

FCC Test Report

FCC ID : TLZ-CU659
Equipment : IEEE 802.15.4z UWB IoT Module
Brand Name : AzureWave
Model Name : AW-CU659
Applicant : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City ,
Taiwan 231
Manufacturer : AzureWave Technologies (Shanghai) Inc.
No. 1355, Jiaxin Road, Malu Twon, Jiading District
Shanghai, P.R. China
Standard : 47 CFR FCC Part 15.517

The product was received on Mar. 21, 2025, and testing was started from Apr. 09, 2025 and completed on Apr. 23, 2025. We, SPORTON INTERNATIONAL INC. Hsinhua 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. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)

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Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
1.1.6	15.517(a)	Operational Restriction	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.503 (d) /15.517(b)	UWB Bandwidth	PASS	-
3.3	15.517(e)	Peak Emissions within a 50 MHz Bandwidth	PASS	-
3.4	15.517(c) /15.517(d)	Radiated Emissions	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and explanations:

None

Reviewed by: Ben Tseng

Report Producer: Michelle Tsai

1 General Description

1.1 Information

1.1.1 RF General Information

RF General Information					
Frequency Range (GHz)	Mode	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	EIRP (dBm/50MHz)
3.1-10.6GHz	UWB	6489.6	5	1	-0.06
3.1-10.6GHz	UWB	7987.2	9	1	-0.20

Note 1: TransferJet uses Pi/2 shift BPSK + DSSS modulation.

Band	Mode	BWch	Nant
3.1-10.6GHz	Ultra Wide Band	499.2	1TX

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Support
1	1	Azrowave	AN-2659-1	printed	I-Pex	UWB
2	2	Azrowave	AN-2659-2	printed	I-Pex	UWB
3	3	Azrowave	AN-2659-3	printed	I-Pex	UWB

Ant.	Port	Gain (dBi)	
		6489.6 (MHz)	7987.2 (MHz)
1	1	3.6	4.4
2	2	4.4	4.7
3	3	4.5	5.3

Note 1: The EUT has three antennas.

For UWB function: (1TX)

Ant. 1 (port 1) could transmit.

For UWB function: (3RX)

Ant. 1 (port 1), Ant. 2 (port 2) Ant. 3 (port 3) could receive.

1.1.3 Type of EUT

Operational Condition	
EUT Power Type	From Test Fixture
Type of EUT	
☒	Stand-alone
☐	Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.: ...
☐	Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.: ...
☐	Other:

1.1.4 Test Signal Duty Cycle

Mode	DC	DCF (dB)	T (s)	VBW (Hz)_1/T
Ultra Wide Band	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.1.5 Table for Multiple Listing

RF Filter	Brand Name	Model Name
SKU-1	Murata	LFB217G42CFHF483
SKU-2	PSA	RFBPF20097G4W2T

Note: SKU-1 configuration was measured during the test.

1.1.6 Operational Restriction

Operation Restriction	Informed the applicant	Not applicable	User Manual Informed	Passed
☒ Indoor UWB devices & Fixed indoor infrastructure				
Must be capable of operation only indoors. The necessity to operate with a fixed indoor infrastructure. [A transmitter that had been connected to the AC power lines and operates solely through the AC mains. Or The device under test operates solely through USB port of a PC. It is not intended to operate from any other power source and be considered sufficient to demonstrate a fixed indoor infrastructure]	☒	☐	☐	☒
☒ Emissions from equipment				
The emissions from equipment operated shall not be intentionally directed outside of the building in which the equipment is located, such as through a window or a doorway, to perform an outside function, such as the detection of persons about to enter a building. [The applicant has been informed of this requirement.]	☒	☐	☐	☒
☒ Outdoor mounted antennas				
The use of outdoor mounted antennas, e.g., antennas mounted on the outside of a building or on a telephone pole, or any other outdoors infrastructure is prohibited. [The applicant has been informed without any outdoor mounted antennas.]	☒	☐	☐	☒
☒ Field disturbance sensors install				
Field disturbance sensors installed inside of metal or underground storage tanks are considered to operate indoors provided the emissions are directed towards the ground. [Not applicable for this client.]	☐	☒	☐	☒
☒ A communications system shall transmit only				
A communications system shall transmit only when the intentional radiator is sending information to an associated receiver. [The applicant has been informed of this requirement and is clearly stated on the user manual.]	☒	☐	☒	☐

1.2 Testing Applied 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

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

- ♦ KDB 393764 D01 v02
- ♦ KDB 412172 D01 v01r01

1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
☒ Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		FAX: 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Daniel Lin	21.5~23.9°C / 52~55%	23/Apr/2025
Radiated	03CH02-HY	Daniel Lin	22.8~24.7°C / 53~59%	09/Apr/2025~20/Apr/2025
☐ Wen 33rd. St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
	TEL: 886-3-318-0787		FAX: 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				

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
AC Power-line Conducted Emissions	3.34 dB	Confidence levels of 95%
UWB Bandwidth	0.13 MHz	Confidence levels of 95%
Unwanted Emissions (9 kHz ~ 30 MHz)	2.5 dB	Confidence levels of 95%
Unwanted Emissions (30 MHz ~ 1 GHz)	4.8 dB	Confidence levels of 95%
Unwanted Emissions (1 GHz ~ 18 GHz)	4.2 dB	Confidence levels of 95%
Unwanted Emissions (18 GHz ~ 40 GHz)	4.1 dB	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

2.2 The Worst Case Configuration

Worst Modulation Used for Conformance Testing		
Mode	Transmit Chains (N _{TX})	Test Channel Frequencies (MHz)
UWB	1	6489.6
UWB	1	7987.2

2.3 The Worse Case Power Setting Parameter

Test Software Version	Dos6.1
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Mode	Power Setting
Ultra Wide Band_Nss1_1TX	-
6489.6MHz	43
7987.2MHz	63

2.4 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
Operating Mode	CTX
1	Fixture Mode

The Worst Case Mode for Following Conformance Tests			
Tests Item	UWB Bandwidth, Peak Emissions within a 50 MHz Bandwidth, Radiated 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	CTX		
1	Fixture Mode		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT	V		

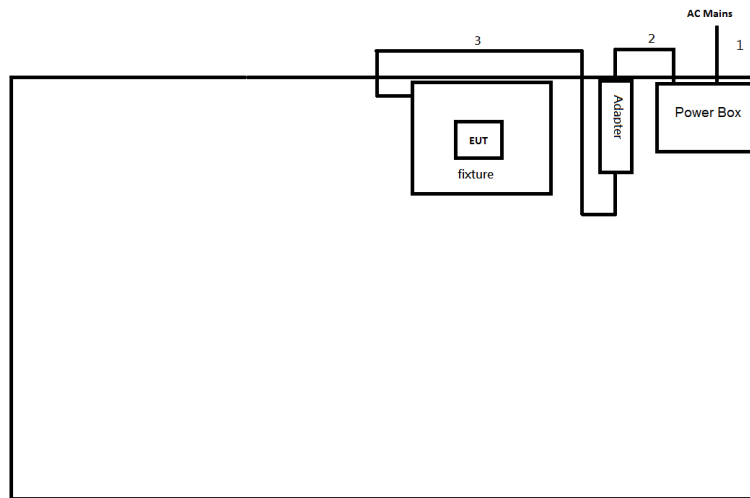
2.5 Support Equipment

Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	AC Power cable	Power sync	TPCMRN0006	-	-
2	Notebook	Dell	P28S	-	-
3	Adapter for NB	Dell	LA65NM130	-	-
4	Fixture	Azurewave	AW-CU695-i1	-	-

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	AC Power cable	Power sync	TPCMRN0006	-	-
2	Notebook	Dell	P28S	-	-
3	Adapter for NB	Dell	LA65NM130	-	-
4	fixture	Azurewave	AW-CU695-i1	-	-

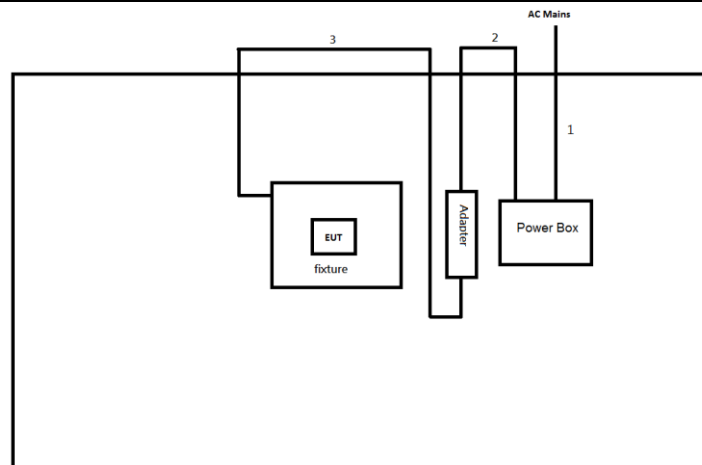
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	AC Power cable	No	0.6	-
3	DC Power cable	No	1.5	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	AC Power cable	No	0.6	-
3	DC Power cable	No	1.5	-

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

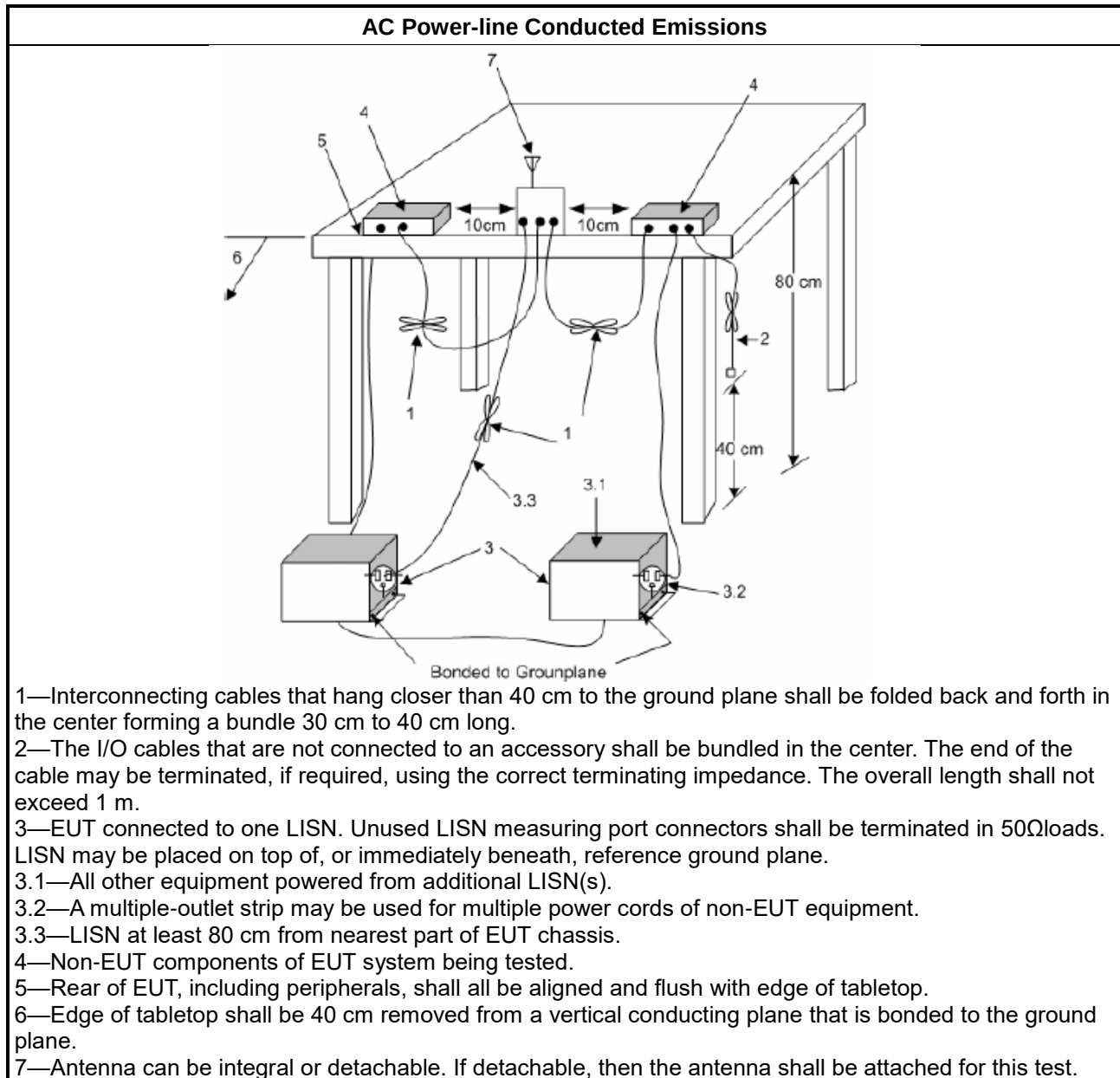
Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

3.1.5 Test Setup



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 UWB bandwidth

3.2.1 UWB bandwidth Limit

UWB bandwidth Limit	
☒	UWB bandwidth ≥ 500 MHz or Fractional bandwidth ≥ 0.2 ; Fractional bandwidth = $2(f_H - f_L) / (f_H + f_L)$
☒	The UWB bandwidth of a UWB system operating under the provisions of this section must be contained between 3100 MHz and 10,600 MHz.

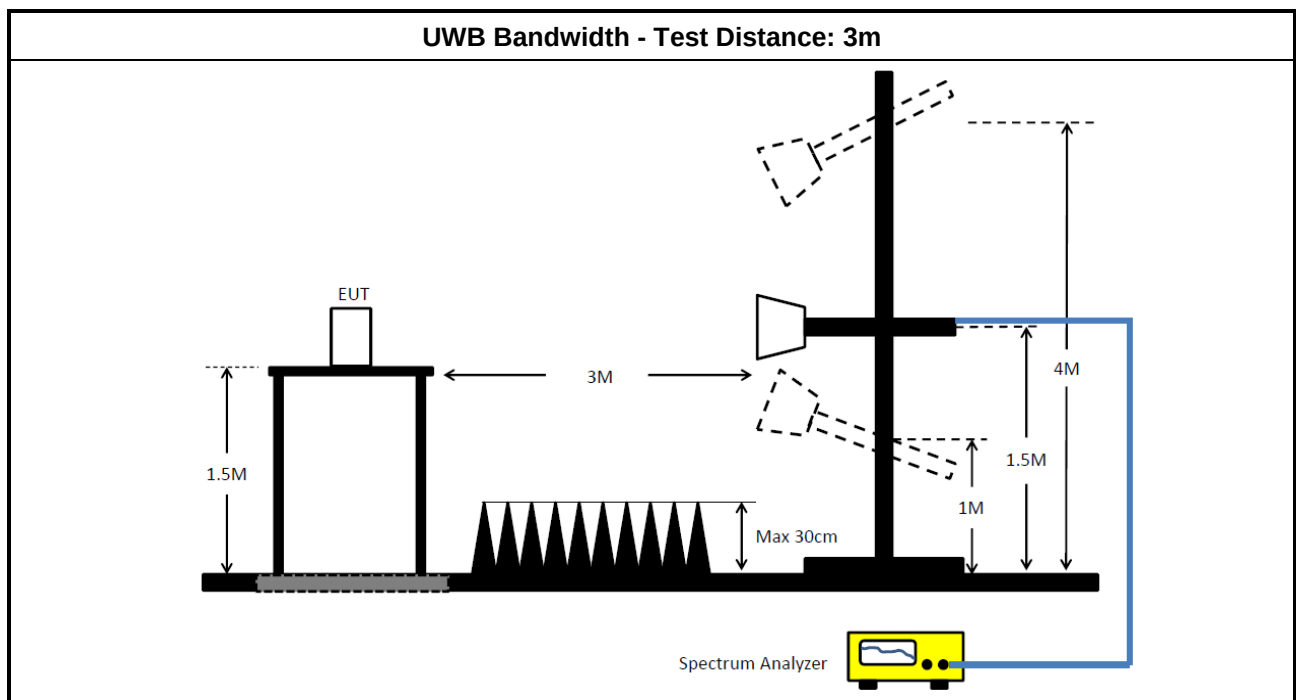
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
☒	For the UWB bandwidth shall be measured using one of the options below:
☒	Refer as ANSI C63.10, clause 6.9.3 and clause 10.1 for UWB bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of UWB Bandwidth

Refer as Appendix B

3.3 Peak Emissions within a 50 MHz Bandwidth

3.3.1 Peak Emissions within a 50 MHz Bandwidth Limit

Peak Emissions within a 50 MHz Bandwidth Limit
$P_{eirr} = 0 \text{ dBm/50MHz}$

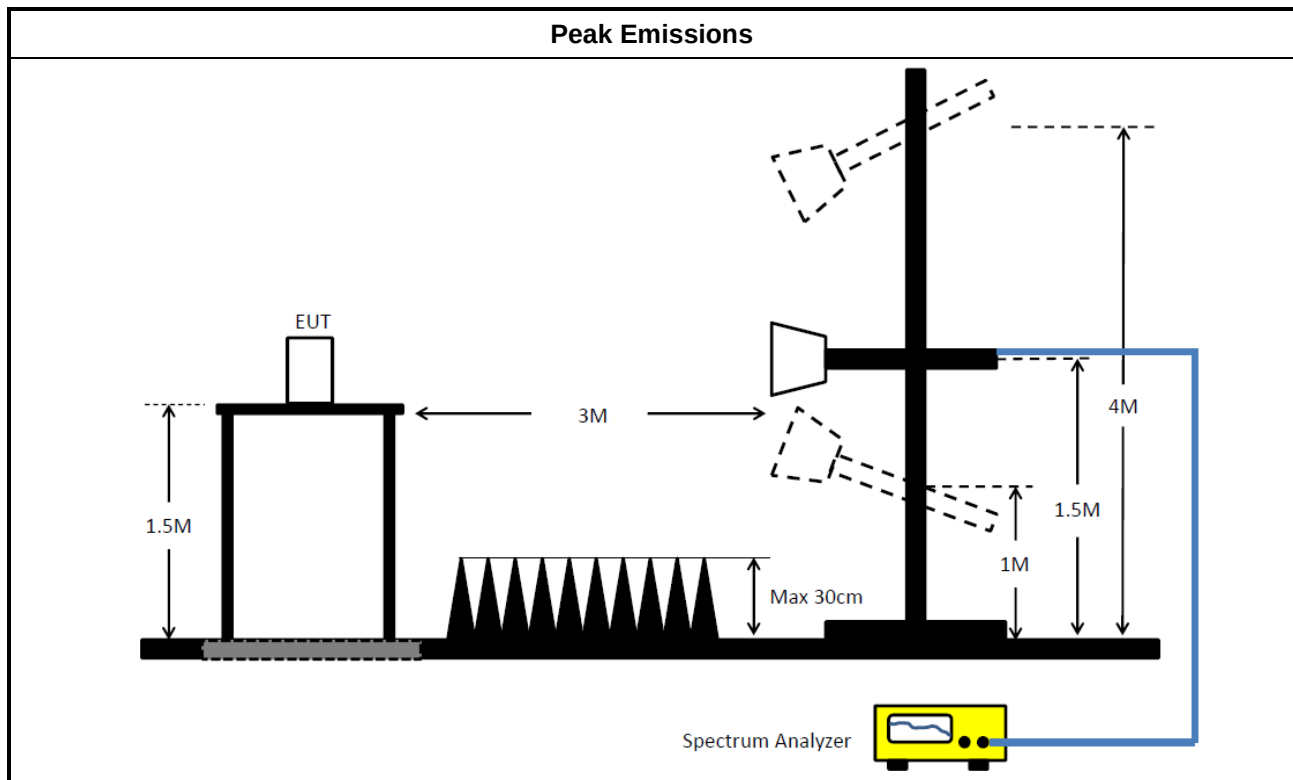
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method
☒ Peak Emissions within a 50 MHz Bandwidth
☒ Refer as ANSI C63.10, clause 10.3.1 for radiated measurement procedure testing.
☒ Refer as ANSI C63.10, clause 10.3.2 for measurement distance is 3m.
☒ Refer as ANSI C63.10, clause 10.3.5 for peak detector procedure testing.
☐ Refer as ANSI C63.10, clause 10.3.6 for bandwidth conversion of peak power. $EIRP_{50MHz} = EIRP_{1MHz} - 20 \log(1MHz/50MHz)$

3.3.4 Test Setup



3.3.5 Test Result of Peak Emissions within a 50 MHz Bandwidth

Refer as Appendix C

3.4 Radiated Emissions

3.4.1 Radiated Emissions Limit

Radiated Emissions below 960MHz and Emissions from Digital Circuitry 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
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.			

Radiated Emissions above 960MHz Limit	
Frequency Range (MHz)	EIRP (dBm)
960-1610	-75.3
1610-1990	-53.3
1990-3100	-51.3
3100-10600	-41.3
Above 10600	-51.3

Radiated Emissions in GPS Bands Limit	
Frequency Range (MHz)	EIRP (dBm)
1164-1240	-85.3
1559-1610	-85.3

3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method for Radiated Emissions above 960MHz	
☒	Radiated Emissions above 960MHz
☒	Refer as ANSI C63.10, clause 10.3.1 for radiated measurement procedure testing.
☒	Refer as ANSI C63.10, clause 10.3.2 for measurement distance is 3m. In some cases, it may be necessary to measure the radiated UWB emissions at a closer distance to obtain enough signal and margin to overcome the measurement system noise floor. Distance extrapolation factor = 20 log (test distance [X m]/specific distance [3 m]) (dB)
☒	Refer as ANSI C63.10, clause 10.3.4 for rms detector procedure testing.
☒	Refer as ANSI C63.10, clause 10.3.7 for evaluating AVG-PSD (RBW=1MHz).
☒	Refer as ANSI C63.10, clause 10.3.10 for evaluating AVG-PSD in GPS Band (RBW≥1kHz).
☒	For radiated measurement.
☒	Refer as KDB 412172, clause 2.2 following eirp can be used radiated test configuration.
☒	Refer as KDB 412172, clause 5 following eirp can be directly determined using the field strength.
☐	Refer as KDB 412172, clause 6 following eirp can be used signal/antenna substitution techniques.

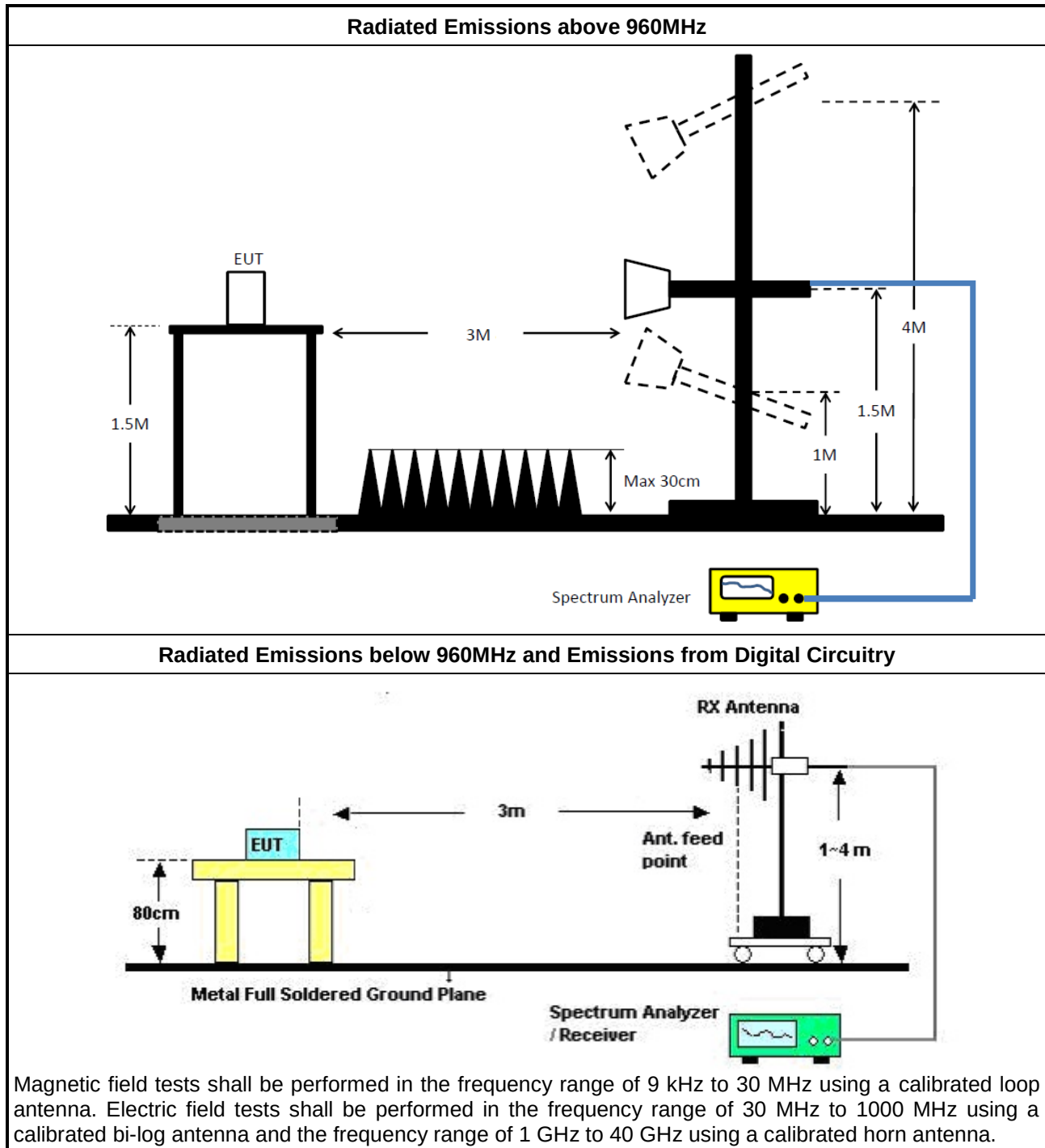
Test Method for Radiated Emissions below 960MHz and Emissions from Digital Circuitry	
☒	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing 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).
☒	For the transmitter unwanted emissions shall be measured using following options below:
☒	Refer as ANSI C63.10, clause 4.1.4.2.3 (Reduced VBW) – Duty cycle ≥ 100%.
☐	Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions. Adjusted by a “duty cycle correction factor”, derived from 20log (dwell time/100 ms). Average emission = peak emission + 20 log (duty cycle).
☒	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 1 GHz and test distance is 3m.
☒	The any unwanted emissions level shall not exceed the fundamental emission level.

3.4.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor)

3.4.5 Test Setup



3.4.6 Radiated Emissions (Below 30MHz)

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

3.4.7 Test Result of Radiated Emissions

Refer as Appendix D

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	ROHDE & SCHWARZ	ESR3	102051	9kHz ~ 3.6GHz	17/May/2024	16/May/2025
Two-Line V-Network	ROHDE & SCHWARZ	ENV 216	101578	9kHz ~ 30MHz	11/Oct/2024	10/Oct/2025
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9 kHz~200MHz	26/Feb/2025	25/Feb/2026
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	17/Oct/2024	16/Oct/2025
Software	Sporton	SENSE-EMI	V5.11.3	-	NCR	NCR

NCR: No Calibration Required

Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
N.S.A. Measurement	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz~1GHz 3M	14/Jul/2024	13/Jul/2025
Site V.S.W.R	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3M	14/Jul/2024	13/Jul/2025
EMI Test Receiver	R&S	ESR	102052	9kHz~3.6GHz	03/May/2024	02/May/2025
Signal Analyzer	R&S	FSP 40	100593	9kHz~40GHz	26/Mar/2025	25/Mar/2026
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	20/Mar/2025	19/Mar/2026
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723/2	30MHz~1GHz	26/Aug/2024	25/Aug/2025
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02268	1GHz~18GHz	23/Sep/2024	22/Sep/2025
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz~40GHz	04/Jun/2024	03/Jun/2025
RF Cable	MVE	400LL+SN 200207	03CH02-cable-02	9kHz~30MHz	26/Nov/2024	25/Nov/2025
RF Cable	MVE	400LL+SN 200207	03CH02-cable-02	30MHz~1GHz	26/Nov/2024	25/Nov/2025
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX 104	03CH02-cable-01	1GHz~40GHz	13/Feb/2025	12/Feb/2026
Amplifier	Agilent	8447D	2944A11149	100kHz~1.3GHz	29/Jun/2024	28/Jun/2025
Amplifier	EM	EM01G18GA	060933	1GHz~18GHz	15/Jul/2024	14/Jul/2025
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	01/Oct/2024	30/Sep/2025
Microwave Preamplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~40GHz	19/Apr/2024	18/Apr/2025
Microwave Preamplifier	EMC INSTRUMENTS	EM18G40G	060874	18GHz ~40GHz	18/Apr/2025	17/Apr/2026
SENSE-UWB	Sporton	V5.11.1	N/A	N/A	N/A	N/A



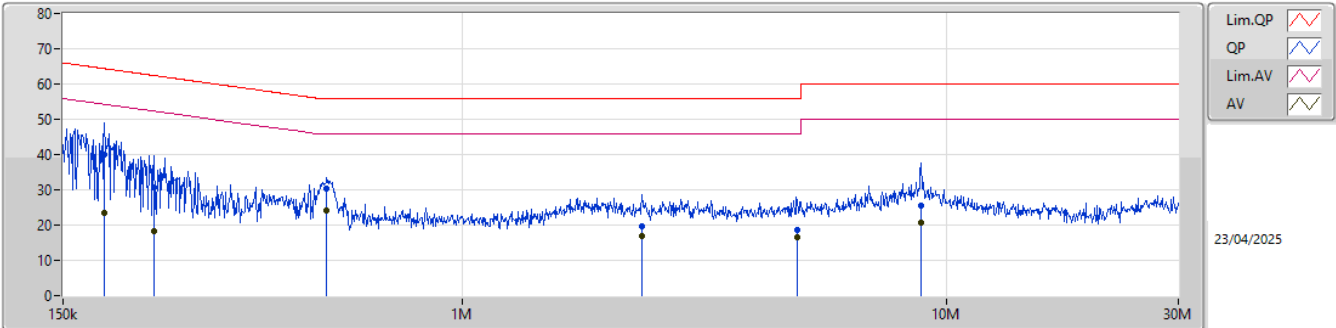
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	523.291k	32.48	46.00	-13.52	Neutral

Result

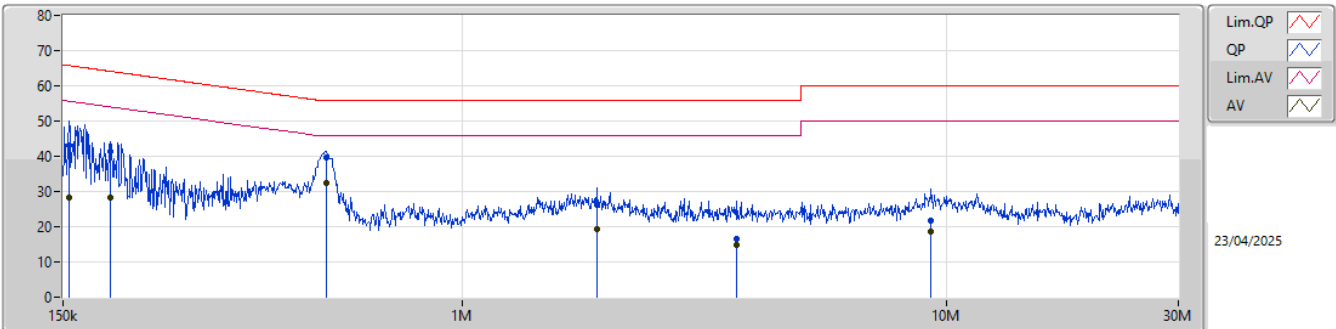
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	182.408k	40.00	64.37	-24.37	Line
Mode 1	Pass	AV	182.408k	23.53	54.37	-30.84	Line
Mode 1	Pass	QP	231.775k	30.77	62.39	-31.62	Line
Mode 1	Pass	AV	231.775k	18.44	52.39	-33.95	Line
Mode 1	Pass	QP	525.384k	30.25	56.00	-25.75	Line
Mode 1	Pass	AV	525.384k	24.05	46.00	-21.95	Line
Mode 1	Pass	QP	2.348M	19.68	56.00	-36.32	Line
Mode 1	Pass	AV	2.348M	16.82	46.00	-29.18	Line
Mode 1	Pass	QP	4.894M	18.49	56.00	-37.51	Line
Mode 1	Pass	AV	4.894M	16.39	46.00	-29.61	Line
Mode 1	Pass	QP	8.835M	25.47	60.00	-34.53	Line
Mode 1	Pass	AV	8.835M	20.71	50.00	-29.29	Line
Mode 1	Pass	QP	154.251k	42.95	65.77	-22.82	Neutral
Mode 1	Pass	AV	154.251k	28.25	55.77	-27.52	Neutral
Mode 1	Pass	QP	187.577k	41.41	64.15	-22.74	Neutral
Mode 1	Pass	AV	187.577k	28.15	54.15	-26.00	Neutral
Mode 1	Pass	QP	523.291k	39.65	56.00	-16.35	Neutral
Mode 1	Pass	AV	523.291k	32.48	46.00	-13.52	Neutral
Mode 1	Pass	QP	1.892M	26.33	56.00	-29.67	Neutral
Mode 1	Pass	AV	1.892M	19.45	46.00	-26.55	Neutral
Mode 1	Pass	QP	3.686M	16.63	56.00	-39.37	Neutral
Mode 1	Pass	AV	3.686M	15.00	46.00	-31.00	Neutral
Mode 1	Pass	QP	9.269M	21.86	60.00	-38.14	Neutral
Mode 1	Pass	AV	9.269M	18.61	50.00	-31.39	Neutral

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	182.408k	40.00	64.37	-24.37	20.13	Line	-	19.87	10.15	0.01	9.97						
AV	182.408k	23.53	54.37	-30.84	20.13	Line	-	3.40	10.15	0.01	9.97						
QP	231.775k	30.77	62.39	-31.62	19.73	Line	-	11.04	9.75	0.01	9.97						
AV	231.775k	18.44	52.39	-33.95	19.73	Line	-	-1.29	9.75	0.01	9.97						
QP	525.384k	30.25	56.00	-25.75	20.06	Line	-	10.19	10.04	0.04	9.98						
AV	525.384k	24.05	46.00	-21.95	20.06	Line	-	3.99	10.04	0.04	9.98						
QP	2.348M	19.68	56.00	-36.32	19.71	Line	-	-0.03	9.71	0.03	9.97						
AV	2.348M	16.82	46.00	-29.18	19.71	Line	-	-2.89	9.71	0.03	9.97						
QP	4.894M	18.49	56.00	-37.51	19.74	Line	-	-1.25	9.67	0.09	9.98						
AV	4.894M	16.39	46.00	-29.61	19.74	Line	-	-3.35	9.67	0.09	9.98						
QP	8.835M	25.47	60.00	-34.53	19.88	Line	-	5.59	9.69	0.21	9.98						
AV	8.835M	20.71	50.00	-29.29	19.88	Line	-	0.83	9.69	0.21	9.98						

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	154.251k	42.95	65.77	-22.82	19.98	Neutral	-	22.97	10.00	0.01	9.97						
AV	154.251k	28.25	55.77	-27.52	19.98	Neutral	-	8.27	10.00	0.01	9.97						
QP	187.577k	41.41	64.15	-22.74	20.09	Neutral	-	21.32	10.11	0.01	9.97						
AV	187.577k	28.15	54.15	-26.00	20.09	Neutral	-	8.06	10.11	0.01	9.97						
QP	523.291k	39.65	56.00	-16.35	20.06	Neutral	-	19.59	10.04	0.04	9.98						
AV	523.291k	32.48	46.00	-13.52	20.06	Neutral	-	12.42	10.04	0.04	9.98						
QP	1.892M	26.33	56.00	-29.67	19.72	Neutral	-	6.61	9.72	0.03	9.97						
AV	1.892M	19.45	46.00	-26.55	19.72	Neutral	-	-0.27	9.72	0.03	9.97						
QP	3.686M	16.63	56.00	-39.37	19.72	Neutral	-	-3.09	9.69	0.05	9.98						
AV	3.686M	15.00	46.00	-31.00	19.72	Neutral	-	-4.72	9.69	0.05	9.98						
QP	9.269M	21.86	60.00	-38.14	19.91	Neutral	-	1.95	9.71	0.22	9.98						
AV	9.269M	18.61	50.00	-31.39	19.91	Neutral	-	-1.30	9.71	0.22	9.98						

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
3.1-10.6GHz	-	-	-	-	-
Ultra Wide Band_Nss1,(HRP)_1TX	525M	582.917M	583MD1D	519M	579.92M

Max-N dB = Maximum 10dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 10dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	F _M (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
Ultra Wide Band_Nss1,(HRP)_1TX	-	-		-	-
6489.6MHz	Pass	500M	6489.6M	525M	579.92M
7987.2MHz	Pass	500M	7987.2M	519M	582.917M

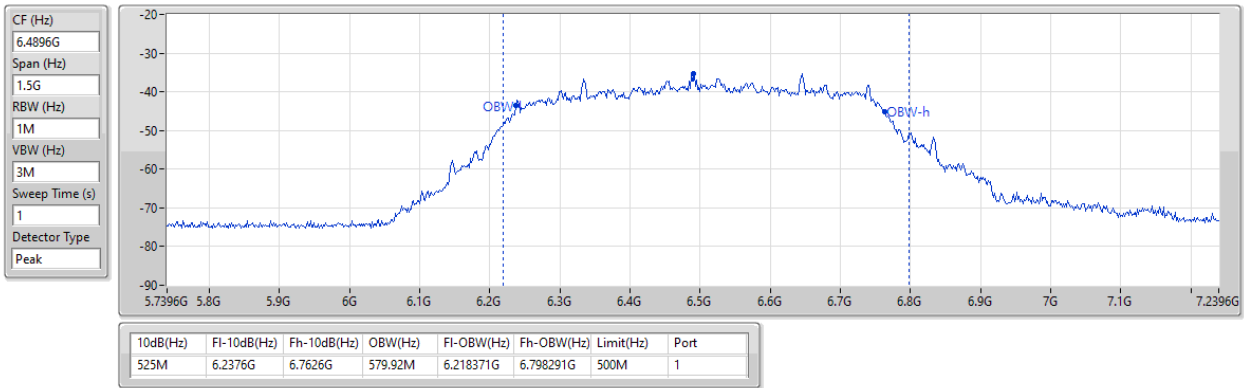
Port X-N dB = Port X 10dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

EBW

6489.6MHz

30/04/2025

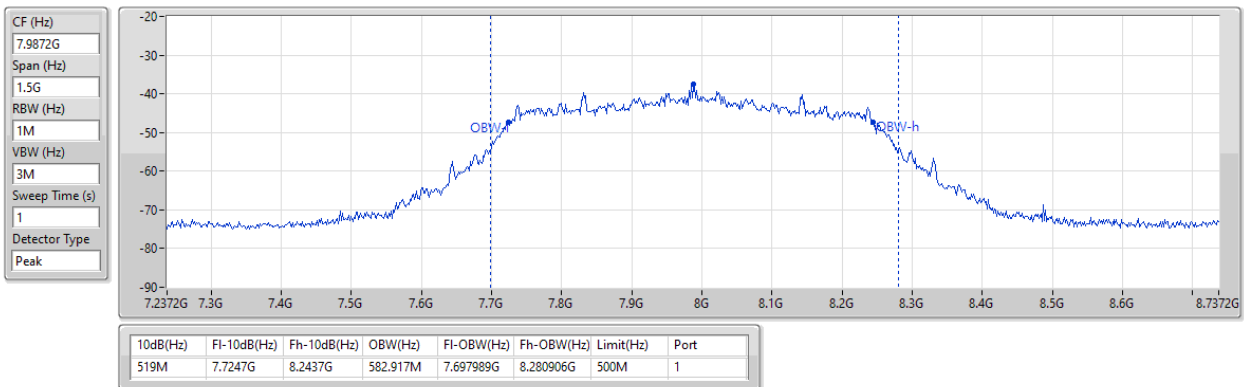


3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

EBW

7987.2MHz

30/04/2025





Summary

Mode	EIRP PD (dBm/50MHz)
3.1-10.6GHz	-
Ultra Wide Band_Nss1_1TX	-0.06

**Result**

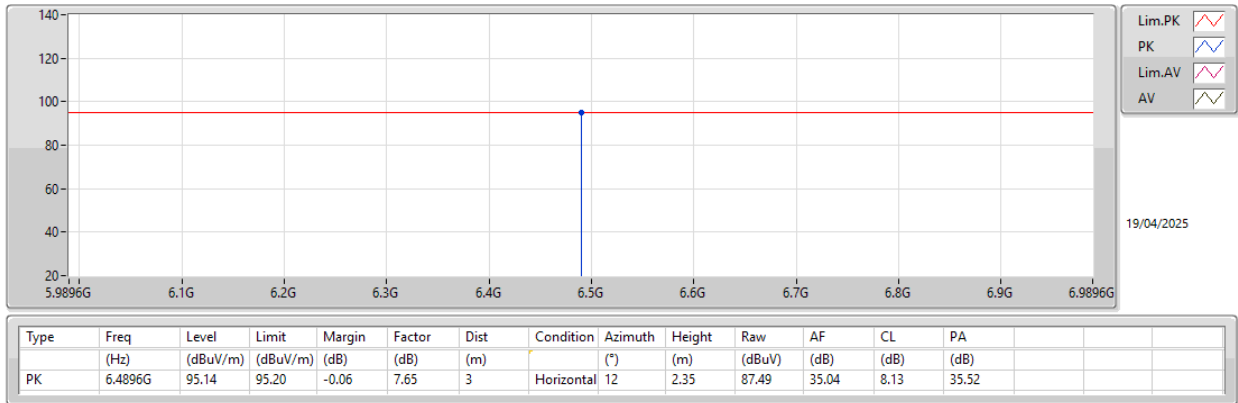
Mode	Result	Raw (dBuV/m)	RBW (MHz)	Factor (dB)	EIRP PD (dBm/50MHz)	EIRP PD Limit (dBm/50MHz)
Ultra Wide Band_Nss1_1TX	-	-		-	-	-
6489.6 MHz	Pass	87.49	50	87.55	-0.06	0
7987.2 MHz	Pass	84.11	50	84.31	-0.20	0

Factor= $20 \cdot \log(\text{RBW}/50\text{MHz}) + 95.2 - (\text{AF} + \text{CL} - \text{PA})$

EIRP PD= RAW - Factor

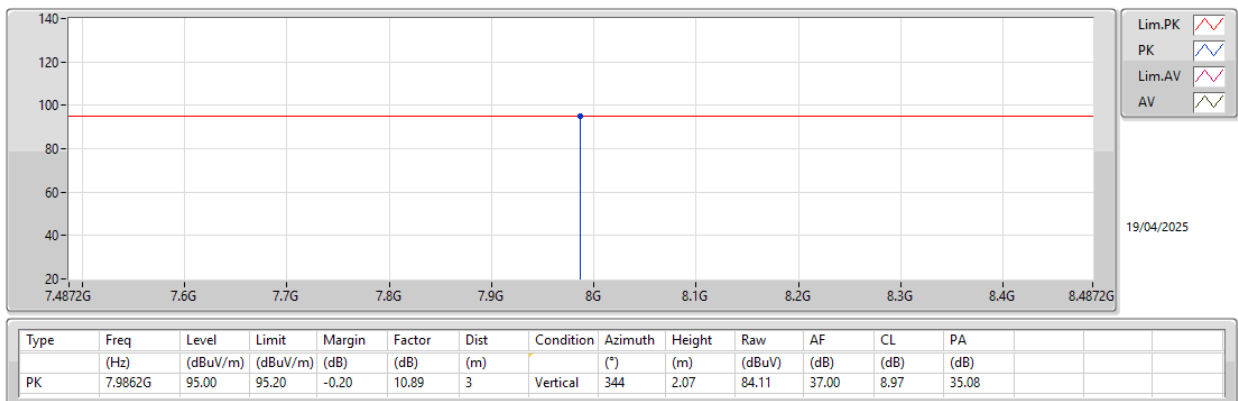
3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

6489.6MHz_TX



3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

7987.2MHz_TX





Summary

Mode	EIRP PD (dBm/MHz)
3.1-10.6GHz	
Ultra Wide Band_Nss1_1TX	-46.48



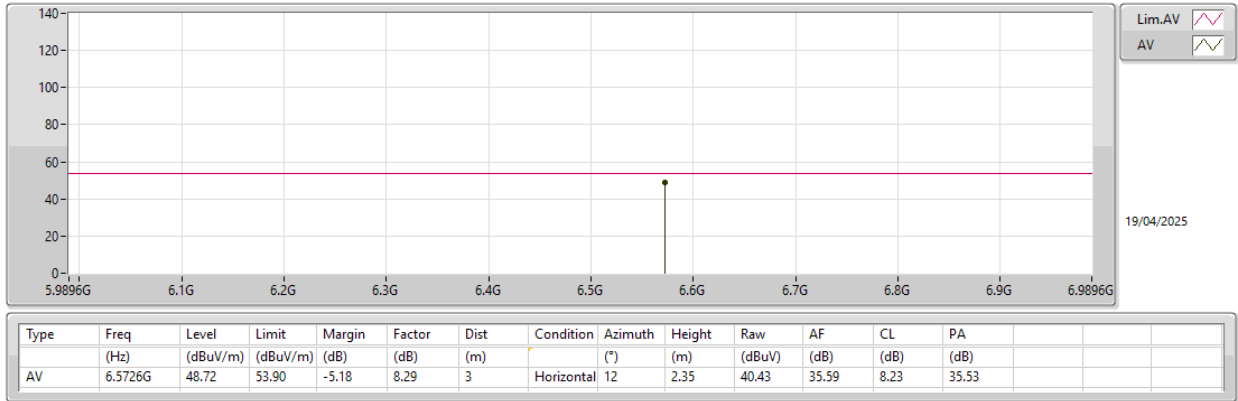
Result

Mode	Result	Raw (dBuV/m)	RBW (MHz)	Factor (dB)	EIRP PD (dBm/MHz)	EIRP PD Limit (dBm/MHz)
Ultra Wide Band_Nss1_1TX	-	-		-	-	-
6489.6MHz	Pass	40.43	1	86.91	-46.48	-41.30
7987.2MHz	Pass	36.29	1	84.31	-48.02	-41.30

EIRP PD= Raw - 95.2 + (AF + CL - PA)

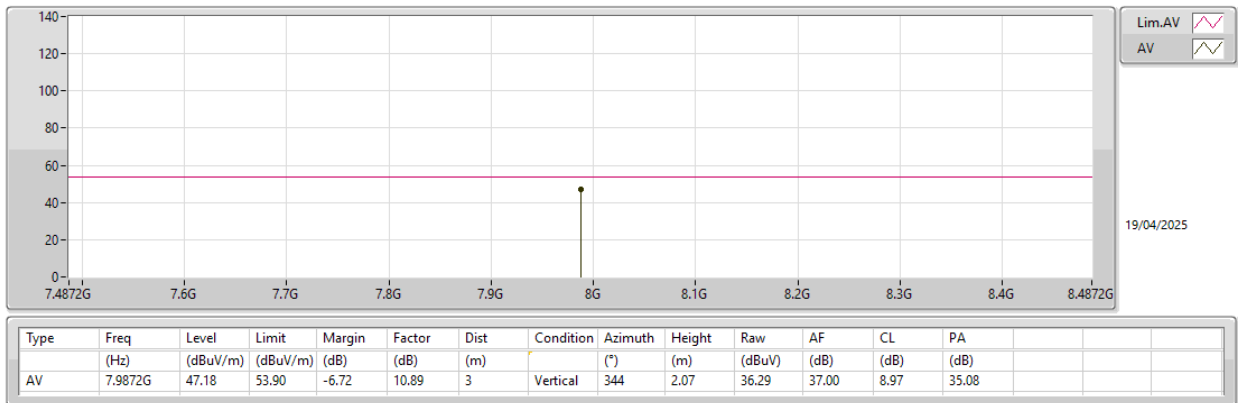
3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

6489.6MHz_TX



3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

7987.2MHz_TX





Summary

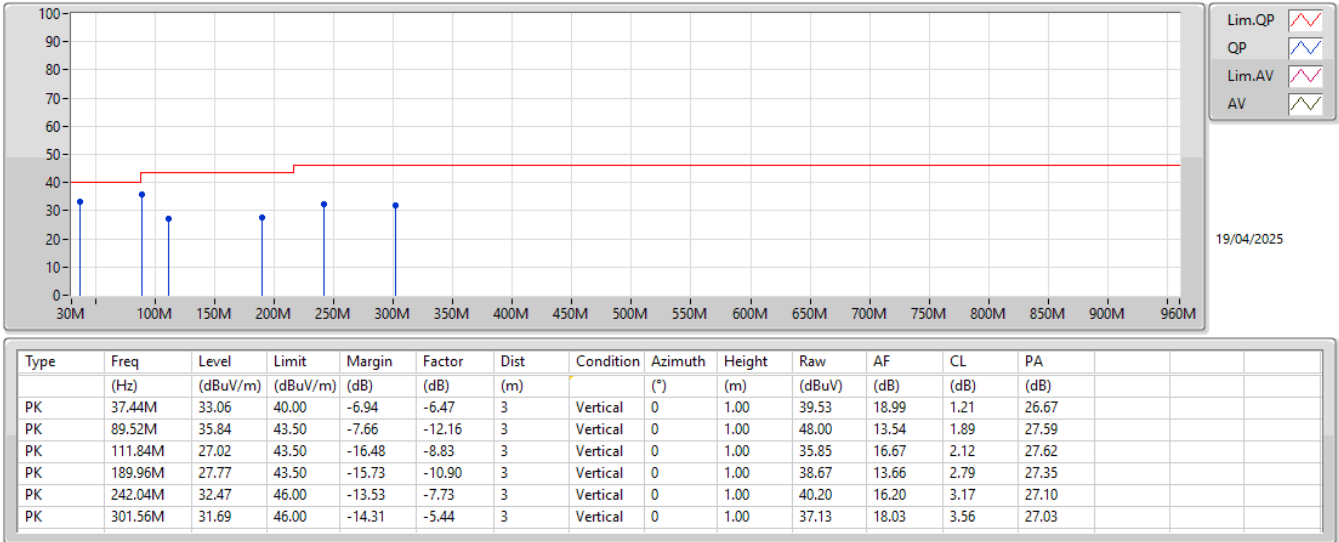
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
3.1-10.6GHz	-	-	-	-	-	-	-	-	-	-
Ultra Wide Band_Nss1,(HRP)_1TX	Pass	PK	37.44M	33.06	40.00	-6.94	3	Vertical	0	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Ultra Wide Band_Nss1,(HRP)_1TX	-	-	-	-	-	-	-	-	-	-
7987.2MHz	Pass	PK	37.44M	33.06	40.00	-6.94	3	Vertical	0	1.00
7987.2MHz	Pass	PK	89.52M	35.84	43.50	-7.66	3	Vertical	0	1.00
7987.2MHz	Pass	PK	111.84M	27.02	43.50	-16.48	3	Vertical	0	1.00
7987.2MHz	Pass	PK	189.96M	27.77	43.50	-15.73	3	Vertical	0	1.00
7987.2MHz	Pass	PK	242.04M	32.47	46.00	-13.53	3	Vertical	0	1.00
7987.2MHz	Pass	PK	301.56M	31.69	46.00	-14.31	3	Vertical	0	1.00
7987.2MHz	Pass	PK	30M	31.81	40.00	-8.19	3	Horizontal	360	1.00
7987.2MHz	Pass	PK	117.42M	33.90	43.50	-9.60	3	Horizontal	360	1.00
7987.2MHz	Pass	PK	150.9M	35.85	43.50	-7.65	3	Horizontal	360	1.00
7987.2MHz	Pass	PK	245.76M	35.56	46.00	-10.44	3	Horizontal	360	1.00
7987.2MHz	Pass	PK	299.7M	29.43	46.00	-16.57	3	Horizontal	360	1.00
7987.2MHz	Pass	PK	474.54M	26.97	46.00	-19.03	3	Horizontal	360	1.00

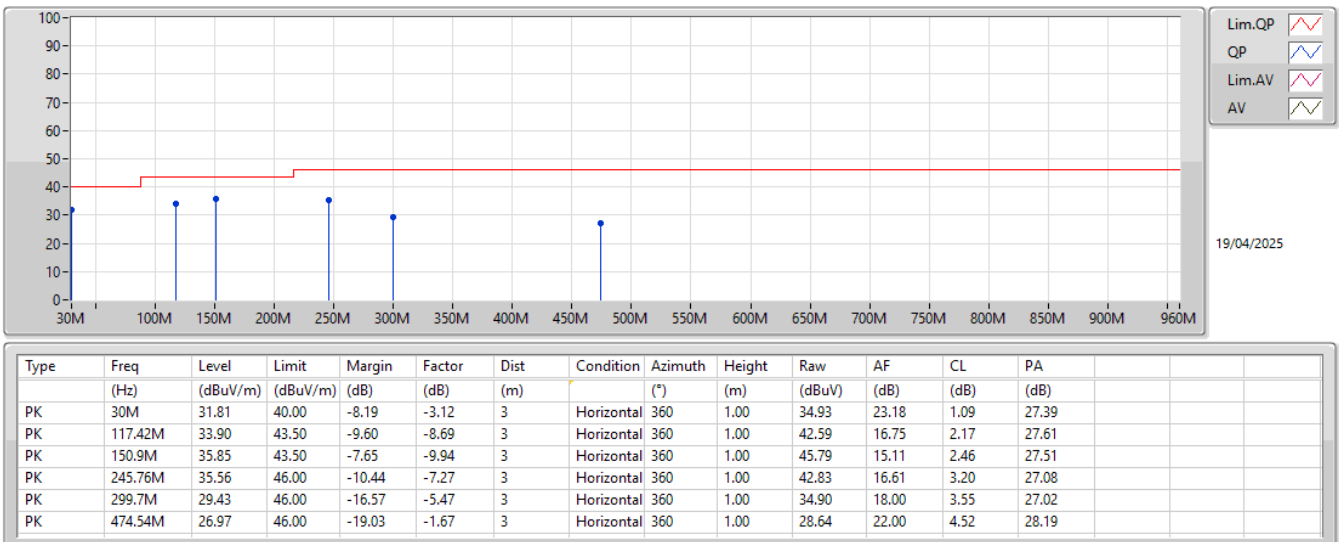
3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

7987.2MHz_Fixture



3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

7987.2MHz_Fixture





Summary

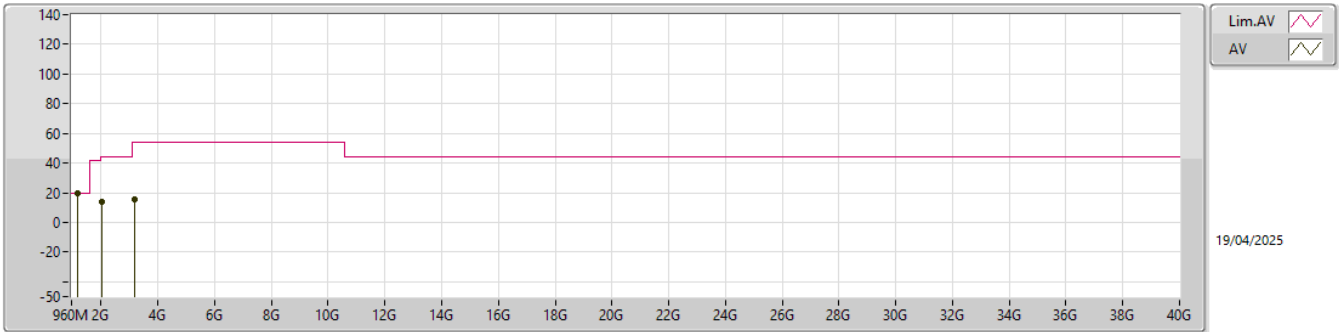
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
3.1-10.6GHz	-	-	-	-	-	-	-	-	-	-
Ultra Wide Band_Nss1,(HRP)_1TX	Pass	AV	1.19438G	19.44	19.90	-0.46	3	Vertical	0	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Ultra Wide Band_Nss1,(HRP)_1TX	-	-	-	-	-	-	-	-	-	-
6489.6MHz	Pass	AV	1.19888G	18.86	19.90	-1.04	3	Vertical	0	1.00
6489.6MHz	Pass	AV	1.60863G	14.20	19.90	-5.70	3	Vertical	0	1.00
6489.6MHz	Pass	AV	2.99481G	16.45	43.90	-27.45	3	Vertical	0	1.00
6489.6MHz	Pass	AV	1.1997G	16.29	19.90	-3.61	3	Horizontal	360	1.00
6489.6MHz	Pass	AV	2.60186G	14.36	43.90	-29.54	3	Horizontal	360	1.00
6489.6MHz	Pass	AV	3.99377G	16.41	53.90	-37.49	3	Horizontal	360	1.00
6489.6MHz	Pass	AV	1.18256G	-10.16	9.90	-20.06	3	Vertical	299	1.94
6489.6MHz	Pass	AV	1.19599G	4.03	9.90	-5.87	3	Vertical	291	1.80
6489.6MHz	Pass	AV	1.19896G	3.04	9.90	-6.86	3	Vertical	273	1.80
6489.6MHz	Pass	AV	1.18975G	-12.42	9.90	-22.32	3	Horizontal	59	1.80
6489.6MHz	Pass	AV	1.19656G	1.13	9.90	-8.77	3	Horizontal	4	1.02
6489.6MHz	Pass	AV	1.19915G	2.41	9.90	-7.49	3	Horizontal	221	1.47
6489.6MHz	Pass	AV	1.57587G	1.74	9.90	-8.16	3	Vertical	110	1.72
6489.6MHz	Pass	AV	1.587G	2.33	9.90	-7.57	3	Vertical	146	1.88
6489.6MHz	Pass	AV	1.59744G	1.23	9.90	-8.67	3	Vertical	89	1.12
6489.6MHz	Pass	AV	1.57582G	1.04	9.90	-8.86	3	Horizontal	169	2.21
6489.6MHz	Pass	AV	1.58731G	1.01	9.90	-8.89	3	Horizontal	359	1.08
6489.6MHz	Pass	AV	1.59563G	0.75	9.90	-9.15	3	Horizontal	251	1.05
7987.2MHz	Pass	AV	1.19438G	19.44	19.90	-0.46	3	Vertical	0	1.00
7987.2MHz	Pass	AV	2.04911G	13.84	43.90	-30.06	3	Vertical	0	1.00
7987.2MHz	Pass	AV	3.17509G	15.49	53.90	-38.41	3	Vertical	0	1.00
7987.2MHz	Pass	AV	1.19847G	16.75	19.90	-3.15	3	Horizontal	360	1.00
7987.2MHz	Pass	AV	2.39862G	14.06	43.90	-29.84	3	Horizontal	360	1.00
7987.2MHz	Pass	AV	3.171G	15.56	53.90	-38.34	3	Horizontal	360	1.00
7987.2MHz	Pass	AV	1.196G	5.48	9.90	-4.42	3	Vertical	269	2.28
7987.2MHz	Pass	AV	1.19693G	4.19	9.90	-5.71	3	Vertical	292	2.44
7987.2MHz	Pass	AV	1.19915G	4.47	9.90	-5.43	3	Vertical	284	1.65
7987.2MHz	Pass	AV	1.19052G	-12.09	9.90	-21.99	3	Horizontal	343	1.46
7987.2MHz	Pass	AV	1.19699G	0.70	9.90	-9.20	3	Horizontal	214	1.52
7987.2MHz	Pass	AV	1.19915G	-0.10	9.90	-10.00	3	Horizontal	304	1.00
7987.2MHz	Pass	AV	1.57479G	1.13	9.90	-8.77	3	Vertical	157	1.63
7987.2MHz	Pass	AV	1.5811G	1.63	9.90	-8.27	3	Vertical	64	1.25
7987.2MHz	Pass	AV	1.59242G	1.03	9.90	-8.87	3	Vertical	28	1.06
7987.2MHz	Pass	AV	1.56586G	0.70	9.90	-9.20	3	Horizontal	286	2.01
7987.2MHz	Pass	AV	1.57058G	1.29	9.90	-8.61	3	Horizontal	197	1.92
7987.2MHz	Pass	AV	1.58776G	1.30	9.90	-8.60	3	Horizontal	188	1.51

3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

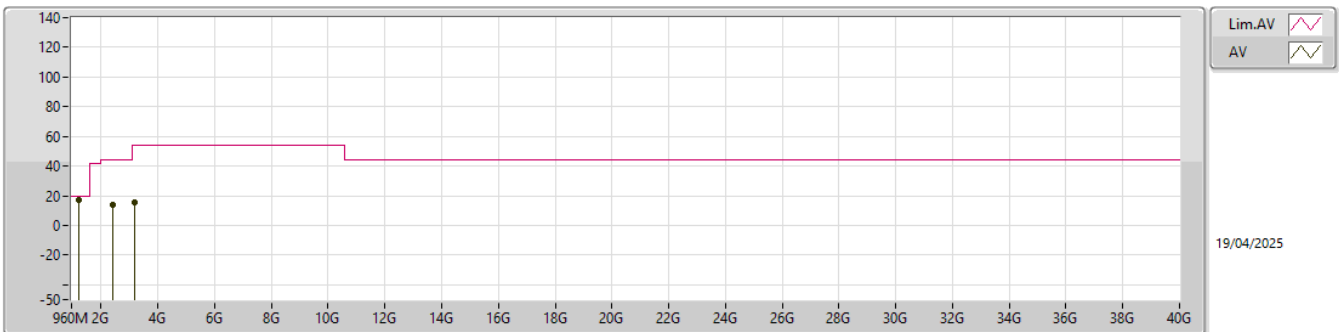
7987.2MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)				
AV	1.19438G	19.44	19.90	-0.46	-40.00	3	Vertical	0	1.00	59.44	26.10	3.36	53.90				
AV	2.04911G	13.84	43.90	-30.06	-37.62	3	Vertical	0	1.00	51.46	27.31	4.54	53.91				
AV	3.17509G	15.49	53.90	-38.41	-34.22	3	Vertical	0	1.00	49.71	29.70	5.74	54.10				

3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

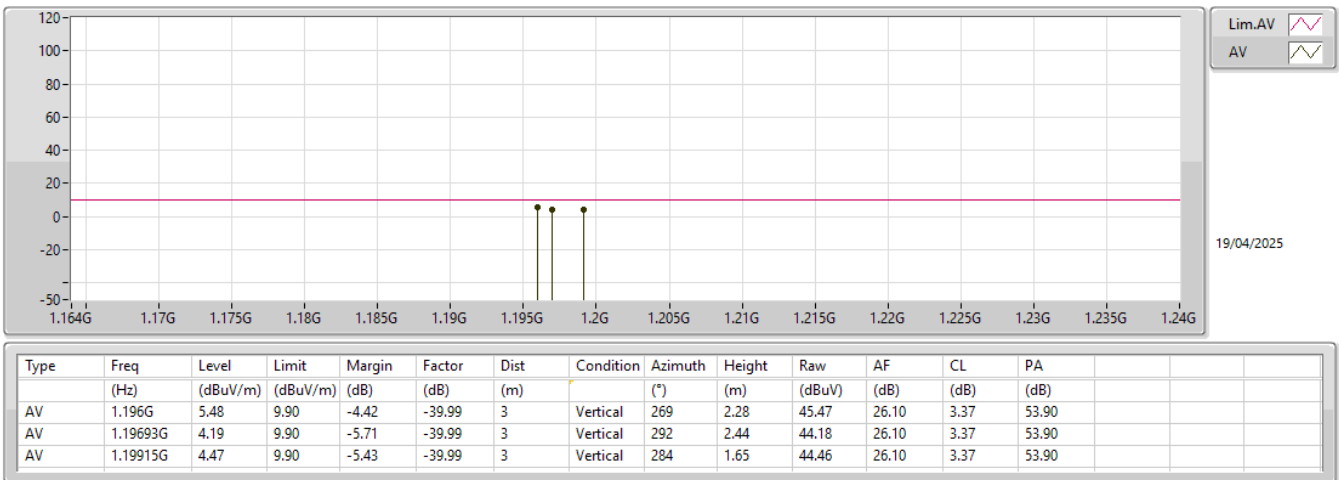
7987.2MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)				
AV	1.19847G	16.75	19.90	-3.15	-39.99	3	Horizontal	360	1.00	56.74	26.10	3.37	53.90				
AV	2.39862G	14.06	43.90	-29.84	-37.29	3	Horizontal	360	1.00	51.35	27.39	4.86	53.98				
AV	3.171G	15.56	53.90	-38.34	-34.22	3	Horizontal	360	1.00	49.78	29.70	5.74	54.10				

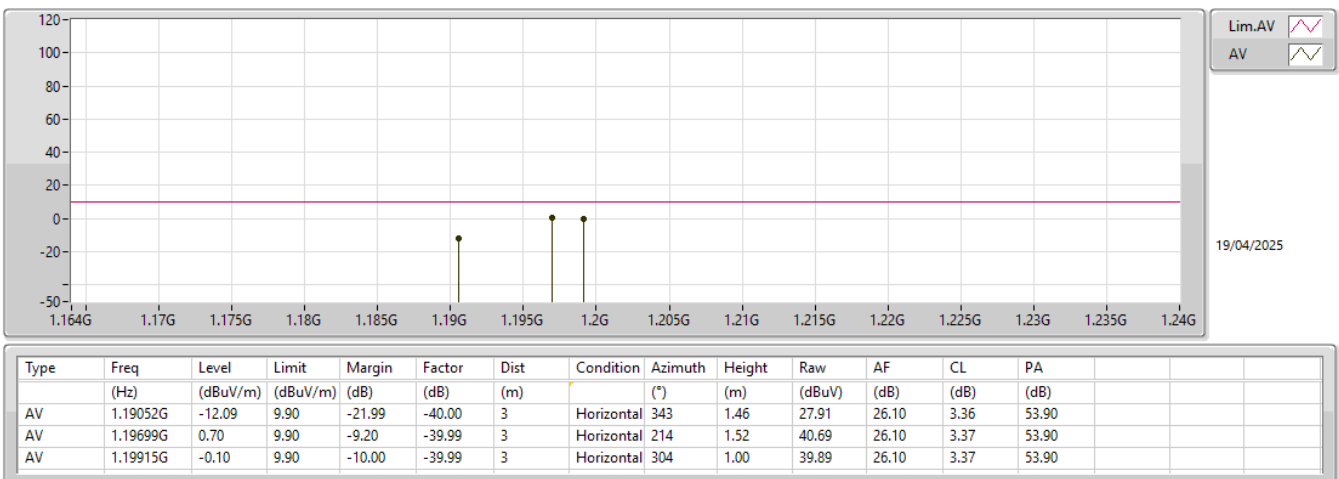
3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

7987.2MHz_TX



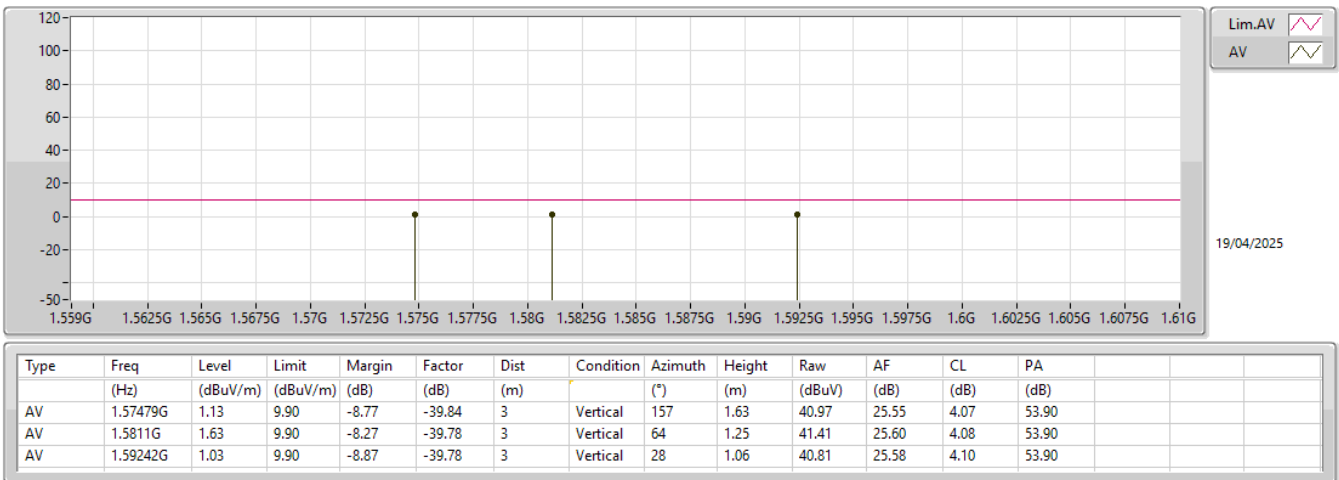
3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

7987.2MHz_TX



3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

7987.2MHz_TX



3.1-10.6GHz_Ultra Wide Band_Nss1,(HRP)_1TX

7987.2MHz_TX

