

Project No: TM-2411000185P
Report No.: TMWK2411003935KR

FCC ID: W3TITM1811

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Rev.: 01

RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART E

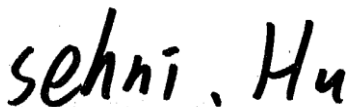
Test Standard	FCC Part 15.407
Product name	Wifi module iTM1811-CU
Brand Name	Safe Fleet
Model No.	iTM1811-CU
Test Result	Pass
Statements of Conformity	Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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:



Sehni Hu
Supervisor

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	March 12, 2025	Initial Issue	ALL	Peggy Tsai
01	March 26, 2025	See the following Note Rev. (01)	P.6	Peggy Tsai

Note:

Rev. (01)

1. Modify note in section 1.3.



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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Fleetmind Seon Solutions Inc. Unit 111 – 3B Burbidge Street, Coquitlam, BC, V3K 7B2 Canada
Manufacturer	Altasec Technology Corp. 12F-5, No. 75, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)
Equipment	Wifi module iTM1811-CU
Model No.	iTM1811-CU
Model Discrepancy	N/A
Trade Name	Safe Fleet
Received Date	November 12, 2024
Date of Test	November 29 ~ December 23, 2024
Power Operation	Powered from Power supply (DC 3.3V)
HW Version	REV0.1
FW Version	0.5.0.9

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. This device is Client (without radar detection).

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 HT 20 MHz mode: OFDM 3. IEEE 802.11n HT 40 MHz mode: OFDM 4. IEEE 802.11ac VHT 20 MHz mode: OFDM 5. IEEE 802.11ac VHT 40 MHz mode: OFDM 6. IEEE 802.11ac VHT 80 MHz 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



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1.3 ANTENNA INFORMATION

Antenna Type	☐ PIFA ☐ PCB ☐ Dipole ☒ Whipless Cellular Antenna
Antenna Gain	Band I (5150-5250 MHz): Gain: 3 dBi Band II (5250~5350 MHz): Gain: 3 dBi Band III (5470-5725 MHz): Gain: 3 dBi Band IV (5725-5850MHz): Gain: 3 dBi
Antenna Connector	SMA-m

Note:

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. However, for this product, professional installation is required to meet the standard. So the EUT complies with the requirements of §FCC Part 15.203.

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	± 2.21 dB
Channel Bandwidth	± 2.79 dB
RF output power (Spectrum)	± 2.74 dB
Power Spectral density	± 2.74 dB
Radiated Emission_9kHz-30MHz	± 3.492 dB
Radiated Emission_30MHz-200MHz	± 3.62 dB
Radiated Emission_200MHz-1GHz	± 3.899 dB
Radiated Emission_1GHz-6GHz	± 5.063 dB
Radiated Emission_6GHz-18GHz	± 5.122 dB
Radiated Emission_18GHz-26GHz	± 3.032 dB
Radiated Emission_26GHz-40GHz	± 3.271 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.



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1.5 FACILITIES AND TEST LOCATION

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

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

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	Ben Yang	-
Radiation	Tony Chao 、 Ray Li	-
RF Conducted	David Li	-
DFS Test	KW Huang	-

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



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1.6 INSTRUMENT CALIBRATION

Conducted_FCC/IC/NCC (All)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Supply	GWINSTEK	GPC-3030D	8070184	2024-09-20	2025-09-19
Power Sensor	Anritsu	MA2411B	1911386	2024-07-19	2025-07-18
Power Sensor	Anritsu	MA2411B	1911387	2024-07-19	2025-07-18
Power Meter	Anritsu	ML2496A	2136002	2024-07-19	2025-07-18
PXA Signal Analyser	KEYSIGHT	N9030B	MY62291089	2024-10-04	2025-10-03
EXA Signal Analyzer	AGILENT	N9010A	MY53400256	2024-11-19	2025-11-18
Attenuator	Marvelous Microwave Inc	MVE2213-10	08	2024-11-07	2025-11-06
Software	Radio Test Software Ver. 21				

DFS Test					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EXA Signal Analyzer	Keysight	N9010B	MY55460167	2024-01-03	2025-01-02
Vector Signal Generator	KEYSIGHT	N5182B/ N5182BX07	MY61252828/ MY59362552	2024-01-19	2025-01-18
DC Power Source	Motech	PPS1208	12033120005	2024-10-16	2025-10-15
Attenuator	E-INSTRUMENT	EPA-600H	EC1400050	2024-06-19	2025-06-18
Power Divider	Solvang Technology	STI08-0015	008	2024-07-03	2025-07-02
Power Divider	Marvelous Microwave	MVE8586	16011201	2024-06-19	2025-06-18
Power Divider	Marvelous Microwave	MVE8586	16011202	2024-06-19	2025-06-18
Cable	Woken	SUMITOMO	1	2024-03-02	2025-03-01
Cable	Woken	SUMITOMO	2	2024-03-02	2025-03-01
Cable	Woken	SUMITOMO	3	2024-03-02	2025-03-01
Cable	Woken	SUMITOMO	4	2024-03-02	2025-03-01
Cable	Woken	SUMITOMO	5	2024-03-02	2025-03-01
Cable	Woken	SUMITOMO	6	2024-03-02	2025-03-01
Cable	Woken	SUMITOMO	8	2024-03-02	2025-03-01
Cable	Woken	SUMITOMO	14	2024-06-26	2025-06-25
Software	Dynamic Frequency Selection Test version 24.11.13				

Remark:

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



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966A Radiated					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Signal Analyzer	KEYSIGHT	N9010A	MY52220817	2024-03-15	2025-03-14
Thermo-Hygro Meter	WISEWIND	1206	D07	2024-11-26	2025-11-25
Active Loop Antenna	SCHWARZBEC K	FMZB 1513-60	1513-60-028	2023-12-13 2024-12-11	2024-12-12 2025-12-10
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2024-07-12	2025-07-11
Preamplifier	EMEC	EM330	060609	2024-02-21	2025-02-20
Cable	Huber+Suhner	104PEA	20995+21000+ 182330	2024-08-07	2025-08-06
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2023-12-28	2024-12-27
Horn Antenna	ETS LINDGREN	3117	00055165	2024-07-11	2025-07-10
Preamplifier	HP	8449B	3008A00965	2023-12-22 2024-12-28	2024-12-21 2025-12-17
Cable	EMCI	EMC101G	221011+221012 +221213	2024-10-11	2025-10-10
Attenuator	Mini-Circuits	BW-S9W5	BWS9W5-09- 966A-01	2024-02-07	2025-02-06
High Pass Filters	MICRO TRONICS	HPM13195	3	2024-01-23	2025-01-22
Horn Antenna	SCHWARZBEC K	BBHA9170	1047	2023-12-13 2024-12-06	2024-12-12 2025-12-05
Pre-Amplifier	EMCI	EMC184045SE	980860	2023-12-12 2024-12-02	2024-12-11 2025-12-01
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Site Validation	CCS	966A	N/A	2024-08-03	2025-08-02
Software	e3 V9-210616c				

AC Mains Conduction					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESCI	100064	2024-06-14	2025-06-13
LISN	TESEQ	LN2-16N	22012	2024-02-29	2025-02-27
Cable	Woken	SFL402	185A	2024-07-08	2025-07-07
Software	e3 V6-110812				

Remark:

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



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1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

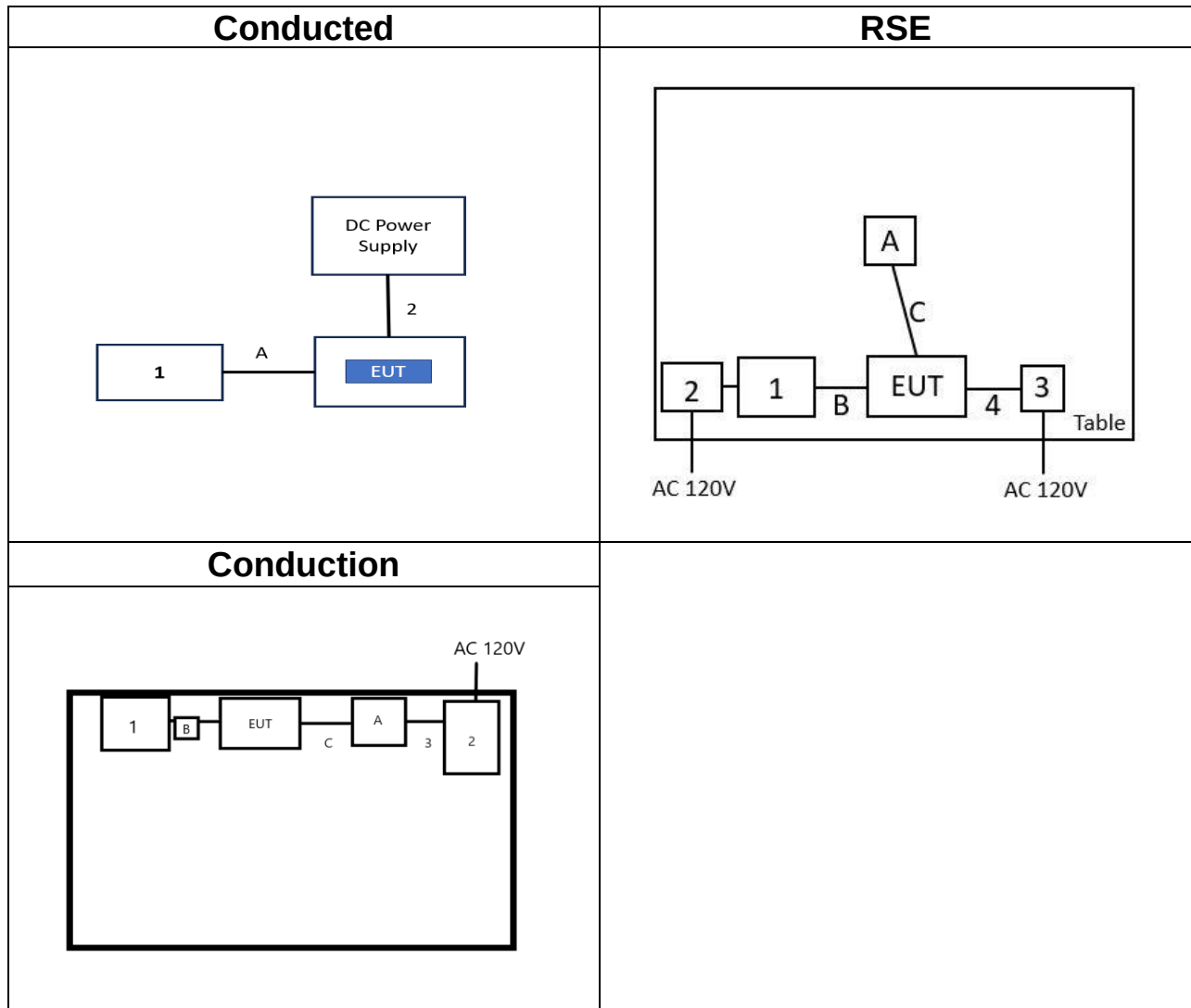
EUT Accessories Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
	N/A					

Support Equipment (Conducted)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(O)	Lenovo	T470	N/A	N/A
2	DC Power Cable	MISUMI	MCR3S-RE	N/A	N/A
A	PHR-5 to TypeA	N/A	N/A	N/A	N/A

Support Equipment (RSE)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A
2	Adapter	Lenovo	ADLX45DLC3A	N/A	N/A
3	DC Power Source	GWINSTEK	SPS-3610	GPE880163	N/A
4	DC Cable	Phino	E94163	N/A	N/A
A	Antenna	MP Antenna	SEON-0894-72	N/A	N/A
B	PHR-5 to TypeA	N/A	N/A	N/A	N/A
C	SMA Cable	N/A	N/A	N/A	N/A

Support Equipment (Conduction)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A
2	DC Power Source	GWINSTEK	SPS-3610	GPE880163	N/A
3	DC Cable	Phino	E94163	N/A	N/A
A	Antenna	MP Antenna	SEON-0894-72	N/A	N/A
B	PHR-5 to TypeA	N/A	N/A	N/A	N/A
C	SMA Cable	N/A	N/A	N/A	N/A

1.8 TEST SET UP DIAGRAM



1.9 TEST PROGRAM

The EUT connection corresponds to the surrounding fixture control board.
This EUT uses "MP Tool v15.0.0.498" software to set the frequency, modulation, and power to allow the sample to continuously transmit.

1.10 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 v02r01, KDB 905462 D02 v02.



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2. TEST SUMMERY

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(h)	5	Dynamic Frequency Selection	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	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																																																									
Operating Frequency	<table><tr><td></td><td>Mode</td><td>Frequency Range (MHz)</td></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>				Mode	Frequency Range (MHz)	U-NII-1	IEEE 802.11a	5180, 5220, 5240	IEEE 802.11n HT20	5180, 5220, 5240	IEEE 802.11n HT40	5190, 5230	IEEE 802.11ac VHT20	5180, 5220, 5240	IEEE 802.11ac VHT40	5190, 5230	IEEE 802.11ac VHT80	5210	U-NII-2a	IEEE 802.11a	5260, 5300, 5320	IEEE 802.11n HT20	5260, 5300, 5320	IEEE 802.11n HT40	5270, 5310	IEEE 802.11ac VHT20	5260, 5300, 5320	IEEE 802.11ac VHT40	5270, 5310	IEEE 802.11ac VHT80	5290	U-NII-2c	IEEE 802.11a	5500, 5580, 5700	IEEE 802.11n HT20	5500, 5580, 5700	IEEE 802.11n HT40	5510, 5550, 5670	IEEE 802.11ac VHT20	5500, 5580, 5700	IEEE 802.11ac VHT40	5510, 5550, 5670	IEEE 802.11ac VHT80	5530, 5610	U-NII-3	IEEE 802.11a	5745, 5785, 5825	IEEE 802.11n HT20	5745, 5785, 5825	IEEE 802.11n HT40	5755, 5795	IEEE 802.11ac VHT20	5745, 5785, 5825	IEEE 802.11ac VHT40	5755, 5795	IEEE 802.11ac VHT80	5775
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	IEEE 802.11ac VHT40	5755, 5795																																																								
	IEEE 802.11ac VHT80	5775																																																								
Operation Transmitter	1. IEEE 802.11a mode: 1T1R(SISO) 2. IEEE 802.11n HT20 mode: 1T1R(SISO) 3. IEEE 802.11n HT40 mode: 1T1R(SISO) 4. IEEE 802.11ac VHT20 mode: 1T1R(SISO)) 5. IEEE 802.11ac VHT40 mode: 1T1R(SISO) 6. IEEE 802.11ac VHT80 mode: 1T1R(SISO)																																																									

Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.



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3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conduction Emission	
Test Condition	AC Power line conduction emission for line and neutral
Power supply Mode	Mode 1: EUT Power by Power Supply
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 power by Power supply
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 power by Power supply
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:

1. The worst mode was record in this test report.
2. AC power line conducted emission were performed the EUT transmit at the highest output power channel as worse case.
3. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(X-Plane) were recorded in this report.
4. The system support 802.11a/n ht20/n ht40/ac vht20/40/80, the ht20/ht40 were reduced since the identical parameters with 802.11ac vht20/vht40.



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3.3EUT DUTY CYCLE

Temperature: 19.7 ~ 24.5°C Test date: November 30 ~ December 19, 2024
Humidity: 46 ~ 57% RH Tested by: David Li

Mode	Duty Cycle (%) =Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11a	57.58	2.40	0.74	1.00
802.11n_20	55.89	2.53	0.79	1.00
802.11ac_20	55.96	2.52	0.78	1.00
802.11n_40	38.63	4.13	1.58	2.00
802.11ac_40	38.78	4.11	1.57	2.00
802.11ac_80	23.98	6.20	3.16	4.00

802.11a 20MHz Chain0 5180MHz



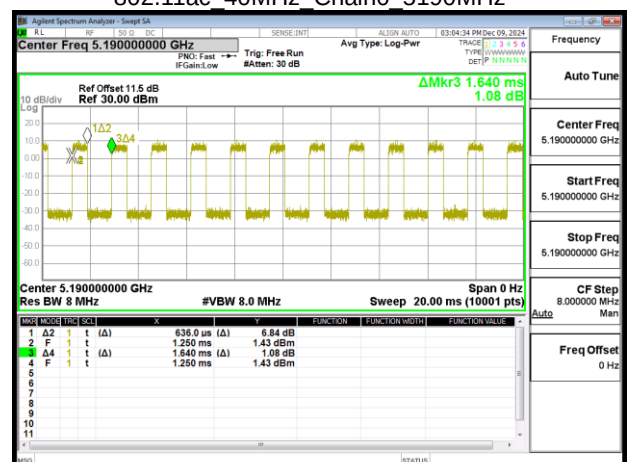
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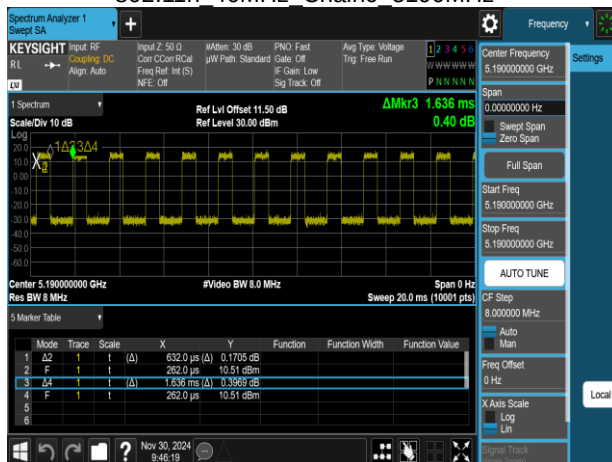
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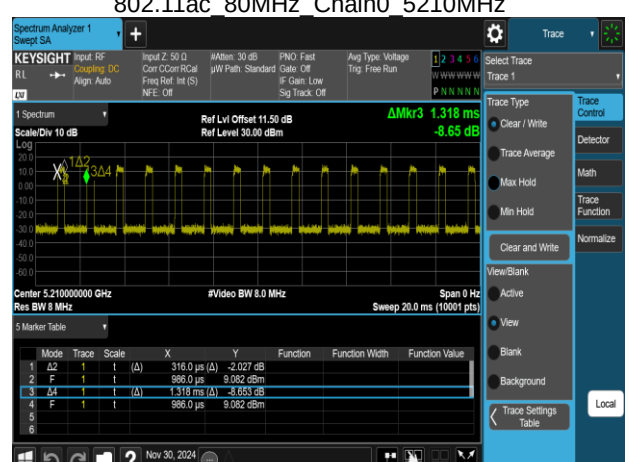
802.11ac 40MHz Chain0 5190MHz



802.11n 40MHz Chain0 5190MHz



802.11ac 80MHz Chain0 5210MHz



4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a),

Frequency Range (MHz)	Limits(dB μ V)	
	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

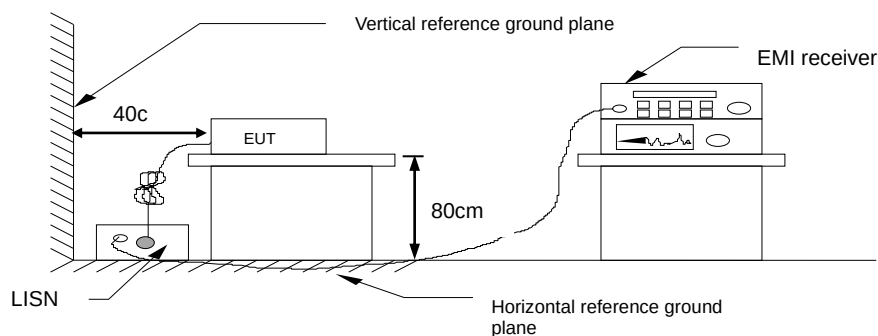
* Decreases with the logarithm of the frequency.

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





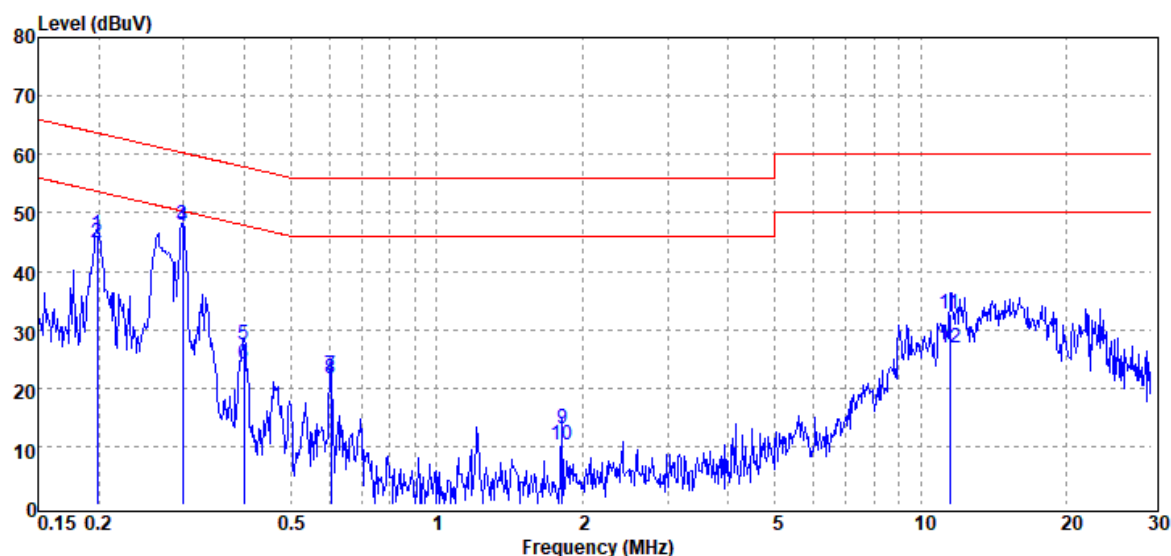
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4.1.4 Test Result

Project No : TM-2411000185P
Operation Mode : 5G
Test Chamber : Conduction
Probe : LINE
Note :

Test Date : 2024-12-13
Temp./Humi. : 23.4°C / 54%
Engineer : Ben Yang
Test Voltage : AC 120V/60Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.199	QP	45.88	0.39	46.27	63.66	-17.39
0.199	Average	44.36	0.39	44.75	53.66	-8.91
0.299	QP	47.37	0.38	47.75	60.28	-12.53
0.299	Average	47.14	0.38	47.52	50.28	-2.76
0.399	QP	27.06	0.38	27.44	57.88	-30.44
0.399	Average	23.77	0.38	24.15	47.88	-23.73
0.603	QP	21.89	0.38	22.27	56.00	-33.73
0.603	Average	21.11	0.38	21.49	46.00	-24.51
1.813	QP	12.78	0.18	12.96	56.00	-43.04
1.813	Average	10.12	0.18	10.30	46.00	-35.70
11.476	QP	32.18	0.38	32.56	60.00	-27.44
11.476	Average	26.55	0.38	26.93	50.00	-23.07

Note: 1. Actual FS= Spectrum Read Level + Factor

Note: 2. Margin= Actual FS - Limit

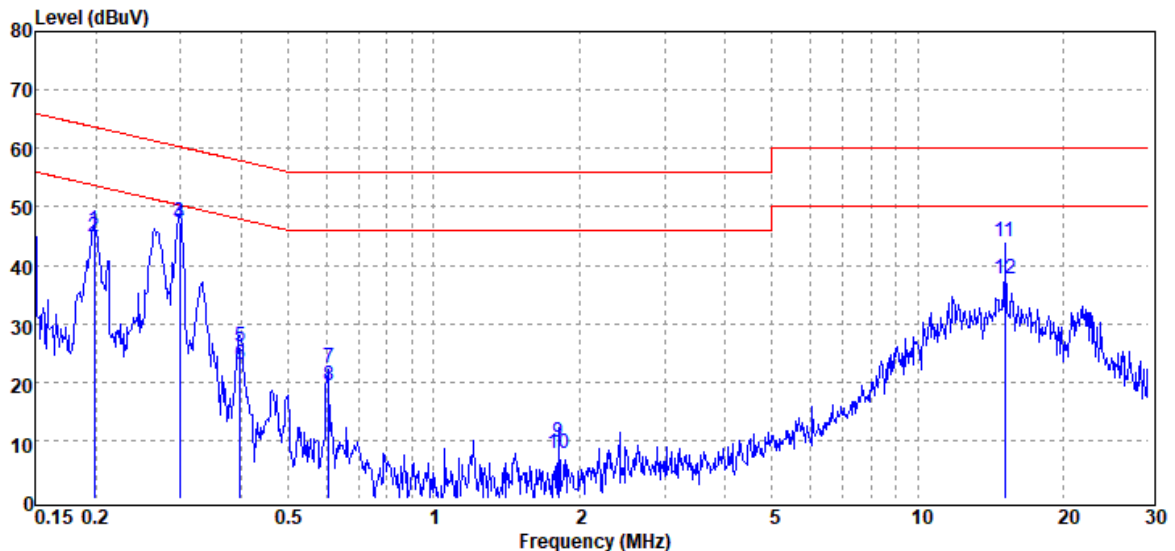


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Project No : TM-2411000185P
Operation Mode : 5G
Test Chamber : Conduction
Probe : NEUTRAL
Note :

Test Date : 2024-12-13
Temp./Humi. : 23.4°C / 54%
Engineer : Ben Yang
Test Voltage : AC 120V/60Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.199	QP	45.67	0.36	46.03	63.65	-17.62
0.199	Average	44.37	0.36	44.73	53.65	-8.92
0.299	QP	47.10	0.35	47.45	60.28	-12.83
0.299	Average	46.83	0.35	47.18	50.28	-3.10
0.397	QP	25.78	0.35	26.13	57.91	-31.78
0.397	Average	22.60	0.35	22.95	47.91	-24.96
0.606	QP	22.12	0.35	22.47	56.00	-33.53
0.606	Average	19.02	0.35	19.37	46.00	-26.63
1.812	QP	9.63	0.16	9.79	56.00	-46.21
1.812	Average	7.64	0.16	7.80	46.00	-38.20
15.130	QP	43.68	0.40	44.08	60.00	-15.92
15.130	Average	37.36	0.40	37.76	50.00	-12.24

Note: 1. Actual FS= Spectrum Read Level + Factor

Note: 2. Margin= Actual FS - Limit



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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) $\geq 3 \times$ 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.



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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 $\geq 3 \times \text{RBW}$

4.2.3 Test Setup

Refer to section 1.8.



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4.2.4 Test Result

Temperature: 19.7 ~ 24.5°C Test date: November 30 ~ December 19, 2024
Humidity: 46 ~ 57% RH Tested by: David Li

Occupied Bandwidth(99%)

802.11a_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5180	16.517	12.180
5220	16.495	12.170
5240	16.490	12.170
5260	16.542	12.190
5300	16.487	12.170
5320	16.515	12.180
5500	16.535	12.180
5580	16.710	12.230
5700	16.748	12.240

802.11a_Ch0

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5745	16.632	16.36
5785	16.553	15.98
5825	16.553	16.37

802.11n_HT20_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5180	17.635	12.460
5220	17.640	12.460
5240	17.637	12.460
5260	17.637	12.460
5300	17.613	12.460
5320	17.631	12.460
5500	17.645	12.470
5580	17.632	12.460
5700	17.771	12.500

802.11n_HT20_Ch0

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5745	17.735	17.64
5785	17.707	16.93
5825	17.668	16.95

802.11n_HT40_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5190	36.040	15.570
5230	36.068	15.570
5270	36.132	15.580
5310	36.185	15.590
5510	36.095	15.570
5550	36.125	15.580
5670	36.122	15.580

802.11n_HT40_Ch0

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5755	36.226	35.07
5795	36.192	33.91

802.11ac_VHT80_Ch0

Frequency (MHz)	99% BW (MHz)	10 Log (B) (dB)
5210	75.327	18.770
5290	75.377	18.770
5530	75.313	18.770
5610	75.453	18.780

802.11ac_VHT80_Ch0

Frequency (MHz)	99% BW (MHz)	6dB BW (MHz)
5775	75.547	74.28

6 dB Bandwidth & 26 dB Bandwidth

802.11a_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	20.39	13.090
5220	20.66	13.150
5240	20.16	13.040
5260	20.25	13.060
5300	20.61	13.140
5320	20.15	13.040
5500	20.94	13.210
5580	29.41	14.680
5700	29.73	14.730

802.11a_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.36	12.140
5785	15.98	12.040
5825	16.37	12.140

802.11a_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.30	< 5250
5745	5736.78	> 5725

Note: The measurement results of all 6dBc test channels are greater than 500kHz.

802.11n_HT20_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	20.92	13.210
5220	20.51	13.120
5240	20.93	13.210
5260	20.61	13.140
5300	20.58	13.130
5320	20.56	13.130
5500	20.95	13.210
5580	21.11	13.240
5700	25.76	14.110

802.11n_HT20_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.64	12.460
5785	16.93	12.290
5825	16.95	12.290

802.11n_HT20_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.84	< 5250
5745	5736.19	> 5725

Note: The measurement results of all 6dBc test channels are greater than 500kHz.

802.11n_HT40_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	41.73	16.200
5230	41.59	16.190
5270	40.90	16.120
5310	40.82	16.110
5510	41.38	16.170
5550	41.54	16.180
5670	45.81	16.610

802.11n_HT40_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	35.07	15.450
5795	33.91	15.300

802.11n_HT40_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.17	< 5250
5755	5737.00	> 5725

Note: The measurement results of all 6dBc test channels are greater than 500kHz.

802.11ac_VHT80_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	81.44	19.110
5290	81.19	19.100
5530	80.41	19.050
5610	82.79	19.180

802.11ac_VHT80_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	74.28	18.710

802.11ac_VHT80_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5247.91	< 5250
5775	5737.52	> 5725

Note: The measurement results of all 6dBc test channels are greater than 500kHz.



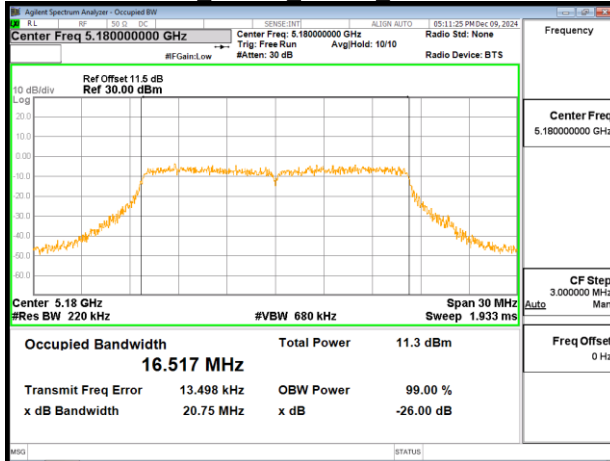
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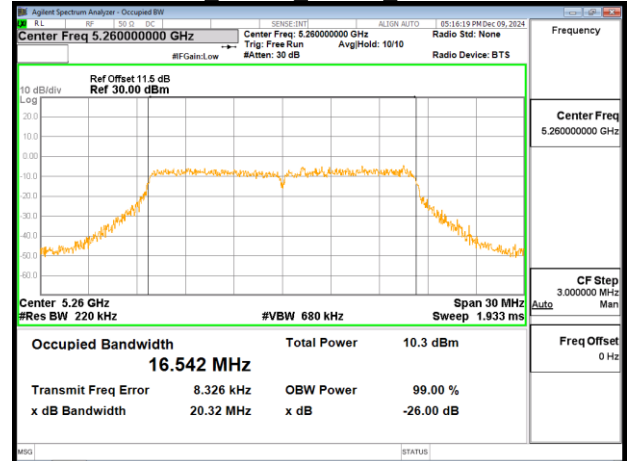
Test Data

Occupied Bandwidth(99%)

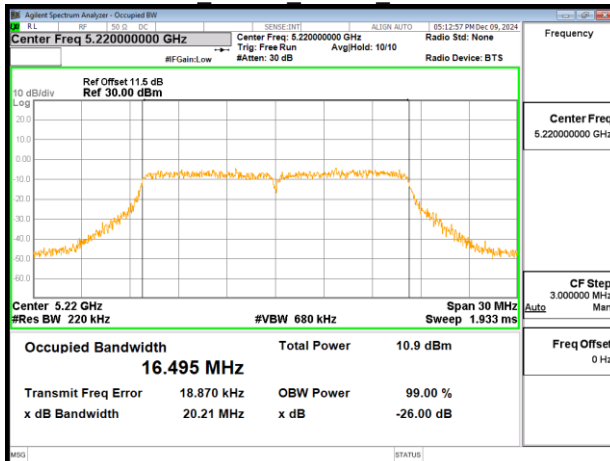
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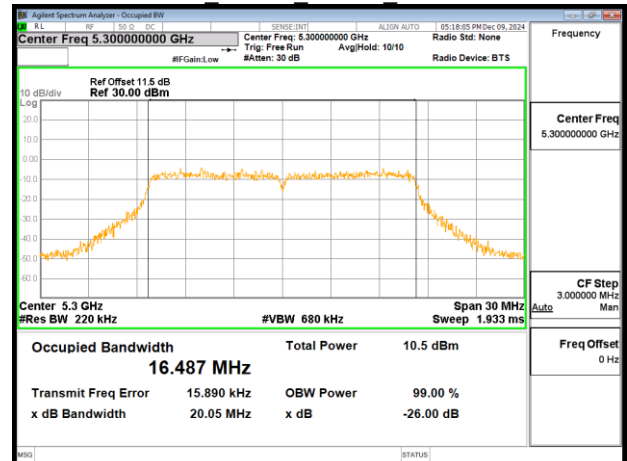
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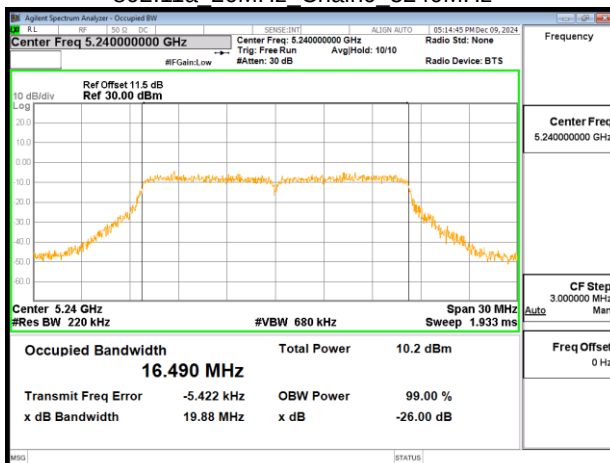
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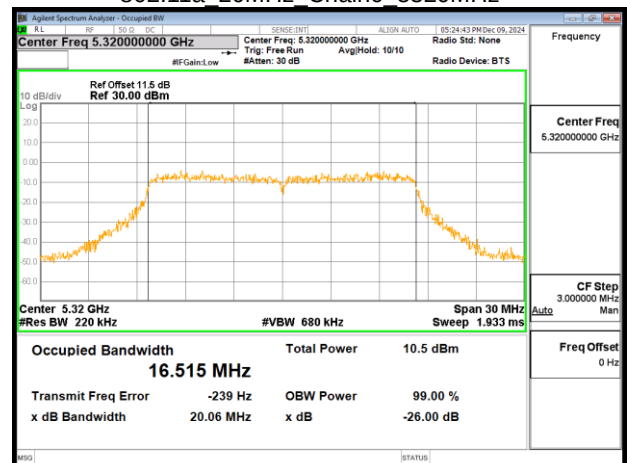
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802.11a 20MHz Chain0 5240MHz



802.11a 20MHz Chain0 5320MHz

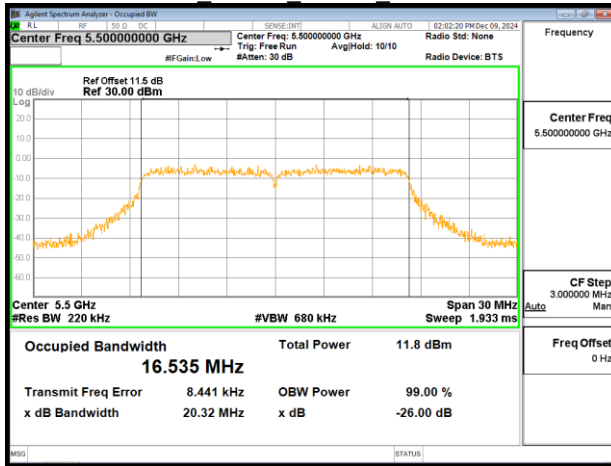




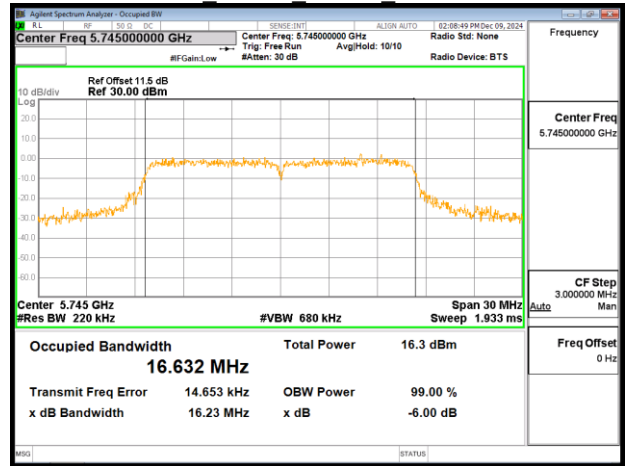
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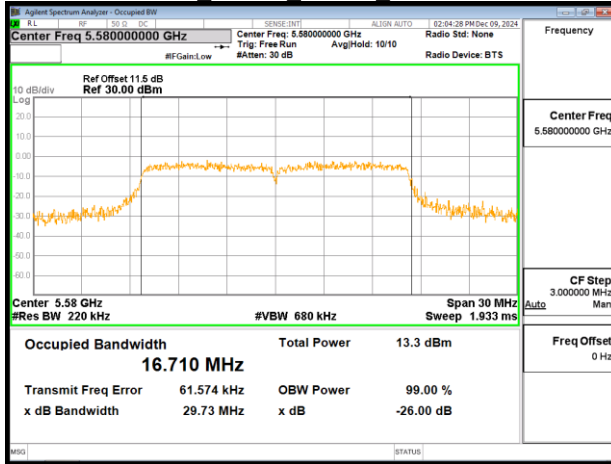
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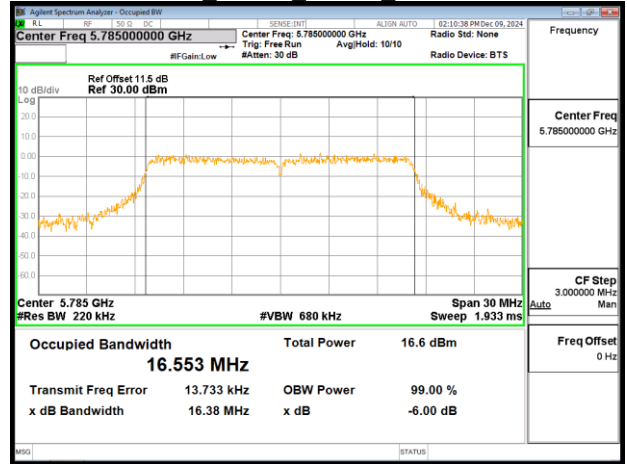
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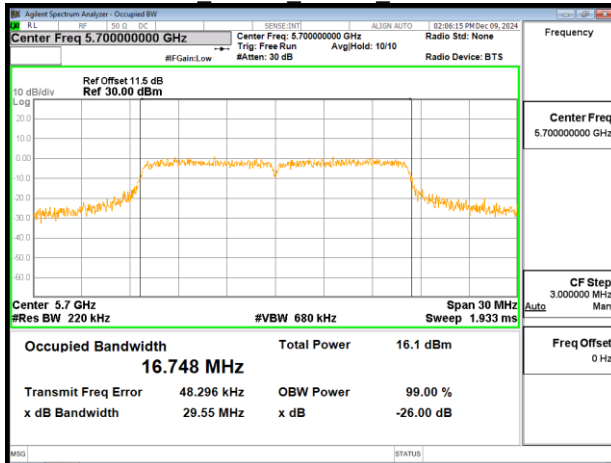
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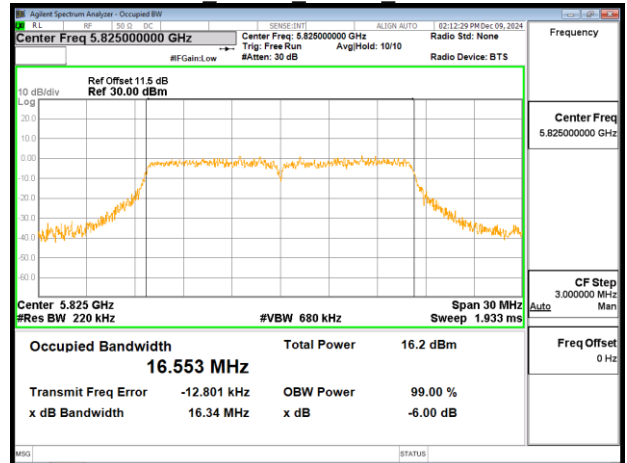
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802.11a 20MHz Chain0 5700MHz



802.11a 20MHz Chain0 5825MHz

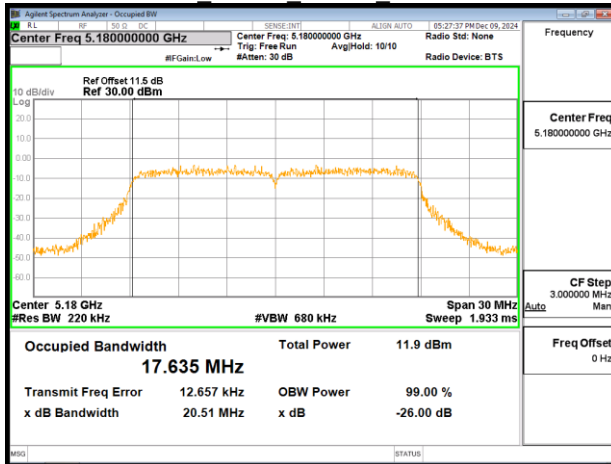




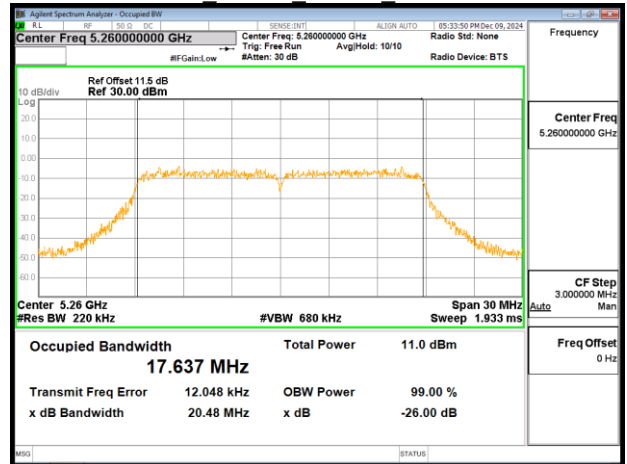
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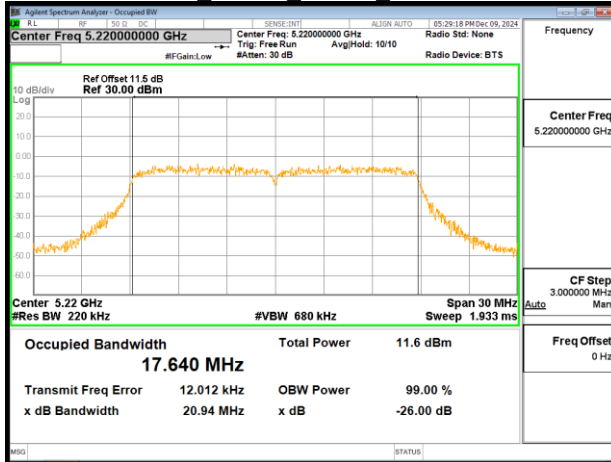
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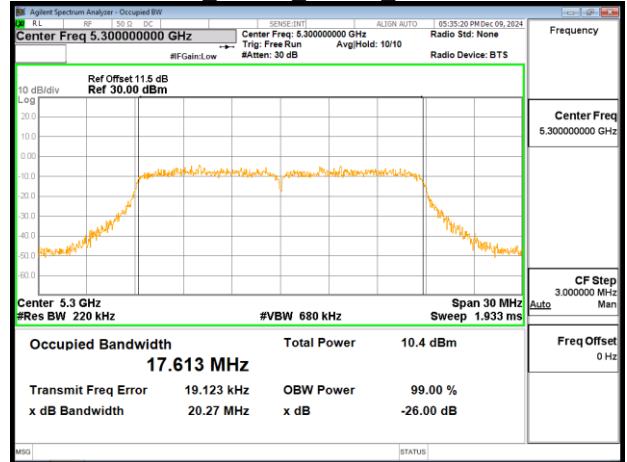
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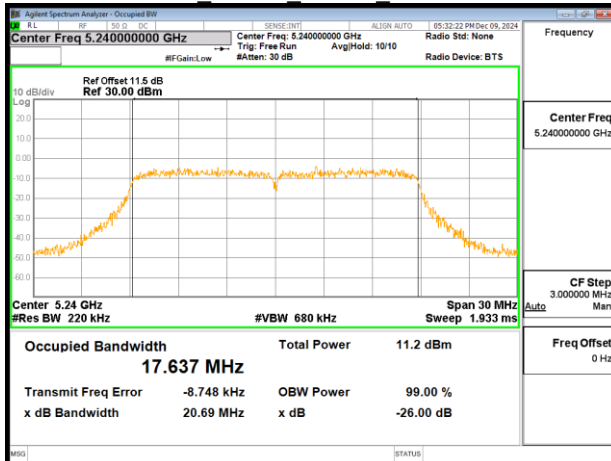
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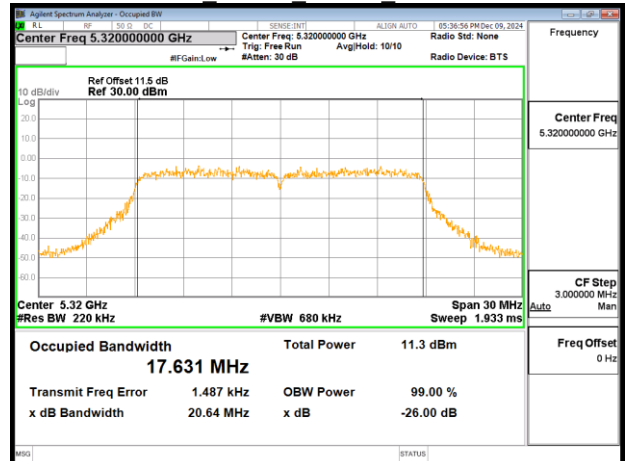
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802.11n 20MHz Chain0 5240MHz



802.11n 20MHz Chain0 5320MHz

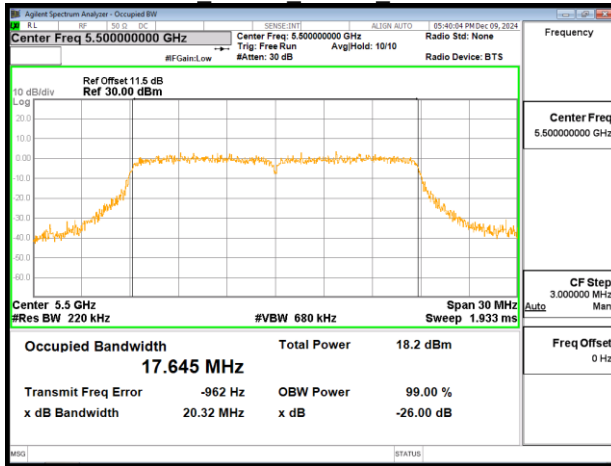




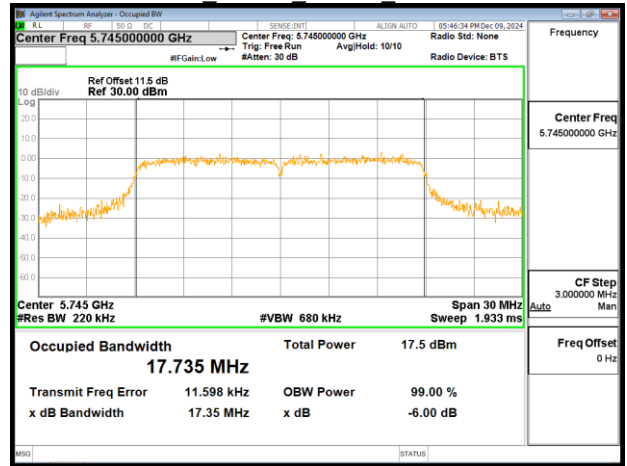
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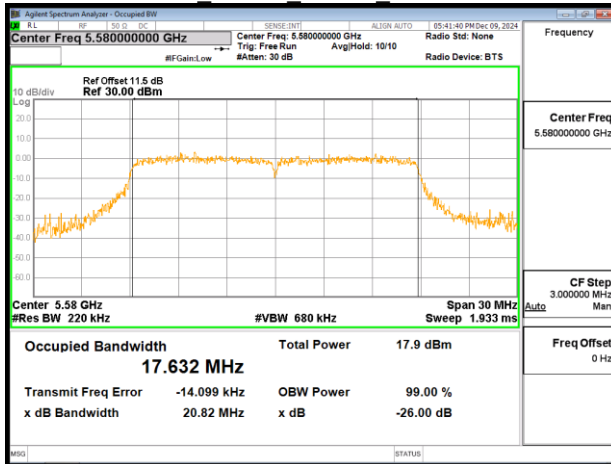
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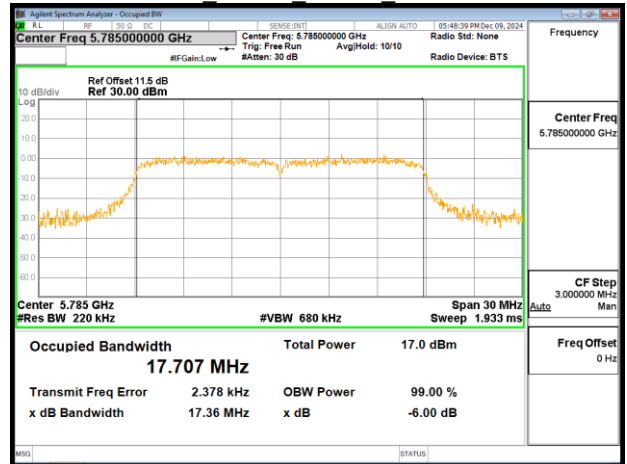
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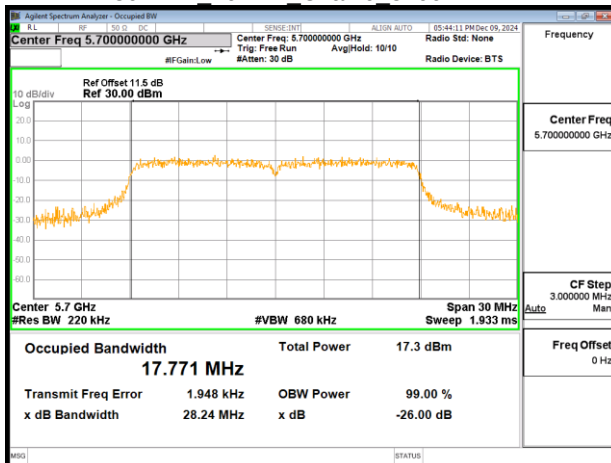
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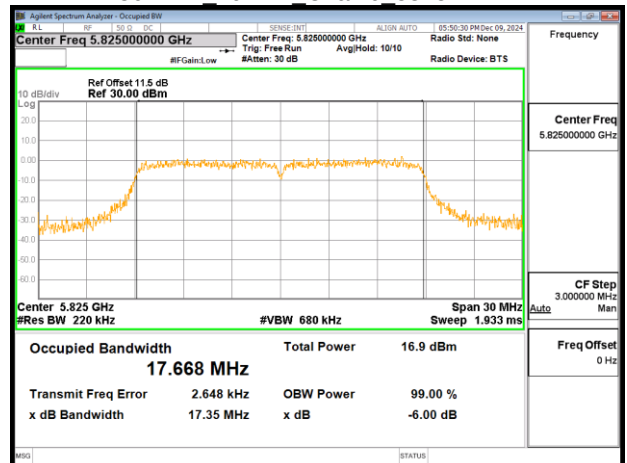
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802.11n 20MHz Chain0 5700MHz



802.11n 20MHz Chain0 5825MHz

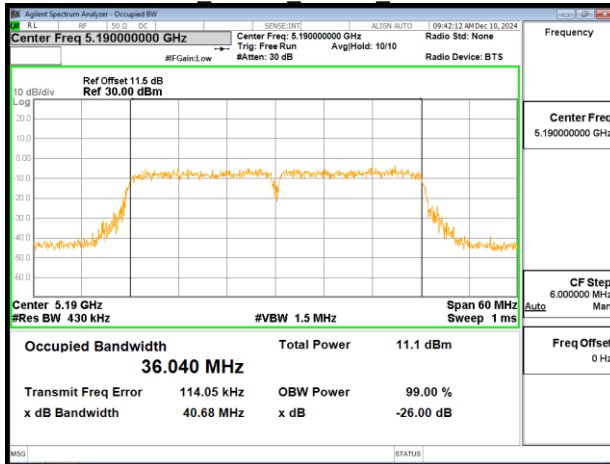




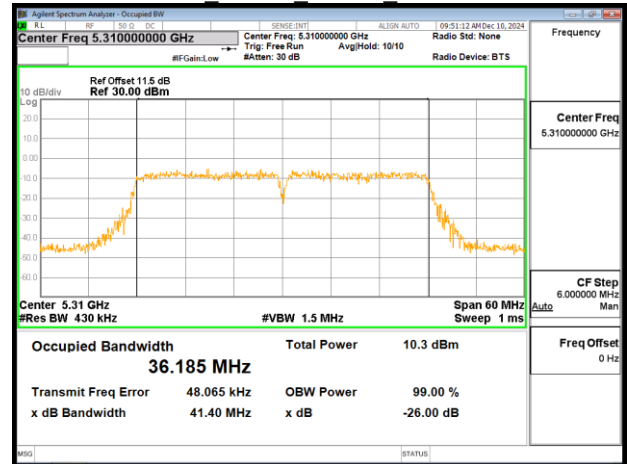
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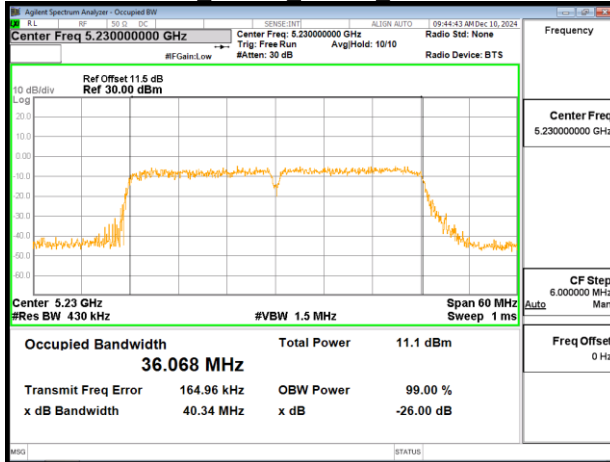
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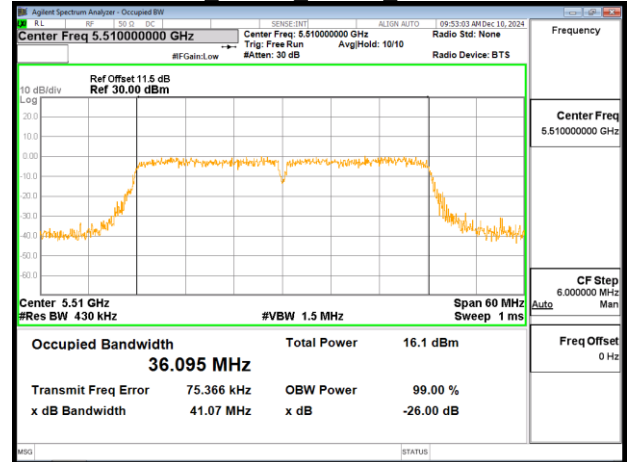
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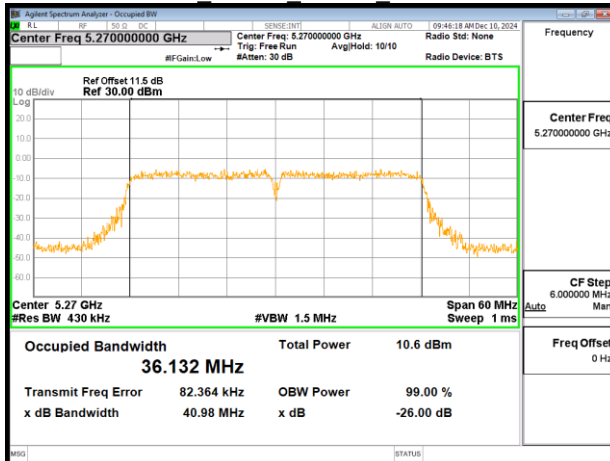
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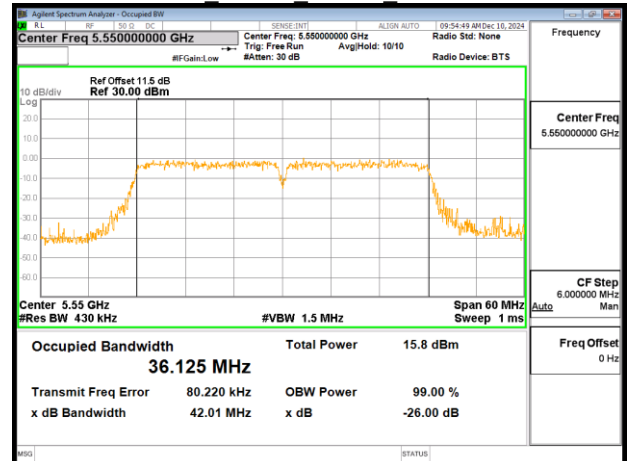
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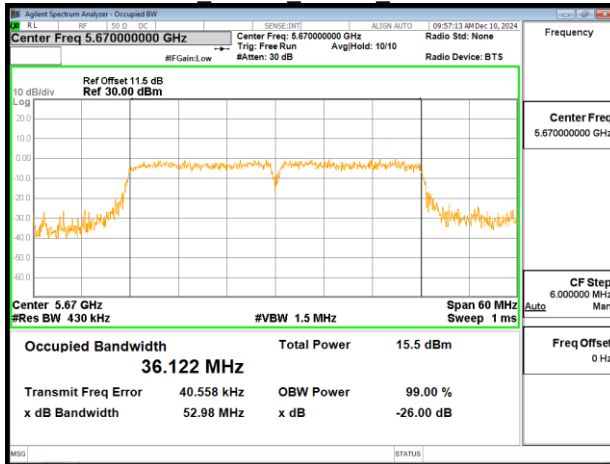




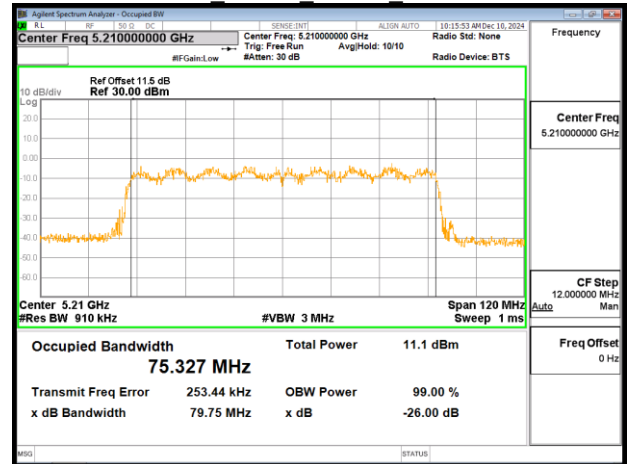
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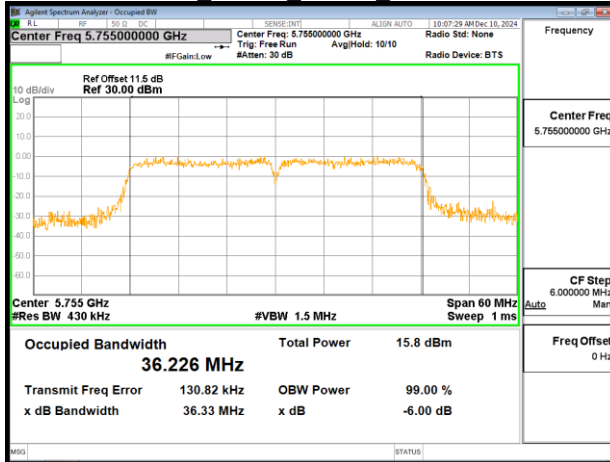
802.11n 40MHz Chain0 5670MHz



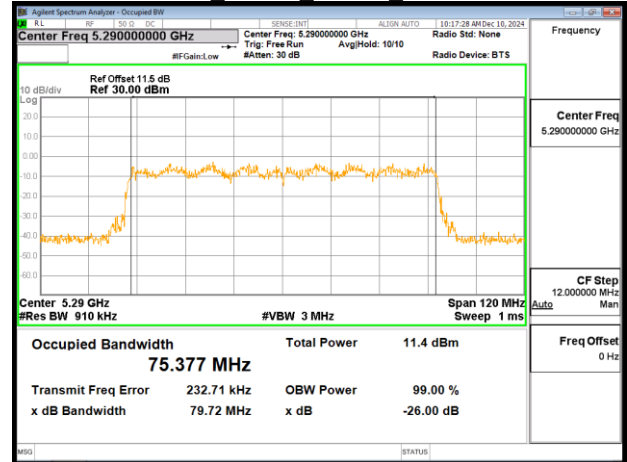
802.11ac 80MHz Chain0 5210MHz



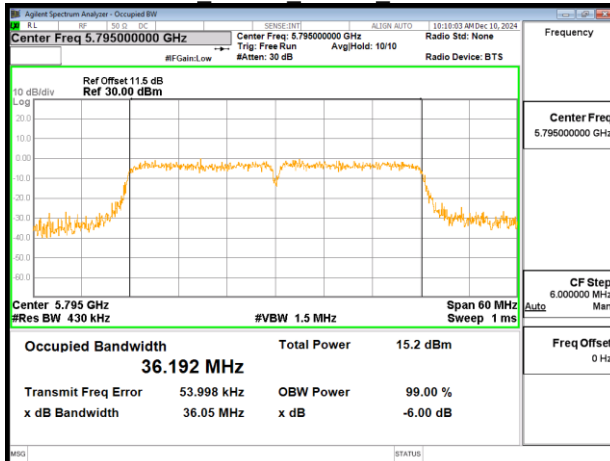
802.11n 40MHz Chain0 5755MHz



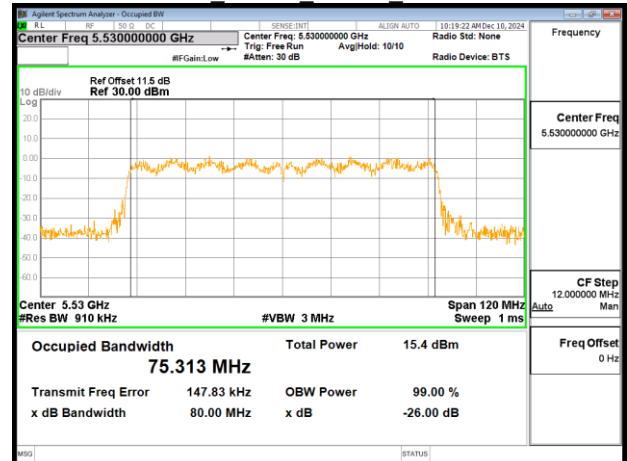
802.11ac 80MHz Chain0 5290MHz



802.11n 40MHz Chain0 5795MHz



802.11ac 80MHz Chain0 5530MHz

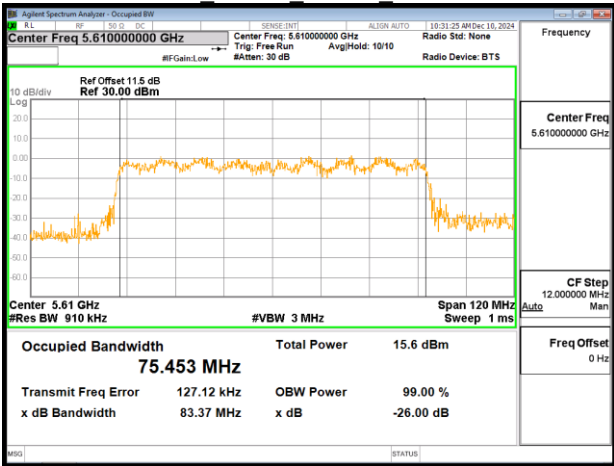




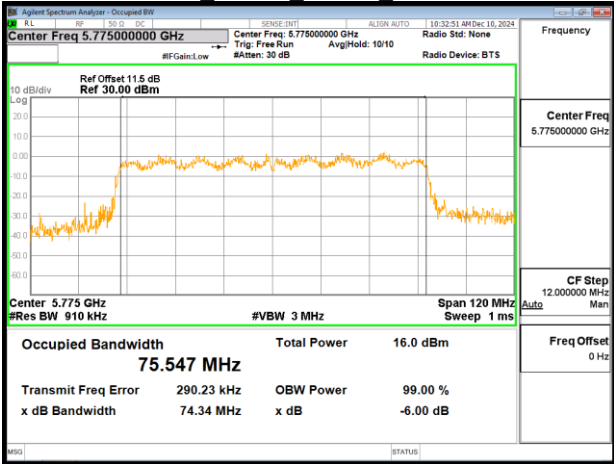
Project No: TM-2411000185P
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802.11ac 80MHz Chain0_5610MHz



802.11ac 80MHz Chain0_5775MHz



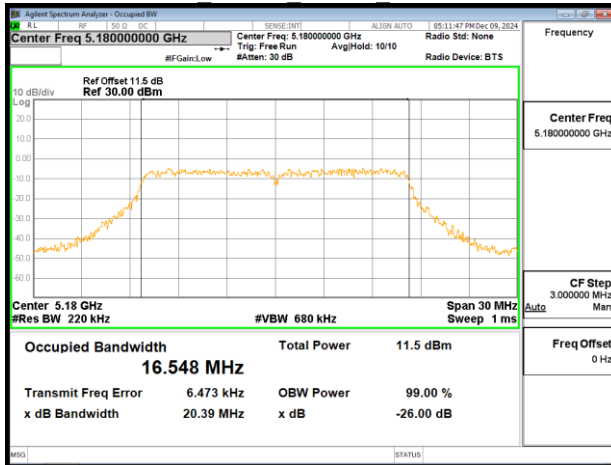


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Report No.: TMWK2411003935KR

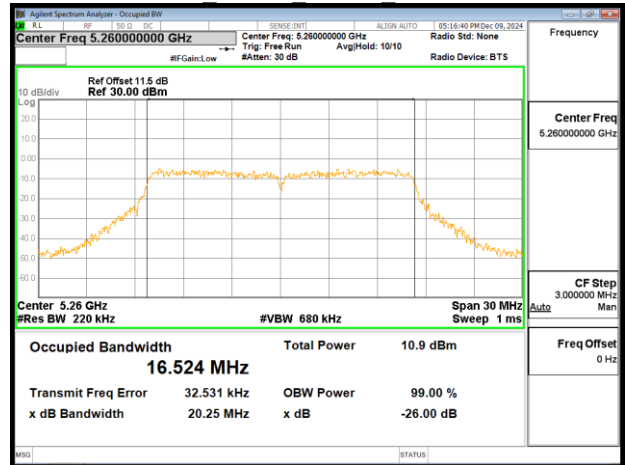
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6 dB Bandwidth & 26 dB Bandwidth

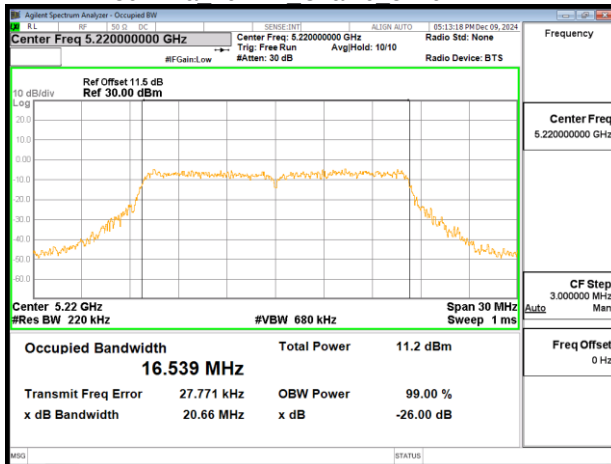
802.11a 20MHz Chain0 5180MHz



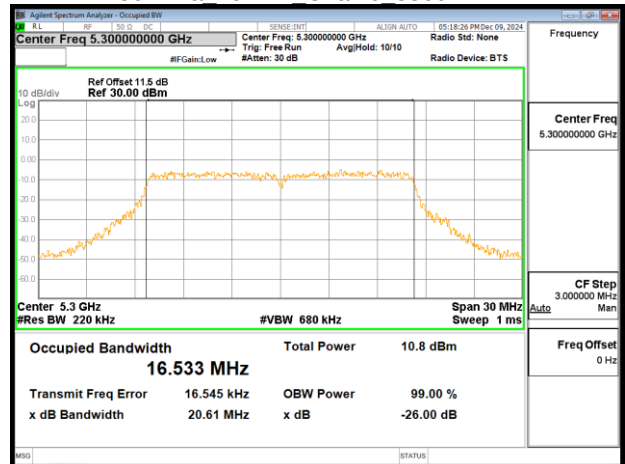
802.11a 20MHz Chain0 5260MHz



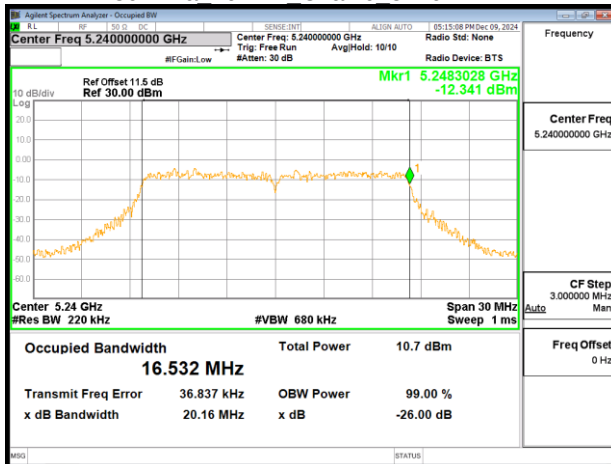
802.11a 20MHz Chain0 5220MHz



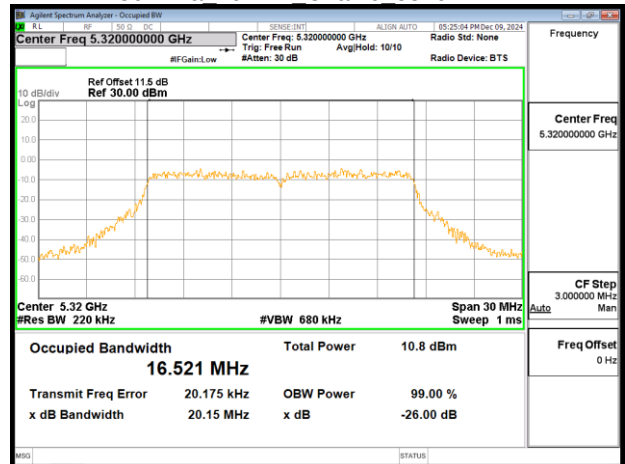
802.11a 20MHz Chain0 5300MHz



802.11a 20MHz Chain0 5240MHz



802.11a 20MHz Chain0 5320MHz

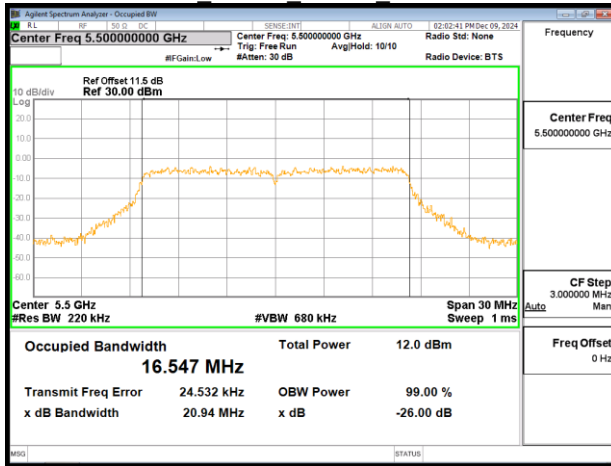




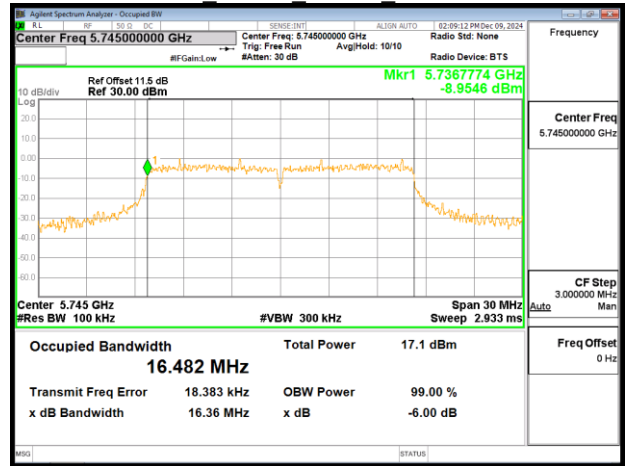
Project No: TM-2411000185P
Report No.: TMWK2411003935KR

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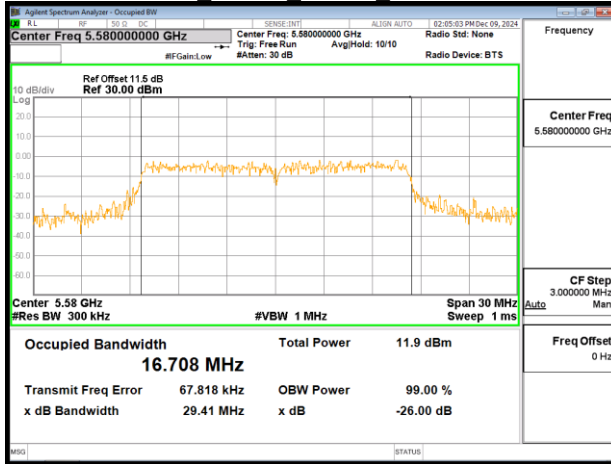
802.11a 20MHz Chain0 5500MHz



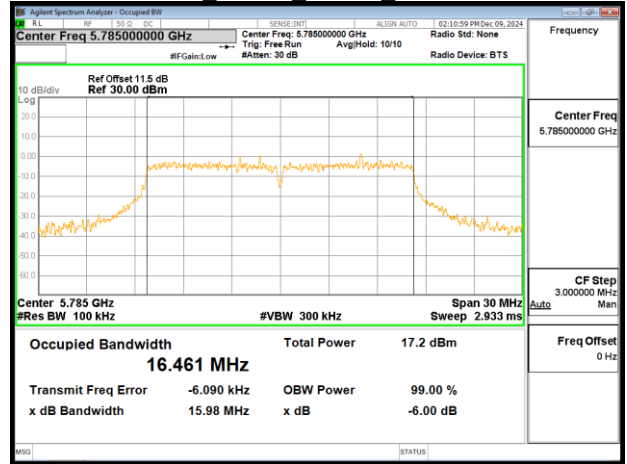
802.11a 20MHz Chain0 5745MHz



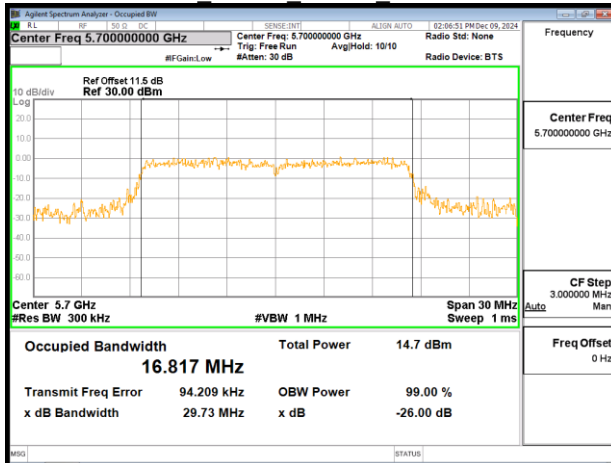
802.11a 20MHz Chain0 5580MHz



802.11a 20MHz Chain0 5785MHz



802.11a 20MHz Chain0 5700MHz



802.11a 20MHz Chain0 5825MHz

