

# RF EXPOSURE REPORT

Report No.: DDT-B21090104-2E18

<b>Applicant</b>	:	PowerVision Tech Inc.
<b>Address</b>	:	Zone E,Ocean Venture Valley,No.40, Yangguang Rd, Nanhai new District,Weihai,Shandong,China
<b>Equipment under Test</b>	:	PowerVision S1
<b>Model No.</b>	:	PVS10
<b>Trade Mark</b>	:	<b>PowerVision</b>
<b>FCC ID</b>	:	2AKBMPVS12
<b>Manufacturer</b>	:	PowerVision Tech Inc.
<b>Address</b>	:	Zone E,Ocean Venture Valley,No.40, Yangguang Rd, Nanhai new District,Weihai,Shandong,China

**Issued By:** Tianjin Dongdian Testing Service Co., Ltd.

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## TEST REPORT DECLARE

<b>Applicant</b>	:	Powervision Tech Inc.
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<b>Model No.</b>	:	PVS10
<b>Trade Mark</b>	:	<b>PowerVision</b>
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<b>Address</b>	:	Zone E,Ocean Venture Valley,No.40, Yangguang Rd, Nanhai new District,Weihai,Shandong,China

**Assess Standard Used:** FCC CFR 47 part1, 1.1307(b), 1.1310; KDB680106 D01v03r01

**We Declare:**

The equipment described above is assessed by Tianjin Dongdian Testing Service Co., Ltd and in the configuration assessed the equipment complied with the standards specified above. The assessed results are contained in this report and Tianjin Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these assess.

**After evaluation, our opinion is that the equipment is In Accordance with above standard.**

<b>Report No:</b>	DDT-B21090104-2E18		
<b>Date of Receipt:</b>	Sep. 01, 2021	<b>Date of Test:</b>	Sep. 01, 2021 ~ Nov. 20, 2021

**Prepared By:**

*Sunny Zhang*

**Sunny Zhang/Engineer**

**Approved By:**

*Aaron Zhang*

**Aaron Zhang/EMC Manager**



Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Tianjin Dongdian Testing Service Co., Ltd.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

## Revision history

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Nov. 20, 2021	

## 1. General information

### 1.1. Description of Equipment

EUT* Name	: PowerVision S1
Model Number	: PVS10
EUT function description	: Please refer to user manual of this device
Power supply	: Input: DC 5V/3A; 9V2A;12V1.5A or DC 3.85V from built-in battery Output: 10W (Max)
Wireless charging Operation frequency	: 110kHz-205kHz
Hardware Version	: V11.02.02
Firmware Version	: V1.5.3
Antenna Type	: Inductive loop coil antenna
Sample Number	: N/A

Note: EUT is the ab. of equipment under test.

### 1.2. Assistant equipment used for test

Description of Accessories	Manufacturer	Model number	Serial No.	Other
Mobile phone	iPhone	A1865	N/A	N/A
Mobile phone	SAMSUNG	SM-N9500	N/A	N/A

### 1.3. Assess laboratory

Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.

Tel: +86-22-58038033, <http://www.ddttest.com>, Email: [ddt@dgddt.com](mailto:ddt@dgddt.com)

**NVLAP** (National Voluntary Laboratory Accreditation Program) CODE: 500036-0

**CNAS** (China National Accreditation Service for Conformity Assessment) CODE: L13402

**FCC** Designation Number: CN5004; FCC Test Firm Registration Number: 368676

**ISED** (Innovation, Science and Economic Development Canada) Company Number: 27768  
Conformity Assessment Body Identifier: CN0125

**VCCI** Facility Registration Number: C-20089, T-20093, R-20125, G-20122

## 2. Equipment used during test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Exposure Level Tester	Narda	ELT-400	M-0425	2020/12/24	1 Year
B-Field Probe	Narda	100 cm <sup>2</sup> Probe	M-0440	2020/12/24	1 Year
Field Strength Meter	Wavecontrol	SMP2	20SN1419	2020/12/23	1 Year
Field Probe	Wavecontrol	WPF8	20WP041176	2020/12/23	1 Year



### **3. Method of measurement**

#### **3.1. Applicable Standard**

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

According KDB680106 D01v03r01: RF Exposure Wireless Charging Apps v03r01.

#### **3.2. Test Procedure**

- a) The RF exposure test was performed in shielded chamber.
- b) The measurement probe was placed at test distance which is between the edge of the charger and the measure point of probe.
- c) The measurement probe used to search of highest strength.
- d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, Top, Bottom) were completed.
- e) The EUT were measured according to the dictates of KDB 680106D01v03r01.

### 3.3. Equipment Approval Considerations:

The EUT does comply with section 5 b) of KDB680106 D01r01 RF Exposure Wireless Charging App v03r01

(1) Power transfer frequency is less than 1MHz.

Yes; the device operates in the frequency range from 110 kHz ~ 205 kHz.

(2) Output power from each primary coil is less than or equal to 15 watts

Yes; the maximum output power of the primary coil is 10W.

(3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.

Yes; the transfer system includes only single primary and secondary coils.

(4) Client device is placed directly in contact with the transmitter.

Yes.

(5) Mobile exposure conditions only (mobile exposure conditions are not covered by this exclusion).

No; the EUT is for mobile and portable exposure conditions.

(6) The aggregate H-field strengths at 0 cm (15 cm) surrounding the device and 0 cm (20cm) above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

Yes; the EUT H-field strengths levels are less than 50% of MPE limit.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz \* = Plane-wave equivalent power density



### 3.4. E and H Field Strength

Test mode for wireless charger:

Mobile phone has been charged with iPhone mobile phone A1865

E-Filed Strength (V/m)

0cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	5.24	4.37	5.16	307
B	1.73	1.82	1.80	307
C	4.25	1.52	4.11	307
D	1.49	3.81	1.42	307
Top	9.32	6.67	7.24	307
Bottom	3.11	2.50	3.34	307

2cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	2.17	1.95	1.78	307
B	0.80	0.78	0.81	307
C	1.88	0.57	1.86	307
D	0.64	1.64	0.63	307
Top	8.29	5.56	6.35	307
Bottom	1.49	1.26	1.94	307

4cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	1.12	1.06	1.28	307
B	0.45	0.37	0.48	307
C	0.99	0.31	0.99	307
D	0.35	0.88	0.36	307
Top	7.13	4.12	5.23	307
Bottom	0.82	0.80	1.09	307

6cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.65	0.60	0.53	307
B	0.31	0.19	0.19	307
C	0.58	0.24	0.66	307
D	0.23	0.52	0.23	307
Top	6.92	3.80	4.97	307
Bottom	0.45	0.43	0.74	307

8cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.44	0.39	0.36	307
B	0.35	0.13	0.14	307
C	0.39	0.22	0.35	307
D	0.19	0.39	0.21	307
Top	3.28	1.88	2.81	307
Bottom	0.26	0.25	0.32	307

10cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.35	0.21	0.21	307
B	0.26	0.15	0.11	307
C	0.27	0.11	0.26	307
D	0.13	0.21	0.18	307
Top	1.60	0.93	1.15	307
Bottom	0.16	0.17	0.17	307

E-Filed Strength at 15 cm from the edges surrounding the EUT and 20 cm above the top surface of the EUT (V/m)

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.22	0.15	0.17	307
B	0.24	0.08	0.21	307
C	0.21	0.09	0.08	307
D	0.28	0.10	0.17	307
Top	0.34	0.07	0.13	307
Bottom	0.12	0.08	0.16	307

H-Filed Strength (A/m)

0cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.614	0.335	0.401	0.815
B	0.598	0.321	0.486	0.815
C	0.617	0.346	0.509	0.815
D	0.601	0.393	0.406	0.815
Top	0.623	0.405	0.488	0.815
Bottom	0.625	0.422	0.517	0.815

2cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.513	0.267	0.362	0.815
B	0.517	0.254	0.308	0.815
C	0.526	0.267	0.343	0.815
D	0.535	0.256	0.335	0.815
Top	0.532	0.207	0.389	0.815
Bottom	0.542	0.244	0.313	0.815

4cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.440	0.311	0.381	0.815
B	0.411	0.294	0.250	0.815
C	0.380	0.234	0.303	0.815
D	0.372	0.285	0.256	0.815
Top	0.338	0.235	0.239	0.815
Bottom	0.453	0.348	0.307	0.815

6cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.268	0.152	0.237	0.815
B	0.279	0.147	0.117	0.815
C	0.248	0.136	0.216	0.815
D	0.295	0.134	0.101	0.815
Top	0.284	0.102	0.143	0.815
Bottom	0.272	0.166	0.282	0.815

8cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.164	0.113	0.131	0.815
B	0.125	0.112	0.095	0.815
C	0.137	0.084	0.148	0.815
D	0.142	0.091	0.129	0.815
Top	0.128	0.089	0.102	0.815
Bottom	0.166	0.138	0.153	0.815

10cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.111	0.078	0.106	0.815
B	0.124	0.098	0.079	0.815
C	0.130	0.067	0.090	0.815
D	0.113	0.071	0.064	0.815
Top	0.109	0.052	0.097	0.815
Bottom	0.102	0.076	0.107	0.815

H-Filed Strength at 15 cm from the edges surrounding the EUT and 20 cm above the top surface of the EUT (A/m)

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.119	0.123	0.105	0.815
B	0.051	0.054	0.054	0.815
C	0.089	0.095	0.078	0.815
D	0.043	0.048	0.044	0.815
Top	0.056	0.032	0.031	0.815
Bottom	0.086	0.081	0.087	0.815

Mobile phone has been charged with SAMSUNG mobile phone SM-N9500

E-Filed Strength (V/m)

0cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	4.74	4.41	5.05	307
B	1.81	1.34	1.76	307
C	4.16	2.32	3.69	307
D	3.51	2.41	1.38	307
Top	8.46	5.76	7.15	307
Bottom	3.45	2.33	3.17	307

2cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	2.13	1.77	1.82	307
B	0.82	0.82	0.89	307
C	1.65	0.53	1.60	307
D	0.74	1.34	0.53	307
Top	7.21	5.03	5.32	307
Bottom	1.52	1.23	1.87	307

4cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	1.25	1.16	1.38	307
B	0.65	0.35	0.42	307
C	0.91	0.36	0.84	307
D	0.42	0.77	0.41	307
Top	7.04	4.35	5.16	307
Bottom	0.93	0.82	1.12	307

6cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.76	0.61	0.56	307
B	0.51	0.17	0.22	307
C	0.68	0.24	0.66	307
D	0.27	0.52	0.23	307
Top	6.02	3.81	4.37	307
Bottom	0.39	0.42	0.84	307

8cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.46	0.32	0.36	307
B	0.55	0.16	0.12	307
C	0.37	0.26	0.35	307
D	0.29	0.32	0.27	307
Top	3.17	1.57	2.58	307
Bottom	0.36	0.21	0.42	307

10cm

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.45	0.25	0.23	307
B	0.36	0.35	0.21	307
C	0.22	0.16	0.23	307
D	0.33	0.25	0.10	307
Top	1.63	0.73	1.25	307
Bottom	0.26	0.21	0.37	307

E-Filed Strength at 15 cm from the edges surrounding the EUT and 20 cm above the top surface of the EUT (V/m)

Test Position	Probe Measure Result(V/m)			Limits Test (V/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.25	0.17	0.18	307
B	0.34	0.05	0.23	307
C	0.24	0.03	0.18	307
D	0.20	0.12	0.27	307
Top	0.38	0.17	0.12	307
Bottom	0.22	0.04	0.14	307

H-Filed Strength (A/m)  
0cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.584	0.304	0.412	0.815
B	0.503	0.324	0.426	0.815
C	0.637	0.348	0.511	0.815
D	0.623	0.343	0.416	0.815
Top	0.573	0.413	0.482	0.815
Bottom	0.637	0.412	0.525	0.815

2cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.515	0.247	0.332	0.815
B	0.521	0.274	0.318	0.815
C	0.503	0.247	0.322	0.815
D	0.512	0.286	0.367	0.815
Top	0.472	0.217	0.331	0.815
Bottom	0.505	0.234	0.353	0.815

4cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.431	0.315	0.321	0.815
B	0.425	0.224	0.254	0.815
C	0.337	0.217	0.312	0.815
D	0.322	0.205	0.236	0.815
Top	0.312	0.228	0.234	0.815
Bottom	0.447	0.313	0.327	0.815

6cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.243	0.141	0.226	0.815
B	0.264	0.156	0.211	0.815
C	0.252	0.133	0.235	0.815
D	0.278	0.114	0.131	0.815
Top	0.262	0.142	0.126	0.815
Bottom	0.242	0.162	0.223	0.815

8cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.155	0.125	0.126	0.815
B	0.131	0.142	0.055	0.815
C	0.132	0.064	0.136	0.815
D	0.122	0.071	0.141	0.815
Top	0.121	0.069	0.123	0.815
Bottom	0.142	0.148	0.134	0.815

10cm

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.127	0.073	0.126	0.815
B	0.128	0.058	0.071	0.815
C	0.151	0.077	0.087	0.815
D	0.136	0.073	0.065	0.815
Top	0.121	0.042	0.077	0.815
Bottom	0.135	0.086	0.132	0.815

H-Filed Strength at 15 cm from the edges surrounding the EUT and 20 cm above the top surface of the EUT (A/m)

Test Position	Probe Measure Result(A/m)			Limits Test (A/m)
	Output 10W	Output 5W	Output 7.5W	
A	0.125	0.137	0.113	0.815
B	0.063	0.077	0.064	0.815
C	0.078	0.086	0.065	0.815
D	0.052	0.057	0.062	0.815
Top	0.061	0.051	0.043	0.815
Bottom	0.073	0.042	0.069	0.815

**Exposure conditions for simultaneous transmission operations**

Not support.