Report No.: FR193028-02AC



RADIO TEST REPORT

FCC ID : 2AHKM-CODA5814Q1

Equipment : DOCIS 3.1 Wi-Fi 6 EMTA Gateway

Brand Name : Hitron

Model Name : CODA5814Q, CODA5810Q

Applicant : Hitron Technologies Inc.

No. 1-8, Li-Hsin 1st Rd. Hsinchu Science Park.

Hsinchu 30078, Taiwan

Manufacturer : Hitron Technologies Inc.

No. 1-8, Li-Hsin 1st Rd. Hsinchu Science Park,

Hsinchu 30078, Taiwan

Standard : 47 CFR FCC Part 15.407

The product was received on Jun. 28, 2022, and testing was started from Oct. 18, 2022 and completed on Nov. 04, 2022. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

TEL: 886-3-656-9065 FAX: 886-3-656-9085

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History of this test report

Report No.	Version	Description	Issued Date
FR193028-02AC	01	Initial issue of report	Nov. 18, 2022

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Summary of Test Result

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.407(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum EIRP Output Power	PASS	-
3.4	15.407(a)	EIRP Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-

Declaration of Conformity:

- The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
- 2. The measurement uncertainty please refer to report "Measurement Uncertainty".

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen
Report Producer: Penny Kao

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1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5725-5895	a, n (HT20), ac (VHT20), ax (HEW20)	5845-5885	169-177[3]
5725-5895	n (HT40), ac (VHT40), ax (HEW40)	5835-5875	167-175[2]
5725-5895	ac (VHT80), ax (HEW80)	5855	171[1]
5725-5895	ac (VHT160), ax (HEW160)	5815	163[1]

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Band	Mode	BWch (MHz)	Nant
5.725-5.895GHz	802.11a	20	4TX
5.725-5.895GHz	802.11n HT20	20	4TX
5.725-5.895GHz	802.11n HT20-BF	20	4TX
5.725-5.895GHz	802.11ac VHT20	20	4TX
5.725-5.895GHz	802.11ac VHT20-BF	20	4TX
5.725-5.895GHz	802.11ax HEW20	20	4TX
5.725-5.895GHz	802.11ax HEW20-BF	20	4TX
5.725-5.895GHz	802.11n HT40	40	4TX
5.725-5.895GHz	802.11n HT40-BF	40	4TX
5.725-5.895GHz	802.11ac VHT40	40	4TX
5.725-5.895GHz	802.11ac VHT40-BF	40	4TX
5.725-5.895GHz	802.11ax HEW40	40	4TX
5.725-5.895GHz	802.11ax HEW40-BF	40	4TX
5.725-5.895GHz	802.11ac VHT80	80	4TX
5.725-5.895GHz	802.11ac VHT80-BF	80	4TX
5.725-5.895GHz	802.11ax HEW80	80	4TX
5.725-5.895GHz	802.11ax HEW80-BF	80	4TX
5.725-5.895GHz	802.11ac VHT160	160	4TX
5.725-5.895GHz	802.11ac VHT160-BF	160	4TX
5.725-5.895GHz	802.11ax HEW160	160	4TX
5.725-5.895GHz	802.11ax HEW160-BF	160	4TX

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Note:

- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40, VHT80 and VHT160 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.

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- HEW20, HEW40, HEW80 and HEW160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	Airgain	N03HTAFE-PK1-LA1X80BUR2	PCB Antenna	I-PEX	
2	2	Airgain	N03HTAFF-PK1-LB1X90BU	PCB Antenna	I-PEX	Note 1
3	3	Airgain	N03HTAFG-PK1-LG1X130BUR2	PCB Antenna	I-PEX	Note 1
4	4	Airgain	N03HTAFH-PK1-LW1X150BU	PCB Antenna	I-PEX	

Note 1:

14010								
Ant.	Port			Antenna (Gain (dBi)			
	Port	2.4GHz	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 4	
1	1	3.13	2.72	2.24	2.67	2.28	2.95	
2	2	1.42	2.14	2.8	3.46	3.95	4.03	
3	3	3.4	2.82	2.58	1.87	3.38	3.3	
4 4		3.26	3.26 2.82 3.83 3.78	3.78	4.93	5.47		
			D	irectional Gain	(dBi)			
	2.4GHz UNII 1 UNII 2A UNII 2C UNII 3 UNII 4							
4T	1S	5.92	5.44	6.34	6.46	6.27	6.54	
4T2S		3.4	2.82	3.83	3.78	4.93	5.47	
4T	4S	3.4	2.82	3.83	3.78	4.93	5.47	

Note 2: The above information (brand / model name / antenna type) was declared by the manufacturer.

Note 3: WLAN 2.4GHz/5GHz(UNII 1~4): The directional gain is measured which follows the procedure of KDB 662911 D03.

Note 4: The EUT has four antennas.

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax mode (4TX/4RX)

Port 1 and Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1 and Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a/n/ac/ax mode (4TX/4RX)

Port 1 and Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1 and Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

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1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.952	0.21	1.977m	1k
802.11ax HEW20	0.867	0.62	5.446m	300
802.11ax HEW40	0.868	0.61	5.446m	300
802.11ax HEW80	0.851	0.7	5.445m	300
802.11ax HEW160	0.937	0.28	5.446m	300

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N	ote	

- DC is Duty Cycle.
- DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	Fror	n Power Adapter			
	\boxtimes	With beamforming		Without beamforming	
Beamforming Function	The product has beamforming function for 11n/VHT/ax in 2.4GHz and 11n/ac/ax in 5GHz.				
Function	\boxtimes				
Davisa Type	\boxtimes	Indoor Access Point	\boxtimes	Subordinate	
Device Type	☐ Indoor Client				
Channel Puncturing Function		Supported	\boxtimes	Unsupported	
Support RU	ort RU		Partial RU		
Test Software Version		Non-beamforming mode: QSPR Version 5.0-00197 Beamforming mode: Dos[10.0.10586]			

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Model Name	Voice Interface	Case color of EUT	Battery Port
CODA5814Q	V	Black	V
CODA5810Q	X	Black	X

Note1: From the above models, model: CODA5814Q was selected as representative model for the test and its data was recorded in this report.

Note2: The above information was declared by manufacturer.

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1.2 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

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- 47 CFR FCC Part 15
- ANSI C63.10-2013
- FCC KDB 789033 D02 v02r01

The following reference test guidance is not within the scope of accreditation of TAF.

- FCC KDB 662911 D03 v01
- FCC KDB 412172 D01 v01r01
- FCC KDB 414788 D01 v01r01
- FCC KDB 291074 D02 v01

1.3 Testing Location Information

Testing Location Information

Test Lab.: Sporton International Inc. Hsinchu Laboratory

Hsinchu ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

(TAF: 3787) TEL: 886-3-656-9065 FAX: 886-3-656-9085

Test site Designation No. TW3787 with FCC.

Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH03-CB	Owen Hsu	22.5~23.8 / 55~61	Oct. 29, 2022~ Nov. 04, 2022
Radiated Below 1GHz	03CH06-CB	Stim Sung	23.8-24.9 / 55-58	Oct. 18, 2022
Radiated Above 1GHz	03CH02-CB	Gordon Hung	22.6~24.2 / 56~60	Oct. 18, 2022~
Radiated Above 1GH2	03CH03-CB	Gordon Hung	22.4~24.6 / 55~59	Nov. 03, 2022
Radiated Co-location	03CH06-CB	Gordon Hung	24.3~25.6 / 60~63	Oct. 18, 2022~ Nov. 03, 2022
AC Conduction	CO01-CB	Tim Chen	21~22 / 56~58	Oct. 19, 2022

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1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence

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level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	5.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%
Conducted Emission	3.2 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.2 dB	Confidence levels of 95%
Bandwidth Measurement	2.0 %	Confidence levels of 95%

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2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5845MHz	21
5865MHz	20.5
5885MHz	20.5
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5845MHz	20.5
5865MHz	20.5
5885MHz	20.5
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5835MHz	23.5
5875MHz	23
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5855MHz	23
802.11ax HEW160_Nss1,(MCS0)_4TX	-
5815MHz	22.5
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5845MHz	20.5
5865MHz	20.5
5885MHz	20.5
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5835MHz	23
5875MHz	23
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5855MHz	23
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-
5815MHz	23

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Note:

- Evaluated HEW20/HEW40/HEW80/HEW160 mode only due to the similar modulation. The power setting of HT20/HT40/VHT20/VHT40/VHT80/VHT160 mode are the same or lower than HEW20/HEW40/HEW80/HEW160.
- The EUT supports non-beamforming and beamforming modes, after evaluating, the non-beamforming mode has been evaluated to be the worst case, so it was selected to test. The beamforming mode evaluates the output power only.

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2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests		
Tests Item AC power-line conducted emissions		
Condition AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz		
Operating Mode Normal Link		
1 EUT + Adapter		

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The Worst Case Mode for Following Conformance Tests		
Tests Item	Emission Bandwidth Maximum EIRP Output Power EIRP Power Spectral Density	
Test Condition Conducted measurement at transmit chains		

The Worst Case Mode for Following Conformance Tests			
Tests Item	Unwanted Emissions		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
	Normal Link		
Operating Mode < 1GHz	After evaluating, the worst case was found at Y axis, thus the measurement will follow this same test configuration.		
1	EUT in Y axis + Adapter		
	СТХ		
Operating Mode > 1GHz	After evaluating, the worst case was found at Y axis, thus the measurement will follow this same test configuration.		
1 EUT in Y axis			

The Worst Case Mode for Following Conformance Tests		
Tests Item Simultaneous Transmission Analysis - Radiated Emission Co-location		
Test Condition Radiated measurement		
	Normal Link	
Operating Mode	After evaluating, the worst case was found at Y axis, thus the measurement will follow this same test configuration.	
1 EUT in Y axis_WLAN 2.4GHz + WLAN 5GHz		
Refer to Appendix F for Radiated Emission Co-location.		

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The Worst Case Mode for Following Conformance Tests			
Tests Item	Tests Item Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation		
Operating Mode	Operating Mode		
1	1 WLAN 2.4GHz + WLAN 5GHz		
Refer to Sporton Test Report No.: FA193028-02 for Co-location RF Exposure Evaluation.			

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2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories				
Equipment Brand Model Name Name			Rating	
Adapter	MOSO	MS-V4000R120-050A0-US	Input: 100-240V~, 50/60Hz, 1.3A max. Output: 12.0V, 4.0A	
Others				
RJ-45 cable*1: Non-shielded, 1.5m				

2.5 Support Equipment

For AC Conduction:

	Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID	
Α	Phone1	SAMPO	HT-B 907WL	N/A	
В	Phone2	SAMPO	HT-B 907WL	N/A	
С	2.4G NB	DELL	E6430	N/A	
D	5G NB	DELL	E6430	N/A	
Е	WAN NB	DELL	E6430	N/A	
F	CO (Terminal System)	Jinghong	D3 CMTS JH-HE3416B	N/A	
G	LAN NB	DELL	E6430	N/A	

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For Radiated (below 1GHz):

	Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID	
Α	Terminal System	N/A	JH-HE3416B	N/A	
В	NB (LAN)	DELL	E4300	N/A	
С	NB (2.4G WIFI)	DELL	E4300	N/A	
D	NB (5G WIFI)	DELL	E4300	N/A	
Е	Phone1	H-T-T	F-689	N/A	
F	Phone2	H-T-T	F-689	N/A	
G	PC(2.5G WAN)	DELL	T3400	N/A	

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For Radiated (above 1GHz) and RF Conducted:

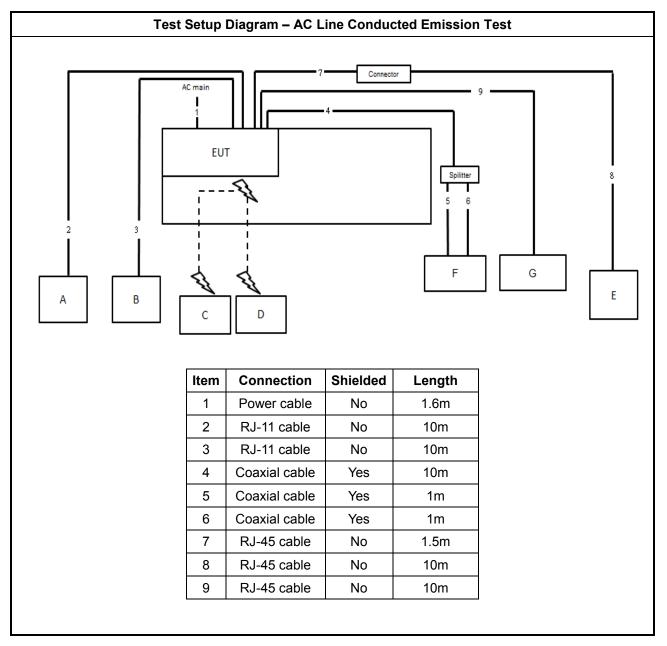
	Support Equipment			
No.	o. Equipment Brand Name Model Name FCC ID			
Α	Notebook	DELL	E4300	N/A

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2.6 Test Setup Diagram



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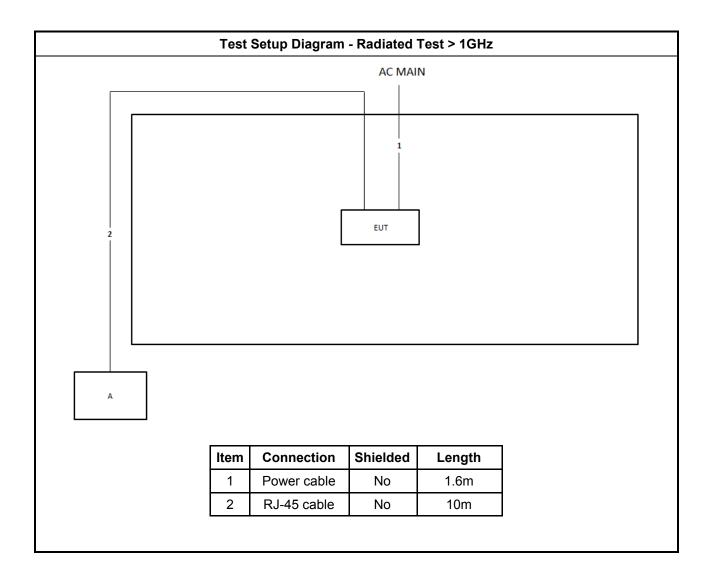


Test Setup Diagram - Radiated Test < 1GHz connector EUT G В **Shielded** Connection Length Item 1 Power cable No 1.6m 2 RJ-45 cable No 10m Coaxial cable 10m 3 Yes RJ-11 cable 4 No 1.5m 5 RJ-11 cable No 1.5m 6 RJ-45 cable 1.5m No 7 RJ-45 cable No 1.5m 8 RJ-45 cable No 10m

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3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit				
Frequency Emission (MHz) Quasi-Peak Average				
0.15-0.5	66 - 56 *	56 - 46 *		
0.5-5	56	46		
5-30	60	50		
Note 1: * Decreases with the logarithm of the frequency.				

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3.1.2 Measuring Instruments

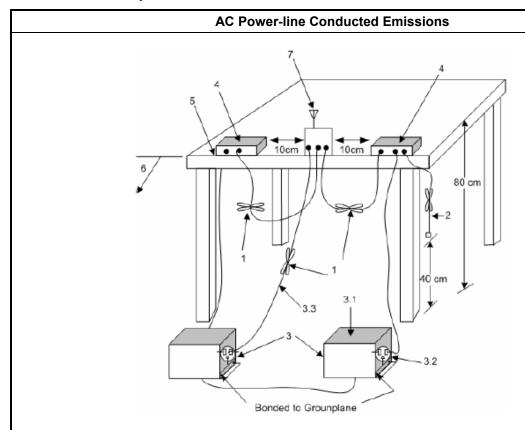
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

	Test Method
\boxtimes	Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

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3.1.4 Test Setup



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.

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- 2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- 3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
- 3.1—All other equipment powered from additional LISN(s).
- 3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
- 3.3—LISN at least 80 cm from nearest part of EUT chassis.
- 4—Non-EUT components of EUT system being tested.
- 5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
- 6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
- 7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

3.1.5 Measurement Results Calculation

The measured Level is calculated using:

- a. Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- b. Margin = -Limit + Level

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

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3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit					
UNII Devices					
For the 5.85-5.895 GHz band, 26 dB emission bandwidth ,N/A. 6 dB emission bandwidth ≥ 500kHz.					

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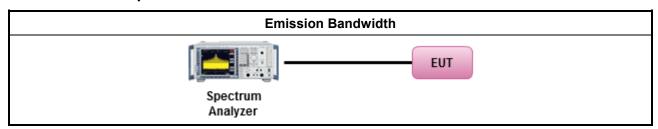
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

	Test Method								
-	For the emission bandwidth shall be measured using one of the options below:								
Refer as FCC KDB 789033 D02, clause C for EBW and clause D for OBW measuren									
Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.									
	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.								

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

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3.3 Maximum EIRP Output Power

3.3.1 Limit

	Maximum EIRP Output Power Limit					
UNI	UNII Devices					
\boxtimes						
	■ Indoor AP & subordinate device < 36 dBm					
	Client device < 30 dBm					

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3.3.2 Measuring Instruments

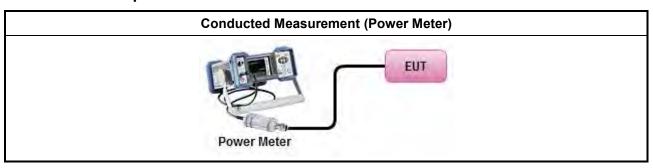
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

		Test Method							
	Ave	rage over on/off periods with duty factor							
	Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).								
		Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)							
	Wid	eband RF power meter and average over on/off periods with duty factor							
	\boxtimes	Refer as FCC KDB 789033 D02, clause E Method PM-G (using an RF average power meter).							
\boxtimes	For	conducted measurement.							
	•	If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.							
	•	If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP _{total} = $P_{total} + DG$							
	For	radiated measurement.							
	•	Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"							
	•	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.							
	•	Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.							

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3.3.4 Test Setup



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3.3.5 Test Result of Maximum EIRP Output Power

Refer as Appendix C

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3.4 EIRP Power Spectral Density

3.4.1 Limit

EIRP Power Spectral Density Limit							
UNII Devices							
	■ Indoor AP & subordinate device < 20dBm/MHz						
	■ Client device < 14dBm/MHz						

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3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

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3.4.3 Test Procedures

		Test Method										
•	outp func	k power spectral density procedures that the same method as used to determine the conducted ut power shall be used to determine the peak power spectral density and use the peak search tion on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density I be measured using below options:										
		Refer as FCC KDB 789033 D02, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth										
	[duty	y cycle ≥ 98% or external video / power trigger]										
		Refer as FCC KDB 789033 D02, clause E Method SA-1 (spectral trace averaging).										
		Refer as FCC KDB 789033 D02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)										
	duty	cycle < 98% and average over on/off periods with duty factor										
	\boxtimes	Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).										
		Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)										
\boxtimes	For	conducted measurement.										
	•	If the EUT supports multiple transmit chains using options given below:										
		Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.										
		Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,										
		Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.										
	•	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $ PPSD_{total} = PPSD_1 + PPSD_2 + + PPSD_n \\ (calculated in linear unit [mW] and transfer to log unit [dBm]) \\ EIRP_{total} = PPSD_{total} + DG $										
	For	radiated measurement.										
	•	Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"										
	•	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.										

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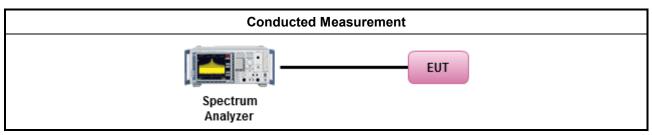
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Test Method ■ Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.

3.4.4 Test Setup



3.4.5 Test Result of EIRP Power Spectral Density

Refer as Appendix D

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3.5 Unwanted Emissions

3.5.1 Transmitter Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit								
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)					
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300					
0.490~1.705	24000/F(kHz)	33.8 - 23	30					
1.705~30.0	30	29	30					
30~88	100	40	3					
88~216	150	43.5	3					
216~960	200	46	3					
Above 960	500	54	3					

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- Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
- Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

	Un-restricted band emissions above 1GHz Limit								
Operating Band	Limit								
⊠ 5.85 - 5.895 GHz	(i) For an indoor access point or subordinate device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of 15 dBm/MHz and shall decrease linearly to an e.i.r.p. of - 7 dBm/MHz at or above 5.925 GHz. (ii) For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of -5 dBm/MHz and shall decrease linearly to an e.i.r.p. of -27 dBm/MHz at or above 5.925 GHz. (iii) For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/ MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.725 GHz.								

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall

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be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

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3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

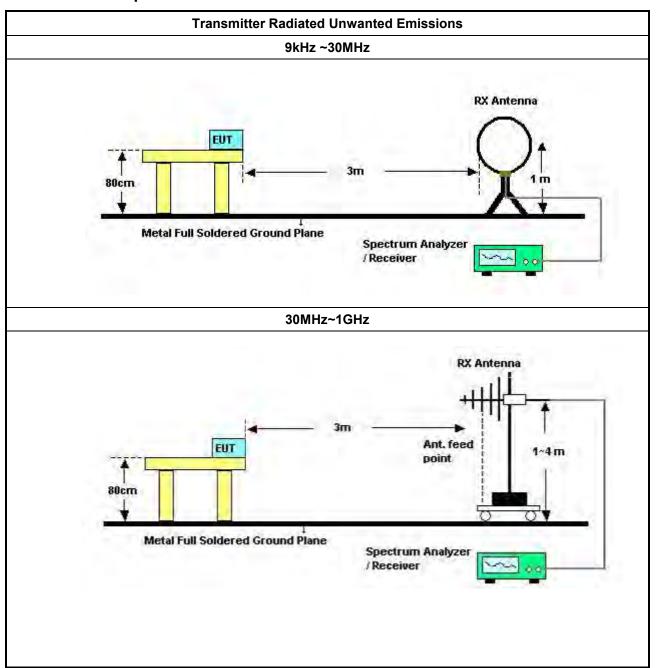
Test Method

- Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
- The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
- For the transmitter unwanted emissions shall be measured using following options below:
 - Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands.
 - Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands.
 - Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging).
 - Refer as FCC KDB 789033 D02, G)6) Method VB (Reduced VBW).
 - Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
 - Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
 - Refer as FCC KDB 789033 D02, clause G)5) measurement procedure peak limit.
 - Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
- For radiated measurement.
 - Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
 - Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
 - Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
- The any unwanted emissions level shall not exceed the fundamental emission level.
- All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

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3.5.4 Test Setup

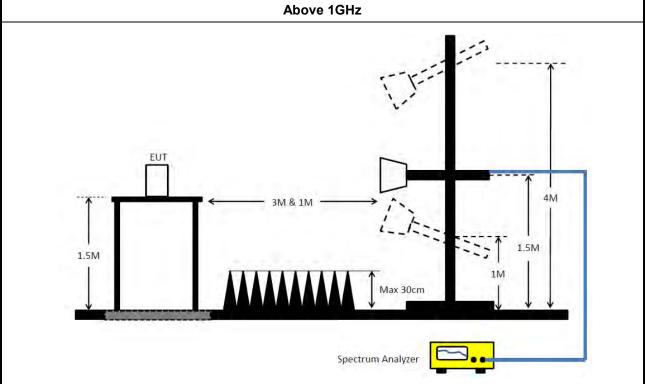


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Above 1GHz

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3.5.5 **Measurement Results Calculation**

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

Transmitter Unwanted Emissions (Below 30MHz) 3.5.6

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

3.5.7 **Test Result of Transmitter Unwanted Emissions**

Refer as Appendix E

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Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Feb. 22, 2022	Feb. 21, 2023	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50- 16-2	04083	150kHz ~ 100MHz	Feb. 09, 2022	Feb. 08, 2023	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 12, 2022	Apr. 11, 2023	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwa rz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 10, 2022	Feb. 09, 2023	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	May 14, 2022	May 13, 2023	Radiation (03CH06-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH06-CB	30 MHz ~ 1 GHz	Aug. 04, 2022	Aug. 03. 2023	Radiation (03CH06-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Sep. 30, 2022	Sep. 29, 2023	Radiation (03CH06-CB)
Bilog Antenna with 6 dB attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37878 & AT-N0606	20MHz ~ 2GHz	Jul. 31, 2022	Jul. 30, 2023	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBE CK	BBHA9120D	BBHA 9120D-1292	1GHz~18GHz	Aug. 09, 2022	Aug. 08, 2023	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBE AK	BBHA9170	BBHA9170252	15GHz ~ 40GHz	Aug. 22, 2022	Aug. 21, 2023	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	Nov. 04, 2021	Nov. 03, 2022	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	Aug 02, 2022	Aug 01, 2023	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 20, 2022	Jul. 19, 2023	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Dec. 24, 2021	Dec. 23, 2022	Radiation (03CH06-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH06-CB)
RF Cable-low	Woken	RG402	Low Cable-24+67	30MHz~1GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-67	1GHz~18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05+67	1GHz~18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH06-CB)

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Calibration Calibration Instrument **Brand** Model No. Serial No. Characteristics Remark Date **Due Date** Radiation WCA0929M 40G#5 1GHz ~ 40 GHz Dec. 08, 2021 Dec. 07, 2022 High Cable Woken (03CH06-CB) Radiation High Cable Woken WCA0929M 40G#7 1GHz ~ 40 GHz Dec. 14, 2021 Dec. 13, 2022 (03CH06-CB) Radiation Test Software **SPORTON SENSE** N.C.R. V5.10 N.C.R. (03CH06-CB) 3m Semi Anechoic Radiation RIKEN SAC-3M 03CH02-CB 1GHz ~18GHz Mar. 26, 2022 Mar. 25, 2023 Chamber (03CH02-CB) **VSWR** Radiation 1GHz ~ 18GHz 9610-4976 Horn Antenna **EMCO** 3115 Apr. 19, 2022 Apr. 18, 2023 (03CH02-CB) **SCHWARZBE** Radiation Horn Antenna BBHA9170 BBHA9170252 15GHz ~ 40GHz Aug. 22, 2022 Aug. 21, 2023 (03CH02-CB) ΑK Radiation 1GHz ~ 26.5GHz Pre-Amplifier Aailent 83017A MY39501305 Jul. 01, 2022 Jun. 30, 2023 (03CH02-CB) TTA1840-35-H Radiation Pre-Amplifier **MITEQ** 1864479 18GHz ~ 40GHz Jul. 20, 2022 Jul. 19, 2023 (03CH02-CB) G Spectrum Radiation R&S **FSP** 100593 9kHz~40GHz Apr. 08, 2022 Apr. 07, 2023 (03CH02-CB) analyzer Radiation High Cable-18 1GHz ~ 18GHz Oct. 03, 2022 Oct. 02, 2023 RF Cable-high Woken RG402 (03CH02-CB) High Radiation RF Cable-high Woken RG402 1GHz ~ 18GHz Oct. 03, 2022 Oct. 02, 2023 Cable-18+19 (03CH02-CB) Radiation 40G#5+7 1GHz ~ 40 GHz High Cable Woken WCA0929M Dec. 14, 2021 Dec. 13, 2022 (03CH02-CB) Radiation High Cable Woken WCA0929M 40G#5 1GHz ~ 40 GHz Dec. 08, 2021 Dec. 07, 2022 (03CH02-CB) Radiation WCA0929M High Cable Woken 40G#7 1GHz ~ 40 GHz Dec. 14, 2021 Dec. 13, 2022 (03CH02-CB) Radiation **Test Software SPORTON SENSE** V5.10 N.C.R. N.C.R. (03CH02-CB) 3m Semi Anechoic 1GHz ~18GHz Radiation **TDK** SAC-3M 03CH03-CB May 05, 2022 May 04, 2023 Chamber (03CH03-CB) **VSWR** Radiation 750MHz~18GHz Horn Antenna ETS · Lindgren 3115 6821 Jan. 21, 2022 Jan. 20, 2023 (03CH03-CB) **SCHWARZBE** Radiation Horn Antenna BBHA9170 BBHA9170252 15GHz ~ 40GHz Aug. 22, 2022 Aug. 21, 2023 AK (03CH03-CB) Radiation Pre-Amplifier 8449B 3008A02097 1GHz ~ 26.5GHz Jul. 01, 2022 Jun. 30, 2023 Agilent (03CH03-CB) TTA1840-35-H Radiation Pre-Amplifier **MITEQ** 1864479 18GHz ~ 40GHz Jul. 20, 2022 Jul. 19, 2023 G (03CH03-CB) Spectrum Radiation R&S FSP40 100019 9kHz ~ 40GHz Jun. 10, 2022 Jun. 09, 2023 Analyzer (03CH03-CB) High Radiation RF Cable-high Woken RG402 1GHz ~ 18GHz Oct. 03, 2022 Oct. 02, 2023 Cable-20+29 (03CH03-CB) Radiation Oct. 02, 2023 RG402 High Cable-29 1GHz ~ 18GHz Oct. 03, 2022 RF Cable-high Woken

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(03CH03-CB)

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Calibration Calibration Serial No. Characteristics Instrument **Brand** Model No. Remark Date **Due Date** Radiation High Cable WCA0929M 40G#5+7 1GHz ~ 40 GHz Dec. 14, 2021 Dec. 13, 2022 Woken (03CH03-CB) Radiation High Cable Woken WCA0929M 40G#5 1GHz ~ 40 GHz Dec. 08, 2021 Dec. 07, 2022 (03CH03-CB) Radiation High Cable WCA0929M 40G#7 1GHz ~ 40 GHz Dec. 14, 2021 Dec. 13, 2022 Woken (03CH03-CB) Radiation Test Software **SPORTON** SENSE V5.10 N.C.R. N.C.R. (03CH03-CB) Conducted Spectrum R&S FSV40 101028 9kHz~40GHz Jan. 07, 2022 Jan. 06, 2023 analyzer (TH03-CB) Conducted Power Sensor 1531344 300MHz~40GHz Jul. 31, 2022 Jul. 30, 2023 Anritsu MA2411B (TH03-CB) Conducted Power Meter Anritsu ML2495A 1728002 300MHz~40GHz Jul. 31, 2022 Jul. 30, 2023 (TH03-CB) Conducted RF Cable-high Woken RG402 High Cable-11 1 GHz -18 GHz Oct. 03, 2022 Oct. 02, 2023 (TH03-CB) Conducted RF Cable-high Woken RG402 High Cable-12 1 GHz -18 GHz Oct. 03, 2022 Oct. 02, 2023 (TH03-CB) Conducted RF Cable-high Woken RG402 High Cable-13 1 GHz -18 GHz Oct. 03, 2022 Oct. 02, 2023 (TH03-CB) Conducted RF Cable-high Woken RG402 High Cable-14 1 GHz -18 GHz Oct. 03, 2022 Oct. 02, 2023 (TH03-CB) Conducted RF Cable-high Woken RG402 High Cable-15 1 GHz -18 GHz Oct. 03, 2022 Oct. 02, 2023 (TH03-CB) Conducted SP-SWI Oct. 03, 2023 Switch **SPTCB SWI-03** 1 GHz -26.5 GHz Oct. 04, 2022 (TH03-CB)

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Conducted

(TH03-CB)

N.C.R.

N.C.R.

Note: Calibration Interval of instruments listed above is one year.

SENSE

V5.10

NCR means Non-Calibration required.

SPORTON

Test Software

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Conducted Emissions at Powerline

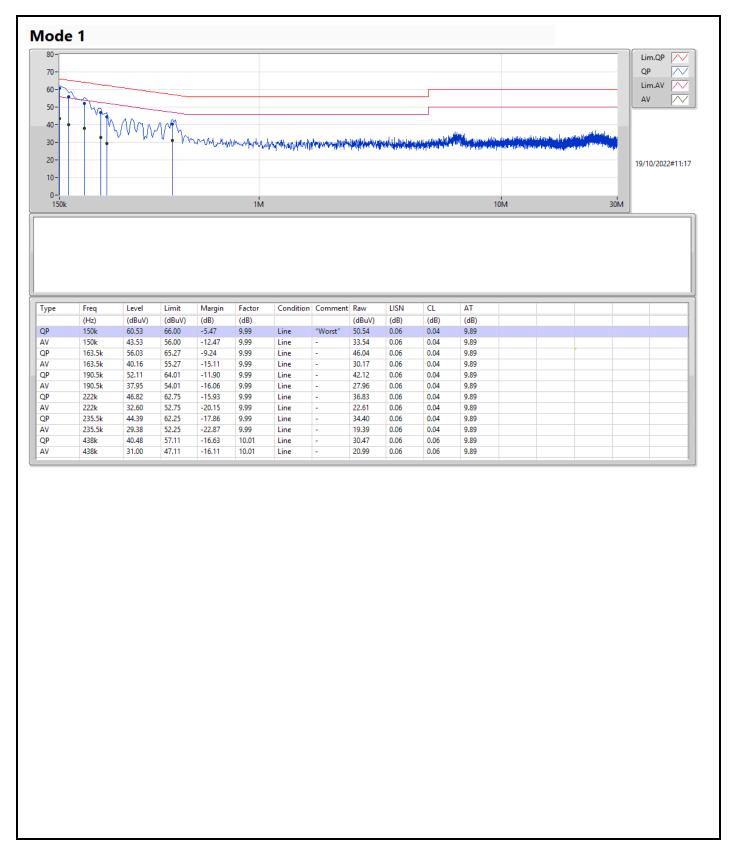
Appendix A

Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	150k	60.53	66.00	-5.47	Line

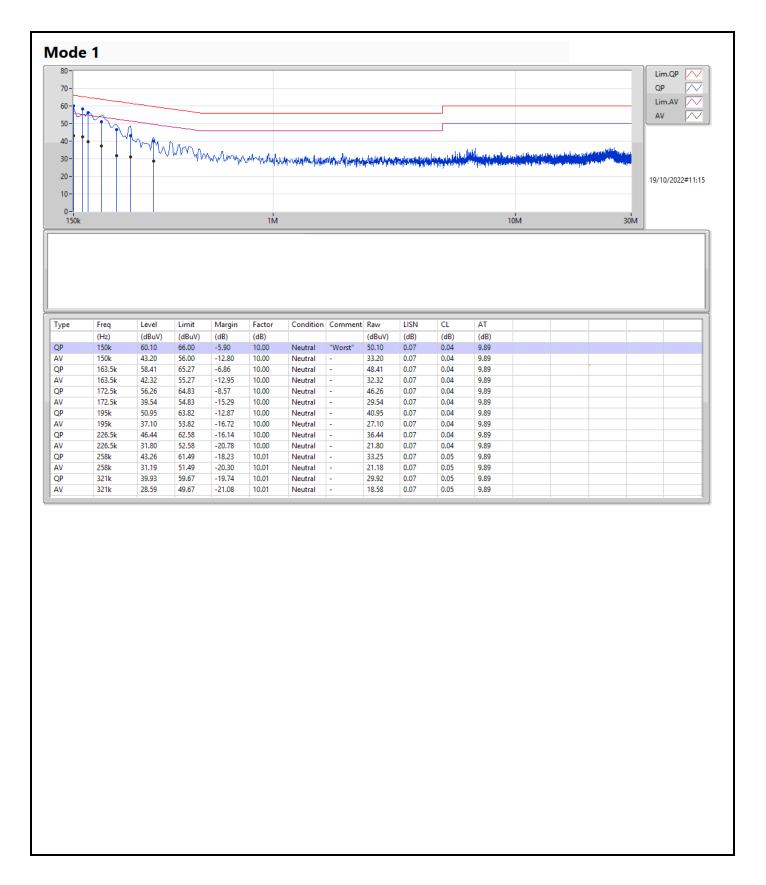
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Appendix B **EBW**

Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
5.725-5.895GHz	ū	ū	·	ū	-
802.11a_Nss1,(6Mbps)_4TX	16.35M	16.541M	16M5D1D	16.32M	16.465M
802.11ax HEW20_Nss1,(MCS0)_4TX	19.14M	19.159M	19M2D1D	18.93M	19.012M
802.11ax HEW40_Nss1,(MCS0)_4TX	37.92M	40.375M	40M4D1D	37.5M	37.848M
802.11ax HEW80_Nss1,(MCS0)_4TX	77.52M	77.93M	77M9D1D	76.2M	77.342M
802.11ax HEW160_Nss1,(MCS0)_4TX	151.92M	155.154M	155MD1D	130.08M	154.449M

 $\label{eq:max-NdB} Max-N\,dB = Maximum\,6dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,other\,band;\\ Max-OBW = Maximum\,99\%\,occupied\,bandwidth;\\ Min-N\,dB = Minimum\,6dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,other\,band;\\ Min-OBW = Minimum\,99\%\,occupied\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,other\,band;\\ Min-OBW = Minimum\,99\%\,occupied\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,band\,/\,Maximum\,26dB\,down\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5.85GHz\,bandwidth\,for\,5.725-5$

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EBW Appendix B

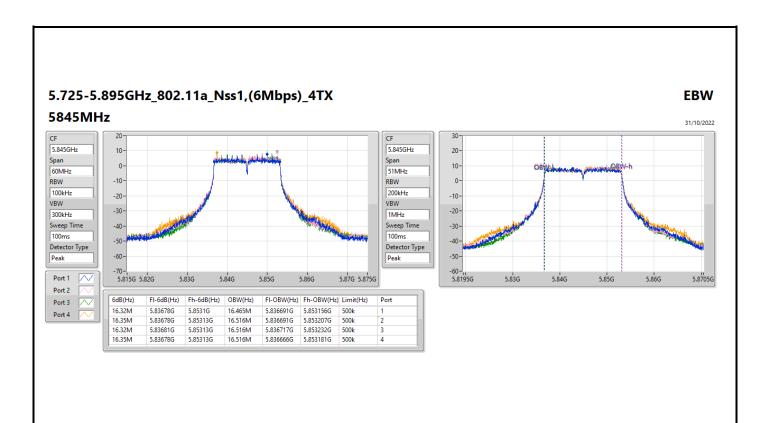
Result

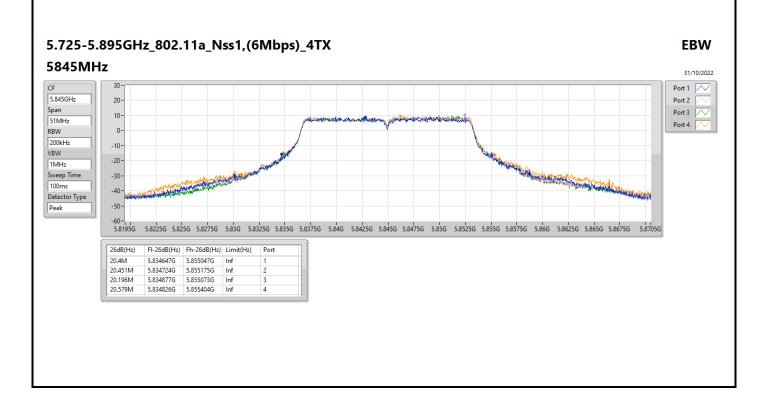
Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW	Port 3-N dB	Port 3-OBW	Port 4-N dB	Port 4-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5845MHz	Pass	500k	16.32M	16.465M	16.35M	16.516M	16.32M	16.516M	16.35M	16.516M
5865MHz	Pass	500k	16.35M	16.465M	16.35M	16.49M	16.32M	16.516M	16.35M	16.516M
5885MHz	Pass	500k	16.35M	16.465M	16.32M	16.49M	16.35M	16.541M	16.32M	16.541M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5845MHz	Pass	500k	19.14M	19.159M	18.99M	19.012M	18.96M	19.071M	18.96M	19.071M
5865MHz	Pass	500k	19.02M	19.159M	18.93M	19.012M	18.96M	19.071M	18.99M	19.042M
5885MHz	Pass	500k	19.02M	19.13M	18.93M	19.012M	19.02M	19.042M	19.05M	19.071M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5835MHz	Pass	500k	37.92M	37.848M	37.74M	37.848M	37.5M	37.907M	37.8M	40.375M
5875MHz	Pass	500k	37.5M	37.848M	37.74M	37.848M	37.62M	37.966M	37.92M	38.318M
802.11ax HEW80_Nss1,(MCS0)_4TX	-		=	=	T.	=	=	-	=	
5855MHz	Pass	500k	76.92M	77.342M	76.8M	77.46M	76.2M	77.342M	77.52M	77.93M
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5815MHz	Pass	500k	151.92M	154.449M	146.64M	155.154M	137.52M	154.919M	130.08M	154.919M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth

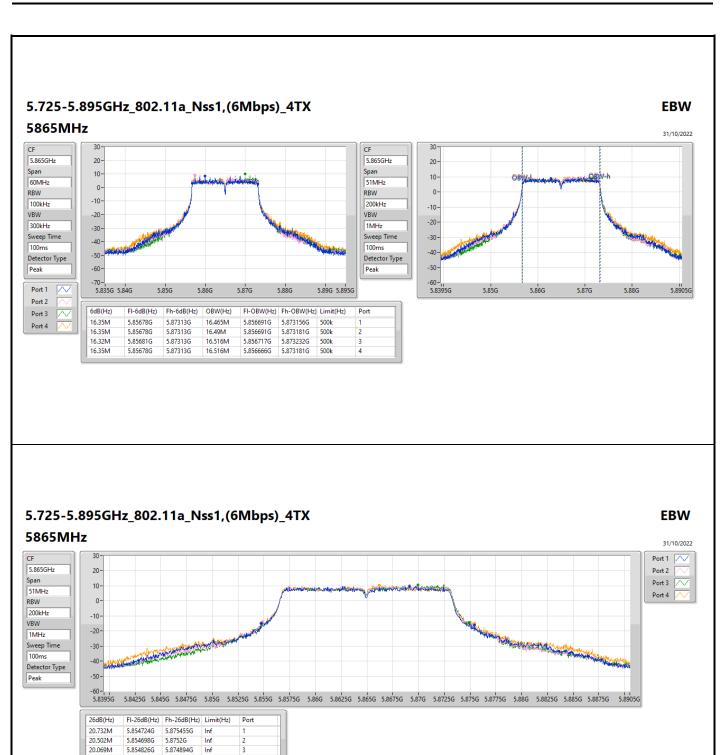
Sporton International Inc. Hsinchu Laboratory

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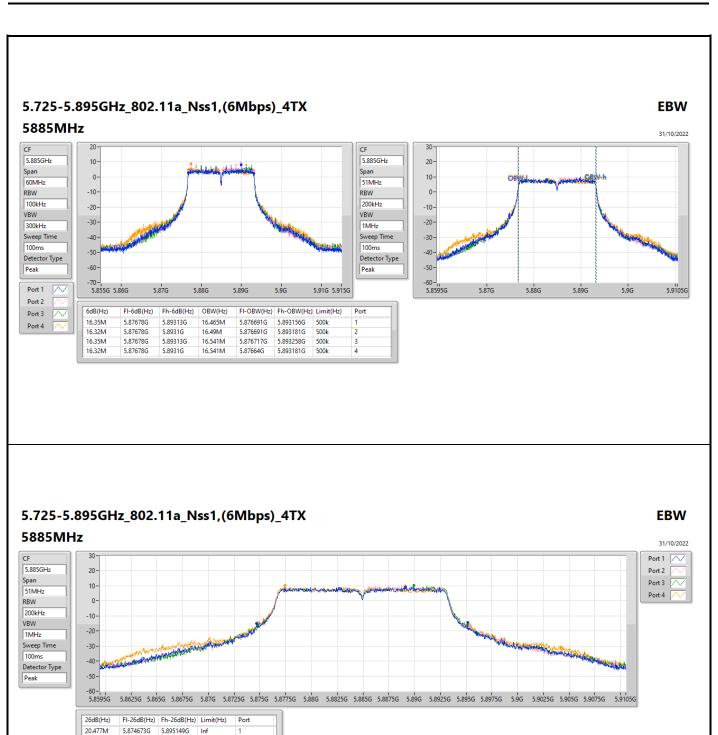
20.63M

5.875455G

Inf

5.854826G

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20.655M

20.375M

20.579M

5.874749G

5.8748G

5.8748G

5.895404G

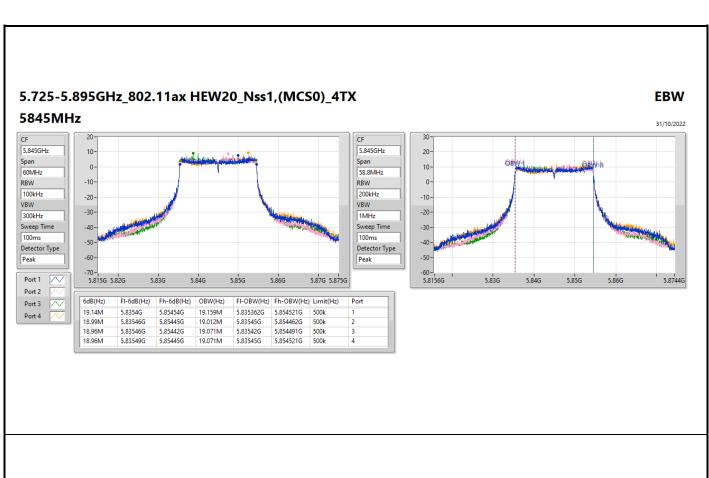
5.895175G

5.895379G

Inf

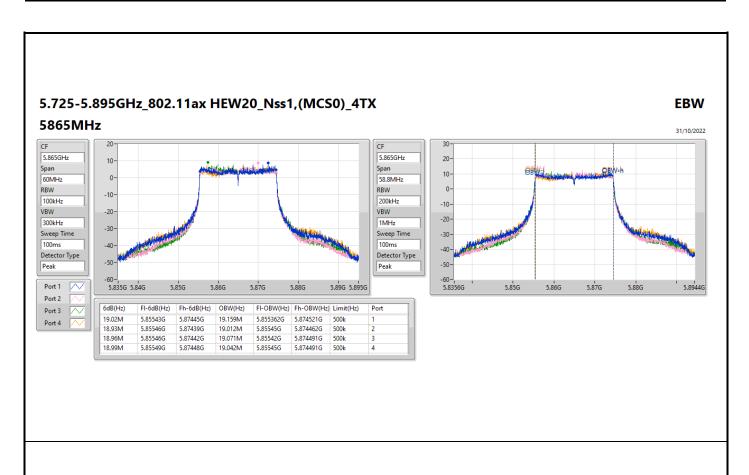
Inf

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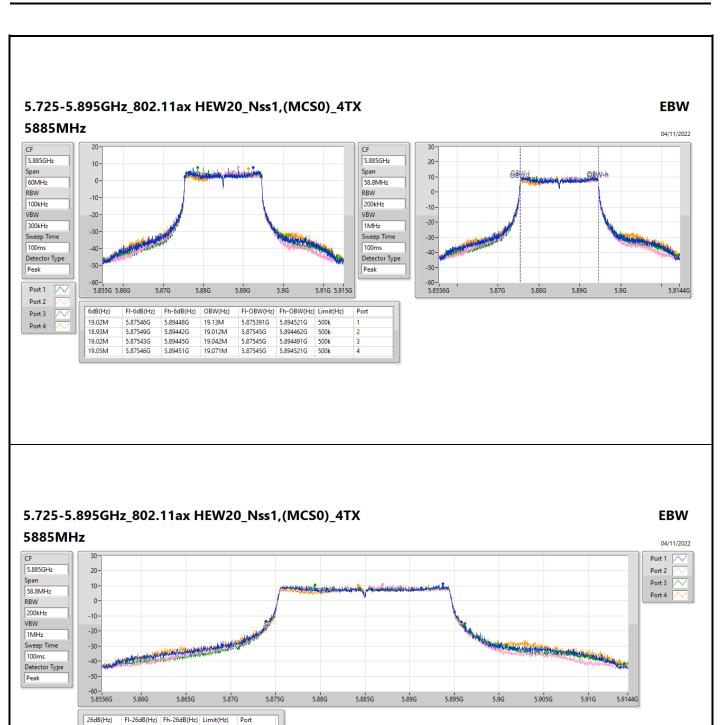
5.725-5.895GHz_802.11ax HEW20_Nss1,(MCS0)_4TX **EBW** 5845MHz 5.845GHz Port 2 Port 3 / 10-58.8MHz Port 4 RBW 200kHz -10-VBW -20-1MHz ALCOHOL: NAME OF THE PARTY OF T Sweep Time -30--40 Detector Type -50--60-5.8156G 5.845G 5.85G 5.855G 5.865G 5.835G 5.84G 5.86G 5.87G 5.82G 5.825G 5.83G 5.8744G FI-26dB(Hz) Fh-26dB(Hz) Limit(Hz) 21.903M 5.834034G 5.855937G 21.491M 5.834093G 5.855584G Inf 21.55M 5.83421G 5.85576G 21.609M 5.834151G Inf

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5.725-5.895GHz_802.11ax HEW20_Nss1,(MCS0)_4TX **EBW** 5865MHz 5.865GHz Port 2 Port 3 / 10-58.8MHz Port 4 RBW 200kHz -10-VBW -20-1MHz Sweep Time -30--40 Detector Type -50--60-5.8356G 5.86G 5.865G 5.87G 5.875G 5.885G 5.85G 5.855G 5.88G 5.89G 5.84G 5.845G 5.89440 FI-26dB(Hz) Fh-26dB(Hz) Limit(Hz) 21.962M 5.853857G 5.875819G 21.491M 5.85421G 5.875702G Inf 21.697M 5.853975G 5.875672G 5.875878G 21.962M 5.853916G Inf

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21.815M

21.374M

21.991M

21.932M

5.873946G

5.874298G

5.87421G

5.873857G

5.89576G 5.895672G

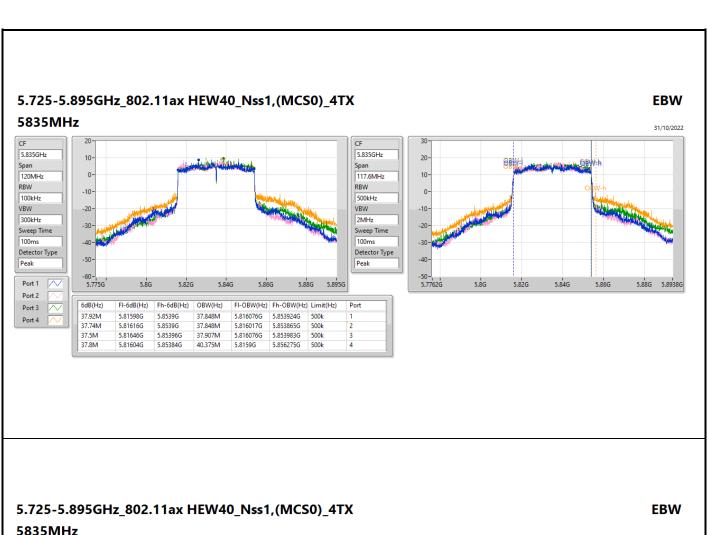
5.896201G

5.89579G

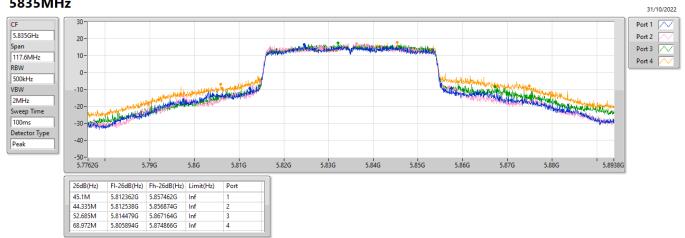
Inf

Inf

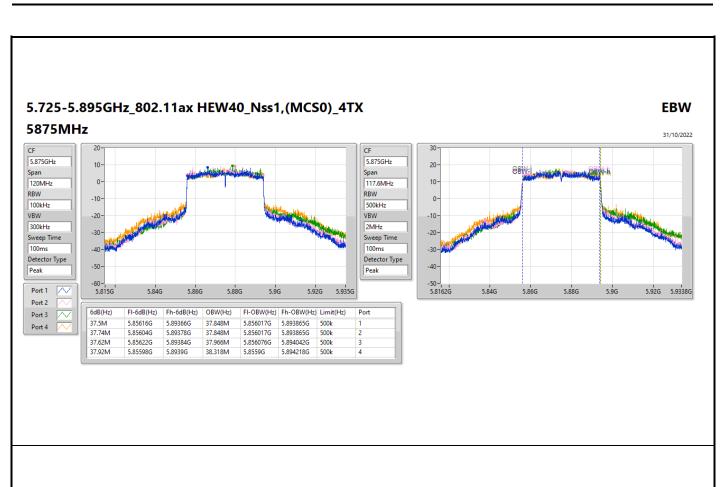
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5835MHz

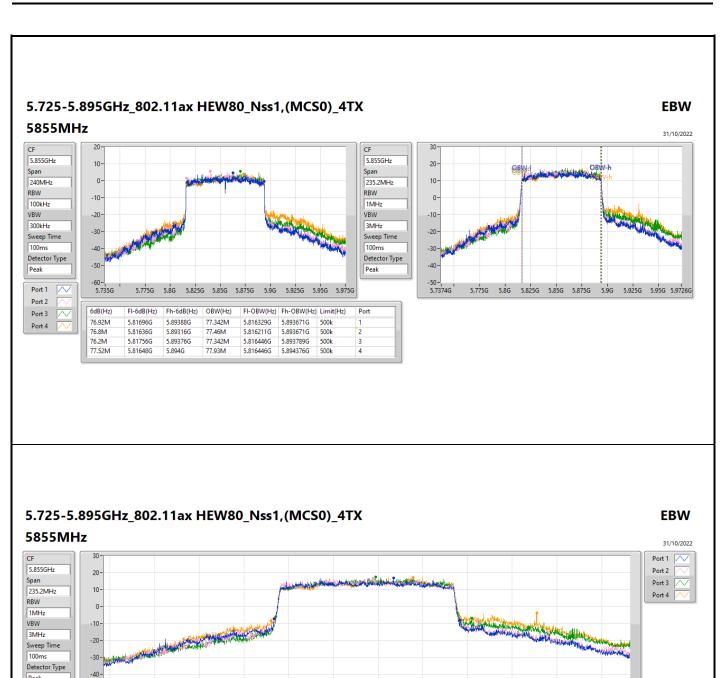


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5.725-5.895GHz_802.11ax HEW40_Nss1,(MCS0)_4TX **EBW** 5875MHz 5.875GHz Port 2 20-Port 3 10-117.6MHz Port 4 RBW 0-500kHz VBW -10-2MHz -20-Sweep Time -30-Detector Type -40--50-5.8162G 5.86G 5.88G 5.89G 5.91G 5.84G 5.85G 5.87G 5.9G 5.92G 5.83G 5.9338G 26dB(Hz) FI-26dB(Hz) Fh-26dB(Hz) Limit(Hz) 51.685M 5.853068G 5.904753G 49.274M 5.852715G 5.901989G Inf 57.742M 5.85148G 5.909222G 5.912456G 72.559M 5.839896G Inf

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5.84G

5.86G

5.88G

5.9G

5.92G

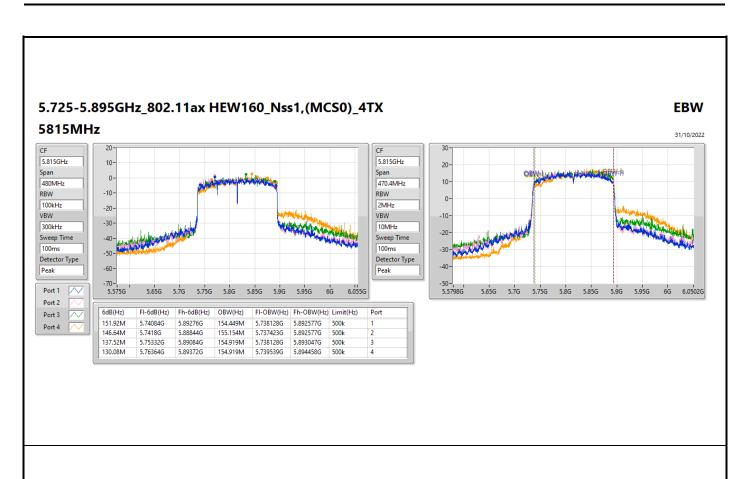
5.94G

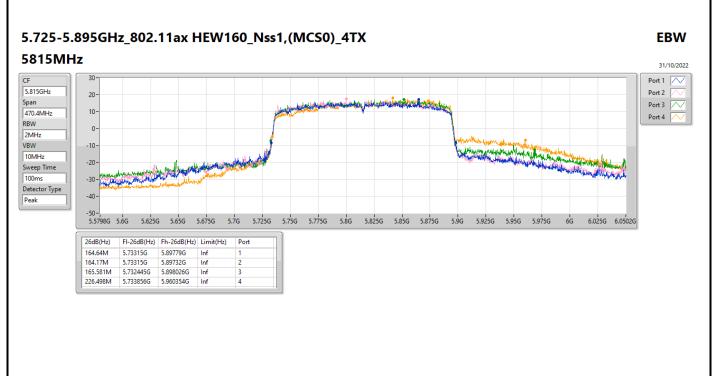
3.13140	3.700	3.10		3.00
26dB(Hz)	FI-26dB(Hz)	Fh-26dB(Hz)	Limit(Hz)	Port
83.143M	5.813487G	5.89663G	Inf	1
90.905M	5.813487G	5.904392G	Inf	2
87.612M	5.814193G	5.901805G	Inf	3
118.776M	5.812194G	5.93097G	Inf	4

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5.96G 5.9726G





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Average Power Appendix C

Summary

Mode	Total Power	Total Power	EIRP	EIRP
	(dBm)	(W)	(dBm)	(W)
5.725-5.895GHz	-	•	ī	-
802.11a_Nss1,(6Mbps)_4TX	26.77	0.47534	32.24	1.67494
802.11ax HEW20_Nss1,(MCS0)_4TX	26.71	0.46881	32.18	1.65196
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	26.71	0.46881	33.25	2.11349
802.11ax HEW40_Nss1,(MCS0)_4TX	30.04	1.00925	35.51	3.55631
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	29.31	0.85310	35.85	3.84592
802.11ax HEW80_Nss1,(MCS0)_4TX	29.26	0.84333	34.73	2.97167
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	29.26	0.84333	35.80	3.80189
802.11ax HEW160_Nss1,(MCS0)_4TX	28.56	0.71779	34.03	2.52930
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	28.56	0.71779	35.10	3.23594

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Average Power Appendix C

Result

Mode	Result	DG	Port 1	Port 2	Port 3	Port 4	Total Power	EIRP	EIRP Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11a_Nss1,(6Mbps)_4TX		-	-	-	-	-	ī	=	=
5845MHz	Pass	5.47	20.29	20.90	20.83	20.93	26.77	32.24	36.00
5865MHz	Pass	5.47	19.82	20.41	20.32	20.27	26.23	31.70	36.00
5885MHz	Pass	5.47	19.94	20.36	20.43	20.38	26.30	31.77	36.00
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5845MHz	Pass	5.47	20.32	20.65	20.80	20.57	26.61	32.08	36.00
5865MHz	Pass	5.47	20.34	20.73	20.79	20.55	26.63	32.10	36.00
5885MHz	Pass	5.47	20.59	20.80	20.91	20.45	26.71	32.18	36.00
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5835MHz	Pass	5.47	23.68	23.86	24.52	23.96	30.04	35.51	36.00
5875MHz	Pass	5.47	22.95	23.25	23.60	23.33	29.31	34.78	36.00
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5855MHz	Pass	5.47	22.88	23.24	23.47	23.35	29.26	34.73	36.00
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5815MHz	Pass	5.47	22.45	22.80	21.84	22.97	28.56	34.03	36.00
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5845MHz	Pass	6.54	20.32	20.65	20.80	20.57	26.61	33.15	36.00
5865MHz	Pass	6.54	20.34	20.73	20.79	20.55	26.63	33.17	36.00
5885MHz	Pass	6.54	20.59	20.80	20.91	20.45	26.71	33.25	36.00
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5835MHz	Pass	6.54	22.85	23.27	23.60	23.31	29.29	35.83	36.00
5875MHz	Pass	6.54	22.95	23.25	23.60	23.33	29.31	35.85	36.00
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5855MHz	Pass	6.54	22.88	23.24	23.47	23.35	29.26	35.80	36.00
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5815MHz	Pass	6.54	22.45	22.80	21.84	22.97	28.56	35.10	36.00

DG = Directional Gain; Port X = Port X output power

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Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.725-5.895GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	13.32	19.86
802.11ax HEW20_Nss1,(MCS0)_4TX	13.20	19.74
802.11ax HEW40_Nss1,(MCS0)_4TX	13.19	19.73
802.11ax HEW80_Nss1,(MCS0)_4TX	10.18	16.72
802.11ax HEW160_Nss1,(MCS0)_4TX	7.22	13.76

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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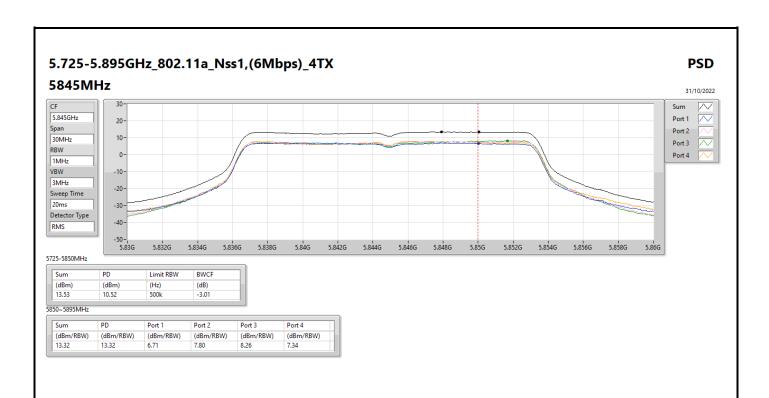
Result

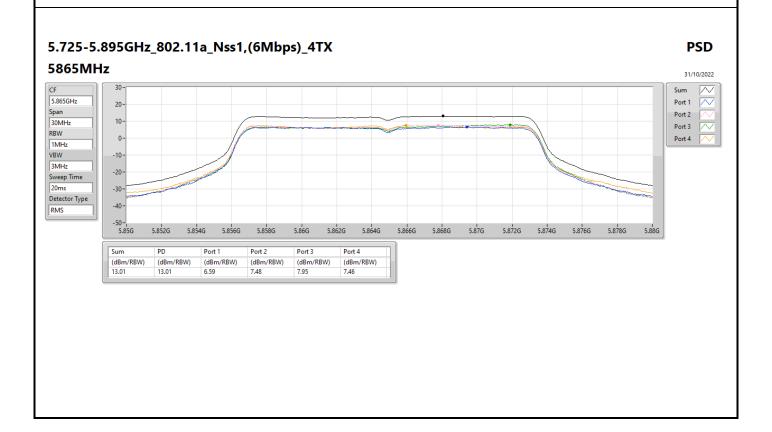
Mode	Result	DG	Port 1	Port 2	Port 3	Port 4	PD	EIRP PD	EIRP PD Limit
		(dBi)	(dBm/RBW)						
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	=
5845MHz	Pass	6.54	6.71	7.80	8.26	7.34	13.32	19.86	20.00
5865MHz	Pass	6.54	6.59	7.48	7.95	7.46	13.01	19.55	20.00
5885MHz	Pass	6.54	6.78	7.72	7.91	8.01	13.03	19.57	20.00
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5845MHz	Pass	6.54	7.44	6.88	7.05	8.10	13.20	19.74	20.00
5865MHz	Pass	6.54	7.42	7.08	7.15	7.52	13.01	19.55	20.00
5885MHz	Pass	6.54	7.81	7.16	7.63	7.24	13.09	19.63	20.00
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5835MHz	Pass	6.54	4.83	5.29	6.59	6.19	11.45	17.99	20.00
5875MHz	Pass	6.54	6.73	7.67	7.38	7.86	13.19	19.73	20.00
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	=
5855MHz	Pass	6.54	3.99	4.84	4.34	5.10	10.18	16.72	20.00
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5815MHz	Pass	6.54	0.12	1.25	1.23	2.39	7.22	13.76	20.00

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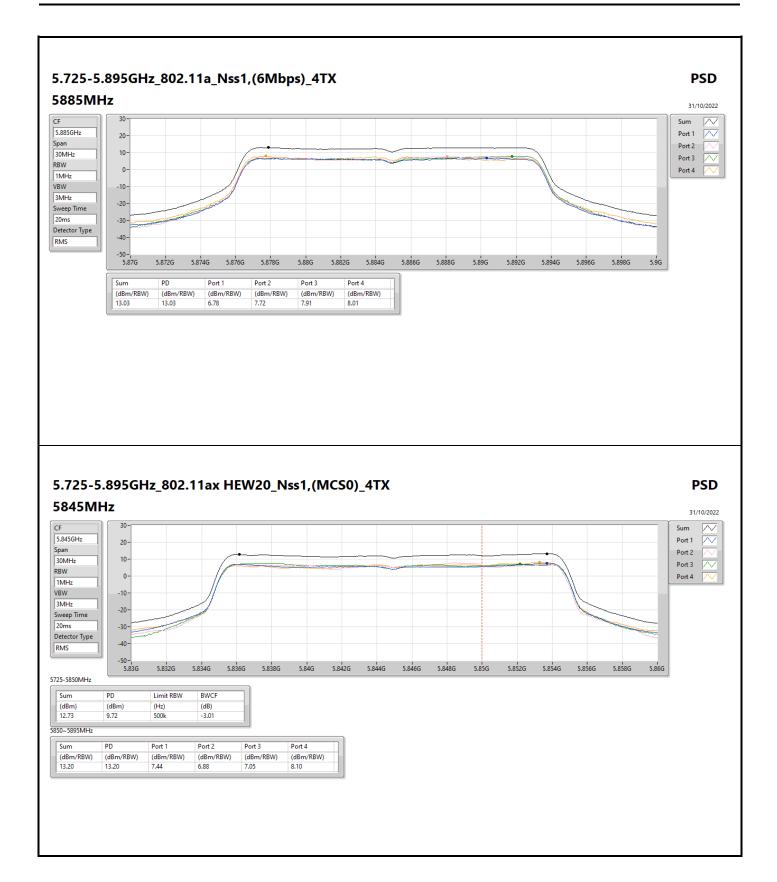
Page No.

DG = Directional Gain; RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band; PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

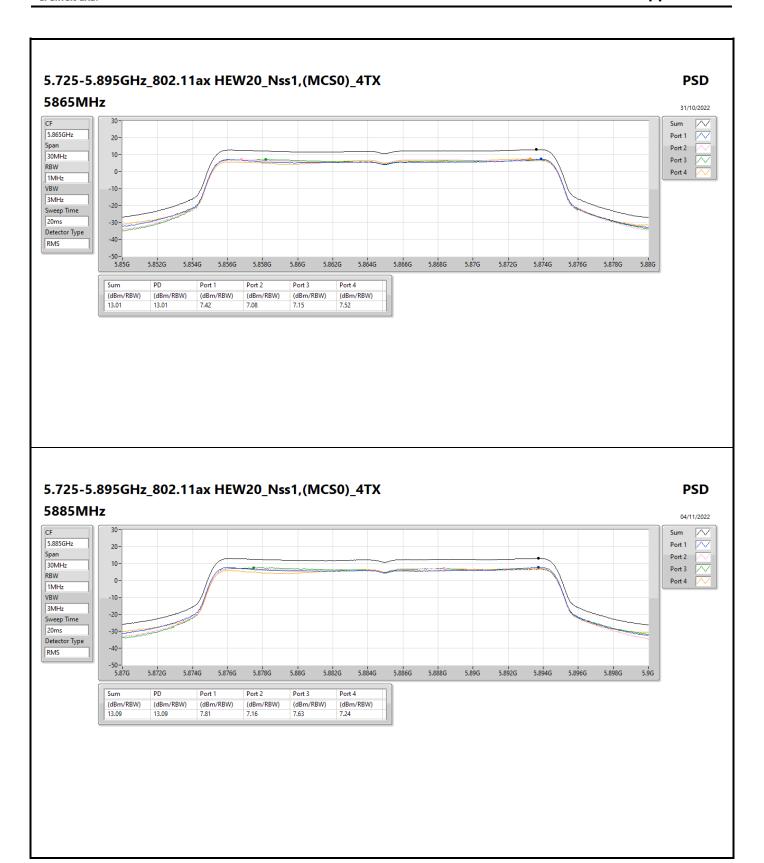




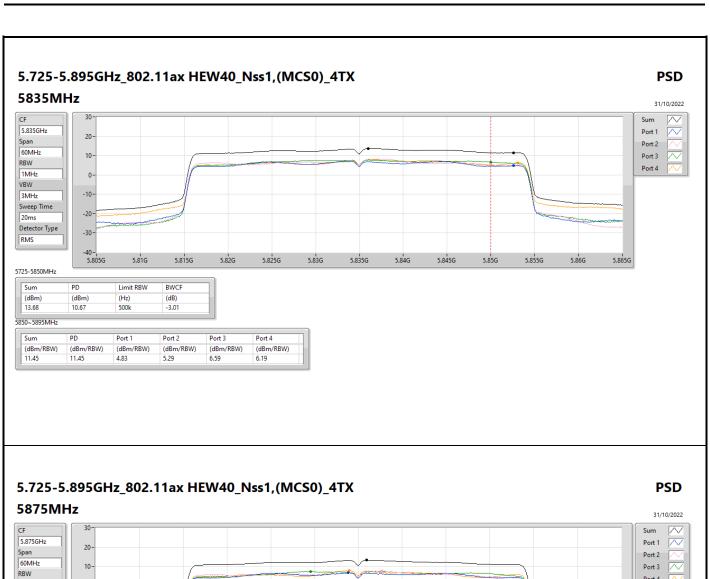
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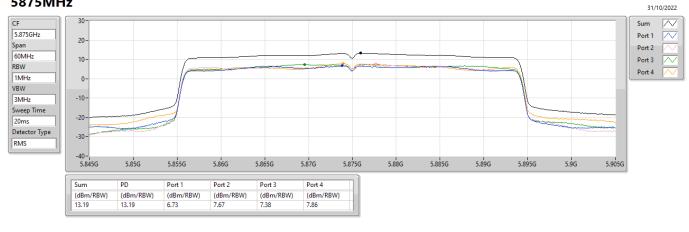


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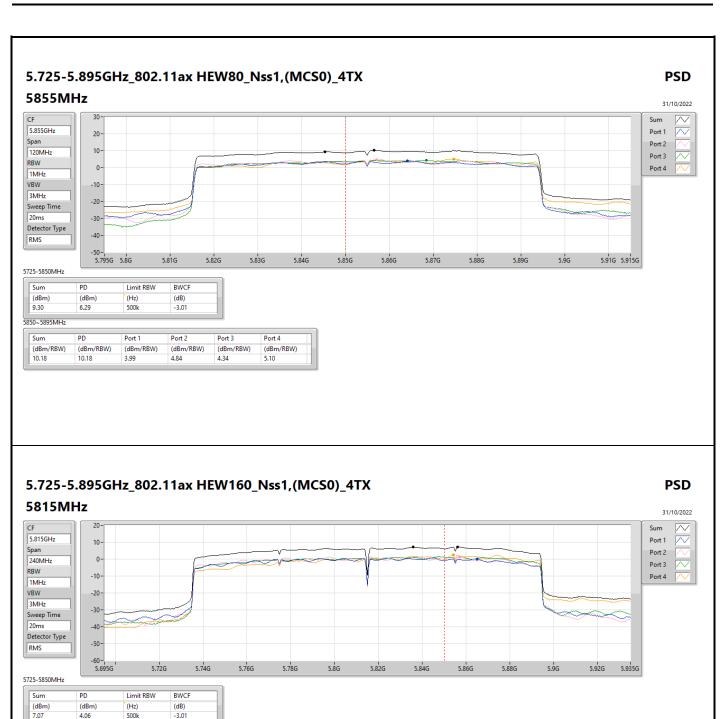


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5850~5895MHz

(dBm/RBW) 7.22 (dBm/RBW) 7.22

(dBm/RBW) 0.12 (dBm/RBW)

(dBm/RBW) 2.39

(dBm/RBW) 1.23

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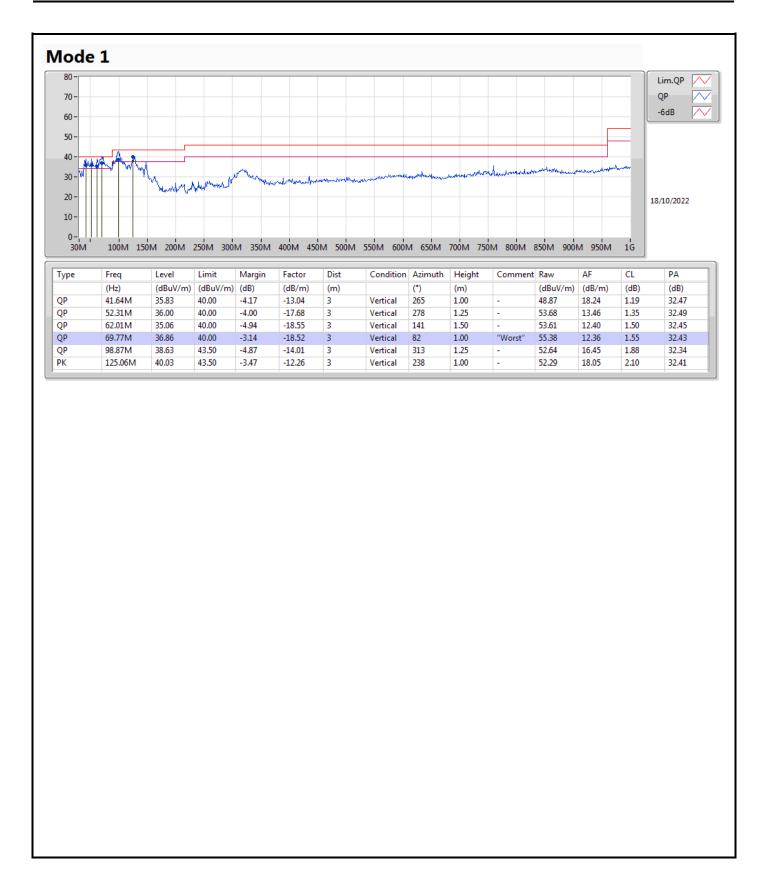
Radiated Emissions below 1GHz

Appendix E.1

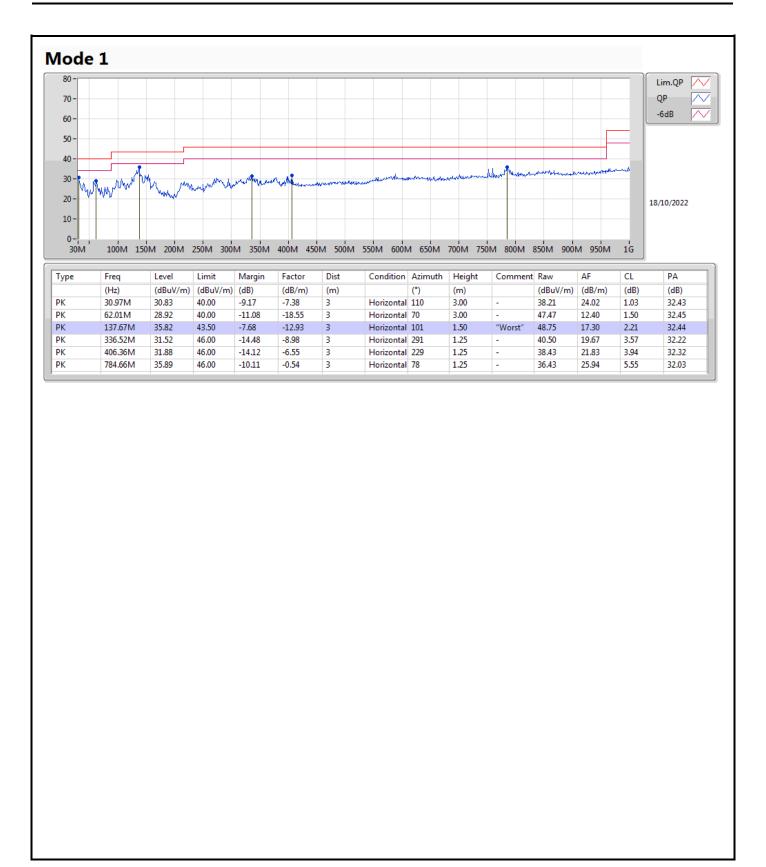
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	QP	69.77M	36.86	40.00	-3.14	Vertical

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RSE TX above 1GHz

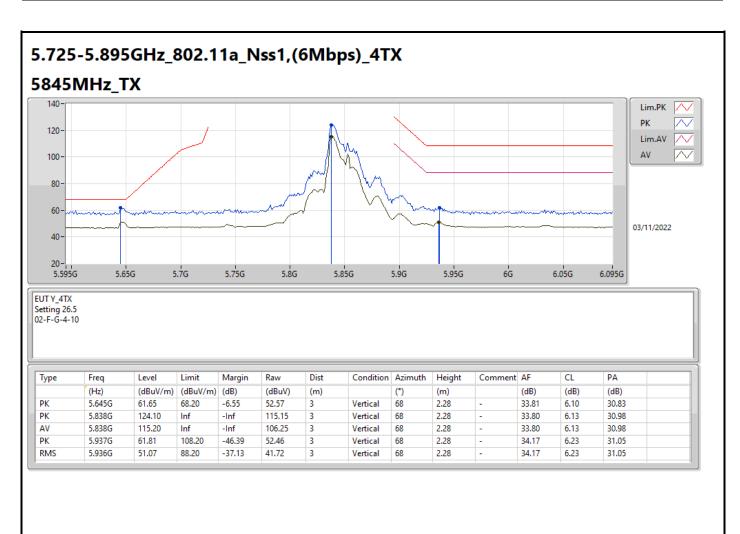
Appendix E.2

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5.725-5.895GHz	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_4TX	Pass	AV	11.7643G	53.90	54.00	-0.10	3	Horizontal	31	1.38	-

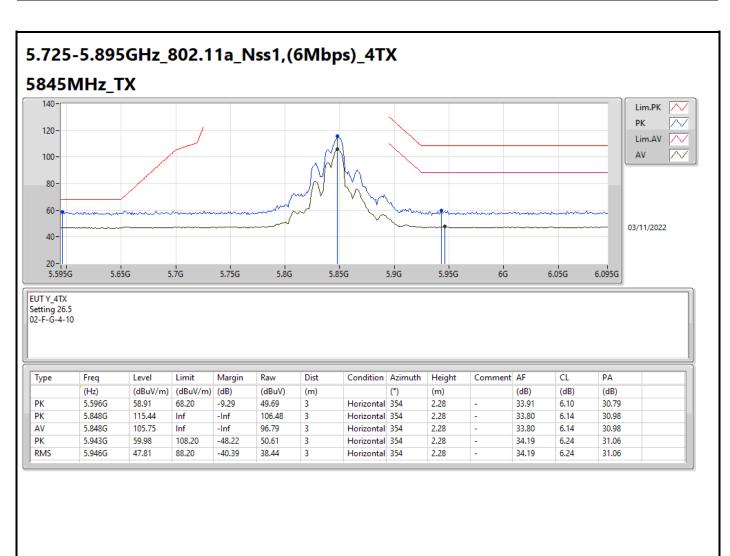
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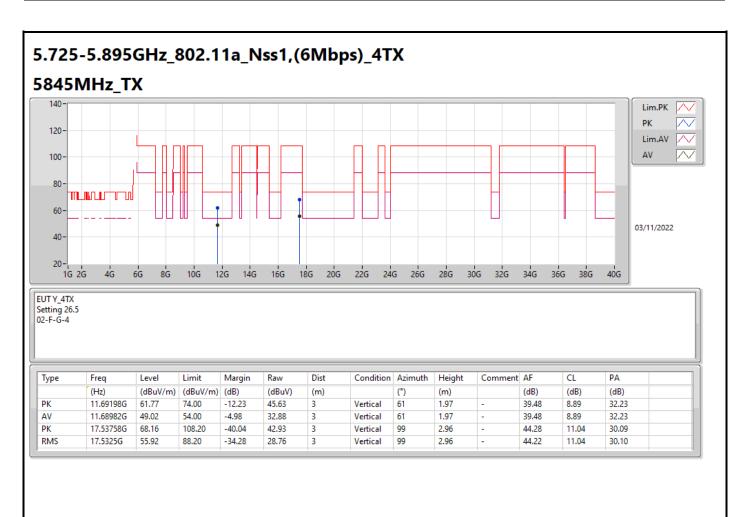
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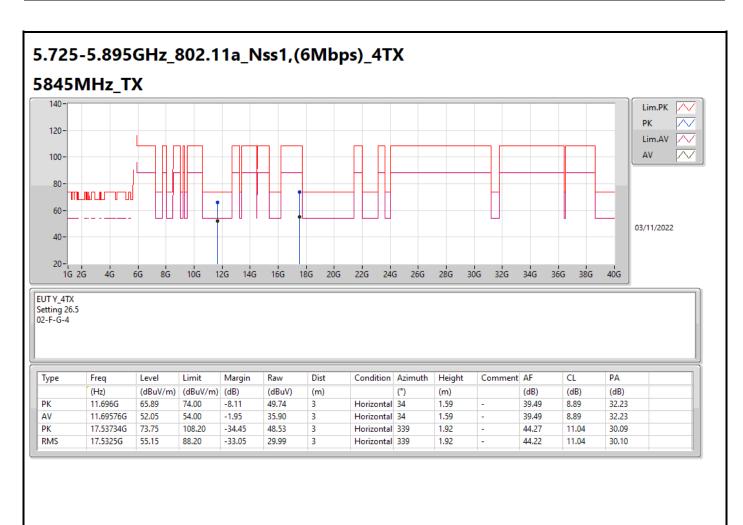
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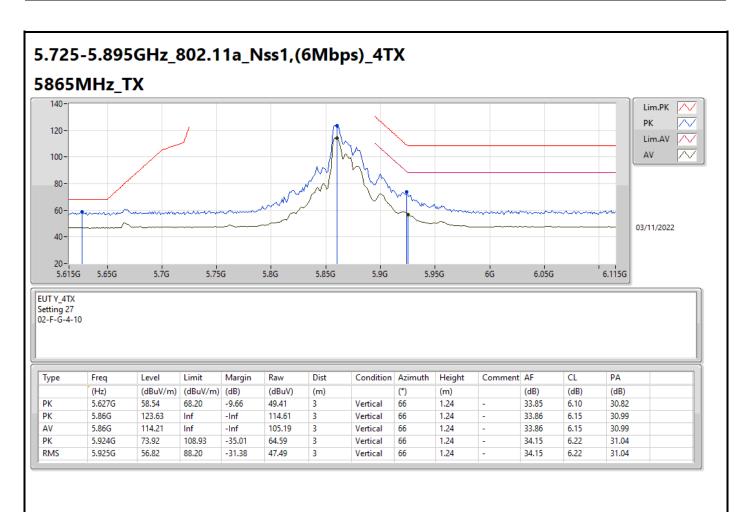
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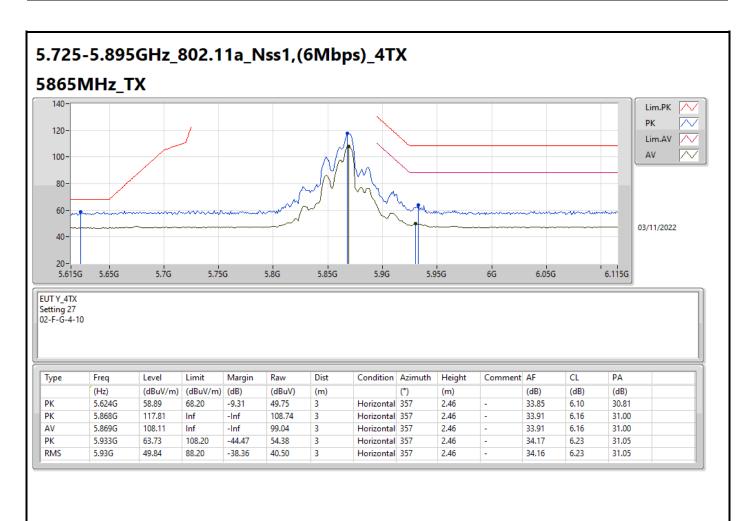
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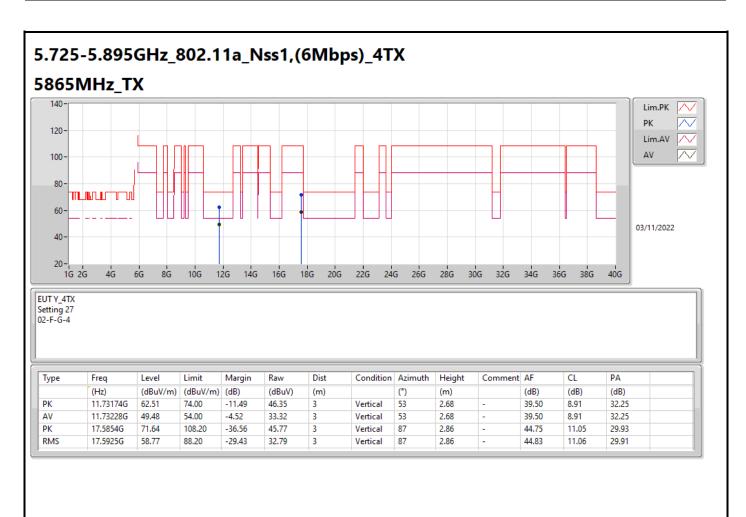
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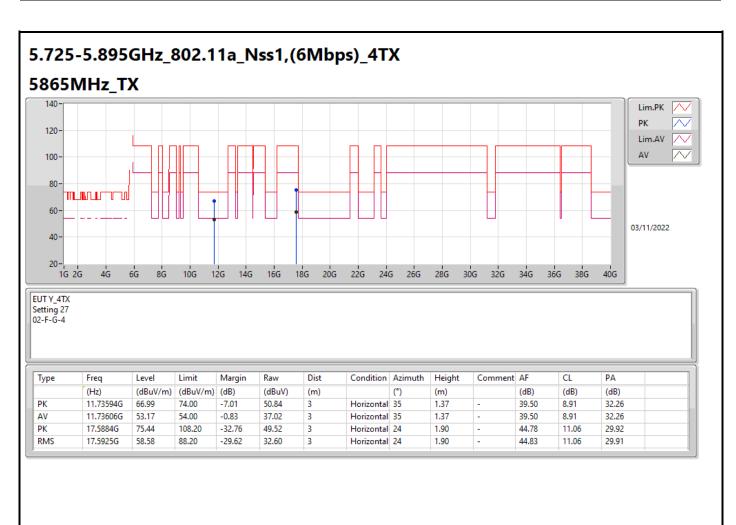
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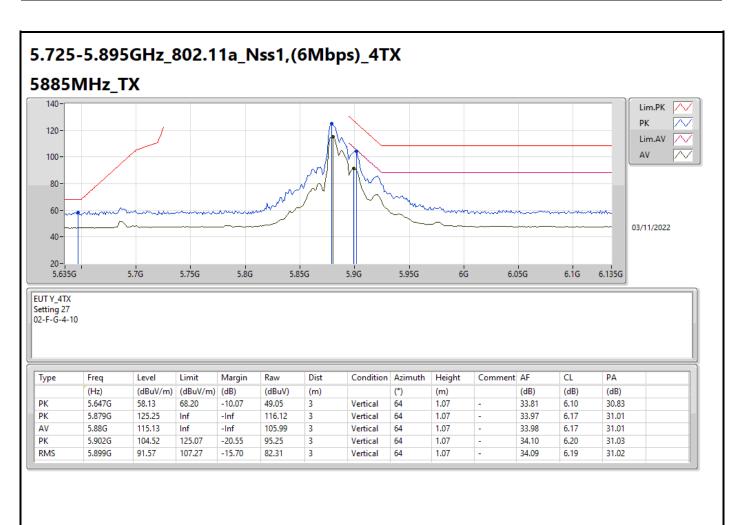
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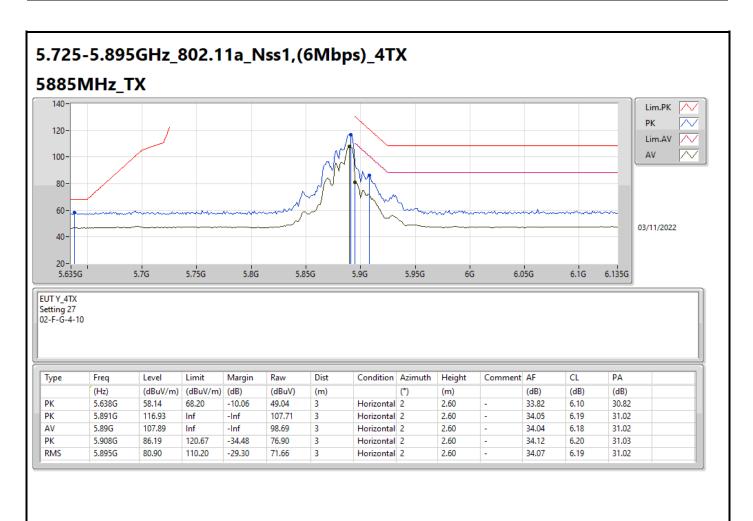
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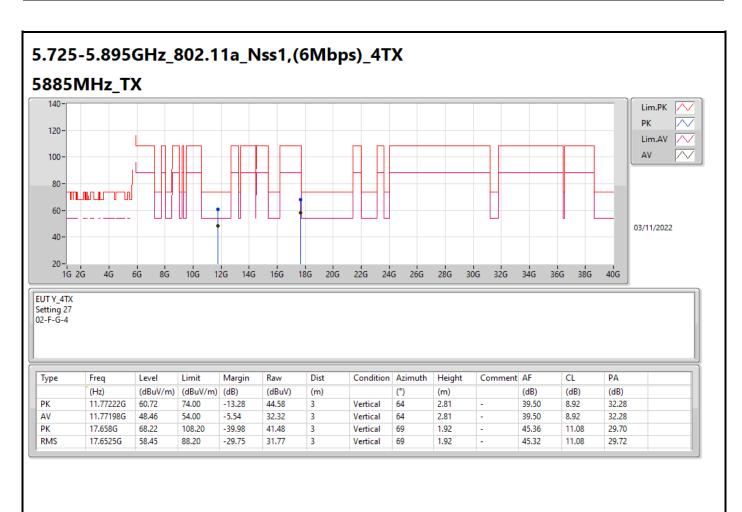
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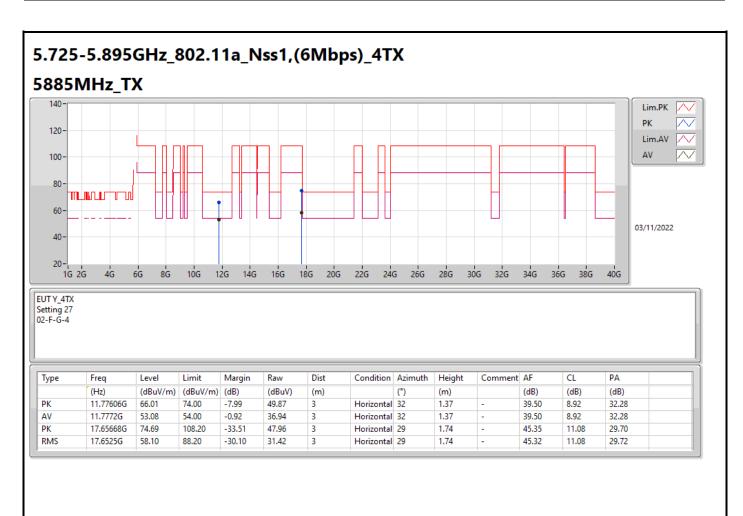
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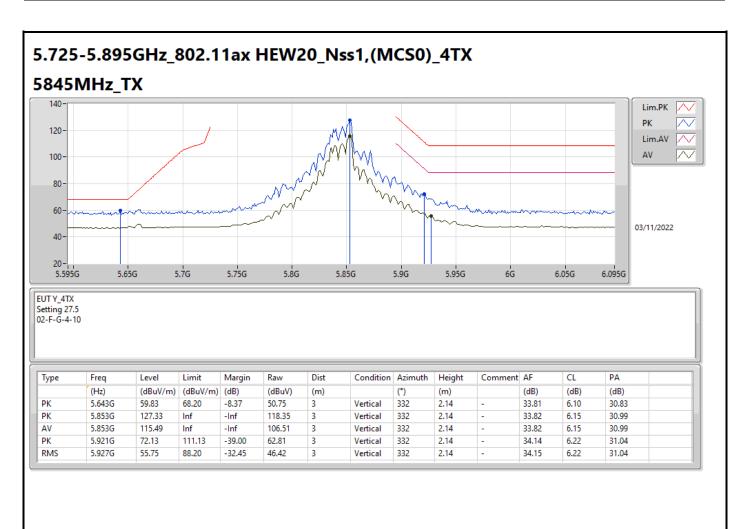
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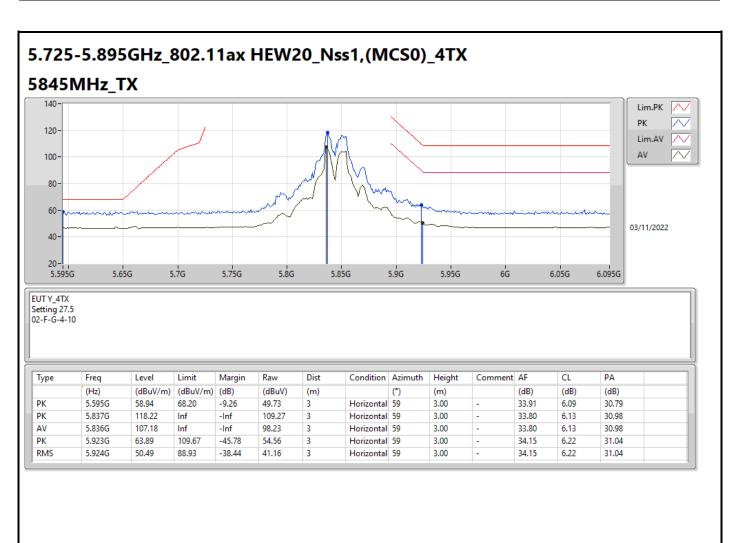
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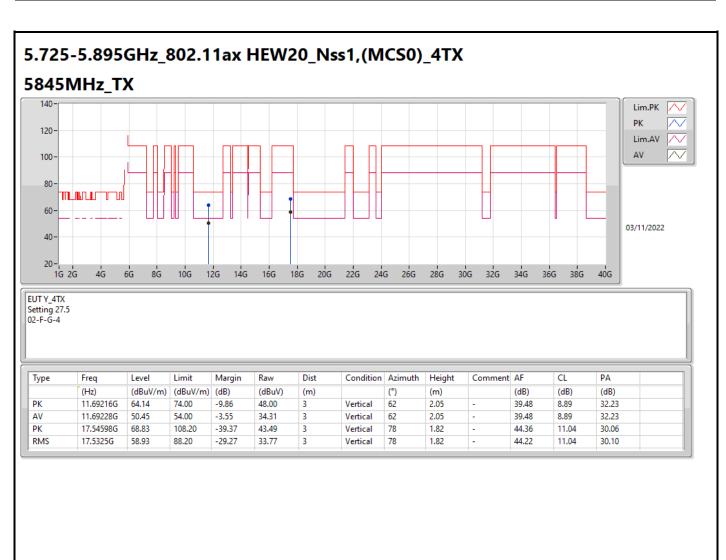
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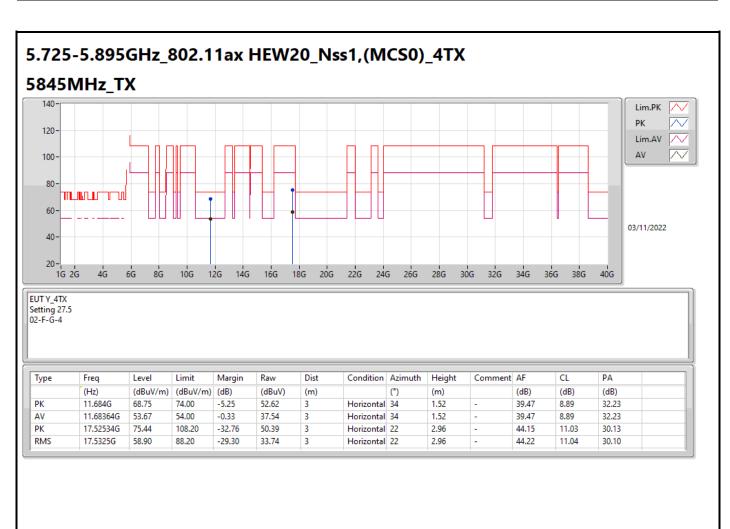
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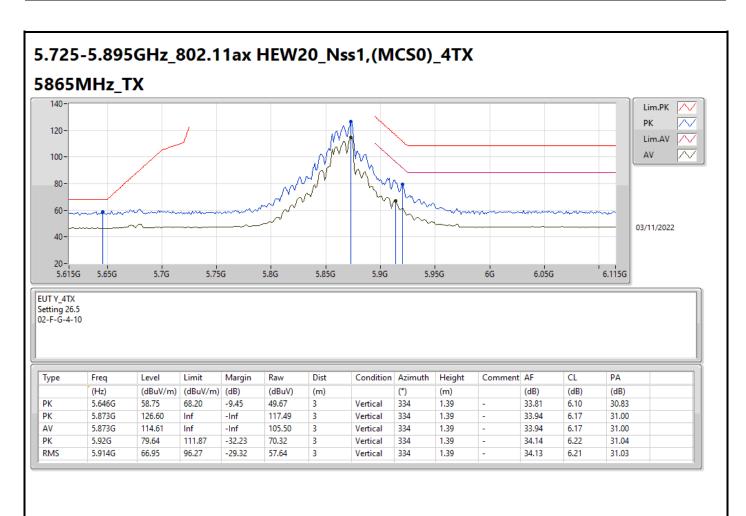
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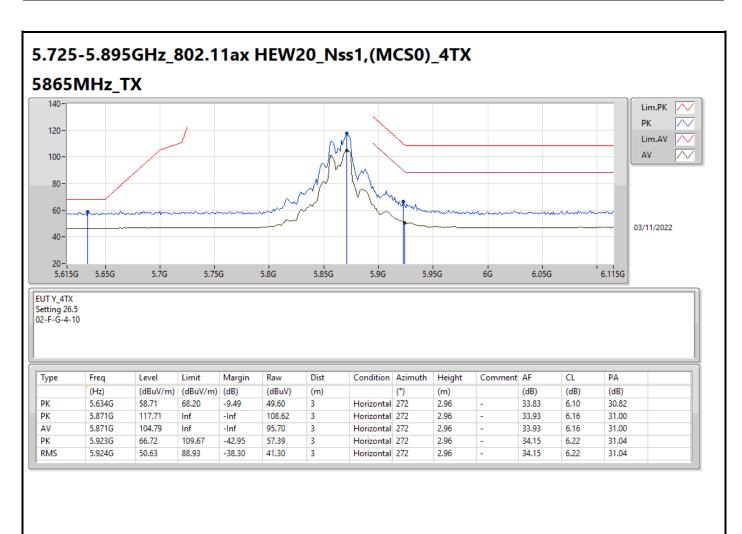
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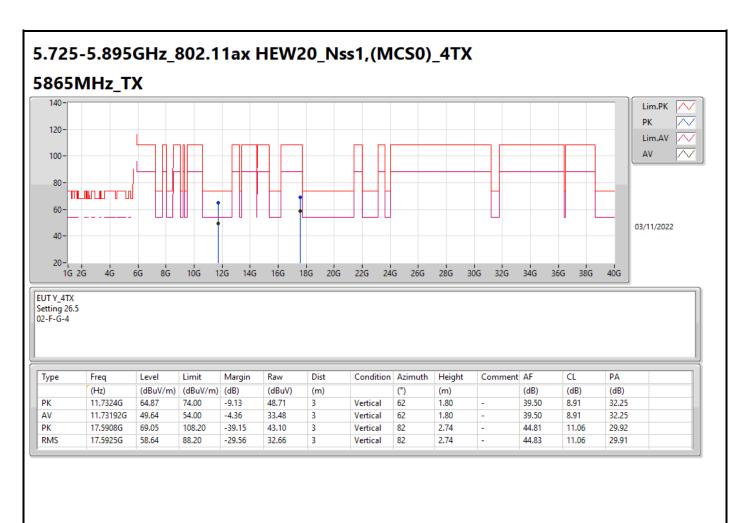
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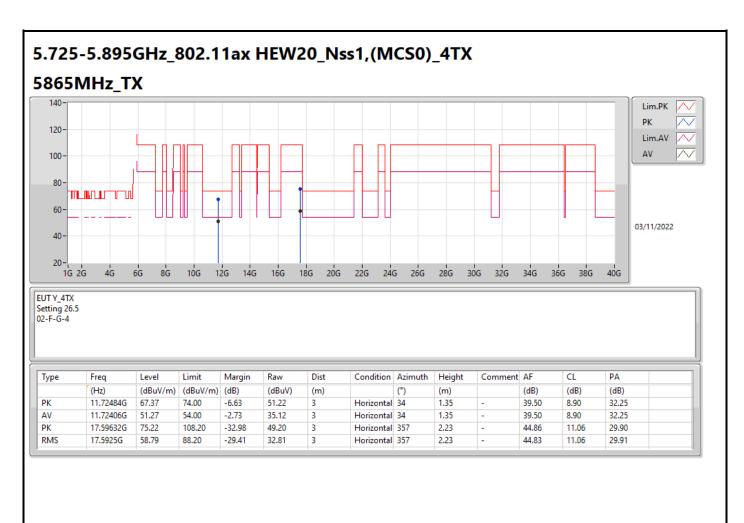
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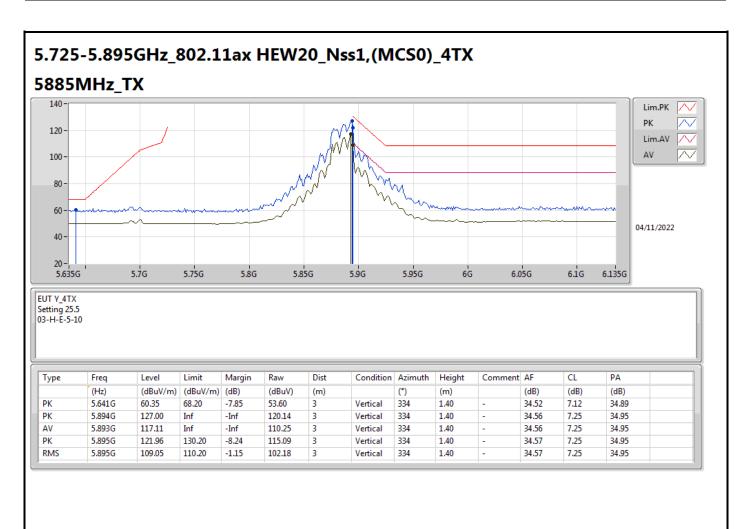
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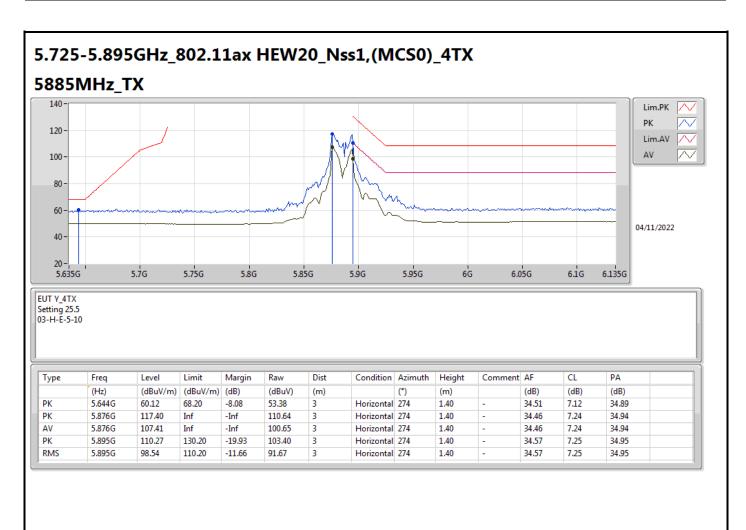
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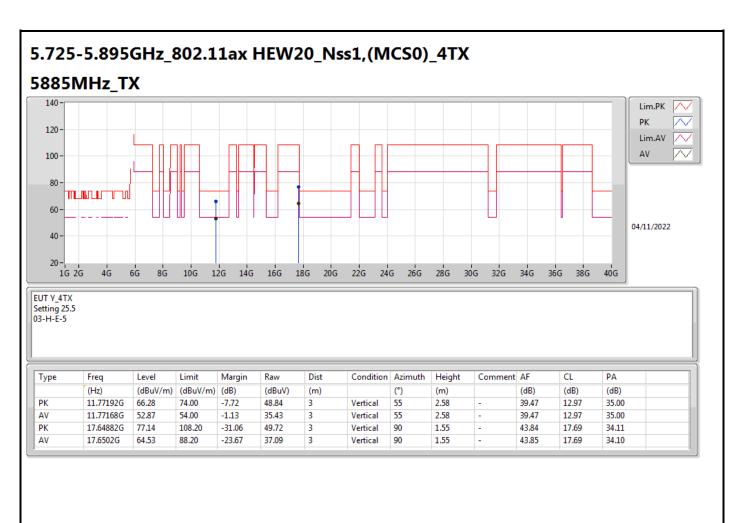
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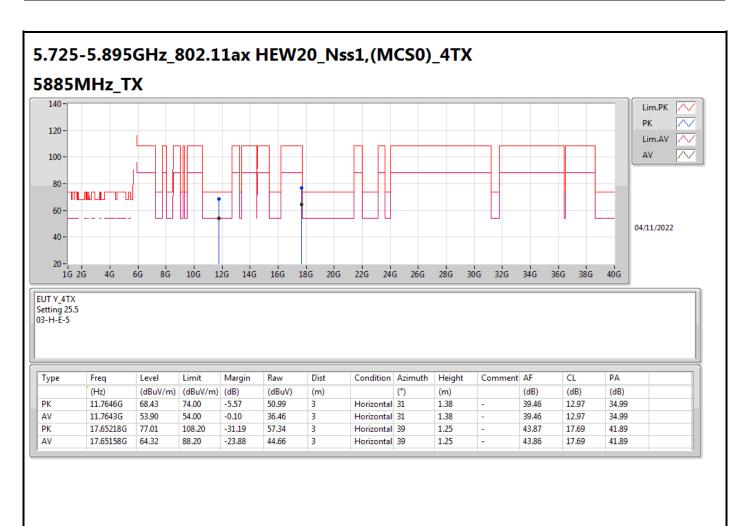
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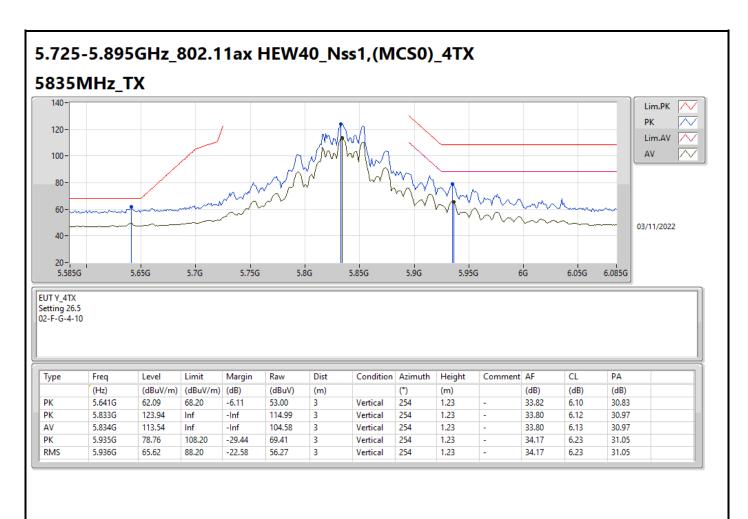
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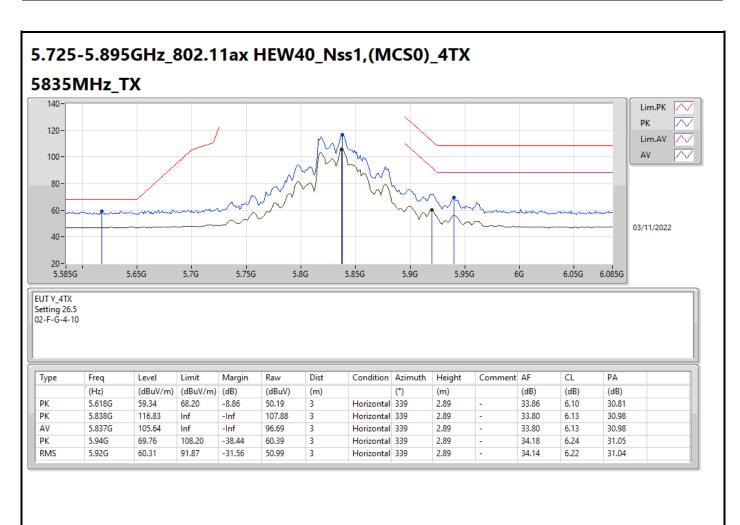
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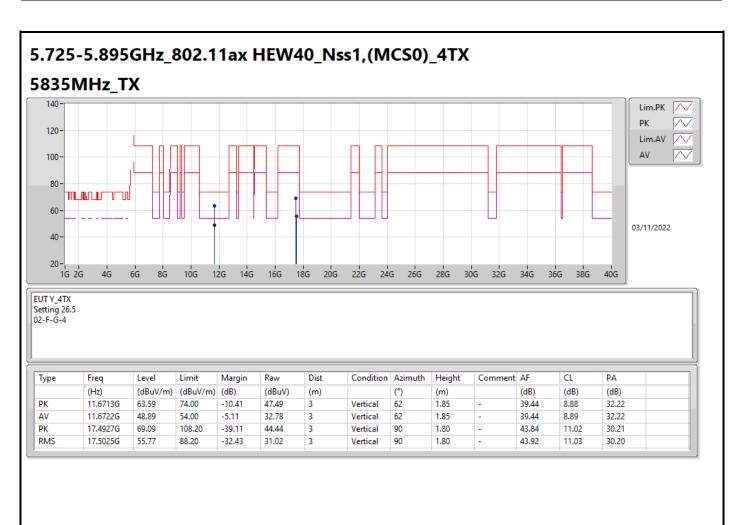
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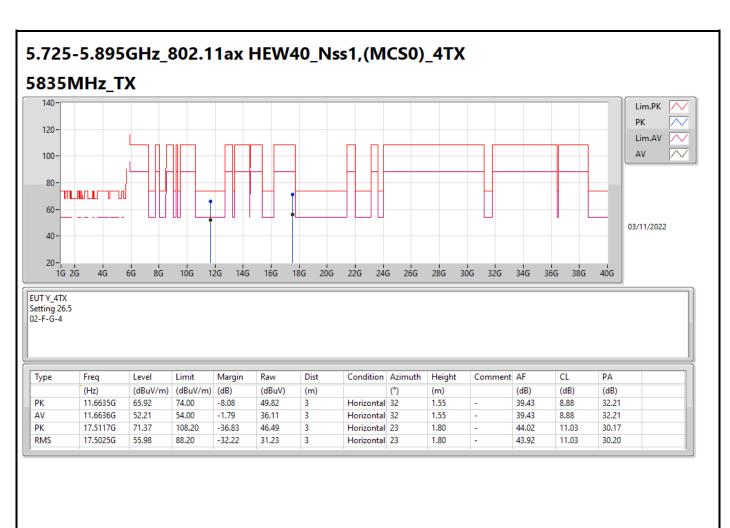
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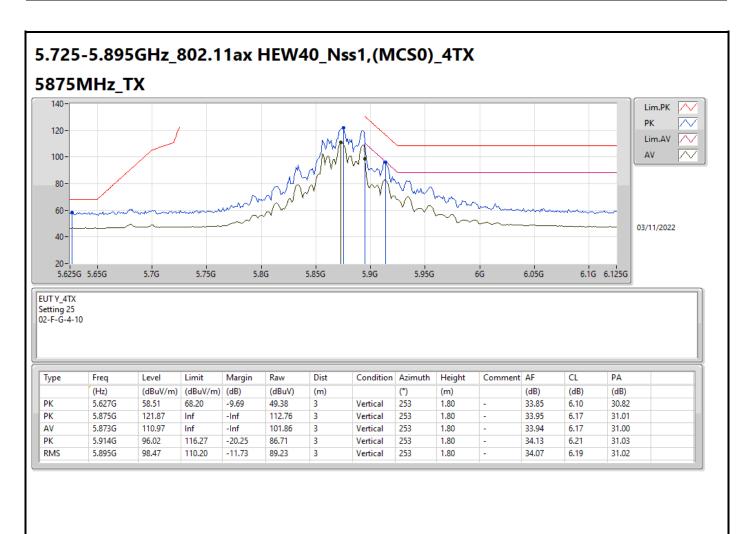
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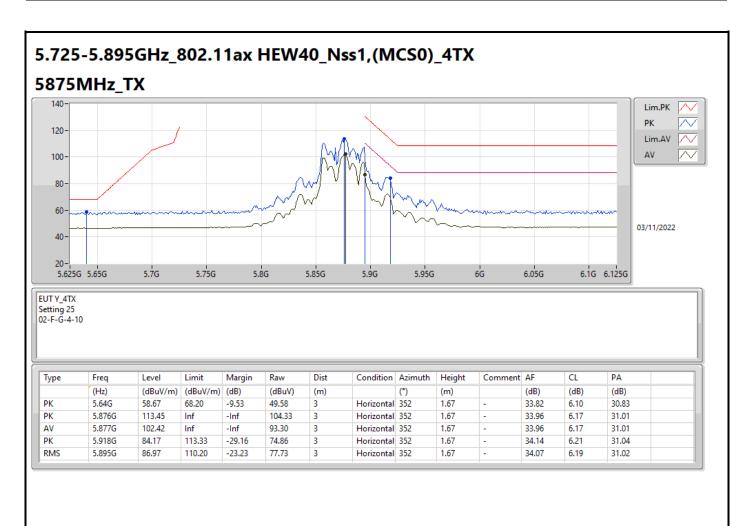
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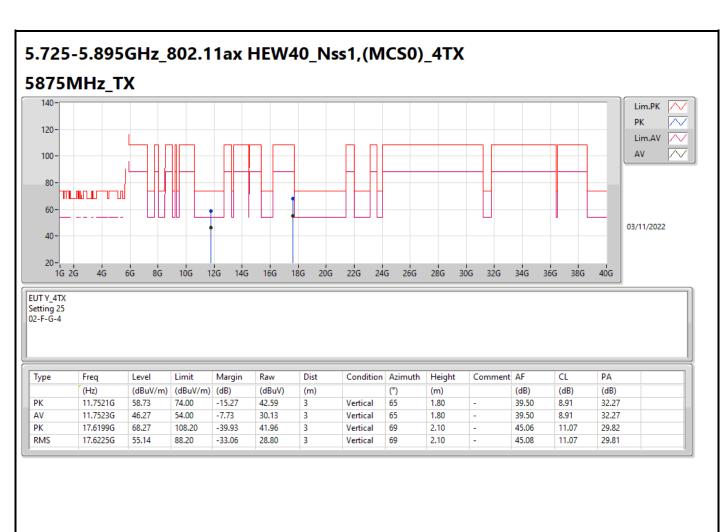
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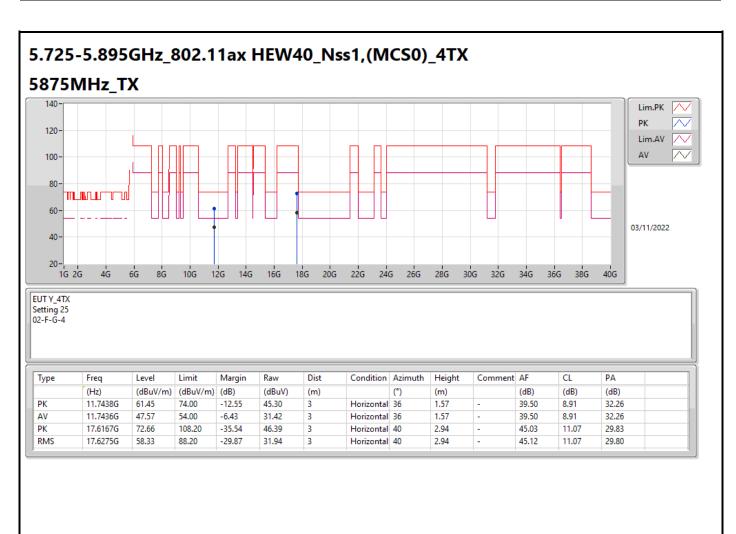
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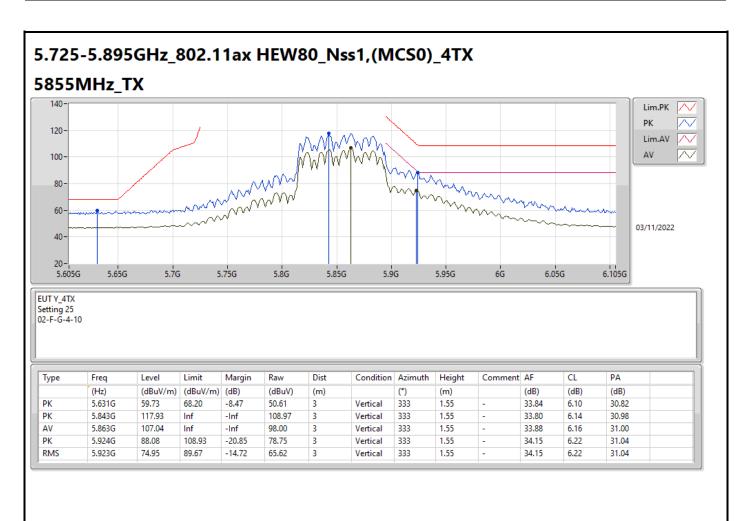
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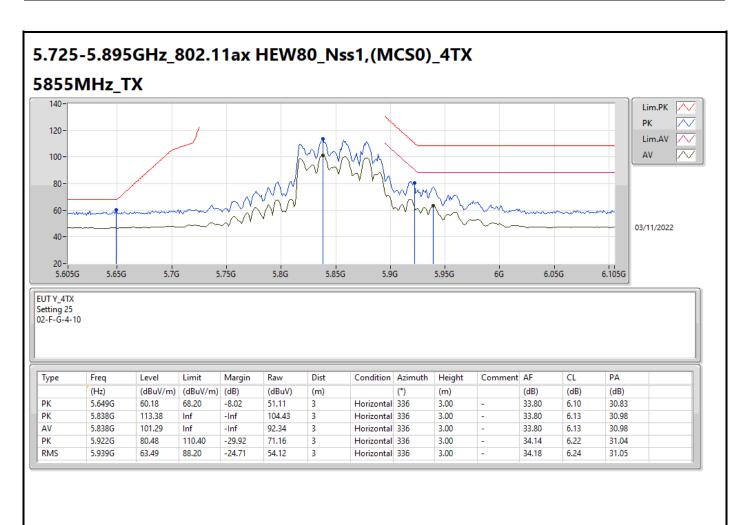
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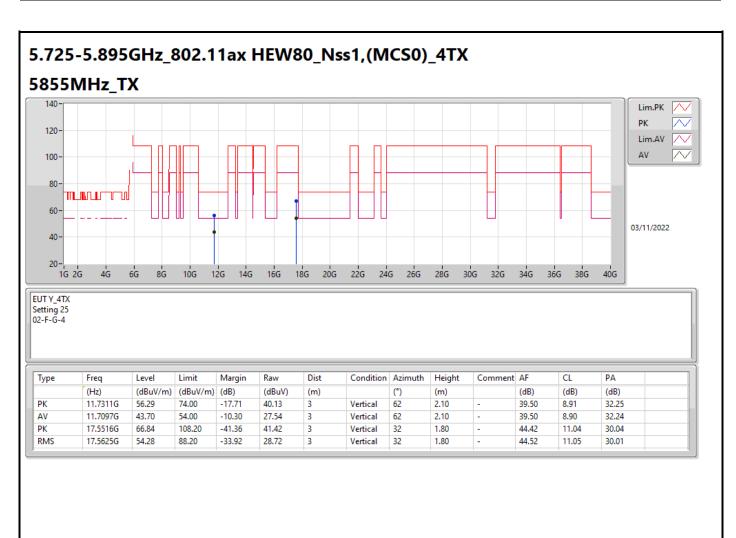
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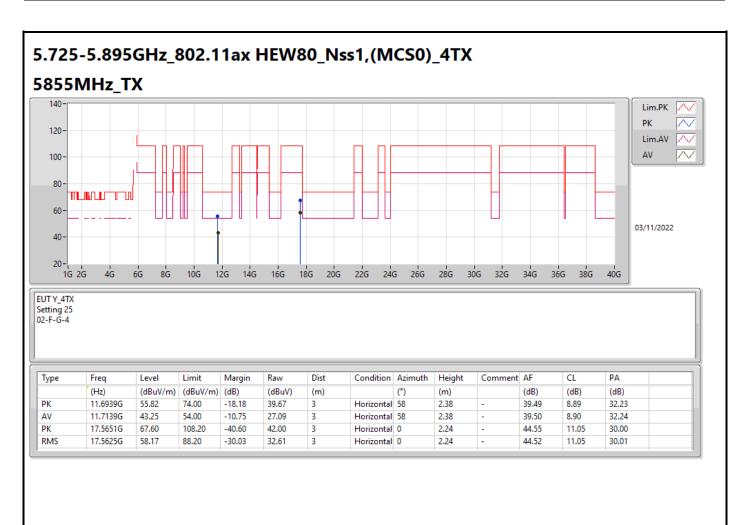
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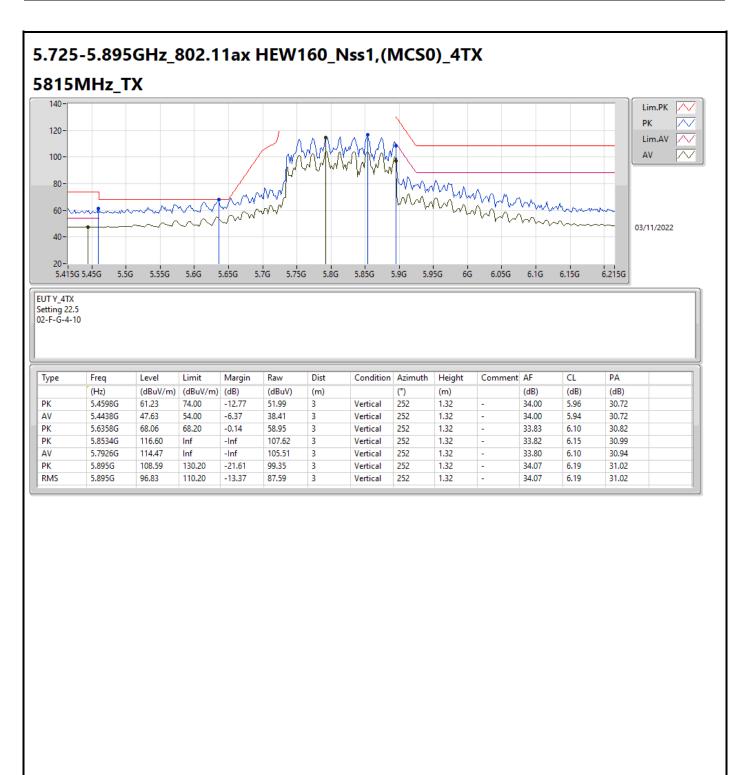
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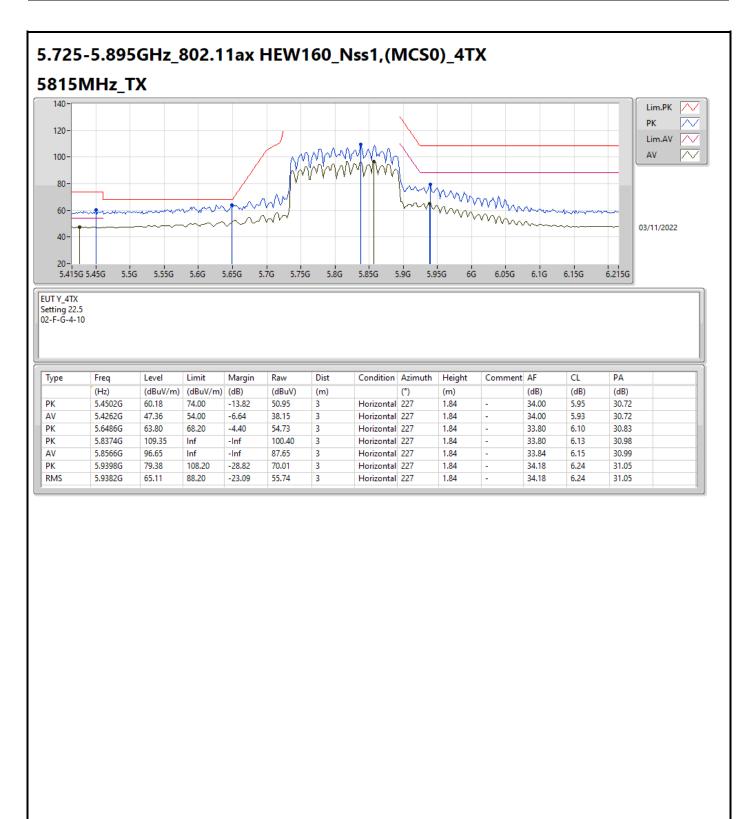
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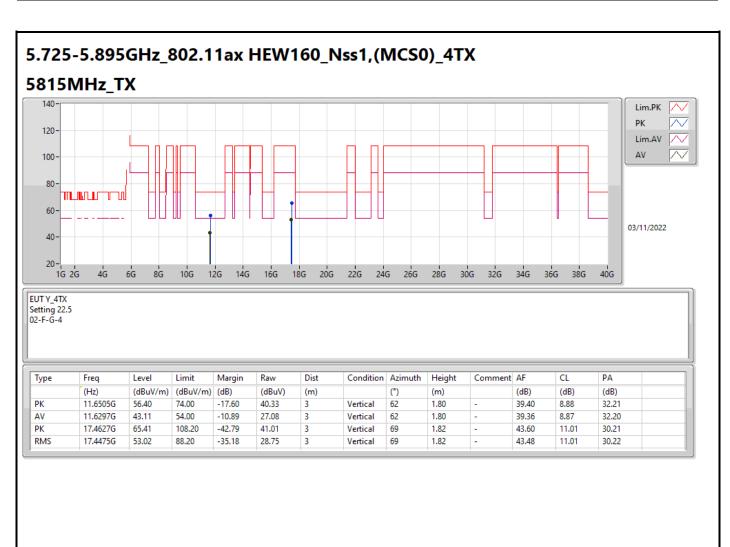
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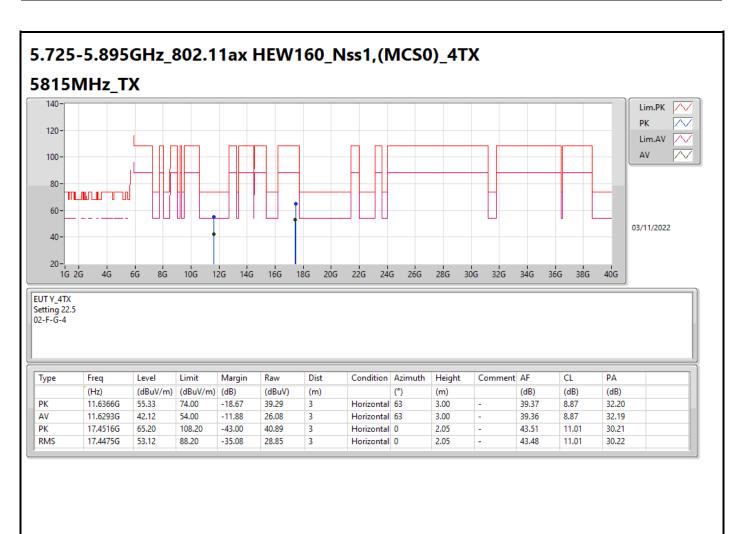
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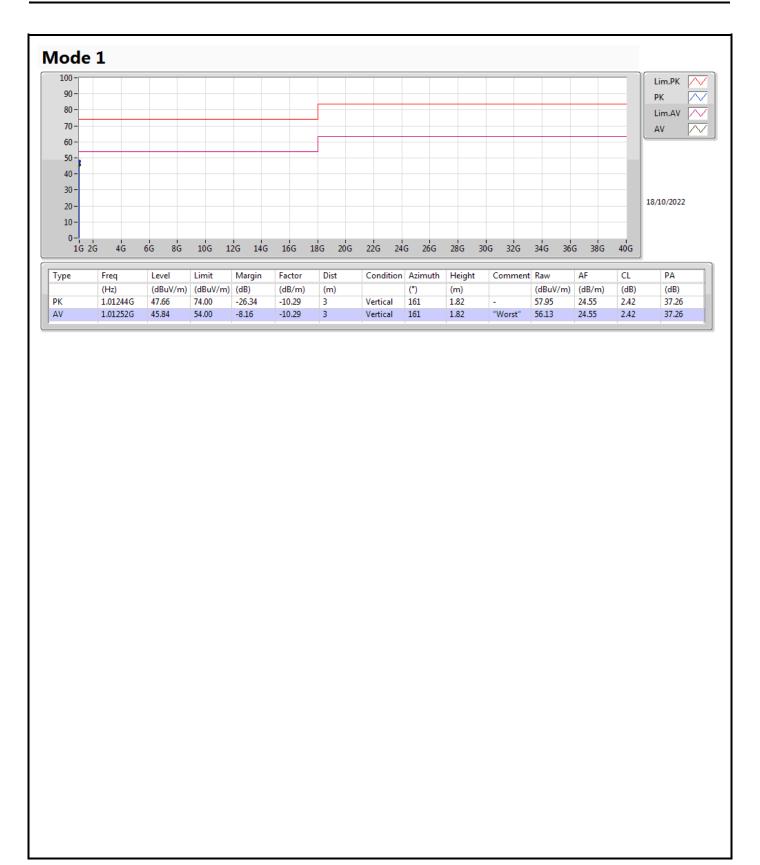
Radiated Emissions above 1GHz_Co-location

Appendix F

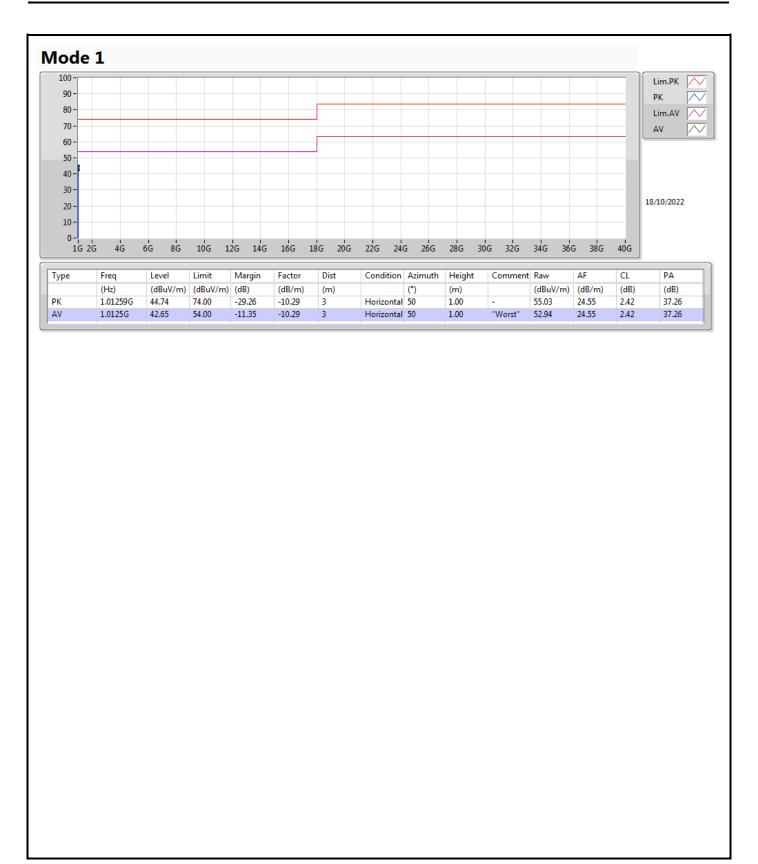
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	1.01252G	45.84	54.00	-8.16	Vertical

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