RADIO TEST REPORT

For

Huizhou Pinxu Electronics Co., Ltd

Triple Wireless Bluetooth Keyboard

Test Model: 794

Prepared for	:	Huizhou Pinxu Electronics Co., Ltd
Address	:	NO.49 RENMIN 2 ROAD QIUCHANG HUIYANG DISTRICT HUIZHOU CITY GD. CHINA
Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample	:	May 16, 2025
Number of tested samples	:	2
Sample No.	:	A250516078-1, A250516078-2
Serial number	:	Prototype
Date of Test	:	May 16, 2025 ~ May 27, 2025
Date of Report	:	May 28, 2025

CE

RADIO TEST REPORT
ETSI EN 300 440 V2.2.1 (2018-07)
Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Harmonised Standard for access to radio spectrum

Report Reference No.	:	**LCSA05165084EC**
Date of Issue.....	:	May 28, 2025
Testing Laboratory Name.....	:	**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address.....	:	Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China
Testing Location/ Procedure....	:	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name.....	:	**Huizhou Pinxu Electronics Co., Ltd**
Address.....	:	NO.49 RENMIN 2 ROAD QIUCHANG HUIYANG DISTRICT HUIZHOU CITY GD. CHINA
Test Specification		
Standard.....	:	ETSI EN 300 440 V2.2.1 (2018-07)
Test Report Form No.	:	TRF-4-E-135 A/0
TRF Originator.....	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF.....	:	Dated 2011-03

Test Item Description.....	:	**Triple Wireless Bluetooth Keyboard**
Trade Mark.....	:	N/A
Test Model.....	:	794
Ratings	:	Please Refer to Page 6
Result	:	**PASS**

Compiled by:	Supervised by:	Approved by:
Joker.Hu	Jack Liu	
Joker Hu/Administrator	Jack Liu/ Technique principal	Gavin Liang/ Manager

RADIO -- TEST REPORT

Test Report No. : LCSA05165084EC	May 28, 2025 Date of issue

Test Model.....	: 794
EUT.....	: Triple Wireless Bluetooth Keyboard
Applicant.....	**: Huizhou Pinxu Electronics Co., Ltd**
Address.....	: NO.49 RENMIN 2 ROAD QIUCHANG HUIYANG DISTRICT HUIZHOU CITY GD. CHINA
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: Huizhou Pinxu Electronics Co., Ltd**
Address.....	: NO.49 RENMIN 2 ROAD QIUCHANG HUIYANG DISTRICT HUIZHOU CITY GD. CHINA
Telephone.....	: /
Fax.....	: /
Factory.....	**: Huizhou Pinxu Electronics Co., Ltd**
Address.....	: NO.49 RENMIN 2 ROAD QIUCHANG HUIYANG DISTRICT HUIZHOU CITY GD. CHINA
Telephone.....	: /
Fax.....	: /

Test Result	PASS

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Report Version	Issue Date	Revision Content	Revised By
000	May 28, 2025	Initial Issue	---

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1. Product Description for Equipment Under Test (EUT)

EUT	: Triple Wireless Bluetooth Keyboard
Test Model	: 794
Power Supply	: Dongle: DC 5V for Compute Keyboard: Input: DC 5V⎓200mA Battery: 3.7V⎓2000mAh
Hardware Version	: v2
Software Version	: v47
Bluetooth	:
Frequency Range	: 2402MHz ~ 2480MHz
Channel Number	: 40 channels for Bluetooth V5.1 (BT LE)
Channel Spacing	: 2MHz for Bluetooth V5.1 (BT LE)
Modulation Type	: GFSK for Bluetooth V5.1 (BT LE)
Bluetooth Version	: V5.1
Antenna Description	: PCB Antenna, 2.58dBi(Max.)
2.4G	:
Frequency Range	: 2402MHz-2480MHz
Channel Number	: 40 channels
Channel Spacing	: 2MHz
Modulation Type	: GFSK
Antenna Description	: PCB Antenna, -5.92dBi(max.)

1.2. Objective

This Type approval report is prepared on behalf of **Huizhou Pinxu Electronics Co., Ltd** in accordance with ETSI EN 300 440 V2.2.1 (2018-07), Short range devices(SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Harmonized Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.

The objective is to determine compliance with ETSI EN 300 440 V2.2.1 (2018-07).

1.3. Related Submittal(s)/Grant(s)

No Related Submittals.

1.4. Test Methodology

All measurements contained in this report were conducted with ETSI EN 300 440 V2.2.1 (2018-07).

1.5. Facilities

All measurement facilities used to collect the measurement data are located at Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 32.

1.6. Support Equipment List

Manufacturer	Description	Model	Serial Number	Certificate
SHENZHEN TIANYIN ELECTRONICS CO., LTD	Power Adapter	TPA-46050 200UU	--	CE
Lenovo	Notebook	B470	WB05067151	CE

Note: Auxiliary equipment is provided by the laboratory.

1.7. External I/O Cable

I/O Port Description	Quantity	Cable
Type-C Port	1	N/A

1.8. Laboratory Accreditations And Listings

Site Description

EMC Lab. : NVLAP Accreditation Code is 600167-0.
FCC Designation Number is CN5024.
CAB identifier is CN0071.
CNAS Registration Number is L4595.

1.9. Measurement Uncertainty

Test Item		Uncertainty
Radio Frequency	:	±0.9 x 10^{-4}
Total RF Power, Conducted	:	±1.0 dB
RF Power Density, Conducted	:	±1.8 dB
Spurious Emissions, Conducted	:	±1.8 dB
All Emissions, Radiated	:	±3.1 dB
Temperature	:	±0.5°C
Humidity	:	±1 %
DC And Low Frequency Voltages	:	±1 %

1.10. Description Of Test Modes

The EUT operates in the unlicensed 2402MHz-2480MHz Band at 2.4GHz.

The EUT has been tested under operating condition. The transmitter and the receiver was tested separately.

This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.

All test modes were tested, only the result of the worst case was recorded in the report.

Test Mode	Channel	Frequency Range (MHz)
2.4G Transmit		
Tx	1	2402
	20	2440
	40	2480
2.4G Receive		
Rx	1	2402
	20	2440
	40	2480

A***Note: The EUT was programmed to transmit continuously during testing (duty cycle = 100%).

Channel List:

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2402	15	2430	29	2458
2	2404	16	2432	30	2460
3	2406	17	2434	31	2462
4	2408	18	2436	32	2464
5	2410	19	2438	33	2466
6	2412	20	2440	34	2468
7	2414	21	2442	35	2470
8	2416	22	2444	36	2472
9	2418	23	2446	37	2474
10	2420	24	2448	38	2476
11	2422	25	2450	39	2478
12	2424	26	2452	40	2480
13	2426	27	2454		
14	2428	28	2456		

2. SYSTEM TEST CONFIGURATION

2.1. Justification

The system was configured for testing in engineering mode.

2.2. EUT Exercise Software

N/A.

2.3. Special Accessories

N/A.

2.4. Block Diagram/Schematics

Please refer to the related document.

2.5. Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

2.6. Configuration of Test Setup

Please refer to the test setup photo.

3. SUMMARY OF TEST RESULTS

RULES ETSI EN 300 440 V2.2.1	DESCRIPTION OF TEST	RESULT
§ 4.2.2	Equivalent isotropically radiated power (EIRP)	Compliant
§ 4.2.3	Permitted range of operating frequencies	Compliant
§ 4.2.5	Duty cycle	Compliant
§ 4.2.4	Transmitter Spurious Emissions	Compliant
§ 4.3.3	Adjacent channel selectivity	Compliant
§ 4.3.4	Blocking or desensitization	Compliant
§ 4.3.5	Receiver Spurious Emissions	Compliant

Note: "N/A" means this test item is not applicable.

4. EQUIVALENT ISOTROPICALLY RADIATED POWER (EIRP)

4.1. Definition and Limit

The e.i.r.p. is defined as the maximum radiated power of the transmitter and its antenna.
The transmitter maximum e.i.r.p. under normal and extreme test conditions shall not exceed the values given in following table.

Frequency Bands	Power	Application	Notes
2 400 MHz to 2 483,5 MHz	10 mW e.i.r.p.	Non-specific short range devices	
2 400 MHz to 2 483,5 MHz	25 mW e.i.r.p.	Radio determination devices	
(a) 2 446 MHz to 2 454 MHz	500 mW e.i.r.p.	Radio Frequency Identification (RFID) devices	See also table 4 and annex D
(b) 2 446 MHz to 2 454 MHz	4 W e.i.r.p.	Radio Frequency Identification (RFID) devices	See also table 4 and annex D
5 725 MHz to 5 875 MHz	25 mW e.i.r.p.	Non-specific short range devices	
9 200 MHz to 9 500 MHz	25 mW e.i.r.p.	Radio determination devices	
9 500 MHz to 9 975 MHz	25 mW e.i.r.p.	Radio determination devices	
10,5 GHz to 10,6 GHz	500 mW e.i.r.p.	Radio determination devices	
13,4 GHz to 14,0 GHz	25 mW e.i.r.p.	Radio determination devices	
17,1 GHz to 17,3 GHz	400 mW e.i.r.p.	Radio determination devices	See annex F
24,00 GHz to 24,25 GHz	100 mW e.i.r.p.	Non-specific short range devices and Radio determination devices	

4.2. Test Procedure

To measure e.i.r.p. it is first necessary to determine the appropriate method of measurement: see clauses 4.2.2.3.1 and 4.2.2.3.2. The -6 dB transmitter bandwidth shall be determined using a 100 kHz measuring bandwidth in order to establish which measurement method is applicable:

• clause 4.2.2.3.1 for Non spread spectrum transmitters with a -6 dB bandwidth of up to 20 MHz and spread spectrum transmitters with channel bandwidth of up to 1 MHz;

• clause 4.2.2.3.2 for all other transmitter bandwidths.

Using the applicable measurement procedure as described in clause 4.2.2.3.2 and annex B, the power output shall be measured and recorded in the test report. The method of measurement shall be documented in the test report.

Measurements shall be performed at normal test conditions (see clause 5.6).

Where possible, the equipment shall be able to operate in a continuous transmit mode for testing purposes.

4.3. Test Result

Environmental Conditions

Temperature/ Humidity:	24.2° C/ 53.0%	ATM Pressure:	100.9 kPa
Operator:	Jay Luo	Test Result:	Pass

EIRP(Modulation: GFSK)--- 2.4G Transmit					
Low Channel fo =2402MHz Vnor= DC 3.7V					
Temperature (℃)	Power Supplied (V)	Reading dBm	Antenna Gain (dBi)	EIRP dBm	Limit dBm
-10	DC 3.3V	1.83	-5.92	-4.09	10
	DC 3.7V	2.68	-5.92	-3.24	10
	DC 4.2V	2.28	-5.92	-3.64	10
25	DC 3.3V	2.33	-5.92	-3.59	10
	DC 3.7V	2.65	-5.92	-3.27	10
	DC 4.2V	2.63	-5.92	-3.29	10
45	DC 3.3V	2.05	-5.92	-3.87	10
	DC 3.7V	1.95	-5.92	-3.97	10
	DC 4.2V	2.20	-5.92	-3.72	10
Middle Channel fo =2440 MHz Vnor= DC 3.7V					
Temperature (℃)	Power Supplied (V)	Reading dBm	Antenna Gain (dBi)	EIRP dBm	Limit dBm
-10	DC 3.3V	1.64	-5.92	-4.28	10
	DC 3.7V	2.53	-5.92	-3.39	10
	DC 4.2V	2.17	-5.92	-3.75	10
25	DC 3.3V	2.31	-5.92	-3.61	10
	DC 3.7V	2.65	-5.92	-3.27	10
	DC 4.2V	2.52	-5.92	-3.40	10
45	DC 3.3V	2.02	-5.92	-3.90	10
	DC 3.7V	1.82	-5.92	-4.10	10
	DC 4.2V	2.10	-5.92	-3.82	10
High Channel fo =2480 MHz Vnor= DC 3.7V					
Temperature (℃)	Power Supplied (V)	Reading dBm	Antenna Gain (dBi)	EIRP dBm	Limit dBm
-10	DC 3.3V	1.67	-5.92	-4.25	10
	DC 3.7V	2.48	-5.92	-3.44	10
	DC 4.2V	2.21	-5.92	-3.71	10
25	DC 3.3V	2.29	-5.92	-3.63	10
	DC 3.7V	2.57	-5.92	-3.35	10
	DC 4.2V	2.52	-5.92	-3.40	10
45	DC 3.3V	1.96	-5.92	-3.96	10
	DC 3.7V	1.85	-5.92	-4.07	10
	DC 4.2V	2.13	-5.92	-3.79	10

EIRP(Modulation: GFSK)--- 2.4G Receive					
Low Channel fo =2402MHz Vnor= DC 5V					
Temperature (℃)	Power Supplied (V)	Reading dBm	Antenna Gain (dBi)	EIRP dBm	Limit dBm
-10	DC 4.5V	-2.36	2.58	0.22	10
	DC 5V	-3.02	2.58	-0.44	10
	DC 5.5V	-2.38	2.58	0.20	10
25	DC 4.5V	-2.97	2.58	-0.39	10
	DC 5V	-2.13	2.58	0.45	10
	DC 5.5V	-1.74	2.58	0.84	10
45	DC 4.5V	-2.99	2.58	-0.41	10
	DC 5V	-2.32	2.58	0.26	10
	DC 5.5V	-3.06	2.58	-0.48	10
Middle Channel fo =2440 MHz Vnor= DC 5V					
Temperature (℃)	Power Supplied (V)	Reading dBm	Antenna Gain (dBi)	EIRP dBm	Limit dBm
-10	DC 4.5V	-2.49	2.58	0.09	10
	DC 5V	-3.03	2.58	-0.45	10
	DC 5.5V	-2.39	2.58	0.19	10
25	DC 4.5V	-3.05	2.58	-0.47	10
	DC 5V	-2.23	2.58	0.35	10
	DC 5.5V	-1.73	2.58	**0.85**	10
45	DC 4.5V	-3.04	2.58	-0.46	10
	DC 5V	-2.32	2.58	0.26	10
	DC 5.5V	-3.15	2.58	-0.57	10
High Channel fo =2480 MHz Vnor= DC 5V					
Temperature (℃)	Power Supplied (V)	Reading dBm	Antenna Gain (dBi)	EIRP dBm	Limit dBm
-10	DC 4.5V	-2.48	2.58	0.10	10
	DC 5V	-3.02	2.58	-0.44	10
	DC 5.5V	-2.35	2.58	0.23	10
25	DC 4.5V	-3.04	2.58	-0.46	10
	DC 5V	-2.25	2.58	0.33	10
	DC 5.5V	-1.83	2.58	0.75	10
45	DC 4.5V	-3.00	2.58	-0.42	10
	DC 5V	-2.26	2.58	0.32	10
	DC 5.5V	-3.12	2.58	-0.54	10

Test Result: Pass

5. PERMITTED RANGE OF OPERATING FREQUENCIES

5.1. Definition and Limit

The width of the power spectrum envelope is fH -fL for a given operating frequency. In equipment that allows

adjustment or selection of different operating frequencies, the power envelope takes up different positions in the allowed band. The frequency range is determined by the lowest value of fL and the highest value of fH resulting from the adjustment of the equipment to the lowest and highest operating frequencies.

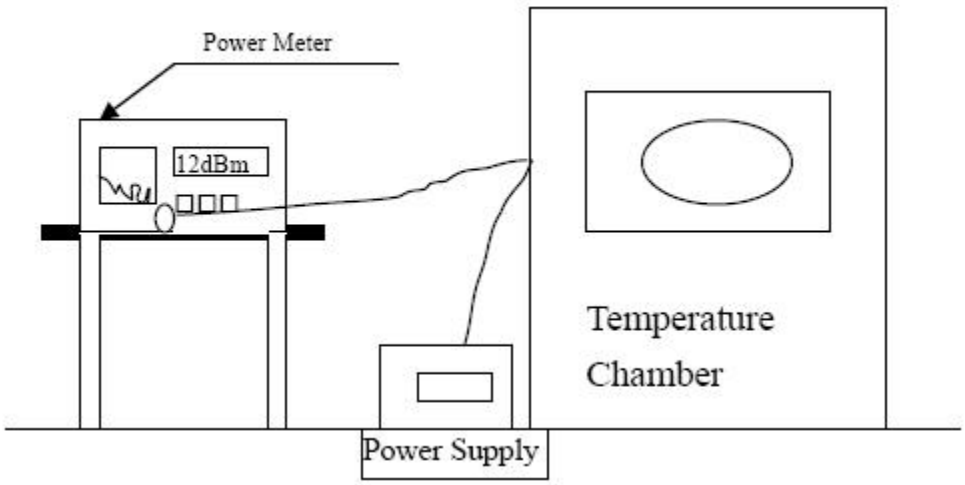
The occupied bandwidth (i.e. the bandwidth in which 99 % of the wanted emission is contained) of the transmitter shall fall within the assigned frequency band.

For all equipment the frequency range shall lie within the frequency band given by clause 4.2.2.4, table 2. For

non-harmonized frequency bands the available frequency range may differ between national administrations.

5.2. Test Procedure

The equipment shall be able to operate in a continuous transmit mode for testing purposes. Please refer to ETSI EN 300 440 for the measurement method.



5.3. Test Result

Environmental Conditions

Temperature/ Humidity:	24.2° C/ 53.0%	ATM Pressure:	100.9 kPa
Operator:	Jay Luo	Test Result:	Pass

Test Mode: Tx, GFSK--- 2.4G Transmit

Test Conditions		Frequency (MHz) at -30dBm/30KHz	
Temperature	Voltage(V)	f_L at Low Channel >2400MHz	f_H at High Channel (<2483.5MHz)
T_{min} = -10℃	DC 3.3V	2401.74	2480.27
	DC 3.7V	2401.71	2480.21
	DC 4.2V	2401.72	2480.31
T_{nor} = 25℃	DC 3.3V	2401.72	2480.25
	DC 3.7V	2401.67	2480.20
	DC 4.2V	2401.71	2480.14
T_{max} =45℃	DC 3.3V	2401.88	2480.21
	DC 3.7V	2401.80	2480.26
	DC 4.2V	2401.67	2480.12
Limit	fH(2483.5MHz) - fL(2400MHz) = 83.5MHz		

Test Mode: Tx, GFSK--- 2.4G Receive

Test Conditions		Frequency (MHz) at -30dBm/30KHz	
Temperature	Voltage(V)	f_L at Low Channel >2400MHz	f_H at High Channel (<2483.5MHz)
T_{min} = -10℃	DC 4.5V	2401.82	2480.30
	DC 5V	2401.71	2480.24
	DC 5.5V	2401.69	2480.26
T_{nor} = 25℃	DC 4.5V	2401.73	2480.28
	DC 5V	2401.59	2480.16
	DC 5.5V	2401.71	2480.17
T_{max} =45℃	DC 4.5V	2401.86	2480.21
	DC 5V	2401.82	2480.33
	DC 5.5V	2401.73	2480.17
Limit	f_H(2483.5MHz) - f_L(2400MHz) = 83.5MHz		

Test Result: Pass

6. DUTY CYCLE

6.1. Definition and Limit

Duty cycle is the ratio expressed as a percentage, of the cumulative duration of transmissions Ton_cum within an observation interval Tobs. $DC = \left(\frac{T_{on\_cum}}{T_{obs}}\right)_{Fobs}$ on an observation bandwidth Fobs.

Unless otherwise specified, Tobs is 1 hour and the observation bandwidth Fobs is the operational frequency band Each transmission consists of an RF emission, or sequence of RF emissions separated by intervals < TDis.

An equipment may operate on several bands simultaneously (i.e. multi transmissions), Duty Cycle of each band applies to each transmission.

It has to be noted that on some bands Duty Cycle value may depend on the presence of a primary radio service. Equipment may be triggered manually, by internal timing or by external stimulus. Depending on the method of triggering the timing may be predictable or random.

For manual operated or event dependant devices, with or without software controlled functions, the manufacturer shall declare whether the device once triggered, follows a pre-programmed cycle, or whether the transmitter remains on until the trigger is released or the device is manually reset. The manufacturer shall also give a description of the application for the device and include a typical usage pattern. The typical usage pattern as declared by the manufacturer shall be used to determine the duty cycle and compare to the limit in table 4.

For devices with a 100 % duty cycle transmitting an unmodulated carrier most of the time, a time-out shut-off facility shall be implemented in order to improve the efficient use of spectrum. The method of implementation shall be declared by the manufacturer.

Table Duty Cycle Limits

Frequency Band	Duty cycle	Application
2 400 MHz to 2 483,5 MHz	No Restriction	Generic use
2 400 MHz to 2 483,5 MHz	No Restriction	Detection, movement and alert applications
(a) 2 446 MHz to 2 454 MHz	No Restriction	RFID
(b) 2 446 MHz to 2 454 MHz	≤ 15 %	RFID
5 725 MHz to 5 875 MHz	No Restriction	Generic use
9 200 MHz to 9 500 MHz	No Restriction	Radiodetermination: radar, detection, movement and alert applications
9 500 MHz to 9 975 MHz	No Restriction	Radiodetermination: radar, detection, movement and alert applications
10,5 GHz to 10,6 GHz	No Restriction	Radiodetermination: radar, detection, movement and alert applications
13,4 GHz to 14,0 GHz	No Restriction	Radiodetermination: radar, detection, movement and alert applications
17,1 GHz to 17,3 GHz	DAA or equivalent techniques	Radiodetermination: GBSAR detecting and movement and alert applications
24,00 GHz to 24,25 GHz	No Restriction	Generic use and for Radiodetermination: radar, detection, movement and alert applications

6.2. Test Procedure

Please refer to ETSI EN 300 440 clause 4.2.5.3 for the measurement method.

An assessment of the overall Duty Cycle shall be made for a representative period of Tobs over the observation bandwidth Fobs. Unless otherwise specified, Tobs is 1 hour and the observation bandwidth Fobs is the operational frequency band.

The representative period shall be the most active one in normal use of the device. As a guide "Normal use" is
considered as representing the behaviour of the device during transmission of 99 % of the [emissions] generated during its operational lifetime.

Procedures such setup, commissioning, and maintenance are not considered part of normal operation.

For manual operated or event dependant devices, with or without software controlled functions, the manufacturer shall declare whether the device once triggered, follows a pre-programmed cycle, or whether the transmitter remains on until the trigger is released or the device is manually reset. The manufacturer shall also give a description of the application for the device and include a typical usage pattern. The typical usage pattern as declared by the manufacturer shall be
used to determine the duty cycle and compare to the limit in table 4.

Where an acknowledgement is required, the additional transmitter on-time shall be included and declared by the manufacturer.

6.3. Test Result

The EUT was programmed to transmit continuously during testing (duty cycle = 100%).

7. TRANSMITTER SPURIOUS EMISSIONS

7.1. Definition and Limit

Unwanted emissions in the spurious domain (spurious emissions) are those at frequencies beyond the limit of 250 % of the occupied bandwidth above and below the centre frequency of the emission. The occupied bandwidth is either measured or declared by the manufacturer.

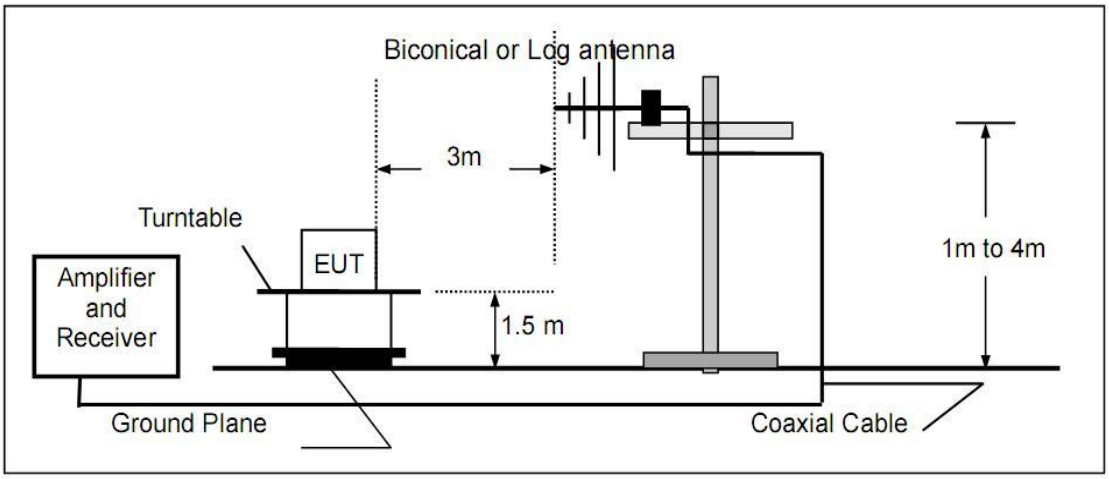
The maximum power limits of any unwanted emissions in the spurious domain are given in table 3.

Table: spurious emissions

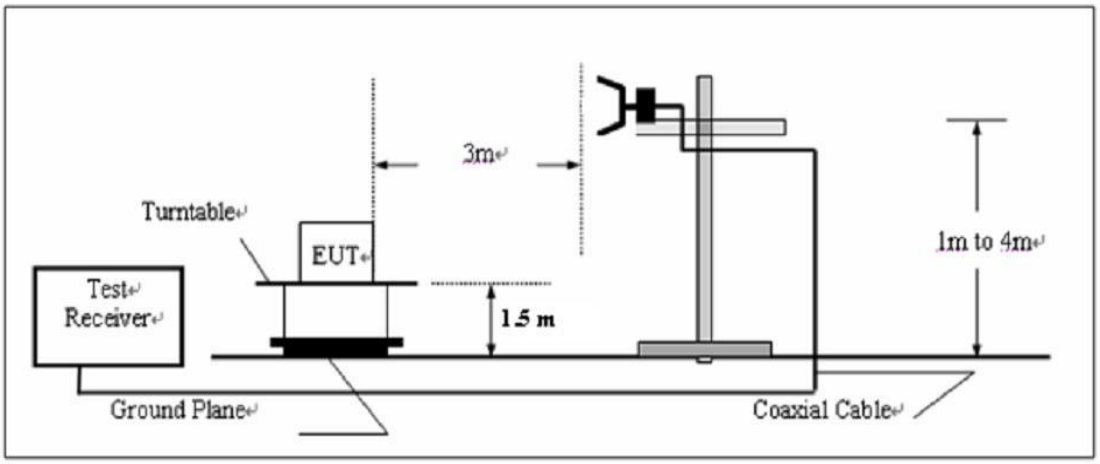
Frequency ranges / State	47 MHz to 74 MHz 87,5 MHz to 108 MHz 174 MHz to 230 MHz 470 MHz to 862 MHz	Other frequencies ≤ 1 000 MHz	Frequencies > 1 000 MHz
Operating	4 nW	250 nW	1 µW
Standby	2 nW	2 nW	20 nW

7.2. Test Procedure

Radiated Below 1GHz

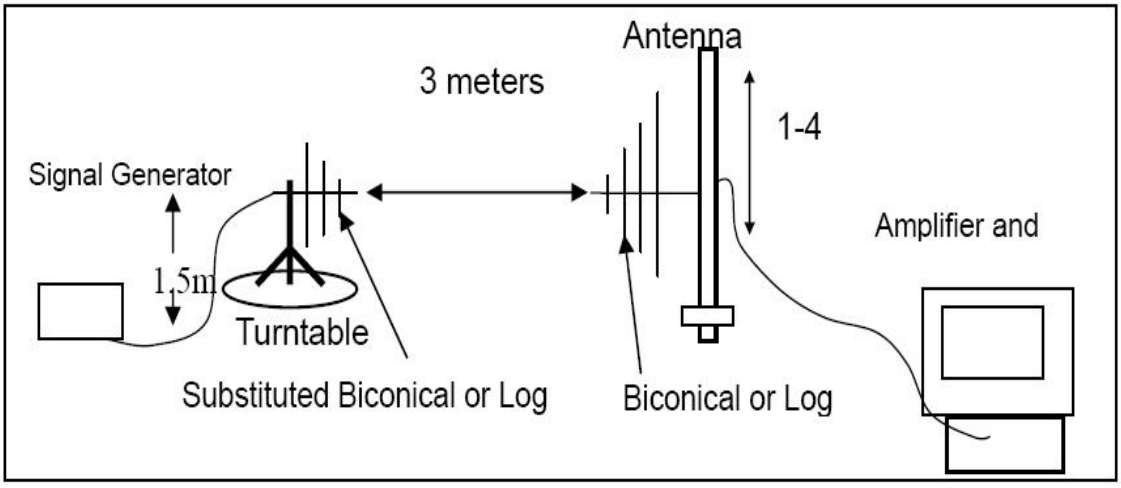


Radiated Above 1GHz

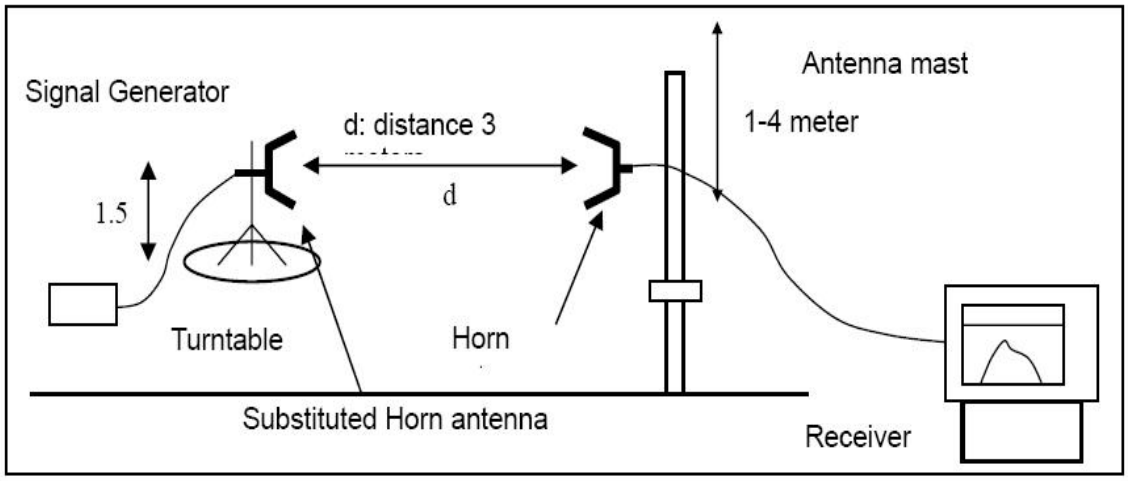


Substitution Method: (Radiated Emissions)

Radiated Below 1GHz



Radiated Above 1 GHz



7.3. Test Result

Environmental Conditions

Temperature/ Humidity:	24.2° C/ 53.0%	ATM Pressure:	100.9 kPa
Operator:	Jay Luo		

Test mode: GFSK---2.4G Transmit

Measurement Data

Lowest channel				
Frequency (MHz)	**Spurious Emission**		**Limit (dBm)**	**Test Result**
	Polarization (H/V)	**Level(dBm)**		
163.88	H	-45.72	-36.00	Pass
143.18	V	-39.29	-36.00	
938.35	H	-43.78	-36.00	
637.89	V	-66.28	-54.00	
4805.96	H	-41.55	-30.00	
4805.86	V	-41.04	-30.00	
7202.67	H	-40.64	-30.00	
7205.91	V	-37.78	-30.00	
Highest channel				
Frequency (MHz)	**Spurious Emission**		**Limit (dBm)**	**Test Result**
	Polarization (H/V)	**Level(dBm)**		
66.96	H	-58.81	-54.00	Pass
53.09	V	-63.86	-54.00	
981.28	H	-44.50	-36.00	
504.18	V	-62.82	-54.00	
4964.26	H	-38.55	-30.00	
4963.97	V	-37.01	-30.00	
7441.34	H	-44.31	-30.00	
7442.57	V	-35.67	-30.00	

Test mode: GFSK---2.4G Receive

Measurement Data

Lowest channel				
Frequency (MHz)	**Spurious Emission**		**Limit (dBm)**	**Test Result**
	Polarization (H/V)	**Level(dBm)**		
82.00	H	-40.43	-36.00	Pass
167.41	V	-49.29	-36.00	
874.55	H	-41.12	-36.00	
908.33	V	-43.23	-36.00	
4804.28	H	-40.58	-30.00	
4805.91	V	-36.21	-30.00	
7205.29	H	-38.29	-30.00	
7203.63	V	-36.05	-30.00	
Highest channel				
Frequency (MHz)	**Spurious Emission**		**Limit (dBm)**	**Test Result**
	Polarization (H/V)	**Level(dBm)**		
55.94	H	-61.05	-54.00	Pass
66.19	V	-65.05	-54.00	
907.69	H	-42.51	-36.00	
220.58	V	-69.31	-54.00	
4962.97	H	-41.63	-30.00	
4960.55	V	-37.45	-30.00	
7443.55	H	-43.31	-30.00	
7440.67	V	-44.77	-30.00	

8. RECEIVER SPURIOUS EMISSIONS

8.1. Definition and Limit

Spurious radiations from the receiver are components at any frequency, radiated by the equipment and antenna.

This requirement applies to all receivers, except receivers used in combination with permanently co-located transmitters continuously transmitting. Co-located is defined as < 3 m. In these cases the receivers will be tested together with the transmitter in operating mode.

The power of any spurious emission shall not exceed 2 nW in the range 25 MHz to 1 GHz and shall not exceed 20 nW on frequencies above 1 GHz.

8.2. Test Procedure

Please refer to ETSI EN 300 440 clause 4.3.5.3 for the measurement method.

8.3. Test Result

Pass

Environmental Conditions

Temperature/ Humidity:	24.2° C/ 53.0%	ATM Pressure:	100.9 kPa
Operator:	Jay Luo		

Test Mode: Receiving--- 2.4G Transmit

Measurement Data

Lowest channel				
Frequency (MHz)	**Spurious Emission**		**Limit (dBm)**	**Test Result**
	Polarization (H/V)	**Level(dBm)**		
409.82	H	-72.31	-57.00	Pass
283.40	V	-69.92	-57.00	
594.48	H	-62.26	-57.00	
828.82	V	-71.63	-57.00	
1703.22	H	-61.10	-47.00	
1250.24	V	-54.41	-47.00	
2094.56	H	-62.01	-47.00	
2943.52	V	-74.10	-47.00	
Highest channel				
Frequency (MHz)	**Spurious Emission**		**Limit (dBm)**	**Test Result**
	Polarization (H/V)	**Level(dBm)**		
241.77	H	-66.23	-57.00	Pass
347.83	V	-63.31	-57.00	
793.98	H	-64.40	-57.00	
989.70	V	-70.57	-57.00	
1498.70	H	-68.92	-47.00	
1007.88	V	-71.58	-47.00	
2169.84	H	-73.17	-47.00	
2004.60	V	-54.54	-47.00	

Test Mode: Receiving--- 2.4G Receive

Measurement Data

Lowest channel				
Frequency (MHz)	**Spurious Emission**		**Limit (dBm)**	**Test Result**
	Polarization (H/V)	**Level(dBm)**		
164.03	H	-69.86	-57.00	Pass
346.35	V	-60.81	-57.00	
503.98	H	-62.64	-57.00	
820.33	V	-66.89	-57.00	
1422.47	H	-71.83	-47.00	
1479.97	V	-55.94	-47.00	
2556.22	H	-64.63	-47.00	
2353.38	V	-68.40	-47.00	
Highest channel				
Frequency (MHz)	**Spurious Emission**		**Limit (dBm)**	**Test Result**
	Polarization (H/V)	**Level(dBm)**		
315.67	H	-62.85	-57.00	Pass
437.21	V	-74.33	-57.00	
530.27	H	-68.42	-57.00	
513.99	V	-69.76	-57.00	
1494.72	H	-64.27	-47.00	
1096.07	V	-57.79	-47.00	
2533.95	H	-60.69	-47.00	
2653.84	V	-60.23	-47.00	

9. ADJACENT CHANNEL SELECTIVITY

9.1. Definition and Limit

The adjacent channel selectivity is a measure of the capability of the receiver to operate satisfactorily in the presence of an unwanted signal that differs in frequency from the wanted signal by an amount equal to the adjacent channel separation for which the equipment is intended.

The adjacent channel selectivity of the equipment under specified conditions shall not be less than -30 dBm + k.

The correction factor, k, is as follows:

$k = -20\log f - 10\log BW$

Where:

- f is the frequency in GHz;
- BW is the channel bandwidth in MHz.

The factor k is limited within the following:

- -40 dB < k < 0 dB.

The measured adjacent channel selectivity shall be stated in the test report.

9.2. Test Procedure

Please refer to ETSI EN 300 440 clause 4.3.3.3 for the measurement method.

9.3. Test Result

Pass

2.4G Transmit				
Test Frequency	Lower or upper	Test Value (dBm)	Limit (dBm)	Verdict
2402 MHz	Lower	-11.70	≥-40.62	Pass
	Upper	-11.28	≥-40.62	Pass
2440 MHz	Lower	-11.67	≥-40.76	Pass
	Upper	-11.48	≥-40.76	Pass
2480 MHz	Lower	-11.67	≥-40.90	Pass
	Upper	-11.50	≥-40.90	Pass
2.4G Receive				
Test Frequency	Lower or upper	Test Value (dBm)	Limit (dBm)	Verdict
2402 MHz	Lower	-11.66	≥-40.62	Pass
	Upper	-11.30	≥-40.62	Pass
2440 MHz	Lower	-11.57	≥-40.76	Pass
	Upper	-11.40	≥-40.76	Pass
2480 MHz	Lower	-11.84	≥-40.90	Pass
	Upper	-11.50	≥-40.90	Pass

As declared by the manufacture, the receiver channel bandwidth is 2MHz.

10. BLOCKING OR DESENSITIZATION

10.1. Definition and Limit

Blocking is a measure of the capability of the receiver to receive a wanted modulated signal without exceeding a given degradation due to the presence of an unwanted input signal at any frequencies other than those of the spurious responses or the adjacent channels or bands, see clauses 4.3.3 and 4.3.4.

The blocking level, for any frequency within the specified ranges, shall not be less than the values given in table 6, except at frequencies on which spurious responses are found.

Table 6: Limits for blocking or desensitization

Receiver category	Limit
1	-30 dBm + k
2	-45 dBm + k
3	-60 dBm + k

The correction factor, k, is as follows:

$k = -20\log f - 10\log BW$

- f is the frequency in GHz;
- BW is the channel bandwidth in MHz.

The factor k is limited within the following:

$$-40 < k < 0 \text{ dB}$$

10.2. Test Procedure

Please refer to ETSI EN 300 440 clause 4.3.4.3 for the measurement method.

10.3. Test Result

Pass

2.4G Transmit				
Test Frequency	Lower or upper	Test Value (dBm)	Limit (dBm)	Verdict
2402 MHz	Lower	-11.97	≥-55.62	Pass
	Upper	-10.83	≥-55.62	Pass
2440 MHz	Lower	-11.72	≥-55.76	Pass
	Upper	-10.97	≥-55.76	Pass
2480 MHz	Lower	-11.80	≥-55.90	Pass
	Upper	-11.31	≥-55.90	Pass
2.4G Receive				
Test Frequency	Lower or upper	Test Value (dBm)	Limit (dBm)	Verdict
2402 MHz	Lower	-11.95	≥-55.62	Pass
	Upper	-10.78	≥-55.62	Pass
2440 MHz	Lower	-11.73	≥-55.76	Pass
	Upper	-10.92	≥-55.76	Pass
2480 MHz	Lower	-11.76	≥-55.90	Pass
	Upper	-11.17	≥-55.90	Pass

11. LIST OF MEASURING EQUIPMENT

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	MXA Signal Analyzer	Agilent	N9020A	MY49100060	2024-10-08	2025-10-07
2	DC Power Supply	Agilent	E3642A	N/A	2024-10-08	2025-10-07
3	Temperature & Humidity Chamber	Baro	/	/	2024-06-12	2025-06-11
4	EMI Test Software	Farad	EZ	/	N/A	N/A
5	3m Full Anechoic Chamber	MRDIANZI	FAC-3M	MR009	2022-08-17	2025-08-16
6	Positioning Controller	Max-Full	MF7802BS	MF780208586	N/A	N/A
7	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00005	2024-07-13	2027-07-12
8	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2024-08-03	2027-08-02
9	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2024-07-13	2027-07-12
10	EMI Test Receiver	R&S	ESR 7	101181	2024-06-06	2025-06-05
11	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2024-06-06	2025-06-05
12	Low-frequency amplifier	SchwarzZBECK	BBV9745	00253	2024-10-08	2025-10-07
13	High-frequency amplifier	JS Denki Pte	PA0118-43	JSPA21009	2024-10-08	2025-10-07
14	MXG Vector Signal Generator	Agilent	E4438C	MY42081396(6G)	2024-10-08	2025-10-07
15	ESG Vector Signal Generator	Agilent	E4438C	MY49072627(3G)	2024-06-06	2025-06-05

12. PHOTOGRAPHS OF TEST SETUP

Please refer to separated files Appendix D for Photographs of Test Setup_RF.

13. PHOTOGRAPHS OF THE EUT

Please refer to separated files Appendix C for Photographs of The EUT.

----------THE END OF REPORT----------