



Report No.: FC4D1172

EMI TEST REPORT

Filing Type : Certification

FCC ID : 2ABOF-G1RN6AHI042

Equipment : RNv SYSTEM (6 GHz)

Brand Name : Tarana

Model Name : RNv SYSTEM (6 GHz)

Model Number : G1RN6AHI042

Applicant : Tarana Wireless, Inc.

590 Alder Drive , Milpitas , CA 95035 , USA

Manufacturer : Tarana Wireless, Inc.

590 Alder Drive , Milpitas , CA 95035 , USA

Standard : 47 CFR FCC Rules and Regulations Part 15

Subpart B Class B Digital Device

The product was received on Dec. 23, 2024, and testing was started from Jan. 22, 2025 and completed on Feb. 06, 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 C63.4-2014 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: Sin Chang

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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Appendix A. Test Results of AC Power Port Conducted Emission

Appendix B. Test Results of Radiated Emission

Appendix C. Test Photos

Photographs of EUT V01

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History of this test report

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Report No.	Version	Description	Issued Date
FC4D1172	01	Initial issue of report	Mar. 05, 2025

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Summary of Test Result

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
4	15.107	AC Power Port Conducted Emission	PASS	Under limit 7.21 dB at 559.5 kHz
5	15.109	Radiated Emission below 1GHz	PASS	Under limit 2.38 dB at 96.56 MHz
5	15.109	Radiated Emission above 1GHz	PASS	Under limit 7.36 dB at 17.2945 GHz

Conformity Assessment Condition:

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

Disclaimer:

- 1. 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.
- 2. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
- 3. The EUT 5G/6G RF function is not connected to the AE, these configurations are specified by the manufacturer.

Reviewed by: Sin Chang Report Producer: Wendy Pan

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1. General Description of Equipment under Test

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Product Detail			
Equipment Name	RNv SYSTEM (6 GHz)		
Model Name	RNv SYSTEM (6 GHz)		
Model Number G1RN6AHI042			
Brand Name Tarana			
Power Supply	From PoE		

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1.1. Feature of Equipment under Test

1. The maximum operating frequency: 6.8GHz

2. Accessories

Power	Brand	Model	Rating
Рег	DUULONG	DOECOU DEA	INPUT: 100-240V~1.5A, 50-60Hz
PoE	PHIHONG	POE60U-BTA	OUTPUT: 56V, 0.535A, 30W

3. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

1.2. Modification of EUT

Please refer to the technical specifications of EUT.

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2. Test Configuration of Equipment under Test

2.1. Test Mode

The following table is a list of the test modes shown in this test report.

All test items			
Test Mode Description			
1	Normal Link - EUT		

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Note: The EUT can only be used on the Y axis.

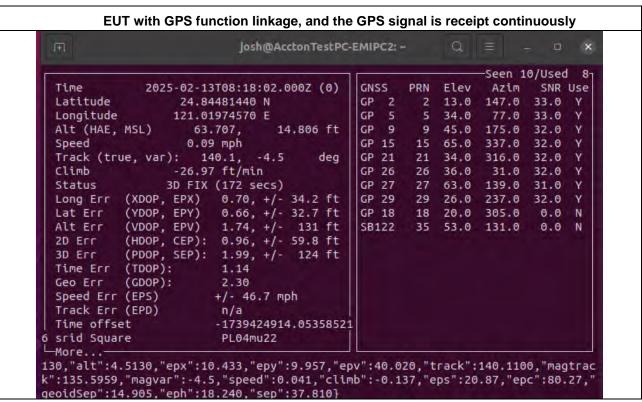
2.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Support Unit	Brand	Model	FCC ID
Α	LAN PC	ASUS	D800MDR	N/A
В	GPS Simulator	WELNAVIGATE	GS-100	N/A

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2.3. EUT Operation Condition



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The simulator to link with the EUT of the signal level, shall be 18 dB above the Pmin (-110dBm) for the EUT.

During the test, the following programs under Linux were executed:

The EUT links with the GPS Simulator to traffic packet data by GPS.

The remote PC executed "Terminal" to view the GPS connection status of the EUT.

Remove the BN station after confirming the 5GHz/6GHz RF scan function of EUT via the BN station.

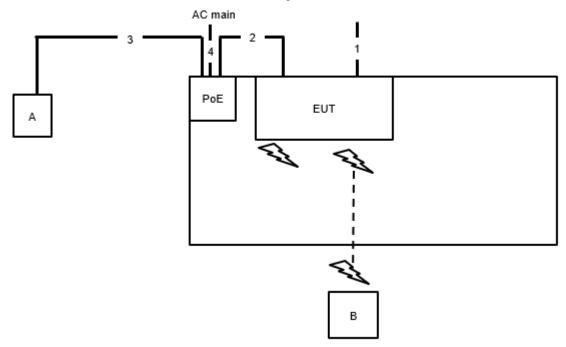
The remote PC executed "Ping.exe" to link with the EUT to maintain the connection by LAN.

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2.4. Connection Diagram of Test System

2.4.1. AC Power Line Conduction Emissions Test Configuration



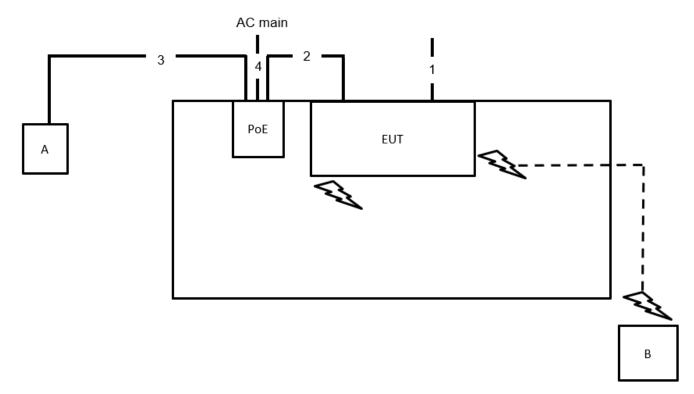
Item	Connection	Shielded	Length
1	GND cable	No	1.5m
2	Cat6 RJ-45 cable	Yes	2m
3	Cat6 RJ-45 cable	Yes	10m
4	Power cable	No	1.8m

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2.4.2. Radiation Emissions Test Configuration



Connection	Shielded	Length
GND cable	No	1.5m
Cat6 RJ-45 cable	Yes	2m
Cat6 RJ-45 cable	Yes	10m
Power cable	No	1.8m
	GND cable Cat6 RJ-45 cable Cat6 RJ-45 cable	GND cable No Cat6 RJ-45 cable Yes Cat6 RJ-45 cable Yes

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3. General Information of Test

3.1. Test Facility

Test Lab. : Sporton International Inc. Hsinchu Laboratory

Hsinchu ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan

(R.O.C.)

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

Test site Designation No. TW3787 with FCC.

Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

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3.2. Test Environment

	Test Site		Test Environment				
Test Items	No.	Test Engineer	Temp (°C)	Humidity (%)	Pressure (kPa)	Test Date	Remark
AC Power Port Conducted Emission	CO01-CB	Tim Chen	21~22	57~58	-	Feb. 06, 2025	-
Radiated Emission below 1GHz	10CH01-CB	Bob Chang	23~24	51~52	-	Jan. 22, 2025	-
Radiated Emission above 1GHz	10CH01-CB	Bob Chang	23~24	51~52	-	Jan. 22, 2025	-

3.3. Test Voltage

Power Type	Test Voltage
AC Power Supply	120 V / 60 Hz

3.4. Standard for Methods of Measurement

ANSI C63.4-2014

3.5. Frequency Range Investigated

Test Items	Frequency Range
Conducted emission test	150 kHz to 30 MHz
Radiated emission test	30 MHz to 35,000 MHz

3.6. Test Distance

Test Items	Test Distance
Radiated emission test below 1 GHz (30 MHz to 1,000 MHz)	10 m
Radiated emission test above 1 GHz (1,000 MHz to 18,000 MHz)	3 m
Radiated emission test above 1 GHz (18,000 MHz to 35,000 MHz)	1 m

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4. Test of Conducted Emission

4.1. Limit

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)		
0.15~0.5	66~56	56~46		
0.5~5	56	46		
5~30	60	50		

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4.2. Test Procedures

- a. The EUT was placed on a desk 0.8 meters height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50 Ω coupling impedance for the measuring instrument.
- e. The FCC states that a 50 Ω , 50 uH LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

4.3. Measurement Results Calculation

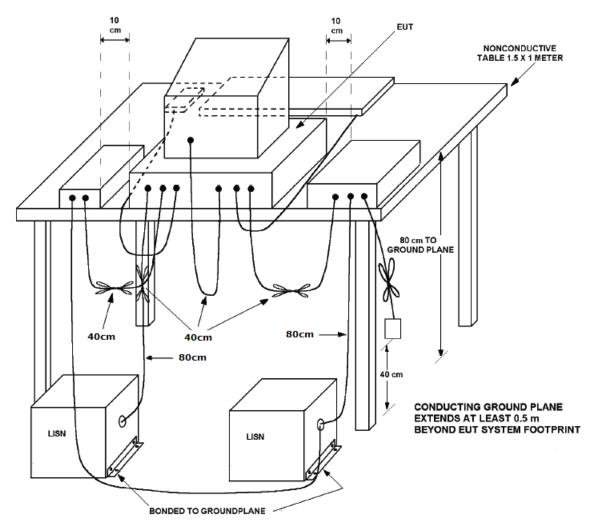
The measured Level is calculated using:

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

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4.4. Typical Test Setup Layout of Conducted Emission



4.5. Test Result of AC Power Ports

Refer as Appendix A

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5. Test of Radiated Emission

5.1. Limit

Radiated Emission below 1 GHz test at 10 m:

Frequency (MHz)	QP (dBuV/m)
30~230	30
230~1,000	37

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Radiated Emission 1~18 GHz test at 3 m:

Frequency (MHz)	PK (dBuV/m)	AV (dBuV/m)	
1,000 to 18,000	74	54	

Radiated Emission 18~35 GHz test at 1 m:

Frequency (MHz)	PK (dBuV/m)	AV (dBuV/m)		
18,000 to 35,000	83.54	63.54		

For 30 ~1,000 MHz:

Based on FCC Part 15 Subpart B 15.109(g), the radiated emission limits of this section, digital devices may be shown to comply with the standards contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, "Information Technology Equipment—Radio Disturbance Characteristics—Limits and Methods of Measurement".

For above 1GHz:

Reference FCC Part 15 Subpart B measurement and limits, the radiated emission measurement of this section used boresight antenna.

For above 18 GHz:

Shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m

Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].

Average limit = 54dBuV/m + distance extrapolation factor (9.54 dB) =63.54dBuV/m.

Peak limit = 74dBuV/m + distance extrapolation factor (9.54 dB) =83.54dBuV/m.

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5.2. Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 10m (below 1GHz) / 3m (1GHz-18GHz) / 1m (18GHz-35GHz) meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.

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- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

5.3. Measurement Results Calculation

The measured Level is calculated using:

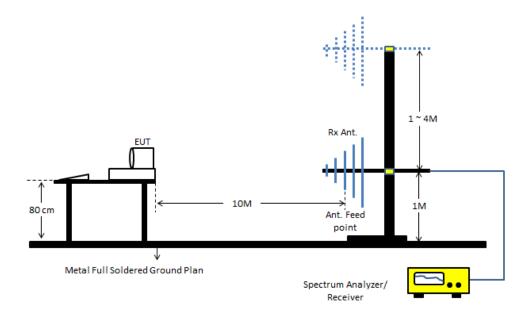
- a. Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) Preamp factor (PA) = Level
- b. Margin = -Limit + Level

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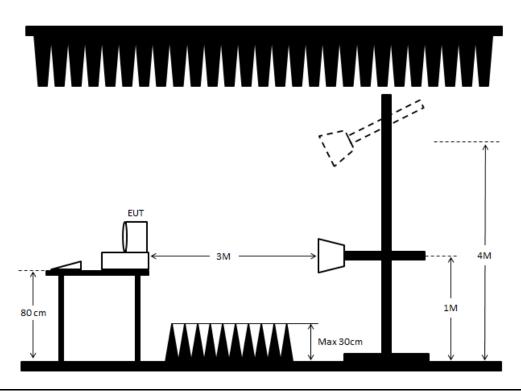
5.4. Typical Test Setup Layout of Radiated Emission

<Below 1 GHz>:



<Above 1 GHz>:

1,000~18,000 MHz



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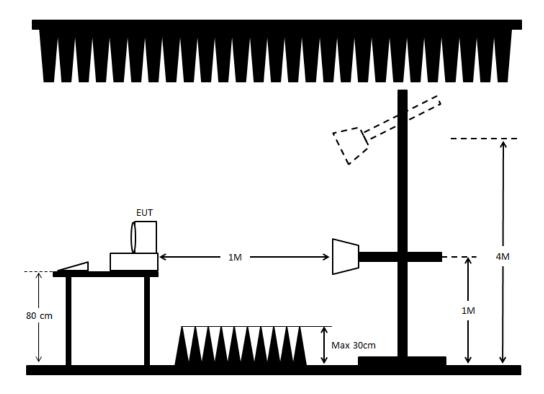
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18,000~35,000 MHz



5.5. Test Result of Radiated Emission

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6. List of Measuring Equipment Used

List of Measuring Equipment Used										
Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark			
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Mar. 01, 2024	Feb. 28, 2025	Conduction (CO01-CB)			
LISN	F.C.C.	FCC-LISN-50-1 6-2	04083	150kHz ~ 100MHz	Feb. 19, 2024	Feb. 18, 2025	Conduction (CO01-CB)			
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 24, 2024	Apr. 23, 2025	Conduction (CO01-CB)			
Pulse Limiter	Rohde&Schwar z	ESH3-Z2	100430	9kHz ~ 30MHz	Oct. 16, 2024	Oct. 15, 2025	Conduction (CO01-CB)			
COND Cable	Woken	Cable	Low 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)			
10m Semi Anechoic Chamber NSA	TDK	SAC-10M	10CH01-CB	30MHz~1GHz 10m,3m	Jan. 15, 2025	Jan. 14, 2026	Radiation (10CH01-CB)			
10m Semi Anechoic Chamber VSWR	TDK	SAC-10M	10CH01-CB	1GHz ~18GHz 3m	Feb. 23, 2024	Feb. 22, 2025	Radiation (10CH01-CB)			
Amplifier	Agilent	8447D	2944A10783	9kHz ~ 1.3GHz	Mar. 09, 2024	Mar. 08, 2025	Radiation (10CH01-CB)			
Amplifier	Agilent	8447D	2944A10784	9kHz ~ 1.3GHz	Mar. 09, 2024	Mar. 08, 2025	Radiation (10CH01-CB)			
Low Cable	Woken	SUCOFLEX 104	low cable-01	25MHz ~ 1GHz	Oct. 16, 2024	Oct. 15, 2025	Radiation (10CH01-CB)			
Low Cable	Woken	SUCOFLEX 104	low cable-02	25MHz ~ 1GHz	Oct. 16, 2024	Oct. 15, 2025	Radiation (10CH01-CB)			
Biconical Antenna	Schwarzbeck	VHBB 9124	324	30MHz ~ 200MHz	Oct. 05, 2024	Oct. 04, 2025	Radiation (10CH01-CB)			
Log Antenna	Schwarzbeck	VUSLP 9111	247	200MHz ~ 1GHz	Oct. 05, 2024	Oct. 04, 2025	Radiation (10CH01-CB)			
EMI Test Receiver	Rohde&Schwar z	ESCI	100186	9kHz ~ 3GHz	Jul. 12, 2024	Jul. 11, 2025	Radiation (10CH01-CB)			
Spectrum Analyzer	Rohde&Schwar z	FSV30	101026	9kHz ~ 30GHz	Apr. 22, 2024	Apr. 21, 2025	Radiation (10CH01-CB)			
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 27, 2024	May 26, 2025	Radiation (10CH01-CB)			
Horn Antenna	EMCO	3117	00081283	1GHz ~ 18GHz	Dec. 06, 2024	Dec. 05, 2025	Radiation (10CH01-CB)			
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 23, 2024	Sep. 22, 2025	Radiation (10CH01-CB)			
Pre-Amplifier	Agilent	8449B	3008A02660	1GHz ~ 26.5GHz	May 17, 2024	May 16, 2025	Radiation (10CH01-CB)			

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Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 25, 2024	Nov. 24, 2025	Radiation (10CH01-CB)
High Cable	TITAN	T318E	High cable03	30MHz ~ 18GHz	Oct. 16, 2024	Oct. 15, 2025	Radiation (10CH01-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (10CH01-CB)
Test Software	SPORTON	SENSE-EMI	V5.11	30MHz-40GHz	N.C.R.	N.C.R.	Radiation (10CH01-CB)
Band Rejector	MTJ	5G Band Rejector	BRJ-04B1	1GHz ~ 10GHz	Oct. 16, 2024	Oct. 15, 2025	Radiation (10CH01-CB)
Band Rejector	MTJ	5G Band Rejector	BRJ-04B3	1GHz ~ 10GHz	Oct. 16, 2024	Oct. 15, 2025	Radiation (10CH01-CB)

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 $[\]frak{\%}$ Calibration Interval of instruments listed above is one year.

 $[\]divideontimes$ N.C.R. means Non-Calibration required.

7. Measurement Uncertainty

Test Items	Uncertainty	Remark
Conducted Emissions	3.8 dB	Confidence levels of 95%
Radiated Emissions below 1GHz	5.7 dB	Confidence levels of 95%
Radiated Emissions 1GHz ~ 40GHz	4.7 dB	Confidence levels of 95%

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Conducted Emissions at Powerline

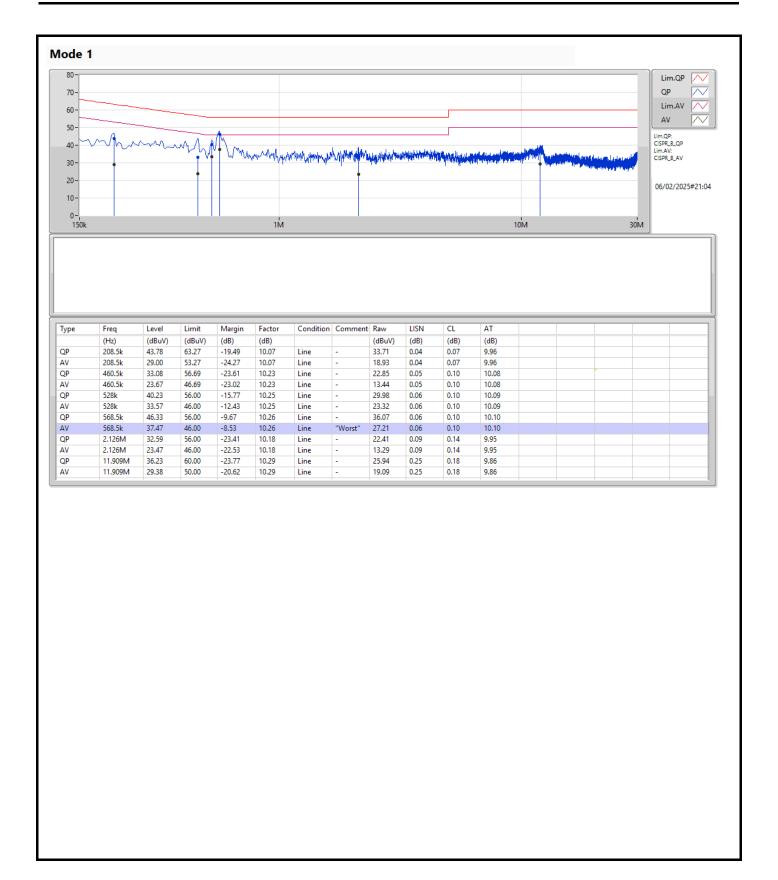
Appendix A

Summary

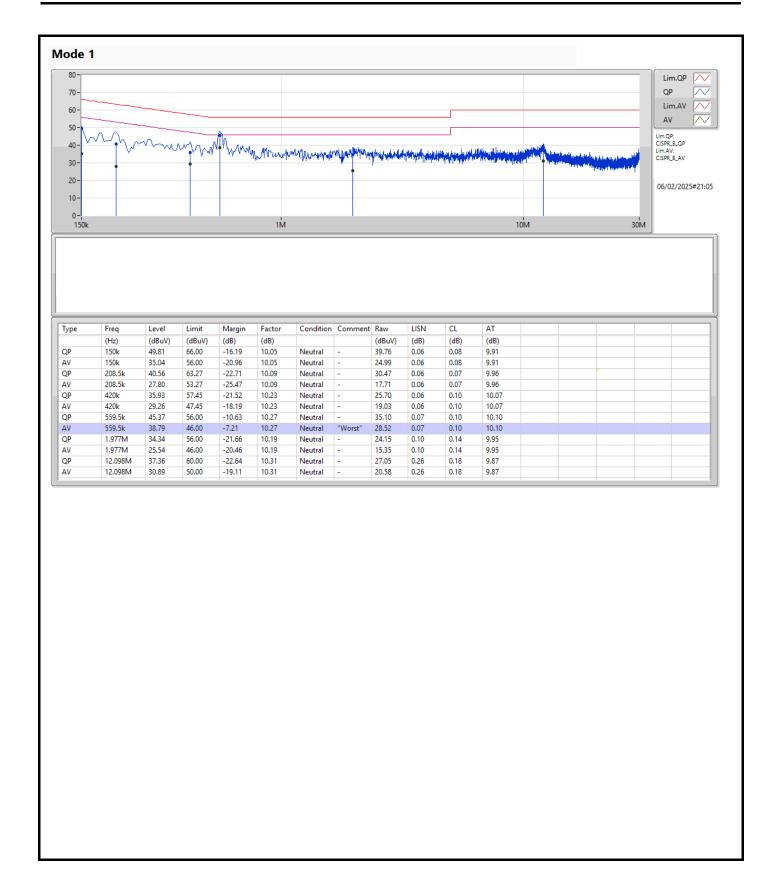
Mode	Result	Туре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	559.5k	38.79	46.00	-7.21	Neutral

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Radiated Emissions below 1GHz

Appendix B.1

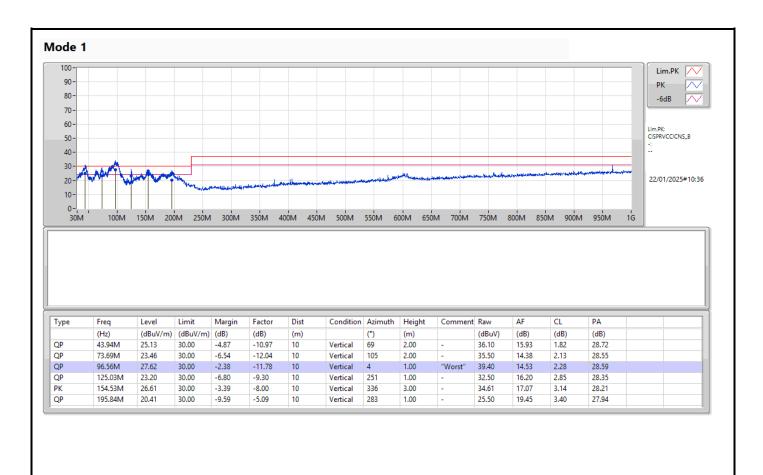
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	QP	96.56M	27.62	30.00	-2.38	Vertical

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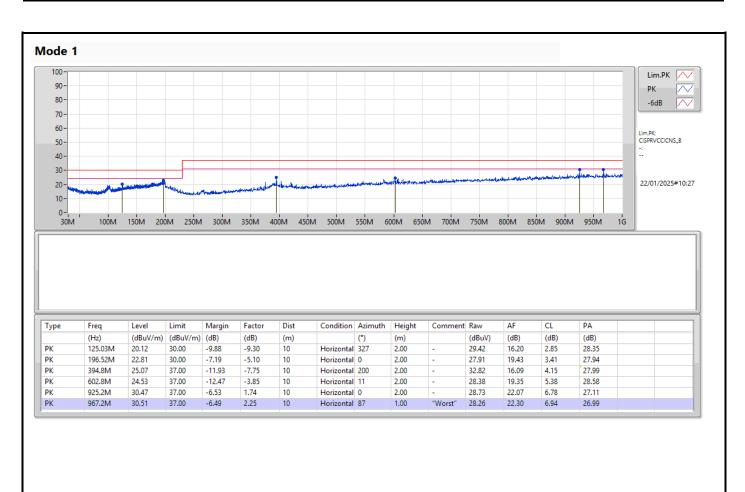
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Radiated Emissions above 1~18GHz

Appendix B.2

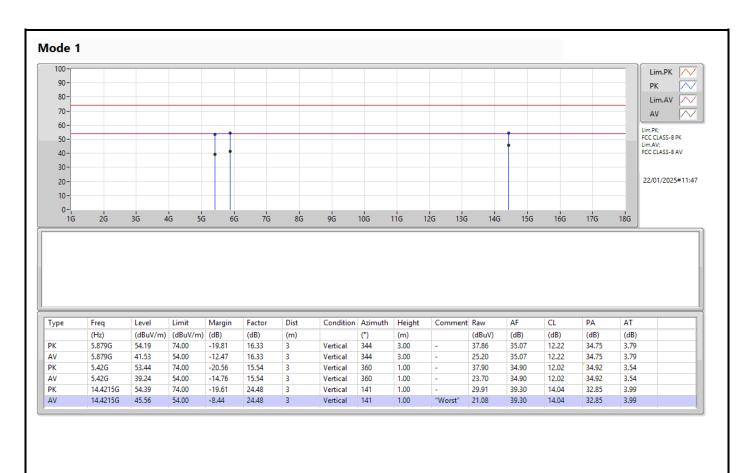
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	17.2945G	46.64	54.00	-7.36	Horizontal

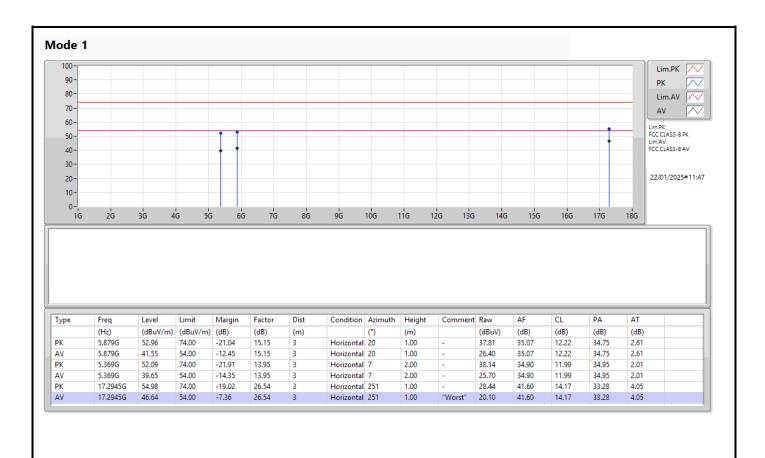
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Radiated Emissions above 18~35GHz

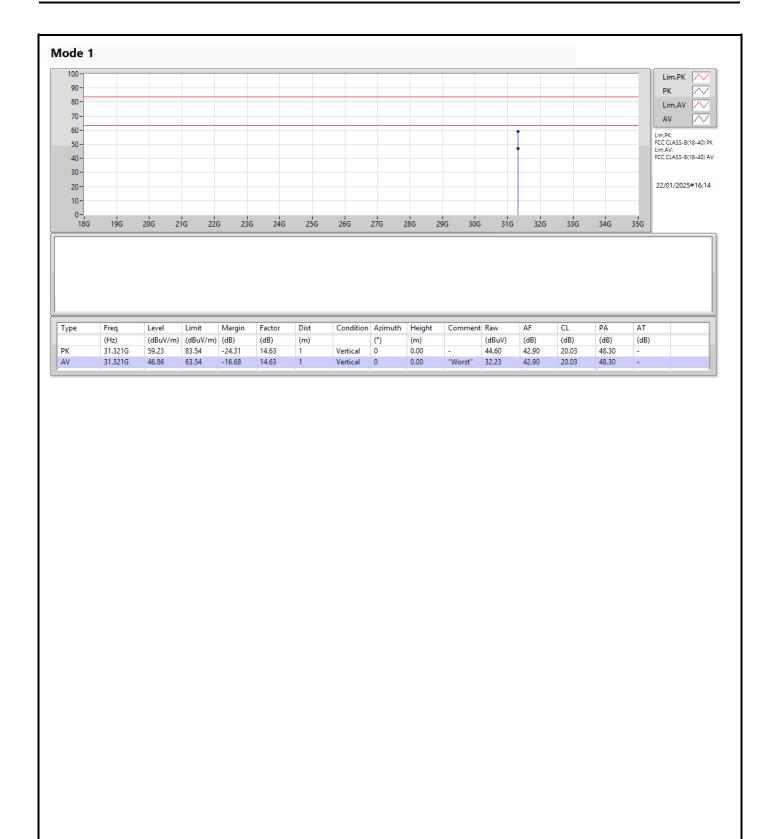
Appendix B.3

Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	31.321G	46.86	63.54	-16.68	Vertical

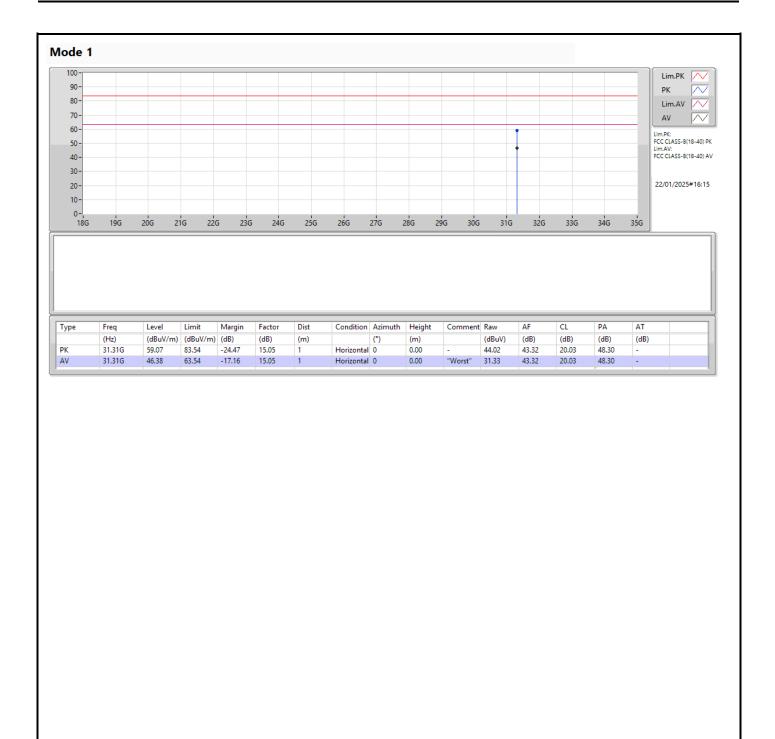
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