

Prüfbericht-Nr.: Test report no.:	CN232KP1 001	Auftrags-Nr.: Order no.:	168412906	Seite 1 von 24 Page 1 of 24
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2023-01-30	
Auftraggeber: Client:	Harman International Industries, Inc 8500 Balboa Blvd, Northridge, California, 91329, United States			
Prüfgegenstand: Test item:	PORTABLE BLUETOOTH SPEAKER			
Bezeichnung / Typ-Nr.: Identification / Type no.:	GO+PLAY 3 (Trademark: harman / kardon)			
Auftrags-Inhalt: Order content:	Type test			
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 RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 March 2019			
Wareneingangsdatum: Date of sample receipt:	2023-02-15	Refer to photos document		
Prüfmuster-Nr.: Test sample no.:	A003415293-001 to 005			
Prüfzeitraum: Testing period:	2023-02-16 – 2023-03-03			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:			genehmigt von: authorized by:	
Datum: Date:	2023-04-28		Ausstellungsdatum: Issue date:	2023-04-28
	Signed by: Alex Lan		Signed by: Lin Lin	
Stellung / Position	Project Manager		Stellung / Position	Review
Sonstiges / Other:	FCC ID: APIHKGPLAY3 IC: 6132A-HKGOPLAY3 HVIN: GO+PLAY 3			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged:			
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.				

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Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 99% BANDWIDTH

RESULT: Pass

5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.5 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.6 20dB BANDWIDTH

RESULT: Pass

5.1.7 CARRIER FREQUENCY SEPARATION

RESULT: Pass

5.1.8 FREQUENCY STABILITY

RESULT: Pass

5.1.9 NUMBER OF HOPPING FREQUENCY

RESULT: Pass

5.1.10 TIME OF OCCUPANCY

RESULT: Pass

5.1.11 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

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

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China

FCC Registration No.: 694916

IC Registration No.: 25069 and the CAB identifier is CN0078.

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2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (TS8997)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
Signal Analyzer	R&S	FSV 40	101441	2023-08-01
OSP	R&S	OSP 150	101017	2023-11-21
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
Test Software	R&S	WMS32 (V11.00.00)	N/A	N/A
Power Meter	R&S	NRP2	107105	2023-11-21
Wideband Power Sensor	R&S	NRP-Z81	105677	2023-08-01
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2024-06-22
Unwanted Emission Testing (TS9975)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2023-08-02
Signal Analyzer	R&S	FSV 40	101439	2023-08-01
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2023-08-01
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2023-08-02
Amplifier	R&S	SCU-18F	180070	2023-08-02
Amplifier	R&S	SCU40A	100475	2023-08-02
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2024-08-06
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2024-08-06
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2024-08-27
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2023-08-06
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-06-22
Conducted Emission Testing				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR3	102428	2023-07-31
Artificial Mains Network	R&S	ENV216	102333	2023-08-01
EMC32 test software	R&S	EMC32 Ver.10.50.00	N/A	N/A

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

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

Parameter	Uncertainty (k=2)
Occupied Channel Bandwidth	$\pm 2.08 \%$
RF output power, conducted	$\pm 0.99 \text{ dB}$
RF power density, conducted	$\pm 0.99 \text{ dB}$
Unwanted Emissions, conducted	$\pm 0.89 \text{ dB}$
All emissions, radiated	$\pm 4.17 \text{ dB}$
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	$\pm 3.70 \text{ dB} / \pm 3.30 \text{ dB}$

2.6 Location of Original Data

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

2.7 Status of Facility Used for Testing

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

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a portable Bluetooth speaker, which supports Bluetooth dual mode technology.

The Classical Bluetooth and Bluetooth low energy can't transmit at the same time.

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

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	PORTABLE BLUETOOTH SPEAKER
Type Designation	GO+PLAY 3
Trademark	harman / kardon
FCC ID	APIHKGGOPLAY3
IC	6132A-HKGGOPLAY3
HVIN	GO+PLAY 3
Extreme Temperature Range	-10°C to +45°C
Input Voltage	AC 100 ~ 240V, 50/60Hz or DC 10.8V, 2400mAh via built-in battery (mode ICR18650-2600)
Output Voltage	DC 5V, 2.A max (type C interface)
Technical Specification of Classical Bluetooth	
Bluetooth Core Version	Bluetooth 5.2
Operating Frequency band	2402 ~ 2480 MHz
Channel Number	79 channels
Channel separation	1MHz
Modulation	GFSK, $\pi/4$ DQPSK, 8DPSK
Antenna Type	FPC antenna
Antenna Gain	2.3 dBi
Technical Specification of Bluetooth Low Energy	
Bluetooth Core Version	Bluetooth 5.2
Operating Frequency band	2402 ~ 2480 MHz
Channel Number	40 channels
Channel separation	2MHz
Data rate	1Mbps, 2Mbps
Modulation	GFSK
Antenna Type	FPC antenna
Antenna Gain	2.3 dBi

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Table 3: RF Channel and Frequency of Classic Bluetooth

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
00	2402.00	20	2422.00	40	2442.00	60	2462.00
01	2403.00	21	2423.00	41	2443.00	61	2463.00
02	2404.00	22	2424.00	42	2444.00	62	2464.00
03	2405.00	23	2425.00	43	2445.00	63	2465.00
04	2406.00	24	2426.00	44	2446.00	64	2466.00
05	2407.00	25	2427.00	45	2447.00	65	2467.00
06	2408.00	26	2428.00	46	2448.00	66	2468.00
07	2409.00	27	2429.00	47	2449.00	67	2469.00
08	2410.00	28	2430.00	48	2450.00	68	2470.00
09	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00	--	--

Table 4: RF Channel and Frequency of Bluetooth Low Energy

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
00	2402.00	10	2422.00	20	2442.00	30	2462.00
01	2404.00	11	2424.00	21	2444.00	31	2464.00
02	2406.00	12	2426.00	22	2446.00	32	2466.00
03	2408.00	13	2428.00	23	2448.00	33	2468.00
04	2410.00	14	2430.00	24	2450.00	34	2470.00
05	2412.00	15	2432.00	25	2452.00	35	2472.00
06	2414.00	16	2434.00	26	2454.00	36	2474.00
07	2416.00	17	2436.00	27	2456.00	37	2476.00
08	2418.00	18	2438.00	28	2458.00	38	2478.00
09	2420.00	19	2440.00	29	2460.00	39	2480.00

3.3 Independent Operation Modes

The basic operation modes are:

- A. On
 - 1. Bluetooth transmitting mode (BR & EDR mode)
 - a) Low Channel
 - b) Middle Channel
 - c) High Channel
- B. On, Transmitting on Hopping channel
- C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|-------------------------|----------------------------------|
| - Application Form | - FCC/IC Label and Location Info |
| - Block Diagram | - Photo Document |
| - Schematics | - User Manual |
| - Technical Description | |

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

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

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

4.2 Test Operation and Test Software

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

4.3 Special Accessories and Auxiliary Equipment

Table 5: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N or Rating
Laptop	Lenovo	T480	PF-16A6N8

4.4 Countermeasures to Achieve EMC Compliance

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

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

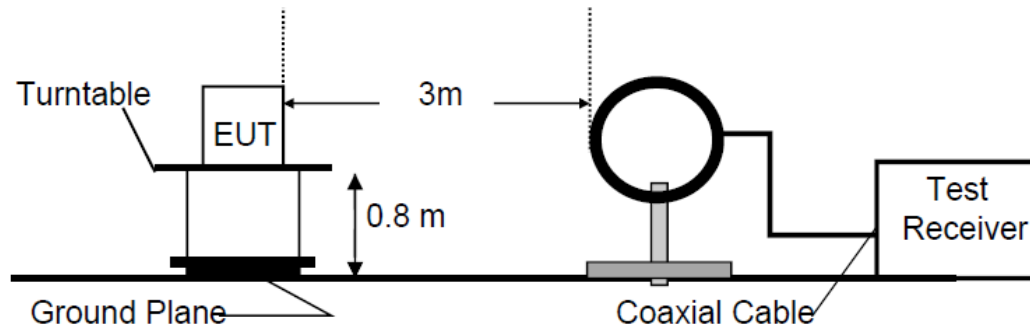


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

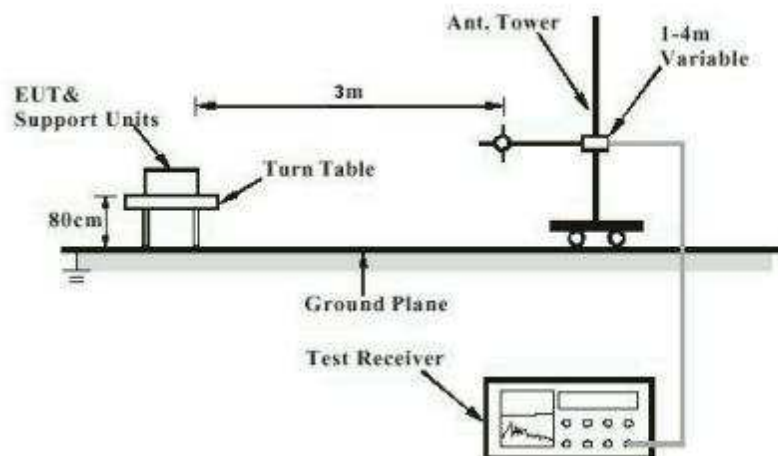


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

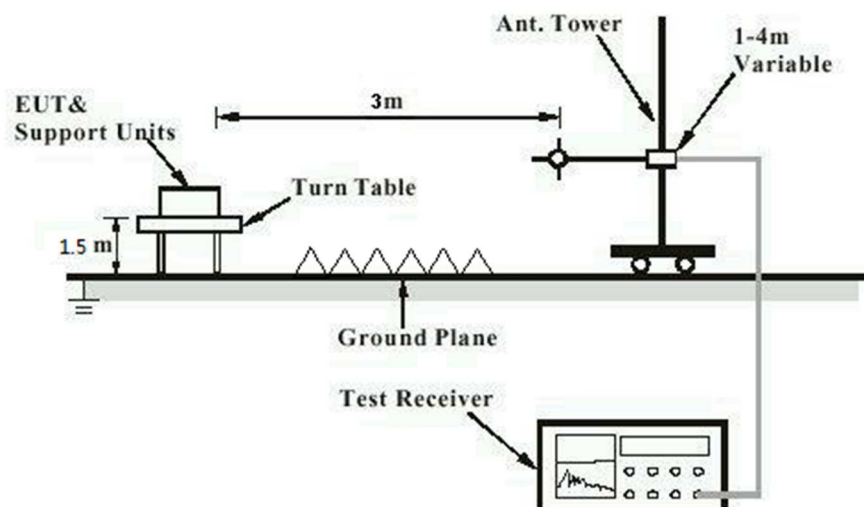


Diagram of Measurement Configuration for Conducted Transmitter Measurement

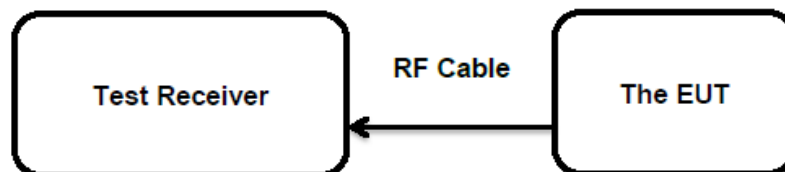
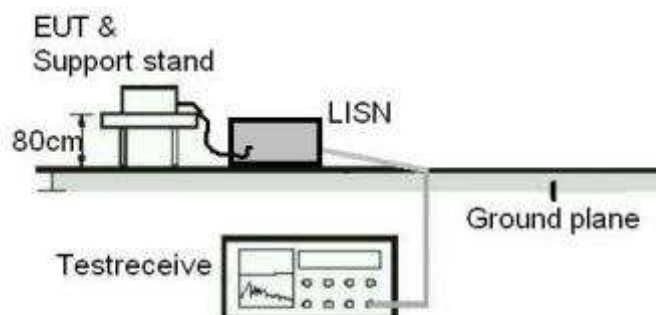


Diagram of Measurement Configuration for Mains Conduction Measurement



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
RSS-Gen Clause 8.3

According to the manufacturer declared, the EUT has one integral antenna, the directional gain of antenna is 2.30dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

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5.1.2 Maximum Conducted Output Power

RESULT:

Pass

Test Specification

Test standard	FCC Part 15.247(b)(1) RSS-247 Clause 5.4(b)
Basic standard	ANSI C63.10: 2013
Limits	FHSS<0.125W(Maximum peak conducted output power) < 4 W (e.i.r.p.)
Kind of test site	Shielded Room

Test Setup

Date of testing	2023-02-16 to 2023-03-03
Input voltage	Battery
Operation mode	A.1
Test channel	Low / Middle / High
Ambient temperature	22.7 °C
Relative humidity	55 %
Atmospheric pressure	101 kPa

Table 6: Test Result of Maximum Conducted Output Power

Test Mode	Channel Frequency (MHz)	Measured Peak Output Power		Limit (W)
		(dBm)	(W)	
BR	2402	7.2	0.00525	< 0.125
	2441	7.3	0.00537	
	2480	7.7	0.00589	
EDR	2402	6.7	0.00468	< 0.125
	2441	6.7	0.00468	
	2480	7.2	0.00525	

Note: The cable loss is taken into account in results and the maximum e.i.r.p. is 9.6 dBm less than 4W(36dBm).

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5.1.3 99% Bandwidth

RESULT:

Pass

Test Specification

Test standard : RSS-Gen Clause 6.7
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-02-16 to 2023-03-03
Input voltage : Battery
Operation mode : A.1
Test channel : Low / Middle / High
Ambient temperature : 22.7 °C
Relative humidity : 55 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B

Table 7: Test Result of 99% Bandwidth

Test Mode	Channel Frequency (MHz)	Measured 99% Bandwidth	Limit
		(MHz)	
BR	2402	0.875	/
	2441	0.875	
	2480	0.870	
EDR	2402	1.150	/
	2441	1.150	
	2480	1.150	

Note: The fundamental emissions stay within the allocated band 2400-2483.5MHz.

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5.1.4 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);
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-02-16 to 2023-03-03
Input voltage	: Battery
Operation mode	: A.1
Test channel	: Low / Middle / High
Ambient temperature	: 22.7 °C
Relative humidity	: 55 %
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 B

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5.1.5 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) RSS-Gen Table 6 & Table 7
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2023-02-16 to 2023-03-03
Input voltage	: AC 120V, 60Hz
Operation mode	: A.1
Test channel	: Low / Middle / High
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

Remark:

During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions. After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation shown in the test set-up photos.

Testing was carried out within frequency range 9kHz to the tenth harmonics.

For the measurement records, refer to the appendix B

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5.1.6 20dB Bandwidth

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(a)(1)
RSS-247 Clause 5.1(a)
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-02-16 to 2023-03-03
Input voltage : Battery
Operation mode : A.1
Test channel : Low / Middle / High
Ambient temperature : 22.7 °C
Relative humidity : 55 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B

Table 8: Test Result of -20dB Bandwidth

Test Mode	Channel Frequency (MHz)	20dB Bandwidth (kHz)	2/3 of 20dB Bandwidth (kHz)	Limit (MHz)
BR	2402	950	633.333	/
	2441	925	616.667	
	2480	925	616.667	
EDR	2402	1195	796.667	/
	2441	1195	796.667	
	2480	1195	796.667	

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5.1.7 Carrier Frequency Separation

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(a)(1)
RSS-247 Clause 5.1(b)
Basic standard : ANSI C63.10: 2013
Limits : $\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth, whichever is greater
Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-02-16 to 2023-03-03
Input voltage : Battery
Operation mode : A.1
Test channel : Low / Middle / High
Ambient temperature : $22.7\text{ }^{\circ}\text{C}$
Relative humidity : 55 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B

Table 9: Test Result of Carrier Frequency Separation

Test Mode	Channel [MHz]	Result [MHz]	Limit[MHz]	Verdict
BR	2402	0.980	≥ 0.633	PASS
	2441	0.980	≥ 0.617	PASS
	2480	1.01	≥ 0.617	PASS
EDR	2402	1.01	≥ 0.797	PASS
	2441	0.980	≥ 0.797	PASS
	2480	1.01	≥ 0.797	PASS

Note:

The limit is maximum $2/3$ of the 20 dB bandwidth: 796.667 kHz .

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5.1.8 Frequency stability

RESULT:

Pass

Test Specification

Test standard	: RSS-247 Clause 8.11
Basic standard	: ANSI C63.10: 2013
Limits	: within at least the central 80% of its permitted operating frequency band (2400-2483.5MHz)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-02-16 to 2023-03-03
Input voltage	: Battery
Operation mode	: B
Ambient temperature	: 22.7 °C
Relative humidity	: 55 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B

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5.1.9 Number of Hopping Frequency

RESULT:

Pass

Test Specification

Test standard : FCC part 15.247(a)(1)(iii)
RSS-247 Clause 5.1(d)
Basic standard : ANSI C63.10: 2013
Limits : ≥ 15 non-overlapping channels
Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-02-16 to 2023-03-03
Input voltage : Battery
Operation mode : B
Ambient temperature : 22.7 °C
Relative humidity : 55 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

Table 10: Test Result of Number of Hopping Frequency

Frequency Range	Measured Quantity of Hopping Channel	Limit	Result
2402 to 2480 MHz	79	≥ 15	Pass

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5.1.10 Time of Occupancy

RESULT:

Pass

Test Specification

Test standard	: FCC part 15.247(a)(1)(iii) RSS-247 Clause 5.1(d)
Basic standard	: ANSI C63.10: 2013
Limits	: < 0.4s
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-02-16 to 2023-03-03
Input voltage	: Battery
Operation mode	: B
Test channel	: Low / Middle / High
Ambient temperature	: 22.7 °C
Relative humidity	: 55 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

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5.1.11 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 4
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-02-16 to 2023-03-03
Input voltage	: AC 120V, 60Hz
Operation mode	: B
Earthing	: Not connected
Ambient temperature	: 25.0 °C
Relative humidity	: 51.2 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

6 Photographs of the Test Set-Up

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

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Appendix B.1: Test Results of 99% Bandwidth

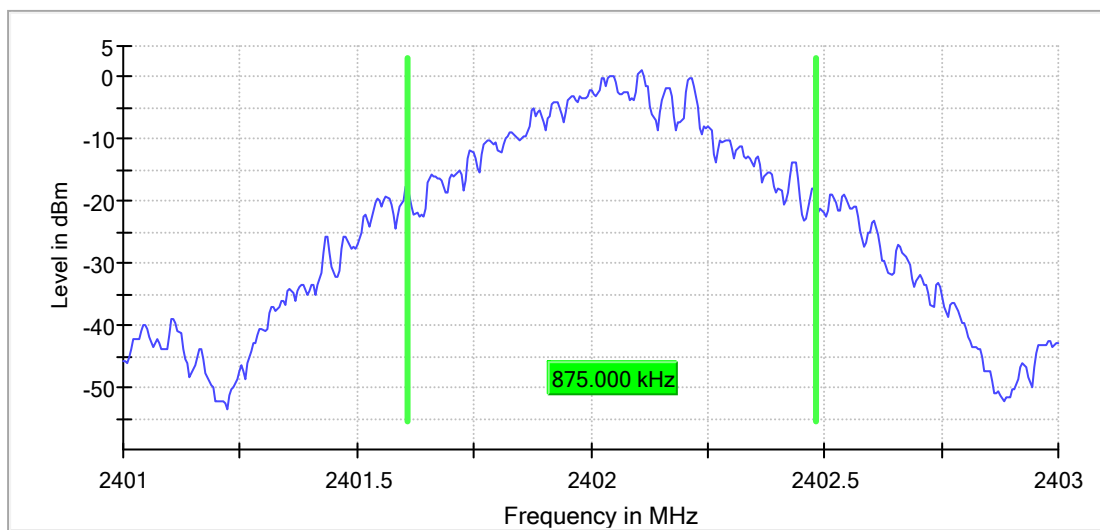
BR mode (GFSK)

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2402.000000	0.875000	---	---	2401.607500	2402.482500	PASS

RBW=10kHz, VBW=30kHz

99 % Bandwidth

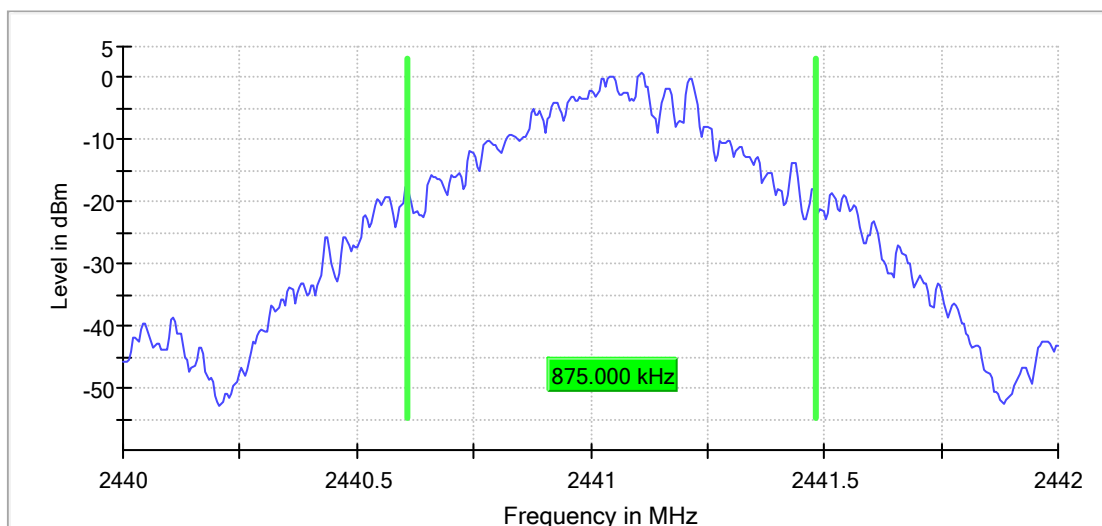


99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2441.000000	0.875000	---	---	2440.607500	2441.482500	PASS

RBW=10kHz, VBW=30kHz

99 % Bandwidth

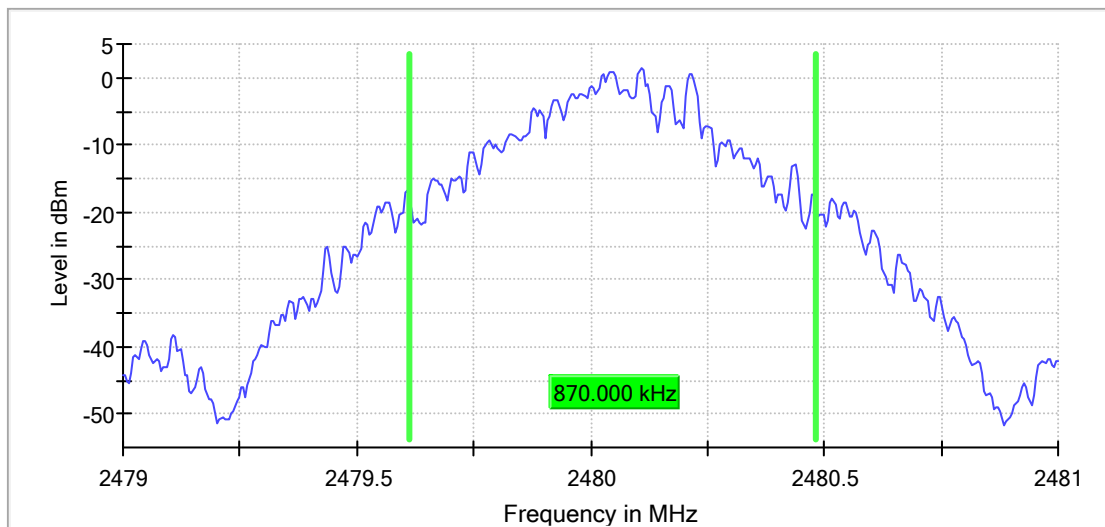


99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2480.000000	0.870000	---	---	2479.612500	2480.482500	PASS

RBW=10kHz, VBW=30kHz

99 % Bandwidth



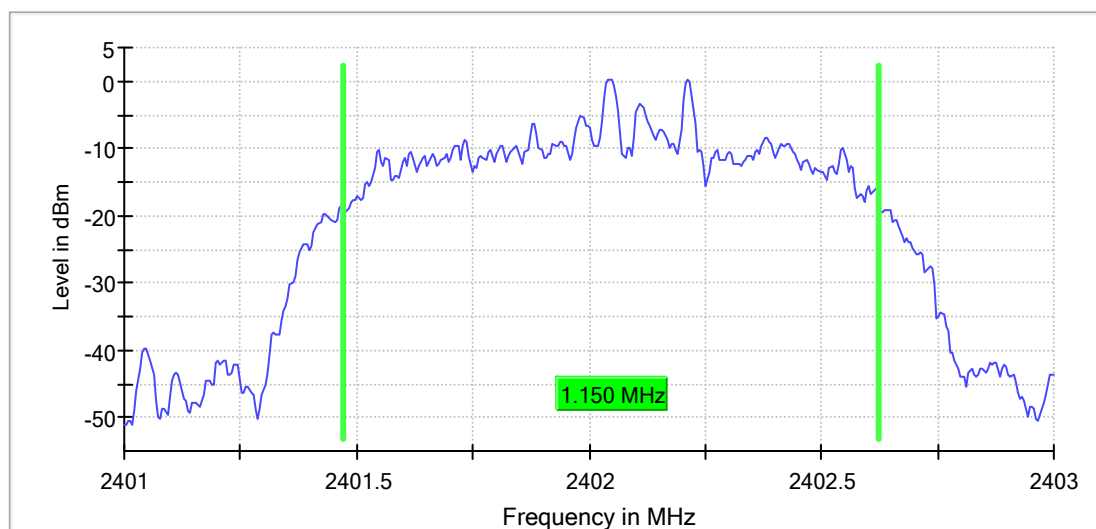
EDR mode (8DPSK)

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2402.000000	1.150000	---	---	2401.472500	2402.622500	PASS

RBW=30kHz, VBW=100kHz

99 % Bandwidth

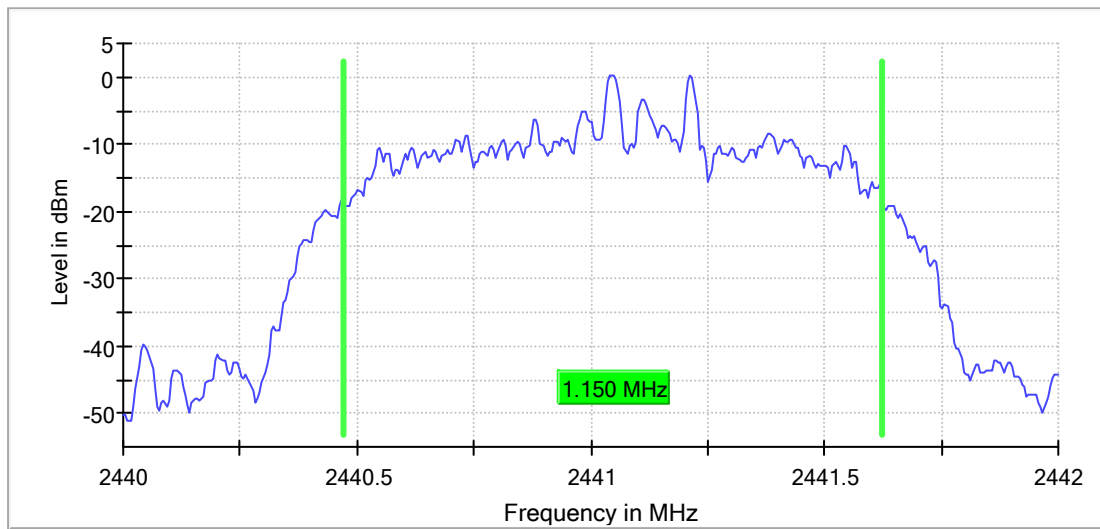


99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2441.000000	1.150000	---	---	2440.472500	2441.622500	PASS

RBW=30kHz, VBW=100kHz

99 % Bandwidth

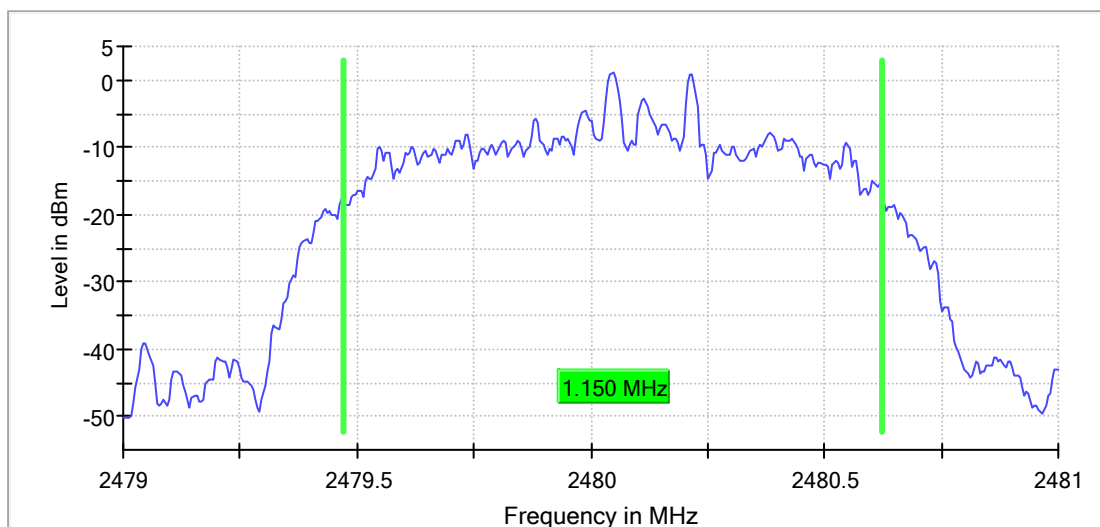


99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2480.000000	1.150000	---	---	2479.472500	2480.622500	PASS

RBW=30kHz, VBW=100kHz

99 % Bandwidth



Appendix B.2: Test Results of 20dB Bandwidth

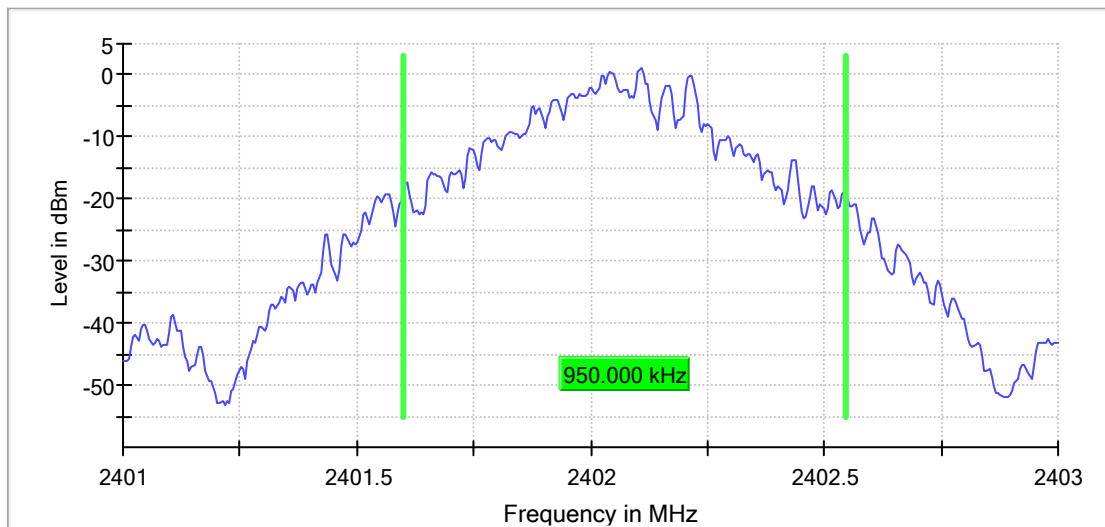
BR mode (GFSK)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2402.000000	0.950000	---	---	2401.597500	2402.547500	PASS

RBW=10kHz, VBW=30kHz

20 dB Bandwidth

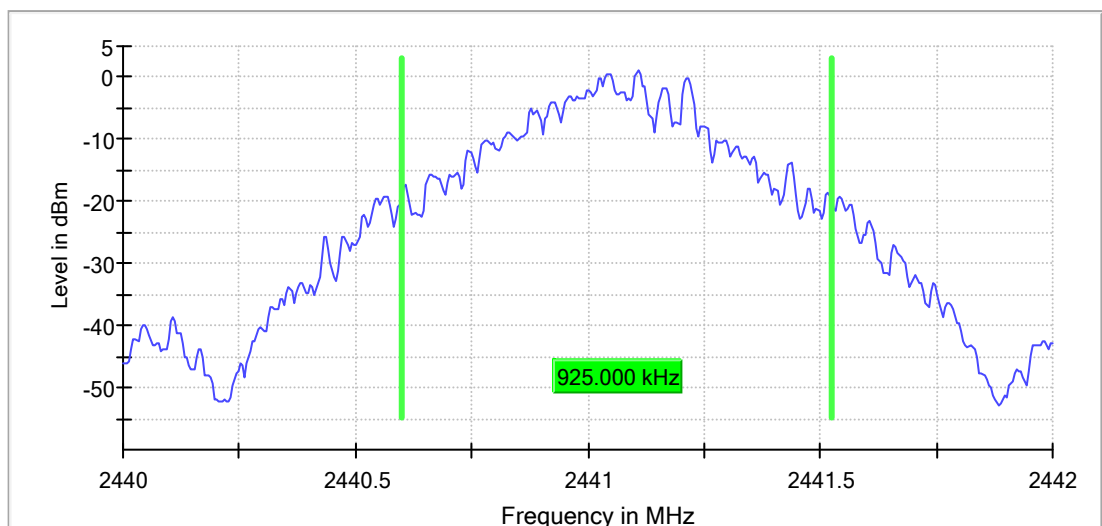


20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2441.000000	0.925000	---	---	2440.597500	2441.522500	PASS

RBW=10kHz, VBW=30kHz

20 dB Bandwidth

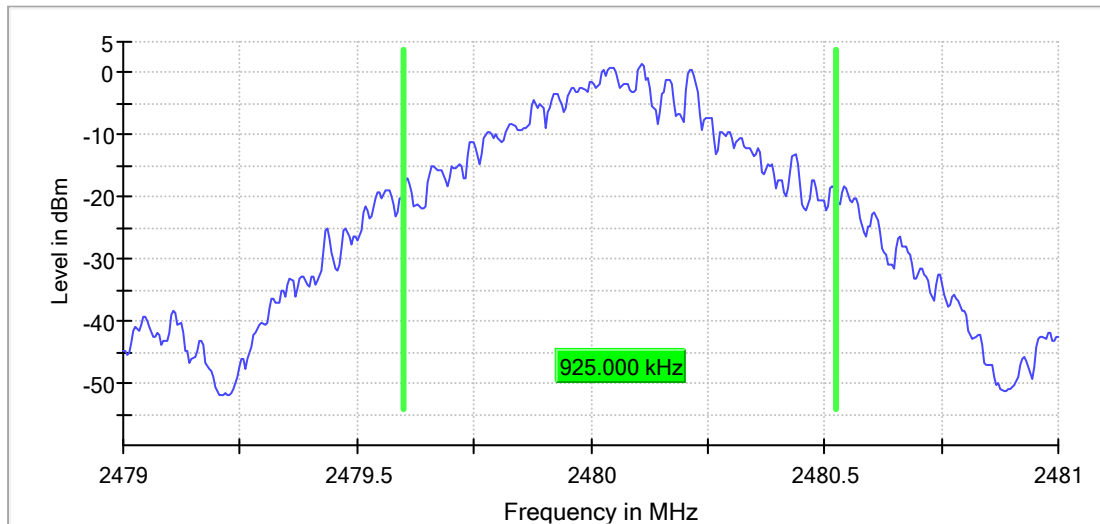


20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2480.000000	0.925000	---	---	2479.597500	2480.522500	PASS

RBW=10kHz, VBW=30kHz

20 dB Bandwidth



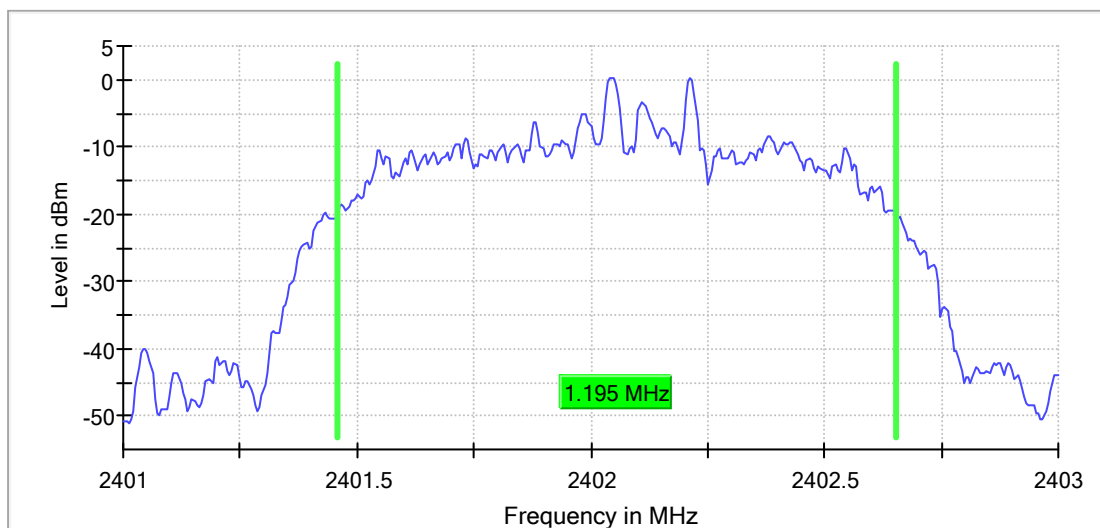
EDR mode (8DPSK)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2402.000000	1.195000	---	---	2401.457500	2402.652500	PASS

RBW=30kHz, VBW=100kHz

20 dB Bandwidth

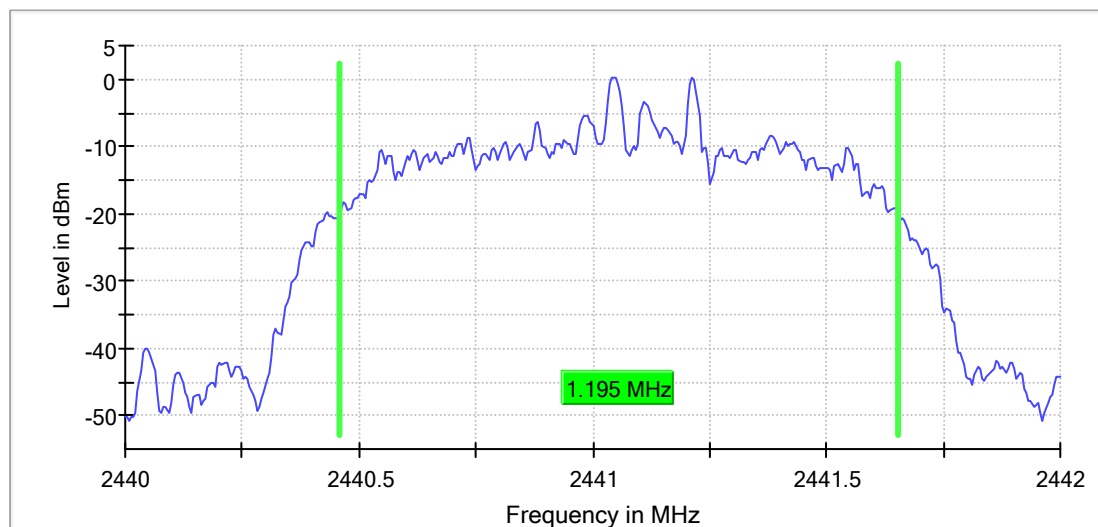


20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2441.000000	1.195000	---	---	2440.457500	2441.652500	PASS

RBW=30kHz, VBW=100kHz

20 dB Bandwidth

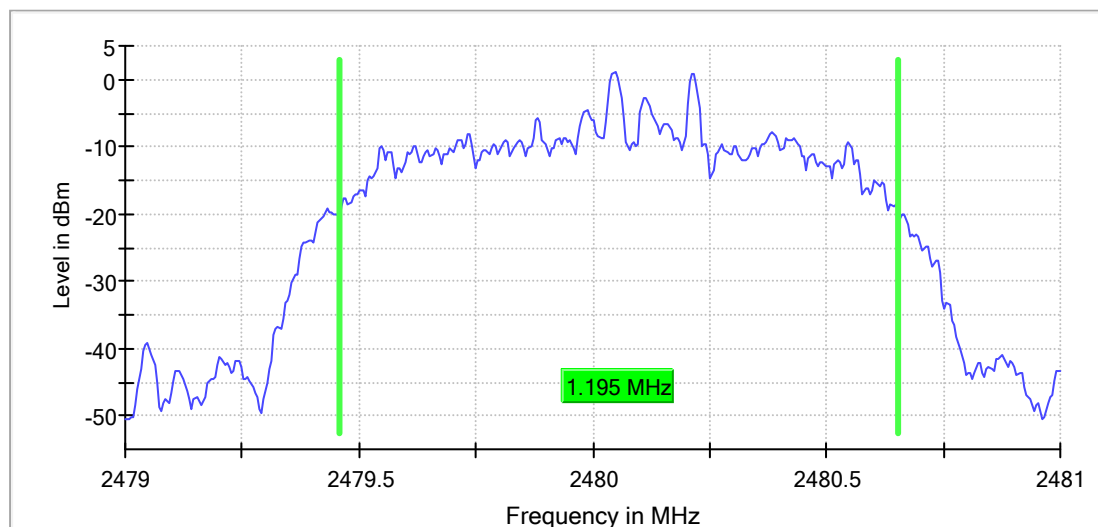


20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2480.000000	1.195000	---	---	2479.457500	2480.652500	PASS

RBW=30kHz, VBW=100kHz

20 dB Bandwidth



Appendix B.3: Test Results of Frequency stability

Test Channel (MHz)	2402
--------------------	------

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
AC 108V	2402.016	-16	-6.66	10
AC 120V	2402.013	-13	-5.41	
AC 132V	2402.012	-12	-5.00	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2402.011	-11	-4.58	10
-20	2402.012	-12	-5.00	
-10	2402.014	-14	-5.83	
0	2402.013	-9	-3.75	
10	2402.010	-10	-4.16	
20	2402.009	-9	-3.75	
30	2402.007	-7	-2.91	
40	2402.010	-10	-4.16	
50	2402.011	-11	-4.58	
55	2402.012	-12	-5.00	

Test Channel (MHz)	2441
--------------------	------

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
AC 108V	2441.015	15	6.15	10
AC 120V	2441.012	12	4.92	
AC 132V	2441.016	16	6.55	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2441.013	13	5.33	10
-20	2441.014	14	5.74	
-10	2441.015	15	6.15	
0	2441.012	12	4.92	
10	2441.019	19	7.78	
20	2441.019	19	7.78	
30	2441.016	16	6.55	
40	2441.017	17	6.96	
50	2441.011	11	4.51	
55	2441.017	17	6.96	

Test Channel (MHz)	2480
-----------------------	------

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
AC 108V	2480.018	18	7.26	10
AC 120V	2480.015	15	6.05	
AC 132V	2480.011	11	4.44	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2480.011	11	4.44	10
-20	2480.015	15	6.05	
-10	2480.011	11	4.44	
0	2480.019	19	7.66	
10	2480.013	13	5.24	
20	2480.015	15	6.05	
30	2480.016	16	6.45	
40	2480.012	12	4.84	
50	2480.013	13	5.24	
55	2480.015	15	6.05	

Appendix B.4: Test Results of Carrier Frequency Separation

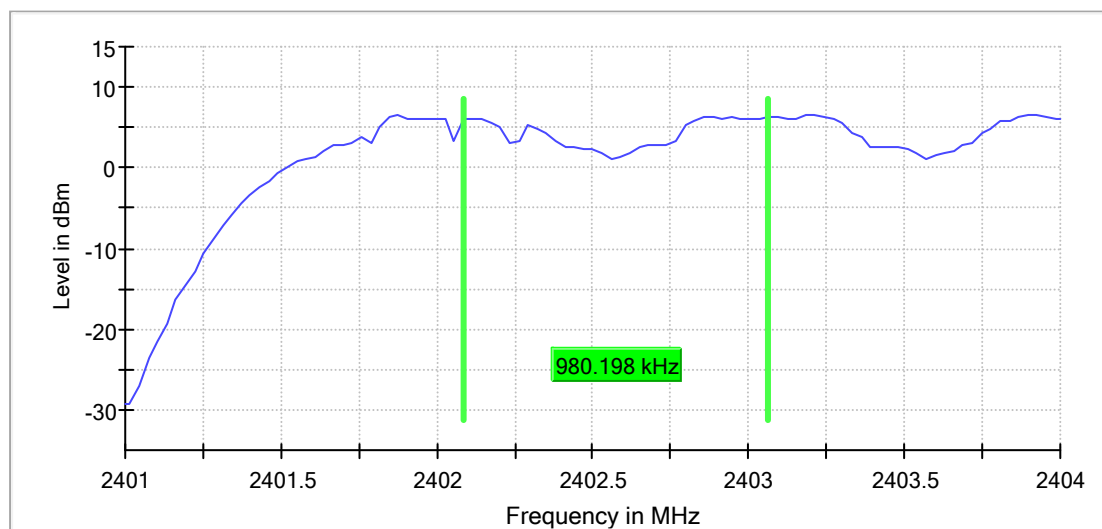
BR mode (GFSK)

Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)	Result
2402.000000	0.980198	0.633333	---	2402.084158	2403.064356	PASS

RBW=300kHz, VBW=300kHz

CFS

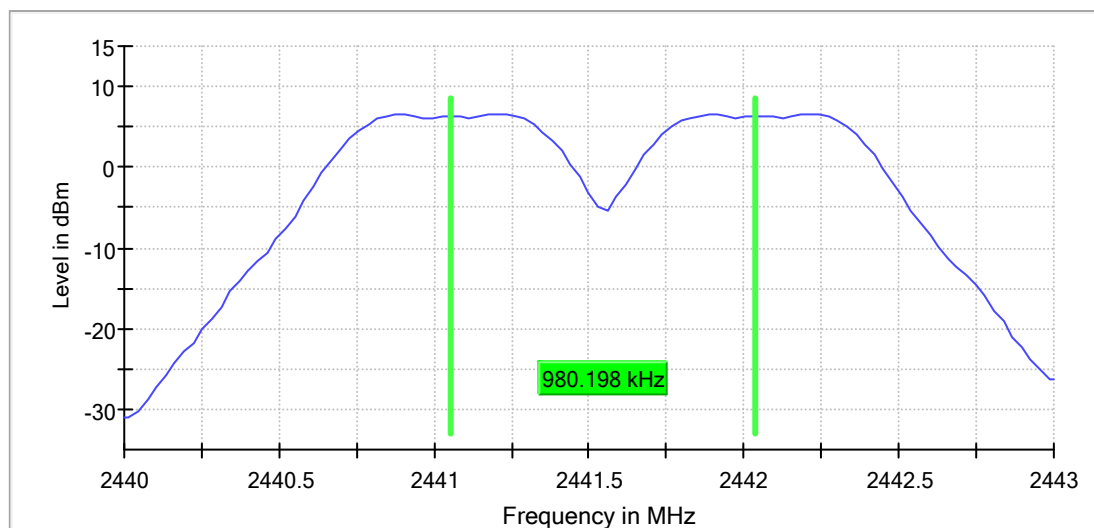


Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)	Result
2441.000000	0.980198	0.616667	---	2441.054455	2442.034653	PASS

RBW=300kHz, VBW=300kHz

CFS

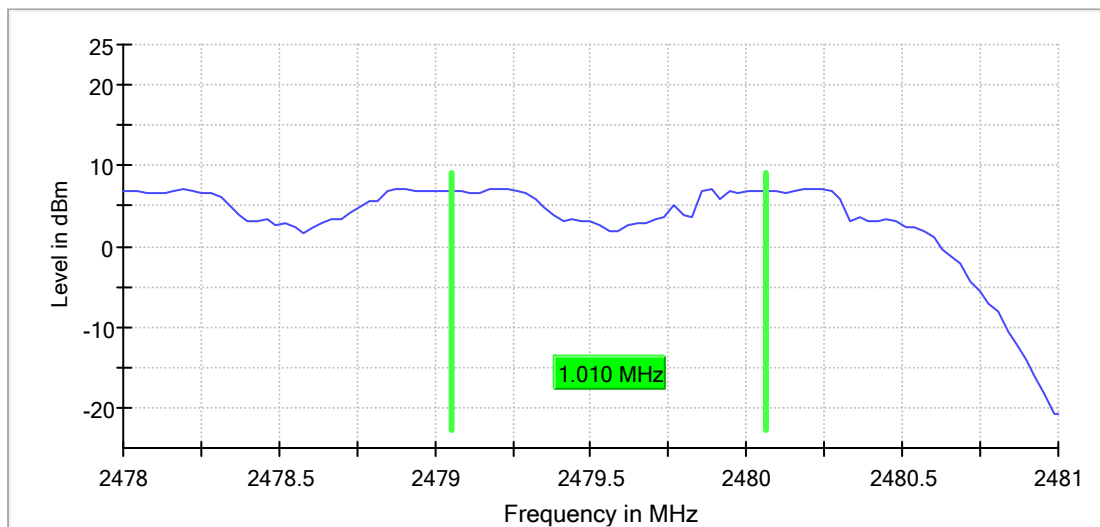


Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)	Result
2480.000000	1.009901	0.616667	---	2479.054455	2480.064356	PASS

RBW=300kHz, VBW=300kHz

CFS



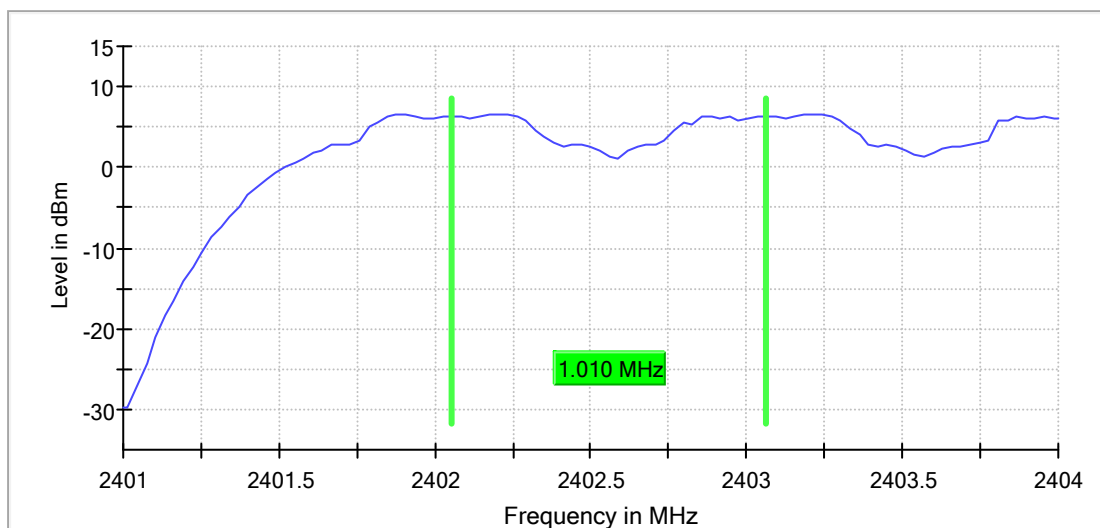
EDR mode (8DPSK)

Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)	Result
2402.000000	1.009901	0.796667	---	2402.054455	2403.064356	PASS

RBW=300kHz, VBW=300kHz

CFS

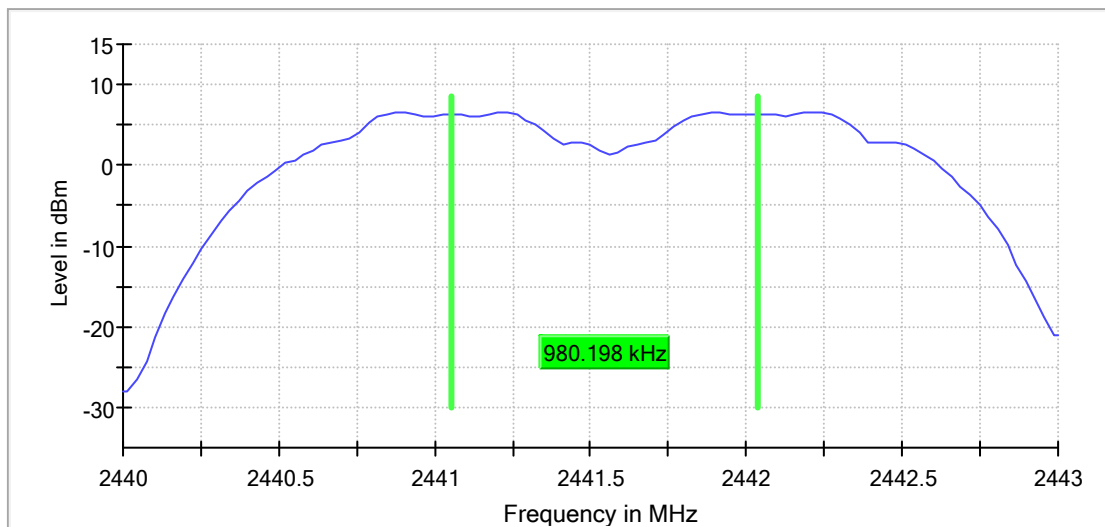


Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)	Result
2441.000000	0.980198	0.796667	---	2441.054455	2442.034653	PASS

RBW=300kHz, VBW=300kHz

CFS

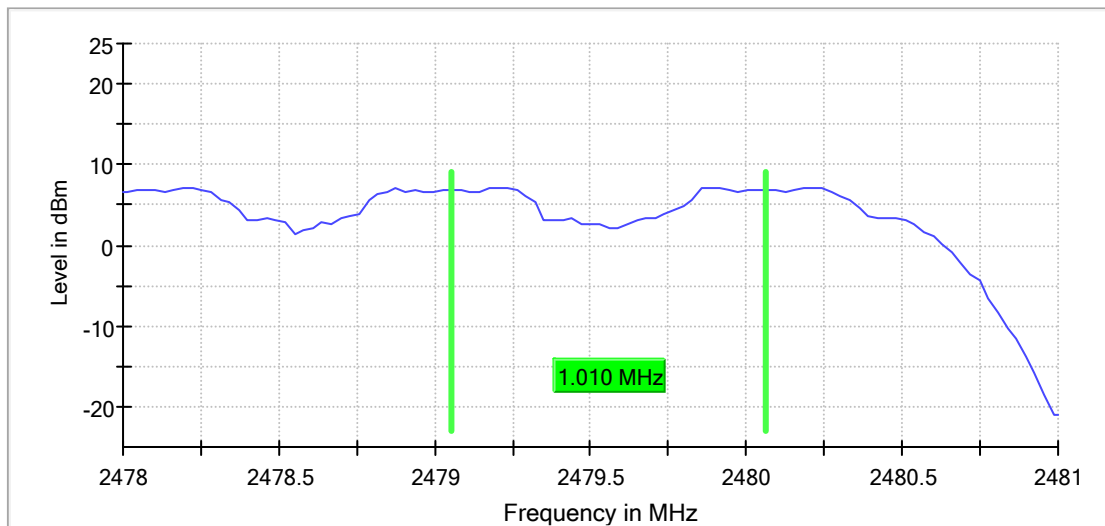


Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)	Result
2480.000000	1.009901	0.796667	---	2479.054455	2480.064356	PASS

RBW=300kHz, VBW=300kHz

CFS



Appendix B.5: Test Results of Number of Hopping Frequency

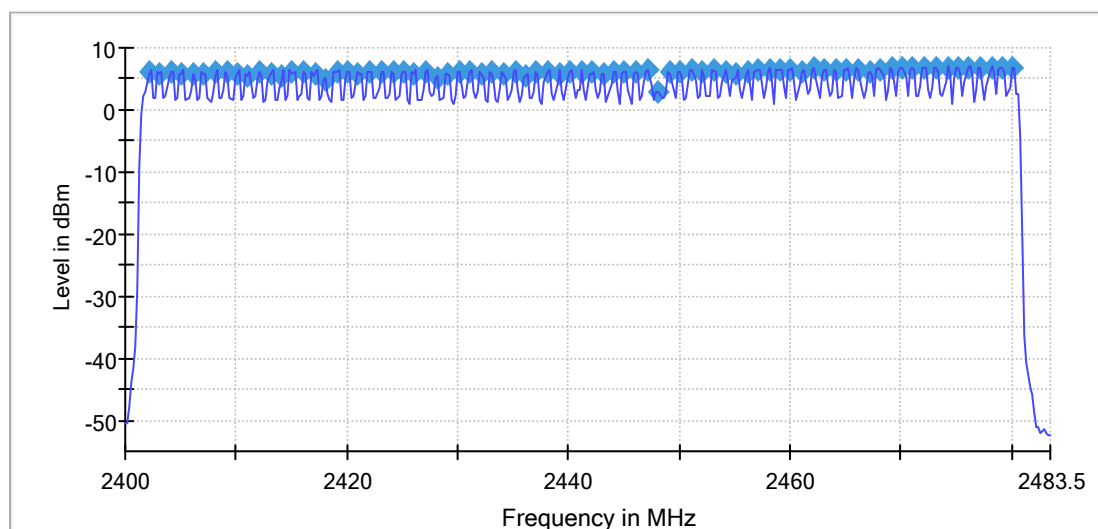
BR mode (GFSK)

Channels

Channels	Limit Min	Limit Max	Result
79	15	---	PASS

RBW=200kHz, VBW=200kHz

Sequence



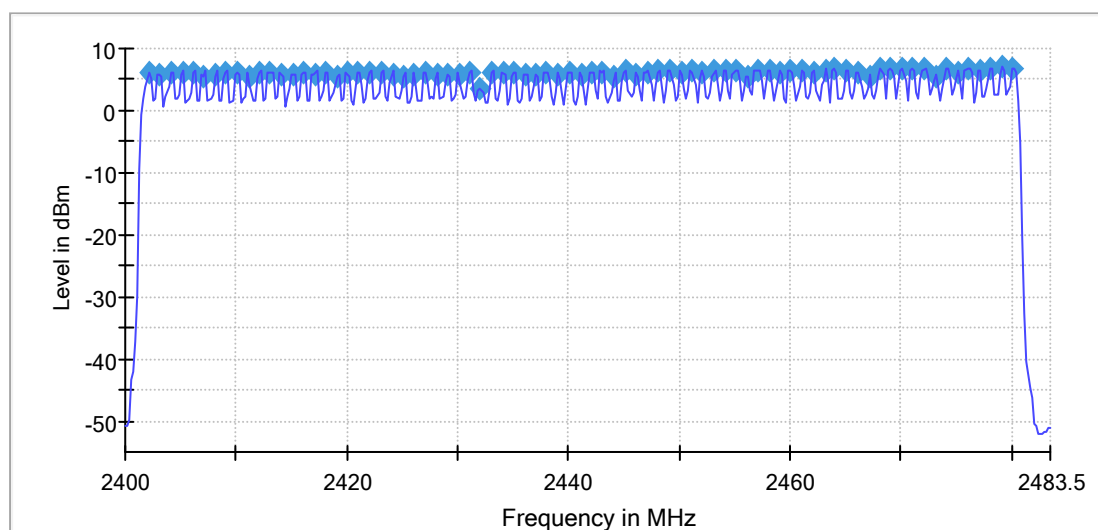
EDR mode (8DPSK)

Channels

Channels	Limit Min	Limit Max	Result
79	15	---	PASS

RBW=200kHz, VBW=200kHz

Sequence



Appendix B.6: Test Results of Time of Occupancy

BR mode (GFSK)

1DH1

Result

DUT Frequency (MHz)	Result		Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS		160	63.070	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
10.000	799.960	198.308

Transmit Time per Hop

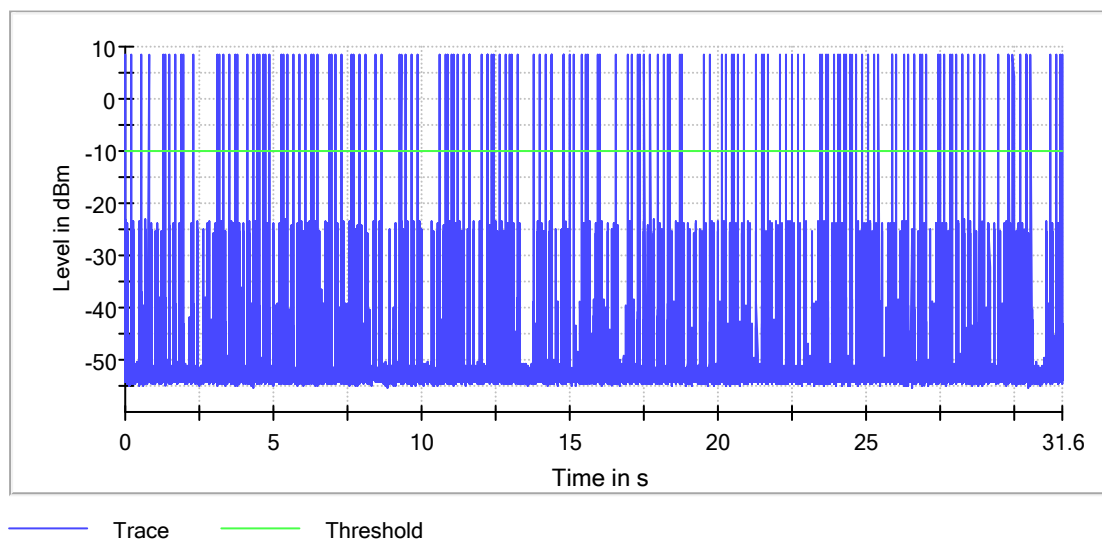
Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
0.37	0.40	400.000	0.000	0.392

DwellTime

Min (ms)	Max (ms)	Mean (ms)
0.39	0.40	0.393

RBW=500kHz, VBW=1MHz

Time of Channel Occupancy



1DH3

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	106	175.430	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
41.240	1961.150	296.951

Transmit Time per Hop

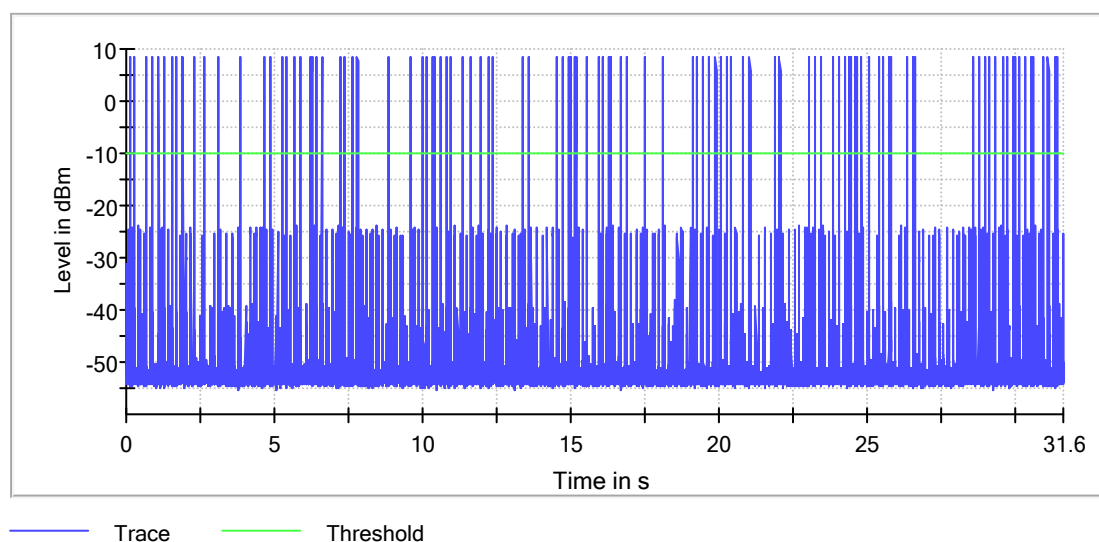
Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
1.630	1.650	400.000	0.000	1.640

DwellTime

Min (ms)	Max (ms)	Mean (ms)
1.630	1.650	1.642

RBW=500kHz, VBW=1MHz

Time of Channel Occupancy(2)



1DH5

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	68	199.450	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
10.000	2389.890	456.696

Transmit Time per Hop

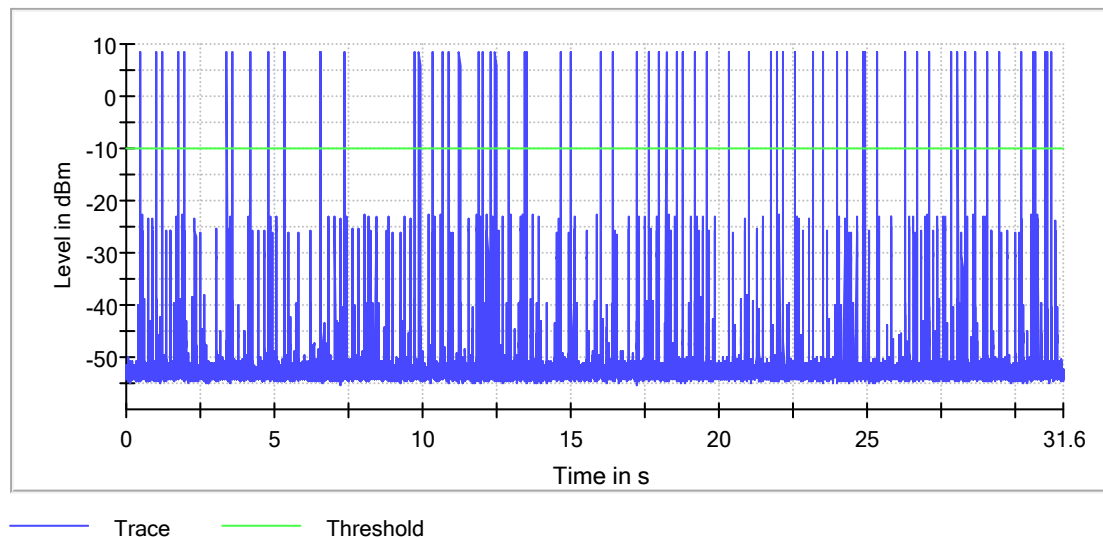
Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.880	2.900	400.000	0.000	2.891

DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.890	2.900	2.894

RBW=500kHz, VBW=1MHz

Time of Channel Occupancy(3)



EDR mode (8DPSK)

3DH1

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	150	59.190	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
10.000	799.960	210.712

Transmit Time per Hop

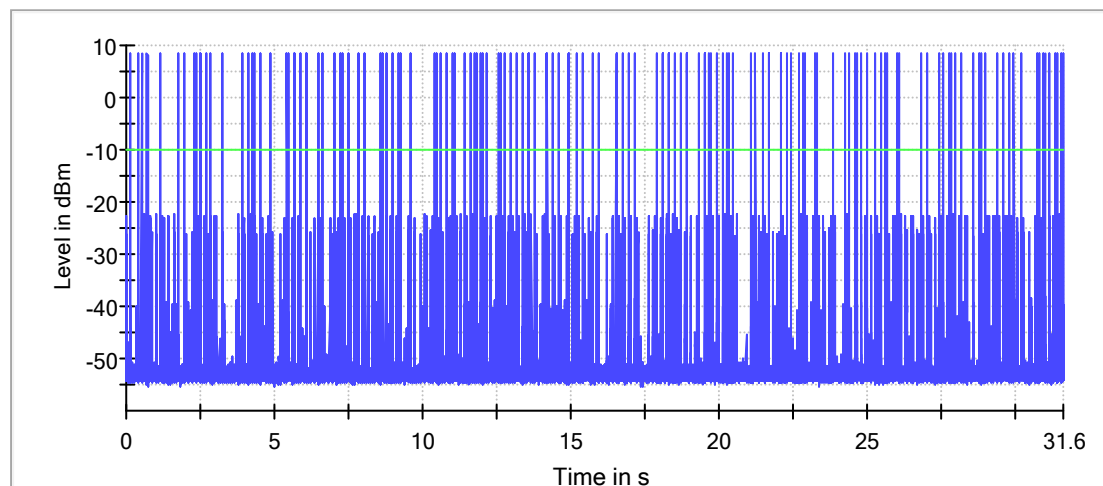
Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
0.38	0.40	400.000	0.000	0.392

DwellTime

Min (ms)	Max (ms)	Mean (ms)
0.39	0.40	0.393

RBW=500kHz, VBW=1MHz

Time of Channel Occupancy



— Trace — Threshold

3DH3

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	108	178.760	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
44.990	1218.690	276.681

Transmit Time per Hop

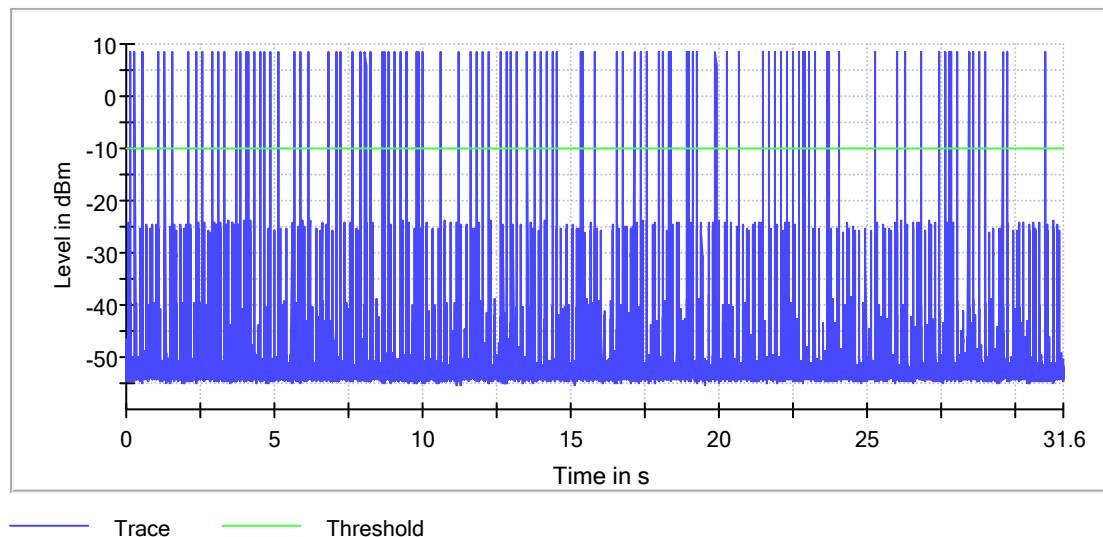
Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
1.630	1.650	400.000	0.000	1.640

DwellTime

Min (ms)	Max (ms)	Mean (ms)
1.630	1.650	1.642

RBW=500kHz, VBW=1MHz

Time of Channel Occupancy(2)



3DH5

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	90	262.910	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
20.000	1339.940	327.906

Transmit Time per Hop

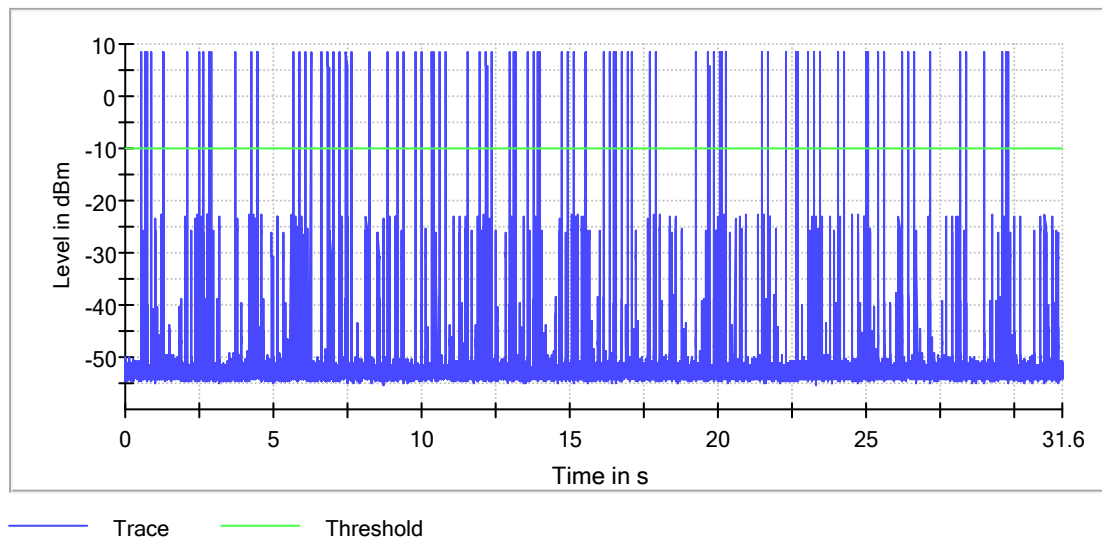
Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.880	2.900	400.000	0.000	2.889

DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.890	2.900	2.893

RBW=500kHz, VBW=1MHz

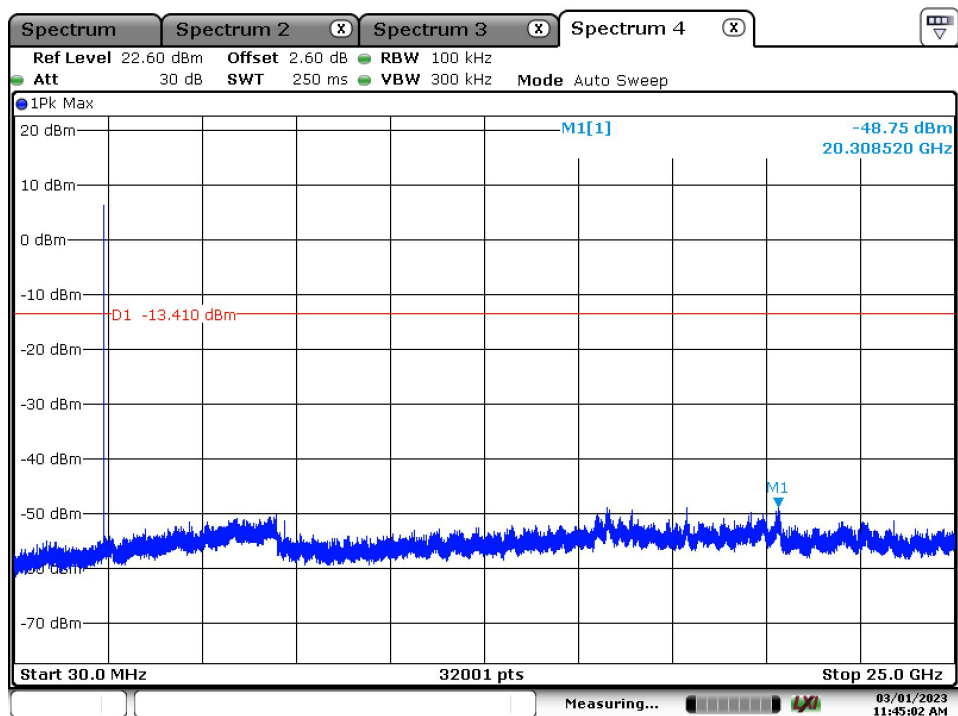
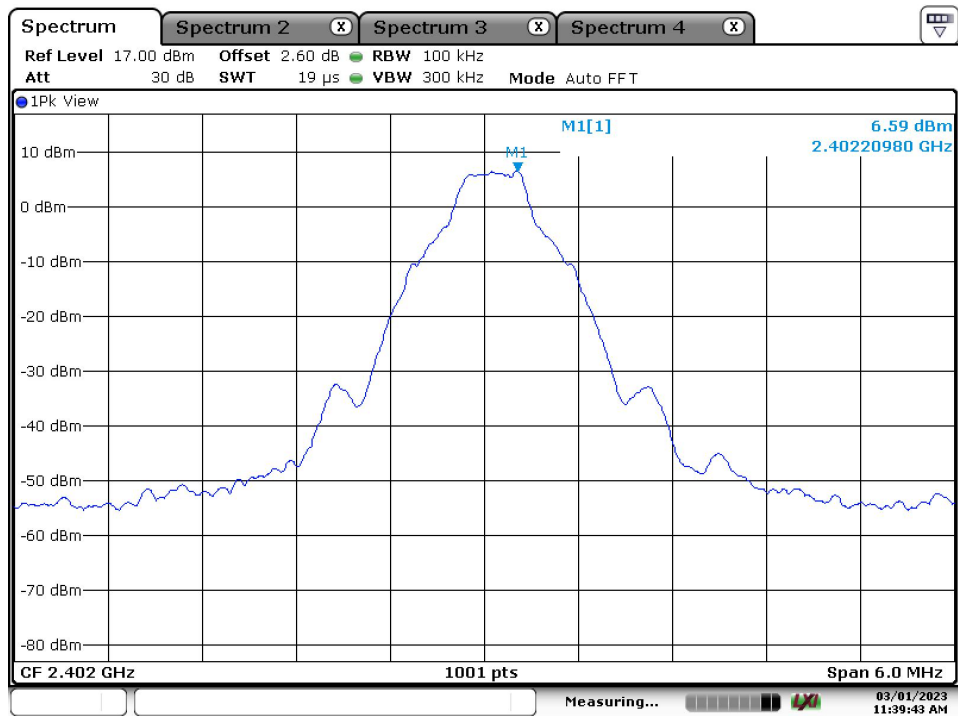
Time of Channel Occupancy(3)



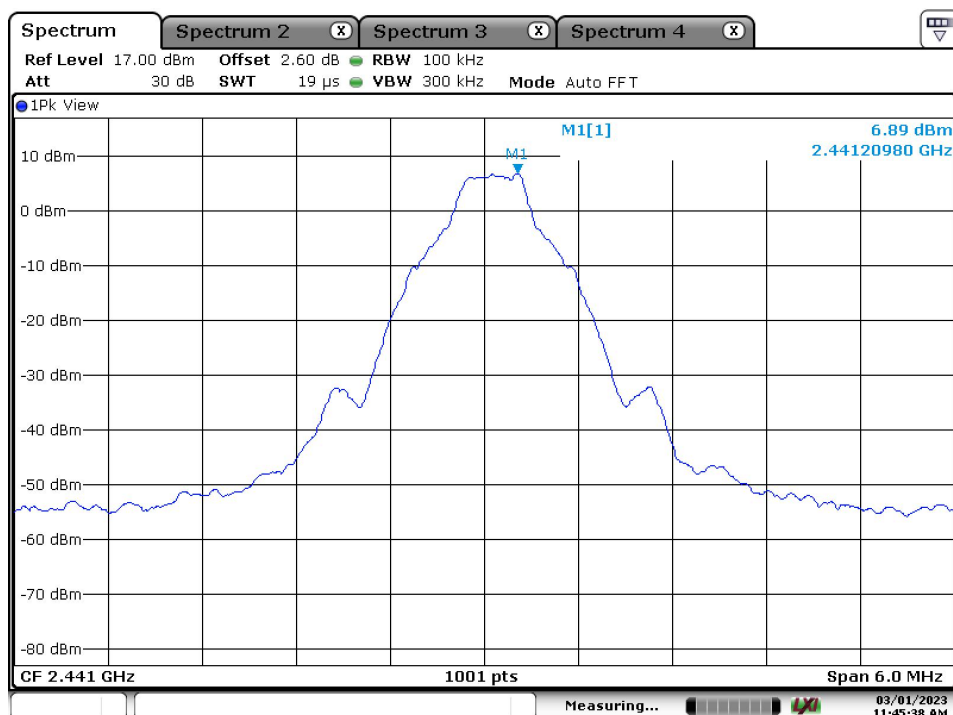
Appendix B.7: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

BR mode (GFSK)

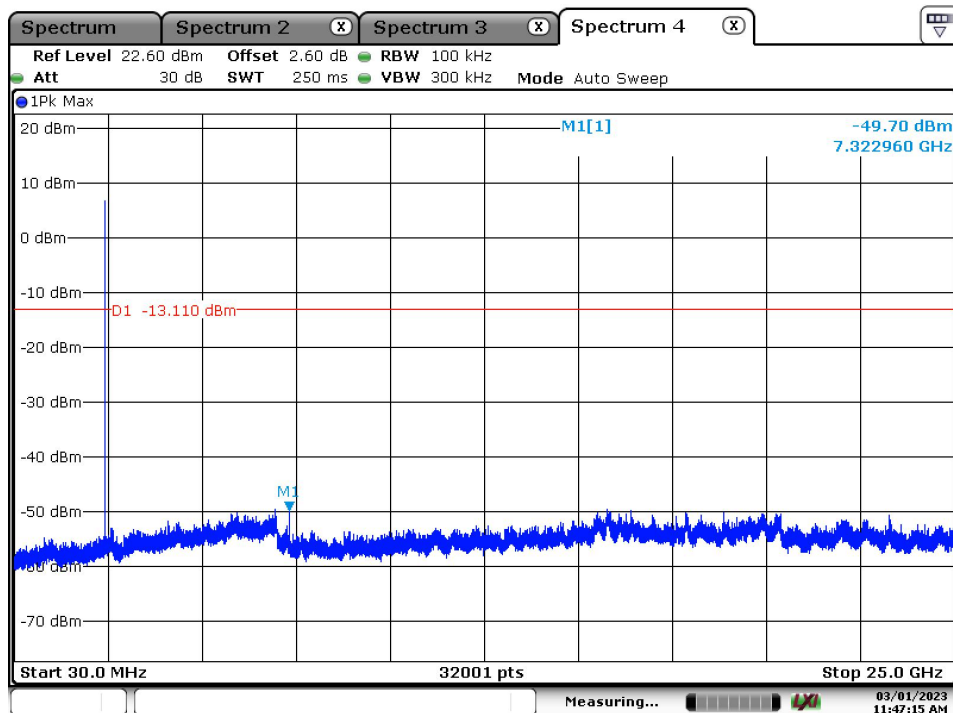
Low Channel



Middle Channel

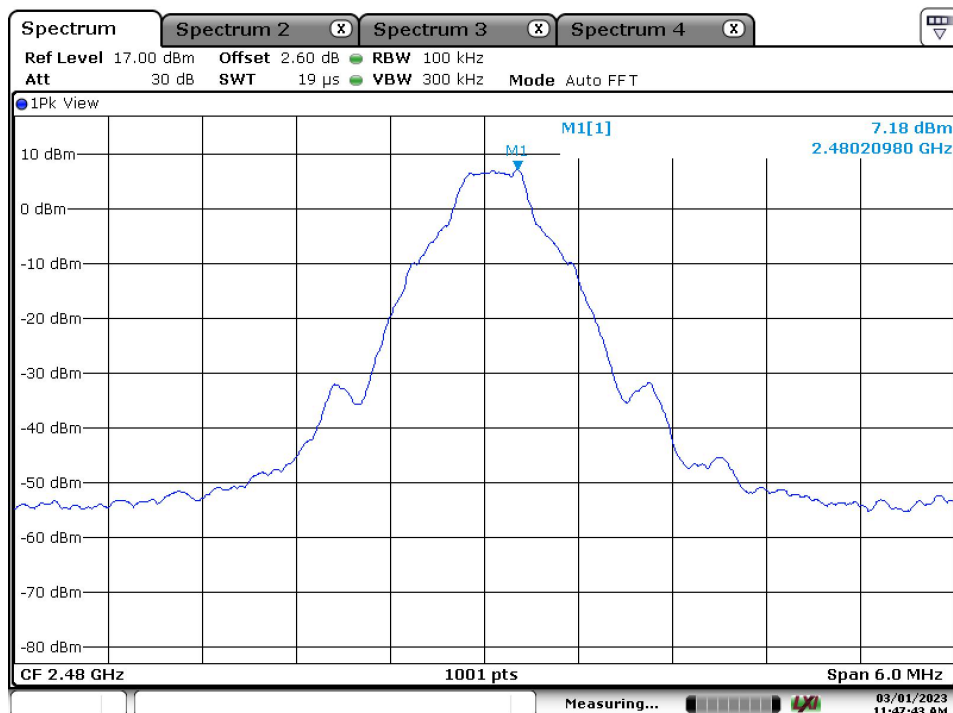


Date: 1.MAR.2023 11:45:38

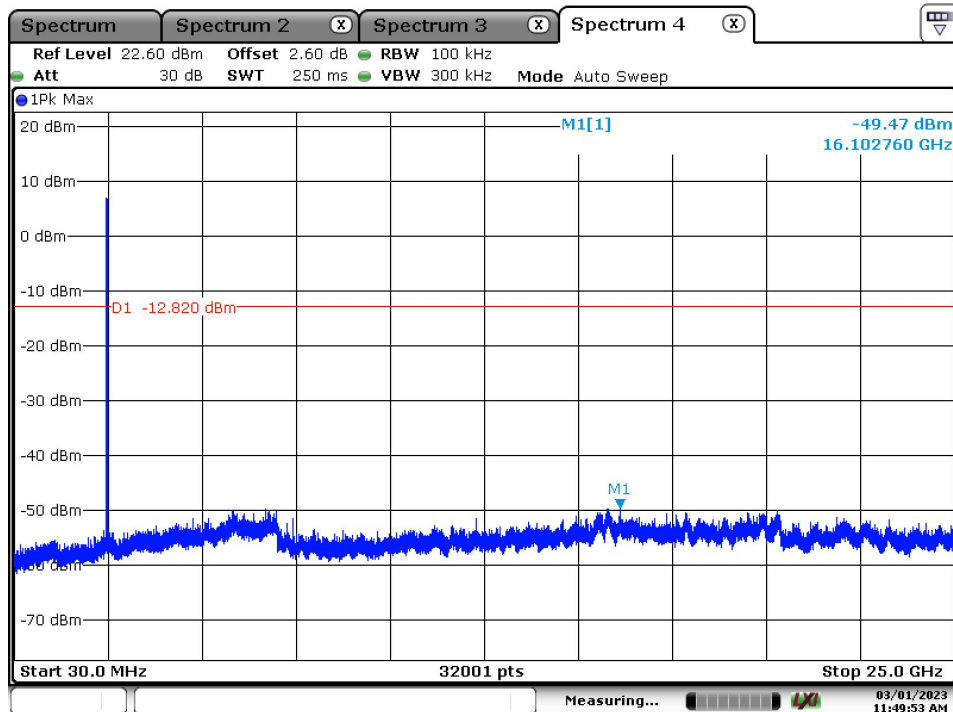


Date: 1.MAR.2023 11:47:16

High Channel

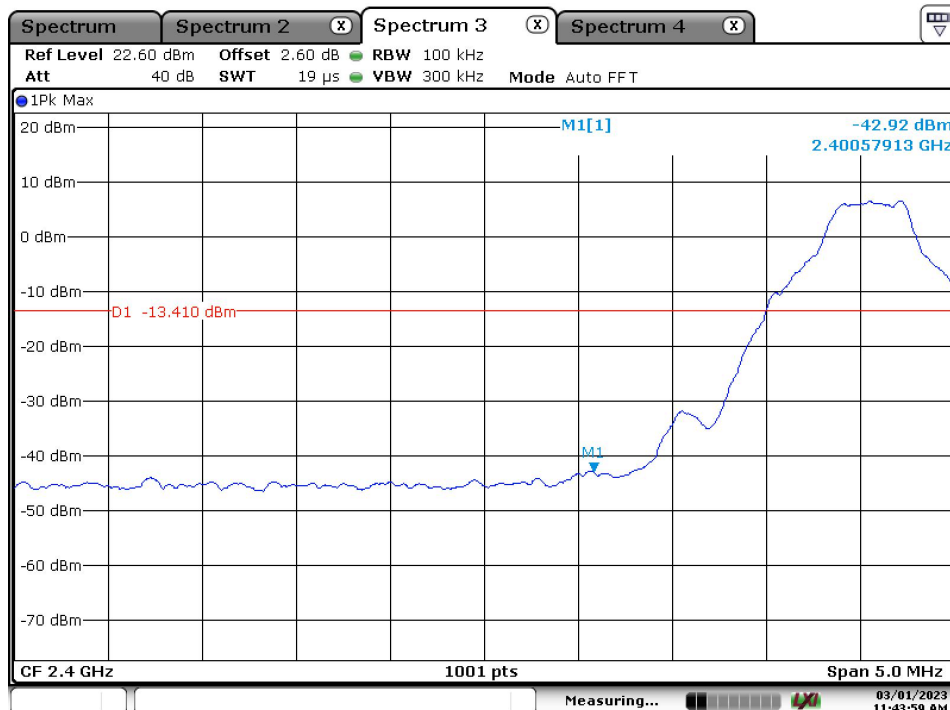


Date: 1.MAR.2023 11:47:43



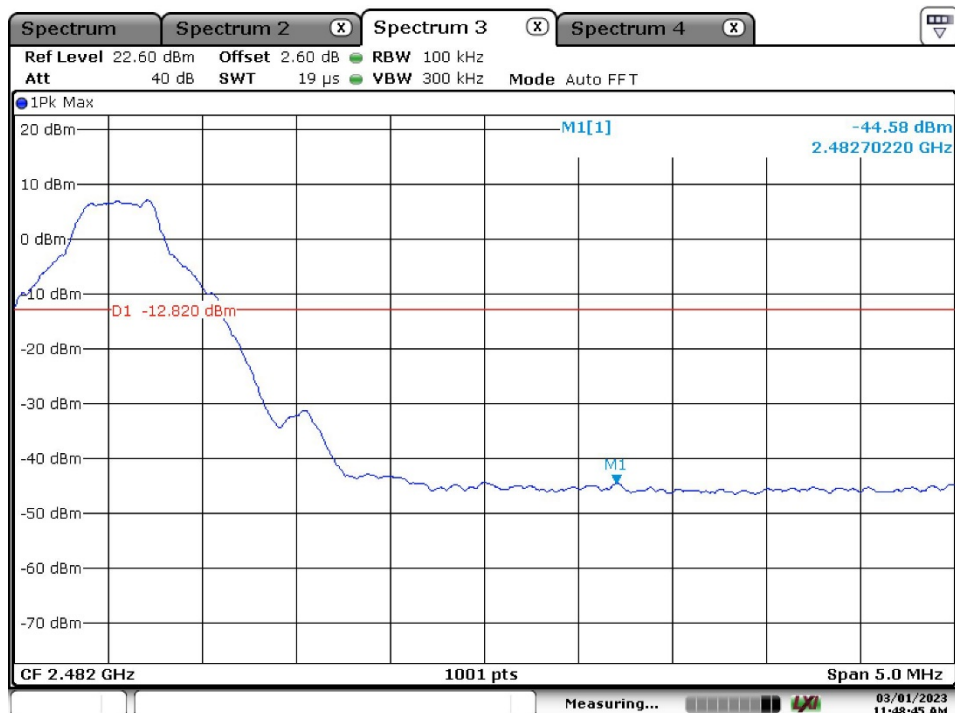
Date: 1.MAR.2023 11:49:54

Band Edge, Low Channel



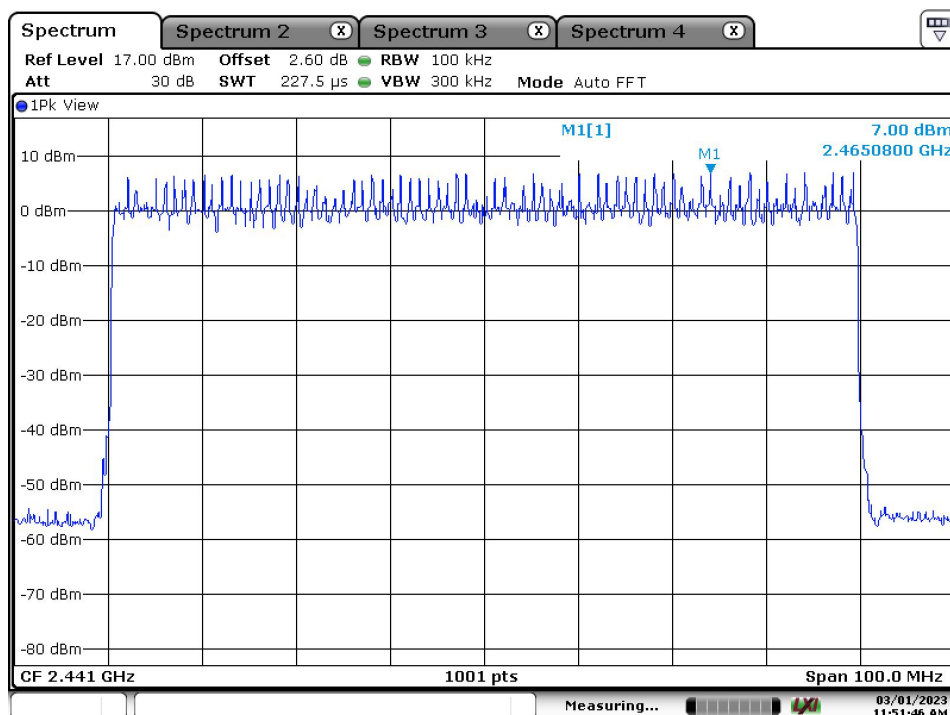
Date: 1.MAR.2023 11:44:00

Band Edge, High Channel

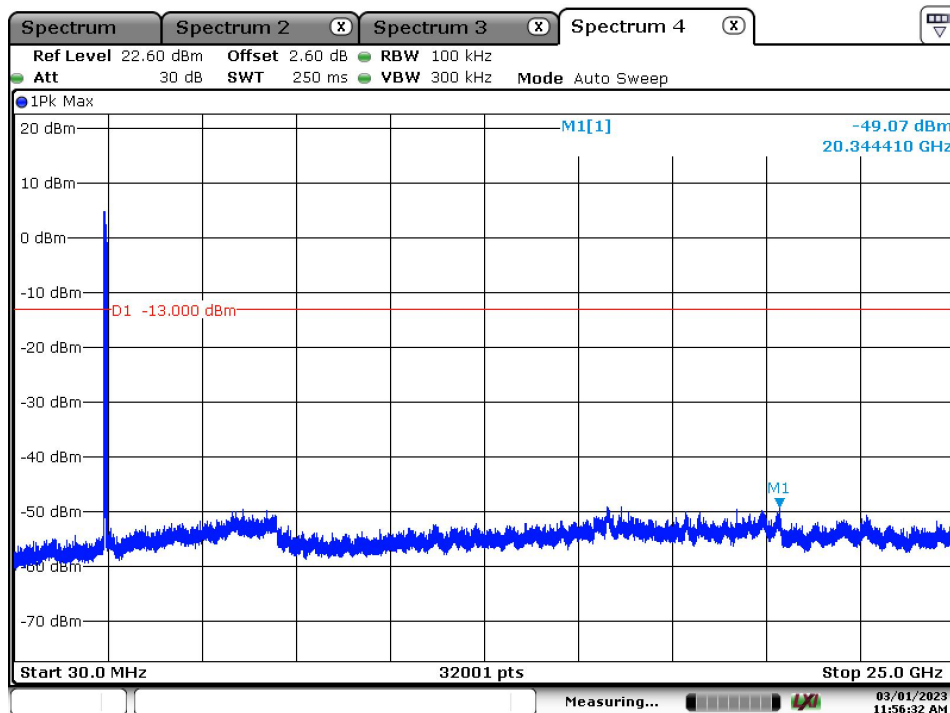


Date: 1.MAR.2023 11:48:45

Hopping Mode

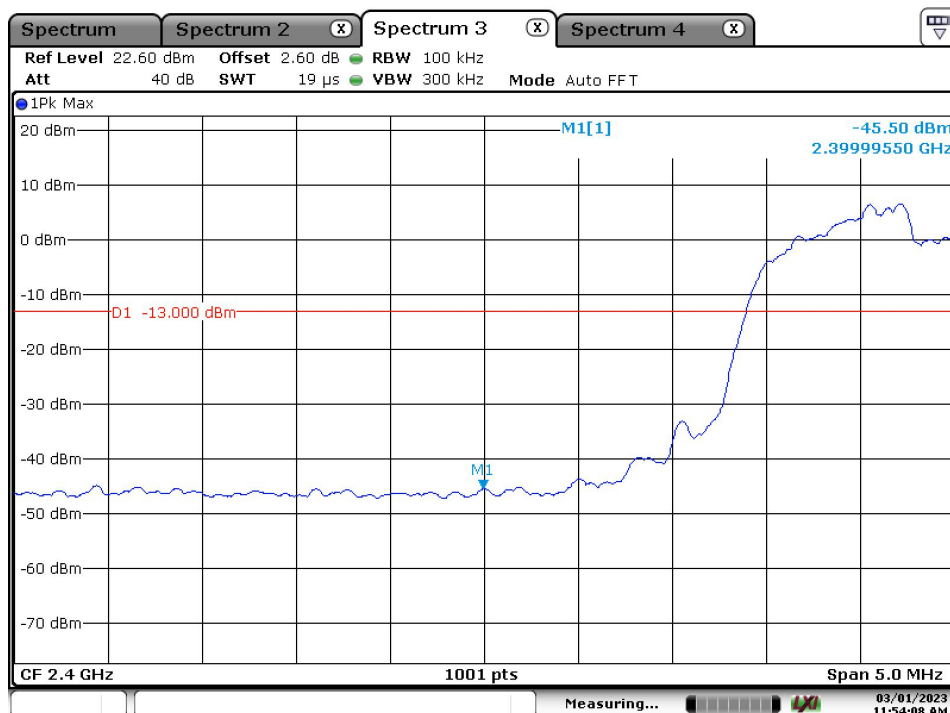


Date: 1.MAR.2023 11:51:46



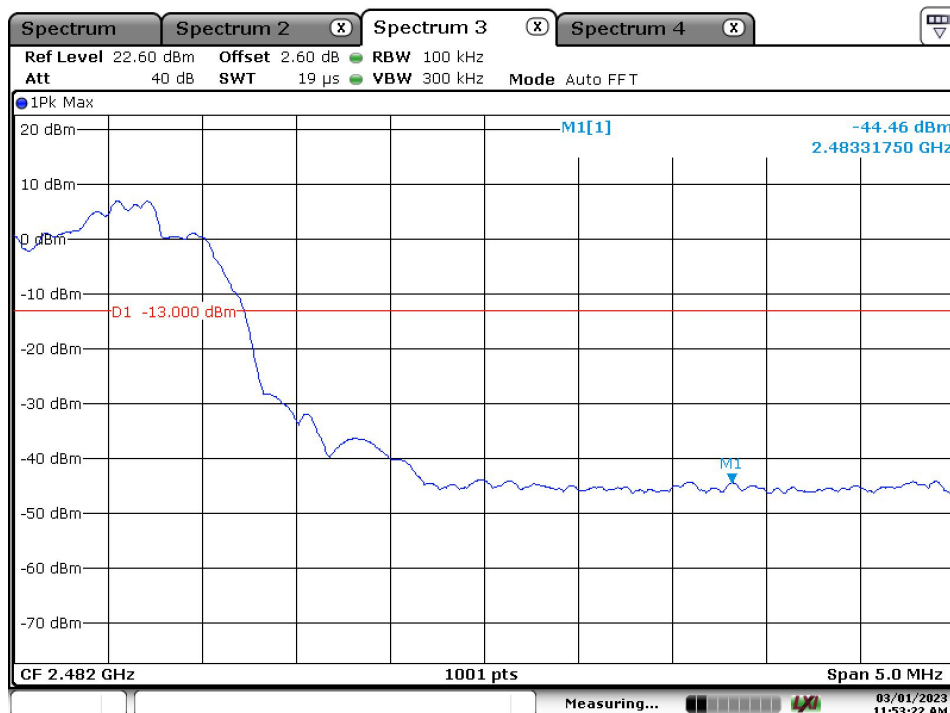
Date: 1.MAR.2023 11:56:33

Band Edge, Hopping Mode, Low Channel



Date: 1.MAR.2023 11:54:08

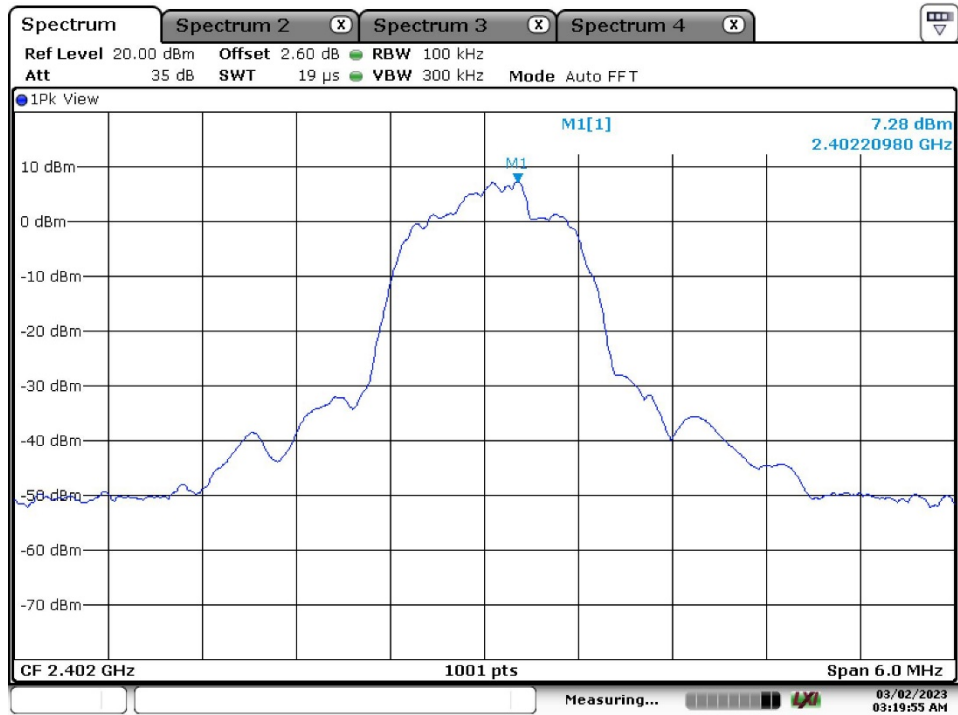
Band Edge, Hopping Mode, High Channel



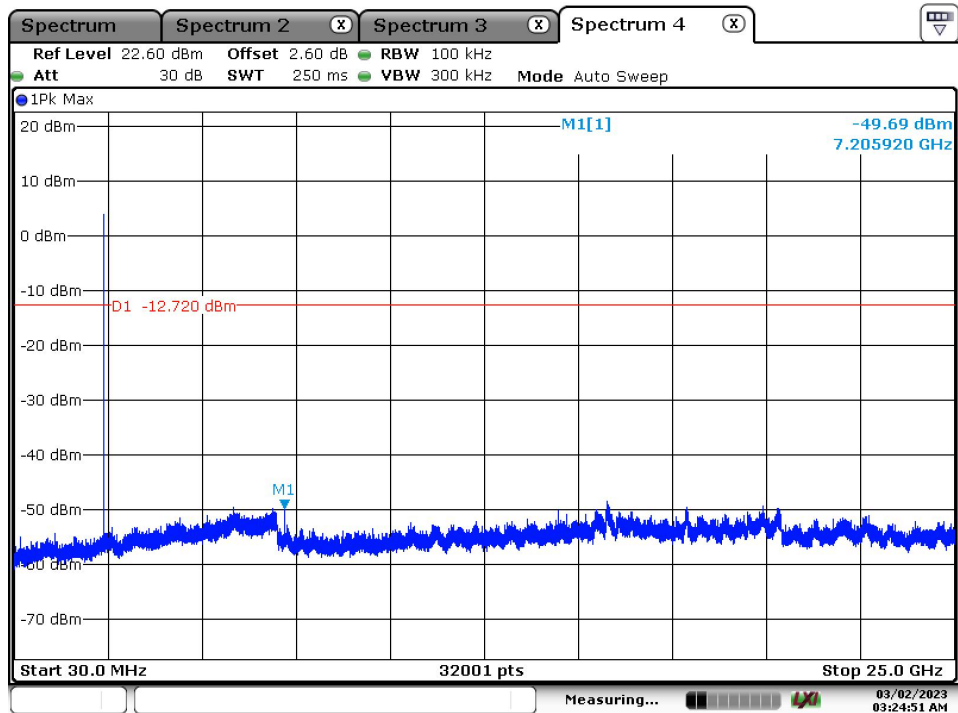
Date: 1.MAR.2023 11:53:22

EDR mode (8DPSK)

Low Channel

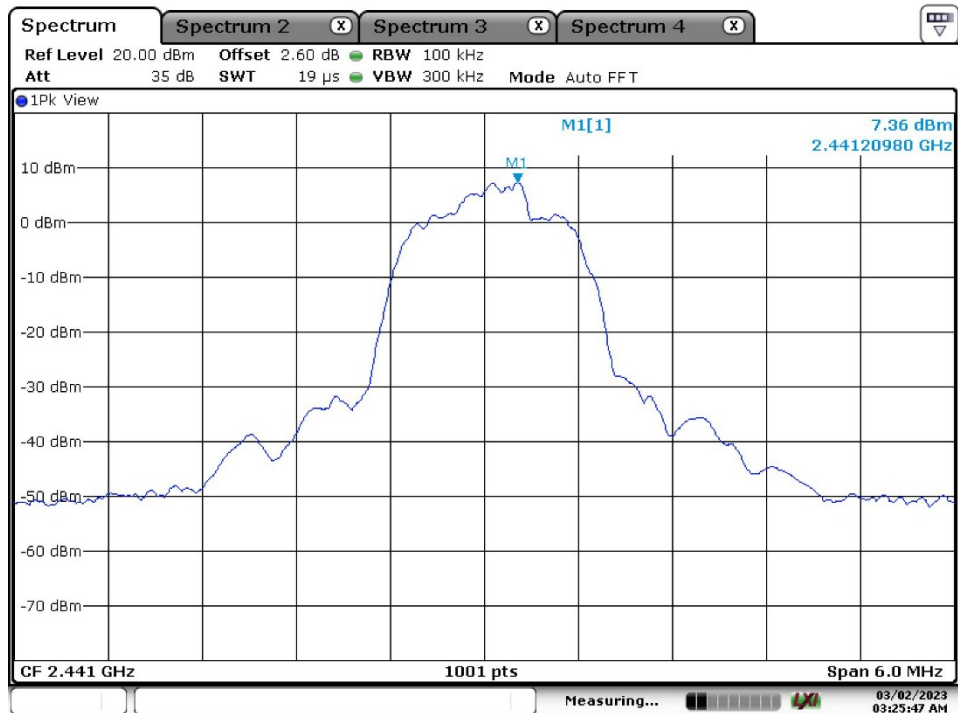


Date: 2.MAR.2023 03:19:55

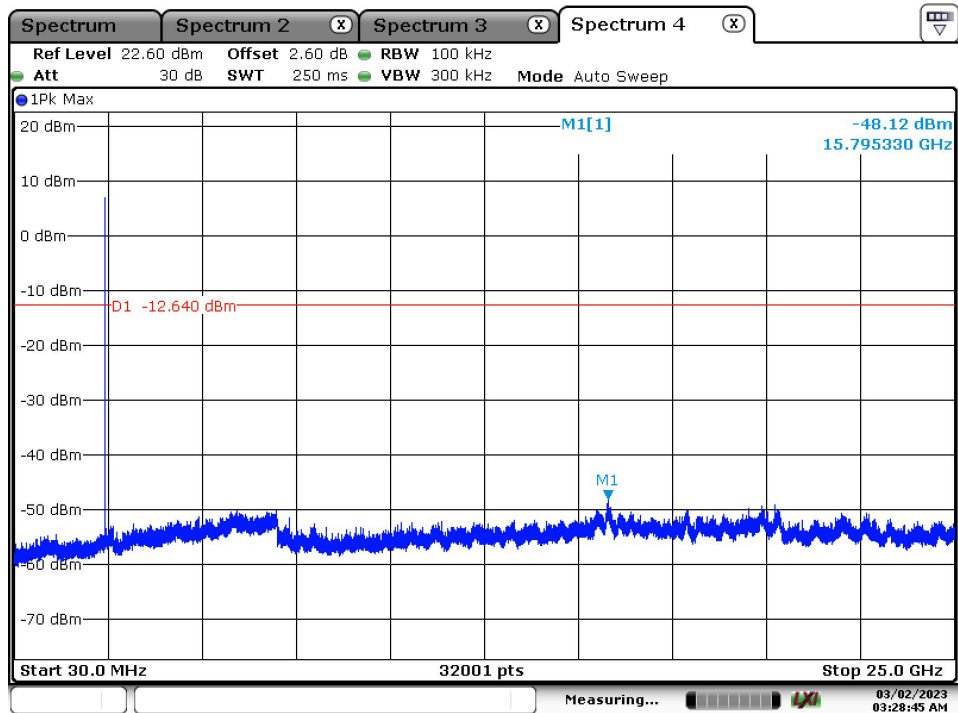


Date: 2.MAR.2023 03:24:51

Middle Channel

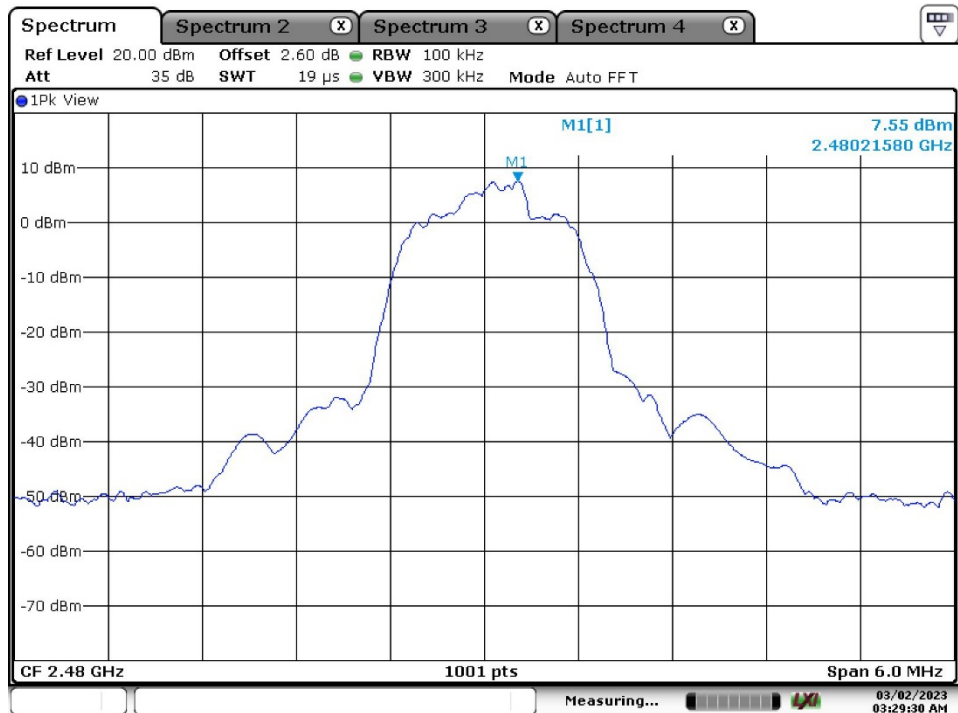


Date: 2.MAR.2023 03:25:47

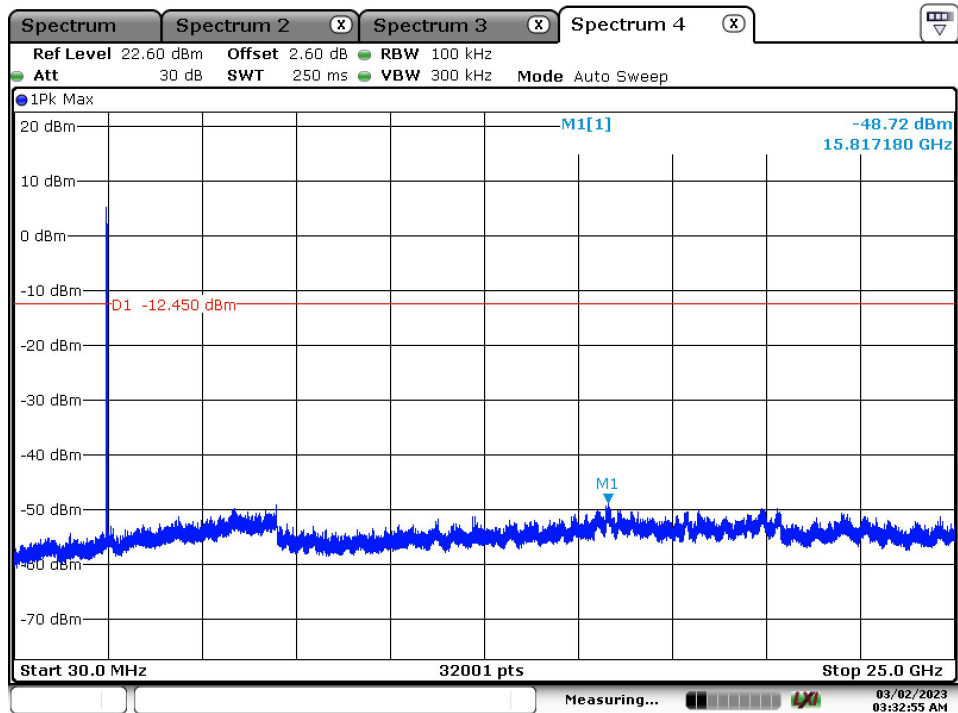


Date: 2.MAR.2023 03:28:45

High Channel

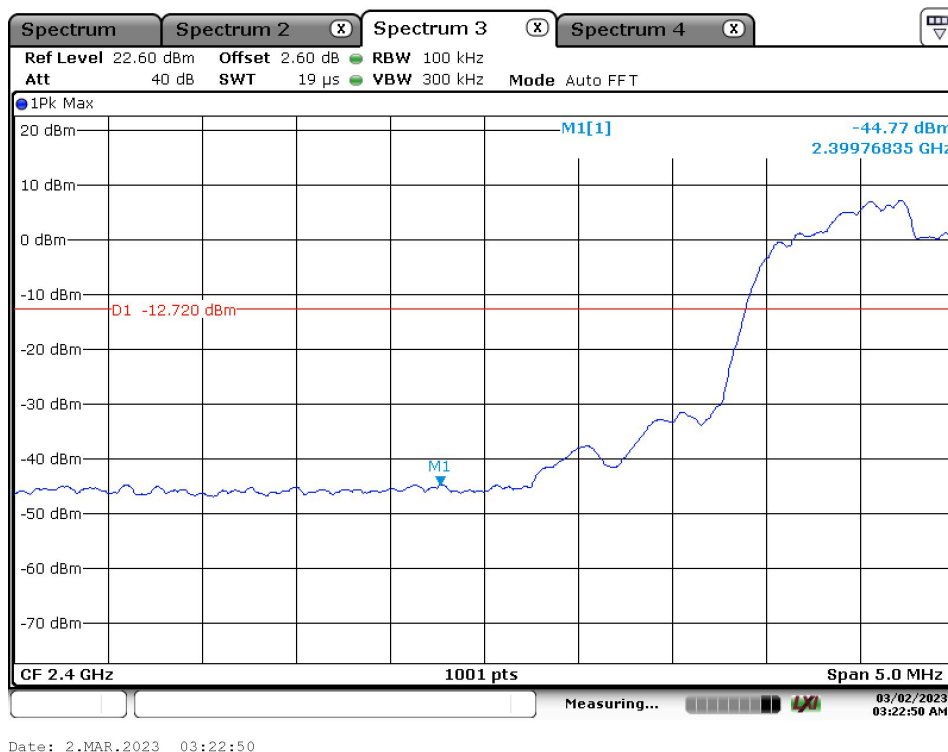


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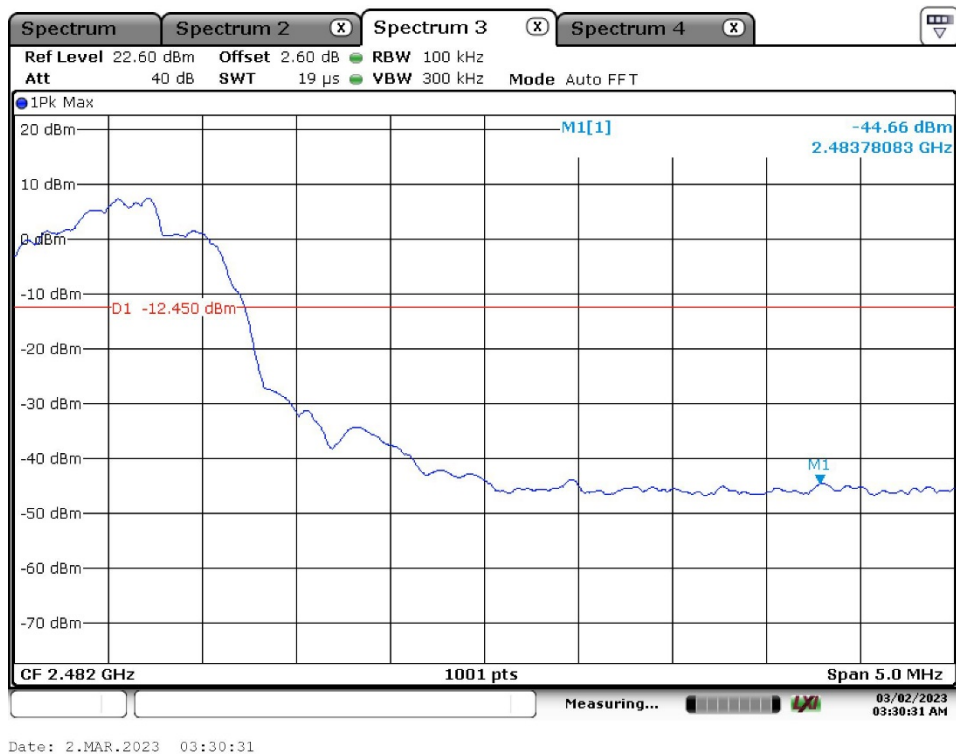


Date: 2.MAR.2023 03:32:55

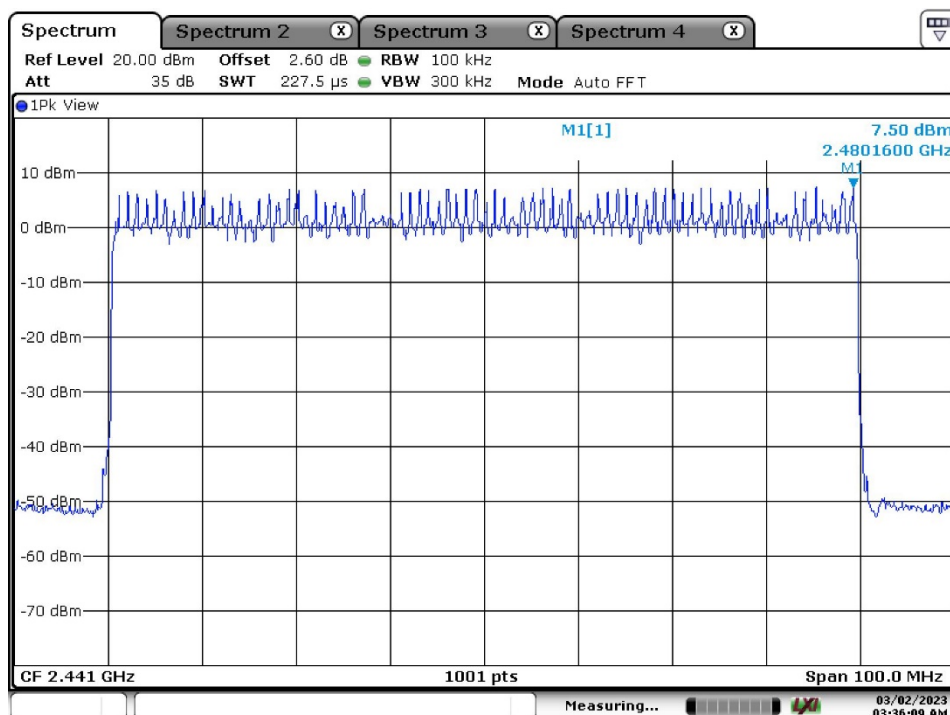
Band Edge, Low Channel



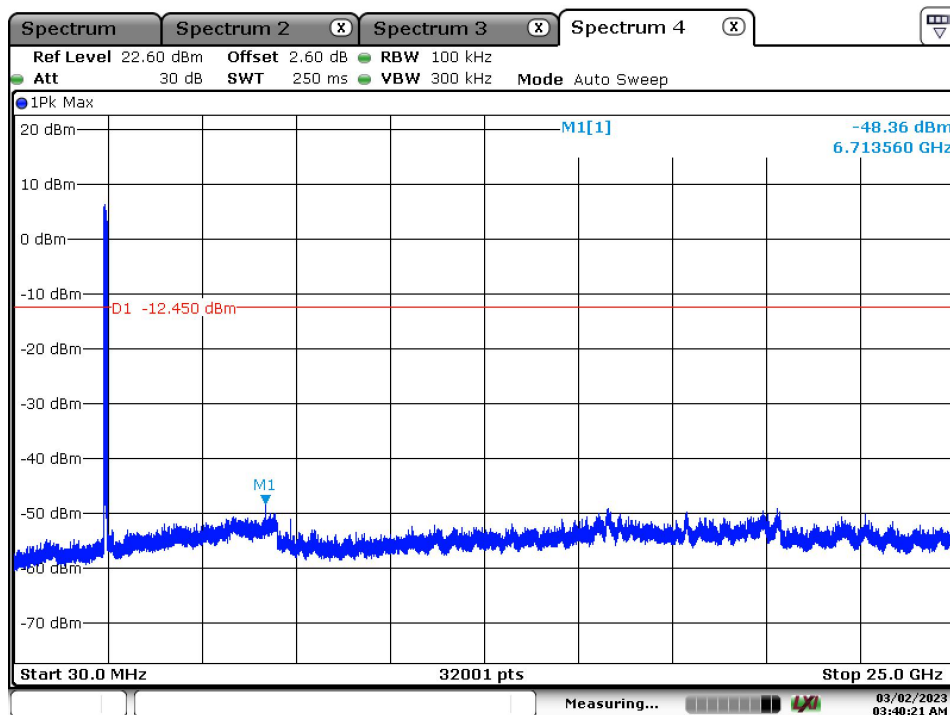
Band Edge, High Channel



Hopping Mode

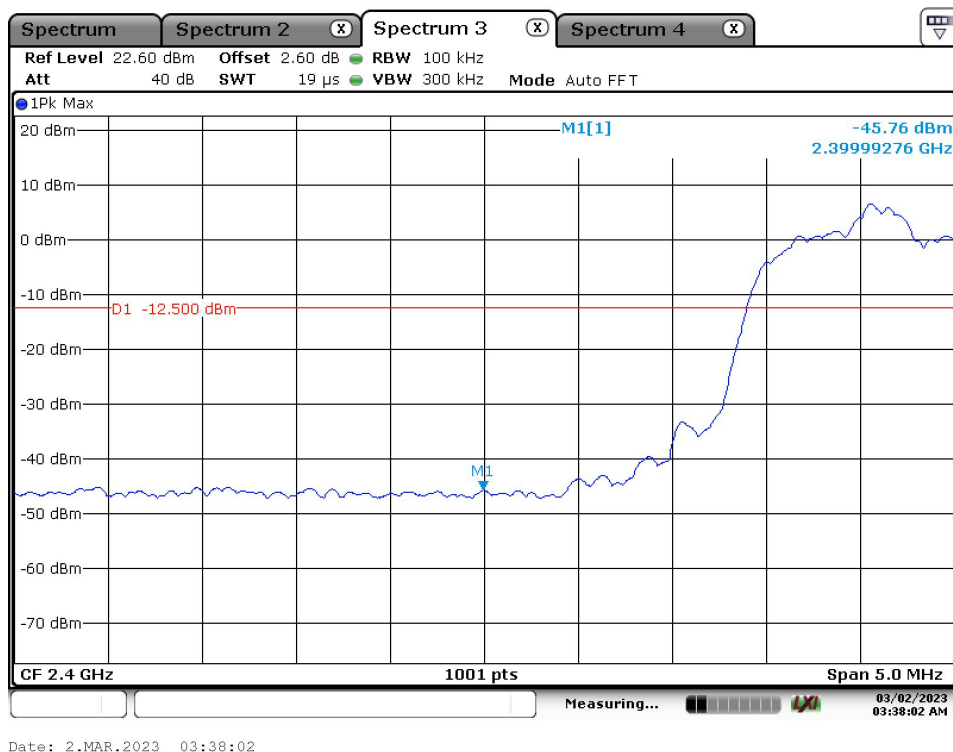


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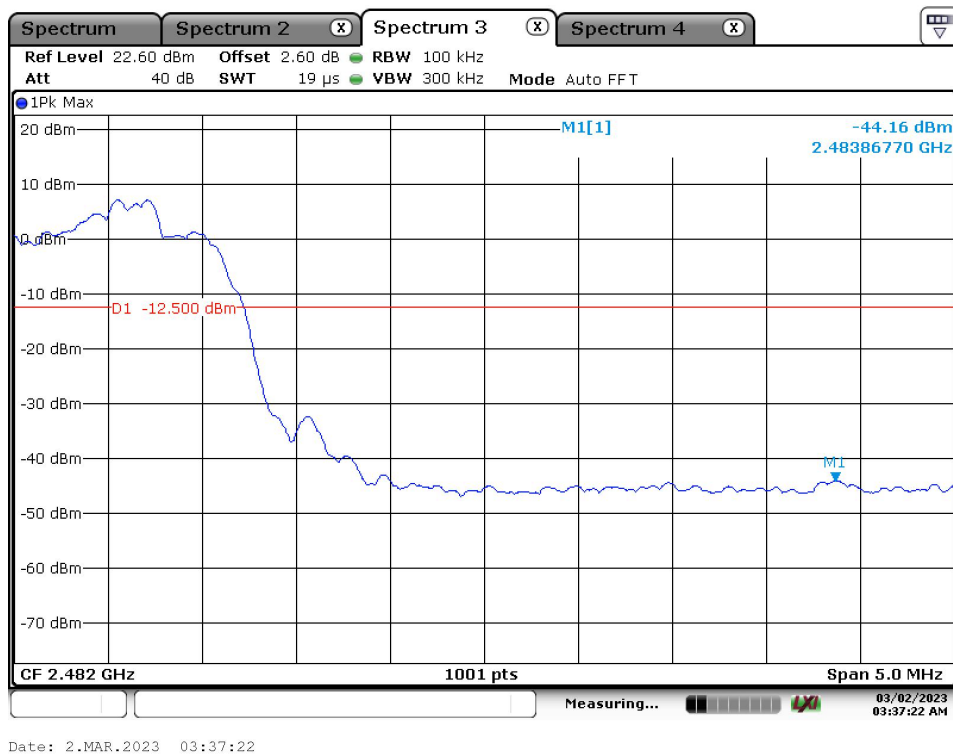


Date: 2.MAR.2023 03:40:21

Band Edge, Hopping Mode, Low Channel



Band Edge, Hopping Mode, High Channel



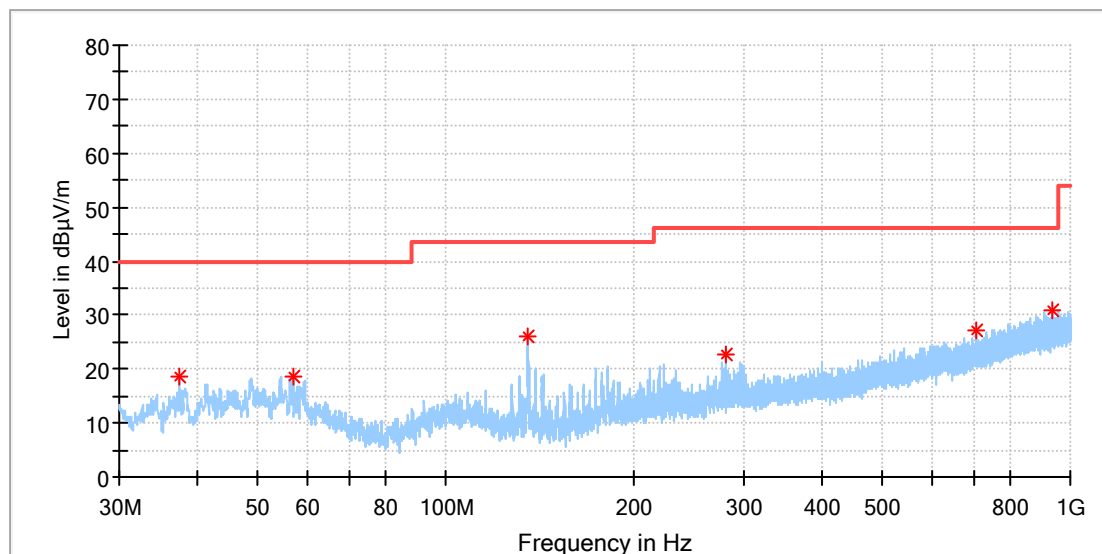
Appendix B.8: Test Results of Radiated Spurious Emissions

Note: 1. Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported. 2. This testing was carried out on different modulations, but only the worst case (GFSK) was presented in this report.

30MHz - 1GHz

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

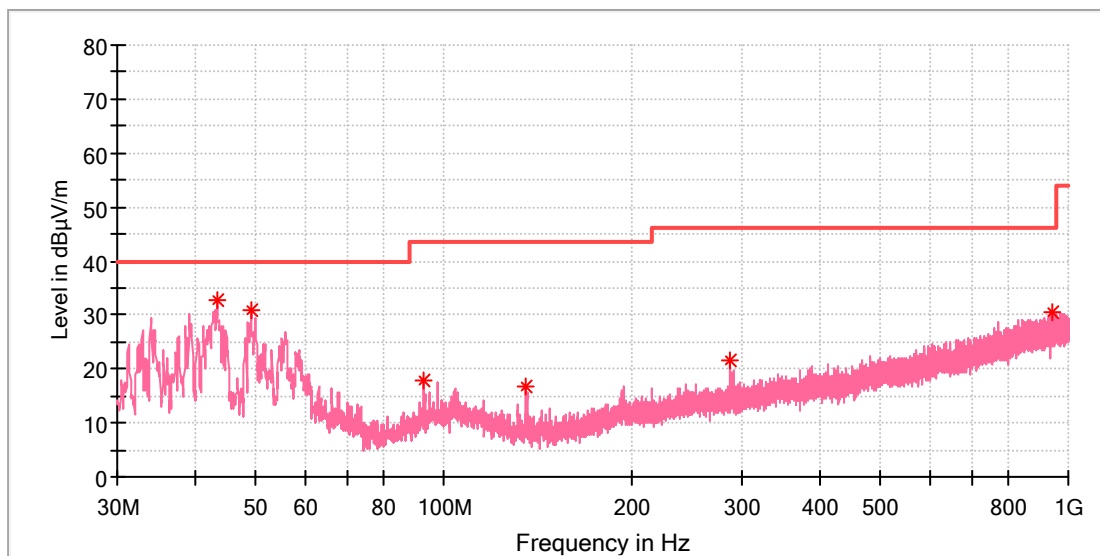


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.469000	18.69	40.00	21.31	100.0	H	174.0	-21.0
56.966000	18.71	40.00	21.29	100.0	H	235.0	-18.7
135.051000	25.88	43.50	17.62	100.0	H	145.0	-22.1
281.715000	22.61	46.00	23.39	100.0	H	48.0	-16.6
706.672000	27.12	46.00	18.88	100.0	H	323.0	-7.9
936.707500	30.92	46.00	15.08	100.0	H	263.0	-4.6

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

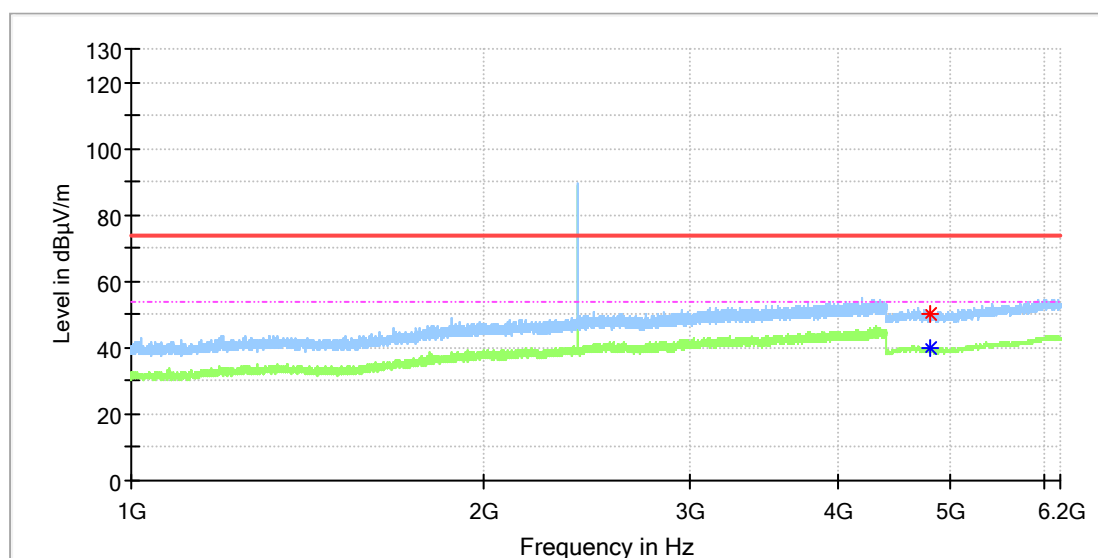
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
43.337500	32.80	40.00	7.20	100.0	V	273.0	-19.2
49.157500	30.77	40.00	9.23	100.0	V	0.0	-18.3
92.856000	17.94	43.50	25.56	100.0	V	187.0	-20.3
135.633000	16.66	43.50	26.84	100.0	V	108.0	-22.1
287.050000	21.57	46.00	24.43	100.0	V	27.0	-16.6
940.151000	30.52	46.00	15.48	100.0	V	273.0	-4.5

1GHz - 18GHz

Note: The highest waveform in the figure is Bluetooth Fundamental.

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

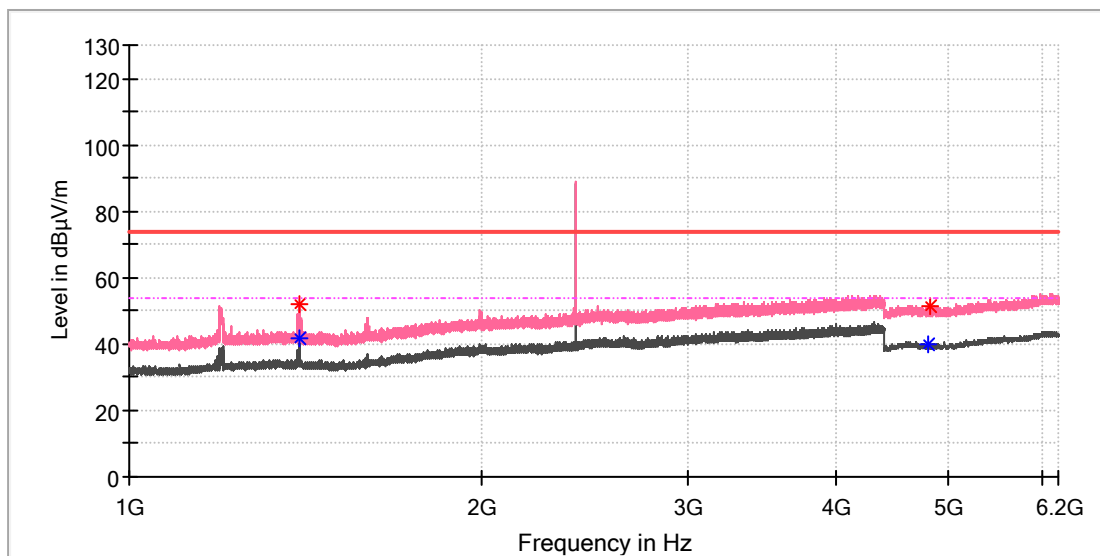


Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4802.500000	50.37	---	74.00	23.63	100.0	H	358.0	11.8
4805.000000	---	39.64	54.00	14.36	100.0	H	218.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

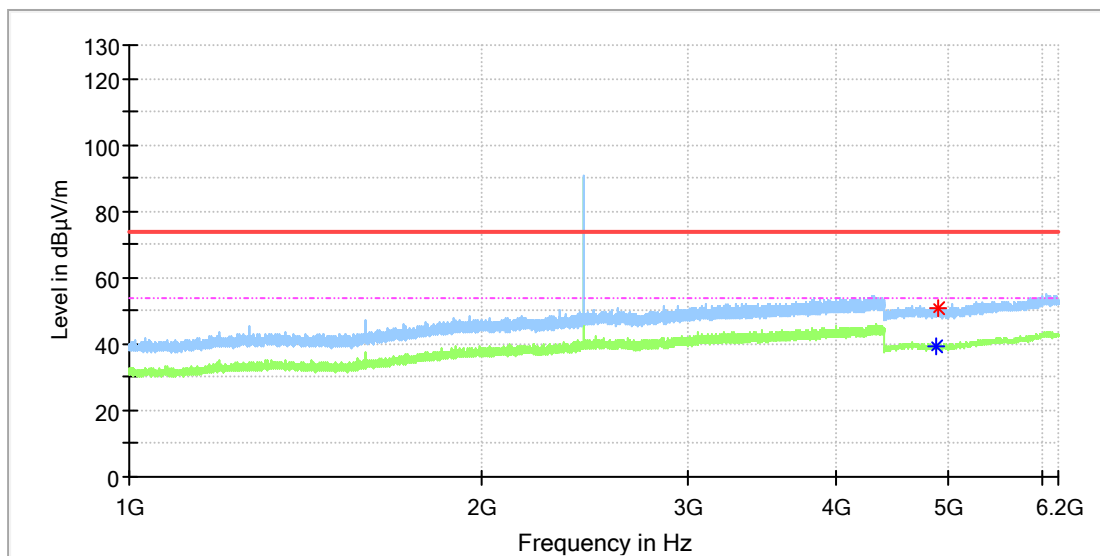


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1397.800000	52.30	---	74.00	21.70	100.0	V	270.0	1.7
1397.800000	---	41.60	54.00	12.40	100.0	V	270.0	1.7
4806.500000	---	40.06	54.00	13.94	100.0	V	116.0	11.8
4818.000000	51.40	---	74.00	22.60	150.0	V	102.0	11.8

EUT Information

EUT Name: Portable Bluetooth Speaker
Model: GO+PLAY 3
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168412906/A003415293-001
Test Voltage:: AC 120V, 60Hz
Remark: Temp 22 Humi:55%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin

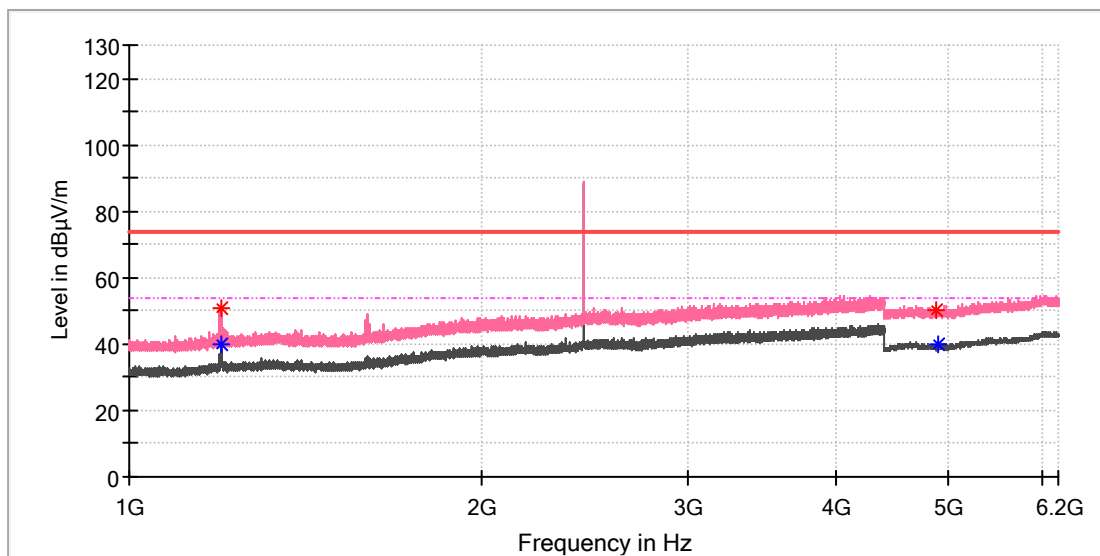


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4870.500000	---	39.39	54.00	14.61	100.0	H	224.0	11.8
4900.000000	50.87	---	74.00	23.13	100.0	H	186.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

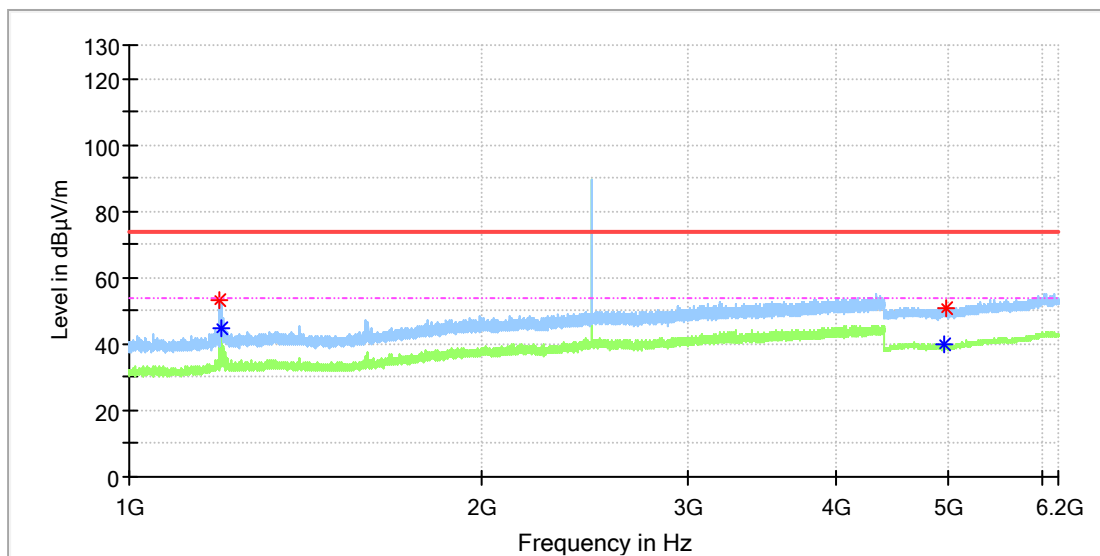


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1196.860000	50.85	---	74.00	23.15	100.0	V	222.0	1.1
1196.860000	---	39.62	54.00	14.38	100.0	V	222.0	1.1
4877.000000	50.21	---	74.00	23.79	100.0	V	204.0	11.8
4899.000000	---	40.18	54.00	13.82	100.0	V	316.0	11.8

EUT Information

EUT Name: Portable Bluetooth Speaker
Model: GO+PLAY 3
Test Mode: BR_DH5_High channel
Order No/Sample No: 168412906/A003415293-001
Test Voltage:: AC 120V, 60Hz
Remark: Temp 22 Humi:55%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin

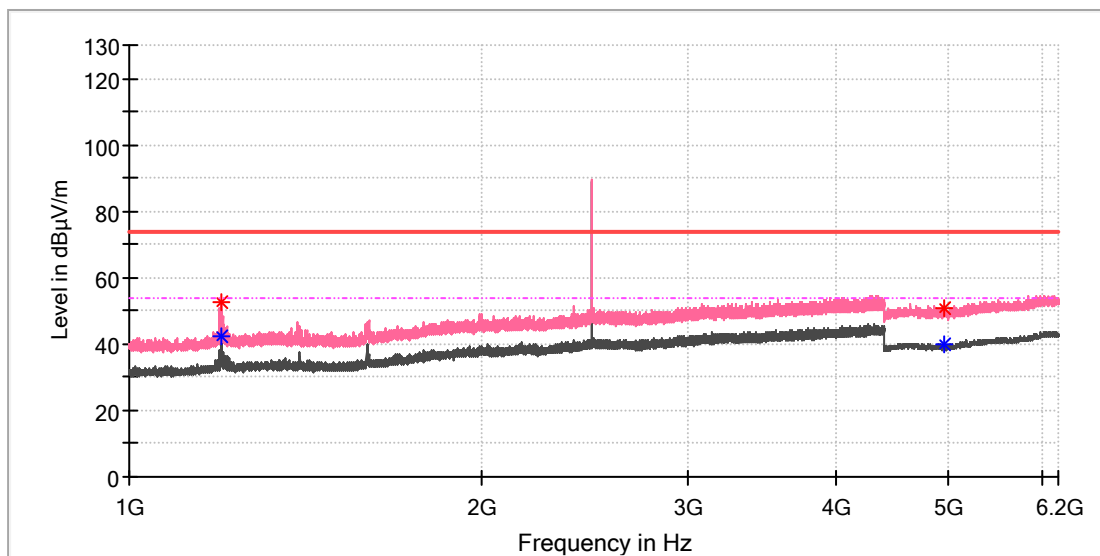


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1194.990000	52.97	---	74.00	21.03	100.0	H	251.0	1.1
1196.350000	---	44.80	54.00	9.20	100.0	H	293.0	1.1
4949.500000	---	39.76	54.00	14.24	100.0	H	66.0	11.8
4974.500000	50.93	---	74.00	23.07	100.0	H	80.0	11.8

EUT Information

EUT Name: Portable Bluetooth Speaker
Model: GO+PLAY 3
Test Mode: BR_DH5_High channel
Order No/Sample No: 168412906/A003415293-001
Test Voltage:: AC 120V, 60Hz
Remark: Temp 22 Humi:55%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin

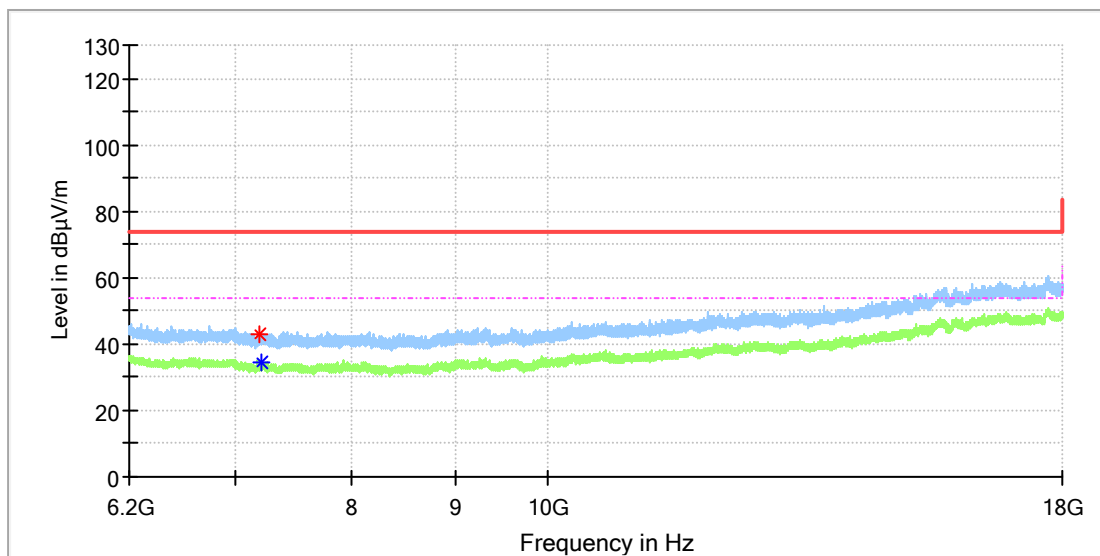


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1198.220000	---	42.13	54.00	11.87	100.0	V	237.0	1.1
1199.240000	52.63	---	74.00	21.37	100.0	V	256.0	1.1
4949.000000	50.56	---	74.00	23.44	100.0	V	63.0	11.8
4959.000000	---	39.70	54.00	14.30	100.0	V	63.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

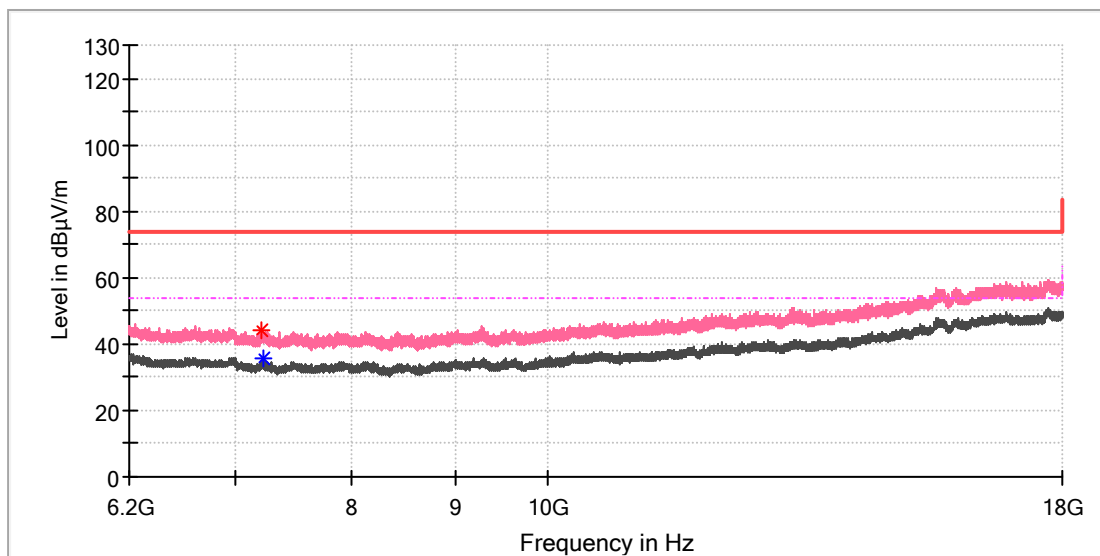


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7201.033333	42.98	---	74.00	31.02	100.0	H	357.0	8.8
7204.966667	---	34.59	54.00	19.41	100.0	H	103.0	8.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

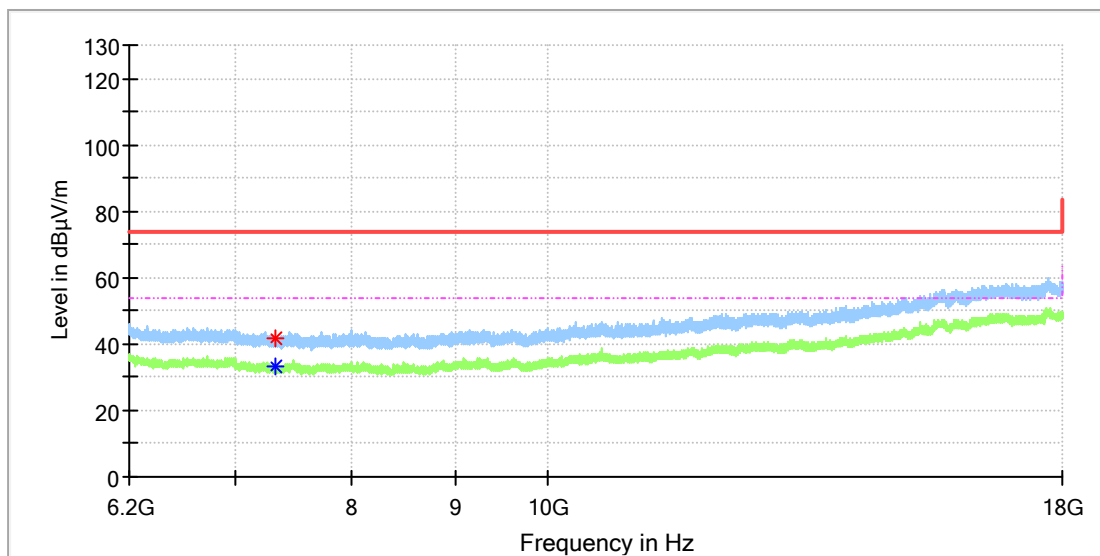


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7218.241667	43.85	---	74.00	30.15	100.0	V	3.0	8.7
7226.108333	---	35.61	54.00	18.39	100.0	V	147.0	8.7

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

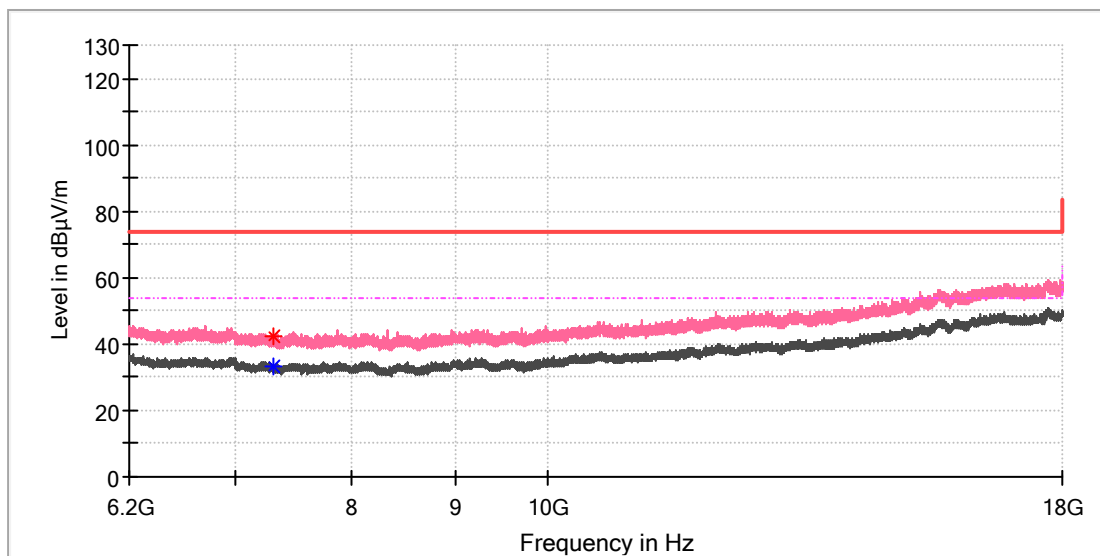


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.966667	41.77	---	74.00	32.23	100.0	H	47.0	8.2
7332.308333	---	33.43	54.00	20.57	100.0	H	23.0	8.1

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

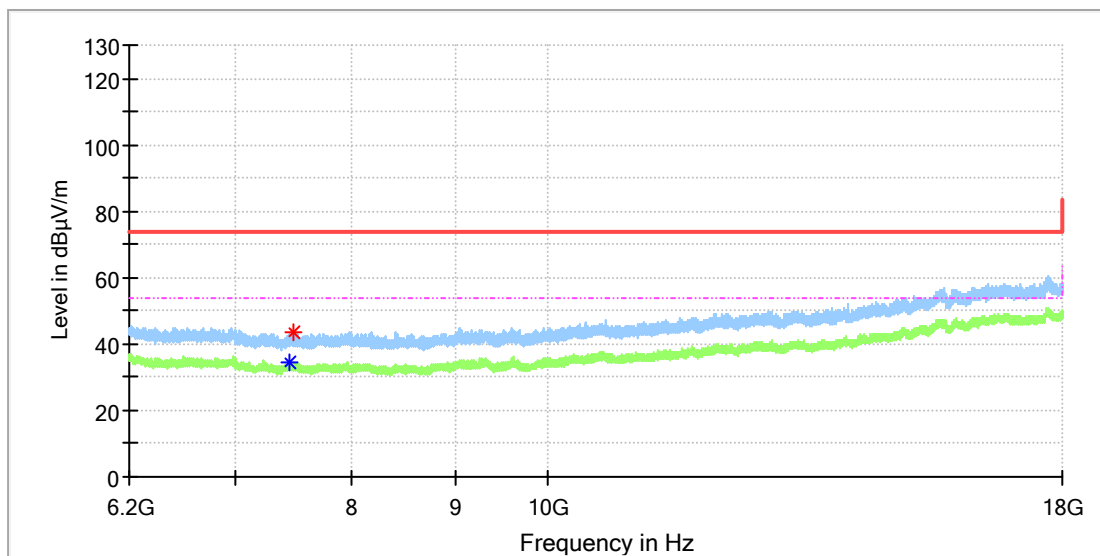


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7306.741667	42.41	---	74.00	31.59	100.0	V	202.0	8.3
7307.233333	---	33.49	54.00	20.51	100.0	V	119.0	8.3

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

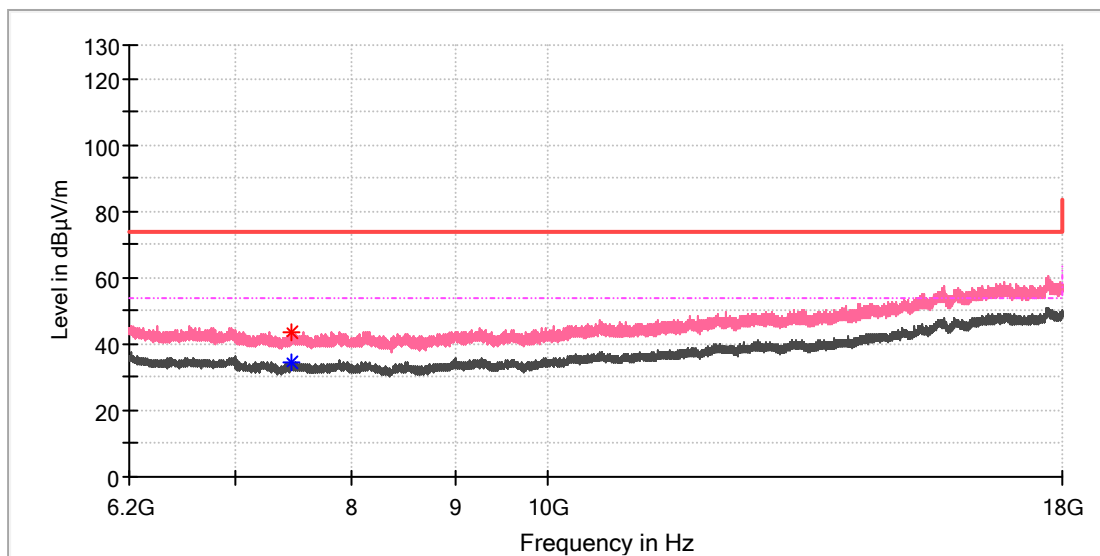


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7448.341667	---	34.30	54.00	19.70	100.0	H	197.0	8.5
7483.250000	43.27	---	74.00	30.73	100.0	H	35.0	8.7

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



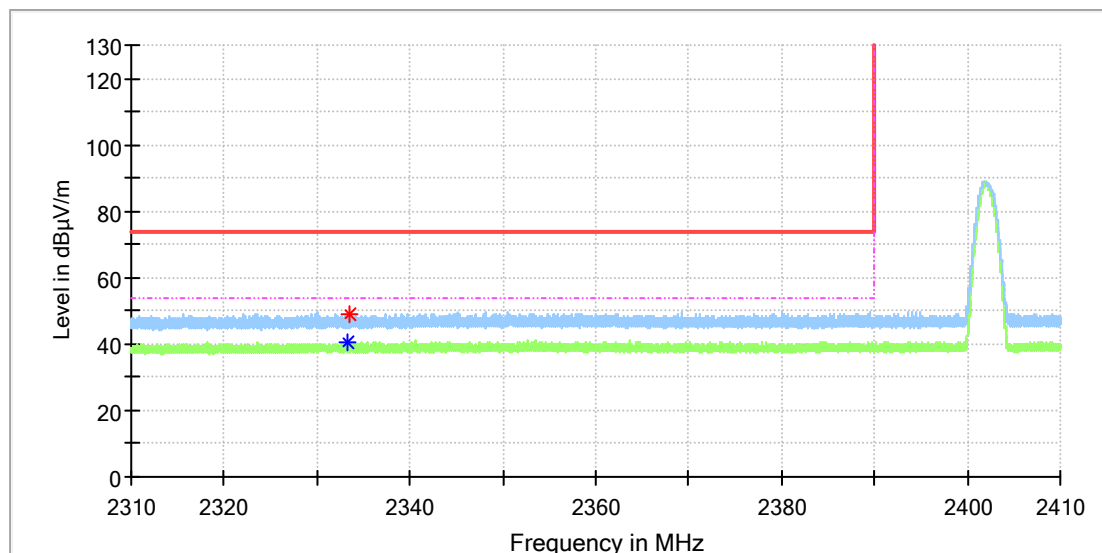
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7461.125000	43.41	---	74.00	30.59	100.0	V	351.0	8.5
7465.550000	---	34.57	54.00	19.43	100.0	V	326.0	8.6

Appendix B.9: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

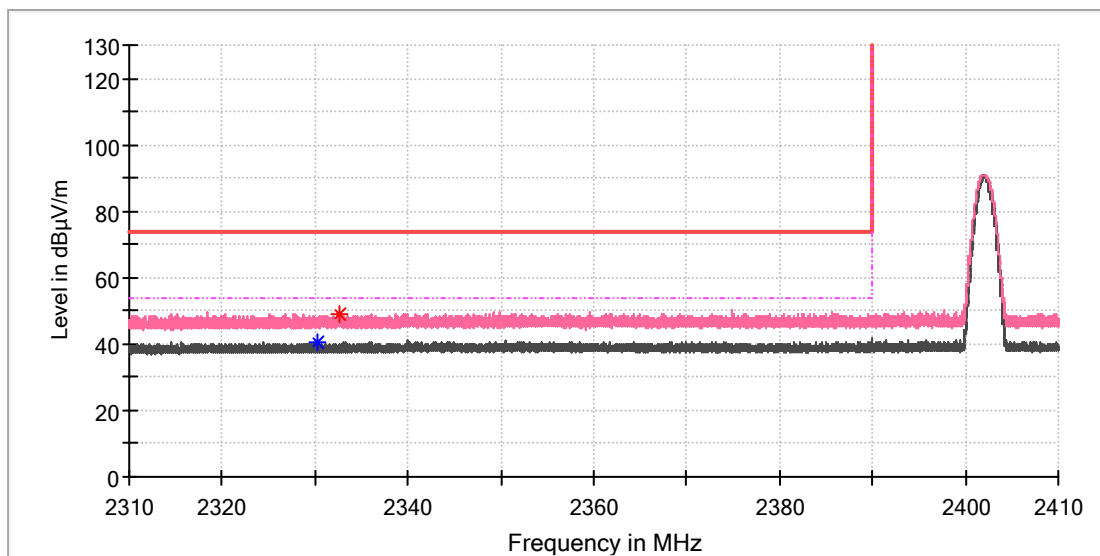


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2333.350000	---	40.71	54.00	13.29	100.0	H	173.0	6.7
2333.525000	49.22	---	74.00	24.78	100.0	H	134.0	6.7

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

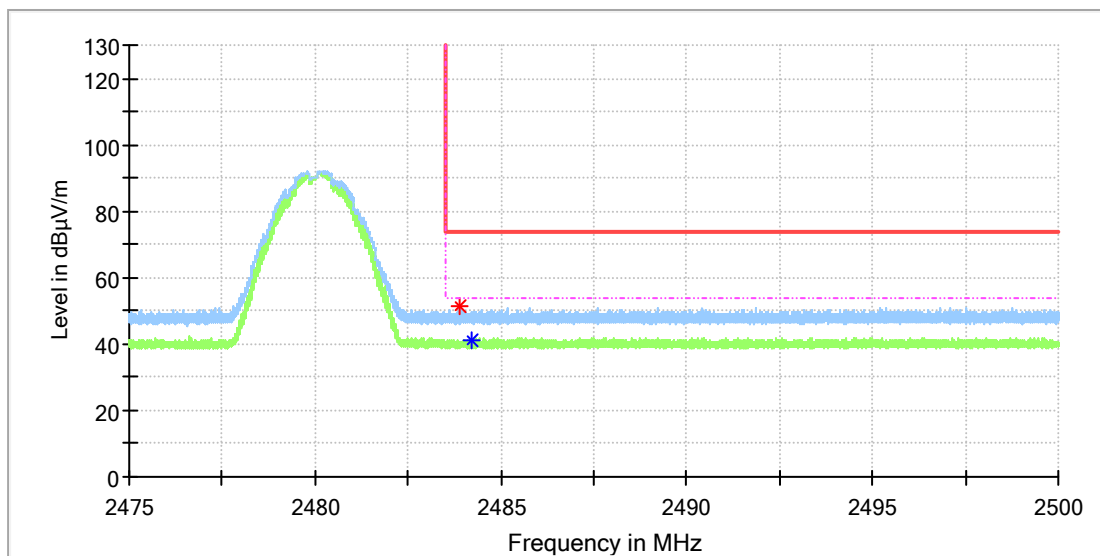


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2330.330000	---	40.67	54.00	13.33	100.0	V	219.0	6.7
2332.680000	48.96	---	74.00	25.04	100.0	V	317.0	6.7

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	GO+PLAY 3
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

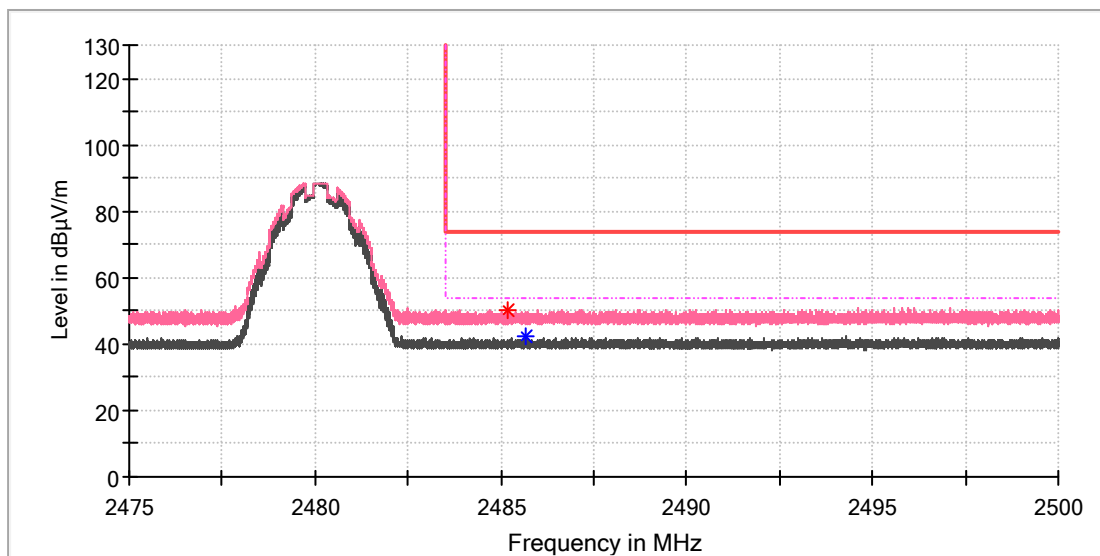


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.913750	51.29	---	74.00	22.71	100.0	H	202.0	7.4
2484.190000	---	41.24	54.00	12.76	100.0	H	233.0	7.4

EUT Information

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Model:	GO+PLAY 3
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168412906/A003415293-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
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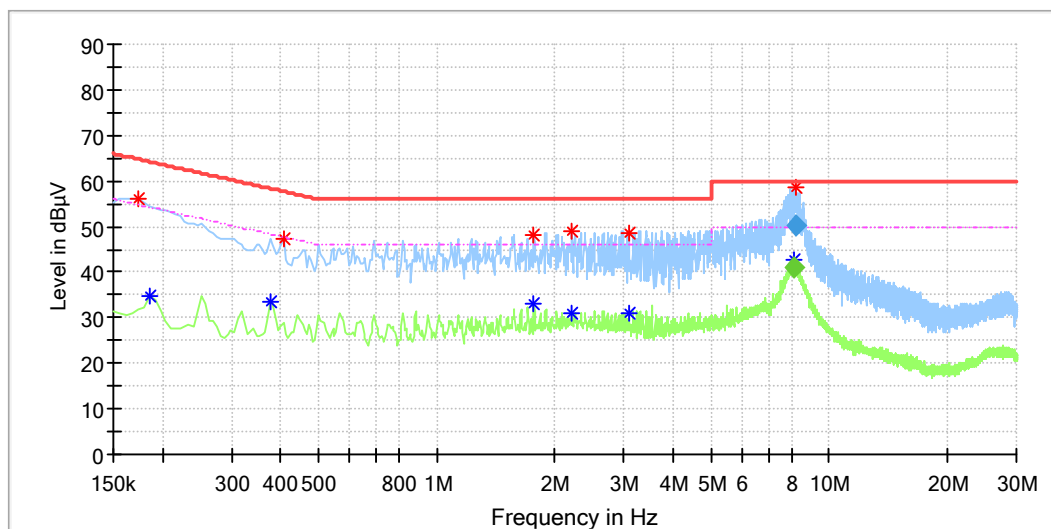
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2485.201250	50.10	---	74.00	23.90	100.0	V	189.0	7.4
2485.645000	---	42.19	54.00	11.81	100.0	V	137.0	7.4

Appendix B.10: Test Results of Conducted Emissions

EUT Information

EUT Name:	Portable Bluetooth Speaker
Order Number:	168412906 220
Model:	GO + PLAY 3
Test Mode:	Bluetooth playing + USB-C charge out
Test Voltage:	AC 120V/60Hz
Test Standard:	FCC Part 15B
Test By:/Review By:	Charlie Zha/Gary Chen
Tem./Hum./Pressure:	23.2°C/50.6%/101kPa
Remark:	SR2



Critical Freqs

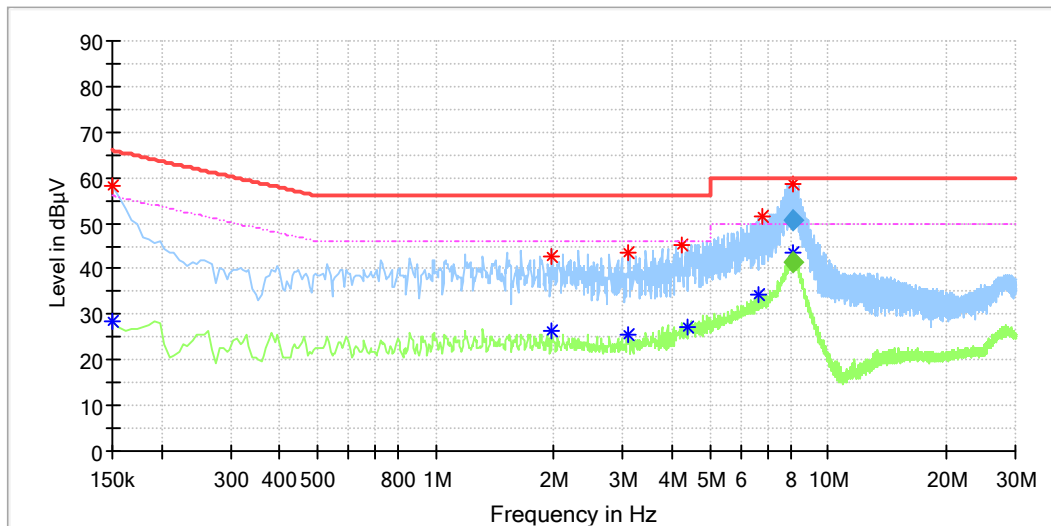
Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.173880	56.09	---	64.77	8.68	L1	9.9
0.185820	---	34.59	54.22	19.64	L1	9.9
0.376860	---	33.38	48.35	14.97	L1	9.9
0.406710	47.23	---	57.72	10.48	L1	9.9
1.767870	48.13	---	56.00	7.87	L1	10.1
1.767870	---	33.17	46.00	12.83	L1	10.1
2.209650	---	31.02	46.00	14.98	L1	10.2
2.209650	48.90	---	56.00	7.10	L1	10.2
3.099180	48.75	---	56.00	7.25	L1	10.2
3.099180	---	31.12	46.00	14.88	L1	10.2
8.130420	---	42.58	50.00	7.42	L1	10.3
8.237880	58.75	---	60.00	1.25	L1	10.3

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
8.130420	---	41.17	50.00	8.83	1000.0	9.000	L1	10.3
8.237880	50.09	---	60.00	9.91	1000.0	9.000	L1	10.3

EUT Information

EUT Name:	Portable Bluetooth Speaker
Order Number:	168412906 220
Model:	GO + PLAY 3
Test Mode:	Bluetooth playing + USB-C charge out
Test Voltage:	AC 120V/60Hz
Test Standard:	FCC Part 15B
Test By:/Review By:	Charlie Zha/Gary Chen
Tem./Hum./Pressure:	23.2°C/50.6%/101kPa
Remark:	SR2



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.150000	---	28.39	56.00	27.61	N	9.8
0.150000	58.15	---	66.00	7.85	N	9.8
1.976820	42.64	---	56.00	13.36	N	9.8
1.982790	---	26.35	46.00	19.65	N	9.8
3.105150	---	25.64	46.00	20.36	N	9.9
3.105150	43.65	---	56.00	12.35	N	9.9
4.233480	45.41	---	56.00	10.59	N	9.9
4.358850	---	27.15	46.00	18.85	N	9.9
6.675210	---	34.20	50.00	15.80	N	10.0
6.806550	51.44	---	60.00	8.56	N	10.0
8.163210	---	43.38	50.00	6.62	N	10.0
8.171210	58.78	---	60.00	1.22	N	10.0

Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
8.163210	---	41.25	50.00	8.75	1000.0	9.000	N	10.0
8.171210	50.74	---	60.00	9.26	1000.0	9.000	N	10.0