Prüfbericht-Nr.: *Test Report No.*:	**50352518 001**	**Auftrags-Nr.:** *Order No.*:	168137853	Seite 1 von 24 *Page 1 of 24*
Kunden-Referenz-Nr.: *Client Reference No.*:	N/A	**Auftragsdatum:** *Order date*:	24.02.2020	
Auftraggeber: *Client*:	Chongqing Changan Automobile Co., Ltd. No. 260 Jianxin Dong Road, Jiangbei District, 400023 Chongqing, P.R. China			
Prüfgegenstand: *Test item*:	Radio Assy			
Bezeichnung / Typ-Nr.: *Identification / Type No.*:	7901010-BU51			
Auftrags-Inhalt: *Order content*:	Test Report			
Prüfgrundlage: *Test specification*:	CFR47 FCC Part 15.203 CFR47 FCC Part 15.247 CFR47 FCC Part 2.1091			

Wareneingangsdatum: *Date of receipt*:	20.11.2019	Refer to Photo Documentation
Prüfmuster-Nr.: *Test sample No.*:	A001047645-001	
Prüfzeitraum: *Testing period*:	20.11.2019 - 12.03.2020	
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*:			**kontrolliert von /** *reviewed by*:		
21.04.2020	Hardy Suo / Assistant Project Manager		22.04.2020	Sam Lin / Technical Certifier	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*: FCC ID: 2AVTF790101051
This report is for DSS operation.

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 specification(s)		*F(ail) = failed a.m. test specification(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.
V04

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT
RESULT: Pass

5.1.2 PEAK OUTPUT POWER
RESULT: Pass

5.1.3 20DB EMISSION BANDWIDTH AND 99% OCCUPIED CHANNEL BANDWIDTH
RESULT: Pass

5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH
RESULT: Pass

5.1.5 SPURIOUS EMISSIONS
RESULT: Pass

5.1.6 CARRIER FREQUENCY SEPARATION
RESULT: Pass

5.1.7 HOPPING FREQUENCIES
RESULT: Pass

5.1.8 TIME OF CHANNEL OCCUPANCY
RESULT: Pass

5.1.9 SAFETY HUMAN EXPOSURE
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: Test Results of Bluetooth operation mode

Appendix B: Photographs of the Test Set-Up

1.2 TEST STANDARD(S)

Applied Rules:	CFR47 FCC Part 15.203 CFR47 FCC Part 15.247 CFR47 FCC Part 2.1091
Test Method:	KDB 558074 D01 ANSI C63.10:2013

2. TEST SITES

2.1 TEST FACILITIES

TÜV Rheinland (Shenzhen) Co., Ltd.
(FCC Registration No.: 694916 & IC Registration Number: 25069)
Address: No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, P.R. China

2.2 TEST DATE

Date of test: 20.11.2019 - 12.03.2020

2.3 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Table 1: List of Test and Measurement Equipment

☒ Radio Spectrum Testing (TS8997)					
Equip. No.	**Description**	**Manufacturer**	**Model**	**Serial No.**	**Calibrated until (DD.MM.YYYY)**
1825794	Wireless Connectivity Tester	R&S	CMW270	101375	20.08.2020
1825795	Signal Analyzer	R&S	FSV 40	101441	20.08.2020
1825796	Vector Signal Generator	R&S	SMBV100A	263301	21.08.2020
1825797	Signal Generator	R&S	SMB100A	115186	21.08.2020
1825798	OSP	R&S	OSP 150	101017	17.12.2020
1825799	Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
1825800	Test Software	R&S	WMS32 (V10.40.10)	N/A	N/A
1825801	Power Meter	R&S	NRP2	107105	17.12.2020
1825802	Wideband Power Sensor	R&S	NRP-Z81	105350	17.12.2020
1829620	Power Sensor	R&S	NRP-Z81	105677	11.10.2020
1826483	Humid & Temp Programmable Tester	BOST	NTH090-60	19040801	16.04.2020
1826431	Shielding Room 8#	Albatross	SR8	APC17151 -SR8	23.07.2020

☒ Unwanted Emission Testing (TS9975)					
Equip. No.	**Description**	**Manufacturer**	**Model**	**Serial No.**	**Calibrated until (DD.MM.YYYY)**
1826021	EMI Test Receiver	R&S	ESR 7	102021	19.08.2020
1826023	Signal Analyzer	R&S	FSV 40	101439	21.08.2020
1826024	System Controller Interface	R&S	SCI-100	S10010038	N/A
1826025	Filterbank	R&S	Wlan	100759	21.08.2020
1826026	OSP	R&S	OSP 120	102040	N/A
1826028	Pre-amplifier	R&S	SCU08F1	08320031	20.08.2020
1826029	Amplifier	R&S	SCU-18F	180070	20.08.2020
1826030	Amplifier	R&S	SCU40A	100475	20.09.2020
1826031	Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	02.09.2020
1826032	Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	02.09.2020
1826033	Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	02.09.2020
1826034	Active Loop Antenna	Schwarzbeck	FMZB 1513	302	01.09.2020
1826035	Wideband Ridged Horn Antenna (12-18 GHz)	Steatite	QMS-00208	18313	02.09.2020
1826036	Test software	R&S	V10.40.10-EMC32	N/A	N/A
1826037	Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
1826433	3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	06.07.2020

2.4 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.5 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.

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A 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. facility located at No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, P.R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3. GENERAL PRODUCT INFORMATION

3.1 GENERAL DESCRIPTION

The EUT is Bluetooth transmitter which used in vehicle.

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

3.2 RATING AND SYSTEM DETAILS

Table 2: Rating of EUT

General Information of EUT	Description
Kind of Equipment:	Radio Assy
Type Designation:	7901010-BU51
FCC ID:	2AVTF790101051
Type of Equipment:	Mobile device
Operating Voltage:	DC 12V
Operating Temperature Range:	-40°C ~ +85°C

Table 3: Technical Specification of EUT

Characteristic	Description
Operated Modes:	Bluetooth Core V2.1
Operational Frequency Band(s):	2.4G ISM Band
Operating Frequency Range:	2402 – 2480 MHz
Channel Number:	79 channels
Modulation Type:	GFSK, 8DPSK, π/4QDPSK
Antenna Type:	PIFA Antenna, Integrate
Antenna Gain:	Max. 2.14 dBi

Table 4: Operating Frequency Channel of EUT

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	21	2423.00	42	2444.00	63	2465.00
1	2403.00	22	2424.00	43	2445.00	64	2466.00
2	2404.00	23	2425.00	44	2446.00	65	2467.00
3	2405.00	24	2426.00	45	2447.00	66	2468.00
4	2406.00	25	2427.00	46	2448.00	67	2469.00
5	2407.00	26	2428.00	47	2449.00	68	2470.00
6	2408.00	27	2429.00	48	2450.00	69	2471.00
7	2409.00	28	2430.00	49	2451.00	70	2472.00
8	2410.00	29	2431.00	50	2452.00	71	2473.00
9	2411.00	30	2432.00	51	2453.00	72	2474.00
10	2412.00	31	2433.00	52	2454.00	73	2475.00
11	2413.00	32	2434.00	53	2455.00	74	2476.00
12	2414.00	33	2435.00	54	2456.00	75	2477.00
13	2415.00	34	2436.00	55	2457.00	76	2478.00
14	2416.00	35	2437.00	56	2458.00	77	2479.00
15	2417.00	36	2438.00	57	2459.00	78	2480.00
16	2418.00	37	2439.00	58	2460.00	--	--
17	2419.00	38	2440.00	59	2461.00	--	--
18	2420.00	39	2441.00	60	2462.00	--	--
19	2421.00	40	2442.00	61	2463.00	--	--
20	2422.00	41	2443.00	62	2464.00	--	--

Table 5: Frequency Hopping Information

Technical Specification	Description
Hopping Range	Hereby we declare that the maximum frequency of this device is: 2402-2480MHz. This is according the Bluetooth Core Specification for devices which will be operated in the USA. This was checked during the Bluetooth Qualification tests (Test Case: TRM/CA/04-E).
Hopping Sequence	Example of a 79 hopping sequence in data mode: 33,04,21,44,23,42,53,46,55,48,40,59,72,29,76,31,08,73, 07,75,09,45,60,39,58,13,47,11,77,52,35,50,65,54,67,56, 69,62,71,64, 7,25,27,66,57,70,74,61,78,63,10,41,05,43, 15,44,64,68,02,70,06,01,51,03,55,05,03,66,53,49,36,47,
Receiver input bandwidth	The input bandwidth of the receiver is 1MHz. In every connection one Bluetooth device is the master and the other one is the slave. The master determines the hopping sequence. The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master. Additionally the type of connection is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection. Also

	the slave of the connection will use these settings. Repeating of a packer has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case. That means a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence.

3.3 INDEPENDENT OPERATION MODES

The basic operation modes are:

A. Transmitting
    1) Bluetooth function
        i. Low Channel
        ii. Mid Channel
        iii. High Channel
B. Receiving
C. Standby
D. Off

3.4 NOISE GENERATING AND NOISE SUPPRESSING PARTS

Refer to the Circuit Diagram.

3.5 SUBMITTED DOCUMENTS

☒ User Manual
☒ Circuit Diagram
☒ Block Diagram
☒ Schematics
☐ Model Difference Letter
☒ Rating Label
☐ PCB Layout
☒ Photo Document
☒ Parts List

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.

During testing, test software provided by the applicant was used to control the operating channel as well as output power for Bluetooth operation.

Table 6: List of Frequencies under Test, Bluetooth operation

Channel	Channel number	Frequency (MHz)	Power Level setting in software
Low	0	2402.00	0 dBm
Middle	39	2441.00	0 dBm
High	78	2480.00	0 dbm

Table 7: Test Environments

Environment Parameter	Selected Values During Tests		
	Temperature (°C)	Voltage (V) DC	Relative Humidity
Normal (NTNV)	23	12	50%
HTHV	---	---	---
LTHV	---	---	---
HTLV	---	---	---
LTLV	---	---	---

4.3 SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT

Table 8: Auxiliary Equipment used during test

Name	Model	Manufacturer	S/N
-	-	-	-

4.4 COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE

The test sample, which has been tested, contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test

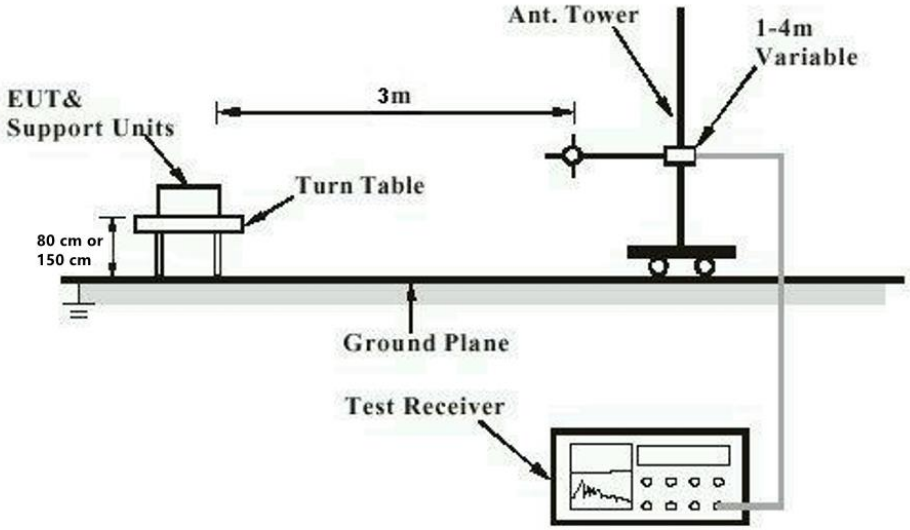


Diagram of Measurement Equipment Configuration for Conduction Measurement

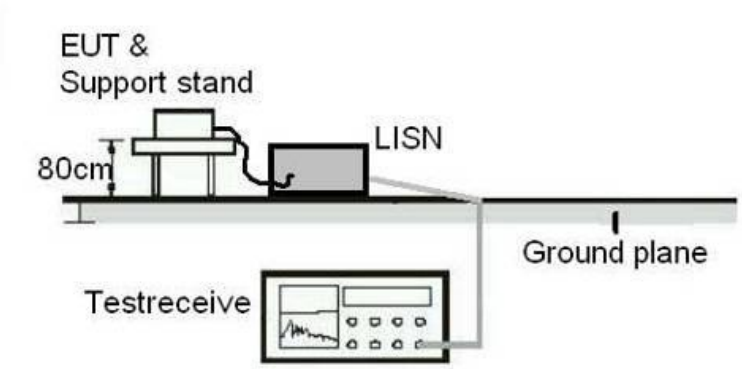
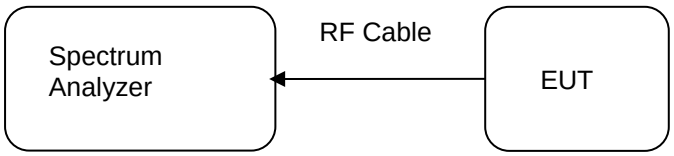


Diagram of Measurement Equipment Configuration for Transmitter Measurement



5. TEST RESULTS

5.1 ESSENTIAL REQUIREMENTS OF STANDARD

5.1.1 ANTENNA REQUIREMENT

RESULT: **Pass**

Test standard	:	CFR47 FCC Part 15.247b)(4) 47 CFR FCC Part 15.203
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	20.11.2019 - 12.03.2020
Input voltage	:	DC 12V
Test environment	:	☒ Normal test conditions ☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	23 ºC
Relative humidity	:	50%
Atmospheric pressure	:	101.0 kPa

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 2.14 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to compliance the provision.

Refer to EUT photo for details.

5.1.2 PEAK OUTPUT POWER

RESULT: **Pass**

Test standard	:	CFR47 FCC Part 15.247b)(1)
Limits	:	0.125 mW
Test procedure	:	ANSI C63.10:2013
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	20.11.2019 - 12.03.2020
Input voltage	:	DC 12V
Test environment	:	☒ Normal test conditions
		☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 ºC
Relative humidity	:	50%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix A for details of test results.

5.1.3 20dB Emission Bandwidth and 99% Occupied Channel Bandwidth

RESULT: **Pass**

Test standard	:	CFR47 FCC Part 15.247b)(1)
Limits	:	No limit
Test procedure	:	ANSI C63.10:2013
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	20.11.2019 - 12.03.2020
Input voltage	:	DC 12V
Test environment	:	☒ Normal test conditions
		☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 ºC
Relative humidity	:	50%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix A for details of test results.

5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH

RESULT: **Pass**

Test standard	:	CFR47 FCC Part 15.247d)
Limit	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Test procedure	:	ANSI C63.10:2013
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	20.11.2019 - 12.03.2020
Input voltage	:	DC 12V
Test environment	:	☒ Normal test conditions ☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 ºC
Relative humidity	:	51%
Atmospheric pressure	:	101.0 kPa

The measurement is performed hopping and non-hopping mode, only the worst data is recorded in this report.

Refer to attached Appendix A for details of test results.

5.1.5 SPURIOUS EMISSIONS

RESULT: **Pass**

Test standard	:	CFR47 FCC Part 15.247(d) 47 CFR FCC Part 15.209
Limits	:	Refer to 15.209(a)
Test procedure	:	ANSI C63.10:2013
Kind of test site	:	3m Semi Anechoic Room

Test Setup

Date of testing	:	20.11.2019 - 12.03.2020
Input voltage	:	DC 12V
Test environment	:	☒ Normal test conditions ☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	23 ºC
Relative humidity	:	42%
Atmospheric pressure	:	101.0 kPa

Sweep the whole frequency band through the range from 9 kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in this report. The measurement is performed for all operational modes and both antenna polarization, only the worst data is recorded in this report.

Refer to attached Appendix A for details of test results.

5.1.6 CARRIER FREQUENCY SEPARATION

RESULT: **Pass**

Test standard	:	CFR47 FCC Part 15.247(a)(1)
Limit	:	≥ 25kHz or two-thirds of 20dB bandwidth, whichever is greater
Test procedure	:	ANSI C63.10:2013
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	20.11.2019 - 12.03.2020
Input voltage	:	DC 12V
Test environment	:	☒ Normal test conditions
		☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	23 ºC
Relative humidity	:	47%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix A for details of test results.

5.1.7 HOPPING FREQUENCIES

RESULT: **Pass**

Test standard	:	CFR47 FCC Part 15.247(a)(1)
Limits	:	≥ 15 non-overlapping channels
Test procedure	:	ANSI C63.10:2013
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	20.11.2019 - 12.03.2020
Input voltage	:	DC 12V
Test environment	:	☒ Normal test conditions
		☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 ºC
Relative humidity	:	51%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix A for details of test results.

5.1.8 TIME OF CHANNEL OCCUPANCY

RESULT: **Pass**

Test standard	:	CFR47 FCC Part 15.247(a)(1)(iii)
Limits	:	0.4s
Test procedure	:	ANSI C63.10:2013
Kind of test site	:	Shielding Room

Test Setup

Date of testing	:	20.11.2019 - 12.03.2020
Input voltage	:	DC 12V
Test environment	:	☒ Normal test conditions ☐ Extreme test conditions
Operation mode	:	A.1
Ambient temperature	:	24 ºC
Relative humidity	:	51%
Atmospheric pressure	:	101.0 kPa

Refer to attached Appendix A for details of test results.

5.1.9 SAFETY HUMAN EXPOSURE

5.1.9.1 Radio Frequency Exposure Compliance

RESULT: **Pass**

Test Specification

Test standard : CFR47 FCC Part 2.1091

Limit : FCC KDB Publication 447498 D01 v06

Measurement Record for CFR47 FCC Part 2.1091

The minimum distance for the EUT is less than 5mm.

The maximum specified e.i.r.p.: -1.22dBm+2.14dBi=0.92dBm=1.24mW

Antenna Gain: 2.14dBi max

According to KDB 447498 D01 v06 4.3.1 a)

Exempted Power for this Bluetooth device: 9.5mW, hence the EUT is compliance with the RF exposure.

6. SYSTEM MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Table 9: System Measurement Uncertainty

Items		Extended Uncertainty
RE	Radiated emission 9 kHz - 30 MHz	±3.97 dB
	Radiated emission 30 MHz - 1 GHz	±4.30 dB
Remark: 95% Confidence Levels, K=2.		

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Appendix A

Test Results of Bluetooth operation mode

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TEST RESULTS 3
APPENDIX A.2: TEST RESULTS OF RADIO SIGNAL CONDUCTED MEASUREMENT 3
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Hopping Frequencies (frequency independent; 0.000 dBm; 1 MHz) 4
Time of Channel Occupancy (2441 MHz; 0.000 dBm; 1 MHz) 5
Time of Channel Occupancy(2) (2441 MHz; 0.000 dBm; 1 MHz) 7
Time of Channel Occupancy(3) (2441 MHz; 0.000 dBm; 1 MHz) 9
Emission Bandwidth 20 dB (2402 MHz; 0.000 dBm; 1 MHz; Test Mode) 11
Carrier Frequency Separation (2402 MHz; 0.000 dBm; 1 MHz; Test Mode) 13
Occupied Channel Bandwidth 99% (2402 MHz; 0.000 dBm; 1 MHz; Test Mode) 15
Emission Bandwidth 20 dB (2441 MHz; 0.000 dBm; 1 MHz; Test Mode) 17
Carrier Frequency Separation (2441 MHz; 0.000 dBm; 1 MHz; Test Mode) 19
Occupied Channel Bandwidth 99% (2441 MHz; 0.000 dBm; 1 MHz; Test Mode) 21
Emission Bandwidth 20 dB (2480 MHz; 0.000 dBm; 1 MHz; Test Mode) 23
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GFSK *66*
8DPSK *76*

Appendix A.1: Test Results of Peak Output Power

Test Results

Operation Mode	Channel	Frequency	Test Results				Limit	Conclusion
			Peak Power		Avg. Power			
		MHz	(dBm)	(W)	(dBm)	(W)	(W)	
BDR mode (GFSK)	0	2402	-1.38	0.0007	-2.77	0.0005	0.125	PASS
	39	2441	-1.24	0.0008	-2.61	0.0005	0.125	PASS
	78	2480	-1.22	0.0008	-2.59	0.0006	0.125	PASS
EDR mode (8DPSK)	0	2402	-2.61	0.0005	-4.86	0.0003	0.125	PASS
	39	2441	-2.64	0.0005	-4.91	0.0003	0.125	PASS
	78	2480	-2.60	0.0005	-4.87	0.0003	0.125	PASS
Note: N/A								

Appendix A.2: Test Results of Radio Signal Conducted Measurement

GFSK

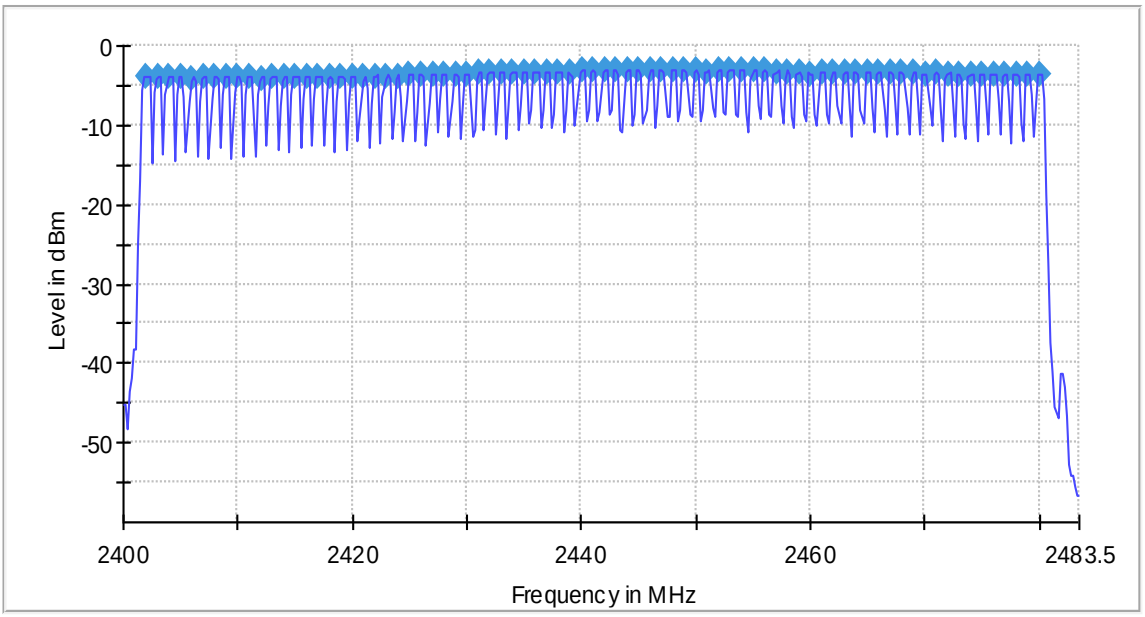
Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Hopping Frequencies	**--- (hopping)**	**0.0**	**1.000000**	**PASS**
Time of Channel Occupancy	**2441.000 (hopping)**	**0.0**	**1.000000**	**PASS**
Time of Channel Occupancy(2)	**2441.000 (hopping)**	**0.0**	**1.000000**	**PASS**
Time of Channel Occupancy(3)	**2441.000 (hopping)**	**0.0**	**1.000000**	**PASS**
Emission Bandwidth 20 dB	**2402.000 (single)**	**0.0**	**1.000000**	**PASS**
Carrier Frequency Separation	**2402.000 (single)**	**0.0**	**1.000000**	**PASS**
Occupied Channel Bandwidth 99%	**2402.000 (single)**	**0.0**	**1.000000**	**PASS**
Emission Bandwidth 20 dB	**2441.000 (single)**	**0.0**	**1.000000**	**PASS**
Carrier Frequency Separation	**2441.000 (single)**	**0.0**	**1.000000**	**PASS**
Occupied Channel Bandwidth 99%	**2441.000 (single)**	**0.0**	**1.000000**	**PASS**
Emission Bandwidth 20 dB	**2480.000 (single)**	**0.0**	**1.000000**	**PASS**
Carrier Frequency Separation	**2480.000 (single)**	**0.0**	**1.000000**	**PASS**
Occupied Channel Bandwidth 99%	**2480.000 (single)**	**0.0**	**1.000000**	**PASS**

Hopping Frequencies (frequency independent; 0.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a),(g), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Channels

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



Sequence

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	200.000 kHz	<= 299.000 kHz
VBW	200.000 kHz	>= 200.000 kHz
SweepPoints	418	~ 418
Sweeptime	1.060 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	75 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Time of Channel Occupancy (2441 MHz; 0.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	319	134.400	-20.0

Periode

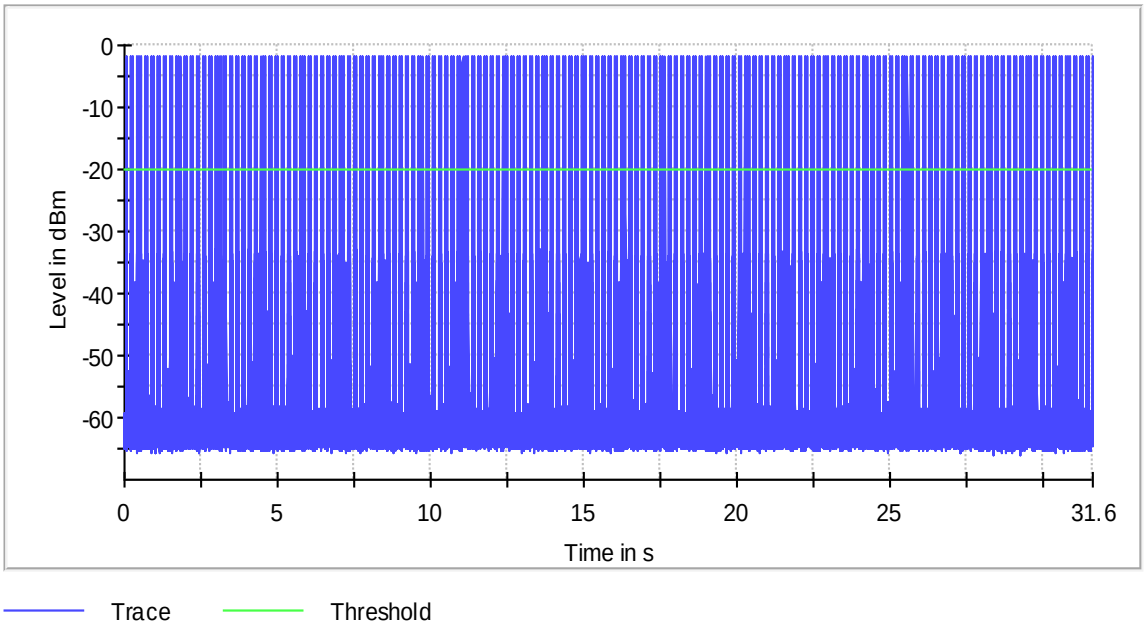
Min (ms)	Max (ms)	Mean (ms)
98.740	98.750	98.748

Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
0.420	0.420	400.000	0.000	0.420

DwellTime

Min (ms)	Max (ms)	Mean (ms)
0.420	0.420	0.420



Time of Channel Occupancy

Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Time of Channel Occupancy(2) (2441 MHz; 0.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	159	268.130	-20.0

Periode

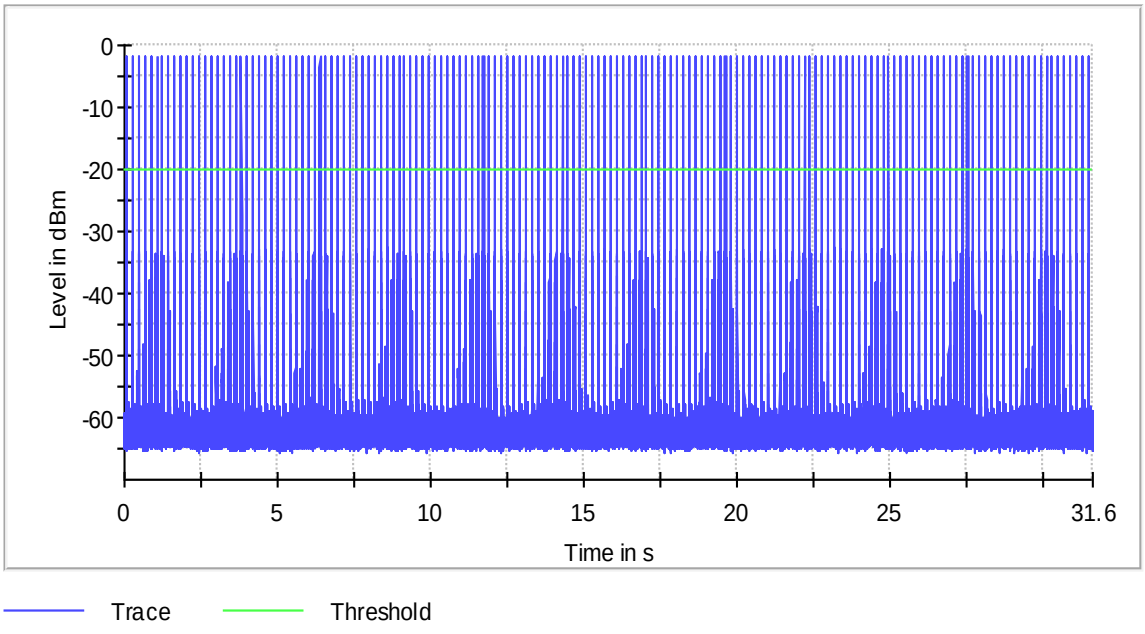
Min (ms)	Max (ms)	Mean (ms)
197.490	197.500	197.496

Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
1.670	1.680	400.000	0.000	1.676

DwellTime

Min (ms)	Max (ms)	Mean (ms)
1.670	1.680	1.676



Time of Channel Occupancy(2)

Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Time of Channel Occupancy(3) (2441 MHz; 0.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	106	312.860	-20.0

Periode

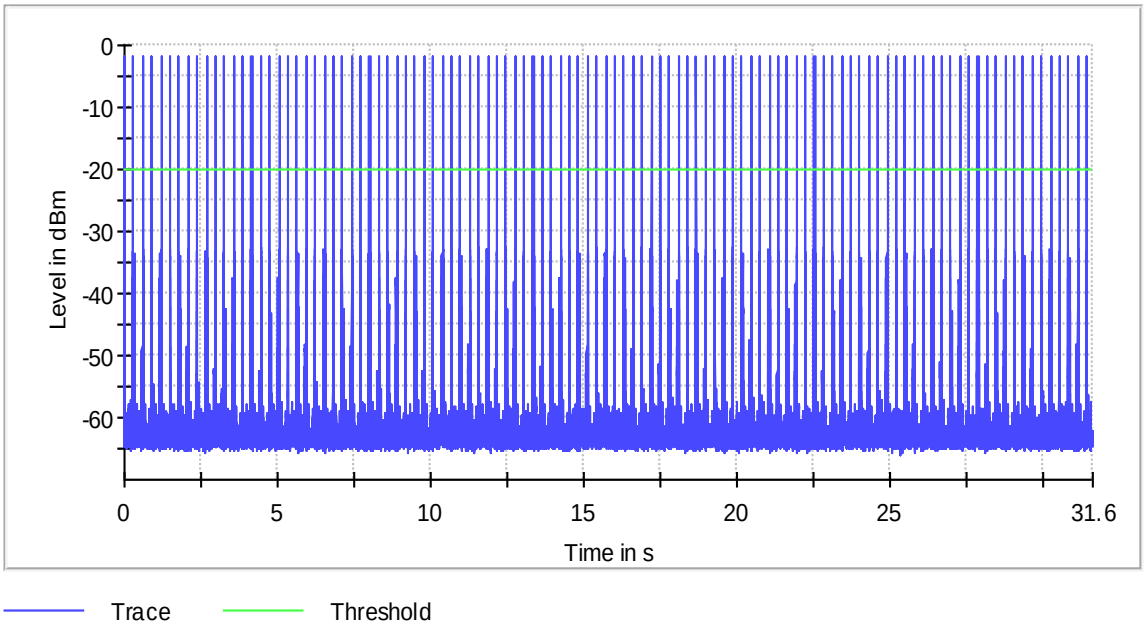
Min (ms)	Max (ms)	Mean (ms)
296.240	296.250	296.244

Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.920	2.930	400.000	0.000	2.924

DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.920	2.930	2.924



Time of Channel Occupancy(3)

Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Emission Bandwidth 20 dB (2402 MHz; 0.000 dBm; 1 MHz; Test Mode)

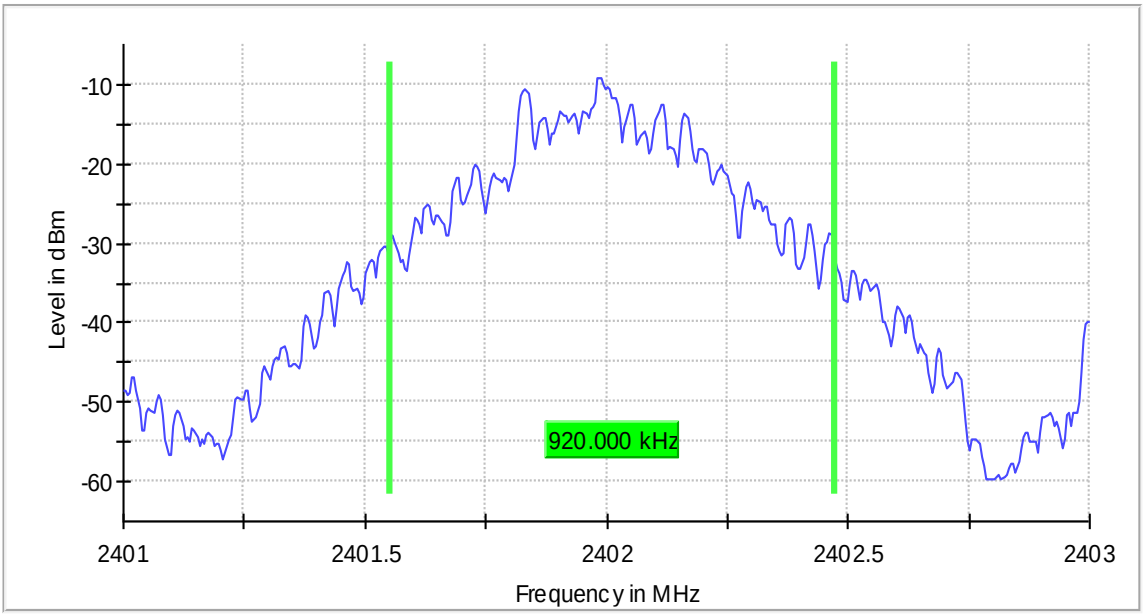
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.920000	---	---	2401.552500	2402.472500

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-9.3	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	6 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.39 dB	0.50 dB

Carrier Frequency Separation (2402 MHz; 0.000 dBm; 1 MHz; Test Mode)

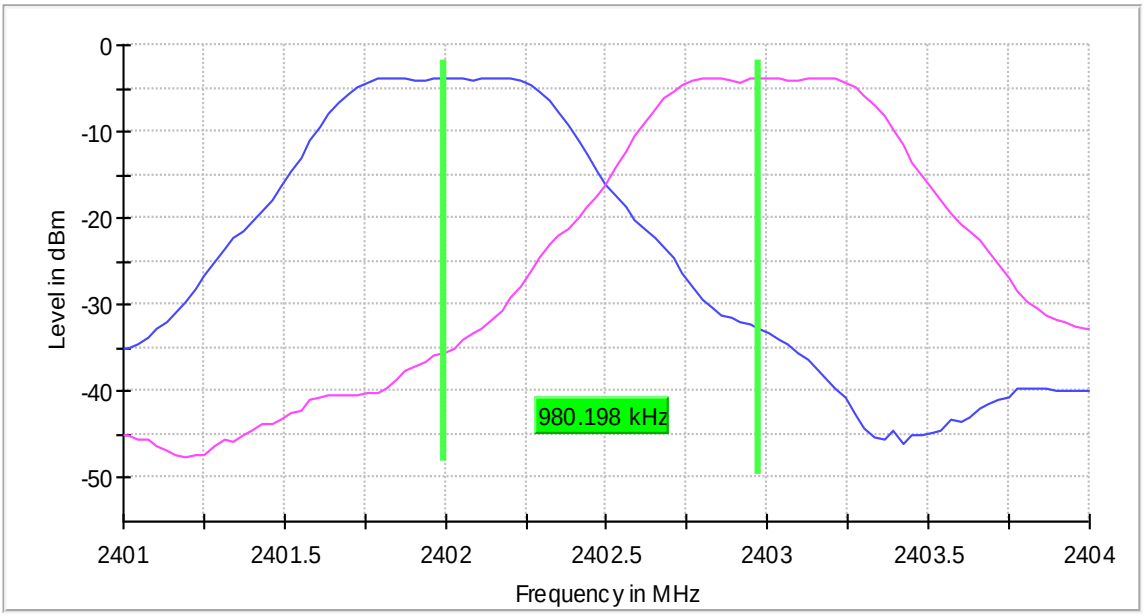
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

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	0.613333	---	2401.995050	2402.975248

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

DUT Frequency (MHz)	Result
2402.000000	PASS



CFS1

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.03 dB	0.50 dB

CFS2

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.02 dB	0.50 dB

Occupied Channel Bandwidth 99% (2402 MHz; 0.000 dBm; 1 MHz; Test Mode)

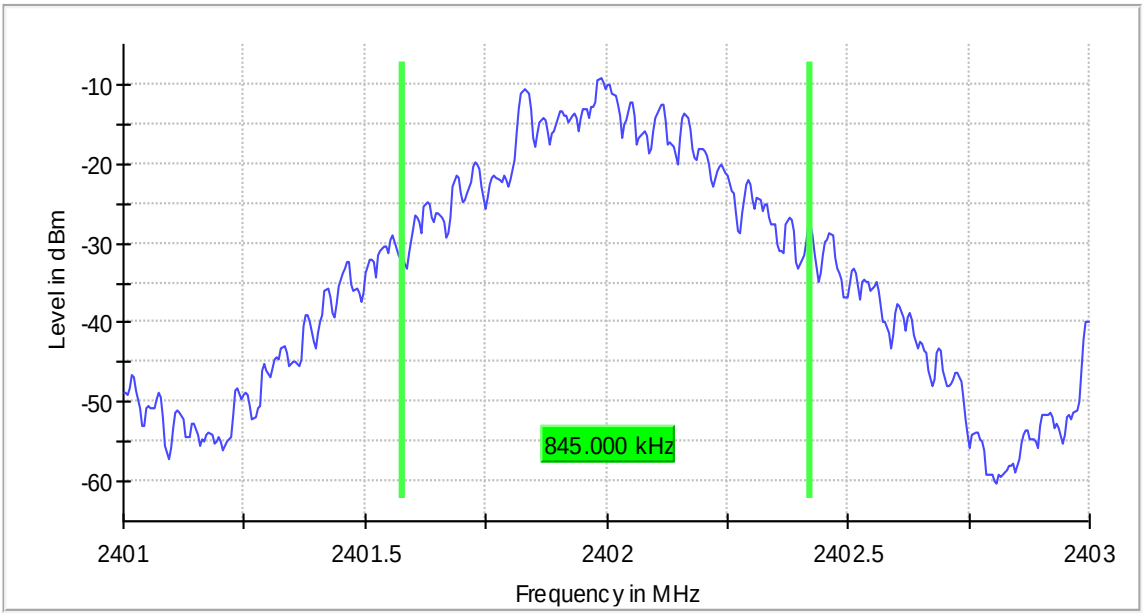
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.845000	---	---	2401.577500	2402.422500

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

DUT Frequency (MHz)	Result
2402.000000	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	10 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.17 dB	0.30 dB

Emission Bandwidth 20 dB (2441 MHz; 0.000 dBm; 1 MHz; Test Mode)

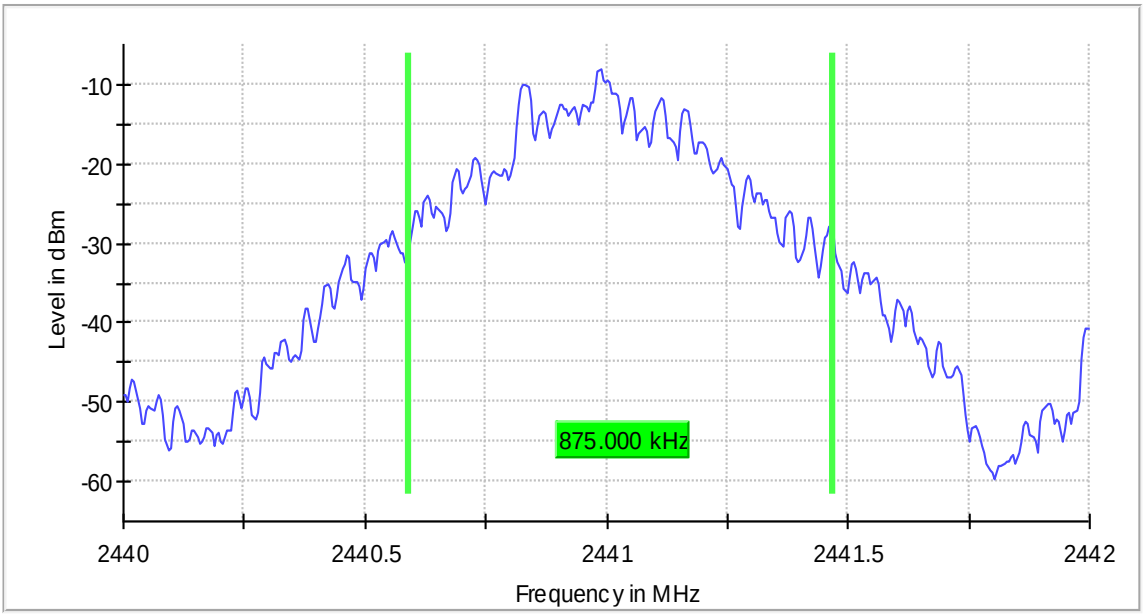
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	0.875000	---	---	2440.592500	2441.467500

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-8.2	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.09 dB	0.50 dB

Carrier Frequency Separation (2441 MHz; 0.000 dBm; 1 MHz; Test Mode)

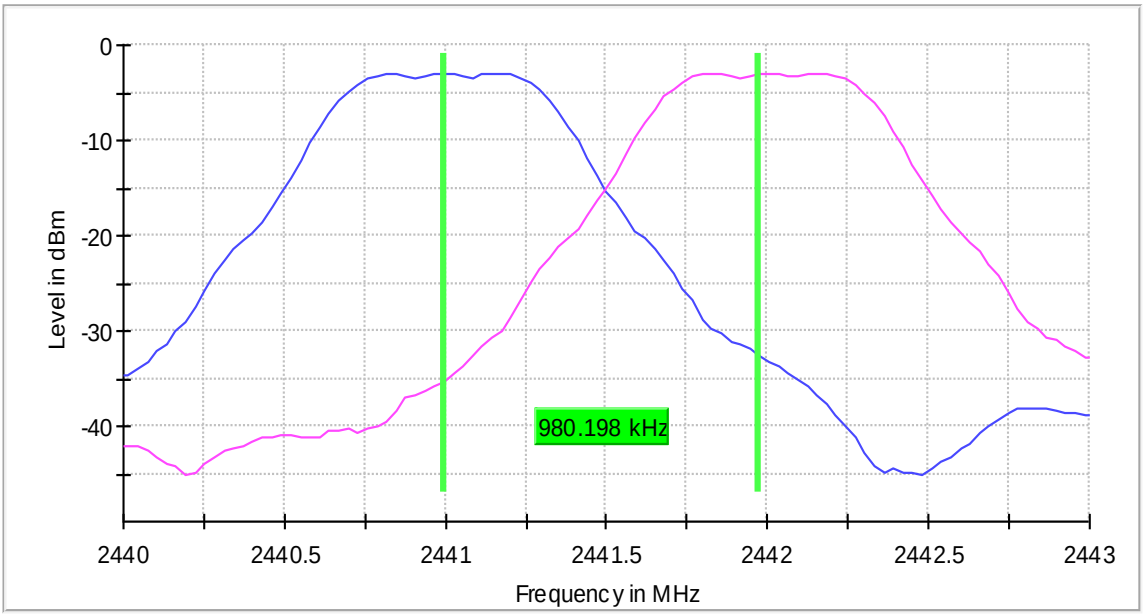
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

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	0.583333	---	2440.995050	2441.975248

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

DUT Frequency (MHz)	Result
2441.000000	PASS



CFS1

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.06 dB	0.50 dB

CFS2

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.01 dB	0.50 dB

Occupied Channel Bandwidth 99% (2441 MHz; 0.000 dBm; 1 MHz; Test Mode)

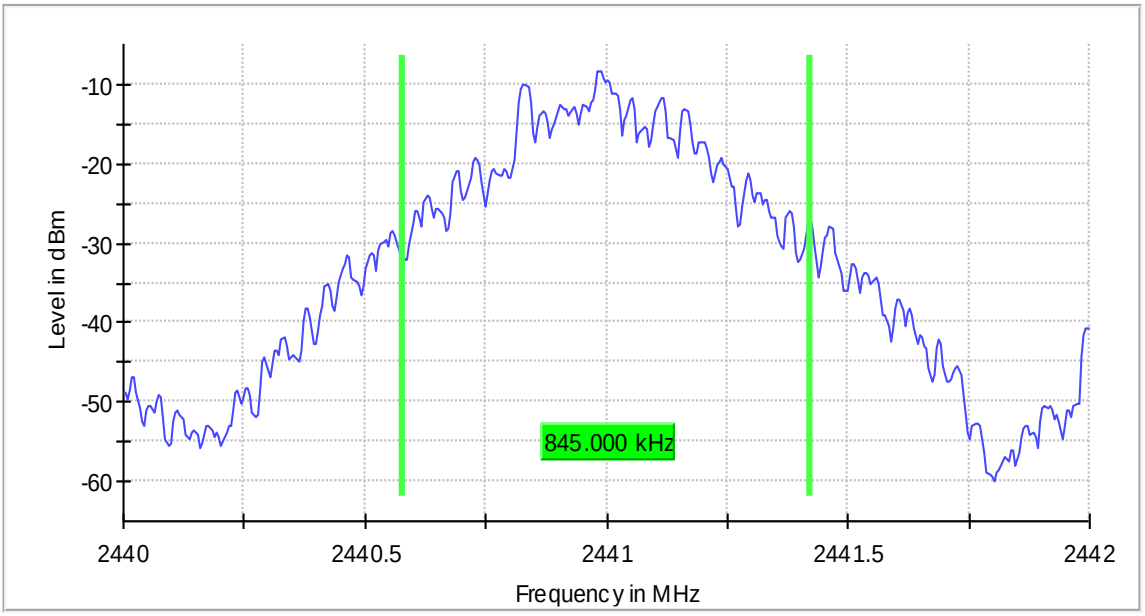
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	0.845000	---	---	2440.577500	2441.422500

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

DUT Frequency (MHz)	Result
2441.000000	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	9 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.14 dB	0.30 dB

Emission Bandwidth 20 dB (2480 MHz; 0.000 dBm; 1 MHz; Test Mode)

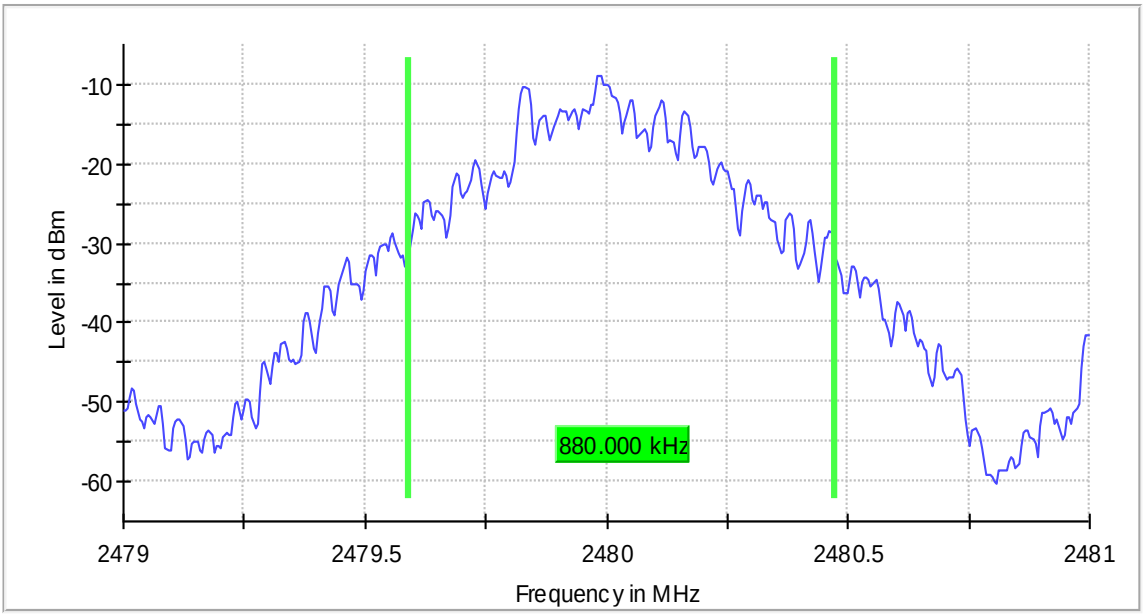
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.880000	---	---	2479.592500	2480.472500

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-8.8	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.27 dB	0.50 dB

Carrier Frequency Separation (2480 MHz; 0.000 dBm; 1 MHz; Test Mode)

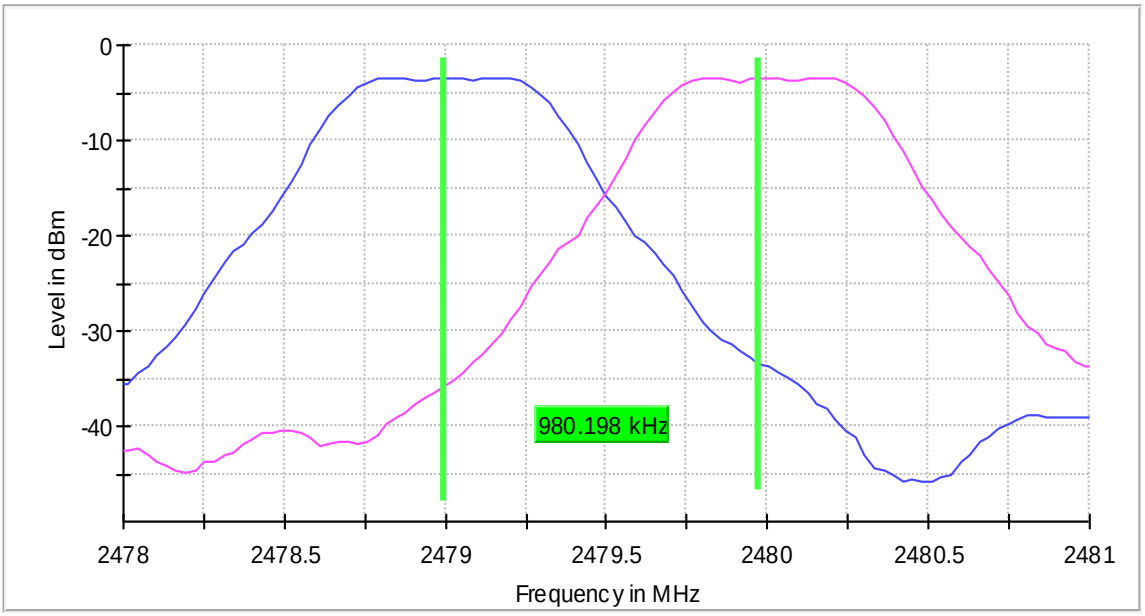
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

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	0.586667	---	2478.995050	2479.975248

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

DUT Frequency (MHz)	Result
2480.000000	PASS



CFS1

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.24 dB	0.50 dB

CFS2

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.04 dB	0.50 dB

Occupied Channel Bandwidth 99% (2480 MHz; 0.000 dBm; 1 MHz; Test Mode)

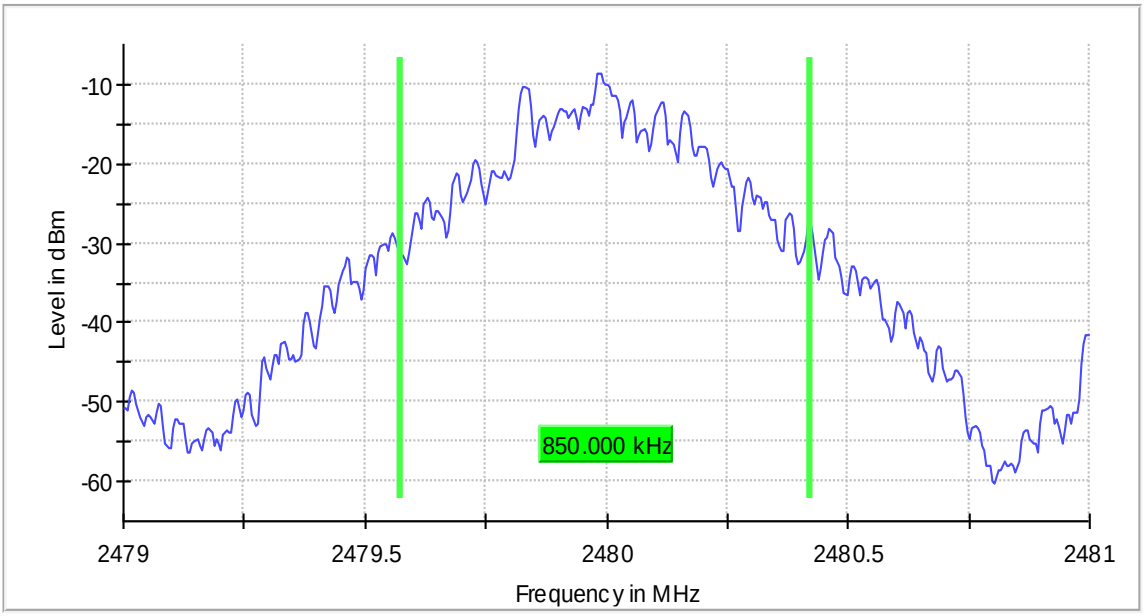
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.850000	---	---	2479.572500	2480.422500

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

DUT Frequency (MHz)	Result
2480.000000	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	6 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.28 dB	0.30 dB

8DPSK

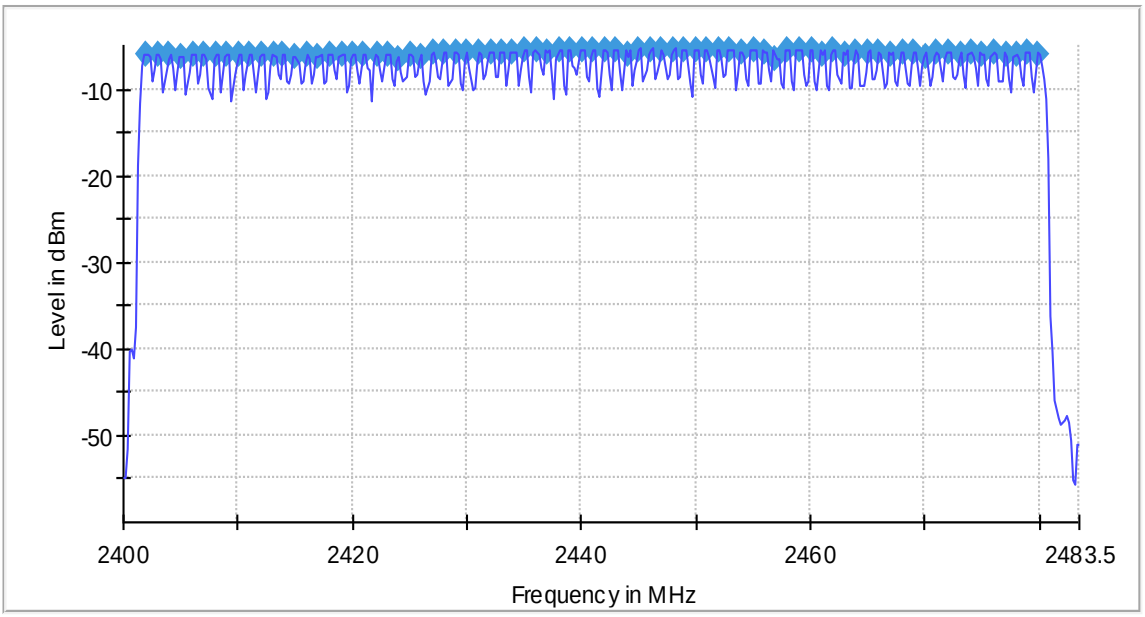
Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Hopping Frequencies	--- (hopping)	0.0	1.000000	PASS
Time of Channel Occupancy	2441.000 (hopping)	0.0	1.000000	PASS
Time of Channel Occupancy(2)	2441.000 (hopping)	0.0	1.000000	PASS
Time of Channel Occupancy(3)	2441.000 (hopping)	0.0	1.000000	PASS
Emission Bandwidth 20 dB	2402.000 (single)	0.0	1.000000	PASS
Carrier Frequency Separation	2402.000 (single)	0.0	1.000000	PASS
Occupied Channel Bandwidth 99%	2402.000 (single)	0.0	1.000000	PASS
Emission Bandwidth 20 dB	2441.000 (single)	0.0	1.000000	PASS
Carrier Frequency Separation	2441.000 (single)	0.0	1.000000	PASS
Occupied Channel Bandwidth 99%	2441.000 (single)	0.0	1.000000	PASS
Emission Bandwidth 20 dB	2480.000 (single)	0.0	1.000000	PASS
Carrier Frequency Separation	2480.000 (single)	0.0	1.000000	PASS
Occupied Channel Bandwidth 99%	2480.000 (single)	0.0	1.000000	PASS

Hopping Frequencies (frequency independent; 0.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a),(g), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Channels

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



Sequence

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	200.000 kHz	<= 299.000 kHz
VBW	200.000 kHz	>= 200.000 kHz
SweepPoints	418	~ 418
Sweeptime	1.060 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	69 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.36 dB	0.50 dB

Time of Channel Occupancy (2441 MHz; 0.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	319	138.220	-20.0

Periode

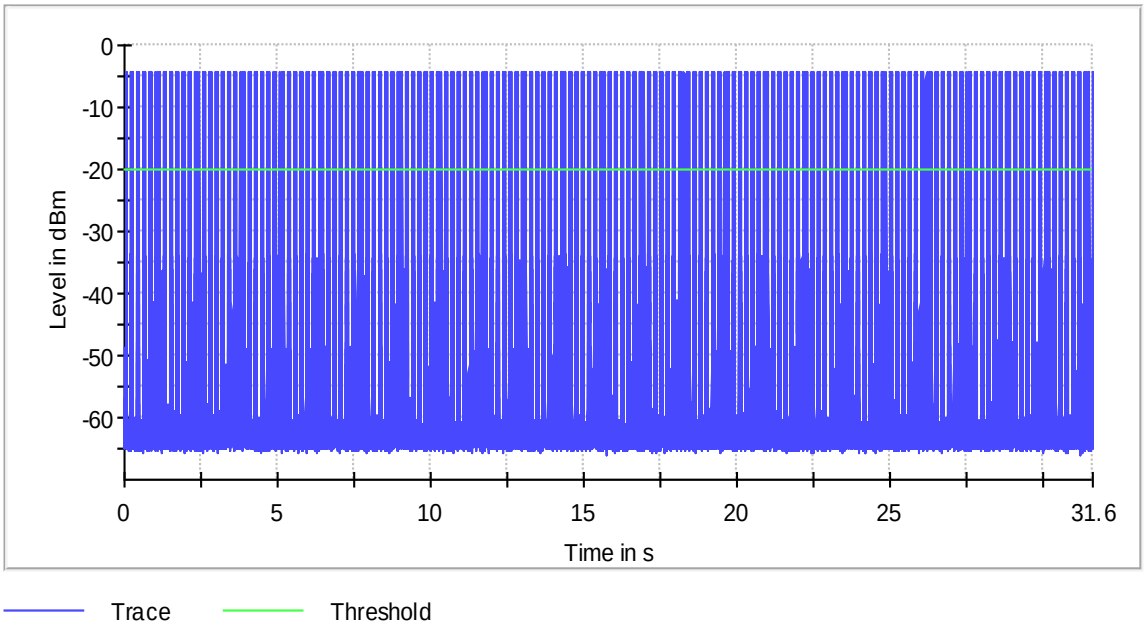
Min (ms)	Max (ms)	Mean (ms)
98.740	98.750	98.748

Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
0.420	0.440	400.000	0.000	0.432

DwellTime

Min (ms)	Max (ms)	Mean (ms)
0.430	0.440	0.432



Time of Channel Occupancy

Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Time of Channel Occupancy(2) (2441 MHz; 0.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	159	268.810	-20.0

Periode

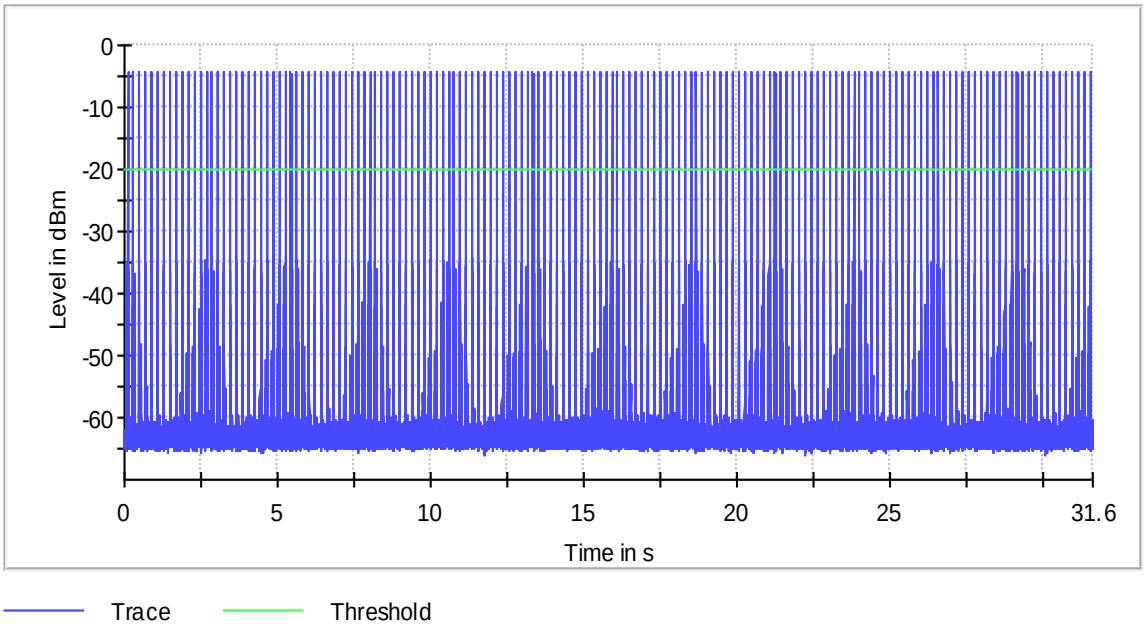
Min (ms)	Max (ms)	Mean (ms)
197.490	197.500	197.496

Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
1.670	1.690	400.000	0.000	1.680

DwellTime

Min (ms)	Max (ms)	Mean (ms)
1.680	1.690	1.682



Time of Channel Occupancy(2)

Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Time of Channel Occupancy(3) (2441 MHz; 0.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	106	313.360	-20.0

Periode

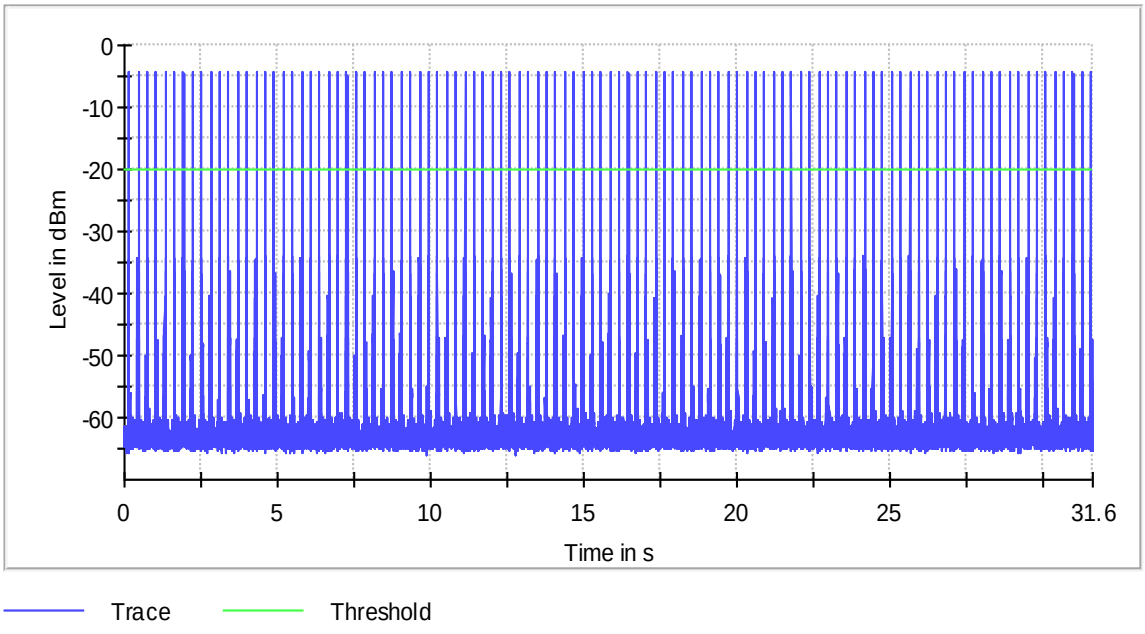
Min (ms)	Max (ms)	Mean (ms)
296.240	296.250	296.244

Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.910	2.940	400.000	0.000	2.929

DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.930	2.940	2.933



Time of Channel Occupancy(3)

Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Emission Bandwidth 20 dB (2402 MHz; 0.000 dBm; 1 MHz; Test Mode)

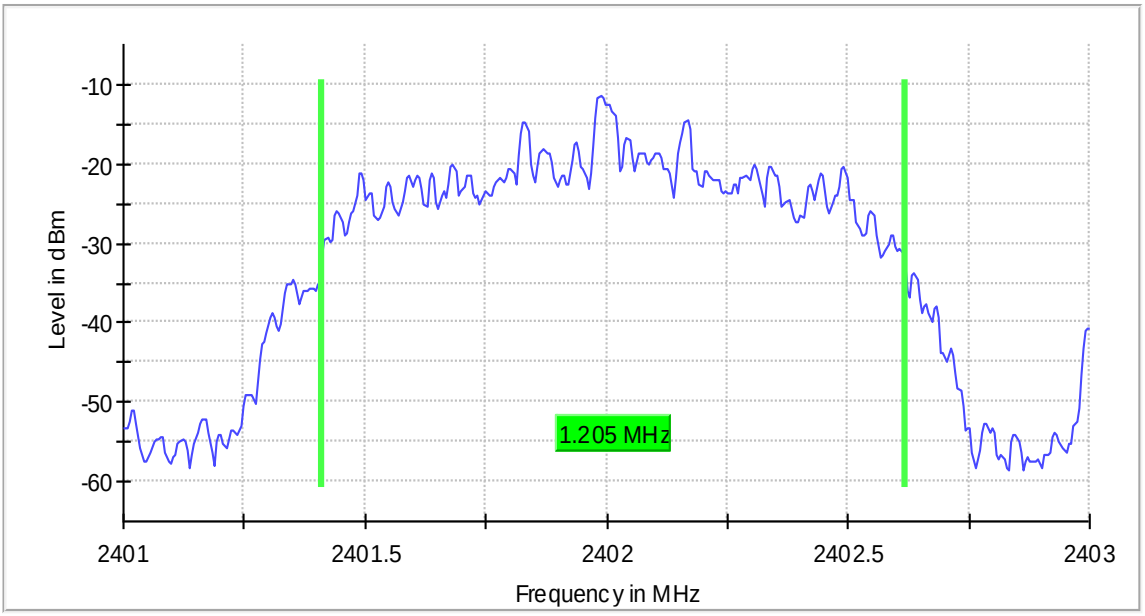
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.205000	---	---	2401.412500	2402.617500

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-11.4	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.27 dB	0.50 dB

Carrier Frequency Separation (2402 MHz; 0.000 dBm; 1 MHz; Test Mode)

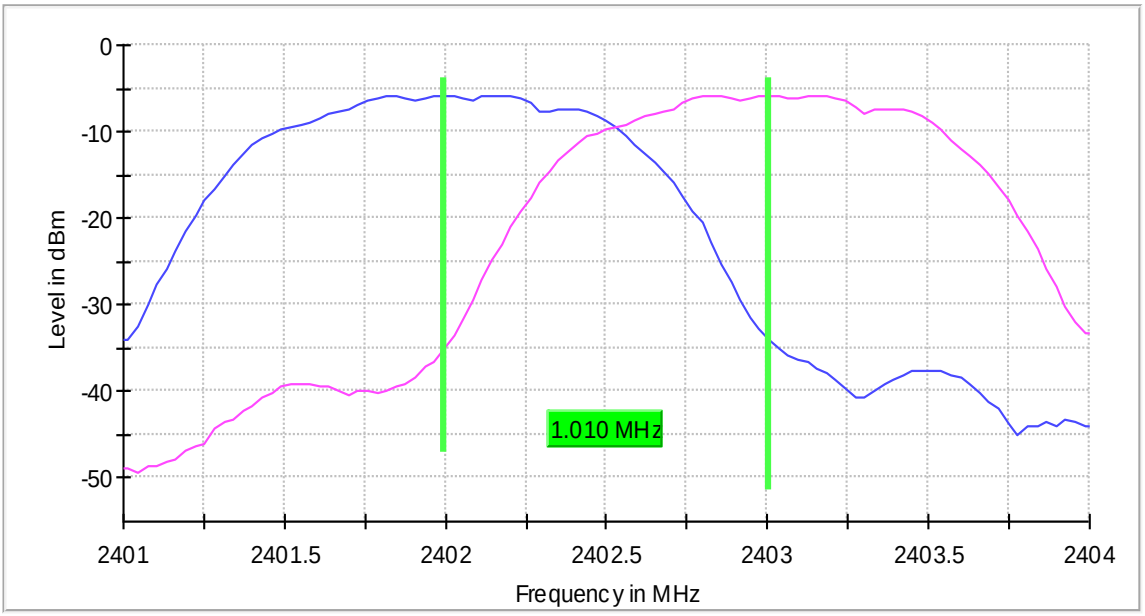
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

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	0.803333	---	2401.995050	2403.004950

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

DUT Frequency (MHz)	Result
2402.000000	PASS



CFS1

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.06 dB	0.50 dB

CFS2

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.06 dB	0.50 dB

Occupied Channel Bandwidth 99% (2402 MHz; 0.000 dBm; 1 MHz; Test Mode)

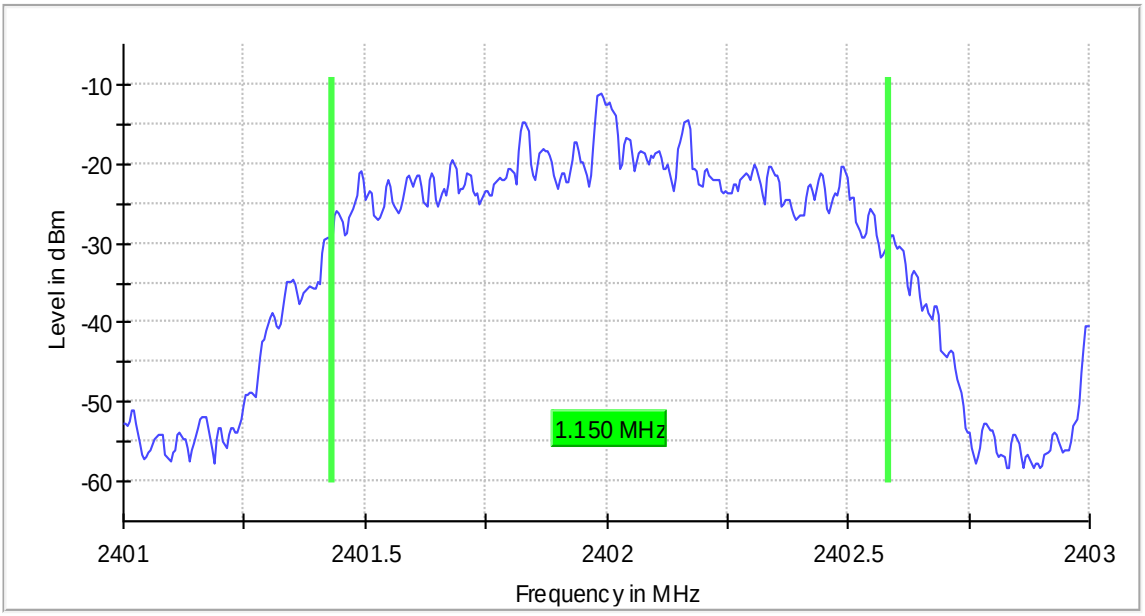
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.150000	---	---	2401.432500	2402.582500

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

DUT Frequency (MHz)	Result
2402.000000	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	10 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.20 dB	0.30 dB

Emission Bandwidth 20 dB (2441 MHz; 0.000 dBm; 1 MHz; Test Mode)

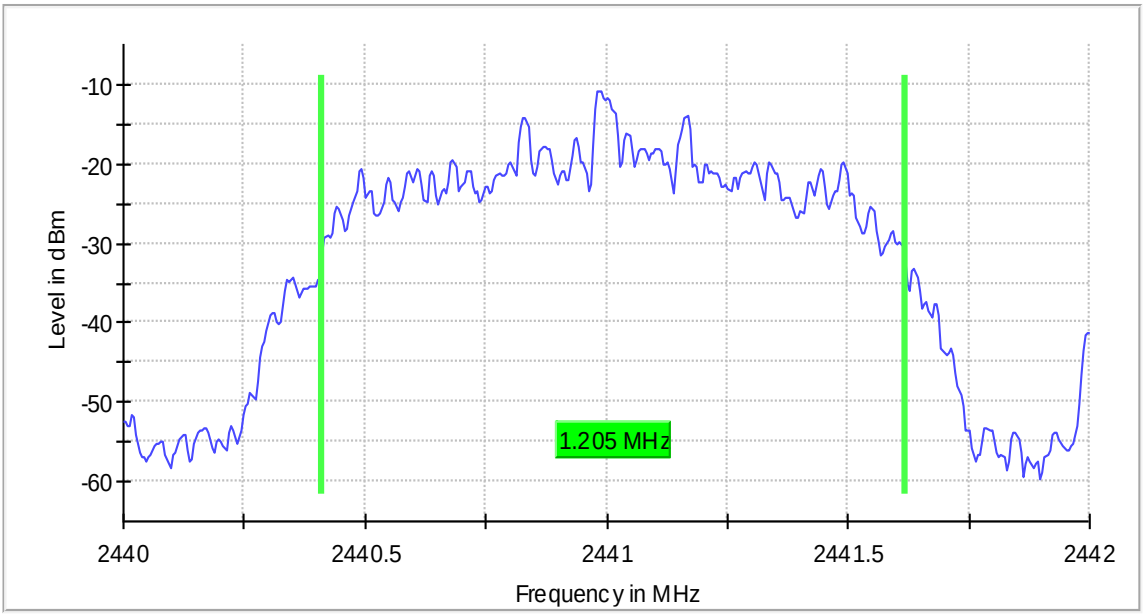
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.205000	---	---	2440.412500	2441.617500

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-10.8	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.33 dB	0.50 dB

Carrier Frequency Separation (2441 MHz; 0.000 dBm; 1 MHz; Test Mode)

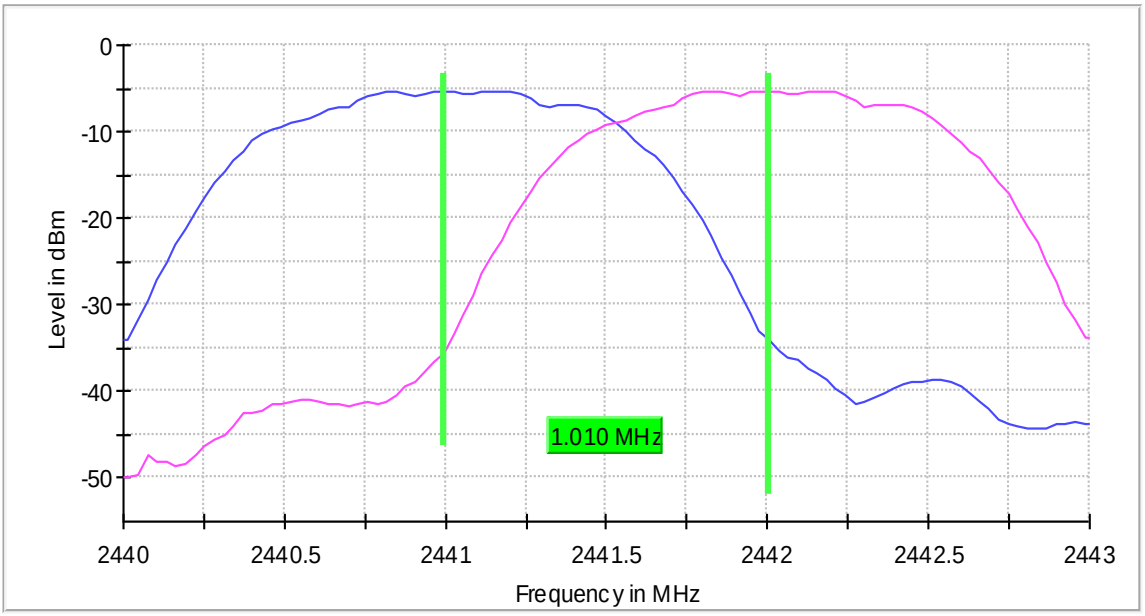
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

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	0.803333	---	2440.995050	2442.004950

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

DUT Frequency (MHz)	Result
2441.000000	PASS



CFS1

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.02 dB	0.50 dB

CFS2

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.09 dB	0.50 dB

Occupied Channel Bandwidth 99% (2441 MHz; 0.000 dBm; 1 MHz; Test Mode)

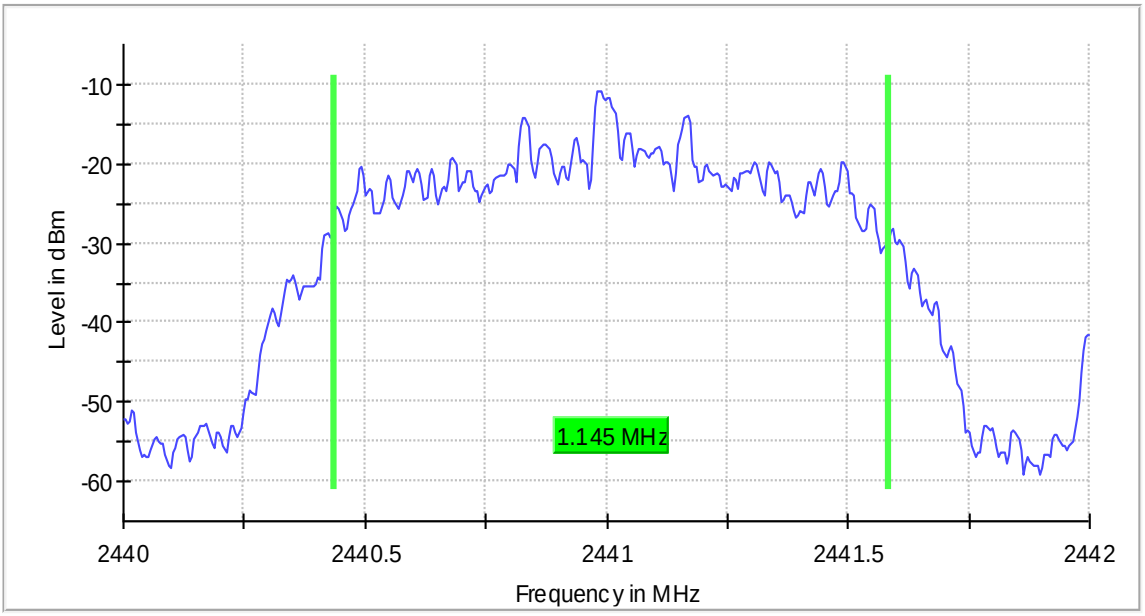
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.145000	---	---	2440.437500	2441.582500

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

DUT Frequency (MHz)	Result
2441.000000	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	14 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.19 dB	0.30 dB

Emission Bandwidth 20 dB (2480 MHz; 0.000 dBm; 1 MHz; Test Mode)

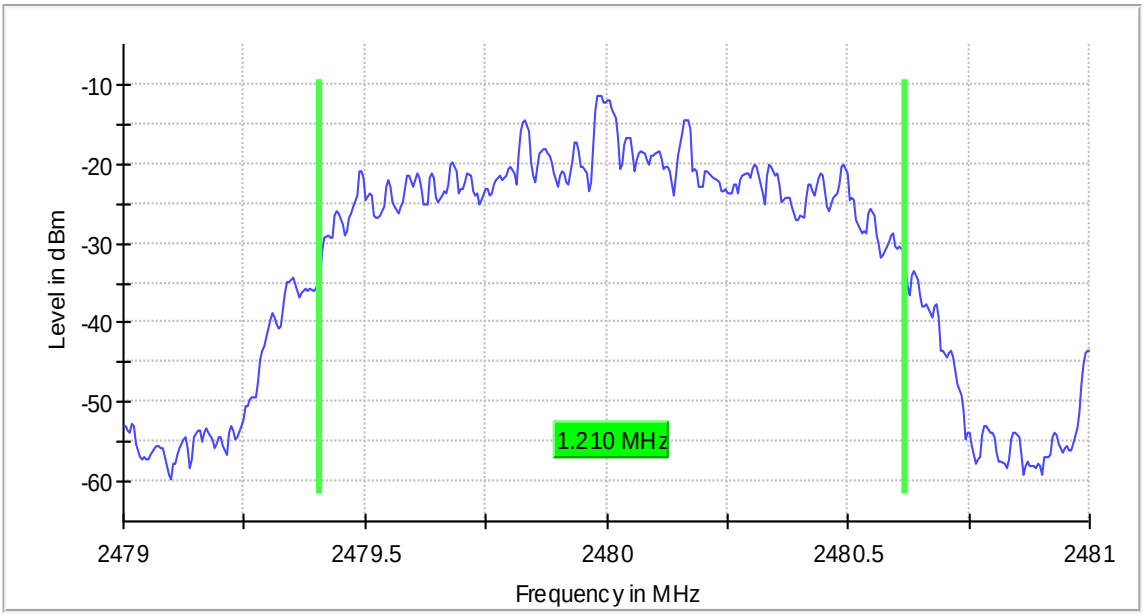
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.210000	---	---	2479.407500	2480.617500

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-11.4	PASS



Bandwidth

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.15 dB	0.50 dB

Carrier Frequency Separation (2480 MHz; 0.000 dBm; 1 MHz; Test Mode)

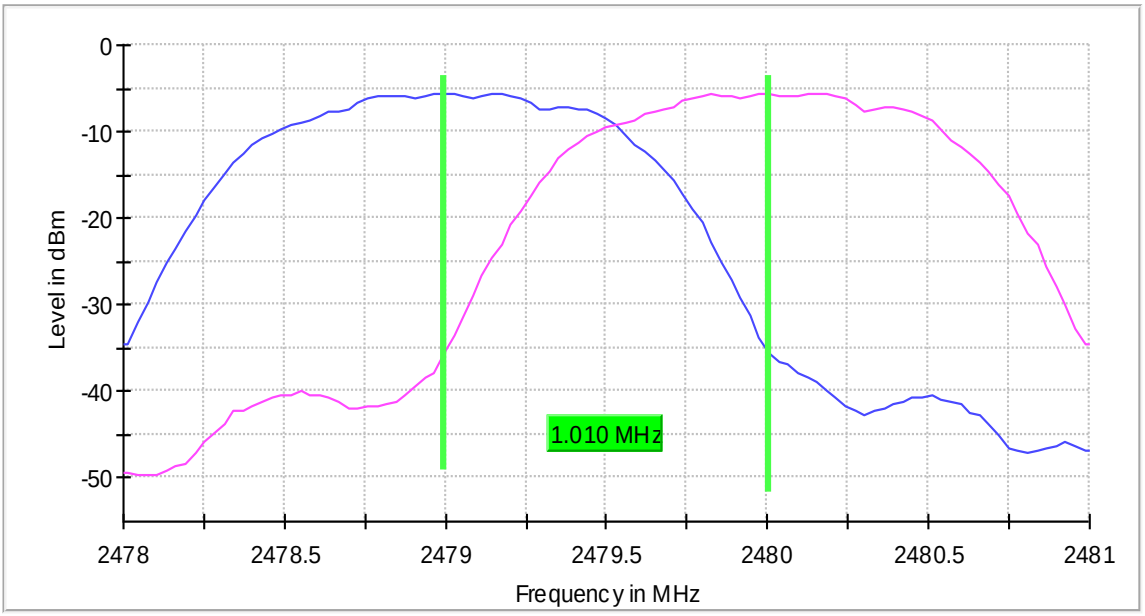
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

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	0.806667	---	2478.995050	2480.004950

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

DUT Frequency (MHz)	Result
2480.000000	PASS



CFS1

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.07 dB	0.50 dB

CFS2

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.01 dB	0.50 dB

Occupied Channel Bandwidth 99% (2480 MHz; 0.000 dBm; 1 MHz; Test Mode)

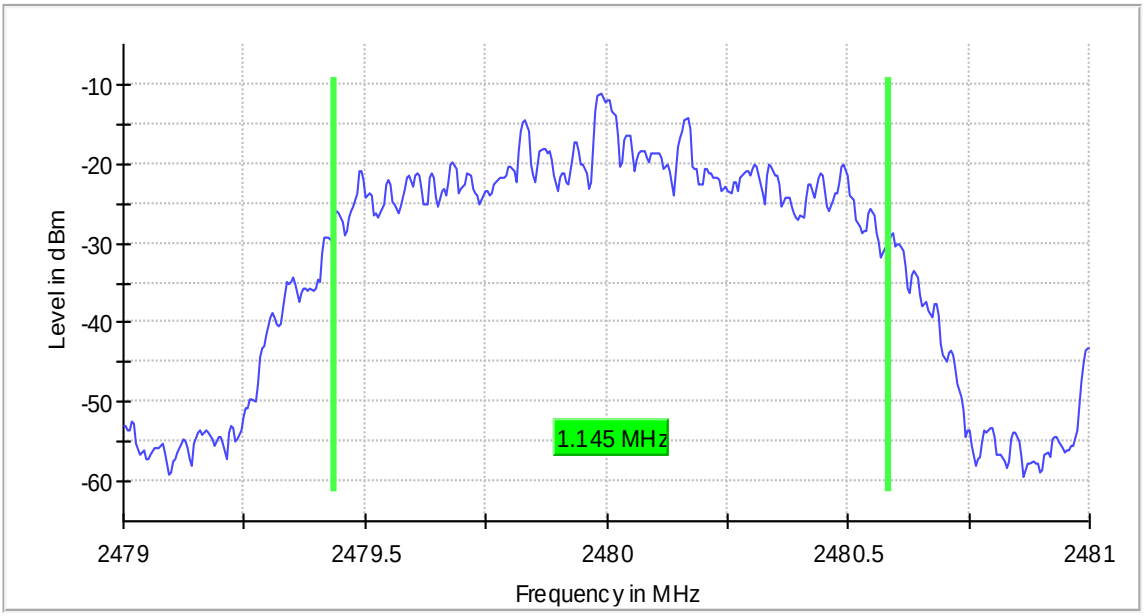
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.145000	---	---	2479.437500	2480.582500

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

DUT Frequency (MHz)	Result
2480.000000	PASS



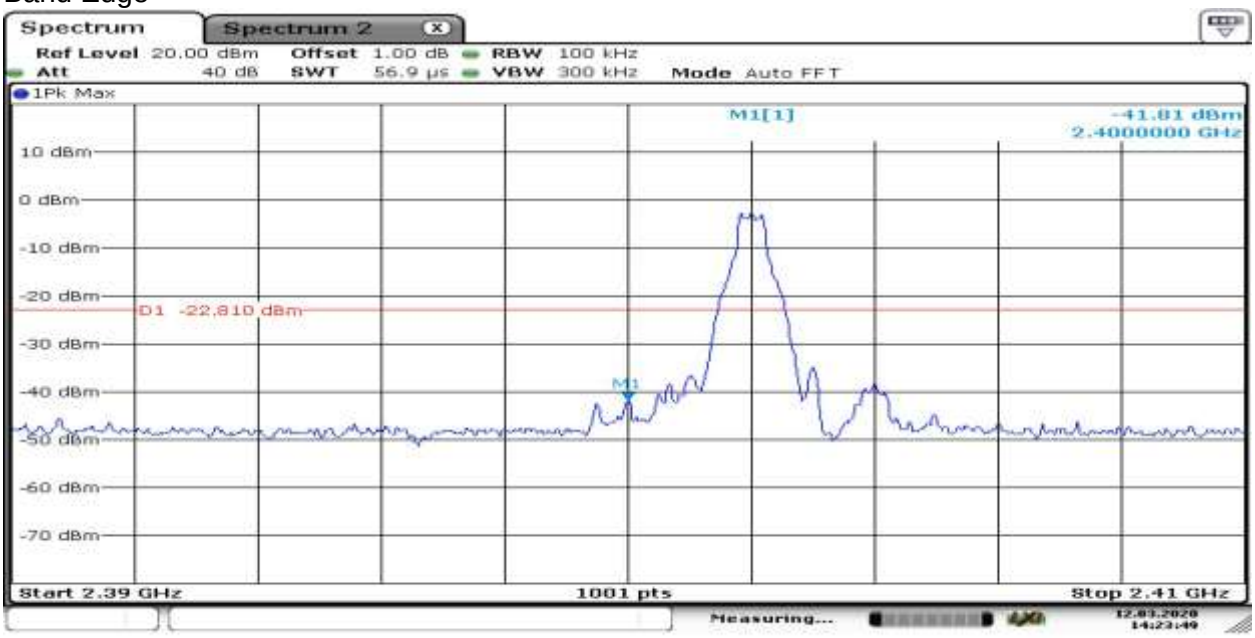
Bandwidth

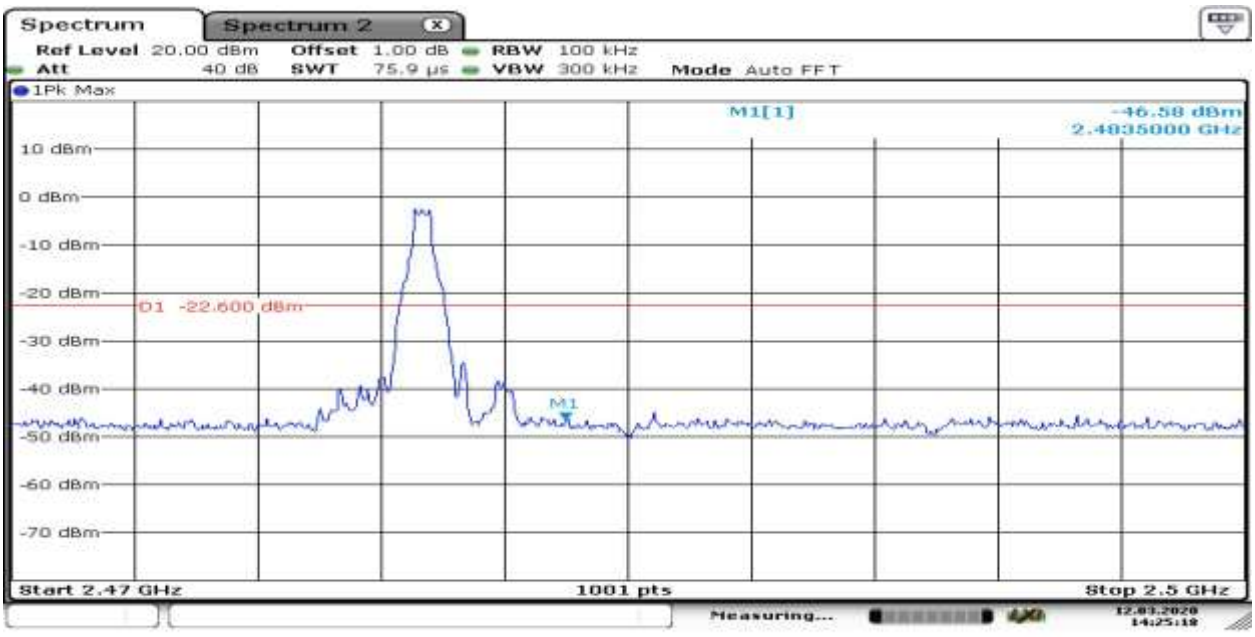
Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	6 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.13 dB	0.30 dB

Appendix A.3: Test Results of Conducted Spurious Emissions measured in 100 kHz Bandwidth

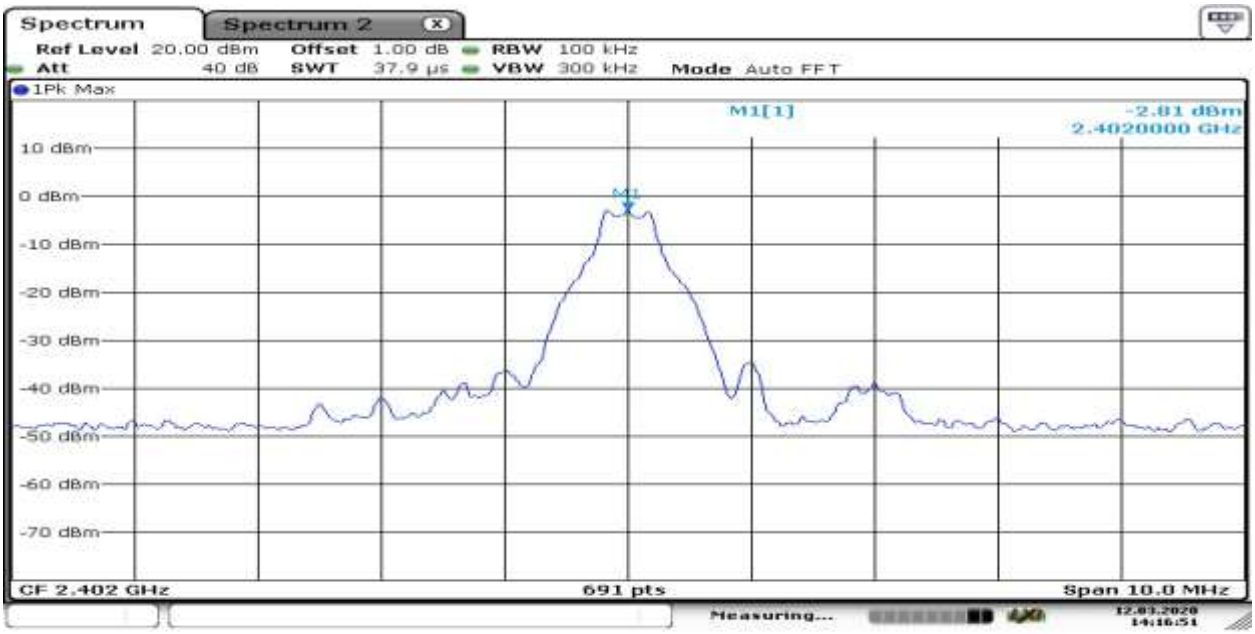
GFSK
Band Edge



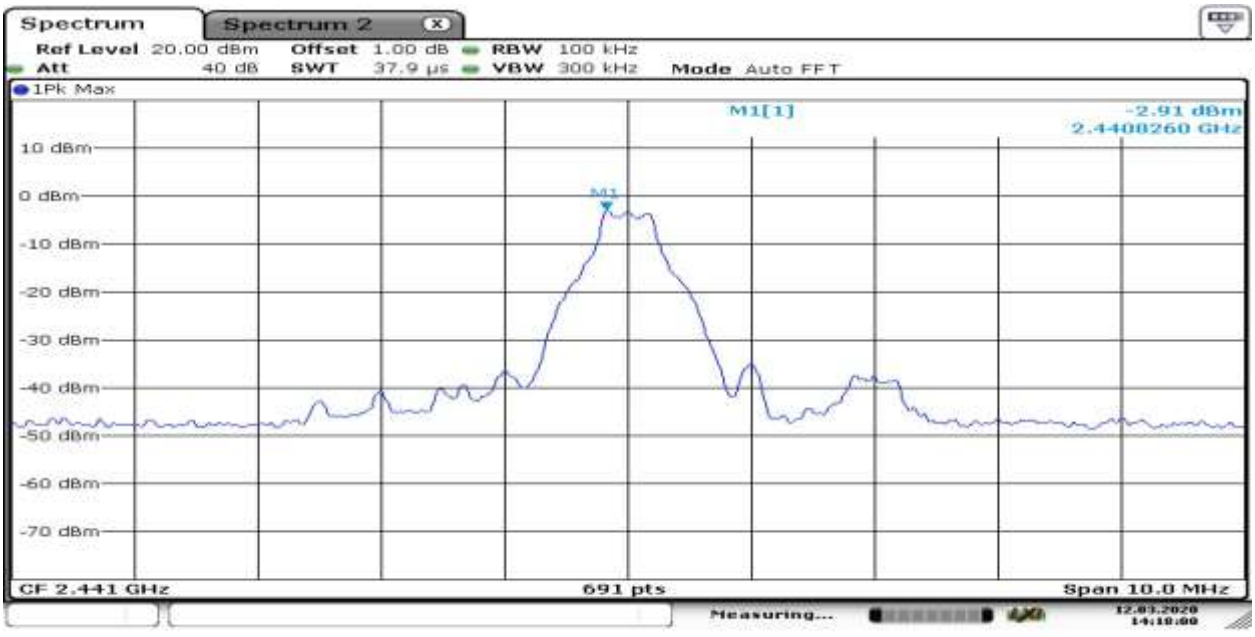


Conducted Spurious Emissions

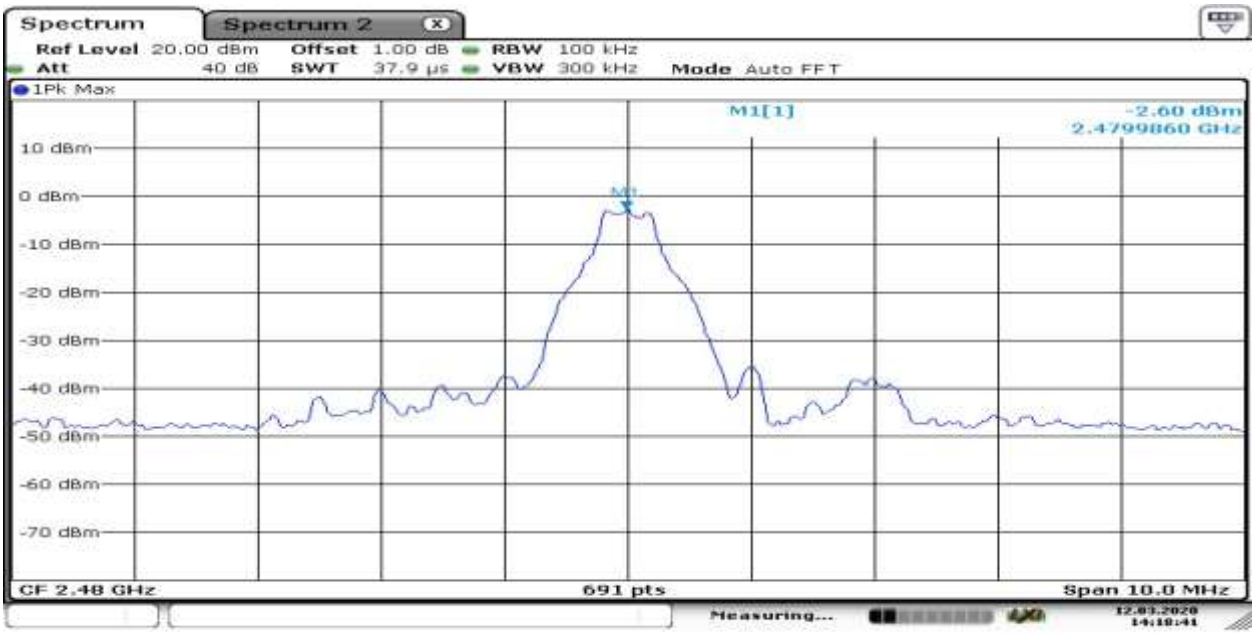
100 kHz Reference Level



Date: 12.MAR.2020 14:16:51

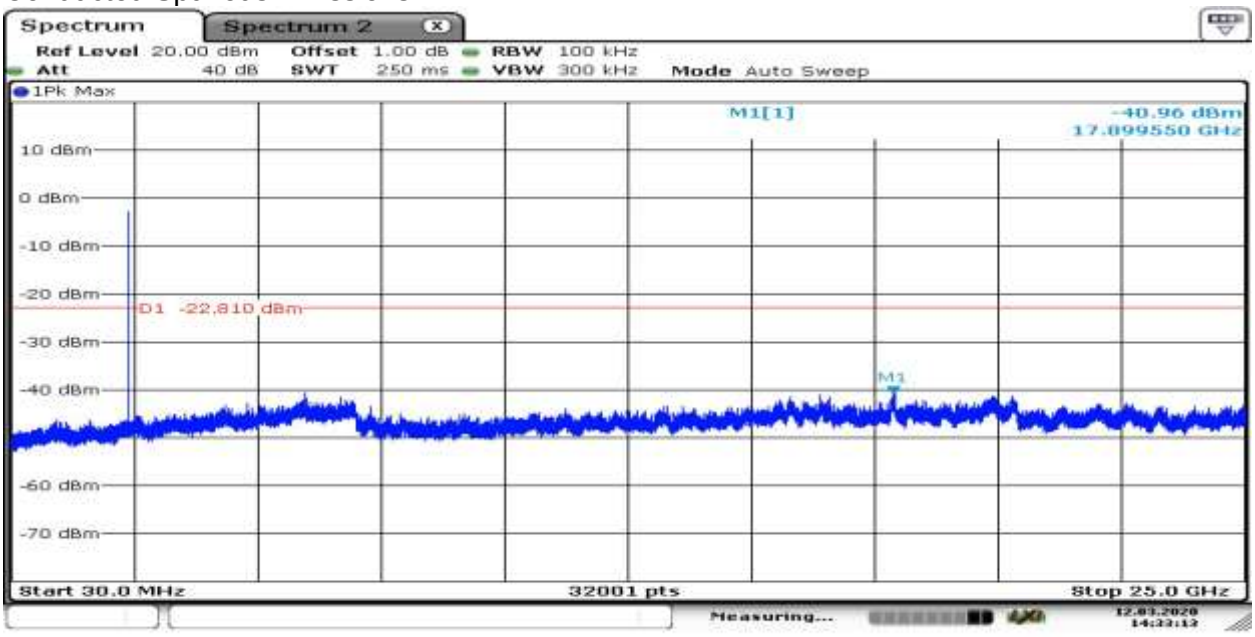


Date: 12.MAR.2020 14:18:01

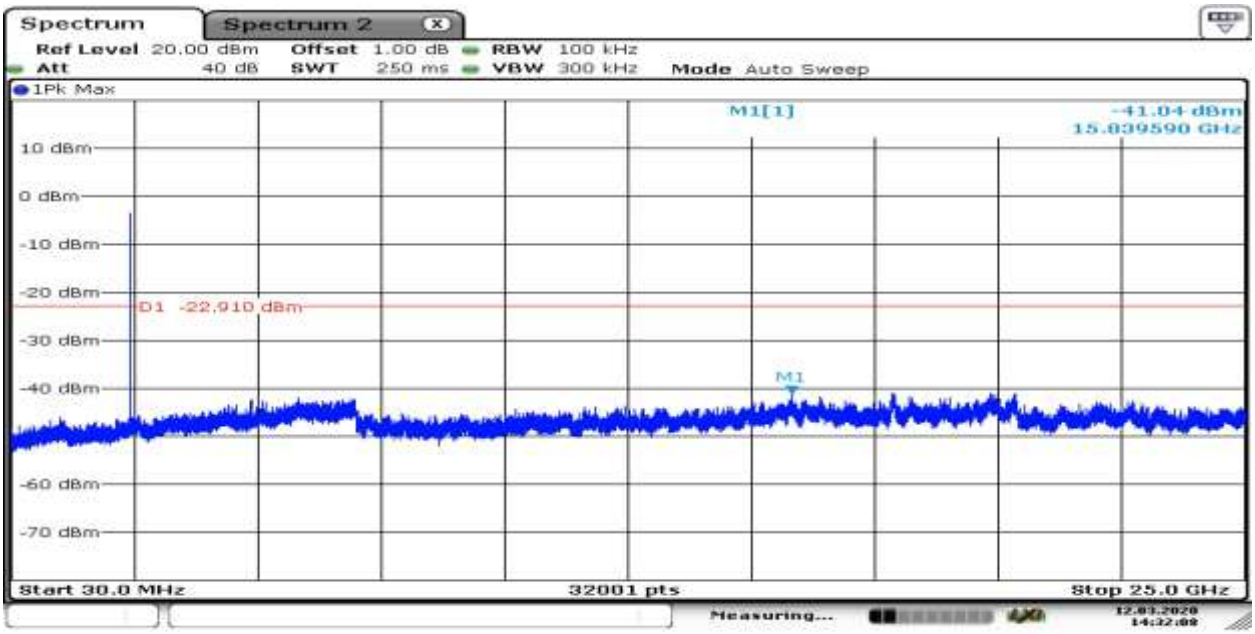


Date: 12.MAR.2020 14:18:42

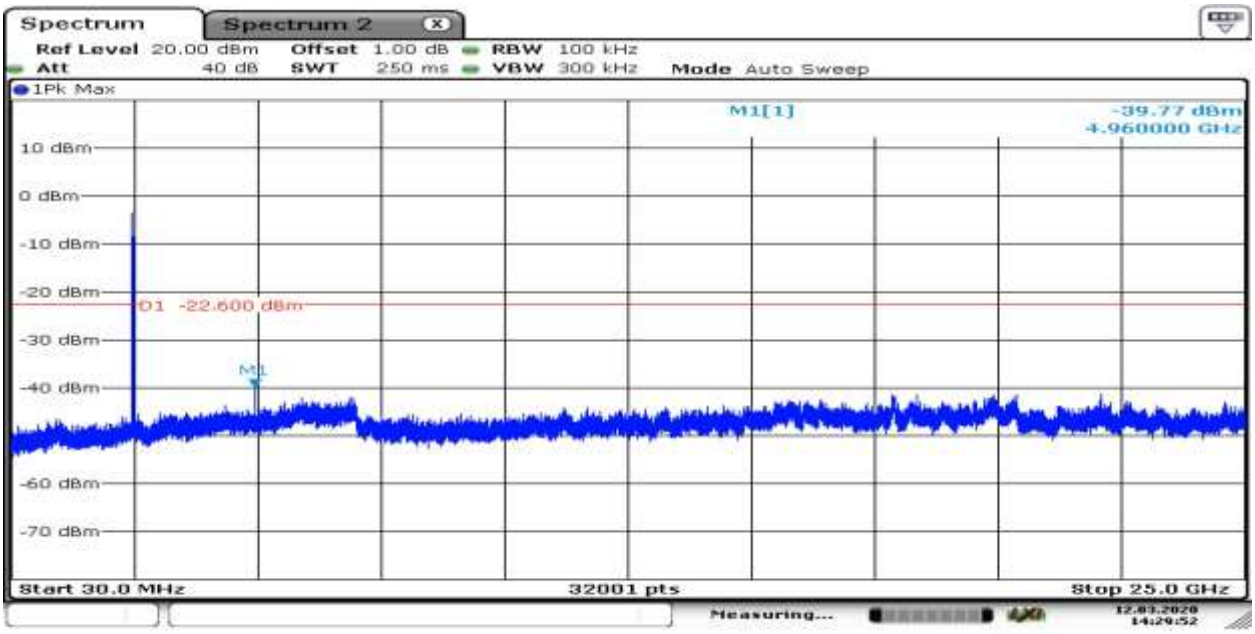
Conducted Spurious Emissions



Date: 12.MAR.2020 14:33:13

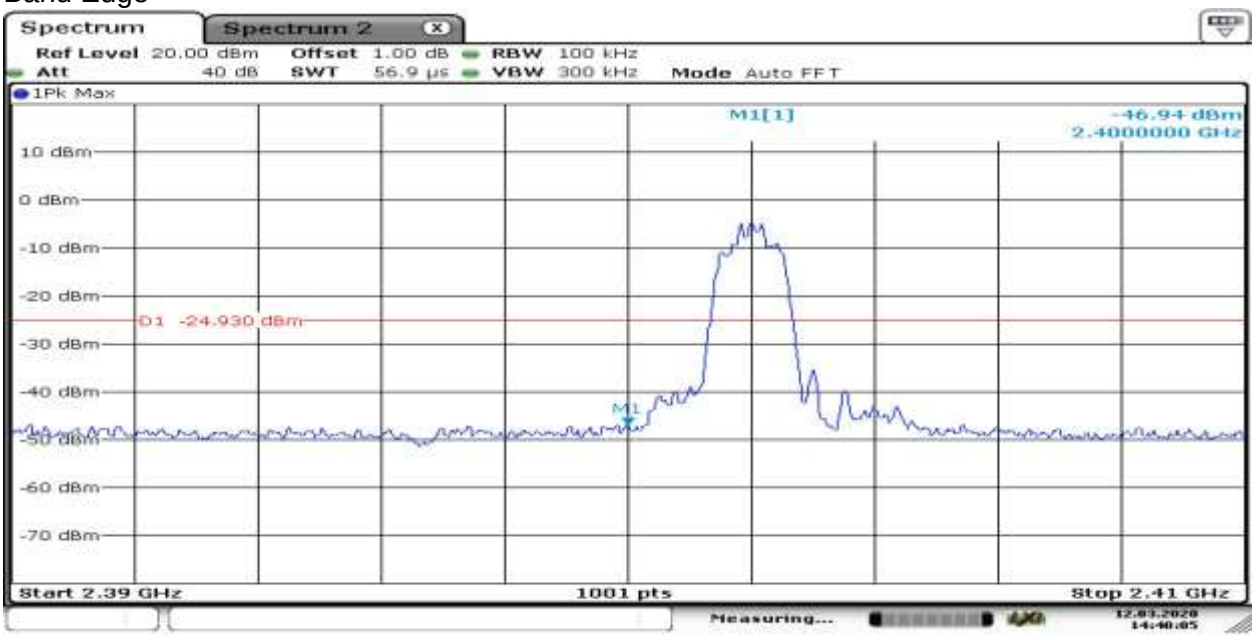


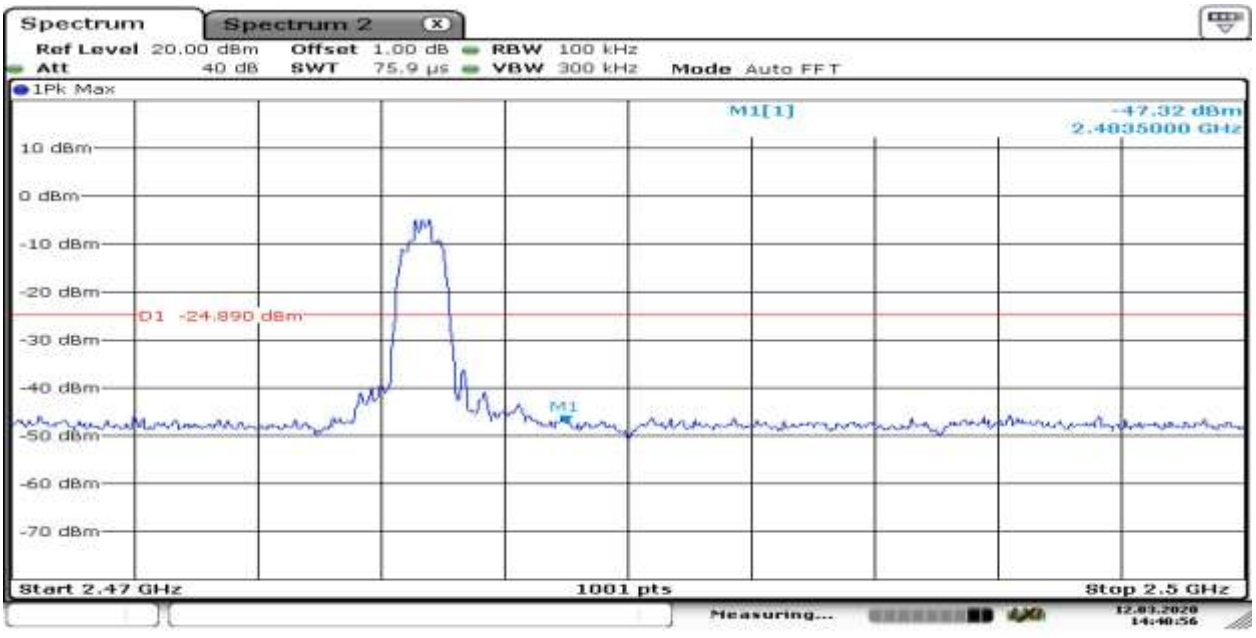
Date: 12.MAR.2020 14:32:09



Date: 12.MAR.2020 14:29:53

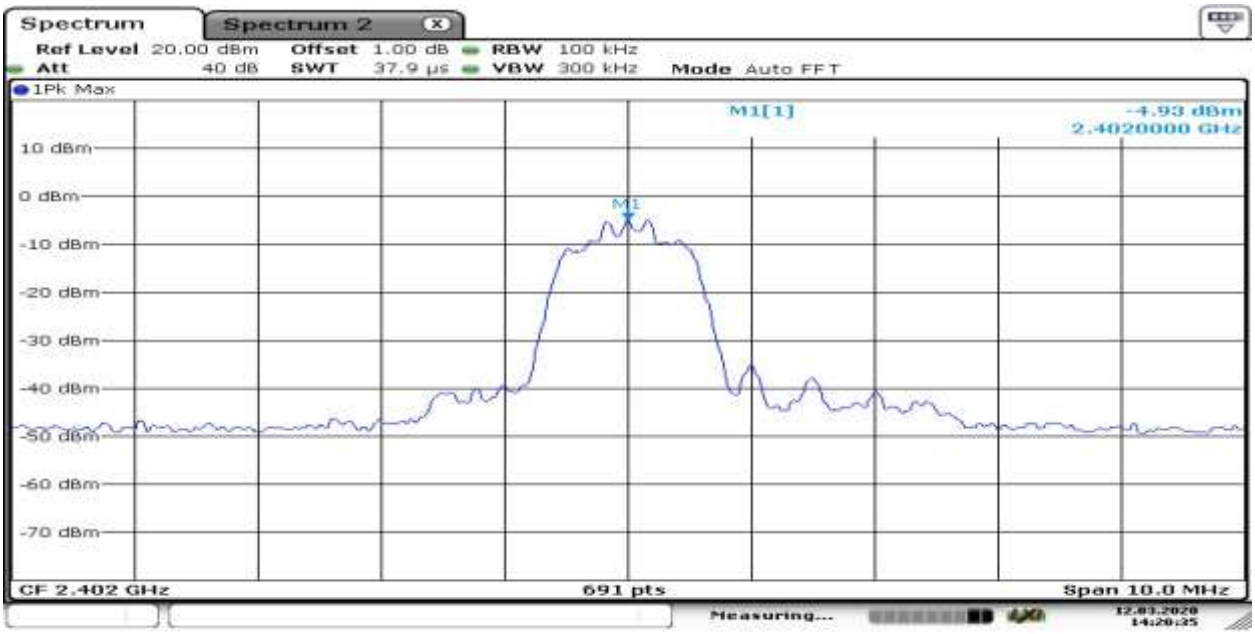
8DPSK
Band Edge





Conducted Spurious Emissions

100 kHz Reference Level



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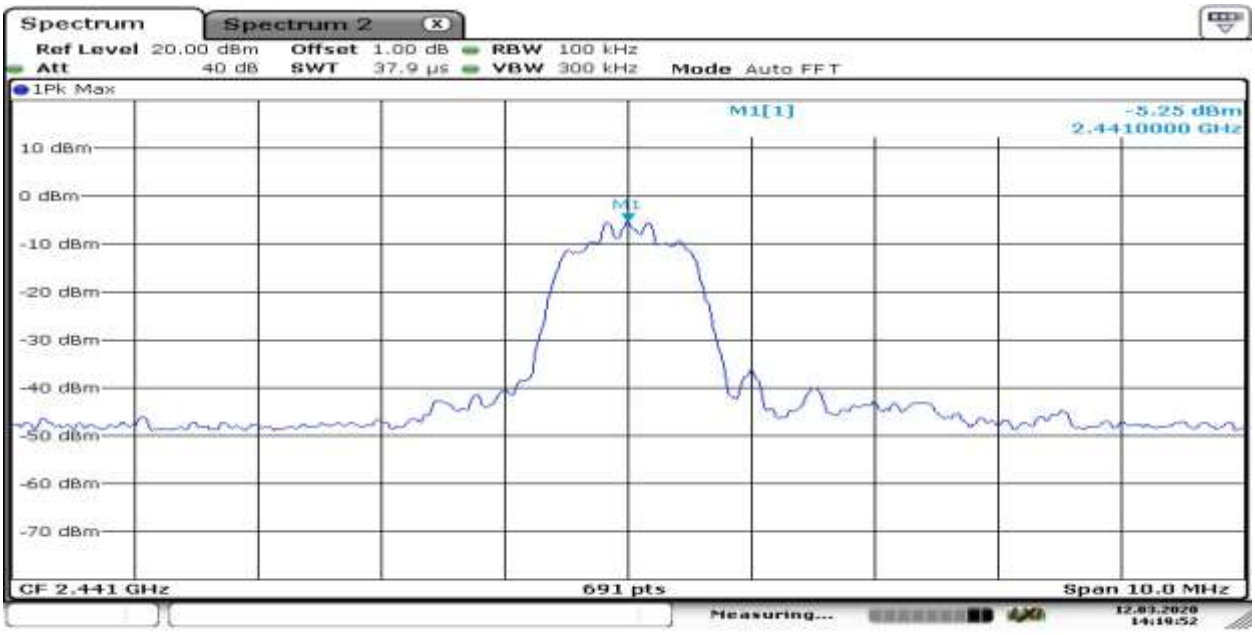
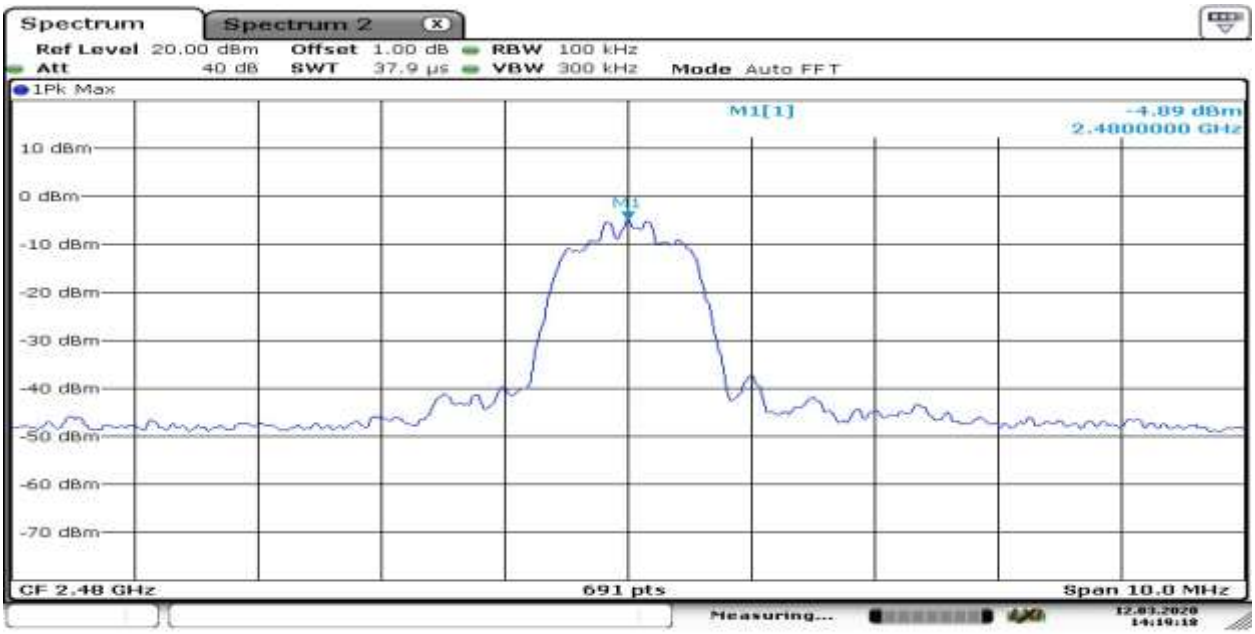
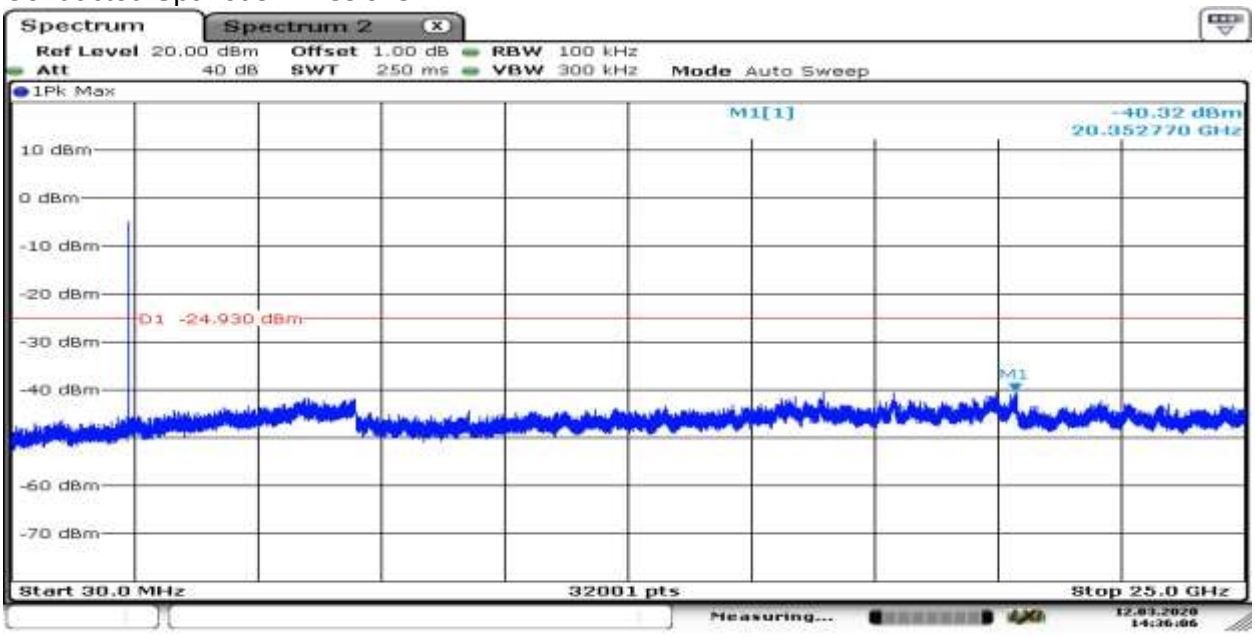


Date: 12.MAR.2020 14:19:52



Date: 12.MAR.2020 14:19:18

Conducted Spurious Emissions



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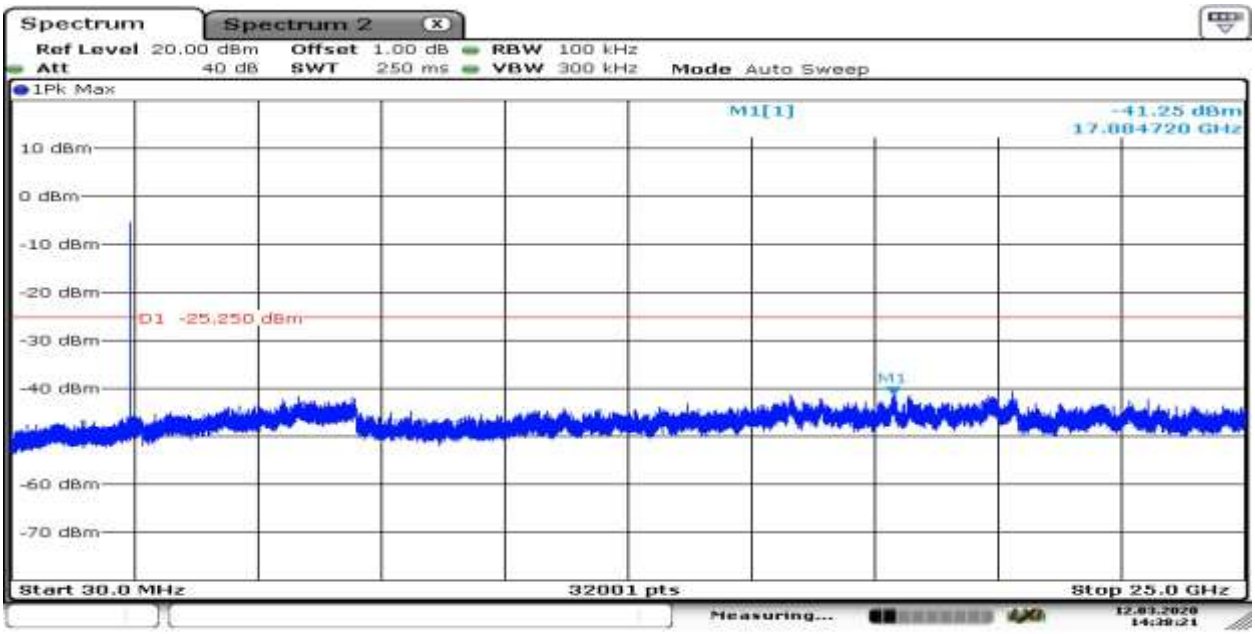

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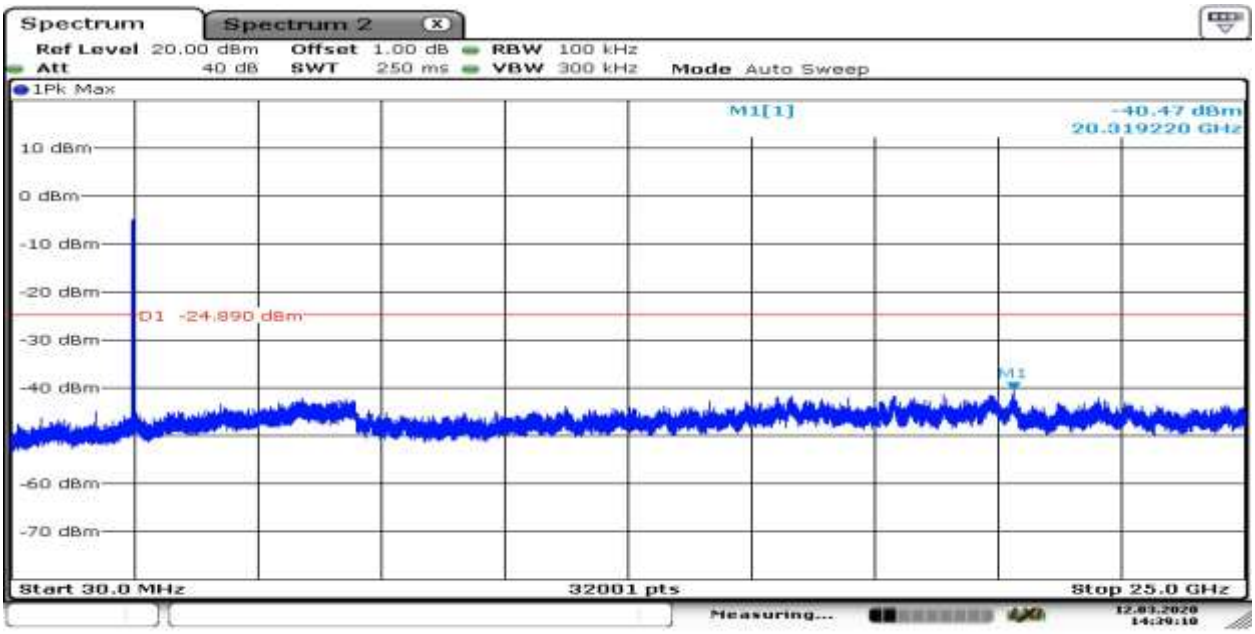


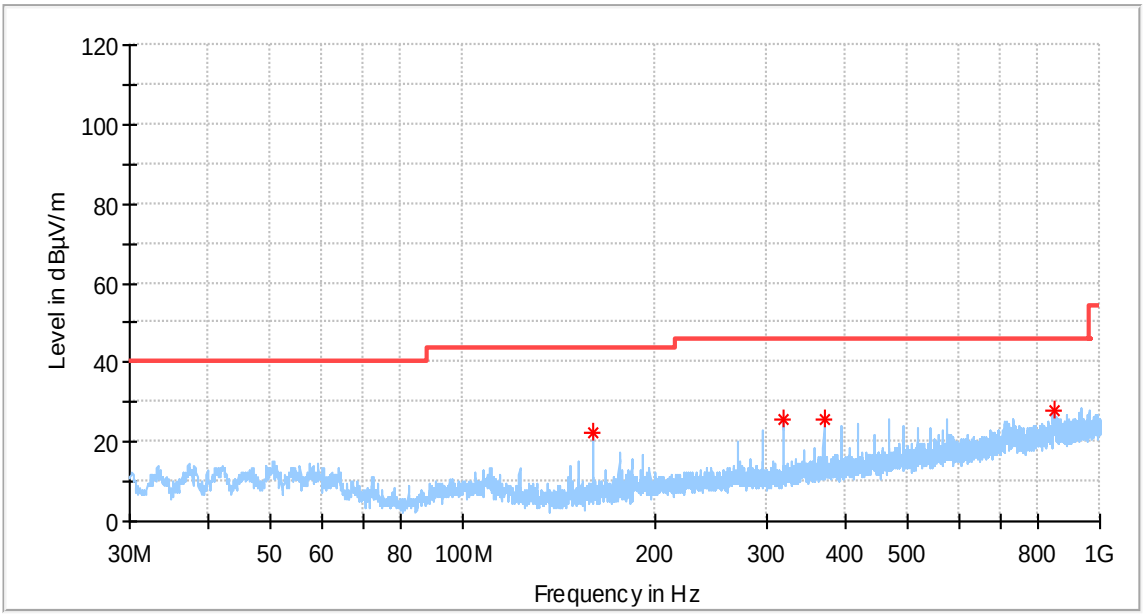
Date: 12.MAR.2020 14:39:11

Appendix A.4: Test Results of Radiated Emissions

Radiated Emissions below 1 GHz

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_High Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

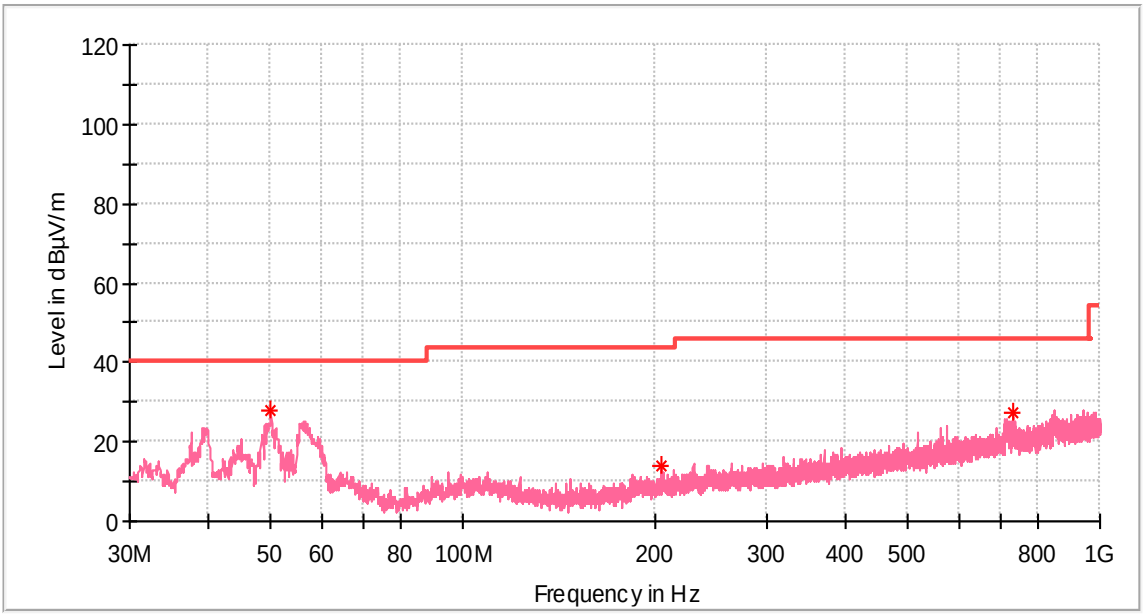


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
159.980000	22.31	---	43.50	21.19	100.0	H	53.0	-22.0
319.448000	25.66	---	46.00	20.34	100.0	H	176.0	-16.1
368.627000	25.76	---	46.00	20.24	100.0	H	94.0	-14.8
850.862500	27.92	---	46.00	18.08	100.0	H	176.0	-5.9

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_High Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

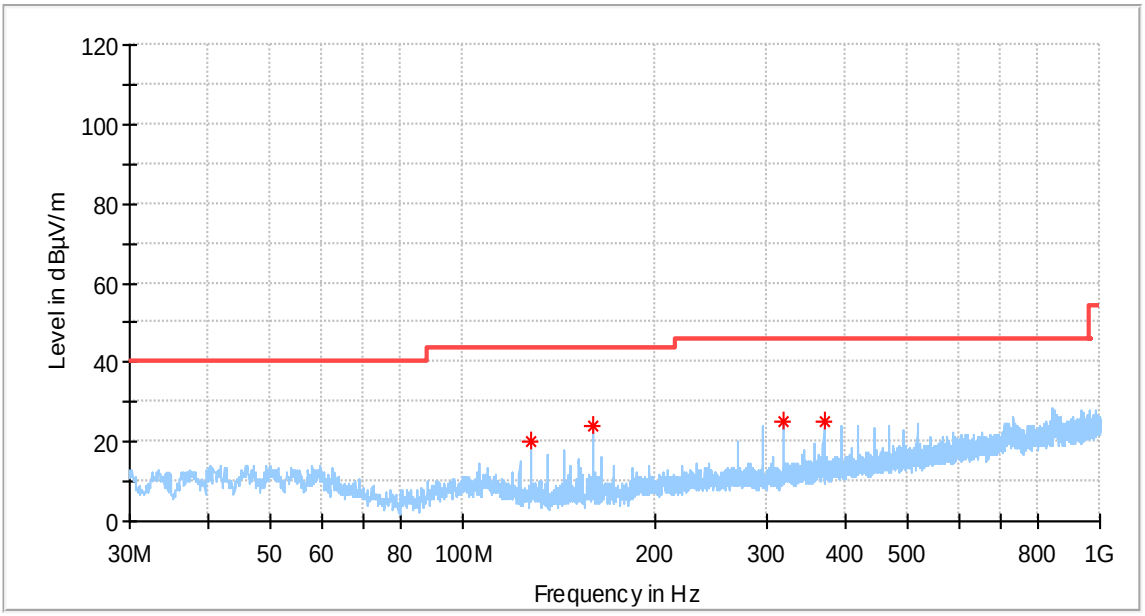


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.982000	27.66	---	40.00	12.34	100.0	V	340.0	-18.6
205.182000	14.15	---	43.50	29.35	100.0	V	4.0	-19.2
729.176000	27.57	---	46.00	18.43	100.0	V	237.0	-7.9

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_Low Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

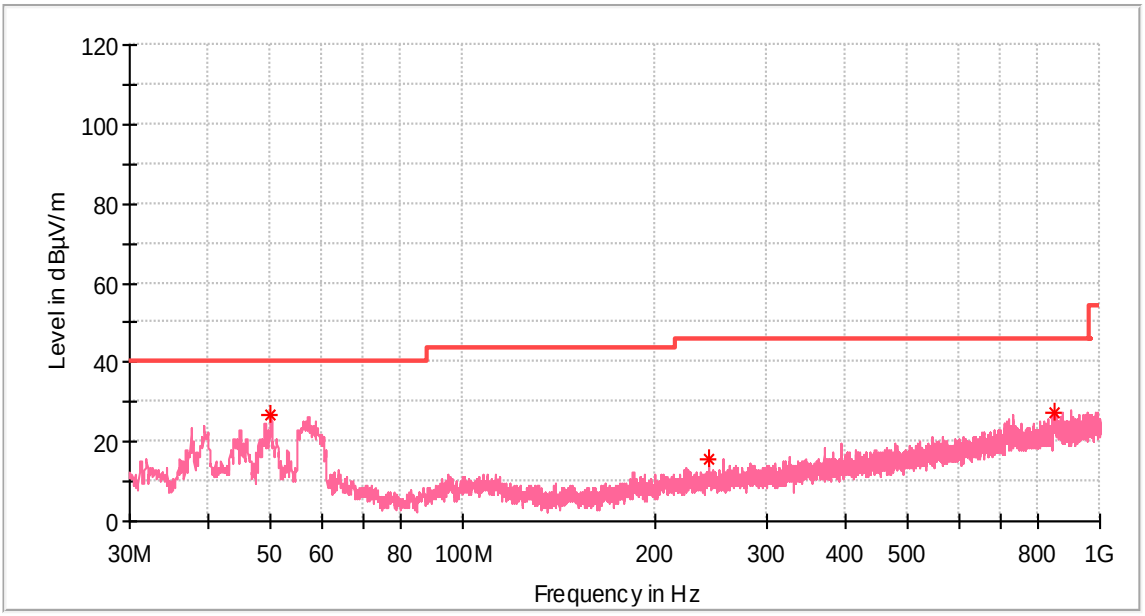


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
127.970000	20.21	---	43.50	23.29	100.0	H	168.0	-22.0
159.980000	23.93	---	43.50	19.57	100.0	H	324.0	-22.0
319.448000	25.30	---	46.00	20.70	100.0	H	184.0	-16.1
368.627000	25.29	---	46.00	20.71	100.0	H	119.0	-14.8

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_Low Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



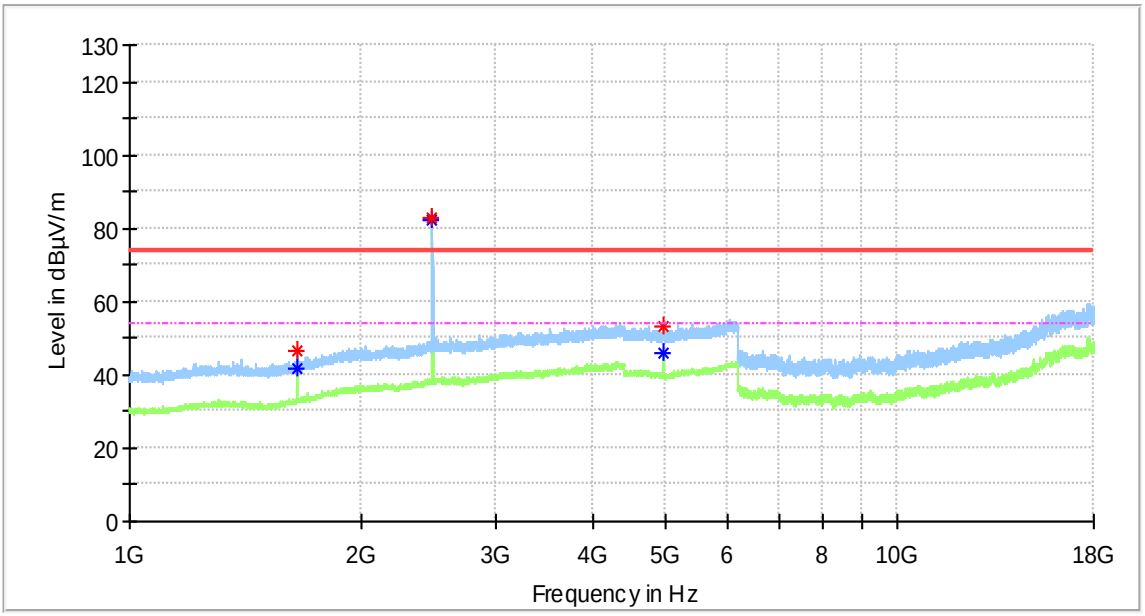
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.982000	26.55	---	40.00	13.45	100.0	V	249.0	-18.6
243.885000	15.76	---	46.00	30.24	100.0	V	307.0	-17.9
845.430500	27.52	---	46.00	18.48	100.0	V	126.0	-6.0

Radiated Emissions above 1 GHz
GFSK

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_GFSK_High Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

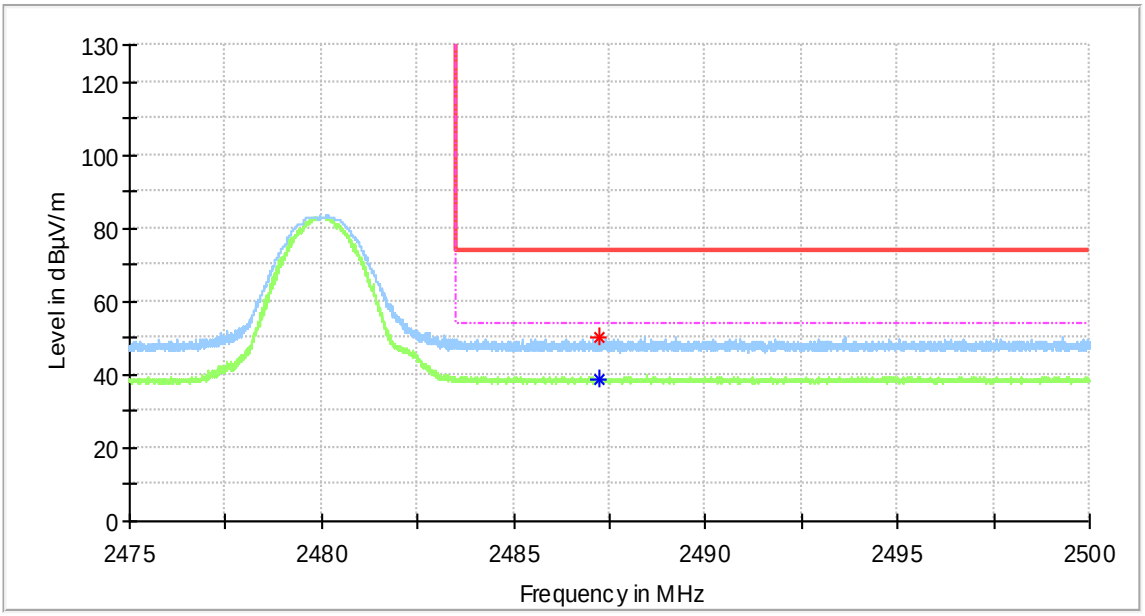


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1654.000000	---	41.80	54.00	12.20	100.0	H	73.0	2.6
1654.000000	46.68	---	74.00	27.32	100.0	H	73.0	2.6
2480.000000	---	82.14	54.00	-28.14	100.0	H	210.0	7.4
2480.000000	82.65	---	74.00	-8.65	100.0	H	210.0	7.4
4960.000000	---	45.73	54.00	8.27	100.0	H	21.0	13.2
4960.000000	53.15	---	74.00	20.85	100.0	H	21.0	13.2

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_GFSK_High Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

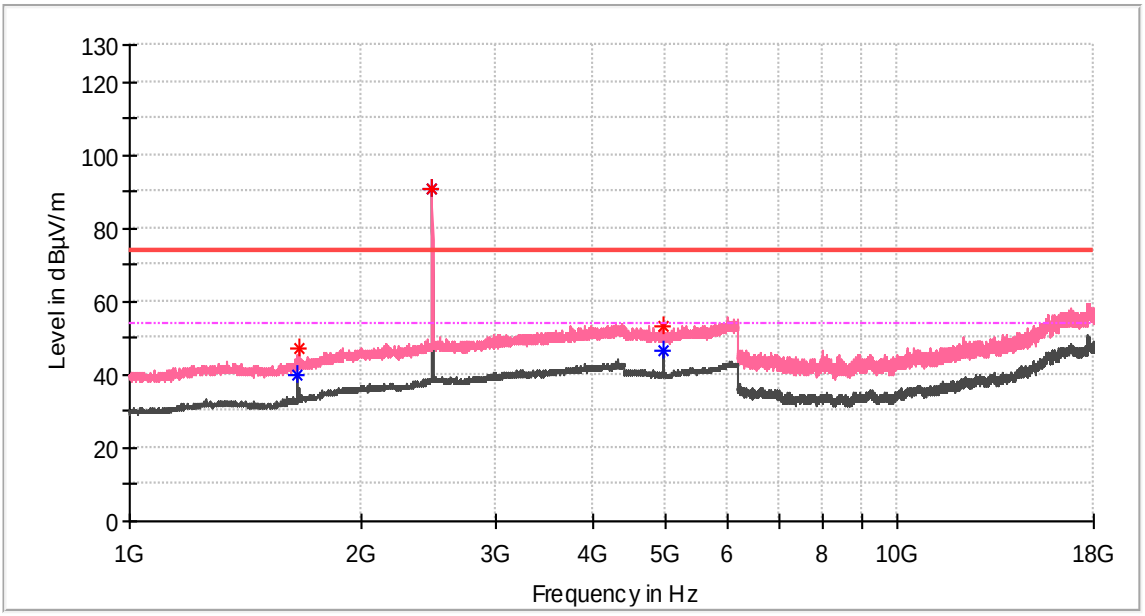


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2487.209559	---	38.80	54.00	15.20	100.0	H	44.0	7.4
2487.246324	50.47	---	74.00	23.53	100.0	H	0.0	7.4

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_GFSK_High Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

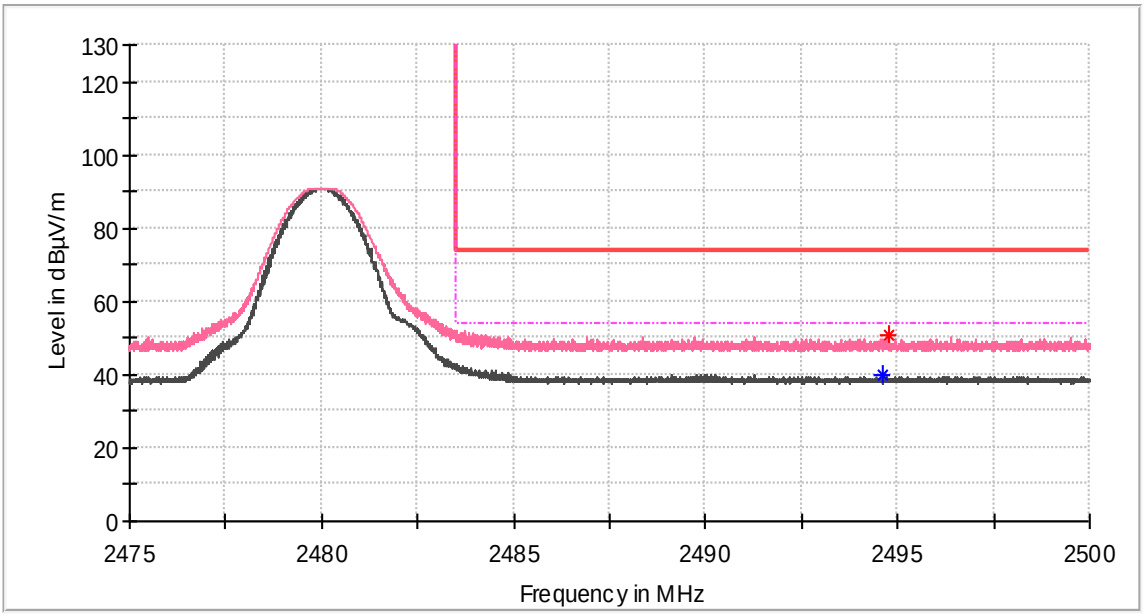


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1654.000000	---	40.05	54.00	13.95	100.0	V	345.0	2.6
1665.500000	47.34	---	74.00	26.66	100.0	V	167.0	2.8
2480.000000	---	90.53	54.00	-36.53	100.0	V	0.0	7.4
2480.000000	90.95	---	74.00	-16.95	100.0	V	0.0	7.4
4959.500000	---	46.67	54.00	7.33	100.0	V	136.0	13.2
4960.000000	53.43	---	74.00	20.57	100.0	V	57.0	13.2

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_GFSK_High Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

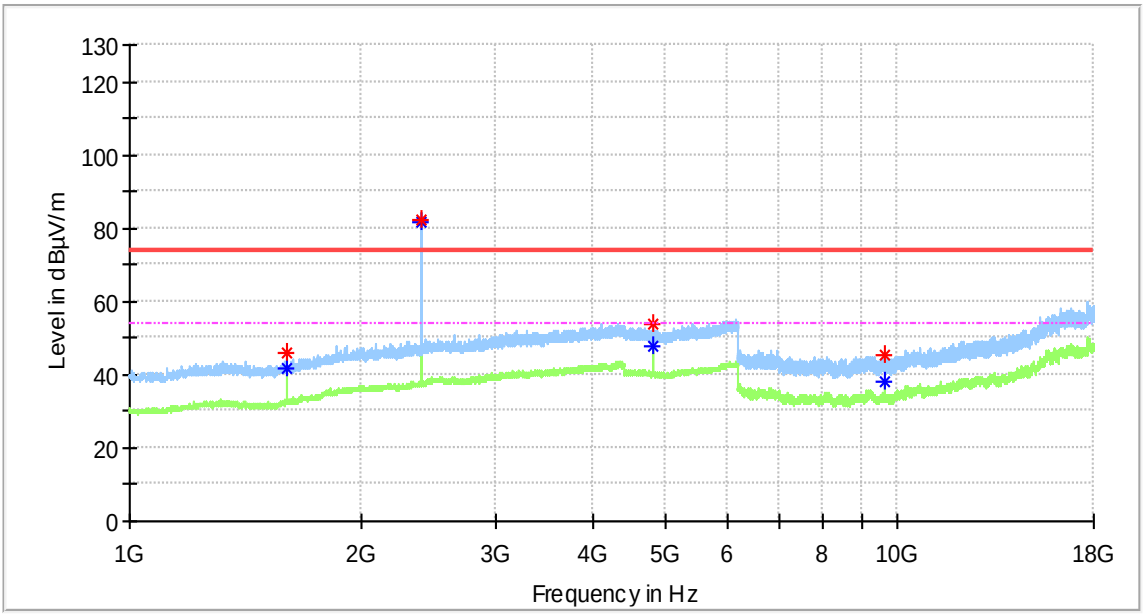


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2494.588235	---	39.67	54.00	14.33	100.0	V	162.0	7.4
2494.772059	50.49	---	74.00	23.51	100.0	V	231.0	7.4

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_GFSK_Low Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

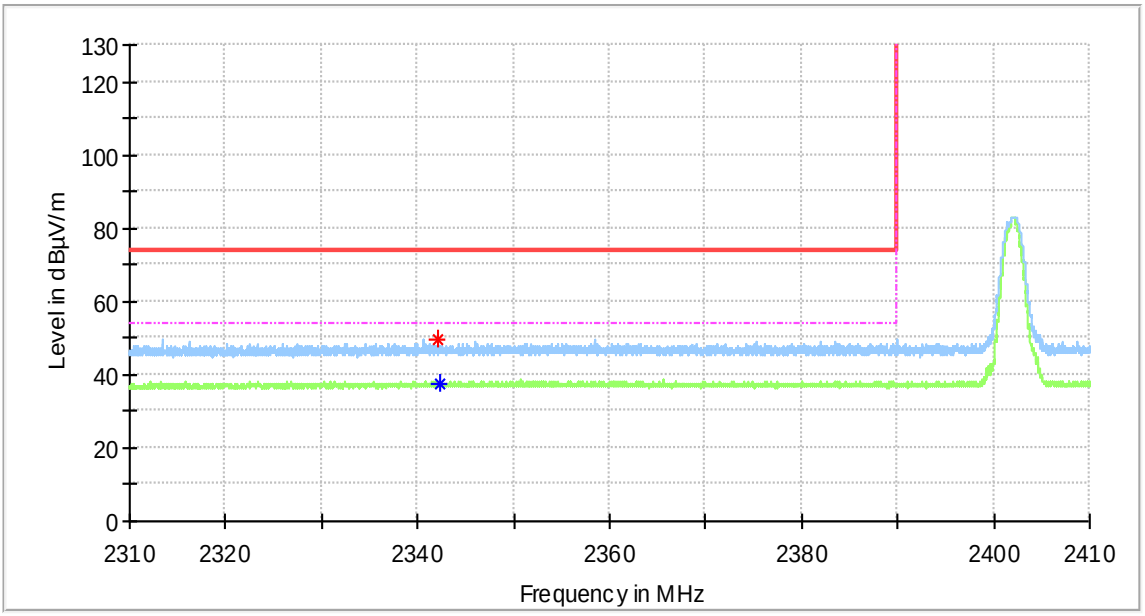


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1602.000000	---	41.51	54.00	12.49	100.0	H	276.0	2.1
1602.000000	46.05	---	74.00	27.95	100.0	H	276.0	2.1
2402.000000	82.11	---	74.00	-8.11	100.0	H	268.0	7.0
2402.000000	---	81.68	54.00	-27.68	100.0	H	268.0	7.0
4804.000000	---	47.47	54.00	6.53	100.0	H	130.0	13.6
4804.500000	54.05	---	74.00	19.95	100.0	H	130.0	13.6
9608.233333	45.34	---	74.00	28.66	100.0	H	295.0	10.4
9608.233333	---	38.20	54.00	15.80	100.0	H	295.0	10.4

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_GFSK_Low Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

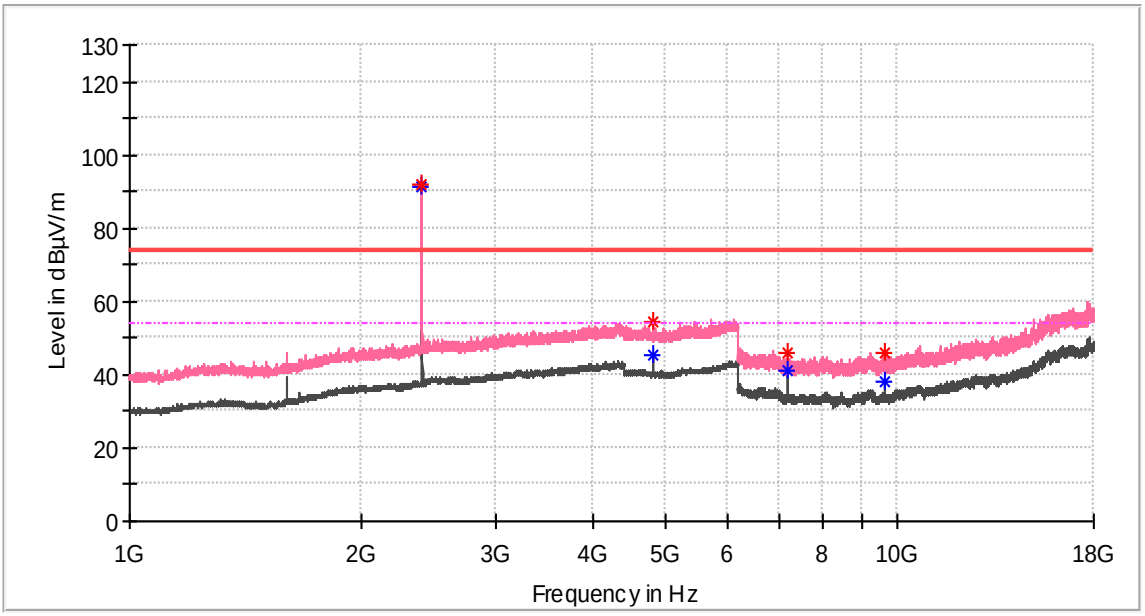


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2342.029412	49.47	---	74.00	24.53	100.0	H	128.0	6.8
2342.382353	---	37.78	54.00	16.22	100.0	H	267.0	6.8

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_GFSK_Low Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

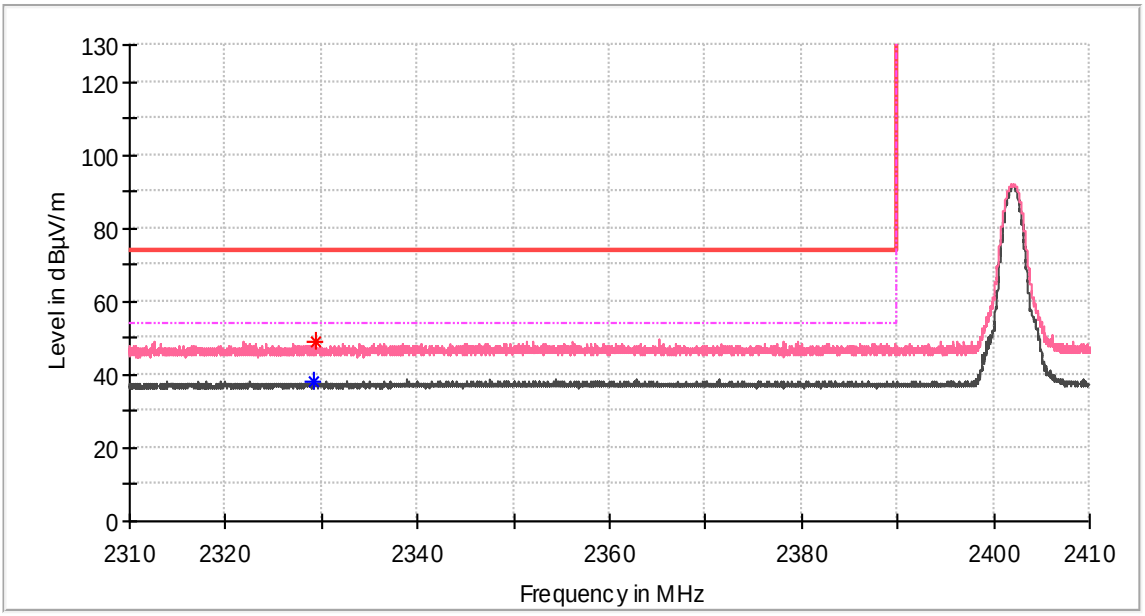


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2402.000000	---	91.53	54.00	-37.53	100.0	V	356.0	7.0
2402.000000	91.94	---	74.00	-17.94	100.0	V	356.0	7.0
4804.000000	54.26	---	74.00	19.74	100.0	V	240.0	13.6
4804.000000	---	45.58	54.00	8.42	100.0	V	240.0	13.6
7205.458333	---	41.41	54.00	12.59	100.0	V	271.0	8.8
7205.458333	45.82	---	74.00	28.18	100.0	V	271.0	8.8
9607.741667	---	38.25	54.00	15.75	100.0	V	70.0	10.4
9608.725000	45.75	---	74.00	28.25	100.0	V	271.0	10.4

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_GFSK_Low Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

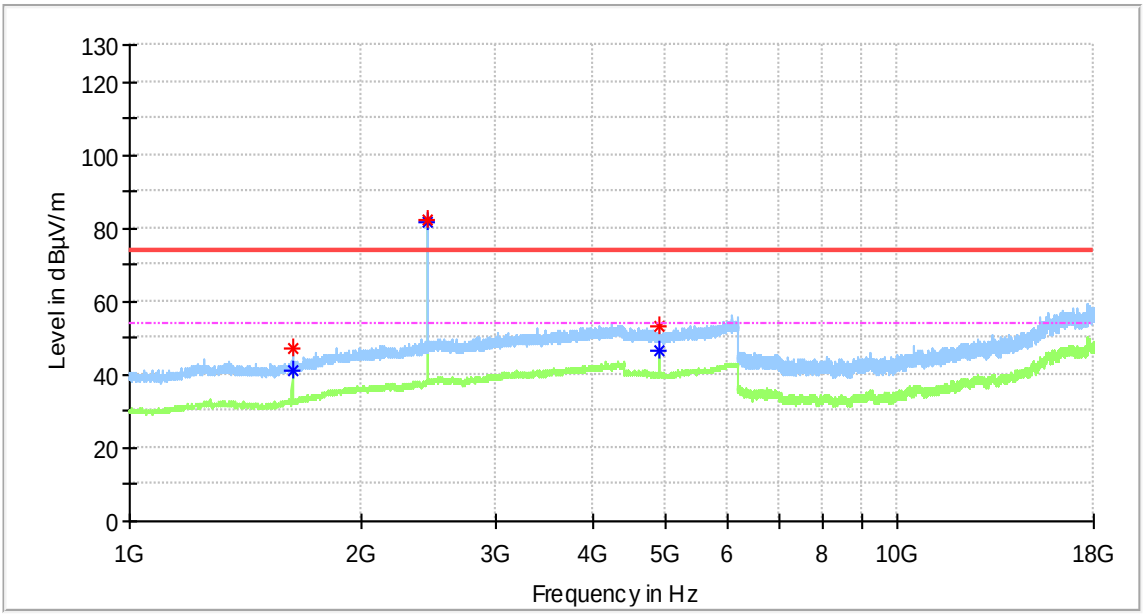


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2329.279412	---	38.01	54.00	15.99	100.0	V	323.0	6.7
2329.426471	49.25	---	74.00	24.75	100.0	V	52.0	6.7

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_GFSK_Mid Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

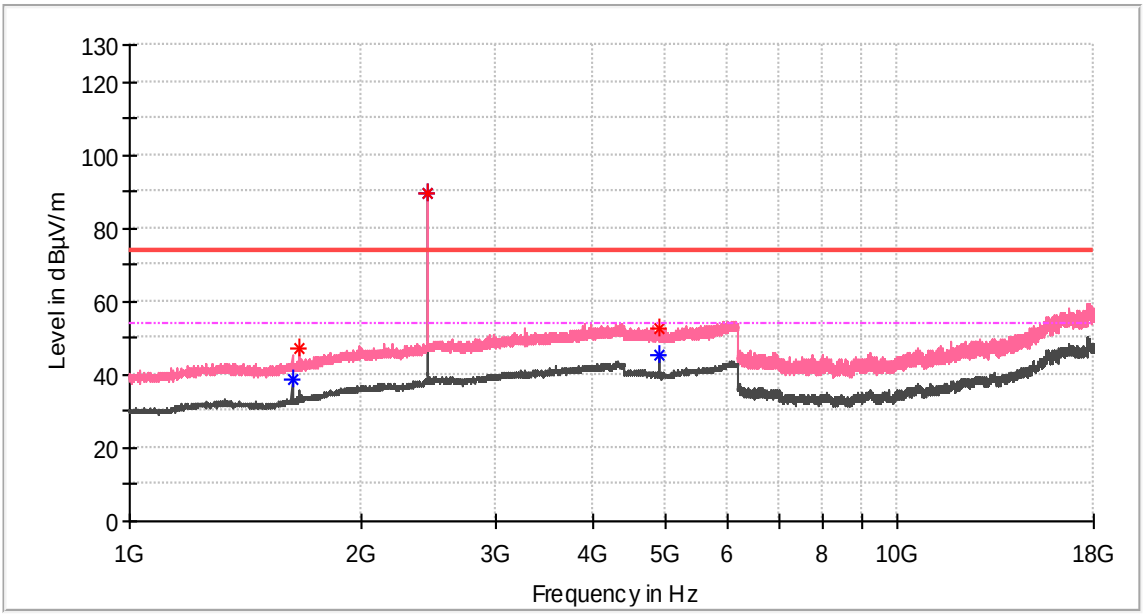


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1628.000000	---	40.85	54.00	13.15	100.0	H	73.0	2.4
1628.000000	47.34	---	74.00	26.66	100.0	H	73.0	2.4
2441.000000	82.36	---	74.00	-8.36	100.0	H	210.0	7.4
2441.000000	---	81.91	54.00	-27.91	100.0	H	210.0	7.4
4882.000000	---	46.55	54.00	7.45	100.0	H	154.0	13.4
4882.000000	53.50	---	74.00	20.50	100.0	H	154.0	13.4

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_GFSK_Mid Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



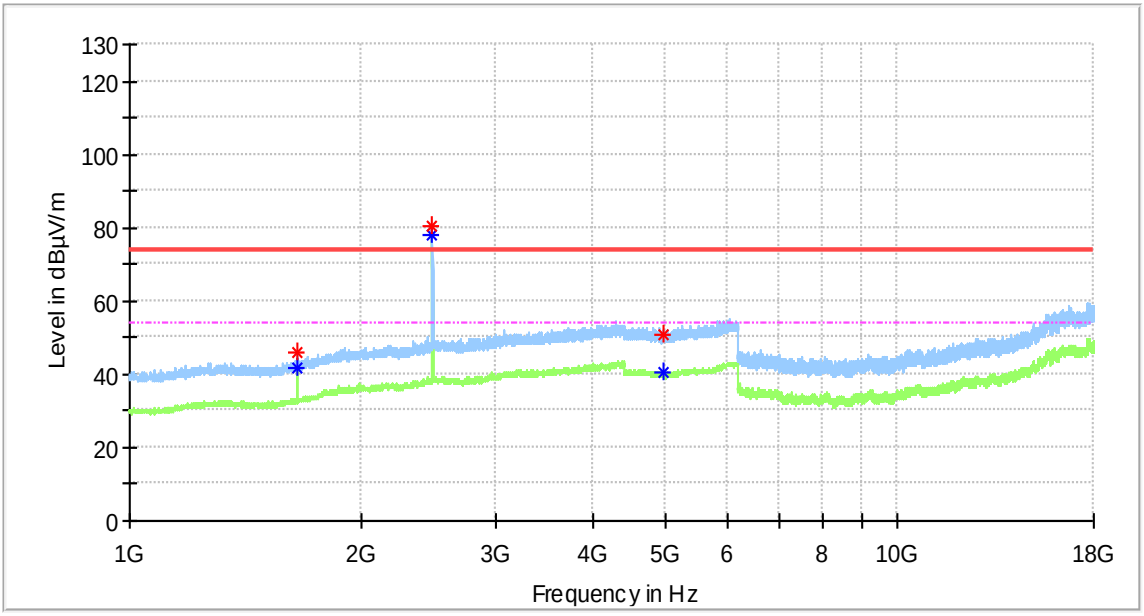
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1627.500000	---	38.66	54.00	15.34	100.0	V	67.0	2.4
1659.500000	47.09	---	74.00	26.91	100.0	V	194.0	2.7
2441.000000	---	89.21	54.00	-35.21	100.0	V	202.0	7.4
2441.000000	89.55	---	74.00	-15.55	100.0	V	202.0	7.4
4882.000000	---	45.24	54.00	8.76	100.0	V	324.0	13.4
4882.000000	52.46	---	74.00	21.54	100.0	V	324.0	13.4

8DPSK

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_8DPSK_High Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

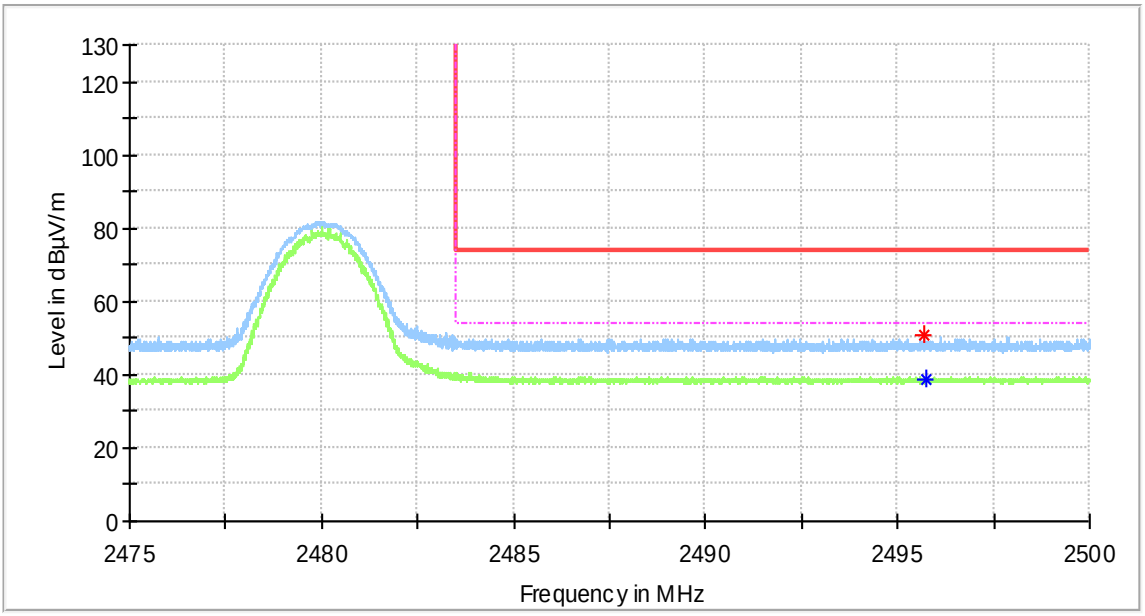


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1654.000000	---	41.93	54.00	12.07	100.0	H	73.0	2.6
1654.000000	46.00	---	74.00	28.00	100.0	H	73.0	2.6
2479.500000	80.49	---	74.00	-6.49	100.0	H	251.0	7.4
2480.000000	---	77.97	54.00	-23.97	100.0	H	210.0	7.4
4960.000000	---	40.68	54.00	13.32	100.0	H	105.0	13.2
4963.000000	50.84	---	74.00	23.16	100.0	H	0.0	13.2

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_8DPSK_High Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

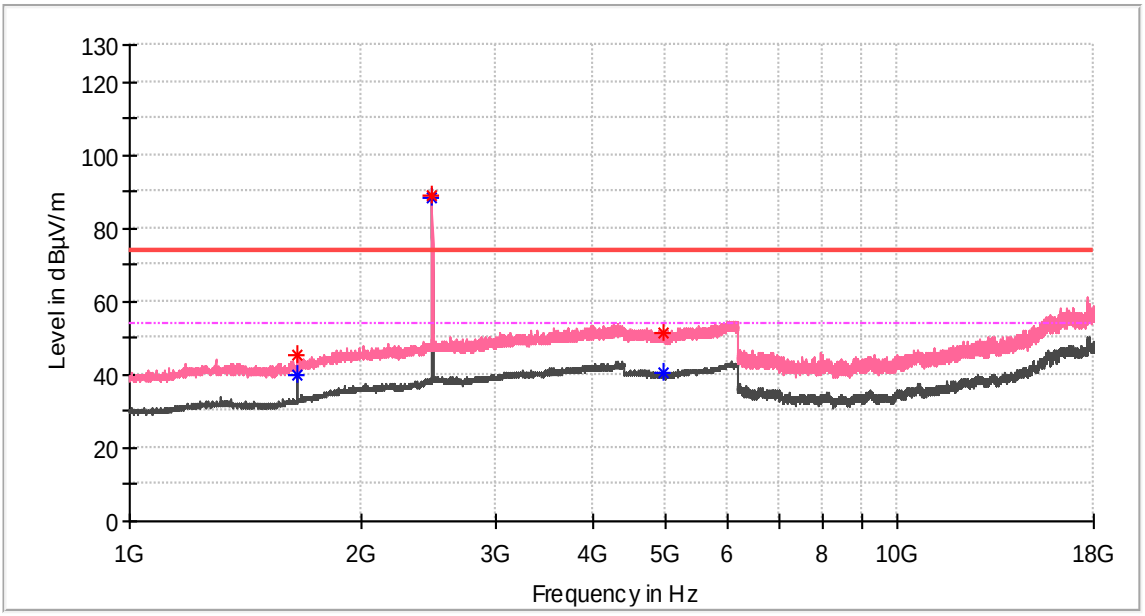


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2495.683824	50.95	---	74.00	23.05	100.0	H	78.0	7.4
2495.727941	---	38.80	54.00	15.20	100.0	H	196.0	7.4

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_8DPSK_High Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

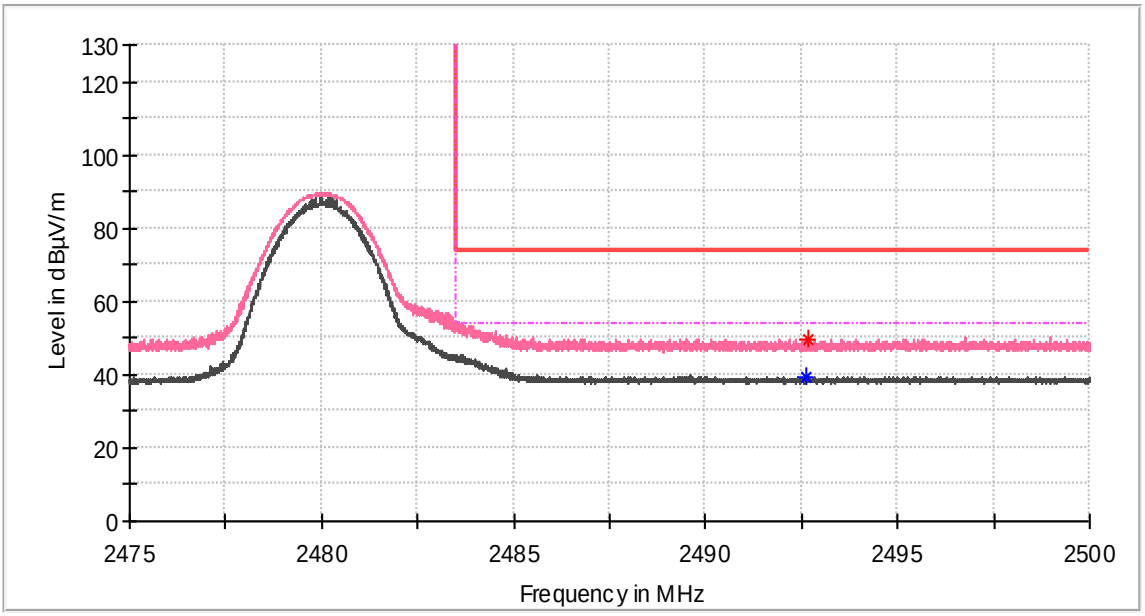


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1654.000000	---	39.86	54.00	14.14	100.0	V	345.0	2.6
1654.000000	45.26	---	74.00	28.74	100.0	V	345.0	2.6
2480.000000	---	88.57	54.00	-34.57	100.0	V	0.0	7.4
2480.000000	88.85	---	74.00	-14.85	100.0	V	0.0	7.4
4959.500000	---	40.75	54.00	13.25	100.0	V	148.0	13.2
4969.500000	51.22	---	74.00	22.78	100.0	V	261.0	13.2

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_8DPSK_High Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

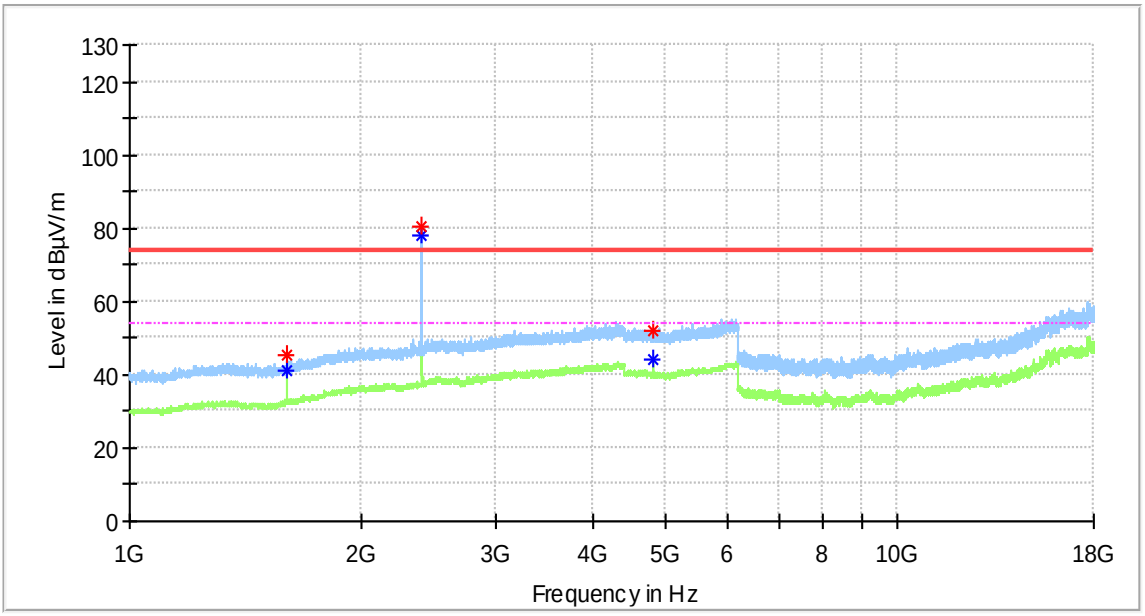


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2492.602941	---	39.27	54.00	14.73	100.0	V	316.0	7.4
2492.658088	49.78	---	74.00	24.22	100.0	V	329.0	7.4

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_8DPSK_Low Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

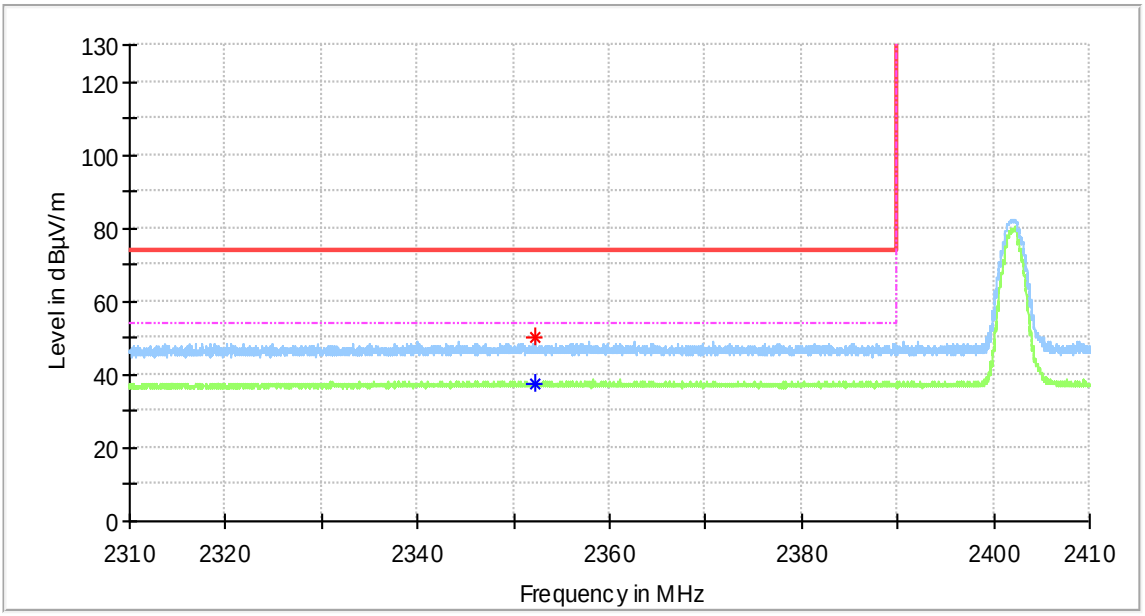


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1602.000000	---	41.28	54.00	12.72	100.0	H	276.0	2.1
1602.000000	45.54	---	74.00	28.46	100.0	H	276.0	2.1
2401.500000	80.44	---	74.00	-6.44	100.0	H	268.0	7.0
2402.000000	---	78.04	54.00	-24.04	100.0	H	268.0	7.0
4803.000000	52.16	---	74.00	21.84	100.0	H	115.0	13.6
4804.000000	---	43.94	54.00	10.06	100.0	H	115.0	13.6

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_8DPSK_Low Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

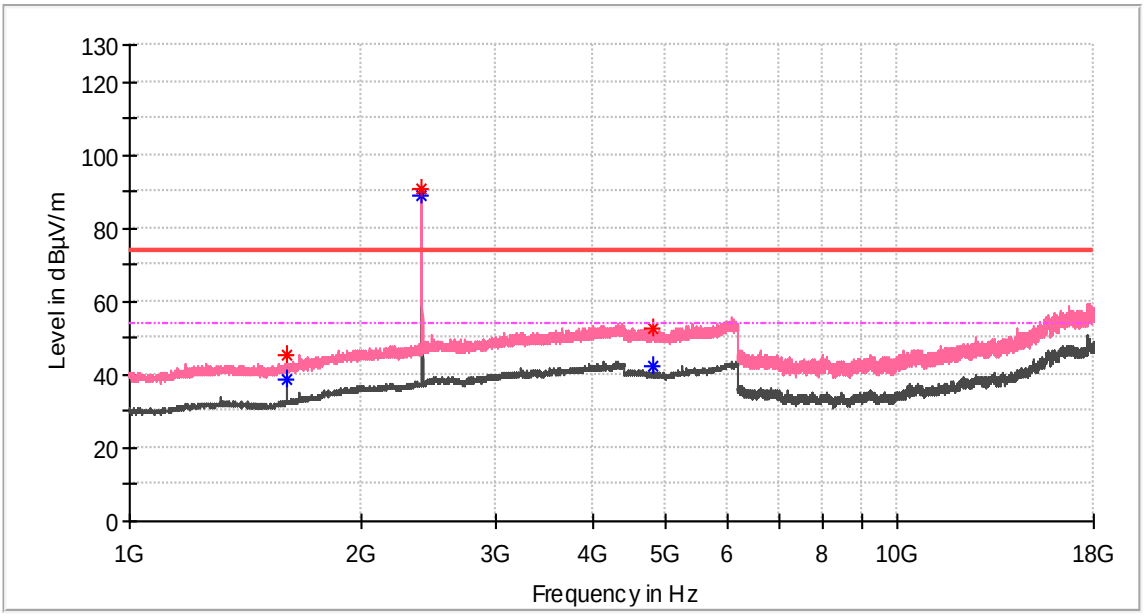


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2352.235294	---	37.77	54.00	16.23	100.0	H	163.0	6.9
2352.235294	50.27	---	74.00	23.73	100.0	H	163.0	6.9

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_8DPSK_Low Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

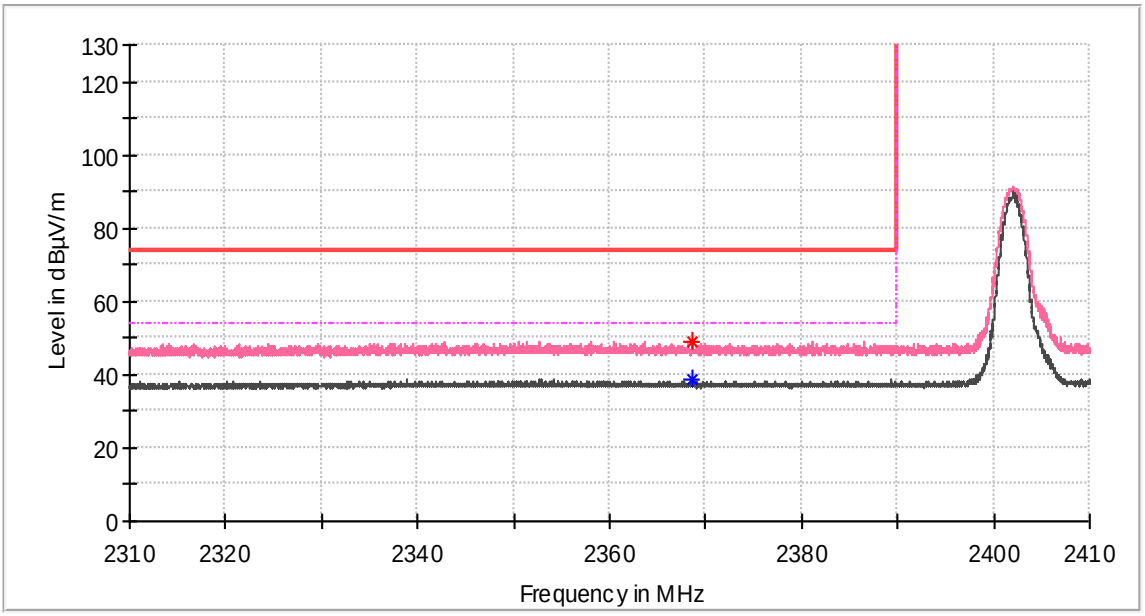


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1602.000000	---	38.80	54.00	15.20	100.0	V	177.0	2.1
1602.000000	45.33	---	74.00	28.67	100.0	V	177.0	2.1
2402.000000	90.87	---	74.00	-16.87	100.0	V	356.0	7.0
2402.000000	---	88.75	54.00	-34.75	100.0	V	356.0	7.0
4804.000000	---	42.55	54.00	11.45	100.0	V	99.0	13.6
4806.500000	52.44	---	74.00	21.56	100.0	V	268.0	13.6

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_8DPSK_Low Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

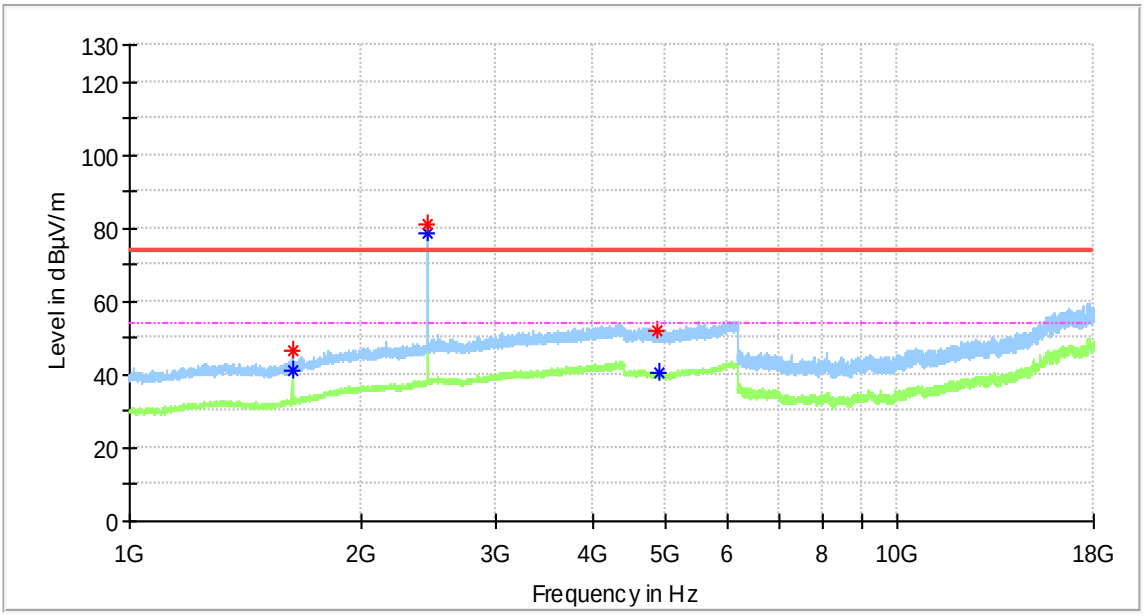


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2368.544118	49.23	---	74.00	24.77	100.0	V	274.0	6.9
2368.588235	---	38.49	54.00	15.51	100.0	V	226.0	6.9

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_8DPSK_Mid Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

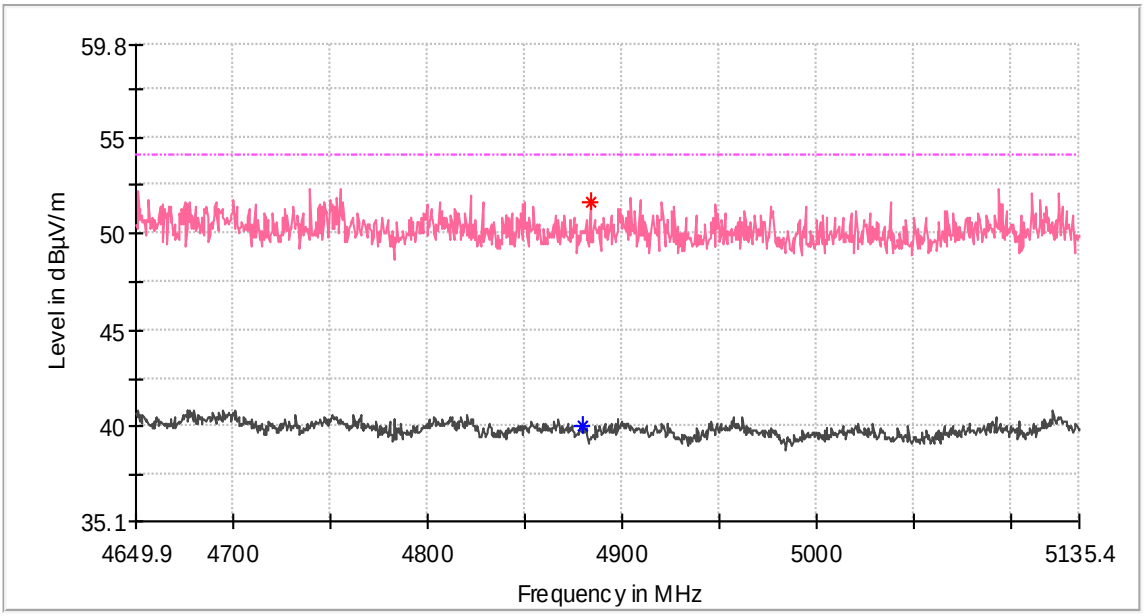


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1628.000000	---	41.21	54.00	12.79	100.0	H	75.0	2.4
1628.000000	46.65	---	74.00	27.35	100.0	H	75.0	2.4
2441.000000	---	78.42	54.00	-24.42	100.0	H	125.0	7.4
2441.000000	81.01	---	74.00	-7.01	100.0	H	125.0	7.4
4871.500000	52.11	---	74.00	21.89	100.0	H	271.0	13.4
4882.000000	---	40.52	54.00	13.49	100.0	H	160.0	13.4

EUT Information

EUT Name:	Radio
Model:	7901010-BU51
Test Mode:	TX_BT_8DPSK_Mid Channel
Test Voltage::	DC 12V
Remark:	Temp 23 Humi:42%
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)
1627.500000	44.41	---	74.00	29.59	100.0	V	344.0	2.4
1628.000000	---	39.08	54.00	14.92	100.0	V	344.0	2.4
2441.000000	---	85.30	54.00	-31.30	100.0	V	166.0	7.4
2441.000000	88.35	---	74.00	-14.35	100.0	V	166.0	7.4
4880.000000	---	40.09	54.00	13.91	100.0	V	112.0	13.4
4884.000000	51.60	---	74.00	22.40	100.0	V	130.0	13.4