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**FEDERAL COMMUNICATIONS COMMISSION**  
Registration number: 282399

Report No.: GLEMR070802385RFT  
FCC ID : VKY13107  
Page: 1 of 15

## TEST REPORT

**Application No. :** GLEMR070802385RF

**Applicant:** Winplus Co.,Ltd

**FCC ID:** VKY13107

**Fundamental Carrier**

**Frequency :** 2.468GHz

**Equipment Under Test (EUT):**

**Name:** 3.5" BU Camera

**Model No.:** BT13107,BT13265,BT13264,BT50072♣

♣

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: 2006 (Section 15.249);

**Date of Receipt:** 16 August 2007

**Date of Test:** 17 to 27 August 2007

**Date of Issue:** 28 August 2007

**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

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf  
This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. 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.



## 2 Test Summary

Test	Test Requirement	Standard Paragraph	Result
Flied Strength of Fundamental	FCC PART 15 :2006	Section 15.249 (a)	PASS
Flied Strength of Unwanted Emissions	FCC PART 15 :2006	Section 15.209& Section 15.249 (d)	PASS
Occupied Bandwidth	FCC PART 15 :2006	Section 15.249	PASS
Band Edges	FCC PART 15 :2006	Section 15.249 (d)	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART 15 :2006	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.



Model No: BT13107,BT13265,BT13264,BT50072

Only the Item **BT13107** was tested, since the electrical circuit design, PCB layout, components used and internal wiring were identical for the above models, model numbers were different according to declaration by the applicant.



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## 4 General Information

### 4.1 Client Information

Applicant: Winplus Co.,Ltd.  
Address of Applicant: Suites 6-11, 7<sup>th</sup> 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, BT13265, BT13264, BT50072  
Number of Channels 1 Channel  
Fundamental Carrier 2468MHz  
Frequency:  
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: 2006 (Section 15.249);

### 4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory, No.198 Kezhu Road, Science Town Economic& Technology Development District Guangzhou, 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/OATS						
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	06-03-2007	06-03-2008
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	05-12-2006	05-12-2007
N/A	EMI Test Software	Audix	E3	N/A	N/A	N/A
EMC0514	Coaxial cable	SGS	N/A	N/A	04-12-2006	04-12-2007
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	12-08-2007	12-08-2008
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	12-08-2007	12-08-2008
EMC0517	Horn Antenna	Rohde & Schwarz	HF906	100095	12-08-2007	12-08-2008
EMC0040	Spectrum Analyzer	Rohde & Schwarz	FSP30	100324	05-12-2006	05-12-2007
EMC0520	0.1-1300 MHz Pre-Amplifier	HP	8447D OPT 010	2944A06252	28-03-2007	28-03-2008
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	28-03-2007	28-03-2008
EMC0523	Active Loop Antenna	EMCO	6502	00042963	09-08-2006	09-08-2008
EMC0530	10m Semi- Anechoic Chamber	ETS	N/A	N/A	22-08-2006	22-08-2007

General used equipment						
No:	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
EMC0050-EMC0053	Temperature, & Humidity	ZHENGZHOU BO YANG	WSB	N/A	05-12-2006	05-12-2007
EMC0054	Temperature, & Humidity	Shenzhen Tai Kong	THG-1	N/A	04-01-2007	04-01-2008
EMC0006	DMM	Fluke	73	70681569	27-09-2006	27-09-2007
EMC0007	DMM	Fluke	73	70671122	27-09-2006	27-09-2007

Conducted Emission						
No:	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
EMC0306	Shielding Room	Zhong Yu	8 x 3 x 3.8 m <sup>3</sup>	N/A	N/A	N/A
EMC0102	LISN	Schaffner Chase	MNZ050D/1	1421	05-12-2006	05-12-2007
EMC0506	EMI Test Receiver	Rohde & Schwarz	ESCS30	100085	05-12-2006	05-12-2007
EMC0107	Coaxial Cable	SGS	2m	N/A	25-11-2006	25-11-2007
EMC0106	Voltage Probe	SGS	N/A	N/A	N/A	N/A



## 6 Test Results

### 6.1 E.U.T. Operation

Input voltage: DC 12V  
 Temperature: 20.0 -25.0 °C  
 Humidity: 38-48 % RH  
 Atmospheric Pressure: 992 -1006 mbar  
 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 August 2007  
**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<sup>0</sup> 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 dB $\mu$ V/m.

The limit for peak field strength dBuV/m for the fundamental frequency = 114.0 dB $\mu$ V/m.

No fundamental is allowed in the restricted bands.

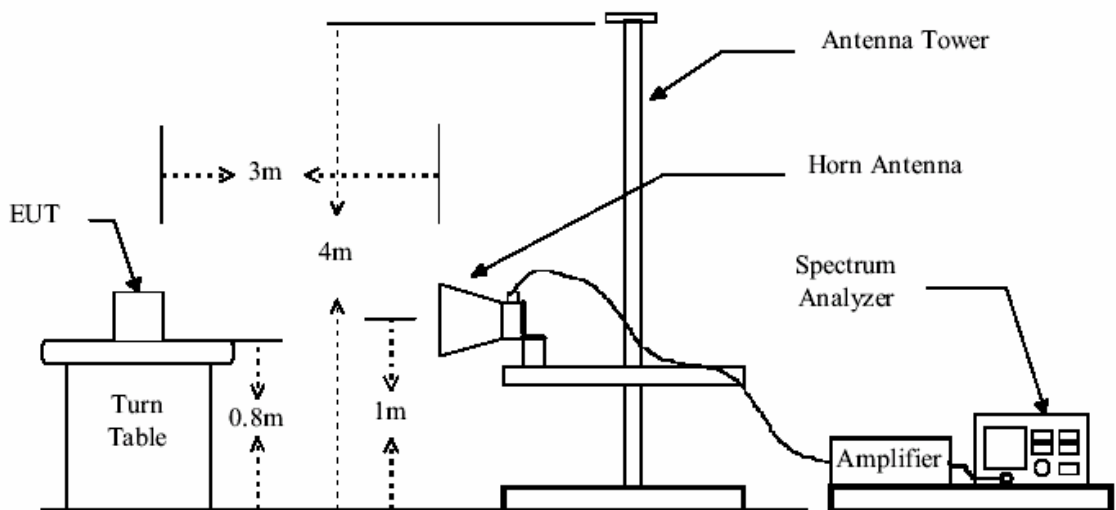
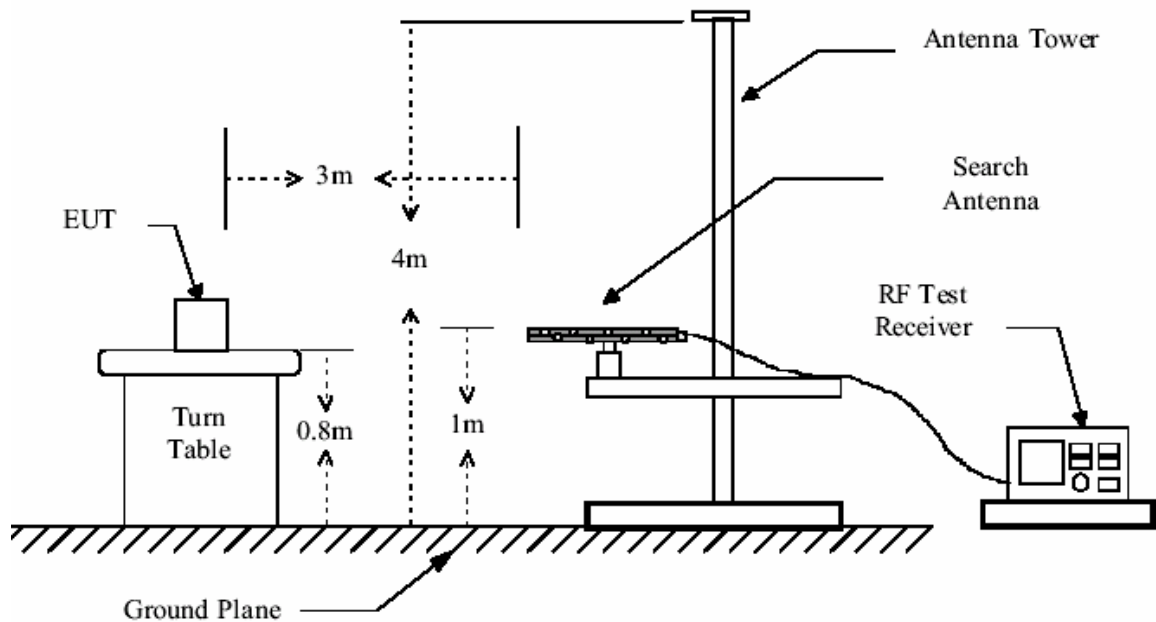
The limit for average field strength dB $\mu$ V/m for the harmonics = 54.0 dB $\mu$ V/m.

The limit for peak field strength dB $\mu$ V/m for the harmonics = 74.0 dB $\mu$ V/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 dB $\mu$ V/m in 15.209. Here the limit for the other emission is 54.0 dB $\mu$ V/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 rotated 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-** Vertical polarization

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

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)
330.76	17.3	2.2	24.6	49.5	44.4	46.0

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 (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)
4938.330	33.34	7.50	32.9	64.5	72.4	74.0
7404.000	36.23	8.83	32.4	57.8	70.4	74.0
9845.697	37.54	10.43	31.8	56.4	72.5	74.0

**Average Measurement**

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)
4938.330	33.34	7.50	32.93	41.7	49.6	54.0
7404.000	36.23	8.83	32.37	38.5	51.2	54.0
9845.697	37.54	10.43	31.82	37.3	53.5	54.0

**Fundamental Frequency:**

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Peak Reading Level (dBuV)	Average Reading Level (dBuV)	Peak Emission Level (dBuV/m)	Average Emission Level (dBuV/m)
2468.000	28.7	4.80	34.7	98.0	89.5	96.8	88.3



**Test in transmitting status-** Horizontal polarization

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

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Emission Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)
330.76	17.3	2.2	24.6	47.5	42.4	46.0

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

**Peak Measurement**

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Emission Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)
4938.330	33.34	7.50	32.9	63.0	70.9	74.0
7404.000	36.23	8.83	32.4	57.0	69.6	74.0
9845.697	37.54	10.43	31.8	56.0	72.1	74.0

**Average Measurement**

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Emission Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)
4938.330	33.34	7.50	32.93	40.0	47.9	54.0
7404.000	36.23	8.83	32.37	38.0	50.7	54.0
9845.697	37.54	10.43	31.82	36.0	52.2	54.0

**Fundamental Frequency:**

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Peak Reading Level (dBuV)	Average Reading Level (dBuV)	Peak Emission Level (dBuV/m)	Average Emission Level (dBuV/m)
2468.000	28.7	4.6	34.7	98.0	85.6	96.7	84.2

**TEST RESULTS:** The unit does meet the FCC requirements.

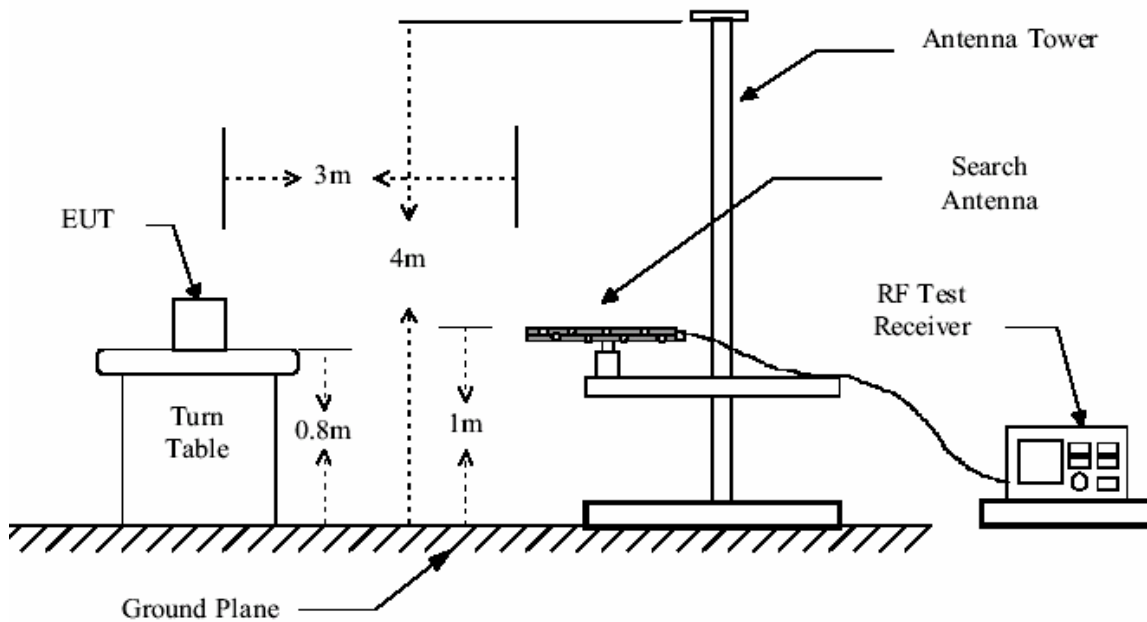
**6.2.2 Test in Receiver AV in mode**

Test Requirement: FCC 15.209 & FCC 15.109  
 Test Method: ANSI C63.4 section 8 & 13  
 Measurement Distance: 3m (Semi-Anechoic Chamber and OATS)  
 Test instrumentation resolution bandwidth 120 kHz (30 MHz - 1000 MHz)

Receive antenna scan height 1 m - 4 m, polarization Vertical / Horizontal

Limit: 40.0 dB $\mu$ V/m between 30MHz & 88MHz  
 43.5 dB $\mu$ V/m between 88MHz & 216MHz  
 46.0 dB $\mu$ V/m between 216MHz & 960MHz  
 54.0 dB $\mu$ V/m above 960MHz

**Test Configuration:**



The following measurement result were performed on the EUT:

30MHz~1GHz unwanted emissions ,Quasi-Peak Measurement

Horizontal polarization

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Emission Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)
128.94	11.5	1.6	25.0	44.8	32.9	43.5
294.81	12.8	2.5	25.0	54.5	44.8	46.0
324.51	13.8	2.6	25.2	52.3	43.6	46.0
327.80	13.9	2.6	25.2	53.1	44.4	46.0
339.43	14.3	2.7	25.2	53.0	44.7	46.0
510.15	17.3	3.4	26.0	44.9	39.6	46.0



Vertical polarization

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Emission Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)
100.00	10.3	1.4	25.0	52.7	39.4	43.5
128.94	11.5	1.6	25.0	50.8	38.9	43.5
280.26	12.5	2.4	25.0	53.7	43.6	46.0
320.07	13.7	2.6	25.1	51.4	42.5	46.0
329.73	14.0	2.6	25.2	52.2	43.6	46.0
589.69	18.5	3.7	26.3	40.0	36.0	46.0

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

**TEST RESULTS: The unit does meet the FCC requirements**



### 6.2.3 Occupied Bandwidth & Band Edge

Test Requirement: FCC Part 15 Section 15.249

Test Method: ANSI C63.4

Operation within the band 2400-2483.5MHz

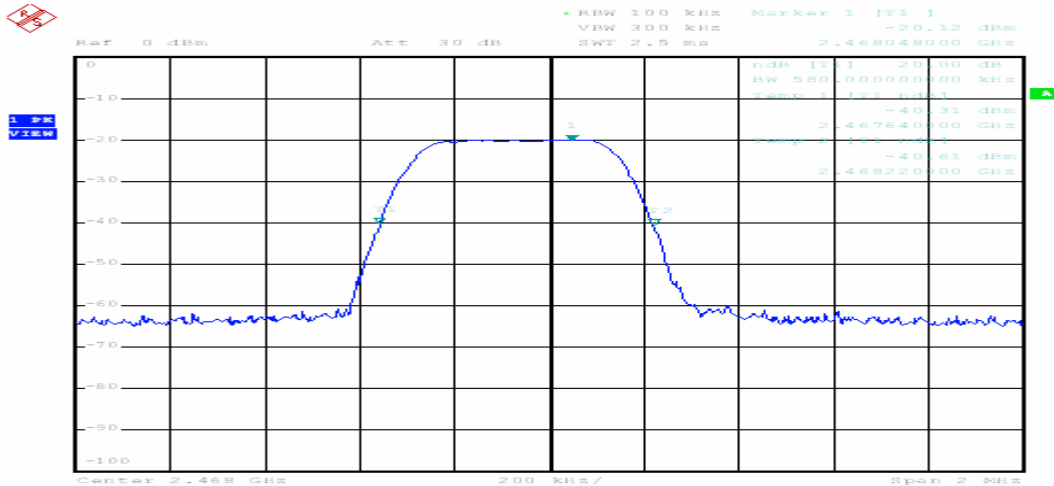
Test Date: 20 August 2007

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.

Occupied Bandwidth:

Test result:

Test Frequency	20 dB bandwidth
2468MHz	580kHz



Date: 20.AUG.2007 14:44:04

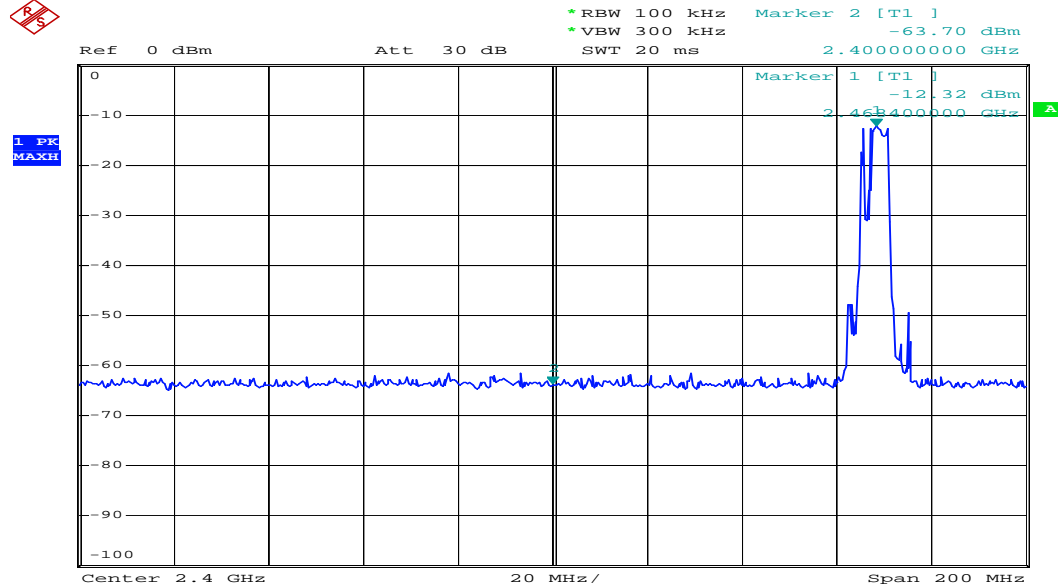


Band edge :

The Lower Edge 2.4000GHz: the value is attenuated 51.38dB.

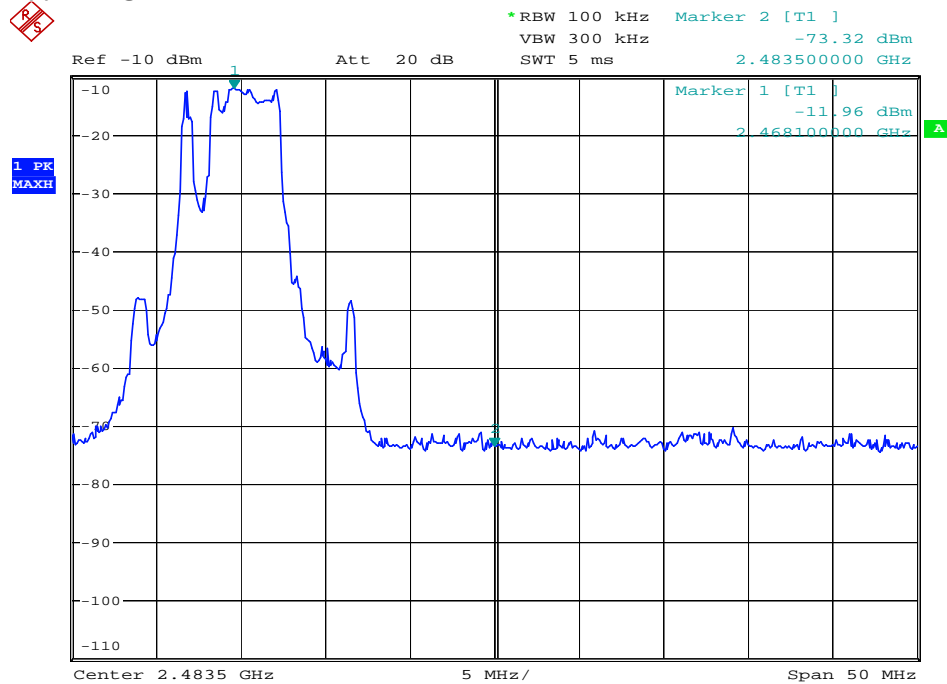
The Upper Edge 2.4835GHz: the value is attenuated 61.36dB.

Lower Edge:



Date: 25.AUG.2007 17:03:04

Upper Edge:



Date: 25.AUG.2007 16:57:52



### **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.