

Project No.: TM-2209000309P
Report No.: TMWK2209003823KR

FCC ID: 2AS4N000003

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Rev.: 00

RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART E

Test Standard	FCC Part 15.407
Product name	Ridge X-ray Flat Panel Detector
Brand Name	INCX
Model No.	Ridge F17C, Ridge V14C, Ridge V17C, Ridge F14C, Ridge F14G, Ridge F17G
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

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	November 30, 2022	Initial Issue	ALL	Doris Chu

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	InnoCare Optoelectronics Corp Rm. B, No. 2, Sec. 2, Huanxi Rd., Southern Taiwan Science Park, Xinshi Dist., Tainan, 741 Taiwan					
Manufacturer	InnoCare Optoelectronics Corp Rm. B, No. 2, Sec. 2, Huanxi Rd., Southern Taiwan Science Park, Xinshi Dist., Tainan City 741, Taiwan, R.O.C.					
Equipment	Ridge X-ray Flat Panel Detector					
Model Name	Ridge F17C, Ridge V14C, Ridge V17C, Ridge F14C, Ridge F14G, Ridge F17G					
Model Discrepancy		Model	PCBA X-Board	ROIC	Scintillator	Other
	Main	Ridge F17C	different size	17	Csl	Marketing Differences
	Series	Ridge V14C		14	Csl	
		Ridge V17C		17	Csl	
		Ridge F14C		14	Csl	
		Ridge F14G		14	GOS	
		Ridge F17G		17	GOS	
Brand Name	INCX					
Received Date	September 23, 2022					
Date of Test	October 5 ~ 19, 2022					
Power Supply	1. Power from Power Adapter. Mean well / GSM60A24-P1L I/P: 100-240VAC, 1.4-0.7A, 50-60Hz O/P: 24VDC, 2.5A, 60W MAX. 2. Power from Battery. 11.4VDC, 4231mAh or 4129mAh/48Wh					
HW Version	V06					
SW Version	V81.36					

Remark:

- For more details, please refer to the User's manual of the EUT.
- Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
- Disclaimer: The variant 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 HT 20	5180 ~ 5240 MHz
	IEEE 802.11n HT 40	5190 ~ 5230 MHz
	IEEE 802.11ac VHT 20	5180 ~ 5240 MHz
	IEEE 802.11ac VHT 40	5190 ~ 5230 MHz
	IEEE 802.11ac VHT 80	5210 MHz
	IEEE 802.11ax HE 20	5180 ~ 5240 MHz
	IEEE 802.11ax HE 40	5190 ~ 5230 MHz
	IEEE 802.11ax HE 80	5210 MHz
	UNII-3	
	IEEE 802.11a	5745 ~ 5825 MHz
	IEEE 802.11n HT 20	5745 ~ 5825 MHz
	IEEE 802.11n HT 40	5755 ~ 5795 MHz
	IEEE 802.11ac VHT 20	5745 ~ 5825 MHz
	IEEE 802.11ac VHT 40	5755 ~ 5795 MHz
	IEEE 802.11ac VHT 80	5775 MHz
	IEEE 802.11ax HE 20	5745 ~ 5825 MHz
	IEEE 802.11ax HE 40	5755 ~ 5795 MHz
	IEEE 802.11ax HE 80	5775 MHz
Modulation Type	<ol style="list-style-type: none"> 1. IEEE 802.11a mode: OFDM 2. IEEE 802.11n HT 20 mode: OFDM 3. IEEE 802.11n HT 40 mode: OFDM 4. IEEE 802.11ac VHT 20 mode: OFDM 5. IEEE 802.11ac VHT 40 mode: OFDM 6. IEEE 802.11ac VHT 80 mode: OFDM 7. IEEE 802.11ax HE 20 mode: OFDMA 8. IEEE 802.11ax HE 40 mode: OFDMA 9. IEEE 802.11ax HE 80 mode: OFDMA 	

Remark:

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

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Number of frequencies to be tested		
Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
<input type="checkbox"/> 1 MHz or less	1	Middle
<input type="checkbox"/> 1 MHz to 10 MHz	2	1 near top and 1 near bottom
<input checked="" type="checkbox"/> More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Specification	<input type="checkbox"/> PIFA <input checked="" type="checkbox"/> PCB <input type="checkbox"/> Dipole <input type="checkbox"/> Coils
Antenna Gain	Chain 0: 5150~5250MHz: Gain: 0.64 dBi 5725~5850MHz: Gain: -0.89 dBi Chain 1: 5150~5250MHz: Gain: 0.64 dBi 5725~5850MHz: Gain: -0.89 dBi Direction Gain: 5150~5250MHz: Gain: 2.92 dBi 5725~5850MHz: Gain: 2.92 dBi
Antenna connector	I-PEX

Notes:

- Power Directional Gain = $10 \cdot \log \{ [10^{(Ant1/20)} + 10^{(Ant2/20)} + \dots + 10^{(Ant N /20)}]^2 / N \text{ ANT} \}$ dBi
- 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	± 2.1183
Channel Bandwidth	± 2.1863
RF output power (Spectrum)	± 2.1865
Power Spectral density	± 2.1855
Radiated Emission_9kHz-30MHz	± 3.814
Radiated Emission_30MHz-200MHz	± 4.272
Radiated Emission_200MHz-1GHz	± 4.619
Radiated Emission_1GHz-6GHz	± 5.522
Radiated Emission_6GHz-18GHz	± 5.228
Radiated Emission_18GHz-26GHz	± 4.089
Radiated Emission_26GHz-40GHz	± 4.019

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.
 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	Jack Chen	-
Radiation	Ray Li, Tony Chao	-
RF Conducted	David Li	-

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

RF Conducted Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Meter	Anritsu	ML2496A	2136002	2021-12-06	2022-12-05
EXA Signal Analyzer	Keysight	N9010B	MY60242460	2022-01-30	2023-01-29
Power Sensor	Anritsu	MA2411B	1911386	2022-08-08	2023-08-07
Power Sensor	Anritsu	MA2411B	1911387	2022-08-08	2023-08-07
Software	Radio Test Software Ver. 21				

3M 966 Chamber Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
K-Type Cable	Huber+Suhner	SUCOFLEX 102	29406/2	2021-12-05	2022-12-04
Pre-Amplifier	MITEQ	AMF-6F-18004000-37-8P	985646	2022-09-07	2023-09-06
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2022-08-03	2023-08-02
Spectrum Analyzer	Agilent	E4446A	MY46180323	2021-12-06	2022-12-05
Thermo-Hygro Meter	WISEWIND	1206	D07	2021-12-28	2022-12-27
Loop Antenna	COM-POWER	AL-130	121051	2022-04-13	2023-04-12
Horn Antenna	SCHWARZBECK	BBHA9170	1047	2022-01-11	2023-01-10
Coaxial Cable	EMCI	EMC101G- KM-KM-500	211041	2021-12-23	2022-12-22
Coaxial Cable	EMC	EMC101G-KM-KM-9000	211042	2021-12-23	2022-12-22
Pre-Amplifier	EMCI	EMC184045SE	980860	2021-12-28	2022-12-27
Horn Antenna	ETS LINDGREN	3116	00026370	2021-11-30	2022-11-29
Cable	Woken	J-1099	201709090004	2021-12-23	2022-12-22
Preamplifier	EMEC	EM330	060609	2022-02-23	2023-02-22
Preamplifier	HP	8449B	3008A00965	2021-12-24	2022-12-23
Cable	Huber+Suhner	104PEA	20995+11112+182330	2022-02-23	2023-02-22
Coaxial Cable	EMCI	EMC105	190914+33953	2022-06-15	2023-06-14
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2022-01-25	2023-01-24
High Pass Filters	MICRO TRONICS	HPM13195	003	2022-02-10	2023-02-09
Software	e3 210616				

Remark:

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

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AC Conducted Emissions Test Site					
Equipment	Manufacturer	Model	S/N	Cal Date	Cal Due
CABLE	EMCI	CFD300-NL	CERF	2022-06-27	2023-06-26
EMI Test Receiver	R&S	ESCI	100064	2022-06-17	2023-06-16
LISN	SCHAFFNER	NNB 41	03/10013	2022-02-15	2023-02-14
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	IC
1	NB(C)	Lenovo	T470	N/A	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, KDB 662911.

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

3. DESCRIPTION OF TEST MODES

3.1 THE EUT CHANNEL NUMBER OF OPERATING CONDITION

<p>Operation mode</p>	<ol style="list-style-type: none"> 1. IEEE 802.11a mode: 6Mbps 2. IEEE 802.11n HT 20 mode: MCS0 3. IEEE 802.11n HT 40 mode: MCS0 4. IEEE 802.11ac VHT 20 mode: MCS0 5. IEEE 802.11ac VHT 40 mode: MCS0 6. IEEE 802.11ac VHT 80 mode: MCS0 7. IEEE 802.11ax HE 20 mode: MCS0 8. IEEE 802.11ax HE 40 mode: MCS0 9. IEEE 802.11ax HE 80 mode: MCS0 																																								
<p>Operating Frequency</p>		<table border="1"> <thead> <tr> <th data-bbox="708 837 1050 891">Mode</th> <th data-bbox="1050 837 1442 891">Frequency Range (MHz)</th> </tr> </thead> <tbody> <tr> <td data-bbox="708 891 1050 925">IEEE 802.11a</td> <td data-bbox="1050 891 1442 925">5180, 5220, 5240</td> </tr> <tr> <td data-bbox="708 925 1050 958">IEEE 802.11n HT 20</td> <td data-bbox="1050 925 1442 958">5180, 5220, 5240</td> </tr> <tr> <td data-bbox="708 958 1050 992">IEEE 802.11n HT 40</td> <td data-bbox="1050 958 1442 992">5190, 5230</td> </tr> <tr> <td data-bbox="708 992 1050 1025">IEEE 802.11ac VHT 20</td> <td data-bbox="1050 992 1442 1025">5180, 5220, 5240</td> </tr> <tr> <td data-bbox="708 1025 1050 1059">IEEE 802.11ac VHT 40</td> <td data-bbox="1050 1025 1442 1059">5190, 5230</td> </tr> <tr> <td data-bbox="708 1059 1050 1093">IEEE 802.11ac VHT 80</td> <td data-bbox="1050 1059 1442 1093">5210</td> </tr> <tr> <td data-bbox="708 1093 1050 1126">IEEE 802.11ax HE 20</td> <td data-bbox="1050 1093 1442 1126">5180, 5220, 5240</td> </tr> <tr> <td data-bbox="708 1126 1050 1160">IEEE 802.11ax HE 40</td> <td data-bbox="1050 1126 1442 1160">5190, 5230</td> </tr> <tr> <td data-bbox="708 1160 1050 1193">IEEE 802.11ax HE 80</td> <td data-bbox="1050 1160 1442 1193">5210</td> </tr> <tr> <td data-bbox="708 1193 1050 1227">IEEE 802.11a</td> <td data-bbox="1050 1193 1442 1227">5745, 5785, 5825</td> </tr> <tr> <td data-bbox="708 1227 1050 1261">IEEE 802.11n HT 20</td> <td data-bbox="1050 1227 1442 1261">5745, 5785, 5825</td> </tr> <tr> <td data-bbox="708 1261 1050 1294">IEEE 802.11n HT 40</td> <td data-bbox="1050 1261 1442 1294">5755, 5795</td> </tr> <tr> <td data-bbox="708 1294 1050 1328">IEEE 802.11ac VHT 20</td> <td data-bbox="1050 1294 1442 1328">5745, 5785, 5825</td> </tr> <tr> <td data-bbox="708 1328 1050 1361">IEEE 802.11ac VHT 40</td> <td data-bbox="1050 1328 1442 1361">5755, 5795</td> </tr> <tr> <td data-bbox="708 1361 1050 1395">IEEE 802.11ac VHT 80</td> <td data-bbox="1050 1361 1442 1395">5775</td> </tr> <tr> <td data-bbox="708 1395 1050 1429">IEEE 802.11ax HE 20</td> <td data-bbox="1050 1395 1442 1429">5745, 5785, 5825</td> </tr> <tr> <td data-bbox="708 1429 1050 1462">IEEE 802.11ax HE 40</td> <td data-bbox="1050 1429 1442 1462">5755, 5795</td> </tr> <tr> <td data-bbox="708 1462 1050 1496">IEEE 802.11ax HE 80</td> <td data-bbox="1050 1462 1442 1496">5775</td> </tr> </tbody> </table>	Mode	Frequency Range (MHz)	IEEE 802.11a	5180, 5220, 5240	IEEE 802.11n HT 20	5180, 5220, 5240	IEEE 802.11n HT 40	5190, 5230	IEEE 802.11ac VHT 20	5180, 5220, 5240	IEEE 802.11ac VHT 40	5190, 5230	IEEE 802.11ac VHT 80	5210	IEEE 802.11ax HE 20	5180, 5220, 5240	IEEE 802.11ax HE 40	5190, 5230	IEEE 802.11ax HE 80	5210	IEEE 802.11a	5745, 5785, 5825	IEEE 802.11n HT 20	5745, 5785, 5825	IEEE 802.11n HT 40	5755, 5795	IEEE 802.11ac VHT 20	5745, 5785, 5825	IEEE 802.11ac VHT 40	5755, 5795	IEEE 802.11ac VHT 80	5775	IEEE 802.11ax HE 20	5745, 5785, 5825	IEEE 802.11ax HE 40	5755, 5795	IEEE 802.11ax HE 80	5775	
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Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.
2. The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the power and PSD across all data rates, bandwidths, and modulations. The device supports SISO and MIMO at 802.11a/b/g/ n HT20 / ax HE20 / n HT40 / ax HE40 / ac VHT 80 / ax HE 80mode, per pre-test, MIMO 2TX mode was the worst and reported.
3. 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 power by Adapter (14 inch) Mode 2: EUT power by Adapter (17 inch)
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT power by Adapter (14 inch) Mode 2: EUT power by Adapter (17 inch)
Worst Mode	<input type="checkbox"/> Mode 1 <input checked="" type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4
Worst Position	<input type="checkbox"/> Placed in fixed position. <input checked="" type="checkbox"/> Placed in fixed position at X-Plane (E2-Plane) <input type="checkbox"/> Placed in fixed position at Y-Plane (E1-Plane) <input type="checkbox"/> 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 Adapter (14 inch) Mode 2: EUT power by Adapter (17 inch)
Worst Mode	<input type="checkbox"/> Mode 1 <input checked="" type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> 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(X-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 output power channel as worse case.

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3.3 EUT DUTY CYCLE

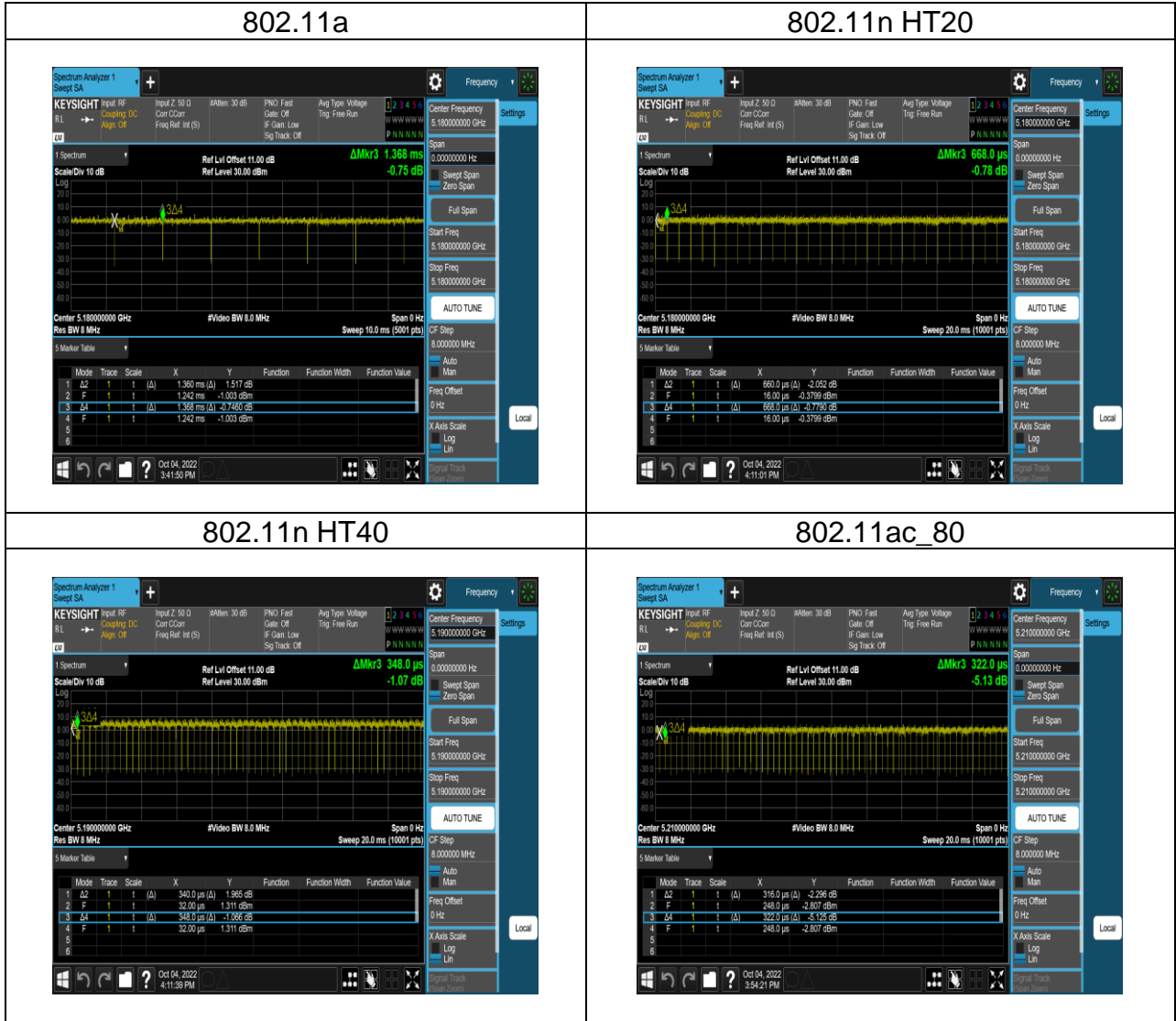
Temperature: 22 ~ 25.5°C

Test date: October 5 ~ 19, 2022

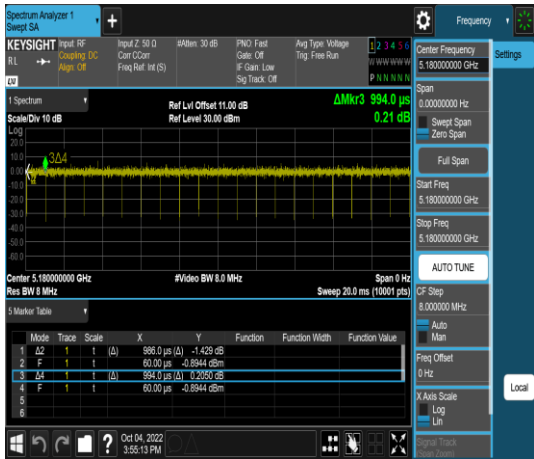
Humidity: 48 ~ 52% RH

Tested by: David Li

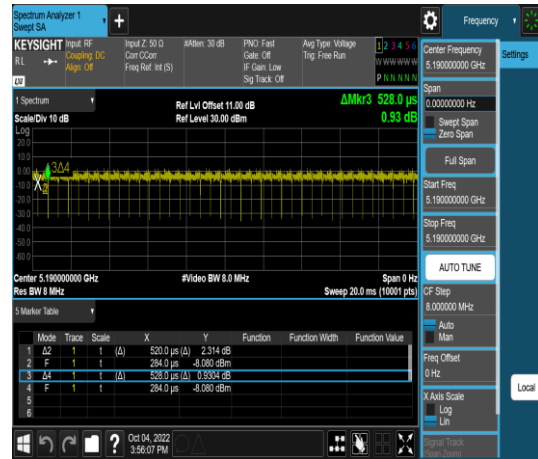
Duty Cycle				
Configuration	Duty Cycle (%)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11a	99.42	0.03	0.74	0.01
802.11n HT20	98.80	0.05	1.52	0.01
802.11n HT40	97.70	0.10	2.94	3.00
802.11ac VHT80	98.14	0.08	3.16	0.01
802.11ax HE 20	99.20	0.03	1.01	0.01
802.11ax HE 40	98.48	0.07	1.92	0.01
802.11ax HE 80	97.20	0.12	3.60	4.00



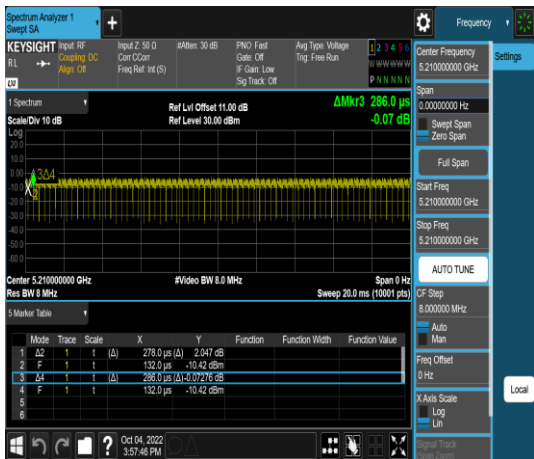
802.11ax HE 20



802.11ax HE 40



802.11ax HE 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

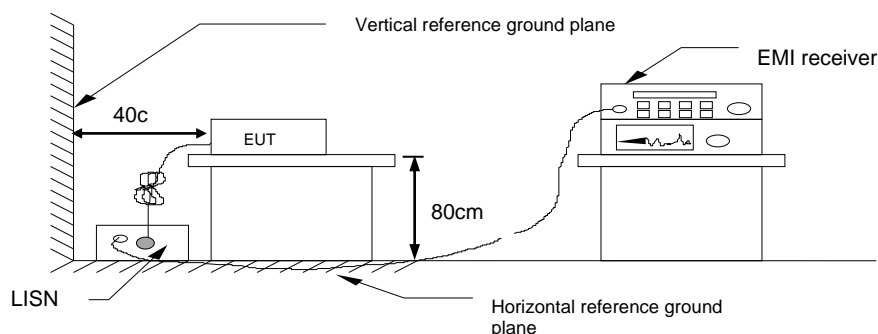
* Decreases with the logarithm of the frequency.

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

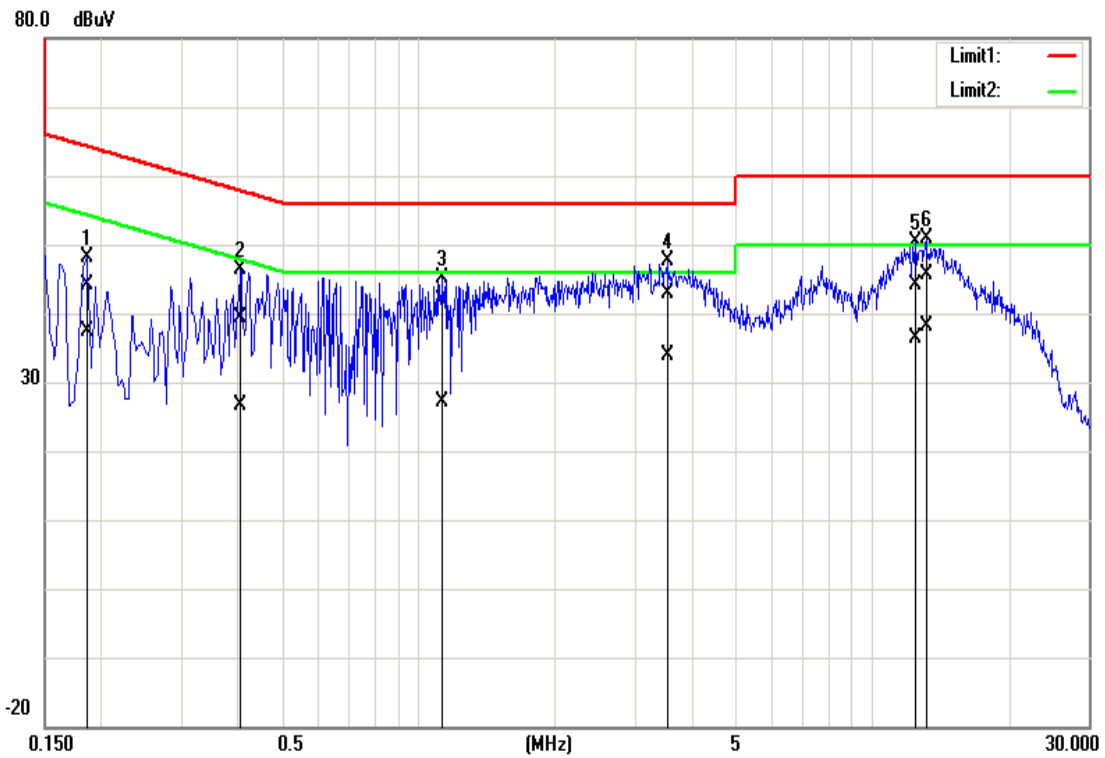


4.1.4 Test Result

Pass.

Test Data

Test Mode	Mode 1	Temp/Hum	24.3(°C)/ 52%RH
Phase	Line	Test Date	October 17, 2022
		Test Engineer	Jack Chen

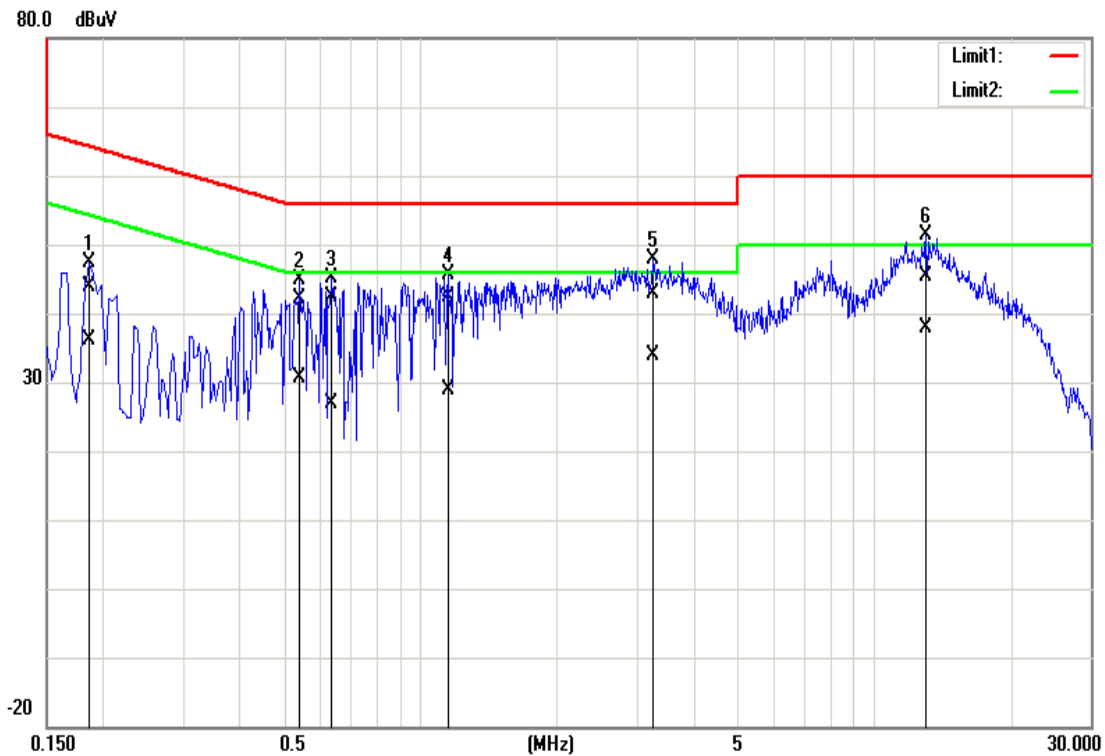


Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1860	34.06	27.29	10.18	44.24	37.47	64.21	54.21	-19.97	-16.74	Pass
0.4060	29.28	16.33	10.19	39.47	26.52	57.73	47.73	-18.26	-21.21	Pass
1.1300	31.75	17.01	10.21	41.96	27.22	56.00	46.00	-14.04	-18.78	Pass
3.5460	32.65	23.62	10.30	42.95	33.92	56.00	46.00	-13.05	-12.08	Pass
12.5020	33.74	26.11	10.36	44.10	36.47	60.00	50.00	-15.90	-13.53	Pass
13.1580	35.28	27.79	10.36	45.64	38.15	60.00	50.00	-14.36	-11.85	Pass

Note: Correction factor = LISN loss + Cable loss

Report No.: TMWK2209003822KR

Test Mode	Mode 1	Temp/Hum	24.3(°C)/ 52%RH
Phase	Neutral	Test Date	October 17, 2022
		Test Engineer	Jack Chen



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
0.1860	33.77	26.00	10.17	43.94	36.17	64.21	54.21	-20.27	-18.04	Pass
0.5420	31.90	20.52	10.18	42.08	30.70	56.00	46.00	-13.92	-15.30	Pass
0.6340	32.19	16.68	10.18	42.37	26.86	56.00	46.00	-13.63	-19.14	Pass
1.1500	32.08	18.71	10.20	42.28	28.91	56.00	46.00	-13.72	-17.09	Pass
3.2460	32.68	23.62	10.26	42.94	33.88	56.00	46.00	-13.06	-12.12	Pass
13.0300	35.04	27.61	10.37	45.41	37.98	60.00	50.00	-14.59	-12.02	Pass

Note: 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

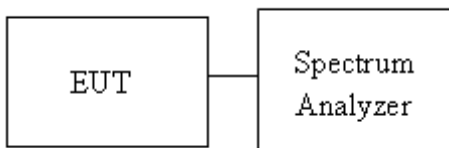
1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set RBW: approximately 1% of the emission bandwidth.
3. Set the VBW>RBW.
4. Detoctor = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26dB down 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) $\geq 3 \times$ 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.

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 xRBW

4.2.3 Test Setup

4.2.4 Test Result

Temperature: 22 ~ 25.5°C

Test date: October 5 ~ 19, 2022

Humidity: 48 ~ 52% RH

Tested by: David Li

UNII-1 5150-5250 MHz					
Test mode: IEEE 802.11a mode					
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)	Chain 1 26dB BW (MHz)
Low	5180	16.368	16.337	18.24	18.30
Mid	5220	16.359	16.355	18.49	18.32
High	5240	16.377	16.348	18.44	18.47
Test mode: IEEE 802.11n HT20 mode					
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)	Chain 1 26dB BW (MHz)
Low	5180	17.511	17.542	19.23	19.14
Mid	5220	17.527	17.541	19.38	19.17
High	5240	17.522	17.544	19.40	19.14
Test mode: IEEE 802.11n HT40 mode					
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)	Chain 1 26dB BW (MHz)
Low	5190	36.057	36.004	38.96	38.64
High	5230	36.101	36.040	47.94	38.48
Test mode: IEEE 802.11ac VHT80 mode					
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)	Chain 1 26dB BW (MHz)
Mid	5210	75.950	76.280	86.96	87.39

Test mode: IEEE 802.11ax HE20 mode						
Channel	Frequency (MHz)	RU config	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)	Chain 1 26dB BW (MHz)
Low	5180	full	18.875	18.881	20.02	20.25
Mid	5220	full	18.896	18.900	20.39	20.46
High	5240	full	18.897	18.889	20.40	20.15
Test mode: IEEE 802.11ax HE40 mode						
Channel	Frequency (MHz)	RU config	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)	Chain 1 26dB BW (MHz)
Low	5190	full	37.670	37.672	39.59	39.57
High	5230	full	37.674	37.679	46.99	42.40
Test mode: IEEE 802.11ax HE80 mode						
Channel	Frequency (MHz)	RU config	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)	Chain 1 26dB BW (MHz)
Mid	5210	full	37.746	37.765	40.20	40.20

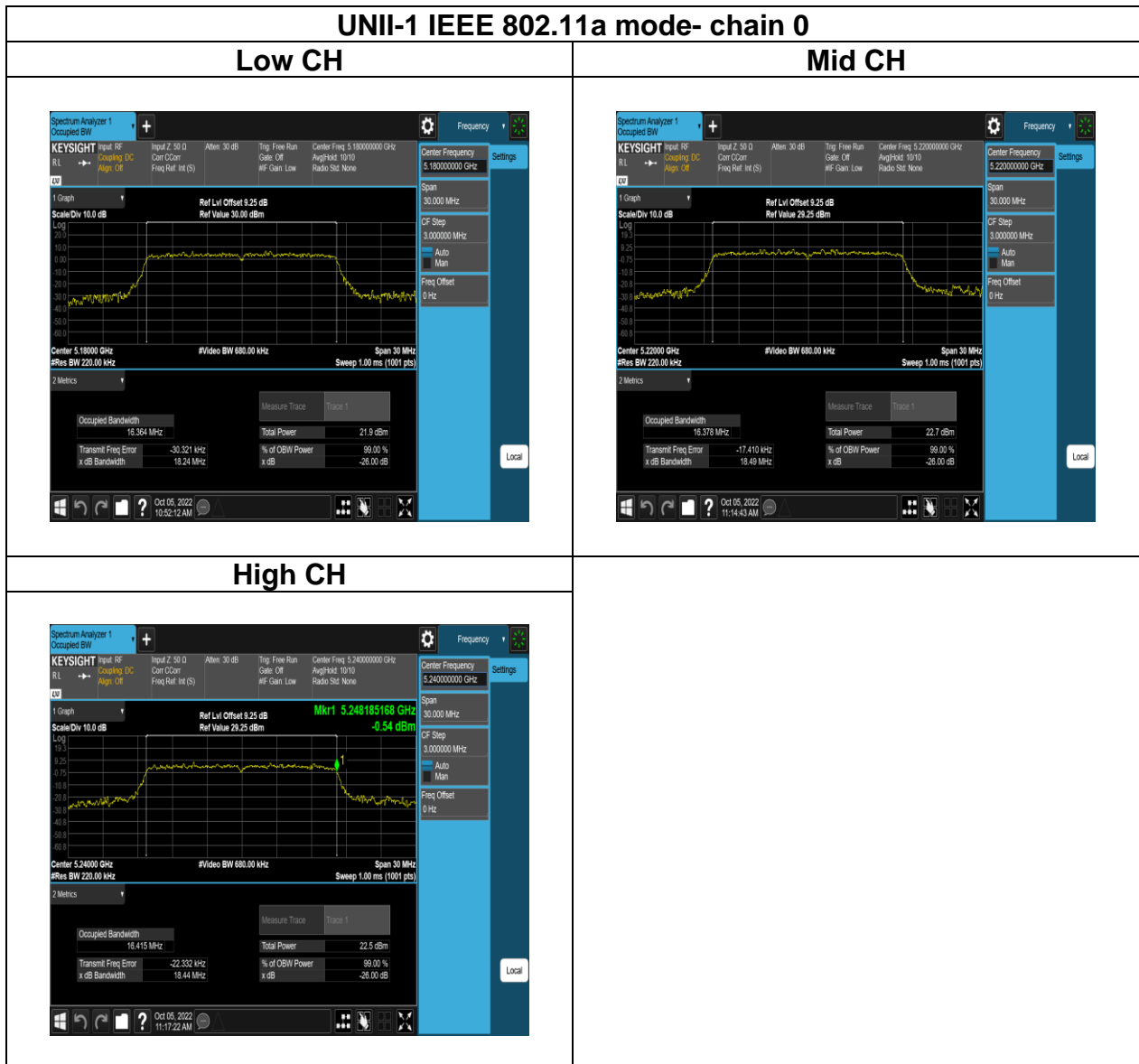
Report No.: TMWK2209003822KR

UNII-3 5725-5825MHz						
Test mode: IEEE 802.11a mode						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	Limit
Low	5745	16.754	16.640	16.11	16.33	>500kHz
Mid	5785	16.537	16.523	16.29	16.08	
High	5825	16.571	16.528	16.32	16.34	
Test mode: IEEE 802.11n HT20 mode						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	Limit
Low	5745	17.720	17.683	16.07	17.17	>500kHz
Mid	5785	17.600	17.632	16.58	17.56	
High	5825	17.711	17.634	16.07	17.20	
Test mode: IEEE 802.11n HT40 mode						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	Limit
Low	5755	36.114	36.115	35.46	35.60	>500kHz
High	5795	36.063	36.080	35.48	35.59	
Test mode: IEEE 802.11ac VHT80 mode						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	Limit
Mid	5775	76.027	76.064	75.81	75.94	>500kHz

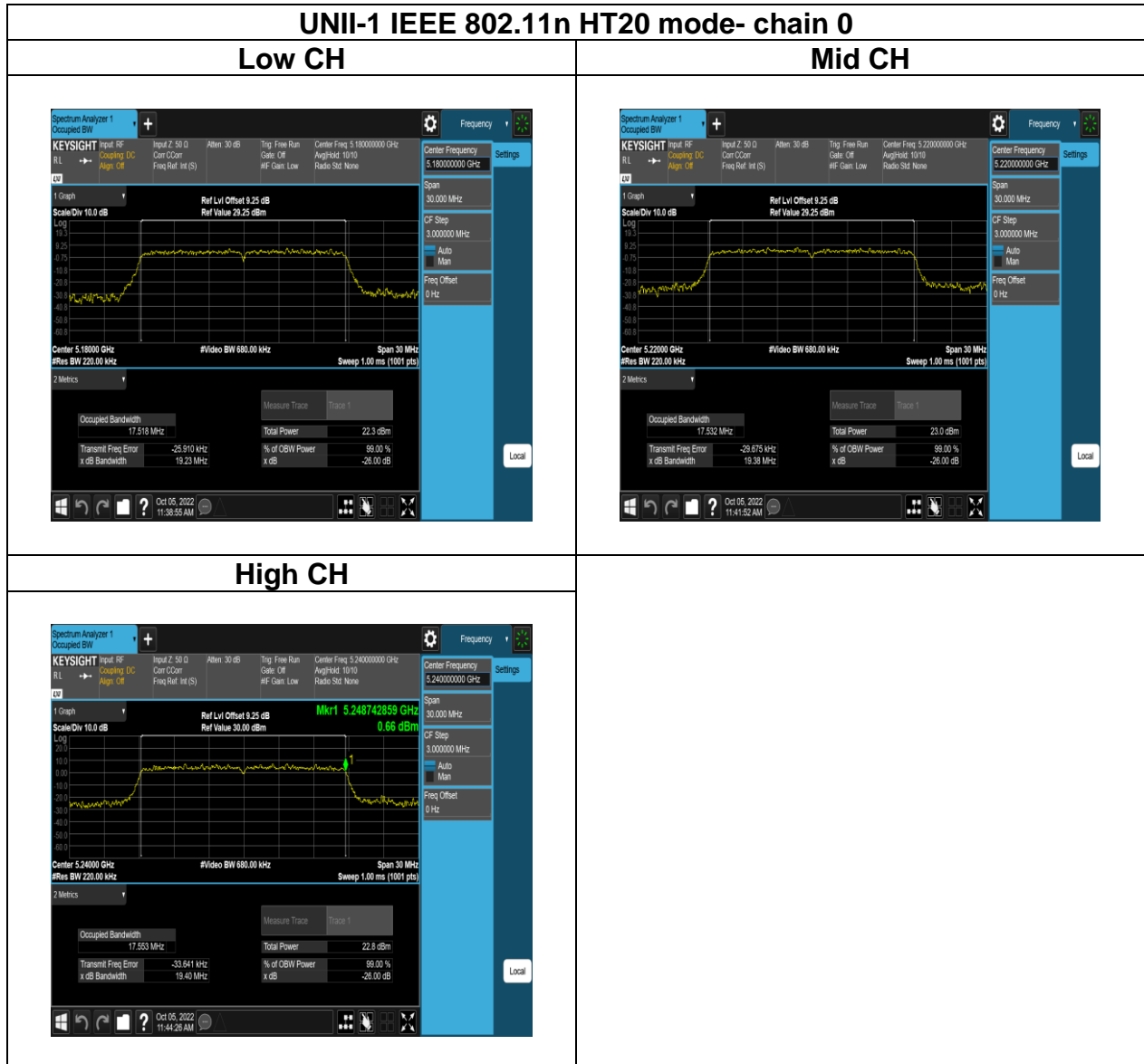
Test mode: IEEE 802.11ax HE20 mode							
Channel	Frequency (MHz)	RU config	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	Limit
Low	5745	full	18.977	18.963	16.36	18.07	>500kHz
Mid	5785	full	18.940	18.969	18.28	16.96	
High	5825	full	18.938	18.958	17.48	17.38	
Test mode: IEEE 802.11ax HE40 mode							
Channel	Frequency (MHz)	RU config	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	Limit
Low	5755	full	37.714	37.703	37.53	36.41	>500kHz
High	5795	full	37.717	37.705	36.67	37.39	
Test mode: IEEE 802.11ax HE80 mode							
Channel	Frequency (MHz)	RU config	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	Limit
Mid	5775	full	38.279	38.218	36.37	35.13	>500kHz

Report No.: TMWK2209003822KR

Test Plots (26dB BANDWIDTH)



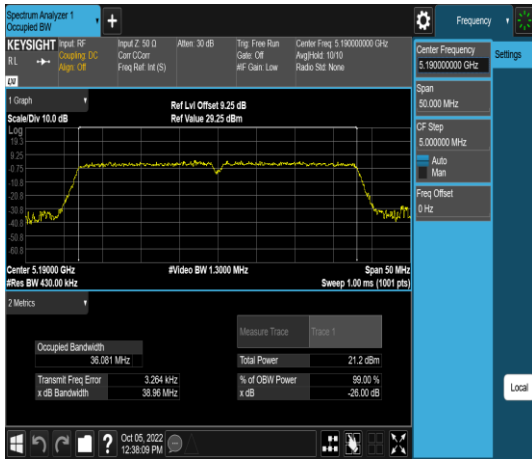
Report No.: TMWK2209003822KR



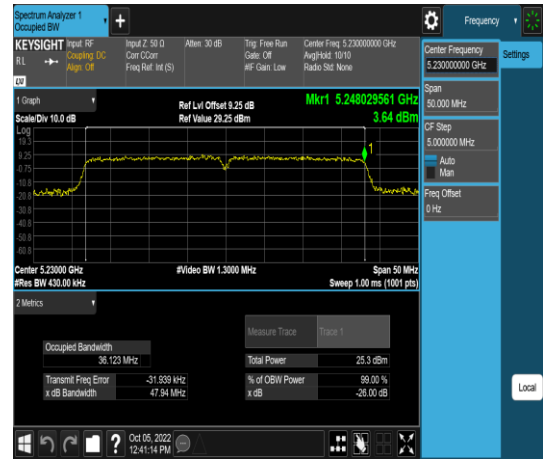
Report No.: TMWK2209003822KR

UNII-1 IEEE 802.11n HT40 mode- chain 0

Low CH

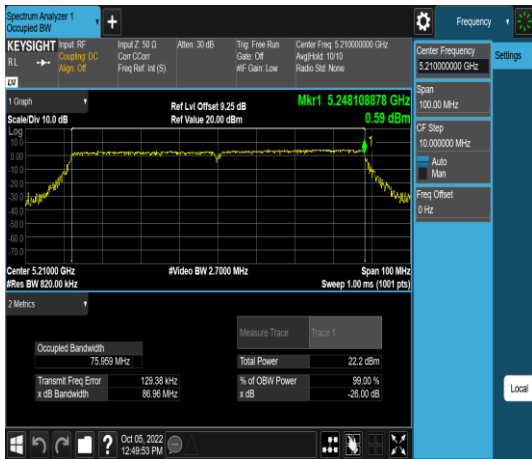


High CH



UNII-1 IEEE 802.11ac VHT80 mode- chain 0

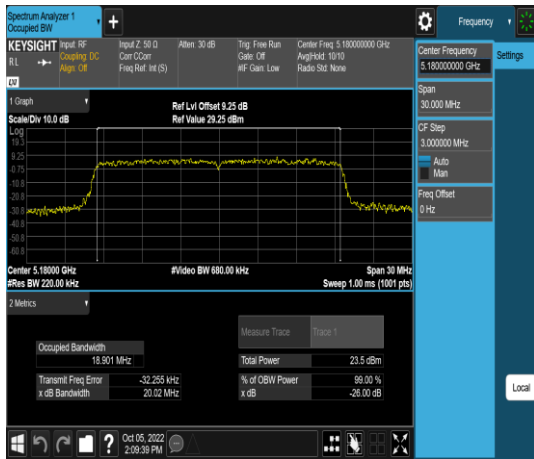
Mid CH



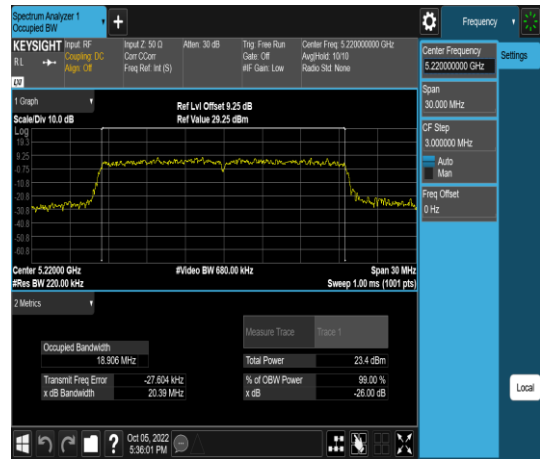
Report No.: TMWK2209003822KR

UNII-1 IEEE 802.11ax HE20 mode- chain 0

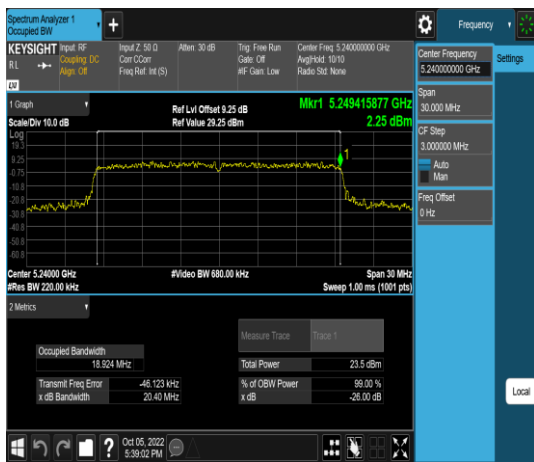
Low CH



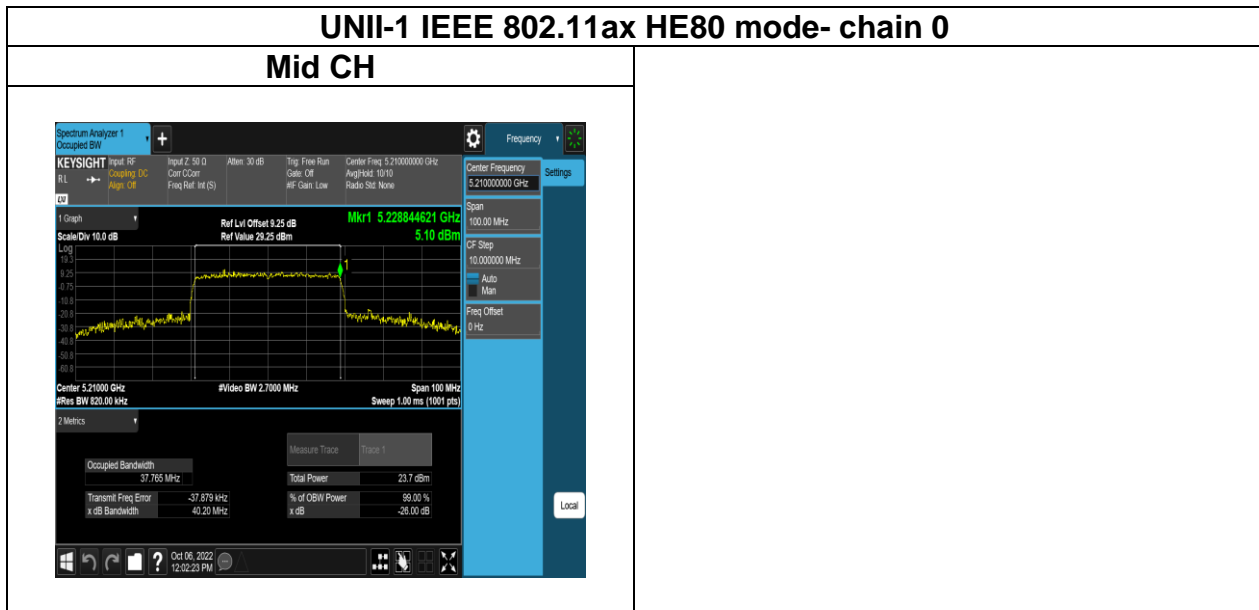
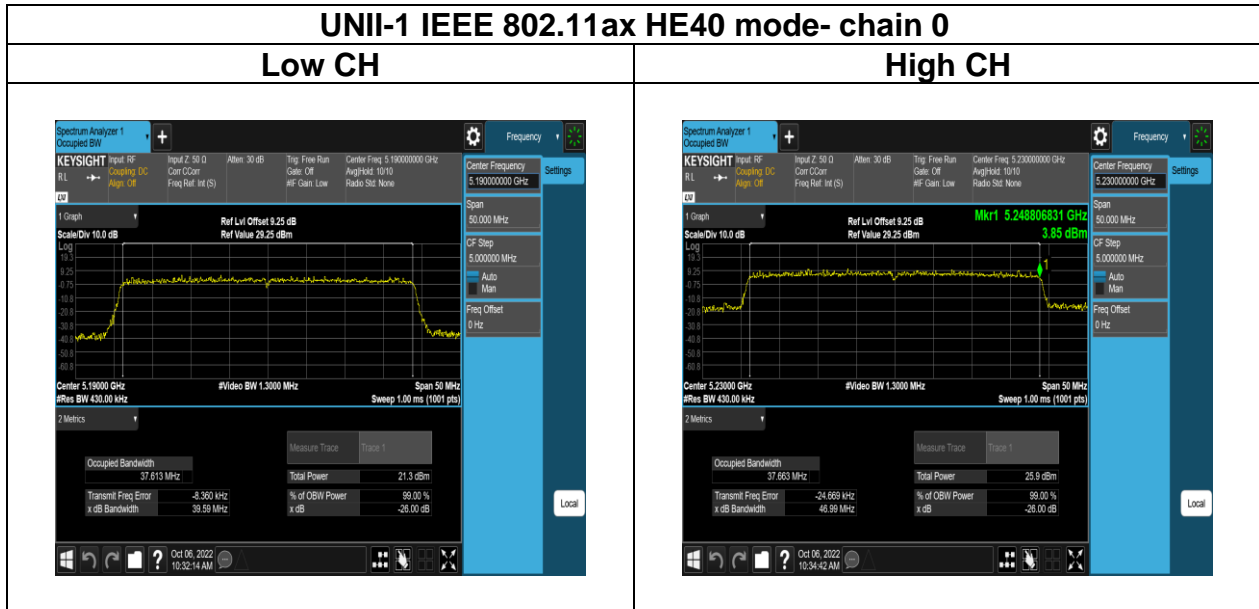
Mid CH



High CH



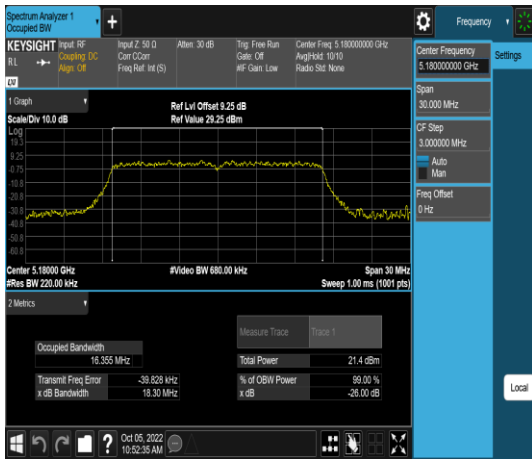
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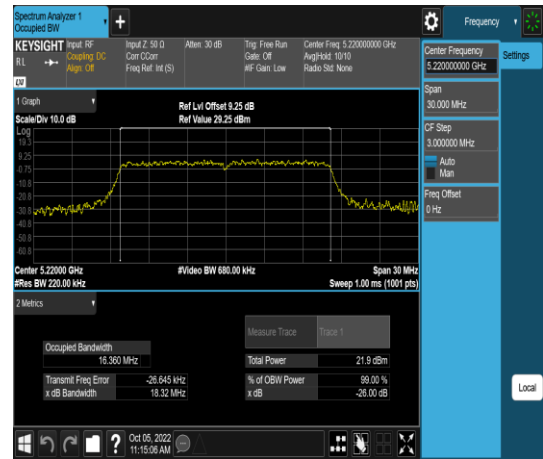
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UNII-1 IEEE 802.11a mode- chain 1

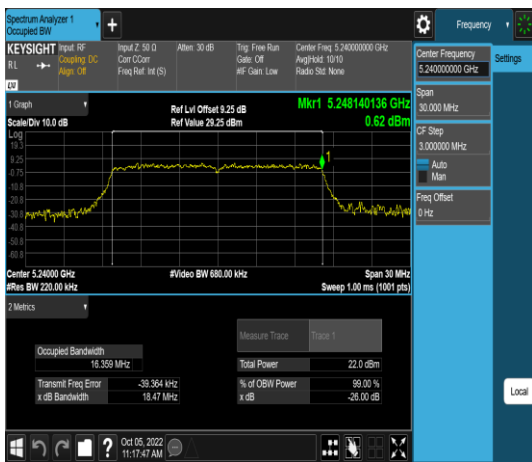
Low CH



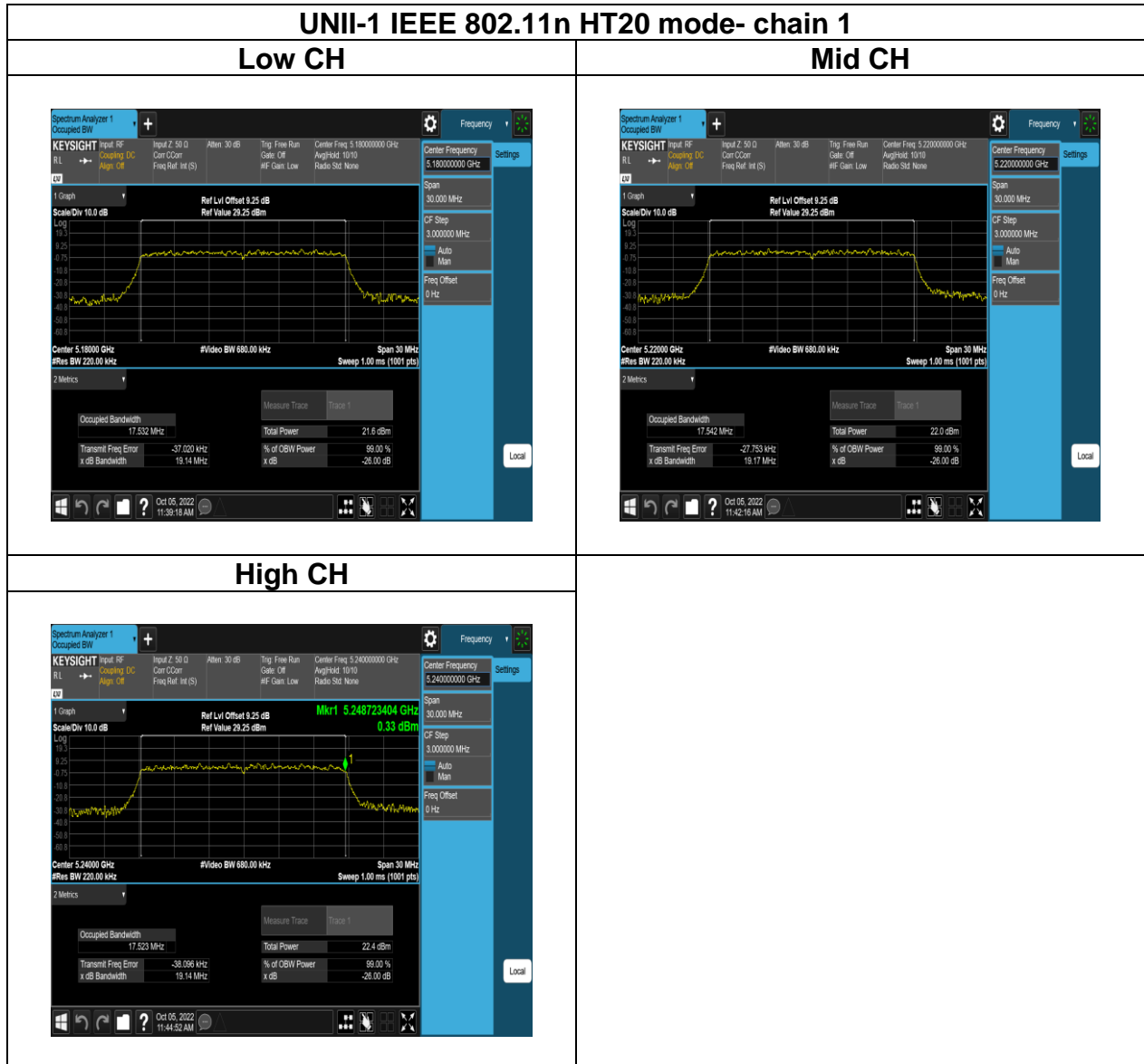
Mid CH



High CH



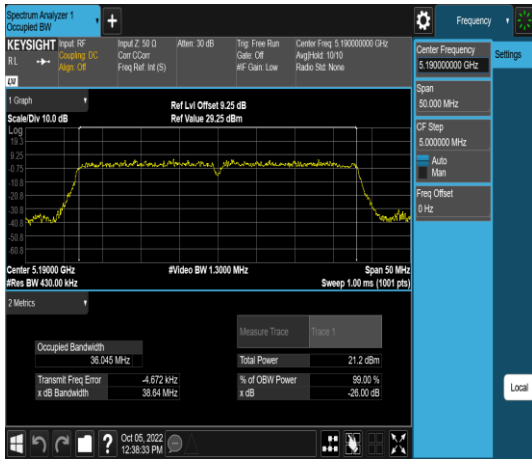
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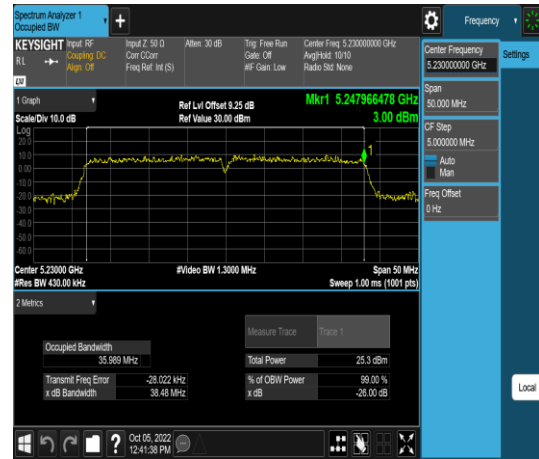
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UNII-1 IEEE 802.11n HT40 mode- chain 1

Low CH

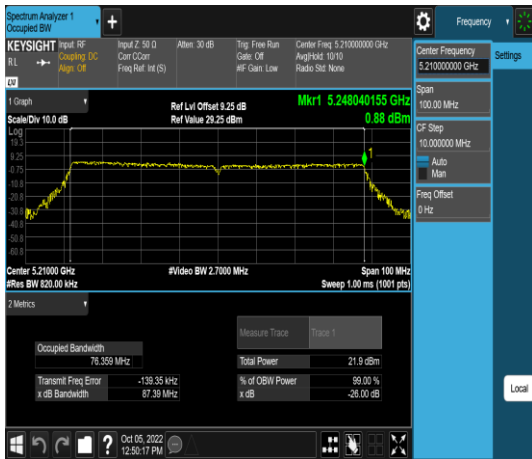


High CH



UNII-1 IEEE 802.11ac VHT80 mode- chain 1

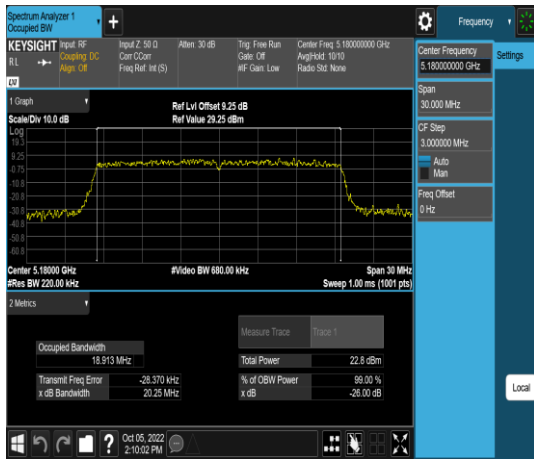
Mid CH



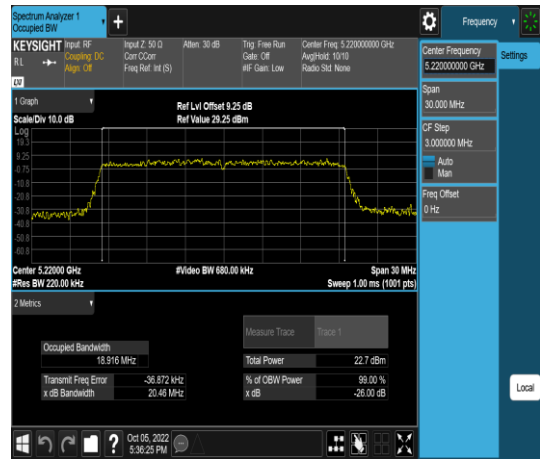
Report No.: TMWK2209003822KR

UNII-1 IEEE 802.11ax HE20 mode- chain 1

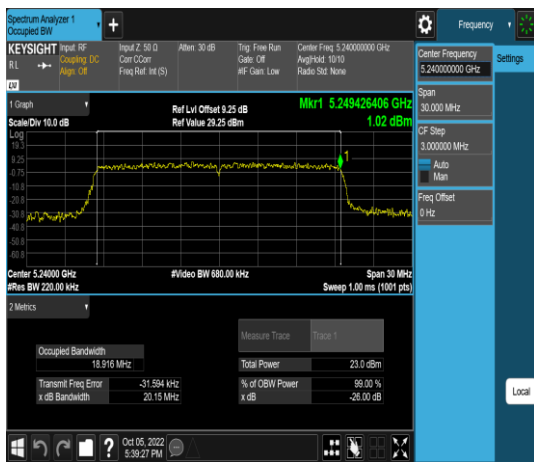
Low CH



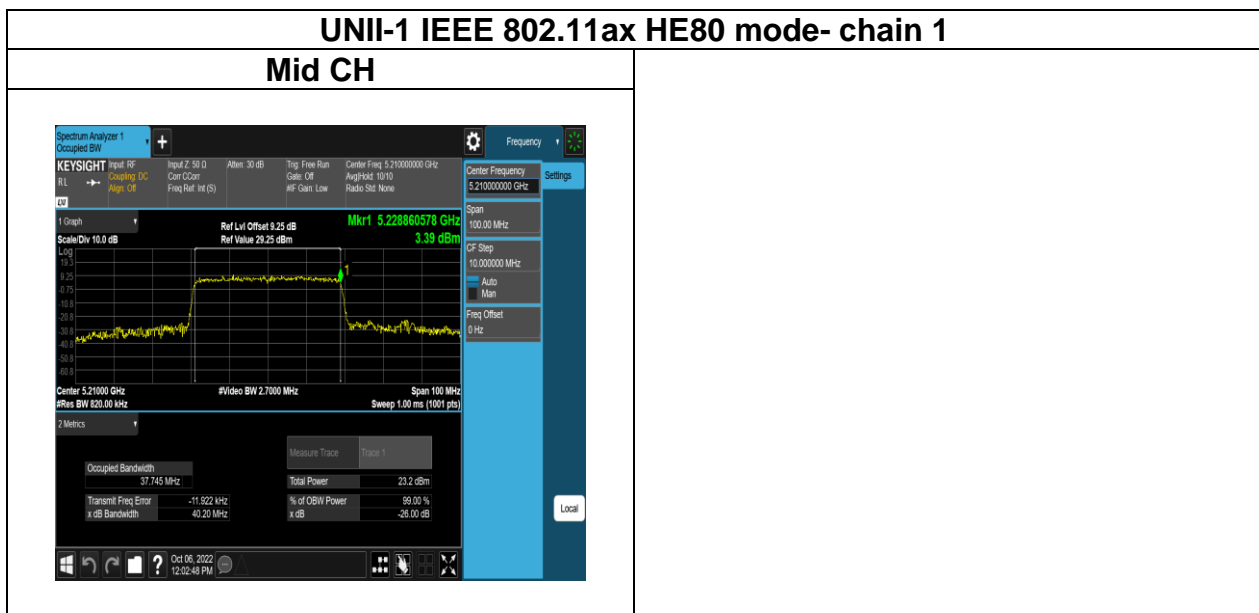
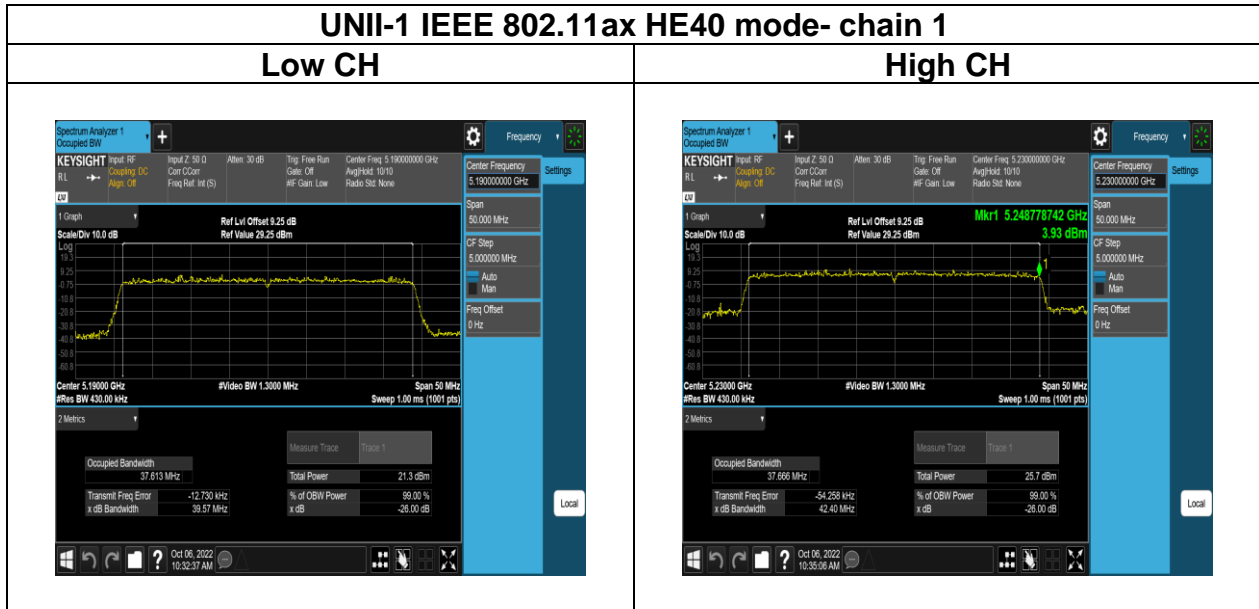
Mid CH



High CH

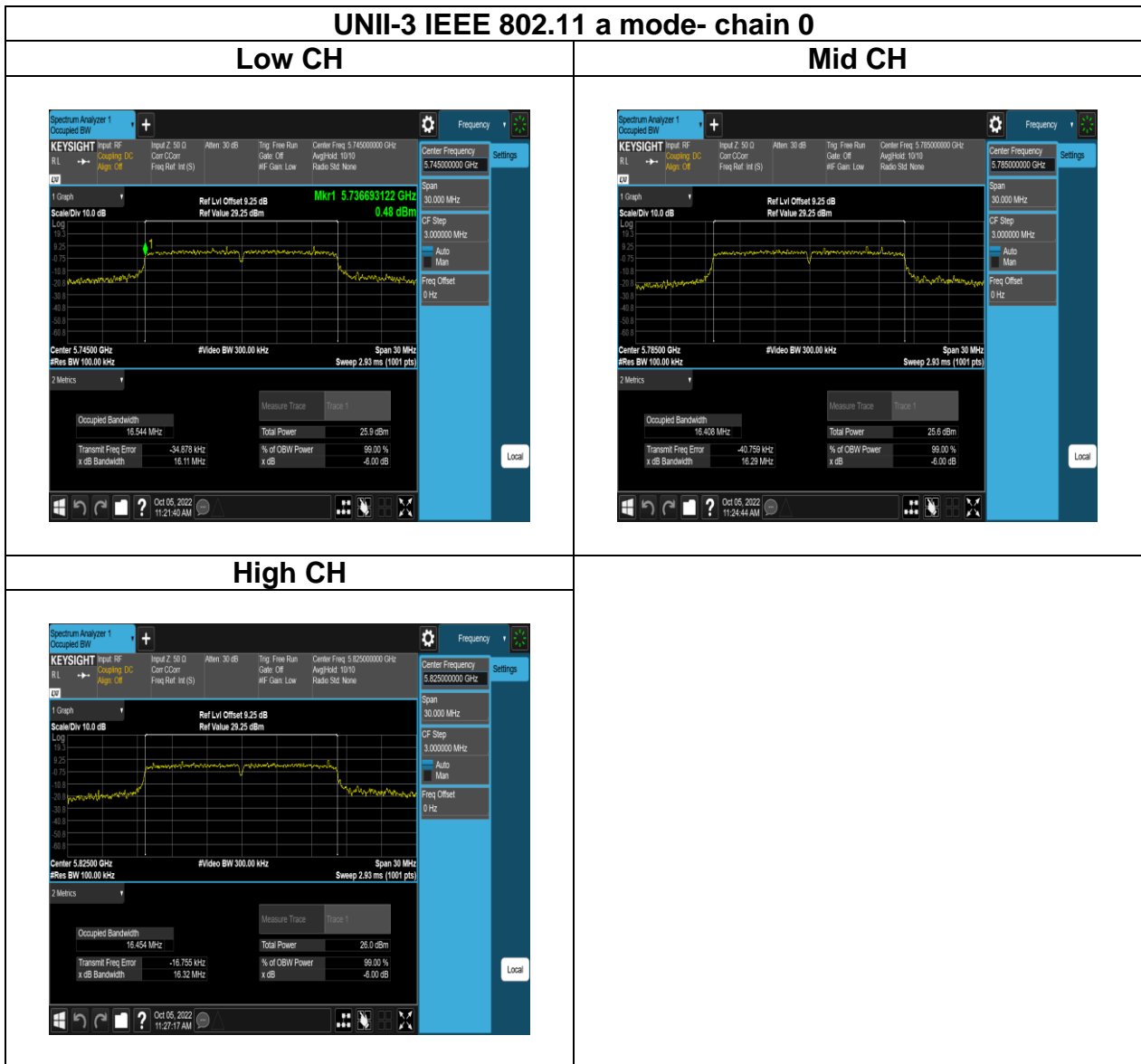


Report No.: TMWK2209003822KR

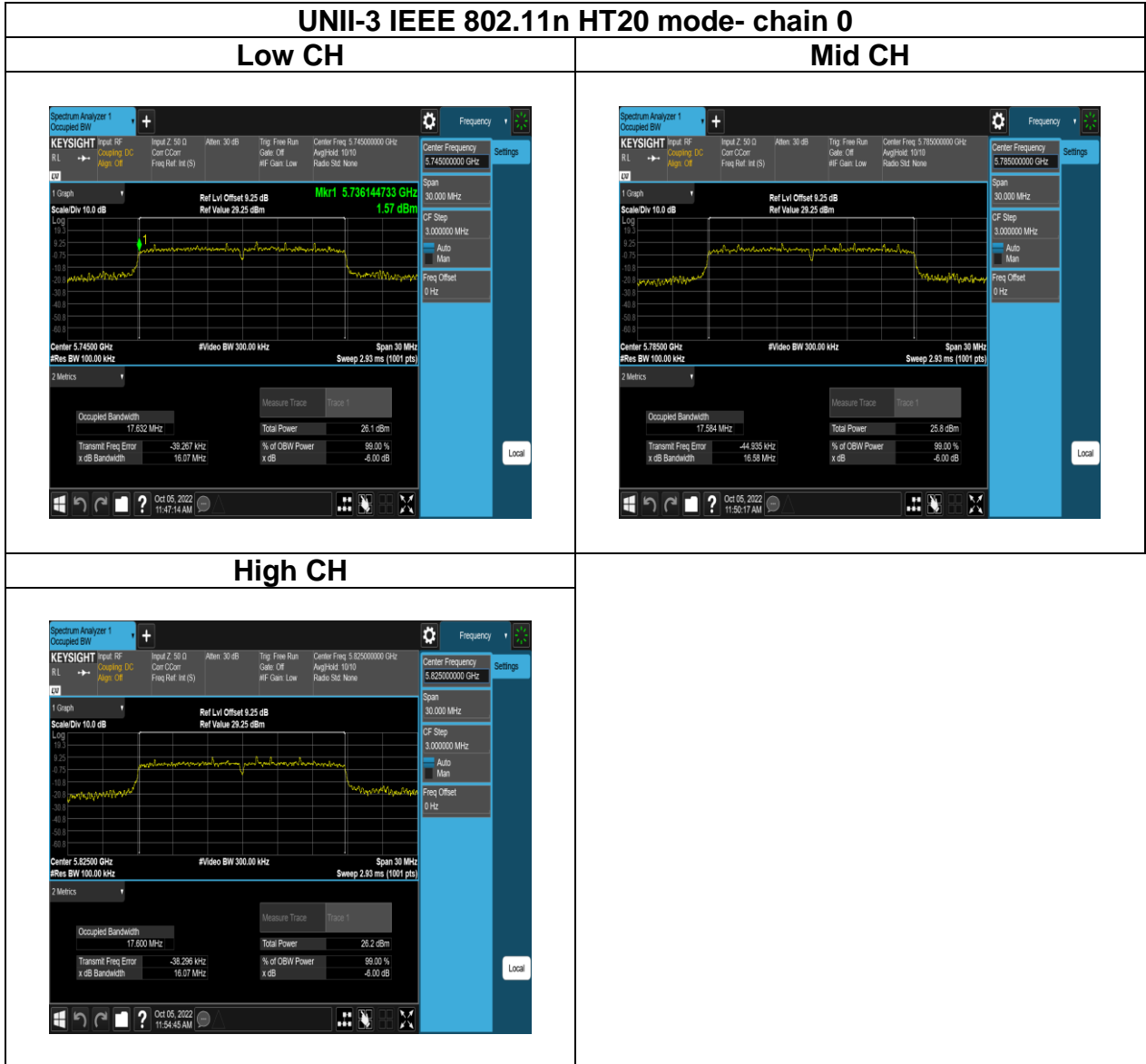


Report No.: TMWK2209003822KR

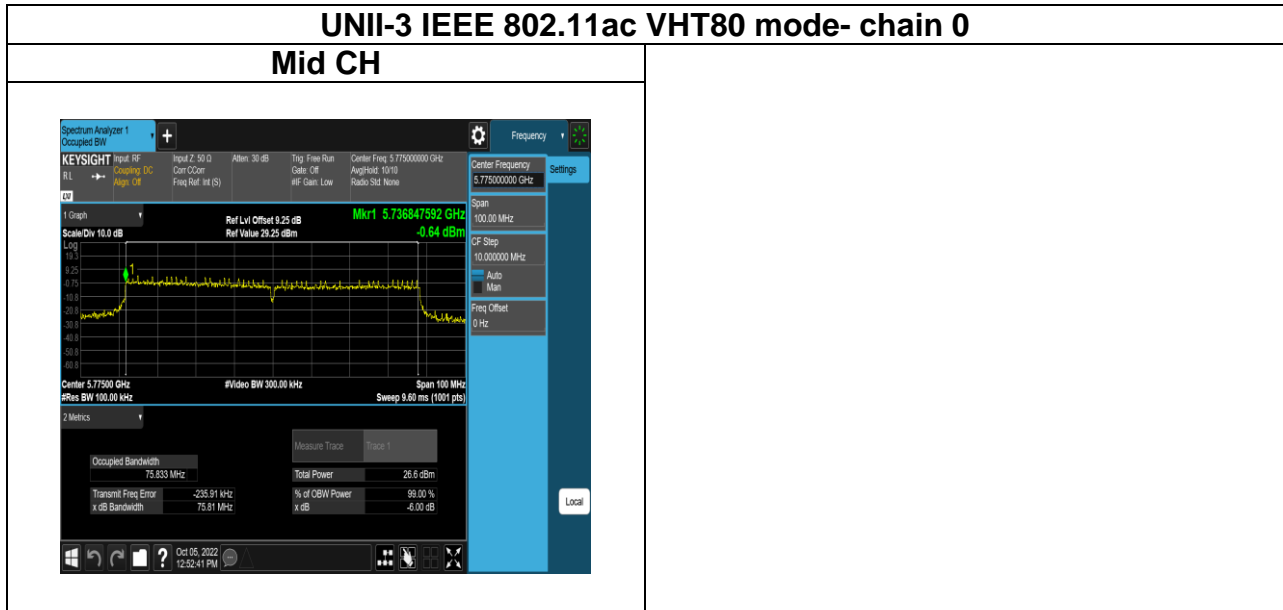
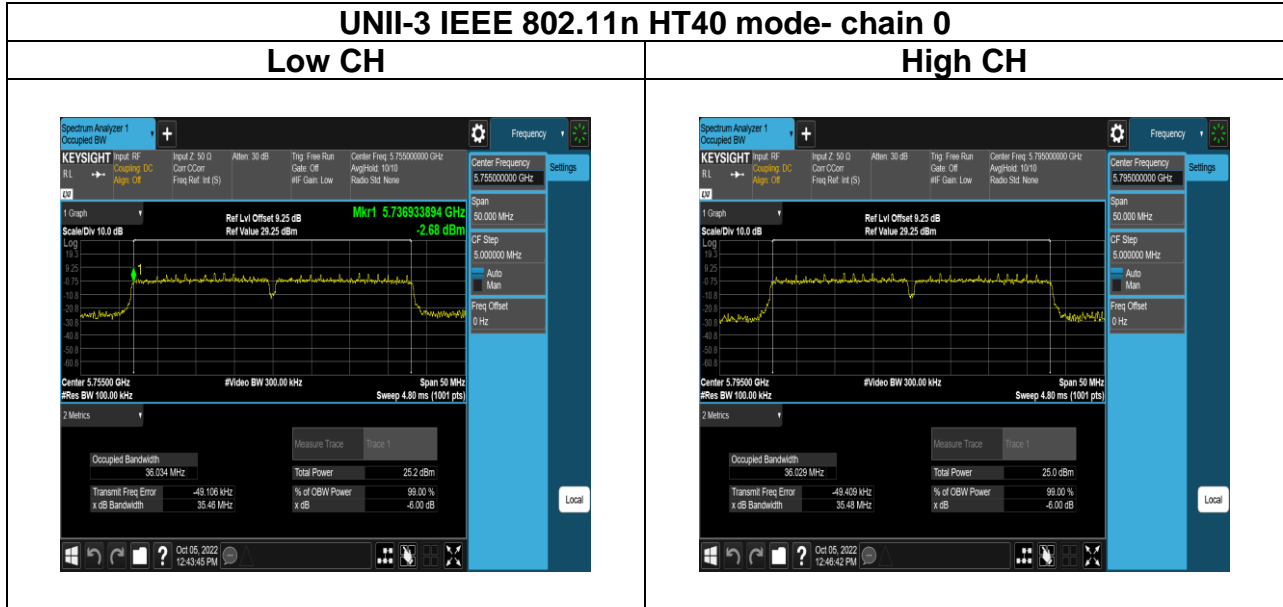
Test Plots (6dB BANDWIDTH)



Report No.: TMWK2209003822KR



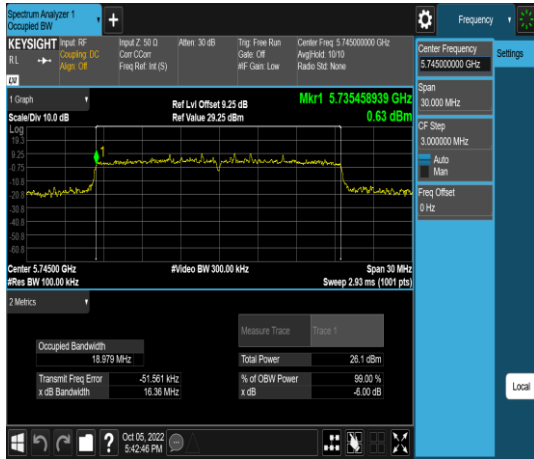
Report No.: TMWK2209003822KR



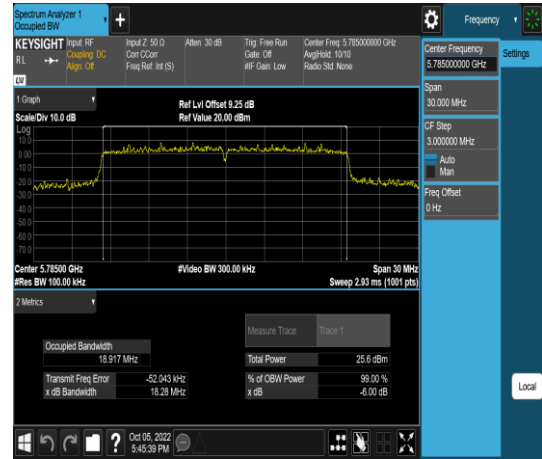
Report No.: TMWK2209003822KR

UNII-3 IEEE 802.11ax HE20 mode- chain 0

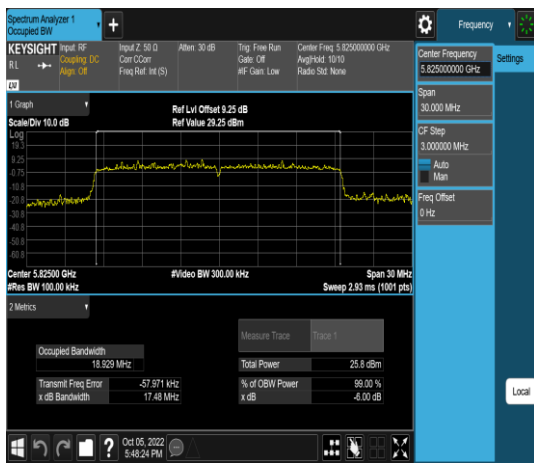
Low CH



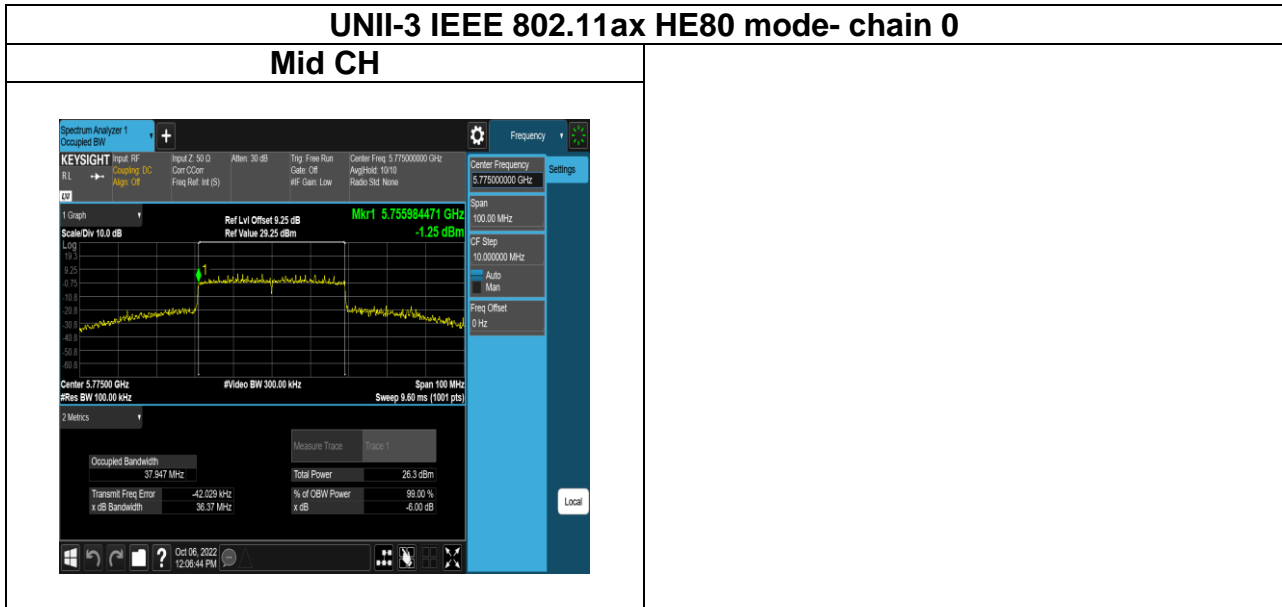
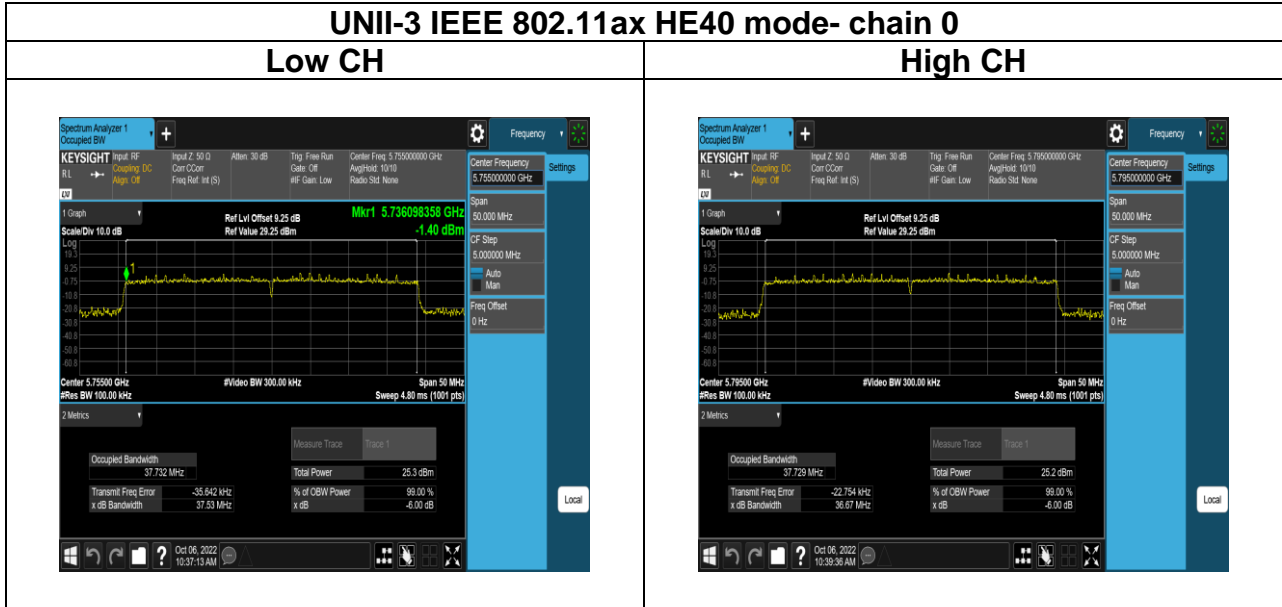
Mid CH



High CH



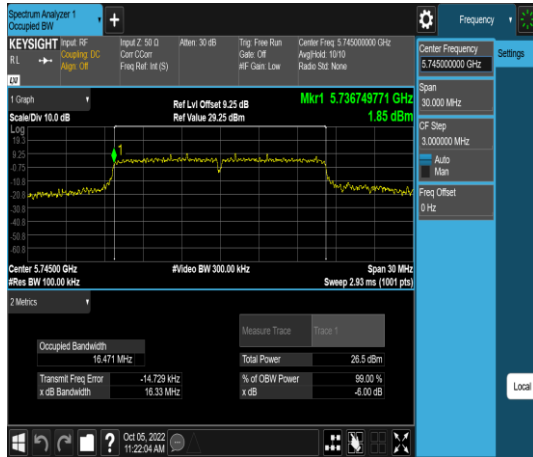
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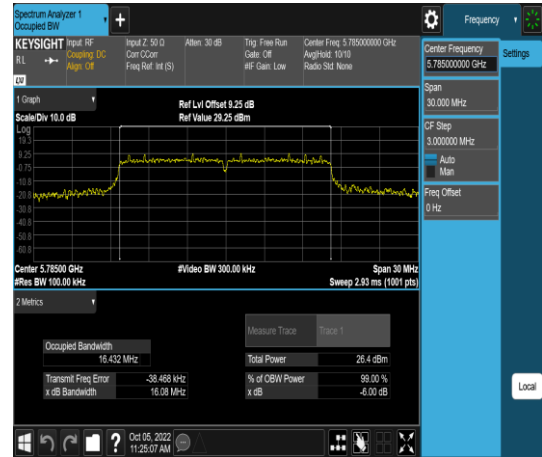
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UNII-3 IEEE 802.11 a mode- chain 1

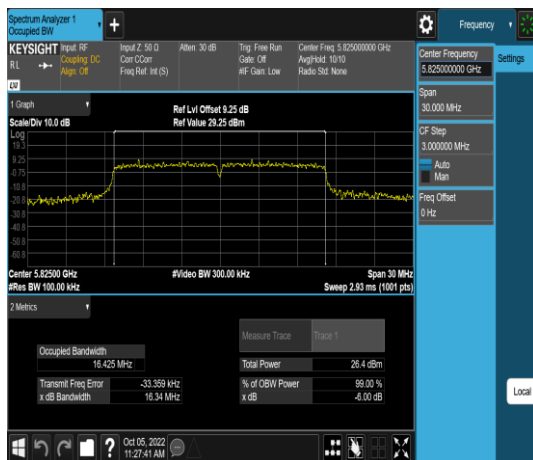
Low CH



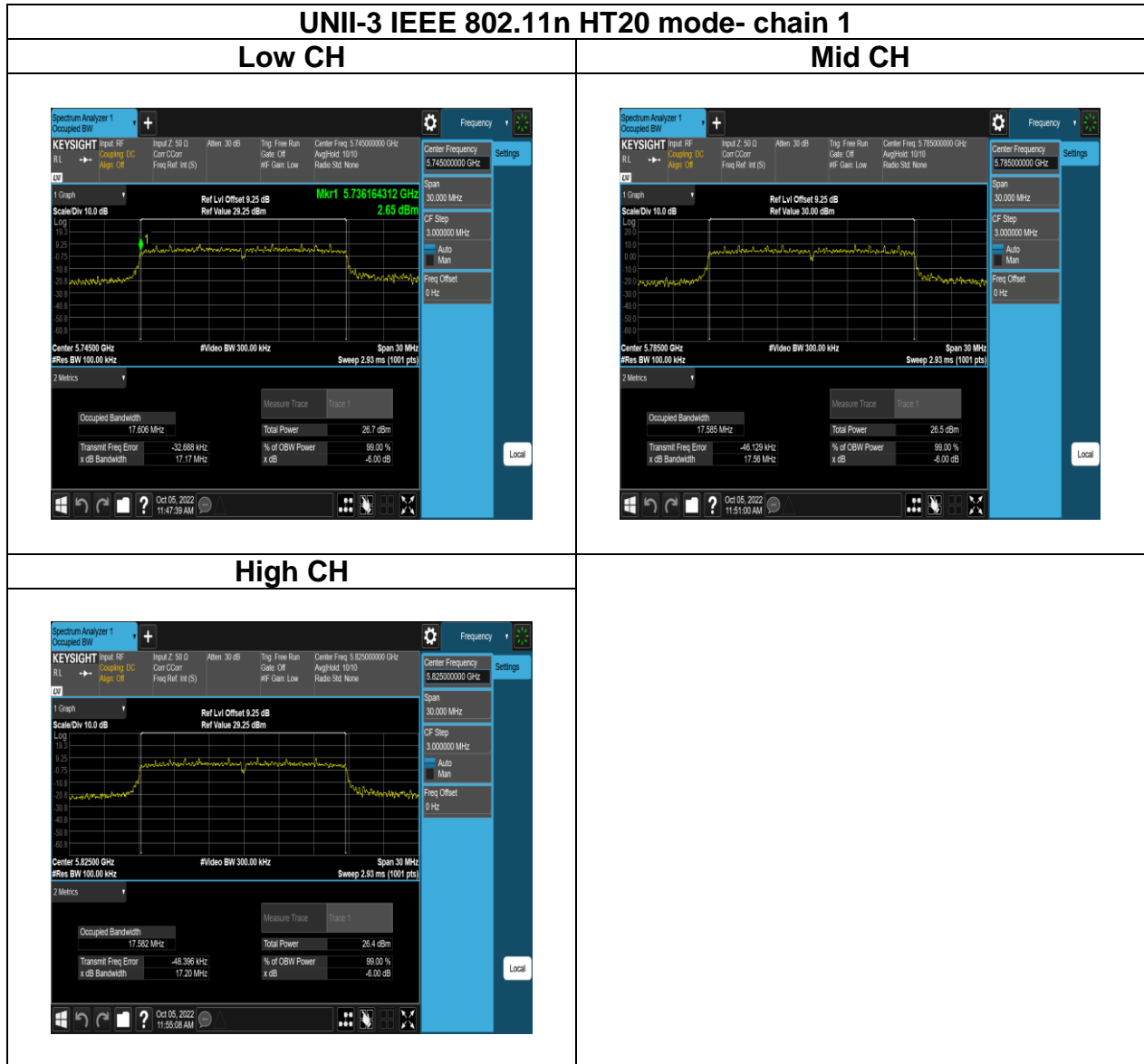
Mid CH



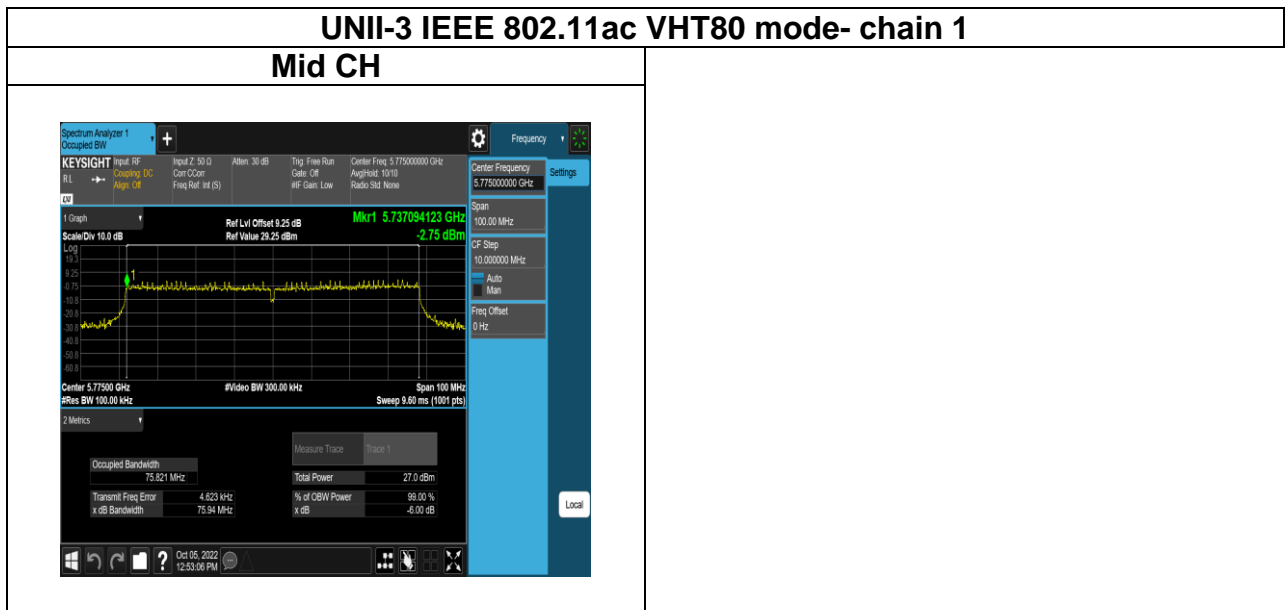
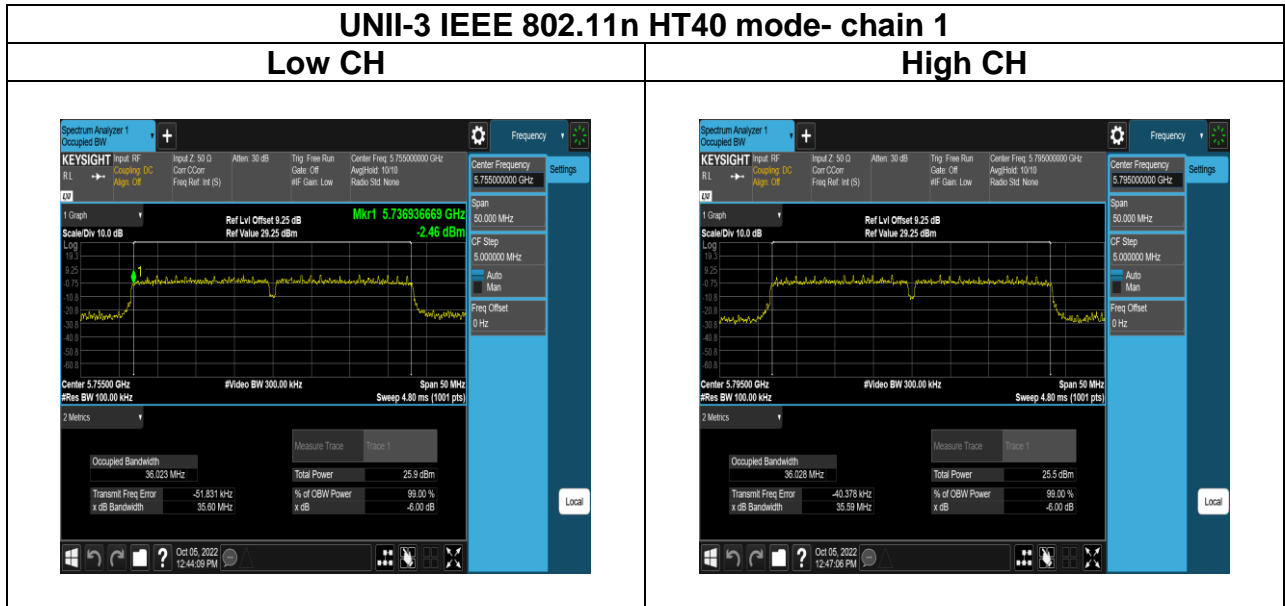
High CH



Report No.: TMWK2209003822KR



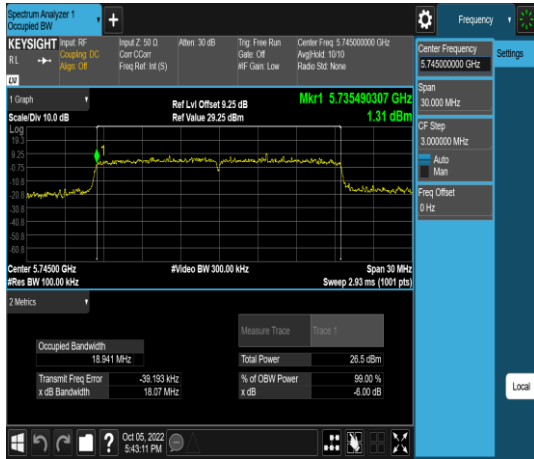
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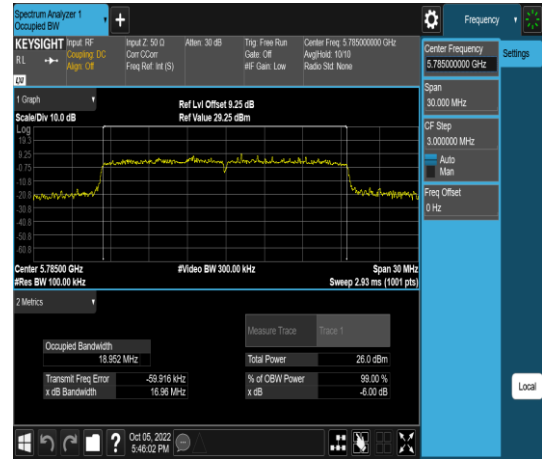
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UNII-3 IEEE 802.11ax HE20 mode- chain 1

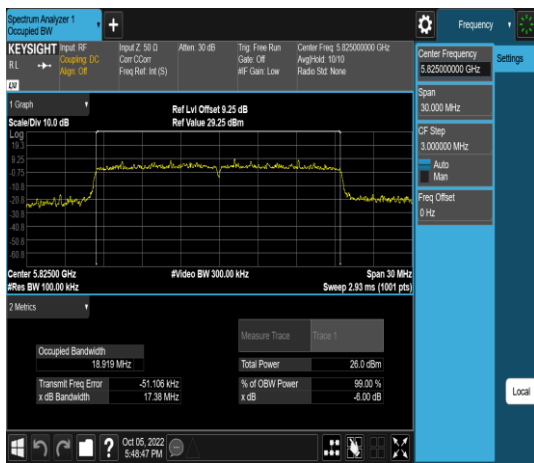
Low CH



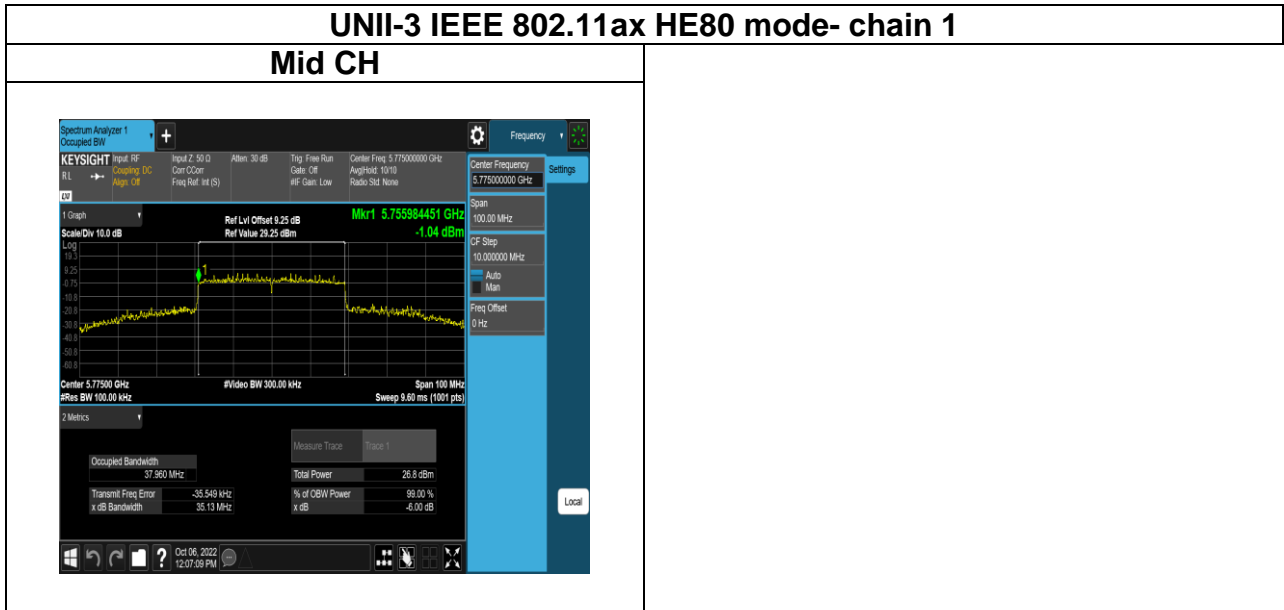
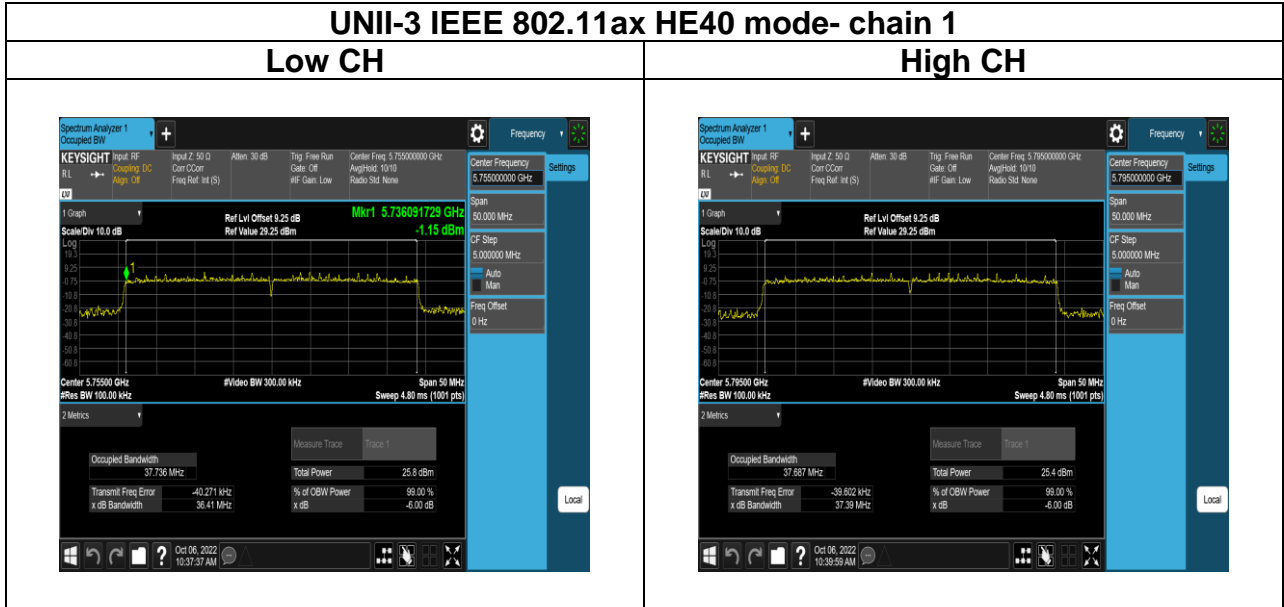
Mid CH



High CH



Report No.: TMWK2209003822KR



Report No.: TMWK2209003822KR

Test Plots (OBW 99%)

