



RADIO TEST REPORT

FCC ID : 2AHKM-CHITA31
Equipment : DOCSIS 3.1 Wireless eMTA Gateway
Brand Name : Hitron
Model Name : CHITA3.1
Applicant : Hitron Technologies Inc.
No. 1-8, Li-Hsin 1st Rd. Hsinchu Science Park,
Hsinchu 30078, Taiwan
Manufacturer : Hitron Technologies Inc.
No. 1-8, Li-Hsin 1st Rd. Hsinchu Science Park,
Hsinchu 30078, Taiwan
Standard : 47 CFR FCC Part 15.407

The product was received on Jul. 16, 2025, and testing was started from Sep. 25, 2025 and completed on Sep. 26, 2025. 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 C63.10-2020 and shown compliance with the applicable technical standards.

The test results in this variant 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.)



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1 General Description	5
1.1 Information.....	5
1.2 Applicable Standards	9
1.3 Testing Location Information	9
1.4 Measurement Uncertainty	9
2 Test Configuration of EUT	10
2.1 The Worst Case Measurement Configuration	10
2.2 EUT Operation during Test	10
2.3 Accessories	11
2.4 Support Equipment.....	11
2.5 Test Setup Diagram	12
3 Transmitter Test Result	15
3.1 AC Power-line Conducted Emissions	15
3.2 Unwanted Emissions.....	17
4 Test Equipment and Calibration Data	21
Appendix A. Test Results of AC Power-line Conducted Emissions	
Appendix B. Test Results of Unwanted Emissions	
Appendix C. Test Photos	
Photographs of EUT v01	



History of this test report

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

Page Number : 3 of 22
Issued Date : Oct. 14, 2025
Report Version : 01



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(b)	Unwanted Emissions	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/manufacture 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: Muse Chan

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	4
5.15-5.25GHz	802.11n HT20	20	4
5.15-5.25GHz	802.11n HT20-BF	20	4
5.15-5.25GHz	802.11ac VHT20	20	4
5.15-5.25GHz	802.11ac VHT20-BF	20	4
5.15-5.25GHz	802.11n HT40	40	4
5.15-5.25GHz	802.11n HT40-BF	40	4
5.15-5.25GHz	802.11ac VHT40	40	4
5.15-5.25GHz	802.11ac VHT40-BF	40	4
5.15-5.25GHz	802.11ac VHT80	80	4
5.15-5.25GHz	802.11ac VHT80-BF	80	4
5.725-5.85GHz	802.11a	20	4
5.725-5.85GHz	802.11n HT20	20	4
5.725-5.85GHz	802.11n HT20-BF	20	4
5.725-5.85GHz	802.11ac VHT20	20	4
5.725-5.85GHz	802.11ac VHT20-BF	20	4
5.725-5.85GHz	802.11n HT40	40	4
5.725-5.85GHz	802.11n HT40-BF	40	4
5.725-5.85GHz	802.11ac VHT40	40	4
5.725-5.85GHz	802.11ac VHT40-BF	40	4
5.725-5.85GHz	802.11ac VHT80	80	4
5.725-5.85GHz	802.11ac VHT80-BF	80	4



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.
- ♦ BWch is the nominal channel bandwidth.



1.1.2 Antenna Information

Ant.	Port		Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
	2.4GHz	5GHz					2.4GHz	5GHz
1	1	1	WIESON	GY196HC112-018	PCB Antenna	I-PEX	1.99	1.97
2	2	2	WIESON	GY196HC112-019	PCB Antenna	I-PEX	1.58	1.87
3	3	3	WIESON	GY196HC112-020	PCB Antenna	I-PEX	1.96	1.96
4	-	4	WIESON	GY196HC112-021	PCB Antenna	I-PEX	-	1.76

Note1: The above information was declared by manufacturer.

Note2:

For WLAN 2.4GHz function:

For IEEE 802.11b/g/n/VHT mode (3TX/3RX):

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

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

For WLAN 5GHz function:

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

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

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

Note3: Directional gain information

Type	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left[\sum_{k=1}^{N_{ANT}} g_{j,k} \right]^2}{N_{ANT}} \right]$
BF	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left[\sum_{k=1}^{N_{ANT}} g_{j,k} \right]^2}{N_{ANT}} \right]$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left[\sum_{k=1}^{N_{ANT}} g_{j,k} \right]^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left[\sum_{k=1}^{N_{ANT}} g_{j,k} \right]^2}{N_{ANT}} \right]$$

$$NSS1(g_{1,1}) = 10^{G_{1,1}/20} ; NSS1(g_{1,2}) = 10^{G_{2,2}/20} ; NSS1(g_{1,3}) = 10^{G_{3,3}/20} ; NSS1(g_{1,4}) = 10^{G_{4,4}/20}$$

$$g_{j,k} = (NSS1(g_{1,1}) + NSS1(g_{1,2}) + NSS1(g_{1,3}) + NSS1(g_{1,4}))^2$$

$$DG = 10 \log[(NSS1(g_{1,1}) + NSS1(g_{1,2}) + NSS1(g_{1,3}) + NSS1(g_{1,4}))^2 / N_{ANT}] => 10$$

$$\log[(10^{G_{1,1}/20} + 10^{G_{2,2}/20} + 10^{G_{3,3}/20} + 10^{G_{4,4}/20})^2 / N_{ANT}]$$

Where ;

$$2.4G \ G1= 1.99 \text{ dBi} ; 2.4G \ G2= 1.58 \text{ dBi} ; 2.4G \ G3= 1.96 \text{ dBi} ; DG= 6.62\text{dBi}$$

$$5G \ G1= 1.97 \text{ dBi} ; 5G \ G2= 1.87 \text{ dBi} ; 5G \ G3= 1.96 \text{ dBi} ; 5G \ G4= 1.76 \text{ dBi} ; DG= 7.91\text{dBi}$$

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.971	0.13	2.07m	1k
802.11ac VHT20	0.989	0.05	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ac VHT40	0.973	0.12	2.437m	1k
802.11ac VHT80	0.943	0.25	1.148m	1k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	The product has beamforming function for VHT in 2.4GHz and n/ac in 5GHz.			
Function	☐	Outdoor P2M	☒	Indoor P2M
	☐	Fixed P2P	☐	Client
	☒	Point-to-multipoint	☐	Point-to-point
Channel Puncturing Function	☐	Supported Static Puncturing		
	☐	Supported Dynamic Puncturing (Reduce BW)		
	☒	Unsupported		
Test Software Version	QRCT V3.0.295.0			

Note: The above information was declared by manufacturer.

1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR2N1823AB

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Change the IC chip for WiFi 5G to "Brand: Qualcomm / Model: QCA9984" from "Brand: Qualcomm / Model: QCA9988".	1. AC power-line conducted emissions 2. Unwanted Emissions below 1GHz 3. Unwanted Emissions above 1GHz (After evaluating, the worst case is found at 802.11ac VHT80 5210 MHz, 802.11ac VHT40 5230 MHz, 802.11a 5785MHz, and retest these channels only. These test channels will be based on original output power to re-test.)
2. Update the reference standard to "ANSI C63.10-2020" from "ANSI C63.10-2013".	After evaluation, it is not necessary to test.



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 C63.10-2020
- ♦ 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
Radiated (Below 1GHz)	03CH05-CB	RJ Huang	21.5~22.9 / 57~60	Sep. 25, 2025
Radiated (Above 1GHz)	03CH02-CB	Justin Lin	24.5-25.6 / 56-59	Sep. 26, 2025
AC Conduction	CO01-CB	Ryan Huang	22~23 / 55~56	Sep. 26, 2025

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))

Parameter	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.8 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.8 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%

2 Test Configuration of EUT

2.1 The Worst Case Measurement Configuration

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

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	Normal Link
After evaluating, and the worst case was found at Y axis, so it was selected to perform test and its test result was written in the report.	
1	EUT in Y axis + Adapter
Operating Mode > 1GHz	CTX
After evaluating, and the worst case was found at Y axis, so it was selected to perform test and its test result was written in the report.	
1	EUT in Y axis

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + WLAN 5GHz
Refer to Sporton Test Report No.: FA2N1823-02 for Co-location RF Exposure Evaluation.	

2.2 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.



2.3 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
Adapter	MOSO	MSS-V3500WR120-042A0-US	Input: 100-240V~50/60Hz, 1.2A max. Output: 12.0V, 3.5A
Other			
RJ-45 cable*1, non-shielded, 1.5m			

2.4 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Phone 1	PHILIPS	M20	N/A
B	Phone 2	PHILIPS	M20	N/A
C	2.4G NB	Lenovo	X260	N/A
D	5G NB	Lenovo	X260	N/A
E	LAN NB	Lenovo	X260	N/A
F	Terminal system	Jinghong	JH-HE3416B	N/A
G	Flash disk3.0	Transcend	JetFlash-703	N/A

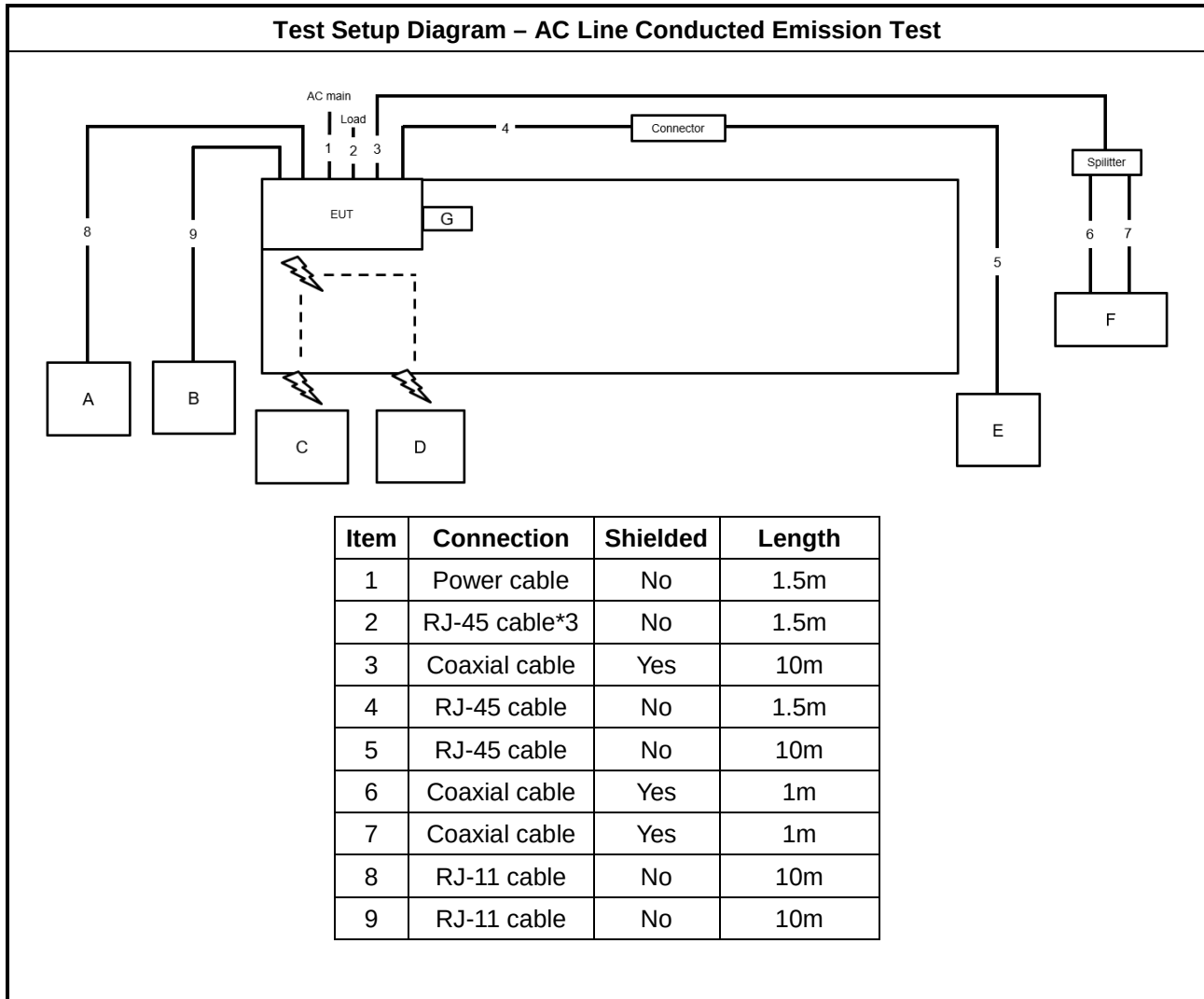
For Radiated (below 1GHz):

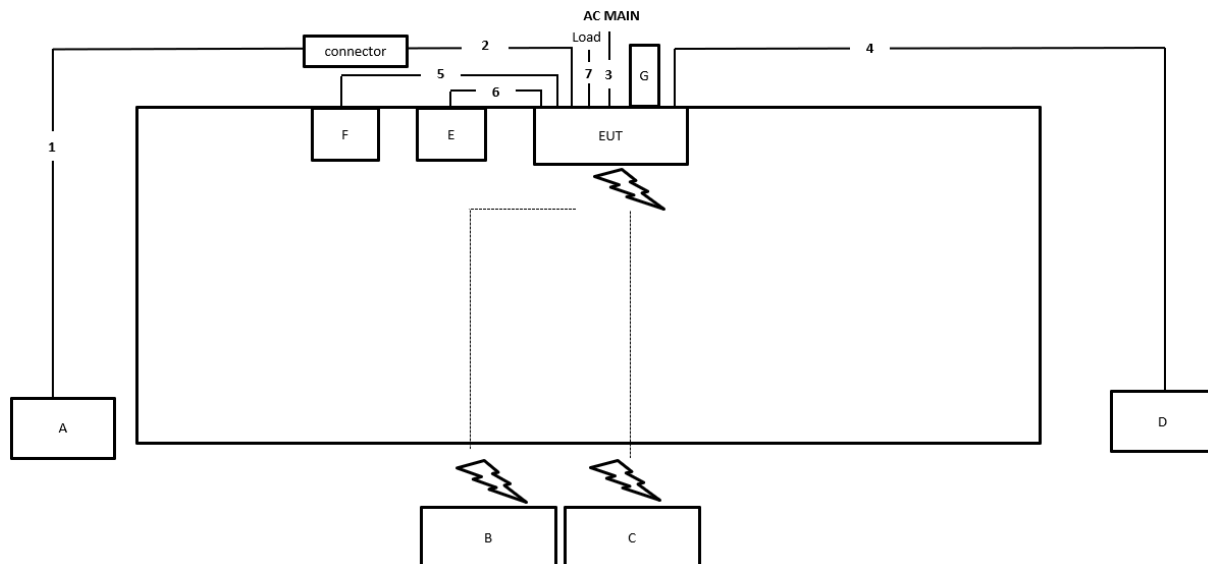
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	LAN NB	DELL	E4300	N/A
B	2.4G NB	DELL	E4300	N/A
C	5G NB	DELL	E4300	N/A
D	Terminal system	Jinghong	JH-HE3416B	N/A
E	Phone 1	PHILIPS	M20	N/A
F	Phone 2	PHILIPS	M20	N/A
G	Flash disk	Apacer	AP8GAH139B	N/A

For Radiated (above 1GHz):

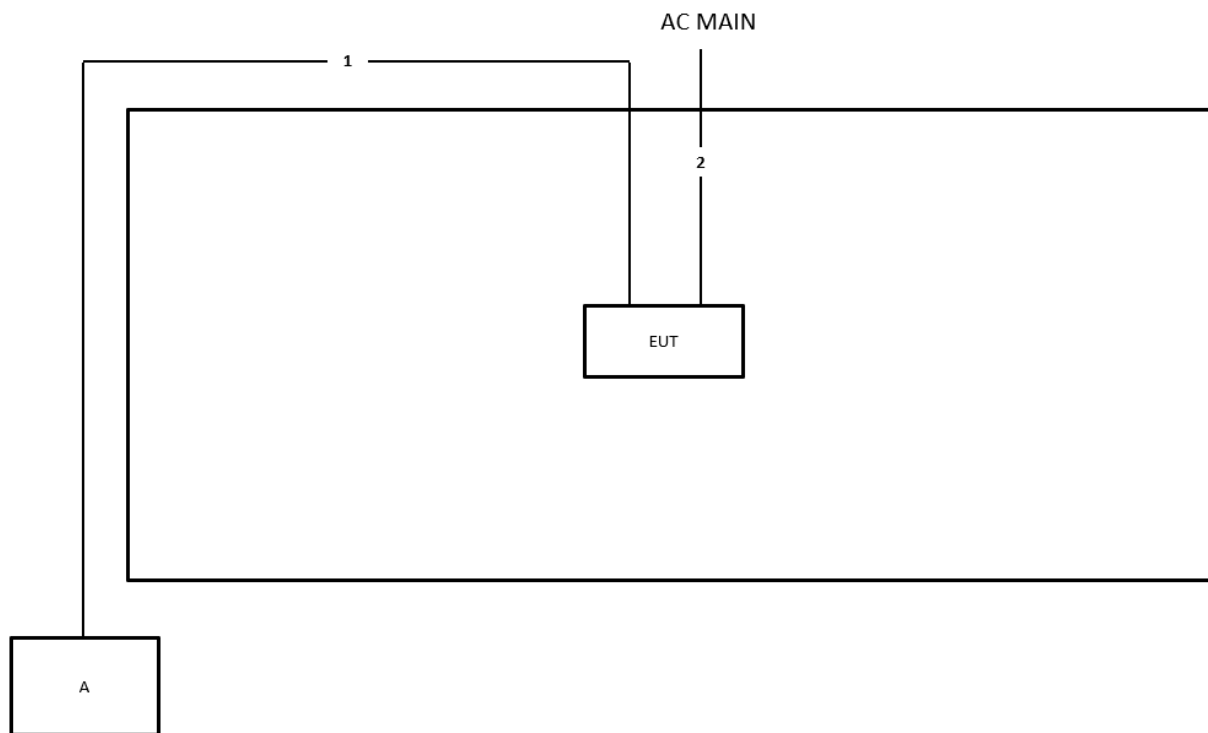
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	RJ-45 cable	No	1.5m
3	Power cable	No	1.5m
4	Coaxial cable	Yes	10m
5	RJ-11 cable	No	1.5m
6	RJ-11 cable	No	1.5m
7	RJ-45 cable*3	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz


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

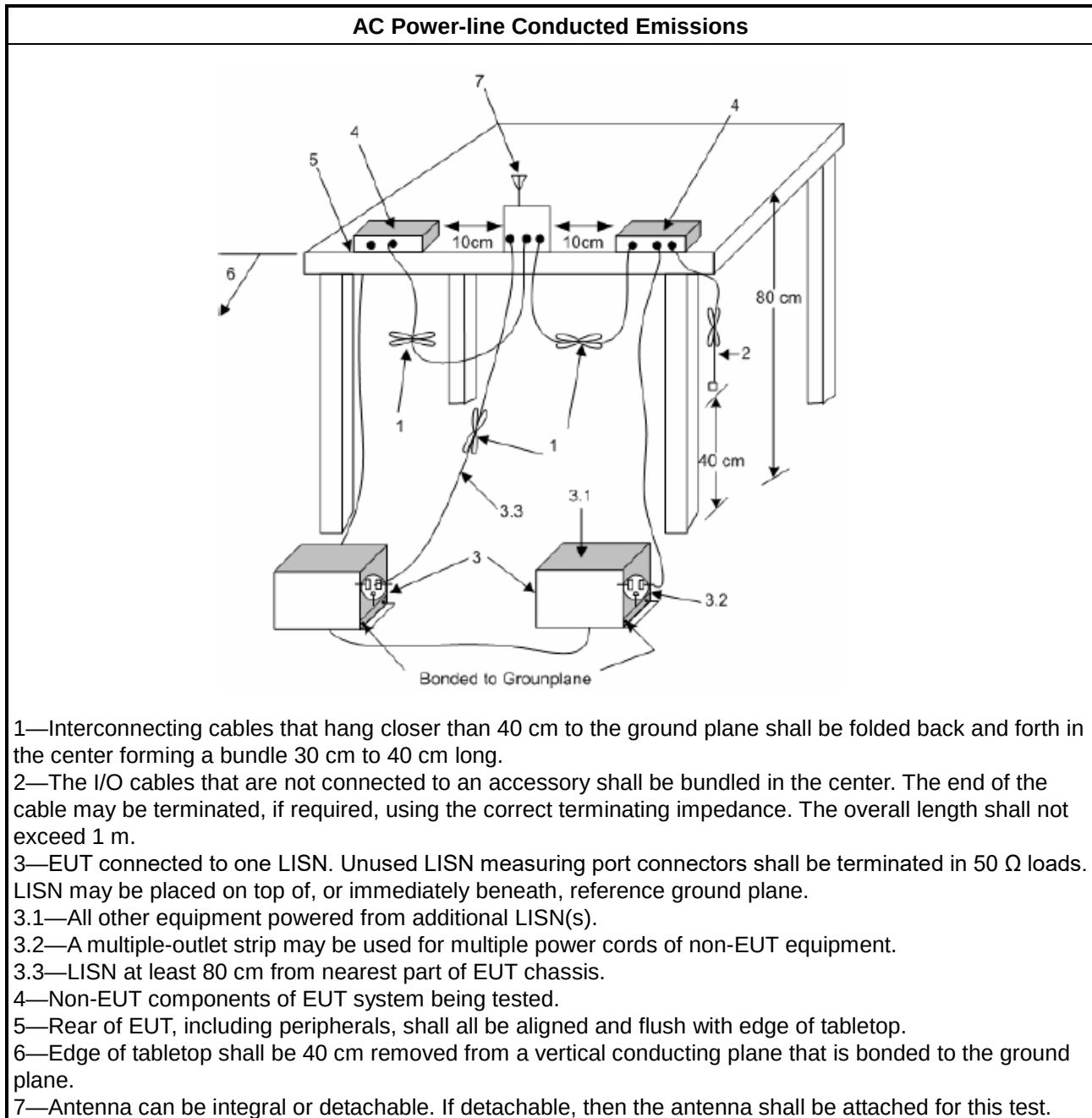
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2020, 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 Unwanted Emissions

3.2.1 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.

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).

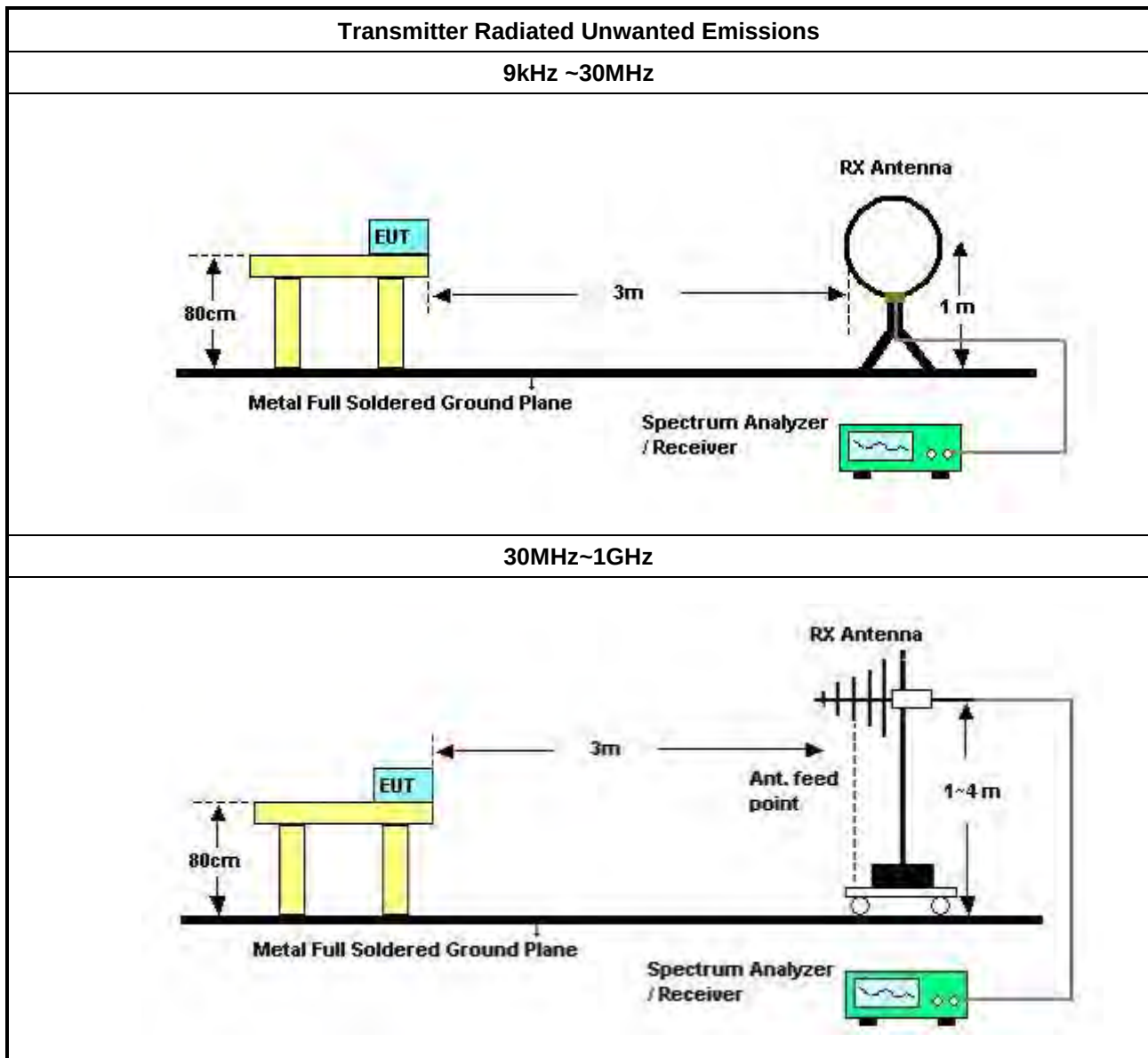
3.2.2 Measuring Instruments

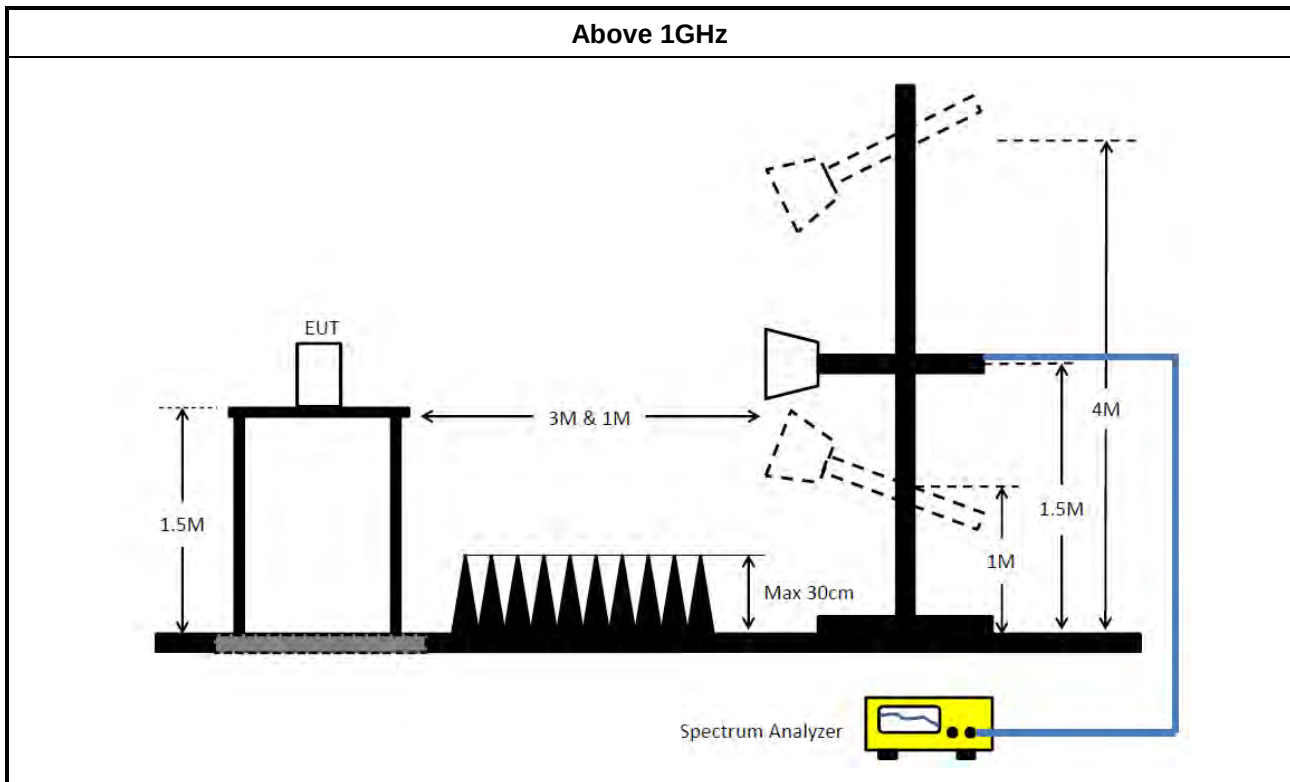
Refer a test equipment and calibration data table in this test report.

3.2.3 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.	

3.2.4 Test Setup





3.2.5 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.

3.2.6 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 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.

3.2.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix B



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	Mar. 06, 2025	Mar. 05, 2026	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Feb. 18, 2025	Feb. 17, 2026	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	May 10, 2025	May 09, 2026	Conduction (CO01-CB)
Pulse Limiter	Rohde& Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Oct. 16, 2024	Oct. 15, 2025	Conduction (CO01-CB)
COND Cable	Woken	Cable	CO01	9kHz ~ 30MHz	Oct. 16, 2024	Oct. 15, 2025	Conduction (CO01-CB)
Test Software	SPORTON	SENSE-EMI	V5.11	150kHz-30MHz	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6121	65417	9kHz - 30MHz	Oct. 17, 2024	Oct. 16, 2025	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~1 GHz	Jul. 31, 2025	Jul. 30, 2026	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 22, 2025	Mar. 21, 2026	Radiation (03CH05-CB)
Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	May 01, 2025	Apr. 30, 2026	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Apr. 21, 2025	Apr. 20, 2026	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESR7	102172	9kHz ~ 7GHz	Oct. 21, 2024	Oct. 20, 2025	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Sep. 25, 2025	Sep. 24, 2026	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE-EMI	V5.11.8	30MHz-40GHz	N.C.R.	N.C.R.	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 23, 2025	Mar. 22, 2026	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 15, 2025	Apr. 14, 2026	Radiation (03CH02-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Aug. 22, 2025	Aug. 21, 2026	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jun. 28, 2025	Jun. 27, 2026	Radiation (03CH02-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 25, 2024	Nov. 24, 2025	Radiation (03CH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Signal Analyzer	R&S	FSV3044	101536	10kHz ~ 44GHz	Aug. 20, 2025	Aug. 19, 2026	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Jun. 19, 2025	Jun. 18, 2026	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Jun. 19, 2025	Jun. 18, 2026	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Apr. 30, 2025	Apr. 29, 2026	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE-1540 7_NII	V5.11. 27	5.15GHz- 7.115GHz	N.C.R.	N.C.R.	Radiation (03CH02-CB)

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

NCR means Non-Calibration required.



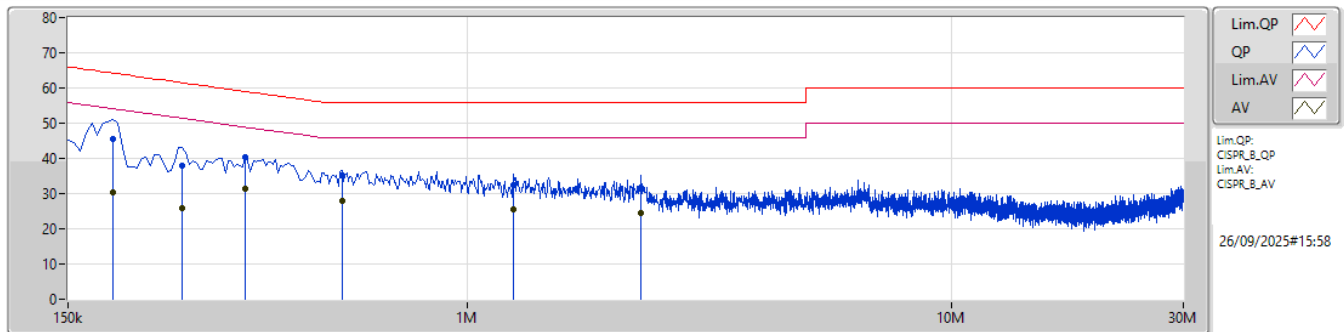
Conducted Emissions at Powerline

Appendix A

Summary

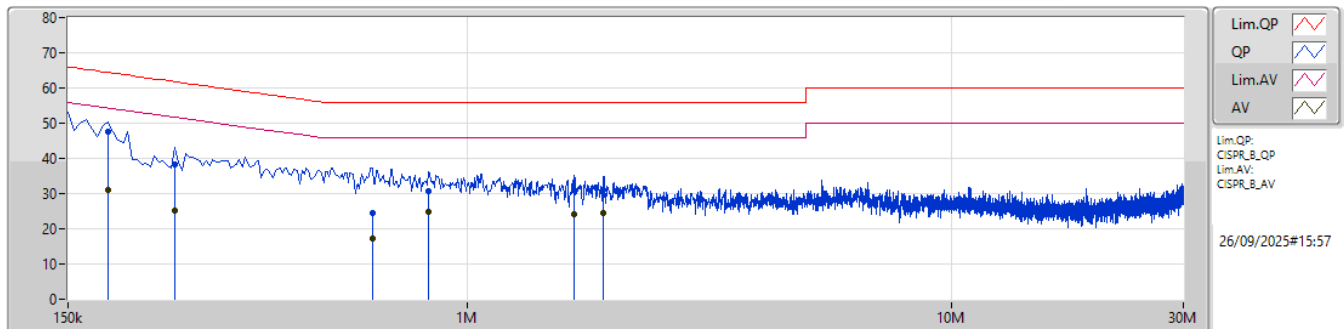
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	181.5k	47.63	64.41	-16.78	Neutral

Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	PA (dB)	AT (dB)				
QP	186k	45.46	64.20	-18.74	10.01	Line	-	35.45	0.06	0.07	0.06	9.94				
AV	186k	30.38	54.20	-23.82	10.01	Line	-	20.37	0.06	0.07	0.06	9.94				
QP	258k	37.80	61.49	-23.69	10.06	Line	-	27.74	0.06	0.08	0.07	9.99				
AV	258k	25.69	51.49	-25.80	10.06	Line	-	15.63	0.06	0.08	0.07	9.99				
QP	348k	40.27	59.00	-18.73	10.10	Line	-	30.17	0.05	0.09	0.08	10.04				
AV	348k	31.24	49.00	-17.76	10.10	Line	"Worst"	21.14	0.05	0.09	0.08	10.04				
QP	550.5k	35.07	56.00	-20.93	10.15	Line	-	24.92	0.06	0.10	0.10	10.09				
AV	550.5k	28.02	46.00	-17.98	10.15	Line	-	17.87	0.06	0.10	0.10	10.09				
QP	1.248M	32.58	56.00	-23.42	10.12	Line	-	22.46	0.08	0.11	0.16	10.09				
AV	1.248M	25.68	46.00	-20.32	10.12	Line	-	15.56	0.08	0.11	0.16	10.09				
QP	2.283M	31.44	56.00	-24.56	9.95	Line	-	21.49	0.10	0.14	0.23	9.94				
AV	2.283M	24.40	46.00	-21.60	9.95	Line	-	14.45	0.10	0.14	0.23	9.94				

Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	PA (dB)	AT (dB)				
QP	181.5k	47.63	64.41	-16.78	10.02	Neutral	"Worst"	37.61	0.08	0.07	0.07	9.94				
AV	181.5k	30.97	54.41	-23.44	10.02	Neutral	-	20.95	0.08	0.07	0.07	9.94				
QP	249k	38.24	61.79	-23.55	10.06	Neutral	-	28.18	0.08	0.08	0.08	9.98				
AV	249k	25.11	51.79	-26.68	10.06	Neutral	-	15.05	0.08	0.08	0.08	9.98				
QP	636k	24.42	56.00	-31.58	10.15	Neutral	-	14.27	0.09	0.09	0.14	10.11				
AV	636k	17.29	46.00	-28.71	10.15	Neutral	-	7.14	0.09	0.09	0.14	10.11				
QP	829.5k	30.78	56.00	-25.22	10.16	Neutral	-	20.62	0.09	0.09	0.16	10.14				
AV	829.5k	24.98	46.00	-21.02	10.16	Neutral	-	14.82	0.09	0.09	0.16	10.14				
QP	1.662M	31.12	56.00	-24.88	10.02	Neutral	-	21.10	0.10	0.13	0.22	10.01				
AV	1.662M	24.26	46.00	-21.74	10.02	Neutral	-	14.24	0.10	0.13	0.22	10.01				
QP	1.91M	31.06	56.00	-24.94	9.97	Neutral	-	21.09	0.11	0.14	0.24	9.96				
AV	1.91M	24.32	46.00	-21.68	9.97	Neutral	-	14.35	0.11	0.14	0.24	9.96				



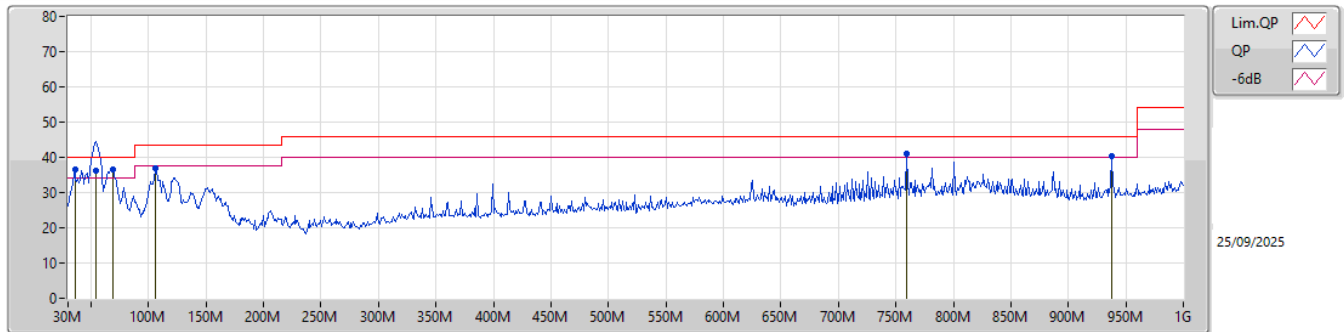
Radiated Emissions below 1GHz

Appendix B.1

Summary

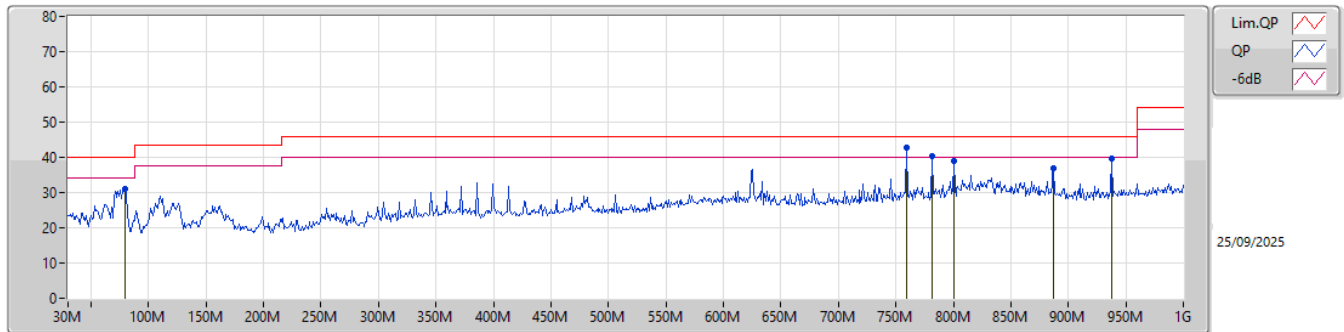
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	QP	759.44M	42.92	46.00	-3.08	Horizontal

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)	AF (dB/m)	CL (dB)	PA (dB)		
PK	35.82M	36.52	40.00	-3.48	-10.24	3	Vertical	210	1.00	"Worst"	46.76	20.99	0.56	31.79		
QP	54.25M	36.22	40.00	-3.78	-18.38	3	Vertical	360	1.00	-	54.60	12.92	0.70	32.00		
PK	68.8M	36.41	40.00	-3.59	-18.81	3	Vertical	176	1.00	-	55.22	12.37	0.79	31.97		
PK	105.66M	36.88	43.50	-6.62	-13.54	3	Vertical	39	1.25	-	50.42	17.43	0.99	31.96		
PK	759.44M	41.12	46.00	-4.88	-4.06	3	Vertical	213	1.00	-	45.18	25.64	2.85	32.55		
PK	937.92M	40.27	46.00	-5.73	-2.78	3	Vertical	203	1.00	-	43.05	26.65	3.23	32.66		

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)	AF (dB/m)	CL (dB)	PA (dB)		
PK	79.47M	30.92	40.00	-9.08	-18.17	3	Horizontal	360	1.25	-	49.09	12.99	0.86	32.02		
QP	759.44M	42.92	46.00	-3.08	-4.06	3	Horizontal	196	1.25	"Worst"	46.98	25.64	2.85	32.55		
PK	781.75M	40.44	46.00	-5.56	-3.98	3	Horizontal	35	1.25	-	44.42	25.81	2.89	32.68		
PK	800.18M	38.81	46.00	-7.19	-4.02	3	Horizontal	68	1.25	-	42.83	25.84	2.93	32.79		
PK	887.48M	36.96	46.00	-9.04	-2.91	3	Horizontal	262	1.25	-	39.87	26.51	3.13	32.55		
PK	937.92M	39.56	46.00	-6.44	-2.78	3	Horizontal	38	1.00	-	42.34	26.65	3.23	32.66		

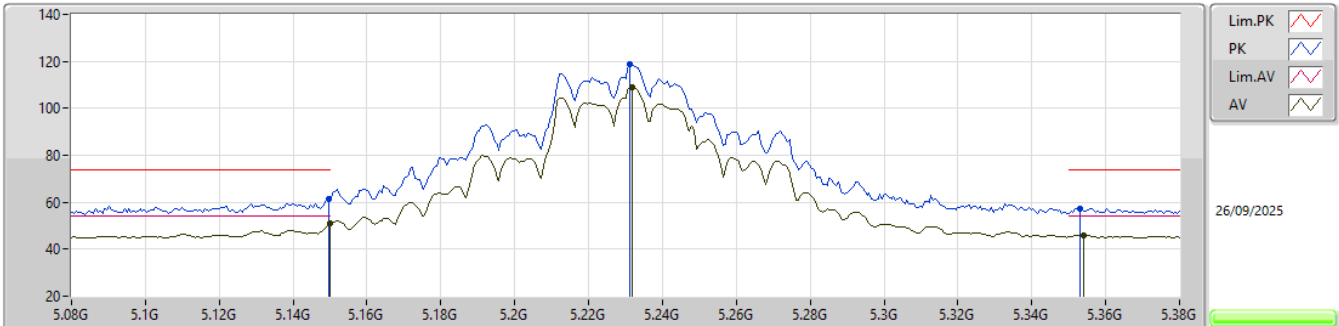


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80_Nss1,(MCS0)_4TX	Pass	AV	5.15G	53.59	54.00	-0.41	3	Vertical	277	1.40	-

5.15-5.25GHz_802.11ac_VHT40_Nss1,(MCS0)_4TX

5230MHz_TX

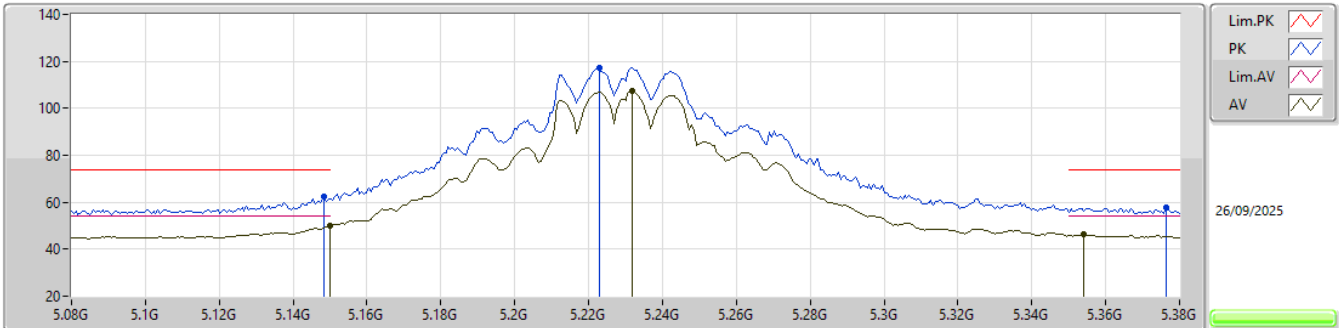


EUT Y_4TX
Setting 22
02-D-I-1-6

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	5.1496G	61.57	74.00	-12.43	50.52	3	Vertical	276	1.46	-	33.60	7.58	30.13
AV	5.15G	51.09	54.00	-2.91	40.04	3	Vertical	276	1.46	-	33.60	7.58	30.13
PK	5.2312G	118.80	Inf	-Inf	107.66	3	Vertical	276	1.46	-	33.70	7.61	30.17
AV	5.2318G	108.90	Inf	-Inf	97.76	3	Vertical	276	1.46	-	33.70	7.61	30.17
PK	5.353G	57.43	74.00	-16.57	46.06	3	Vertical	276	1.46	-	33.90	7.70	30.23
AV	5.3542G	46.08	54.00	-7.92	34.70	3	Vertical	276	1.46	-	33.90	7.71	30.23

5.15-5.25GHz_802.11ac_VHT40_Nss1,(MCS0)_4TX

5230MHz_TX

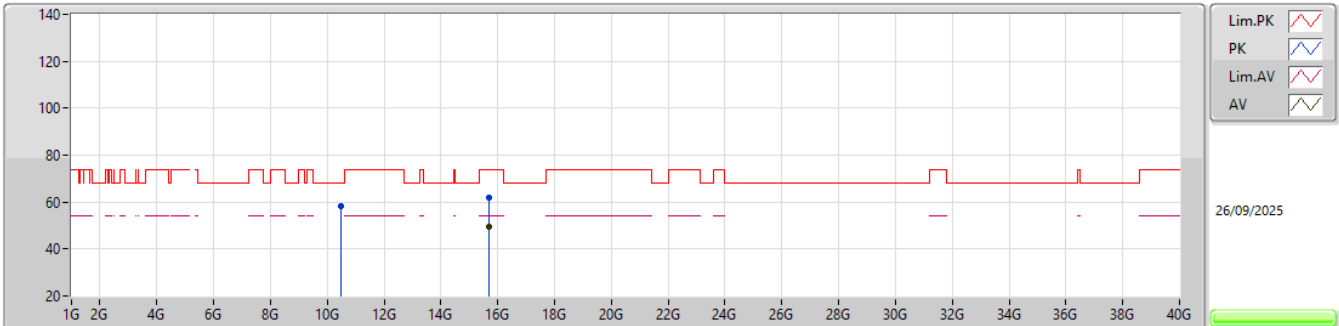


EUT_Y_4TX
Setting 22
02-D-I-1-6

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	5.1484G	62.21	74.00	-11.79	51.16	3	Horizontal	330	2.46	-	33.60	7.58	30.13
AV	5.15G	50.15	54.00	-3.85	39.10	3	Horizontal	330	2.46	-	33.60	7.58	30.13
PK	5.2228G	117.41	Inf	-Inf	106.27	3	Horizontal	330	2.46	-	33.70	7.61	30.17
AV	5.2318G	107.48	Inf	-Inf	96.34	3	Horizontal	330	2.46	-	33.70	7.61	30.17
PK	5.3764G	57.96	74.00	-16.04	46.59	3	Horizontal	330	2.46	-	33.90	7.72	30.25
AV	5.3542G	46.20	54.00	-7.80	34.82	3	Horizontal	330	2.46	-	33.90	7.71	30.23

5.15-5.25GHz_802.11ac_VHT40_Nss1,(MCS0)_4TX

5230MHz_TX

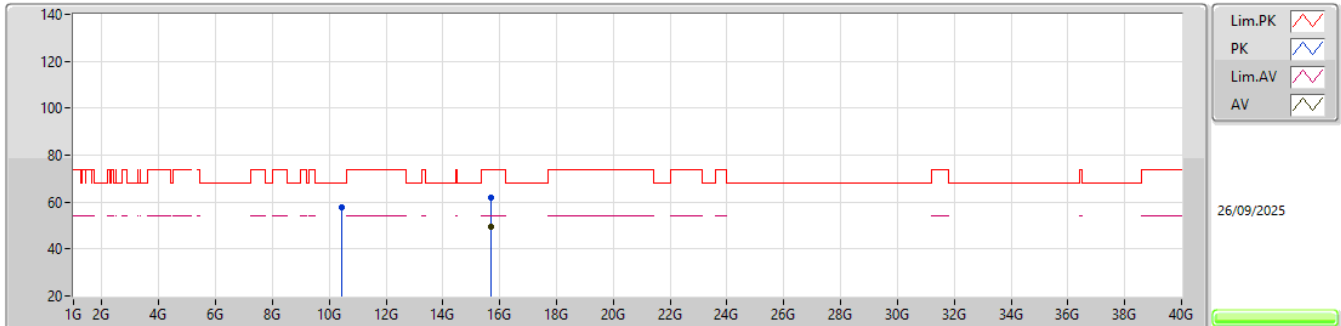


EUT_Y_4TX
Setting 22
02-D-I-1

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	10.4652G	58.10	68.20	-10.10	38.68	3	Vertical	90	1.80	-	38.23	12.01	30.82			
PK	15.69208G	61.89	74.00	-12.11	41.63	3	Vertical	119	1.94	-	37.62	14.56	31.92			
AV	15.6868G	49.35	54.00	-4.65	29.08	3	Vertical	119	1.94	-	37.63	14.56	31.92			

5.15-5.25GHz_802.11ac_VHT40_Nss1,(MCS0)_4TX

5230MHz_TX

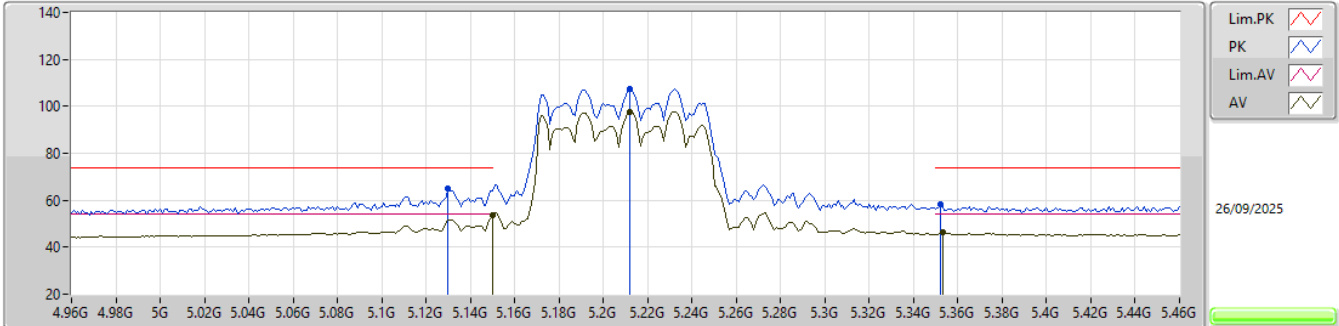


EUT_Y_4TX
Setting 22
02-D-I-1

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	10.45084G	57.91	68.20	-10.29	38.52	3	Horizontal	360	1.80	-	38.20	12.01	30.82			
PK	15.6832G	62.00	74.00	-12.00	41.73	3	Horizontal	130	2.84	-	37.63	14.56	31.92			
AV	15.69484G	49.55	54.00	-4.45	29.29	3	Horizontal	130	2.84	-	37.61	14.57	31.92			

5.15-5.25GHz_802.11ac_VHT80_Nss1,(MCS0)_4TX

5210MHz_TX

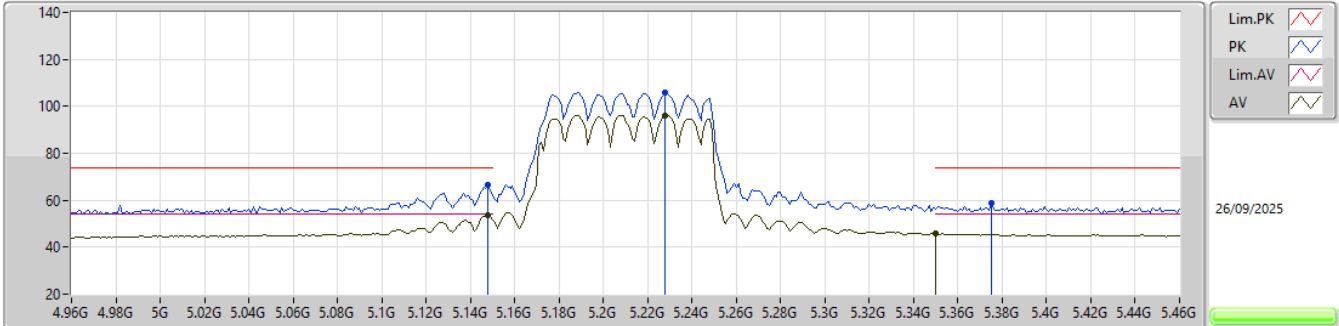


EUT_Y_4TX
Setting 15
02-D-I-1-6

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	5.13G	64.94	74.00	-9.06	53.92	3	Vertical	277	1.40	-	33.56	7.58	30.12
AV	5.15G	53.59	54.00	-0.41	42.54	3	Vertical	277	1.40	-	33.60	7.58	30.13
PK	5.212G	107.65	Inf	-Inf	96.51	3	Vertical	277	1.40	-	33.70	7.60	30.16
AV	5.212G	97.74	Inf	-Inf	86.60	3	Vertical	277	1.40	-	33.70	7.60	30.16
PK	5.352G	58.18	74.00	-15.82	46.81	3	Vertical	277	1.40	-	33.90	7.70	30.23
AV	5.353G	46.32	54.00	-7.68	34.95	3	Vertical	277	1.40	-	33.90	7.70	30.23

5.15-5.25GHz_802.11ac_VHT80_Nss1,(MCS0)_4TX

5210MHz_TX

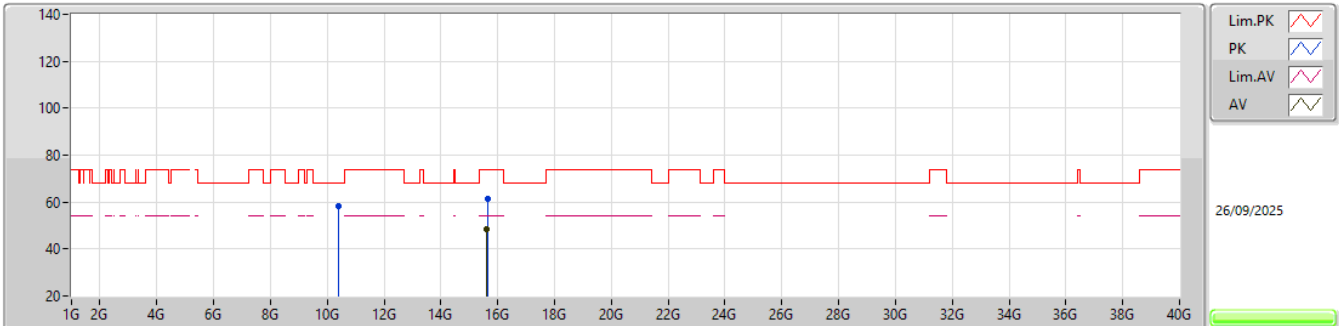


EUT_Y_4TX
Setting 15
02-D-I-1-6

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	5.148G	66.40	74.00	-7.60	55.35	3	Horizontal	313	1.65	-	33.60	7.58	30.13			
AV	5.148G	53.45	54.00	-0.55	42.40	3	Horizontal	313	1.65	-	33.60	7.58	30.13			
PK	5.228G	105.96	Inf	-Inf	94.82	3	Horizontal	313	1.65	-	33.70	7.61	30.17			
AV	5.228G	96.26	Inf	-Inf	85.12	3	Horizontal	313	1.65	-	33.70	7.61	30.17			
PK	5.375G	58.72	74.00	-15.28	47.34	3	Horizontal	313	1.65	-	33.90	7.72	30.24			
AV	5.35G	45.69	54.00	-8.31	34.32	3	Horizontal	313	1.65	-	33.90	7.70	30.23			

5.15-5.25GHz_802.11ac_VHT80_Nss1,(MCS0)_4TX

5210MHz_TX

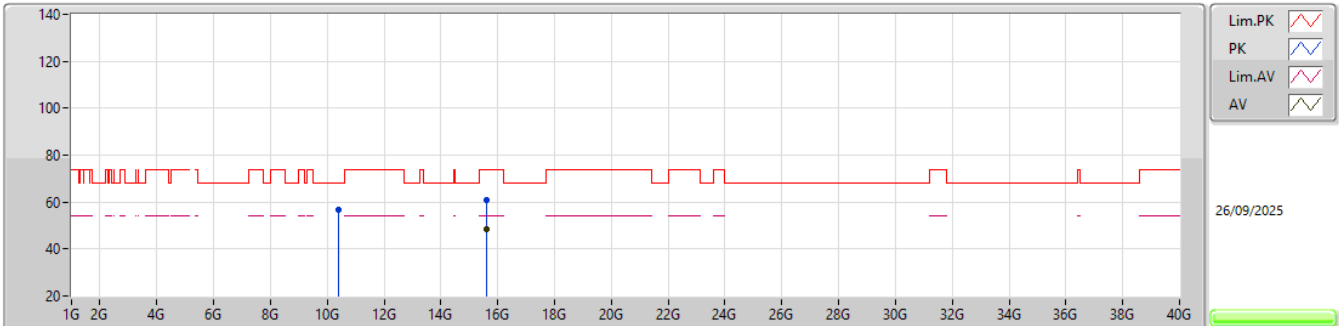


EUT_Y_4TX
Setting 15
02-D-I-1

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	10.41344G	58.46	68.20	-9.74	39.02	3	Vertical	6	2.99	-	38.27	11.99	30.82			
PK	15.63912G	61.22	74.00	-12.78	40.91	3	Vertical	243	1.54	-	37.72	14.52	31.93			
AV	15.62512G	48.31	54.00	-5.69	27.98	3	Vertical	243	1.54	-	37.75	14.51	31.93			

5.15-5.25GHz_802.11ac_VHT80_Nss1,(MCS0)_4TX

5210MHz_TX

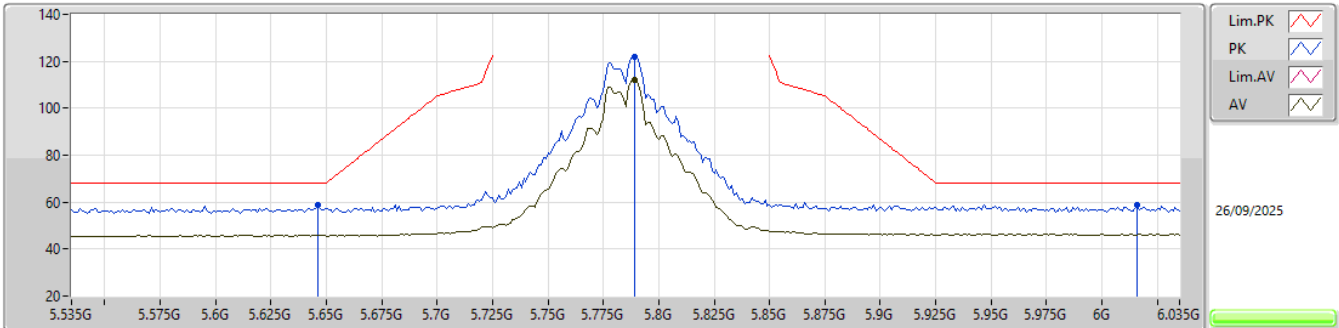


EUT_Y_4TX
Setting 15
02-D-I-1

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	10.41624G	56.98	68.20	-11.22	37.54	3	Horizontal	239	1.92	-	38.27	11.99	30.82			
PK	15.62264G	61.09	74.00	-12.91	40.78	3	Horizontal	299	2.06	-	37.75	14.50	31.94			
AV	15.62848G	48.26	54.00	-5.74	27.94	3	Horizontal	299	2.06	-	37.74	14.51	31.93			

5.725-5.85GHz_802.11a_Nss1,(6Mbps)_4TX

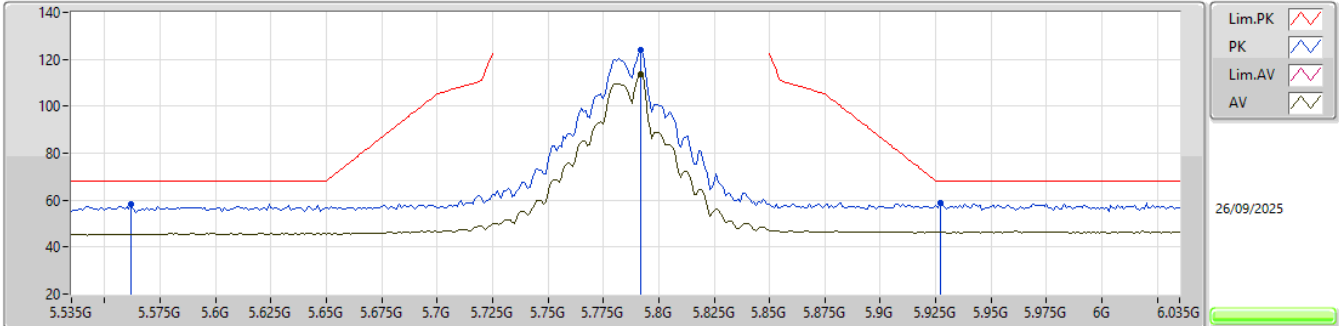
5785MHz_TX

EUT_Y_4TX
Setting 23
02-D-I-1-6

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	5.646G	58.60	68.20	-9.60	46.92	3	Vertical	290	1.80	-	34.00	7.94	30.26				
PK	5.789G	122.15	Inf	-Inf	110.17	3	Vertical	290	1.80	-	34.00	8.19	30.21				
AV	5.789G	112.22	Inf	-Inf	100.24	3	Vertical	290	1.80	-	34.00	8.19	30.21				
PK	6.016G	58.57	68.20	-9.63	46.27	3	Vertical	290	1.80	-	34.33	8.11	30.14				

5.725-5.85GHz_802.11a_Nss1,(6Mbps)_4TX

5785MHz_TX

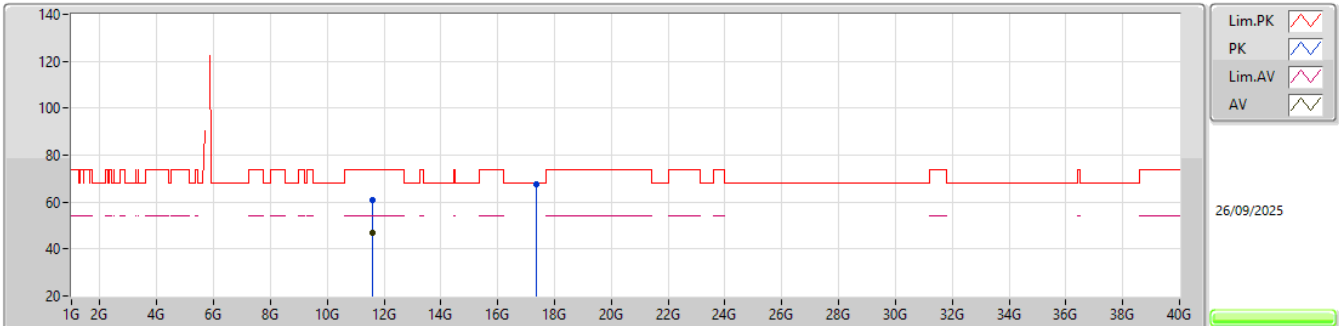


EUT_Y_4TX
Setting 23
02-D-I-1-6

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	5.562G	58.25	68.20	-9.95	46.62	3	Horizontal	342	2.20	-	34.08	7.84	30.29				
PK	5.792G	123.82	Inf	-Inf	111.82	3	Horizontal	342	2.20	-	34.00	8.20	30.20				
AV	5.792G	113.48	Inf	-Inf	101.48	3	Horizontal	342	2.20	-	34.00	8.20	30.20				
PK	5.927G	58.73	68.20	-9.47	46.59	3	Horizontal	342	2.20	-	34.15	8.15	30.16				

5.725-5.85GHz_802.11a_Nss1,(6Mbps)_4TX

5785MHz_TX

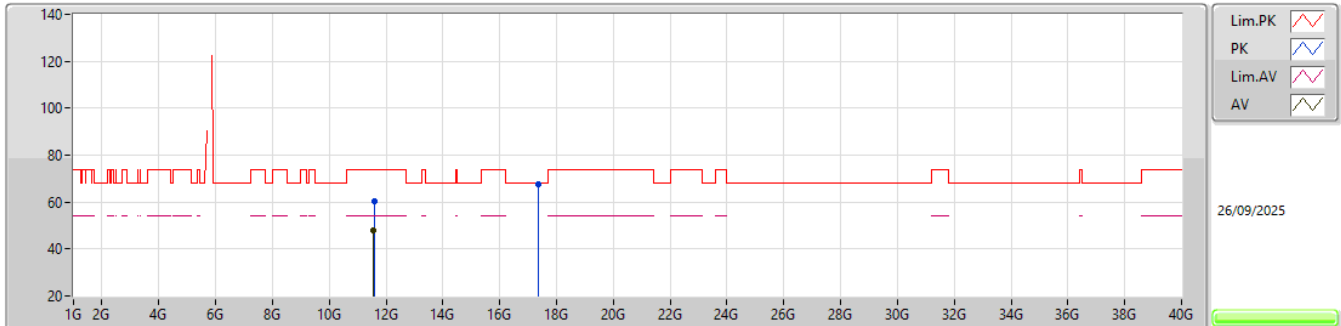


EUT_Y_4TX
Setting 23
02-D-I-1

Type	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	11.573G	60.91	74.00	-13.09	40.22	3	Vertical	294	1.80	-	39.15	12.57	31.03				
AV	11.575G	47.07	54.00	-6.93	26.37	3	Vertical	294	1.80	-	39.15	12.58	31.03				
PK	17.354G	67.57	68.20	-0.63	41.38	3	Vertical	123	1.80	-	42.92	15.11	31.84				

5.725-5.85GHz_802.11a_Nss1,(6Mbps)_4TX

5785MHz_TX

EUT_Y_4TX
Setting 23
02-D-I-1

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	11.578G	60.44	74.00	-13.56	39.73	3	Horizontal	357	1.80	-	39.16	12.58	31.03			
AV	11.572G	47.95	54.00	-6.05	27.27	3	Horizontal	357	1.80	-	39.14	12.57	31.03			
PK	17.358G	67.34	68.20	-0.86	41.14	3	Horizontal	294	1.80	-	42.93	15.11	31.84			