Report No. : FR3N2709AA





RADIO TEST REPORT

FCC ID	: TLZ-CU5XX
Equipment	: Wireless MCU with Integrated Tri-radio Wi-Fi 6 + BLE 5.3/802.15.4 LGA module, Wireless MCU with Integrated Wi Fi 6 and Bluetooth Low Energy 5. 3 Module
Brand Name	: AzureWave
Model Name	: AW-CU570, AW-CU598
Applicant	: AzureWave Technologies, Inc. 8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City , Taiwan 231
Manufacturer	: AzureWave Technologies, Inc.
	8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City , Taiwan 231
Standard	: 47 CFR FCC Part 15.247

The product was received on Dec. 12, 2023, and testing was started from Dec. 26, 2023 and completed on Jun. 14, 2024. 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: Rex Liao

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 Report Template No.: CB-A10_10 Ver1.3 Page Number: 1 of 30Issued Date: Jun. 28, 2024Report Version: 01



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Photographs of EUT v01



History of this test report

Report No.	Version	Description	Issued Date
FR3N2709AA	01	Initial issue of report	Jun. 28, 2024



Summary of Test Result

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	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Conformity Assessment Condition:

- 1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
- 2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sam Chen Report Producer: Sophia Shiung



General Description 1

1.1 Information

1.1.1 **RF General Information**

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20), VHT20, ax (HEW20)	2412-2462	1-11 [11]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	1TX
2.4-2.4835GHz	802.11g	20	1TX
2.4-2.4835GHz	802.11n HT20	20	1TX
2.4-2.4835GHz	VHT20	20	1TX
2.4-2.4835GHz	802.11ax HEW20	20	1TX

Note:

- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation. ٠
- 11g and HT20 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation. ٠
- ٠
- VHT20 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation. HEW20 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM ٠ modulation.
- BWch is the nominal channel bandwidth.



1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	ARISTOTLE	RFA-27-C38H1-C198	Dipole	u.FL	
2	Molex	2128600011	Dipole	u.FL	Note 1
3	LYNwave	2570	РСВ	N/A	

Note 1:

Note 1								
		Gain (dBi)						
Ant.	WLAN 2.4GHz	WLAN 5GHz	Bluetooth	Thread	WLAN 2.4GHz	WLAN 5GHz	Bluetooth	Thread
1	-	1	-	-	3	5	3	3
2	1	-	1	1	Note 2			
3	1	1	1	1	2.2	4.4	2.2	2.2

Note 2: The Ant. 2 has one RF cable (Brand: TE Connectivity / Model Name: Linx Connectivity / Remark: 11.5cm), and its gains are listed below.

Ant	Gain (dBi)						
Ant.		WLAN 2.4GHz	WLAN 5GHz	Bluetooth	Thread		
	Max Peak Gain	5.3	4.5	5.3	5.3		
2	Cable Loss	0.34	0.34	0.34	0.34		
	Net Gain	4.96	4.16	4.96	4.96		

Note 3: The above information was declared by manufacturer.

Note 4: For RF Conducted tests:

The Ant. 2 in WLAN 2.4GHz / Bluetooth / Thread and the Ant. 1 in WLAN 5GHz have higher gain than others in the same band. Therefore, they were selected to perform the test.

For AC Conduction and Radiated tests:

The EUT has two types of antenna. The antennas with higher gain in each band of each type were selected to test and their data were recorded in this report. Thus, Ant. 1 & Ant. 3 were selected to test WLAN 5GHz, and Ant. 2 & Ant. 3 were selected to test WLAN 2.4GHz / Bluetooth / Thread.

Note 5: For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax (1TX/1RX):

Only Port 1 can be used as transmitting/receiving antenna.

For 5GHz function:

For IEEE 802.11a/n/ac/ax (1TX/1RX):

Only Port 1 can be used as transmitting/receiving antenna.

For bluetooth function (1TX/1RX):

Only Port 1 can be used as transmitting/receiving antenna.

For Thread function (1TX/1RX):

Only Port 1 can be used as transmitting/receiving antenna.



1.1.3 Mode Test Duty Cycle

Mode	DC	DCF	Т	VBW
		(dB)	(s)	(Hz)_1/T
802.11b_Nss 1,(1D)	0.999	0.01	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g_Nss 1,(6D)	0.987	0.06	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ax HEW20_Nss 1,(M0)	0.986	0.06	n/a (DC>=0.98)	n/a (DC>=0.98)

Note:

• DC is Duty Cycle.

DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From host system			
Beamforming Function		With beamforming	\boxtimes	Without beamforming
Function	\boxtimes	Point-to-multipoint		Point-to-point
Support RU	\boxtimes	Full RU		Partial RU
Test Software Version	DutApiMimoApApp 2.0.0.2			

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

The two EUTs are identical except for the difference listed below:

EUT	Equipment Name	Model Name	Thread Function		
Wireless MCU with Integrated Tri-radio Wi-Fi 6 +		AW-CU570	N/		
1	BLE 5.3/802.15.4 LGA module				
Wireless MCU with Integrated Wi Fi 6 and			Y		
2	Bluetooth Low Energy 5. 3 Module	AW-CU598	^		

Note 1: From the above EUTs, EUT 1 (AW-CU570) was selected as representative EUT for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.



1.2 Applicable Standards

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

- 47 CFR FCC Part 15.247
- ANSI C63.10-2013

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

- FCC KDB 558074 D01 v05r02
- FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location InformationTest Lab. : Sporton International Inc. Hsinchu LaboratoryHsinchuADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)(TAF: 3787)TEL: 886-3-656-9065FAX: 886-3-656-9085Test 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	TH02-CB	Mason Chan	23.5~24.2 / 60~63	May 16, 2024
Radiated < 1GHz	03CH01-CB	Paul Hu	22.4-23.5 / 55-58	Feb. 07, 2024~
Radialed < TGHZ	03CH04-CB	Paul Hu	21-22 / 56-59	May 23, 2024
Radiated > 1GHz	03CH06-CB	21.9~22.8 / 56~58		Dec. 26, 2023~ Feb. 29, 2024
Radialed > 1GHz	03CH02-CB		22.7~23.8 / 56~59	May 14, 2024~ May 15, 2024
AC Conduction	CO01-CB	Tim Chen	20~21 / 63~64	Feb. 22, 2024~ Jun. 14, 2024



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 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)	3.7 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.1 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	3.1 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.1 dB	Confidence levels of 95%
Bandwidth Measurement	2.2%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode
802.11b_Nss1,(1Mbps)_1TX
2412MHz
2437MHz
2462MHz
802.11g_Nss1,(6Mbps)_1TX
2412MHz
2417MHz
2437MHz
2457MHz
2462MHz
802.11ax HEW20_Nss1,(MCS0)_1TX
2412MHz
2417MHz
2437MHz
2457MHz
2462MHz

Note:

٠

Evaluated HEW20 mode only, due to similar modulation. The power setting of HT20 / VHT20 modes are the same or lower than HEW20.

2.2 The Worst Case Measurement Configuration

Th	e 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	СТХ
1	EUT 1 + Ant. 2_Thread
2	EUT 1 + Ant. 2_Bluetooth
3	EUT 1 + Ant. 2_WLAN 2.4GHz
4	EUT 1 + Ant. 1_WLAN 5GHz
5	EUT 1 + Ant. 3_Thread
6	EUT 1 + Ant. 3_Bluetooth
7	EUT 1 + Ant. 3_WLAN 2.4GHz
8	EUT 1 + Ant. 3_WLAN 5GHz
For operating, mode 6 is the	he worst case and it was recorded in this test report.



The Worst Case Mode for Following Conformance Tests			
Tests Item	Maxi Pow	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands	
Test Condition	Conducted measurement at transmit chains		
Test Mode	1 EUT 1 + Ant. 2		

Th	e Worst Case Mode for Following Conformance Tests
Tests Item	Emissions in Restricted Frequency Bands
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.
	СТХ
Operating Mode < 1GHz	The EUT was performed at X axis, Y axis and Z axis position in Radiated Emission test > 1GHz, and the worst case was found at Y axis. Thus, the measurement will follow this same test configuration.
1	EUT 1 in Y axis + Ant. 2_WLAN 2.4GHz
2	EUT 1 in Y axis + Ant. 2_Bluetooth
3	EUT 1 in Y axis + Ant. 2_Thread
4	EUT 1 in Y axis + Ant. 1_WLAN 5GHz
5	EUT 1 in Y axis + Ant. 3_WLAN 2.4GHz
6	EUT 1 in Y axis + Ant. 3_Bluetooth
7	EUT 1 in Y axis + Ant. 3_Thread
8	EUT 1 in Y axis + Ant. 3_WLAN 5GHz
For operating, mode 2 is the	he worst case and it was recorded in this test report.
	СТХ
Operating Mode > 1GHz	The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found at Y axis. Thus, the measurement will follow this same test configuration.
1	EUT 1 in Y axis + Ant. 2
2	EUT 1 in Y axis + Ant. 3

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

N/A



2.5 Support Equipment

For AC Conduction:

	Support Equipment				
No.	No. Equipment Brand Name Model Name FCC ID				
А	Fixture	AzureWave	2570-i4	N/A	
В	NB	DELL	E6430	N/A	

For Radiated < 1GHz:

	Support Equipment				
No.	No. Equipment Brand Name Model Name FCC ID				
А	Fixture	AzureWave	2570-i4	N/A	
В	DC Power Supply	MOTECH	LPS-305	N/A	

For Radiated > 1GHz:

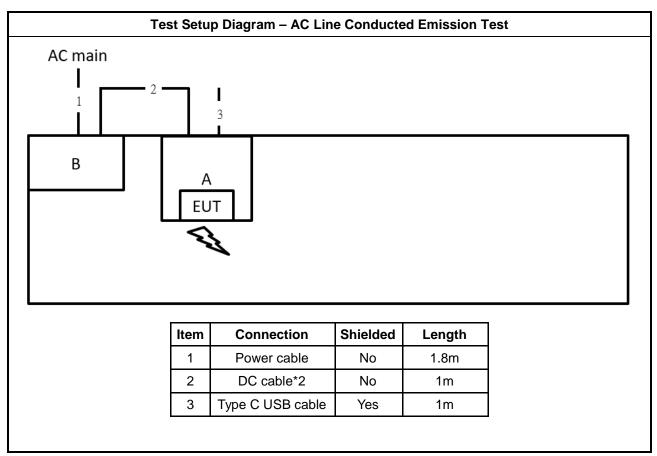
	Support Equipment			
No.	No. Equipment Brand Name Model Name FCC ID			
А	Fixture	AzureWave	2570 2	N/A
В	DC Power Supply	MOTECH	LPS-305	N/A
С	NB	DELL	E4300	N/A

For RF Conducted:

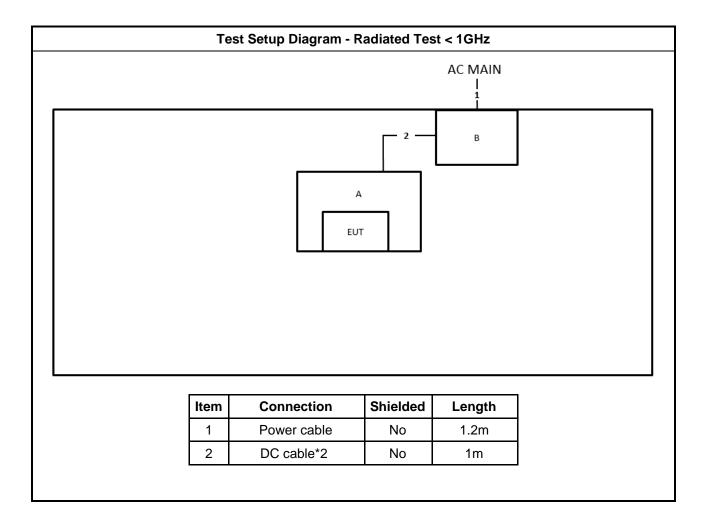
	Support Equipment			
No.	Equipment	Brand Name	Model Name	FCC ID
А	NB	DELL	E4300	N/A
В	Fixture	AzureWave	2570 12	N/A



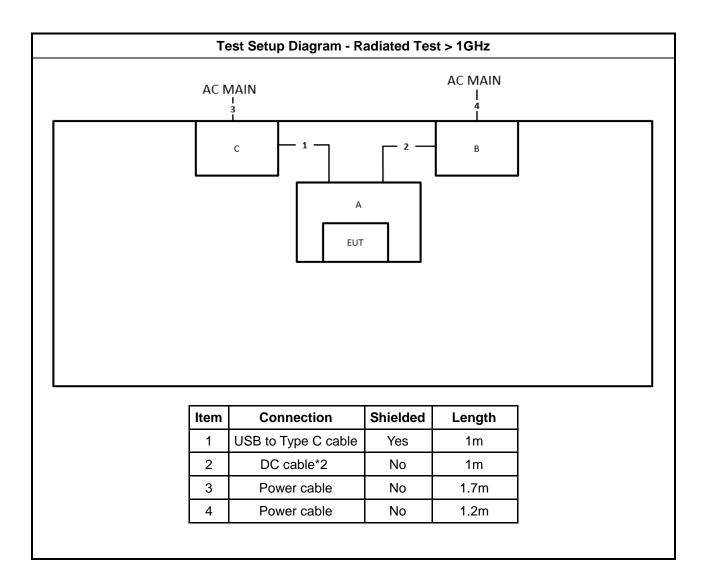
2.6 Test Setup Diagram













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.		

3.1.2 Measuring Instruments

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

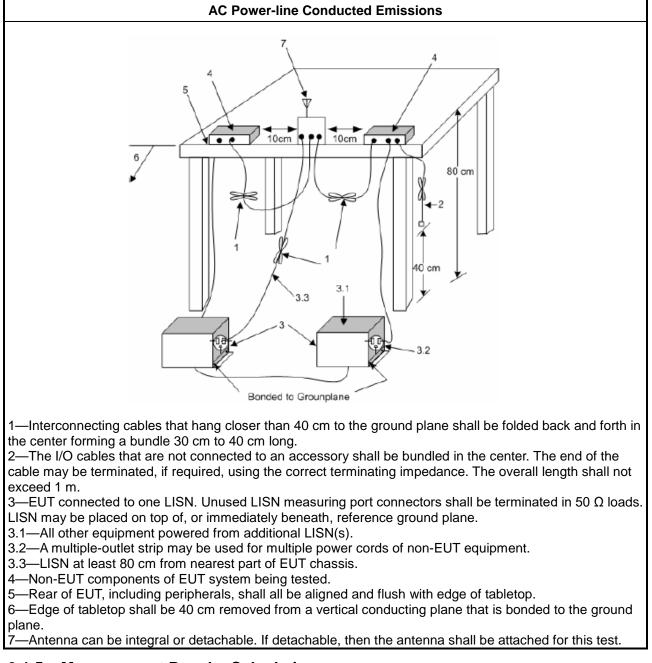
3.1.3 Test Procedures

Test Method

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



3.1.4 Test Setup



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



3.2 **DTS Bandwidth**

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
 6 dB bandwidth ≥ 500 kHz.

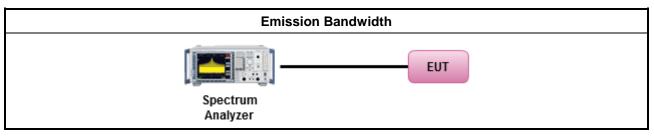
3.2.2 **Measuring Instruments**

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

3.2.3 **Test Procedures**

For							
	 For the emission bandwidth shall be measured using one of the options below: 						
	Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.						
	Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.						
	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.						

Test Setup 3.2.4



3.2.5 **Test Result of Emission Bandwidth**

Refer as Appendix B



3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit

• If $G_{TX} \le 6$ dBi, then $P_{Out} \le 30$ dBm (1 W)	f G⊤x ≤ 6 dBi, then I	P _{Out} ≤ 30 dBm (1 W)
--	-----------------------	---------------------------------

•	Point-to-multipoint systems	(P2M): If G _{TX} > 6 dBi, t	hen $P_{Out} = 30 - (G_{TX} - 6) dBm$
---	-----------------------------	--------------------------------------	---------------------------------------

- Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3$ dBm
- Smart antenna system (SAS):
 - Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3$ dBm
 - Overlap beam: If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 (G_{TX} 6)/3 \text{ dBm}$
 - Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3 + 8$ dB dBm

 P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.

3.3.2 Measuring Instruments

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

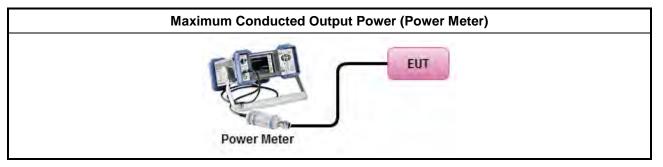
3.3.3 Test Procedures

	Test Method						
•	Maxi	mum Peak Conducted Output Power					
	□ Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).						
		Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).					
•	Maxi	mum Conducted Output Power					
	[duty	v cycle ≥ 98% or external video / power trigger]					
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.					
	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A (alternative)						
	duty cycle < 98% and average over on/off periods with duty factor						
	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.						
	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA (alternative)						
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3					
	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3 (alternative)						
	Mea	surement using a power meter (PM)					
	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using RF average power meter).						
		Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).					
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•	 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} = P₁ + P₂ + + P_n (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP_{total} = P_{total} + DG 					

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral	Density Limit
----------------	---------------

■ Power Spectral Density (PSD) ≤ 8 dBm/3kHz

3.4.2 Measuring Instruments

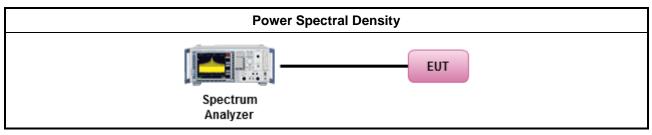
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

	Test Method							
-	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).							
	\square	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD.						
•	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.						



3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D



3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit					
RF output power procedure Limit (dBc)					
20					
30					

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

3.5.2 Measuring Instruments

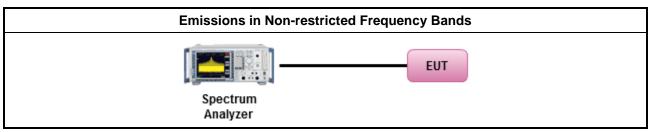
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method

Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E



3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions 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				

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.

3.6.2 Measuring Instruments

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

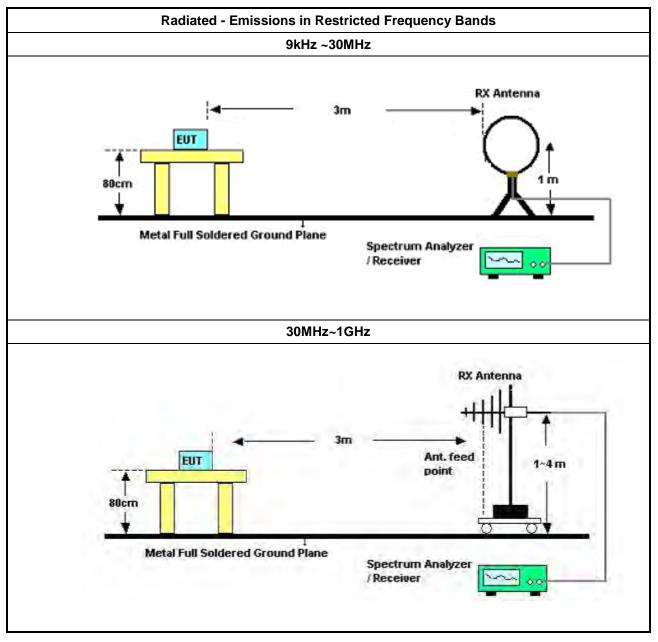


3.6.3 Test Procedures

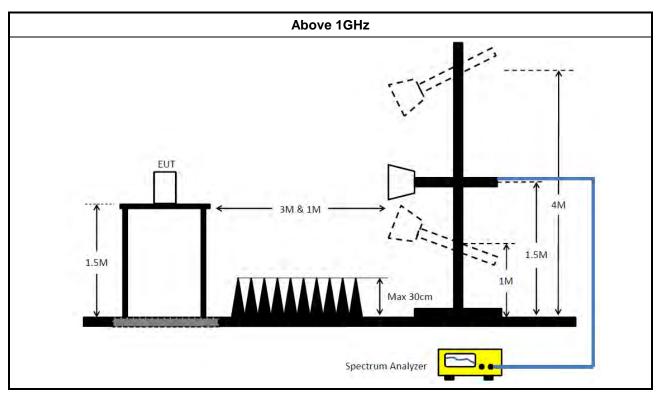
	Test Method						
•	The average emission levels shall be measured in [duty cycle \geq 98 or duty factor].						
•	Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.						
•	For the transmitter unwanted emissions shall be measured using following options below:						
	 Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands. 						
	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle ≥98%).						
	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).						
	☑ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW≥1/T).						
	□ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW \ge 1/T, where T is pulse time.						
	Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.						
	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.						
•	For the transmitter band-edge emissions shall be measured using following options below:						
	 Refer as FCC KDB 558074 clause 8.7 & C63.10 clause 11.13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below. 						
	 Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements. 						
	 Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz). 						
	 For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB 						
	 For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred. 						



3.6.4 Test Setup







3.6.5 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.

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

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.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 18, 2023	May 17, 2024	Conduction (CO01-CB)
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Mar. 01, 2024	Feb. 28, 2025	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Dec. 29, 2023	Dec. 28, 2024	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 27, 2023	Apr. 26, 2024	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 24, 2024	Apr. 23, 2025	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 08, 2024	Feb. 07, 2025	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 17, 2023	Oct. 16, 2024	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6121	65417	9kHz - 30MHz	Oct. 13, 2023	Oct. 12, 2024	Radiation (03CH01-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH01-CB	30MHz ~ 1GHz	Jan. 18, 2024	Jan. 17, 2025	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Feb. 19, 2023	Feb. 18, 2024	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Feb. 18, 2024	Feb. 17, 2025	Radiation (03CH01-CB)
Pre-Amplifier	SGH	SGH0301	20230109-2	10M~1GHz	Jun. 23, 2023	Jun. 22, 2024	Radiation (03CH01-CB)
Signal Analyzer	R&S	FSV3044	101437	10kHz ~ 44GHz	Nov. 28, 2023	Nov. 27, 2024	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 13, 2023	Jun. 12, 2024	Radiation (03CH01-CB)
RF Cable-low	Woken	RG402	Low Cable-31+32	30MHz ~ 1GHz	Nov. 06, 2023	Nov. 05, 2024	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6121	65417	9kHz - 30MHz	Oct. 13, 2023	Oct. 12, 2024	Radiation (03CH04-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH04-CB	30MHz ~ 1GHz	Aug. 01, 2023	Jul. 31, 2024	Radiation (03CH04-CB)



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Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
BILOG ANTENNA with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	22021&AT-N06 07	30MHz ~ 1GHz	Oct. 07, 2023	Oct. 06, 2024	Radiation (03CH04-CB)
Pre-Amplifier	EMCI	EMC330N	980391	20MHz ~ 3GHz	May 23, 2023	May 22, 2024	Radiation (03CH04-CB)
Pre-Amplifier	EMCI	EMC330N	980391	20MHz ~ 3GHz	May 22, 2024	May 21, 2025	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Mar. 21, 2023	Mar. 20, 2024	Radiation (03CH04-CB
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Mar. 19, 2024	Mar. 18, 2025	Radiation (03CH04-CB
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 13, 2023	Jun. 12, 2024	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+67	30MHz – 1GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH04-CB)
3m Semi Anechoic Chamber VSWR	трк	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1292	1GHz~18GHz	Jul. 31, 2023	Jul. 30, 2024	Radiation (03CH06-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 04, 2023	Sep. 03, 2024	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	Aug. 01, 2023	Jul. 31, 2024	Radiation (03CH06-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 24, 2023	Nov. 23, 2024	Radiation (03CH06-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	Apr. 21, 2023	Apr. 20, 2024	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05+68	1GHz~18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40GHz	Dec. 06, 2023	Dec. 05, 2024	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 24, 2024	Mar. 23, 2025	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 12, 2024	Apr. 11, 2025	Radiation (03CH02-CB)

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Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 04, 2023	Sep. 03, 2024	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jun. 30, 2023	Jun. 29, 2024	Radiation (03CH02-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 24, 2023	Nov. 23, 2024	Radiation (03CH02-CB)
Signal Analyzer	R&S	FSV3044	101536	10kHz ~ 44GHz	Jul. 24, 2023	Jul. 23, 2024	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40GHz	Jan. 11, 2024	Jan. 10, 2025	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Aug. 14, 2023	Aug. 13, 2024	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Oct. 19, 2023	Oct. 18, 2024	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Oct. 19, 2023	Oct. 18, 2024	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1GHz – 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1GHz – 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1GHz – 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1GHz – 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1GHz – 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH02-CB)
Switch	SPTCB	SP-SWI	SWI-02	1–26.5GHz	Oct. 03, 2023	Oct. 02, 2024	Conducted (TH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)

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

NCR means Non-Calibration required.



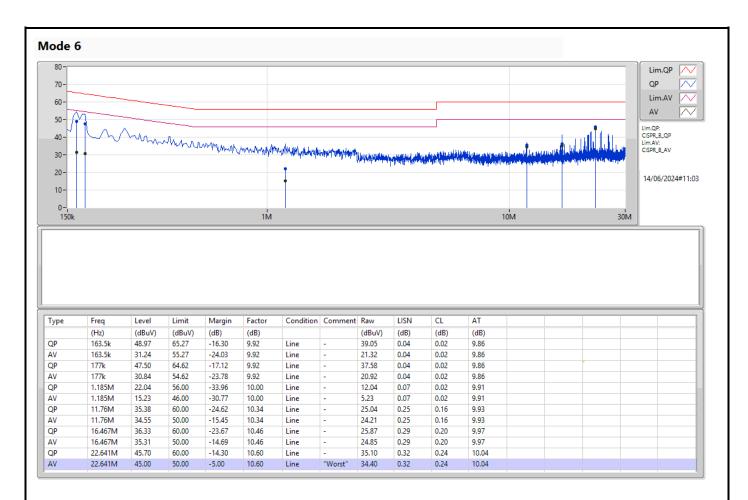
Conducted Emissions at Powerline

Appendix A

Summary							
Mode	Result	Туре	Freq	Level	Limit	Margin	Condition
			(Hz)	(dBuV)	(dBuV)	(dB)	
Mode 6	Pass	AV	22.641M	45.00	50.00	-5.00	Line

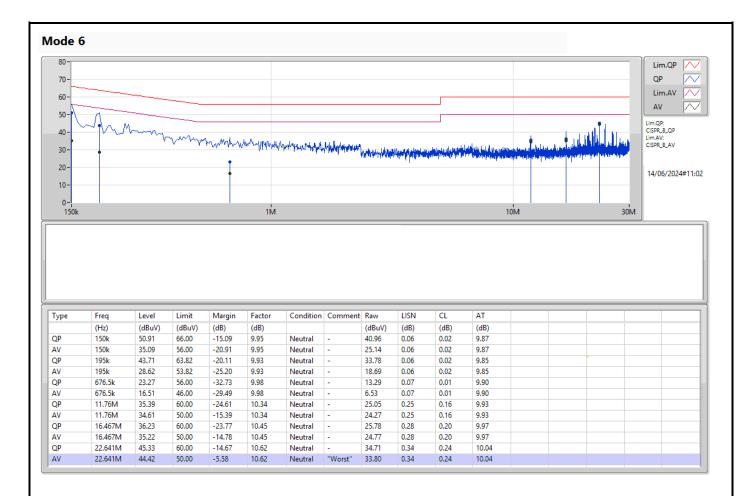














Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	9.95M	13.434M	13M4G1D	9.575M	13.327M
802.11g_Nss1,(6Mbps)_1TX	16.475M	16.631M	16M6D1D	16.325M	16.504M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.7M	18.965M	19M0D1D	17.075M	18.745M

 $\label{eq:max-NdB} Max\cdot N\,dB = Maximum 6dB \ down \ bandwidth; \ Max-OBW = Maximum 99\% \ occupied \ bandwidth; \ Min-NdB = Minimum 99\% \ occupied \ bandwidth; \ Min-OBW = Minimum 99\% \ occupied \ bandwidth; \ \ ban$



Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	9.575M	13.434M
2437MHz	Pass	500k	9.95M	13.341M
2462MHz	Pass	500k	9.725M	13.327M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	16.325M	16.504M
2437MHz	Pass	500k	16.425M	16.631M
2462MHz	Pass	500k	16.475M	16.623M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	18.7M	18.745M
2437MHz	Pass	500k	17.575M	18.799M
2462MHz	Pass	500k	17.075M	18.965M

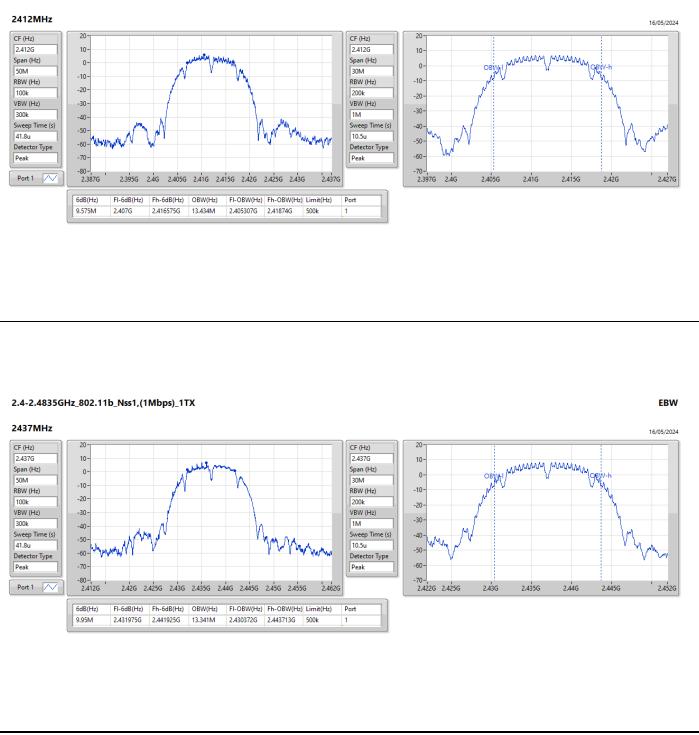
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth



EBW

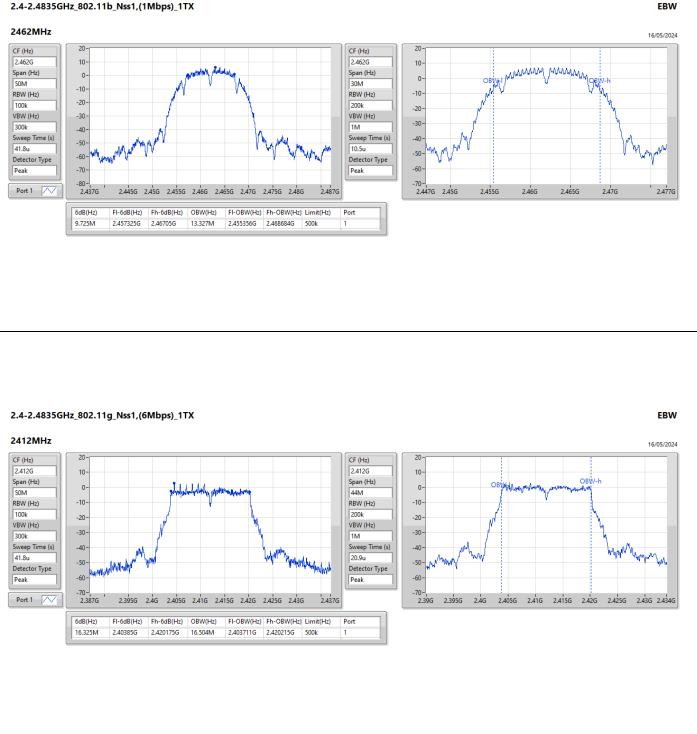


2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX



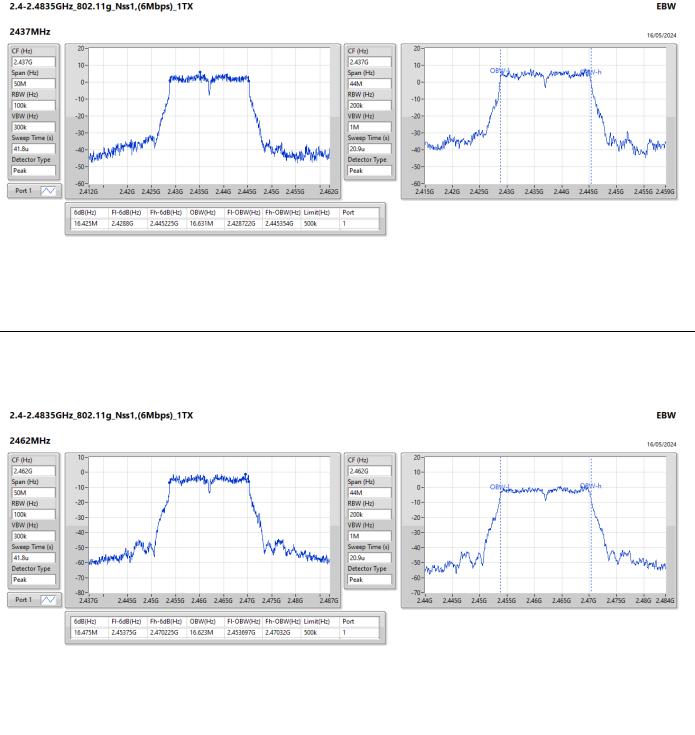






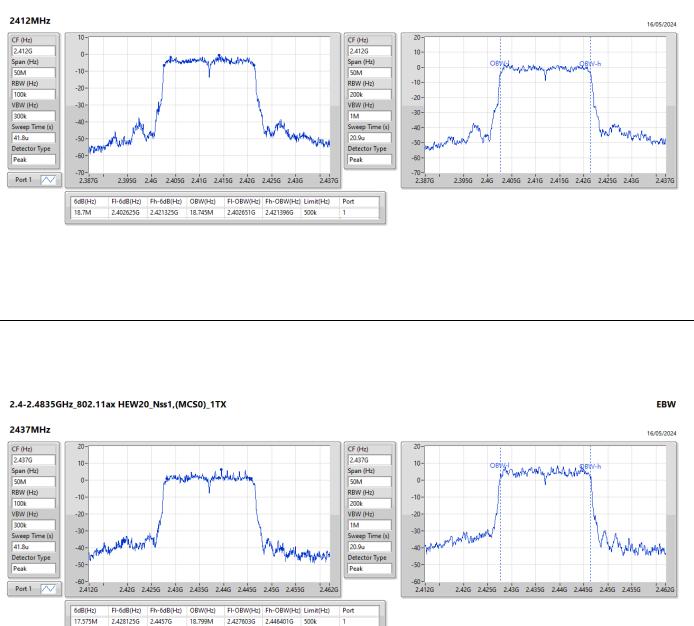






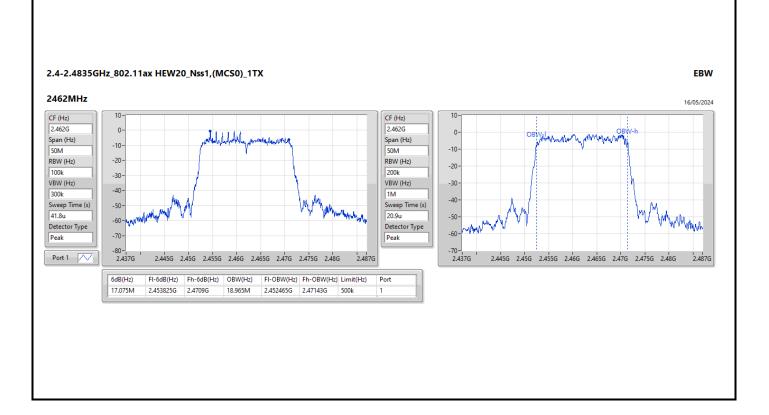


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX



EBW







Appendix C

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	17.62	0.05781
802.11g_Nss1,(6Mbps)_1TX	19.46	0.08831
802.11ax HEW20_Nss1,(MCS0)_1TX	18.99	0.07925



Average Power

Appendix C

Result

Mode	Result	DG	Port 1	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	4.96	16.88	16.88	30.00
2437MHz	Pass	4.96	17.62	17.62	30.00
2462MHz	Pass	4.96	16.31	16.31	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	4.96	13.83	13.83	30.00
2417MHz	Pass	4.96	15.71	15.71	30.00
2437MHz	Pass	4.96	19.46	19.46	30.00
2457MHz	Pass	4.96	18.62	18.62	30.00
2462MHz	Pass	4.96	12.37	12.37	30.00
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	4.96	13.98	13.98	30.00
2417MHz	Pass	4.96	15.81	15.81	30.00
2437MHz	Pass	4.96	18.99	18.99	30.00
2457MHz	Pass	4.96	14.16	14.16	30.00
2462MHz	Pass	4.96	10.41	10.41	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_1TX	-6.49
802.11g_Nss1,(6Mbps)_1TX	-6.63
802.11ax HEW20_Nss1,(MCS0)_1TX	-8.09

RBW = 3kHz;



PSD

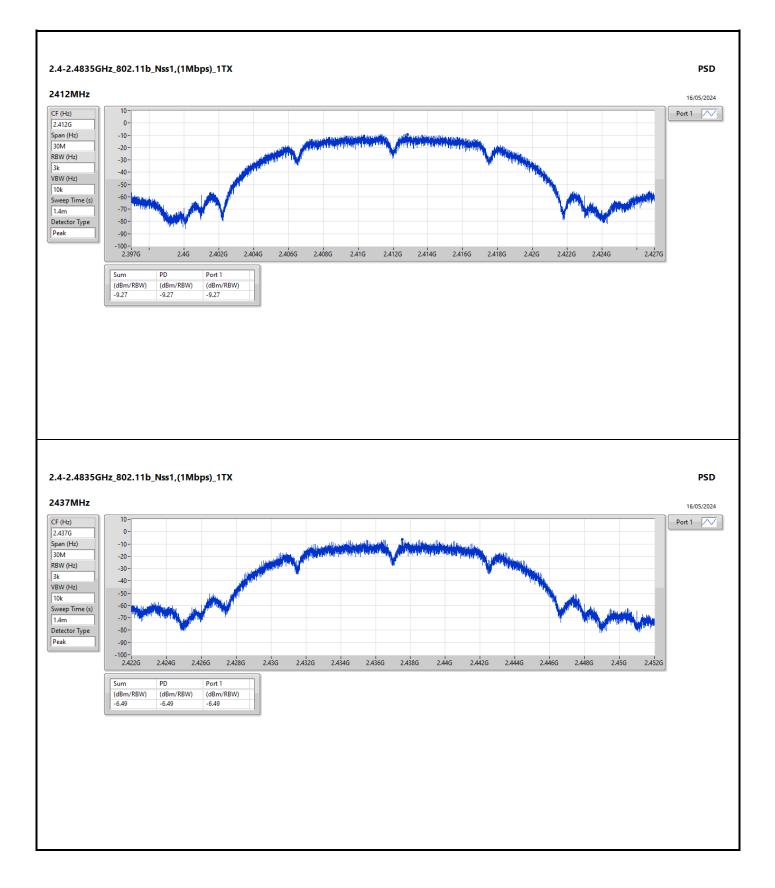
Appendix D

Result

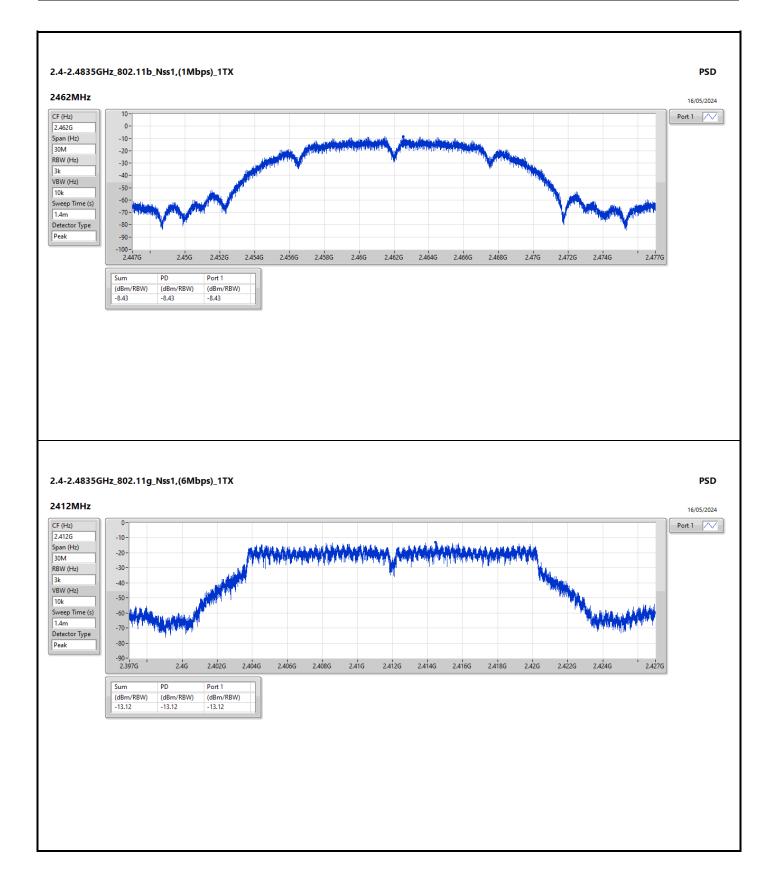
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	4.96	-9.27	-9.27	8.00
2437MHz	Pass	4.96	-6.49	-6.49	8.00
2462MHz	Pass	4.96	-8.43	-8.43	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	4.96	-13.12	-13.12	8.00
2437MHz	Pass	4.96	-6.63	-6.63	8.00
2462MHz	Pass	4.96	-13.61	-13.61	8.00
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	4.96	-12.70	-12.70	8.00
2437MHz	Pass	4.96	-8.09	-8.09	8.00
2462MHz	Pass	4.96	-17.09	-17.09	8.00

DG = Directional Gain: RBW = 3kHz; PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

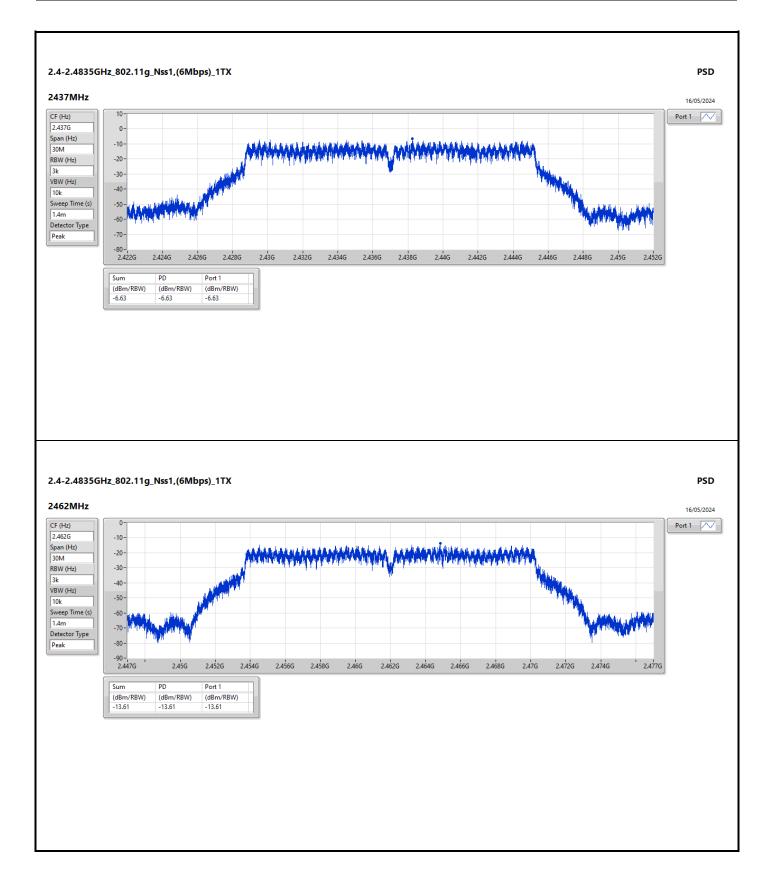




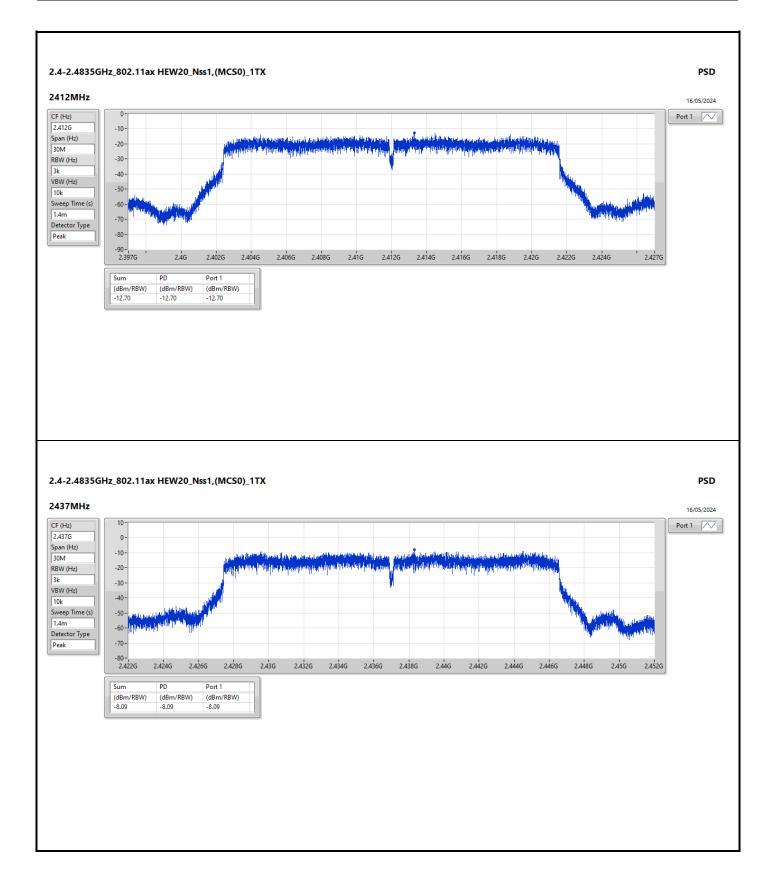




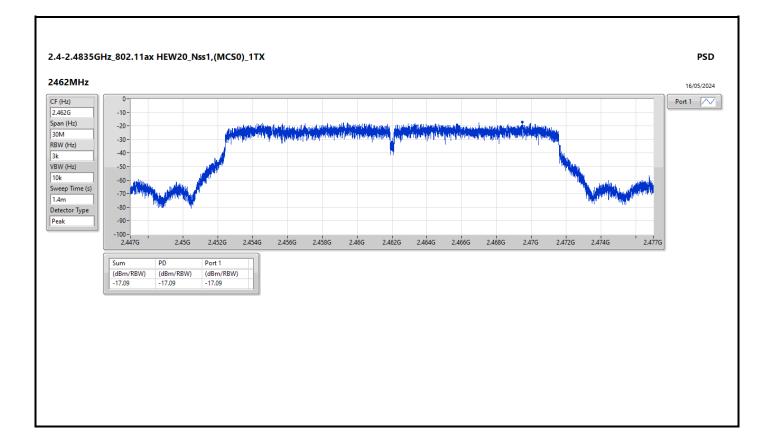














Appendix E

Summary

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-		-	-		-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	2.43841G	7.58	-22.42	2.13749G	-54.16	2.39704G	-41.55	2.4G	-52.72	2.50622G	-53.08	21.8561G	-48.98	1
802.11g_Nss1,(6Mbps)_1TX	Pass	2.44459G	8.94	-21.06	1.894G	-54.01	2.39728G	-38.33	2.4G	-44.70	2.51702G	-53.37	21.98815G	-47.81	1
802.11ax HEW20_Nss1,(MCS0)_1TX	Pass	2.44459G	8.55	-21.45	2.14797G	-53.30	2.39744G	-36.08	2.4G	-44.37	2.5059G	-53.22	21.87015G	-49.14	1

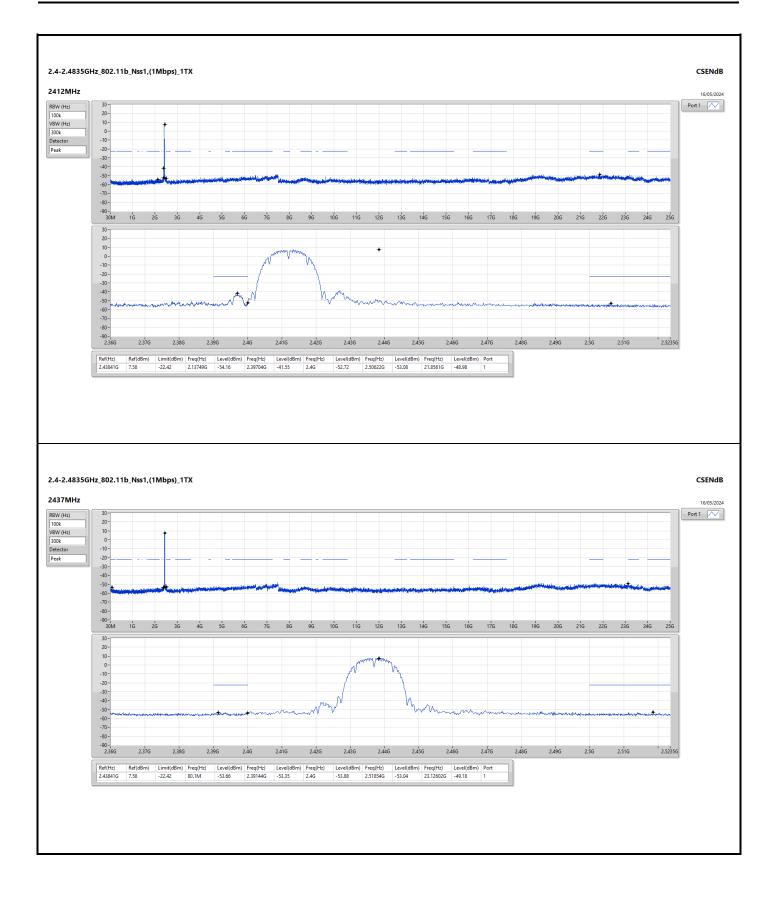


Appendix E

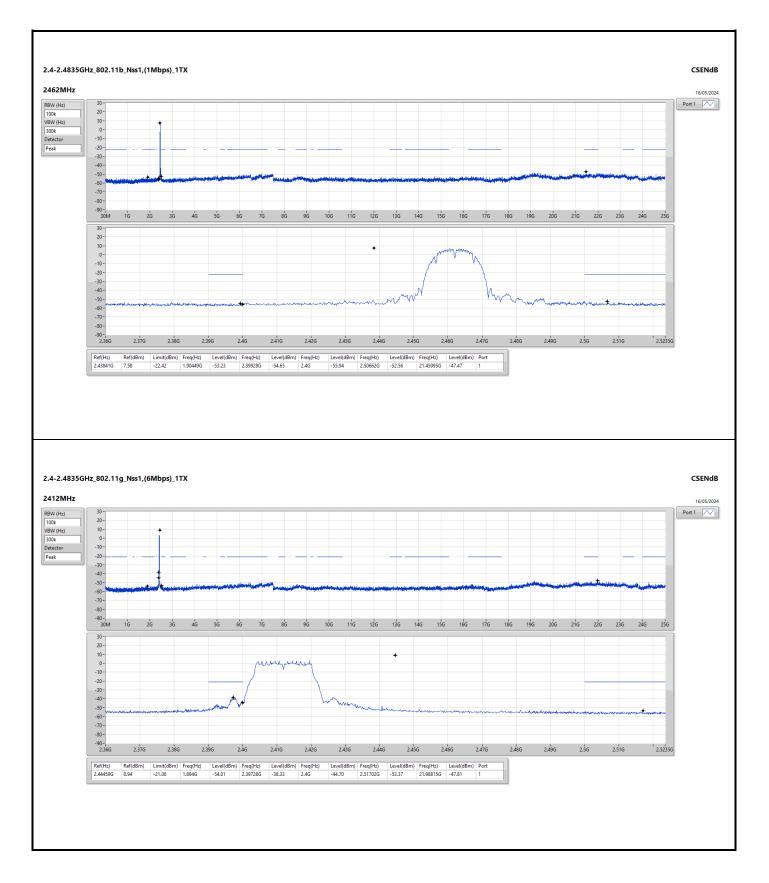
Result

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
802.11b_Nss1,(1Mbps)_1TX	-		-	-	-	-	-	-	-	-	-	-		-	-
2412MHz	Pass	2.43841G	7.58	-22.42	2.13749G	-54.16	2.39704G	-41.55	2.4G	-52.72	2.50622G	-53.08	21.8561G	-48.98	1
2437MHz	Pass	2.43841G	7.58	-22.42	80.1M	-53.66	2.39144G	-53.35	2.4G	-53.88	2.51854G	-53.04	23.12602G	-49.18	1
2462MHz	Pass	2.43841G	7.58	-22.42	1.90449G	-53.23	2.39928G	-54.65	2.4G	-55.94	2.50662G	-52.56	21.45995G	-47.47	1
802.11g_Nss1,(6Mbps)_1TX	-		-	-	-	-	-	-	-	-	-	-		-	-
2412MHz	Pass	2.44459G	8.94	-21.06	1.894G	-54.01	2.39728G	-38.33	2.4G	-44.70	2.51702G	-53.37	21.98815G	-47.81	1
2437MHz	Pass	2.44459G	8.94	-21.06	1.78566G	-53.31	2.39952G	-44.57	2.4G	-45.25	2.50318G	-49.06	21.59762G	-48.81	1
2462MHz	Pass	2.44459G	8.94	-21.06	2.06875G	-53.64	2.39232G	-53.71	2.4G	-56.02	2.50166G	-52.49	21.52457G	-48.92	1
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-		-	-
2412MHz	Pass	2.44459G	8.55	-21.45	2.14797G	-53.30	2.39744G	-36.08	2.4G	-44.37	2.5059G	-53.22	21.87015G	-49.14	1
2437MHz	Pass	2.44459G	8.55	-21.45	46.31M	-53.24	2.39992G	-44.95	2.4G	-46.24	2.50006G	-51.08	21.99096G	-49.15	1
2462MHz	Pass	2.44459G	8.55	-21.45	1.72391G	-53.06	2.39648G	-54.11	2.4G	-55.30	2.5195G	-51.75	21.64257G	-49.17	1

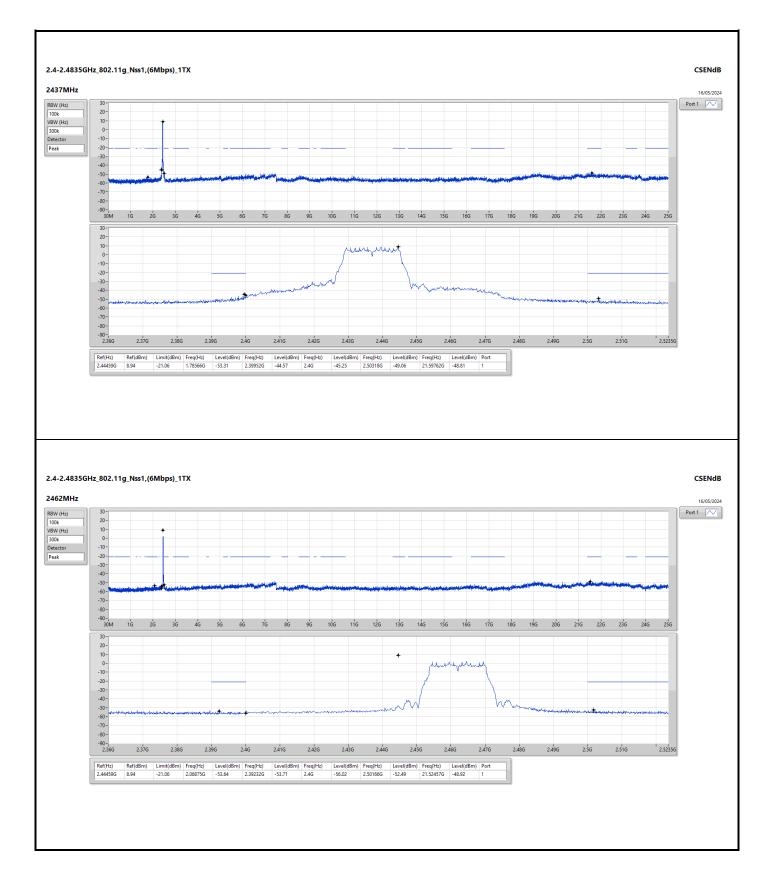




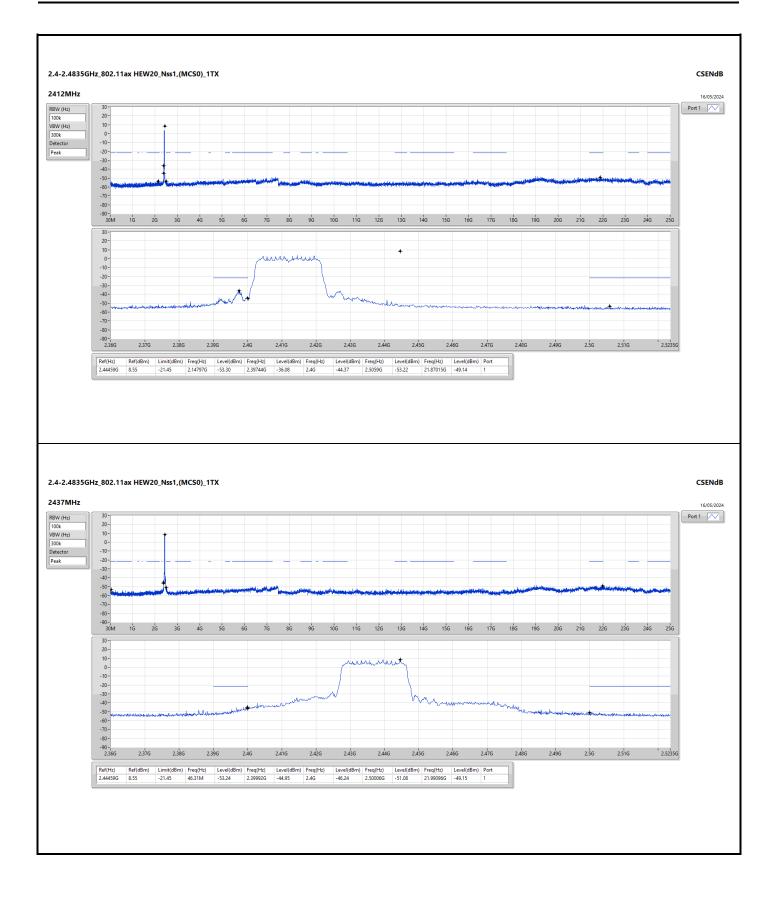




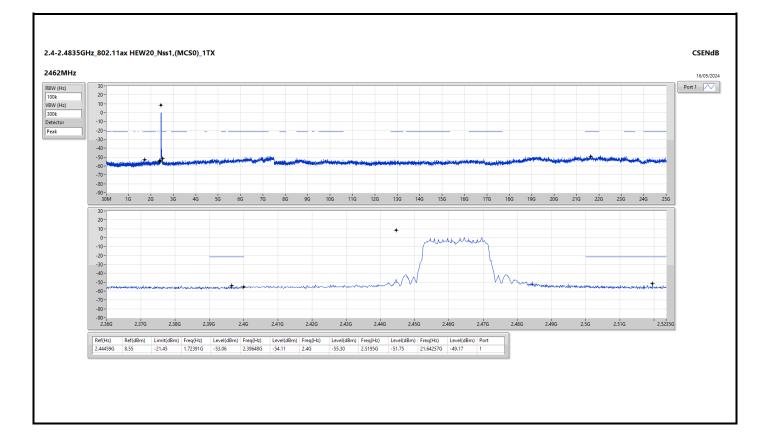














Radiated Emissions below 1GHz

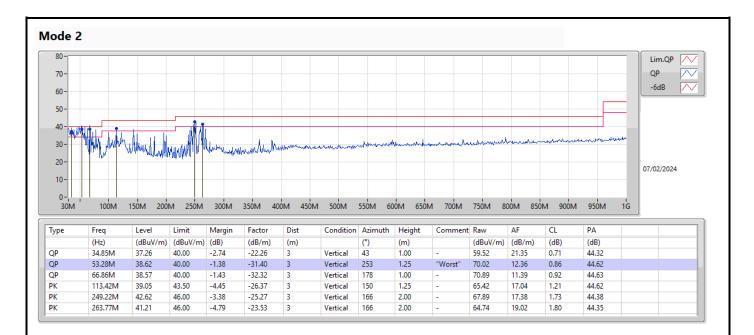
Appendix F.1

Summary							
Mode	Result	Туре	Freq	Level	Limit	Margin	Condition
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	
Mode 2	Pass	QP	53.28M	38.62	40.00	-1.38	Vertical



Radiated Emissions below 1GHz

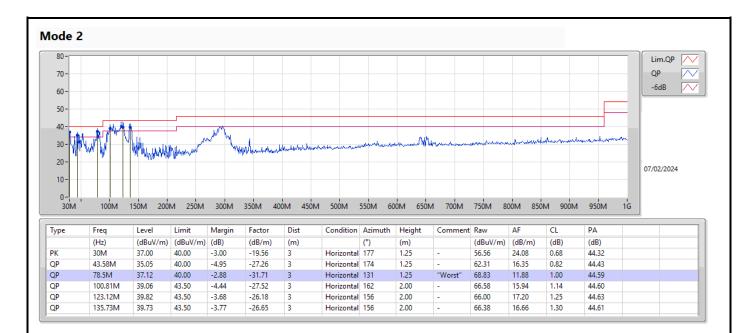
Appendix F.1





Radiated Emissions below 1GHz

Appendix F.1





RSE TX above 1GHz_Dipole Antenna

Appendix F.2

Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-			-	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_1TX	Pass	AV	2.3896G	52.80	54.00	-1.20	3	Vertical	38	2.02	-



2.4138G

108.18

Inf

-Inf

75.85

3

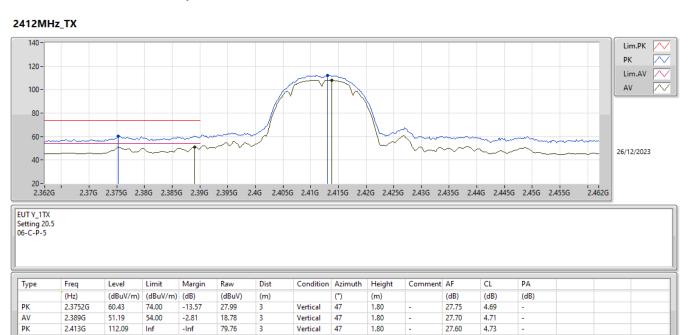
Vertical

47

1.80

Appendix F.2

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX



27.60

4.73



2.4138G

99.46

Inf

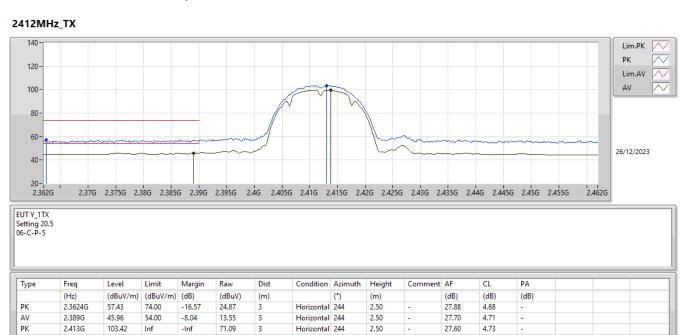
-Inf

67.13

3

Appendix F.2

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX



Horizontal 244

2.50

27.60

4.73



4.824G

43.81

54.00

-10.19

36.30

3

Vertical

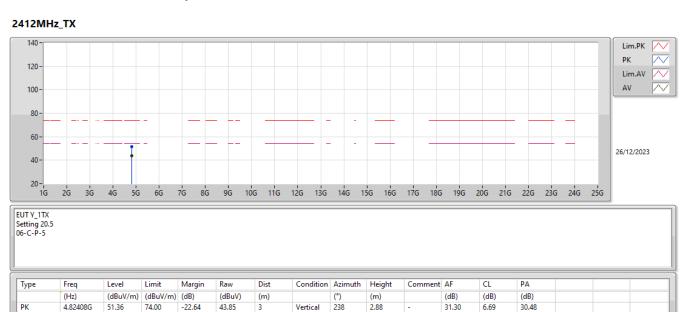
238

2.88

31.30

6.69

30.48





4.824G

48.70

54.00

-5.30

41.19

3

Horizontal 135

1.77

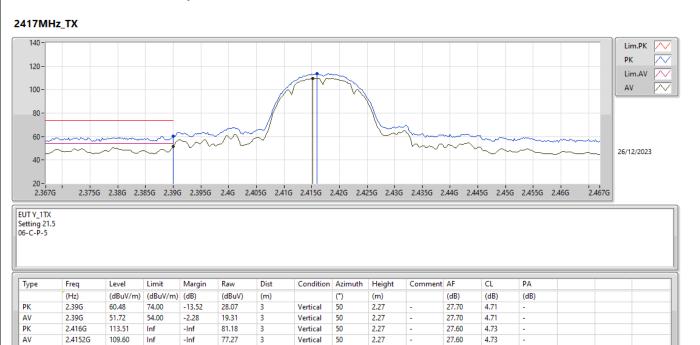
31.30

6.69

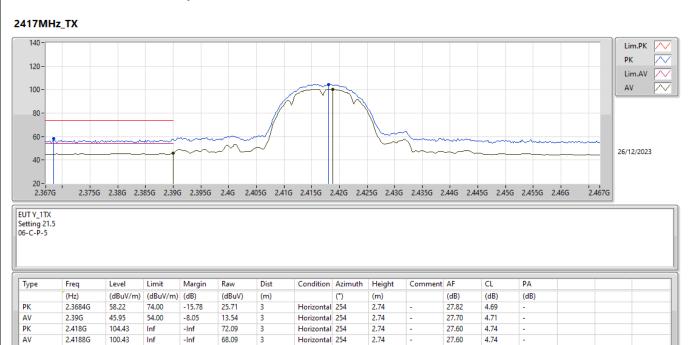
30.48



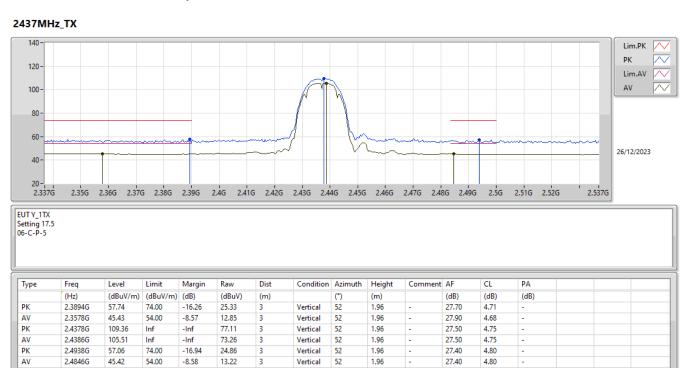




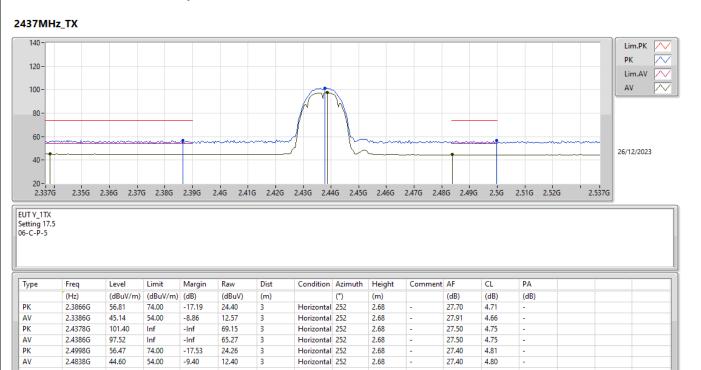




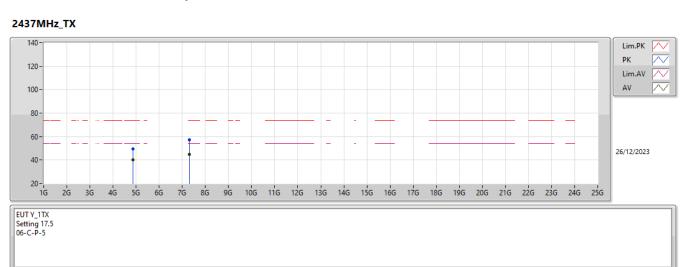






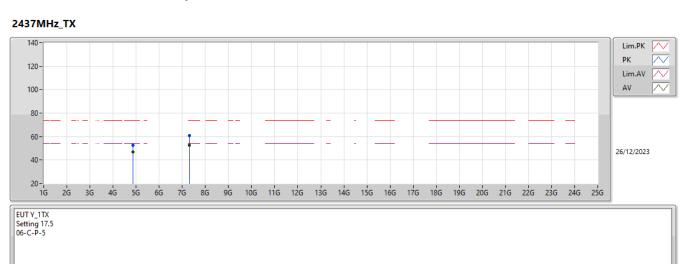






Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.8742G	49.30	74.00	-24.70	41.71	3	Vertical	80	1.93	-	31.30	6.73	30.44		
AV	4.874G	40.27	54.00	-13.73	32.68	3	Vertical	80	1.93	-	31.30	6.73	30.44		
PK	7.30928G	57.28	74.00	-16.72	43.73	3	Vertical	40	1.88	-	36.60	8.34	31.39		
AV	7.31028G	45.06	54.00	-8.94	31.51	3	Vertical	40	1.88	-	36.60	8.34	31.39		





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
PK	4.874G	52.33	74.00	-21.67	44.74	3	Horizontal	132	1.80	-	31.30	6.73	30.44		
AV	4.874G	46.73	54.00	-7.27	39.14	3	Horizontal	132	1.80	-	31.30	6.73	30.44		
PK	7.31356G	60.79	74.00	-13.21	47.24	3	Horizontal	242	2.95	-	36.60	8.34	31.39		
AV	7.31028G	52.41	54.00	-1.59	38.86	3	Horizontal	242	2.95	-	36.60	8.34	31.39		



2.4878G

50.09

54.00

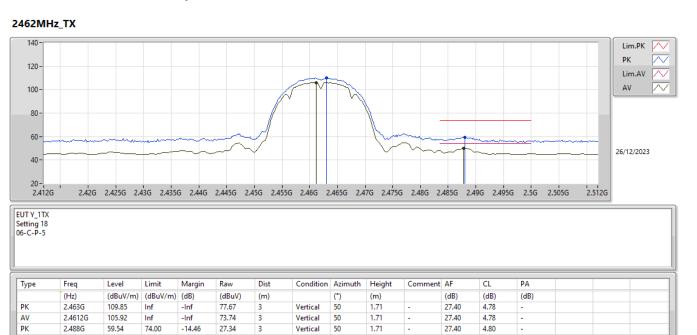
-3.91

17.89

3

Appendix F.2

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX



50

Vertical

1.71

27.40

4.80



РК

AV

2.4862G

2.4878G

56.73

45.44

74.00

54.00

-17.27

-8.56

24.53

13.24

3

3

Horizontal 252

Horizontal 252

2.62

2.62

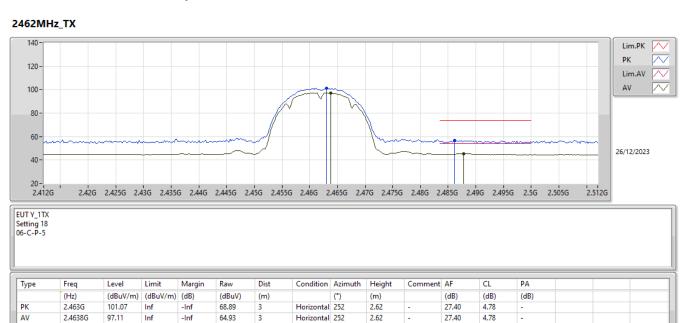
27.40

27.40

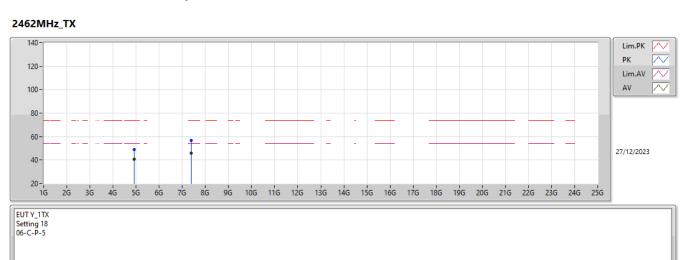
4.80

4.80

Appendix F.2

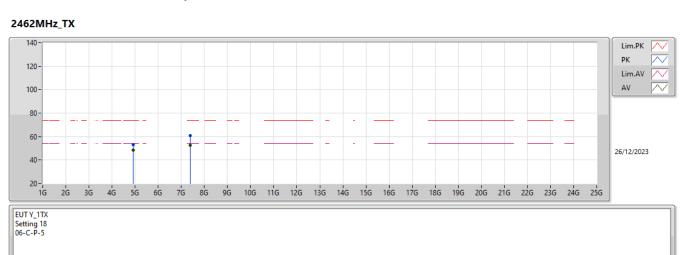






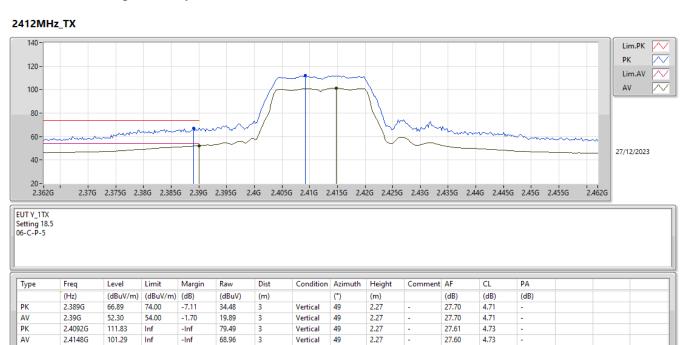
Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.92412G	49.22	74.00	-24.78	41.44	3	Vertical	11	1.23	-	31.40	6.78	30.40		
AV	4.924G	40.91	54.00	-13.09	33.13	3	Vertical	11	1.23	-	31.40	6.78	30.40		
PK	7.39184G	56.51	74.00	-17.49	42.87	3	Vertical	113	2.33	-	36.60	8.34	31.30		
AV	7.38764G	45.70	54.00	-8.30	32.06	3	Vertical	113	2.33	-	36.60	8.34	31.30		





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.92392G	53.15	74.00	-20.85	45.37	3	Horizontal	129	1.80	-	31.40	6.78	30.40		
AV	4.924G	48.26	54.00	-5.74	40.48	3	Horizontal	129	1.80	-	31.40	6.78	30.40		
PK	7.38452G	61.10	74.00	-12.90	47.46	3	Horizontal	200	2.50	-	36.60	8.34	31.30		
AV	7.38524G	52.73	54.00	-1.27	39.09	3	Horizontal	200	2.50	-	36.60	8.34	31.30		







2.4146G

92.07

Inf

-Inf

59.74

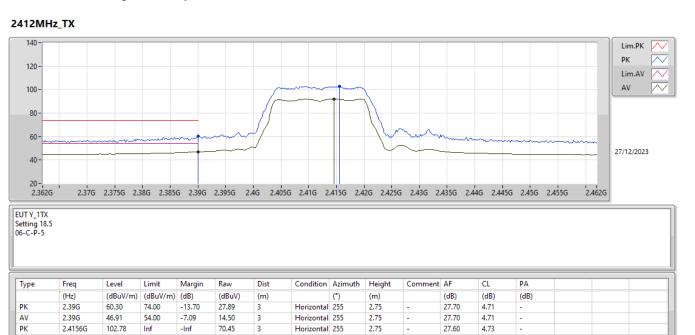
3

Horizontal 255

2.75

Appendix F.2

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX



27.60



4.82864G

35.04

54.00

-18.96

27.53

3

Vertical

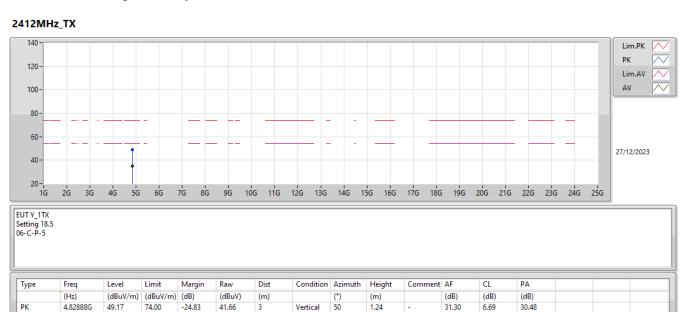
50

1.24

31.30

6.69

30.48





4.82564G

36.58

54.00

-17.42

29.07

3

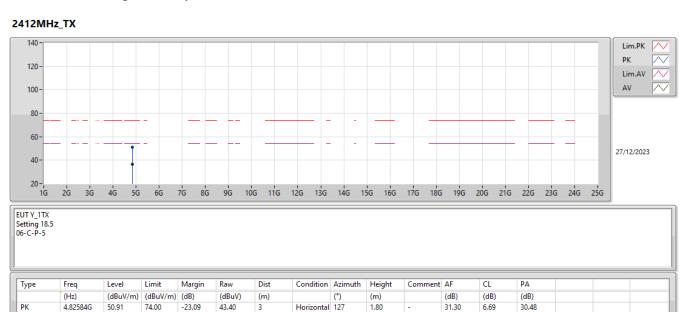
Horizontal 127

1.80

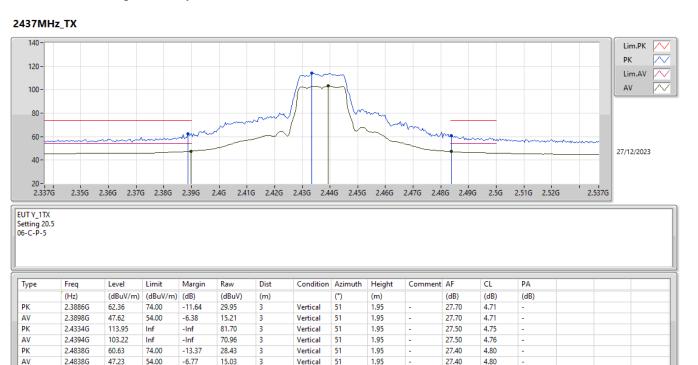
31.30

6.69

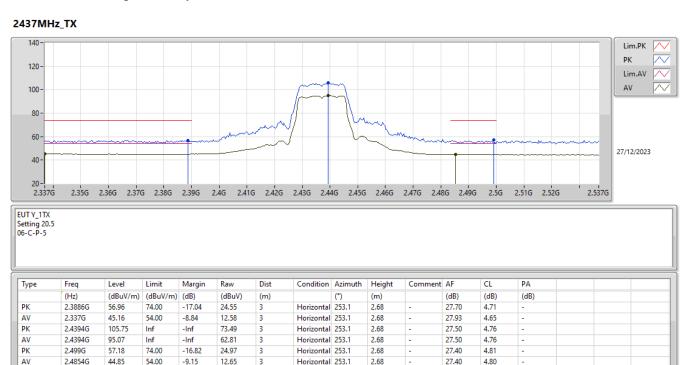
30.48



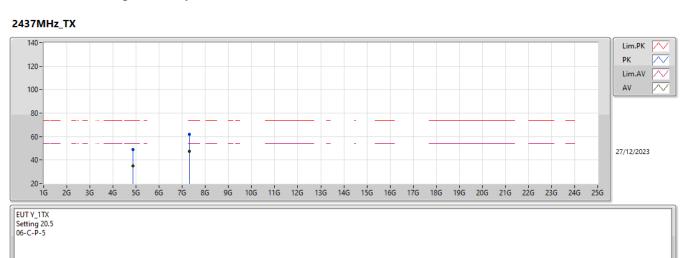






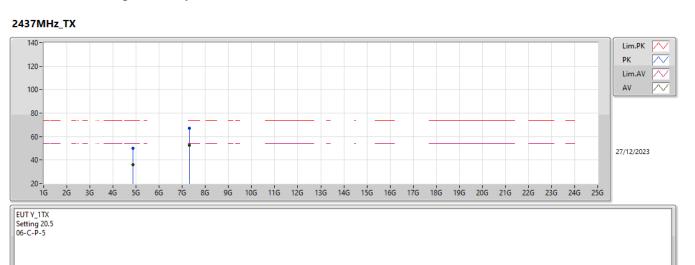






Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
PK	4.86932G	48.99	74.00	-25.01	41.40	3	Vertical	120	1.69	-	31.30	6.73	30.44		
AV	4.86476G	34.84	54.00	-19.16	27.26	3	Vertical	120	1.69	-	31.30	6.73	30.45		
РК	7.314G	61.96	74.00	-12.04	48.41	3	Vertical	7	2.89	-	36.60	8.34	31.39		
AV	7.3137G	47.22	54.00	-6.78	33.67	3	Vertical	7	2.89	-	36.60	8.34	31.39		





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.87286G	49.93	74.00	-24.07	42.34	3	Horizontal	263	1.66	-	31.30	6.73	30.44		
AV	4.8749G	36.02	54.00	-17.98	28.43	3	Horizontal	263	1.66	-	31.30	6.73	30.44		
PK	7.30974G	67.22	74.00	-6.78	53.67	3	Horizontal	247	2.98	-	36.60	8.34	31.39		
AV	7.3101G	52.63	54.00	-1.37	39.08	3	Horizontal	247	2.98	-	36.60	8.34	31.39		







2.4835G

46.74

54.00

-7.26

14.54

3

Horizontal 252

2.62

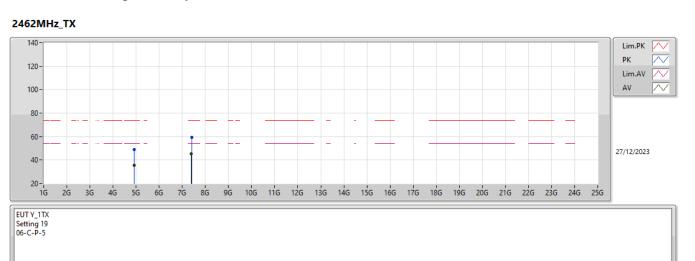
Appendix F.2

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX



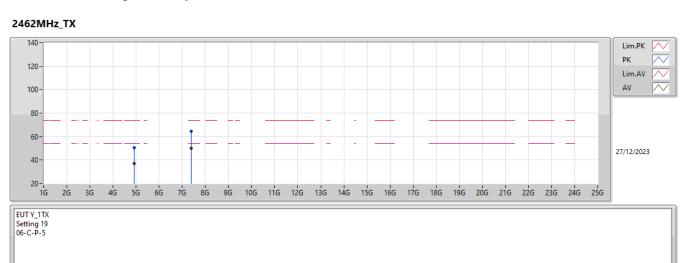
27.40





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.92496G	48.92	74.00	-25.08	41.14	3	Vertical	249	1.80	-	31.40	6.78	30.40		
AV	4.92416G	35.71	54.00	-18.29	27.93	3	Vertical	249	1.80	-	31.40	6.78	30.40		
PK	7.40176G	59.21	74.00	-14.79	45.55	3	Vertical	17	1.78	-	36.60	8.34	31.28		
AV	7.38656G	45.29	54.00	-8.71	31.65	3	Vertical	17	1.78	-	36.60	8.34	31.30		





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
PK	4.92528G	50.64	74.00	-23.36	42.86	3	Horizontal	131	1.79	-	31.40	6.78	30.40		
AV	4.92288G	36.83	54.00	-17.17	29.07	3	Horizontal	131	1.79	-	31.39	6.77	30.40		
PK	7.3826G	64.29	74.00	-9.71	50.66	3	Horizontal	244	2.94	-	36.60	8.34	31.31		
AV	7.3854G	49.80	54.00	-4.20	36.16	3	Horizontal	244	2.94	-	36.60	8.34	31.30		



РК

AV

2.4144G

2.4146G

111.95

99.10

Inf

Inf

-Inf

-Inf

79.62

66.77

3

3

Vertical

Vertical

38

38

2.04

2.04

27.60

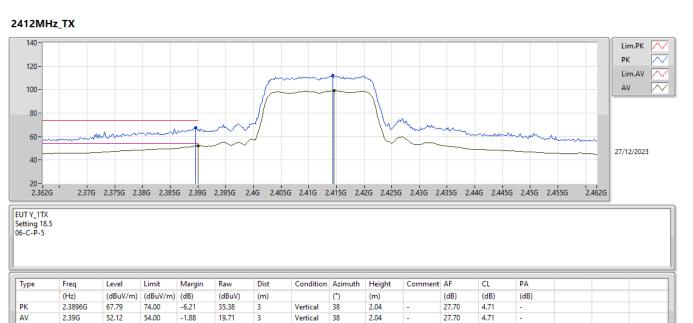
27.60

4.73

4.73

Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX





РК

AV

2.4144G

2.4044G

103.77

90.75

Inf

Inf

-Inf

-Inf

71.44

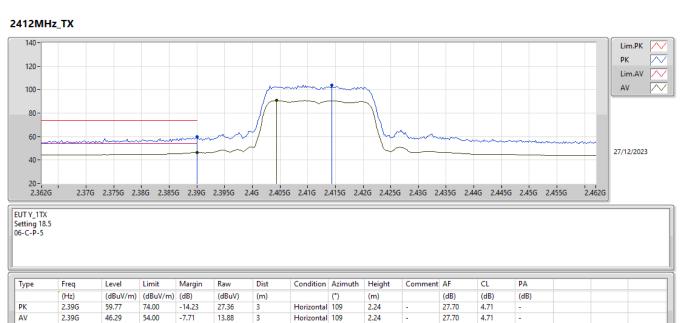
58.37

3

3

Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX



Horizontal 109

Horizontal 109

2.24

2.24

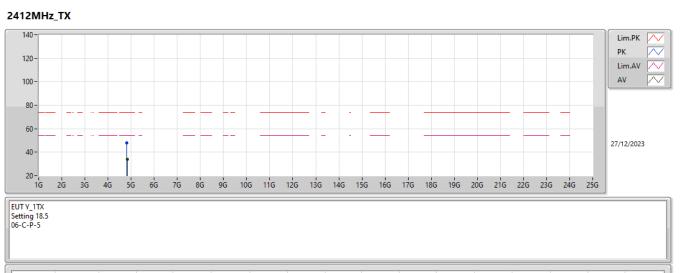
27.60

27.66

4.73



2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX



Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.81912G	48.04	74.00	-25.96	40.54	3	Vertical	171	1.90	-	31.30	6.69	30.49		
AV	4.82972G	34.07	54.00	-19.93	26.55	3	Vertical	171	1.90	-	31.30	6.70	30.48		



Lim.PK PK

Lim.AV AV

27/12/2023

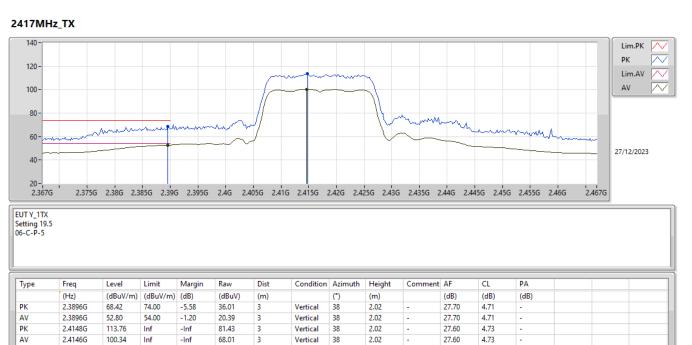
2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX 2412MHz_TX

80-60-40-16 26 36 46 56 66 76 86 96 106 116 126 136 146 156 166 176 186 196 206 216 226 236 246 256 EUTY_TX Setting 18.5 06-C-P-5

Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.82296G	49.57	74.00	-24.43	42.07	3	Horizontal	232	1.80	-	31.30	6.69	30.49		
AV	4.82504G	35.45	54.00	-18.55	27.94	3	Horizontal	232	1.80	-	31.30	6.69	30.48		



2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX





2.4198G

92.09

Inf

-Inf

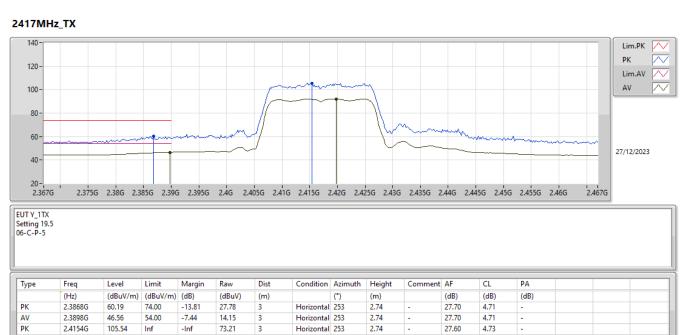
59.75

3

AV

Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX



Horizontal 253

2.74

27.60



AV PK

AV

2.4294G

2.4838G

2.4835G

102.08

65.12

48.92

Inf

74.00

54.00

-Inf

-8.88

-5.08

69.82

32.92

16.72

3

3

3

Vertical

Vertical

Vertical

34

34

34

1.94

1.94

1.94

27.51

27.40

27.40

4.75

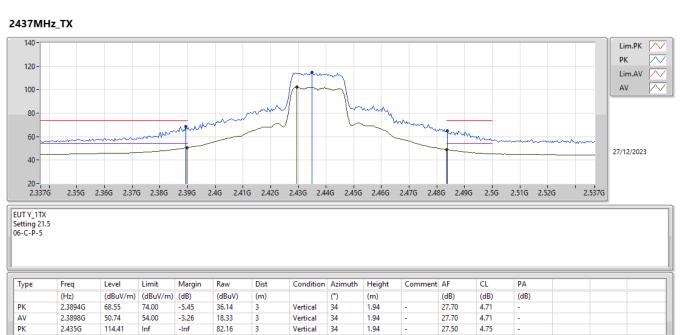
4.80

4.80

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Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX





2.4394G

2.4902G

2.4835G

AV

94.31

58.28

44.98

Inf

74.00

54.00

-Inf

-15.72

-9.02

62.05

26.08

12.78

3

3

3

Horizontal 255

Horizontal 255

Horizontal 255

2.66

2.66

2.66

27.50

27.40

27.40

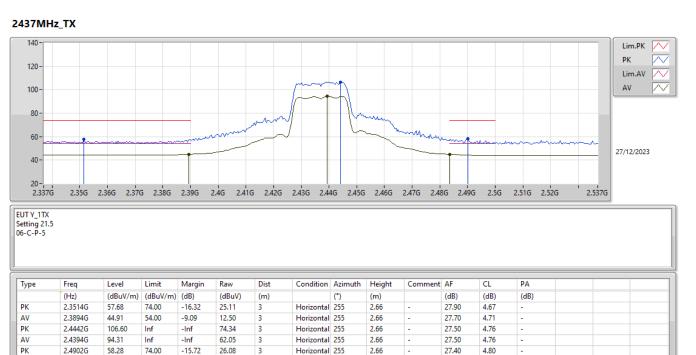
4.76

4.80

4.80

Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX





РК

AV

7.3086G

7.30964G

60.82

46.40

74.00

54.00

-13.18

-7.60

47.27

32.85

3

3

Vertical

Vertical

254.3

254.3

2.54

2.54

36.60

36.60

8.34

8.34

31.39

31.39

Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX 2437MHz_TX 140-Lim.PK РК 120-Lim.AV AV 100 80-60· 27/12/2023 40-20-¦ 1G зĠ 4G 7Ġ 9Ġ 10G 11G 12G 13G 14G 15G 16G 17G 18G 19G 20G 21G 22G 23G 24G 25G 2G 5Ġ 6G 8Ġ EUT Y_1TX Setting 21.5 06-C-P-5 Туре Freq Level Limit Margin Raw Dist Condition Azimuth Height Comment AF CL PA (Hz) (dBuV/m) (dBuV/m) (dB) (dBuV) (m) (dB) (dB) (dB) (°) (m) 150 PK 4.88912G 47.19 74.00 -26.81 39.57 3 Vertical 1.93 31.30 6.75 30.43 AV 4.86704G 33.63 54.00 -20.37 26.05 3 Vertical 150 1.93 31.30 6.73 30.45



РК

AV

4.87272G

7.31028G

7.31244G

34.46

66.90

52.41

54.00

74.00

54.00

-19.54

-7.10

-1.59

26.87

53.35

38.86

3

3

3

Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX 2437MHz_TX 140-Lim.PK РК 120-Lim.AV AV 100 80-60· 27/12/2023 40-20-¦ 1G зĠ 4G 7Ġ 9G 10G 11G 12G 13G 14G 15G 16G 17G 18G 19G 20G 21G 22G 23G 24G 25G 2G 5Ġ 6G 8Ġ EUT Y_1TX Setting 21.5 06-C-P-5 Туре Freq Level Limit Margin Raw Dist Condition Azimuth Height Comment AF CL PA (Hz) (dBuV/m) (dBuV/m) (dB) (dBuV) (m) (dB) (dB) (dB) (°) (m) PK 4.87192G 48.80 74.00 -25.20 41.21 3 Horizontal 237 1.57 31.30 6.73 30.44

Horizontal 237

Horizontal 223

Horizontal 223

1.57

2.87

2.87

31.30

36.60

36.60

6.73

8.34

8.34

30.44

31.39



2.4835G

52.20

54.00

-1.80

20.00

3

Vertical

30

1.72

Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX



27.40



РК

AV

2.4946G

2.4835G

58.11

45.91

74.00

54.00

-15.89

-8.09

25.90

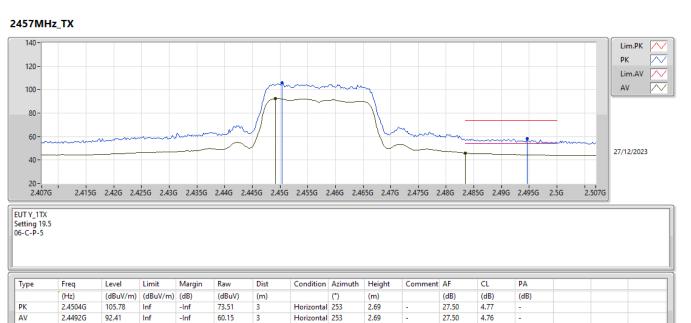
13.71

3

3

Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX



Horizontal 253

Horizontal 253

2.69

2.69

27.40

27.40

4.81



РК

AV

2.4866G

2.4835G

66.16

52.40

74.00

54.00

-7.84

-1.60

33.96

20.20

3

3

Vertical

Vertical

30

30

1.70

1.70

27.40

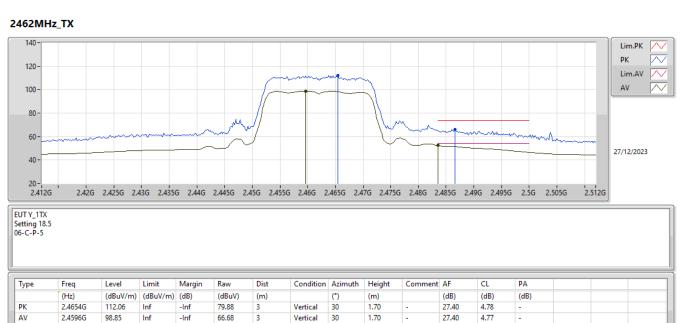
27.40

4.80

4.80

Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX





РК

AV

2.4646G

2.4835G

2.4835G

90.77

59.07

46.86

Inf

74.00

54.00

-Inf

-14.93

-7.14

58.59

26.87

14.66

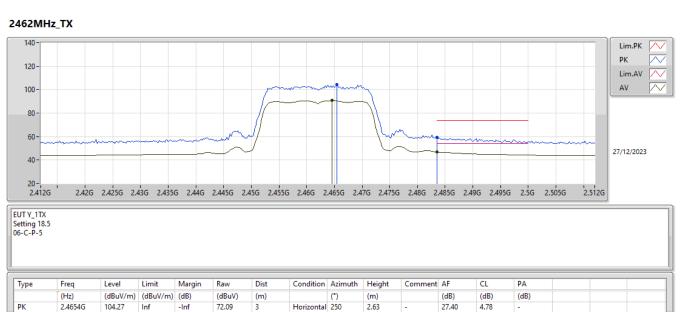
3

3

3

Appendix F.2

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX



Horizontal 250

Horizontal 250

Horizontal 250

2.63

2.63

2.63

27.40

27.40

27.40

4.78

4.80

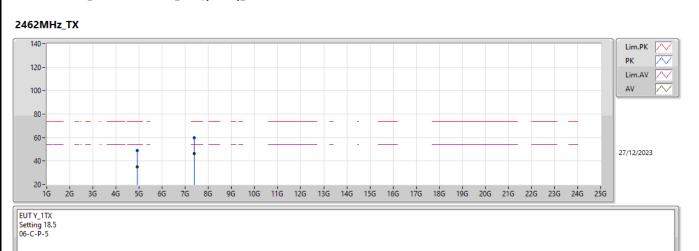


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX 2462MHz_TX 140-Lim.PK РК 120-Lim.AV AV 100-80-60-27/12/2023 40-20-| 1G 2G 3G 4G 5G 6G 7Ġ 8G 9G 10G 11G 12G 13G 14G 15G 16G 17G 18G 19G 20G 21G 22G 23G 24G 25G EUT Y_1TX Setting 18.5 06-C-P-5

Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA	
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)	
PK	4.92888G	47.50	74.00	-26.50	39.69	3	Vertical	173	1.28	-	31.42	6.78	30.39	
AV	4.92416G	34.03	54.00	-19.97	26.25	3	Vertical	173	1.28	-	31.40	6.78	30.40	
PK	7.38944G	57.57	74.00	-16.43	43.93	3	Vertical	214	2.41	-	36.60	8.34	31.30	
AV	7.3864G	43.74	54.00	-10.26	30.10	3	Vertical	214	2.41	-	36.60	8.34	31.30	



2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX



Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
PK	4.91512G	49.20	74.00	-24.80	41.47	3	Horizontal	236	1.80	-	31.36	6.77	30.40		
AV	4.92384G	35.20	54.00	-18.80	27.42	3	Horizontal	236	1.80	-	31.40	6.78	30.40		
PK	7.38872G	60.04	74.00	-13.96	46.40	3	Horizontal	223	2.42	-	36.60	8.34	31.30		
AV	7.38592G	46.36	54.00	-7.64	32.72	3	Horizontal	223	2.42	-	36.60	8.34	31.30		



RSE TX above 1GHz_PCB Antenna

Appendix F.3

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz		-	-	-	-	-	-	-	-	-	-
802.11g_Nss1,(6Mbps)_1TX	Pass	AV	2.39G	52.90	54.00	-1.10	3	Horizontal	314	2.27	-



2.4138G

101.66

Inf

-Inf

70.19

3

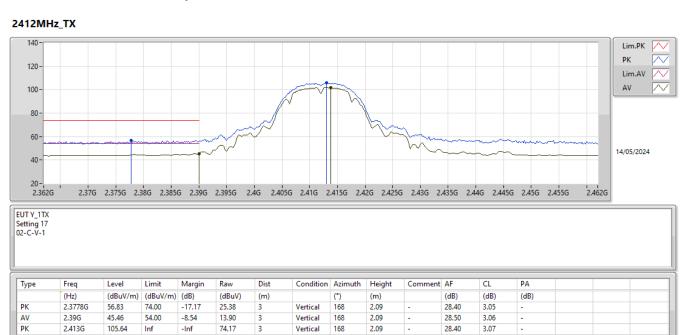
Vertical

168

2.09

Appendix F.3

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX



28.40



РК

AV

2.413G

2.4128G

110.07

105.98

Inf

Inf

-Inf

-Inf

78.60

74.51

3

3

Horizontal 211

Horizontal 211

2.49

2.49

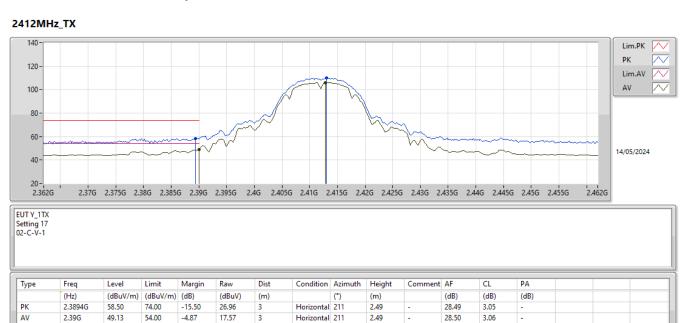
28.40

28.40

3.07

3.07

Appendix F.3



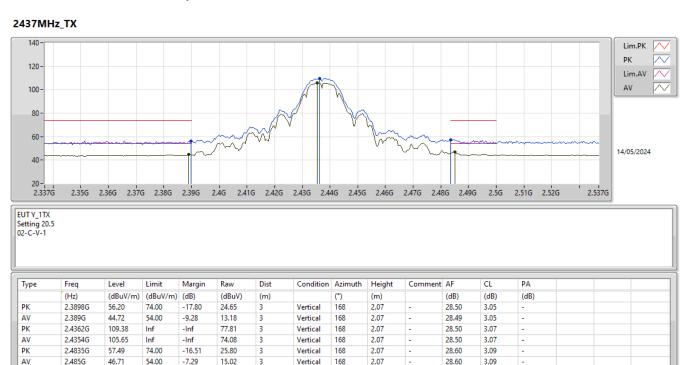














2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2.4354G

2.485G

2.485G

AV

110.00

59.57

49.48

Inf

74.00

54.00

-Inf

-14.43

-4.52

78.43

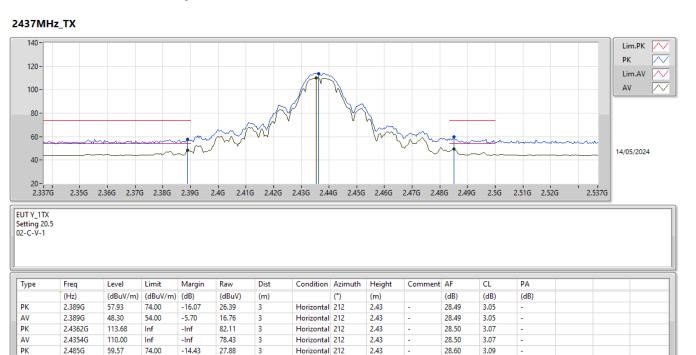
27.88

17.79

3

3

3



Horizontal 212

Horizontal 212

Horizontal 212

2.43

2.43

2.43

28.50

28.60

28.60

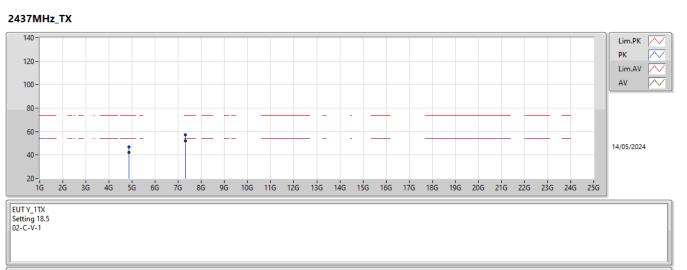
3.07

3.09

3.09

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Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.87388G	47.12	74.00	-26.88	74.29	3	Vertical	168	1.85	-	33.25	5.11	65.53		
AV	4.874G	42.38	54.00	-11.62	69.55	3	Vertical	168	1.85	-	33.25	5.11	65.53		
PK	7.3119G	57.17	74.00	-16.83	80.42	3	Vertical	36	1.99	-	36.45	6.51	66.21		
AV	7.31172G	51.99	54.00	-2.01	75.24	3	Vertical	36	1.99	-	36.45	6.51	66.21		



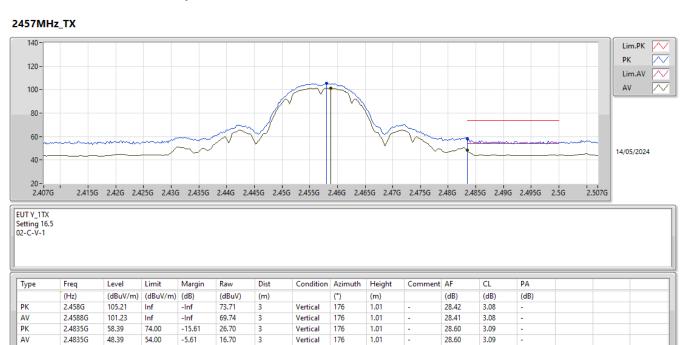
2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX



Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.87406G	48.58	74.00	-25.42	75.75	3	Horizontal	50	1.77	-	33.25	5.11	65.53		
AV	4.874G	44.51	54.00	-9.49	71.68	3	Horizontal	50	1.77	-	33.25	5.11	65.53		
PK	7.3119G	57.22	74.00	-16.78	80.47	3	Horizontal	333	2.05	-	36.45	6.51	66.21		
AV	7.31172G	52.12	54.00	-1.88	75.37	3	Horizontal	333	2.05	-	36.45	6.51	66.21		

Sporton International Inc. Hsinchu Laboratory







2.4835G

52.09

54.00

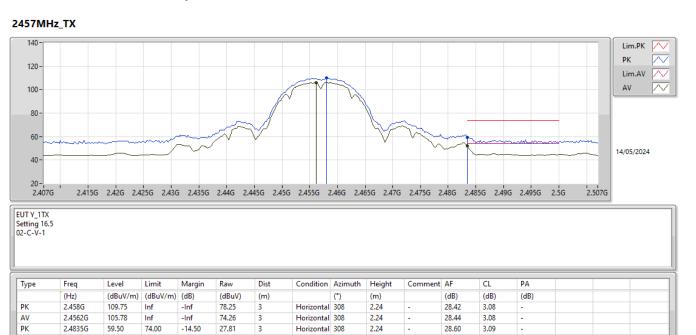
-1.91

20.40

3

Appendix F.3

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX



Horizontal 308

2.24

28.60

3.09



2.4835G

48.02

54.00

-5.98

16.33

3

Vertical

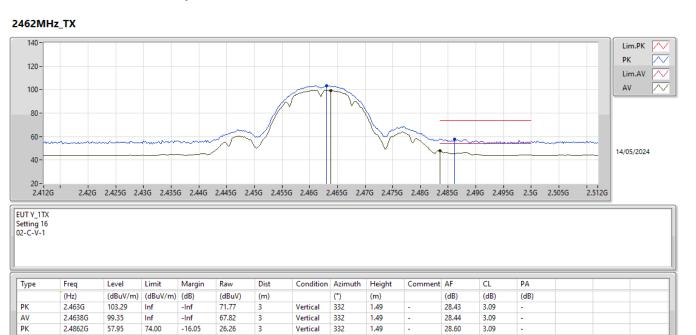
332

1.49

28.60

3.09

Appendix F.3

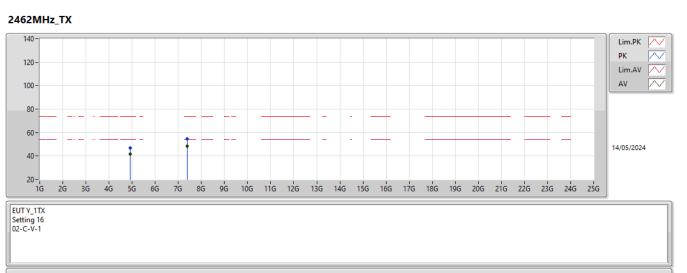






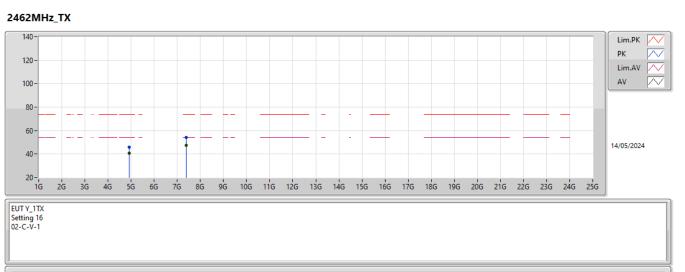
Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	2.461G	108.86	Inf	-Inf	77.37	3	Horizontal	306	2.24	-	28.41	3.08	-		
AV	2.4602G	105.22	Inf	-Inf	73.74	3	Horizontal	306	2.24	-	28.40	3.08	-		
PK	2.4836G	60.24	74.00	-13.76	28.55	3	Horizontal	306	2.24	-	28.60	3.09	-		
AV	2.4835G	51.86	54.00	-2.14	20.17	3	Horizontal	306	2.24	-	28.60	3.09	-		





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.92406G	46.84	74.00	-27.16	73.89	3	Vertical	358	2.43	-	33.35	5.13	65.53		
AV	4.924G	41.97	54.00	-12.03	69.02	3	Vertical	358	2.43	-	33.35	5.13	65.53		
PK	7.3875G	54.83	74.00	-19.17	78.09	3	Vertical	34	2.53	-	36.60	6.55	66.41		
AV	7.38672G	48.46	54.00	-5.54	71.71	3	Vertical	34	2.53	-	36.60	6.55	66.40		





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
PK	4.92418G	45.73	74.00	-28.27	72.78	3	Horizontal	52	1.89	-	33.35	5.13	65.53		
AV	4.924G	40.55	54.00	-13.45	67.60	3	Horizontal	52	1.89	-	33.35	5.13	65.53		
PK	7.38516G	53.89	74.00	-20.11	77.14	3	Horizontal	336	1.69	-	36.60	6.55	66.40		
AV	7.38528G	47.65	54.00	-6.35	70.90	3	Horizontal	336	1.69	-	36.60	6.55	66.40		



2.4194G

93.50

Inf

-Inf

62.03

3

Vertical

345

2.29

Appendix F.3

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX



28.40

3.07



2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2.4194G

97.54

Inf

-Inf

66.07

3



Horizontal 314

2.08

3.07









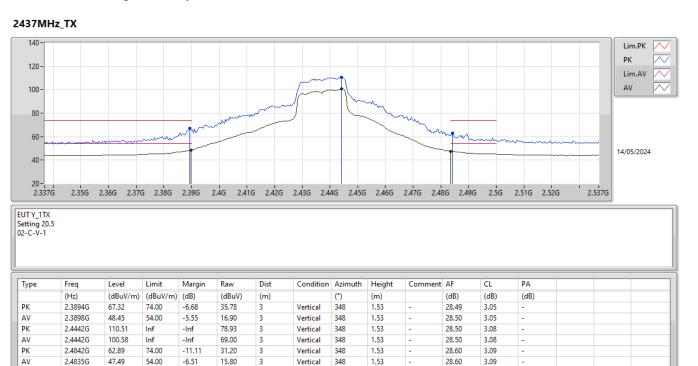




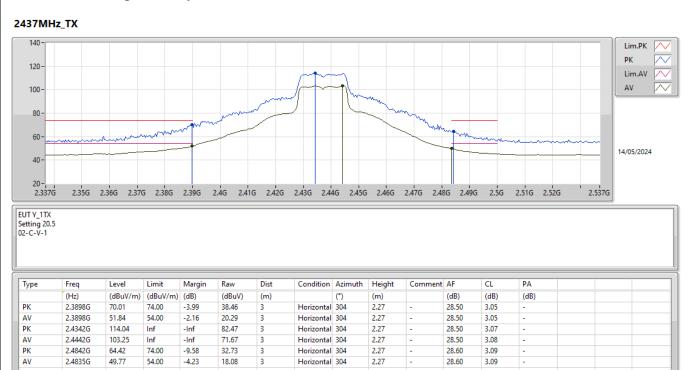




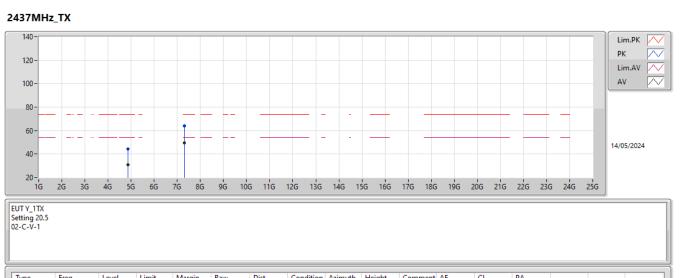






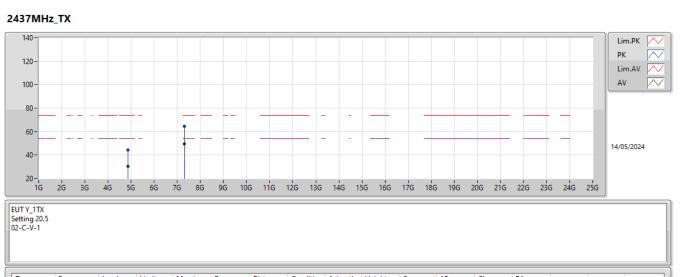






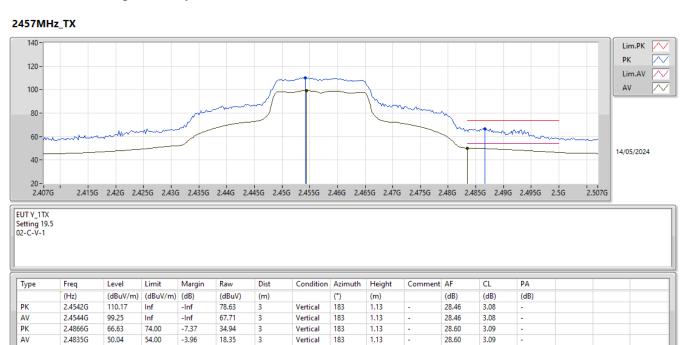
Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA			
(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)			
4.87676G	44.25	74.00	-29.75	71.42	3	Vertical	189	1.78	-	33.25	5.11	65.53			
4.874G	30.78	54.00	-23.22	57.95	3	Vertical	189	1.78	-	33.25	5.11	65.53			
7.3146G	63.92	74.00	-10.08	87.16	3	Vertical	36	1.53	-	36.46	6.51	66.21			
7.3145G	49.36	54.00	-4.64	72.60	3	Vertical	36	1.53	-	36.46	6.51	66.21			
	(Hz) 4.87676G 4.874G 7.3146G	(Hz) (dBuV/m) 4.87676G 44.25 4.874G 30.78 7.3146G 63.92	(Hz) (dBuV/m) (dBuV/m) 4.87676G 44.25 74.00 4.874G 30.78 54.00 7.3146G 63.92 74.00	(Hz) (dBuV/m) (dBV/m) (dB) 4.87676G 44.25 74.00 -29.75 4.874G 30.78 54.00 -23.22 7.3146G 63.92 74.00 -10.08	(Hz) (dBuV/m) (dBuV/m) (dB) (dBuV) 4.87676G 44.25 74.00 -29.75 71.42 4.874G 30.78 54.00 -23.22 57.95 7.3146G 63.92 74.00 -10.08 87.16	(Hz) (dBuV/m) (dBV/m) (dB) (dBuV) (m) 4.87676G 44.25 74.00 -29.75 71.42 3 4.874G 30.78 54.00 -23.22 57.95 3 7.3146G 63.92 74.00 -10.08 87.16 3	(Hz) (dBuV/m) (dBuV/m) (dB) (dBuV) (m) 4.87676G 44.25 74.00 -29.75 71.42 3 Vertical 4.874G 30.78 54.00 -23.22 57.95 3 Vertical 7.3146G 63.92 74.00 -10.08 87.16 3 Vertical	(Hz) (dBuV/m) (dBuV/m) (dB) (dBuV) (m) (*) 4.87676G 44.25 74.00 -29.75 71.42 3 Vertical 189 4.874G 30.78 54.00 -23.22 57.95 3 Vertical 189 7.3146G 63.92 74.00 -10.08 87.16 3 Vertical 36	(Hz) (dBuV/m) (dBV/m) (dB) (dBV/m) (m) (°) (m) 4.87676G 44.25 74.00 -29.75 71.42 3 Vertical 189 1.78 4.874G 30.78 54.00 -23.22 57.95 3 Vertical 189 1.78 7.3146G 63.92 74.00 -10.08 87.16 3 Vertical 36 1.53	(Hz) (dBuV/m) (dBuV/m) (dB) (dBuV) (m) (°) (m) 4.87676G 44.25 74.00 -29.75 71.42 3 Vertical 189 1.78 - 4.8764G 30.78 54.00 -23.22 57.95 3 Vertical 189 1.78 - 7.3146G 63.92 74.00 -10.08 87.16 3 Vertical 36 1.53 -	(Hz) (dBuV/m) (dBuV/m) (dB) (dBuV) (m) (°) (m) (dB) 4.87676G 44.25 74.00 -29.75 71.42 3 Vertical 189 1.78 - 33.25 4.874G 30.78 54.00 -23.22 57.95 3 Vertical 189 1.78 - 33.25 7.3146G 63.92 74.00 -10.08 87.16 3 Vertical 36 1.53 - 36.46	(Hz) (dBuV/m) (dB) (dBV) (m) (°) (m) (dB) (dB) (dB) 4.87676G 44.25 74.00 -29.75 71.42 3 Vertical 189 1.78 - 33.25 5.11 4.87676G 30.78 54.00 -23.22 57.95 3 Vertical 189 1.78 - 33.25 5.11 7.3146G 63.92 74.00 -10.08 87.16 3 Vertical 36 1.53 - 36.46 6.51	(Hz) (dBuV/m) (dB) (dBuV) (m) (°) (m) (dB) (dB) (dB) 4.87676G 44.25 74.00 -29.75 71.42 3 Vertical 189 1.78 - 33.25 5.11 65.53 4.87676G 30.78 54.00 -23.22 57.95 3 Vertical 189 1.78 - 33.25 5.11 65.53 7.3146G 63.92 74.00 -10.08 87.16 3 Vertical 36 1.53 - 36.46 6.51 66.21	(Hz) (dBuV/m) (dBuV/m) (dB) (dBuV) (m) (°) (m) (dB) (dB) (dB) 4.87676G 44.25 74.00 -29.75 71.42 3 Vertical 189 1.78 - 33.25 5.11 65.53 4.8764G 30.78 54.00 -23.22 57.95 3 Vertical 189 1.78 - 33.25 5.11 65.53 7.3146G 63.92 74.00 -10.08 87.16 3 Vertical 36 1.53 - 36.46 6.51 66.21	(Hz) (dBuV/m) (dB) (dBuV) (m) (°) (m) (dB) (dB) (dB) 4.87676G 44.25 74.00 -29.75 71.42 3 Vertical 189 1.78 - 33.25 5.11 65.53 4.87676G 30.78 54.00 -23.22 57.95 3 Vertical 189 1.78 - 33.25 5.11 65.53 7.3146G 63.92 74.00 -10.08 87.16 3 Vertical 36 1.53 - 36.46 6.51 66.21



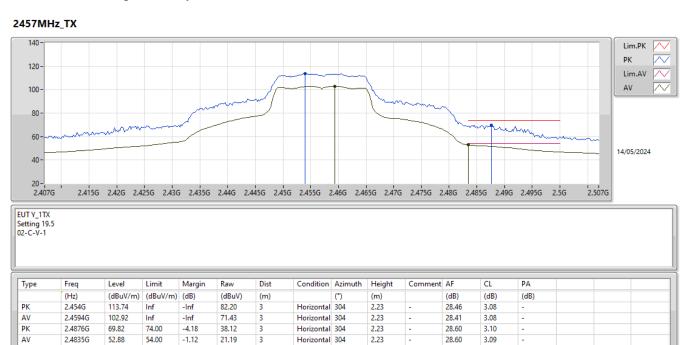


Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.87412G	44.49	74.00	-29.51	71.66	3	Horizontal	56	1.80	-	33.25	5.11	65.53		
AV	4.87406G	30.18	54.00	-23.82	57.35	3	Horizontal	56	1.80	-	33.25	5.11	65.53		
PK	7.31574G	64.72	74.00	-9.28	87.97	3	Horizontal	337	1.80	-	36.46	6.51	66.22		
AV	7.31454G	49.29	54.00	-4.71	72.53	3	Horizontal	337	1.80	-	36.46	6.51	66.21		











2.4835G

49.97

54.00

-4.03

18.28

3

Vertical

176

1.00

28.60

3.09

Appendix F.3





РК

AV

2.4592G

2.4838G

2.4835G

96.52

69.01

52.55

Inf

74.00

54.00

-Inf

-4.99

-1.45

65.03

37.32

20.86

3

3

3

Horizontal 304

Horizontal 304

Horizontal 304

2.24

2.24

2.24

28.41

28.60

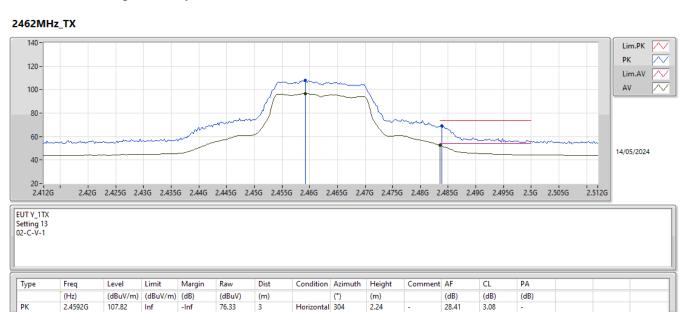
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3.08

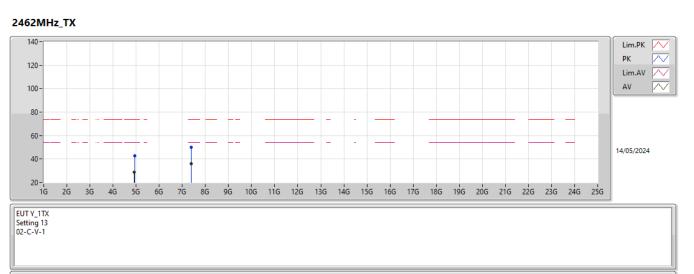
3.09

3.09

Appendix F.3

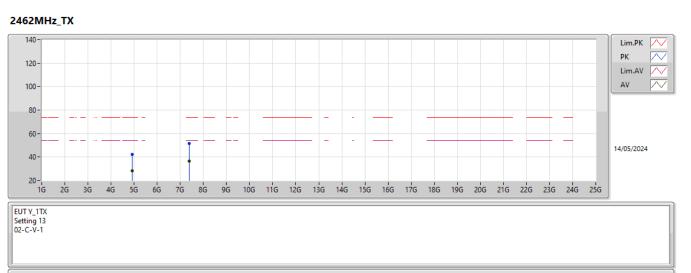






Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA	
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)	
РК	4.93582G	42.64	74.00	-31.36	69.67	3	Vertical	360	2.95	-	33.37	5.13	65.53	
AV	4.92394G	28.79	54.00	-25.21	55.84	3	Vertical	360	2.95	-	33.35	5.13	65.53	
PK	7.3956G	49.97	74.00	-24.03	73.24	3	Vertical	33	2.54	-	36.60	6.56	66.43	
AV	7.389G	36.21	54.00	-17.79	59.47	3	Vertical	33	2.54	-	36.60	6.55	66.41	





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.92766G	42.14	74.00	-31.86	69.18	3	Horizontal	53	2.14	-	33.36	5.13	65.53		
AV	4.9291G	28.03	54.00	-25.97	55.07	3	Horizontal	53	2.14	-	33.36	5.13	65.53		
РК	7.39062G	51.41	74.00	-22.59	74.67	3	Horizontal	39	1.49	-	36.60	6.55	66.41		
AV	7.3893G	36.63	54.00	-17.37	59.89	3	Horizontal	39	1.49	-	36.60	6.55	66.41		



РК

AV

2.4144G

2.4144G

106.94

93.61

Inf

Inf

-Inf

-Inf

75.47

62.14

3

3

Vertical

Vertical

202

202

1.52

1.52

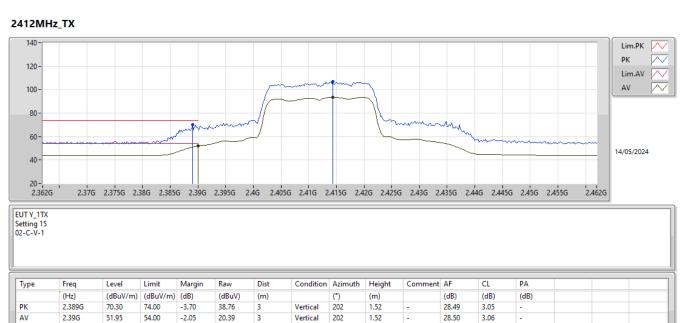
28.40

28.40

3.07

3.07

Appendix F.3





РК

AV

2.4198G

2.4196G

109.51

96.40

Inf

Inf

-Inf

-Inf

78.04

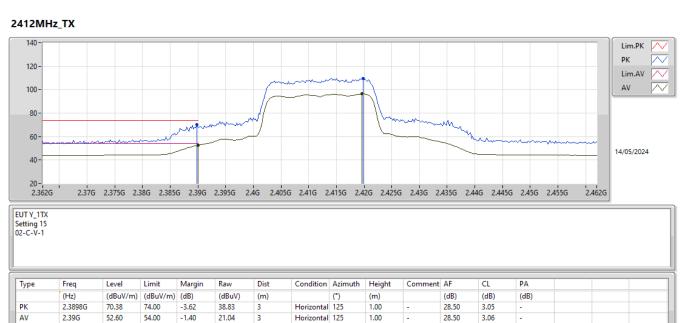
64.93

3

3

Appendix F.3

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX



Horizontal 125

Horizontal 125

1.00

1.00

28.40

28.40

3.07

3.07







4.82514G

28.71

54.00

-25.29

55.98

3

Horizontal 70

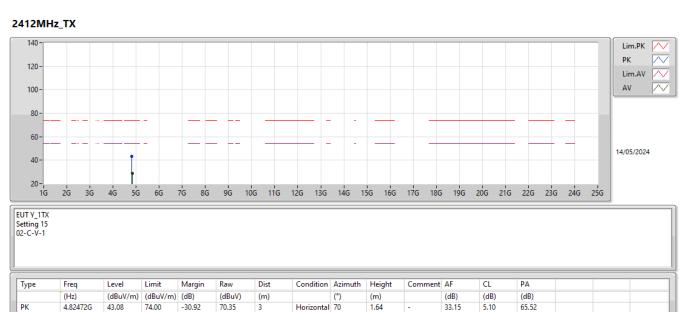
1.64

33.15

5.10

65.52

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

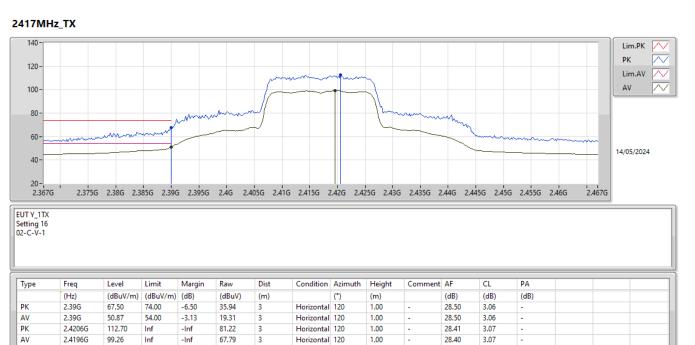


Appendix F.3











AV PK

AV

2.4398G

2.4835G

2.4835G

100.55

65.95

48.66

Inf

74.00

54.00

-Inf

-8.05

-5.34

68.97

34.26

16.97

3

3

3

Vertical

Vertical

Vertical

201

201

201

1.49

1.49

1.49

28.50

28.60

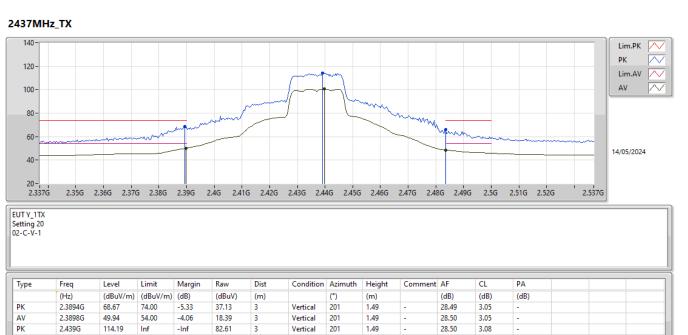
28.60

3.08

3.09 3.09

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Appendix F.3





AV PK

AV

2.4446G

2.4866G

2.4835G

99.91

63.14

47.71

Inf

74.00

54.00

-Inf

-10.86

-6.29

68.33

31.45

16.02

3

3

3

Horizontal 121

Horizontal 121

Horizontal 121

1.79

1.79

1.79

28.50

28.60

28.60

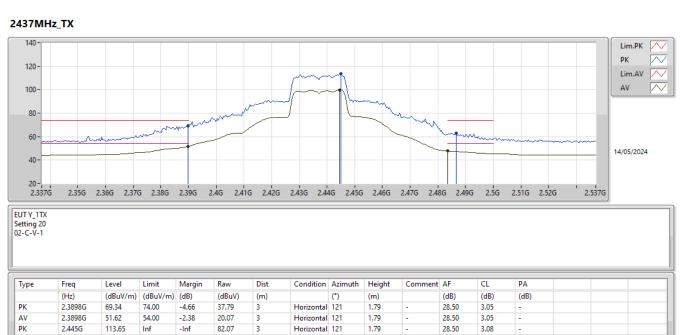
3.08

3.09

3.09

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Appendix F.3

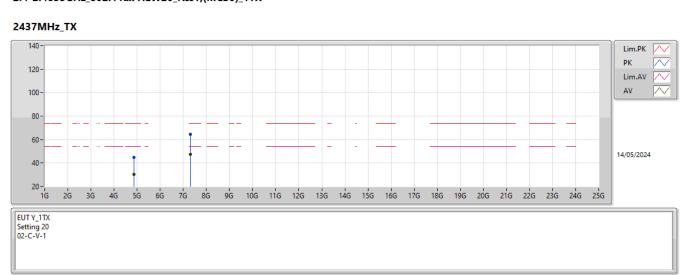






Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.87304G	42.30	74.00	-31.70	69.47	3	Vertical	23	1.91	-	33.25	5.11	65.53		
AV	4.87388G	28.45	54.00	-25.55	55.62	3	Vertical	23	1.91	-	33.25	5.11	65.53		
PK	7.31856G	62.89	74.00	-11.11	86.12	3	Vertical	39	2.58	-	36.47	6.52	66.22		
AV	7.31466G	47.18	54.00	-6.82	70.42	3	Vertical	39	2.58	-	36.46	6.51	66.21		





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.87526G	44.63	74.00	-29.37	71.80	3	Horizontal	48	1.80	-	33.25	5.11	65.53		
AV	4.87418G	30.48	54.00	-23.52	57.65	3	Horizontal	48	1.80	-	33.25	5.11	65.53		
PK	7.31448G	64.40	74.00	-9.60	87.64	3	Horizontal	337	1.80	-	36.46	6.51	66.21		
AV	7.31466G	47.44	54.00	-6.56	70.68	3	Horizontal	337	1.80	-	36.46	6.51	66.21		



2.4835G

49.79

54.00

-4.21

18.10

3

Vertical

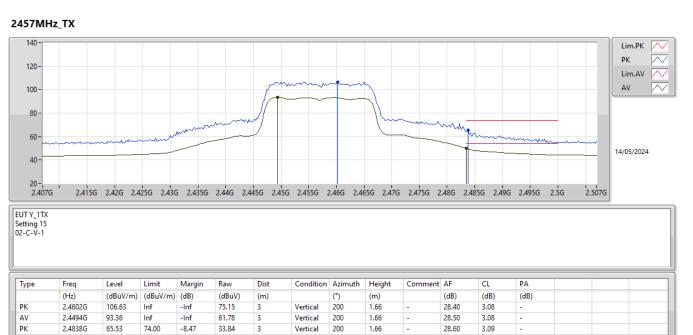
200

1.66

28.60

3.09

Appendix F.3





2.4835G

52.22

54.00

-1.78

20.53

3

Horizontal 122

1.80

28.60

3.09

Appendix F.3





РК

AV

2.4594G

2.4858G

2.4835G

90.61

65.39

50.59

Inf

74.00

54.00

-Inf

-8.61

-3.41

59.12

33.70

18.90

3

3

3

Vertical

Vertical

Vertical

201

201

201

1.65

1.65

1.65

28.41

28.60

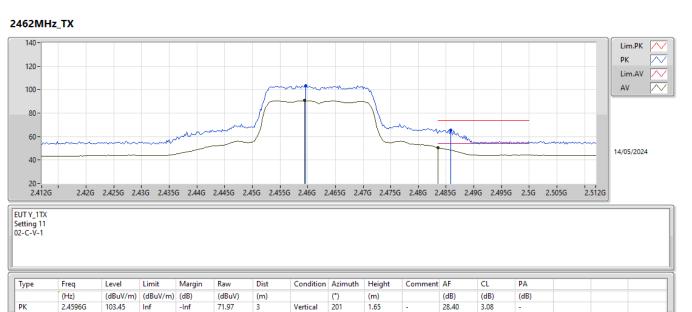
28.60

3.08

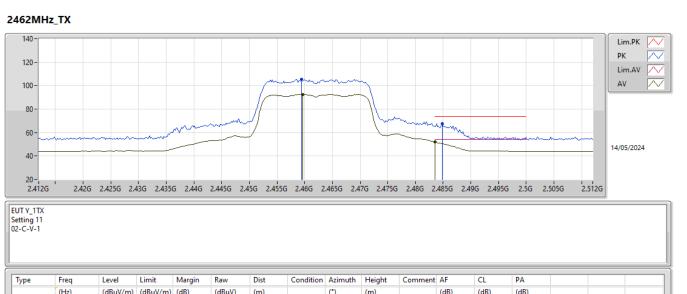
3.09

3.09

Appendix F.3







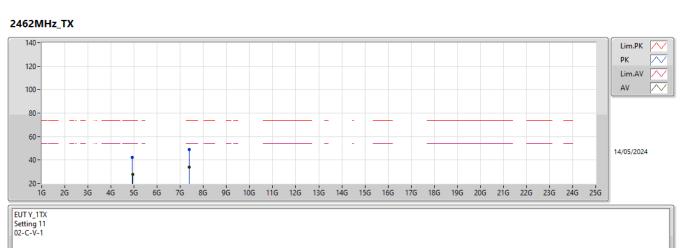
Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	2.4594G	105.43	Inf	-Inf	73.94	3	Horizontal	119	1.00	-	28.41	3.08	-		
AV	2.4596G	92.60	Inf	-Inf	61.12	3	Horizontal	119	1.00	-	28.40	3.08	-		
РК	2.4848G	67.50	74.00	-6.50	35.81	3	Horizontal	119	1.00	-	28.60	3.09	-		
AV	2.4835G	52.05	54.00	-1.95	20.36	3	Horizontal	119	1.00	-	28.60	3.09	-		





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.92454G	41.56	74.00	-32.44	68.61	3	Vertical	11	2.48	-	33.35	5.13	65.53		
AV	4.93858G	27.71	54.00	-26.29	54.73	3	Vertical	11	2.48	-	33.38	5.13	65.53		
PK	7.38942G	47.57	74.00	-26.43	70.83	3	Vertical	306	2.43	-	36.60	6.55	66.41		
AV	7.3896G	33.85	54.00	-20.15	57.11	3	Vertical	306	2.43	-	36.60	6.55	66.41		





Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA		
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)		
РК	4.92148G	42.08	74.00	-31.92	69.14	3	Horizontal	244	2.75	-	33.34	5.13	65.53		
AV	4.9357G	27.71	54.00	-26.29	54.74	3	Horizontal	244	2.75	-	33.37	5.13	65.53		
PK	7.39686G	48.95	74.00	-25.05	72.22	3	Horizontal	213	1.14	-	36.60	6.56	66.43		
AV	7.38882G	33.86	54.00	-20.14	57.12	3	Horizontal	213	1.14	-	36.60	6.55	66.41		