FCC - TEST REPORT

Report Number	:	**64.790.18.04422.01**	Date of Issue:	2019-03-08
Model	:	B1		
Product Type	:	Smart Peak Flow Meter		
Applicant	:	GuangZhou Homesun Medical Technology Co.,Ltd		
Address	:	Floor 7th,TianxiangBusiness Building, No.28,Li Fu Road,Haizhu		
	:	District, Guangzhou,GD.China		
Production Facility	:	GuangZhou Homesun Medical Technology Co.,Ltd		
Address	:	Floor 7th,TianxiangBusiness Building, No.28,Li Fu Road,Haizhu		
	:	District, Guangzhou,GD.China		

Test Result	:	■ **Positive**	☐ **Negative**
Total pages including Appendices	:	34	

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch is a subcontractor to TÜV SÜD Product Service GmbH according to the principles outlined in ISO 17025.

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations. TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch issued reports.

This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval.

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

1 Table of Contents

1 Table of Contents 2
2 Details about the Test Laboratory 3
3 Description of the Equipment Under Test 4
4 Summary of Test Standards 5
5 Summary of Test Results 6
6 General Remarks 7
7 Test Setups 8
8 Systems test configuration 9
9 Technical Requirement 10
9.1 Conducted Emission 10
9.2 Conducted peak output power 13
9.3 Power spectral density 16
9.4 6 dB Bandwidth and 99% Occupied Bandwidth 19
9.5 Spurious RF conducted emissions 23
9.6 Band edge 27
9.7 Spurious radiated emissions for transmitter 29
10 Test Equipment List 33
11 System Measurement Uncertainty 34

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

2 Details about the Test Laboratory

Details about the Test Laboratory
Test Site 1

Company name:	TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch Building 12 & 13, Zhiheng Wisdomland Business Park, Nantou Checkpoint Road 2, Nanshan District Shenzhen 518052 P.R. China
Telephone:	86 755 8828 6998
Fax:	86 755 828 5299
FCC Registration No.:	514049

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

3 Description of the Equipment Under Test

Product:	Smart Peak Flow Meter
Model no.:	B1
FCC ID:	2ASLFGZHX-B1
Options and accessories:	N/A
Rating:	Internal Battery:3.7VDC DC input:5V
RF Transmission Frequency:	2402MHz-2480MHz
No. of Operated Channel:	40
Modulation:	GFSK
Antenna Type:	Internal Antenna
Antenna Gain:	0.0dBi
Description of the EUT:	The Equipment Under Test (EUT) B1 is Smart Peak Flow Meter with Bluetooth operated at 2.402-2.48GHz

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2017 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to KDB558074 D01 v05 DTS Measurement Guidance and ANSI C63.10 (2013).

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

5 Summary of Test Results

Technical Requirements					
FCC Part 15 Subpart C					
Test Condition		Test Site	Test Result		
			Pass	Fail	N/A
§15.207	Conducted emission AC power port	Site 1	☒	☐	☐
§15.247 (b) (1)	Conducted peak output power	Site 1	☒	☐	☐
§15.247(a)(1)	20dB bandwidth	---	☐	☐	☒
§15.247(a)(1)	Carrier frequency separation	---	☐	☐	☒
§15.247(a)(1)(iii)	Number of hopping frequencies	---	☐	☐	☒
§15.247(a)(1)(iii)	Dwell Time	---	☐	☐	☒
§15.247(a)(2)	6dB bandwidth and 99% Occupied Bandwidth	Site 1	☒	☐	☐
§15.247(e)	Power spectral density	Site 1	☒	☐	☐
§15.247(d)	Spurious RF conducted emissions	Site 1	☒	☐	☐
§15.247(d)	Band edge	Site 1	☒	☐	☐
§15.247(d) & §15.209	Spurious radiated emissions for transmitter	Site 1	☒	☐	☐
§15.203	Antenna requirement	See note 1	☒	☐	☐

Note 1: N/A=Not Applicable.
Note 2: The EUT uses a Integrated antenna, which gain is 0.0dBi. In accordance to §15.203, it is considered sufficiently to comply with the provisions of this section.

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

6 General Remarks

This submittal(s) (test report) is intended for FCC ID: 2ASLFGZHX-B1 complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C rules.
B1 is Smart Peak Flow Meter with Bluetooth 4.0. The TX and RX range is 2402MHz-2480MHz for 4.0.

SUMMARY:

All tests according to the regulations cited on page 5 were

- Performed

- **Not** Performed

The Equipment under Test

- **Fulfills** the general approval requirements.

- **Does not** fulfill the general approval requirements.

Sample Received Date: December 5, 2018

Testing Start Date: December 11, 2018

Testing End Date: December 19, 2018

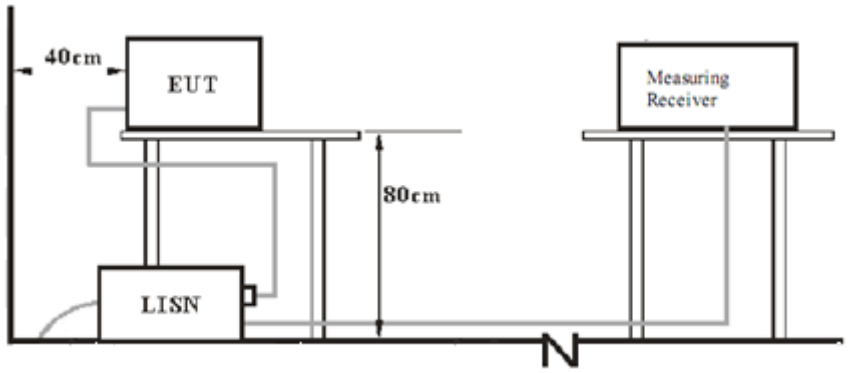
- TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch -

Reviewed by:	Prepared by:	Test by:
Tony Liu	Kevin Ouyang	Louise Liu

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

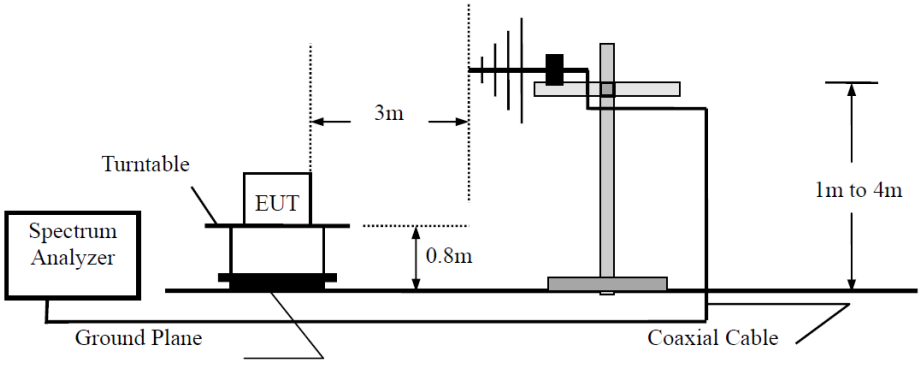
7 Test Setups

7.1 AC Power Line Conducted Emission test setups

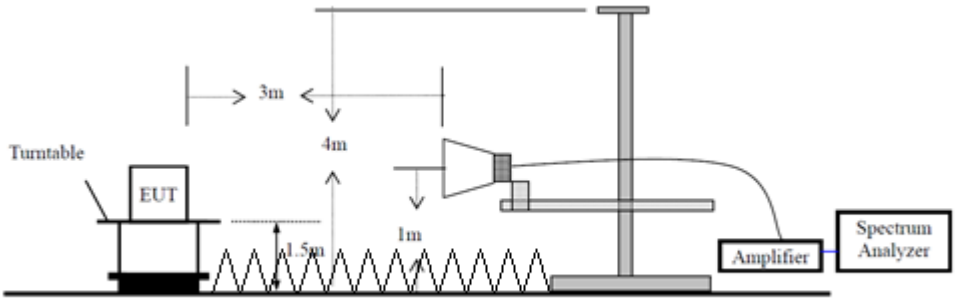


7.2 Radiated test setups

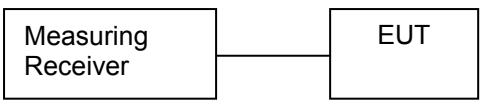
Below 1GHz



Above 1GHz



7.2 Conducted RF test setups



TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

8 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Notebook	Lenovo	X220	---
Mobile phone	Huawei	P10	---

Test software: SmartRF_Studio.exe, which used to control the EUT in continues transmitting mode.

The system was configured to channel 0, 19, and 39 for the test.

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

9 Technical Requirement

9.1 Conducted Emission

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

According to §15.207, conducted emissions limit as below:

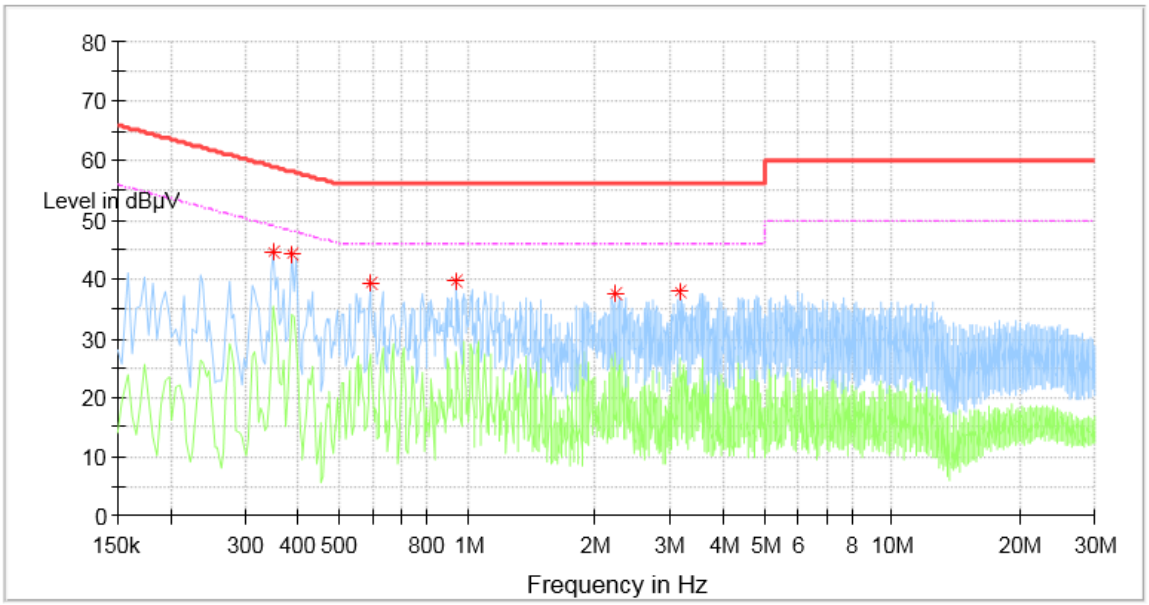
Frequency MHz	QP Limit dBµV	AV Limit dBµV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

"*": Decreasing linearly with logarithm of the frequency

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Conducted Emission

Product Type	:	Smart Peak Flow Meter
M/N	:	B1
Operating Condition	:	Charging
Test Specification	:	Line
Comment	:	AC 120V/60Hz



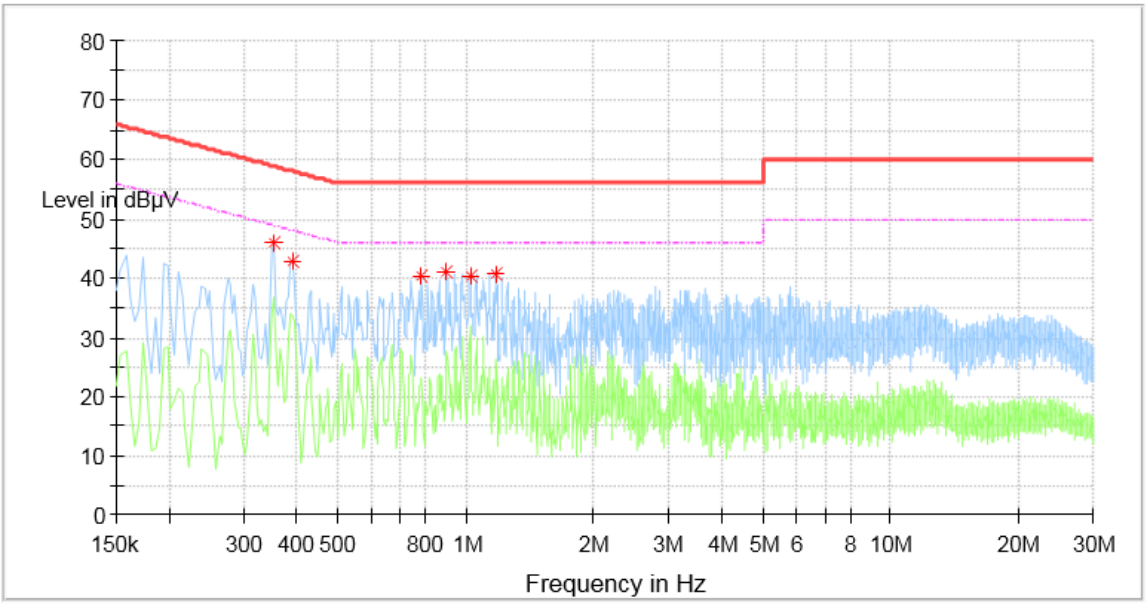
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.350000	44.59	---	58.96	14.37	L1	10.2
0.386000	44.27	---	58.15	13.88	L1	10.3
0.590000	39.15	---	56.00	16.85	L1	10.3
0.942000	39.48	---	56.00	16.52	L1	10.3
2.234000	37.49	---	56.00	18.51	L1	10.3
3.174000	37.90	---	56.00	18.10	L1	10.4

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Conducted Emission

Product Type	:	Smart Peak Flow Meter
M/N	:	B1
Operating Condition	:	Charging
Test Specification	:	Neutral
Comment	:	AC 120V/60Hz



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.354000	45.95	---	58.87	12.92	N	10.3
0.390000	42.76	---	58.06	15.30	N	10.3
0.786000	40.21	---	56.00	15.79	N	10.3
0.902000	40.89	---	56.00	15.11	N	10.3
1.022000	40.50	---	56.00	15.50	N	10.3
1.174000	40.60	---	56.00	15.40	N	10.3

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

9.2 Conducted peak output power

Test Method

1. Use the following spectrum analyzer settings:
   RBW > the 6 dB bandwidth of the emission being measured, VBW≥3RBW, Span≥3RBW
   Sweep = auto, Detector function = peak, Trace = max hold.
2. Add a correction factor to the display.
3. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power.

Limits

According to §15.247 (b) (1), conducted peak output power limit as below:

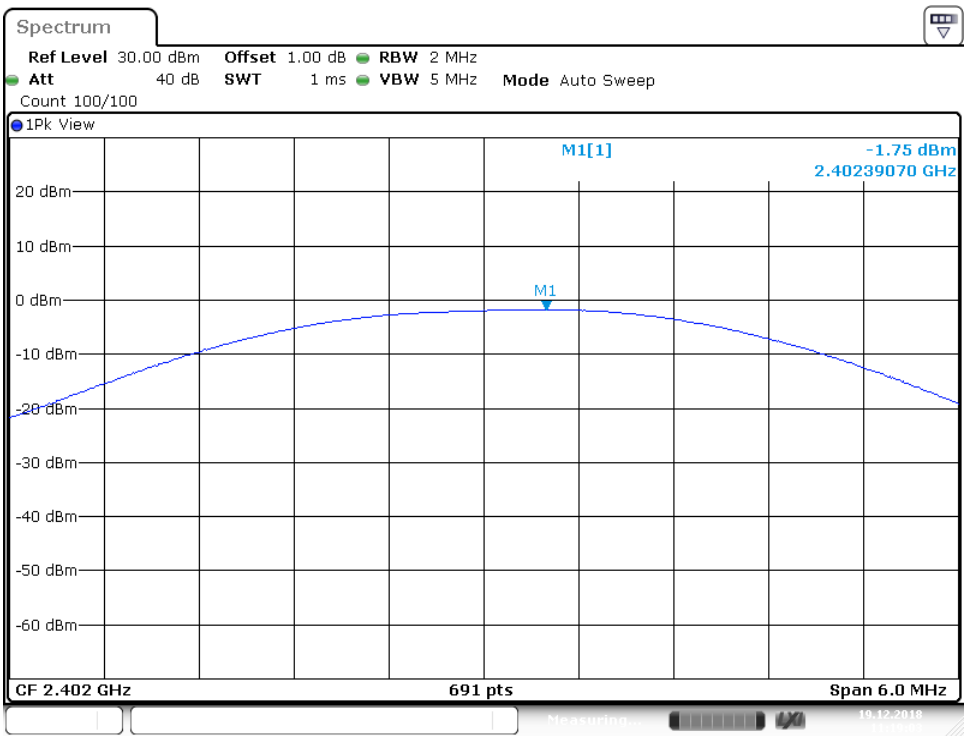
Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1	≤30

Test result as below table

Frequency MHz	Conducted Peak Output Power dBm	Result
Bottom channel 2402MHz	-1.75	Pass
Middle channel 2440MHz	-2.02	Pass
Top channel 2480MHz	-2.22	Pass

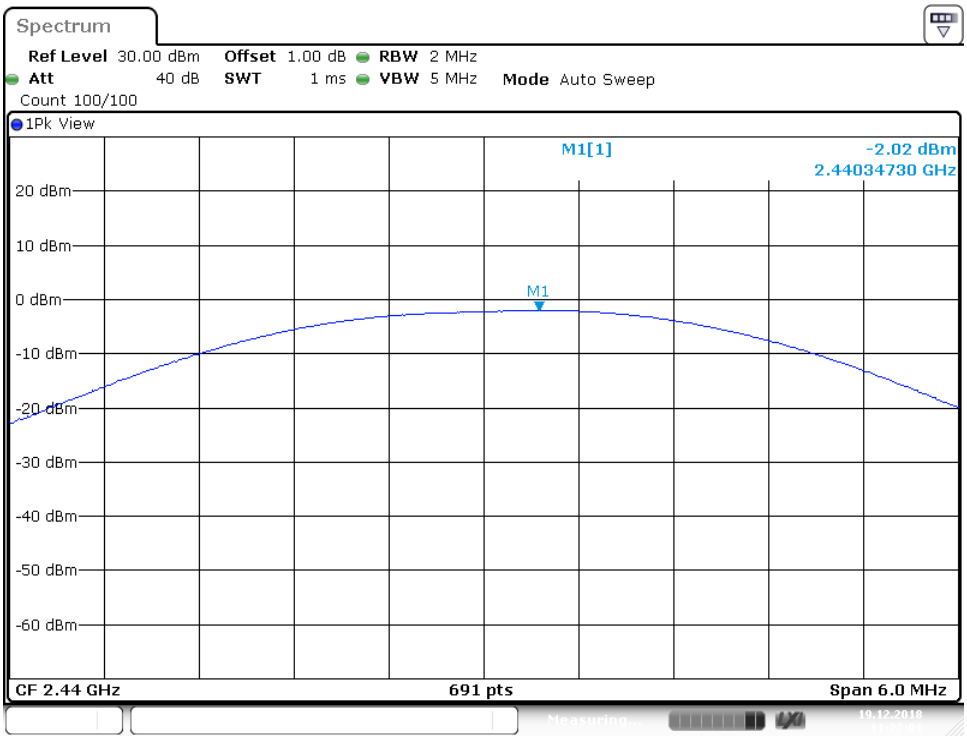
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Low channel 2402MHz



Date: 19.DEC.2018 11:19:03

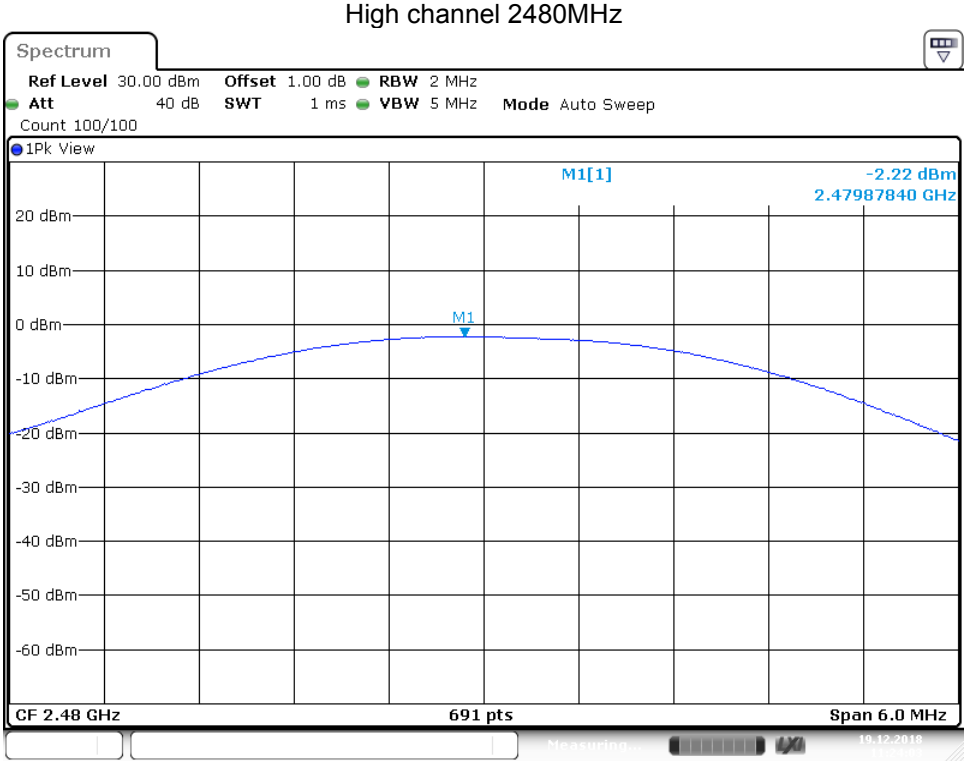
Middle channel 2440MHz



Date: 19.DEC.2018 11:22:01

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

High channel 2480MHz



Date: 19.DEC.2018 11:24:04

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

9.3 Power spectral density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

1. Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW≥3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
2. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
3. Repeat above procedures until other frequencies measured were completed.

Limit

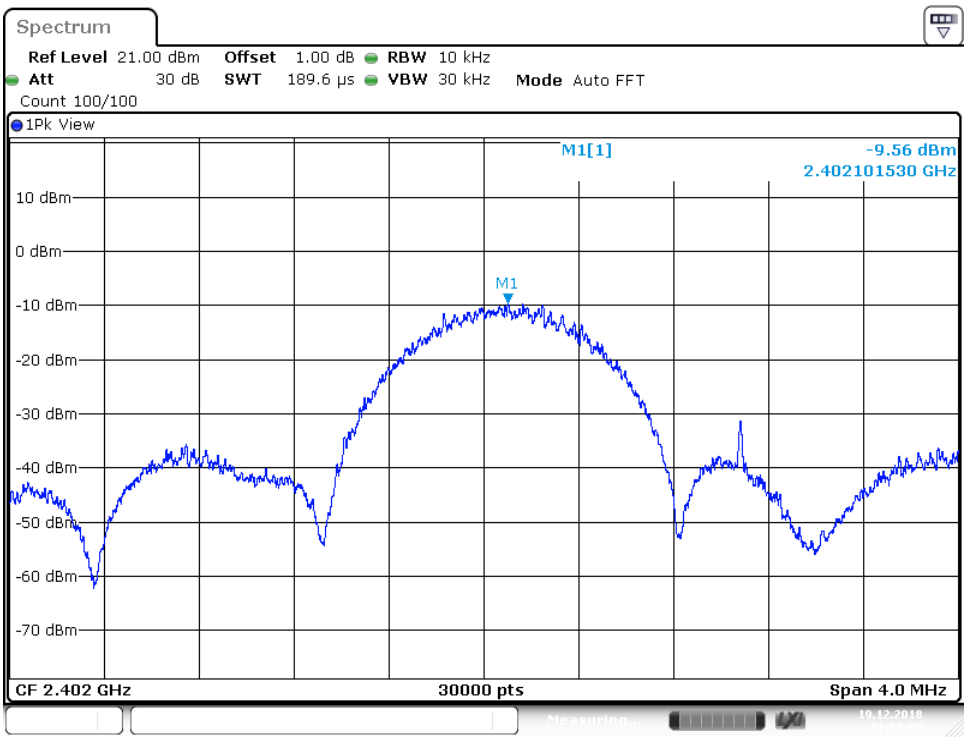
Limit [dBm]
≤8

Test result

Frequency **MHz**	Power spectral density **dBm**	Result
Bottom channel 2402MHz	-9.56	Pass
Middle channel 2440MHz	-9.35	Pass
Top channel 2480MHz	-10.06	Pass

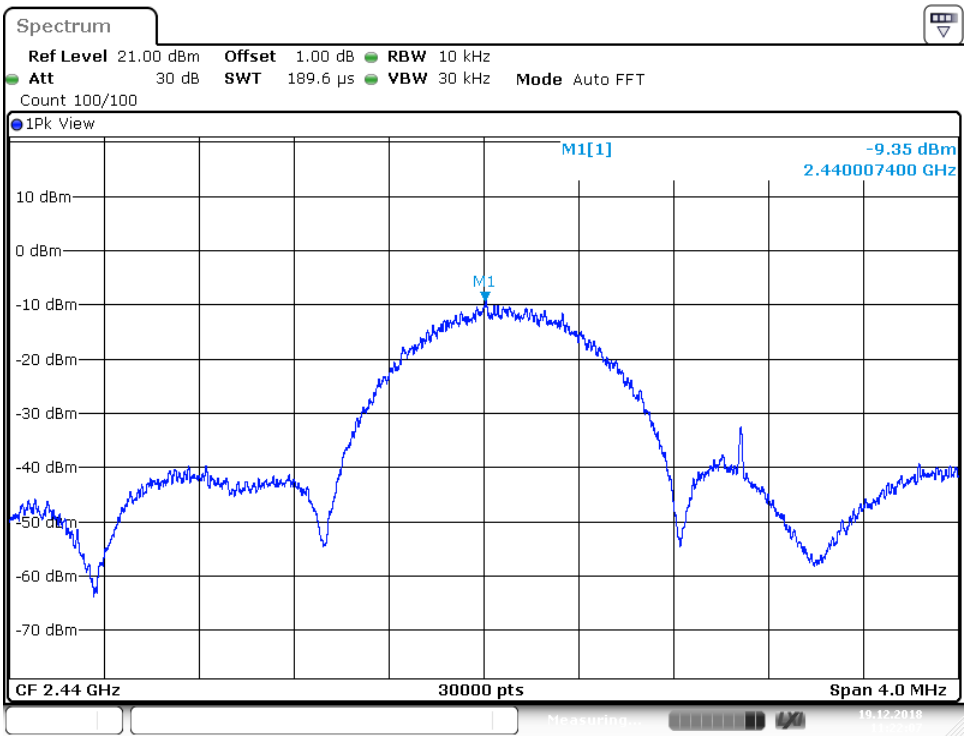
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Low channel 2402MHz



Date: 19.DEC.2018 11:19:10

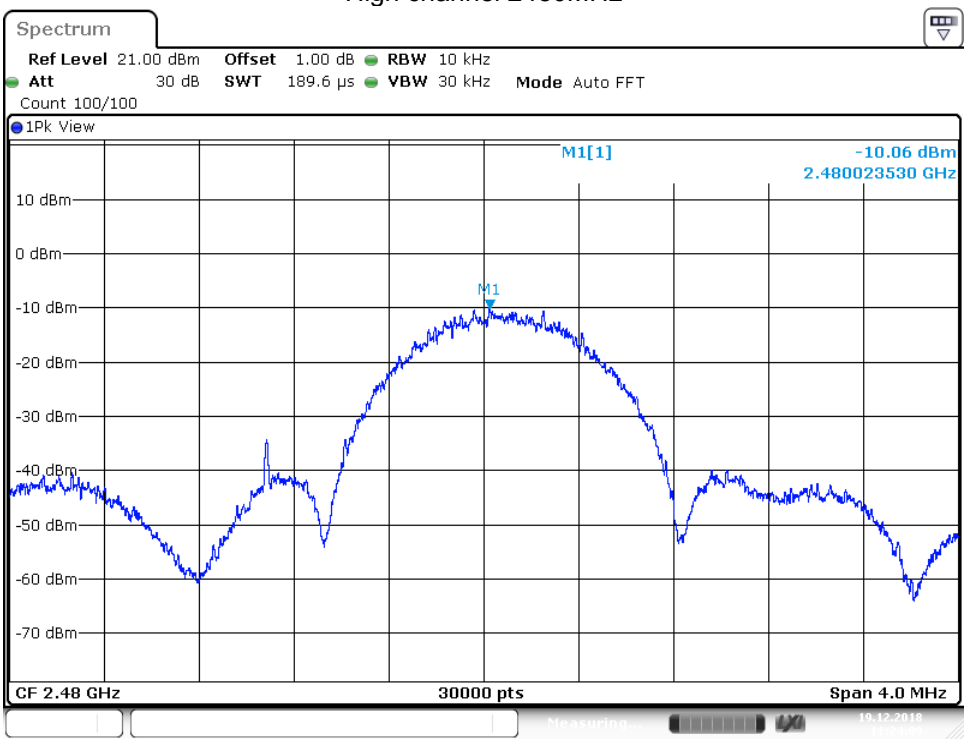
Middle channel 2440MHz



Date: 19.DEC.2018 11:22:07

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

High channel 2480MHz



Date: 19.DEC.2018 11:24:10

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

9.4 6 dB Bandwidth and 99% Occupied Bandwidth

Test Method

1. Use the following spectrum analyzer settings:
RBW=100K, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 6 dB, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.
3. Allow the trace to stabilize, record the X dB Bandwidth value.

Limit

Limit [kHz]
≥500

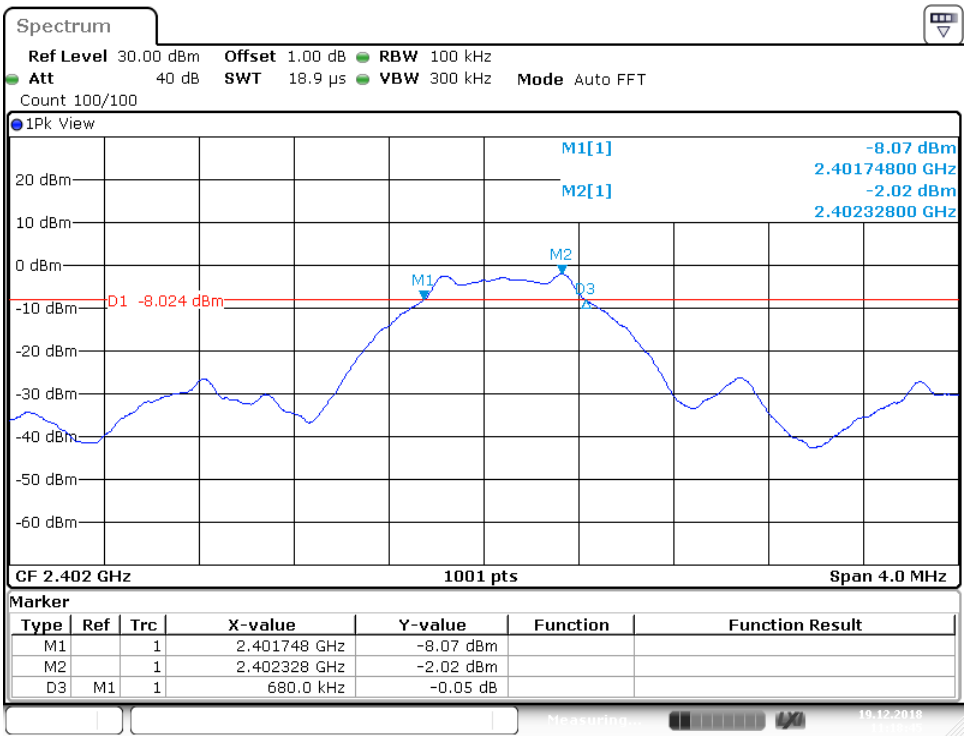
Test result

Frequency MHz	6dB bandwidth kHz	99% bandwidth kHz	Result
Bottom channel 2402MHz	680	1107	Pass
Middle channel 2440MHz	684	1083	Pass
Top channel 2480MHz	680	1075	Pass

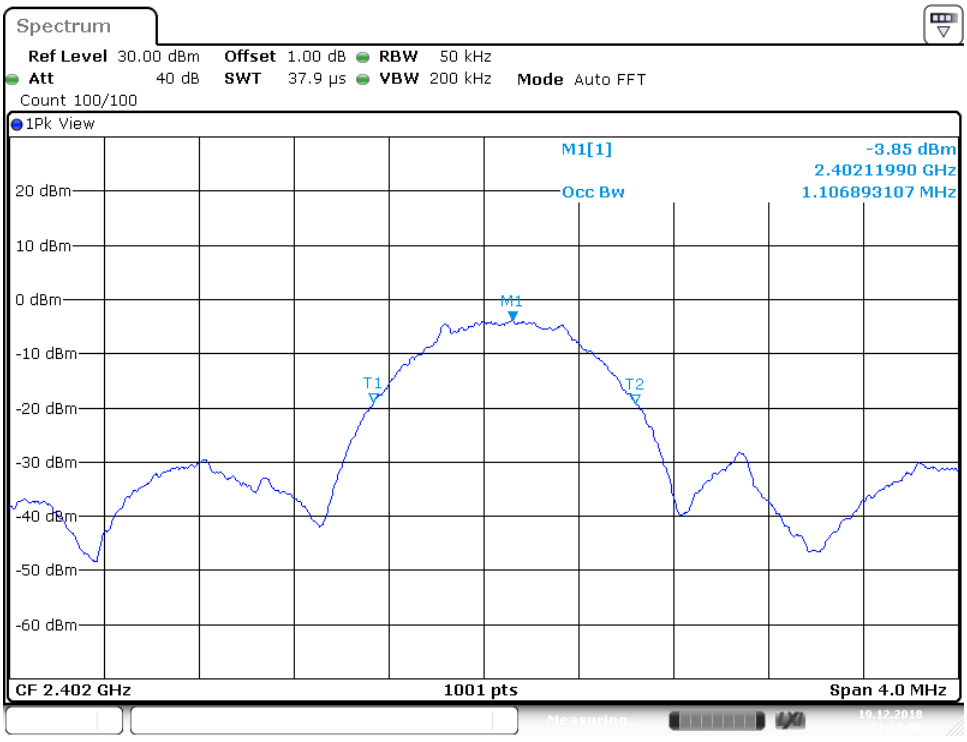
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

6 dB Bandwidth

Low channel 2402MHz



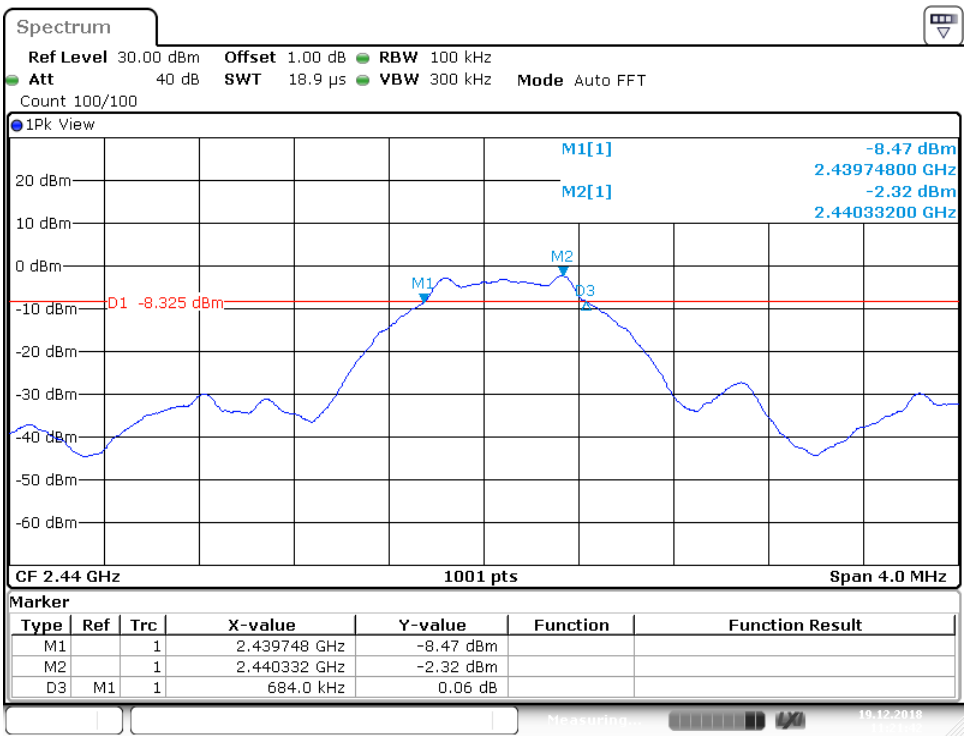
Date: 19.DEC.2018 11:18:45



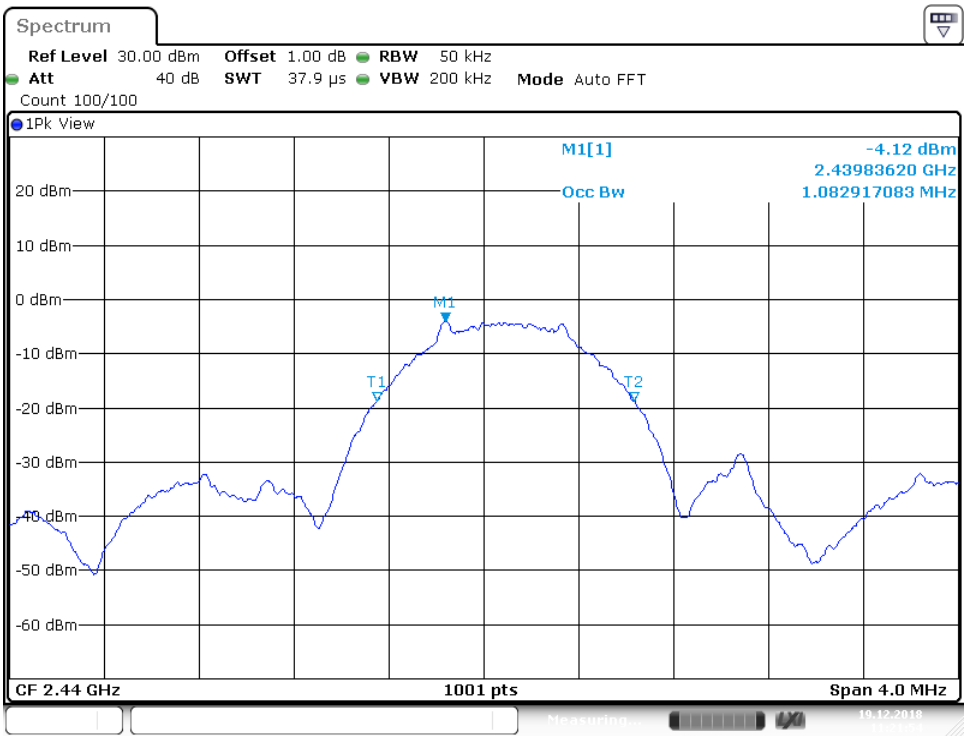
Date: 19.DEC.2018 11:18:56

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Middle channel 2440MHz



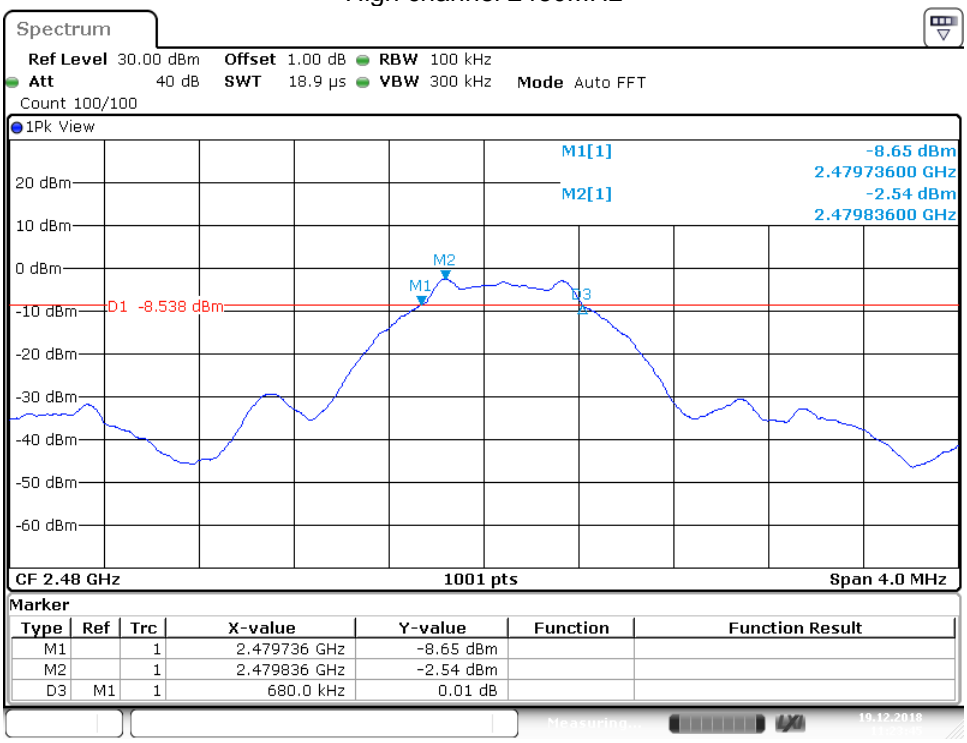
Date: 19.DEC.2018 11:21:42



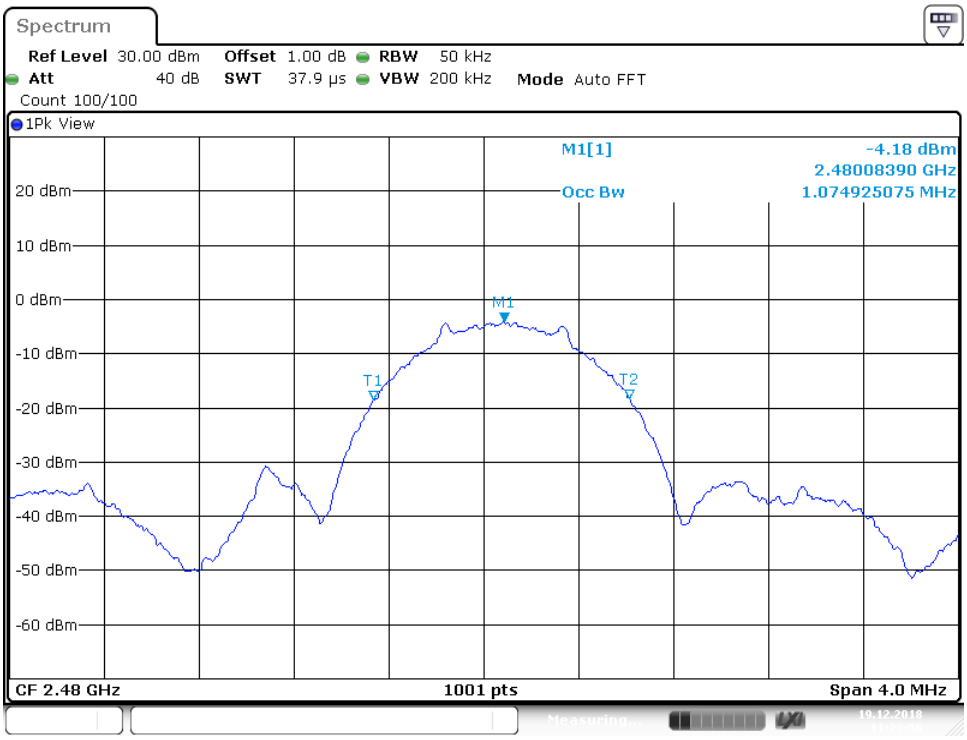
Date: 19.DEC.2018 11:21:54

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

High channel 2480MHz



Date: 19.DEC.2018 11:23:46



Date: 19.DEC.2018 11:23:57

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

9.5 Spurious RF conducted emissions

Test Method

1. Establish a reference level by using the following procedure:
   a. Set RBW=100 kHz. VBW≥3RBW. Detector =peak, Sweep time = auto couple, Trace mode = max hold.
   b. Allow trace to fully stabilize, use the peak marker function to determine the maximum PSD level.
2. Use the maximum PSD level to establish the reference level.
   a. Set the center frequency and span to encompass frequency range to be measured.
   b. Use the peak marker function to determine the maximum amplitude level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements, report the three highest emissions relative to the limit.
3. Repeat above procedures until other frequencies measured were completed.

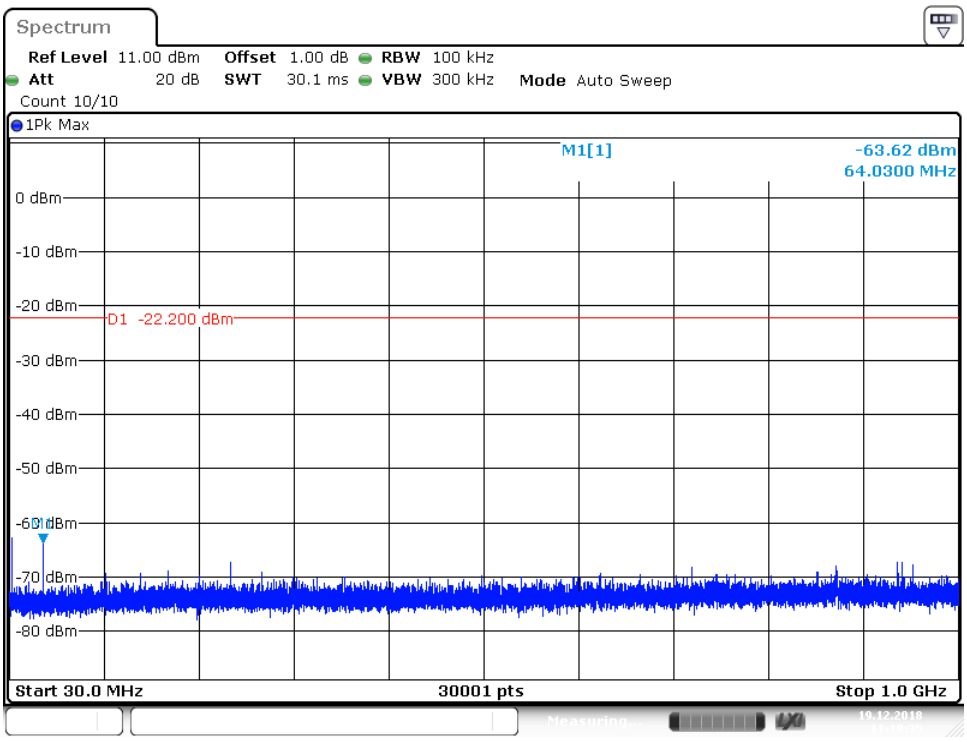
Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20

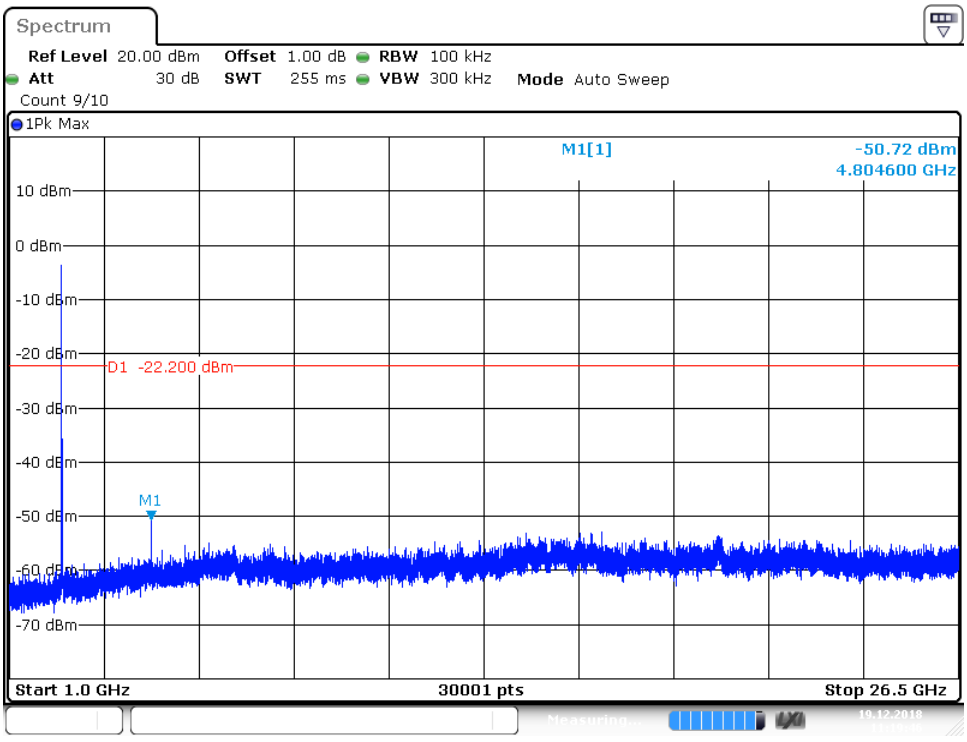
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Spurious RF conducted emissions

2402MHz



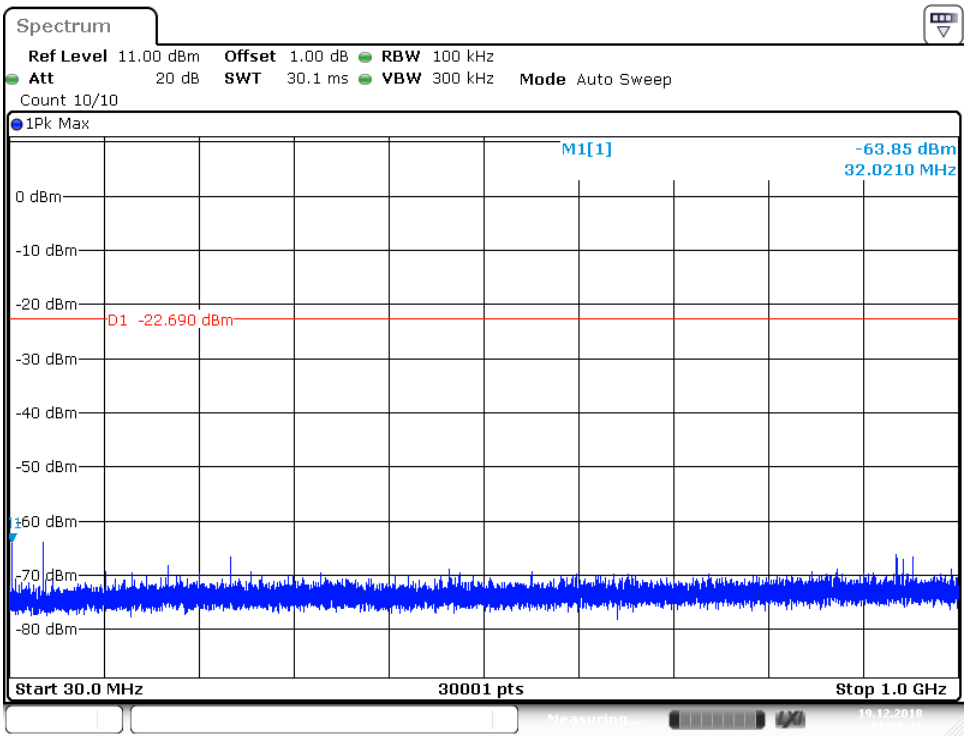
Date: 19.DEC.2018 11:19:35



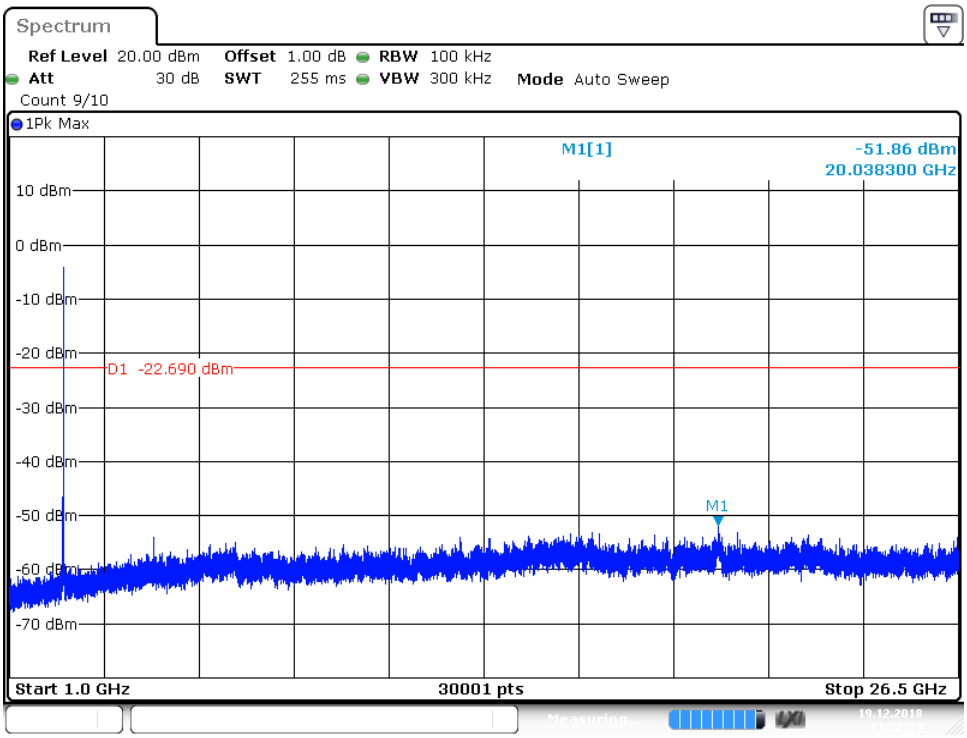
Date: 19.DEC.2018 11:19:46

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

2440MHz



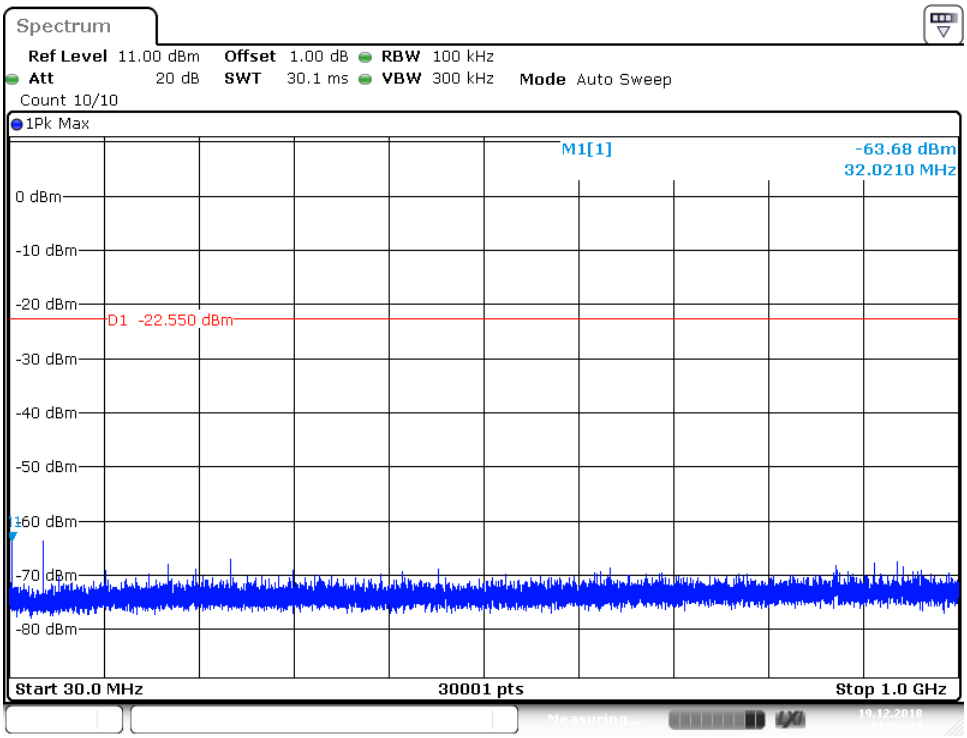
Date: 19.DEC.2018 11:22:22



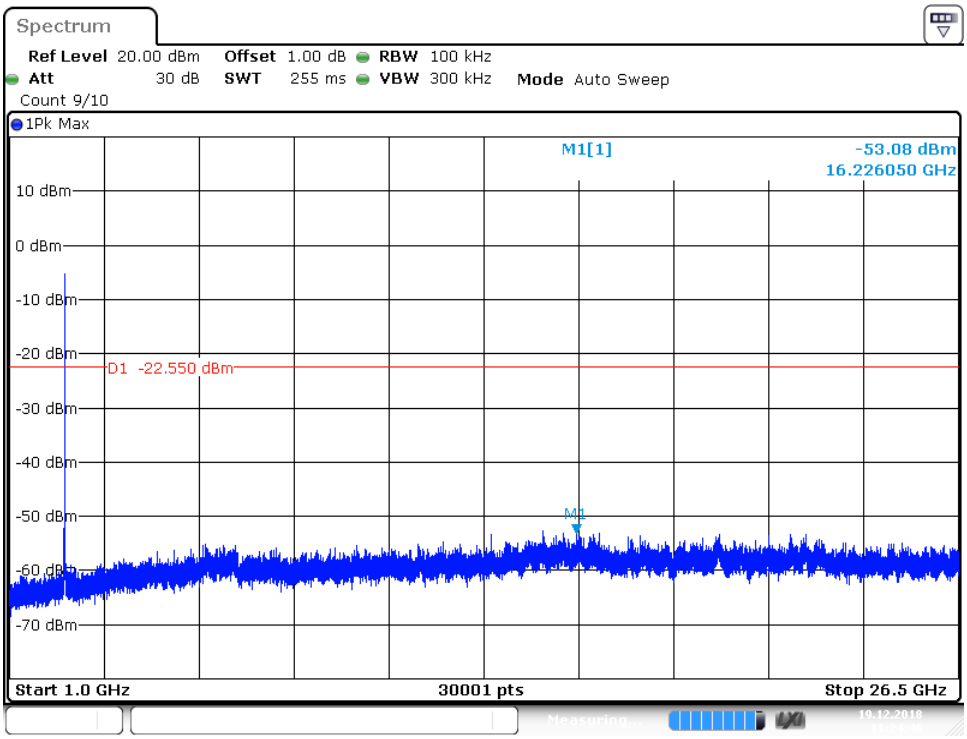
Date: 19.DEC.2018 11:22:33

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

2480MHz



Date: 19.DEC.2018 11:24:34



Date: 19.DEC.2018 11:24:46

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

9.6 Band edge

Test Method

1 Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold.
2 Allow the trace to stabilize, use the peak and delta measurement to record the result.
3 The level displayed must comply with the limit specified in this Section.

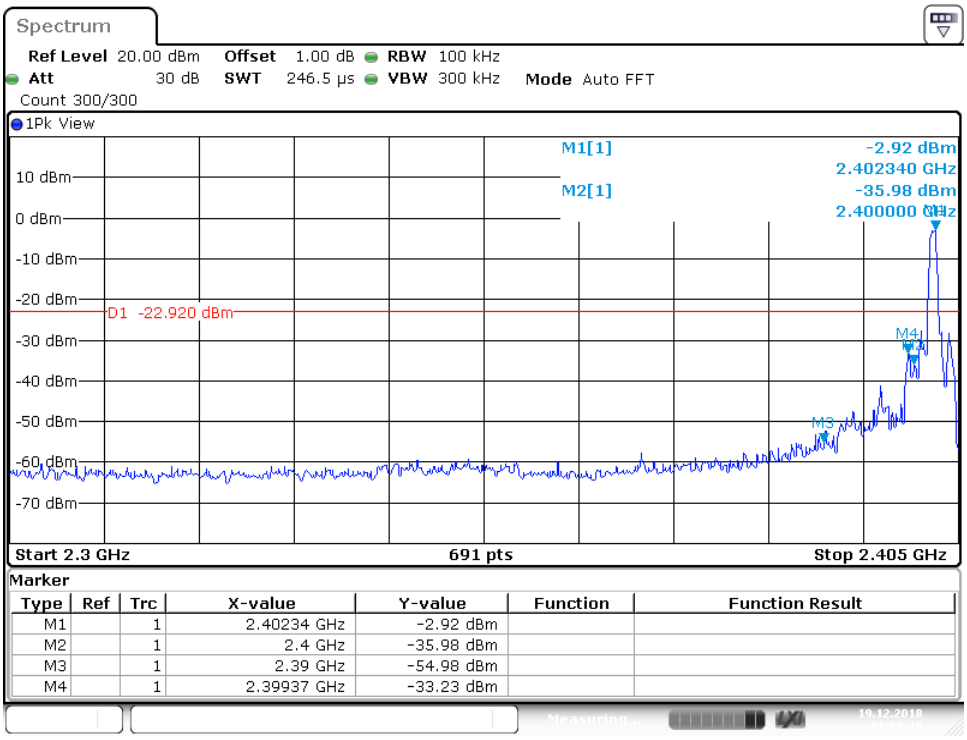
Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Band edge testing

2402MHz

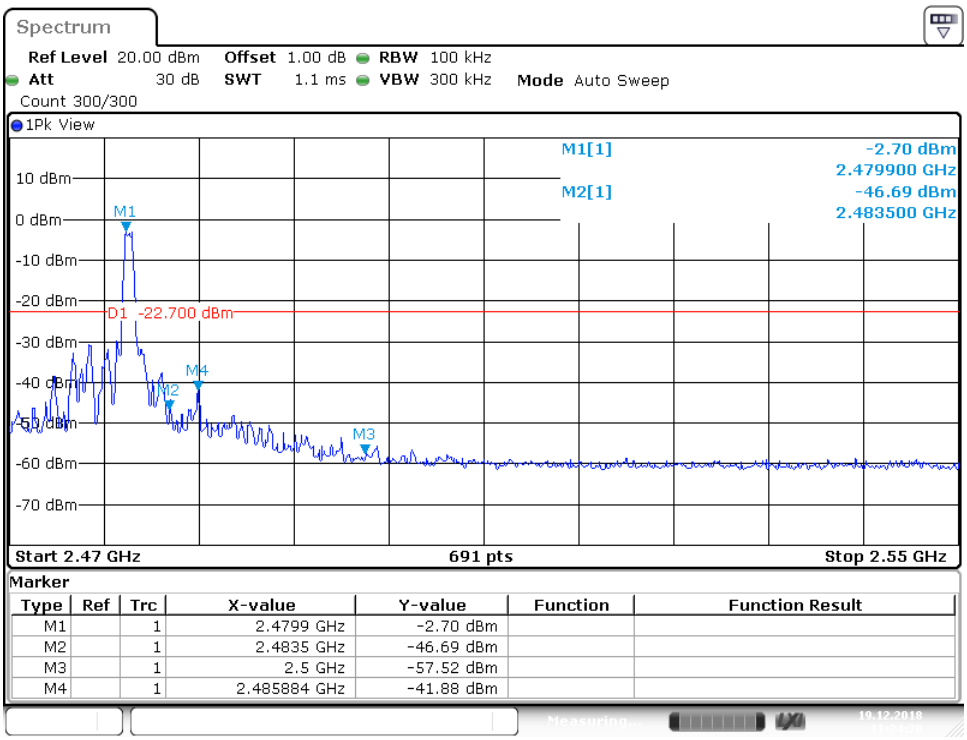


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40234 GHz	-2.92 dBm		
M2		1	2.4 GHz	-35.98 dBm		
M3		1	2.39 GHz	-54.98 dBm		
M4		1	2.39937 GHz	-33.23 dBm		

Date: 19.DEC.2018 11:19:19

2480MHz



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4799 GHz	-2.70 dBm		
M2		1	2.4835 GHz	-46.69 dBm		
M3		1	2.5 GHz	-57.52 dBm		
M4		1	2.485884 GHz	-41.88 dBm		

Date: 19.DEC.2018 11:24:19

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

9.7 Spurious radiated emissions for transmitter

Test Method

1: The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

2: The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.

3: The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

4: For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

5: Use the following spectrum analyzer settings According to C63.10:

For Above 1GHz

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 1MHz, VBW≥RBW for peak measurement and VBW = 10Hz for average measurement, Sweep = auto, Detector function = peak, Trace = max hold.

For Below 1GHz

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 100 KHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

Note:

1: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Quasi-peak detection (QP) at frequency below 1GHz.

2: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for peak detection (PK) at frequency above 1GHz.

3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average ((duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (20log(1/duty cycle).

4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (duty cycle > 98%) for Average detection (AV) at requencyabove1GHz

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Limit

The radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section15.205, must comply with the radiated emission limits specified in section 15.209.

Frequency MHz	Field Strength uV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Spurious radiated emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Transmitting spurious emission test result as below:

Below 1GHz

Frequency Band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Correct factor	Result
	MHz	dBuV/m		dBµV/m		dB	(dB)	
30-1000MHz	341.962778	35.23	H	46.00	QP	10.77	-25.3	Pass
	377.960556	38.01	H	46.00	QP	7.99	-24.5	Pass
	414.012222	39.00	H	46.00	QP	7.00	-23.7	Pass
	40.292778	30.12	V	40.00	QP	9.88	-26.0	Pass
	342.016667	33.89	V	46.00	QP	12.11	-25.3	Pass
	413.958333	32.00	V	46.00	QP	14.00	-23.7	Pass

Above 1GHZ

Low channel 2402MHz Test Result

Frequency Band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Correct factor	Result
	MHz	dBuV/m		dBµV/m		dB	(dB)	
1000-25000MHz	1452.125000	32.19	H	74	PK	41.81	-11.1	Pass
	1994.062500	33.95	H	74	PK	40.05	-8.9	Pass
	4804.687500	53.03	H	74	PK	20.97	3.7	Pass
	10729.218750	42.42	H	74	PK	31.58	10.4	Pass
	1804.625000	38.31	V	74	PK	35.69	-9.8	Pass
	2057.625000	33.31	V	74	PK	40.69	-8.3	Pass
	4804.687500	48.25	V	74	PK	25.75	3.7	Pass
	7206.562500	43.74	V	74	PK	30.26	6.0	Pass

Middle channel 2440MHz Test Result

Frequency Band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Correct factor	Result
	MHz	dBuV/m		dBµV/m		dB	(dB)	
1000-25000MHz	1452.062500	34.69	H	74	PK	39.31	-11.1	Pass
	1994.375000	34.39	H	74	PK	39.61	-8.9	Pass
	4879.687500	50.99	H	74	PK	23.01	3.8	Pass
	12133.125000	43.31	H	74	PK	30.69	12.3	Pass
	1807.562500	36.96	V	74	PK	37.04	-9.8	Pass
	2077.312500	37.61	V	74	PK	36.39	-8.3	Pass
	4880.625000	48.62	V	74	PK	25.38	3.8	Pass
	11921.718750	44.53	V	74	PK	29.47	12.0	Pass

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

High channel 2480MHz Test Result

Frequency Band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Correct factor	Result
	MHz	dBuV/m		dBμV/m		dB	(dB)	
1000-25000MHz	1811.062500	32.10	H	74	PK	41.90	-9.8	Pass
	2101.312500	32.07	H	74	PK	41.93	-8.1	Pass
	4959.375000	44.29	H	74	PK	29.71	4.3	Pass
	7612.031250	42.56	H	74	PK	31.44	9.9	Pass
	1808.687500	31.76	V	74	PK	42.24	-9.8	Pass
	2098.875000	34.46	V	74	PK	39.54	-8.2	Pass
	4959.375000	44.82	V	74	PK	29.18	4.3	Pass
	12723.750000	45.19	V	74	PK	28.81	14.4	Pass

Remark:

(1) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are the noise floor or attenuated more than 10dB below the permissible limits or the field strength is too small to be measured.

(2) Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain
Below 1GHz: Corrector factor = Antenna Factor + Cable Loss

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

10 Test Equipment List

List of Test Instruments

Radiated Emission Test

Description	Manufacturer	Model no.	Serial no.	cal. due date
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2019-7-6
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2019-6-28
Horn Antenna	Rohde & Schwarz	HF907	102294	2019-6-28
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2019-6-28
Signal Generator	Rohde & Schwarz	SMY01	839369/005	2019-6-28
Attenuator	Agilent	8491A	MY39264334	2019-6-28
3m Semi-anechoic chamber	TDK	9X6X6	----	2020-7-7
Test software	Rohde & Schwarz	EMC32	Version 9.15.00	N/A

Conducted Emission Test

Description	Manufacturer	Model no.	Serial no.	cal. due date
EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2019-7-6
LISN	Rohde & Schwarz	ENV432	101318	2019-7-6
Attenuator	Shanghai Huaxiang	TS2-26-3	080928189	2019-7-6
Test software	Rohde & Schwarz	EMC32	Version9.15.00	N/A

RF conducted test

Description	Manufacturer	Model no.	Serial no.	cal. due date
Signal Analyzer	Rohde & Schwarz	FSV40	101030	2019-7-6
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	101226/100851	2019-7-6
Power Splitter	Weinschel	1580	SC319	2019-7-5
10dB Attenuator	Weinschel	4M-10	43152	2019-7-6
Test software	Rohde & Schwarz	EMC32	Version 10.38.00	N/A
Test software	Tonscend	System for BT/WIFI	Version 2.6	N/A

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

11 System Measurement Uncertainty

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

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Conducted Emission 150kHz-30MHz (for test using High Voltage Probe TK9420(VT9420))	2.51 dB
Uncertainty for Radiated Spurious Emission 25MHz-3000MHz	Horizontal: 4.80dB; Vertical: 4.87dB;
Uncertainty for Radiated Spurious Emission 3000MHz-18000MHz	Horizontal: 4.59dB; Vertical: 4.58dB;
Uncertainty for Radiated Spurious Emission 18000MHz-40000MHz	Horizontal: 5.05dB; Vertical: 5.04dB;
Uncertainty for Conducted RF test with TS 8997	Power level test involved: 1.16dB Frequency test involved: 0.6×10^{-7} or 1%

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F, Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478