

Prüfbericht-Nr.: <i>Test report No.:</i>	50088222 001	Auftrags-Nr.: <i>Order No.:</i>	164096210	Seite 1 von 30 <i>Page 1 of 30</i>
Kunden-Referenz-Nr.: <i>Client reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	06.09.2017	
Auftraggeber: <i>Client:</i>	Country Mate Technology Ltd. 5/F, Blk E, Hing Yip Center. 31 Hing Yip Street, Kwun Tong, Kln, Hong Kong			
Prüfgegenstand: <i>Test item:</i>	Bluetooth Around Neck Headset with Noise Cancellation-Silver			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	NS-CAHBTEBNC-S, NS-CAHBTEBNC-S-C (Trademark: INSIGNIA)			
Auftrags-Inhalt: <i>Order content:</i>	FCC and IC approval			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109 FCC KDB Publication 447498 v06 RSS-247 Issue 2 February 2017 RSS-Gen Issue 4 November 2014 RSS-102 Issue 5 March 2015 ICES-003 Issue 6 January 2016			
Wareneingangsdatum: <i>Date of receipt:</i>	09.06.2017	Please refer to photo documents		
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000562480-003 to 005			
Prüfzeitraum: <i>Testing period:</i>	21.06.2017 - 25.06.2017			
Ort der Prüfung: <i>Place of testing:</i>	Accurate Technology Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
 12.07.2017 Alex Lan / Project Engineer		 12.07.2017 Owen Tian / Technical Certifier		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>
Sonstiges / Other:				
FCC ID: MV3-CAHBTEBNC IC: 9029A-CAHBTEBNC, HVIN: NS-CAHBTEBNC-S-C				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged:</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT*RESULT: Passed***5.1.2 PEAK OUTPUT POWER***RESULT: Passed***5.1.3 99% BANDWIDTH***RESULT: Pass***5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100kHz BANDWIDTH***RESULT: Passed***5.1.5 SPURIOUS EMISSION***RESULT: Passed***5.1.6 20dB BANDWIDTH***RESULT: Pass***5.1.7 FREQUENCY SEPARATION***RESULT: Passed***5.1.8 NUMBER OF HOPPING FREQUENCY***RESULT: Passed***5.1.9 TIME OF OCCUPANCY***RESULT: Passed***5.1.10 CONDUCTED EMISSIONS***RESULT: Passed***5.1.11 RADIATED EMISSION***RESULT: Passed***6.1.1 ELECTROMAGNETIC FIELDS***RESULT: Pass*

Contents

1	GENERAL REMARKS	5
1.1	COMPLEMENTARY MATERIALS	5
2	TEST SITES	5
2.1	TEST FACILITIES	5
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	6
2.3	TRACEABILITY	7
2.4	CALIBRATION	7
2.5	MEASUREMENT UNCERTAINTY	7
2.6	LOCATION OF ORIGINAL DATA	7
2.7	STATUS OF FACILITY USED FOR TESTING	7
3	GENERAL PRODUCT INFORMATION	8
3.1	PRODUCT FUNCTION AND INTENDED USE.....	8
3.2	RATINGS AND SYSTEM DETAILS	8
3.3	INDEPENDENT OPERATION MODES	9
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS.....	10
3.5	SUBMITTED DOCUMENTS	10
4	TEST SET-UP AND OPERATION MODES	11
4.1	PRINCIPLE OF CONFIGURATION SELECTION	11
4.2	TEST OPERATION AND TEST SOFTWARE.....	11
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT.....	11
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	11
4.5	TEST SETUP DIAGRAM.....	12
5	TEST RESULTS	14
5.1	TRANSMITTER REQUIREMENT & TEST SUITES	14
5.1.1	<i>Antenna Requirement</i>	<i>14</i>
5.1.2	<i>Peak Output Power</i>	<i>15</i>
5.1.3	<i>99% Bandwidth</i>	<i>16</i>
5.1.4	<i>Conducted spurious emissions measured in 100kHz Bandwidth.....</i>	<i>17</i>
5.1.5	<i>Spurious Emission</i>	<i>18</i>
5.1.6	<i>20dB Bandwidth</i>	<i>19</i>
5.1.7	<i>Frequency Separation.....</i>	<i>20</i>
5.1.8	<i>Number of hopping frequency.....</i>	<i>21</i>
5.1.9	<i>Time of Occupancy</i>	<i>22</i>
5.1.10	<i>Conducted emissions</i>	<i>23</i>
5.1.11	<i>Radiated Emission.....</i>	<i>24</i>
6	SAFETY HUMAN EXPOSURE	25
6.1	RADIO FREQUENCY EXPOSURE COMPLIANCE	25
6.1.1	<i>Electromagnetic Fields.....</i>	<i>25</i>

Prüfbericht - Nr.: 50088222 001		Seite 4 von 30
<i>Test Report No.</i>		<i>Page 4 of 30</i>
7	PHOTOGRAPHS OF THE TEST SET-UP.....	26
8	LIST OF TABLES	30
9	LIST OF PHOTOGRAPHS	30

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:
Appendix 1: Test Result

2 Test Sites

2.1 Test Facilities

Accurate Technology Co., Ltd.

F1, Bldg. A, Changyuan New Material Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China

FCC Registration No.: 752051

Test site Industry Canada No.: 5077A-2

The tests at the test site have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Spurious emission and Radiated emission				
Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	2018-01-06
Test Receiver	Rohde&Schwarz	ESCS30	100307	2018-01-06
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	2018-01-09
Loop Antenna	Schwarzbeck	FMZB1516	1516131	2018-01-09
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	2018-01-09
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	2018-01-09
RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	2018-01-06
Pre-Amplifier	Rohde&Schwarz	CBLU11835 40-01	3791	2018-01-06
Radio Test Suite				
Spectrum Analyzer	Rohde & Schwarz	FSV40	101495	2018-01-06
Conducted Emission				
Test Receiver	Rohde & Schwarz	ESCS30	100307	2018-01-06
L.I.S.N.	Schwarzbeck	NLSK8126	8126431	2018-01-06
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	2018-01-06
50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	2018-01-06

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements are $\pm 3\text{dB}$.

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix 1 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The Accurate Technology Co., Ltd. test facility located at F1, Bldg. A, Changyuan New Material Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a Bluetooth Around Neck Headset with Noise Cancellation-Silver which supports Bluetooth function.

According to the declaration of the applicant, the electrical circuit design, PCB layout and components used are identical for all models, only the model name is different, model "NS-CAHBTEBNC-S" is for US market, model "NS-CAHBTEBNC-S-C" is for Canada market. For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Rating of EUT

Kind of Equipment:	Bluetooth Around Neck Headset with Noise Cancellation-Silver
Type Designation:	NS-CAHBTEBNC-S, NS-CAHBTEBNC-S-C
Trade Mark:	INSIGNIA
FCC ID:	MV3-CAHBTEBNC
IC:	9029A-CAHBTEBNC
HVIN:	NS-CAHBTEBNC-S-C

Table 3: Technical Specification of Bluetooth (BDR & EDR)

Technical Specification	Value
Operating Frequency band	2402 – 2480 MHz
Bluetooth Core Version	4.1, single mode
Channel Number	79 channels
Channel separation	1MHz
Extreme Temperature Range	0°C to +55°C
Operating Voltage	DC 3.7V, 120mAh via built-in Li-ion Polymer Battery DC 5V, 500mA via Micro USB interface for Charging
Battery	Model: 401230 Ratings: DC 3.7V, 120mAh
Modulation	GFSK, 8DPSK, π /4DQPSK
Antenna Type	Internal Antenna, Non-User Replaceable
Antenna Gain	1.92 dBi

Table 4: RF channel and frequency of Bluetooth (BDR & EDR mode)

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00
7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00		

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth Transmitting mode (BDR & EDR)
 - 1. low channel
 - 2. middle channel
 - 3. high channel
- B. On, Bluetooth hopping mode
- C. On, Play with Aux-in
- D. Charging
- E. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Technical Description
- PCB Layout
- Photo Document
- Circuit Diagram
- Instruction Manual
- Rating Label

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2014 and ANSI C63.10: 2013. According to section 3.1, all tests were applied on model NS-CAHBTEBNC-S in this test report.

4.3 Special Accessories and Auxiliary Equipment

The EUT was tested with following accessories:

Description	Manufacturer	Type	S/N
iPhone6S PLUS	Apple	ML6D2 CH/A	C35QJ76JGRWM
Notebook	LENOVO	ThinkPad X240	N/A

4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

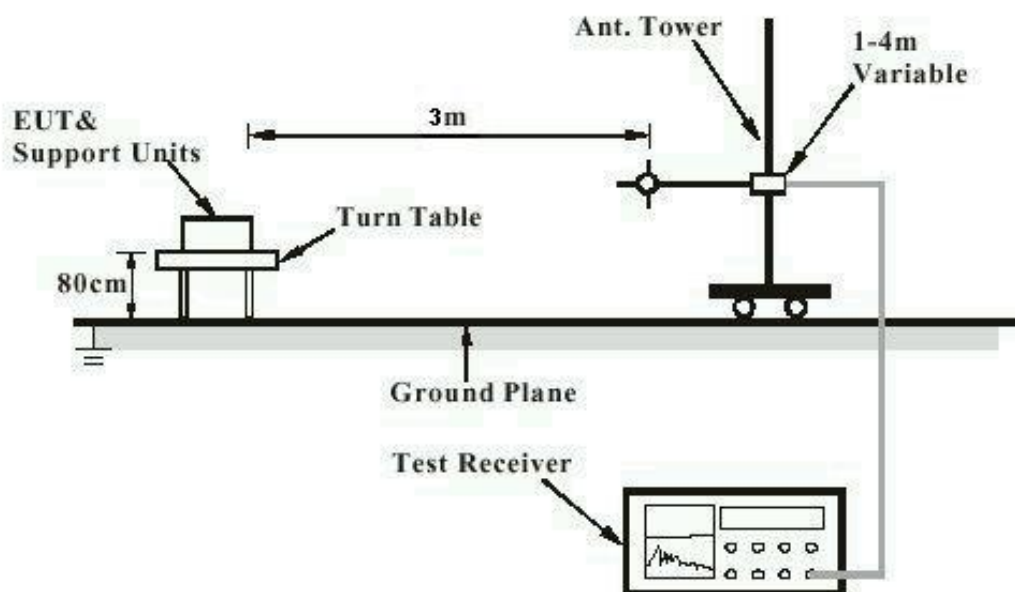


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

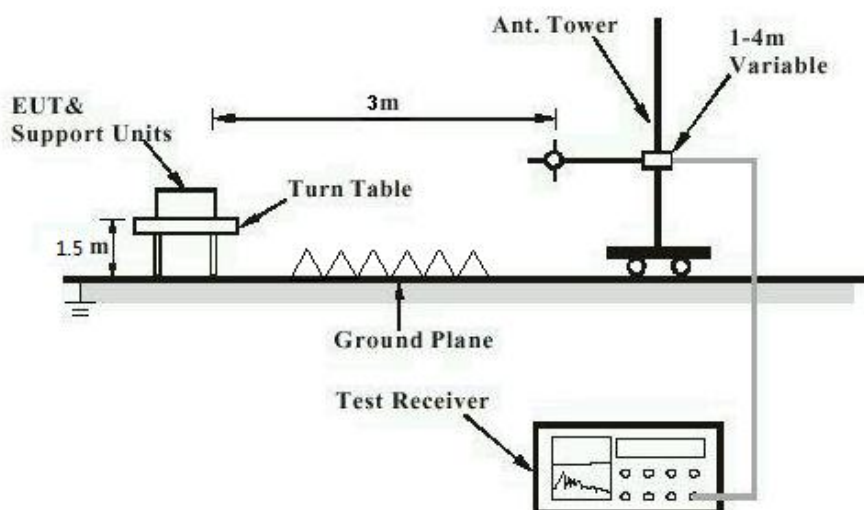


Diagram of Measurement Equipment Configuration for Mains Conduction Measurement

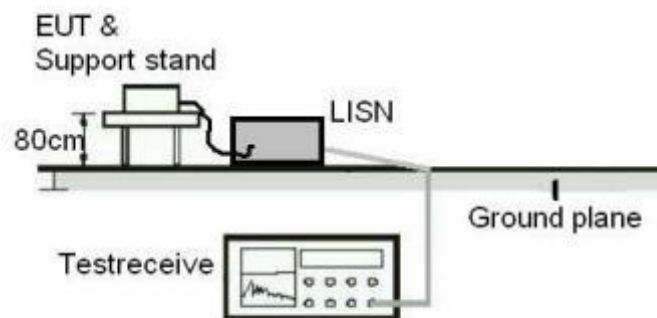
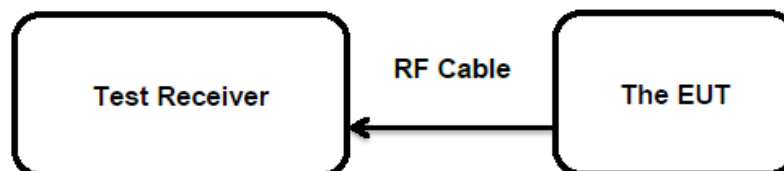


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Passed**

Test standard	:	FCC Part 15.247(b)(4) and Part 15.203 RSS-Gen Clause 6.7
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 1.92 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT photo for details.

Note: The maximum e.i.r.p. is 4.78 dBm less than 4W.

5.1.3 99% Bandwidth

RESULT:
Pass

Date of testing : 2017-06-21
 Test standard : RSS-Gen clause 6.6
 Basic standard : ANSI C63.10: 2013
 Kind of test site : Shielded room

Test setup

Test Channel : Low/ Middle/ High
 Operation Mode : A
 Ambient temperature : 25°C
 Relative humidity : 50%
 Atmospheric pressure : 101kPa

Table 6: Test result of 99% Bandwidth

Test Mode	Channel Frequency (MHz)	99% Bandwidth (KHz)	Limit (W)
BDR	2402	999	/
	2441	990	
	2480	999	
EDR	2402	1194	/
	2441	1194	
	2480	1194	

5.1.4 Conducted spurious emissions measured in 100kHz Bandwidth**RESULT:****Passed**

Date of testing	:	2017-06-21
Test standard	:	FCC part 15.247(d) RSS-247 clause 5.5
Basic standard	:	ANSI C63.10: 2013
Limit	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shield room

Test setup

Test Channel	:	Low/ High
Operation mode	:	A
Ambient temperature	:	25°C
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

All emissions are more than 20dB below fundamental, details refer to Appendix 1, and compliance is achieved as well.

Prüfbericht - Nr.: 50088222 001

Test Report No.

Seite 18 von 30

Page 18 of 30

5.1.5 Spurious Emission

RESULT:**Passed**

Date of testing	:	2017-06-24
Test standard	:	FCC part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Table 4 & Table 5
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/ Middle/ High
Operation mode	:	A
Ambient temperature	:	25°C
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

Remark:

During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions. After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation shown in the test setup photos.
Testing was carried out within frequency range 9 kHz to the tenth harmonics.

For details refer to Appendix 1.

Test Mode	Channel Frequency (MHz)	20dB Bandwidth (kHz)	2/3 of 20dB Bandwidth (kHz)	Limit (MHz)
BDR	2402	929	619.333	/
	2441	938	625.333	
	2480	938	625.333	
EDR	2402	1211	807.333	/
	2441	1207	804.667	
	2480	1207	804.667	

5.1.7 Frequency Separation

RESULT:

Passed

Date of testing	:	2017-06-21
Test standard	:	FCC part 15.247(a)(1) RSS-247 Clause 5.1(2)
Basic standard	:	ANSI C63.4: 2003
Limit	:	≥ 25kHz or 2/3 of 20dB bandwidth, whichever is greater
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	B
Ambient temperature	:	25°C
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

Table 8: Test result of Frequency Separation

Channel	Channel Frequency (MHz)	Measured Channel Separation (KHz)	Limit (kHz)	Result
Low Channel	2402	1002.9	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2403			
Mid Channel	2441	1002.9		Pass
Adjacency Channel	2442			
High Channel	2480	1002.9		Pass
Adjacency Channel	2479			

Prüfbericht - Nr.: 50088222 001
Test Report No.**Seite 21 von 30**
Page 21 of 30

5.1.8 Number of hopping frequency

RESULT:**Passed**

Date of testing : 2017-06-21
Test standard : FCC part 15.247(a)(1)(iii)
RSS-247 Clause 5.1(4)
Basic standard : ANSI C63.10: 2013
Limits : ≥ 15 non-overlapping channels
Kind of test site : Shield room

Test setup

Test Channel : Low/ Middle/ High
Operation Mode : B
Ambient temperature : 25°C
Relative humidity : 55%
Atmospheric pressure : 101 kPa

Table 9: Test result of Number of hopping frequency

Frequency Range	Measured Quantity of Hopping Channel	Limit	Result
<u>2400</u> to <u>2483.5</u> MHz	79	≥ 15	Pass

5.1.10 Conducted emissions**RESULT:****Passed**

Date of testing	:	2017-06-25
Test standard	:	FCC Part 15.107(a) & FCC Part 15.207(a) RSS-Gen Clause 8.8 & ICES-003
Basic standard	:	ANSI C63.10: 2013 & ANSI C63.4: 2014
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a) & FCC Part 15.207(a) Table 3 of RSS-Gen & Table 2 of ICES-003
Kind of test site	:	Shield room

Test setup

Input Voltage	:	AC 120V, 60Hz via AC/DC Adapter of Notebook
Operation Mode	:	B, D
Earthing	:	Not connected
Ambient temperature	:	25°C
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

For details refer to Appendix 1.

5.1.11 Radiated Emission**RESULT:****Passed**

Date of testing : 2017-06-24
Test standard : FCC Part 15.109(a) & FCC Part 15.209(a)
RSS-Gen 8.9
Basic standard : ANSI C63.4: 2014
Frequency range : 30 - 6000MHz
Classification : Class B
Limit : FCC Part 15.109(a) & FCC Part 15.209(a)
RSS-Gen Table 4, Table 5 & Table 7 of ICES-003
Kind of test site : 3m Semi-Anechoic Chamber

Test setup

Input Voltage : DC 3.7V, 120mAh via built-in Li-ion Polymer Battery
DC 5V, 500mA via Micro USB interface for Charging
Operation mode : C, D
Earthing : Not connected
Ambient temperature : 23°C
Relative humidity : 48%
Atmospheric pressure : 101 kPa

Test data refer to Appendix 1.

8 List of Tables

Table 1: List of Test and Measurement Equipment	6
Table 2: Rating of EUT	8
Table 3: Technical Specification of Bluetooth (BDR & EDR)	8
Table 4: RF channel and frequency of Bluetooth (BDR & EDR mode)	9
Table 5: Test result of Peak Output Power	15
Table 6: Test result of 99% Bandwidth.....	16
Table 7: Test result of 20dB Bandwidth	19
Table 8: Test result of Frequency Separation	20
Table 9: Test result of Number of hopping frequency.....	21
Table 10: Test result of Time of Occupancy.....	22

9 List of Photographs

Photograph 1: Set-up for Radio Spectrum Test	26
Photograph 2: Set-up for Spurious Emissions (9kHz-30MHz)	26
Photograph 3: Set-up for Spurious Emissions (30MHz-1GHz)	27
Photograph 4: Set-up for Spurious Emissions (1GHz-18GHz)	27
Photograph 5: Set-up for Spurious Emissions (18GHz-26GHz)	28
Photograph 6: Set-up for Conducted Emissions	28
Photograph 7: Set-up for Radiated Emissions, below 1GHz	29
Photograph 8: Set-up for Radiated Emissions, above 1GHz	29

List of Figures

Figure 1: Test figure of spurious emissions, mode A.1, Horizontal polarity (30MHz – 1GHz)	2
Figure 2: Test figure of spurious emissions, mode A.1, Vertical polarity (30MHz – 1GHz)	3
Figure 3: Test figure of spurious emissions, mode A.1, Horizontal polarity (1GHz – 18GHz)	4
Figure 4: Test figure of spurious emissions, mode A.1, Vertical polarity (1GHz – 18GHz)	5
Figure 5: Test figure of spurious emissions, mode A.2, Horizontal polarity (30MHz – 1GHz)	6
Figure 6: Test figure of spurious emissions, mode A.2, Vertical polarity (30MHz – 1GHz)	7
Figure 7: Test figure of spurious emissions, mode A.2, Horizontal polarity (1GHz – 18GHz)	8
Figure 8: Test figure of spurious emissions, mode A.2, Vertical polarity (1GHz – 18GHz)	9
Figure 9: Test figure of spurious emissions, mode A.3, Horizontal polarity (30MHz – 1GHz)	10
Figure 10: Test figure of spurious emissions, mode A.3, Vertical polarity (30MHz – 1GHz)	11
Figure 11: Test figure of spurious emissions, mode A.3, Horizontal polarity (1GHz – 18GHz)	12
Figure 12: Test figure of spurious emissions, mode A.3, Vertical polarity (1GHz – 18GHz)	13
Figure 13: Test figure of Radiated emissions in restricted bands, Mode A.1, Horizontal	14
Figure 14: Test figure of Radiated emissions in restricted bands, Mode A.1, Vertical	15
Figure 15: Test figure of Radiated emissions in restricted bands, Mode A.3, Horizontal	16
Figure 16: Test figure of Radiated emissions in restricted bands, Mode A.3, Vertical	17
Figure 17: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.1	18
Figure 18: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.2	18
Figure 19: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.3	19
Figure 20: Test figure of Frequency Band Edge in 100kHz Bandwidth, Mode A.1	19
Figure 21: Test figure of Frequency Band Edge in 100kHz Bandwidth, Mode A.3	20
Figure 22: Test figure of Conducted emissions, Mode B, line live	21
Figure 23: Test figure of Conducted emissions, Mode B, line neutral	22
Figure 24: Test figure of Conducted emissions, Mode D, line live	23
Figure 25: Test figure of Conducted emissions, Mode D, line neutral	24
Figure 26: Test figure of Radiated emissions, Mode C, Below 1GHz, Horizontal	25
Figure 27: Test figure of Radiated emissions, Mode C, Below 1GHz, Vertical	26
Figure 28: Test figure of Radiated emissions, Mode C, Above 1GHz, Horizontal	27
Figure 29: Test figure of Radiated emissions, Mode C, Above 1GHz, Vertical	28
Figure 30: Test figure of Radiated emissions, Mode D, Below 1GHz, Horizontal	29
Figure 31: Test figure of Radiated emissions, Mode D, Below 1GHz, Vertical	30
Figure 32: Test figure of Radiated emissions, Mode D, Above 1GHz, Horizontal	31
Figure 33: Test figure of Radiated emissions, Mode D, Above 1GHz, Vertical	32

Note 1: Testing was carried out within frequency range 9 kHz to the tenth harmonics. The measurement results below 30MHz and above 18GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

Figure 1: Test figure of spurious emissions, mode A.1, Horizontal polarity (30MHz – 1GHz)

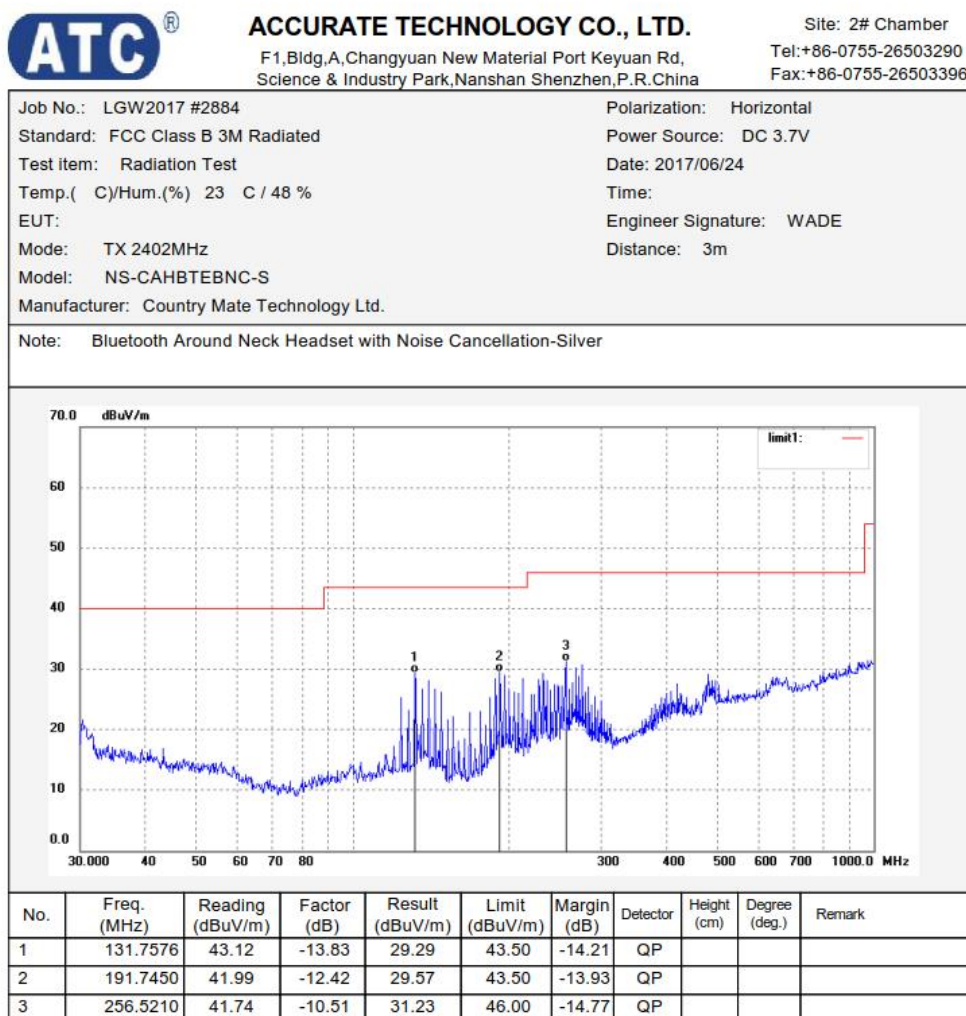


Figure 2: Test figure of spurious emissions, mode A.1, Vertical polarity (30MHz – 1GHz)



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.: LGW2017 #2885

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2402MHz

Model: NS-CAHBTEBNC-S

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

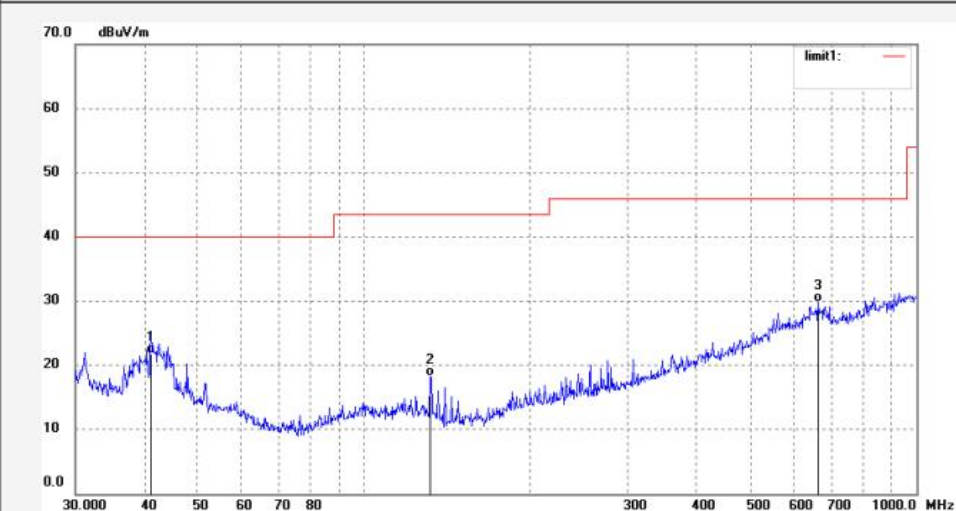
Date: 2017/06/24

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation-Silver



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	33.55	-11.78	21.77	40.00	-18.23	QP			
2	131.7576	32.09	-13.83	18.26	43.50	-25.24	QP			
3	663.4728	31.33	-1.57	29.76	46.00	-16.24	QP			

Figure 3: Test figure of spurious emissions, mode A.1, Horizontal polarity (1GHz –18GHz)



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.: LGW2017 #2846

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2402MHz

Model: NS-CAHBTEBNC-S

Manufacturer: Country Mate Technology Ltd.

Polarization: Horizontal

Power Source: DC 3.7V

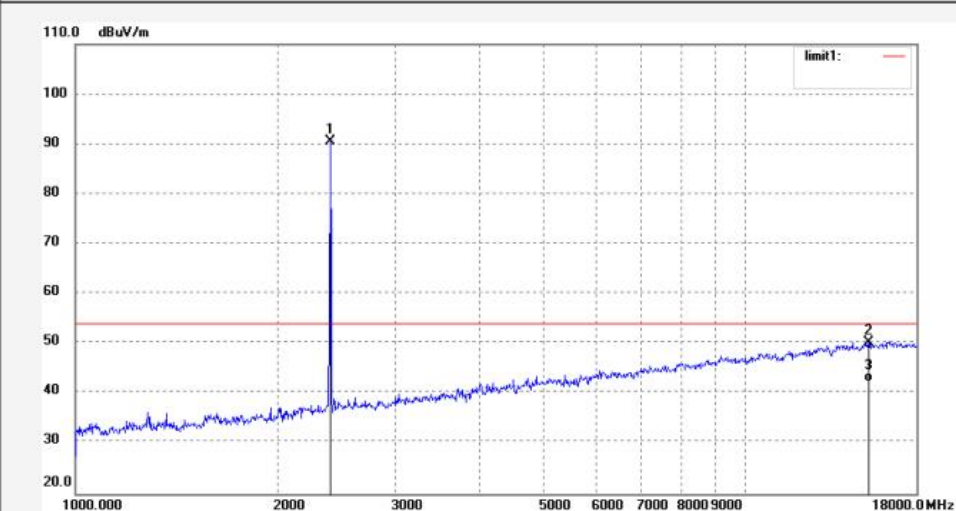
Date: 2017/06/24

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation-Silver



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	92.13	-1.61	90.52	/	/	peak			
2	15265.885	-8.50	58.68	50.18	74.00	-23.82	peak			
3	15265.885	-16.37	58.68	42.31	54.00	-11.69	AVG			

Figure 4: Test figure of spurious emissions, mode A.1, Vertical polarity (1GHz – 18GHz)



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.: LGW2017 #2847

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2402MHz

Model: NS-CAHBTEBNC-S

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

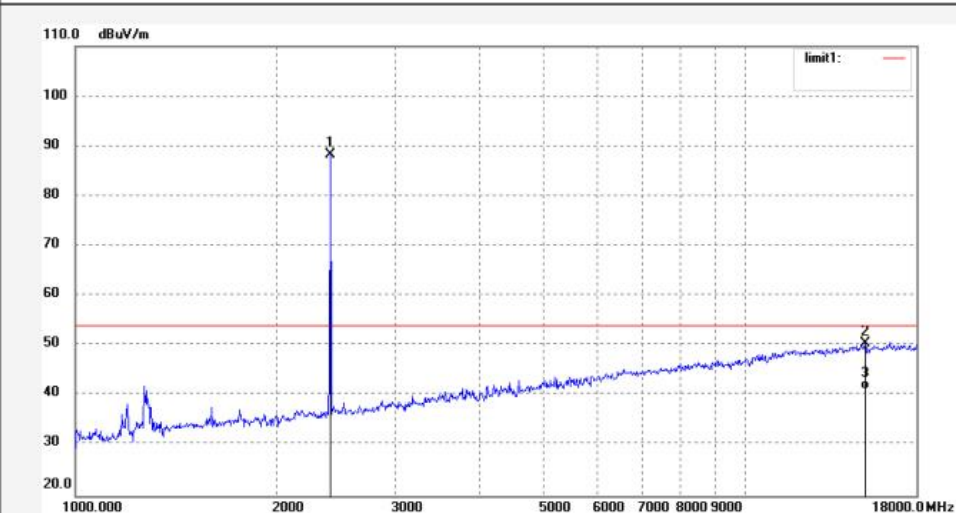
Date: 2017/06/24

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation-Silver



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	89.91	-1.61	88.30	/	/	peak			
2	15090.405	-8.51	58.96	50.45	74.00	-23.55	peak			
3	15090.405	-17.65	58.96	41.31	54.00	-12.69	AVG			

Figure 5: Test figure of spurious emissions, mode A.2, Horizontal polarity (30MHz – 1GHz)

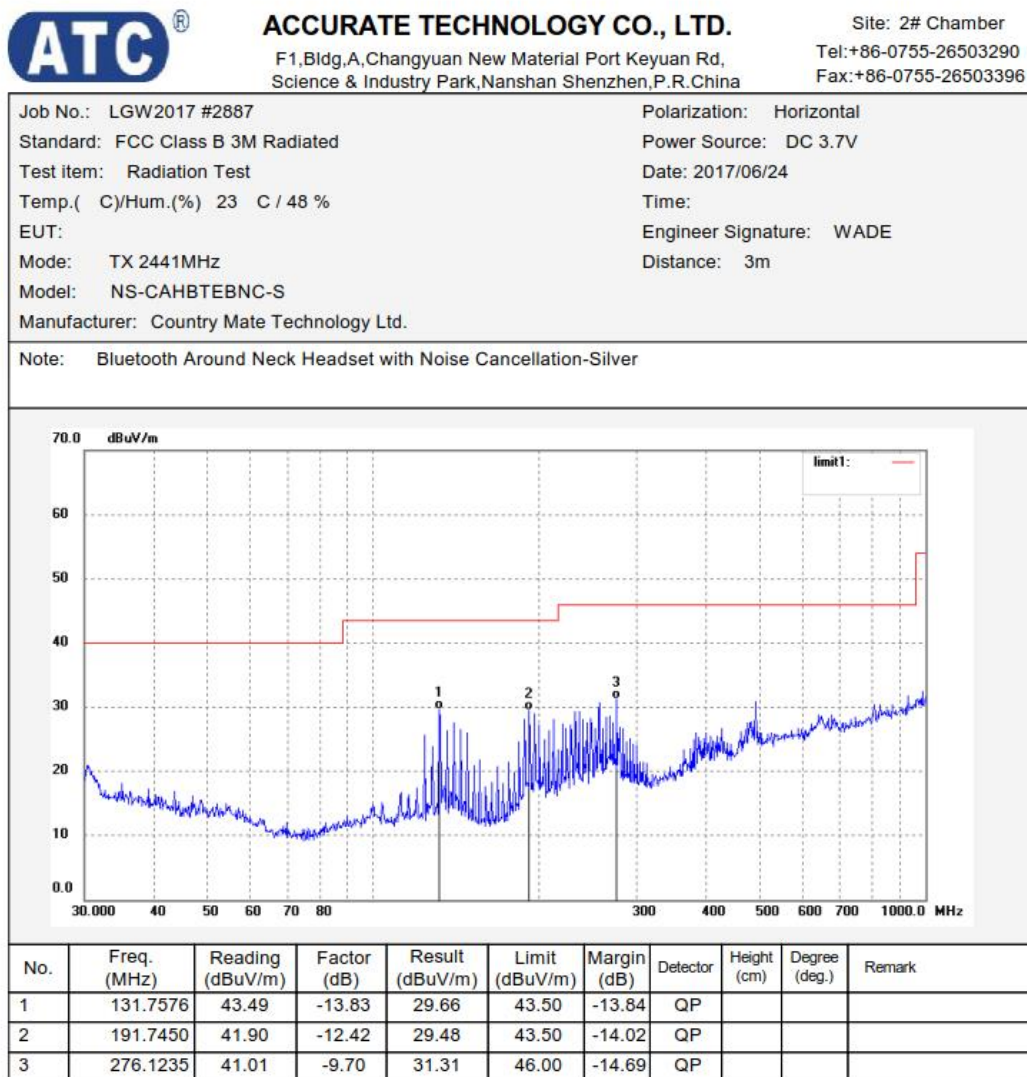


Figure 6: Test figure of spurious emissions, mode A.2, Vertical polarity (30MHz – 1GHz)

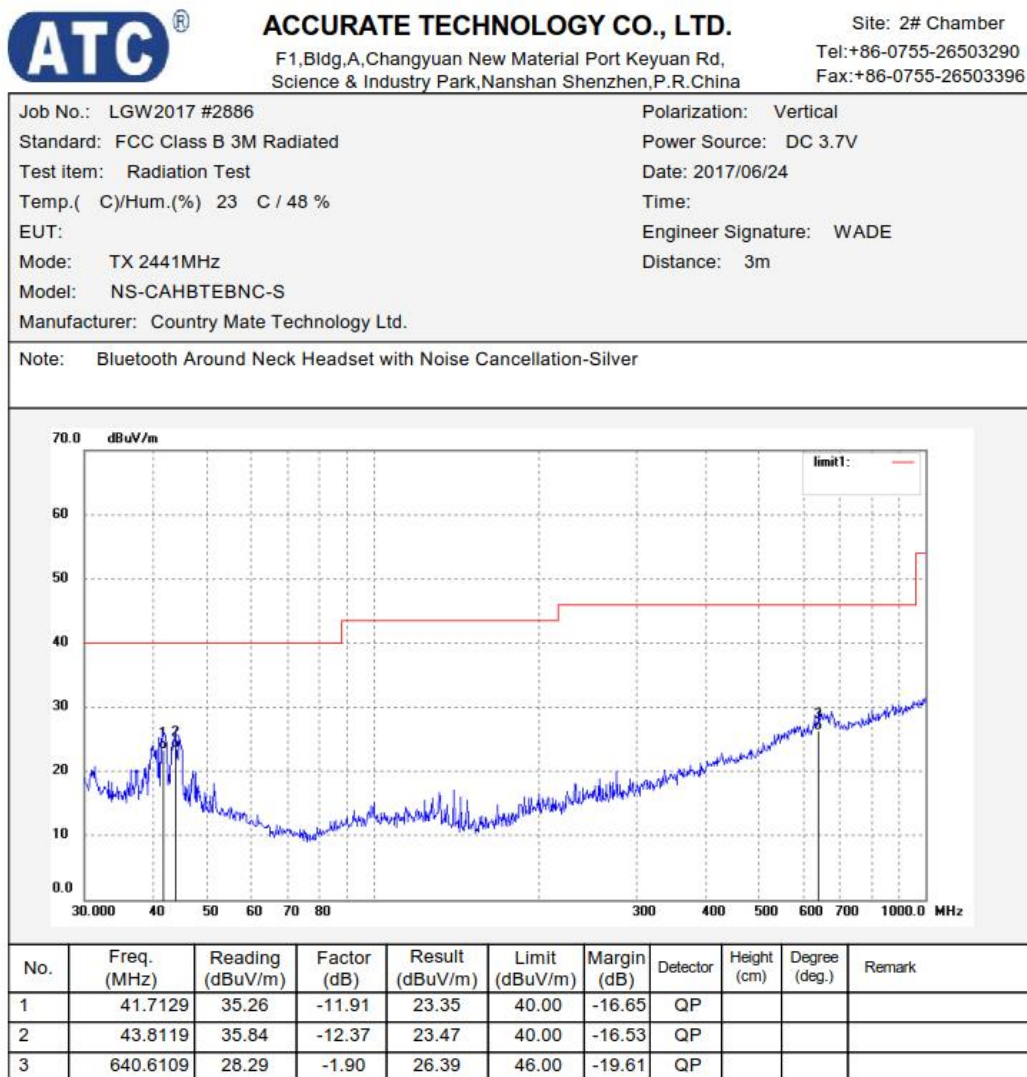


Figure 7: Test figure of spurious emissions, mode A.2, Horizontal polarity (1GHz – 18GHz)

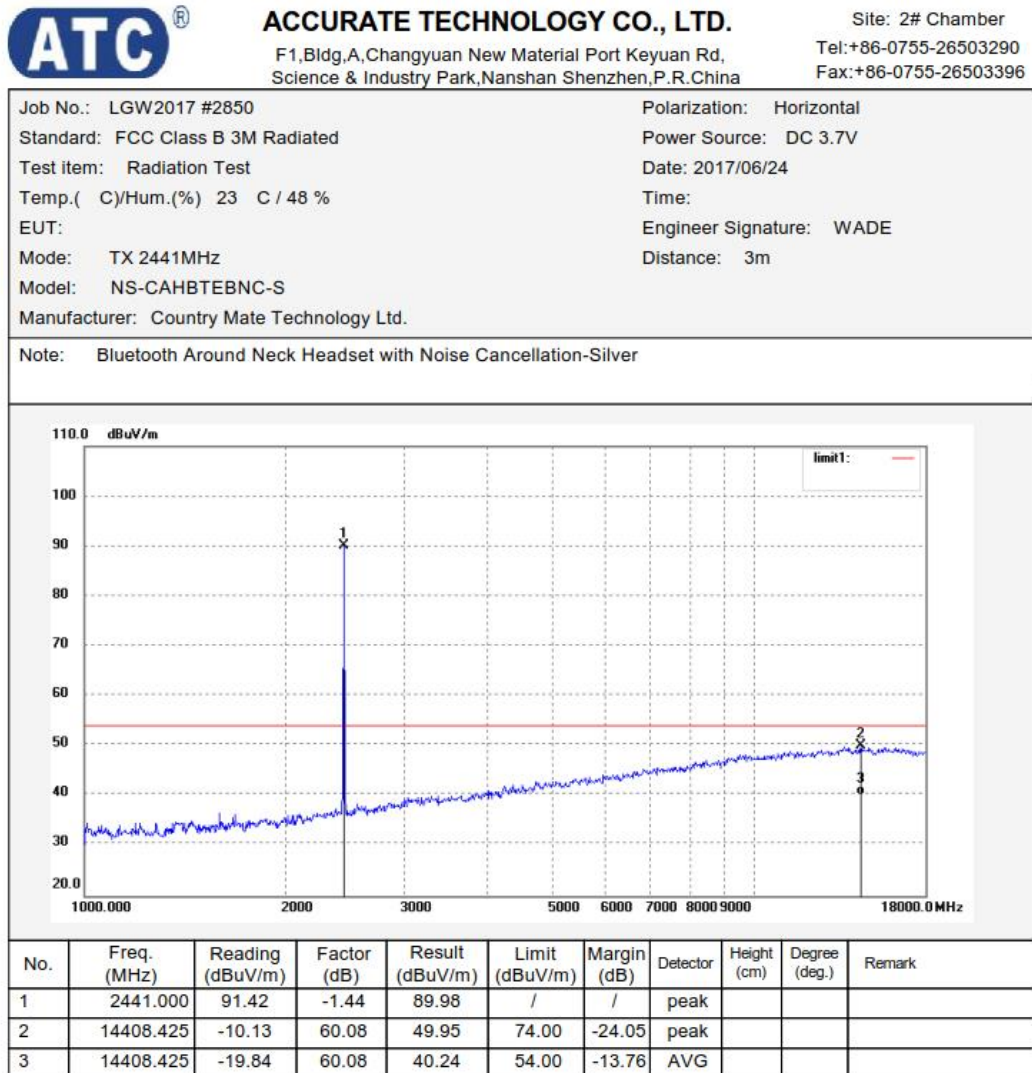


Figure 8: Test figure of spurious emissions, mode A.2, Vertical polarity (1GHz – 18GHz)



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.: LGW2017 #2851

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT:

Mode: TX 2441MHz

Model: NS-CAHBTEBNC-S

Manufacturer: Country Mate Technology Ltd.

Polarization: Vertical

Power Source: DC 3.7V

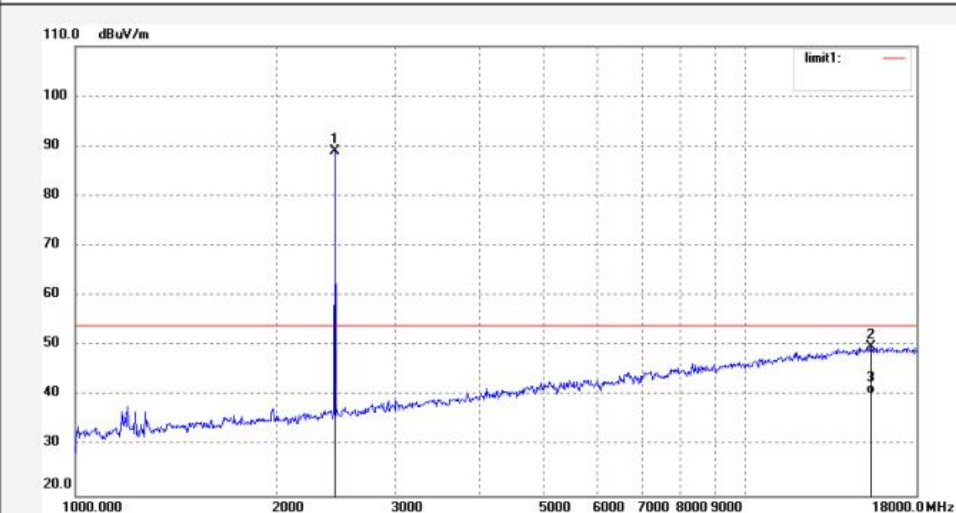
Date: 2017/06/24

Time:

Engineer Signature: WADE

Distance: 3m

Note: Bluetooth Around Neck Headset with Noise Cancellation-Silver



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	90.35	-1.44	88.91	/	/	peak			
2	15398.832	-8.75	58.46	49.71	74.00	-24.29	peak			
3	15398.832	-18.02	58.46	40.44	54.00	-13.56	AVG			

Figure 9: Test figure of spurious emissions, mode A.3, Horizontal polarity (30MHz – 1GHz)

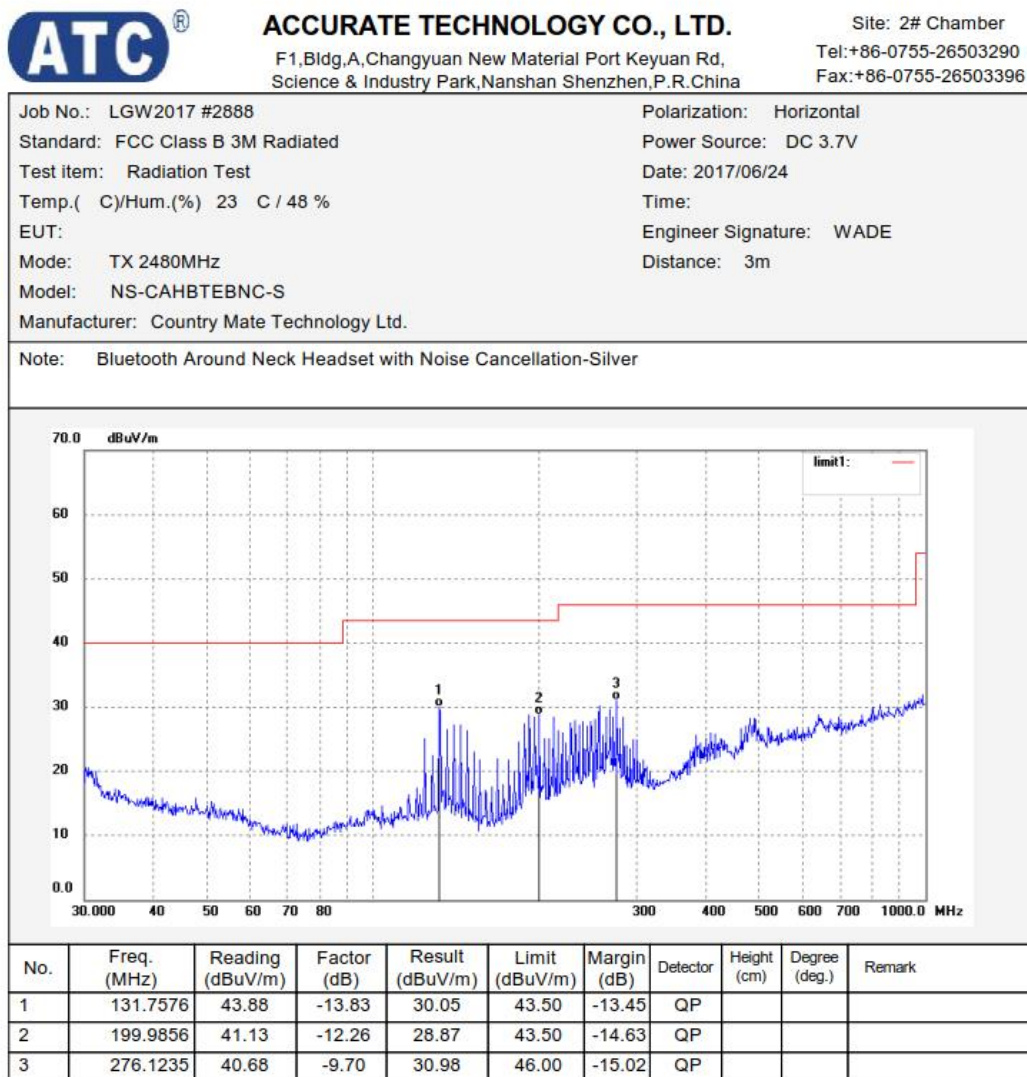


Figure 10: Test figure of spurious emissions, mode A.3, Vertical polarity (30MHz – 1GHz)

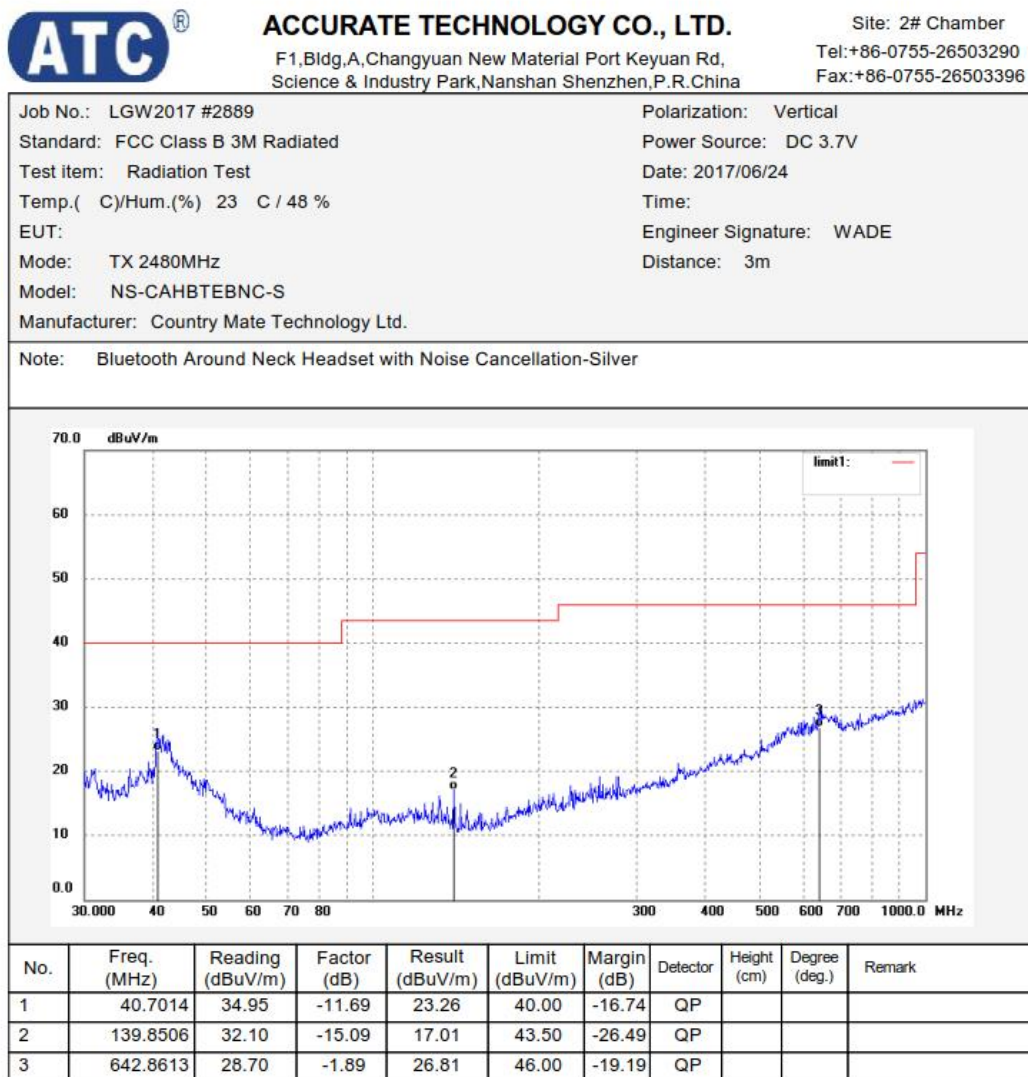


Figure 11: Test figure of spurious emissions, mode A.3, Horizontal polarity (1GHz –18GHz)

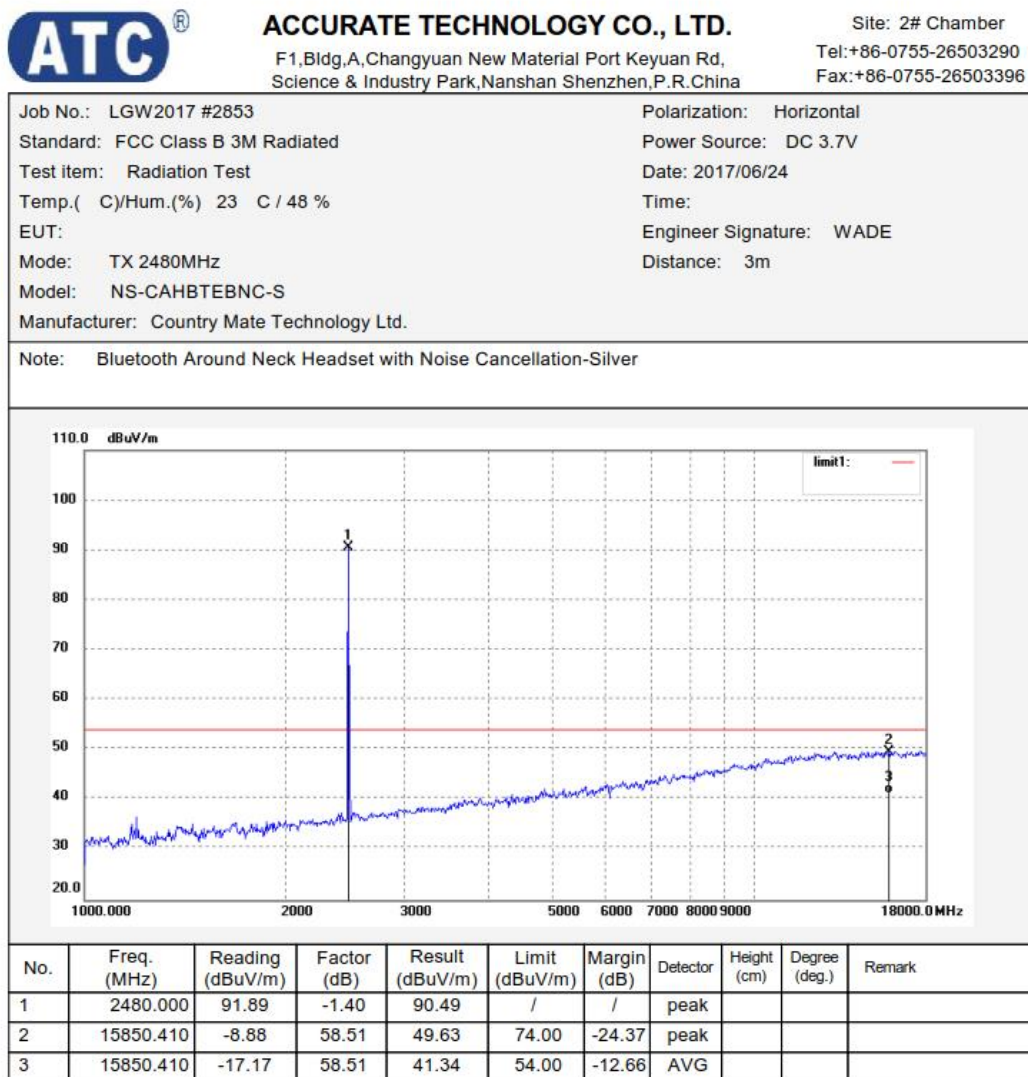


Figure 12: Test figure of spurious emissions, mode A.3, Vertical polarity (1GHz – 18GHz)

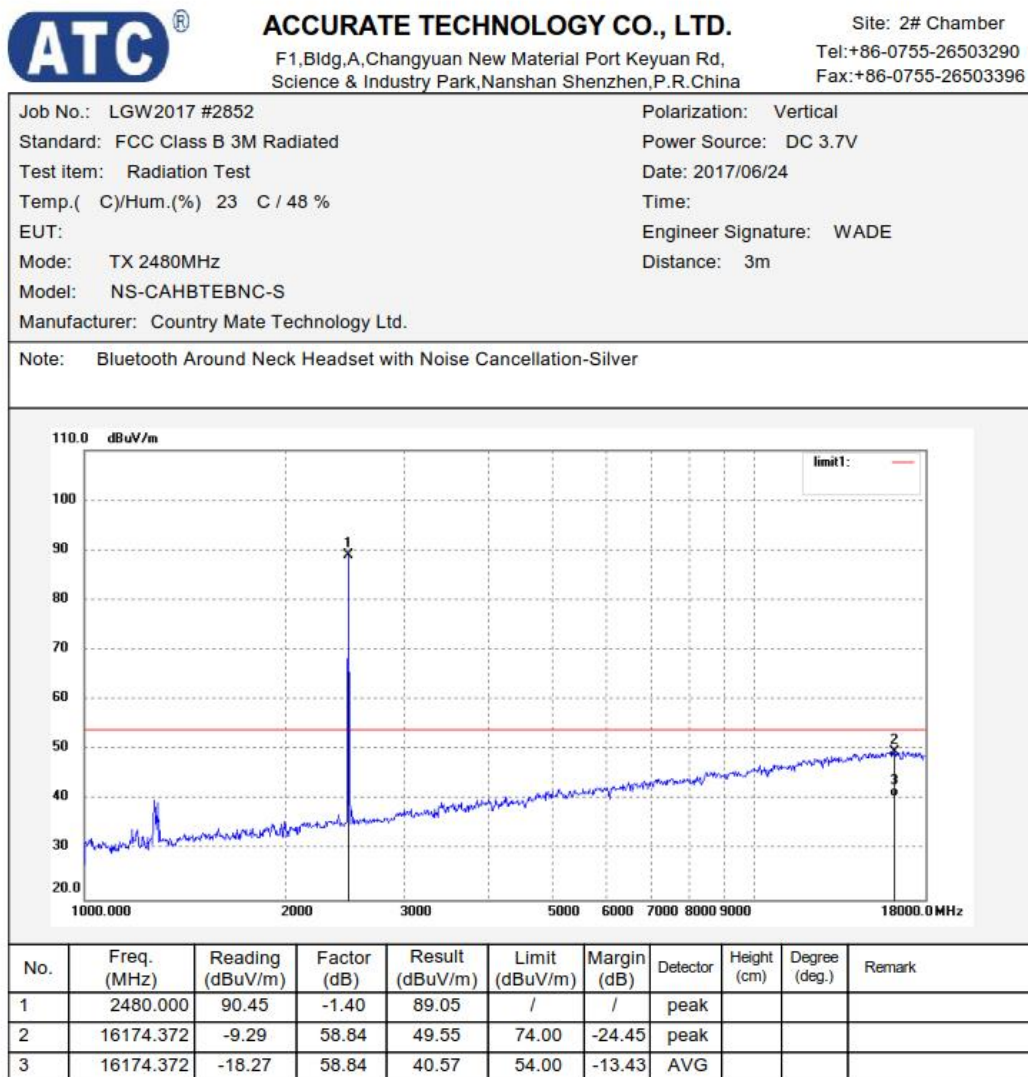


Figure 13: Test figure of Radiated emissions in restricted bands, Mode A.1, Horizontal

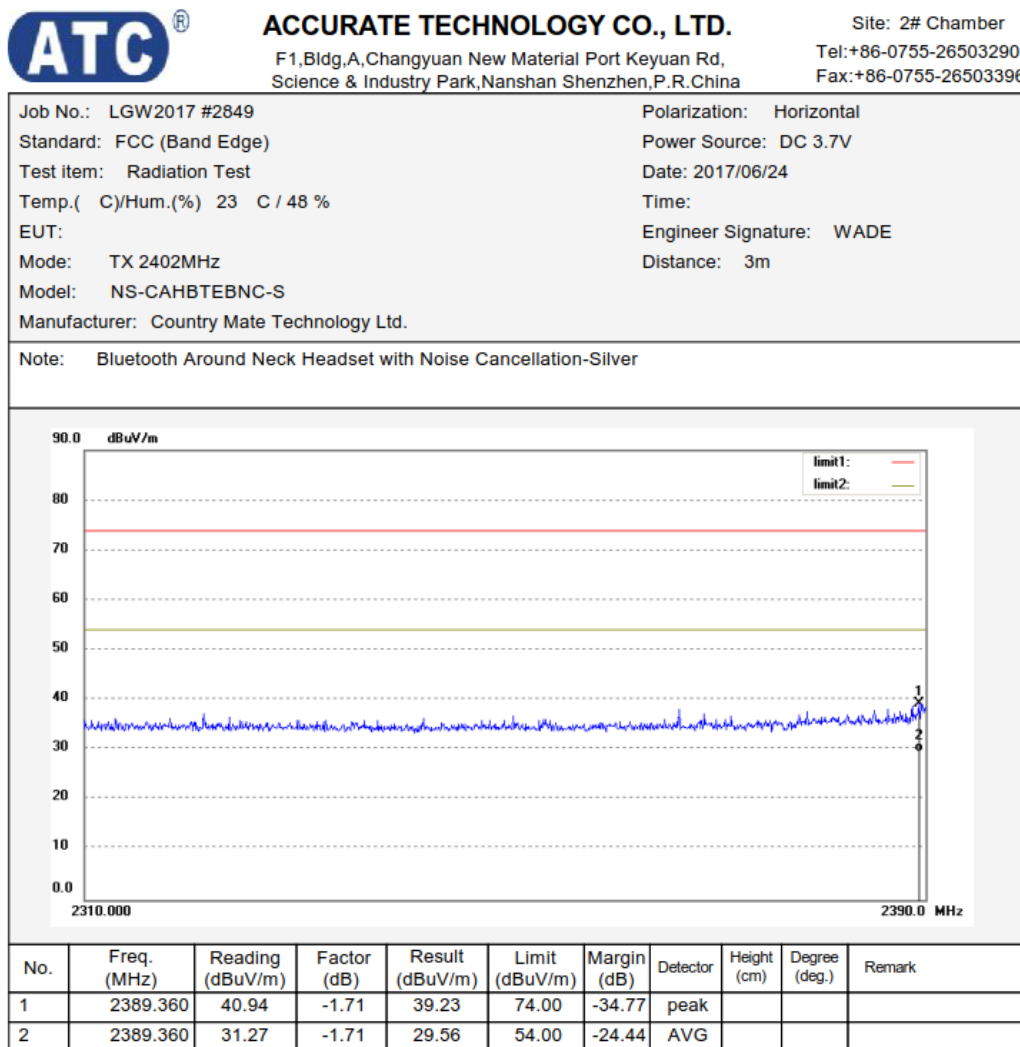


Figure 14: Test figure of Radiated emissions in restricted bands, Mode A.1, Vertical

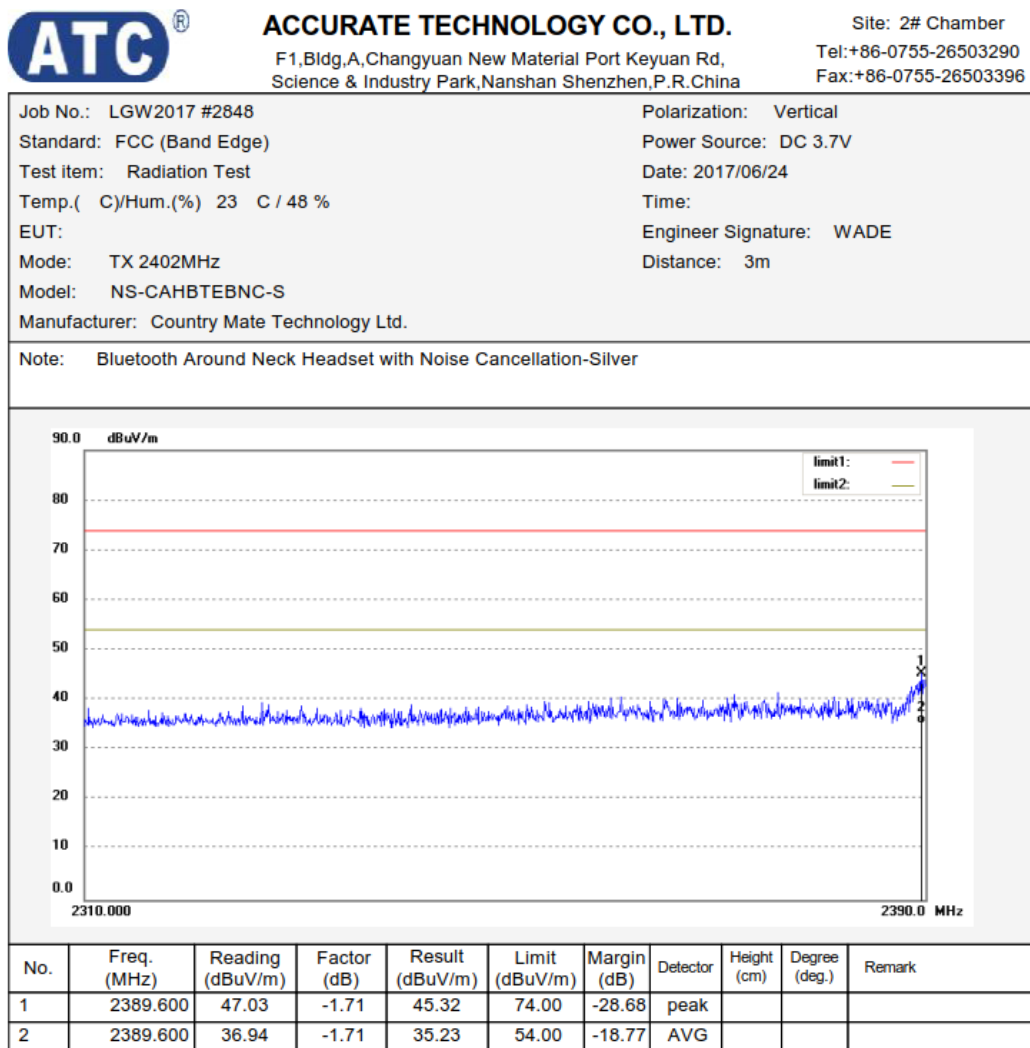


Figure 15: Test figure of Radiated emissions in restricted bands, Mode A.3, Horizontal

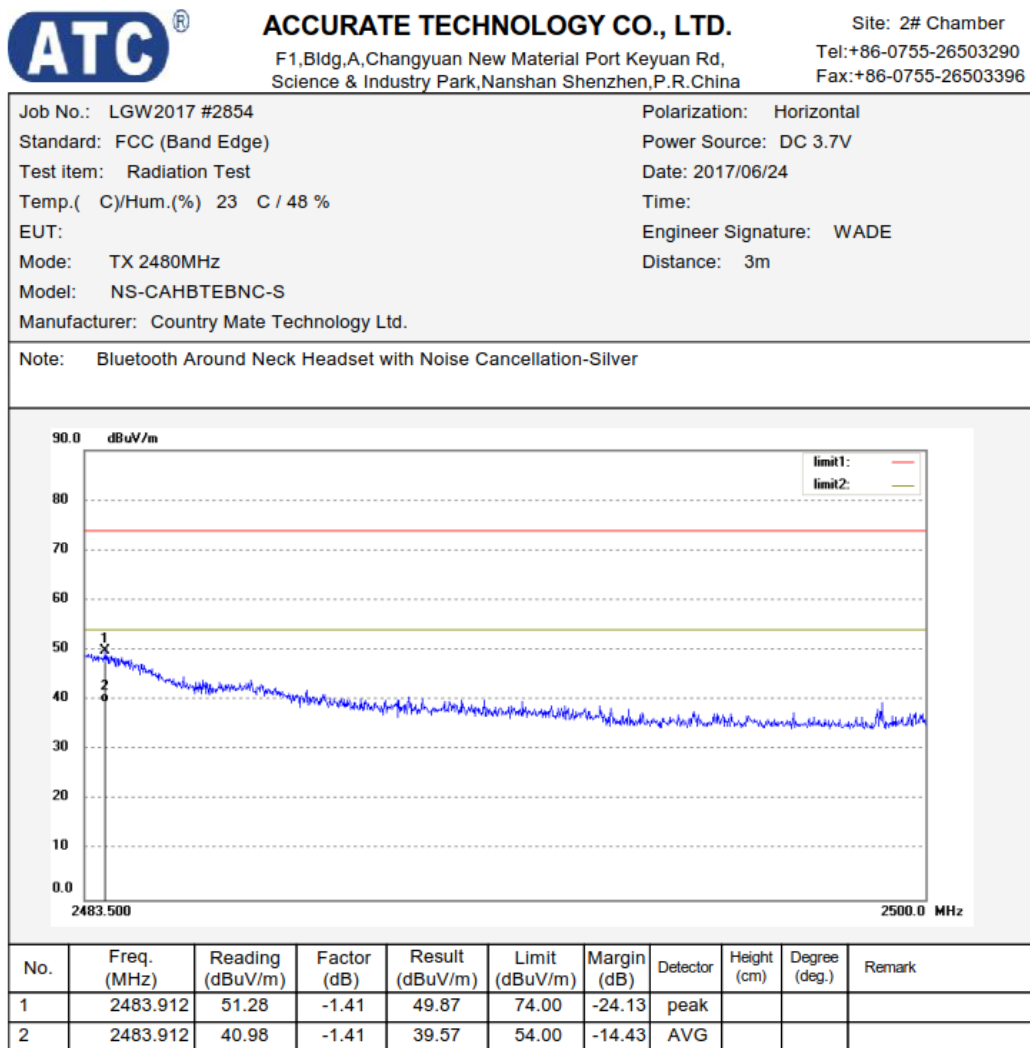


Figure 16: Test figure of Radiated emissions in restricted bands, Mode A.3, Vertical

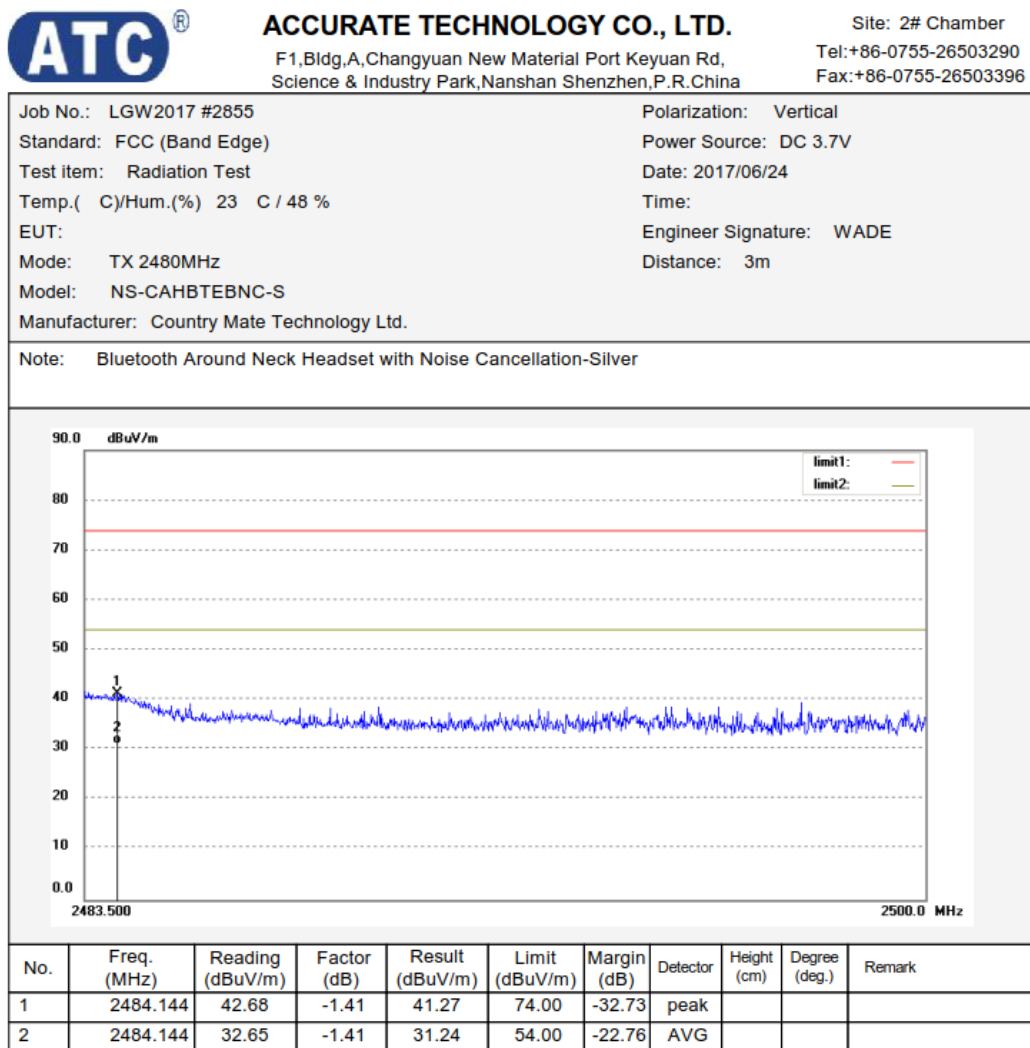


Figure 17: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.1

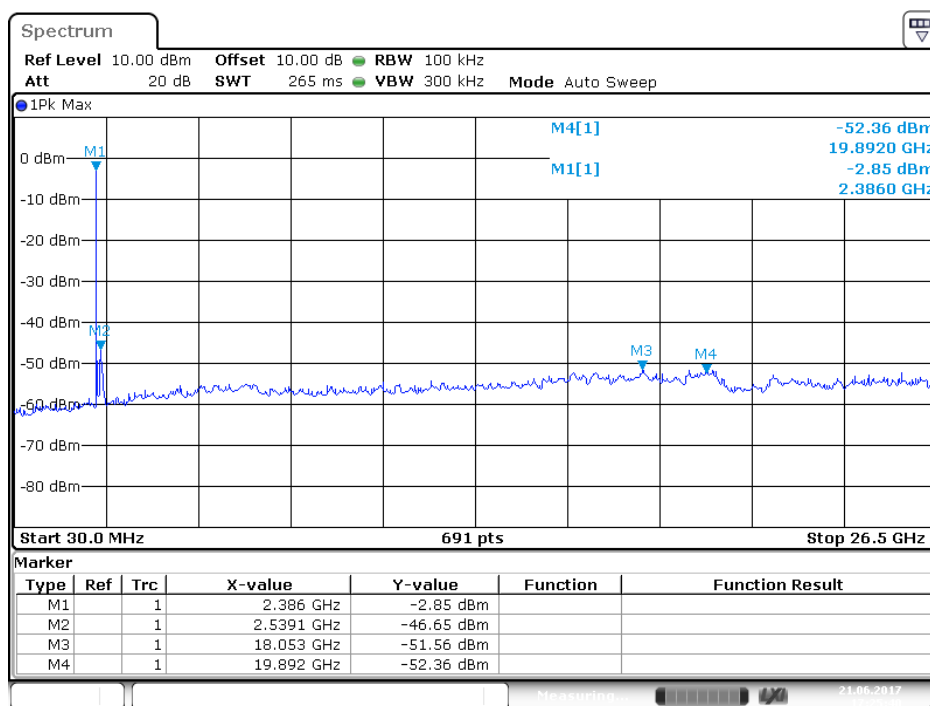


Figure 18: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.2

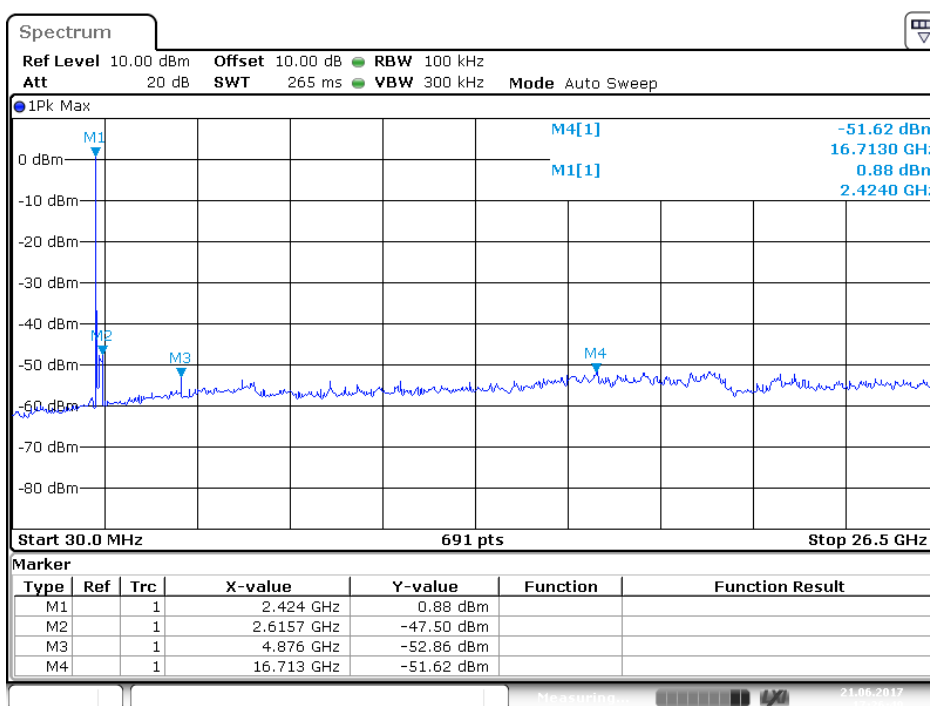


Figure 19: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.3

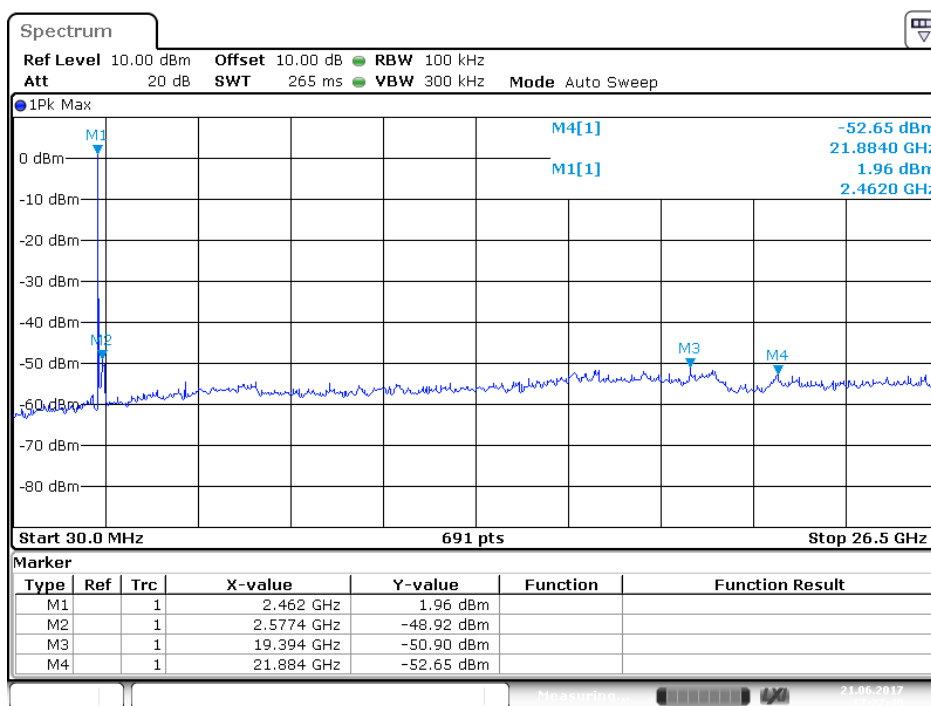


Figure 20: Test figure of Frequency Band Edge in 100kHz Bandwidth, Mode A.1

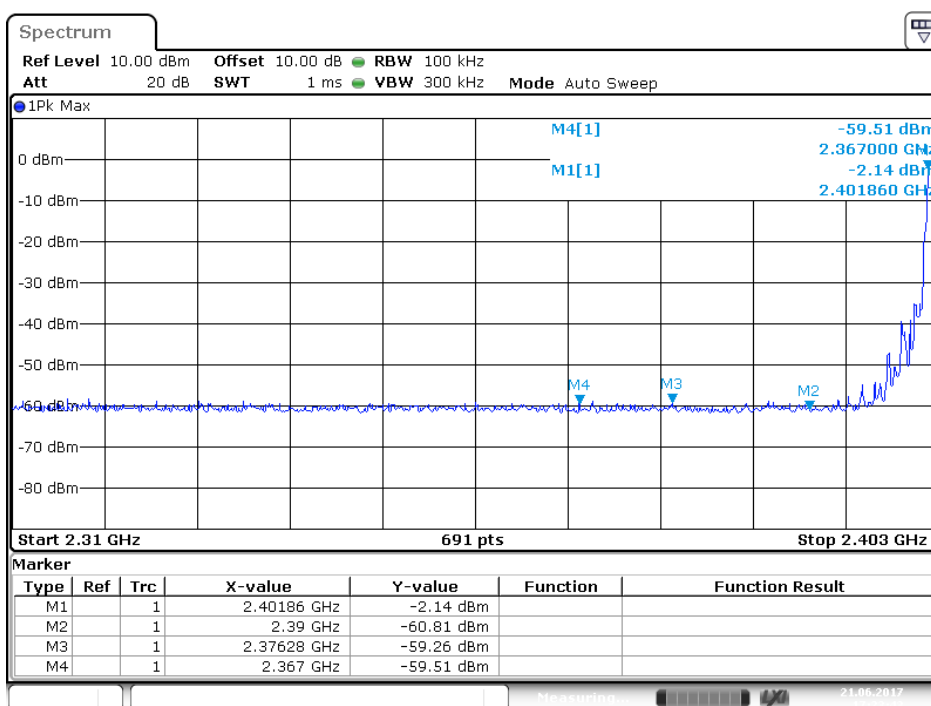
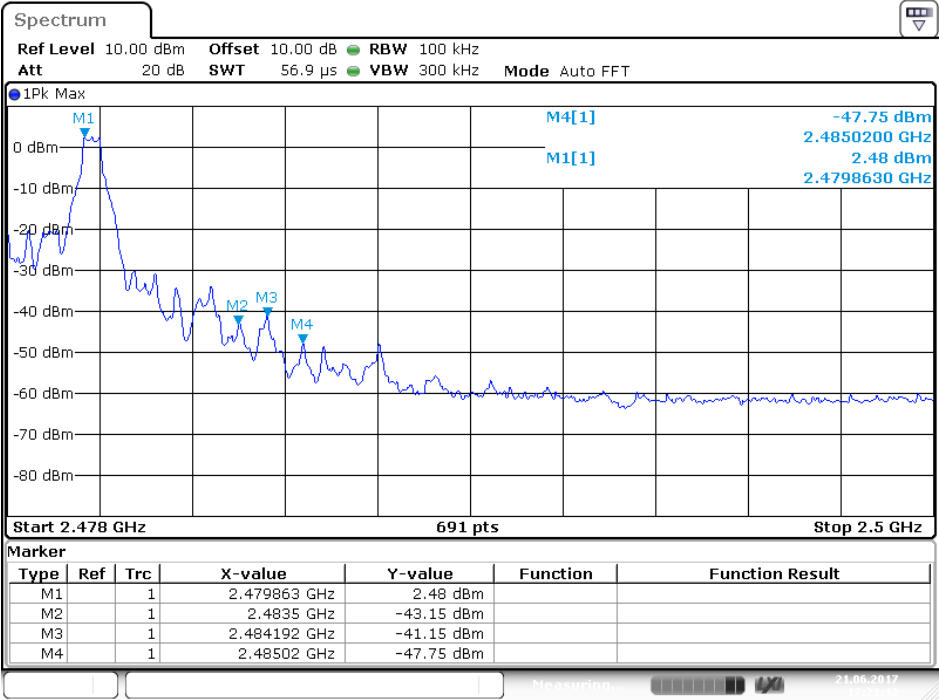


Figure 21: Test figure of Frequency Band Edge in 100kHz Bandwidth, Mode A.3



Date: 21.JUN.2017 17:21:32

Figure 22: Test figure of Conducted emissions, Mode B, line live

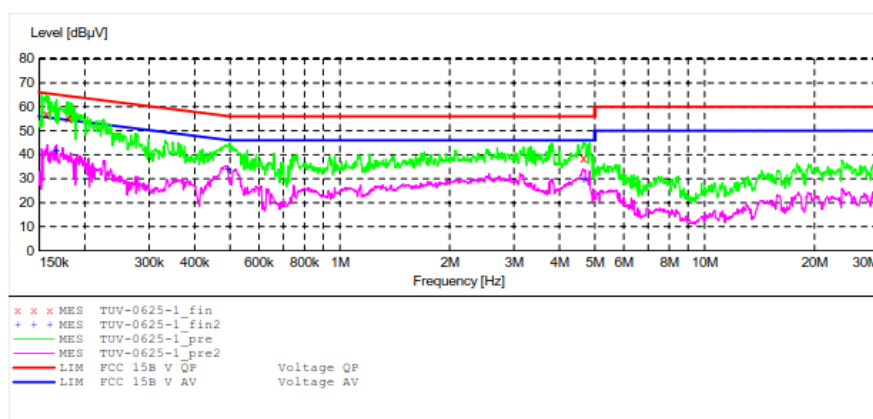
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Bluetooth Around Neck Headset with Noise Cancellation-Silver
 Manufacturer: Country Mate Technology Ltd.
 Operating Condition: TX
 Test Site: 1#Shielding Room
 Operator: WADE
 Test Specification: L 120V/60Hz
 Comment: M/N:NS-CAHBTEBNC-S
 Start of Test: 6/25/2017 /

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
 150.0 kHz 30.0 MHz 5.0 kHz Average
 QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "TUV-0625-1_fin"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.156734	56.90	10.5	66	8.7	QP	L1	GND
0.180236	55.50	10.5	65	9.0	QP	L1	GND
4.646054	38.30	11.1	56	17.7	QP	L1	GND

MEASUREMENT RESULT: "TUV-0625-1_fin2"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.166406	41.70	10.5	55	13.4	AV	L1	GND
0.492876	33.70	10.7	46	12.4	AV	L1	GND
4.646054	29.30	11.1	46	16.7	AV	L1	GND

Figure 23: Test figure of Conducted emissions, Mode B, line neutral

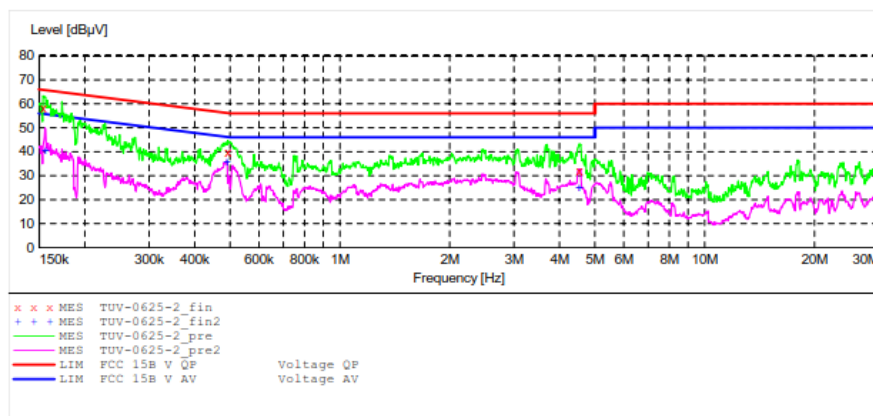
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Bluetooth Around Neck Headset with Noise Cancellation-Silver
 Manufacturer: Country Mate Technology Ltd.
 Operating Condition: TX
 Test Site: 1#Shielding Room
 Operator: WADE
 Test Specification: N 120V/60Hz
 Comment: M/N:NS-CAHBTEBNC-S
 Start of Test: 6/25/2017 /

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-0625-2_fin"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.153636	58.00	10.5	66	7.8	QP	N	GND
0.492876	39.90	10.7	56	16.2	QP	N	GND
4.536094	32.20	11.1	56	23.8	QP	N	GND

MEASUREMENT RESULT: "TUV-0625-2_fin2"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.155487	40.30	10.5	56	15.4	AV	N	GND
0.488957	35.70	10.7	46	10.5	AV	N	GND
4.518021	25.00	11.1	46	21.0	AV	N	GND

Figure 24: Test figure of Conducted emissions, Mode D, line live

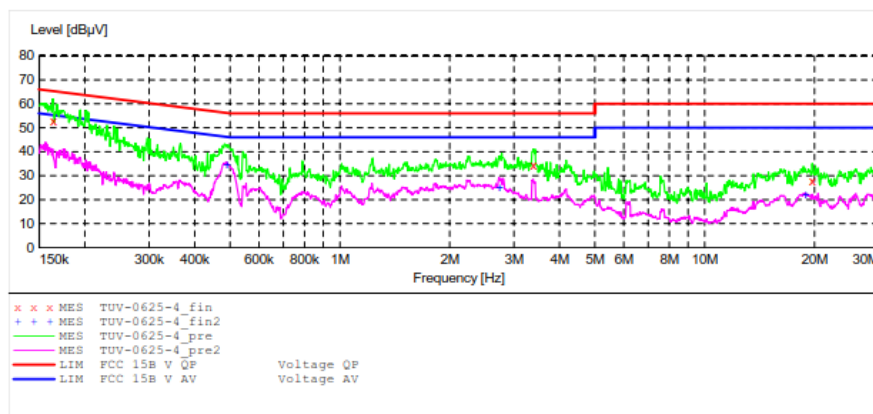
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Bluetooth Around Neck Headset with Noise Cancellation-Silver
 Manufacturer: Country Mate Technology Ltd.
 Operating Condition: Charging
 Test Site: 1#Shielding Room
 Operator: WADE
 Test Specification: L 120V/60Hz
 Comment: M/N: NS-CAHBTEBNC-S
 Start of Test: 6/25/2017 /

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-0625-4_fin"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.163769	52.60	10.5	65	12.7	QP	L1	GND
3.389385	34.20	11.1	56	21.8	QP	L1	GND
19.710077	27.60	11.4	60	32.4	QP	L1	GND

MEASUREMENT RESULT: "TUV-0625-4_fin2"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.488957	34.50	10.7	46	11.7	AV	L1	GND
2.732124	25.10	11.0	46	20.9	AV	L1	GND
18.863291	21.90	11.4	50	28.1	AV	L1	GND

Figure 25: Test figure of Conducted emissions, Mode D, line neutral

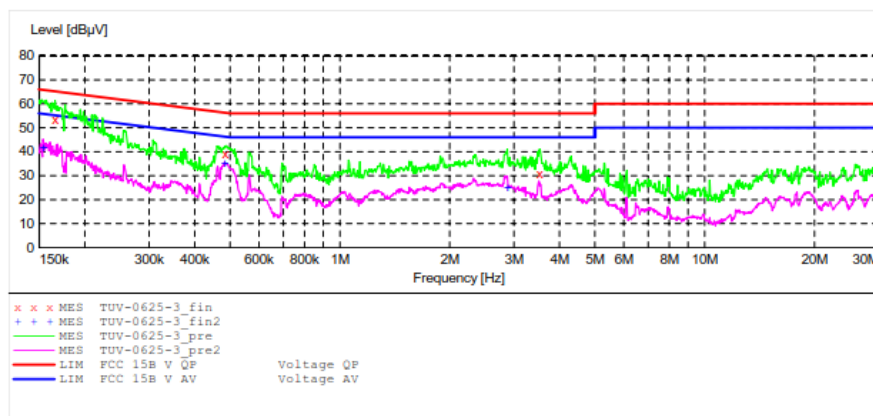
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Bluetooth Around Neck Headset with Noise Cancellation-Silver
 Manufacturer: Country Mate Technology Ltd.
 Operating Condition: Charging
 Test Site: 1#Shielding Room
 Operator: WADE
 Test Specification: N 120V/60Hz
 Comment: M/N:NS-CAHBTEBNC-S
 Start of Test: 6/25/2017 /

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-0625-3_fin"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.165743	53.60	10.5	65	11.6	QP	N	GND
0.485068	39.40	10.7	56	16.9	QP	N	GND
3.527427	30.60	11.1	56	25.4	QP	N	GND

MEASUREMENT RESULT: "TUV-0625-3_fin2"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.153636	41.60	10.5	56	14.2	AV	N	GND
0.483136	35.00	10.7	46	11.3	AV	N	GND
2.877655	24.60	11.0	46	21.4	AV	N	GND

Figure 26: Test figure of Radiated emissions, Mode C, Below 1GHz, Horizontal

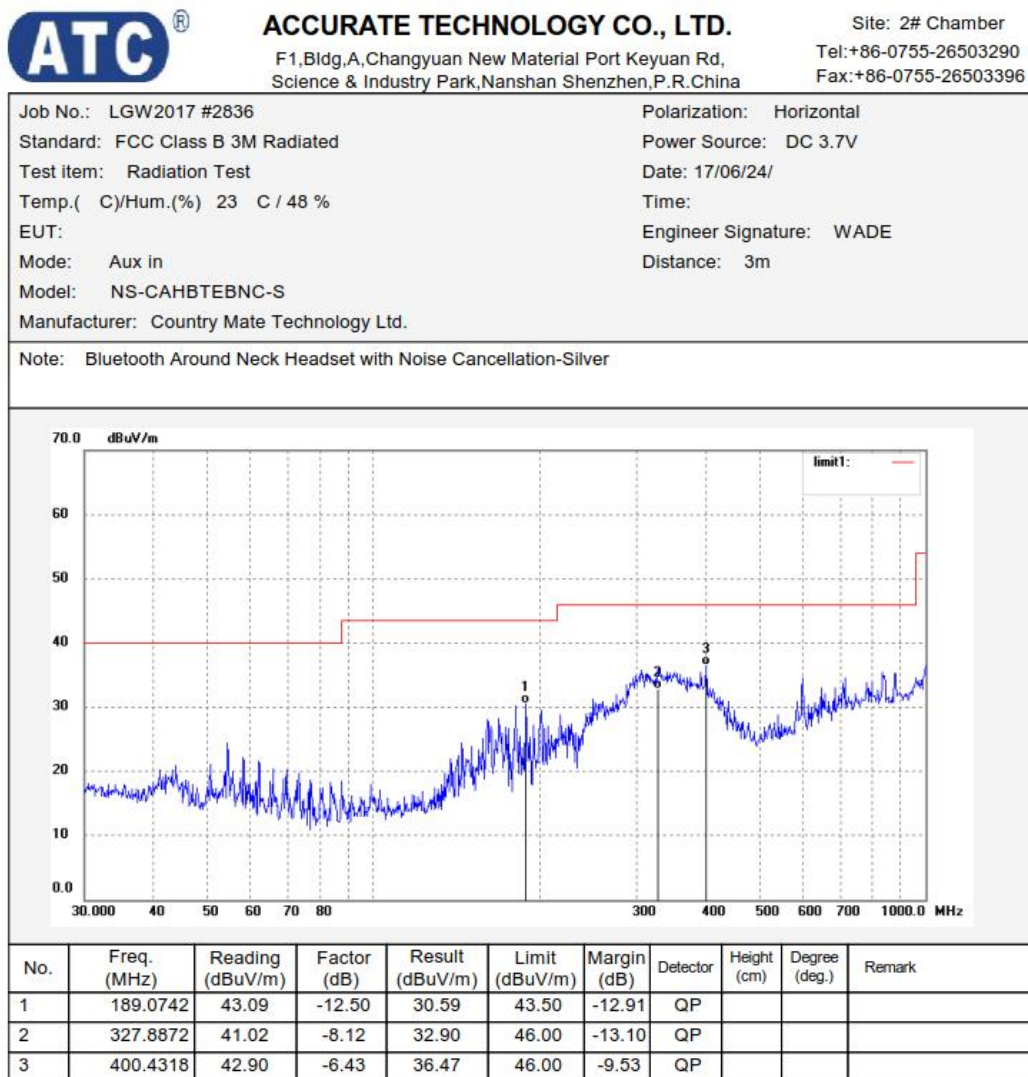


Figure 27: Test figure of Radiated emissions, Mode C, Below 1GHz, Vertical

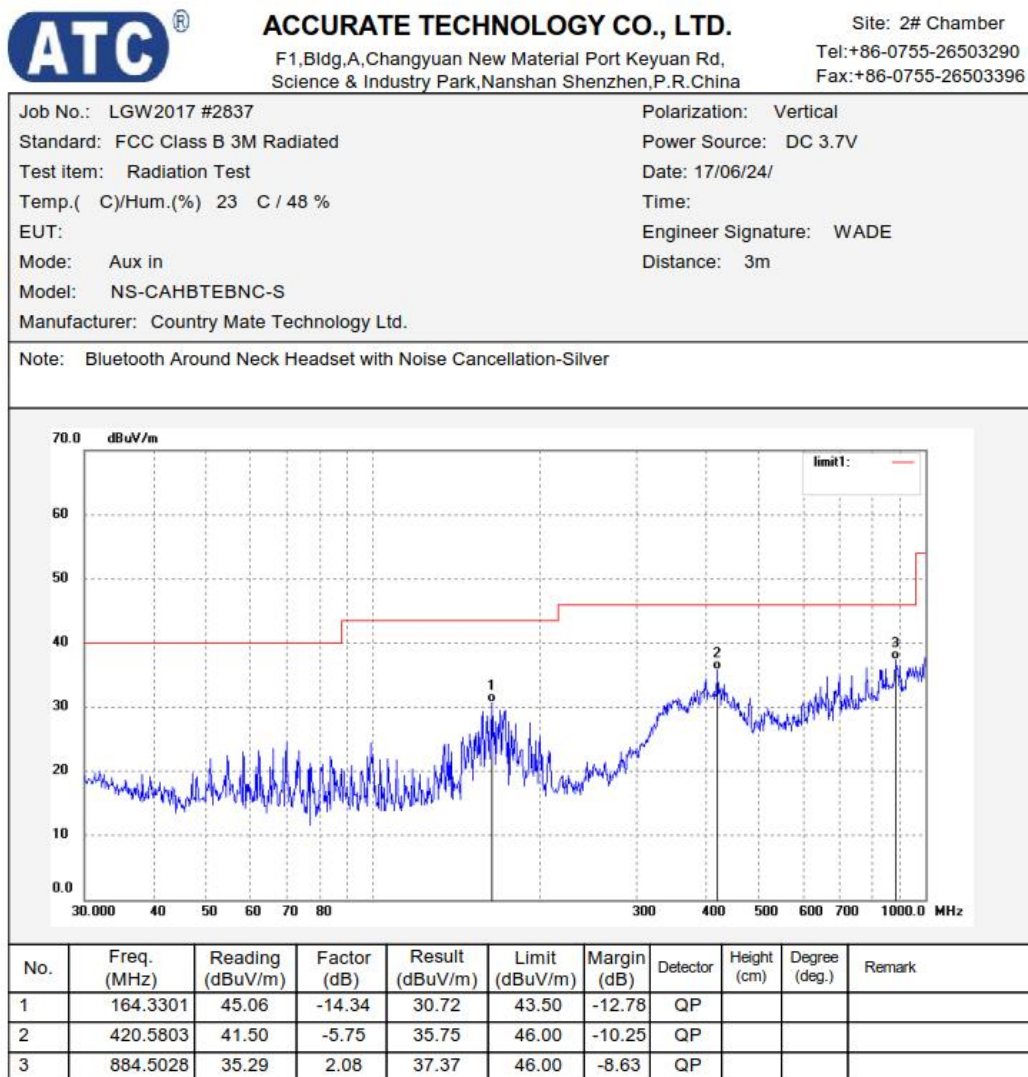


Figure 28: Test figure of Radiated emissions, Mode C, Above 1GHz, Horizontal

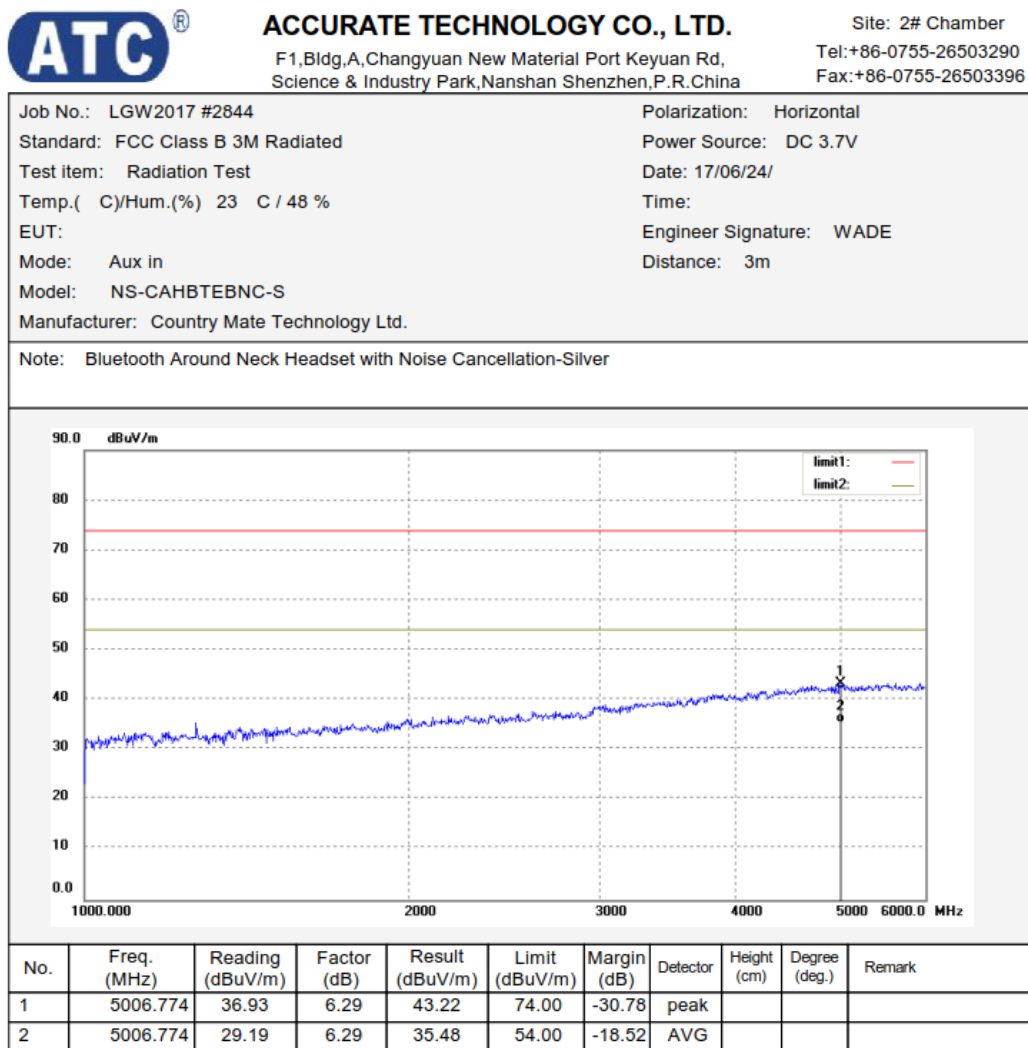


Figure 29: Test figure of Radiated emissions, Mode C, Above 1GHz, Vertical

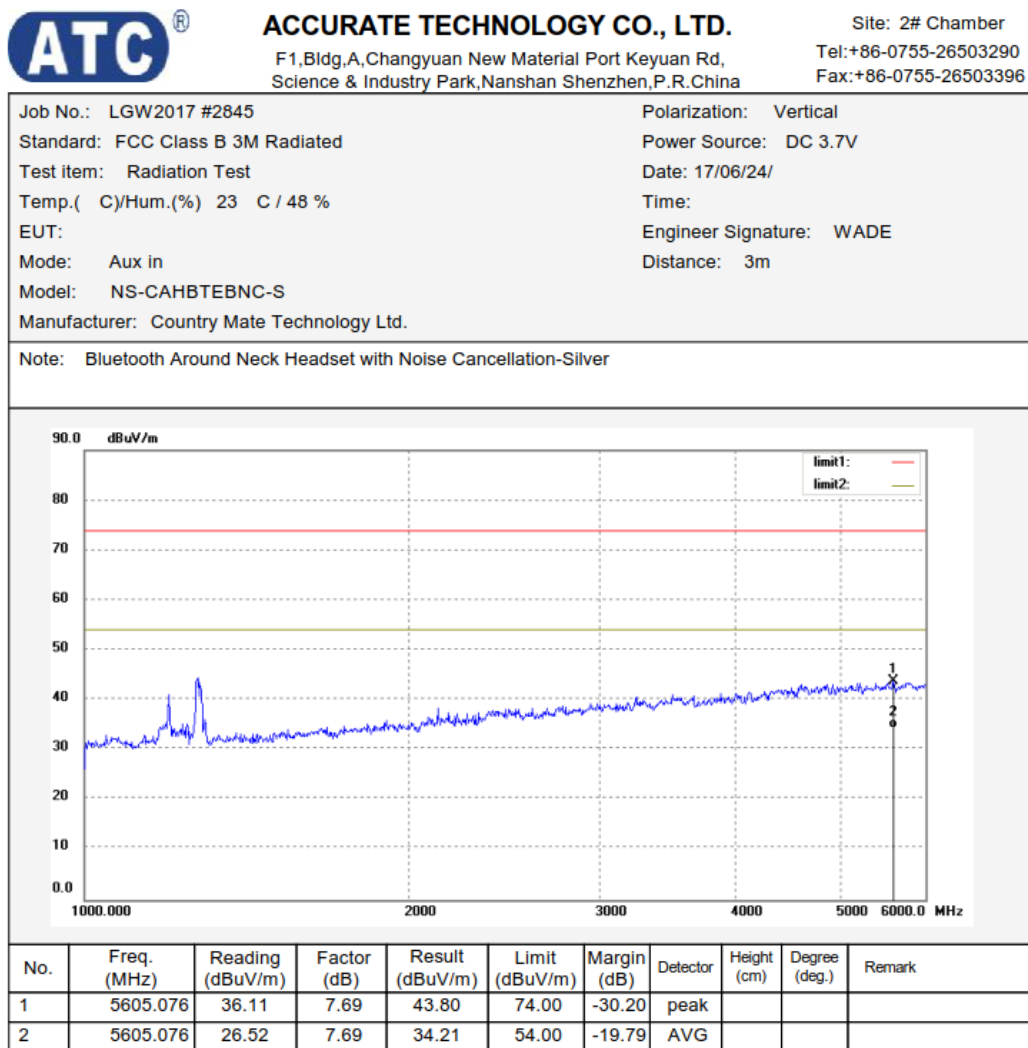


Figure 30: Test figure of Radiated emissions, Mode D, Below 1GHz, Horizontal

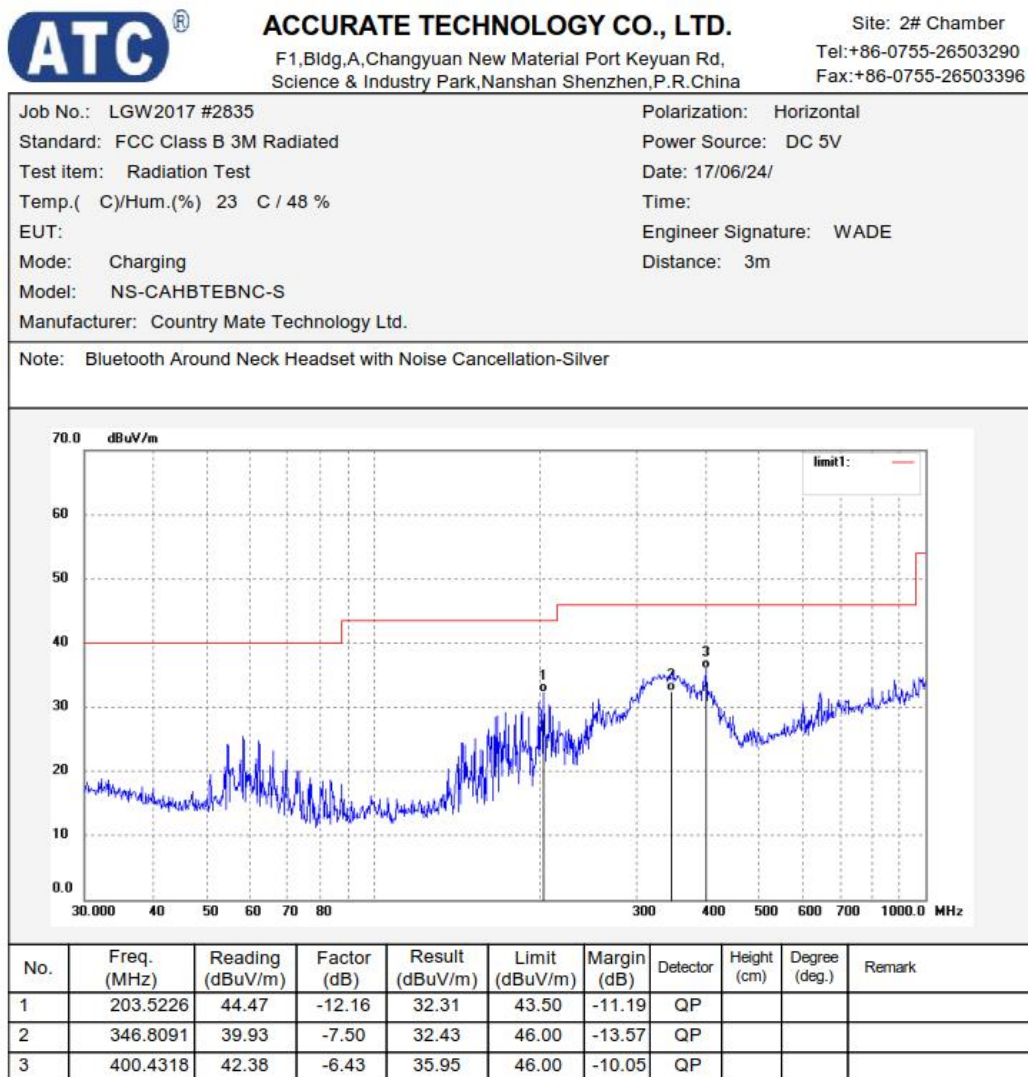


Figure 31: Test figure of Radiated emissions, Mode D, Below 1GHz, Vertical

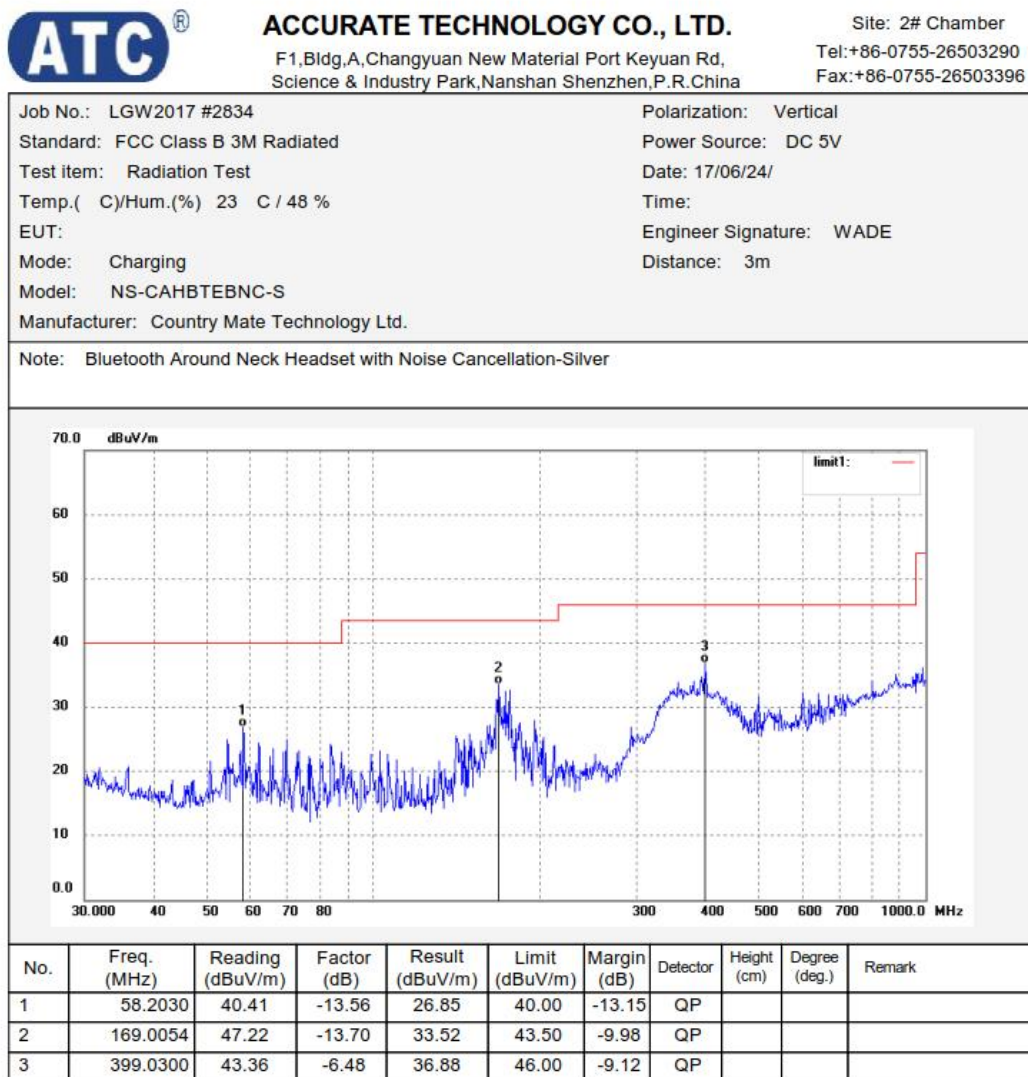


Figure 32: Test figure of Radiated emissions, Mode D, Above 1GHz, Horizontal

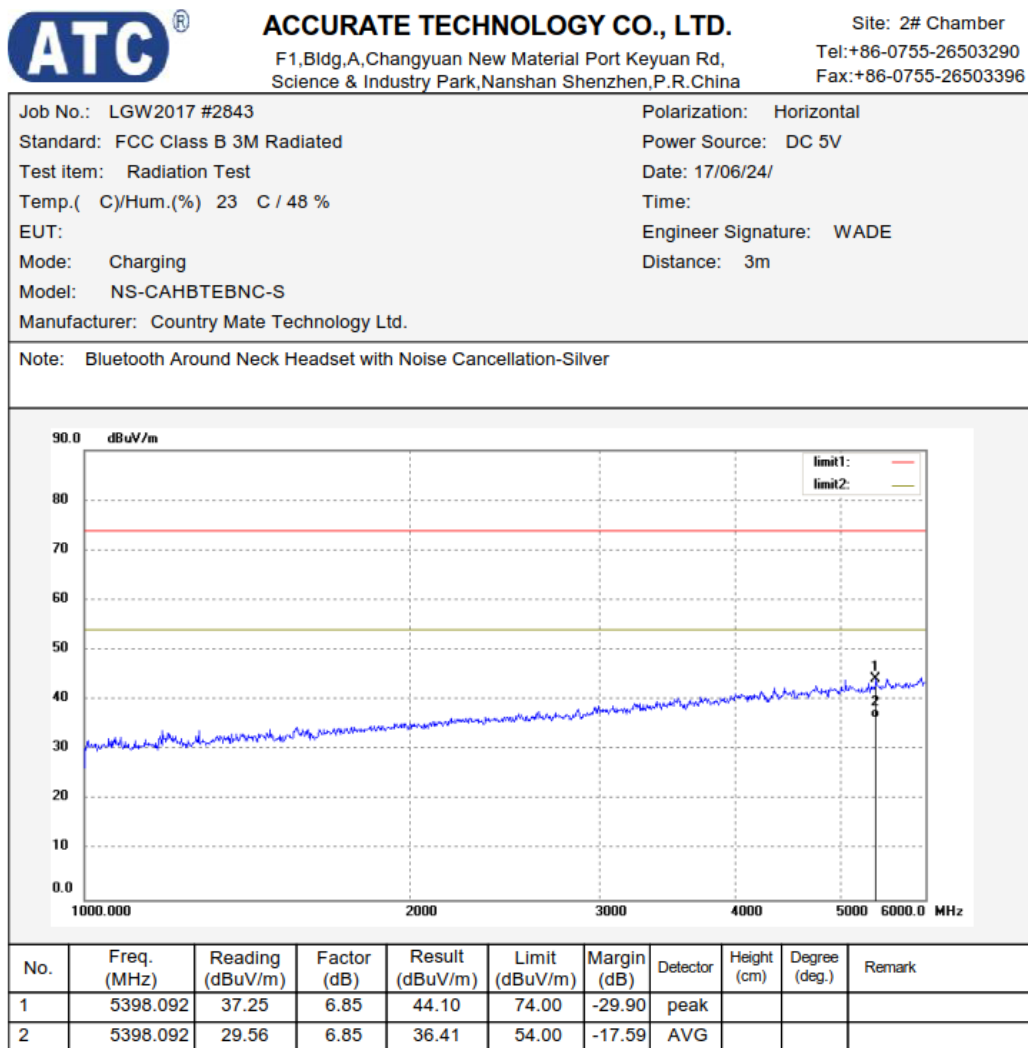


Figure 33: Test figure of Radiated emissions, Mode D, Above 1GHz, Vertical

