

# **RF Test Report**

FCC ID: 2A7OH-EA-XRN-7B004

Test Report No...... RF250530006-01-005

Product(s) Name....... Industrial touch all-in-one PC

Model(s)..... EA-XRN-7B004, EA-XRN-7B006

Trade Mark..... NA

Applicant...... Shenzhen Tengtek Technology Co., Ltd

Address...... Room 1202, Building 160, East Lisongkuang Community, Gongming

Street, Guangming District, Shenzhen, China 518106

Receipt Date..... 2025.06.04

Test Date...... 2025.06.06

Issued Date...... 2025.06.11

ANSI C63.10:2013

Testing Laboratory.....: Shenzhen Haiyun Standard Technical Co., Ltd.

Prepared By:	Checked By:	Approved By:	Standard
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## **HISTORY OF THIS TEST REPORT**

Amendment Report Issue Date: 2025.06.11

- $\, \bigcirc \,$  No additional attachment
- Additional attachments were issued following record

Attachment No.	Issue Date	Description
RF240314002-03-005	2024.04.15	Original report
RF250530006-01-005	2025.06.11	Add the mode name, change the power supply, PCB position, modify the sample appearance and the antenna type. Therefore, the AC power line conducted emission, radiated emission and band edge were tested with reference to the original report, while the rest remained unchanged.



#### 1.. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

	FCC CFR Title 47, Part 15, Subpart C				
Standard(s) Section	Test Item	Test Result	Judgment	Remark	
15.207	AC Power Line Conducted Emissions		PASS	Compliance	
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX A APPENDIX B APPENDIX C	PASS	Compliance	
15.247(a)(2)	Bandwidth		PASS	Note(3)	
15.247(b)(3)	Maximum Output Power		PASS	Note(3)	
15.247(d)	Conducted Spurious Emission		PASS	Note(3)	
15.247(e)	Power Spectral Density		PASS	Note(3)	
15.203	Antenna Requirement		PASS	Note(2)	

#### Note:

- (1) "N/A" denotes test is not applicable to this device.
- (2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.
- (3) For test data, please refer to the report RF240314002-03-005.
- (4) Add the mode name, change the power supply, PCB position, modify the sample appearance and the antenna type. Therefore, the AC power line conducted emission, radiated emission and band edge were tested with reference to the original report, while the rest remained unchanged.



#### 1.1. TEST FACILITY

Company:	Shenzhen Haiyun Standard Technical CO., Ltd.
Address:	No. 110-113, 115, 116, Block B, Jinyuan Business Building, Bao'an District, Shenzhen, China
CNAS Registration Number:	CNAS L18252
CAB identifier	CN0145
A2LA Certificate Number	6823.01
Telephone:	0755-26024411

#### 1.2. MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

bermaence level (basea en a cererage lactor (it 2))		
Uncertainty		
Parameter	Uncertainty	
Occupied Channel Bandwidth	±102kHz	
RF power conducted	±0.243dB	
Power Spectral Density	±1.328dB	
Conducted Spurious Emission	±0.743dB	
Conducted emission(9kHz~30MHz) AC main	±2.68dB	
Radiated emission(9kHz~30MHz)	±3.50dB	
Radiated emission (30MHz~1GHz)	±4.20dB	
Radiated emission (1GHz~18GHz)	±5.10dB	
Radiated emission (18GHz~40GHz)	±5.26dB	

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

#### 1.3. TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
Radiated Emissions-9 kHz to 30 MHz	24.2°C	49%RH	AC 120V/60Hz	Freedom Zhuo
Radiated Emissions-30 MHz to 1000 MHz	24.2°C	49%RH	AC 120V/60Hz	Freedom Zhuo
Radiated Emissions-Above 1000 MHz	24.2°C	49%RH	AC 120V/60Hz	Freedom Zhuo
AC POWER LINE CONDUCTED EMISSIONS	23.4°C	46%RH	AC 120V/60Hz	Freedom Zhuo



#### 2.. GENERAL INFORMATION

#### 2.1. GENERAL DESCRIPTION OF EUT

Sample No.	POC250530006-S001
Product Name	Industrial touch all-in-one PC
Model Name	EA-XRN-7B004, EA-XRN-7B006
Test Model	EA-XRN-7B006
Model difference	The power supply, model name, PCB position, exterior interfaces and the antenna type are different.
Trade Mark	N/A
Power Supply	DC 12V from adapter
Adapter Information	For EA-XRN-7B004 Model: HKA09012070-7U Input: 100-240V~, 50/60Hz 1.5A Output: 12V==7.0A, 84.0W  For EA-XRN-7B006 Model: HKA09012070-7U Input: 100-240V~, 50/60Hz 2.0A Output: 12V==12.5A, 150.0W
Operation Frequency	2402 MHz ~ 2480 MHz
Modulation Type	GFSK
Bit Rate of Transmitter	1Mbps,
Max. Output Power	2.64 dBm (0.0018W)
Antenna gain	2.86dBi
Antenna type	FPC antenna

#### Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.



#### 2. Channel List:

Chainer         (MHz)         Chainer         (MHz)           00         2402         20         2442           01         2404         21         2444           02         2406         22         2446           03         2408         23         2448           04         2410         24         2450           05         2412         25         2452           06         2414         26         2454           07         2416         27         2456           08         2418         28         2458           09         2420         29         2460           10         2422         30         2462           11         2424         31         2464           12         2426         32         2466           13         2428         33         2468           14         2430         34         2470           15         2432         35         2472           16         2434         36         2474           17         2436         37         2476           18         2438         38	nannei List:	_		_
01         2404         21         2444           02         2406         22         2446           03         2408         23         2448           04         2410         24         2450           05         2412         25         2452           06         2414         26         2454           07         2416         27         2456           08         2418         28         2458           09         2420         29         2460           10         2422         30         2462           11         2424         31         2464           12         2426         32         2466           13         2428         33         2468           14         2430         34         2470           15         2432         35         2472           16         2434         36         2474           17         2436         37         2476           18         2438         38         2478	Channel	Frequency (MHz)	Channel	Frequency (MHz)
02       2406       22       2446         03       2408       23       2448         04       2410       24       2450         05       2412       25       2452         06       2414       26       2454         07       2416       27       2456         08       2418       28       2458         09       2420       29       2460         10       2422       30       2462         11       2424       31       2464         12       2426       32       2466         13       2428       33       2468         14       2430       34       2470         15       2432       35       2472         16       2434       36       2474         17       2436       37       2476         18       2438       38       2478	00	2402	20	2442
03       2408       23       2448         04       2410       24       2450         05       2412       25       2452         06       2414       26       2454         07       2416       27       2456         08       2418       28       2458         09       2420       29       2460         10       2422       30       2462         11       2424       31       2464         12       2426       32       2466         13       2428       33       2468         14       2430       34       2470         15       2432       35       2472         16       2434       36       2474         17       2436       37       2476         18       2438       38       2478	01	2404	21	2444
04       2410       24       2450         05       2412       25       2452         06       2414       26       2454         07       2416       27       2456         08       2418       28       2458         09       2420       29       2460         10       2422       30       2462         11       2424       31       2464         12       2426       32       2466         13       2428       33       2468         14       2430       34       2470         15       2432       35       2472         16       2434       36       2474         17       2436       37       2476         18       2438       38       2478	02	2406	22	2446
05       2412       25       2452         06       2414       26       2454         07       2416       27       2456         08       2418       28       2458         09       2420       29       2460         10       2422       30       2462         11       2424       31       2464         12       2426       32       2466         13       2428       33       2468         14       2430       34       2470         15       2432       35       2472         16       2434       36       2474         17       2436       37       2476         18       2438       38       2478	03	2408	23	2448
06       2414       26       2454         07       2416       27       2456         08       2418       28       2458         09       2420       29       2460         10       2422       30       2462         11       2424       31       2464         12       2426       32       2466         13       2428       33       2468         14       2430       34       2470         15       2432       35       2472         16       2434       36       2474         17       2436       37       2476         18       2438       38       2478	04	2410	24	2450
07     2416     27     2456       08     2418     28     2458       09     2420     29     2460       10     2422     30     2462       11     2424     31     2464       12     2426     32     2466       13     2428     33     2468       14     2430     34     2470       15     2432     35     2472       16     2434     36     2474       17     2436     37     2476       18     2438     38     2478	05	2412	25	2452
08       2418       28       2458         09       2420       29       2460         10       2422       30       2462         11       2424       31       2464         12       2426       32       2466         13       2428       33       2468         14       2430       34       2470         15       2432       35       2472         16       2434       36       2474         17       2436       37       2476         18       2438       38       2478	06	2414	26	2454
09     2420     29     2460       10     2422     30     2462       11     2424     31     2464       12     2426     32     2466       13     2428     33     2468       14     2430     34     2470       15     2432     35     2472       16     2434     36     2474       17     2436     37     2476       18     2438     38     2478	07	2416	27	2456
10     2422     30     2462       11     2424     31     2464       12     2426     32     2466       13     2428     33     2468       14     2430     34     2470       15     2432     35     2472       16     2434     36     2474       17     2436     37     2476       18     2438     38     2478	08	2418	28	2458
11       2424       31       2464         12       2426       32       2466         13       2428       33       2468         14       2430       34       2470         15       2432       35       2472         16       2434       36       2474         17       2436       37       2476         18       2438       38       2478	09	2420	29	2460
12     2426     32     2466       13     2428     33     2468       14     2430     34     2470       15     2432     35     2472       16     2434     36     2474       17     2436     37     2476       18     2438     38     2478	10	2422	30	2462
13     2428     33     2468       14     2430     34     2470       15     2432     35     2472       16     2434     36     2474       17     2436     37     2476       18     2438     38     2478	11	2424	31	2464
14     2430     34     2470       15     2432     35     2472       16     2434     36     2474       17     2436     37     2476       18     2438     38     2478	12	2426	32	2466
15     2432     35     2472       16     2434     36     2474       17     2436     37     2476       18     2438     38     2478	13	2428	33	2468
16     2434     36     2474       17     2436     37     2476       18     2438     38     2478	14	2430	34	2470
17     2436     37     2476       18     2438     38     2478	15	2432	35	2472
18 2438 38 2478	16	2434	36	2474
	17	2436	37	2476
10 100 100	18	2438	38	2478
19   2440   39   2480	19	2440	39	2480



#### 2.2. DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX Mode_1Mbps Channel 00/19/39
Mode 2	TX Mode_1Mbps Channel 39

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

	Radiated emissions test – Below 1GHz
Final Test Mode	Description
Mode 2	TX Mode_1Mbps Channel 39

Radiated emissions test – Above 1GHz	
Final Test Mode	Description
Mode 1	TX Mode_1Mbps Channel 00/19/39

Maximum Output Power test		
Final Test Mode	Description	
Mode 1	TX Mode_1Mbps Channel 00/19/39	

#### Note:

- (1) For radiated emission above 1 GHz test, the spurious points of 1GHz~18GHz and 18GHz~26.5GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.
- (2) For radiated emissions below 1 GHz test, the TX Mode\_1Mbps Channel 39 is found to be the worst case and recorded.

#### 2.3. PARAMETERS OF TEST SOFTWARE

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

Test Software Version		cmd.exe	
Frequency (MHz)	2402	2440	2480
1Mbps	default	default	default



#### 2.4. SUPPORT UNITS

No.	Equipment Model		Manufacturer	Series No
1	Displayer	T24S-28	LENOVO	M032004854IT
2	Mouse	DOK-680U	LENOVO	701E8328
3	Earphone	E1	LENOVO	/
4	USB Disk	32GB	Kingston	/
5	Keyboard	SK-8827	LENOVO	21R1ADL



#### 3.. AC POWER LINE CONDUCTED EMISSIONS

#### 3.1. **LIMIT**

Frequency of Emission (MHz)	Limit (dl	BμV)
Frequency of Emission (WHZ)	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

#### Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

#### 3.2. TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

The following table is the setting of the receiver:

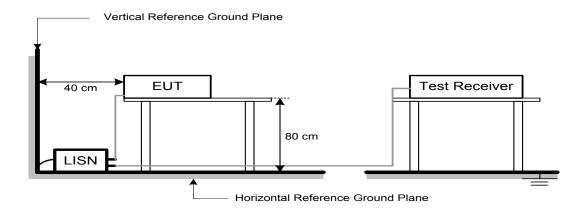
Receiver Parameters	Setting
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

#### 3.3. DEVIATION FROM TEST STANDARD

No deviation.



#### 3.4. TEST SETUP



#### 3.5. EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



#### 3.6. TEST RESULTS

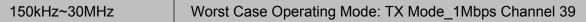
#### Note:

- 1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
- 2. Measurement = Reading + Correct Factor.
- 3. Over = Measurement Limit

We only recorded the data of the worst mode. Please see the following:

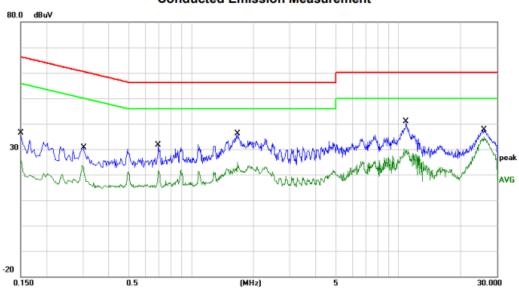






#### Neutral

# **Conducted Emission Measurement**



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	13.43	19.51	32.94	66.00	-33.06	QP	
2		0.1500	7.56	19.51	27.07	56.00	-28.93	AVG	
3		0.3020	6.26	19.54	25.80	60.19	-34.39	QP	
4		0.3020	2.55	19.54	22.09	50.19	-28.10	AVG	
5		0.6940	5.86	19.45	25.31	56.00	-30.69	QP	
6		0.6940	1.82	19.45	21.27	46.00	-24.73	AVG	
7		1.6780	11.06	19.62	30.68	56.00	-25.32	QP	
8		1.6780	4.04	19.62	23.66	46.00	-22.34	AVG	
9		10.9060	15.03	20.23	35.26	60.00	-24.74	QP	
10	*	10.9060	8.78	20.23	29.01	50.00	-20.99	AVG	
11		25.9860	8.10	21.08	29.18	60.00	-30.82	QP	
12		25.9860	2.82	21.08	23.90	50.00	-26.10	AVG	



#### 4.. RADIATED EMISSIONS

#### **4.1. LIMIT**

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

#### LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-1000 MHz)

Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000 MHz)

Fraguanay (MHz)	(dBuV/m at 3 m)		
Frequency (MHz)	Peak	Average	
Above 1000	74	54	

#### Note:

- (1) The limit for radiated test was performed according to FCC CFR Title 47, Part 15, Subpart C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).



#### **4.2. TEST PROCEDURE**

- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1 GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1 GHz)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
- i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

The following table is the setting of the receiver:

Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~150 kHz for RBW 200 Hz
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW	1 MHz / 3 MHz for PK value
(Emission in restricted band)	1 MHz / 1/T Hz for AVG value

Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector
Start ~ Stop Frequency	1 GHz~26.5 GHz for PK/AVG detector

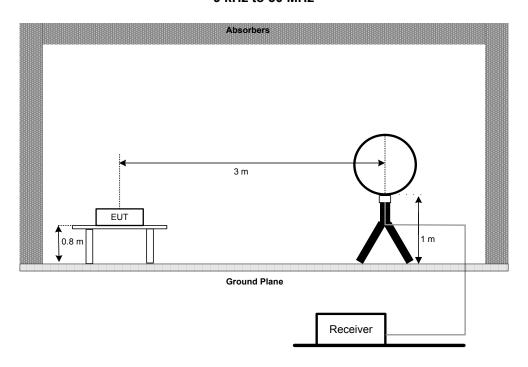


#### **4.3. DEVIATION FROM TEST STANDARD**

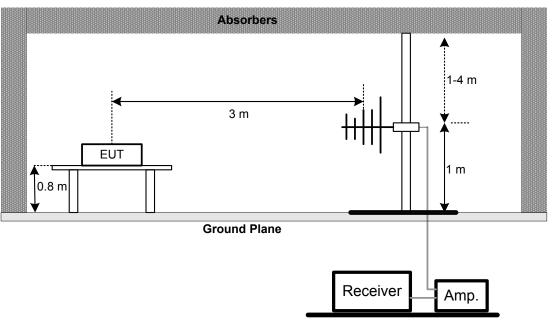
No deviation.

#### 4.4. TEST SETUP

9 kHz to 30 MHz

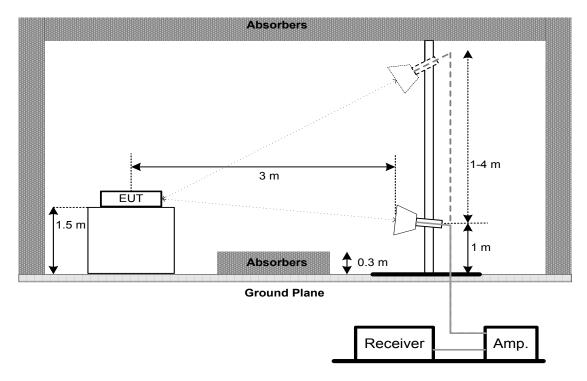


30 MHz to 1 GHz





**Above 1 GHz** 



#### 4.5. EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 4.6. TEST RESULT - 9 kHz TO 30 MHz

Please refer to the APPENDIX A.

#### Remark:

- (1) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

#### 4.7. TEST RESULT - 30 MHz TO 1000 MHz

Please refer to the APPENDIX B.

#### 4.8. TEST RESULT - ABOVE 1000 MHz

Please refer to the APPENDIX C.

#### Remark:

(1) No limit: This is fundamental signal, the judgment is not applicable. For fundamental signal judgment was referred to Peak output test.



#### 5.. BANDWIDTH

#### **5.1. LIMIT**

Section	Test Item	Limit	
	6 dB Bandwidth	>= 500 kHz	
FCC 15.247(a)(2)	99% Emission Bandwidth	-	

#### **5.2. TEST PROCEDURE**

- a. The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

#### For 6 dB Bandwidth:

Spectrum Parameters	Setting
Span Frequency	> Measurement Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

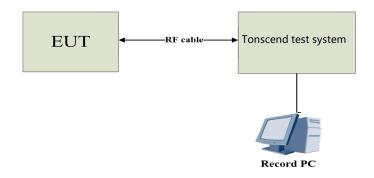
#### For 99% Emission Bandwidth:

Spectrum Parameters	Setting	
Span Frequency	Between 1.5 times and 5.0 times the OBW	
RBW	1% to 5% of the OBW	
VBW	approximately three times RBW	
Detector	Peak	
Trace	Max Hold	
Sweep Time	Auto	

#### **5.3. DEVIATION FROM STANDARD**

No deviation.

#### **5.4. TEST SETUP**



#### 5.5. EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.



#### **5.6. TEST RESULTS**

Test result: PASS

Note: For test data, please refer to the report RF240314002-03-005.



#### **6.. MAXIMUM OUTPUT POWER**

#### **6.1. LIMIT**

Section	Test Item	Limit
FCC 15.247(b)(3)	Maximum Output Power	1.0000 watt or 30.00 dBm

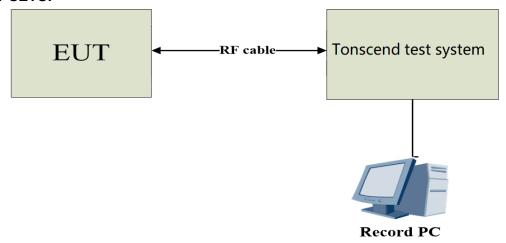
#### **6.2. TEST PROCEDURE**

- a. The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.
- b. A peak power sensor was used on the output port of the EuT. A power meter was used to read the response of the peak power sensor. Record the power level. Average power sensor was used to perform output power measurement, trigger and gating function of wideband power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

#### 6.3. DEVIATION FROM STANDARD

No deviation.

#### 6.4. TEST SETUP



#### 6.5. EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 6.6. TEST RESULTS

Note: For test data, please refer to the report RF240314002-03-005.



#### 7.. CONDUCTED SPURIOUS EMISSION

#### **7.1. LIMIT**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

#### 7.2. TEST PROCEDURE

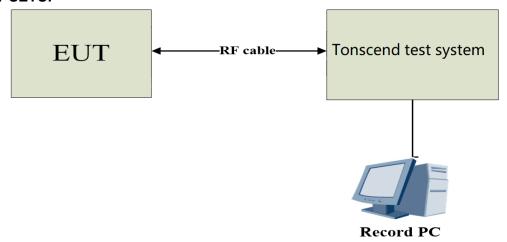
- a. The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Start Frequency	30 MHz
Stop Frequency	26.5 GHz
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

#### 7.3. DEVIATION FROM STANDARD

No deviation.

#### 7.4. TEST SETUP



#### 7.5. EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 7.6. TEST RESULTS

Test result: PASS

Note: For test data, please refer to the report RF240314002-03-005.



#### 8.. POWER SPECTRAL DENSITY

#### 8.1. **LIMIT**

Section	Test Item	Limit
FCC 15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

#### **8.2. TEST PROCEDURE**

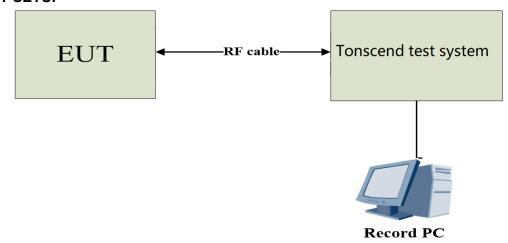
- a. The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Span Frequency	2 MHz
RBW	3 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

#### 8.3. DEVIATION FROM STANDARD

No deviation.

#### 8.4. TEST SETUP



#### **8.5. EUT OPERATION CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

#### **8.6. TEST RESULTS**

Test result: PASS

Note: For test data, please refer to the report RF240314002-03-005.



#### 9.. MEASUREMENT INSTRUMENTS LIST

J i	9 MEASUREMENT INSTRUMENTS LIST  Radiated Emissions						
No.	Cal data Cal Duo data						
					·	(yyyy/mm/dd)	(yyyy/mm/dd)
1	Test receiver	Rohde&Schwarz	ESU	100184	JLE011	2025/3/1	2026/2/28
2	Log periodic antenna	Schwarzbeck	VULB 9168	1151	JLE012	2025/4/12	2026/4/11
3	Low frequency amplifier	1	LNA 0920N	2014	JLE023	2025/3/1	2026/2/28
4	High frequency amplifier	Schwarzbeck	BBV 9718	9718-284	JLE024	2025/3/1	2026/2/28
5	Horn Antenna	SCHWARZBEC K	BBHA 9120 D	02670	JLE028	2025/4/12	2026/4/11
6	Temp&Humid ity Recorder	Meideshi	JR900	1	JLE021	2025/4/15	2026/4/14
7	Horn Antenna	SCHWARZBEC K	BBHA 9170	9170#68 5	JLE029	2024/7/15	2025/7/14
8	Loop Antenna	SCHWARZBEC K	FMZB15 19B	00029	JLE030	2024/7/15	2025/7/14
9	Broadband preamplifier	Schwarzbeck	BBV9721	9721-019	JLE025	2025/3/1	2026/2/28
10	Test software	Farad Technology Co., Ltd	EZ-EMC Ver.TW-03A2				
			RF Conduc	ted Emissic	n		
1	MXA Signal Analyzer	Keysight	N9021B	MY60080 169	JLE050	2025/3/1	2026/2/28
2	RF Control Unit	dsusoft	JS0806- 2	21G8060 449	JLE053	2025/3/1	2026/2/28
3	power supply unit	dsusoft	JS0806- 4ADC	N/A	JLE055	2025/3/1	2026/2/28
4	VXG Signal Generator	Keysight	M9384B	MY61270 787	JLE051	2025/4/20	2026/4/19
5	EXG Analog Signal Generator	Keysight	N5173B	MY59101 282	JLE052	2025/3/1	2026/2/28
6	Wideband Radio Communicati on Tester	Rohde&Schwarz	CMW500	1201.000 2K50-116 064-Dt	JLE054	2025/3/1	2026/2/28
7	Test software	dsusoft	JS1120-3 Ver.3.2.22.0				



#### **10.. ANTENNA REQUIREMENT**

Test standard: FCC part 15.203

According to the manufacturer declared, the EUT has a FPC antenna 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 further details.



## **APPENDIX A - RADIATED EMISSION - 9 KHZ TO 30 MHZ**

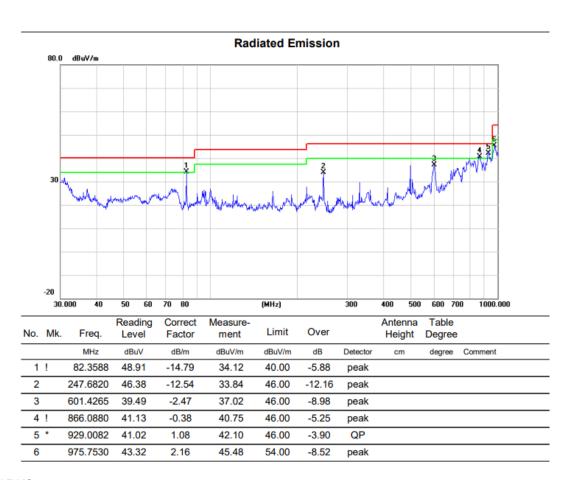
Radiated emission: 9KHz-30MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.



# APPENDIX B - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

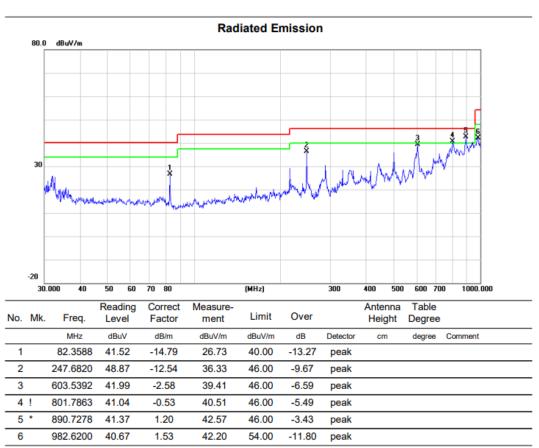


#### **REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



Test Mode	TX Mode_1Mbps Channel 39	Polarization	Horizontal
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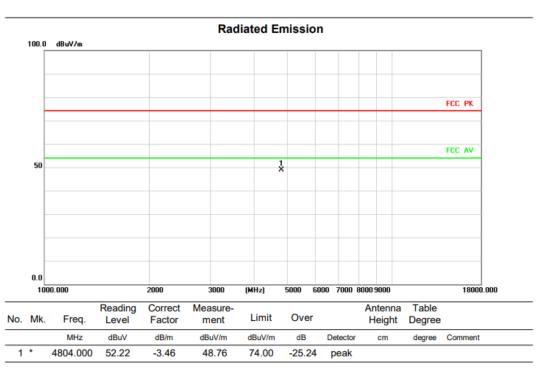
#### **REMARKS:**

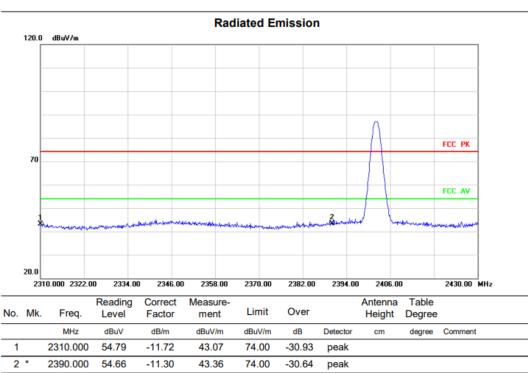
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



## **APPENDIX C - RADIATED EMISSION - ABOVE 1000 MHZ**

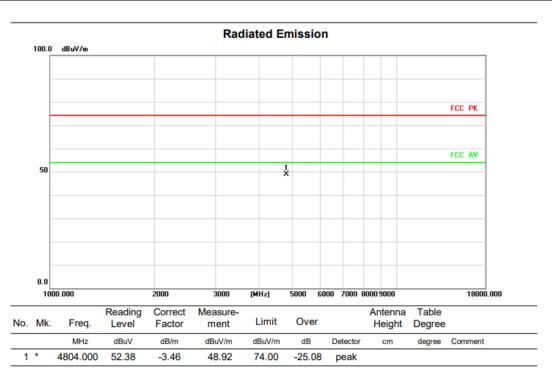
Test Mode	TX 2402 MHz_1Mbps	Polarization Vertical	
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Test Mode	TX 2402 MHz_1Mbps	Polarization	Horizontal
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# Radiated Emission 120.0 dBuV/m FCC PK

No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2310.000	54.37	-11.72	42.65	74.00	-31.35	peak			
2	*	2390.000	55.31	-11.30	44.01	74.00	-29.99	peak			

2430.00 MHz

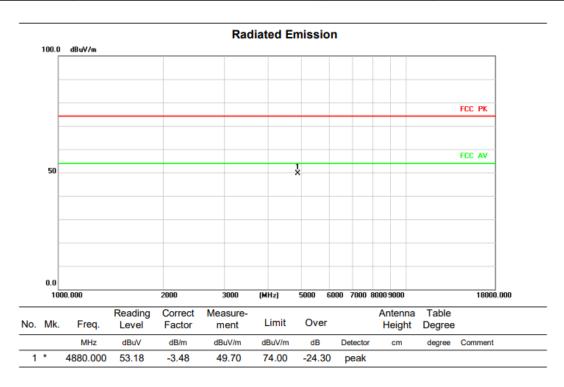
Report No.: RF250530006-01-005

2310.000 2322.00 2334.00 2346.00 2358.00 2370.00 2382.00 2394.00 2406.00

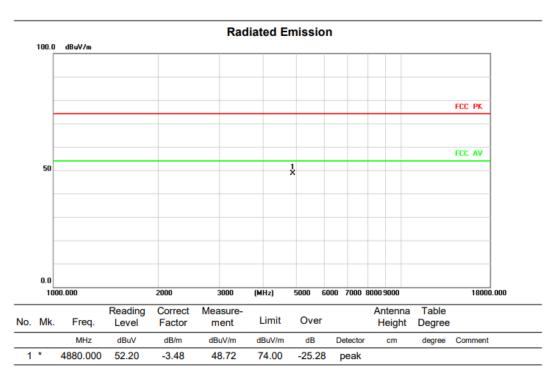
20.0





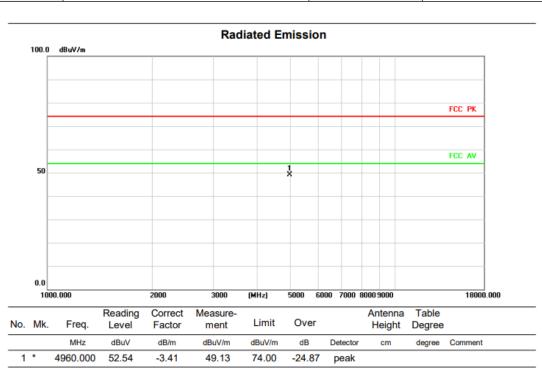


Test Mode TX 2440 MHz _1Mbps	Polarization Horizontal	
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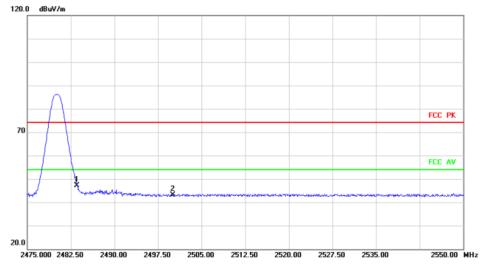




Test Mode	TX 2480 MHz 1Mbps	Polarization	Vertical
	_ '		

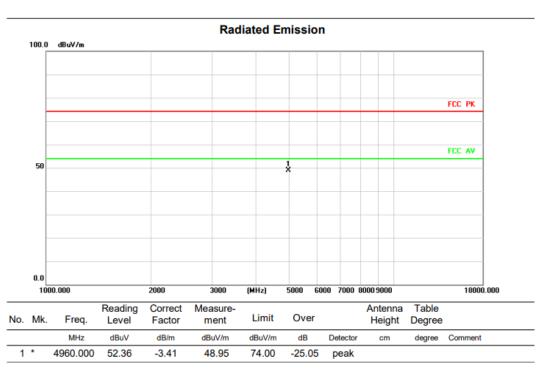


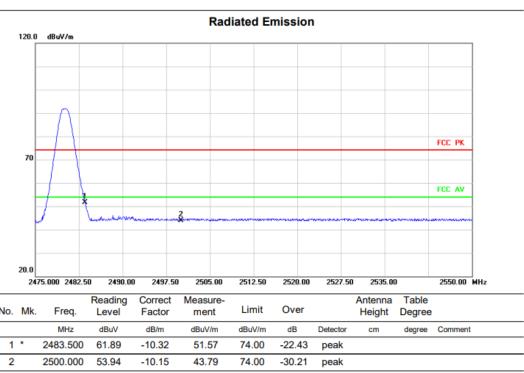
# **Radiated Emission**



No.	Mk.		_	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2483.500	57.49	-10.32	47.17	74.00	-26.83	peak			
2		2500.000	53.19	-10.15	43.04	74.00	-30.96	peak			_









# **Statement**

 The report is invalid without the official seal or special seal of Shenzhen Haiyun Standard Technical Co., Ltd. (hereinafter referred to as the unit).

2. The report is invalid without the signature of the approver.

3. The report is invalid if altered arbitrarily.

4. The report shall not be partially copied without the written approval of the unit.

5. The reported test results are only valid for the tested samples.

6. If there is any objection to the test report, it shall be submitted to the test unit within 15 days from the date of receiving the report, and the overdue shall not be accepted.

# Shenzhen Haiyun Standard Technical Co., Ltd.

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Tel: 0755-26024411

China

Email: service@hy-lab.cn

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