

Prüfbericht-Nr.: Test report no.:	CN24LPG8 001	Auftrags-Nr.: Order no.:	170359239	Seite 1 von 23 Page 1 of 23										
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date.:	2023.12.14											
Auftraggeber: Client:	BOE Digital Technology Co., Ltd. Room 101, 3rd Floor, Building 1, No. 12 Xihuan Middle Road, BDA Beijing, China													
Prüfgegenstand: Test item:	LCD Monitor													
Bezeichnung / Typ-Nr.: Identification / Type No.:	55BDL6052H, 55BDL6052H/05, 55BDL6052H/12, 55BDL6052H/** (*=0-9 or A-Z)													
Auftrags-Inhalt: Order content:	TÜV Rheinland FCC approval													
Prüfgrundlage: Test specification:	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 FCC KDB Publication 447498 D01 v06													
Wareneingangsdatum: Date of sample receipt:	2023.12.14													
Prüfmuster-Nr.: Test sample No.:	170359239-001													
Prüfzeitraum: Testing period:	Refer to test report													
Ort der Prüfung: Place of testing:	Refer to section 2.1													
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Guangdong) Ltd.													
Prüfergebnis*: Test result*:	Pass													
geprüft von: tested by: Amy Wang		genehmigt von: authorized by: Storm Shu												
Datum: Date:2024.08.27		Ausstellungs Datum: Issue date:2024.08.27												
Stellung/Position:	Sachverständige(r)/Expert	Stellung/Position:	Sachverständige(r)/Expert											
Sonstiges / Other: FCC ID: 2BH28-55BDL6052H														
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged												
<table><tr><td>* Legende:</td><td>1 = sehr gut 2 = gut P(ass) = entspricht o.g. Prüfgrundlage(n)</td><td>3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)</td><td>4 = ausreichend N/A = nicht anwendbar</td><td>5 = mangelhaft N/T = nicht getestet</td></tr><tr><td>Legend:</td><td>1 = very good 2 = good P(ass) = passed a.m. test specifications(s)</td><td>3 = satisfactory F(ail) = failed a.m. test specifications(s)</td><td>4 = sufficient N/A = not applicable</td><td>5 = poor N/T = not tested</td></tr></table>					* Legende:	1 = sehr gut 2 = gut P(ass) = entspricht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar	5 = mangelhaft N/T = nicht getestet	Legend:	1 = very good 2 = good P(ass) = passed a.m. test specifications(s)	3 = satisfactory F(ail) = failed a.m. test specifications(s)	4 = sufficient N/A = not applicable	5 = poor N/T = not tested
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Anmerkungen
Remarks

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4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

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 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.8 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

6.1.1 ELECTROMAGNETIC FIELDS

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 1: Test setup

Appendix 2: Test Results of Wi-Fi

2 Test Sites

2.1 Test Facilities

CTC Laboratories, Inc.

2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua New District, Shenzhen, Guangdong, China

FCC test Firm Registration Number: CN1208

A2LA Certificate No.: 4340.01

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9163	01026	Dec. 18, 2024
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Sep. 25, 2025
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 12, 2024
4	Broadband Amplifier	SCHWARZBECK	BBV9743B	259	Dec. 12, 2024
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 12, 2024
6	3m chamber 3	YIHENG	EE106	/	Aug. 28, 2026
7	Test Software	FARA	EZ-EMC	FA-03A2	/
Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	LISN	R&S	ENV216	101112	Dec. 12, 2024
2	LISN	R&S	ENV216	101113	Dec. 12, 2024
3	EMI Test Receiver	R&S	ESCS30	100353	Dec. 12, 2024
4	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 12, 2024
5	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 12, 2024
6	Test Software	R&S	EMC32	6.10.10	/
RF Test System - SRD					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 21, 2025
2	Spectrum Analyzer	R&S	FSV40-N	101654	Aug. 07, 2024
3	Spectrum Analyzer	R&S	FSU26	100105	Dec. 12, 2024
4	MXA Signal Analyzer	Keysight	N9020A	MY46471737	Dec. 12, 2024
5	MXA Signal Analyzer	Keysight	N9020A	MY52091402	Aug. 22, 2024
6	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 12, 2024

7	PSG Analog Signal Generator	Agilent	E8257D	MY46521908	Dec. 12, 2024
8	EXG Analog Signal Generator	Keysight	N5173B	MY59100842	Dec. 12, 2024
9	MXG Vector Signal Generator	Keysight	N5182B	MY59100212	Dec. 12, 2024
10	USB Wideband Power Sensor	Keysight	U2021XA	MY55130004	Mar. 21, 2025
11	USB Wideband Power Sensor	Keysight	U2021XA	MY55130006	Mar. 21, 2025
12	Wideband Radio Communication Tester	R&S	CMW500	102257	May 25, 2024
13	Wideband Radio Communication Tester	R&S	CMW500	102414	Dec. 12, 2024
14	RF Control Unit	Tonscend	JS0806-2	/	Aug. 22, 2024
15	High and low temperature test chamber	ESPEC	MT3035	/	Mar. 21, 2025
16	Test Software	Tonscend	JS1120-3	V2.6.88.0346	/

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 basis using in house standards or comparisons.

2.5 Measurement Uncertainty

Test Items	Measurement Uncertainty	Note
DTS Bandwidth	±0.0196%	(1)
Maximum Conducted Output Power	±0.686 dB	(1)
Maximum Power Spectral Density Level	±0.743 dB	(1)
Band-edge Compliance	±1.328 dB	(1)
Unwanted Emissions In Non-restricted Freq Bands	9kHz-1GHz: ±0.746dB 1GHz-26GHz: ±1.328dB	(1)
Conducted Emissions 9kHz~30MHz	±3.08 dB	(1)
Radiated Emissions 30~1000MHz	±4.51 dB	(1)
Radiated Emissions 1~18GHz	±5.84 dB	(1)
Radiated Emissions 18~40GHz	±6.12 dB	(1)

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.6 Sample Calculations

Calculation of test results for conducted emission measurement:

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2100	24.61	20.35	44.96	63.21	-18.25	QP
2	0.2100	4.92	20.35	25.27	53.21	-27.94	AVG

Frequency (MHz) = Emission frequency in MHz

Correct Factor = Insertion loss + Cable loss

Margin = Result (Result = Reading + Correct Factor) – Limit

Detector: QP= Quasi-Peak; AVG= Average

e.g.:

44.96dBuV (Result) = 24.61dBuV (Reading) + 20.35dB (Correct Factor)

-18.25dB (Margin) = 44.96dBuV (Result) – 63.21dBuV (Limit)

2.7 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix 2 of this report and delivered to the applicant. A copy has been retained in the **CTC Laboratories, Inc.** file for certification follow-up purposes.

2.8 Status of Facility Used for Testing

CTC Laboratories, Inc. is listed on the US Federal Communications Commission list of facilities approved to perform measurements, whose designation number is 951311.

3 General Product Information

The EUT is LCD monitor which supports HDMI input, wired network connect, USB play, 2.4GHz Wi-Fi functions.

Model different:

55BDL6052H, 55BDL6052H/05, 55BDL6052H/12, 55BDL6052H/** (*=0-9 or A-Z)

All models are identical to each other except for model name and marketing purpose.

According to the above information, all applicable tests have been performed on 55BDL6052H.

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

3.1 Product Function and Intended Use

Refer to Technical Documentation and User Manual.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

Technical Specification	Value
Kind of Equipment	LCD Monitor
Type Designation	55BDL6052H, 55BDL6052H/05, 55BDL6052H/12, 55BDL6052H/** (*=0-9 or A-Z)
FCC ID	2BH28-55BDL6052H
Operating Temperature Range	-20°C to +45°C
Operating Voltage	AC 100-240V, 50/60Hz
Testing Voltage	AC 230V, 50Hz
Technical Specification of Wi-Fi 802.11 b/g/n	
Operating Frequency	2412 - 2462 MHz for 802.11b/g/n(HT20) 2422 - 2452 MHz for 802.11n(HT40)
Type of Modulation	802.11b: CCK, DQPSK, DBPSK 802.11g/n : BPSK, QPSK, 16QAM, 64QAM
Data Rate	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0~MCS 7 for 802.11n(HT20/40) (All data rates considered, only the Worst-cases reported)
Channel Number	11 channels for 802.11b/g/n(HT20) 7 channels for 802.11n(HT40)
Channel Separation	5 MHz
Antenna Type	External Antenna
Number of Antenna:	1
Gain	1.96 dBi Max (As detailed in Antenna spec)

Table 3: RF Channel and Frequency of Wi-Fi 802.11 b/g/n

RF Channel	802.11 b/g/n(HT20)	802.11 n(HT40)
	Frequency (MHz)	Frequency (MHz)
01	2412	/
02	2417	/
03	2422	2422
04	2427	2427
05	2432	2432
06	2437	2437
07	2442	2442
08	2447	2447
09	2452	2452
10	2457	/
11	2462	/

Test frequencies are lowest channel: 2412 MHz, middle channel: 2437 MHz and highest channel: 2462 MHz for 802.11b/g/n(HT20)

Test frequencies are lowest channel: 2422 MHz, middle channel: 2437 MHz and highest channel: 2452 MHz for 802.11n(HT40)

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Wi-Fi 802.11 b/g/n wireless transmitting mode
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. On, Wi-Fi connecting mode
- C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Block Diagram
- FCC Label and Location Info
- Model Difference Letter
- Operation Description
- Photo Document
- Schematics
- User Manual

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 testing were performed according to the procedures in ANSI C63.10: 2013 and ANSI C63.4: 2014

Type	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
2.4G WIFI	802.11b	1.96	39	RF Test Tool v5.4
	802.11g		48	
	802.11n(HT20)		46	
	802.11n(HT40)		46	

4.3 Special Accessories and Auxiliary Equipment

Table 4: List of Accessories and Auxiliary Equipment

Assistant equipment	Manufacturer	Model	Remark
Laptop	Lenovo	ThinkPad E14 Gen 3	SN: PF-3384L3
GPON Terminal	HUAWEI	EG8247Q	SN: 485754435C3A919C

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)

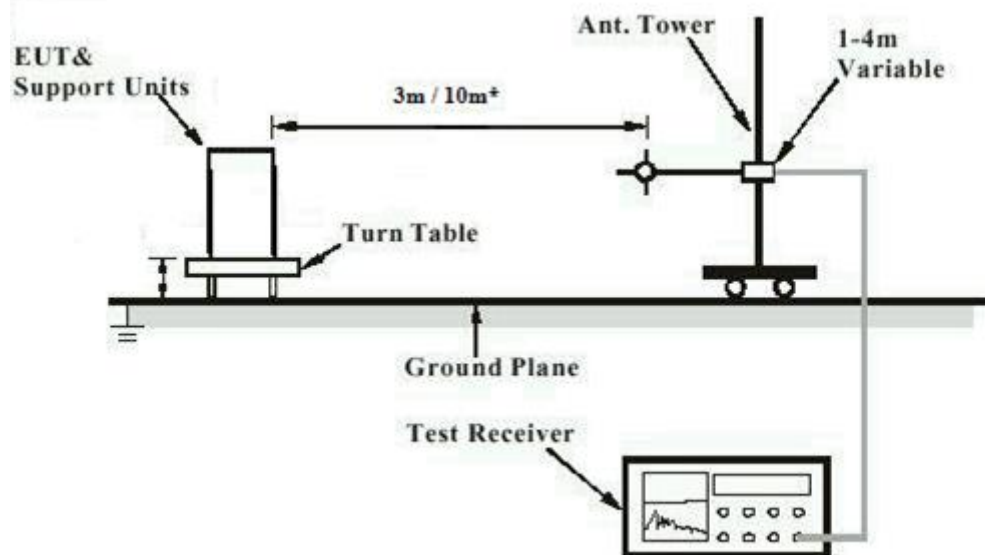


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

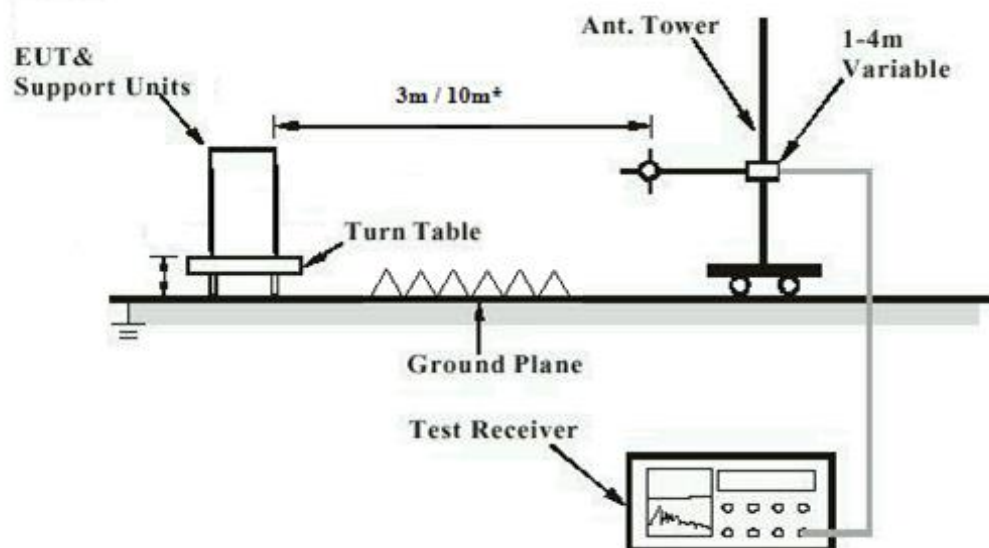


Diagram of Measurement Configuration for Mains Conduction Measurement

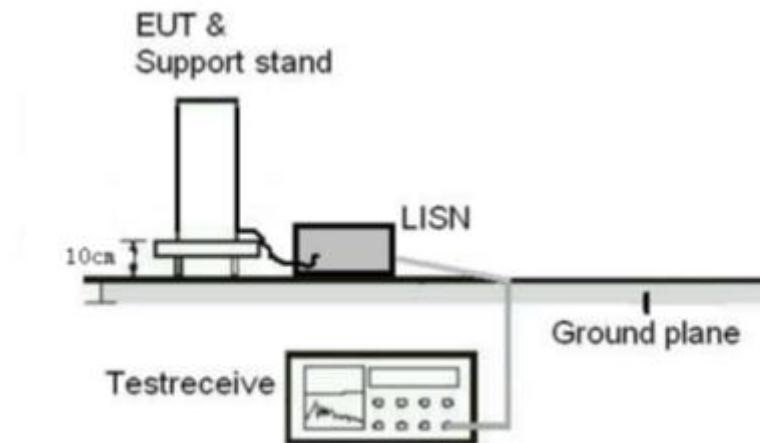
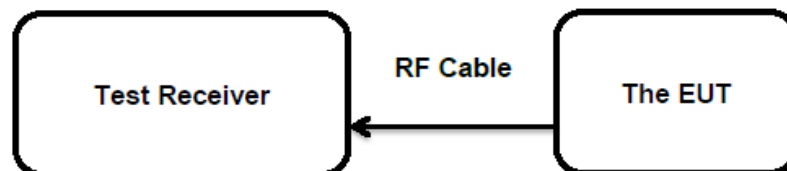


Diagram of Measurement Configuration for Conducted Transmitter Measurement



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 an external antenna, the directional gain of Wi-Fi antenna is 1.96 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.

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)(3) RSS-247 Clause 5.4(b)&(d)
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	: 2024-04-01
Input voltage	: AC 120V/60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24.5 °C
Relative humidity	: 51 %
Atmospheric pressure	: 101 kPa

This testing was carried out on all operation modes, but only the worst case was presented in this report.

For the measurement records, refer to the appendix 2.

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	: 2024-04-01
Input voltage	: AC 120V/60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24.5 °C
Relative humidity	: 51 %
Atmospheric pressure	: 101 kPa

This testing was carried out on all operation modes, but only the worst case was presented in this report.

For the measurement records, refer to the appendix 2.

5.1.4 6dB Bandwidth

RESULT:**Pass****Test Specification**

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

Test Setup

Date of testing	: 2024-04-01
Input voltage	: AC 120V/60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24.5 °C
Relative humidity	: 51 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix 2.

5.1.5 99% Bandwidth**RESULT:****Pass****Test Specification**

Test standard	: RSS-Gen Clause 6.6
Basic standard	: ANSI C63.10: 2013
Limits	: More than 500 KHz
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2024-04-01
Input voltage	: AC 120V/60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24.5 °C
Relative humidity	: 51 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix 2.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth**RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.247(d) RSS-247 Clause 5.5
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	: 2024-04-01
Input voltage	: AC 120V/60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24.5 °C
Relative humidity	: 51 %
Atmospheric pressure	: 101 kPa

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

For the measurement records, refer to the appendix 2.

5.1.7 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3
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	: 2024-04-12
Input voltage	: AC 120V/60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24.5 °C
Relative humidity	: 51 %
Atmospheric pressure	: 101 kPa

The Radiated Spurious Emission was carried out within frequency range 9kHz – 30MHz and 18GHz - 26.5GHz, and the measurements with active antenna were greater than 20dB below the limit, so the test data were not recorded in the test report.

For the measurement records, refer to the appendix 2.

5.1.8 Conducted Emission on AC Mains

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	: ANSI C63.10: 2013
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a) RSS-Gen Table 3
Kind of test site	: Shielded Room

Test Setup

Date of testing	: Refer to test result
Input voltage	: AC 120V/60Hz
Operation mode	: B
Earthing	: Not connected
Ambient temperature	: 24 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix 2.

6 Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT:

Pass

Test Specification

Test standard : CFR47 FCC Part 2: Section 2.1091
CFR47 FCC Part 1: Section 1.1310
FCC KDB Publication 447498 D01 v06
RSS-102 Issue 5 March 2015

➤ FCC requirements

FCC requirement: Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20cm normally can be maintained between the user and the device.

Power Density: $S_{(mW/cm^2)} = PG/4\pi R^2$ or $EIRP/4\pi R^2$

Where:

S = power density (mW/cm²)

P = power input to the antenna (mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (cm)

The nominal maximum conducted output power specified:

Wi-Fi 802.11 b/g/n: 17.77 dBm

From the peak RF output power, the minimum mobile separation distance, d=20 cm, as well as the antenna gain (1.9 dBi for Wi-Fi 802.11 b/g/n), the RF power density can be calculated as below:

For Wi-Fi 802.11 b/g/n: $S_{(mW/cm^2)} = PG/4\pi R^2 = 0.018 \text{ mW/cm}^2$

Limits for Maximum Permissible Exposure (MPE) according to FCC Part 1.1310:

1.0 mW/cm²

“RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”

7 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix 1.

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