RADIO TEST REPORT
FCC 47 CFR PART 15 SUBPART E

Test Standard	**FCC Part 15.407**
Product name	**Digital Device**
Brand Name	**Philips**
Model No.	**9290035625, 9290035626**
Test Result	**Pass**
Statements of Conformity	**Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.**

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.
The test results of this report relate only to the tested sample (EUT) identified in this report.
The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc.(Wugu Laboratory)

Approved by:

Shawn Wu
Supervisor

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	August 2, 2023	Initial Issue	ALL	Doris Chu
01	August 14, 2023	See the following Note Rev. (01)	P.6, P.9, P.19-20, P.25-26, P.76, P.13, P.4	Doris Chu
02	August 17, 2023	See the following Note Rev. (02)	P.13, P.60, P.204-206, P.4, P.9	Doris Chu
03	August 18, 2023	See the following Note Rev. (03)	P.4, P.9	Doris Chu

Rev. (01)
1. Modify antenna type to Monopole in section 1.3.
2. Modify 966D Equipment to EXA Signal Analyzer in section 1.6.
3. Add 240V Conduction data in section 4.1.4.
4. Modify Frequency range in section 4.2.4.
5. Add test limit in section 4.5.1.
6. Modify test mode in section 3.2.
7. Add Serial Number and modify Model Discrepancy in section 1.1.

Rev. (02)
1. Modify remark in section 3.2.
2. Modify test data in section 4.4.4.
3. Add frequency stability in section 4.6.
4. Modify Serial Number in section 1.1.
5. Modify Conducted Equipment list in section 1.6.

Rev. (03)
1. Remove HW Version in section 1.1.
2. Modify Conducted Equipment list in section 1.6.

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Signify (China) Investment Co., Ltd. Building no.9, Lane 888, Tianlin Road, Minhang District, Shanghai, 200233, China
Manufacturer	Signify (China) Investment Co., Ltd. Building no.9, Lane 888, Tianlin Road, Minhang District, Shanghai, 200233, China
Equipment	Digital Device
Model No.	9290035625, 9290035626
Model Discrepancy	**Model** / **Difference** 9290035625 / 1.without Battery components 2. without level shift IC 3. Zigbee Antenna model: RFFPA203007IMAB402 WiFi Antenna model: RFFPA203006IMLB403 9290035626 / 1. with Battery components 2.with level shift IC 3. Zigbee Antenna model: RFFPA203007IMAB401 WiFi Antenna model: RFFPA203006IMLB402
Trade Name	Philips
Received Date	June 2, 2023
Date of Test	June 9 ~ August 16, 2023
Power Supply	1. Power from Power Adapter. I/P: 100-240VAC, 0.6A, 50-60Hz O/P: 12.0VDC, 2.0A, 24.0W 2. Power from Battery. (DC 3.7V) (for 9290035626)
SW Version	V1.0.02R25
Serial Number	Radiated: 9290035625: E53080 9290035626: 0DF5C2 Conducted 9290035625: FB2287 Conduction 9290035626: 74F6BF

Remark:
1. For more details, please refer to the User's manual of the EUT.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
3. Disclaimer: The variant model numbers / trademarks are assessed as identical in hardware and software to each other, hence all variants are fully covered by the test results in this test report without further verification test.

1.2 EUT CHANNEL INFORMATION

Frequency Range	

UNII-1	
IEEE 802.11a	5180 ~ 5240 MHz
IEEE 802.11n HT20	5180 ~ 5240 MHz
IEEE 802.11ac VHT20	5180 ~ 5240 MHz
IEEE 802.11n HT40	5190 ~ 5230 MHz
IEEE 802.11ac VHT40	5190 ~ 5230 MHz
IEEE 802.11ac VHT80	5210 MHz
UNII-2a	
IEEE 802.11a	5260 ~ 5320 MHz
IEEE 802.11n HT20	5260 ~ 5320 MHz
IEEE 802.11ac VHT20	5260 ~ 5320 MHz
IEEE 802.11n HT40	5270 ~ 5310 MHz
IEEE 802.11ac VHT40	5270 ~ 5310 MHz
IEEE 802.11ac VHT80	5290 MHz
UNII-2c	
IEEE 802.11a	5500 ~ 5700 MHz
IEEE 802.11n HT20	5500 ~ 5700 MHz
IEEE 802.11ac VHT20	5500 ~ 5700 MHz
IEEE 802.11n HT40	5510 ~ 5670 MHz
IEEE 802.11ac VHT40	5510 ~ 5670 MHz
IEEE 802.11ac VHT80	5530 ~ 5610 MHz
UNII-3	
IEEE 802.11a	5745 ~ 5825 MHz
IEEE 802.11n HT20	5745 ~ 5825 MHz
IEEE 802.11ac VHT20	5745 ~ 5825 MHz
IEEE 802.11n HT40	5755 ~ 5795 MHz
IEEE 802.11ac VHT40	5755 ~ 5795 MHz
IEEE 802.11ac VHT80	5775 MHz

Modulation Type	1. IEEE 802.11a mode: OFDM 2. IEEE 802.11n HT20 mode: OFDM 3. IEEE 802.11n HT40 mode: OFDM 4. IEEE 802.11ac VHT20 mode: OFDM 5. IEEE 802.11ac VHT40 mode: OFDM 6. IEEE 802.11ac VHT80 mode: OFDM

Remark:
Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	**Number of frequencies**	**Location in frequency range of operation**
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	☒ Monopole ☐ PCB ☐ Dipole ☐ Coils
Antenna Gain	5150~5250 9290035625: Gain: 1.24 dBi 9290035626: Gain: 1.05 dBi 5250~5350: 9290035625: Gain: 2.27 dBi 9290035626: Gain: 2.66 dBi 5470~5725: 9290035625: Gain: 2.27 dBi 9290035626: Gain: 2.66 dBi 5725~5850 9290035625: Gain: 1.38 dBi 9290035626: Gain: 0.91 dBi
Antenna connector	OFDM

Notes:
1. The antenna(s) of the EUT are permanently attached and there are no provisions for connection to an external antenna. So the EUT complies with the requirements of §15.203.

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	± 2.213 dB
Channel Bandwidth	± 2.7 %
RF output power (Spectrum)	± 2.440 dB
Power Spectral density	± 2.739 dB
AC Powerline Conducted Emission	± 2.213 dB
Radiated Emission_9kHz-30MHz	± 3.115 dB
Radiated Emission_30MHz-200MHz	± 4.071 dB
Radiated Emission_200MHz-1GHz	± 4.419 dB
Radiated Emission_1GHz-6GHz	± 5.023 dB
Radiated Emission_6GHz-18GHz	± 5.068 dB
Radiated Emission_18GHz-26GHz	± 3.349 dB
Radiated Emission_26GHz-40GHz	± 3.229 dB

Remark:
1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

AC Powerline Conducted Emission and Conducted:

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

Radiated emission 9kHz to 40GHz:

☐ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

☒ No. 12, Ln. 116, Wugong 3rd Rd., Wugu Dist., New Taipei City, Taiwan 24803

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	Tony Chao	-
Radiation	Czerny Lin	-
RF Conducted	Allen Shen	-

Remark: The lab has been recognized as the FCC accredited lab. under the KDB 974614 D01 and is listed in the FCC pubic Access Link (PAL) database, FCC Registration No. :444940, the FCC Designation No.:TW1309.

1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Power Sensor	Anritsu	MA2411B	1911386	2022-08-08	2023-08-07
				2023-07-25	2024-07-24
Power Sensor	Anritsu	MA2411B	1911387	2022-08-08	2023-08-07
				2023-07-25	2024-07-24
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200716	2022-10-13	2023-10-12
EXA Signal Analyzer	KEYSIGHT	N9010B	MY55460167	2022-09-07	2023-09-06
Constant Temperature Humidity Chamber	TERCHY	MHG-150LF	930619	2022-10-25	2023-10-24
Power Meter	Anritsu	ML2496A	2136002	2022-11-24	2023-11-23
Digital Multimers	FLUKE	87V	24860499	2022-12-05	2023-12-04
AC Power Source	EXTECH	6800	1440810	N.C.R	N.C.R
Software	Radio Test Software Ver. 21 & E3-Ver: 6.11-20180413 LTE Measurement_Power-Ver.21				

Wugu 966 Chamber D					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Cal Date**	**Cal Due**
Antenna	SHWARZBECK	VULB 9168	1277	2023-01-13	2024-01-12
Pre-Amplifier	EMCI	EMC118A45SE	980820	2022-12-23	2023-12-22
Pre-Amplifier	EMCI	EMC330N	980853	2022-12-23	2023-12-22
Coaxial Cable	EMC	EMC101G-KM-KM-9000	220407+211228+230205	2023-03-21	2024-03-20
EXA Signal Analyzer	Agilent	N9010A	MY52220817	2023-03-09	2024-03-08
Coaxial Cable	EMC	EMCCFD400	211212+211222+211020	2023-03-21	2024-03-20
High Pass Filter	TITAN	T04H70002600050S01	211215-7-3	2023-02-02	2024-02-01
Thermo-Hygro Meter	EDSDS	EDS-A49	966D1	2023-05-11	2024-05-10
Pre-Amplifier	EMCI	EMC184045SE	980872	2023-01-03	2024-01-02
Horn Antenna	RF SPIN	DRH18-E	210301A18ES	2023-02-03	2024-02-02
Horn Antenna	SHWARZBECK	BBHA 9170	1134	2022-12-30	2023-12-29
Loop Antenna	SCHWARZBECK	FMZB 1513-60	1513-60-028	2022-12-27	2023-12-26
Software	e3 V9-210616c				

AC Conducted Emissions Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
EMI Test Receiver	R&S	ESCI	100064	2023-06-07	2024-06-06
LISN	TESEQ	LN2-16N	22012	2023-03-08	2024-03-07
Cable	EMCI	CFD300-NL	CERF	2022-06-27	2023-06-26
				2023-06-27	2024-06-26
Software	EZ-EMC(CCS-3A1-CE-WUGU)				

Remark:
1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment						
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**	**IC**
	N/A					

Support Equipment					
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**
1	NB(E)	Lenovo	T460	N/A	N/A

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.407, KDB 789033 D02.

2. TEST SUMMARY

FCC Standard Sec.	Chapter	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207	4.1	AC Conducted Emission	Pass
15.407(a)	4.2	26dB Bandwidth	Pass
15.407(e)	4.2	6dB Bandwidth	Pass
2.1049	4.2	Occupied Bandwidth (99%)	Pass
15.407(a)	4.3	Output Power Measurement	Pass
15.407(a)	4.4	Power Spectral Density	Pass
15.407(b)	4.5	Radiation Band Edge	Pass
15.407(b)	4.5	Radiation Spurious Emission	Pass
15.407(g)	4.6	Frequency Stability	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE EUT CHANNEL NUMBER OF OPERATING CONDITION

<table>
<tr><td>Operation mode</td><td>1. IEEE 802.11a mode: 6Mbps
2. IEEE 802.11n HT20 mode: MCS0
3. IEEE 802.11n HT40 mode: MCS0
4. IEEE 802.11ac VHT20 mode: MCS0
5. IEEE 802.11ac VHT40 mode: MCS0
6. IEEE 802.11ac VHT80 mode: MCS0</td></tr>
<tr><td>Operating Frequency</td><td>
<table>
<tr><th></th><th>Mode</th><th>Frequency Range (MHz)</th></tr>
<tr><td rowspan="6">U-NII-1</td><td>IEEE 802.11a</td><td>5180, 5220, 5240</td></tr>
<tr><td>IEEE 802.11n HT20</td><td>5180, 5220, 5240</td></tr>
<tr><td>IEEE 802.11n HT40</td><td>5190, 5230</td></tr>
<tr><td>IEEE 802.11ac VHT20</td><td>5180, 5220, 5240</td></tr>
<tr><td>IEEE 802.11ac VHT40</td><td>5190, 5230</td></tr>
<tr><td>IEEE 802.11ac VHT80</td><td>5210</td></tr>
<tr><td rowspan="6">U-NII-2a</td><td>IEEE 802.11a</td><td>5260, 5300, 5320</td></tr>
<tr><td>IEEE 802.11n HT20</td><td>5260, 5300, 5320</td></tr>
<tr><td>IEEE 802.11n HT40</td><td>5270, 5310</td></tr>
<tr><td>IEEE 802.11ac VHT20</td><td>5260, 5300, 5320</td></tr>
<tr><td>IEEE 802.11ac VHT40</td><td>5270, 5310</td></tr>
<tr><td>IEEE 802.11ac VHT80</td><td>5290</td></tr>
<tr><td rowspan="6">U-NII-2c</td><td>IEEE 802.11a</td><td>5500, 5580, 5700</td></tr>
<tr><td>IEEE 802.11n HT20</td><td>5500, 5580, 5700</td></tr>
<tr><td>IEEE 802.11n HT40</td><td>5510, 5550, 5670</td></tr>
<tr><td>IEEE 802.11ac VHT20</td><td>5500, 5580, 5700</td></tr>
<tr><td>IEEE 802.11ac VHT40</td><td>5510, 5550, 5670</td></tr>
<tr><td>IEEE 802.11ac VHT80</td><td>5530, 5610</td></tr>
<tr><td rowspan="6">U-NII-3</td><td>IEEE 802.11a</td><td>5745, 5785, 5825</td></tr>
<tr><td>IEEE 802.11n HT20</td><td>5745, 5785, 5825</td></tr>
<tr><td>IEEE 802.11n HT40</td><td>5755, 5795</td></tr>
<tr><td>IEEE 802.11ac VHT20</td><td>5745, 5785, 5825</td></tr>
<tr><td>IEEE 802.11ac VHT40</td><td>5755, 5795</td></tr>
<tr><td>IEEE 802.11ac VHT80</td><td>5775</td></tr>
</table>
</td></tr>
</table>

Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.
2. The mode IEEE 802.11ac VHT20 and VHT40 are only different in control messages with IEEE 802.11n 20 MHz and HT40, and have same power setting. Therefore, the highest power(IEEE 802.11n 20 MHz and HT40) were test conducted and radiated measurement and recorded in this report.

3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conducted Emission	
Test Condition	**AC Power line conducted emission for line and neutral**
Power supply Mode	**Mode 1: EUT (Model: 9290035626) Power by Adapter-1.5m(S024CSM1200200) Mode 2: EUT (Model: 9290035625) Power by Adapter-1.5m(S024CSM1200200)**
Worst Mode	**☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4**

Radiated Emission Measurement Above 1G	
Test Condition	**Radiated Emission Above 1G**
Power supply Mode	**Mode 1: EUT (Model: 9290035626) Power by Adapter-1.5m(S024CSM1200200) Mode 2: EUT (Model: 9290035625) Power by Adapter-1.5m(S024CSM1200200)**
Worst Mode	**☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4**
Worst Position	**☐ Placed in fixed position. ☐ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☒ Placed in fixed position at Z-Plane (H-Plane)**

Radiated Emission Measurement Below 1G	
Test Condition	**Radiated Emission Below 1G**
Power supply Mode	**Mode 1: EUT (Model: 9290035626) Power by Adapter-1.5m(S024CSM1200200) Mode 2: EUT (Model: 9290035625) Power by Adapter-1.5m(S024CSM1200200)**
Worst Mode	**☐ Mode 1 ☒ Mode 2 ☐ Mode 3 ☐ Mode 4**

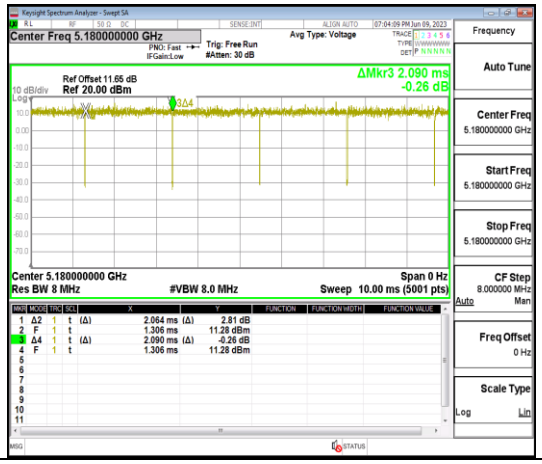
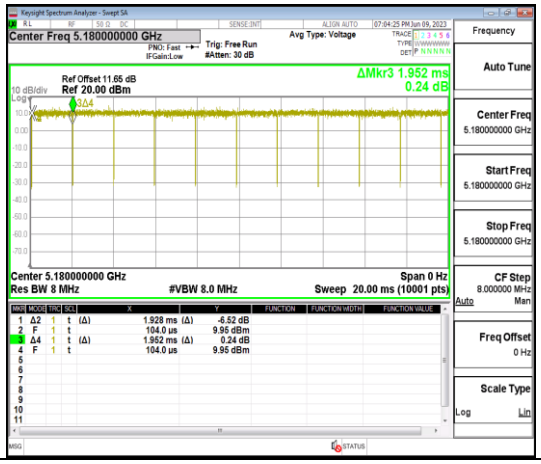
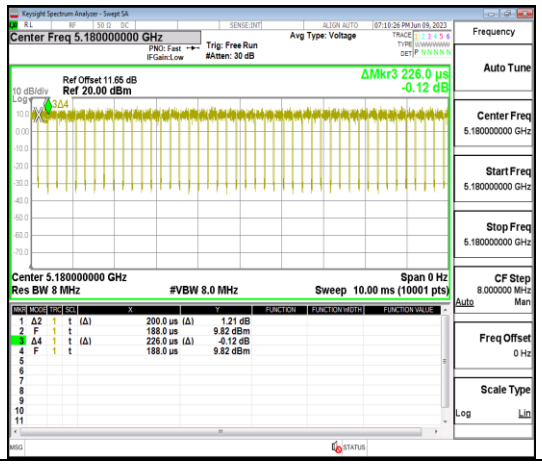
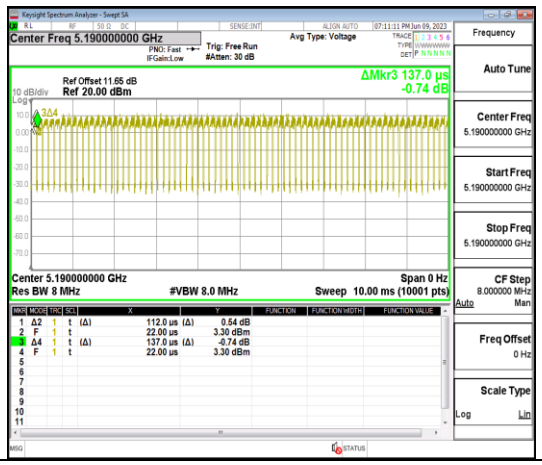
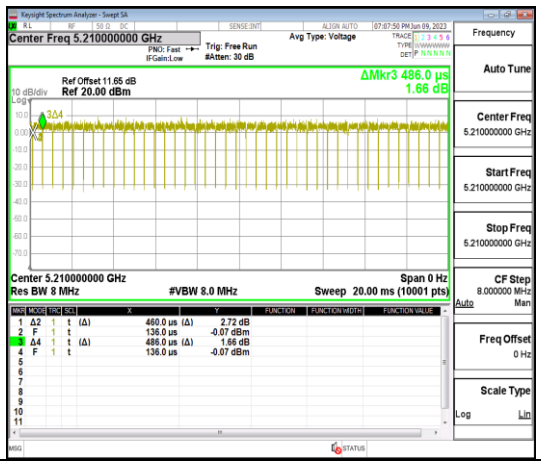
Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Z-Plane) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest band edge and Harmonics channel as worse case.

3.3 EUT DUTY CYCLE

Temperature: 23.2 ~ 25.4℃ **Test date:** June 9 ~ 16, 2023

Humidity: 57 ~ 61% RH **Tested by:** Allen Shen

Duty Cycle				
Configuration	Duty Cycle (%)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11a	98.76	0.05	0.48	0.01
802.11n_20	98.77	0.05	0.52	0.01
802.11ac_20	88.50	0.53	5.00	5.00
802.11n_40	97.33	0.12	1.05	2.00
802.11ac_40	81.75	0.88	8.93	9.00
802.11ac_80	94.65	0.24	2.17	3.00

802.11a	802.11n HT20
	
802.11ac 20	**802.11n HT40**
	
802.11ac 40	**802.11ac 80**
	

4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a),

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

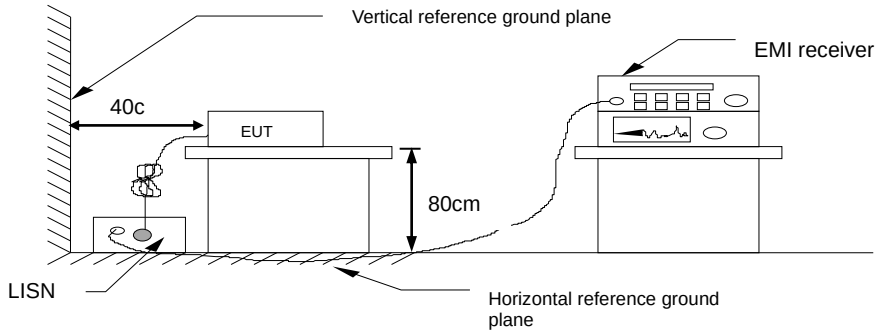
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup

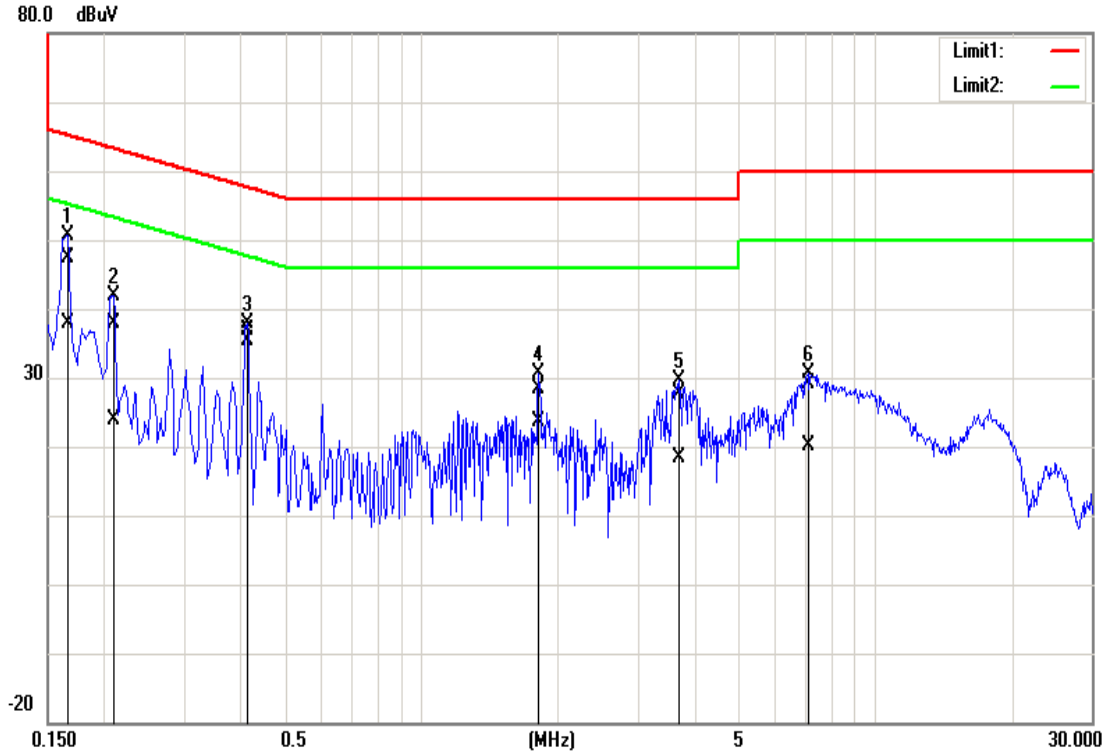


4.1.4 Test Result

Pass.

Test Data

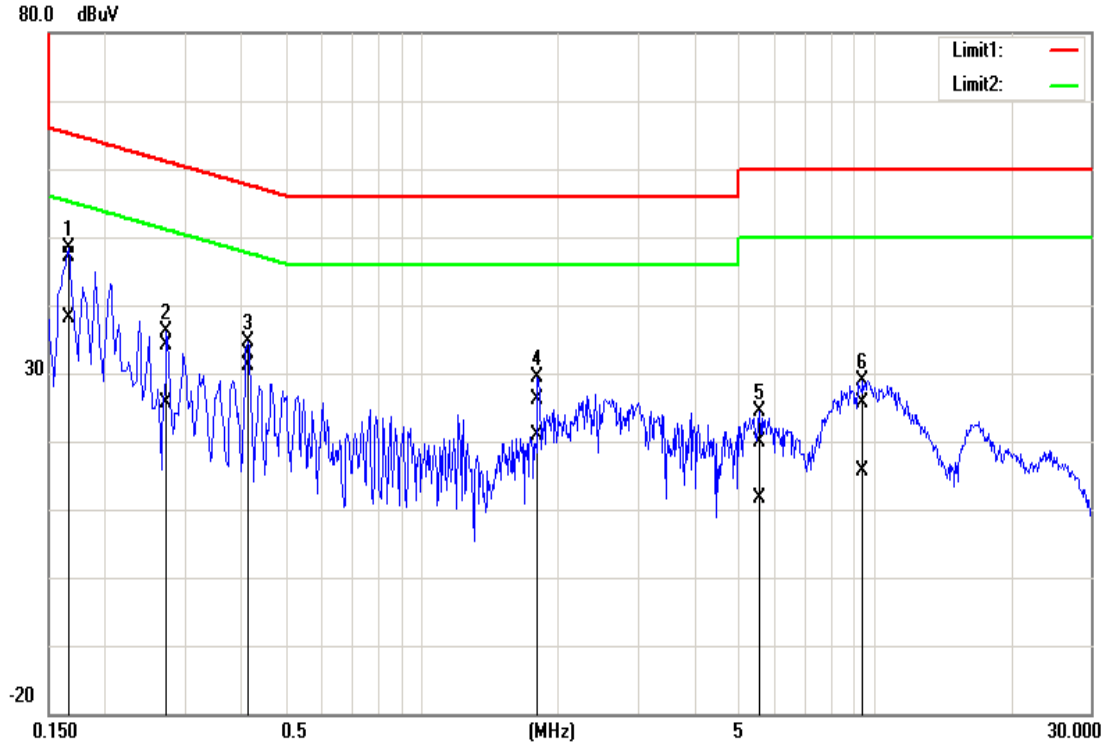
Test Mode:	Mode 1	Temp/Hum	24.8(℃)/ 57%RH
Phase:	Line	Test Date	June 19, 2023
Test Voltage:	120Vac, 60Hz	Test Engineer	Tony Chao



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (d uV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1660	47.28	37.76	0.15	47.43	37.91	65.16	55.16	-17.73	-17.25	Pass
0.2100	37.76	23.70	0.15	37.91	23.85	63.21	53.21	-25.30	-29.36	Pass
0.4140	36.69	35.17	0.15	36.84	35.32	57.57	47.57	-20.73	-12.25	Pass
1.8100	28.26	23.37	0.20	28.46	23.57	56.00	46.00	-27.54	-22.43	Pass
3.6820	27.44	18.19	0.25	27.69	18.44	56.00	46.00	-28.31	-27.56	Pass
7.1300	28.84	19.91	0.31	29.15	20.22	60.00	50.00	-30.85	-29.78	Pass

Note: 1. Correction factor = LISN loss + Cable loss.

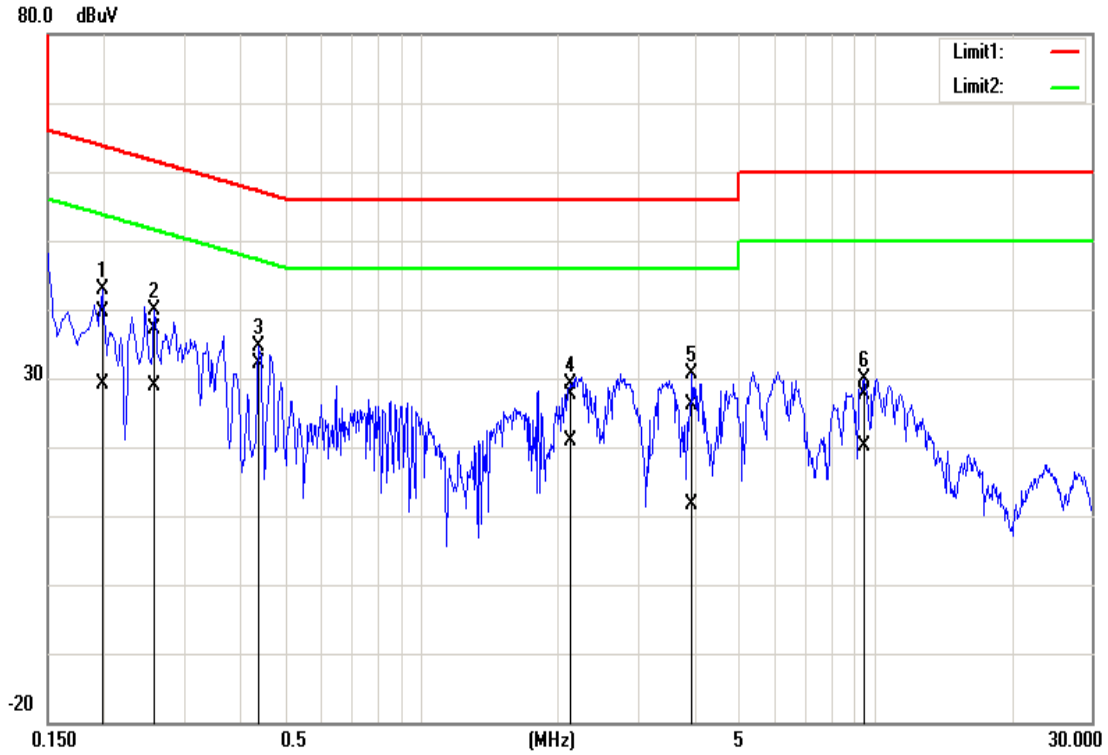
Test Mode:	Mode 1	Temp/Hum	24.8(℃)/ 57%RH
Phase:	Neutral	Test Date	June 19, 2023
Test Voltage:	120Vac, 60Hz	Test Engineer	Tony Chao



Frequency (MHz)	Quasi Peak reading dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1660	47.06	38.03	0.19	47.25	38.22	65.16	55.16	-17.91	-16.94	Pass
0.2740	33.99	25.44	0.19	34.18	25.63	61.00	51.00	-26.82	-25.37	Pass
0.4140	32.79	30.89	0.19	32.98	31.08	57.57	47.57	-24.59	-16.49	Pass
1.8060	25.97	20.52	0.24	26.21	20.76	56.00	46.00	-29.79	-25.24	Pass
5.5900	19.59	11.26	0.32	19.91	11.58	60.00	50.00	-40.09	-38.42	Pass
9.4260	25.27	15.17	0.38	25.65	15.55	60.00	50.00	-34.35	-34.45	Pass

Note: 1. Correction factor = LISN loss + Cable loss.

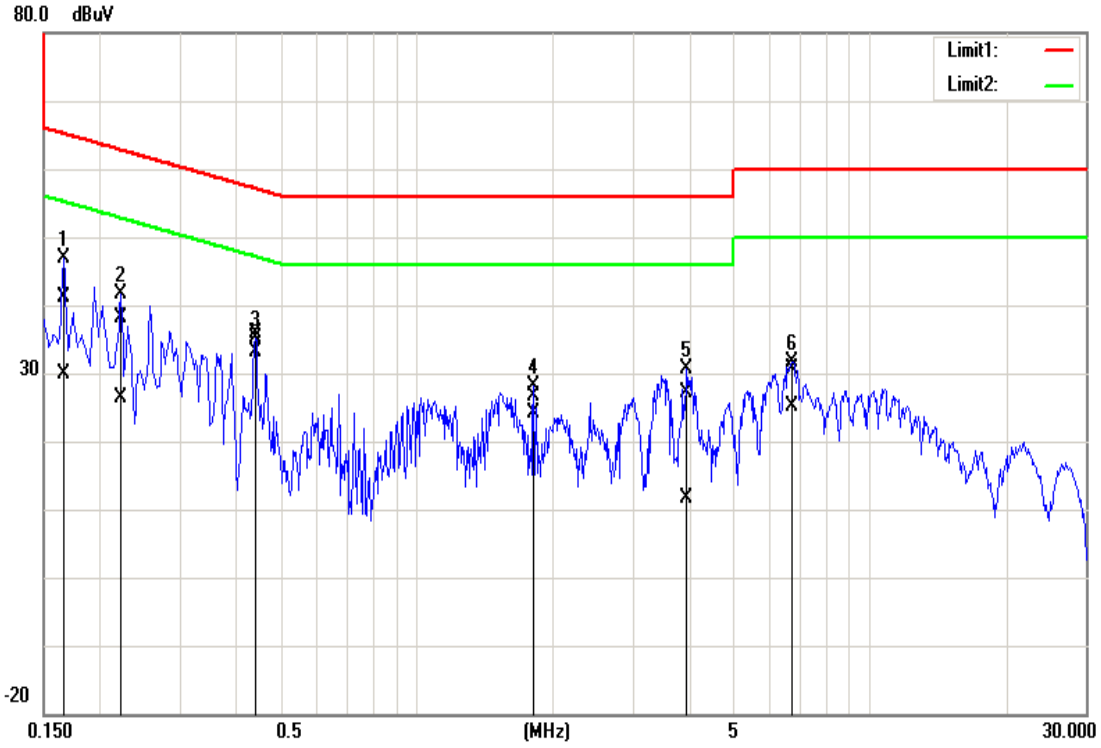
Test Mode:	Mode 1	Temp/Hum	24.3(℃)/ 52%RH
Phase:	Line	Test Date	August 8, 2023
Test Voltage:	240Vac, 50Hz	Test Engineer	Tony Chao



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (d uV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1980	39.49	28.90	0.15	39.64	29.05	63.69	53.69	-24.05	-24.64	Pass
0.2580	36.93	28.77	0.15	37.08	28.92	61.50	51.50	-24.42	-22.58	Pass
0.4380	34.59	32.08	0.15	34.74	32.23	57.10	47.10	-22.36	-14.87	Pass
2.1020	27.31	20.77	0.22	27.53	20.99	56.00	46.00	-28.47	-25.01	Pass
3.9460	25.98	11.38	0.26	26.24	11.64	56.00	46.00	-29.76	-34.36	Pass
9.4700	27.21	19.86	0.35	27.56	20.21	60.00	50.00	-32.44	-29.79	Pass

Note: 1. Correction factor = LISN loss + Cable loss.

Test Mode:	Mode 1	Temp/Hum	24.3(℃)/ 52%RH
Phase:	Neutral	Test Date	August 8, 2023
Test Voltage:	240Vac, 50Hz	Test Engineer	Tony Chao



Frequency (MHz)	Quasi Peak reading dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1660	40.86	29.66	0.19	41.05	29.85	65.16	55.16	-24.11	-25.31	Pass
0.2220	38.03	26.10	0.19	38.22	26.29	62.74	52.74	-24.52	-26.45	Pass
0.4420	35.57	33.03	0.19	35.76	33.22	57.02	47.02	-21.26	-13.80	Pass
1.8100	26.33	23.83	0.25	26.58	24.08	56.00	46.00	-29.42	-21.92	Pass
3.9460	26.71	11.32	0.31	27.02	11.63	56.00	46.00	-28.98	-34.37	Pass
6.7500	30.24	24.75	0.34	30.58	25.09	60.00	50.00	-29.42	-24.91	Pass

Note: 1. Correction factor = LISN loss + Cable loss.

4.2 26dB BANDWIDTH, 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

4.2.1 Test Limit

26 dB Bandwidth ：For reporting purposes only.

6 dB Bandwidth ：Least 500kHz.

Occupied Bandwidth(99%) ： For reporting purposes only.

4.2.2 Test Procedure

26dB

1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

2. Set RBW: approximately 1% of the emission bandwidth.

3. Set the VBW>RBW.

4. Detoctor = Peak.

5. Trace mode = max hold.

6. Measure the maximum width of the emission that is 26dB down from the peak of the emission. Compare this with the RBW setting of the analyser. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

6dB

1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

2. Set RBW = 100 kHz.

3. Set the video bandwidth (VBW) ≥ 3 x RBW.

4. Detoctor = Peak.

5. Trace mode = max hold.

6. Sweep = auto couple.

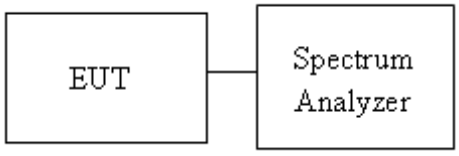
7. Allow the trace to stabilize.

8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

99%

1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set center frequency to the nominal EUT channel center frequency.
3. Set span = 1.5 times to 5.0 times the OBW.
4. Set RBW = 1 % to 5% of the OBW.
5. Set VBW ≧ 3 xRBW

4.2.3 Test Setup



4.2.4 Test Result

Temperature:	23.2 ~ 25.4℃	**Test date:**	June 9 ~ 16, 2023
Humidity:	57 ~ 61% RH	**Tested by:**	Allen Shen

UNII-1 5150-5250 MHz

Test mode: IEEE 802.11a mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
36	5180	16.633	21.20
44	5220	16.698	21.55
48	5240	16.653	21.47

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
36	5180	17.820	21.50
44	5220	17.861	21.36
48	5240	17.828	21.38

Test mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
38	5190	36.317	39.41
46	5230	36.405	39.92

Test mode: IEEE 802.11ac VHT80 mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
42	5210	75.635	81.33

UNII-2a 5250-5350 MHz

Test mode: IEEE 802.11a mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
52	5260	16.663	21.53
60	5300	16.663	21.07
64	5320	16.650	21.43

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
52	5260	17.840	21.33
60	5300	17.860	21.43
64	5320	17.833	21.60

Test mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
54	5270	36.338	41.40
62	5310	36.344	39.70

Test mode: IEEE 802.11ac VHT80 mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
58	5290	75.720	81.28

UNII-2c 5470~5725 MHz

Test mode: IEEE 802.11a mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
100	5500	16.608	20.89
116	5580	16.735	21.49
140	5700	16.638	21.25

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
100	5500	17.817	21.35
116	5580	17.802	21.52
140	5700	17.813	21.24

Test mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
102	5510	36.355	40.01
110	5550	36.301	40.22
134	5670	36.294	40.58

Test mode: IEEE 802.11ac VHT80 mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	26dB BW (MHz)
106	5530	75.681	81.52
122	5610	75.849	81.27

UNII-3 5725~5850 MHz

Test mode: IEEE 802.11a mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	6dB BW (MHz) Limit: > 500 KHz
149	5745	16.788	16.35
157	5785	16.926	16.33
165	5825	16.884	16.36

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	OBW(99%) (MHz)	6dB BW (MHz) Limit: > 500 KHz
149	5745	18.040	17.41
157	5785	18.004	17.29
165	5825	17.996	17.57

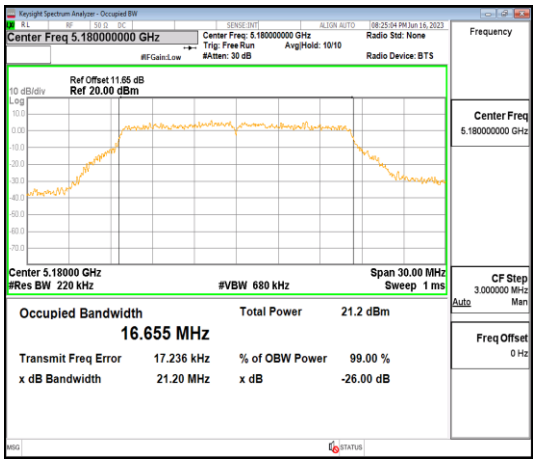
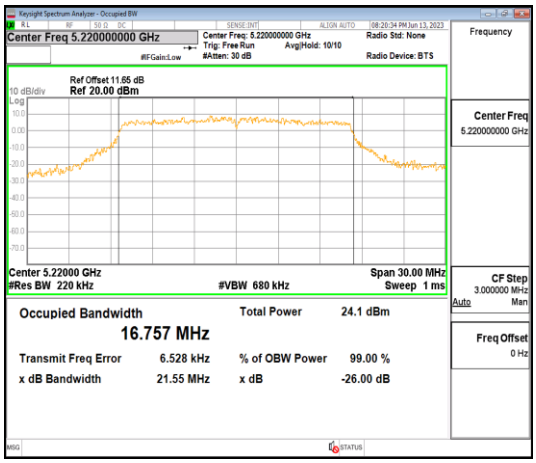
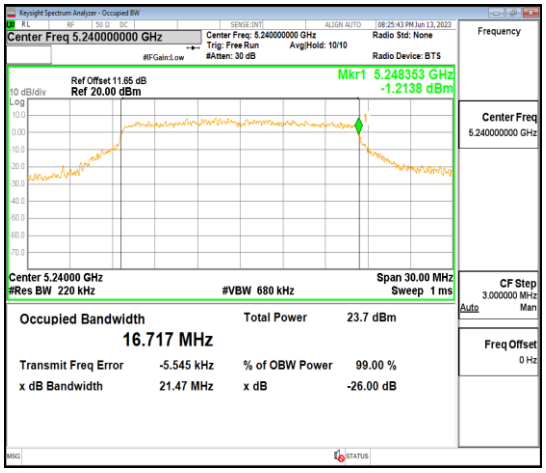
Test mode: IEEE 802.11n HT40 mode

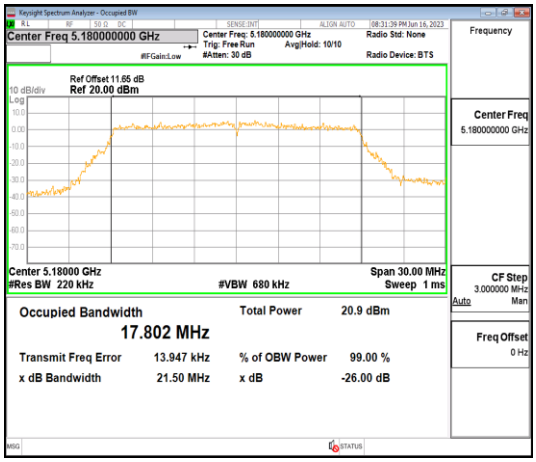
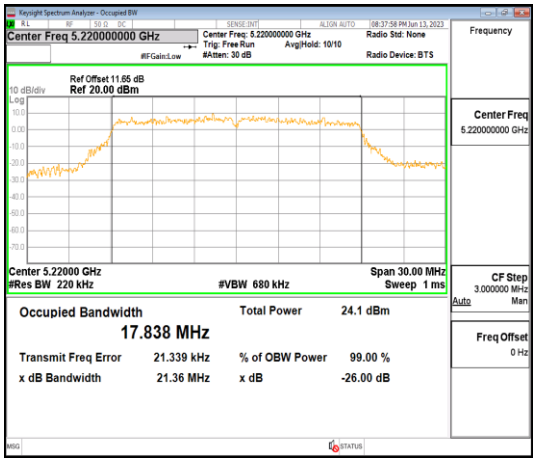
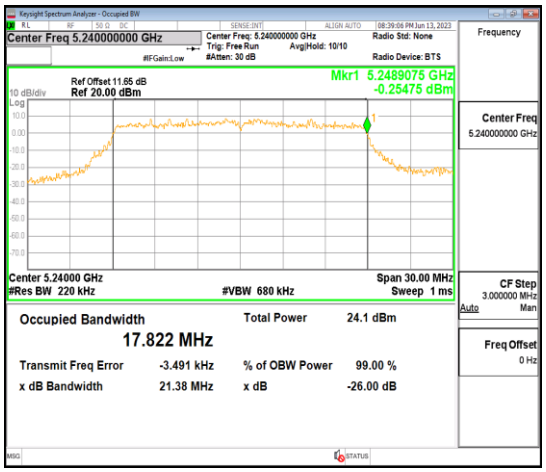
Channel	Frequency (MHz)	OBW(99%) (MHz)	6dB BW (MHz) Limit: > 500 KHz
151	5755	36.635	36.35
159	5795	36.591	36.33

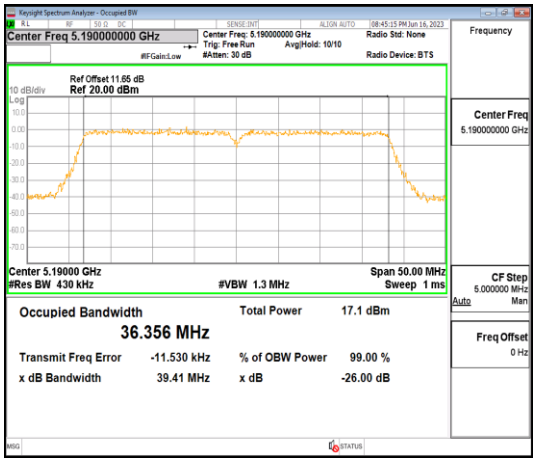
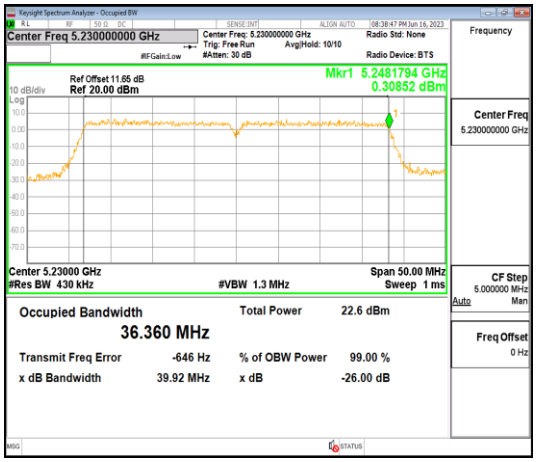
Test mode: IEEE 802.11ac VHT80 mode

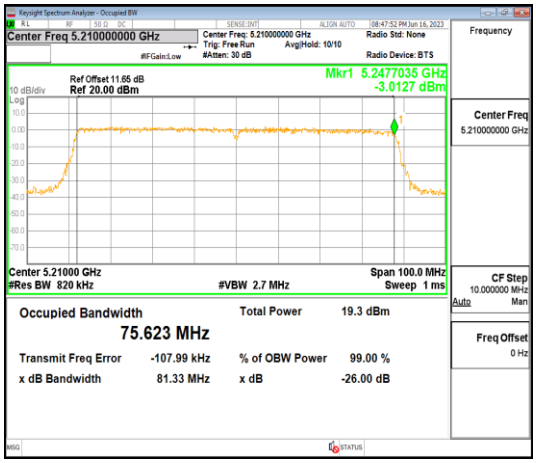
Channel	Frequency (MHz)	OBW(99%) (MHz)	6dB BW (MHz) Limit: > 500 KHz
155	5775	75.823	75.16

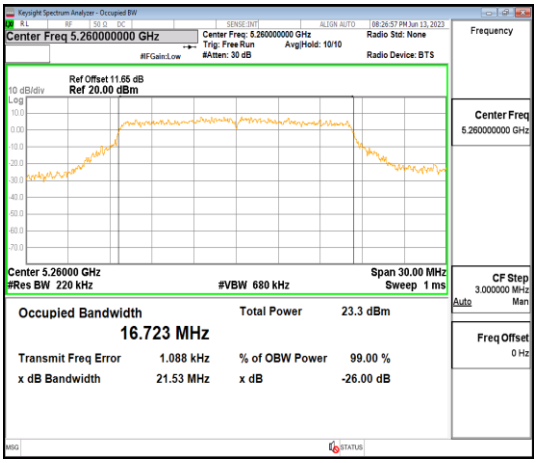
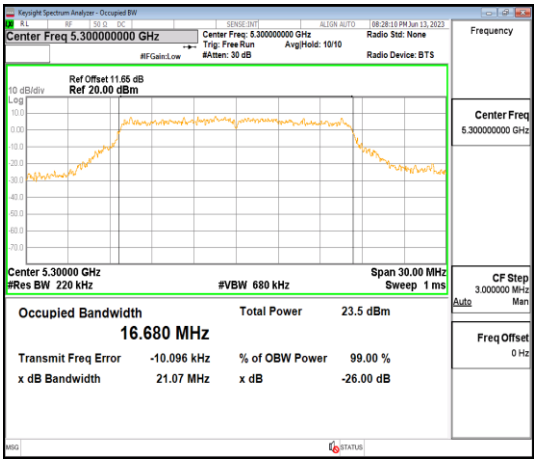
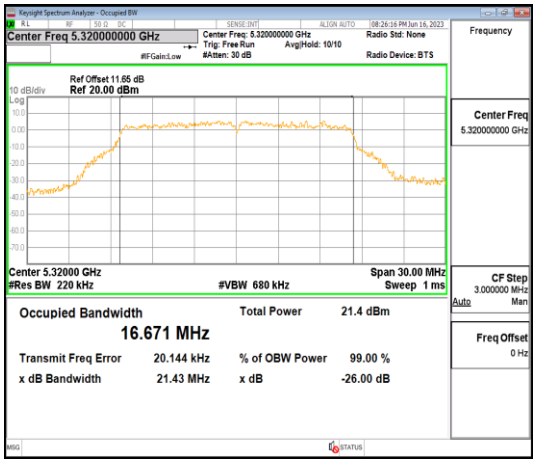
Test Plots (26dB BANDWIDTH)

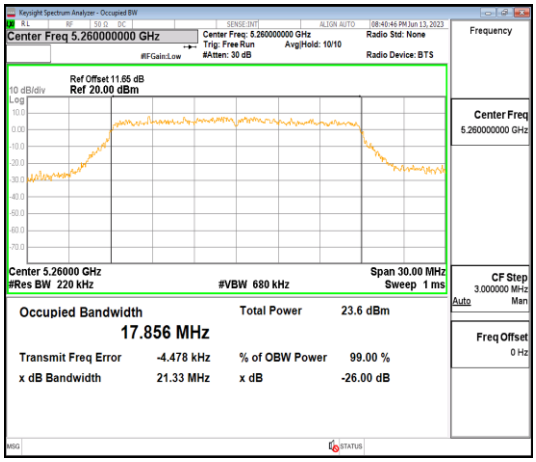
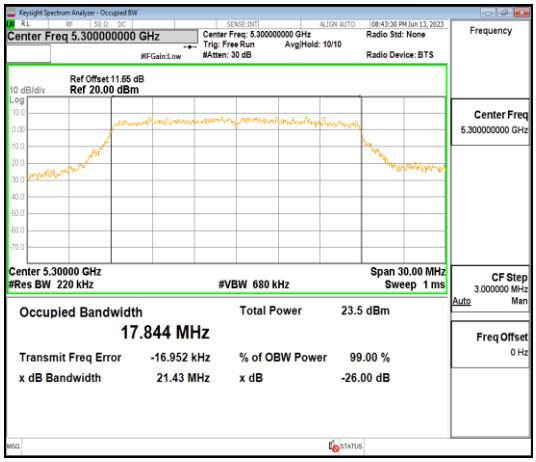
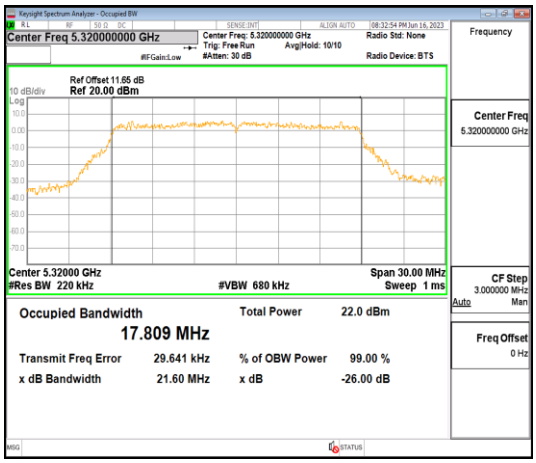
UNII-1 IEEE 802.11a mode	
5180 MHz	5220 MHz
	
5240 MHz	
	

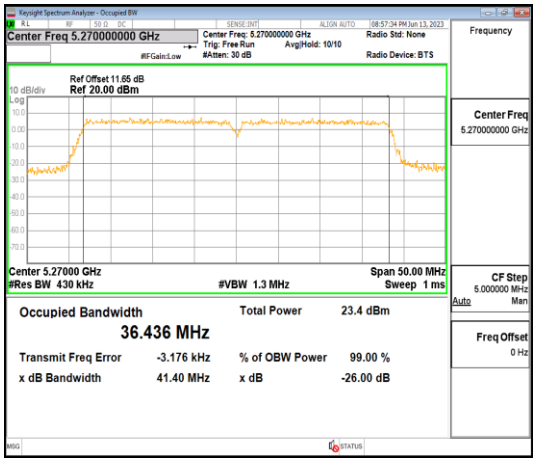
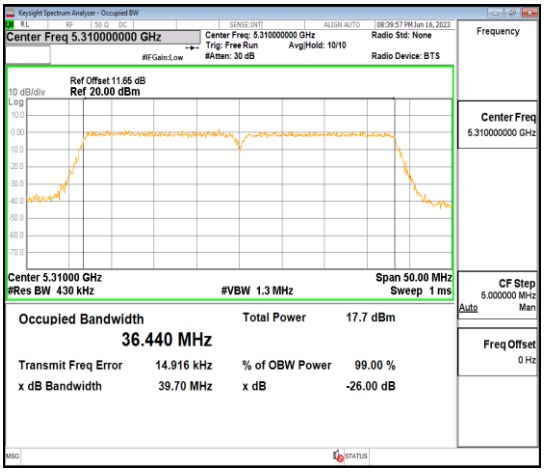
UNII-1 IEEE 802.11n HT20 mode	
5180 MHz	**5220 MHz**
	
5240 MHz	
	

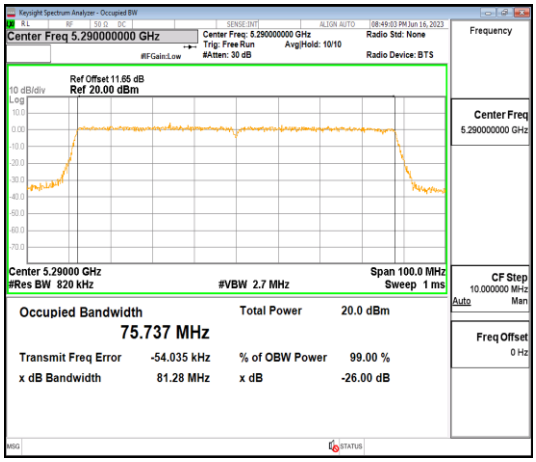
UNII-1 IEEE 802.11n HT40 mode	
5190 MHz	**5230 MHz**
	

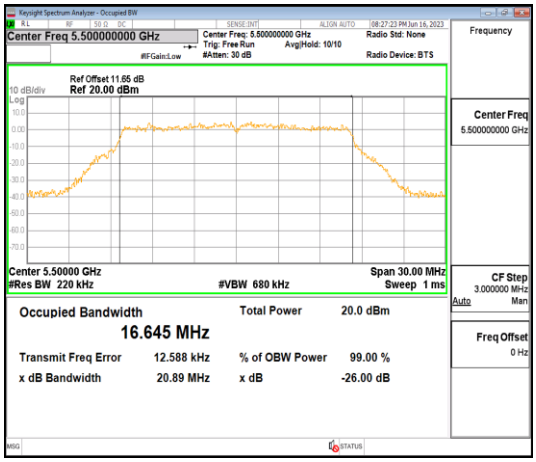
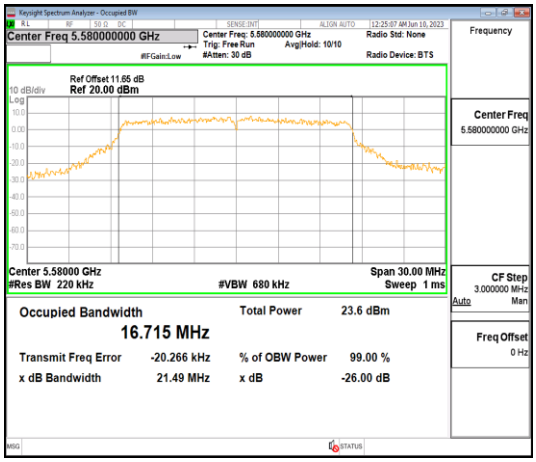
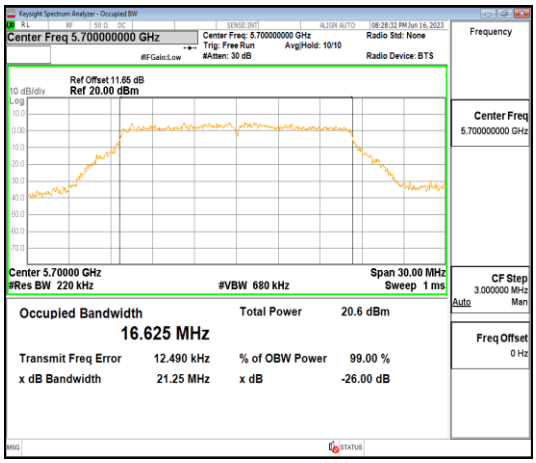
UNII-1 IEEE 802.11ac VHT80 mode
5210 MHz


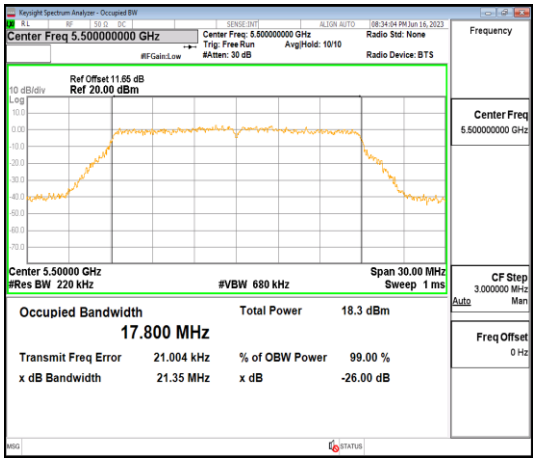
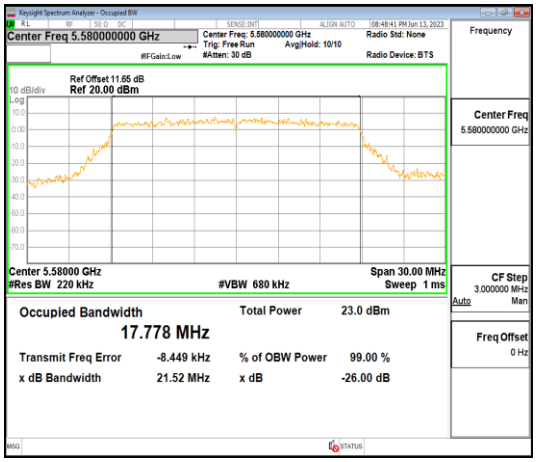
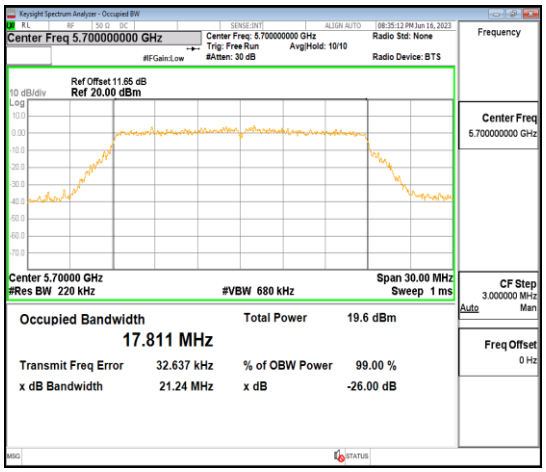
UNII-2a IEEE 802.11a mode	
5260 MHz	**5300 MHz**
	
5320 MHz	
	

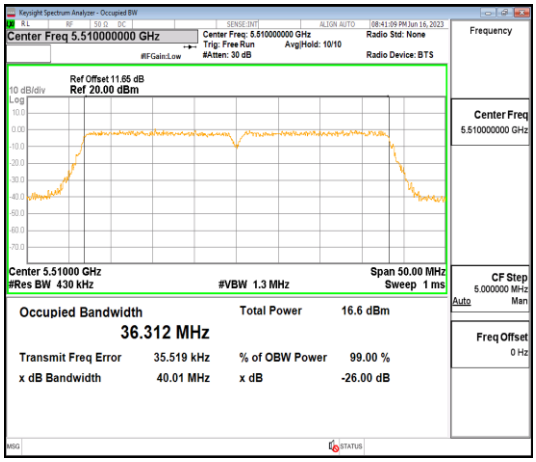
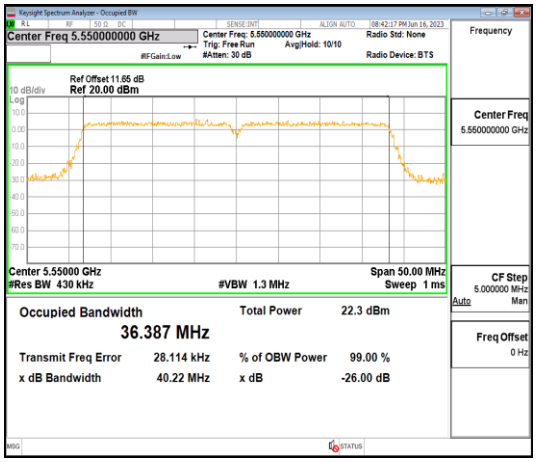
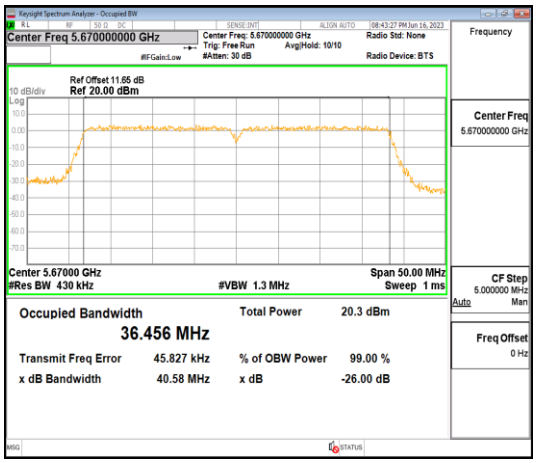
UNII-2a IEEE 802.11n HT20 mode	
5260 MHz	**5300 MHz**
	
5320 MHz	
	

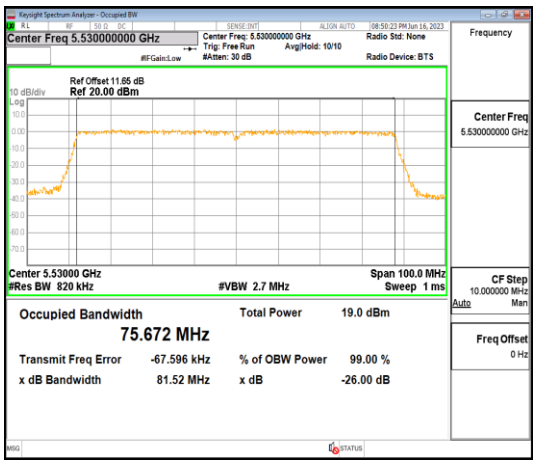
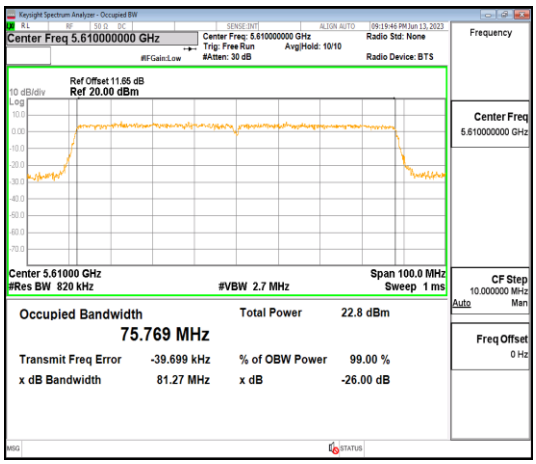
UNII-2a IEEE 802.11n HT40 mode	
5270 MHz	**5310 MHz**
	

UNII-2a IEEE 802.11ac VHT80 mode	
5290 MHz	
	

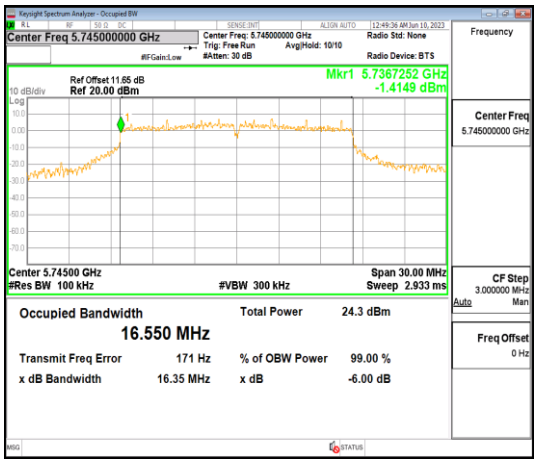
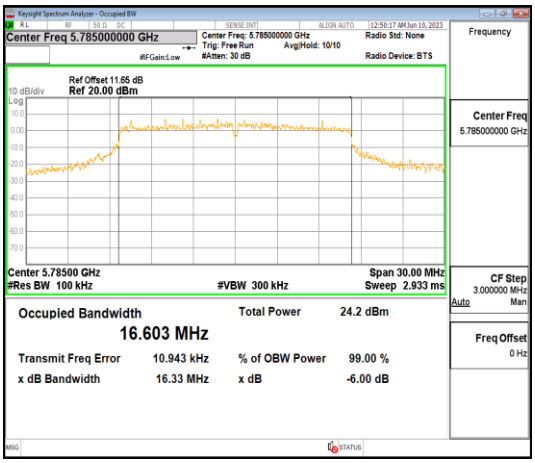
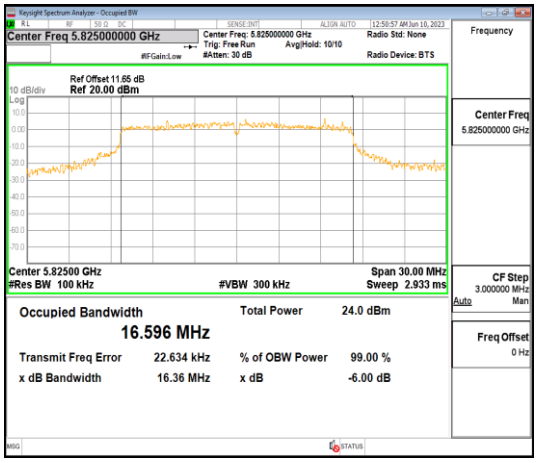
UNII-2c IEEE 802.11a mode	
5500 MHz	**5580 MHz**
	
5700 MHz	
	

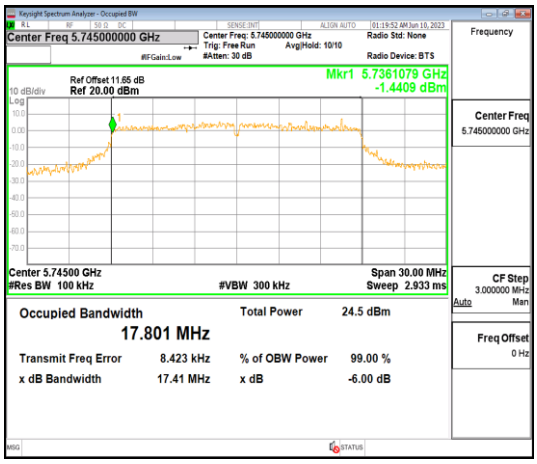
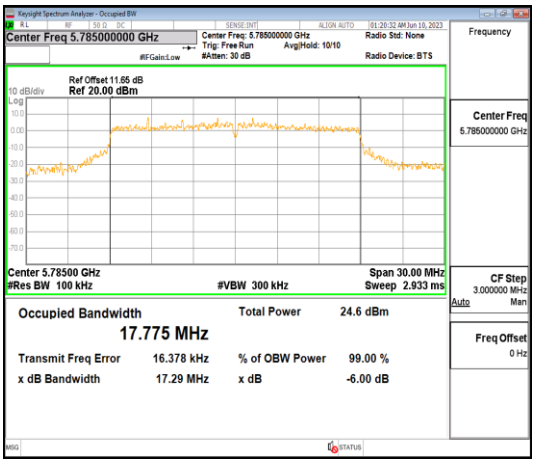
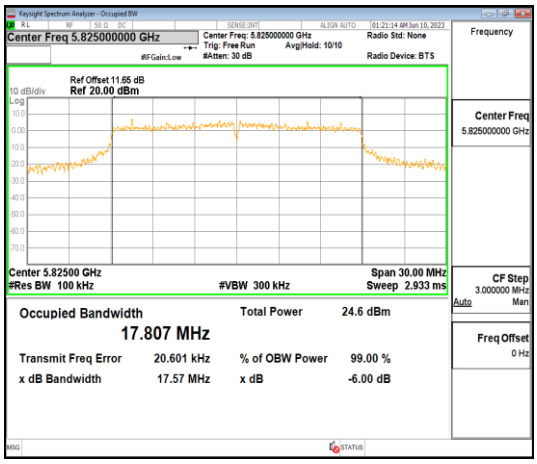
UNII-2c IEEE 802.11n HT20 mode	
5500 MHz	**5580 MHz**
	
5700 MHz	
	

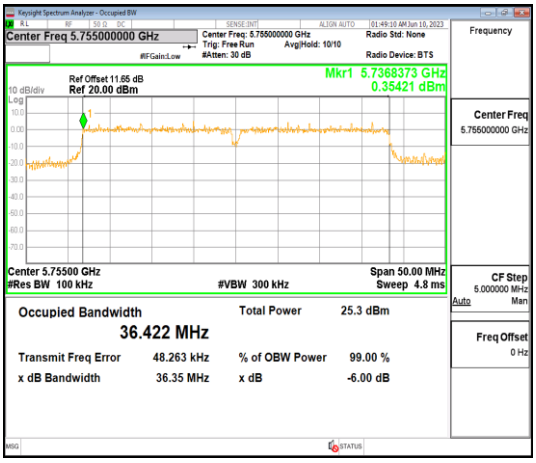
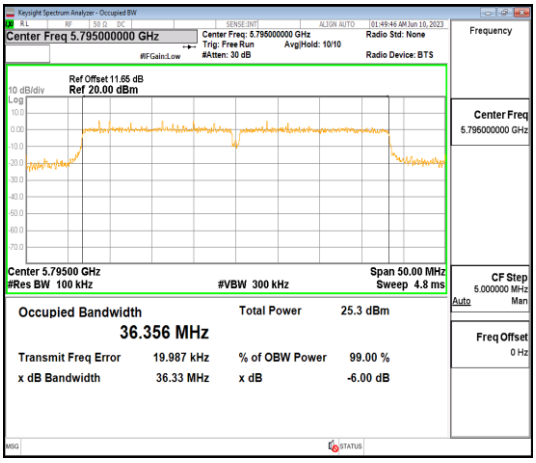
UNII-2c IEEE 802.11n HT40 mode	
5510 MHz	**5550 MHz**
	
5670 MHz	
	

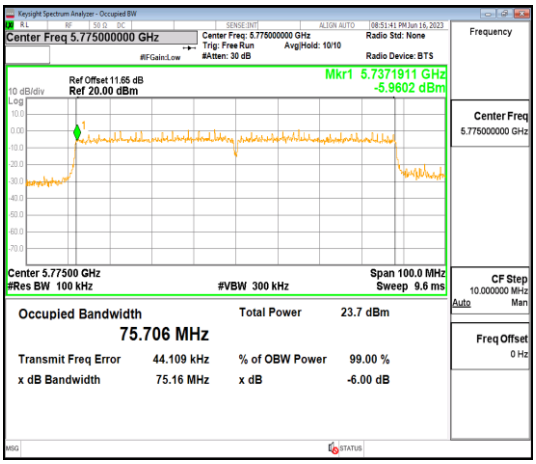
UNII-2c IEEE 802.11ac VHT80 mode	
5530 MHz	**5610 MHz**
	

Test Plots (6dB BANDWIDTH)

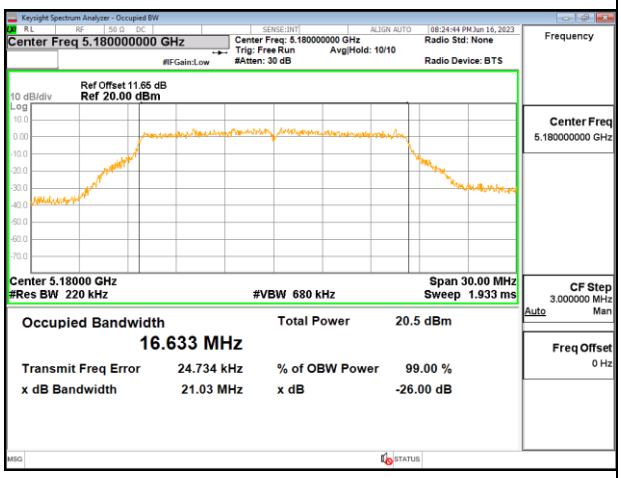
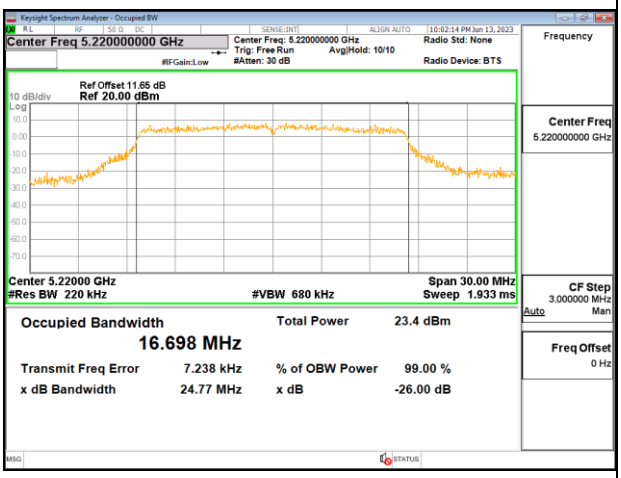
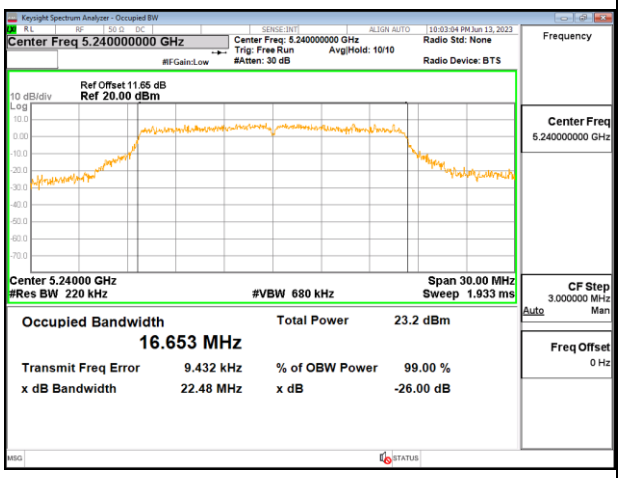
UNII-3 IEEE 802.11 a mode	
5745 MHz	5785 MHz
	
5825 MHz	
	

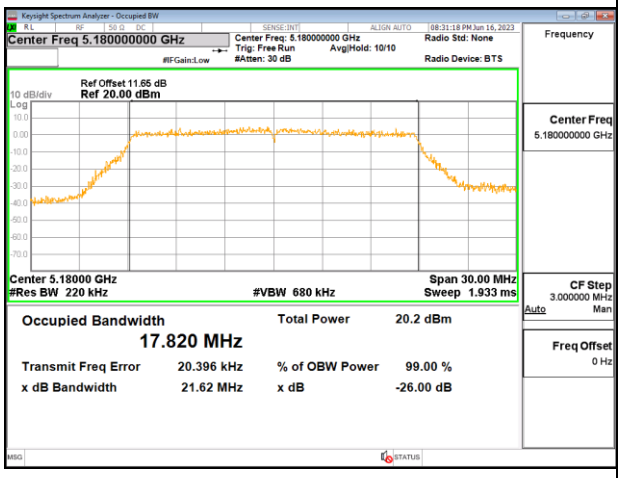
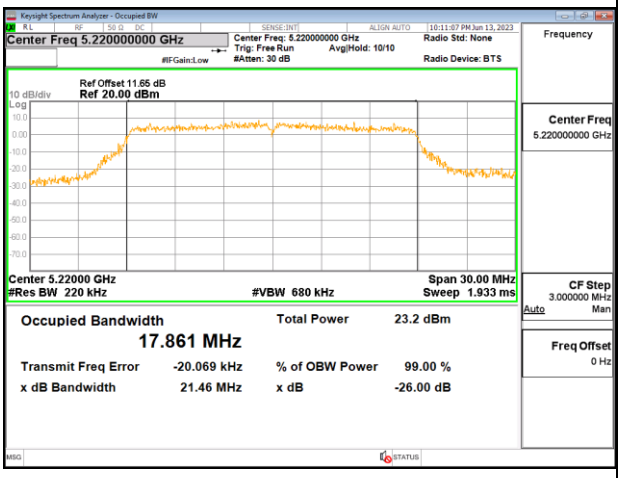
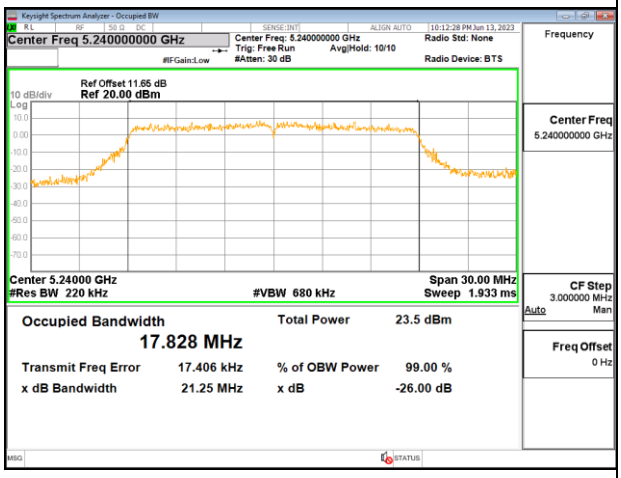
UNII-3 IEEE 802.11n HT20 mode	
5745 MHz	**5785 MHz**
	
5825 MHz	
	

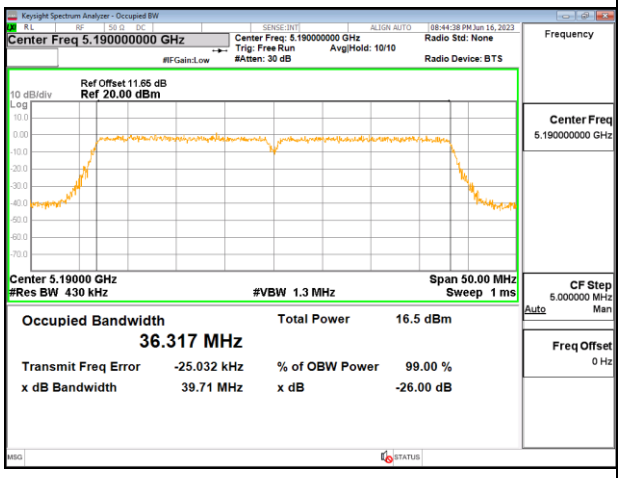
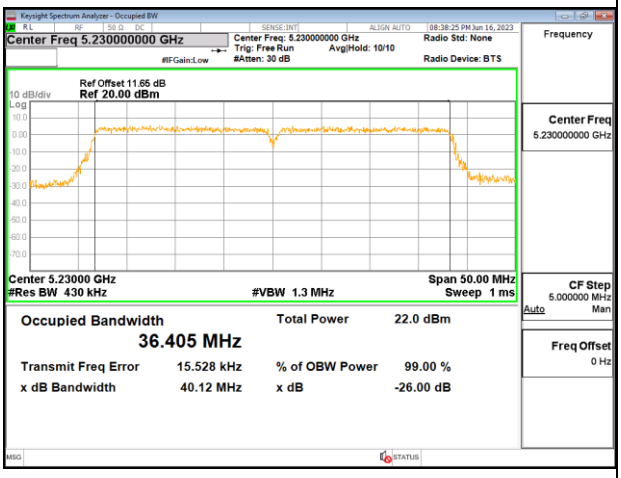
UNII-3 IEEE 802.11n HT40 mode- chain 0	
CH 5755	CH 5795
	

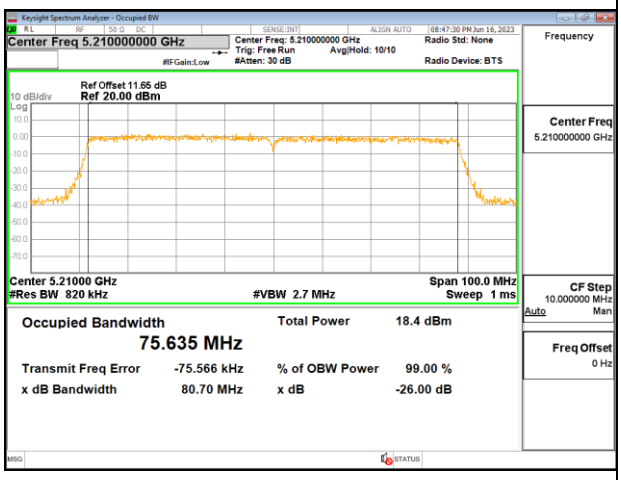
UNII-3 IEEE 802.11ac VHT80 mode- chain 0
CH 5775


Test Plots (OBW 99%)

UNII-1 IEEE 802.11a mode	
5180 MHz	5220 MHz
	
5240 MHz	
	

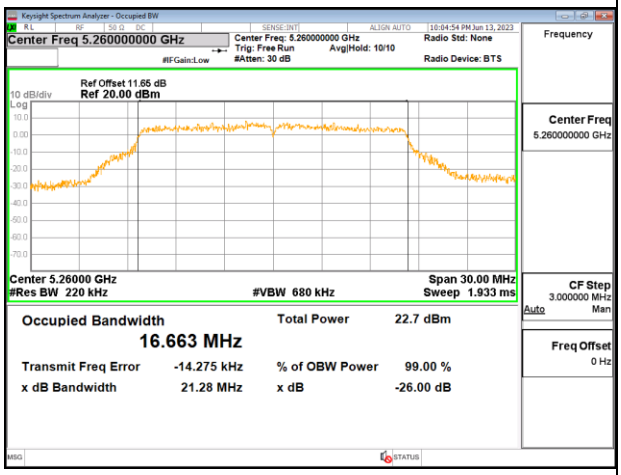
UNII-1 IEEE 802.11n HT20 mode	
5180 MHz	**5220 MHz**
	
5240 MHz	
	

UNII-1 IEEE 802.11n HT40 mode	
5190 MHz	**5230 MHz**
	

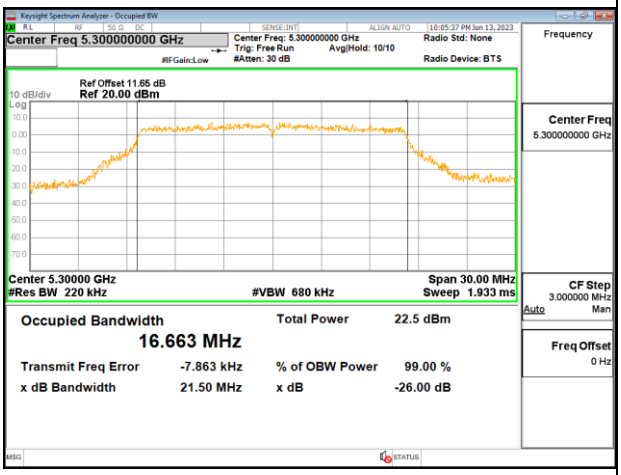
UNII-1 IEEE 802.11ac VHT80 mode	
5210 MHz	
	

UNII-2a IEEE 802.11a mode

5260 MHz



5300 MHz



5320 MHz