



RADIO TEST REPORT

FCC ID : Z8H89FT0069
Equipment : ePMP 6 GHz Force 4600C SM / ePMP 4600L 6 GHz 2x2 Access Point
Brand Name : Cambium Networks
Model Name : ePMP 6 GHz Force 4600C SM / ePMP 4600L 6 GHz 2x2 Access Point
Model Number : C068940P151A
Applicant : Cambium Networks Inc.
3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA
Manufacturer : Cambium Networks, Ltd.
Ashburton, TQ13 7UP, UK
Standard : 47 CFR FCC Part 15.407

The product was received on Jul. 12, 2022, and testing was started from Jul. 14, 2022 and completed on Jul. 20, 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.)



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TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A12_1 Ver1.4



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	15.407(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum Output Power	PASS	-
3.4	15.407(a)	Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-

Declaration of Conformity:

1. 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: Sandy Chuang



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5725-5850	a, n (HT20), ac (VHT20), ax (HEW20)	5745-5825	149-165 [5]
5725-5850	n (HT40), ac (VHT40), ax (HEW40)	5755-5795	151-159 [2]
5725-5850	ac (VHT80), ax (HEW80)	5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.725-5.85GHz	802.11a	20	2TX
5.725-5.85GHz	802.11n HT20	20	2TX
5.725-5.85GHz	802.11n HT20-BF	20	2TX
5.725-5.85GHz	802.11ac VHT20	20	2TX
5.725-5.85GHz	802.11ac VHT20-BF	20	2TX
5.725-5.85GHz	802.11ax HEW20	20	2TX
5.725-5.85GHz	802.11ax HEW20-BF	20	2TX
5.725-5.85GHz	802.11n HT40	40	2TX
5.725-5.85GHz	802.11n HT40-BF	40	2TX
5.725-5.85GHz	802.11ac VHT40	40	2TX
5.725-5.85GHz	802.11ac VHT40-BF	40	2TX
5.725-5.85GHz	802.11ax HEW40	40	2TX
5.725-5.85GHz	802.11ax HEW40-BF	40	2TX
5.725-5.85GHz	802.11ac VHT80	80	2TX
5.725-5.85GHz	802.11ac VHT80-BF	80	2TX
5.725-5.85GHz	802.11ax HEW80	80	2TX
5.725-5.85GHz	802.11ax HEW80-BF	80	2TX

Note:

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40, VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ HEW20, HEW40, HEW80 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	Cambium	ePMP 6GHz 2x2 Dish Antenna	Dish	RP-SMA	25.21
	2	Cambium	ePMP 6GHz 2x2 Dish Antenna	Dish	RP-SMA	25.21

Note: The above information was declared by manufacturer.

For IEEE 802.11a/n/ac/ax (2TX/2RX):

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

Port 1 and Port 2 could transmit/receive simultaneously.

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.876	0.57	1.977m	1k
802.11ax HEW20	0.855	0.68	5.458m	300
802.11ax HEW40	0.85	0.71	5.458m	300
802.11ax HEW80	0.868	0.61	5.458m	300

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From PoE			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	The product has beamforming function for n/ac/ax in 5GHz.			
Function	☐	Outdoor P2M	☐	Indoor P2M
	☒	Fixed P2P	☐	Client
	☐	Point-to-multipoint	☒	Point-to-point
Test Software Version	QRCT V4.0.00192.0			

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Model Name	Description
ePMP 6 GHz Force 4600C SM	Client
ePMP 4600L 6 GHz 2x2 Access Point	AP

Note 1: From the above, ePMP 6 GHz Force 4600C SM was selected as representative model for the test and its data was recorded in this report.

Note 2: From the above, Mesh was selected as representative mode for the test and its data was recorded in this report.

Note 3: 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
- ♦ 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 D01 v02r01
- ♦ FCC KDB 412172 D01 v01r01
- ♦ FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu (TAF: 3787)	ADD: 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 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	TH01-CB	Serway Lee	25.3~26. / 66~69	Jul. 15, 2022
Radiated <Below 1GHz>	03CH05-CB	Eason Chen	25.5~27 / 65~68	Jul. 14, 2022~ Jul. 18, 2022
Radiated <Above 1GHz>	03CH03-CB	Eason Chen	25.5~27 / 65~68	Jul. 14, 2022~ Jul. 18, 2022
AC Conduction	CO01-CB	Dean Chang	22~23 / 52~53	Jul. 20, 2022

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)	3.4 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%

2 Test Configuration of EUT

2.1 Test Channel Mode

<Non-Beamforming Mode>

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5745MHz	31.5
5785MHz	31.5
5825MHz	31.5
802.11ax HEW20_Nss1,(MCS0)_2TX	-
5745MHz	31.5
5785MHz	31.5
5825MHz	30
802.11ax HEW40_Nss1,(MCS0)_2TX	-
5755MHz	31
5795MHz	30
802.11ax HEW80_Nss1,(MCS0)_2TX	-
5775MHz	25.5

<Beamforming Mode>

Mode	Power Setting
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5745MHz	31.5
5785MHz	31.5
5825MHz	30
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5755MHz	31
5795MHz	30
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5775MHz	25.5

Note1: Evaluated HEW20/HEW40/HEW80 mode only, due to similar modulation. The power setting of HT20/HT40/VHT20/VHT40/VHT80 mode are the same or lower than HEW20/HEW40/HEW80.

Note2: The EUT supports beamforming and CDD modes, and the CDD mode is the worst case. Therefore, all test items are evaluated in the report. The beamforming mode only evaluates the output power.



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	CTX

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Output Power 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.
Operating Mode < 1GHz	CTX
The EUT was performed at X axis, Y axis and Z axis position. EUT Y axis has been evaluated to be the worst case at Emissions in Unwanted Emissions <Above 1GHz> ; thus, the measurement will follow this same test configuration.	
1	EUT in Y axis
Operating Mode > 1GHz	CTX
The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found at Y axis. So the measurement will follow this same test configuration.	
1	EUT in Y axis

Note: The EUT was powered by PoE, and the PoE was for measurement only, it would not be marketed.

Equipment	Brand Name	Model Name	FCC ID
PoE	Cambium	NET-P30-56IN	N/A



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

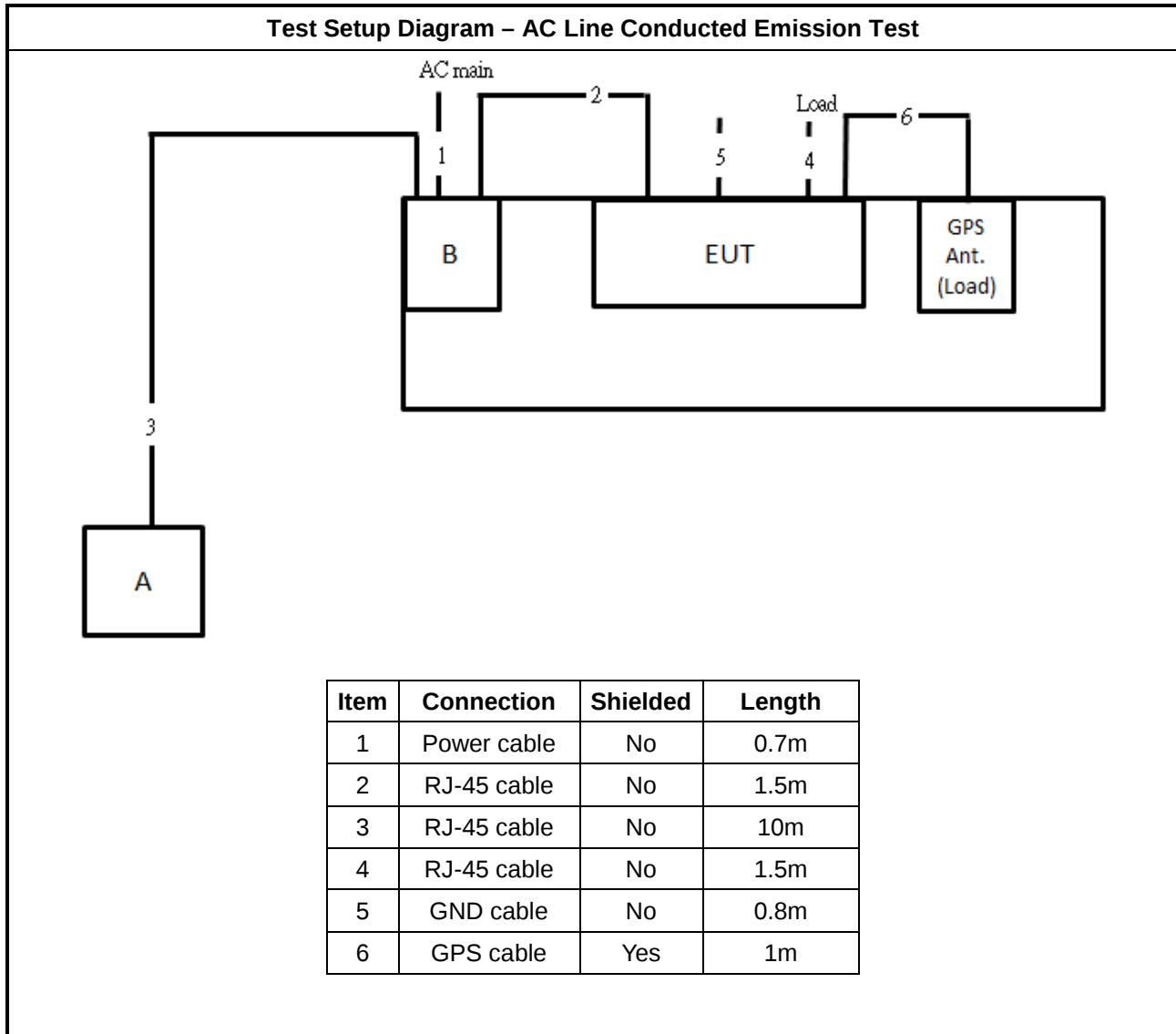
For AC Conduction:

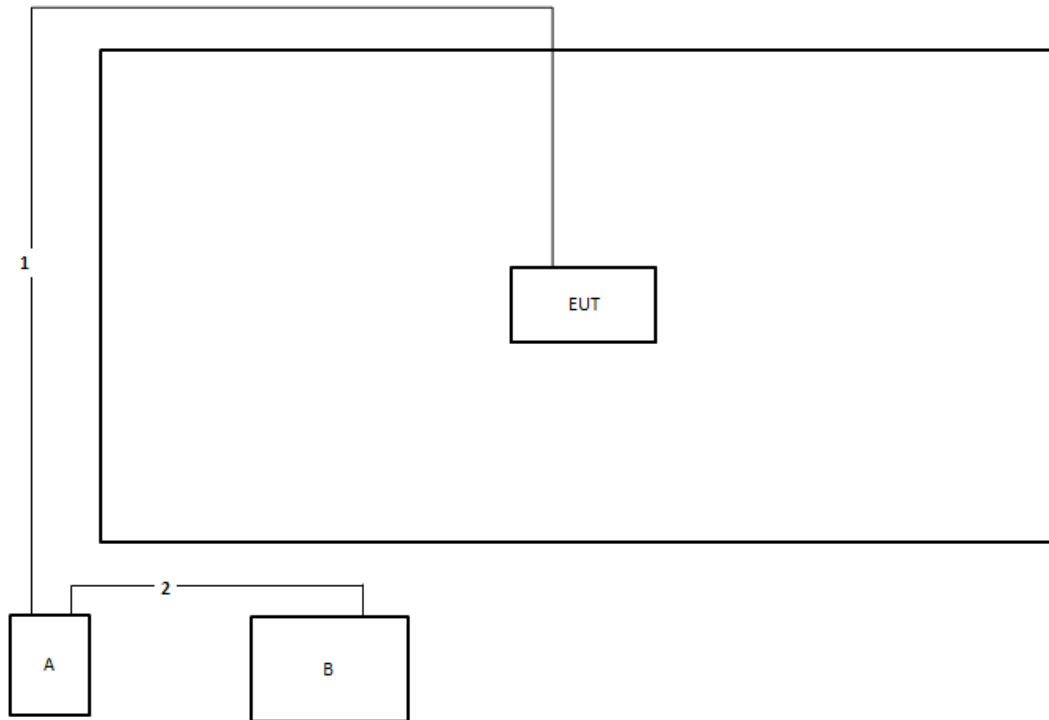
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Eth/Reset NB	DELL	E6430	N/A
B	PoE	Cambium	NET-P30-56IN	N/A

For Radiated and RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	PoE	Cambium	NET-P30-56IN	N/A
B	NB	DELL	E4300	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test


Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	RJ-45 cable	No	1.5m



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.		

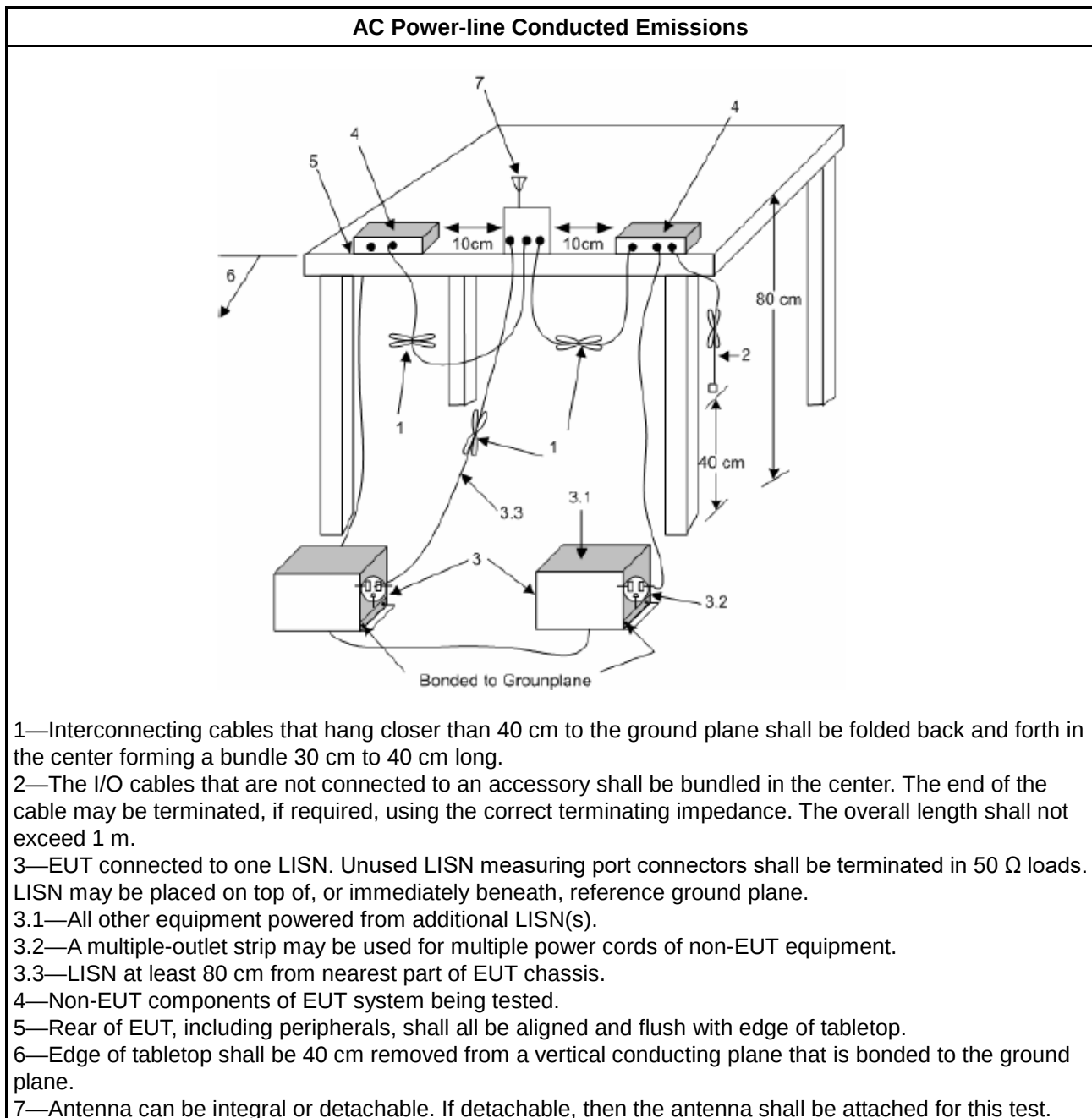
3.1.2 Measuring Instruments

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:

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

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A



3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
UNII Devices	
☐	For the 5.15-5.25 GHz band, N/A
☐	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz.
☐	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz.
☒	For the 5.725-5.85 GHz band, 26 dB emission bandwidth ,N/A. 6 dB emission bandwidth $\geq 500\text{kHz}$.
☐	For the 5.85-5.895 GHz band, 26 dB emission bandwidth ,N/A. 6 dB emission bandwidth $\geq 500\text{kHz}$.
LE-LAN Devices	
☐	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq 500\text{kHz}$.

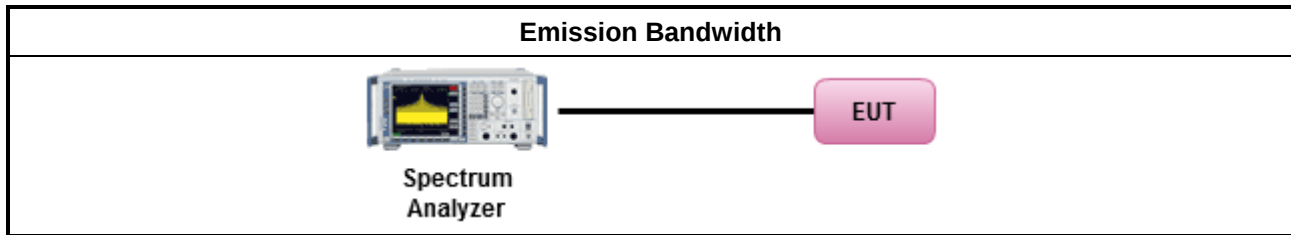
3.2.2 Measuring Instruments

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 measurement.
☐	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



3.3 Maximum Output Power

3.3.1 Limit

Maximum Output Power Limit	
UNII Devices	
☐ For the 5.15-5.25 GHz band:	
☐	- Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees ≤ 125 mW [21 dBm] - Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ - Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. - Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☐ For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
☐ For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
☒ For the 5.725-5.85 GHz band:	
☒	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
Maximum EIRP Limit	
☐ For the 5.85-5.895 GHz band:	
☐	- Indoor AP & subordinate device < 36 dBm - Client device < 30 dBm
LE-LAN Devices	
☐ For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.	
☐ For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
☐ For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
☐ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the

lesser of 1 W.

P_{Out} = maximum conducted output power in dBm,

G_{TX} = the maximum transmitting antenna directional gain in dBi.

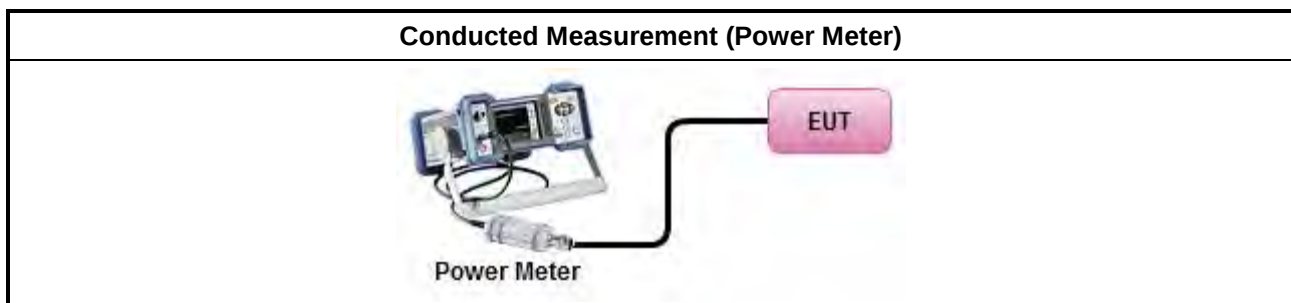
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
	Average 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)
	Wideband RF power meter and average over on/off periods with duty factor
☒	Refer as FCC KDB 789033 D02, clause E Method PM-G (using an RF average power meter).
☒	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: $P_{total} = P_1 + P_2 + \dots + P_n$ (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.

3.3.4 Test Setup



3.3.5 Test Result of Maximum Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Limit

Peak Power Spectral Density Limit	
UNII Devices	
☐ For the 5.15-5.25 GHz band:	
	- Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. - Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. - Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$. - Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☐ For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
☐ For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
☒ For the 5.725-5.85 GHz band:	
	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
EIRP Power Spectral Density Limit	
☐ For the 5.85-5.895 GHz band:	
	- Indoor AP & subordinate device < 20dBm/MHz - Client device < 14dBm/MHz
LE-LAN Devices	
☐ For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.	
☐ For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
	e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for $0^\circ \leq \theta < 8^\circ$; -13 - 0.716 (θ-8) dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 - 1.22 (θ-40) dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$
☐ For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
☐ For the 5.725-5.85 GHz band:	
	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output	



power shall be used to determine the power spectral density. And power spectral density in dBm/MHz
 G_{TX} = the maximum transmitting antenna directional gain in dBi.

3.4.2 Measuring Instruments

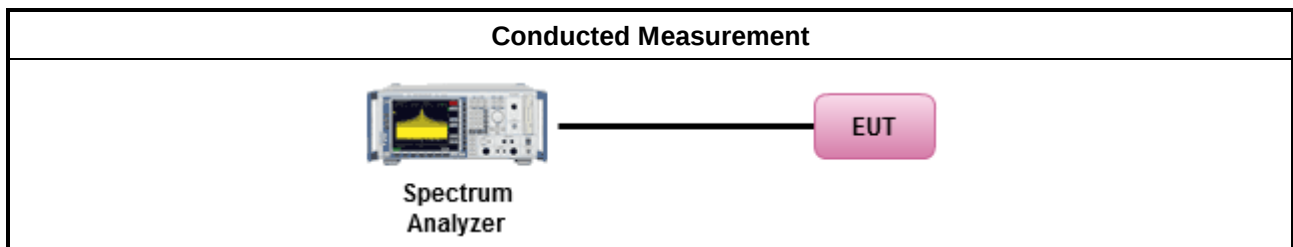
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method	
Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall 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 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	
☒	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)
☒ 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: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm])	

Test Method	
	$EIRP_{total} = PPSD_{total} + DG$
☐	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.
	Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D



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

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
☐ 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☐ 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☐ 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☒ 5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
☐ 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 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 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 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).	

3.5.2 Measuring Instruments

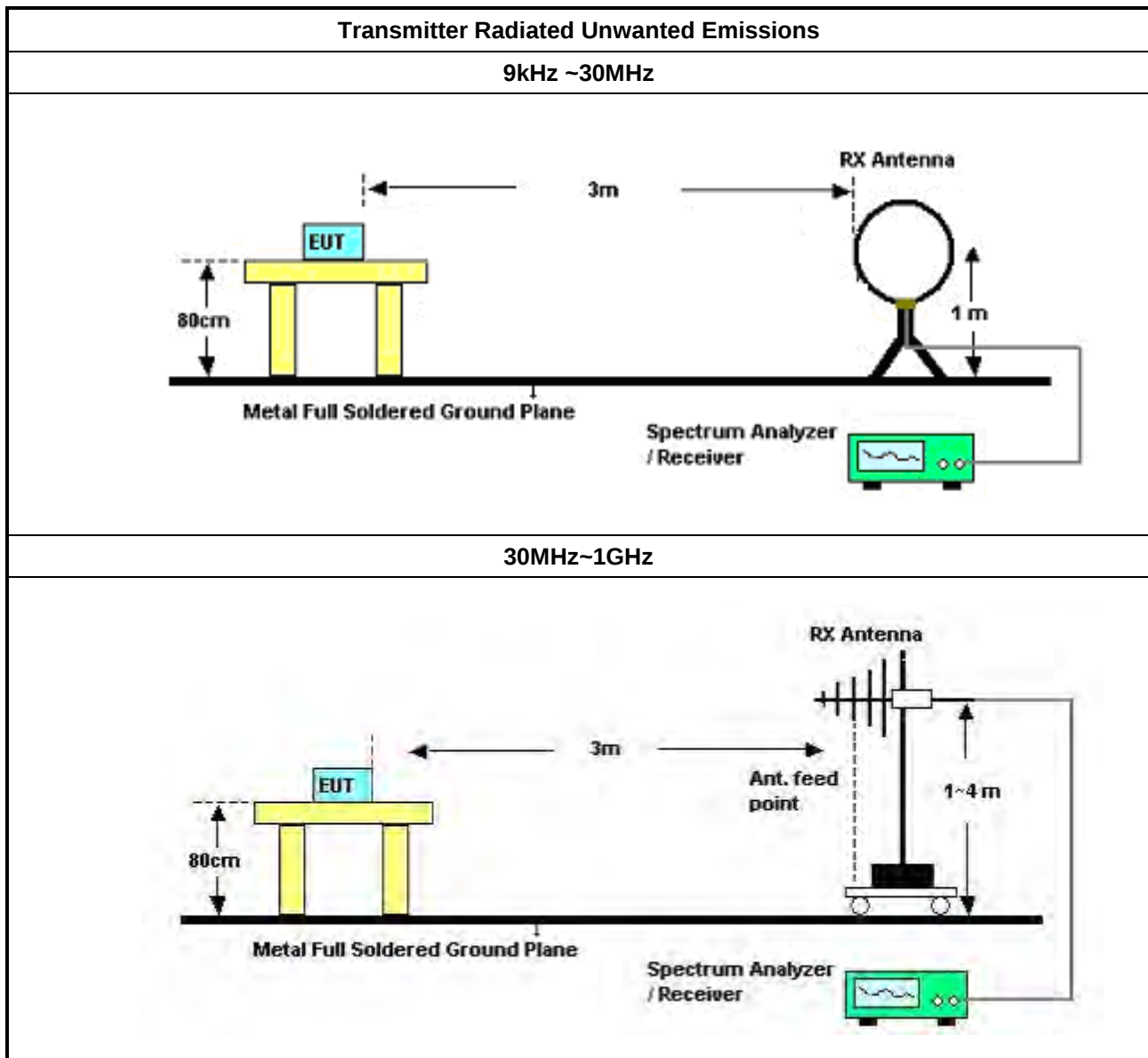
Refer a test equipment and calibration data table in this test report.

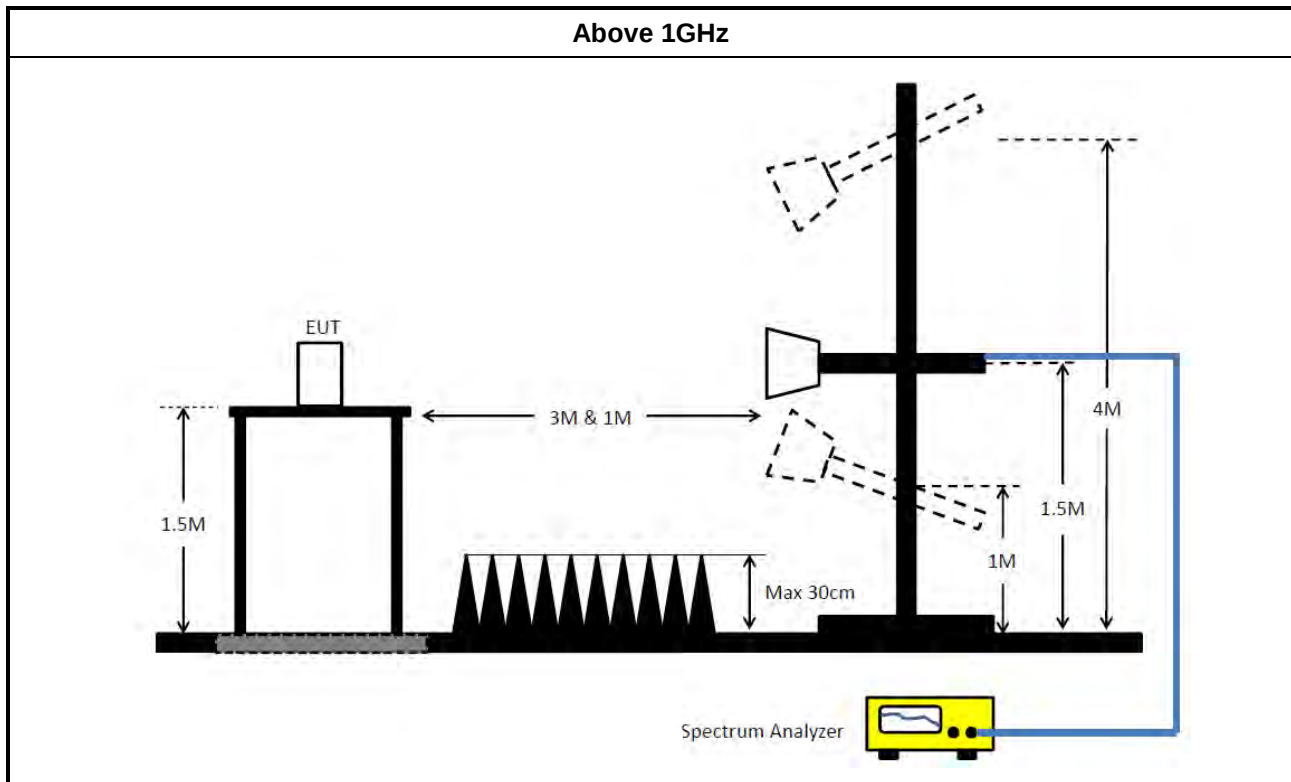


3.5.3 Test Procedures

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 $\geq$ 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 $\geq$ 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.	

3.5.4 Test Setup





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.

3.5.6 Transmitter Unwanted Emissions (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.

3.5.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E



4 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-50-1 6-2	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&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 10, 2022	Feb. 09, 2023	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 18, 2022	May 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 (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 09, 2021	Aug. 08, 2022	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 25, 2022	Mar. 24, 2023	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 26, 2022	Apr. 25, 2023	Radiation (03CH05-CB)
Signal Analyzer	R&S	FSV3044	101321	9kHz ~ 44GHz	Jun. 13, 2022	Jun. 12, 2023	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 13, 2021	Oct. 12, 2022	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH03-CB	1GHz ~18GHz 3m	May 05, 2022	May 04, 2023	Radiation (03CH03-CB)
Horn Antenna	ETS • Lindgren	3115	6821	750MHz~18GHz	Jan. 21, 2022	Jan. 20, 2023	Radiation (03CH03-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH03-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH03-CB)
Pre-Amplifier	-	-	TF-130N-R1	18GHz ~ 40GHz	Jun. 21, 2022	Jun. 20, 2023	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+29	1GHz ~ 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-29	1GHz ~ 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH03-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH03-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH03-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH03-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 27, 2022	May 26, 2023	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
Switch	SPTCB	SP-SWI	SWI-03	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	SWI-03-P1	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	SWI-03-P2	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	SWI-03-P3	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	SWI-03-P4	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	SWI-03-P5	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

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

NCR means Non-Calibration required.



Conducted Emissions at Powerline

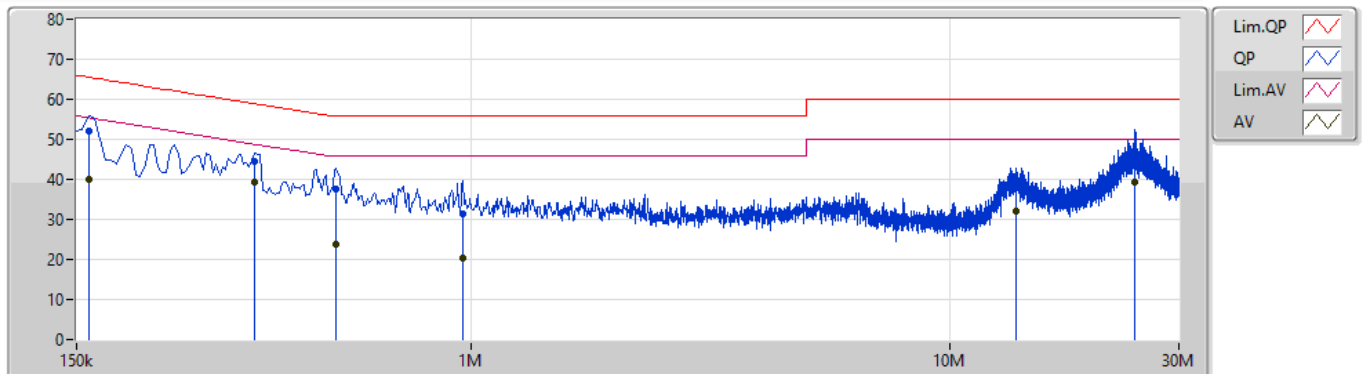
Appendix A

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	24.41M	40.89	50.00	-9.11	Neutral

Mode 1

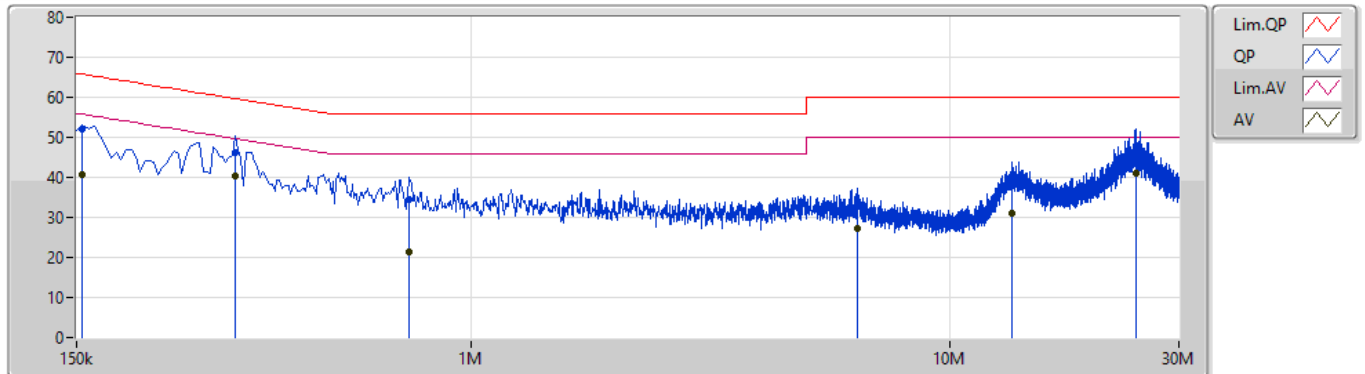
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Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	159k	51.92	65.52	-13.60	9.99	Line	-	41.93	0.06	0.04	9.89			
AV	159k	40.12	55.52	-15.40	9.99	Line	-	30.13	0.06	0.04	9.89			
QP	352.5k	44.34	58.91	-14.57	10.01	Line	-	34.33	0.06	0.06	9.89			
AV	352.5k	39.35	48.91	-9.56	10.01	Line	"Worst"	29.34	0.06	0.06	9.89			
QP	523.5k	37.64	56.00	-18.36	10.00	Line	-	27.64	0.06	0.05	9.89			
AV	523.5k	23.88	46.00	-22.12	10.00	Line	-	13.88	0.06	0.05	9.89			
QP	960k	31.53	56.00	-24.47	10.00	Line	-	21.53	0.07	0.04	9.89			
AV	960k	20.39	46.00	-25.61	10.00	Line	-	10.39	0.07	0.04	9.89			
QP	13.722M	38.65	60.00	-21.35	10.36	Line	-	28.29	0.26	0.17	9.93			
AV	13.722M	31.90	50.00	-18.10	10.36	Line	-	21.54	0.26	0.17	9.93			
QP	24.27M	46.72	60.00	-13.28	10.59	Line	-	36.13	0.35	0.27	9.97			
AV	24.27M	39.24	50.00	-10.76	10.59	Line	-	28.65	0.35	0.27	9.97			

Mode 1

20/07/2022



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	154.5k	51.99	65.75	-13.76	10.00	Neutral	-	41.99	0.07	0.04	9.89			
AV	154.5k	40.55	55.75	-15.20	10.00	Neutral	-	30.55	0.07	0.04	9.89			
QP	321k	46.29	59.67	-13.38	10.01	Neutral	-	36.28	0.07	0.05	9.89			
AV	321k	40.21	49.67	-9.46	10.01	Neutral	-	30.20	0.07	0.05	9.89			
QP	744k	34.48	56.00	-21.52	10.02	Neutral	-	24.46	0.08	0.05	9.89			
AV	744k	21.41	46.00	-24.59	10.02	Neutral	-	11.39	0.08	0.05	9.89			
QP	6.401M	32.73	60.00	-27.27	10.22	Neutral	-	22.51	0.19	0.13	9.90			
AV	6.401M	27.11	50.00	-22.89	10.22	Neutral	-	16.89	0.19	0.13	9.90			
QP	13.457M	37.83	60.00	-22.17	10.37	Neutral	-	27.46	0.27	0.17	9.93			
AV	13.457M	31.11	50.00	-18.89	10.37	Neutral	-	20.74	0.27	0.17	9.93			
QP	24.41M	47.77	60.00	-12.23	10.54	Neutral	-	37.23	0.30	0.27	9.97			
AV	24.41M	40.89	50.00	-9.11	10.54	Neutral	"Worst"	30.35	0.30	0.27	9.97			

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.35M	18.441M	18M4D1D	16.32M	16.942M
802.11ax HEW20_Nss1,(MCS0)_2TX	18.99M	19.64M	19M6D1D	18.75M	19.1M
802.11ax HEW40_Nss1,(MCS0)_2TX	38.1M	39.7M	39M7D1D	38.04M	38.801M
802.11ax HEW80_Nss1,(MCS0)_2TX	78M	79.04M	79M0D1D	77.76M	79.04M

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

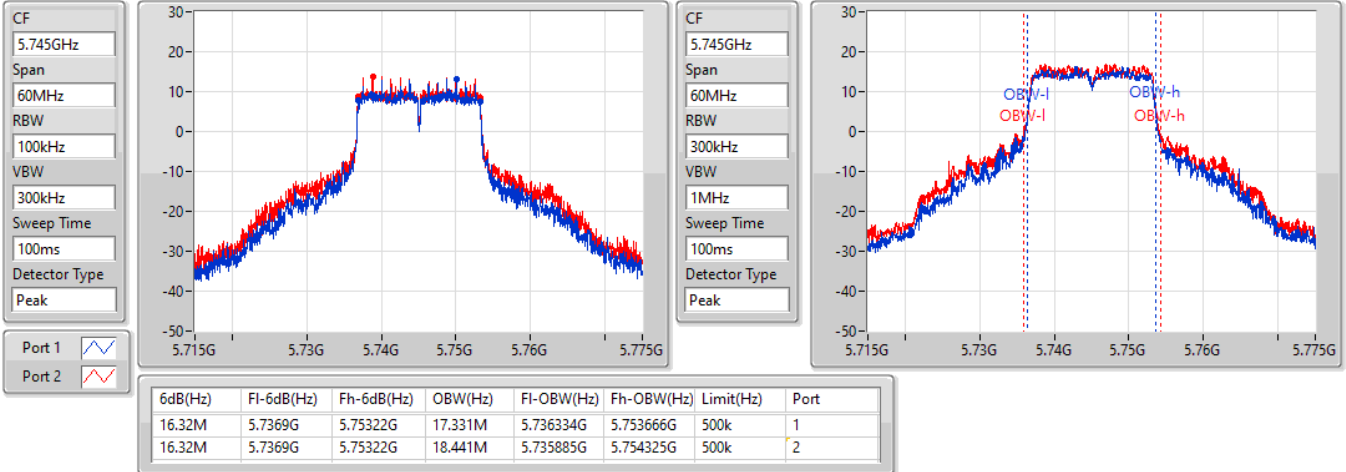
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5745MHz	Pass	500k	16.32M	17.331M	16.32M	18.441M
5785MHz	Pass	500k	16.32M	17.151M	16.32M	17.391M
5825MHz	Pass	500k	16.32M	17.721M	16.35M	16.942M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5745MHz	Pass	500k	18.93M	19.34M	18.75M	19.64M
5785MHz	Pass	500k	18.99M	19.28M	18.96M	19.4M
5825MHz	Pass	500k	18.96M	19.31M	18.96M	19.1M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5755MHz	Pass	500k	38.1M	39.1M	38.04M	39.7M
5795MHz	Pass	500k	38.04M	38.801M	38.04M	38.921M
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5775MHz	Pass	500k	78M	79.04M	77.76M	79.04M

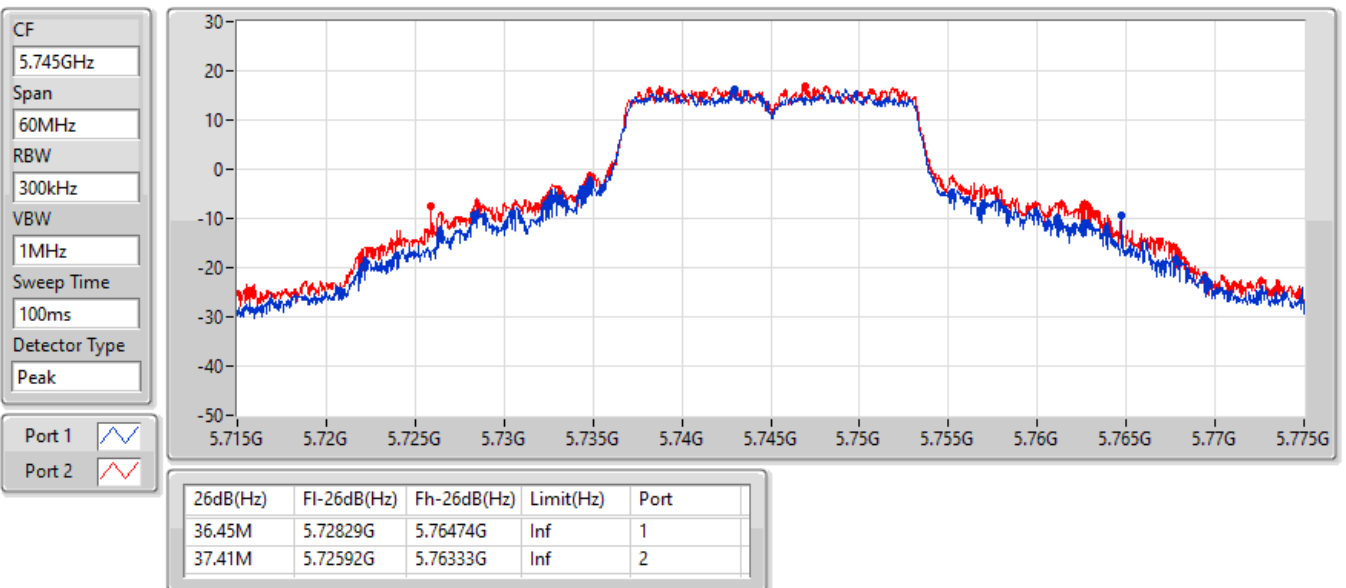
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11a_Nss1,(6Mbps)_2TX
EBW
5745MHz

16/07/2022

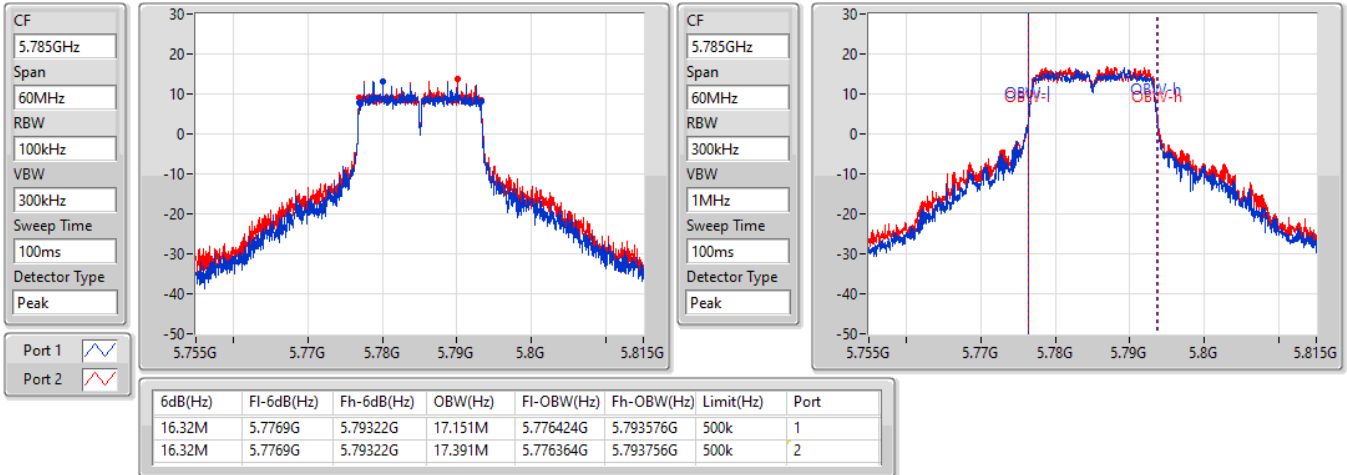

802.11a_Nss1,(6Mbps)_2TX
EBW
5745MHz

16/07/2022

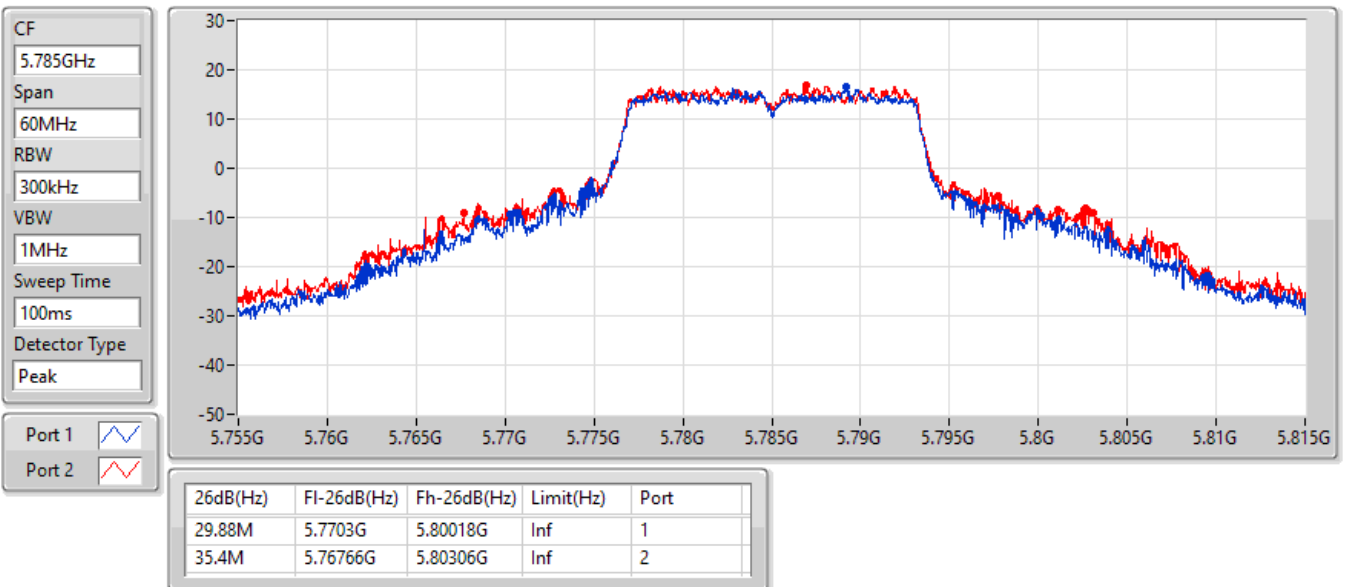


802.11a_Nss1,(6Mbps)_2TX
EBW
5785MHz

16/07/2022

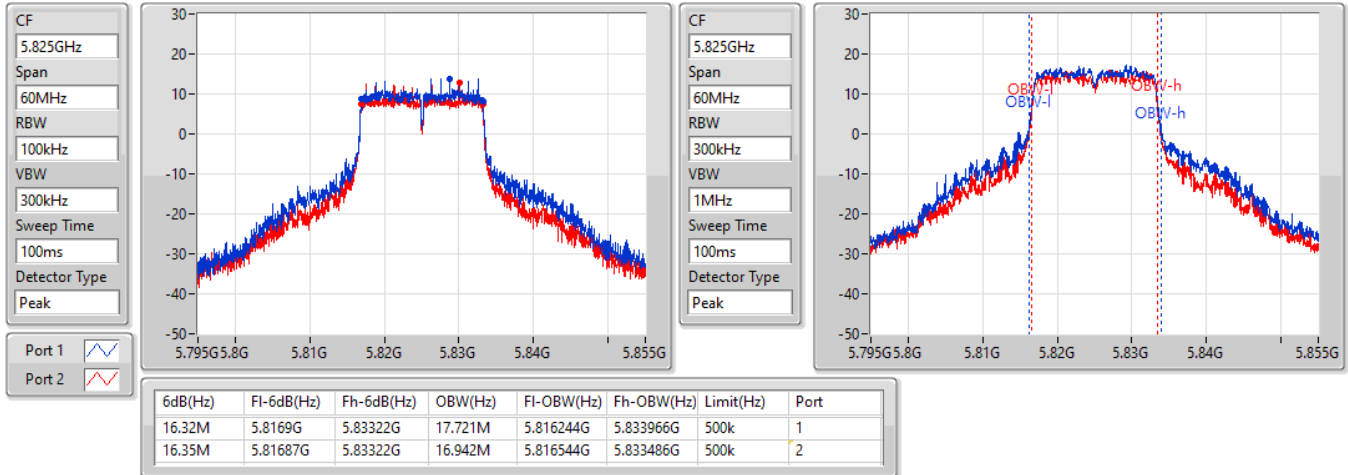

802.11a_Nss1,(6Mbps)_2TX
EBW
5785MHz

16/07/2022

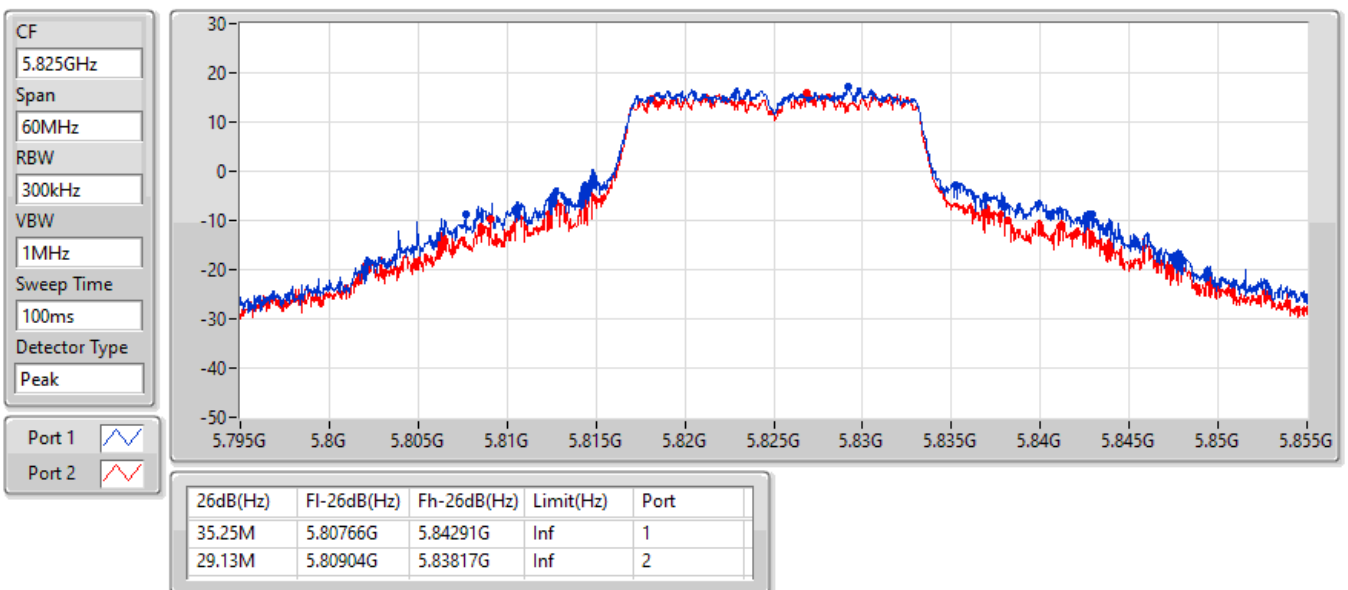


802.11a_Nss1,(6Mbps)_2TX
EBW
5825MHz

16/07/2022


802.11a_Nss1,(6Mbps)_2TX
EBW
5825MHz

16/07/2022

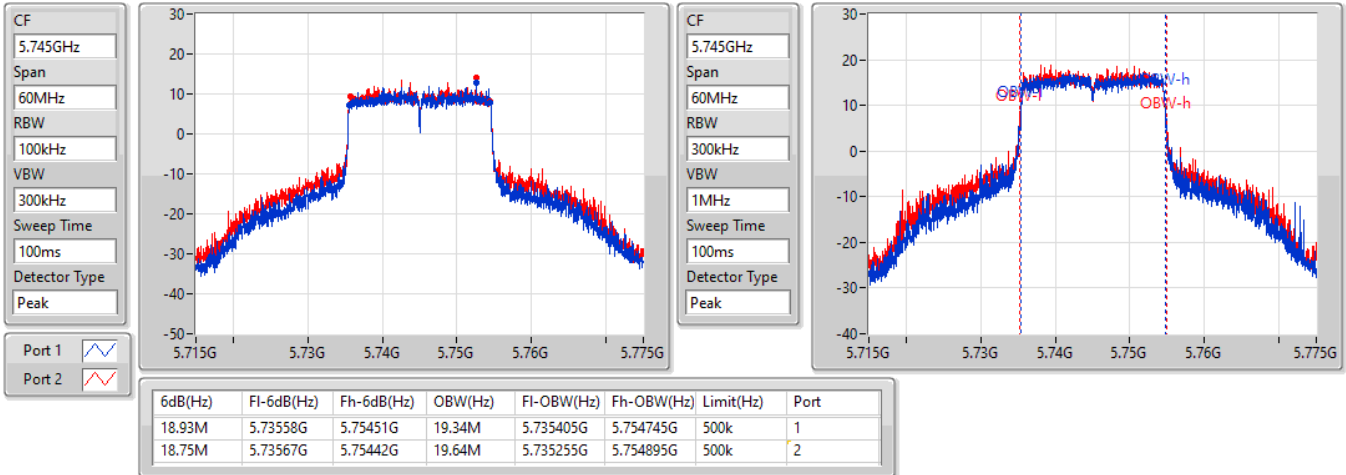


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5745MHz

16/07/2022

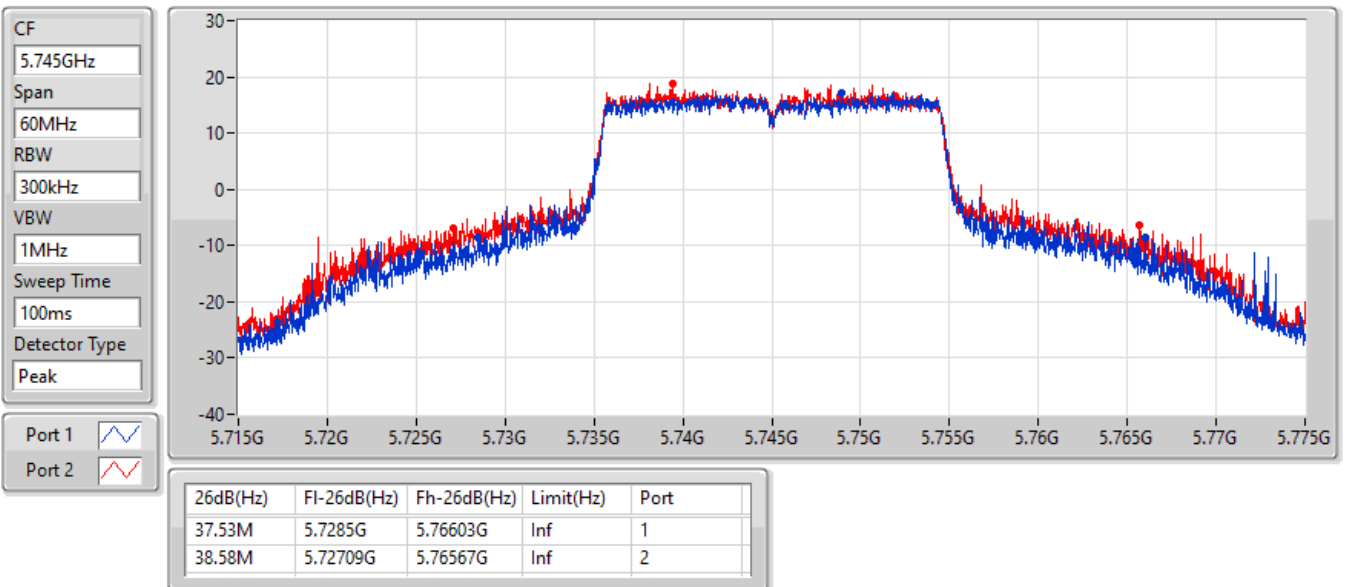


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

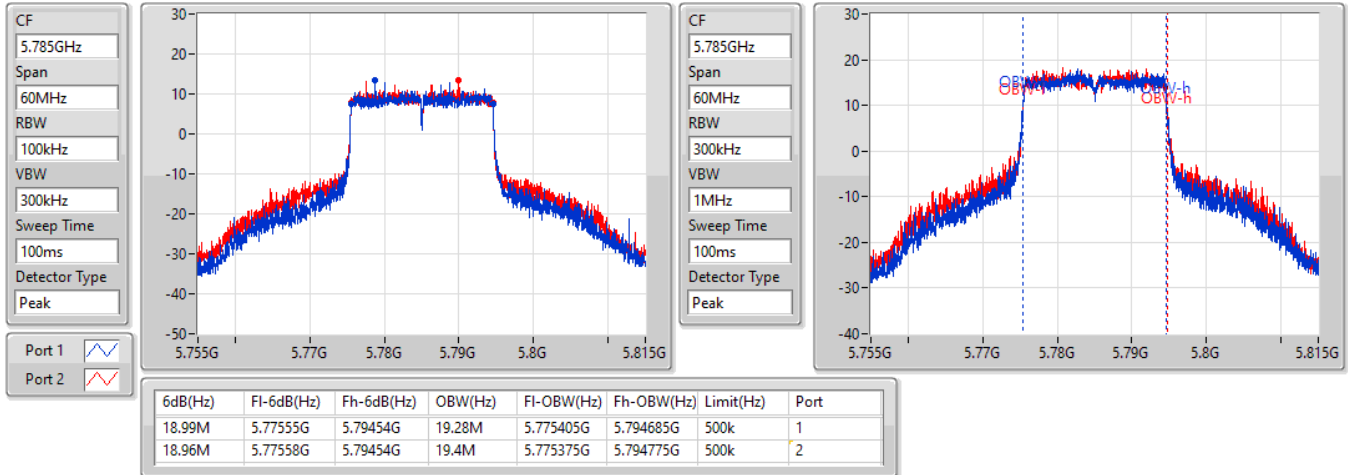
5745MHz

16/07/2022

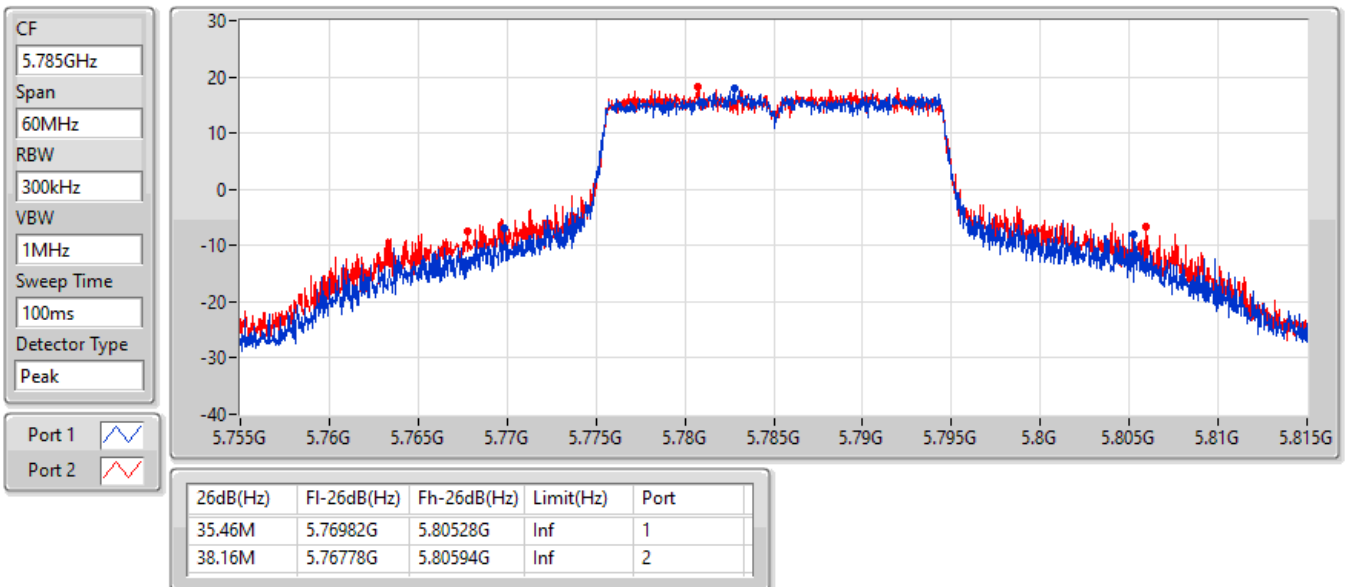


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5785MHz

16/07/2022

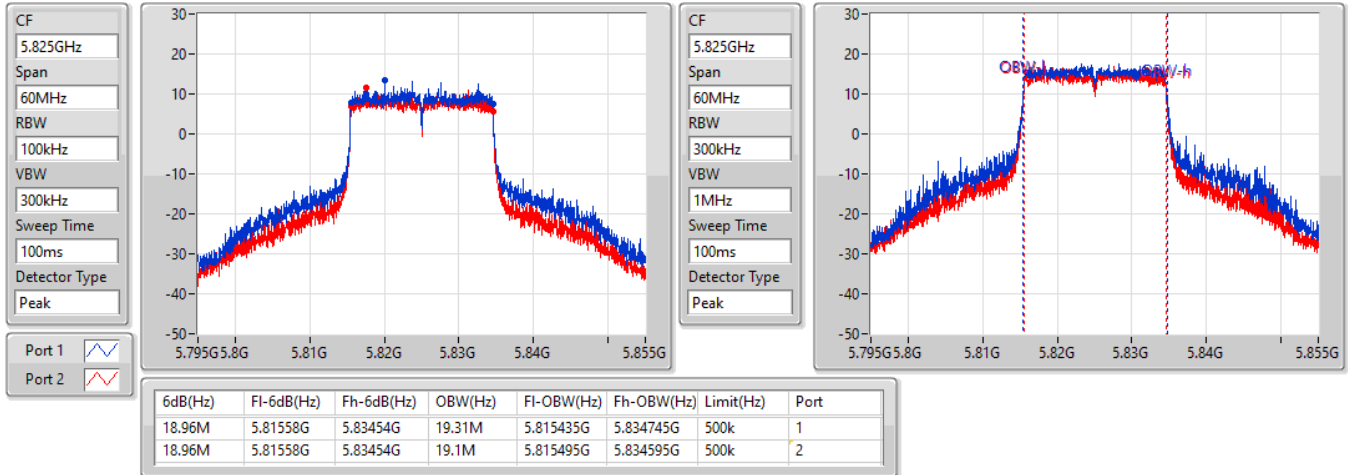

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5785MHz

16/07/2022

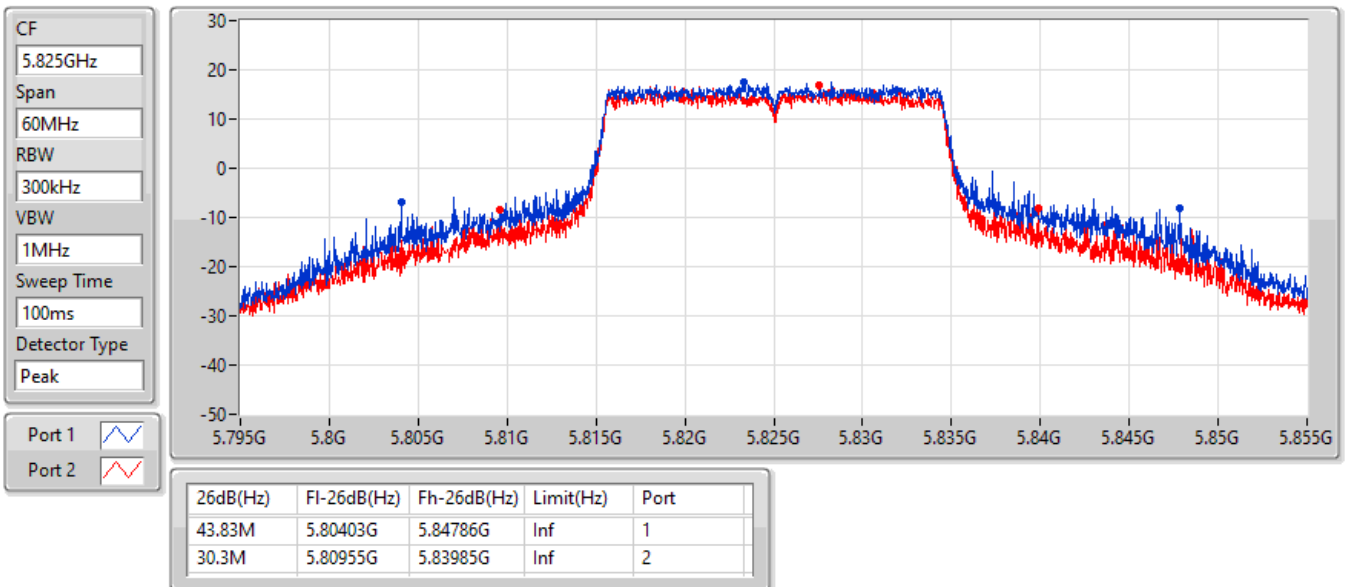


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5825MHz

16/07/2022

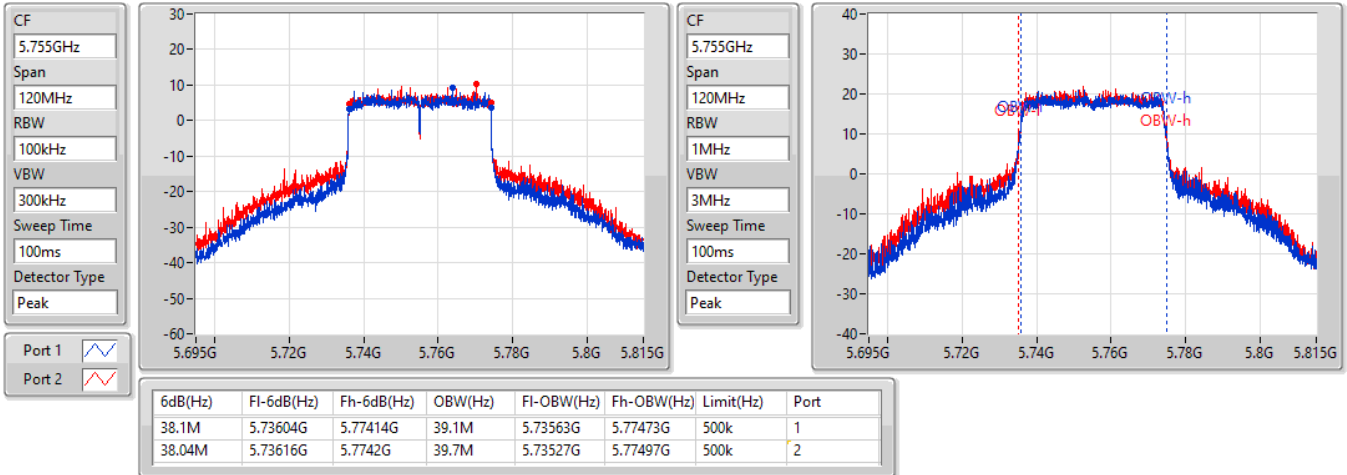

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5825MHz

16/07/2022

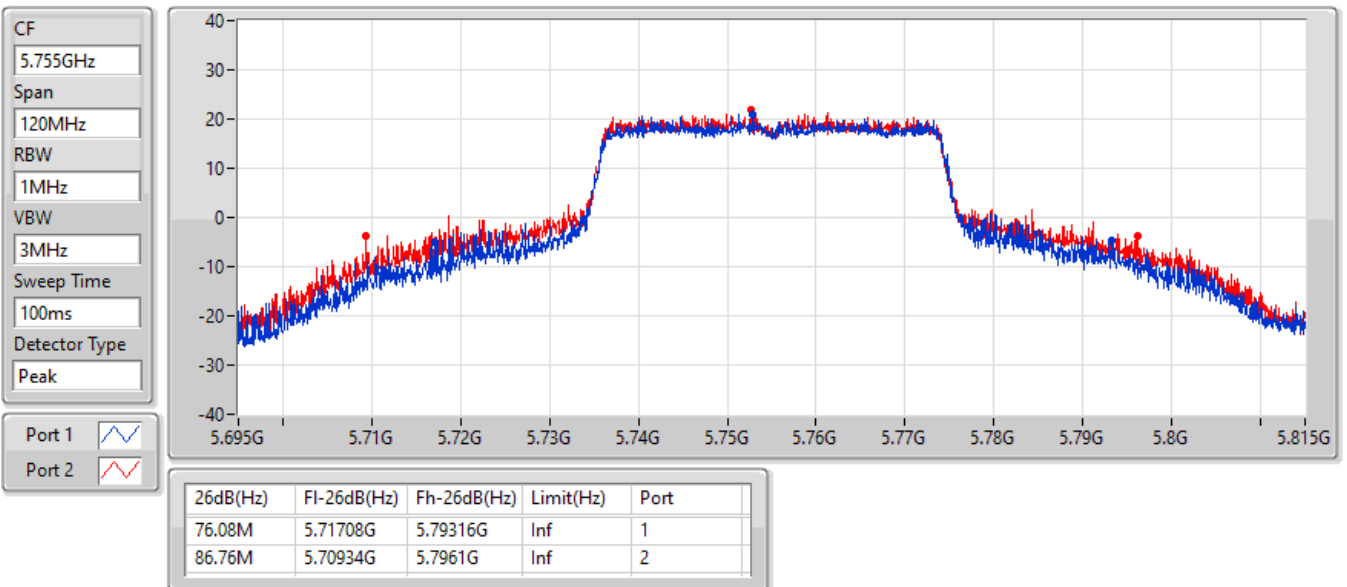


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5755MHz

16/07/2022

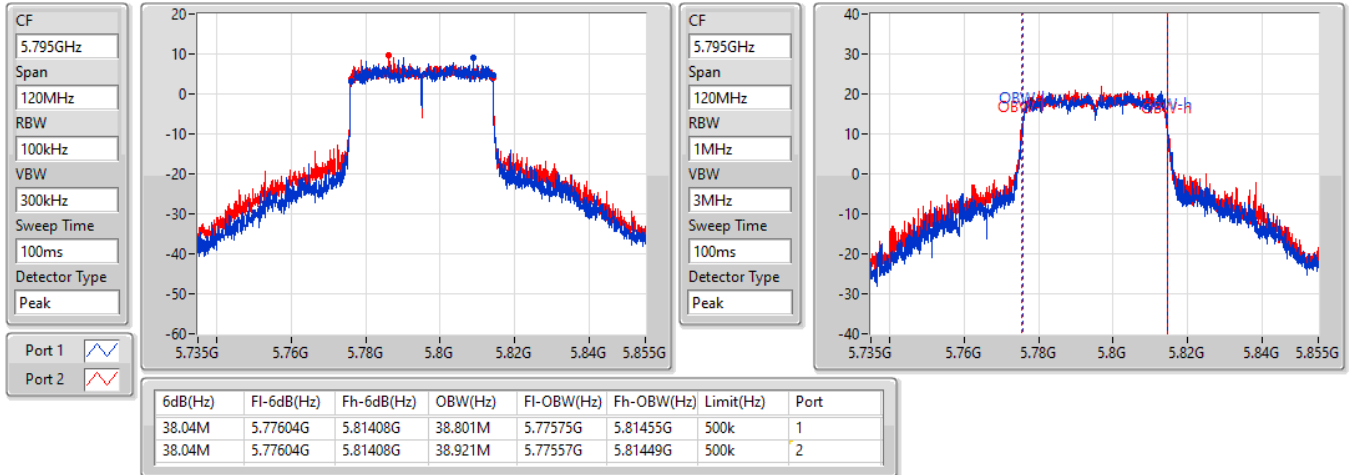

802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5755MHz

16/07/2022

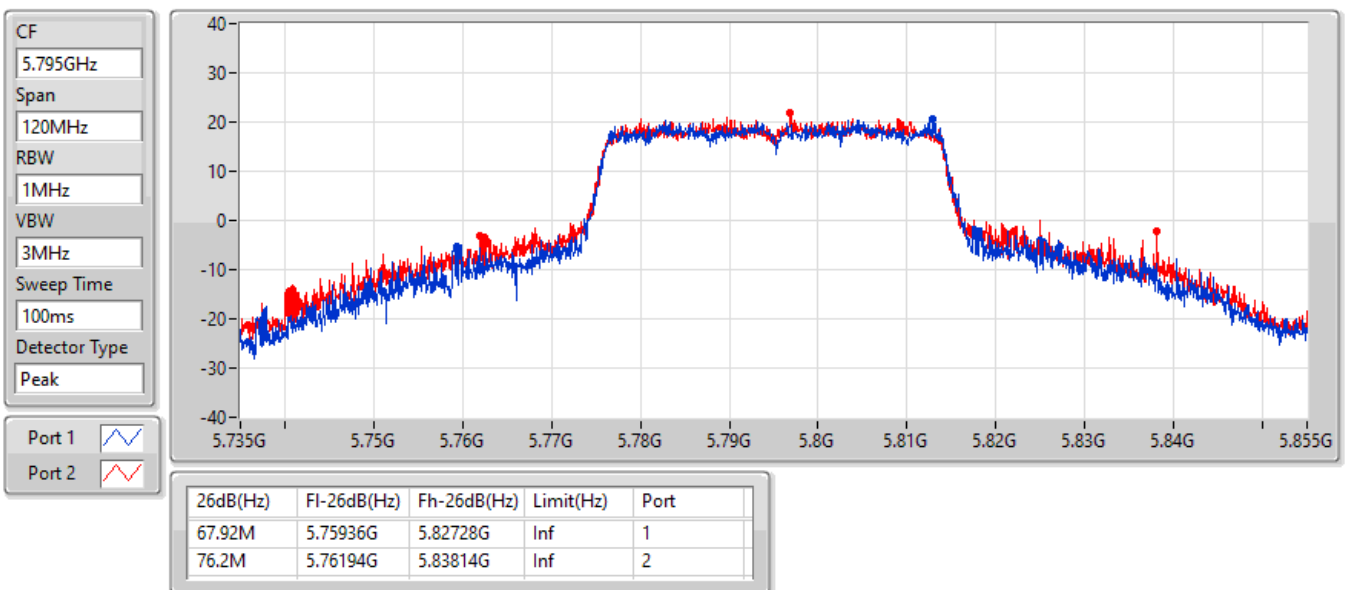


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5795MHz

16/07/2022

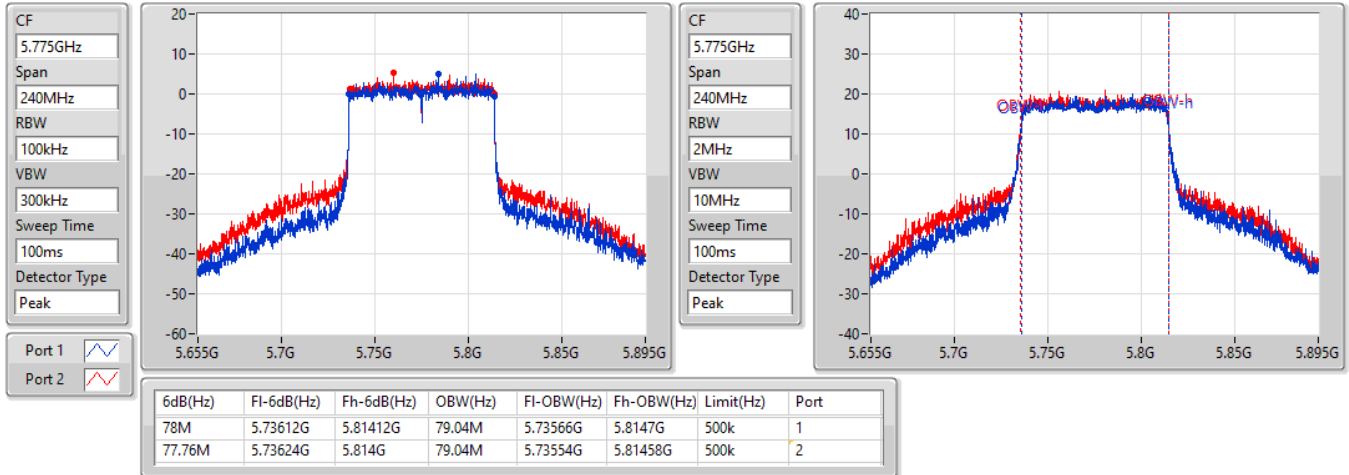

802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5795MHz

16/07/2022

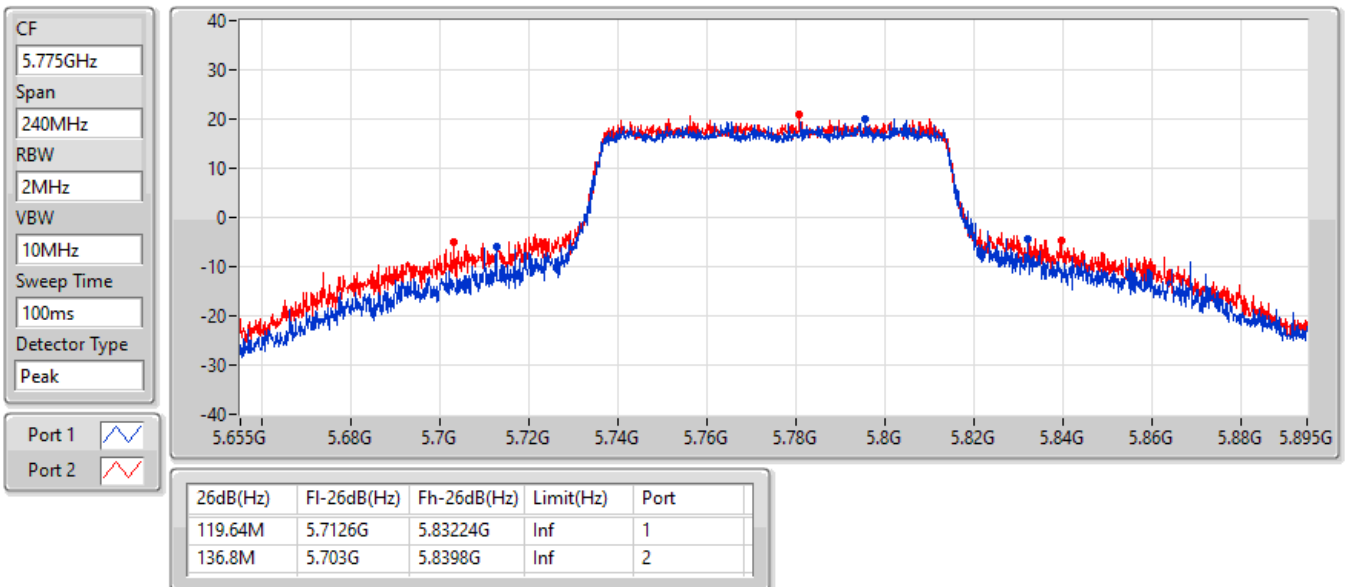


802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5775MHz

16/07/2022


802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5775MHz

16/07/2022





Average Power <Non-Beamforming Mode>

Appendix C.1

Summary

Mode	Total Power (dBm)	Total Power (W)
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	27.42	0.55208
802.11ax HEW20_Nss1,(MCS0)_2TX	27.63	0.57943
802.11ax HEW40_Nss1,(MCS0)_2TX	27.29	0.53580
802.11ax HEW80_Nss1,(MCS0)_2TX	25.82	0.38194



Average Power <Non-Beamforming Mode>

Appendix C.1

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5745MHz	Pass	25.21	24.04	24.69	27.39	30.00
5785MHz	Pass	25.21	24.09	24.53	27.33	30.00
5825MHz	Pass	25.21	24.98	23.76	27.42	30.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5745MHz	Pass	25.21	24.34	24.89	27.63	30.00
5785MHz	Pass	25.21	24.31	24.75	27.55	30.00
5825MHz	Pass	25.21	24.56	23.32	26.99	30.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5755MHz	Pass	25.21	23.97	24.56	27.29	30.00
5795MHz	Pass	25.21	23.75	24.19	26.99	30.00
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5775MHz	Pass	25.21	22.45	23.15	25.82	30.00

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



Average Power <Beamforming Mode>

Appendix C.2

Summary

Mode	Total Power (dBm)	Total Power (W)
5.725-5.85GHz	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	27.63	0.57943
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	27.29	0.53580
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	25.82	0.38194



Average Power <Beamforming Mode>

Appendix C.2

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5745MHz	Pass	28.22	24.34	24.89	27.63	30.00
5785MHz	Pass	28.22	24.31	24.75	27.55	30.00
5825MHz	Pass	28.22	24.56	23.32	26.99	30.00
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5755MHz	Pass	28.22	23.97	24.56	27.29	30.00
5795MHz	Pass	28.22	23.75	24.19	26.99	30.00
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5775MHz	Pass	28.22	22.45	23.15	25.82	30.00

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

Summary

Mode	PD (dBm/RBW)
5.725-5.85GHz	-
802.11a_Nss1,(6Mbps)_2TX	13.48
802.11ax HEW20_Nss1,(MCS0)_2TX	13.05
802.11ax HEW40_Nss1,(MCS0)_2TX	9.77
802.11ax HEW80_Nss1,(MCS0)_2TX	5.04

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

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5745MHz	Pass	28.22	10.48	10.89	13.38	30.00
5785MHz	Pass	28.22	10.59	10.84	13.34	30.00
5825MHz	Pass	28.22	11.41	10.02	13.48	30.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5745MHz	Pass	28.22	10.11	10.31	13.05	30.00
5785MHz	Pass	28.22	10.03	10.23	12.85	30.00
5825MHz	Pass	28.22	10.00	8.84	12.24	30.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5755MHz	Pass	28.22	6.64	7.11	9.77	30.00
5795MHz	Pass	28.22	6.56	6.80	9.46	30.00
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5775MHz	Pass	28.22	2.05	2.53	5.04	30.00

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

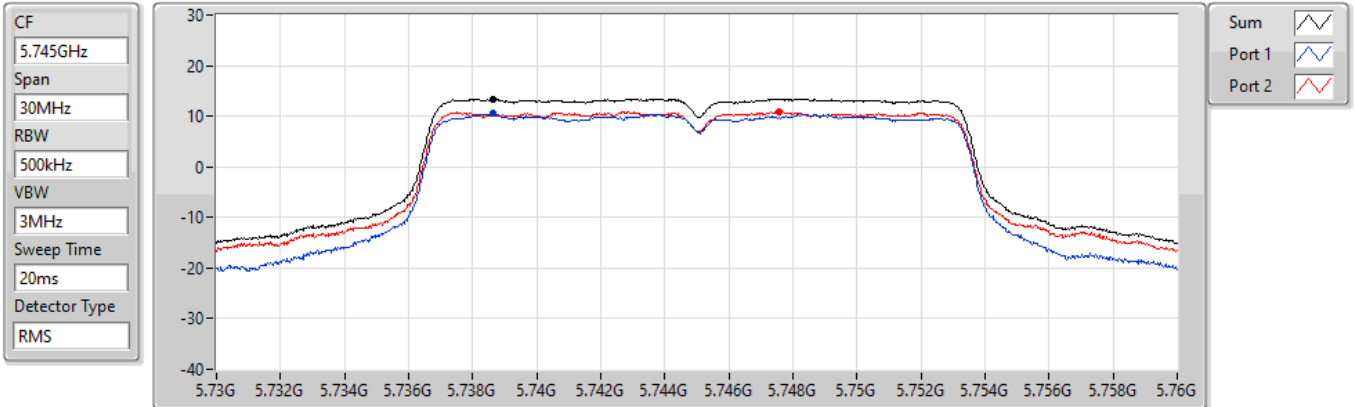
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

802.11a_Nss1,(6Mbps)_2TX

PSD

5745MHz

16/07/2022

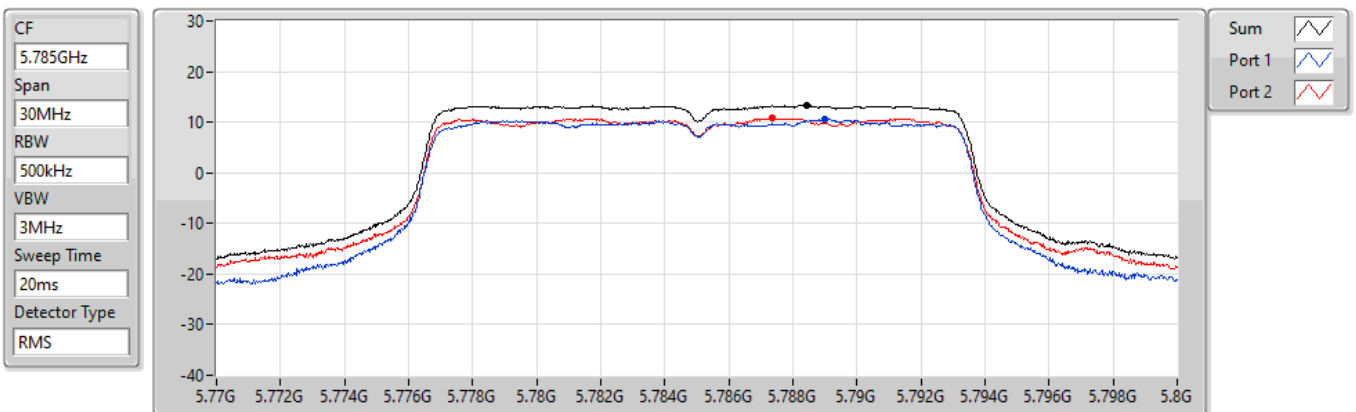


802.11a_Nss1,(6Mbps)_2TX

PSD

5785MHz

16/07/2022

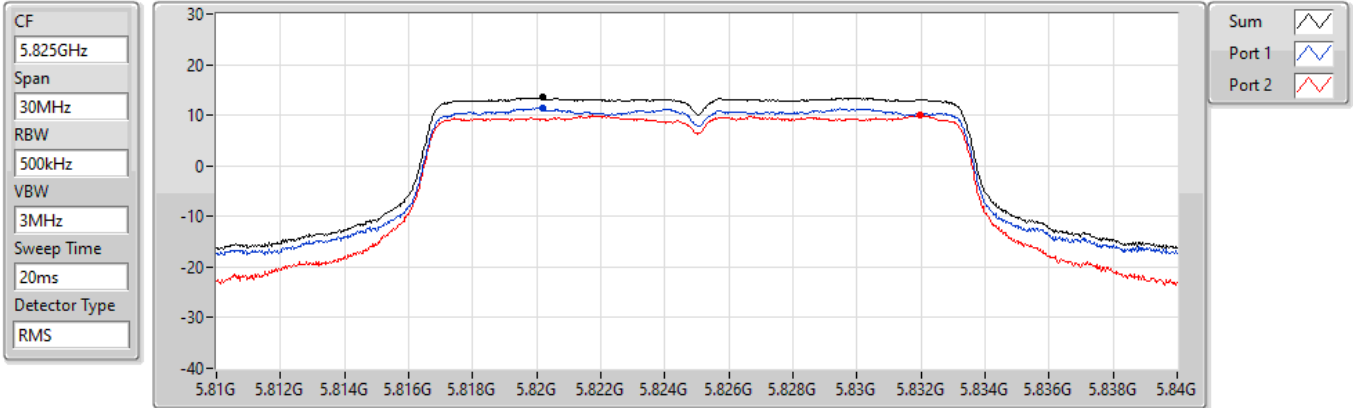


802.11a_Nss1,(6Mbps)_2TX

PSD

5825MHz

16/07/2022

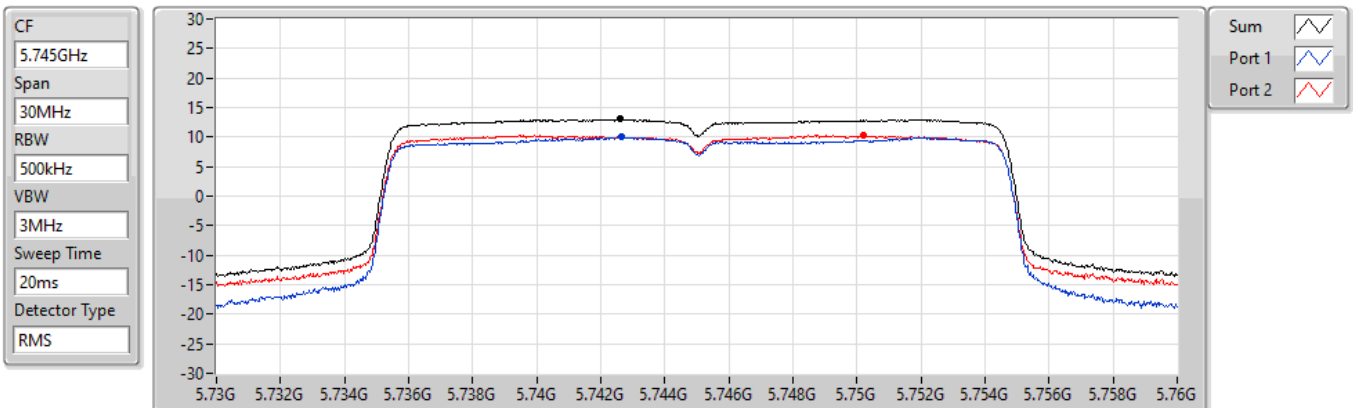


802.11ax HEW20_Nss1,(MCS0)_2TX

PSD

5745MHz

16/07/2022

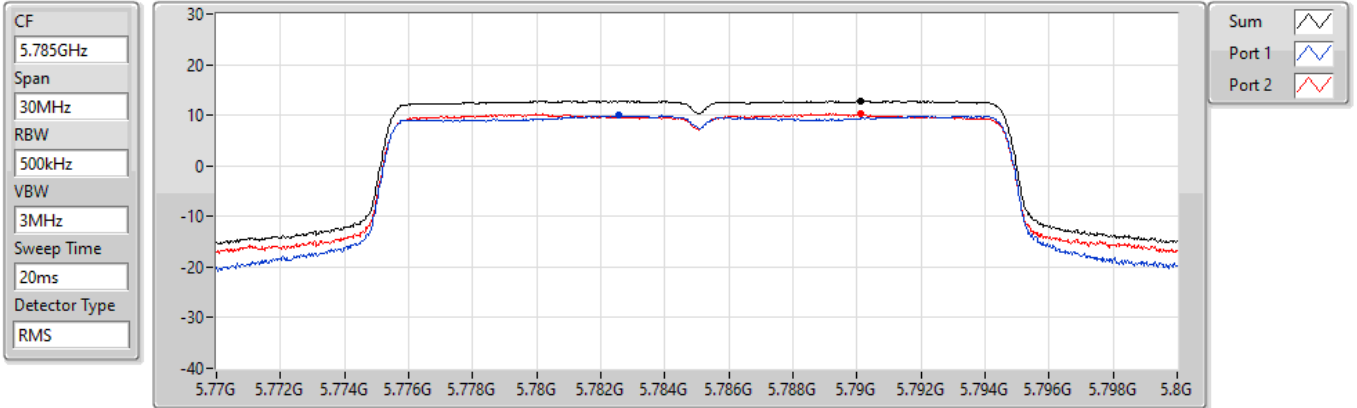


802.11ax HEW20_Nss1,(MCS0)_2TX

PSD

5785MHz

16/07/2022

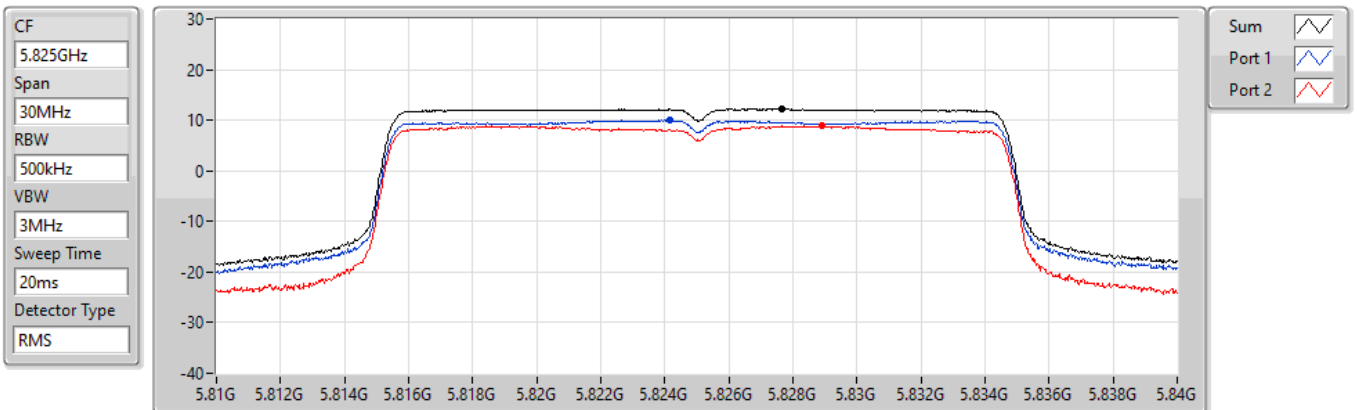


802.11ax HEW20_Nss1,(MCS0)_2TX

PSD

5825MHz

16/07/2022

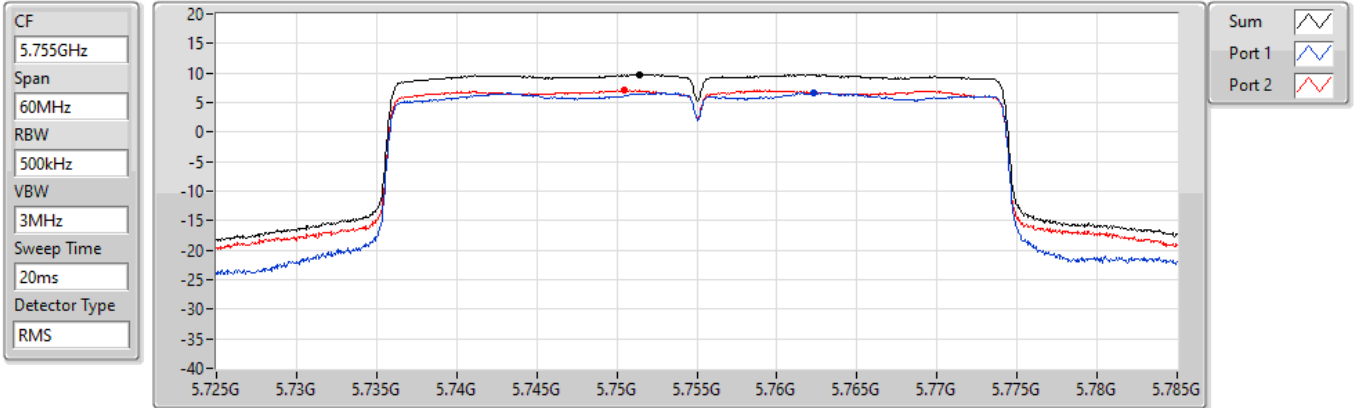


802.11ax HEW40_Nss1,(MCS0)_2TX

PSD

5755MHz

16/07/2022

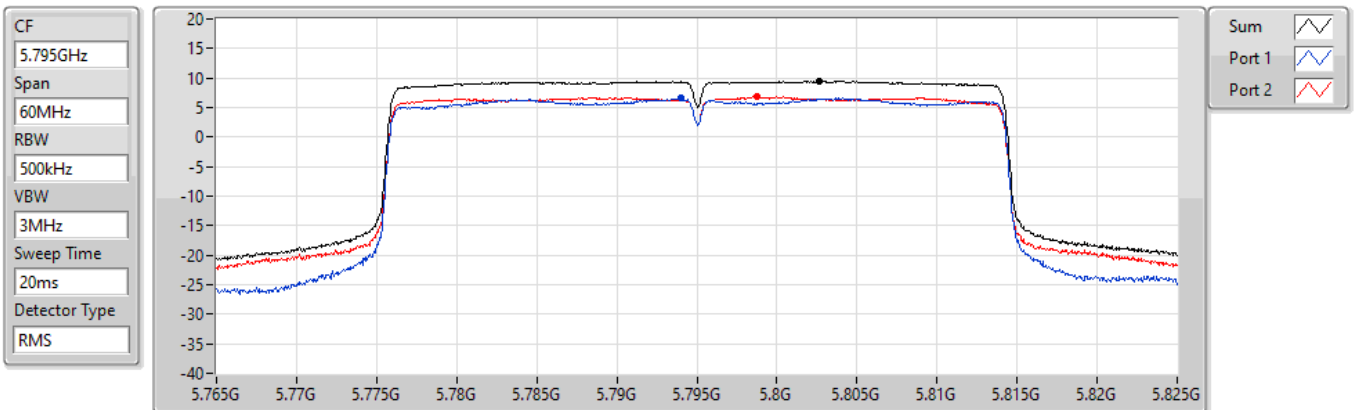


802.11ax HEW40_Nss1,(MCS0)_2TX

PSD

5795MHz

16/07/2022

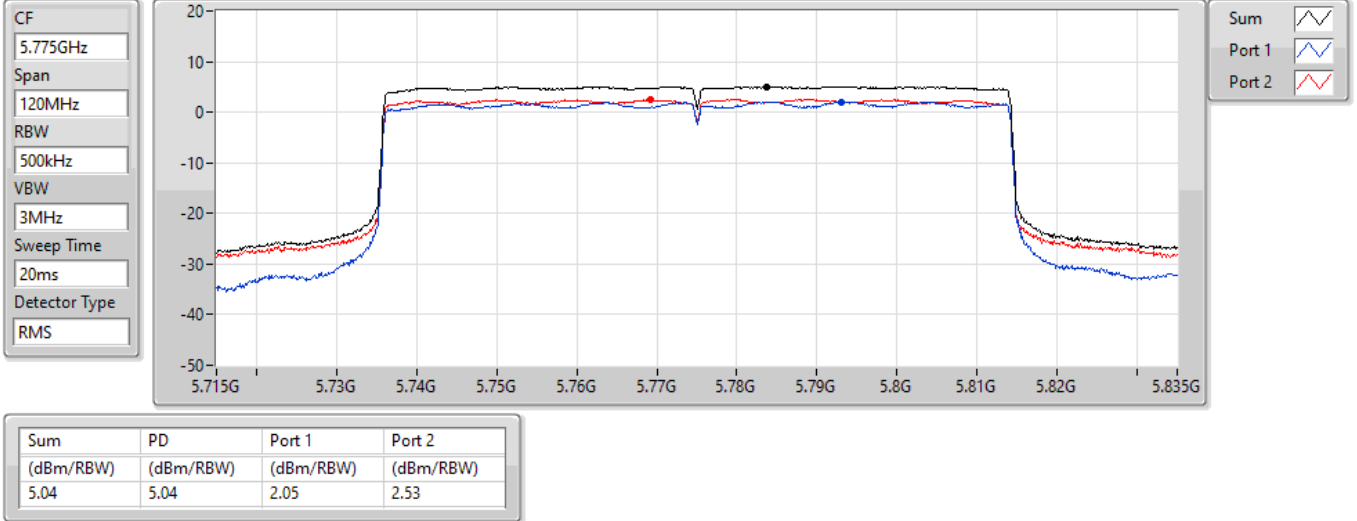


802.11ax HEW80_Nss1,(MCS0)_2TX

5775MHz

PSD

16/07/2022





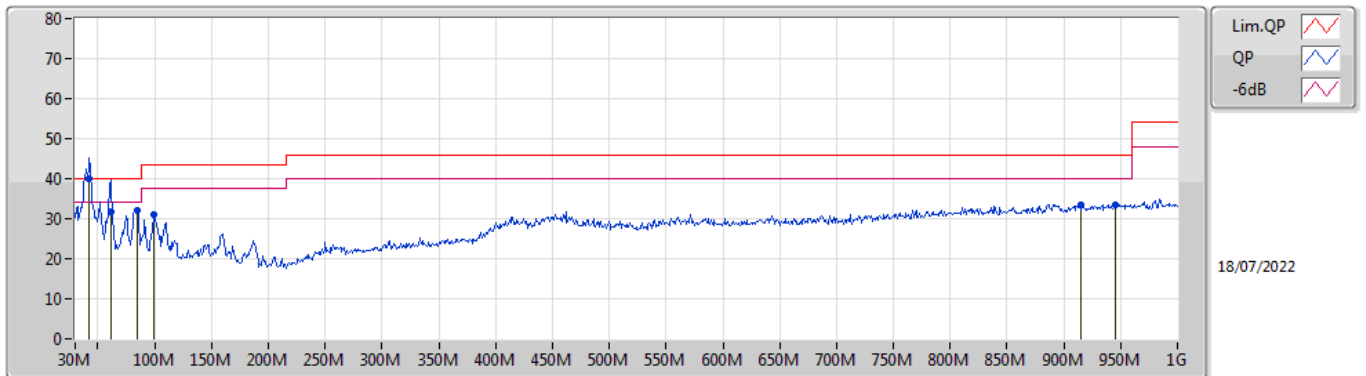
Radiated Emissions below 1GHz

Appendix E.1

Summary

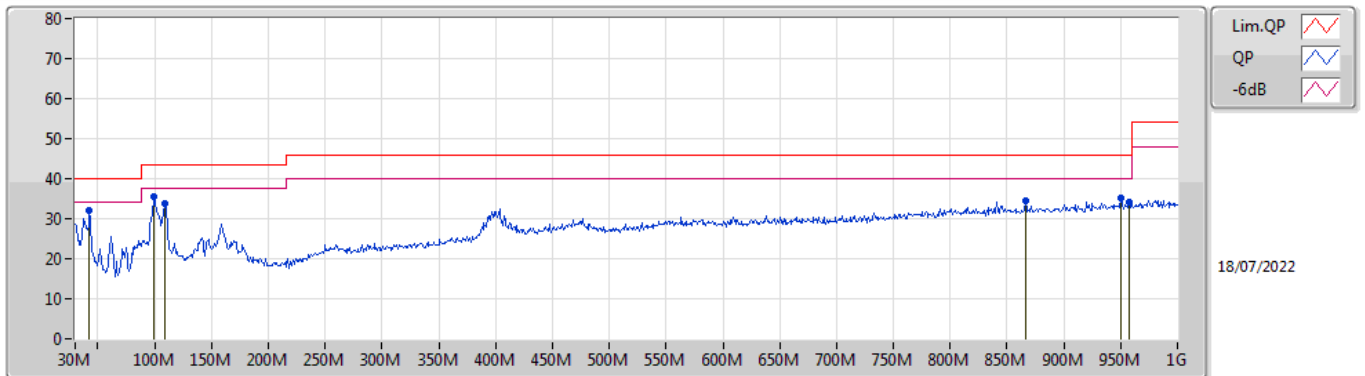
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	QP	42.61M	39.89	40.00	-0.11	Vertical

Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
QP	42.61M	39.89	40.00	-0.11	-13.61	3	Vertical	116	1.25	"Worst"	53.50	17.23	0.95	31.79
QP	61.04M	31.71	40.00	-8.29	-18.49	3	Vertical	64	2.00	-	50.20	12.23	1.20	31.92
PK	84.32M	32.09	40.00	-7.91	-17.09	3	Vertical	341	1.50	-	49.18	13.46	1.40	31.95
PK	98.87M	31.19	43.50	-12.31	-14.09	3	Vertical	197	1.50	-	45.28	16.40	1.48	31.97
PK	914.64M	33.60	46.00	-12.40	-0.90	3	Vertical	321	1.50	-	34.50	26.20	5.39	32.49
PK	945.68M	33.56	46.00	-12.44	-0.48	3	Vertical	351	1.25	-	34.04	26.43	5.57	32.48

Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
PK	42.61M	32.18	40.00	-7.82	-13.61	3	Horizontal	280	3.00	"Worst"	45.79	17.23	0.95	31.79
PK	98.87M	35.61	43.50	-7.89	-14.09	3	Horizontal	93	2.00	-	49.70	16.40	1.48	31.97
PK	108.57M	33.81	43.50	-9.69	-12.88	3	Horizontal	60	2.00	-	46.69	17.55	1.54	31.97
PK	866.14M	34.46	46.00	-11.54	-1.36	3	Horizontal	183	1.25	-	35.82	25.97	5.16	32.49
PK	950.53M	35.01	46.00	-10.99	-0.40	3	Horizontal	208	3.00	-	35.41	26.48	5.60	32.48
PK	957.32M	34.30	46.00	-11.70	-0.25	3	Horizontal	306	1.50	-	34.55	26.61	5.60	32.46

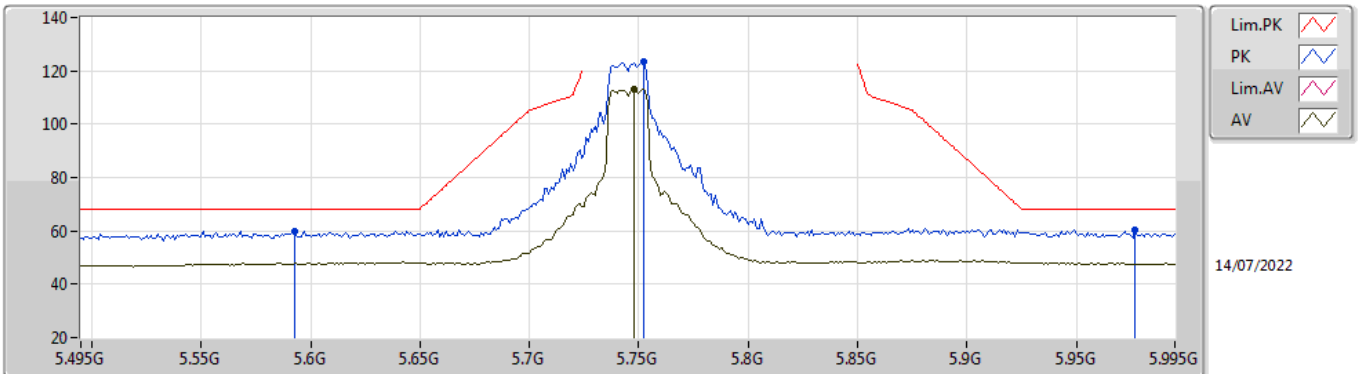


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW80_Nss1,(MCS0)_2TX	Pass	PK	5.647G	67.85	68.20	-0.35	3	Vertical	0	1.76	-

802.11a_Nss1,(6Mbps)_2TX

5745MHz_TnomVnom

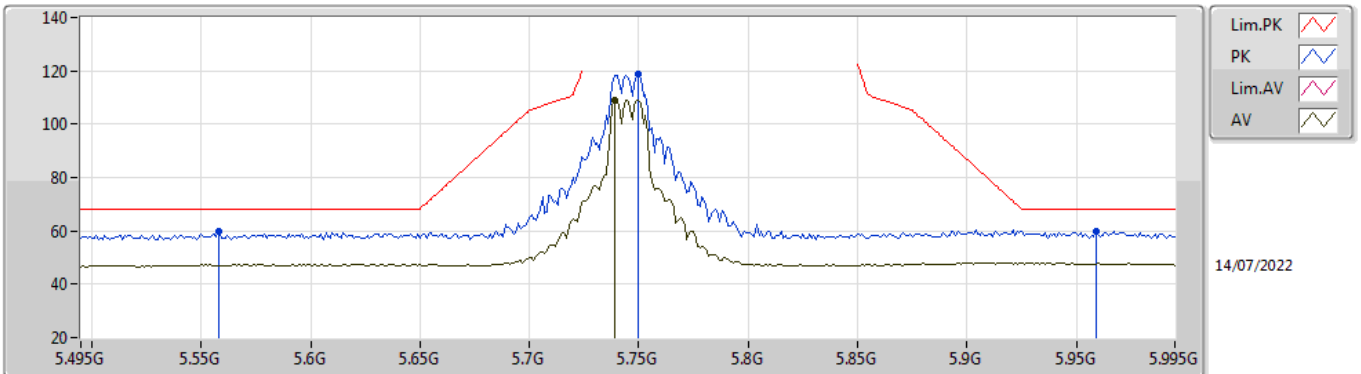


EUT V_2TX
Setting 31.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.593G	60.07	68.20	-8.13	52.96	3	Vertical	360	1.76	-	34.60	7.39	34.88	
PK	5.752G	123.46	Inf	-Inf	116.78	3	Vertical	360	1.76	-	34.20	7.40	34.92	
AV	5.748G	113.06	Inf	-Inf	106.37	3	Vertical	360	1.76	-	34.20	7.40	34.91	
PK	5.977G	60.24	68.20	-7.96	52.82	3	Vertical	360	1.76	-	34.80	7.58	34.96	

802.11a_Nss1,(6Mbps)_2TX

5745MHz_TnomVnom

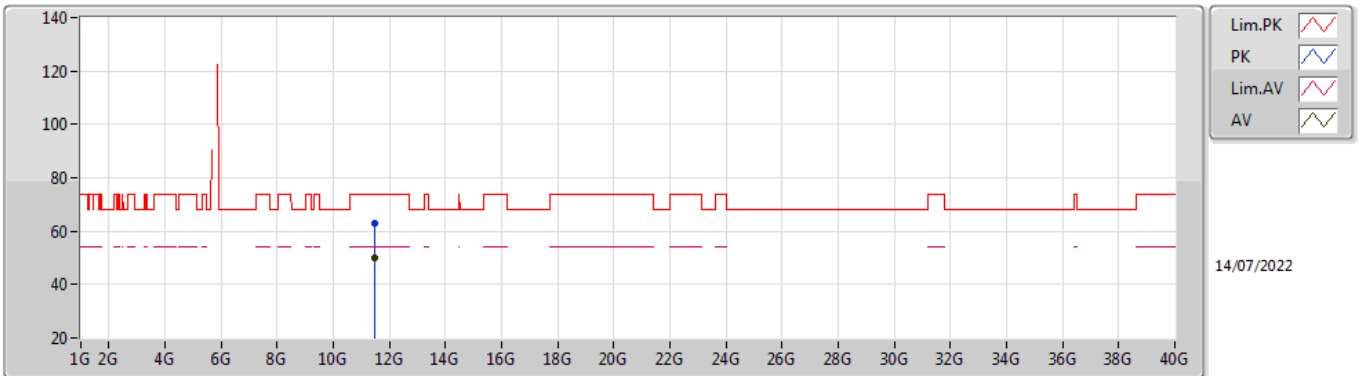


EUT V_2TX
Setting 31.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.558G	59.68	68.20	-8.52	52.59	3	Horizontal	360	1.72	-	34.60	7.36	34.87	
PK	5.75G	118.63	Inf	-Inf	111.94	3	Horizontal	360	1.72	-	34.20	7.40	34.91	
AV	5.739G	108.94	Inf	-Inf	102.23	3	Horizontal	360	1.72	-	34.22	7.40	34.91	
PK	5.959G	59.96	68.20	-8.24	52.56	3	Horizontal	360	1.72	-	34.80	7.56	34.96	

802.11a_Nss1,(6Mbps)_2TX

5745MHz_TnomVnom

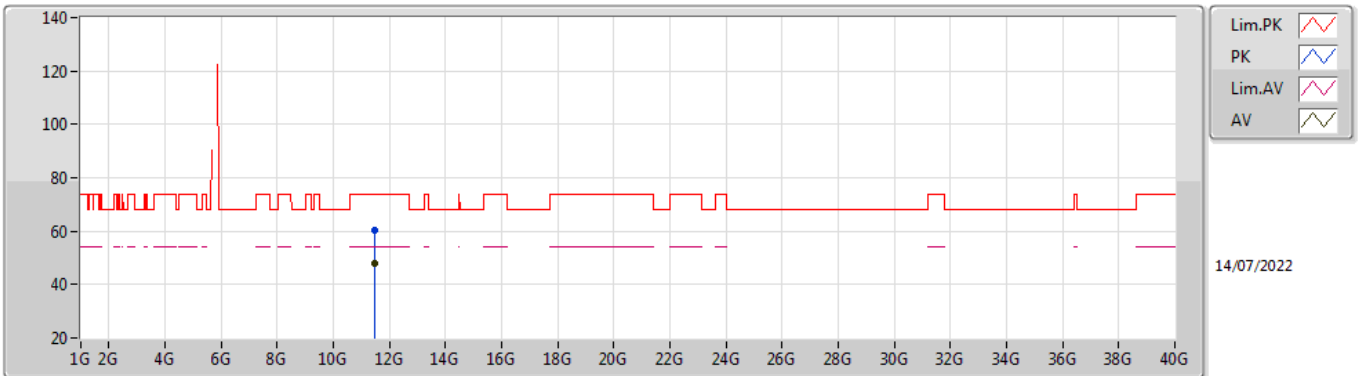


EUT V_2TX
Setting 31.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.49198G	63.06	74.00	-10.94	48.22	3	Vertical	360	1.74	-	38.98	10.72	34.86
AV	11.49228G	49.97	54.00	-4.03	35.13	3	Vertical	360	1.74	-	38.98	10.72	34.86

802.11a_Nss1,(6Mbps)_2TX

5745MHz_TnomVnom

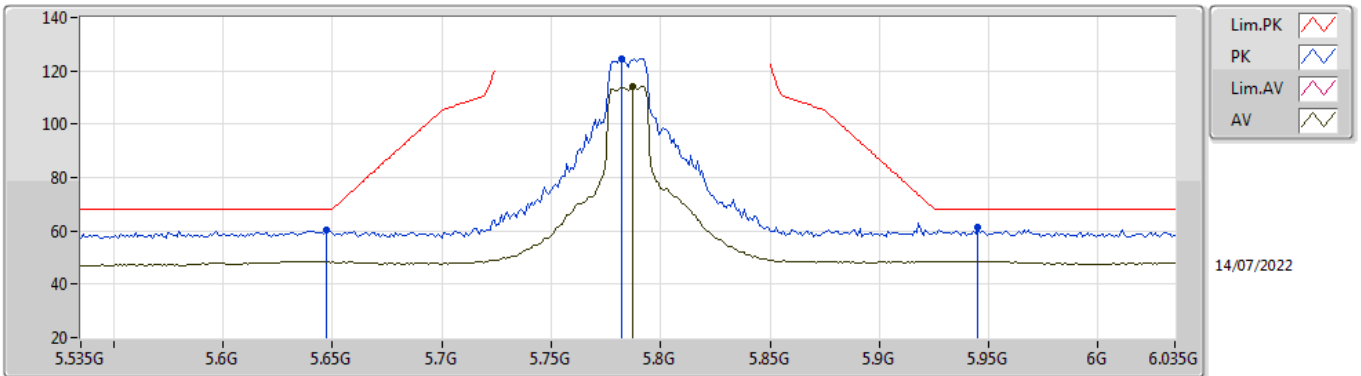


EUT V_2TX
Setting 31.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.48844G	60.54	74.00	-13.46	45.70	3	Horizontal	7	1.80	-	38.98	10.72	34.86
AV	11.48856G	47.92	54.00	-6.08	33.08	3	Horizontal	7	1.80	-	38.98	10.72	34.86

802.11a_Nss1,(6Mbps)_2TX

5785MHz_TnomVnom

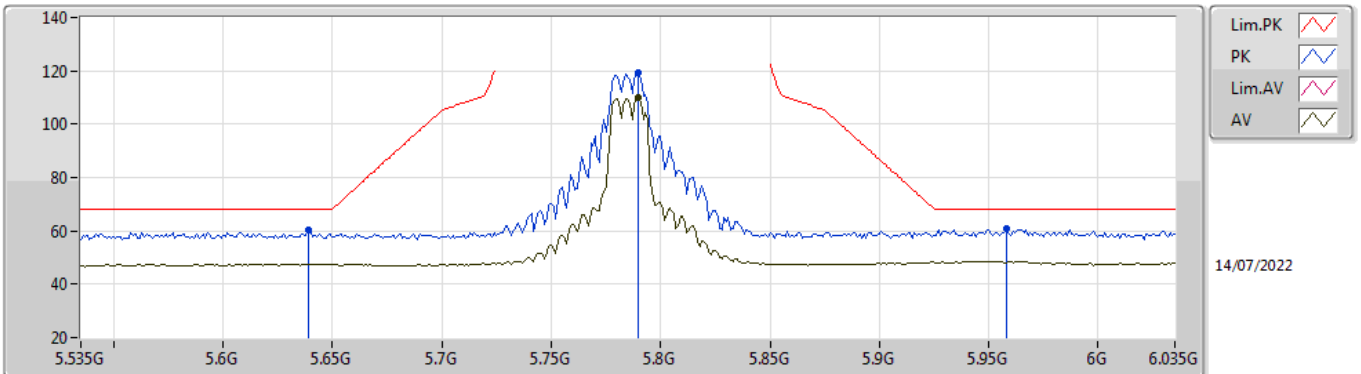


EUT V_2TX
Setting 31.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.647G	60.31	68.20	-7.89	53.29	3	Vertical	0	1.74	-	34.51	7.40	34.89	
PK	5.782G	124.37	Inf	-Inf	117.69	3	Vertical	0	1.74	-	34.20	7.40	34.92	
AV	5.787G	114.08	Inf	-Inf	107.40	3	Vertical	0	1.74	-	34.20	7.40	34.92	
PK	5.945G	61.21	68.20	-6.99	53.85	3	Vertical	0	1.74	-	34.78	7.54	34.96	

802.11a_Nss1,(6Mbps)_2TX

5785MHz_TnomVnom

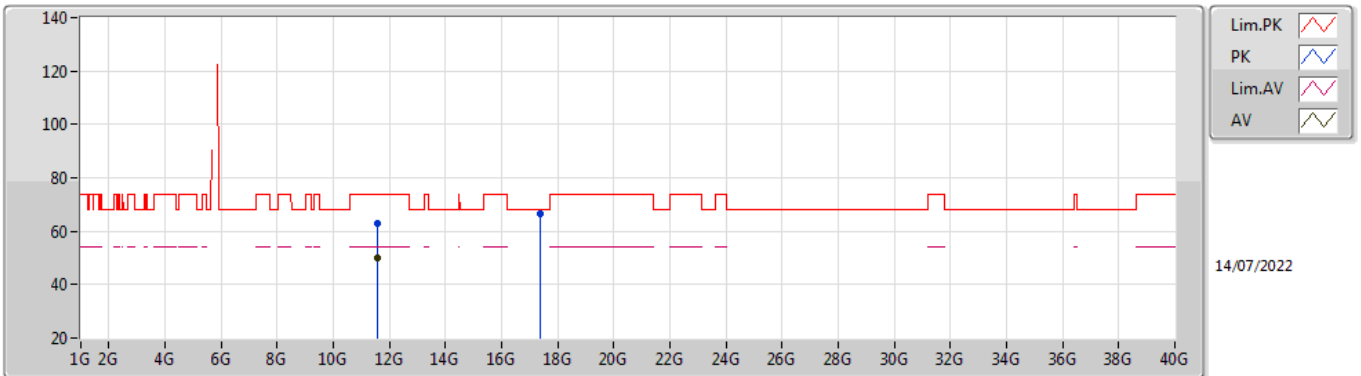


EUT V_2TX
Setting 31.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.639G	60.15	68.20	-8.05	53.12	3	Horizontal	0	1.75	-	34.52	7.40	34.89	
PK	5.79G	119.29	Inf	-Inf	112.61	3	Horizontal	0	1.75	-	34.20	7.40	34.92	
AV	5.79G	109.90	Inf	-Inf	103.22	3	Horizontal	0	1.75	-	34.20	7.40	34.92	
PK	5.958G	60.63	68.20	-7.57	53.23	3	Horizontal	0	1.75	-	34.80	7.56	34.96	

802.11a_Nss1,(6Mbps)_2TX

5785MHz_TnomVnom

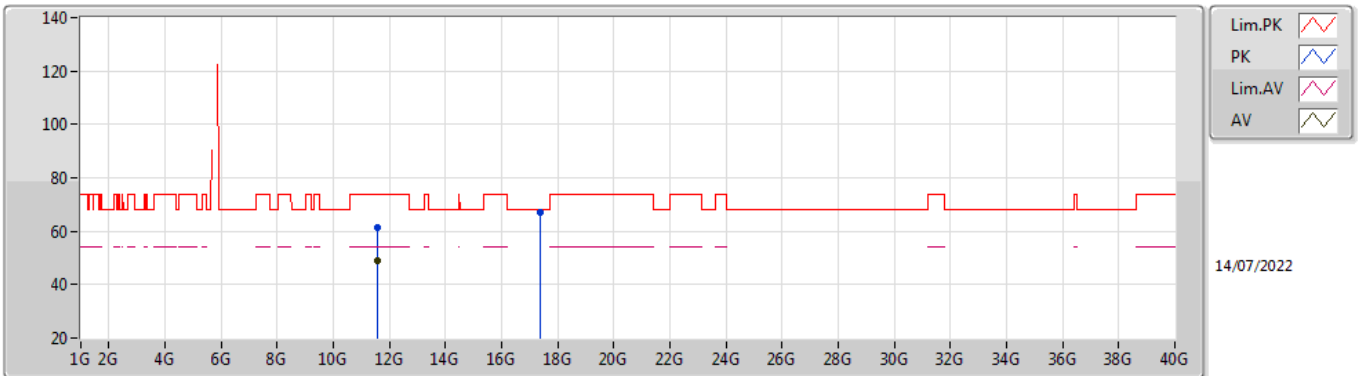


EUT V_2TX
Setting 31.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.57282G	62.80	74.00	-11.20	47.67	3	Vertical	0	1.70	-	39.29	10.74	34.90
AV	11.56808G	49.76	54.00	-4.24	34.64	3	Vertical	0	1.70	-	39.27	10.74	34.89
PK	17.35584G	66.52	68.20	-1.68	44.92	3	Vertical	164	1.80	-	41.42	14.35	34.17

802.11a_Nss1,(6Mbps)_2TX

5785MHz_TnomVnom

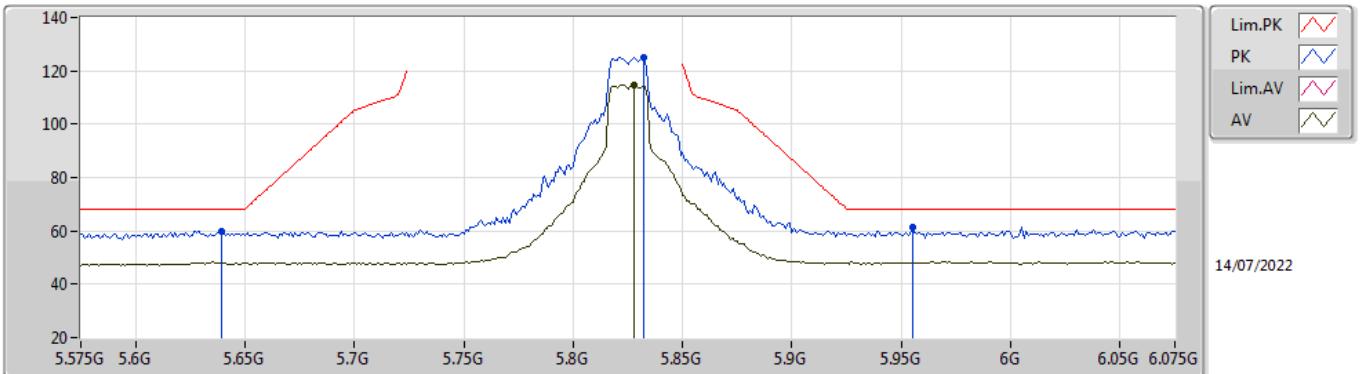


EUT V_2TX
Setting 31.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.57048G	61.63	74.00	-12.37	46.51	3	Horizontal	-0	1.76	-	39.28	10.74	34.90
AV	11.57006G	49.06	54.00	-4.94	33.94	3	Horizontal	-0	1.76	-	39.28	10.74	34.90
PK	17.3688G	66.84	68.20	-1.36	45.17	3	Horizontal	189	1.80	-	41.48	14.36	34.17

802.11a_Nss1,(6Mbps)_2TX

5825MHz_TnomVnom

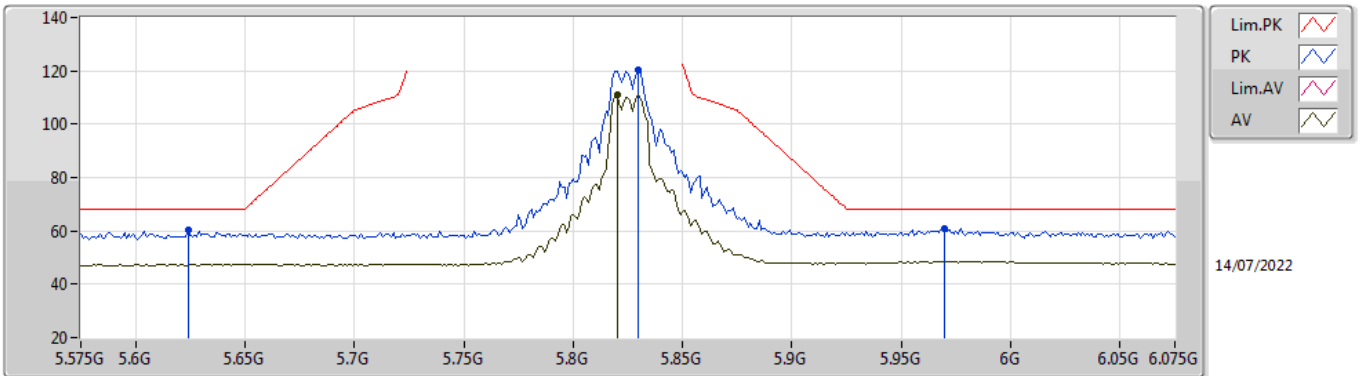


EUT V_2TX
Setting 31.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.639G	59.91	68.20	-8.29	52.88	3	Vertical	0	1.74	-	34.52	7.40	34.89	
PK	5.832G	124.84	Inf	-Inf	118.08	3	Vertical	0	1.74	-	34.26	7.43	34.93	
AV	5.828G	114.90	Inf	-Inf	108.14	3	Vertical	0	1.74	-	34.26	7.43	34.93	
PK	5.955G	61.55	68.20	-6.65	54.16	3	Vertical	0	1.74	-	34.80	7.55	34.96	

802.11a_Nss1,(6Mbps)_2TX

5825MHz_TnomVnom

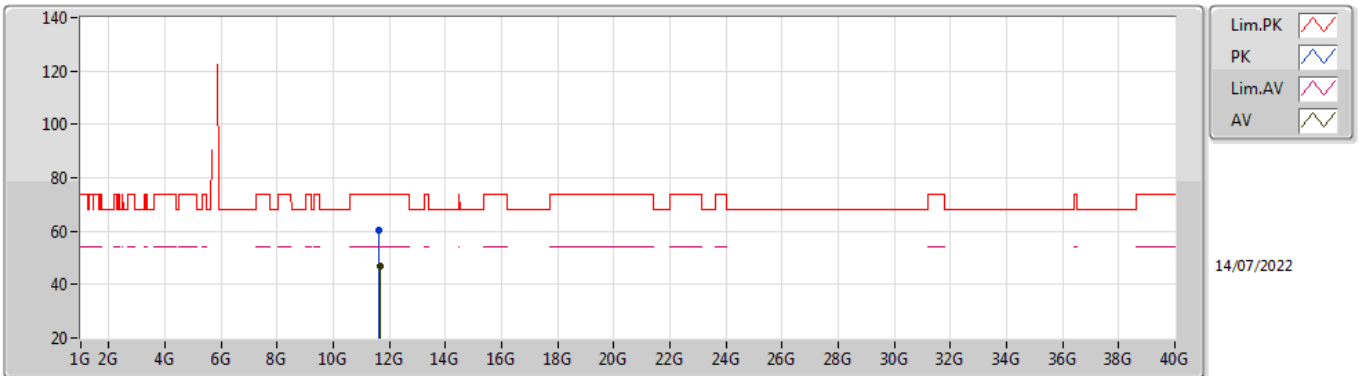


EUT V_2TX
Setting 31.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.624G	60.24	68.20	-7.96	53.18	3	Horizontal	-0	1.74	-	34.55	7.40	34.89	
PK	5.83G	120.36	Inf	-Inf	113.60	3	Horizontal	-0	1.74	-	34.26	7.43	34.93	
AV	5.82G	111.12	Inf	-Inf	104.39	3	Horizontal	-0	1.74	-	34.24	7.42	34.93	
PK	5.97G	60.83	68.20	-7.37	53.42	3	Horizontal	-0	1.74	-	34.80	7.57	34.96	

802.11a_Nss1,(6Mbps)_2TX

5825MHz_TnomVnom

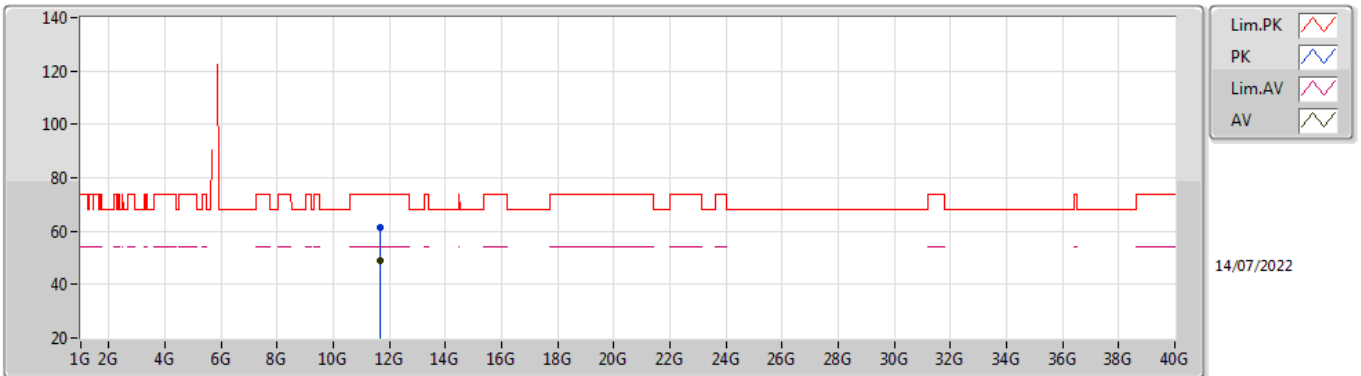


EUT V_2TX
Setting 31.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	11.6473G	60.13	74.00	-13.87	44.91	3	Vertical	-0	1.64	-	39.40	10.75	34.93	
AV	11.6479G	46.79	54.00	-7.21	31.57	3	Vertical	-0	1.64	-	39.40	10.75	34.93	

802.11a_Nss1,(6Mbps)_2TX

5825MHz_TnomVnom

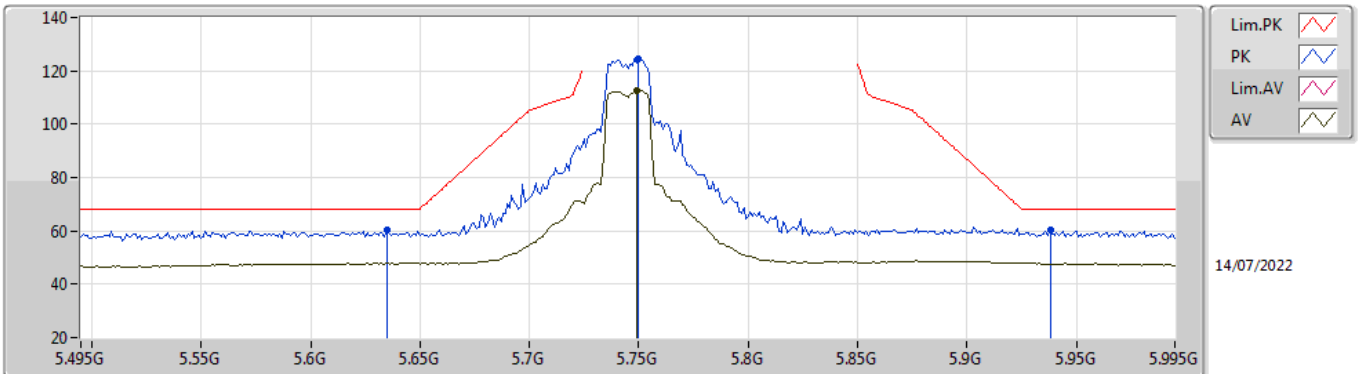


EUT_V_2TX
Setting 31.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.65072G	61.24	74.00	-12.76	46.03	3	Horizontal	-0	1.72	-	39.40	10.75	34.94
AV	11.64994G	48.87	54.00	-5.13	33.65	3	Horizontal	-0	1.72	-	39.40	10.75	34.93

802.11ax HEW20_Nss1,(MCS0)_2TX

5745MHz_TnomVnom

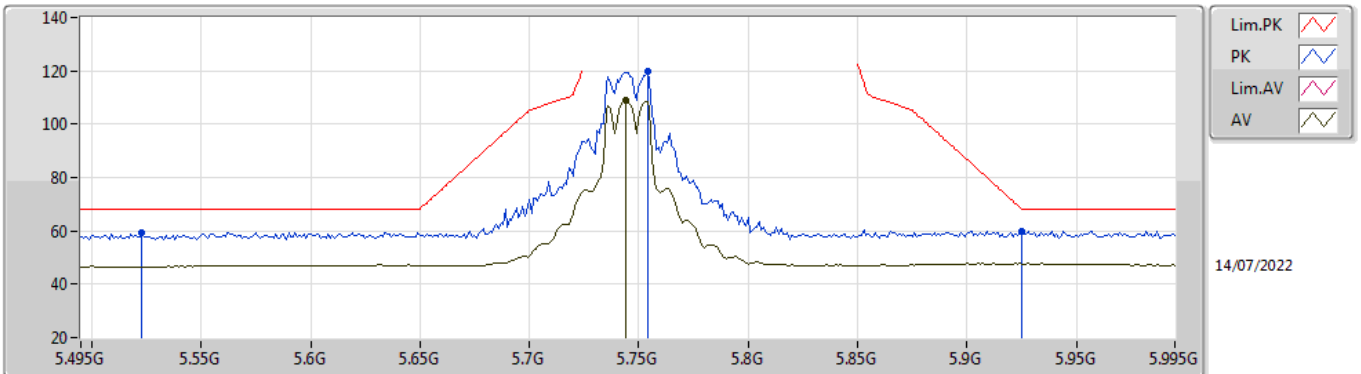


EUT V_2TX
Setting 31.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.635G	60.35	68.20	-7.85	53.31	3	Vertical	-0	1.75	-	34.53	7.40	34.89	
PK	5.75G	124.64	Inf	-Inf	117.95	3	Vertical	-0	1.75	-	34.20	7.40	34.91	
AV	5.749G	112.51	Inf	-Inf	105.82	3	Vertical	-0	1.75	-	34.20	7.40	34.91	
PK	5.938G	60.27	68.20	-7.93	52.94	3	Vertical	-0	1.75	-	34.75	7.54	34.96	

802.11ax HEW20_Nss1,(MCS0)_2TX

5745MHz_TnomVnom

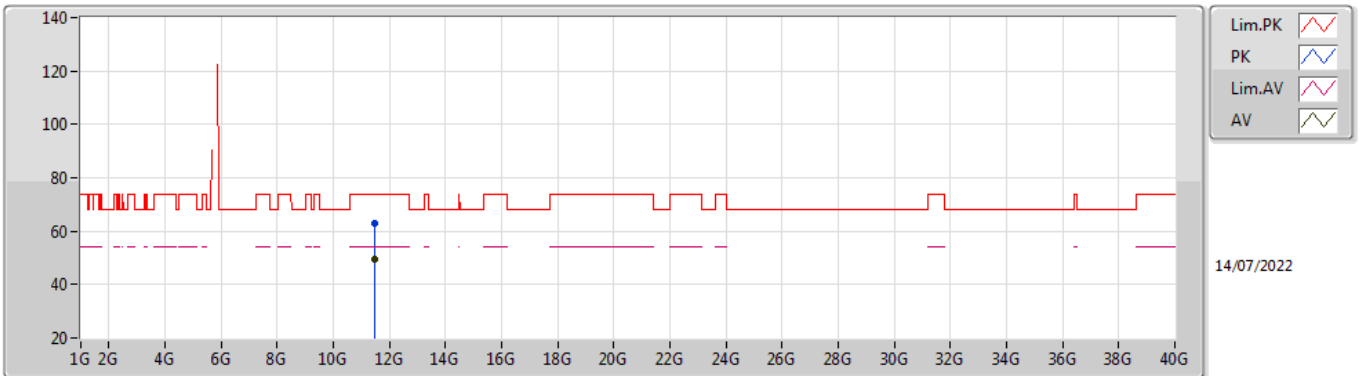


EUT V_2TX
Setting 31.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.523G	59.39	68.20	-8.81	52.34	3	Horizontal	-0	1.76	-	34.60	7.32	34.87	
PK	5.754G	119.91	Inf	-Inf	113.23	3	Horizontal	-0	1.76	-	34.20	7.40	34.92	
AV	5.744G	109.03	Inf	-Inf	102.33	3	Horizontal	-0	1.76	-	34.21	7.40	34.91	
PK	5.925G	60.02	68.20	-8.18	52.74	3	Horizontal	-0	1.76	-	34.70	7.53	34.95	

802.11ax HEW20_Nss1,(MCS0)_2TX

5745MHz_TnomVnom

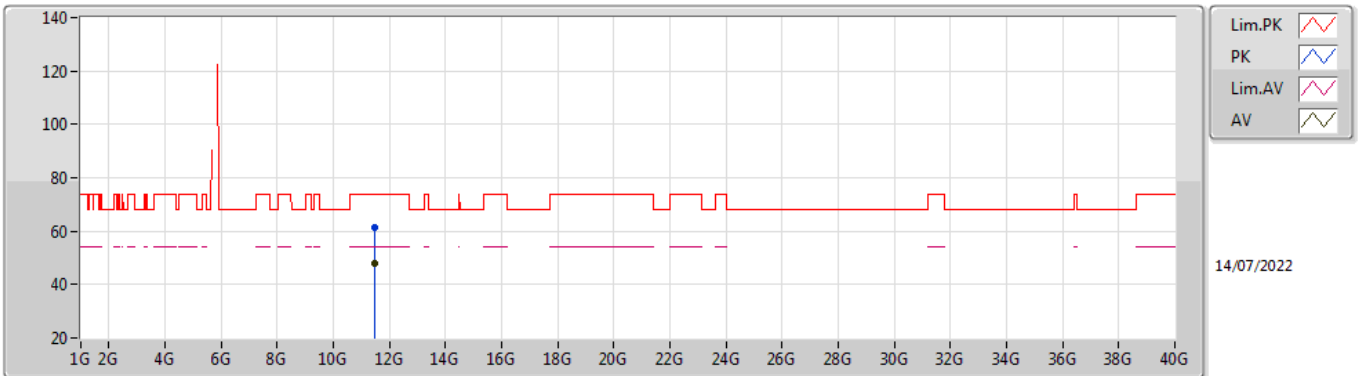


EUT V_2TX
Setting 31.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.48406G	63.15	74.00	-10.85	48.32	3	Vertical	-0	1.70	-	38.97	10.72	34.86
AV	11.49546G	49.52	54.00	-4.48	34.67	3	Vertical	-0	1.70	-	38.99	10.72	34.86

802.11ax HEW20_Nss1,(MCS0)_2TX

5745MHz_TnomVnom

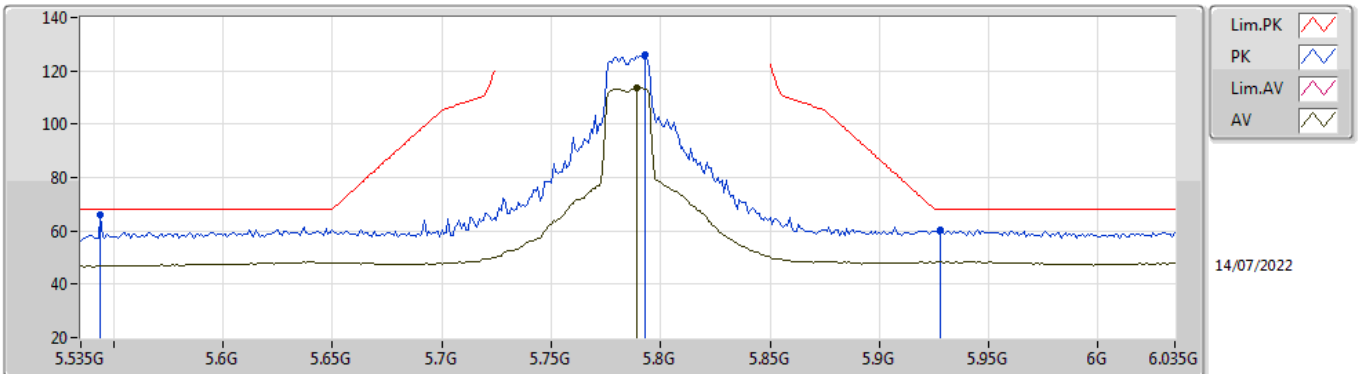


EUT V_2TX
Setting 31.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.49966G	61.36	74.00	-12.64	46.50	3	Horizontal	0	1.74	-	39.00	10.72	34.86
AV	11.49G	47.76	54.00	-6.24	32.92	3	Horizontal	0	1.74	-	38.98	10.72	34.86

802.11ax HEW20_Nss1,(MCS0)_2TX

5785MHz_TnomVnom

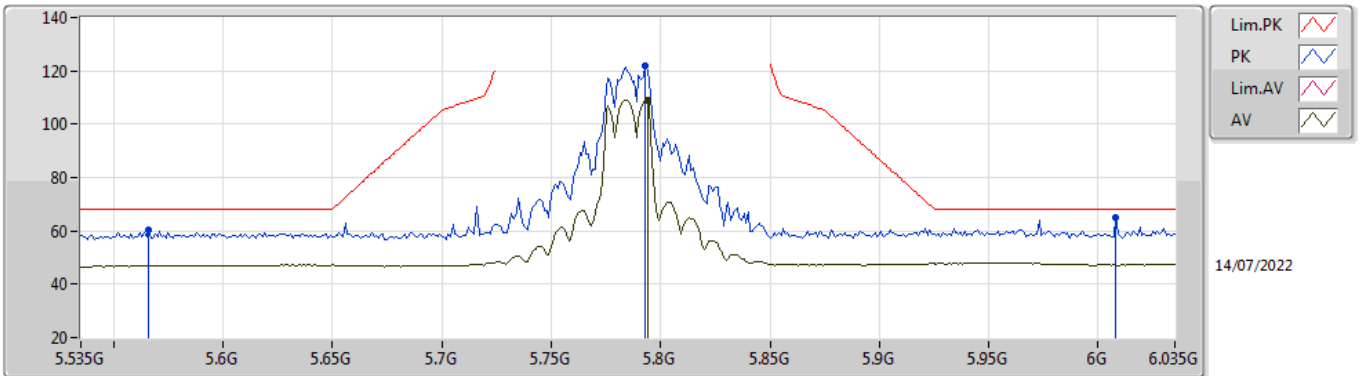


EUT V_2TX
Setting 31.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.544G	66.29	68.20	-1.91	59.22	3	Vertical	0	1.77	-	34.60	7.34	34.87	
PK	5.793G	126.27	Inf	-Inf	119.59	3	Vertical	0	1.77	-	34.20	7.40	34.92	
AV	5.789G	113.78	Inf	-Inf	107.10	3	Vertical	0	1.77	-	34.20	7.40	34.92	
PK	5.928G	60.26	68.20	-7.94	52.97	3	Vertical	0	1.77	-	34.71	7.53	34.95	

802.11ax HEW20_Nss1,(MCS0)_2TX

5785MHz_TnomVnom

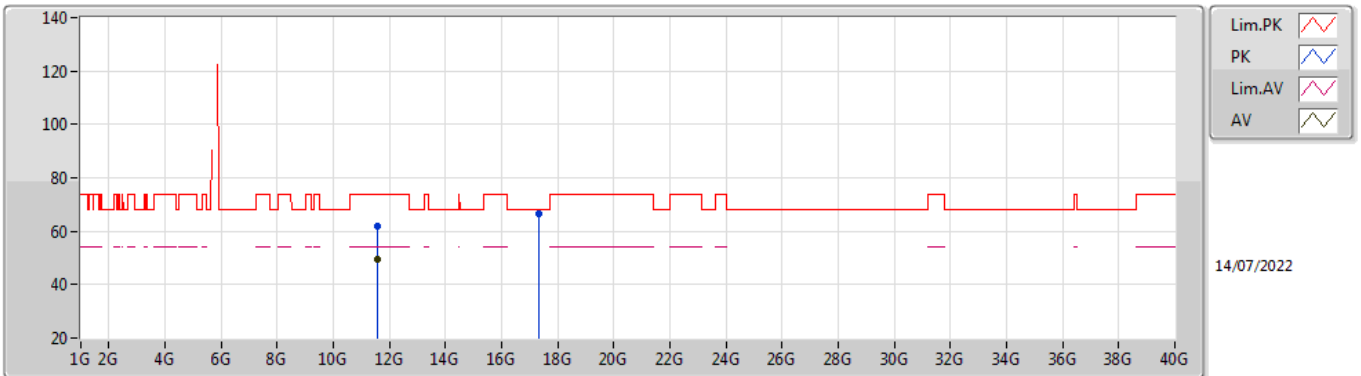


EUT V_2TX
Setting 31.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.566G	60.25	68.20	-7.95	53.15	3	Horizontal	-0	1.80	-	34.60	7.37	34.87	
PK	5.793G	121.99	Inf	-Inf	115.31	3	Horizontal	-0	1.80	-	34.20	7.40	34.92	
AV	5.794G	109.22	Inf	-Inf	102.54	3	Horizontal	-0	1.80	-	34.20	7.40	34.92	
PK	6.008G	65.21	68.20	-2.99	57.76	3	Horizontal	-0	1.80	-	34.82	7.60	34.97	

802.11ax HEW20_Nss1,(MCS0)_2TX

5785MHz_TnomVnom

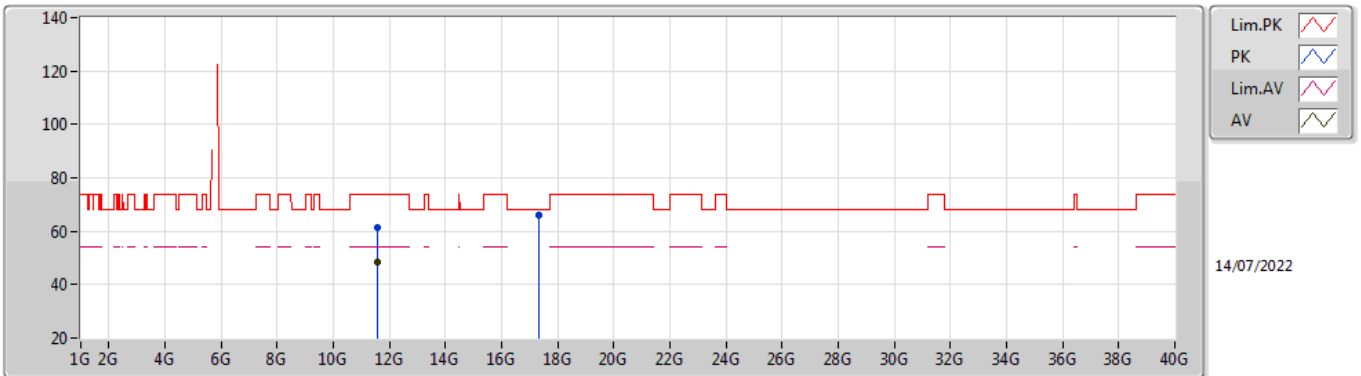


EUT V_2TX
Setting 31.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.5649G	62.09	74.00	-11.91	46.99	3	Vertical	-0	1.69	-	39.26	10.73	34.89
AV	11.56628G	49.29	54.00	-4.71	34.18	3	Vertical	-0	1.69	-	39.27	10.73	34.89
PK	17.34168G	66.63	68.20	-1.57	45.09	3	Vertical	0	1.70	-	41.37	14.34	34.17

802.11ax HEW20_Nss1,(MCS0)_2TX

5785MHz_TnomVnom

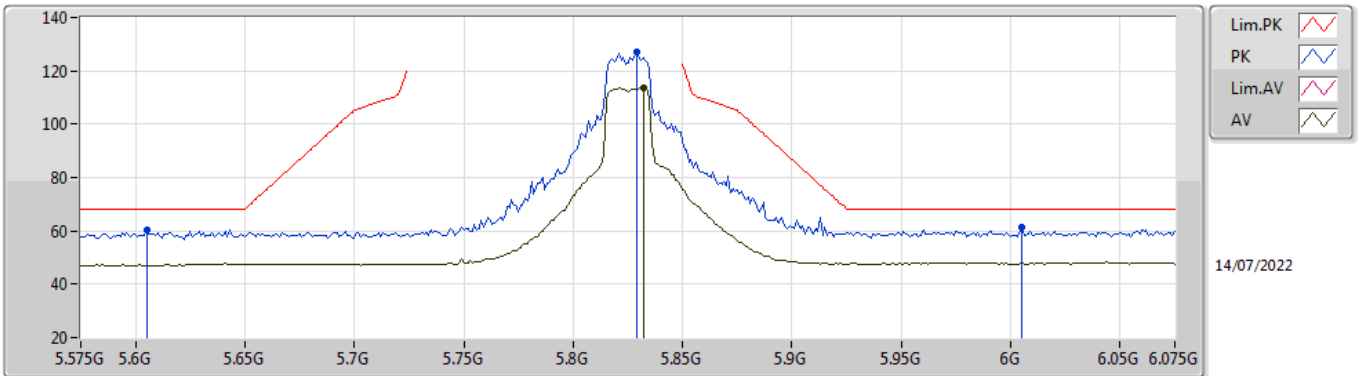


EUT_V_2TX
Setting 31.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	11.57084G	61.41	74.00	-12.59	46.29	3	Horizontal	-0	1.70	-	39.28	10.74	34.90	
AV	11.5703G	48.37	54.00	-5.63	33.25	3	Horizontal	-0	1.70	-	39.28	10.74	34.90	
PK	17.34774G	66.16	68.20	-2.04	44.60	3	Horizontal	0	1.80	-	41.39	14.34	34.17	

802.11ax HEW20_Nss1,(MCS0)_2TX

5825MHz_TnomVnom

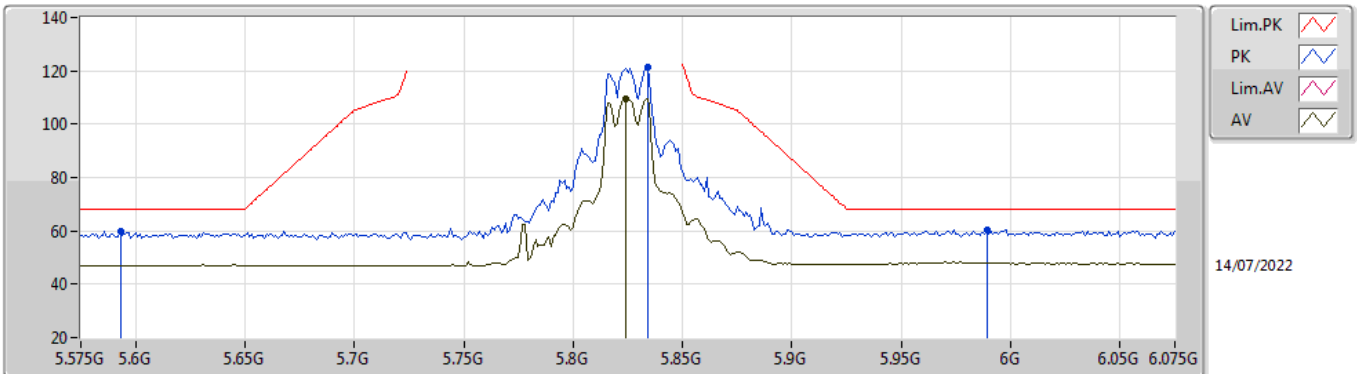


EUT V_2TX
Setting 30
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.605G	60.32	68.20	-7.88	53.21	3	Vertical	0	1.76	-	34.59	7.40	34.88	
PK	5.829G	126.95	Inf	-Inf	120.19	3	Vertical	0	1.76	-	34.26	7.43	34.93	
AV	5.832G	113.47	Inf	-Inf	106.71	3	Vertical	0	1.76	-	34.26	7.43	34.93	
PK	6.005G	61.50	68.20	-6.70	54.06	3	Vertical	0	1.76	-	34.81	7.60	34.97	

802.11ax HEW20_Nss1,(MCS0)_2TX

5825MHz_TnomVnom

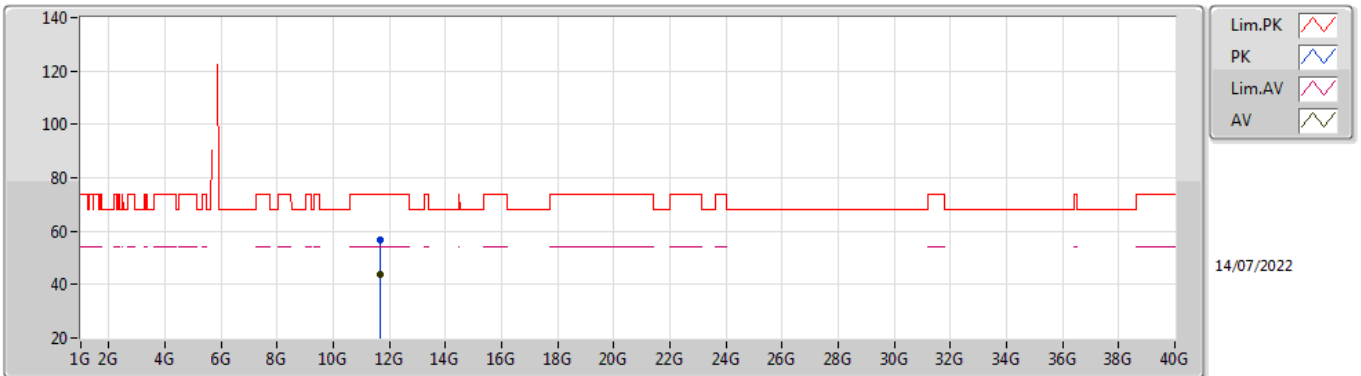


EUT V_2TX
Setting 30
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.593G	60.02	68.20	-8.18	52.91	3	Horizontal	360	1.80	-	34.60	7.39	34.88	
PK	5.834G	121.46	Inf	-Inf	114.69	3	Horizontal	360	1.80	-	34.27	7.43	34.93	
AV	5.824G	109.48	Inf	-Inf	102.74	3	Horizontal	360	1.80	-	34.25	7.42	34.93	
PK	5.989G	60.38	68.20	-7.82	52.96	3	Horizontal	360	1.80	-	34.80	7.59	34.97	

802.11ax HEW20_Nss1,(MCS0)_2TX

5825MHz_TnomVnom

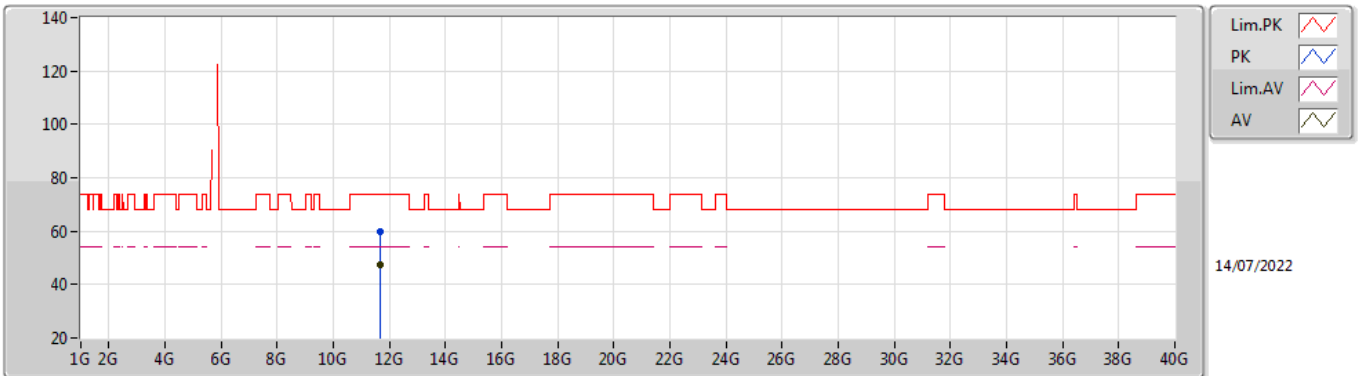


EUT_V_2TX
Setting 30
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	11.66392G	56.72	74.00	-17.28	41.51	3	Vertical	4	1.80	-	39.40	10.75	34.94	
AV	11.64856G	43.55	54.00	-10.45	28.33	3	Vertical	4	1.80	-	39.40	10.75	34.93	

802.11ax HEW20_Nss1,(MCS0)_2TX

5825MHz_TnomVnom

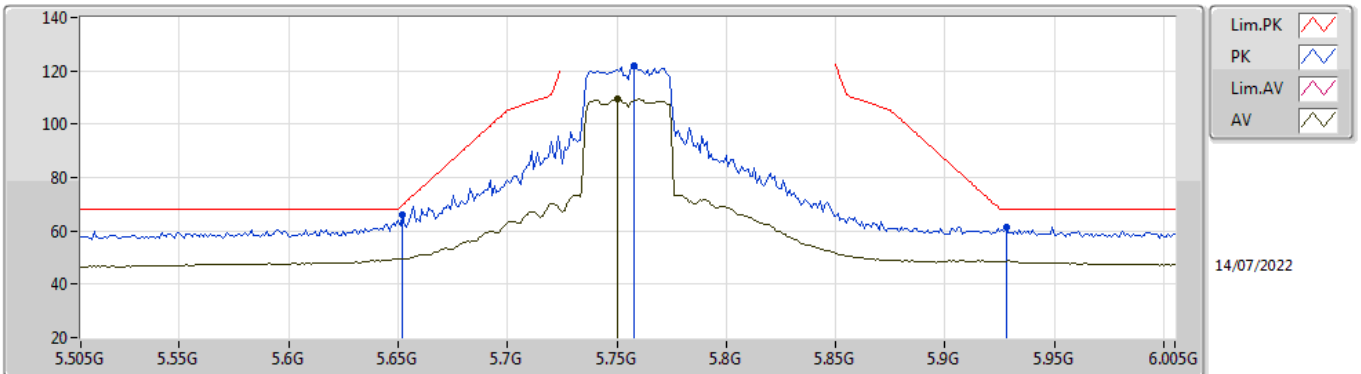


EUT_V_2TX
Setting 30
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.6491G	59.81	74.00	-14.19	44.59	3	Horizontal	0	1.76	-	39.40	10.75	34.93
AV	11.65024G	47.29	54.00	-6.71	32.08	3	Horizontal	0	1.76	-	39.40	10.75	34.94

802.11ax HEW40_Nss1,(MCS0)_2TX

5755MHz_TnomVnom

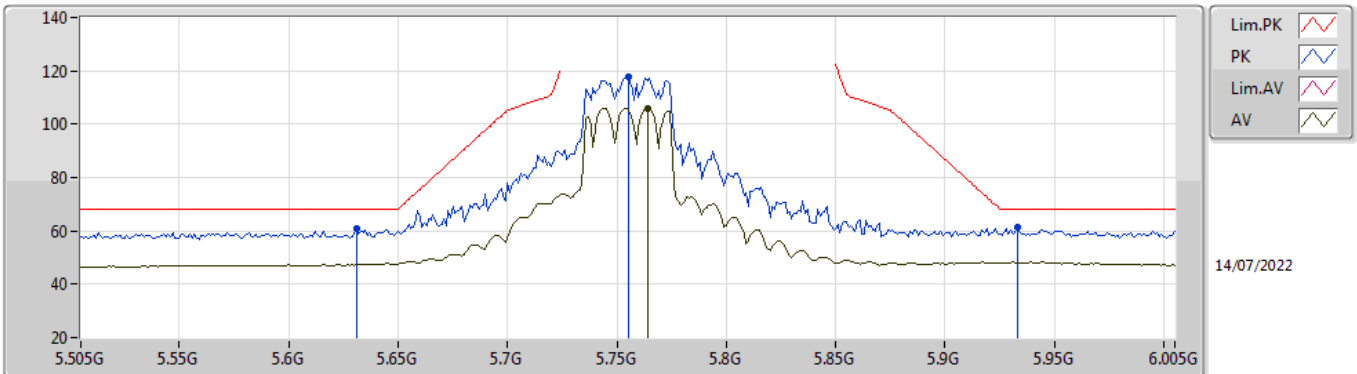


EUT_V_2TX
Setting 31
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.652G	65.83	69.68	-3.85	58.83	3	Vertical	0	1.77	-	34.49	7.40	34.89	
PK	5.758G	121.87	Inf	-Inf	115.19	3	Vertical	0	1.77	-	34.20	7.40	34.92	
AV	5.75G	109.41	Inf	-Inf	102.72	3	Vertical	0	1.77	-	34.20	7.40	34.91	
PK	5.928G	61.40	68.20	-6.80	54.11	3	Vertical	0	1.77	-	34.71	7.53	34.95	

802.11ax HEW40_Nss1,(MCS0)_2TX

5755MHz_TnomVnom

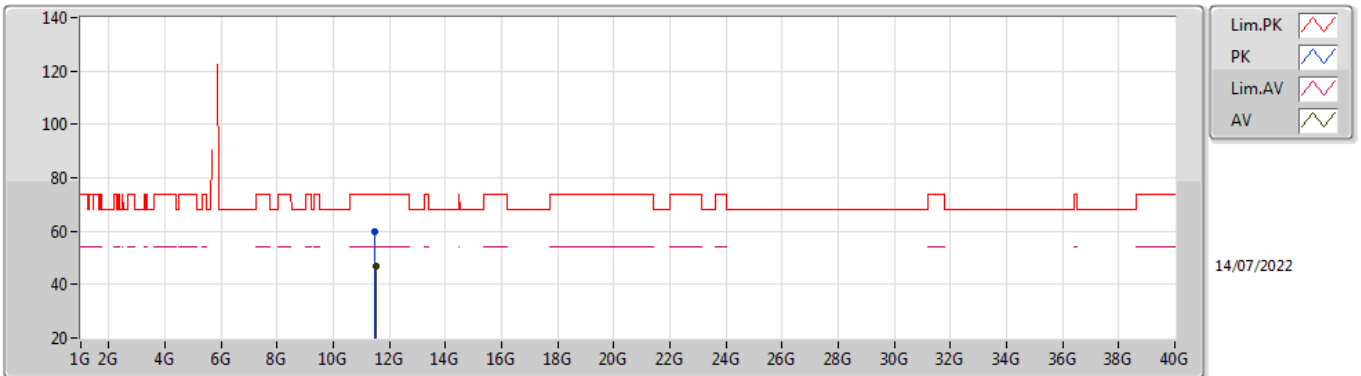


EUT_V_2TX
Setting 31
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.631G	61.11	68.20	-7.09	54.06	3	Horizontal	-0	1.76	-	34.54	7.40	34.89	
PK	5.755G	117.63	Inf	-Inf	110.95	3	Horizontal	-0	1.76	-	34.20	7.40	34.92	
AV	5.764G	105.86	Inf	-Inf	99.18	3	Horizontal	-0	1.76	-	34.20	7.40	34.92	
PK	5.933G	61.16	68.20	-7.04	53.86	3	Horizontal	-0	1.76	-	34.73	7.53	34.96	

802.11ax HEW40_Nss1,(MCS0)_2TX

5755MHz_TnomVnom

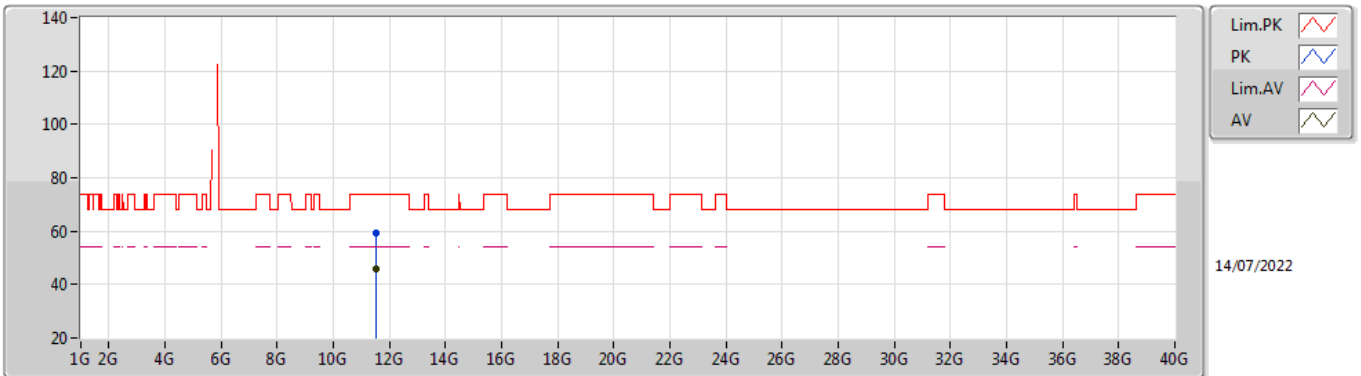


EUT_V_2TX
Setting 31
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.49542G	60.06	74.00	-13.94	45.21	3	Vertical	-0	1.72	-	38.99	10.72	34.86
AV	11.50496G	46.81	54.00	-7.19	31.92	3	Vertical	-0	1.72	-	39.02	10.73	34.86

802.11ax HEW40_Nss1,(MCS0)_2TX

5755MHz_TnomVnom

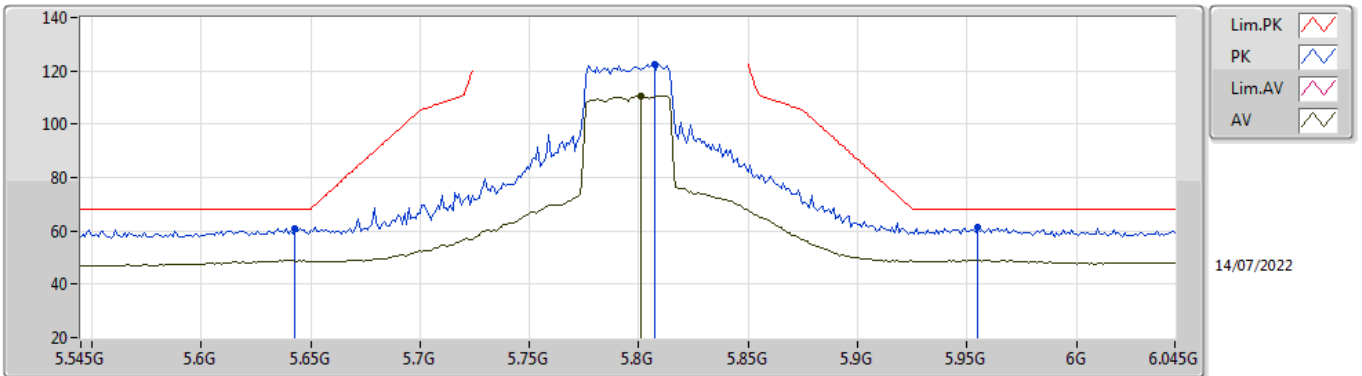


EUT V_2TX
Setting 31
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.50796G	59.35	74.00	-14.65	44.45	3	Horizontal	6	1.80	-	39.03	10.73	34.86
AV	11.50886G	45.94	54.00	-8.06	31.03	3	Horizontal	6	1.80	-	39.04	10.73	34.86

802.11ax HEW40_Nss1,(MCS0)_2TX

5795MHz_TnomVnom

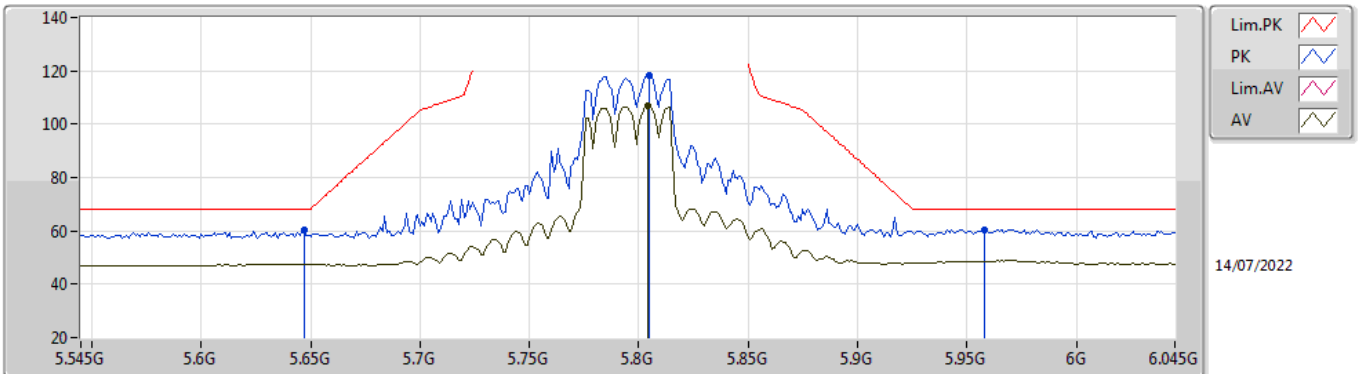


EUT V_2TX
Setting 30
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.643G	61.07	68.20	-7.13	54.05	3	Vertical	-0	1.76	-	34.51	7.40	34.89	
PK	5.807G	122.44	Inf	-Inf	115.75	3	Vertical	-0	1.76	-	34.21	7.41	34.93	
AV	5.801G	110.64	Inf	-Inf	103.97	3	Vertical	-0	1.76	-	34.20	7.40	34.93	
PK	5.955G	61.29	68.20	-6.91	53.90	3	Vertical	-0	1.76	-	34.80	7.55	34.96	

802.11ax HEW40_Nss1,(MCS0)_2TX

5795MHz_TnomVnom

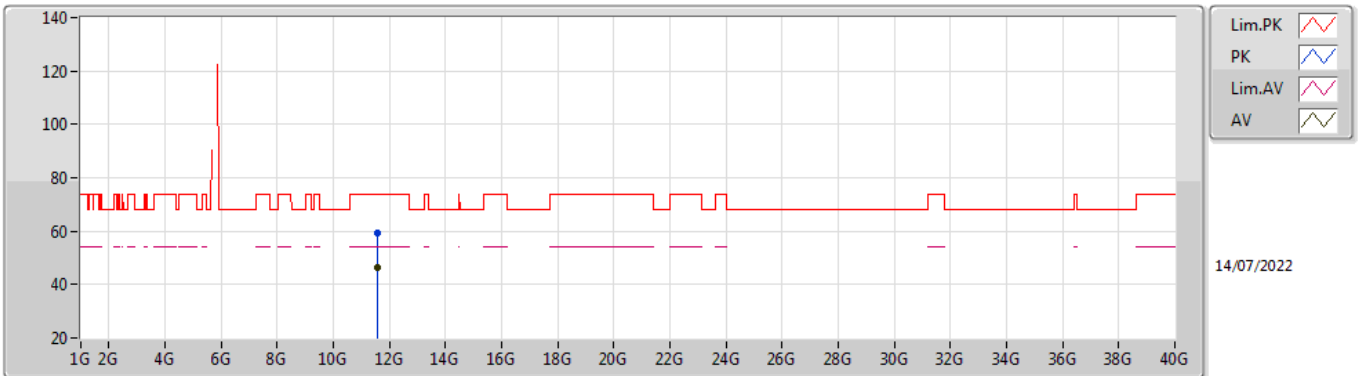


EUT V_2TX
Setting 30
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	5.647G	60.11	68.20	-8.09	53.09	3	Horizontal	-0	1.75	-	34.51	7.40	34.89	
PK	5.805G	118.50	Inf	-Inf	111.81	3	Horizontal	-0	1.75	-	34.21	7.41	34.93	
AV	5.804G	106.64	Inf	-Inf	99.96	3	Horizontal	-0	1.75	-	34.21	7.40	34.93	
PK	5.958G	60.58	68.20	-7.62	53.18	3	Horizontal	-0	1.75	-	34.80	7.56	34.96	

802.11ax HEW40_Nss1,(MCS0)_2TX

5795MHz_TnomVnom

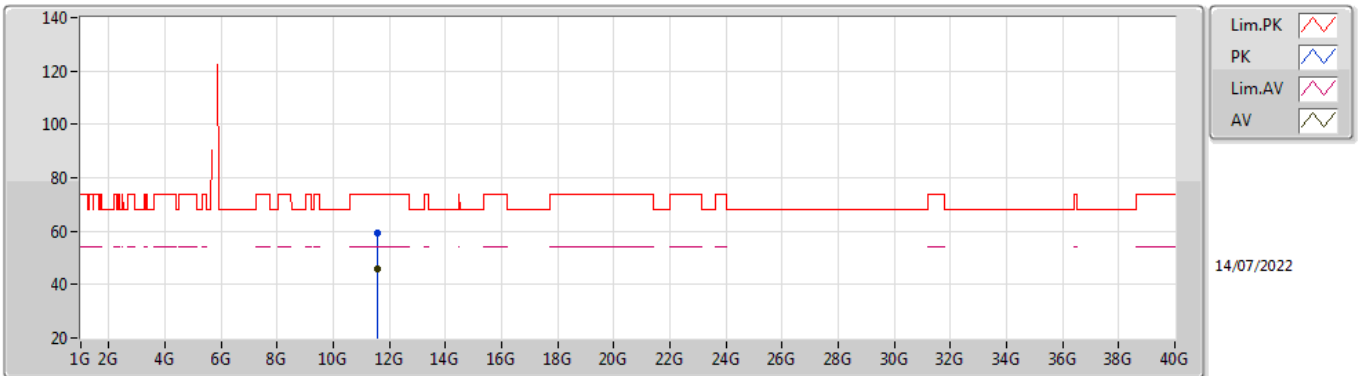


EUT_V_2TX
Setting 30
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	11.59564G	59.09	74.00	-14.91	43.88	3	Vertical	0	1.68	-	39.38	10.74	34.91	
AV	11.59498G	46.19	54.00	-7.81	30.98	3	Vertical	0	1.68	-	39.38	10.74	34.91	

802.11ax HEW40_Nss1,(MCS0)_2TX

5795MHz_TnomVnom

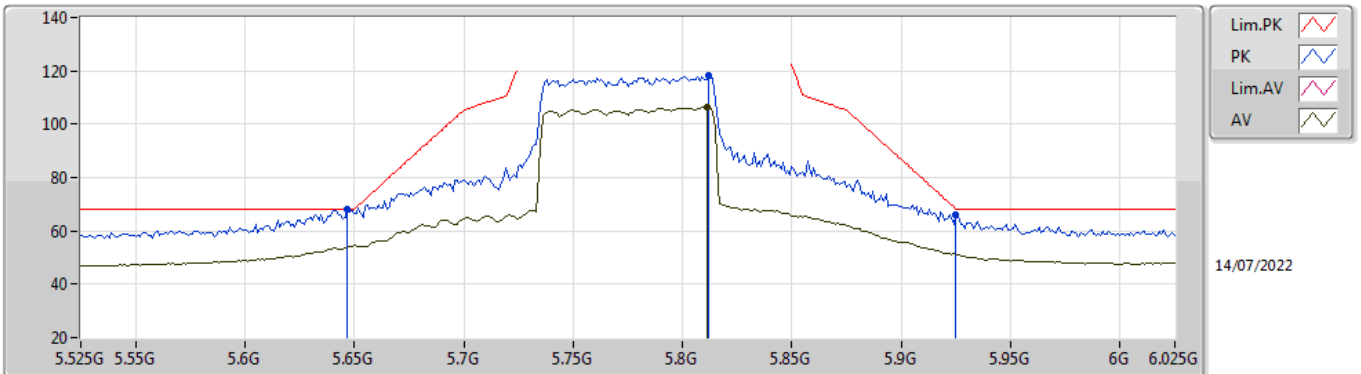


EUT_V_2TX
Setting 30
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	11.5906G	59.08	74.00	-14.92	43.89	3	Horizontal	-0	1.80	-	39.36	10.74	34.91	
AV	11.58958G	45.78	54.00	-8.22	30.58	3	Horizontal	-0	1.80	-	39.36	10.74	34.90	

802.11ax HEW80_Nss1,(MCS0)_2TX

5775MHz_TnomVnom

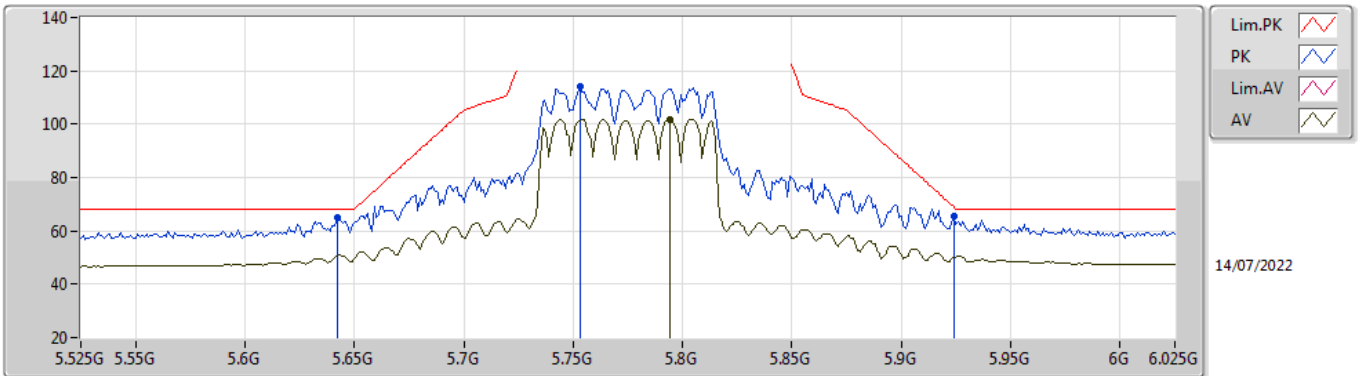


EUT V_2TX
Setting 25.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	5.647G	67.85	68.20	-0.35	60.83	3	Vertical	0	1.76	-	34.51	7.40	34.89
PK	5.812G	118.43	Inf	-Inf	111.73	3	Vertical	0	1.76	-	34.22	7.41	34.93
AV	5.811G	106.24	Inf	-Inf	99.54	3	Vertical	0	1.76	-	34.22	7.41	34.93
PK	5.925G	65.95	68.20	-2.25	58.67	3	Vertical	0	1.76	-	34.70	7.53	34.95

802.11ax HEW80_Nss1,(MCS0)_2TX

5775MHz_TnomVnom

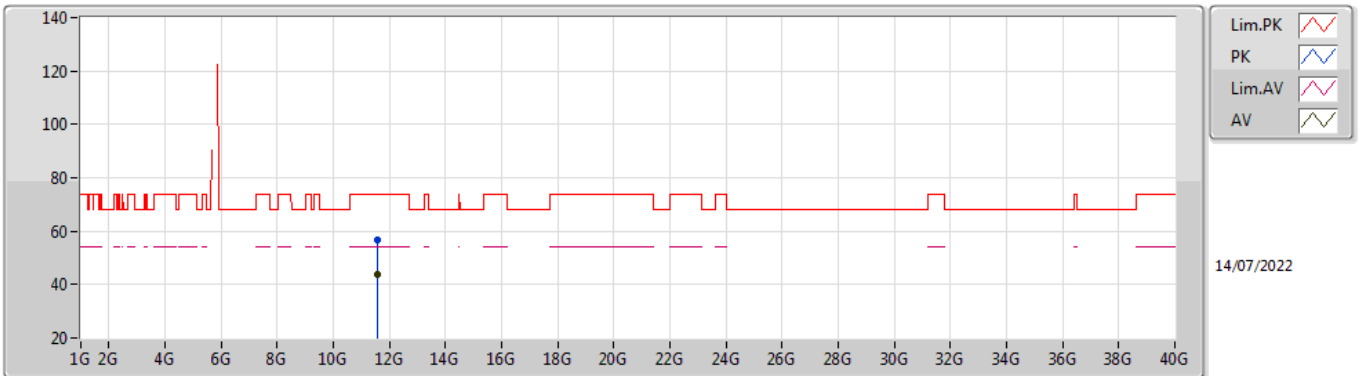


EUT V_2TX
Setting 25.5
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	5.642G	64.80	68.20	-3.40	57.77	3	Horizontal	0	1.78	-	34.52	7.40	34.89
PK	5.753G	114.20	Inf	-Inf	107.52	3	Horizontal	0	1.78	-	34.20	7.40	34.92
AV	5.794G	101.76	Inf	-Inf	95.08	3	Horizontal	0	1.78	-	34.20	7.40	34.92
PK	5.924G	65.76	68.94	-3.18	58.49	3	Horizontal	0	1.78	-	34.70	7.52	34.95

802.11ax HEW80_Nss1,(MCS0)_2TX

5775MHz_TnomVnom

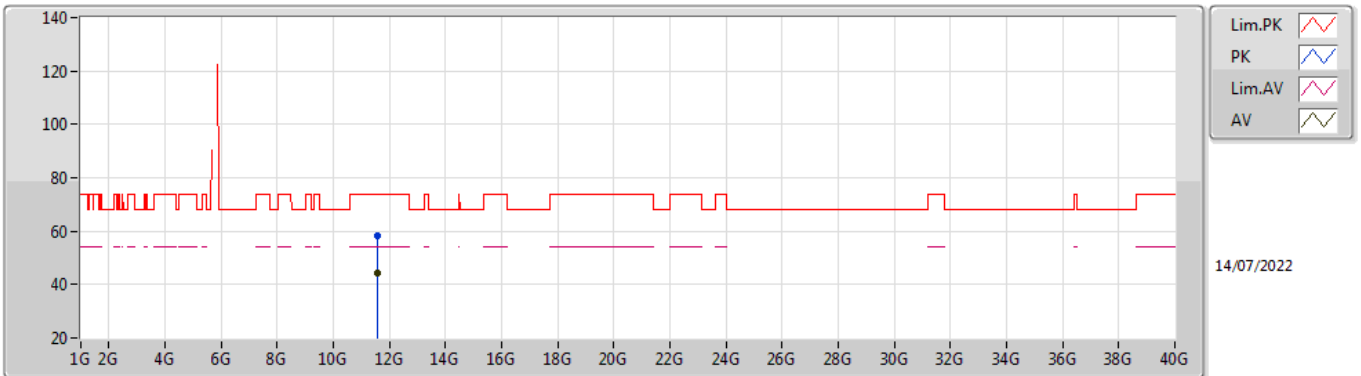


EUT Y_2TX
Setting 25.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	11.55018G	56.90	74.00	-17.10	41.86	3	Vertical	4	1.91	-	39.20	10.73	34.89	
AV	11.5512G	43.57	54.00	-10.43	28.53	3	Vertical	4	1.91	-	39.20	10.73	34.89	

802.11ax HEW80_Nss1,(MCS0)_2TX

5775MHz_TnomVnom



EUT V_2TX
Setting 25.5
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	11.55G	58.07	74.00	-15.93	43.02	3	Horizontal	0	1.72	-	39.20	10.73	34.88	
AV	11.55018G	44.42	54.00	-9.58	29.38	3	Horizontal	0	1.72	-	39.20	10.73	34.89	