Prüfbericht - Produkte
Test Report - Products

TÜVRheinland®

Prüfbericht-Nr.: *Test report no.:*	**CN220J2E 001**	**Auftrags-Nr.:** *Order no.:*	168385386	**Seite 1 von 25** *Page 1 of 25*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2022-08-05	
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.:*	CLIP4D (Trademark: JBL)			
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 CFR47 FCC Part 2.1093		RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 March 2019 RSS-102 Issue 5 March 2015	
Wareneingangsdatum: *Date of receipt:*	2022-08-05	Refer to photos document		
Prüfmuster-Nr.: *Test sample No.:*	A003313451-002, 003, A003312855-015			
Prüfzeitraum: *Testing period:*	2022-08-11 – 2022-08-16			
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:*	X Alex Lan Signed by: Alex Lan	**genehmigt von:** *authorized by:*	X Winnie Hou Signed by: Winnie Hou
Datum: *Date:* 2022-09-09		**Ausstellungsdatum:** *Issue date:* 2022-09-13	
Stellung / Position	Assistant Project Manager	**Stellung** / Position	Department Manager

Sonstiges / *Other:* FCC ID: APIJBLCLIP4D
IC: 6132A-JBLCLIP4D HVIN: CLIP4D

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

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhalt
	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*

V05

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 NUMBER OF HOPPING FREQUENCY
RESULT: Pass

5.1.9 TIME OF OCCUPANCY
RESULT: Pass

5.1.10 CONDUCTED EMISSION ON AC MAINS
RESULT: Pass

6.1.1 ELECTROMAGNETIC FIELDS
RESULT: Pass

Contents

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.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum				
Description	**Manufacturer**	**Model**	**Serial No.**	**Calibrated until**
Wireless Connectivity Tester	R&S	CMW270	101375	2023-08-02
Signal Analyzer	R&S	FSV 40	101441	2023-08-01
Vector Signal Generator	R&S	SMBV100A	263301	2023-08-01
Signal Generator	R&S	SMB100A	115186	2023-08-01
OSP	R&S	OSP 150	101017	2022-12-02
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	2022-12-02
Power Sensor	R&S	NRP-Z81	105677	2023-08-01
Humid & Temp Programmable Tester	BOST	NTH090-60	19040801	2023-04-02
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2024-06-22
Radiated Spurious Emissions				
Description	**Manufacturer**	**Model**	**Serial No.**	**Calibrated 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	2022-09-08
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2024-08-06
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 Emissions				
Equipment	**Manufacturer**	**M/N**	**S/N**	**Calibrated until**
EMI Test Receiver	R&S	ESR3	102680	2023-02-27

Artificial Mains Network	R&S	ENV216	101445	2023-02-27
Artificial Mains Network	R&S	ENV432	101546	2023-02-27
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 basics using in house standards or comparisons.

2.5 Measurement Uncertainty

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

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

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B 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 Classical Bluetooth technology.

This product has four different color of enclosure: blue, green, black and gray.

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	CLIP4D
Trademark	JBL
FCC ID	APIJBLCLIP4D
IC	6132A-JBLCLIP4D
HVIN	CLIP4D
Extreme Temperature Range	0°C - +45°C
Operating Voltage	DC 3.7V, 1050mAh, 3.885Wh via built-in battery DC 5V, 1A via Type-C interface
Technical Specification of Classical Bluetooth	
Bluetooth Core Version	Bluetooth 5.1
Operating Frequency band	2402 ~ 2480 MHz
Channel Number	79 channels
Channel separation	1MHz
Modulation	GFSK, 8DPSK, π/4DQPSK
Antenna Type	PIFA antenna (PCB Layout Antenna)
Antenna Gain	0 dBi

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	--	--

3.3 Independent Operation Modes

The basic operation modes are:

A. On
   1. Bluetooth transmitting mode (BDR & EDR mode)
      a) Low Channel
      b) Middle Channel
      c) High Channel

B. On, Transmitting on Hopping channel

C. On, Charging with normal operating

D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

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

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

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

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

4.2 Test Operation and Test Software

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

4.3 Special Accessories and Auxiliary Equipment

Table 4: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N or Rating
iPad	Apple	A1893	DMPYN2HZJF8K
Laptop	Lenovo	ThinkPad X240	10Q67059
AC/DC Adapter	HUAWEI	HW-100225C00	Rating Input: AC 100-240V, 50/60Hz, 0.75A Rating Output: DC 5V, 2A or DC 9V, 2A or DC 10V, 2.25A

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)

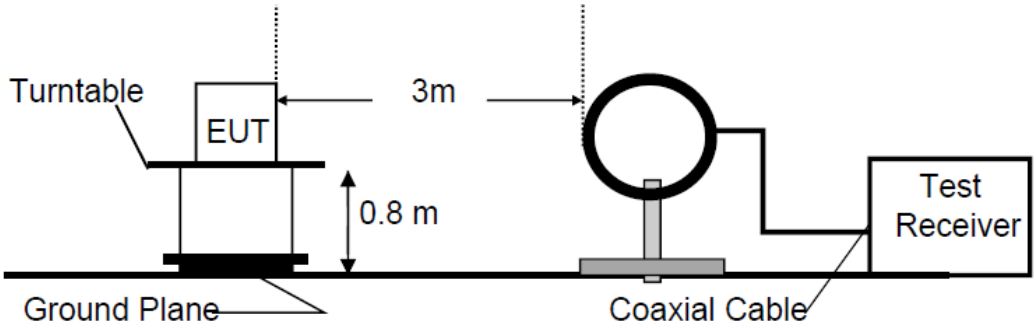


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

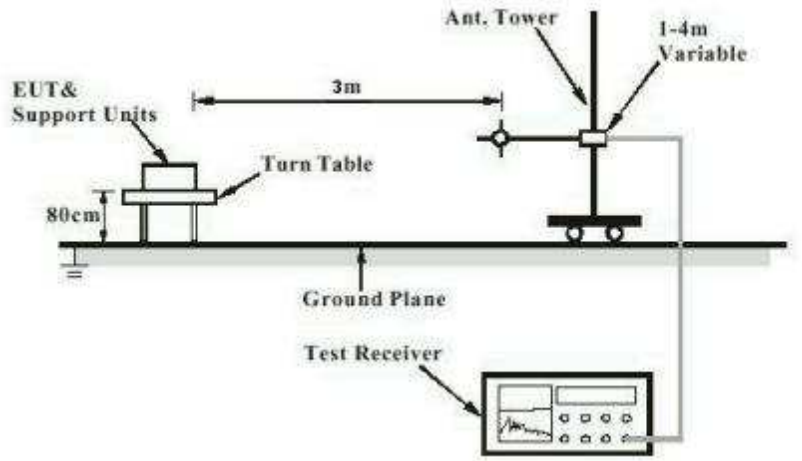


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

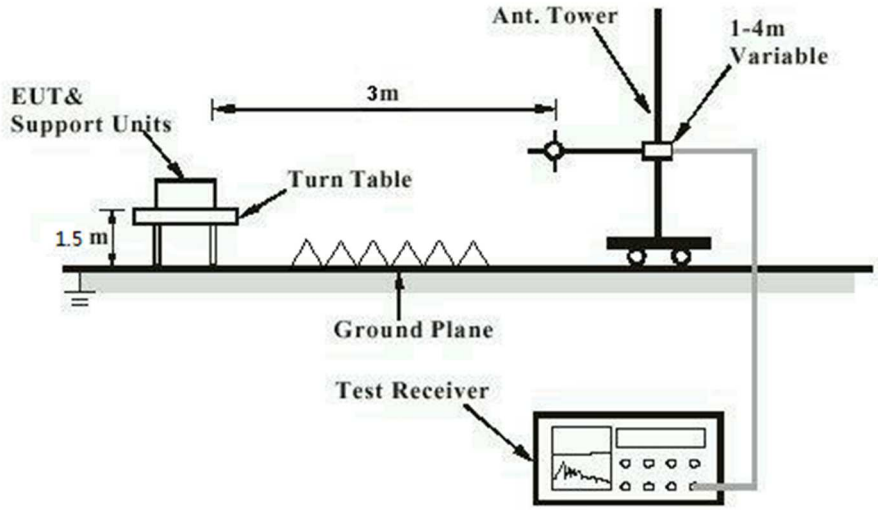


Diagram of Measurement Configuration for Mains Conduction Measurement

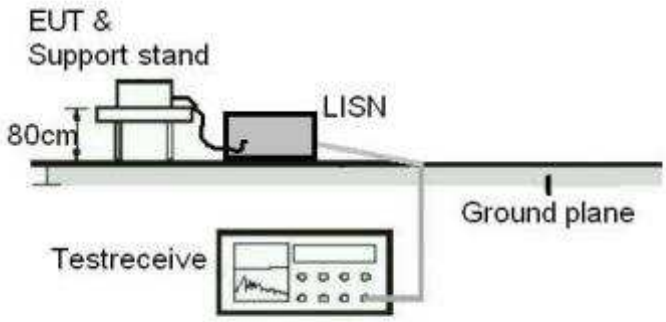
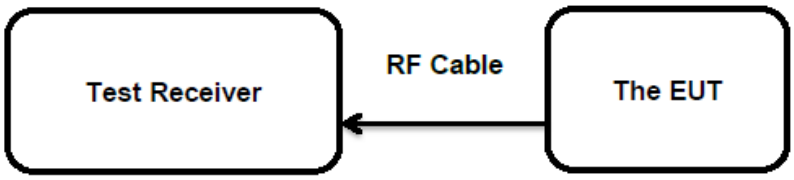


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification

Test standard : FCC Part 15.247(b)(4) and Part 15.203
RSS-Gen Clause 8.3

According to the manufacturer declared, the EUT has one PCB layouy antenna, the directional gain of antennas are 0 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum 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	2022-08-11
Input voltage	DC 3.7V
Operation mode	A.1
Test channel	Low / Middle / High
Ambient temperature	25.6 ℃
Relative humidity	52 %
Atmospheric pressure	101 kPa

Table 5: Test Result of Maximum Conducted Output Power

Test Mode	Channel Frequency (MHz)	Measured Peak Output Power		Limit (W)
		(dBm)	(W)	
BDR	2402	2.3	0.00170	< 0.125
	2441	2.3	0.00170	
	2480	2.7	0.00186	
EDR	2402	3.2	0.00209	< 0.125
	2441	3.2	0.00209	
	2480	3.6	0.00229	

Note: The cable loss is taken into account in results and the maximum e.i.r.p. is 3.6 dBm less than 4W(36dBm).

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	:	2022-08-11
Input voltage	:	DC 3.7V
Operation mode	:	A.1
Test channel	:	Low / Middle / High
Ambient temperature	:	25.6 ℃
Relative humidity	:	52 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B

Table 6: Test Result of 99% Bandwidth

Test Mode	Channel Frequency (MHz)	Measured 99% Bandwidth (KHz)	Limit
BDR	2402	885	/
	2441	885	
	2480	885	
EDR	2402	1170	/
	2441	1170	
	2480	1170	

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

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	:	2022-08-12
Input voltage	:	DC 3.7V
Operation mode	:	A.1
Test channel	:	Low / Middle / High
Ambient temperature	:	25.6 ℃
Relative humidity	:	52 %
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.

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	:	2022-08-16
Input voltage	:	DC 3.7V
Operation mode	:	A.1
Test channel	:	Low / Middle / High
Ambient temperature	:	23 ℃
Relative humidity	:	53 %
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.

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	:	2022-08-11
Input voltage	:	DC 3.7V
Operation mode	:	A.1
Test channel	:	Low / Middle / High
Ambient temperature	:	25.6 ℃
Relative humidity	:	52 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

Table 7: Test Result of -20dB Bandwidth

Test Mode	Channel Frequency (MHz)	20dB Bandwidth (kHz)	2/3 of 20dB Bandwidth (kHz)	Limit (MHz)
BDR	2402	930	620.000	/
	2441	930	620.000	
	2480	935	623.333	
EDR	2402	1260	840.000	/
	2441	1260	840.000	
	2480	1260	840.000	

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	:	≥ 25kHz or 2/3 of 20dB bandwidth, whichever is greater
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-08-11
Input voltage	:	DC 3.7V
Operation mode	:	B
Test channel	:	Low / Middle / High
Ambient temperature	:	25.6 ℃
Relative humidity	:	52 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

Table 8: Test Result of Carrier Frequency Separation

Test Mode	Channel	Channel Frequency (MHz)	Measured Channel Separation (MHz)	Limit (kHz)	Result
BDR	Low Channel	2401.995050	0.980198	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
	Adjacency Channel	2402.975248			
	Middle Channel	2440.995050	0.980198		Pass
	Adjacency Channel	2441.975248			
	High Channel	2478.995050	0.980198		Pass
	Adjacency Channel	2479.975248			
EDR	Low Channel	2401.995050	1.009900	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
	Adjacency Channel	2403.004950			
	Middle Channel	2440.995050	1.009900		Pass
	Adjacency Channel	2442.004950			
	High Channel	2478.995050	1.009900		Pass
	Adjacency Channel	2480.004950			

Note:

The limit is maximum 2/3 of the 20 dB bandwidth: 840KHz.

5.1.8 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	:	2022-08-11
Input voltage	:	DC 3.7V
Operation mode	:	B
Ambient temperature	:	25.6 ℃
Relative humidity	:	52 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

Table 9: Test Result of Number of Hopping Frequency

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

5.1.9 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	:	2022-08-11
Input voltage	:	DC 3.7V
Operation mode	:	B
Test channel	:	Low / Middle / High
Ambient temperature	:	25.6 ℃
Relative humidity	:	52 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

5.1.10 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	:	2022-08-11
Input voltage	:	DC 5V via Type-C interface
Operation mode	:	C
Earthing	:	Not connected
Ambient temperature	:	24.9℃
Relative humidity	:	55.7%
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

6 Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT: **Pass**

Test Specification

Test standard	:	CFR47 FCC Part 2.1093
		RSS-102 Issue 5 March 2019
		FCC KDB Publication 447498 v06
Limit	:	CFR47 FCC Part 1.1310

The measured maximum conducted output power of the EUT is 3..6dBm ≈ 2.29 mW, which is below the SAR exclusion threshold level 9. 6mW (SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm), hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498 D01: Mobile and Portable RF Exposure. Guidance v06.

The measured maximum conducted output power of the EUT is 3..6dBm ≈ 2.29 mW and the measured maximum specified e.i.r.p of the EUT is 3..6dBm ≈ 2.29 mW, which is below the SAR exclusion threshold level 4mW, hence the EUT is excluded from SAR evaluation according to RSS-102 Issue 5 section 2.5.1.

7 Photographs of the Test Set-Up

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

8 List of Tables

Appendix B: Test Results

Appendix B.1: Test Results of 99% Bandwidth

BDR-GFSK

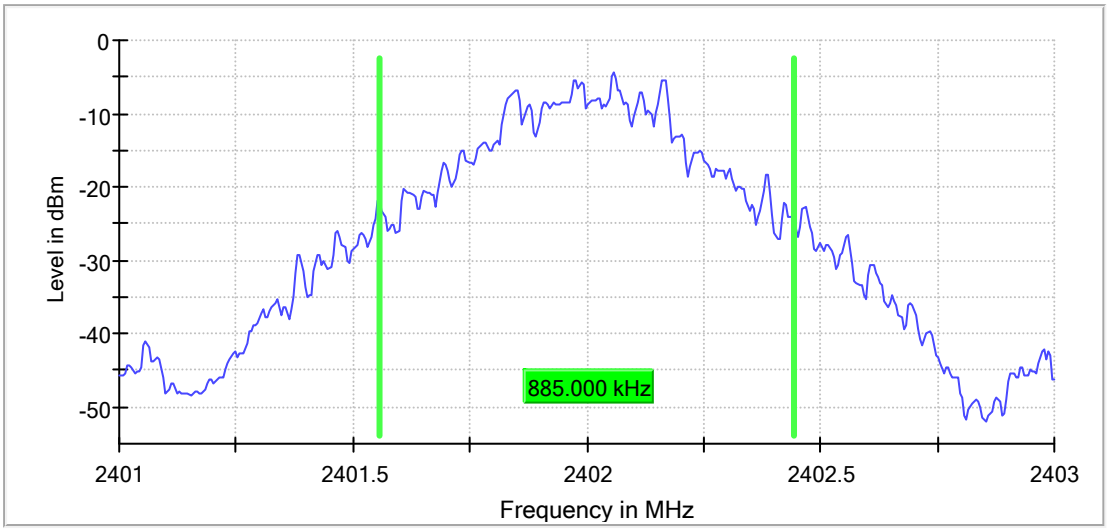
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.885000	---	---	2401.557500	2402.442500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS

99 % Bandwidth



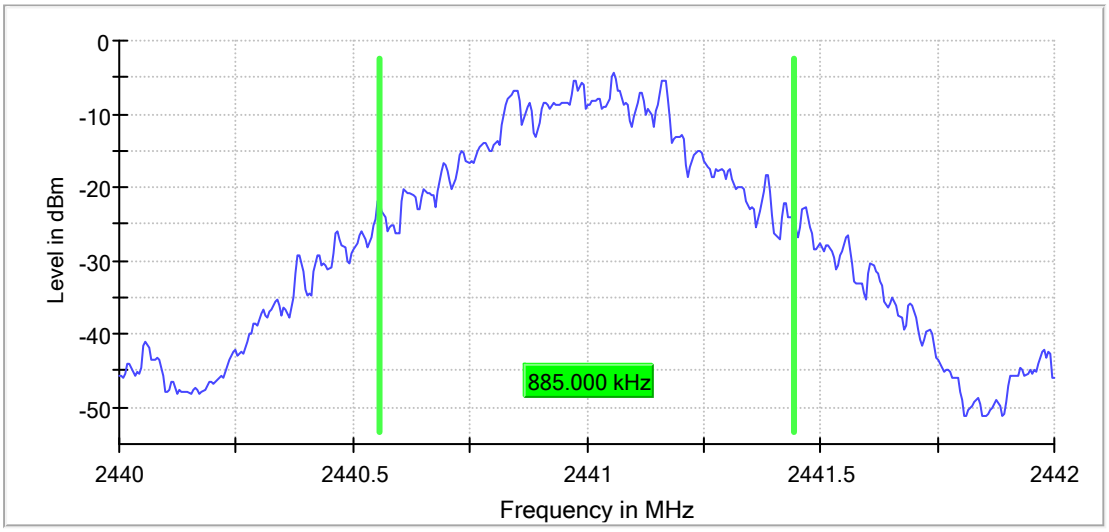
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	0.885000	---	---	2440.557500	2441.442500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS

99 % Bandwidth



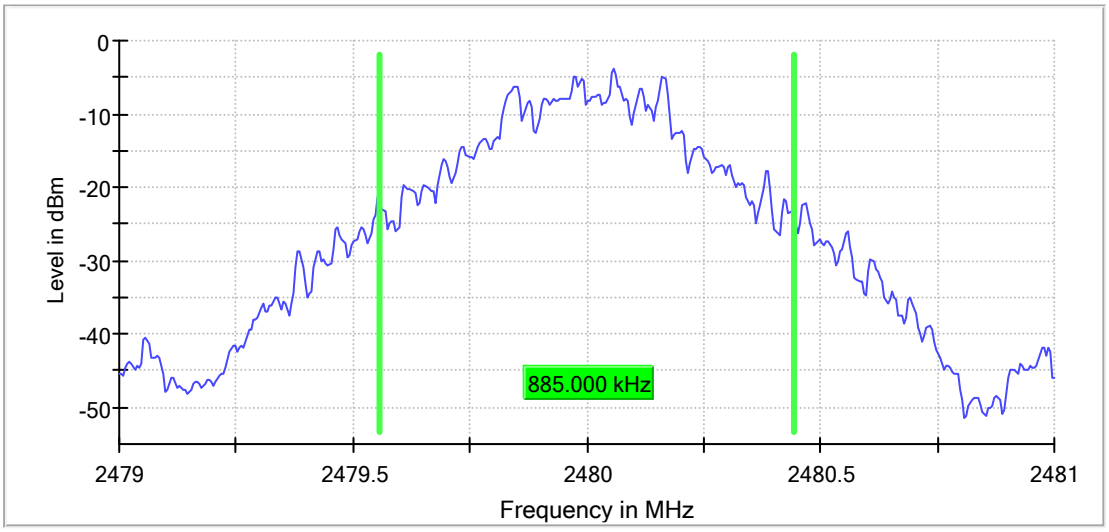
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.885000	---	---	2479.557500	2480.442500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS

99 % Bandwidth



EDR-8DPSK

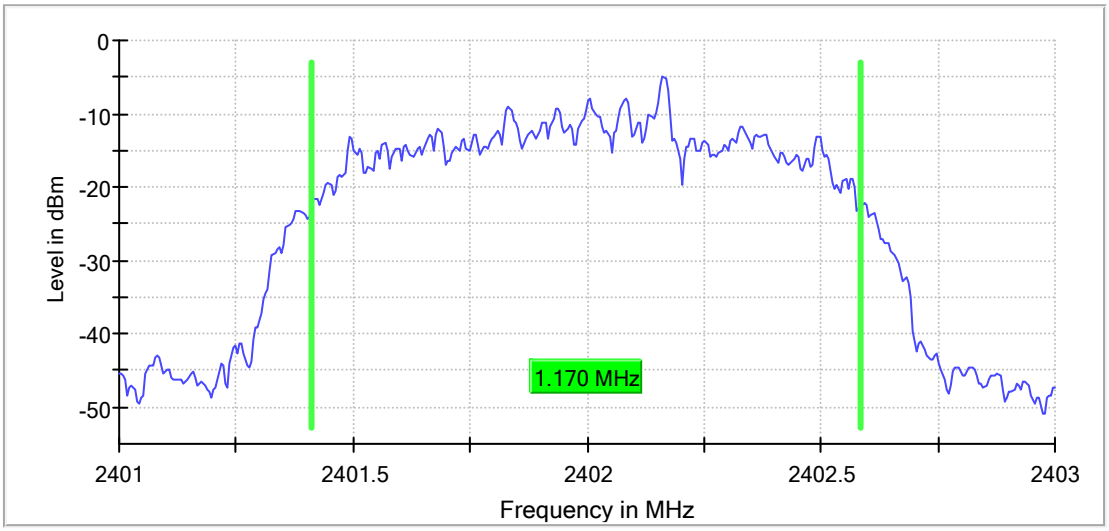
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.170000	---	---	2401.412500	2402.582500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS

99 % Bandwidth



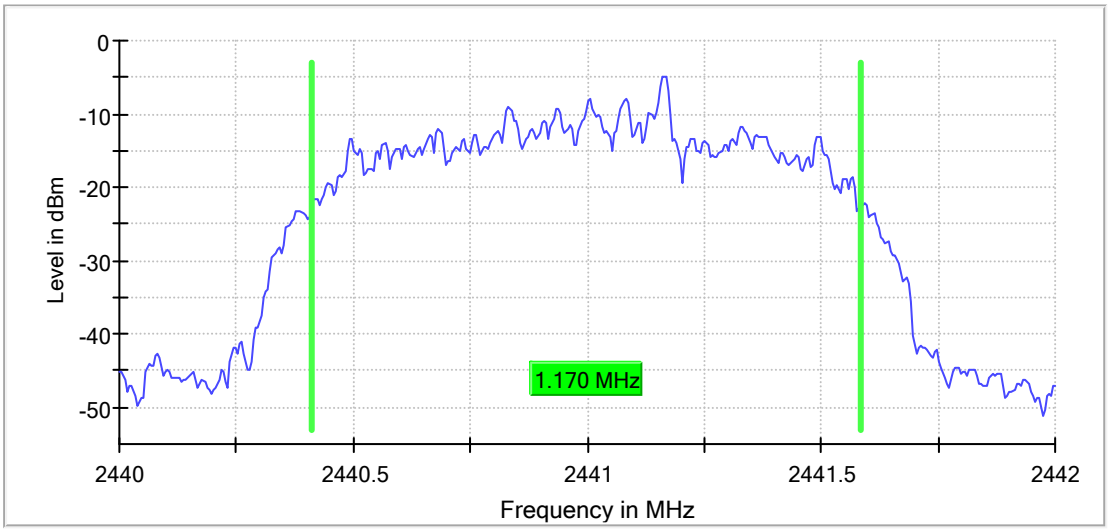
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.170000	---	---	2440.412500	2441.582500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS

99 % Bandwidth



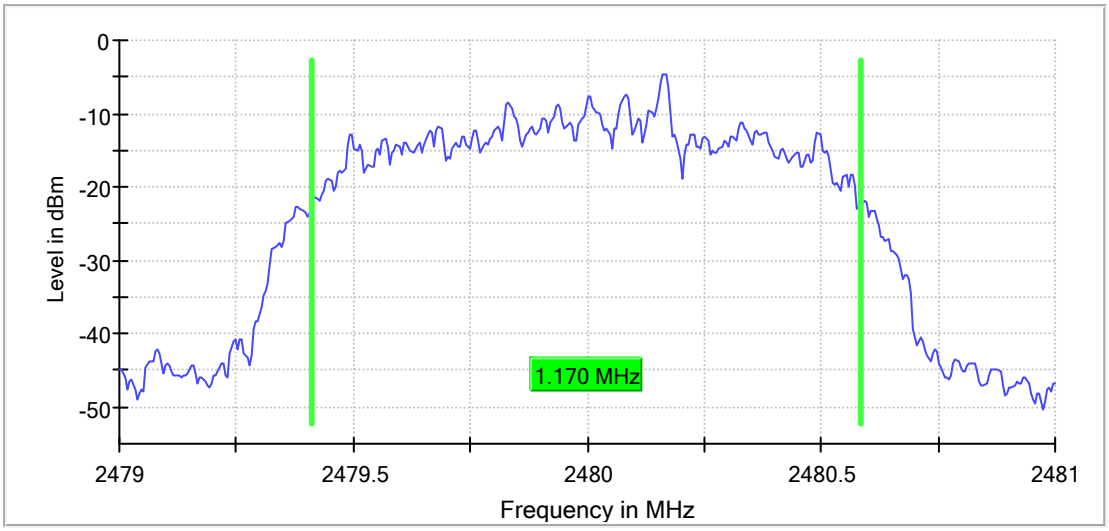
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.170000	---	---	2479.412500	2480.582500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS

99 % Bandwidth



Appendix B.2: Test Results of 20dB Bandwidth

BDR-GFSK

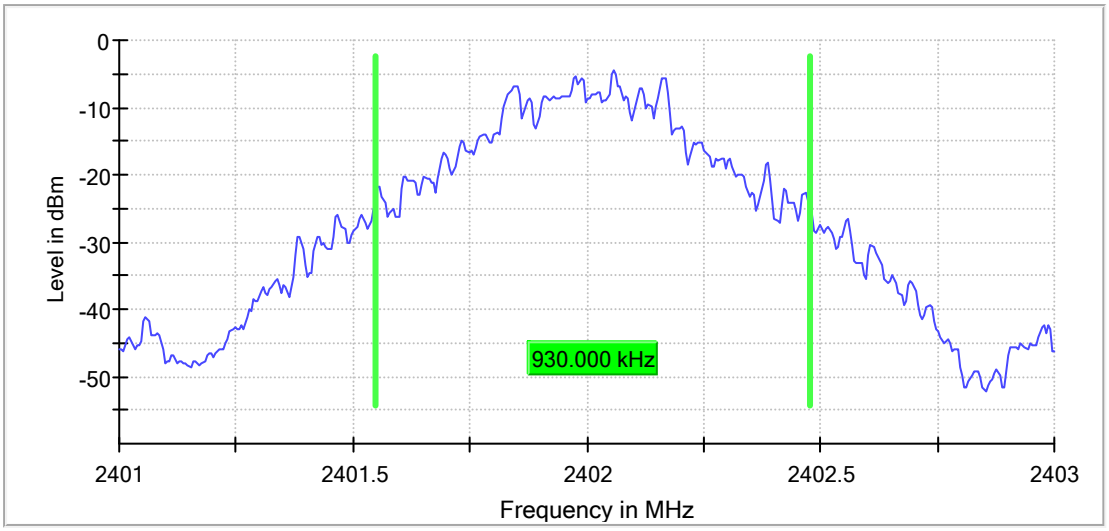
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.930000	---	---	2401.547500	2402.477500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-4.4	PASS

20 dB Bandwidth



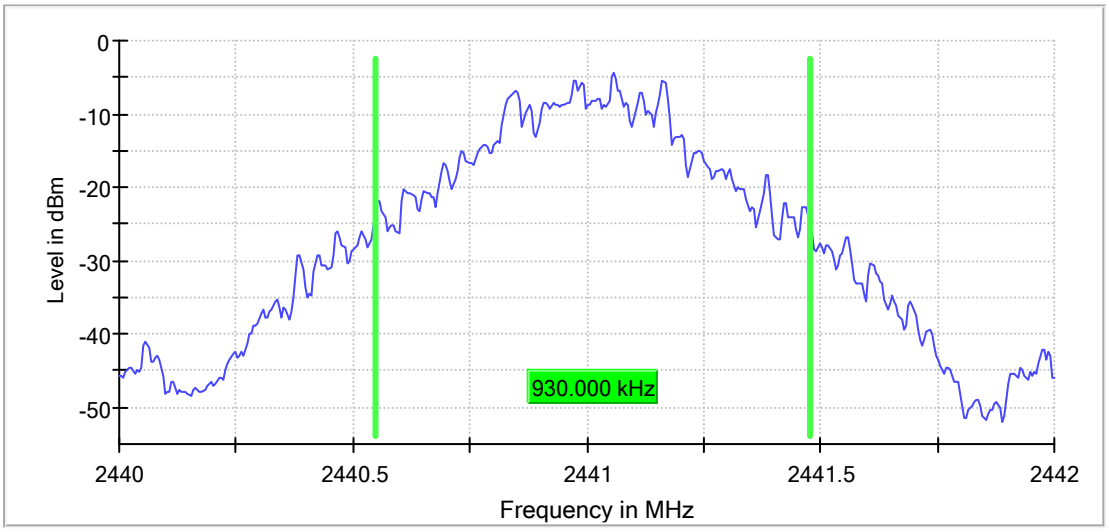
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	0.930000	---	---	2440.547500	2441.477500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-4.4	PASS

20 dB Bandwidth



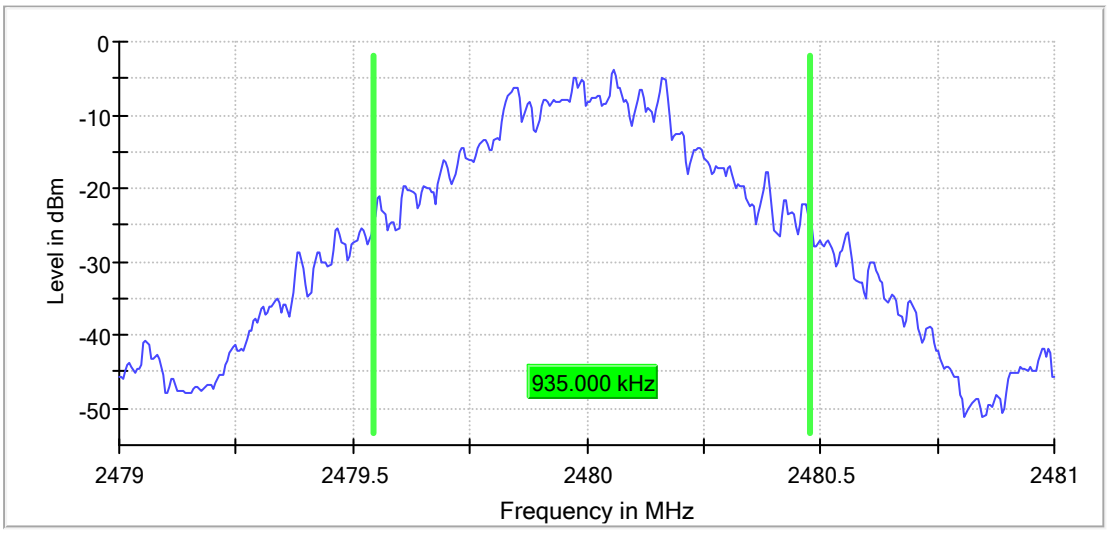
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.935000	---	---	2479.542500	2480.477500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-3.9	PASS

20 dB Bandwidth



EDR-8DPSK

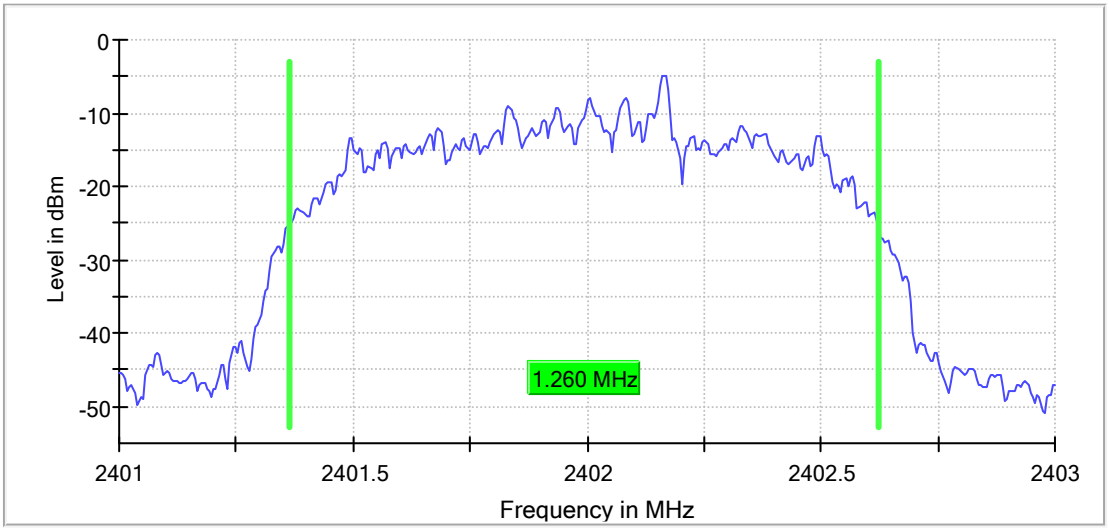
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.260000	---	---	2401.362500	2402.622500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-5.0	PASS

20 dB Bandwidth



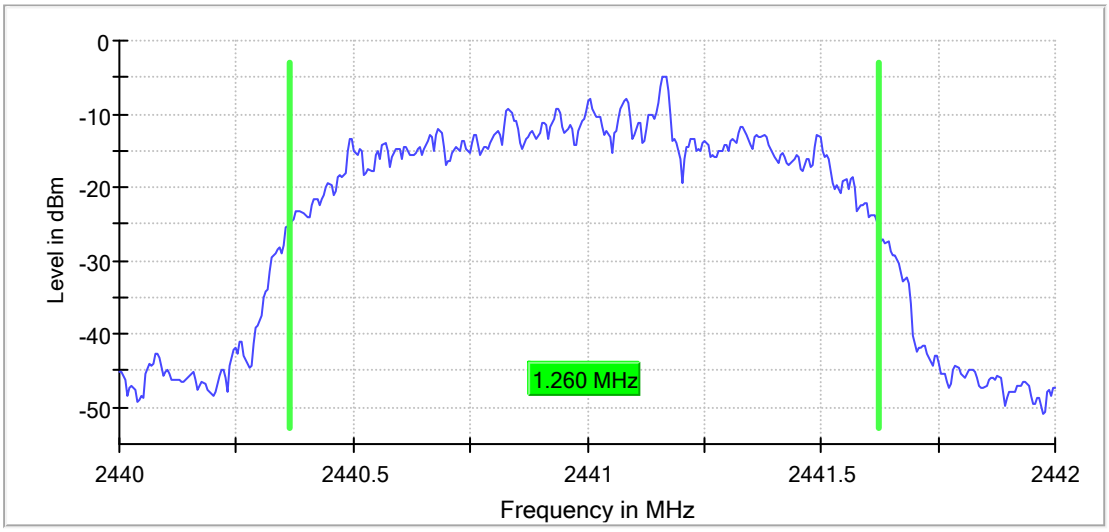
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.260000	---	---	2440.362500	2441.622500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-5.0	PASS

20 dB Bandwidth



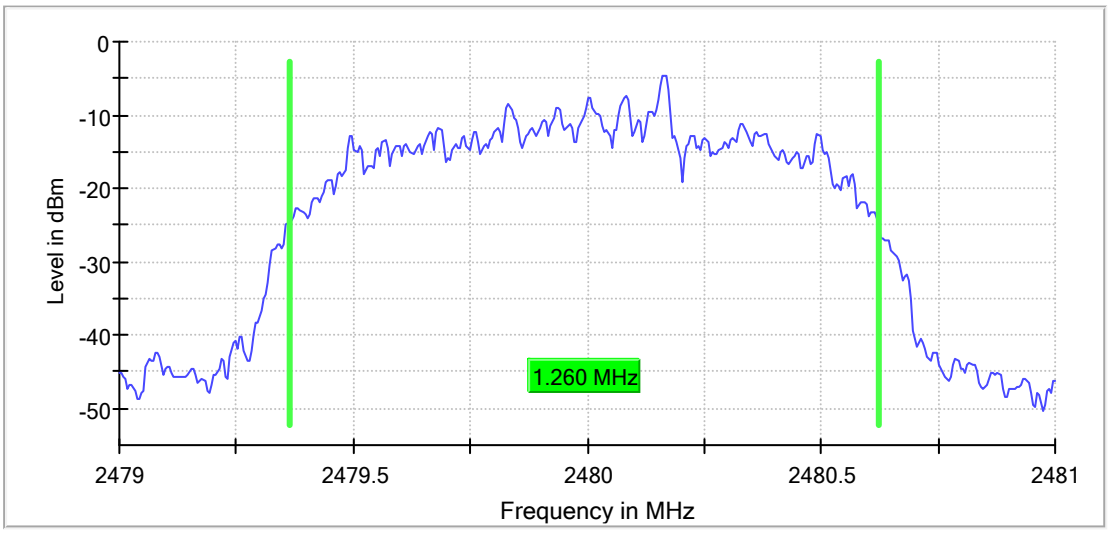
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.260000	---	---	2479.362500	2480.622500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-4.6	PASS

20 dB Bandwidth



Appendix B.3: Test Results of Carrier Frequency Separation

BDR-GFSK

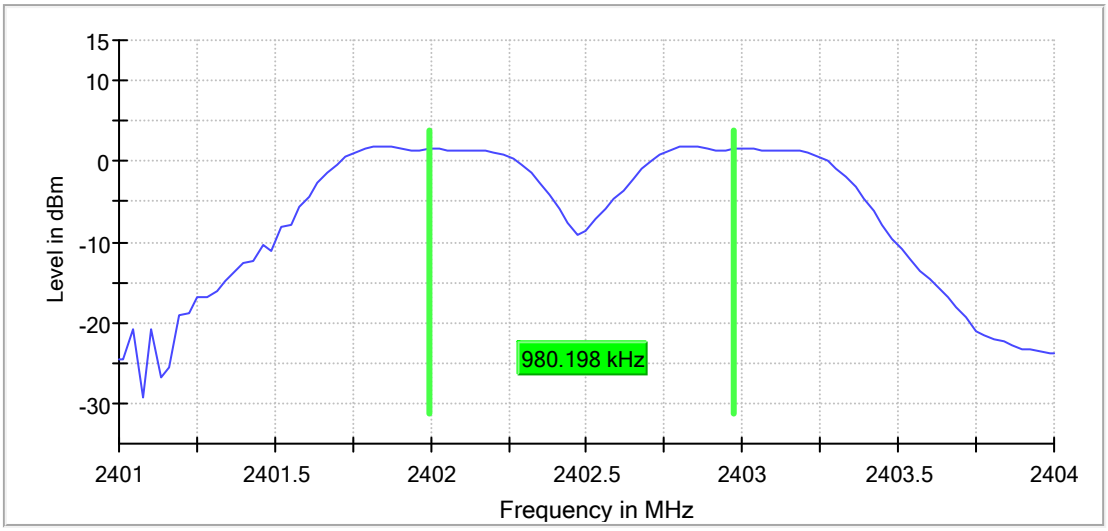
Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2402.000000	0.980198	0.620000	---	2401.995050	2402.975248

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS

CFS



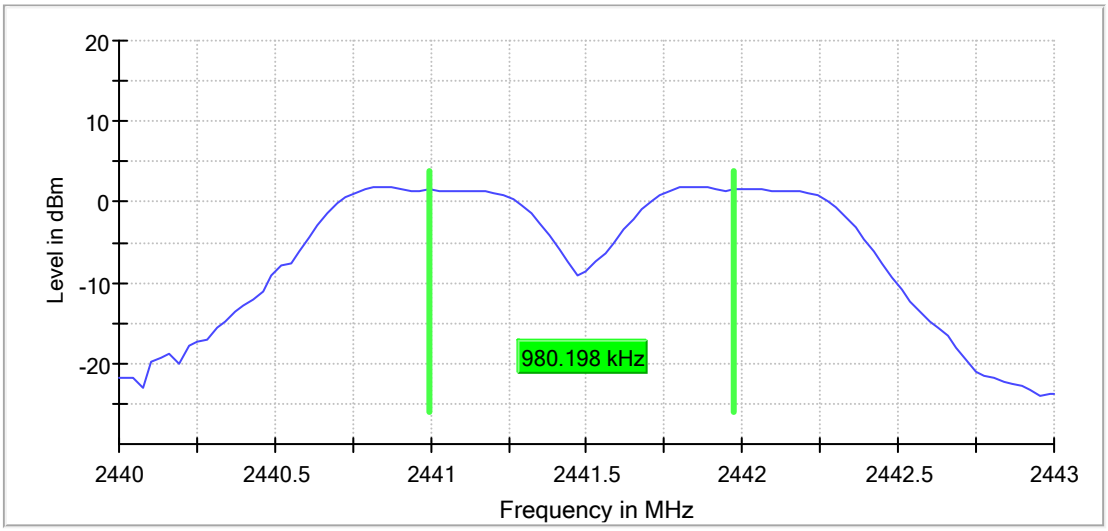
Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2441.000000	0.980198	0.620000	---	2440.995050	2441.975248

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS

CFS



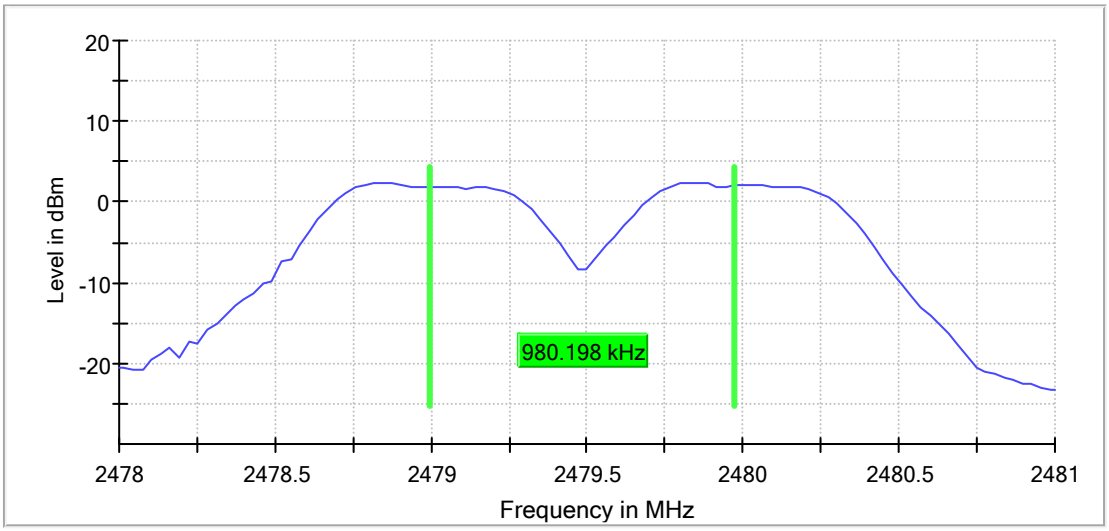
Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2480.000000	0.980198	0.623333	---	2478.995050	2479.975248

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS

CFS



EDR-8DPSK

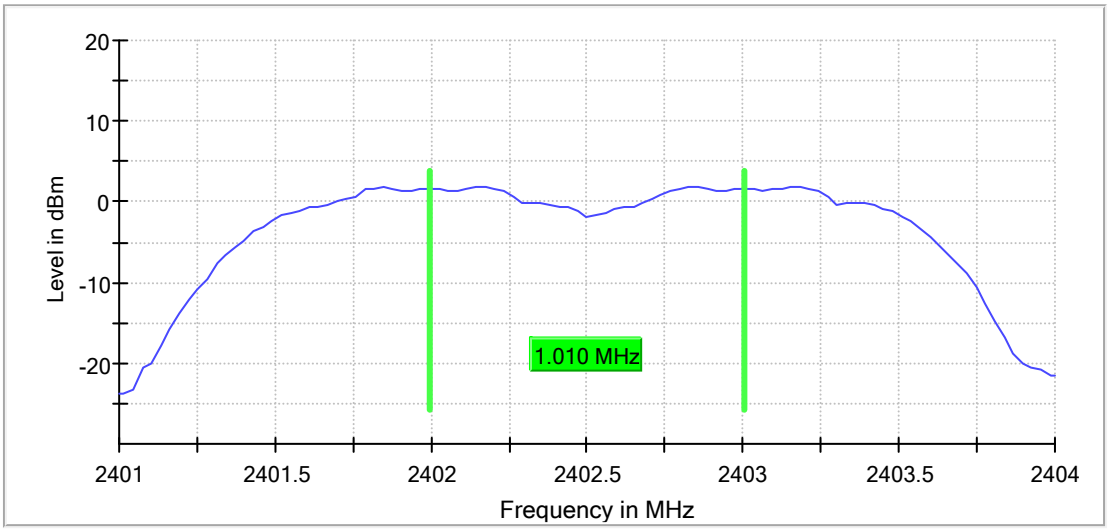
Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2402.000000	1.009900	0.840000	---	2401.995050	2403.004950

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS

CFS



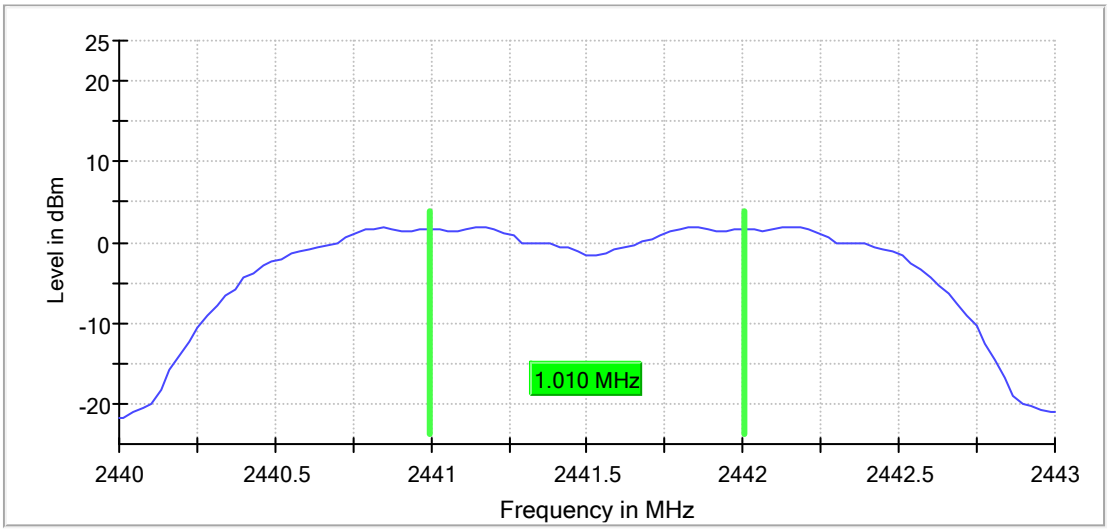
Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2441.000000	1.009900	0.840000	---	2440.995050	2442.004950

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS

CFS



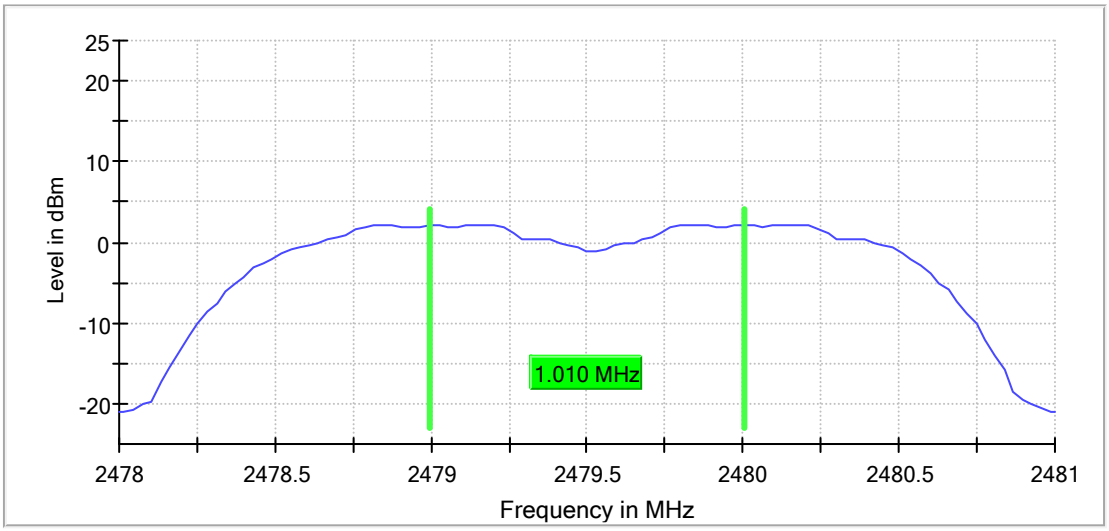
Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2480.000000	1.009900	0.840000	---	2478.995050	2480.004950

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS

CFS



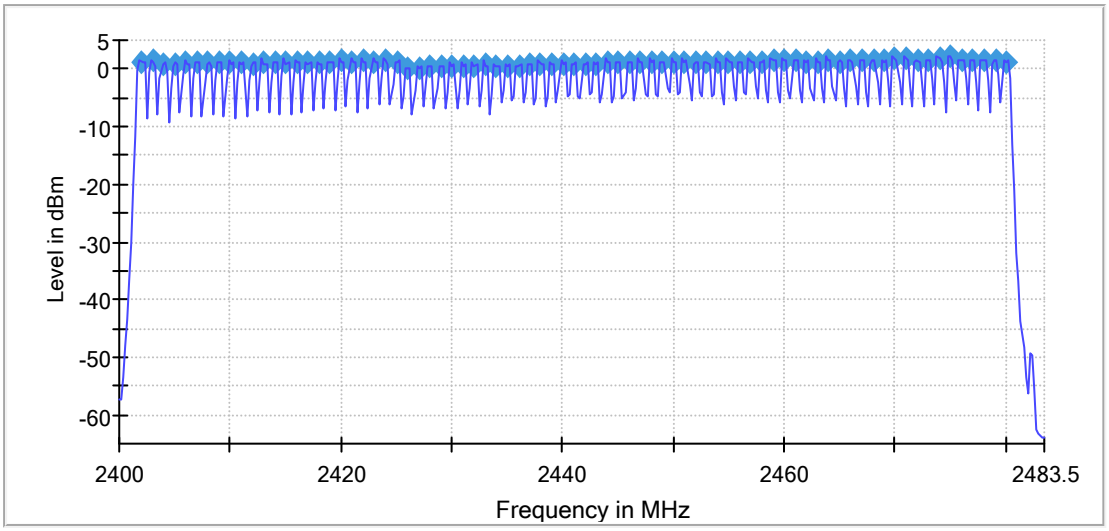
Appendix B.4: Test Results of Number of Hopping Frequencies

BDR-GFSK

Channels

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

Sequence

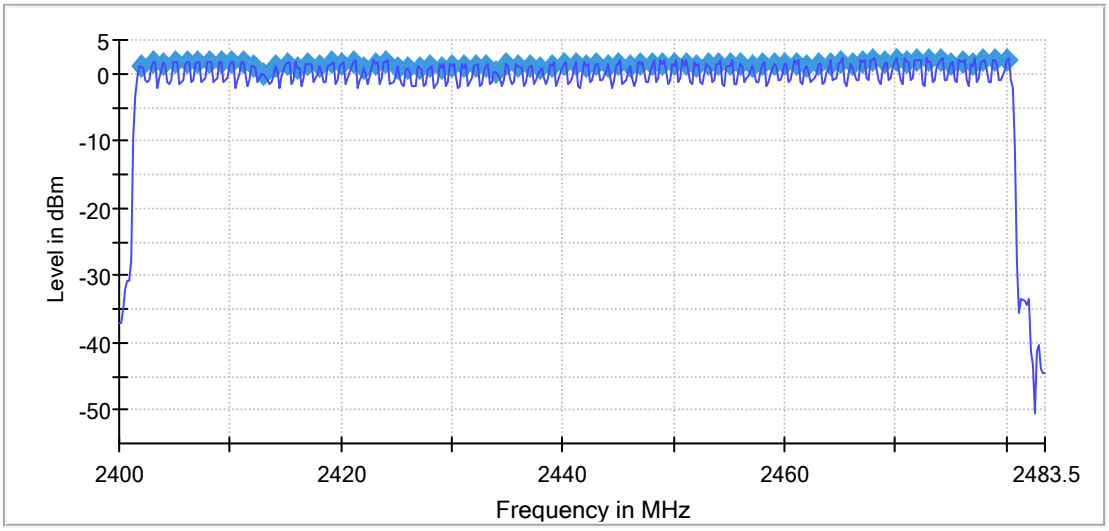


EDR-8DPSK

Channels

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

Sequence



Appendix B.5: Test Results of Time of Occupancy

BDR-GFSK

DH1

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	319	130.000	-20.0

Periode

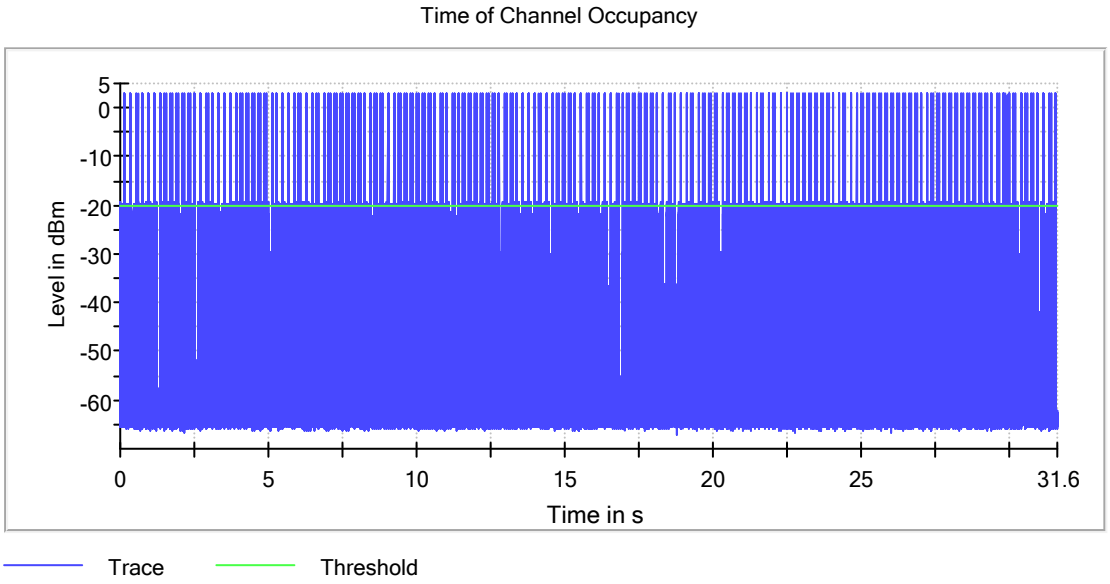
Min (ms)	Max (ms)	Mean (ms)
3.750	195.000	98.740

Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
0.40	0.41	400.000	0.000	0.406

DwellTime

Min (ms)	Max (ms)	Mean (ms)
0.40	0.41	0.406



DH3

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	164	274.330	-20.0

Periode

Min (ms)	Max (ms)	Mean (ms)
5.000	787.480	190.379

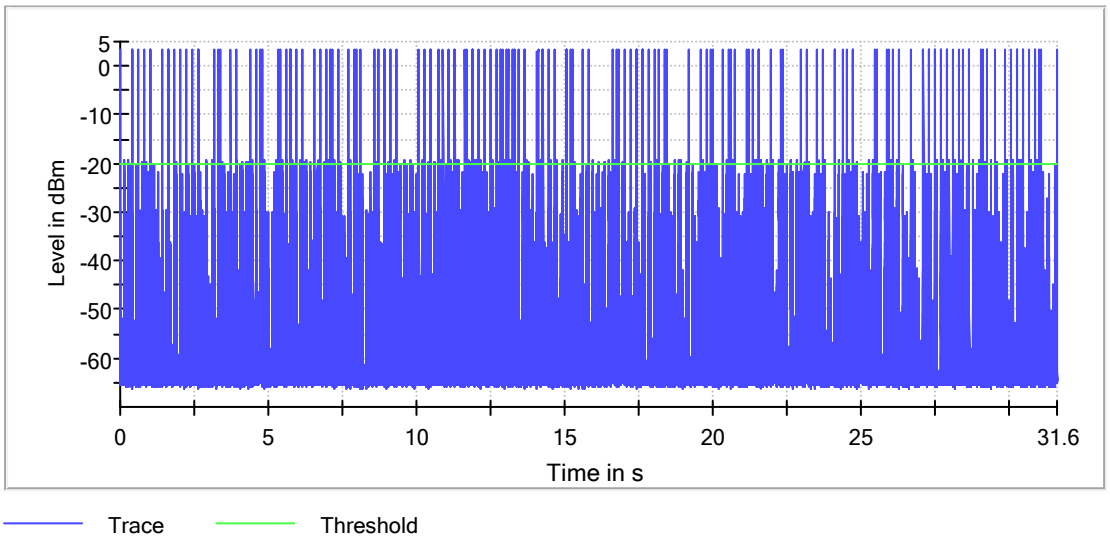
Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
1.660	1.670	400.000	0.000	1.663

DwellTime

Min (ms)	Max (ms)	Mean (ms)
1.660	1.670	1.663

Time of Channel Occupancy(2)



DH5

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	109	323.030	-20.0

Periode

Min (ms)	Max (ms)	Mean (ms)
11.250	1353.710	290.513

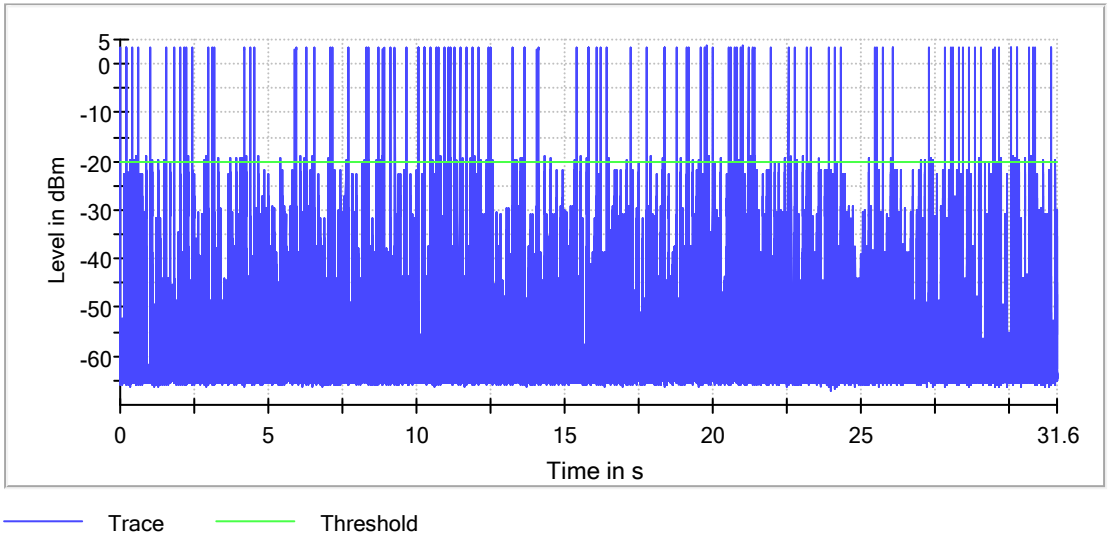
Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.910	5.820	400.000	0.000	2.937

DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.910	6.660	2.945

Time of Channel Occupancy(3)



EDR-8DPSK

3DH1

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	319	127.170	-20.0

Periode

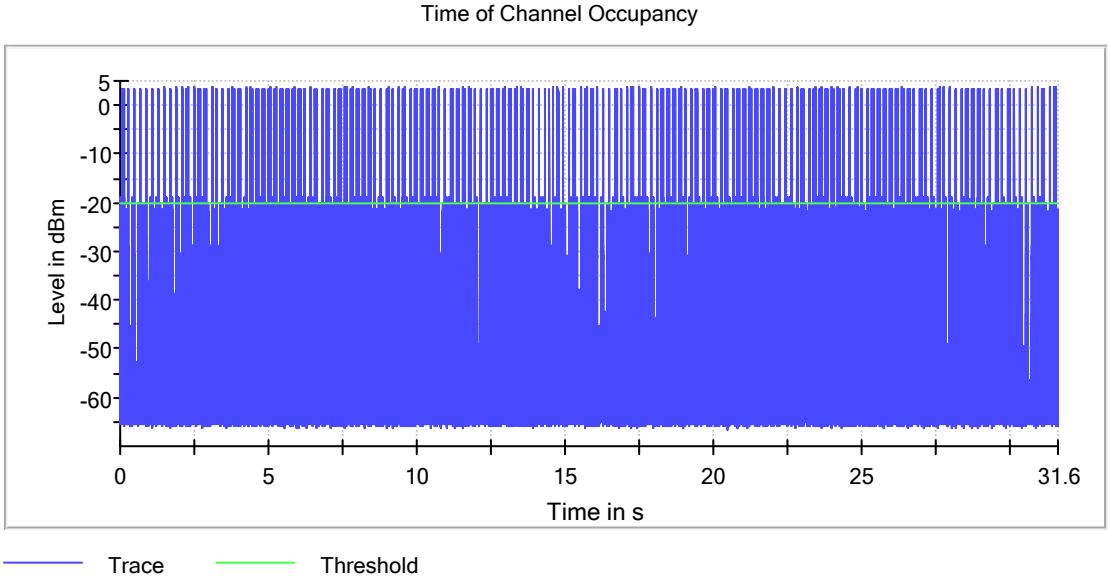
Min (ms)	Max (ms)	Mean (ms)
3.750	195.000	98.806

Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
0.39	0.40	400.000	0.000	0.397

DwellTime

Min (ms)	Max (ms)	Mean (ms)
0.39	0.40	0.397



3DH3

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	154	255.710	-20.0

Periode

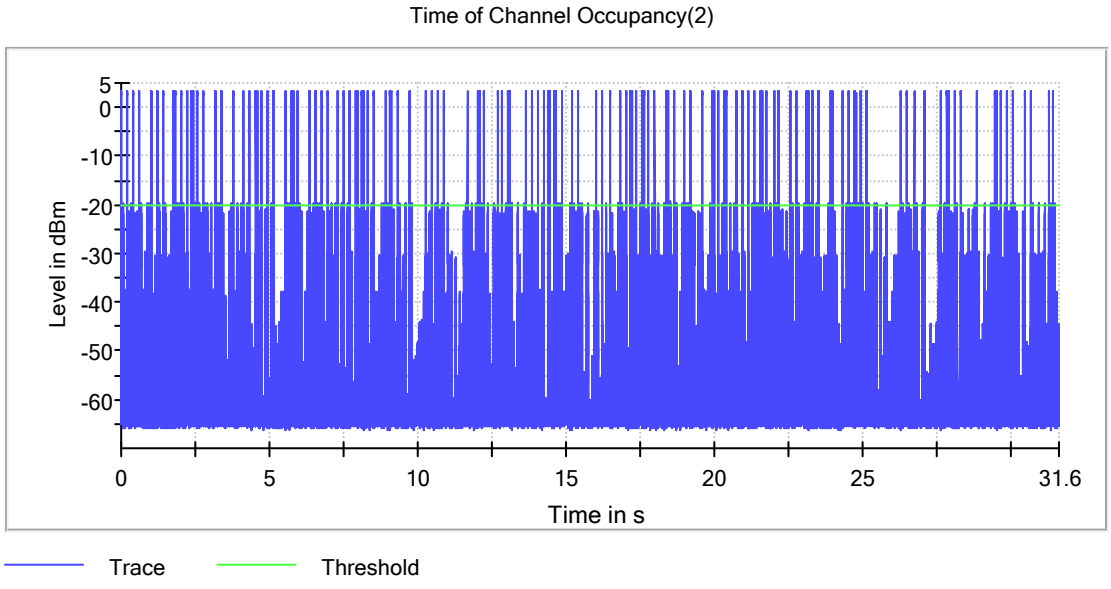
Min (ms)	Max (ms)	Mean (ms)
5.000	1137.470	204.292

Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
1.640	1.660	400.000	0.000	1.650

DwellTime

Min (ms)	Max (ms)	Mean (ms)
1.640	1.660	1.650



3DH5

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	108	318.780	-20.0

Periode

Min (ms)	Max (ms)	Mean (ms)
11.250	1353.710	291.581

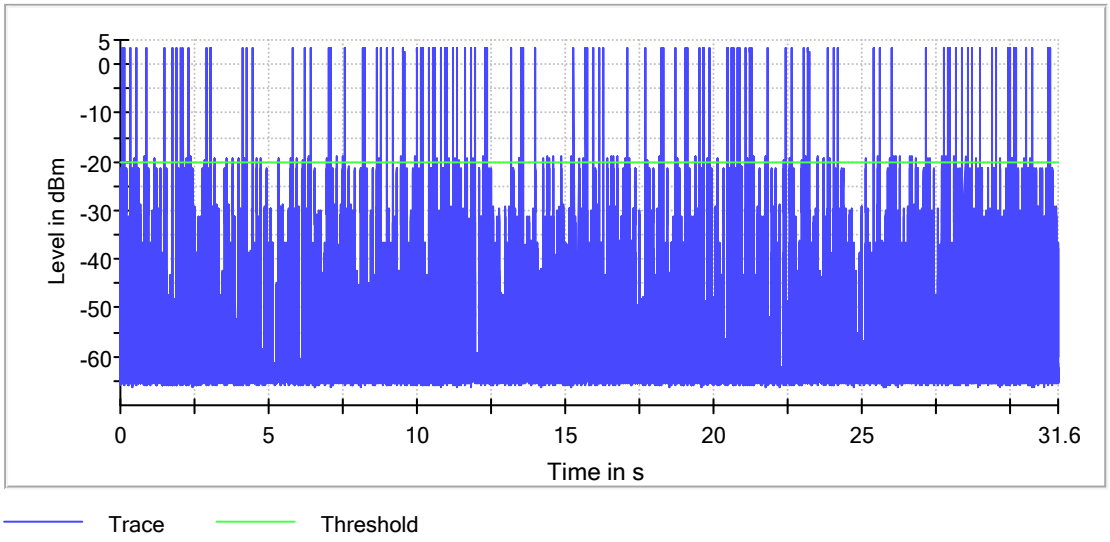
Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.890	5.800	400.000	0.000	2.925

DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.890	6.650	2.933

Time of Channel Occupancy(3)

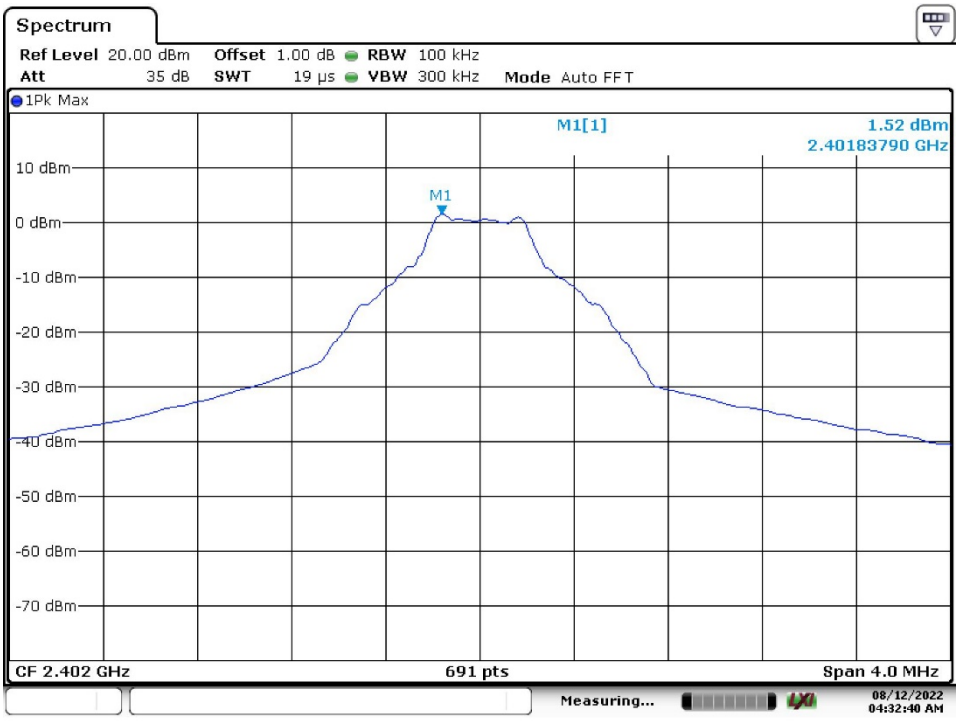


Appendix B.6: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

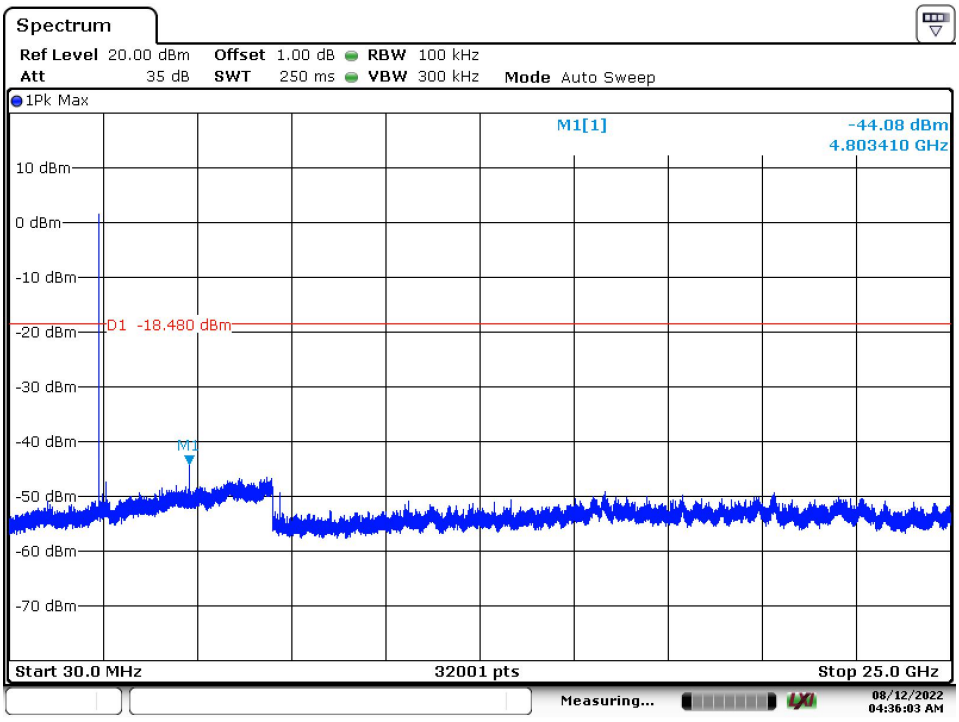
Conducted Spurious Emission

BDR-GFSK

Low Channel

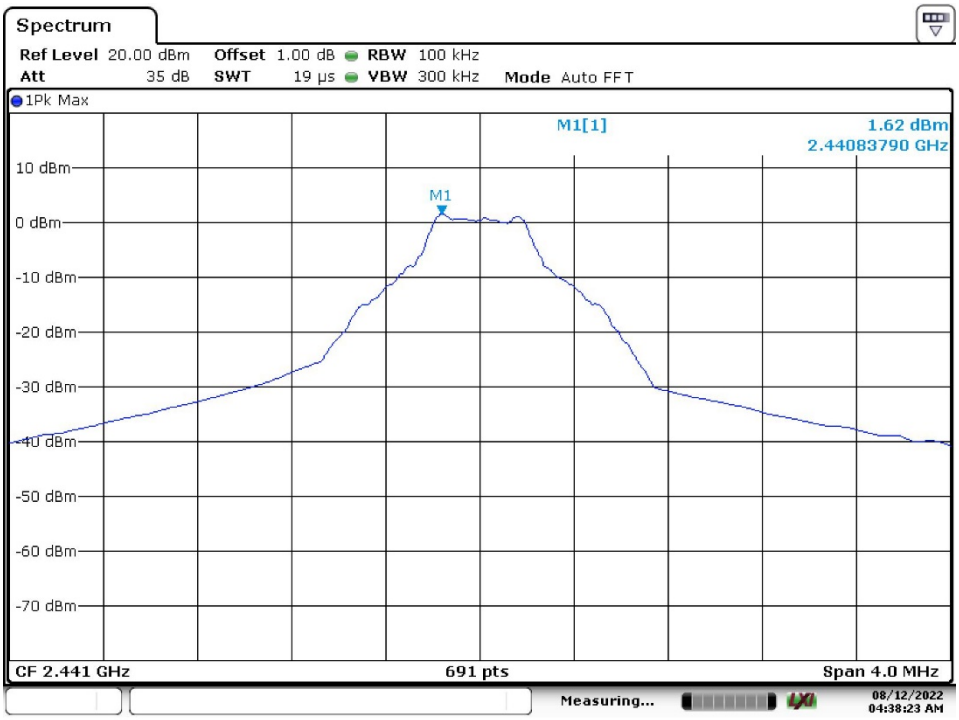


Date: 12.AUG.2022 04:32:40

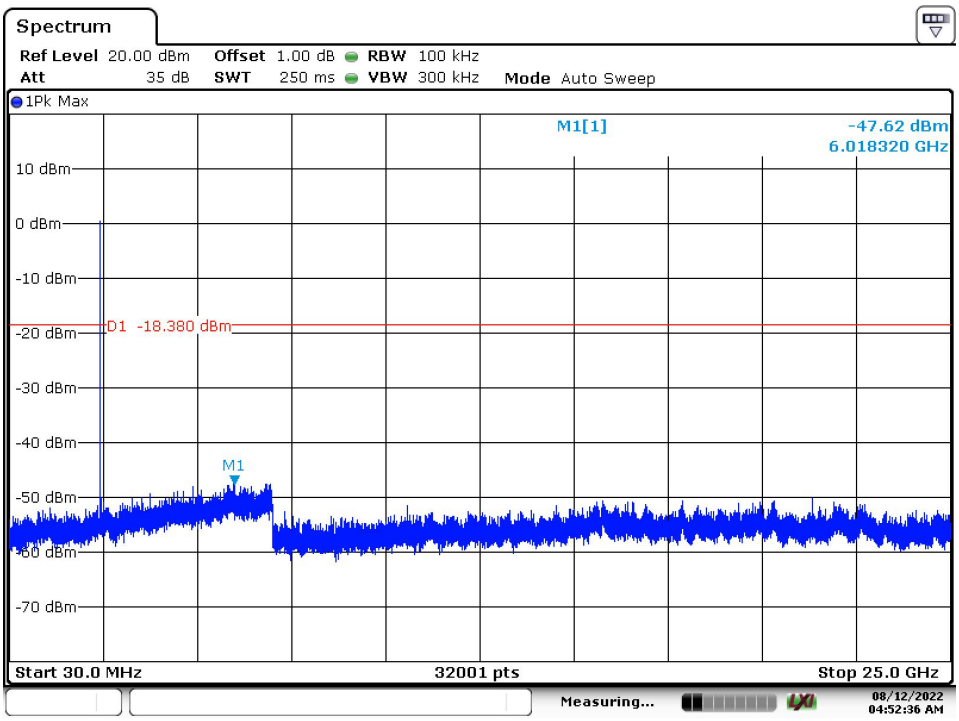


Date: 12.AUG.2022 04:36:04

Middle Channel

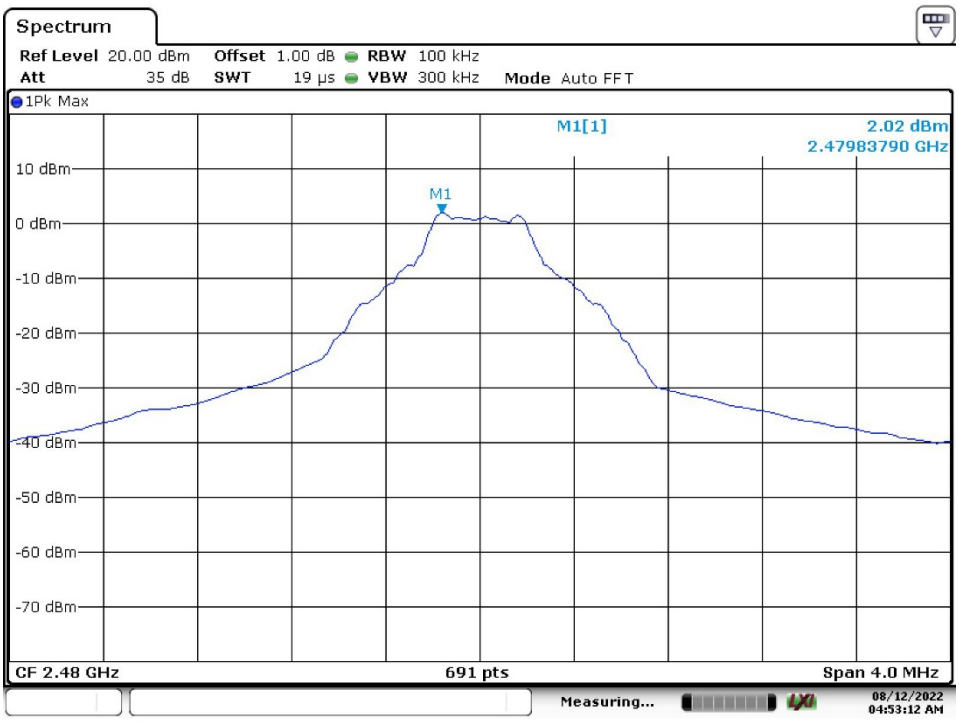


Date: 12.AUG.2022 04:38:23

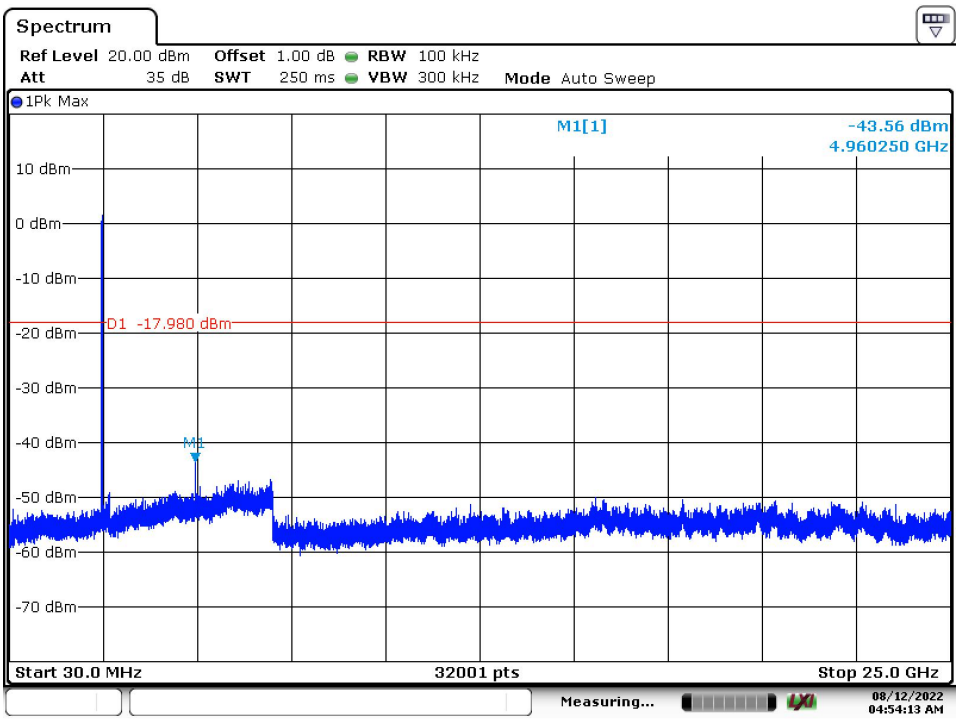


Date: 12.AUG.2022 04:52:37

High Channel

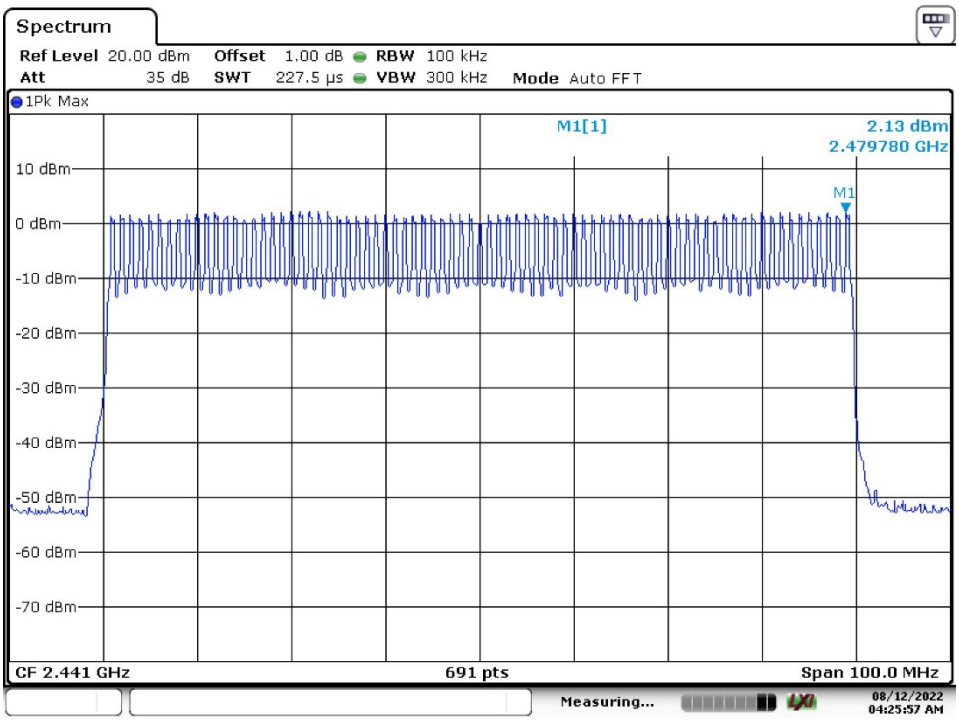


Date: 12.AUG.2022 04:53:13

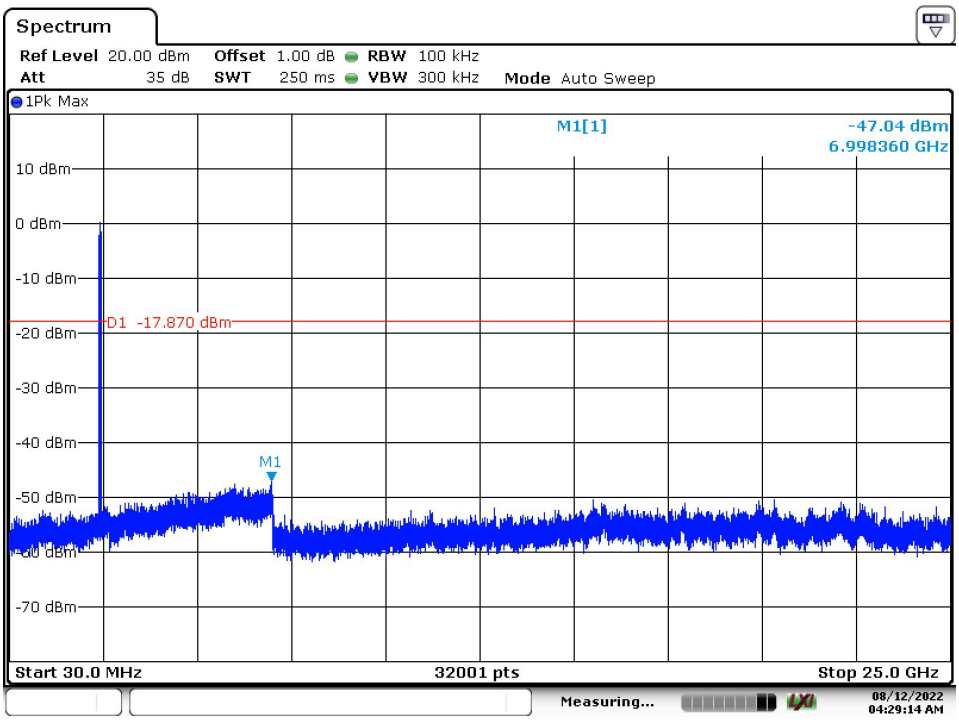


Date: 12.AUG.2022 04:54:14

Hopping



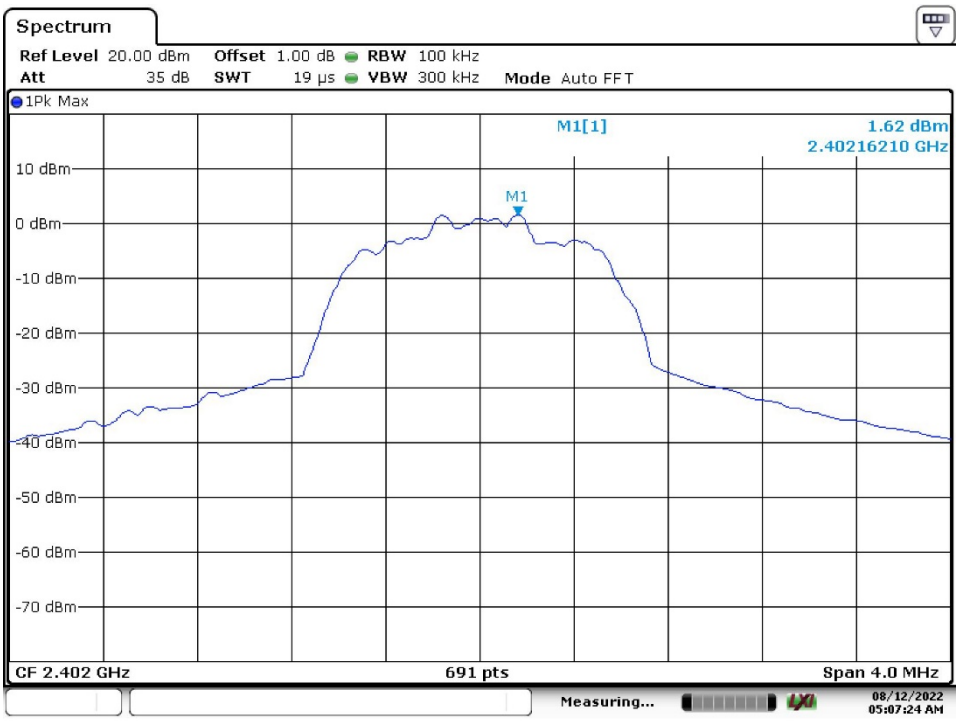
Date: 12.AUG.2022 04:25:57



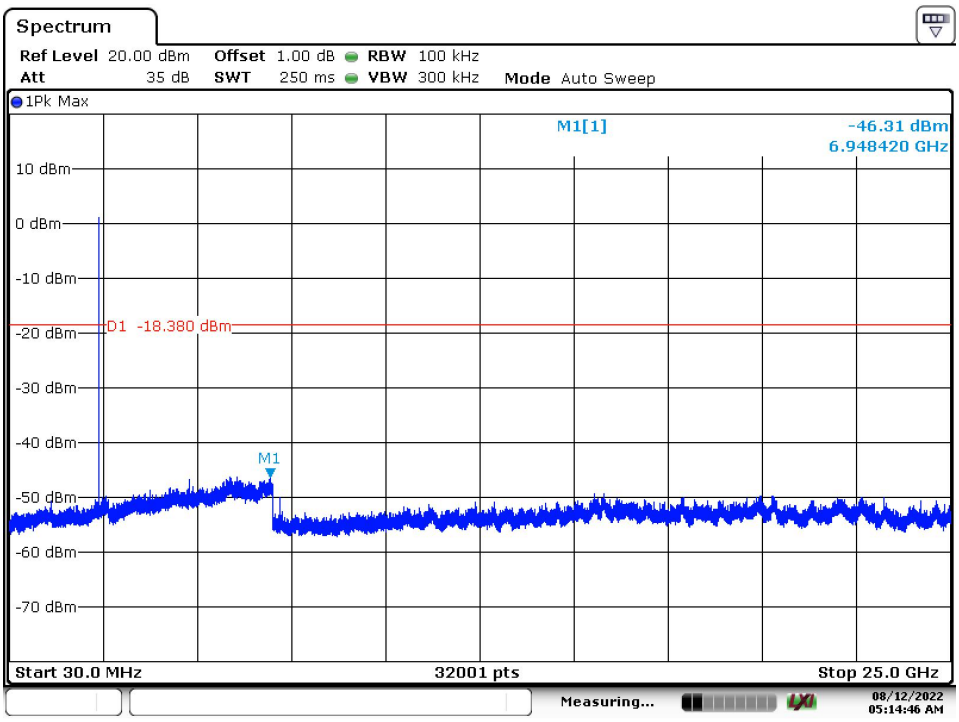
Date: 12.AUG.2022 04:29:15

EDR-8DPSK

Low Channel

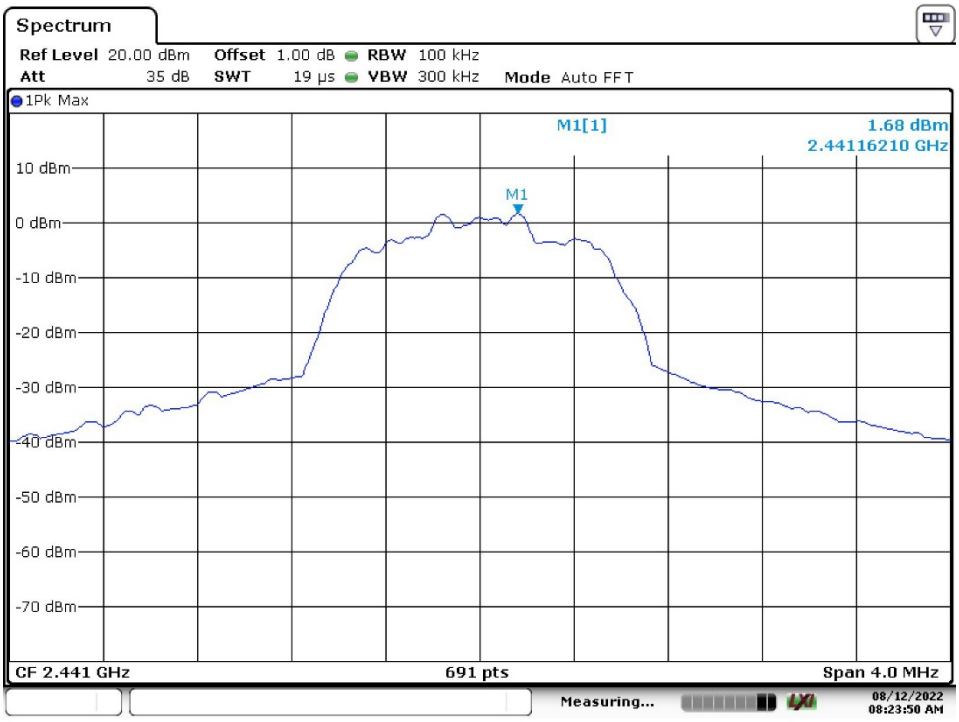


Date: 12.AUG.2022 05:07:25

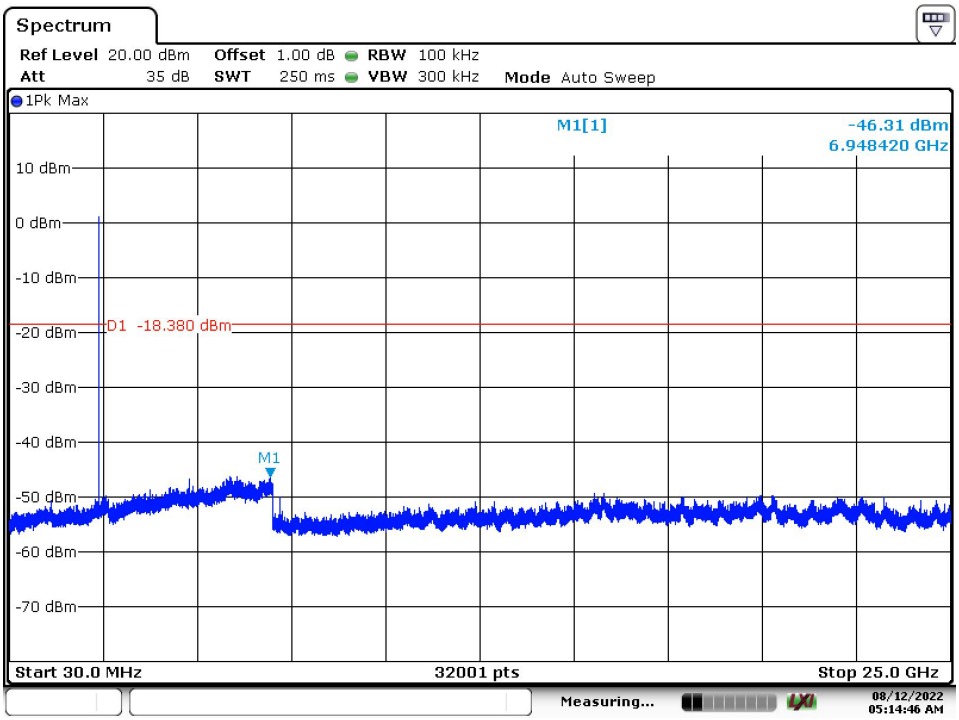


Date: 12.AUG.2022 05:14:46

Middle Channel

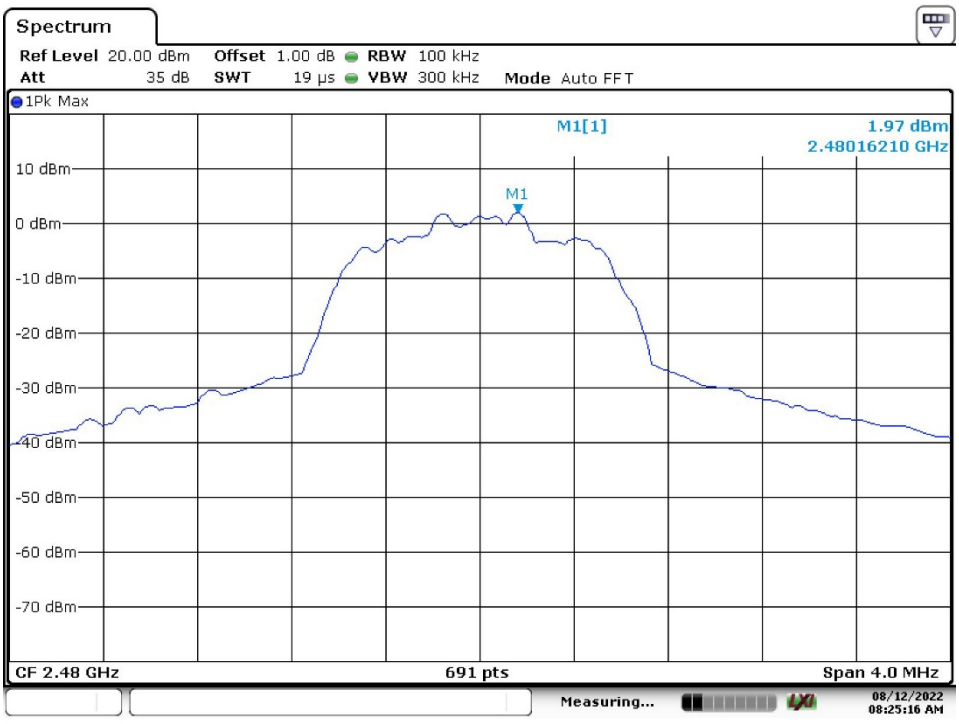


Date: 12.AUG.2022 08:23:50



Date: 12.AUG.2022 05:14:46

High Channel



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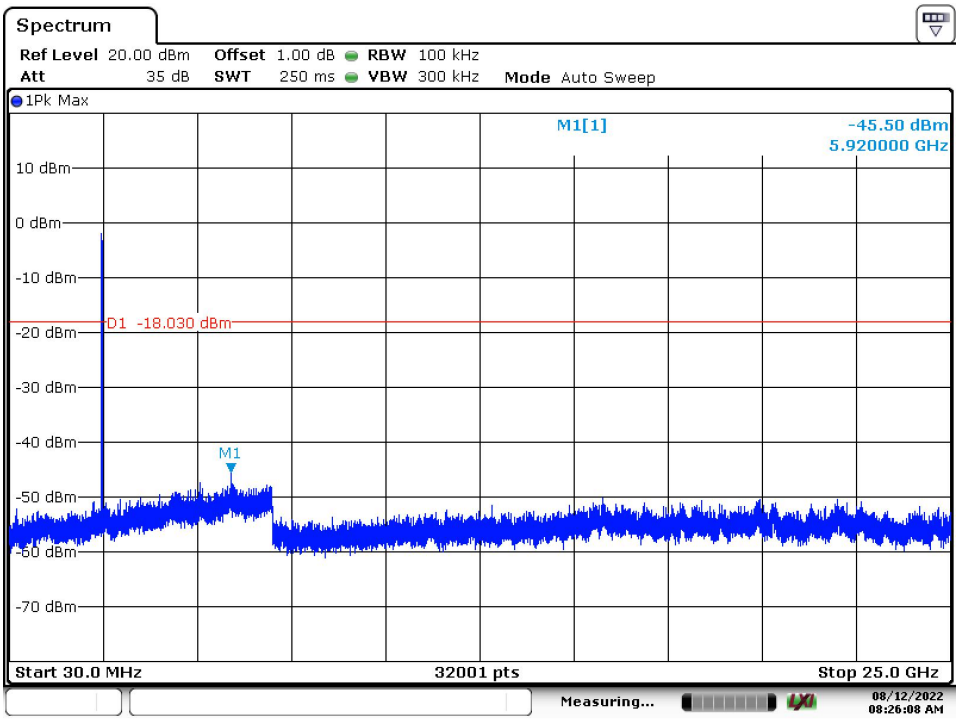

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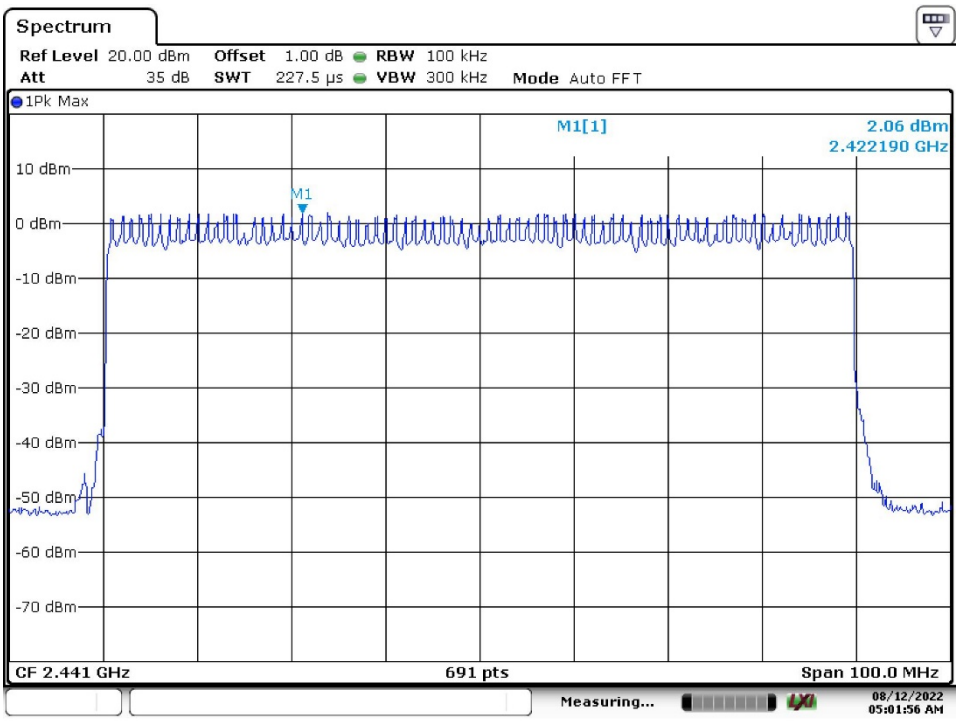
Hopping



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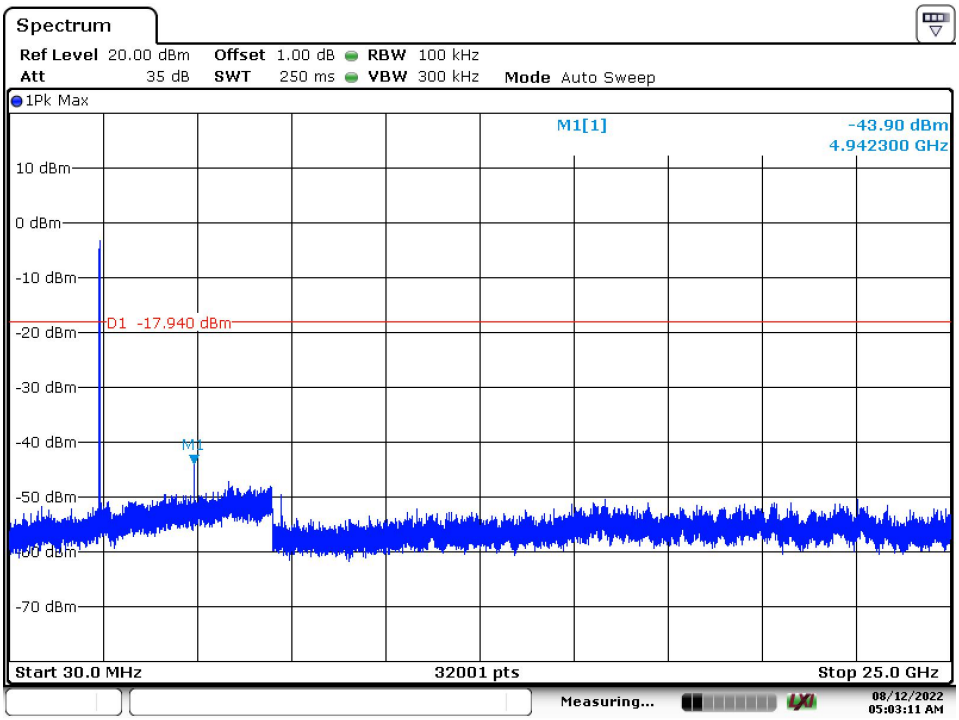
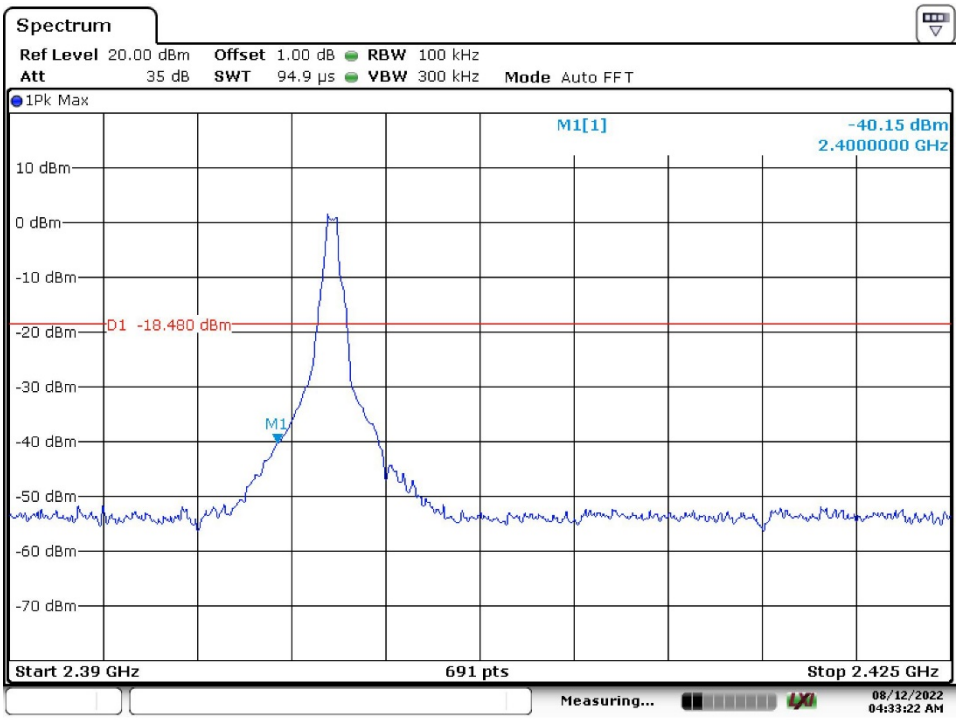


Date: 12.AUG.2022 05:03:11

Band Edge

BDR-GFSK
Low Channel



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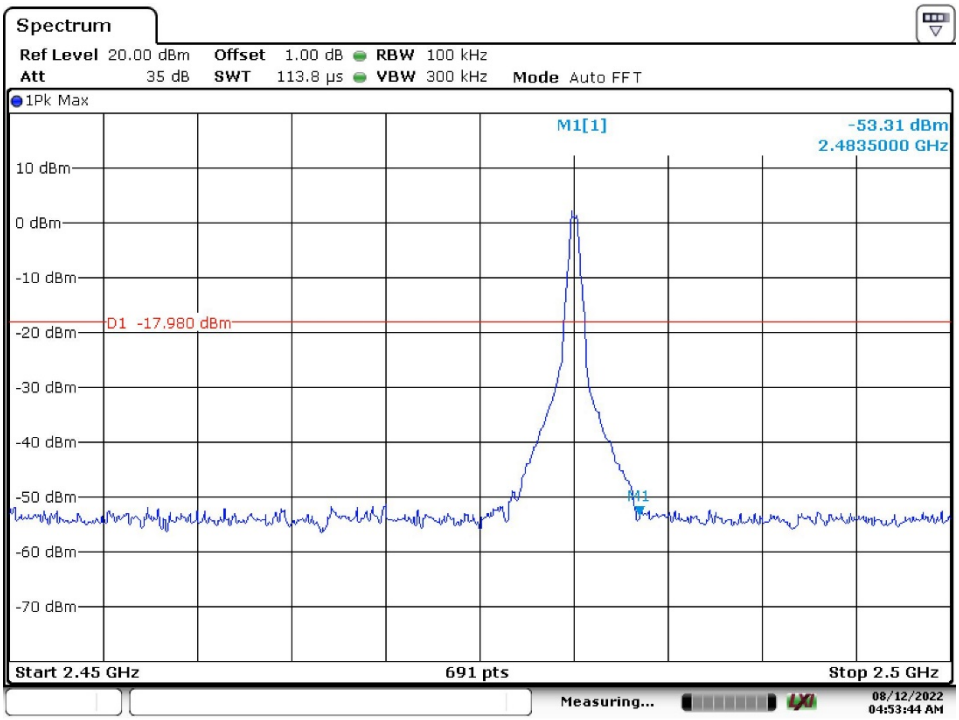
High Channel



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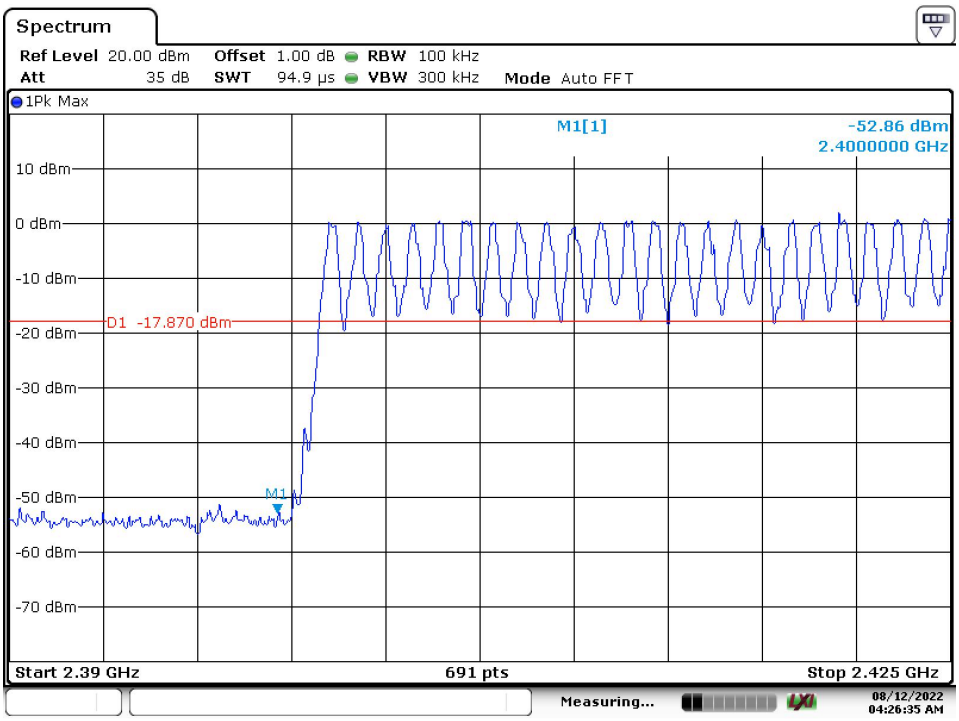
Hopping



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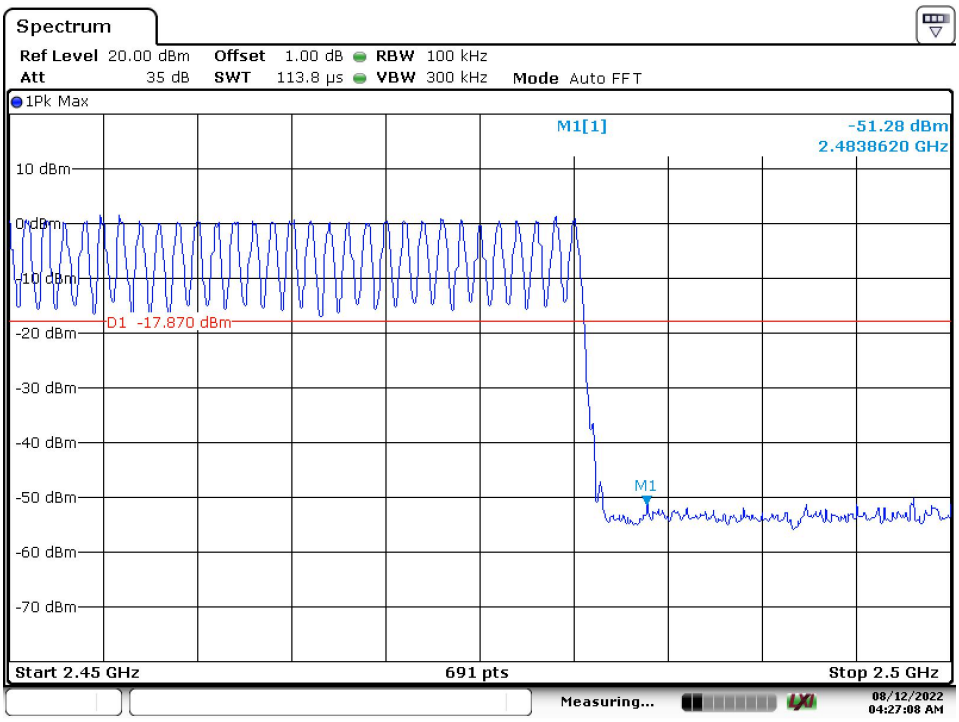
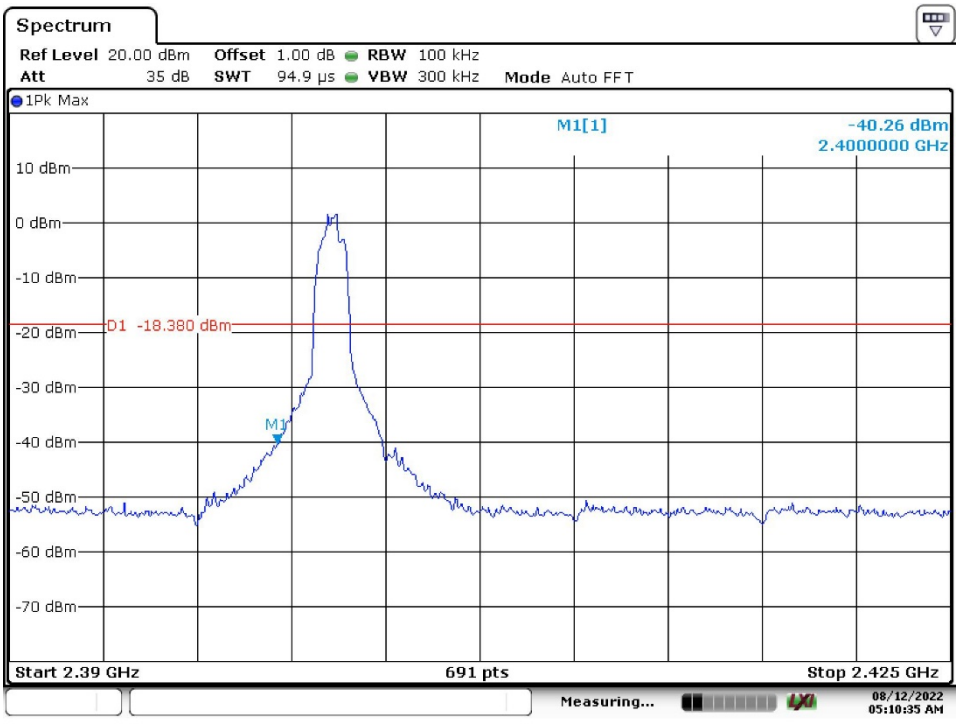


Date: 12.AUG.2022 04:27:09

EDR-8DPSK

Low Channel



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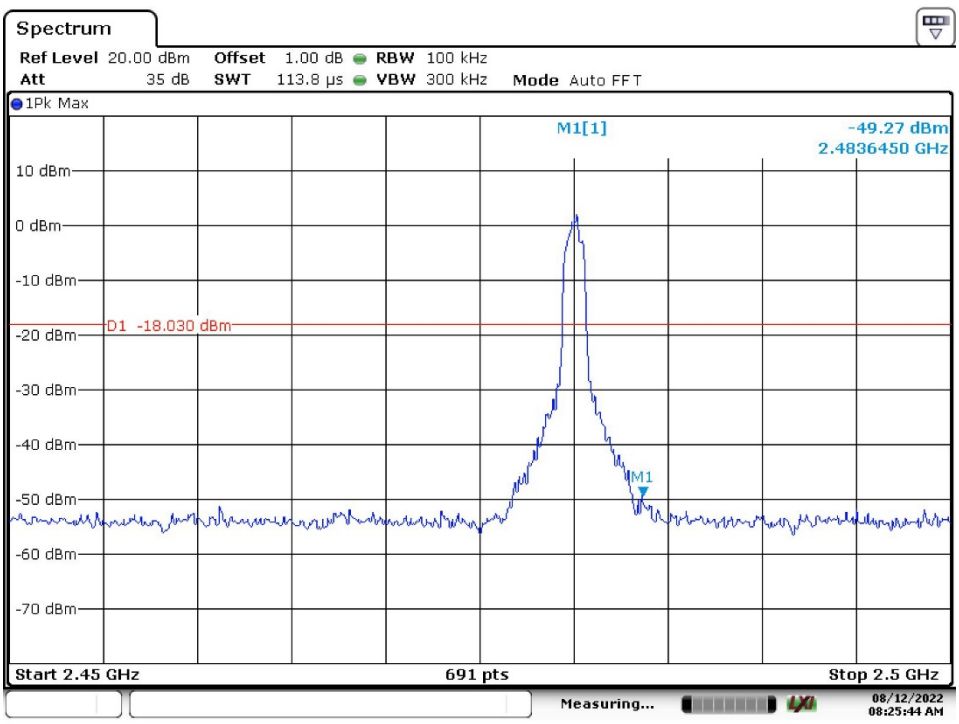
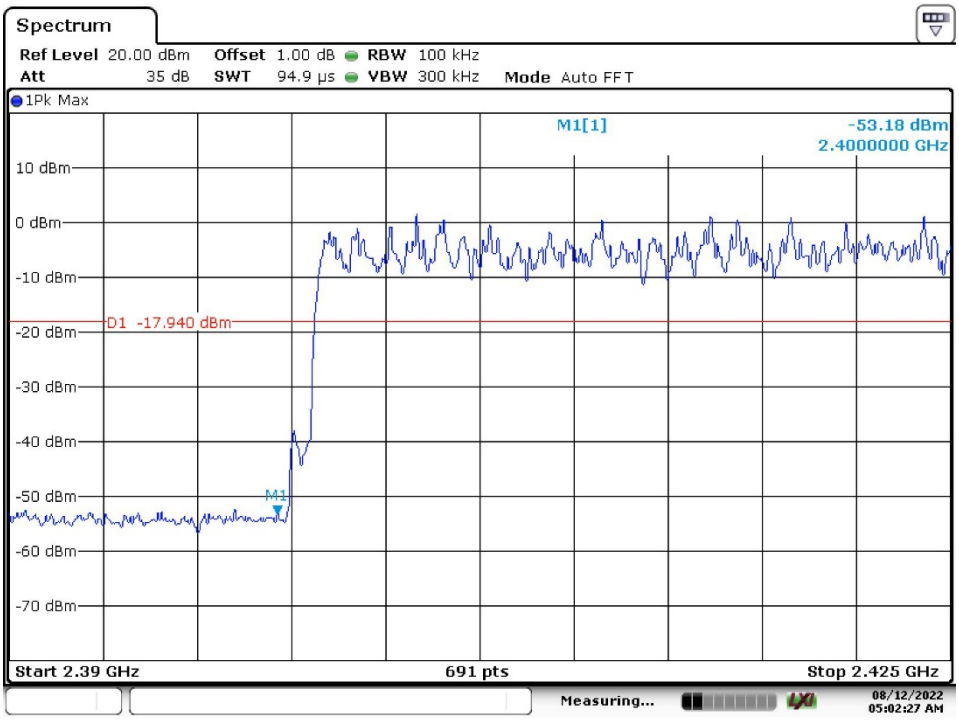
High Channel

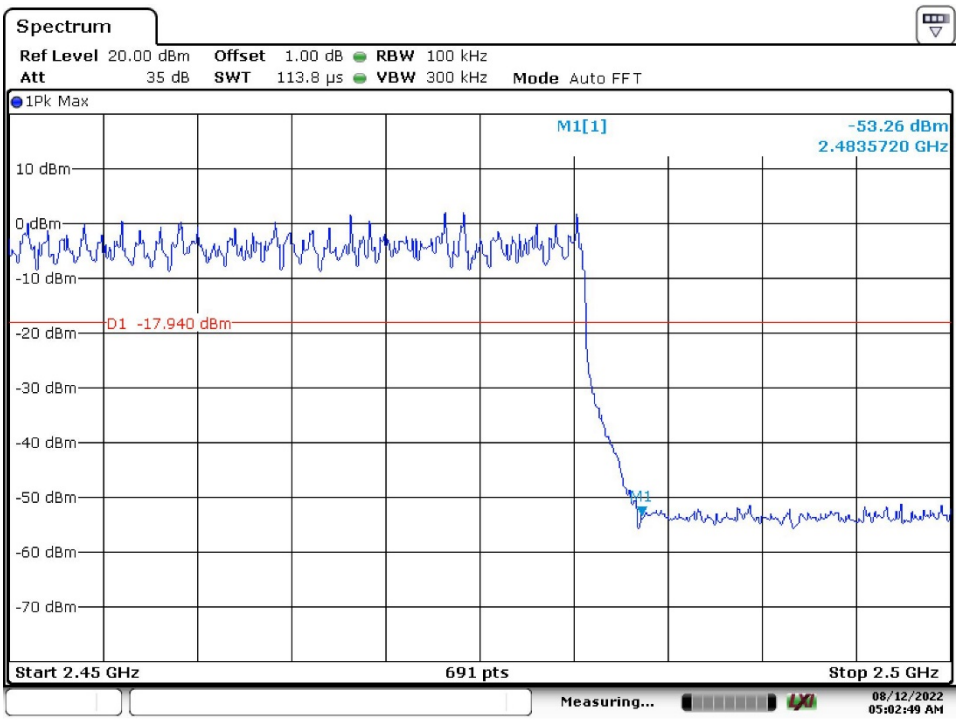


Date: 12.AUG.2022 08:25:44

Hopping



Date: 12.AUG.2022 05:02:27



Date: 12.AUG.2022 05:02:50

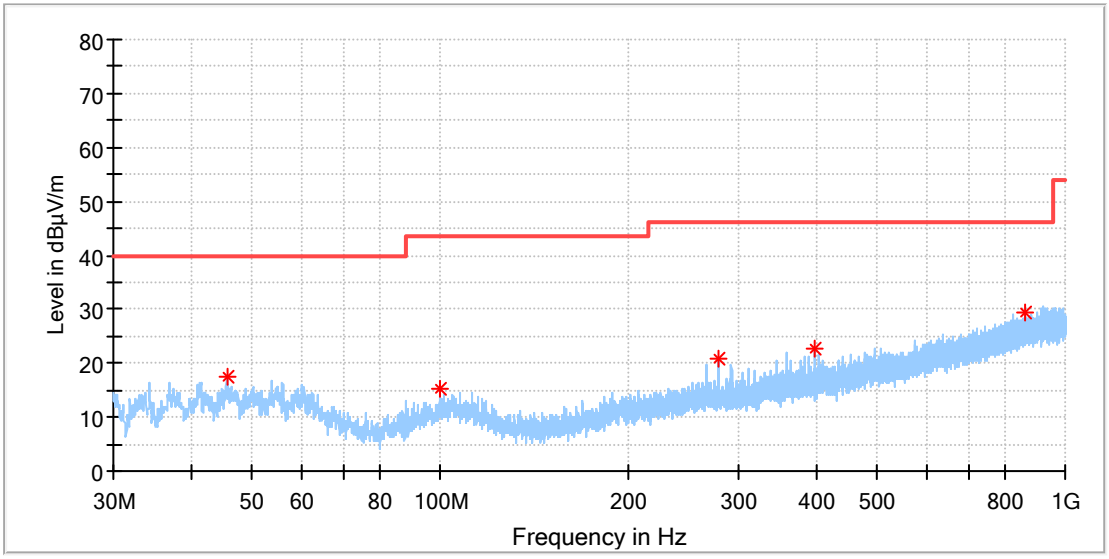
Appendix B.7: Test Results of Radiated Spurious Emissions

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 was presented in this report.

30MHz - 1GHz

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

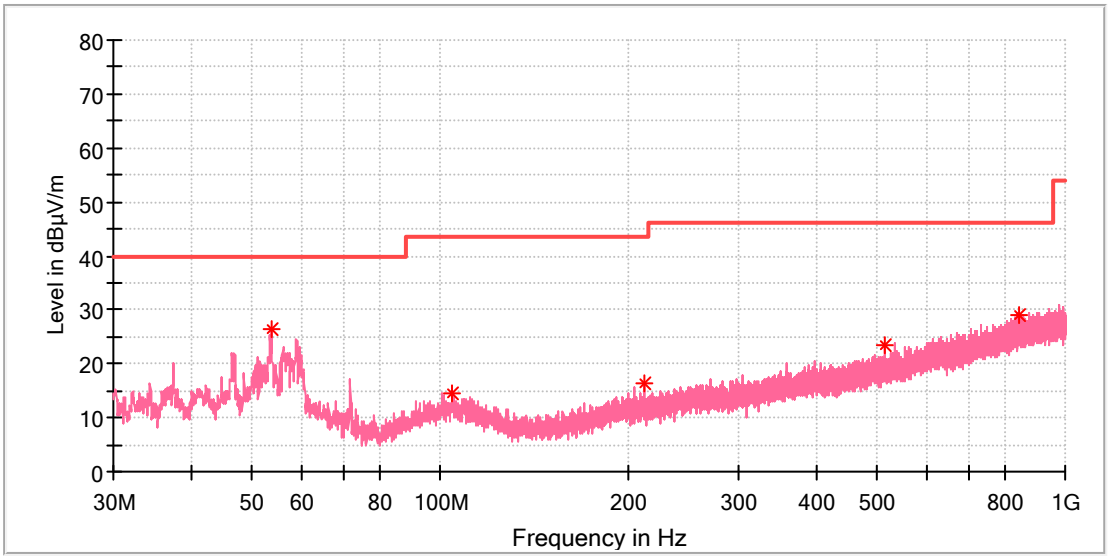


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
45.568500	17.47	40.00	22.53	100.0	H	87.0	-18.7
99.646000	15.44	43.50	28.06	100.0	H	94.0	-19.1
279.484000	20.94	46.00	25.06	100.0	H	143.0	-16.7
396.514500	22.74	46.00	23.26	100.0	H	313.0	-13.7
862.599500	29.57	46.00	16.43	100.0	H	116.0	-5.3

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

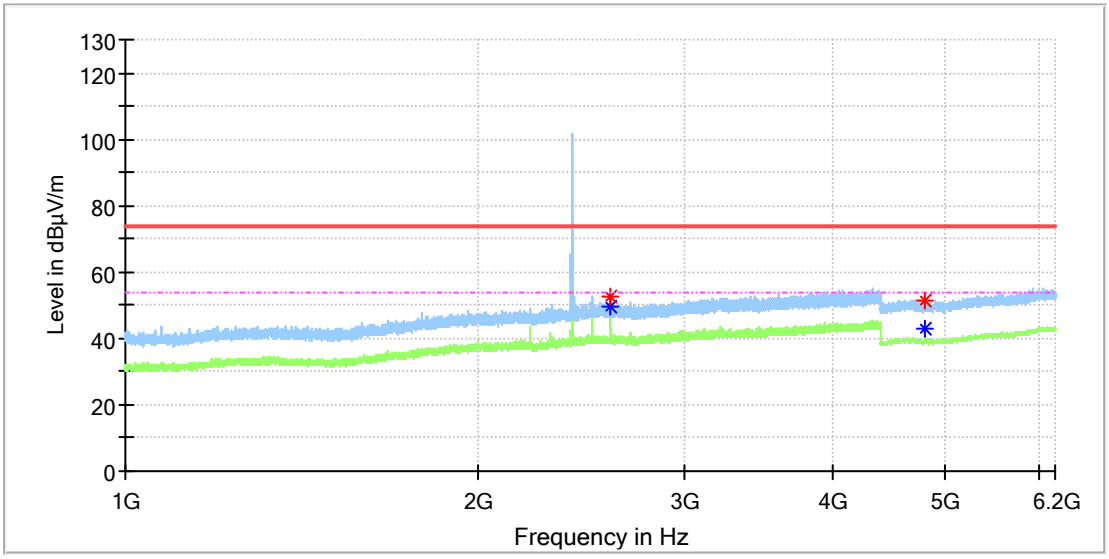
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
53.716500	26.27	40.00	13.73	100.0	V	103.0	-18.4
104.835500	14.53	43.50	28.97	100.0	V	310.0	-18.8
212.263000	16.34	43.50	27.16	100.0	V	97.0	-18.8
516.309500	23.32	46.00	22.68	100.0	V	89.0	-11.6
844.509000	29.18	46.00	16.82	100.0	V	6.0	-5.6

1GHz - 6.2GHz

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

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

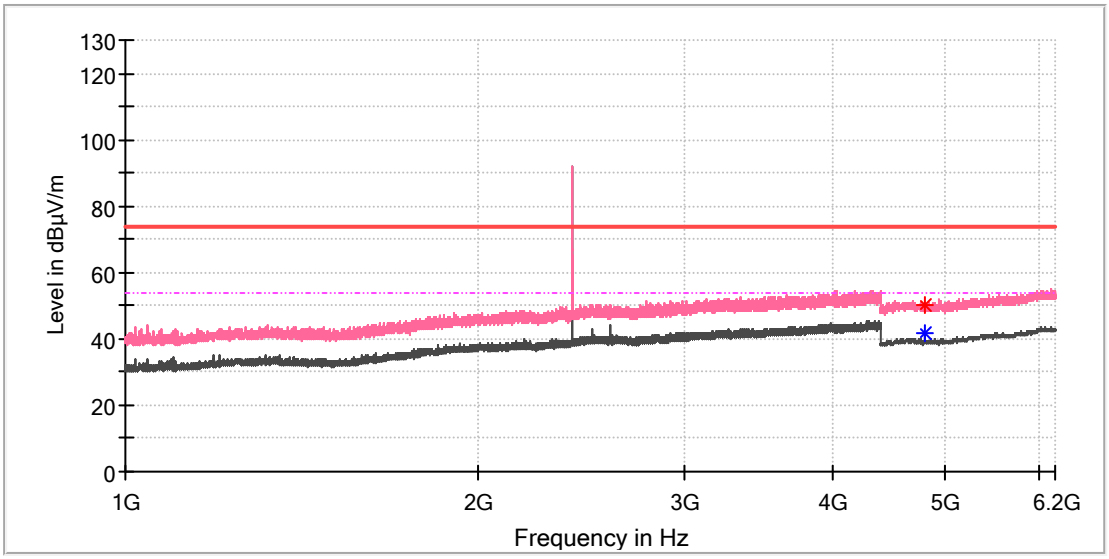


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2593.920000	---	49.56	54.00	4.44	100.0	H	176.0	7.4
2594.090000	52.65	---	74.00	21.35	100.0	H	176.0	7.4
4803.500000	51.46	---	74.00	22.54	100.0	H	245.0	11.8
4803.500000	---	43.13	54.00	10.87	100.0	H	245.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

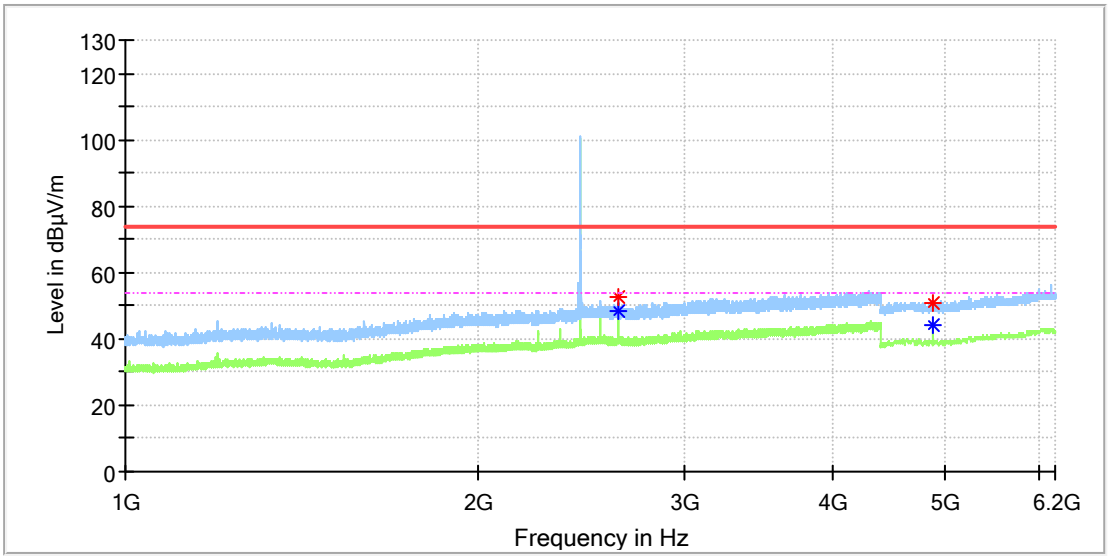


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4804.000000	---	41.48	54.00	12.52	100.0	V	230.0	11.8
4806.000000	50.32	---	74.00	23.68	100.0	V	334.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

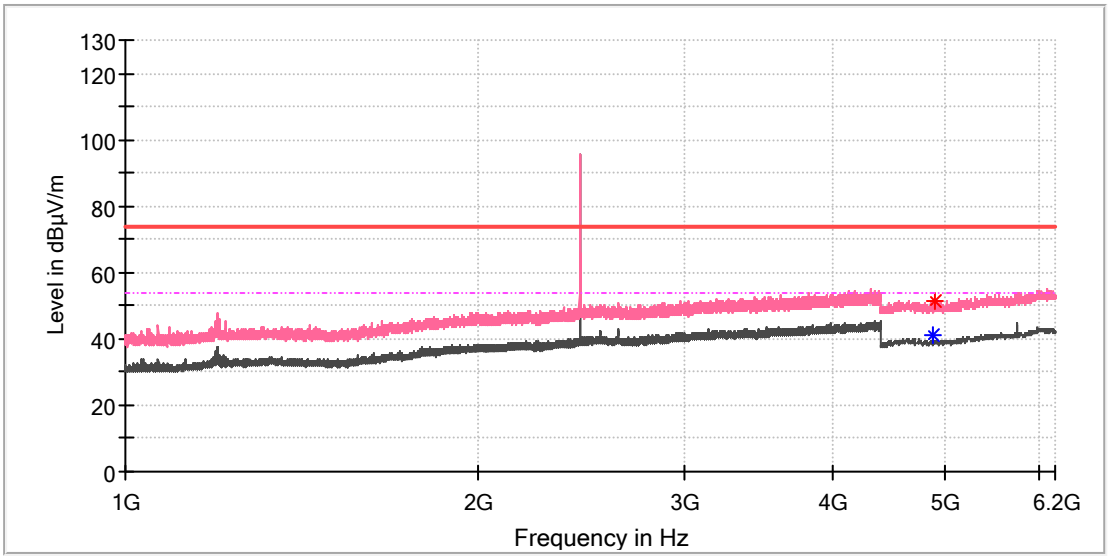


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2633.020000	---	48.08	54.00	5.92	100.0	H	170.0	7.5
2633.190000	52.78	---	74.00	21.22	100.0	H	180.0	7.5
4881.500000	50.88	---	74.00	23.12	100.0	H	164.0	11.8
4882.000000	---	43.89	54.00	10.11	100.0	H	171.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

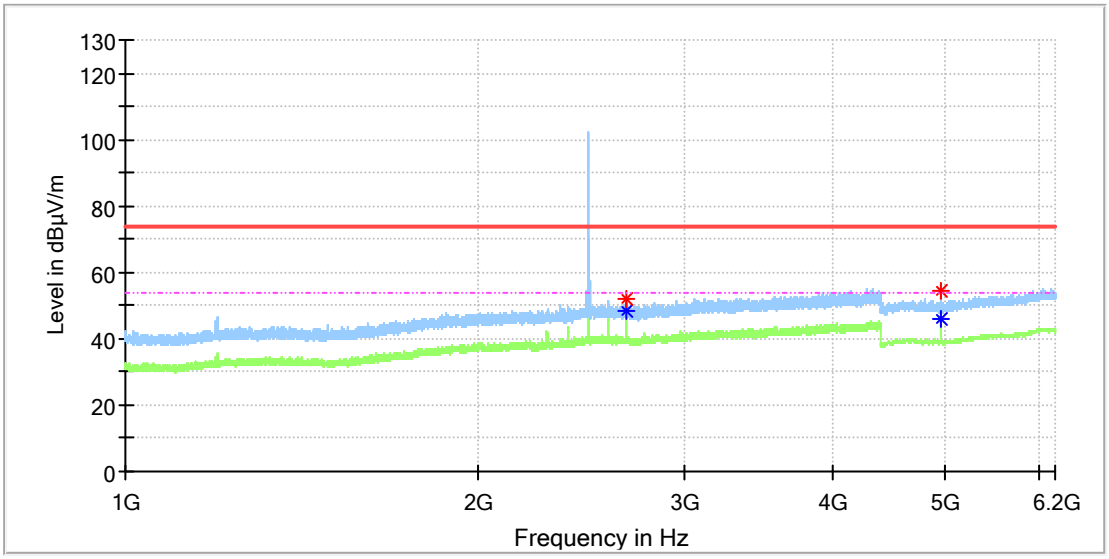


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4882.000000	---	41.14	54.00	12.86	100.0	V	234.0	11.8
4893.000000	51.24	---	74.00	22.76	100.0	V	277.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_HIgh channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

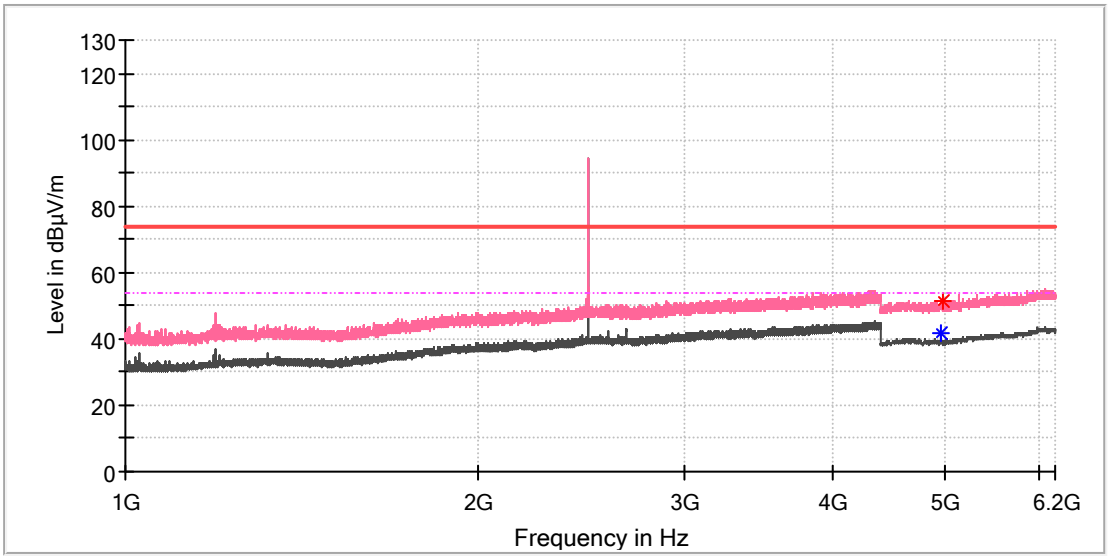


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2671.950000	51.93	---	74.00	22.07	100.0	H	182.0	7.5
2672.120000	---	48.08	54.00	5.92	100.0	H	171.0	7.5
4959.500000	54.14	---	74.00	19.86	100.0	H	161.0	11.8
4959.500000	---	46.19	54.00	7.81	100.0	H	161.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_HIgh channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



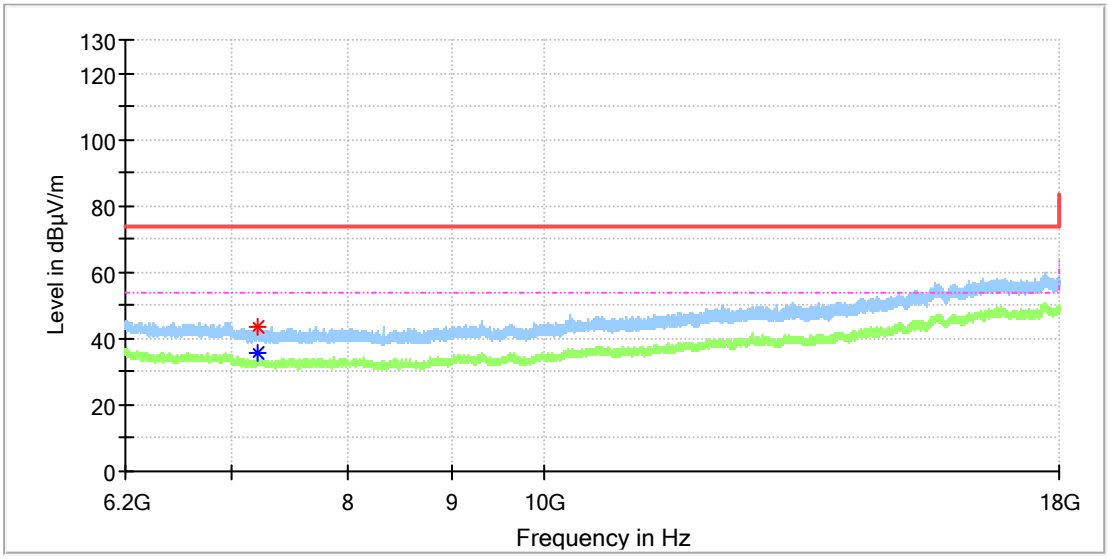
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4960.000000	---	41.63	54.00	12.37	100.0	V	314.0	11.8
4979.500000	51.20	---	74.00	22.80	100.0	V	227.0	11.8

6.2GHz - 18GHz
Note: The highest waveform in the figure is Bluetooth Fundamental.

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

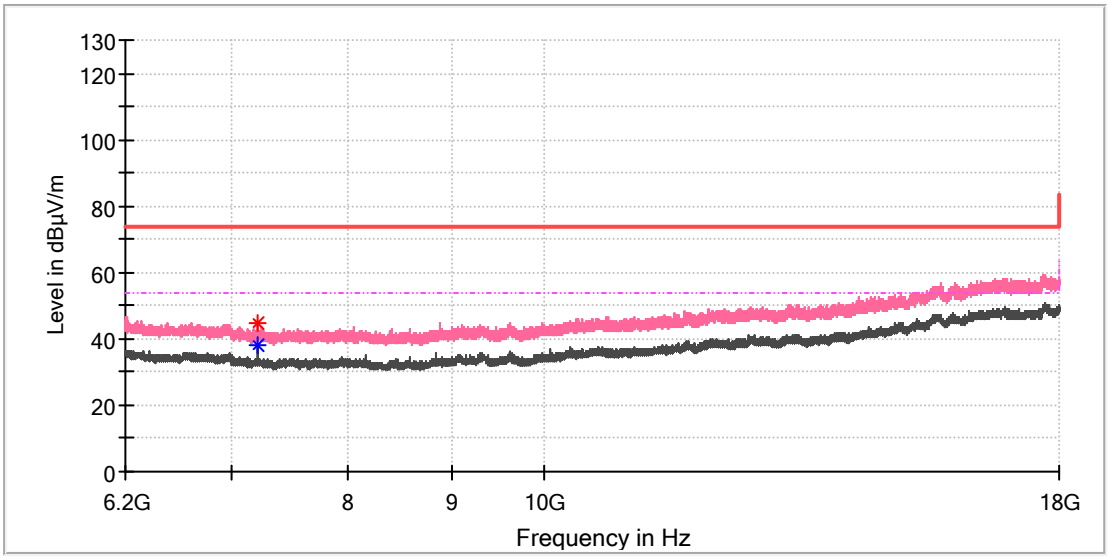


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.458333	---	35.77	54.00	18.23	100.0	H	329.0	8.8
7205.950000	43.67	---	74.00	30.33	100.0	H	241.0	8.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

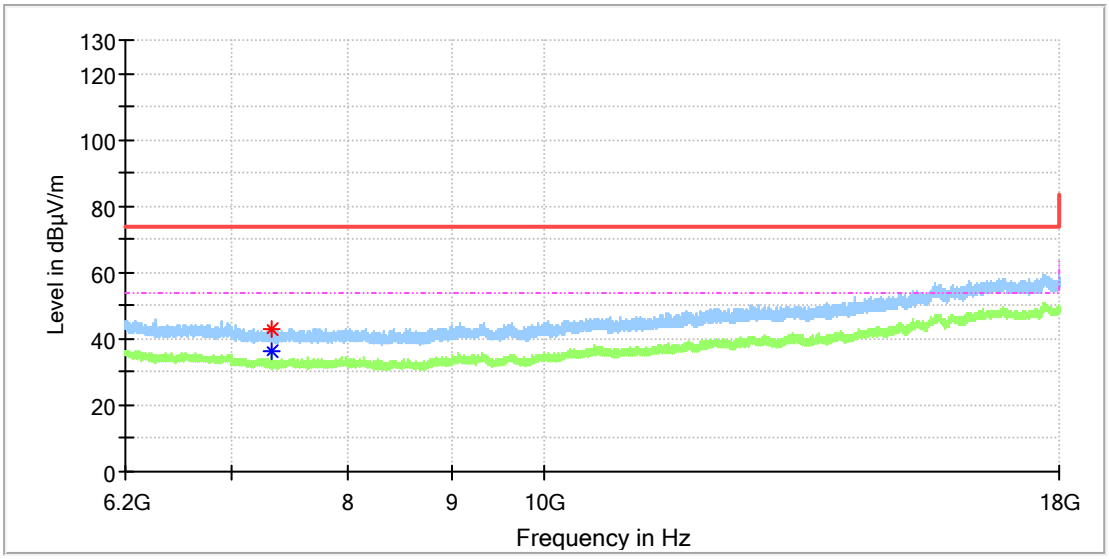


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.950000	44.67	---	74.00	29.33	100.0	V	359.0	8.8
7205.950000	---	38.03	54.00	15.97	100.0	V	359.0	8.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

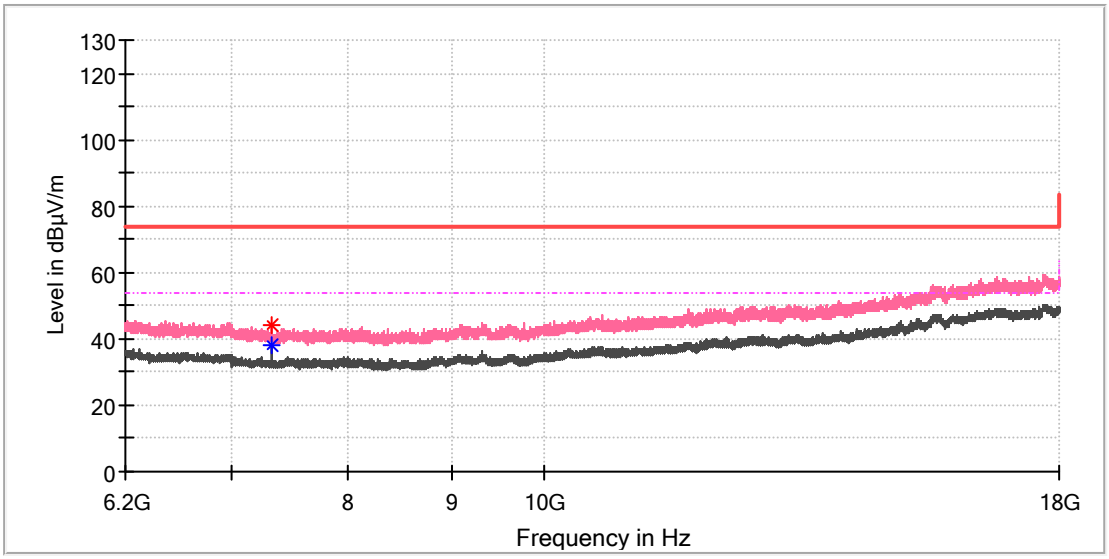


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.475000	---	36.30	54.00	17.70	100.0	H	301.0	8.2
7322.966667	42.74	---	74.00	31.26	100.0	H	301.0	8.2

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

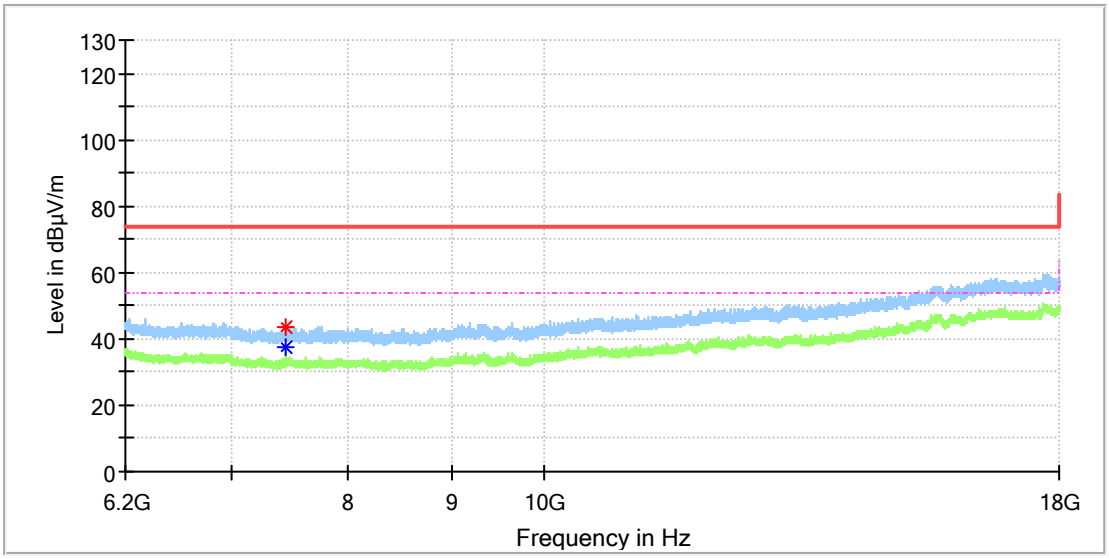


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.475000	44.16	---	74.00	29.84	100.0	V	33.0	8.2
7323.458333	---	38.34	54.00	15.66	100.0	V	201.0	8.2

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_HIgh channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

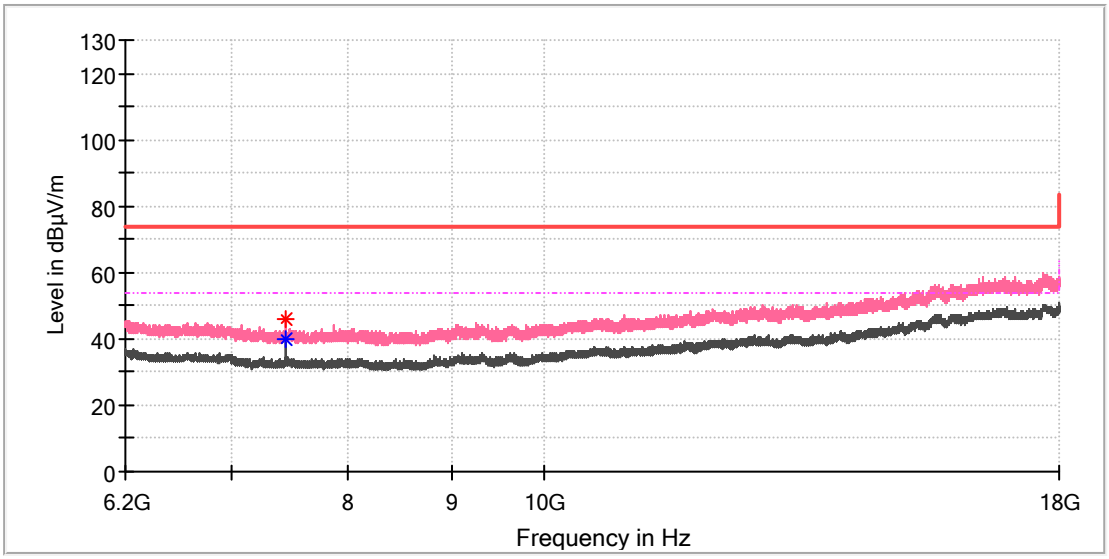


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.491667	43.32	---	74.00	30.68	100.0	H	303.0	8.4
7439.983333	---	37.51	54.00	16.49	100.0	H	303.0	8.4

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_HIgh channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



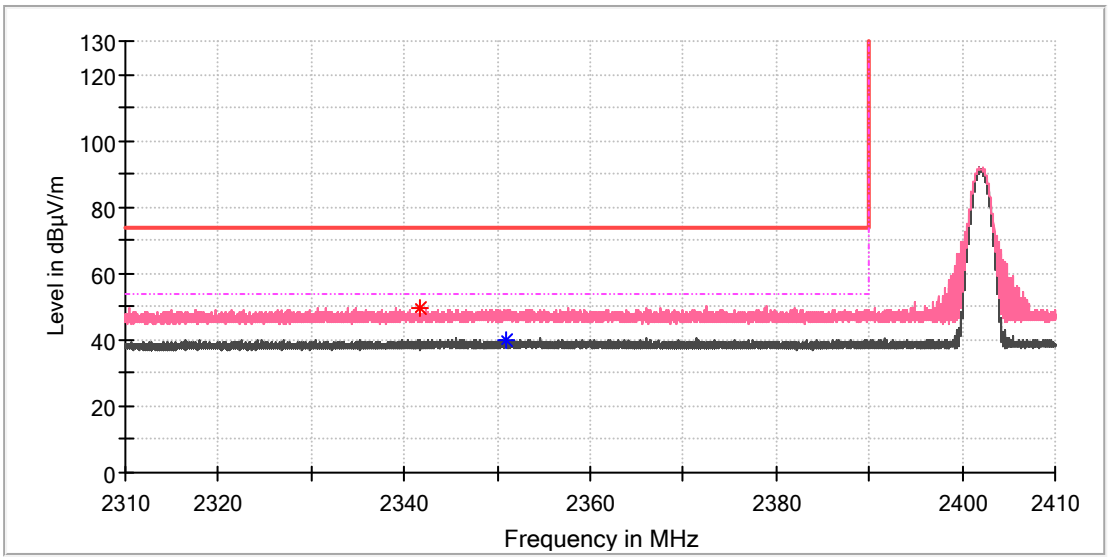
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.983333	---	39.75	54.00	14.25	100.0	V	253.0	8.4
7440.475000	45.73	---	74.00	28.27	100.0	V	218.0	8.4

Appendix B.8: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

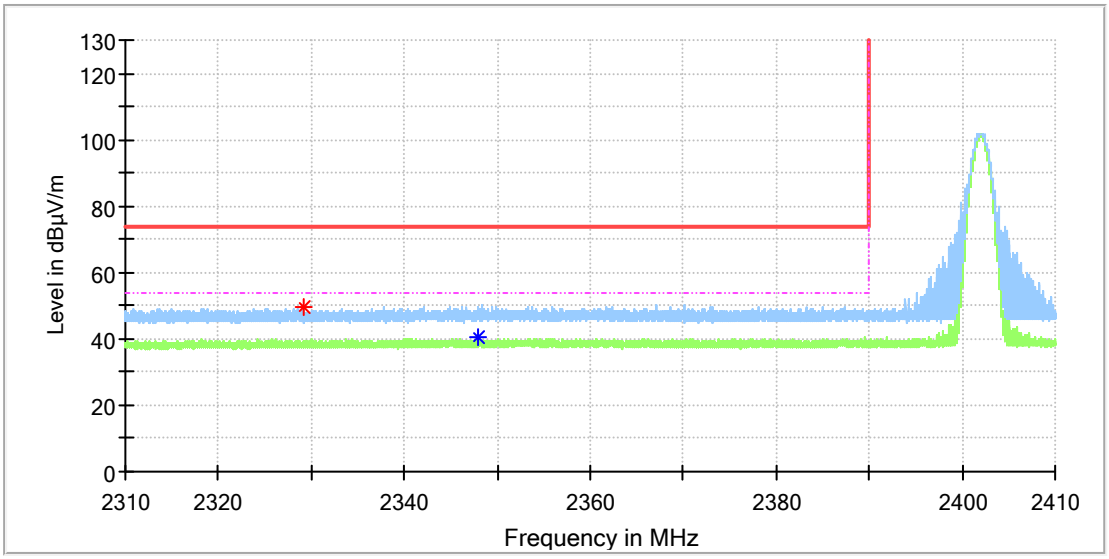


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2341.600000	49.45	---	74.00	24.55	100.0	V	107.0	6.8
2350.915000	---	39.96	54.00	14.04	100.0	V	308.0	6.9

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

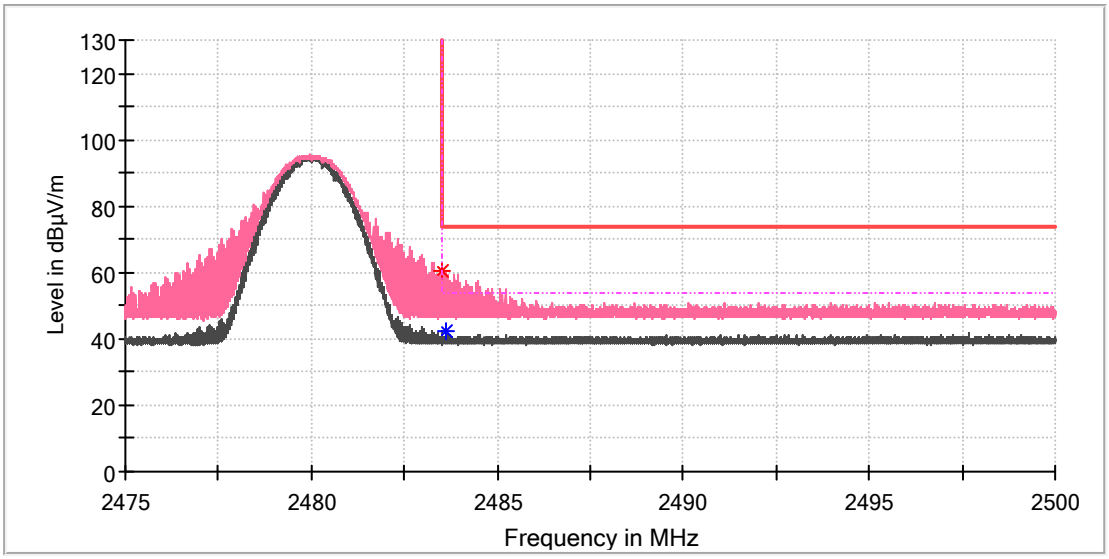


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2329.120000	49.41	---	74.00	24.59	100.0	H	0.0	6.7
2347.830000	---	40.33	54.00	13.67	100.0	H	0.0	6.9

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_HIgh channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

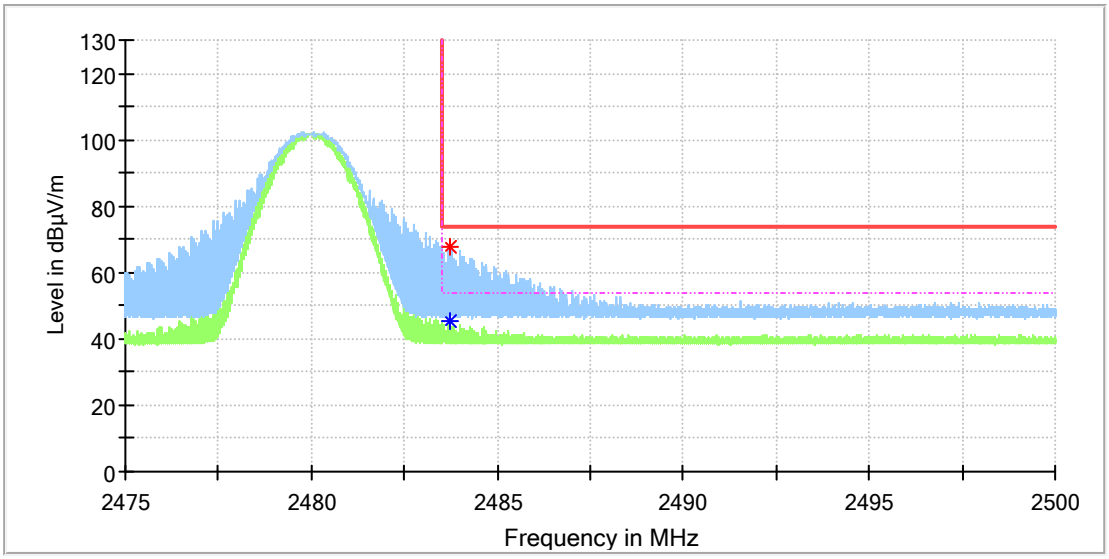


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.533750	60.63	---	74.00	13.37	100.0	V	4.0	7.4
2483.608750	---	42.19	54.00	11.81	100.0	V	190.0	7.4

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	BR_DH5_HIgh channel
Order No/Sample No:	168385386/A003313451-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



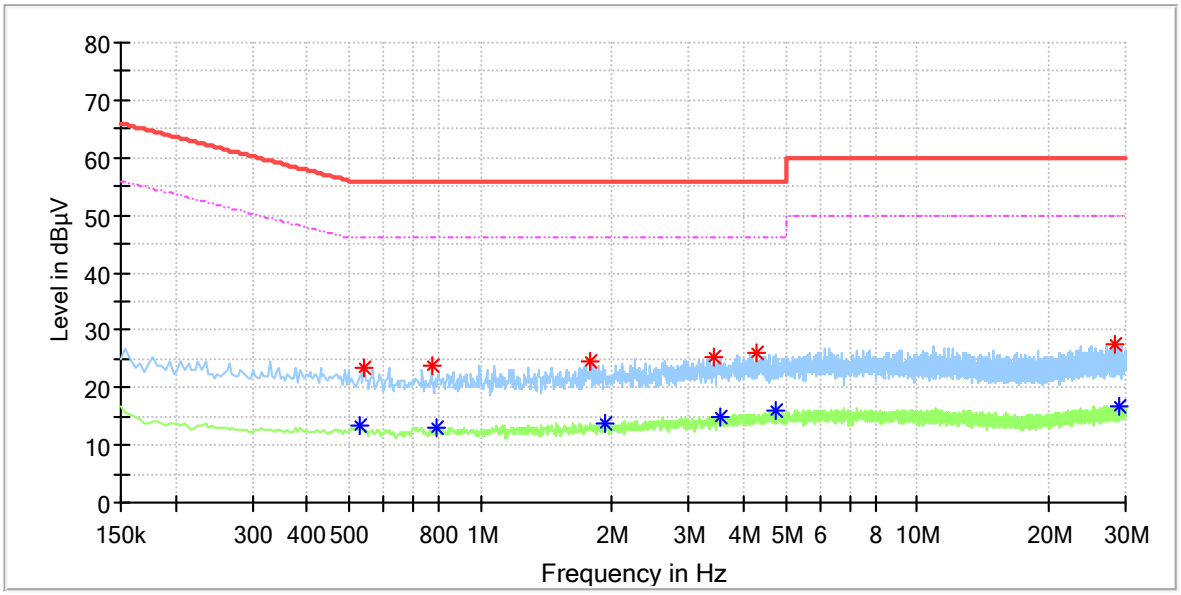
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.706250	---	45.25	54.00	8.75	100.0	H	179.0	7.4
2483.706250	68.02	---	74.00	5.98	100.0	H	179.0	7.4

Appendix B.9: Test Results of Conducted Emission

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	Charging +BT playing
Test Voltage:	AC 120V/60Hz
Test By/Review By:	Guangshen cen/Gary Chen
Test Standard:	FCC Part15
Tem./Hum./Pressure:	24.9°C/55.7%/101kPa
Remark:	SR1

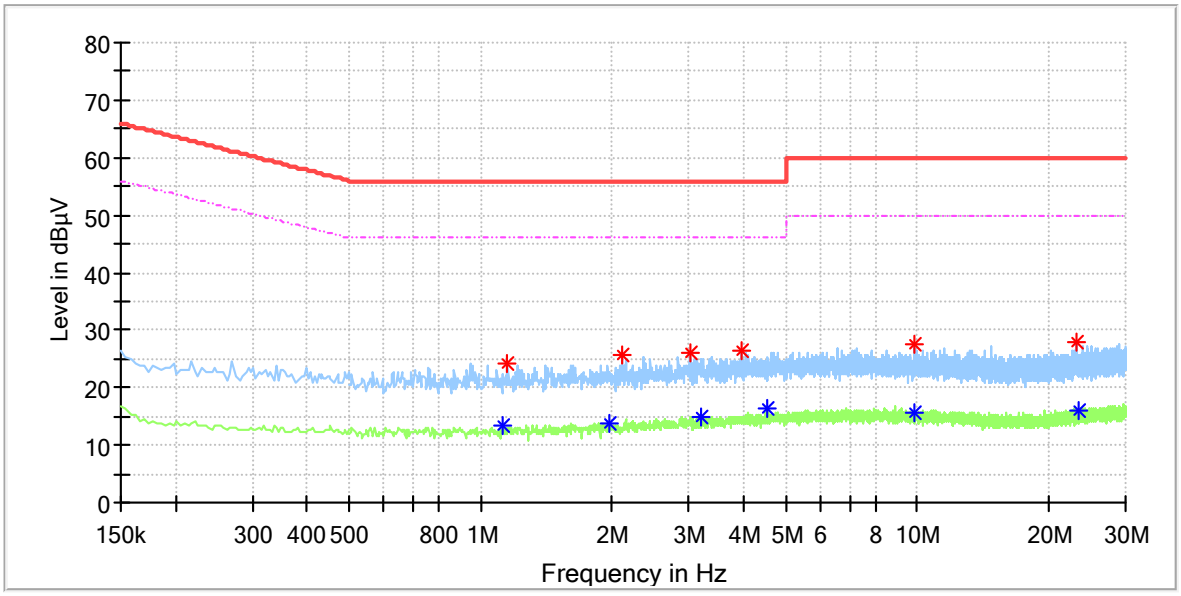


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.528000	---	13.28	46.00	32.72	L1	9.7
0.540000	23.49	---	56.00	32.51	L1	9.7
0.772000	23.97	---	56.00	32.03	L1	9.7
0.792000	---	12.89	46.00	33.11	L1	9.7
1.776000	24.56	---	56.00	31.44	L1	9.8
1.936000	---	13.87	46.00	32.13	L1	9.8
3.420000	25.17	---	56.00	30.83	L1	9.9
3.548000	---	15.05	46.00	30.95	L1	9.9
4.288000	26.09	---	56.00	29.91	L1	9.9
4.760000	---	15.84	46.00	30.16	L1	10.0
28.512000	27.36	---	60.00	32.64	L1	10.4
29.096000	---	16.88	50.00	33.12	L1	10.4

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP4D
Test Mode:	Charging +BT playing
Test Voltage:	AC 120V/60Hz
Test By/Review By:	Guangshen cen/Gary Chen
Test Standard:	FCC Part15
Tem./Hum./Pressure:	24.9°C/55.7%/101kPa
Remark:	SR1



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
1.124000	---	13.26	46.00	32.74	N	9.7
1.152000	24.35	---	56.00	31.65	N	9.7
1.980000	---	13.84	46.00	32.16	N	9.7
2.104000	25.59	---	56.00	30.41	N	9.8
3.008000	25.99	---	56.00	30.01	N	9.9
3.212000	---	15.06	46.00	30.94	N	9.9
3.956000	26.25	---	56.00	29.75	N	9.9
4.556000	---	16.22	46.00	29.78	N	10.0
9.800000	---	15.58	50.00	34.42	N	10.0
9.832000	27.68	---	60.00	32.32	N	10.0
23.088000	27.91	---	60.00	32.09	N	10.5
23.404000	---	16.11	50.00	33.89	N	10.5