



TEST REPORT N°: CRWJ-ESH-P25120941B-2

FCC Test Report

Applicant:	Zhejiang Lingzhu Technology Co., Ltd.
Address:	Room 302, No 1 Building Huace Center, Xihu District, Hangzhou City, Zhejiang Province, China
Manufacturer:	Zhejiang Lingzhu Technology Co., Ltd.
Address:	Room 302, No 1 Building Huace Center, Xihu District, Hangzhou City, Zhejiang Province, China
Factory:	Hangzhou Xizhi Electronics Co., Ltd.
Address:	2nd Floor, Building 3, No. 8, Yuyang Road, Lushan Street, Fuyang District, Hangzhou City, Zhejiang Province, China
This document includes 78 pages	

Product Name:	Smart Battery Doorbell	
Test Model:	SC162-WCD3A	
Serial Models:	SC162-WCxyz (The main differences between models lie in appearance, color, camera resolution, and sensors or lenses. Apart from these, the PCB, software and hardware versions, antennas, etc., are all the same.)	
Brand Name:	--	
FCC ID:	2BEWXSC162A	
Rated Voltage/Power:	AC 8-24V~ 50/60Hz 200mA or 5V= 1.5A	
Received Date:	Dec. 12, 2025	
Test Date:	Dec. 15, 2025 to Jan. 09, 2026	
Applicable Standards:	47 CFR Part 15 Subpart C (Section 15.247) ANSI C63.10:2020	
Clause Examined:	All Clauses Relevant	

CONCLUSION : The submitted sample was found to **COMPLY** with the test requirement.

Test done by:

Approved by:

Name: Ghost Li
Title: Project Engineer
Date: Jan. 16, 2026

Name: Sean YU
Title: RF Supervisor
Date: Jan. 16, 2026

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



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Release Control Record

Issue No.	Description	Date Issued
CRWJ-ESH-P25120941B-2	Original release	Jan. 16, 2026



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1 Summary of Test Results

The EUT has been tested according to the following specifications:

47 CFR FCC Part 15, Subpart C (SECTION 15.247)			
FCC Clause	Test Item	Result	Remarks
15.203	Antenna Requirement	PASS	No antenna connector is used.
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	Minimum 6dB Bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted Output Power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.247(d)	Conducted Band Edges Measurement	PASS	Meet the requirement of limit.
15.247(d)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
15.247(d)	Emissions in restricted frequency bands	PASS	Meet the requirement of limit.
15.205 / 15.209 / 15.247(d)	Radiated Emissions Measurement	PASS	Meet the requirement of limit.



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1.1 Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Loop Antenna	ETS-LINDGREN	6502	E1A1039	Jul.30,24	Jul.29,26
Hybrid Antenna(25MHz-1.5GHz)	Schwarzbeck	VULB9168	E1A1001	Mar.28,24	Mar.27,26
Horn Antenna(1GHz -18GHz)	Schwarzbeck	BBHA9120D	E1A1017	Jul.31,24	Jul.30,26
Double Ridge Horn Antenna(18G-40G)	COM-POWER	AH-840	E1A1040	Jul.31,24	Jul.30,26
Pre-Amplifier(100kHz-1.3GHz)	Agilent	8447D	E1A2001	Feb.17,25	Feb.16,26
Pre-Amplifier(0.5GHz-18GHz)	EMCI	EMC184045SE	E1A2009	Jun.26,25	Jun.25,26
Pre-Amplifier(18GHz-40GHz)	Toscend	TAP18040048	E1A2014	May.28,25	May.27,26
EMI test receiver	R&S	ESR26	E1R1009	Aug.12,25	Aug.11,26
Spectrum Analyzer	Keysight	N9030B	E1S1003	May.23,25	May.22,26
Spectrum Analyzer	Keysight	N9020A	E1S1004	Feb.18,25	Feb.17,26
EMI test receiver	R&S	ESR3	E1R1008	Aug.12,25	Aug.11,26
LISN	R&S	ENV216	E1L1013	Aug.18,25	Aug.17, 26
Humidity&Temp Tester	ESPEC	SE TH-Z-042U	C1TH002	Jun.05,25	Jun.04,26
RF Control Unit	Toscend	JS0806-2	E1C5003	N/A	N/A
Test Software	Toscend	JS32-CE	N/A	N/A	N/A
Test Software	Toscend	JS32-RE	N/A	N/A	N/A
Test Software	Toscend	JS1120	N/A	N/A	N/A
Test Software	Toscend	JS1120-3	N/A	N/A	N/A



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1.2 Test Facility

Laboratory Name: LCIE CHINA COMPANY LIMITED

Laboratory Address: No.829, Xin Zhuan Road, Song Jiang District, Shanghai, China

Test Location: No.829, Xin Zhuan Road, Song Jiang District, Shanghai, China

A2LA Lab Code: 2343.01

FCC-Recognized Accredited Testing Lab: CN1213

ISED Recognized Lab: 6392A

FCC Accredited Test Site Number: 176467



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1.3 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Measurement	Frequency	Expanded Uncertainty ($k=2$) ($\pm$)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.56 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.08 dB
Radiated Emissions above 1 GHz	Above 1GHz	5.12 dB



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1.4 Modification Record

There were no modifications required for compliance.



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2 General Information

2.1 General Description of EUT

Product	Smart Battery Doorbell
Brand	--
Test Model	SC162-WCD3A
Serial Models	SC162-WCxyz (The main differences between models lie in appearance, color, camera resolution, and sensors or lenses. Apart from these, the PCB, software and hardware versions, antennas, etc., are all the same.)
Power Rating	8-24V~ 50/60Hz 200mA or 5V= 1.5A
Modulation Type	GFSK
Modulation Technology	Bluetooth Low Energy 5.0
Operating Frequency	2402MHz ~ 2480MHz
Number of Channel	40
Output Power	4.15 dBm
Antenna Type	Dipole Antenna
Antenna Connector	--
Antenna Gain	1.05 dBi
Product SW/HW version	--
Radio SW/HW version	--
Test SW version	--
RF power setting in Test SW	--

Note: For more details, please refer to the User's manual of the EUT.



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2.2 Description of Test Modes

40 channels are provided for Bluetooth LE.

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



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2.2.1 Test Mode Applicability:

EUT Configure Mode	Applicable to				Description
	RE ≥ 1G	RE < 1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz

RE< 1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Radiated Emission Test (Above 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	BLE	0 to 39	0, 19, 39	GFSK

Radiated Emission Test (Below 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	BLE	0 to 39	0	GFSK

Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	BLE	0 to 39	0	GFSK



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Antenna Port Conducted Measurement

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	BLE	0 to 39	0, 19, 39	GFSK



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2.2.2 Test Condition:

Applicable to	Normal Environmental Conditions	Normal Input Power
RE ≥ 1G	23deg. C, 58%RH	5V $\overline{\overline{=}}$ 1.5A Powered by battery
RE < 1G	23deg. C, 58%RH	5V $\overline{\overline{=}}$ 1.5A Powered by battery
PLC	23deg. C, 58%RH	5V $\overline{\overline{=}}$ 1.5A
APCM	25deg. C, 60%RH	5V $\overline{\overline{=}}$ 1.5A Powered by battery



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2.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

NO.	PRODUCT	BRAND/ Manufacturer	MODEL NO.
1.	AC/DC Adapter	--	KA06E-0501000US
2.	Laptop	Lenovo	L470
3.	Indoor Chime 1	SC162-DDJ	100-240V~50/60Hz 20mA
4.	Indoor Chime 2	SC162-DDJ-USB	DC5V 1A
5.	Adaptor	VC54GBCH	100-240V~50/60Hz 600mA

2.4 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standard:

47 CFR Part 15 Subpart C (Section 15.247)

KDB 558074 D01 DTS Meas Guidance v05r02

ANSI C63.10:2020

All relaxed test items have been performed and recorded as per the above standard.



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3 Test Procedure and Results

3.1 AC Power Conducted Emission

3.1.1 Limits

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3.1.2 Test Procedures

- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

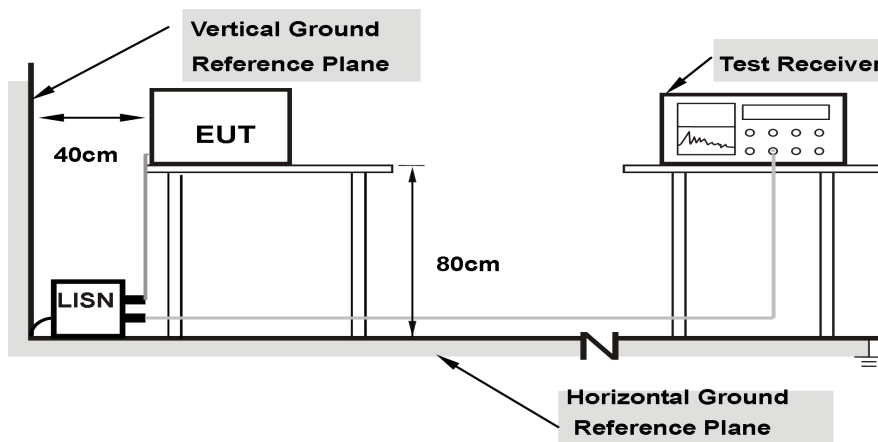
NOTE: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

3.1.3 Deviation from Test Standard

No deviation.

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3.1.4 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

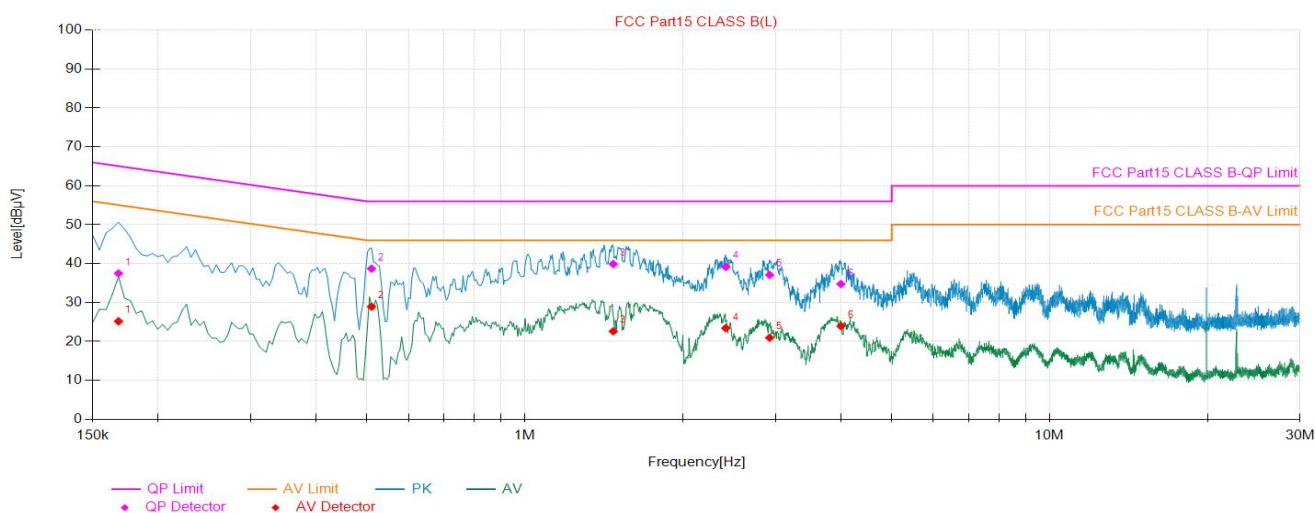
3.1.5 EUT Operating Conditions

Same as 3.1.6.

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3.1.6 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Power supply	Adaptor: AC 120V, 60Hz EUT Rated Power: AC 8-24V~ 50/60Hz 200mA or 5V= 1.5A		
Test Mode	Charging (By adaptor) + Bluetooth link + WiFi link + 433MHz link with indoor chime 1		



Final Data List

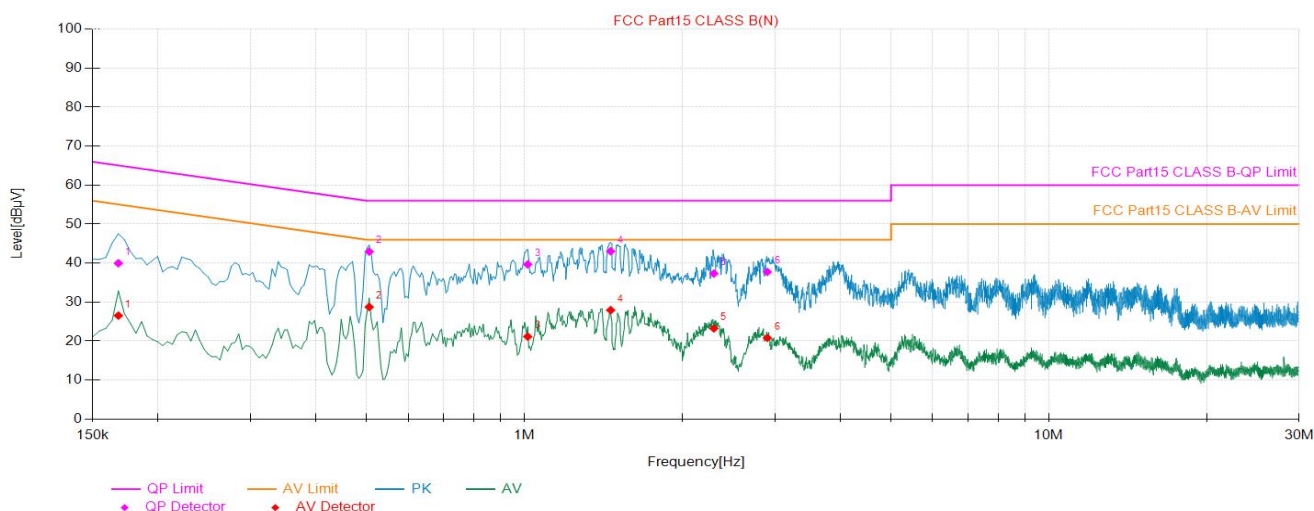
NO.	Freq. [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]
1	0.17	19.89	17.60	37.49	65.06	27.57	5.29	25.18	55.06	29.88
2	0.51	19.66	19.04	38.70	56.00	17.30	9.28	28.94	46.00	17.06
3	1.47	19.68	20.21	39.89	56.00	16.11	2.93	22.61	46.00	23.39
4	2.41	19.77	19.40	39.17	56.00	16.83	3.65	23.42	46.00	22.58
5	2.93	19.83	17.27	37.10	56.00	18.90	1.12	20.95	46.00	25.05
6	4.00	19.87	14.88	34.75	56.00	21.25	4.09	23.96	46.00	22.04

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss

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Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Power supply	Adaptor: AC 120V, 60Hz EUT Rated Power: AC 8-24V~ 50/60Hz 200mA or 5V= 1.5A		
Test Mode	Charging (By adaptor) + Bluetooth link + WiFi link + 433MHz link with indoor chime 1		



Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading [dBuV]	QP Value [dBuV]	QP Limit [dBuV]	QP Margin [dB]	AV Reading [dBuV]	AV Value [dBuV]	AV Limit [dBuV]	AV Margin [dB]
1	0.17	19.87	20.10	39.97	65.06	25.09	6.67	26.54	55.06	28.52
2	0.51	19.64	23.31	42.95	56.00	13.05	9.11	28.75	46.00	17.25
3	1.01	19.63	20.04	39.67	56.00	16.33	1.52	21.15	46.00	24.85
4	1.46	19.69	23.35	43.04	56.00	12.96	8.26	27.95	46.00	18.05
5	2.30	19.78	17.54	37.32	56.00	18.68	3.47	23.25	46.00	22.75
6	2.90	19.82	17.92	37.74	56.00	18.26	1.01	20.83	46.00	25.17

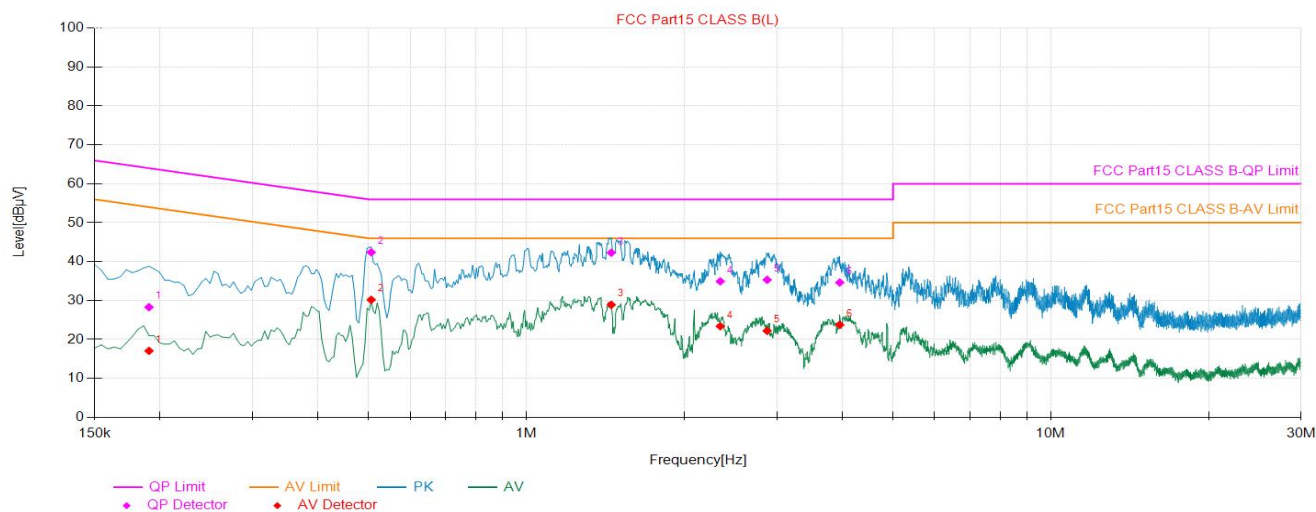
REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
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TEST REPORT N°: CRWJ-ESH-P25120941B-2

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Power supply	Adaptor: AC 120V, 60Hz EUT Rated Power: AC 8-24V~ 50/60Hz 200mA or 5V= 1.5A		
Test Mode	Charging (By adaptor) + Bluetooth link + WiFi link + 433MHz link with indoor chime 2		



Final Data List

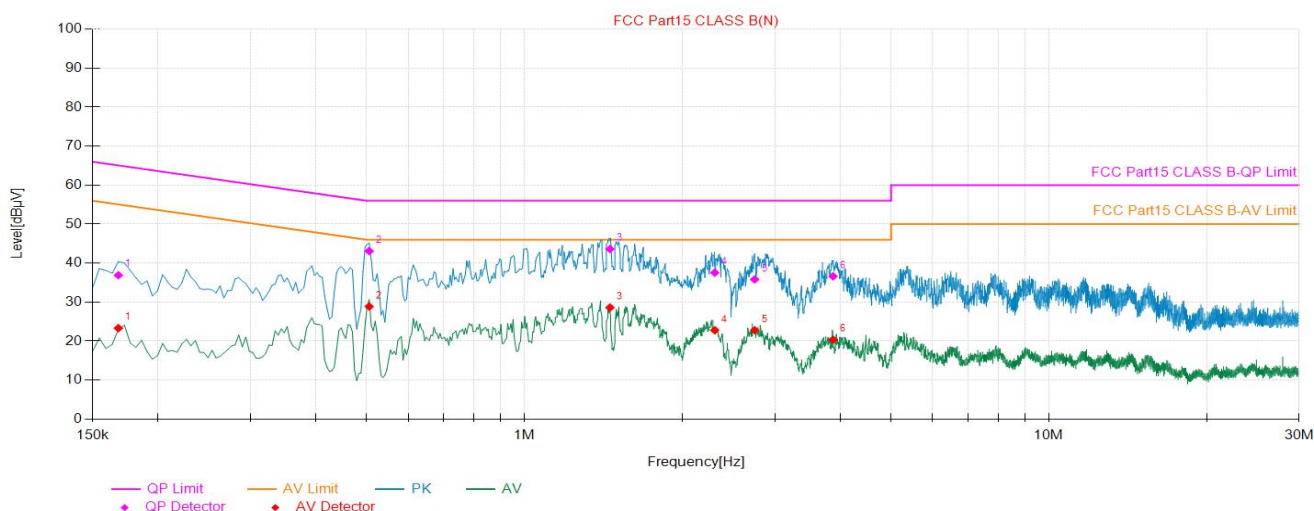
NO.	Freq. [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]
1	0.19	19.87	8.43	28.30	64.01	35.71	-2.80	17.07	54.01	36.94
2	0.51	19.66	22.74	42.40	56.00	13.60	10.53	30.19	46.00	15.81
3	1.45	19.68	22.61	42.29	56.00	13.71	9.22	28.90	46.00	17.10
4	2.34	19.76	15.18	34.94	56.00	21.06	3.63	23.39	46.00	22.61
5	2.88	19.83	15.49	35.32	56.00	20.68	2.37	22.20	46.00	23.80
6	3.96	19.87	14.76	34.63	56.00	21.37	3.88	23.75	46.00	22.25

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss

TEST REPORT N°: CRWJ-ESH-P25120941B-2

Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Power supply	Adaptor: AC 120V, 60Hz EUT Rated Power: AC 8-24V~ 50/60Hz 200mA or 5V= 1.5A		
Test Mode	Charging (By adaptor) + Bluetooth link + WiFi link + 433MHz link with indoor chime 2		



Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading [dBuV]	QP Value [dBuV]	QP Limit [dBuV]	QP Margin [dB]	AV Reading [dBuV]	AV Value [dBuV]	AV Limit [dBuV]	AV Margin [dB]
1	0.17	19.87	17.02	36.89	65.06	28.17	3.44	23.31	55.06	31.75
2	0.51	19.64	23.45	43.09	56.00	12.91	9.22	28.86	46.00	17.14
3	1.46	19.69	23.92	43.61	56.00	12.39	8.91	28.60	46.00	17.40
4	2.31	19.79	17.77	37.56	56.00	18.44	3.01	22.80	46.00	23.20
5	2.75	19.81	16.00	35.81	56.00	20.19	2.99	22.80	46.00	23.20
6	3.88	19.82	16.80	36.62	56.00	19.38	0.56	20.38	46.00	25.62

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss



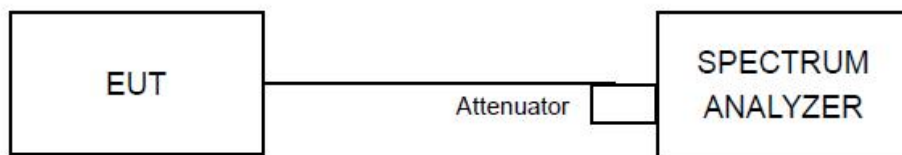
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3.2 Minimum 6dB Bandwidth

3.2.1 Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz

3.2.2 Test Setup



3.2.3 Test Procedures

The EUT was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” for compliance to FCC 47CFR 15.247 requirements (clause 8.2).

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW $\geq$ 3 RBW, peak detector with maximum hold) is implemented by the instrumentation function.

3.2.4 Deviation of Test Standard

No deviation.



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3.2.5 Test Results

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.656	2401.684	2402.340	0.5	PASS
		2440	0.688	2439.664	2440.352	0.5	PASS
		2480	0.708	2479.652	2480.360	0.5	PASS
BLE_2M	Ant1	2402	1.228	2401.372	2402.600	0.5	PASS
		2440	1.244	2439.356	2440.600	0.5	PASS
		2480	1.112	2479.452	2480.564	0.5	PASS

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0249	2401.4991	2402.5240	---	---
		2440	1.0244	2439.4969	2440.5213	---	---
		2480	1.0259	2479.4959	2480.5218	---	---
BLE_2M	Ant1	2402	2.0455	2400.9994	2403.0449	---	---
		2440	2.0695	2438.9901	2441.0596	---	---
		2480	2.0654	2478.9857	2481.0511	---	---

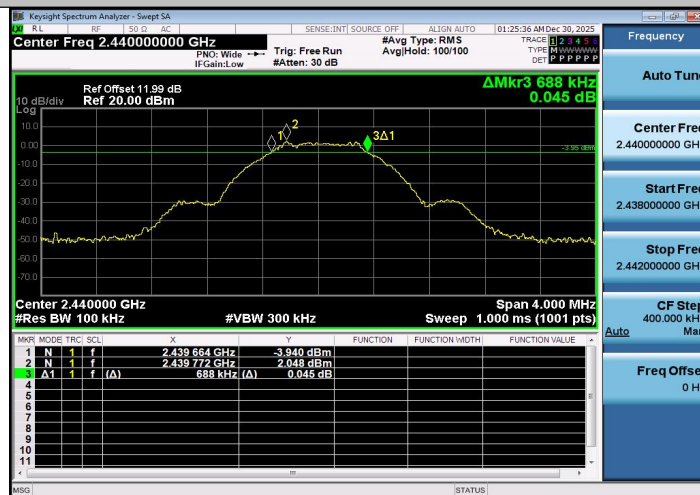


TEST REPORT N°: CRWJ-ESH-P25120941B-2

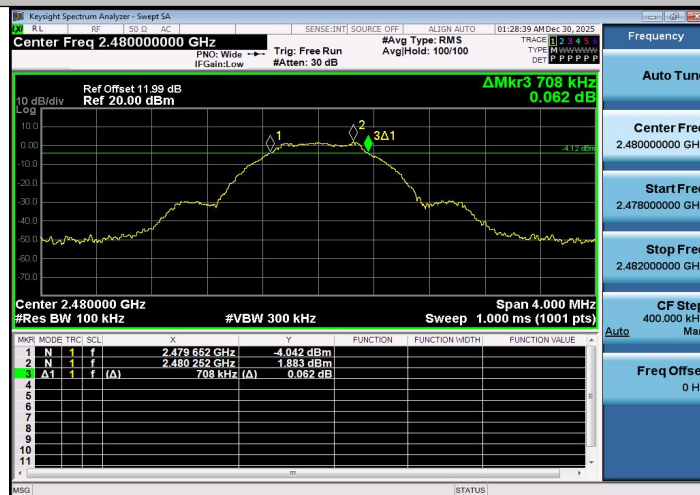
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



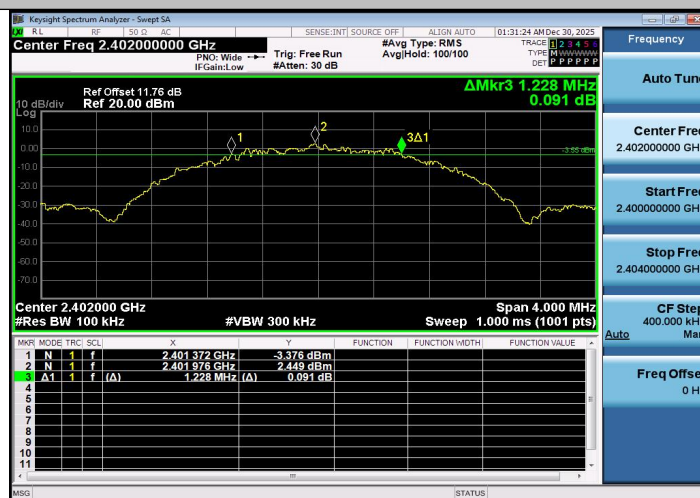
BLE_1M_Ant1_2480





TEST REPORT N°: CRWJ-ESH-P25120941B-2

BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



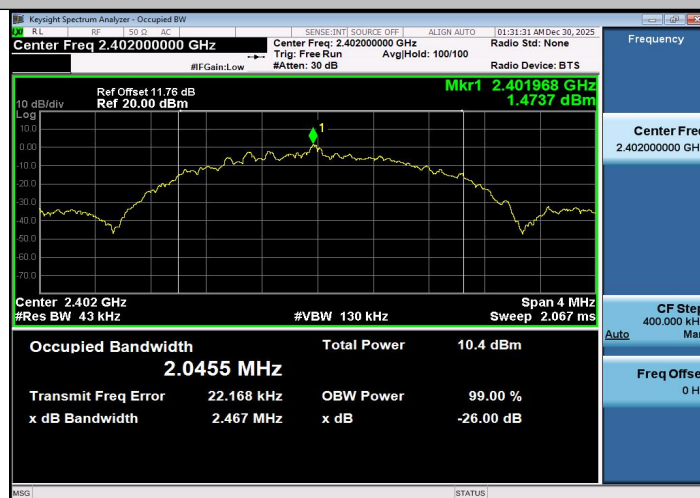
BLE_2M_Ant1_2480



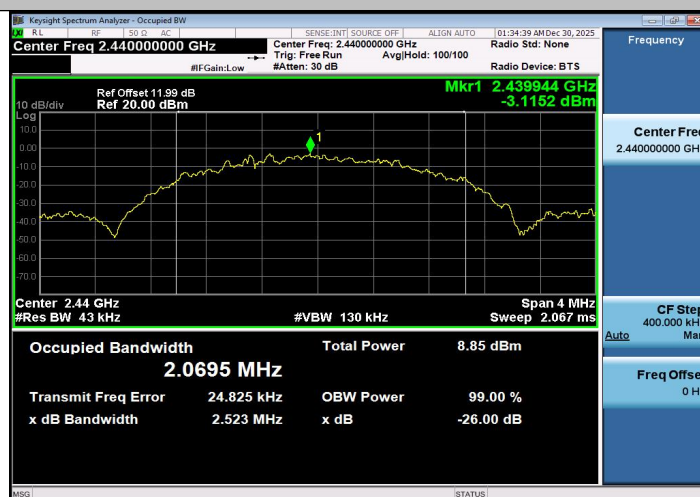


TEST REPORT N°: CRWJ-ESH-P25120941B-2

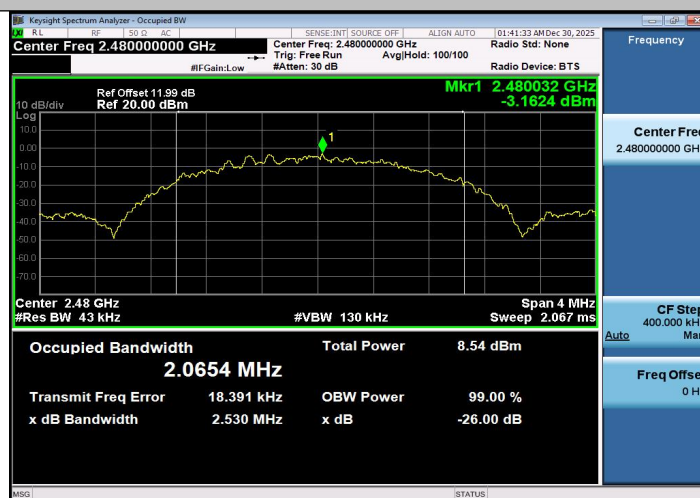
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480





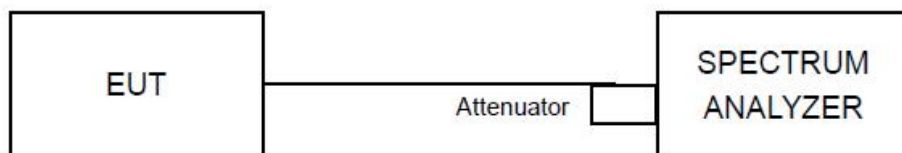
TEST REPORT N°: CRWJ-ESH-P25120941B-2

3.3 Conducted Output Power

3.3.1 Limit

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30 dBm)

3.3.2 Test Setup



3.3.3 Test Procedures

The EUT was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” for compliance to FCC 47CFR 15.247 requirements (clause 9.2.2.4).

1. Set RBW $\geq$ DTS bandwidth
2. Set VBW $\geq$ 3 RBW.
3. Set Span $\geq$ 3 RBW.
4. Sweep time = No faster than coupled (auto) time.
5. Detector = peak
6. Trace mode = max hold.
7. Allow trace to fully stabilize
8. Use peak marker function to determine the peak amplitude level.

3.3.4 Deviation of Test Standard

No deviation.



TEST REPORT N°: CRWJ-ESH-P25120941B-2

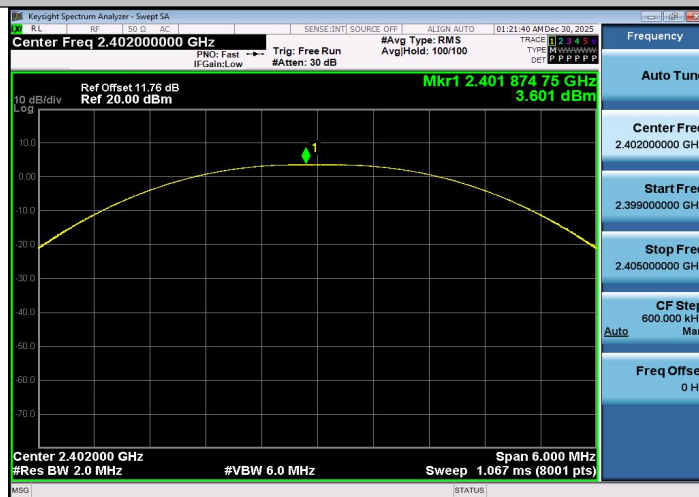
3.3.5 Test Results

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Antenna Gain[dBi]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	3.60	≤30	1.05	4.65	≤36	PASS
		2440	3.16	≤30	1.05	4.21	≤36	PASS
		2480	2.96	≤30	1.05	4.01	≤36	PASS
BLE_2M	Ant1	2402	4.15	≤30	1.05	5.20	≤36	PASS
		2440	2.98	≤30	1.05	4.03	≤36	PASS
		2480	2.75	≤30	1.05	3.90	≤36	PASS

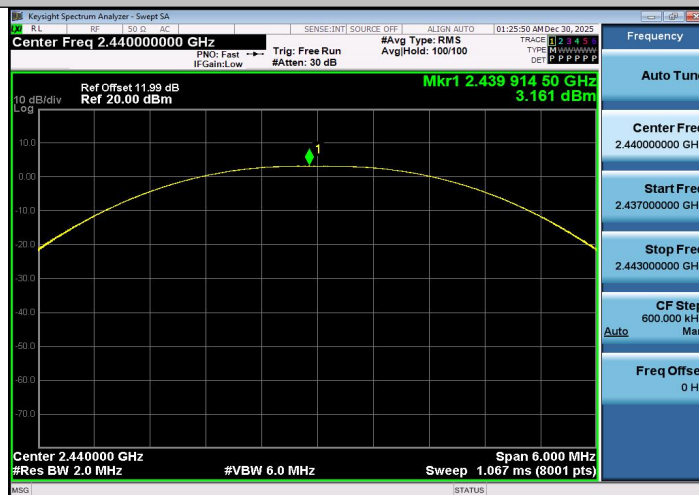


TEST REPORT N°: CRWJ-ESH-P25120941B-2

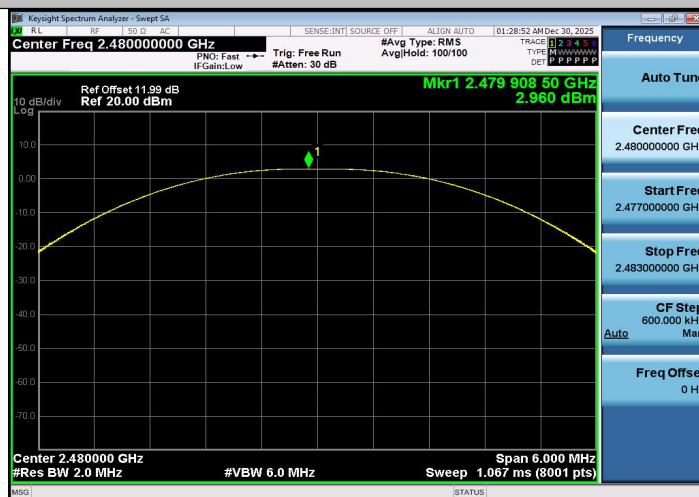
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



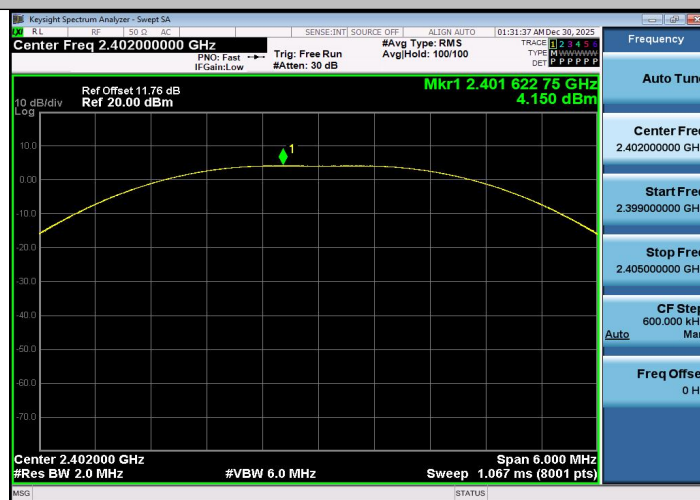
BLE_1M_Ant1_2480



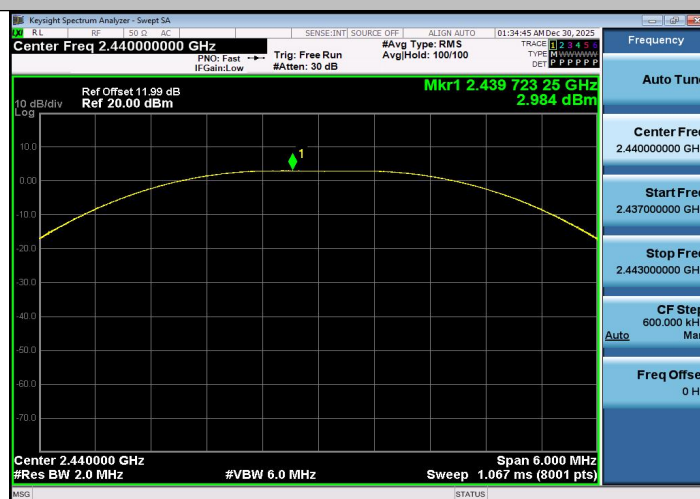


TEST REPORT N°: CRWJ-ESH-P25120941B-2

BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480





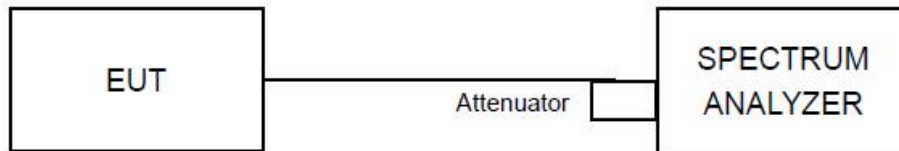
TEST REPORT N°: CRWJ-ESH-P25120941B-2

3.4 Power Spectral Density

3.4.1 Limit

The Maximum of Power Spectral Density Measurement is 8 dBm.

3.4.2 Test Setup



3.4.3 Test Procedures

The power output per FCC §15.247(e) was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” (clause 10.5) for compliance to FCC 47CFR 15.247 requirements.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = No faster than coupled (auto) time.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

3.4.4 Deviation of Test Standard

No deviation.



TEST REPORT N°: CRWJ-ESH-P25120941B-2

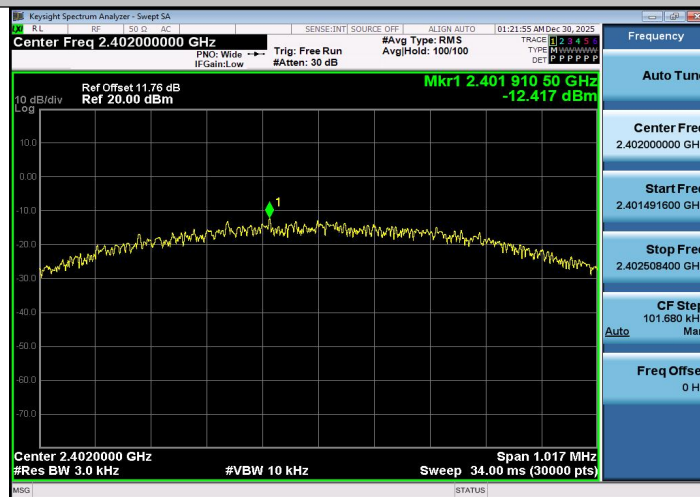
3.4.5 Test Results

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-12.42	≤8.00	PASS
		2440	-13.17	≤8.00	PASS
		2480	-10.97	≤8.00	PASS
BLE_2M	Ant1	2402	-13.40	≤8.00	PASS
		2440	-14.47	≤8.00	PASS
		2480	-14.61	≤8.00	PASS



TEST REPORT N°: CRWJ-ESH-P25120941B-2

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



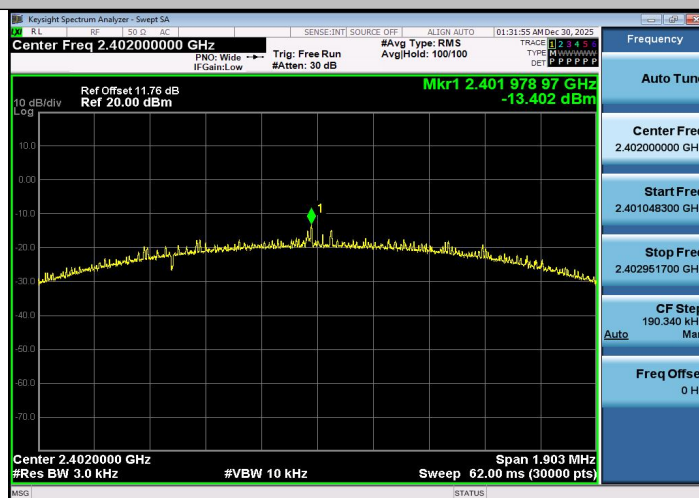
BLE_1M_Ant1_2480



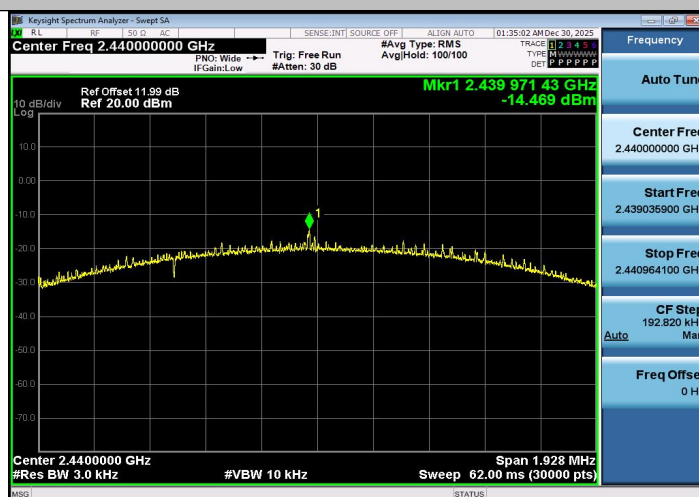


TEST REPORT N°: CRWJ-ESH-P25120941B-2

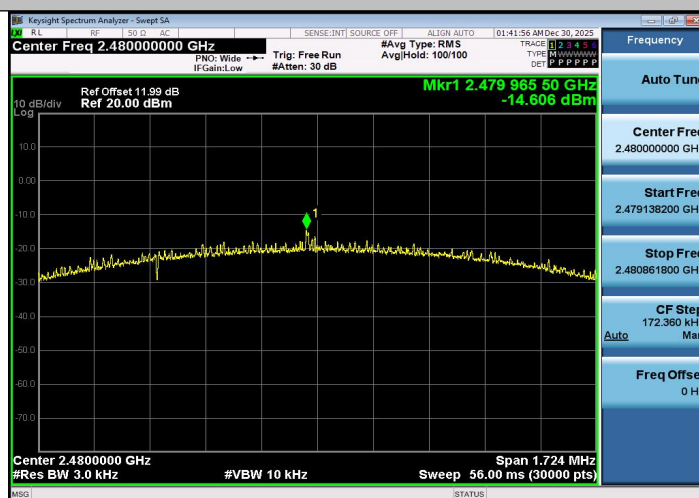
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480





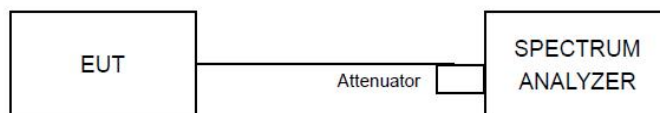
TEST REPORT N°: CRWJ-ESH-P25120941B-2

3.5 Conducted Band Edges Measurement

3.5.1 Limit

Below 20 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

3.5.2 Test Setup



3.5.3 Test Procedures

The EUT was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” (clause 11.0) for compliance to FCC 47CFR 15.247 requirements.

MEASUREMENT PROCEDURE REF

1. Set instrument center frequency to DTS channel center frequency.
2. Set the span to ≥ 1.5 times the DTS bandwidth.
3. Set the RBW = 100 kHz.
4. Set the VBW $\geq [3 \times \text{RBW}]$
5. Detector = peak.
6. Sweep time = No faster than coupled (auto) time.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

MEASUREMENT PROCEDURE OOB

1. Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution. NOTE—the number of points can also be increased for large spans to retain frequency resolution

2. Set RBW = 100 kHz.
3. Set VBW $\geq [3 \times \text{RBW}]$
4. Detector = peak.
5. Sweep = No faster than coupled (auto) time.
6. Trace Mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

3.5.4 Deviation of Test Standard

No deviation.



TEST REPORT N°: CRWJ-ESH-P25120941B-2

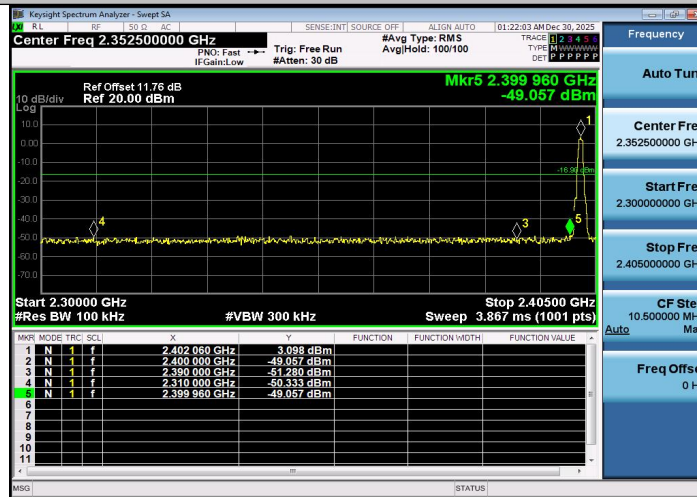
3.5.5 Test Results

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	3.10	-49.06	≤-16.9	PASS
		High	2480	1.29	-48.33	≤-18.71	PASS
BLE_2M	Ant1	Low	2402	1.01	-30.73	≤-18.99	PASS
		High	2480	2.34	-48.12	≤-17.66	PASS

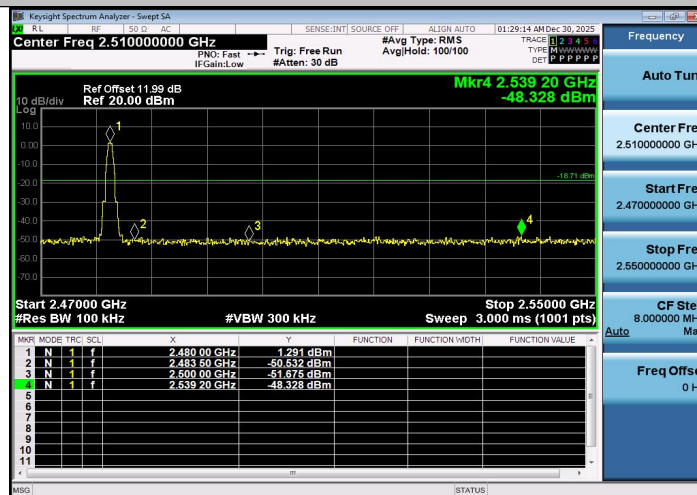


TEST REPORT N°: CRWJ-ESH-P25120941B-2

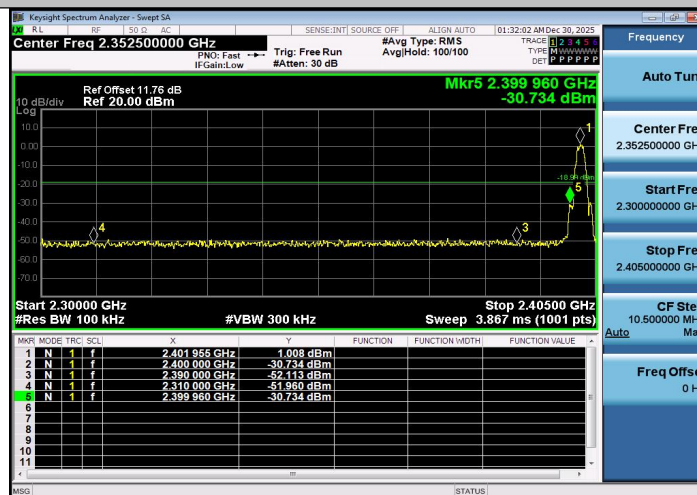
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



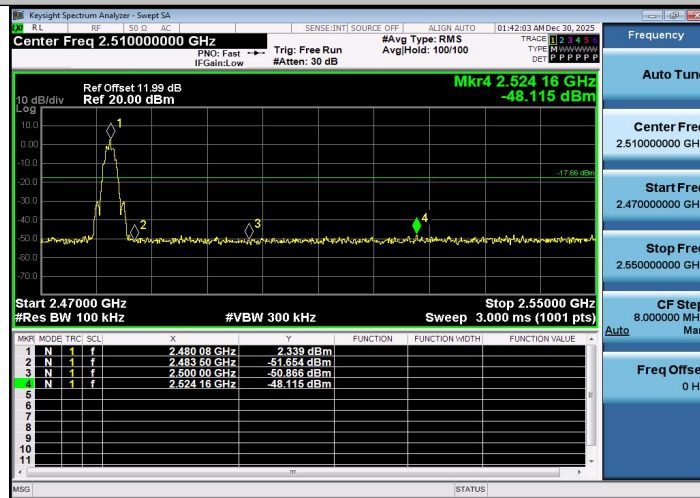
BLE_2M_Ant1_Low_2402





TEST REPORT N°: CRWJ-ESH-P25120941B-2

BLE_2M_Ant1_High_2480





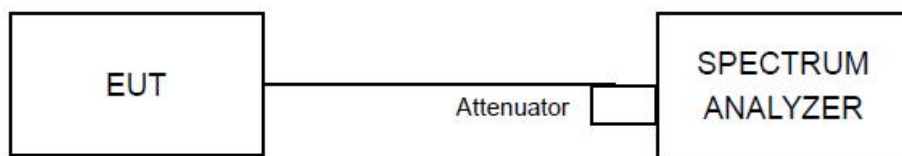
TEST REPORT N°: CRWJ-ESH-P25120941B-2

3.6 Conducted Spurious Emissions

3.6.1 Limit

Below 20 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

3.6.2 Test Setup



3.6.3 Test Procedures

The EUT was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” (clause 11.0) for compliance to FCC 47CFR 15.247 requirements.

MEASUREMENT PROCEDURE REF

1. Set instrument center frequency to DTS channel center frequency.
2. Set the span to ≥ 1.5 times the DTS bandwidth.
3. Set the RBW = 100 kHz.
4. Set the VBW $\geq [3 \times \text{RBW}]$.
5. Detector = peak.
6. Sweep time = No faster than coupled (auto) time.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level

MEASUREMENT PROCEDURE OOB

1. Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution.

2. Set RBW = 100 kHz.
3. Set VBW $\geq [3 \times \text{RBW}]$.
4. Detector = peak.
5. Sweep = No faster than coupled (auto) time.
6. Trace Mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

3.6.4 Deviation of Test Standard

No deviation.



TEST REPORT N°: CRWJ-ESH-P25120941B-2

3.6.5 Test Results

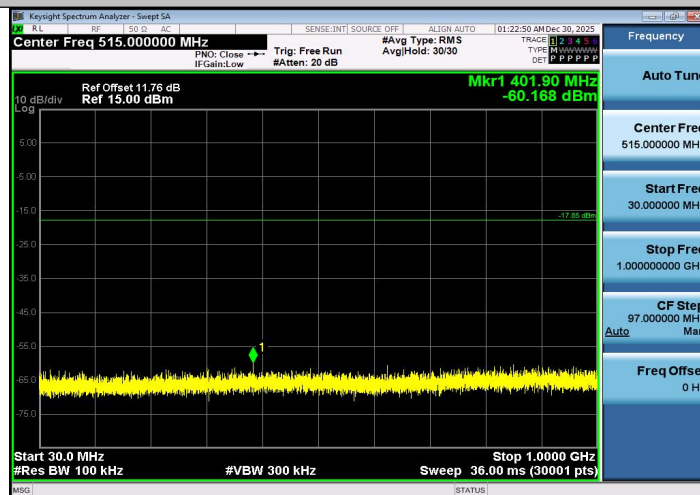
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	2.15	2.15	---	PASS
			30~1000	2.15	-60.17	≤-17.85	PASS
			1000~26500	2.15	-43.54	≤-17.85	PASS
		2440	Reference	1.31	1.31	---	PASS
			30~1000	1.31	-59.83	≤-18.69	PASS
			1000~26500	1.31	-43.7	≤-18.69	PASS
		2480	Reference	0.93	0.93	---	PASS
			30~1000	0.93	-59.27	≤-19.07	PASS
			1000~26500	0.93	-42.55	≤-19.07	PASS
BLE_2M	Ant1	2402	Reference	0.36	0.36	---	PASS
			30~1000	0.36	-59.78	≤-19.64	PASS
			1000~26500	0.36	-44.02	≤-19.64	PASS
		2440	Reference	-1.56	-1.56	---	PASS
			30~1000	-1.56	-59.65	≤-21.56	PASS
			1000~26500	-1.56	-43.09	≤-21.56	PASS
		2480	Reference	-0.84	-0.84	---	PASS
			30~1000	-0.84	-60.07	≤-20.84	PASS
			1000~26500	-0.84	-42.86	≤-20.84	PASS

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BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



BLE_1M_Ant1_2402_1000~26500

