APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
Cozzia USA, LLC

Massage Chair

Model No.: EC-7502D, JPM30

FCC ID: 2AHZV-EC7502D

Prepared for	:	Cozzia USA, LLC
Address	:	861 S. OAK PARK ROAD, COVINA, California 91724, United States
Prepared by	:	Shenzhen Accurate Technology Co., Ltd.
Address	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China Tel: (0755) 26503290 Fax: (0755) 26503396

Report No.	:	RTZ200918011-00
Date of Test	:	September 30-October 26, 2020
Date of Report	:	October 30, 2020

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Description Page

Test Report Certification

Applicant	:	Cozzia USA, LLC
Manufacturer	:	Atex. Co., Ltd. Kurume Plant
Product	:	Massage Chair
Model No.	:	EC-7502D, JPM30

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.10: 2013

The device described above is tested by Shenzhen Accurate Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and Shenzhen Accurate Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Accurate Technology Co., Ltd.

Date of Test :	September 30-October 26, 2020
Date of Report :	October 30, 2020

Prepared by : Bob Wang

(Bob Wang, Engineer)

Approved & Authorized Signer : Candy.Li

(Candy.Li, Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

Model Number	:	EC-7502D, JPM30 (Note: We hereby state that these models are identical in interior structure, electrical circuits and components, just model name is different. Therefore only model EC-7502D is for tests.)
Frequency Range	:	Bluetooth 2402MHz-2480MHz
Number of Channels	:	79
Antenna Gain(Max)	:	2dBi
Antenna type	:	PCB Antenna
Modulation mode	:	GFSK, π/4 DQPSK, 8DPSK
Trade Mark	:	N/A
Power supply	:	AC 110-120V; 60Hz
Applicant	:	Cozzia USA, LLC
Address	:	861 S. OAK PARK ROAD, COVINA, California 91724, United States
Manufacturer	:	Atex. Co., Ltd. Kurume Plant
Address	:	Aokishima 438-1, Jojima town Kurume city, Fukuoka-ken 〒830-0222
Sample No.:	:	RTZ200918011-RF-S1

1.2.Accessory and Auxiliary Equipment

N/A

1.3.Description of Test Facility

EMC Lab	:	Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358 Listed by Innovation, Science and Economic Development Canada (ISEDC) The Registration Number is 5077A-2 Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193 Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	:	Shenzhen Accurate Technology Co., Ltd.
Site Location	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

1.4.Measurement Uncertainty

Radiated Emission Expanded Uncertainty (9kHz-30MHz)	:	U=2.66dB, k=2
Radiated Emission Expanded Uncertainty (30MHz-1000MHz)	:	U=4.28dB, k=2
Radiated Emission Expanded Uncertainty (1G-18GHz)	:	U=4.98dB, k=2
Radiated Emission Expanded Uncertainty (18G-26.5GHz)	:	U=5.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

2.1.For Radiated Emission Test

Item	Equipment	Manufacturer	Type	S/N	Calibrated dates	Validity
1.	Test Receiver	Rohde & Schwarz	ESR	101817	Jan.04, 2020	1 Year
2.	Spectrum Analyzer	Rohde & Schwarz	FSV40	101495	Jan.04, 2020	1 Year
3.	Pre-Amplifier	Agilent	8447D	294A10619	Jan.04, 2020	1 Year
4.	Pre-Amplifier	Rohde & Schwarz	CBLU11835 40-01	3791	Jan.04, 2020	1 Year
5.	50 Coaxial Switch	Anritsu Corp	MP59B	6200237248	Jan.04, 2020	1 Year
6.	Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan.05, 2020	1 Year
7.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan.05, 2020	1 Year
8.	Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan.05, 2020	1 Year
9.	RF Coaxial Cable (Radiated Emission)	SUHNER	N-5m	NO.3	Jan.04, 2020	1 Year
10.	RF Coaxial Cable (Radiated Emission)	SUHNER	N-5m	NO.4	Jan.04, 2020	1 Year
11.	RF Coaxial Cable (Radiated Emission)	SUHNER	N-1m	NO.5	Jan.04, 2020	1 Year
12.	RF Coaxial Cable (Radiated Emission)	SUHNER	N-1m	NO.6	Jan.04, 2020	1 Year
13.	Measurement Software: EZ_EMC V1.1.4.2					

2.2.For Conducted Emission Test

Item	Equipment	Manufacturer	Type	S/N	Calibrated dates	Validity
1.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan. 04, 2020	1 Year
2.	L.I.S.N.	Schwarzbeck	NLSK8126	8126431	Jan. 04, 2020	1 Year
3.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	Jan. 04, 2020	1 Year
4.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283936	Jan. 04, 2020	1 Year
5.	RF Coaxial Cable (Conducted Emission)	SUHNER	N-2m	No.2	Jan. 04, 2020	1 Year
6.	Measurement Software: ES-K1 V1.71					

2.3.For Direct conduction measurement

Item	Equipment	Manufacturer	Type	S/N	Calibrated dates	Validity
1.	Spectrum Analyzer	Rohde & Schwarz	ESPI	100396	Jan. 04, 2020	1 Year
2.	10dB attenuator	/	/	/	Self calibration	/
3.	RF Coaxial Cable	N/A	N-0.1m	/	Self calibration	/

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: Transmitting mode
Low Channel: 2402MHz
Middle Channel: 2441MHz
High Channel: 2480MHz
Hopping

3.2.Configuration and peripherals

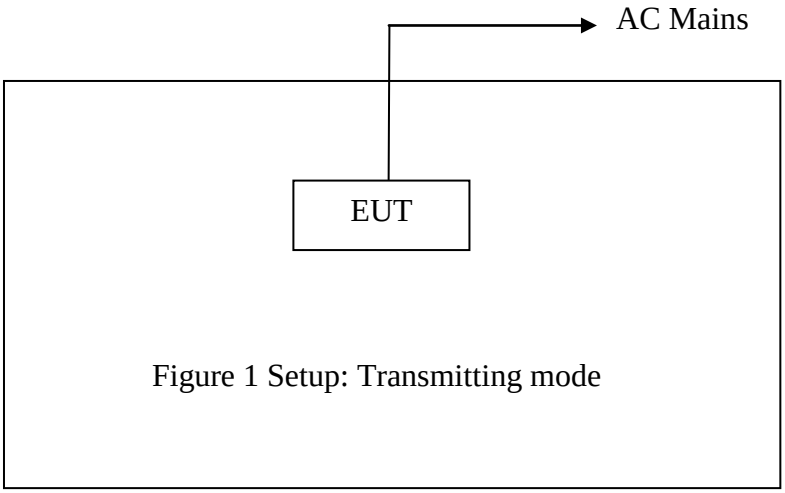


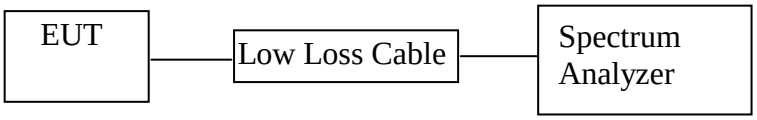
Figure 1 Setup: Transmitting mode

4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.247(a)(1)	20dB Bandwidth Test	Compliant
Section 15.247(a)(1)	Carrier Frequency Separation Test	Compliant
Section 15.247(a)(1)(iii)	Number Of Hopping Frequency Test	Compliant
Section 15.247(a)(1)(iii)	Dwell Time Test	Compliant
Section 15.247(b)(1)	Maximum Peak Output Power Test	Compliant
Section 15.247(d) Section 15.209	Radiated Emission Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.207	AC Power Line Conducted Emissions Limits Test	Compliant
Section 15.203	Antenna Requirement	Compliant

5. 20DB BANDWIDTH TEST

5.1.Block Diagram of Test Setup



5.2.The Requirement For Section 15.247(a)(1)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

5.3.EUT Configuration on Test

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

5.5.Test Procedure

5.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

5.5.2.The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW.

5.5.3.The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

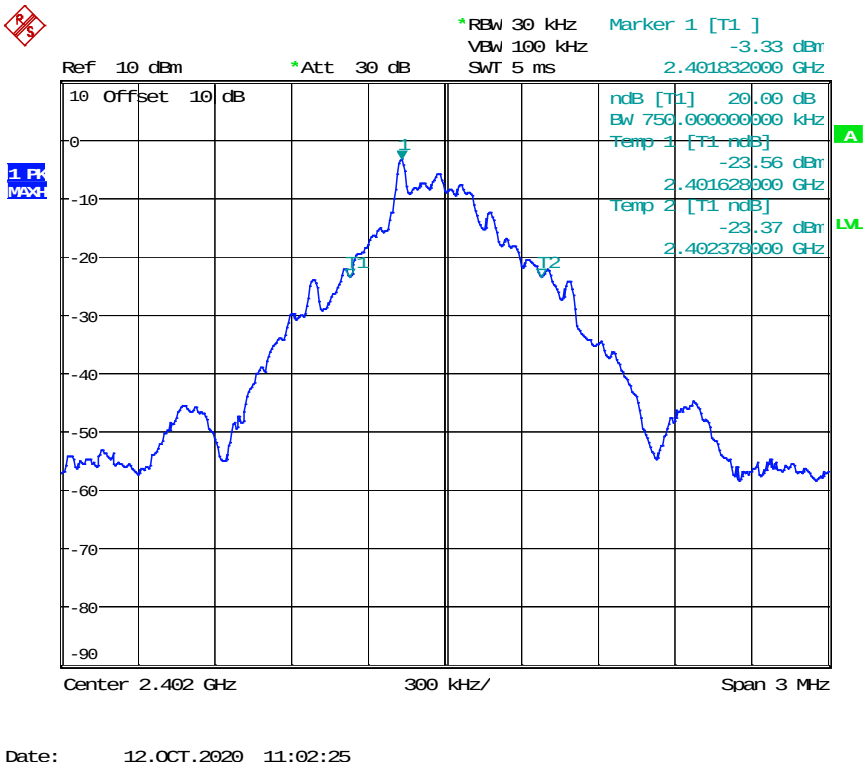
5.6.Test Result

Channel	Frequency (MHz)	GFSK 20dB Bandwidth (MHz)	∏/4DQPSK 20dB Bandwidth (MHz)	8DPSK 20dB Bandwidth (MHz)	Result
Low	2402	0.750	1.176	1.200	Pass
Middle	2441	0.678	1.182	1.200	Pass
High	2480	0.744	1.182	1.212	Pass

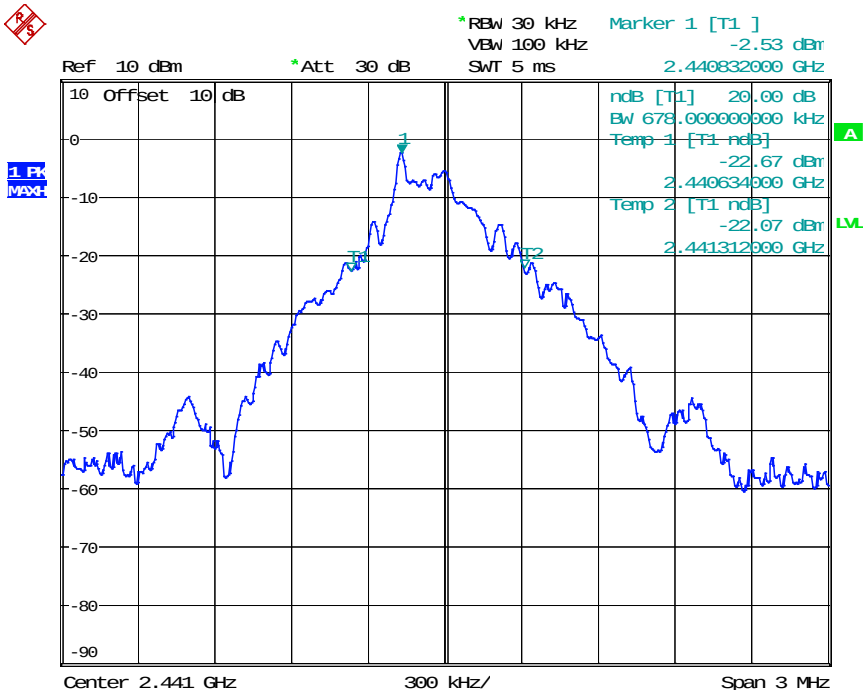
The spectrum analyzer plots are attached as below.

GFSK Mode

Low channel



Middle channel



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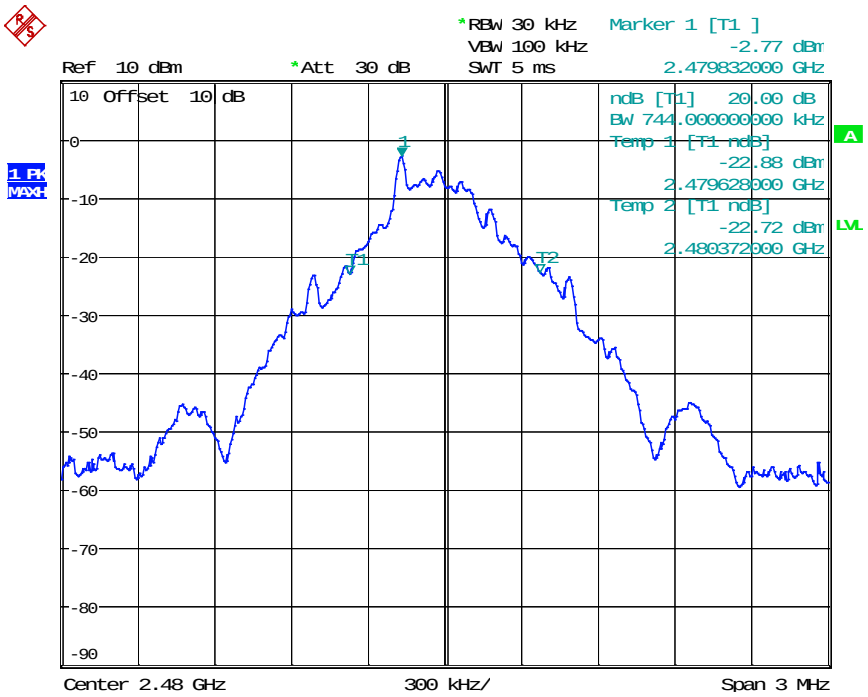
High channel



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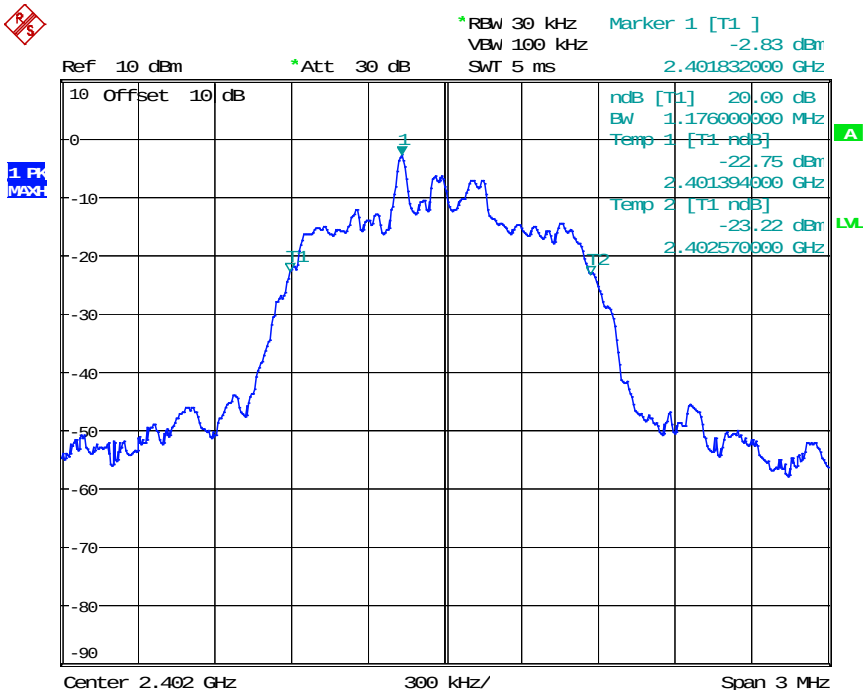
Π/4DQPSK Mode

Low channel



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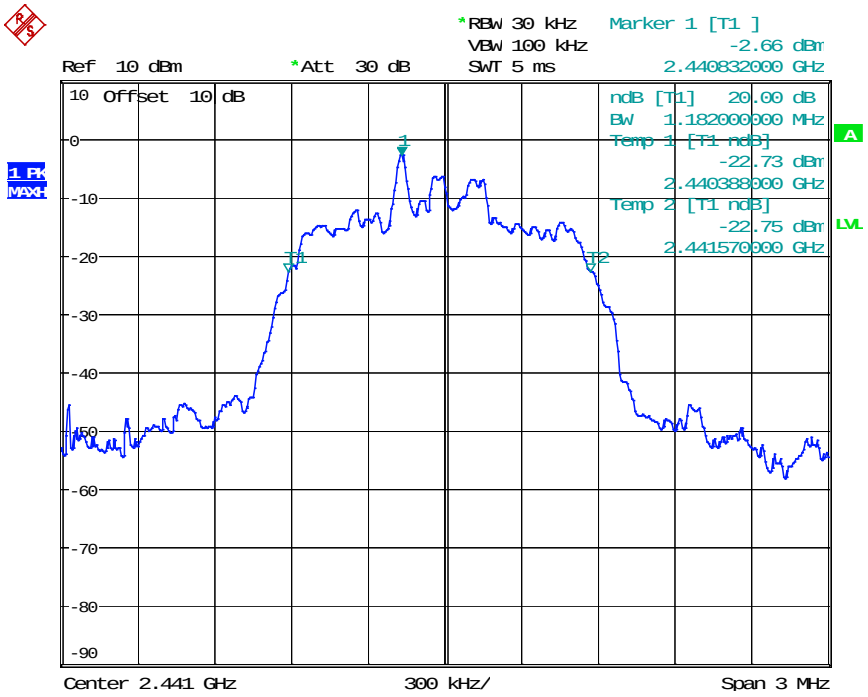
Middle channel



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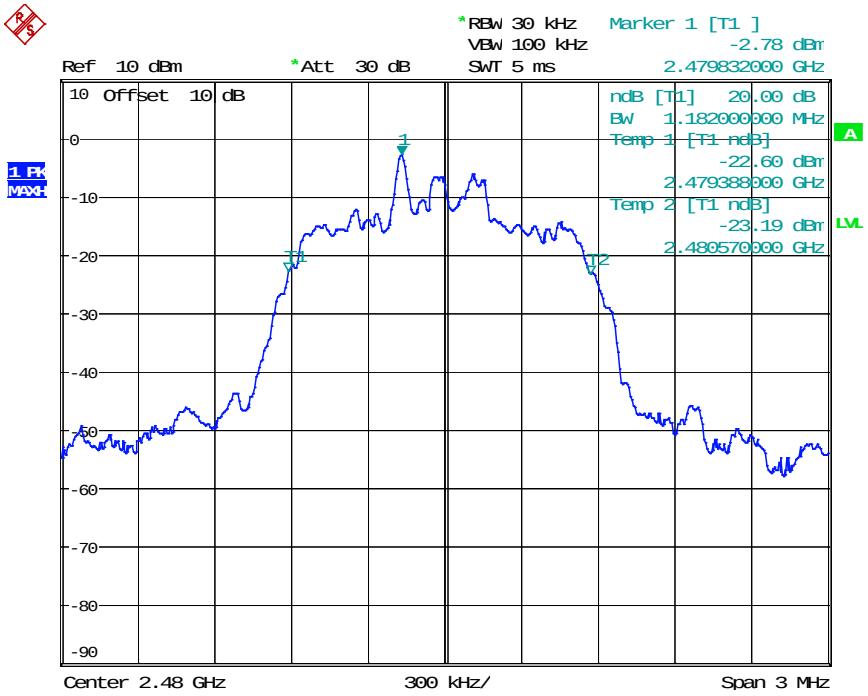
High channel



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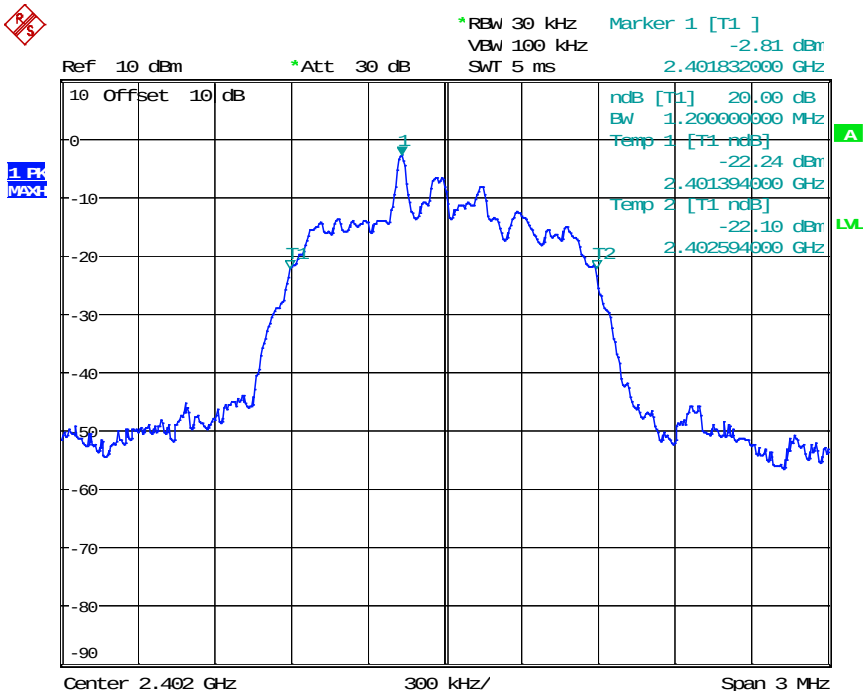
8DPSK Mode

Low channel



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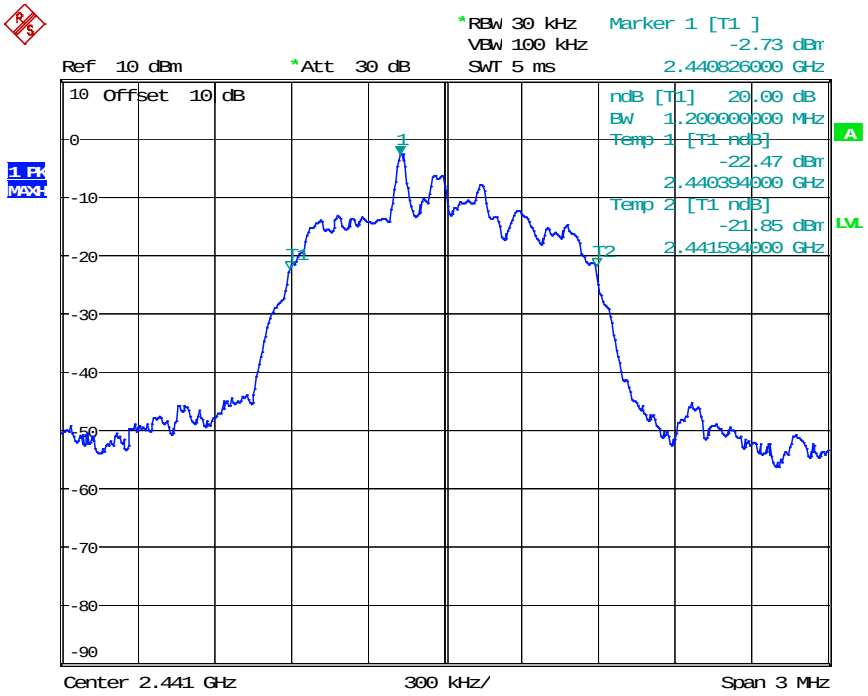
Middle channel



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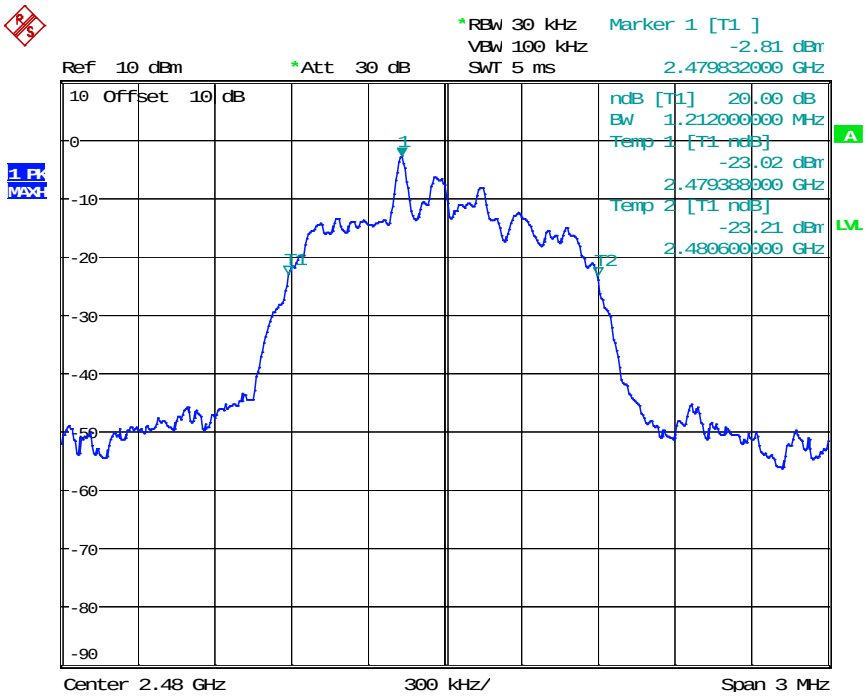
High channel



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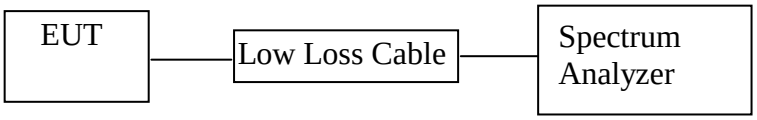
6. CARRIER FREQUENCY SEPARATION TEST

6.1.Block Diagram of Test Setup



6.2.The Requirement For Section 15.247(a)(1)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

6.3.EUT Configuration on Test

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4.Operating Condition of EUT

6.4.1.Setup the EUT and simulator as shown as Section 6.1.

6.4.2.Turn on the power of all equipment.

6.4.3.Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

6.5.Test Procedure

6.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

6.5.2.Set RBW of spectrum analyzer to 30 kHz and VBW to 100 kHz. Adjust Span to 3MHz.

6.5.3.Set the adjacent channel of the EUT Maxhold another trace.

6.5.4.Measurement the channel separation

6.6.Test Result

GFSK

Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2403			
Middle	2440	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2441			
High	2479	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2480			

Π/4DQPSK

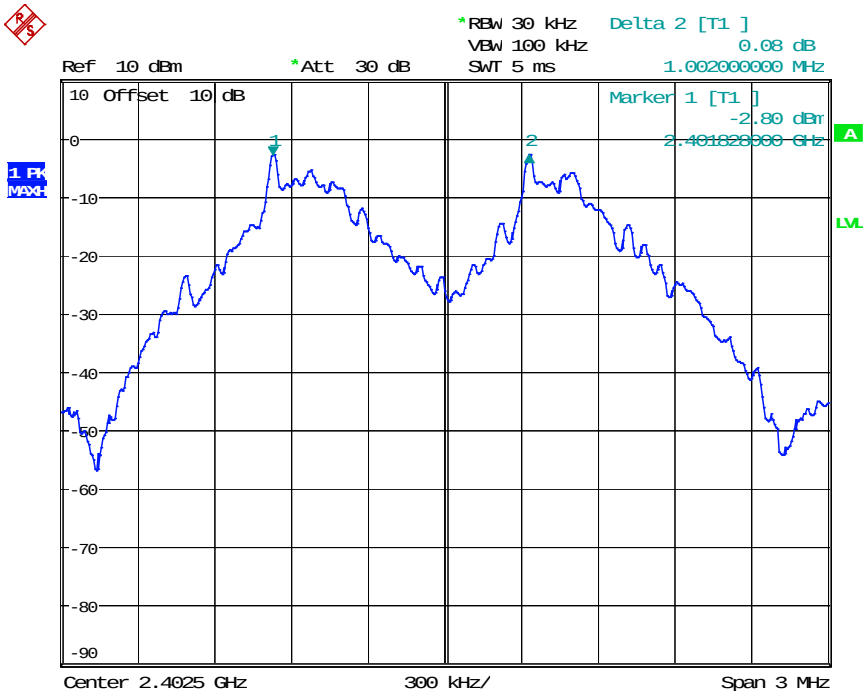
Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2403			
Middle	2440	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2441			
High	2479	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2480			

8DPSK

Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2403			
Middle	2440	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2441			
High	2479	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2480			

GFSK Mode

Low channel



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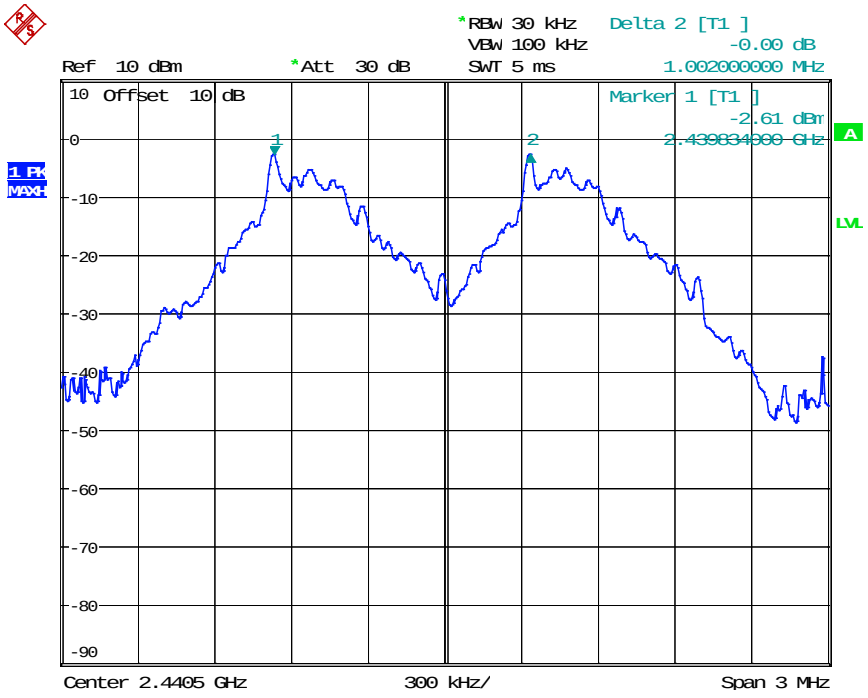
Middle channel



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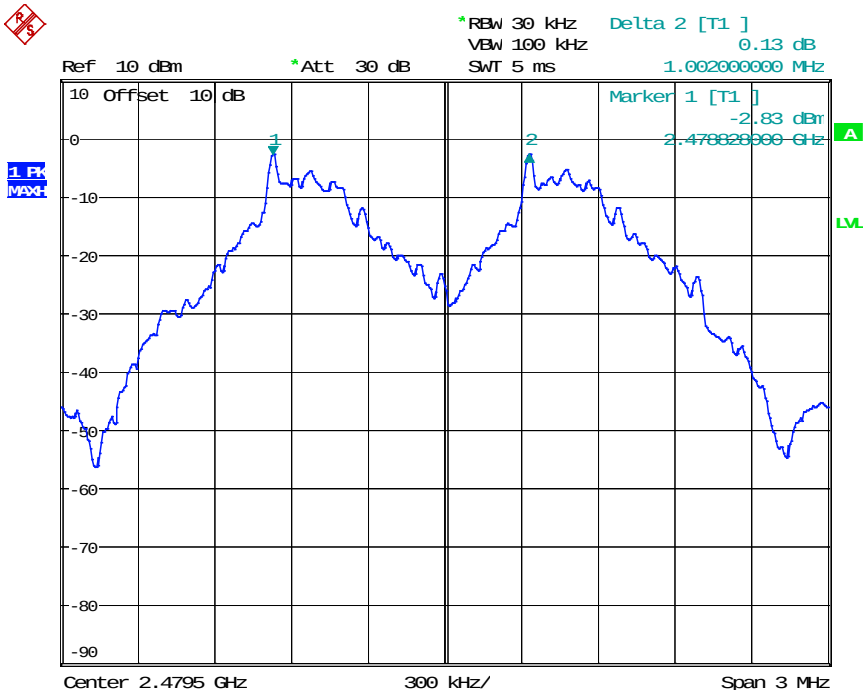
High channel



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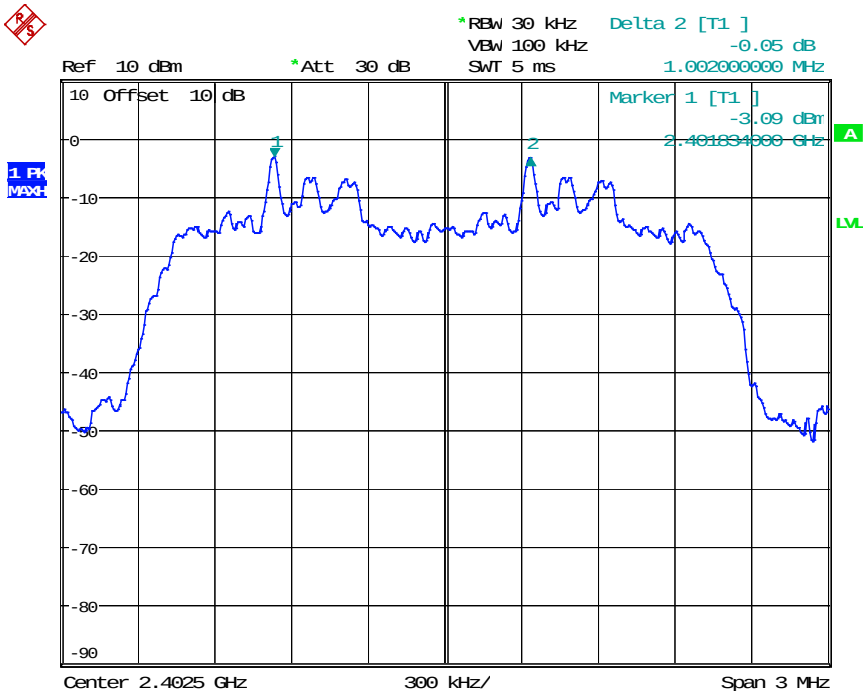
Π/4DQPSK Mode

Low channel



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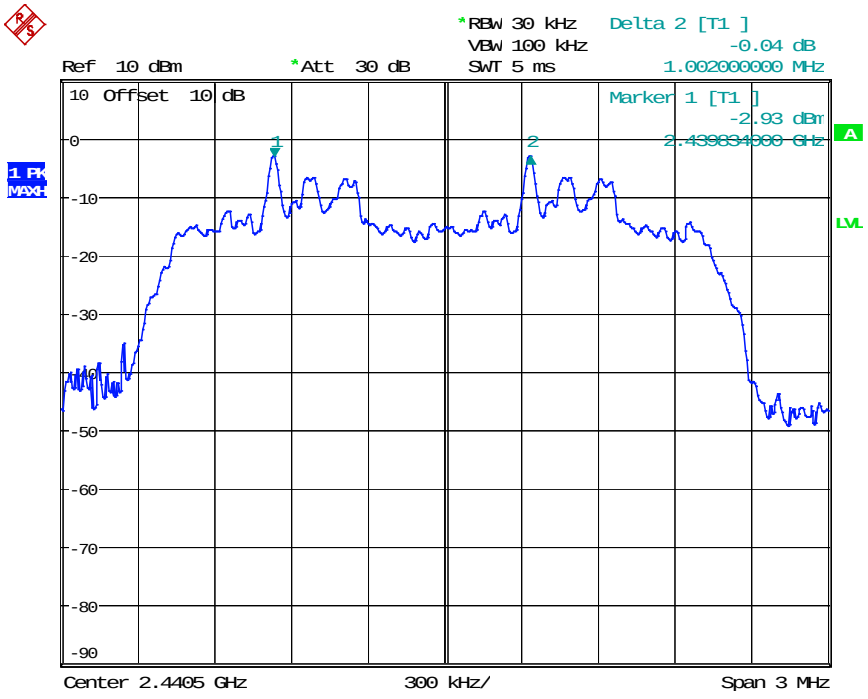
Middle channel



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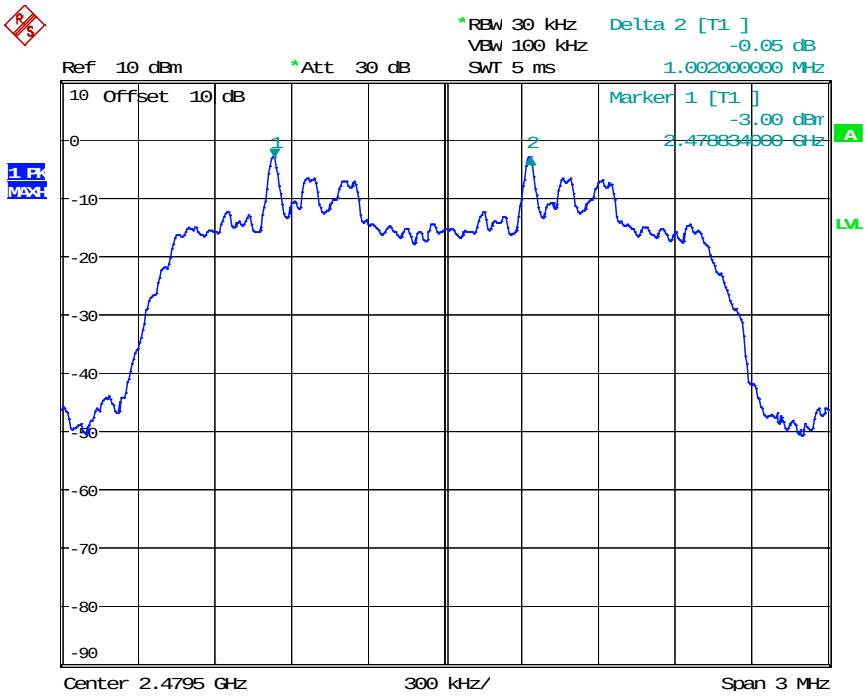
High channel



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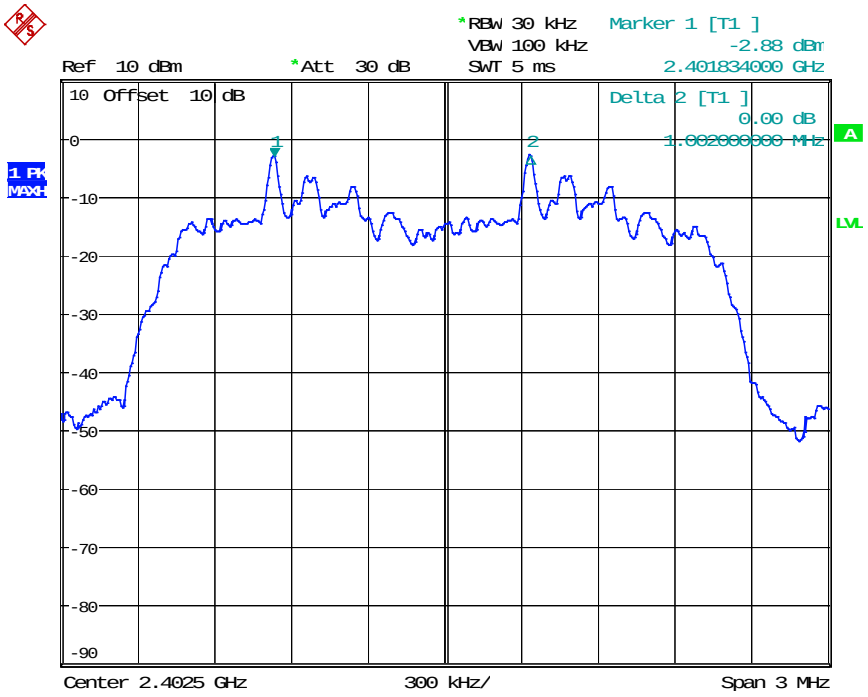
8DPSK Mode

Low channel



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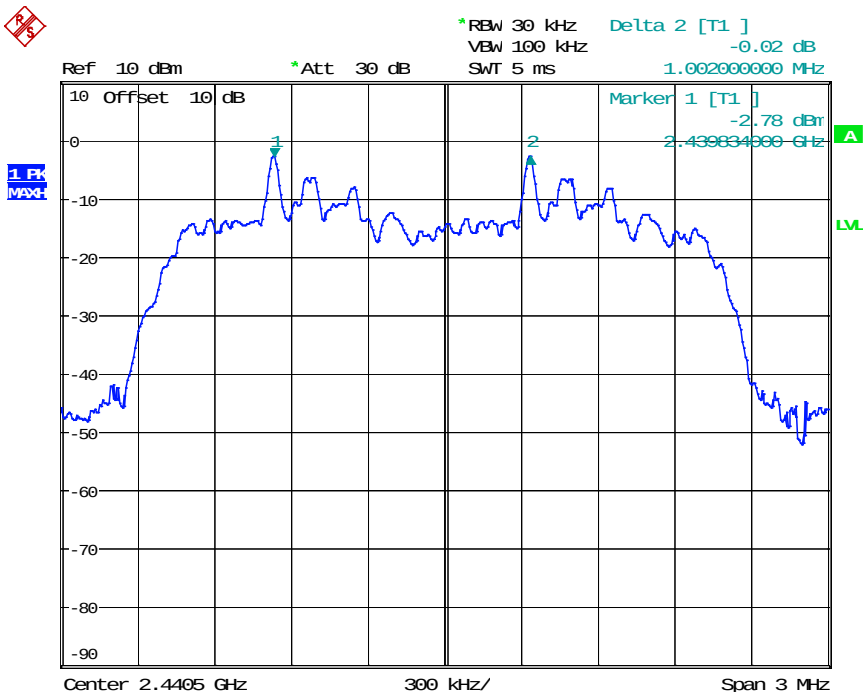
Middle channel



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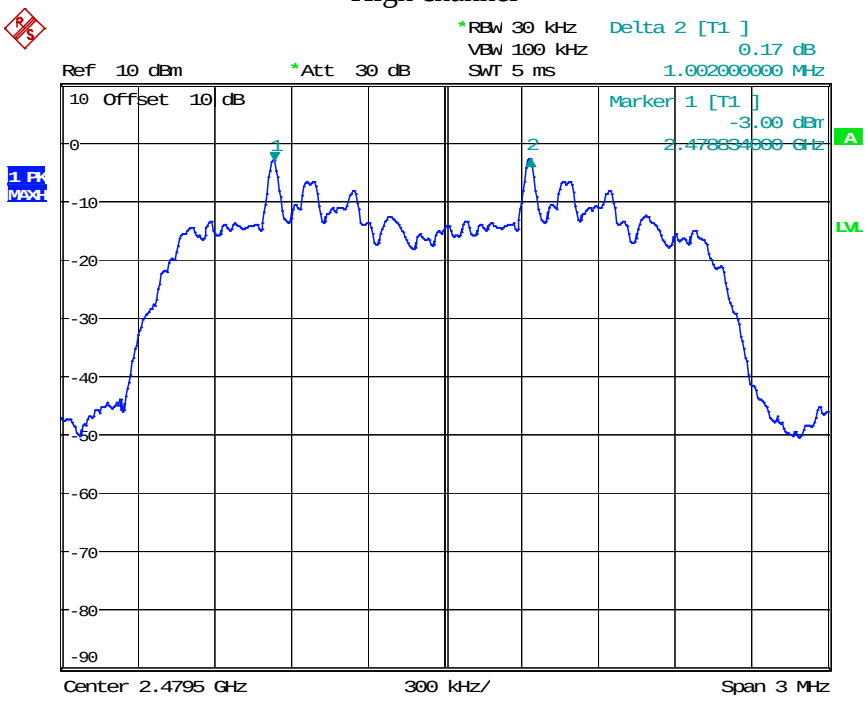
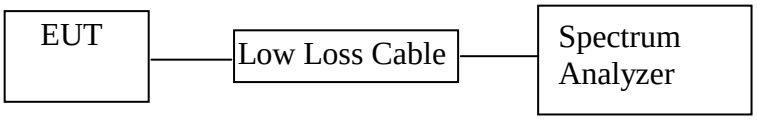
High channel



7. NUMBER OF HOPPING FREQUENCY TEST

7.1.Block Diagram of Test Setup



7.2.The Requirement For Section 15.247(a)(1)(iii)

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

7.3.EUT Configuration on Test

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.4.Operating Condition of EUT

7.4.1.Setup the EUT and simulator as shown as Section 7.1.

7.4.2.Turn on the power of all equipment.

7.4.3.Let the EUT work in TX (Hopping on) modes measure it.

7.5.Test Procedure

7.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2.Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz.

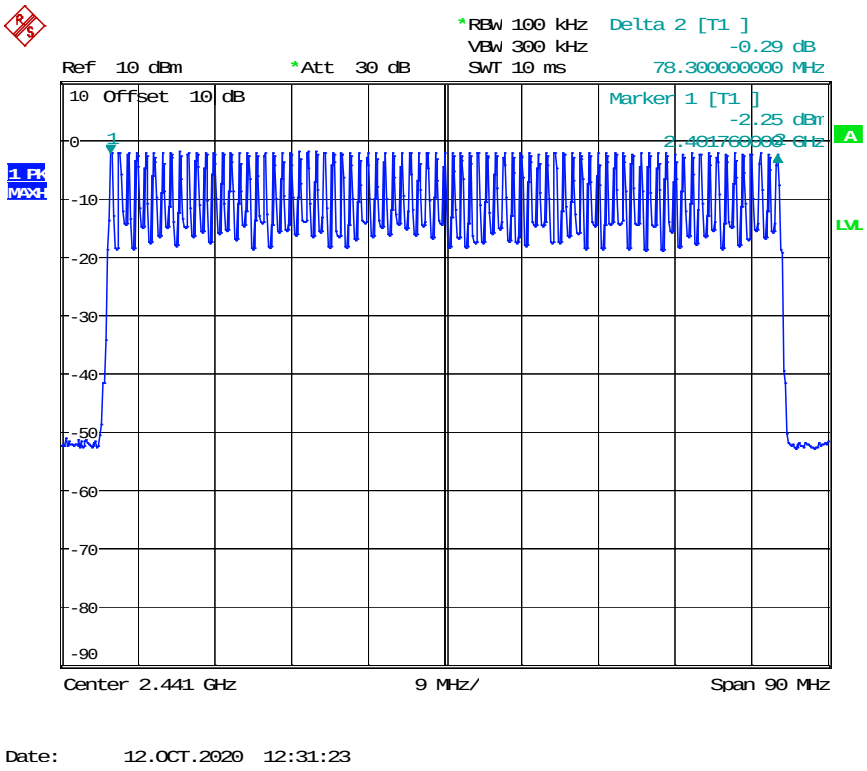
7.5.3.Max hold, view and count how many channel in the band.

7.6.Test Result

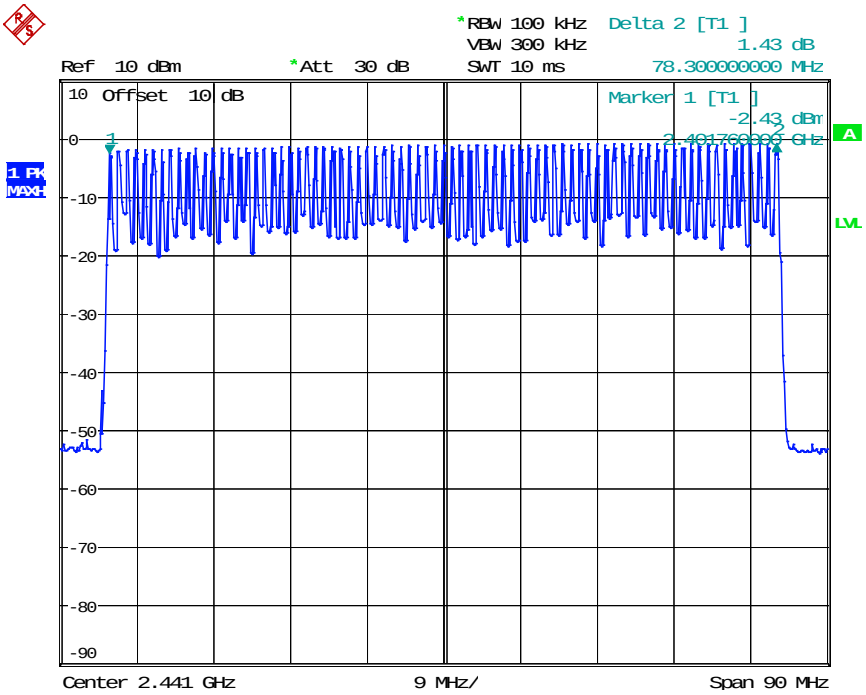
Total number of hopping channel	Measurement result(CH)	Limit(CH)	Result
	79	≧15	Pass

The spectrum analyzer plots are attached as below.

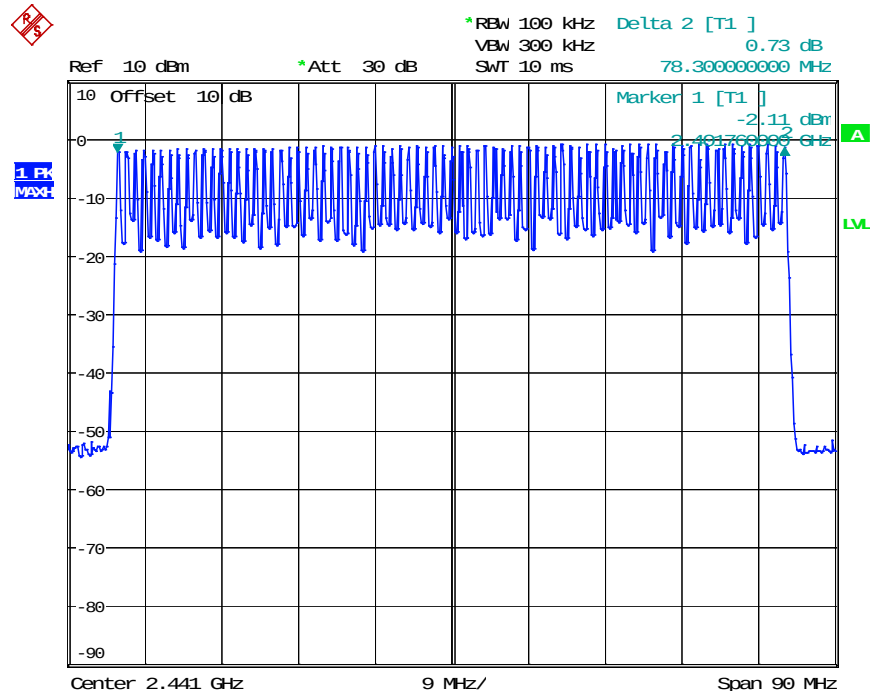
Number of hopping channels (GFSK Mode)



Number of hopping channels (Π/4DQPSK Mode)

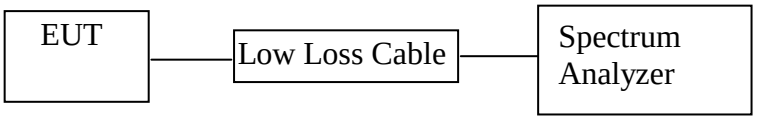


Number of hopping channels (8DPSK Mode)



8. DWELL TIME TEST

8.1.Block Diagram of Test Setup



8.2.The Requirement For Section 15.247(a)(1)(iii)

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

8.3.EUT Configuration on Test

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4.Operating Condition of EUT

8.4.1.Setup the EUT and simulator as shown as Section 8.1.

8.4.2.Turn on the power of all equipment.

8.4.3.Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

8.5.Test Procedure

8.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.2.Set center frequency of spectrum analyzer = operating frequency.

8.5.3.Set the spectrum analyzer as RBW=1MHz, VBW=3MHz, Span=0Hz, Adjust Sweep=5ms, 10ms, 15ms. Get the pulse time.

8.5.4.Repeat above procedures until all frequency measured were complete.

8.6.Test Result

Pass.

GFSK Mode (Worse case)

Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2441	0.48	153.6	400
A period transmit time = 0.4 × 79 = 31.6 Dwell time = pulse time × (1600/(2*79))×31.6				
DH3	2441	1.74	278.4	400
A period transmit time = 0.4 × 79 = 31.6 Dwell time = pulse time × (1600/(4*79))×31.6				
DH5	2441	3.03	323.2	400
A period transmit time = 0.4 × 79 = 31.6 Dwell time = pulse time × (1600/(6*79))×31.6				

Π/4DQPSK (Worse case)

Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2441	0.47	150.4	400
A period transmit time = 0.4 × 79 = 31.6 Dwell time = pulse time × (1600/(2*79))×31.6				
DH3	2441	1.74	278.4	400
A period transmit time = 0.4 × 79 = 31.6 Dwell time = pulse time × (1600/(4*79))×31.6				
DH5	2441	3.00	320.0	400
A period transmit time = 0.4 × 79 = 31.6 Dwell time = pulse time × (1600/(6*79))×31.6				

8DPSK Mode (Worse case)

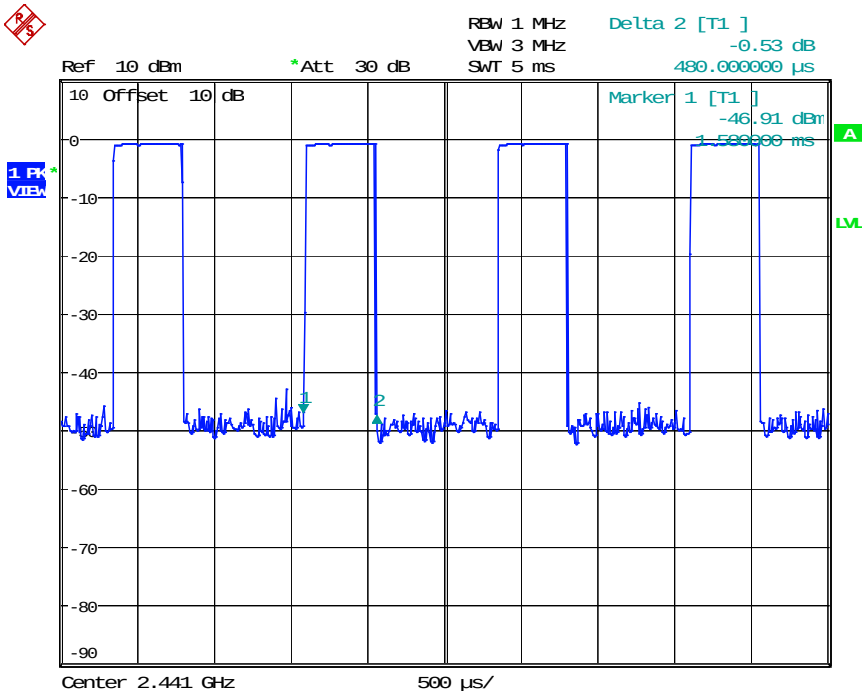
Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2441	0.47	150.4	400
A period transmit time = 0.4 × 79 = 31.6 Dwell time = pulse time × (1600/(2*79))×31.6				
DH3	2441	1.74	278.4	400
A period transmit time = 0.4 × 79 = 31.6 Dwell time = pulse time × (1600/(4*79))×31.6				
DH5	2441	3.00	320.0	400
A period transmit time = 0.4 × 79 = 31.6 Dwell time = pulse time × (1600/(6*79))×31.6				

Note: We tested GFSK mode and Π/4DQPSK & 8DPSK mode the low, middle and high channel and recorded the Worse case data for all test mode.

The spectrum analyzer plots are attached as below.

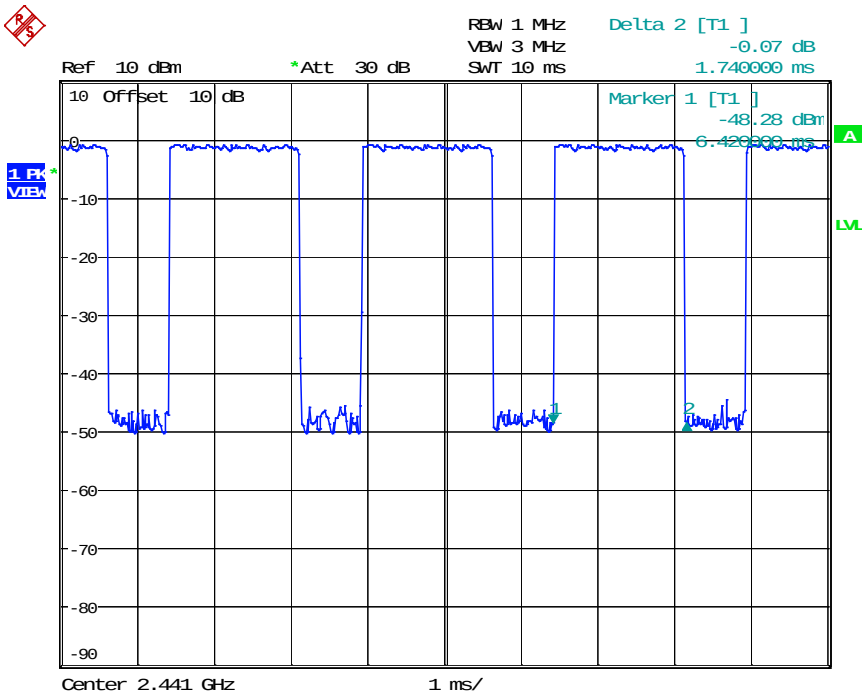
GFSK Mode

DH1 Middle channel



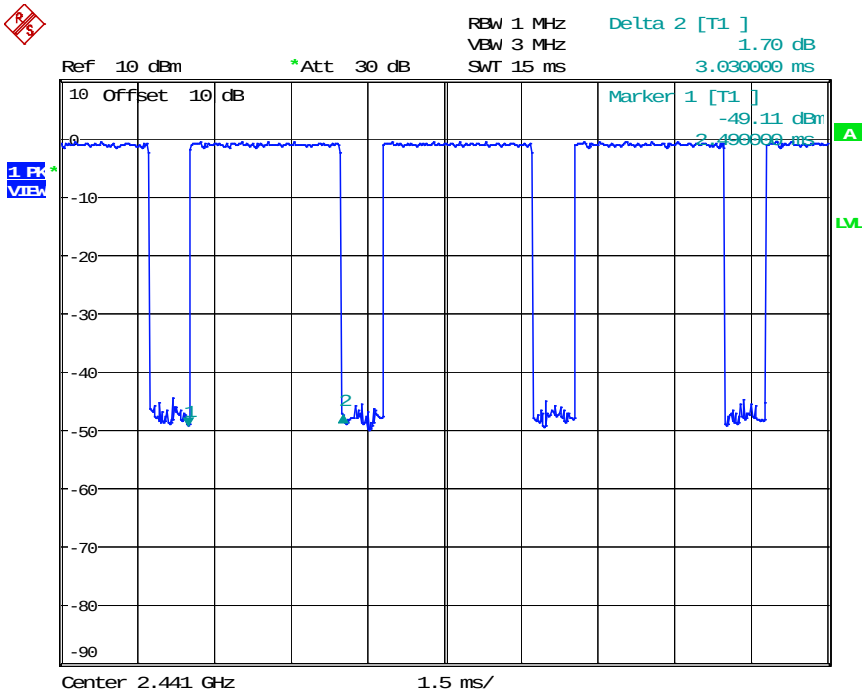
Date: 12.OCT.2020 14:32:03

DH3 Middle channel



Date: 12.OCT.2020 14:59:53

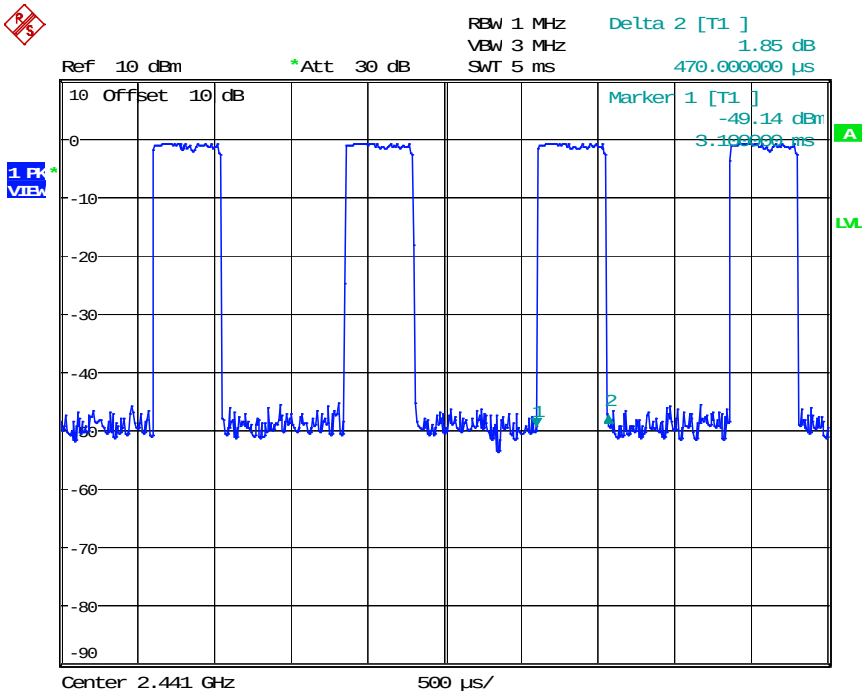
DH5 Middle channel



Date: 12.OCT.2020 15:01:37

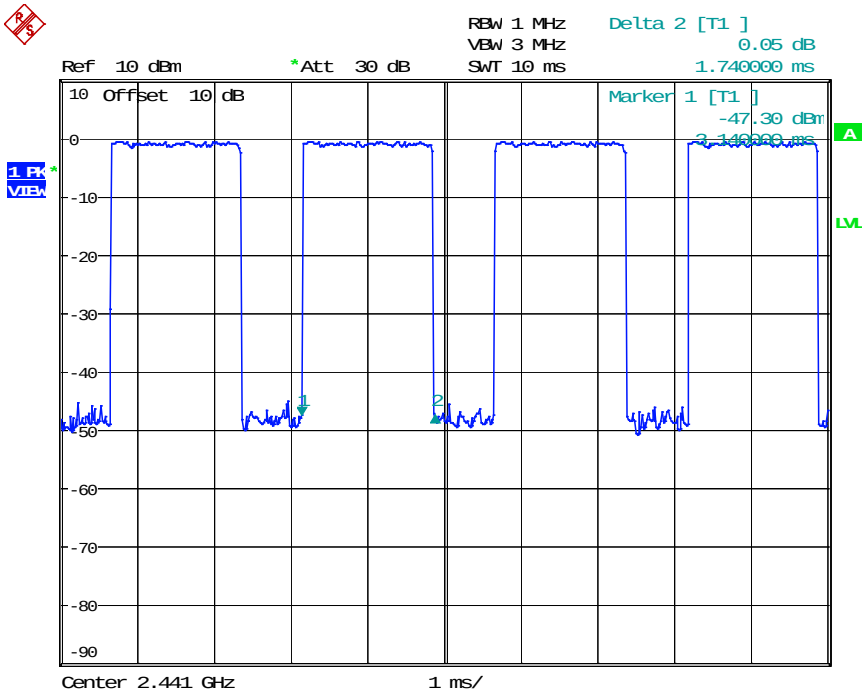
Π/4DQPSK Mode

2DH1 Middle channel



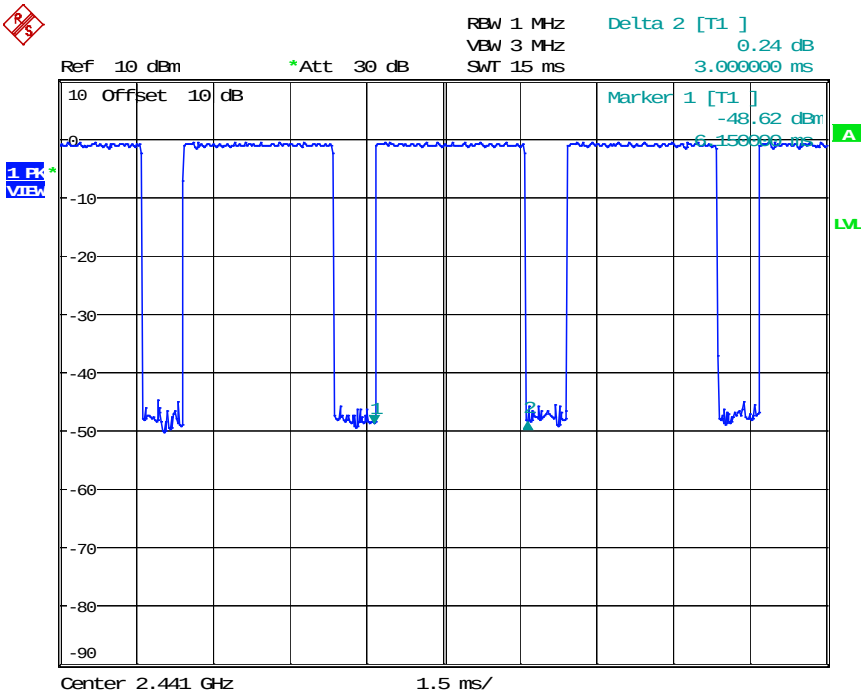
Date: 12.OCT.2020 14:40:52

2DH3 Middle channel



Date: 12.OCT.2020 14:38:56

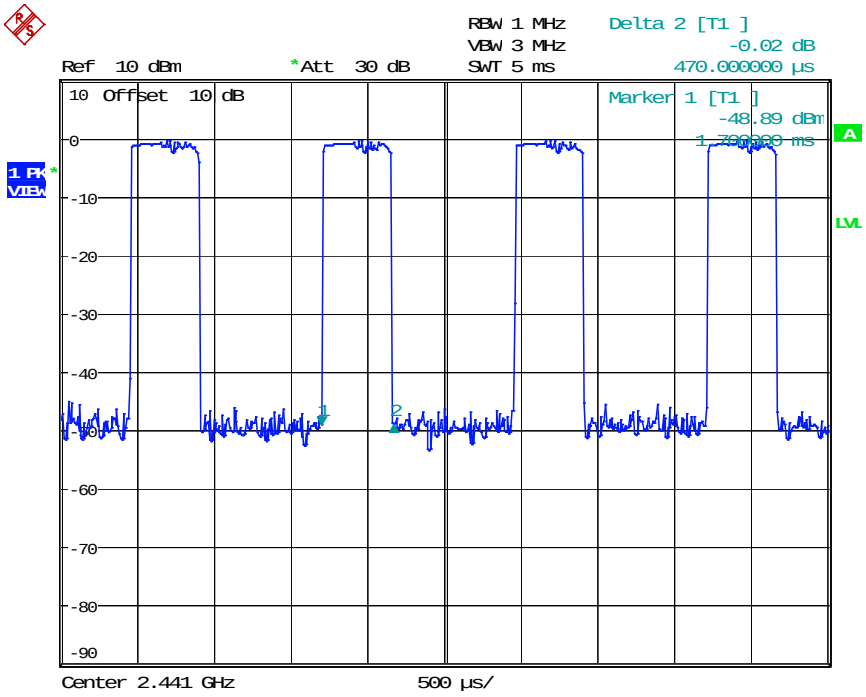
2DH5 Middle channel



Date: 12.OCT.2020 14:42:47

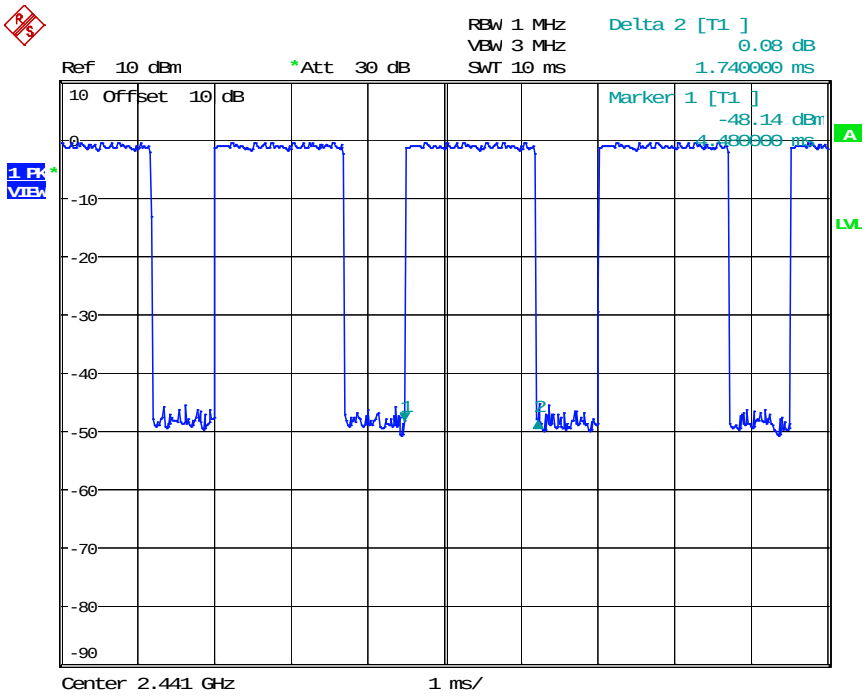
8DPSK Mode

3DH1 Middle channel



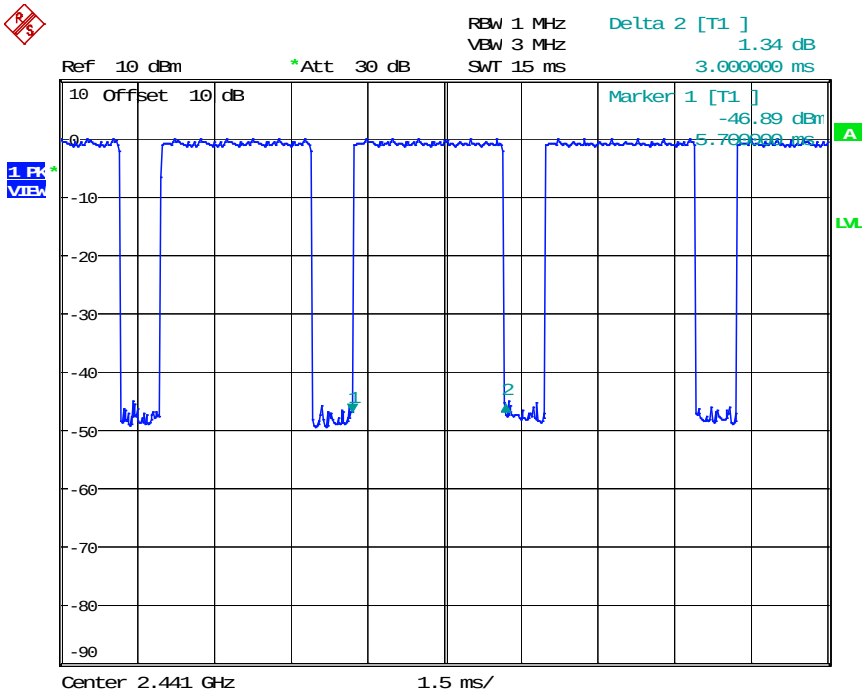
Date: 12.OCT.2020 14:48:40

3DH3 Middle channel



Date: 12.OCT.2020 14:46:25

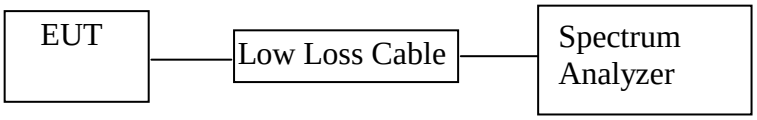
3DH5 Middle channel



Date: 12.OCT.2020 14:44:25

9. MAXIMUM PEAK OUTPUT POWER TEST

9.1.Block Diagram of Test Setup



9.2.The Requirement For Section 15.247(b)(1)

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

9.3.EUT Configuration on Test

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.4.Operating Condition of EUT

9.4.1.Setup the EUT and simulator as shown as Section 9.1.

9.4.2.Turn on the power of all equipment.

9.4.3.Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

9.5.Test Procedure

9.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

9.5.2.Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz(GFSK) and 3MHz and VBW to 10MHz(□/4DQPSK and 8DPSK).

9.5.3.Measurement the maximum peak output power.

9.6.Test Result

GFSK Mode

Channel	Frequency (MHz)	Peak Output Power (dBm/W)	Limits dBm / W
Low	2402	-1.43/0.0007	21 / 0.125
Middle	2441	-0.53/0.0009	21 / 0.125
High	2480	-0.27/0.0009	21 / 0.125

Π/4DQPSK Mode

Channel	Frequency (MHz)	Peak Output Power (dBm/W)	Limits dBm / W
Low	2402	-0.81/0.0008	21 / 0.125
Middle	2441	0.16/0.0010	21 / 0.125
High	2480	0.47/0.0011	21 / 0.125

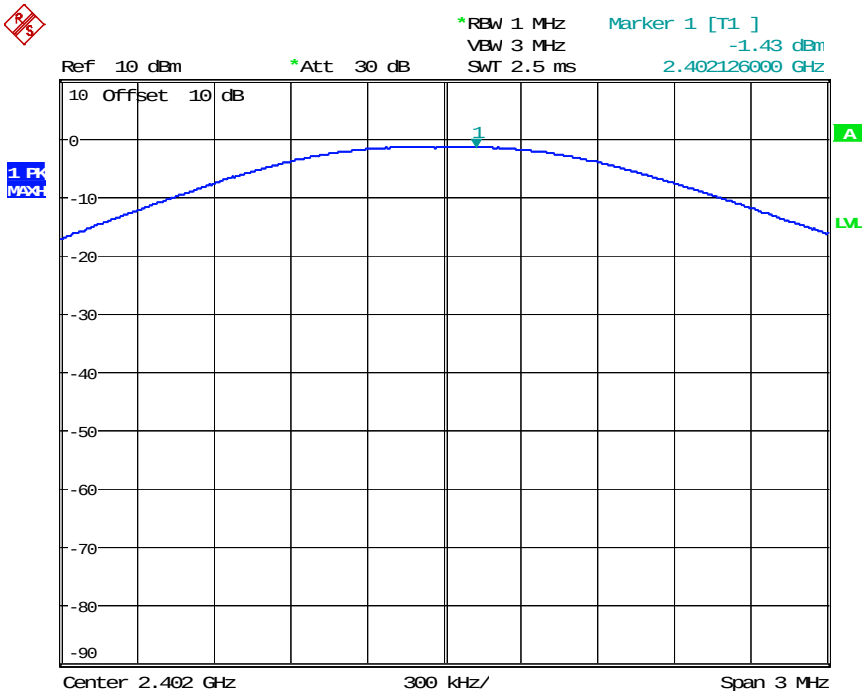
8DPSK Mode

Channel	Frequency (MHz)	Peak Output Power (dBm/W)	Limits dBm / W
Low	2402	-0.29/0.0009	21 / 0.125
Middle	2441	0.68/0.0012	21 / 0.125
High	2480	1.02/0.0013	21 / 0.125

The spectrum analyzer plots are attached as below.

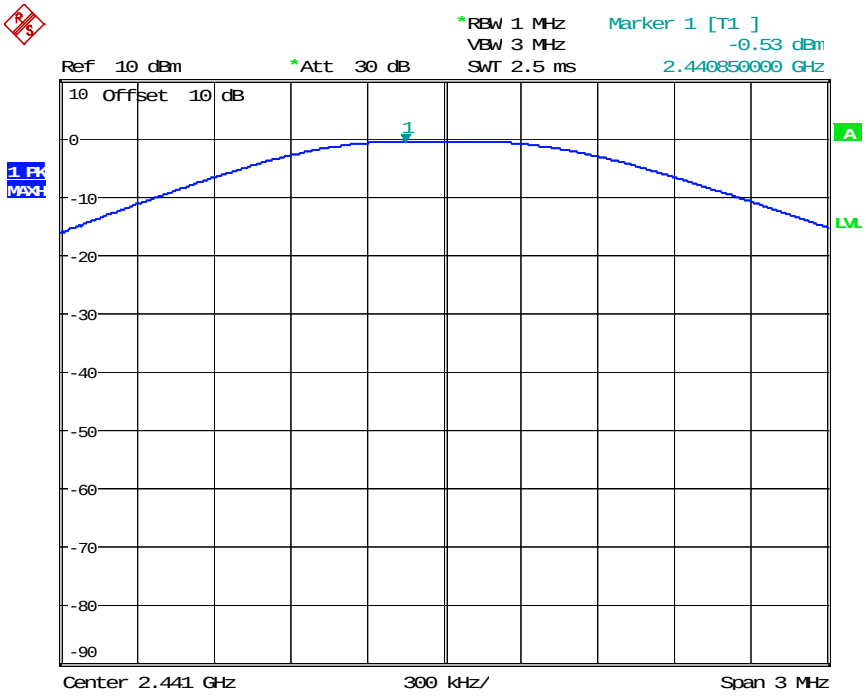
GFSK Mode

Low channel



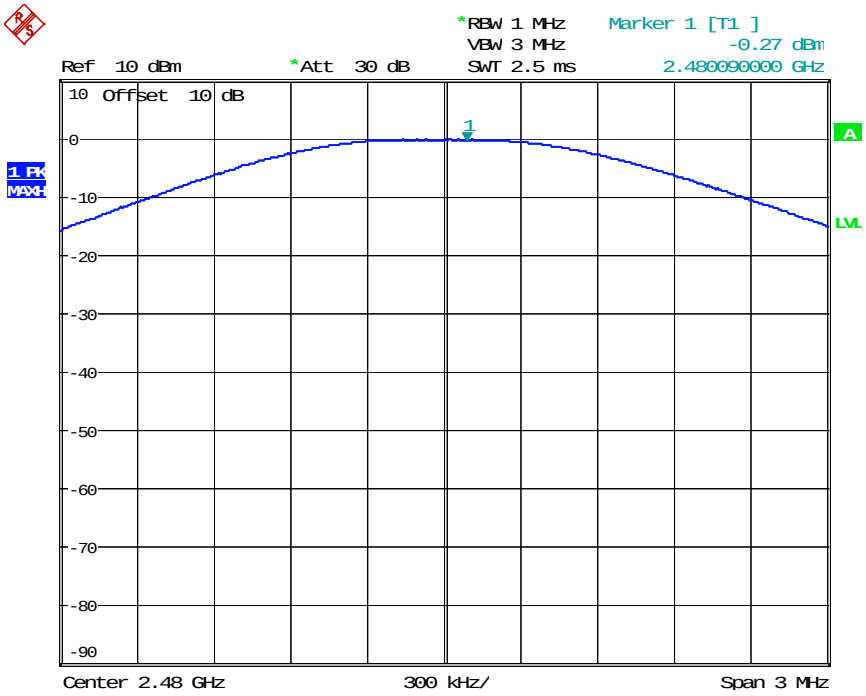
Date: 12.OCT.2020 15:04:10

Middle channel



Date: 12.OCT.2020 15:05:16

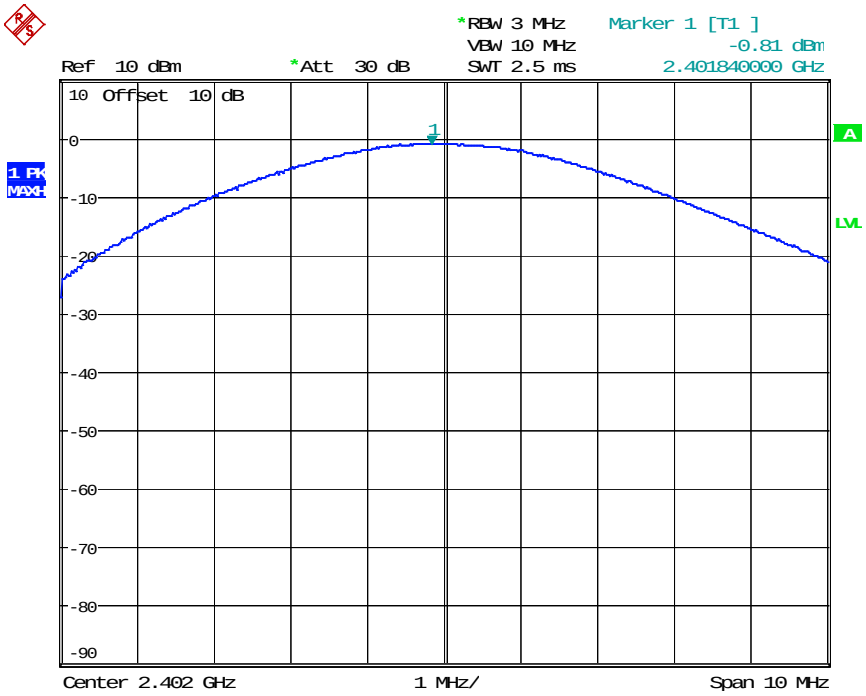
High channel



Date: 12.OCT.2020 15:17:16

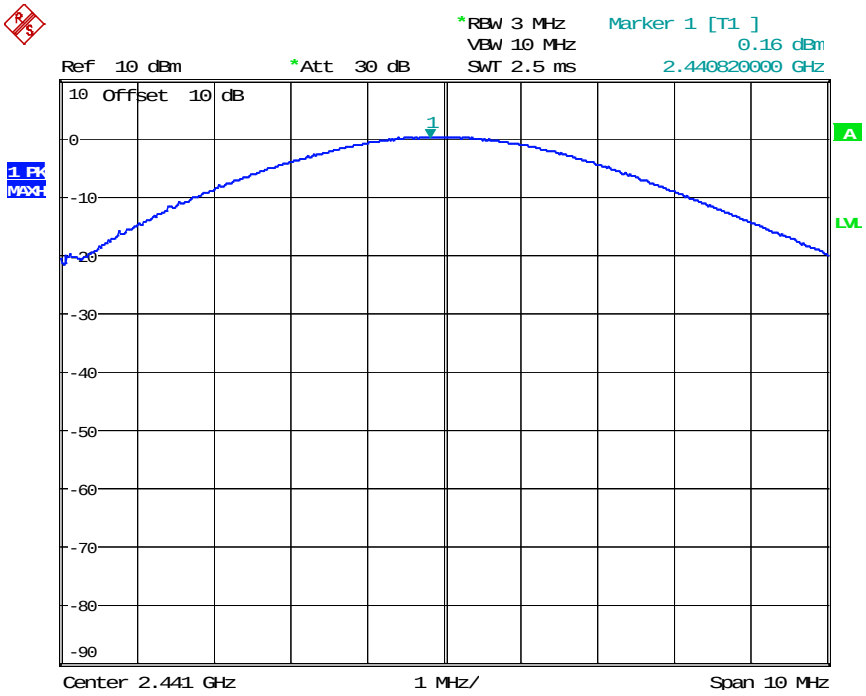
Π/4DQPSK Mode

Low channel



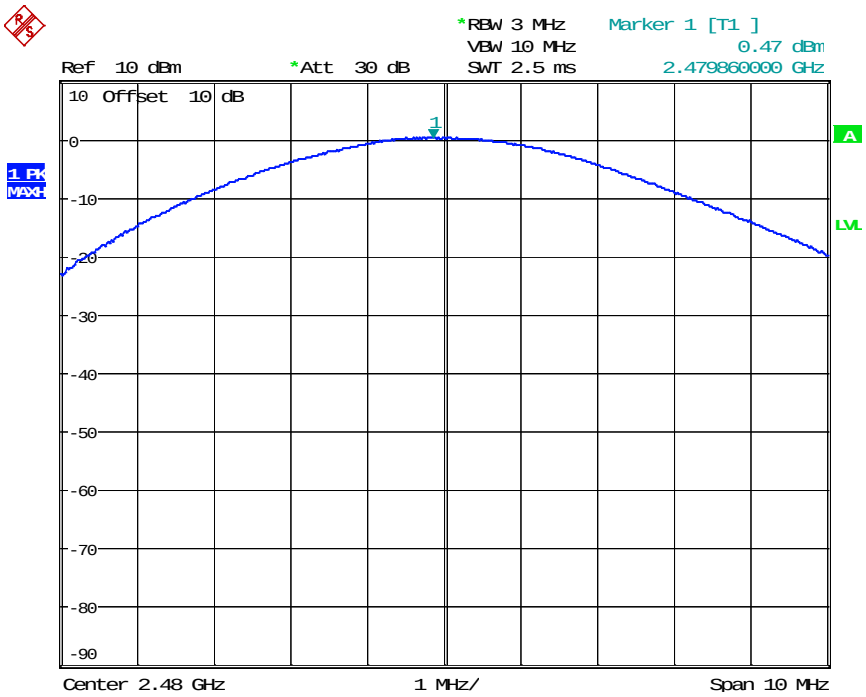
Date: 12.OCT.2020 15:28:45

Middle channel



Date: 12.OCT.2020 15:27:28

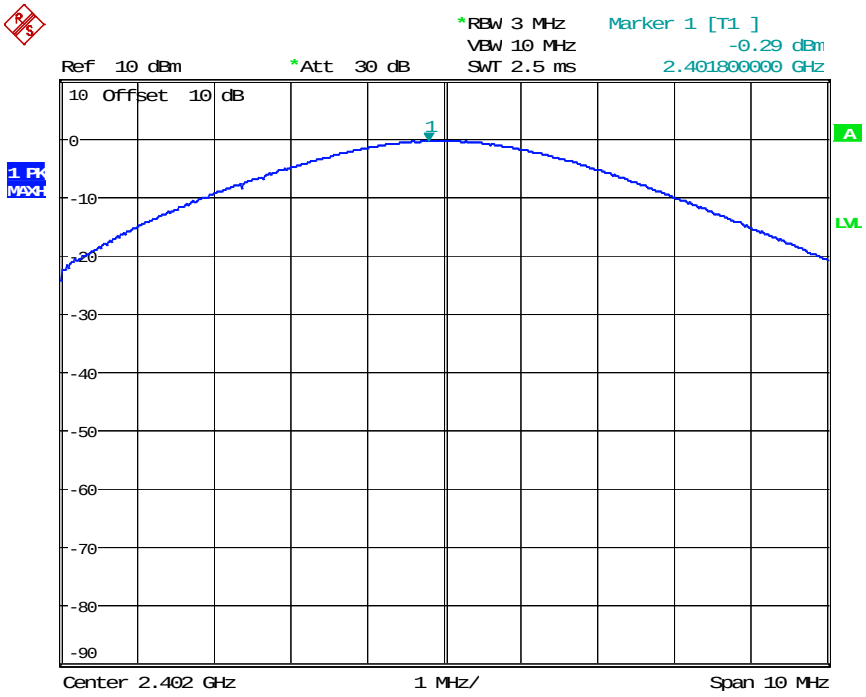
High channel



Date: 12.OCT.2020 15:26:01

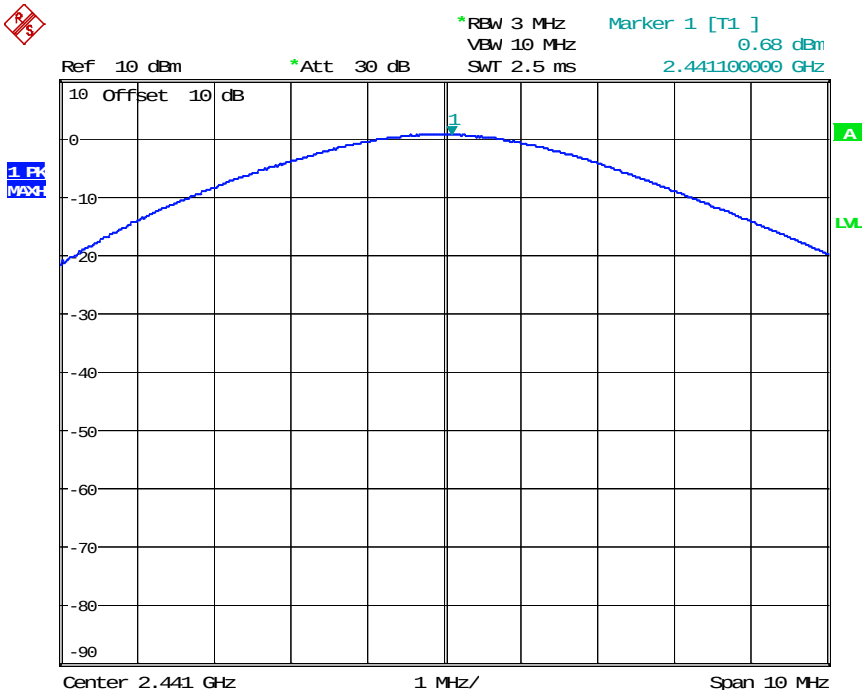
8DPSK Mode

Low channel



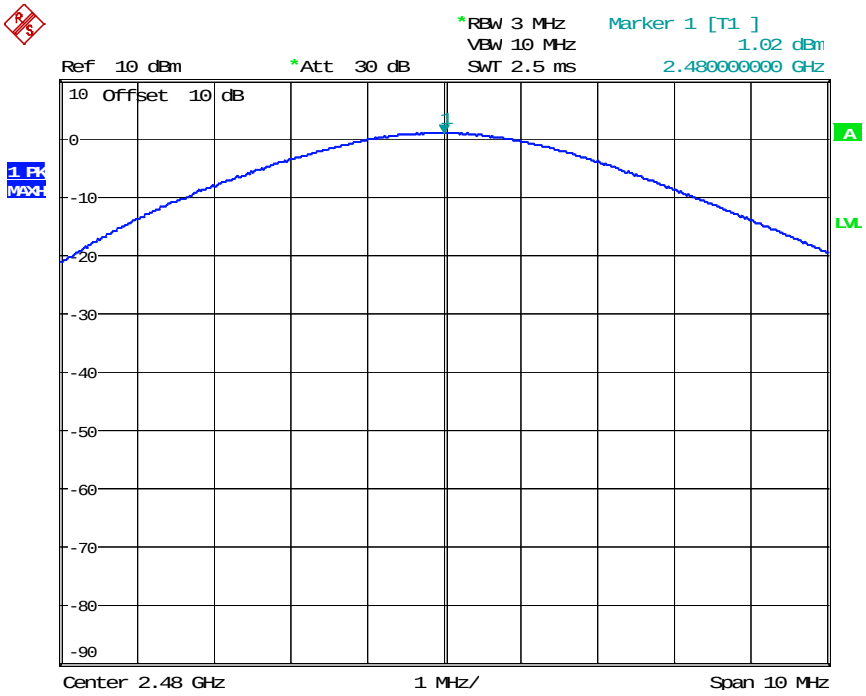
Date: 12.OCT.2020 15:31:28

Middle channel



Date: 12.OCT.2020 15:33:32

High channel

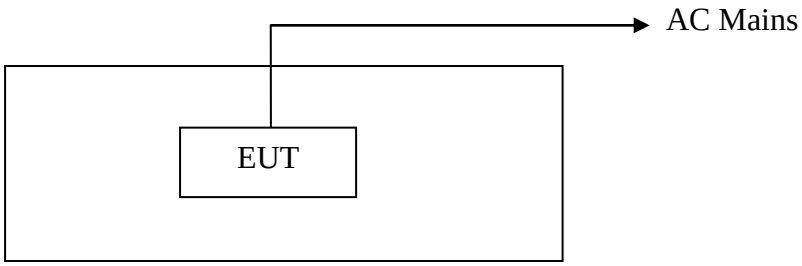


Date: 12.OCT.2020 15:34:54

10.RADIATED EMISSION TEST

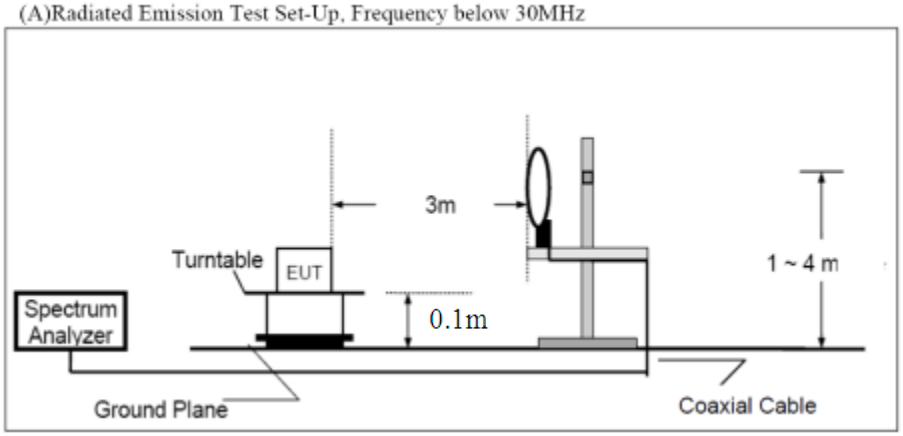
10.1.Block Diagram of Test Setup

10.1.1.Block diagram of connection between the EUT and peripherals

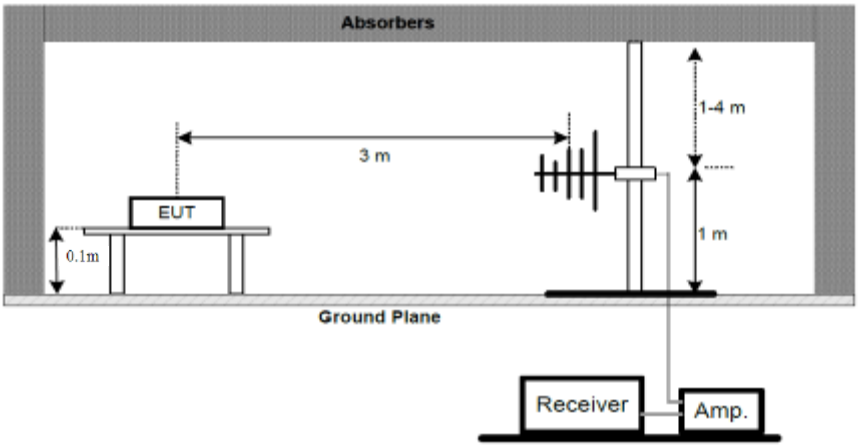


10.1.2.Semi-Anechoic Chamber Test Setup Diagram

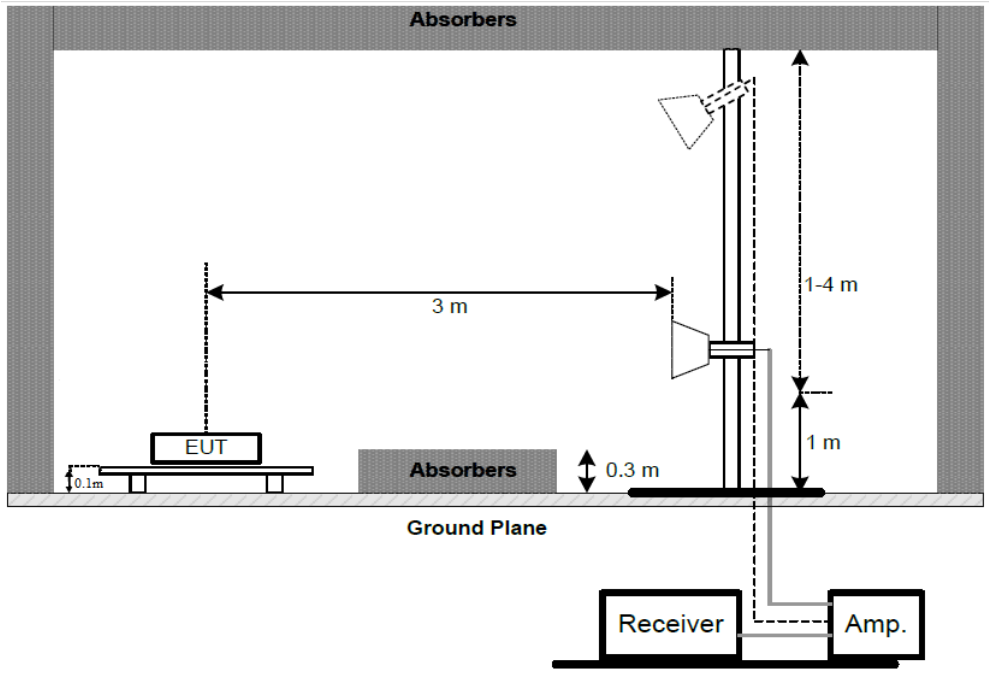
(A)Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up. Frequency 30-1000 MHz.



(B) Radiated Emission Test Set-Up. Frequency 1000-25000 MHz.



10.2.The Limit For Section 15.247(d)

Section 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

10.3.Restricted bands of operation

10.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510
[2]Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

10.4.EUT Configuration on Test

The equipment is installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.5. Operating Condition of EUT

10.5.1. Setup the EUT and simulator as shown as Section 10.1.

10.5.2. Turn on the power of all equipment.

10.5.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

10.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.1 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. This EUT was tested in 3 orthogonal positions and the Worse case position data was reported.

During the radiated emission test, according to the DA 00-705 Released March 30, 2000, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worse case emissions are reported.

10.7.Data Sample

Frequency (MHz)	Reading (dBμv)	Factor (dB/m)	Result (dBμv/m)	Limit (dBμv/m)	Margin (dB)	Remark
X.XX	48.69	-13.35	35.34	46	-10.66	QP

Frequency(MHz) = Emission frequency in MHz
Reading(dBμv) = Uncorrected Analyzer/Receiver reading
Factor (dB/m) = Antenna factor + Cable Loss – Amplifier gain
Result(dBμv/m) = Reading(dBμv) + Factor(dB/m)
Limit (dBμv/m) = Limit stated in standard
Margin (dB) = Result(dBμv/m) - Limit (dBμv/m)
QP = Quasi-peak Reading

Calculation Formula:
Margin(dB) = Result (dBμV/m)–Limit(dBμV/m)
Result(dBμV/m)= Reading(dBμV)+ Factor(dB/m)

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

10.8.Test Results

Pass.

Note: 1.We tested GFSK mode, Π/4DQPSK & 8DPSK Mode and recorded the Worse case data (8DPSK mode) for all test mode.

2. Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
The measurements greater than 20dB below the limit from 9kHz to 30MHz and 18 to 25GHz.

The spectrum analyzer plots are attached as below.

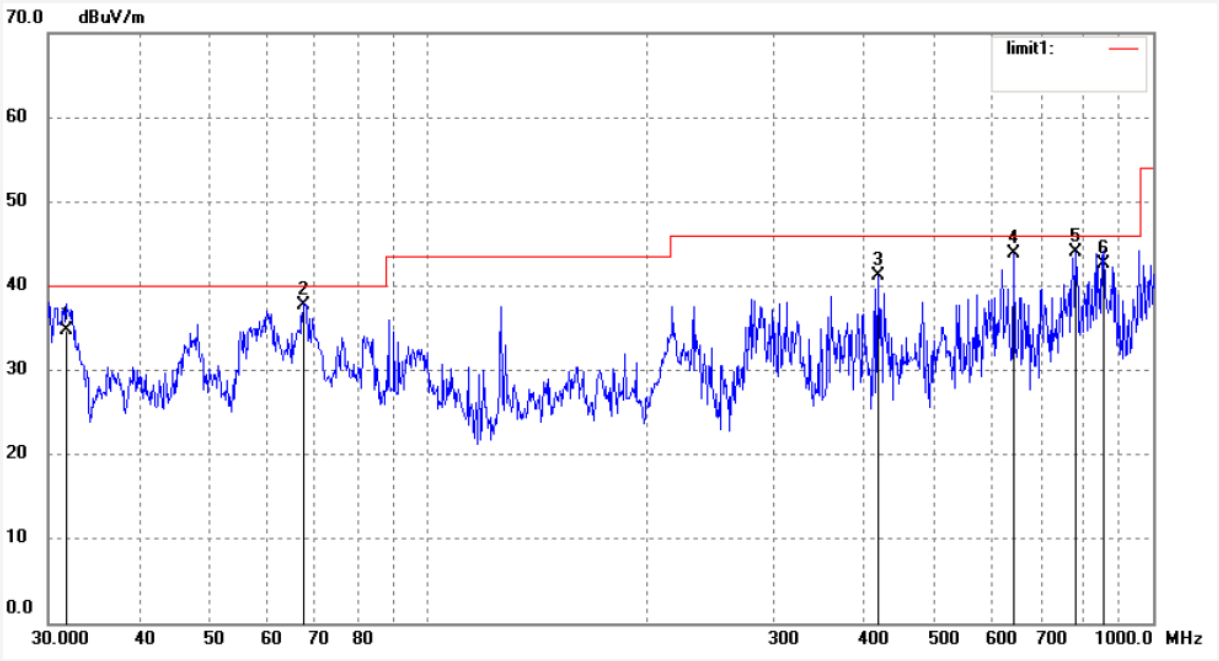
Below 1GHz Worse case data (8DPSK mode)

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #5763
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: TX 2402MHz
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 20/10/26/
Time: 15/57/07
Engineer Signature: Bob
Distance: 3m

Note: Report No.: RTZ200918011-00



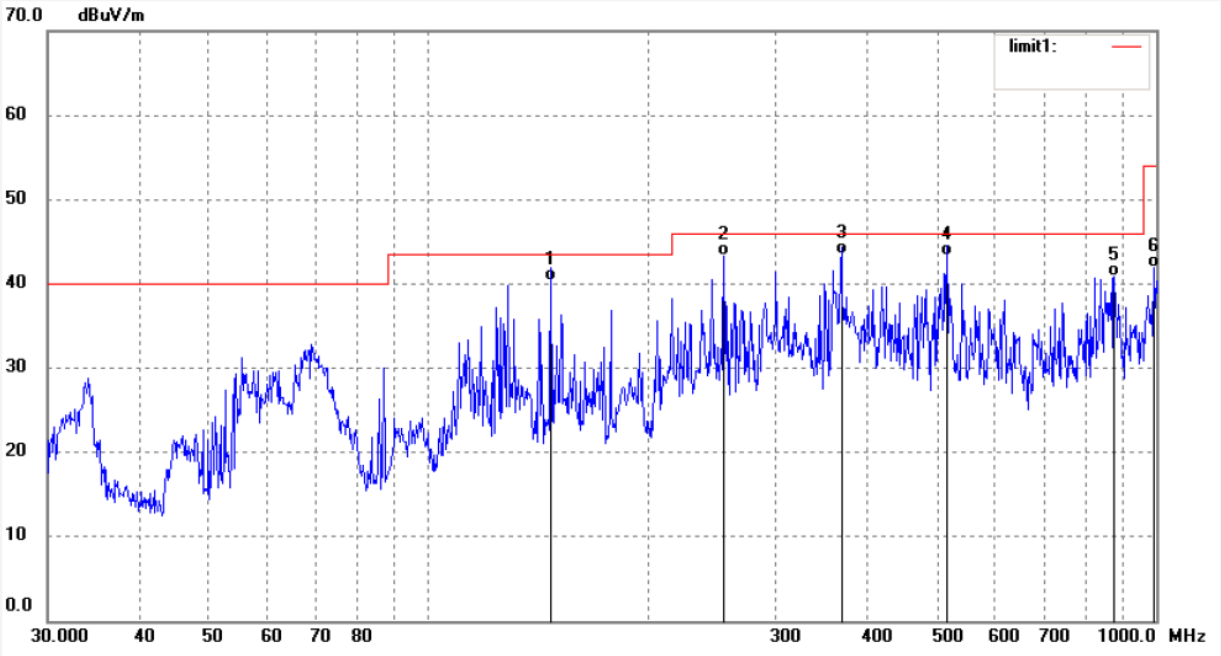
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.7313	45.15	-10.45	34.70	40.00	-5.30	QP			
2	67.4381	54.54	-16.91	37.63	40.00	-2.37	QP			
3	417.6409	48.49	-7.27	41.22	46.00	-4.78	QP			
4	642.8613	47.39	-3.52	43.87	46.00	-2.13	QP			
5	782.3452	45.47	-1.37	44.10	46.00	-1.90	QP			
6	854.0247	42.94	-0.25	42.69	46.00	-3.31	QP			

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #5764
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: TX 2402MHz
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 20/10/26/
Time: 15/59/33
Engineer Signature: Bob
Distance: 3m

Note: Report No.: RTZ200918011-00



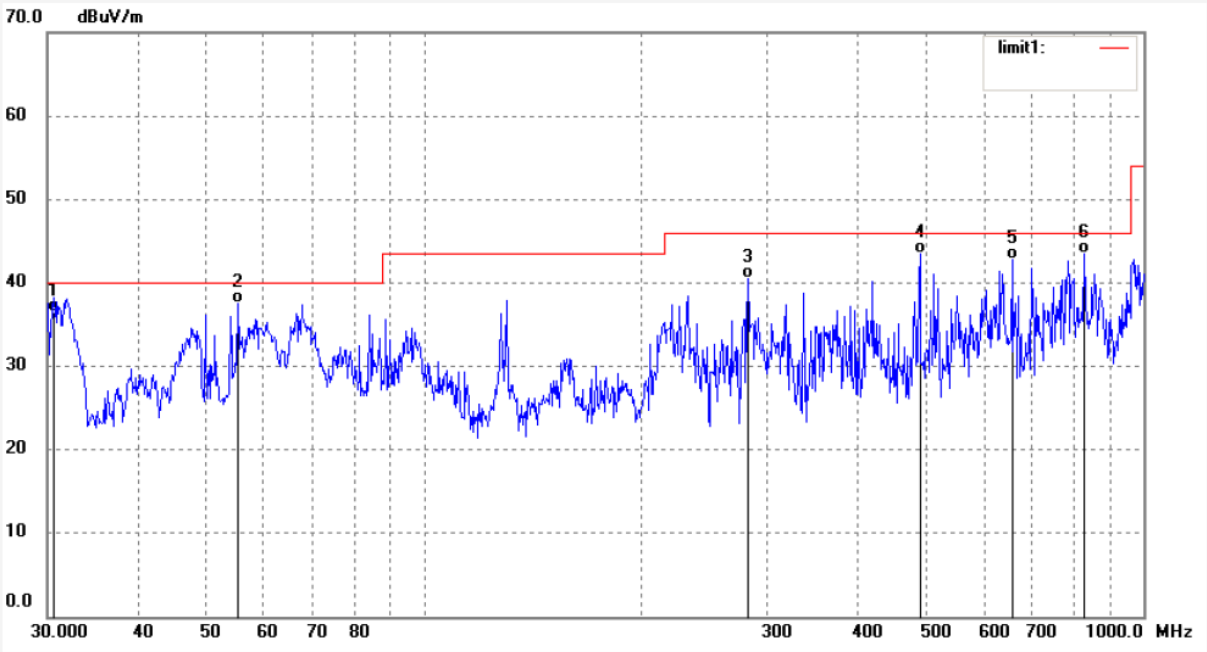
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	147.4036	56.52	-16.20	40.32	43.50	-3.18	QP			
2	254.7284	55.09	-11.76	43.33	46.00	-2.67	QP			
3	369.4047	52.00	-8.51	43.49	46.00	-2.51	QP			
4	515.4374	48.78	-5.48	43.30	46.00	-2.70	QP			
5	875.2468	40.70	0.11	40.81	46.00	-5.19	QP			
6	993.0113	40.17	1.73	41.90	54.00	-12.10	QP			

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #5766
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: TX 2441MHz
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 20/10/26/
Time: 16/14/27
Engineer Signature: Bob
Distance: 3m

Note: Report No.: RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.6378	46.65	-10.11	36.54	40.00	-3.46	QP			
2	55.2207	51.62	-14.02	37.60	40.00	-2.40	QP			
3	281.9945	51.37	-10.79	40.58	46.00	-5.42	QP			
4	489.0269	49.77	-6.21	43.56	46.00	-2.44	QP			
5	656.5299	46.10	-3.31	42.79	46.00	-3.21	QP			
6	827.4934	43.93	-0.52	43.41	46.00	-2.59	QP			

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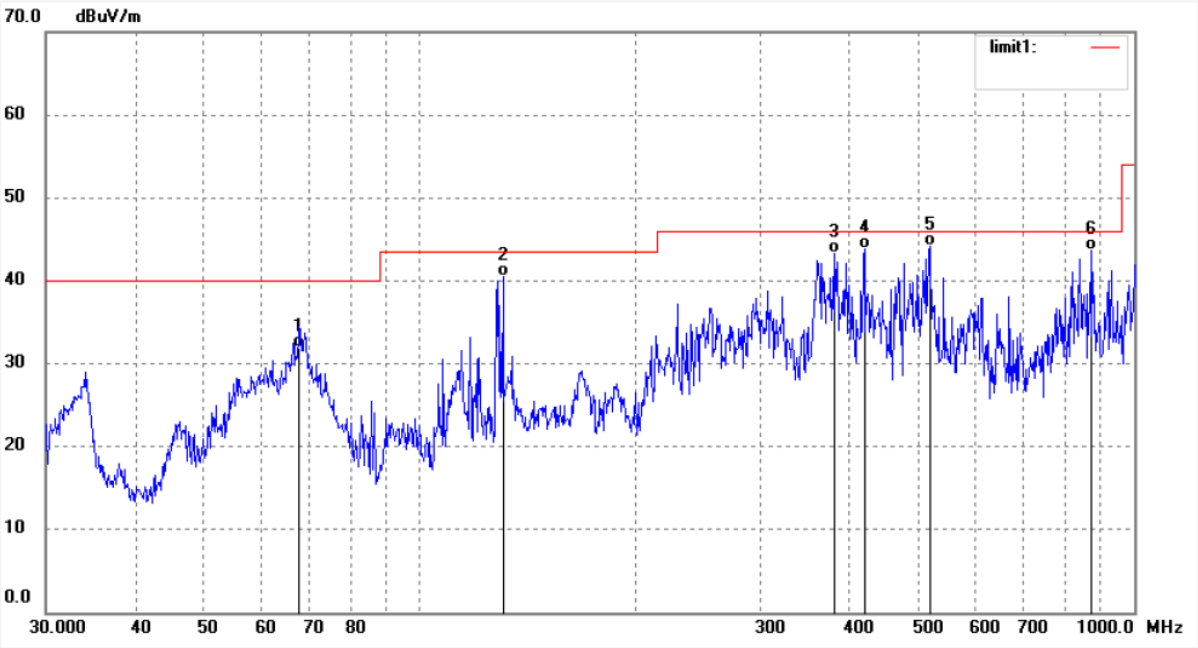
Fax:+86-0755-26503396

Job No.: Bob #5765
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: TX 2441MHz
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 20/10/26/
Time: 16/12/55
Engineer Signature: Bob
Distance: 3m

Note: Report No.: RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	67.9128	48.89	-16.95	31.94	40.00	-8.06	QP			
2	130.8369	55.36	-14.90	40.46	43.50	-3.04	QP			
3	379.9141	51.58	-8.34	43.24	46.00	-2.76	QP			
4	419.1081	51.05	-7.19	43.86	46.00	-2.14	QP			
5	517.2480	49.60	-5.41	44.19	46.00	-1.81	QP			
6	869.1302	43.62	0.03	43.65	46.00	-2.35	QP			

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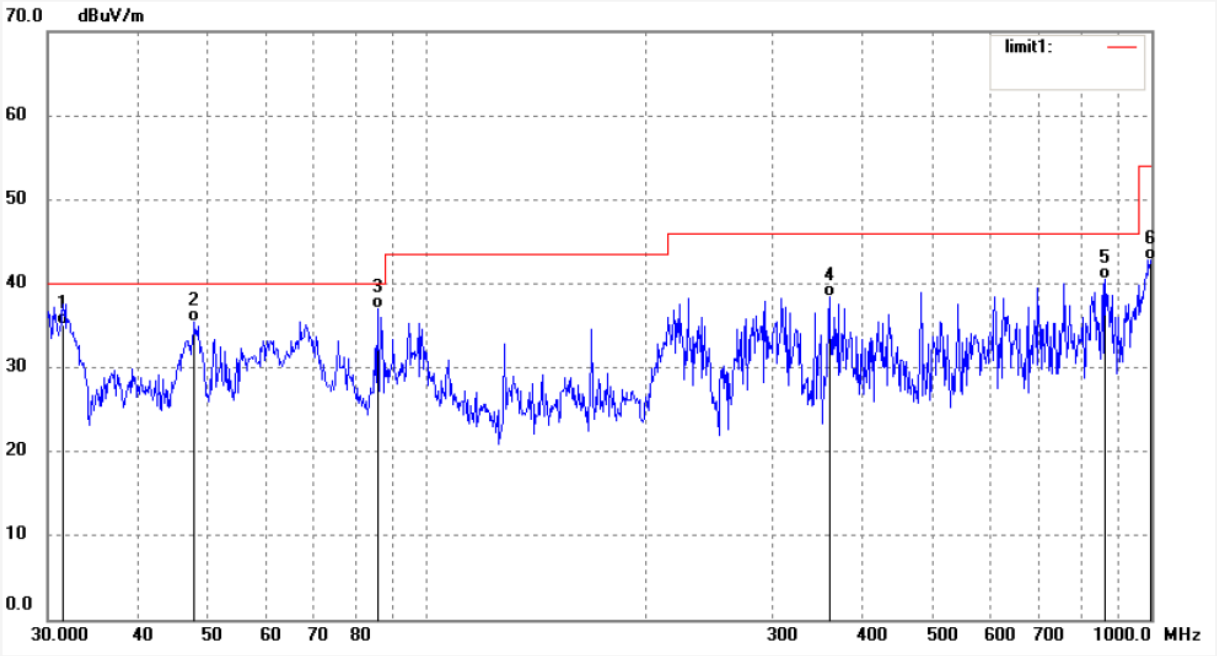
Job No.: Bob #5767
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: TX 2480MHz
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 20/10/26/
Time: 16/16/06
Engineer Signature: Bob
Distance: 3m

Note: Report No.: RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.5095	45.52	-10.38	35.14	40.00	-4.86	QP			
2	47.8260	49.14	-13.62	35.52	40.00	-4.48	QP			
3	85.5977	53.28	-16.35	36.93	40.00	-3.07	QP			
4	359.1859	46.95	-8.62	38.33	46.00	-7.67	QP			
5	863.0562	40.53	-0.04	40.49	46.00	-5.51	QP			
6	996.4996	40.98	1.78	42.76	54.00	-11.24	QP			

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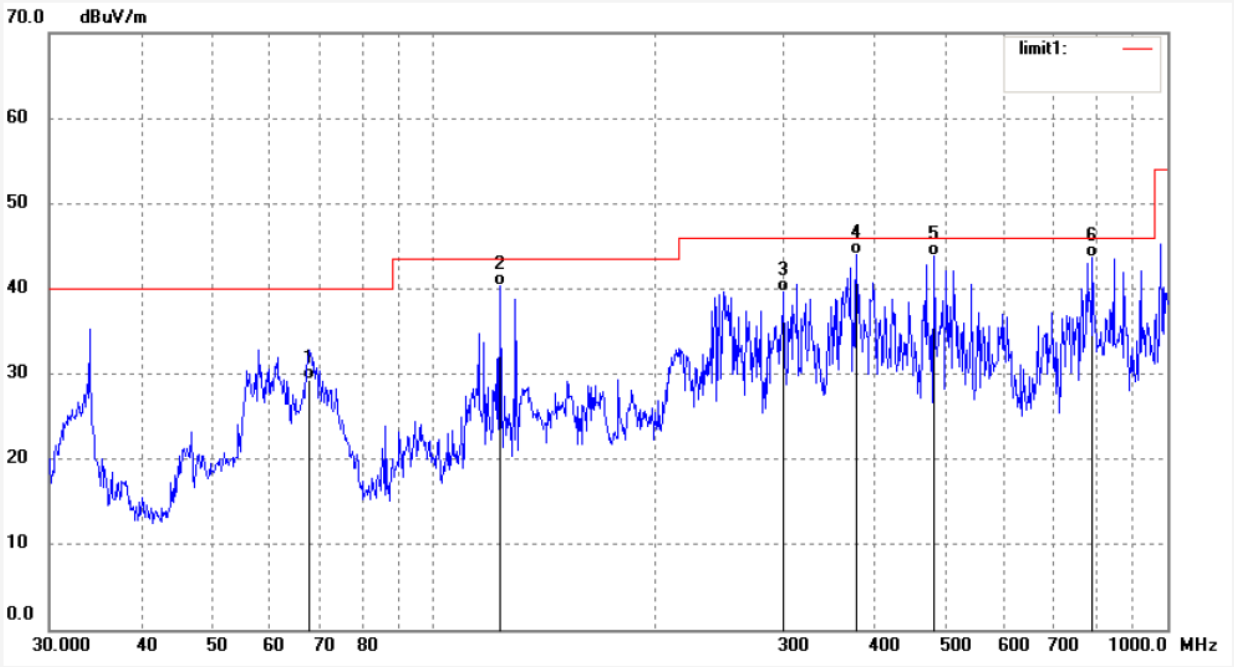
Job No.: Bob #5768	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/26/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 16/18/41
EUT: Massage Chair	Engineer Signature: Bob
Mode: TX 2480MHz	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

Note: Report No.: RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	67.9129	46.32	-16.95	29.37	40.00	-10.63	QP			
2	123.2655	54.89	-14.53	40.36	43.50	-3.14	QP			
3	300.3672	49.94	-10.29	39.65	46.00	-6.35	QP			
4	377.2591	52.45	-8.40	43.05	46.00	-2.95	QP			
5	480.5276	50.23	-6.34	43.89	46.00	-2.11	QP			
6	790.6188	44.77	-1.15	43.62	46.00	-2.38	QP			

Above 1GHz Worse case data (8DPSK mode)

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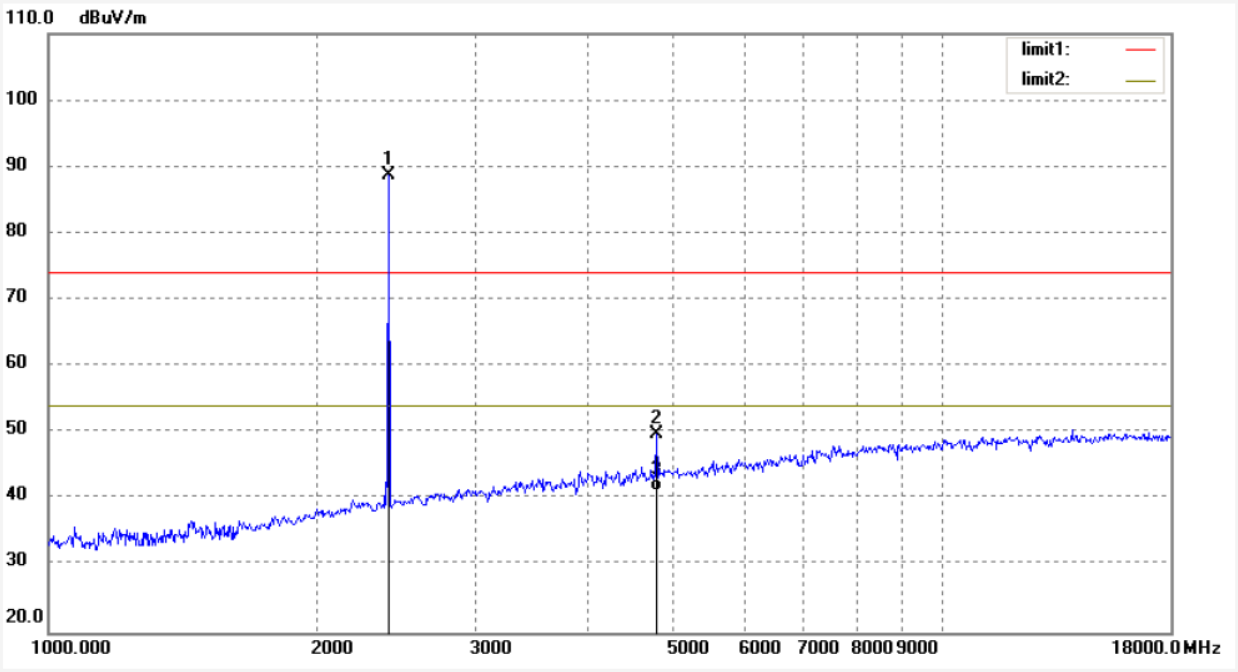
Job No.: LGW2020 #671	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/12/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 8/55/01
EUT: Massage Chair	Engineer Signature: WADE
Mode: TX 2402MHz	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	87.81	0.89	88.70			peak	150	154	
2	4804.000	42.34	7.40	49.74	74.00	-24.26	peak	150	56	
3	4804.000	33.95	7.40	41.35	54.00	-12.65	AVG	150	246	

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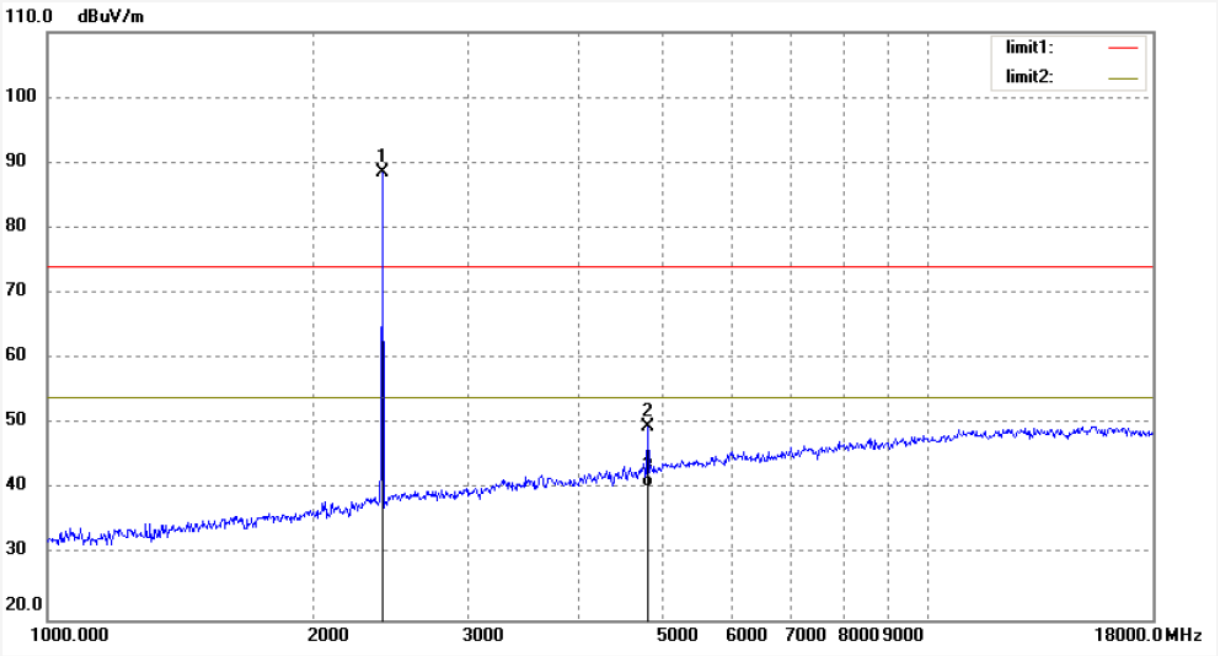
Job No.: LGW2020 #670	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/12/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 8/53/44
EUT: Massage Chair	Engineer Signature: WADE
Mode: TX 2402MHz	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	87.68	0.89	88.57			peak	200	46	
2	4804.000	42.28	7.40	49.68	74.00	-24.32	peak	200	35	
3	4804.000	32.95	7.40	40.35	54.00	-13.65	AVG	200	241	

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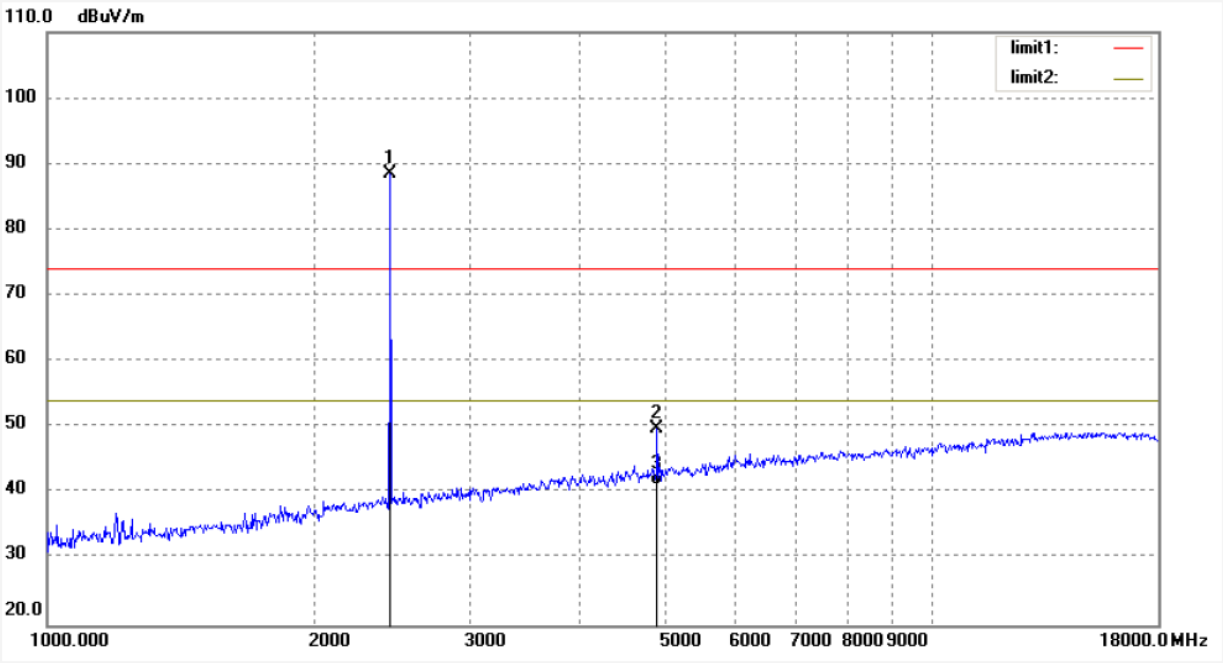
Job No.: LGW2020 #672	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/12/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 8/57/33
EUT: Massage Chair	Engineer Signature: WADE
Mode: TX 2441MHz	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2441.000	87.36	1.06	88.42			peak	150	35	
2	4882.000	41.65	8.11	49.76	74.00	-24.24	peak	150	241	
3	4882.000	33.24	8.11	41.35	54.00	-12.65	AVG	150	233	

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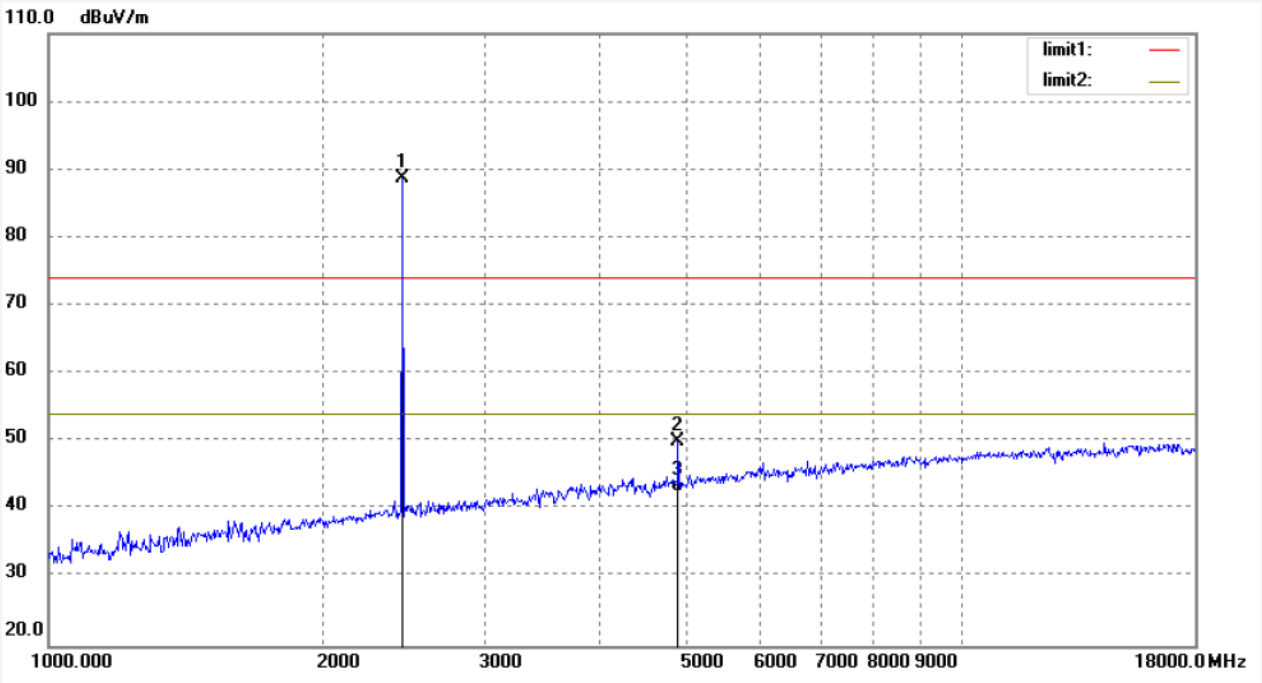
Job No.: LGW2020 #673
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: TX 2441MHz
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 20/10/12/
Time: 8/59/41
Engineer Signature: WADE
Distance: 3m

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2441.000	87.79	1.06	88.85			peak	200	124	
2	4882.000	41.98	8.11	50.09	74.00	-23.91	peak	200	244	
3	4882.000	34.46	8.11	42.57	54.00	-11.43	AVG	200	57	

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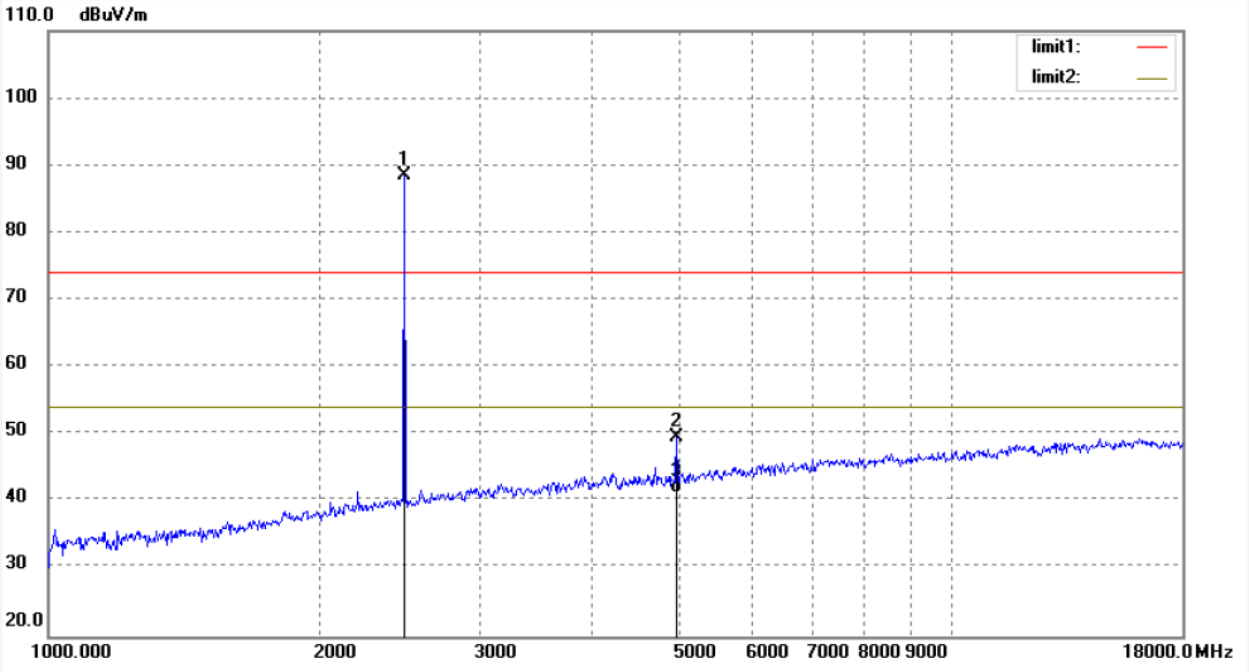
Job No.: LGW2020 #675
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: TX 2480MHz
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 20/10/12/
Time: 9/03/13
Engineer Signature: WADE
Distance: 3m

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	87.49	1.10	88.59			peak	200	45	
2	4960.000	40.99	8.60	49.59	74.00	-24.41	peak	200	351	
3	4960.000	32.76	8.60	41.36	54.00	-12.64	AVG	200	242	

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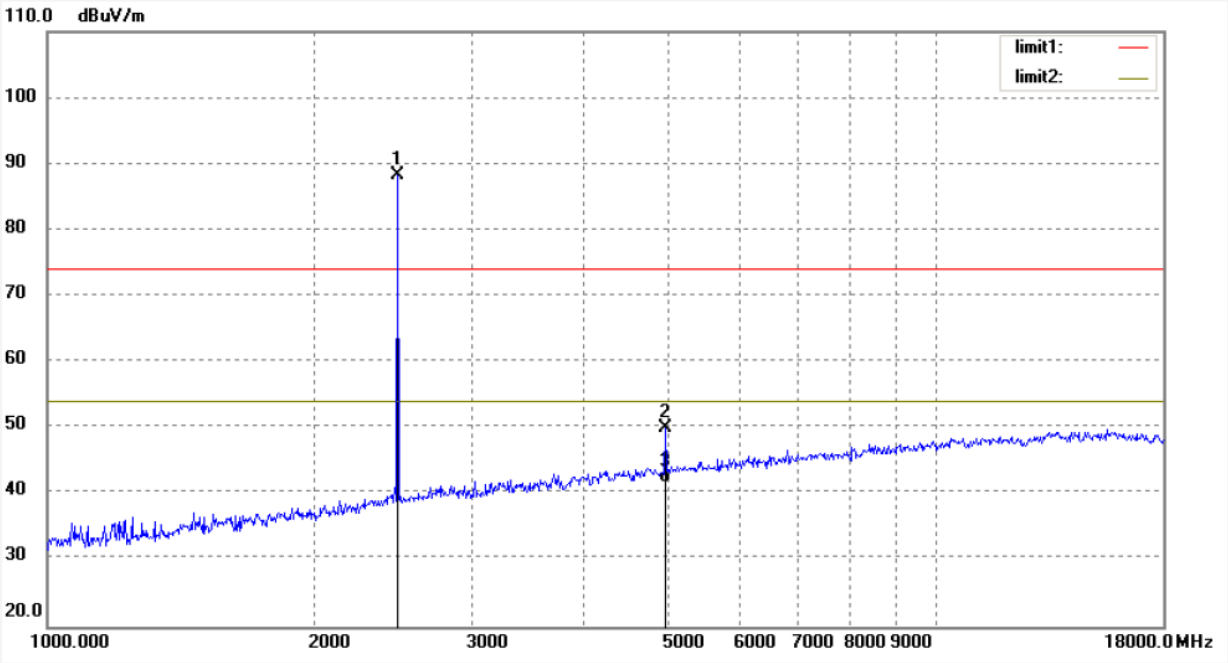
Job No.: LGW2020 #674	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/12/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 9/01/06
EUT: Massage Chair	Engineer Signature: WADE
Mode: TX 2480MHz	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

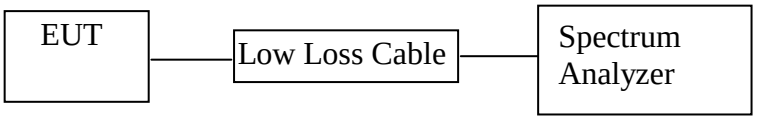
Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	87.12	1.10	88.22			peak	200	351	
2	4960.000	41.36	8.60	49.96	74.00	-24.04	peak	200	244	
3	4960.000	33.03	8.60	41.63	54.00	-12.37	AVG	200	239	

11.BAND EDGE COMPLIANCE TEST

11.1.Block Diagram of Test Setup



11.2.The Requirement For Section 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

11.3.EUT Configuration on Test

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

11.4.Operating Condition of EUT

11.4.1.Setup the EUT and simulator as shown as Section 11.1.

11.4.2.Turn on the power of all equipment.

11.4.3.Let the EUT work in TX (Hopping off, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

11.5.Test Procedure

11.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.

11.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz with convenient frequency span including 100 kHz bandwidth from band edge.

11.5.3.The band edges was measured and recorded.

11.6.Test Result

Note: Both hopping-on mode and hopping-off mode had been pre-tested, and only the Worse case was recorded in the test report.

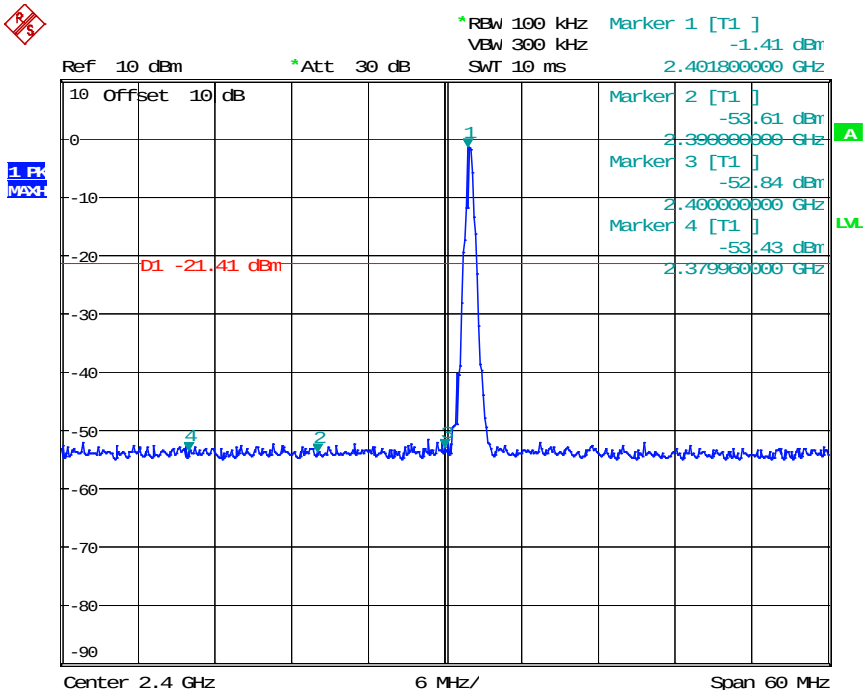
Conducted Band Edge Result

Non-hopping mode

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)	Result
GFSK Mode			
2400.00	51.43	> 20dBc	Pass
2483.50	53.40	> 20dBc	Pass
∏/4DQPSK Mode			
2400.00	44.23	> 20dBc	Pass
2483.50	53.01	> 20dBc	Pass
8DPSK Mode			
2400.00	43.99	> 20dBc	Pass
2483.50	48.92	> 20dBc	Pass

The spectrum analyzer plots are attached as below.

GFSK Mode



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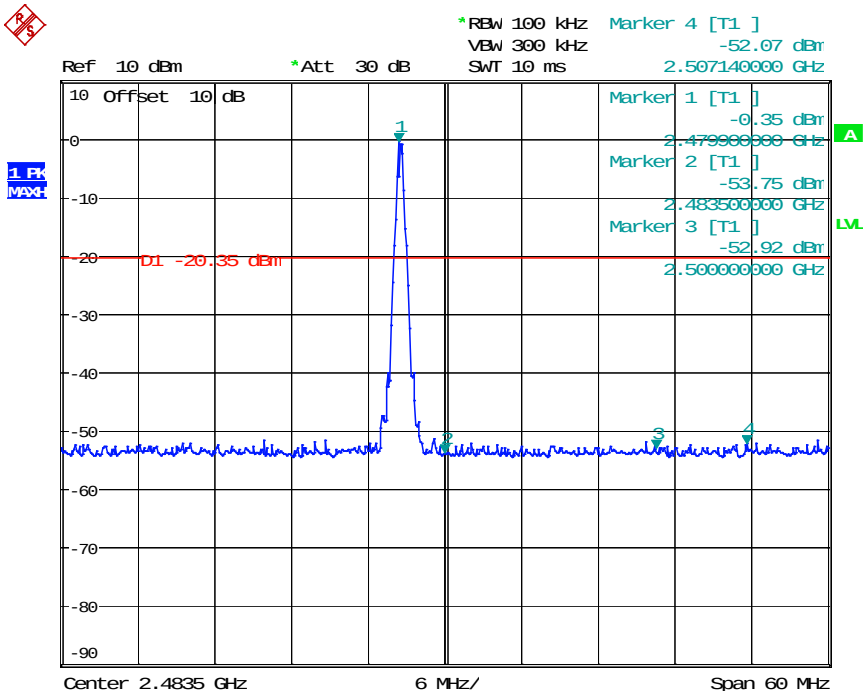
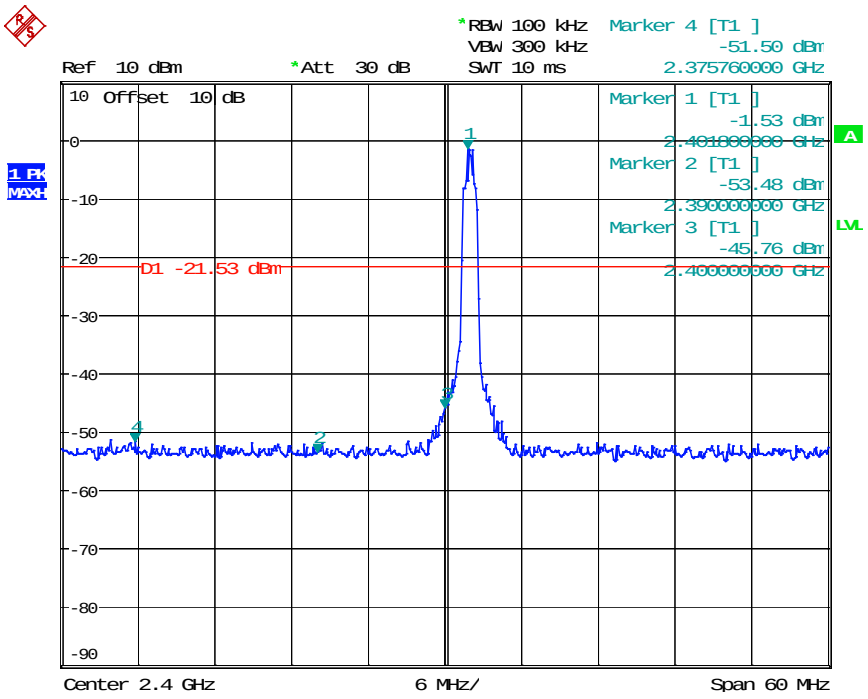
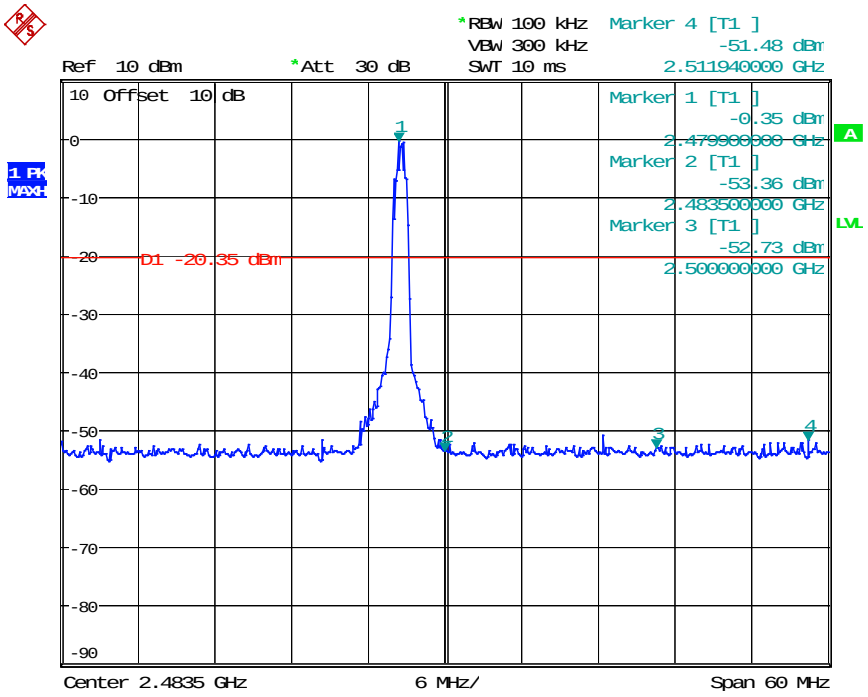


Date: 12.OCT.2020 15:54:14

Π/4DQPSK Mode

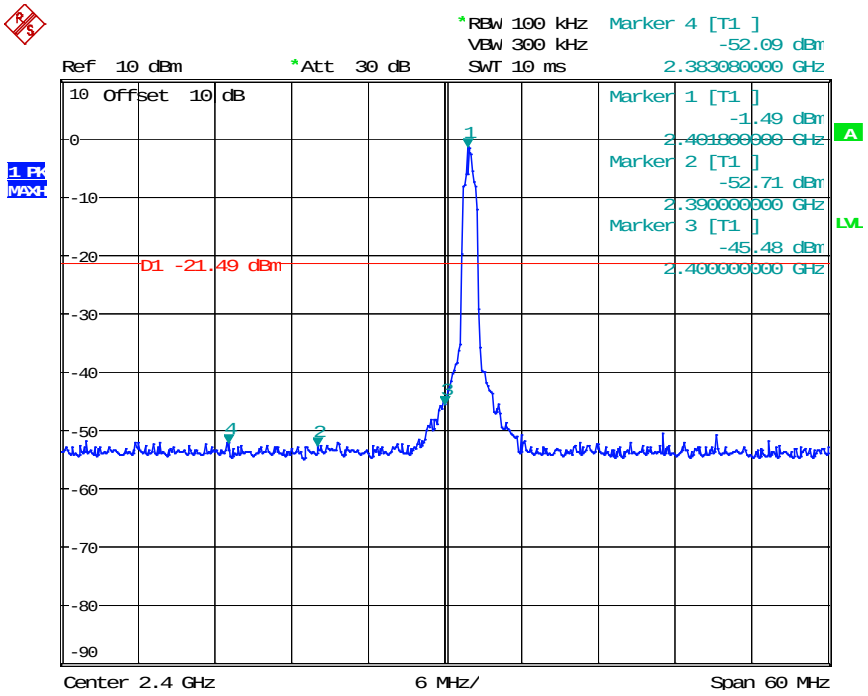


Date: 12.OCT.2020 15:49:29



Date: 12.OCT.2020 15:51:43

8DPSK Mode



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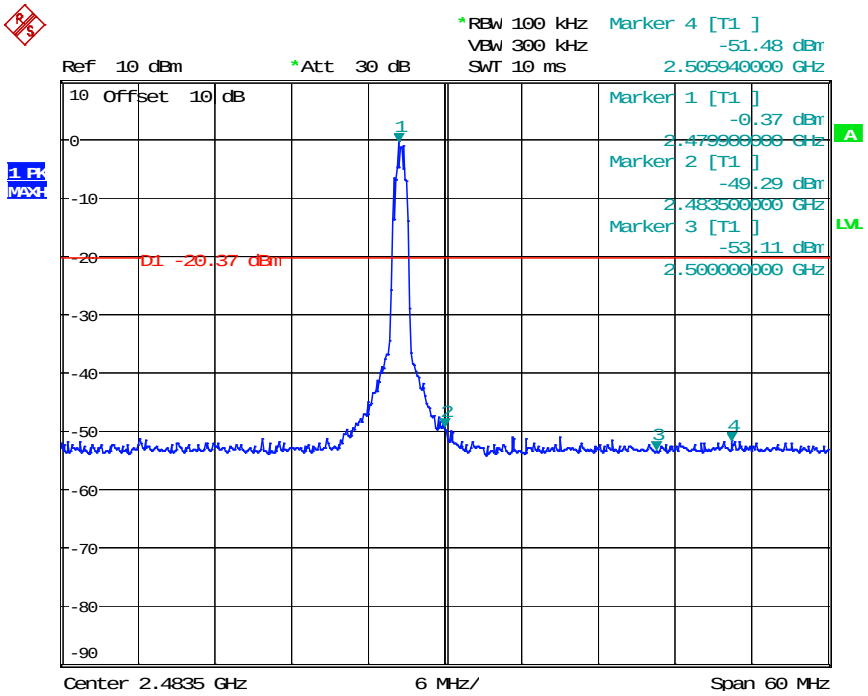

Date: 12.OCT.2020 15:40:17

Radiated Band Edge Result

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

   Result = Reading + Corrected Factor
3. Display the measurement of peak values.

Test Procedure:

The EUT and its simulators are placed on a turntable, which is 0.1 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. This EUT was tested in 3 orthogonal positions and the Worse case position data was reported.

Let the EUT work in TX (Hopping off, Hopping on) modes measure it.
We select 2402MHz, 2480MHz TX frequency to transmit(Hopping off mode).
We select 2402-2480MHz TX frequency to transmit(Hopping on mode).

During the radiated emission test, the spectrum analyzer was set with the following configurations:
1.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
2.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
3.All modes of operation were investigated and the Non-hopping mode Worse case (8DPSK mode) and hopping mode (All modes) emissions are reported.

The spectrum analyzer plots are attached as below.

Non-hopping mode Worse case (8DPSK mode)

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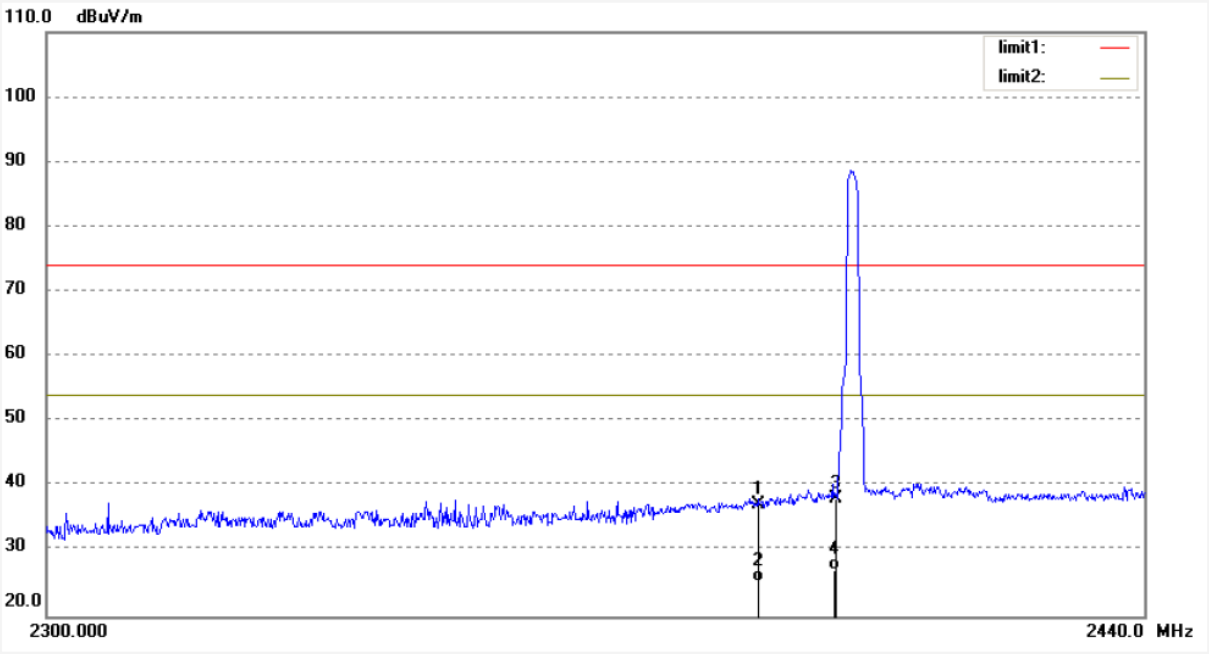
Job No.: LGW2020 #676	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/12/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 9/06/06
EUT: Massage Chair	Engineer Signature: WADE
Mode: TX 2402MHz	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	36.53	0.79	37.32	74.00	-36.68	peak	150	351	
2	2390.000	24.53	0.79	25.32	54.00	-28.68	AVG	150	352	
3	2400.000	37.27	0.88	38.15	74.00	-35.85	peak	150	234	
4	2400.000	26.27	0.88	27.15	54.00	-26.85	AVG	150	24	

Note: Average measurement with peak detection at No.2&4

ACCURATE TECHNOLOGY CO., LTD.
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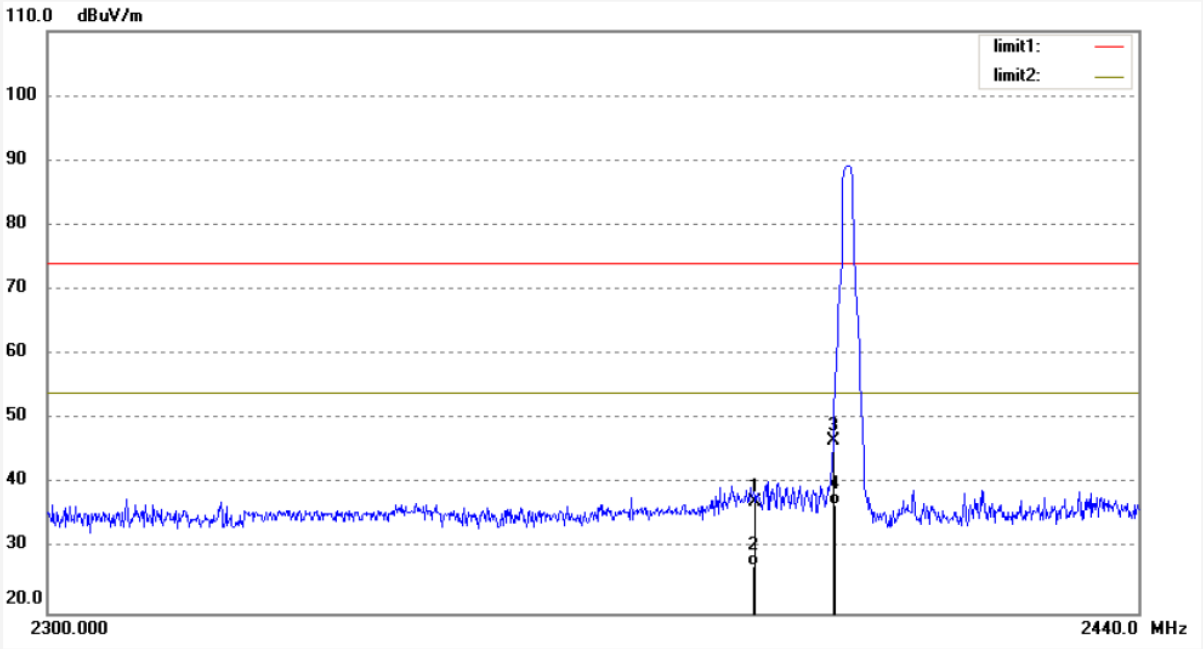
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: LGW2020 #677	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/12/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 9/08/05
EUT: Massage Chair	Engineer Signature: WADE
Mode: TX 2402MHz	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	36.45	0.79	37.24	74.00	-36.76	peak	200	53	
2	2390.000	26.45	0.79	27.24	54.00	-26.76	AVG	200	265	
3	2400.000	45.85	0.88	46.73	74.00	-27.27	peak	200	315	
4	2400.000	35.85	0.88	36.73	54.00	-17.27	AVG	200	242	

Note: Average measurement with peak detection at No.2&4

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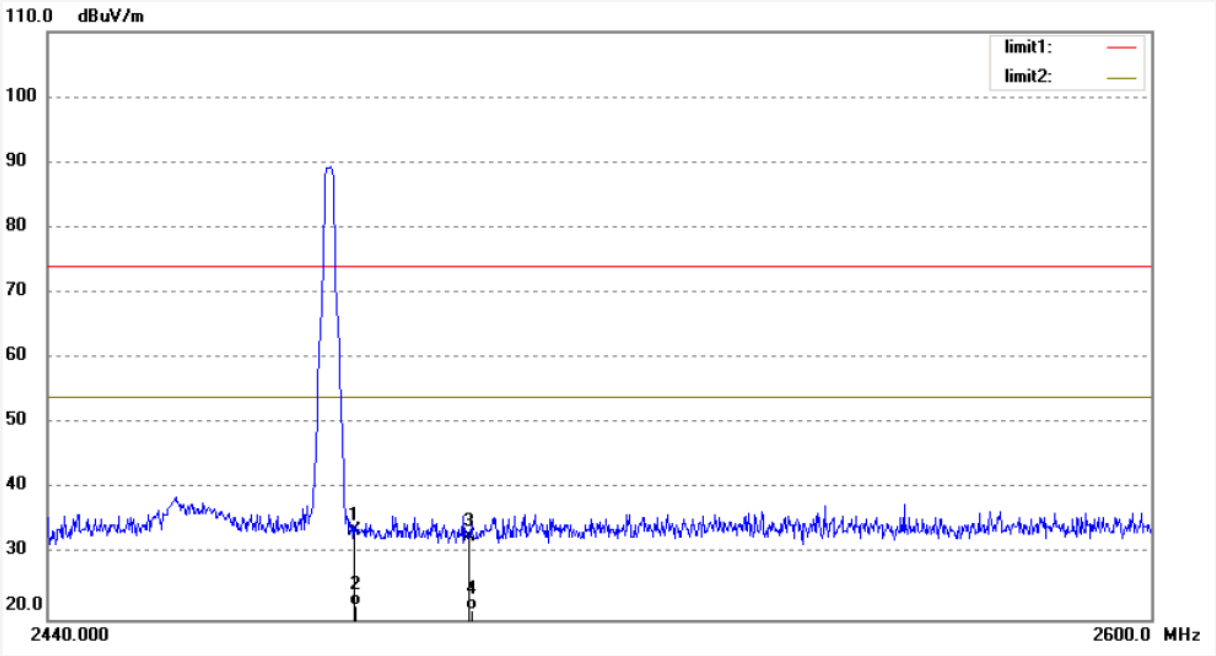
Fax:+86-0755-26503396

Job No.: LGW2020 #678	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/12/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 9/10/22
EUT: Massage Chair	Engineer Signature: WADE
Mode: TX 2480MHz	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	32.56	1.10	33.66	74.00	-40.34	peak	200	354	
2	2483.500	21.14	1.10	22.24	54.00	-31.76	AVG	200	68	
3	2500.000	31.72	1.10	32.82	74.00	-41.18	peak	200	45	
4	2500.000	20.25	1.10	21.35	54.00	-32.65	AVG	200	242	

Note: Average measurement with peak detection at No.2&4

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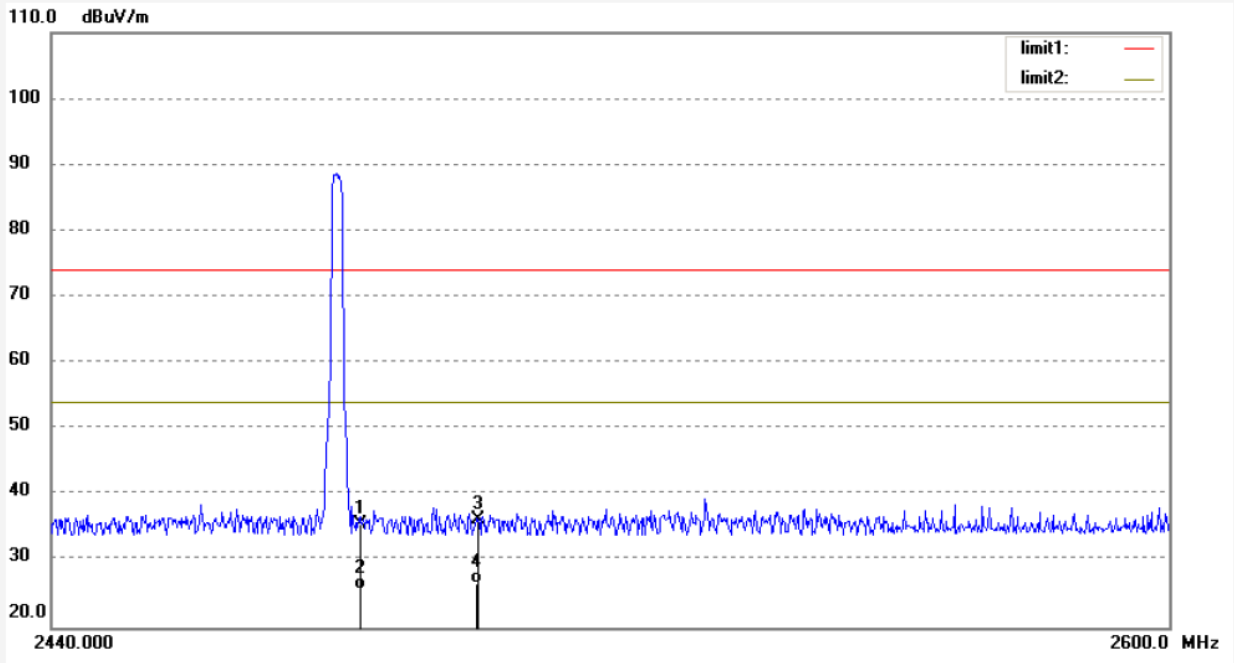
Job No.: LGW2020 #679	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/12/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 9/13/38
EUT: Massage Chair	Engineer Signature: WADE
Mode: TX 2480MHz	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	34.49	1.10	35.59	74.00	-38.41	peak	150	183	
2	2483.500	24.58	1.10	25.68	54.00	-28.32	AVG	150	65	
3	2500.000	35.20	1.10	36.30	74.00	-37.70	peak	150	236	
4	2500.000	25.47	1.10	26.57	54.00	-27.43	AVG	150	242	

Note: Average measurement with peak detection at No.2&4

Hopping mode

ACCURATE TECHNOLOGY CO., LTD.
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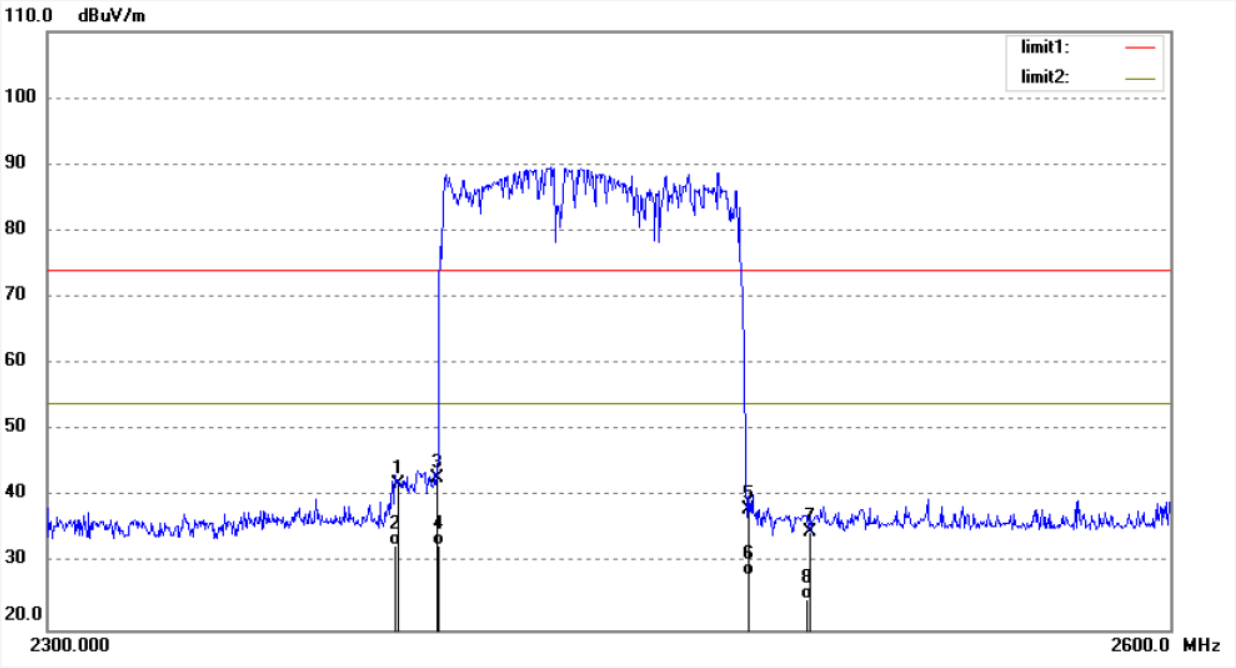
Fax:+86-0755-26503396

Job No.: LGW2020 #680
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: Hopping(GFSK)
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 20/10/12/
Time: 9/17/23
Engineer Signature: WADE
Distance: 3m

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	41.08	0.79	41.87	74.00	-32.13	peak	200	351	
2	2390.000	31.86	0.79	32.65	54.00	-21.35	AVG	200	241	
3	2400.000	41.99	0.88	42.87	74.00	-31.13	peak	200	212	
4	2400.000	31.80	0.88	32.68	54.00	-21.32	AVG	200	54	
5	2483.500	37.12	1.10	38.22	74.00	-35.78	peak	200	358	
6	2483.500	27.02	1.10	28.12	54.00	-25.88	AVG	200	134	
7	2500.000	33.56	1.10	34.66	74.00	-39.34	peak	200	24	
8	2500.000	23.47	1.10	24.57	54.00	-29.43	AVG	200	124	

Note: Average measurement with peak detection at No.2&4&6&8

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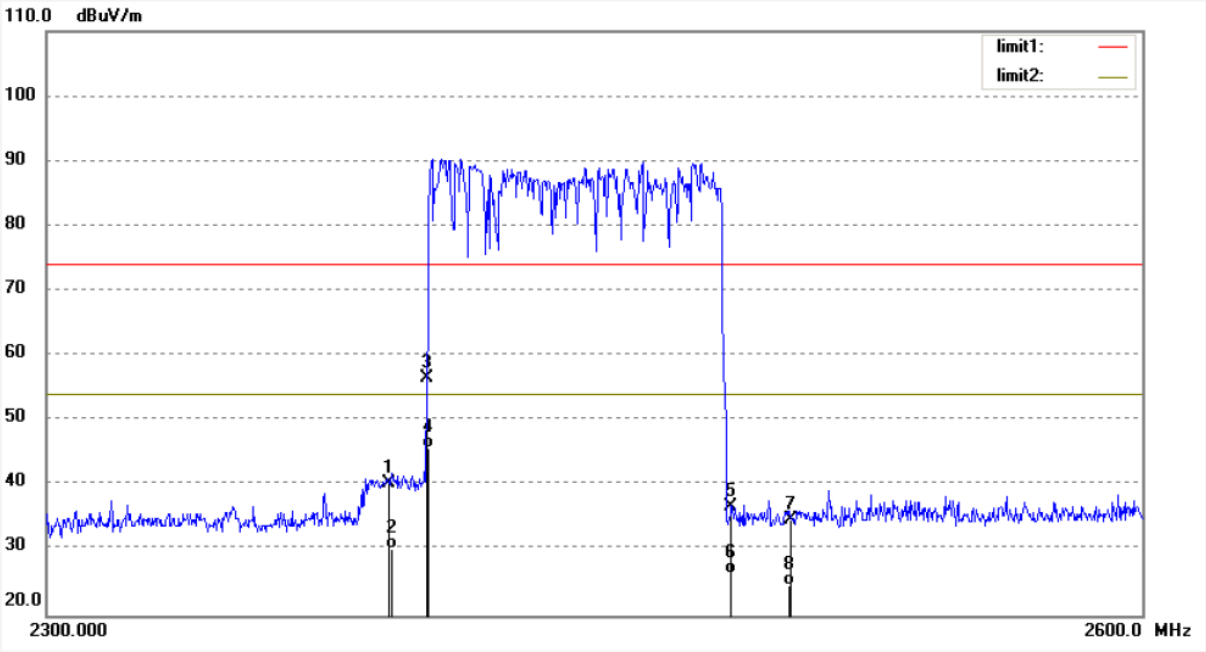
Job No.: LGW2020 #681
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: Hopping(GFSK)
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 20/10/12/
Time: 9/19/41
Engineer Signature: WADE
Distance: 3m

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	39.64	0.79	40.43	74.00	-33.57	peak	150	351	
2	2390.000	29.44	0.79	30.23	54.00	-23.77	AVG	150	45	
3	2400.000	55.72	0.88	56.60	74.00	-17.40	peak	150	24	
4	2400.000	44.80	0.88	45.68	54.00	-8.32	AVG	150	41	
5	2483.500	35.71	1.10	36.81	74.00	-37.19	peak	150	356	
6	2483.500	25.25	1.10	26.35	54.00	-27.65	AVG	150	245	
7	2500.000	33.67	1.10	34.77	74.00	-39.23	peak	150	14	
8	2500.000	23.59	1.10	24.69	54.00	-29.31	AVG	150	242	

Note: Average measurement with peak detection at No.2&4&6&8

ACCURATE TECHNOLOGY CO., LTD.
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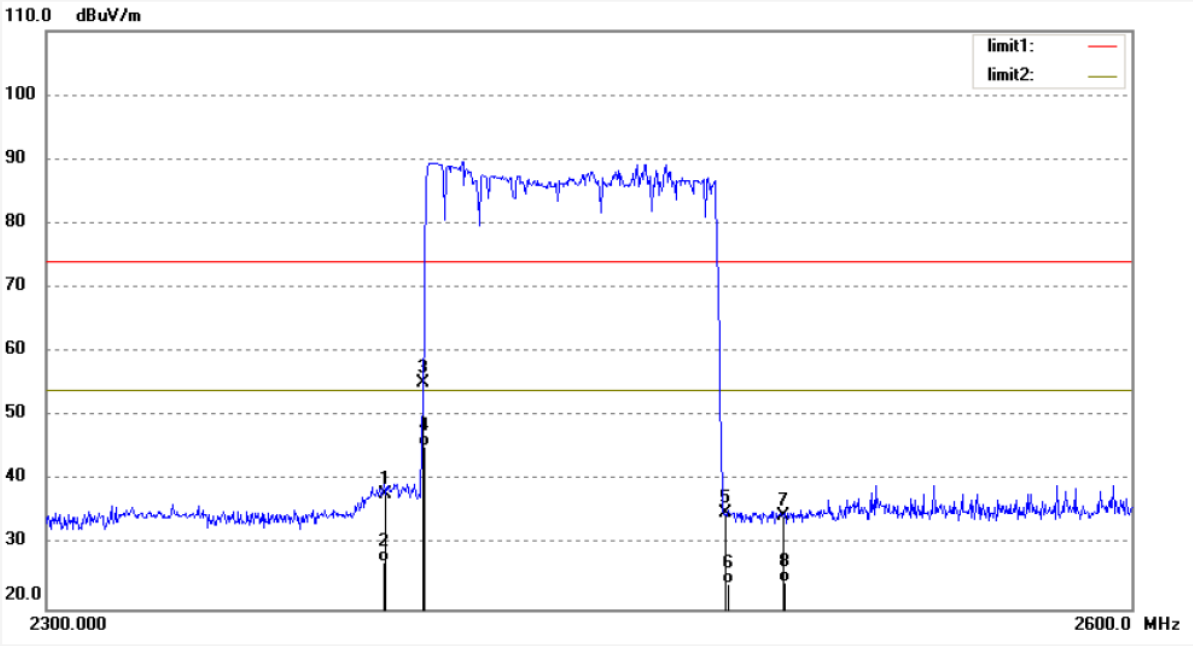
Job No.: LGW2020 #682	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/12/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 9/24/27
EUT: Massage Chair	Engineer Signature: WADE
Mode: Hopping(π/4 DQPSK)	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	37.15	0.79	37.94	74.00	-36.06	peak	200	351	
2	2390.000	26.54	0.79	27.33	54.00	-26.67	AVG	200	56	
3	2400.000	54.32	0.88	55.20	74.00	-18.80	peak	200	35	
4	2400.000	44.47	0.88	45.35	54.00	-8.65	AVG	200	345	
5	2483.500	33.75	1.10	34.85	74.00	-39.15	peak	200	352	
6	2483.500	22.91	1.10	24.01	54.00	-29.99	AVG	200	247	
7	2500.000	33.49	1.10	34.59	74.00	-39.41	peak	200	241	
8	2500.000	23.14	1.10	24.24	54.00	-29.76	AVG	200	124	

Note: Average measurement with peak detection at No.2&4&6&8

ACCURATE TECHNOLOGY CO., LTD.
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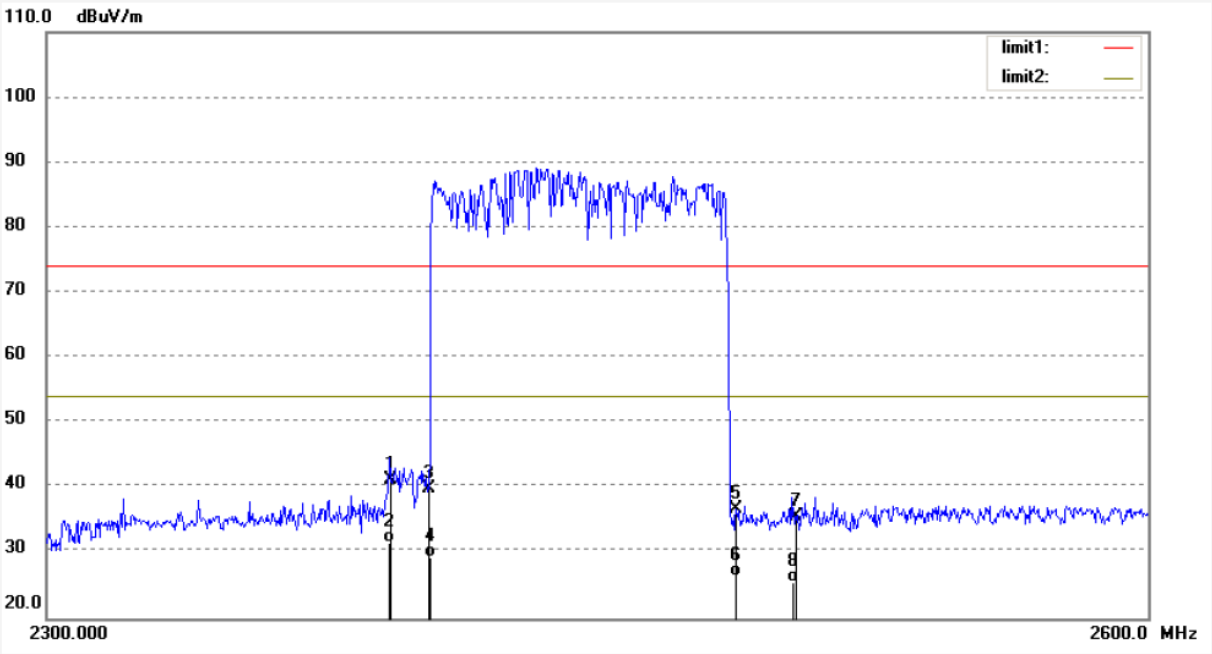
Fax:+86-0755-26503396

Job No.: LGW2020 #683
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: Hopping(π/4 DQPSK)
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 20/10/12/
Time: 9/26/48
Engineer Signature: WADE
Distance: 3m

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	40.40	0.79	41.19	74.00	-32.81	peak	150	244	
2	2390.000	30.77	0.79	31.56	54.00	-22.44	AVG	150	353	
3	2400.000	39.03	0.88	39.91	74.00	-34.09	peak	150	355	
4	2400.000	28.53	0.88	29.41	54.00	-24.59	AVG	150	36	
5	2483.500	35.76	1.10	36.86	74.00	-37.14	peak	150	24	
6	2483.500	25.35	1.10	26.45	54.00	-27.55	AVG	150	142	
7	2500.000	34.55	1.10	35.65	74.00	-38.35	peak	150	44	
8	2500.000	24.44	1.10	25.54	54.00	-28.46	AVG	150	235	

Note: Average measurement with peak detection at No.2&4&6&8

ACCURATE TECHNOLOGY CO., LTD.
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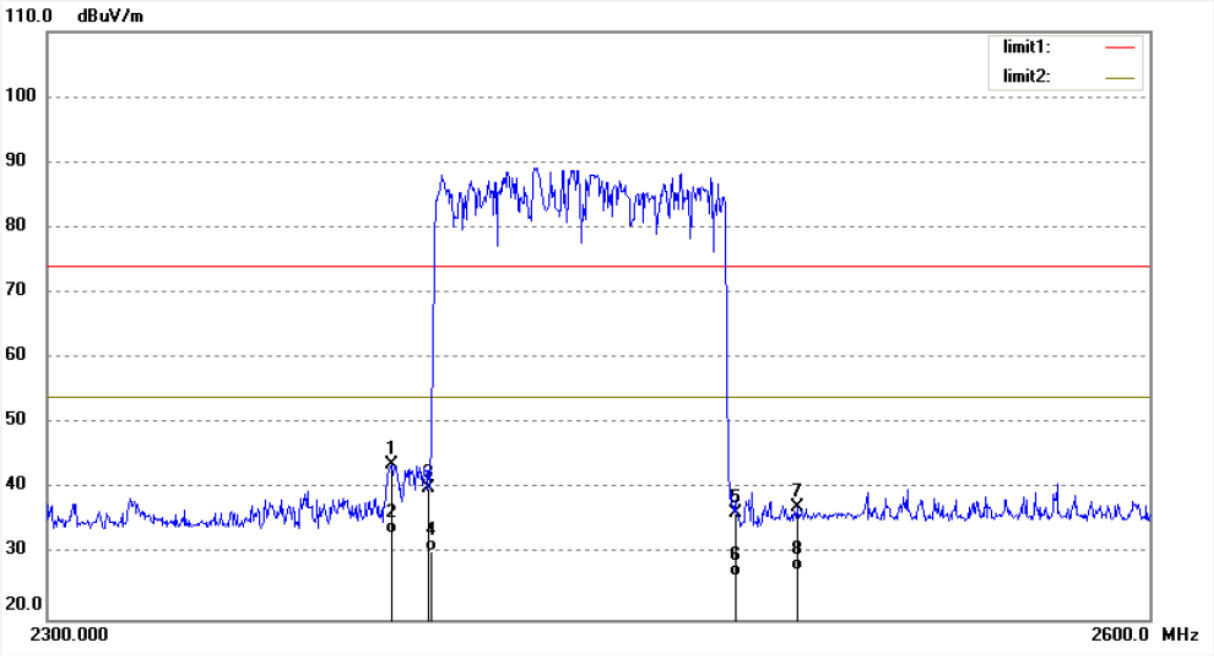
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: LGW2020 #684	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 20/10/12/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 9/31/20
EUT: Massage Chair	Engineer Signature: WADE
Mode: Hopping(8DPSK)	Distance: 3m
Model: EC-7502D	
Manufacturer: Atex. Co., Ltd. Kurume Plant	

Note: Report No.:RTZ200918011-00



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	42.84	0.79	43.63	74.00	-30.37	peak	200	241	
2	2390.000	32.46	0.79	33.25	54.00	-20.75	AVG	200	354	
3	2400.000	39.15	0.88	40.03	74.00	-33.97	peak	200	54	
4	2400.000	29.47	0.88	30.35	54.00	-23.65	AVG	200	57	
5	2483.500	35.12	1.10	36.22	74.00	-37.78	peak	200	35	
6	2483.500	25.44	1.10	26.54	54.00	-27.46	AVG	200	45	
7	2500.000	36.16	1.10	37.26	74.00	-36.74	peak	200	124	
8	2500.000	26.55	1.10	27.65	54.00	-26.35	AVG	200	142	

Note: Average measurement with peak detection at No.2&4&6&8

ACCURATE TECHNOLOGY CO., LTD.
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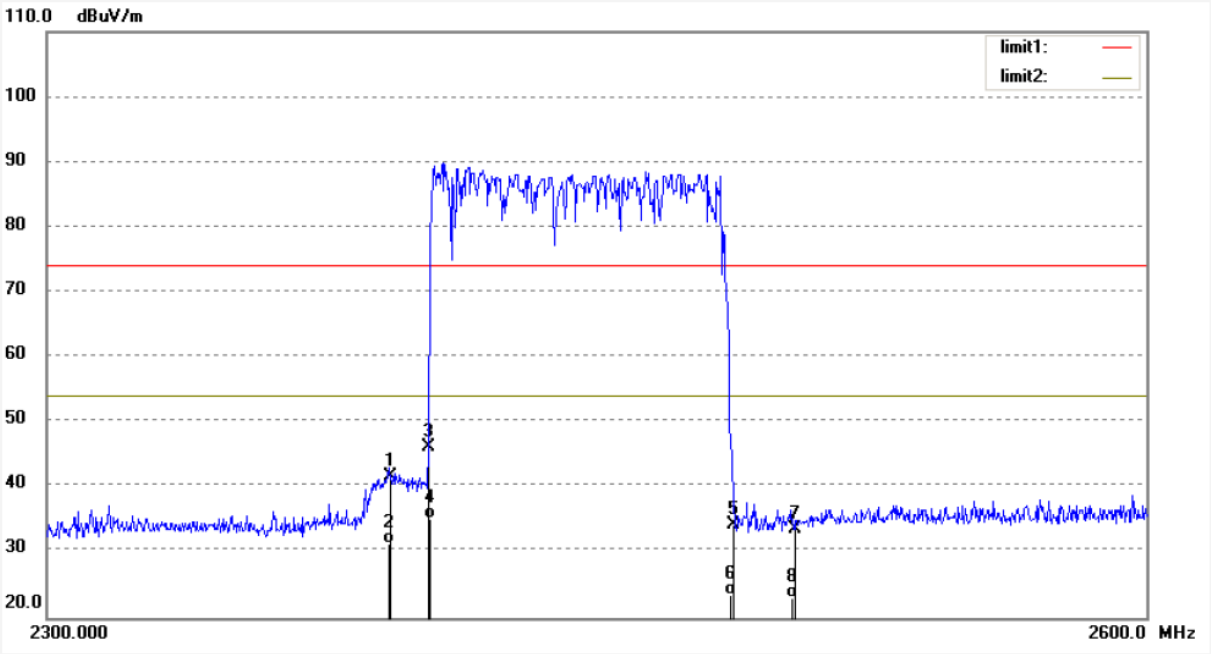
Job No.: LGW2020 #685
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Massage Chair
Mode: Hopping(8DPSK)
Model: EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 20/10/12/
Time: 9/34/31
Engineer Signature: WADE
Distance: 3m

Note: Report No.:RTZ200918011-00



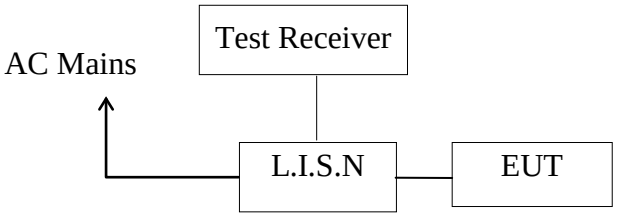
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	41.01	0.79	41.80	74.00	-32.20	peak	150	34	
2	2390.000	30.63	0.79	31.42	54.00	-22.58	AVG	150	21	
3	2400.000	45.31	0.88	46.19	74.00	-27.81	peak	150	247	
4	2400.000	34.36	0.88	35.24	54.00	-18.76	AVG	150	241	
5	2483.500	33.18	1.10	34.28	74.00	-39.72	peak	150	35	
6	2483.500	22.34	1.10	23.44	54.00	-30.56	AVG	150	24	
7	2500.000	32.53	1.10	33.63	74.00	-40.37	peak	150	54	
8	2500.000	22.04	1.10	23.14	54.00	-30.86	AVG	150	341	

Note: Average measurement with peak detection at No.2&4&6&8

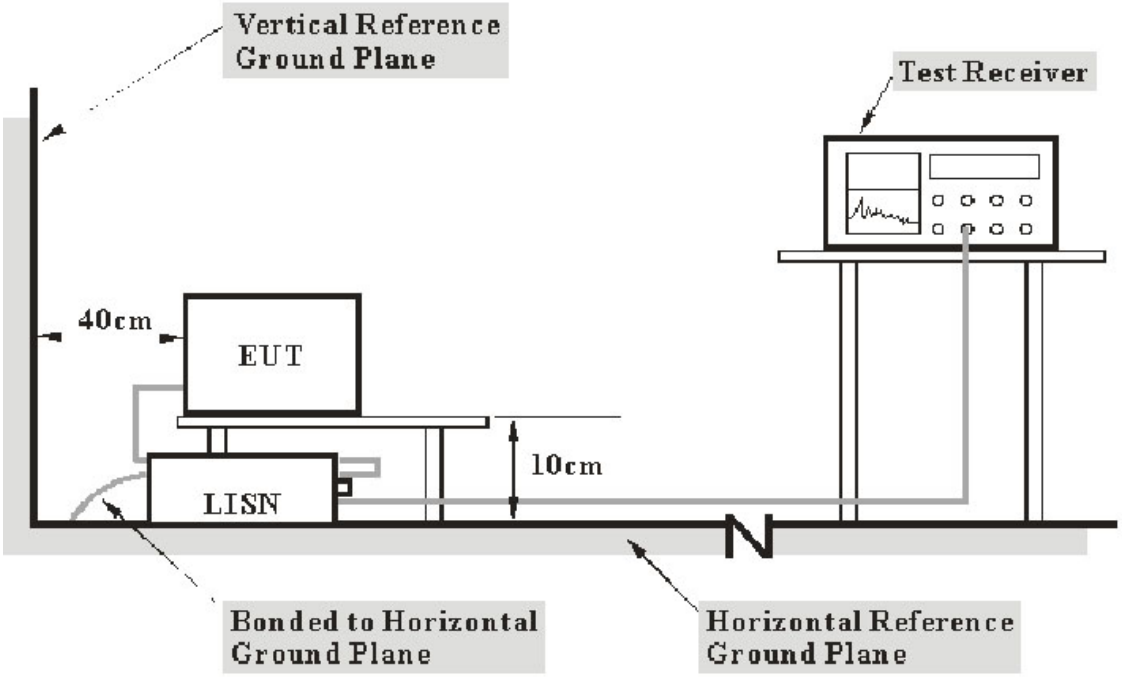
12. AC POWER LINE CONDUCTED EMISSION TEST

12.1. Block Diagram of Test Setup

12.1.1. Block diagram of connection between the EUT and simulators



12.1.2. Test System Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 10 cm from other units and other metal planes support units.

12.2.Power Line Conducted Emission Test Limits

Frequency (MHz)	Conducted Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0
NOTE1: The lower limit shall apply at the transition frequencies. NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

12.3.EUT Configuration on Test

The equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

12.4.Operating Condition of EUT

12.4.1.Setup the EUT and simulator as shown as Section 12.1.

12.4.2.Turn on the power of all equipment.

12.4.3.Let the EUT work in test mode and measure it.

12.5.Test Procedure

The EUT is put on the plane 0.1m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Measurement.
The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

12.6.Data Sample

Frequency (MHz)	Transducer value (dB)	QuasiPeak Level (dBμV)	Average Level (dBμV)	QuasiPeak Limit (dBμV)	Average Limit (dBμV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XX	10.5	51.1	34.2	56.0	46.0	4.9	11.8	Pass

Frequency(MHz) = Emission frequency in MHz
Transducer value(dB) = Insertion loss of LISN + Cable Loss
Level(dBμV) = Quasi-peak Reading/Average Reading + Transducer value
Limit (dBμV) = Limit stated in standard
Margin = Limit (dBμV) - Level (dBμV)

Calculation Formula:
Margin = Limit (dBμV) - Level (dBμV)

12.7.Test Results

Pass.

The frequency range from 150kHz to 30MHz is checked.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.
Emissions attenuated more than 20 dB below the permissible value are not reported.

All data was recorded in the Quasi-peak and average detection mode.

The spectral diagrams are attached as below.

ACCURATE TECHNOLOGY CO.,LTD

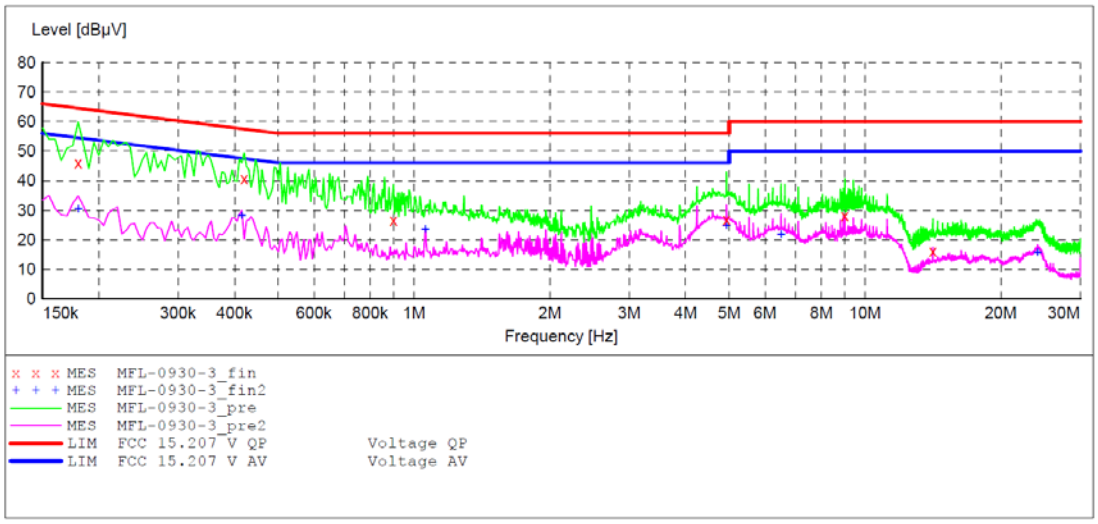
CONDUCTED EMISSION STANDARD FCC PART 15.207

EUT: Massage Chair M/N:EC-7502D
Manufacturer: Atex. Co., Ltd. Kurume Plant
Operating Condition: BT Communication
Test Site: 1#Shielding Room
Operator: Wade
Test Specification: N 120V/60Hz
Comment: Report No.:RTZ200918011-00
Start of Test: 9/30/2020 / 10:14:06AM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak Average	1.0 s	200 Hz	NSLK8126 2008
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak Average	1.0 s	9 kHz	NSLK8126 2008



MEASUREMENT RESULT: "MFL-0930-3_fin"

9/30/2020 10:18AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.180000	46.00	10.4	65	18.5	QP	N	GND
0.420000	40.60	10.5	57	16.8	QP	N	GND
0.900000	26.70	10.6	56	29.3	QP	N	GND
4.930000	26.90	10.7	56	29.1	QP	N	GND
9.020000	28.10	10.8	60	31.9	QP	N	GND
14.140000	16.10	10.8	60	43.9	QP	N	GND

MEASUREMENT RESULT: "MFL-0930-3_fin2"

9/30/2020 10:18AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.180000	30.40	10.4	55	24.1	AV	N	GND
0.415000	28.20	10.5	48	19.3	AV	N	GND
1.060000	23.50	10.6	46	22.5	AV	N	GND
4.930000	24.70	10.7	46	21.3	AV	N	GND
6.510000	21.60	10.8	50	28.4	AV	N	GND
24.130000	15.70	10.9	50	34.3	AV	N	GND

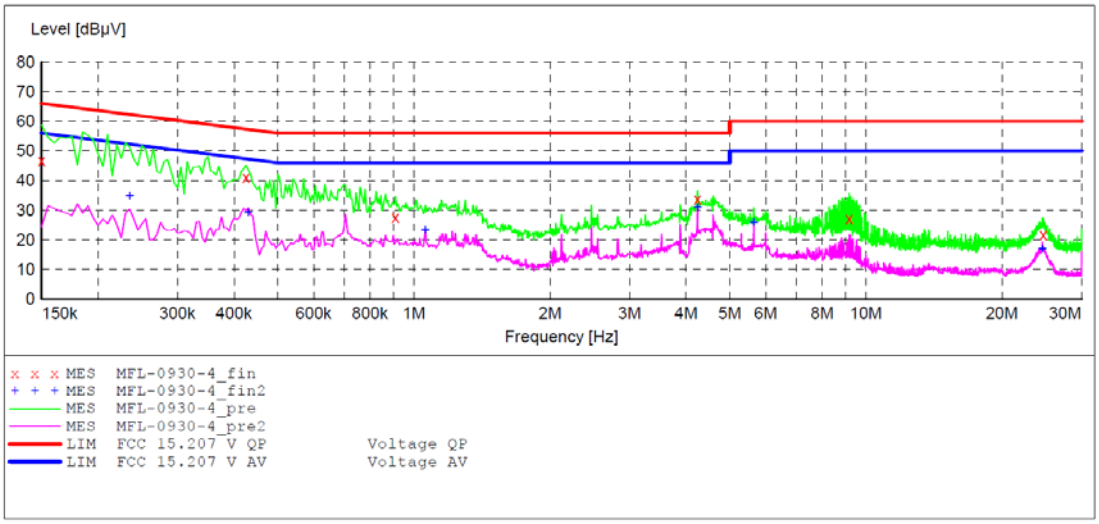
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15.207

```
EUT:                  Massage Chair M/N:EC-7502D
Manufacturer:         Atex. Co., Ltd. Kurume Plant
Operating Condition:  BT Communication
Test Site:            1#Shielding Room
Operator:             Wade
Test Specification:   L 120V/60Hz
Comment:              Report No.:RTZ200918011-00
Start of Test:        9/30/2020 / 10:18:44AM
```

SCAN TABLE: "V 9K-30MHz fin"

```
  Short Description:              _SUB_STD_VTERM2 1.70
  Start      Stop       Step      Detector  Meas.     IF       Transducer
  Frequency  Frequency  Width               Time      Bandw.
  9.0 kHz    150.0 kHz  100.0 Hz  QuasiPeak 1.0 s     200 Hz   NSLK8126 2008
                                  Average
  150.0 kHz  30.0 MHz   5.0 kHz   QuasiPeak 1.0 s     9 kHz    NSLK8126 2008
                                  Average
```



MEASUREMENT RESULT: "MFL-0930-4_fin"

9/30/2020 10:22AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	46.80	10.4	66	19.2	QP	L1	GND
0.425000	41.10	10.5	57	16.2	QP	L1	GND
0.910000	27.50	10.6	56	28.5	QP	L1	GND
4.240000	33.70	10.7	56	22.3	QP	L1	GND
9.180000	27.20	10.8	60	32.8	QP	L1	GND
24.685000	21.80	10.9	60	38.2	QP	L1	GND

MEASUREMENT RESULT: "MFL-0930-4_fin2"

9/30/2020 10:22AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.235000	34.80	10.4	52	17.5	AV	L1	GND
0.430000	29.20	10.5	47	18.1	AV	L1	GND
1.060000	23.40	10.6	46	22.6	AV	L1	GND
4.240000	31.00	10.7	46	15.0	AV	L1	GND
5.650000	25.90	10.7	50	24.1	AV	L1	GND
24.565000	16.80	10.9	50	33.2	AV	L1	GND

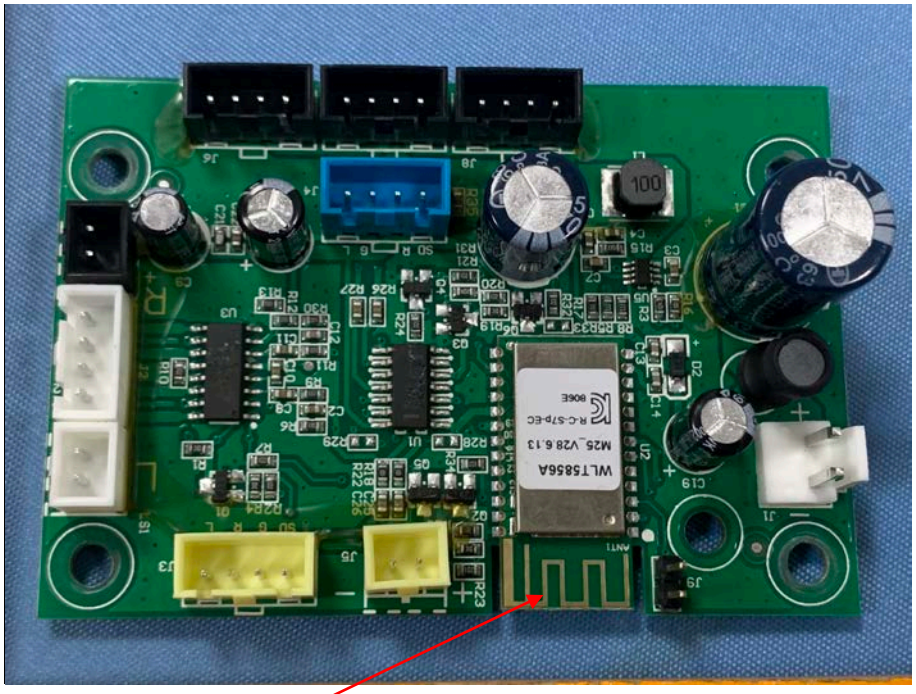
13. ANTENNA REQUIREMENT

13.1. The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

13.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Max Antenna gain of EUT is 2dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



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