

TEST REPORT

Report No.: BCTC2304355056E

Applicant: ROCKPI TRADING LIMITED

Product Name: Radxa ROCK 3 Model C

Model/Type Reference: Radxa ROCK 3 Model C

Tested Date: 2023-05-11 to 2023-05-29

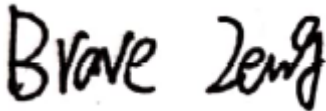
Issued Date: 2023-05-29

Shenzhen BCTC Testing Co., Ltd.



Product Name: Radxa ROCK 3 Model C
Trademark: N/A
Model/Type Reference: Radxa ROCK 3 Model C
Radxa ROCK 3 Model C 1GB, Radxa ROCK 3 Model C 2GB,
Radxa ROCK 3 Model C 4GB, Radxa ROCK 3 Model C 8GB
Prepared For: ROCKPI TRADING LIMITED
Address: Room 11, 27 / f, Ga wah international centre, 191 Javaroad, north point, Hong Kong
Manufacturer: ROCKPI TRADING LIMITED
Address: Room 11, 27 / f, Ga wah international centre, 191 Javaroad, north point, Hong Kong
Prepared By: Shenzhen BCTC Testing Co., Ltd.
Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng,
Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date: 2023-05-11
Sample tested Date: 2023-05-11 to 2023-05-29
Issue Date: 2023-05-29
Report Number: BCTC2304355056E
Test Standards: FCC Part 15B
ANSI C63.4:2014
Test Results: PASS

Tested by:



Brave Zeng/ Project Handler

Approved by:



Zero Zhou/Reviewer

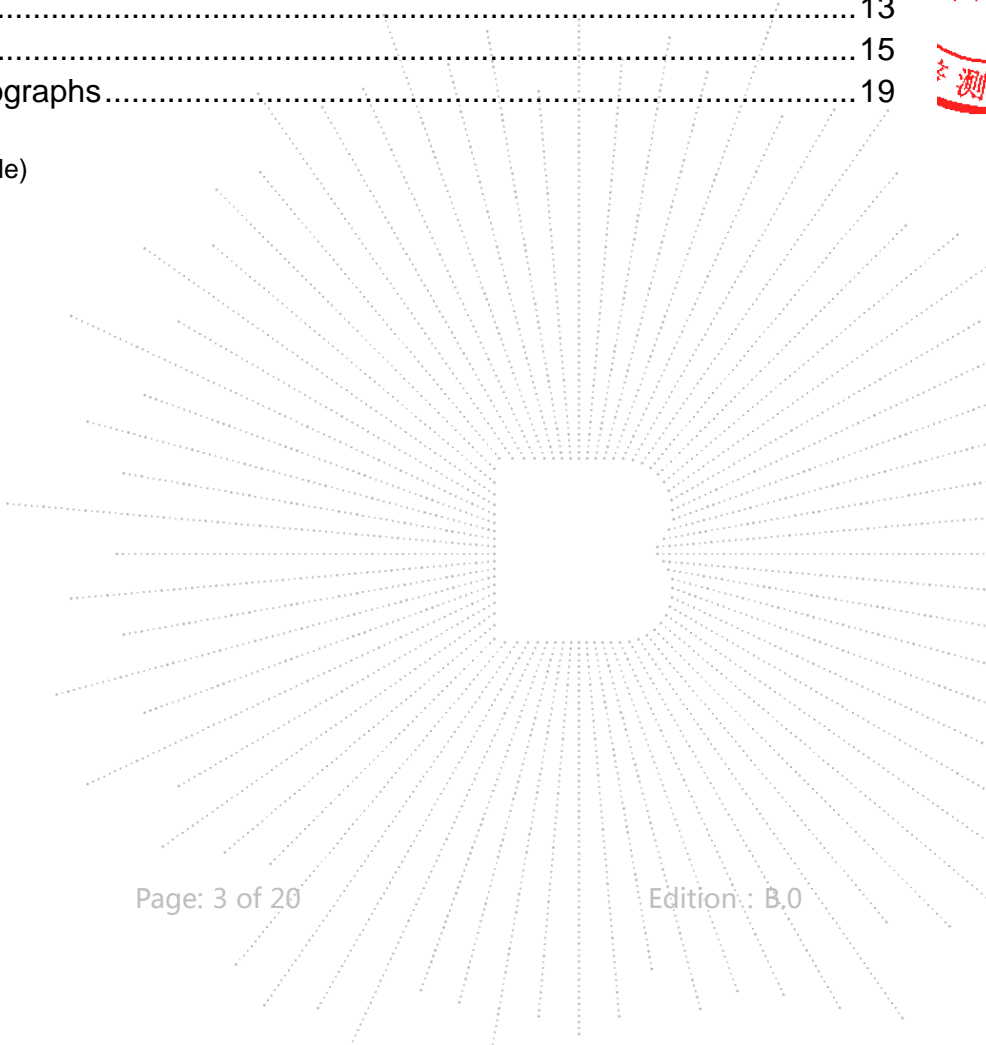
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(Note: N/A Means Not Applicable)

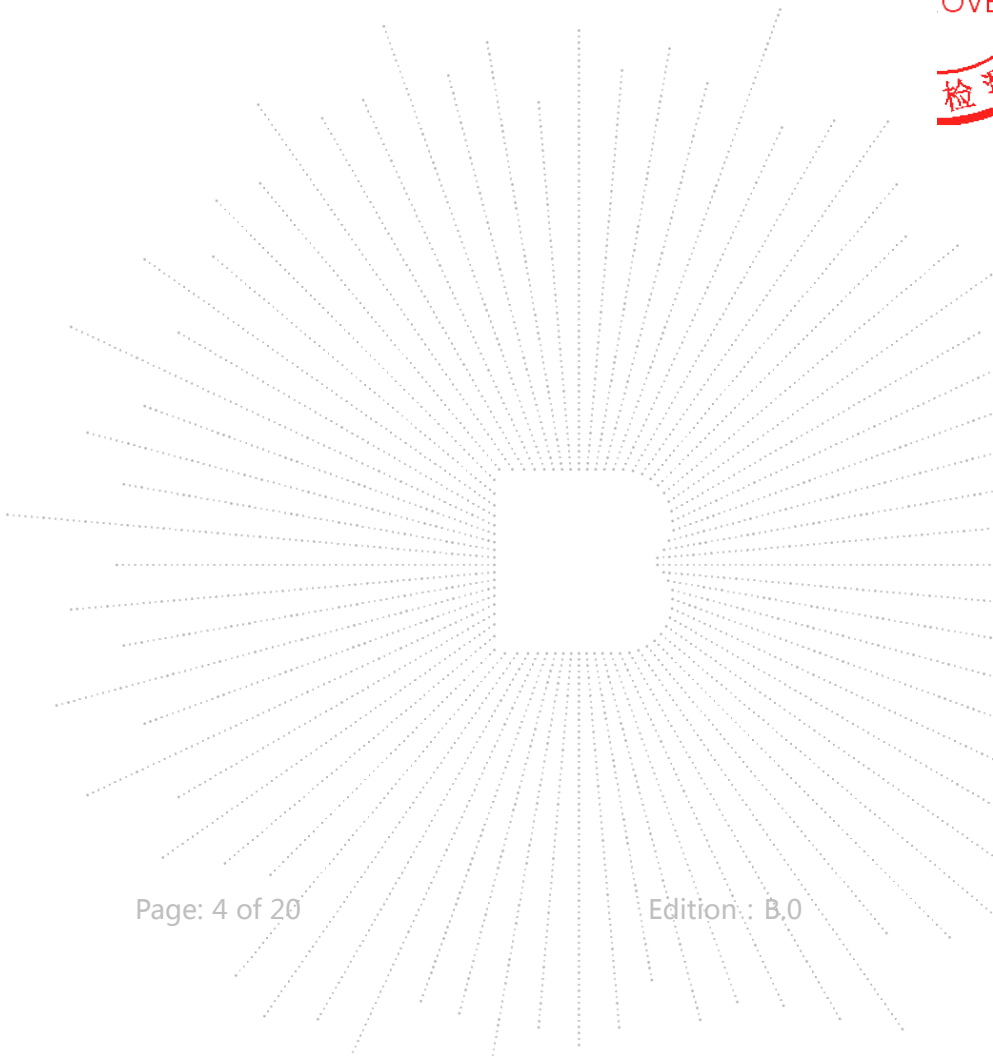


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1. Version

Report No.	Issue Date	Description	Approved
BCTC2304355056E	2023-05-29	Original	Valid

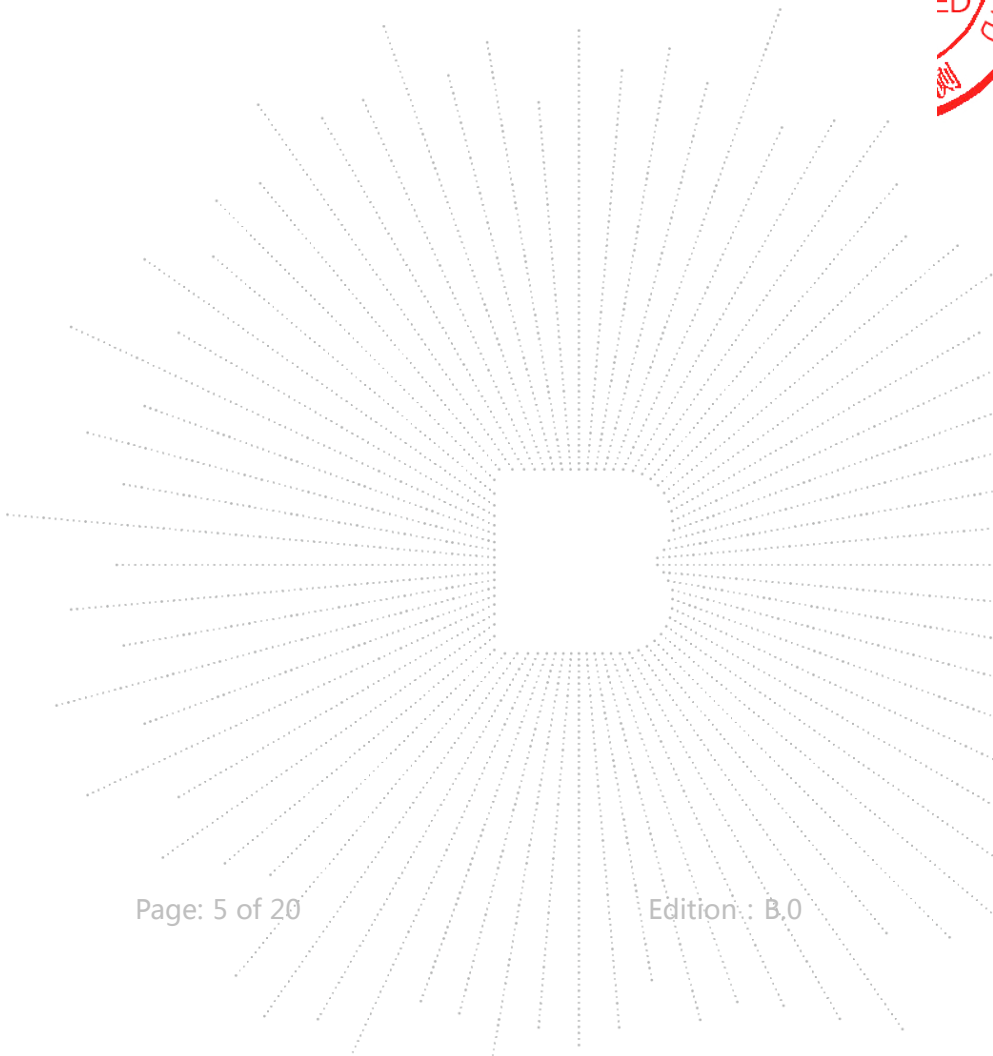
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2. Test Summary

The Product has been tested according to the following specifications:

Standard	Test Item	Test result
FCC Part 15B	Conducted Emission	Pass
FCC Part 15B	Radiated Emission	Pass



3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Test item	Value (dB)
Conducted Emission (150kHz-30MHz)	3.20
Radiated Emission(30MHz~1GHz)	4.80

CO., LTD

4. Product Information And Test Setup

4.1 Product Information

- Ratings:** AC 120V/60Hz
- Model differences:** All models are identical except for the appearance color
- The highest frequency of the internal sources of the EUT is (less than 108) MHz:**
- less than 1.705 MHz, the measurement shall only be made up to 30 MHz.
 - between 1.705 MHz and 108 MHz, the measurement shall only be made up to 1 GHz.
 - between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz.
 - between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz.
 - above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40GHz, whichever is less.

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
1.	---	---	---	---	---

Notes:

- All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Test Mode

Test item	Test Mode	Test Voltage
Conducted emissions from the AC mains power ports (150KHz-30MHz) <input checked="" type="checkbox"/> Class B	Working	AC120V/60Hz
Radiated emissions(30MHz-1GHz) <input checked="" type="checkbox"/> Class B	Working	AC120V/60Hz

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

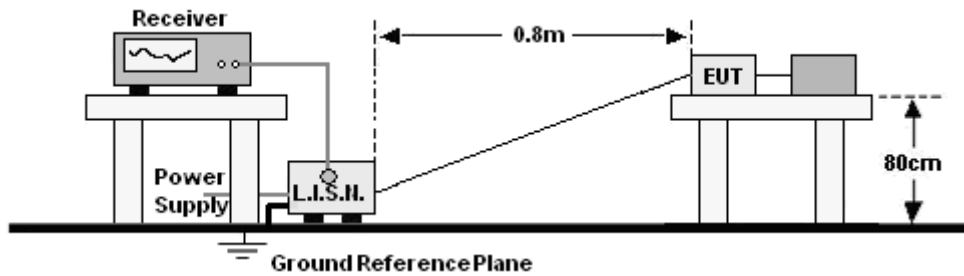
Conducted Emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
LISN	R&S	ENV216	101375	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Attenuator	\	10dB C-6GHz	1650	May 15, 2023	May 14, 2024

Radiated Emissions Test (966 Chamber#02)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	SKET	966 Room	966	Nov. 02. 2021	Nov. 01.2024
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
Receiver	R&S	ESRI7	100010	Nov. 08. 2022	Nov. 07.2023
TRILOG Broadband Antenna	Schwarzbeck	VULB9168	1323	Mar. 06, 2022	Mar. 05, 2024
Amplifier	SKET	LNPA-30M01 G-30	SK202108200 4	Nov. 08. 2022	Nov. 07.2023
Software	SKET	EZ-EMC	FA-03A1	\	\
Horn Antenna	schwarzbeck	BBHA9120D	1541	Jun. 06, 2022	Jun. 05, 2023
Amplifier	SKET	LAPA_01G18 G-45dB	\	May 15, 2023	May 14, 2024

6. Conducted Emission At The Mains Terminals Test

6.1 Block Diagram Of Test Setup

For mains ports:



6.2 Limit

Limits for Class B devices

Frequency range (MHz)	Limits dB(μ V)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56*	56 to 46*
0,50 to 5	56	46
5 to 30	60	50

Notes:

- *Decreasing linearly with logarithm of frequency.
- The lower limit shall apply at the transition frequencies.

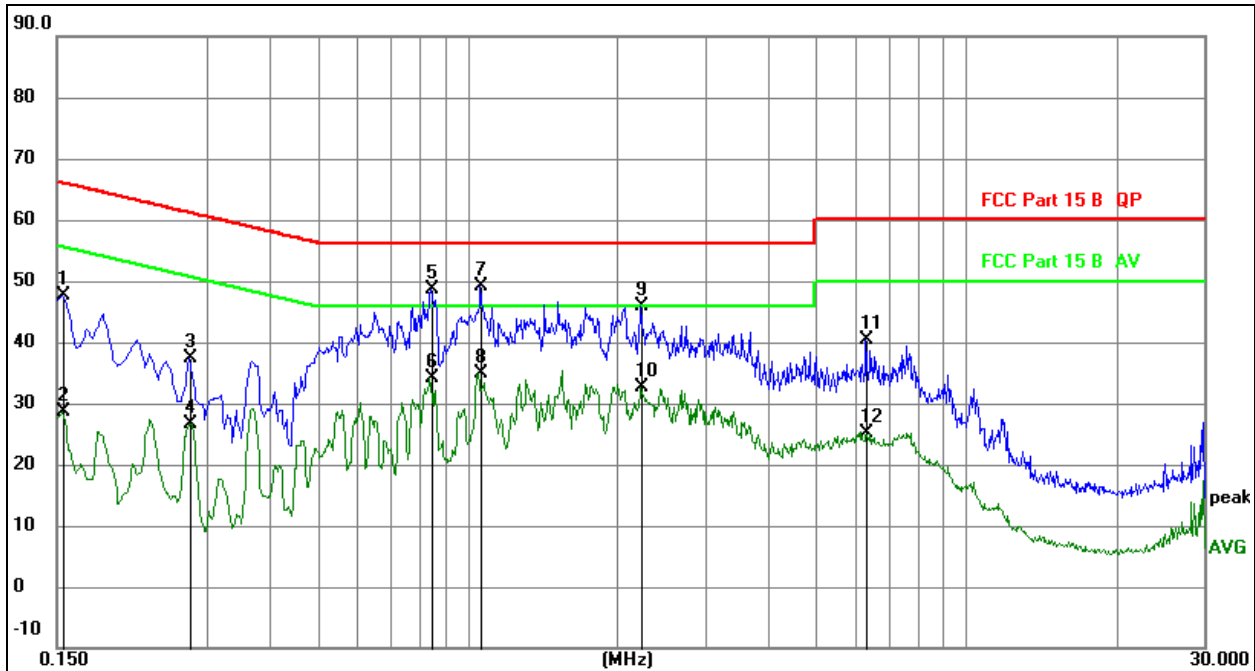
6.3 Test procedure

For mains ports:

- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

6.4 Test Result

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Line
Test Voltage :	AC120V/60Hz	Test Mode:	Working

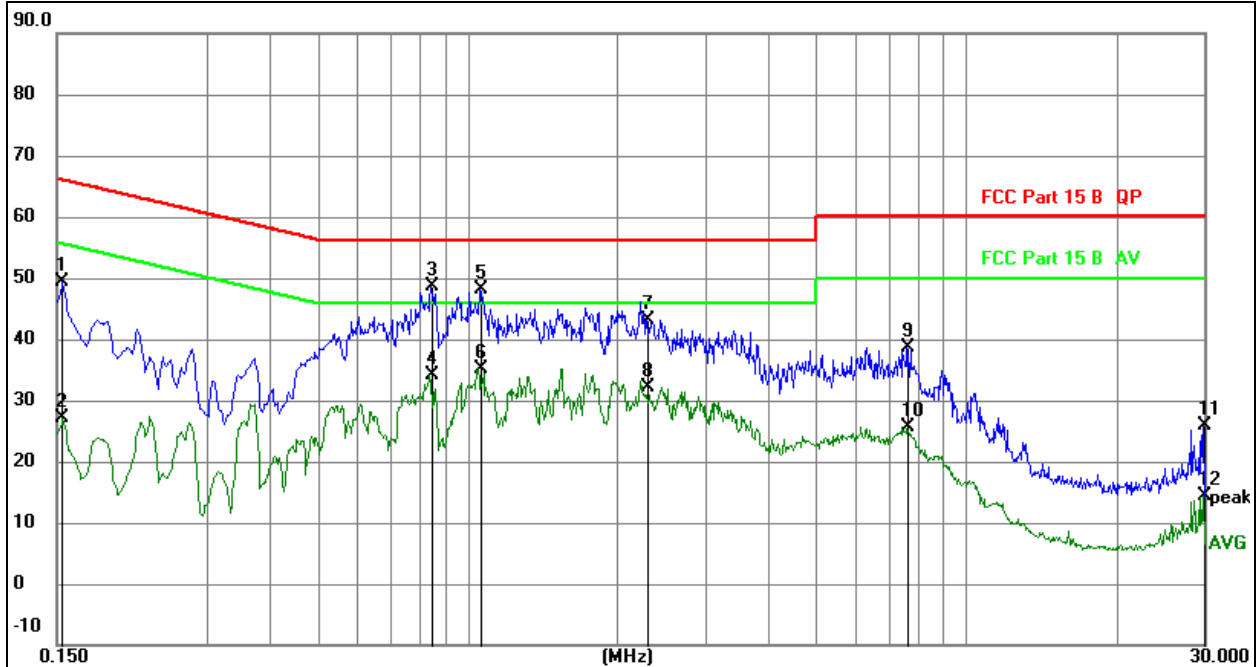


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1545	28.02	19.68	47.70	65.75	-18.05	QP
2		0.1545	8.99	19.68	28.67	55.75	-27.08	AVG
3		0.2760	17.50	19.78	37.28	60.94	-23.66	QP
4		0.2760	6.86	19.78	26.64	50.94	-24.30	AVG
5		0.8475	28.79	19.75	48.54	56.00	-7.46	QP
6		0.8475	14.35	19.75	34.10	46.00	-11.90	AVG
7	*	1.0635	29.34	19.77	49.11	56.00	-6.89	QP
8		1.0635	15.13	19.77	34.90	46.00	-11.10	AVG
9		2.2290	25.95	19.91	45.86	56.00	-10.14	QP
10		2.2290	12.82	19.91	32.73	46.00	-13.27	AVG
11		6.2970	20.15	20.16	40.31	60.00	-19.69	QP
12		6.2970	5.05	20.16	25.21	50.00	-24.79	AVG

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Neutral
Test Voltage :	AC120V/60Hz	Test Mode:	Working


Remark:

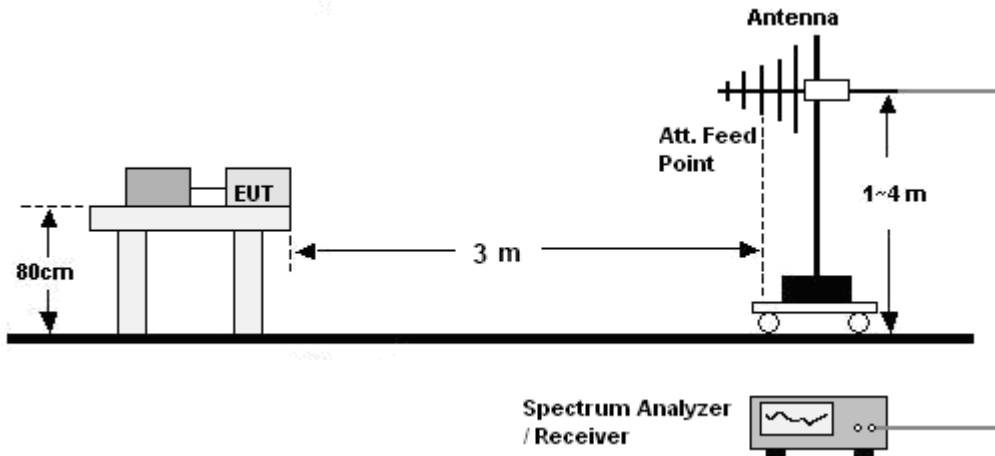
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1539	29.76	19.68	49.44	65.79	-16.35	QP
2		0.1539	7.46	19.68	27.14	55.79	-28.65	AVG
3	*	0.8438	28.77	19.75	48.52	56.00	-7.48	QP
4		0.8438	14.46	19.75	34.21	46.00	-11.79	AVG
5		1.0597	28.29	19.77	48.06	56.00	-7.94	QP
6		1.0597	15.43	19.77	35.20	46.00	-10.80	AVG
7		2.2847	23.31	19.91	43.22	56.00	-12.78	QP
8		2.2847	12.21	19.91	32.12	46.00	-13.88	AVG
9		7.6060	18.54	20.20	38.74	60.00	-21.26	QP
10		7.6060	5.47	20.20	25.67	50.00	-24.33	AVG
11		29.8415	5.23	20.53	25.76	60.00	-34.24	QP
12		29.8415	-6.13	20.53	14.40	50.00	-35.60	AVG

7. Radiation Emission Test

7.1 Block Diagram Of Test Setup

30MHz ~ 1GHz:



7.2 Limit

Limits for Class B devices

Frequency (MHz)	limits at 3m dB(μ V/m)		
	QP Detector	PK Detector	AV Detector
30-88	40.0	--	--
88-216	43.5	--	--
216-960	46.0	--	--
960 to 1000	54.0	--	--
Above 1000	--	74.0	54.0

Note: The lower limit shall apply at the transition frequencies.

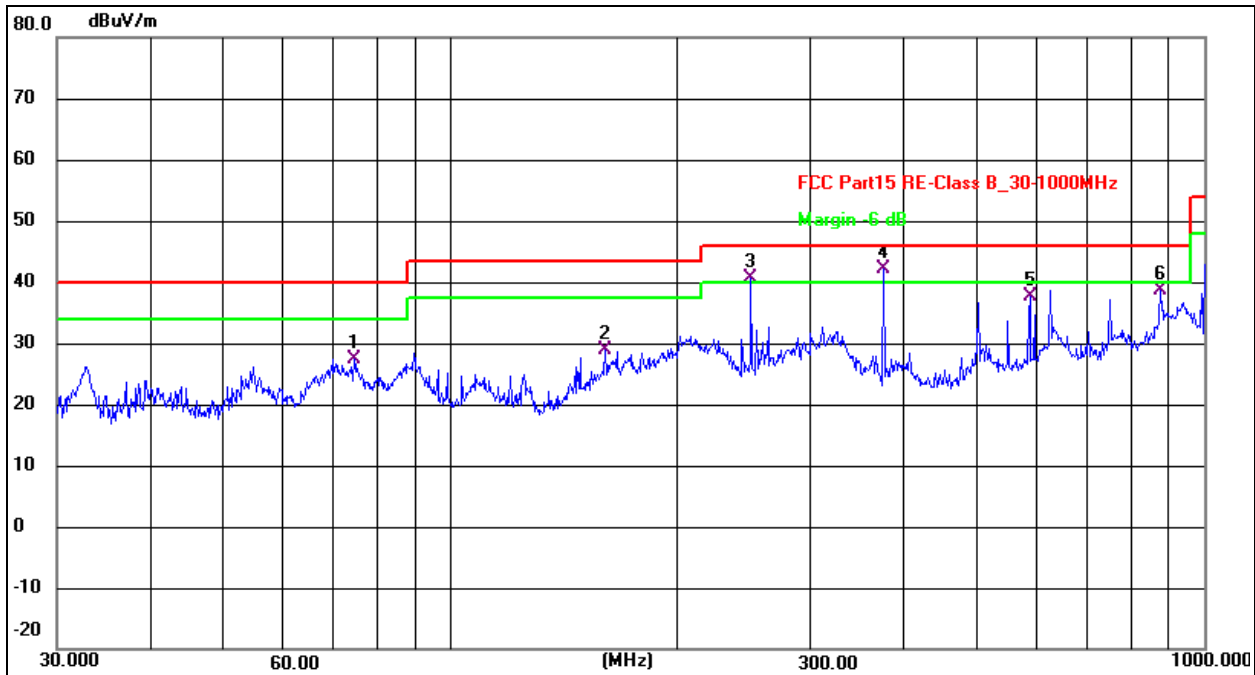
7.3 Test Procedure

30MHz ~ 1GHz:

- The Product was placed on the nonconductive turntable 0.8 m above the ground at a chamber.
- Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

7.4 Test Result

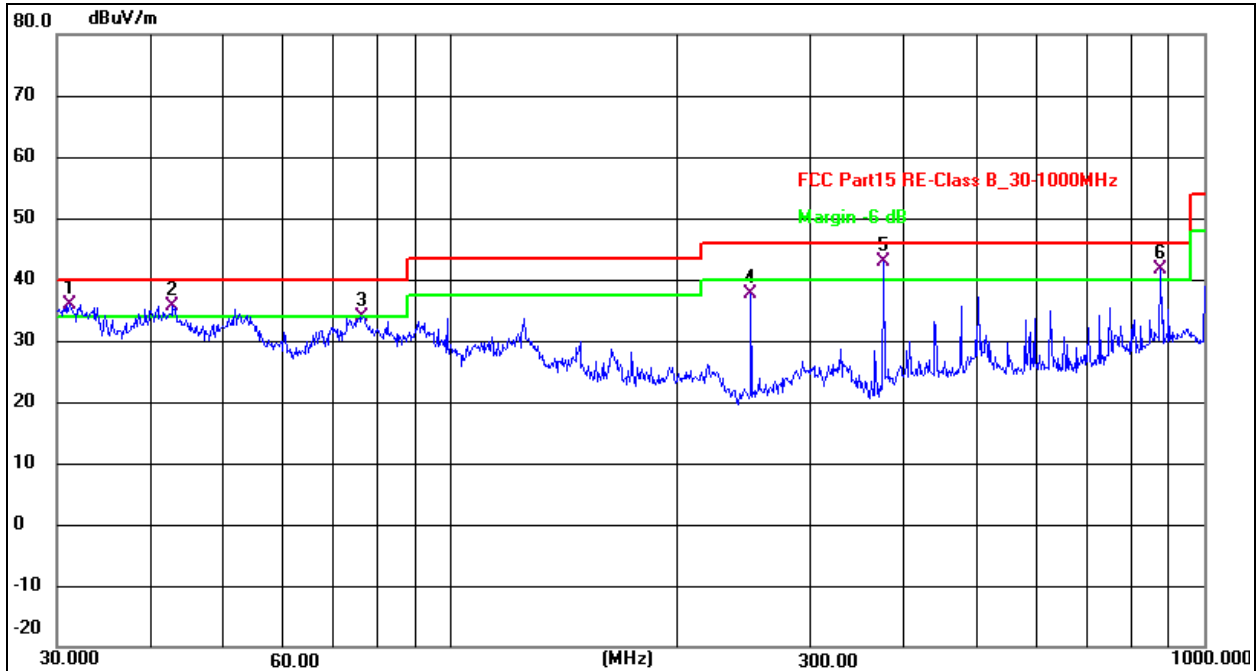
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Horizontal
Test Voltage :	AC120V/60Hz	Test Mode:	Working


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	74.3953	41.78	-14.42	27.36	40.00	-12.64	QP
2	160.3454	39.26	-10.39	28.87	43.50	-14.63	QP
3 !	250.3012	51.97	-11.28	40.69	46.00	-5.31	QP
4 *	374.6225	49.54	-7.44	42.10	46.00	-3.90	QP
5	586.8437	39.05	-1.50	37.55	46.00	-8.45	QP
6	875.2468	35.25	3.44	38.69	46.00	-7.31	QP

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Vertical
Test Voltage :	AC120V/60Hz	Test Mode:	Working



Remark:
 1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
 2. Measurement = Reading Level + Correct Factor
 3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 !	31.1798	47.78	-11.82	35.96	40.00	-4.04	QP
2 !	42.7496	46.05	-10.37	35.68	40.00	-4.32	QP
3	76.5119	48.98	-15.09	33.89	40.00	-6.11	QP
4	250.3012	49.01	-11.28	37.73	46.00	-8.27	QP
5 *	375.9385	50.25	-7.40	42.85	46.00	-3.15	QP
6 !	875.2470	38.19	3.44	41.63	46.00	-4.37	QP

8. EUT Photographs

EUT Photo 1

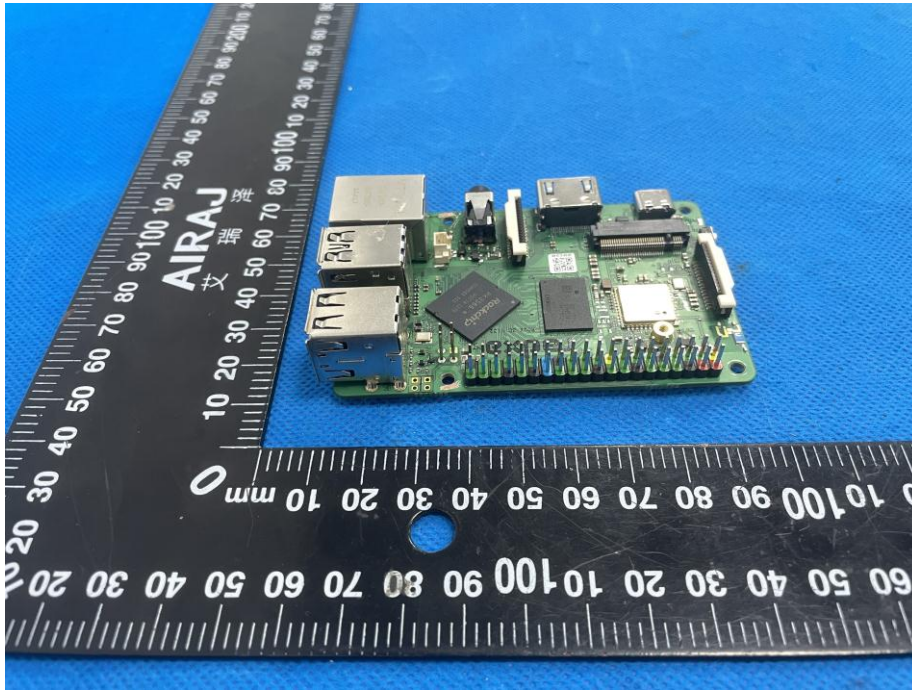


EUT Photo 2

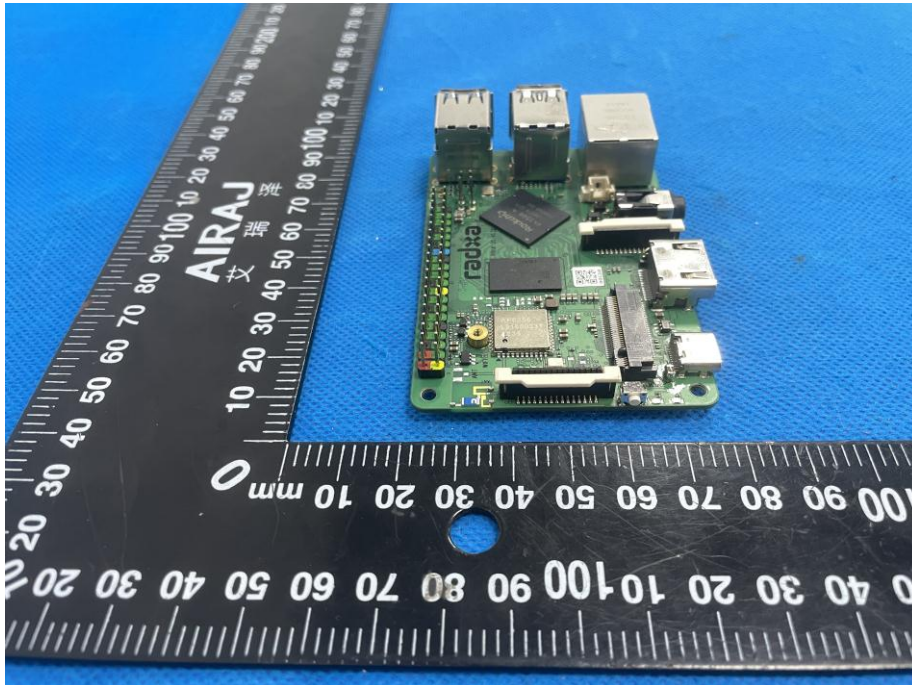


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EUT Photo 3



EUT Photo 4

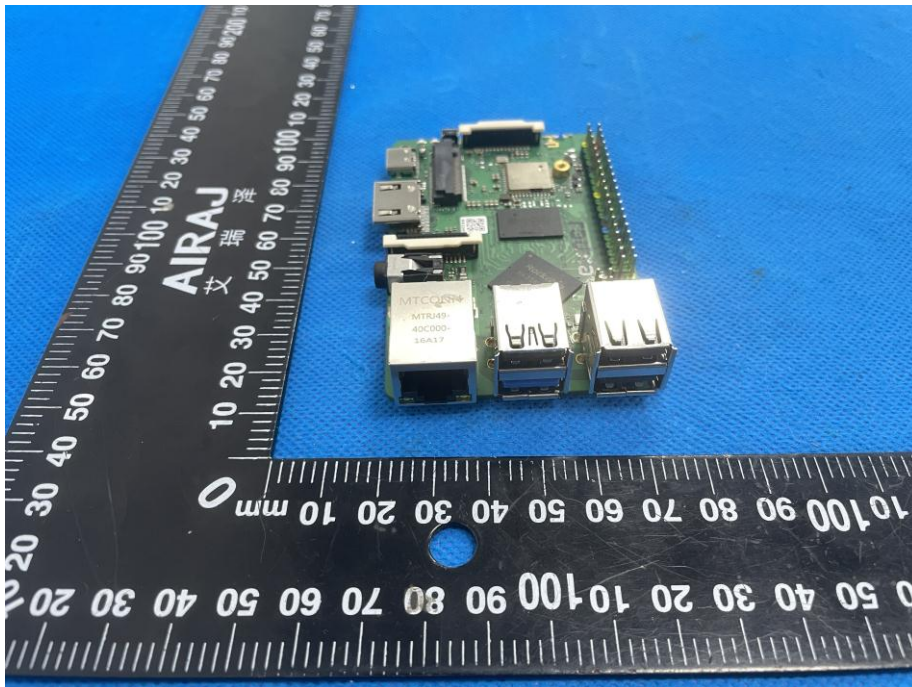


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EUT Photo 5

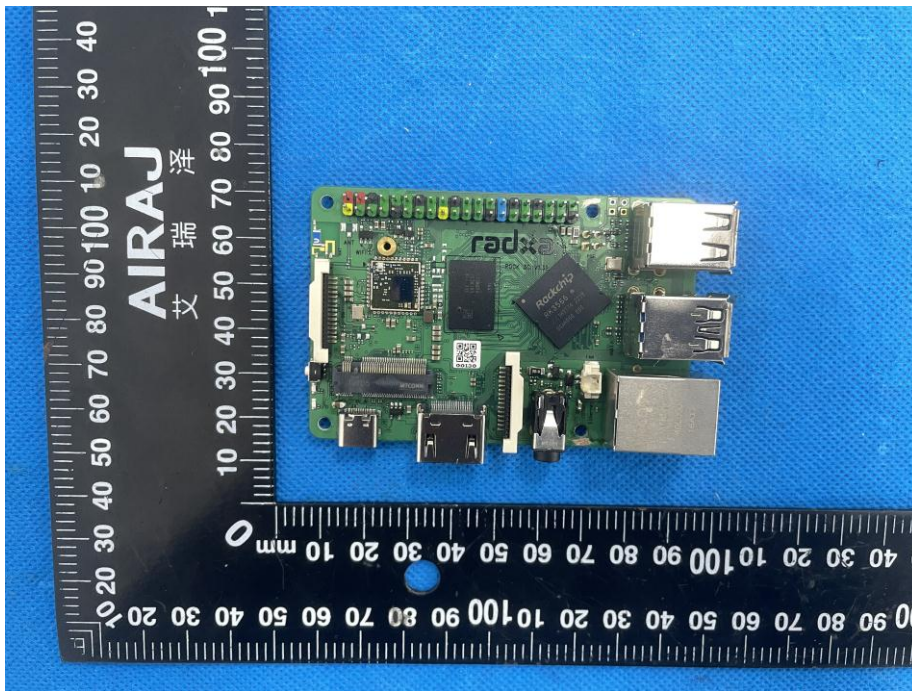


EUT Photo 6

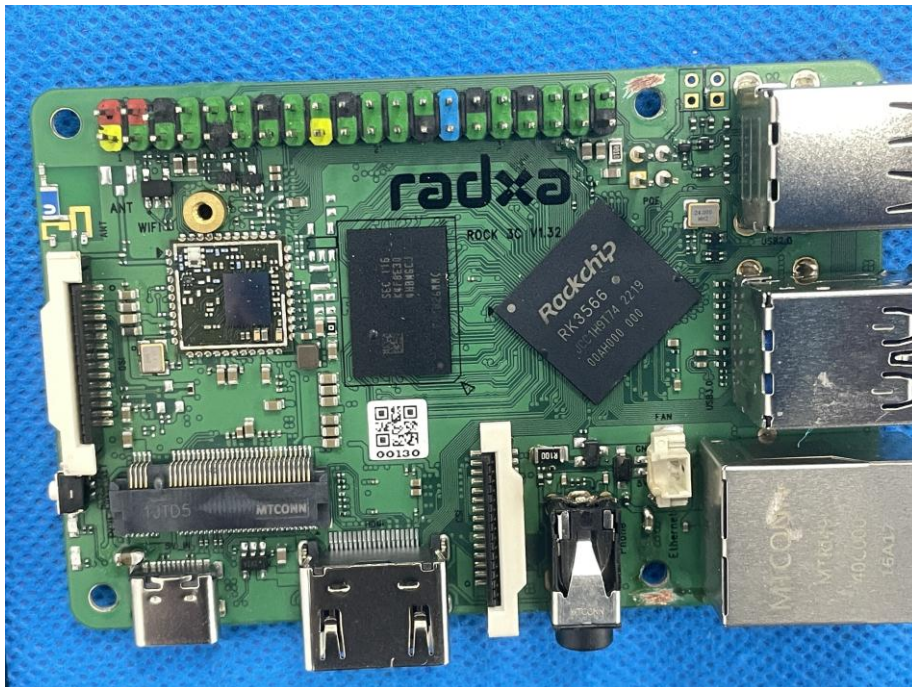


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EUT Photo 7



EUT Photo 8



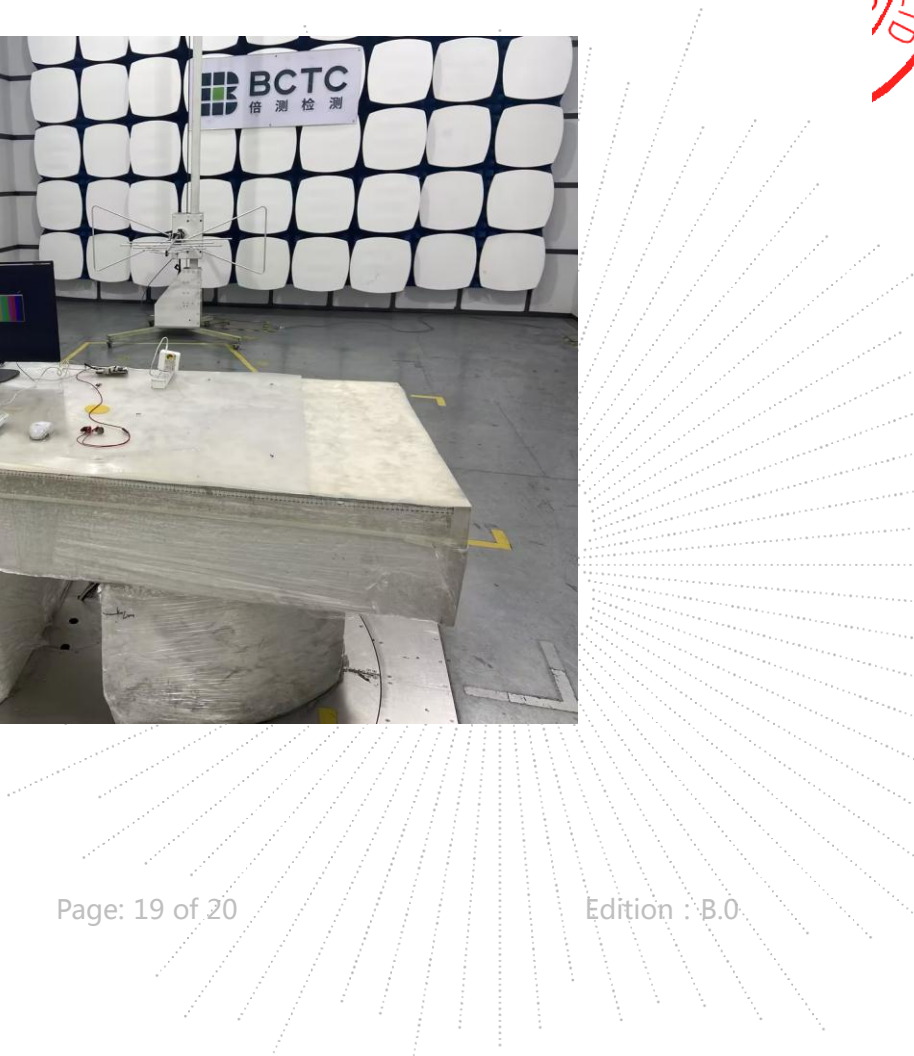
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9. EUT Test Setup Photographs

Conducted Emission



Radiated Emission



STATEMENT

1. The equipment lists are traceable to the national reference standards.
2. The test report can not be partially copied unless prior written approval is issued from our lab.
3. The test report is invalid without the "special seal for inspection and testing".
4. The test report is invalid without the signature of the approver.
5. The test process and test result is only related to the Unit Under Test.
6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. The quality system of our laboratory is in accordance with ISO/IEC17025.
8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

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