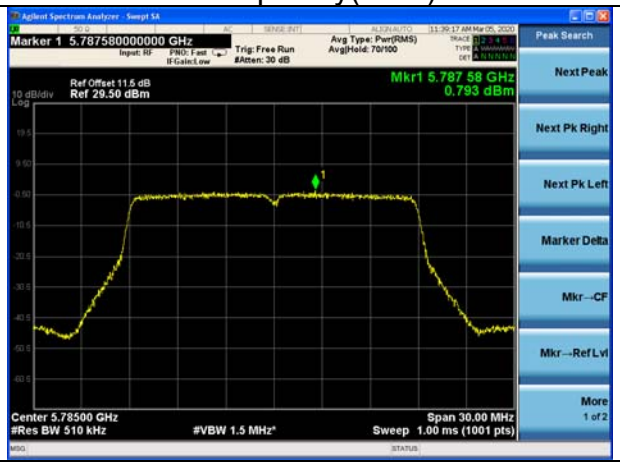
Test Mode: 802.11n HT20 (MIMO Ant0+Ant1)

Carrier frequency (MHz)	Duty Cycle Correction Factor(dB)	Ant0 Meas PSD (dBm/MHz)	Ant1 Meas PSD (dBm/MHz)	Total Corr'd PSD (dBm/MHz)	Limit (dBm/MHz)	Conclusion
5180	0.091	4.347	3.552	6.978	17.0 dBm/MHz	Pass
5200	0.091	3.303	4.442	6.920	17.0 dBm/MHz	Pass
5240	0.091	3.915	3.872	6.904	17.0 dBm/MHz	Pass
5745	0.091	1.111	-0.176	3.525	30.0 dBm/500kHz	Pass
5785	0.091	1.389	0.884	4.154	30.0 dBm/500kHz	Pass
5825	0.091	1.956	1.043	4.534	30.0 dBm/500kHz	Pass

802.11n HT20 (MIMO Ant0)

802.11n HT20 Carrier frequency(MHz):5180	802.11n HT20 Carrier frequency(MHz):5200
	
802.11n HT20 Carrier frequency(MHz):5240	802.11n HT20 Carrier frequency(MHz):5745
	
802.11n HT20 Carrier frequency(MHz):5785	802.11n HT20 Carrier frequency(MHz):5825
	

802.11n HT20 (MIMO Ant1)

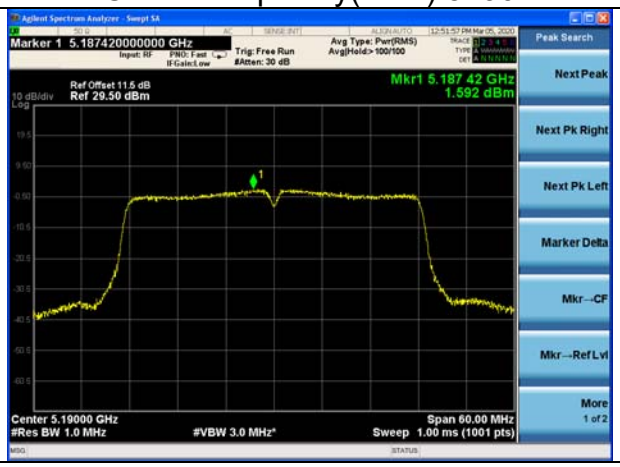
802.11n HT20 Carrier frequency(MHz):5180	802.11n HT20 Carrier frequency(MHz):5200
	
802.11n HT20 Carrier frequency(MHz):5240	802.11n HT20 Carrier frequency(MHz):5745
	
802.11n HT20 Carrier frequency(MHz):5785	802.11n HT20 Carrier frequency(MHz):5825
	

Test Mode: 802.11n HT40 (MIMO Ant0+Ant1)

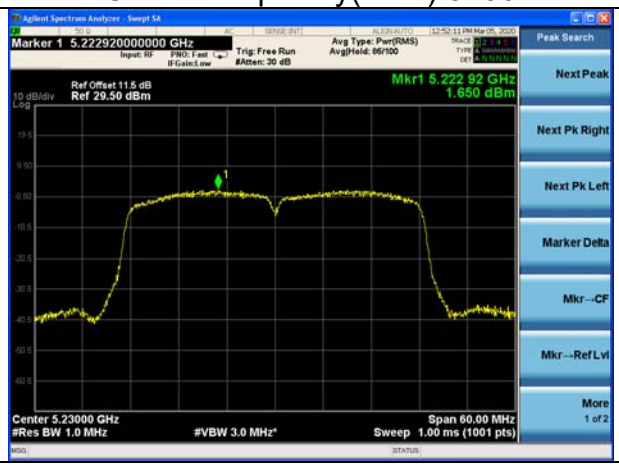
Carrier frequency (MHz)	Duty Cycle Correction Factor(dB)	Ant0 Meas PSD (dBm/MHz)	Ant1 Meas PSD (dBm/MHz)	Total Corr'd PSD (dBm/MHz)	Limit (dBm/MHz)	Conclusion
5190	0.180	1.772	2.477	5.149	17.0 dBm/MHz	Pass
5230	0.180	1.830	2.211	5.035	17.0 dBm/MHz	Pass
5755	0.180	-0.778	-1.835	1.736	30.0 dBm/500kHz	Pass
5795	0.180	-0.251	-1.208	2.307	30.0 dBm/500kHz	Pass

802.11n HT40 (MIMO Ant0)

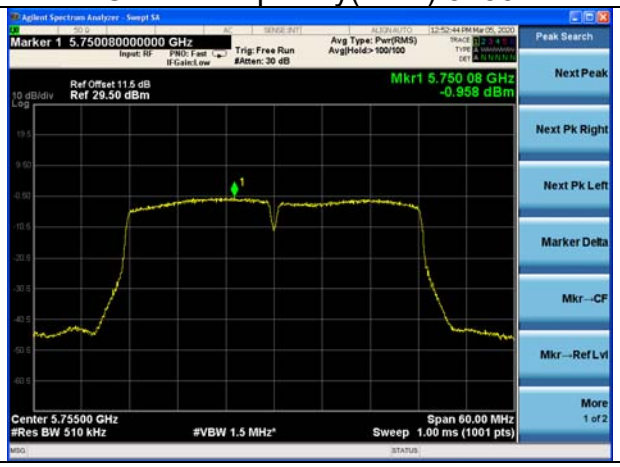
802.11n HT40
Carrier frequency(MHz):5190



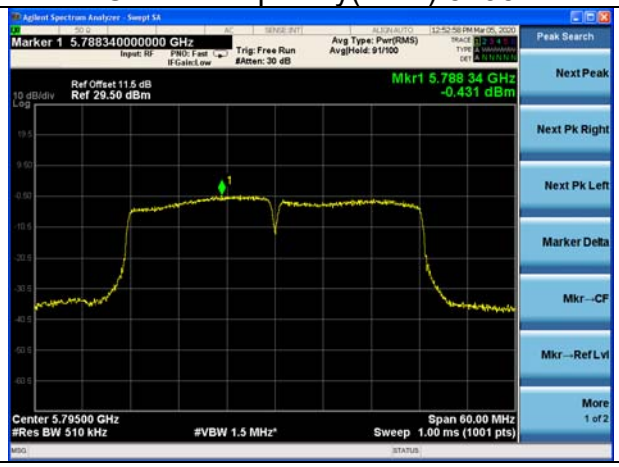
802.11n HT40
Carrier frequency(MHz):5230



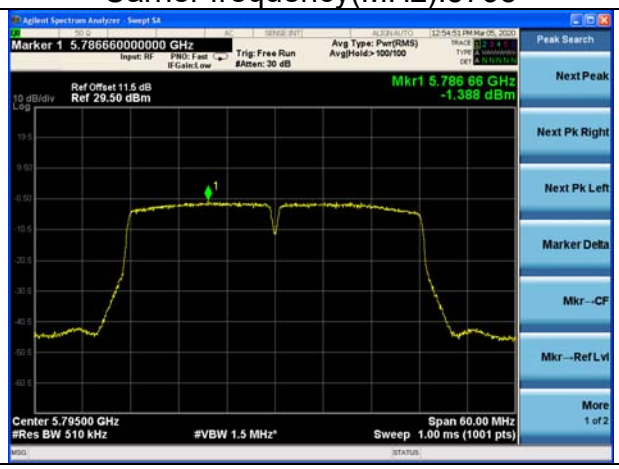
802.11n HT40
Carrier frequency(MHz):5755



802.11n HT40
Carrier frequency(MHz):5795



802.11n HT40 (MIMO Ant1)

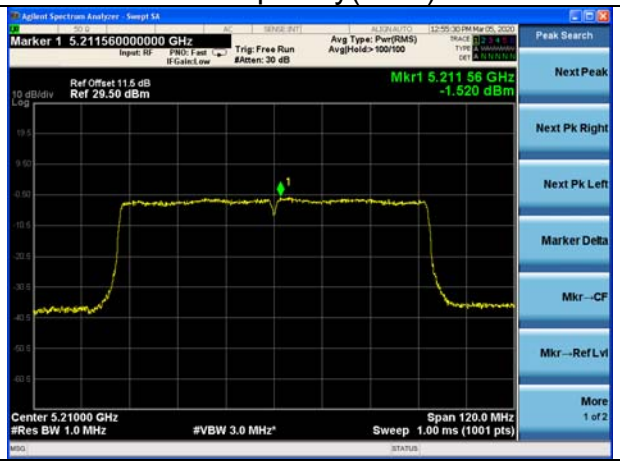
802.11n HT40 Carrier frequency(MHz):5190	802.11n HT40 Carrier frequency(MHz):5230
	
802.11n HT40 Carrier frequency(MHz):5755	802.11n HT40 Carrier frequency(MHz):5795
	

Test Mode: 802.11ac HT80 (MIMO Ant0+Ant1)

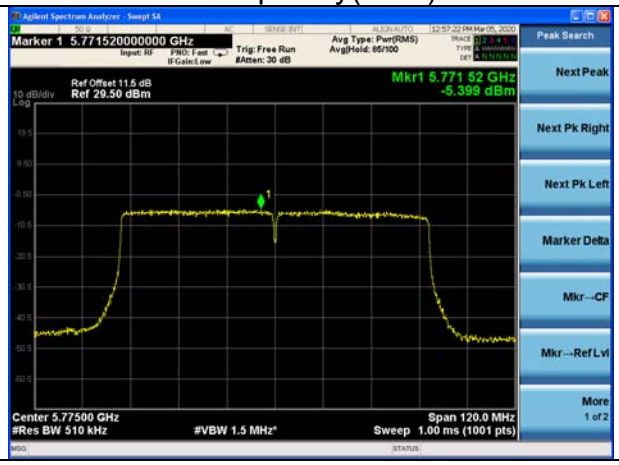
Carrier frequency (MHz)	Duty Cycle Correction Factor(dB)	Ant1 Meas PSD (dBm/MHz)	Ant2 Meas PSD (dBm/MHz)	Total Corr'd PSD (dBm/MHz)	Limit (dBm/MHz)	Conclusion
5210	0.345	-1.175	-0.695	2.082	11.0 dBm/MHz	Pass
5775	0.345	-5.054	-5.116	-2.075	30.0 dBm/500kHz	Pass

802.11ac VHT80 (MIMO Ant0)

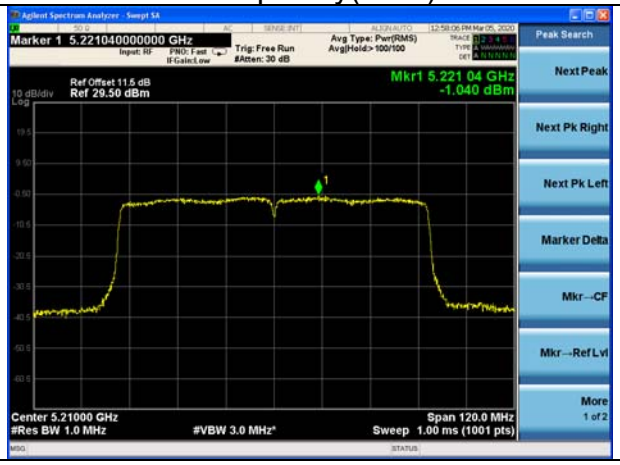
802.11ac HT80
Carrier frequency(MHz):5210



802.11ac HT80
Carrier frequency(MHz):5210

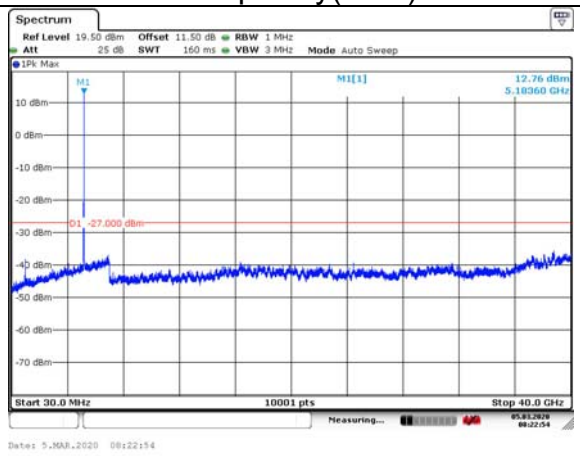
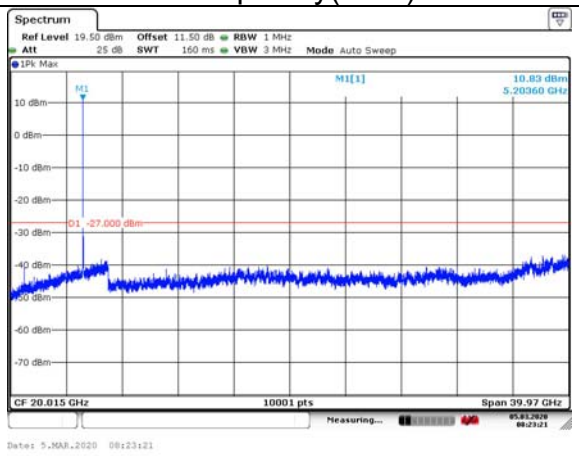
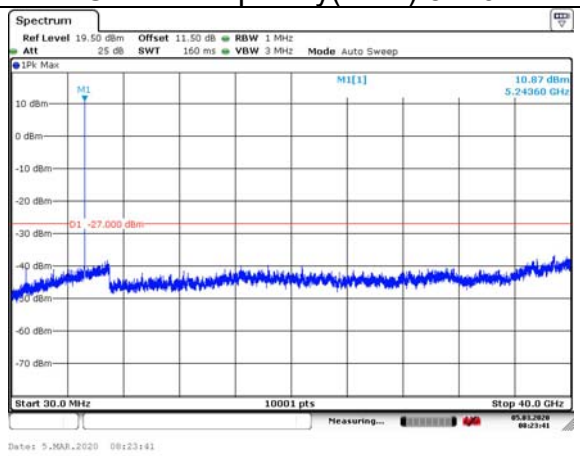
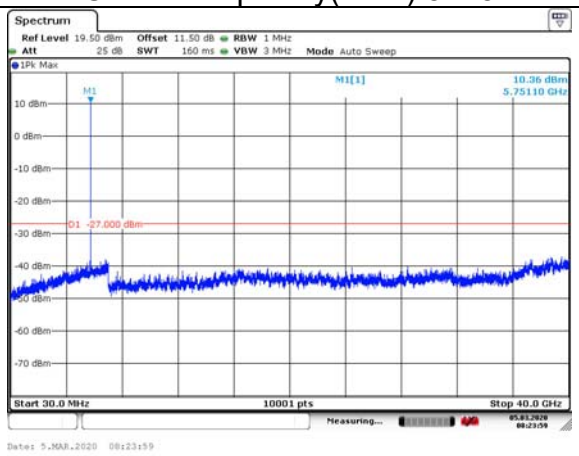
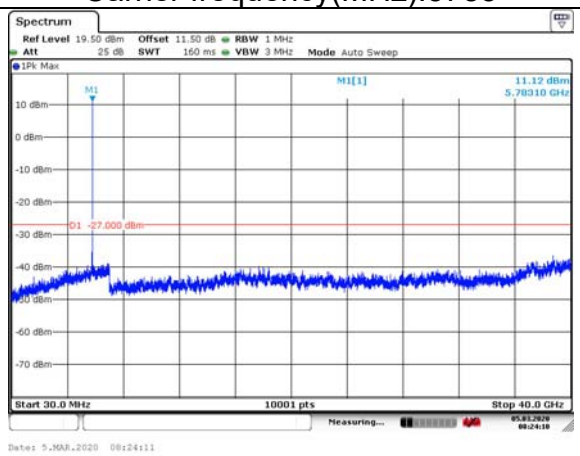
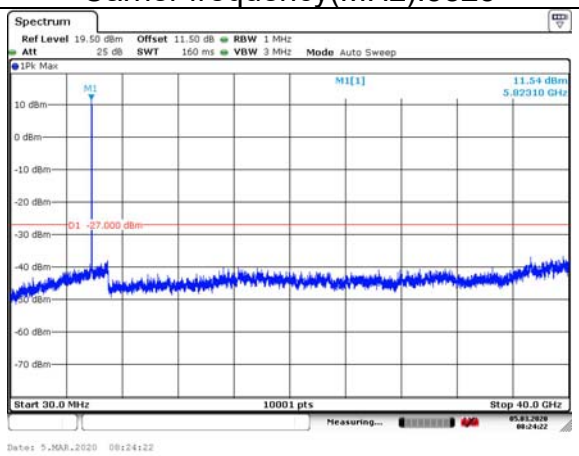


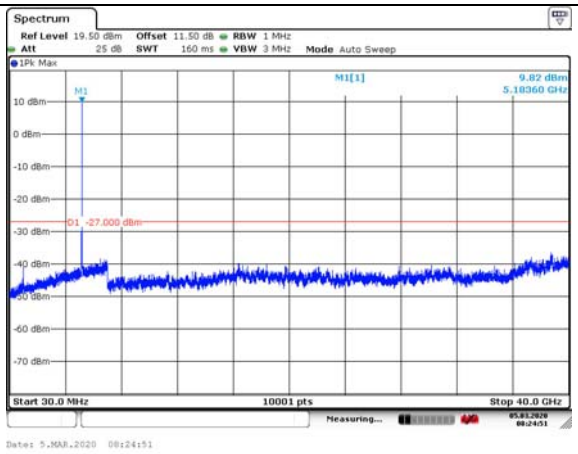
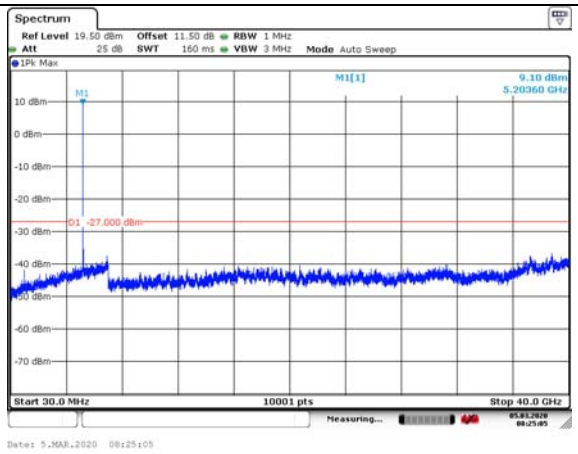
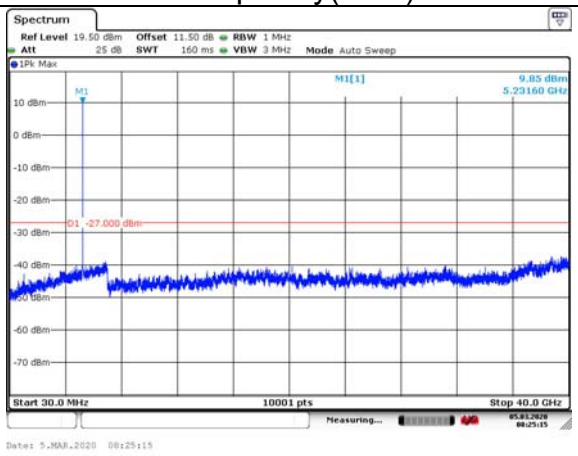
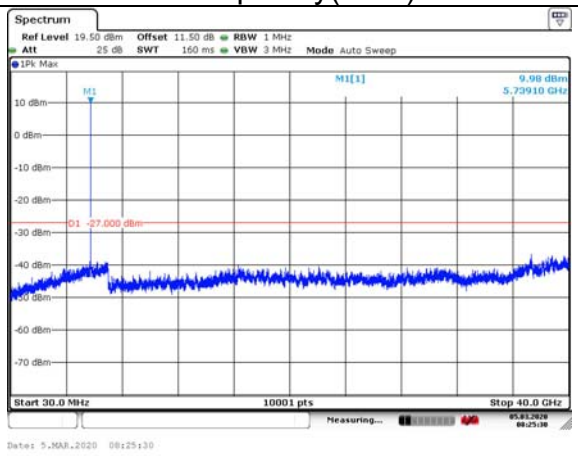
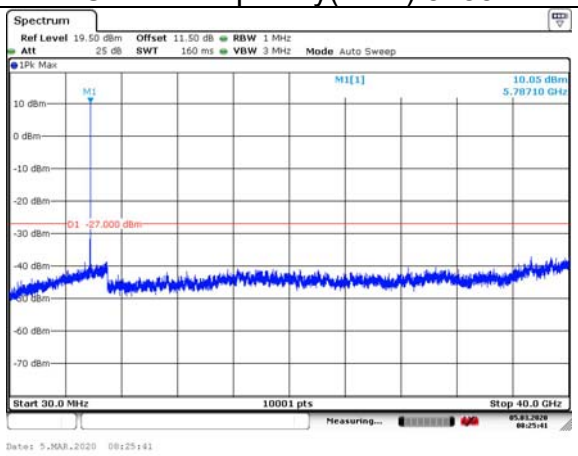
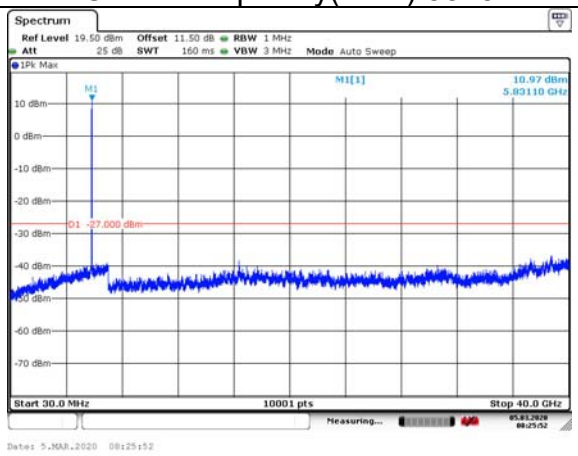
802.11ac HT80
Carrier frequency(MHz):5775

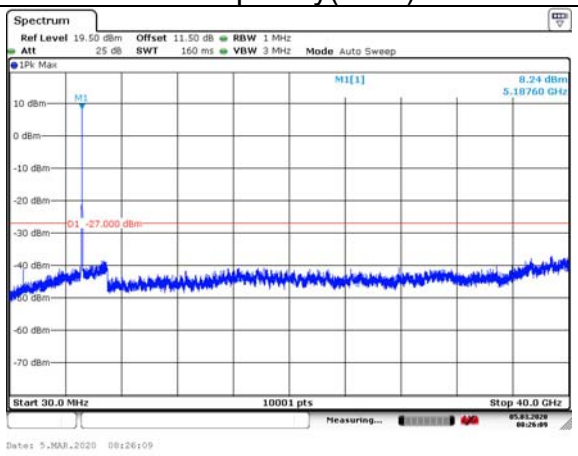
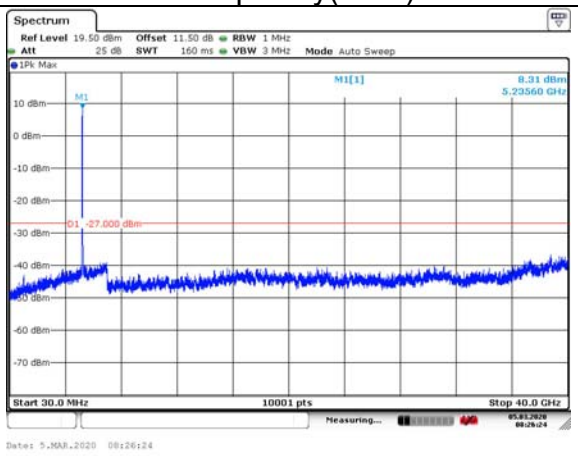


802.11ac HT80
Carrier frequency(MHz):5775

Unwanted Conducted Emission Measurement

802.11a (SISO Ant0) Carrier frequency(MHz):5180	802.11a (SISO Ant0) Carrier frequency(MHz):5200
	
802.11a (SISO Ant0) Carrier frequency(MHz):5240	802.11a (SISO Ant0) Carrier frequency(MHz):5745
	
802.11a (SISO Ant0) Carrier frequency(MHz):5785	802.11a (SISO Ant0) Carrier frequency(MHz):5825
	

802.11n HT20 (SISO Ant0) Carrier frequency(MHz):5180	802.11n HT20 (SISO Ant0) Carrier frequency(MHz):5200
	
802.11n HT20 (SISO Ant0) Carrier frequency(MHz):5240	802.11n HT20 (SISO Ant0) Carrier frequency(MHz):5745
	
802.11n HT20 (SISO Ant0) Carrier frequency(MHz):5785	802.11n HT20 (SISO Ant0) Carrier frequency(MHz):5825
	

802.11n HT40 (SISO Ant0) Carrier frequency(MHz):5190	802.11n HT40 (SISO Ant0) Carrier frequency(MHz):5230
	
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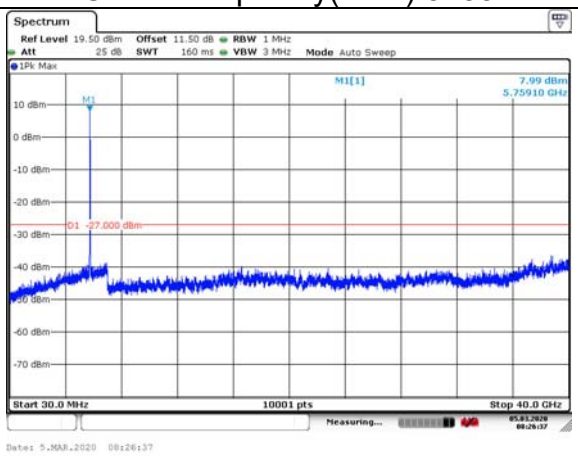	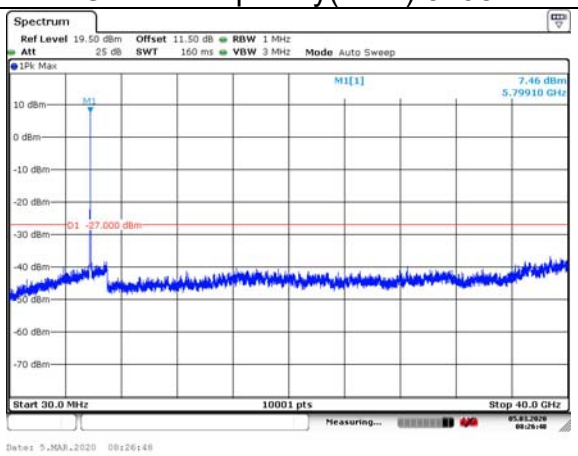
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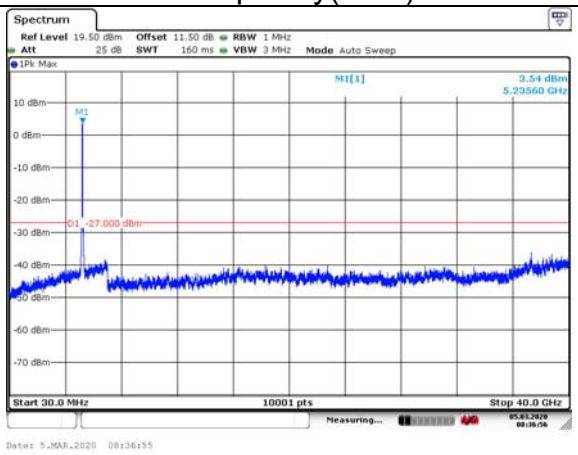	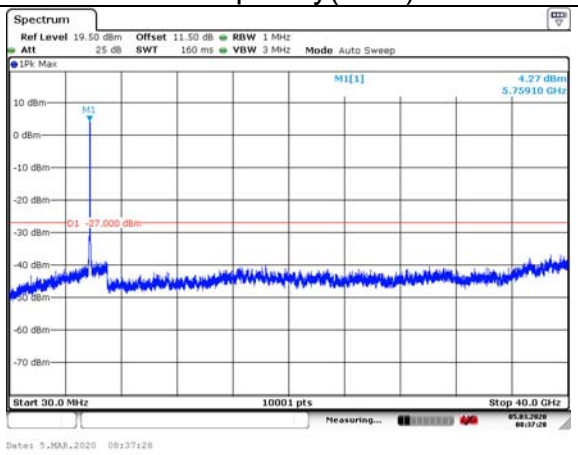

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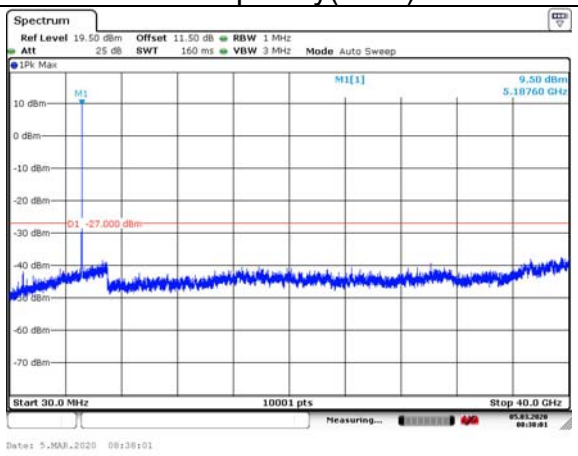	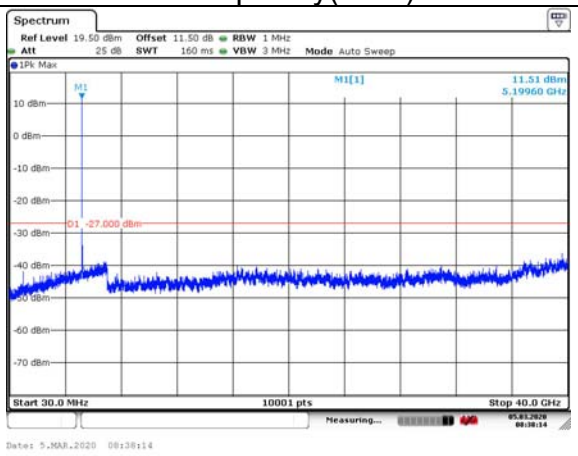
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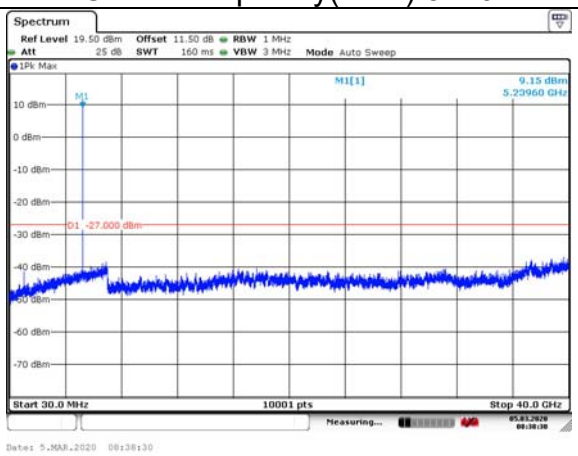
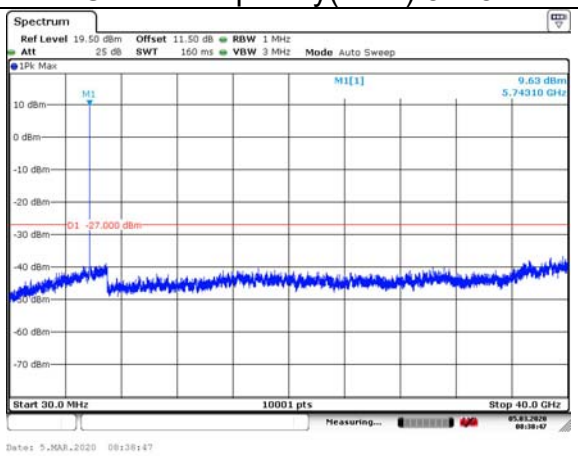
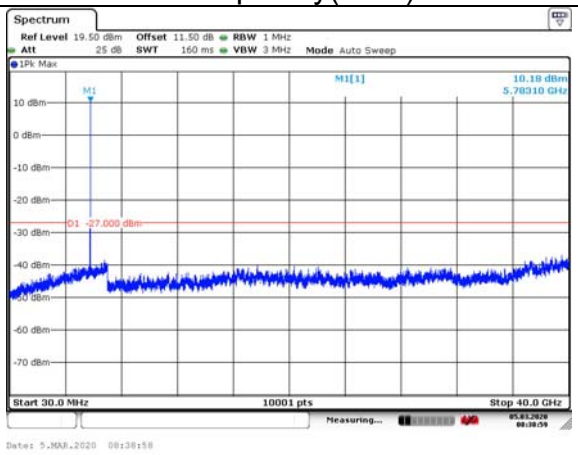
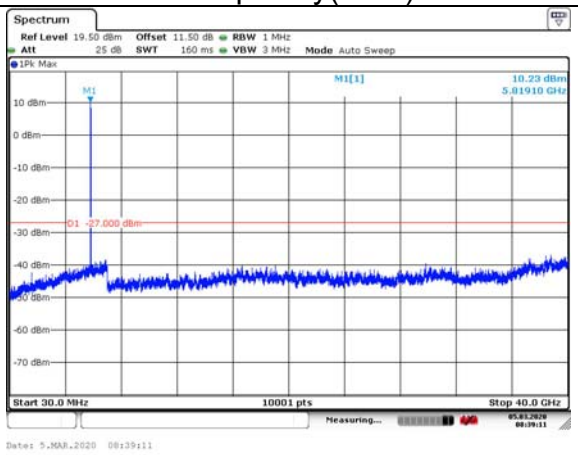
	
802.11n HT20 (MIMO Ant0) Carrier frequency(MHz):5785	802.11n HT20 (MIMO Ant0) Carrier frequency(MHz):5825
	

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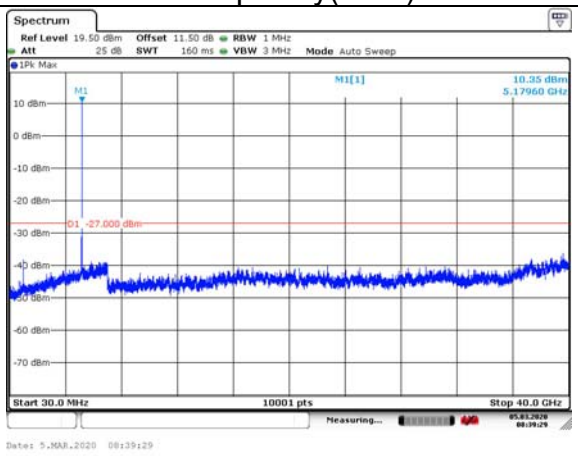	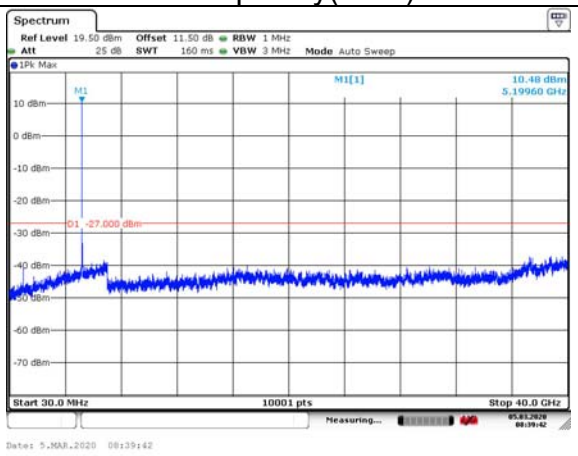
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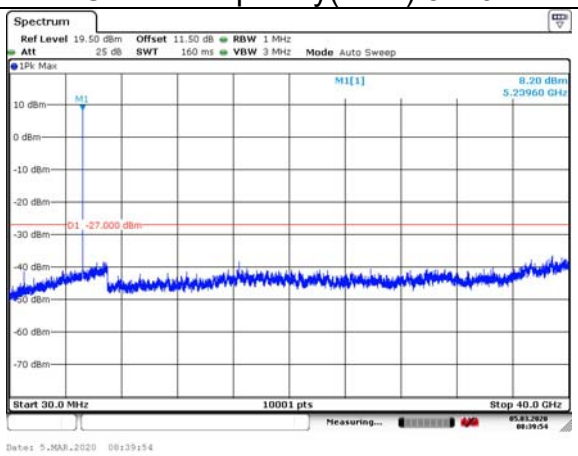	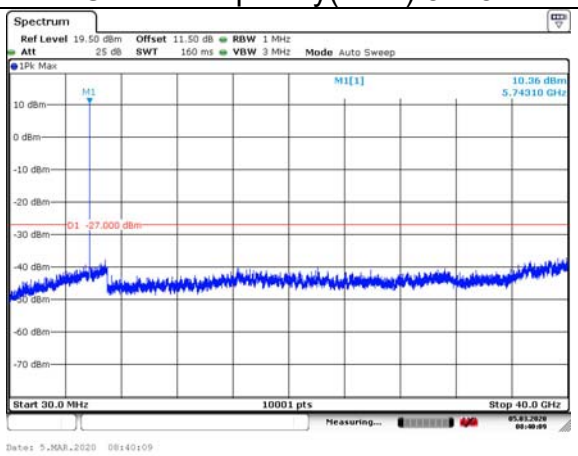
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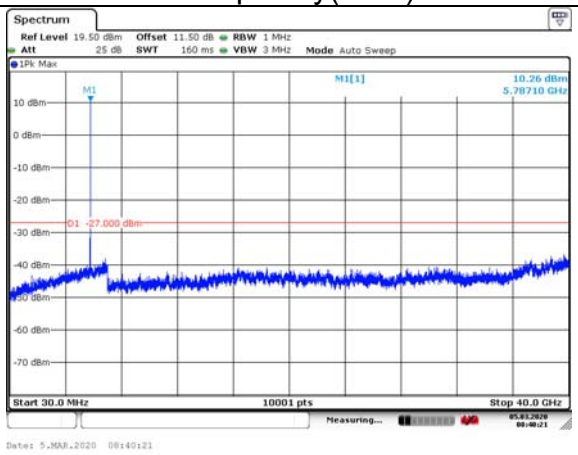	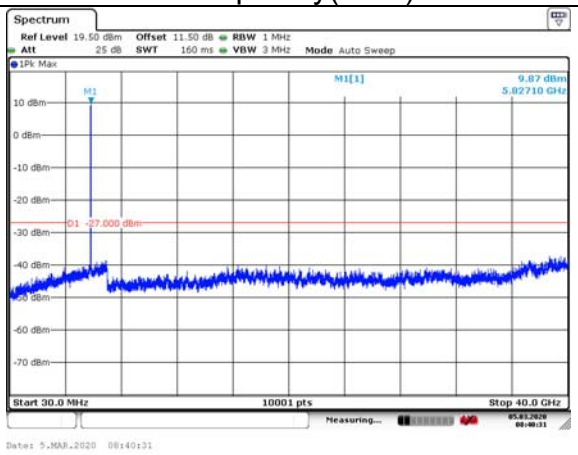

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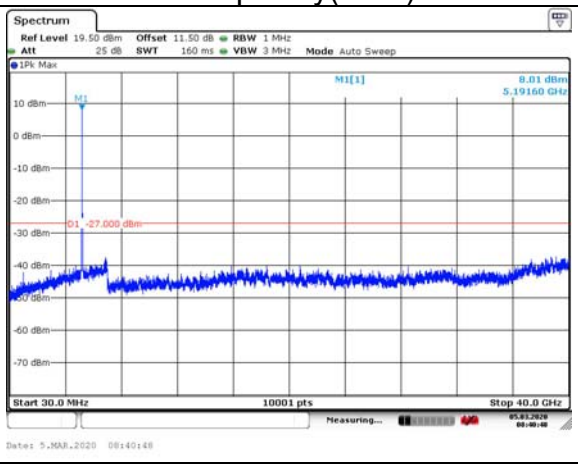	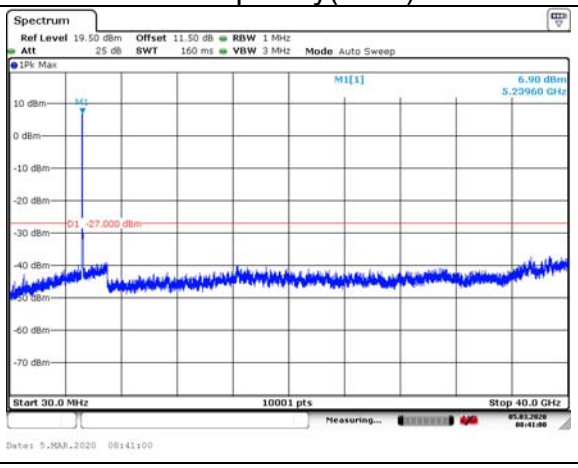
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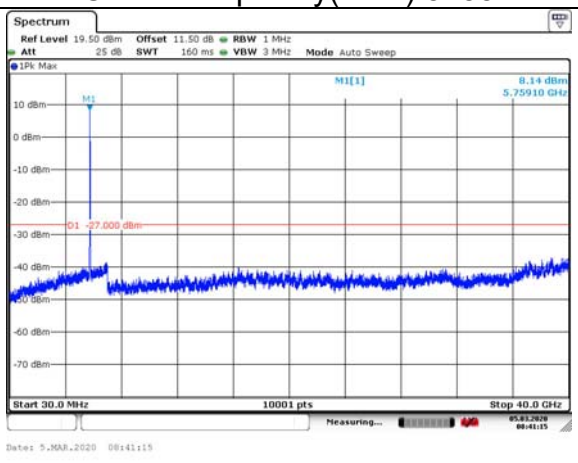
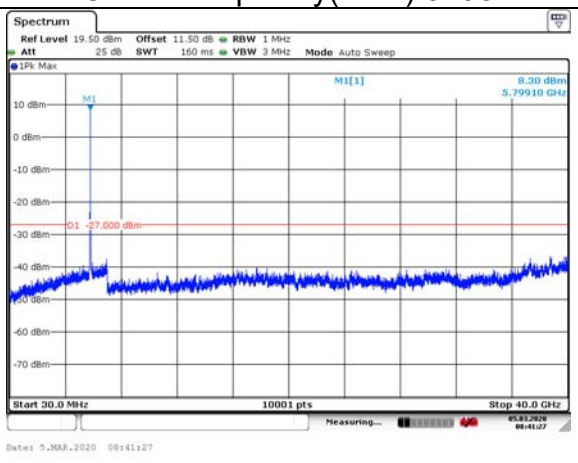
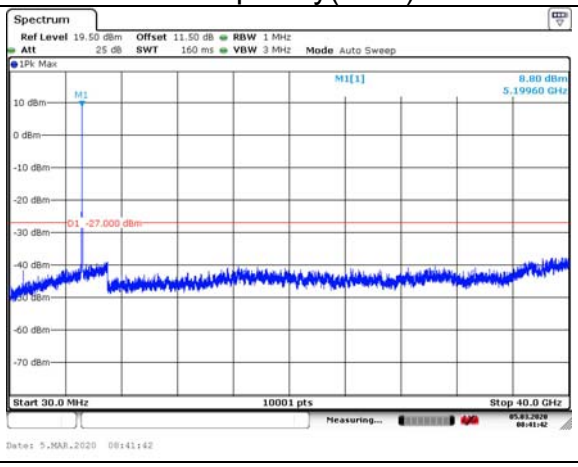
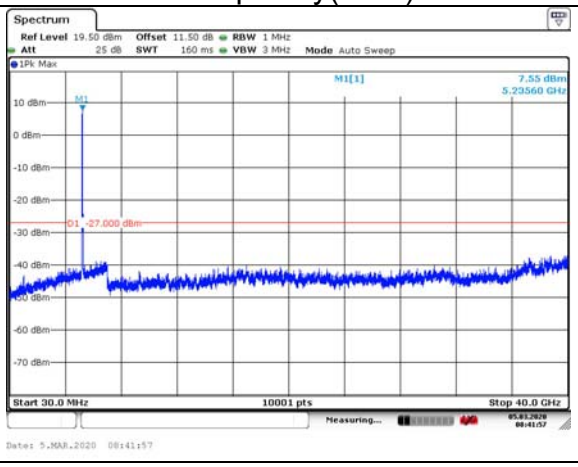
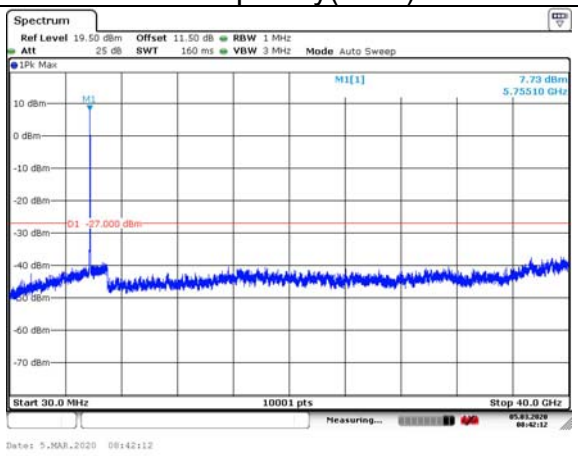
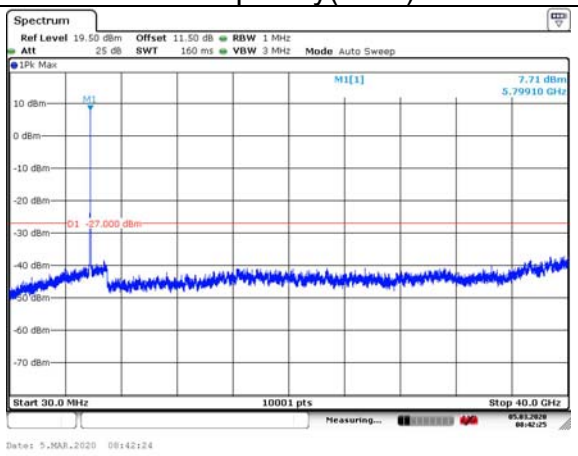
	
802.11n HT40 (MIMO Ant1) Carrier frequency(MHz):5190	802.11n HT40 (MIMO Ant1) Carrier frequency(MHz):5230
	

802.11n HT40 (MIMO Ant1) Carrier frequency(MHz):5755	802.11n HT40 (MIMO Ant1) Carrier frequency(MHz):5795
	
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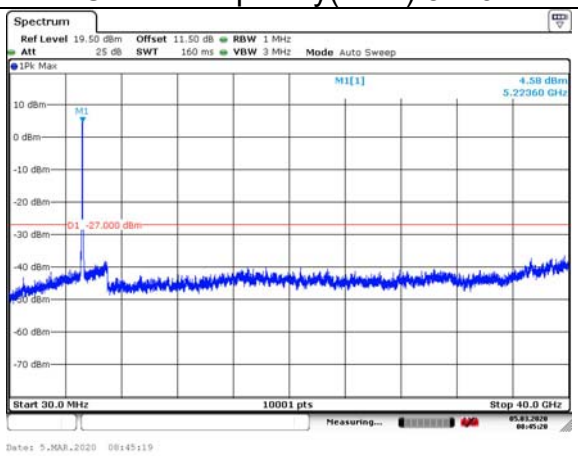	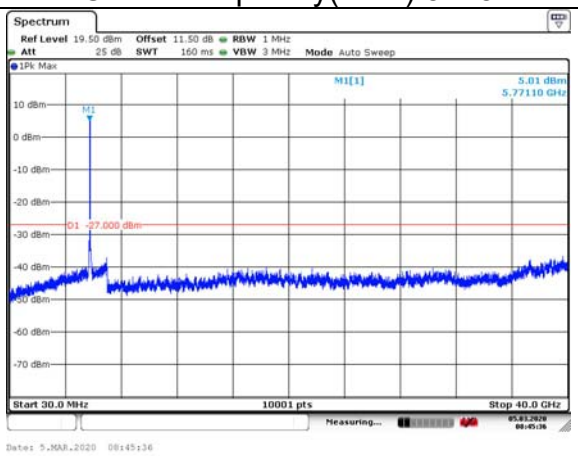
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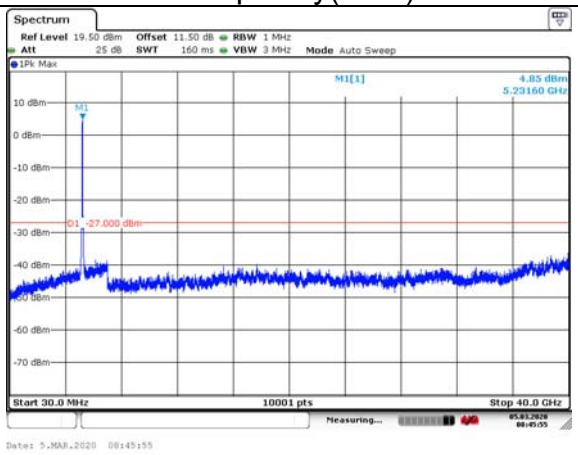	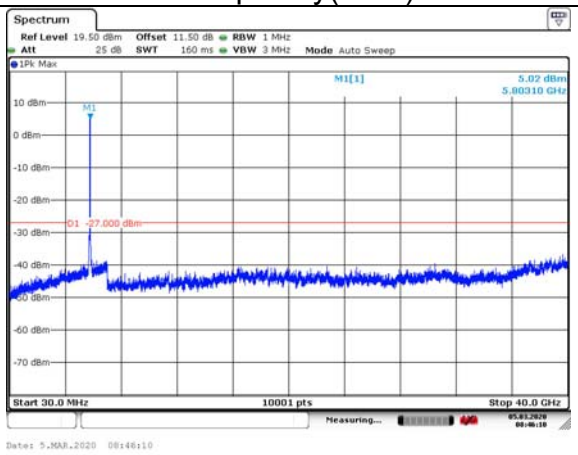

Frequency Stability

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Mod.	Data Rate	Frequency (MHz)	Frequency Stability(ppm)	Voltage(V)	Temperature(°C)
11a	6Mbps	5180	1.12	NV	-20
11a	6Mbps	5180	3.12	NV	-10
11a	6Mbps	5180	0.24	NV	0
11a	6Mbps	5180	-1.34	NV	+10
11a	6Mbps	5180	2.32	HV	+20
11a	6Mbps	5180	-1.78	LV	+20
11a	6Mbps	5180	0.00	NV	+20
11a	6Mbps	5180	3.55	NV	+30
11a	6Mbps	5180	2.39	NV	+40
11a	6Mbps	5180	-1.26	NV	+50
11a	6Mbps	5180	1.67	NV	+55

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Mod.	Data Rate	Frequency (MHz)	Frequency Stability(ppm)	Voltage(V)	Temperature(°C)
11a	6Mbps	5825	0.19	NV	-20
11a	6Mbps	5825	2.15	NV	-10
11a	6Mbps	5825	-0.94	NV	0
11a	6Mbps	5825	-1.74	NV	+10
11a	6Mbps	5825	3.32	HV	+20
11a	6Mbps	5825	-2.78	LV	+20
11a	6Mbps	5825	0.00	NV	+20
11a	6Mbps	5825	0.59	NV	+30
11a	6Mbps	5825	1.39	NV	+40
11a	6Mbps	5825	-0.88	NV	+50
11a	6Mbps	5825	2.64	NV	+55

APPENDIX B – TEST DATA OF RADIATED EMISSION

Radiated Emission Band Edge

The worst case attitude: Ant0.
The measurement results are obtained as described below:
Measure Level = Reading Level + cable loss + antenna factor

Sample calculation: (101.83 dBuV/m) = (54.93 dBμV) + (12.4 dB) + (34.5 dB), the corresponding frequency is 5180MHz.

Carrier frequency (MHz): 5180 MHz
Channel No.:36
Test Mode: 802.11a
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	99.12	52.22	N/A	N/A	12.4	34.5
2	5150	49.22	2.32	-18.98	68.2	12.4	34.5

Carrier frequency (MHz): 5180
Channel No.:36
Test Mode: 802.11a
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	94.53	47.63	N/A	N/A	12.4	34.5
2	5150	53.86	6.96	-14.34	68.2	12.4	34.5

Carrier frequency (MHz): 5180 MHz
Channel No.: 36
Test Mode: 802.11a
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	93.79	46.89	N/A	N/A	12.4	34.5
2	5150	40.74	-6.16	-13.26	54	12.4	34.5

Carrier frequency (MHz): 5180 MHz
Channel No.: 36
Test Mode: 802.11a
Polarity:Horizontal
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	89.20	42.30	N/A	N/A	12.4	34.5
2	5150	40.33	-6.57	-13.67	54	12.4	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11a
Polarity:Vertical
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	99.02	51.92	N/A	N/A	12.6	34.5
2	5250	49.88	2.78	-18.32	68.2	12.6	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11a
Polarity:Horizontal
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	94.49	47.39	N/A	N/A	12.6	34.5
2	5250	49.34	2.24	-18.86	68.2	12.6	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11a
Polarity:Vertical
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	91.73	44.63	N/A	N/A	12.6	34.5
2	5250	39.67	-7.43	-14.33	54	12.6	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11a
Polarity:Horizontal
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	87.24	40.14	N/A	N/A	12.6	34.5
2	5250	39.16	-7.94	-14.84	54	12.6	34.5

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11a
Polarity: Vertical
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV)	cable loss (dB)	antenna factor (dB)
1	5745	101.88	54.28	N/A	N/A	12.9	34.7
2	5725	52.95	5.35	-15.25	68.2	12.9	34.7

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11a
Polarity: Horizontal
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5745	97.67	50.07	N/A	N/A	12.9	34.7
2	5725	52.59	4.99	-15.61	68.2	12.9	34.7

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11a
Polarity: Vertical
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV)	cable loss (dB)	antenna factor (dB)
1	5745	94.48	46.88	N/A	N/A	12.9	34.7
2	5725	40.68	-6.92	-13.32	54	12.9	34.7

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11a
Polarity: Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5745	90.18	42.58	N/A	N/A	12.9	34.7
2	5725	39.69	-7.91	-14.31	54	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11a
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	101.73	54.13	N/A	N/A	12.9	34.7
2	5850	52.42	4.82	-15.78	68.2	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11a
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	97.17	49.57	N/A	N/A	12.9	34.7
2	5850	51.59	3.99	-16.61	68.2	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11a
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	94.81	47.21	N/A	N/A	12.9	34.7
2	5850	41.01	-6.59	-12.99	54	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11a
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	90.11	42.51	N/A	N/A	12.9	34.7
2	5850	40.67	-6.93	-13.33	54	12.9	34.7

Carrier frequency (MHz): 5180 MHz
Channel No.:36
Test Mode: 802.11n（HT20 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	99.60	52.70	N/A	N/A	12.4	34.5
2	5150	49.70	2.80	-18.5	68.2	12.4	34.5

Carrier frequency (MHz): 5180
Channel No.:36
Test Mode: 802.11n（HT20 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	95.13	48.23	N/A	N/A	12.4	34.5
2	5150	54.33	7.43	-13.87	68.2	12.4	34.5

Carrier frequency (MHz): 5180 MHz
Channel No.: 36
Test Mode: 802.11n（HT20 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	93.50	46.60	N/A	N/A	12.4	34.5
2	5150	40.71	-6.19	-13.29	54	12.4	34.5

Carrier frequency (MHz): 5180 MHz
Channel No.: 36
Test Mode: 802.11n（HT20 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	88.59	41.69	N/A	N/A	12.4	34.5
2	5150	40.56	-6.34	-13.44	54	12.4	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11n（HT20 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	99.76	52.66	N/A	N/A	12.6	34.5
2	5250	49.81	2.71	-18.39	68.2	12.6	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11n（HT20 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	95.47	48.37	N/A	N/A	12.6	34.5
2	5250	49.71	2.61	-18.49	68.2	12.6	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11n（HT20）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	91.84	44.74	N/A	N/A	12.6	34.5
2	5250	40.35	-6.75	-13.65	54	12.6	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11n（HT20 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	87.70	40.60	N/A	N/A	12.6	34.5
2	5250	40.13	-6.97	-13.87	54	12.6	34.5

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11n（HT20 MIMO）
Polarity: Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV)	cable loss (dB)	antenna factor (dB)
1	5745	101.55	53.95	N/A	N/A	12.9	34.7
2	5725	52.91	5.31	-15.29	68.2	12.9	34.7

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11n（HT20）
Polarity: Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5745	97.42	49.82	N/A	N/A	12.9	34.7
2	5725	52.15	4.55	-16.05	68.2	12.9	34.7

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11n（HT20 MIMO）
Polarity: Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV)	cable loss (dB)	antenna factor (dB)
1	5745	94.31	46.71	N/A	N/A	12.9	34.7
2	5725	40.67	-6.93	-13.33	54	12.9	34.7

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11n（HT20 MIMO）
Polarity: Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5745	90.16	42.56	N/A	N/A	12.9	34.7
2	5725	39.79	-7.81	-14.21	54	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11n（HT20 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	101.62	54.02	N/A	N/A	12.9	34.7
2	5850	52.72	5.12	-15.48	68.2	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11n（HT20 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	97.10	49.50	N/A	N/A	12.9	34.7
2	5850	52.37	4.77	-15.83	68.2	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11n（HT20 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	94.53	46.93	N/A	N/A	12.9	34.7
2	5850	40.11	-7.49	-13.89	54	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11n（HT20 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	89.72	42.12	N/A	N/A	12.9	34.7
2	5850	39.80	-7.80	-14.20	54	12.9	34.7

Carrier frequency (MHz): 5190 MHz
Channel No.:38
Test Mode: 802.11n（HT40 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5190	97.99	51.09	N/A	N/A	12.4	34.5
2	5150	48.72	1.82	-19.48	68.2	12.4	34.5

Carrier frequency (MHz): 5190 MHz
Channel No.:38
Test Mode: 802.11n（HT40 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5190	93.35	46.45	N/A	N/A	12.4	34.5
2	5150	53.62	6.72	-14.58	68.2	12.4	34.5

Carrier frequency (MHz): 5190 MHz
Channel No.:38
Test Mode: 802.11n（HT40 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5190	91.78	44.88	N/A	N/A	12.4	34.5
2	5150	41.10	-5.80	-12.90	54	12.4	34.5

Carrier frequency (MHz): 5190 MHz
Channel No.:38
Test Mode: 802.11n（HT40 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5190	87.23	40.33	N/A	N/A	12.4	34.5
2	5150	40.81	-6.09	-13.19	54	12.4	34.5

Carrier frequency (MHz): 5230 MHz
Channel No.:46
Test Mode: 802.11n（HT40 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5310	97.91	50.81	N/A	N/A	12.6	34.5
2	5350	48.67	1.57	-19.53	68.2	12.6	34.5

Carrier frequency (MHz): 5230 MHz
Channel No.:46
Test Mode: 802.11n（HT40 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5310	93.46	46.36	N/A	N/A	12.6	34.5
2	5350	48.02	0.92	-20.18	68.2	12.6	34.5

Carrier frequency (MHz): 5230 MHz
Channel No.:46
Test Mode: 802.11n（HT40 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5310	89.49	42.39	N/A	N/A	12.6	34.5
2	5350	37.61	-9.49	-16.39	54	12.6	34.5

Carrier frequency (MHz): 5230 MHz
Channel No.:46
Test Mode: 802.11n（HT40 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5310	85.48	38.38	N/A	N/A	12.6	34.5
2	5350	37.02	-10.08	-16.98	54	12.6	34.5

Carrier frequency (MHz): 5755 MHz
Channel No.:151
Test Mode: 802.11n(HT40 MIMO)
Polarity: Vertical
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5755	99.63	52.03	N/A	N/A	12.9	34.7
2	5725	50.37	2.77	-17.83	68.2	12.9	34.7

Carrier frequency (MHz): 5755 MHz
Channel No.:151
Test Mode: 802.11n(HT40 MIMO)
Polarity: Horizontal
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5755	94.96	47.36	N/A	N/A	12.9	34.7
2	5725	49.76	2.16	-18.44	68.2	12.9	34.7

Carrier frequency (MHz): 5755 MHz
Channel No.:151
Test Mode: 802.11n(HT40 MIMO)
Polarity: Vertical
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5755	92.22	44.62	N/A	N/A	12.9	34.7
2	5725	38.48	-9.12	-15.52	54	12.9	34.7

Carrier frequency (MHz): 5755 MHz
Channel No.:151
Test Mode: 802.11n(HT40)
Polarity: Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5755	88.06	40.46	N/A	N/A	12.9	34.7
2	5725	38.25	-9.35	-15.75	54	12.9	34.7

Carrier frequency (MHz): 5795 MHz
Channel No.:159
Test Mode: 802.11n（HT40 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5795	99.11	51.51	N/A	N/A	12.9	34.7
2	5850	50.40	2.80	-17.80	68.2	12.9	34.7

Carrier frequency (MHz): 5795 MHz
Channel No.:159
Test Mode: 802.11n（HT40 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5795	94.25	46.65	N/A	N/A	12.9	34.7
2	5850	50.37	2.77	-17.83	68.2	12.9	34.7

Carrier frequency (MHz): 5795 MHz
Channel No.:159
Test Mode: 802.11n（HT40 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5795	92.13	44.53	N/A	N/A	12.9	34.7
2	5850	37.59	-10.01	-16.41	54	12.9	34.7

Carrier frequency (MHz): 5795 MHz
Channel No.:159
Test Mode: 802.11n（HT40 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5795	87.34	39.74	N/A	N/A	12.9	34.7
2	5850	36.94	-10.66	-17.06	54	12.9	34.7

Carrier frequency (MHz): 5180 MHz
Channel No.:36
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	101.87	54.97	N/A	N/A	12.4	34.5
2	5150	52.51	5.61	-15.69	68.2	12.4	34.5

Carrier frequency (MHz): 5180
Channel No.:36
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	97.83	50.93	N/A	N/A	12.4	34.5
2	5150	53.85	6.95	-14.35	68.2	12.4	34.5

Carrier frequency (MHz): 5180 MHz
Channel No.: 36
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	95.49	48.59	N/A	N/A	12.4	34.5
2	5150	40.92	-5.98	-13.08	54	12.4	34.5

Carrier frequency (MHz): 5180 MHz
Channel No.: 36
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5180	91.30	44.40	N/A	N/A	12.4	34.5
2	5150	40.83	-6.07	-13.17	54	12.4	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	101.22	54.12	N/A	N/A	12.6	34.5
2	5250	52.05	4.95	-16.15	68.2	12.6	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	96.49	49.39	N/A	N/A	12.6	34.5
2	5250	51.88	4.78	-16.32	68.2	12.6	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	93.61	46.51	N/A	N/A	12.6	34.5
2	5250	41.87	-5.23	-12.13	54	12.6	34.5

Carrier frequency (MHz): 5240 MHz
Channel No.:48
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5240	89.35	42.25	N/A	N/A	12.6	34.5
2	5250	41.55	-5.55	-12.45	54	12.6	34.5

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11ac（VHT20 MIMO）
Polarity: Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV)	cable loss (dB)	antenna factor (dB)
1	5745	101.50	53.90	N/A	N/A	12.9	34.7
2	5725	52.64	5.04	-15.56	68.2	12.9	34.7

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11ac（VHT20 MIMO）
Polarity: Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5745	97.02	49.42	N/A	N/A	12.9	34.7
2	5725	52.12	4.52	-16.08	68.2	12.9	34.7

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11ac（VHT20 MIMO）
Polarity: Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV)	cable loss (dB)	antenna factor (dB)
1	5745	94.37	46.77	N/A	N/A	12.9	34.7
2	5725	39.86	-7.74	-14.14	54	12.9	34.7

Carrier frequency (MHz): 5745 MHz
Channel No.:149
Test Mode: 802.11ac（VHT20）
Polarity: Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5745	90.08	42.48	N/A	N/A	12.9	34.7
2	5725	38.96	-8.64	-15.04	54	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	101.61	54.01	N/A	N/A	12.9	34.7
2	5850	52.66	5.06	-15.54	68.2	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	97.29	49.69	N/A	N/A	12.9	34.7
2	5850	52.47	4.87	-15.73	68.2	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	94.90	47.30	N/A	N/A	12.9	34.7
2	5850	40.98	-6.62	-13.02	54	12.9	34.7

Carrier frequency (MHz): 5825 MHz
Channel No.:165
Test Mode: 802.11ac（VHT20 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5825	90.10	42.50	N/A	N/A	12.9	34.7
2	5850	40.88	-6.72	-13.12	54	12.9	34.7

Carrier frequency (MHz): 5190 MHz
Channel No.:38
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5190	99.23	52.33	N/A	N/A	12.4	34.5
2	5150	49.68	2.78	-18.52	68.2	12.4	34.5

Carrier frequency (MHz): 5190 MHz
Channel No.:38
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5190	95.00	48.10	N/A	N/A	12.4	34.5
2	5150	54.01	7.11	-14.19	68.2	12.4	34.5

Carrier frequency (MHz): 5190 MHz
Channel No.:38
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5190	93.55	46.65	N/A	N/A	12.4	34.5
2	5150	40.95	-5.95	-13.05	54	12.4	34.5

Carrier frequency (MHz): 5190 MHz
Channel No.:38
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5190	88.99	42.09	N/A	N/A	12.4	34.5
2	5150	39.99	-6.91	-14.01	54	12.4	34.5

Carrier frequency (MHz): 5230 MHz
Channel No.:46
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5310	99.08	51.98	N/A	N/A	12.6	34.5
2	5350	49.88	2.78	-18.32	68.2	12.6	34.5

Carrier frequency (MHz): 5230 MHz
Channel No.:46
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5310	94.10	47.00	N/A	N/A	12.6	34.5
2	5350	49.76	2.66	-18.44	68.2	12.6	34.5

Carrier frequency (MHz): 5230 MHz
Channel No.:46
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5310	91.65	44.55	N/A	N/A	12.6	34.5
2	5350	40.01	-7.09	-13.99	54	12.6	34.5

Carrier frequency (MHz): 5230 MHz
Channel No.:46
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5310	86.75	39.65	N/A	N/A	12.6	34.5
2	5350	39.27	-7.83	-14.73	54	12.6	34.5

Carrier frequency (MHz): 5755 MHz
Channel No.:151
Test Mode: 802.11ac(VHT40 MIMO)
Polarity: Vertical
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5755	99.63	52.03	N/A	N/A	12.9	34.7
2	5725	50.81	3.21	-17.39	68.2	12.9	34.7

Carrier frequency (MHz): 5755 MHz
Channel No.:151
Test Mode: 802.11ac(VHT40 MIMO)
Polarity: Horizontal
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5755	95.01	47.41	N/A	N/A	12.9	34.7
2	5725	50.46	2.86	-17.74	68.2	12.9	34.7

Carrier frequency (MHz): 5755 MHz
Channel No.:151
Test Mode: 802.11ac(VHT40 MIMO)
Polarity: Vertical
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5755	92.23	44.63	N/A	N/A	12.9	34.7
2	5725	38.58	-9.02	-15.42	54	12.9	34.7

Carrier frequency (MHz): 5755 MHz
Channel No.:151
Test Mode: 802.11ac(VHT40 MIMO)
Polarity: Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5755	88.01	40.41	N/A	N/A	12.9	34.7
2	5725	38.19	-9.41	-15.81	54	12.9	34.7

Carrier frequency (MHz): 5795 MHz
Channel No.:159
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5795	99.54	51.94	N/A	N/A	12.9	34.7
2	5850	50.24	2.64	-17.96	68.2	12.9	34.7

Carrier frequency (MHz): 5795 MHz
Channel No.:159
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5795	94.83	47.23	N/A	N/A	12.9	34.7
2	5850	49.91	2.31	-18.29	68.2	12.9	34.7

Carrier frequency (MHz): 5795 MHz
Channel No.:159
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5795	92.67	45.07	N/A	N/A	12.9	34.7
2	5850	39.05	-8.55	-14.95	54	12.9	34.7

Carrier frequency (MHz): 5795 MHz
Channel No.:159
Test Mode: 802.11ac（VHT40 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5795	88.44	40.84	N/A	N/A	12.9	34.7
2	5850	38.55	-9.05	-15.45	54	12.9	34.7

Carrier frequency (MHz): 5210 MHz
Channel No.:42
Test Mode: 802.11ac（VHT80 MIMO）
Polarity:Vertical
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5210	97.77	50.87	N/A	N/A	12.4	34.5
2	5150	48.15	1.25	-20.05	68.2	12.4	34.5
3	5250	47.95	0.85	-20.25	68.2	12.6	34.5

Carrier frequency (MHz): 5210 MHz
Channel No.:42
Test Mode: 802.11ac（VHT80 MIMO）
Polarity:Horizontal
Detector: Peak

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5210	93.27	46.37	N/A	N/A	12.4	34.5
2	5150	54.32	7.42	-13.88	68.2	12.4	34.5
3	5250	48.29	1.19	-19.91	68.2	12.6	34.5

Carrier frequency (MHz): 5210 MHz
Channel No.:42
Test Mode: 802.11ac（VHT80 MIMO）
Polarity:Vertical
Detector: Average

No	Frequency （MHz）	Measure Level （dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5210	91.91	45.01	N/A	N/A	12.4	34.5
2	5150	40.53	-6.37	-13.47	54	12.4	34.5
3	5250	38.04	-9.06	-15.96	54	12.6	34.5

Carrier frequency (MHz): 5210 MHz
Channel No.:42
Test Mode: 802.11ac（VHT80 MIMO）
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	cable loss (dB)	antenna factor (dB)
1	5210	87.74	40.84	N/A	N/A	12.4	34.5
2	5150	40.03	-6.87	-13.97	54	12.4	34.5
3	5250	37.72	-9.38	-16.28	54	12.6	34.5

Carrier frequency (MHz): 5775 MHz
Channel No.:155
Test Mode: 802.11ac（VHT80 MIMO）
Polarity: Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV)	cable loss (dB)	antenna factor (dB)
1	5775	97.86	50.26	N/A	N/A	12.9	34.7
2	5725	48.41	0.81	-19.79	68.2	12.9	34.7
2	5850	47.50	-0.10	-20.70	68.2	12.9	34.7

Carrier frequency (MHz): 5775 MHz
Channel No.:155
Test Mode: 802.11ac（VHT80）
Polarity: Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV)	cable loss (dB)	antenna factor (dB)
1	5775	93.42	45.82	N/A	N/A	12.9	34.7
2	5725	47.14	-0.46	-21.06	68.2	12.9	34.7
2	5850	48.12	0.52	-20.08	68.2	12.9	34.7

Carrier frequency (MHz): 5775 MHz
Channel No.:155
Test Mode: 802.11ac（VHT80 MIMO）
Polarity: Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV)	cable loss (dB)	antenna factor (dB)
1	5775	90.36	42.76	N/A	N/A	12.9	34.7
2	5725	35.95	-11.65	-18.05	54	12.9	34.7
2	5850	35.39	-12.21	-18.61	54	12.9	34.7

Carrier frequency (MHz): 5775 MHz
Channel No.:155
Test Mode: 802.11ac（VHT80 MIMO）
Polarity: Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV)	cable loss (dB)	antenna factor (dB)
1	5775	90.73	43.13	N/A	N/A	12.9	34.7
2	5725	36.96	-10.64	-17.04	54	12.9	34.7
2	5850	36.24	-11.36	-17.76	54	12.9	34.7

Sample Calculations

Determining Spurious Emissions Levels

A “reference path loss” is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.
The measurement results are obtained as described below:
Result= P_{mea} + A_{Rpl}
Sample calculation: (31.05 dBμV/m) = (44.55 dBμV) + (-13.5 dB/m), the corresponding frequency is 30.282917MHz.
The worst case attitude: The mobile lay down.

For 802.11a Channel No.:36

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
38.9925	30.72	-18.5	49.22	Vertical	40.00
52.467	33.38	-17.4	50.78	Vertical	40.00
53.973	32.46	-17.6	50.06	Vertical	40.00
54.1305	31.53	-17.7	49.23	Vertical	40.00
54.304	31.34	-17.7	49.04	Vertical	40.00
54.321	31.38	-17.7	49.08	Vertical	40.00

For 802.11n(HT20 MIMO) Channel No.:36

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
38.9925	31.04	-18.5	49.54	Vertical	40.00
50.972	31.84	-17.2	49.04	Vertical	40.00
52.4755	33.43	-17.4	50.83	Vertical	40.00
53.152	31.09	-17.5	48.59	Vertical	40.00
53.979	32.52	-17.6	50.12	Vertical	40.00
54.2785	31.27	-17.7	48.97	Vertical	40.00

For 802.11a Channel No.:40

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
52.4755	33.22	-17.4	50.62	Vertical	40.00
53.6565	31.2	-17.6	48.8	Vertical	40.00
53.979	32.52	-17.6	50.12	Vertical	40.00
54.0215	31.53	-17.6	49.13	Vertical	40.00
54.447	30.93	-17.7	48.63	Vertical	40.00
54.835	30.45	-17.7	48.15	Vertical	40.00

For 802.11n(HT20 MIMO) Channel No.:40

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
52.4755	33.19	-17.4	50.59	Vertical	40.00
53.6105	31.36	-17.6	48.96	Vertical	40.00
53.694	31.53	-17.6	49.13	Vertical	40.00
53.9075	31.89	-17.6	49.49	Vertical	40.00
53.9535	32.21	-17.6	49.81	Vertical	40.00
53.9645	32.38	-17.6	49.98	Vertical	40.00

For 802.11a Channel No.:48

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
38.9925	30.65	-18.5	49.15	Vertical	40.00
52.4755	33.23	-17.4	50.63	Vertical	40.00
53.945	32.36	-17.6	49.96	Vertical	40.00
53.979	32.49	-17.6	50.09	Vertical	40.00
54.287	31.35	-17.7	49.05	Vertical	40.00
54.333	31.57	-17.7	49.27	Vertical	40.00

For 802.11n(HT20 MIMO) Channel No.:48

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
52.4755	33.41	-17.4	50.81	Vertical	40.00
53.9475	32.19	-17.6	49.79	Vertical	40.00
53.9645	32.36	-17.6	49.96	Vertical	40.00
54.1585	31.43	-17.7	49.13	Vertical	40.00
54.1925	31.3	-17.7	49	Vertical	40.00
54.9635	29.68	-17.8	47.48	Vertical	40.00

For 802.11a Channel No.:149

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
51.7855	30.17	-17.4	47.57	Vertical	40.00
52.3675	30.8	-17.4	48.2	Vertical	40.00
52.4755	33.29	-17.4	50.69	Vertical	40.00
53.5	31.37	-17.6	48.97	Vertical	40.00
53.979	32.28	-17.6	49.88	Vertical	40.00
58.2725	27.28	-18.2	45.48	Vertical	40.00

For 802.11n(HT20 MIMO) Channel No.:149

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
50.972	31.99	-17.2	49.19	Vertical	40.00
52.4755	33.56	-17.4	50.96	Vertical	40.00
53.916	32.05	-17.6	49.65	Vertical	40.00
53.9195	31.95	-17.6	49.55	Vertical	40.00
53.962	32.67	-17.6	50.27	Vertical	40.00
53.979	32.4	-17.6	50	Vertical	40.00

For 802.11a Channel No.:157

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
38.984	30.56	-18.5	49.06	Vertical	40.00
52.467	33.45	-17.4	50.85	Vertical	40.00
53.956	32.3	-17.6	49.9	Vertical	40.00
53.968	32.32	-17.6	49.92	Vertical	40.00
53.973	32.84	-17.6	50.44	Vertical	40.00
54.219	31.56	-17.7	49.26	Vertical	40.00

For 802.11n(HT20 MIMO) Channel No.:157

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
52.467	33.41	-17.4	50.81	Vertical	40.00
53.346	31.31	-17.6	48.91	Vertical	40.00
53.5315	31.08	-17.6	48.68	Vertical	40.00
53.7595	31.41	-17.6	49.01	Vertical	40.00
53.939	32.06	-17.6	49.66	Vertical	40.00
56.946	28.27	-18	46.27	Vertical	40.00

For 802.11a Channel No.:165

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
50.9635	32.38	-17.2	49.58	Vertical	40.00
52.467	33.47	-17.4	50.87	Vertical	40.00
53.819	31.48	-17.6	49.08	Vertical	40.00
53.9195	32.13	-17.6	49.73	Vertical	40.00
53.95	32.55	-17.6	50.15	Vertical	40.00
53.956	32.25	-17.6	49.85	Vertical	40.00

For 802.11n(HT20 MIMO) Channel No.:165

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
52.467	33.91	-17.4	51.31	Vertical	40.00
52.484	33.23	-17.4	50.63	Vertical	40.00
53.734	31.59	-17.6	49.19	Vertical	40.00
53.979	32.41	-17.6	50.01	Vertical	40.00
53.985	32.46	-17.6	50.06	Vertical	40.00
54.002	31.97	-17.6	49.57	Vertical	40.00

For 802.11n(HT40 MIMO) Channel No.:38

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
38.984	30.31	-18.5	48.81	Vertical	40.00
52.484	33.22	-17.4	50.62	Vertical	40.00
53.386	31.34	-17.6	48.94	Vertical	40.00
53.5825	31.46	-17.6	49.06	Vertical	40.00
53.939	32.26	-17.6	49.86	Vertical	40.00
53.9535	32.36	-17.6	49.96	Vertical	40.00

For 802.11n(HT40 MIMO) Channel No.:46

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
50.972	32.34	-17.2	49.54	Vertical	40.00
52.4585	33.16	-17.4	50.56	Vertical	40.00
52.4755	33.31	-17.4	50.71	Vertical	40.00
53.956	32.45	-17.6	50.05	Vertical	40.00
55.714	28.33	-17.9	46.23	Vertical	40.00
56.6175	26.88	-18	44.88	Vertical	40.00

For 802.11n(HT40 MIMO) Channel No.:151

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
52.444	33	-17.4	50.4	Vertical	40.00
52.467	33.54	-17.4	50.94	Vertical	40.00
53.95	32.54	-17.6	50.14	Vertical	40.00
53.9705	32.46	-17.6	50.06	Vertical	40.00
54.087	31.37	-17.7	49.07	Vertical	40.00
54.184	31	-17.7	48.7	Vertical	40.00

For 802.11n(HT40 MIMO) Channel No.:159

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
50.972	31.72	-17.2	48.92	Vertical	40.00
52.461	33.33	-17.4	50.73	Vertical	40.00
52.4755	33.27	-17.4	50.67	Vertical	40.00
53.8225	31.1	-17.6	48.7	Vertical	40.00
53.9195	31.86	-17.6	49.46	Vertical	40.00
53.9705	32.18	-17.6	49.78	Vertical	40.00

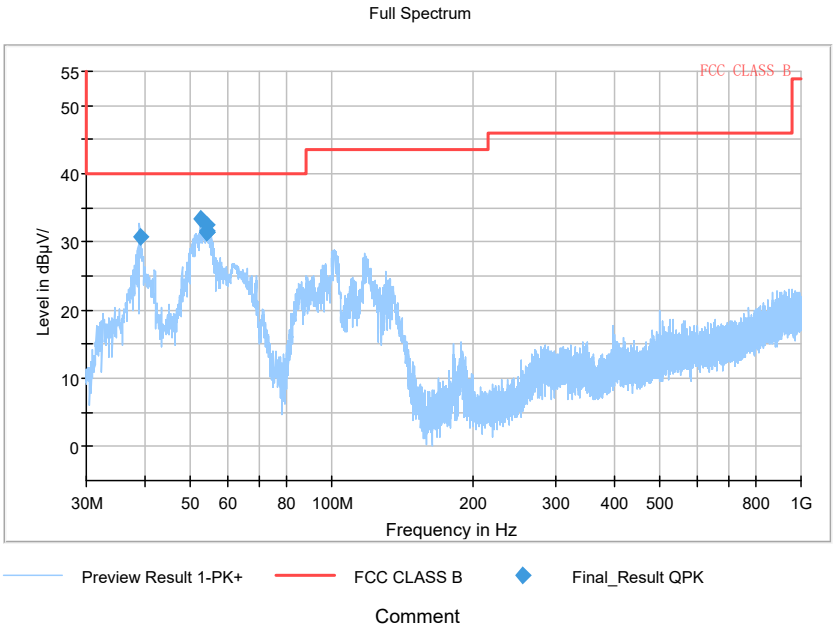
For 802.11ac (VHT80 MIMO) Channel No.:42

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
52.4755	33.49	-17.4	50.89	Vertical	40.00
53.671	31.32	-17.6	48.92	Vertical	40.00
53.9535	32.4	-17.6	50	Vertical	40.00
53.979	32.53	-17.6	50.13	Vertical	40.00
53.9815	32.36	-17.6	49.96	Vertical	40.00
55.114	29.39	-17.8	47.19	Vertical	40.00

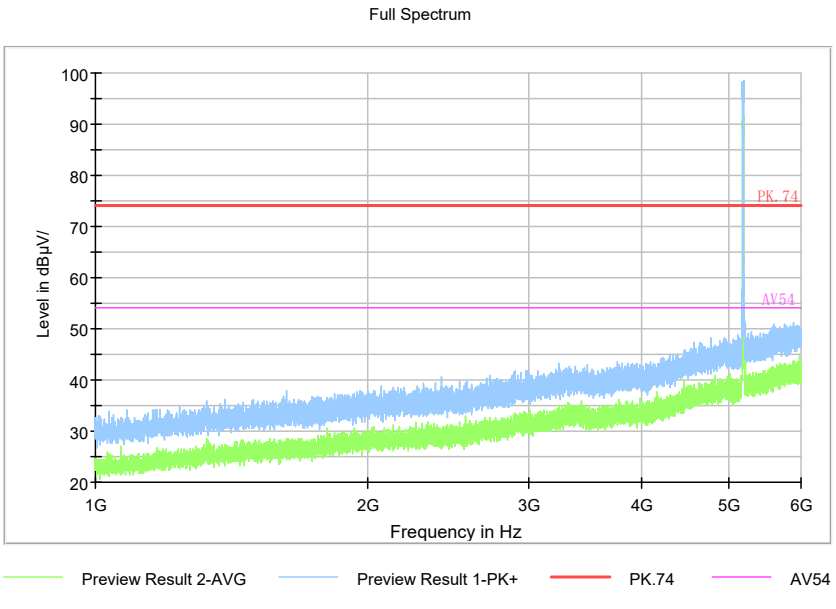
For 802.11ac (VHT80 MIMO) Channel No.:155

Frequency(MHz)	Result(dBμV/m)	ARpl (dB)	Pmea (dBμV/m)	Polarity	Limit (dBμV/m)
52.467	33.42	-17.4	50.82	Vertical	40.00
53.751	31.38	-17.6	48.98	Vertical	40.00
53.939	32.29	-17.6	49.89	Vertical	40.00
53.9415	32.3	-17.6	49.9	Vertical	40.00
53.9645	32.42	-17.6	50.02	Vertical	40.00
53.968	32.29	-17.6	49.89	Vertical	40.00

Carrier frequency (MHz): 5180
Channel No.:36



Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11a



Frequency Range: 1GHz -6GHz
Detector: Av mode and PK mode
Modulation type: 802.11a