



## SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

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Report No.: SZEM161000925705

Page: 1 of 6

# SAR Evaluation Report

**Application No:** SZEM1610009257CR (SGS SH No.:SH1610006915CR)  
**Applicant:** Powervision Tech Inc.  
**Manufacturer:** Powervision Tech Inc.  
**Factory:** Huizhou BYD Electronic Co., Ltd  
**Product Name:** PowerEye Standard Controller  
**Model No.(EUT):** PEYSC10  
**Trade Mark:** PowerVision  
**FCC ID:** 2AKBMPEYSC10  
**Standards:** 47 CFR Part 1.1307 (2015)  
47 CFR Part 2.1093 (2015)  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2016-10-31  
**Date of Test:** 2016-11-29 to 2016-12-19  
**Date of Issue:** 2016-12-20

<b>Test Result:</b>	<b>PASS*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang  
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Version

<b>Revision Record</b>				
<b>Version</b>	<b>Chapter</b>	<b>Date</b>	<b>Modifier</b>	<b>Remark</b>
00		2016-12-20		Original

<b>Authorized for issue by:</b>				
<b>Tested By</b>		 _____ <b>(Peter Geng) /Project Engineer</b>		2016-12-19 _____ <b>Date</b>
<b>Checked By</b>		 _____ <b>(Eric Fu) /Reviewer</b>		2016-12-20 _____ <b>Date</b>



### **3 Contents**

<b>1</b>	<b>COVER PAGE</b> .....	<b>1</b>
<b>2</b>	<b>VERSION</b> .....	<b>2</b>
<b>3</b>	<b>CONTENTS</b> .....	<b>3</b>
<b>4</b>	<b>GENERAL INFORMATION</b> .....	<b>4</b>
4.1	<b>CLIENT INFORMATION</b> .....	4
4.2	<b>GENERAL DESCRIPTION OF EUT</b> .....	4
4.3	<b>TEST LOCATION</b> .....	5
4.4	<b>TEST FACILITY</b> .....	5
4.5	<b>DEVIATION FROM STANDARDS</b> .....	5
4.6	<b>ABNORMALITIES FROM STANDARD CONDITIONS</b> .....	5
4.7	<b>OTHER INFORMATION REQUESTED BY THE CUSTOMER</b> .....	5
<b>5</b>	<b>SAR EVALUATION</b> .....	<b>6</b>
5.1	<b>RF EXPOSURE COMPLIANCE REQUIREMENT</b> .....	6
5.1.1	<i>Standard Requirement</i> .....	6
5.1.2	<i>Limits</i> .....	6
5.1.3	<i>EUT RF Exposure Evaluation</i> .....	6

## 4 General Information

### 4.1 Client Information

Applicant:	Powervision Tech Inc.
Address of Applicant:	Room 301, Building A, No.9 Fulin Road, Chaoyang District, Beijing, 100107, China
Manufacturer:	Powervision Tech Inc.
Address of Manufacturer:	Room 301, Building A, No.9 Fulin Road, Chaoyang District, Beijing, 100107, China
Factory:	Huizhou BYD Electronic Co., Ltd
Address of Factory:	Xiangshui River, Economic Development Zone, Daya Bay, Huizhou, Guangdong, 516083, P.R.China

### 4.2 General Description of EUT

Product Name:	PowerEye Standard Controller
Model No.:	PEYSC10
Trade Mark:	PowerVision
Operation Frequency:	5745MHz to 5810MHz
Type of Modulation:	GFSK
Channel Spacing:	1MHz
Channel Numbers:	66
Sample Type:	Portable Device
Antenna Gain:	Dipole Antenna
Antenna Type:	2dBi
Power Supply	DC 3.7V Li-ion Battery

### 4.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China  
518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

### 4.4 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

### 4.5 Deviation from Standards

None.

### 4.6 Abnormalities from Standard Conditions

None.

### 4.7 Other Information Requested by the Customer

None.

## 5 SAR Evaluation

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

##### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

#### 5.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot \sqrt{f(\text{GHz})} \leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion. Table 1: SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance

#### 5.1.3 EUT RF Exposure Evaluation

According to KDB 412172 D01 Determining ERP and EIRP,

Field Strength Approach (linear terms):

$$\text{eirp} = \text{pt} \times \text{gt} = (\text{E} \times \text{d})^2 / 30$$

where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m,

d = measurement distance in meters (m).

Thus, the EIRP for the lowest, middle and highest channel is calculated as below:

Frequency (MHz)	Average Field Strength (dBuV/m)	Average Field Strength (V/m)	EIRP (mW)	RF Exposure	Limit	Result
5744.586	92.39	0.042	0.520	0.249	3	Pass
5776.485	91.83	0.039	0.457	0.220	3	Pass
5809.517	91.15	0.036	0.391	0.188	3	Pass

Note: The average field strength refer to the Report No. SZEM161000925704 and the test distance is 3m.