TEST REPORT

For

LTE Digital Mobile Phone

Model Number: NX629J

FCC ID: 2AHJO-NX629J

Report Number : WT198004688

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection
Site Location	:	NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China
Tel	:	0086-755-86928965
Fax	:	0086-755-86009898-31396
Web	:	www.smq.com.cn
E-mail		emcrf@smq.com.cn

Test report declaration

Applicant	:	Nubia Technology Co., Ltd.
Address	:	10/F, Tower A, Hans Innovation Mansion, North Ring Rd., No.9018, High-Tech Park, Nanshan District,Shenzhen,China
Manufacturer	:	Nubia Technology Co., Ltd.
Address	:	10/F, Tower A, Hans Innovation Mansion, North Ring Rd., No.9018, High-Tech Park, Nanshan District,Shenzhen,China
EUT Description	:	LTE Digital Mobile Phone
Model No.	:	NX629J
Trade mark	:	nubia
Serial Number	:	/
FCC ID	:	2AHJO-NX629J

Test Standards:

FCC Part 15 15.207, 15.209, 15.247(2018)

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Project Engineer:	(Zhou Fangai 周芳媛)	Date:	Sep.05, 2019
Checked by:	(Lin Yixiang 林奕翔)	Date:	Sep.05, 2019
Approved by:	(Lin Bin 林斌)	Date:	Sep.05, 2019

TABLE OF CONTENTS

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	FCC Rules	Test Results
Band edge measurement	15.247 (d)	Pass
Radiated emission & Radiated restricted band measurement	15.247 (d) / 15.205 & 15.209	Pass

Remark: “N/A” means “Not applicable.”

2. GENERAL INFORMATION

2.1. Report information

This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579.

The Laboratory is Accredited Testing Laboratory of FCC with Designation number CN1165 and Site registration number 582918.

The Laboratory is registered to perform emission tests with Innovation, Science and Economic Development (ISED), and the registration number is 11177A.

2.3. Measurement Uncertainty

Radiated Emission
30MHz~1000MHz 5.1dB
1GHz~6GHz 5.04dB
6GHz~18GHz 5.54dB
18GHz~26.5GHz 5.54dB

3. PRODUCT DESCRIPTION

3.1. EUT Description

Description	:	LTE Digital Mobile Phone
Manufacturer	:	Nubia Technology Co., Ltd.
Model Number	:	NX629J
Operate Frequency	:	2.402GHz~2.480GHz
Antenna Designation	:	Bluetooth: Internal antenna +1.5dBi
Operating voltage	:	3.5V (Low)/3.85V (Nominal)/ 4.4V (Max)
Software Version	:	NX629J_V1S_ENCommon_V1.01
Hardware Version	:	NX629J_V1AMB

Remark: -This is a derivative report based on original report SET2019-02847 and SET2019-02848. This report changes the shape of vents on the back of the phone, changes the app processor chip qualcomm 855 to qualcomm 855 pro. All other parts of the product, including the circuit theory, electrical design and the Critical Components are the same. Test data in this report are based on those of Test Report: SET2019-02847 and SET2019-02848, except for the Radiated Emission and band edge test data.

Bluetooth Low Energy:

Table 2 Working Frequency List

Regulatory Range	RF Channels
2.400-2.4835 GHz	f=2402+k*2 MHz, k=0, … ,39

3.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **2AHJO-NX629J** filing to comply with Section 15.207，15.209，15.247 of the FCC Part 15, Subpart C .

3.3. Block Diagram of EUT Configuration

Figure 1 EUT setup

3.4. Operating Condition of EUT

The transmitter has a maximum peak conducted output power of Basic rate GFSK modulation and EDR mode 8DPSK modulation. Tests were performed with Basic rate GFSK modulation and EDR mode 8DPSK modulation.
Worst-case mode and channel used for 30-1000 MHz radiated and power line conducted emissions was the mode and channel with the highest output power.
Worst-case data rates as provided by the client were: Bluetooth low energy

3.5. Support Equipment List

Table 3 Support Equipment List

Name	Model No	S/N	Manufacturer
Adaptor for EUT	CYNBY090200-A00	--	JIANGSU CHENYANG ELECTRON Co.,LTD
Battery for EUT	Li3949T44P6h996644	--	Zhuhai Coslight Battery Co.,Ltd.
USB for EUT	--	--	--
Earphone	--	--	--

3.6. Test Conditions

Date of test：Aug.23, 2019- Aug.31, 2019
Date of EUT Receive：Aug.14, 2019
Temperature: 22℃-24 ℃
Relative Humidity: 50%

3.7. Special Accessories

Not available for this EUT intended for grant.

3.8. Equipment Modifications

Not available for this EUT intended for grant.

4. TEST EQUIPMENT USED

Table 4 Test Equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB3436	Test Receiver	R&S	ESI26	Nov.19,2018	1 Year
SB3955	Broadband Antenna	Schwarzbeck	VULB9163	May.31,2019	1 Year
SB8501/09	Test Receiver	R&S	ESU40	Mar.11,2019	1 Year
SB3435	Horn Antenna	R&S	HF906	Jan.01,2019	1 Year
SB9058/03	Pre-Amplifier	R&S	SCU 18	Feb.18,2019	1 Year
SB8501/10	Horn Antenna	R&S	3160-09	Mar.21,2017	3 Years
SB8501/11	Horn Antenna	R&S	3160-09	Mar.21,2017	3 Years
SB8501/12	Horn Antenna	R&S	3160-10	Mar.21,2017	3 Years
SB8501/13	Horn Antenna	R&S	3160-10	Mar.21,2017	3 Years
SB3345	Loop Antenna	Schwarzbeck	FMZB1516-113	Feb.20,2019	1 Year
SB8501/14	Pre-Amplifier	R&S	SCU-03	Feb.20,2019	1 Year
SB8501/15	Pre-Amplifier	R&S	SCU-03	Feb.20,2019	1 Year
SB8501/16	Pre-Amplifier	R&S	SCU 26	Feb.18,2019	1 Year
SB8501/17	Pre-Amplifier	R&S	SCU-18	Feb.20,2019	1 Year

5. RADIATED EMISSION TEST

5.1.Test Standard and Limit

5.1.1.Test Standard

FCC Part 15 15.209

5.1.2.Test Limit

Table 5 Radiation Emission Test Limit for FCC (Class B) (9 kHz-1GHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Table 6 Radiation Emission Test Limit for FCC (Class B) (Above 1G)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	PEAK	AVERAGE
Above 1000	74	54

* The lower limit shall apply at the transition frequency.
* The test distance is 3m.

5.2.Test Procedure

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10-2013.The EUT is set to transmit in a continuous mode. Radiated measurements were performed on the frequency range from 30MHz to 25GHz. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz , VBW≥ RBW. All readings above 1 GHz are AV and PK values。RBW=1MHz and 1/T (10Hz) for AV value , RBW=1MHz and VBW≥ RBW for peak value. Measurements were made at 3 meters

5.3.Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

5.4. Test Data

The emissions don't show in following result tables are more than 20dB below the limits.
Bluetooth basic rate, Bluetooth EDR and Bluetooth Low Energy mode were tested, below only shows worst case result of Bluetooth basic rate.
The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

9kHz-30MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

Table 7 Radiated Emission Test Data 9k Hz-30MHz

Frequency MHz	Cable Loss(dB)	Antenna Factor(dB)	Readings(dBμV/m)	Level(dBμV/m)	Polarity(H/V)	Turntable Angle(deg)	Antenna Height(m)	Limits(dBμV/m)	Margin(dB)
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

30MHz-1GHz

Worst case is shown below for 30MHz-1GHz only.

The emissions don't show in following result tables are more than 20dB below the limits.

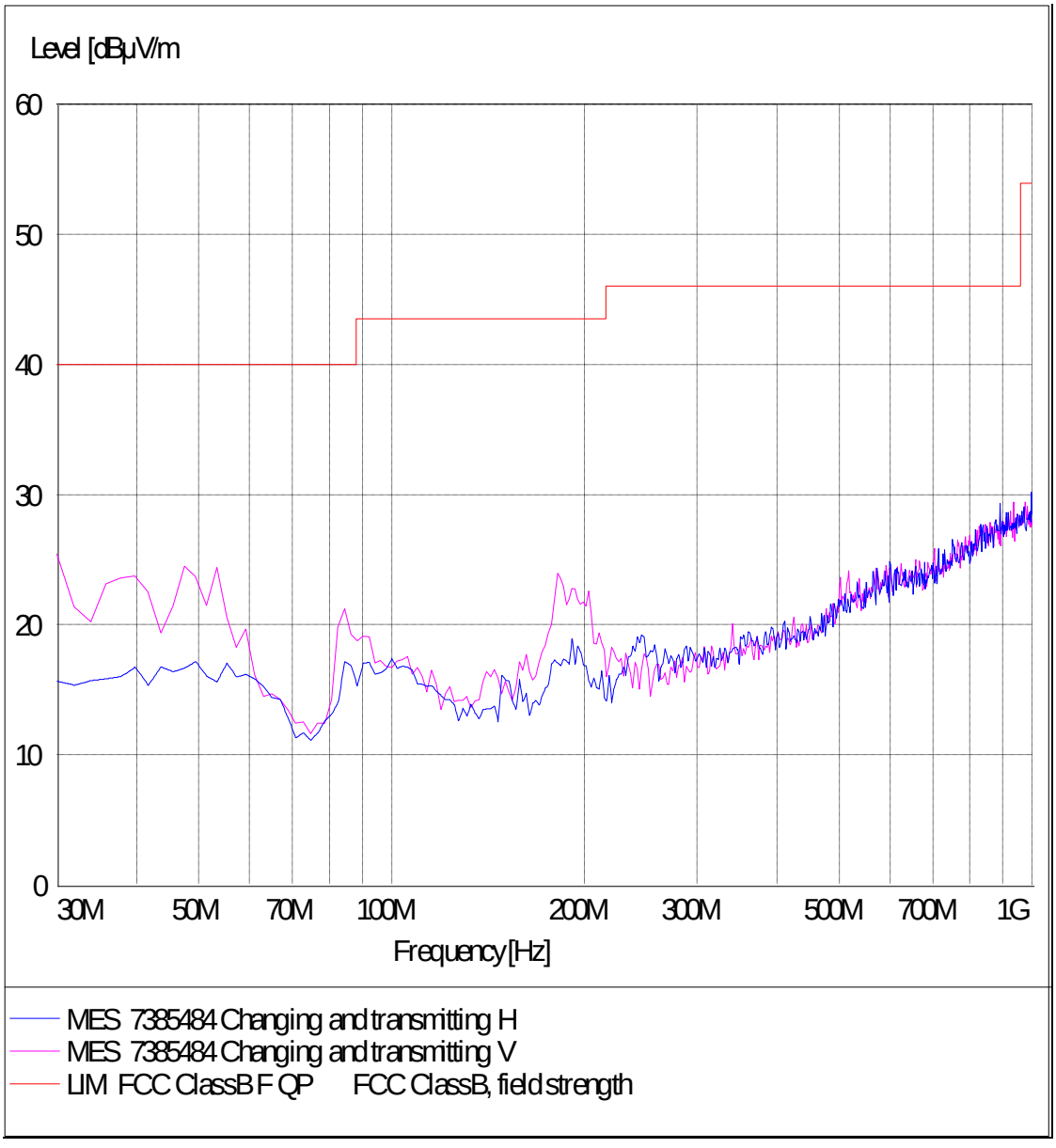
Table 8 Radiated Emission Test Data 30MHz-1GHz

Frequency (MHz)	Cable Loss +preamp (dB)	Antenna Factor (dB)	Readings (dBμV/m)	Level (dBμV/m)	Polarity (H/V)	Limits (dBμV/m)	Margin (dB)	Note
39.719	0.6	12.3	1.0	13.9	H	40.0	26.1	QP
55.270	0.8	13.0	2.3	16.1	H	40.0	23.9	QP
84.428	0.9	8.5	7.3	16.7	H	40.0	23.3	QP
99.979	1.1	12.8	2.3	16.2	H	43.5	27.3	QP
191.342	1.6	10.6	4.7	16.9	H	43.5	26.6	QP
245.771	1.8	12.1	4.2	18.1	H	46.0	27.9	QP
30.109	0.6	12.3	10.5	23.4	V	40	16.6	QP
39.719	0.6	12.3	7.8	20.7	V	40	19.3	QP
47.494	0.8	13.6	7.1	21.5	V	40	18.5	QP
53.326	0.7	13.3	7.4	21.4	V	40	18.6	QP
84.428	0.9	8.5	9.8	19.2	V	40	20.8	QP
181.623	1.6	9.7	8.9	20.2	V	43.5	23.3	QP

Remark: Emission level (dBuV)=Read Value(dBuV/m) + Antenna Factor(dB)+ Cable Loss +preamp(dB)

Radiated Emission

EUT Name: NX629J
Operating Condition: Charging and Transmitting
Test site: SMQ NETC EMC Lab.
Antenna Position: Vertical & Horizontal
Comment: AC 120V/60Hz



1GHz-18GHz

BDR CH0

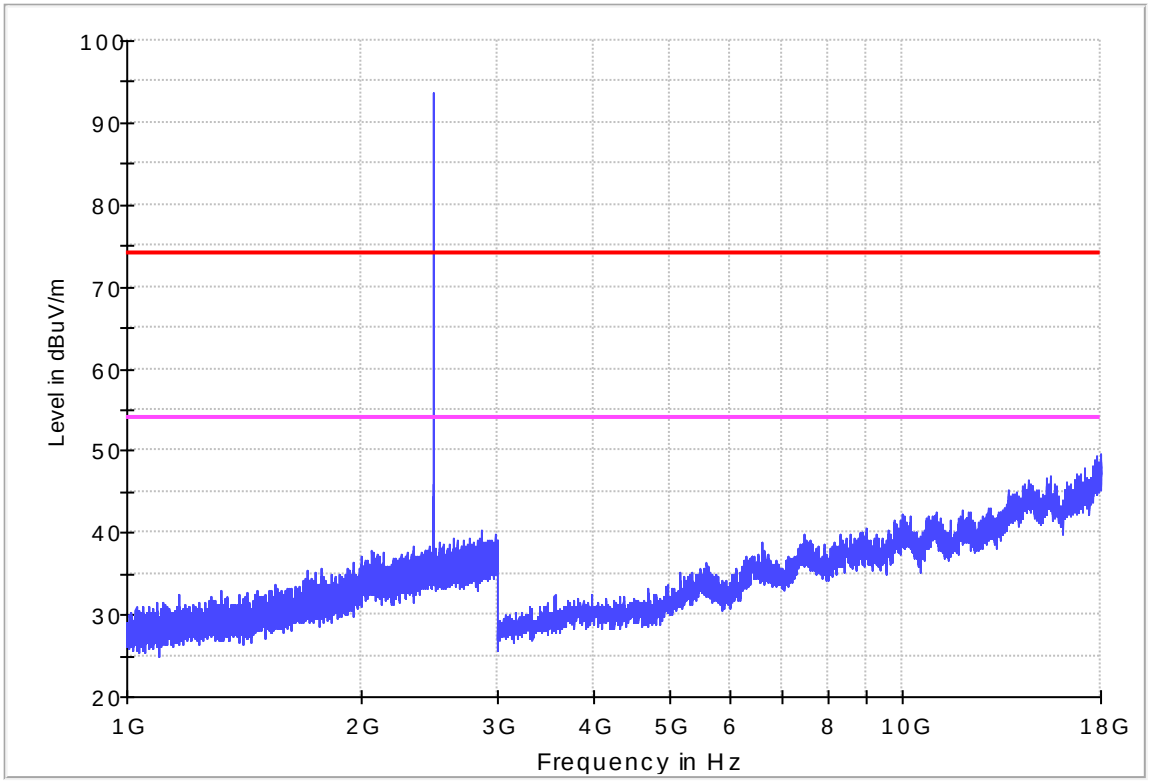
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT DH1 CH0 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	



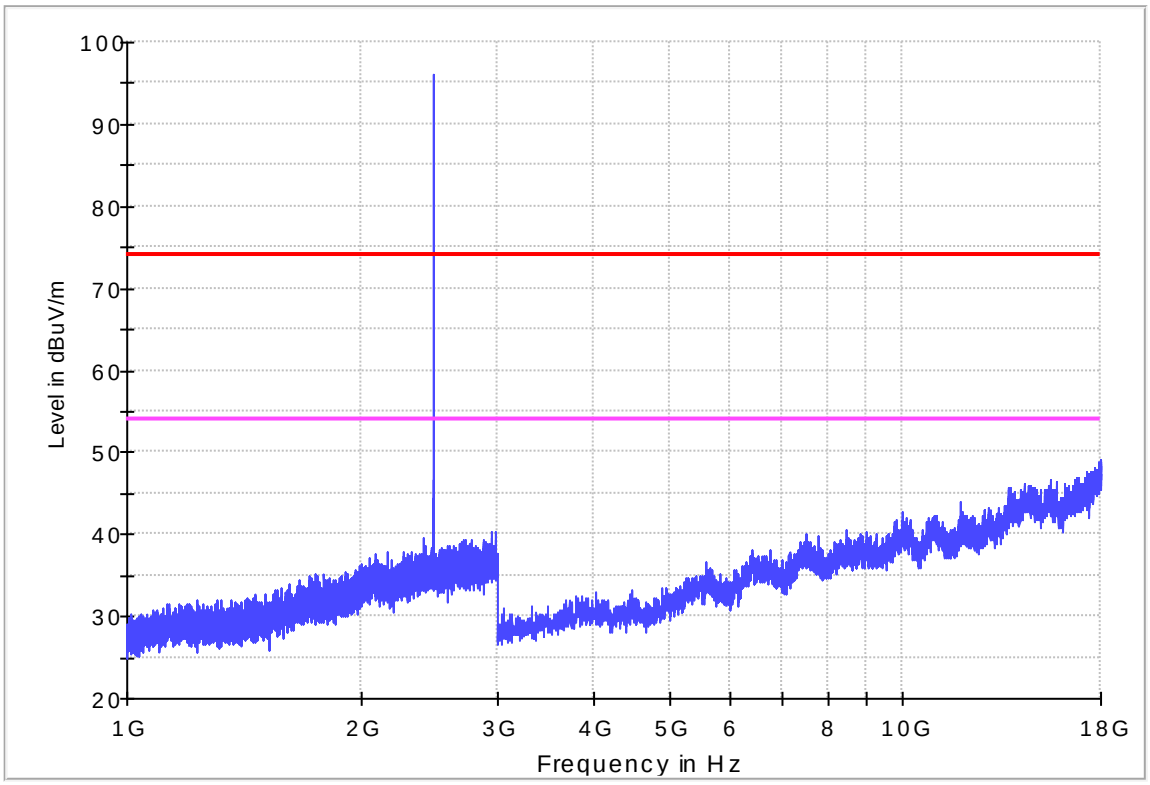
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT DH1 CH0 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	



1GHz-18GHz

BDR CH39

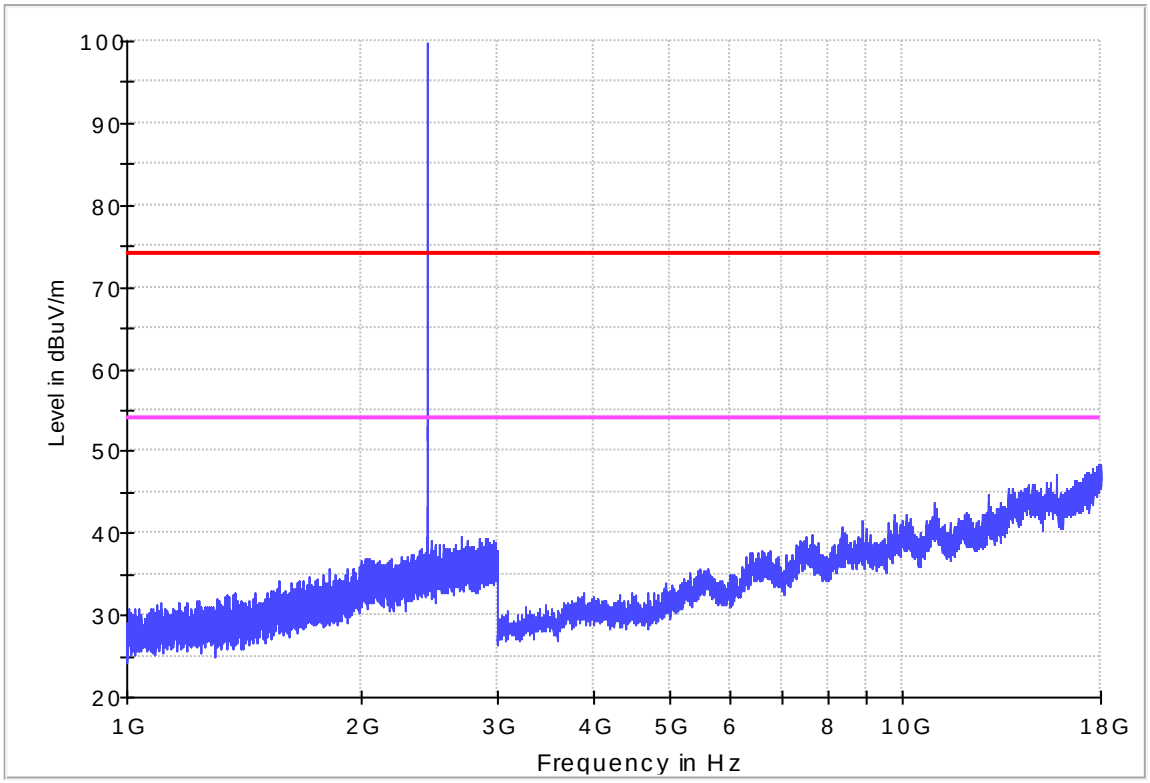
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT DH1 CH39 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	



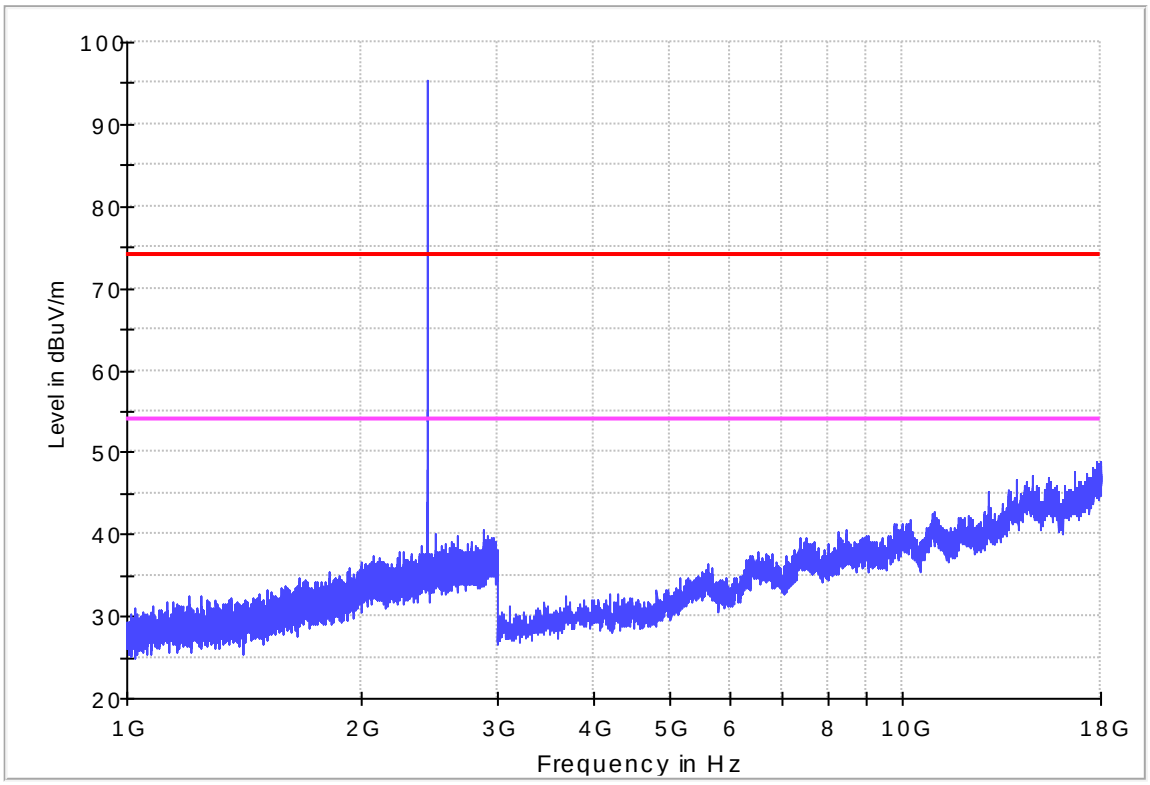
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT DH1 CH39 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	



1GHz-18GHz

BDR CH78

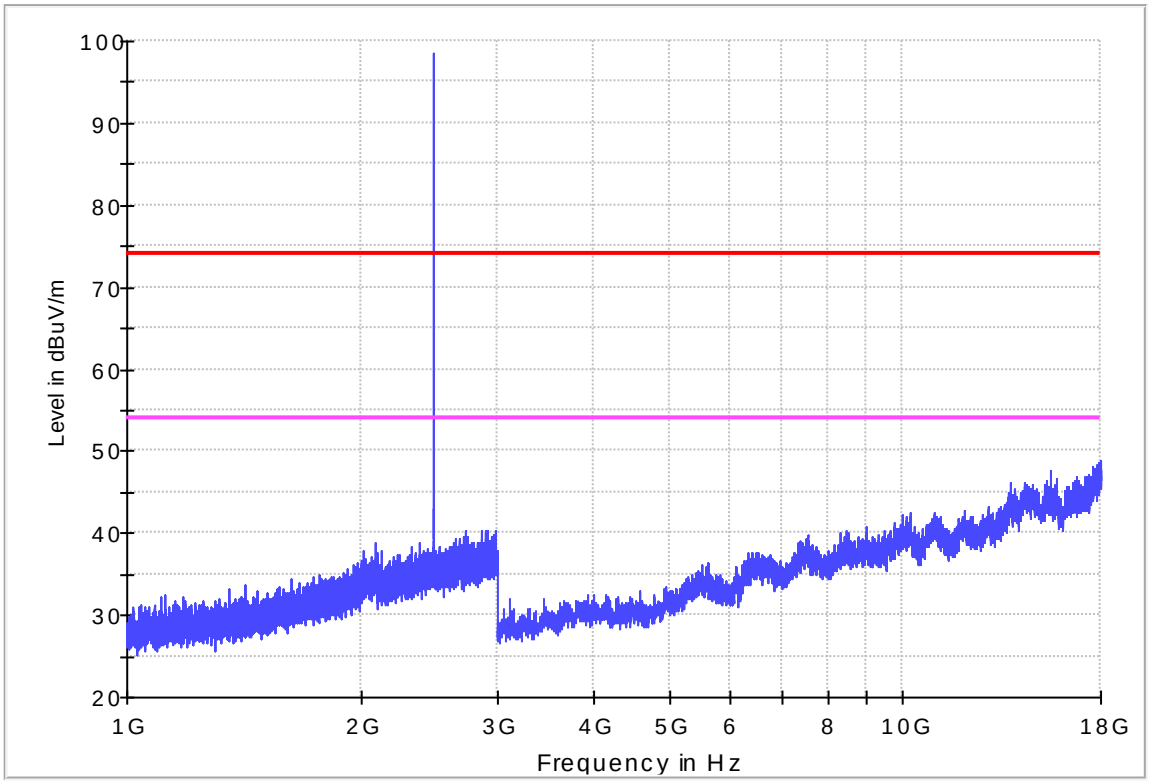
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT DH1 CH78 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	



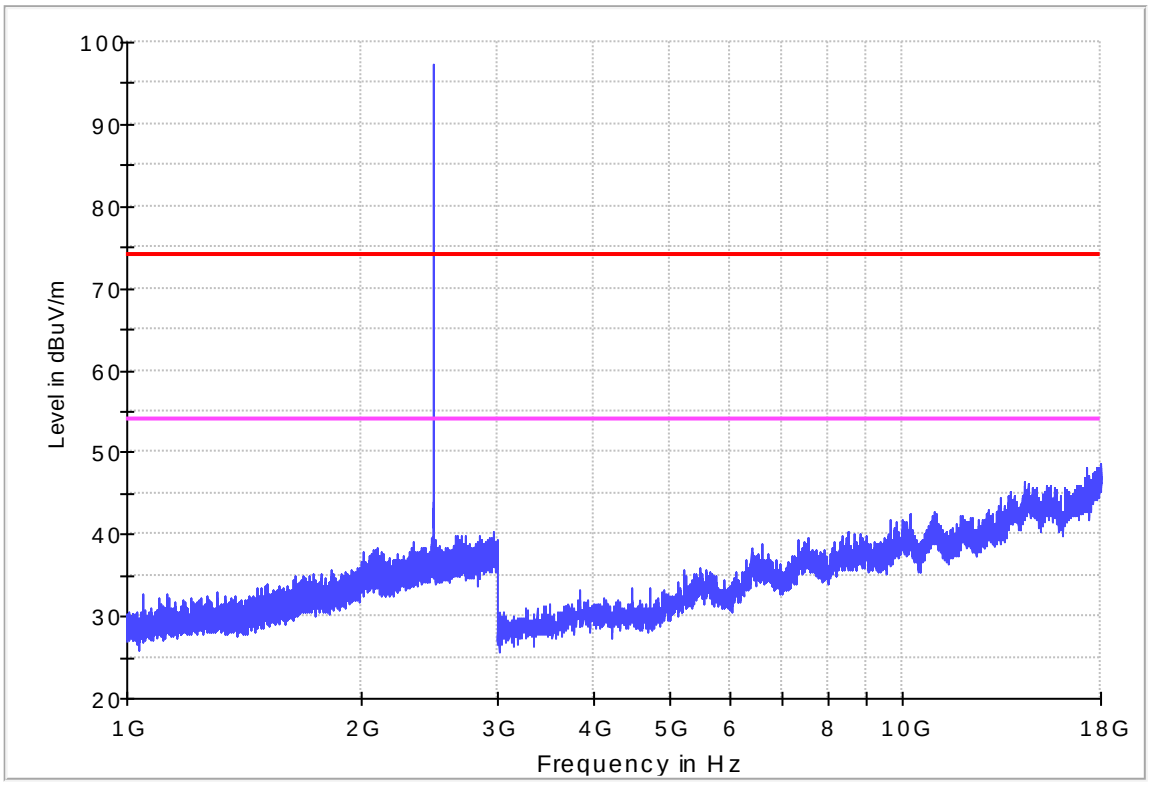
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT DH1 CH78 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	



1GHz-18GHz

EDR CH0

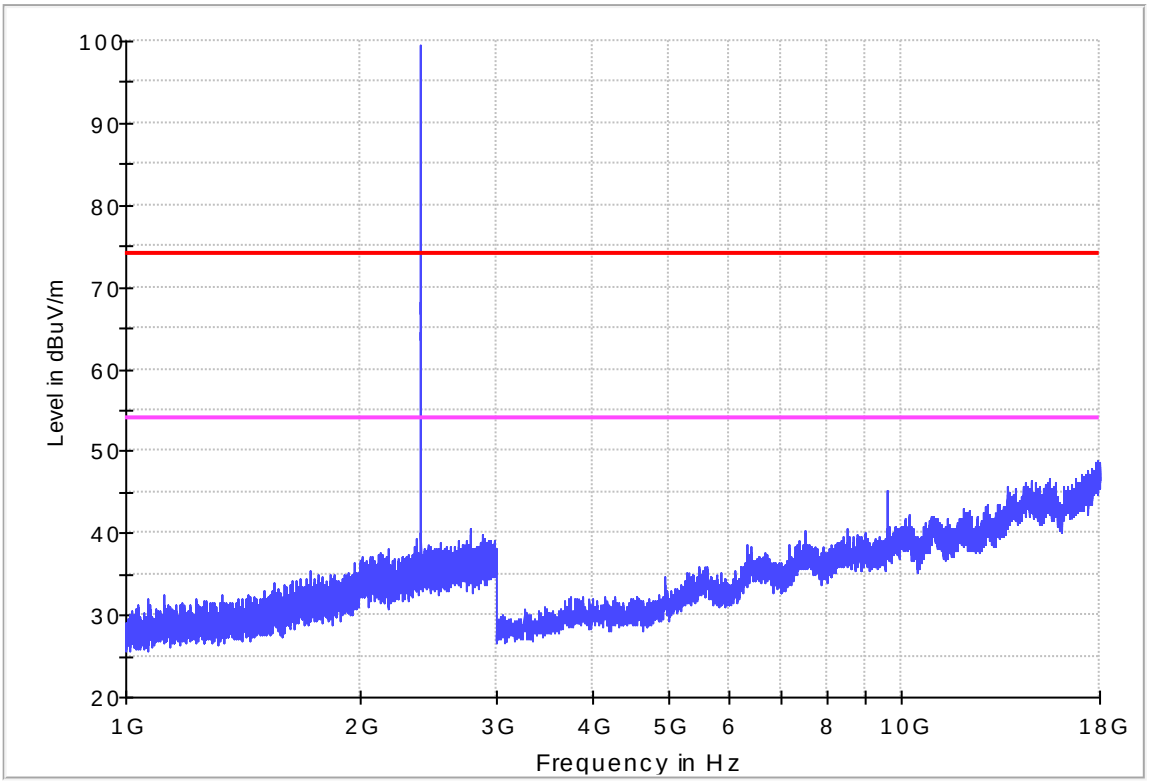
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT 3DH1 CH0 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	



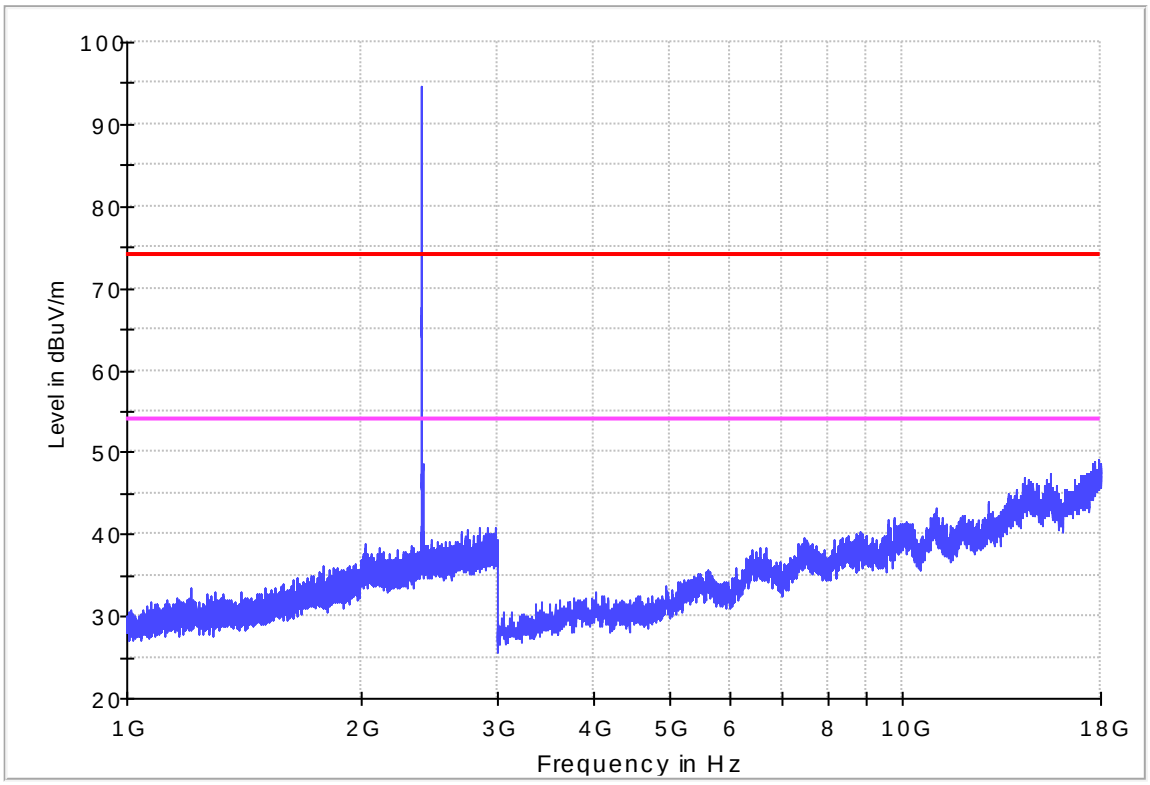
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT 3DH1 CH0 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	



1GHz-18GHz

EDR CH39

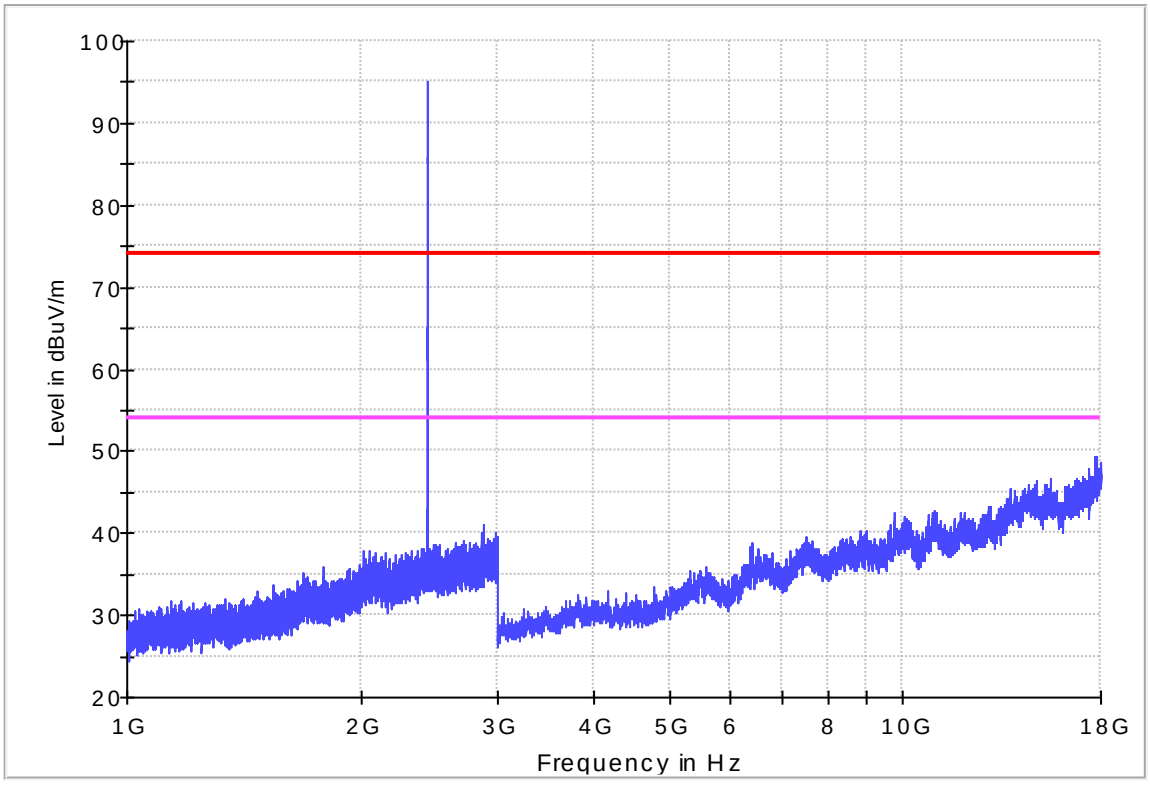
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT 3DH1 CH39 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	



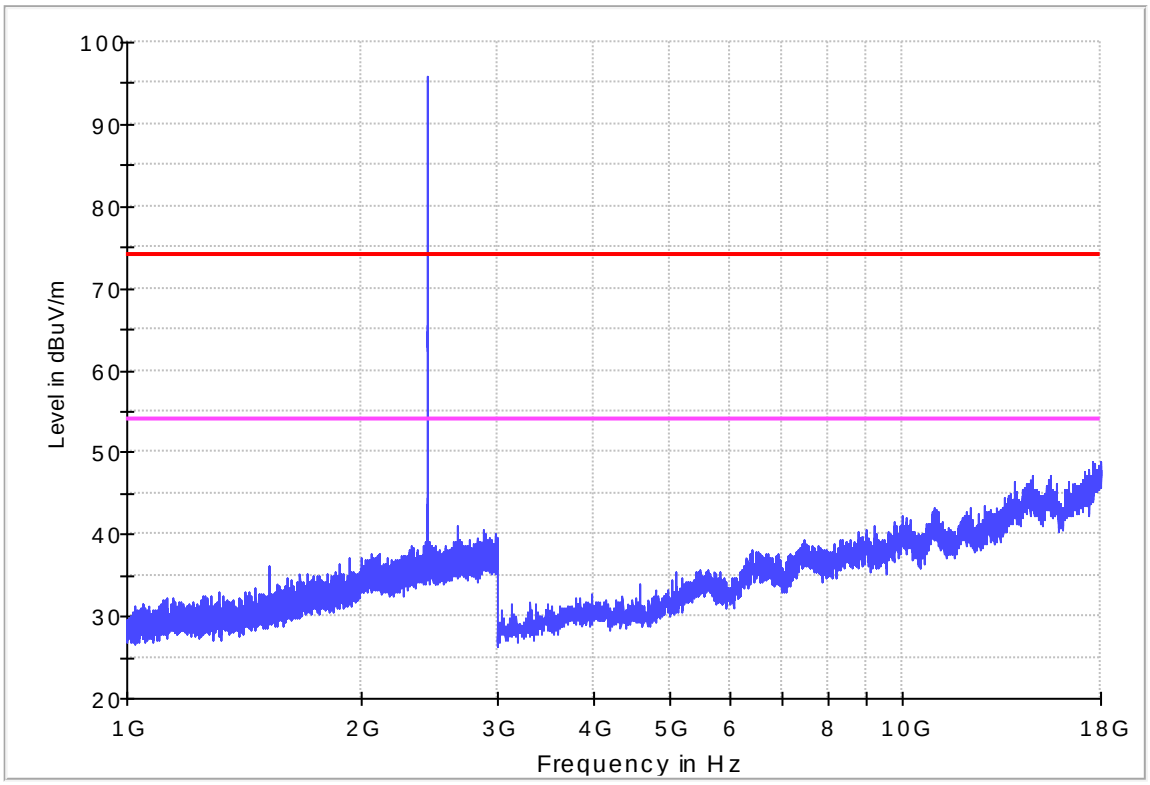
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT 3DH1 CH39 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	



1GHz-18GHz

BDR CH78

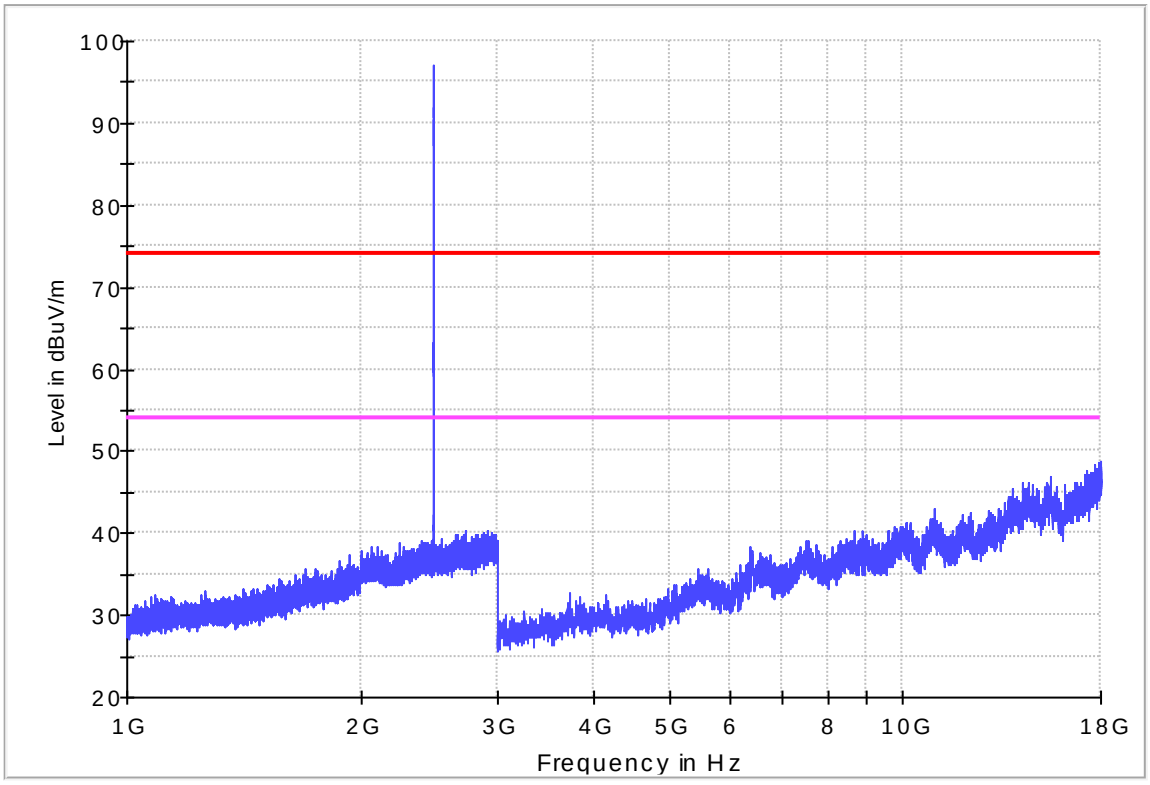
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT 3DH1 CH78 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	



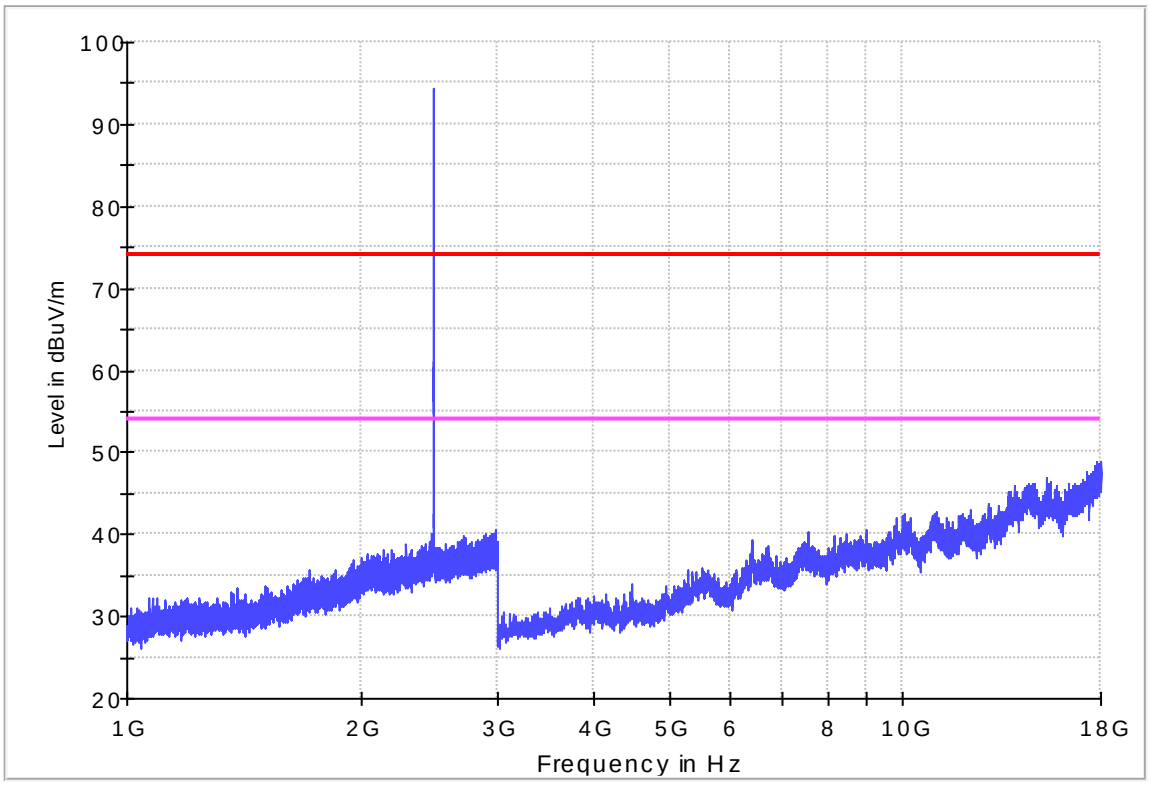
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT 3DH1 CH78 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	



1-18G

BLE CH0

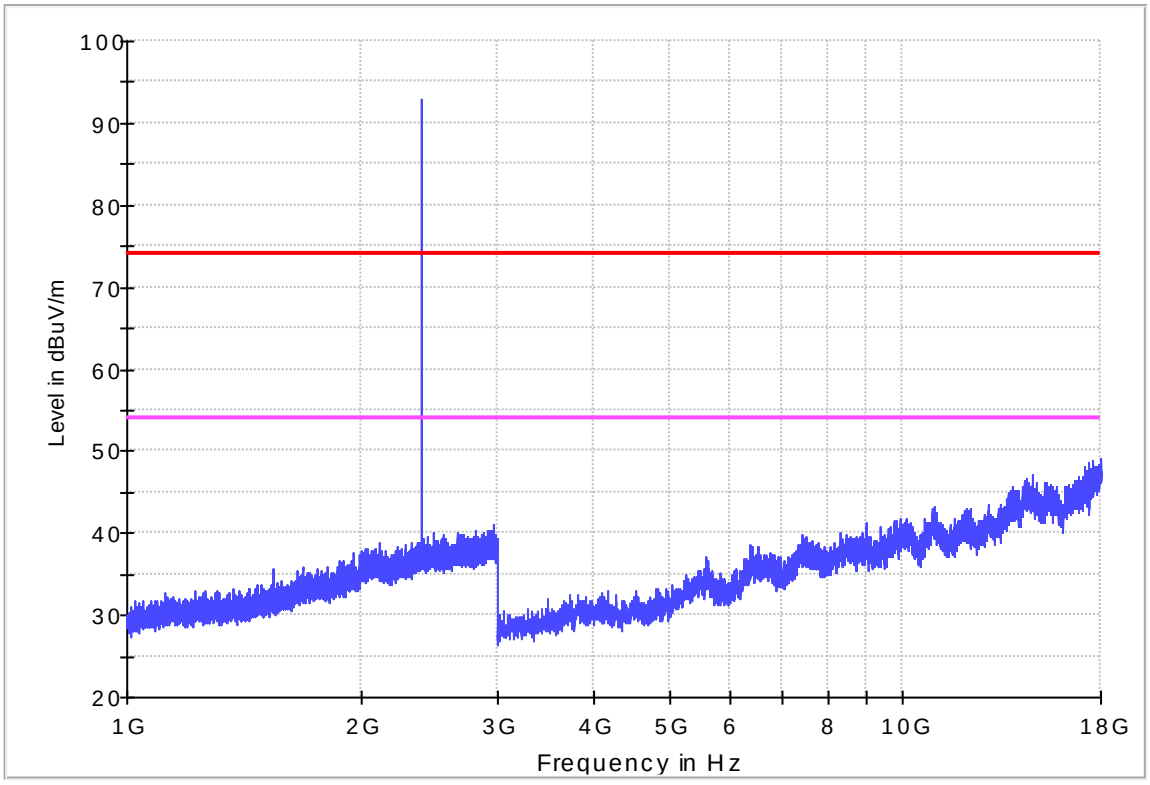
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BLE CH0 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	



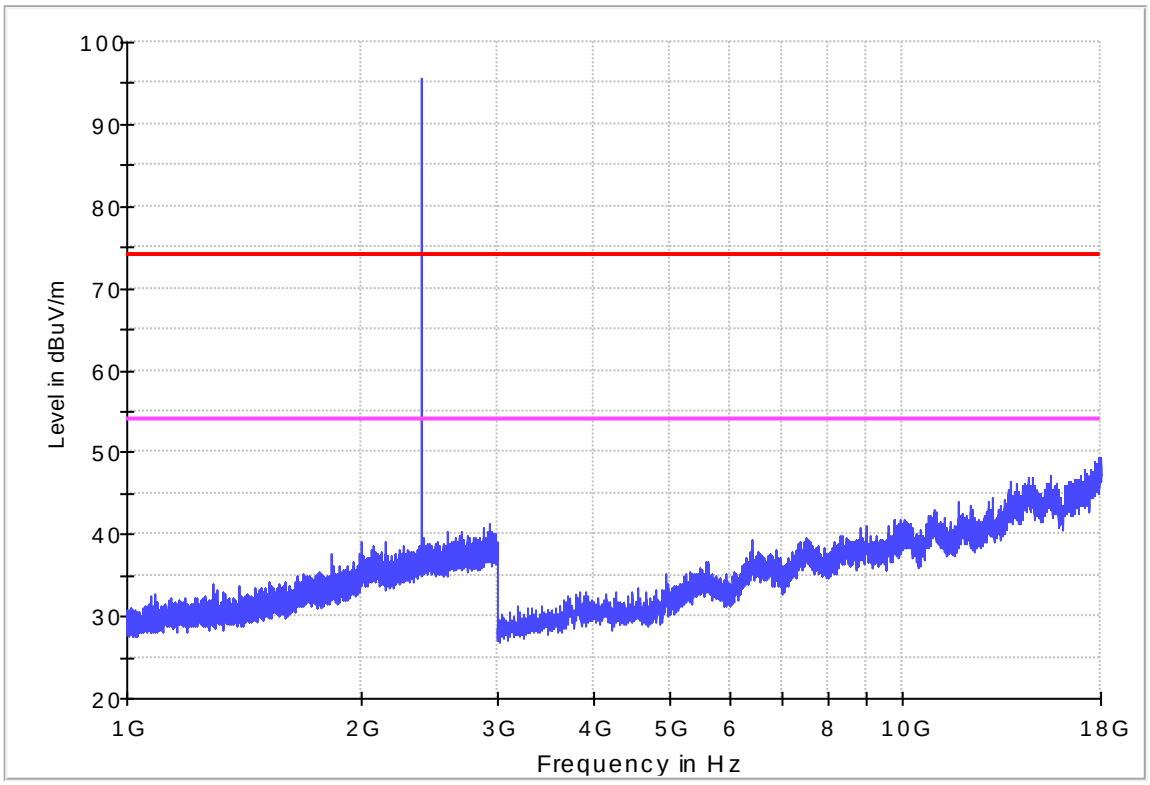
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BLE CH0 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	



1-18G

BLE CH20

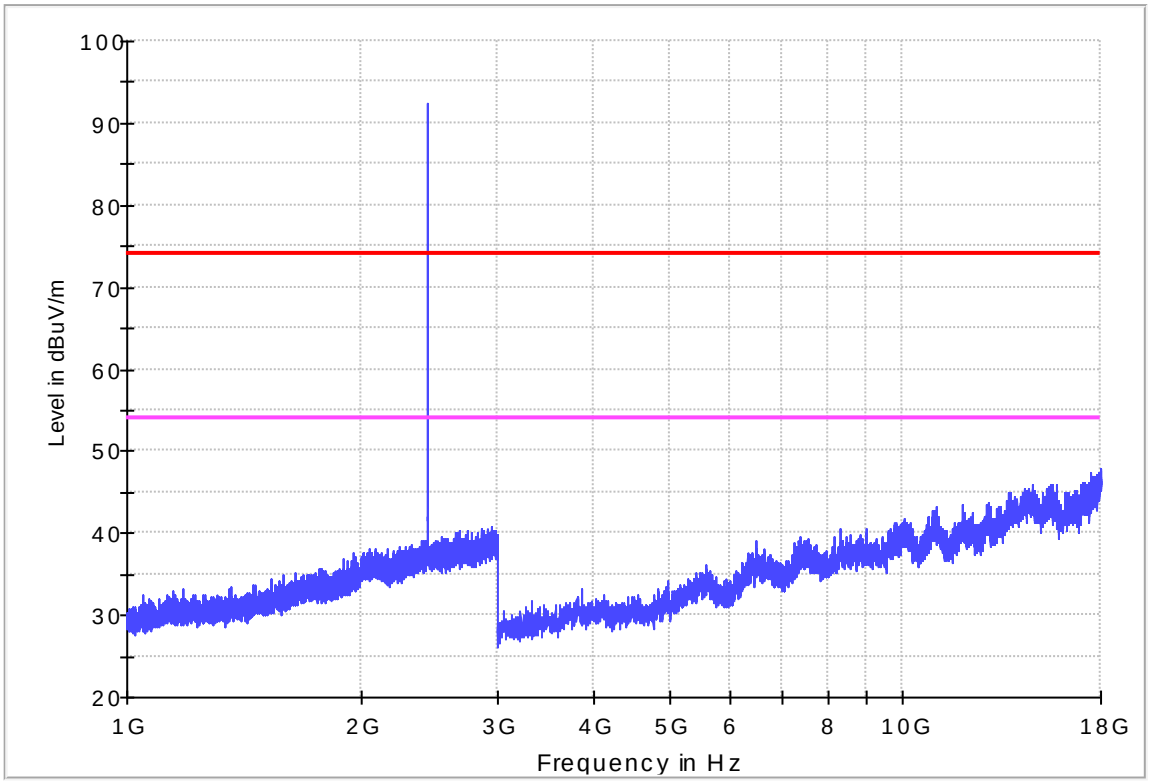
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BLE CH20 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	



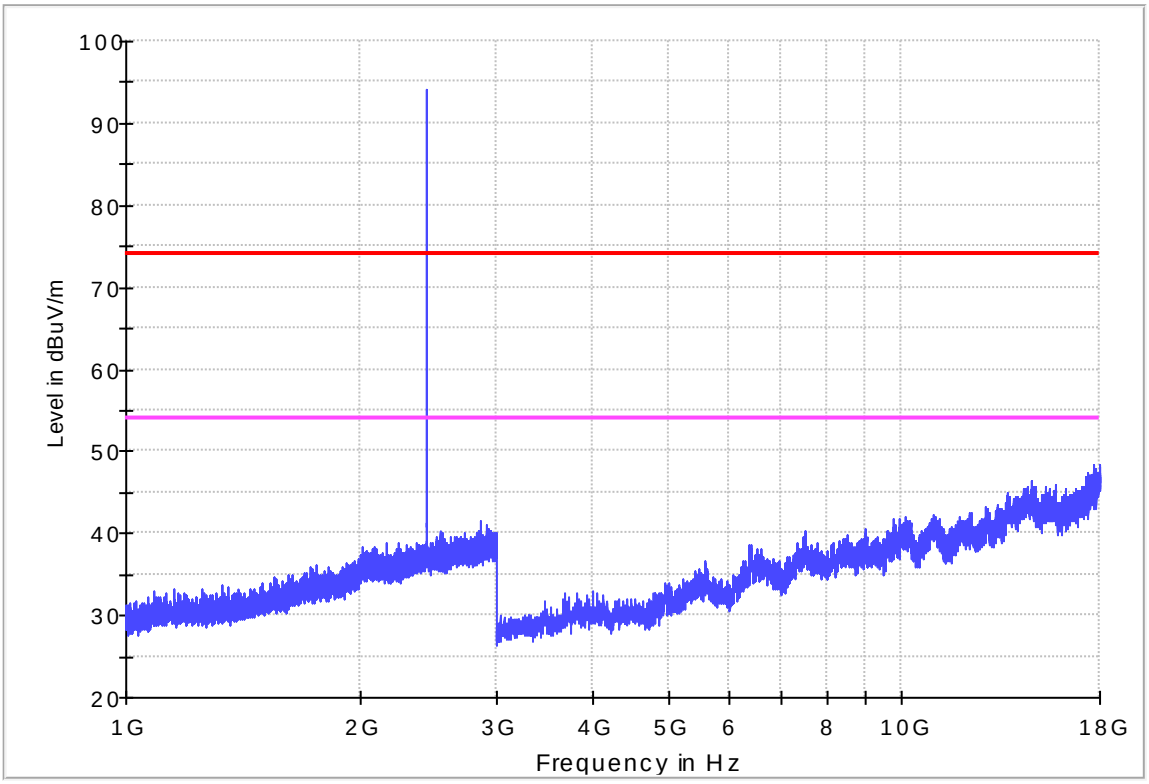
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BLE CH20 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	



1-18G

BLE CH39

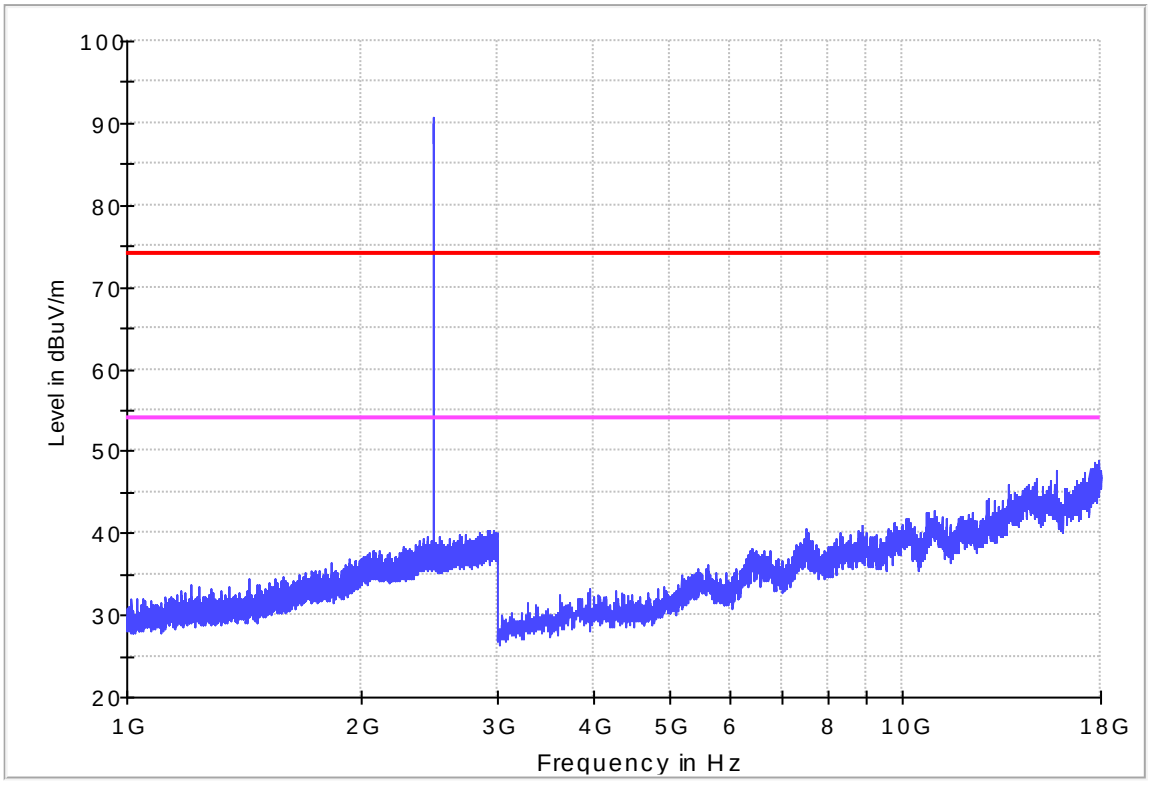
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BLE CH39 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	



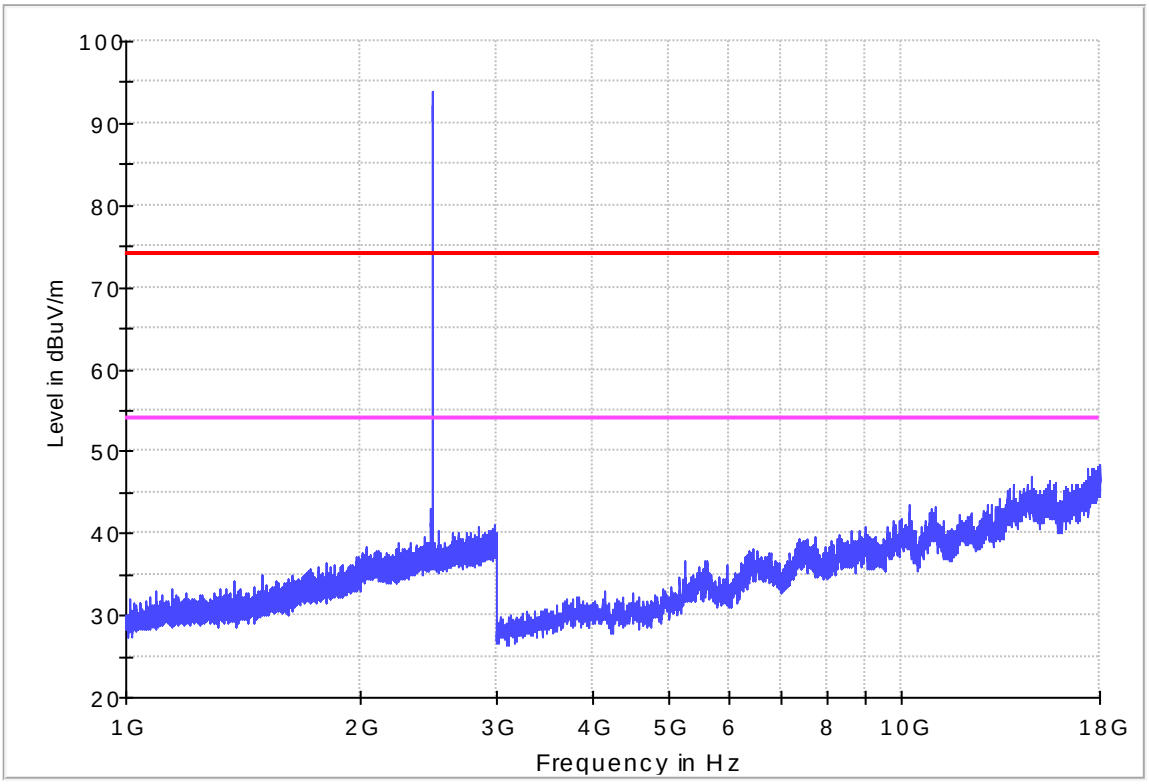
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BLE CH39 TX
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	



18-26.5GHz
No Peak found in pre-scan, only worst case result is listed in this report.

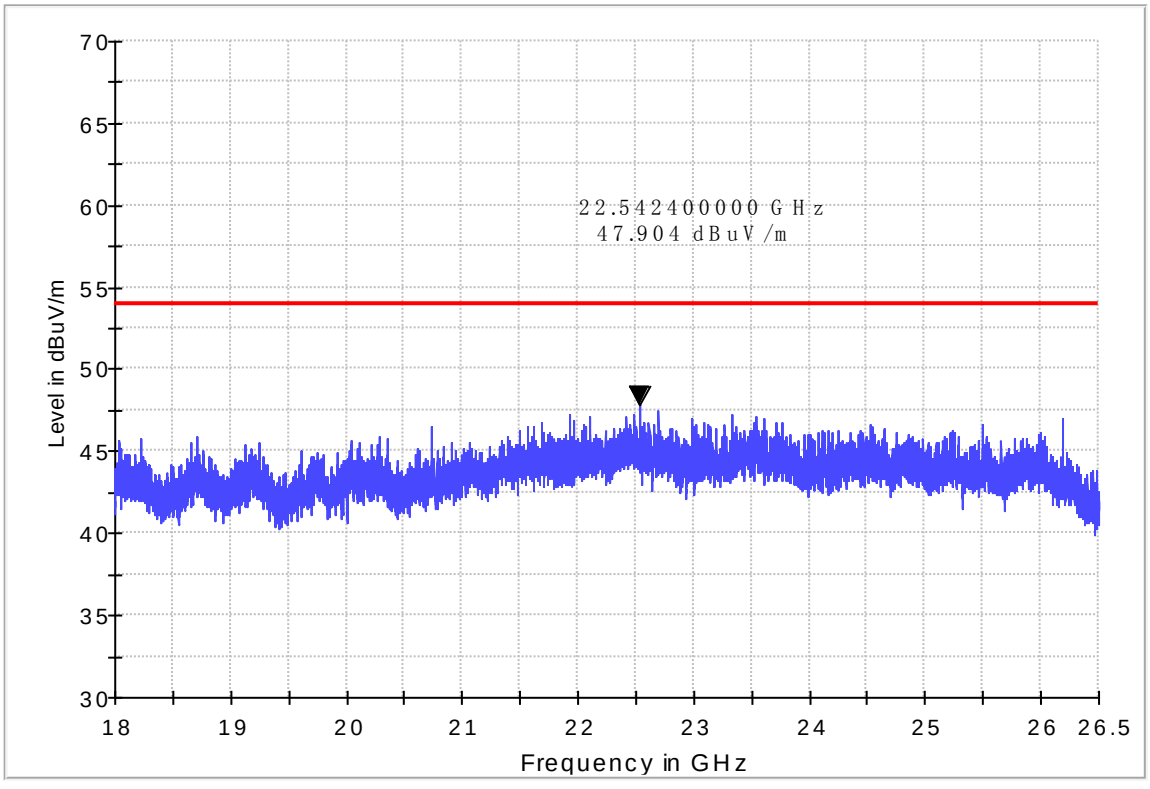
Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	



Radiated Emission

EUT Information

EUT Model Name:	NX629J
Operation mode:	BT
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

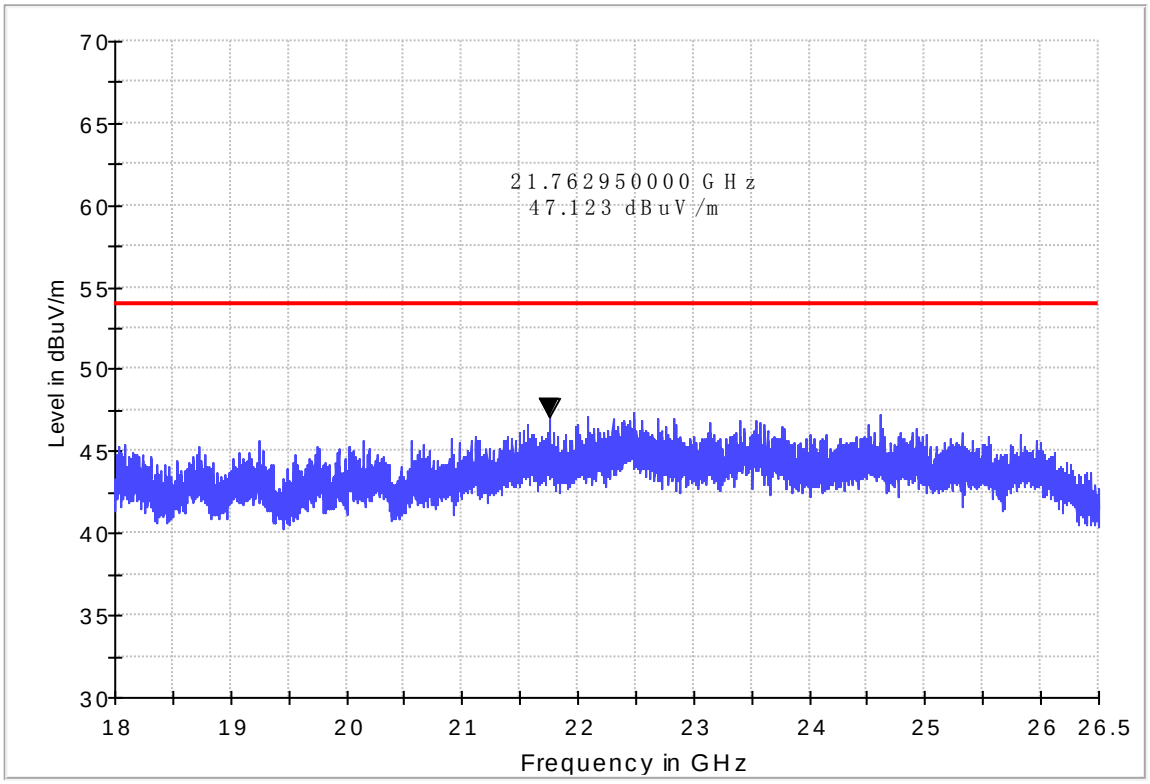


Table 9 Restricted Band Radiated Emission Data

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	
6.31175 - 6.31225	123 - 138	2200 - 2300	
8.291 - 8.294	149.9 - 150.05	2310 - 2390	
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	
12.29 - 12.293	167.72 - 173.2	3332 - 3339	
12.51975 - 12.52025	240 - 285	3345.8 - 3358	
12.57675 - 12.57725	322 - 335.4	3600 - 4400	
13.36 - 13.41			

Except as shown in table 9 to table 15, all other emission of the above band were less than the limit 20dB.

6. BAND EDGES MEASUREMENT

6.1. Limits of Band Edges Measurement

Below –20dB of the highest emission level of operating band (in 100 kHz resolution bandwidth).

6.2. TEST PROCEDURE

1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

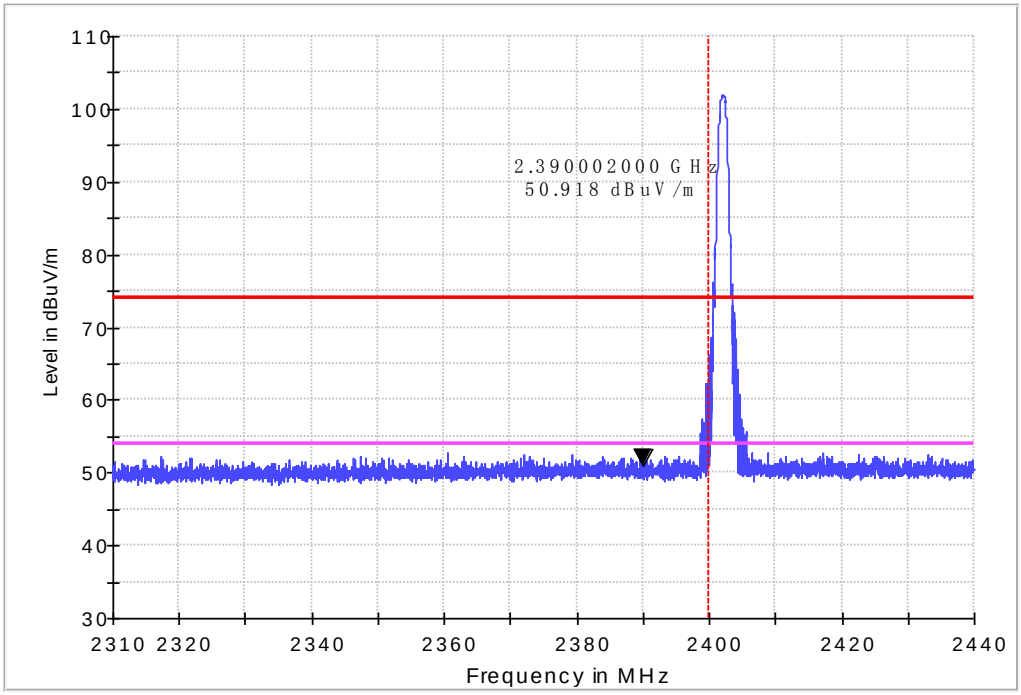
6.3. Test Results

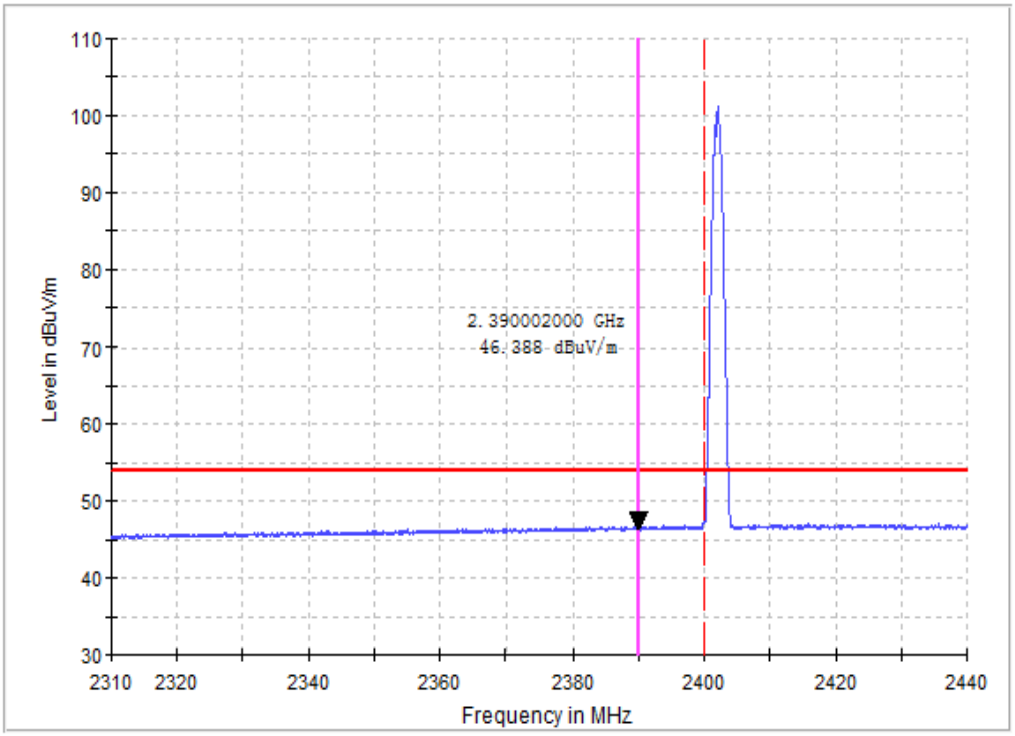
The measured plots are attached on the following. Test data shows compliance with the band edge requirement in part 15.247(d).

Bluetooth Basic Rate

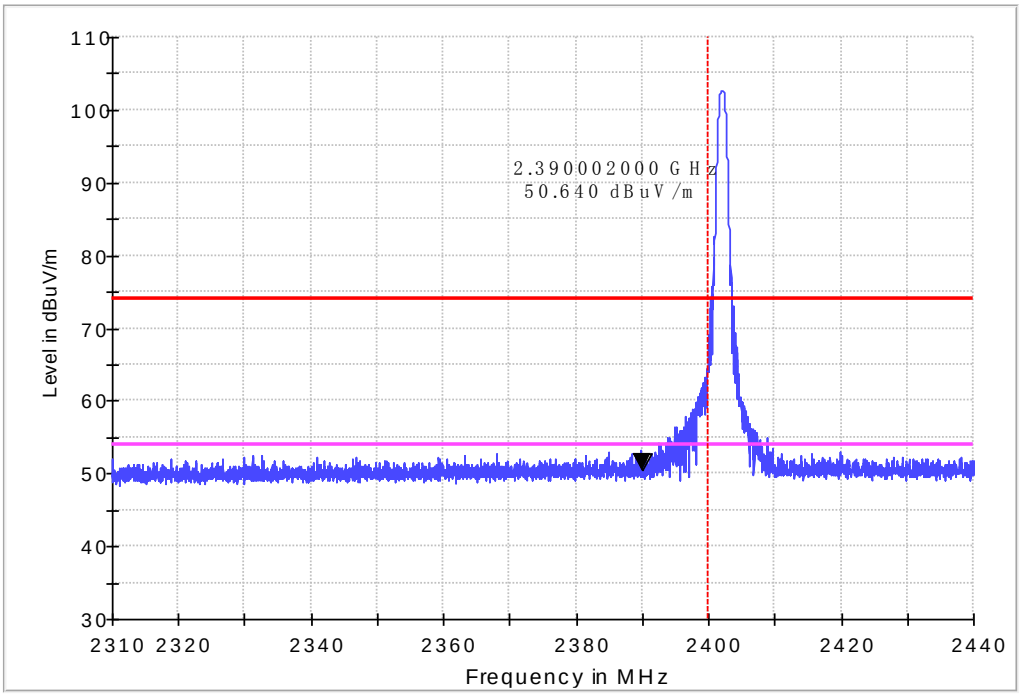
Low edge

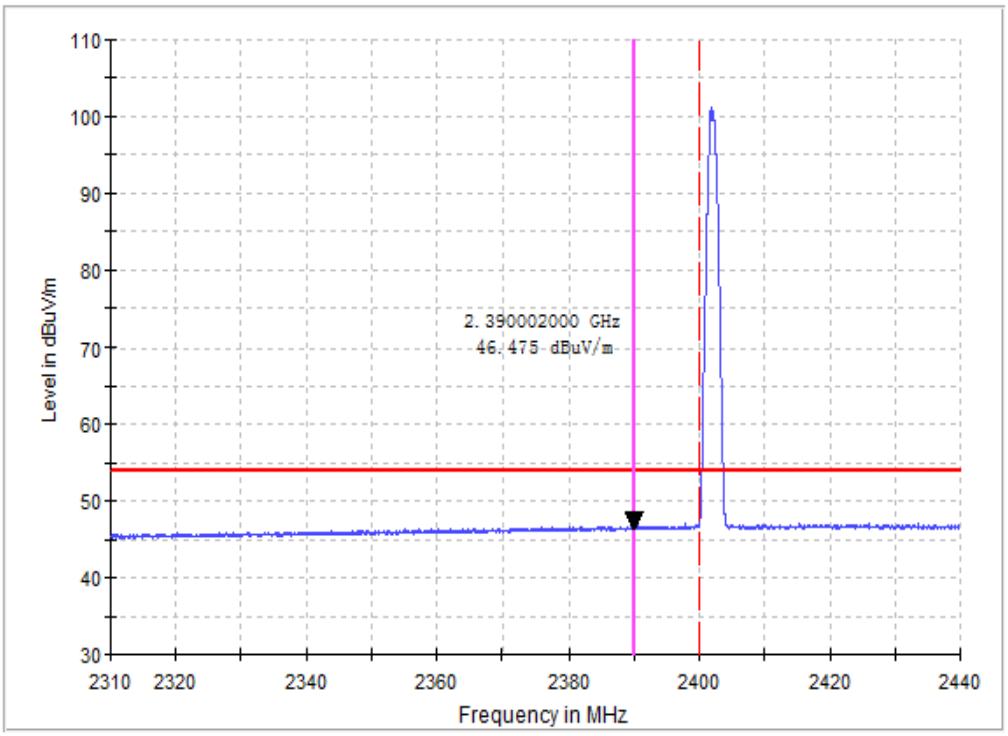
Horizontal





Vertical

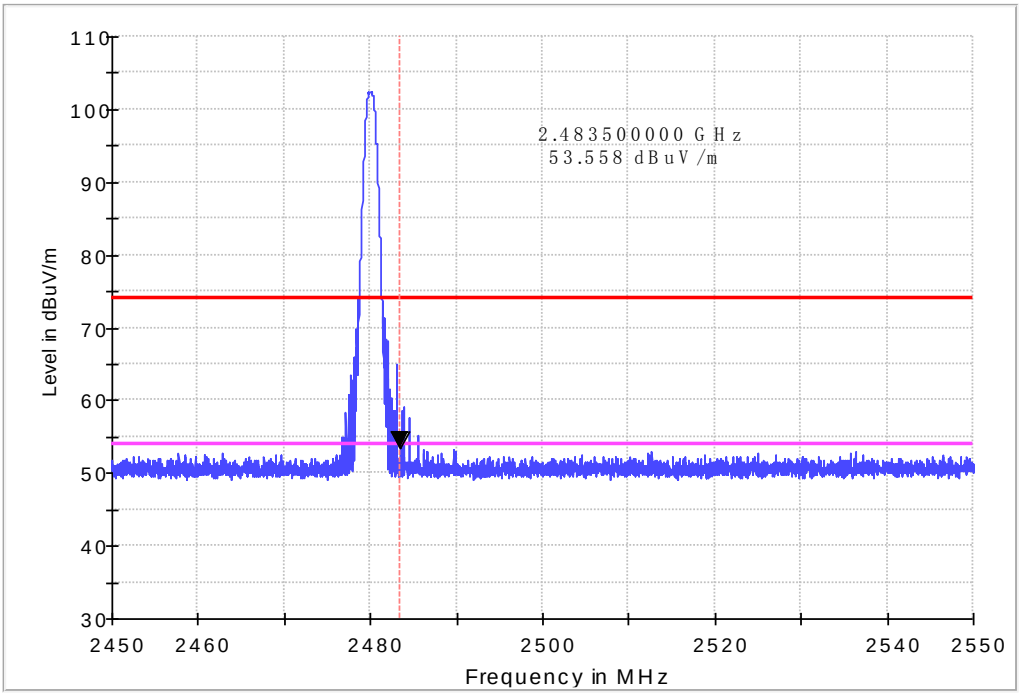

2.390002000 GHz
50.640 dBuV/m
Level in dBuV/m
Frequency in MHz
110
100
90
80
70
60
50
40
30
2310
2320
2340
2360
2380
2400
2420
2440

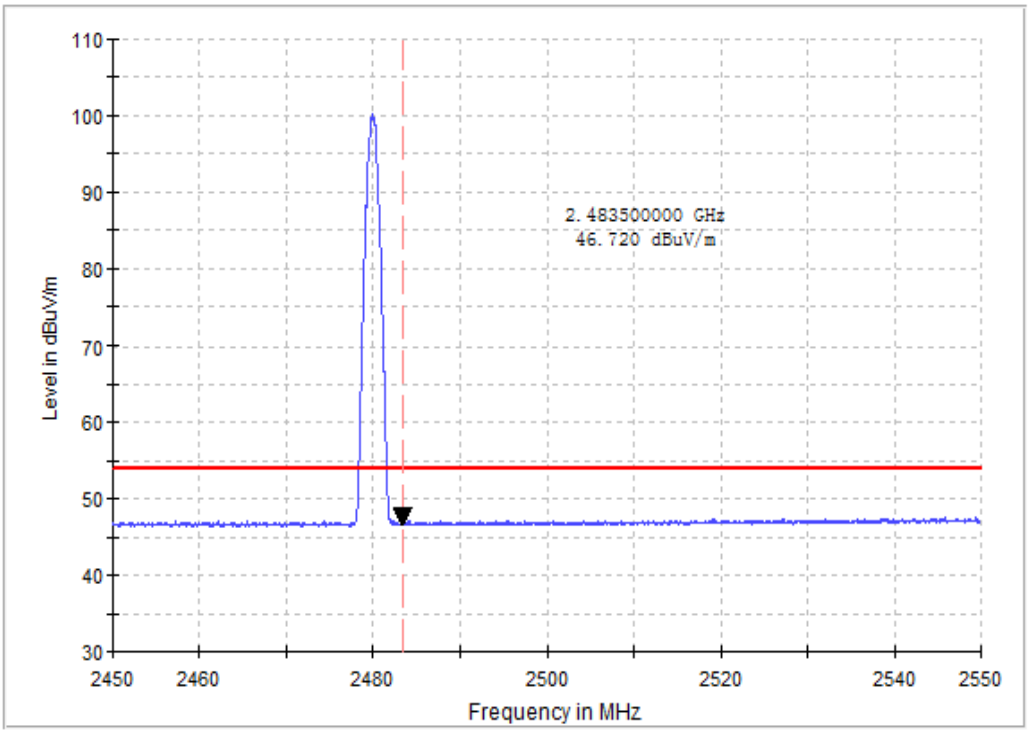

2.390002000 GHz
46.475 dBuV/m
Level in dBuV/m
Frequency in MHz
110
100
90
80
70
60
50
40
30
2310
2320
2340
2360
2380
2400
2420
2440

Bluetooth Basic Rate

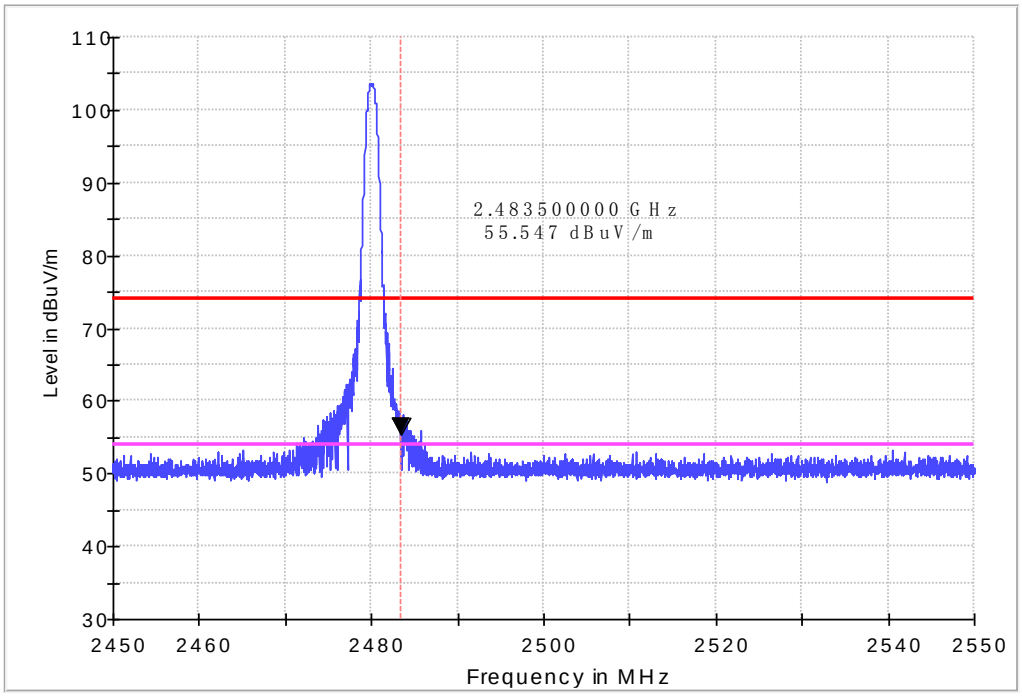
Upper Edge

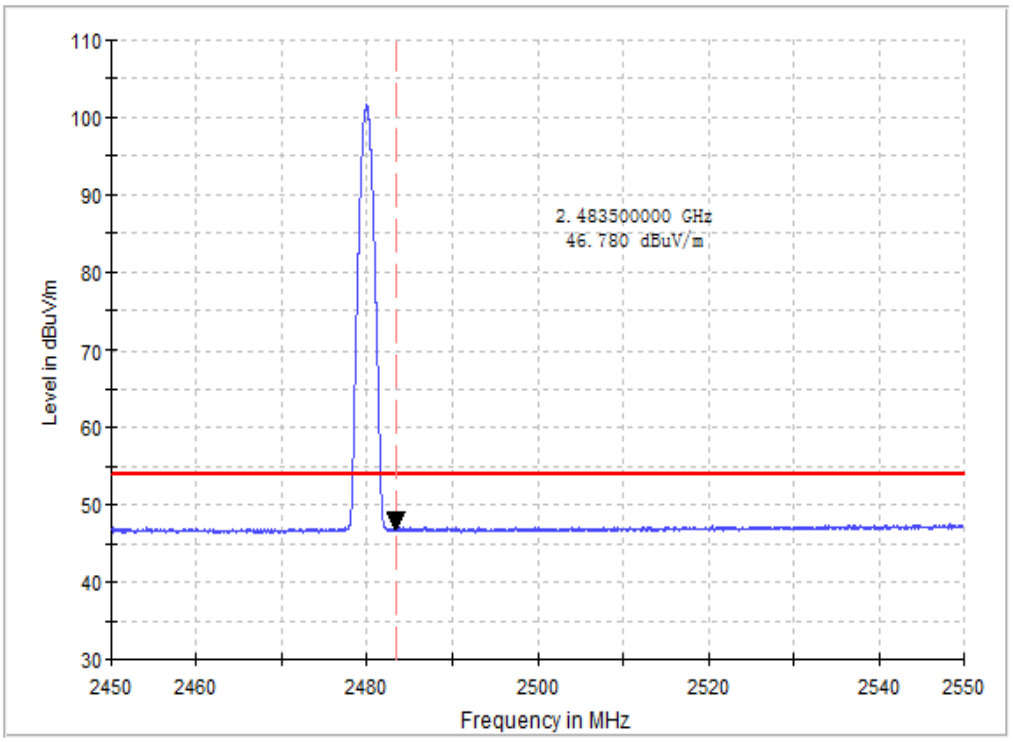
Horizontal





Vertical

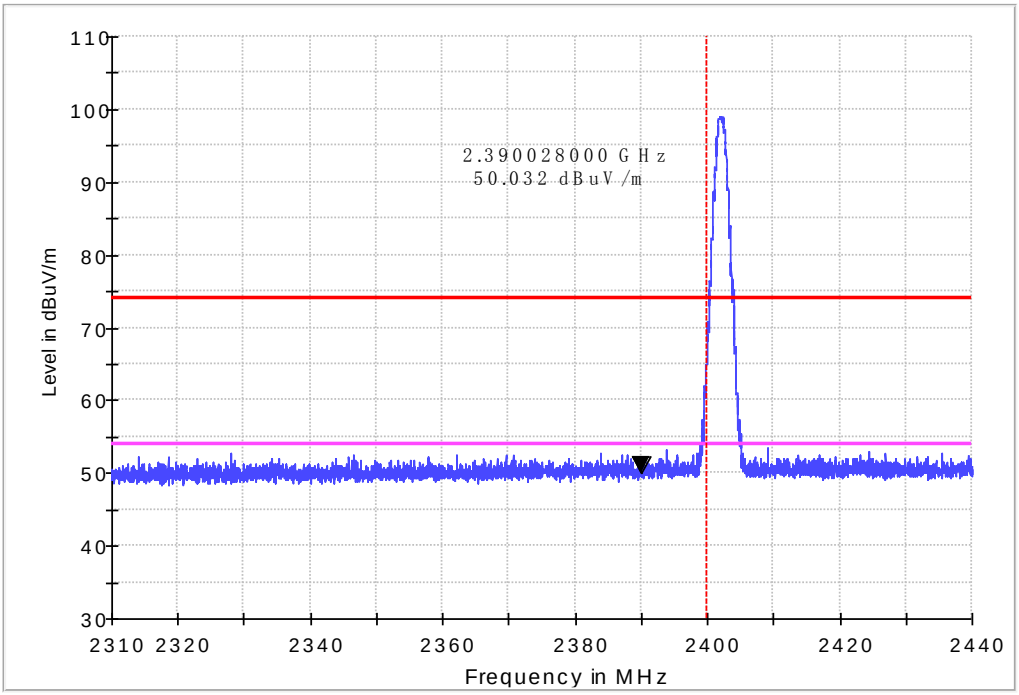

2.483500000 GHz
55.547 dBuV/m
Level in dBuV/m
Frequency in MHz
110
100
90
80
70
60
50
40
30
2450
2460
2480
2500
2520
2540
2550

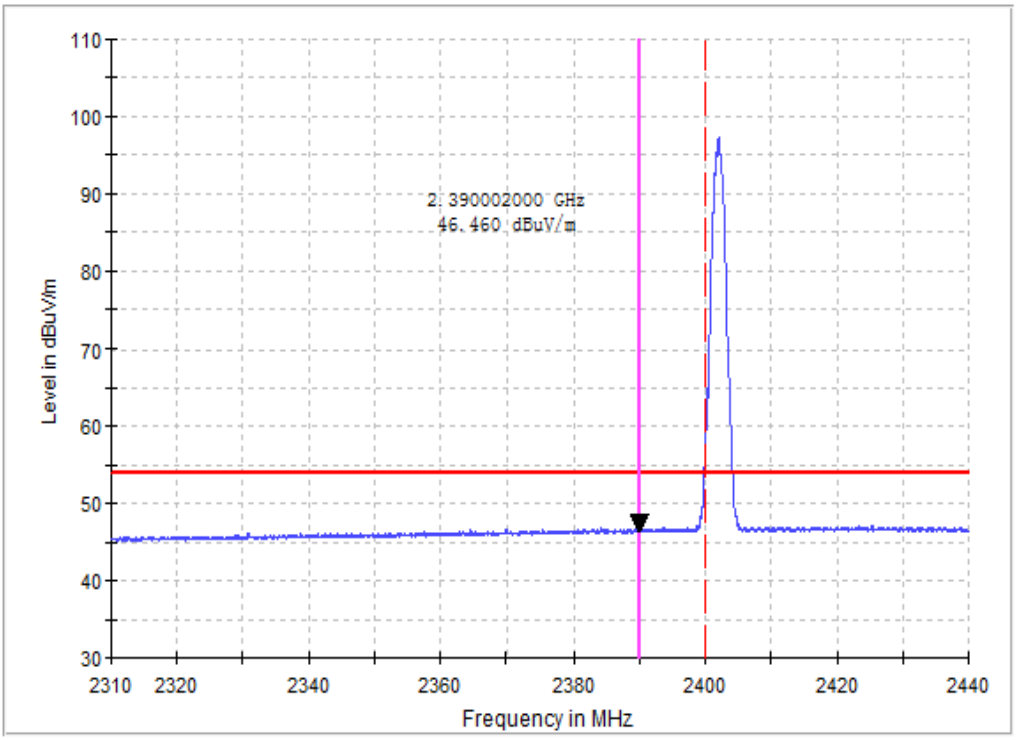

2.483500000 GHz
46.780 dBuV/m
Level in dBuV/m
Frequency in MHz
110
100
90
80
70
60
50
40
30
2450
2460
2480
2500
2520
2540
2550

Bluetooth EDR

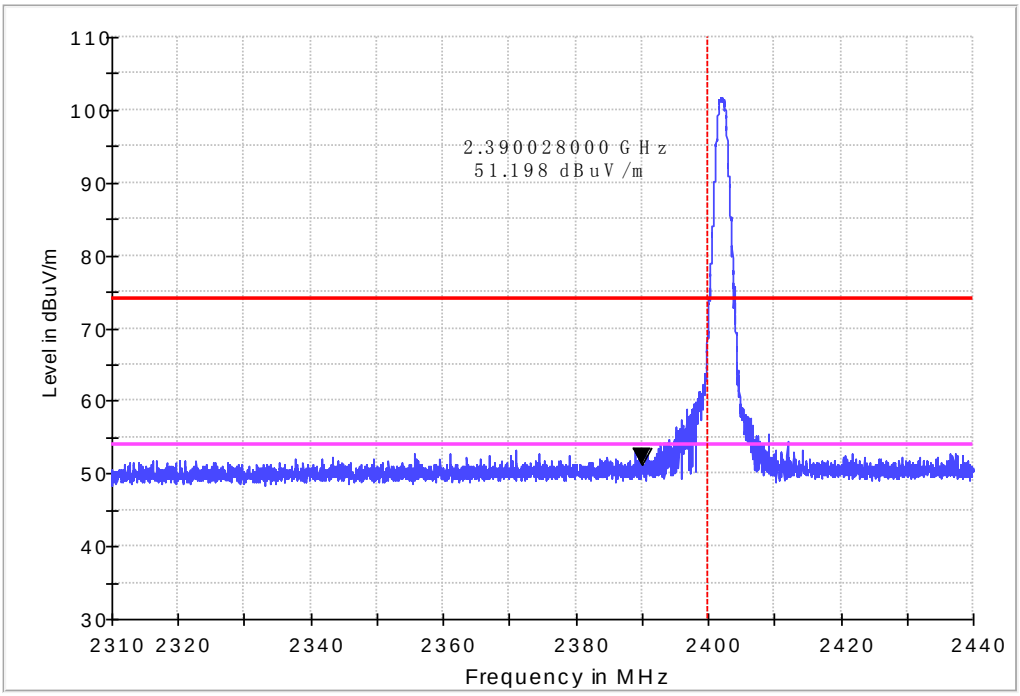
Low edge

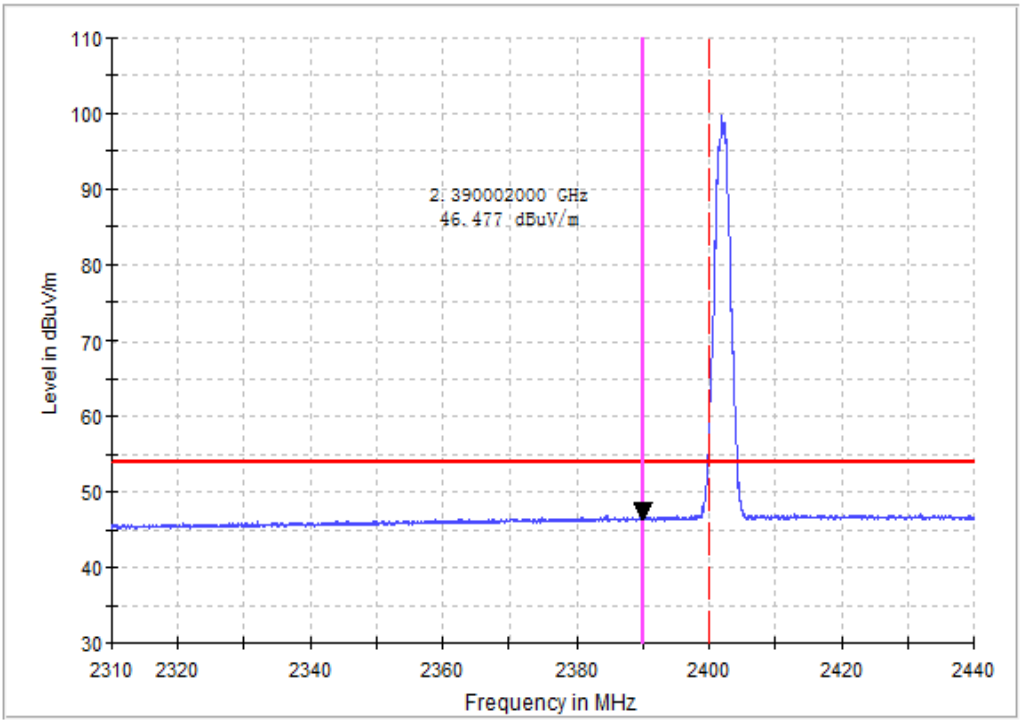
Horizontal





Vertical

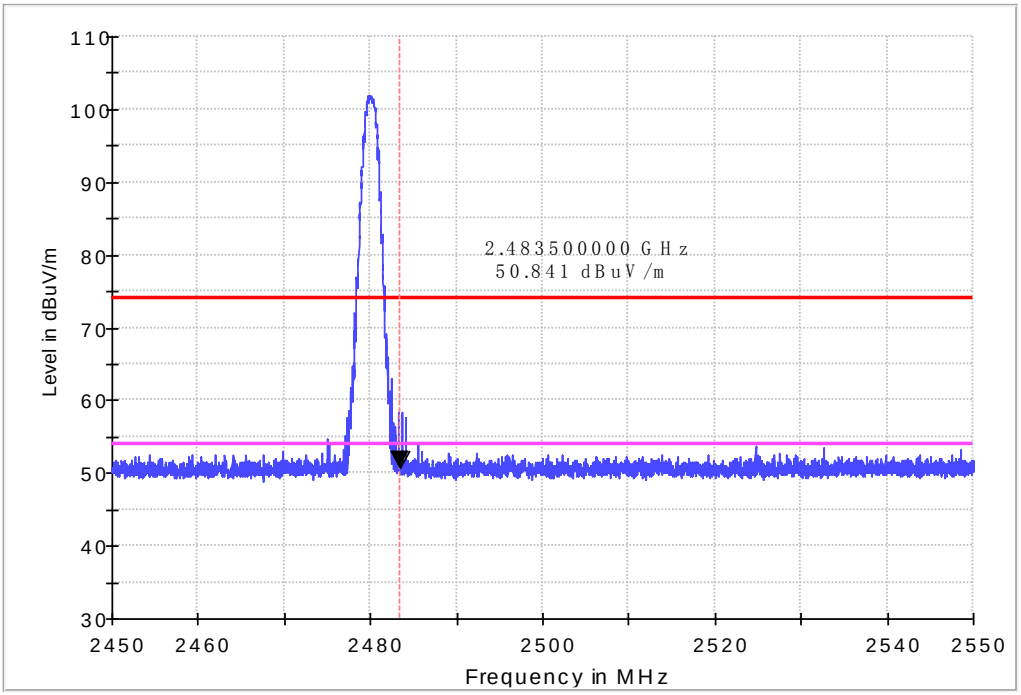

2.390028000 GHz
51.198 dBuV/m
Level in dBuV/m
Frequency in MHz
110
100
90
80
70
60
50
40
30
2310 2320
2340
2360
2380
2400
2420
2440

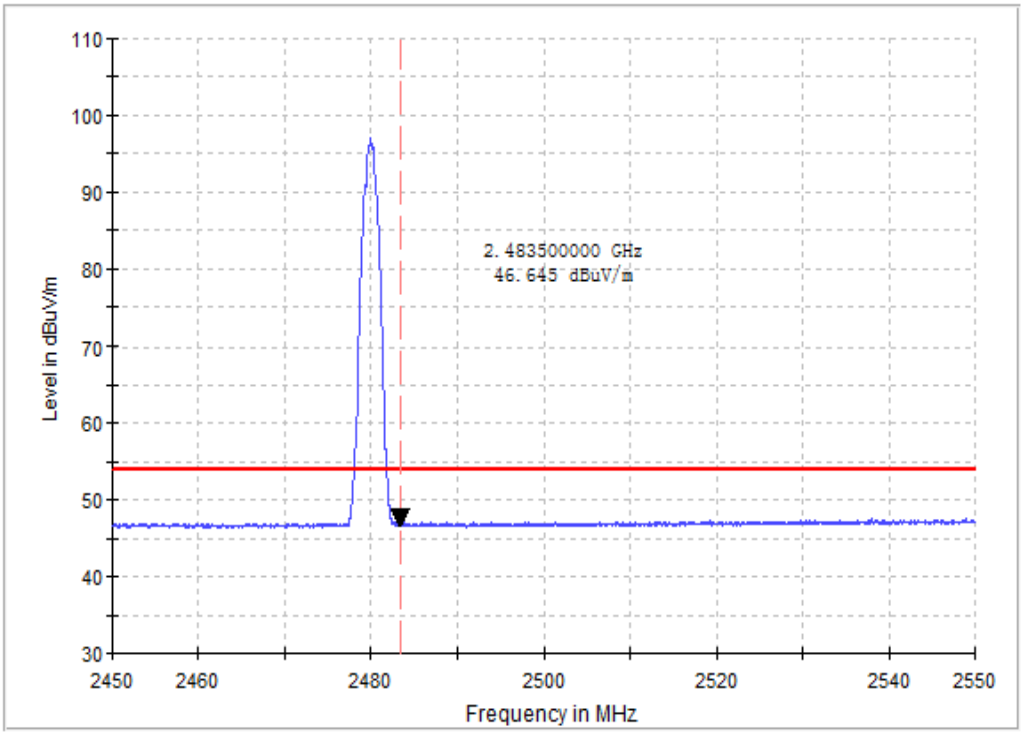

2.390002000 GHz
46.477 dBuV/m
Level in dBuV/m
Frequency in MHz
110
100
90
80
70
60
50
40
30
2310
2320
2340
2360
2380
2400
2420
2440

Bluetooth EDR

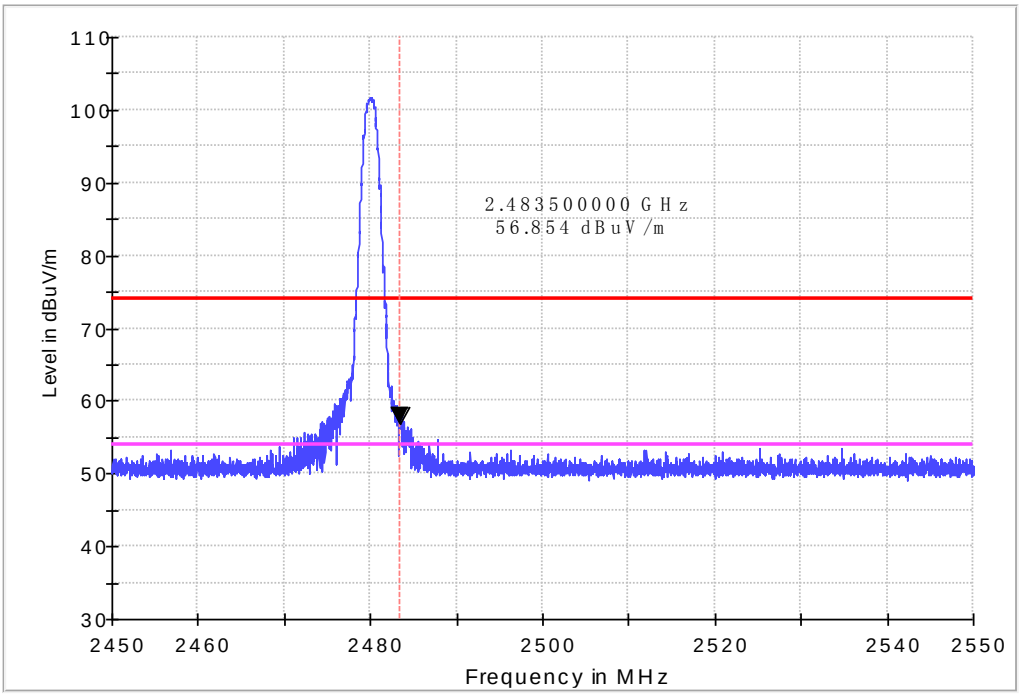
Upper edge

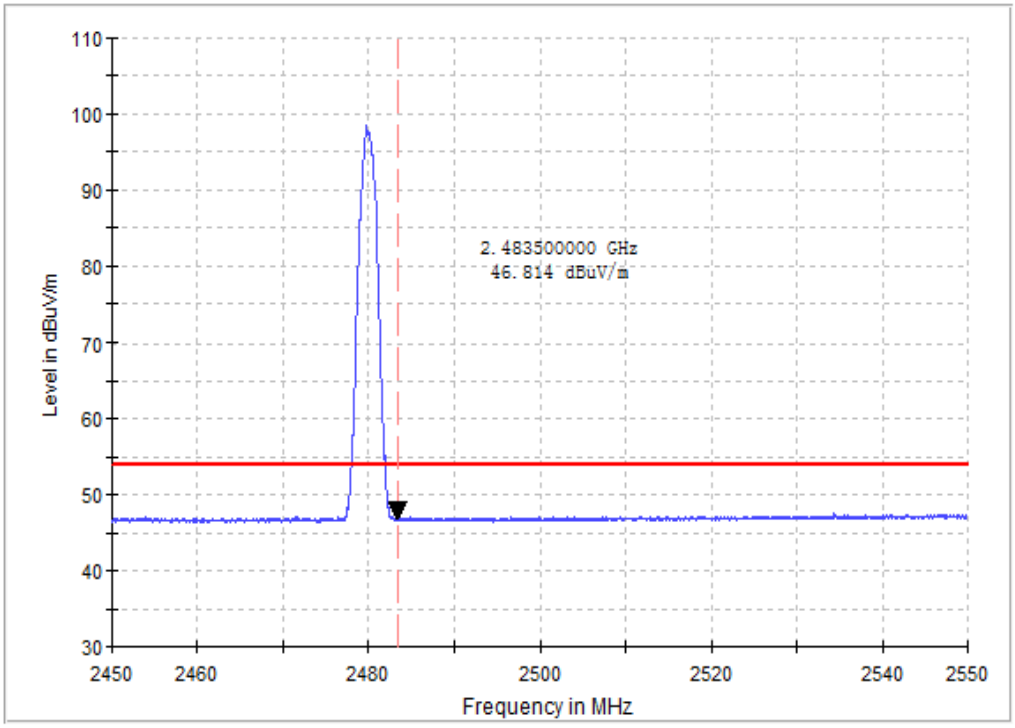
Horizontal





Vertical

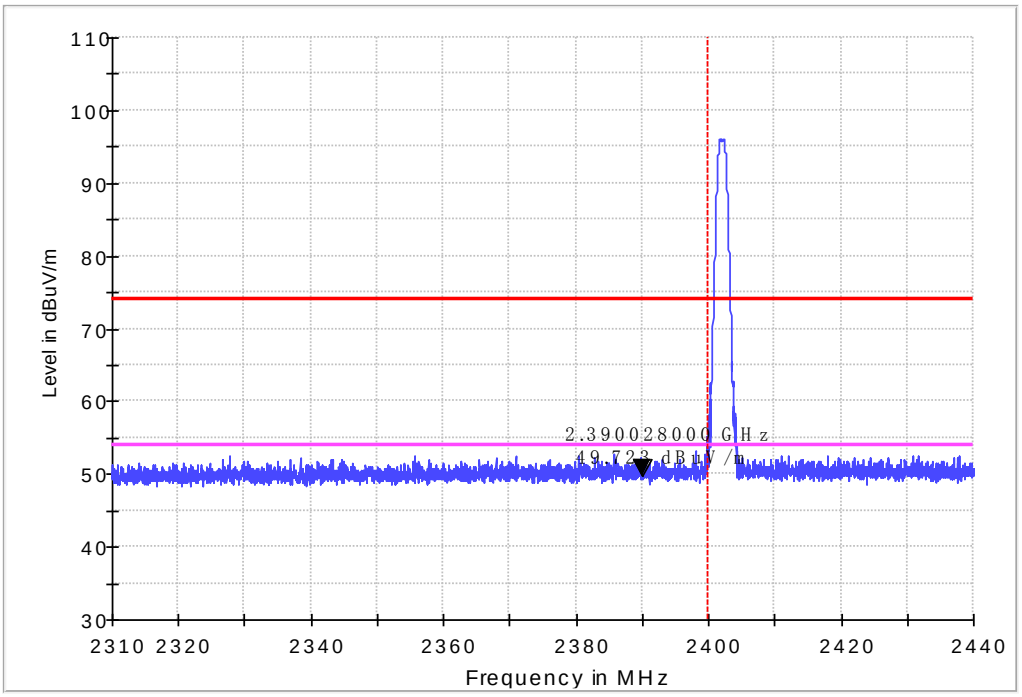

2.483500000 GHz
56.854 dBuV/m
Level in dBuV/m
Frequency in MHz
110
100
90
80
70
60
50
40
30
2450
2460
2480
2500
2520
2540
2550

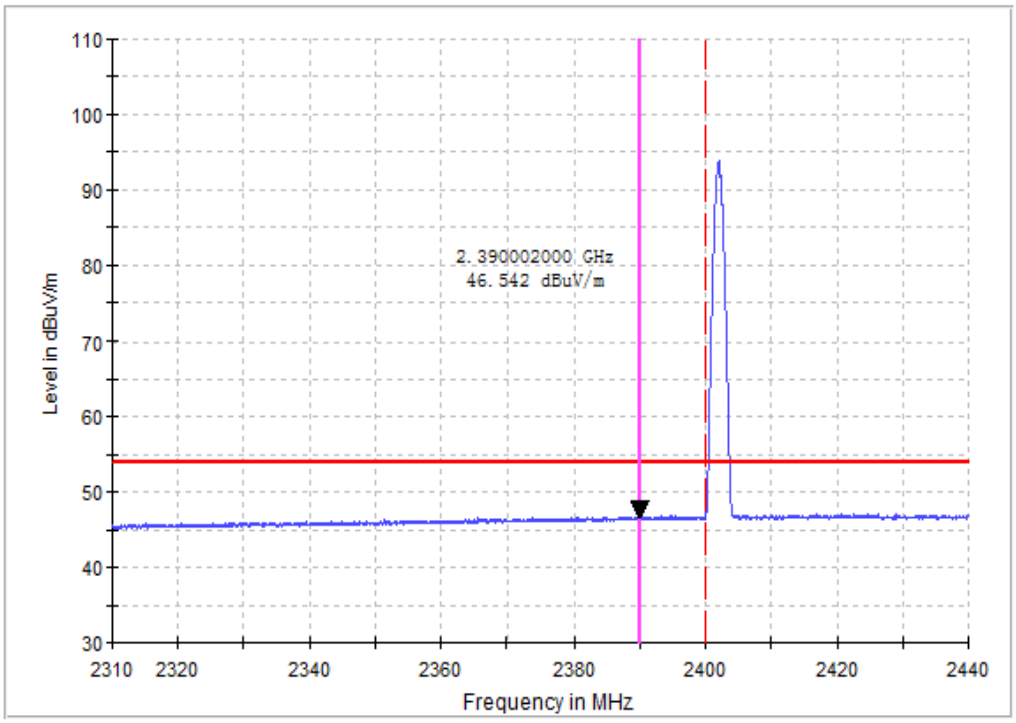

2.483500000 GHz
46.814 dBuV/m
Level in dBuV/m
Frequency in MHz
110
100
90
80
70
60
50
40
30
2450
2460
2480
2500
2520
2540
2550

Bluetooth Low Energy:

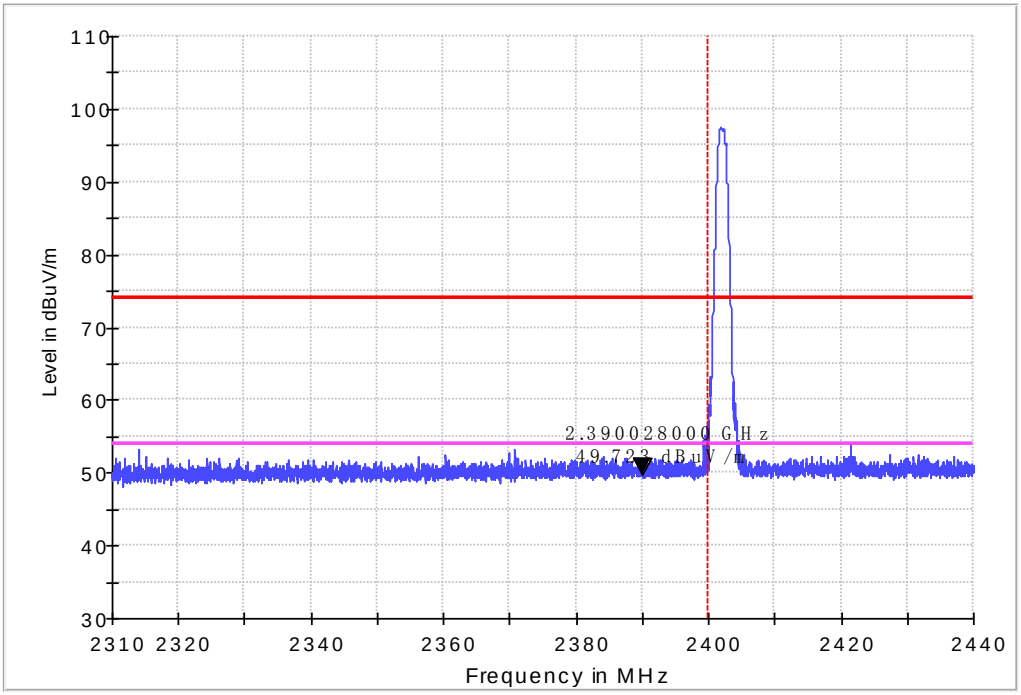
Low edge

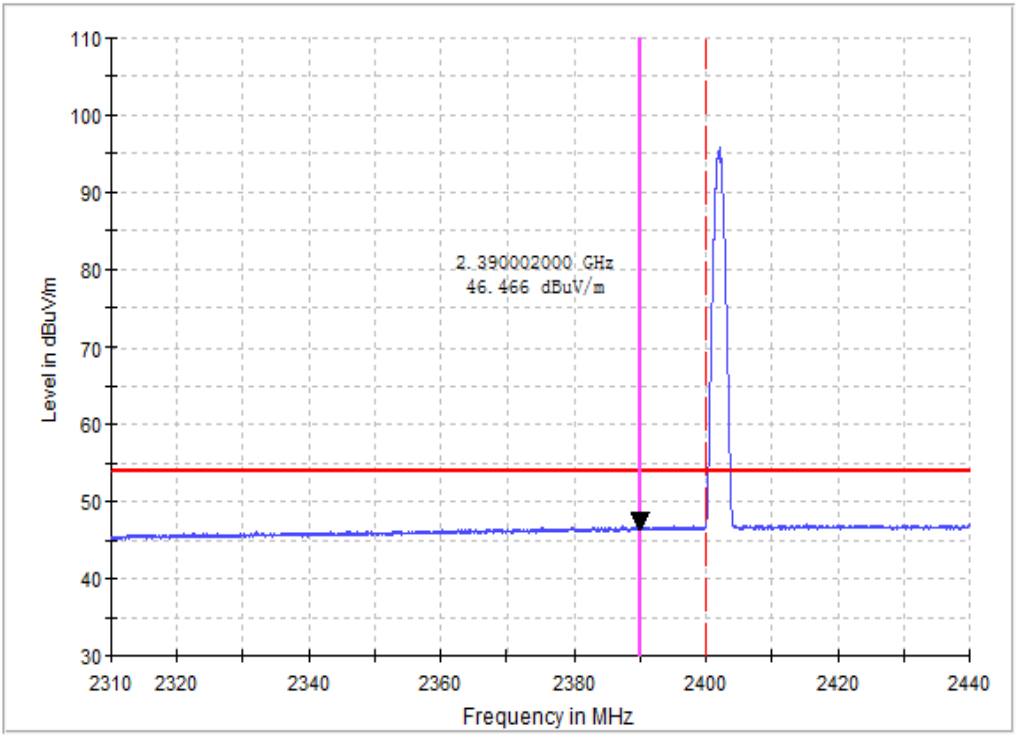
Horizontal





Vertical

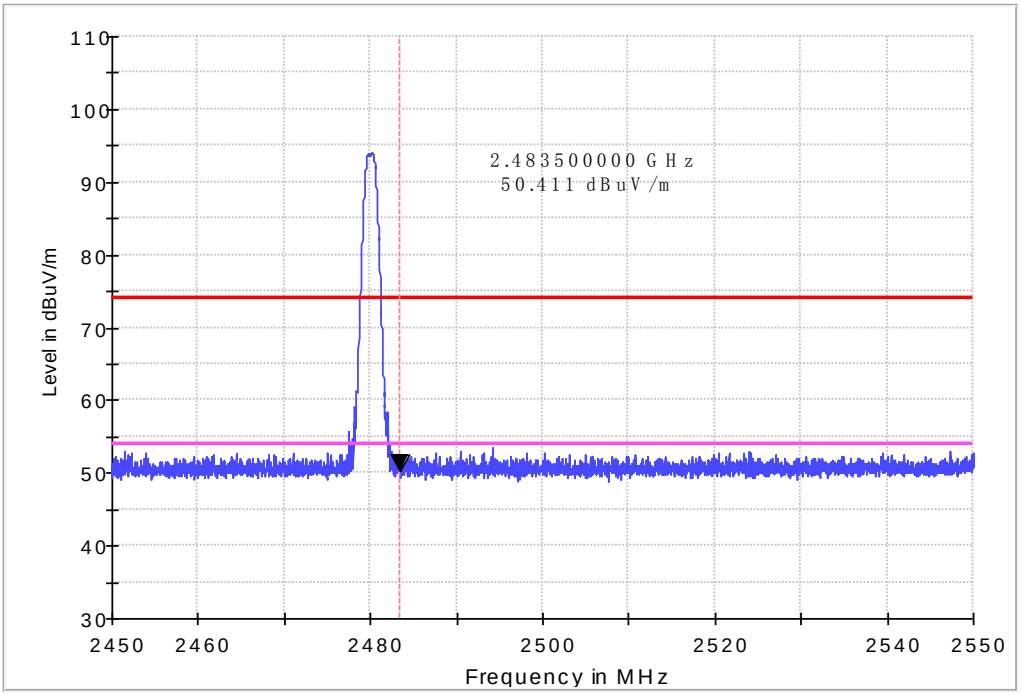

110
100
90
80
70
60
50
40
30
Level in dBuV/m
2.390028000 GHz
49.733 dBuV/m
2310 2320
2340
2360
2380
2400
2420
2440
Frequency in MHz

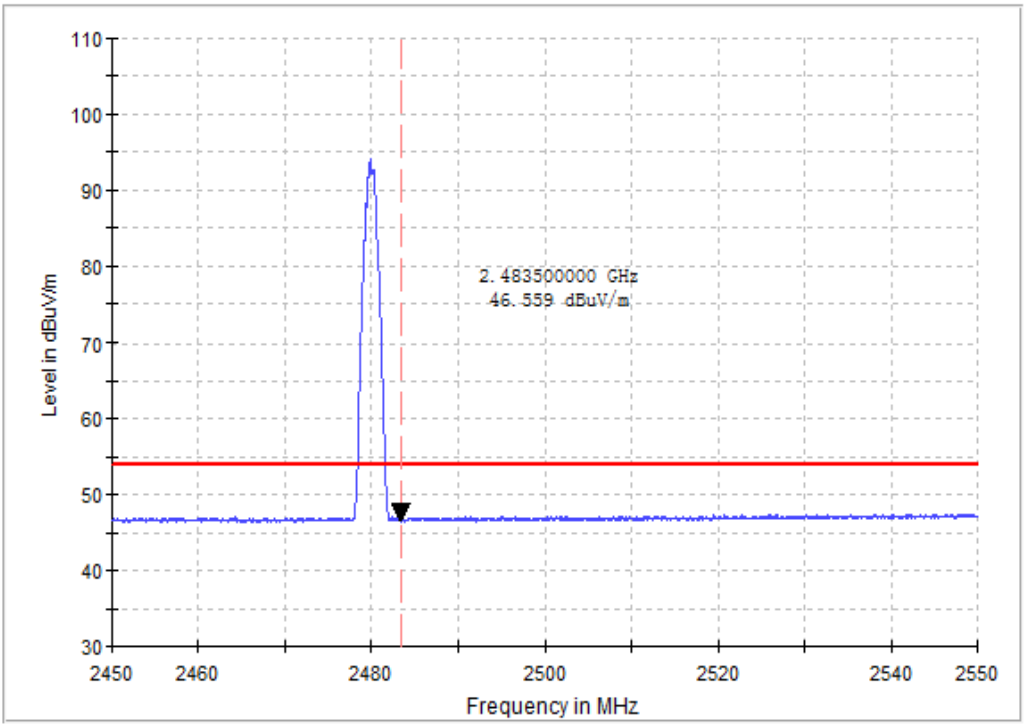

110
100
90
80
70
60
50
40
30
Level in dBuV/m
2.390002000 GHz
46.466 dBuV/m
2310
2320
2340
2360
2380
2400
2420
2440
Frequency in MHz

Bluetooth Low Energy:

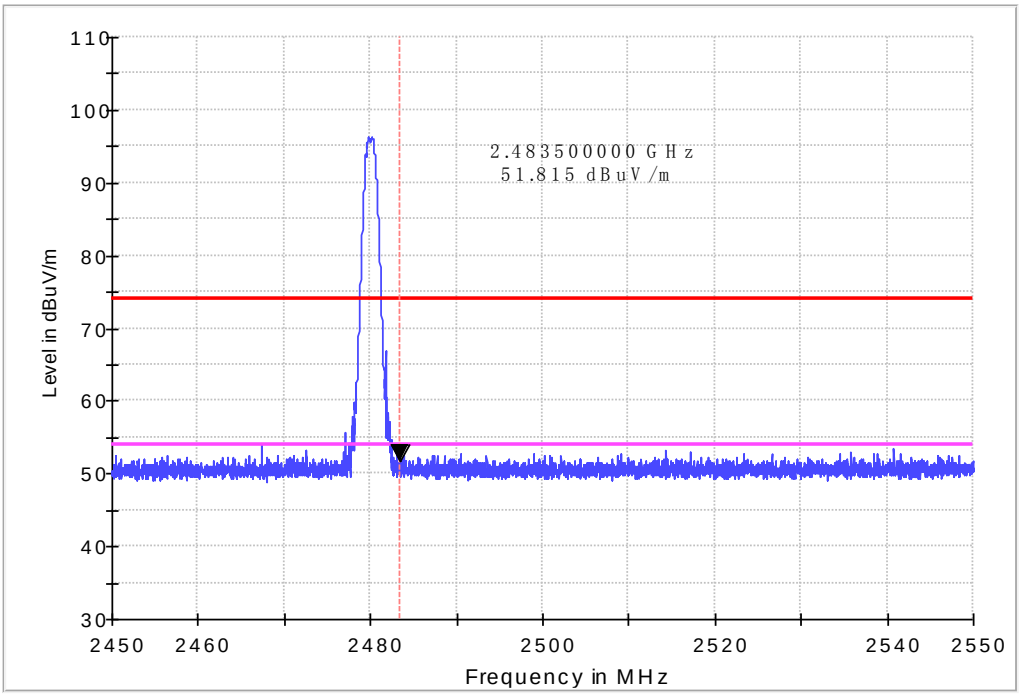
Upper edge

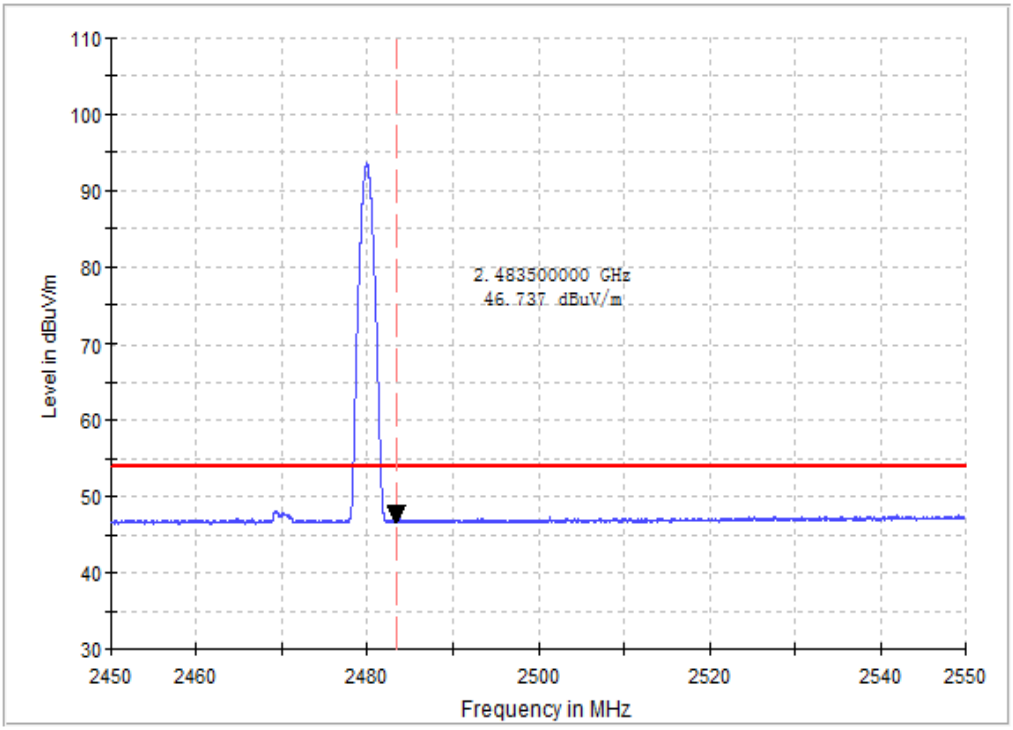
Horizontal





Vertical





----------End of Report----------