FCC SDoC TEST REPORT

Xiamen RGBlink Science & Technology Co.,Ltd.

TAO 1pro

Test Model: TAO 1pro

Additional Model No.: Please Refer To Page 7

Prepared for	:	Xiamen RGBlink Science & Technology Co.,Ltd.
Address	:	S603、604 Weiye Building Torch Hi-Tech Industrial Development Zone, Xiamen city, Fujian Province
Prepared by	:	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
Tel	:	(+86)755-82591330
Fax	:	(+86)755-82591332
Web	:	www.LCS-cert.com
Mail	:	webmaster@LCS-cert.com
Date of receipt of test sample	:	July 07, 2021
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	July 07, 2021 ~ July 23, 2021
Date of Report	:	July 26, 2021

FCC SDoC TEST REPORT
FCC 47 CFR Part 15 Subpart B, Class B(SDoC), ANSI C63.4 -2014

Report Reference No.	**: LCS210707032AE**
Date Of Issue	: July 26, 2021
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.....	**: Xiamen RGBlink Science & Technology Co.,Ltd.**
Address	: S603、604 Weiye Building Torch Hi-Tech Industrial Development Zone, Xiamen city, Fujian Province
Test Specification	
Standard.....	: FCC 47 CFR Part 15 Subpart B, Class B(SDoC), ANSI C63.4 -2014
Test Report Form No.....	: LCSEMC-1.0
TRF Originator.....	: Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF.....	: Dated 2011-03

Test Item Description.	**: TAO 1pro**
Trade Mark	: RGBlink
Test Model.....	: TAO 1pro
Ratings	: DC 12V, 1500mA, 18W
Result	**: Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Emma Wang	Baron Wen	Gavin Liang
Emma Wang/ File administrators	Baron Wen/Technique principal	Gavin Liang/ Manager

FCC -- TEST REPORT

Test Report No. : LCS210707032AE	July 26, 2021 Date of issue

Test Model	: TAO 1pro
EUT.....	: TAO 1pro
Applicant.....	**: Xiamen RGBlink Science & Technology Co.,Ltd.**
Address.....	: S603、604 Weiye Building Torch Hi-Tech Industrial Development Zone, Xiamen city, Fujian Province
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: Xiamen RGBlink Science & Technology Co.,Ltd.**
Address.....	: S603、604 Weiye Building Torch Hi-Tech Industrial Development Zone, Xiamen city, Fujian Province
Telephone.....	: /
Fax.....	: /
Factory.....	**: Xiamen RGBlink Science & Technology Co.,Ltd.**
Address.....	: 5th floor, 205 Xinfeng Road, Huli District, Xiamen city, Fujian Province
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.

Revision History

Revision	Issue Date	Revisions	Revised By
000	July 26, 2021	Initial Issue	Gavin Liang

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Test Report Description Page

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	FCC 47 CFR Part 15 Subpart B, Class B(SDoC), ANSI C63.4 -2014	Class B	PASS
Radiated disturbance	FCC 47 CFR Part 15 Subpart B, Class B(SDoC), ANSI C63.4 -2014	Class B	PASS
N/A is an abbreviation for Not Applicable.			

Test mode:		
Mode 1	HDMI	Record
Mode 2	USB	Record
***Note: All test modes were tested, but we only recorded the worst case in this report.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	TAO 1pro
Trade Mark	:	RGBlink
Test Model	:	TAO 1pro
Additional Model	:	TAO 1tiny, TAO 1nano, TAO 1nano+WIFI, TAO 1mini, ASK nano, ASK Team, ASK pro, ASK Plus, ASK+, ASK, ASK 4K, ASK nano 4K, ASK 4K+, X5, X6, X8, X10, X12, X15, X16, X18, X20, X24, X28
Model Declaration	:	PCB board, structure and internal of these model(s) are t he same, So no additional models were tested
Power Supply	:	DC 12V, 1500mA, 18W
EUT Clock Frequency	:	≤108MHz

2.2. Support equipment List

Name	Manufacturers	M/N	S/N
TV	SONY	KDL-32W700B	2011083
PC	DELL	vostro15-7570	--

2.3. 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.

2.4. 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.

2.5. 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
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

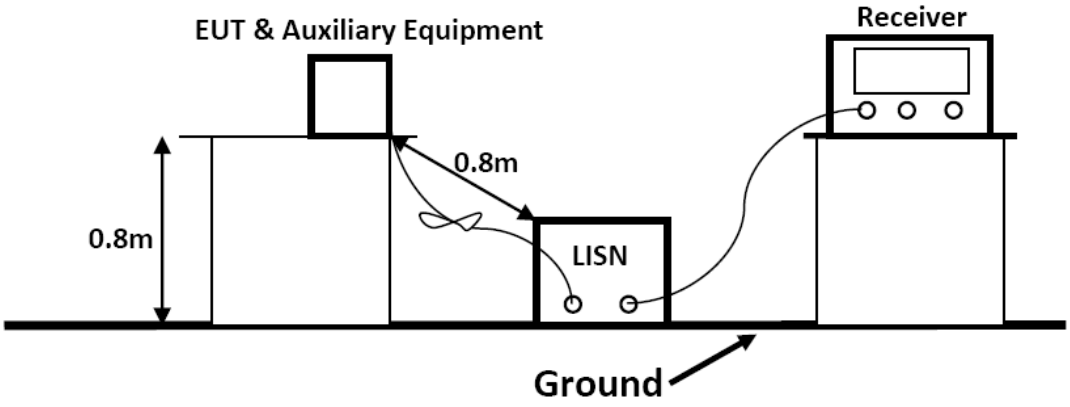
3.1. POWER LINE CONDUCTED EMISSION MEASUREMENT

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	EZ	EZ-EMC	/	N/A	N/A
2	EMI Test Receiver	R&S	ESR3	102312	2021-03-16	2022-03-15
3	Artificial Mains	R&S	ENV216	101119	2021-06-21	2022-06-20
4	10dB Attenuator	SCHWARZBECK	MTS-IMP-136	261115-001-0032	2021-06-21	2022-06-20

3.1.2.Block Diagram of Test Setup



3.1.3.Test Standard

Power Line Conducted Emission Limits (Class B)

Frequency (MHz)			Limit (dBμV)	
			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 Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

3.1.5.Operating Condition of EUT

3.1.5.1.Setup the EUT as shown on Section 3.1.2

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 system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2014 on Conducted Emission Measurement.

The bandwidth of the test receiver is set at 9kHz.

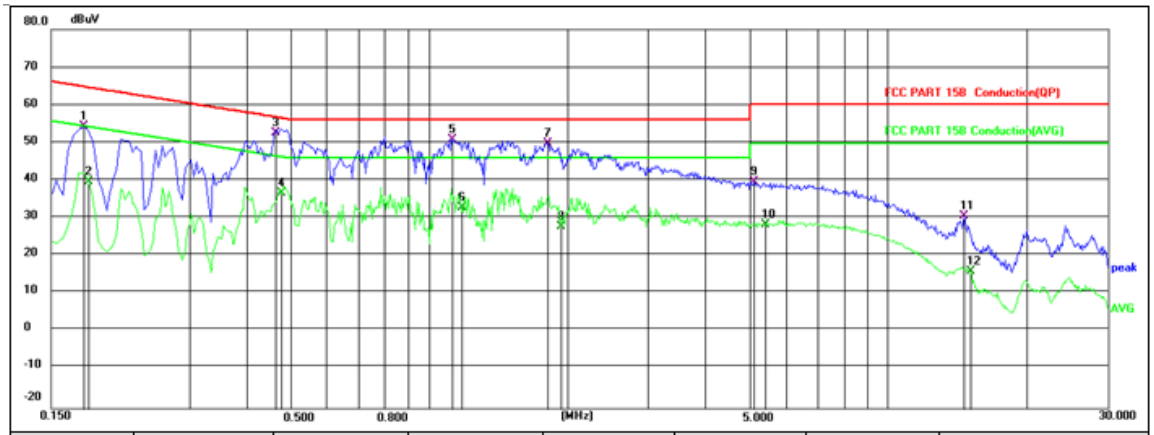
The frequency range from 150kHz to 30MHz is investigated

3.1.7.Test Results

PASS.

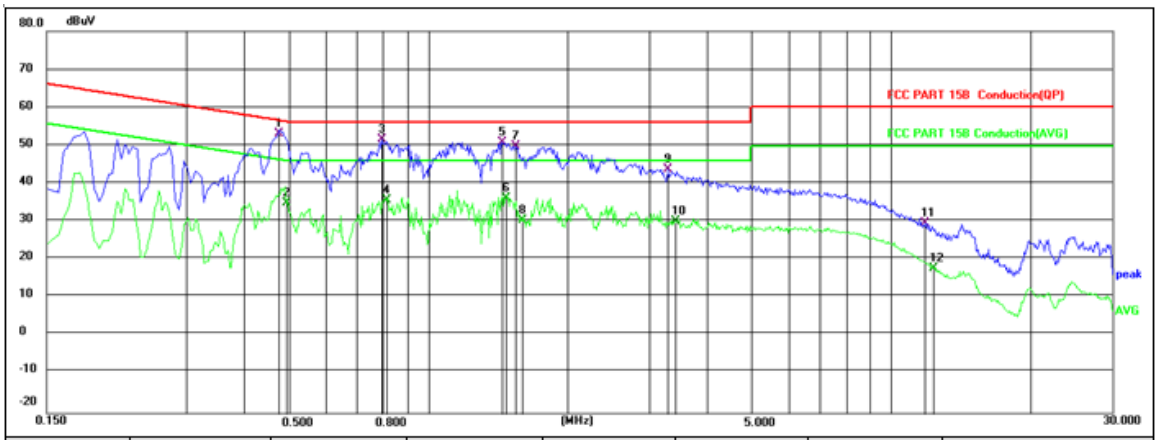
The test result please refer to the next page.

Test Model	TAO 1pro	Test Mode	Mode 1
Environmental Conditions	23.3℃, 53.7% RH	Test Engineer	Zq Pang
Pol	Line	Test Voltage	AC 120V/60Hz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1771	44.51	9.90	54.41	64.62	-10.21	QP
2	0.1816	29.81	9.90	39.71	54.41	-14.70	AVG
3	0.4651	42.82	9.91	52.73	56.60	-3.87	QP
4	0.4786	26.92	9.91	36.83	46.36	-9.53	AVG
5	1.1176	41.02	9.93	50.95	56.00	-5.05	QP
6	1.1761	23.18	9.94	33.12	46.00	-12.88	AVG
7	1.8016	39.88	9.96	49.84	56.00	-6.16	QP
8	1.9321	18.09	9.97	28.06	46.00	-17.94	AVG
9	5.0866	29.78	10.02	39.80	60.00	-20.20	QP
10	5.4106	18.36	10.03	28.39	50.00	-21.61	AVG
11	14.6446	20.18	10.53	30.71	60.00	-29.29	QP
12	15.0856	5.48	10.57	16.05	50.00	-33.95	AVG

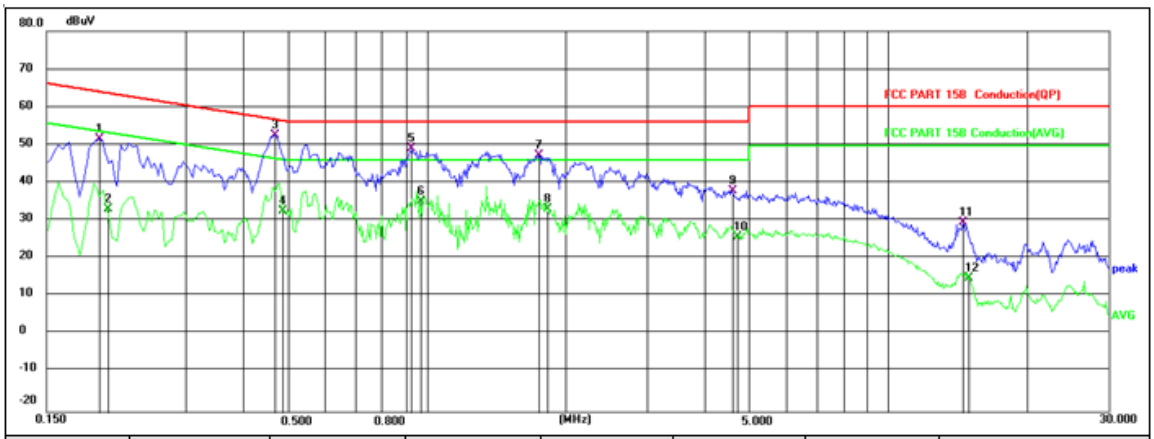
Test Model	TAO 1pro	Test Mode	Mode 1
Environmental Conditions	23.3℃, 53.7% RH	Test Engineer	Zq Pang
Pol	Neutral	Test Voltage	AC 120V/60Hz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.4761	43.17	9.90	53.07	56.41	-3.34	QP
2	0.4941	25.18	9.90	35.08	46.10	-11.02	AVG
3	0.7960	41.82	9.91	51.73	56.00	-4.27	QP
4	0.8088	25.95	9.91	35.86	46.00	-10.14	AVG
5	1.4409	40.96	9.94	50.90	56.00	-5.10	QP
6	1.4640	26.26	9.94	36.20	46.00	-9.80	AVG
7	1.5436	40.05	9.95	50.00	56.00	-6.00	QP
8	1.5935	20.59	9.95	30.54	46.00	-15.46	AVG
9	3.2930	33.88	9.99	43.87	56.00	-12.13	QP
10	3.3994	20.34	9.99	30.33	46.00	-15.67	AVG
11	11.8070	19.50	10.28	29.78	60.00	-30.22	QP
12	12.3182	7.59	10.33	17.92	50.00	-32.08	AVG

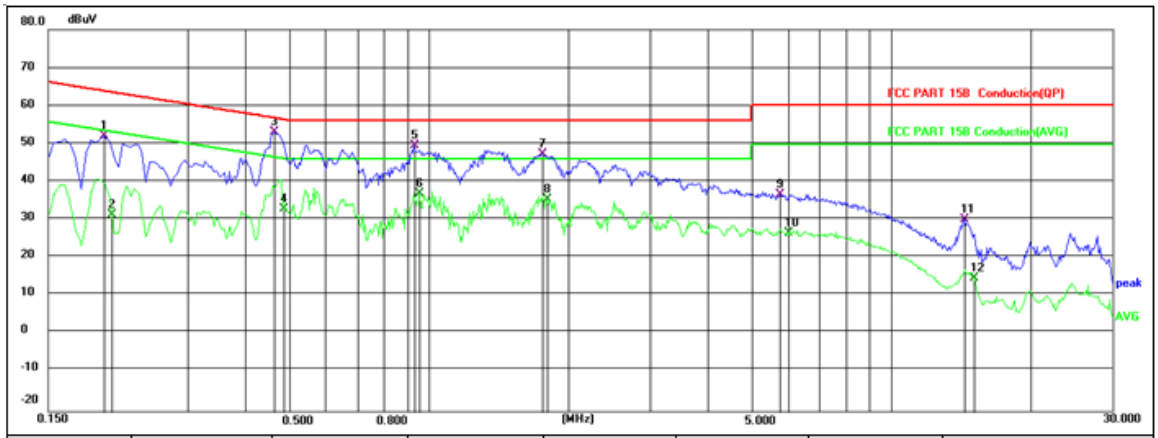
Note: Pre-Scan all mode, Thus record worse case mode result in this report.

Test Model	TAO 1pro	Test Mode	Mode 2
Environmental Conditions	23.3℃, 53.7% RH	Test Engineer	Zq Pang
Pol	Line	Test Voltage	AC 120V/60Hz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1945	41.68	9.89	51.57	63.84	-12.27	QP
2	0.2029	23.39	9.89	33.28	53.49	-20.21	AVG
3	0.4686	42.73	9.91	52.64	56.54	-3.90	QP
4	0.4889	22.88	9.91	32.79	46.19	-13.40	AVG
5	0.9282	39.20	9.93	49.13	56.00	-6.87	QP
6	0.9684	25.37	9.93	35.30	46.00	-10.70	AVG
7	1.7529	37.42	9.96	47.38	56.00	-8.62	QP
8	1.8288	23.35	9.96	33.31	46.00	-12.69	AVG
9	4.5736	28.03	10.02	38.05	56.00	-17.95	QP
10	4.6964	15.98	10.02	26.00	46.00	-20.00	AVG
11	14.5171	19.15	10.51	29.66	60.00	-30.34	QP
12	14.9860	4.58	10.56	15.14	50.00	-34.86	AVG

Test Model	TAO 1pro	Test Mode	Mode 2
Environmental Conditions	23.3℃, 53.7% RH	Test Engineer	Zq Pang
Pol	Neutral	Test Voltage	AC 120V/60Hz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1996	42.25	9.89	52.14	63.63	-11.49	QP
2	0.2061	21.68	9.89	31.57	53.36	-21.79	AVG
3	0.4651	43.29	9.90	53.19	56.60	-3.41	QP
4	0.4876	23.10	9.90	33.00	46.21	-13.21	AVG
5	0.9286	39.66	9.92	49.58	56.00	-6.42	QP
6	0.9511	27.09	9.92	37.01	46.00	-8.99	AVG
7	1.7611	37.54	9.95	47.49	56.00	-8.51	QP
8	1.7926	25.68	9.95	35.63	46.00	-10.37	AVG
9	5.7526	26.78	10.03	36.81	60.00	-23.19	QP
10	6.0226	16.78	10.04	26.82	50.00	-23.18	AVG
11	14.4061	19.84	10.52	30.36	60.00	-29.64	QP
12	15.0721	4.36	10.59	14.95	50.00	-35.05	AVG

Note: Pre-Scan all mode, Thus record worse case mode result in this report.

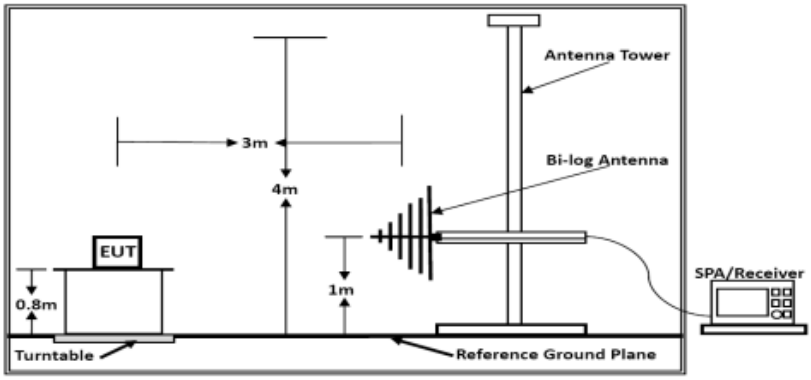
3.2. Radiated emission Measurement

3.2.1. Test Equipment

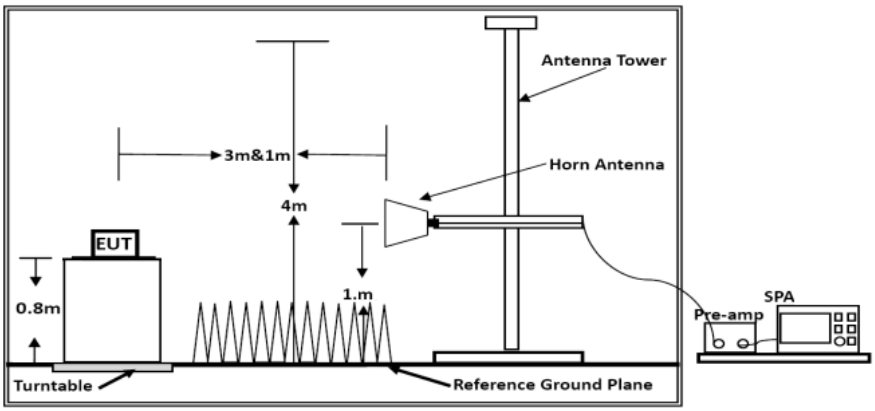
The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	E3	E3-EMC	/	N/A	N/A
2	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2021-07-25	2022-07-24
3	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2021-07-01	2024-06-30
4	EMI Test Receiver	R&S	ESR3	102311	2020-06-22	2021-06-21
5	Broadband Preamplifier	/	BP-01M18G	P190501	2020-06-22	2021-06-21

3.2.2. Block Diagram of Test Setup



Below 1GHz



Above 1GHz

3.2.3. Radiated Emission Limit (Class B)

Limits for Radiated Disturbance Below 1GHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46
960 ~ 1000	3	500	54
Remark: (1) Emission level (dB)μV = 20 log Emission level μV/m (2) The smaller limit shall apply at the cross point between two frequency bands. (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.			

Limits for Radiated Emission Above 1GHz			
Frequency (MHz)	Distance (Meters)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)
Above 1000	3	74	54
***Note: The lower limit applies at the transition frequency.			

3.2.4. EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.2.5. Operating Condition of EUT

3.2.5.1.Setup the EUT as shown in Section 3.2.2.

3.2.5.2.Let the EUT work in test Mode 1 and measure it.

3.2.6. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2014 on radiated emission measurement.

3.2.7. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of spectrum analyzer and receiver

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB/VB 200Hz/1KHz for QP/AVG
Start ~ Stop Frequency	150kHz~30MHz / RB/VB 9kHz/30KHz for QP/AVG
Start ~ Stop Frequency	30MHz~1000MHz / RB/VB 120kHz/1MHz for QP

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10^{th} carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average

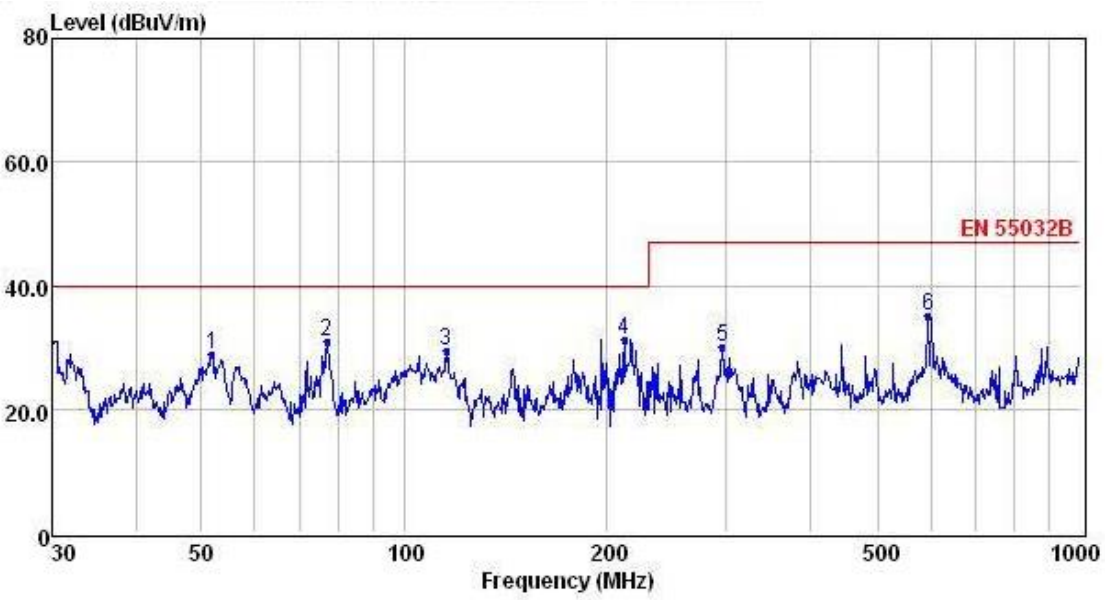
The frequency range from 30MHz to 1000MHz and above 1000MHz is checked.

3.2.8. Radiated Emission Noise Measurement Result

PASS.

The scanning waveforms please refer to the next page.

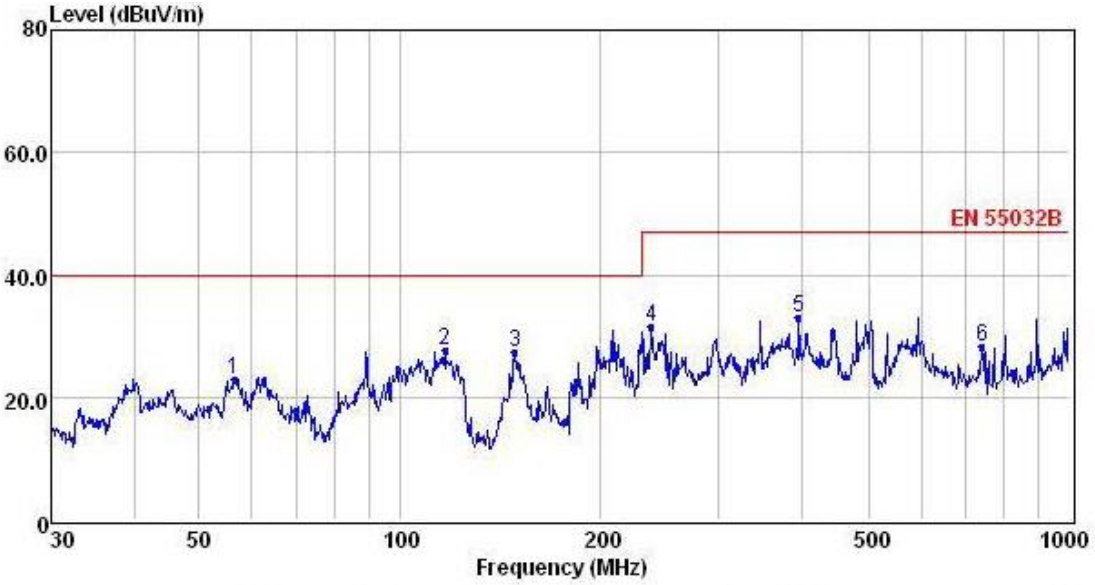
Test Model	TAO 1pro	Test Mode	Mode 1
Environmental Conditions	22.3℃, 53.1% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	RR Tan	Test Voltage	AC 120V/60Hz



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	51.84	15.14	0.54	13.17	28.85	40.00	-11.15	QP
2	76.78	22.39	0.47	8.06	30.92	40.00	-9.08	QP
3	115.32	17.35	0.68	11.31	29.34	40.00	-10.66	QP
4	212.27	19.43	0.93	10.96	31.32	40.00	-8.68	QP
5	296.18	16.00	1.12	12.99	30.11	47.00	-16.89	QP
6	595.13	15.28	1.51	18.36	35.15	47.00	-11.85	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	TAO 1pro	Test Mode	Mode 1
Environmental Conditions	22.3℃, 53.1% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	RR Tan	Test Voltage	AC 120V/60Hz



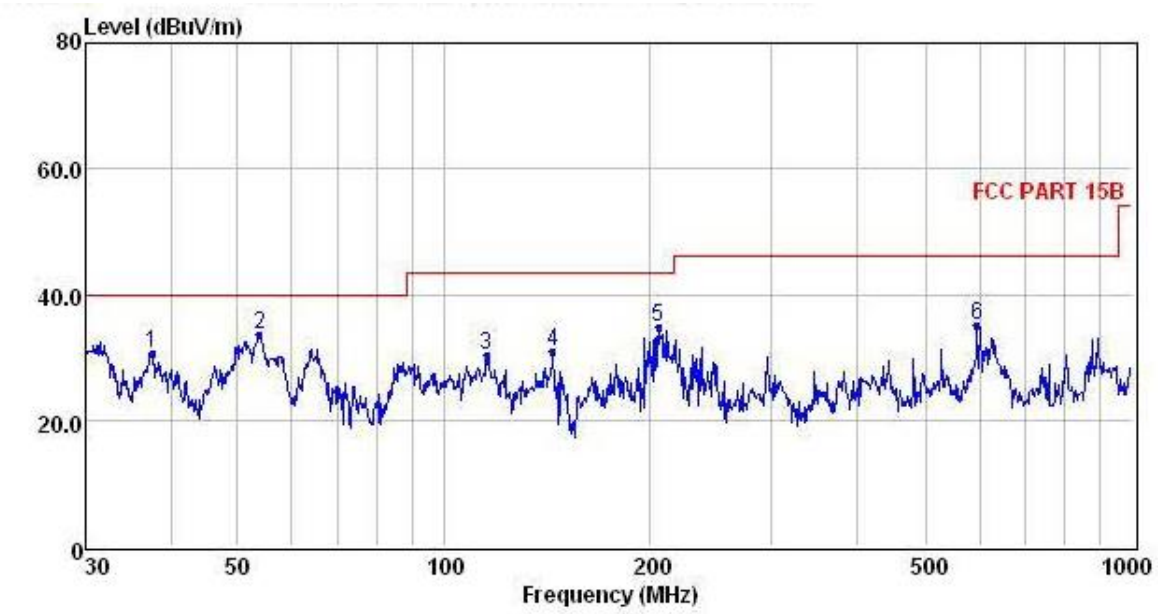
	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	56.39	9.39	0.47	12.93	22.79	40.00	-17.21	QP
2	116.95	15.86	0.68	11.02	27.56	40.00	-12.44	QP
3	148.96	18.30	0.86	8.25	27.41	40.00	-12.59	QP
4	238.31	18.56	0.96	12.01	31.53	47.00	-15.47	QP
5	396.24	16.84	1.30	14.97	33.11	47.00	-13.89	QP
6	742.26	7.25	1.78	19.34	28.37	47.00	-18.63	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

Note: Pre-Scan all mode, Thus record worse case mode result in this report.

Remark: For above 1000MHz, Because the emission it too low to be reported.

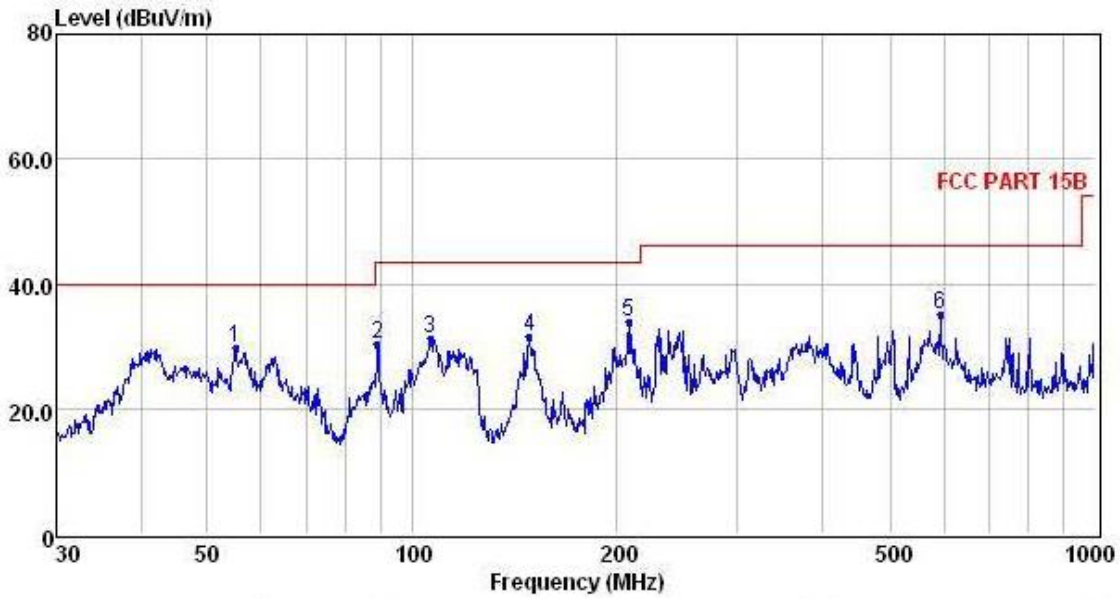
Test Model	TAO 1pro	Test Mode	Mode 2
Environmental Conditions	22.3℃, 53.1% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	RR Tan	Test Voltage	AC 120V/60Hz



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	37.55	17.39	0.38	12.95	30.72	40.00	-9.28	QP
2	53.88	20.16	0.46	13.07	33.69	40.00	-6.31	QP
3	115.32	18.35	0.68	11.31	30.34	43.50	-13.16	QP
4	144.33	22.14	0.71	8.22	31.07	43.50	-12.43	QP
5	205.68	23.11	0.99	10.75	34.85	43.50	-8.65	QP
6	595.13	15.28	1.51	18.36	35.15	46.00	-10.85	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	TAO 1pro	Test Mode	Mode 2
Environmental Conditions	22.3℃, 53.1% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	RR Tan	Test Voltage	AC 120V/60Hz



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	55.03	16.24	0.46	13.02	29.72	40.00	-10.28	QP
2	88.96	18.14	0.68	11.57	30.39	43.50	-13.11	QP
3	106.39	17.97	0.68	12.58	31.23	43.50	-12.27	QP
4	148.96	22.30	0.86	8.25	31.41	43.50	-12.09	QP
5	207.85	22.32	0.86	10.82	34.00	43.50	-9.50	QP
6	593.05	15.12	1.51	18.32	34.95	46.00	-11.05	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

Note: Pre-Scan all mode, Thus record worse case mode result in this report.

Remark: For above 1000MHz, Because the emission it too low to be reported.

4. PHOTOGRAPH

Photo of Power Line Conducted Measurement

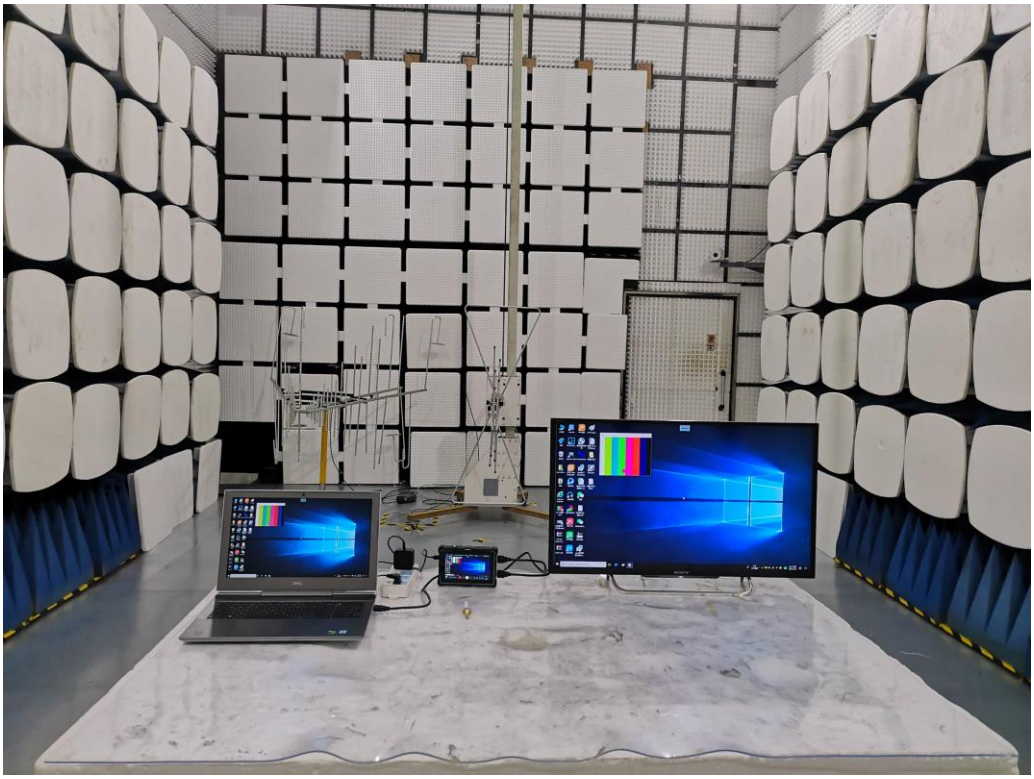


Photo of Radiated emission Measurement

5. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

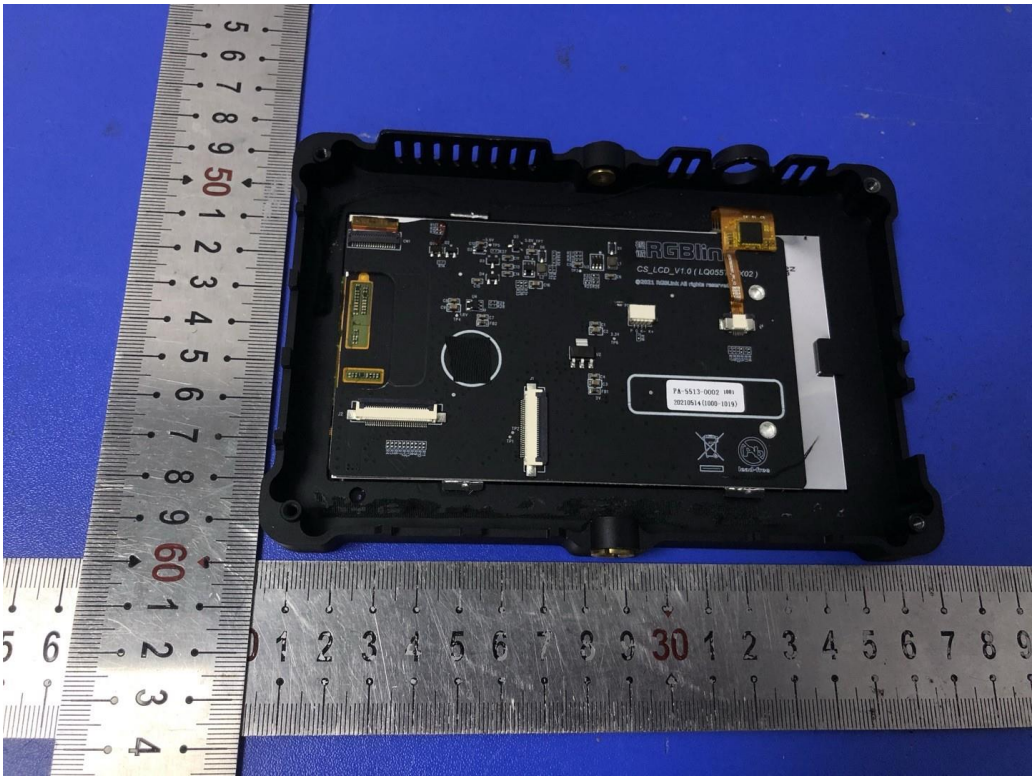


Fig. 8

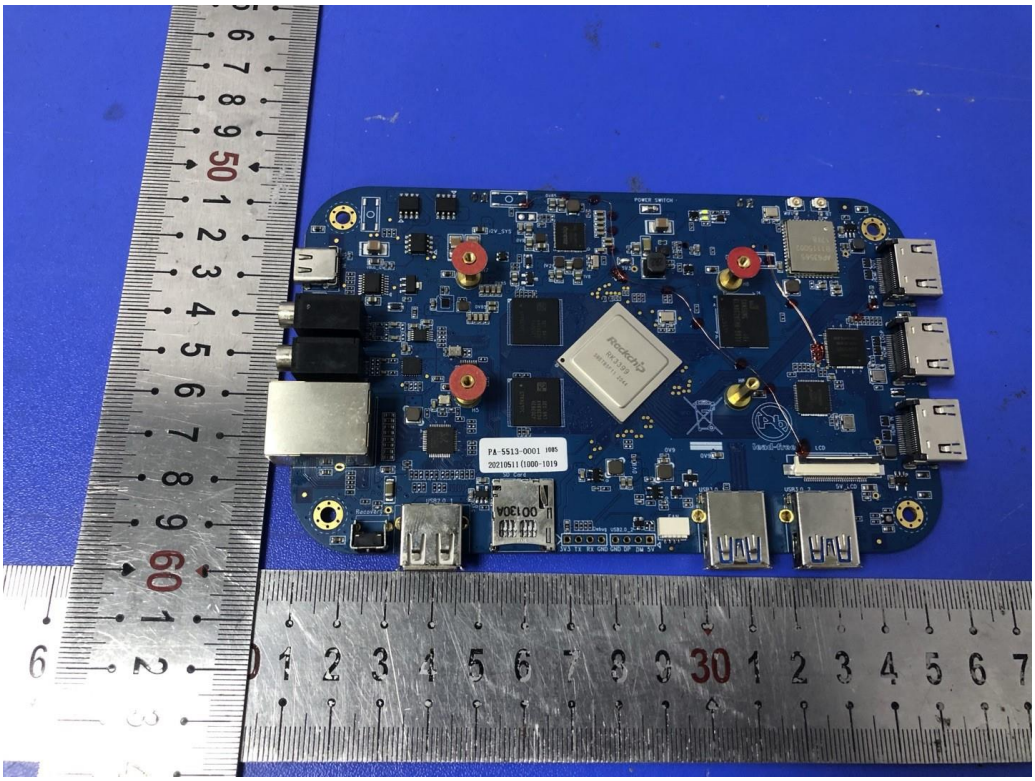


Fig. 9

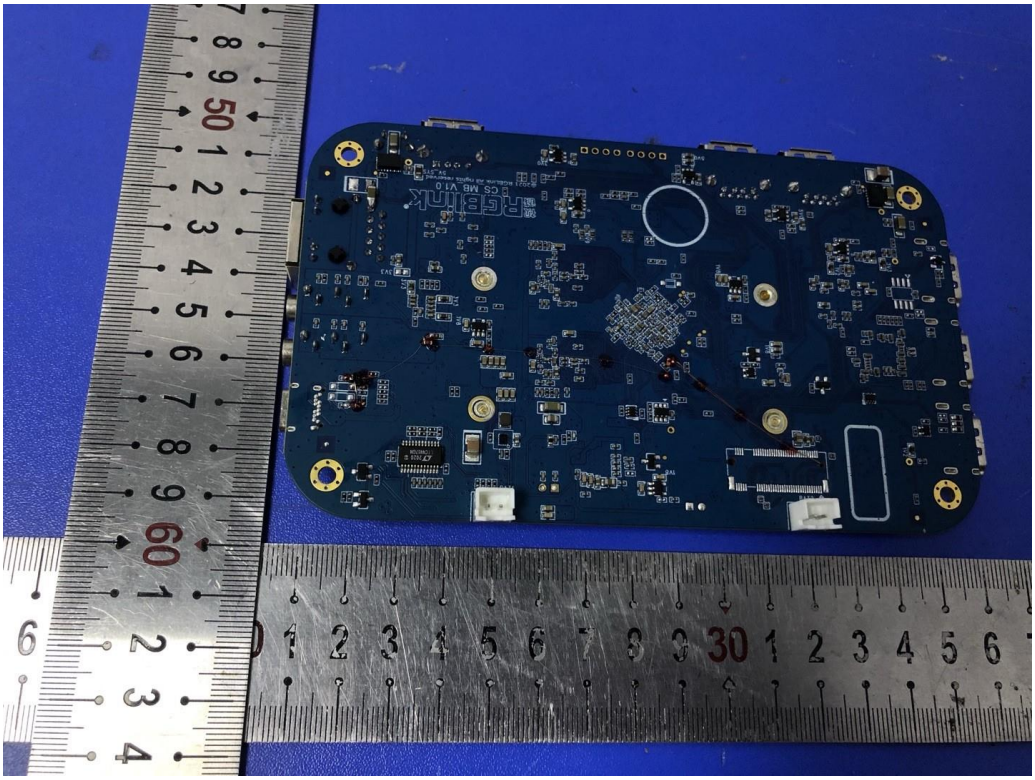


Fig. 10

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