

Huawei Technologies Co.,Ltd

TEST REPORT

SCOPE OF WORK

FCC TESTING–CM70-C

REPORT NUMBER

SZHH01324725-001

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Huawei Technologies Co.,LtdApplication
For
Certification**FCC ID: QISCM70-C****HUAWEI Wireless Earphone****Model: CM70-C****Brand Name: HUAWEI****2.4GHz Transceiver**

Report No.: SZHH01324725-001

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-17]

Prepared and Checked by:**Approved by:**

Sign on file

Terry Tang
Senior Engineer

Kidd Yang
Technical Supervisor
Date: March 21, 2019

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MEASUREMENT/TECHNICAL REPORT

Huawei Technologies Co.,Ltd

Model: CM70-C

FCC ID: QISCM70-C

This report concerns (check one) Original Grant Class II Change

Equipment Type: DTS - Part 15 Digital Transmission Systems (Bluetooth BLE transmitter portion)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes No

If yes, defer until : _____
date

Company Name agrees to notify the Commission by: _____
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes No

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-1-17] Edition] provision.

Report prepared by:

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List of attached file

Exhibit type	File Description	Filename
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
External Photo	External Photo	external photos.pdf
Internal Photo	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
Operation Description	Technical Description	descri.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
Cover Letter	Confidentiality Letter	request.pdf
Cover Letter	Letter of Agency	agency.pdf

EXHIBIT 1
SUMMARY OF TEST RESULTS

1.0 Summary of Test results**HUAWEI Wireless Earphone****Model: CM70-C****FCC ID: QISCM70-C**

TEST ITEM	REFERENCE	RESULTS
Max. Output power	15.247(b)(3)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d)	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

EXHIBIT 2
GENERAL DESCRIPTION

2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a HUAWEI Wireless Earphone with Bluetooth function operating at 2402-2480MHz. The EUT can be powered by DC 3.7V(1 x 3.7V rechargeable battery) and the Bluetooth function can't operation during charging. For more detailed features description, please refer to the user's manual.

Antenna Type: Integral antenna

Modulation Type: GFSK

Antenna Gain: 0dBi Max

Bluetooth Mode: BLE

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

2.2 Related Submittal(s) Grants

This is an application for certification of transceiver for the HUAWEI Wireless Earphone which has Bluetooth function. The BT 5.0 function was reported in the test report: SZHH01324725-002.

2.3 Test Methodology

Radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013) and KDB 558074 D01 v05r01. Radiated emission measurement was performed in Semi-anechoic chamber. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

The Semi-Anechoic chamber used to collect the radiated data is **Intertek Testing Services Shenzhen Ltd. Longhua Branch** and located at 101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, ShenZhen. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: CN1188).

EXHIBIT 3

SYSTEM TEST CONFIGURATION

3.0 System Test Configuration

3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by DC 3.7V(1 x 3.7V rechargeable battery) during the test, only the worst data was reported in this report.

For maximizing emissions, the EUT was rotated through 360°, the EUT was placed on the styrene turntable with 0.8m up to 1GHz and 1.5 m above 1GHz. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

The EUT was operated standalone and placed in the central of the turntable.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

The parameters of test software setting:

During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.

3.3 Special Accessories

N/A.

3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Uncertainty and Compliance – Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

3.5 Equipment Modification

Any modifications installed previous to testing by Huawei Technologies Co.,Ltd will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Longhua Branch.

3.6 Support Equipment List and Description

This product was tested in the following configuration:

Refer List:

Description	Manufacturer	Model No.
Mobile Phone (Provided by Intertek)	HUAWEI	HMA-AL00

EXHIBIT 4
MEASUREMENT RESULTS

Applicant: Huawei Technologies Co.,Ltd
Date of Test: March 19, 2019

Model: CM70-C

4.0 Measurement Results

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

The antenna power of the EUT was connected to the input of a broadband peak RF power meter. The power meter have a video bandwidth that is greater than DTS bandwidth and utilize a fast-responding diode detector. Power was read directly at the EUT antenna terminals with cable loss added.

For antennas with gains of 0dBi <6dBi, So maximum allowed Transmitter output is 30dBm (1000mW).

Frequency (MHz)	Output in dBm (Peak reading)	Output in mWatt
Low Channel: 2402	6.84	4.83
Middle Channel: 2440	7.36	5.45
High Channel: 2480	7.24	5.30

Cable loss: 0.5 dB External Attenuation: 0 dB

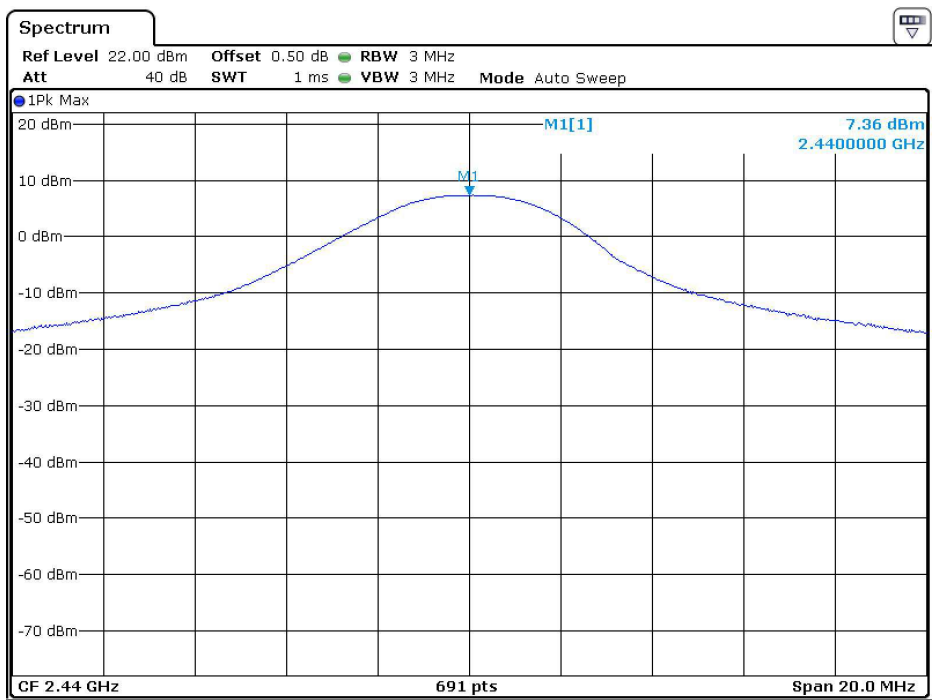
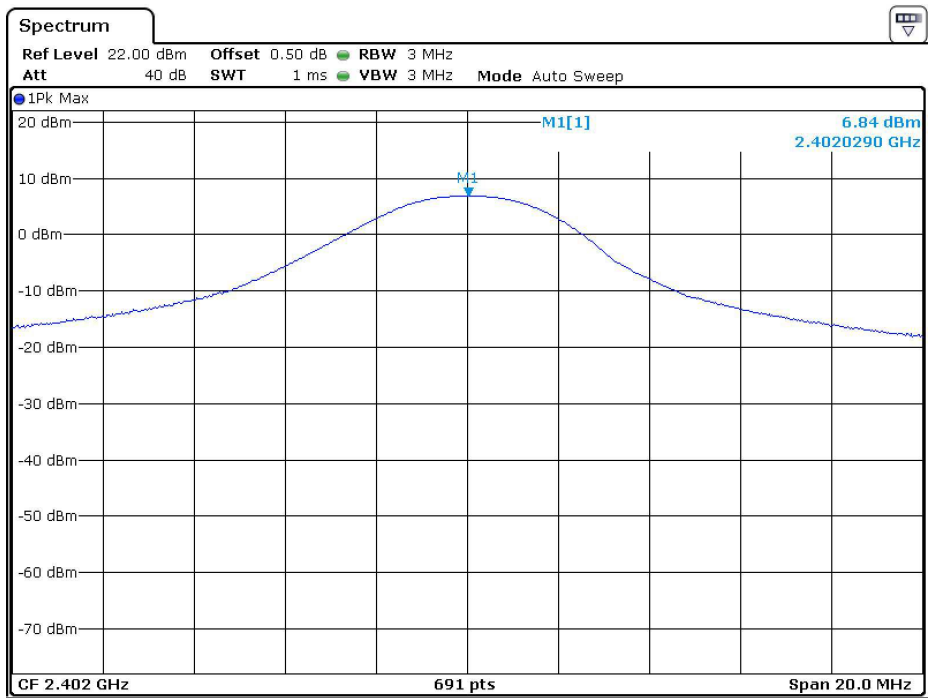
Cable loss, external attenuation has been included in OFFSET function

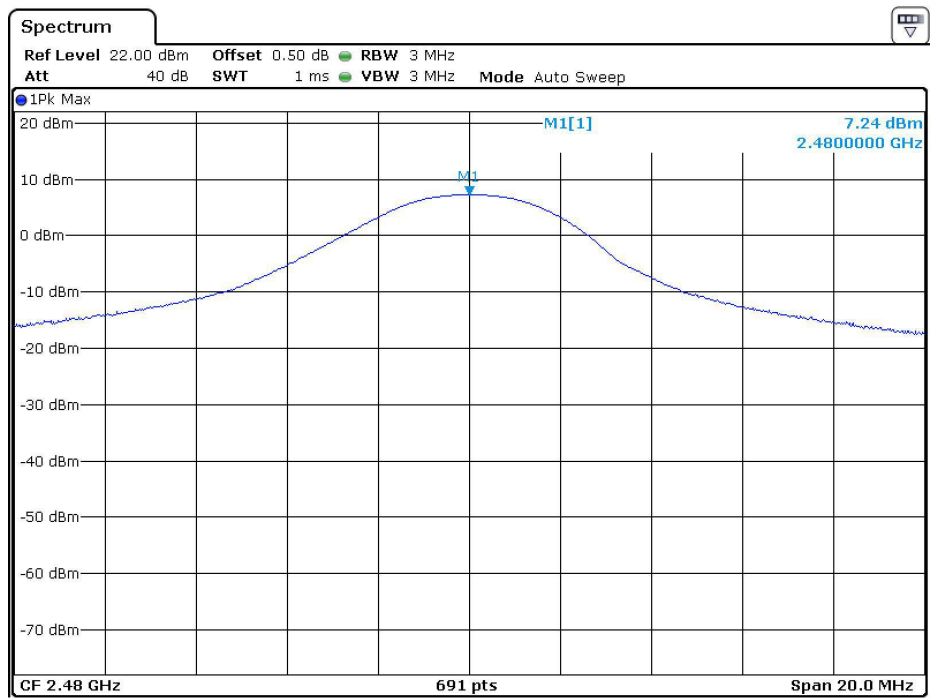
EUT max. output level = 7.36dBm

EUT max. radiated output level = 7.36dBm + 0dBi = 7.36dBm

For RF Exposure, the information is saved with filename: RF exposure.pdf.

The test plots are attached as below.





Applicant: Huawei Technologies Co.,Ltd

Date of Test: March 19, 2019

Model: CM70-C

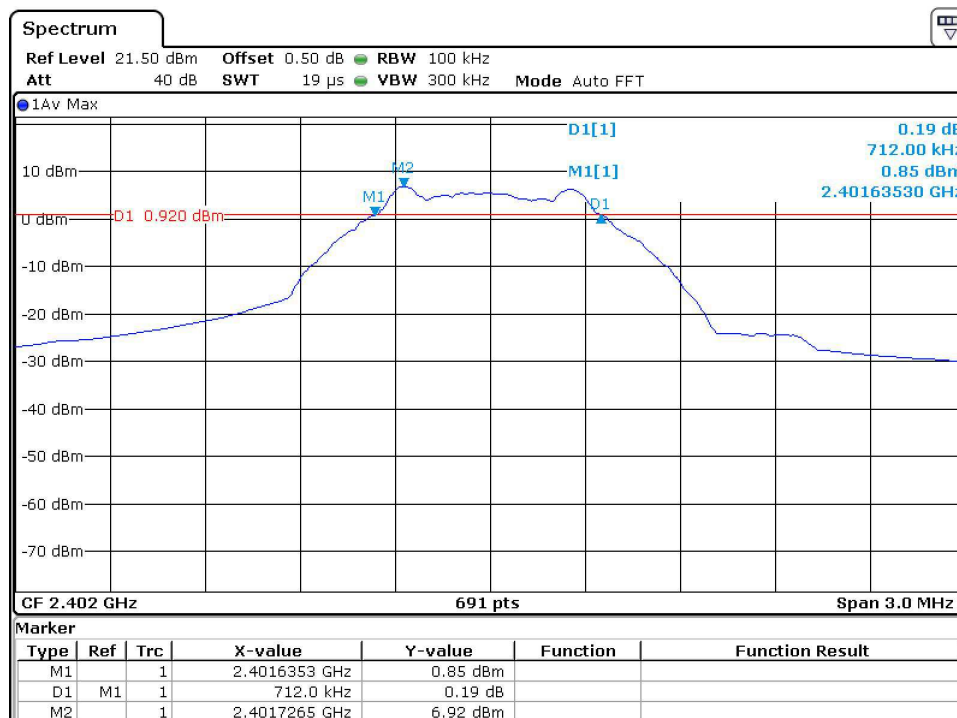
4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a) (2):

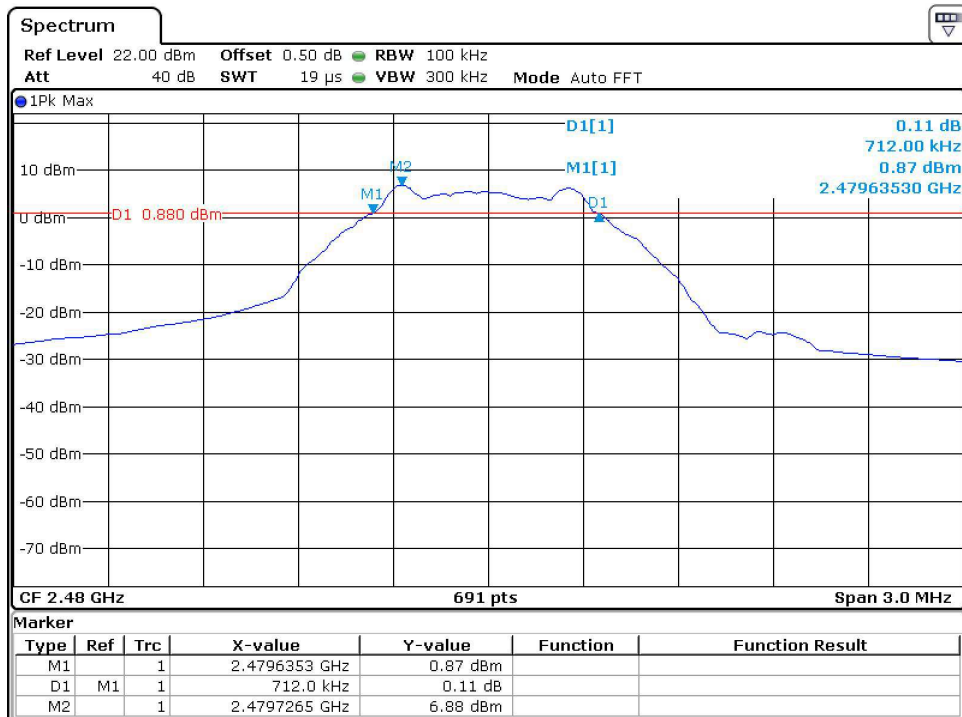
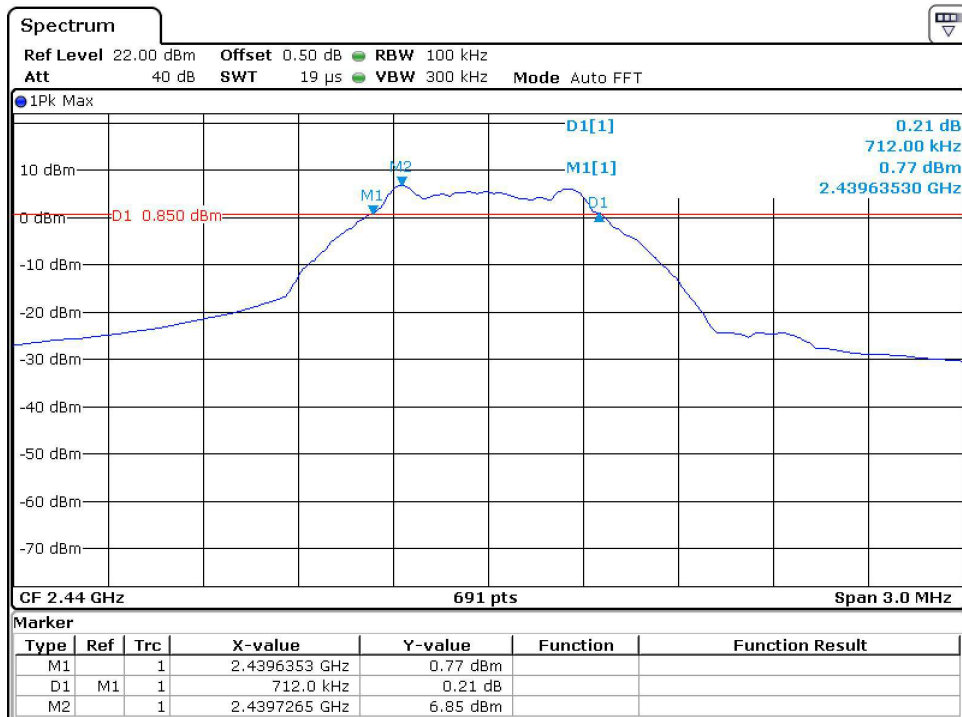
The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 KHz according to FCC KDB 558074 D01 v05r01. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

Limit: The 6 dB Bandwidth is at least 500 kHz.

Frequency (MHz)	6 dB Bandwidth (KHz)
2402	712.0
2440	712.0
2480	712.0

The test plots are attached as below.





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Date of Test: March 19, 2019

Model: CM70-C

4.3 Maximum Power Density Reading, FCC Rule 15.247(e):

The Measurement Procedure PKPSD was set according to the FCC KDB 558074 D01 v05r01.

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

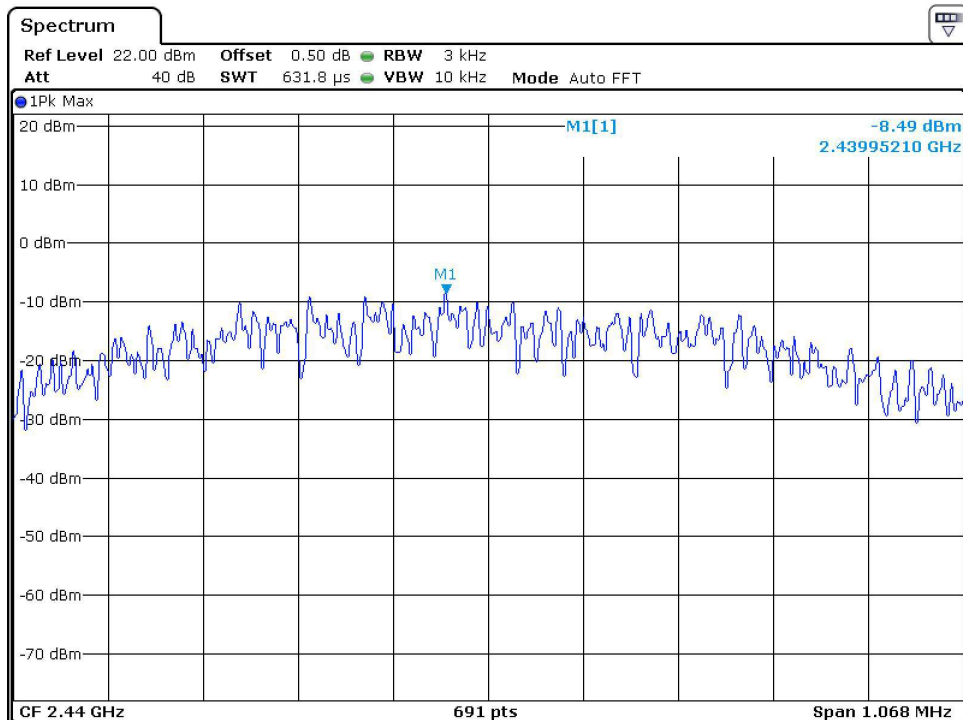
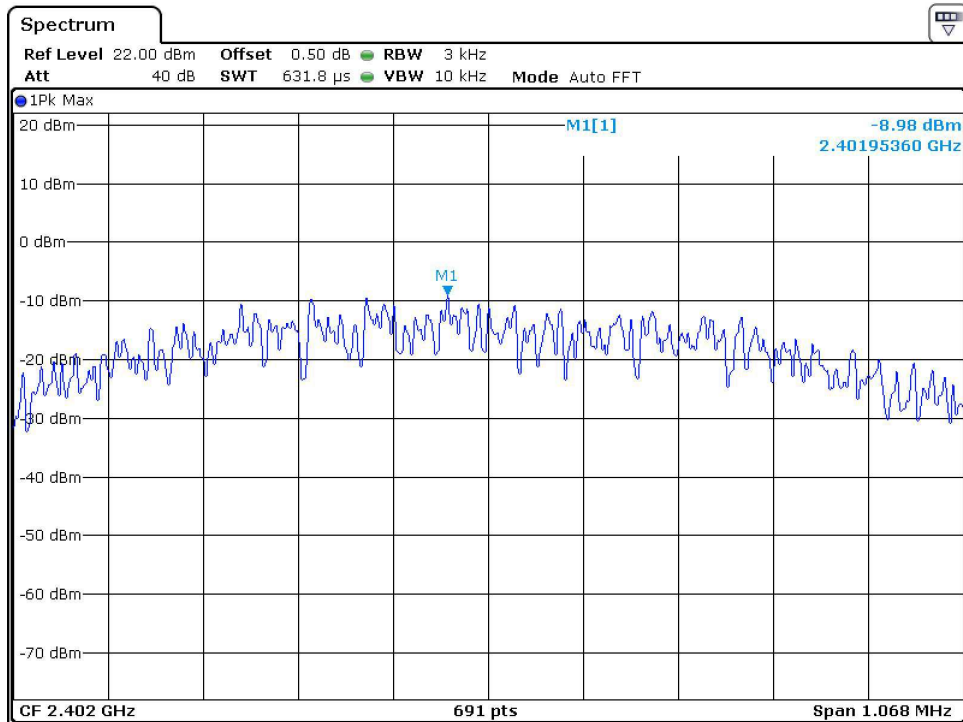
For antennas with gains of 0dBi <6dBi, So the limit of Power Density is 8dBm/3 kHz.

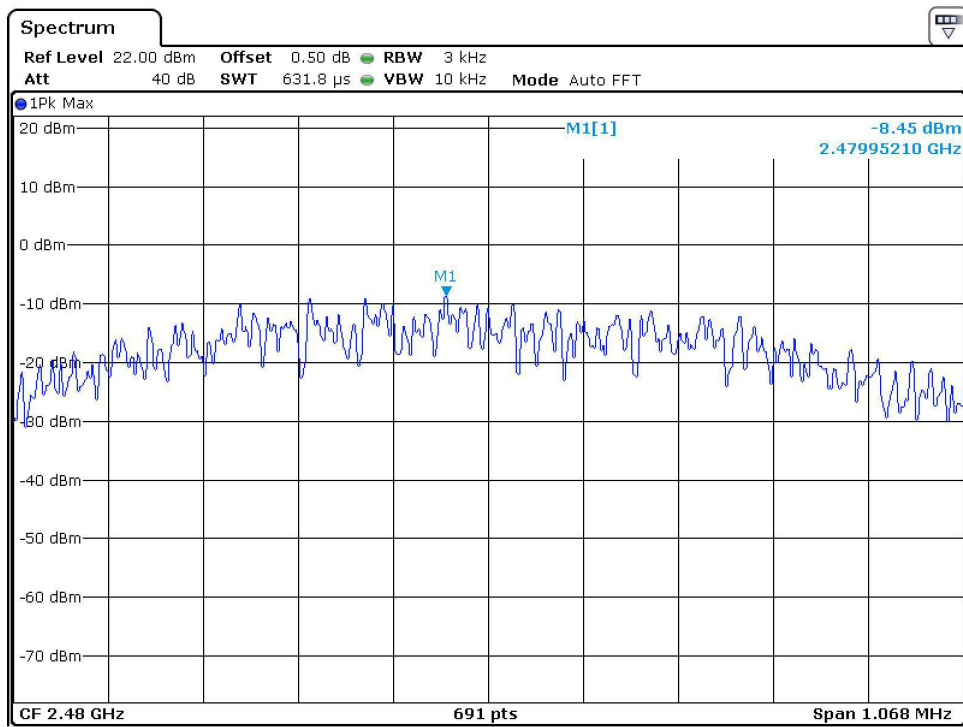
Frequency (MHz)	Power Density with RBW 3KHz
2402	-8.98
2440	-8.49
2480	-8.45

Cable loss: 0.5 dB External Attenuation: 0 dB

Cable loss, external attenuation has been included in OFFSET function

The test plots are attached as below.





Applicant: Huawei Technologies Co.,Ltd

Date of Test: March 19, 2019

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4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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, based on either an RF conducted or a radiated measurement. The Measurement Procedure was set according to the FCC KDB 558074 D01 v05r01.

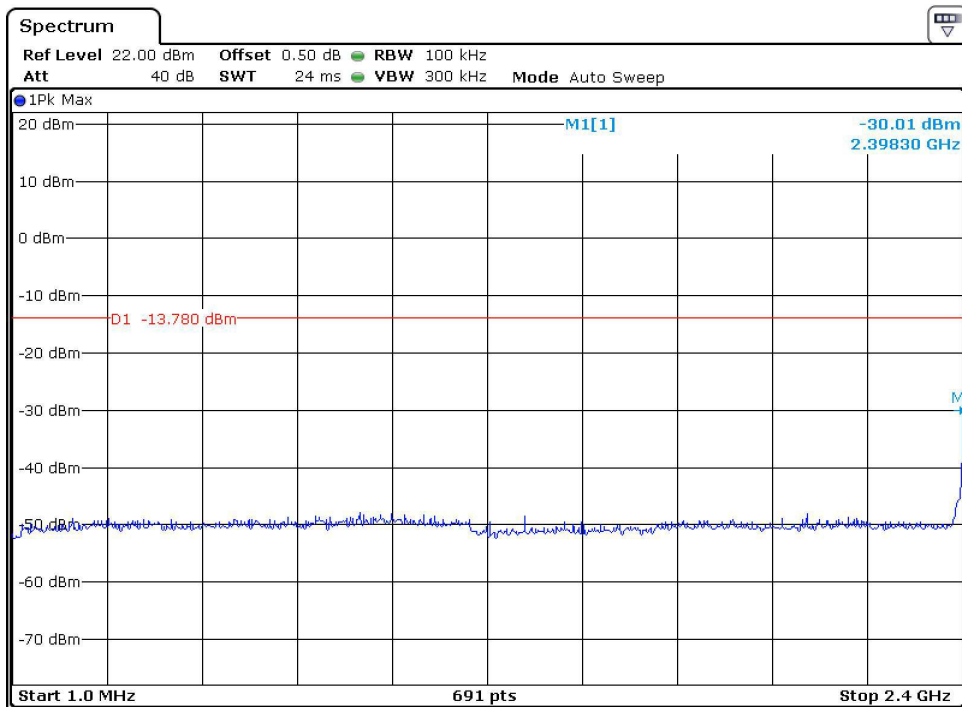
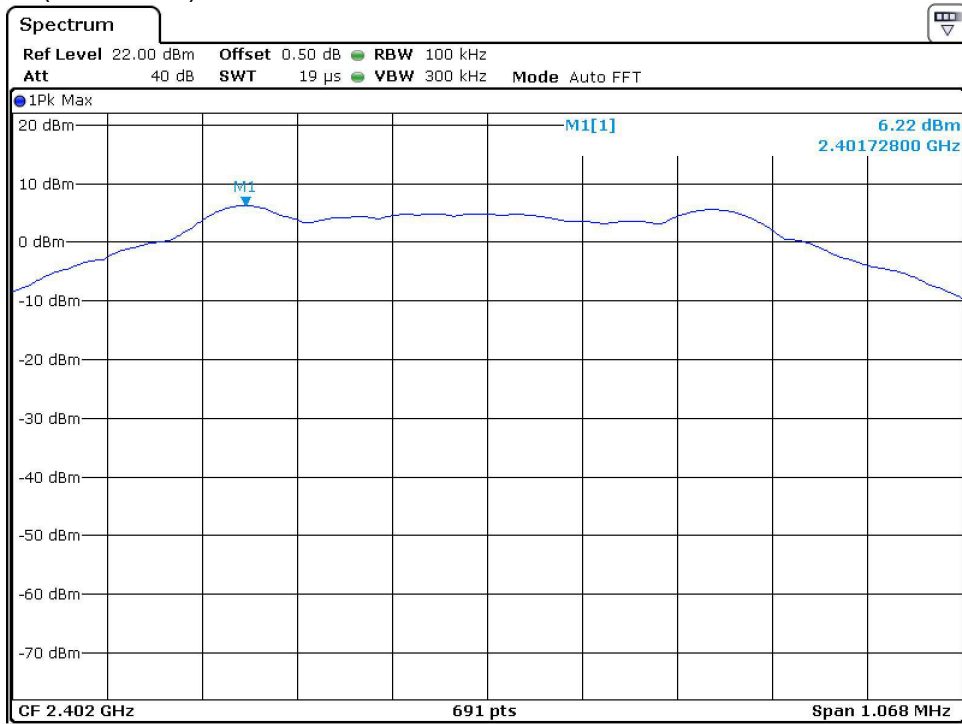
All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

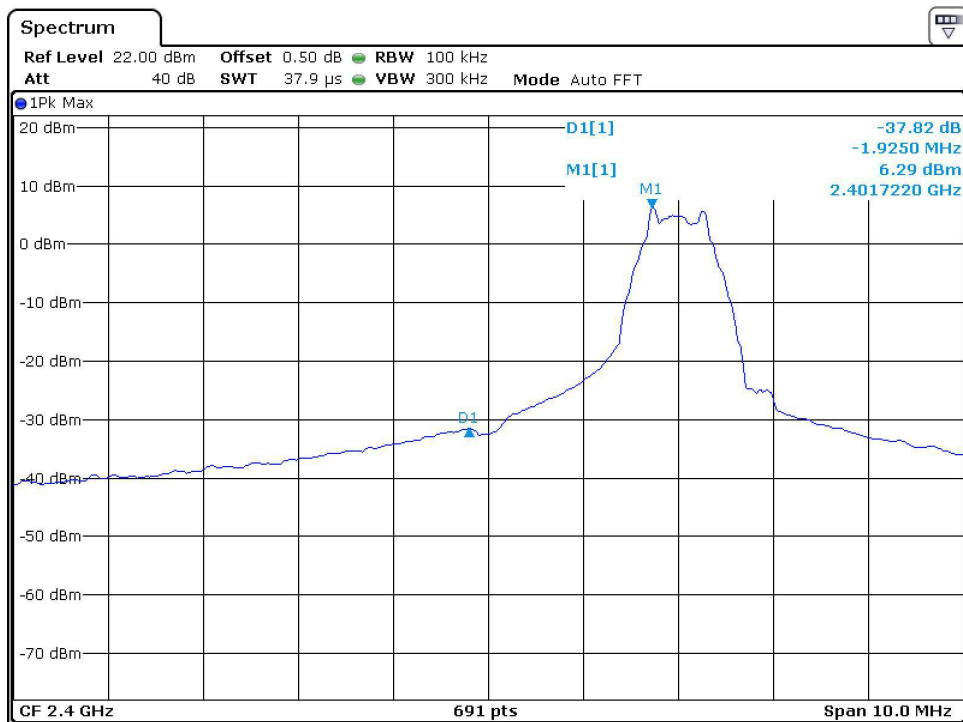
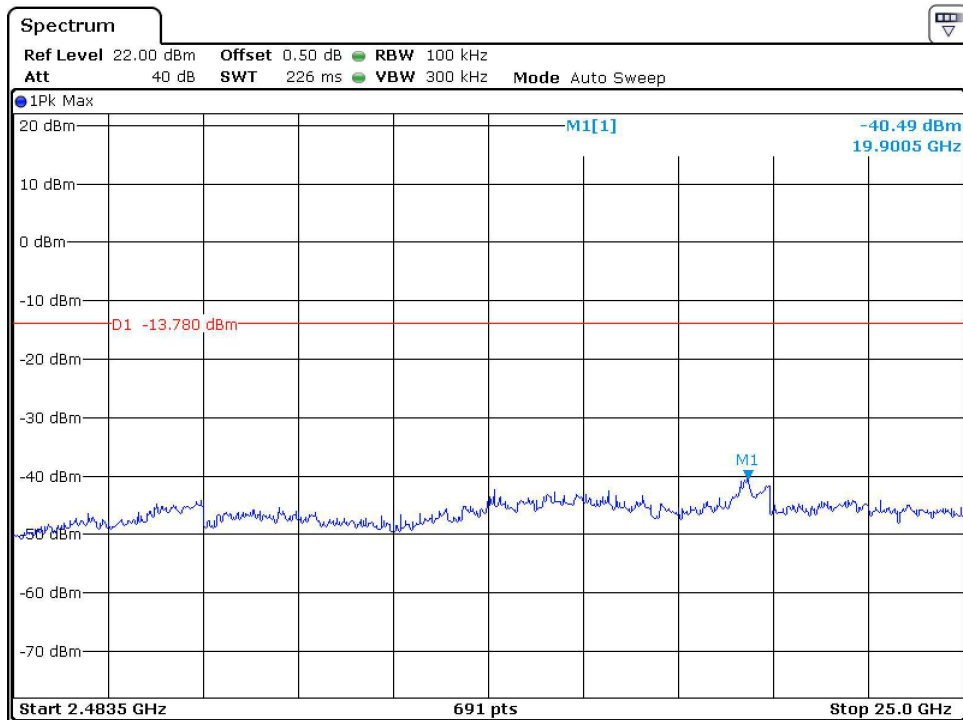
Refer to the attached test plots for out of band conducted emissions data.

The test plots showed all spurious emission up to the tenth harmonic were measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

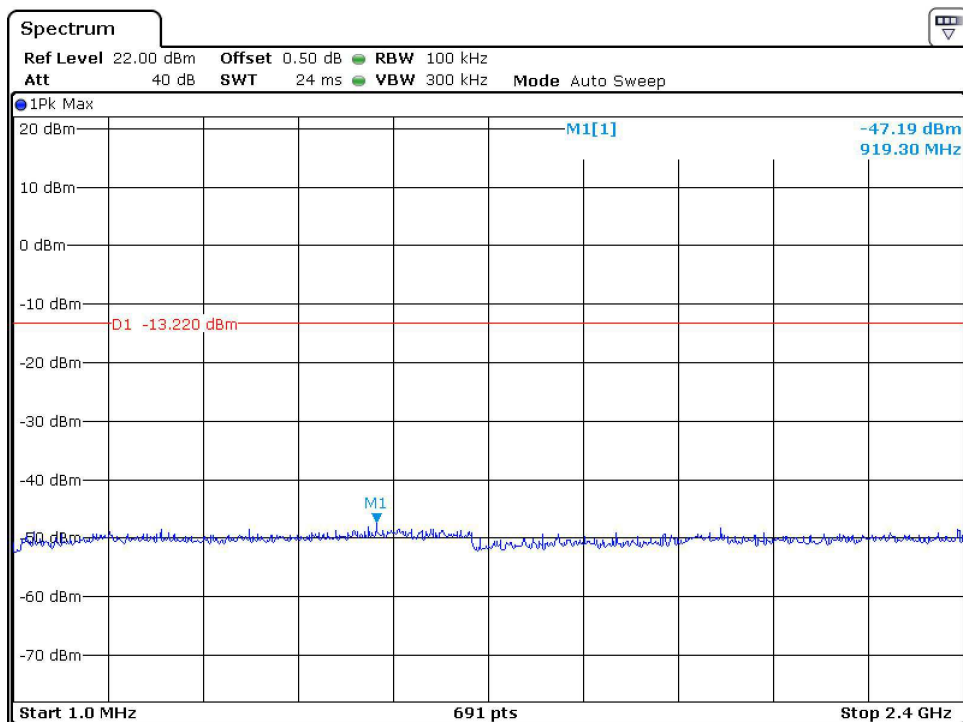
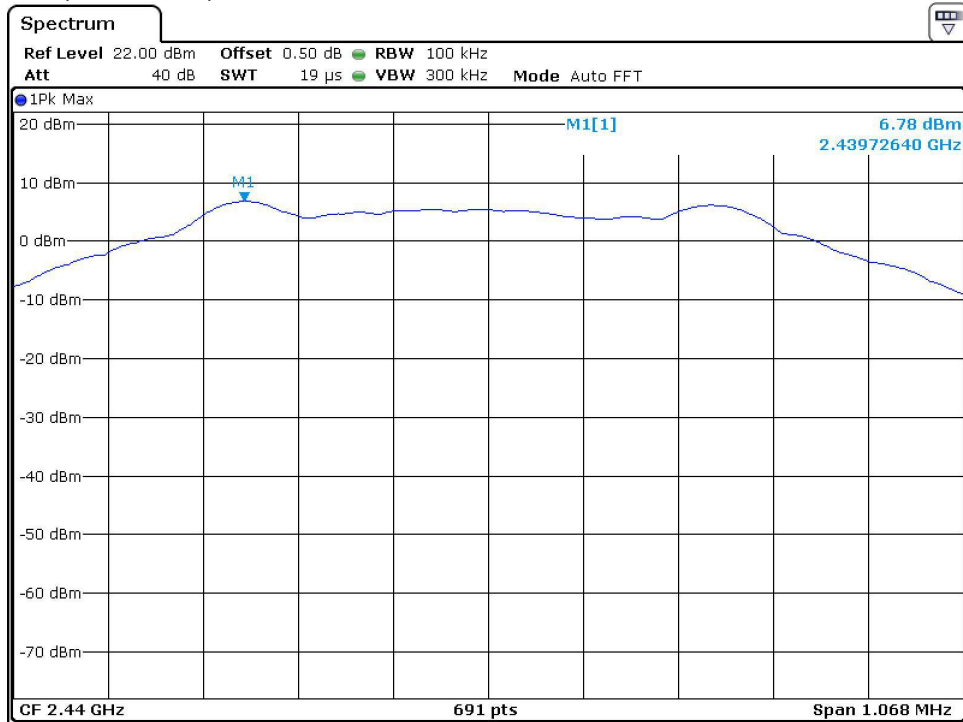
The test plots are attached as below.

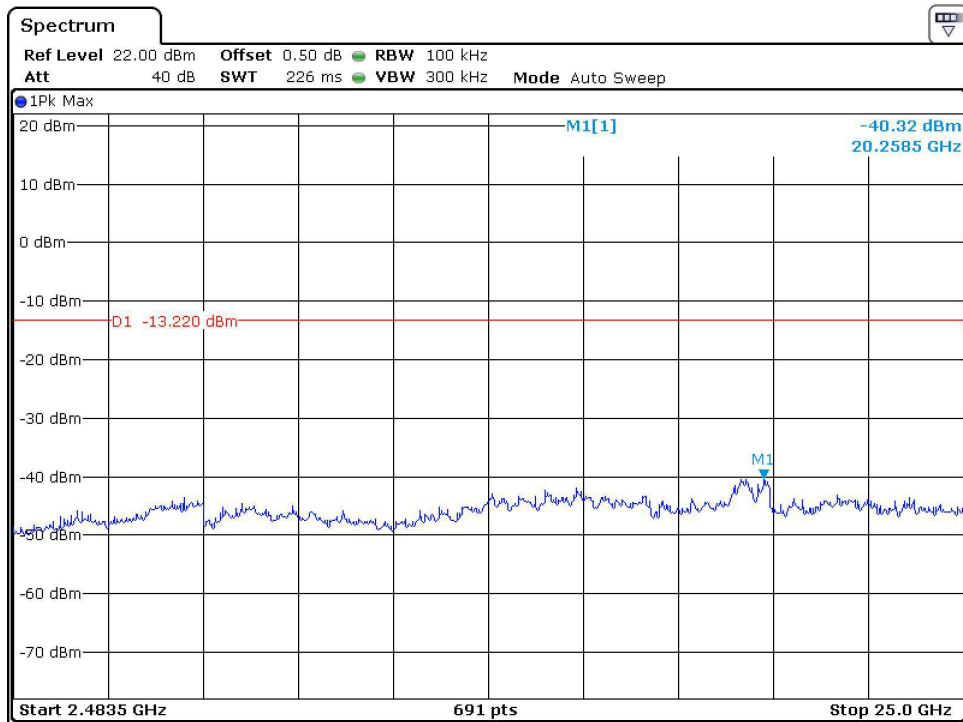
Channel 0 (2402MHz) Reference Level: 6.22dBm



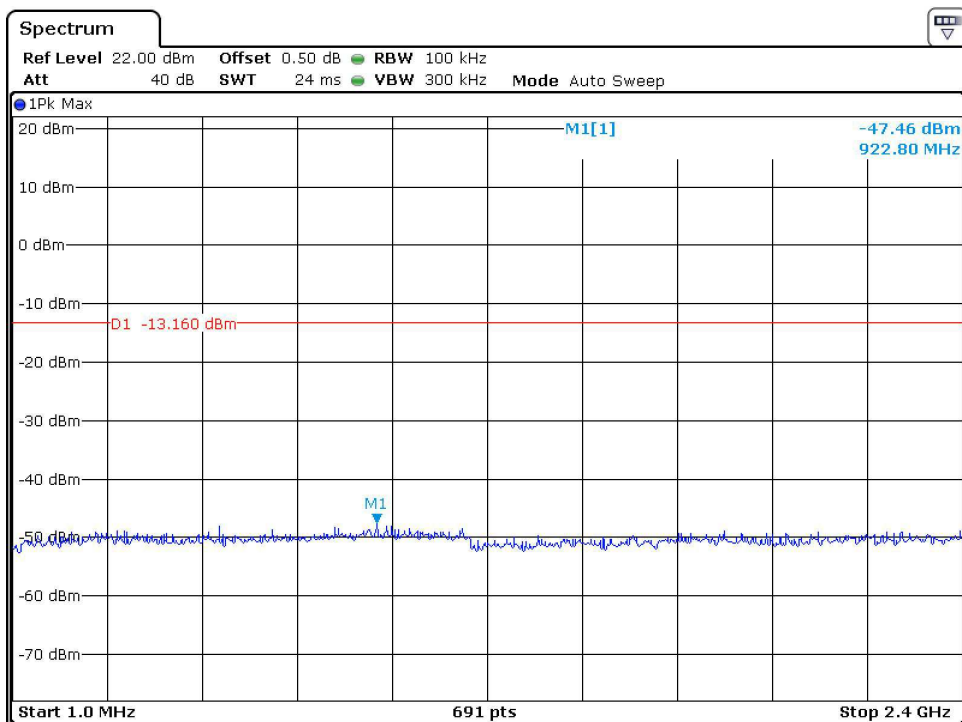
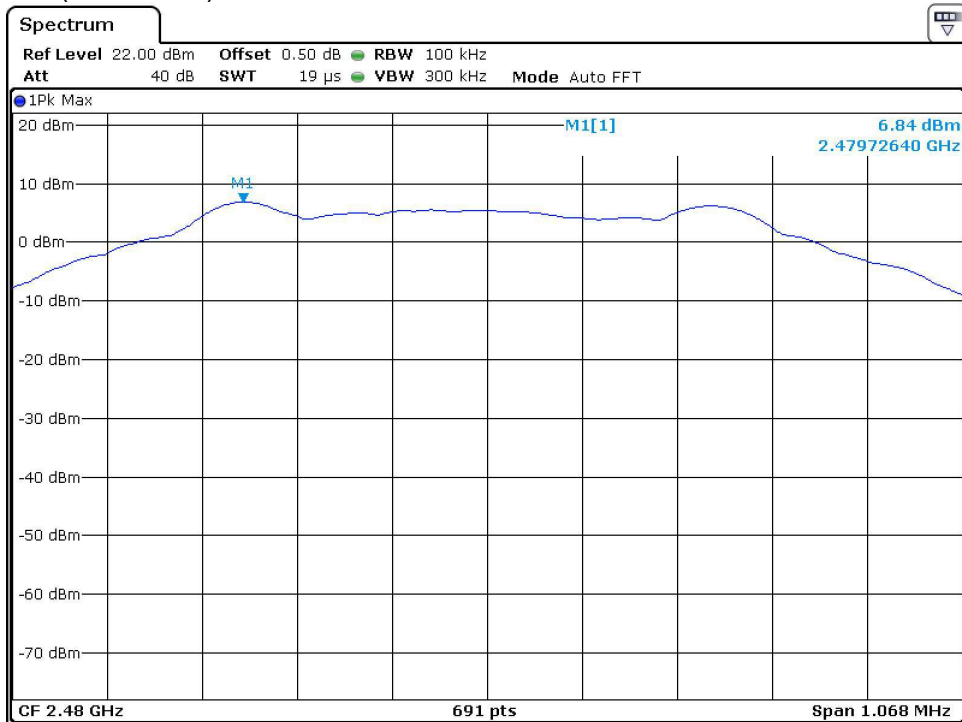


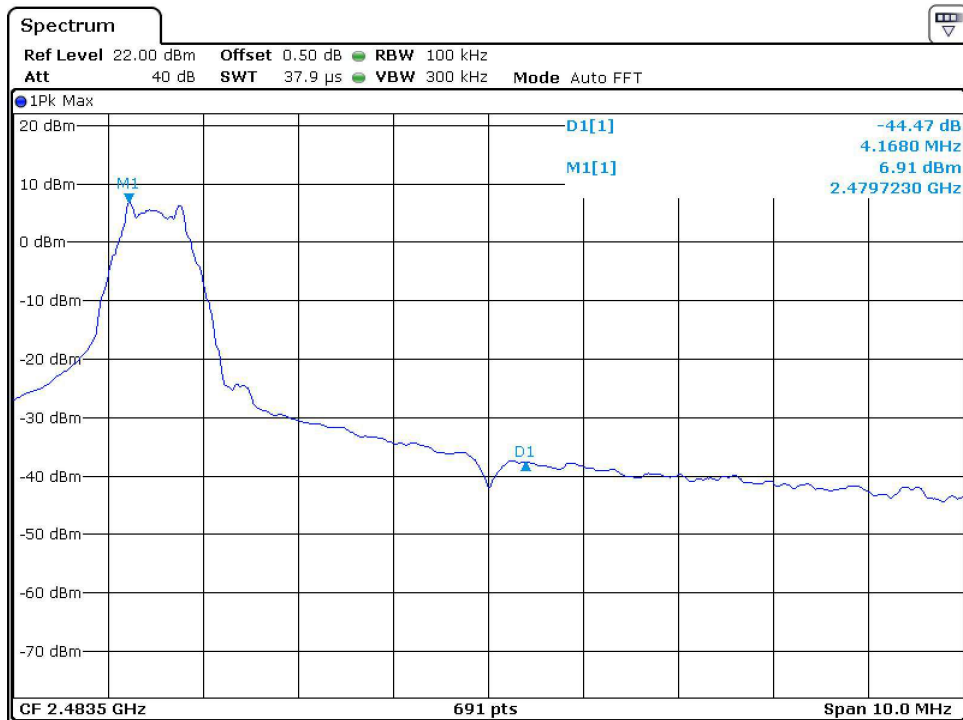
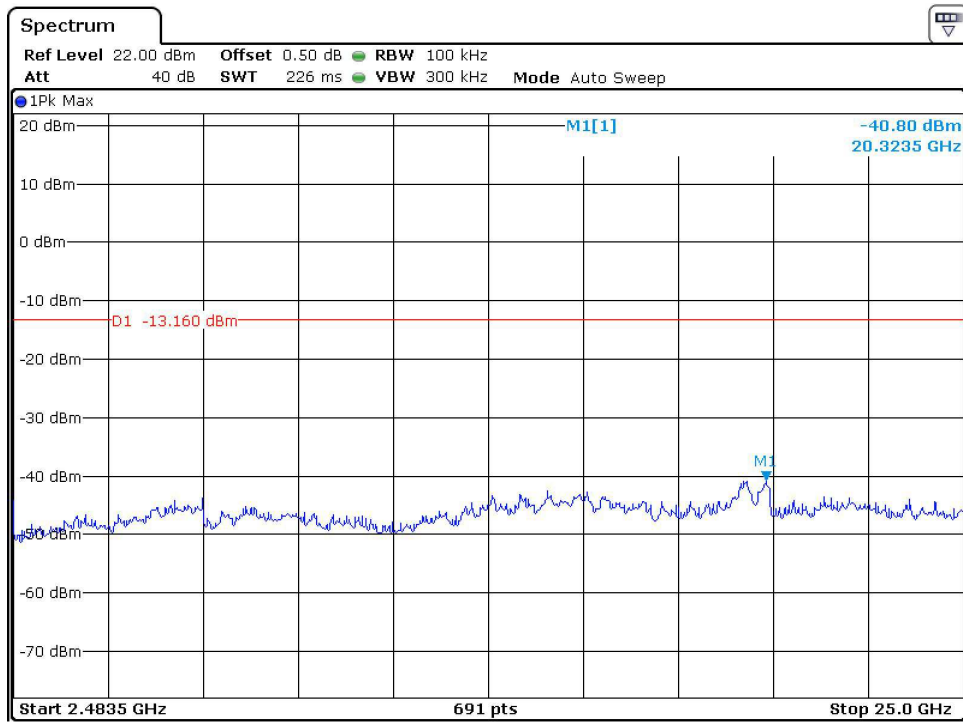
Channel 19 (2440MHz) Reference Level: 6.78dBm





Channel 39 (2480MHz) Reference Level: 6.84dBm





Applicant: Huawei Technologies Co.,Ltd

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Model: CM70-C

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

Not required, since all emissions are more than 20dB below fundamental

See attached data sheet

Applicant: Huawei Technologies Co.,Ltd

Date of Test: March 19, 2019

Model: CM70-C

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b) (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Applicant: Huawei Technologies Co.,Ltd

Date of Test: March 19, 2019

Model: CM70-C

4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD$$

Where

- FS = Field Strength in dB μ V/m
- RA = Receiver Amplitude (including preamplifier) in dB μ V
- CF = Cable Attenuation Factor in dB
- AF = Antenna Factor in dB
- AG = Amplifier Gain in dB
- PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD$$

Example

Assume a receiver reading of 62.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 42 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$\begin{aligned} RA &= 62.0 \text{ dB}\mu\text{V} \\ AF &= 7.4 \text{ dB} \\ CF &= 1.6 \text{ dB} \\ AG &= 29.0 \text{ dB} \\ PD &= 0 \text{ dB} \\ FS &= 62 + 7.4 + 1.6 - 29 + 0 = 42 \text{ dB}\mu\text{V/m} \end{aligned}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm} [(42 \text{ dB}\mu\text{V/m})/20] = 125.9 \mu\text{V/m}$$

Applicant: Huawei Technologies Co.,Ltd

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Model: CM70-C

4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission
at 7440.000MHz
is passed by 9.4dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

TEST PERSONNEL:

Sign on file

Terry Tang, Senior Engineer
Typed/Printed Name

March 19, 2019
Date

Applicant: Huawei Technologies Co.,Ltd

Date of Test: March 19, 2019

Worst Case Operating Mode:

Model: CM70-C

BT Transmitting

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	31.940	30.8	20.0	10.1	20.9	40.0	-19.1
Horizontal	386.960	22.6	20.0	19.3	21.9	46.0	-24.1
Horizontal	531.005	24.9	20.0	21.1	26.0	46.0	-20.0
Horizontal	700.270	28.0	20.0	21.5	29.5	46.0	-16.5
Horizontal	836.555	28.6	20.0	21.6	30.2	46.0	-15.8
Horizontal	960.230	30.7	20.0	21.7	32.4	54.0	-21.6
Vertical	32.425	31.6	20.0	10.1	21.7	40.0	-18.3
Vertical	37.275	27.0	20.0	11.3	18.3	40.0	-21.7
Vertical	299.175	20.4	20.0	18.7	19.1	46.0	-26.9
Vertical	715.305	29.0	20.0	20.1	29.1	46.0	-16.9
Vertical	824.915	28.7	20.0	21.6	30.3	46.0	-15.7
Vertical	951.985	30.9	20.0	21.7	32.6	46.0	-13.4

- NOTES:
1. Quasi-Peak detector is used for frequency below 1GHz.
 2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. All emissions are below the QP limit.

Applicant: Huawei Technologies Co.,Ltd

Date of Test: March 19, 2019

Worst Case Operating Mode:

Model: CM70-C

Transmitting (2402MHz)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4804.000	52.3	36.7	35.5	51.1	74.0	-22.9
Horizontal	*7206.000	54.8	36.1	36.5	55.2	74.0	-18.8
Horizontal	*2385.000	50.5	36.5	28.1	42.1	74.0	-31.9

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4804.000	44.1	36.7	35.5	42.9	54.0	-11.1
Horizontal	*7206.000	37.5	36.1	36.5	37.9	54.0	-16.1
Horizontal	*2385.000	38.4	36.5	28.1	30.0	54.0	-24.0

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	*4804.000	51.2	36.7	35.5	50.0	74.0	-24.0
Vertical	*7206.000	53.8	36.1	36.5	54.2	74.0	-19.8
Vertical	*2385.000	50.2	36.5	28.1	41.8	74.0	-32.2

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	*4804.000	39.4	36.7	35.5	38.2	54.0	-15.8
Vertical	*7206.000	43.3	36.1	36.5	43.7	54.0	-10.3
Vertical	*2385.000	37.2	36.5	28.1	28.8	54.0	-25.2

- NOTES:
1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz/VBW=10Hz for average value.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Huawei Technologies Co.,Ltd

Date of Test: March 19, 2019

Worst Case Operating Mode:

Model: CM70-C

Transmitting (2440MHz)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4880.000	54.9	36.3	33.5	52.1	74.0	-21.9
Horizontal	*7320.000	55.8	36.3	37.7	57.2	74.0	-16.8

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4880.000	41.0	36.3	33.5	38.2	54.0	-15.8
Horizontal	*7320.000	42.1	36.3	37.7	43.5	54.0	-10.5

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	*4880.000	54.0	36.3	33.5	51.2	74.0	-22.8
Vertical	*7320.000	55.4	36.3	37.7	56.8	74.0	-17.2

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	*4880.000	40.7	36.3	33.5	37.9	54.0	-16.1
Vertical	*7320.000	41.9	36.3	37.7	43.3	54.0	-10.7

- NOTES:
1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Huawei Technologies Co.,Ltd

Date of Test: March 19, 2019

Worst Case Operating Mode:

Model: CM70-C

Transmitting (2480MHz)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4960.000	55.0	36.3	33.5	52.2	74.0	-21.8
Horizontal	*7440.000	53.4	36.3	37.8	54.9	74.0	-19.1
Horizontal	*2485.000	55.0	36.1	28.2	47.1	74.0	-26.9

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4960.000	40.8	36.3	33.5	38.0	54.0	-16.0
Horizontal	*7440.000	43.1	36.3	37.8	44.6	54.0	-9.4
Horizontal	*2485.000	39.0	36.1	28.2	31.1	54.0	-22.9

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	*4960.000	54.9	36.3	33.5	52.1	74.0	-21.9
Vertical	*7440.000	55.5	36.3	37.8	57.0	74.0	-17.0
Vertical	*2485.000	51.4	36.1	28.2	43.5	74.0	-30.5

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	*4960.000	40.4	36.3	33.5	37.6	54.0	-16.4
Vertical	*7440.000	43.0	36.3	37.8	44.5	54.0	-9.5
Vertical	*2485.000	39.0	36.1	28.2	31.1	54.0	-22.9

- NOTES:
1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Huawei Technologies Co.,Ltd

Date of Test: March 19, 2019

Model: CM70-C

4.9 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

Not required - No digital part

Test results are attached

Included in the separated report.

Applicant: Huawei Technologies Co.,Ltd

Date of Test: March 19, 2019

Model: CM70-C

4.10 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The Transmitter ON time was determined from the resultant time-amplitude display:

	See attached spectrum analyzer chart (s) for Transmitter timing
	See Transmitter timing diagram provided by manufacturer
x	Not applicable, duty cycle was not used.

EXHIBIT 5
EQUIPMENT PHOTOGRAPHS

5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf & internal photos.pdf.

EXHIBIT 6

PRODUCT LABELLING

6.0 Product Labeling

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf.

EXHIBIT 7

TECHNICAL SPECIFICATIONS

7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

EXHIBIT 8

INSTRUCTION MANUAL

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

EXHIBIT 9

CONFIDENTIALITY REQUEST

9.0 Confidentiality Request

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

EXHIBIT 10

MISCELLANEOUS INFORMATION

10.0 Discussion of Pulse Desensitization

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF*.

Pulse desensitivity is not applicable for this device since the transmitter transmits the RF signal continuously.

EXHIBIT 11

TEST EQUIPMENT LIST

11.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ182-02	RF Power Meter	Anritsu	ML2496A	1302005	5-Jun-2018	5-Jun-2019
SZ182-02-01	Power Sensor	Anritsu	MA2411B	1207429	5-Jun-2018	5-Jun-2019
SZ061-12	BiConiLog Antenna	ETS	3142E	00166158	14-Sep-2018	14-Sep-2019
SZ185-01	EMI Receiver	R&S	ESCI	100547	4-Jan-2019	4-Jan-2020
SZ061-08	Horn Antenna	ETS	3115	00092346	14-Sep-2018	14-Sep-2019
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	21-May-2018	21-May-2019
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	05-Jun-2018	05-Jun-2019
SZ056-06	Signal Analyzer	R&S	FSV 40	101101	05-Jun-2018	05-Jun-2019
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	15-Jan-2019	15-Jan-2020
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	15-Dec-2018	15-Dec-2020
SZ062-02	RF Cable	RADIALL	RG 213U	--	10-Jun-2018	10-Jun-2019
SZ062-05	RF Cable	RADIALL	0.04-26.5GHz	--	10-Jun-2018	10-Jun-2019
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	10-Jun-2018	10-Jun-2019
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	05-Jun-2018	05-Jun-2019

***** End of Report*****