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# **ELECTROMAGNETIC EMISSIONS** COMPLIANCE REPORT





Applicant: Silex Technology, Inc.

2-3-1 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-0237.

Japan

Manufacturer: Silex Technology, Inc.

2-3-1 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-0237.

Japan

**Product Name:** SX-PCEBE-AP

**Brand Name:** Silex Technology

Model No. /ISED HVIN: SX-PCEBE-AP

ISED PMN: Embedded wireless module

**Report Number:** TERF2412003977ER

FCC ID N6C-PCEBEAP

IC: 4908A-PCEBEAP

Date of EUT Received: December 06, 2024

Date of Test: December 09, 2024~February 21, 2025

Issue Date: April 25, 2025

Approved By CHUN-CHIEH, CHEN

### We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2013 and the energy emitted by the sample EUT comply with FCC rule part §15.407, ISED RSS-247.

The results of this report relate only to the sample identified in this report.

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.

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Revision History								
Report Number	Revision	Description	Issue Date	Revised By	Remark			
TERF2412003978ER	00	Original	March 27, 2025	Karen Huang				
TERF2412003978ER	01	Update test result	April 25, 2025	Karen Huang	*			

### Note:

1 . The remark "\*" indicates modification of the report upon requests from certification body.

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### **GENERAL INFORMATION**

#### 1.1 **Product Description**

Product Name:	SX-PCEBE-AP
Brand Name:	Silex Technology
Model No. /ISED HVIN:	SX-PCEBE-AP
Hardware Version:	N/A
Firmware Version:	N/A
EUT Series No.:	PW105450X6
Power Supply:	3.3 VDC and 5 VDC
Test Software (Name/Version)	QRCT/Version 4.0.211.0

#### 1.2 **Modulation & Data Rate**

	64QAM, 16QAM, QPSK, BPSK for OFDM in 802.11a,11n				
	256QAM, 64QAM, 16QAM, QPSK, BPSK				
	for OFDM in 802.11ac				
Modulation type:	1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK				
	for OFDMA in 802.11ax				
	4096QAM, 1024QAM, 256QAM, 64QAM, 16QAM,				
	QPSK, BPSK for OFDMA in 802.11be				
	802.11 a: 6 - 54 Mbps				
	802.11 n_HT20: up to 144.4 Mbps				
	802.11 n_HT40: up to 300 Mbps				
	802.11 ac_VHT20: up to 173.4 Mbps				
	802.11 ac_VHT40: up to 400 Mbps				
	802.11 ac_VHT80: up to 866.6 Mbps				
	802.11 ac_VHT160: up to 1733.4 Mbps				
Transition Rate:	802.11 ax_HE20: up to 286.8 Mbps				
	802.11 ax_HE40: up to 573.6 Mbps				
	802.11 ax_HE80: up to 1201 Mbps				
	802.11 ax_HE160: up to 2402 Mbps				
	802.11 be_EHT20: up to 344.1 Mbps				
	802.11 be_EHT40: up to 688.2 Mbps				
	802.11 be_EHT80: up to 1441.2 Mbps				
	802.11 be_EHT160: up to 2882.4 Mbps				

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### **Antenna Designation**

Antenna Type	Antenna Model No.	Freq. (MHz)	Element Gain (dBi)	Cable Loss	Net Gain (dBi)	Remark
		5150~5250	3.45	0.275	3.175	
Dinala	146452	5250~5350	3.25	0.275	2.975	
Dipole	146153	5470~5725	4.55	0.275	4.275	
		5725~5850	4.05	0.275	3.775	
		5150~5250	4	0.78	3.22	
Dinolo	H2B1PC1A1Cxxxx	5250~5350	4.9	0.99	3.91	
Dipole	HZB IPC IA ICXXXX	5470~5725	4	1.18	2.82	
		5725~5850	5.6	1.63	3.97	
		5150~5250	5.63	2.4	3.23	
Monopolo	WS.03.B.305151	5250~5350	5.15	1.3	3.85	
Monopole	VV3.03.D.303131	5470~5725	4.14	8.0	3.34	
		5725~5850	4.12	8.0	3.32	
		5150~5250	6	2.8	3.2	
PIFA	6001535	5250~5350	6.3	2.4	3.9	Main
FIFA	0001555	5470~5725	5.1	8.0	4.3	IVIAIII
		5725~5850	4.2	8.0	3.4	
		5150~5250	5.6	2.4	3.2	
PIFA	6001535	5250~5350	5.9	2.4	3.5	Aux
FIFA	0001035	5470~5725	5	0.8	4.2	Aux
		5725~5850	5	1.4	3.6	

### Note:

- 1. Pre-scanned was done on the above antennas, measurements were demonstrated by using the antenna with the highest gain as the worst case scenarios.
- 2. Antenna information is provided by the applicant.

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### 1.4

Wi-Fi	Frequency Range	Channels	EIRP/Avg	Rated Power(EIRP/Avg) (dBm) (Worst Case)	Modulation Technology
802.11a/	5180~5240	4	Avg	22.31 dBm	OFDMA
802.11n_HT20/	5260~5320	4	Avg	18.93 dBm	OFDMA
802.11ac_VHT20/ 802.11ax_HE20/	5500~5720	12	Avg	18.67 dBm	OFDM
802.11be_EHT20	5745-5825	5	Avg	23.78 dBm	OFDMA
900 44° LIT40/	5190~5230	2	Avg	23.29 dBm	OFDMA
802.11n_HT40/ 802.11ac_VHT40/	5270~5310	2	Avg	21.39 dBm	OFDM
802.11ax_HE40/ 802.11be_EHT40	5510~5710	6	Avg	21.87 dBm	OFDMA
002.11be_EH140	5755-5795	2	Avg	24.39 dBm	OFDM
	5210	1	Avg	17.80 dBm	OFDMA
802.11ac_VHT80/	5290	1	Avg	18.36 dBm	OFDMA
802.11ax_HE80/ 802.11be_EHT80	5530~5690	3	Avg	23.63 dBm	OFDMA
	5775	1	Avg	22.75 dBm	OFDMA
802.11ac_VHT160/	5250	1	Avg	17.17 dBm	OFDMA
802.11ax_HE160/ 802.11be_EHT160	5570	1	Avg	17.48 dBm	OFDMA

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### 1.5

WLAN 5 GHz for ISED (Master)

Wi-Fi	Frequency Range	Channels	EIRP/Avg	`	er(EIRP/Avg) /orst Case)	Modulation Technology
	5180~5240	4	EIRP	15.26	dBm	OFDM
802.11a/	5260~5320	4	Avg	18.93	dBm	OFDMA
802.11n_HT20/ 802.11ac_VHT20/	(*)5500~5700	8	Avg	18.67	dBm	OFDM
802.11ac_VH120/ 802.11ax_HE20/	5720 (U-NII 2C)	1	Avg	17.01	dBm	OFDMA
802.11be_EHT20	5720 (U-NII 3)	1	Avg	12.74	dBm	OFDMA
	5745-5825	5	Avg	23.78	dBm	OFDMA
	5190~5230	2	EIRP	18.22	dBm	OFDM
802.11n_HT40/	5270~5310	2	Avg	21.39	dBm	OFDM
802.111ac_VHT40/	(*)5510~5670	3	Avg	21.87	dBm	OFDMA
802.11ax_HE40/ 802.11be_EHT40	5710 (U-NII 2C)	1	Avg	20.49	dBm	OFDMA
	5710 (U-NII 3)	1	Avg	12.96	dBm	OFDMA
	5755-5795	2	Avg	24.39	dBm	OFDM
	5210	1	EIRP	21.03	dBm	OFDMA
	5290	1	Avg	18.36	dBm	OFDMA
802.11ac_VHT80/ 802.11ax HE80/	5530	1	Avg	21.20	dBm	OFDMA
802.11be_EHT80	5690 (U-NII 2C)	1	Avg	21.84	dBm	OFDMA
	5690 (U-NII 3)	1	Avg	12.10	dBm	OFDMA
	5775	1	Avg	22.75	dBm	OFDMA
802.11ac_VHT160/ 802.11ax_HE160/ 802.11be_EHT160	5250	1	Avg	17.17	dBm	OFDMA

\*Note: TDWR frequencies are not available in Canada.

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### 1.6 Test Methodology of Applied Standards

FCC Part 15, Subpart E §15.407

FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

RSS-247 issue 3 Aug. 2023

RSS-Gen, Issue 5 April 2018, Amendment 2 (February 2021)

ANSI C63.10:2013

### 1.7 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designa- tion number	IC CAB identifier
		SAC 1		
		SAC 2		
		SAC 3 Conduction 1		
	No 124 Wu Kung Dood New Toingi			
	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New	Conducted 1	TW0027	TW3702
	Taipei City, Taiwan.	Conducted 2	1 440027	
	raipei Gity, raiwari.	Conducted 3		
		Conducted 4		
		Conducted 5		
SGS Taiwan Ltd.		Conducted 6		
Central RF Lab.		Conduction C		
(TAF code 3702)		SAC C SAC D		
		SAC G		
	No.2, Keji 1st Rd., Guishan District,	Conducted A		
	Taoyuan City, Taiwan 333	Conducted B	TW0028	
	ladyuan dity, laiwan 333	Conducted C		
		Conducted D		
		Conducted E		
		Conducted F		
		Conducted G		

**Note:** Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address.

### 1.8 Special Accessories

There are no special accessories used while test was conducted.

### 1.9 Equipment Modifications

There was no modification incorporated into the EUT.

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### SYSTEM TEST CONFIGURATION

#### 2.1 **EUT Configuration**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

#### **EUT Exercise** 2.2

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

#### 2.3 **Test Procedure**

#### 2.3.1 **Conducted Emissions**

The EUT is placed on a table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz. The CISPR Quasi-Peak and Average detector mode is employed. The two LISNs provide 50uH/50 ohm of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

#### 2.3.2 **Conducted Test (RF)**

The active antenna port of the unlicensed wireless device is connected to the spectrum analyzer with attenuator to protect the instrumentation. If a second antenna port is available, it is tested at one operating frequency, with other port(s) appropriately terminated, to verify it has similar output characteristics as the fully tested port.

#### 2.3.3 **Radiated Emissions**

The EUT is placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

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#### 2.4 **Measurement Results Explanation Example**

#### 2.4.1 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

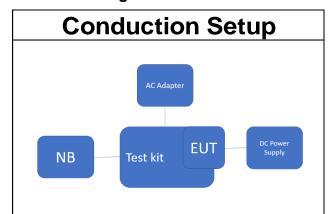
Radiated emission below 30MHz is measured in a 9m\*6m\*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field

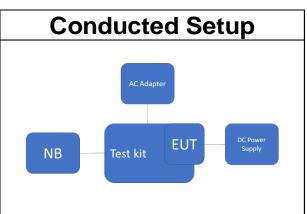
There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

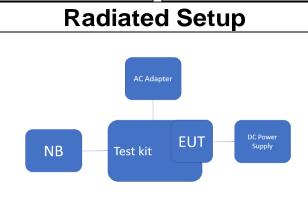
#### 2.4.2 For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

#### 2.5 **Test Configuration**







#### 2.6 Control Unit(s)

AC Power-Line Conducted Emission Test Site: Conduction 1						
EQUIPMENT TYPE MFR MODEL NUMBER SERIAL NUMBER LAST CAL. (mm/dd/yyyy) (mm/dd/yyyy)						
AC Adapter	MEAN WELL	GST60A12	N/A	N/A	N/A	
Test kit	Silex	SCH-39019 REV F	N/A	N/A	N/A	
Notebook	Lenovo	T440P	PC-01V5PW 14/11	N/A	N/A	

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Conducted Emission Test Site: Conducted 2						
EQUIPMENT TYPE MFR MODEL NUMBER SERIAL NUMBER LAST CAL. (mm/dd/yyyy) (mm/dd/yyyy)						
AC Adapter	MEAN WELL	GST60A12	N/A	N/A	N/A	
Test kit	Silex	SCH-39019 REV F	N/A	N/A	N/A	
Notebook	Lenovo	T14	PF-380WLW	N/A	N/A	

Radiated Emission Test Site: SAC 1						
EQUIPMENT TYPE MFR MODEL NUMBER SERIAL NUMBER				LAST CAL. (mm/dd/yyyy)	CAL DUE. (mm/dd/yyyy)	
AC Adapter	MEAN WELL	GST60A12	N/A	N/A	N/A	
Test kit	Silex	SCH-39019 REV F	N/A	N/A	N/A	
Notebook	Lenovo	T440P	PC-01V5PW 14/11	N/A	N/A	

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### SUMMARY OF TEST RESULT

FCC Rules	ISED Rules	Description Of Test	Result
§15.207	RSS-Gen §8.8	AC Power Line Conducted Emission	Compliant
§15.407(e)	RSS-Gen §6.7	Emission Bandwidth	Compliant
§15.407(a)	RSS-247 §6.2.1~4 (1) RSS-247 §6.2.5 (2)	Maximum Conducted Output Power	Compliant
§15.407(a)	RSS-247 §6.2.1~ 4 (1) RSS-247 §6.2.5 (2)	Power Spectral Density	Compliant
§15.205 §15.209 §15.407(b)	RSS-Gen 8.10 RSS-247 §6.2.1~3 (2) §6.2.4 (3) RSS-247 §6.2.5 (3)	Undesirable Radiated Emissions	Compliant
§15.407(c)	RSS-247 §6.4	Transmission in case of Absence of Information	Compliant
§15.203	N/A	Antenna Requirement	Compliant

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### **DESCRIPTION OF TEST MODES**

### **Operating Frequencies**

# UNII-1 5150 MHz ~ 5250MHz

20MHz				
СН	Freq.			
	(MHz)			
36	5180			
40	5200			
44	5220			
48	5240			

525UMHZ			
40	OMHz		
CH 38	Freq.		
	(MHz)		
	5190		
46	5230		
	40 CH 38		

80MHz				
СН	Freq. (MHz)			
42	5210			

# **UNII-2A 5250 MHz**

20MHz				
СН	Freq.			
OII	(MHz)			
52	5260			
56	5280			
60	5300			
64	5320			

~ 5350MHz					
	40MHz				
СН	ر ت	Freq.			
	СП	(MHz)			
	54	5270			
	62	5310			
,					

80MHz				
00	ουίνιπΖ			
СН	Freq.			
	(MHz)			
58	5290			

160MHz		
СН	Freq.	
	(MHz)	
50 5250		

### UNII-2C 5470 MHz ~ 5725MHz

20MHz			
СН	Freq.		
	(MHz)		
100	5500		
104	5520		
108	5540		
112	5560		
116	5580		
132	5660		
136	5680		
140	5700		
144	5720		

JI ZJIVII IZ				
40MHz				
СН	Freq.			
5	(MHz)			
102	5510			
110	5550			
134	5670			
142	5710			
110 134	5550 5670			

80MHz				
СН	Freq.			
СП	(MHz)			
106	5530			
138	5690			

OIVII-3 37 23 WITTE			
20MHz			
СН	Freq.		
CII	(MHz)		
149	5745		
153	5765		
157	5785		
161	5805		

5825

165

UNII-3 5725 MHz ~ 5850MHz				
20MHz			40MHz	
СН	Freq.		СН	Freq.
	(MHz)			(MHz)
149	5745		151	5755
153	5765		159	5795

	80	OMHz
	СН	Freq.
		(MHz)
	155	5775

### Note:

Operating in 5600~5650MHz is prohibited in Canada.

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### 4.2 The Worst Test Modes and Channel Details

- 1. The EUT has been tested under operating condition.
- Test program used to control the EUT for staying in continuous transmitting mode is programmed.
- 3. Investigation has been done on all the possible configurations for searching the worst case. The given UE is pre-scanned among below modes.

	Modulation		Transmission Chain				Tra	Single ansmission Spatial	Tra	Multiple ansmission Spatial		
٧	802.11 a	٧	Ch0	٧	Ch1		Ch2	Ch3		1TX	٧	2TX
٧	802.11 n	٧	Ch0	٧	Ch1		Ch2	Ch3		1TX	٧	2TX
٧	802.11 ac	٧	Ch0	٧	Ch1		Ch2	Ch3		1TX	٧	2TX
٧	802.11 ax	٧	Ch0	٧	Ch1		Ch2	Ch3		1TX	٧	2TX
٧	802.11 be	٧	Ch0	٧	Ch1		Ch2	Ch3		1TX	٧	2TX

4. Therefore, below summary is the modes of test configuration that yield the highest reading and generate the highest emission chosen to carry out the relevantly mandatory test items.

			CONDU	ICTED TEST		
MODE	FREQUENCY	AVAILABLE	TESTED	MODULATION	DATA RATE	ANTENNA
MODE	BAND (MHz)	CHANNEL	CHANNEL	MODULATION	(Mbps)	PORT
	5180~5240	36 to 48	36,44,48			
802.11a	5260~5320	52 to 64	52,60,64	OFDM	6	2TX
002.114	5500~5720	100 to 144	100,116,140,144	OFDIVI	O	217
	5745~5825	149 to 165	149,157,165			
	5180~5240	36 to 48	36,44,48			
802.11n_HT20	5260~5320	52 to 64	52,60,64	OFDM	MCS0	2TX
	5500~5720	100 to 144	100,116,140,144	OI DIVI	WOO	217
	5745~5825	149 to 165	149,157,165			
	5190~5230	38 to 46	38,46			2TX
802.11n_HT40	5270~5310	54 to 62	54,62	OFDM	MCS0	
002.1111_11140	5510~5710	102 to 142	102,110,134,142	OI DIVI	WIGGO	217
	5755~5795	151 to 159	151,159			
	5210	42	42			
802.11ac_VHT80	5290	58	58	OFDM	MCS0	2TX
002.11ac_V11100	5530~5690	106 to 138	106,122,138	OI DIVI	WCSO	217
	5775	155	155			
802.11ac_VHT160	5250	50	50	OFDM	MCS0	2TX
002.11ac_v111100	5570	114	114	OI DIVI	IVIOSO	217

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		TRANS	MIT RADIATED EN	IISSION TEST (BI	ELOW 1 GHz)	
MODE	FREQUENCY	AVAILABLE	TESTED	MODULATION	DATA RATE	ANTENNA
WIODE	BAND (MHz)	CHANNEL	CHANNEL	MODULATION	(Mbps)	PORT
	5180~5240	36 to 48	44			
802.11a	5260~5320	52 to 64	60	OFDM	6	2TX
002.11a	5500~5720	100 to 144	116	OFDIVI	0	217
	5745~5825	149 to 165	157			
		TRANS	MIT RADIATED EN	IISSION TEST (AI	BOVE 1 GHz)	
MODE	FREQUENCY	AVAILABLE	TESTED	MODULATION	DATA RATE	ANTENNA
MIODE	BAND (MHz)	CHANNEL	CHANNEL	MODULATION	(Mbps)	PORT
	5180~5240	36 to 48	36,44,48			
802.11a	5260~5320	52 to 64	52,60,64	OFDM	6	2TX
	5500~5720	100 to 144	100,116,140,144	OFDIVI	0	217
	5745~5825	149 to 165	149,157,165			
	5180~5240	36 to 48	36,44,48			
000 11 <sub>m</sub> LIT00	5260~5320	52 to 64	52,60,64	OFDM	MCS0	2TV
802.11n_HT20	5500~5720	100 to 144	100,116,140,144	OFDIVI		2TX
	5745~5825	149 to 165	149,157,165			
	5190~5230	38 to 46	38,46			
802.11n_HT40	5270~5310	54 to 62	54,62	OFDM	MCS0	2TX
002.1111_11140	5510~5710	102 to 142	102,110,134,142	OFDIVI	WIC30	217
	5755~5795	151 to 159	151,159			
	5210	42	42			
802.11ac VHT80	5290	58	58	OFDM	MCS0	2TX
002.11ac_v11100	5530~5690	106 to 138	106,122,138	OFDIVI	IVICOU	217
	5775	155	155			
802 11aa \/UT160	5250	50	50	OFDM	MCS0	2TV
02.11ac_VHT160	5570	114	114	OFDIVI	IVICOU	2TX

### Note:

The field strength of radiated emission was measured as the EUT positioned in different orthogonal planes (E1/E2/H) based on actual usage of the EUT to pre-scan the emissions for determining the worst case scenario.

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### 5 MEASUREMENT UNCERTAINTY

Test Items	Un	certain	ty
AC Power Line Conducted Emission	+/-	1.54	dB
Output Power measurement	+/-	0.97	dB
Emission Bandwidth	+/-	1.38	Hz
Conducted emission measurement	+/-	0.77	dB
Peak Power Density	+/-	0.61	dB
Temperature	+/-	0.6	°C
Humidity	+/-	3	%
DC / AC Power Source	+/-	1	%

Radiated Spurious Emission Measurement Uncertainty							
	+/-	1.89	dB	9kHz~30MHz			
Polarization: Vertical	+/-	4.15	dB	30MHz - 1000MHz			
Foldrization. Vertical	+/-	3.43	dB	1GHz - 18GHz			
	+/-	3.86	dB	18GHz - 40GHz			
	+/-	1.89	dB	9kHz~30MHz			
Polarization: Horizontal	+/-	4.02	dB	30MHz - 1000MHz			
Polarization. Horizontal	+/-	3.43	dB	1GHz - 18GHz			
	+/-	3.86	dB	18GHz - 40GHz			
	+/-	2	dB	33GHz-50GHz			
	+/-	1.59	dB	50GHz-60GHz			
Radiated Spurious Emission	+/-	1.7	dB	60GHz-90GHz			
	+/-	1.64	dB	90GHz-140GHz			
	+/-	3.83	dB	140GHz-220GHz			

### Note:

- 1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
- 2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

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### **MEASUREMENT EQUIPMENT USED**

#### **Emission from AC power line** 6.1

AC Power-Line Conducted Emission Test Site: Conduction 1										
EQUIPMENT TYPE MFR MODEL NUMBER SERIAL NUMBER LAST CAL. (mm/dd/yyyy) (mm/dd/										
Coaxial Cables	xial Cables EMC Instruments EMCCFD300-BM- Corp. BM-3000		06/22/2024	06/21/2025						
DC Power Supply	Gwinstek	SPS-3610	GEV856733	12/04/2024	12/03/2025					
EMI Test Receiver	R&S	ESR 7	102525	02/17/2024	02/16/2025					
LISN	SCHWARZBECK	NSLK 8127	1040	09/07/2024	09/06/2025					
LISN	SCHWARZBECK	NSLK 8127	1041	11/04/2024	11/03/2025					
Pulse Limiter	SCHWARZBECK	VTSD 9561F-N	793	06/22/2024	06/21/2025					
Test Software	Audix	e3	Ver. 9.210616	N.C.R	N.C.R					

#### 6.2 **Condcuted Measurement**

Conducted Emission Test Site: Conducted 2										
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.					
EQUIPIVIENT TYPE	IVIFK	IVIODEL INDIVIBER	SERIAL NUIVIBER	(mm/dd/yyyy)	(mm/dd/yyyy)					
Attenuator	Mini-Circuits	BW-S10W2+	14	12/11/2024	12/10/2025					
Attenuator	Mini-Circuits	BW-S10W2+	28	12/11/2024	12/10/2025					
DC Block	Mini-Circuits	BLK-18-S+	31129	12/11/2024	12/10/2025					
DC Power Supply	Gwinstek	SPS-3610	GEV856733	12/04/2024	12/03/2025					
Power Meter	Anritsu	ML2496A	2138003	10/09/2024	10/08/2025					
Power Sensor	Anritsu	MA2411B	1911393	10/09/2024	10/08/2025					
Power Sensor	Anritsu	MA2411B	1911394	10/09/2024	10/08/2025					
PXA Spectrum	Kovsight	N9030B	MY61330494	03/22/2024	03/21/2025					
Analyzer	Keysight	N9030B	101101330494	05/22/2024	05/21/2025					
Test Software	SGS	Radio Test	Ver. 21	N.C.B.	N.C.D.					
rest Software	303	Software	vei. ZI	N.C.R	N.C.R					

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### 6.3 Radiated Measurement

	Radiated Emission Test Site: SAC 1									
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL. (mm/dd/yyyy)	CAL DUE. (mm/dd/yyyy)					
7G High Pass Filter	WI	WHKX7.0	45	12/11/2024	12/10/2025					
Band Reject Filter 5150-5350	Titan	T04N5150535050S0 1	211112-2-1	12/11/2024	12/10/2025					
Band Reject Filter 5470-5725	Titan	T04N5470572550S0 1	211112-2-2	12/11/2024	12/10/2025					
Band Reject Filter 5725-5895	Titan	T04N5725589550S0 1	210519-2-1	12/11/2024	12/10/2025					
Bi-log Antenna	SCHWARZBECK	VULB9168	378	08/09/2024	08/08/2025					
Coaxial Cable	EMCI	EMC104-SM-SM- 8000+EMC106-SM- SM-7600	RX Cable 9K- 18G(160125+150817 )	08/30/2024	08/29/2025					
Coaxial Cables	Huber Suhner	SUCOFLEX 102	RX Cable 18G-40G MY2630/2+805062/ 2	08/30/2024	08/29/2025					
DC Power Supply	Gwinstek	SPD-3606	GEW923151	05/16/2024	05/15/2025					
EMI Test Receiver	R&S	ESCI 7	100759	08/28/2024	08/27/2025					
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY60242081	10/23/2024	10/22/2025					
Horn Antenna	RF SPIN	DRH0844	LE2D05A0844	07/10/2024	07/09/2025					
Horn Antenna	SCHWARZBECK	BBHA9120D	D803	01/12/2024	01/11/2025					
Horn Antenna	SCHWARZBECK	BBHA9120D	D803	01/09/2025	01/08/2026					
Loop Antenna	COM-POWER	AL-130R	10160104	12/19/2024	12/18/2025					
Pre-Amplifier	EMCI	EMC118A45SEE	980933	08/30/2024	08/29/2025					
Pre-Amplifier	EMCI	EMC184045SEE	9080939	08/30/2024	08/29/2025					
Pre-Amplifier	HP	8447D	2944A09469	08/30/2024	08/29/2025					
Site Cal	SGS	SAC 1	N/A	08/30/2024	08/29/2025					
Test Software	Audix	e3	Ver. 9.210616	N.C.R	N.C.R					

NOTE: N.C.R refers to Not Calibrated Required.

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### **CONDUCTED EMISSION TEST**

#### 7.1 Standard Applicable

Frequency range within 150 kHz to 30 MHz shall not exceed the Limit table as below.

Frequency range		mits BuV)
MHz	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

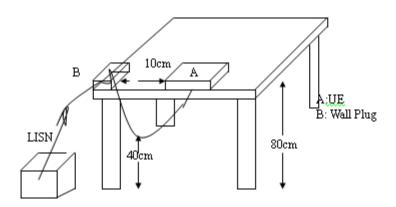
### Note

- 1. The lower limit shall apply at the transition frequencies
- 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

#### 7.2 **EUT Setup:**

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
- 3. The LISN was connected with 120Vac/60Hz power source.

#### 7.3 **Test SET-UP**



#### 7.4 **Measurement Procedure**

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- Repeat above procedures until all phases of power being supplied by given UE are completed.

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### 7.5 Measurement Result

Note: Refer to next page for measurement data and plots.

Note2: The \* reveals the worst-case results that closest to the limit.

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:WJ Lin

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### AC POWER LINE CONDUCTED EMISSION TEST DATA

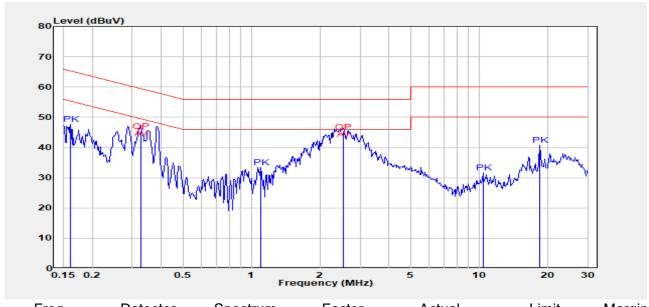
Report Number :TERF2412003978ER Test Site :Conduction 1

Operation Mode: WLAN 5G Test Date :2025-01-07

Temp./Humi. :24.1°C/62% Power :120V/60Hz Probe Engineer

Note:

:L



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dΒμV	dB	dΒμV	dΒμV	dB
0.161	Peak	37.57	10.13	47.70	65.43	-17.73
0.326	Average	32.80	10.14	42.94	49.56	-6.61
0.326	QP	35.16	10.14	45.30	59.56	-14.25
1.104	Peak	23.25	10.20	33.45	56.00	-22.55
2.531	Average	32.47	10.23	42.70	46.00	-3.30
2.531	QP	34.83	10.23	45.06	56.00	-10.94
10.397	Peak	21.23	10.39	31.62	60.00	-28.38
18.494	Peak	30.33	10.51	40.85	60.00	-19.15

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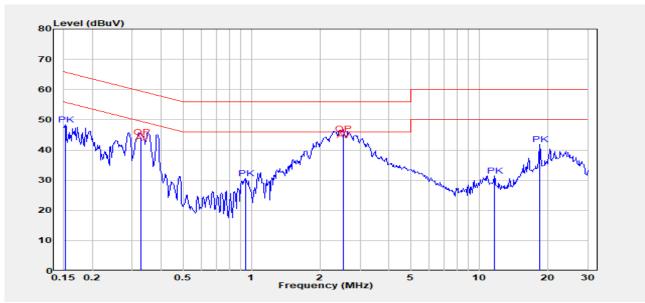
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Report Number :TERF2412003978ER Test Site :Conduction 1

Operation Mode: WLAN 5G Test Date :2025-01-07 Power :120V/60Hz Temp./Humi. :24.1°C/62%

Engineer :WJ Lin Probe :N

Note:



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dΒμV	dB	dΒμV	dΒμV	dB
0.152	Peak	38.31	10.12	48.43	65.87	-17.44
0.328	Average	32.22	10.14	42.36	49.49	-7.13
0.328	QP	34.03	10.14	44.17	59.49	-15.32
0.940	Peak	20.40	10.19	30.59	56.00	-25.41
2.531	Average	32.86	10.23	43.09	46.00	-2.91
2.531	QP	35.11	10.23	45.34	56.00	-10.66
11.666	Peak	20.98	10.44	31.43	60.00	-28.57
18.494	Peak	31.20	10.57	41.76	60.00	-18.24

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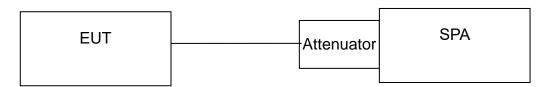
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### EMISSION BANDWIDTH MEASUREMENT

#### 8.1 Standard Applicable

There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C. The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3

#### 8.2 **Test Setup**



#### 8.3 **Measurement Procedure**

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the Antenna port to the spectrum analyzer.
  - 3.a. 26dB Band width Measurement: Set the spectrum analyzer as 1% of emission BW Sweep=auto,

Detector = Peak,

Trace Mode = Max Hold.

Manually readjust RBW until the RBW/EBW ratio is 1% based on EBW as observed on the result of pre-sequence measurement.

- 3.b. Mark the peak frequency and -26dB (upper and lower) frequency.
- 4. Repeat the procedures as list above until all test default channels (low, middle, and high) are completed.
- 5. Minimum Emission Bandwidth for the band 5.725-5.850GHz.

a. Set the spectrum analyzer as

RBW = 100 kHz

VBW = 3\*RBW

Span = large enough to capture all products of the modulation process,

Detector=Peak,

Sweep=auto

- b. Mark the peak frequency and -6dB (upper and lower) frequency.
- 6. For 99% Bandwidth: Set the spectrum analyzer as

RBW = 1%.

VBW = 3\*RBW.

Span = large enough to capture all products of the modulation process,

Detector=Sample,

Sweep=auto.

- 7. Turn on the 99% bandwidth function, max reading.
- 8. Repeat above procedures until all frequency of interest measured was complete.

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#### 8.4 **Measurement Result**

#### 8.4.1 **FCC Occupied Bandwidth**

### 802 11a Ch0

002. 1 1a_C110		
Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	22.13	13.450
5220	22.59	13.540
5240	21.89	13.400
5260	22.67	13.550
5300	22.85	13.590
5320	22.19	13.460
5500	22.54	13.530
5580	22.14	13.450
5700	22.00	13.420
5720(U-NII 2C)	15.97	12.030
5720(U-NII 3)	5.97	7.760

### 802.11a\_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.35	12.140
5785	16.57	12.190
5825	16.35	12.140

### 802.11a\_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.32	< 5250
5745	5736.67	> 5725

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### 802.11a Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	22.35	13.490
5220	22.27	13.480
5240	22.21	13.470
5260	22.31	13.480
5300	22.76	13.570
5320	22.56	13.530
5500	22.18	13.460
5580	22.61	13.540
5700	21.72	13.370
5720(U-NII 2C)	16.02	12.050
5720(U-NII 3)	6.02	7.800

### 802.11a\_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.38	12.140
5785	16.35	12.140
5825	16.39	12.150

### 802.11a Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.37	< 5250
5745	5736.70	> 5725

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### 802.11n\_HT20\_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	22.10	13.440
5220	22.30	13.480
5240	22.44	13.510
5260	22.68	13.560
5300	22.74	13.570
5320	22.73	13.570
5500	22.51	13.520
5580	22.62	13.540
5700	22.97	13.610
5720(U-NII 2C)	16.08	12.060
5720(U-NII 3)	6.08	7.840

### 802.11n\_HT20\_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.82	12.510
5785	17.66	12.470
5825	17.62	12.460

### 802.11n HT20 Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.92	< 5250
5745	5736.08	> 5725

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### 802.11n\_HT20\_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	22.35	13.490
5220	22.50	13.520
5240	22.61	13.540
5260	22.56	13.530
5300	22.89	13.600
5320	22.82	13.580
5500	21.53	13.330
5580	22.14	13.450
5700	22.51	13.520
5720(U-NII 2C)	16.24	12.110
5720(U-NII 3)	6.24	7.950

### 802.11n\_HT20\_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.75	12.490
5785	17.64	12.460
5825	17.77	12.500

### 802.11n HT20 Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.88	< 5250
5745	5736.09	> 5725

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### 802.11n\_HT40\_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	44.78	16.510
5230	44.42	16.480
5270	44.89	16.520
5310	44.48	16.480
5510	44.40	16.470
5550	44.24	16.460
5670	44.99	16.530
5710(U-NII 2C)	37.47	15.740
5710(U-NII 3)	7.47	8.730

### 802.11n\_HT40\_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	36.38	15.610
5795	36.36	15.610

### 802.11n HT40 Ch0

_	·	
Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.16	< 5250
5755	5736.81	> 5725

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### 802.11n HT40 Ch1

••=····_···		
Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	42.23	16.260
5230	42.85	16.320
5270	42.78	16.310
5310	43.76	16.410
5510	42.15	16.250
5550	43.46	16.380
5670	42.38	16.270
5710(U-NII 2C)	36.58	15.630
5710(U-NII 3)	6.58	8.180

### 802.11n\_HT40\_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	36.37	15.610
5795	36.39	15.610

### 802.11n HT40 Ch1

_		
Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.20	< 5250
5755	5736.83	> 5725

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### 802.11ac VHT80 Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	91.24	19.600
5290	93.49	19.710
5530	91.74	19.630
5610	91.77	19.630
5690(U-NII 2C)	80.78	19.070
5690(U-NII 3)	10.78	10.330

### 802.11ac\_VHT80\_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	76.39	18.830

### 802.11ac\_VHT80\_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.01	< 5250
5775	5737.05	> 5725

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### 802.11ac VHT80 Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	91.24	19.600
5290	89.81	19.530
5530	91.21	19.600
5610	91.32	19.610
5690(U-NII 2C)	80.94	19.080
5690(U-NII 3)	10.94	10.390

### 802.11ac\_VHT80\_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	76.46	18.830

### 802.11ac\_VHT80\_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5247.97	< 5250
5775	5736.98	> 5725

### 802.11ac\_VHT160\_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5250	173.6	22.390
5570	171.9	22.350

### 802.11ac\_VHT160\_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5250	172.7	22.370
5570	173.4	22.390

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### 802.11be\_EHT20\_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5180	full	22.36	13.490
5220	full	22.07	13.440
5240	full	22.39	13.500
5260	full	22.46	13.510
5300	full	22.29	13.480
5320	full	22.62	13.540
5500	full	22.11	13.450
5580	full	22.09	13.440
5700	full	22.31	13.480
5720	full	15.97	12.030
(U-NII 2C)	IUII	13.31	12.000
5720 (U-NII 3)	full	5.97	7.760

### 802.11be\_EHT20\_Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5745	full	19.02	12.790
5785	full	19.11	12.810
5825	full	18.91	12.770

### 802.11be\_EHT20\_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5249.48	< 5250
5745	5735.45	> 5725

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### 802.11be\_EHT20\_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5180	full	22.85	13.590
5220	full	22.49	13.520
5240	full	22.87	13.590
5260	full	22.93	13.600
5300	full	22.16	13.460
5320	full	22.72	13.560
5500	full	22.15	13.450
5580	full	22.88	13.590
5700	full	22.50	13.520
5720	full	15.99	12.040
(U-NII 2C)	IUII	13.33	12.040
5720 (U-NII 3)	full	5.99	7.770

### 802.11be\_EHT20\_Ch1

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5745	full	18.79	12.740
5785	full	19.06	12.800
5825	full	18.95	12.780

### 802.11be\_EHT20\_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5249.51	< 5250
5745	5735.45	> 5725

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### 802.11be\_EHT40\_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5190	full	43.35	16.370
5230	full	42.41	16.270
5270	full	43.16	16.350
5310	full	43.69	16.400
5510	full	42.65	16.300
5550	full	43.45	16.380
5670	full	43.80	16.410
5710	full	36.45	15.620
(U-NII 2C)	iuli	30.43	10.020
5710	full	6.45	8.100
(U-NII 3)	iuli	0.40	0.100

### 802.11be\_EHT40\_Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5755	full	37.99	15.800
5795	full	38.17	15.820

### 802.11be\_EHT40\_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.97	< 5250
5755	5736.02	> 5725

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### 802.11be EHT40 Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5190	full	42.16	16.250
5230	full	42.81	16.320
5270	full	43.49	16.380
5310	full	43.65	16.400
5510	full	43.31	16.370
5550	full	43.89	16.420
5670	full	43.45	16.380
5710	full	26.20	15.610
(U-NII 2C)	iuli	36.39	15.010
5710	full	6.39	8.050
(U-NII 3)	iuii	0.03	0.000

### 802.11be\_EHT40\_Ch1

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5755	full	38.05	15.800
5795	full	38.14	15.810

### 802.11be\_EHT40\_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.93	< 5250
5755	5736.02	> 5725

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### 802.11be EHT80 Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5210	full	88.82	19.490
5290	full	86.61	19.380
5530	full	86.25	19.360
5610	full	86.65	19.380
5690	full	77.65	18.900
(U-NII 2C)	IUII	11.05	10.300
5690	full	7.65	8.830
(U-NII 3)	iuli	1.00	0.000

### 802.11be EHT80 Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5775	full	78.22	18.930

### 802.11be\_EHT80\_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.88	< 5250
5775	5736.13	> 5725

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#### 802.11be\_EHT80\_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5210	full	88.20	19.450
5290	full	86.33	19.360
5530	full	87.94	19.440
5610	full	87.09	19.400
5690	full	79.04	18.980
(U-NII 2C)			
5690	full	9.04	9.560
(U-NII 3)		3.0 <del>4</del>	3.300

# 802.11be\_EHT80\_Ch1

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5775	full	77.85	18.910

### 802.11be\_EHT80\_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)	
5210	5248.77	< 5250	
5775	5736.20	> 5725	

## 802.11be\_EHT160\_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5250	full	174.8	22.430
5570	full	170.1	22.310

### 802.11be\_EHT160\_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5250	full	171.5	22.340
5570	full	170.8	22.320

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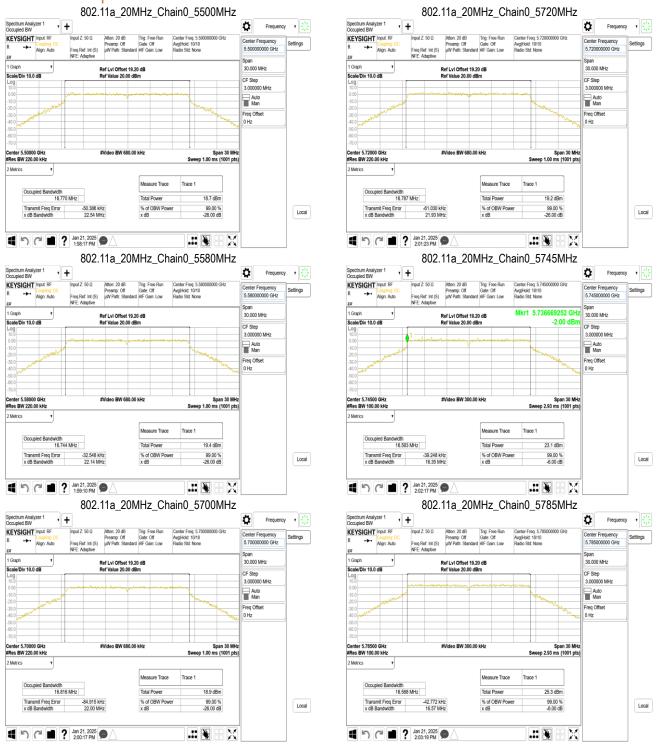
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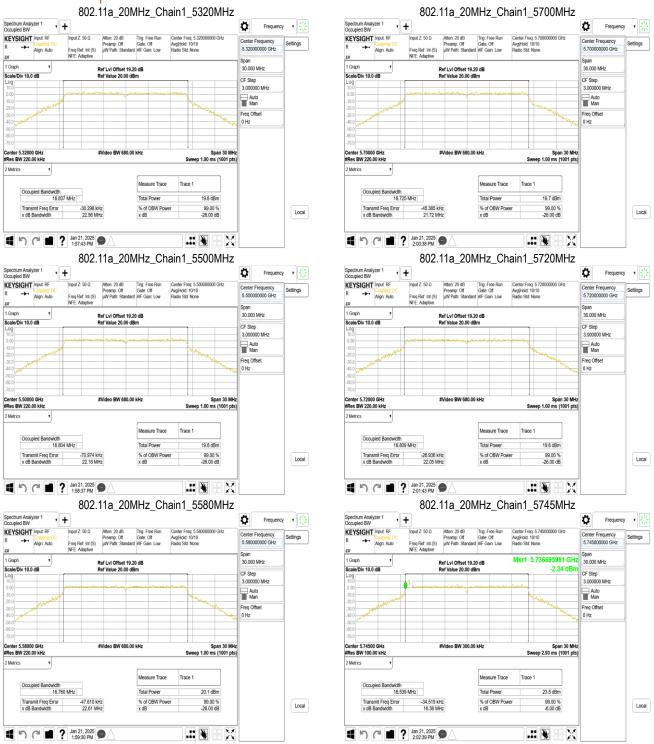
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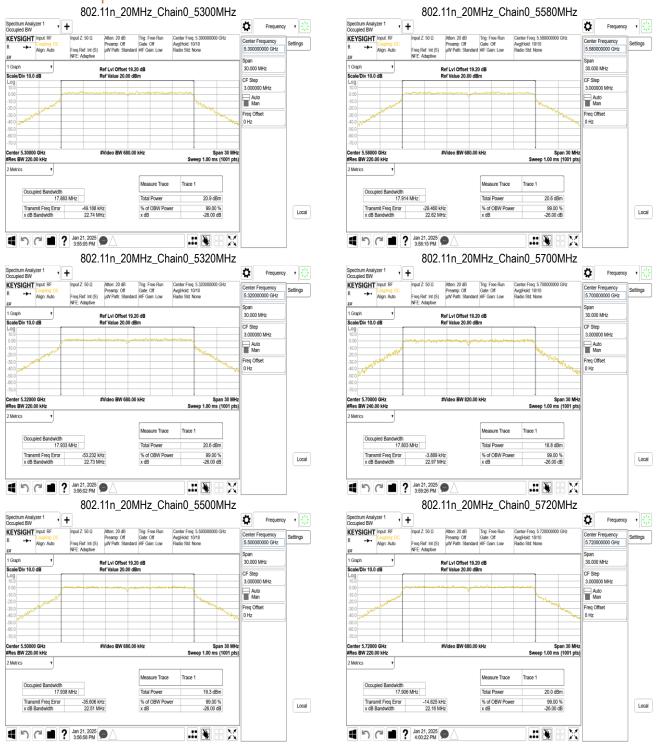
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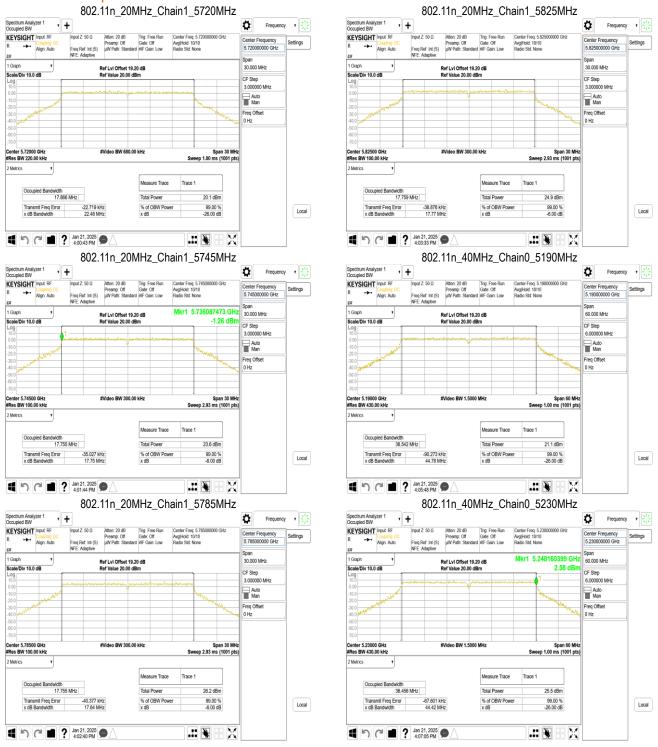
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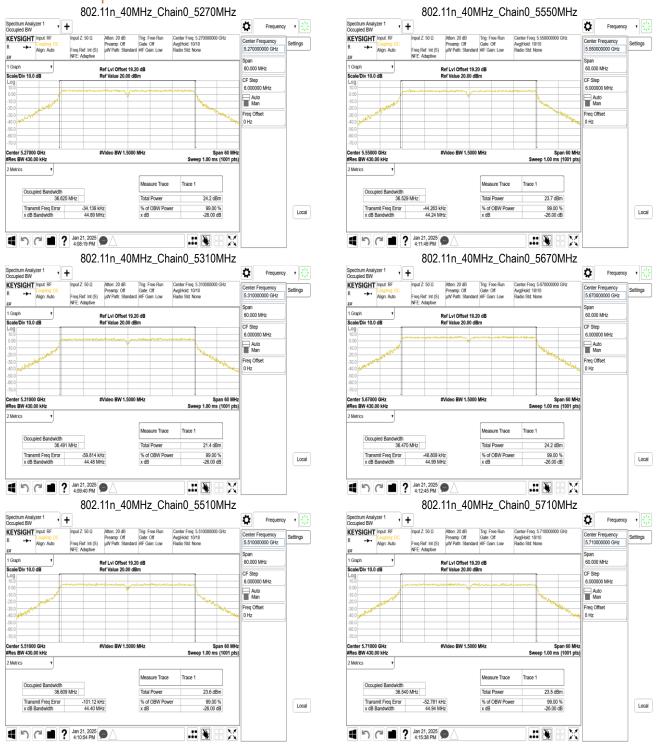
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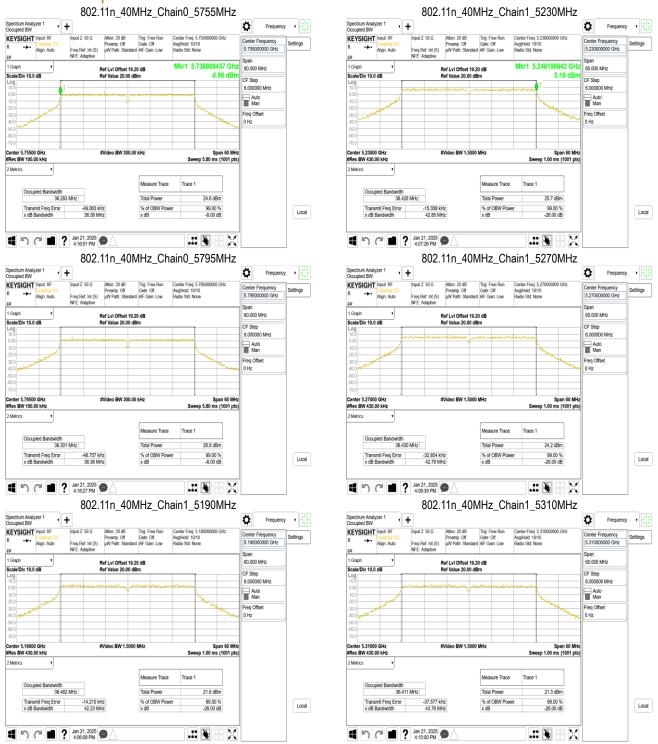
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