

TEST REPORT

Applicant : SHENZHEN GOSPELL DIGITAL TECHNOLOGY CO., LTD.
Address : E. of 5F, Zone A, 1st Ind. Area, Fenghuanggang, Sou. BaoTian 1Rd., Xixiang, St., Bao An District, Shenzhen, Guangdong 518102, P.R.China
Manufacturer : SHENZHEN GOSPELL DIGITAL TECHNOLOGY CO.,LTD.
Address : E. of 5F, Zone A, 1st Ind. Area FENGHUANGGANG, Sou. BaoTian 1 Rd. Xixiang ST., Bao An District SHENZHEN, Guangdong 518102 P.R.CHINA.
Product Name : POWER OVER ETHERNET INJECTOR
Trade Mark : SHENZHEN GOSPELL DIGITAL TECHNOLOGY CO., LTD.
Model No. : G0720-480-050
Ratings : Input: 100-240V~,50/60Hz,0.75AMax; Output: 48.0V === 0.5A, 24.0W
Test specification : COMMISSION REGULATION (EU) 2019/1782 implementing Directive 2009/125/EC with regard to ecodesign requirement for no-load Condition electric power consumption and average active efficiency
Test method : EN 50563:2011+A1:2013 External a.c. - d.c. and a.c.-a.c. power supplies – Determination of no-load power and average efficiency of active modes
Date of Receiver : March 10, 2020
Date of Test : March 17, 2020 to March 19, 2020
Date of Issue : March 20, 2020
Test Report Form No : NTCS-ERP-EPS-2019/1782
Test Result : Pass *
This Test Report is Issued Under the Authority of :

Compiled by

Jenny So

Jenny So / Engineer

Approved by & Authorized Signer



Ryan Luo / Authorized Signatory

***Remarks:**

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of Shenzhen NTC Co., Ltd. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Revision History of This Test Report

[illegible]

Copy of marking plate:



Summary of testing:

The samples submitted were tested and comply with the efficiency in the active mode and the energy consumption in the no-load mode at the corresponding national AC mains supply voltage according to following regulations:

EU Energy-related Products (ErP) directive COMMISSION REGULATION (EU) 2019/1782
1 October 2019

And the use of an efficiency mark, according to the international efficiency marking protocol, qualified with efficiency marking:

☐ IV ☐ V ☒ VI

Test item particulars

Classification of installation and use: ☒ Class I
☐ Class II
Supply Connection: ☐ Direct plug in
☒ Detachable power supply cord
☐ Non-detachable power supply cord.
Category: ☒ Basic Voltage EPS
☐ Low Voltage EPS
☐ Multiple-voltage EPS
Type of external power supplies: ☒ AC input into DC output
☐ AC input into AC output
Output cord length (mm).....: N/A
Output cord cross-sectional areas.....: N/A
Output plug type.....: ☐ USB ☐ Cord
Built-in switch.....: ☐ Yes ☒ No
Measurement method from EN 50564:2011, 5.3.2 or 5.3.3 used: Average reading method

Possible test case verdicts:

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

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
Throughout this report a comma is used as the decimal separator.

General product information:

-The UUT (Unit Under Test) is a Single-voltage external AC to DC power supply (POWER OVER ETHERNET INJECTOR), for supplying power to information technology equipment included electrical business equipment.

Model name	Input	Output	Output Wattage	Efficiency marking
G0720-480-050	100-240V~, 50/60Hz,0.75A _{Max}	48.0Vdc, 0.5A	24.0W	VI

-Factory Information:

1.SHENZHEN GOSPELL DIGITAL TECHNOLOGY CO., LTD.

Address:

(1). E. of 5F, Zone A, 1st Ind. Area FENGHUANGGANG, Sou. BaoTian 1 Rd. Xixiang ST., Bao An District SHENZHEN, GUANGDONG 518102 P.R.CHINA.

(2). West of the 1F to 4F, Block A, Sou. Baotian 1Rd.(Xinghong Science and Technology Park), XiXiang Street, Bao An District, Shenzhen, Guangdong 518102, P.R.China.

2.GOSPOWER ELECTRIC TECHNOLOGY CO., LTD.

Address:

Block 1, XingYe Road No.5, SongShan Lake Park, DongGuan City, Guangdong Province 523000, P.R.China.

1. General Measurement Conditions:

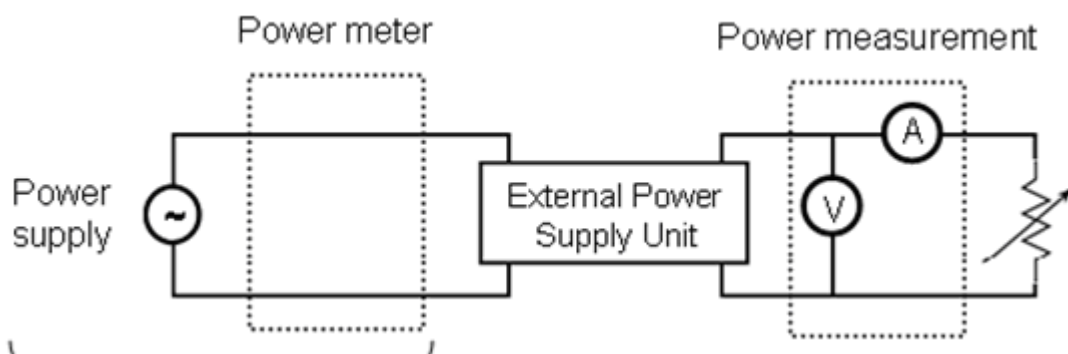
1.1 Test Room:

The testing was carried out in a room that has an air speed close to the UUT of ≤ 0.5 m/s, and the ambient temperature was maintained at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ throughout the test.

1.2 Test Voltage:

The input voltage was within the specified voltage $\pm 1\%$ and the specified frequency $\pm 1\%$. The UUT was tested at rated supply as mentioned in Summary of testing. The input power source is capable of delivering at least 10 times the nameplate input power of the UUT. The THD of the supply voltage when supplying the UUT in the specified mode was not exceeding 2%, up to and including the 13th harmonic.

1.3 Test Setup:



The samples were operated at 100% of nameplate current output for at least 30 minutes immediately prior to conducting each of efficiency measurements.

All testing leads used in the test set-up were of large gauge and shortest possible length in order to avoid the introduction of errors in the testing process.

A total of 3 test specimens were tested as required by the regulations.

1.4 Load Conditions:

The UUT was tested at five active mode load conditions and the no load condition according to Table 1 below by using electronic loads.

Percentage of Nameplate Output Current	
Load Condition 1	100% $\pm$ 2%
Load Condition 2	75% $\pm$ 2%
Load Condition 3	50% $\pm$ 2%
Load Condition 4	25% $\pm$ 2%
Load Condition 5	10% $\pm$ 2%
Load Condition 6	0%

The 2% allowance is of nameplate output current, not of the calculated current value. For example, a UUT at Load Condition 3 may be tested in a range from 48% to 52% of rated output current.

2. Test Summary :

(1) Ecodesign requirements set out in Annex II, 1 a and b) of COMMISSION REGULATION (EU) 2019/1782 for no-load electric power consumption and average active efficiency of external power supplies:

Rated Output Power (Po)	Minimum Average Efficiency in Active Mode	Verdict
Po≤1.0W	AC-AC external power supplies, except low voltage and multiple voltage output external power supplies: $0.5 \cdot Po/1W + 0.160$	N/A
	AC-DC external power supplies, except low voltage and multiple voltage output external power supplies: $0.5 \cdot Po/1W + 0.160$	N/A
	Low voltage external power supplies: $0.517 \cdot Po/1W + 0.087$	N/A
	Multiple voltage output external power supplies: $0.497 \cdot Po/1W + 0.067$	N/A
1.0W < Po≤49.0W	AC-AC external power supplies, except low voltage and multiple voltage output external power supplies: $0.071 \cdot \ln(Po/1W) - 0.0014 \times Po/1W + 0.67$	N/A
	AC-DC external power supplies, except low voltage and multiple voltage output external power supplies: $0.071 \cdot \ln(Po/1W) - 0.0014 \times Po/1W + 0.67$	P
	Low voltage external power supplies: $0.0834 \cdot \ln(Po/1W) - 0.0014 \cdot Po/1W + 0.609$	N/A
	Multiple voltage output external power supplies: $0.075 \cdot \ln(Po/1W) + 0.561$	N/A
Po > 49.0W	AC-AC external power supplies, except low voltage and multiple voltage output external power supplies: 0.880	N/A
	AC-DC external power supplies, except low voltage and multiple voltage output external power supplies: 0.880	N/A
	Low voltage external power supplies: 0.870	N/A
	Multiple voltage output external power supplies: 0.860	N/A
Rated Output Power (Po)	No-load Power Consumption	Verdict
Po≤49.0W	AC-AC external power supplies, except low voltage and multiple voltage output external power supplies: 0.21W	N/A
	AC-DC external power supplies, except low voltage and multiple voltage output external power supplies: 0.10W	P
	Low voltage external power supplies: 0.10W	N/A
	Multiple voltage output external power supplies: 0.30W	N/A
Po > 49.0W	AC-AC external power supplies, except low voltage and multiple voltage output external power supplies: 0.21W	N/A
	AC-DC external power supplies, except low voltage and multiple voltage output external power supplies: 0.21W	N/A
	Low voltage external power supplies: 0.21W	N/A
	Multiple voltage output external power supplies: 0.30W	N/A

Note(s):

1. "ln" refers to the natural logarithm;
2. 'low voltage external power supply' means an external power supply with a nameplate output voltage of less than 6 volts and a nameplate output current greater than or equal to 550 milliamperes;
3. 'multiple voltage output external power supply' means an external power supply able to convert AC power input from the mains power source into more than one simultaneous output at lower DC or AC voltage;
4. 'nameplate output power' (P_O) means the maximum output power as specified by the manufacturer;
5. 'no-load condition' means the condition in which the input of an external power supply is connected to the mains power source, but the output is not connected to any primary load.

3. Test Results:

Tabel: Energy-Efficiency data and the no-load power consumption					P
Model No:	G0720-480-050				
Sample No.:	2003-0470				
Test voltage/ Frequency	230V 50Hz				
Percentage of rated output current	Measure at load condition (Percentage of nameplate output current)				
	100%	75%	50%	25%	0%(no-load condition)
Output voltage (Vd.c.)	47.6	47.8	47.8	48.1	48.0
Output Current (A)	0.5	0.375	0.25	0.125	--
Active Output Power (W)	23.8	17.93	11.95	6.01	--
Input voltage (Vd.c.)	230	230	230	230	230
Input Current (A)	0.215	0.167	0.117	0.063	0.056
Input Power (W)	27.24	20.58	13.86	7.0	0.10
Total Harmonic Distortion (THD,A%)	82.37	83.36	84.15	83.67	6.49
Total Harmonic Distortion (THD,V%)	0.57	0.53	0.54	0.56	0.61
True Power Factor(W/VA)	0.55	0.53	0.51	0.48	0.48
Power consumed by UUT:	3.44	2.65	1.91	1.07	0.10
Efficiency (%)	87.37	87.12	86.22	85.86	--
Average Efficiency (%)	86.64				--
The average active efficiency limits value (%):≥ 86.20					
The no-load condition power consumption limit (W):≤0.10					

Tabel: Energy-Efficiency data and the no-load power consumption					P
Model No:	G0720-480-050				
Sample No.:	2003-0474				
Test voltage/ Frequency	230V 50Hz				
Percentage of rated output current	Measure at load condition (Percentage of nameplate output current)				
	100%	75%	50%	25%	0%(no-load condition)
Output voltage (Vd.c.)	47.6	47.8	48.1	48.1	48.0
Output Current (A)	0.5	0.375	0.25	0.125	--
Active Output Power (W)	23.8	17.93	12.02	6.02	--
Input voltage (Vd.c.)	230	230	230	230	230
Input Current (A)	0.216	0.167	0.117	0.063	0.059
Input Power (W)	27.23	20.64	13.88	7.0	0.10
Total Harmonic Distortion (THD,A%)	82.47	83.20	83.55	83.01	5.86
Total Harmonic Distortion (THD,V%)	0.56	0.55	0.55	0.56	0.56
True Power Factor(W/VA)	0.54	0.53	0.51	0.48	0.48

Power consumed by UUT:	3.43	2.71	1.86	1.07	0.10
Efficiency (%)	87.40	86.87	86.59	86.00	--
Average Efficiency (%)	86.72				--
The average active efficiency limits value (%): ≥ 86.20					
The no-load condition power consumption limit (W): ≤ 0.10					

Tabel: Energy-Efficiency data and the no-load power consumption					P
Model No:	G0720-480-050				
Sample No.:	2003-0485				
Test voltage/ Frequency	230V 50Hz				
Percentage of rated output current	Measure at load condition (Percentage of nameplate output current)				
	100%	75%	50%	25%	0%(no-load condition)
Output voltage (Vd.c.)	47.1	47.4	47.4	47.7	48.0
Output Current (A)	0.5	0.375	0.25	0.125	--
Active Output Power (W)	23.55	17.78	11.90	5.96	--
Input voltage (Vd.c.)	230	230	230	230	230
Input Current (A)	0.209	0.164	0.115	0.062	0.059
Input Power (W)	27.0	20.28	13.68	6.96	0.10
Total Harmonic Distortion (THD,A%)	82.27	83.16	83.90	83.14	5.66
Total Harmonic Distortion (THD,V%)	0.57	0.55	0.51	0.54	0.55
True Power Factor(W/VA)	0.56	0.53	0.51	0.48	0.48
Power consumed by UUT:	3.45	2.50	1.78	1.0	0.10
Efficiency (%)	87.22	87.67	86.99	85.63	--
Average Efficiency (%)	86.88				--
The average active efficiency limits value (%):≥ 86.20					
The no-load condition power consumption limit (W):≤ 0.10					

Tabel: Energy-Efficiency data and the no-load power consumption					P
Model No:	G0720-480-050				
Sample No.:	2003-0470				
Test voltage/ Frequency	115V 60Hz				
Percentage of rated output current	Measure at load condition (Percentage of nameplate output current)				
	100%	75%	50%	25%	0%(no-load condition)
Output voltage (Vd.c.)	47.8	47.8	47.8	48.1	48.0
Output Current (A)	0.5	0.375	0.25	0.125	--
Active Output Power (W)	23.9	17.92	11.95	6.01	--
Input voltage (Vd.c.)	115	115	115	115	115

Input Current (A)	0.387	0.298	0.204	0.108	0.059
Input Power (W)	27.56	20.64	13.86	7.0	0.08
Total Harmonic Distortion (THD,A%)	76.76	78.20	79.76	81.29	11.37
Total Harmonic Distortion (THD,V%)	0.96	0.80	0.66	0.50	0.48
True Power Factor(W/VA)	0.62	0060	0.59	0.56	0.55
Power consumed by UUT:	3.76	2.72	1.91	1.01	0.08
Efficiency (%)	86.71	86.82	86.21	85.86	--
Average Efficiency (%)	86.40				--
The average active efficiency limits value (%):≥ 86.20					
The no-load condition power consumption limit (W):≤ 0.10					

Tabel: Energy-Efficiency data and the no-load power consumption					P
Model No:	G0720-480-050				
Sample No.:	2003-0475				
Test voltage/ Frequency	115V 60Hz				
Percentage of rated output current	Measure at load condition (Percentage of nameplate output current)				
	100%	75%	50%	25%	0%(no-load condition)
Output voltage (Vd.c.)	47.7	47.9	47.9	48.2	48.1
Output Current (A)	05	0.375	0.25	0.125	--
Active Output Power (W)	23.85	17.96	11.97	6.02	--
Input voltage (Vd.c.)	115	115	115	115	115
Input Current (A)	0.393	0.297	0.202	0.106	0.059
Input Power (W)	27.5	20.7	13.82	7.02	0.08
Total Harmonic Distortion (THD,A%)	77.01	77.77	79.37	80.57	11.15
Total Harmonic Distortion (THD,V%)	0.98	0.77	0.65	0.51	0.48
True Power Factor(W/VA)	0.61	0.60	0.059	0.57	0.55
Power consumed by UUT:	3.65	2.74	1.85	1.00	0.08
Efficiency (%)	86.72	86.76	76.61	75.75	--
Average Efficiency (%)	86.46				--
The average active efficiency limits value (%):≥ 86.20					
The no-load condition power consumption limit (W):≤ 0.10					

Tabel: Energy-Efficiency data and the no-load power consumption					P
Model No:	G0720-480-050				
Sample No.:	2003-0485				
Test voltage/ Frequency	115V 60Hz				

Percentage of rated output current	Measure at load condition (Percentage of nameplate output current)				
	100%	75%	50%	25%	0%(no-load condition)
Output voltage (Vd.c.)	47.4	47.4	47.7	47.7	48.0
Output Current (A)	05	0.375	0.25	0.125	--
Active Output Power (W)	23.55	17.77	11.92	5.96	--
Input voltage (Vd.c.)	115	115	115	115	115
Input Current (A)	0.396	0.294	0.200	0.104	0.59
Input Power (W)	27.3	20.46	13.74	6.90	0.08
Total Harmonic Distortion (THD,A%)	77.66	79.06	80.01	80.64	11.37
Total Harmonic Distortion (THD,V%)	0.94	0.77	0.66	0.52	0.47
True Power Factor(W/VA)	0.61	0.60	0.59	0.57	0.55
Power consumed by UUT:	3.75	2.69	1.82	0.94	0.08
Efficiency (%)	86.26	86.85	86.75	86.37	--
Average Efficiency (%)	86.56				--
The average active efficiency limits value (%):≥ 86.20					
The no-load condition power consumption limit (W):≤ 0.10					

Tabel: Minimum Efficiency in Active Mode at 10 % load of full rated output current				
Tested model:	G0720-480-050			
Test voltage/ Frequency	230V/50Hz			
Sample No.:	2003-0470	2003-0475	2003-0485	Remark
Percent of Nameplate Current	10%	10%	10%	--
Output Current (A)	0.05	0.05	0.05	--
Output Voltage (V)	48.3	48.3	47.8	--
Output Power (W)	2.41	2.41	2.39	Output Power (Pout)
Input Current (A)	0.033	0.033	0.032	--
Input Voltage (V)	230	230	230	--
Input Power (W)	3.01	3.04	3.06	Input Power (Pin)
Total Harmonic Distortion A% (THD)	77.32	75.42	77.93	--
Total Harmonic Distortion V%(THD)	0.56	0.58	0.53	--
True Power Factor (W/VA)	0.42	0.41	0.47	--
Power Consumed by UUT (W)	0.6	0.63	0.67	--
Efficiency (%)	80.06	79.28	78.10	--

Table: Minimum Efficiency in Active Mode at 10 % load of full rated output current

Tested model:	G0720-480-050			
Test voltage/ Frequency	115V/50Hz			
Sample No.:	2003-0470	2003-0475	2003-0485	Remark
Percent of Nameplate Current	10%	10%	10%	--
Output Current (A)	0.05	0.05	0.05	--
Output Voltage (V)	48.3	48.2	47.7	--
Output Power (W)	2.41	2.41	2.38	Output Power (Pout)
Input Current (A)	0.048	0.046	0.047	--
Input Voltage (V)	115	115	115	--
Input Power (W)	2.95	2.96	2.94	Input Power (Pin)
Total Harmonic Distortion A% (THD)	81.55	81.69	81.70	--
Total Harmonic Distortion V%(THD)	0.48	0.49	0.49	--
True Power Factor (W/VA)	0.54	0.53	0.53	--
Power Consumed by UUT (W)	0.54	0.55	0.56	--
Efficiency (%)	81.69	81.42	80.95	--

4. Test and Calculated Results:

Item	Sample No.	Test at 115V, 60Hz	Test at 230V, 50Hz	Limit of Energy Efficiency	Verdict
No load power (W)	2003-0470	0.08	0.10	0.10	P
	2003-0475	0.08	0.10	0.10	P
	2003-0485	0.08	0.10	0.10	P
	Average	0.08	0.10	--	--
Average Efficiency (%) at 10%	2003-0470	81.69	80.06	--	--
	2003-0475	81.42	79.28	--	--
	2003-0485	80.95	78.10	--	--
	Average	81.35	79.14	--	--
Load conditions Average Efficiency (%)	2003-0470	86.40	86.64	86.20	P
	2003-0475	86.46	86.72	86.20	P
	2003-0485	86.56	86.88	86.20	P
	Average	86.47	86.74	--	--

5. Equipment Used during Test :

Equipment	Model/Type	Cal. Date	Valid Date
Digital Power Meter	WT210	2019/9/6	2020/9/5
Electronic Loading	3710A	2019/9/6	2020/9/5
Digital anemometer	P6-8901	2019/9/6	2020/9/5

6. Information requirements set out in Annex II, 2 of COMMISSION REGULATION (EU) 2019/1782 :

(a) from 1 April 2020, the nameplate shall include the following information:

Nameplate information	Value and precision	Unit
Output power	24.0	W
Output voltage	48.0	V
Output current	0.5	A

Conclusion: Complied (refer to the marking label)

(b) from 1 April 2020, instruction manuals for end-users (where applicable), and free access websites of manufacturers, importers or authorised representatives shall include the following information, in the order as set out below:

Nameplate information	Value and precision	Unit
Manufacturer's name or trade mark, commercial registration number and address	SHENZHEN GOSPELL DIGITAL TECHNOLOGY CO., LTD.	--
Model identifier	G0720-480-050	--
Input voltage	100-240	V
Input AC frequency	50/60	Hz
Output voltage	48.0	V
Output current	0.5	A
Output power	24.0	W
Average active efficiency	86.74	%
Efficiency at low load (10 %)	79.14	%
No-load power consumption	0.10	W

Remark:

1. Values for efficiency and no-load power are the arithmetical means of the values determined for 3 tested units.
2. Tested at 115V/60Hz and 230V/50Hz, most unfavourable value are declared here.
3. Round the calculated efficiency value to one tenth of a percentage point, and round the calculated no-load power value to one hundredth of the point.

Conclusion: Complied (Refer to the Instruction Manual and Website)

Photo documentation

Photo 1

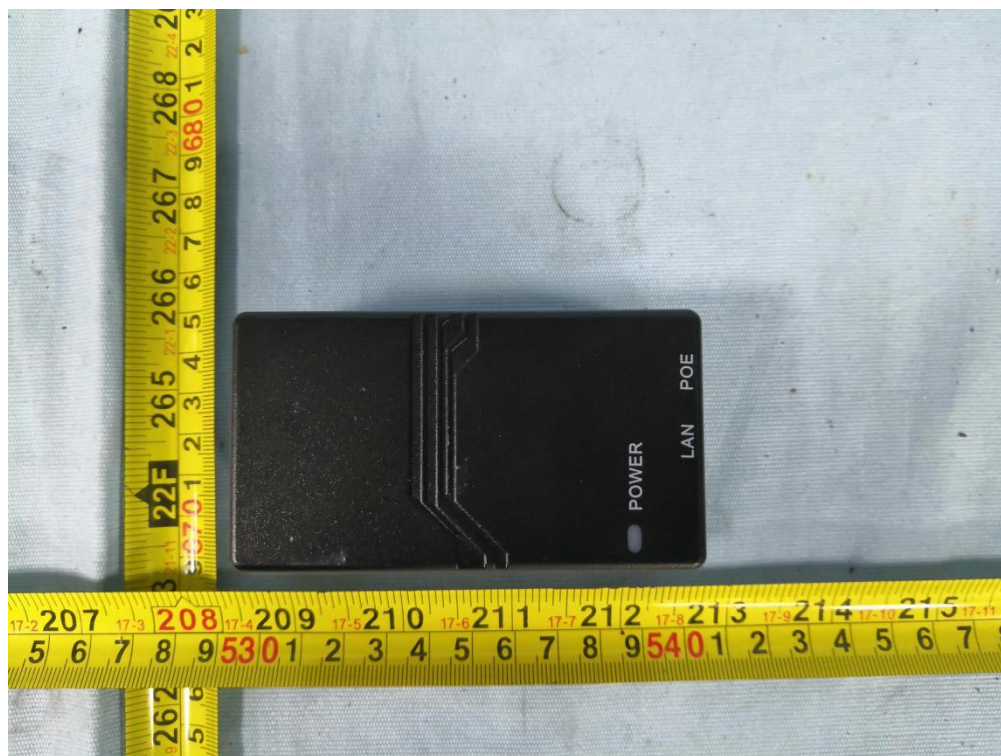


Photo 2



Photo 3

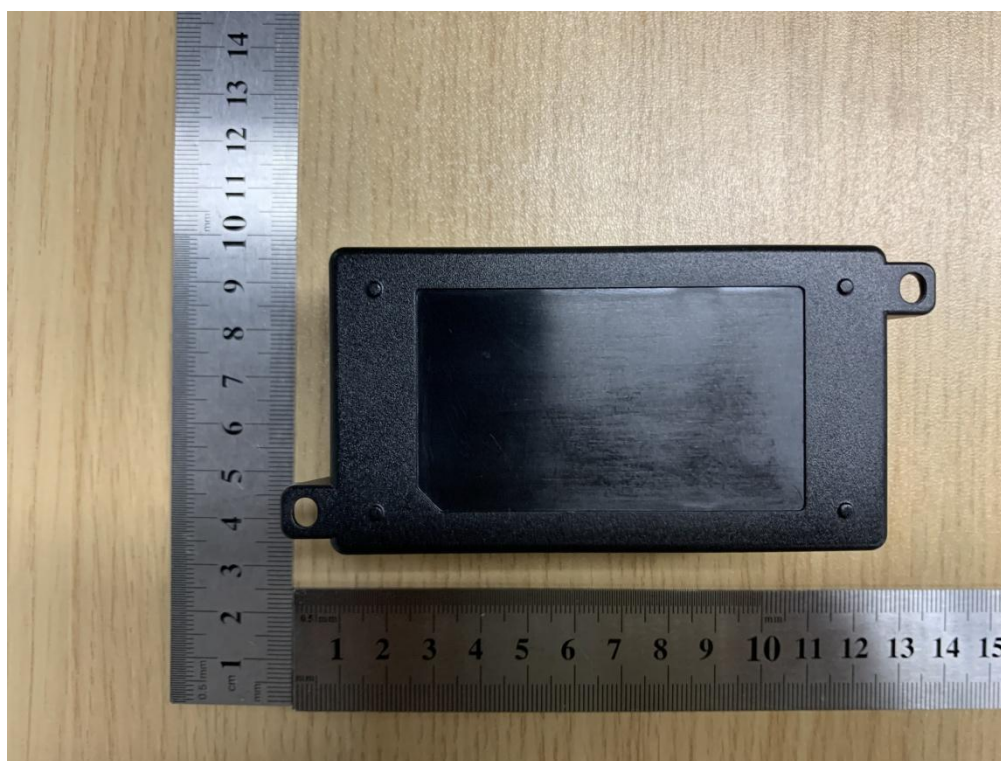


Photo 4

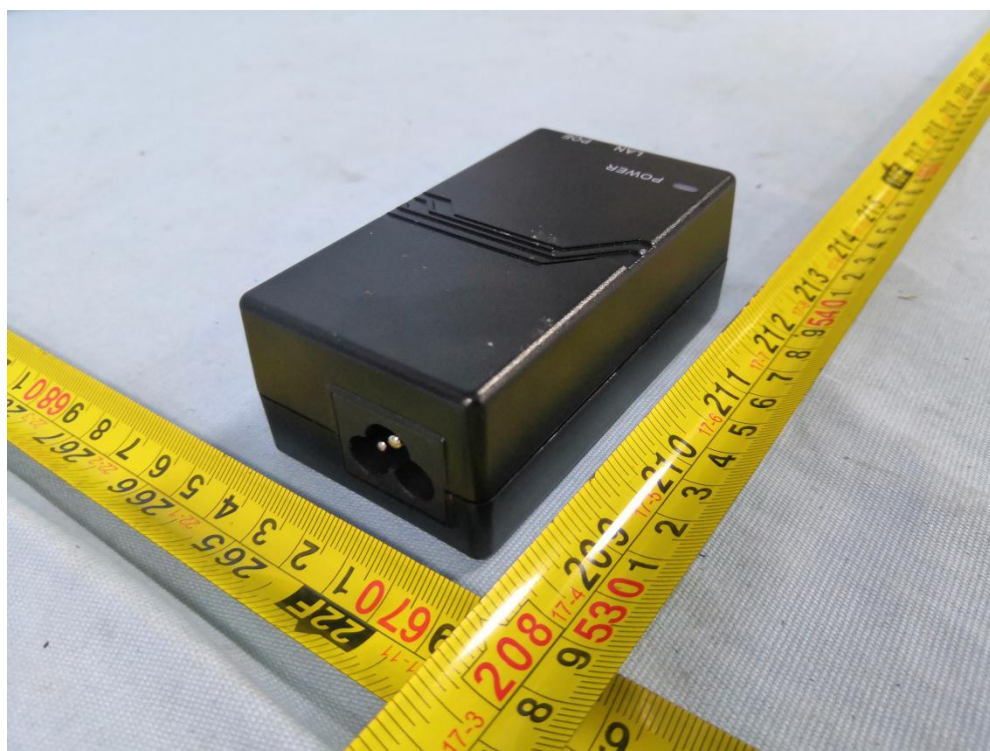


Photo 5



Photo 6

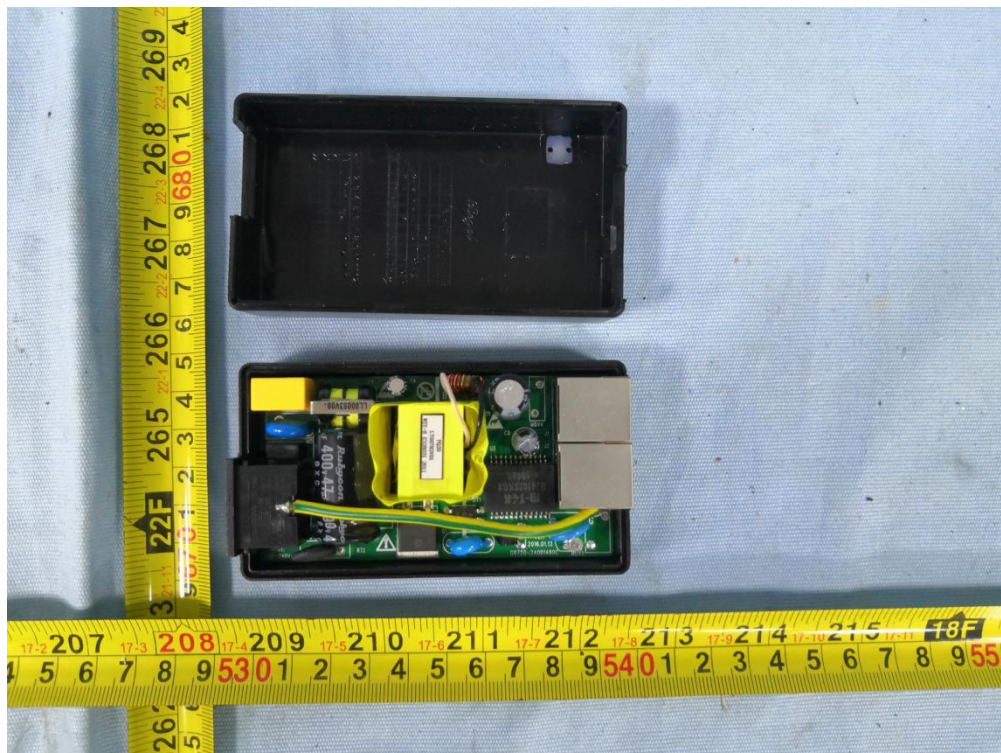


Photo 7

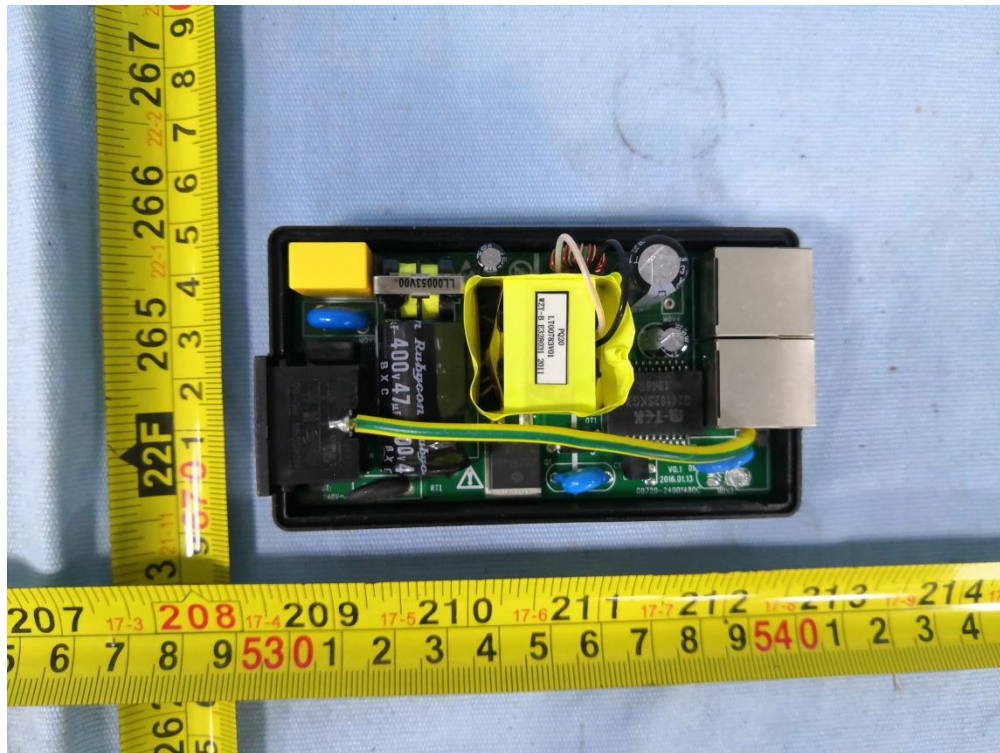
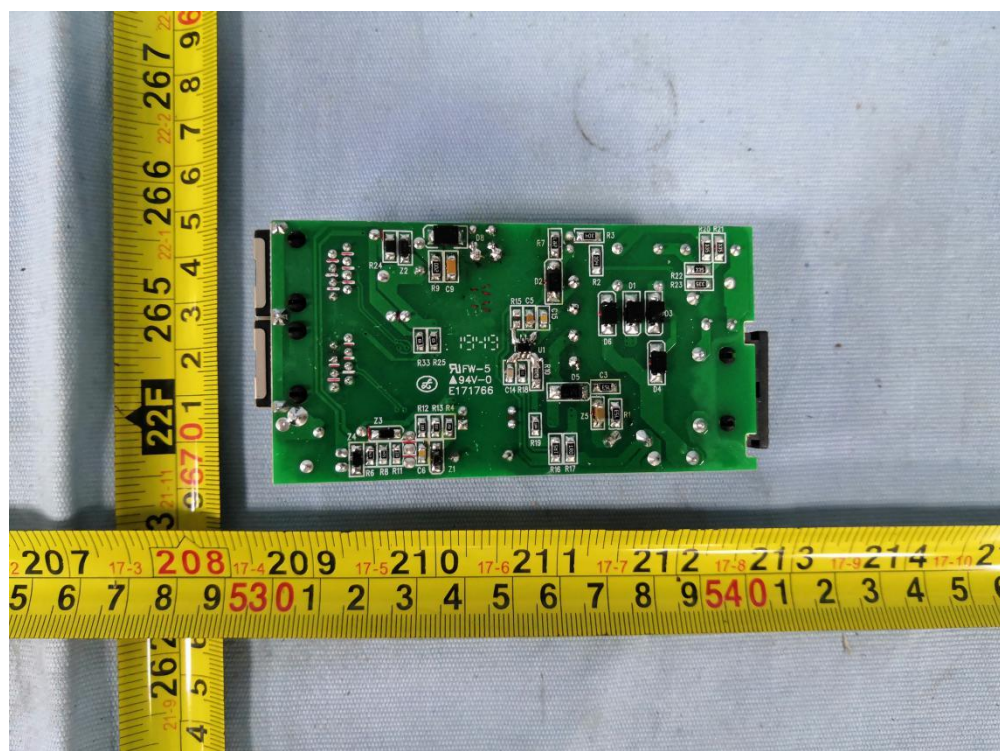


Photo 8



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