

FCC Test Report

Application No.: DNT2502130118R0996-01239 Applicant: Shenzhen guo-link Technology Co., Ltd. Room 10102, Workshop 4, No. 1 Road, Shangxue Technology City, Xinxue Address of Applicant: Community, Bantian Sub-district, Longgang District, Shenzhen City, China **EUT Description:** Locator device Model No.: k7 2BGM6-K7 FCC ID: Input:DC 5V/1A From Wireless Charging; **Power Supply:** DC 3.7V From Rechargeable Lithium-ion Battery Trade Mark: **GUO-LINK** 47 CFR FCC Part 2, Subpart J Standards: 47 CFR Part 15, Subpart C ANSI C63.10: 2013 Date of Receipt: 2025/02/15 Date of Test: 2025/02/16 to 2025/03/06 Date of Issue: 2025/03/07 Test Result: PASS Vargne Jon Penyils chen Vine Shen (Testing Engineer) **Prepared By: Reviewed By:**

Approved By:

(Project Engineer) (Manager)



Note: If there is any objection to the results in this report, please submit a written inquiry to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp, and is issued by the company in accordance with the requirements of the "Conditions of Issuance of Test Reports" printed in the attached page. Unless otherwise stated, the results presented in this report only apply to the samples tested this time. Partial reproduction of this report is not allowed unless approved by the company in writing.

Dongguan DN Testing Co., Ltd.

Add: No. 1, West Fourth Street, Xingfa South Road, Wusha Community, Chang 'an Town, Dongguan City, Guangdong P.R.China Tel:+86-769-88087383 Web: www.dn-testing.com E-mail: service@dn-testing.com



Report No.: DNT2502130118R0996-01239 **Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V2.0		Mar.07, 2025	Valid	Original Report



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Test Summary

Test Item	Test Requirement	Test Method	Test Result	Result
Antenna Requirement	15.203/247(b)	<u> </u>	Clause 3.1	PASS
Duty Cycle	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	Clause 3.2	PASS
DTS (6 dB) Bandwidth	15.247 (a)(2)	ANSI C63.10: 2013	Clause 3.3	PASS
Conducted Output Power	15.247 (b)(3)	ANSI C63.10: 2013	Clause 3.4	PASS
Power Spectral Density	15.247 (e)	ANSI C63.10: 2013	Clause 3.5	PASS
Band-edge for RF Conducted Emissions	15.247(d)	ANSI C63.10: 2013	Clause 3.6	PASS
RF Conducted Spurious Emissions	15.247(d)	ANSI C63.10: 2013	Clause 3.7	PASS
Radiated Spurious Emissions	15.247(d);15.205/15.209	ANSI C63.10: 2013	Clause 3.8	PASS
Restricted bands around fundamental frequency (Radiated Emission)	15.247(d);15.205/15.209	ANSI C63.10: 2013	Clause 3.9	PASS
AC Power Line Conducted Emission	15.207	ANSI C63.10: 2013	Clause 3.10	PASS

Note:

1. "N/A" denotes test is not applicable in this test report.



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2 General Information

2.1 Test Location

Company:	Dongguan DN Testing Co., Ltd
Address:	No. 1, West Fourth Street, South Xinfa Road, Wusha Liwu, Chang ' an Town, Dongguan City, Guangdong P.R.China
Test engineer:	Wayne Lin

2.2 General Description of EUT

Manufacturer:	Shenzhen guo-link Technology Co., Ltd.		
Address of Manufacturer:	Room 10102, Workshop 4, No. 1 Road, Shangxue Technology City, Xinxue Community, Bantian Sub-district, Longgang District, Shenzhen City, China		
EUT Description:	Locator device		
Test Model No.:	k7		
Additional Model(s):			
Chip Type:	CY8018		
Serial Number	PR2502130118R0996		
Power Supply	Input:DC 5V/1A From Wireless Charging; DC 3.7V From Rechargeable Lithium-ion Battery		
Trade Mark:	GUO-LINK		
Hardware Version:	V1.0		
Software Version:	V1.0		
Operation Frequency:	2402 MHz to 2480 MHz		
Type of Modulation:	GFSK		
Sample Type:	□ Portable Device, □ Module, ⊠ Mobile Device		
Antenna Type:	□ External, ⊠ Integrated		
Antenna Ports	☐ Ant 1, ☐ Ant 2, ☐ Ant 3		
Antenna Gain*:	⊠ Provided by applicant		
	2.67dBi		
	⊠ Provided by applicant		
RF Cable*:	0.5dB(0.6~1GHz); 0.8dB(1.4~2GHz); 1.0dB(2.1~2.7GHz); 1.5dB(3~4GHz); 1.8dB(4.4~6GHz);		

Remark:

*All models are just name differences, motherboard, PCB circuit board, chip, electronic components, appearance is all the same.

*Since the above data and/or information is provided by the applicant relevant results or conclusions of this report are only made for these data and/or information, DNT is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.



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2.3 Channel List

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

2.4 Test Environment and Mode

Operating Environment:	
Temperature:	20~25.0 °C
Humidity:	45~56 % RH
Atmospheric Pressure:	101.0~101.30 KPa
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.

2.5 Power Setting of Test Software

Software Name		662x_FCC_Rev2.1	
Frequency(MHz)	2402	2440	2480
BLE 1M Setting	Default	Default	Default
BLE 2M Setting	Default	Default	Default

2.6 Description of Support Units

The EUT has been tested independent unit.



2.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

Lab A:

• FCC, USA

Designation Number: CN1348

A2LA (Certificate No. 7050.01)

DONGGUAN DN TESTING CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 7050.01.

Innovation, Science and Economic Development Canada

DONGGUAN DN TESTING CO., LTD. EMC Laboratory has been recognized by ISED as an accredited testing laboratory. CAB identifier is CN0149.

IC#: 30755.

2.8 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1 (DTS Bandwidth	±0.0196%
2	Maximum Conducted Output Power	±0.686 dB
3	Maximum Power Spectral Density Level	±0.743 dB
4	Band-edge Compliance	±1.328 dB
5	Unwanted Emissions In Non-restricted Freq Bands	9KHz-1GHz:±0.746dB 1GHz-26GHz: ±1.328dB

No.	Item	Measurement Uncertainty		
1	Conduction Emission	Measurement Uncertainty ± 3.0dB (150kHz to 30MHz) ± 4.8dB (Below 1GHz) ± 4.8dB (1GHz to 6GHz) ± 4.5dB (6GHz to 18GHz)		
		± 4.8dB (Below 1GHz)		
2	Dedicted Facility	± 4.8dB (1GHz to 6GHz)		
	Radiated Emission	± 4.5dB (6GHz to 18GHz)		
		± 5.02dB (Above 18GHz)		



2.9 Equipment List

For Connect EUT Antenna Terminal Test						
Description	Manufacturer	Model	Serial Number	Cal date	Due date	
Signal Generator	Keysight	N5181A-6G	MY48180415	2024-10-23	2025-10-22	
Signal Generator	Keysight	N5182B	MY57300617	2024-10-23	2025-10-22	
Power supply	Keysight	E3640A	ZB2022656	2024-10-23	2025-10-22	
Radio Communication Tester	R&S	CMW500	105082	2024-10-23	2025-10-22	
Spectrum Analyzer	Aglient	N9010A	MY52221458	2024-10-23	2025-10-22	
BT/WIFI Test Software	Tonscend	JS1120 V3.1.83	NA	NA	NA	
RF Control Unit	Tonscend	JS0806-2	22F8060581	NA	NA	
Power Sensor	Anritsu	ML2495A	2129005	2024-10-23	2025-10-22	
Pulse Power Sensor	Anritsu	MA2411B	1911397	2024-10-23	2025-10-22	
temperature and humidity box	SCOTEK	SCD-C40-80PRO	6866682020008	2024-10-23	2025-10-22	

Test Equipment for Conducted Emission					
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Receiver	R&S	ESCI3	101152	2024-10-23	2025-10-22
LISN	R&S	ENV216	102874	2024-10-23	2025-10-22
ISN	R&S	ENY81-CA6	1309.8590.03	2024-10-23	2025-10-22

Test Ec	quipment for F	Radiated Emis	sion(30MHz-	-1000MHz	z)	
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date	
Receiver	R&S	ESR7	ESR7 102497		2025-10-22	
Test Software	ETS-LINDGREN	TILE-FULL	NA	NA	NA	
RF Cable	ETS-LINDGREN	RFC-NMS-100- NMS-350-IN	NA	2024-10-23	2025-10-22	
Log periodic antenna	periodic antenna ETS-LINDGREN		01475	2022-11-28	2025-11-27	
Pre-amplifier	Schwarzbeck	BBV9743B	00423	2024-10-23	2025-10-22	



Test E	Test Equipment for Radiated Emission(Above 1000MHz)									
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date					
Frequency analyser	Keysight	N9010A	MY52221458	2024-10-23	2025-10-22					
RF Cable	ETS-LINDGREN	RFC-NMS-100- NMS-350-IN	NA	2024-10-23	2025-10-22					
Horn Antenna	ETS-LINDGREN	3117	00252567	2022-11-28	2025-11-27					
Double ridged waveguide antenna	ETS-LINDGREN	3116C	00251780	2022-11-28	2025-11-27					
Test Software	ETS-LINDGREN	TILE-FULL	NA	NA	NA					
Pre-amplifier	ETS-LINDGREN	3117-PA	252567	2024-10-23	2025-10-22					
Pre-amplifier	ETS-LINDGREN	3116C-PA	251780	2024-10-23	2025-10-22					

2.10 Assistant equipment used for test

Code	Equipment	Manufacturer	Model No.	Equipment No.
	Adapter	Ao tong	GA-1202000C	JS-DN-RF-027
2	Wireless Charging	Manyi	ZGJ221	1
3	Computer	acer	N22C8	EMC notebook01



3 Test results and Measurement Data

3.1 Antenna Requirement

Standard requirement: 47 CFR Part 15C Section 15.203 /247(c)

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.67dBi.



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3.2 Duty Cycle

Refer to section : Appendix A

Note:

- 1.If duty cycle <98 %, the conducted average output power and average power spectral density should be add duty factor.
- 2.If duty cycle \geq 98 %,the EUT is consider to be transmitting continuously,the conducted average output power
 - and average power spectral density no need to add duty factor(consider to be zero).
- 3. The conducted peak output power and peak power spectral density no need to consider duty factor.
- 4. The on-time time is transmission duration(T).



3.3 DTS (6 dB) Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)	
Test Method:	ANSI C63.10: 2013 Section 11.8.1 Option 1	~
Test Setup:	Spectrum Analyzer E.U.T	an an
	Non-Conducted Table	5
	Ground Reference Plane	
Instruments Used:	Refer to section 2.9 for details	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates	
Final Test Mode:	Through Pre-scan, find the the worst case of GFSK	07
Limit:	≥ 500 kHz	
Test Results:	Pass A A A	<u> </u>

The detailed test data see: Appendix B



3.4 Conducted Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10: 2013 Section 11.9.1.3
Test Setup:	POWER METER E.U.T Non-Conducted Table
	Ground Reference Plane
Test Instruments:	Refer to section 2.9 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the the worst case of GFSK
Limit:	30dBm
Test Results:	Pass

The detailed test data see: Appendix C



3.5 Power Spectral Density

Test Requirement:	47 CFR Part 15C Section 15.247 (e)
Test Method:	ANSI C63.10: 2013 Section 11.10.2
Test Setup:	Spectrum Analyzer E.U.T
	Ground Reference Plane
Test Instruments:	Refer to section 2.9 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the the worst case of GFSK
Limit:	≤8.00dBm/3kHz
Test Results:	Pass

The detailed test data see: Appendix D



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3.6 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2013 Section 11.13
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table
	Ground Reference Plane
Instruments Used:	Refer to section 2.9 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the the worst case of GFSK
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

The detailed test data see: Appendix E



3.7 RF Conducted Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2013 Section 11.11
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
Instruments Used:	Refer to section 2.9 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the worst case of GFSK;
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

The detailed test data see: Appendix F

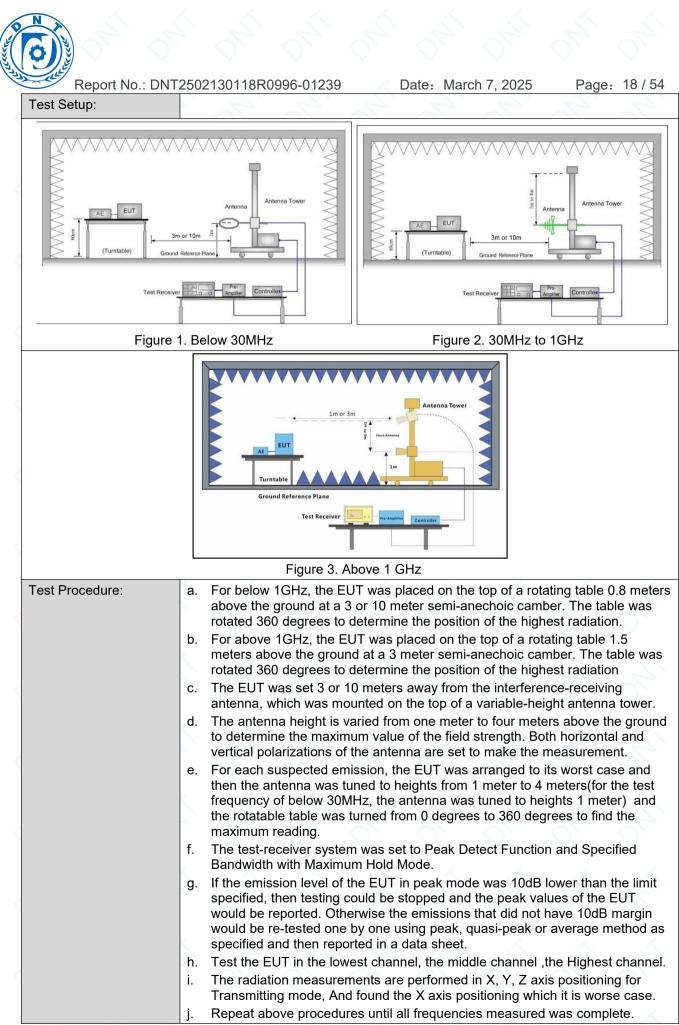


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3.8 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Sectio	n 15.209 and 15.20)5		
Test Method:	ANSI C63.10: 2013 Sect	tion 11.12			\sim \sim
Test Site:	Measurement Distance:	3m or 10m (Semi-A	Anechoic Ch	amber)	
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
		Peak	1MHz	3MHz	Peak
	Above 1GHz	Peak	1MHz	10Hz (DC≥0.98)	Average
	5 2 2	2 2	2	≥1/T (DC<0.98)	2 2
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	<u> </u>	< - <	300
	0.490MHz-1.705MHz	24000/F(kHz)	\sim	2-2	30
	1.705MHz-30MHz	30	-		30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3



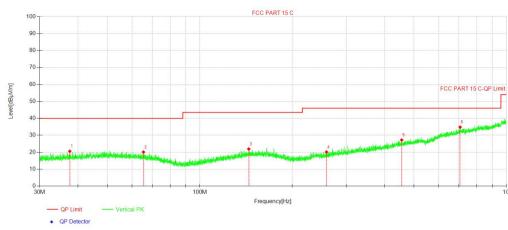
Report No.: DN	2502130118R0996-01239
Test Configuration:	Measurements Below 1000MHz • RBW = 120 kHz • VBW = 300 kHz • Detector = Peak • Trace mode = max hold Peak Measurements Above 1000 MHz • RBW = 1 MHz • VBW ≥ 3 MHz • Detector = Peak • Sweep time = auto • Trace mode = max hold Average Measurements Above 1000MHz • RBW = 1 MHz • VBW ≥ 1 MHz • VBW = 10 Hz, when duty cycle is no less than 98 percent. • VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Charge + Transmitting mode.
Final Test Mode:	Pretest the EUT at Charging+Transmitting mode. Through Pre-scan, find the worst case of GFSK,Only the worst case is recorded the report.
Instruments Used:	Refer to section 2.9 for details
Test Results:	Pass

N

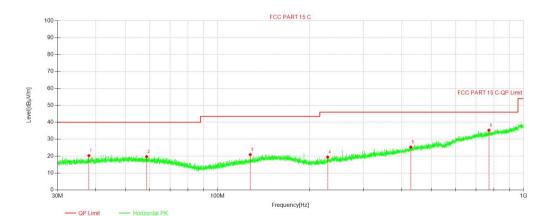


OP Detector

Test data For 30-1000MHz



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	37.63	29.72	-9.10	20.62	40.00	19.38	100	246	PK	Vertical
2	65.43	29.51	-9.38	20.13	40.00	19.87	100	114	PK	Vertical
3	144.39	30.11	-8.20	21.91	43.50	21.59	100	222	PK	Vertical
4	258.78	28.82	-8.66	20.16	46.00	25.84	100	47	PK	Vertical
5	455.43	29.93	-2.70	27.23	46.00	18.77	100	180	PK	Vertical
6	706.45	32.36	2.46	34.82	46.00	11.18	100	274	PK	Vertical

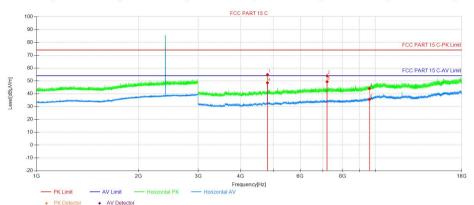


<u> </u>	() () () () () () () () () ()						-			
NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	38.00	29.33	-9.05	20.28	40.00	19.72	100	230	PK	Horizontal
2	58.67	28.31	-8.62	19.69	40.00	20.31	100	79	PK	Horizontal
3	127.93	30.48	-9.62	20.86	43.50	22.64	100	164	PK	Horizontal
4	229.13	29.94	-10.50	19.44	46.00	26.56	100	164	PK	Horizontal
5	428.47	28.78	-3.42	25.36	46.00	20.64	100	49	PK	Horizontal
6	771.45	31.52	3.78	35.30	46.00	10.70	100	104	PK	Horizontal

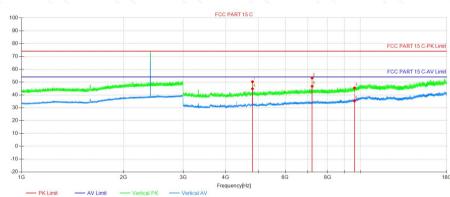


For above 1GHz

BLE 1M 2402MHz



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	4805.34	59.55	-4.61	54.94	74.00	19.06	150	326	PK	Н
2	7207.71	55.69	-1.76	53.93	74.00	20.07	150	204	PK	Н
3	9608.58	43.20	0.88	44.08	74.00	29.92	150	345	PK	Н
4	4803.84	53.13	-4.61	48.52	54.00	5.48	150	309	AV	Н
5	7206.96	51.11	-1.76	49.35	54.00	4.65	150	131	AV	Н
6	9608.58	34.65	0.88	35.53	54.00	18.47	150	148	AV	Н

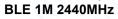


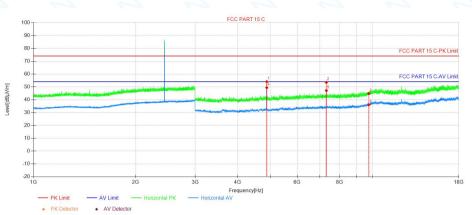
PK Detector
 AV Detector

NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	4805.34	54.89	-4.61	50.28	74.00	23.72	150	90	PK	V
2	7207.71	54.92	-1.76	53.16	74.00	20.84	150	108	PK	V
3	9608.58	44.57	0.88	45.45	74.00	28.55	150	179	PK	V
4	4805.34	49.35	-4.61	44.74	54.00	9.26	150	90	AV	V
5	7206.96	48.48	-1.76	46.72	54.00	7.28	150	108	AV	V
6	9608.58	34.35	0.88	35.23	54.00	18.77	150	179	AV	V

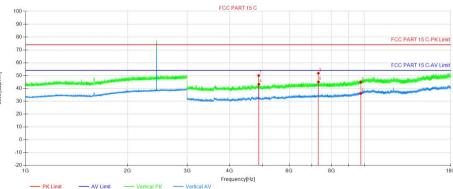


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NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	4881.09	58.76	-4.71	54.05	74.00	19.95	150	270	PK	Н
2	7318.72	55.00	-1.50	53.50	74.00	20.50	150	198	PK	Н
3	9760.09	43.14	1.62	44.76	74.00	29.24	150	143	PK	Н
4	4881.09	54.10	-4.71	49.39	54.00	4.61	150	287	AV	Н
5	7319.47	48.66	-1.50	47.16	54.00	6.84	150	181	AV	Н
6	9760.09	34.39	1.62	36.01	54.00	17.99	150	342	AV	Н



PK Detector

AV Detector

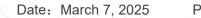
~	NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
	1	4878.84	54.70	-4.70	50.00	74.00	24.00	150	161	PK	V
	2	7318.72	53.32	-1.50	51.82	74.00	22.18	150	38	PK	V
<	3	9760.09	43.25	1.62	44.87	74.00	29.13	150	283	PK	V
	4	4881.09	47.97	-4.71	43.26	54.00	10.74	150	214	AV	V
	5	7319.47	46.58	-1.50	45.08	54.00	8.92	150	179	AV	V
	6	9760.09	34.36	1.62	35.98	54.00	18.02	150	72	AV	V

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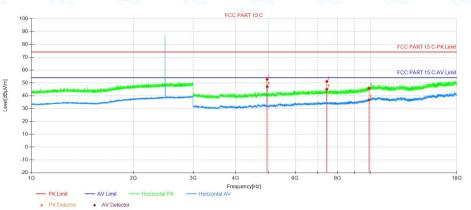
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 Tel:+86-769-88087383
 E-mail: service@dn-testing.com



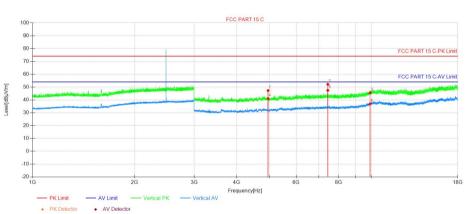


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BLE 1M 2480MHz



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	4959.10	57.63	-4.86	52.77	74.00	21.23	150	288	PK	Н
2	7441.72	52.51	-1.34	51.17	74.00	22.83	150	163	PK	н
3	9920.60	43.60	2.27	45.87	74.00	28.13	150	269	PK	Н
4	4960.60	51.88	-4.86	47.02	54.00	6.98	150	4	AV	н
5	7441.72	46.46	-1.34	45.12	54.00	8.88	150	146	AV	Н
6	9920.60	34.41	2.27	36.68	54.00	17.32	150	360	AV	Н



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	4959.10	52.16	-4.86	47.30	74.00	26.70	150	109	PK	V
2	7440.22	53.50	-1.34	52.16	74.00	21.84	150	199	PK	V
3	9920.60	43.28	2.27	45.55	74.00	28.45	150	55	PK	V
4	4959.85	45.93	-4.86	41.07	54.00	12.93	150	90	AV	V
5	7440.97	48.78	-1.34	47.44	54.00	6.56	150	199	AV	V
6	9920.60	34.68	2.27	36.95	54.00	17.05	150	163	AV	V

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 E-mail: service@dn-testing.com



Note:

1. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe including Ant.Factor and the Cable Factor etc.), The basic equation is as follows:

Result Level= Reading Level + Correct Factor(including Ant.Factor, Cable Factor etc.)

2. The amplitude of 9KHz to 30MHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

3. The amplitude of 18GHz to 25GHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be report.

4. All channels had been pre-test, only the worst case was reported.

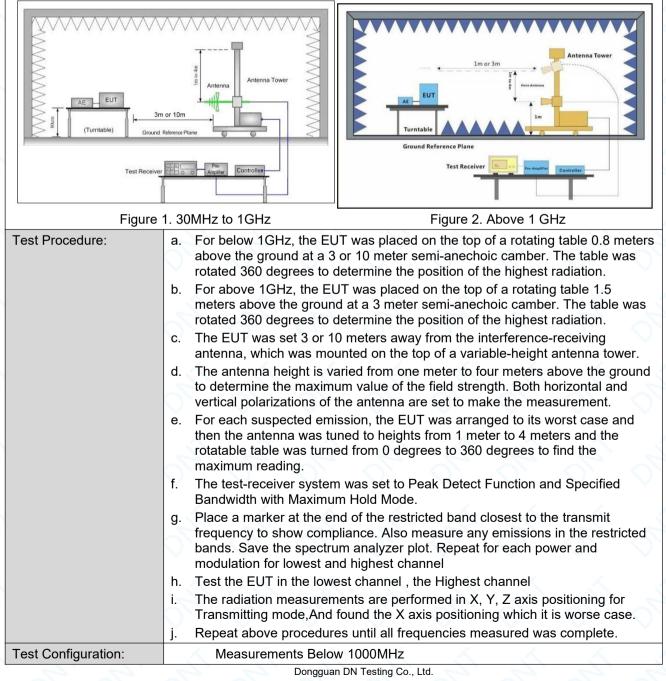


Report No.: DNT2502130118R0996-01239 Date: March 7, 2025 Page: 25/54

3.9 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 1	5.209 and 15.205	
Test Method:	ANSI C63.10: 2013 Section	11.12	<u> </u>
Test Site:	Measurement Distance: 3m	or 10m (Semi-Anechoic C	Chamber)
Limit:	Frequency	Limit (dBuV/m)	Remark
	30MHz-88MHz	40.0	Quasi-peak
	88MHz-216MHz	43.5	Quasi-peak
	216MHz-960MHz	46.0	Quasi-peak
	960MHz-1GHz	54.0	Quasi-peak
		54.0	Average Value
	Above 1GHz	74.0	Peak Value
Tast Osterna			\bigcirc

Test Setup:



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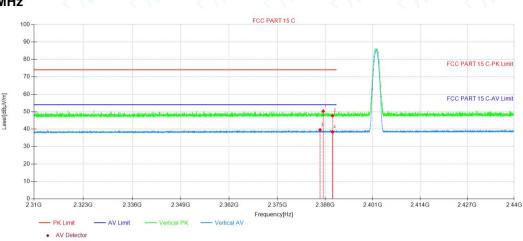


Report No.:	DNT2502130118R0996-01239 Date: March 7, 2025 Page: 26 /	54
	• RBW = 120 kHz	
	• VBW = 300 kHz	
	 Detector = Peak 	
	Trace mode = max hold	Κ
	Peak Measurements Above 1000 MHz	
	• RBW = 1 MHz	
	• VBW \ge 3 MHz	
	Detector = Peak	Κ
	Sweep time = auto	
	Trace mode = max hold	
	Average Measurements Above 1000MHz	
	• RBW = 1 MHz	К
	 VBW = 10 Hz, when duty cycle is no less than 98 percent. 	
	• VBW \ge 1/T, when duty cycle is less than 98 percent where T is the minimum	
	transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.	5
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.	
Final Test Mode:	Pretest the EUT at Charge + Transmitting mode.	К
	Through Pre-scan, find the worst case of GFSK	
	Only the worst case is recorded in the report.	
Instruments Used:	Refer to section 2.9 for details	
Test Results:	Pass	

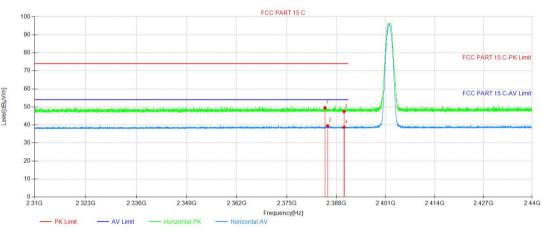


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Test Date BLE 1M 2402MHz



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	2387.46	51.07	-0.80	50.27	74.00	23.73	150	306	Peak	V
2	2390.01	48.51	-0.80	47.71	74.00	26.29	150	249	Peak	V
3	2386.60	40.34	-0.81	39.53	54.00	14.47	150	316	AV	V
4	2390.01	39.18	-0.80	38.38	54.00	15.62	150	226	AV	V



AV Detector

NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	2385.00	50.27	-0.81	49.46	74.00	24.54	150	322	Peak	Н
2	2390.01	48.19	-0.80	47.39	74.00	26.61	150	177	Peak	Н
3	2385.71	40.25	-0.81	39.44	54.00	14.56	150	210	AV	Н
4	2390.01	39.52	-0.80	38.72	54.00	15.28	150	244	AV	Н

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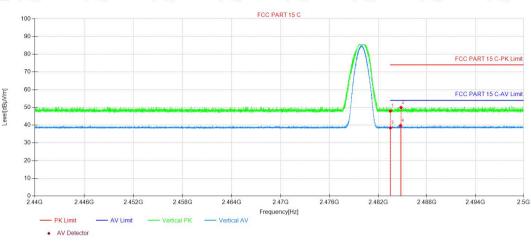
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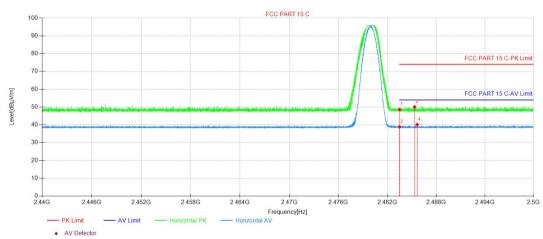


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NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	2483.50	48.27	-0.29	47.98	74.00	26.02	150	199	PK	Vertical
2	2484.81	50.21	-0.27	49.94	74.00	24.06	150	312	PK	Vertical
3	2483.50	38.79	-0.29	38.50	54.00	15.50	150	130	AV	Vertical
4	2484.76	40.04	-0.27	39.77	54.00	14.23	150	108	AV	Vertical



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
1	2483.50	48.87	-0.29	48.58	74.00	25.42	150	14	PK	Horizontal
2	2485.36	50.35	-0.27	50.08	74.00	23.92	150	165	PK	Horizontal
3	2483.50	39.17	-0.29	38.88	54.00	15.12	150	243	AV	Horizontal
4	2485.68	40.45	-0.27	40.18	54.00	13.82	150	3	AV	Horizontal

Note:

1. The BLE 1M is the worse case.

2. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe

including Ant.Factor and the Cable Factor etc.), The basic equation is as follows:

Result Level= Reading Level + Correct Factor(including Ant.Factor ,Cable Factor etc.)



3.10AC Power Line Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15	5.207							
Test Method:	ANSI C63.10: 2013								
Test Frequency Range:	150kHz to 30MHz		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
Limit:		Limit (d	Limit (dBuV)						
	Frequency range (MHz)	Quasi-peak	Average						
	0.15-0.5	66 to 56*	56 to 46*						
	0.5-5	56	46						
	5-30	60	50						
	* Decreases with the logarith	nm of the frequency.							
Test Procedure:	 The mains terminal disturoom. The EUT was connected Impedance Stabilization Nettimpedance. The power cable a second LISN 2, which was plane in the same way as the multiple socket outlet strip w single LISN provided the rate 3) The tabletop EUT was pl ground reference plane. And placed on the horizontal group of the EUT shall be 0.4 m from vertical ground reference plane reference plane. The LISN 1 unit under test and bonded to mounted on top of the ground between the closest points of the EUT and associated equipment and all of the inter the second stability. 	to AC power source thro work) which provides a 5 es of all other units of the bonded to the ground re- e LISN 1 for the unit bein ras used to connect multip- ing of the LISN was not e aced upon a non-metallic d for floor-standing arrang- und reference plane, with a vertical ground refe- ane was bonded to the ho- was placed 0.8 m from t to a ground reference plane d reference plane. This co of the LISN 1 and the EUT ipment was at least 0.8 m	ugh a LISN 1 (Line $0\Omega/50\mu$ H + 5Ω linear EUT were connected to ference g measured. A ole power cables to a exceeded. table 0.8m above the gement, the EUT was erence plane. The rear ference plane. The rear ference plane. The orizontal ground he boundary of the ne for LISNs listance was T. All other units of n from the LISN 2. ositions of						
	ANSI C63.10 2013 on condu								
Test Setup:	AC Mains	AE mog8	Test Receiver						
	Ground Reference Plane								

Exploratory Test Mode:

Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
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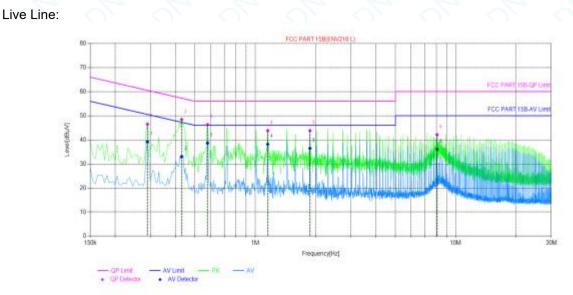
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	Charge + Transmitting mode.
Final Test Mode:	Through Pre-scan, find the the worst case of GFSK
Instruments Used:	Refer to section 2.9 for details
Test Results:	Pass



Measurement Data

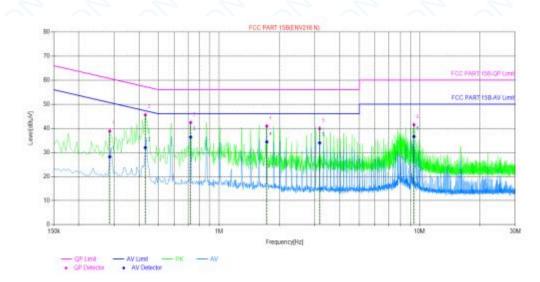
An initial pre-scan was performed on the live and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.



Final	Final Data List												
NO.	Freq. [MHz]	Factor [d8]	QP Value [dBuV]	QP Limit [dBuV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBuV]	AV Margin [dB]	Verdict				
1	0.2895	9.90	46.48	60.54	14.06	39.16	50.54	11.38	PASS				
2	0.429	9.80	48.45	57.27	8.82	33.04	47.27	14.23	PASS				
3	0.5775	9.83	46.28	56.00	9.72	38.65	46.00	7.35	PASS				
4	1.1535	9.72	43.82	56.00	12.18	38.15	46.00	7.85	PASS				
5	1.8735	9.73	43.82	56.00	12.18	36.47	46.00	9.53	PASS				
6	8.0745	9.87	42.14	60.00	17.86	36.14	50.00	13.86	PASS				



Neutral Line:



Final	Final Data List												
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBuV]	QP Limit [dBuV]	QP Margin (dB)	AV Value [dBuV]	AV Limit [dBµV]	AV Margin [dB]	Verdict				
1	0.285	9.88	38.83	60.67	21.84	28.14	50.67	22.53	PASS				
2	0.429	9.83	45.56	57.27	11.71	31.99	47.27	15.28	PASS				
3	0.7215	9.85	42.40	56.00	13.60	36.35	46.00	9.65	PASS				
4	1.7295	9.75	40.92	56.00	15.08	34.32	46.00	11.68	PASS				
5	3.174	9.89	39.86	56.00	16.14	33.96	46.00	12.04	PASS				
6	9.375	9.84	41.47	60.00	18.53	36.57	50.00	13.43	PASS				

Remark:

1. The BLE 1M is the worse case.

2. The following Quasi-Peak and Average measurements were performed on the EUT:

3. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe including LISN Factor and the Cable Factor etc.), The basic equation is as follows:

Result Level= Reading Level + Correct Factor(including LISN Factor, Cable Factor etc.)



Date: March 7, 2025

4 Appendix

Appendix A: Duty Cycle

Test Result

Antenna	Frea(MHz)	ON Time	Period	DC [%]
		l [ms]	[ms]	
	2402	0.44	0.63	69.84
Ant1	2440	0.44	0.63	69.84
\sim	2480	0.44	0.63	69.84
	2402	0.25	0.63	39.68
Ant1	2440	0.25	0.63	39.68
	2480	0.25	0.62	40.32
	Ant1	Ant1 2440 2480 2402 Ant1 2440	Antenna Freq(MHZ) [ms] 2402 0.44 2440 0.44 2480 0.44 2402 0.25 Ant1 2440 0.25	Antenna Freq(MHZ) [ms] [ms] 2402 0.44 0.63 Ant1 2440 0.44 0.63 2480 0.44 0.63 2402 0.25 0.63 Ant1 2440 0.25 0.63



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Test Graphs

							alyzer - Si			
Frequency	16:29 AM Feb 18, 2025 TRACE 1 2 3 4 5 6 TYPE WWWWWW			Trig Delay-2.0	2	2 AC 00000 GHz	50 s	RF Freq 2		en
	DET P P P P P P			Trig: Video #Atten: 20 dB): Fast 🔸					
Auto Tur	tr3 630.0 μs 2.42 dB	ΔMk					Offset 1 24.31		B/div	0 d
				a	3∠		21101			og
Center Fre 2.402000000 GH			_					01		14.3 4.31
2.40200000 GF	TRIGLIVE									4.31 5.69
Start Fre									_	15.7
2.402000000 GH									-	5.7
					1 ********	20				35.7
Stop Fre	mitestypet		hillenseturitellel		9%(A1A	WMKY		<i>PI</i>	44.4	45.7
2.402000000 GH										55.7
									-	5.7
CF Ste	Span 0 Hz	1				GHz	00000			
8.000000 MH Auto Ma	ms (1001 pts)			8.0 MHz	#VBW			8 MH:		_
<u>rato</u> inte	FUNCTION VALUE	TION WIDTH F	FUNCTION FUNC	4.38 dBm	.0 us	× 120		TRC SCL	NDDE	X6 1
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01				2.42 QB	.Δ) 24 0.	630.		1 1	Δ1	4
								-		5 6
								-	_	7
										9
								_		1

BLE_1M_Ant1_2440

gilent Spectrum Analyzer - Swept SA		SENSE: PULSE SOUR	RCE OFF ALIGNAUT	11:19:29 AM Feb 18, 2025	1
Center Freq 2.440000000		rig Delay-2.000 ms rig: Video		TRACE 1 2 3 4 5 6	Frequency
Ref Offset 14.31 dB 10 dB/div Ref 24.31 dBm		Atten: 20 dB		ΔMkr3 630.0 μs 4.03 dB	Auto Tui
0g 14.3 4.31 5.69	€3∆1			TRIGLVL	Center Fre 2.440000000 G
15.7 25.7 36.7	2∆1				Start Fr 2.440000000 G
45.7 ******* 55.7	Autochichion		herioxietari		Stop Fr 2.440000000 G
enter 2.440000000 GHz es BW 8 MHz	#VBW 8.0			Span 0 Hz 2.000 ms (1001 pts)	CF St 8.000000 M Auto M
	120.0 µs	2.73 dBm	CTION FUNCTION WID	TH FUNCTION VALUE	
2 Δ1 1 t (Δ) 3 Δ1 1 t (Δ) 4 5 6	440.0 μs (Δ) 630.0 μs (Δ)	-46.20 dB 4.03 dB			Freq Offs 0
7 8 9 0					
11				×	

BLE_1M_Ant1_2480

Agilen		ctrur																			
Cen		Fre	RF eq 2		50 Q DOO		0 G	Hz	z D: Fast		Trig Del				ALIGNA ype: RM			TRACE	2 3 4 5 P P P P	6	Frequency
10 d	B/div			Offse 24.					o: Fasi		#Atten: 2					2	\Mkr	3 63		s	Auto Tune
Log 14.3 4.31		Ø	1							♦ ³	Δ1								TRICLY		Center Freq 2.480000000 GHz
-15.7 -25.7 -35.7					_		_	,2/													Start Freq 2.480000000 GHz
-45.7 -55.7 -65.7	- Milited Milited	Υ						6. ₁₁₁ 1	fleshing	ni)			Phy	¥441+	μ 			- 41	gurlwiky.		Stop Freq 2.480000000 GHz
Cen Res	BW	81	VIH2	2	10 G				#\	/BW	8.0 MHz					·	.000 m	ıs (10	<u> </u>)	CF Step 8.000000 MHz Auto Man
3 4 5 6 7		1	t t	(Δ) (Δ)		*		440	.0 µs .0 µs .0 µs		3.68 d -45.67 2.91	dB	FUNCTIO		FUNCTION	MDTH	FU	NCTIONA	ALUE		Freq Offset 0 Hz
8 9 10 11 < MSG											3					STATUS	-				

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Date: March 7, 2025

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	PNO: East - T	rig Delay-2.000 ms rig: Video	#Avg Type: RMS	TRAC	E 1 2 3 4 5 6	Frequency
	IFGain:Low #/	utten: 20 dB		∆Mkr3 6	30.0 µs	Auto Tun
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						Start Fre 2.402000000 GH
1/*Norphine	hele and which and	htsin-dihij\il	«///////////	istenterien filter	iptakilistaki	Stop Fre 2.402000000 GH
Hz	#VBW 8.0			o 2.000 ms (*	1001 pts)	CF Ste 8.000000 MH Auto Ma
t (Δ)	1.370 ms 250.0 μs (Δ) 630.0 μs (Δ)	2.29 dBm 4.52 dB 4.68 dB				Freq Offse 0 H
	g 2.402000000 Ref Offset 14.31 dB Ref 24.31 dBm 	q.2.402000000 GHz T PHO: Fax: T IFG-init.ow T Ver Offset 14.31 dB T Ver 04.4.11 dB T Ver 04.11 dB T Ver 04.11 dB T Ver 04.11 dB T	q. 2.402000000 GHz Trig Delay-2000 ms PHO: Fast Trig: Udeo #Atten: 20 dB #Atten: 20 dB Ref Offset 14.31 dB #Atten: 20 dB Ref 0.4.31 dB #Atten: 4.31 dB Ver 0.4.31 dB #Atten: 4.31 dB 2.4.31 dBm #Atten: 4.31 dB 2.4.32 dBm #Atten: 4.31 dB 2.4.32 dBm #Atten: 4.31 dB 2.4.32 dBm #VBW 8.0 MHz 2.3.370 ms 2.28 dBm 4.1.370 ms 2.28 dBm 4.1.370 ms 2.28 dBm	q.2.402000000 GHz Trig Euley 2000 ms #Avg Type: RMS PHO: Fair Trig: Udeo #Atten: 20 dB Ref Offset 14.31 dB Ref 24.31 dB Image: State 1.31 dB Image: State 1.31 dB Image: State 1.31 dB Image: State 1.31 dB Image: State 1.31 dB Image: State 1.31 dB Image: State 1.31 dB Image: State 1.31 dB Image: State 1.32 ms	q. 2.402000000 CHz PR0:Tature IFG bint.tww Trig biles Trig: Video & Atten: 20 dB Max or Average Trig: Video Atten: 20 dB Max or Average Trig: Video Atten: 20 dB Max or Average Trig: Video Atten: 20 dB Trig:	q. 2.402000000 GHz PROFER Trig Delays Profest Trig Delays Trig Video Max 2 (2.3 + 5) (2.4 + 5) Max 2 (2.3 + 5) <thmax (2.3="" +="" 2="" 5)<="" th=""> Max 2 (2.3 + 5)</thmax>

BLE_2M_Ant1_2440

RL RF	50 Ω AC				M Feb 18, 2025	quency
Center Freq 2	.440000000 GHz	Fast +++ Trig: Vid	ay-2.000 ms #Avg Typ leo	P	PE WWWWWWW	quency
	IFGain		20 dB	į	DET PPPPP	
0 dB/div Ref	Offset 14.31 dB 24.31 dBm			∆Mkr3 (630.0 μs / 3.28 dB	luto Tun
-og 14.3				2Δ1	3∆1	enter Fre
4.31						100000 GH
5.69					TRIG LVL	
15.7			1			Start Fre
25.7					2.4400	100000 GH
35.7 WANNY		4. 414	an and have a president	alaboration and the	MANANAW	
45.7 *******			L	1.124		Stop Fre
65.7					2.4400	100000 GH
Center 2.4400	10000 GHz				Span 0 Hz	CF Ste
Res BW 8 MHz		#VBW 8.0 MH:	z	Sweep 2.000 ms	(1001 pts) 8.0	00000 MH
MKR MODE THE SEL	× 1.370	ms 3.65 c		NCTION WIDTH FUNCT		Ma
2 Δ1 1 t	(Δ) 250.0	μs (Δ) 3.15	6 dB			
3 Δ1 1 t 4	(Δ) 630.0	μs (Δ) 3.28	3 dB		F	reqOffso 0 H
6						UF
7						
8		-				
9						
9 10 11						

BLE_2M_Ant1_2480

Agiler	t Spectr	um An	alyzer - S	wept SA														
Cen	ter Fi	RF req 1	50 2.4800	Ω AC	D GH	Z IO: Fast		Trig Dela			#Avg		SNAUTO RMS	11:36	D7 AM Feb 1 TRACE 1 2 TYPE WW	3456	Frequen	cy
10 d Log	B/div		Offset	14.31 dE dBm	IFG	iu: Fasi ain:Lov	"	#Atten: 2						∆Mkr:	DET P P	^{pppp}	Auto	Tune
14.3 4.31				1			ſ							02∆1		RIGLVL	Cente 2.48000000	
-15.7 -25.7 -35.7																3∆1	Star 2.48000000	t Freq 10 GHz
-45.7 -55.7 -65.7	-hongadau			Altrond	K.MUAR	aran ya	hu.		Trail.	2044	nilija lijaji	"		Mallavi	Harian Marian	April 12	Stop 2.48000000	Freq 00 GHz
Res	BW 8	MH		GHz		#\	/BW	8.0 MHz					<u> </u>	2.000 m	,	pts)	CF 8.00000 Auto	Step MHz Man
1	NODE 11 Δ1 1 Δ1 1	t	(Δ) (Δ)	×	250	70 ms 0.0 µs 0.0 µs		6.58 d -0.17 -49.15	dB	FUNC	TIDN	FUNCTI	ON WIDTH	Fur	ICTION VALU	JE 🔦	Freq	_
6 7 8						_			-									
10 11 < MSG			I					- 8					STATE	JS	3	>		

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Appendix B: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
	1	2402	0.684	2401.668	2402.352	0.5	PASS
BLE_1M	Ant1	2440	0.688	2439.676	2440.364	0.5	PASS
		2480	0.684	2479.668	2480.352	0.5	PASS
		2402	1.164	2401.416	2402.580	0.5	PASS
BLE_2M	Ant1	2440	1.168	2439.416	2440.584	0.5	PASS
	1	2480	1.176	2479.424	2480.600	0.5	PASS



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Test Graphs

RL RF Center Freq 2	50 Ω AC 2.402000000 GHz PN0	Mide +++ Trig: Free Run	ALIGNAUTO #Avg Type: RMS Avg Hold: 100/100	11:16:36 AM Feb 18, 2025 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P P P P P P	Frequency
0 dB/div Ref	IFGa Offset 14.31 dB 30.00 dBm	n:Low #Atten: 40 dB		△Mkr3 684 kHz 0.098 dB	Auto Tur
		l ²	3∆1	0.80 dBn	Center Fre 2.402000000 GH
20.0			- Among		Start Fre 2.40000000 GH
40.0	Slagen Color			Warman albah an	Stop Fre 2.404000000 GH
enter 2.40200 Res BW 100 H	kHz ×		Sweep 1.	Span 4.000 MHz 000 ms (1001 pts) FUNCTION VALUE	CF Ste 400.000 kH Auto Ma
1 N 1 f 2 N 1 f 3 Δ1 1 f 4 5 6	2.401 668 2.401 748 (Δ) 684				Freq Offs 0 H
7 8 9					

BLE_1M_Ant1_2440

	ım Analyzer - Swep	ot SA					
RL		AC	SEN	SE: PULSE SOURCE OFF	ALIGNAUTO	11:19:36 AM Feb 18, 2025	
enter Fr	eq 2.44000	PNO: Wide IFGain:Lov		e Run Avg	g Type: RMS Hold: 100/100	TRACE 1 2 3 4 5 TYPE MWWWWW DET P P P P P	P
0 dB/div	Ref Offset 14.3 Ref 30.00 d					∆Mkr3 688 kH: -0.300 dE	
og 20.0			A ²				Center Fre
0.0	_		j~	~~~	_	0.74 dBr	2.440000000 G
0.0			1				Start Fr
0.0		mart			home		2.438000000 G
).0	mann	م			- N	manna	Stop Fr
0.0							2.442000000 G
enter 2.4 Res BW	40000 GHz 100 kHz	#V	BW 300 kH	z	Sweep 1	Span 4.000 MH .000 ms (1001 pts) 400.000 k
Krimode Tri 1 N 1	f	X 2.439 676 GHz	1.505 c		FUNCTION WIDTH	FUNCTION VALUE	Auto M
2 N 1 3 Δ1 1 4	f f (Δ)	2.439 752 GHz 688 kHz	6.743 ((Δ) -0.300				Freq Offs 0
6 7 8							
9							
1				-	-		
6					STATU	s	C

BLE_1M_Ant1_2480

Agilent Spectrum Analyzer - Swept SA	
X RL 8F ISO.2 AC SENSE:PULSE SOURCE OFF ALIGNAUTO 11:22:14 AM Feb 18, 2023 Center Freq 2.480000000 GHz #Avg Type: RMS 178AC [1:2:3:45 DN0: Mide → Trig: Free Run AvgHold: 100/100 TVFE/WWWWW	Frequency
If Guint Low #Atten: 40 dB tel ^[] PPPP 10 dB/div Ref Offset 14.31 dB ΔMkr3 684 kH; 00 dB/div P6 30,00 dBm -0.382 dE	P Auto Tune
Δομ 200 100 000 210 220 3Δ1 059.68	Center Freq 2.480000000 GHz
	Start Freq 2.478000000 GHz
400 / Minupangang Andrew Andre	Stop Freq 2.482000000 GHz
Center 2.480000 GHz Span 4.000 MH #Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts	
MCR MCR Tel X Y FB/CTON	Freq Offset
ASG STATUS	

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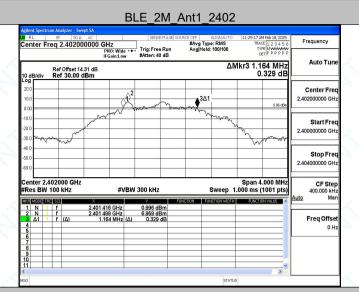
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BLE_2M_Ant1_2440

RL		OΩ AC			SENSE:PULSE SC		ALIGNAUTO	11:33:59 AM		Francisco
enter F	req 2.440	000000	GHz PNO: Wide		rig: Free Run	#Avg Typ Avg Hold	e: RMS I: 100/100	TYPE	123456 MWWWWW	Frequency
			IFGain:Low	#	Atten: 40 dB	-			PPPPP	Auto Tun
0 dB/div	Ref Offset Ref 30.0						ΔN	4kr3 1.16/ -0.3	8 MHz 327 dB	Auto Tuli
.og 20.0										Center Fre
10.0				0 ²		▲3∆	l. 1			2.440000000 GH
0.00				Sm	mm		1		0.94 dBm	2.44000000 GH
			- And	-		ma m	man			
10.0		North					1000			Start Free
20.0	~	N	_					m		2.438000000 GH
30.0 Arro n	mont		-			-		2m	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
40.0				-			-		<u> </u>	04 E
50.0		_		_						Stop Free 2.442000000 GH
60.0		_	_	_						2.442000000 GH
	440000 GH	-								
Res BW		-1Z	#VI	BW 30	0 kHz		Sweep 1	Span 4.0 .000 ms (1		CF Ster 400.000 kH
KR MODE T		X			Y F		NOTION WIDTH		<u> </u>	Auto Ma
1 N 1	f	2.439	416 GHz		1.551 dBm					
2 N 1 3 Δ1 1	f f (Δ)		9 492 GHz 1.168 MHz (5.941 dBm -0.327 dB					Freq Offse
4	Γ(Δ)		1.108 MHZ		-0.327 dB					0 H
5									0.5	UH
7										
8										
9										
10									_	
10 11									>	

BLE_2M_Ant1_2480

Agilent Spectrum Analyzer - Swept SA	
M RL RF 50.Ω AC SENSE:PULSE SOURCE OFF ALIGNAUTO 11:36:14 AM Feb 18,21 Center Freq 2.480000000 GHz #Avg Type: RMS TRACE 12.3.4	
PNO: Wide Trig: Free Run Avg Hold: 100/100	
IFGaint.dw #Altern.40 db	Auto Tuno
Ref Offset 14.31 dB ΔMkr3 1.176 Mi	1Z
10 dB/div Ref 30.00 dBm 0.107 c	
20.0	Center Freq
	2.480000000 GHz
0.00 0.72	3Bn
100 mm With White and	
200	Start Freq
	2.478000000 GHz
200 at M. advit.	
-40.0	Stop Freq
-50.0	2.482000000 GHz
-60.0	
Center 2.480000 GHz Span 4.000 M	Hz CF Step
#Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 p	ts) 400.000 kHz
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE	Auto Man
1 N 1 f 2.479 424 GHz 0.878 dBm	
2 N 1 f 2.480 020 GHz 6.720 dBm 3 Δ1 1 f (Δ) 1.176 MHz (Δ) 0.107 dB	Freq Offset
4	0 Hz
6	
7	
9	-
10	
	×
MSG STATUS	

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Appendix C: Maximum conducted output power

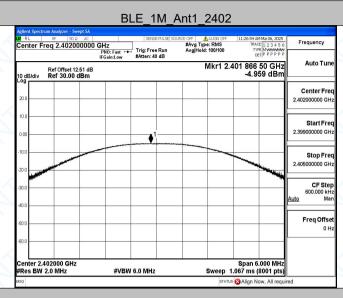
Test Result

TestMode	Antenna	Freq(MHz)	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
	1	2402	-4.96	≤30	PASS
BLE_1M	Ant1	2440	-5.74	≤30	PASS
	× 1	2480	-5.55	≤30	PASS
	Ant1	2402	-5.00	≤30	PASS
BLE_2M		2440	-5.70	≤30	PASS
		2480	-5.46	≤30	PASS



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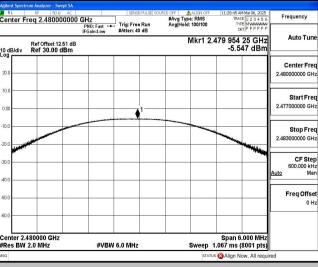
Test Graphs



BLE_1M_Ant1_2440

Center F	req 2.440000000	GHz	SENSE:PULSE SO	#Avg Type	ALIGN OFF	TRAC	4 Mar 06, 2025 E 1 2 3 4 5 6 M WWWWWW	Frequency
		PNO: Fast +++ IFGain:Low	Trig: Free Run #Atten: 40 dB	Avg Hold:		DE	50 GHz	Auto Tur
10 dB/div	Ref Offset 12.51 dB Ref 30.00 dBm				1KI 1 2.4		35 dBm	
20.0								Center Fre 2.440000000 GH
0.00			1					Start Fre 2.437000000 G
-10.0						No. of Concession, Name		Stop Fro 2.443000000 GI
-30.0								CF Ste 600.000 k Auto M
-50.0								Freq Offs 01
-60.0								
	440000 GHz 2.0 MHz	#VBW 6	.0 MHz	s	Sweep 1.	Span 6 067 ms (.000 MHz 8001 pts)	
//SG					STATUS	🛛 Align N	ow, All requir	red

BLE_1M_Ant1_2480



BLE_2M_Ant1_2402

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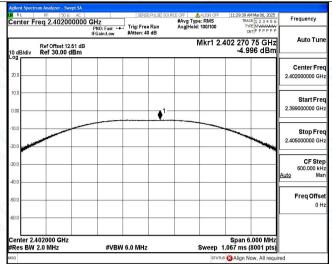
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BLE_2M_Ant1_2440

Center F	RF 50 Ω AC req 2.44000000	OGHz PNO: Fast ↔ IFGain:Low			#Avg Type Avg Hold:	ALIGN OFF : RMS 100/100	TRA	M Mar 06, 2025 CE 1 2 3 4 5 6 PE MWWWWW NET P P P P P P	Frequency
10 dB/div	Ref Offset 12.51 dE Ref 30.00 dBm	1			N	/kr1 2./		75 GHz 01 dBm	Auto Tui
20.0									Center Fr 2.440000000 G
10.0 0.00				1					Start Fr 2.437000000 G
-10.0				¥					Stop Fr 2.443000000 G
-30.0									CF St 600.000 k Auto M
-40.0									Freq Offs 0
-60.0									
Center 2. #Res BW	440000 GHz 2.0 MHz	#VBW	6.0 MHz		:	weep 1	Span 6 1.067 ms	6.000 MHz (8001 pts)	

BLE_2M_Ant1_2480

	um Analyzer - Swept S						
Center Fi	RF 50 Q AC		SENSE:PULSE SO	#Avg Type: RMS	TRAC	Mar 06, 2025	Frequency
10 dB/div	Ref Offset 12.51 d Ref 30.00 dBn	PNO: Fast +++ IFGain:Low	¹ Trig: Free Run #Atten: 40 dB	Avg Hold: 100/10	2.479 330	25 GHz 33 dBm	Auto Tune
20.0							Center Fred 2.480000000 GH;
0.00		•					Start Free 2.477000000 GH
-10.0 -20.0							Stop Fre 2.483000000 GH
-30.0							CF Stej 600.000 kH <u>Auto</u> Ma
-50.0							Freq Offse 0 H
-60.0 Center 2.4 #Res BW	180000 GHz	#\/B\M	6.0 MHz	Swee	Span 6.	000 MHz	
MSG	2.0 10112	#VDVV	0.0 10112		TATUS 🐼 Align No	· .	red

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Appendix D: Maximum power spectral density

Test Result

TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
2 4		2402	-18.49	≤8.00	PASS
BLE_1M	Ant1	2440	-19.22	≤8.00	PASS
		2480	-18.79	≤8.00	PASS
		2402	-18.58	≤8.00	PASS
BLE_2M	Ant1	2440	-20.16	≤8.00	PASS
		2480	-20.10	≤8.00	PASS