

TEST REPORT For FCC

Test Report No. : TK-FR9017

Date of Issue : 09/24/2009

Description of Product : 2.4GHz WIRELESS CAMERA SYSTEM

Model No. : WXC-24

Applicant : **XM.CO.,LTD.**

6-4B,1L, 4-Complex,Gumi National Industrial, SinDang-ri,
Sandong-myein, Gumi-city, Gyeongbuk, KOREA

Manufacturer : **XM.CO.,LTD.**

6-4B,1L, 4-Complex,Gumi National Industrial, SinDang-ri,
Sandong-myein, Gumi-city, Gyeongbuk, KOREA

Standards : FCC Part 15 Subpart C §15.249

Test Date : 09/24/2009 ~ 10/07/2009

Test Results : PASS FAIL

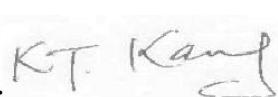
The test results relate only to the items tested.

Tested by:



Kyu-Chul Shin
Test Engineer
Date:10/07/2009

Reviewed by:



KT Kang
Technical Manager
Date: 10/07/2009

THRU-KES CO.,LTD.

477-6, Hager-Ri, Yoju-Up, Yoju-Gun Kyunggi-Do,469-803, Korea
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1.0 General Product Description

Discription : 2.4GHz WIRELESS CAMERA SYSTEM
Equipment model name : WXC-24
Serial number : Prototype
EUT condition : Pre-production, not damaged
Frequency Range : 2450 MHz
Number of channels : 1channel(2450MHz)
Antenna Designation : Non-User Replaceable
Type of Modulation : FM
Power Source : 12VDC

1.1 Tested Frequency

| Frequency (MHz) | CH1 |
|-----------------|------|
| | 2450 |

1.2 Model Differences

Not applicable

1.3 Device Modifications

The following modifications were necessary for compliance:

Not applicable

1.4 Peripheral Devices

| Device | Manufacturer | Model No. | Serial No. | FCC ID or DoC |
|--------|-----------------------|-----------|------------|---------------|
| EUT | X M . C O . , L T D . | WXC-24 | - | - |
| Camera | X M . C O . , L T D . | - | - | - |

* note : This camera is setted outside of the test site during testing

1.5 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

1.6 Test Facility

THRU-KES Co.,Ltd. (Test Site # : 343818)
477-6, Hager-Ri, Yoju-Up, Yoju-Gun Kyunggi-Do, 469-803, Korea

2.0 Summary of test Results

| FCC Part Section(s) | Description Of Tests | Status (note 1) |
|------------------------|----------------------|-----------------|
| 15.209(a) 15.249(a) | Radiated Emission | C |
| 15.207(a) | Conducted Emission | NA |
| 15.249(d) | Band Edge Testing | C |

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

The sample was tested according to the following specification:

- FCC Part 15.249, ANSI C63.4-2003

2.1.1 Radiated Emission Test

Test Location

Testing was performed at a test distance of 3 meter Open Area Test Site

Test Procedures

The height of the measuring antenna was varied between 1 to 4 m and the table was rotated a full revolution in order to obtain maximum values of the electric field intensity. The measurement was made in both the vertical and horizontal polarization, and the maximum value is presented in the report.

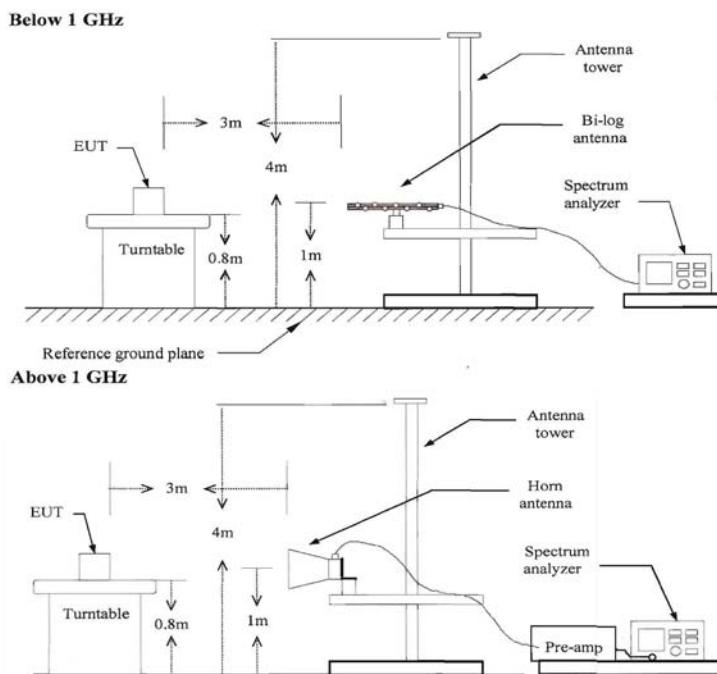
The spectrum analyzer is set to:

Below 1GHz :

RBW=100KHz/VBW=300KHz/Sweep=AUTO

Above 1GHz:

- (a) PEAK: RBW=VBW=1MHz/Sweep=AUTO
- (b) AVERAGE: RBW=1MHz/VBW=10Hz/Sweep=AUTO



Limit

-15.249(a)

| Frequency | Field Strength of Fundamental (millivolts/meter) | Field Strength of Harmonics |
|-----------------|--|-----------------------------|
| 902-928 MHz MHz | 50 | 500 |
| 2400-2483.5 MHz | 50 | 500 |
| 5725-5875 MHz | 50 | 500 |
| 24.0-24.25GHz | 250 | 2500 |

- 15.209(a)

| Frequency(MHz) | Field Strength uV/m@3m | Field Strength dBuV/m@3m |
|----------------|------------------------|--------------------------|
| 30-88 | 100** | 40 |
| 88-216 | 150** | 43.5 |
| 216-960 | 200** | 46 |
| Above 960 | 500 | 54 |

** Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

Test Results

| | | | |
|---------|-------------------------------|--------------------|---------------|
| EUT | 2.4GHz WIRELESS CAMERA SYSTEM | Measurement Detail | |
| Model | WXC-24 | Frequency Range | Below 1000MHz |
| Channel | - | Detector function | Quasi-Peak |

The requirements are:

Complies

| Frequency (MHz) | Measured Data (dBuV/m) | Margin (dB) | Remark |
|--------------------|---------------------------|----------------|------------|
| 53.80 | 30.1 | 9.9 | Quasi-Peak |

Test Data

| No | Emission Frequency (MHz) | Meter Reading dBuV/m | Ant. Polaritry | Correction Factor dB | Cable Loss dB | Field Strength (dBuV/m) | Margin (dBuv) | Limit (dBuv/m) |
|----|-----------------------------|-------------------------|----------------|-------------------------|------------------|----------------------------|------------------|-------------------|
| 1 | 49.60 | 11.5 | V | 13.6 | 4.0 | 29.0 | -11.0 | 40.0 |
| 2 | 53.80 | 12.6 | V | 13.2 | 4.2 | 30.1 | -9.9 | 40.0 |
| 3 | 67.80 | 10.9 | H | 11.2 | 3.4 | 25.6 | -14.4 | 40.0 |
| 4 | 118.40 | 13.2 | V | 12.1 | 2.4 | 27.7 | -15.8 | 43.5 |
| 5 | 130.70 | 14.7 | V | 12.8 | 2.4 | 30.0 | -13.5 | 43.5 |

Test Results

| | | | |
|---------|-------------------------------|--------------------|---------|
| EUT | 2.4GHz WIRELESS CAMERA SYSTEM | Measurement Detail | |
| Model | WXC-24 | Frequency Range | 1-25GHz |
| Channel | Channel 1 | Detector function | Peak |

The requirements are:

Complies

| Frequency (MHz) | Measured Data (dBuV/m) | Margin (dB) | Remark |
|--------------------|---------------------------|----------------|--------|
| 2450.00 | 91.40 | 2.6 | Peak |

Test Data

| Frequency [MHz] | Reading [dBuV/m] | Pol. | Height [m] | Correction Factor | | | Limits [dBuV/m] | Result [dBuV/m] | Margin [dB] |
|--------------------|---------------------|------|---------------|-------------------|-----------|-------|--------------------|--------------------|----------------|
| | | | | Antenna | Amp. Gain | Cable | | | |
| 2450.00 | 91.1 | V | 1.3 | 28.2 | 35.3 | 7.4 | 94.0 | 91.4 | 2.6 |
| - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - |

* No emissions were detected at a level greater than 20dB below limit

2.1.2 Conducted Emission Test

Not Applicable, as it's power was supplied from DC Power Supply

2.1.4 Band-Edge Testing

Test Standard

FCC Part 15 15.249 :2005

Band Edge FCC 15.249(d) Limit

Emission 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

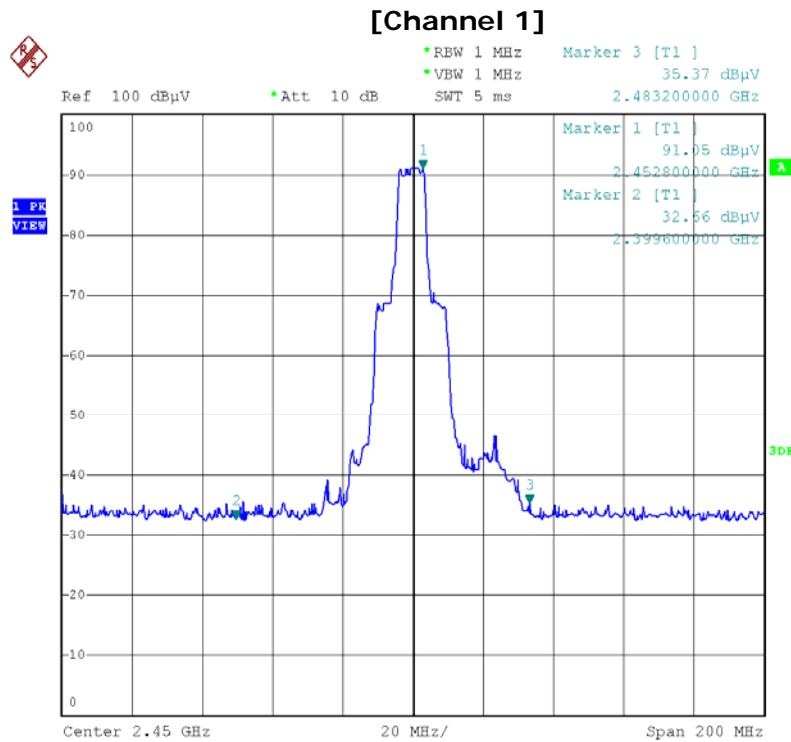
Test Procedures

With the EUT's antenna attached, the EUT's radiated emission power was received by the test antenna which was connected to the spectrum analyzer with operation band.

Test Results

| Band-Edge Testing | Result |
|-------------------|----------|
| | Complies |

See next pages for actual measured spectrum plots.



APPENDIX A – Test Equipment Used For Tests

| No | Description | Manufacturer | Model No. | Serial No. | Due Cal. |
|----|-----------------------------|------------------|---------------------|------------|------------|
| 1 | Test Receiver | Rohde & | ESHS 10 | 862970/018 | 2010.06.11 |
| 2 | Test Receiver | Rohde & | ESVS 10 | 826008/014 | 2010.05.20 |
| 3 | Spectrum Analyzer | Hewlett Packard | 8566B | 2311A02394 | 2010.05.15 |
| 4 | Spectrum Analyzer | Rohde & | FSP13 | 100130 | 2010.05.15 |
| 5 | Modulation Analyzer | Hewlett Packard | 8901B | 3438A05094 | 2010.05.15 |
| 6 | Audio analyzer | Hewlett Packard | 8903B | 3011A12915 | 2010.05.15 |
| 7 | Preamplifier | Hewlett Packard | 8447F | 2805A02570 | 2010.05.15 |
| 8 | Preamplifier | A.H. Systems | PAM-0118 | 164 | 2010.04.17 |
| 9 | Signal Generator | Hewlett Packard | 8673D | 2708A00448 | 2010.05.15 |
| 10 | Power Meter | Hewlett Packard | 437B | 312U24787 | 2010.04.21 |
| 11 | Power Sensor | Hewlett Packard | 8482B | 3318A06943 | 2010.05.15 |
| 12 | Loop Antenna | Rohde & | HFH2-Z2.335.4711.52 | 826532/006 | 2011.02.06 |
| 13 | Dipole Antenna | Rohde & | VHAP | 574 | 2010.07.07 |
| 14 | Dipole Antenna | Rohde & | VHAP | 575 | 2010.07.17 |
| 15 | Dipole Antenna | Rohde & | UHAP | 545 | 2010.07.17 |
| 16 | Dipole Antenna | Rohde & | UHAP | 546 | 2010.07.07 |
| 17 | Biconical Antenna | Eaton Corp. | 94455-1 | 0977 | 2010.07.03 |
| 18 | Biconical Antenna | EMCO | 3104C | 9111-2468 | 2010.07.03 |
| 19 | Log Periodic Antenna | EMCO | 3146 | 2051 | 2010.06.05 |
| 20 | Log Periodic Antenna | EMCO | 3146 | 8901-2320 | 2010.07.03 |
| 21 | Horn Antenna | A.H. Systems | SAS-571 | 414 | 2011.03.16 |
| 22 | LISN | EMCO | 3810/2 | 2228 | 2010.05.15 |
| 23 | Waveform Generator | Hewlett Packard | 33120A | US34001190 | 2010.05.15 |
| 24 | Digital Oscilloscope | Tektronix | TDS 340A | B012287 | 2010.05.15 |
| 25 | Dummy Load | Bird Electronics | 8251 | 11511 | 2010.04.17 |
| 26 | Spectrum Analyzer | Rohde & | FSP40 | - | 2009.10.30 |
| 27 | Double Ridged Guide Antenna | ETS-Lindgren | 3116 | 00062916 | 200912.19 |
| 28 | Double Ridged Guide Antenna | ETS-Lindgren | 3116 | 00062504 | 200912.19 |