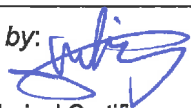


Prüfbericht-Nr.: <i>Test Report No.:</i>	17051456 001	Auftrags-Nr.: <i>Order No.:</i>	164040685	Seite 1 von 57 <i>Page 1 of 57</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	09.07.2015	
Auftraggeber: <i>Client:</i>	Dongguan Newmen Electronics Technology Co.,LTD No.5, Xifa Road, Lin Village, Tangxia Town, Dongguan, Guangdong, China			
Prüfgegenstand: <i>Test item:</i>	Bluetooth mouse			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	NS-PNM6103-BK			
Auftrags-Inhalt: <i>Order content:</i>	FCC Certification			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.209 FCC KDB publication 447498 D01 v05r02			
Wareneingangsdatum: <i>Date of receipt:</i>	10.07.2015			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000241485-001/002			
Prüfzeitraum: <i>Testing period:</i>	10.07.2015 - 10.08.2015			
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: 		
08.09.2015	Lin Lin / Project Manager	08.09.2015	Sam Lin / 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>
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: V4P-NSPNM6103BK		
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 specification(s) F(ail) = failed a.m. test specification(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 nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <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 20dB BANDWIDTH

RESULT: Passed

5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100KHZ BANDWIDTH

RESULT: Passed

5.1.5 SPURIOUS EMISSION

RESULT: Passed

5.1.6 FREQUENCY SEPARATION

RESULT: Passed

5.1.7 NUMBER OF HOPPING FREQUENCY

RESULT: Passed

5.1.8 TIME OF OCCUPANCY

RESULT: Passed

6.1.1 ELECTROMAGNETIC FIELDS

RESULT: Pass

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1. General Remarks

1.1 Complementary Materials

None.

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

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	2016-01-10
Test Receiver	Rohde & Schwarz	ESCS30	100307	2016-01-10
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	2016-01-10
Loop Antenna	Schwarzbeck	FMZB1516	1516131	2016-01-10
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	2016-01-10
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	2016-01-10
Pre-Amplifier	Rohde & Schwarz	CBLU1183540-01	3791	2016-01-10
Radio Test Suite				
Receiver	Rohde & Schwarz	FSV40	101495	2016-01-10

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

Table 2: Measurement Uncertainty

Parameter	Uncertainty
Radiated emission (below 30MHz)	$< \pm 3.08 \text{ dB}$
Radiated emission (30MHz-1GHz)	$< \pm 4.42 \text{ dB}$
Radiated emission (above 1GHz)	$< \pm 4.06 \text{ dB}$

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at 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 Wireless 3 button Mouse with Bluetooth wireless technology.
For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

Technical Specification	Value
Product Name	Bluetooth mouse
Model number	NS-PNM6103-BK
Operation Bandwidth	2402-2480MHz
Modulation	GFSK
Number of channel	79
Channel spacing	1M
Antenna gain	-1.53dBi
Antenna type	PCB
Rated	1.5Vdc (AA Battery)

3.3 Independent Operation Modes

The basic operation modes are:

- A. Bluetooth Transmitting
 - 1. Lowest channel
 - 2. Middle channel
 - 3. Highest channel
 - 4. Hopping
- B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- | | |
|-------------------------|----------------------|
| - Photo Document | - Circuit Diagram |
| - Technical Description | - Instruction Manual |
| - Block | - 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 C63.10:2013.

4.3 Special Accessories and Auxiliary Equipment

The EUT was tested with following accessories

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)

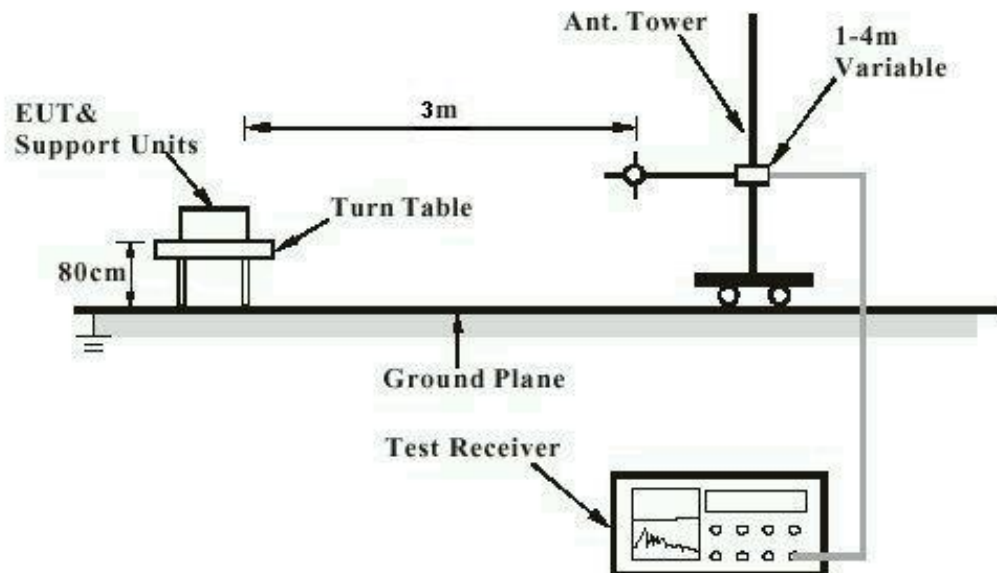
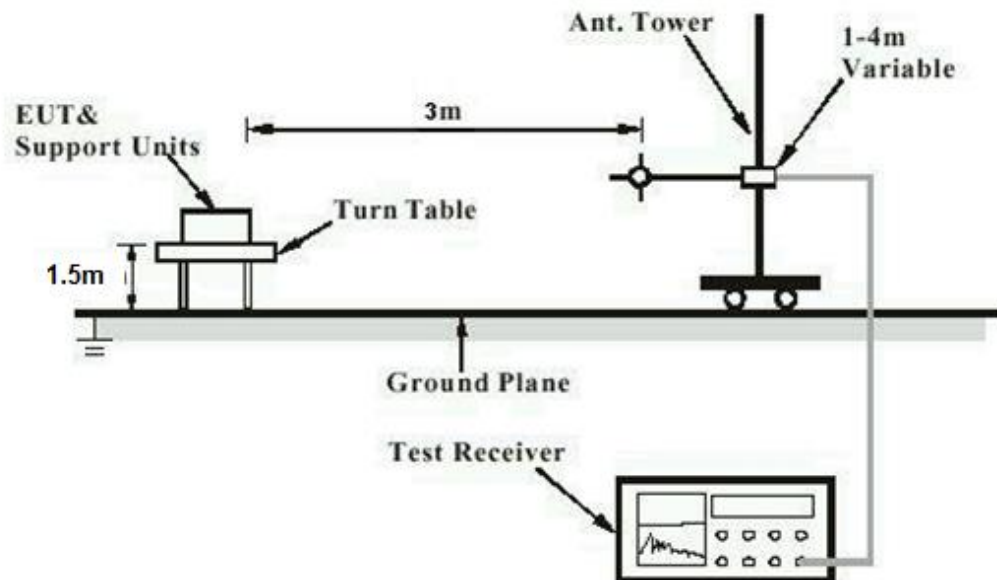


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

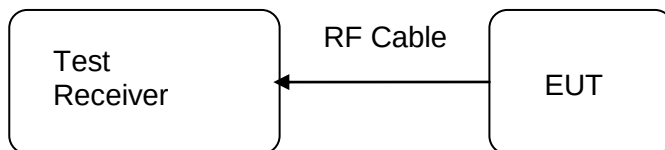


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Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement

5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Passed**

Test date	:	2015-07-17
Test standard	:	FCC Part 15.247(b)(4) and Part 15.203
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 -1.53dBi, 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.

5.1.2 Peak Output Power

RESULT:**Passed**

Test date : 2015-07-17
Test standard : FCC Part 15.247(b)(1)
Basic standard : ANSI C63.10: 2013
Limit : 125mW
Kind of test site : Shielded room

Test setup

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

Table 4: Test result of Peak Output Power

Channel	Channel Frequency (MHz)	Peak Output Power		Limit
		(dBm)	(W)	(mW)
Low Channel	2402	-4.26	0.37	125
Middle Channel	2441	-3.86	0.41	125
High Channel	2480	-3.82	0.41	125

5.1.3 20dB Bandwidth

RESULT:**Passed**

Date of testing : 2015-07-17
Test standard : FCC Part 15.247(a)(1)
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 : 55%
Atmospheric pressure : 101 kPa

Table 5: Test result of 20dB Bandwidth

Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	703.3	/	Pass
Mid Channel	2441	703.3	/	Pass
High Channel	2480	703.3	/	Pass

5.1.4 Conducted spurious emissions measured in 100kHz Bandwidth

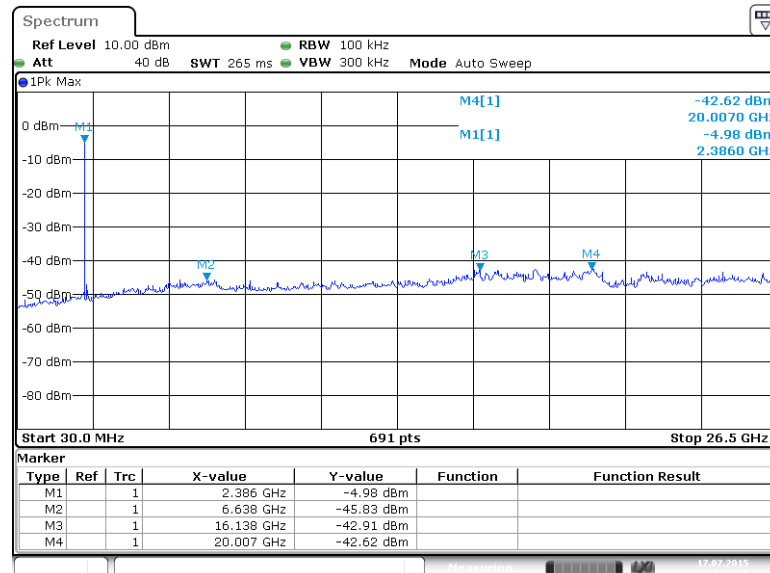
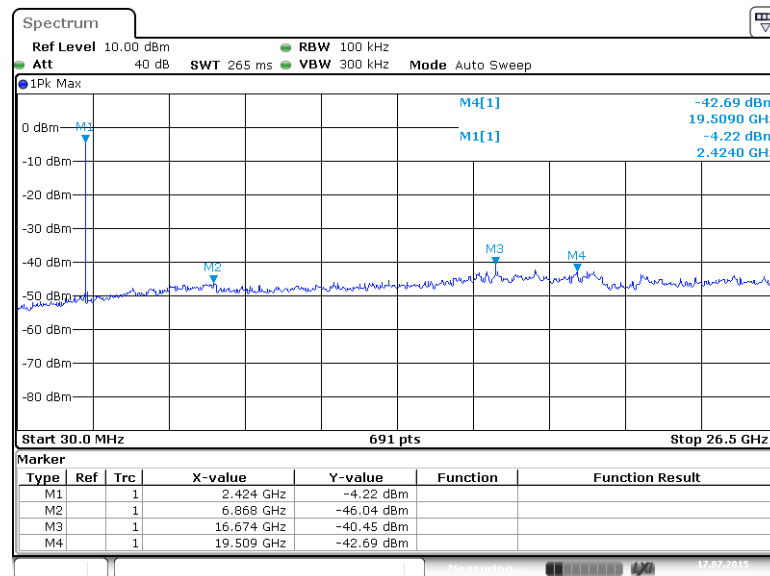
RESULT:**Passed**

Date of testing : 2015-07-17
Test standard : FCC part 15.247(d)
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

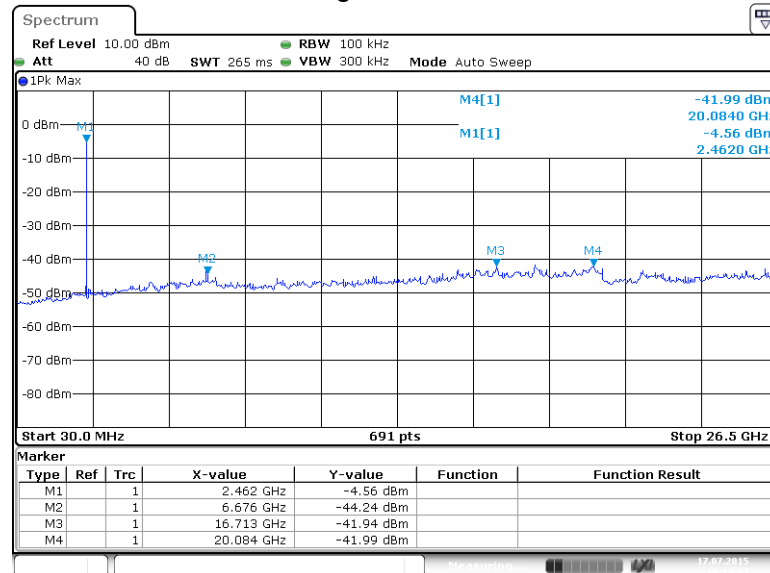
Test setup

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

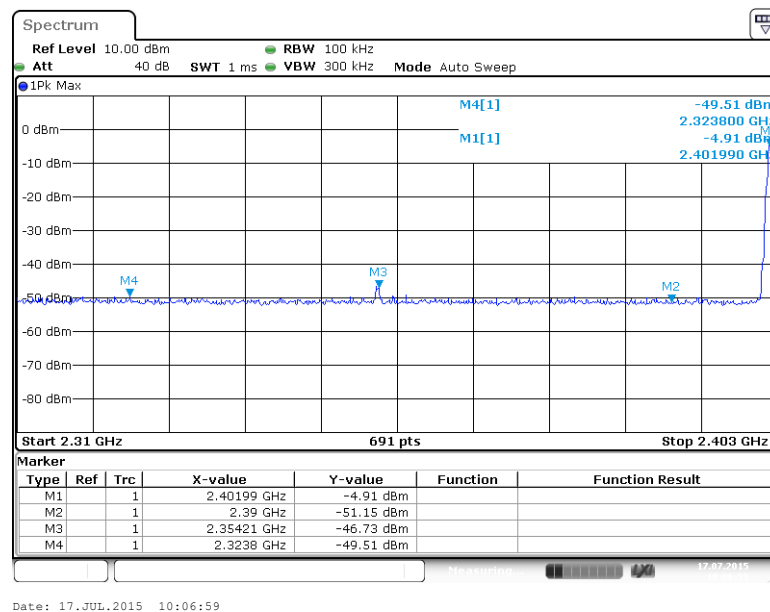
Remark: all emissions are more than 20dB below fundamental.

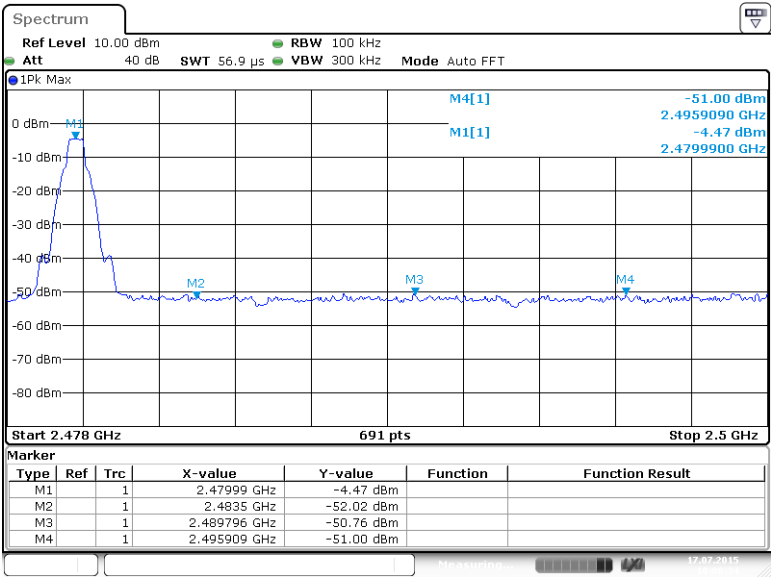
Test Plot of Conducted spurious emissions measured in 100kHz Bandwidth
Low Channel

Middle Channel


High Channel



Test Plot of Conducted spurious emissions measured in 100kHz Bandwidth Bandedge





Date: 17.JUL.2015 10:08:34

5.1.5 Spurious Emission

RESULT:**Passed**

Date of testing	:	2015-07-21 to 2015-07-22
Test standard	:	FCC part 15.247(d) FCC Part 15.205 FCC Part 15.209
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d)
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 9kHz to the tenth harmonics.

Test Plot of Spurious Emission

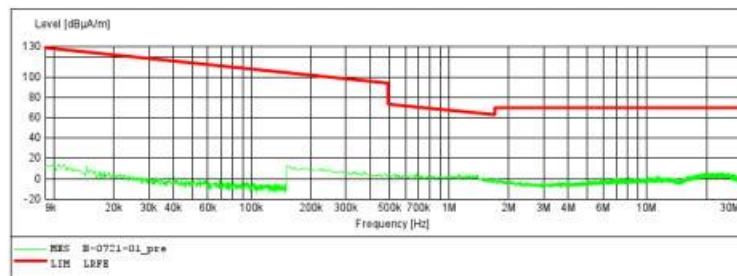
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3M Radiated

EUT: Bluetooth Mouse M/N: NS-ENM6103-BK
 Manufacturer: Dongguan Newmen Electronics Technology Co., LTD
 Operating Condition: TX 2402MHz
 Test Site: C# Chamber
 Operator: LAN
 Test Specification: DC 1.5V
 Comment: X
 Start of Test: 2015-07-21 /

SCAN TABLE: "LFRE Fin"

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

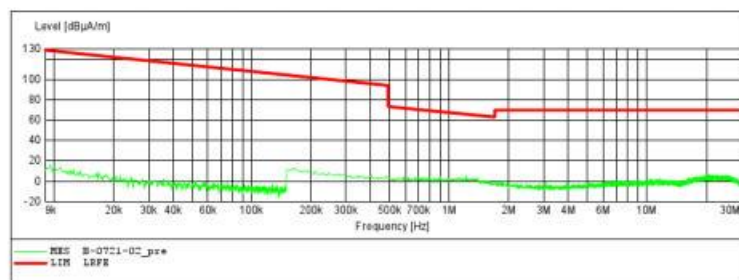


ACCURATE TECHNOLOGY CO., LTD
FCC Class B 3M Radiated

EUT: Bluetooth Mouse M/N: NS-PNM6103-BK
 Manufacturer: Dongguan Newmen Electronics Technology Co., LTD
 Operating Condition: TX 2402MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 1.5V
 Comment: Y
 Start of Test: 2015-07-21 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB_STD VTERM 1.70			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
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

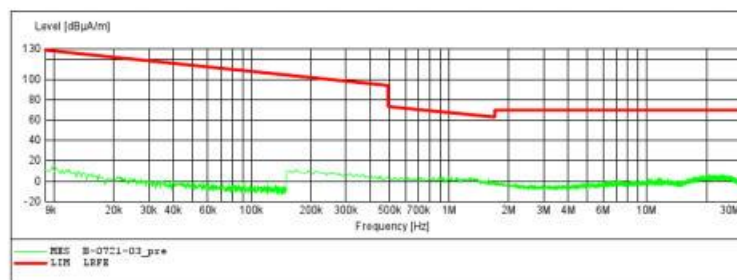


ACCURATE TECHNOLOGY CO., LTD
FCC Class B 3M Radiated

EUT: Bluetooth Mouse M/N: NS-PNM6103-BK
 Manufacturer: Dongguan Newmen Electronics Technology Co., LTD
 Operating Condition: TX 2402MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 1.5V
 Comment: Z
 Start of Test: 2015-07-21 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB_STD VTERM 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	1516M		
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M		

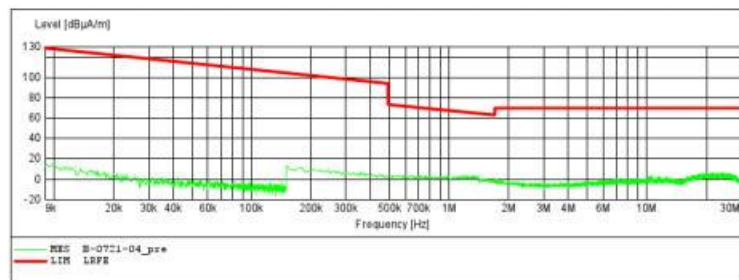


ACCURATE TECHNOLOGY CO., LTD
FCC Class B 3M Radiated

EUT: Bluetooth Mouse M/N: NS-PNM6103-BK
 Manufacturer: Dongguan Newmen Electronics Technology Co., LTD
 Operating Condition: TX 241MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 1.5V
 Comment: X
 Start of Test: 2015-07-21 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB_STD VTERM 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

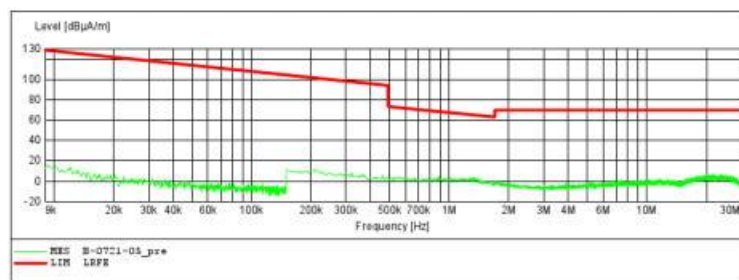


ACCURATE TECHNOLOGY CO., LTD
FCC Class B 3M Radiated

EUT: Bluetooth Mouse M/N: NS-PNM6103-BK
 Manufacturer: Dongguan Newmen Electronics Technology Co., LTD
 Operating Condition: TX 241MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 1.5V
 Comment: Y
 Start of Test: 2015-07-21 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB_STD VTERM 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

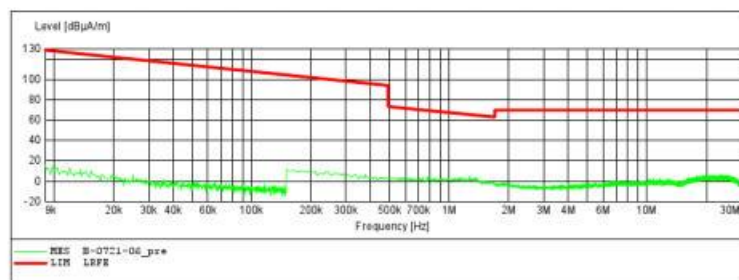


ACCURATE TECHNOLOGY CO., LTD
FCC Class B 3M Radiated

EUT: Bluetooth Mouse M/N: NS-PNM6103-BK
 Manufacturer: Dongguan Newmen Electronics Technology Co., LTD
 Operating Condition: TX 241MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 1.5V
 Comment: Z
 Start of Test: 2015-07-21 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB_STD VTERM 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

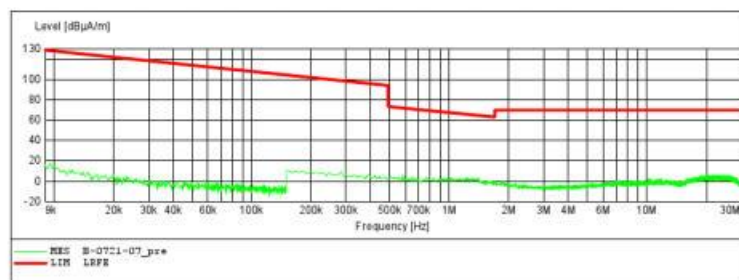


ACCURATE TECHNOLOGY CO., LTD
FCC Class B 3M Radiated

EUT: Bluetooth Mouse M/N: NS-PNM6103-BK
 Manufacturer: Dongguan Newmen Electronics Technology Co., LTD
 Operating Condition: TX 2480MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 1.5V
 Comment: X
 Start of Test: 2015-07-21 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB_STD VTERM 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

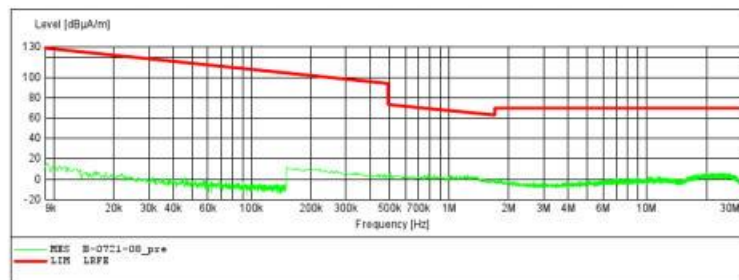


ACCURATE TECHNOLOGY CO., LTD
FCC Class B 3M Radiated

EUT: Bluetooth Mouse M/N: NS-PNM6103-BK
 Manufacturer: Dongguan Newmen Electronics Technology Co., LTD
 Operating Condition: TX 2480MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 1.5V
 Comment: Y
 Start of Test: 2015-07-21 /

SCAN TABLE: "LFRE Fin"

Short Description:			_SUB_STD VTERM 1.70		IF		Transducer	
Start	Stop	Step	Detector	Meas.	Time	Bandw.		
Frequency	Frequency	Width						
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		

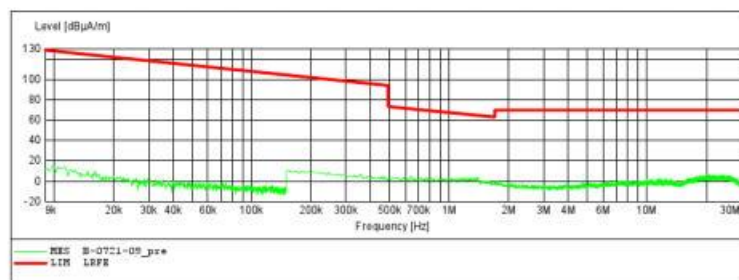


ACCURATE TECHNOLOGY CO., LTD
FCC Class B 3M Radiated

EUT: Bluetooth Mouse M/N: NS-PNM6103-BK
 Manufacturer: Dongguan Newmen Electronics Technology Co., LTD
 Operating Condition: TX 2480MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 1.5V
 Comment: Z
 Start of Test: 2015-07-21 /

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




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.: LGW2015 #855

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2402MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co., LTD

Polarization: Vertical

Power Source: DC 1.5V

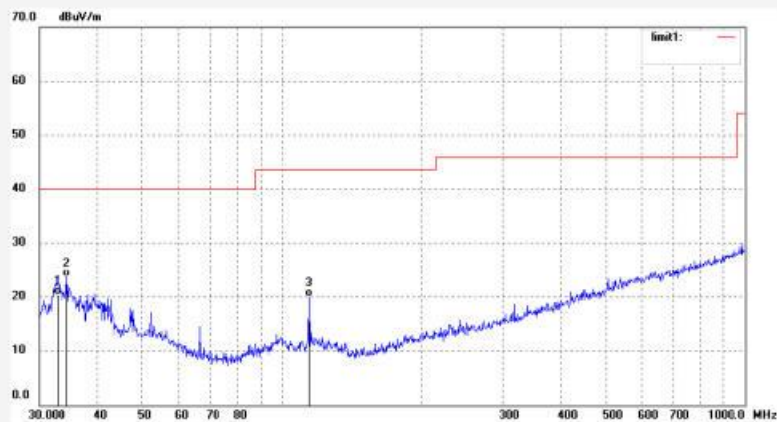
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.8637	30.18	-9.79	20.39	40.00	-19.61	QP			
2	34.3962	33.99	-10.24	23.75	40.00	-16.25	QP			
3	114.5146	34.33	-14.23	20.10	43.50	-23.40	QP			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #856

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2402MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Horizontal

Power Source: DC 1.5V

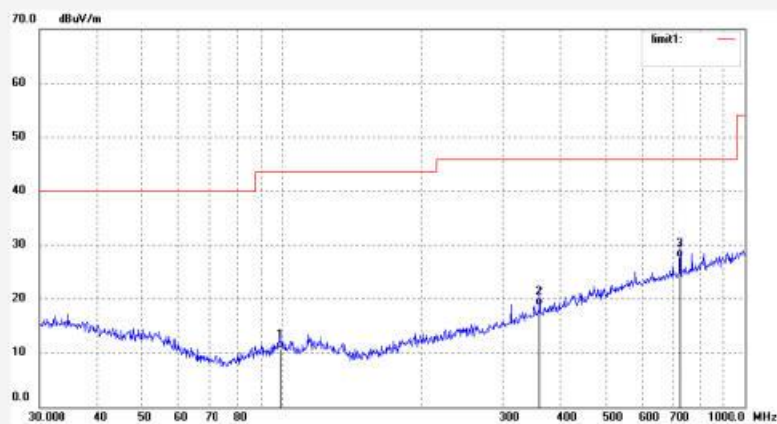
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	99.5279	24.97	-14.28	10.69	43.50	-32.81	QP			
2	360.4476	27.50	-8.60	18.90	46.00	-27.10	QP			
3	721.7259	30.12	-2.46	27.66	46.00	-18.34	QP			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #857

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2441MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Horizontal

Power Source: DC 1.5V

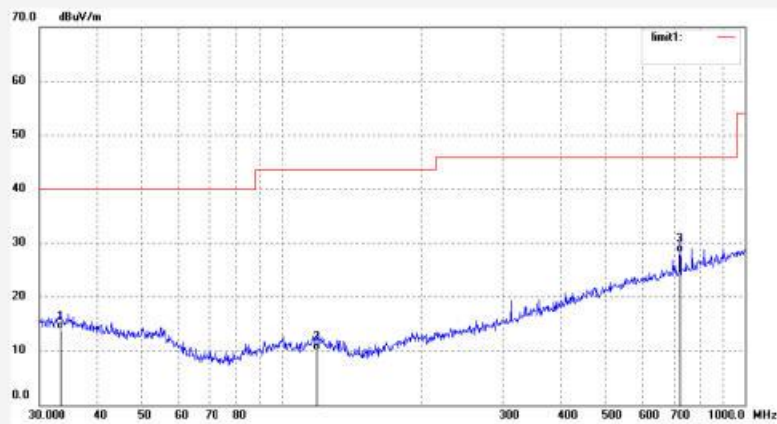
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.3278	24.24	-10.25	13.99	40.00	-26.01	QP			
2	119.0180	24.22	-14.15	10.07	43.50	-33.43	QP			
3	721.7259	30.66	-2.46	28.20	46.00	-17.80	QP			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #858

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2441MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co., LTD

Polarization: Vertical

Power Source: DC 1.5V

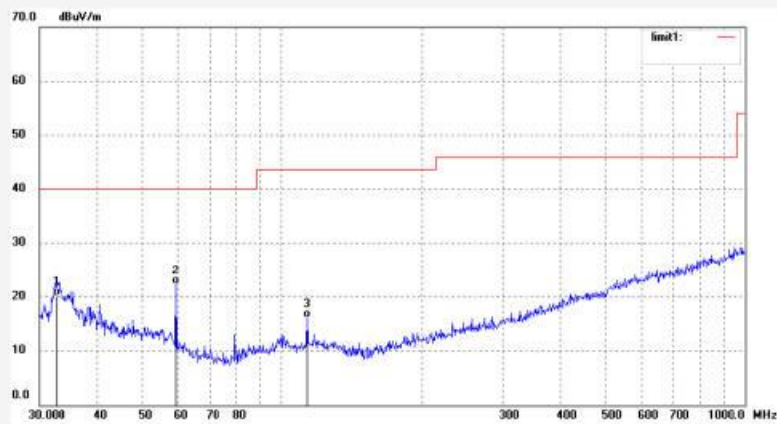
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.7486	30.05	-9.75	20.30	40.00	-19.70	QP			
2	59.2325	36.09	-13.79	22.30	40.00	-17.70	QP			
3	113.3162	30.67	-14.41	16.26	43.50	-27.24	QP			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #859

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2480MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Vertical

Power Source: DC 1.5V

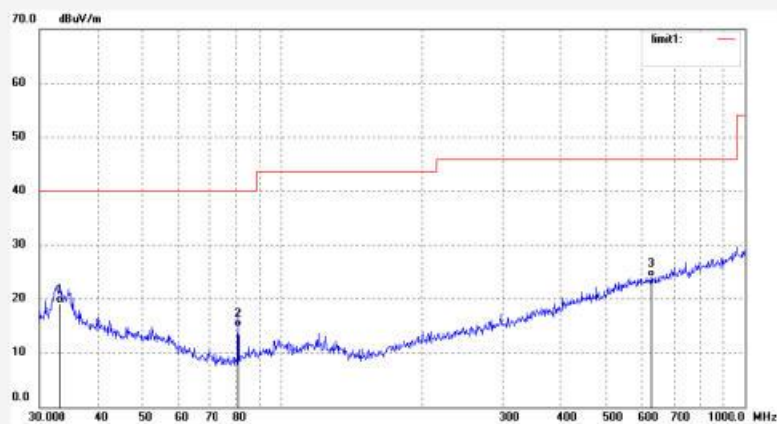
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.0949	29.02	-9.86	19.16	40.00	-20.84	QP			
2	80.6441	32.13	-17.36	14.77	40.00	-25.23	QP			
3	627.2738	27.65	-3.61	24.04	46.00	-21.96	QP			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #860

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2480MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Horizontal

Power Source: DC 1.5V

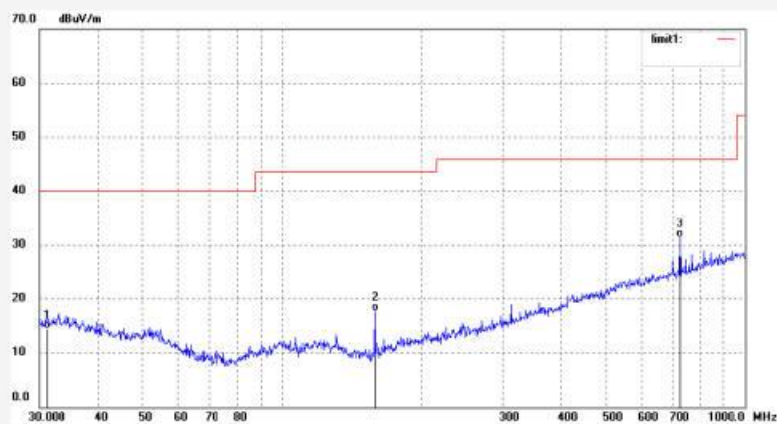
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.1798	24.53	-10.04	14.49	40.00	-25.51	QP			
2	159.2250	33.32	-15.64	17.68	43.50	-25.82	QP			
3	721.7259	33.83	-2.46	31.37	46.00	-14.63	QP			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #881

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2402MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Vertical

Power Source: DC 1.5V

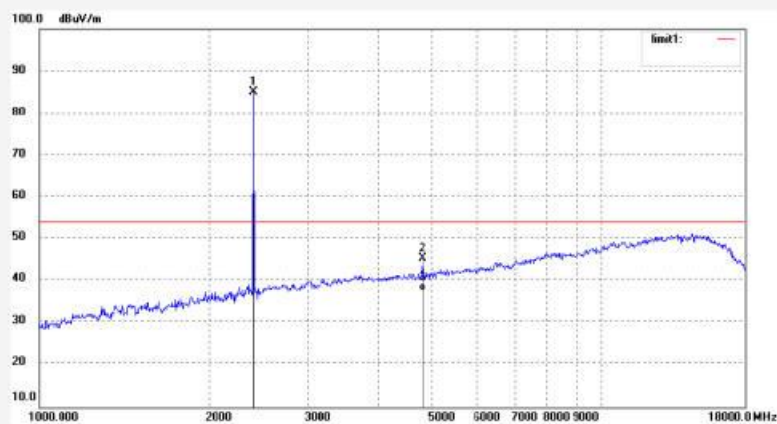
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	92.58	-7.45	85.13	/	/	peak			
2	4804.023	45.71	-0.30	45.41	74.00	-28.59	peak			
3	4804.023	37.85	-0.30	37.55	54.00	-16.45	AVG			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #862

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2402MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Horizontal

Power Source: DC 1.5V

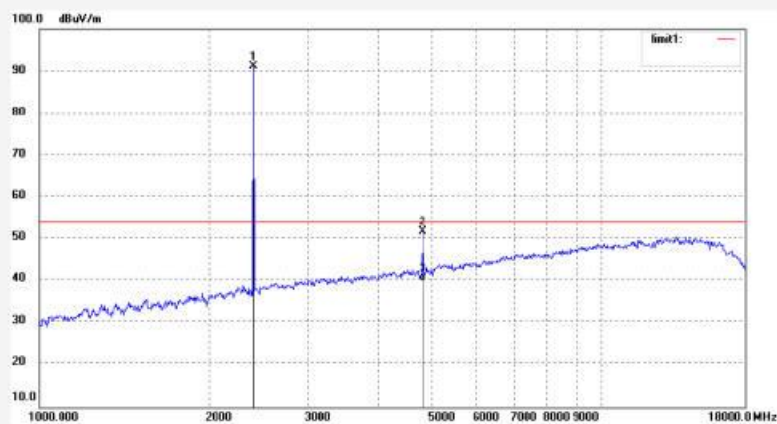
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	98.67	-7.45	91.22	/	/	peak			
2	4804.026	52.01	-0.30	51.71	74.00	-22.29	peak			
3	4804.026	40.12	-0.30	39.82	54.00	-14.18	AVG			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #885

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2441MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Vertical

Power Source: DC 1.5V

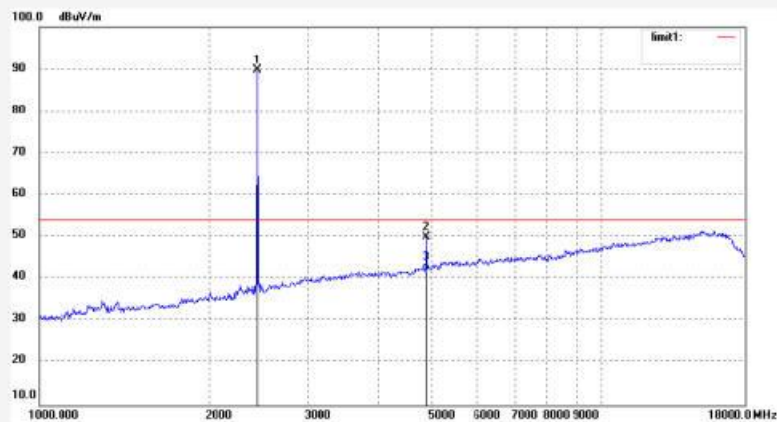
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2441.000	97.08	-7.35	89.73	/	/	peak			
2	4882.027	49.85	0.14	49.99	74.00	-24.01	peak			
3	4882.027	41.93	0.14	42.07	54.00	-11.93	AVG			


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Fax: +86-0755-26503396

Job No.: LGW2015 #886

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2441MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Horizontal

Power Source: DC 1.5V

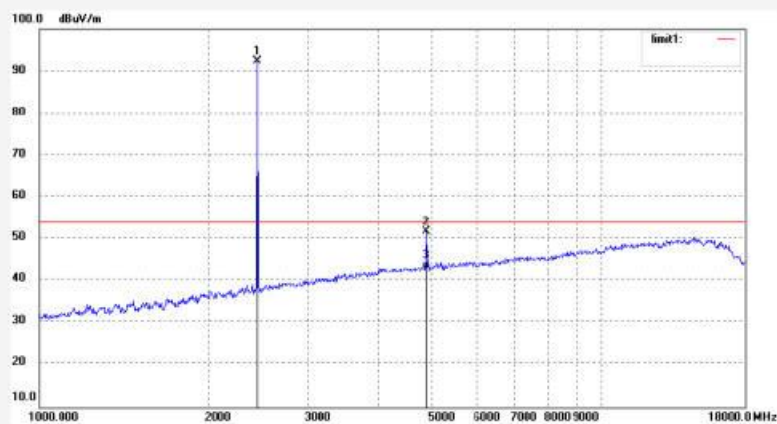
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2441.000	99.74	-7.35	92.39	/	/	peak			
2	4882.021	51.52	0.14	51.66	74.00	-22.34	peak			
3	4882.021	42.75	0.14	42.89	54.00	-11.11	AVG			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #867

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2480MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Horizontal

Power Source: DC 1.5V

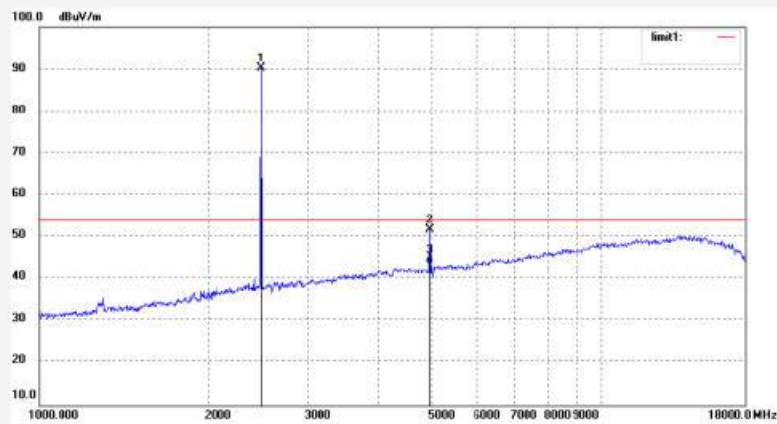
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	97.51	-7.37	90.14	/	/	peak			
2	4960.027	51.12	0.52	51.64	74.00	-22.36	peak			
3	4960.027	43.20	0.52	43.72	54.00	-10.28	AVG			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #868

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2480MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Vertical

Power Source: DC 1.5V

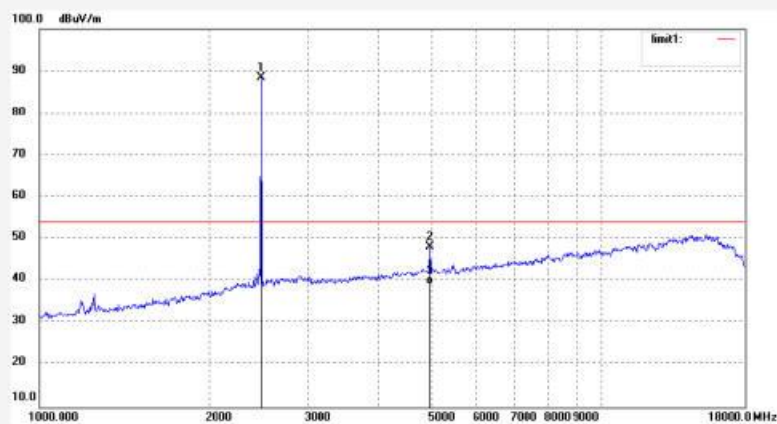
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	95.77	-7.37	88.40	/	/	peak			
2	4960.025	47.58	0.52	48.10	74.00	-25.90	peak			
3	4960.025	38.62	0.52	39.14	54.00	-14.86	AVG			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #887

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2402MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co., LTD

Polarization: Vertical

Power Source: DC 1.5V

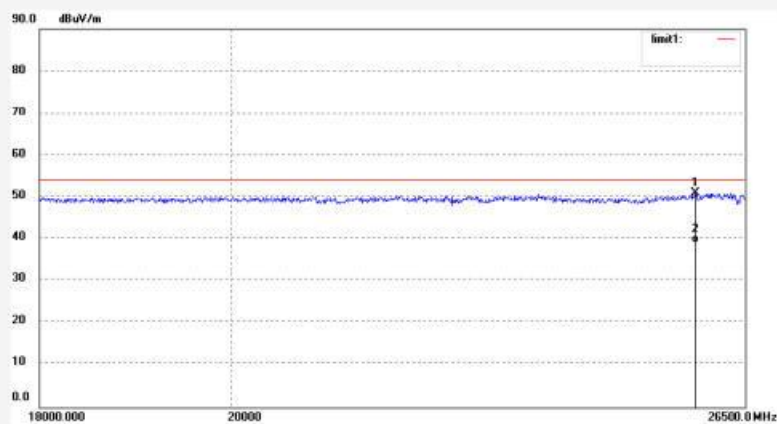
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	25792.161	34.40	16.50	50.90	74.00	-23.10	peak			
2	25792.161	22.56	16.50	39.06	54.00	-14.94	AVG			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #888

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2402MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co., LTD

Polarization: Horizontal

Power Source: DC 1.5V

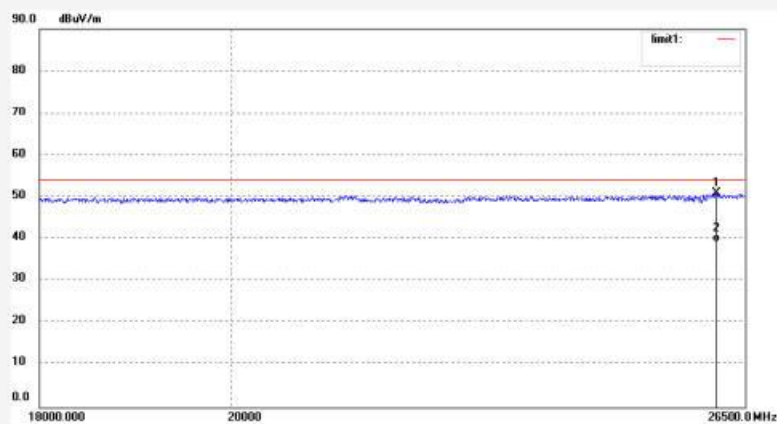
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26083.086	34.56	16.50	51.06	74.00	-22.94	peak			
2	26083.086	22.86	16.50	39.36	54.00	-14.64	AVG			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #889

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2441MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Horizontal

Power Source: DC 1.5V

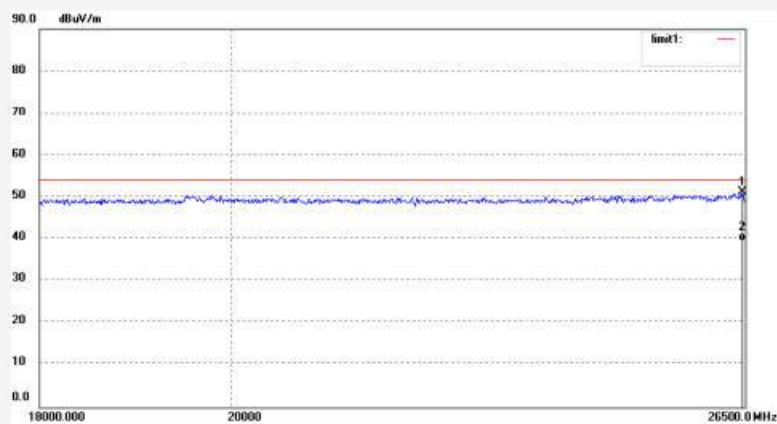
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26469.269	34.66	16.50	51.16	74.00	-22.84	peak			
2	26469.269	22.97	16.50	39.47	54.00	-14.53	AVG			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #890

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2441MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co., LTD

Polarization: Vertical

Power Source: DC 1.5V

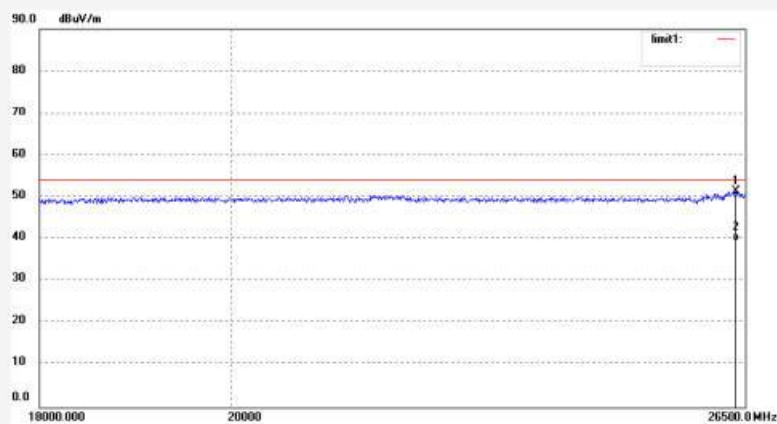
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26367.091	34.86	16.50	51.36	74.00	-22.64	peak			
2	26367.091	23.09	16.50	39.59	54.00	-14.41	AVG			


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Fax: +86-0755-26503396

Job No.: LGW2015 #891

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2480MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Vertical

Power Source: DC 1.5V

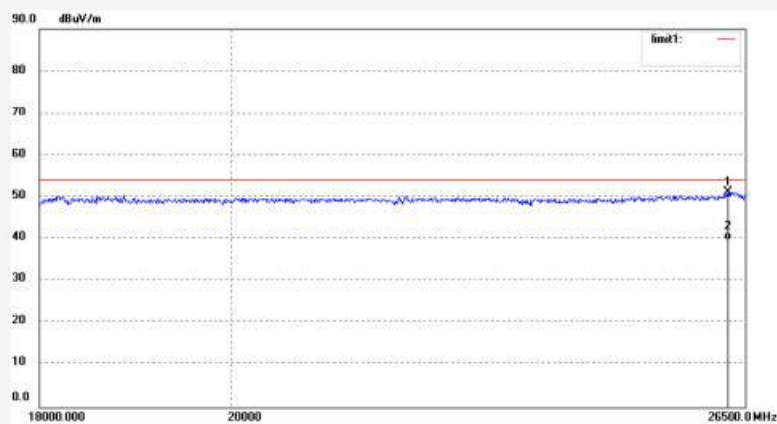
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26244.998	34.70	16.50	51.20	74.00	-22.80	peak			
2	26244.998	23.26	16.50	39.76	54.00	-14.24	AVG			


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Site: 2# Chamber

Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #892

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Mouse

Mode: TX 2480MHz

Model: NS-PNM6103-BK

Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Horizontal

Power Source: DC 1.5V

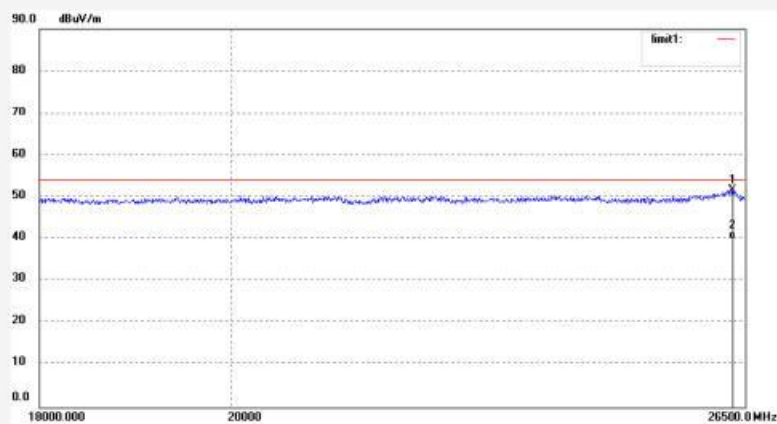
Date: 15/07/22/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26316.150	35.17	16.50	51.67	74.00	-22.33	peak			
2	26316.150	23.55	16.50	40.05	54.00	-13.95	AVG			


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Site: 2# Chamber

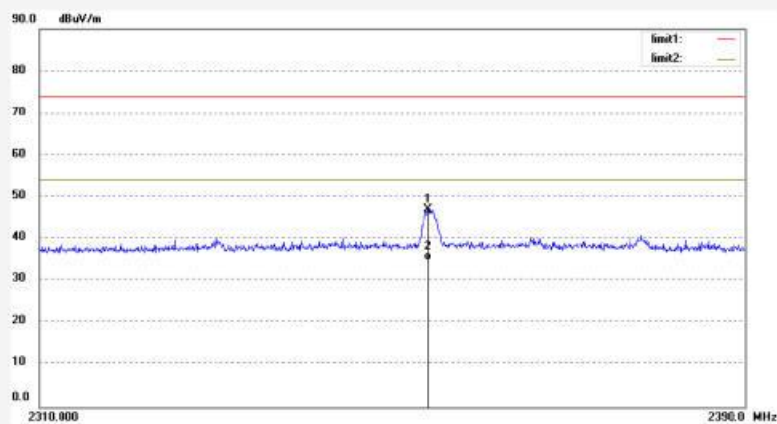
Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #863
Standard: FCC (Band Edge)
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Bluetooth Mouse
Mode: TX 2402MHz
Model: NS-PNM6103-BK
Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Horizontal
Power Source: DC 1.5V
Date: 15/07/22/
Time:
Engineer Signature:
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2353.760	54.99	-7.76	47.23	74.00	-26.77	peak			
2	2353.760	42.86	-7.76	35.10	54.00	-18.90	AVG			


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

Site: 2# Chamber

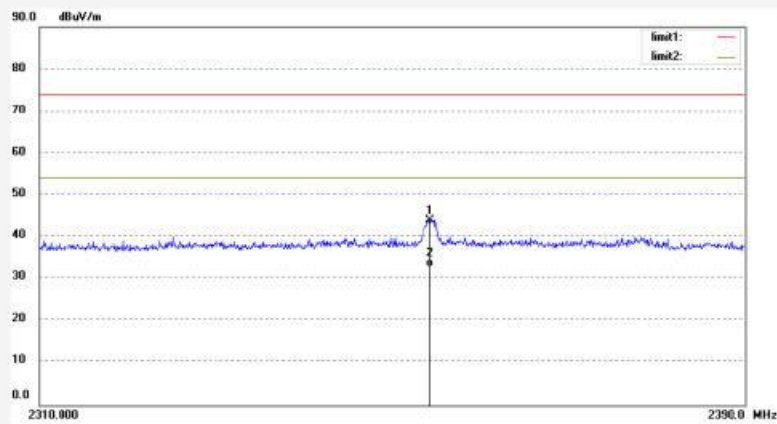
Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #884
Standard: FCC (Band Edge)
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Bluetooth Mouse
Mode: TX 2402MHz
Model: NS-PNM6103-BK
Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Vertical
Power Source: DC 1.5V
Date: 15/07/22/
Time:
Engineer Signature:
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2354.000	51.67	-7.76	43.91	74.00	-30.09	peak			
2	2354.000	40.76	-7.76	33.00	54.00	-21.00	AVG			


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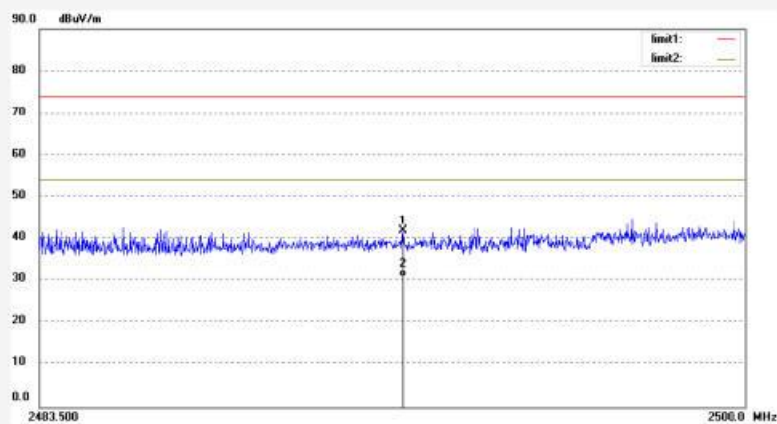
Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #889
Standard: FCC (Band Edge)
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Bluetooth Mouse
Mode: TX 2480MHz
Model: NS-PNM6103-BK
Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Vertical
Power Source: DC 1.5V
Date: 15/07/22/
Time:
Engineer Signature:
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2491.997	49.26	-7.39	41.87	74.00	-32.13	peak			
2	2491.997	38.32	-7.39	30.93	54.00	-23.07	AVG			


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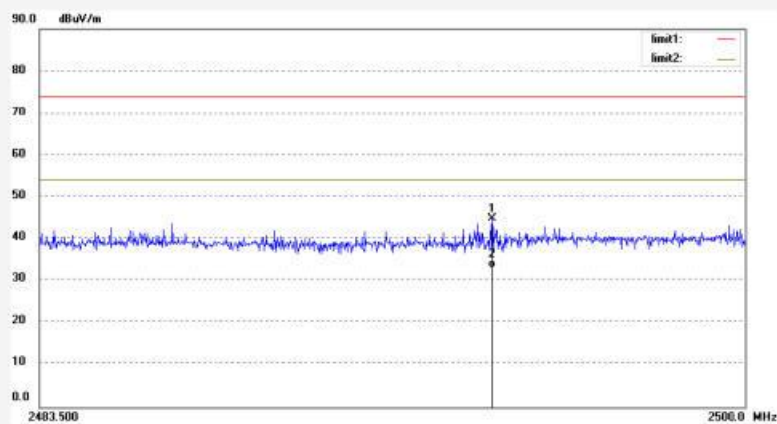
Tel: +86-0755-26503290

Fax: +86-0755-26503396

Job No.: LGW2015 #870
 Standard: FCC (Band Edge)
 Test item: Radiation Test
 Temp.(C)/Hum.(%) 23 C / 48 %
 EUT: Bluetooth Mouse
 Mode: TX 2480MHz
 Model: NS-PNM6103-BK
 Manufacturer: Dongguan Newmen Electronics Technology Co.,LTD

Polarization: Horizontal
 Power Source: DC 1.5V
 Date: 15/07/22/
 Time:
 Engineer Signature:
 Distance: 3m

Note



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2494.093	52.33	-7.40	44.93	74.00	-29.07	peak			
2	2494.093	40.52	-7.40	33.12	54.00	-20.88	AVG			

5.1.6 Frequency Separation

RESULT:**Passed**

Date of testing : 2015-07-17
Test standard : FCC part 15.247(a)(1)
Basic standard : ANSI C63.10: 2013
Limit : $\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth, whichever is greater

Test setup

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

Table 6: Test result of Frequency Separation

Channel	Channel Frequency (MHz)	Measured Channel Separation (MHz)	Limit (kHz)	Result
Low Channel	2402	1	$\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth	Pass
Adjacency Channel	2403			
Mid Channel	2441	1	$\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth	Pass
Adjacency Channel	2442			
High Channel	2480	1	$\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth	Pass
Adjacency Channel	2479			

5.1.7 Number of hopping frequency

RESULT:**Passed**

Date of testing : 2015-07-17
Test standard : FCC part 15.247(a)(1)(iii)
Basic standard : ANSI C63.10: 2013
Limits : ≥ 15 non-overlapping channels
Kind of test site : Shield room

Test setup

Test Channel : Hopping
Operation Mode : A
Ambient temperature : 25°C
Relative humidity : 55%
Atmospheric pressure : 101 kPa

Table 7: Test result of Number of hopping frequency

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

5.1.8 Time of Occupancy

RESULT:
Passed

Date of testing : 2015-07-17
 Test standard : FCC part 15.247(a)(1)(iii)
 Basic standard : ANSI C63.10: 2013
 Limits : 0.4s
 Kind of test site : Shield room

Test setup

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

Table 8: Test result of Time of Occupancy

Modulation Type	Packet	Max Dwell Time				Limit (s)	Result
GFSK	DH1	0.42	ms * 320=	134.4	ms	0.4	Pass
	DH3	1.70	ms * 160=	272.0	ms	0.4	Pass
	DH5	2.96	ms * 107=	316.7	ms	0.4	Pass

Note:

The maximum number of hopping channels in 31.6s for DH1
 $= 1600 / 2 / 79 * 31.6 = 320$

The maximum number of hopping channels in 31.6s for DH3
 $= 1600 / 4 / 79 * 31.6 = 160$

The maximum number of hopping channels in 31.6s for DH5
 $= 1600 / 6 / 79 * 31.6 = 107$

6. Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT:**Pass**

Test standard : FCC KDB Publication 447498 D01 v05r02

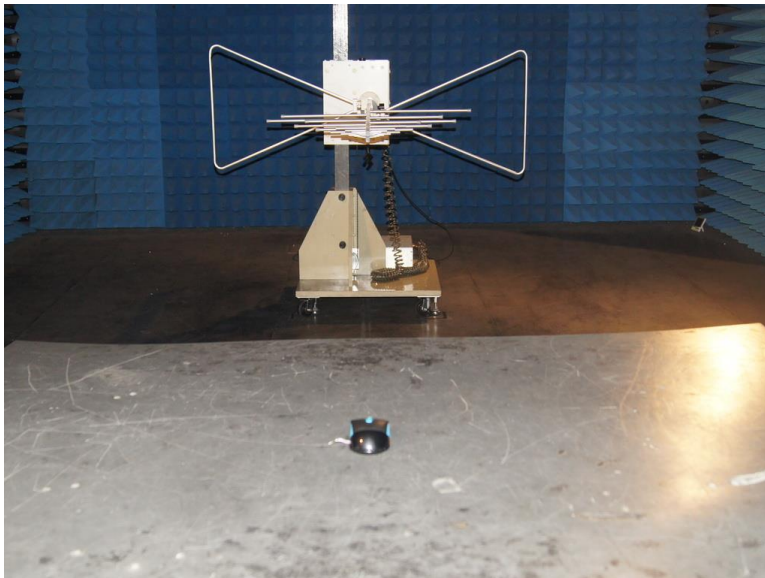
The separation distance of the NS-PNM6103-BK should be 5mm. The measured maximum peak output power of the NS-PNM6103-BK is -3.82dBm (0.41mW, antenna gain:-1.53dBi), which is far below the SAR exclusion threshold level 10 mW (Appendix A, SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm), hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498 D01: Mobile and Portable RF Exposure. Guidance v05r02.

7. Photographs of the Test Set-Up

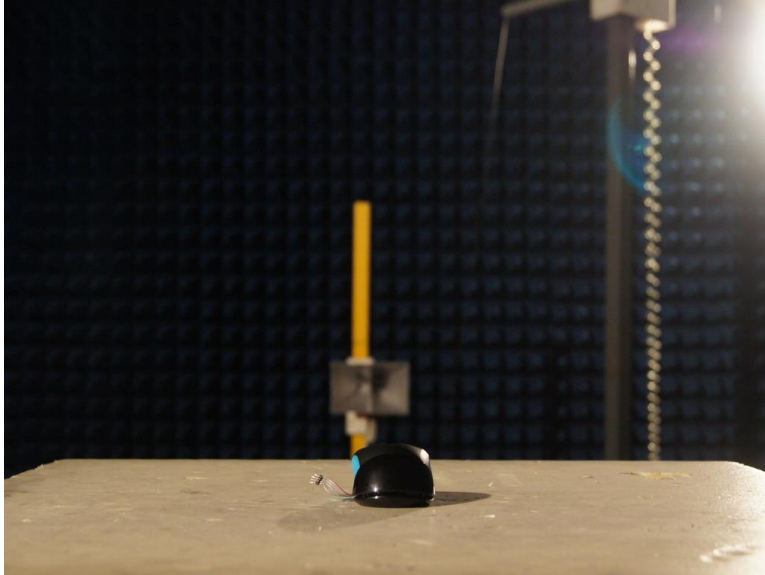
Photograph 1: Set-up for Spurious Emissions (9kHz-30MHz)



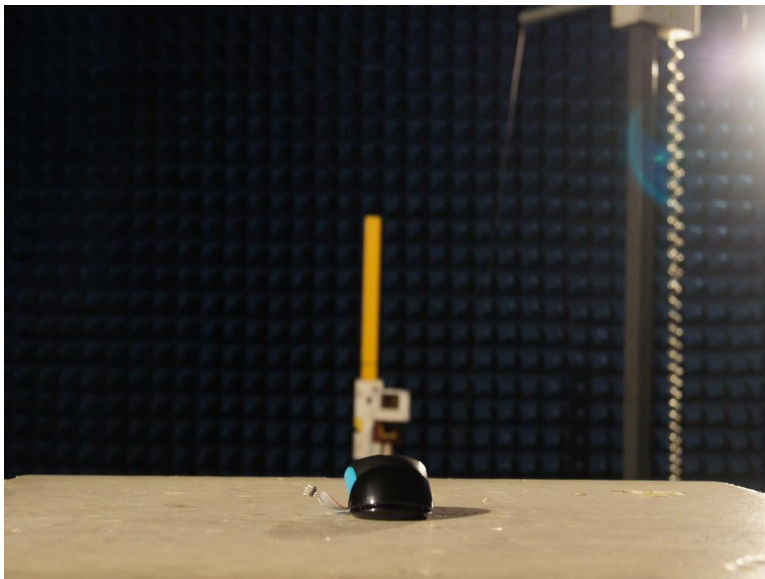
Photograph 2: Set-up for Spurious Emissions (30MHz-1GHz)



Photograph 3: Set-up for Spurious Emissions (1GHz-18GHz)



Photograph 4: Set-up for Spurious Emissions (18GHz-26GHz)



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