Testing Laboratory 3787

RADIO TEST REPORT

FCC ID	:	Z3WAIR4980
Equipment	:	Wi-Fi 6E Smart Mesh System
Brand Name	:	Airties
Model Name	:	Air 4980
Applicant	:	Airties Wireless Networks Sehit Mehmet Mikdat Uluunlu Sokagi No:23 Esentepe, Sisli İstanbul, 34394 Turkey
Manufacturer	:	Airties Wireless Networks Sehit Mehmet Mikdat Uluunlu Sokagi No:23 Esentepe, Sisli İstanbul, 34394 Turkey
Standard	:	47 CFR FCC Part 15.247

The product was received on Jul. 08, 2022, and testing was started from Jul. 21, 2022 and completed on Jul. 25, 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 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.)

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History of this test report

Report No.	Version	Description	Issued Date
FR211129-01AA	01	Initial issue of report	Aug. 15, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(d)	Emissions in Restricted Frequency Bands	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: Viola Huang

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20), VHT20, ax (HEW20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40), VHT40, ax (HEW40)	2422-2452	3-9 [7]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	2
2.4-2.4835GHz	802.11g	20	2
2.4-2.4835GHz	802.11n HT20	20	2
2.4-2.4835GHz	802.11n HT20-BF	20	2
2.4-2.4835GHz	VHT20	20	2
2.4-2.4835GHz	VHT20-BF	20	2
2.4-2.4835GHz	802.11ax HEW20	20	2
2.4-2.4835GHz	802.11ax HEW20-BF	20	2
2.4-2.4835GHz	802.11n HT40	40	2
2.4-2.4835GHz	802.11n HT40-BF	40	2
2.4-2.4835GHz	VHT40	40	2
2.4-2.4835GHz	VHT40-BF	40	2
2.4-2.4835GHz	802.11ax HEW40	40	2
2.4-2.4835GHz	802.11ax HEW40-BF	40	2

Note:
- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- HEW20, HEW40 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	2.4GHz port	5GHz port	6E port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	1	-	AirTies	A00	PCB antenna	N/A	Note 1
2	2	2	-	AirTies	A11	PCB antenna	N/A	
3	-	-	1	AirTies	A0X	PCB antenna	N/A	
4	-	-	2	AirTies	A1X	PCB antenna	N/A	
5	-	-	3	AirTies	A2X	PCB antenna	N/A	
6	-	-	4	AirTies	A3X	PCB antenna	N/A	

Note 1:

Ant.	Antenna Gain (dBi)								
	WLAN	WLAN 5GHz				WLAN 6E			
	2.4GHz	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 5	UNII 6	UNII 7	UNII 8
1	3.36	1.62	2.35	1.37	1.01	-	-	-	-
2	4.06	1.92	1.59	0.54	2.18	-	-	-	-
3	-	-	-	-	-	2.40	1.29	1.05	3.33
4	-	-	-	-	-	3.01	2.18	1.57	2.00
5	-	-	-	-	-	3.06	2.14	1.20	2.68
6	-	-	-	-	-	1.30	1.61	2.56	2.70

Ant.	Directional Gain (dBi)									
	WLAN 2.4GHz		WLAN 5GHz							
			UNII 1		UNII 2A		UNII 2C		UNII 3	
	2T1S	2T2S	2T1S	2T2S	2T1S	2T2S	2T1S	2T2S	2T1S	2T2S
1	4.66	1.65	3.10	0.11	3.34	0.33	2.66	-0.35	3.60	0.59
2										

Ant.	Directional Gain (dBi)											
	WLAN 6E											
	UNII 5			UNII 6			UNII 7			UNII 8		
	4T1S	4T2S	4T4S	4T1S	4T2S	4T4S	4T1S	4T2S	4T4S	4T1S	4T2S	4T4S
3	5.10	3.06	0.15	3.92	2.18	-1.09	3.57	2.56	-1.30	5.90	3.33	-0.03
4												
5												
6												

Note 2: The EUT has six antennas.
Note 3: The brand/model/antenna type information was declared by manufacturer.
Note 4: Maximum Directional Gain following KDB662911 D03.
The antenna report is provided in the operational description for this application.

For 2.4GHz:
For IEEE 802.11b/g/n/VHT/ax mode (2TX/2RX):
Port 1 and Port 2 can be used as transmitting/receiving antenna.
Port 1 and Port 2 could transmit/receive simultaneously.
For 5GHz UNII 1~3:
For IEEE 802.11a/n/ac/ax mode (2TX/2RX):
Port 1 and Port 2 can be used as transmitting/receiving antenna.
Port 1 and Port 2 could transmit/receive simultaneously.
For 5GHz UNII 5~8:
For IEEE 802.11ax mode (4TX/4RX):
Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.
Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

1.1.3 EUT Operational Condition

EUT Power Type	From Power Adapter			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	The product has beamforming function for n/VHT/ax in 2.4GHz, n/ac/ax in 5GHz UNII 1~UNII 3 and ax in 6GHz UNII 5~UNII 8.			
Function	☒	Point-to-multipoint	☐	Point-to-point
HW version	PCB-4980-D01-M01-R06			
SW version	4.127.8.0			

Note: The above information was declared by manufacturer.

1.1.4 Table for EUT supports function

Function	Supports type	Support Band
AP Router	Master	2.4GHz / 5GHz / 6E
Mesh	Master	6E

Note: The AP router was selected to test.

1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR211129AA

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

Modifications	Performance Checking
1. 6G&5G FEM supply 0201 package MLCCs have been changed to 0402 MLCCs. (C328,C356,C384,C412,C892,C930,C385, C390, C893, C899, C931, C937 footprint change)	Do not have to retest assessed.
2. ECAPs as inserted in 5V DC switcher output according to to more stabilize the supply voltage. 3. MLCCs have been added to CPU Core regulator output and Radio IC Core regulator output according to broadcom suggestion. 4. Reserved MLCCs have been added according to 1.8V power rail measurements. 5. 3.3V DC switcher and its peripheral components have been changed due to component shortage and availability. 6. 5V DC switcher and its peripheral components have been changed(different vendor) due to component shortage and availability. 7. JTAG_SEL functionality of Radio IC has been disabled due to it's not used. 8. PCB layout and P/N changed from PCB-4980-D01-M01-R05 to PCB-4980-D01-M01-R06 due to the changes listed above. 9. change U6.	1. AC Power-line Conducted Emissions 2. Unwanted Emissions below 1GHz

1.2 Applicable Standards

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

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

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

- FCC KDB 558074 D01 v05r02
- FCC KDB 662911 D03 v01
- 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	Bruce Yang	24.4~25.5 / 55~58	Jul. 21, 2022
AC Conduction	CO02-CB	Joe Chu	23~24 / 61~62	Jul. 25, 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%

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 (AP Router) + Adapter

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
1	EUT in X axis (AP Router) + Adapter
2	EUT in Y axis (AP Router) + Adapter
3	EUT in Z axis (AP Router) + Adapter
For operating mode 2 is the worst case and it was record in this test report.	

2.2 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link Mode:

During the test, the EUT operation to normal function.

2.3 Accessories

Accessories			
Equipment Name	**Brand Name**	**Model Name**	**Rating**
Adapter	MOSO	MS-V2000R120-024H0-US	INPUT: 100-240V, 50/60Hz, 0.7A max. OUTPUT 12.0V, 2.0A
Others			
RJ-45 cable*1, non-shielded, 1.5m			

2.4 Support Equipment

For AC Conduction:

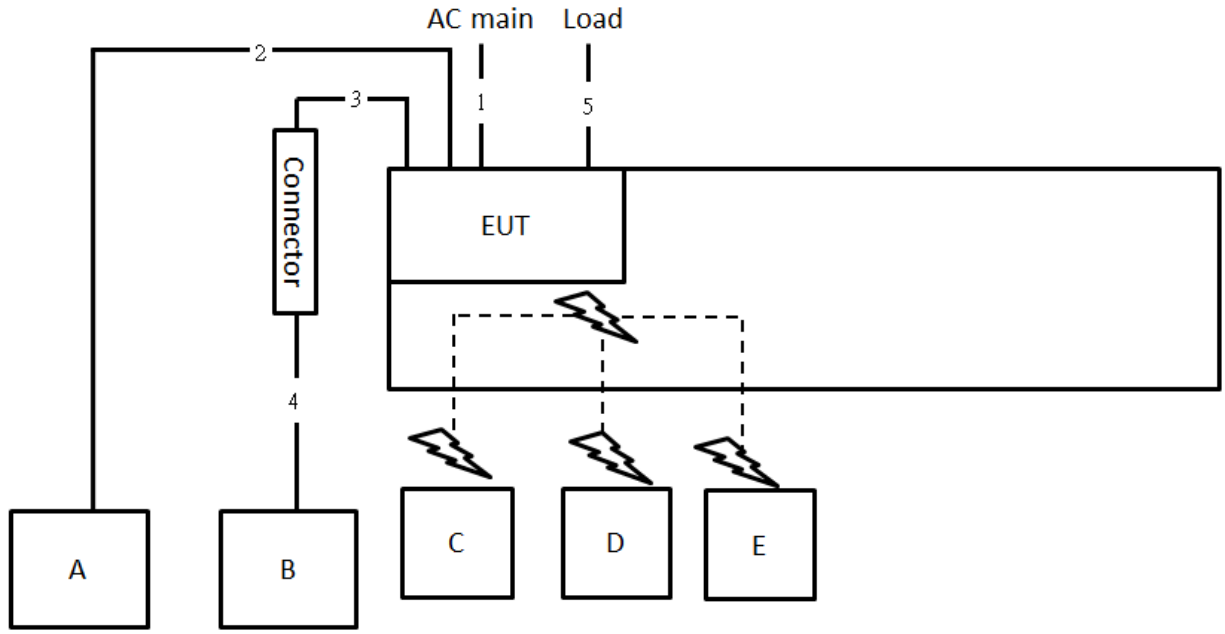
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	LAN PC	DELL	T3400	N/A
B	2.5G WAN PC	DELL	T3400	N/A
C	2.4G NB	DELL	E6430	N/A
D	5G NB	DELL	E6430	N/A
E	6G NB	DELL	E6430	N/A

For Radiated (below 1GHz):

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook (WAN Port)	DELL	E4300	N/A
B	Notebook (LAN Port)	DELL	E4300	N/A
C	Notebook (2.4G WiFi)	DELL	E4300	N/A
D	Notebook (5G WiFi)	DELL	E4300	N/A
E	WLAN module	Intel	AX210NGW	N/A
F	Notebook (6G WiFi)	DELL	E4300	N/A

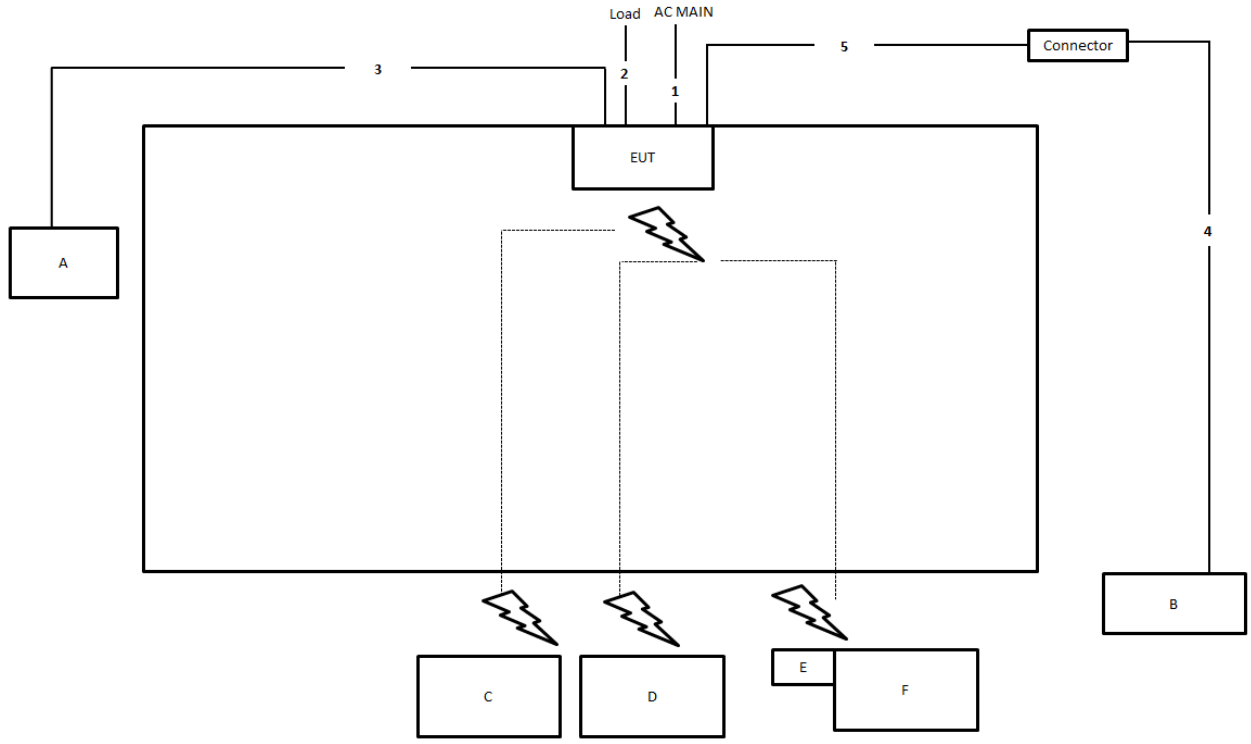
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1.5m
4	RJ-45 cable	No	10m
5	RJ-45 cable	No	1.5m

Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	1.5m
3	RJ-45 cable	No	10m
4	RJ-45 cable	No	10m
5	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

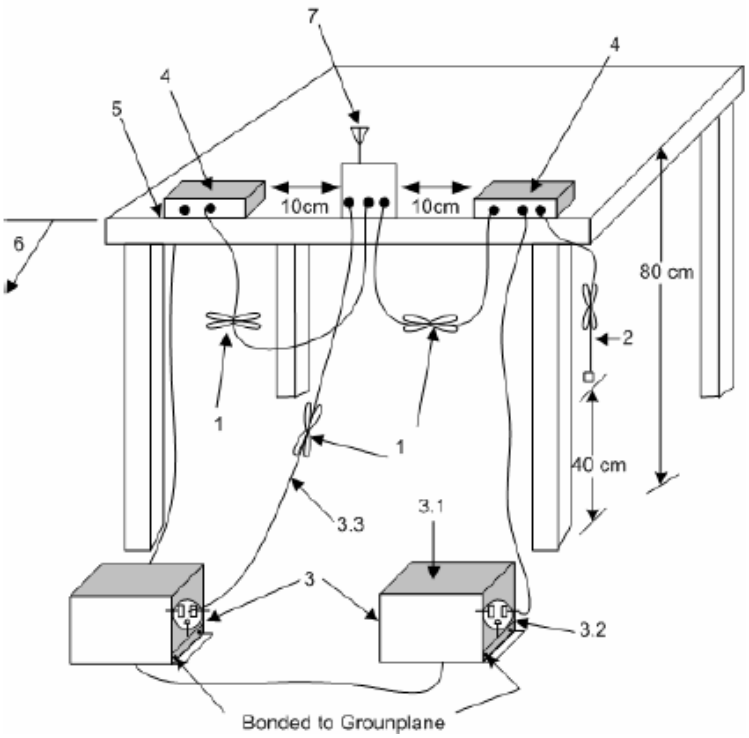
Refer a test equipment and calibration data table in this test report.

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

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

3.1.5 Measurement Results Calculation

The measured Level is calculated using:

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

b. Margin = -Limit + Level

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Emissions in Restricted Frequency Bands

3.2.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.2.2 Measuring Instruments

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

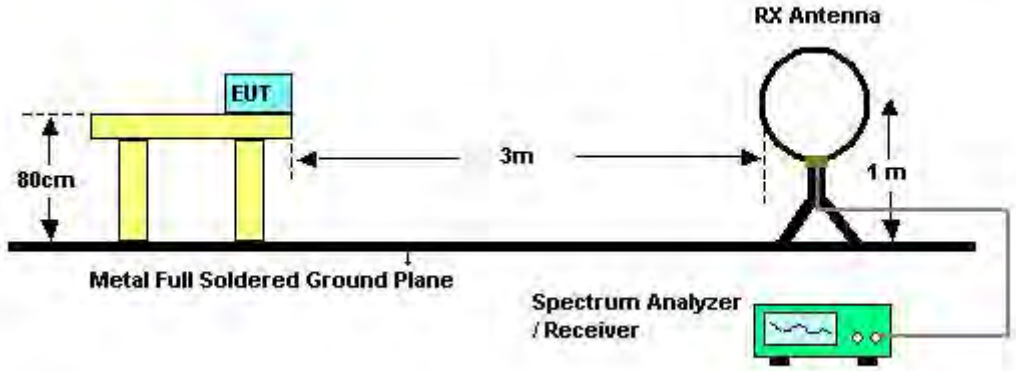
3.2.3 Test Procedures

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

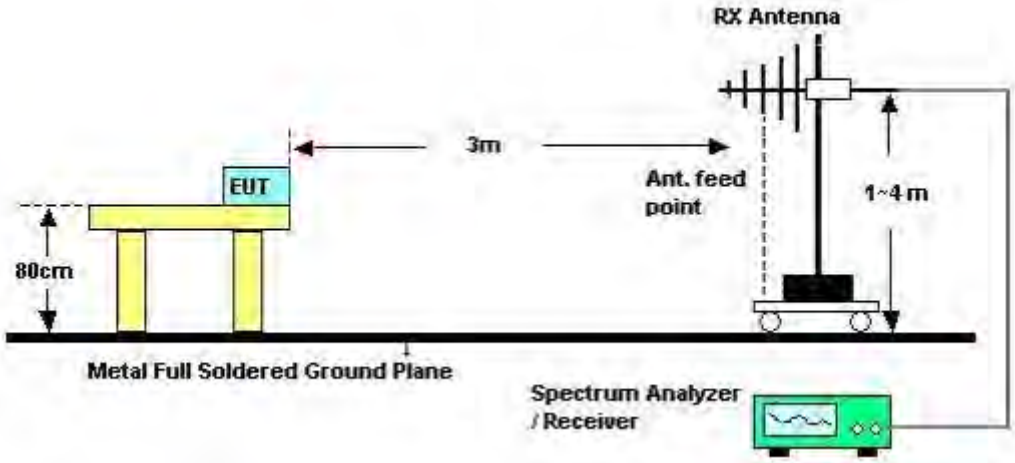
3.2.4 Test Setup

Radiated - Emissions in Restricted Frequency Bands

9kHz ~30MHz



30MHz~1GHz



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 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.
The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

3.2.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Jan. 07, 2022	Jan. 06, 2023	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Dec. 22, 2021	Dec. 21, 2022	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 06, 2022	May 05, 2023	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz~30MHz	Oct. 19, 2021	Oct. 18, 2022	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Mar. 18, 2022	Mar. 17, 2023	Conduction (CO02-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO02-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)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Mar. 14, 2022	Mar. 13, 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)

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

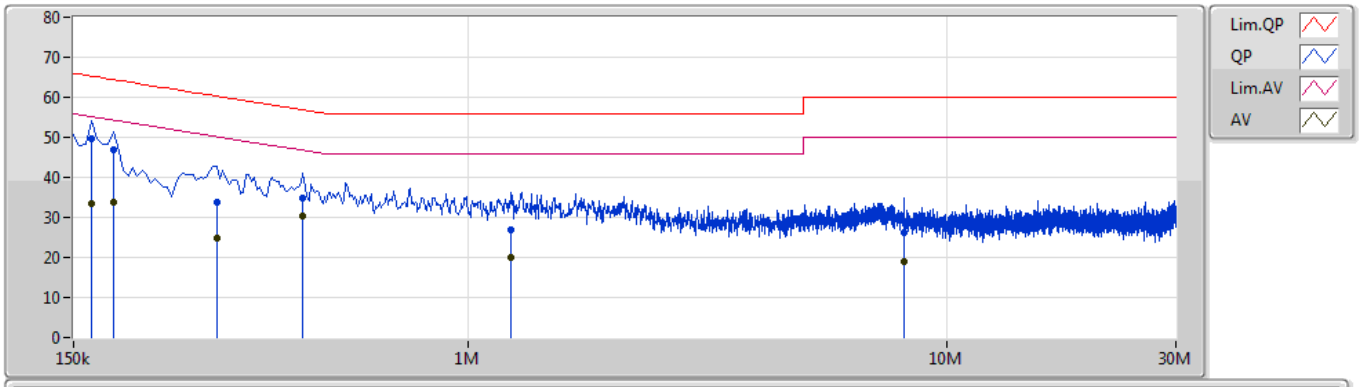
N.C.R. means Non-Calibration required.

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	150k	51.81	66.00	-14.19	Neutral

Mode 1

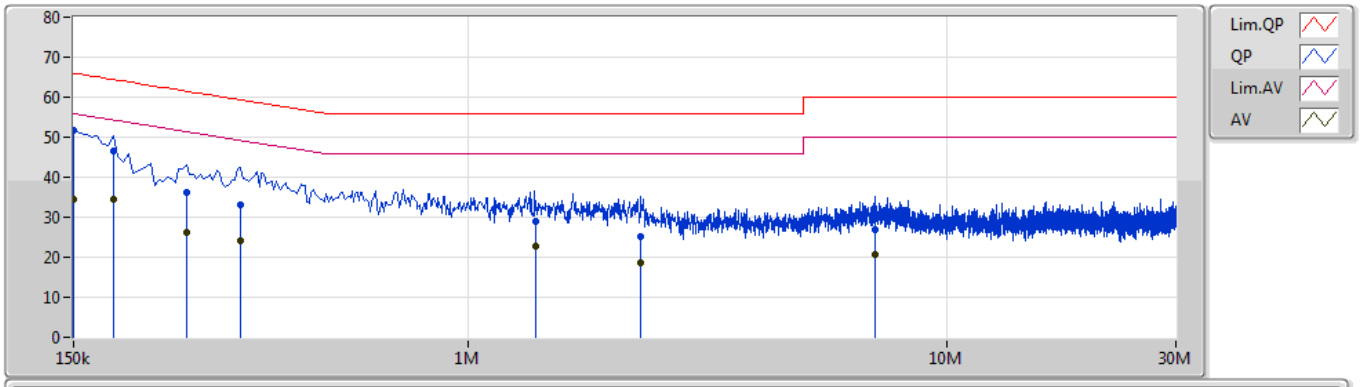
25/07/2022



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	163.5k	49.57	65.27	-15.70	10.23	Line	"Worst"	39.34	0.12	0.02	10.09
AV	163.5k	33.60	55.27	-21.67	10.23	Line	-	23.37	0.12	0.02	10.09
QP	181.5k	46.83	64.41	-17.58	10.22	Line	-	36.61	0.12	0.02	10.08
AV	181.5k	33.74	54.41	-20.67	10.22	Line	-	23.52	0.12	0.02	10.08
QP	298.5k	33.93	60.28	-26.35	10.23	Line	-	23.70	0.12	0.02	10.09
AV	298.5k	24.78	50.28	-25.50	10.23	Line	-	14.55	0.12	0.02	10.09
QP	451.5k	34.87	56.84	-21.97	10.25	Line	-	24.62	0.12	0.02	10.11
AV	451.5k	30.32	46.84	-16.52	10.25	Line	-	20.07	0.12	0.02	10.11
QP	1.23M	26.82	56.00	-29.18	10.32	Line	-	16.50	0.15	0.03	10.14
AV	1.23M	20.03	46.00	-25.97	10.32	Line	-	9.71	0.15	0.03	10.14
QP	8.115M	26.05	60.00	-33.95	10.57	Line	-	15.48	0.31	0.07	10.19
AV	8.115M	19.07	50.00	-30.93	10.57	Line	-	8.50	0.31	0.07	10.19

Mode 1

25/07/2022

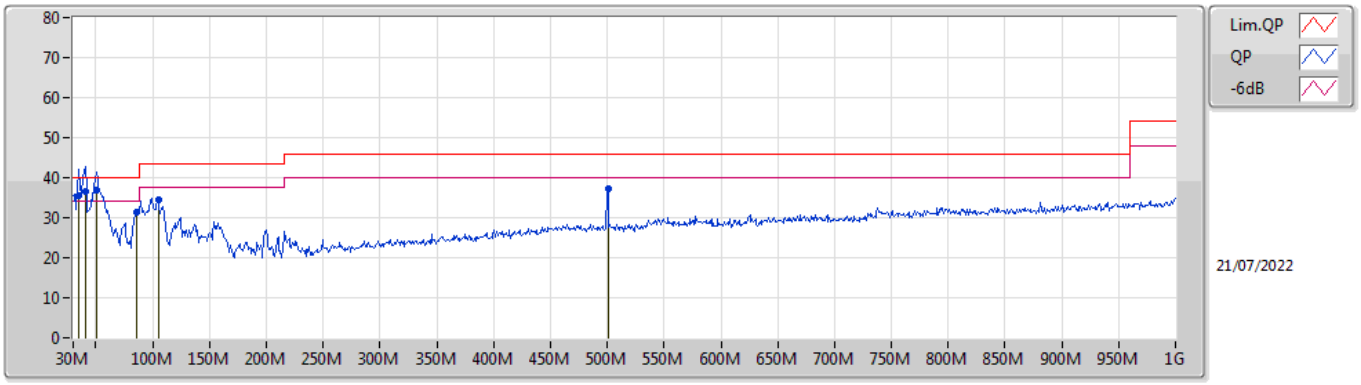


Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150k	51.81	66.00	-14.19	10.29	Neutral	"Worst"	41.52	0.16	0.02	10.11
AV	150k	34.62	56.00	-21.38	10.29	Neutral	-	24.33	0.16	0.02	10.11
QP	181.5k	46.71	64.41	-17.70	10.26	Neutral	-	36.45	0.16	0.02	10.08
AV	181.5k	34.57	54.41	-19.84	10.26	Neutral	-	24.31	0.16	0.02	10.08
QP	258k	36.34	61.49	-25.15	10.26	Neutral	-	26.08	0.16	0.02	10.08
AV	258k	26.26	51.49	-25.23	10.26	Neutral	-	16.00	0.16	0.02	10.08
QP	334.5k	33.04	59.35	-26.31	10.28	Neutral	-	22.76	0.16	0.02	10.10
AV	334.5k	23.98	49.35	-25.37	10.28	Neutral	-	13.70	0.16	0.02	10.10
QP	1.379M	28.94	56.00	-27.06	10.35	Neutral	-	18.59	0.18	0.03	10.14
AV	1.379M	22.69	46.00	-23.31	10.35	Neutral	-	12.34	0.18	0.03	10.14
QP	2.292M	25.23	56.00	-30.77	10.41	Neutral	-	14.82	0.20	0.05	10.16
AV	2.292M	18.54	46.00	-27.46	10.41	Neutral	-	8.13	0.20	0.05	10.16
QP	7.062M	27.00	60.00	-33.00	10.52	Neutral	-	16.48	0.26	0.07	10.19
AV	7.062M	20.53	50.00	-29.47	10.52	Neutral	-	10.01	0.26	0.07	10.19

Summary

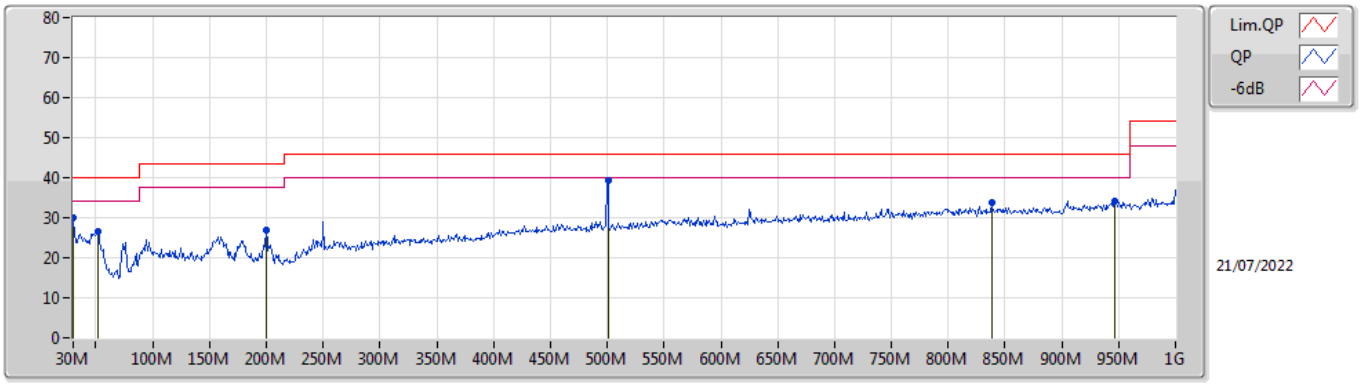
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 2	Pass	QP	50.37M	36.96	40.00	-3.04	Vertical

Mode 2



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV/m)	(dB/m)	(dB)	(dB)
QP	34.85M	35.42	40.00	-4.58	-9.28	3	Vertical	360	1.00	-	44.70	21.51	0.90	31.69
QP	40.67M	36.57	40.00	-3.43	-12.63	3	Vertical	356	2.00	-	49.20	18.22	0.91	31.76
QP	50.37M	36.96	40.00	-3.04	-16.84	3	Vertical	10	1.25	"Worst"	53.80	13.92	1.10	31.86
PK	85.29M	31.31	40.00	-8.69	-16.83	3	Vertical	174	1.25	-	48.14	13.70	1.41	31.94
PK	104.69M	34.52	43.50	-8.98	-13.20	3	Vertical	165	1.00	-	47.72	17.25	1.52	31.97
PK	500.45M	37.20	46.00	-8.80	-5.60	3	Vertical	359	1.25	-	42.80	23.20	3.60	32.40

Mode 2



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV/m)	(dB/m)	(dB)	(dB)
PK	30M	30.16	40.00	-9.84	-6.76	3	Horizontal	286	3.00	-	36.92	23.99	0.80	31.55
PK	52.31M	26.60	40.00	-13.40	-17.61	3	Horizontal	162	3.00	-	44.21	13.16	1.10	31.87
PK	199.75M	26.87	43.50	-16.63	-14.72	3	Horizontal	134	2.00	-	41.59	15.10	2.20	32.02
PK	500.45M	39.27	46.00	-6.73	-5.60	3	Horizontal	102	1.25	"Worst"	44.87	23.20	3.60	32.40
PK	838.01M	33.77	46.00	-12.23	-1.66	3	Horizontal	0	2.00	-	35.43	25.78	5.05	32.49
PK	946.65M	34.09	46.00	-11.91	-0.46	3	Horizontal	356	1.25	-	34.55	26.44	5.58	32.48