FCC- TEST REPORT

Report Number	:	**64.910.21.03146.01**	Date of Issue:	August 28, 2021

Model	:	DBV1N-M
Product Type	:	Smart Dumbbell
Applicant	:	Beijing Kingsmith Technology Co.,Ltd
Manufacturer	:	Beijing Kingsmith Technology Co.,Ltd
Address	:	Floor 4, Bldg 25, Area 18, ABP Park, Fengtai District, Beijing, PR China

Test Result	:	■ **Positive**	☐ **Negative**
Total pages including Appendices	:	31	

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen 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. Shenzhen 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. Shenzhen 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. Shenzhen Branch issued reports.

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

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 City, 518052, P. R. China
FCC Registration Number:	514049
IC Registration Number:	10320A
Telephone:	86 755 8828 6998
Fax:	86 755 828 5299

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 Dumbbell

Model no.: DBV1N-M

FCC ID: 2ARDB-DBV1N-M

Battery type: 3.7V, Li-ion battery

Operating Frequency Range: 2402~2480MHz

Modulation: GFSK

Antenna Type: Ceramic Antenna

Antenna Gain: 5.05dBi

Description of the EUT: EUT is a Smart Dumbbell, 2.4GHz Bluetooth technology was used for communicating.

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 10-1-2020 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to KDB558074 D01 v05r02 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		Pages	Test Result	Test Site
§15.207	Conducted emission AC power port	10-12	Pass	Site 1
§15.247(b)(1)	Conducted peak output power	13-14	Pass	Site 1
§15.247(e)	Power spectral density	19-20	Pass	Site 1
§15.247(a)(2)	6dB bandwidth and 99% occupied bandwidth	15-18	Pass	Site 1
§15.247(d)	Spurious RF conducted emissions	21-24	Pass	Site 1
§15.247(d)	Band edge	25-26	Pass	Site 1
§15.247(d) & §15.209 & §15.205	Spurious radiated emissions for transmitter	27-29	Pass	Site 1
§15.203	Antenna requirement	See note 1	Pass	--

Note 1: The EUT uses a ceramic antenna, which gain is 5.05dBi. According 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

Remarks

This submittal(s) (test report) is intended for FCC ID: 2ARDB-DBV1N-M complies with Section 15.247,15.209, 15.205 and 15.203 of the FCC Part 15, Subpart C.
This report is for the BLE part.

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:	July 10, 2021
Testing Start Date:	July 11, 2021
Testing End Date:	July 26, 2021

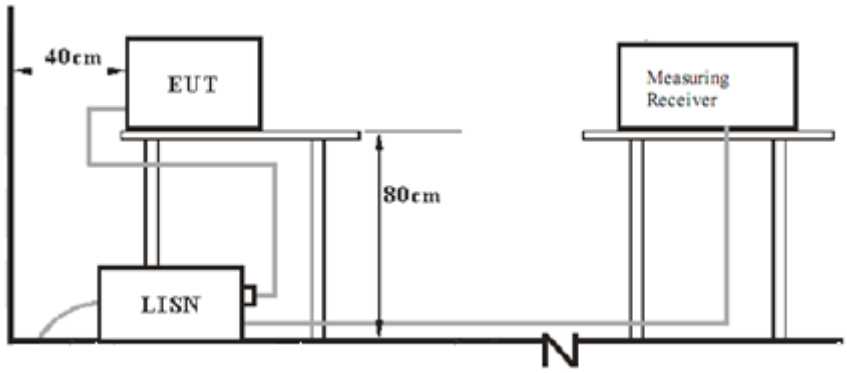
- TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch -

Reviewed by:	Prepared by:	Tested by:
Peter Jia	Matt Zhang	Hardy Huang

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

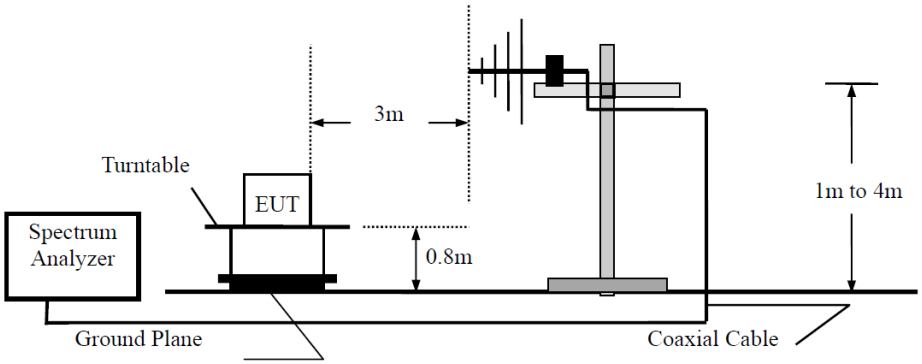
7 Test Setups

7.1 AC Power Line Conducted Emission test setups

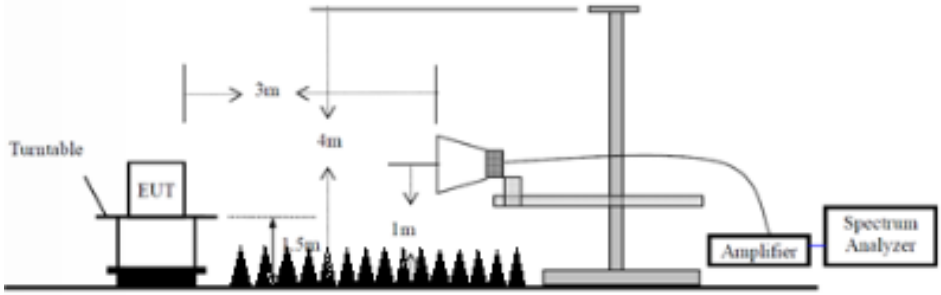


7.2 Radiated test setups

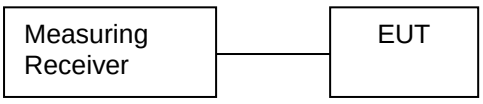
Below 1GHz



Above 1GHz



7.3 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)
Adaptor	Apple	A153	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

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 a 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

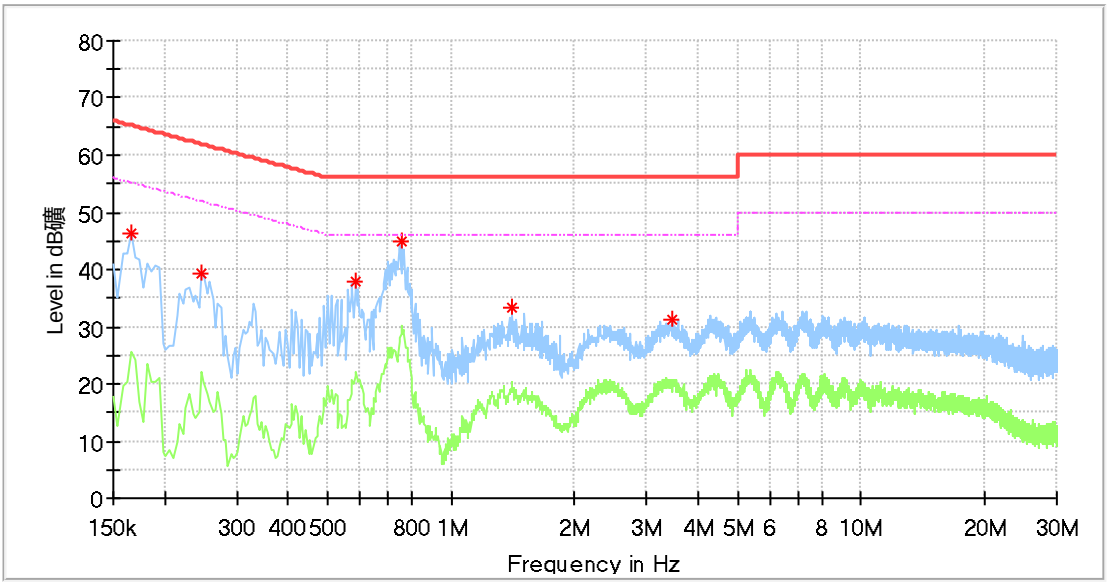
Frequency MHz	QP Limit dBµV	AV Limit dBµV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

* Decreasing linear

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 Dumbbell
M/N	:	DBV1N-M
Operating Condition	:	USB Charging
Conduct Line	:	L



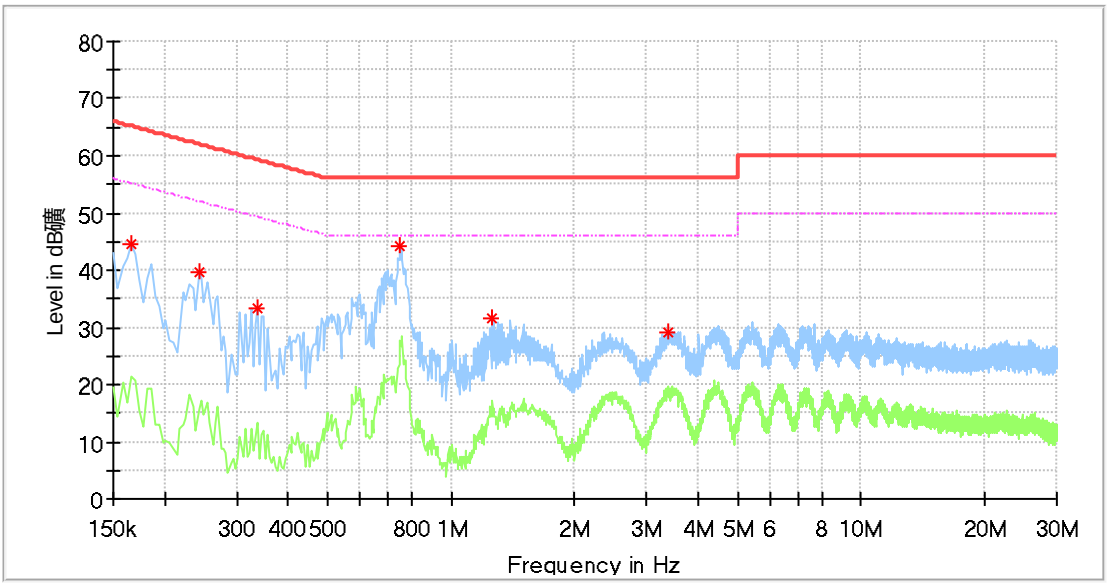
Final_Result

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.166000	46.20	---	65.16	18.95	L1	10.32
0.246000	39.17	---	61.89	22.72	L1	10.32
0.586000	37.86	---	56.00	18.14	L1	10.32
0.758000	44.74	---	56.00	11.26	L1	10.33
1.410000	33.18	---	56.00	22.82	L1	10.35
3.478000	31.13	---	56.00	24.87	L1	10.45

Remark： “*” Correct factor=cable loss + LISN factor

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

Product Type	:	Smart Dumbbell
M/N	:	DBV1N-M
Operating Condition	:	USB Charging
Conduct Line	:	N



Final_Result

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.166000	44.42	---	65.16	20.74	N	10.33
0.242000	39.53	---	62.03	22.49	N	10.33
0.338000	33.41	---	59.25	25.84	N	10.33
0.750000	44.11	---	56.00	11.89	N	10.34
1.262000	31.53	---	56.00	24.47	N	10.36
3.374000	29.19	---	56.00	26.81	N	10.46

Remark： “*” Correct factor=cable loss + LISN factor

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.

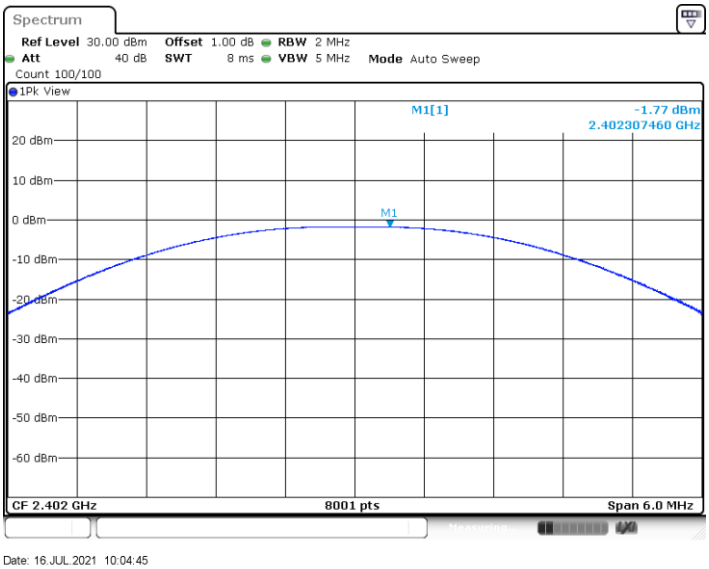
Limits

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

Test result as below table

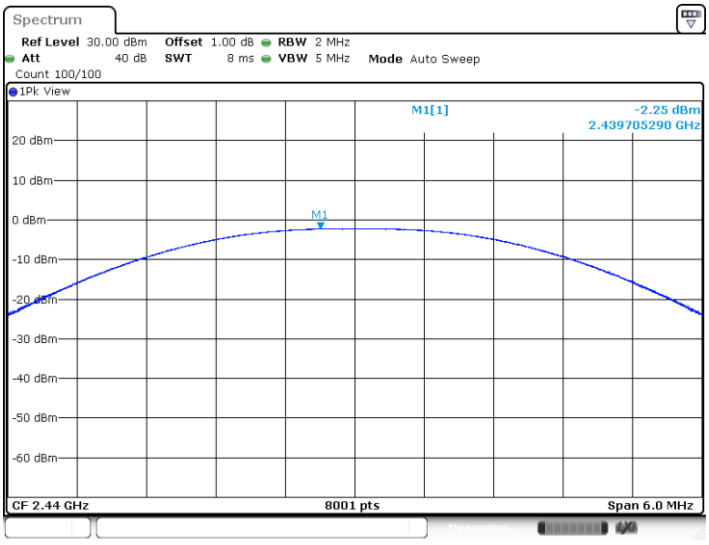
Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2402MHz	-1.77	Pass
Middle channel 2440MHz	-2.25	Pass
High channel 2480MHz	-2.29	Pass

2402MHz



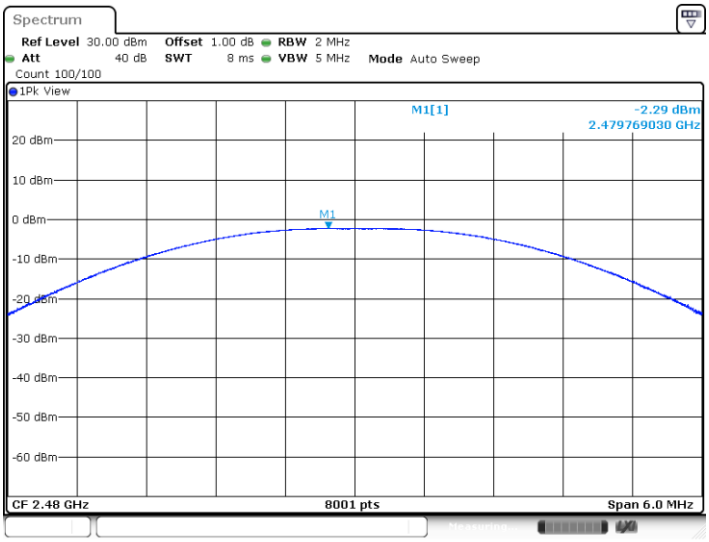
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F,Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

2440MHz



Date: 16.JUL.2021 10:06:32

2480MHz



Date: 16.JUL.2021 10:08:16

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 6dB 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.

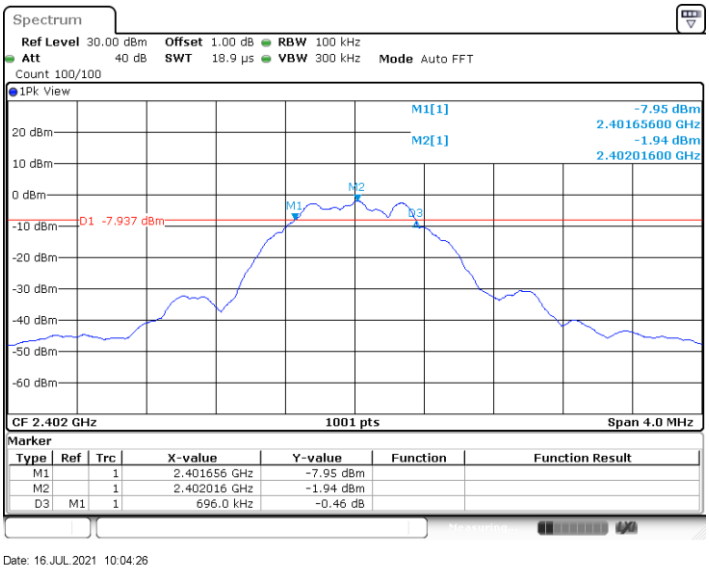
Limit

Limit [kHz]
⩾500

Test result

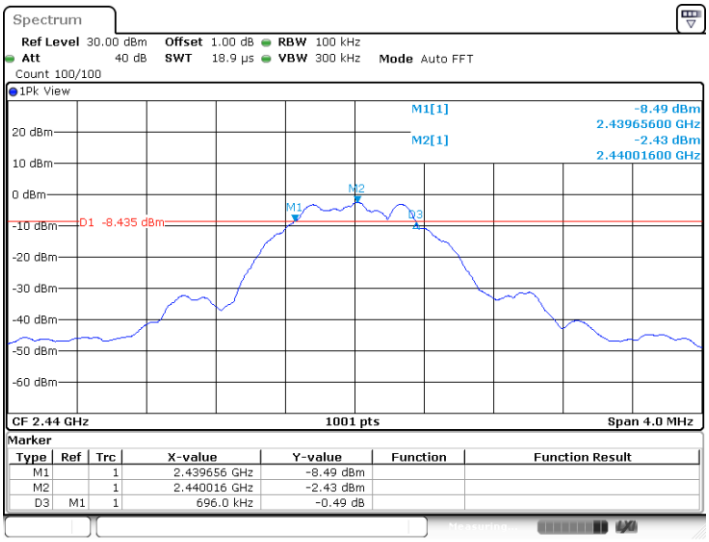
TestMode	Channel [MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Verdict
BLE	2402	0.696	2401.656	2402.352	PASS
	2440	0.696	2439.656	2440.352	PASS
	2480	0.692	2479.656	2480.348	PASS

2402MHz



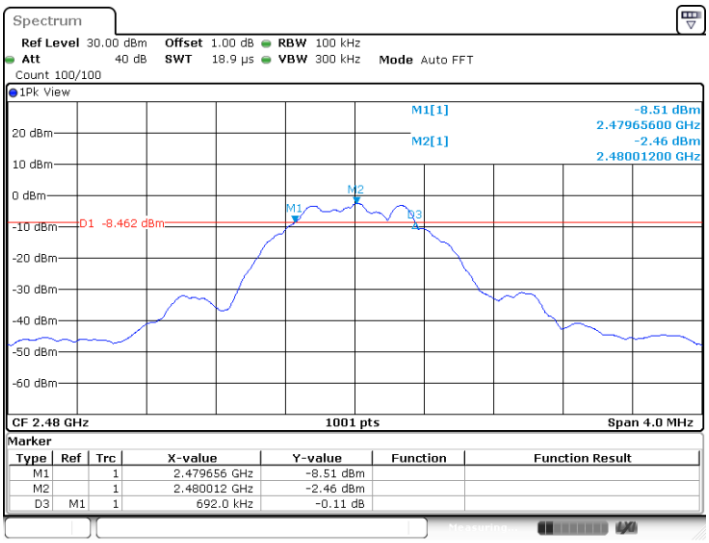
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F,Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

2440MHz



Date: 16.JUL.2021 10:06:15

2480MHz

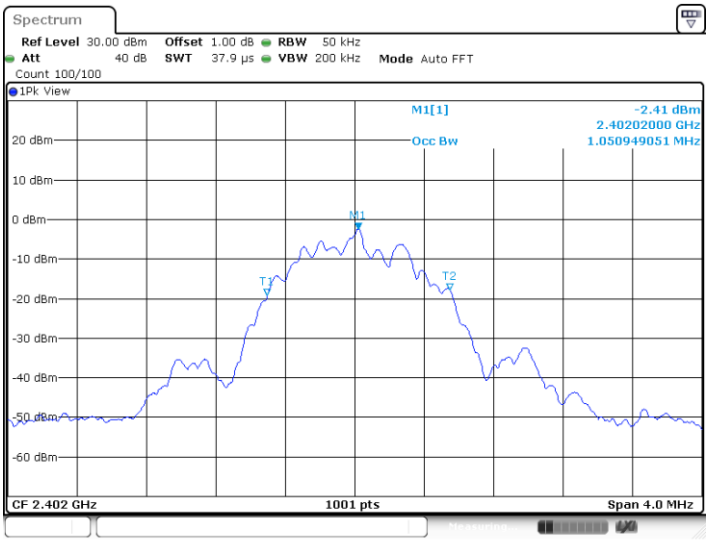


Date: 16.JUL.2021 10:07:58

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

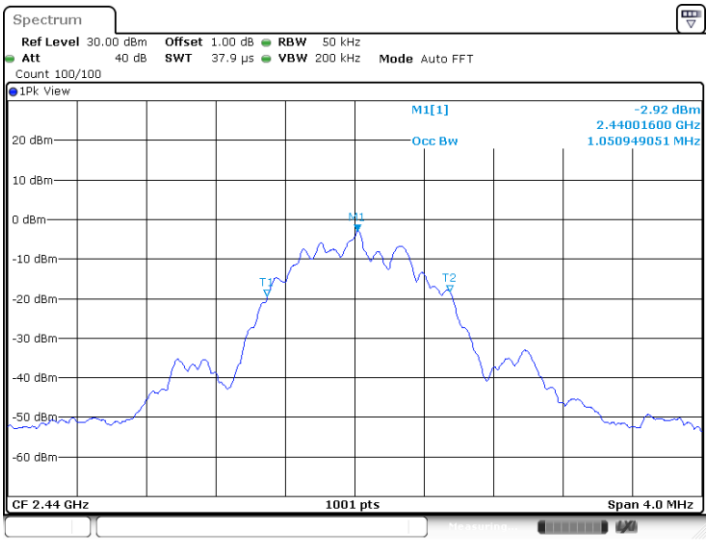
TestMode	Channel [MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
BLE	2402	1.051	2401.497	2402.547	PASS
	2440	1.051	2439.497	2440.547	PASS
	2480	1.051	2479.497	2480.547	PASS

2402MHz



Date: 16.JUL.2021 10:04:38

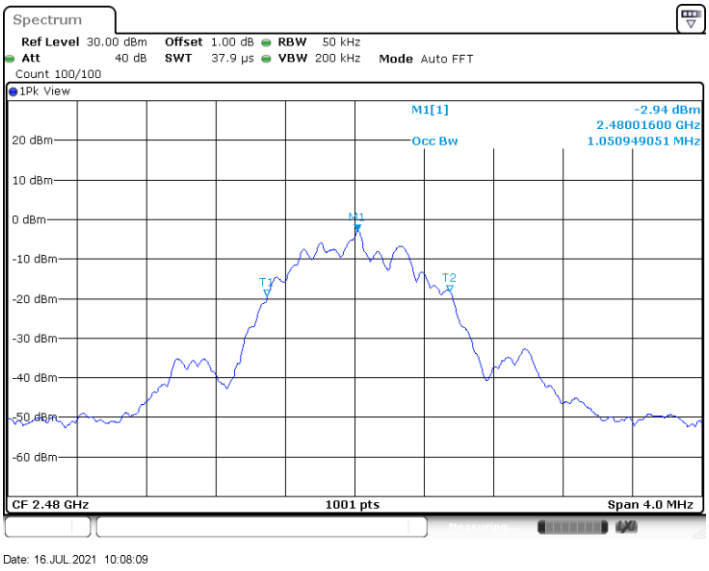
2440MHz



Date: 16.JUL.2021 10:06:25

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: 16.JUL.2021 10:08:09

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 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.

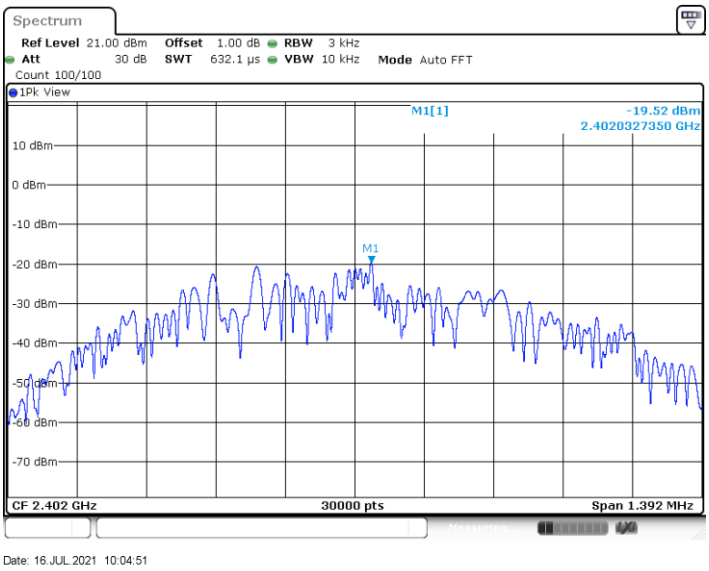
Limit

Limit [dBm/3KHz]
⩽8

Test result

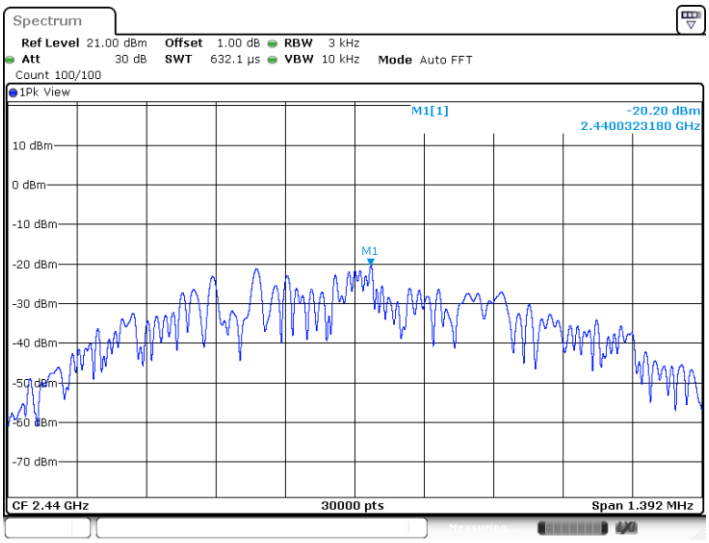
Frequency **MHz**	Power spectral density **dBm/3KHz**	Result
Top channel 2402MHz	-19.52	Pass
Middle channel 2440MHz	-20.2	Pass
Bottom channel 2480MHz	-20.14	Pass

2402MHz



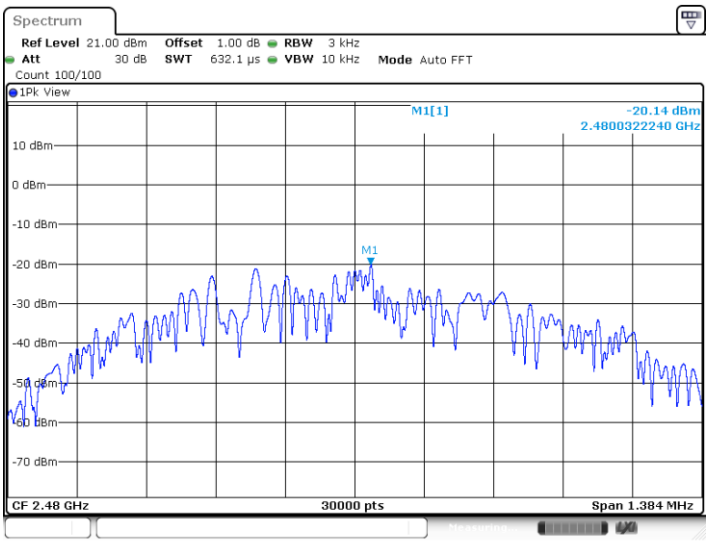
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F,Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

2440MHz



Date: 16.JUL.2021 10:06:38

2480MHz



Date: 16.JUL.2021 10:08:21

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.

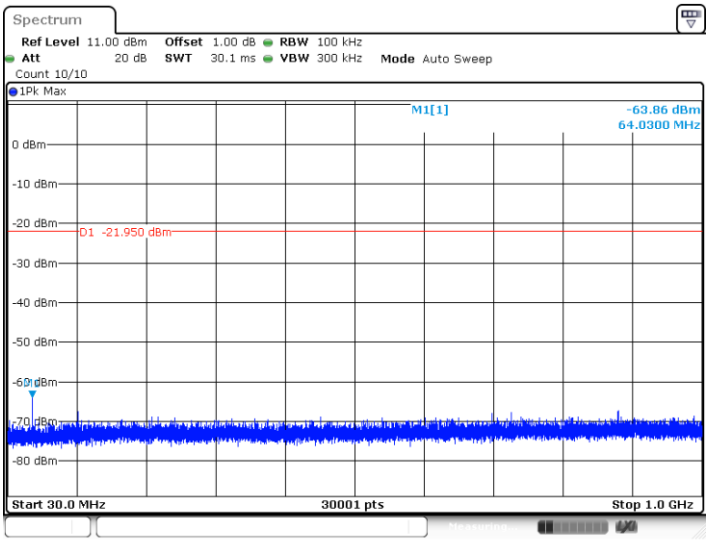
Limit

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

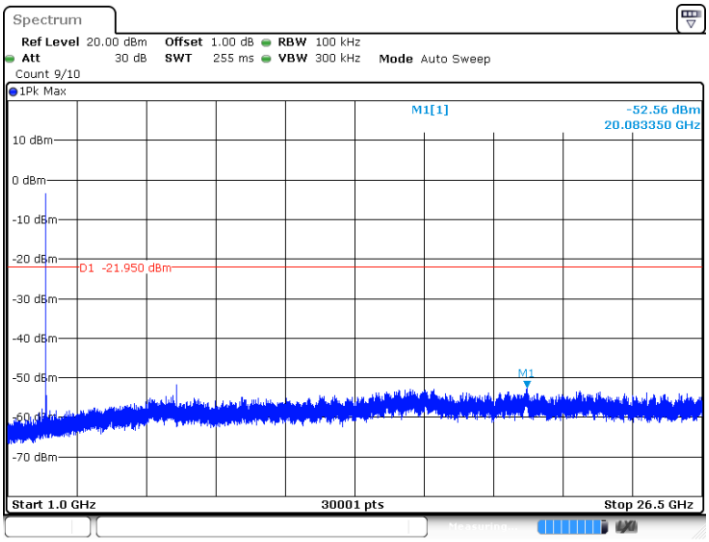
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
5F,Communication Building,163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Spurious RF conducted emissions

2402MHz



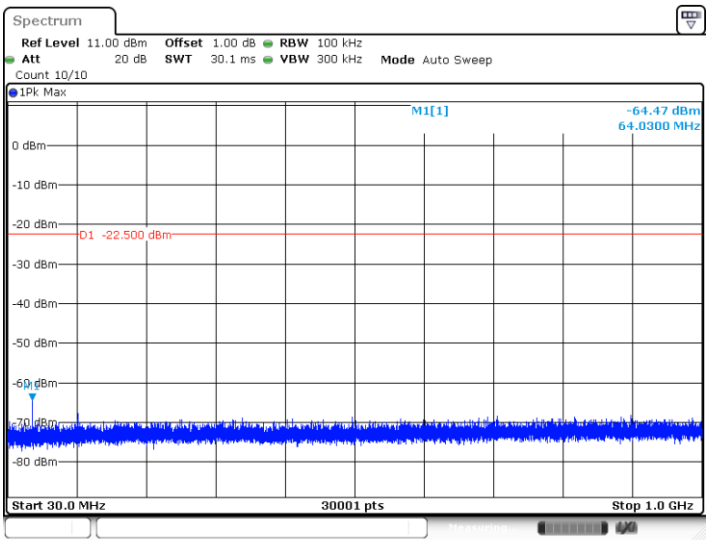
Date: 16.JUL.2021 10:05:13



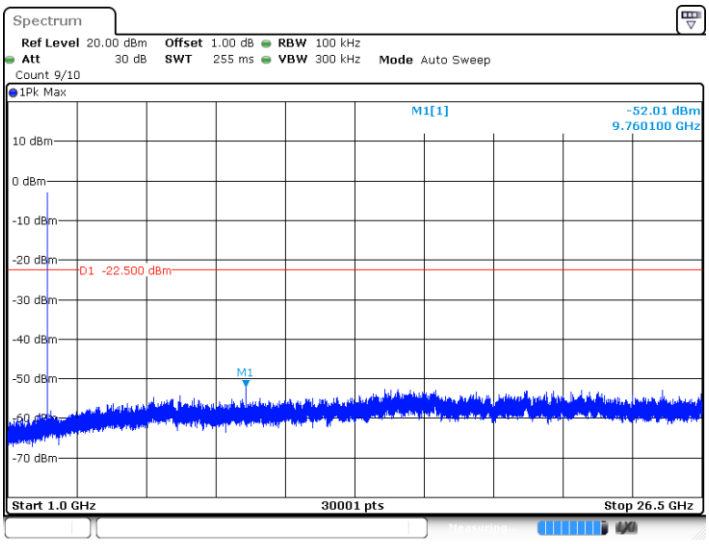
Date: 16.JUL.2021 10:05:21

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



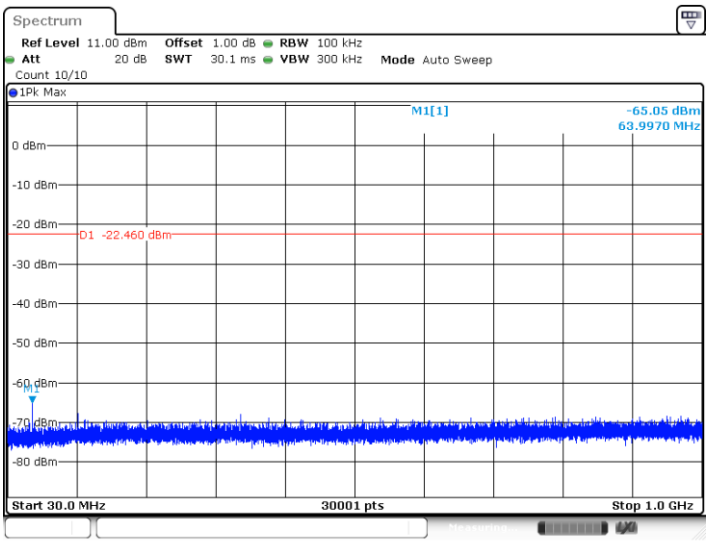
Date: 16.JUL.2021 10:06:49



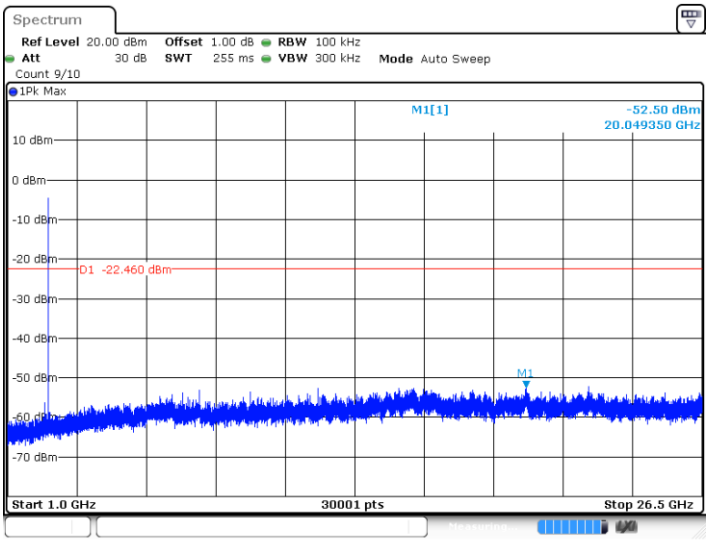
Date: 16.JUL.2021 10:06:57

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

2480MHz



Date: 16.JUL.2021 10:08:42



Date: 16.JUL.2021 10:08:50

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

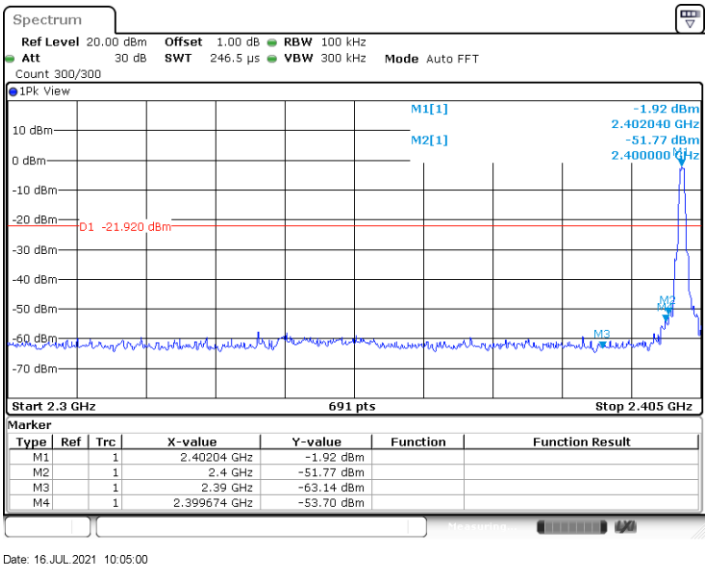
1 Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold.
2 Allow the trace to stabilize, use the peak and delta measurement to record the result.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

Limit

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

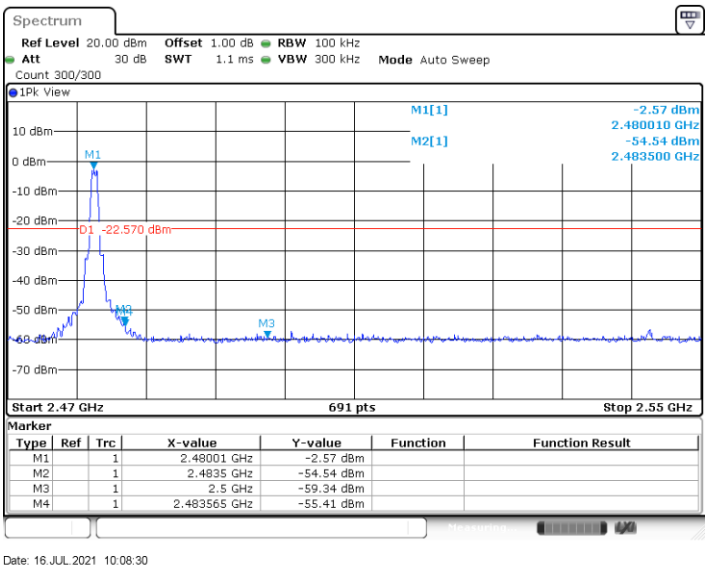
Test result

2402MHz



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



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 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 to 120KHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

For Peak unwanted emissions 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 ,Sweep = auto, Detector function = peak, Trace = max hold.

Procedures for average unwanted emissions measurements above 1000 MHz

a) RBW = 1 MHz.

b) VBW \ [3 × RBW].

c) Detector = RMS (power averaging), if [span / (# of points in sweep)] \ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.

d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)

e) Sweep time = auto.

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D,where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

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

g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:
1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is [10 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.
2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is [20 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

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:

2402MHz (30MHz – 1GHz)

Frequency	Emission Level	Polarization	Limit	Detector	Result
MHz	dBuV/m		dBµV/m		
101.90	16.10	Horizontal	46.00	QP	Pass
167.31	16.76	Vertical	46.00	QP	Pass

2402MHz (Above 1GHz)

Frequency	Emission Level	Polarization	Limit	Detector	Result
MHz	dBuV/m		dBµV/m		
4391.50*	44.35	Horizontal	74.00	PK	Pass
5227.50	47.15	Horizontal	74.00	PK	Pass
4549.50*	43.49	Vertical	74.00	PK	Pass
5930.50	42.47	Vertical	74.00	PK	Pass

2440MHz (Above 1GHz)

Frequency	Emission Level	Polarization	Limit	Detector	Result
MHz	dBuV/m		dBµV/m		
3280.00	43.63	Horizontal	74	PK	Pass
5288.00	42.20	Horizontal	74	PK	Pass
3224.50	46.33	Vertical	74	PK	Pass
5854.50	50.69	Vertical	74	PK	Pass

2480MHz (Above 1GHz)

Frequency	Emission Level	Polarization	Limit	Detector	Result
MHz	dBuV/m		dBµV/m		
4123.50*	47.78	Horizontal	74.00	PK	Pass
5801.00	50.37	Horizontal	74.00	PK	Pass
4148.00*	47.43	Vertical	74.00	PK	Pass
5909.50	50.84	Vertical	74.00	PK	Pass

Remark:

(1) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.

(2) 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.

(3) 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

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
CE	EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2022-6-4
	LISN	Rohde & Schwarz	ENV4200	100249	2022-6-5
	LISN	Rohde & Schwarz	ENV216	100326	2022-6-5
	ISN	Rohde & Schwarz	ENY81	100177	2022-6-5
	ISN	Rohde & Schwarz	ENY81-CAT6	101664	2022-6-5
	High Voltage Proble	Rohde & Schwarz	TK9420(VT9420)	9420-584	2022-6-5
	RF Current probe	Rohde & Schwarz	EZ-17	100816	2022-6-5
C	Signal Generator	Rohde & Schwarz	SMB100A	108272	2022-6-3
	Signal Analyzer	Rohde & Schwarz	FSV40	101030	2022-6-3
	Vector Signal Generator	Rohde & Schwarz	SMU 200A	105324	2022-6-3
	RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	101226/100851	2022-6-3
RE	EMI Test Receiver	Rohde & Schwarz	ESR 7	102176	2022-6-4
	Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2022-7-23
	Horn Antenna	Rohde & Schwarz	HF907	102294	2022-6-23
	Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2022-6-6
	3m Semi-anechoic chamber	TDK	9X6X6	----	2022-10-28

C - Conducted RF tests

- Conducted peak output power
- 6dB bandwidth
- Power spectral density
- Spurious RF conducted emissions
- Band edge
- Conducted emission AC power port

RE - Radiated RF tests

- Spurious radiated emissions for transmitter

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 Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 5.12dB; Vertical: 5.10dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-25000MHz	Horizontal: 5.01dB; Vertical: 5.00dB;
Uncertainty for Conducted Emission 150KHz-30MHz	U=3.21dB
Uncertainty for conducted power test	1.16dB
Frequency test involved:	0.6×10^{-7}

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