



PSE TEST REPORT
For
KHADAS TECHNOLOGY CO., LTD
Edge2 ARM PC
Test Model: K1011

Prepared for : KHADAS TECHNOLOGY CO., LTD
Address : 2709 QIANCHENG CENTER, HAICHENG ROAD,
XIXIANG STREET, BAO'AN DISTRICT,
SHENZHEN, CHINA. 518101

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample : February 17, 2023
Number of tested samples : 1
Sample No. : A010523103
Date of Test : February 17, 2023 ~ February 21, 2023
Date of Report : February 21, 2023



**PSE TEST REPORT****J55032 (H29)****Report Reference No.: LCSA010523103E****Date Of Issue.....: February 21, 2023****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.....: KHADAS TECHNOLOGY CO., LTD****Address.....: 2709 QIANCHENG CENTER, HAICHENG ROAD, XIXIANG STREET, BAO'AN DISTRICT, SHENZHEN, CHINA. 518101****Test Specification:****Standard: J55032 (H29)****Test Report Form No.....: LCSEMC-1.0****TRF Originator: Shenzhen LCS Compliance Testing Laboratory Ltd.****Master TRF: Dated 2011-03****SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. All rights reserved.**

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Test Item Description.....: Edge2 ARM PC**Trade Mark.....: Khadas****Test Model: K1011****Ratings.....: Please Refer To Page 7****Result: Positive****Compiled by:**

Emma Wang/ File administrators

Supervised by:

Baron Wen/Technique principal

Approved by:

Gavin Liang/ Manager





PSE -- TEST REPORT

Test Report No. : LCSA010523103EFebruary 21, 2023
Date of issue

Test Model..... : K1011

EUT..... : Edge2 ARM PC

Applicant..... : KHADAS TECHNOLOGY CO., LTDAddress..... : 2709 QIANCHENG CENTER, HAICHENG ROAD,
XIXIANG STREET, BAO' AN DISTRICT, SHENZHEN,
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Factory..... : KHADAS TECHNOLOGY CO., LTDAddress..... : 2709 QIANCHENG CENTER, HAICHENG ROAD,
XIXIANG STREET, BAO' AN DISTRICT, SHENZHEN,
CHINA. 518101

Telephone..... : /

Fax..... : /

Test Result according to the standards on page 6: Positive

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.



Shenzhen LCS Compliance Testing Laboratory Ltd.

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Scan code to check authenticity



Revision History

Revision	Issue Date	Revisions Content	Revised By
000	February 21, 2023	Initial Issue	/





TABLE OF CONTENT

Test Report Description	Page
1. SUMMARY OF STANDARDS AND RESULTS	6
1.1.Description of Standards and Results.....	6
2. GENERAL INFORMATION	7
2.1.Description of Device (EUT).....	7
2.2.Description of Test Facility	7
2.3.Statement of the Measurement Uncertainty	7
2.4. Support Equipment List.....	7
2.5.Measurement Uncertainty.....	8
3.TEST RESULTS	9
3.1.POWER LINE CONDUCTED EMISSION MEASUREMENT	9
3.2 RADIATED EMISSION MEASUREMENT.....	15
4. PHOTOGRAPHS OF TEST SETUP	21
5. EXTERNAL AND INTERNAL PHOTOS OF THE EUT	22





1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	J55032 (H29)	class B	PASS
Conducted disturbance at telecommunication port	J55032 (H29)	class B	N/A
Radiated disturbance	J55032 (H29)	class B	PASS
N/A is an abbreviation for Not Applicable.			

Test mode:		
Mode	Working	Record





2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : Edge2 ARM PC

Trade Mark : Khadas

Test Model : K1011

Power Supply : Type-C Input: 5V \pm 3A 9V \pm 2.67A 12V \pm 2A
Output: USB 1: 5V \pm 1300mA
USB 2: 5V \pm 1500mA

Highest internal freq. : Fx>108MHz

2.2. Description of Test Facility

Site Description

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

2.3. Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

2.4. Support Equipment List

Name	Manufacturers	M/N	S/N
Adapter	OPPO	OP52KAUH	--
TV	PHILIPS	32PHF6395/T3	XM1A2119003731





2.5.Measurement Uncertainty

Test	Parameters	Expanded Uncertainty (Ulab)	Expanded Uncertainty (Ucispr)
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 2.63 dB ± 2.35 dB	± 3.8 dB ± 3.4 dB
Power Disturbance	Level accuracy (30MHz to 300MHz)	± 2.90 dB	± 4.5 dB
Electromagnetic Radiated Emission (3-loop)	Level accuracy (9kHz to 30MHz)	± 3.60 dB	± 3.3 dB
Radiated Emission	Level accuracy (9kHz to 30MHz)	± 3.68 dB	N/A
Radiated Emission	Level accuracy (30MHz to 1000MHz)	± 3.48 dB	± 5.3 dB
Radiated Emission	Level accuracy (above 1000MHz)	± 3.90 dB	± 5.2 dB

(1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

(2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.





3.TEST RESULTS

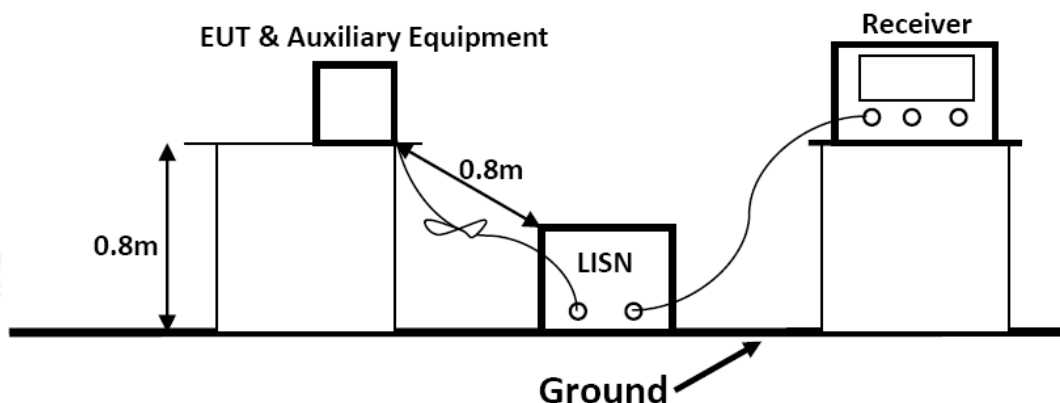
3.1.POWER LINE CONDUCTED EMISSION MEASUREMENT

3.1.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	Farad	EZ	/	N/A	N/A
2	EMI Test Receiver	R&S	ESR3	102312	2023-02-17	2024-02-16
3	Artificial Mains	R&S	ENV216	101288	2022-06-16	2023-06-15
4	Pulse Limiter	R&S	ESH3-Z2	102750-NB	2022-08-17	2023-08-16

3.1.2.Block Diagram of Test Setup



3.1.3.Test Standard

J55032 (H29)

Power Line Conducted Emission Limits (Class B)

Frequency (MHz)	Limit (dB μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

NOTE1-The lower limit shall apply at the transition frequencies.

NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.





3.1.4.EUT Configuration on Test

The following equipments are installed on Conducted Emission Measurement to see

J55032 requirements and operating in a manner which tends to maximize its emission characteristics in normal application.

3.1.5.Operating Condition of EUT

3.1.5.1.Setup the EUT as shown on Section 3.1.1.

3.1.5.2.Turn on the power of all equipments.

3.1.5.3.Let the EUT work in measuring mode 1 and measure it.

3.1.6.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided 50-ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the J55032 regulations during conducted emission measurement.

The bandwidth of the field strength meter is set at 9kHz in 150kHz~30MHz.

The frequency range from 150kHz to 30MHz is investigated

3.1.7.Test Results

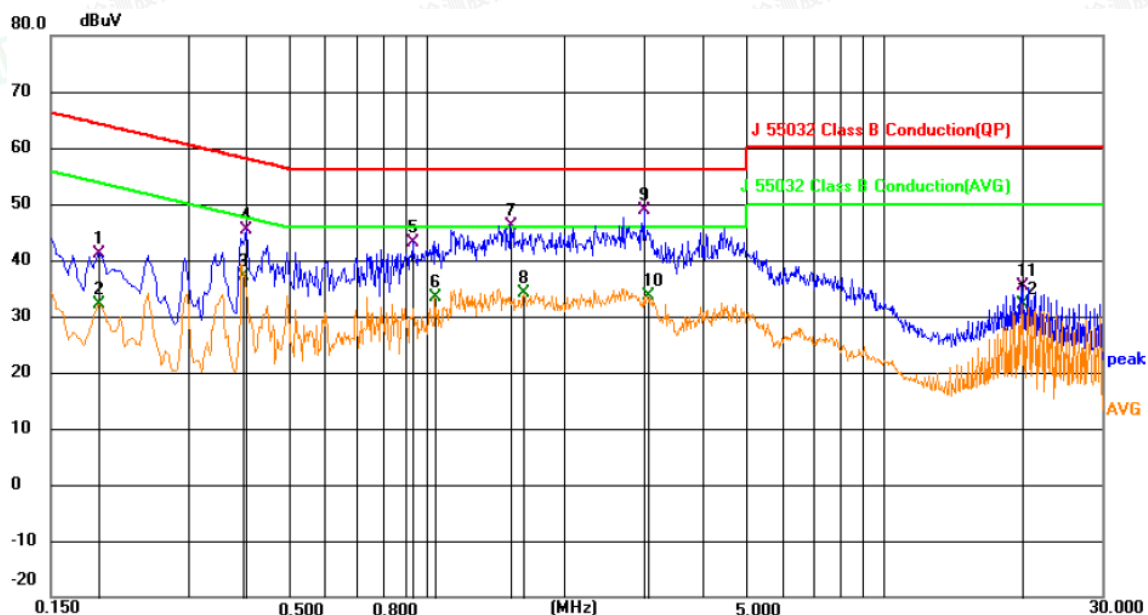
PASS.

The test result please refer to the next page.





Test Model	K1011	Test Mode	Working
Environmental Conditions	22.5℃, 53.7% RH	Test Engineer	Hy Luo
Pol	Line	Test Voltage	AC 100V/50Hz

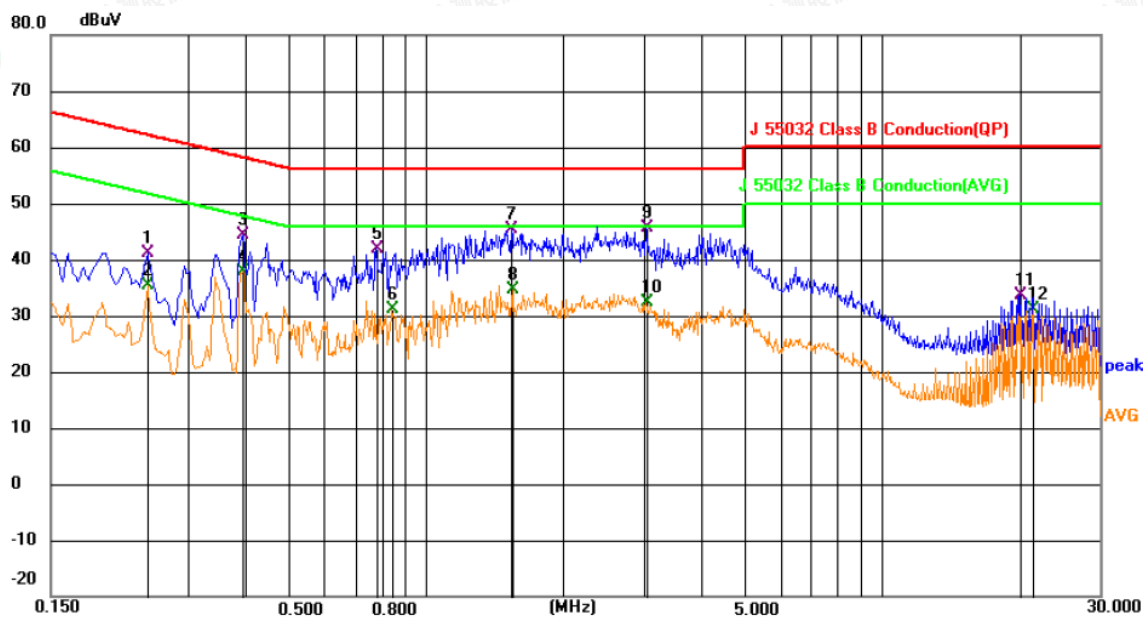


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1906	21.56	19.63	41.19	64.01	-22.82	QP	
2		0.1906	12.53	19.63	32.16	54.01	-21.85	AVG	
3		0.3976	17.40	19.63	37.03	47.90	-10.87	AVG	
4		0.4021	25.67	19.63	45.30	57.81	-12.51	QP	
5		0.9330	23.60	19.65	43.25	56.00	-12.75	QP	
6		1.0410	13.72	19.65	33.37	46.00	-12.63	AVG	
7		1.5270	26.50	19.67	46.17	56.00	-9.83	QP	
8		1.6305	14.49	19.67	34.16	46.00	-11.84	AVG	
9	*	2.9851	29.13	19.68	48.81	56.00	-7.19	QP	
10		3.0391	14.00	19.70	33.70	46.00	-12.30	AVG	
11		19.9501	15.11	20.21	35.32	60.00	-24.68	QP	
12		19.9501	11.91	20.21	32.12	50.00	-17.88	AVG	





Test Model	K1011	Test Mode	Working
Environmental Conditions	22.5°C, 53.7% RH	Test Engineer	Hy Luo
Pol	Neutral	Test Voltage	AC 100V/50Hz

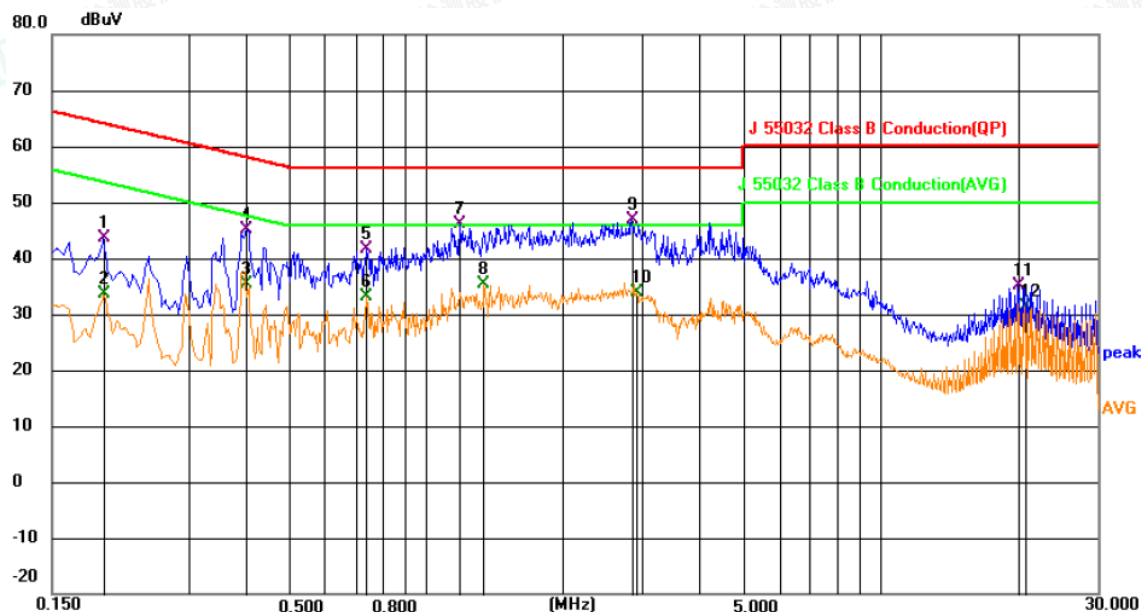


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	dBuV	Factor	ment	dBuV	dB	Detector	Comment
1		0.2446	21.59	19.63	41.22	61.94	-20.72	QP	
2		0.2446	15.79	19.63	35.42	51.94	-16.52	AVG	
3		0.3976	24.81	19.63	44.44	57.90	-13.46	QP	
4	*	0.3976	18.13	19.63	37.76	47.90	-10.14	AVG	
5		0.7755	22.21	19.64	41.85	56.00	-14.15	QP	
6		0.8430	11.38	19.64	31.02	46.00	-14.98	AVG	
7		1.5360	25.64	19.67	45.31	56.00	-10.69	QP	
8		1.5494	15.01	19.67	34.68	46.00	-11.32	AVG	
9		3.0391	25.90	19.75	45.65	56.00	-10.35	QP	
10		3.0391	12.69	19.75	32.44	46.00	-13.56	AVG	
11		19.9501	13.43	20.21	33.64	60.00	-26.36	QP	
12		21.5881	11.09	20.12	31.21	50.00	-18.79	AVG	





Test Model	K1011	Test Mode	Working
Environmental Conditions	22.5°C, 53.7% RH	Test Engineer	Hy Luo
Pol	Line	Test Voltage	AC 100V/60Hz

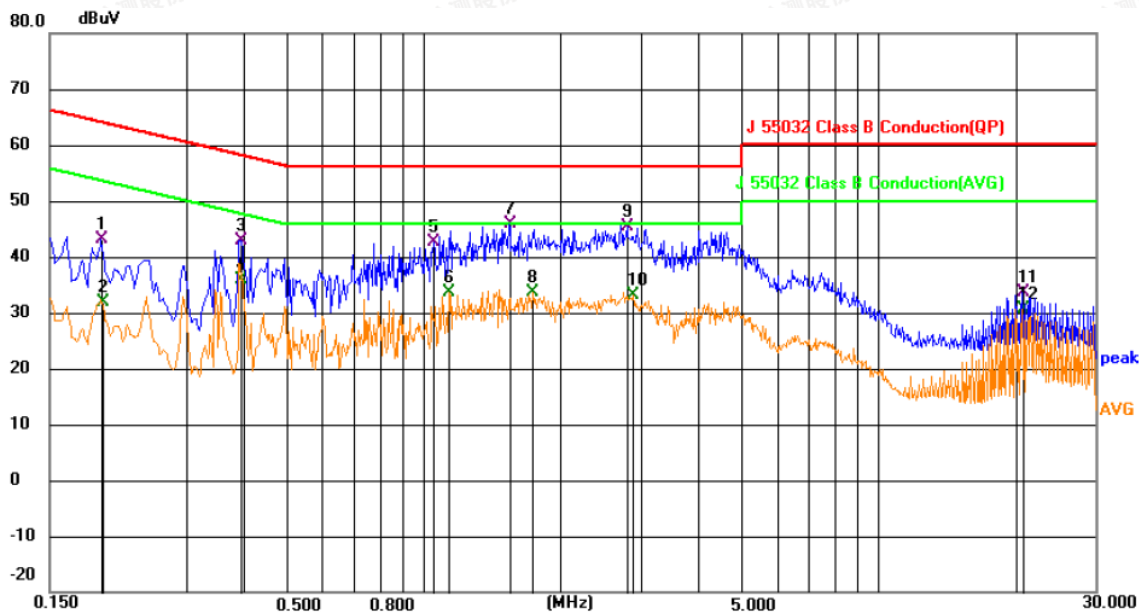


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1951	23.97	19.63	43.60	63.82	-20.22	QP	
2		0.1951	14.08	19.63	33.71	53.82	-20.11	AVG	
3		0.3997	15.83	19.63	35.46	47.86	-12.40	AVG	
4		0.4021	25.39	19.63	45.02	57.81	-12.79	QP	
5		0.7395	21.91	19.65	41.56	56.00	-14.44	QP	
6		0.7395	13.58	19.65	33.23	46.00	-12.77	AVG	
7		1.1849	26.40	19.66	46.06	56.00	-9.94	QP	
8		1.3425	15.61	19.66	35.27	46.00	-10.73	AVG	
9	*	2.8276	27.29	19.68	46.97	56.00	-9.03	QP	
10		2.9041	14.31	19.68	33.99	46.00	-12.01	AVG	
11		19.9546	15.03	20.21	35.24	60.00	-24.76	QP	
12		20.7736	11.23	20.16	31.39	50.00	-18.61	AVG	





Test Model	K1011	Test Mode	Working
Environmental Conditions	22.5°C, 53.7% RH	Test Engineer	Hy Luo
Pol	Neutral	Test Voltage	AC 100V/60Hz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1951	23.46	19.63	43.09	63.82	-20.73	QP	
2		0.1954	12.30	19.63	31.93	53.80	-21.87	AVG	
3		0.3976	23.29	19.63	42.92	57.90	-14.98	QP	
4		0.3976	16.22	19.63	35.85	47.90	-12.05	AVG	
5		1.0500	23.06	19.65	42.71	56.00	-13.29	QP	
6		1.1400	13.91	19.65	33.56	46.00	-12.44	AVG	
7	*	1.5405	26.27	19.67	45.94	56.00	-10.06	QP	
8		1.7430	13.89	19.67	33.56	46.00	-12.44	AVG	
9		2.8006	25.63	19.72	45.35	56.00	-10.65	QP	
10		2.8906	13.37	19.72	33.09	46.00	-12.91	AVG	
11		20.7781	13.48	20.16	33.64	60.00	-26.36	QP	
12		20.7781	10.59	20.16	30.75	50.00	-19.25	AVG	





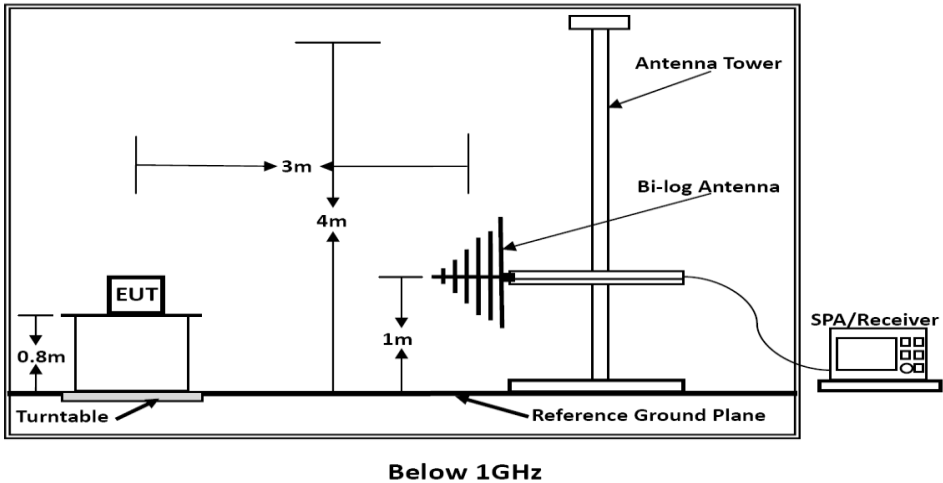
3.2 RADIATED EMISSION MEASUREMENT

3.2.1. Test Equipment

The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	AUDIX	E3	/	N/A	N/A
2	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2021-09-12	2024-09-11
3	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2021-09-05	2024-09-04
4	EMI Test Receiver	R&S	ESR3	102311	2022-08-17	2023-08-16
5	Broadband Preamplifier	/	BP-01M18G	P190501	2022-06-16	2023-06-15

3.2.2. Block Diagram of Test Setup



3.2.3. Measuring Standard

J55032 (H29)





3.2.4. Radiated Emission Limits

J55032 Limits:

All emanations from a class B device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

Limits for Radiated Emission Below 1GHz			
Frequency (MHz)	Distance (Meters)	Field Strengths Limit (dBμV/m)	
30 ~ 230	3	40	
230 ~ 1000	3	47	
***Note:			
(1) The smaller limit shall apply at the combination point between two frequency bands.			
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.			
Limits for Radiated Emission Above 1GHz			
Frequency (MHz)	Distance (Meters)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)
1000 ~ 3000	3	70	50
3000 ~ 6000	3	74	54
***Note: The lower limit applies at the transition frequency.			

3.2.5. EUT Configuration on Test

The VCCI regulations test method must be used to find the maximum emission during radiated emission measurement.

3.2.6. Operating Condition of EUT

3.2.6.1. Turn on the power.

3.2.6.2. After that, let the EUT work in test Mode 1 and measure it.

3.2.7. Test Procedure

The EUT is placed on a turntable, which is 0.8 meter high above the ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. By-log antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.

The bandwidth of the Receiver is set at RBW/VBW 120KHz/300KHz.

The frequency range from 30MHz to 1000MHz is investigated.

The bandwidth of the Receiver is set at RBW/VBW 1MHz/3MHz.

The frequency range from 1000MHz to 6000MHz is investigated.

3.2.8. Test Results

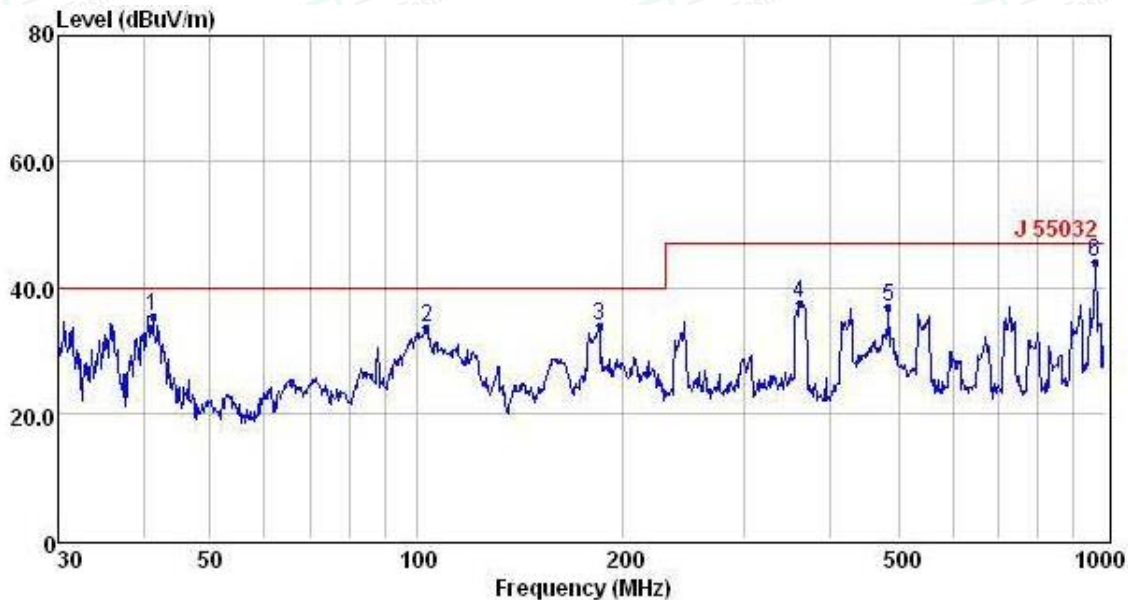
PASS.

The test result please refer to the next page.





Test Model	K1011	Test Mode	Working
Environmental Conditions	22.3°C, 53% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	XF Peng	Test Voltage	AC 100V/50Hz



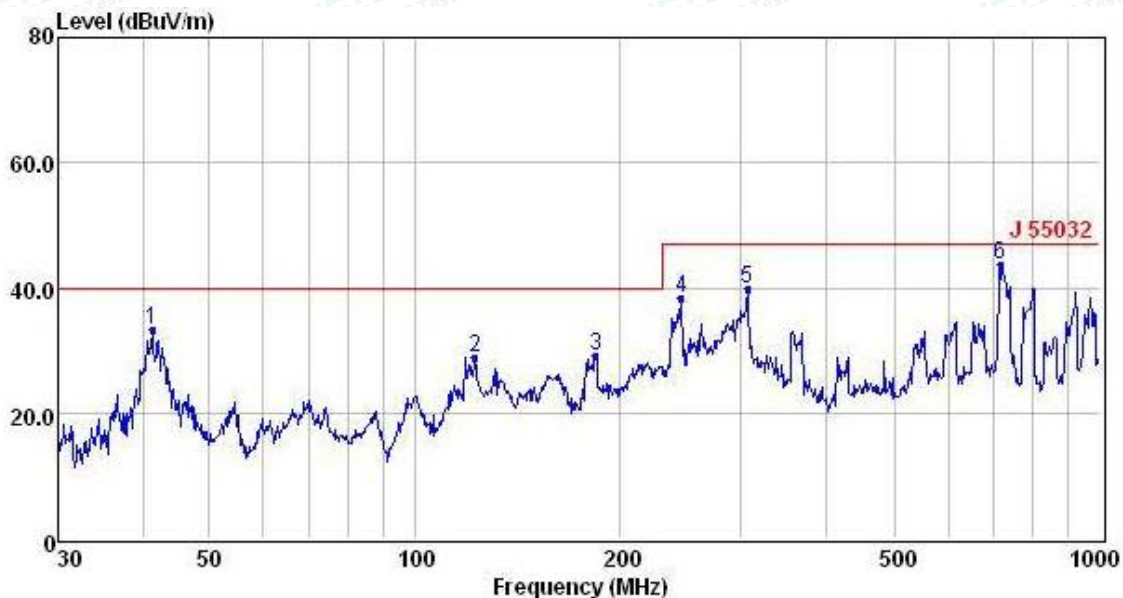
	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	41.28	23.44	0.52	11.47	35.43	40.00	-4.57	QP
2	103.44	21.95	0.82	10.95	33.72	40.00	-6.28	QP
3	184.49	22.58	1.15	10.03	33.76	40.00	-6.24	QP
4	361.71	21.30	1.37	14.71	37.38	47.00	-9.62	QP
5	483.91	18.98	1.49	16.46	36.93	47.00	-10.07	QP
6	968.93	20.26	2.17	21.58	44.01	47.00	-2.99	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that are 20db below the official limit are not reported





Test Model	K1011	Test Mode	Working
Environmental Conditions	22.3°C, 53% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	XF Peng	Test Voltage	AC 100V/50Hz



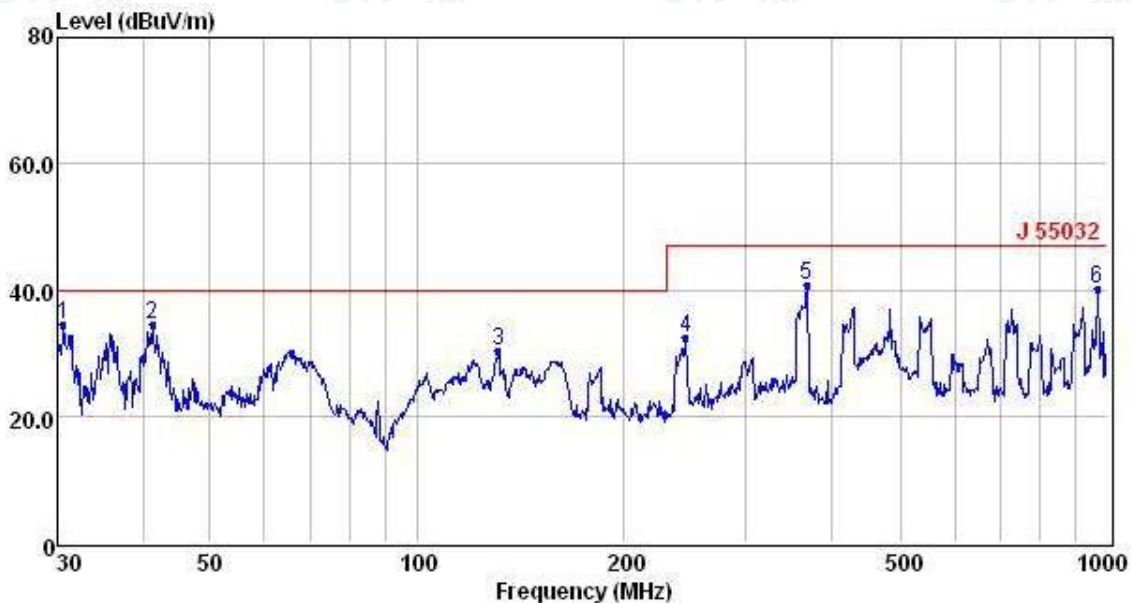
	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	41.28	21.36	0.52	11.47	33.35	40.00	-6.65	QP
2	122.40	17.69	0.92	10.30	28.91	40.00	-11.09	QP
3	183.84	17.99	1.15	10.00	29.14	40.00	-10.86	QP
4	245.95	24.82	1.26	12.32	38.40	47.00	-8.60	QP
5	306.75	24.92	1.32	13.64	39.88	47.00	-7.12	QP
6	716.68	22.71	1.84	19.04	43.59	47.00	-3.41	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that are 20db below the official limit are not reported





Test Model	K1011	Test Mode	Working
Environmental Conditions	22.3°C, 53% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	XF Peng	Test Voltage	AC 100V/60Hz



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	30.64	23.40	0.41	10.64	34.45	40.00	-5.55	QP
2	41.28	22.44	0.52	11.47	34.43	40.00	-5.57	QP
3	131.30	20.23	0.96	9.28	30.47	40.00	-9.53	QP
4	245.95	18.79	1.26	12.32	32.37	47.00	-14.63	QP
5	368.11	24.65	1.38	14.61	40.64	47.00	-6.36	QP
6	968.93	16.26	2.17	21.58	40.01	47.00	-6.99	QP

Note: 1. All readings are Quasi-peak values.

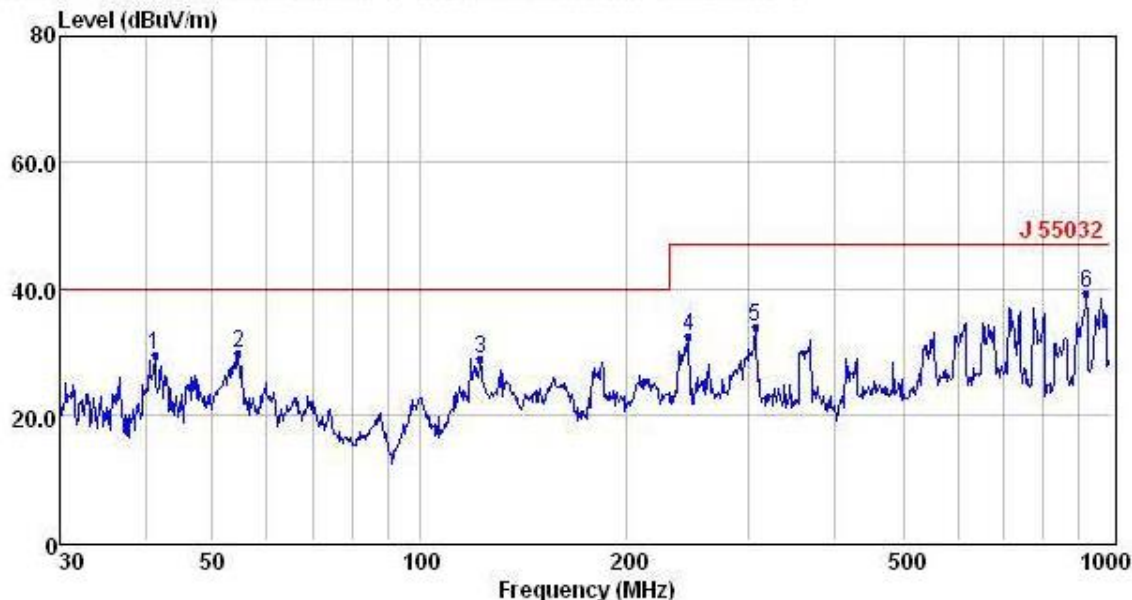
2. Measured= Reading + Antenna Factor + Cable Loss

3. The emission that are 20db below the official limit are not reported





Test Model	K1011	Test Mode	Working
Environmental Conditions	22.3°C, 53% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	XF Peng	Test Voltage	AC 100V/60Hz



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	41.28	17.36	0.52	11.47	29.35	40.00	-10.65	QP
2	54.45	16.47	0.62	12.55	29.64	40.00	-10.36	QP
3	122.40	17.69	0.92	10.30	28.91	40.00	-11.09	QP
4	245.95	18.82	1.26	12.32	32.40	47.00	-14.60	QP
5	306.75	18.92	1.32	13.64	33.88	47.00	-13.12	QP
6	922.52	15.48	2.12	21.75	39.35	47.00	-7.65	QP

Note: 1. All readings are Quasi-peak values.

2. Measured= Reading + Antenna Factor + Cable Loss

3. The emission that are 20db below the official limit are not reported

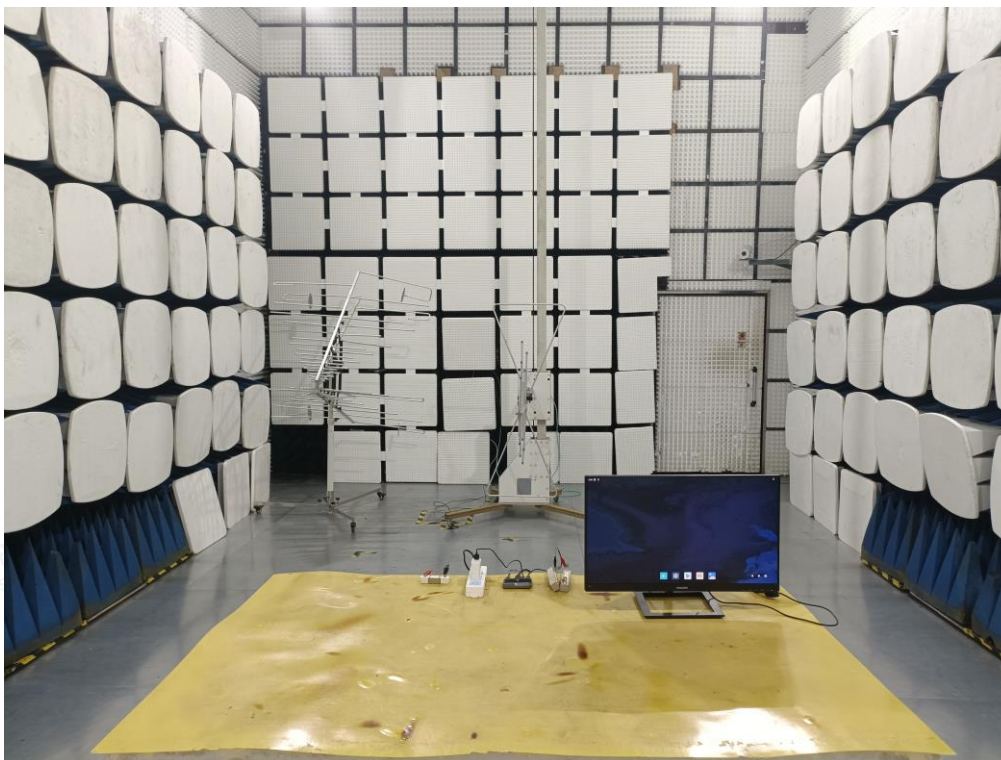


4. PHOTOGRAPHS OF TEST SETUP

4.1. Photo of Power Line Conducted Measurement



4.2. Photo of Radiated Measurement



5. EXTERNAL AND INTERNAL PHOTOS OF THE EUT



Fig. 1

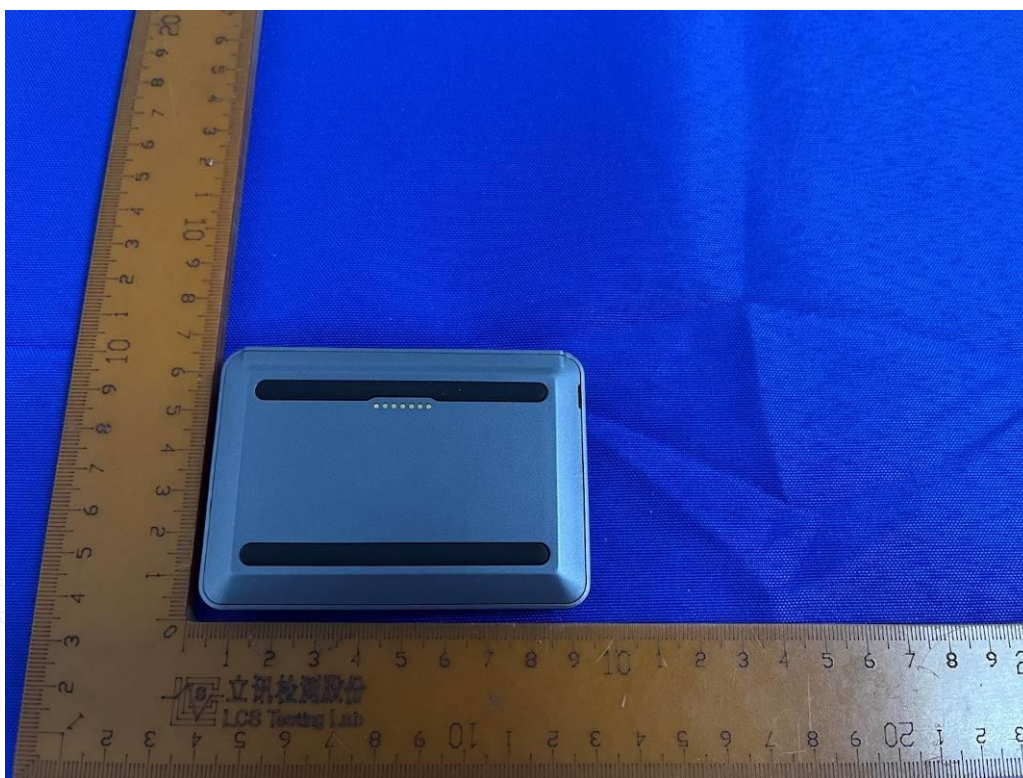


Fig. 2



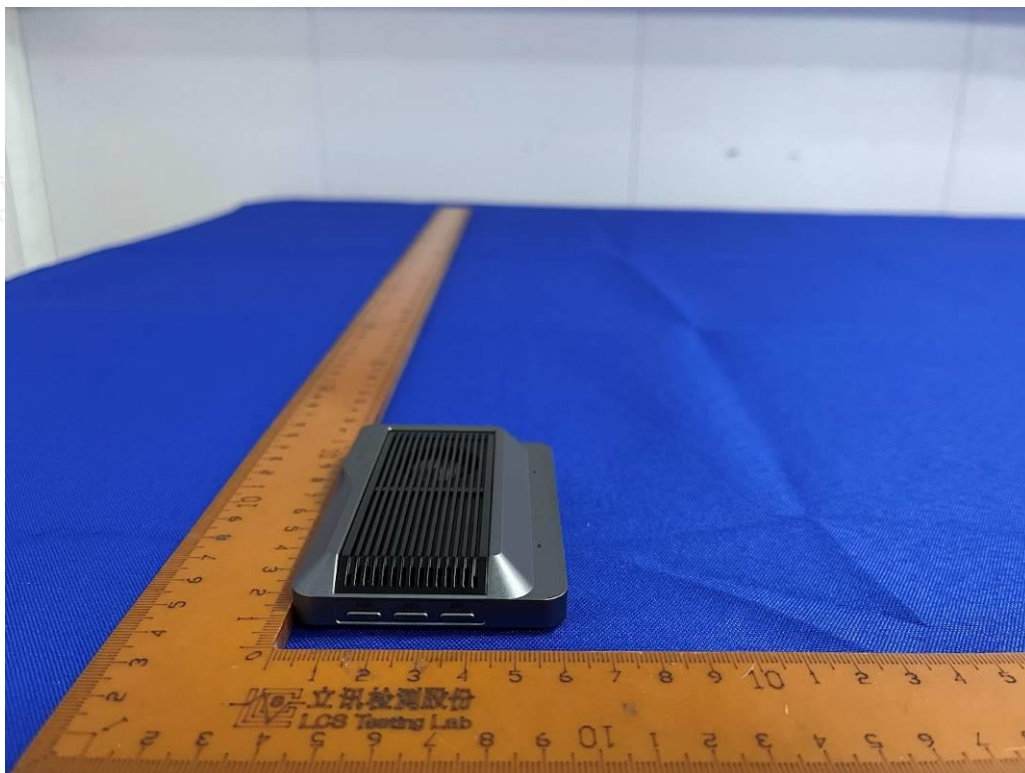


Fig. 3

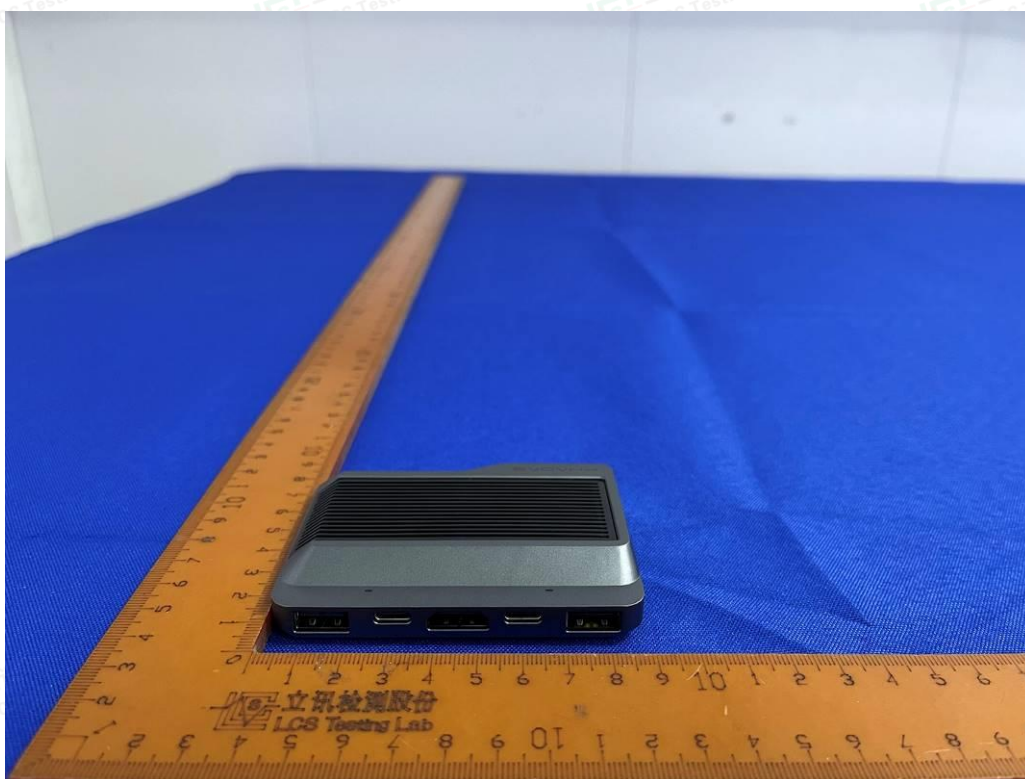


Fig. 4



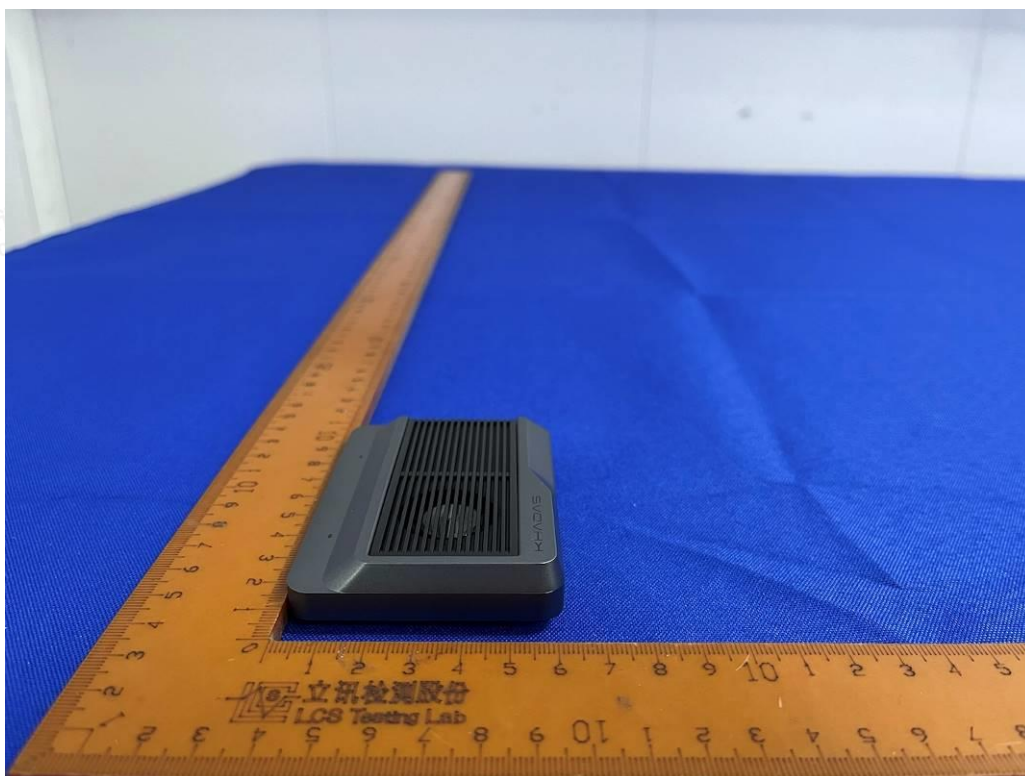


Fig. 5

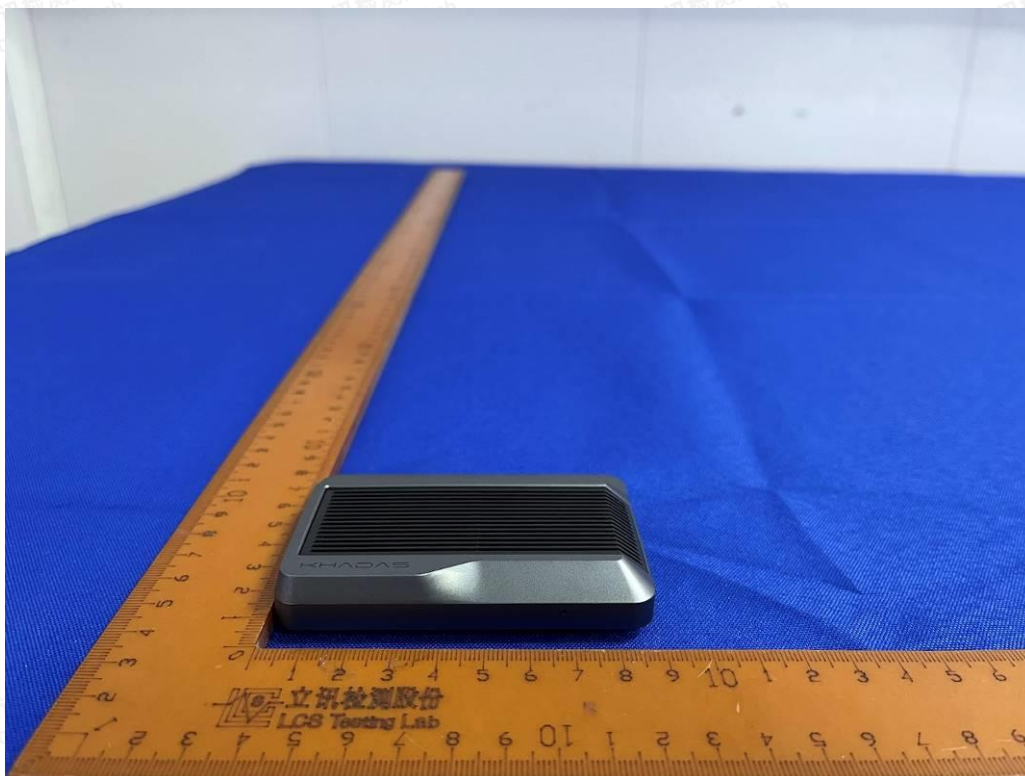


Fig. 6





Fig. 7

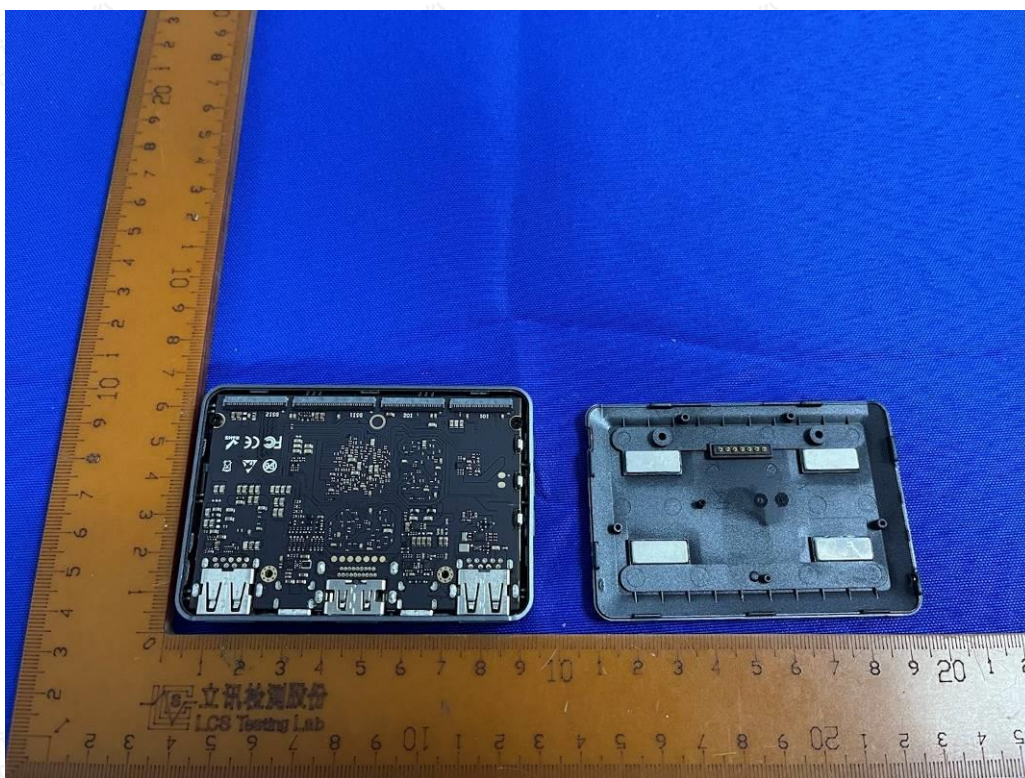


Fig. 8



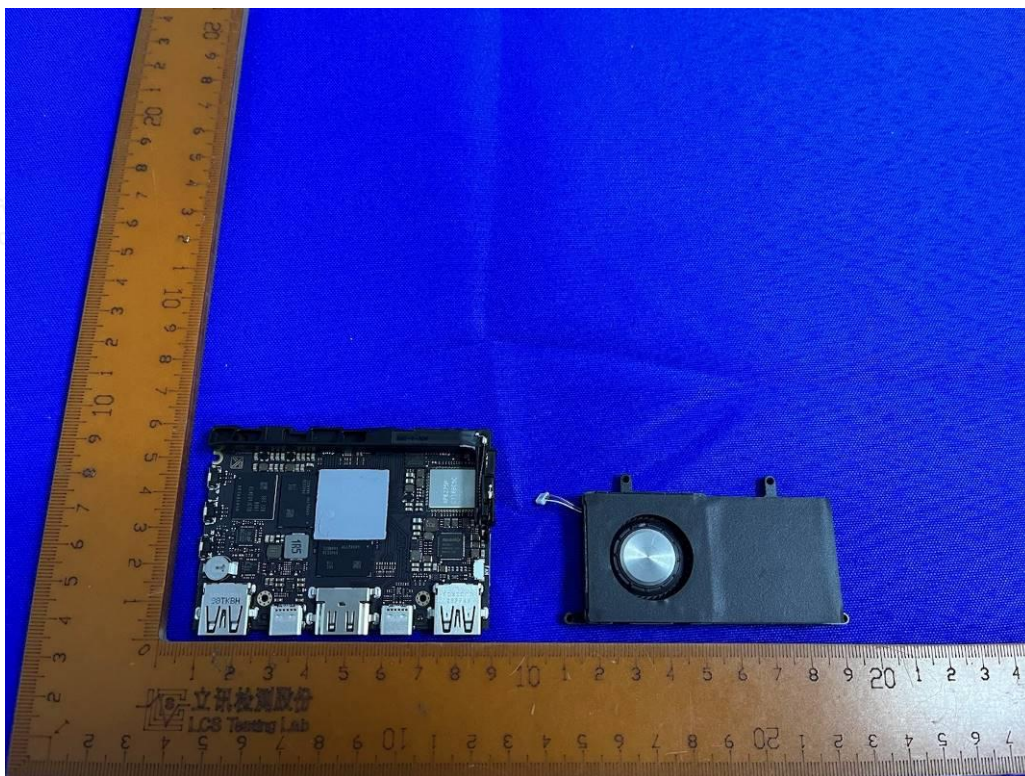


Fig. 9

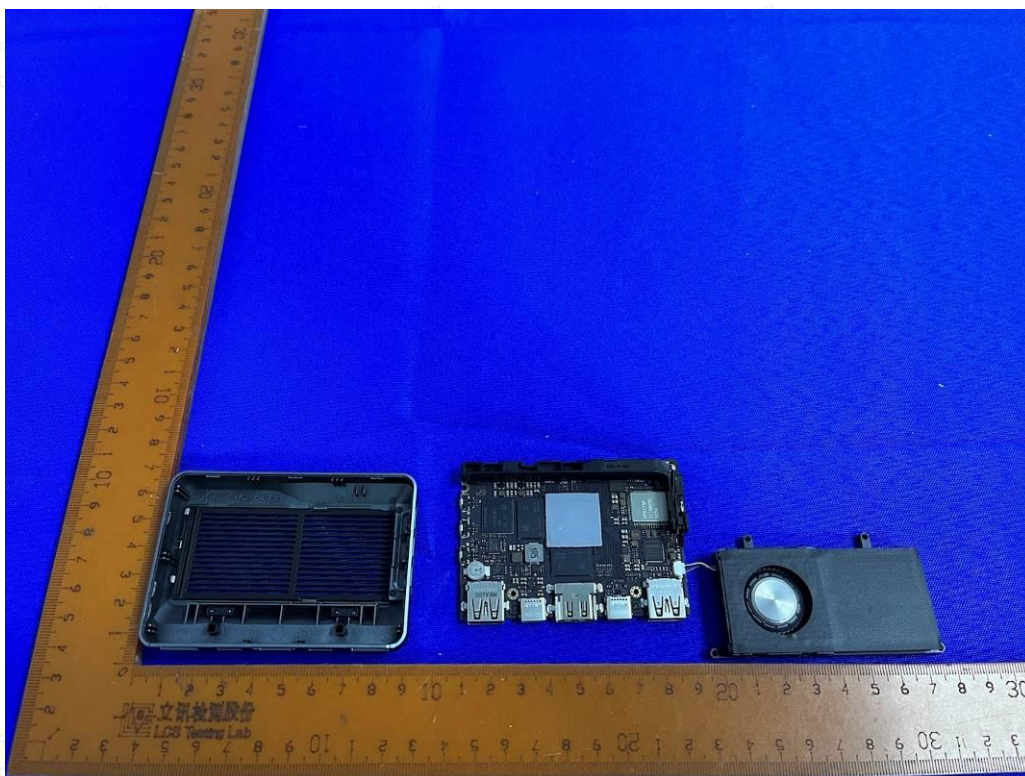


Fig. 10



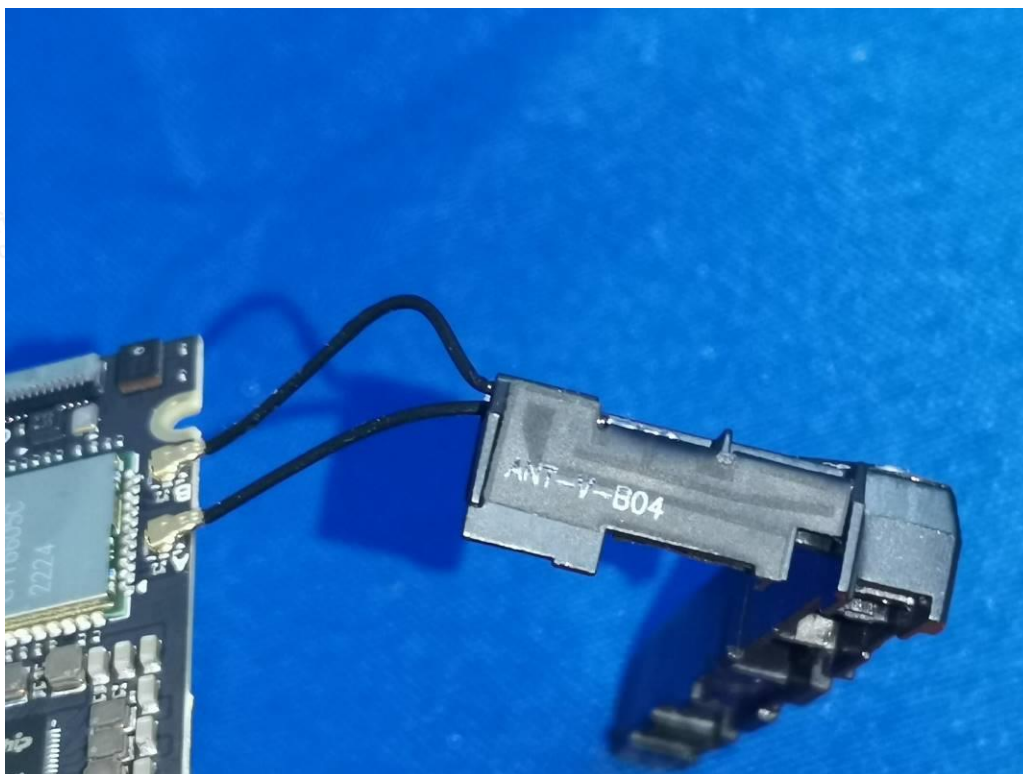


Fig. 11

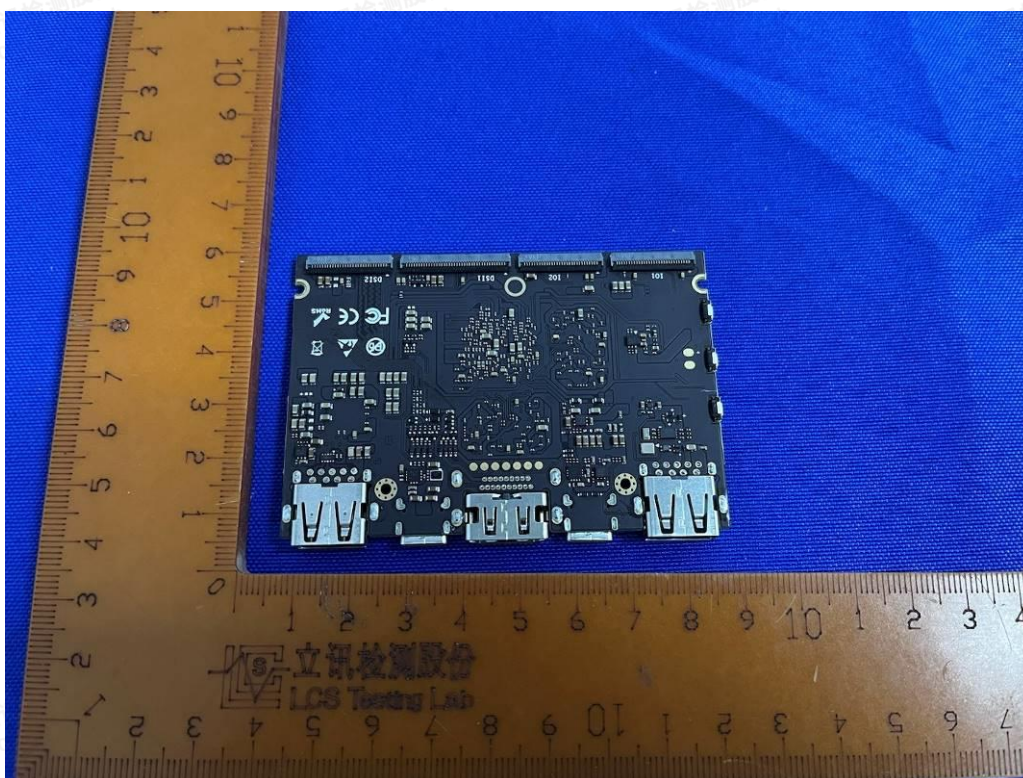


Fig. 12



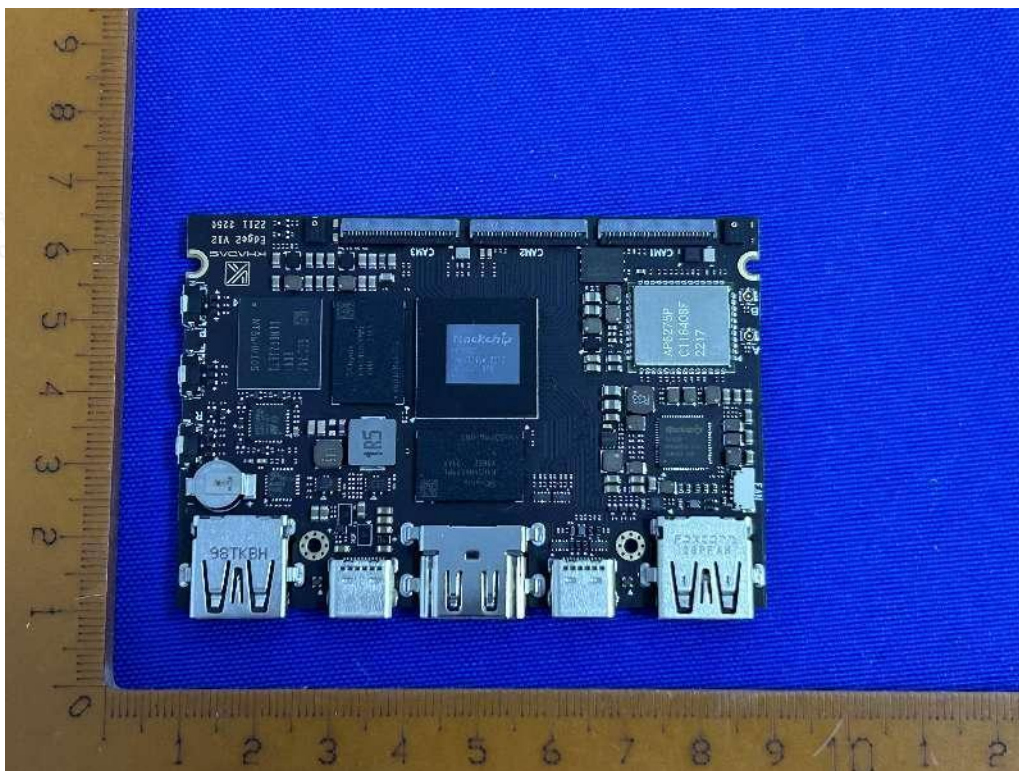


Fig. 13

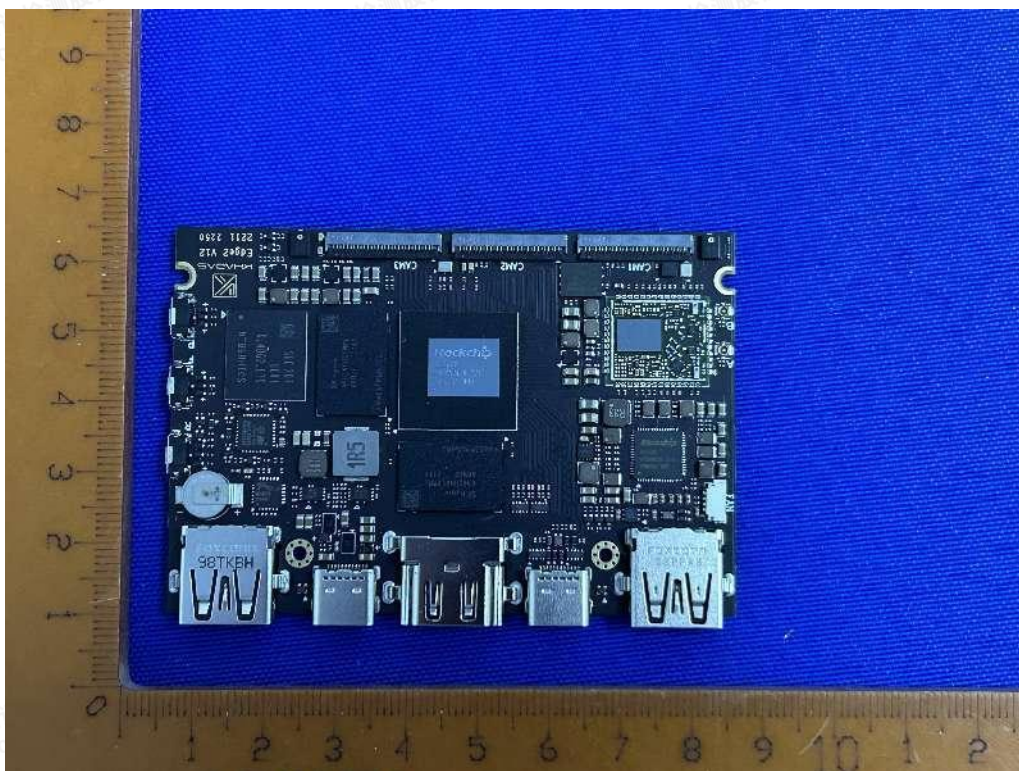


Fig. 14



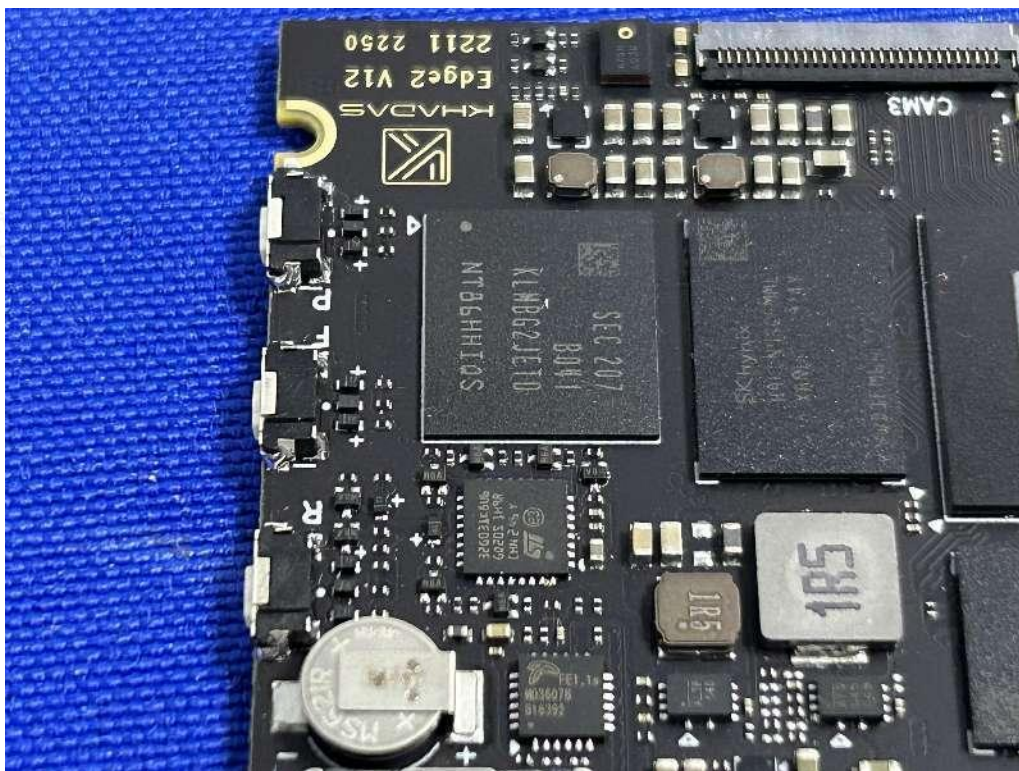


Fig. 15

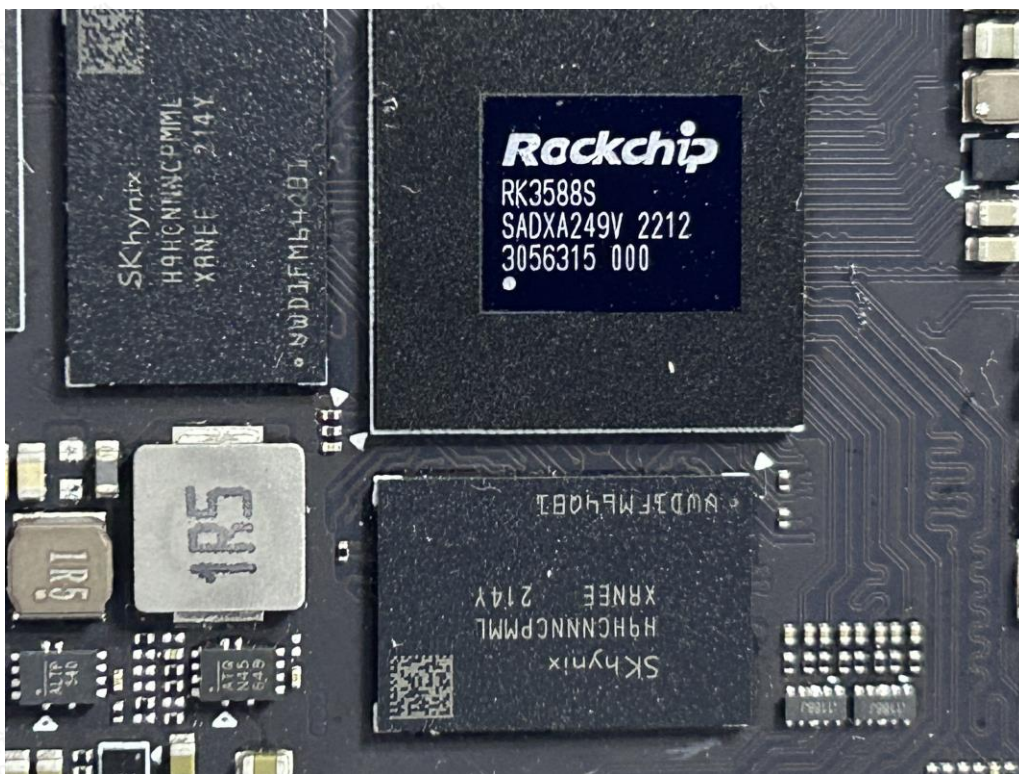


Fig. 16



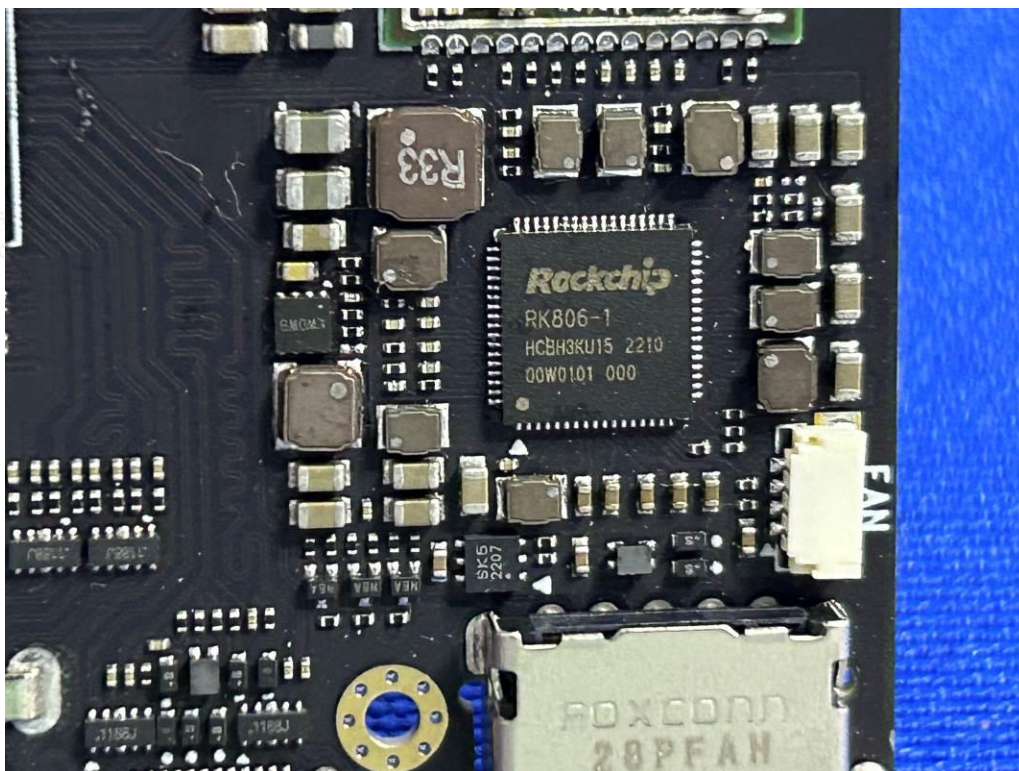


Fig. 17

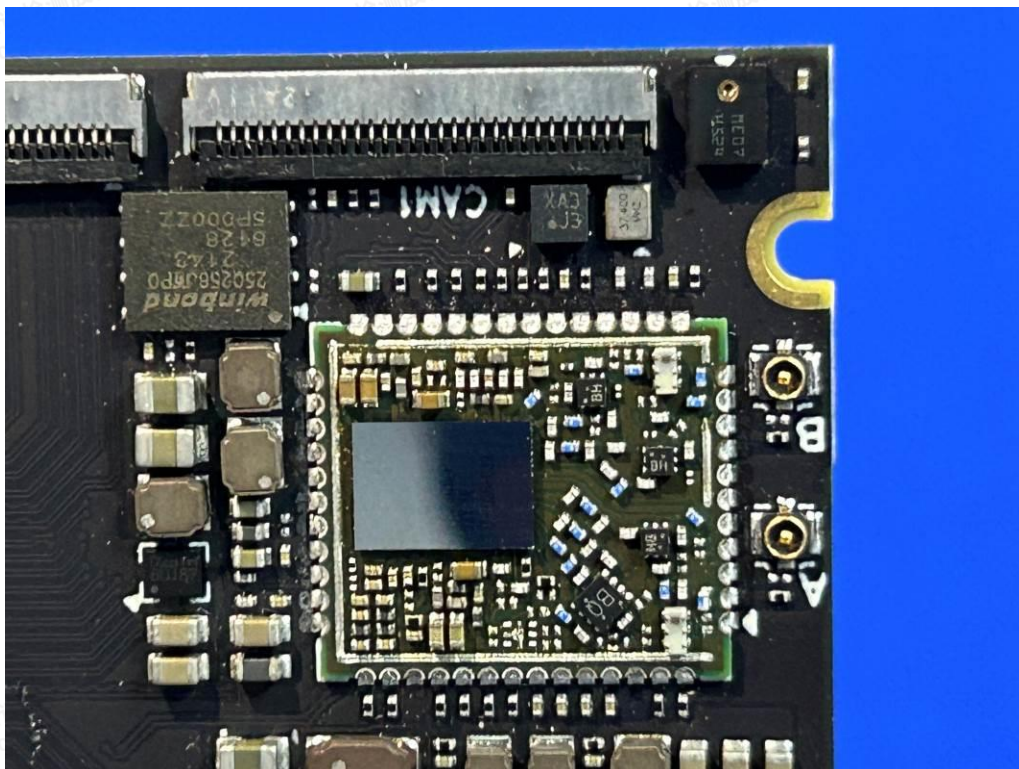


Fig. 18



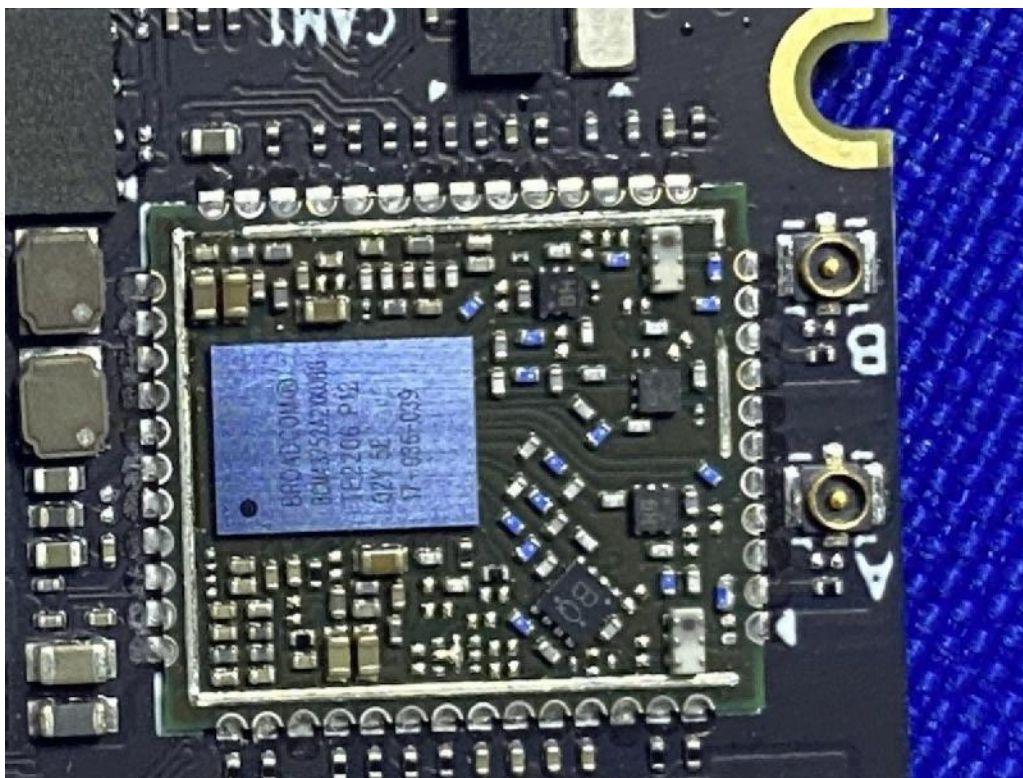


Fig. 19



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

