TEST REPORT

Applicant:	Shine Technology Co., LTD
Address of Applicant:	2806, 28F, Tower A, Shuma Plaza, Haidian District, Beijing
Manufacturer:	Shine Technology Co., LTD
Address of Manufacturer:	2806, 28F, Tower A, Shuma Plaza, Haidian District, Beijing
Factory:	DONGGUAN Shine Well Intelligent Equipment Co.,Ltd
Factory address:	301,No 393,TaiAn Road, Chang An, Dongguan, China
Product name:	16'' Doorside terminal
Model(s):	2BC4A-LEDD16LCN
Rating(s):	POE power supply model: PSE-480050 INPUT: AC100-240V, 50/60Hz, OUTPUT: DC48V0.5A POE Splitter model: POE-AF-H, INPUT: DC44V-57V, OUTPUT: 12V/1A For main: Input: DC 12V
Trademark:	/
Standards:	FCC Part15.225 ANSI C63.10-2013
FCC ID:	2BC4A-LEDD16LCN
Data of Receipt:	2023-08-14
Date of Test:	2023-08-14~2023-08-22
Date of Issue:	2023-08-22
Test Result	**Pass***

* In the configuration tested, the test item complied with the standards specified above.

Authorized for issue by:

Test by:			***Reviewed by:***		
Aug. 22, 2023	Chivas Tsang Project Engineer	Chivas	Aug. 22, 2023	Victor Meng Project Manager	Victor
Date	*Name/Position*	*Signature*	*Date*	*Name/Position*	*Signature*

Testing Laboratory information:

Testing Laboratory Name	:	ITL Co., Ltd
Address	:	No. 8 Jinqianling Street 5, Huangjiang Town, Dongguan, Guangdong, 523757 P.R.C.
Testing location	:	Same as above
Tel	:	0086-769-39001678
Fax	:	0086-20-62824387
E-mail	:	itl@i-testlab.com

Possible test case verdicts:

- test case does not apply to the test object..: N/A
- test object does meet the requirement .....: P (Pass)
- test object does not meet the requirement..: F (Fail)

General remarks:

The test results presented in this report relate only to the object tested.
The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report would be invalid test report without all the signatures of testing technician and approver.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

General product information:

Products are sold with adapters and without adapters.
POE power supply model: PSE-480050 INPUT: AC100-240V, 50/60Hz, OUTPUT: DC48V0.5A.
POE Splitter model: POE-AF-H, INPUT: DC44V-57V, OUTPUT: 12V/1A.
All tests were performed on products with adapters configured.

1 Test Summary

Test	Test Requirement	Result
Antenna Requirement	FCC PART 15 C Section 15.203	PASS
20dB Bandwidth	FCC PART 15 C section 15.215	PASS
Conducted Emission	FCC PART 15 C section 15.207	PASS
Radiated Spurious Emission	FCC PART 15 C section 209(a), 15.225(d)	PASS
Transmitter Frequency Stability (Temperature & Voltage Variation)	FCC PART 15 C section.225(e)	PASS
Band Edge Emission	FCC PART 15C section.209(a), 15.225(a)(b)(c)(d)	PASS

2 Contents

Page

TEST REPORT 1
1 TEST SUMMARY 3
2 CONTENTS 4
3 GENERAL INFORMATION 5
3.1 CLIENT INFORMATION 5
3.2 GENERAL DESCRIPTION OF E.U.T. 5
3.3 DETAILS OF E.U.T. 5
3.4 DESCRIPTION OF SUPPORT UNITS 5
3.5 TEST LOCATION 5
3.6 DEVIATION FROM STANDARDS 5
3.7 ABNORMALITIES FROM STANDARD CONDITIONS 5
3.8 OTHER INFORMATION REQUESTED BY THE CUSTOMER 5
3.9 TEST FACILITY 6
3.10 MEASUREMENT UNCERTAINTY 6
4 INSTRUMENTS USED DURING TEST 7
5 TEST RESULTS 8
5.1 E.U.T. TEST CONDITIONS 8
5.2 ANTENNA REQUIREMENT 10
5.3 20DB BANDWIDTH 11
5.4 RADIATED SPURIOUS EMISSIONS 13
5.5 *Harmonic and other spurious emissions* *16*
5.6 BAND EDGES REQUIREMENT 20
5.7 CONDUCTED EMISSIONS AT MAINS TERMINALS 150 KHZ TO 30MHZ 22
5.7.1 Measurement Data *23*
5.8 TRANSMITTER FREQUENCY STABILITY 26
5.8.1 Block Diagram Of Test Setup *26*
5.8.2 Limit: *26*
5.8.3 Test Procedure *26*
5.8.4 EUT Operating Conditions *26*
5.8.5 Test Result *27*
6.1 EUT TEST SETUP PHOTOGRAPHS 28
6.2 EUT PHOTOGRAPHS 29

3 General Information

3.1 Client Information

Applicant:	Shine Technology Co., LTD
Address of Applicant:	2806, 28F, Tower A, Shuma Plaza, Haidian District, Beijing

3.2 General Description of E.U.T.

Name:	16'' Doorside terminal
Model No.:	2BC4A-LEDD16LCN
Trade Mark:	/
Operating Frequency:	13.56MHz
Antenna installation:	Coil Antenna
Antenna gain:	0 dBi
Ratings:	AC120V , 60Hz
Adapter:	Adapter1 model: PSE-480050 INPUT: AC100-240V, 50/60Hz, OUTPUT:DC48V0.5A Adapter2 model: POE-AF-H, INPUT: DC44V-57V, OUTPUT: 12V/1A.

3.3 Details of E.U.T.

EUT Power Supply:	AC120V, 60Hz
Test mode:	The program used to control the EUT for staying in continuous transmitting.

3.4 Description of Support Units

The EUT has been tested as an independent unit for fixed frequency by testing lab.

3.5 Test Location

All tests were performed at:

ITL Co., Ltd
No. 8 Jinqianling Street 5, Huangjiang Town, Dongguan, Guangdong, 523757 P.R.C.
0086-769-39001678
itl@i-testlab.com

No tests were sub-contracted.

3.6 Deviation from Standards

None.

3.7 Abnormalities from Standard Conditions

None.

3.8 Other Information Requested by the Customer

None.

3.9 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS Lab code:L9342**
- **FCC Designation No.:CN5035**
- **IC Registration NO.: 12593A**
- **NVLAP LAB CODE: 600199-0**

3.10 Measurement Uncertainty

The below measurement uncertainties given below are based on a 95% confidence level (base on a coverage factor (k=2).)

Parameter	Uncertainty
Radio frequency	2.25%
total RF power, conducted	±1.34 dB
RF power density , conducted	±1.49 dB
All emissions, radiated	±2.72 dB
Temperature	±5.02 dB
Humidity	±0.8°C
DC and low frequency voltages	±1.5 %

4 Instruments Used during Test

No.	Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
ITL-114	Spectrum Analyzer	Agilent	N9010A	MY51250936	2023/01/13	2024/01/14
ITL-154	EMI test receiver 9kHz to 26.5GHz	R&S	ESR26	101257	2023/01/07	2024/01/06
ITL-116	Pre Amplifier	HP	8447F	3113A05905	2023/01/07	2024/01/06
ITL-117	Wideband Amplifier Super Ultra	Mini-circuits	ZVA-183-S+	469101134	2022/10/14	2023/10/13
ITL-180	Trilog-Broadband Antenna	Schwarzbeck	VULB 9164	005	2022/11/20	2024/11/19
ITL-110	Horn Antenna	A-INFOMW	JXTXLB-10180-N	J2031090612133	2022/06/17	2024/06/16
ITL-103	Two-line v-network	R&S	ENV216	100120	2023/06/14	2024/06/13
ITL-115	50Ω Coaxial Cable	Mini-circuts	CBL	C001	2022/06/19	2024/06/18
ITL-100	Semi-Anechoic chamber	ETS•Lindgren	FACT3 2.0	CT09015	2022/10/14	2025/10/13
ITL-145	Loop Antenna	ZHINAN	ZN30900A	002489	2022/06/17	2024/06/16

5 Test Results

5.1 E.U.T. test conditions

Test Voltage: AC120V

Temperature: 23.2 -25.0 °C

Humidity: 38-50 % RH

Atmospheric Pressure: 1000 -1010 mbar

Requirements:

15.31(e): For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

15.32: Power supplies and CPU boards used with personal computers and for which separate authorizations are required to be obtained shall be tested as follows: Testing shall be in accordance with the procedures specified in Section 15.31 of this part.

Test frequencies and frequency range:

According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

According to the 15.33 (a) For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in the following table:

Number of fundamental frequencies to be tested in EUT transmit band

Frequency range in which	Number of	Location in frequency range
1 MHz or less	1	Middle
1 MHz to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom

Frequency range of radiated emission measurements

Lowest frequency generated	Upper frequency range of measurement
9 kHz to below 10 GHz	10th harmonic of highest fundamental frequency or to 40 GHz,
At or above 10 GHz to below	5th harmonic of highest fundamental frequency or to 100 GHz,
At or above 30 GHz	5th harmonic of highest fundamental frequency or to 200 GHz,

Test frequency: 13.56MHz

Test the EUT in continuous transmission mode, duty cycle＞98%.

5.2 Antenna requirement

Standard requirement

15.203 requirement:

For intentional device. According to 15.203. An intentional radiator shall be designed to Ensure that no antenna other than that furnished by the responsible party shall be used with the device.

EUT Antenna

The antenna is an Internal Antenna and no consideration of replacement. The best case gain of the antenna is 0dBi.

Test result: The unit does meet the FCC requirements.

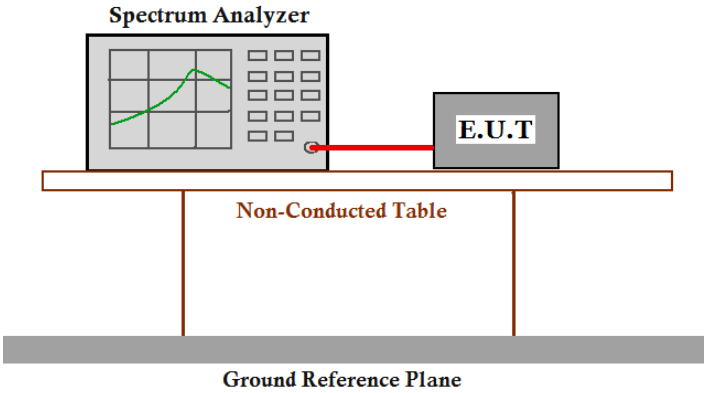
5.3 20dB Bandwidth

Test Requirement: FCC PART 15 C section 15.215

Test Method: ANSI C63.10:2013

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, channels and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Test Configuration:



Test Procedure:

1. Remove the antenna from the EUT and then connect a low attention attenuation RF cable (Cable loss =0.5dB) from the antenna port to the spectrum.
2. Set the spectrum analyser: RBW=100 kHz. VBW = 300 kHz, Sweep = auto; Detector Function = Peak. Trace = Max Hold, Set span to encompass the entire emission bandwidth of the signal.
3. Mark the peak power frequency and -20dB (upper and lower) power frequency.
4. Repeat until all the test status is investigated.
5. Report the worst case.

Test result (-6 dB bandwidth)

Frequency (MHz)	Measured 20dB Bandwidth (kHz)
13.56	2.816

The unit does meet the FCC requirements.

5.4 Radiated Spurious Emissions

Test Requirement: FCC Part 15 C section 15.209, 15.225(d)

(d) 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, and provided the transmitter demonstrates compliance with the peak conducted power limits.

Test Method: ANSI C63.10:2013

Test Status: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, channels and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Detector: For PK value:

RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto

Detector function = peak

Trace = max hold

For AV value:

RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f <1 GHz, 9kHz for <30MHz

VBW =10Hz

Sweep = auto

Detector function = peak

Trace = max hold

15.209 Limit: 40.0 dBµV/m between 30MHz & 88MHz

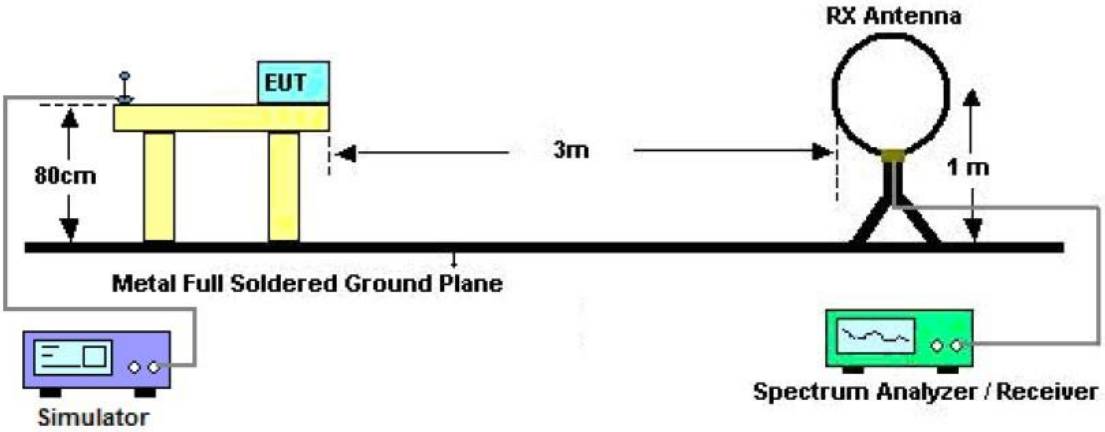
43.5 dBµV/m between 88MHz & 216MHz

46.0 dBµV/m between 216MHz & 960MHz

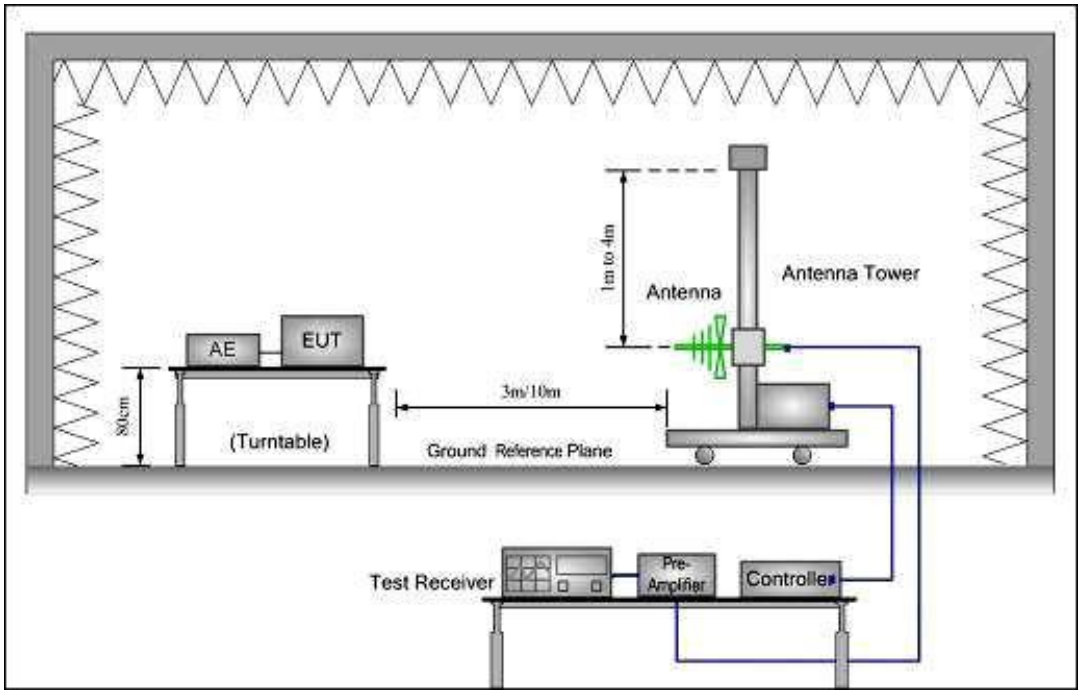
54.0 dBµV/m above 960MHz

Test Configuration:

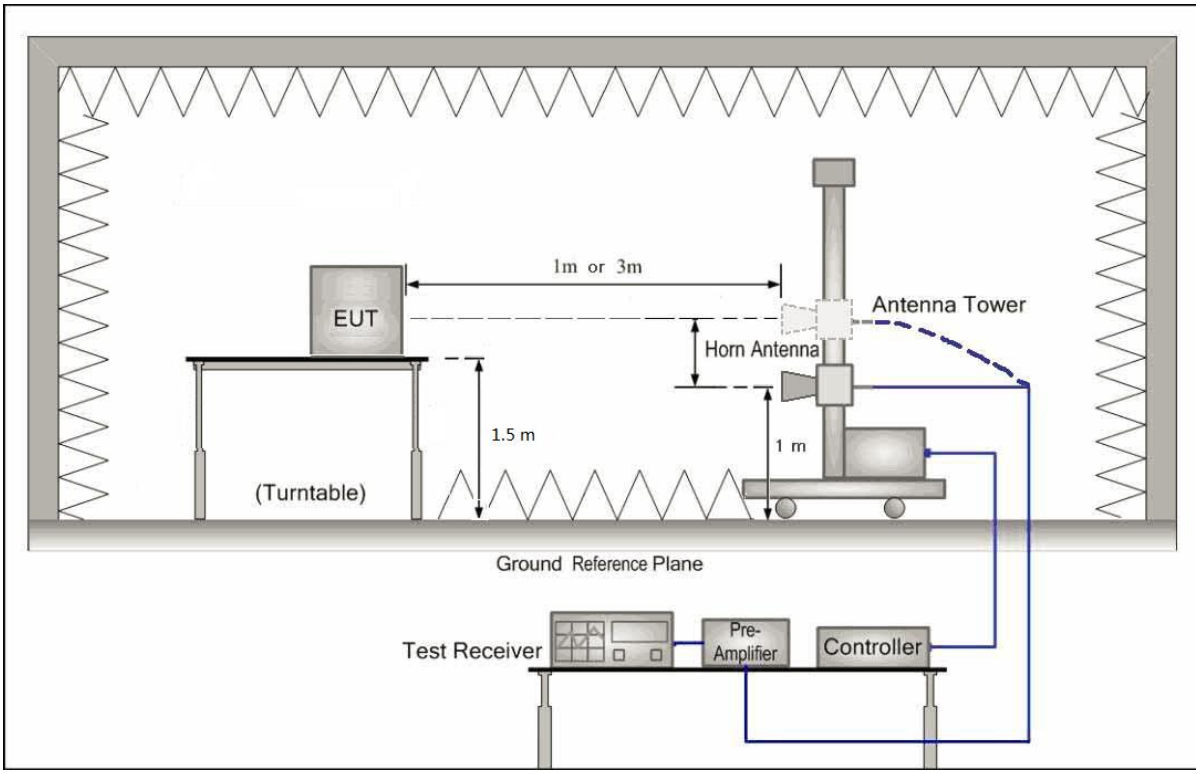
1) 9kHz to 30MHz emissions:



2) 30 MHz to 1 GHz emissions:



3) 1 GHz to 40 GHz emissions:



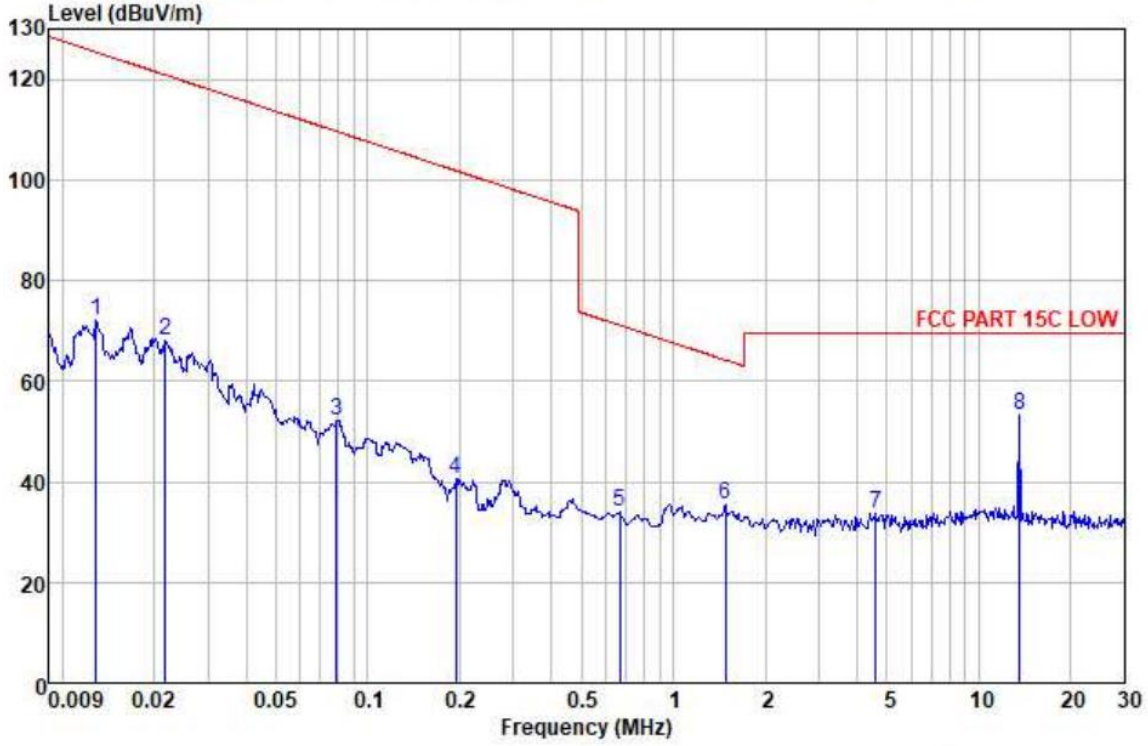
Test Procedure: (1) The receiver was scanned from 0.009MHz to 25GHz.When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only. The worst case emissions were reported.

(2) Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log(dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit. Submit this data.

(3) Pre-test under all modes below 1GHz, choose the worst case mode record On the report.

5.5 Harmonic and other spurious emissions

9kHz~30MHz Test result



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	0.013	78.37	21.16	0.10	27.62	72.01	125.42	-53.41	VERTICAL	Peak
2	0.022	74.80	20.89	0.11	27.69	68.11	120.84	-52.73	VERTICAL	Peak
3	0.079	59.33	20.57	0.15	27.90	52.15	109.64	-57.49	VERTICAL	Peak
4	0.195	47.76	20.45	0.20	27.90	40.51	101.82	-61.31	VERTICAL	Peak
5	0.668	41.29	20.36	0.21	27.90	33.96	71.11	-37.15	VERTICAL	Peak
6	1.480	42.83	20.33	0.21	27.90	35.47	64.20	-28.73	VERTICAL	Peak
7	4.606	41.00	20.36	0.24	27.92	33.68	69.54	-35.86	VERTICAL	Peak
8	13.548	60.59	20.41	0.33	27.95	53.38	69.54	-16.16	VERTICAL	Peak

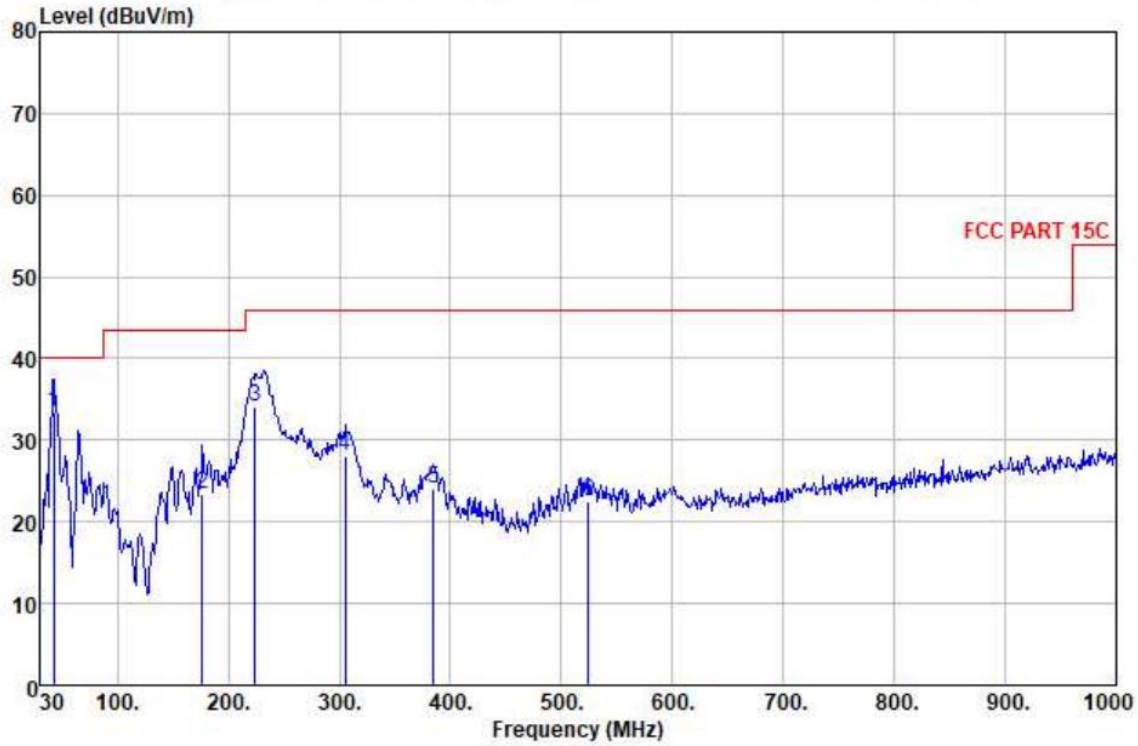
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Horizontal:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	42.610	47.43	13.53	0.74	28.31	33.39	40.00	-6.61	HORIZONTAL	QP
2	176.470	40.48	9.32	1.59	28.04	23.35	43.50	-20.15	HORIZONTAL	QP
3	224.000	48.72	11.33	1.81	27.68	34.18	46.00	-11.82	HORIZONTAL	QP
4	305.480	39.98	13.43	2.14	27.58	27.97	46.00	-18.03	HORIZONTAL	QP
5	385.020	34.64	15.26	2.40	28.32	23.98	46.00	-22.02	HORIZONTAL	QP
6	524.700	30.76	17.47	2.85	28.60	22.48	46.00	-23.52	HORIZONTAL	QP

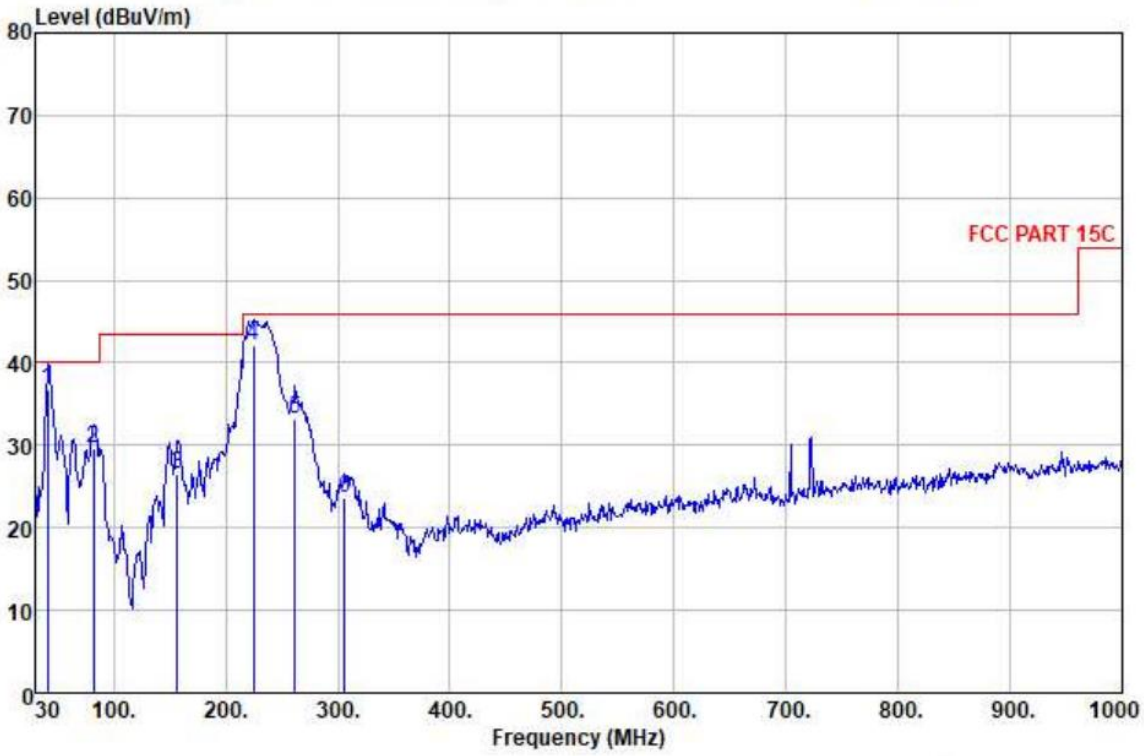
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Note: The emission above limit is fundamental emission, which is not subject to the limit.

Vertical:

Peak scan

Level (dBµV/m)



Quasi-peak measurement

No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	40.670	49.04	15.22	0.72	28.16	36.82	40.00	-3.18	VERTICAL	QP
2	82.380	48.93	7.80	1.06	28.17	29.62	40.00	-10.38	VERTICAL	QP
3	157.070	45.45	7.91	1.50	28.24	26.62	43.50	-16.88	VERTICAL	QP
4	224.970	56.64	11.40	1.82	27.65	42.21	46.00	-3.79	VERTICAL	QP
5	261.830	45.64	13.15	1.98	27.53	33.24	46.00	-12.76	VERTICAL	QP
6	306.450	35.50	13.45	2.15	27.57	23.53	46.00	-22.47	VERTICAL	QP

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Note: The emission above limit is fundamental emission, which is not subject to the limit.

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), the amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

Remark:

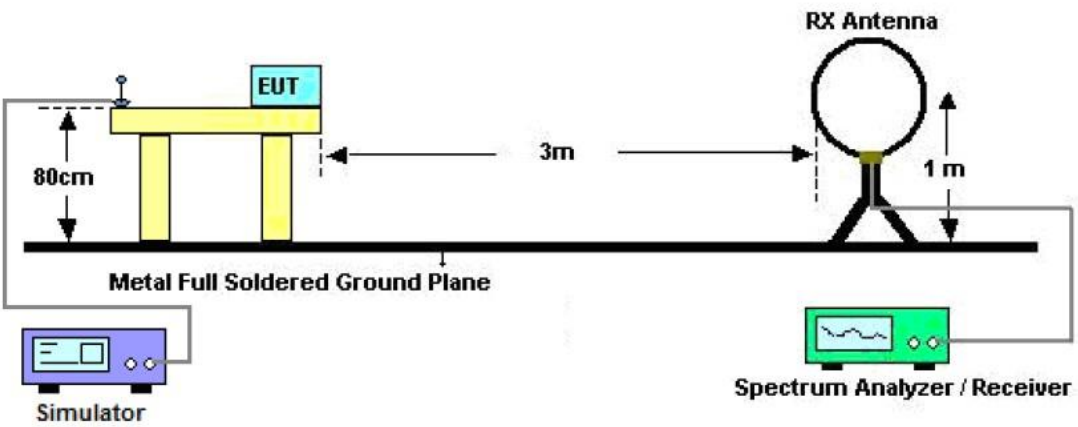
1) .For this intentional radiator operates below 25 GHz. The spectrum shall be investigated to the tenth harmonics of the highest fundamental frequency. And above the third harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 3rd harmonic.
2). As shown in Section, for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.
3). The test only perform the EUT in transmitting status since the test frequencies were over 1GHz only required transmitting status.

Test result: The unit does meet the FCC requirements.

5.6 Band Edges Requirement

Test Requirement:	FCC Part 15 C section 15.209(a), 15.225(d)
Test Method:	ANSI C63.10:2013
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, channels and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Test Configuration:



Limit：FCC Part15 C Section 15.209 and 15.225

LIMITS OF RADIATED EMISSION MEASUREMENT (Below 30MHz)

a. 15.848 microvolts/m (84 dB μ V/m) at 30 m, within the band 13.553 – 13.567 MHz.

b. 334 microvolts/m(50.5dB μV/m) at 30 m, within the bands 13.410 – 13.553MHz and 13.567 – 13.710MHz.

c. 106 microvolts/m(40.5dB μV/m) at 30 m, within the bands 13.110 – 13.410MHz and 13.710 – 14.010MHz.

d. 30 microvolts/m(29.5 dB μV/m) at 30 m, outside the band 13.110 – 14.010MHz.

Test Procedure:

a. The Product is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The maximum values of the field strength are recorded by adjusting the polarizations of the test antenna and rotating the turntable.

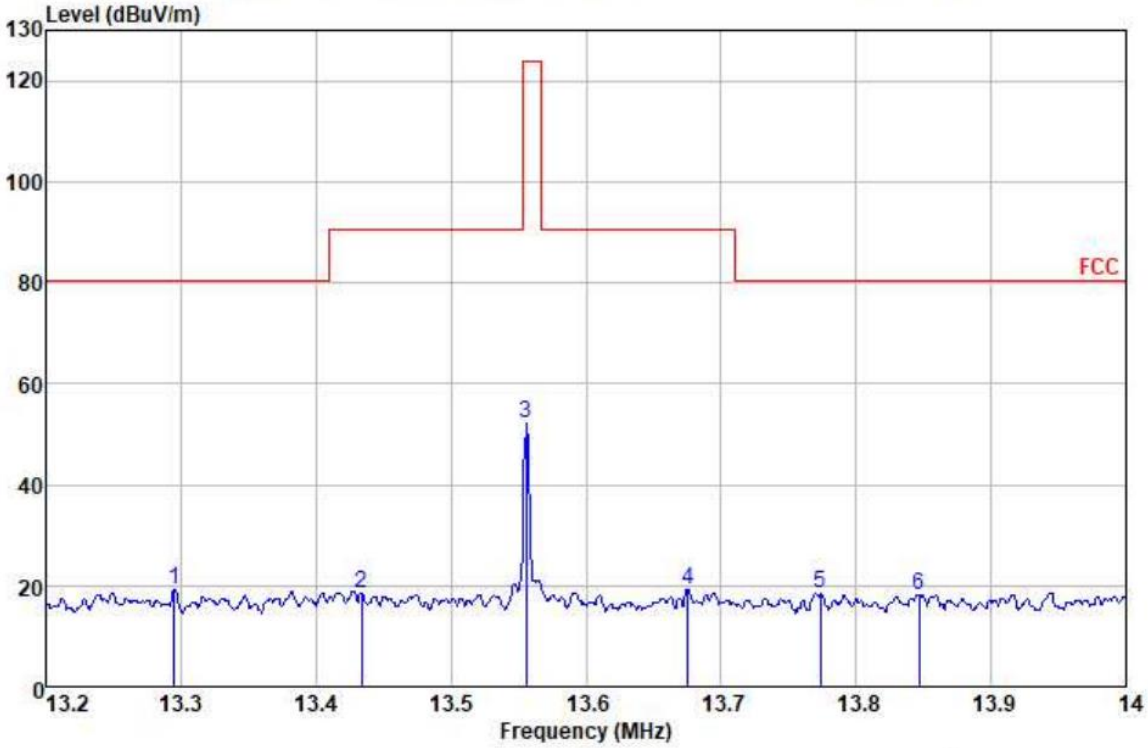
b. For each suspected emission, the Product was arranged to its worst case and then turn table was turned from 0 degrees to 360 degrees to find the maximum reading.

c. The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9kHz to 150kHz and 10kHz RBW in 150kHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

Test result:

Peak scan

Level (dBµV/m)



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	13.295	26.45	20.40	0.33	27.94	19.24	80.50	-61.26	VERTICAL	Peak
2	13.434	25.72	20.40	0.33	27.94	18.51	90.50	-71.99	VERTICAL	Peak
3	13.556	59.21	20.41	0.33	27.95	52.00	124.00	-72.00	VERTICAL	Peak
4	13.675	26.44	20.41	0.34	27.95	19.24	90.50	-71.26	VERTICAL	Peak
5	13.774	25.62	20.41	0.34	27.95	18.42	80.50	-62.08	VERTICAL	Peak
6	13.846	25.31	20.41	0.34	27.95	18.11	80.50	-62.39	VERTICAL	Peak

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Test result: The unit does meet the FCC requirements.

5.7 Conducted Emissions at Mains Terminals 150 kHz to 30MHz

Test Requirement: FCC Part 15 C section 15.207

Test Voltage: 120V~ 60Hz

Test Method: ANSI C63.10:2013 Clause 6.2

Frequency Range: 150 kHz to 30 MHz

Detector: Peak for pre-scan (9 kHz Resolution Bandwidth)

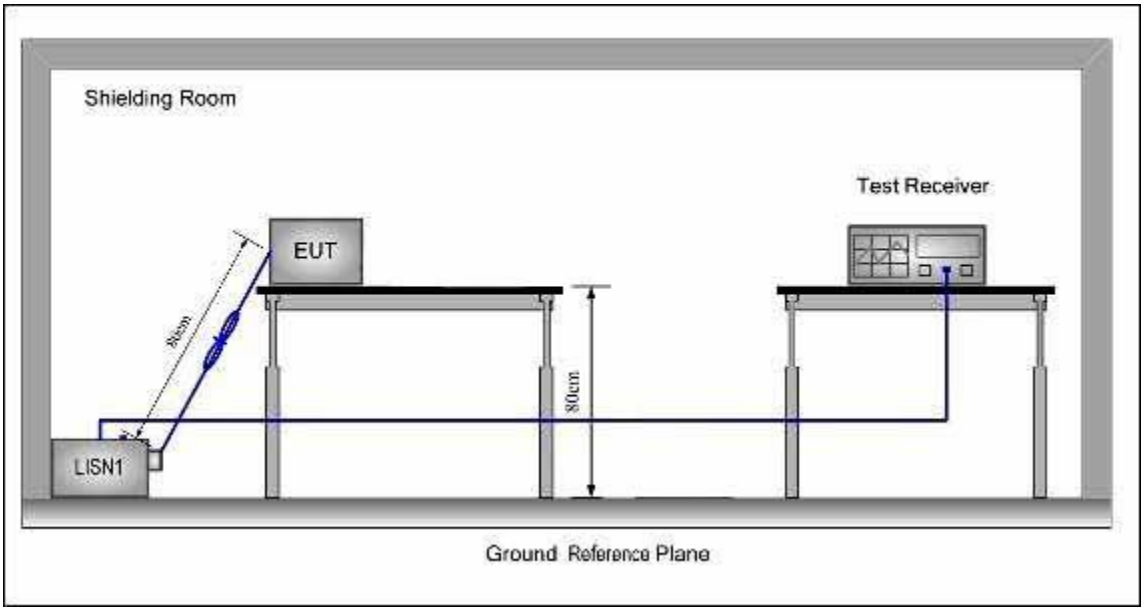
Test Limit

Limits for conducted disturbance at the mains ports of class B

Frequency Range	Class B Limit dB(μV)	
	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
NOTE 1 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.		

EUT Operation: The program used to control the EUT for staying in continuous transmitting.

Test Configuration:



Test procedure:

1. The mains terminal disturbance voltage test was conducted in a shielded room.

2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.

4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0,4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN 2.

5.7.1 Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

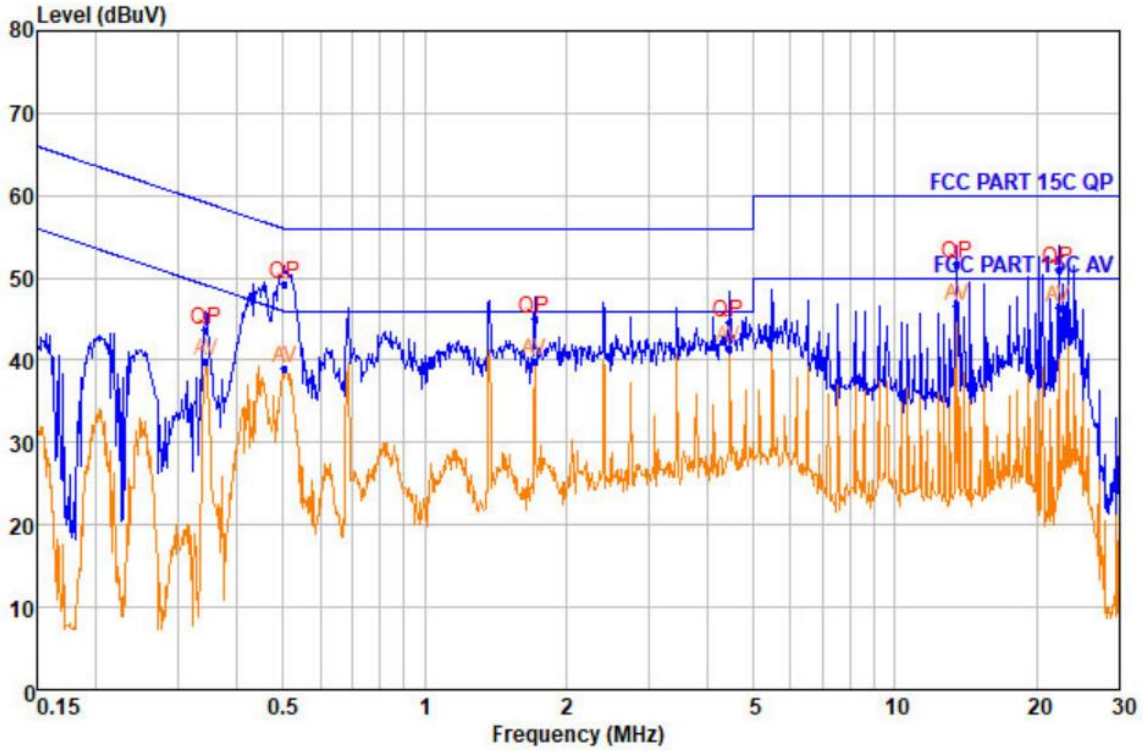
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected. For EUT the communicating was worst case mode.

The following Quasi-Peak and Average measurements were performed on the EUT

Live line

Peak Scan:

Level (dBµV)



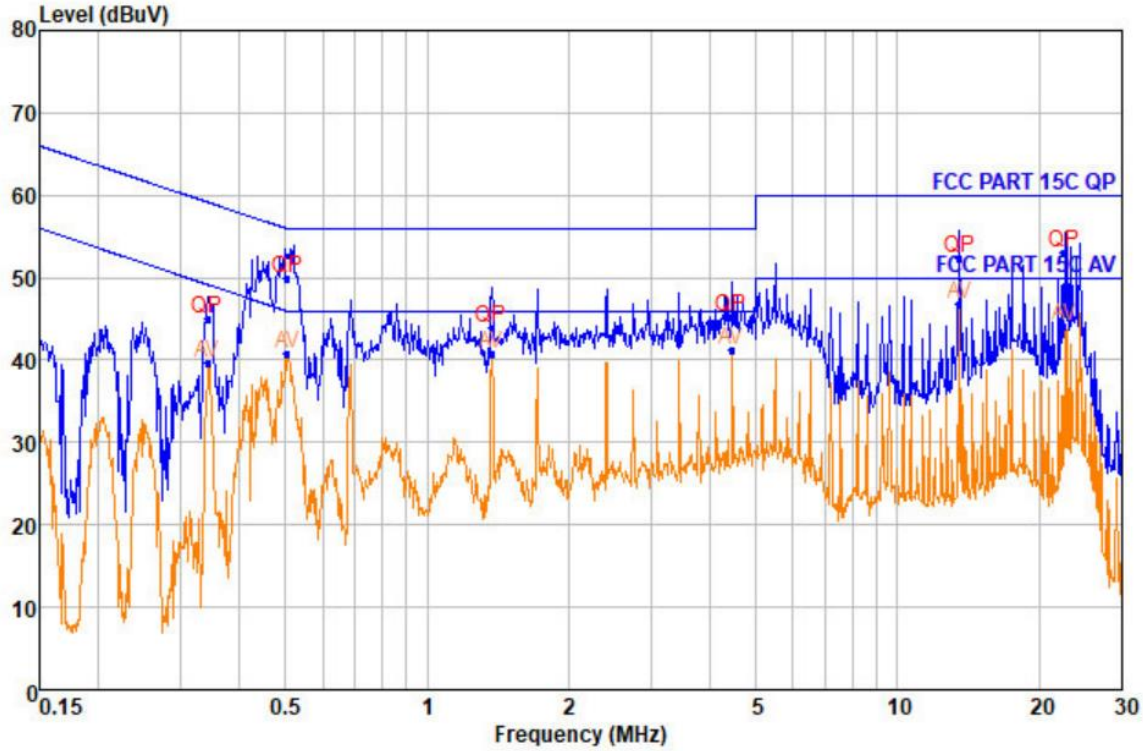
Quasi-peak and Average measurement

NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Over Limit dB
1	0.343	43.69	QP	10.02	0.25	59.13	-15.44
2	0.343	39.99	Average	10.02	0.25	49.13	-9.14
3	0.504	49.18	QP	10.01	0.27	56.00	-6.82
4	0.504	38.98	Average	10.01	0.27	46.00	-7.02
5	1.713	45.06	QP	9.99	0.34	56.00	-10.94
6	1.713	39.89	Average	9.99	0.34	46.00	-6.11
7	4.443	44.48	QP	9.89	0.39	56.00	-11.52
8	4.443	41.41	Average	9.89	0.39	46.00	-4.59
9	13.528	51.77	QP	9.67	0.45	60.00	-8.23
10	13.528	46.66	Average	9.67	0.45	50.00	-3.34
11	22.252	50.99	QP	9.46	0.48	60.00	-9.01
12	22.252	46.46	Average	9.46	0.48	50.00	-3.54

Neutral Line

Peak Scan:

Level (dBμV)

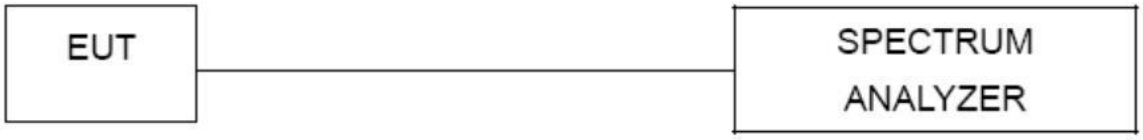


Quasi-peak and Average measurement

NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Over Limit dB
1	0.341	44.95	QP	9.94	0.25	59.18	-14.23
2	0.341	39.77	Average	9.94	0.25	49.18	-9.41
3	0.505	49.91	QP	9.90	0.27	56.00	-6.09
4	0.505	40.69	Average	9.90	0.27	46.00	-5.31
5	1.371	43.96	QP	9.92	0.33	56.00	-12.04
6	1.371	40.84	Average	9.92	0.33	46.00	-5.16
7	4.443	45.31	QP	9.83	0.39	56.00	-10.69
8	4.443	41.19	Average	9.83	0.39	46.00	-4.81
9	13.528	52.47	QP	9.64	0.45	60.00	-7.53
10	13.528	46.69	Average	9.64	0.45	50.00	-3.31
11	22.610	52.99	QP	9.65	0.48	60.00	-7.01
12	22.610	44.01	Average	9.65	0.48	50.00	-5.99

5.8 Transmitter Frequency Stability

5.8.1 Block Diagram Of Test Setup



5.8.2 Limit:

The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.
Limit: ±0.01% of 13.56MHz=1356Hz

5.8.3 Test Procedure

1. Set RBW = 10 kHz.
2. Set the video bandwidth (VBW) ⩾RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. The transmitter output (antenna port) was connected to the spectrum analyzer.

5.8.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.5 Unless otherwise a special operating condition is specified in the follows during the testing.

5.8.5 Test Result

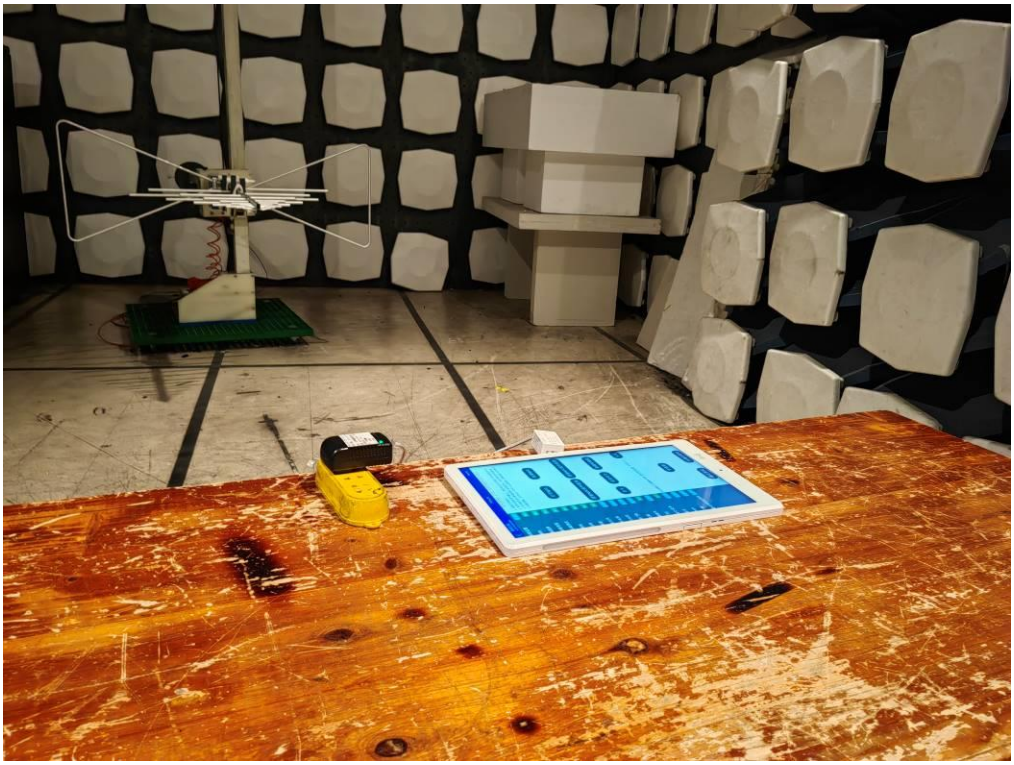
Temperature：	25℃	Relative Humidity：	51%
Pressure：	101kPa	Test Voltage ：	AC120V/60Hz
Test Mode ：	TX mode		

Test Conditions			Frequency Deviation		Limit (Hz)	Result
Frequency MHz	Power(Vdc)	Temperature (℃)	Measured (MHz)	Frequency error(Hz)		
13.56	AC 120V	-20	13.56022	220	±1356	pass
	AC 120V	-10	13.56026	260	±1356	
	AC 120V	0	13.56031	310	±1356	
	AC 120V	10	13.56044	440	±1356	
	AC 120V	20	13.56025	560	±1356	
	AC 120V	30	13.56026	260	±1356	
	AC 120V	40	13.56028	280	±1356	
	AC 120V	50	13.56033	330	±1356	
	AC 102V	20	13.56045	450	±1356	
	AC 138V	20	13.56065	650	±1356	

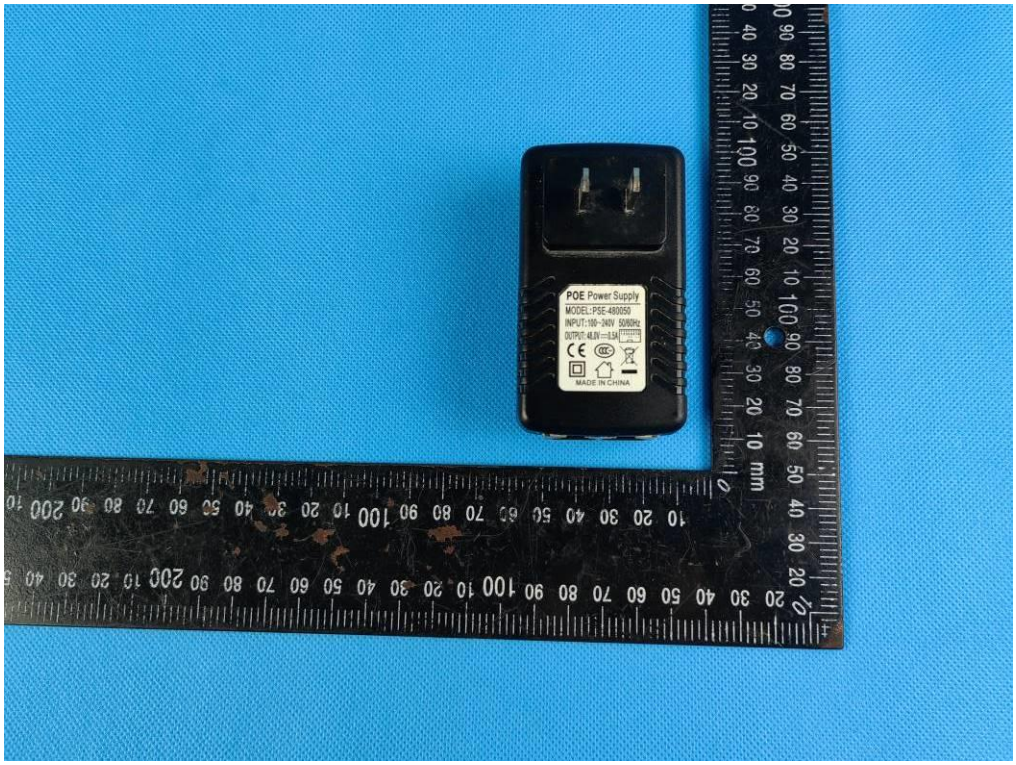
6.1 EUT Test Setup Photographs

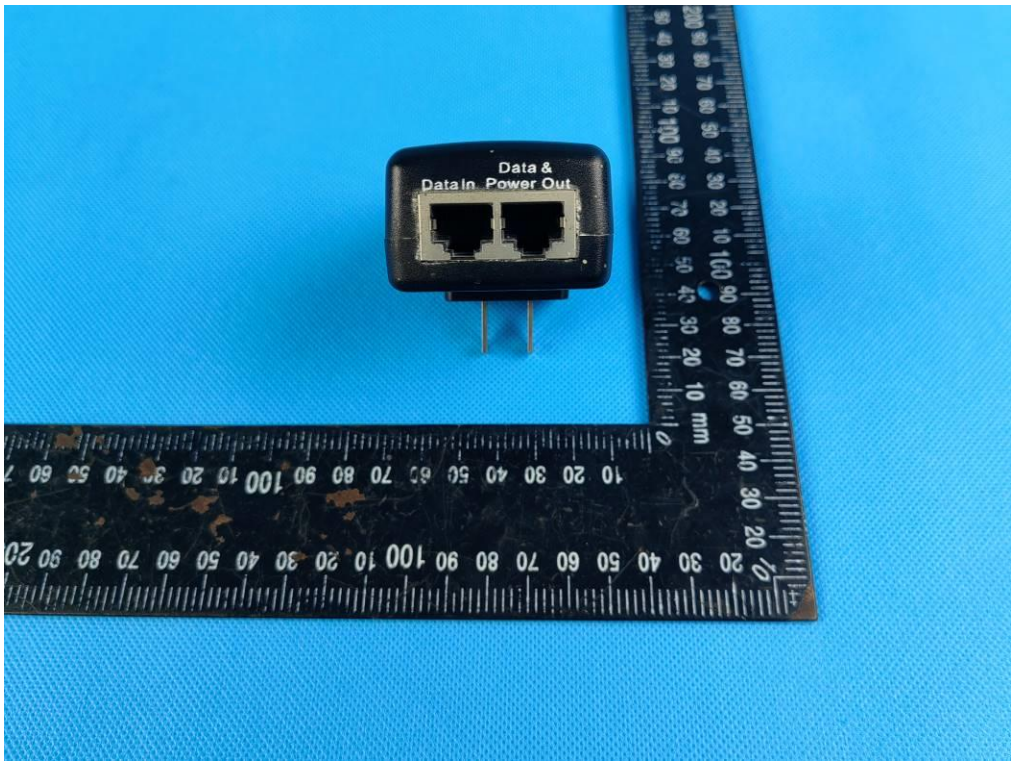
Conducted Emission Photo

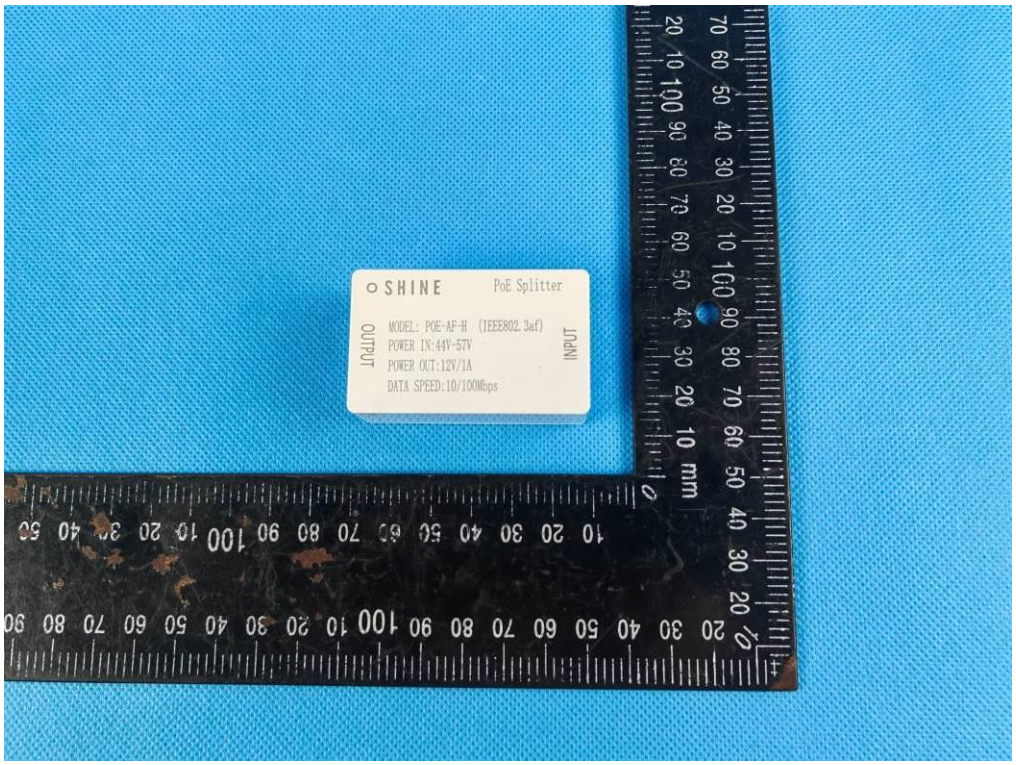
Radiated Measurement Photos

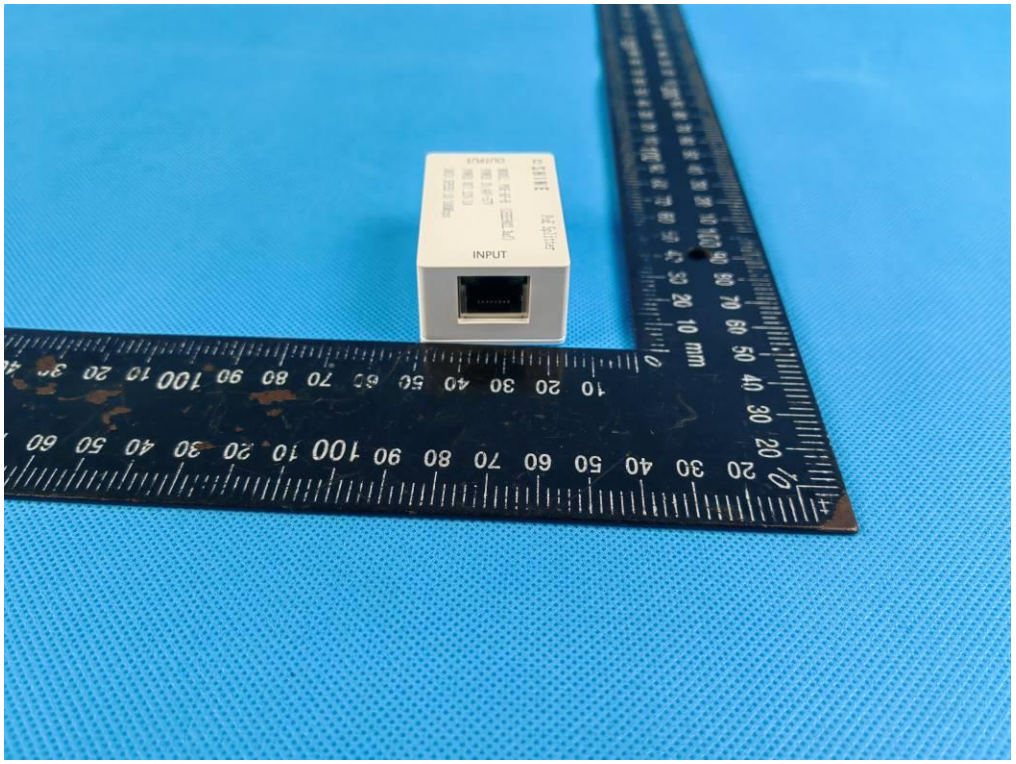


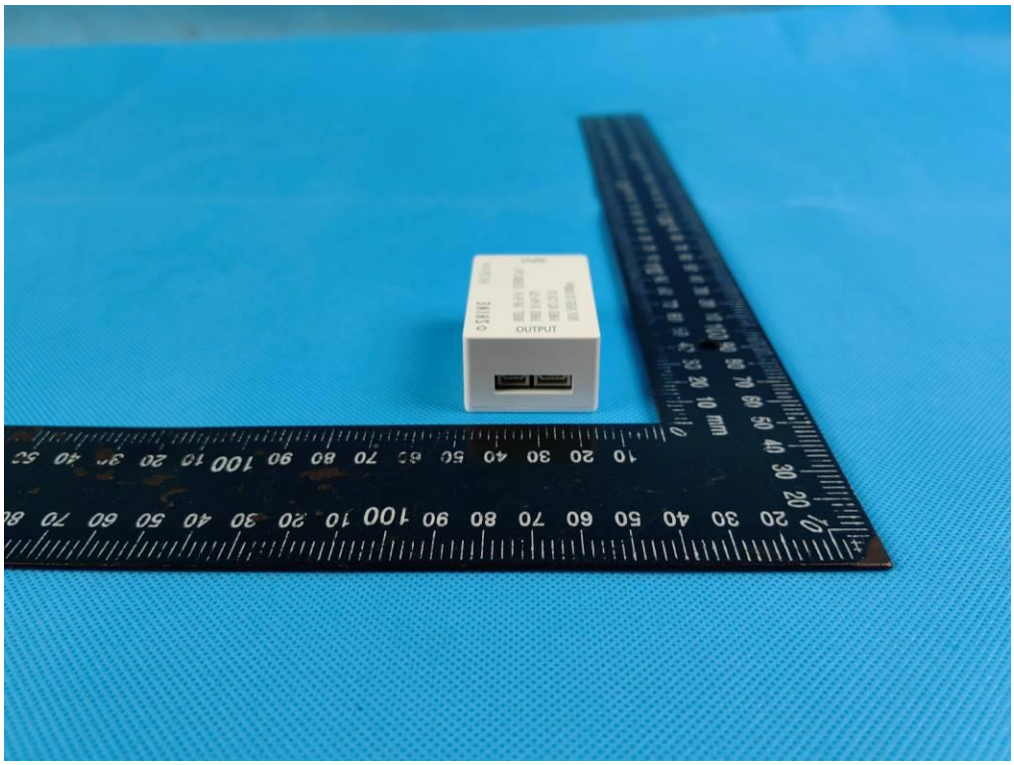
6.2 EUT Photographs

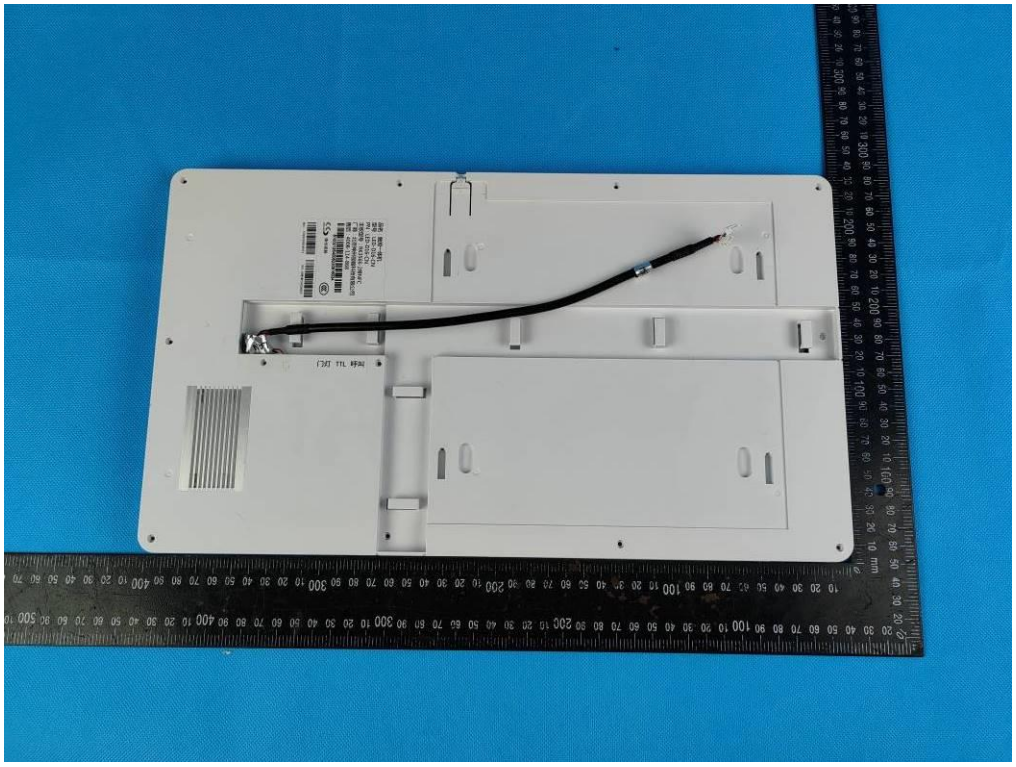

POE Power Supply
MODEL:PSE-480050
INPUT:100~240V 50/60Hz
OUTPUT:48.0V---0.5A
MADE IN CHINA

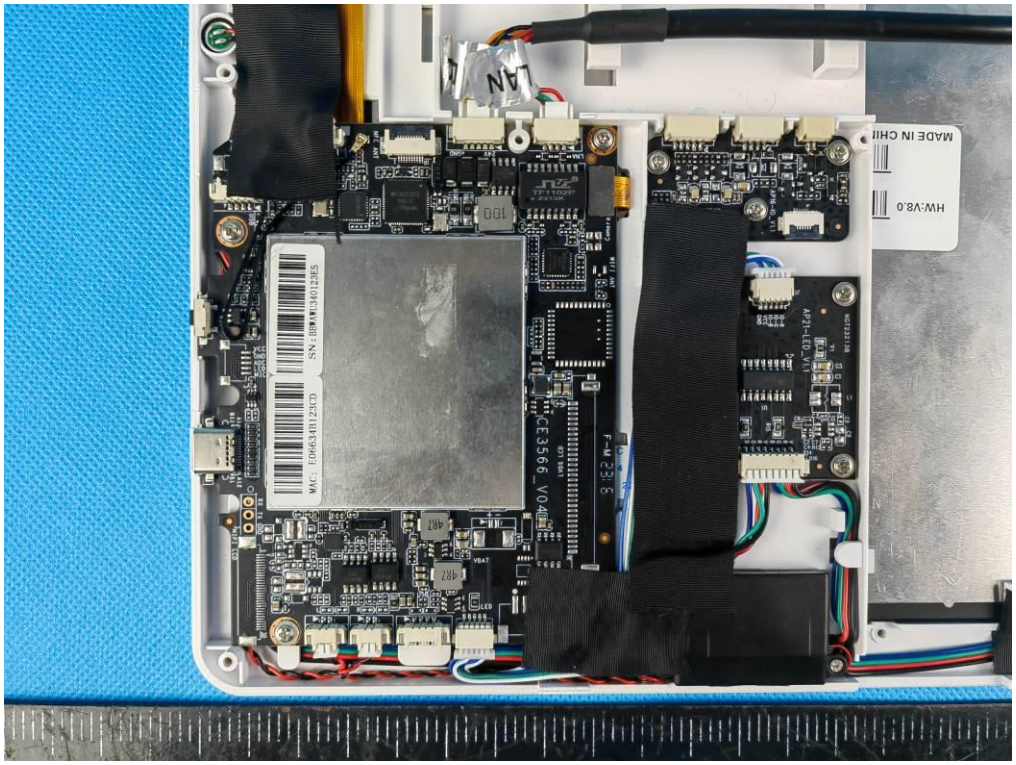

Data &
Data In Power Out


SHINE
PoE Splitter
MODEL: POE-AF-H (IEEE802.3af)
POWER IN:44V-57V
POWER OUT:12V/1A
DATA SPEED:10/100Mbps
OUTPUT
INPUT


INPUT


OUTPUT





-- End of test report --