

APPLICATION CERTIFICATION FCC Part 15C & RSS-247

On Behalf of
Country Mate Technology Ltd

Wireless Stereo Earbuds
Model No.: NS-CAHBTAP, NS-CAHBTAP-C

FCC ID: MV3-CAHBTAPR
IC: 9029A-CAHBTAPR

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Report No. : ATE20180329
Date of Test : Jan. 29--Mar. 6, 2018
Date of Report : Mar. 9, 2018

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Test Report Certification

Applicant : Country Mate Technology Ltd
Address : 5/F., Block E, Hing Yip Centre 31 Hing Yip St., Kwun Tong, Kln., H.K.
Manufacturer : Country Mate Technology Ltd
Address : 5/F., Block E, Hing Yip Centre 31 Hing Yip St., Kwun Tong, Kln., H.K.
Product : Wireless Stereo Earbuds
Model No. : NS-CAHBTAP, NS-CAHBTAP-C

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247

ANSI C63.10: 2013

RSS-247 Issue 2 February 2017

RSS-Gen Issue 4 November 2014

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 and RSS-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 : Jan. 29--Mar. 6, 2018

Date of Report: Mar. 9, 2018

Prepared by :

Star Yang
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Approved &
Authorized Signer :

Sean Liu
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1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Wireless Stereo Earbuds
Model Number	:	NS-CAHBTAP, NS-CAHBTAP-C (Note: Above series are identical in schematic, structure and critical components, Only the model name is different from the market requirement, NS-CAHBTAP For the FCC reports, NS-CAHBTAP-C For the IC reports.)
HVIN	:	R
Bluetooth version	:	V4.1 classic mode
Frequency Range	:	2402MHz-2480MHz
Number of Channels	:	79
Antenna Gain(Max)	:	0.8dBi
Antenna type	:	Integral Antenna
Modulation mode	:	GFSK, $\pi/4$ DQPSK, 8DPSK
Trade Name	:	INSIGNIA
Rating	:	DC 3.7V (Powered by Lithium battery) or DC 5V (Powered by USB port)
Applicant Address	:	Country Mate Technology Ltd 5/F., Block E, Hing Yip Centre 31 Hing Yip St., Kwun Tong, Kln., H.K.
Manufacturer Address	:	Country Mate Technology Ltd 5/F., Block E, Hing Yip Centre 31 Hing Yip St., Kwun Tong, Kln., H.K.
Date of sample received	:	Feb. 24, 2018
Date of Test	:	Jan. 29--Mar. 6, 2018

1.2. Accessory and Auxiliary Equipment

Notebook PC: Manufacturer: Lenovo
M/N: ThinkPad X240
S/N: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 (ISED) 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

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 06, 2018	Jan. 05, 2019
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 06, 2018	Jan. 05, 2019
Spectrum Analyzer	Rohde&Schwarz	FSV-40	101495	Jan. 06, 2018	Jan. 05, 2019
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 06, 2018	Jan. 05, 2019
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 06, 2018	Jan. 05, 2019
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 12, 2018	Jan. 11, 2019
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 12, 2018	Jan. 11, 2019
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 12, 2018	Jan. 11, 2019
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 12, 2018	Jan. 11, 2019
Open Switch and Control Unit	Rohde&Schwarz	OSP120 + OSP-B157	101244 + 100866	Jan. 06, 2018	Jan. 05, 2019
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 06, 2018	Jan. 05, 2019
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 06, 2018	Jan. 05, 2019
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 06, 2018	Jan. 05, 2019
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 06, 2018	Jan. 05, 2019

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: Transmitting mode

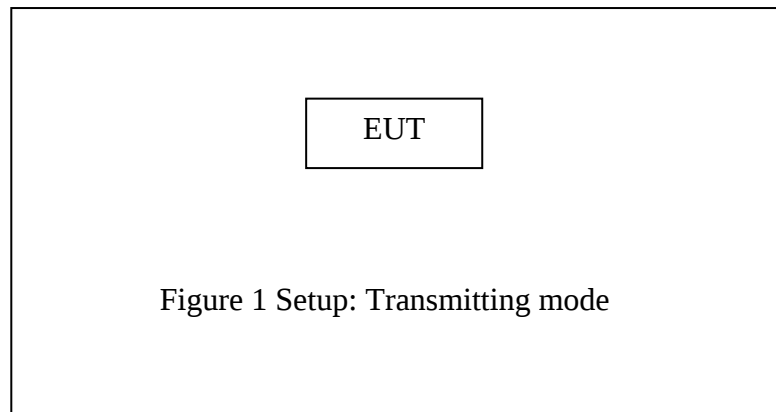
Low Channel: 2402MHz

Middle Channel: 2441MHz

High Channel: 2480MHz

Hopping

3.2.Configuration and peripherals

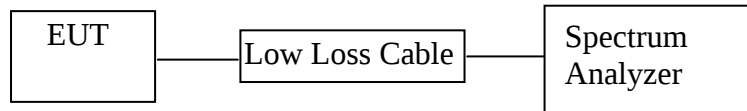


4. TEST PROCEDURES AND RESULTS

FCC&IC Rules	Description of Test	Result
Section 15.207 RSS-Gen Section 8.8	AC Power Line Conducted Emission Test	Compliant
Section 15.247(a)(1) RSS-247 A5.1	20dB Bandwidth Test	Compliant
Section 15.247(a)(1) RSS-247 A5.1	Carrier Frequency Separation Test	Compliant
Section 15.247(a)(1)(iii) RSS-247 A5.1	Number Of Hopping Frequency Test	Compliant
Section 15.247(a)(1)(iii) RSS-247 A5.1	Dwell Time Test	Compliant
Section 15.247(b)(1) RSS-247 A5.4	Maximum Peak Output Power Test	Compliant
Section 15.247(d) Section 15.209 RSS-247 A5.5 RSS-Gen 6.13	Radiated Emission Test	Compliant
RSS-Gen Section 6.6	99% Occupied Bandwidth	Compliant
Section 15.247(d) RSS-247 A5.5	Band Edge Compliance Test	Compliant
Section RSS-247	Conducted Spurious Emission Test	Compliant
Section 15.203 RSS-Gen 8.3	Antenna Requirement	Compliant

5. 20DB BANDWIDTH TEST

5.1. Block Diagram of Test Setup



(EUT: Wireless Stereo Earbuds)

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

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. The Requirement For RSS-247 Section 5.1

RSS-247 Section 5.1(a): The bandwidth of a frequency hopping channel is the 20dB emission bandwidth, measured with the hopping stopped. The system's radio frequency (RF) bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. 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.

5.4. EUT Configuration on Measurement

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.

5.5. Operating Condition of EUT

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

5.5.2. Turn on the power of all equipment.

5.5.3. 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.

5.6. Test Procedure

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

5.6.2. The RBW should be 1%~5% of OBW.

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

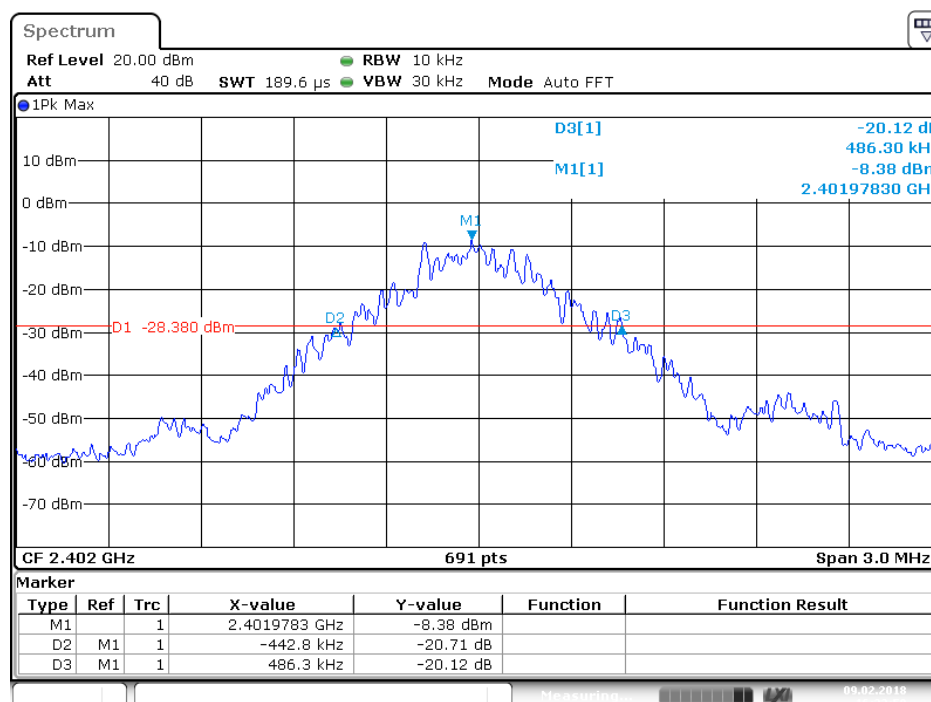
5.7. Test Result

Channel	Frequency (MHz)	BDR mode 20dB Bandwidth (MHz)	EDR mode 20dB Bandwidth (MHz)	Result
Low	2402	0.929	1.224	Pass
Middle	2441	0.960	1.224	Pass
High	2480	0.955	1.224	Pass

The spectrum analyzer plots are attached as below.

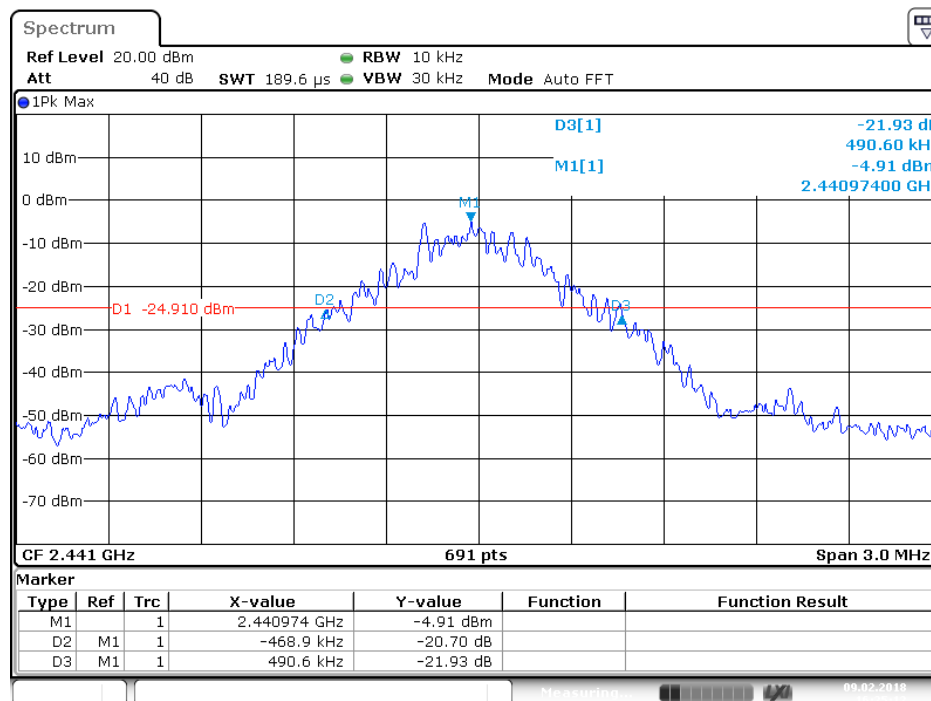
BDR Mode

Low channel



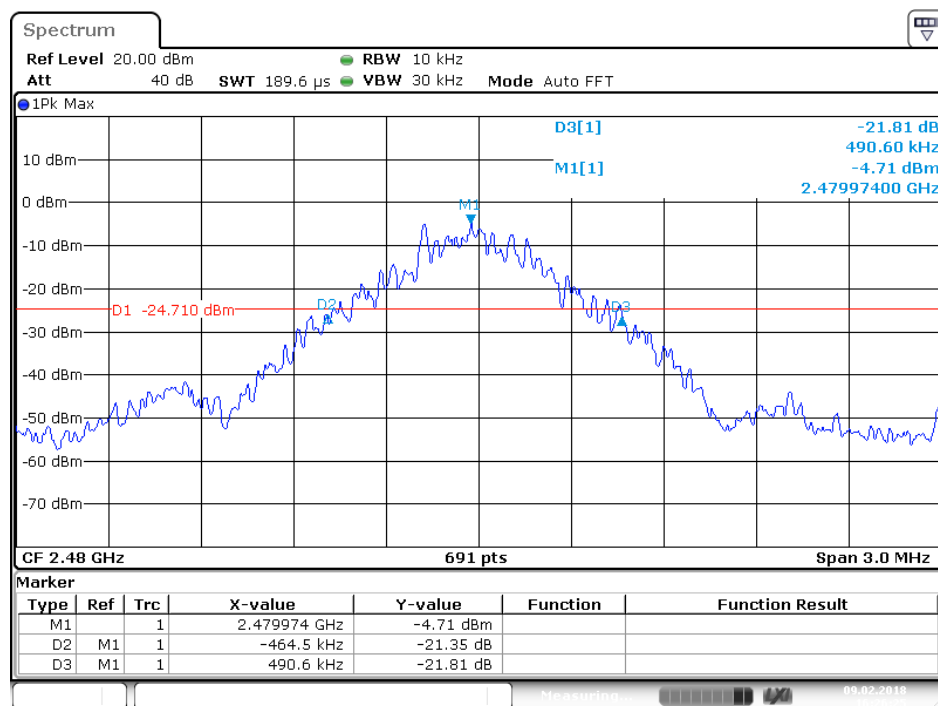
Date: 9.FEB.2018 16:23:51

Middle channel



Date: 9.FEB.2018 16:25:12

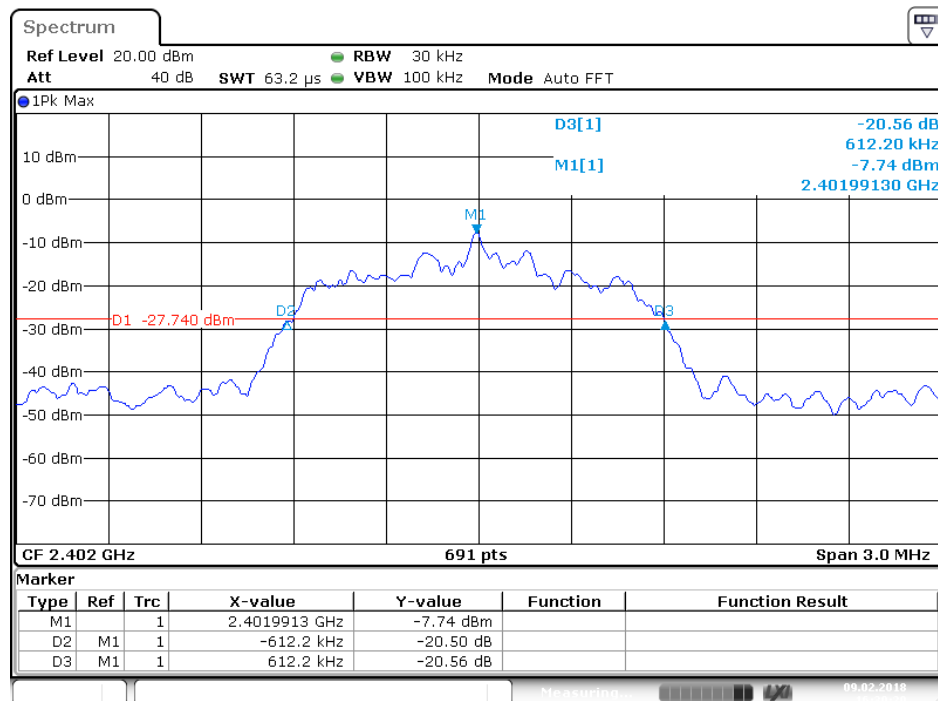
High channel



Date: 9.FEB.2018 16:26:25

EDR Mode

Low channel



Date: 9.FEB.2018 16:30:20

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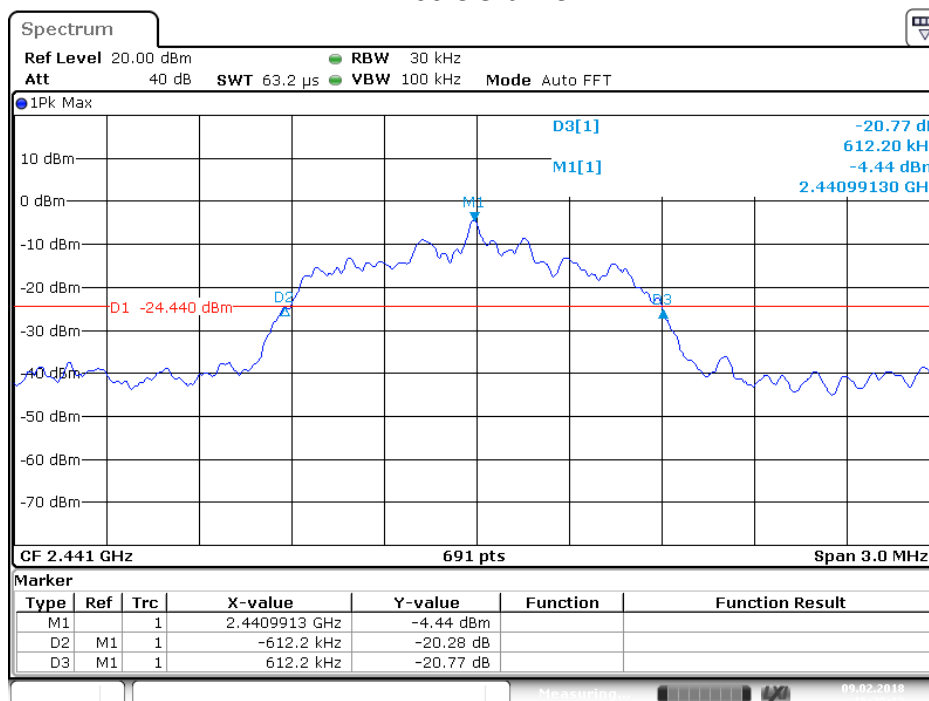
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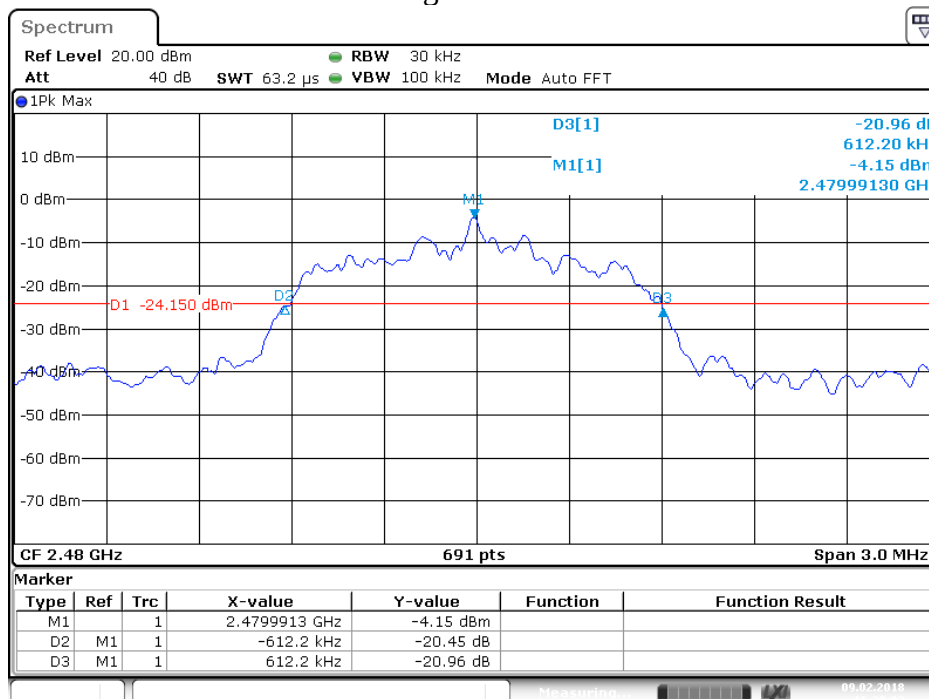
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Middle channel



Date: 9.FEB.2018 16:29:13

High channel



Date: 9.FEB.2018 16:28:03

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6. CARRIER FREQUENCY SEPARATION TEST

6.1. Block Diagram of Test Setup



(EUT: Wireless Stereo Earbuds)

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

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 pseudorandomly 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. The Requirement For RSS-247 Section 5.1(b)

RSS-247 Section 5.1(b): FHSS 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, FHSs operating in the band 2400-2483.5 MHz 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

6.4. EUT Configuration on Measurement

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.

6.5.Operating Condition of EUT

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

6.5.2.Turn on the power of all equipment.

6.5.3.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.

6.6.Test Procedure

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

6.6.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz. Adjust Span to 3MHz.

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

6.6.4.Measurement the channel separation

6.7.Test Result

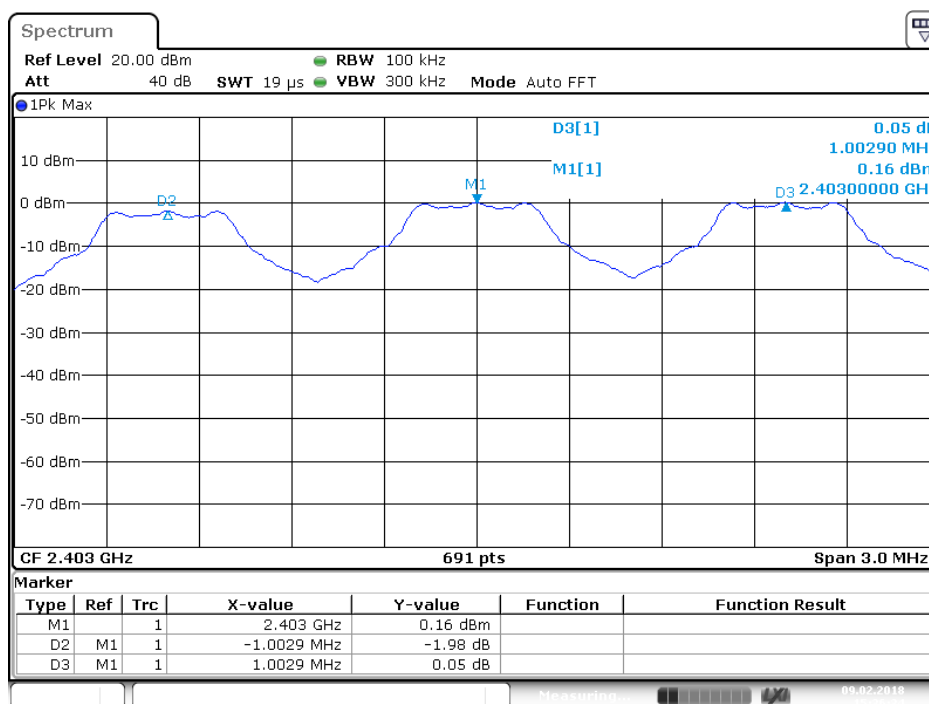
EDR mode (Worse case)

Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402	1.0029	25KHz or 2/3*20dB bandwidth	PASS
	2403			
Middle	2440	1.0029	25KHz or 2/3*20dB bandwidth	PASS
	2441			
High	2479	1.0029	25KHz or 2/3*20dB bandwidth	PASS
	2480			

The spectrum analyzer plots are attached as below.

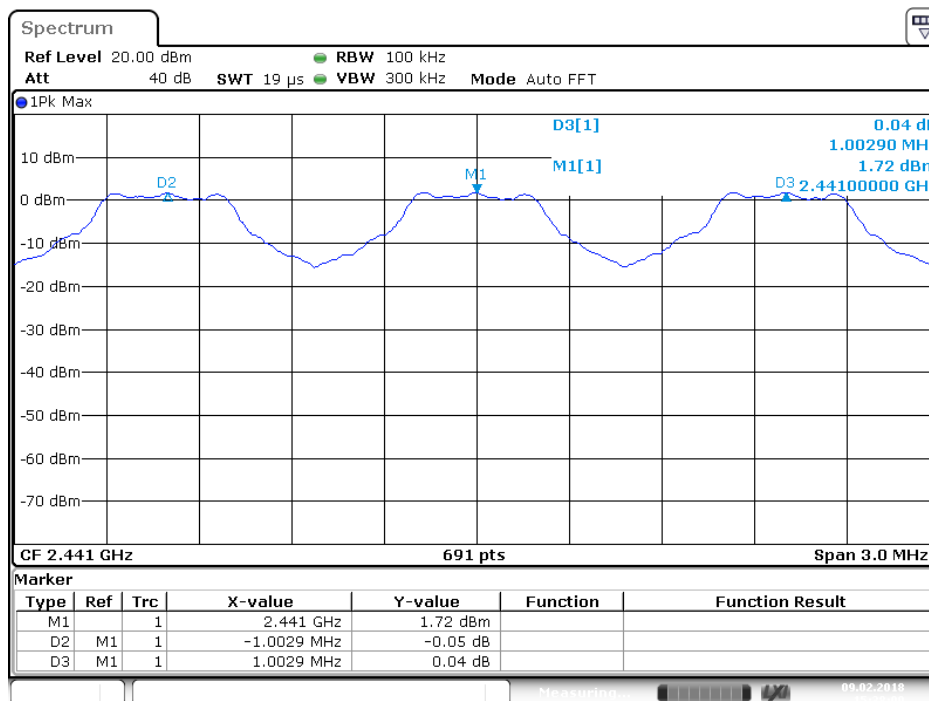
EDR Mode

Low channel



Date: 9.FEB.2018 15:36:34

Middle channel



Date: 9.FEB.2018 15:38:00

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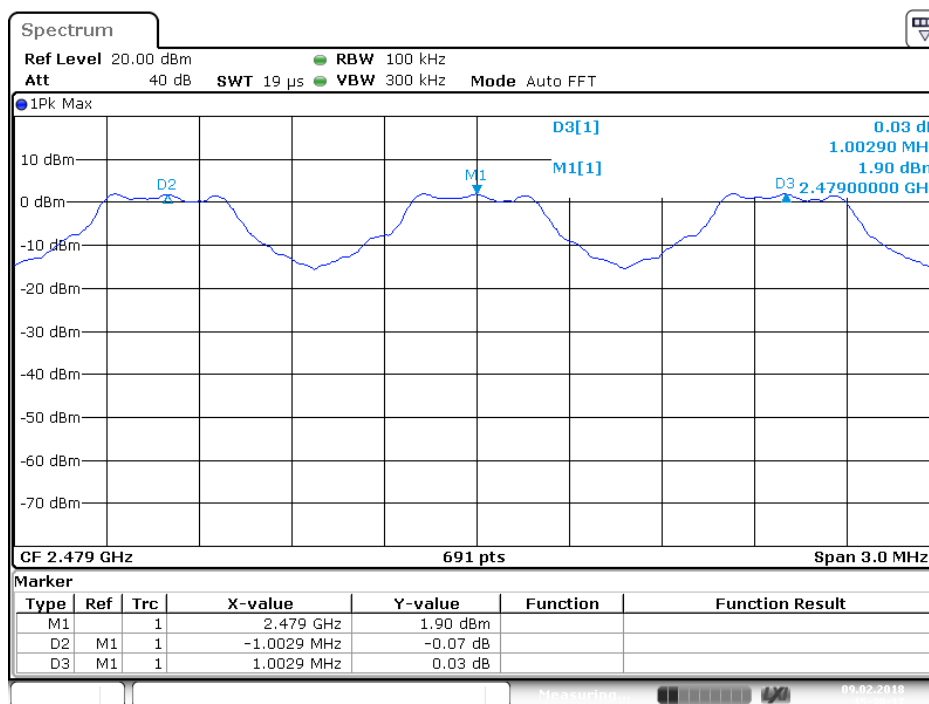
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High channel



Date: 9.FEB.2018 15:39:18

7. NUMBER OF HOPPING FREQUENCY TEST

7.1. Block Diagram of Test Setup



(EUT: Wireless Stereo Earbuds)

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

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

7.3. The Requirement For RSS-247 Section 5.1(d)

RSS-247 Section 5.1(d): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

7.4. EUT Configuration on Measurement

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.

7.5. Operating Condition of EUT

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

7.5.2. Turn on the power of all equipment.

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

7.6.Test Procedure

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

7.6.2.Set the spectrum analyzer as Span=90MHz, RBW=100 kHz, VBW=300 kHz.

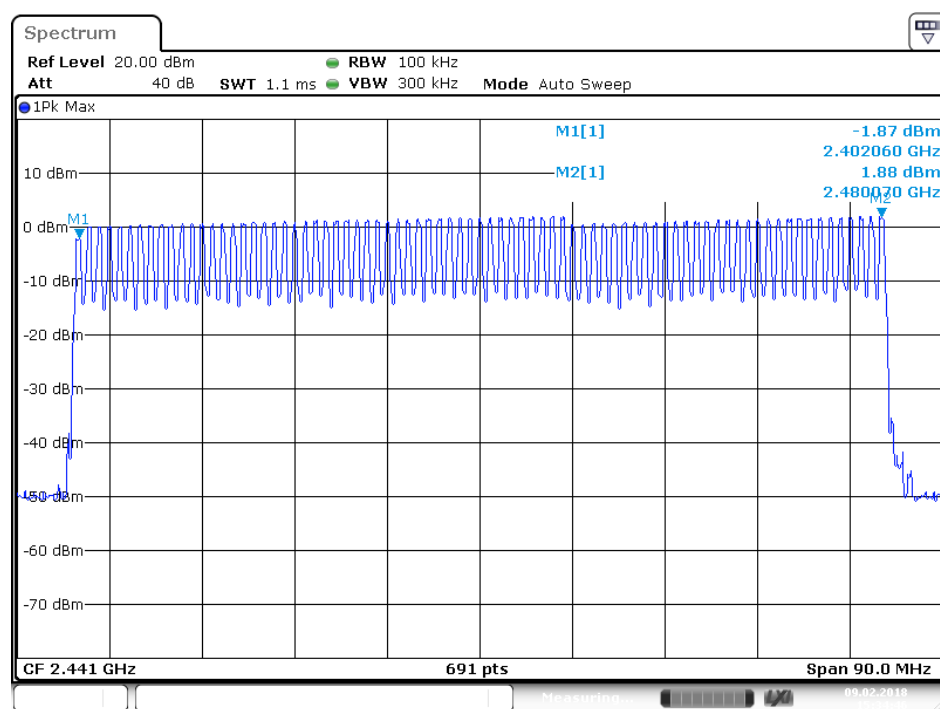
7.6.3.Max hold, view and count how many channel in the band.

7.7.Test Result

Total number of hopping channel	Measurement result(CH)	Limit(CH)
	79	≥ 15

The spectrum analyzer plots are attached as below.

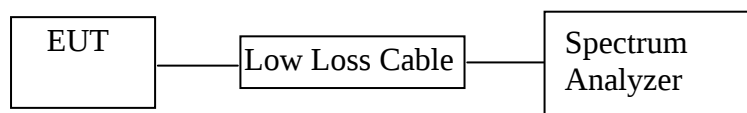
Number of hopping channels(GFSK)



Date: 9.FEB.2018 15:34:46

8. DWELL TIME TEST

8.1. Block Diagram of Test Setup



(EUT: Wireless Stereo Earbuds)

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

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. The Requirement For Section RSS-247 Section 5.1(d)

RSS-247 Section 5.1(d): 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.

8.4. EUT Configuration on Measurement

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.

8.5. Operating Condition of EUT

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

8.5.2. Turn on the power of all equipment.

8.5.3. 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.

8.6. Test Procedure

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

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

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

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

8.7. Test Result

BDR Mode

Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2402	0.420	134.40	400
	2441	0.420	134.40	400
	2480	0.428	136.96	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(2 \times 79)) \times 31.6$				
DH3	2402	1.696	271.36	400
	2441	1.696	271.36	400
	2480	1.696	271.36	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(4 \times 79)) \times 31.6$				
DH5	2402	2.957	315.41	400
	2441	2.957	315.41	400
	2480	2.957	315.41	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(6 \times 79)) \times 31.6$				

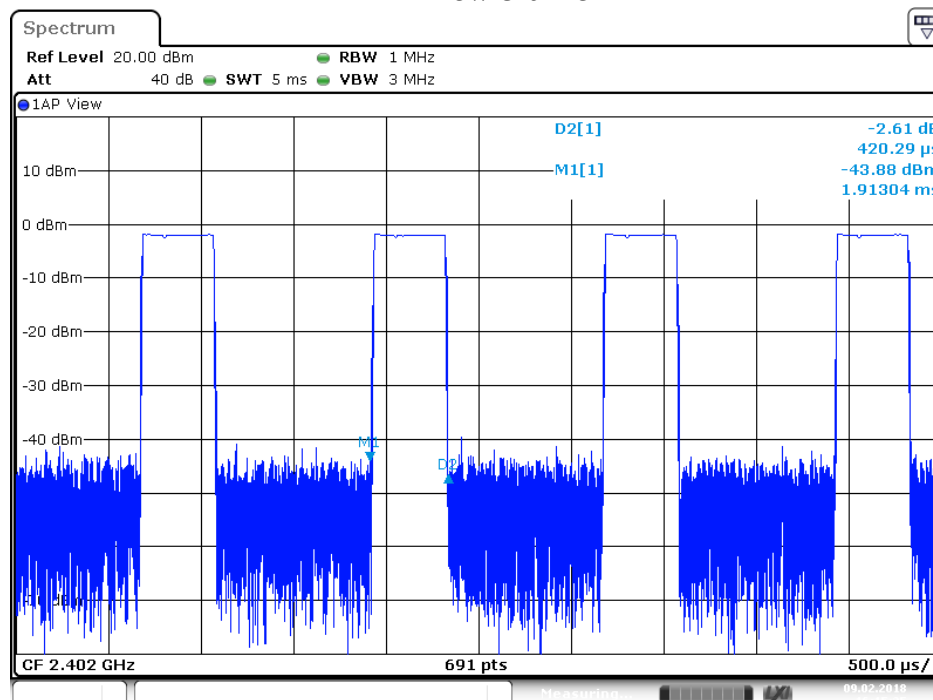
EDR Mode

Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2402	0.435	139.20	400
	2441	0.435	139.20	400
	2480	0.435	139.20	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(2 \times 79)) \times 31.6$				
DH3	2402	1.696	271.36	400
	2441	1.710	273.30	400
	2480	1.710	273.30	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(4 \times 79)) \times 31.6$				
DH5	2402	2.978	317.65	400
	2441	2.978	317.65	400
	2480	2.978	317.65	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(6 \times 79)) \times 31.6$				

The spectrum analyzer plots are attached as below.

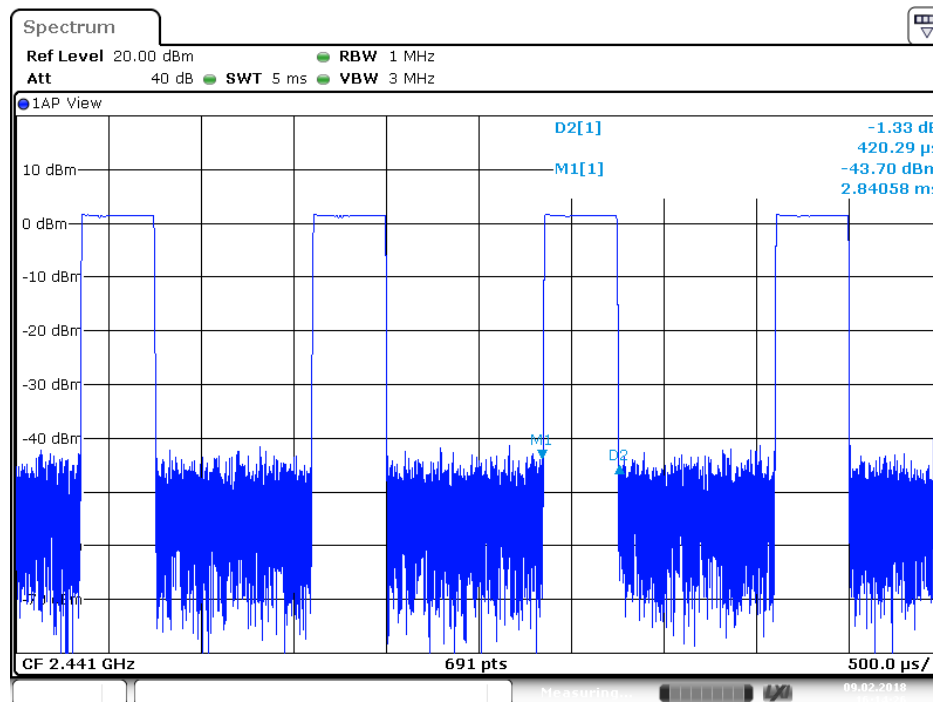
BDR Mode

DH1 Low channel



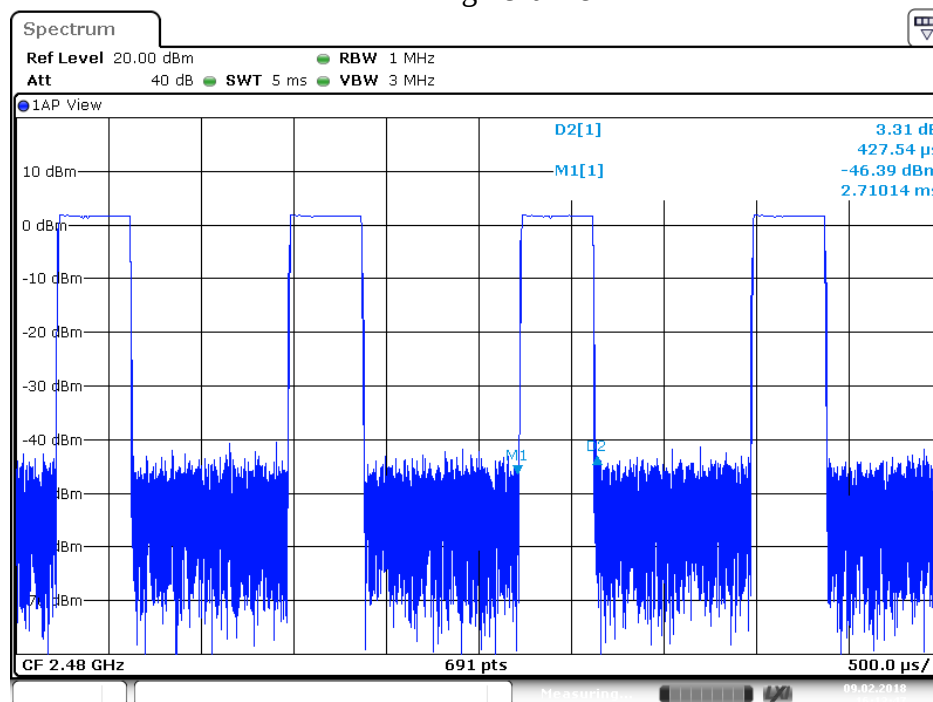
Date: 9.FEB.2018 16:15:35

DH1 Middle channel



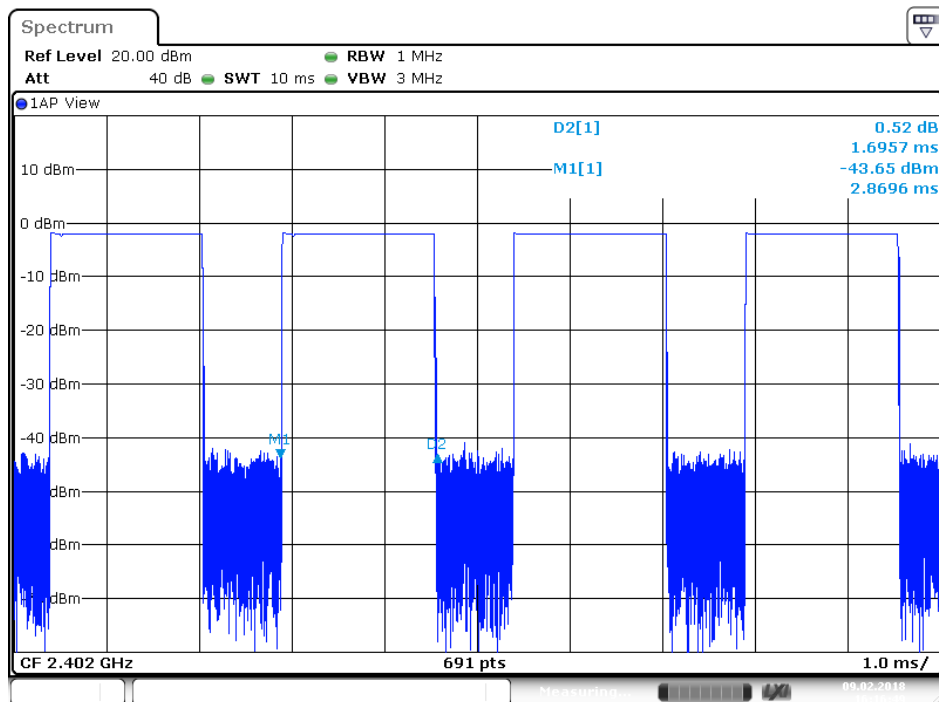
Date: 9.FEB.2018 16:14:26

DH1 High channel

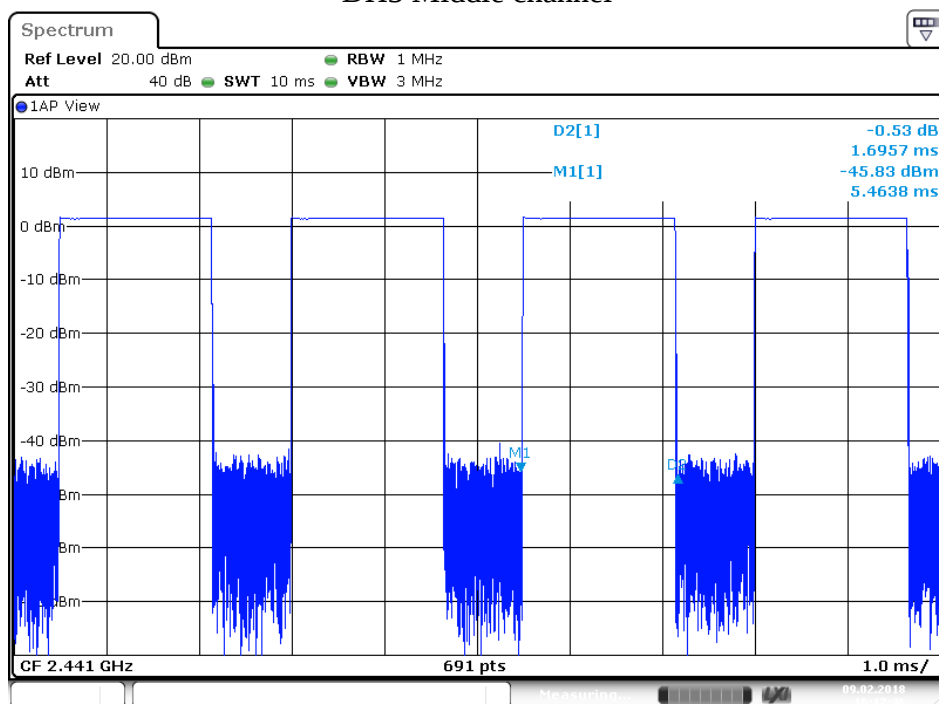


Date: 9.FEB.2018 16:13:47

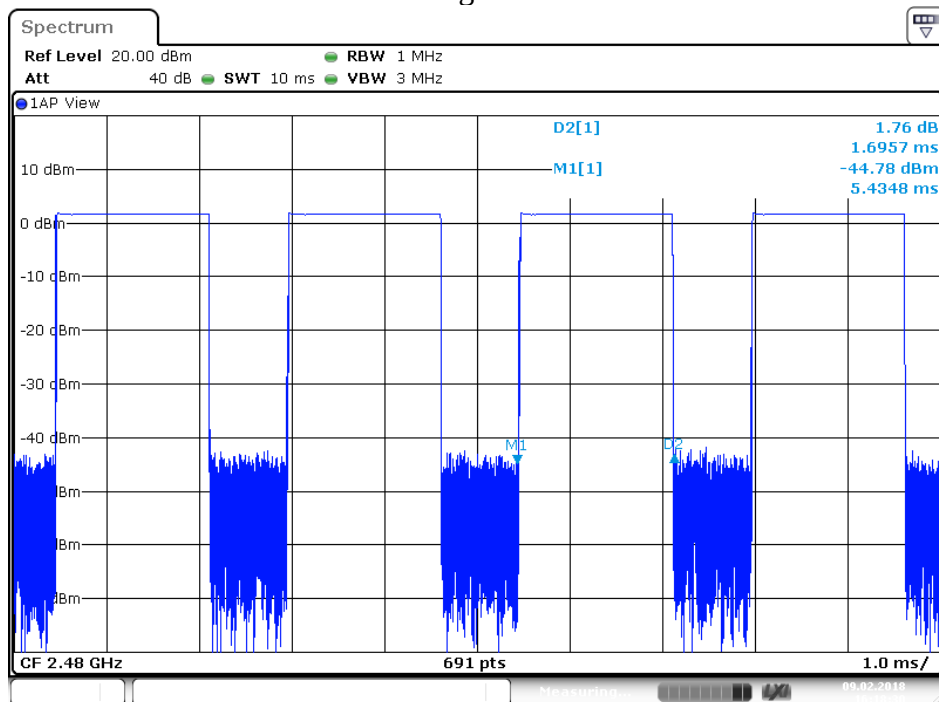
DH3 Low channel



DH3 Middle channel

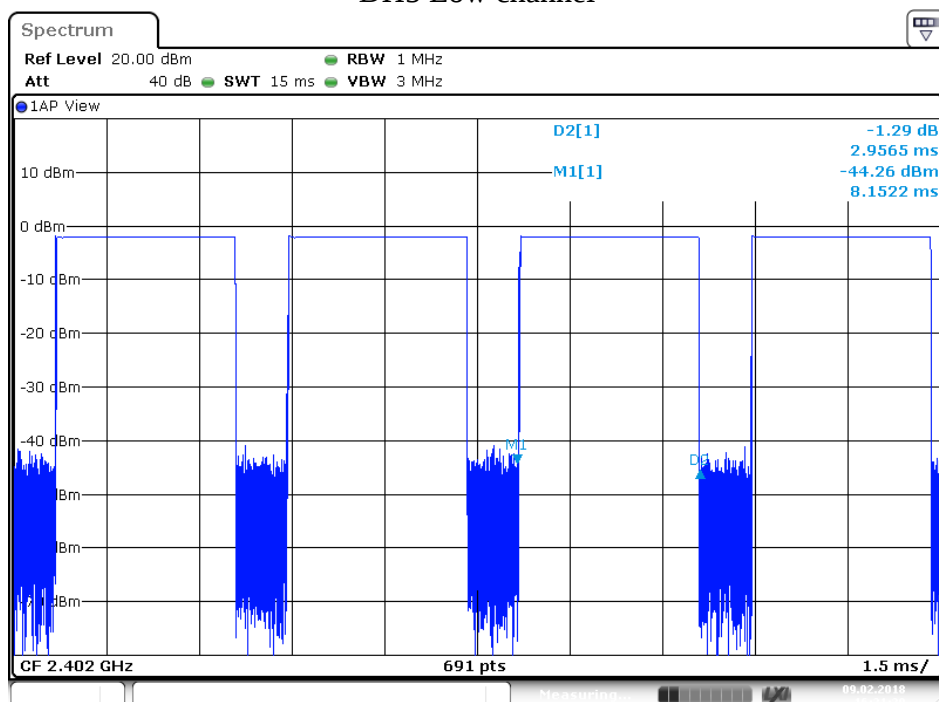


DH3 High channel



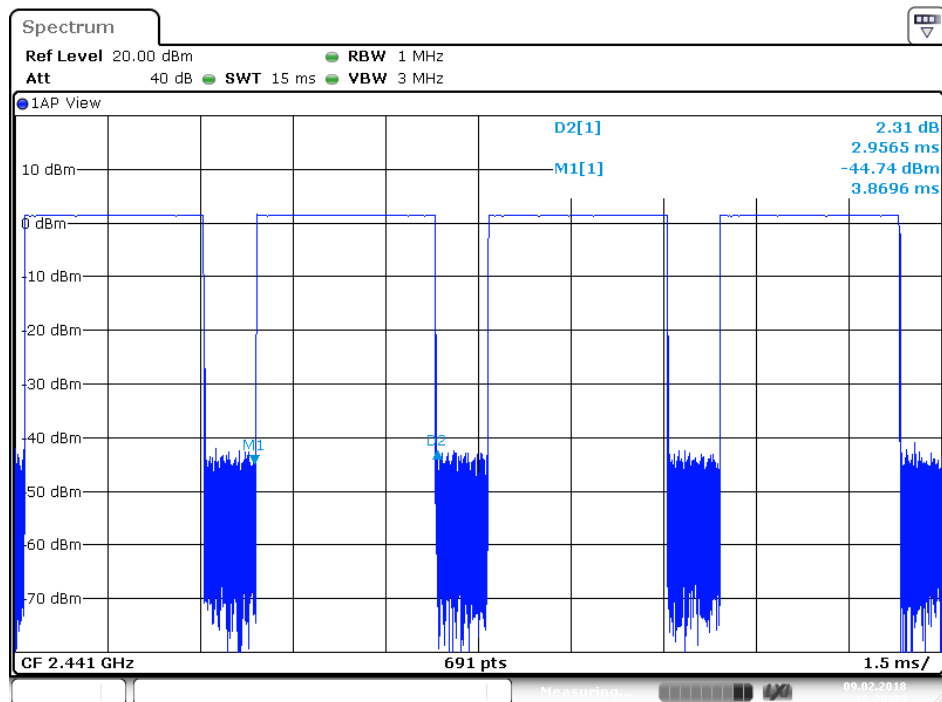
Date: 9.FEB.2018 16:18:30

DH5 Low channel



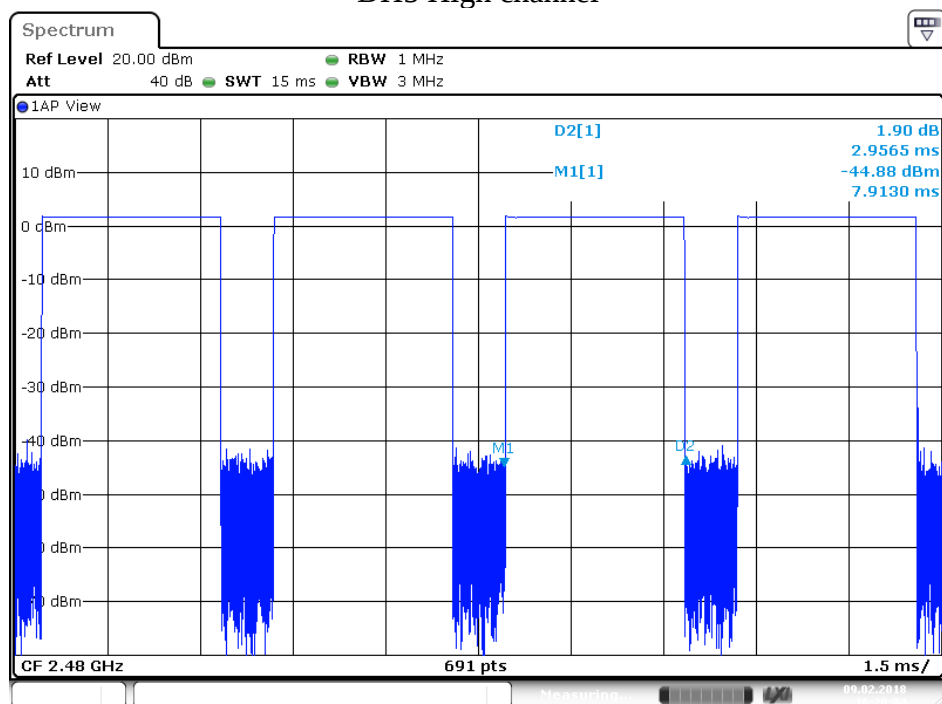
Date: 9.FEB.2018 16:21:20

DH5 Middle channel



Date: 9.FEB.2018 16:20:39

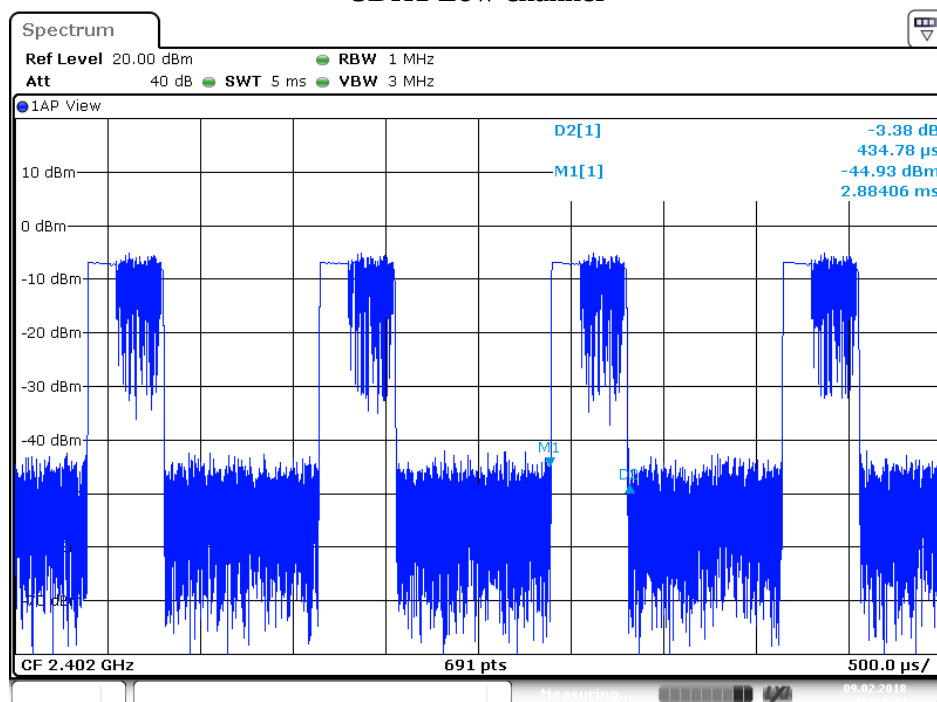
DH5 High channel



Date: 9.FEB.2018 16:20:05

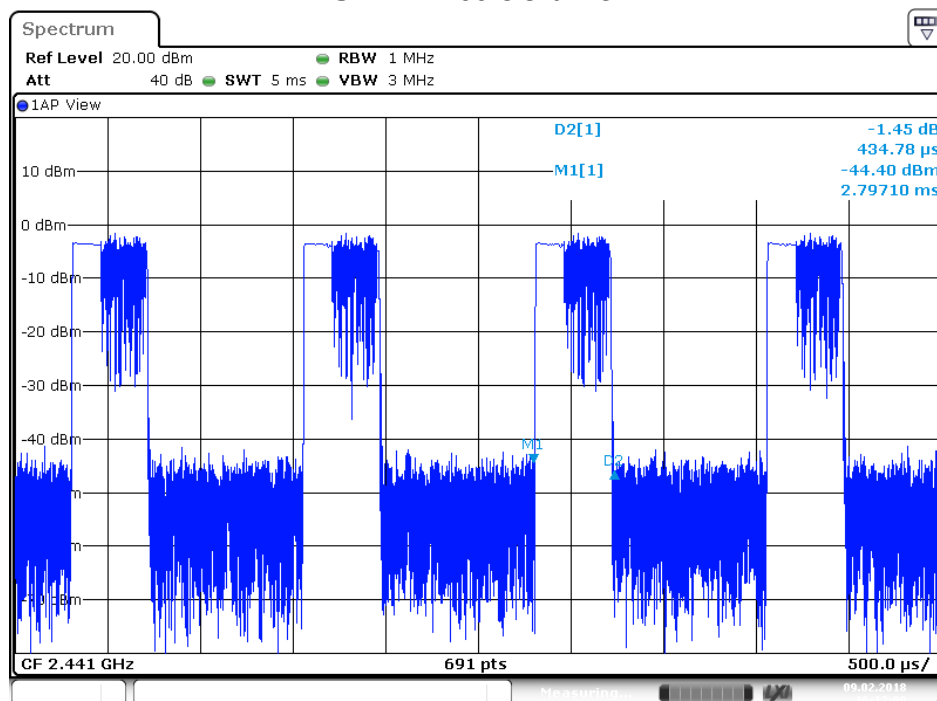
EDR Mode

3DH1 Low channel



Date: 9.FEB.2018 16:11:24

3DH1 Middle channel



Date: 9.FEB.2018 16:12:00

shenzhen Accurate Technology Co., Ltd.

Address: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

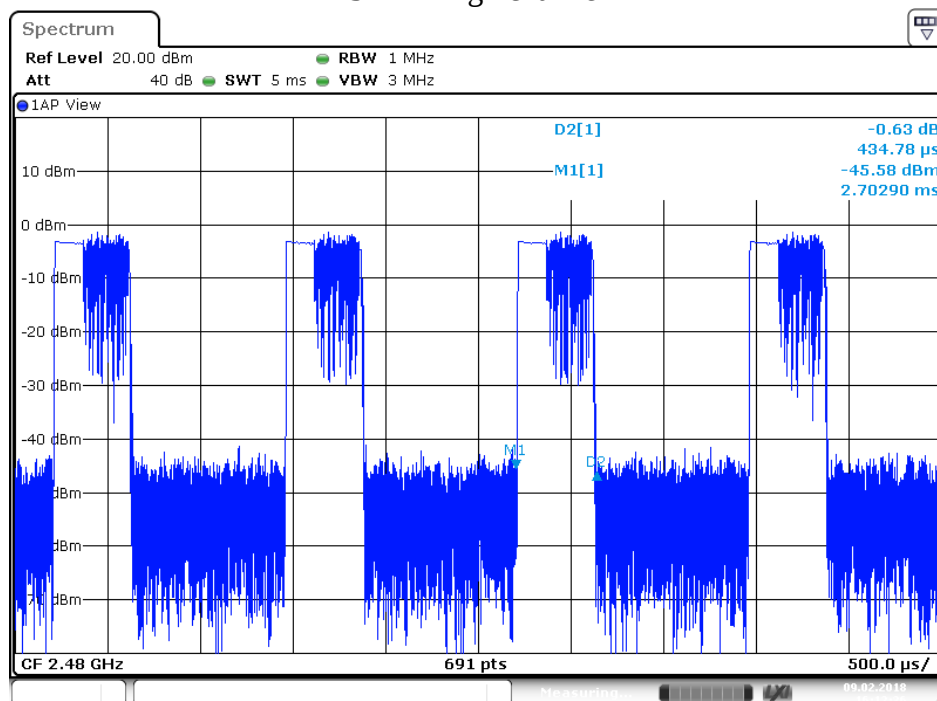
Tel: +86-755-26503290

Fax: +86-755-26503396

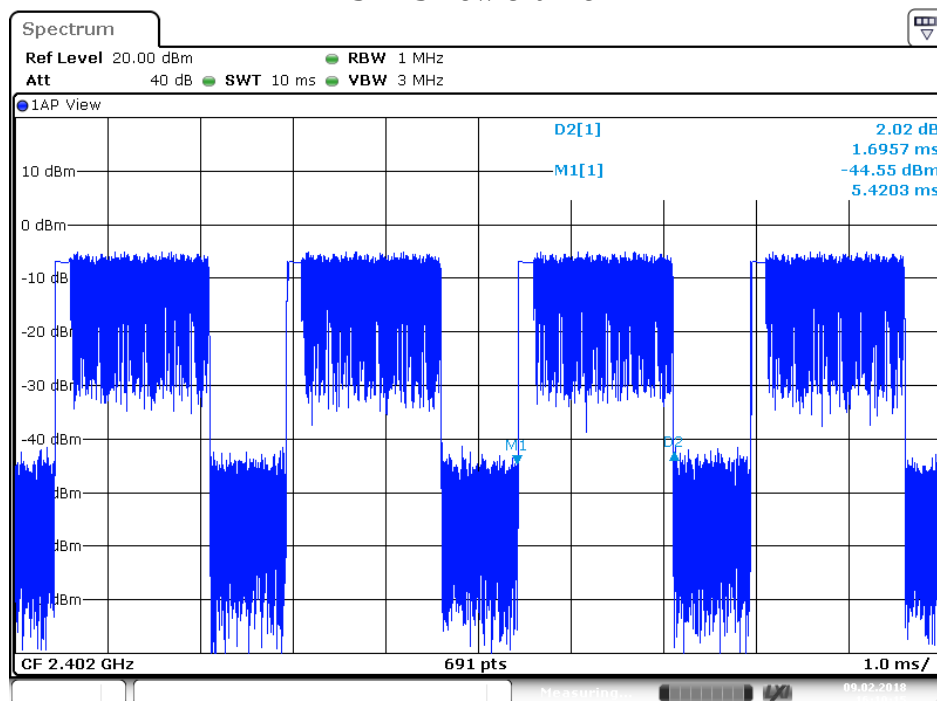
E-mail: webmaster@atc-lab.com

Http://www.atc-lab.com

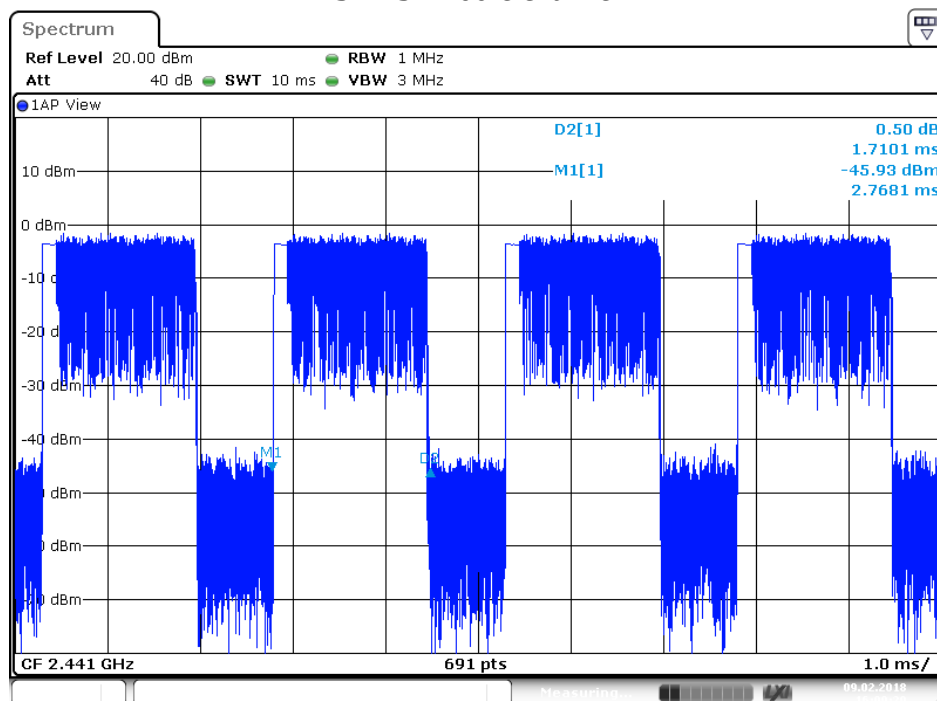
3DH1 High channel



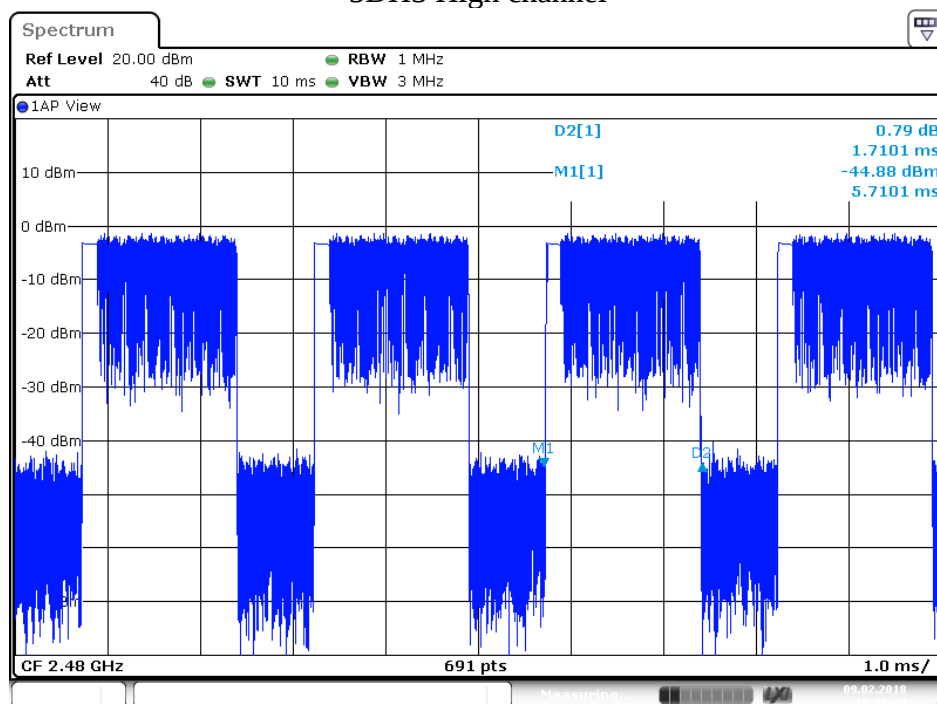
3DH3 Low channel



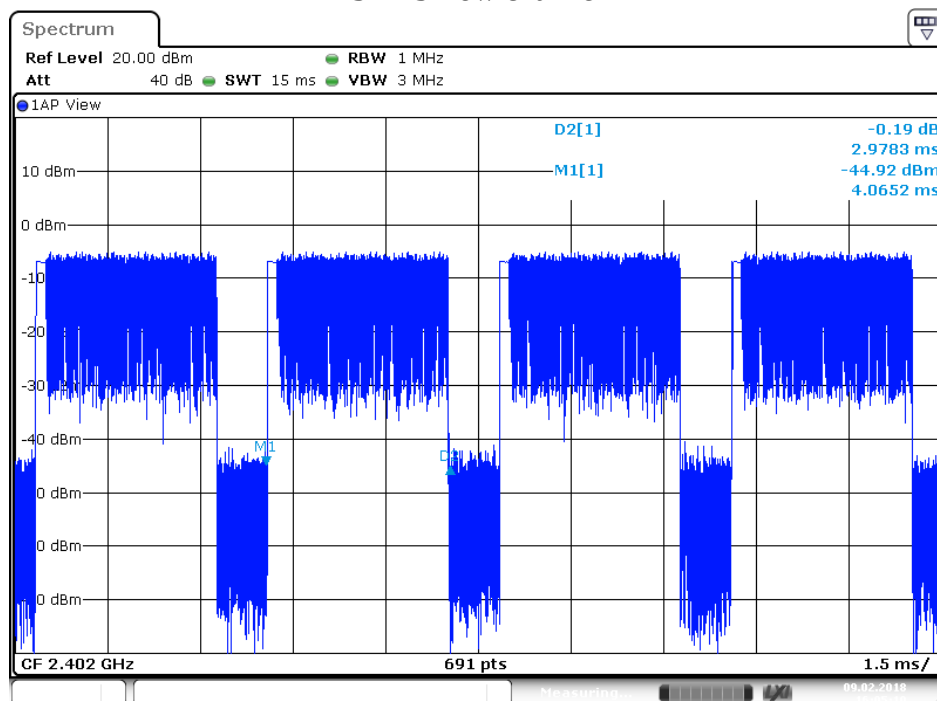
3DH3 Middle channel



3DH3 High channel

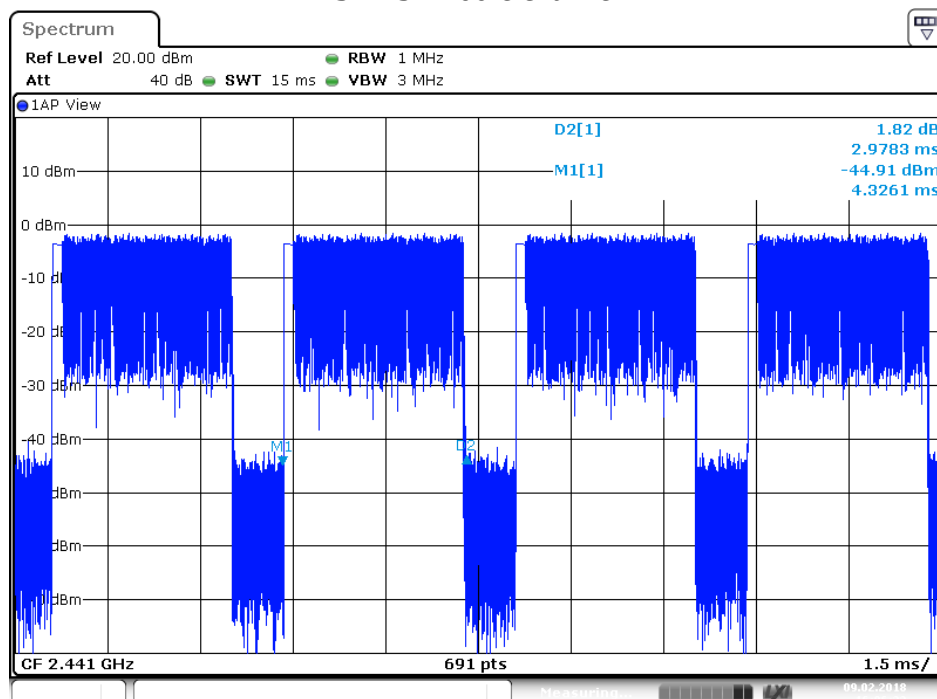


3DH5 Low channel



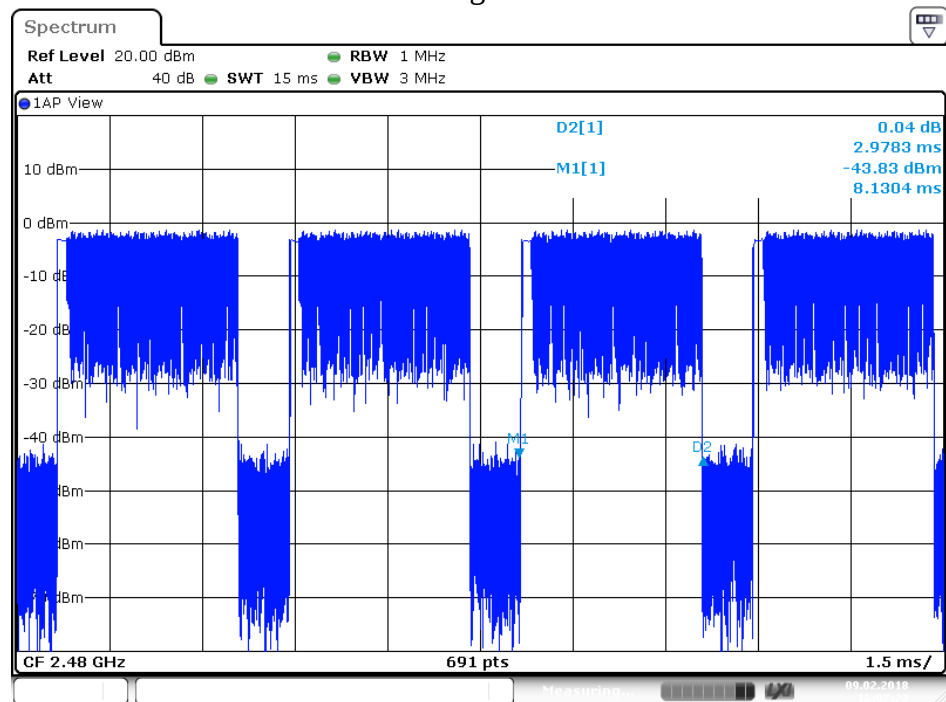
Date: 9.FEB.2018 16:05:10

3DH5 Middle channel



Date: 9.FEB.2018 16:06:33

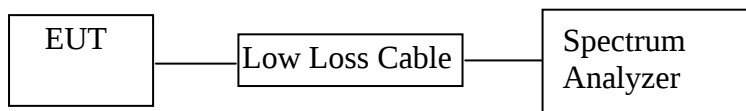
3DH5 High channel



Date: 9.FEB.2018 16:07:23

9. MAXIMUM PEAK OUTPUT POWER TEST

9.1. Block Diagram of Test Setup



(EUT: Wireless Stereo Earbuds)

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

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. The Requirement For RSS-247 Section 5.4(b)

RSS-247 Section 5.4(b): For FHSS operating in the band 2400-2483.5MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more hopping channels; the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 hopping channels.

The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e).

9.4. EUT Configuration on Measurement

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.

9.5. Operating Condition of EUT

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

9.5.2. Turn on the power of all equipment.

9.5.3. 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.

9.6.Test Procedure

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

9.6.2.Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz for BDR mode

9.6.3.Set RBW of spectrum analyzer to 3MHz and VBW to 10MHz for EDR mode

9.6.4.Measurement the maximum peak output power.

9.7.Test Result

BDR Mode

Frequency (MHz)	Maximum peak conducted output power (dBm/W)	e.i.r.p. (dBm/W)	Limits dBm / W
2402	-1.35/0.0007	0.55/0.0011	21 / 0.125
2441	2.17/0.0016	2.97/0.0020	21 / 0.125
2480	2.40/0.0017	3.20/0.0021	21 / 0.125

EDR Mode

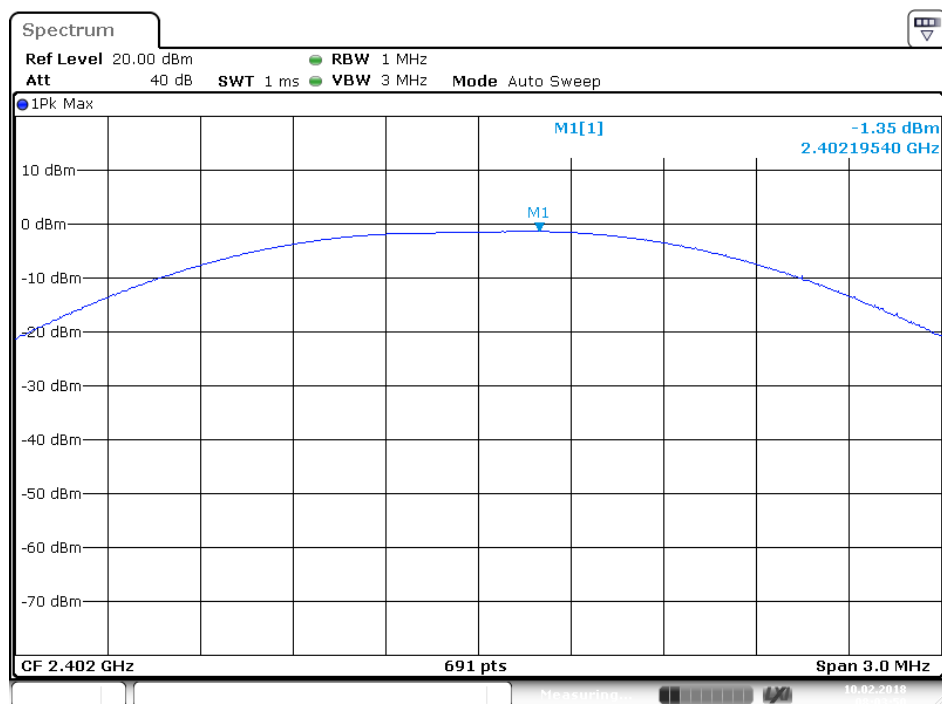
Frequency (MHz)	Maximum peak conducted output power (dBm/W)	e.i.r.p. (dBm/W)	Limits dBm / W
2402	-4.05/0.0004	-3.25/0.0005	21 / 0.125
2441	-0.69/0.0009	0.11/0.0010	21 / 0.125
2480	-0.43/0.0009	0.37/0.0011	21 / 0.125

Note: e.i.r.p= Maximum peak conducted output power+Antenna gain(0.8dBi)

The spectrum analyzer plots are attached as below.

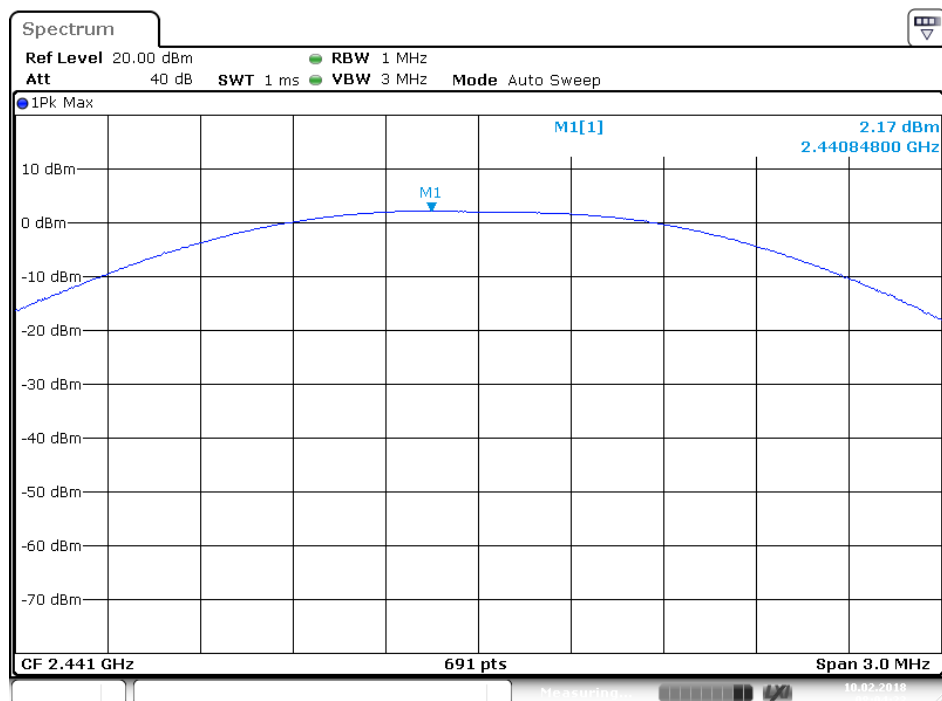
BDR Mode

Low channel



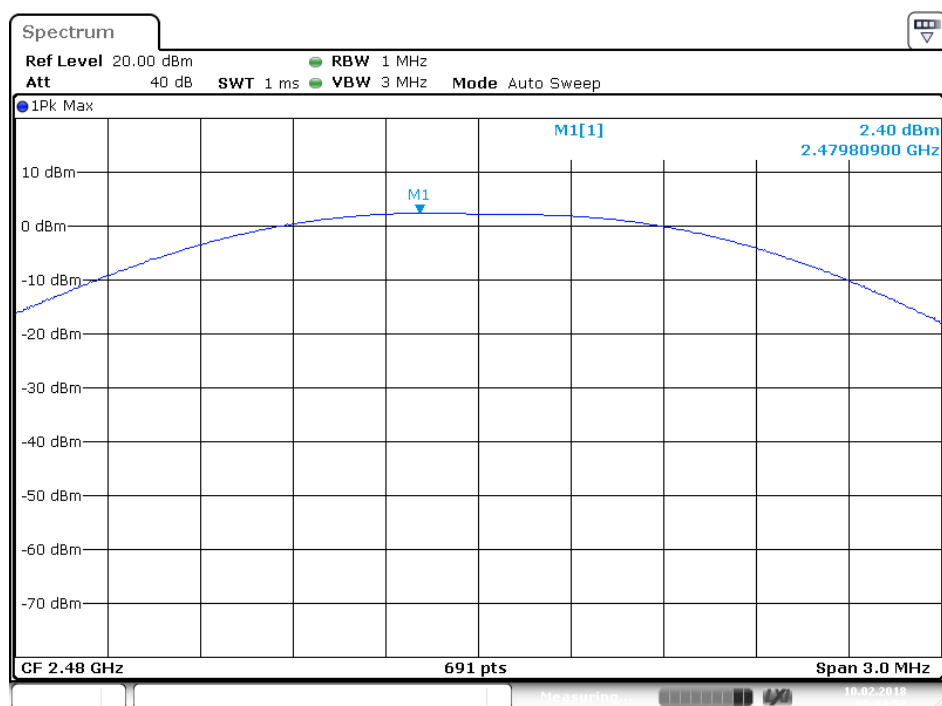
Date: 10.FEB.2018 08:03:49

Middle channel



Date: 10.FEB.2018 08:04:22

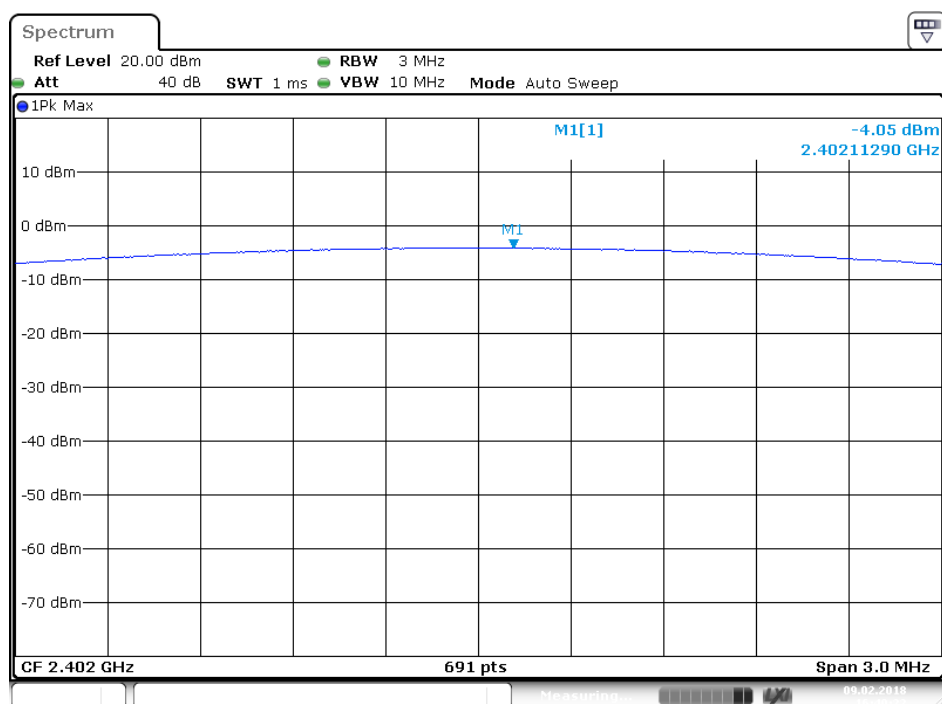
High channel



Date: 10.FEB.2018 08:04:50

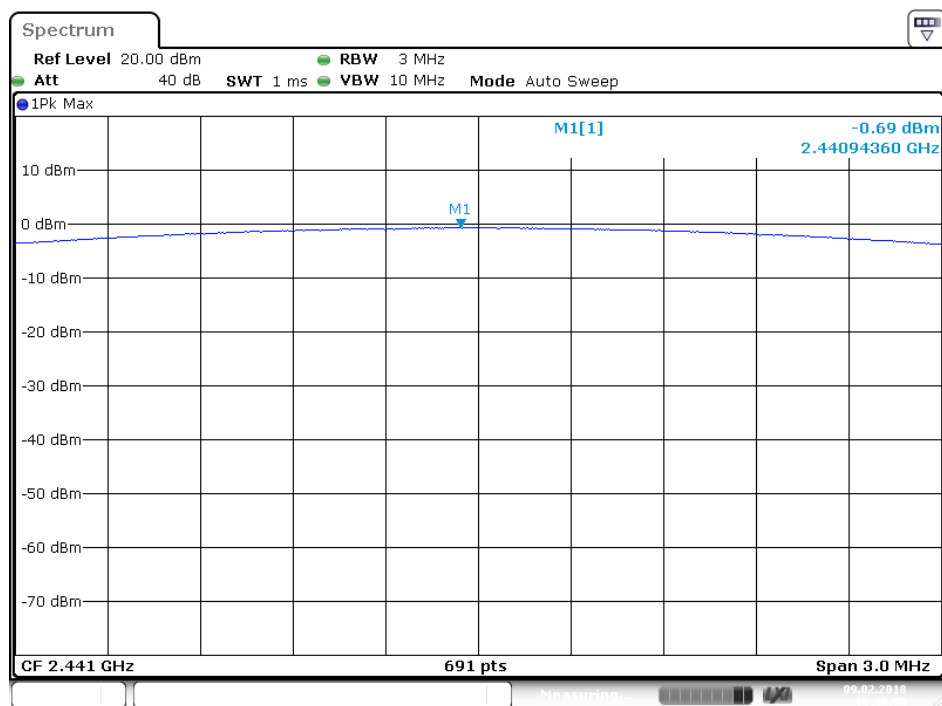
EDR Mode

Low channel



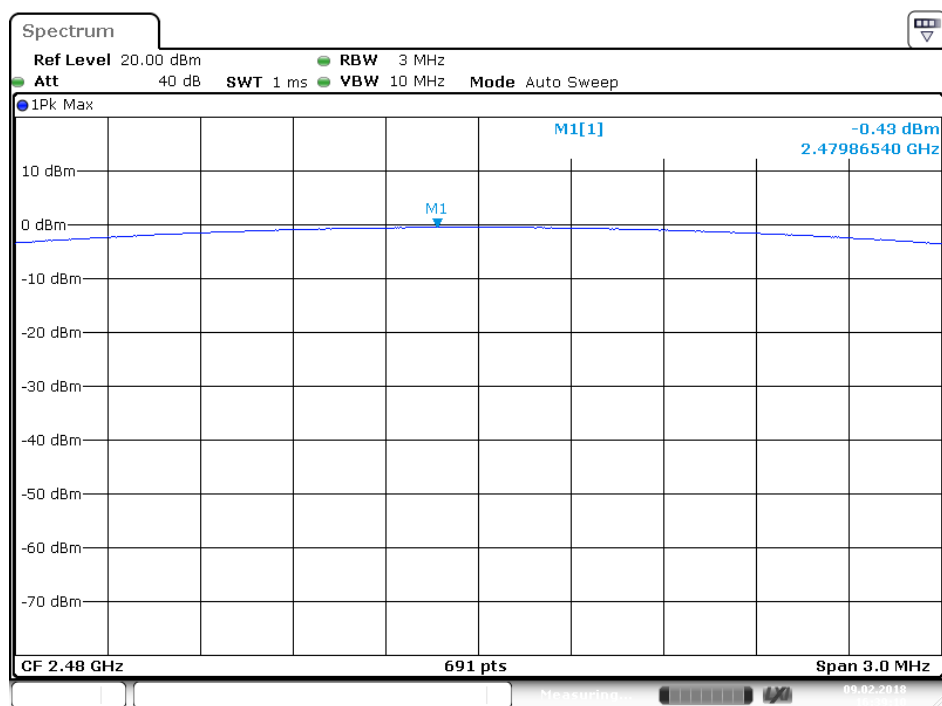
Date: 9.FEB.2018 16:40:23

Middle channel



Date: 9.FEB.2018 16:39:50

High channel

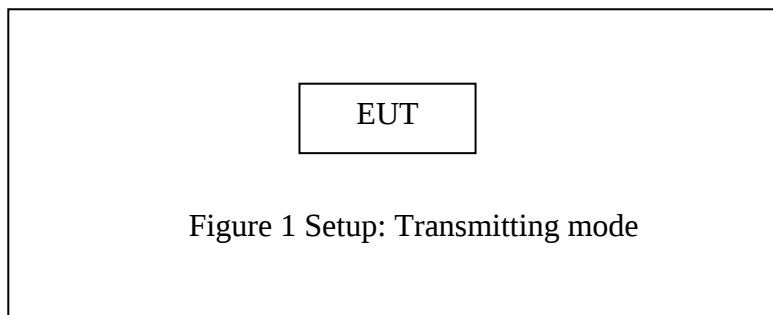


Date: 9.FEB.2018 16:39:10

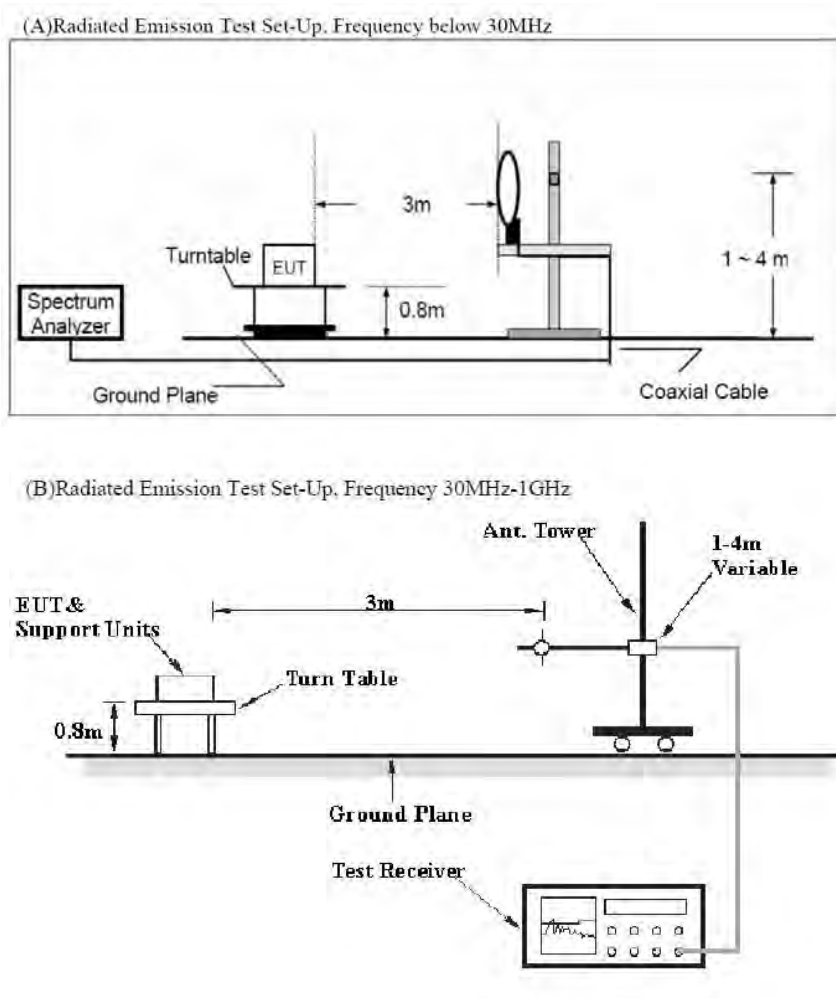
10.RADIATED EMISSION TEST

10.1.Block Diagram of Test Setup

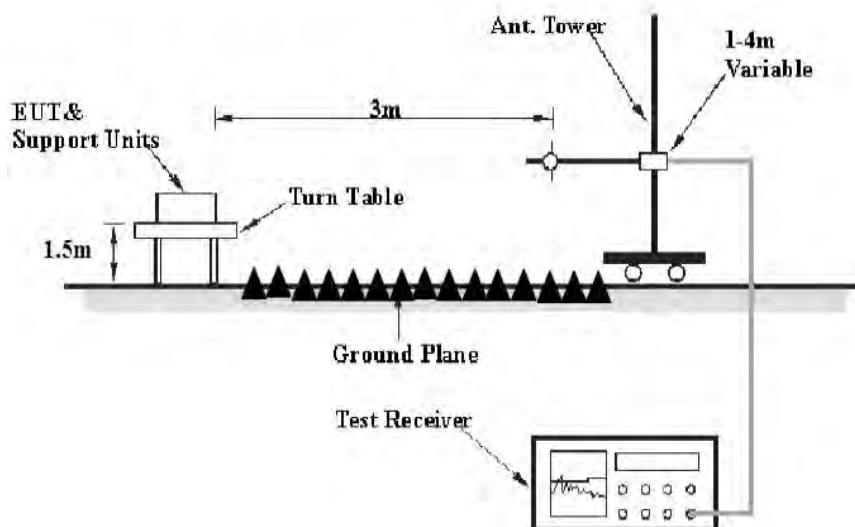
10.1.1.Block diagram of connection between the EUT and peripherals



10.1.2.Semi-Anechoic Chamber Test Setup Diagram



(C) Radiated Emission Test Set-Up, Frequency above 1GHz



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			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510

²Above 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 Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

10.4.Configuration of EUT on Measurement

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. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground (Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground (Above 1GHz). 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 worst case position data was reported.

During the radiated emission test, 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 worst-case emissions are reported.

10.6.Data Sample

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

Frequency(MHz) = Emission frequency in MHz

Reading(dB μ v) = Uncorrected Analyzer/Receiver reading

Factor (dB/m) = Antenna factor + Cable Loss – Amplifier gain

Result(dB μ v/m) = Reading(dB μ v) + Factor(dB/m)

Limit (dB μ v/m) = Limit stated in standard

Margin (dB) = Result(dB μ v/m) - Limit (dB μ v/m)

QP = Quasi-peak Reading

Calculation Formula:

Margin(dB) = Result (dB μ V/m)–Limit(dB μ V/m)

Result(dB μ V/m)= Reading(dB μ V)+ 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.

10.7.The Field Strength of Radiation Emission Measurement Results

Note: 1.We tested GFSK mode, $\Pi/4$ -DQPSK Mode & 8QPSK mode and recorded the worst case data (GFSK mode) for all test mode.

The spectrum analyzer plots are attached as below.

9kHz-30MHz test data

ACCURATE TECHNOLOGY CO., LTD

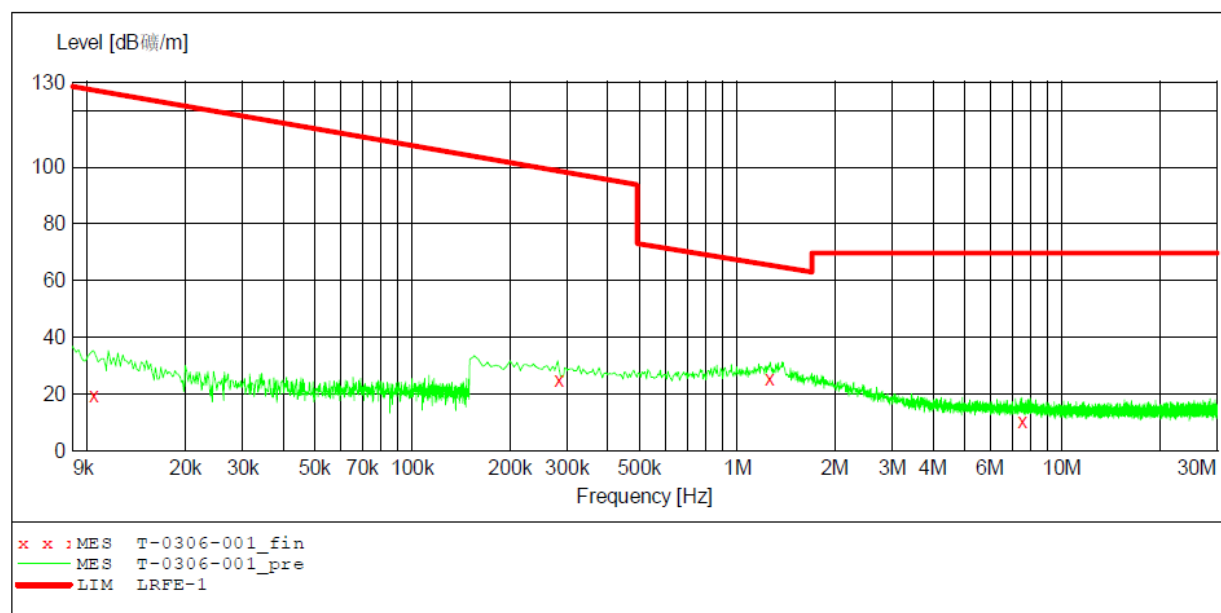
FCC Class B 3m Radiated

EUT: Wireless Stereo Earbuds M/N: NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: TX 2402MHz
 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: DC 3.7V
 Comment: X
 Start of Test: 2018-3-6 /

SCAN TABLE: "LFRE(E) Fin"

Short Description: _SUB_STD_VTERM2 1.70

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E



MEASUREMENT RESULT: "T-0306-001_fin"

2018-3-6

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.010400	19.30	20.1	127.2	107.9	QP	100.0	0.00	HORIZONTAL
0.280000	25.10	20.2	98.7	73.6	QP	100.0	0.00	HORIZONTAL
1.250000	25.20	20.4	65.5	40.3	QP	100.0	0.00	HORIZONTAL
7.495000	10.50	20.6	69.5	59.0	QP	100.0	0.00	HORIZONTAL

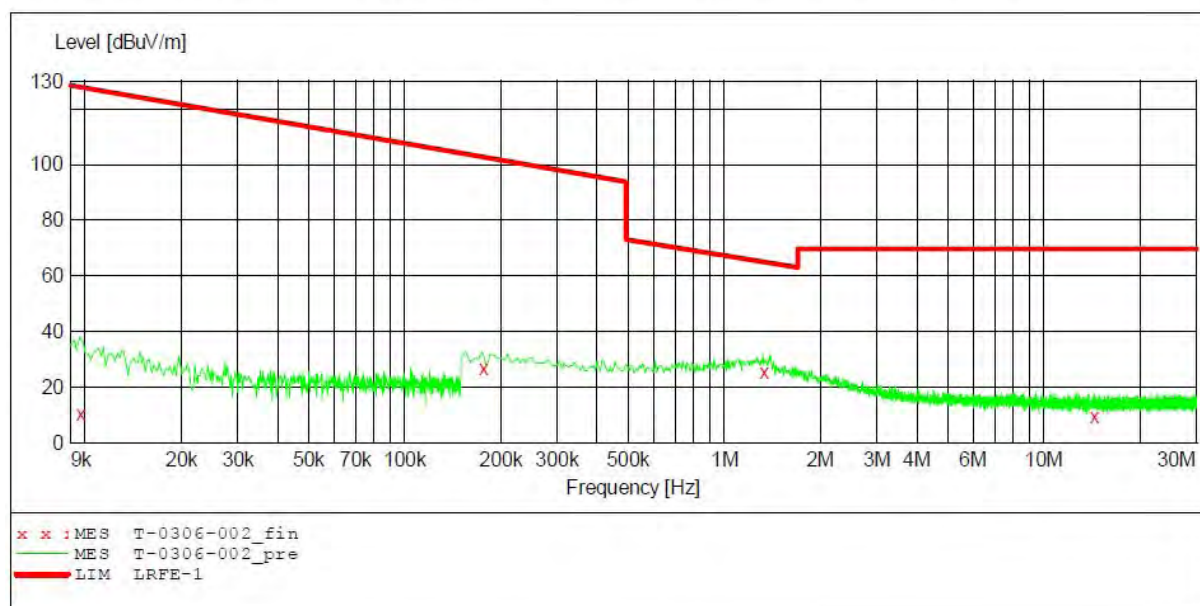
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3m Radiated

EUT: Wireless Stereo Earbuds M/N: NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: TX 2402MHz
 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: DC 3.7V
 Comment: Y
 Start of Test: 2018-3-6 /

SCAN TABLE: "LFRE(E) Fin"

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E



MEASUREMENT RESULT: "T-0306-002_fin"

2018-3-6

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.009600	10.50	20.1	127.9	117.4	QP	100.0	0.00	HORIZONTAL
0.175000	26.70	20.2	102.7	76.0	QP	100.0	0.00	HORIZONTAL
1.320000	25.50	20.4	65.0	39.5	QP	100.0	0.00	HORIZONTAL
14.355000	9.70	21.0	69.5	59.8	QP	100.0	0.00	HORIZONTAL

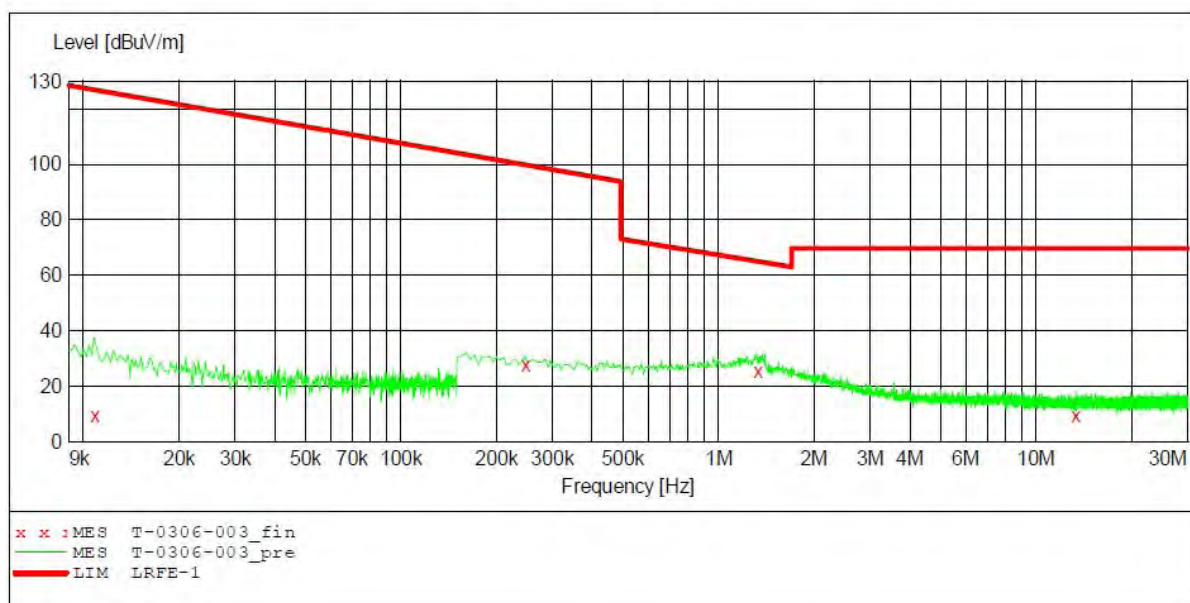
ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3m Radiated

EUT: Wireless Stereo Earbuds M/N:NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: TX 2402MHz
 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: DC 3.7V
 Comment: Z
 Start of Test: 2018-3-6 /

SCAN TABLE: "LFRE(E) Fin"

Short Description:		_SUB_STD_VTERM2 1.70					
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer	
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516E	
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E	



MEASUREMENT RESULT: "T-0306-003_fin"

2018-3-6

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.010800	9.70	20.1	126.9	117.2	QP	100.0	0.00	HORIZONTAL
0.245000	27.70	20.2	99.8	72.1	QP	100.0	0.00	HORIZONTAL
1.320000	25.50	20.4	65.0	39.5	QP	100.0	0.00	HORIZONTAL
13.320000	9.50	20.9	69.5	60.0	QP	100.0	0.00	HORIZONTAL

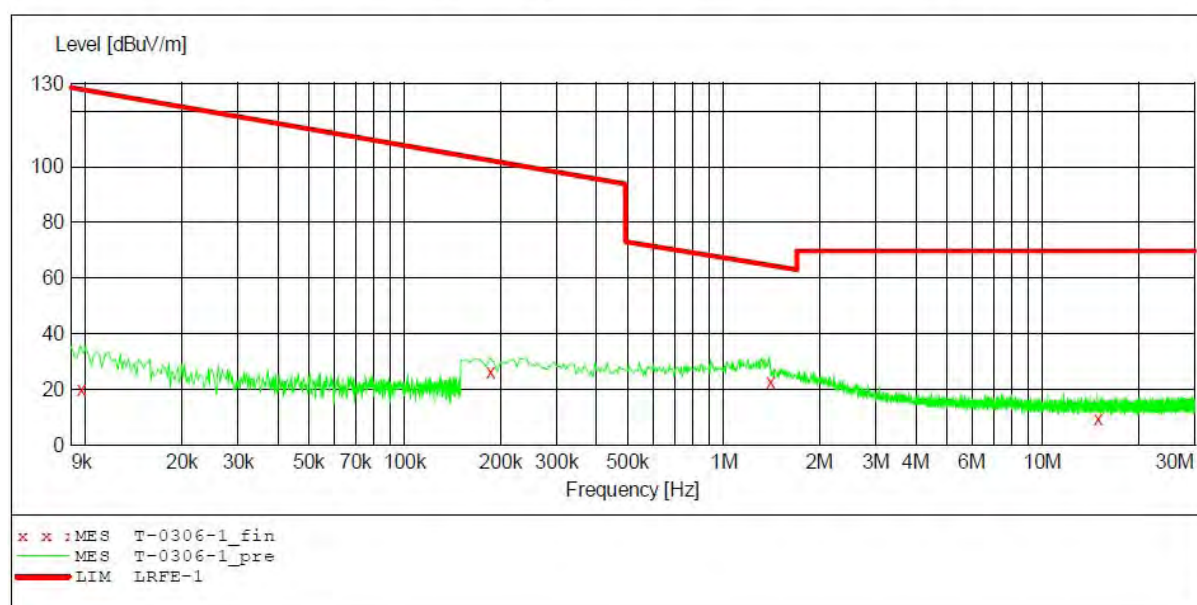
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3m Radiated

EUT: Wireless Stereo Earbuds M/N: NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: TX 2441MHz
 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: DC 3.7V
 Comment: X
 Start of Test: 2018-3-6 /

SCAN TABLE: "LFRE(E) Fin"

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E



MEASUREMENT RESULT: "T-0306-1_fin"

2018-3-6

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.009600	19.90	20.1	127.9	108.0	QP	100.0	0.00	HORIZONTAL
0.185000	26.40	20.2	102.3	75.9	QP	100.0	0.00	HORIZONTAL
1.395000	22.60	20.4	64.6	42.0	QP	100.0	0.00	HORIZONTAL
14.840000	9.60	21.1	69.5	59.9	QP	100.0	0.00	HORIZONTAL

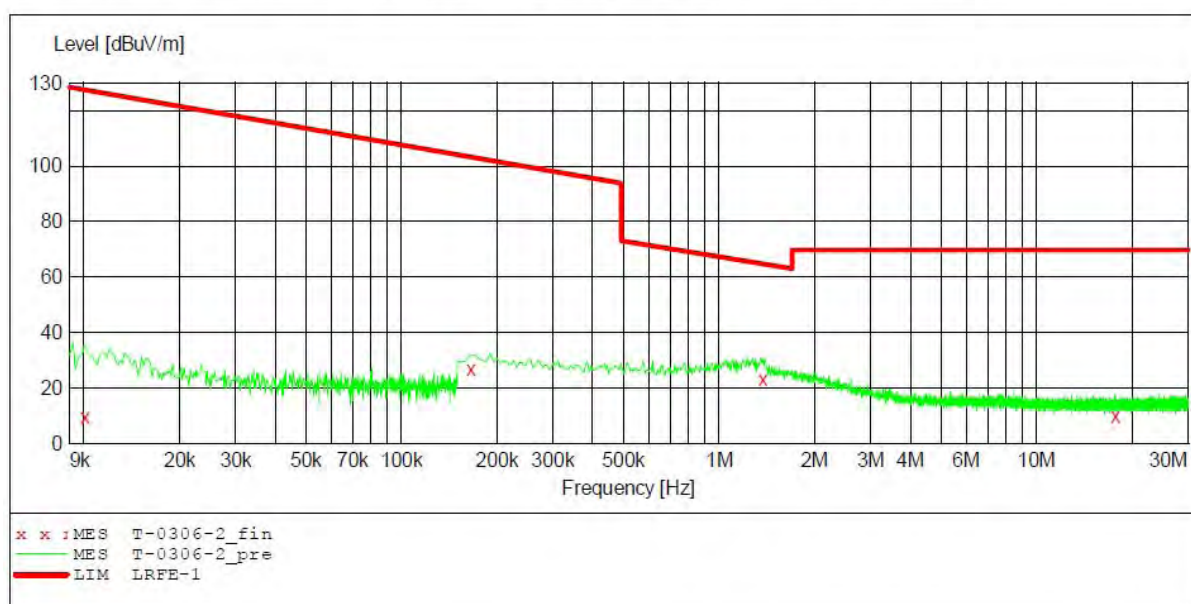
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3m Radiated

EUT: Wireless Stereo Earbuds M/N: NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: TX 2441MHz
 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: DC 3.7V
 Comment: Y
 Start of Test: 2018-3-6 /

SCAN TABLE: "LFRE(E) Fin"

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E



MEASUREMENT RESULT: "T-0306-2_fin"

2018-3-6

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.010000	9.60	20.1	127.6	118.0	QP	100.0	0.00	HORIZONTAL
0.165000	26.70	20.2	103.2	76.5	QP	100.0	0.00	HORIZONTAL
1.365000	22.90	20.4	64.8	41.9	QP	100.0	0.00	HORIZONTAL
17.630000	9.80	21.3	69.5	59.7	QP	100.0	0.00	HORIZONTAL

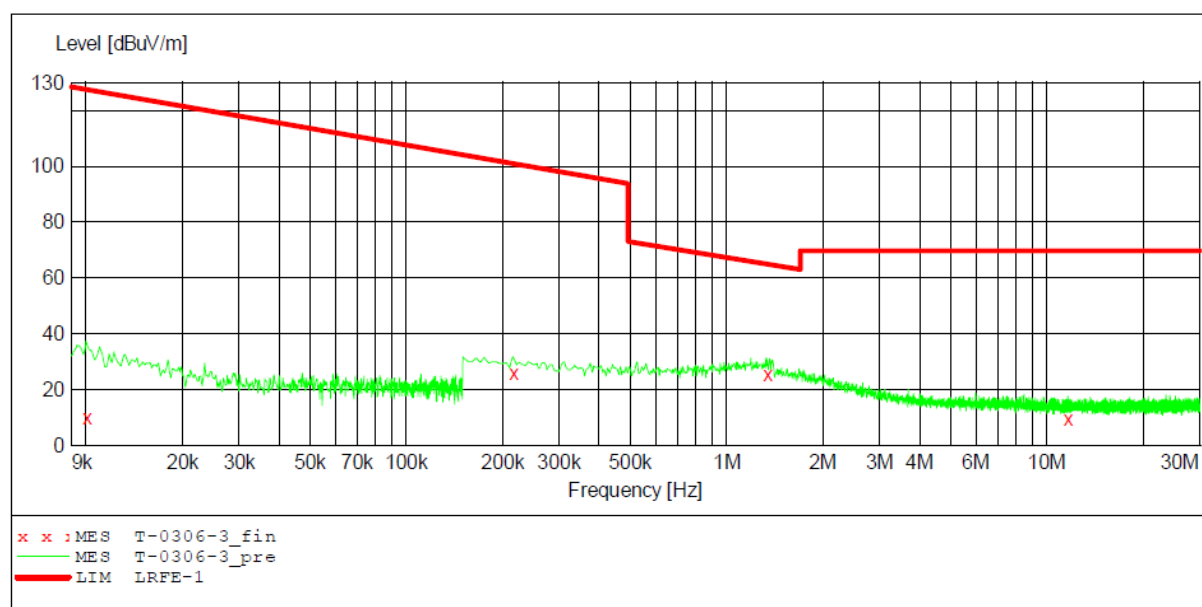
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3m Radiated

EUT: Wireless Stereo Earbuds M/N: NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: TX 2441MHz
 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: DC 3.7V
 Comment: Z
 Start of Test: 2018-3-6 /

SCAN TABLE: "LFRE(E) Fin"

Start	Stop	Step	_SUB_STD_VTERM2	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	1.70	QuasiPeak	1.0 s	200 Hz	1516E
150.0 kHz	30.0 MHz	5.0 kHz		QuasiPeak	1.0 s	9 kHz	1516E



MEASUREMENT RESULT: "T-0306-3_fin"

2018-3-6

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.010000	9.80	20.1	127.6	117.8	QP	100.0	0.00	HORIZONTAL
0.215000	25.80	20.2	101.0	75.2	QP	100.0	0.00	HORIZONTAL
1.340000	25.30	20.4	64.9	39.6	QP	100.0	0.00	HORIZONTAL
11.620000	9.40	20.8	69.5	60.1	QP	100.0	0.00	HORIZONTAL

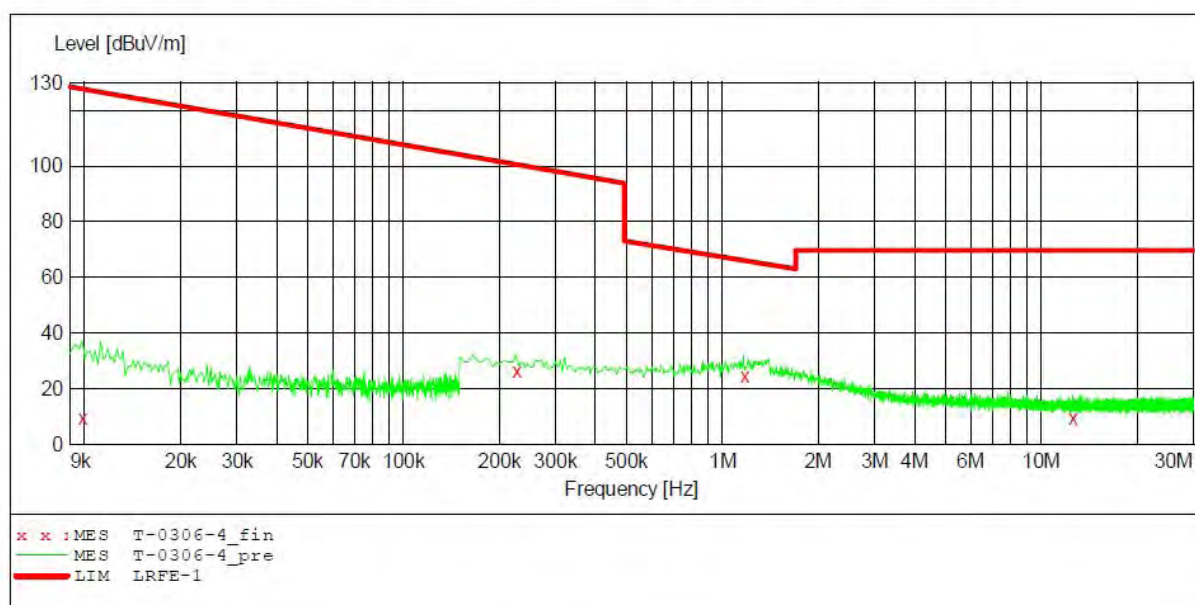
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3m Radiated

EUT: Wireless Stereo Earbuds M/N: NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: TX 2480MHz
 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: DC 3.7V
 Comment: X
 Start of Test: 2018-3-6 /

SCAN TABLE: "LFRE(E) Fin"

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E



MEASUREMENT RESULT: "T-0306-4_fin"

2018-3-6

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.009800	9.40	20.1	127.8	118.4	QP	100.0	0.00	HORIZONTAL
0.225000	26.10	20.2	100.6	74.5	QP	100.0	0.00	HORIZONTAL
1.165000	24.50	20.4	66.0	41.5	QP	100.0	0.00	HORIZONTAL
12.530000	9.50	20.9	69.5	60.0	QP	100.0	0.00	HORIZONTAL

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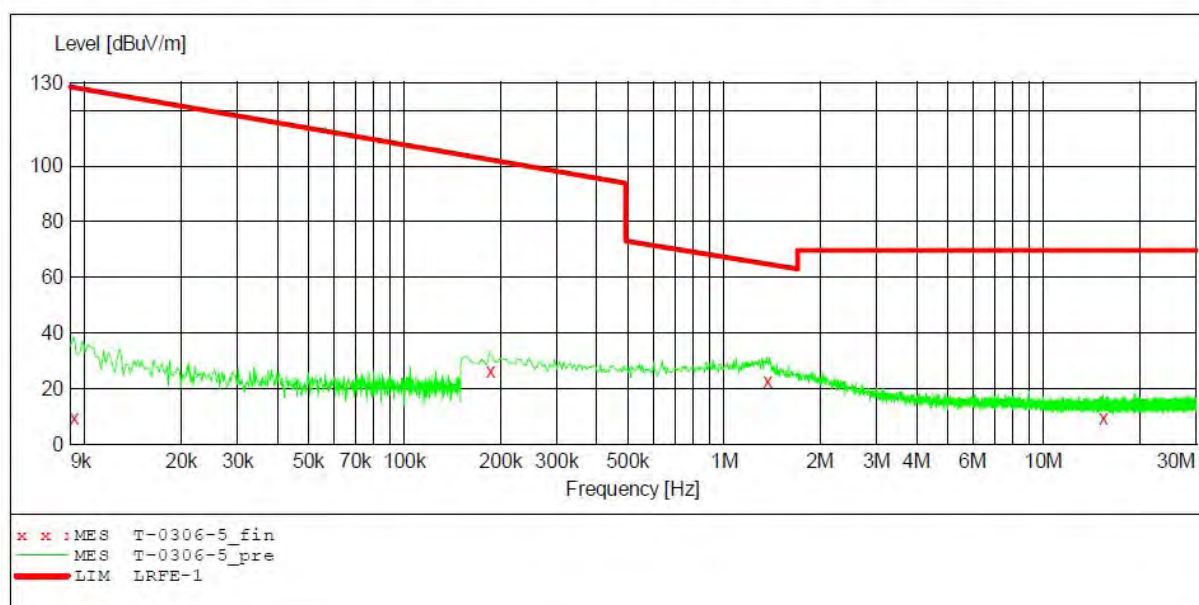
FCC Class B 3m Radiated

EUT: Wireless Stereo Earbuds M/N: NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: TX 2480MHz
 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: DC 3.7V
 Comment: Y
 Start of Test: 2018-3-6 /

SCAN TABLE: "LFRE(E) Fin"

Short Description: _SUB STD VTERM2 1.70

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E



MEASUREMENT RESULT: "T-0306-5_fin"

2018-3-6

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.009200	9.50	20.1	128.3	118.8	QP	100.0	0.00	HORIZONTAL
0.185000	26.30	20.2	102.3	76.0	QP	100.0	0.00	HORIZONTAL
1.360000	22.80	20.4	64.8	42.0	QP	100.0	0.00	HORIZONTAL
15.320000	9.70	21.1	69.5	59.8	QP	100.0	0.00	HORIZONTAL

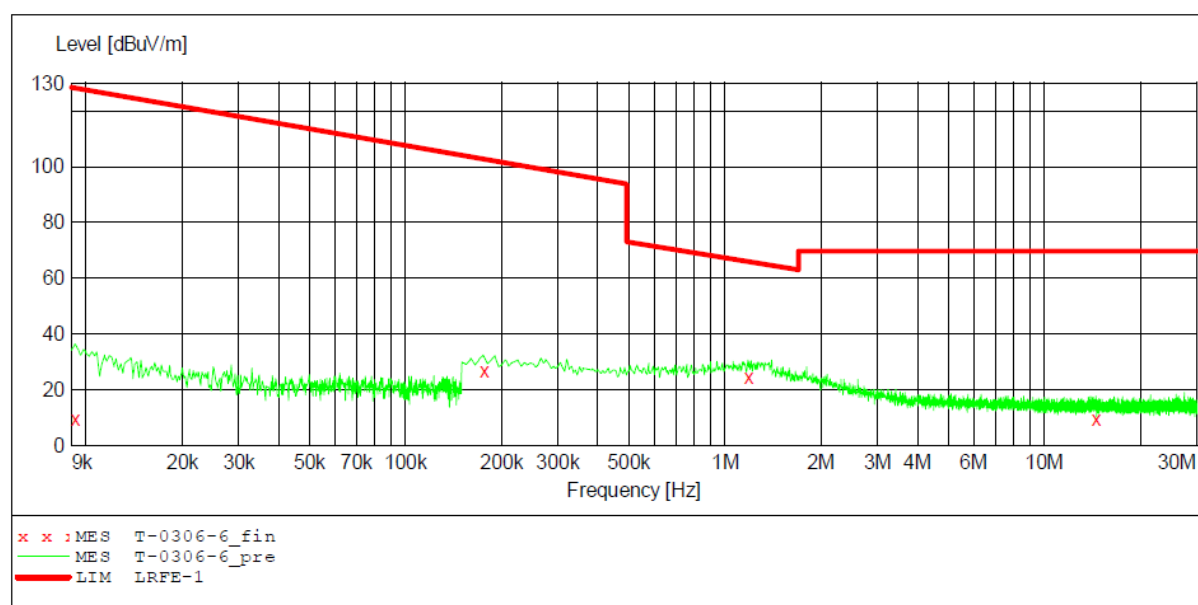
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3m Radiated

EUT: Wireless Stereo Earbuds M/N: NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: TX 2480MHz
 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: DC 3.7V
 Comment: Z
 Start of Test: 2018-3-6 /

SCAN TABLE: "LFRE(E) Fin"

Start	Stop	Step	_SUB_STD	VTERM2	1.70	IF	Transducer
Frequency	Frequency	Width	Detector	Meas.	Time	Bandw.	
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s		200 Hz	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s		9 kHz	1516E



MEASUREMENT RESULT: "T-0306-6_fin"

2018-3-6

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.009200	9.70	20.1	128.3	118.6	QP	100.0	0.00	HORIZONTAL
0.175000	26.50	20.2	102.7	76.2	QP	100.0	0.00	HORIZONTAL
1.180000	24.60	20.4	65.9	41.3	QP	100.0	0.00	HORIZONTAL
14.490000	9.50	21.0	69.5	60.0	QP	100.0	0.00	HORIZONTAL

30MHz-1000MHz test data



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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

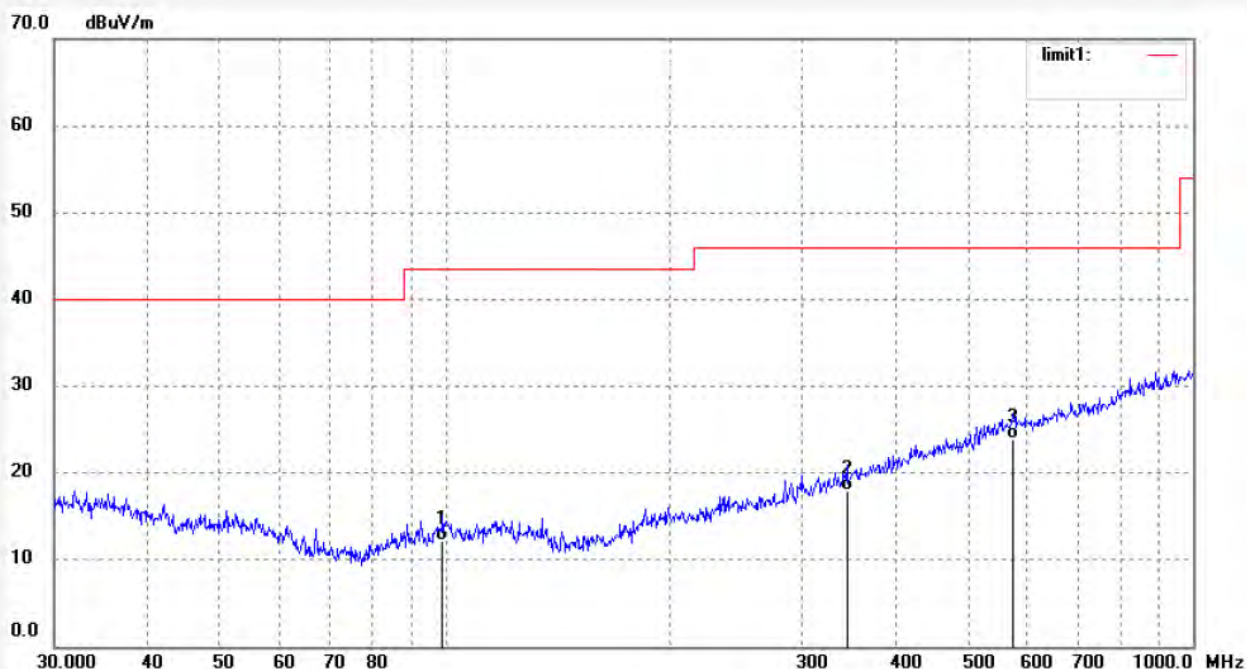
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LGW2018 #338
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Stereo Earbuds
Mode: TX 2402MHz
Model: NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal
Power Source: DC 3.7V
Date: 18/01/29/
Time:
Engineer Signature: WADE
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	99.1796	25.48	-13.33	12.15	43.50	-31.35	QP			
2	344.3854	25.53	-7.57	17.96	46.00	-28.04	QP			
3	574.6258	26.47	-2.63	23.84	46.00	-22.16	QP			

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Http://www.atc-lab.com

Job No.: LGW2018 #337

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2402MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Vertical

Power Source: DC 3.7V

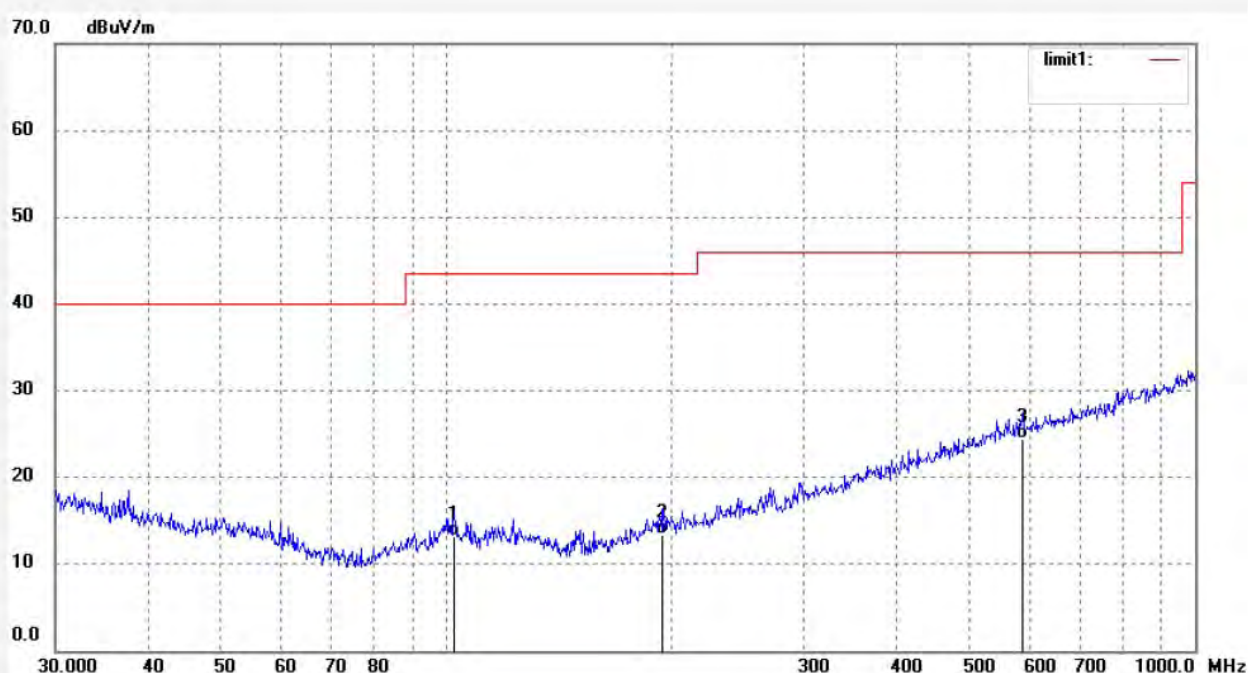
Date: 18/01/29/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	102.3597	26.64	-13.44	13.20	43.50	-30.30	QP			
2	194.4533	25.64	-12.32	13.32	43.50	-30.18	QP			
3	588.9050	26.85	-2.47	24.38	46.00	-21.62	QP			

Job No.: LGW2018 #339

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2441MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal

Power Source: DC 3.7V

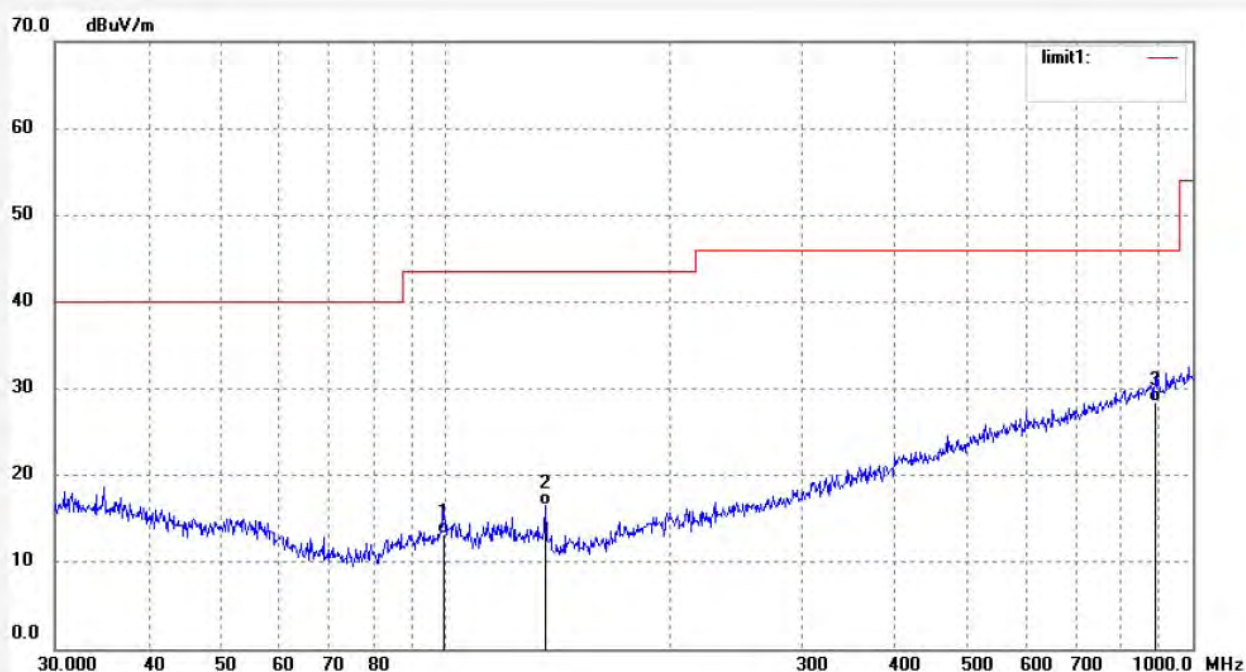
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Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	99.5279	26.40	-13.21	13.19	43.50	-30.31	QP			
2	135.9822	30.79	-14.20	16.59	43.50	-26.91	QP			
3	890.7278	26.26	2.16	28.42	46.00	-17.58	QP			

Job No.: LGW2018 #340

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2441MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Vertical

Power Source: DC 3.7V

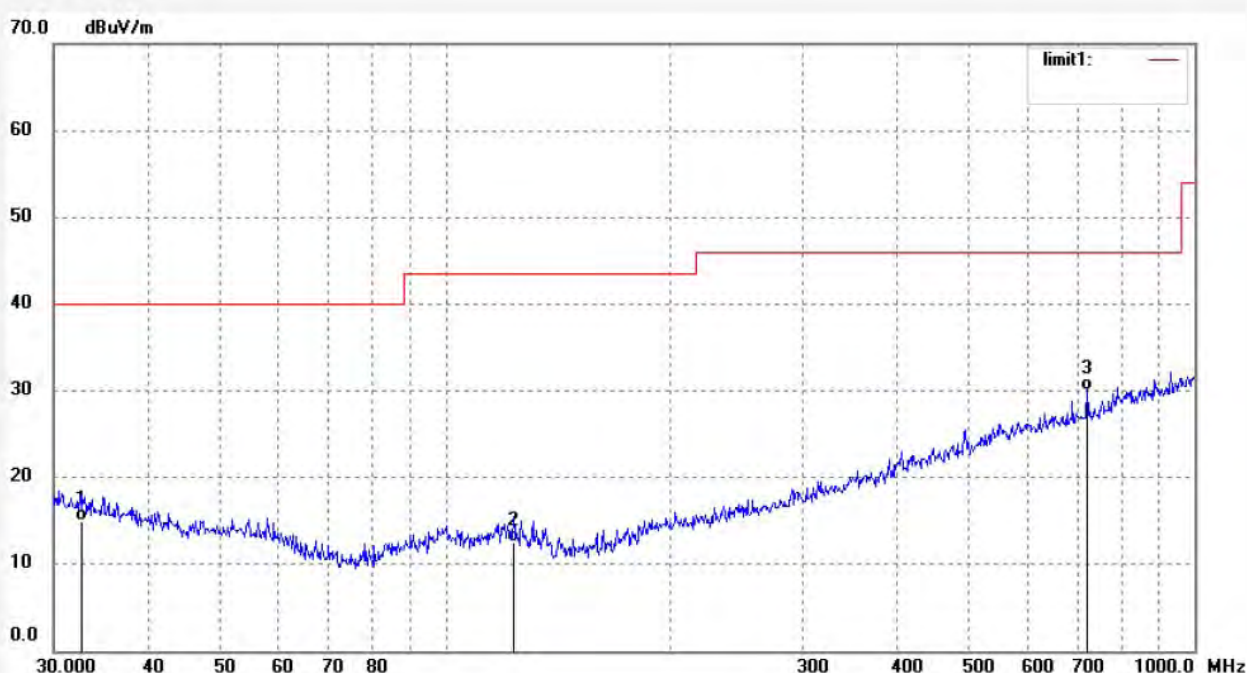
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Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.7486	24.72	-9.75	14.97	40.00	-25.03	QP			
2	123.2655	25.97	-13.43	12.54	43.50	-30.96	QP			
3	719.1994	30.90	-0.80	30.10	46.00	-15.90	QP			

Job No.: LGW2018 #342

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2480MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal

Power Source: DC 3.7V

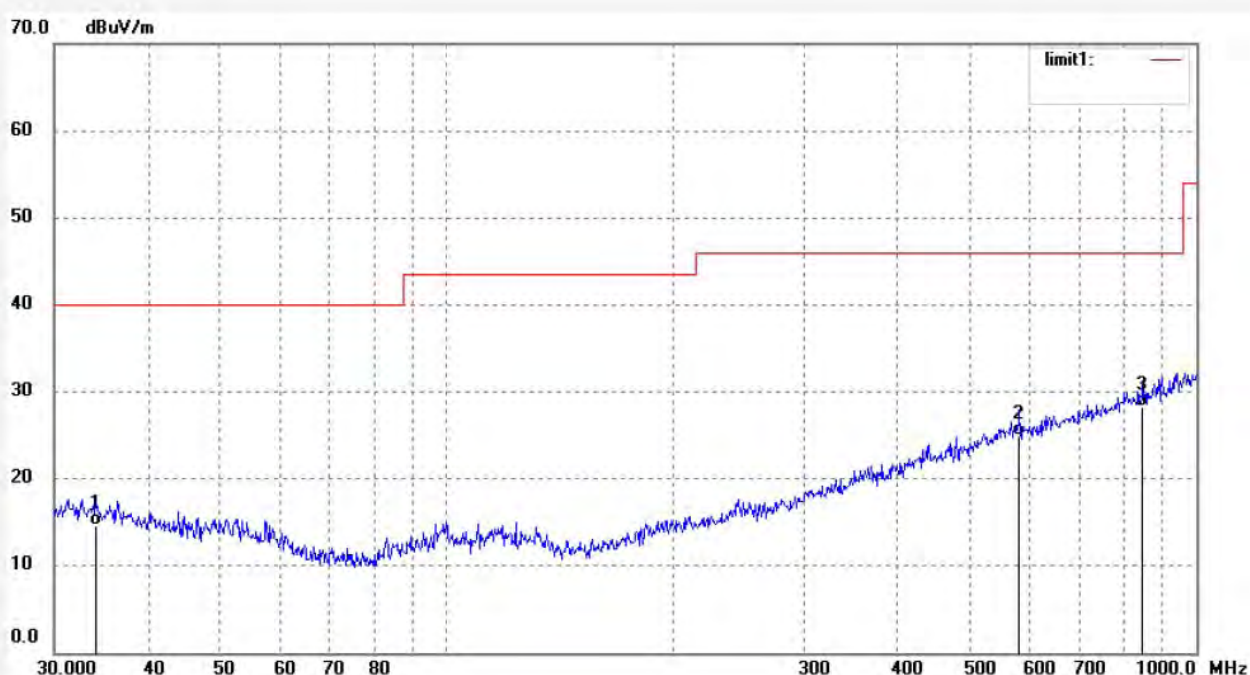
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Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.1561	24.88	-10.33	14.55	40.00	-25.45	QP			
2	580.7025	27.44	-2.55	24.89	46.00	-21.11	QP			
3	848.0562	26.66	1.54	28.20	46.00	-17.80	QP			

Job No.: LGW2018 #341

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2480MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Vertical

Power Source: DC 3.7V

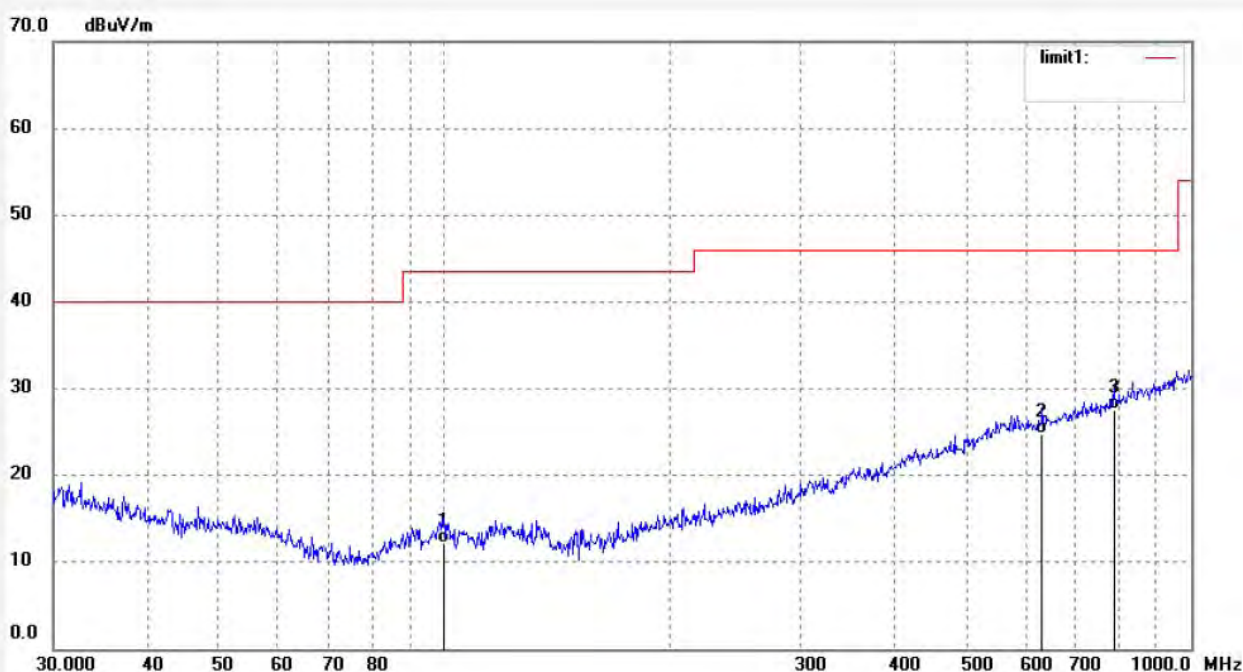
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Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	99.8777	25.21	-13.09	12.12	43.50	-31.38	QP			
2	631.6884	26.69	-1.95	24.74	46.00	-21.26	QP			
3	787.8513	27.04	0.55	27.59	46.00	-18.41	QP			

1GHz-18GHz test data



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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

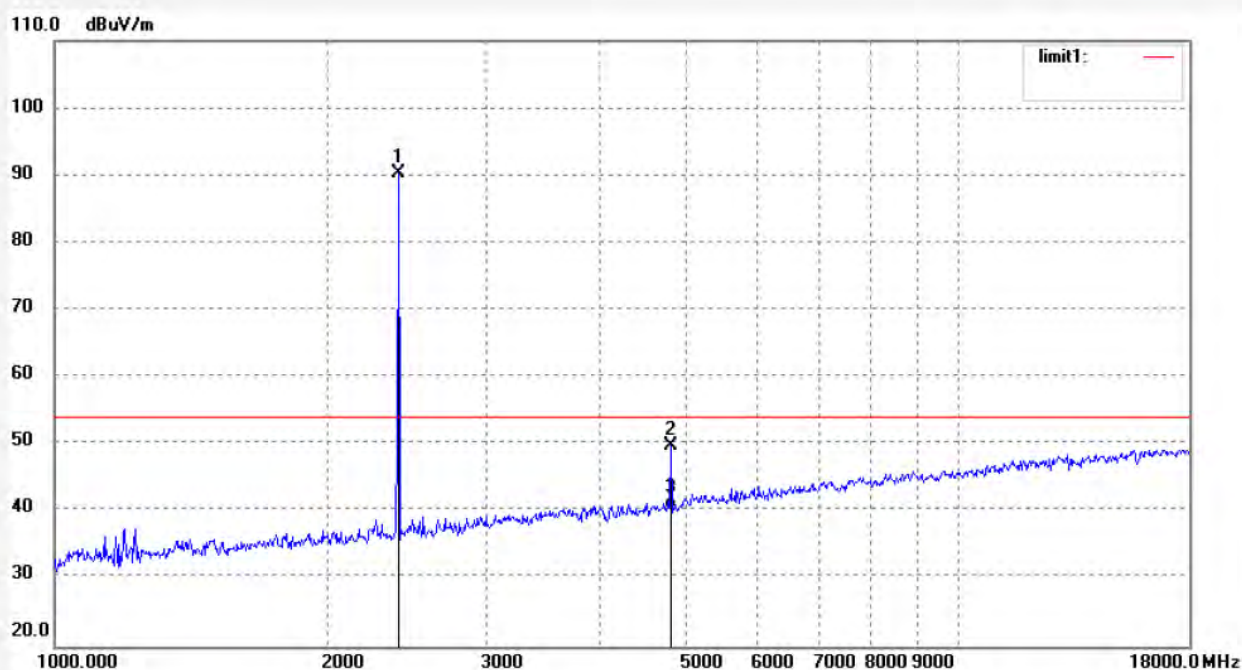
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LGW2018 #299
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Stereo Earbuds
Mode: TX 2402MHz
Model: NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal
Power Source: DC 3.7V
Date: 18/01/29/
Time:
Engineer Signature: WADE
Distance: 3m

Note:



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	89.52	0.89	90.41	/	/	peak			
2	4804.026	42.39	7.40	49.79	74.00	-24.21	peak			
3	4804.026	32.92	7.40	40.32	54.00	-13.68	AVG			

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Fax: +86-755-26503396

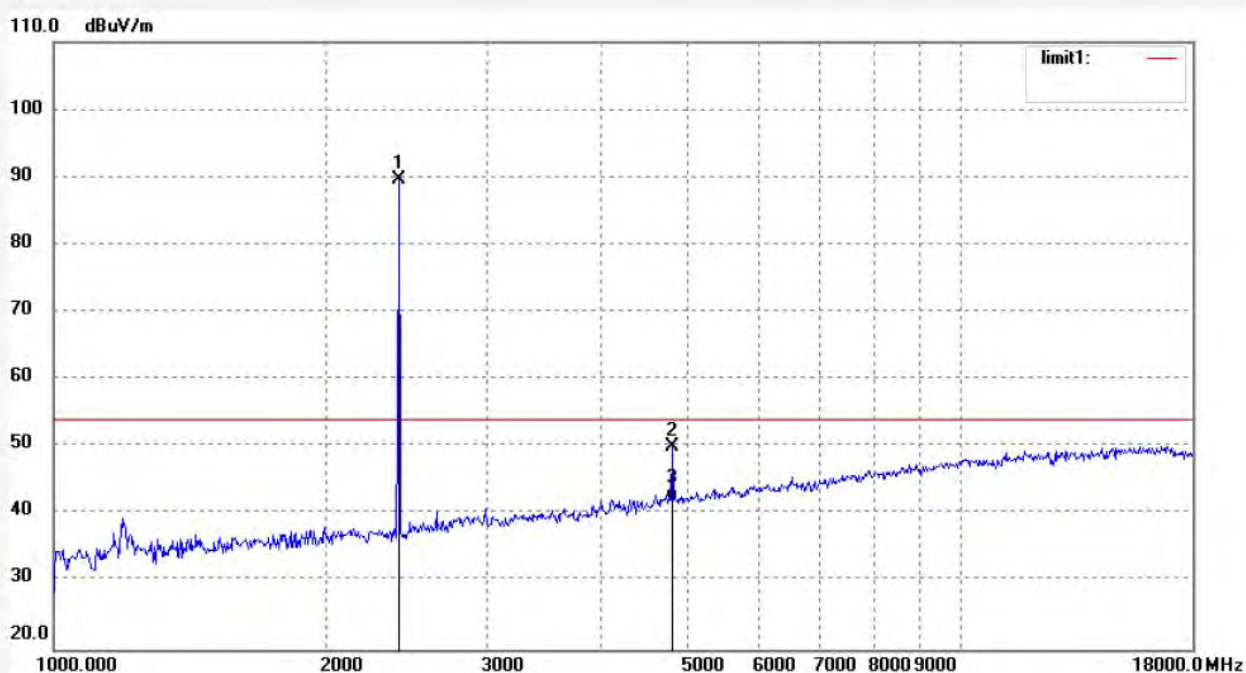
E-mail: webmaster@atc-lab.com

Http://www.atc-lab.com

Job No.: LGW2018 #300
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Stereo Earbuds
Mode: TX 2402MHz
Model: NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd

Polarization: Vertical
Power Source: DC 3.7V
Date: 18/01/29/
Time:
Engineer Signature: WADE
Distance: 3m

Note:



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	88.77	0.89	89.66	/	/	peak			
2	4804.025	42.66	7.40	50.06	74.00	-23.94	peak			
3	4804.025	34.74	7.40	42.14	54.00	-11.86	AVG			

Job No.: LGW2018 #303

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2441MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal

Power Source: DC 3.7V

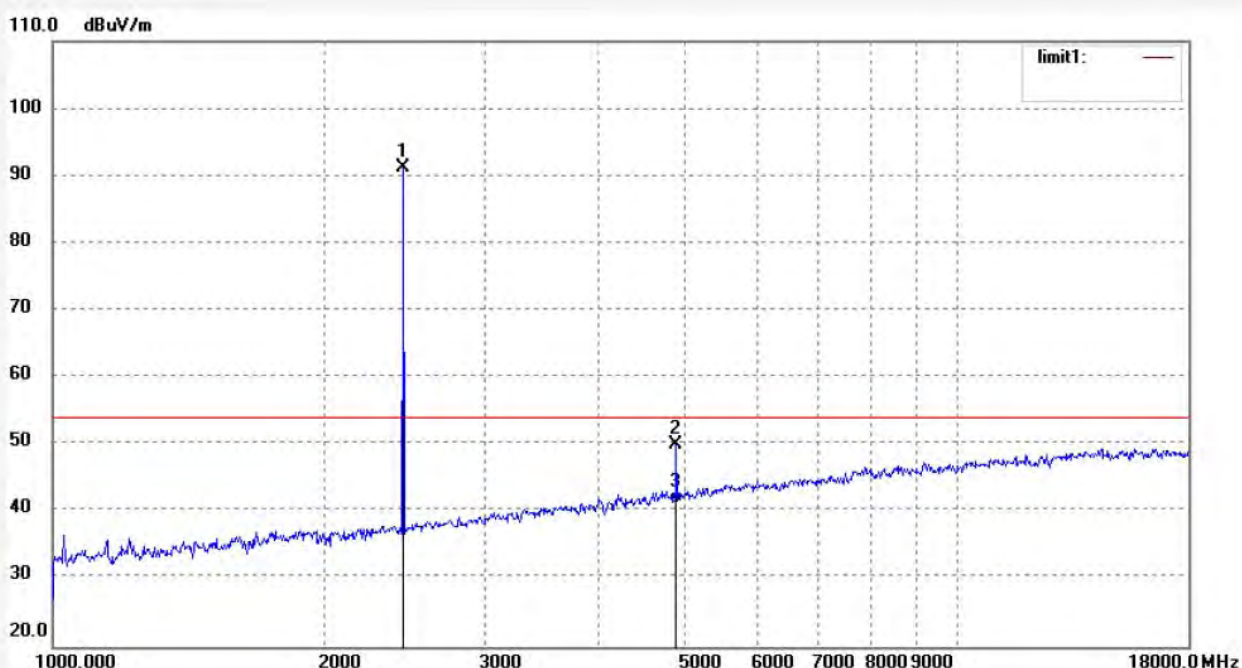
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Time:

Engineer Signature: WADE

Distance: 3m

Note:



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	90.11	1.06	91.17	/	/	peak			
2	4882.027	41.83	8.11	49.94	74.00	-24.06	peak			
3	4882.026	33.21	8.11	41.32	54.00	-12.68	AVG			

Job No.: LGW2018 #304

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2441MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Vertical

Power Source: DC 3.7V

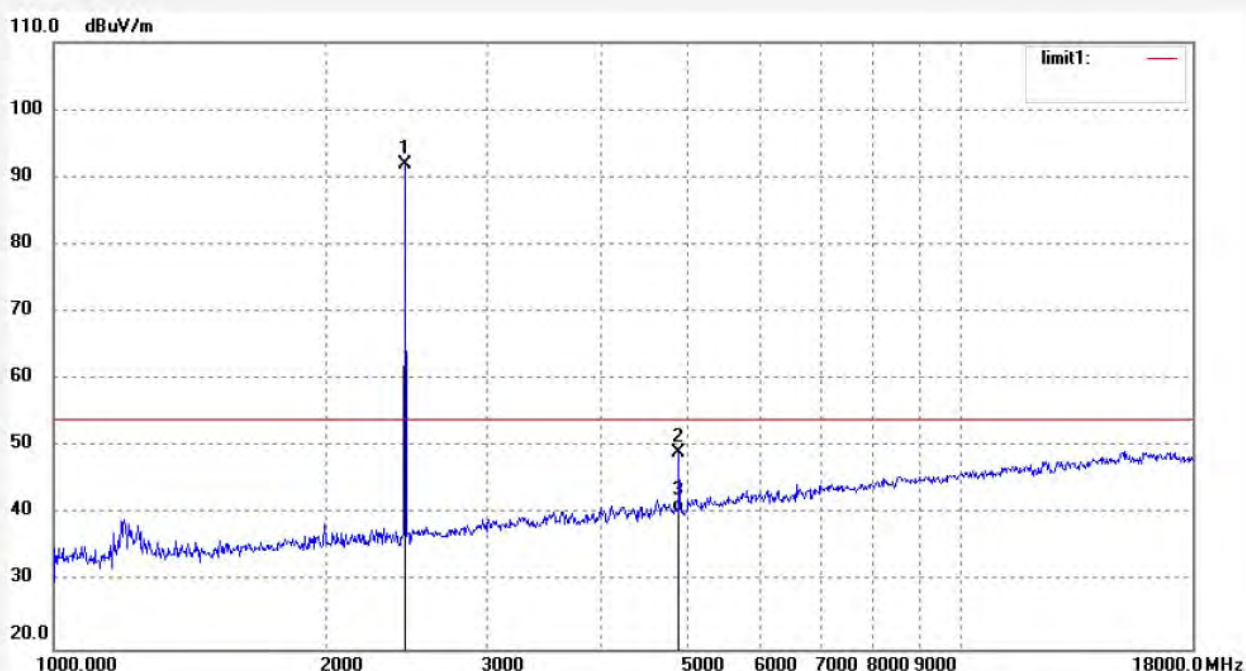
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Time:

Engineer Signature: WADE

Distance: 3m

Note:



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	90.84	1.06	91.90	/	/	peak			
2	4882.028	41.04	8.11	49.15	74.00	-24.85	peak			
3	4882.028	32.34	8.11	40.45	54.00	-13.55	AVG			

Job No.: LGW2018 #306

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2480MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal

Power Source: DC 3.7V

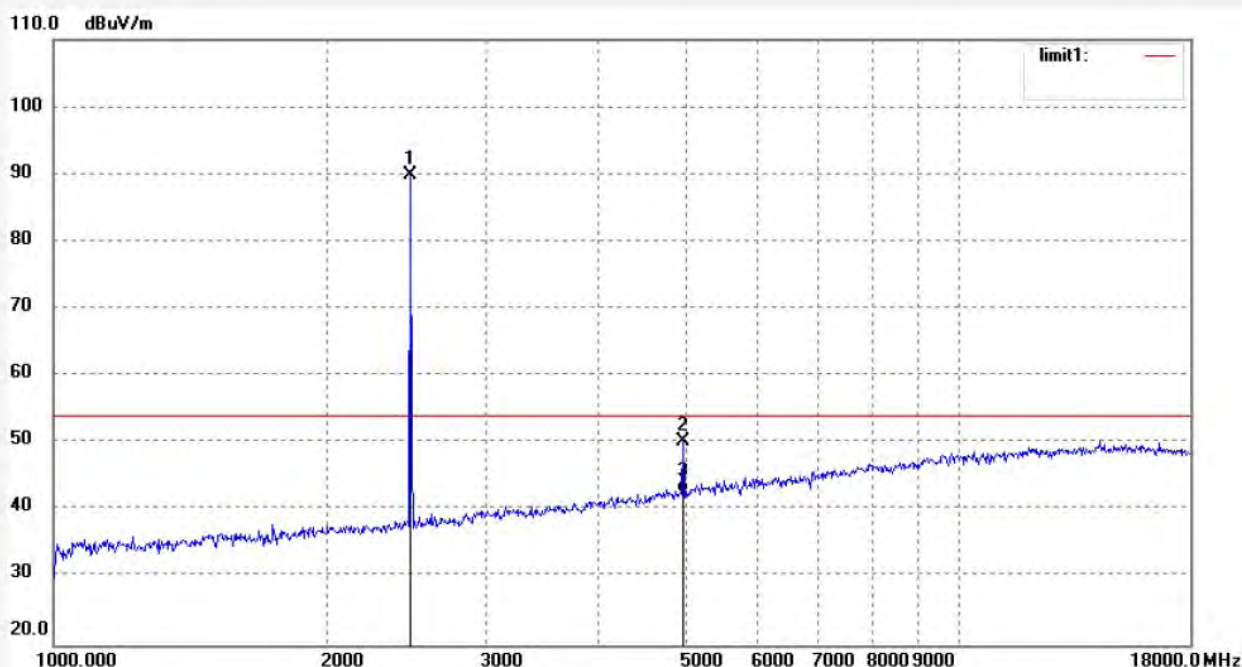
Date: 18/01/29/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



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	88.70	1.10	89.80	/	/	peak			
2	4960.031	41.67	8.60	50.27	74.00	-23.73	peak			
3	4960.031	33.97	8.60	42.57	54.00	-11.43	AVG			

Job No.: LGW2018 #305

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2480MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Vertical

Power Source: DC 3.7V

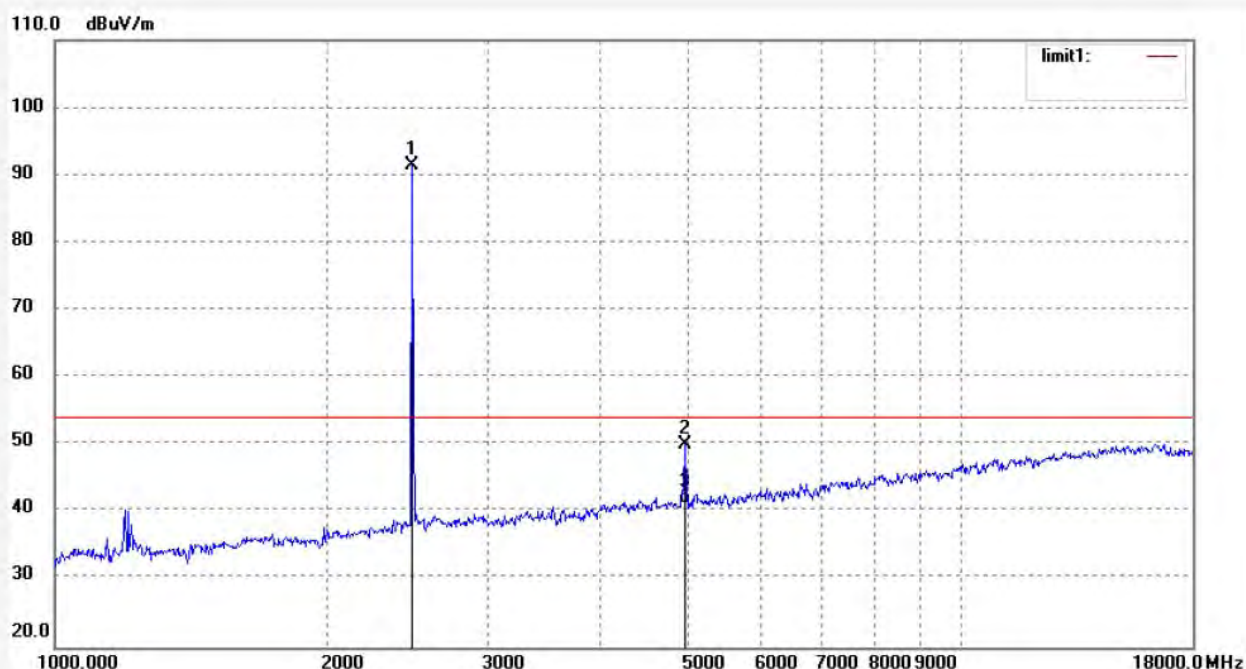
Date: 18/01/29/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



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	90.28	1.10	91.38	/	/	peak			
2	4960.029	41.37	8.60	49.97	74.00	-24.03	peak			
3	4960.029	32.75	8.60	41.35	54.00	-12.65	AVG			

18GHz-26.5GHz test data



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

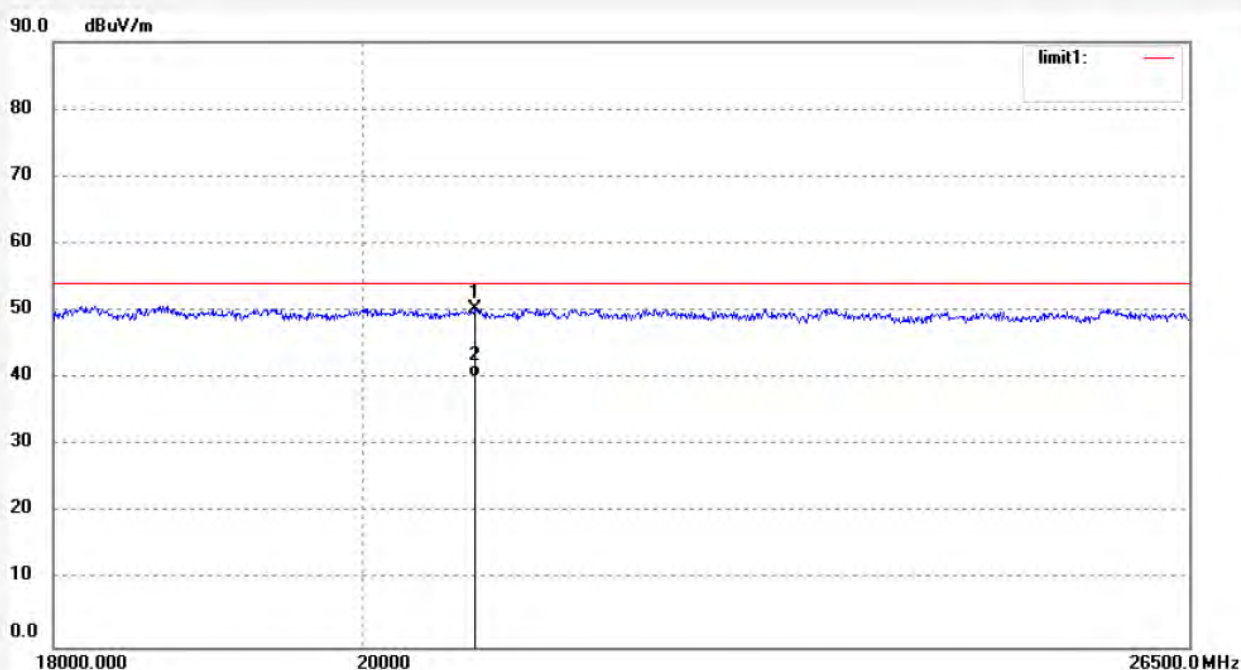
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LGW2018 #310
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Stereo Earbuds
Mode: TX 2402MHz
Model: NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal
Power Source: DC 3.7V
Date: 18/01/29/
Time:
Engineer Signature: WADE
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	20777.373	11.91	38.34	50.25	74.00	-23.75	peak			
2	20777.373	1.93	38.34	40.27	54.00	-13.73	AVG			

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Job No.: LGW2018 #309

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2402MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Vertical

Power Source: DC 3.7V

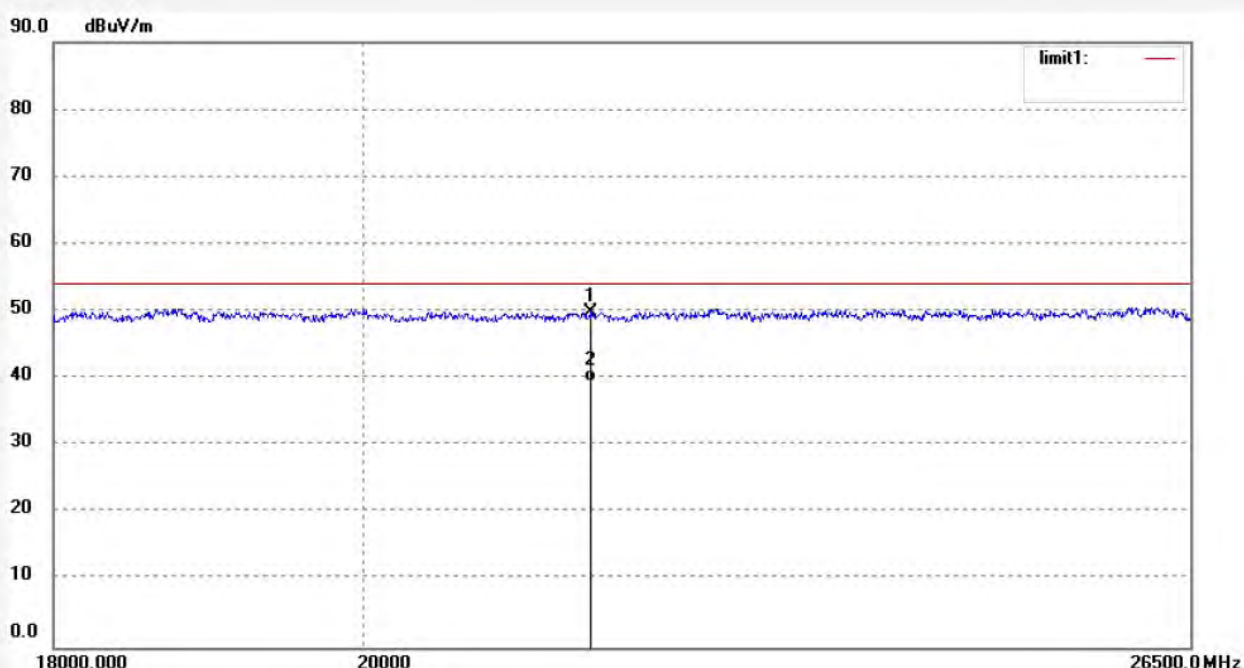
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Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	21605.083	10.54	39.26	49.80	74.00	-24.20	peak			
2	21605.083	0.15	39.26	39.41	54.00	-14.59	AVG			

Job No.: LGW2018 #311

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2441MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal

Power Source: DC 3.7V

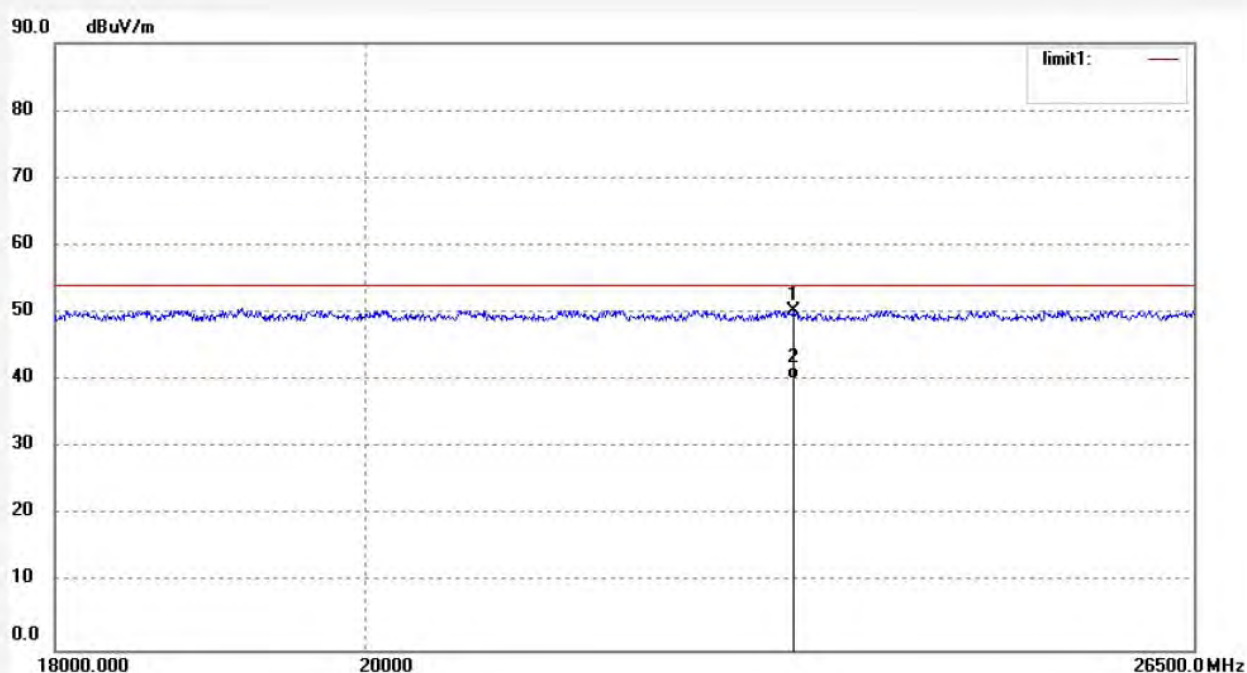
Date: 18/01/29/

Time:

Engineer Signature: WADE

Distance: 3m

Note:

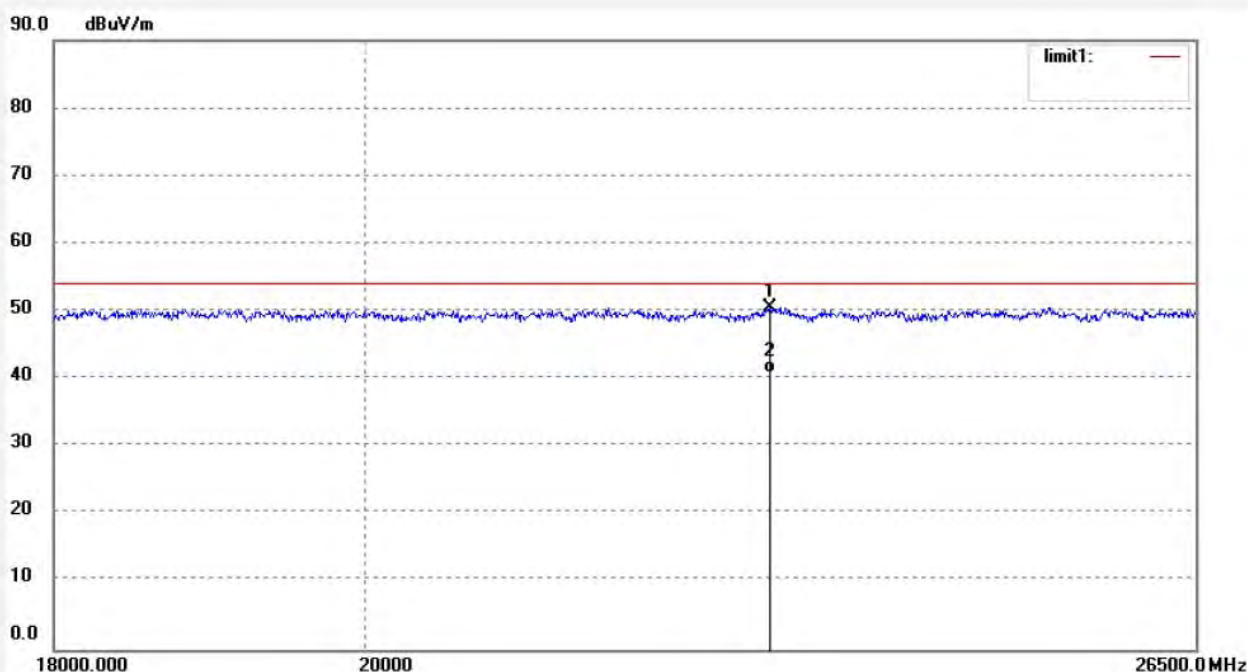


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	23135.944	10.60	39.71	50.31	74.00	-23.69	peak			
2	23135.944	0.41	39.71	40.12	54.00	-13.88	AVG			

Job No.: LGW2018 #312
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Stereo Earbuds
Mode: TX 2441MHz
Model: NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd

Polarization: Vertical
Power Source: DC 3.7V
Date: 18/01/29/
Time:
Engineer Signature: WADE
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	22939.915	10.73	39.78	50.51	74.00	-23.49	peak			
2	22939.915	0.96	39.78	40.74	54.00	-13.26	AVG			

Job No.: LGW2018 #314

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2480MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal

Power Source: DC 3.7V

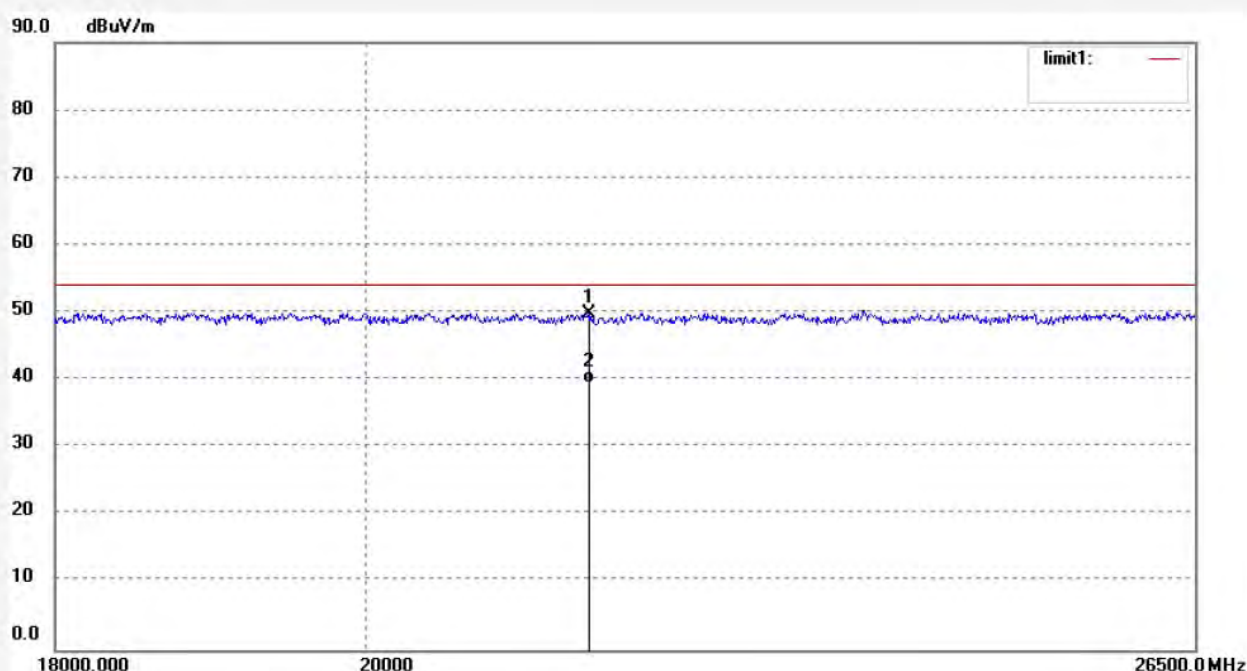
Date: 18/01/29/

Time:

Engineer Signature: WADE

Distance: 3m

Note:

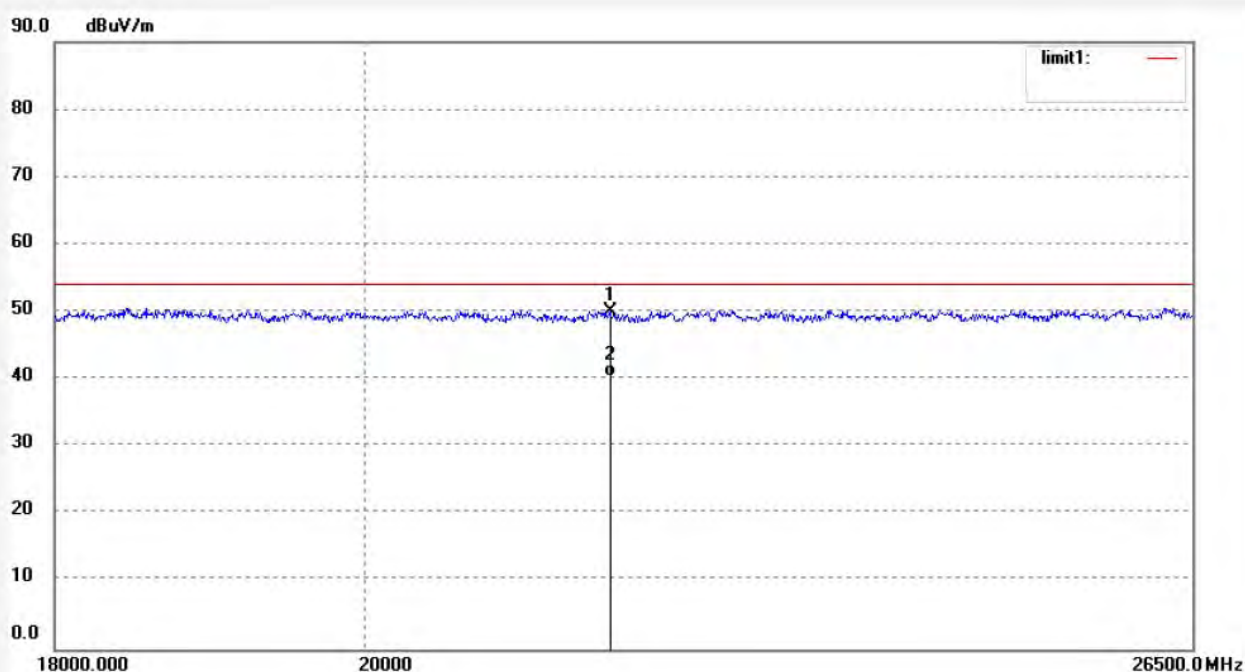


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	21580.029	11.16	38.66	49.82	74.00	-24.18	peak			
2	21580.029	0.88	38.66	39.54	54.00	-14.46	AVG			

Job No.: LGW2018 #313
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Stereo Earbuds
Mode: TX 2480MHz
Model: NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd

Polarization: Vertical
Power Source: DC 3.7V
Date: 18/01/29/
Time:
Engineer Signature: WADE
Distance: 3m

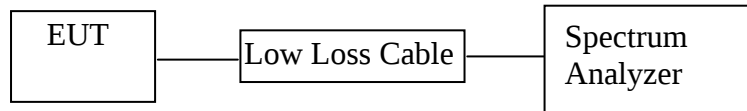
Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	21739.197	10.78	39.25	50.03	74.00	-23.97	peak			
2	21739.197	1.10	39.25	40.35	54.00	-13.65	AVG			

11.BAND EDGE COMPLIANCE TEST

11.1.Block Diagram of Test Setup



(EUT: Wireless Stereo Earbuds)

11.2.The Requirement 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).

11.3.EUT Configuration on Measurement

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

Non-hopping mode

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
BDR mode		
2400.00	46.73	> 20dBc
2486.38	52.50	> 20dBc
EDR mode		
2400.00	39.45	> 20dBc
2489.73	46.95	> 20dBc

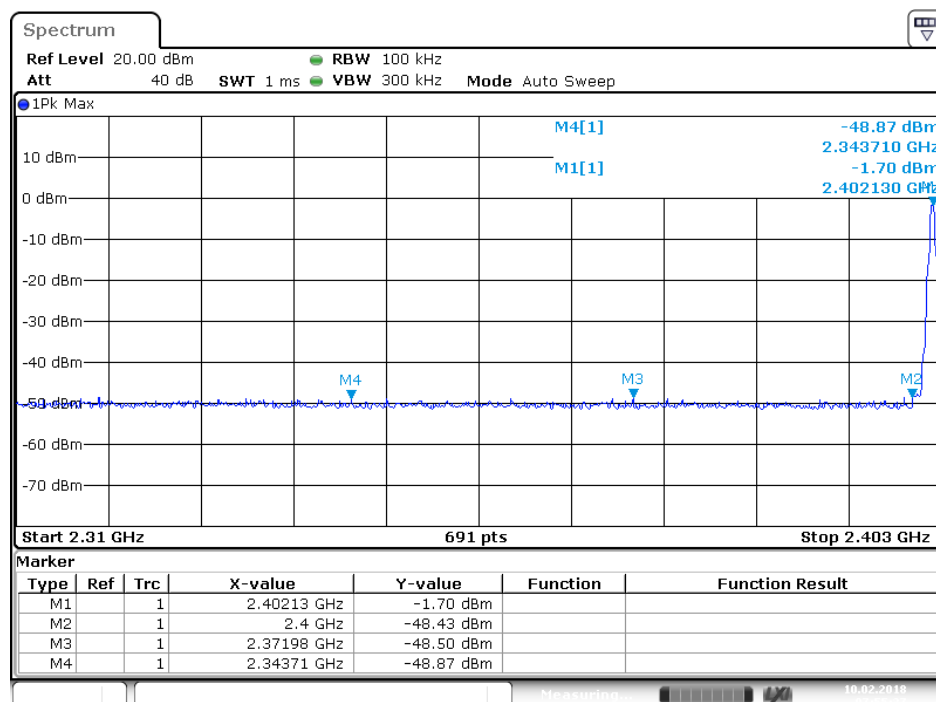
Hopping mode

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
BDR mode		
2361.07	45.82	> 20dBc
2487.40	51.87	> 20dBc
EDR mode		
2368.36	41.14	> 20dBc
2491.32	47.10	> 20dBc

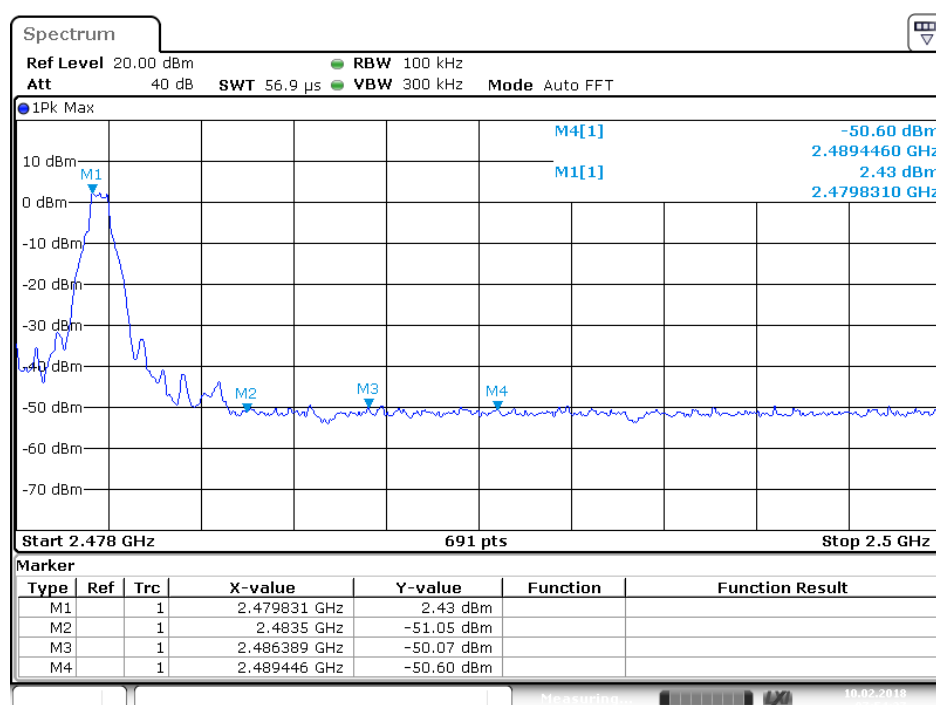
The spectrum analyzer plots are attached as below.

Non-hopping mode

BDR mode

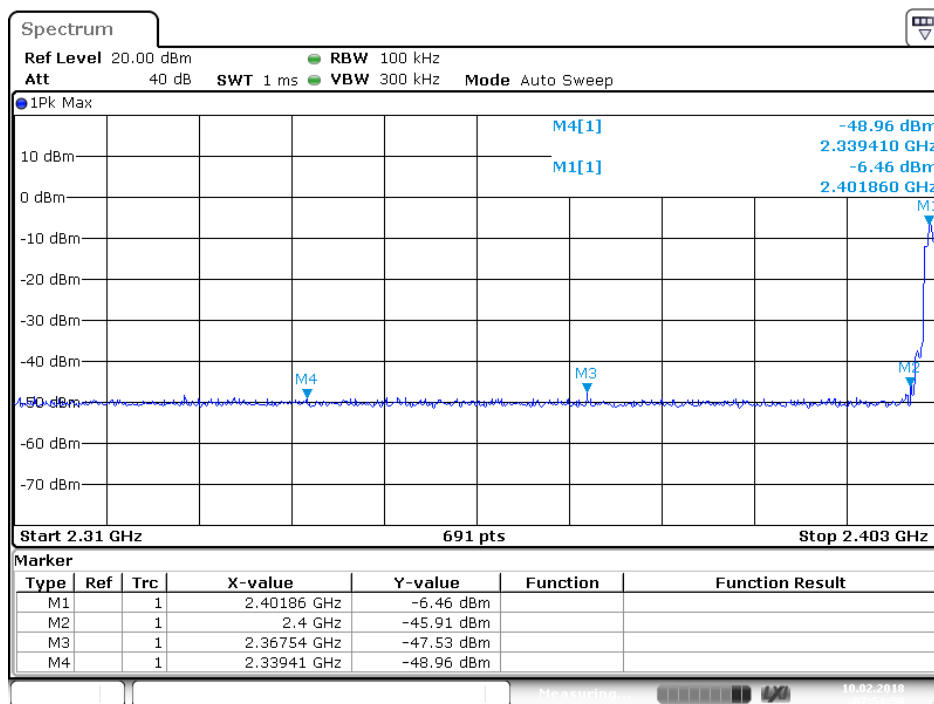


Date: 10.FEB.2018 07:55:36

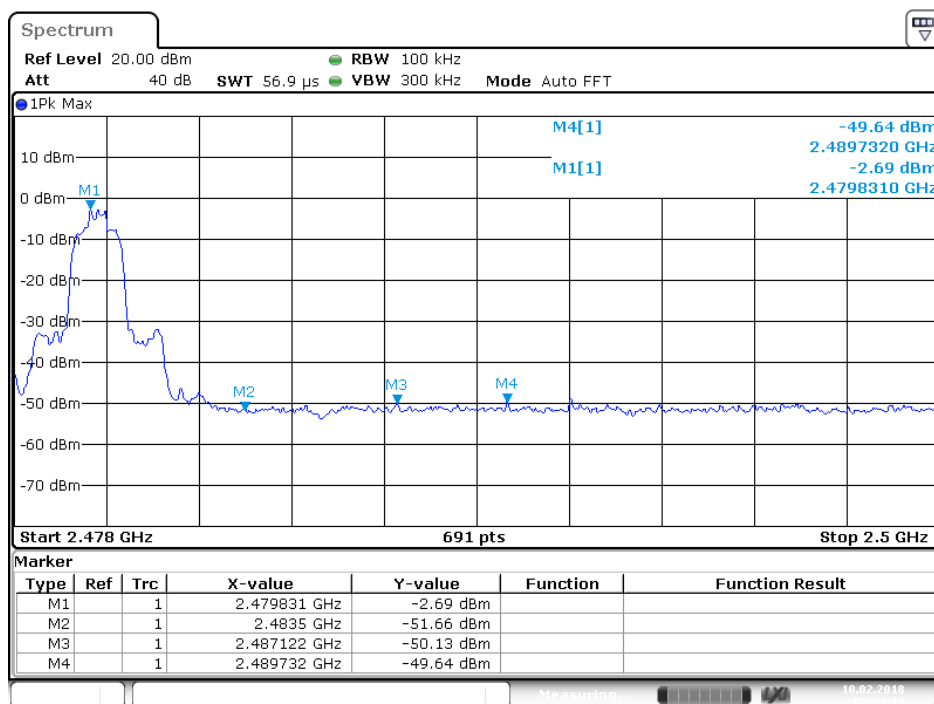


Date: 10.FEB.2018 07:54:26

EDR mode



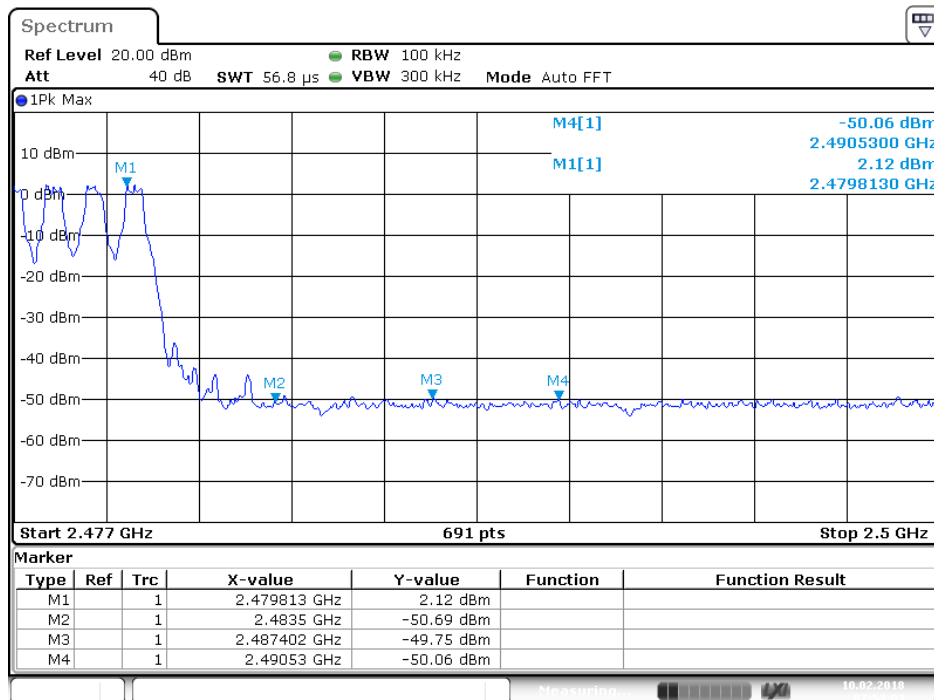
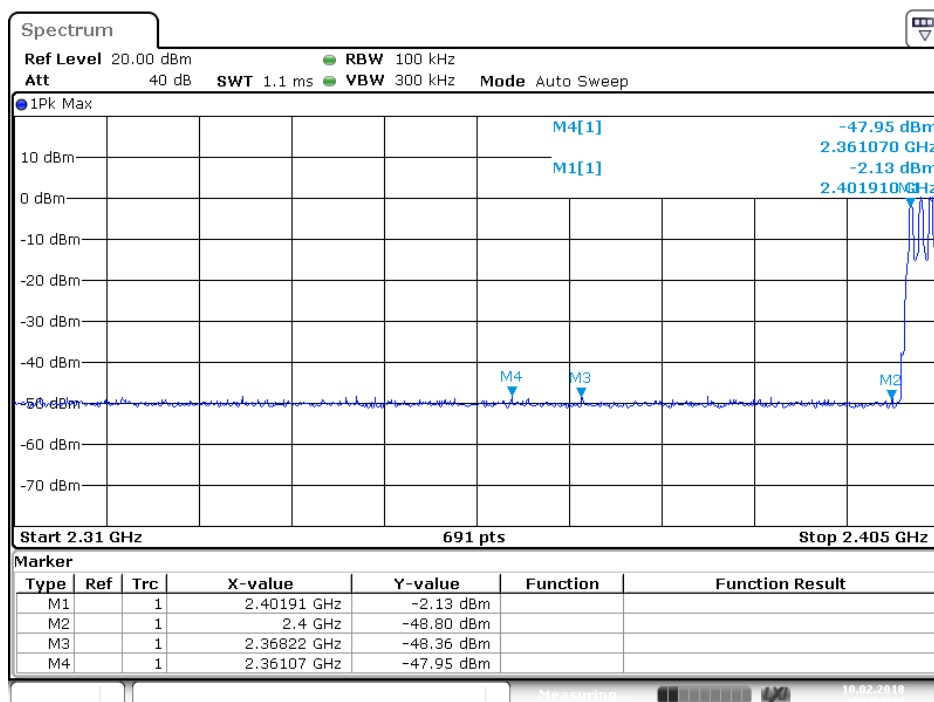
Date: 10.FEB.2018 07:51:50



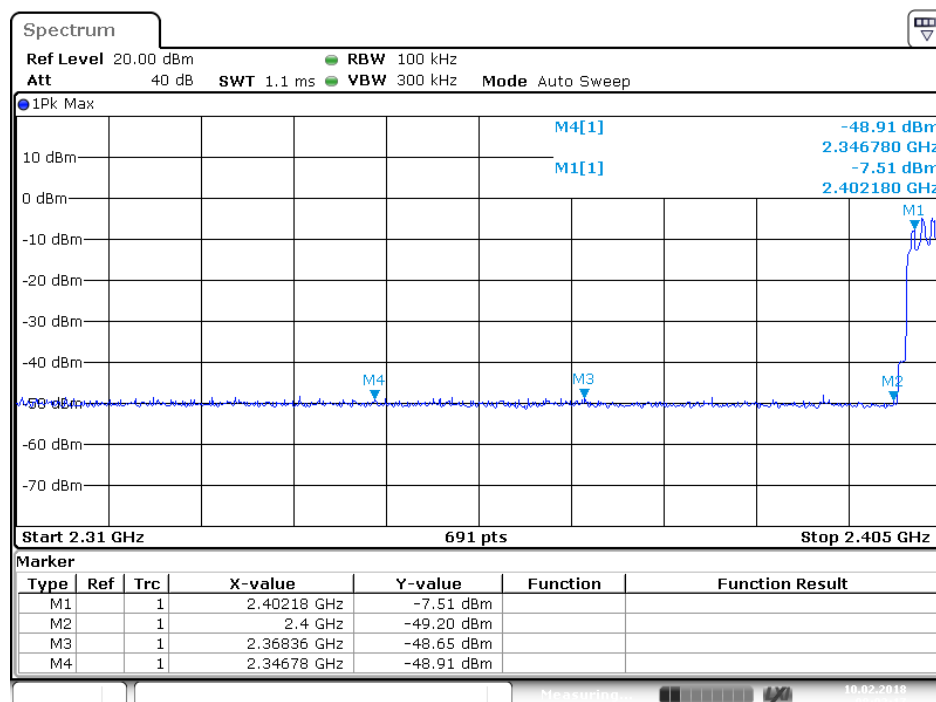
Date: 10.FEB.2018 07:53:11

hopping mode

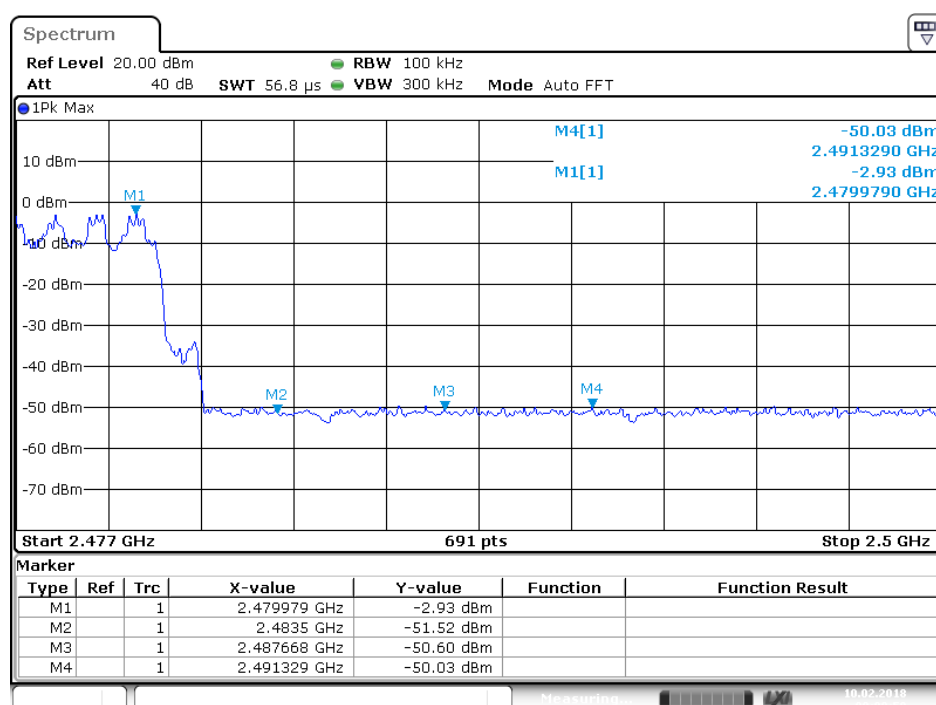
BDR mode



EDR mode



Date: 10.FEB.2018 08:02:17



Date: 10.FEB.2018 08:00:50

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 1.5 meter high above ground(Above 1GHz). 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 worst 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 worst-case emissions are reported.

Non-hopping mode



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F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

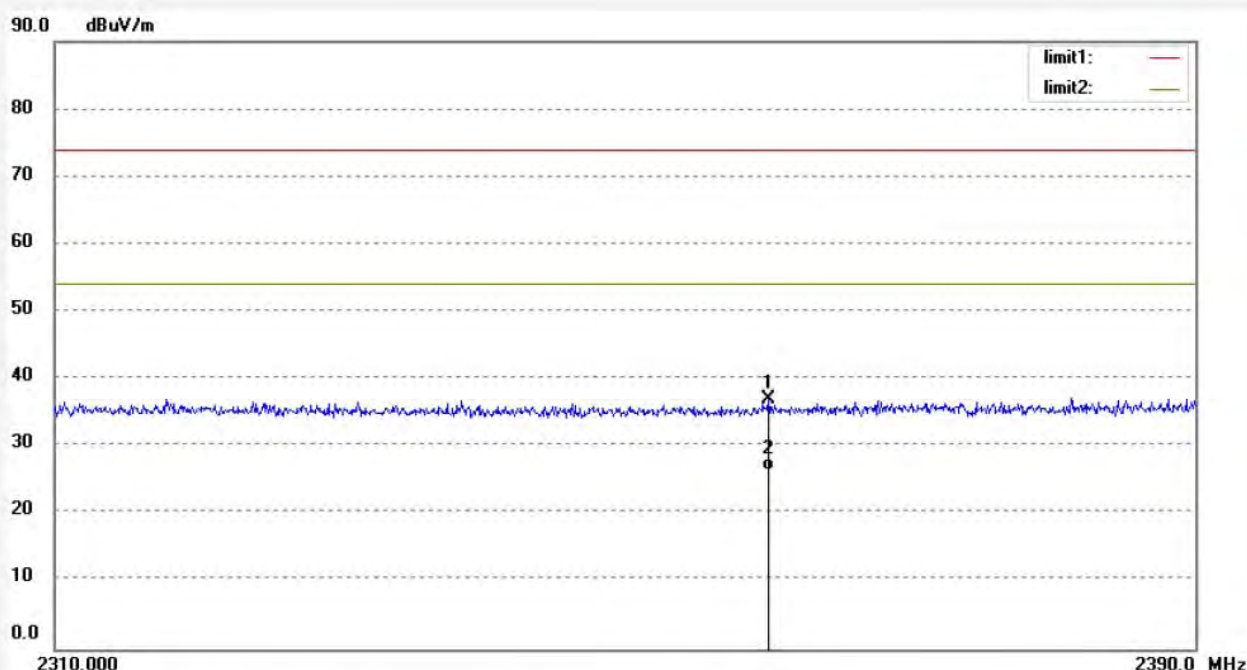
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LGW2018 #302
Standard: FCC (Band Edge)
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Stereo Earbuds
Mode: TX 2402MHz
Model: NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal
Power Source: DC 3.7V
Date: 18/01/29/
Time:
Engineer Signature: WADE
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2359.840	36.39	0.56	36.95	74.00	-37.05	peak			
2	2359.840	25.88	0.56	26.44	54.00	-27.56	AVG			

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: +86-755-26503290

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Http://www.atc-lab.com



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.: LGW2018 #301

Standard: FCC (Band Edge)

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2402MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Vertical

Power Source: DC 3.7V

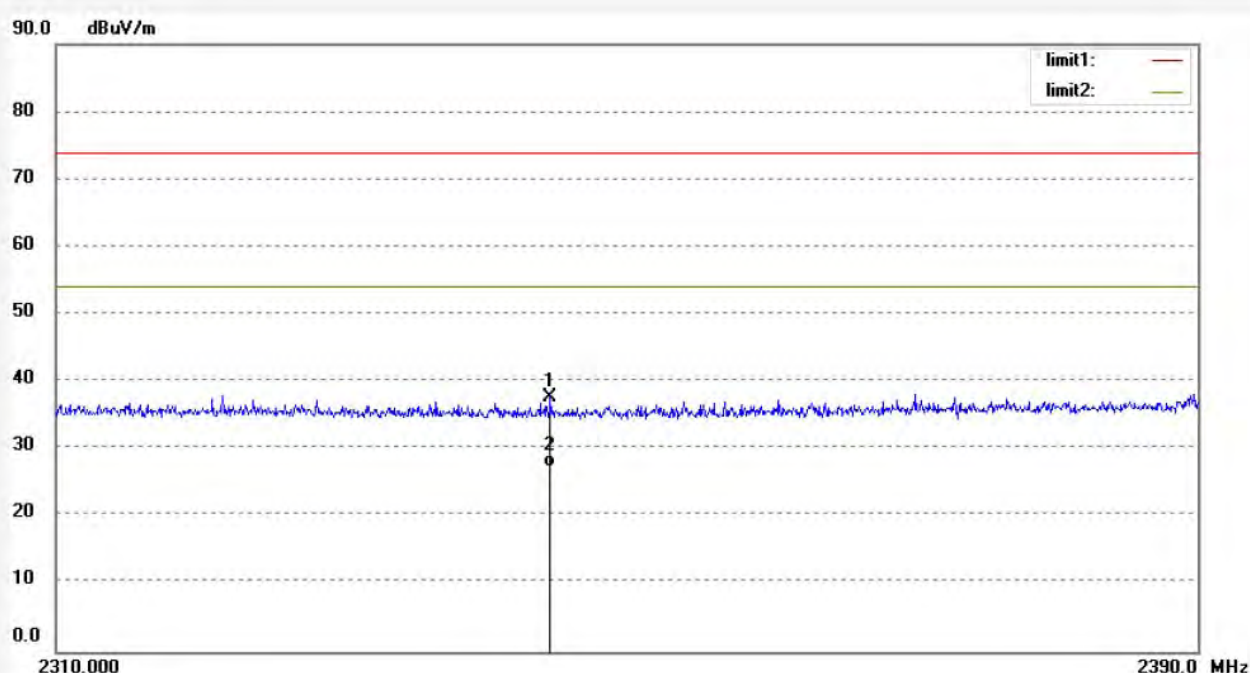
Date: 18/01/29/

Time:

Engineer Signature: WADE

Distance: 3m

Note:

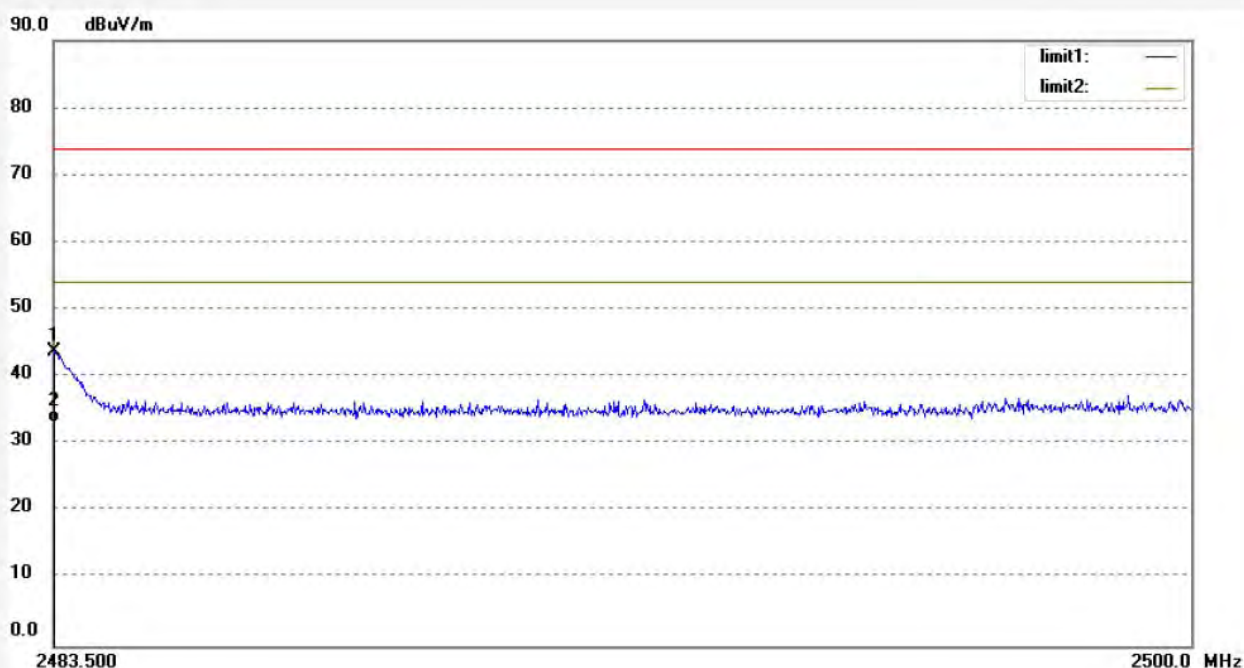


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2344.320	37.18	0.47	37.65	74.00	-36.35	peak			
2	2344.320	26.88	0.47	27.35	54.00	-26.65	AVG			

Job No.: LGW2018 #307
Standard: FCC (Band Edge)
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Stereo Earbuds
Mode: TX 2480MHz
Model: NS-CAHBTAP
Manufacturer: Country Mate Technology Ltd

Polarization: Horizontal
Power Source: DC 3.7V
Date: 18/01/29/
Time:
Engineer Signature: WADE
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.517	42.62	1.10	43.72	74.00	-30.28	peak			
2	2483.517	32.14	1.10	33.24	54.00	-20.76	AVG			

Job No.: LGW2018 #308

Standard: FCC (Band Edge)

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Wireless Stereo Earbuds

Mode: TX 2480MHz

Model: NS-CAHBTAP

Manufacturer: Country Mate Technology Ltd

Polarization: Vertical

Power Source: DC 3.7V

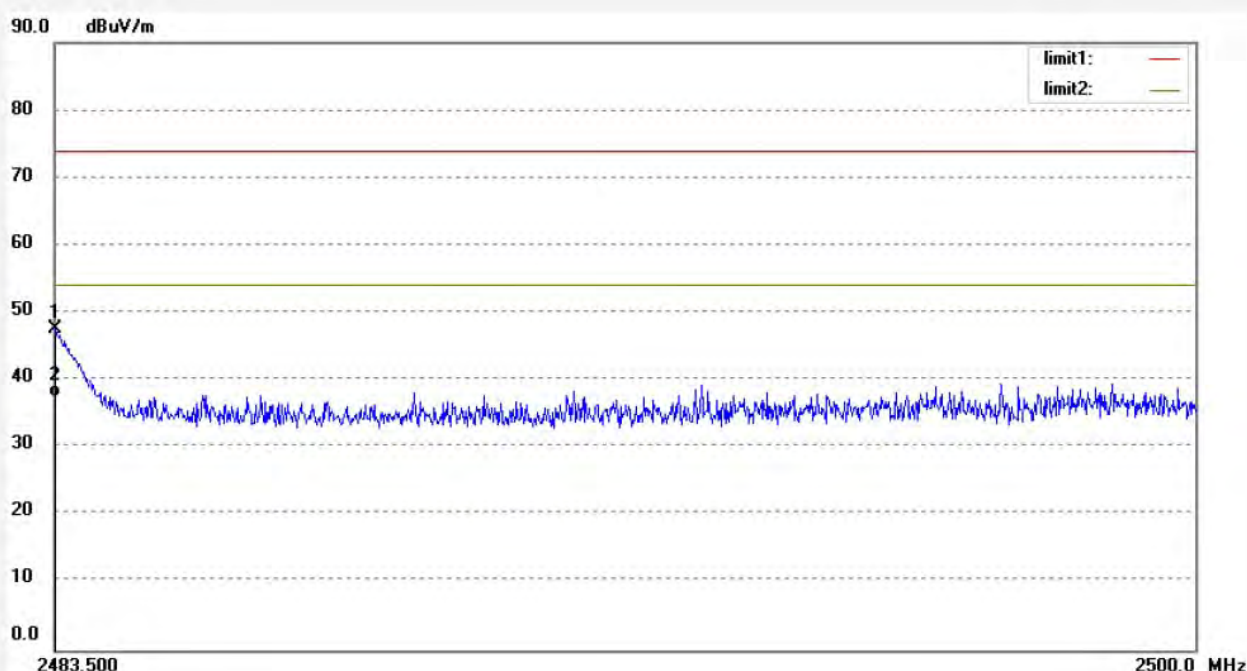
Date: 18/01/29/

Time:

Engineer Signature: WADE

Distance: 3m

Note:

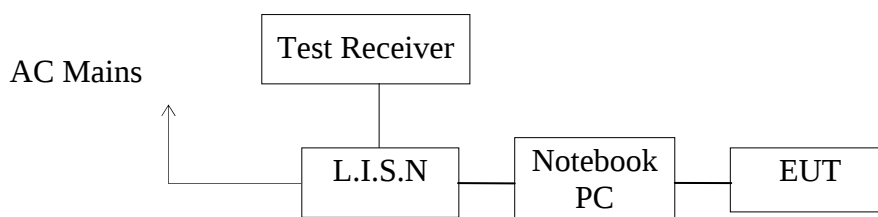


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	46.53	1.10	47.63	74.00	-26.37	peak			
2	2483.500	36.44	1.10	37.54	54.00	-16.46	AVG			

12.AC POWER LINE CONDUCTED EMISSION FOR FCC PART

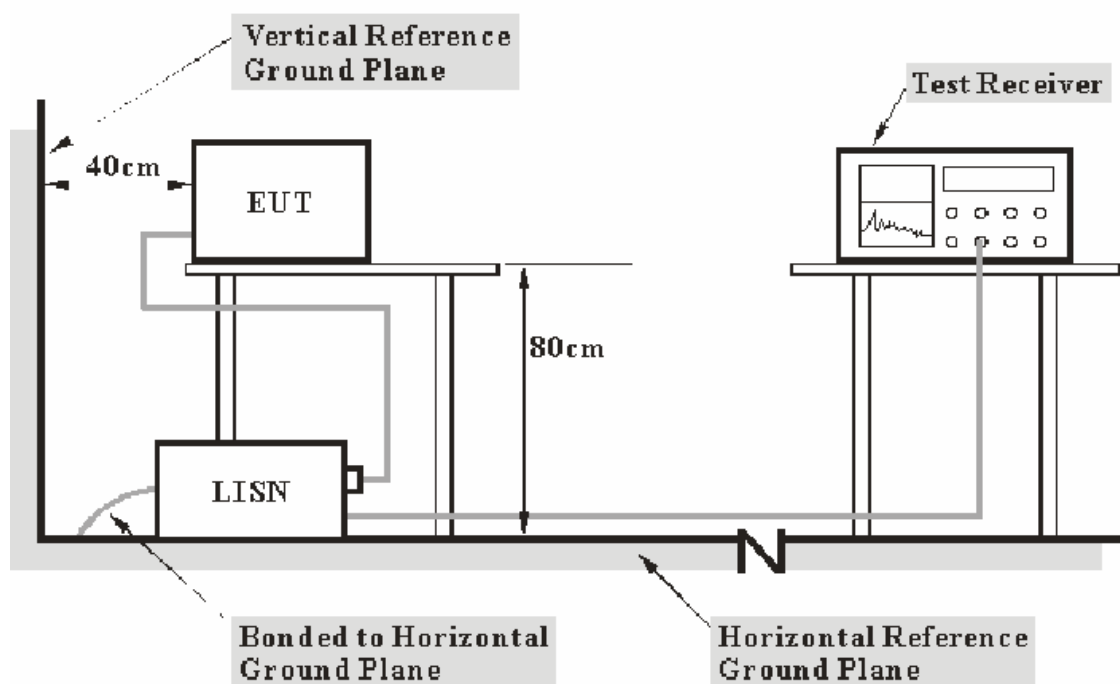
15 SECTION 15.207(A)

12.1.Block Diagram of Test Setup



(EUT: Wireless Stereo Earbuds)

12.2.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 80 cm from other units and other metal planes support units.

12.3.Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μ V)	
	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.		

12.4.Configuration of EUT on Measurement

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.

12.5.Operating Condition of EUT

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

12.5.2.Turn on the power of all equipment.

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

12.6.Test Procedure

The EUT is put on the plane 0.8m 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 C63.4: 2014 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.

12.7.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)

12.8.Power Line Conducted Emission Measurement Results

PASS.

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

Test mode : BT Communication (AC 120V/60Hz)								
MEASUREMENT RESULT: "TUV-0210-1_fin"								
2/10/2018								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.175000	57.30	10.5	65	7.4	QP	N	GND	
0.235000	48.60	10.6	62	13.7	QP	N	GND	
4.820000	43.50	11.1	56	12.5	QP	N	GND	
22.180000	33.20	11.4	60	26.8	QP	N	GND	
MEASUREMENT RESULT: "TUV-0210-1_fin2"								
2/10/2018								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.180000	42.20	10.5	55	12.3	AV	N	GND	
0.235000	32.30	10.6	52	20.0	AV	N	GND	
4.830000	37.30	11.1	46	8.7	AV	N	GND	
22.015000	26.70	11.4	50	23.3	AV	N	GND	

MEASUREMENT RESULT: "TUV-0210-2_fin"

2/10/2018

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.180000	55.60	10.5	65	8.9	QP	L1	GND
0.240000	47.30	10.6	62	14.8	QP	L1	GND
3.270000	40.00	11.1	56	16.0	QP	L1	GND
23.545000	33.80	11.5	60	26.2	QP	L1	GND

MEASUREMENT RESULT: "TUV-0210-2_fin2"

2/10/2018

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.180000	40.30	10.5	55	14.2	AV	L1	GND
0.245000	31.70	10.6	52	20.2	AV	L1	GND
4.720000	37.30	11.1	46	8.7	AV	L1	GND
5.840000	28.70	11.2	50	21.3	AV	L1	GND

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

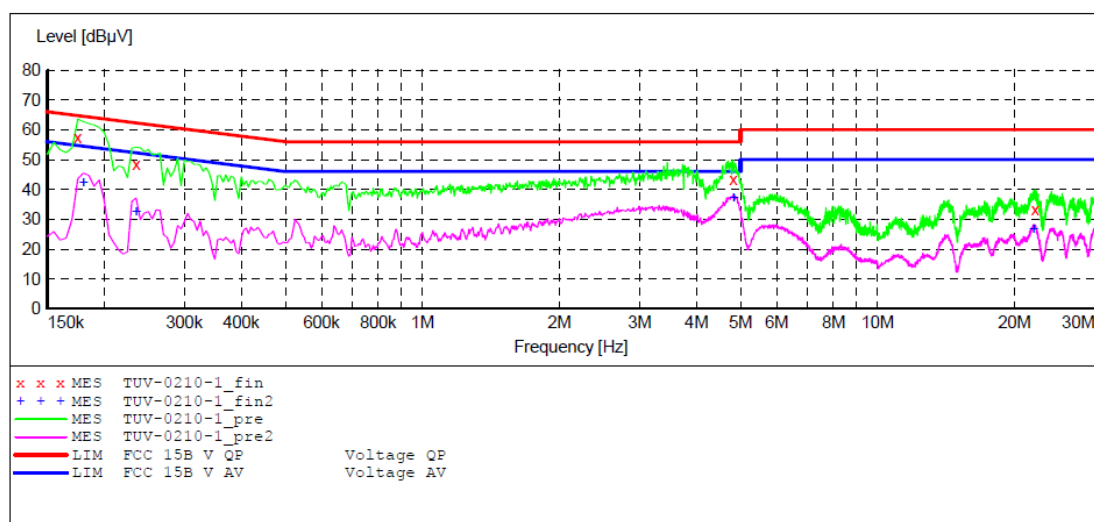
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15 C

EUT: Wireless Stereo Earbuds M/N:NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: BT Communication
 Test Site: 1#Shielding Room
 Operator: WADE
 Test Specification: N 120V/60Hz
 Comment: Mains port
 Start of Test: 2/10/2018 /

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: "TUV-0210-1_fin"

2/10/2018

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.175000	57.30	10.5	65	7.4	QP	N	GND
0.235000	48.60	10.6	62	13.7	QP	N	GND
4.820000	43.50	11.1	56	12.5	QP	N	GND
22.180000	33.20	11.4	60	26.8	QP	N	GND

MEASUREMENT RESULT: "TUV-0210-1_fin2"

2/10/2018

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.180000	42.20	10.5	55	12.3	AV	N	GND
0.235000	32.30	10.6	52	20.0	AV	N	GND
4.830000	37.30	11.1	46	8.7	AV	N	GND
22.015000	26.70	11.4	50	23.3	AV	N	GND

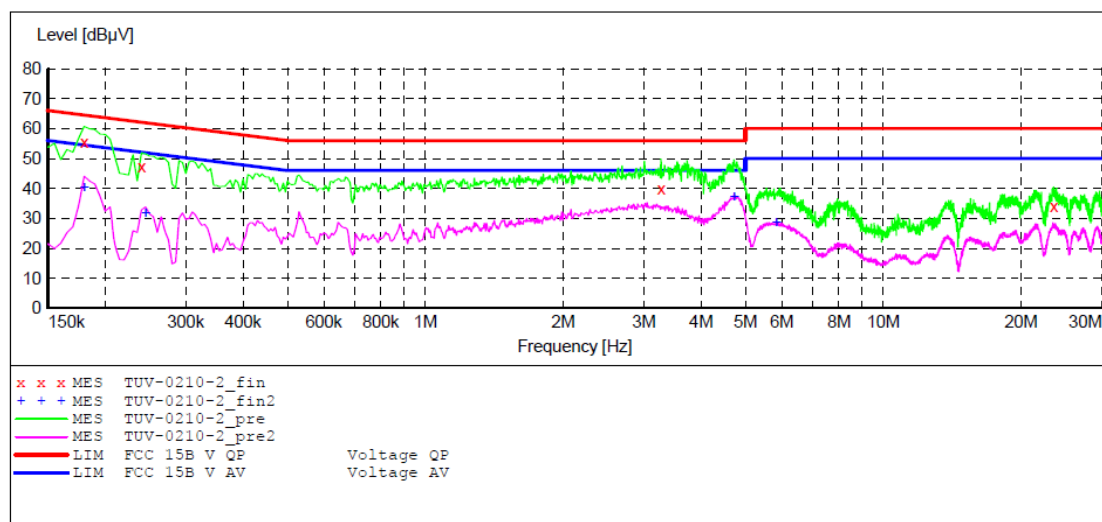
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15 C

EUT: Wireless Stereo Earbuds M/N: NS-CAHBTAP
 Manufacturer: Country Mate Technology Ltd
 Operating Condition: BT Communication
 Test Site: 1#Shielding Room
 Operator: WADE
 Test Specification: L 120V/60Hz
 Comment: Mains port
 Start of Test: 2/10/2018 /

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: "TUV-0210-2_fin"

2/10/2018

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.180000	55.60	10.5	65	8.9	QP	L1	GND
0.240000	47.30	10.6	62	14.8	QP	L1	GND
3.270000	40.00	11.1	56	16.0	QP	L1	GND
23.545000	33.80	11.5	60	26.2	QP	L1	GND

MEASUREMENT RESULT: "TUV-0210-2_fin2"

2/10/2018

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.180000	40.30	10.5	55	14.2	AV	L1	GND
0.245000	31.70	10.6	52	20.2	AV	L1	GND
4.720000	37.30	11.1	46	8.7	AV	L1	GND
5.840000	28.70	11.2	50	21.3	AV	L1	GND

13.99% OCCUPIED BANDWIDTH

13.1.The Requirement for RSS-Gen Clause 6.6

The emission bandwidth (x dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated x dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth. When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth

13.2.EUT Configuration on Measurement

The following equipment is 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.

13.3.Operating Condition of EUT

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

13.3.2.Turn on the power of all equipment.

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

13.4.Test Procedure

13.4.1.The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The transmitter output was connected to the spectrum analyzer through a low loss cable.

13.4.2.The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW. Set RBW of spectrum analyzer to 30kHz and VBW to 100kHz.

13.4.3.Set SPA “Meas” function, Select “Occupied Bandwidth” function, Select “99% Power Bandwidth”. The frequency of the upper and lower markers indicating the edges of the transmitters “99% Power” emission bandwidth shall be recorded to automate by SPA.

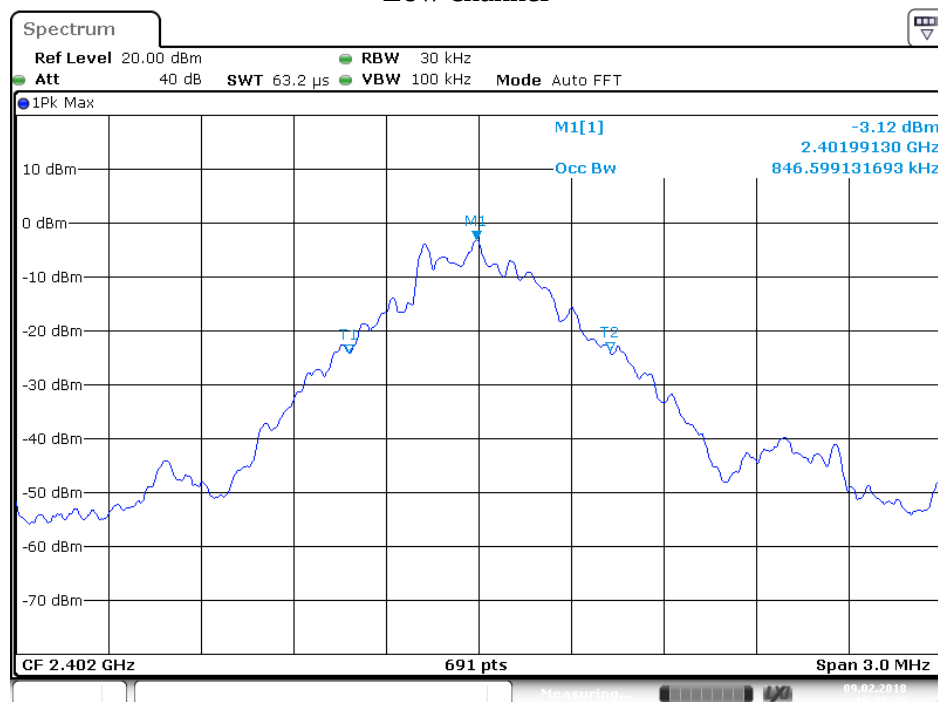
13.5.Measurement Result

Channel	Frequency (MHz)	BDR mode 99% Bandwidth (MHz)	EDR mode 99% Bandwidth (MHz)	Result
Low	2402	0.847	1.146	Pass
Middle	2441	0.842	1.155	Pass
High	2480	0.847	1.146	Pass

The spectrum analyzer plots are attached as below.

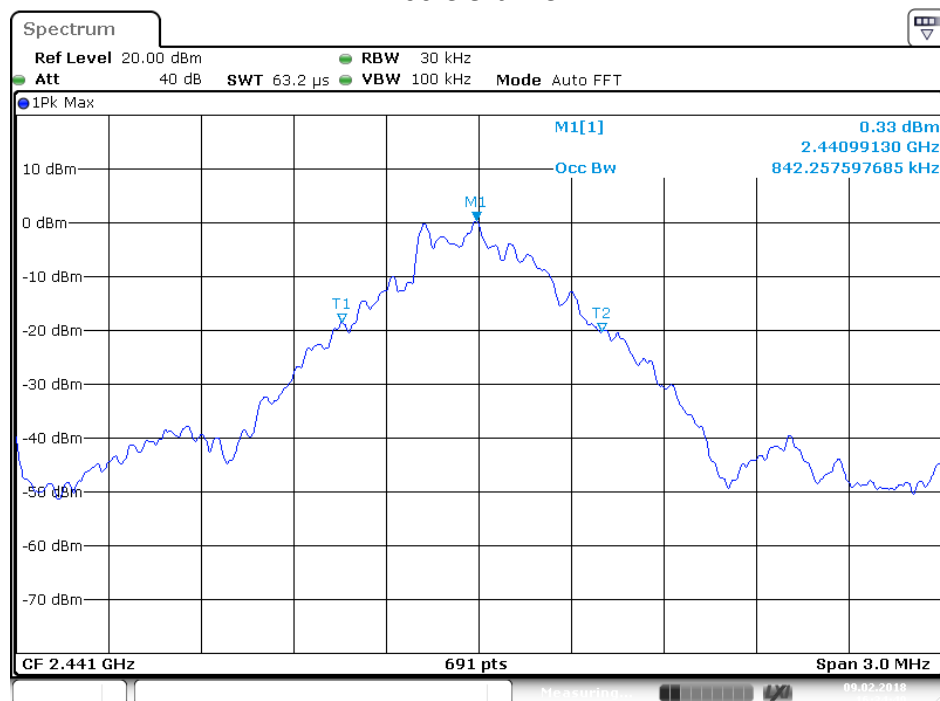
BDR mode

Low channel



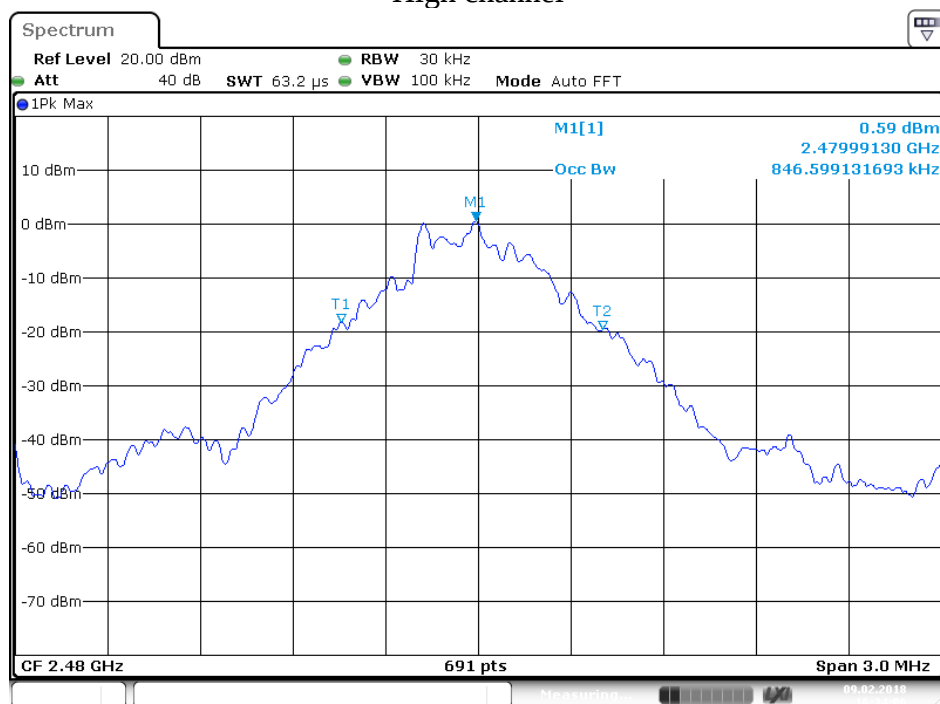
Date: 9.FEB.2018 16:35:35

Middle channel



Date: 9.FEB.2018 16:34:49

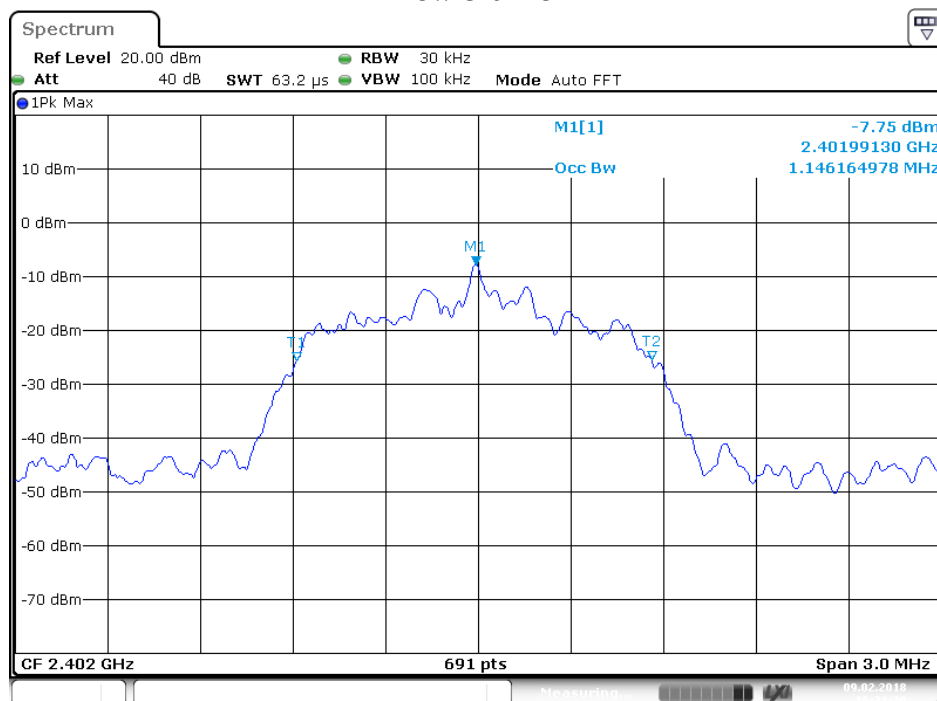
High channel



Date: 9.FEB.2018 16:34:06

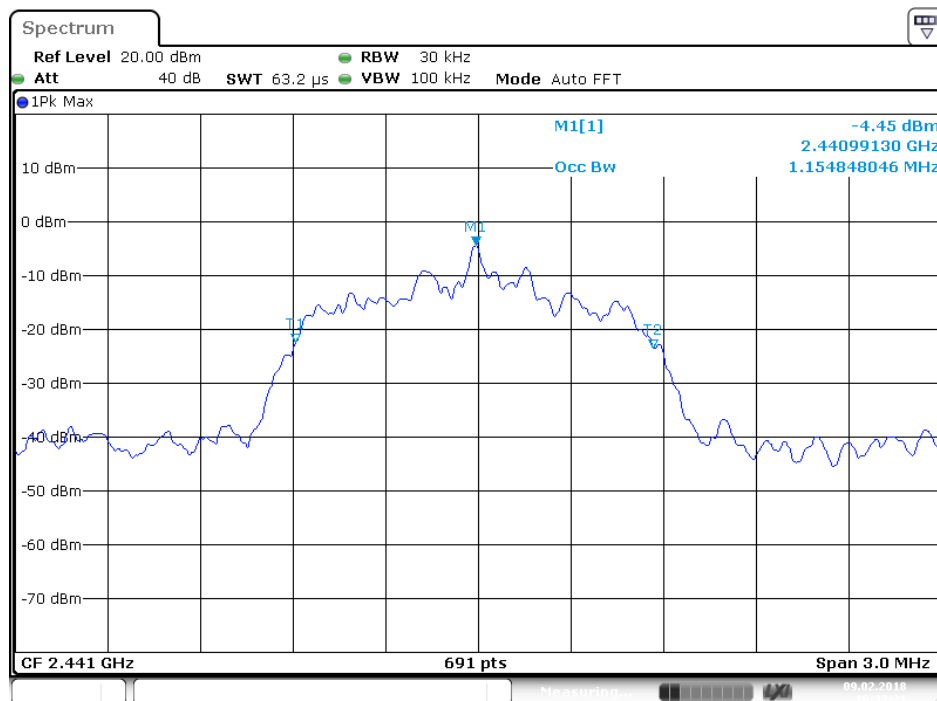
EDR mode

Low channel



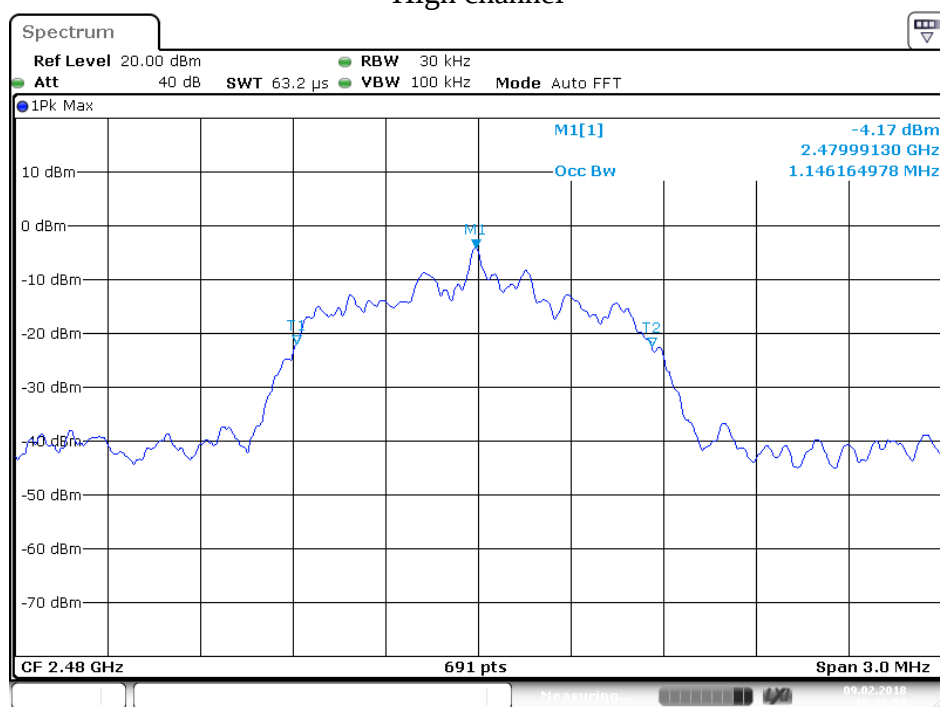
Date: 9.FEB.2018 16:31:30

Middle channel



Date: 9.FEB.2018 16:32:22

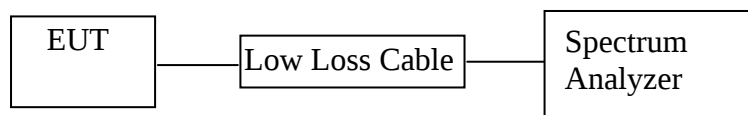
High channel



Date: 9.FEB.2018 16:32:58

14.CONDUCTED SPURIOUS EMISSION COMPLIANCE TEST

14.1.Block Diagram of Test Setup



(EUT: Wireless Stereo Earbuds)

14.2.The Requirement 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).

14.3.EUT Configuration on Measurement

The equipment is 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.

14.4.Operating Condition of EUT

14.4.1.Setup the EUT and simulator as shown as Section 14.1.

14.4.2.Turn on the power of all equipment.

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

14.5. Test Procedure

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

14.5.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz

14.5.3. The Conducted Spurious Emission was measured and recorded.

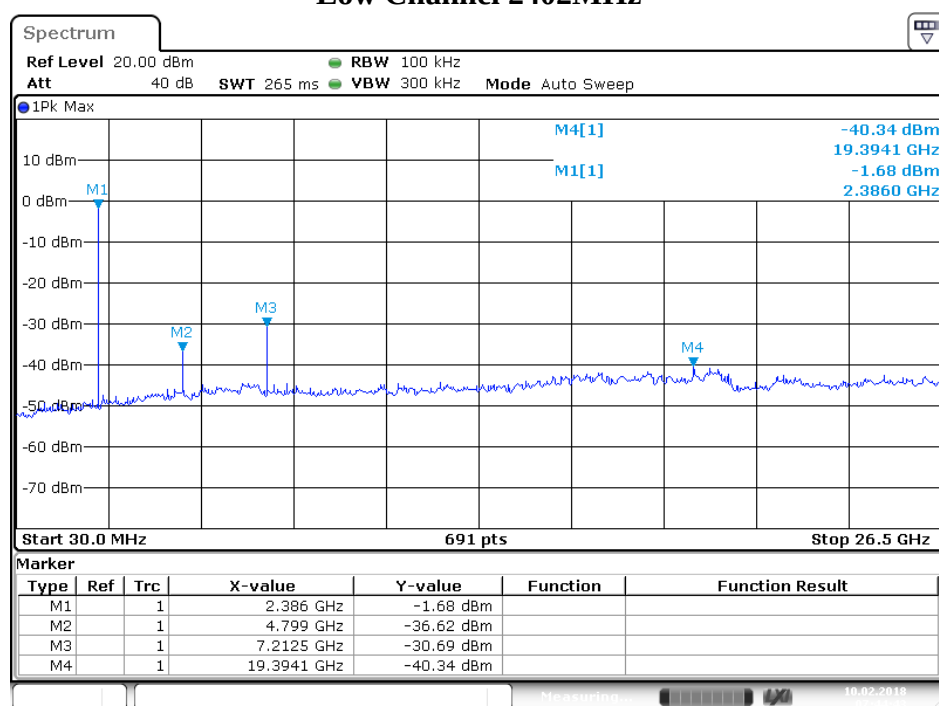
14.6. Test Result

Pass.

The spectrum analyzer plots are attached as below.

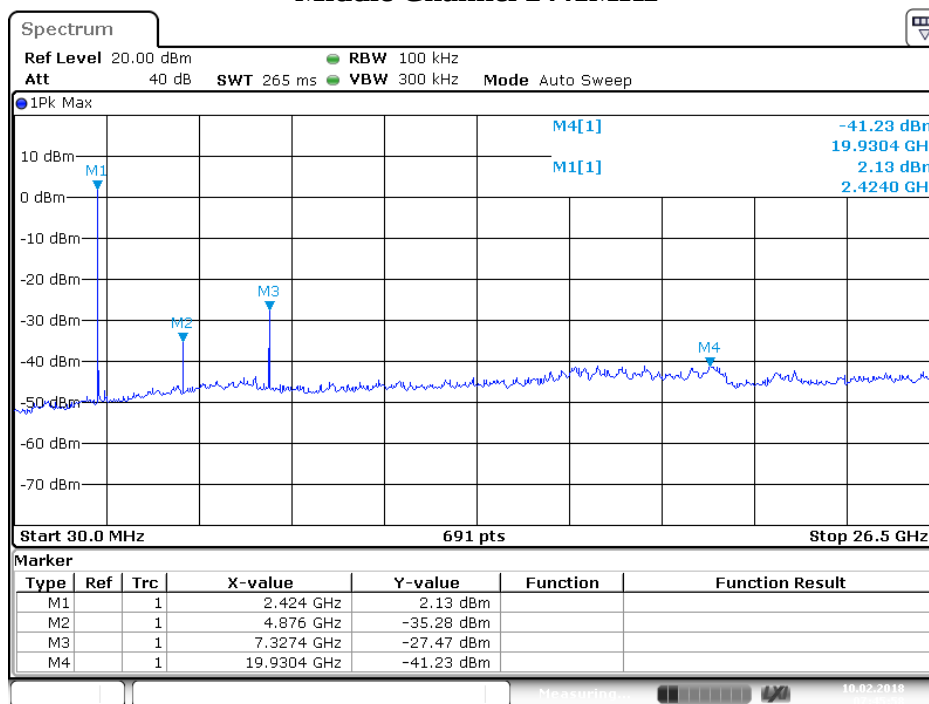
BDR mode

Low Channel 2402MHz



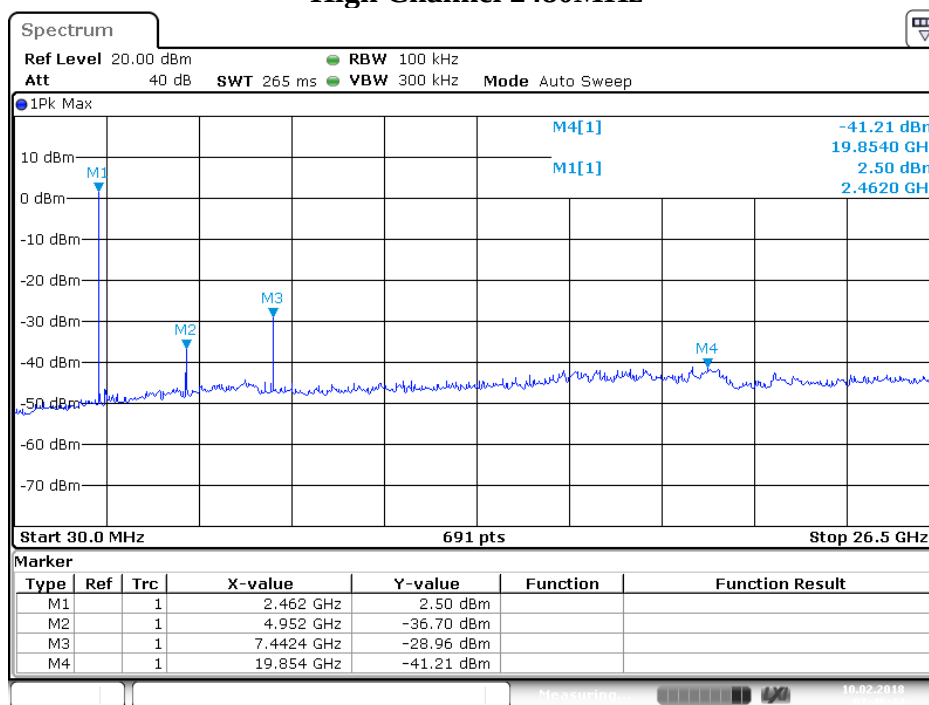
Date: 10.FEB.2018 07:44:43

Middle Channel 2441MHz



Date: 10.FEB.2018 07:45:58

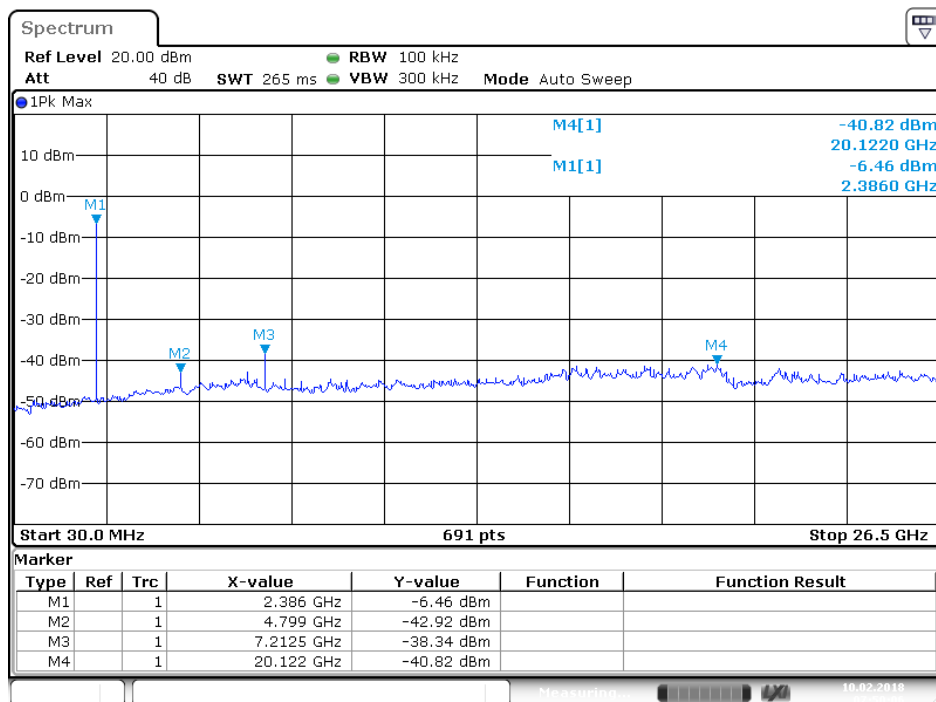
High Channel 2480MHz



Date: 10.FEB.2018 07:46:43

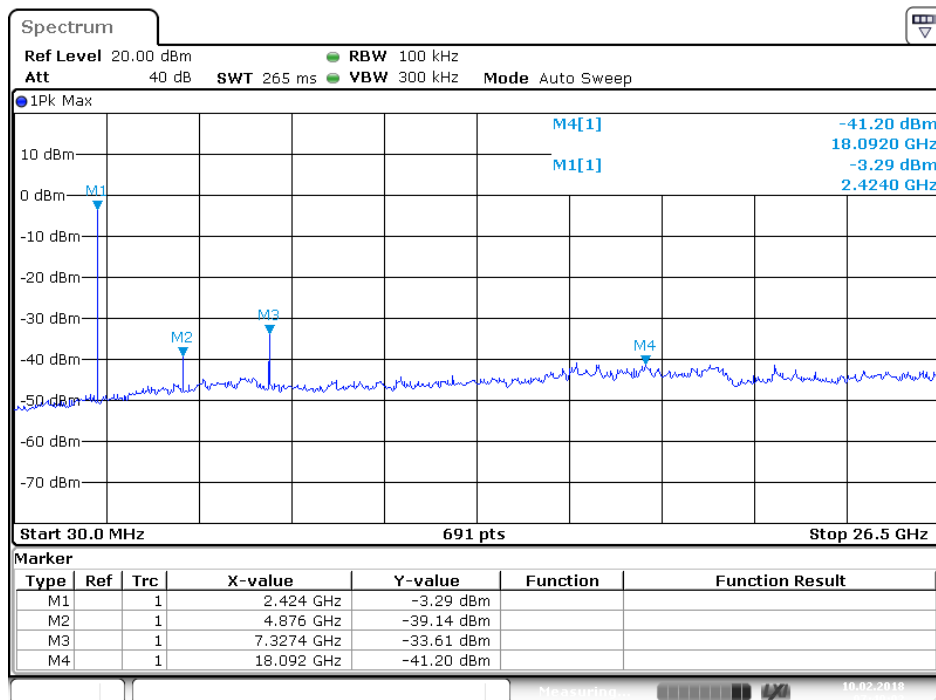
EDR mode

Low Channel 2402MHz



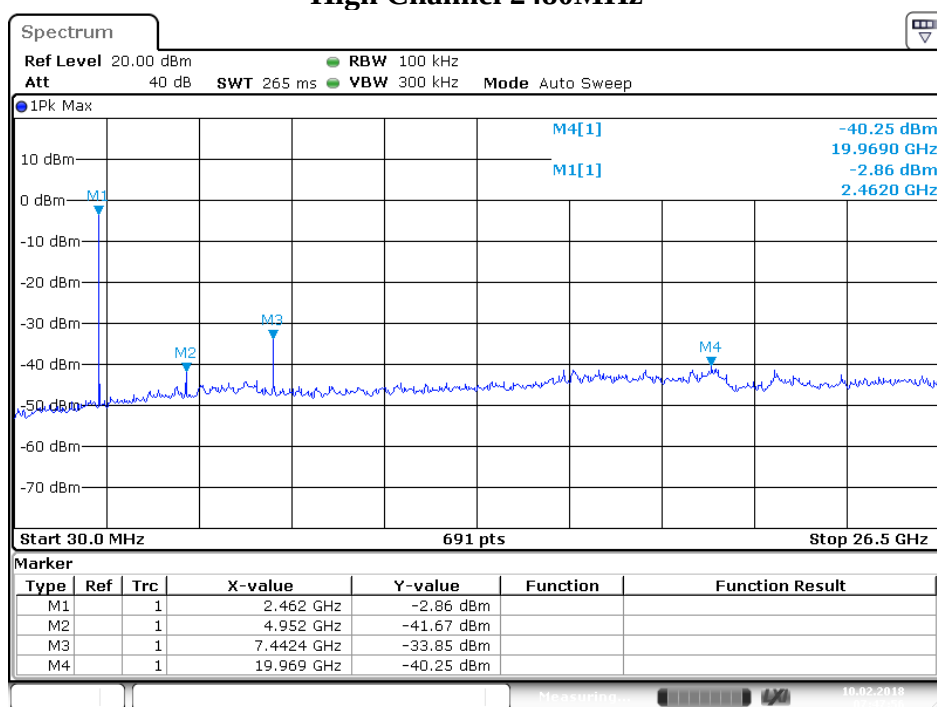
Date: 10.FEB.2018 07:50:06

Middle Channel 2441MHz



Date: 10.FEB.2018 07:49:02

High Channel 2480MHz



Date: 10.FEB.2018 07:47:55

15.ANTENNA REQUIREMENT

15.1.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.

15.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Max Antenna gain of EUT is 0.8dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.

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