

TEST REPORT

For

NFC Android Reader

Model Number: FX205F

FCC ID: 2AGQIFX205

Report Number : WT198003469

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Inspection
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TEST REPORT DECLARATION

Applicant : FAMOCO SAS
Address : 59 avenue Victor Hugo Paris, France
Manufacturer : FAMOCO SAS
Address : 59 avenue Victor Hugo Paris, France
EUT Description : NFC Android Reader
Model No. : FX205F
Trade mark : FAMOCO
Serial Number : /
FCC ID : 2AGQIFX205

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:	<u>Jul.23, 2019</u>
Checked by:	 _____ (Lin Yixiang 林奕翔)	Date:	<u>Jul.23, 2019</u>
Approved by:	 _____ (Lin Bin 林斌)	Date:	<u>Jul.23, 2019</u>

TABLE OF CONTENTS

TEST REPORT DECLARATION	2
1. TEST RESULTS SUMMARY	5
2. GENERAL INFORMATION	6
2.1. Report information.....	6
2.2. Laboratory Accreditation and Relationship to Customer	6
2.3. Measurement Uncertainty	6
3. PRODUCT DESCRIPTION	7
3.1. EUT Description	7
3.2. Related Submittal(s) / Grant (s).....	7
3.3. Block Diagram of EUT Configuration	7
3.4. Operating Condition of EUT	7
3.5. Directional Antenna Gain	8
3.6. Support Equipment List.....	8
3.7. Test Conditions	8
3.8. Special Accessories	8
3.9. Equipment Modifications	8
4. TEST EQUIPMENT USED	9
5. 6DB BANDWIDTH MEASUREMENT	10
5.1. LIMITS OF 6dB BANDWIDTH MEASUREMENT.....	10
5.2. TEST PROCEDURE	10
5.3. TEST SETUP	10
6. MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	12
6.1. LIMITS OF Maximum Conducted Output Power Measurement	12
6.2. TEST PROCEDURE	12
6.3. TEST SETUP	12
6.4. TEST DATA	12
7. MAXIMUM POWER SPECTRAL DENSITY LEVEL MEASUREMENT	14
7.1. LIMITS OF Maximum Power Spectral Density Level Measurement.....	14
7.2. TEST PROCEDURE	14
7.3. TEST DATA	14
8. CONDUCTED BANDEDGE AND SPURIOUS MEASUREMENT	16
8.1. LIMITS OF Conducted Bandedge and Spurious Measurement	16
8.2. TEST PROCEDURE	16
8.3. TEST DATA	17
9. RADIATED BANDEDGE AND SPURIOUS MEASUREMENT	20
9.1. LIMITS OF Radiated Bandedge and Spurious Measurement.....	20
9.2. TEST PROCEDURE	20
9.3. TEST DATA	20
10. CONDUCTED EMISSION TEST FOR AC POWER PORT MEASUREMENT	41
10.1. Test Standard and Limit	41
10.2. Test Procedure	41
10.3. Test Arrangement.....	41

10.4.	Test Data	41
11.	ANTENNA REQUIREMENTS	48
11.1.	Applicable requirements	48
11.2.	Antenna Connector.....	48
11.3.	Antenna Gain.....	48

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	FCC Rules	Test Results
6dB DTS bandwidth	15.247 (a) (2)	Pass
Maximum Peak Conducted Power	15.247 (b) (3)	Pass
Maximum Power Spectral Density Level	15.247 (3)	Pass
Conducted Bandedge and Spurious	15.247 (d)	Pass
Radiated Bandedge and Spurious	15.247 (d) 15.209 15.205	Pass
Conducted emission test for AC power port	15.207	Pass
Antenna Requirement	15.203	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

Conducted Emission

9 kHz~30MHz 2.9dB

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 : NFC Android Reader
Manufacturer : FAMOCO SAS
Model Number : FX205F
Operate Frequency : 2.402GHz~2.480GHz
Antenna Designation : BT: PIFA ANTENNA +1.3dBi
Operating voltage : 3.5V (Low)/3.8V (Nominal)/ 4.35V (Max)
Software Version : MOLY.LR12A.R2.MP.V44.1
Hardware Version : F205_MB_V2.0
Remark: --

Bluetooth Low Energy:

Table 2 Working Frequency List

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

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

This submittal(s) (test report) is intended for FCC ID: **2AGQIFX205** filing to comply with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C Rules.

3.3.Block Diagram of EUT Configuration

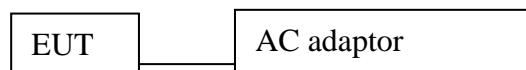


Figure 1 EUT setup

3.4.Operating Condition of EUT

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

Test mode is configured to be with duty cycle >98%

3.5. Directional Antenna Gain

The EUT does NOT support a WIFI MIMO function.
Directional gain need NOT to be considered.

3.6. Support Equipment List

Table 3 Support Equipment List

Name	Model No	S/N	Manufacturer
Adaptor 1# for EUT	HJ528-0500200	--	Good Fortune (Dongguan) Electronics & Technology Co., Ltd.
Adaptor 2# for EUT	HJ-0502000W2-US	--	ShenZhen HuaJin Electronics CO.,LTD
Battery for EUT	FX205 Series	--	Zuhai Greaton Electronic Technology Co.,Ltd..
USB for EUT	--	--	--
Earphone	--	--	--

3.7. Test Conditions

Date of test : Jun.29, 2019- Jul.17, 2019
Date of EUT Receive : Jun.20, 2019
Temperature: 22°C-26 °C
Relative Humidity: 41%-53%

3.8. Special Accessories

Not available for this EUT intended for grant.

3.9. 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
SB2603	Test Receiver	R&S	ESCS30	Feb.20,2019	1 Year
SB8501/06	AMN	R&S	ESH2-Z5	Feb.20,2019	1 Year
SB12943	Test Receiver	R&S	ESR7	Dec.06,2018	1 Year
SB5472/02	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
SB9059	Preamplifier	R&S	SCU-40	Aug.29,2018	1 Year
SB7941/02	Signal Analyzer	R&S	FSU26	May.29,2019	1 Year

5. 6DB BANDWIDTH MEASUREMENT

5.1.LIMITS OF 6dB BANDWIDTH MEASUREMENT

CFR 47 (FCC) part 15.247 (a) (2), 558074 D01 DTS Meas Guidance v05r02

5.2.TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer.

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

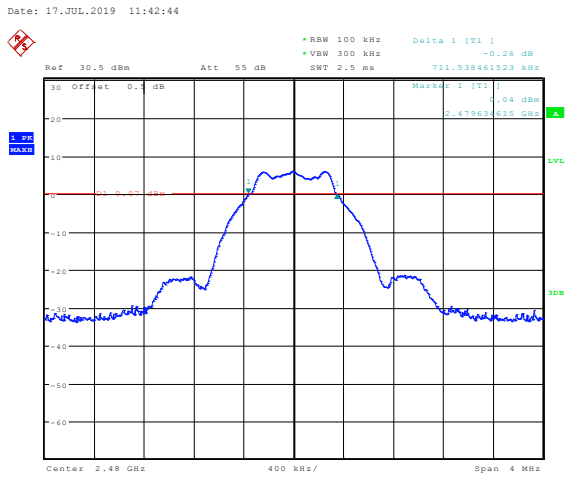
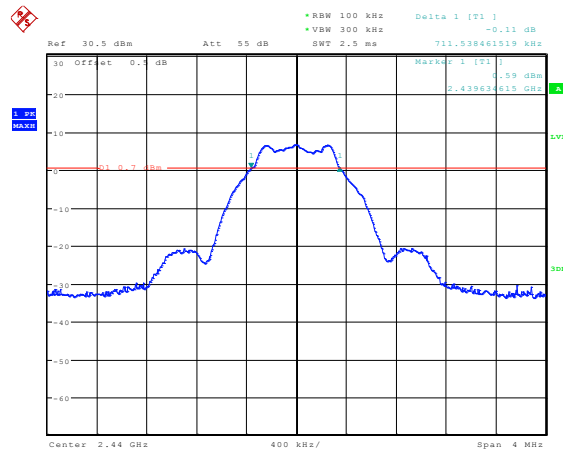
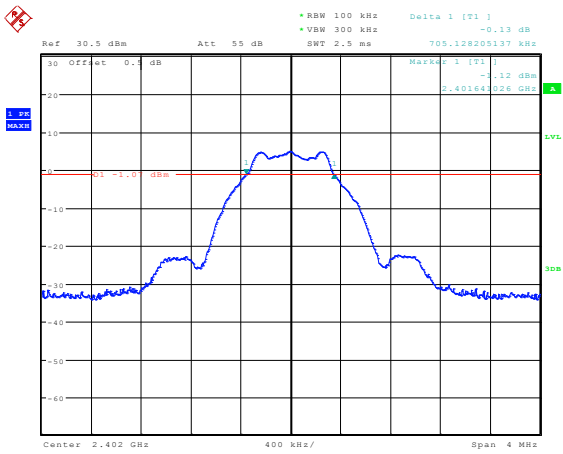
5.3.TEST SETUP



Test Data

Table 5 6dB Bandwidth Test Data BLE

CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	results
2402	0.7051	Pass
2440	0.7115	Pass
2480	0.7115	Pass



6. MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

6.1. LIMITS OF Maximum Conducted Output Power Measurement

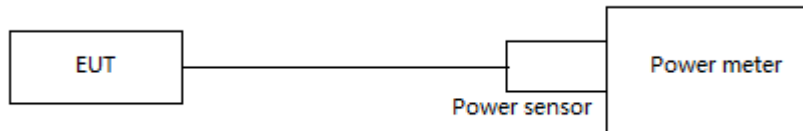
CFR 47 (FCC) part 15.247 (b) (3), 558074 D01 DTS Meas Guidance v05r02

6.2. TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer.

- a) Set the RBW \geq DTS bandwidth.
- b) Set VBW \geq 3 x RBW.
- c) Set span \geq 3 x RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

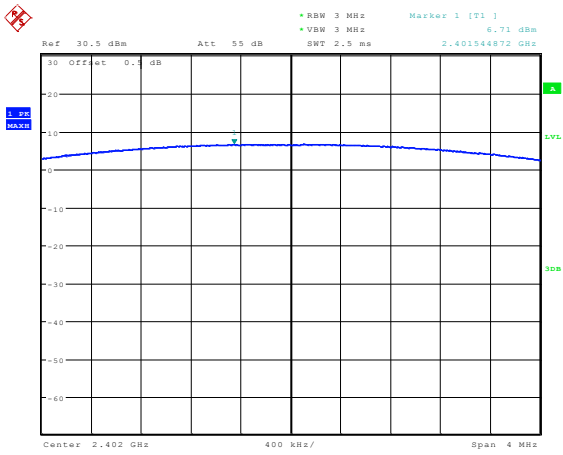
6.3. TEST SETUP



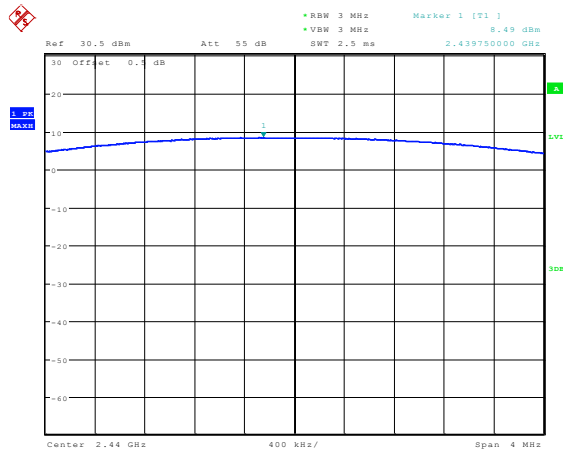
6.4. TEST DATA

Table 6 Maximum Conducted Output Power Test Data BLE

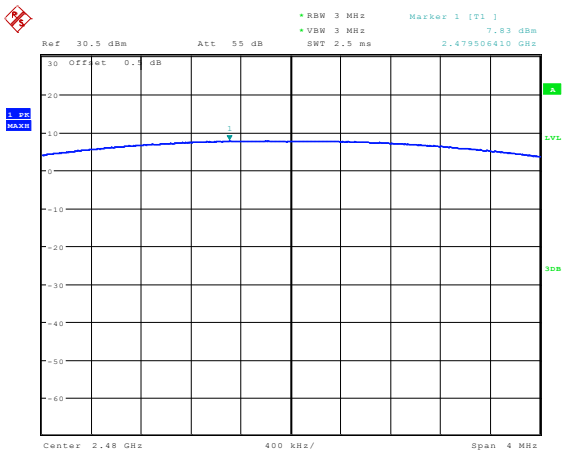
Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
2402	6.71	< 30	Pass
2440	8.49	< 30	Pass
2480	7.83	< 30	Pass



Date: 17.JUL.2019 11:25:02



Date: 17.JUL.2019 11:24:43



Date: 17.JUL.2019 11:25:31

7. MAXIMUM POWER SPECTRAL DENSITY LEVEL MEASUREMENT

7.1.LIMITS OF Maximum Power Spectral Density Level Measurement

CFR 47 (FCC) part 15.247 (e) , 558074 D01 DTS Meas Guidance v05r02

7.2.TEST PROCEDURE

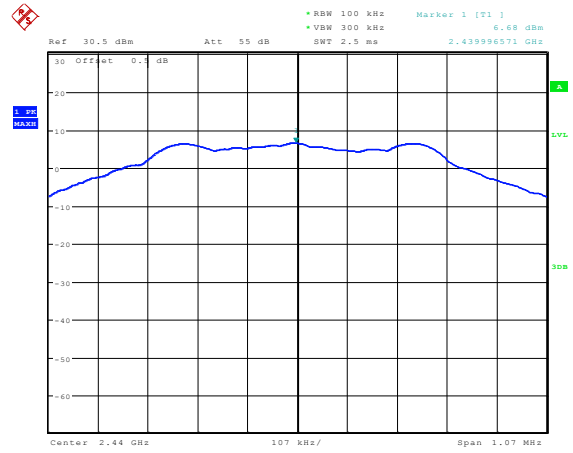
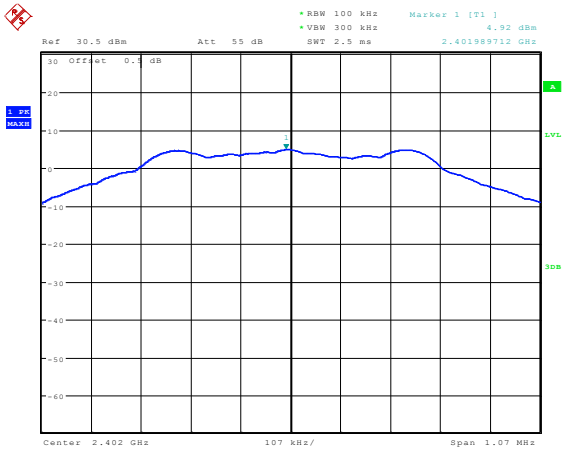
The transmitter output was connected to the spectrum analyzer.

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set RBW to: $3\text{kHz} \leq \text{RBW} \leq 100\text{ kHz}$.
- d) Set VBW $\geq 3 \times \text{RBW}$.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.
- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

7.3.TEST DATA

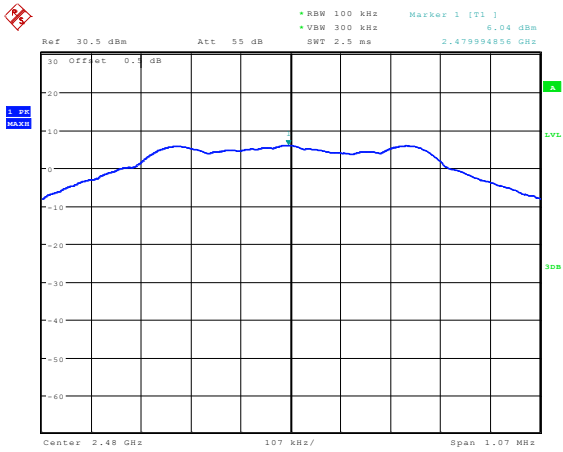
Table 7 Maximum Power Spectral Density Level Test Data BLE

Freq.[MHz]	PSD [dBm]	Limit [dBm]	Result
2402	4.92	8	Pass
2440	6.68	8	Pass
2480	6.04	8	Pass



Date: 17.JUL.2019 11:48:00

Date: 17.JUL.2019 11:47:24



Date: 17.JUL.2019 11:46:48

8. CONDUCTED BANDEGE AND SPURIOUS MEASUREMENT

8.1.LIMITS OF Conducted Bandedge and Spurious Measurement

CFR 47 (FCC) part 15.247 (d) and 558074 D01 DTS Meas Guidance v05r02

8.2.TEST PROCEDURE

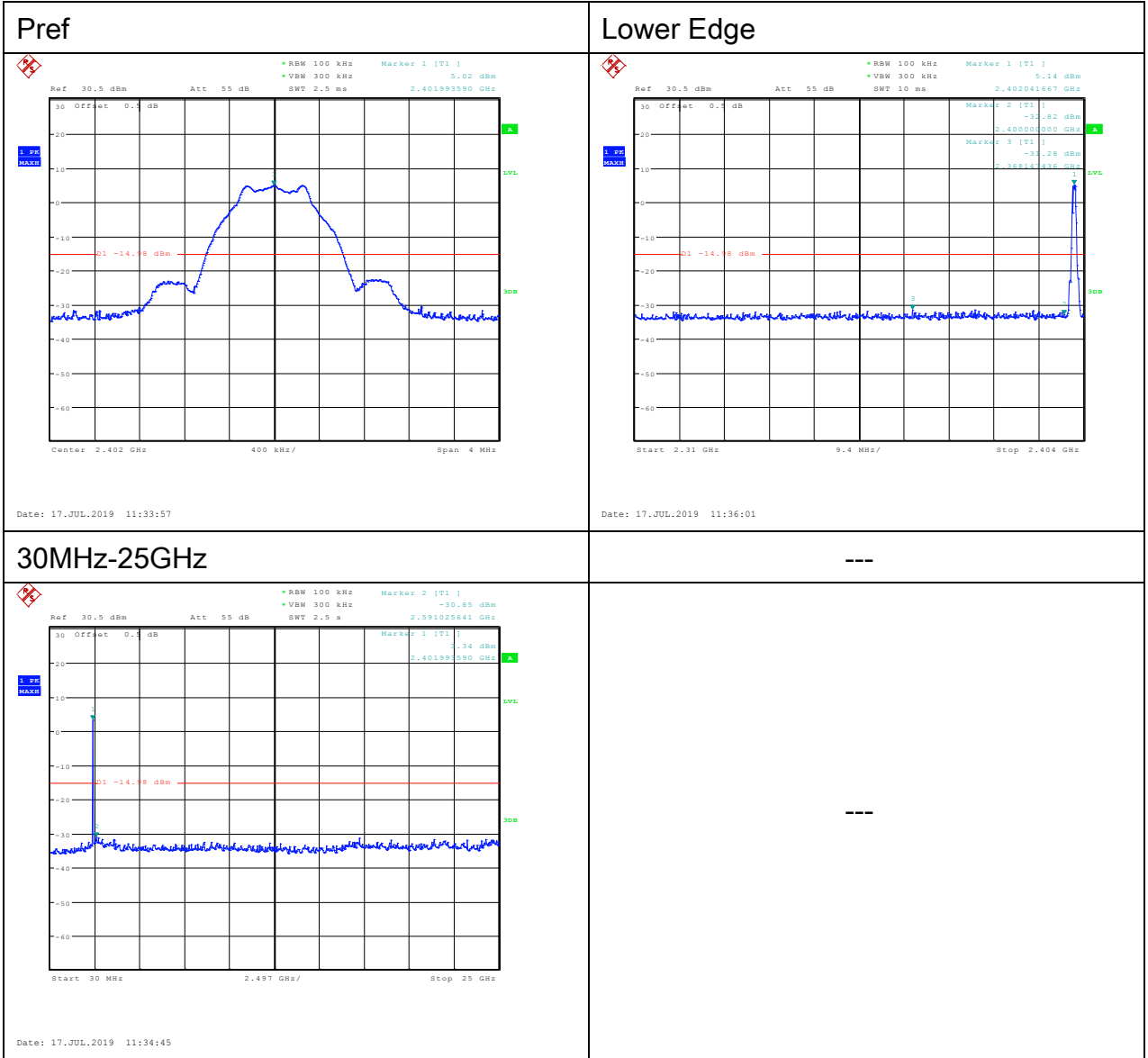
The transmitter output was connected to the spectrum analyzer.

Establish a reference level by using the following procedure:

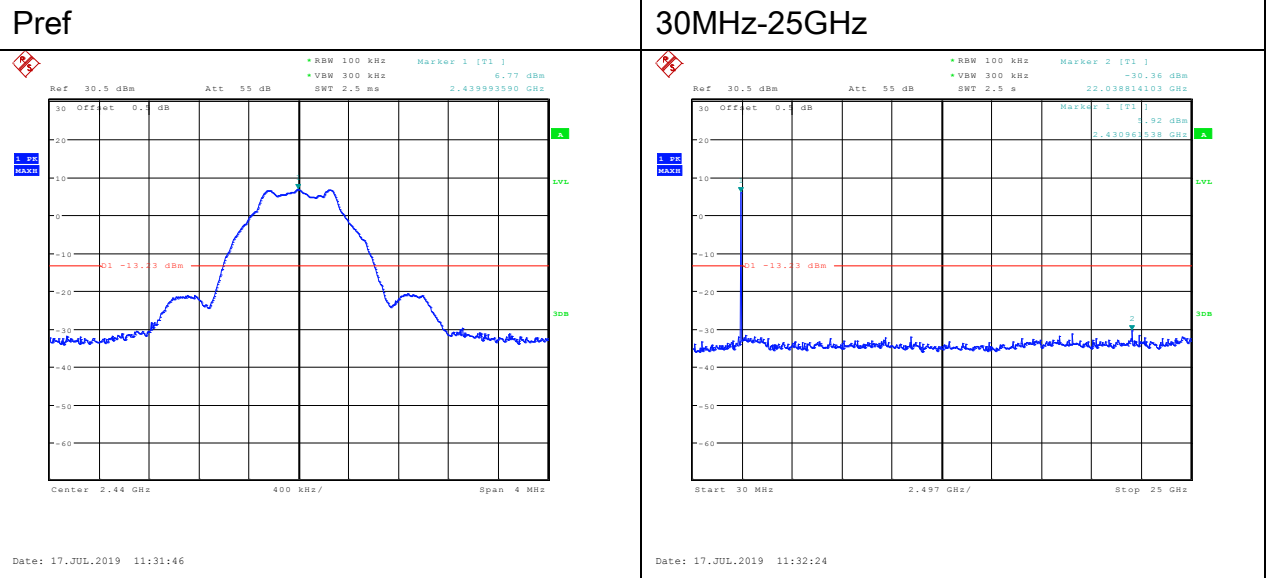
- a)Set instrument center frequency to DTS channel center frequency.
 - b)Set the span to ≥ 1.5 times the DTS bandwidth.
 - c)Set the RBW = 100 kHz.
 - d)Set the VBW $\geq 3 \times$ RBW.
 - e)Detector = peak.
 - f)Sweep time = auto couple.
 - g)Trace mode = max hold.
 - h)Allow trace to fully stabilize.
 - i)Use the peak marker function to determine the maximum PSD level.
- Emission level measurement
- a)Set the center frequency and span to encompass frequency range to be measured.
 - b)Set the RBW = 100 kHz.
 - c)Set the VBW $\geq 3 \times$ RBW.
 - d)Detector = peak.
 - e)Ensure that the number of measurement points \geq span/RBW
 - f)Sweep time = auto couple.
 - g)Trace mode = max hold.
 - h)Allow trace to fully stabilize.
 - i)Use the peak marker function to determine the maximum amplitude level.

8.3.TEST DATA

BLE CH0

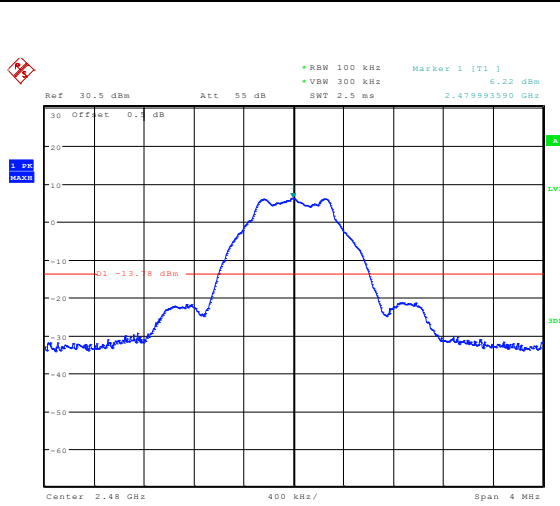


BLE CH19



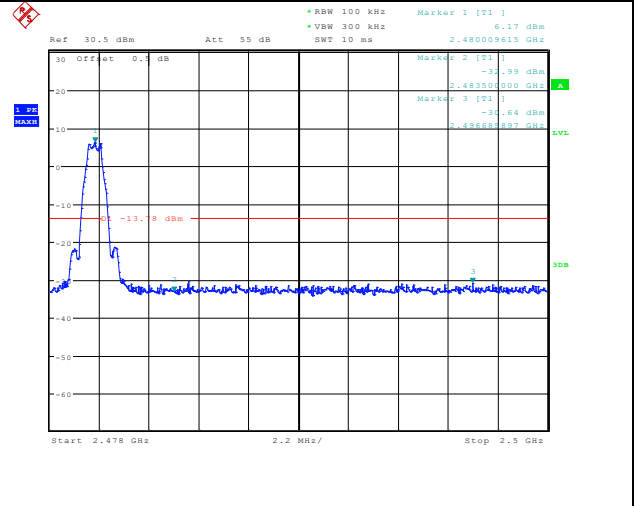
BLE CH39

Pref



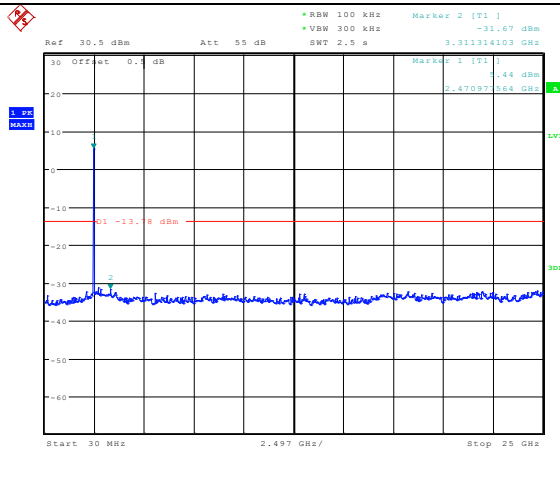
Date: 17.JUL.2019 11:27:42

Upper Edge



Date: 17.JUL.2019 11:30:26

30MHz-25GHz



Date: 17.JUL.2019 11:28:42

9. RADIATED BANDEGE AND SPURIOUS MEASUREMENT

9.1.LIMITS OF Radiated Bandedge and Spurious Measurement

CFR 47 (FCC) part 15.247 (d) and 558074 D01 DTS Meas Guidance v05r02

9.2.TEST PROCEDURE

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. For measurement below 1GHz, the EUT was placed on a turntable with 0.8meter, above ground. For measurement above 1 GHz, test at FAR, the EUT is placed on a non-conductive table, which is 1.5 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f > 1$ GHz for peak measurement. Set RBW = 1 MHz, and 1/T (on time) for average measurement.

9.3.TEST DATA

Adaptor: 1#

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 8 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)
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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 9 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
42.416	0.8	13.6	6.7	21.1	H	40	18.9	QP
48.915	0.7	13.6	7.1	21.4	H	40	18.6	QP
98.967	1.1	12.8	6.8	20.7	H	43.5	22.8	QP
148.146	1.4	10.5	8.5	20.4	H	43.5	23.1	QP
264.061	1.9	12.1	9.1	23.1	H	46	22.9	QP
558.844	2.9	16.6	8.7	28.2	H	46	17.8	QP
33.201	0.7	12.3	11.8	24.8	V	40	15.2	QP
38.148	0.7	12.3	15.6	28.6	V	40	11.4	QP
53.474	0.7	13.3	8.6	22.6	V	40	17.4	QP
93.729	1.1	11.9	7.7	20.7	V	43.5	22.8	QP
146.109	1.4	10.5	9.7	21.6	V	43.5	21.9	QP
190.341	1.6	10.6	9.9	22.1	V	43.5	21.4	QP

Adaptor: 2#

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 10 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)
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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 11 Radiated Emission Test Data 30MHz-1GHz

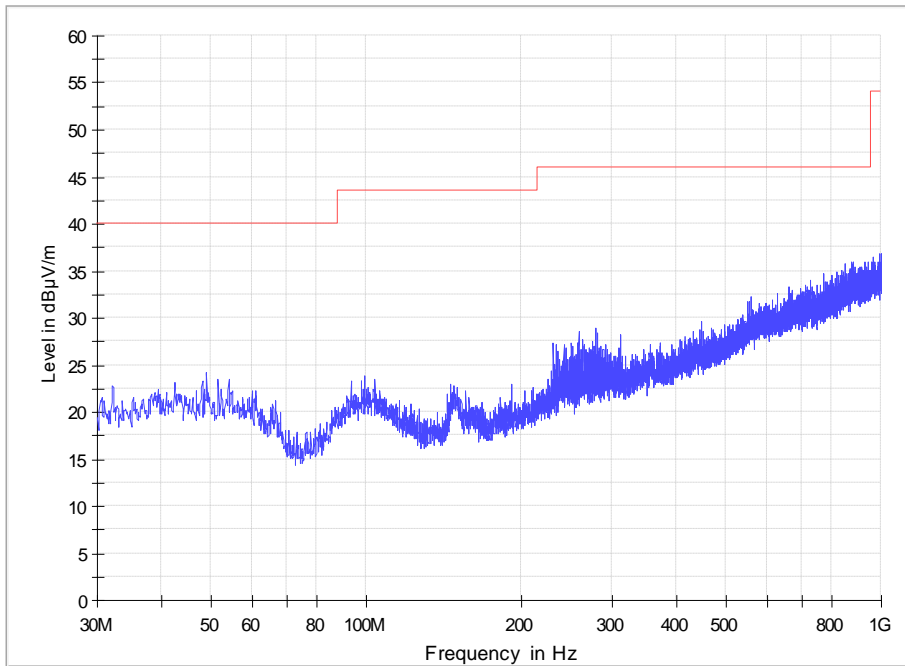
Frequency (MHz)	Cable Loss +preamp (dB)	Antenna Factor (dB)	Readings (dBμV/m)	Level (dBμV/m)	Polarity (H/V)	Limits (dBμV/m)	Margin (dB)	Note
30.291	0.6	12.3	10.9	23.8	V	40	16.2	QP
33.201	0.7	12.3	11.4	24.4	V	40	15.6	QP
38.730	0.7	12.3	10.7	23.7	V	40	16.3	QP
171.814	1.5	9.0	16.4	26.9	V	43.5	16.6	QP
197.422	1.7	10.6	18.5	30.8	V	43.5	12.7	QP
206.734	1.7	10.6	16.0	28.3	V	43.5	15.2	QP
41.543	0.7	13.6	1.5	15.8	H	40	24.2	QP
57.259	0.8	13.0	2.3	16.1	H	40	23.9	QP
103.041	1.2	13.2	2.9	17.3	H	43.5	26.2	QP
149.116	1.5	10.5	10.5	22.5	H	43.5	21.0	QP
242.527	1.8	12.1	11.0	24.9	H	46.0	21.1	QP
268.329	2.0	12.1	8.3	22.4	H	46.0	23.6	QP

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

Radiated Emission

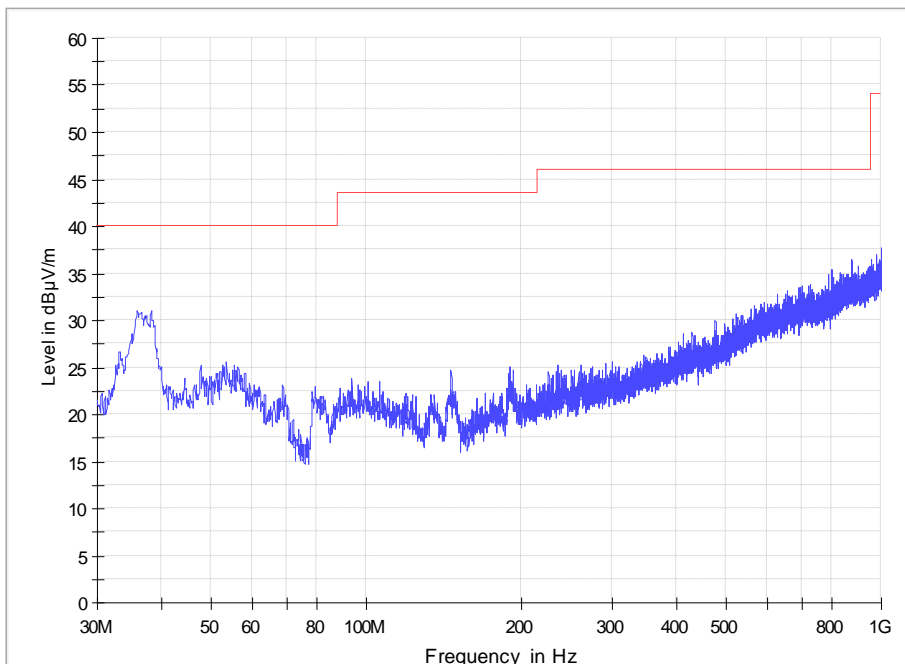
EUT Name: FX205F
Operating Condition: Charging and Transmitting
Test site: SMQ NETC EMC Lab.
Antenna Position: Vertical & Horizontal
Comment: AC 120V/60Hz
Adaptor: 1#

Field strength 30M-1GHz 1F 3m chamber



(Horizontal)

Field strength 30M-1GHz 1F 3m chamber

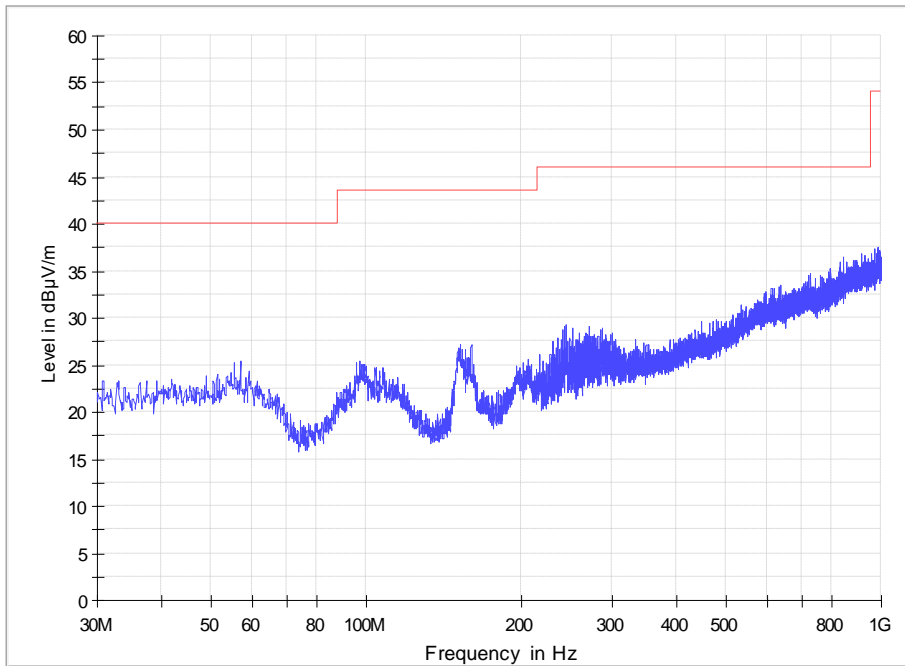


(Vertical)

Radiated Emission

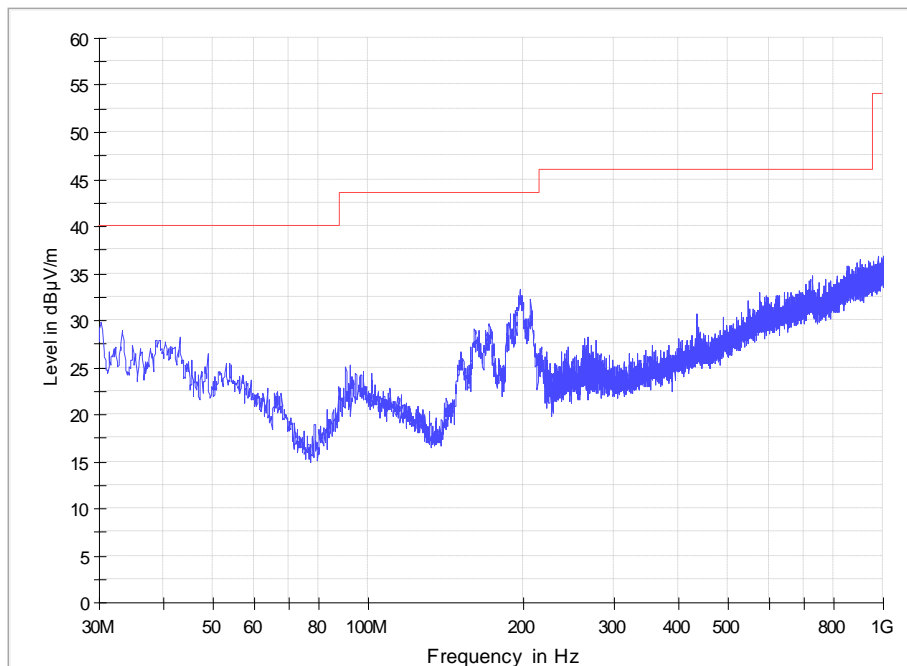
EUT Name: FX205F
Operating Condition: Charging and Transmitting
Test site: SMQ NETC EMC Lab.
Antenna Position: Vertical & Horizontal
Comment: AC 120V/60Hz
Adaptor: 2#

Field strength 30M-1GHz 1F 3m chamber



(Horizontal)

Field strength 30M-1GHz 1F 3m chamber



(Vertical)

1-18G
BLE CH0

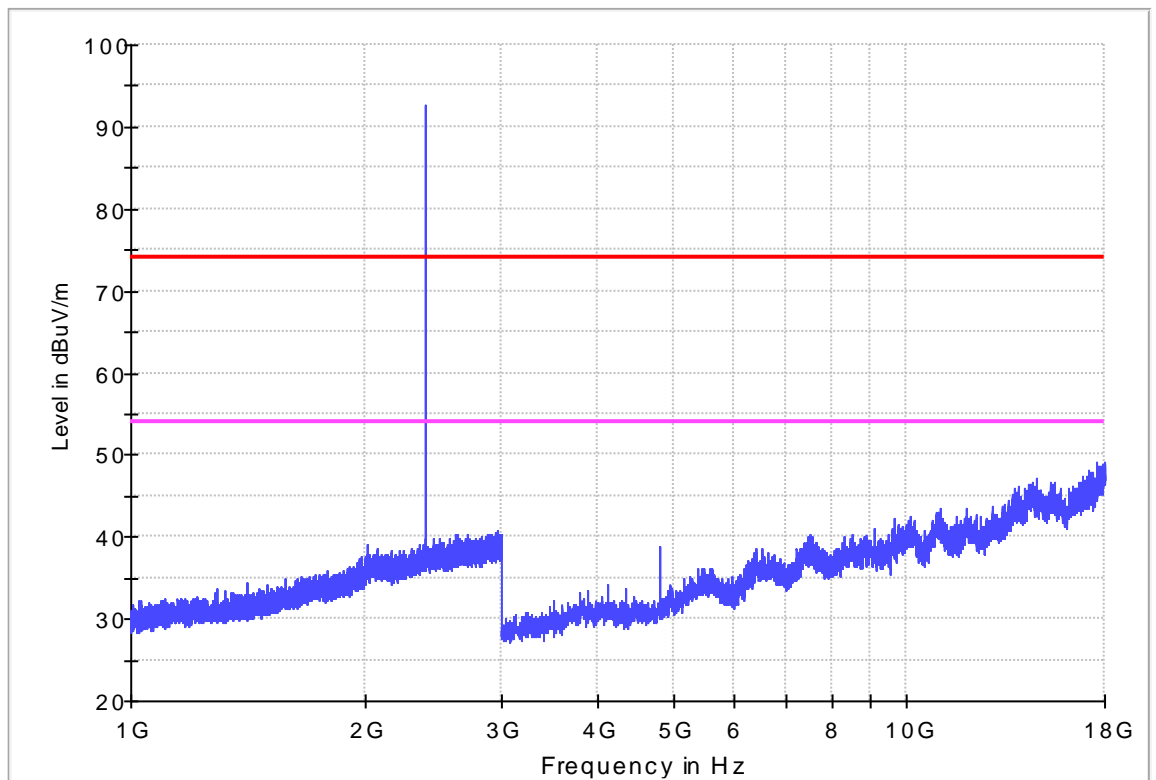
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH0 TX
Test Voltage:
Comment:

Common Information

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



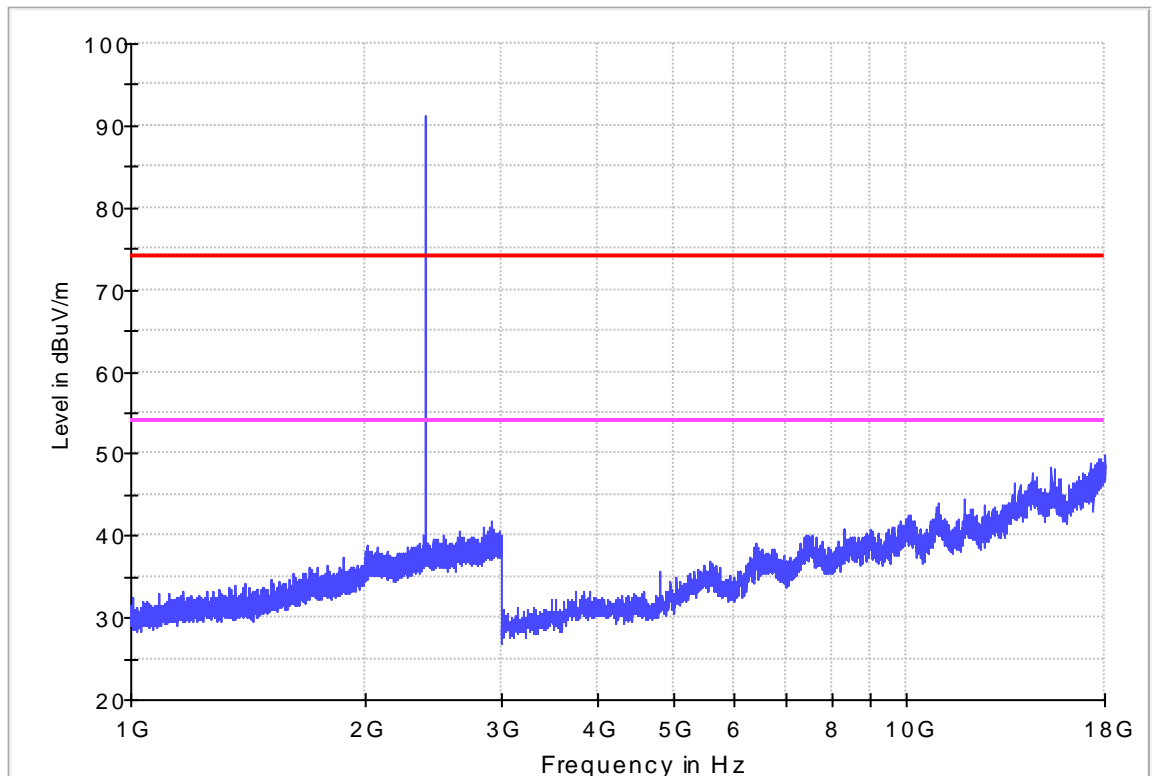
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH0 TX
Test Voltage:
Comment:

Common Information

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



1-18G
BLE CH19

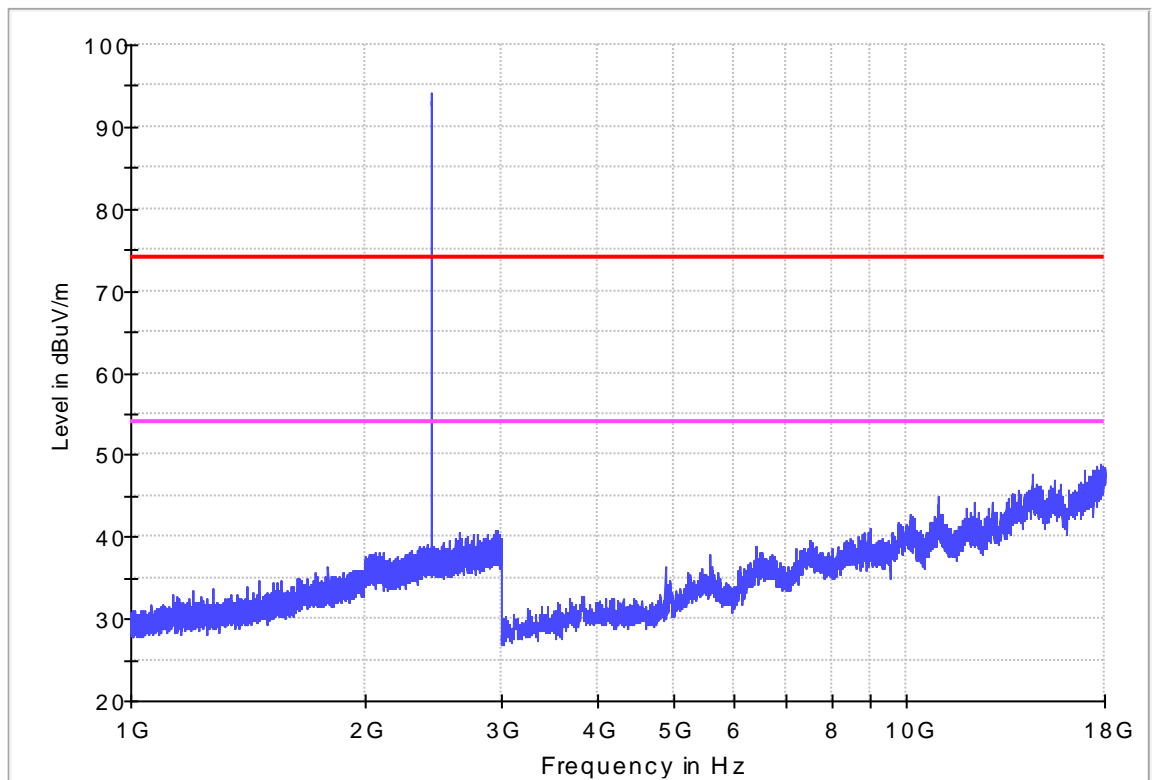
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH19 TX
Test Voltage:
Comment:

Common Information

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



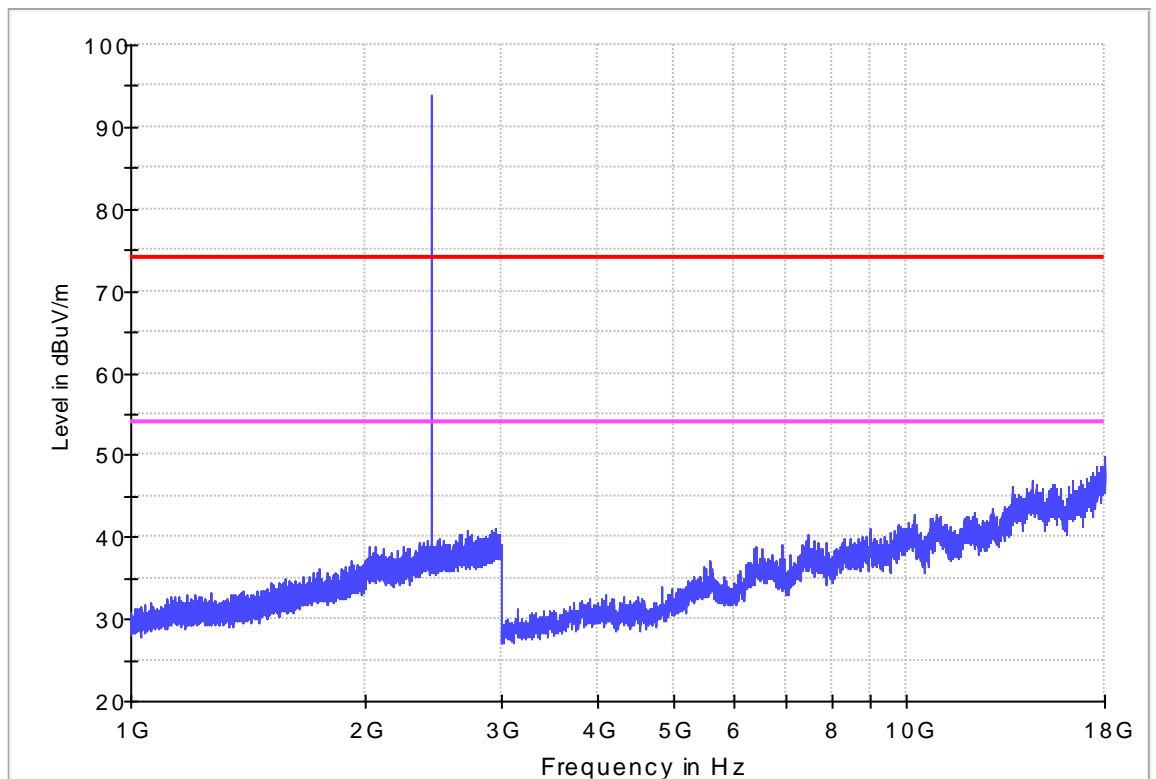
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH19 TX
Test Voltage:
Comment:

Common Information

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



1-18G
BLE CH39

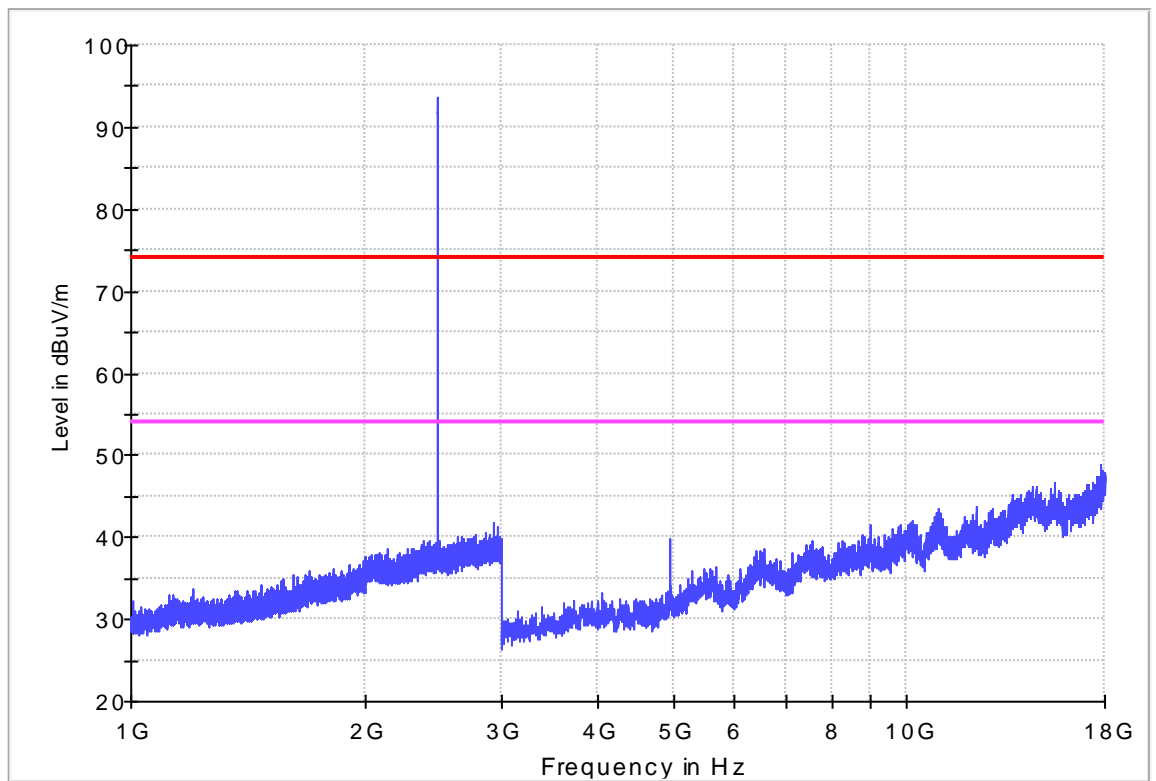
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH39 TX
Test Voltage:
Comment:

Common Information

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



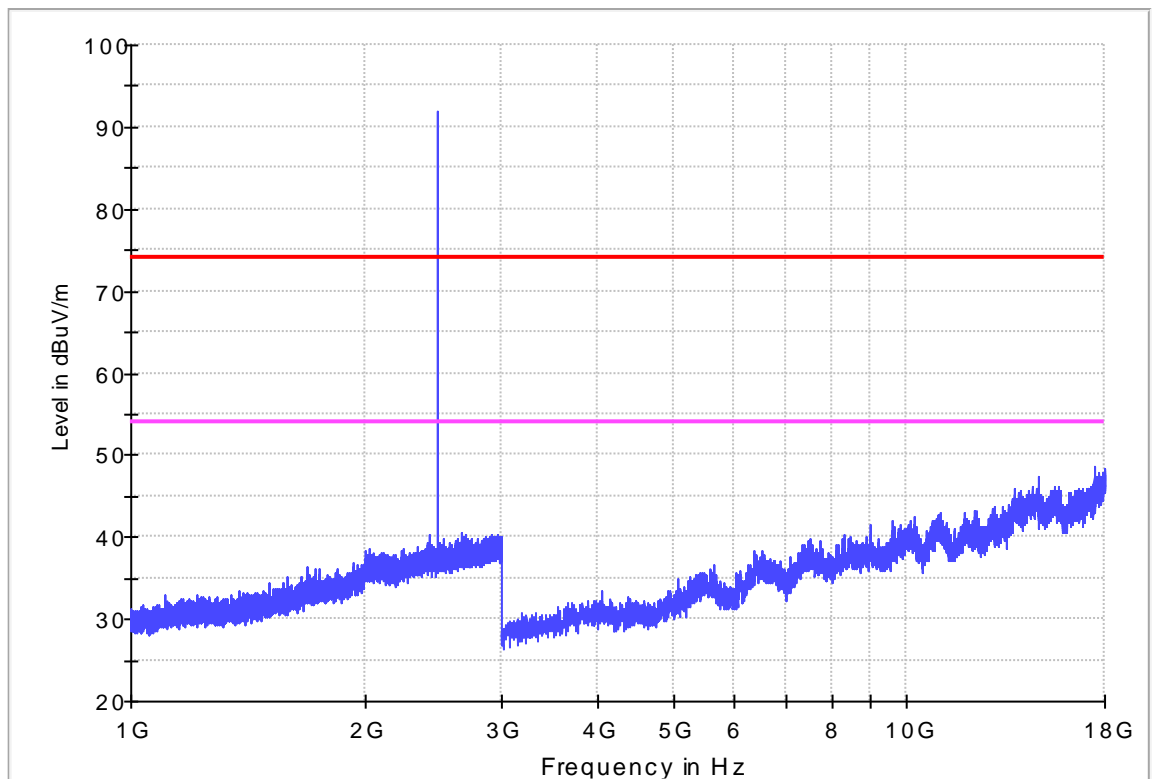
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT 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.

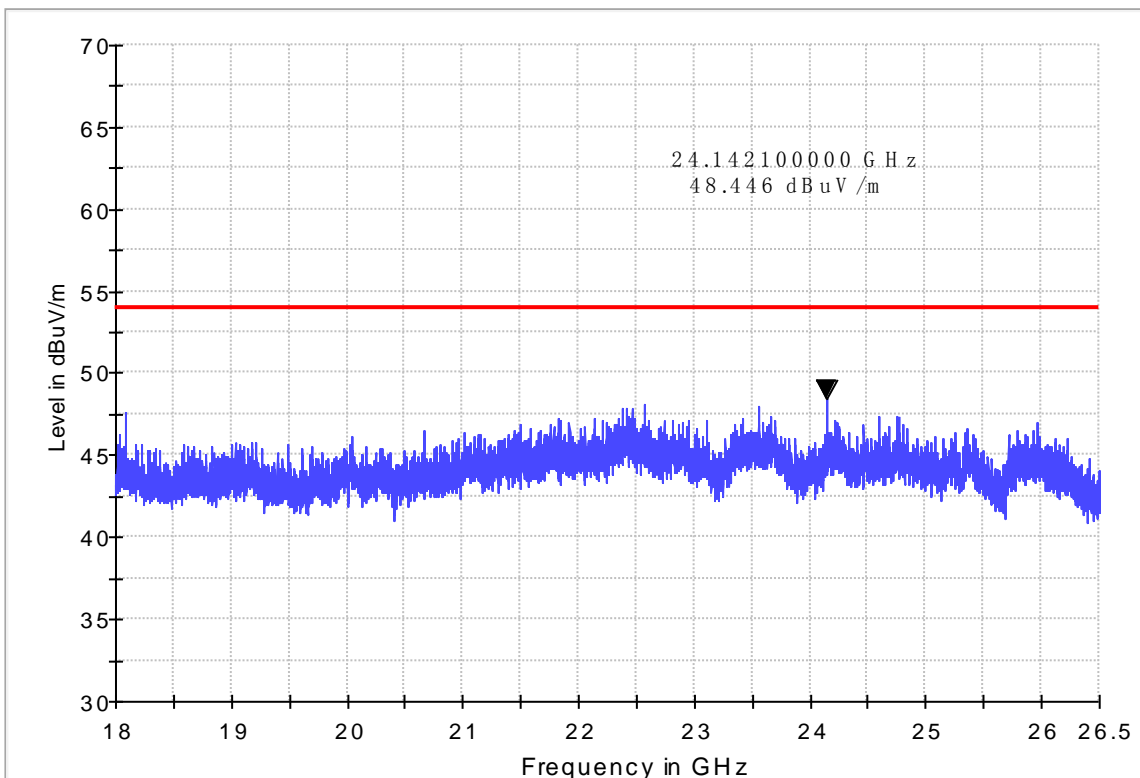
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BLE
Test Voltage:
Comment:

Common Information

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



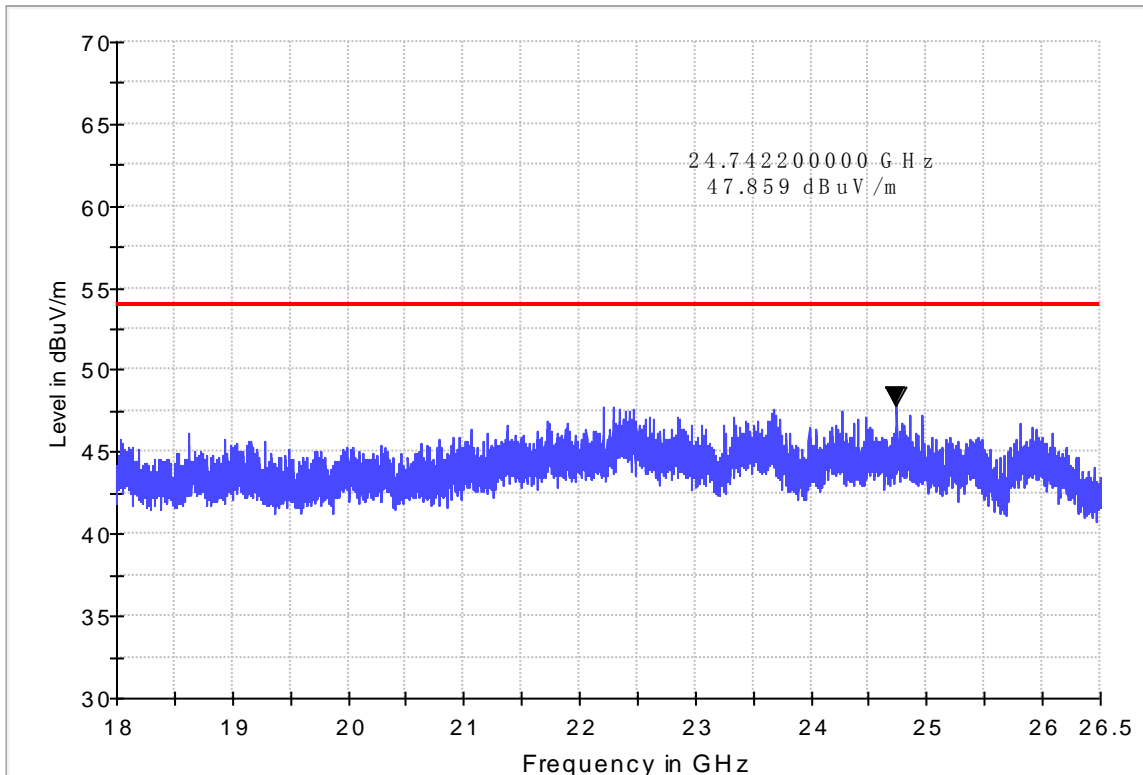
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BLE
Test Voltage:
Comment:

Common Information

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



Band edge

BLE CH0

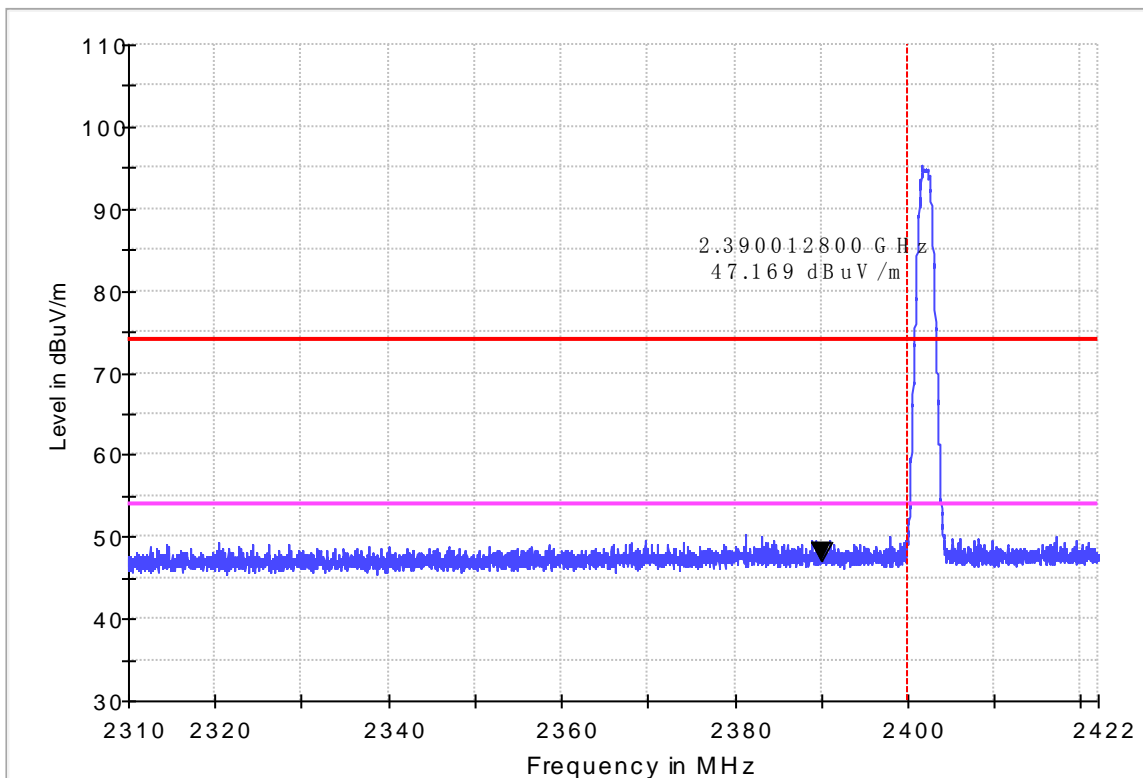
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH0 TX
Test Voltage:
Comment:

Common Information

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



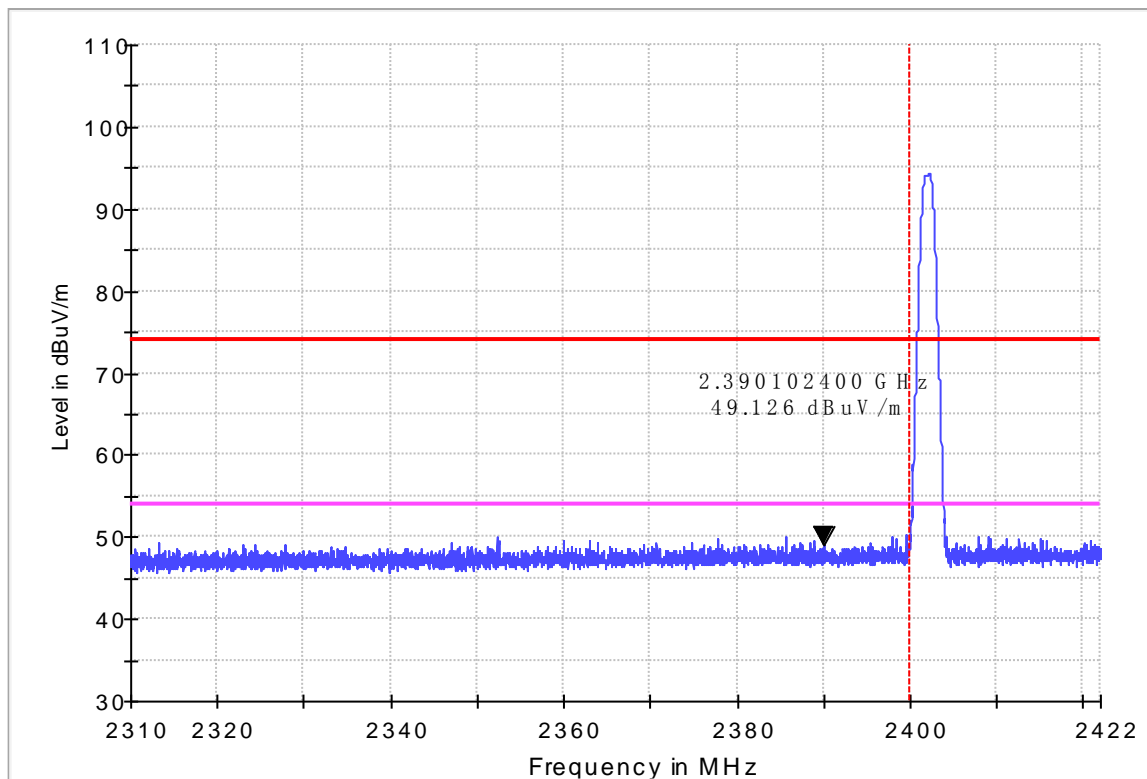
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH0 TX
Test Voltage:
Comment:

Common Information

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



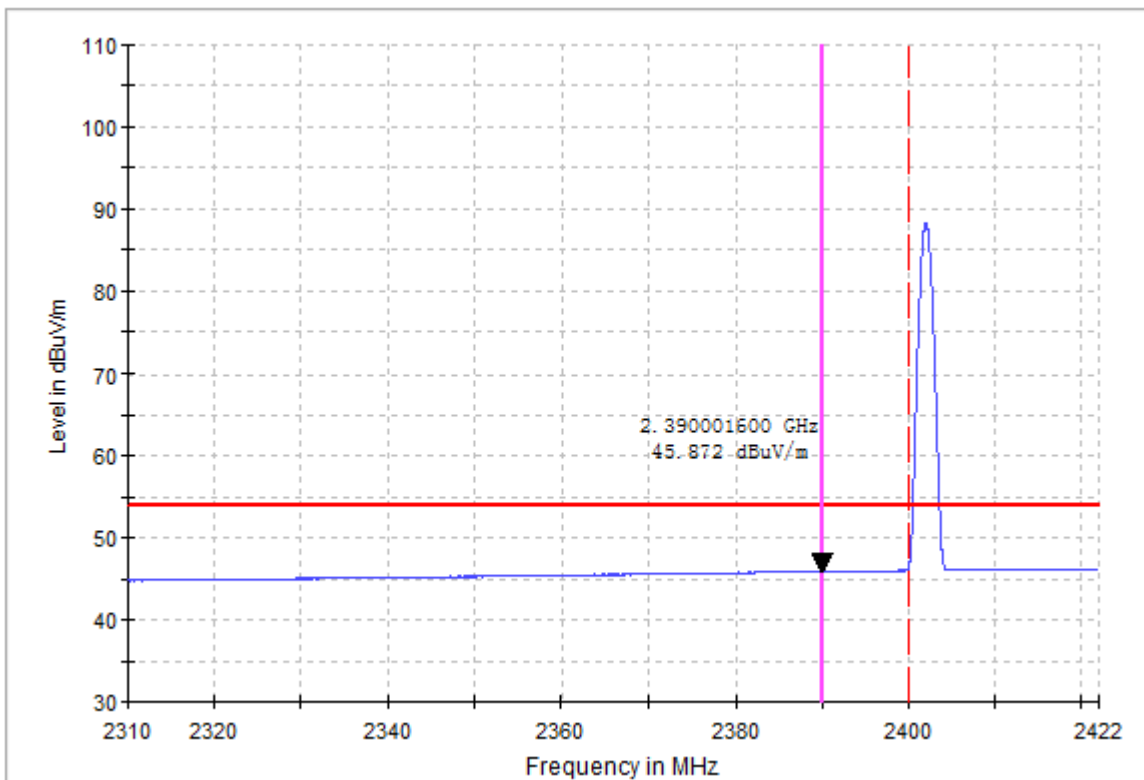
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH0 TX
Test Voltage:
Comment:

Common Information

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



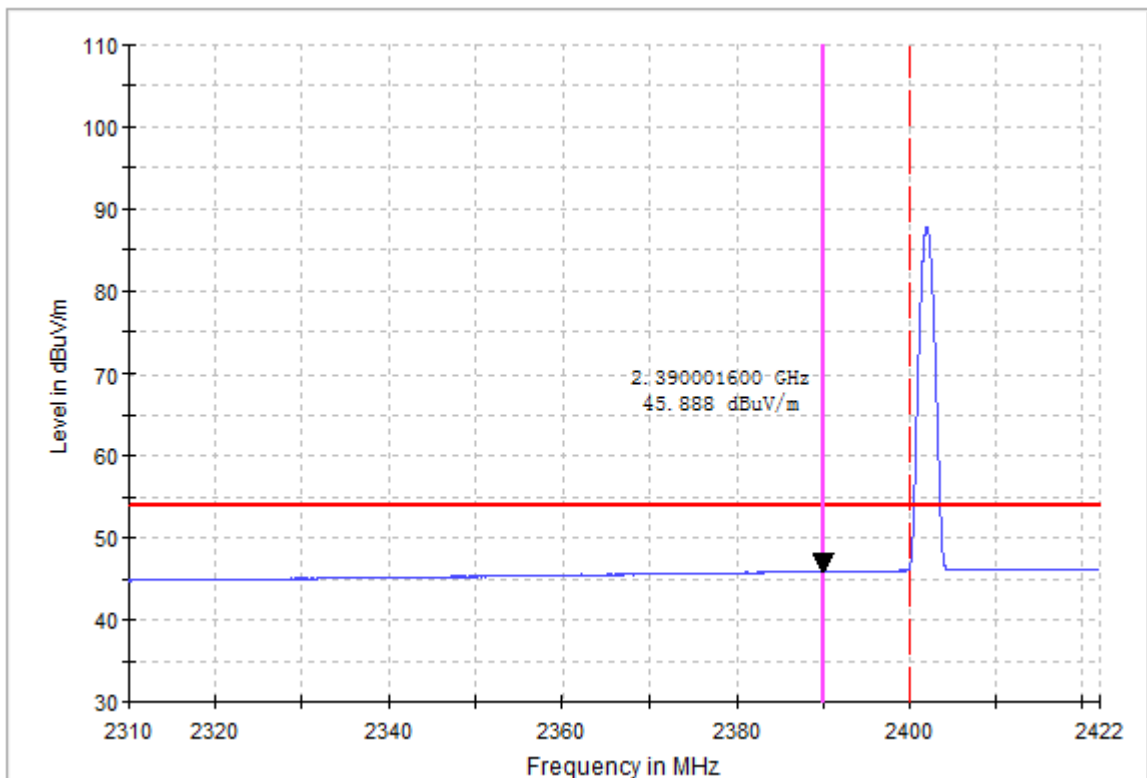
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH0 TX
Test Voltage:
Comment:

Common Information

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



Band edge
BLE CH39

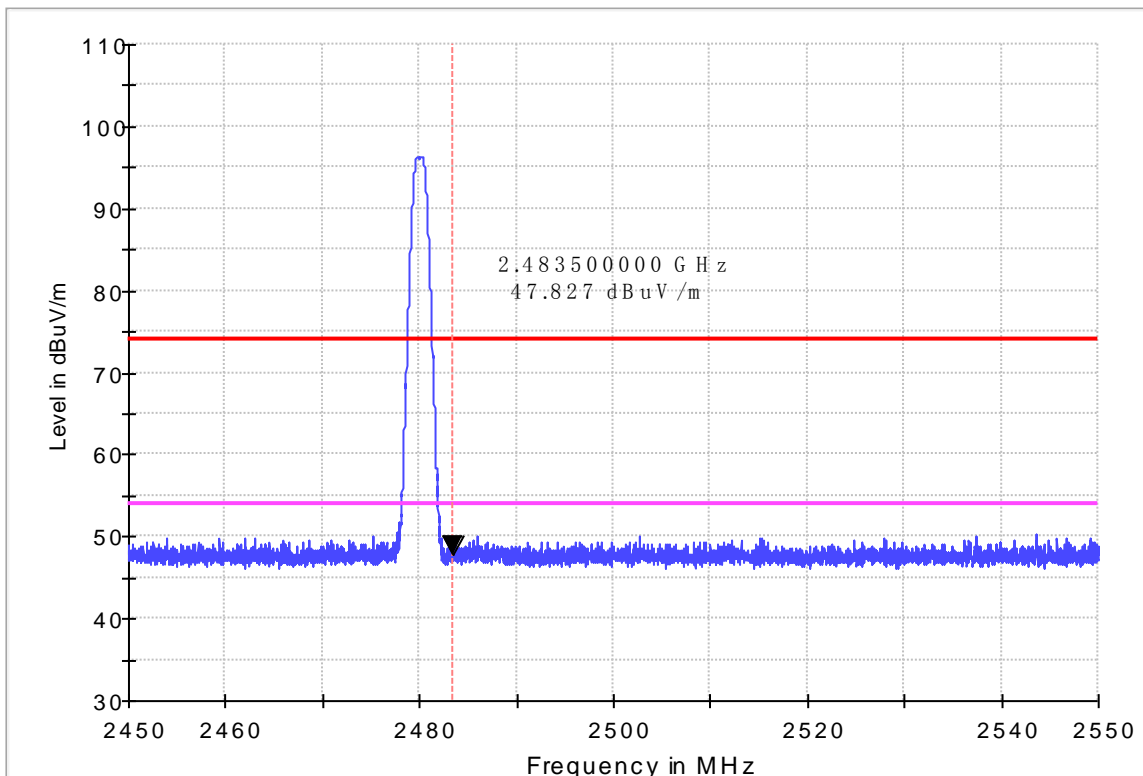
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH39 TX
Test Voltage:
Comment:

Common Information

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



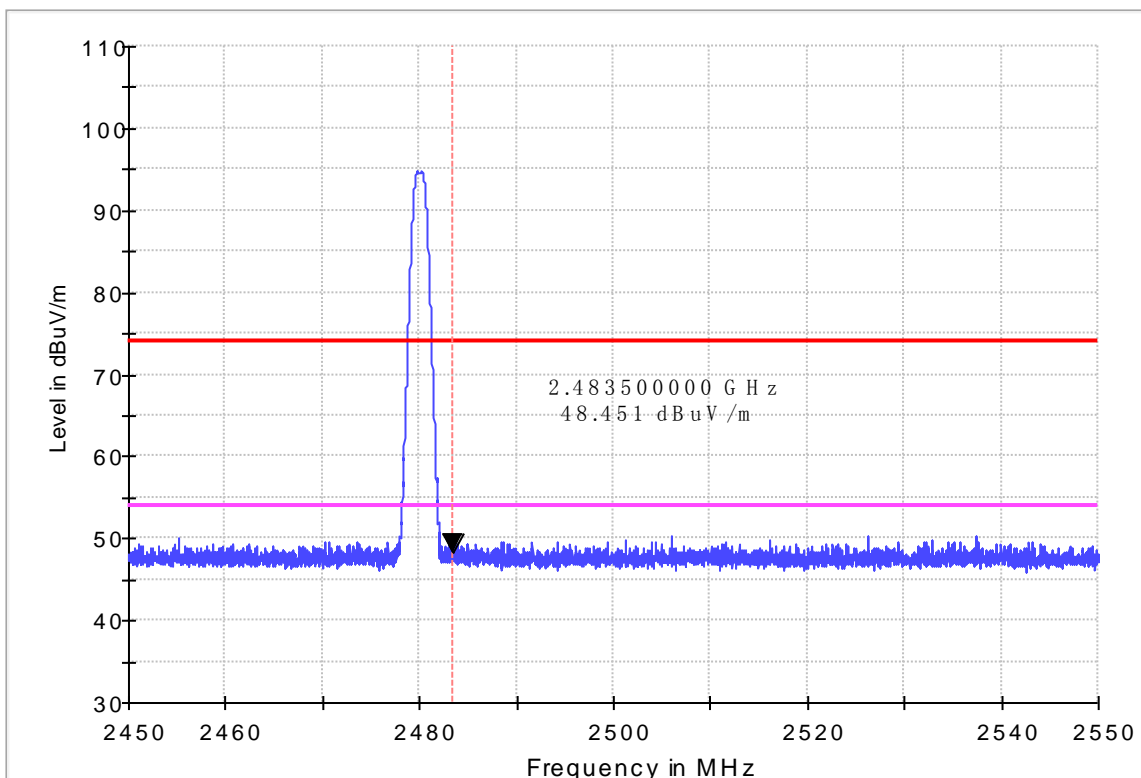
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH39 TX
Test Voltage:
Comment:

Common Information

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



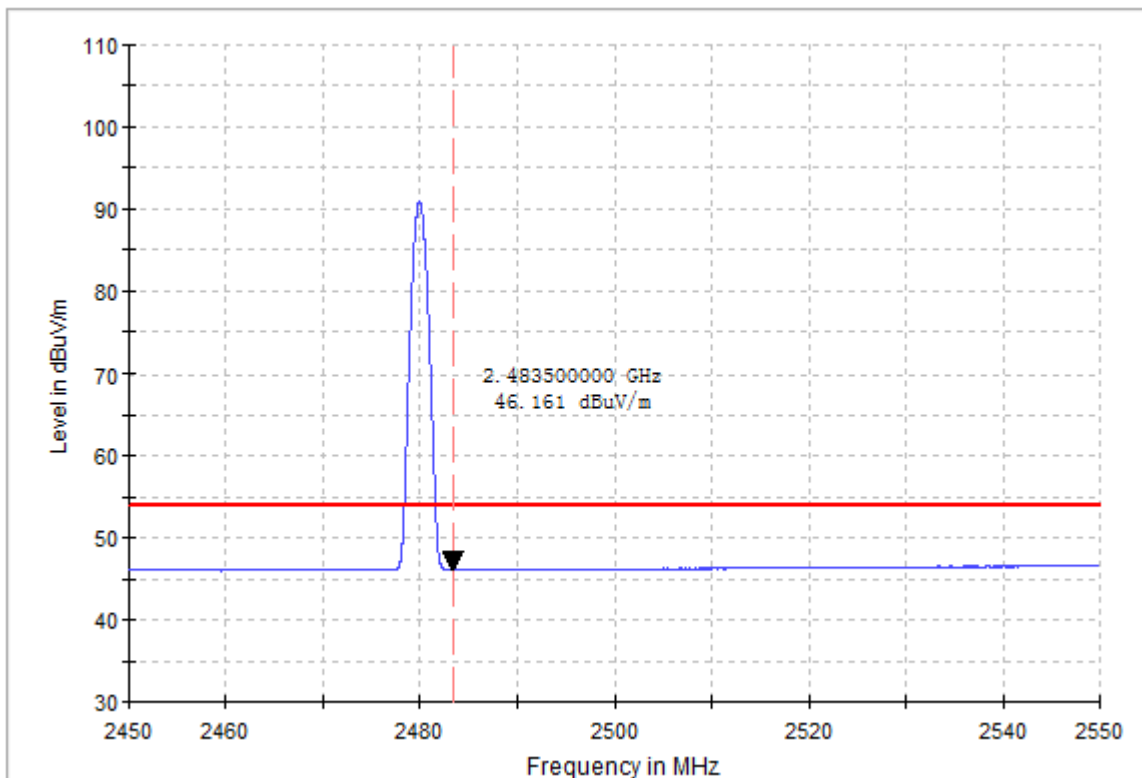
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH39 TX
Test Voltage:
Comment:

Common Information

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



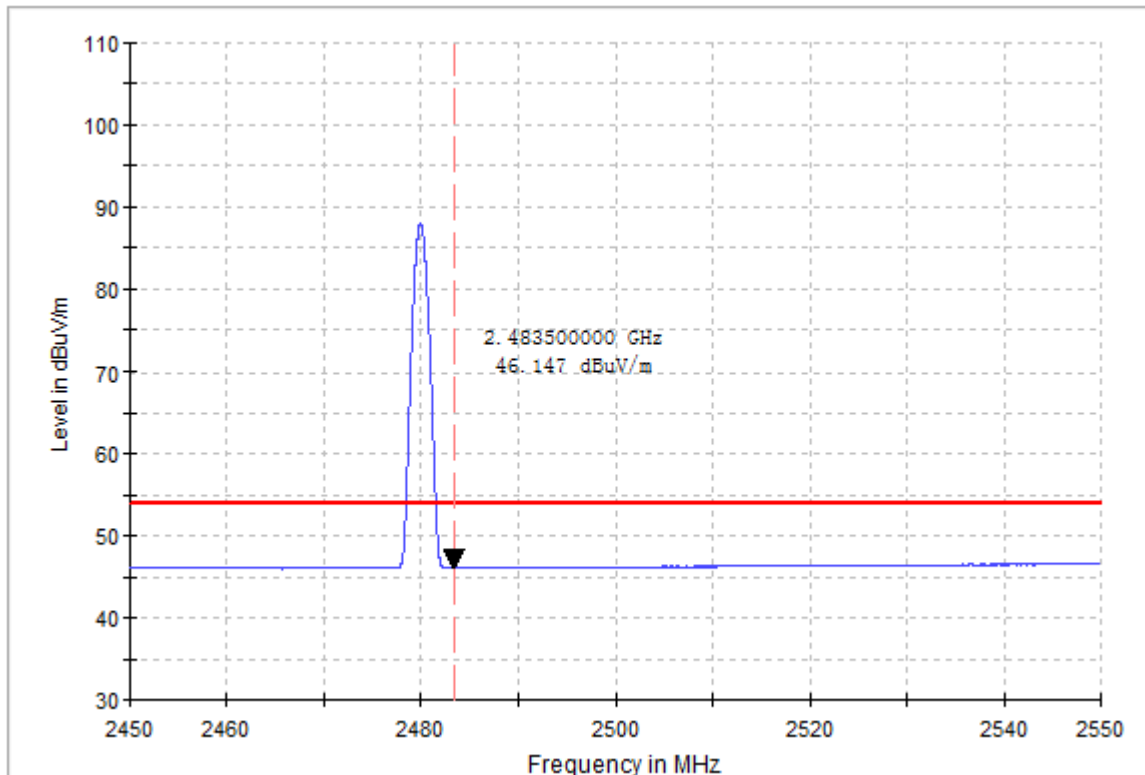
Radiated Emission

EUT Information

EUT Model Name: FX205F
Operation mode: BT BLE CH39 TX
Test Voltage:
Comment:

Common Information

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



10. CONDUCTED EMISSION TEST FOR AC POWER PORT MEASUREMENT

10.1. Test Standard and Limit

10.1.1. Test Standard

FCC Part 15.207

10.1.2. Test Limit

Table 12 Conducted Emission Test Limit

Frequency	Maximum RF Line Voltage (dB μ V)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

* Decreasing linearly with logarithm of the frequency

* The lower limit shall apply at the transition frequency.

10.2. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. According to the requirements of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

The bandwidth of EMI test receiver is set at 9kHz.

10.3. 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.

10.4. Test Data

The emissions don't show in below are too low against the limits. Refer to the test curves.

Table 13 Conducted Emission Test Data

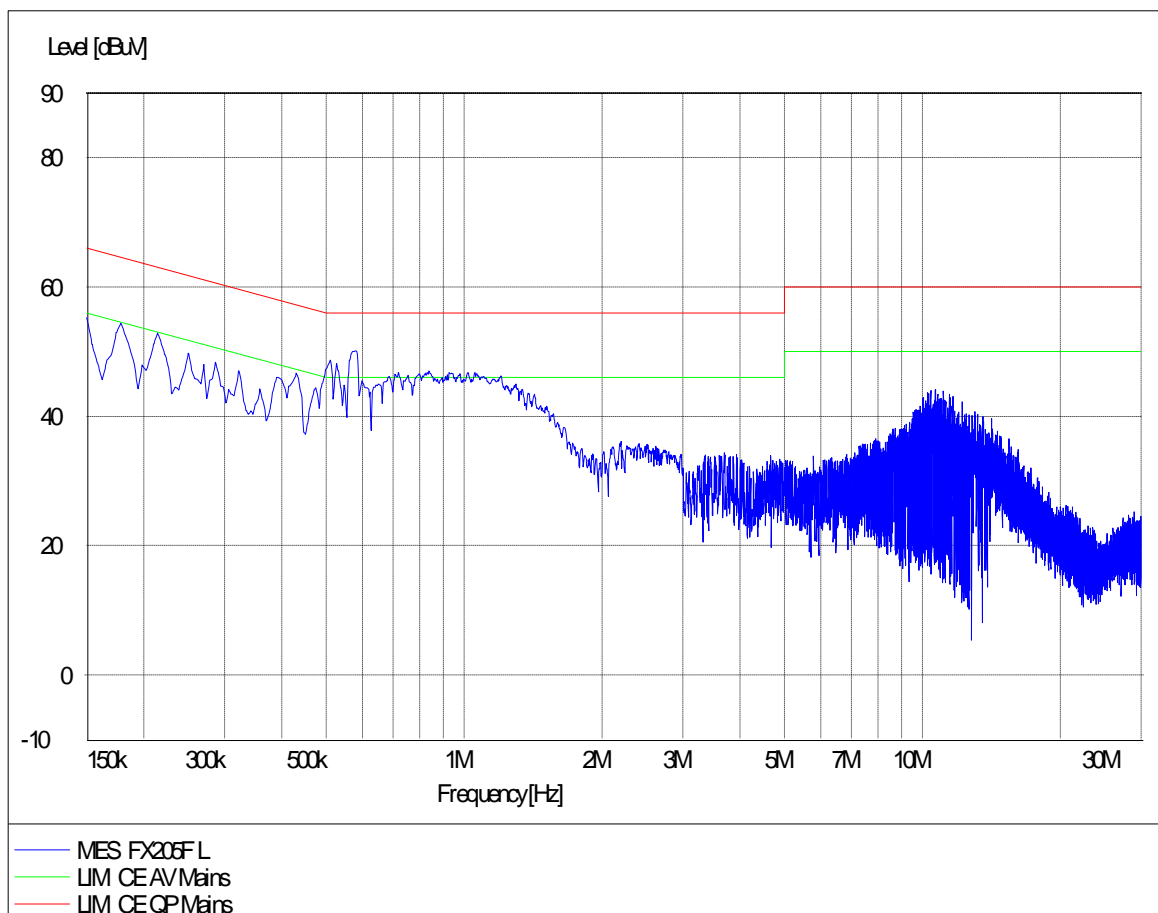
Model No.: FX205F								
Test mode: Charging and Transmitting								
Adaptor:1#								
	Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
			Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)
Line	0.150	9.7	37.0	46.7	66	20.6	30.3	56
	0.178	9.7	37.8	47.5	64.6	22.2	31.9	54.6
	0.214	9.7	35.5	45.2	63.0	18.9	28.6	53.0
	0.510	9.8	36.7	46.5	56	19.6	29.4	46
	0.582	9.8	37.2	47.0	56	20.0	29.8	46
	0.950	9.8	31.7	41.5	56	16.8	26.6	46
Neutral	0.150	9.7	36.2	45.9	66	18.8	28.5	56
	0.178	9.7	35.5	45.2	64.6	19.3	29.0	54.6
	0.546	9.8	35.1	44.9	56	17.6	27.4	46
	0.582	9.8	33.9	43.7	56	16.3	26.1	46
	2.646	9.9	27.9	37.8	56	14.2	24.1	46
	10.368	9.9	27.3	37.2	60	13.5	23.4	50

Table 14 Conducted Emission Test Data

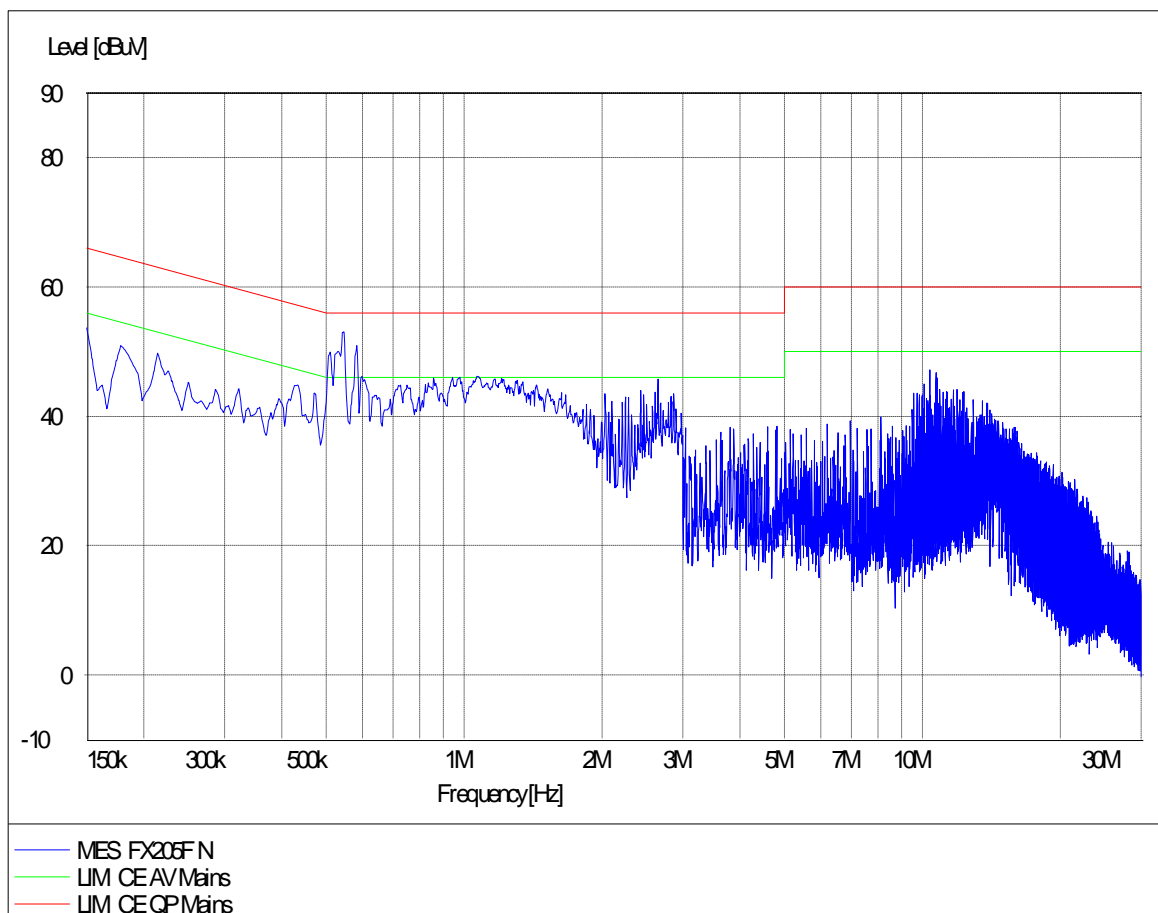
Model No.: FX205F								
Test mode: Charging and Transmitting								
Adaptor:2#								
	Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
			Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)
Line	0.150	9.7	37.8	47.5	66	20.3	30.0	56
	0.218	9.7	34.2	43.9	62.9	19.5	29.2	52.9
	0.290	9.7	31.8	41.5	60.5	16.2	25.9	50.5
	0.654	9.8	35.7	45.5	56	25.5	35.3	46
	2.730	9.9	30.5	40.4	56	18.2	28.1	46
	13.412	9.9	29.7	39.6	60	15.7	25.6	50
	18.052	9.9	30.7	40.6	60	19.1	29.0	50
Neutral	0.166	9.7	32.0	41.7	65.2	15.1	24.8	55.2
	0.674	9.8	27.8	37.6	56	17.4	27.2	46
	0.730	9.8	31.1	40.9	56	19.2	29.0	46
	2.786	9.9	27.0	36.9	56	15.3	25.2	46
	13.600	9.9	28.1	38.0	60	14.6	24.5	50
	18.972	9.9	31.7	41.6	60	18.3	28.2	50

- REMARKS: 1. Emission level (dBuV) =Read Value (dBuV) + Correction Factor (dB)
2. Correction Factor (dB) =LISN Factor (dB) + Cable Factor (dB) +Limiter Factor (dB)
3. The other emission levels were very low against the limit.

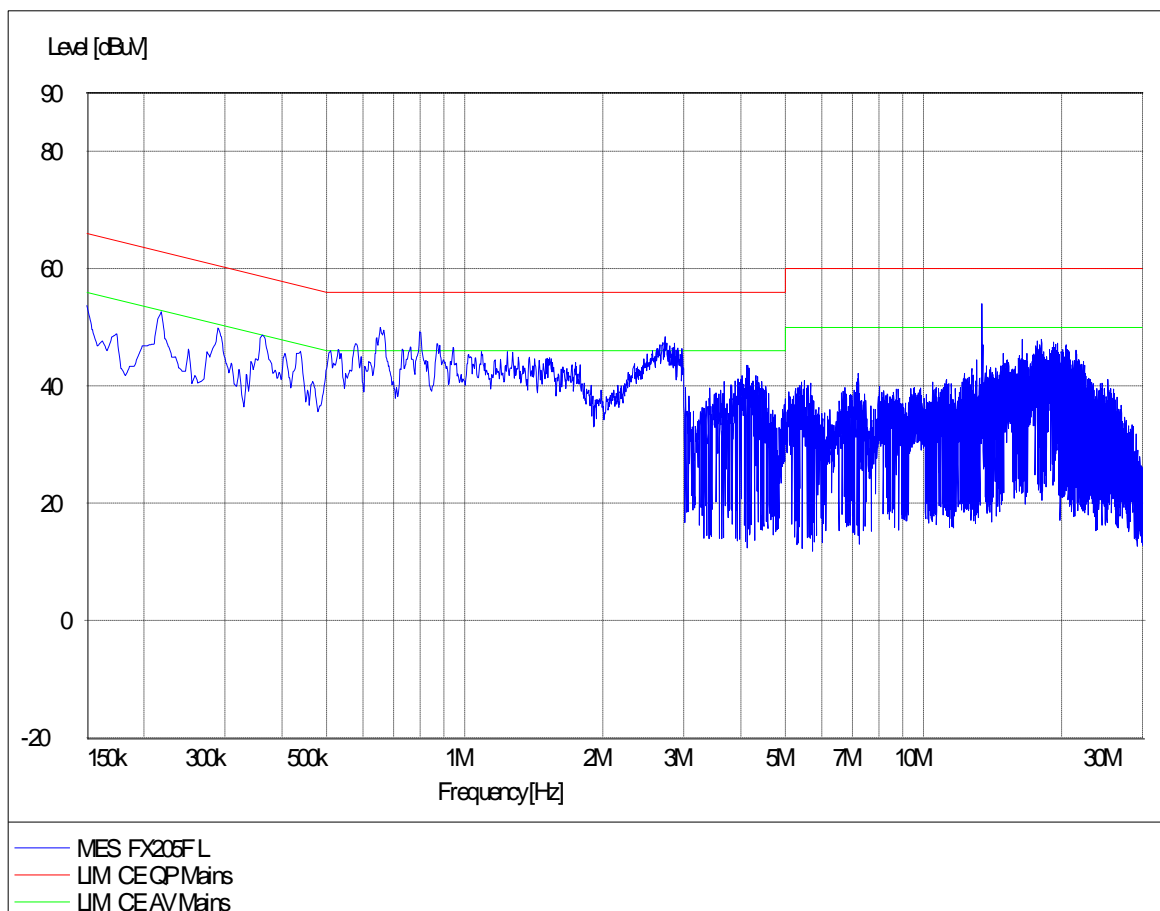
EUT: FX205F
Manufacturer:
Operating Condition: Charging and Transmitting
Test Site:
Operator:
Test Specification: L
Comment: AC 120V/60Hz
Adaptor: 1#



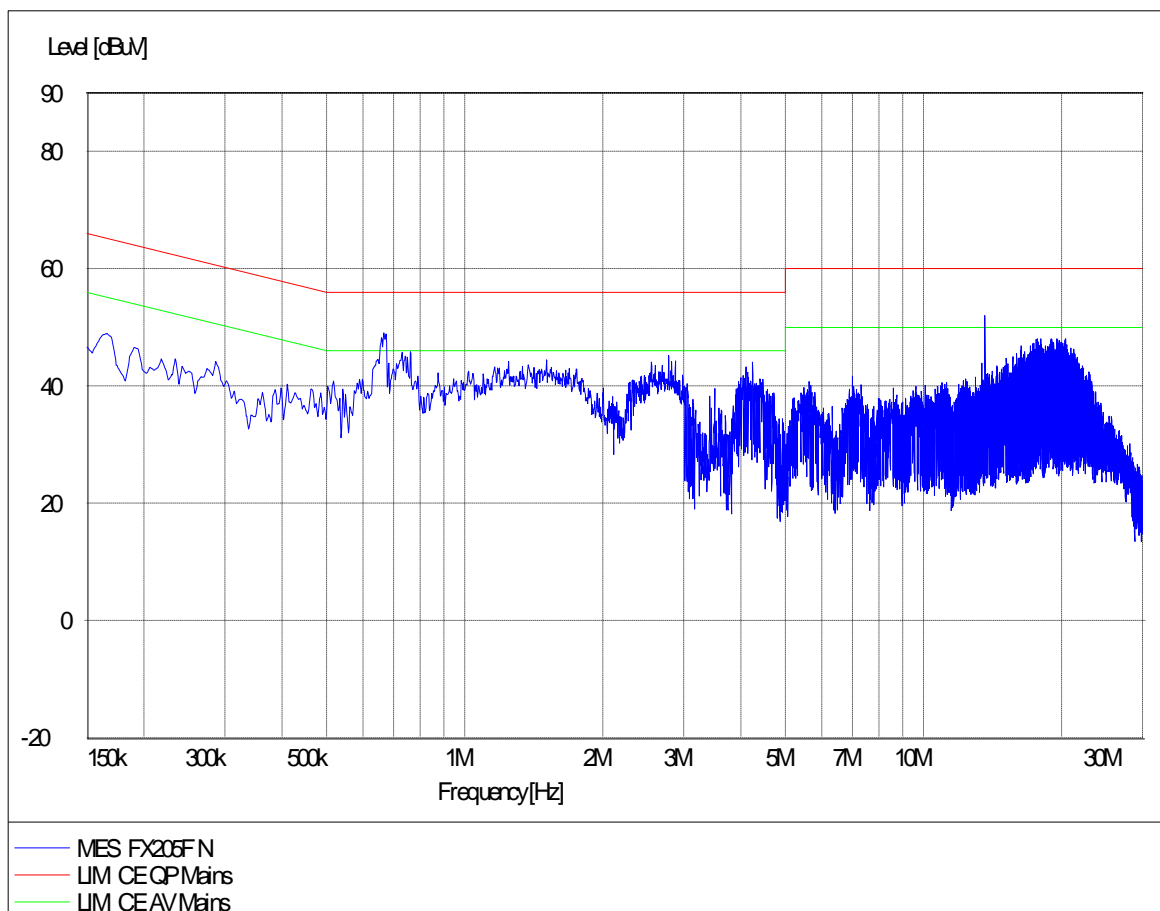
EUT: FX205F
Manufacturer:
Operating Condition: Charging and Transmitting
Test Site:
Operator:
Test Specification: N
Comment: AC 120V/60Hz
Adaptor: 1#



EUT: FX205F
Manufacturer:
Operating Condition: Charging and Transmitting
Test Site:
Operator:
Test Specification: L
Comment: AC 120V/60Hz
Adaptor: 2#



EUT: FX205F
Manufacturer:
Operating Condition: Charging and Transmitting
Test Site:
Operator:
Test Specification: N
Comment: AC 120V/60Hz
Adaptor: 2#



11. ANTENNA REQUIREMENTS

11.1. Applicable requirements

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

11.2. Antenna Connector

Antenna Connector is on the PCB within enclosure and not accessible to user.

11.3. Antenna Gain

The antenna gain of EUT is less than 6 dBi.

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