

APPLICATION CERTIFICATION FCC Part 15C & RSS-247

On Behalf of
Country Mate Technology Ltd.

Bluetooth Around Neck Headset with Noise Cancellation
Model No.: NS-CAHBTEBNC-B, NS-CAHBTEBNC-B-C

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

Prepared for : Country Mate Technology Ltd.
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H.K.

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Report No. : ATE20181503
Date of Test : July 30-August 1, 2018
Date of Report : August 10, 2018

TABLE OF CONTENTS

Description	Page
Test Report Certification	
1. GENERAL INFORMATION	4
1.1. Description of Device (EUT).....	4
1.2. Accessory and Auxiliary Equipment	5
1.3. Description of Test Facility	5
1.4. Measurement Uncertainty	5
2. MEASURING DEVICE AND TEST EQUIPMENT	6
3. OPERATION OF EUT DURING TESTING	7
3.1. Operating Mode	7
3.2. Configuration and peripherals	7
4. TEST PROCEDURES AND RESULTS	8
5. DESCRIPTION OF VERSION	9
6. RADIATED EMISSION TEST	10
6.1. Block Diagram of Test Setup.....	10
6.2. The Limit For Section 15.247(d)	11
6.3. The Requirement For RSS-247 Section 5.5.....	11
6.4. Transmitter Emission Limit	12
6.5. Restricted bands of operation	13
6.6. Configuration of EUT on Measurement	15
6.7. Test Procedure	15
6.8. Data Sample.....	16
6.9. The Field Strength of Radiation Emission Measurement Results	16
7. BAND EDGE COMPLIANCE TEST	44
7.1. Block Diagram of Test Setup.....	44
7.2. The Requirement For Section 15.247(d)	44
7.3. The Requirement For RSS-247 Section 5.5.....	44
7.4. EUT Configuration on Measurement	44
7.5. Operating Condition of EUT	45
7.6. Test Procedure	45
7.7. Test Result	45
8. AC POWER LINE CONDUCTED EMISSION.....	51
8.1. Block Diagram of Test Setup.....	51
8.2. Test System Setup.....	51
8.3. Power Line Conducted Emission Measurement Limits.....	52
8.4. Configuration of EUT on Measurement	52
8.5. Operating Condition of EUT	52
8.6. Test Procedure	52
8.7. Data Sample.....	53
8.8. Power Line Conducted Emission Measurement Results	53

Test Report Certification

Applicant : Country Mate Technology Ltd.
Manufacturer : Country Mate Technology Ltd.
Product : Bluetooth Around Neck Headset with Noise Cancellation
Model No. : NS-CAHBTEBNC-B, NS-CAHBTEBNC-B-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 5 April 2018

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 :
Date of Report:

July 30-August 1, 2018

August 10, 2018

Prepared by :

Star Yang
(Star Yang, Engineer)

Approved &
Authorized Signer :

Sean Liu
(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Bluetooth Around Neck Headset with Noise Cancellation
Model Number	:	NS-CAHBTEBNC-B, NS-CAHBTEBNC-B-C (Note: Above series are identical in schematic, structure and critical components, Only the model name is different from the market requirement, NS-CAHBTEBNC-B For the FCC reports, NS-CAHBTEBNC-B-C For the IC reports.)
HVIN	:	NS-CAHBTEBNC-B-C
Bluetooth version	:	V4.1 single mode
Frequency Range	:	2402MHz-2480MHz
Number of Channels	:	79
Channel Separation	:	1MHz
Antenna Gain(Max)	:	1.92 dBi
Antenna type	:	Integral Antenna
Modulation mode	:	GFSK, $\pi/4$ DQPSK, 8DPSK
Trade Name	:	INSIGNIA
Rating	:	DC 3.7V, 120mAh via built-in Li-ion Polymer Battery DC 5V, 500mA via Micro USB interface for Charging
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.

Notebook PC: Manufacturer: Lenovo
M/N: ThinkPad X240
S/N:n.a

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

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	ESR	101817	Jan. 06, 2018	Jan. 05, 2019
EMI Test Receiver	Rohde& Schwarz	ESCI3	SB9058/05	May 02, 2018	May 01, 2019
EMI Test Receiver	Rohde& Schwarz	ESU40	SB8501/09	May 13, 2018	May 12, 2019
Spectrum Analyzer	Rohde&Schwarz	FSV-40	101495	Jan. 06, 2018	Jan. 05, 2019
Pre-Amplifier	Agilent	8447D	294A10619	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. 06, 2018	Jan. 05, 2019
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 06, 2018	Jan. 05, 2019
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 06, 2018	Jan. 05, 2019
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 06, 2018	Jan. 05, 2019
Horn Antenna	Rohde&Schwarz	3160-10	SB8501/12	May 13, 2018	May 12, 2019
Open Switch and Control Unit	Rohde&Schwarz	OSP120 + OSP-B157	101244 + 100866	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

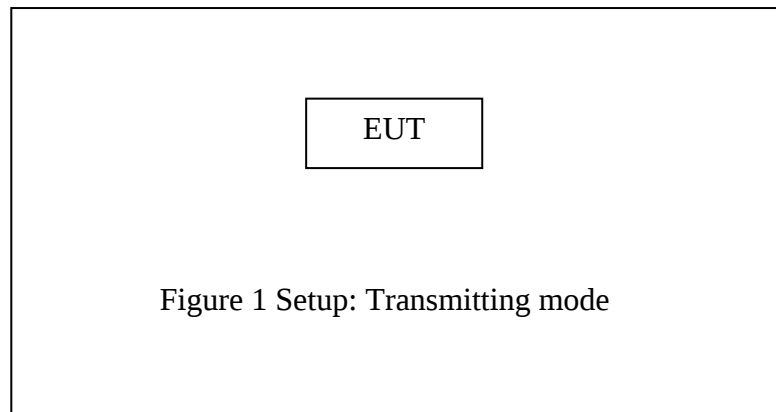
Low Channel: 2402MHz

Middle Channel: 2441MHz

High Channel: 2480MHz

Hopping

3.2.Configuration and peripherals



4. TEST PROCEDURES AND RESULTS

2.4G Bluetooth 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 Section 5.1(a)	20dB Bandwidth Test	Reference to report 5088222 001
Section 15.247(a)(1) RSS-247 Section 5.1(b)	Carrier Frequency Separation Test	Reference to report 5088222 001
Section 15.247(a)(1)(iii) RSS-247 Section 5.1(d)	Number Of Hopping Frequency Test	Reference to report 5088222 001
Section 15.247(a)(1)(iii) RSS-247 Section 5.1(d)	Dwell Time Test	Reference to report 5088222 001
Section 15.247(b)(1) RSS-247 Section 5.4(b)	Maximum Peak Output Power Test	Reference to report 5088222 001
Section 15.247(d) Section 15.209 RSS-247 Section 5.5 RSS-Gen Section 6.13	Radiated Emission Test	Compliant
RSS-Gen Section 6.7	99% Occupied Bandwidth	Reference to report 5088222 001
Section 15.247(d) RSS-247 Section 5.5	Band Edge Compliance Test	Compliant
Section 15.247(d) RSS-247 Section 5.5	Conducted Spurious Emission Test	Reference to report 5088222 001
Section 15.203 RSS-Gen Section 6.8	Antenna Requirement	Reference to report 5088222 001

5. DESCRIPTION OF VERSION

Date of Report	Summary	Report No.
July 12, 2017	Original Report	50088222 001
August 10, 2018	Update the model	ATE20181503

Circuit schematic comparison:

1. the new version adds a touch switch button on the basis of the original version.
2. the new version added a motor vibration on the basis of the original version.
3. other parts, such as RF, charge the same as before.

PCB Layout comparison:

1. The RF layout part remains unchanged.
2. the charge layout part is unchanged, all of which are CSR8640 internal charging management.
3. Add button part
4. Add motor welding plate

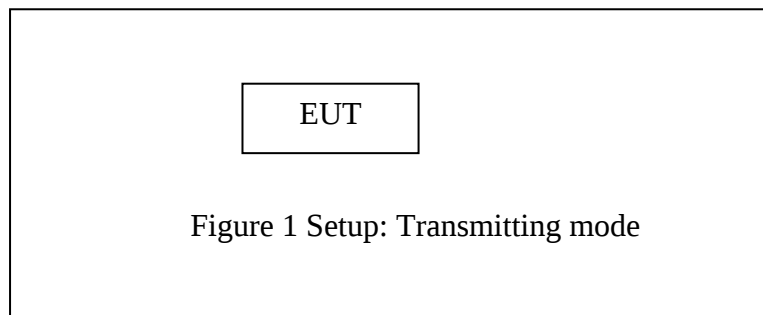
Remark:

1. Compared with the original report 50088222 001, sample of the new provision is basically the same as the old one. Through evaluation of the above difference, We retested the conducted emission, radiation band edge compliance and radiation emission. Other all test data and test pictures would refer to 50088222 001.
2. This report is based on report of 50088222 001.

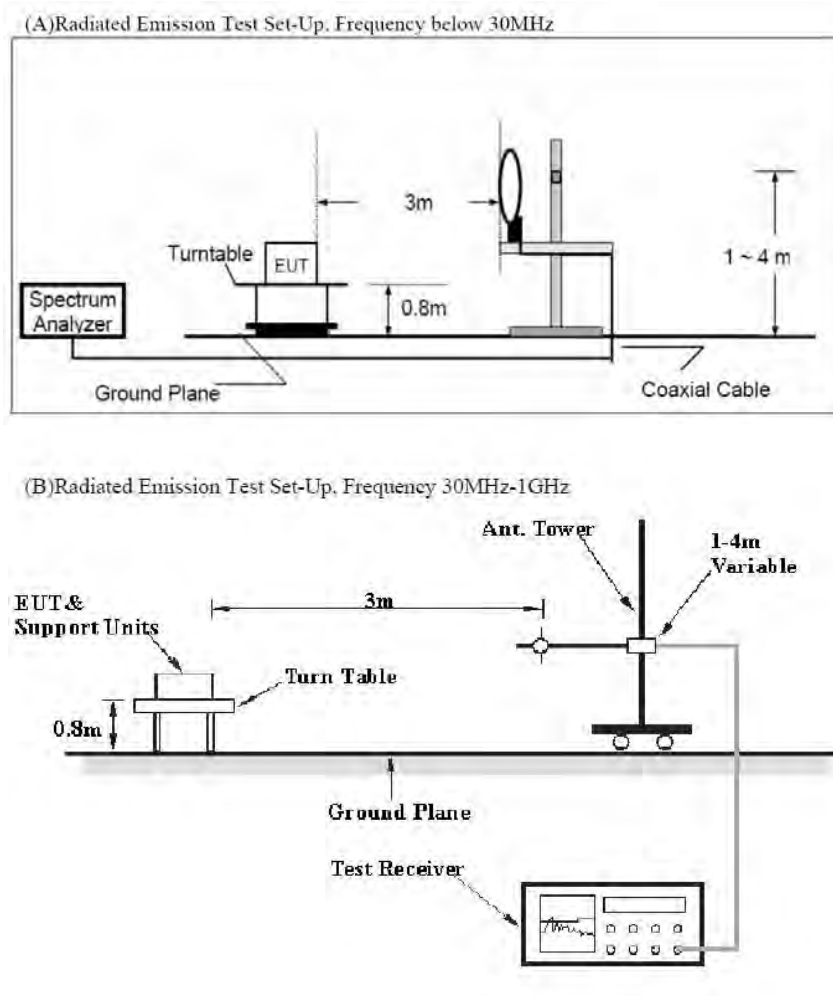
6. RADIATED EMISSION TEST

6.1. Block Diagram of Test Setup

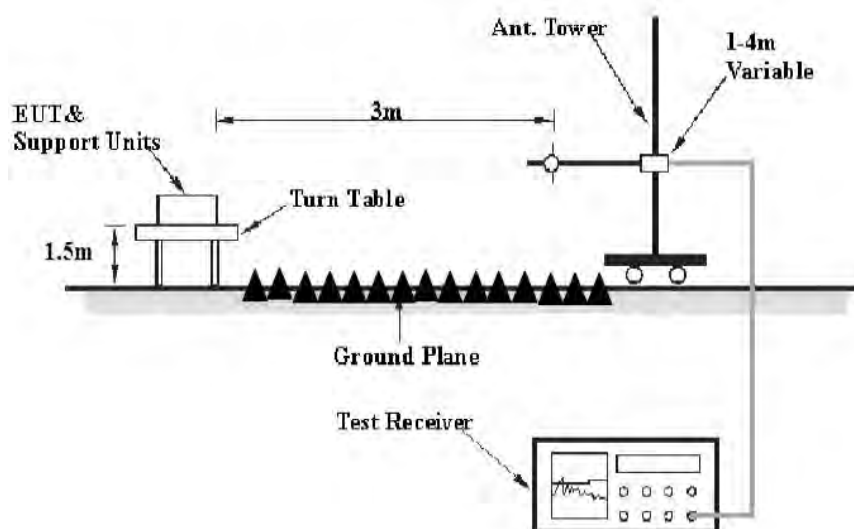
6.1.1. Block diagram of connection between the EUT and peripherals



6.1.2. Semi-Anechoic Chamber Test Setup Diagram



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



6.2. 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).

6.3. The Requirement For RSS-247 Section 5.5

Section 5.5: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

6.4. Transmitter Emission Limit

Radiated emissions shall comply with the field strength limits shown in table 5 and table 6. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter's fundamental emission.

Table 5 – General field strength limits at frequencies above 30 MHz

Frequency (MHz)	Field strength ($\mu\text{V/m}$ at 3 m)
30 – 88	100
88 – 216	150
216 – 960	200
Above 960	500

Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Magnetic field strength (H-Field) ($\mu\text{A/m}$)	Measurement distance (m)
9 - 490 kHz ¹	$6.37/F$ (F in kHz)	300
490 - 1705 kHz	$63.7/F$ (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

6.5.Restricted bands of operation

6.5.1.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.

6.5.2.RSS-Gen 8.10 Restricted bands of operation

Restricted frequency bands, identified in table 7, are designated primarily for safety-of-life services (distress calling and certain aeronautical activities), certain satellite downlinks, radio astronomy and some government uses. Except where otherwise indicated, the following conditions related to the restricted frequency bands apply:

(a) The transmit frequency, including fundamental components of modulation, of licence-exempt radio apparatus shall not fall within the restricted frequency bands listed in table 7 except for apparatus compliant with RSS-287, *Emergency Position Indicating Radio Beacons (EPIRB)*, *Emergency Locator Transmitters (ELT)*, *Personal Locator Beacons (PLB)*, and *Maritime Survivor Locator Devices (MSLD)*.

(b) Unwanted emissions that fall into restricted frequency bands listed in table 7 shall comply with the limits specified in table 5 and table 6.

(c) Unwanted emissions that fall into restricted frequency bands listed in table 7 shall comply with the limits specified in table 5 and table 6.

Table 7 – Restricted frequency bands*

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 - 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 - 138	--	

* Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

6.6.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.

6.7.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.

6.8.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.

6.9.The Field Strength of Radiation Emission Measurement Results

PASS.

Note: We tested Bluetooth all 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

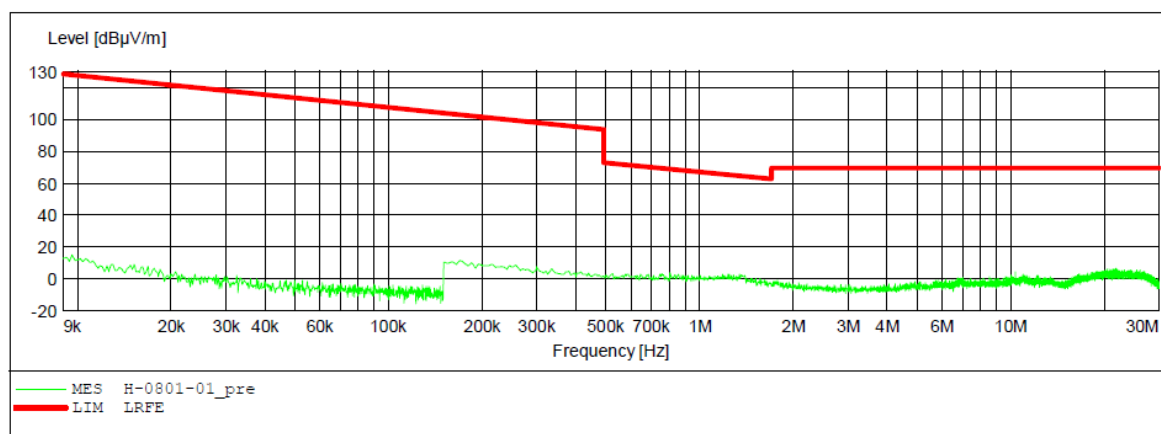
ACCURATE TECHNOLOGY CO., LTD.

FCC Class B 3M Radiated

EUT: M/N: NS-CAHBTEBNC-B
 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: 2018-08-01 /

SCAN TABLE: "LFRE 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	1516M	
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M	



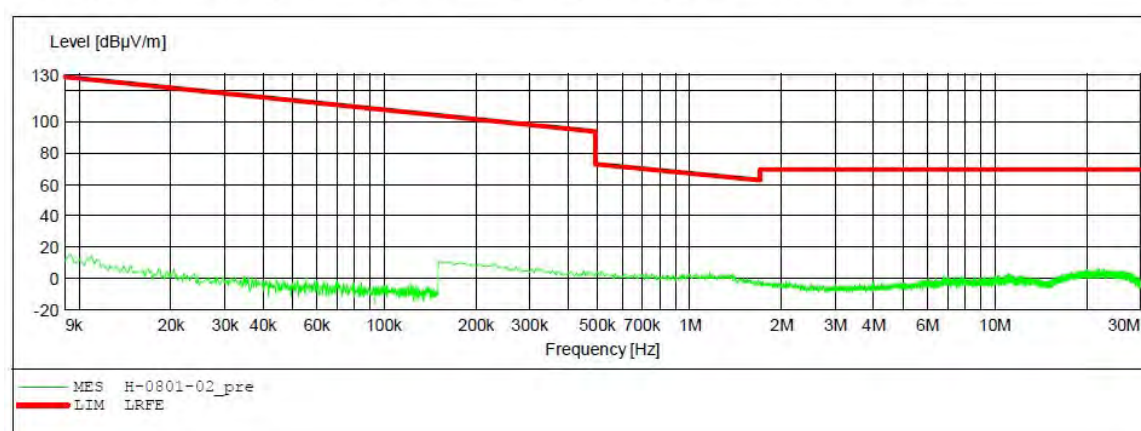
ACCURATE TECHNOLOGY CO., LTD.

FCC Class B 3M Radiated

EUT: M/N: NS-CAHBTEBNC-B
 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: 2018-08-01 /

SCAN TABLE: "LFRE 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	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



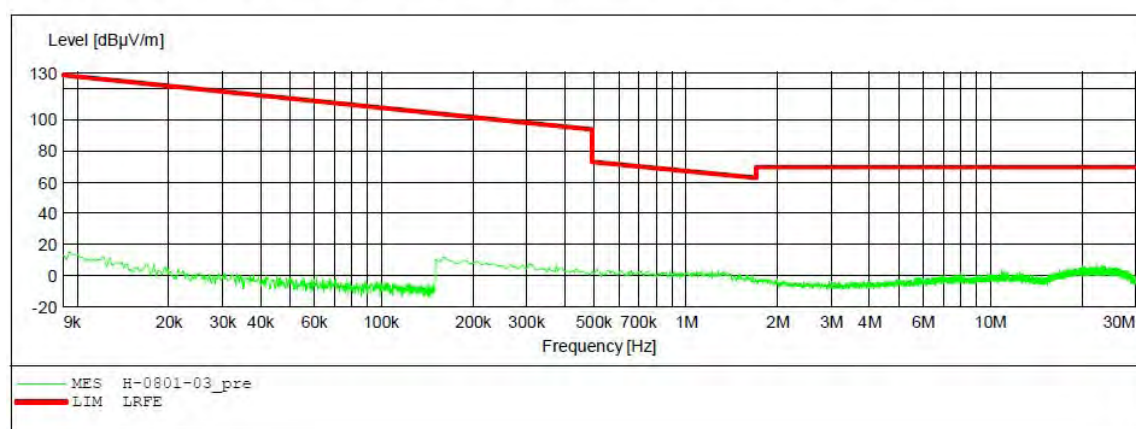
ACCURATE TECHNOLOGY CO., LTD.

FCC Class B 3M Radiated

EUT: M/N: NS-CAHBTEBNC-B
 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: 2018-08-01 /

SCAN TABLE: "LFRE 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	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



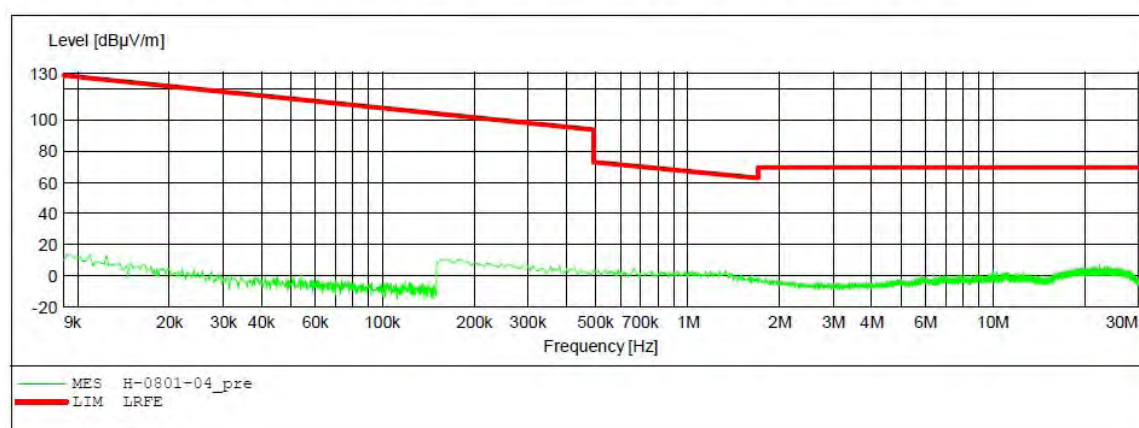
ACCURATE TECHNOLOGY CO., LTD.

FCC Class B 3M Radiated

EUT: M/N: NS-CAHBTEBNC-B
 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: 2018-08-01 /

SCAN TABLE: "LFRE 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	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



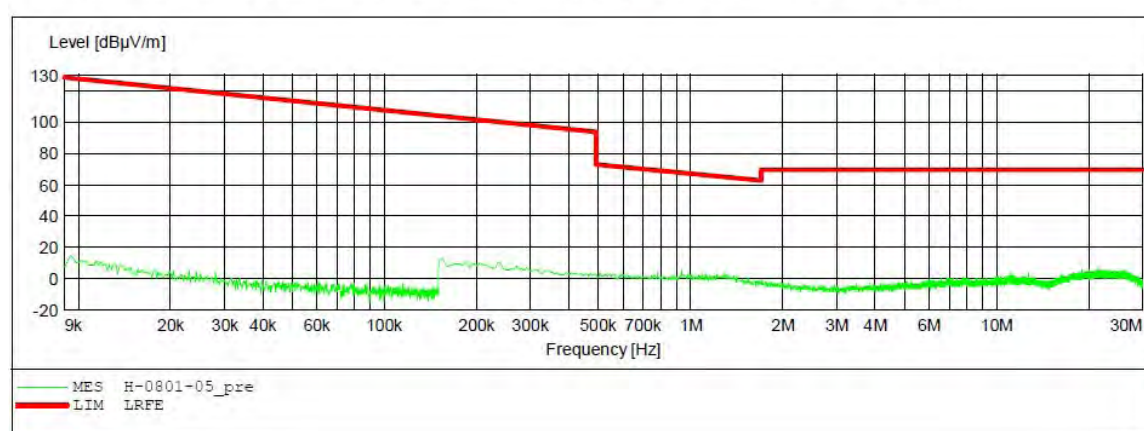
ACCURATE TECHNOLOGY CO., LTD.

FCC Class B 3M Radiated

EUT: M/N: NS-CAHBTEBNC-B
 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: 2018-08-01 /

SCAN TABLE: "LFRE 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	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



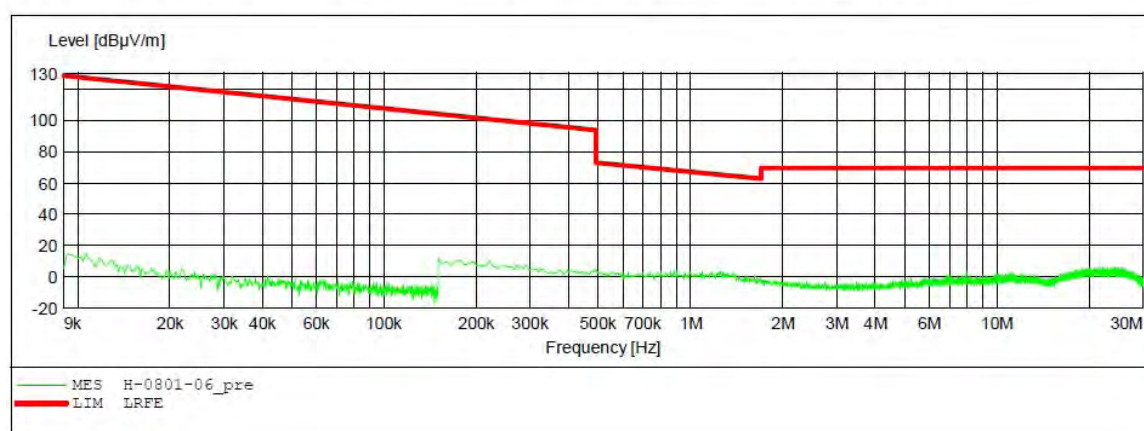
ACCURATE TECHNOLOGY CO., LTD.

FCC Class B 3M Radiated

EUT: M/N: NS-CAHBTEBNC-B
 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: 2018-08-01 /

SCAN TABLE: "LFRE 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	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



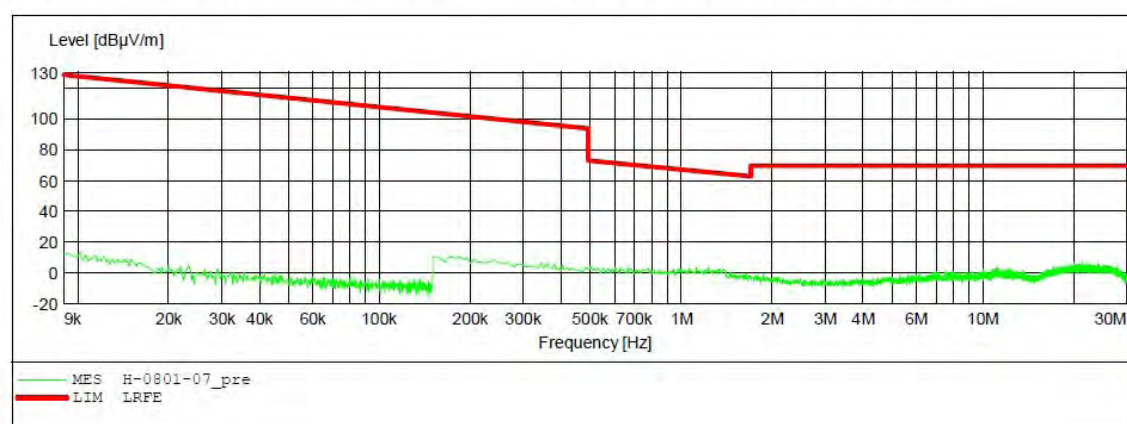
ACCURATE TECHNOLOGY CO., LTD.

FCC Class B 3M Radiated

EUT: M/N: NS-CAHBTEBNC-B
 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: 2018-08-01 /

SCAN TABLE: "LFRE 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	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



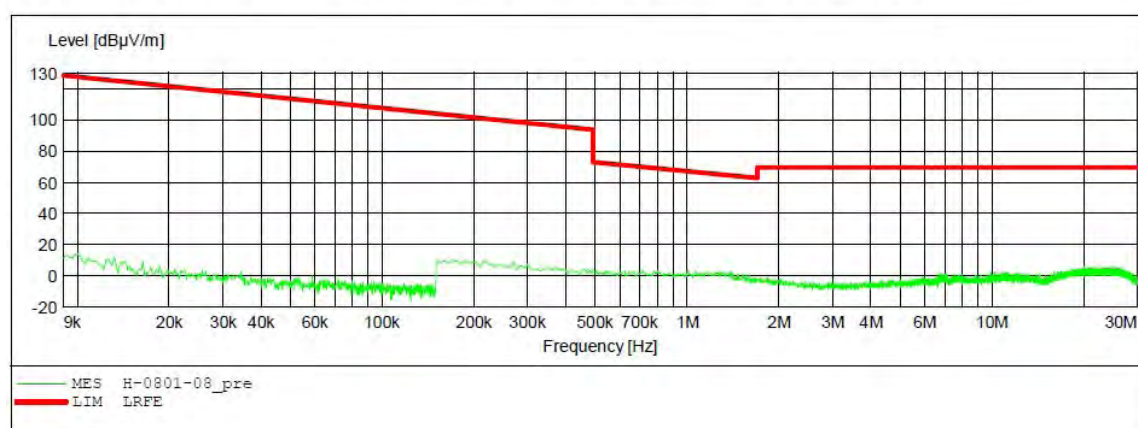
ACCURATE TECHNOLOGY CO., LTD.

FCC Class B 3M Radiated

EUT: M/N: NS-CAHBTEBNC-B
 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: 2018-08-01 /

SCAN TABLE: "LFRE 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	1516M	
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M	



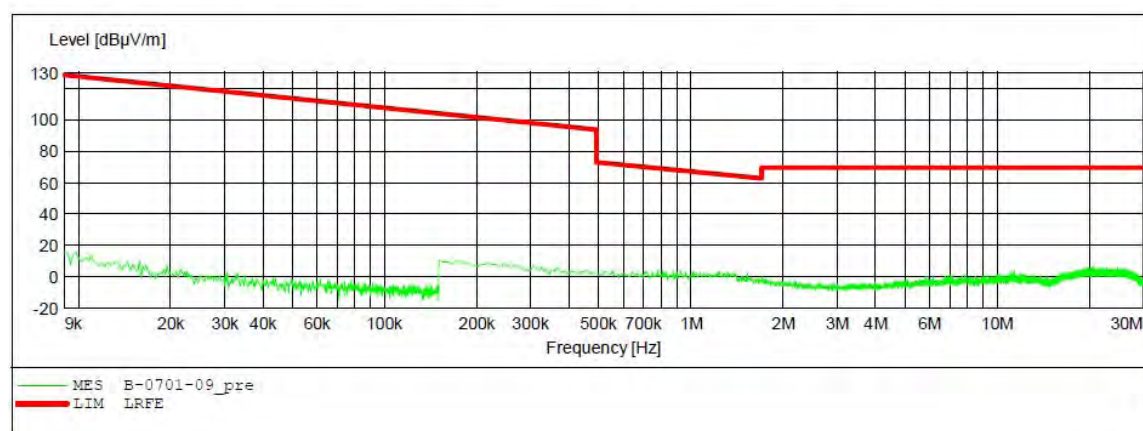
ACCURATE TECHNOLOGY CO., LTD.

FCC Class B 3M Radiated

EUT: M/N: NS-CAHBTEBNC-B
 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: 2018-08-01 /

SCAN TABLE: "LFRE 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	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



30MHz-1000MHz test data



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Job No.: LGW2018 #2097

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2402MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

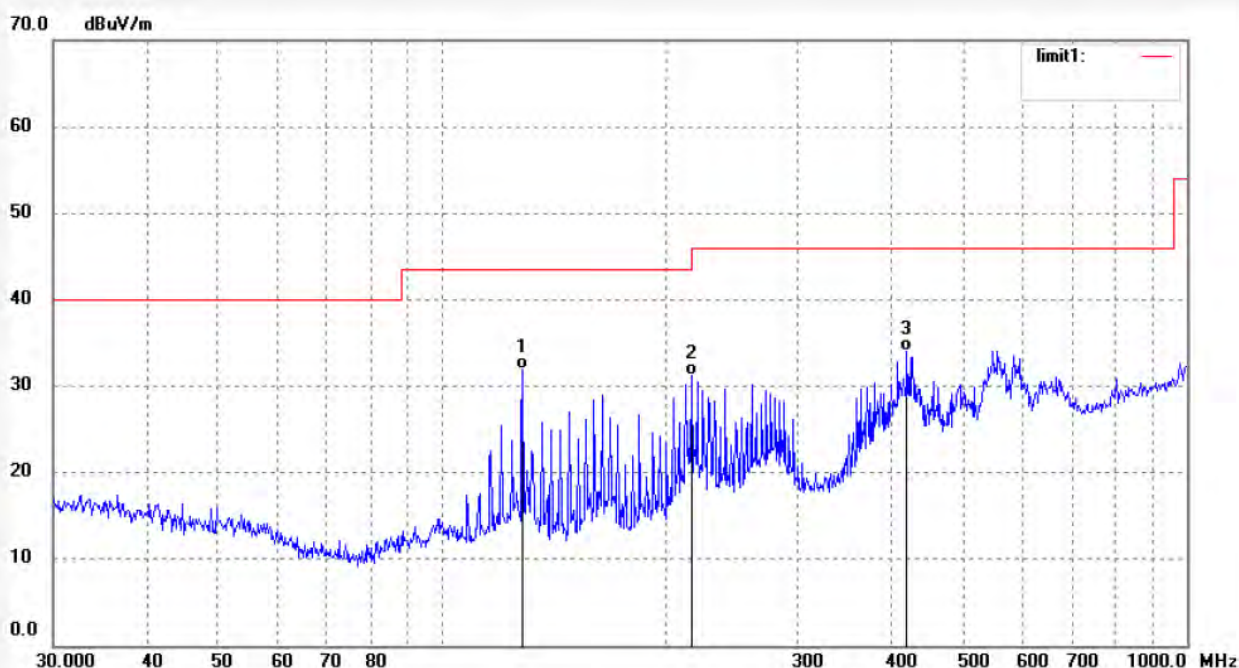
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	128.1129	45.58	-13.71	31.87	43.50	-11.63	QP			
2	216.0240	42.84	-11.66	31.18	46.00	-14.82	QP			
3	420.5803	39.87	-5.75	34.12	46.00	-11.88	QP			

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Job No.: LGW2018 #2096

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2402MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

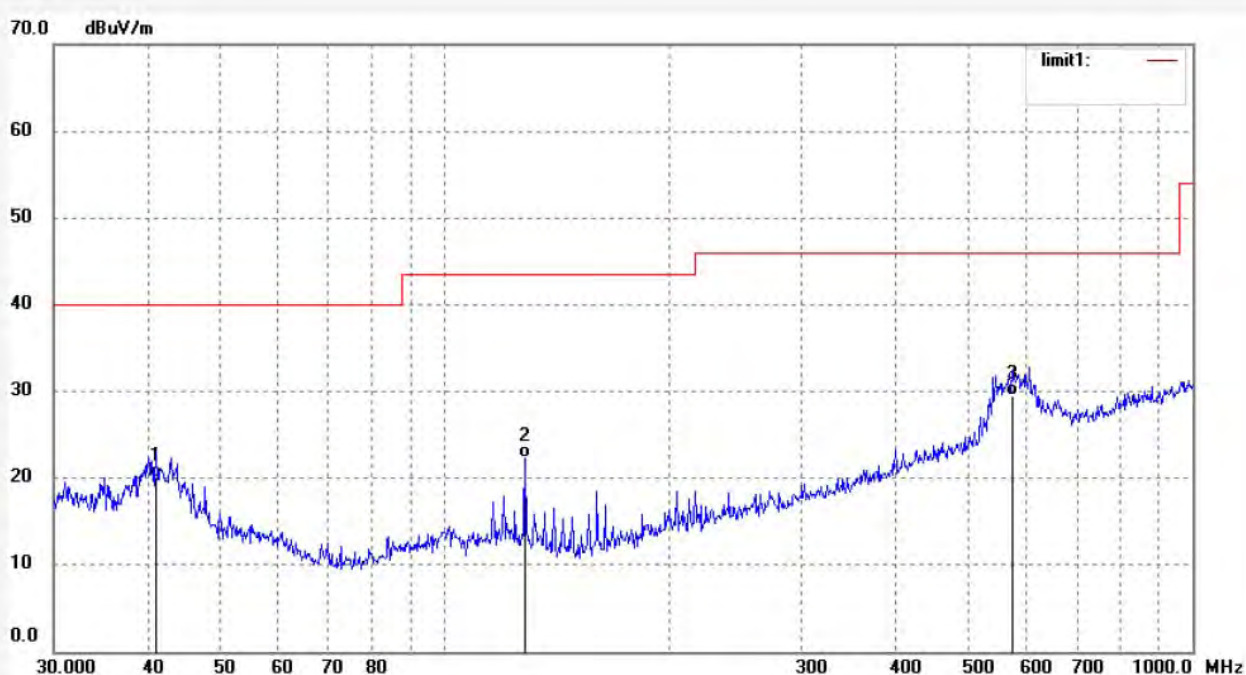
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	41.1319	31.83	-11.78	20.05	40.00	-19.95	QP			
2	128.1129	35.97	-13.71	22.26	43.50	-21.24	QP			
3	574.6258	32.11	-2.63	29.48	46.00	-16.52	QP			



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Job No.: LGW2018 #2098

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2441MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

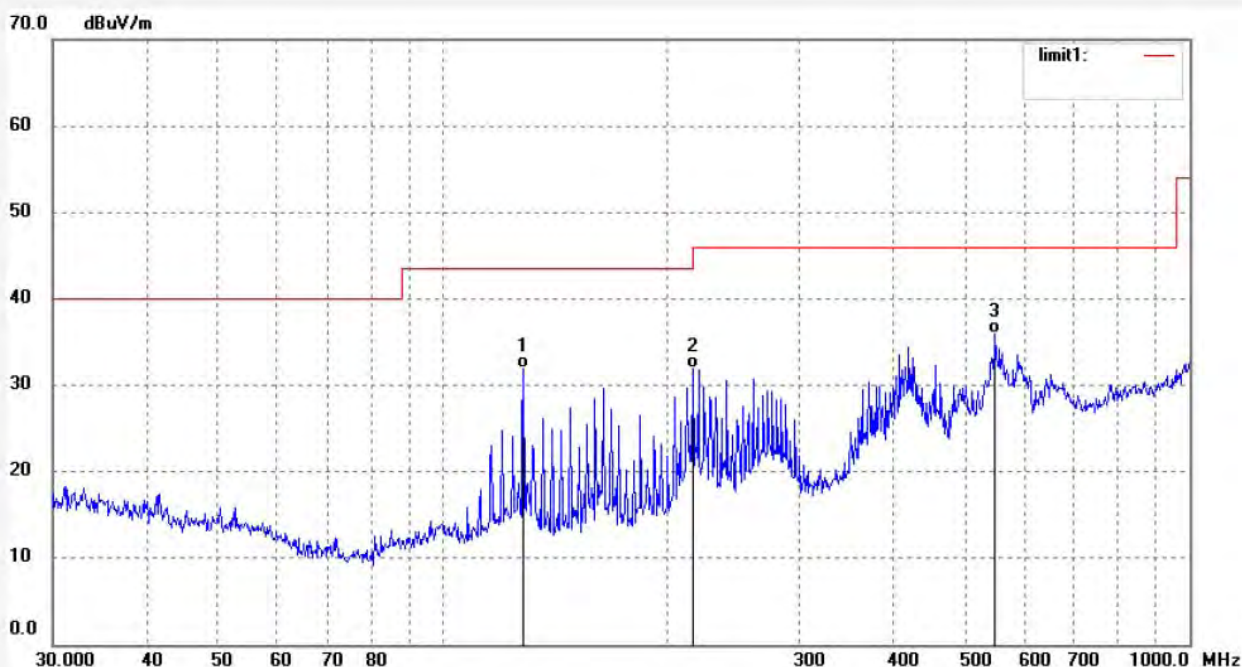
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	128.1129	45.67	-13.71	31.96	43.50	-11.54	QP			
2	216.0240	43.68	-11.66	32.02	46.00	-13.98	QP			
3	549.0193	39.13	-3.11	36.02	46.00	-9.98	QP			

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Job No.: LGW2018 #2099

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2441MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

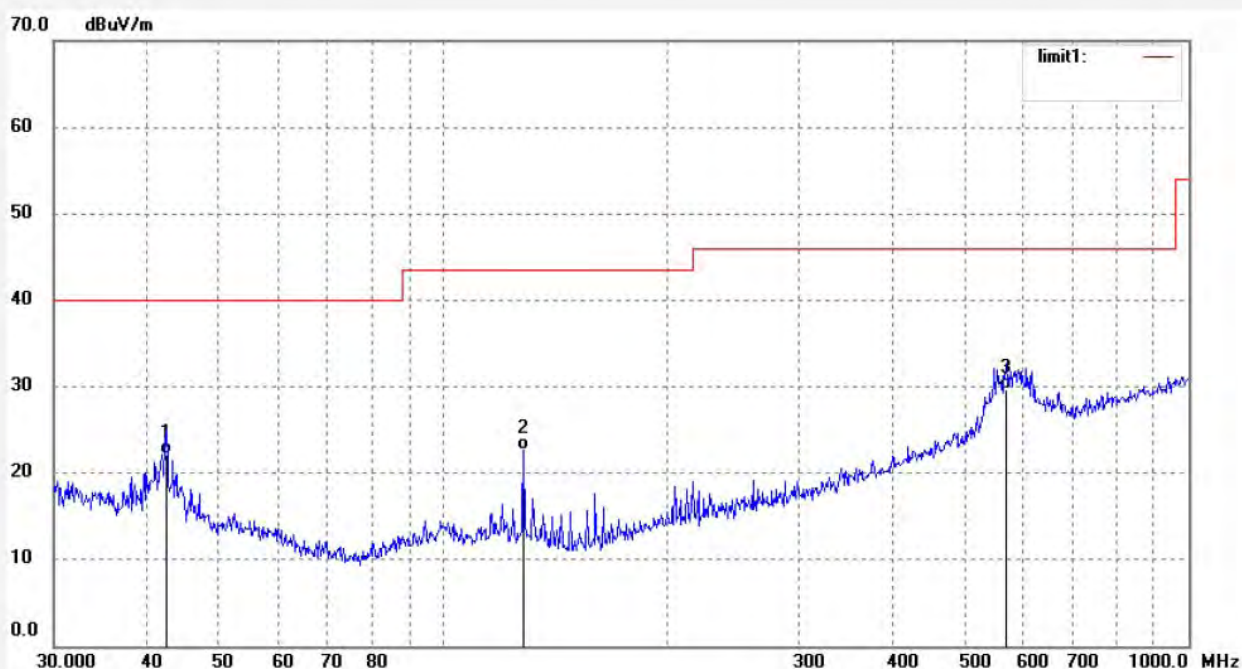
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	42.4508	34.13	-12.07	22.06	40.00	-17.94	QP			
2	128.1129	36.33	-13.71	22.62	43.50	-20.88	QP			
3	568.6127	32.43	-2.78	29.65	46.00	-16.35	QP			



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Job No.: LGW2018 #2101

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2480MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

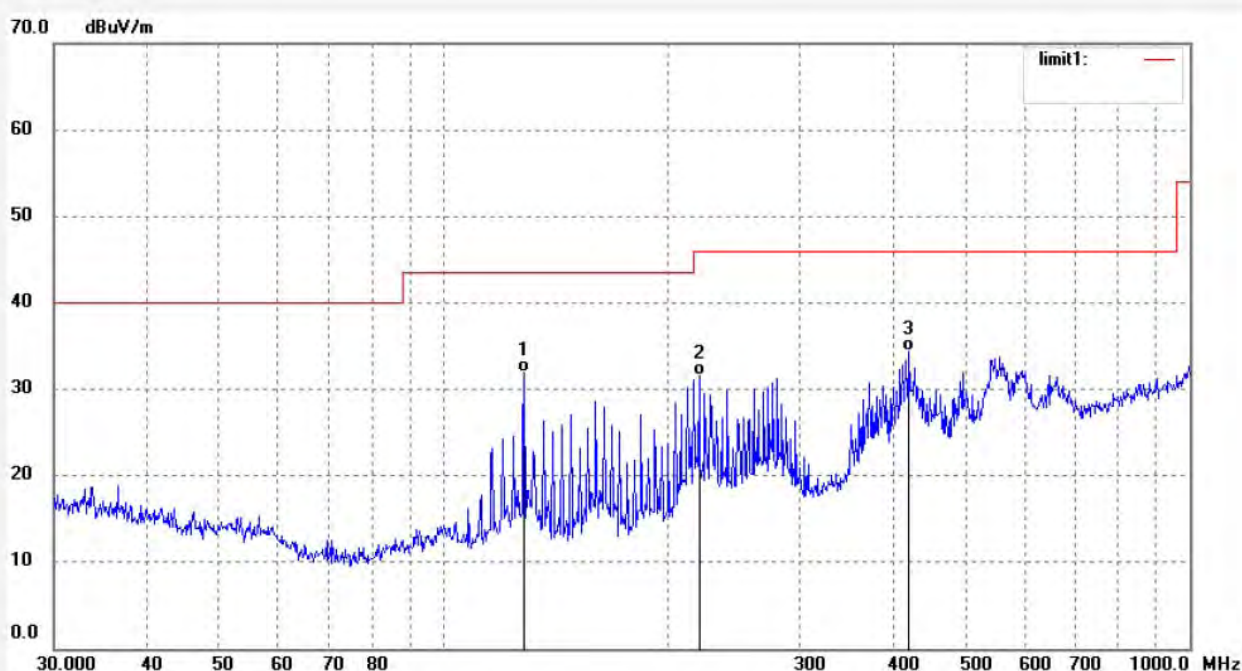
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	128.1129	45.70	-13.71	31.99	43.50	-11.51	QP			
2	219.8448	43.09	-11.51	31.58	46.00	-14.42	QP			
3	420.5803	40.16	-5.75	34.41	46.00	-11.59	QP			

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Job No.: LGW2018 #2100

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2480MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

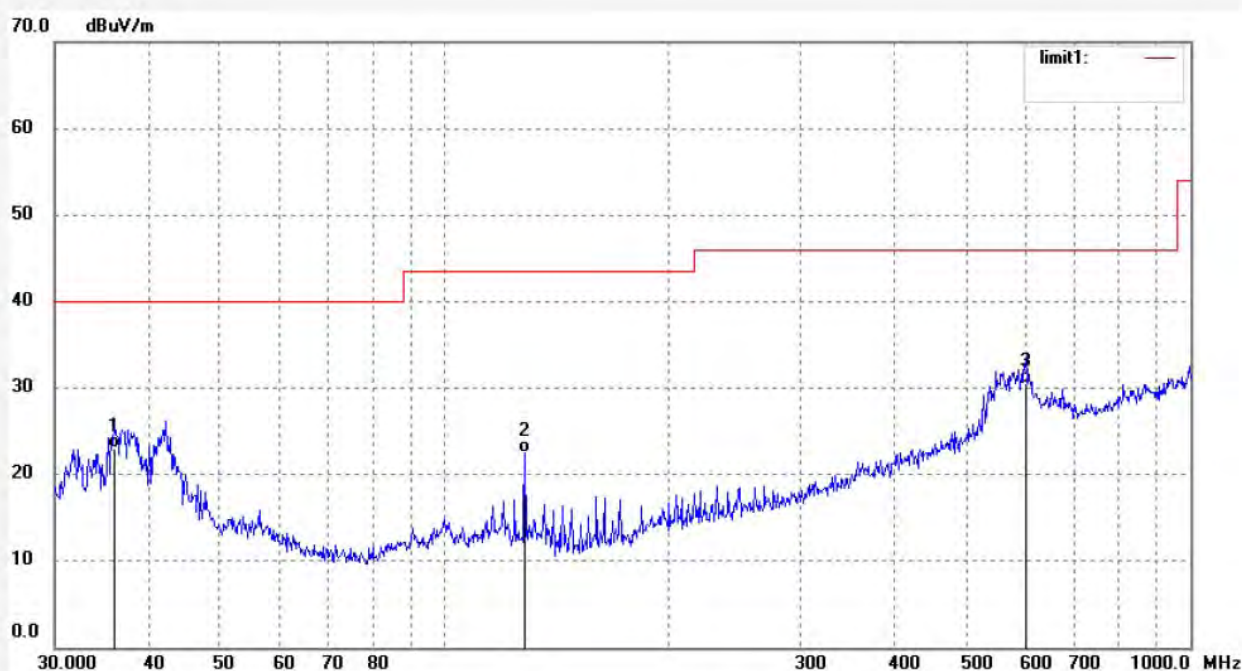
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	36.1272	33.73	-10.67	23.06	40.00	-16.94	QP			
2	128.1129	36.26	-13.71	22.55	43.50	-20.95	QP			
3	601.4265	32.90	-2.37	30.53	46.00	-15.47	QP			

1GHz-18GHz test data



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Job No.: LGW2018 #2081

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2402MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

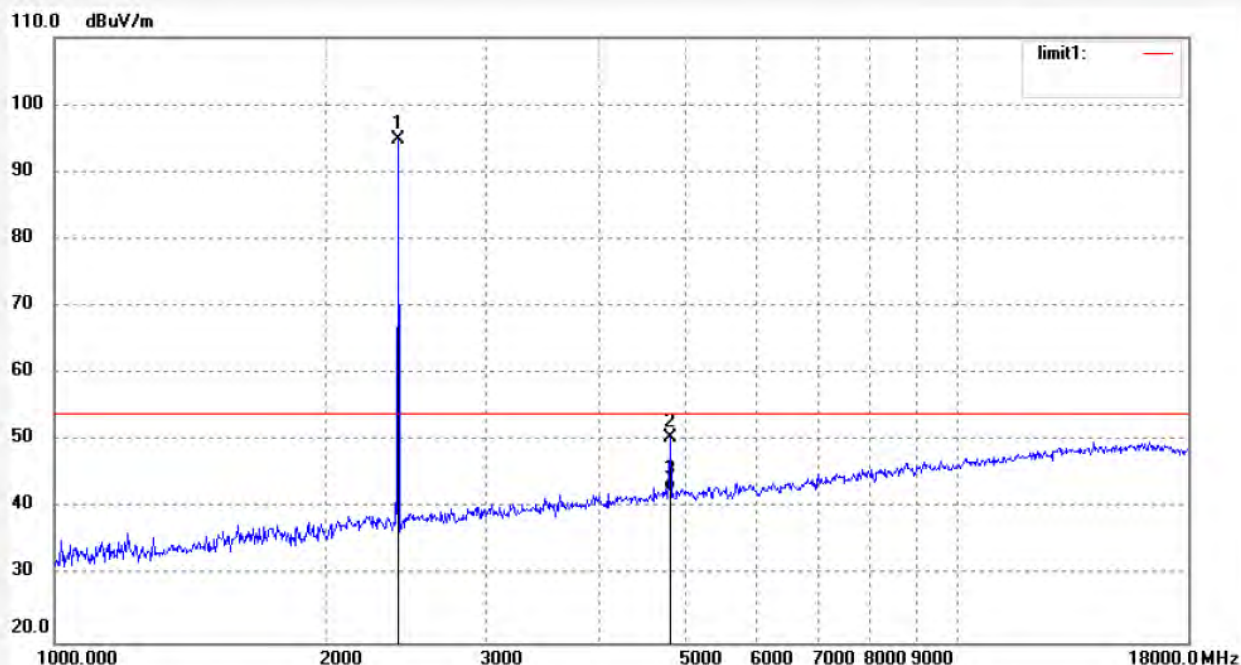
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



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	93.93	0.89	94.82	/	/	peak			
2	4804.027	43.08	7.40	50.48	74.00	-23.52	peak			
3	4804.027	35.17	7.40	42.57	54.00	-11.43	AVG			

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Job No.: LGW2018 #2080

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2402MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

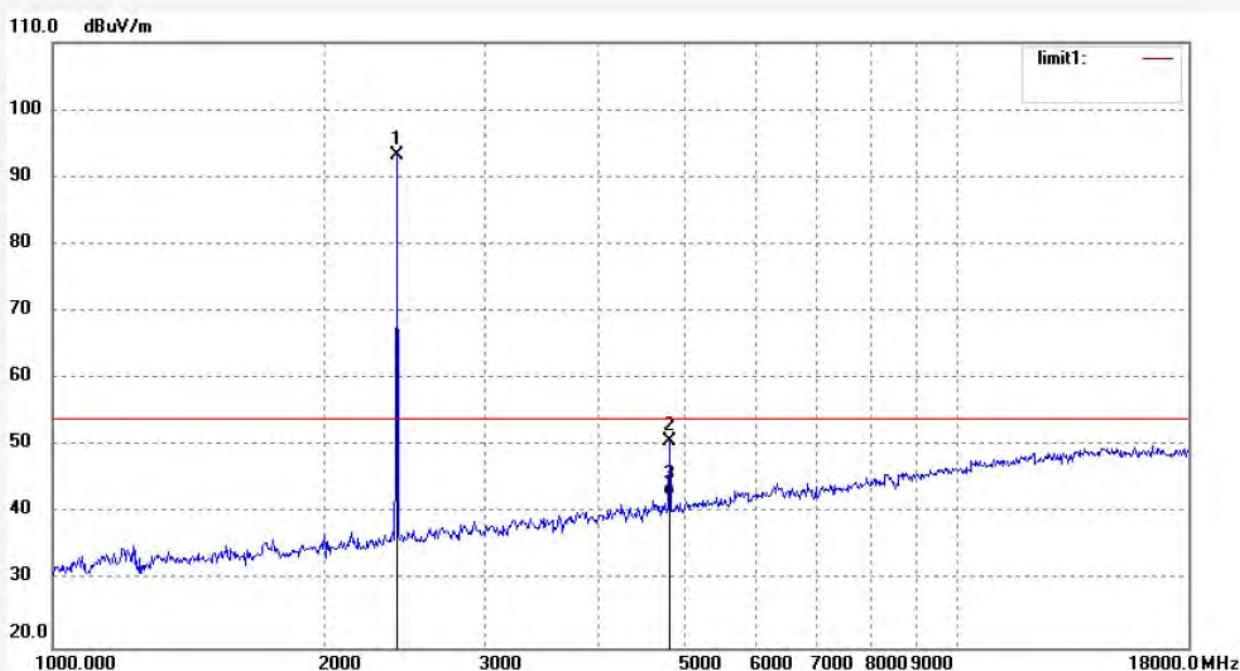
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



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	92.44	0.89	93.33	/	/	peak			
2	4804.025	43.25	7.40	50.65	74.00	-23.35	peak			
3	4804.025	35.16	7.40	42.56	54.00	-11.44	AVG			

Job No.: LGW2018 #2085

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2441MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

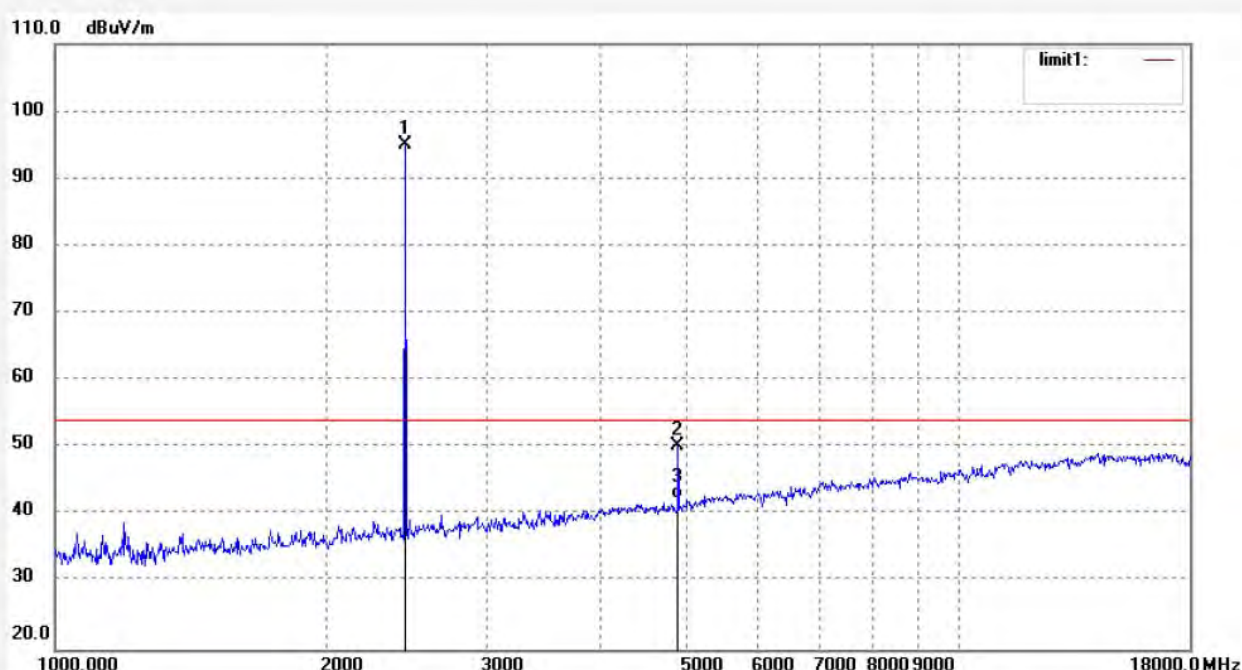
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



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	93.94	1.06	95.00	/	/	peak			
2	4882.027	42.23	8.11	50.34	74.00	-23.66	peak			
3	4882.027	34.21	8.11	42.32	54.00	-11.68	AVG			

Job No.: LGW2018 #2084

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2441MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

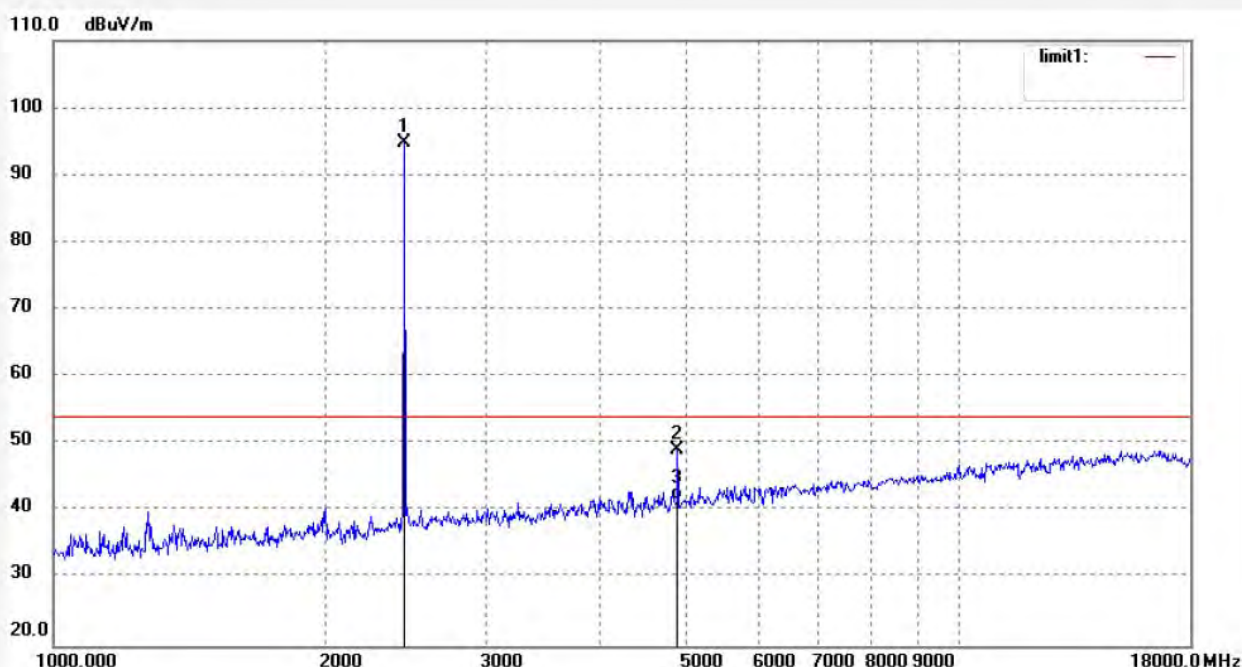
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



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	93.86	1.06	94.92	/	/	peak			
2	4882.026	40.98	8.11	49.09	74.00	-24.91	peak			
3	4882.026	33.67	8.11	41.78	54.00	-12.22	AVG			

Job No.: LGW2018 #2086

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2480MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

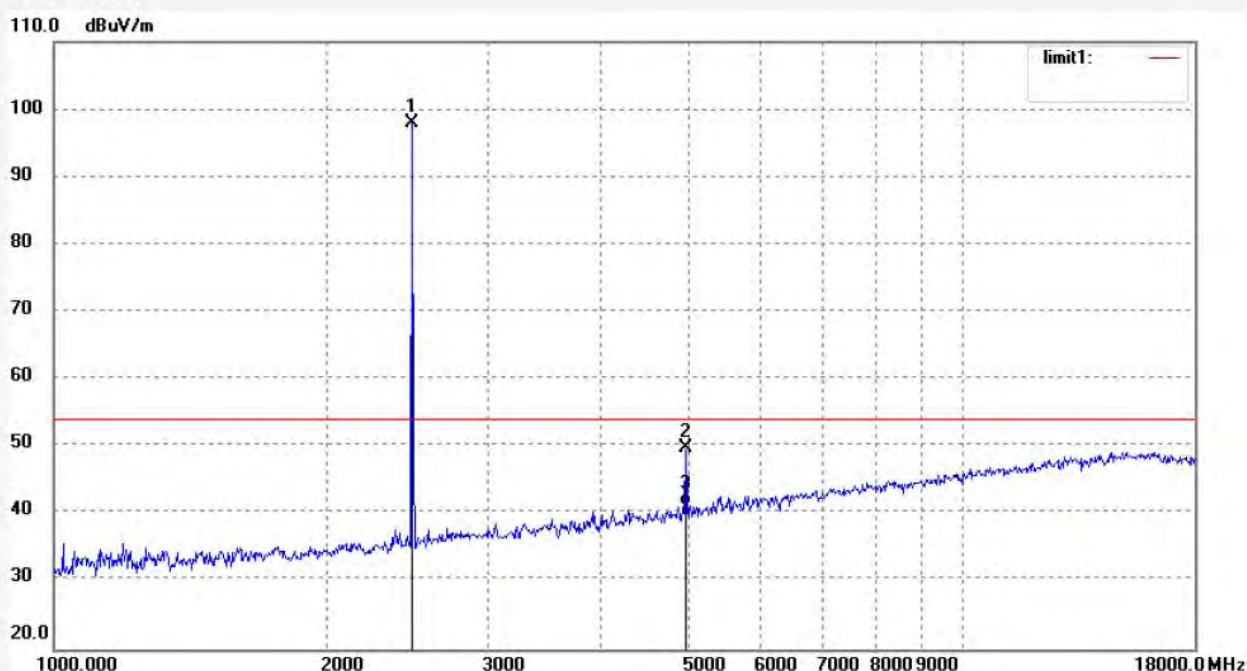
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



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	96.88	1.10	97.98	/	/	peak			
2	4960.029	41.10	8.60	49.70	74.00	-24.30	peak			
3	4960.029	32.65	8.60	41.25	54.00	-12.75	AVG			

Job No.: LGW2018 #2087

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2480MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

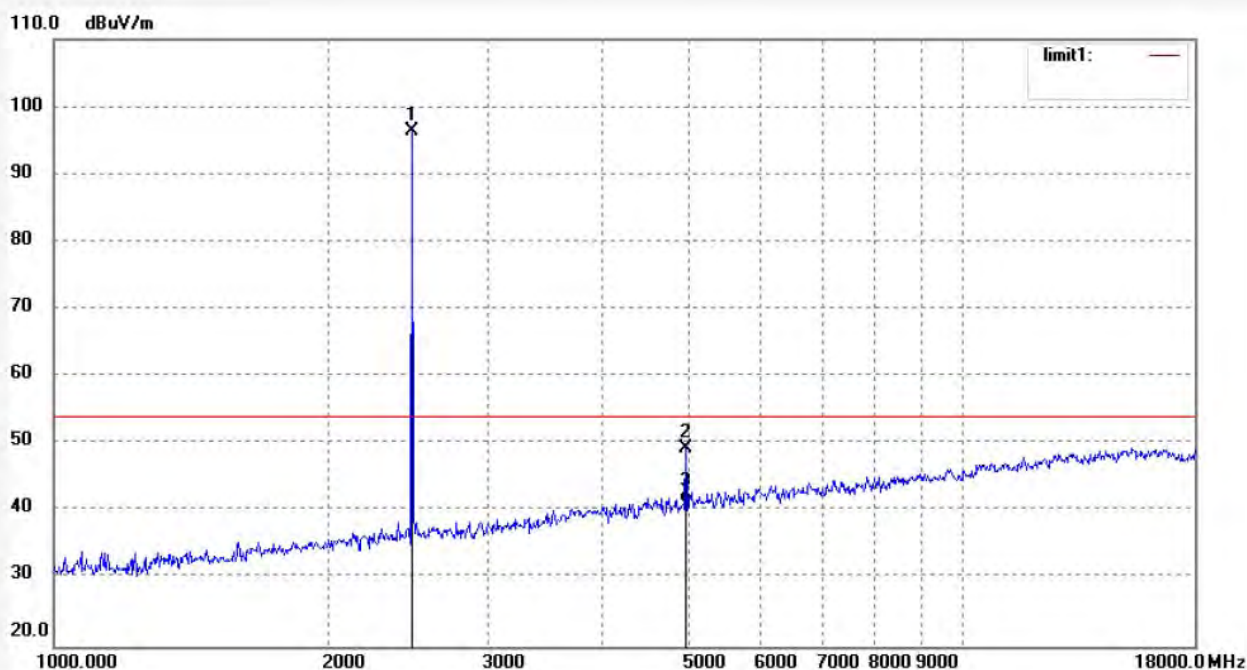
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



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	95.37	1.10	96.47	/	/	peak			
2	4960.028	40.72	8.60	49.32	74.00	-24.68	peak			
3	4960.028	32.66	8.60	41.26	54.00	-12.74	AVG			

18GHz-26.5GHz test data



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Job No.: LGW2018 #2090

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2402MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

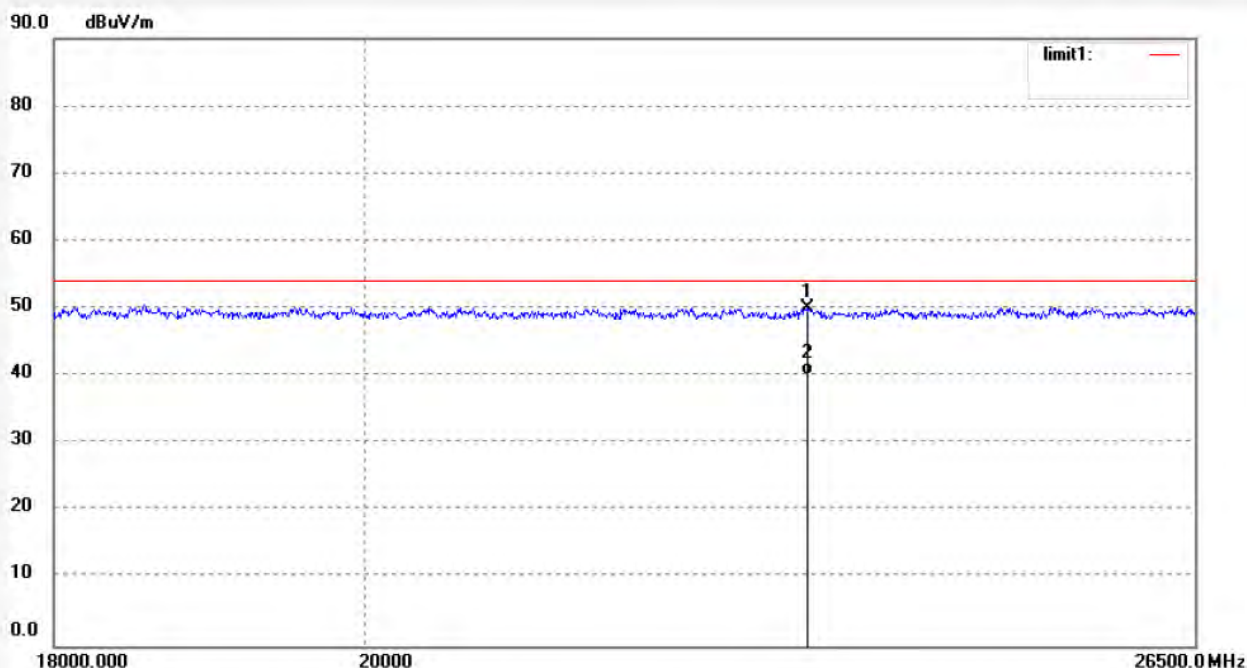
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	23243.574	10.21	39.80	50.01	74.00	-23.99	peak			
2	23243.574	0.41	39.80	40.21	54.00	-13.79	AVG			

Job No.: LGW2018 #2091

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2402MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

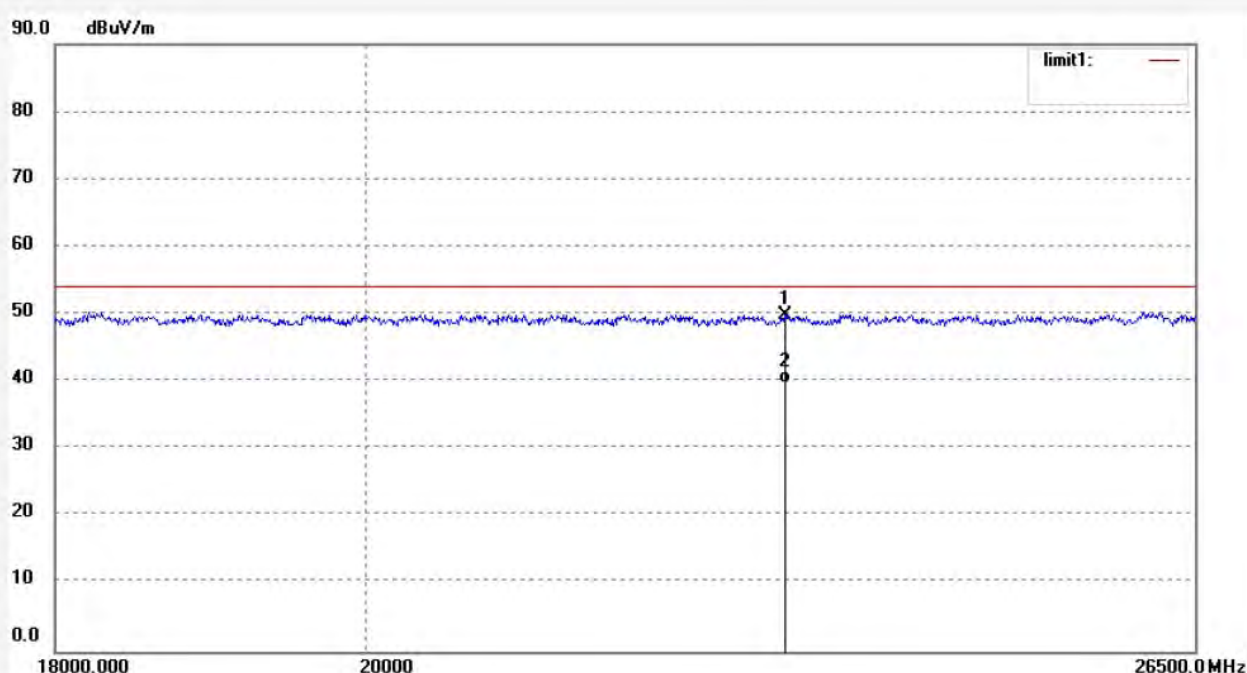
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	23055.549	9.95	39.81	49.76	74.00	-24.24	peak			
2	23055.549	-0.16	39.81	39.65	54.00	-14.35	AVG			



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Job No.: LGW2018 #2093

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2441MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

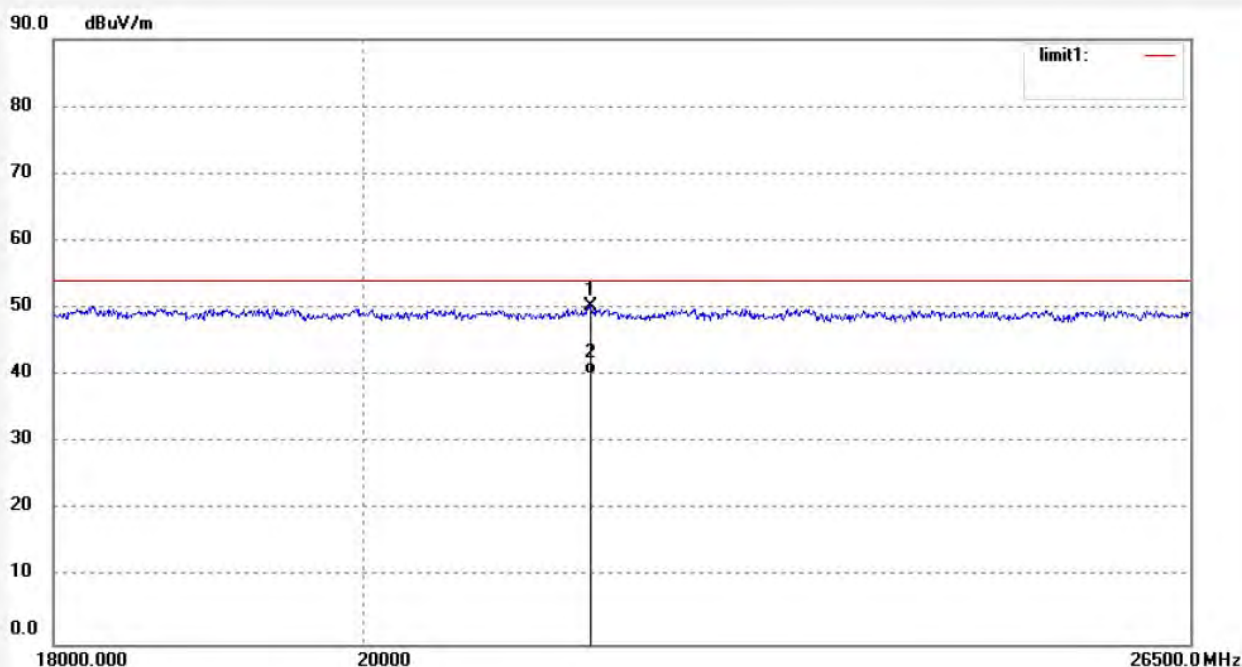
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	21613.441	11.54	38.71	50.25	74.00	-23.75	peak			
2	21613.441	1.41	38.71	40.12	54.00	-13.88	AVG			

Job No.: LGW2018 #2092

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2441MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

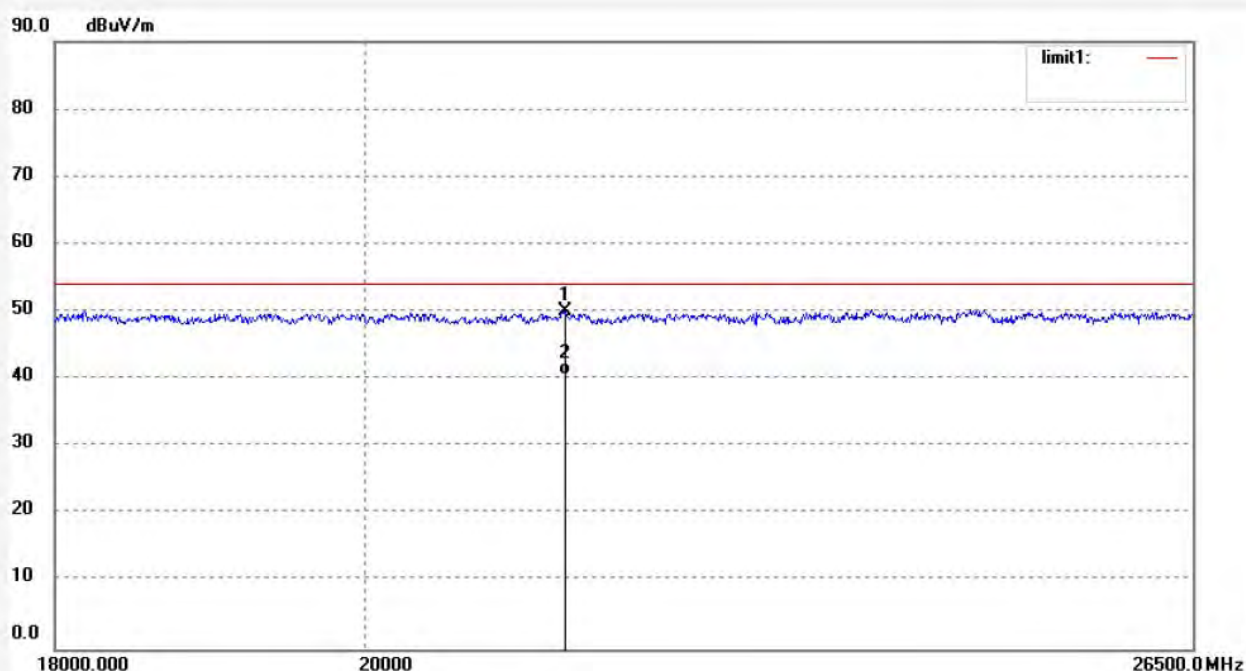
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	21413.741	10.83	39.29	50.12	74.00	-23.88	peak			
2	21413.741	1.28	39.29	40.57	54.00	-13.43	AVG			

Job No.: LGW2018 #2094

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2480MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

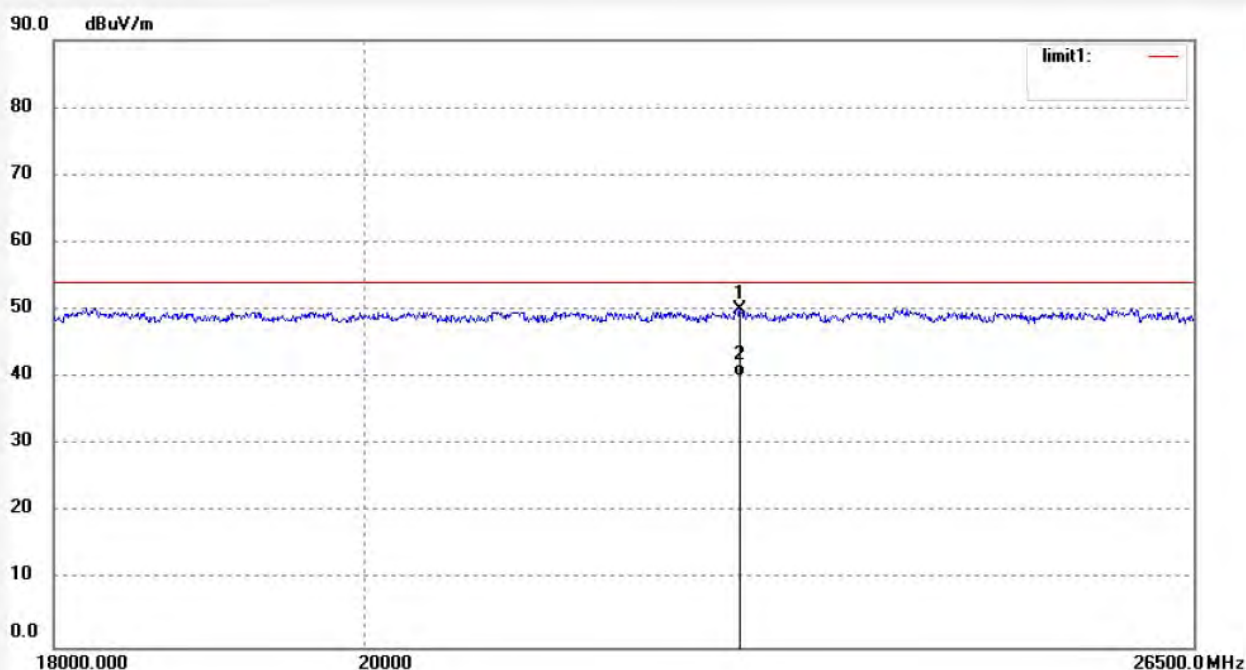
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	22719.171	10.44	39.72	50.16	74.00	-23.84	peak			
2	22719.171	0.51	39.72	40.23	54.00	-13.77	AVG			



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Job No.: LGW2018 #2095

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2480MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

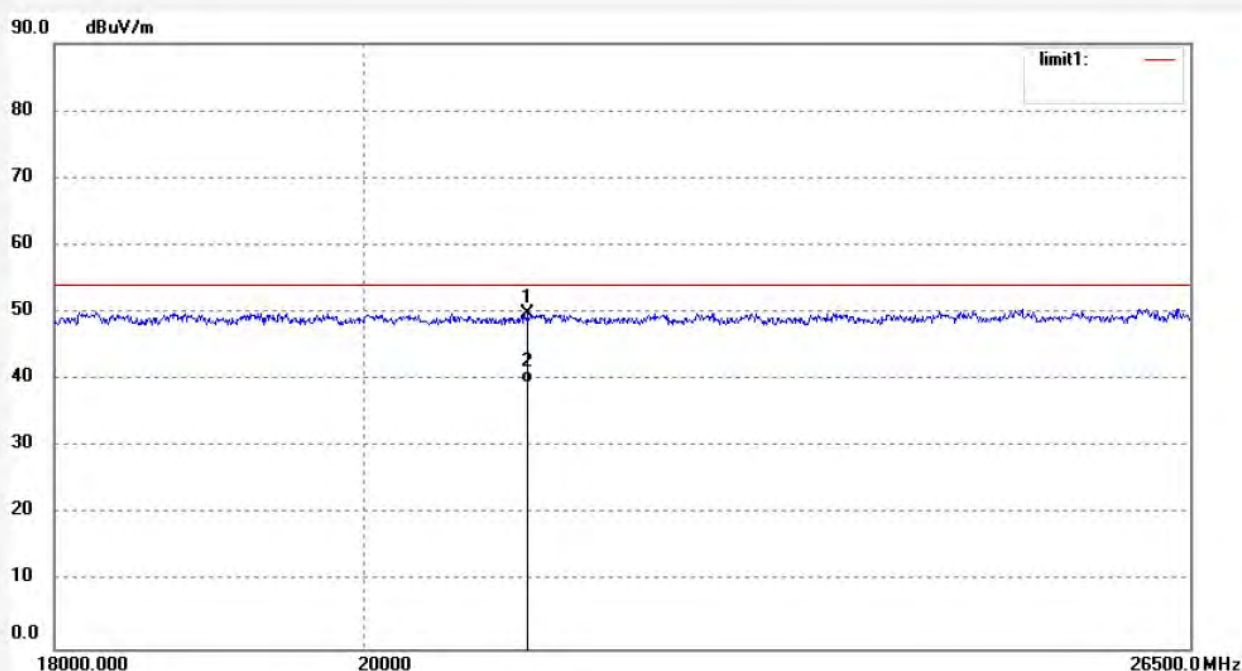
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

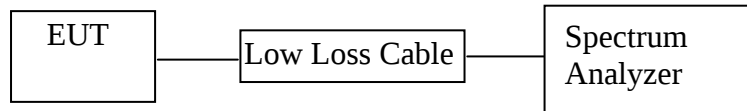
Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	21150.342	10.36	39.37	49.73	74.00	-24.27	peak			
2	21150.342	0.17	39.37	39.54	54.00	-14.46	AVG			

7. BAND EDGE COMPLIANCE TEST

7.1. Block Diagram of Test Setup



7.2. 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).

7.3. The Requirement For RSS-247 Section 5.5

Section 5.5: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

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 off, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

7.6. Test Procedure

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

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

7.6.3. The band edges was measured and recorded.

7.7. Test Result

Note: We only tested the radiation edge band, conducted edge band reference to Report No.: 50088222 001

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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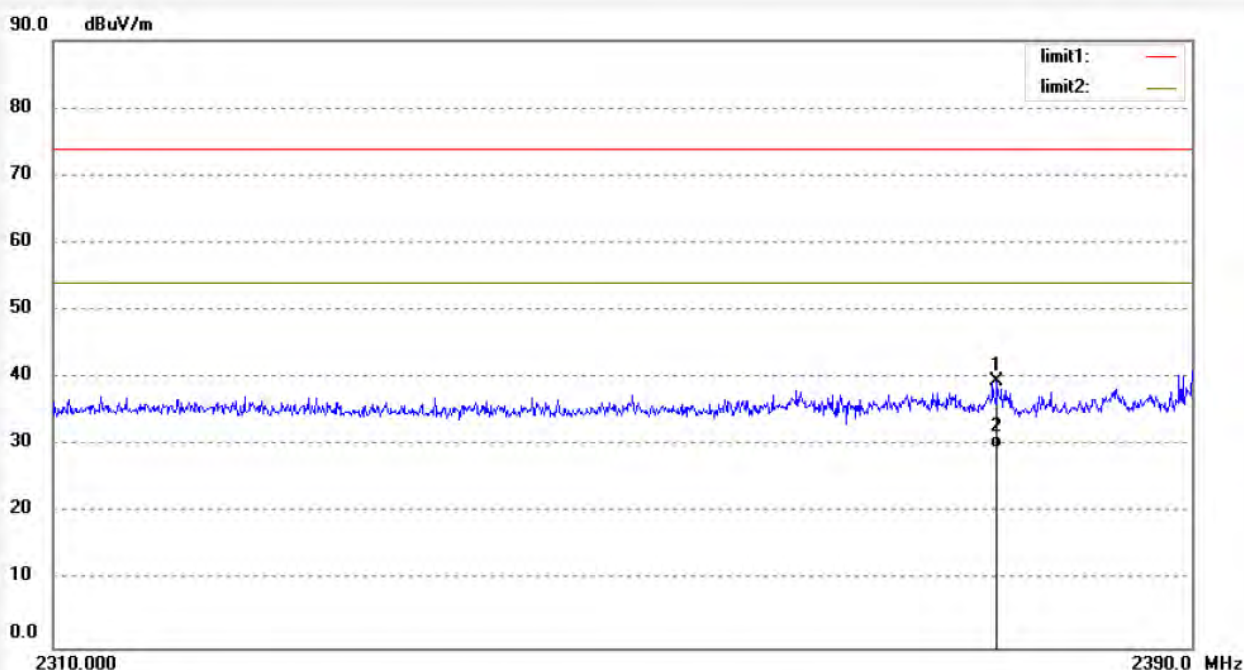
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: LGW2018 #2082
Standard: FCC (Band Edge)
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT:
Mode: TX 2402MHz
Model: NS-CAHBTEBNC-B
Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal
Power Source: DC 3.7V
Date: 18/07/30/
Time:
Engineer Signature: WADE
Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2376.160	38.90	0.68	39.58	74.00	-34.42	peak			
2	2376.160	28.86	0.68	29.54	54.00	-24.46	AVG			

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Fax:+86-0755-26503396

Job No.: LGW2018 #2083

Standard: FCC (Band Edge)

Test item: Radiation Test

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

EUT:

Mode: TX 2402MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

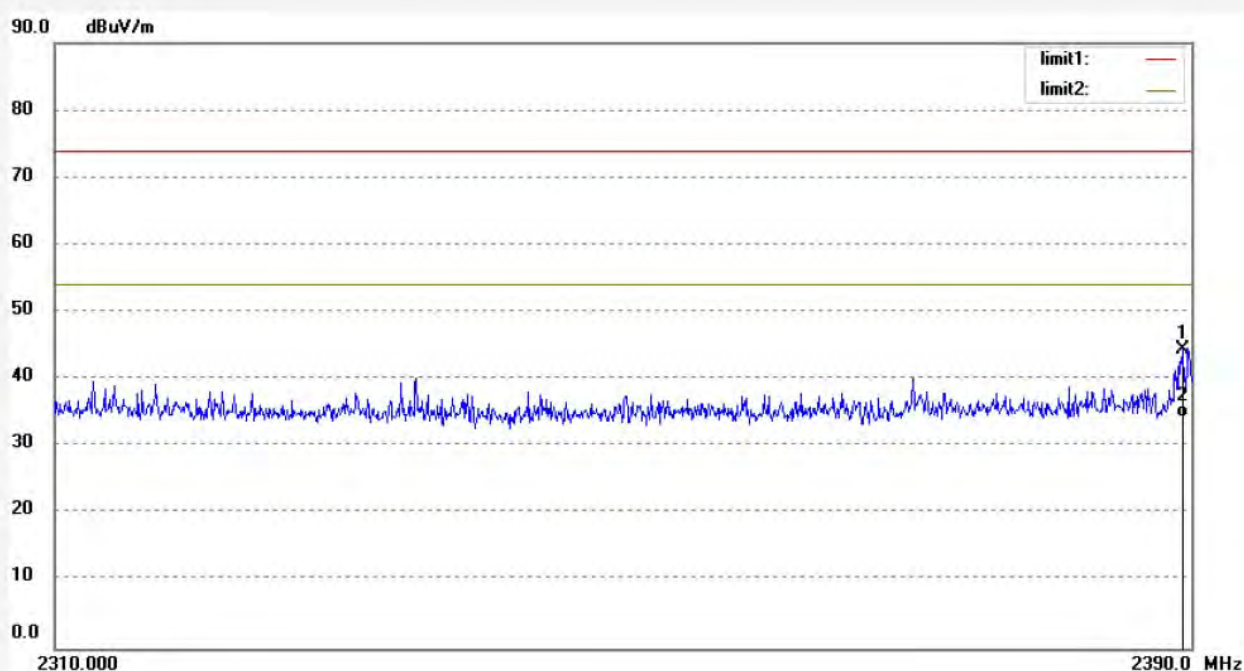
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2389.360	43.63	0.79	44.42	74.00	-29.58	peak			
2	2389.360	33.45	0.79	34.24	54.00	-19.76	AVG			



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Job No.: LGW2018 #2089

Standard: FCC (Band Edge)

Test item: Radiation Test

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

EUT:

Mode: TX 2480MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

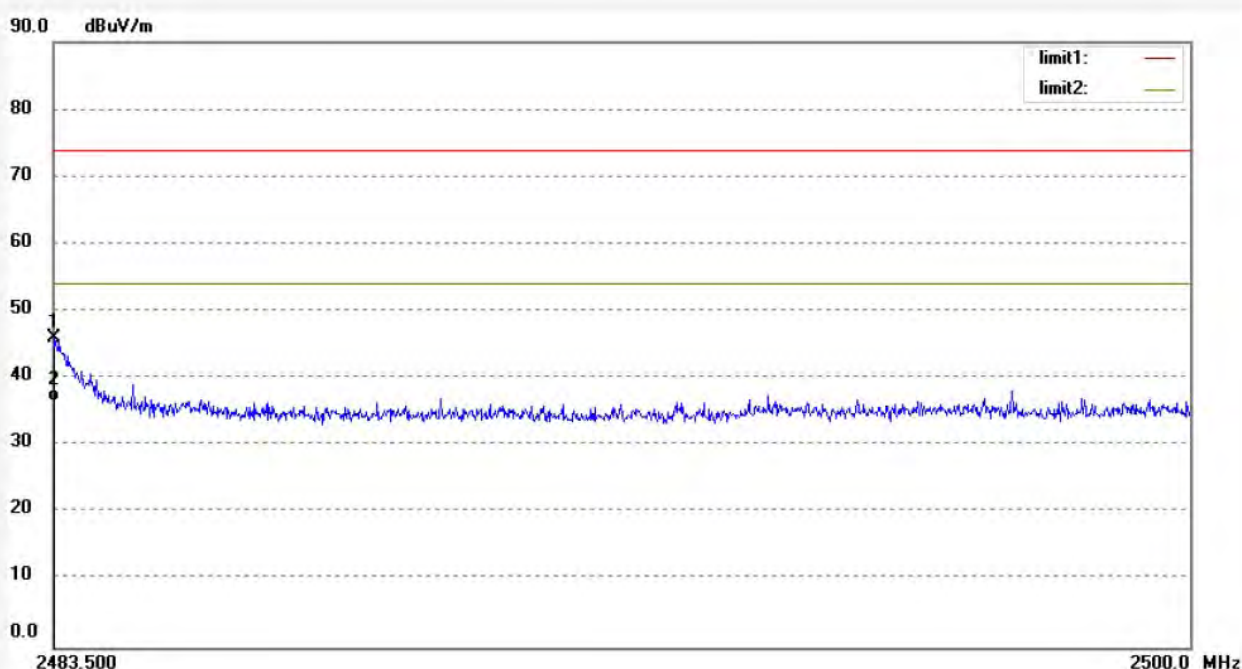
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



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	44.95	1.10	46.05	74.00	-27.95	peak			
2	2483.517	35.44	1.10	36.54	54.00	-17.46	AVG			



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Job No.: LGW2018 #2088

Standard: FCC (Band Edge)

Test item: Radiation Test

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

EUT:

Mode: TX 2480MHz

Model: NS-CAHBTEBNC-B

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

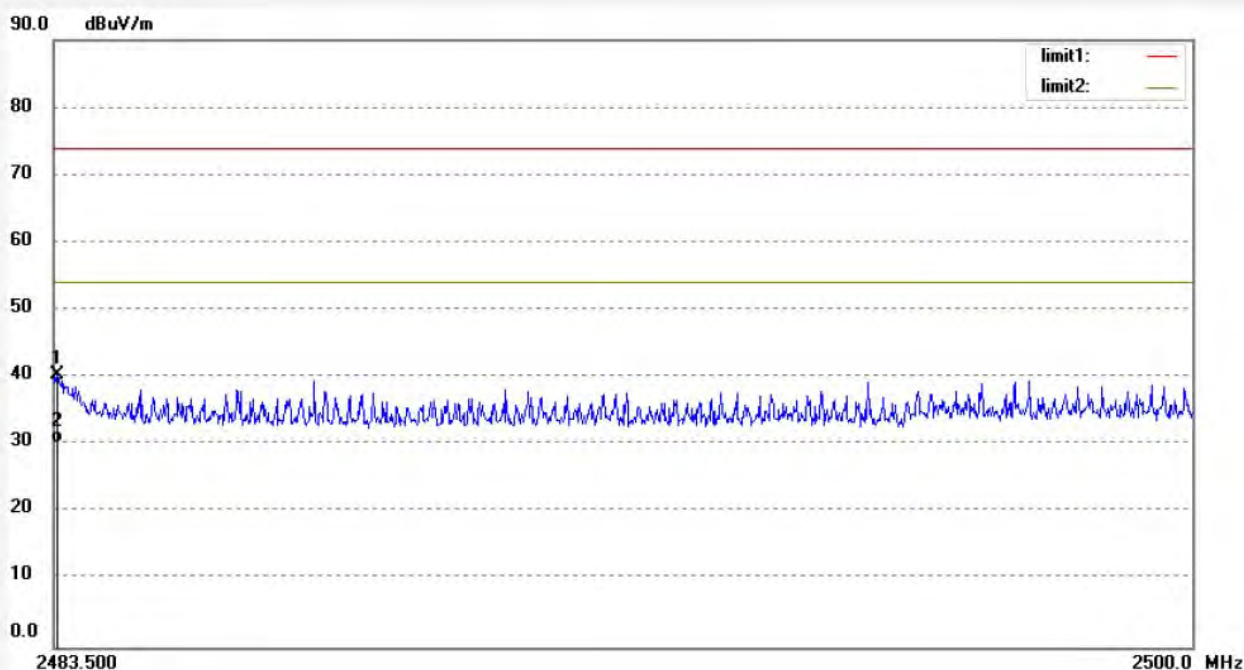
Date: 18/07/30/

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.550	39.24	1.10	40.34	74.00	-33.66	peak			
2	2483.550	29.15	1.10	30.25	54.00	-23.75	AVG			

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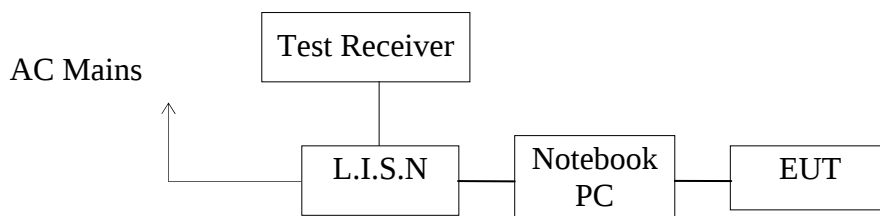
Fax: +86-755-26503396

E-mail: webmaster@atc-lab.com

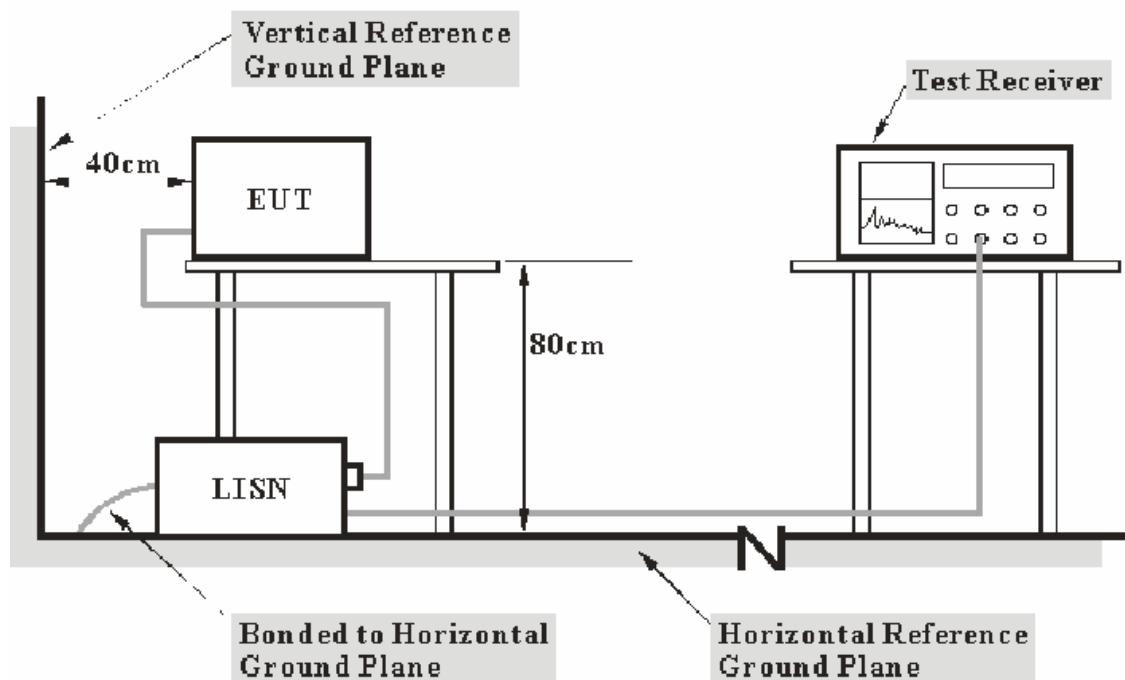
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8. AC POWER LINE CONDUCTED EMISSION

8.1. Block Diagram of Test Setup



8.2. 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.

8.3.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.		

8.4.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.

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 test mode and measure it.

8.6.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.

8.7.Data Sample

Frequency (MHz)	Transducer value (dB)	QuasiPeak Level (dB μ V)	Average Level (dB μ V)	QuasiPeak Limit (dB μ V)	Average Limit (dB μ V)	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(dB μ V) = Quasi-peak Reading/Average Reading + Transducer value

Limit (dB μ V) = Limit stated in standard

Margin = Limit (dB μ V) - Level (dB μ V)

Calculation Formula:

Margin = Limit (dB μ V) - Level (dB μ V)

8.8.Power Line Conducted Emission Measurement 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.

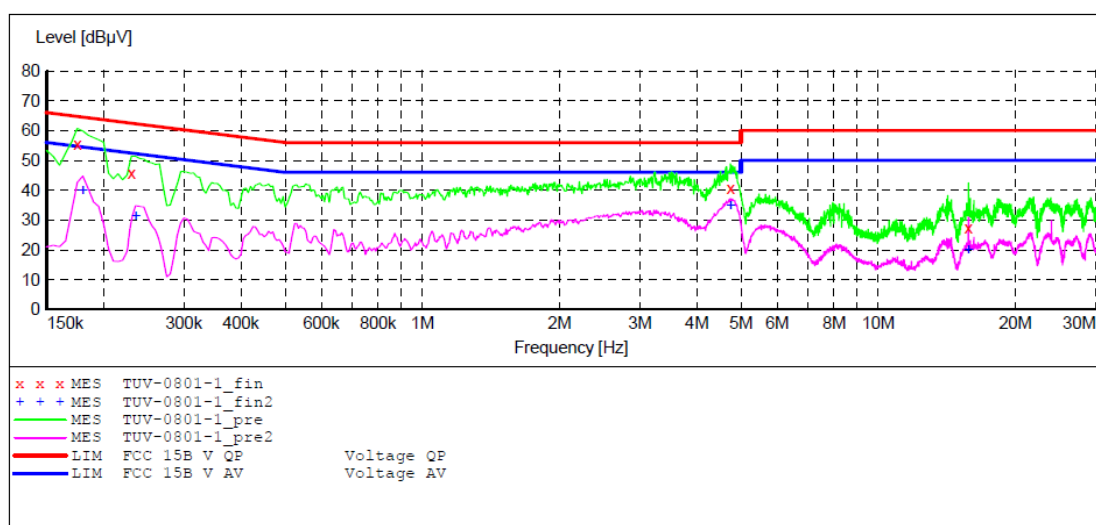
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CONDUCTED EMISSION STANDARD FCC PART 15 C

EUT: Bluetooth Around Neck Headset with Noise Cancellation
 Manufacturer: Country Mate Technology Ltd.
 Operating Condition: BT Communication
 Test Site: 1#Shielding Room
 Operator: WADE
 Test Specification: N 120V/60Hz
 Comment: M/N:NS-CAHBTEBNC-B
 Start of Test: 8/1/2018 /

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-0801-1_fin"

8/1/2018

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.175000	55.40	10.5	65	9.3	QP	N	GND
0.230000	45.50	10.6	62	16.9	QP	N	GND
4.740000	40.70	11.1	56	15.3	QP	N	GND
15.775000	27.20	11.4	60	32.8	QP	N	GND

MEASUREMENT RESULT: "TUV-0801-1_fin2"

8/1/2018

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.180000	39.90	10.5	55	14.6	AV	N	GND
0.235000	31.40	10.6	52	20.9	AV	N	GND
4.740000	34.80	11.1	46	11.2	AV	N	GND
15.775000	19.80	11.4	50	30.2	AV	N	GND

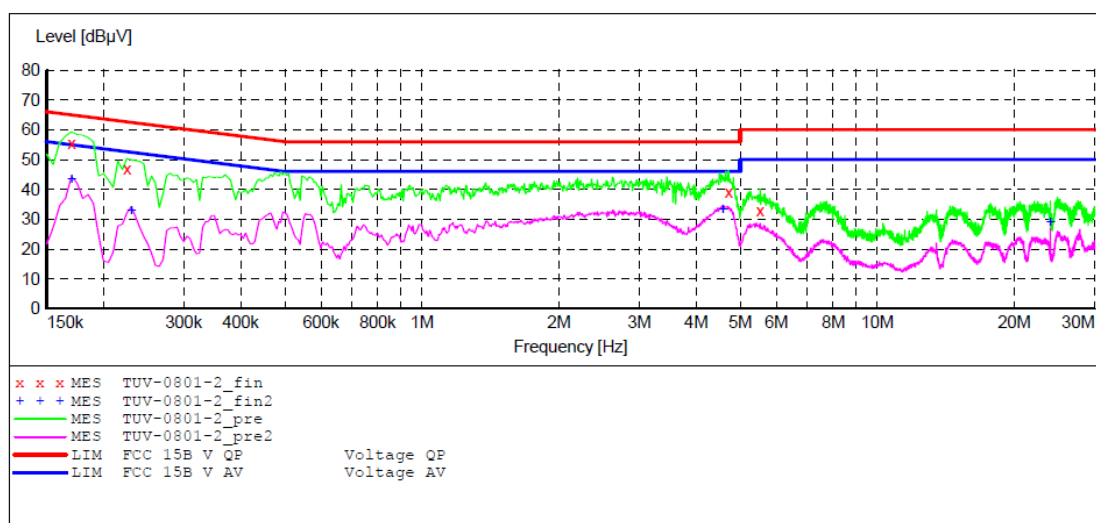
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15 C

EUT: Bluetooth Around Neck Headset with Noise Cancellation
 Manufacturer: Country Mate Technology Ltd.
 Operating Condition: BT Communication
 Test Site: 1#Shielding Room
 Operator: WADE
 Test Specification: L 120V/60Hz
 Comment: M/N:NS-CAHBTEBNC-B
 Start of Test: 8/1/2018 /

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-0801-2_fin"

8/1/2018

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.170000	55.50	10.5	65	9.5	QP	L1	GND
0.225000	46.80	10.6	63	15.8	QP	L1	GND
4.710000	39.00	11.1	56	17.0	QP	L1	GND
5.530000	32.90	11.2	60	27.1	QP	L1	GND

MEASUREMENT RESULT: "TUV-0801-2_fin2"

8/1/2018

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.170000	43.20	10.5	55	11.8	AV	L1	GND
0.230000	32.90	10.6	52	19.5	AV	L1	GND
4.580000	33.40	11.1	46	12.6	AV	L1	GND
23.995000	28.90	11.5	50	21.1	AV	L1	GND

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