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FCC REPORT

Application No.: SZEM1108002891RF

Applicant: Shenzhen AEE Technology CO., LTD

Product Name: GEye remote control

Operation Frequency: 433.956MHz FCC ID: YVV-8206814

Standards: FCC CFR Title 47 Part 15 Subpart C Section 15.231: 2010

Date of Receipt: 2011-08-17

Date of Test: 2011-08-18 to 2011-10-21

Date of Issue: 2011-11-16

Test Result : PASS *

* 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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3 Test Summary

Test Item	Section in CFR 47	Result	
Antenna requirement	15.203	Pass	
Field strength of the fundamental signal	15.231 (b)	Pass	
Spurious emissions	15.231 (b)/15.209	Pass	
20dB Bandwidth	15.231 (c)	Pass	
Dwell time	15.231 (a)	Pass	

Remark: Pass: The EUT complies with the essential requirements in the standard.

Fail: The EUT does not comply with the essential requirements in the standard.



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4 General Information

4.1 Client Information

Applicant:	Shenzhen AEE Technology CO., LTD			
Address of Applicant:	AEE Hi-Tech Park, Sun Industrial Area, Xili, Nanshan District,			
	Shenzhen, China 518108			
Manufacturer/ Factory:	Shenzhen AEE Technology CO., LTD			
Address of Manufacturer/	AEE Hi-Tech Park, Sun Industrial Area, Xili, Nanshan District,			
Factory:	Shenzhen, China 518108			

4.2 General Description of E.U.T.

Product Name:	GEye remote control
Model No.:	8206814
Operation Frequency:	433.956MHz
Modulation Type:	AM
Antenna Type:	Integral
Antenna Gain:	0dBi
Power Supply:	GEye remote control(TX):3V CELL BATTERY "CR2032"



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4.3 E.U.T Operation mode

Operating Environment:

Temperature: 25.0 °C
Humidity: 50 % RH
Atmospheric Pressure: 1010 mbar

Test mode:

Transmitting mode: Keep the EUT in transmitting mode with modulation.

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.

VCCI

The 3m Semi-anechoic chamber and Shielded Room $(7.5m \times 4.0m \times 3.0m)$ of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.

Date of Registration: September 29, 2008. Valid until September 28, 2011.

• 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 556682, March 16, 2011

Industry Canada (IC)

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

4.5 Test Location

All tests were performed at:

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

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.

4.6 Other Information Requested by the Customer

None.



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4.7 Test Instruments list

RE in Chamber													
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)								
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2012-06-10								
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2012-05-26								
3	EMI Test software	AUDIX	E3	SEL0050	N/A								
4	Coaxial cable	SGS	N/A	SEL0028	2012-05-29								
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2011-11-09								
6	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2011-11-09								
7	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2012-05-26								

RF conducted													
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)								
1	Spectrum Analyzer	Rohde & Schwarz	FSP 30	SEL0154	2011-10-27								
2	Coaxial cable	SGS	N/A	SEL0028	2012-05-29								



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5 Test results and Measurement Data

5.1 Antenna requirement:

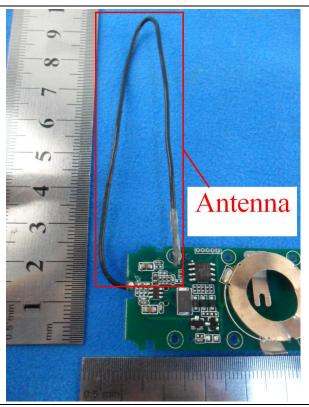
Standard requirement: FCC Part15 C Section 15.203

15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

E.U.T Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 0dBi.





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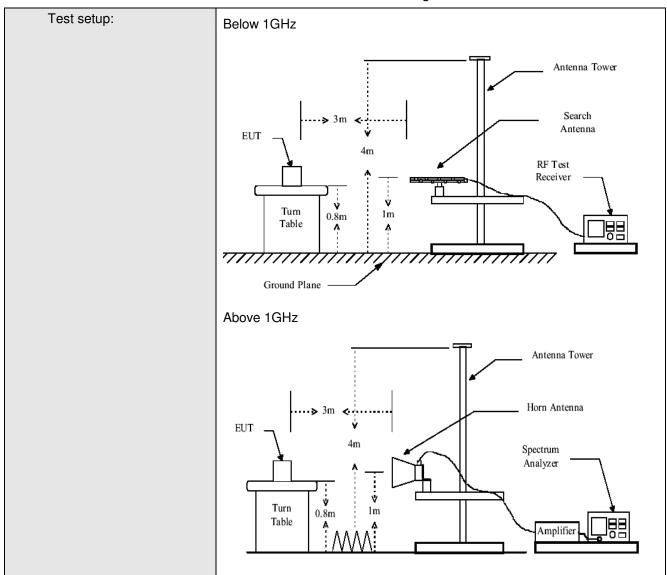
5.2 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.231(b) and 15.209									
Test Method:	ANSI C63.10: 2009									
Test Frequency Range:	30MHz to 5000MHz									
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)									
Receiver setup:	Frequency	Detector	RBW	VBW	Remark					
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value					
	Above 1GHz	Peak	1MHz	3MHz	Peak Value					
Limit:	Freque	ency	Limit (dBuV/	/m @3m)	Remark					
(Field strength of the	40014	11-	80.8	3	Average Value					
fundamental signal)	433M	HZ	100.8	33	Peak Value					
Limit:	Freque	ency	Limit (dBuV/	m @3m)	Remark					
(Spurious Emissions)	30MHz-8	8MHz	40.0)	Quasi-peak Value					
	88MHz-21	16MHz	43.5	5	Quasi-peak Value					
	216MHz-9	60MHz	46.0)	Quasi-peak Value					
	960MHz-	1GHz	54.0)	Quasi-peak Value					
	Above 1	CH2	54.0)	Average Value					
	Above	GHZ	74.0)	Peak Value					
	Or The maximu	m permitted ur	wanted emis	ssion level i	s 20 dB below the					
	maximum perm	itted fundamer	ntal level							
	whichever limit									
Test Procedure:			•		e which is 0.8meter					
	_			_	o determine the					
	•				can move up and					
		1 meter and 4 r	neters to find	d out the ma	aximum emission					
	level.	and vertical na	larization of t	ha antanna	ore est on					
	Both horizontal	•			all of the interface					
				•	0:2009 on radiated					
	measurement.	mampulated a	coording to F	101 000.11	J.2000 OH Fadiated					
		easurements a	are performe	d in X. Y. Z	axis positioning.					
	Only the worst case is shown in the report.									
Test Instruments:	Refer to section		·							
Test mode:	Transmitting mo	ode								
Test results:	Pass									



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Note:

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



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Measurement Data

5.2.1 Field Strength Of The Fundamental Signal

Peak value	Peak value:														
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization							
433.95	2.35	16.59	27.33	82.06	73.66	100.83	-27.17	Horizontal							
433.95	2.35	16.59	27.33	71.16	62.76	100.83	-38.07	Vertical							

Remark: 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. So, only the peak measurements were shown in the report.



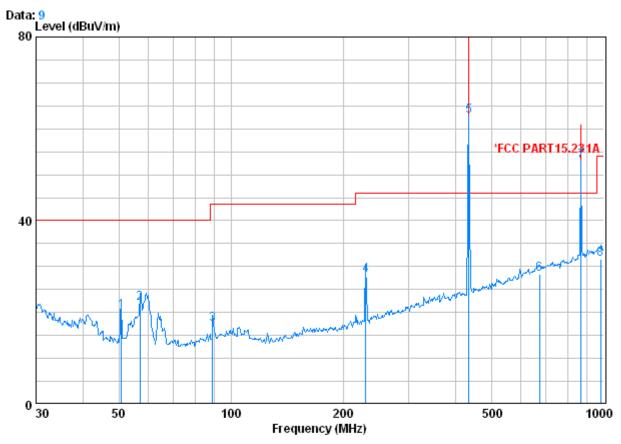
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5.2.2 Spurious Emissions

30MHz~1GHz

Vertical



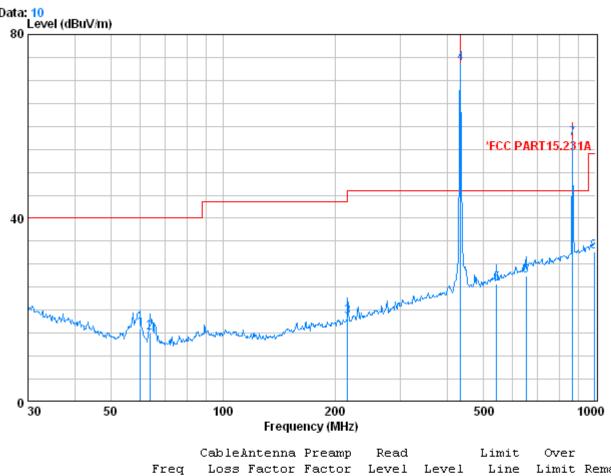
		CableAntenna		Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	50.764	0.80	7.93	27.29	38.86	20.31	40.00	-19.69	QP
2	56.991	0.80	7.43	27.27	41.16	22.12	40.00	-17.88	QP
3	89.276	1.10	8.64	27.22	34.84	17.36	43.50	-26.14	QP
4	230.099	1.57	11.67	26.59	41.50	28.15	46.00	-17.85	QP
5	433.950	2.35	16.59	27.33	71.16	62.76	100.83	-38.07	Peak
6	672.845	2.85	21.40	27.45	31.53	28.34	46.00	-17.66	QP
7 0	867.920	3.48	22.85	26.92	53.62	53.03	60.83	-7.80	QP
8	979.180	3.68	24.04	26.40	30.36	31.68	54.00	-22.32	QP



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Horizontal



		Cable	lntenna	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	<u>dBuV</u>	dBuV/m	dBuV/m	dB	
1	60.069	0.80	7.19	27.27	35.13	15.85	40.00	-24.15	QP
2	63.759	0.80	7.08	27.26	34.51	15.13	40.00	-24.87	QP
3	216.024	1.49	11.05	26.64	32.72	18.63	46.00	-27.37	QP
4	433.950	2.35	16.59	27.33	82.06	73.66	100.83	-27.17	Peak
5	543.274	2.65	18.81	27.63	31.98	25.81	46.00	-20.19	QP
6	651.942	2.81	20.68	27.47	31.50	27.52	46.00	-18.48	QP
7 0	867.920	3.48	22.85	26.92	57.88	57.29	60.83	-3.54	QP
8	993.011	3.69	24.21	26.33	31.10	32.67	54.00	-21.33	QP



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Above 1GHz

Peak Measurement:

I ear Measurement.											
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization			
1296	2.38	27.73	39.27	66.84	57.68	80.83	-23.15	Vertical			
1728	2.66	29.83	39.45	69.76	62.80	80.83	-18.03	Vertical			
2596	3.09	32.84	40.00	57.11	53.04	80.83	-27.79	Vertical			
3460	3.70	33.21	40.63	56.92	53.20	80.83	-27.63	Vertical			
3904	4.08	33.70	40.97	50.67	47.48	74.00	-26.52	Vertical			
4416	4.43	34.97	41.35	49.96	48.01	80.83	-32.82	Horizontal			
1296	2.38	27.73	39.27	62.28	53.12	80.83	-27.71	Horizontal			
1735	2.66	29.83	39.46	72.32	65.35	80.83	-15.48	Horizontal			
2164	2.90	32.08	39.68	50.24	45.54	80.83	-35.29	Horizontal			
2596	3.09	32.84	40.00	55.76	51.69	80.83	-29.14	Horizontal			

Average value:

Frequency (MHz)	Peak Level (dBuV/m)	PDCF (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Over Limit (dB)	polarization
1296	57.68	-7.40	50.28	60.83	-10.55	Vertical
1728	62.80	-7.40	55.40	60.83	-5.43	Vertical
2596	53.04	-7.40	45.64	60.83	-15.19	Vertical
3460	53.20	-7.40	45.80	60.83	-15.03	Vertical
3904	47.48	-7.40	40.08	54.00	-13.92	Vertical
4416	48.01	-7.40	40.61	60.83	-20.22	Horizontal
1296	53.12	-7.40	45.72	60.83	-15.11	Horizontal
1735	65.35	-7.40	57.95	60.83	-2.88	Horizontal
2164	45.54	-7.40	38.14	60.83	-22.69	Horizontal
2596	51.69	-7.40	44.29	60.83	-16.54	Horizontal



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PDCF Calculate Formula:

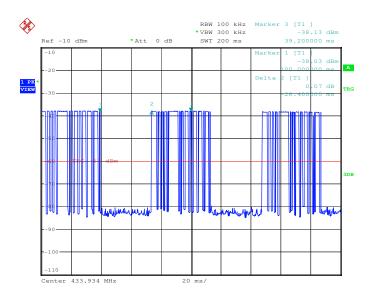
Average value=Peak value + PDCF (pulse desensitization correction factor)

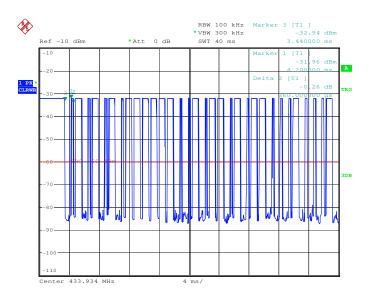
PDCF=20 log(Duty cycle)= -7.4dB

Duty cycle= T on time / T period = 0.4276

Ton time = 42.76 ms

T period = 100 ms

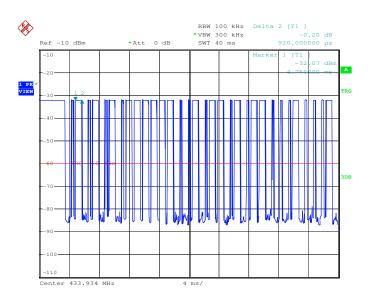




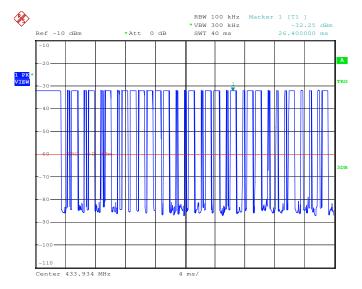


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5.3 20dB Bandwidth

Test Requirement:	FCC Part15 C Section 15.231 (c)		
Test Method:	ANSI C63.10:2009		
Receiver setup:	RBW=10KHz, VBW=30KHz, detector: Peak		
Limit:	The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.		
Test mode:	Transmitting mode		
Test Procedure:	According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.		
	2. Set the EUT to proper test channel.		
	3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points.		
	4. Read 20dB bandwidth.		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 4.7 for details		
Test results:	Pass		

Measurement Data

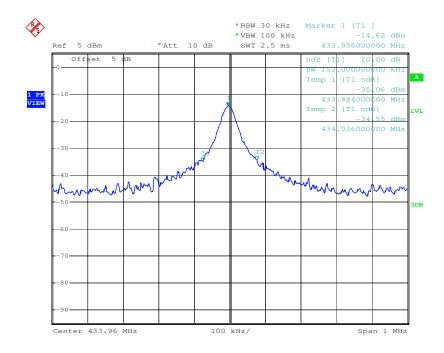
20dB bandwidth (KHz)	Limit (KHz)	Results
152	1084.89	Pass



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Test plot as follows:





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5.4 Dwell Time:

Test Requirement:	FCC Part15 C Section 15.231 (a)		
Test Method:	ANSI C63.10:2009		
Receiver setup:	RBW=100KHz, VBW=300KHz, span=0Hz, detector: Peak		
Limit:	Not more than 5 seconds		
Test mode:	Transmitting mode		
Test Procedure:	According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.		
	2. Set the EUT to proper test channel.		
	3. single scan the transmit, and read the transmission time.		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 4.7 for details		
Test results:	Pass		
-			

Measurement Data

Dwell time (second)	Limit (second)	Results
0.694	5	Pass



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Test plot as follows:

