

TEST REPORT

Product Name : PilotPano Panoramic Camera
Brand Mark : Labpano
Model No. : PIP221
Extension Model : PIP221+
Report Number : BLA-EMC-202207-A1501
Date of Sample Receipt : 2022/8/1
Date of Test : 2022/8/1 to 2022/9/5
Date of Issue : 2022/9/5
Test Standard : 47 CFR Part 15, Subpart B
Test Result : Pass

Prepared for:

Shenzhen Pisoftware Technology Co., Ltd.
C11-B, TCL International E City, 1001 Zhongshanyuan Road, Nanshan District, Shenzhen City, 518057, P.R.China

Prepared by:

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Date: 2022/9/5



REPORT REVISE RECORD

Version No.	Date	Description
00	2022/9/5	Original

BlueAsia

TABLE OF CONTENTS

1	TEST SUMMARY	4
2	GENERAL INFORMATION	5
3	GENERAL DESCRIPTION OF E.U.T.	5
4	TEST MODE	6
5	MEASUREMENT UNCERTAINTY	6
6	DESCRIPTION OF SUPPORT UNIT	7
7	LABORATORY LOCATION	7
8	TEST INSTRUMENTS LIST	8
9	RADIATED EMISSIONS (ABOVE 1GHZ)	9
9.1	LIMITS	9
9.2	BLOCK DIAGRAM OF TEST SETUP	9
9.3	PROCEDURE	9
9.4	TEST DATA	10
10	RADIATED EMISSIONS (30MHZ-1GHZ)	12
10.1	LIMITS	12
10.2	BLOCK DIAGRAM OF TEST SETUP	12
10.3	PROCEDURE	12
10.4	TEST DATA	13
11	CONDUCTED EMISSIONS AT MAINS TERMINALS (150KHZ-30MHZ)	15
11.1	LIMITS	15
11.2	BLOCK DIAGRAM OF TEST SETUP	15
11.3	PROCEDURE	15
11.4	TEST DATA	16
	APPENDIX A: PHOTOGRAPHS OF TEST SETUP	18
	APPENDIX B: PHOTOGRAPHS OF EUT	20

1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
Radiated Emissions (above 1GHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass
Radiated Emissions (30MHz-1GHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass

2 GENERAL INFORMATION

Applicant	Shenzhen Pisoftware Technology Co., Ltd.
Address	C11-B, TCL International E City, 1001 Zhongshanyuan Road,,Nanshan District, Shenzhen City, 518057, P.R.China
Manufacturer	Shenzhen Pisoftware Technology Co., Ltd.
Address	C11-B, TCL International E City, 1001 Zhongshanyuan Road, Nanshan District, Shenzhen City, 518057, P.R.China
Factory	SHENZHEN AONI ELECTRONIC CO,LTD
Address	2F、3F、6F、7F、The half laye of 8F 、9F,Honghui Industrial Park,2nd Liuxian Road,Xinan street,Baoan District,Shenzhen
Product Name	PilotPano Panoramic Camera
Test Model No.	PIP221
Extension Model	PIP221+
Remark	All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are model name for commercial purpose.

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	N/A
Software Version	N/A
Power Supply	Rechargeable Li-ion polymer Battery DC3.8V

4 TEST MODE

TEST MODE	TEST MODE DESCRIPTION
Camera +AC adapte	Keep the EUT on with the camera working and camera +AC adapte
TF card+camera	EUT keeps recording function and stores data in TF card
TF card+video	EUT keeps video playback and transmits data with TF card
Operation(BT)	Put the EUT in wireless working mode
Remark:Only the data of the worst mode would be recorded in this report.	

5 MEASUREMENT UNCERTAINTY

Parameter	Expanded Uncertainty (Confidence of 95%)
Radiated Emission(9kHz-30MHz)	$\pm 4.34\text{dB}$
Radiated Emission(30Mz-1000MHz)	$\pm 4.24\text{dB}$
Radiated Emission(1GHz-18GHz)	$\pm 4.68\text{dB}$
AC Power Line Conducted Emission(150kHz-30MHz)	$\pm 3.45\text{dB}$

6 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
AC Adapter	UGREEN	CD112	N/A	N/A

7 LABORATORY LOCATION

All tests were performed at:
BlueAsia of Technical Services(Shenzhen) Co., Ltd.
Building C, No. 107, Shihuan Road, Shiyuan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673
No tests were sub-contracted.

8 TEST INSTRUMENTS LIST

Test Equipment Of Radiated Emissions (above 1GHz)					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Chamber	SKET	966	N/A	10/11/2020	9/11/2023
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	26/9/2020	25/9/2022
Amplifier	SKET	LNPA-0118-45	N/A	24/9/2021	23/9/2022
EMI software	EZ	EZ-EMC	N/A	N/A	N/A

Test Equipment Of Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Chamber	SKET	966	N/A	10/11/2020	9/11/2023
Receiver	R&S	ESR7	101199	24/9/2021	23/9/2022
EMI software	EZ	EZ-EMC	N/A	N/A	N/A
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	26/9/2020	25/9/2022

Test Equipment Of Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Shield room	SKET	833	N/A	25/11/2020	24/11/2023
Receiver	R&S	ESPI3	101082	24/9/2021	23/9/2022
LISN	R&S	ENV216	3560.6550.15	24/9/2021	23/9/2022
LISN	AT	AT166-2	AKK1806000003	26/9/2021	25/9/2022
EMI software	EZ	EZ-EMC	N/A	N/A	N/A

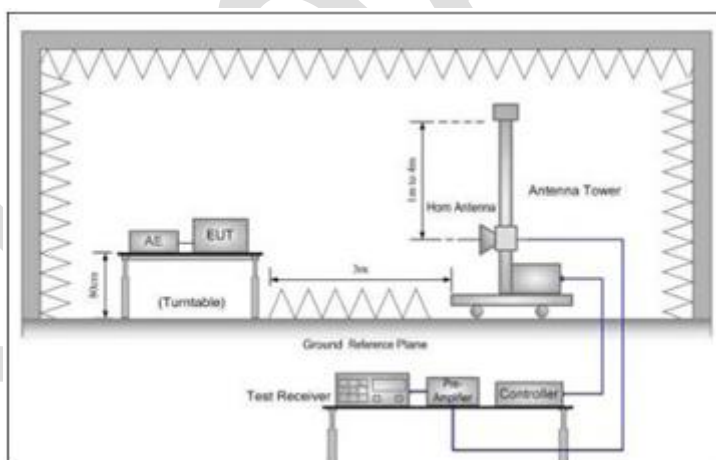
9 RADIATED EMISSIONS (ABOVE 1GHZ)

Test Standard	47 CFR Part 15, Subpart B
Test Method	ANSI C63.4:2014
Test Mode (Pre-Scan)	Camera +AC adapte; TF card+camera; TF card+video; Operation(BT)
Test Mode (Final Test)	Operation(BT)
Tester	Charlie
Temperature	25°C
Humidity	60%

9.1 LIMITS

Frequency Range	Limit
Above 1GHz	74(dBμV/m) peak, 54(dBμV/m) average

9.2 BLOCK DIAGRAM OF TEST SETUP

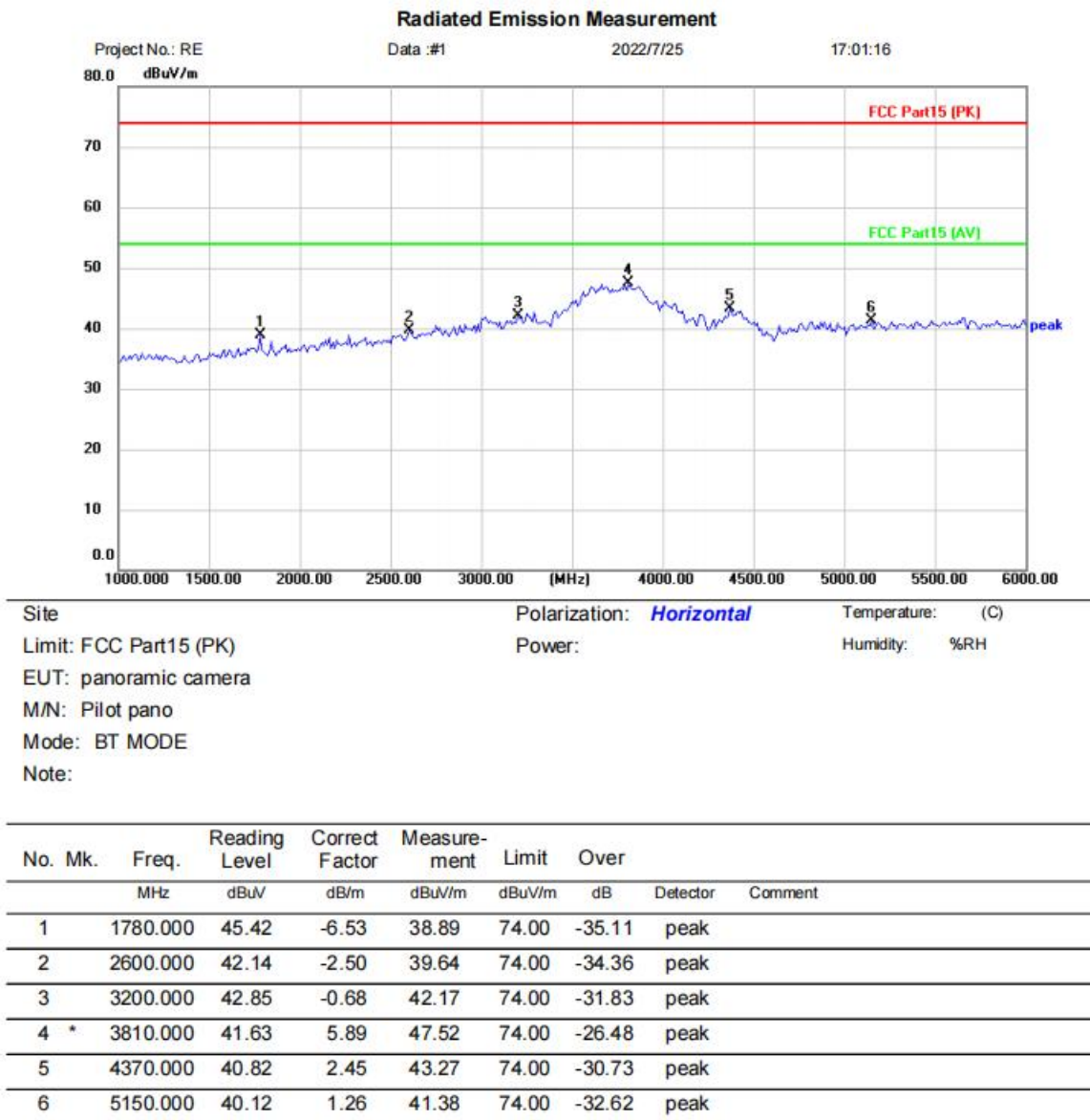


9.3 PROCEDURE

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

9.4 TEST DATA

[TestMode: Operation(BT)]; [Polarity: Horizontal]

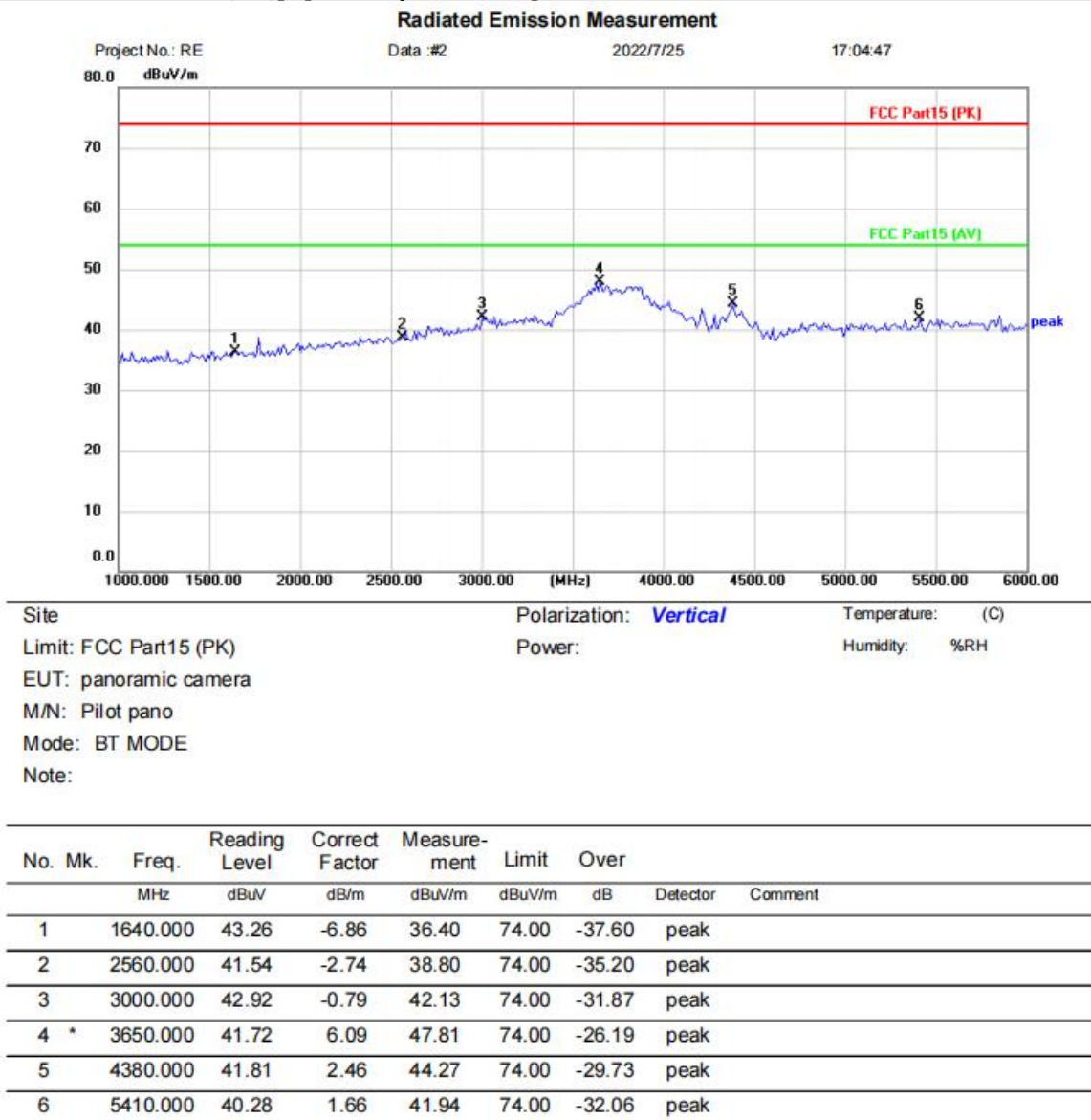


*:Maximum data x:Over limit !:over margin

(Reference Only)

Test Result: Pass

[TestMode: Operation(BT)]; [Polarity: Vertical]



*:Maximum data x:Over limit !:over margin

(Reference Only)

Test Result: Pass

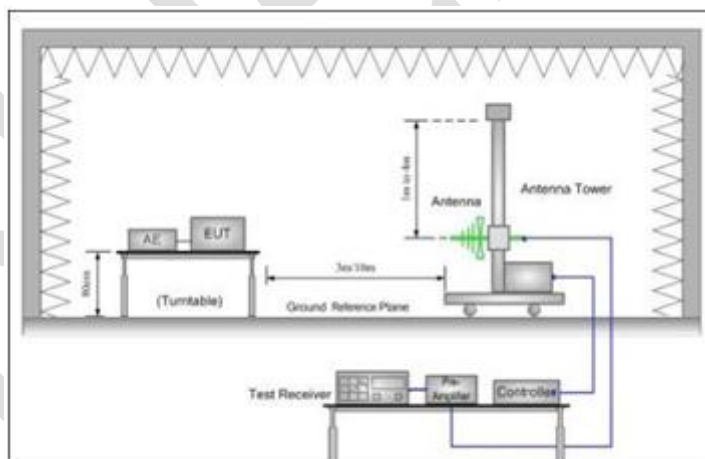
10 RADIATED EMISSIONS (30MHZ-1GHZ)

Test Standard	47 CFR Part 15, Subpart B
Test Method	ANSI C63.4:2014
Test Mode (Pre-Scan)	Camera +AC adapte; TF card+camera; TF card+video; Operation(BT)
Test Mode (Final Test)	Camera +AC adapte
Tester	Charlie
Temperature	25℃
Humidity	60%

10.1 LIMITS

Frequency Range	Limit
30MHz -88MHz	40.0(dBμV/m) quasi-peak
88MHz-216MHz	43.5(dBμV/m) quasi-peak
216MHz-960MHz	46.0(dBμV/m) quasi-peak
960MHz-1000MHz	54.0(dBμV/m) quasi-peak

10.2 BLOCK DIAGRAM OF TEST SETUP

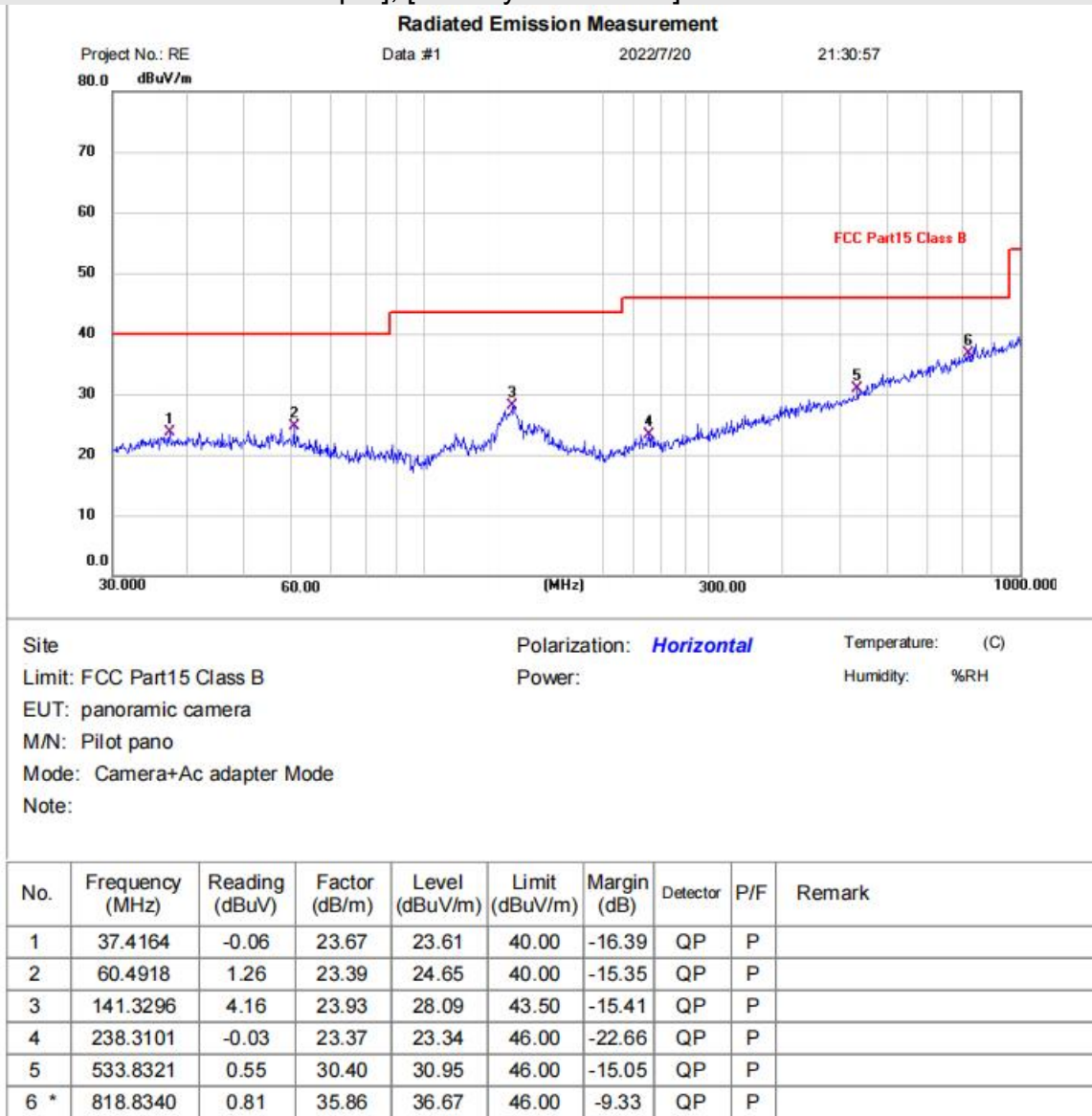


10.3 PROCEDURE

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

10.4 TEST DATA

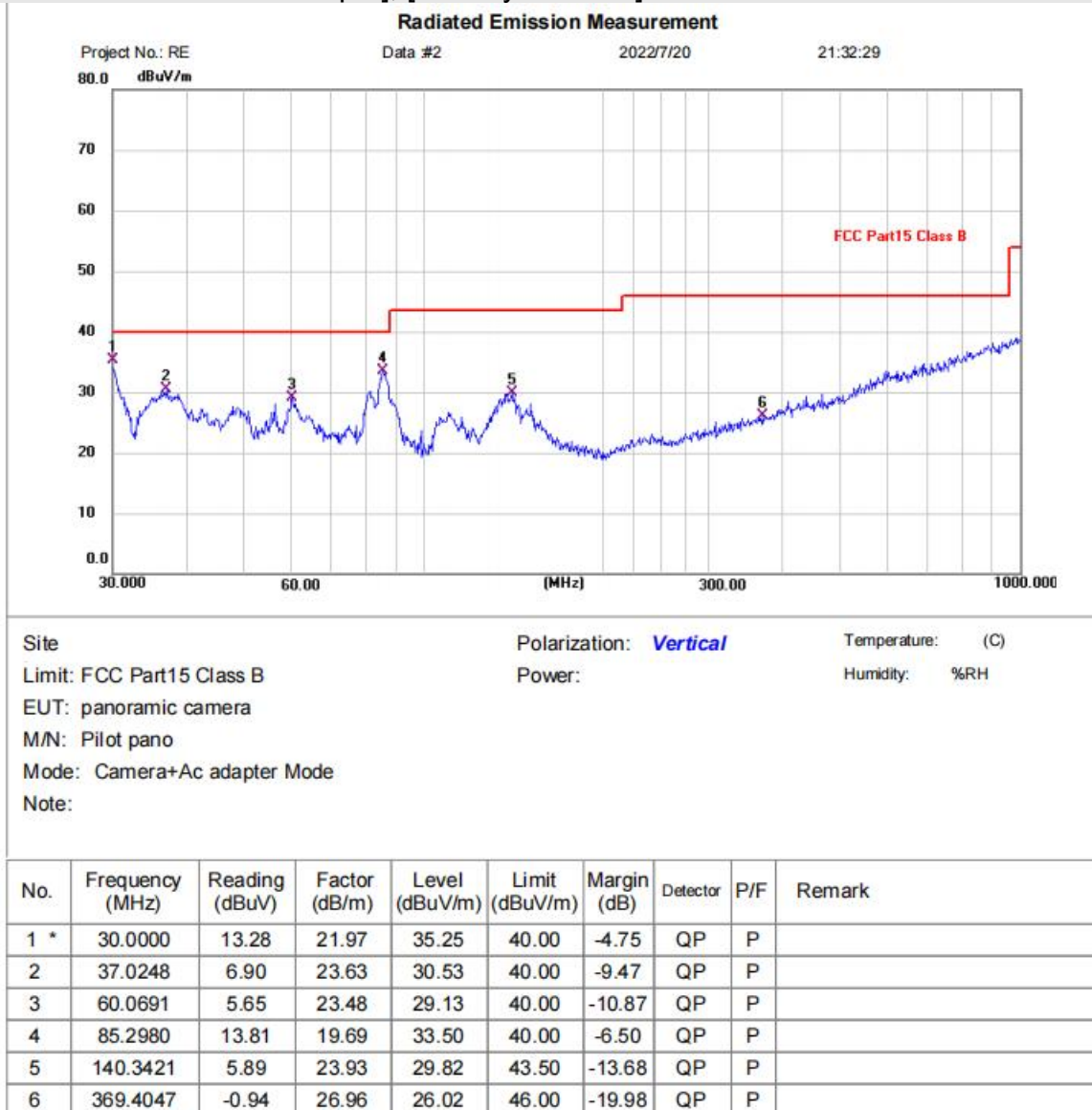
[TestMode: camera +AC adapte]; [Polarity: Horizontal]



*:Maximum data x:Over limit !:over margin

Test Result: Pass

[TestMode: camera +AC adapte]; [Polarity: Vertical]



*:Maximum data x:Over limit !:over margin

Test Result: Pass

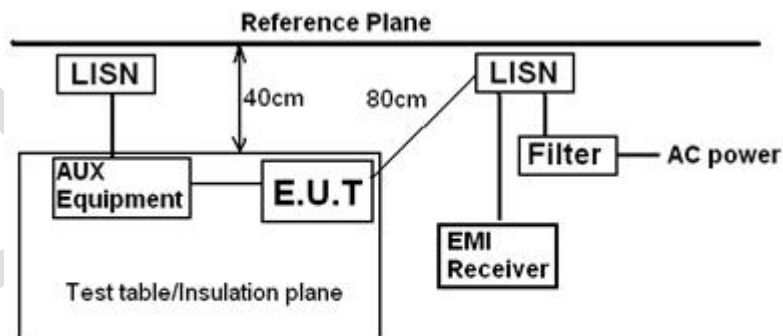
11 CONDUCTED EMISSIONS AT MAINS TERMINALS (150KHZ-30MHZ)

Test Standard	47 CFR Part 15, Subpart B
Test Method	ANSI C63.4:2014
Test Mode (Pre-Scan)	Camera +AC adapte; TF card+camera; TF card+video; Operation(BT)
Test Mode (Final Test)	Camera +AC adapte
Tester	Charlie
Temperature	25°C
Humidity	60%

11.1 LIMITS

Frequency Range	Limit
0.15M-0.5MHz	66dB(μ V)-56dB(μ V) quasi-peak, 56dB(μ V)-46dB(μ V) average
0.5M-5MHz	56dB(μ V) quasi-peak, 46dB(μ V) average
5M-30MHz	60dB(μ V) quasi-peak, 50dB(μ V) average

11.2 BLOCK DIAGRAM OF TEST SETUP



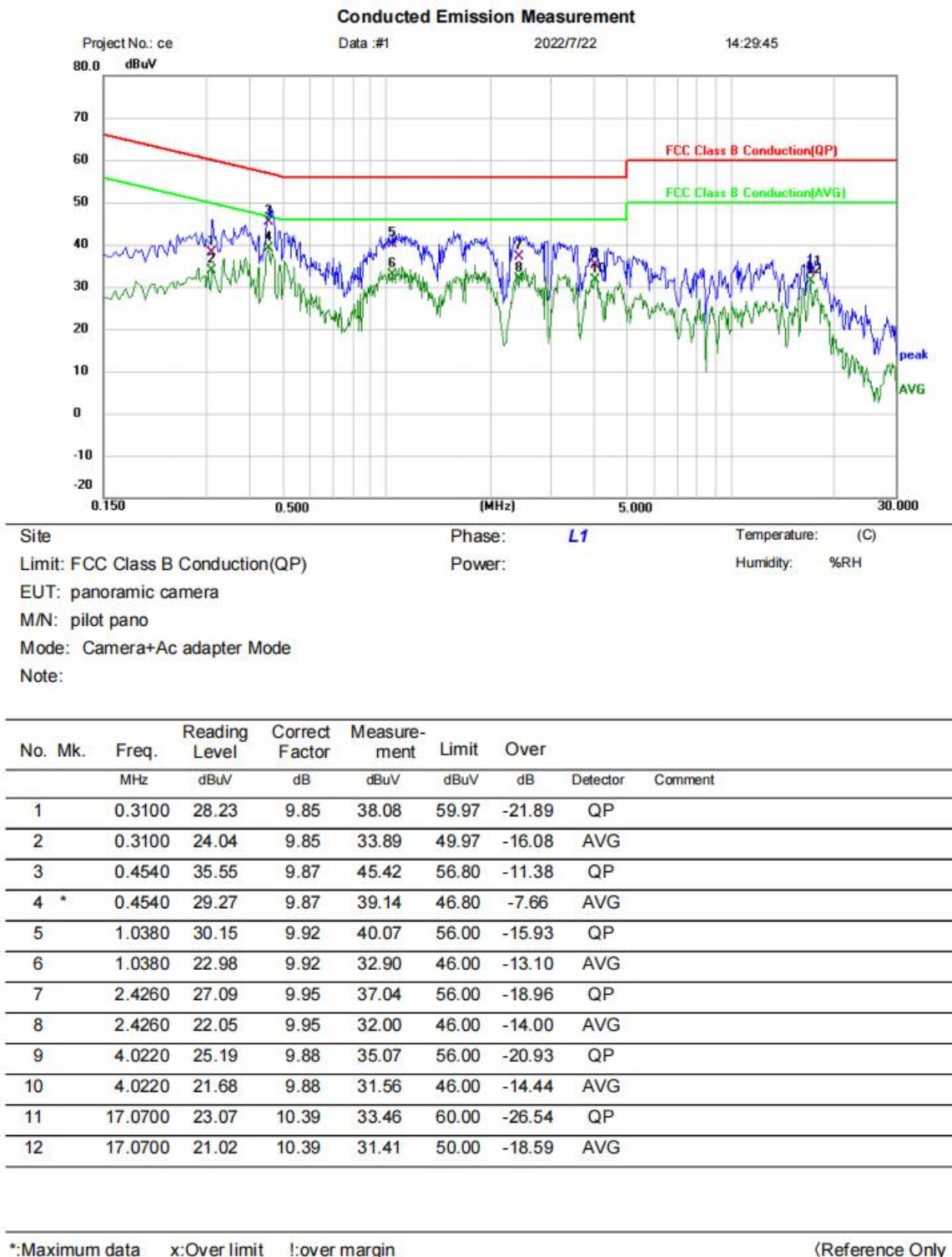
Remark:
E.U.T: Equipment Under Test
LISN: Line Impedance Stabilization Network
Test table height=0.8m

11.3 PROCEDURE

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

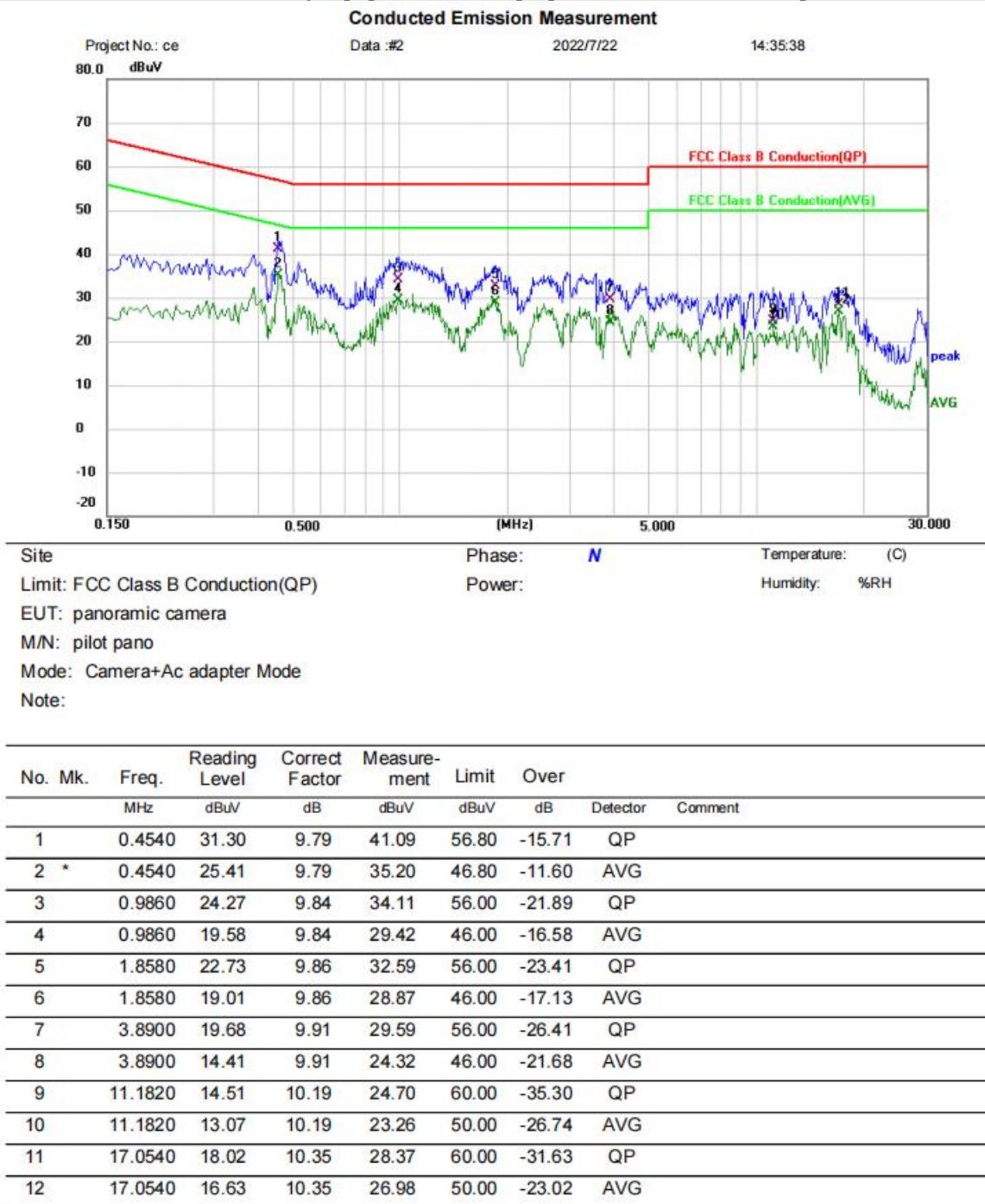
11.4 TEST DATA

[TestMode: camera +AC adapte]; [Line: Line] ; [Power: 1200V/60Hz]



Test Result: Pass

[TestMode: camera +AC adapte]; [Line: Nutral] ; [Power: 1200V/60Hz]



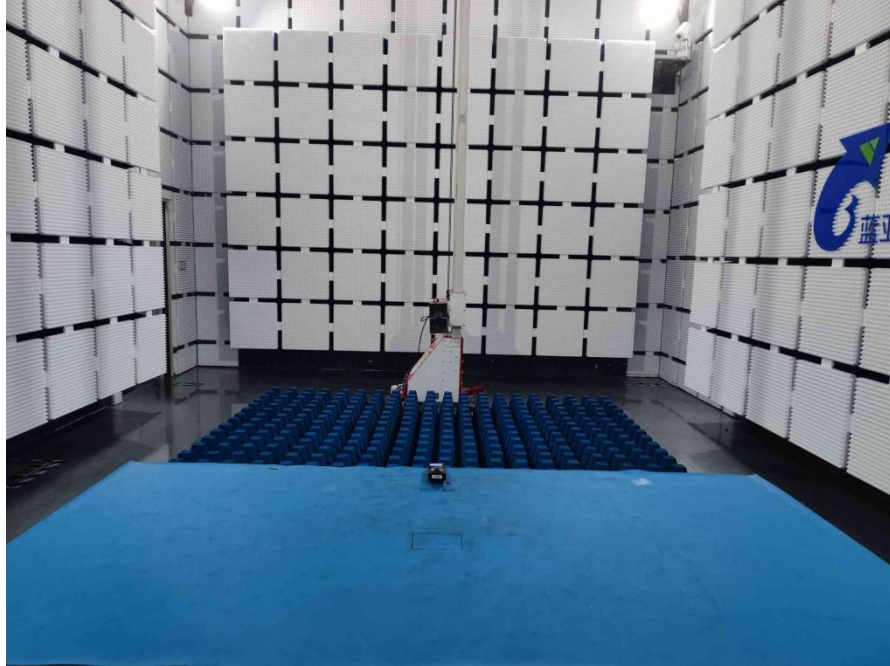
*:Maximum data x:Over limit !:over margin

(Reference Only)

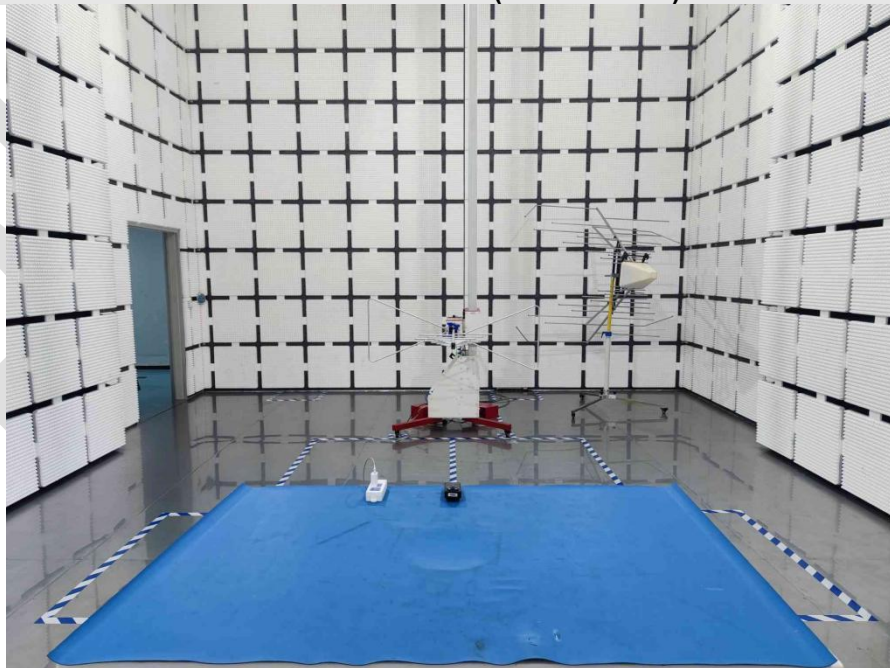
Test Result: Pass

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Radiated Emissions (above 1GHz)



Radiated Emissions (30MHz-1GHz)

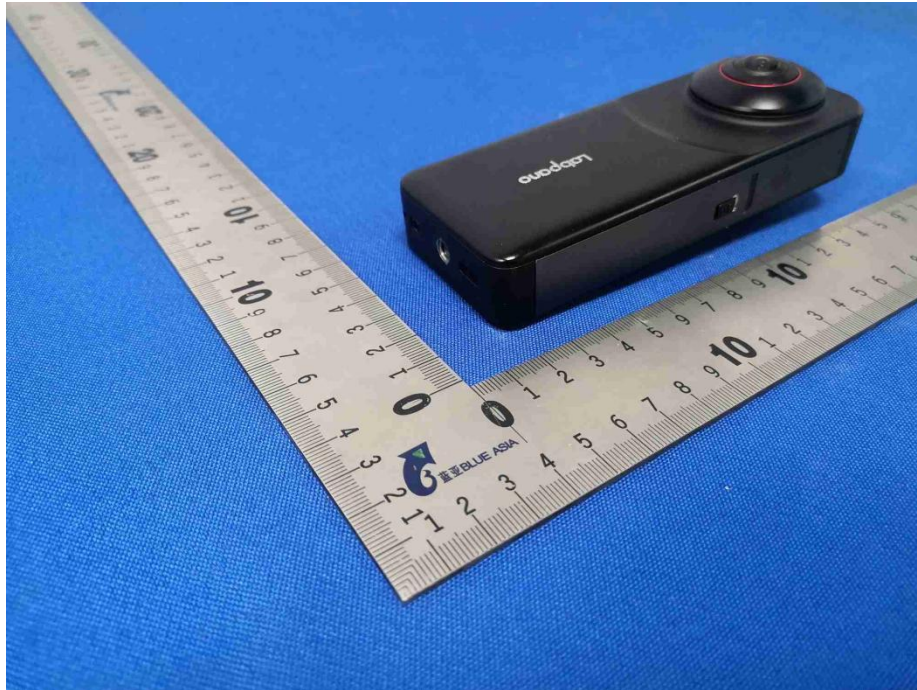


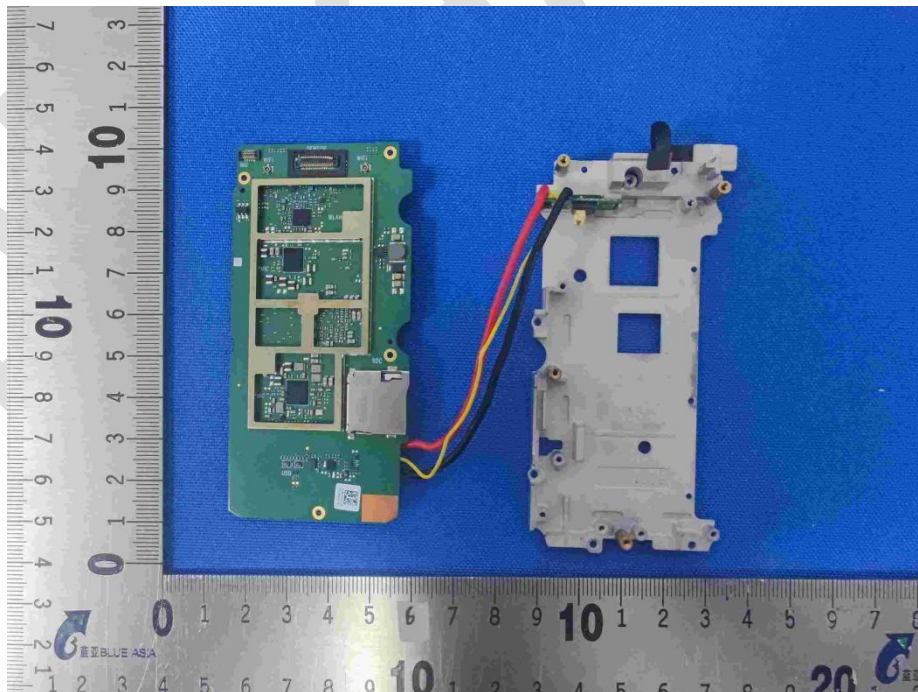
Conducted Emissions at Mains Terminals (150kHz-30MHz)

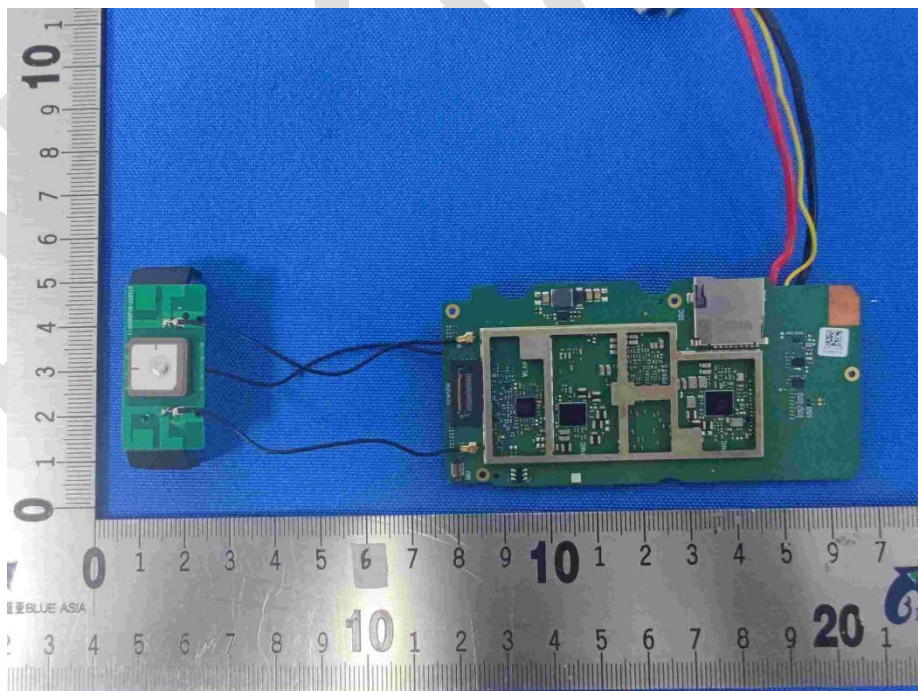
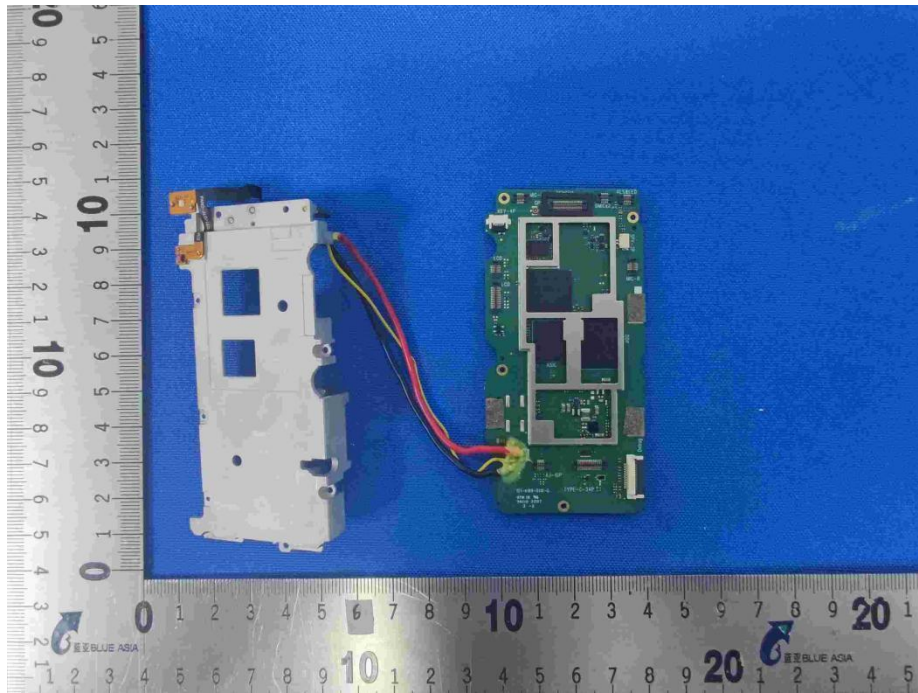


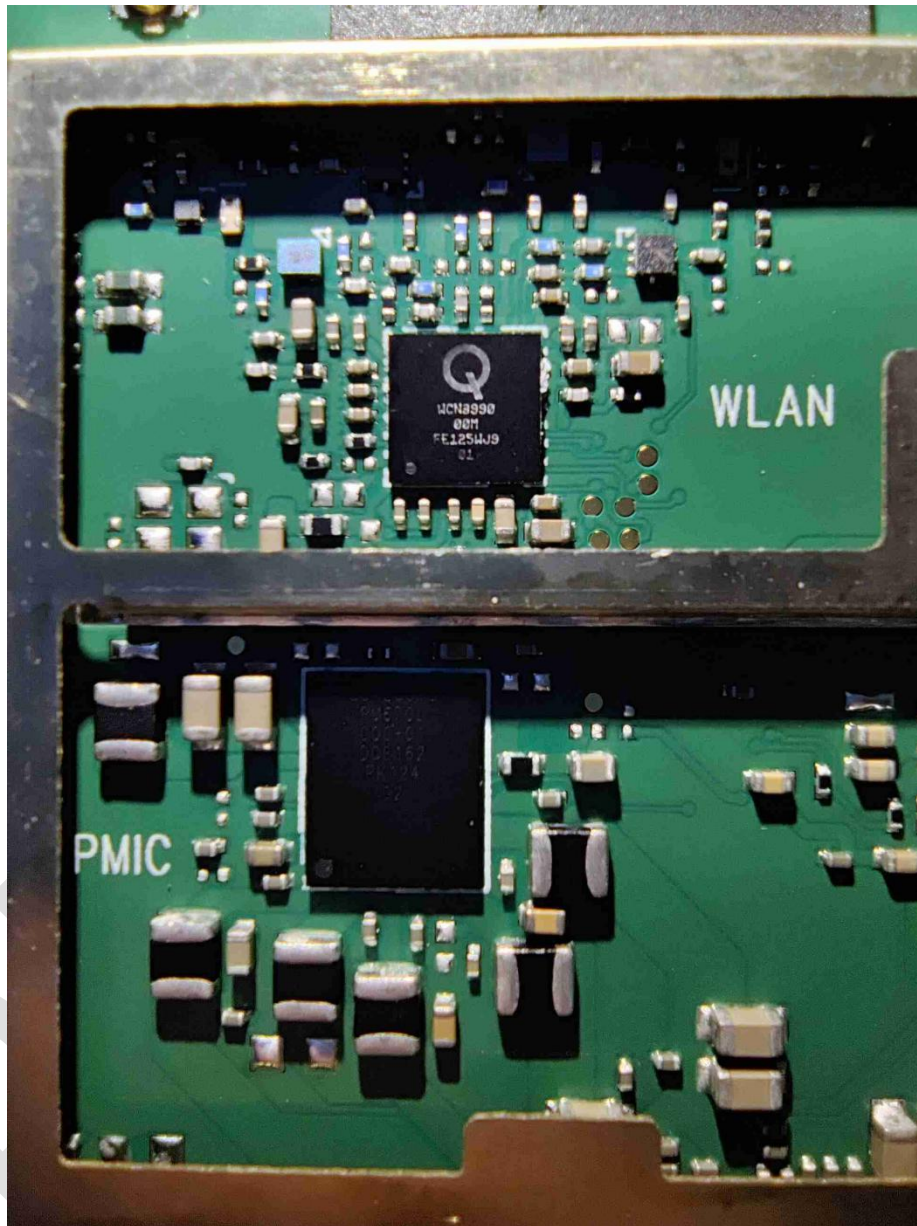
APPENDIX B: PHOTOGRAPHS OF EUT















----END OF REPORT----

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