FCC RF TEST REPORT

Report No.:	R201811003
Model No.:	JA32
Grant No.:	JOY
FCC ID:	JOYJA32
Date of Receipt:	Oct 10,2018
Date of Test:	Oct 10,2018~ Nov 15,2018
Date of Issue:	Nov 26,2018
Test Result:	PASS

Applicant:	KYOCERA CORPORATION
Manufacturer:	KYOCERA CORPORATION
Factory:	KYOCERA CORPORATION
Product Name	SMART PHONE
Trade Mark	KYOCERA
Address:	Yokohama Office 2-1-1 Kagahara,Tsuzuki-ku Yokohama-shi,Kanagawa,Japan
Issued By:	BYD Precise Manufacture Co., Ltd.
Lab Location:	No. 3001, Baohe Road, Baolong Longgang, Shenzhen, 518116, People's Republic of China

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1 REPORT ISSUED HISTORY

Version	Description	Issued Data
Rev. 01	Original issue	Nov 26,2018

2 CERTIFICATION

PRODUCT:	Smart Phone
MODEL:	JA32
BRAND:	KYOCERA
APPLICANT:	KYOCERA
TEST SAMPLE:	ENGINEERING SAMPLE
SN.:	JA32125479850089K0676
HW Version:	JA32
SW Version:	Sdm660_64-userdebug 9
TESTED:	Oct 10,2018~ Nov 15,2018
STANDARDS:	FCC 47 CFR Part15 Subpart C §15.247

The above equipment has been tested by **BYD Precise Manufacture Co., Ltd,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

PREPARED BY : _____ , **DATE:** **2018-11-26**
(Yan Chen / Engineer)

TECHNICAL ACCEPTANCE : _____ , **DATE:** **2018-11-26**
Responsible for EMS (Zhaohui Feng / Manager)

APPROVED BY : _____ , **DATE:** **2018-11-26**
(Jie Yan / Director)

3 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

FCC RULE	TEST ITEMS	RESULT	REMARK
§15.247(a)(2)	6dB Bandwidth	PASS	≥0.5MHz
-	99% Bandwidth	PASS	-
§15.247(b)(1)	Peak Output Power	PASS	≤30dBm
§15.247(e)	Power Spectral Density	PASS	≤8dBm
§15.247(d)	Band edges	PASS	≤20dBc
§15.247(d)	Conducted Spurious	PASS	≤20dBc

3.1 Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5%
RF output power, Conducted	±0.59dB
Power Spectral Density, Conducted	±0.59dB
Unwanted Emissions, Radiated	±1.6dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	±1%

4 GENERAL INFORMATION

4.1 Test Equipments List

Description & Manufacturer	MODEL NO.	SERIAL NO.	Next Calibration date
CBT BLUETOOTH TESTER ROHDE & SCHWARZ	CBT	100430	2019/2/25
SIGNAL ANALYZER ROHDE & SCHWARZ	FSQ26	200393	2019/4/9
DC Power Supply Agilent	E3632A	MY40029031	2019/3/5
LC Filters	-	L2000-9C1AS	-
RF cable		-	-
Power Divider	-	C279810-01	-
PC	-	30008979	-

NOTE: Calibration cycle 12 months.

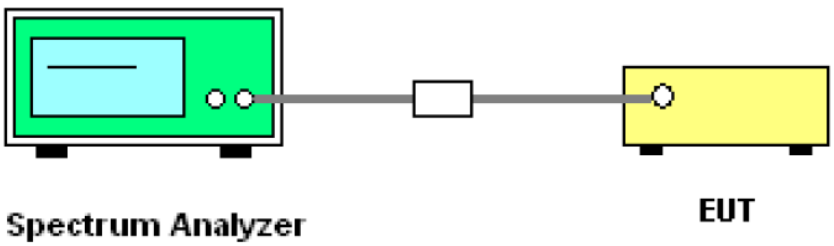
4.2 Description of Test Modes

Test Items	Data Rate/Modulation(BLE/GFSK)
6dB Bandwidth	Mode1:Bluetooth Tx CH00_2402MHz_1Mbps Mode2:Bluetooth Tx CH19_2440MHz_1Mbps Mode3:Bluetooth Tx CH39_2480MHz_1Mbps
99% Bandwidth	
Peak Output Power	
Power Spectral Density	
Band edges	
Conducted Spurious	

4.3 Test Environment and List of Software and Parts

Test Items	Software	Parts	Environment
6dB Bandwidth	QRCT Version3.0	USB Cable、Fake battery	Temp.:25℃±3 Humi:30%~60% Volt.:3.8V
99% Bandwidth	QRCT Version3.0	USB Cable、Fake battery	Temp.:25℃±3 Humi:30%~60% Volt.:3.8V
Peak Output Power	QRCT Version3.0	USB Cable、Fake battery	Temp.:25℃±3 Humi:30%~60% Volt.:3.8V
Power Spectral Density	QRCT Version3.0	USB Cable、Fake battery	Temp.:25℃±3 Humi:30%~60% Volt.:3.8V
Band edges	QRCT Version3.0	USB Cable、Fake battery	Temp.:25℃±3 Humi:30%~60% Volt.:3.8V
Conducted Spurious	QRCT Version3.0	USB Cable、Fake battery	Temp.:25℃±3 Humi:30%~60% Volt.:3.8V

4.4 Configuration Of System Under Test



4.5 Testing Location

Test Site	BYD Precise Manufacture Co., Ltd.
Test Site Location	No. 3001, Baohe Road, Baolong Longgang, Shenzhen, 518116, People's Republic of China
Post Code	518116
Telephone	+86-755 8489 8888 55501
Fax	+86-755 8964 3771

4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 4886.01)**

BYD Precise Manufacture Co., Ltd., Baolong Shenzhen Laboratory is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 4886.01.

- **FCC –Designation Number: CN1232**

BYD Precise Manufacture Co., Ltd., Baolong Shenzhen Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1232.

4.7 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part15 Subpart C §15.247

RSS-210/Gen

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

5 TEST TYPES AND RESULTS

5.1 6dB and 99% Bandwidth

5.1.1 Description

The minimum 6 dB bandwidth shall be at least 500 kHz.

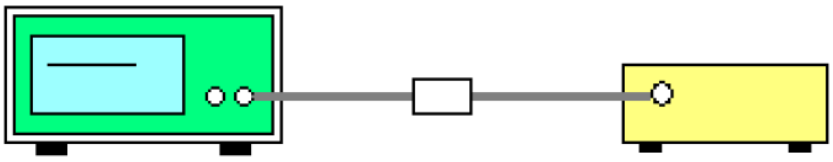
5.1.2 Test Instruments

The measuring equipment is listed in the section 4.1 of this test report.

5.1.3 Test Procedure

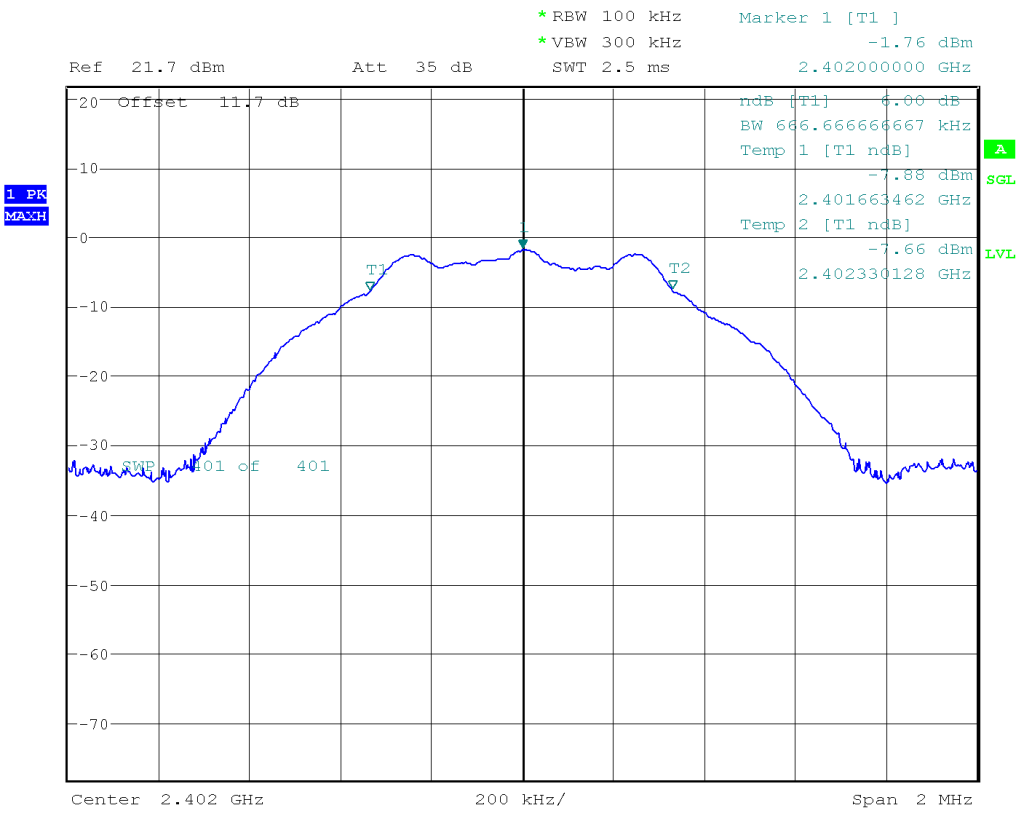
a. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss compensated to the results for each measurement.
b. Set to the maximum power setting and enable the EUT transmit continuously.
c. Use the following spectrum analyzer setting: RBW=100kHz; VBW=300kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
d. For 99% Bandwidth Measurement, The spectrum analyzer's RBW=30 kHz; VBW=100 kHz.
e. Record the measurement the results in the test report.

5.1.4 Test Setup



5.1.5 Test Results

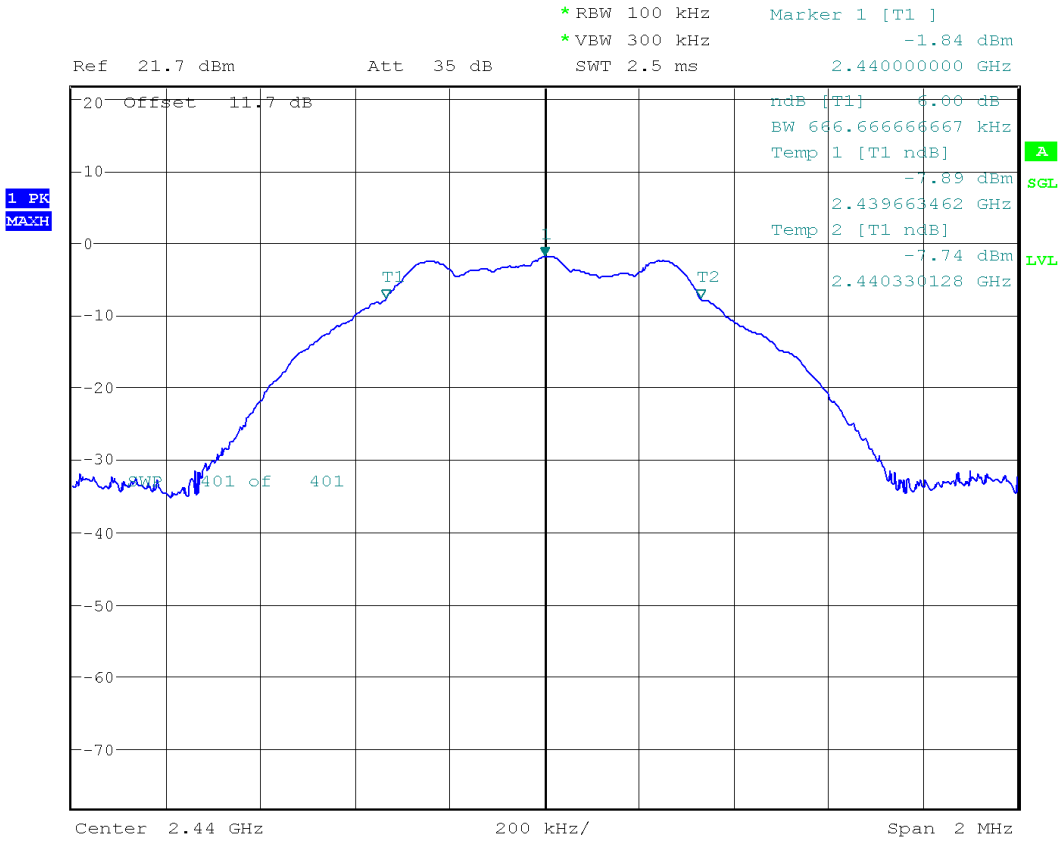
Channel	Frequency(MHz)	6dB BW(kHz)	Limit(kHz)	P/F
0	2402	666.67	500	PASS
19	2440	666.67	500	PASS
39	2480	669.87	500	PASS



BAND

Date: 10.OCT.2018 05:01:44

BT4.0 CH0 2402MHz(6dB BW)



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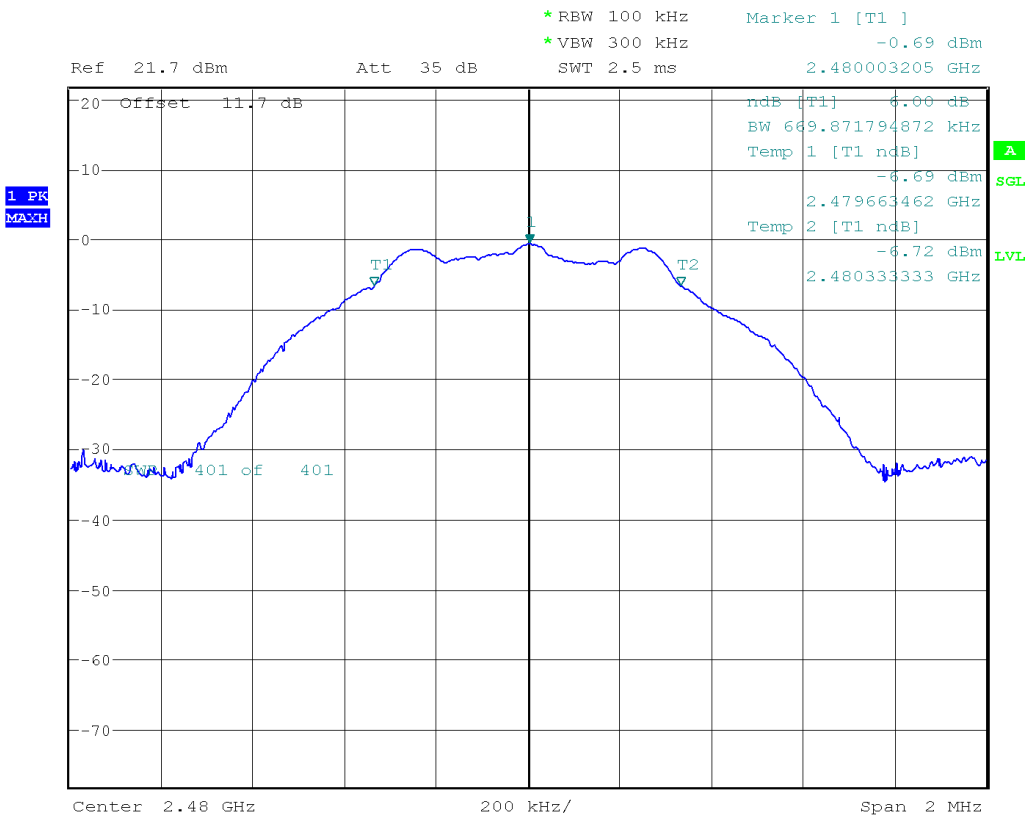
BT4.0 CH19 2440MHz(6dB BW)

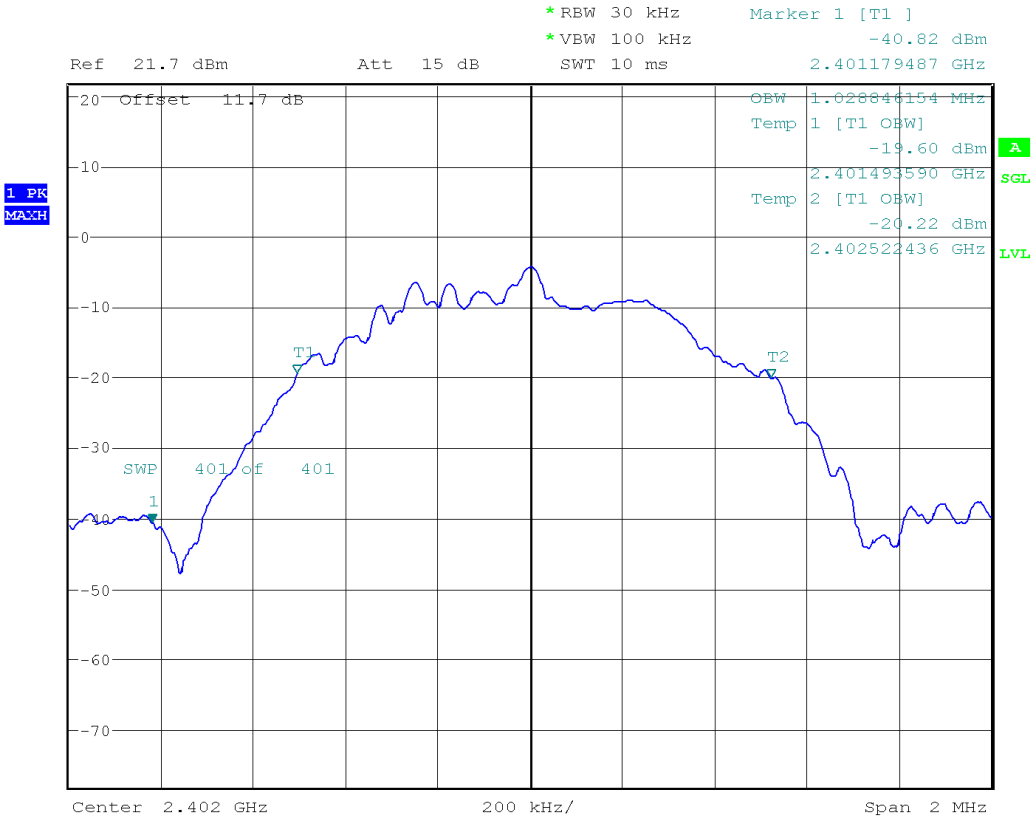


BAND

Date: 10.OCT.2018 05:10:17

BT4.0 CH39 2480MHz(6dB BW)

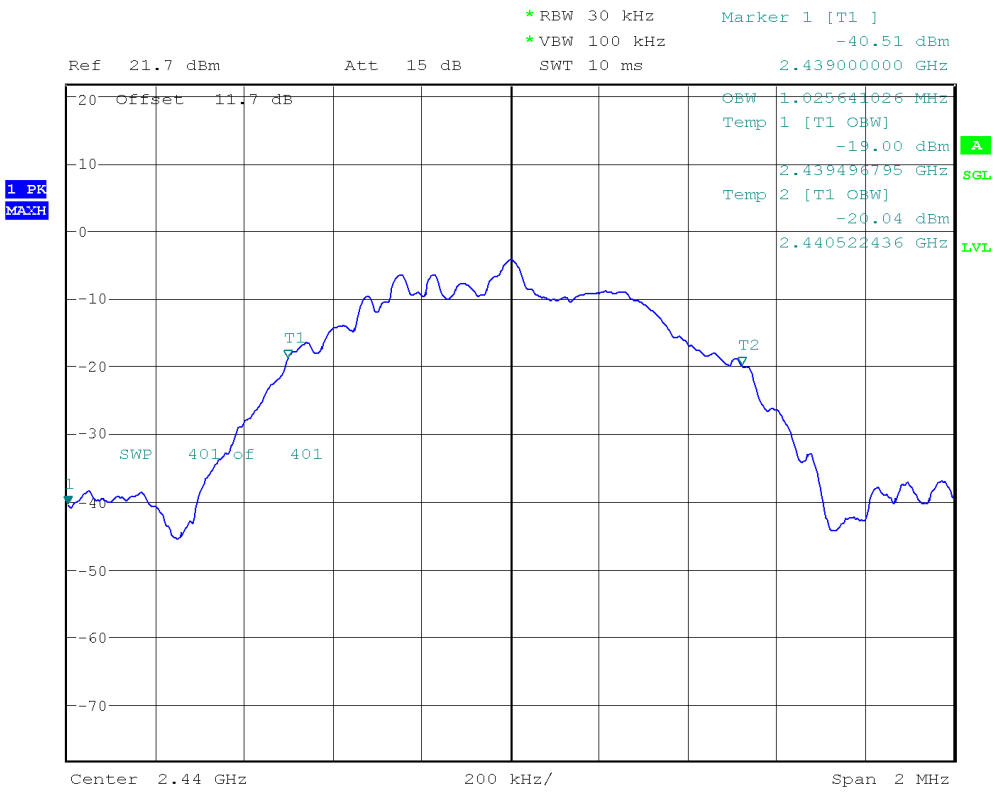
Channel	Frequency(MHz)	99% BW(kHz)
0	2402	1028.85
19	2440	1025.64
39	2480	1028.85



BAND

Date: 10.OCT.2018 05:02:08

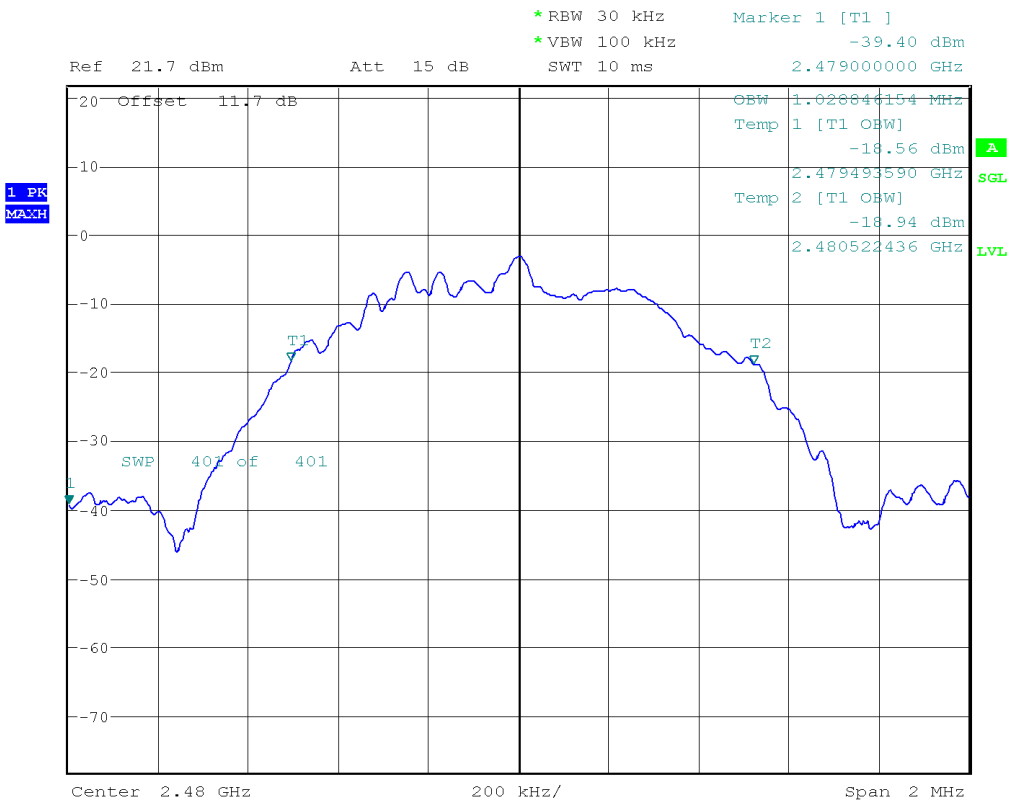
BT4.0 CH0 2402MHz(99% BW)



BAND

Date: 10.OCT.2018 05:07:52

BT4.0 CH19 2440MHz(99% BW)



BAND

Date: 10.OCT.2018 05:10:38

BT4.0 CH39 2480MHz(99% BW)

5.2 Peak Output Power

5.2.1 Description

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

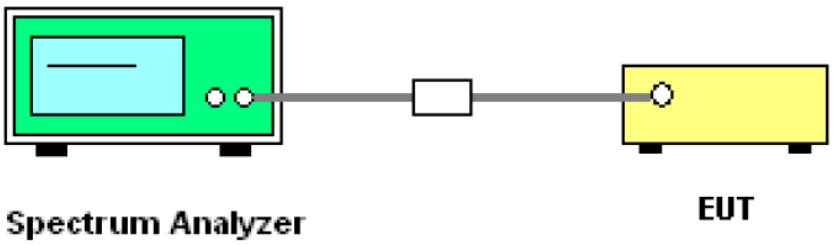
5.2.2 Test Instruments

The measuring equipment is listed in the section 4.1 of this test report.

5.2.3 Test Procedure

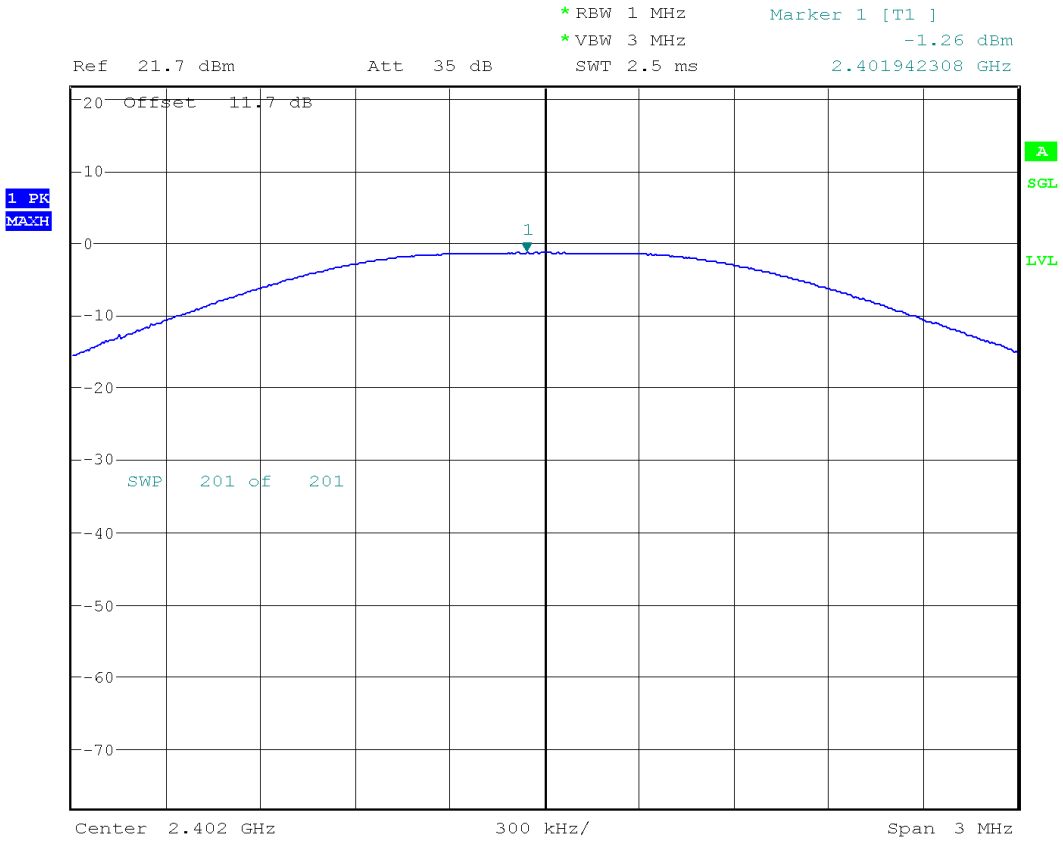
a. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss compensated to the results for each measurement.
b. Set to the maximum power setting and enable the EUT transmit continuously.
c. Record the measurement the results in the test report.

5.2.4 Test Setup



5.2.5 Test Result

Channel	Frequency(MHz)	Power(dBm)	Limit(dBm)	P/F
0	2402	-1.26	30	PASS
19	2440	-1.39	30	PASS
39	2480	-0.08	30	PASS



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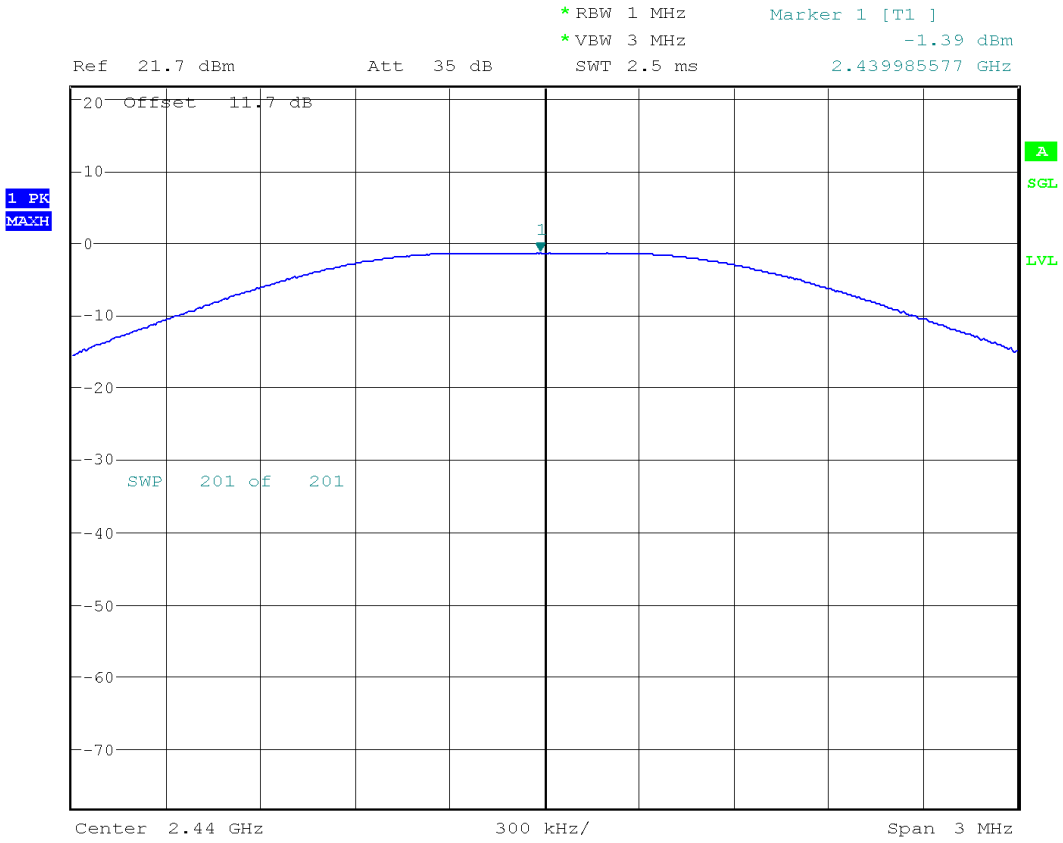
Date: 10.OCT.2018 05:02:19

BT4.0 CH0 2402MHz



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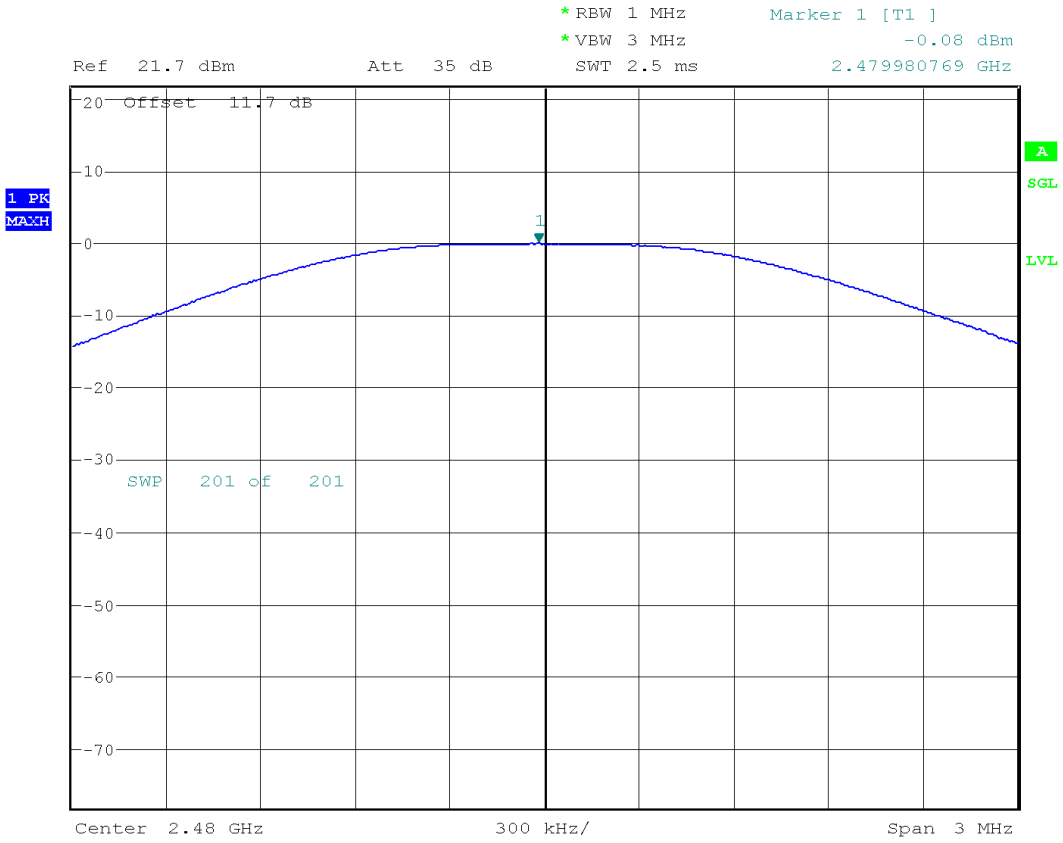
Date: 10.OCT.2018 05:08:03

BT4.0 CH19 2440MHz



BAND

Date: 10.OCT.2018 05:10:48

BT4.0 CH39 2480MHz

5.3 Power Spectral Density

5.3.1 Description

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

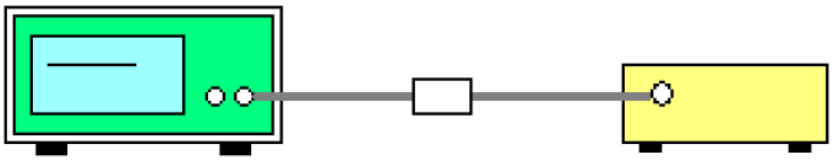
5.3.2 Test Instruments

The measuring equipment is listed in the section 4.1 of this test report.

5.3.3 Test Procedure

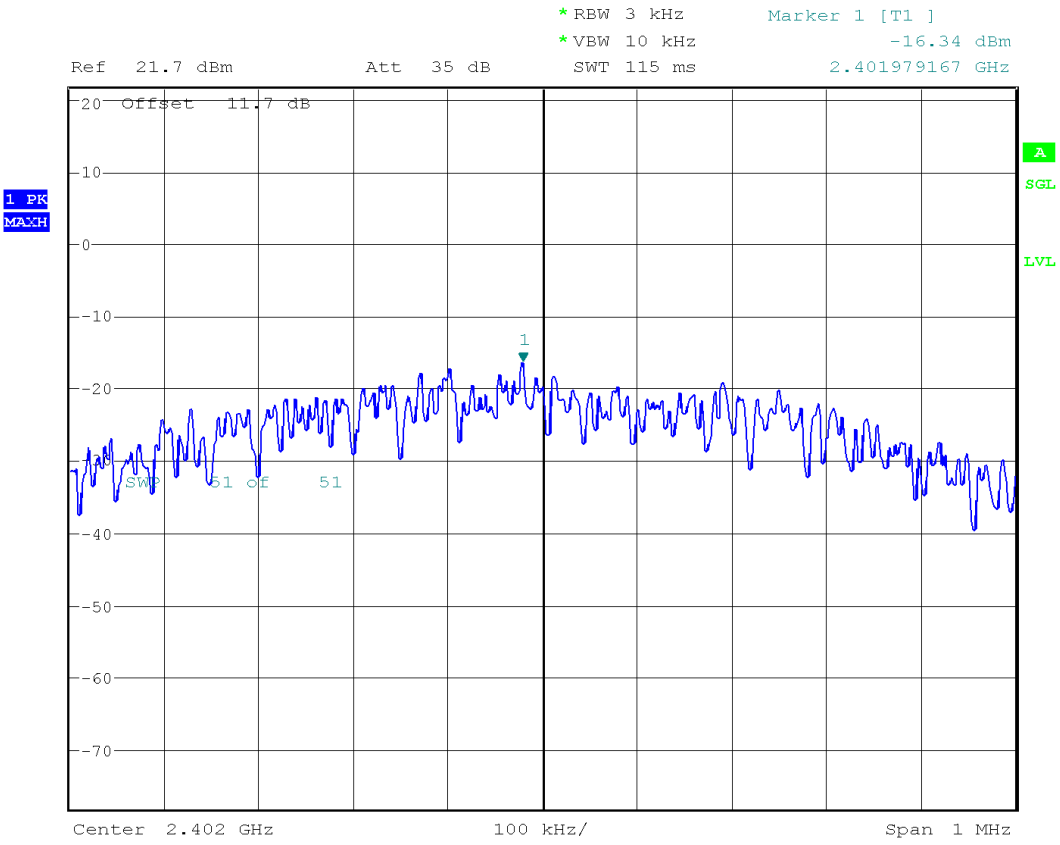
a. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss compensated to the results for each measurement.
b. Set to the maximum power setting and enable the EUT transmit continuously.
c. Make the measurement with the spectrum analyzer's RBW=3kHz. VBW=10kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel bandwidth.(6dB BW)
d. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
e. Record the measurement the results in the test report.
f. The Measured power density (dBm)/100kHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

5.3.4 Test Setup



5.3.5 Test Result

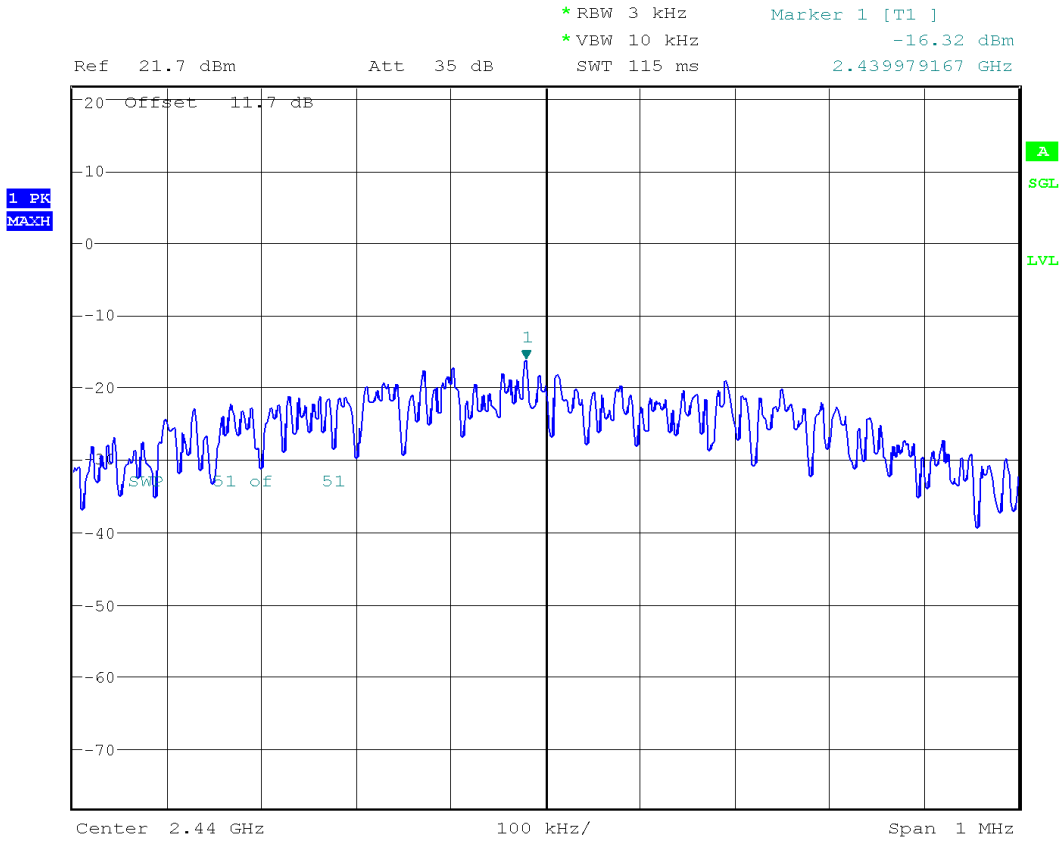
Channel	Frequency(MHz)	Power Spectral Density(dBm/3KHz)	Limit(dBm/MHz)	P/F
0	2402	-16.34	8	PASS
19	2440	-16.32	8	PASS
39	2480	-15.21	8	PASS



BAND

Date: 10.OCT.2018 05:02:39

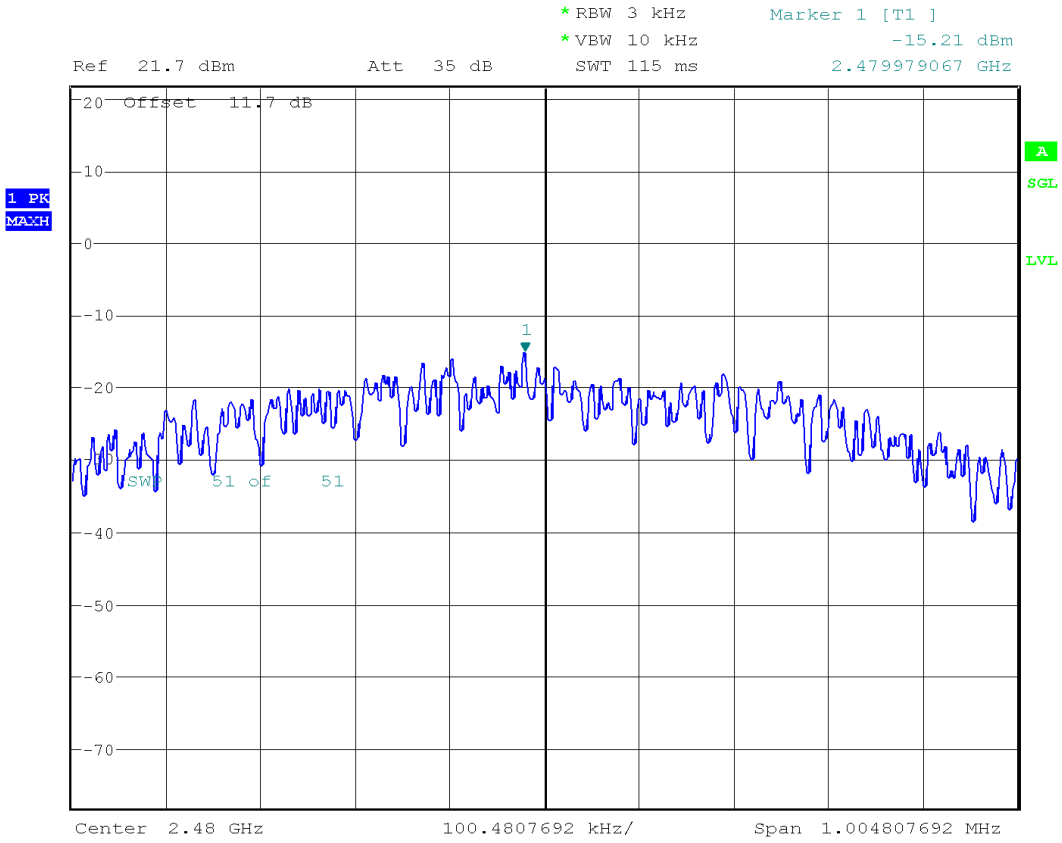
BT4.0 CH0 2402MHz



BAND

Date: 10.OCT.2018 05:08:23

BT4.0 CH19 2440MHz



BAND

Date: 10.OCT.2018 05:11:09

BT4.0 CH39 2480MHz

5.4 Conducted Band Edges and Spurious Emission

5.4.1 Description

All harmonics/spurious must be at least 20 dB down from highest emission level within the authorized band.

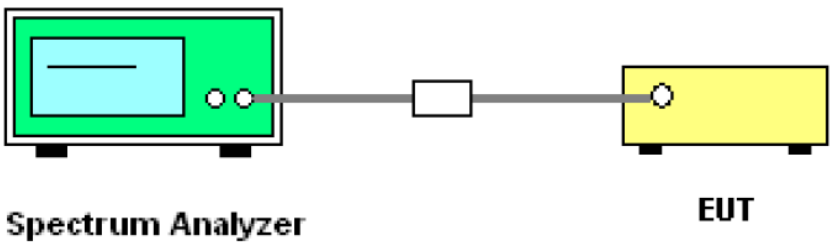
5.4.2 Test Instruments

The measuring equipment is listed in the section 4.1 of this test report.

5.4.3 Test Procedure

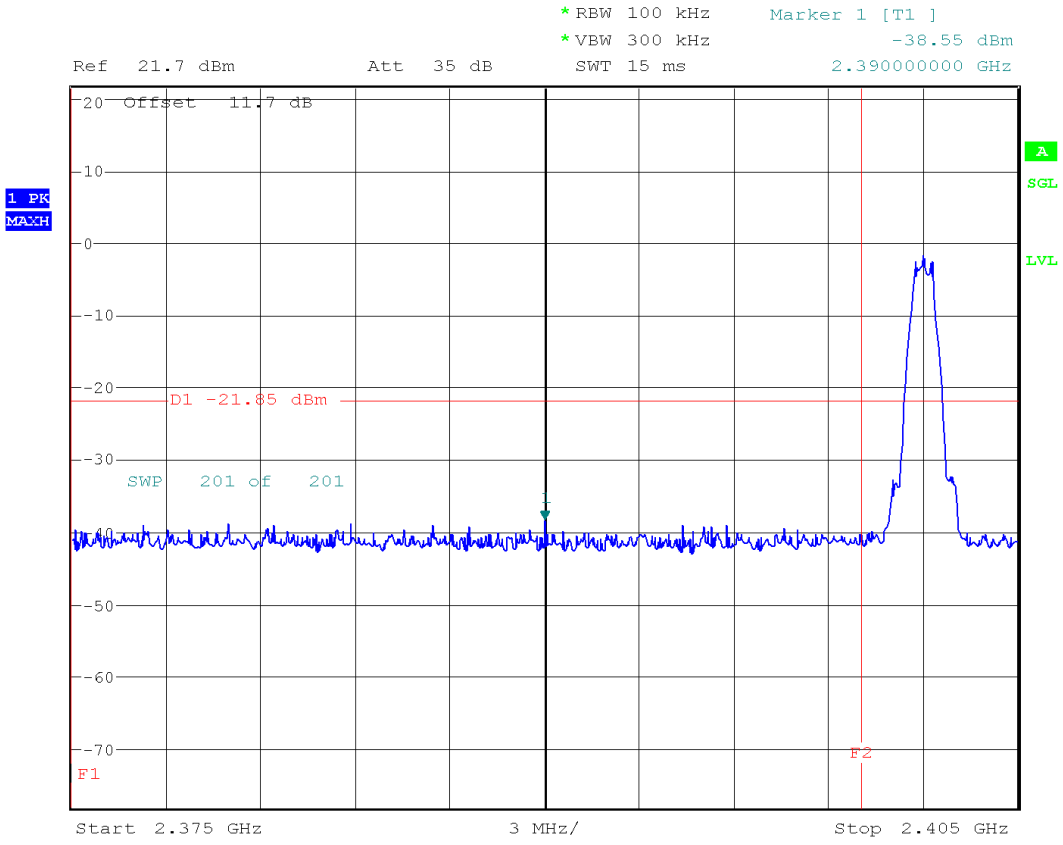
a. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss compensated to the results for each measurement.
b. Set to the maximum power setting and enable the EUT transmit continuously.
c. Make the measurement with the spectrum analyzer's RBW=100kHz. VBW=300kHz,Detector = peak, Unwanted Emissions measured in any 100kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSK level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15,247(d).
d. Record the measurement the results in the test report.
e. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

5.4.4 Test Setup



5.4.5 Test Result

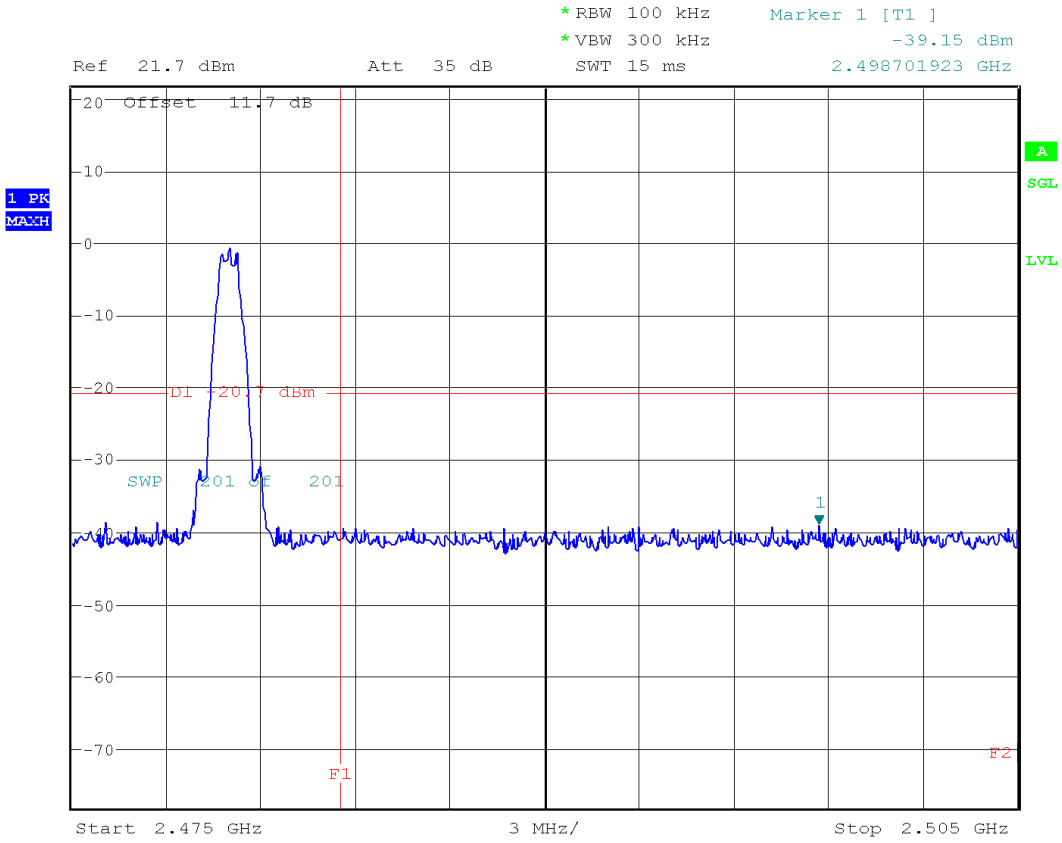
Channel	Frequency(MHz)	100KHz PSD(dBm/100 KHz)	Band Edge Value(dB)	Limit(dBc)	P/F
0	2402	-1.85	-38.55	20.000	PASS
19	2440	-1.87	-	-	-
39	2480	-0.7	-39.15	20.000	PASS



BAND

Date: 10.OCT.2018 05:02:58

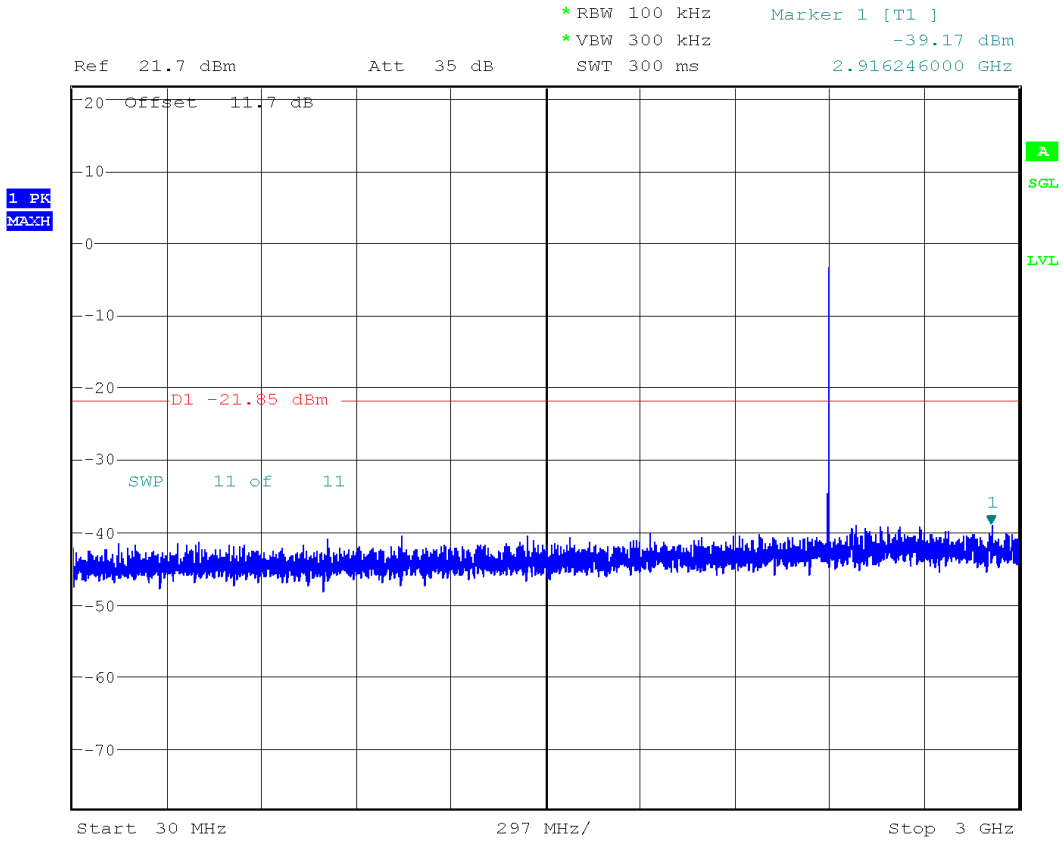
BT4.0 CH0 2402MHz



BAND

Date: 10.OCT.2018 05:11:27

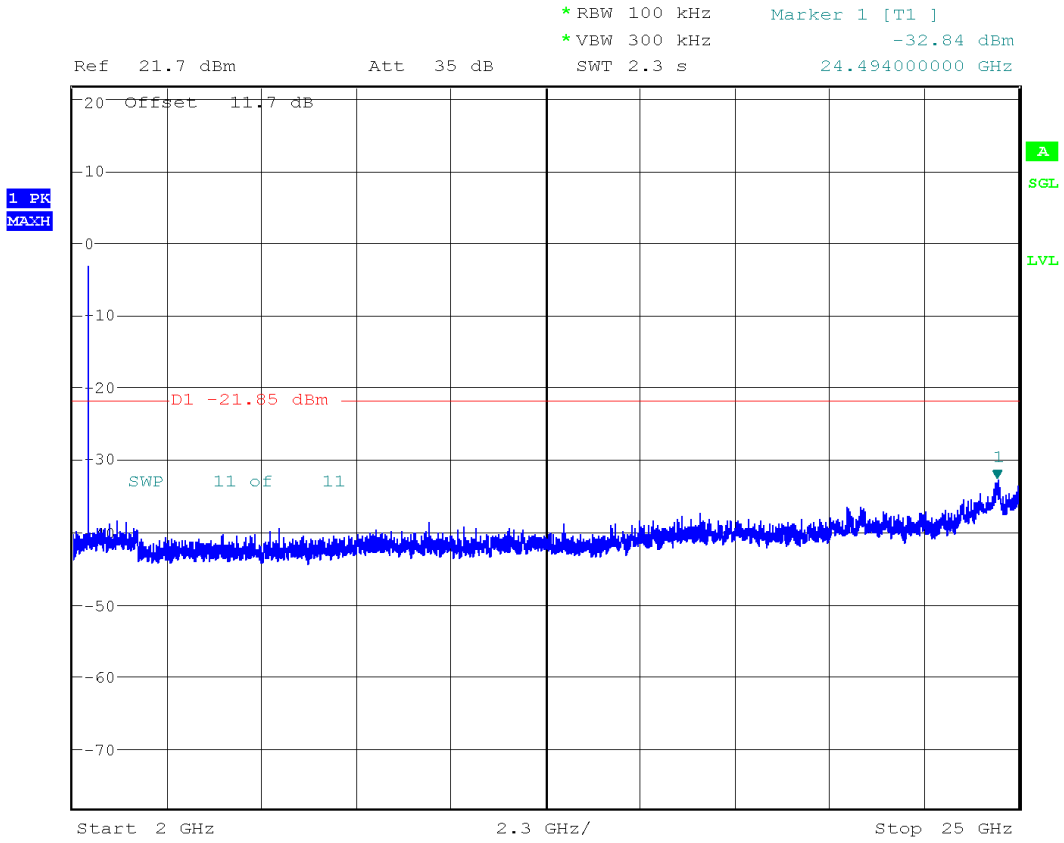
BT4.0 CH39 2480MHz



BAND

Date: 10.OCT.2018 05:03:09

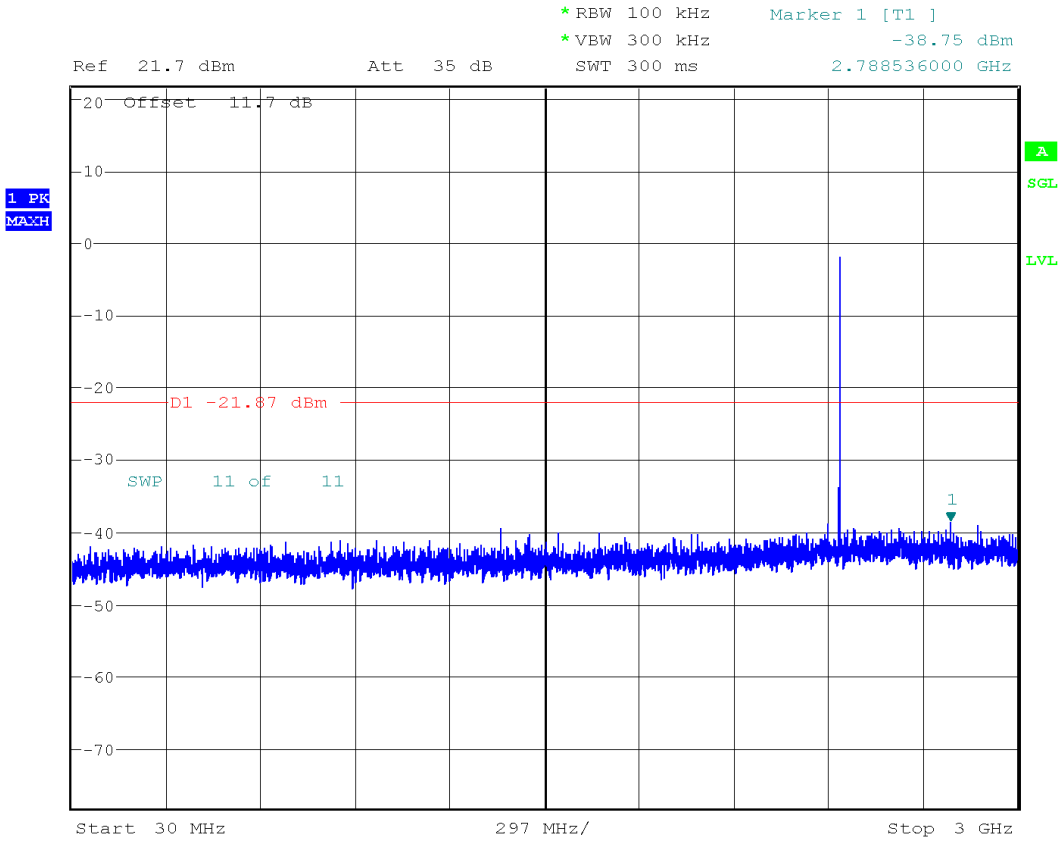
BT4.0 CH0 2402MHz(CSE 30MHz~3GHz)



BAND

Date: 10.OCT.2018 05:03:46

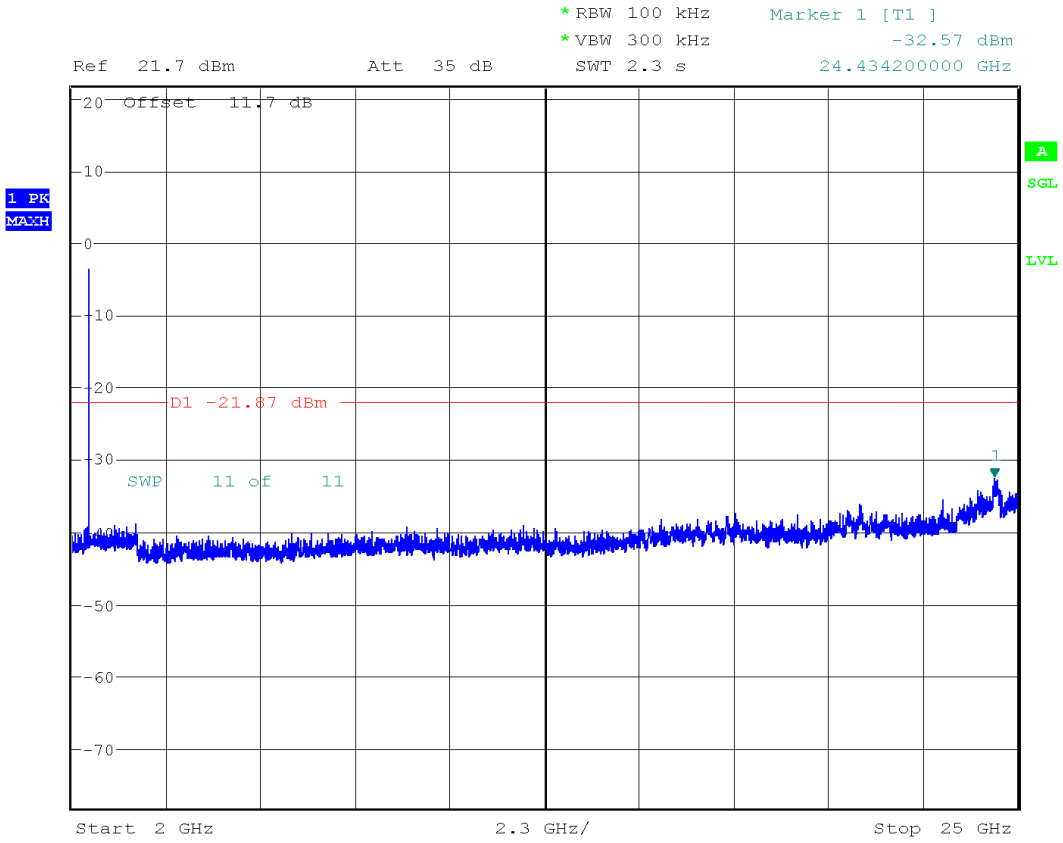
BT4.0 CH0 2402MHz(CSE 2GHz~25GHz)



BAND

Date: 10.OCT.2018 05:08:34

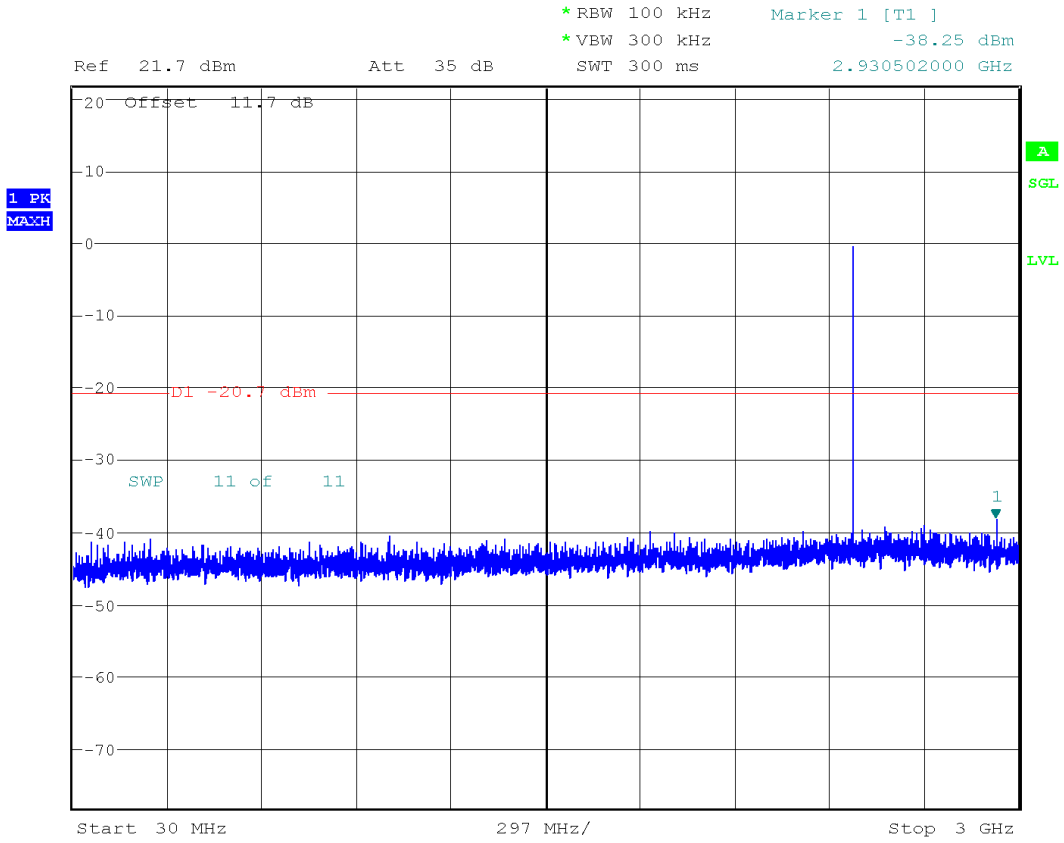
BT4.0 CH19 2440MHz(CSE 30MHz~3GHz)



BAND

Date: 10.OCT.2018 05:09:11

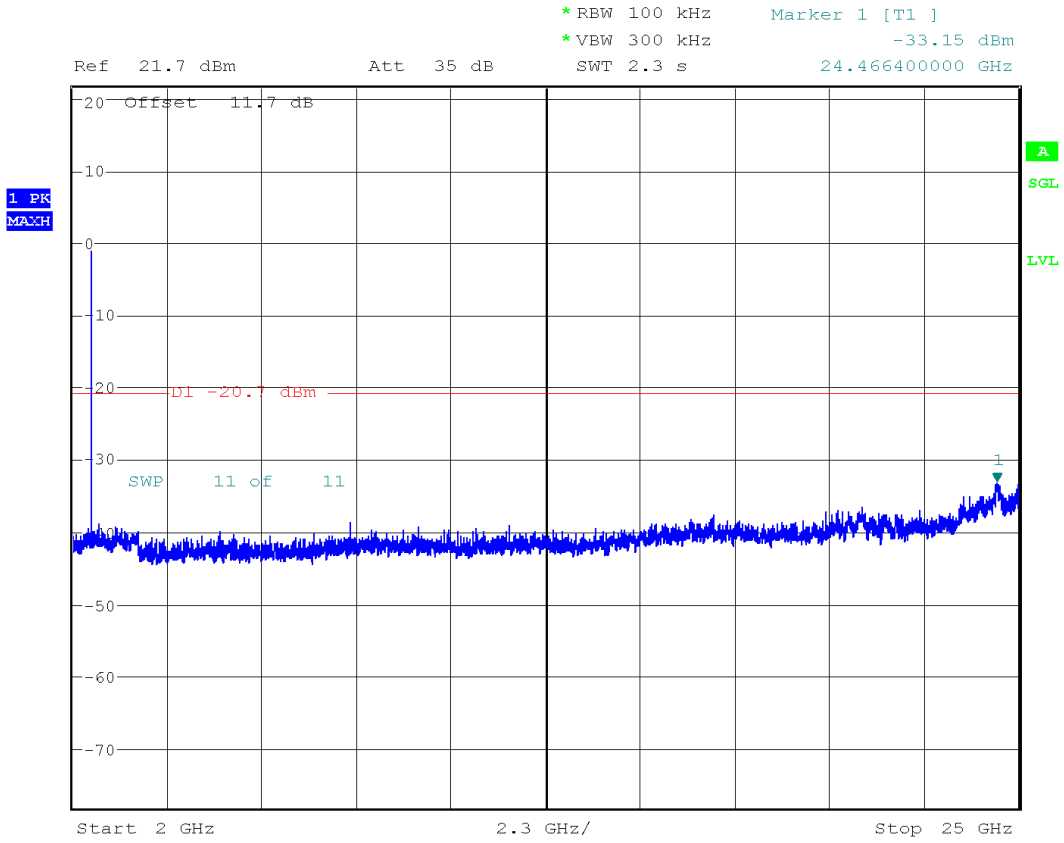
BT4.0 CH19 2440MHz(CSE 2GHz~25GHz)



BAND

Date: 10.OCT.2018 05:11:38

BT4.0 CH39 2480MHz(CSE 30MHz~3GHz)



BAND

Date: 10.OCT.2018 05:12:15

BT4.0 CH39 2480MHz(CSE 2GHz~25GHz)

6 SAMPLE PICTURE

Reference attachment : Test Setup Photos_2

7 APPENDIX - INFORMATION ON THE TESTING LABORATORIES

We, BYD Precise Manufacture Co., Ltd., were founded in 2007 to provide our best service in RF, Radio consultation. Our laboratories are accredited by the following accreditation bodies according to ISO/IEC 17025 (2005) .

USA	A2LA Certificate No.: 4886.01

Copies of accreditation certificates could be inquired from our office. If you have any comments, please feel free to contact us at the following:

EMC / RF / Lab:
Tel: +86-755 8489 8888 55501
Fax: +86-755 8964 3771

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