Prüfbericht-Nr.: *Test report no.:*	**CN24UHMF 002**	**Auftrags-Nr.:** *Order no.:*	168490934	Seite 1 von 28 *Page 1 of 28*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2024-06-26	
Auftraggeber: *Client:*	**BlueAnt Wireless** Suite 6, 861 Doncaster Road, Doncaster East, Victoria 3109, Australia			
Prüfgegenstand: *Test item:*	Bluetooth Speaker			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	X5i (Trademark: BlueAnt)			
Auftrags-Inhalt: *Order content:*	Test Report			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart C Section 15.247			

Wareneingangsdatum: *Date of sample receipt:*	2024-06-27	Please refer to Photo Document
Prüfmuster-Nr.: *Test sample no:*	A003762173-002 A003762173-003	
Prüfzeitraum: *Testing period:*	2024-07-02 - 2024-07-20	
Ort der Prüfung: *Place of testing:*	(refer to 2.1)	
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüfergebnis*: *Test result*:*	Pass	

geprüft von: tested by:	X Hardy Suo	**genehmigt von:** *authorized by:*	X Jonathan Li
Datum: *Date:* 2024-07-26		**Ausstellungsdatum:** *Issue date:* 2024-07-26	
Stellung / Position:	Sachverständige(r)/Expert	**Stellung** / Position:	Sachverständige(r)/Expert

Sonstiges / *Other:* FCC ID: VHF-BLUEANT-X5I

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:* Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.* *Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.*
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Test Summary

5.1.1 ANTENNA REQUIREMENT
RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER
RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY
RESULT: Pass

5.1.4 6DB BANDWIDTH
RESULT: Pass

5.1.5 99% BANDWIDTH
RESULT: Pass

5.1.6 20DB BANDWIDTH
RESULT: Pass

5.1.7 CARRIER FREQUENCY SEPARATION
RESULT: Pass

5.1.8 NUMBER OF HOPPING FREQUENCY
RESULT: Pass

5.1.9 TIME OF OCCUPANCY
RESULT: Pass

5.1.10 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH
RESULT: Pass

5.1.11 RADIATED SPURIOUS EMISSION
RESULT: Pass

5.1.12 CONDUCTED EMISSION ON AC MAINS
RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of Bluetooth BR & EDR

Appendix B: Test Results of Bluetooth LE - Bluetooth Chip1

Appendix C: Test Results of Bluetooth LE - Bluetooth Chip2

Appendix D: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.
No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China.

FCC Accreditation Designation No.: 694916

ISED wireless device testing laboratory: 25069

Shenzhen UnionTrust Quality and Technology Co., Ltd.
Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

A2LA Certificate Number: 4312.01

Remark: test Conducted Emission on AC Mains was performed at Shenzhen UnionTrust Quality and Technology Co., Ltd.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)						
Equip. No.	**Description**	**Manufacturer**	**Model**	**Serial No.**	**Cal. Date**	**Cal. until**
9039436	EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	22.09.2023	21.09.2024
9039437	MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	22.09.2023	21.09.2024
9039438	EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	22.09.2023	21.09.2024
9039439	DC Power Supply	Keysight	E3642A	MY61276100	22.09.2023	21.09.2024
9039440	Wireless Connectivity Tester	R&S	CMW270	102505	22.09.2023	21.09.2024
9039441	Power Control Unit	Tonscend	JS0806-4ADC	N/A	22.09.2023	21.09.2024
9039442	Automation Control Unit	Tonscend	JS0806-2	21C8060396	22.09.2023	21.09.2024
9039443	Test Software	Tonscend	JS1120-3	N/A	N/A	N/A
9039444	Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A	N/A
Unwanted Emission Testing (TS9975)						
Equip. No.	**Description**	**Manufacturer**	**Model**	**Serial No.**	**Cal. Date**	**Cal. until**
G1826021	EMI Test Receiver	R&S	ESR 7	102021	26.07.2023	25.07.2024
G1826023	Signal Analyzer	R&S	FSV 40	101439	26.07.2023	25.07.2024
G1826024	System Controller Interface	R&S	SCI-100	S10010038	N/A	N/A
G1826025	Filterbank	R&S	Wlan	100759	26.07.2023	25.07.2024
G1826026	OSP	R&S	OSP 120	102040	N/A	N/A

G1826028	Pre-amplifier	R&S	SCU08F1	08320031	26.07.2023	25.07.2024
G1826029	Amplifier	R&S	SCU-18F	180070	26.07.2023	25.07.2024
G1826030	Amplifier	R&S	SCU40A	100475	26.07.2023	25.07.2024
G1826031	Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	07.08.2022	06.08.2024
G1826032	Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	07.08.2022	06.08.2024
G1826033	Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	28.08.2022	27.08.2024
G1826034	Active Loop Antenna	Schwarzbeck	FMZB 1513	302	07.08.2022	06.08.2024
G1826036	Test software	R&S	EMC32 (V10.60.10)	N/A	N/A	N/A
G1826037	Control PC	Dell	OptiPlex 7050	36NV9P2	N/A	N/A
G1826433	3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	21.06.2024	20.06.2025

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Conducted Emission				
LISN	R&S	ESH2-Z5	860014/024	26-Oct-2024
Receiver	R&S	ESR7	101181	26-Oct-2024
Pulse Limiter	R&S	ESH3-Z2	0357.8810.54	26-Oct-2024
Shielding room	ETS-Lindgren	843	Euroshiedpn-CT001270-1246	4-Nov-2024
Test Software	EZ-EMC	EZ-CON	Software Version: EMC-CON 3A1.1	

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Table 2: Measurement Uncertainty

Parameter	Uncertainty (k=2)
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB

All emissions, radiated	±4.17 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B & C & D of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The Product is a Bluetooth Speaker which supports Bluetooth dual mode function and has two Bluetooth chips that one is for Bluetooth dual mode and one is for Bluetooth LE.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	**Value**
Kind of Equipment:	Bluetooth Speaker
Type Designation:	X5i
Trademark:	BlueAnt
FCC ID:	VHF-BLUEANT-X5I
Operating Voltage:	AC 100-240V, 1.5A, or Bulit-in battery
Testing Voltage:	AC 120V, 60Hz
Operating Temperature Range:	0°C ~ +50 °C
Radiofrequency operating mode:	Bluetooth: operating within 2400-2483.5MHz, Classic Bluetooth (BR&EDR), Bluetooth BLE (1Mbps&2Mbps)
Technical Specification of Bluetooth (dual mode)-Bluetooth Chip1	
Operating Frequency:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK, π/4-DQPSK, 8DPSK
Channel Number:	BR & EDR mode: 79 channels, Low Energy mode: 40 channels
Channel Separation:	BR & EDR mode: 1MHz, Low Energy mode: 2MHz
Data Rate:	BR & EDR mode: 1Mbps, 2Mbps, 3Mbps Low Energy mode: 1Mbps, 2Mbps
Antenna Type:	Integral Antenna
Antenna Number:	1
Antenna Gain:	-0.68 dBi (Provided by the Client)
Technical Specification of Bluetooth LE-Bluetooth Chip2	
Operating Frequency:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK
Channel Number:	Low Energy mode: 40 channels
Channel Separation:	Low Energy mode: 2MHz
Data Rate:	Low Energy mode: 1Mbps, 2Mbps
Antenna Type:	Integral Antenna
Antenna Number:	1
Antenna Gain:	-0.68 dBi (Provided by the Client)
Remark: Bluetooth (dual mode)-Bluetooth Chip1 and Bluetooth LE-Bluetooth Chip2 have different transmitter antennas.	

Table 4: RF Channel and Frequency of Bluetooth BR & EDR

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	**2402.00**	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00
7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	**2480.00**
19	2421.00	39	**2441.00**	59	2461.00		

Test frequencies are lowest channel: 2402 MHz, middle channel: 2441 MHz and highest channel: 2480 MHz for Bluetooth BR & EDR

Table 5: RF Channel and Frequency of Bluetooth LE

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	**2402**	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	**19**	**2440**	29	2460	**39**	**2480**

Test frequencies are lowest channel: 2402 MHz, middle channel: 2440 MHz and highest channel: 2480 MHz for Bluetooth LE

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Bluetooth transmitting mode (BR & EDR mode)
   1) Low Channel
   2) Middle Channel
   3) High Channel

B. On, Bluetooth transmitting mode (BLE)
   1) Low Channel
   2) Middle Channel
   3) High Channel

C. On, Transmitting on Hopping channel

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- ID Label and Location Info
- User Manual
- Operation Description

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model X5i in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 6: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	Remark
Laptop	Lenovo	T480	S/N: PF-16A6N8

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

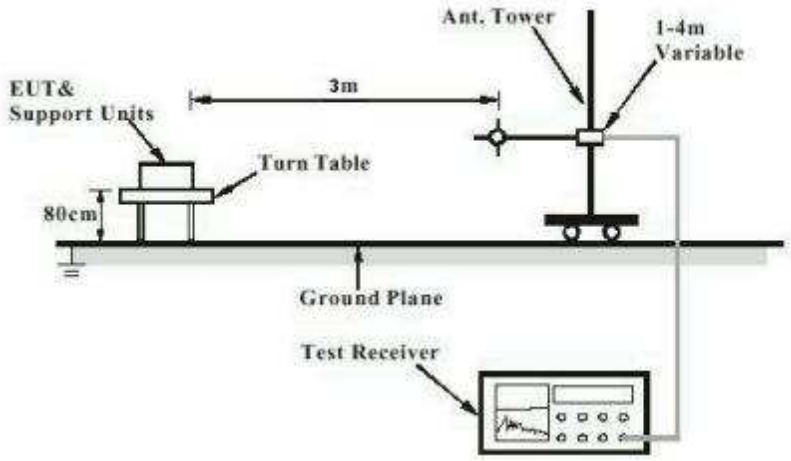


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

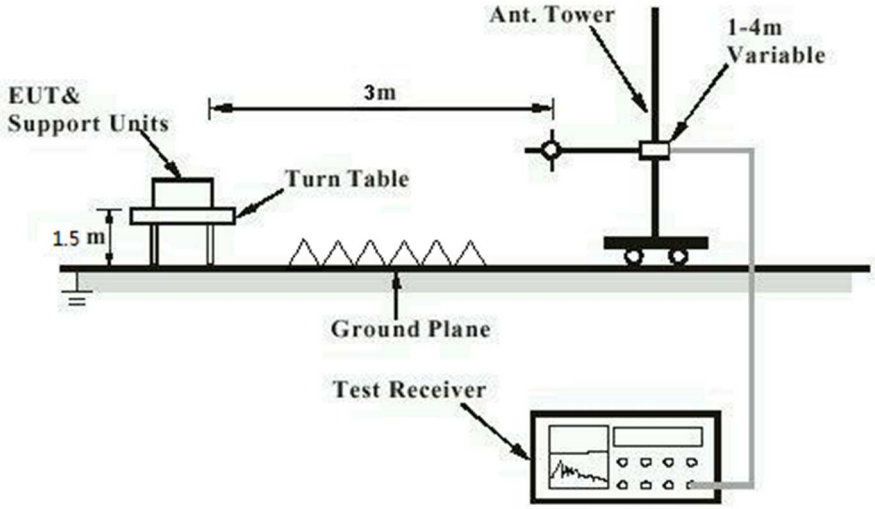


Diagram of Measurement Configuration for Mains Conduction Measurement

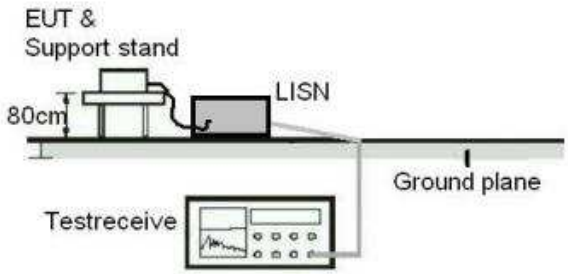
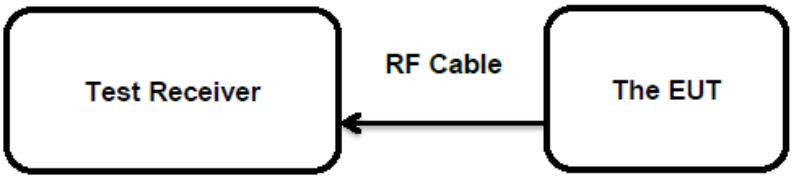


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification

Test standard : FCC Part 15.247(b)(4) and Part 15.203

According to the manufacturer declared, the EUT has two Integral Antenna for Bluetooth Chip1 and Bluetooth Chip2 respective, the directional gain of antenna is -0.68 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(1)&(3)
Basic standard	:	ANSI C63.10: 2013
Limits	:	FHSS < 0.125 Watts, DSSS < 1.0 Watts
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-07-02 - 2024-07-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	23.5 ℃
Relative humidity	:	52.5 %
Atmospheric pressure	:	101 kPa

For details refer to following test result.

Table 7: Test Result of Maximum Peak Conducted Output Power, Bluetooth BR & EDR - Bluetooth Chip1

Test Mode	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
GFSK (BR)	2402.0	-0.38	0.0009	< 0.125
	2441.0	-1.03	0.0008	
	2480.0	-1.34	0.0007	
8DPSK (EDR)	2402.0	0.20	0.0010	
	2441.0	-0.66	0.0009	
	2480.0	-1.00	0.0008	
Maximum Measured Value		**0.20**	**0.0010**	

Table 8: Test Result of Maximum Peak Conducted Output Power, Bluetooth LE - Bluetooth Chip1

Test Mode	Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
			(dBm)	(W)	
Bluetooth LE	1 Mbps	2402.0	-0.74	0.0008	< 1.0
		2440.0	-1.22	0.0008	
		2480.0	-1.61	0.0007	
	2 Mbps	2402.0	-0.56	0.0009	
		2440.0	-1.18	0.0008	
		2480.0	-1.61	0.0007	
Maximum Measured Value			**-0.56**	**0.0009**	

Table 9: Test Result of Maximum Peak Conducted Output Power, Bluetooth LE - Bluetooth Chip2

Test Mode	Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
			(dBm)	(W)	
Bluetooth LE	1 Mbps	2402.0	7.01	0.0050	< 1.0
		2440.0	6.65	0.0046	
		2480.0	6.40	0.0044	
	2 Mbps	2402.0	7.02	0.0050	
		2440.0	6.67	0.0046	
		2480.0	6.33	0.0043	
Maximum Measured Value			**7.02**	**0.0050**	

Note:

1) The cable loss is taken into account in results.
2) Antenna gain(G): -0.68 dBi for Bluetooth Chip1 & Bluetooth Chip2

5.1.3 Conducted Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(e)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 8 dBm / 3kHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-07-02 - 2024-07-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	B
Test channel	:	Low / Middle / High
Ambient temperature	:	23.5 ℃
Relative humidity	:	52.5 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B, C.

5.1.4 6dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(2)
Basic standard	:	ANSI C63.10: 2013
Limits	:	> 500 KHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-07-02 - 2024-07-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	B
Test channel	:	Low / Middle / High
Ambient temperature	:	23.5 ℃
Relative humidity	:	52.5 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B, C.

5.1.5 99% Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-07-02 - 2024-07-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	23.5 ℃
Relative humidity	:	52.5 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A, B, C.

5.1.6 20dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(1)
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-07-02 - 2024-07-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	23.5 ℃
Relative humidity	:	52.5 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.7 Carrier Frequency Separation

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(1)
Basic standard	:	ANSI C63.10: 2013
Limits	:	≥ 25kHz or 2/3 of 20dB bandwidth, whichever is greater
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-07-02 - 2024-07-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	C
Test channel	:	Low / Middle / High
Ambient temperature	:	23.5 ℃
Relative humidity	:	52.5 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.8 Number of Hopping Frequency

RESULT: **Pass**

Test Specification

Test standard	:	FCC part 15.247(a)(1)(iii)
Basic standard	:	ANSI C63.10: 2013
Limits	:	≥ 15 non-overlapping channels
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-07-02 - 2024-07-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Ambient temperature	:	23.5 ℃
Relative humidity	:	52.5 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.9 Time of Occupancy

RESULT: **Pass**

Test Specification

Test standard	:	FCC part 15.247(a)(1)(iii)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 0.4s
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-07-02 - 2024-07-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	23.5 ℃
Relative humidity	:	52.5 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.10 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-07-02 - 2024-07-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	23.5 ℃
Relative humidity	:	52.5 %
Atmospheric pressure	:	101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix A, B, C.

5.1.11 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2024-07-02 - 2024-07-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

Remark:
Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix A, B, C.

5.1.12 Conducted Emission on AC Mains

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.207(a)
Basic standard	:	ANSI C63.10: 2013
Frequency range	:	0.15 – 30MHz
Classification	:	Class B
Limits	:	FCC Part 15.207(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-07-18
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B, C
Earthing	:	Not connected
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

Remark:
Testing was carried out all operation modes, only the worst case configuration of the each mode were reported.
For the measurement records, refer to the appendix A, B, C.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix D.

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