SGS-CSTC Standards Technical Services Co., Ltd.

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TEST REPORT

Application No. :	GLEMR080400936RF
Applicant:	Winplus Co., Ltd
FCC ID:	VKY13107A
Fundamental Carrier Frequency :	2.468GHz
Equipment Under Test (EUT):	
Name:	3.5” BU Camera
Model No.:	BT13107
♣	Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Standards:	FCC PART 15, SUBPART C: 2007 (Section 15.249);
Date of Receipt:	02 April, 2008
Date of Test:	02 April, 2008 to 18 April, 2008
Date of Issue:	21 April, 2008

Test Result :	**PASS ***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above. Please refer to section 2 of this report for further details.

Authorized Signature:

Stephen Guo
Manager

2 Test Summary

Test	Test Requirement	Standard Paragraph	Result
Flied Strength of Fundamental	FCC PART 15 :2007	Section 15.249 (a)	PASS
Flied Strength of Unwanted Emissions	FCC PART 15 :2007	Section 15.209& Section 15.249 (d)	PASS
Occupied Bandwidth	FCC PART 15 :2007	Section 15.249	PASS
Band Edges	FCC PART 15 :2007	Section 15.249 (d)	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART 15 :2007	Section 15.207	N/A

Remark:

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

3 Contents

4 General Information

4.1 Client Information

Applicant:	Winplus Co., Ltd.
Address of Applicant:	Suites 6-11, 7th Floor Corporation Park, 11 On Lai Street Shatin, N.T., Hong Kong.

4.2 General Description of E.U.T.

Name:	3.5” BU Camera
Model No.:	BT13107
Number of Channels	1 Channel
Fundamental Carrier Frequency:	2468MHz
Modulation Type	FM
Antenna Type	Integral
Power Supply:	DC 12V by vehicle Power Supply

4.3 Description of Support Units

The EUT has been tested as an independent unit.

4.4 Standards Applicable for Testing

The customer requested FCC tests for the EUT.

The standard used was FCC PART 15, SUBPART C: 2007 (Section 15.249);

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory,

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District,

Guangzhou, Guangdong, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

4.6 Other Information Requested by the Customer

None.

4.7 Test Facility

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

- **NVLAP – Lab Code: 200611-0**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

- **FCC – Registration No.: 282399**

SGS-CSTC Standards Technical Services Co., Ltd., 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 282399, May 31, 2002. With the above and NVLAP's accreditation, SGS-CSTC is an authorized test laboratory for the DoC process.

5 Equipments Used during Test

	RE in Chamber					
No:	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	N/A	N/A
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	28-01-2008	28-01-2009
N/A	EMI Test Software	Audix	E3	N/A	N/A	N/A
EMC0514	Coaxial cable	SGS	N/A	N/A	04-12-2007	04-12-2008
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	12-08-2008	12-08-2009
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	12-08-2008	12-08-2009
EMC0517	Horn Antenna	Rohde & Schwarz	HF906	100095	12-08-2008	12-08-2009
EMC0040	Spectrum Analyzer	Rohde & Schwarz	FSP30	100324	05-12-2007	05-12-2008
EMC0520	0.1-1300 MHz Pre-Amplifier	HP	8447D OPT 010	2944A06252	11-03-2008	11-03-2009
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	11-03-2008	11-03-2009
EMC0075	310N Amplifier	Sonama	310N	272683	10-09-2007	10-09-2008
EMC0523	Active Loop Antenna	EMCO	6502	00042963	09-08-2008	09-08-2010
EMC0530	10m Semi- Anechoic Chamber	ETS	N/A	N/A	10-08-2008	10-08-2009

6 Test Results

6.1 E.U.T. Operation

Input voltage:	DC 12V
Temperature:	22.0 -25.0 °C
Humidity:	43 - 56 % RH
Atmospheric Pressure:	1002 - 1015mbar
EUT Operation:	Test the EUT with continuously transmitting

6.2 Test Procedure & Measurement Data

6.2.1 Test in transmitting mode

Test Requirement: FCC Part15 C Section 15.249(a) & (d)

Test Method: Based on FCC Part15 C Section 15.249 & ANSI C63.4

Test Date: 18 April, 2008

Measurement Distance: 3m (Compact Semi-Anechoic Chamber)

Frequency range 30 MHz – 25GHz for transmitting mode.

Test instrumentation resolution bandwidth
120 kHz (30 MHz - 1000 MHz), 1 MHz (1000 M – 25GHz)

Operation: Receive antenna scan height 1 - 4 m, polarization Vertical/ Horizontal, a turntable rotate through 360^0 in the horizontal plane and it is used to support the test sample at 0.8m above the ground plane.

Requirements:

FCC Part 15.249(a)

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m @ 3m)	Field Strength of Harmonics (dBuV/m @ 3m)
902 to 928	94.0	54.0
2400 to 2483.5	94.0	54.0
5725 to 5875	94.0	54.0
24000 to 24250	108.0	68.0

FCC Part 15.249(d)

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Remark:

The fundamental frequency of the EUT is 2468MHz.

The limit for average field strength dBuv/m for the fundamental frequency = 94.0 dBμV/m.

The limit for peak field strength dBuv/m for the fundamental frequency = 114.0 dBμV/m.

No fundamental is allowed in the restricted bands.

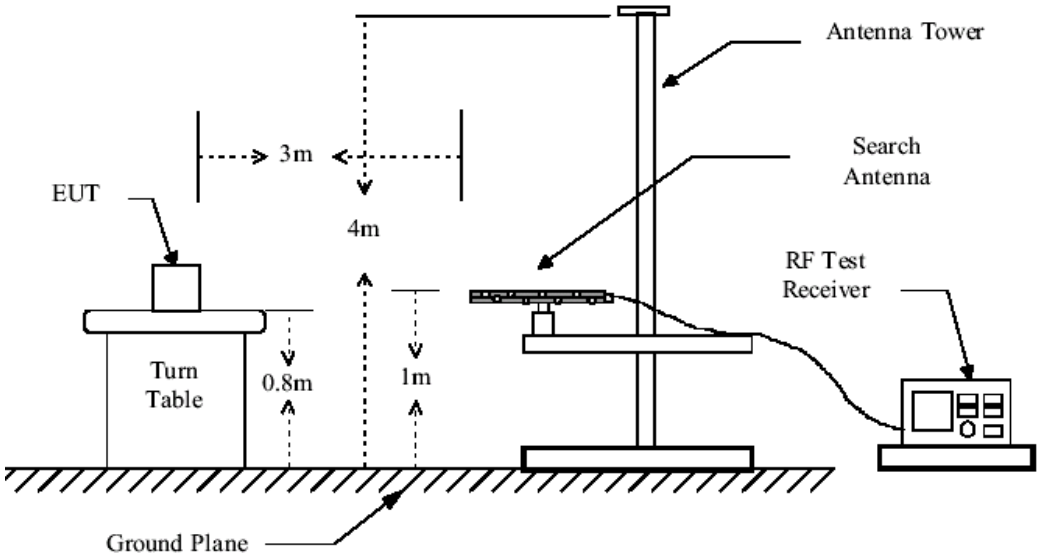
The limit for average field strength dBμV/m for the harmonics = 54.0 dBμV/m.

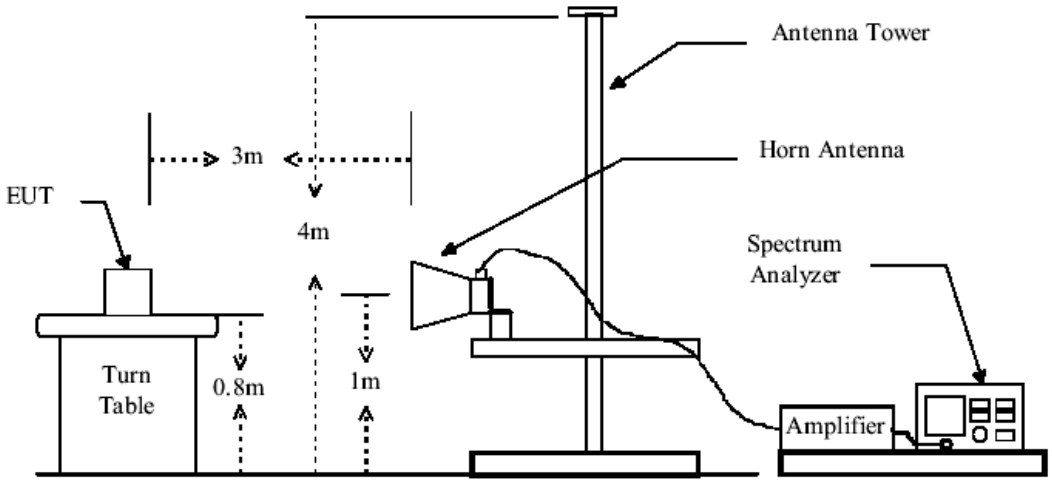
The limit for peak field strength dBμV/m for the harmonics = 74.0 dBμV/m.

Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or 54.0 dBμV/m in 15.209. Here the limit for the other emission is 54.0 dBμV/m.

Test Procedure: The procedure used was ANSI Standard C63.4-2003. The receiver was scanned from 30MHz to 25GHz.When an emission was found, the table was roated 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. The worst case emissions were reported.

Test Configuration:





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

The following test results were performed on the EUT:

Transmitter:

Test in transmitting status

Fundamental Frequency:

Peak Measurement

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limit (dBμV/m)	Antenna polarization
2468.000	28.7	4.80	/	60.57	94.10	114.0	Vertical
2468.000	28.7	4.6	/	68.69	102.27	114.0	Horizontal

Average Measurement

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
2468.000	28.7	4.80	/	54.63	88.16	94.0	Vertical
2468.000	28.7	4.6	/	44.39	77.97	94.0	Horizontal

Harmonious Emission & Other Spurious Emissions:

1~25 GHz Harmonics & Spurious Emissions, Peak & Average Measurement

Peak Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
6985.000	35.88	8.83	/	13.46	58.17	74.0	Vertical
6978.531	35.88	8.83	/	15.84	60.55	74.0	Horizontal

Average Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
6985.000	35.88	8.83	/	0.48	45.19	54.0	Vertical
6978.531	35.88	8.83	/	1.41	46.12	54.0	Horizontal

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

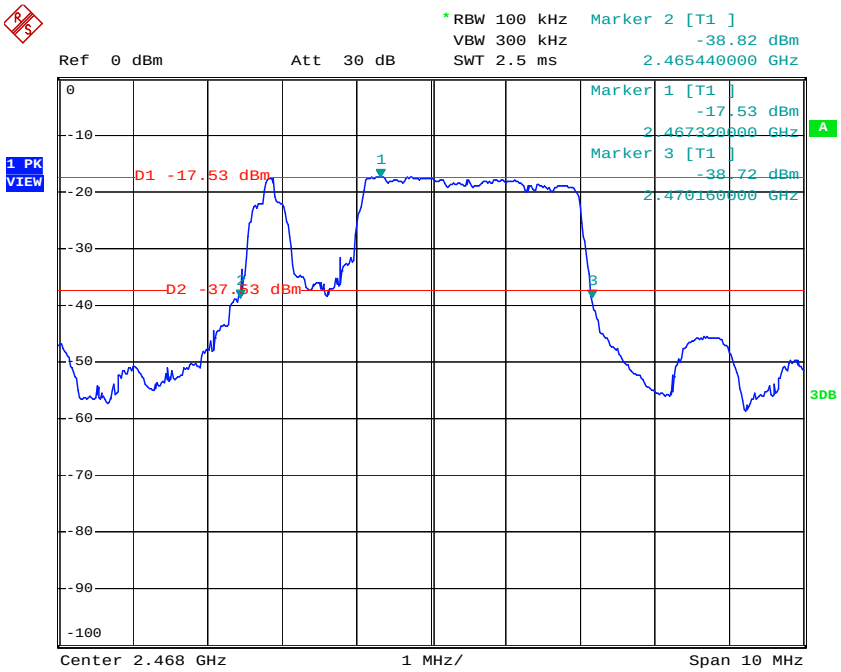
Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization
210.420	8.40	2.00	31.10	61.75	41.05	43.50	Vertical
335.550	14.18	2.60	31.04	56.73	42.47	46.00	Vertical
343.310	14.41	2.60	31.03	57.55	43.53	46.00	Vertical
370.470	14.80	2.70	31.10	56.80	43.20	46.00	Vertical
404.420	16.00	2.90	31.10	56.79	44.59	46.00	Vertical
567.380	18.50	3.40	31.16	51.60	42.34	46.00	Vertical
330.778	14.04	2.60	31.09	56.42	41.97	46.00	Horizontal
343.310	14.41	2.60	31.03	56.41	42.39	46.00	Horizontal
405.002	16.00	2.90	31.10	55.64	43.44	46.00	Horizontal
445.509	16.23	3.00	31.20	56.30	44.33	46.00	Horizontal
781.750	19.62	3.90	31.30	59.38	41.60	46.00	Horizontal
945.020	20.35	4.40	30.53	57.48	41.69	46.00	Horizontal

TEST RESULTS: The unit does meet the FCC requirements.

6.2.2 Occupied Bandwidth

Test Requirement:	FCC Part 15 Section 15.215
Test Method:	ANSI C63.4
Test Date:	18 April, 2008
Requirements:	15.215 (c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed the ensure that the 20dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation. Operation within the band 2400-2483.5MHz

The graph as below:



Test result:

20dB down lower frequency : 2465.44MHz

20dB down upper frequency : 2470.16MHz

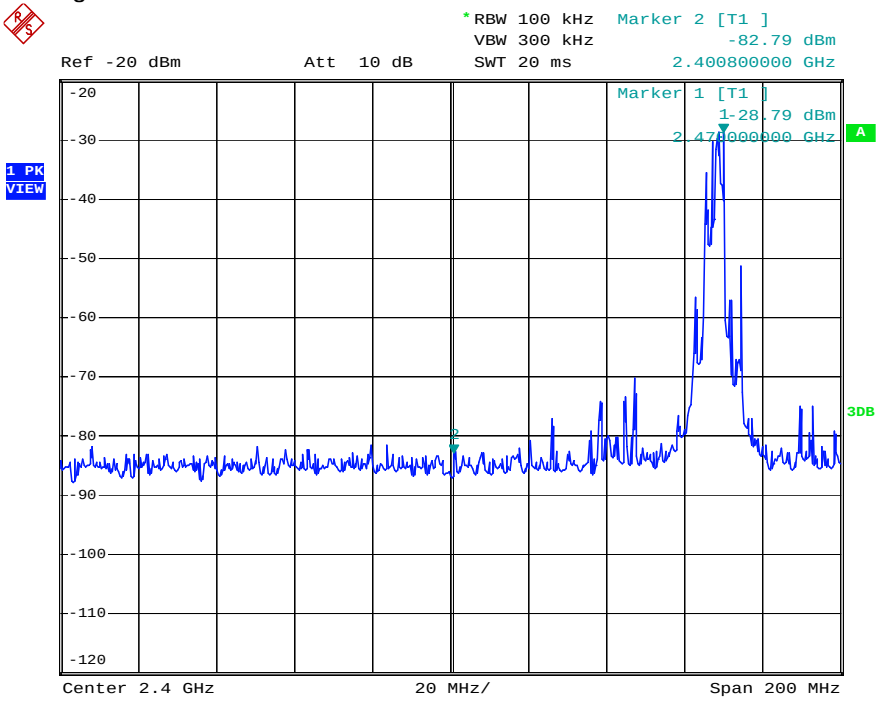
The results: The unit does meet the FCC requirements

6.2.3 Band edge

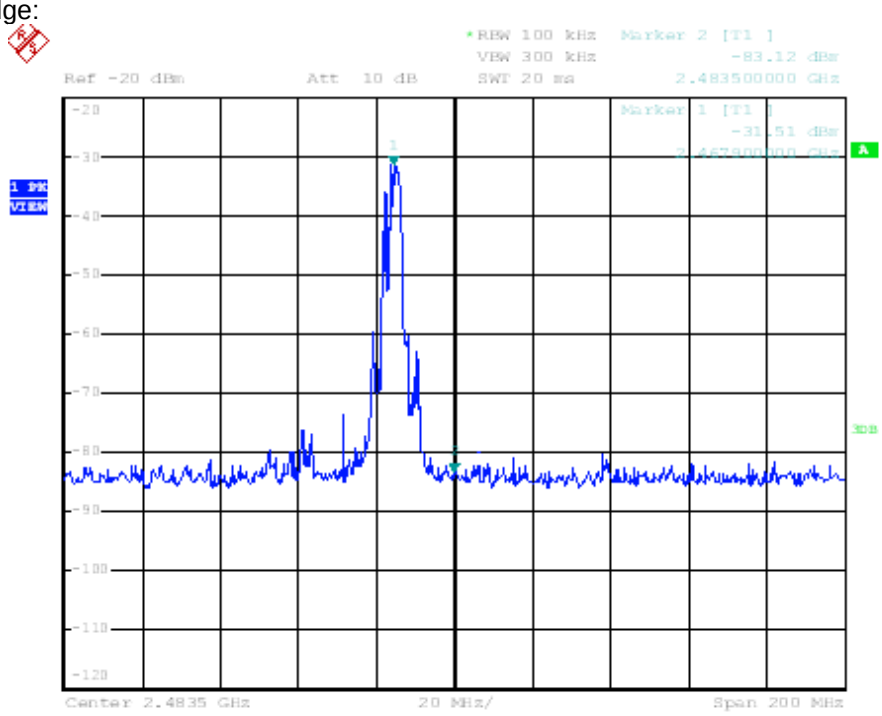
Test Requirement:	FCC Part 15 Section 15.249
Test Method:	ANSI C63.4
	Operation within the band 2400-2483.5MHz
Test Date:	18 April, 2008
Requirements:	15.249 (d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.
Test conclusion:	The Lower Edge 2.4000GHz: the value is attenuated 54.00dB. The Upper Edge 2.4835GHz: the value is attenuated 51.61dB.

The graph as below:

Lower Edge:



Upper Edge:



6.3 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement: N/A

Test Method: Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from AC power lines or contain provisions for operation while connected to the AC power lines.