# FCC Test Report

## *FCC ID: 2ABQJ-N2*

**Original Grant for Computing Device Peripheral**

| | | |
|---|---|---|
| **Report No.** | : | TB-FCC139926 |
| **Applicant** | : | Shenzhen Sinopine Technology Co., Ltd |
| **Equipment Under Test (EUT)** | | |
| **EUT Name** | : | GSM Camera Alarm System |
| **Model No.** | : | N2 |
| **Series Model No.** | : | N1 |
| **Brand Name** | : | N/A |
| **Receipt Date** | : | 2014-04-28 |
| **Test Date** | : | 2014-04-29 to 2014-05-09 |
| **Issue Date** | : | 2014-05-12 |
| **Standards** | : | FCC Part 15: 2012, Subpart B, Class B |
| **Test Method** | : | ANSI C63.4-2003 |
| **Conclusions** | : | **PASS** |

In the configuration tested, the EUT complied with the standards specified above,

The EUT technically complies with the FCC requirements

**Test/Witness Engineer** : 

**Approved& Authorized** : 

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 the report.



1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, China
Tel: +86 75526509301 Fax: +86 75526509195

# Comments

# 1. General Information about EUT

## 1.1 Client Information

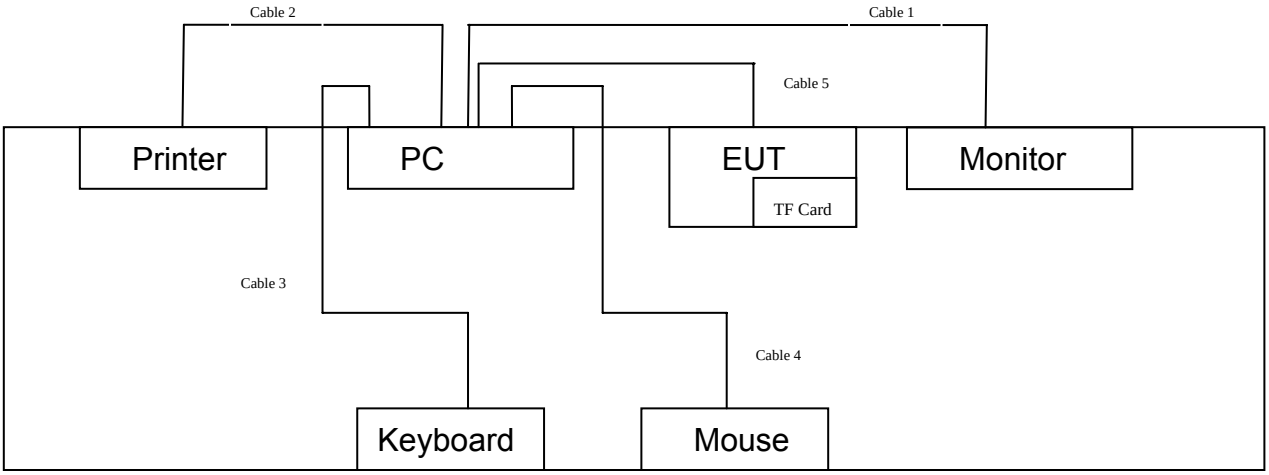
| | | |
|---|---|---|
| **Applicant** | : | Shenzhen Sinopine Technology Co., Ltd |
| **Address** | : | D Building, Huafeng Industrial Zone, Hangcheng Boulevard, Gushu Village, Xixiang Town, Bao'an District, Shenzhen City, China |
| **Applicant** | : | Shenzhen Sinopine Technology Co., Ltd |
| **Address** | : | D Building, Huafeng Industrial Zone, Hangcheng Boulevard, Gushu Village, Xixiang Town, Bao'an District, Shenzhen City, China |

## 1.2 General Description of EUT (Equipment Under Test)

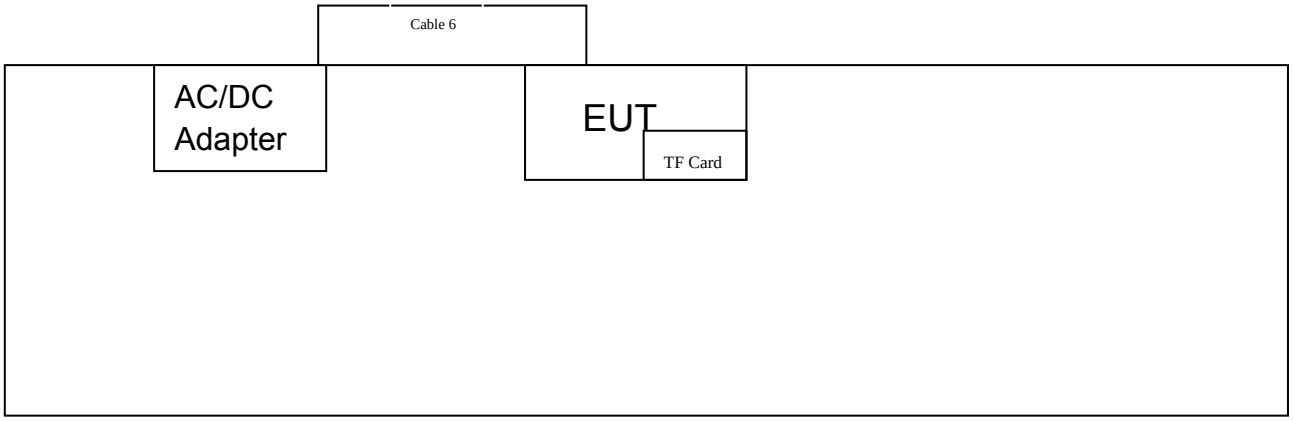
| | | |
|---|---|---|
| **EUT Name** | : | GSM Camera Alarm System |
| **Model No.** | : | N2, N1 |
| **Model difference** | : | The different models are identical in schematic, structure and critical component, the only different is the appearance. |
| **Power Supply** | : | DC power supplied by AC/DC Adapter<br>DC Voltage supplied from Li-Polymer battery. |
| **Power Rating** | : | AC/DC Adapter(FD12SU-090-1000):<br>Input: AC 100~240V 50/60Hz 0.4A<br>Output: DC 9V 1A<br>DC 7.4V from Li-ion battery |
| **Connecting I/O Port(s)** | : | The equipent have USB port for link with PC, so the equipment is considered as a Computing Device Peripheral. |
| **Note:** More detailed features description, please refer to the manufacturer's specifications or the User's Manual. | | |

## 1.3 Block Diagram Showing the Configuration of System Tested

USB Loading with PC




Normal Working




## 1.4 Description of Support Units

| Equipment Information | | | | |
|---|---|---|---|---|
| **Name** | **Model** | **S/N** | **Manufacturer** | **Used "√"** |
| Printer | HP1505n | VNF3G06957 | HP | √ |
| LCD Monitor | E170Sc | ---- | DELL | √ |
| PC | OPTIPLEX380 | ---- | DELL | √ |
| Keyboard | L100 | U01C | DELL | √ |
| Mouse | M-UARDEL7 | ---- | DELL | √ |
| TF Card | 1GB | ---- | Kingston | √ |
| Flash Disk | 2GB | ---- | SSK | |

| | | | | |
|---|---|---|---|---|
| Notebook | B470A2450 | VNF3G06957 | Lenovo | |
| | | | | |
| **Cable Information** | | | | |
| **Number** | **Shielded Type** | **Ferrite Core** | **Length** | **Note** |
| Cable 1 | YES | YES(2) | 1.8M | |
| Cable 2 | YES | YES(1) | 2.0M | |
| Cable 3 | YES | NO | 1.5M | |
| Cable 4 | YES | NO | 1.5M | |
| Cable 5 | NO | NO | 0.8M | Accessories |
| Cable 6 | NO | NO | 1.15M | Accessories |

## 1.5 Description of Test Mode

| Mode | Description |
|---|---|
| Mode 1 | USB loading with PC |
| Mode 2 | Normal working mode |

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of the EUT operation mode, and the maximum emission levels of the conducted and radiated emissions are compared to the FCC Part 15 Subpart B (Class B) limits.

Note: The test results for EUT's RF functions are contained in another Certification Report.

## 1.6 Test Facility

The testing was performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at:

1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China.

At the time of testing, the following bodies accredited the Laboratory:

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

# 2. Test Summary

| FCC Part15, Subpart B | | | | |
|---|---|---|---|---|
| **Section** | **Test Method** | **Test Item** | **Limit** | **Judgment** |
| 15.109 | ANSI C63.4:2003 | Radiated Emission | Class B | PASS |
| 15.107 | ANSI C63.4:2003 | Conducted Emission (150 kHz to 30MHz) | Class B | PASS |
| **Note:** N/A is an abbreviation for Not Applicable. | | | | |

# 3. Conducted Emission Test

## 3.1 Test Standard and Limit

### 3.1.1Test Standard

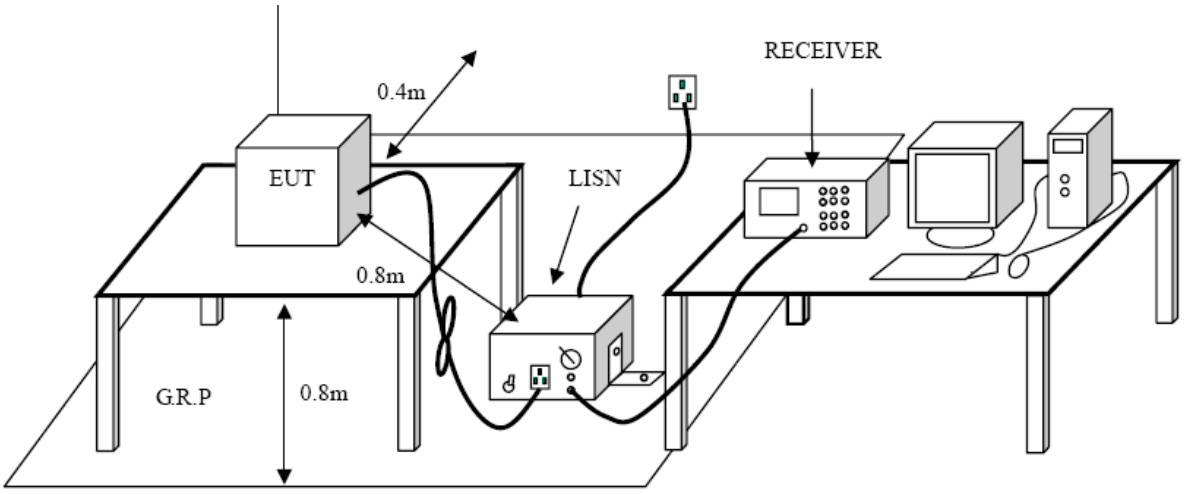
FCC Part 15.107

### 3.1.2 Test Limit

**Conducted Emission Test Limit**

| Frequency (MHz) | Conducted Limit (dBuV) | |
|---|---|---|
| | Quasi-peak Level | Average Level |
| 0.15~0.5 | 66 ~ 56 * | 56 ~ 46 * |
| 0.5~5.0 | 56.00 | 46.00 |
| 5.0~30.0 | 60.00 | 50.00 |
| Notes:(1) *Decreasing linearly with logarithm of the frequency.<br>(2) The lower limit shall apply at the transition frequencies. | | |

## 3.2 Test Setup




## 3.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance.

The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

For the actual test configuration, please refer to the EUT test Photos.

## 3.4 Test Equipment Used

| Description | Manufacturer | Model No. | Serial No. | Cal. Date | Cal. Due Date |
|---|---|---|---|---|---|
| EMI Test Receiver | ROHDE& SCHWARZ | ESCI | 100321 | 2013-08-10 | 2014-08-09 |
| 50ΩCoaxial Switch | Anritsu | MP59B | X10321 | 2013-08-10 | 2014-08-09 |
| L.I.S.N | Rohde & Schwarz | ENV216 | 101131 | 2013-08-10 | 2014-08-09 |
| L.I.S.N | SCHWARZBECK | NNBL 8226-2 | 8226-2/164 | 2013-08-10 | 2014-08-09 |

## 3.5 EUT Operating Mode

(1) Setup the EUT and peripherals refer to the description of test mode.

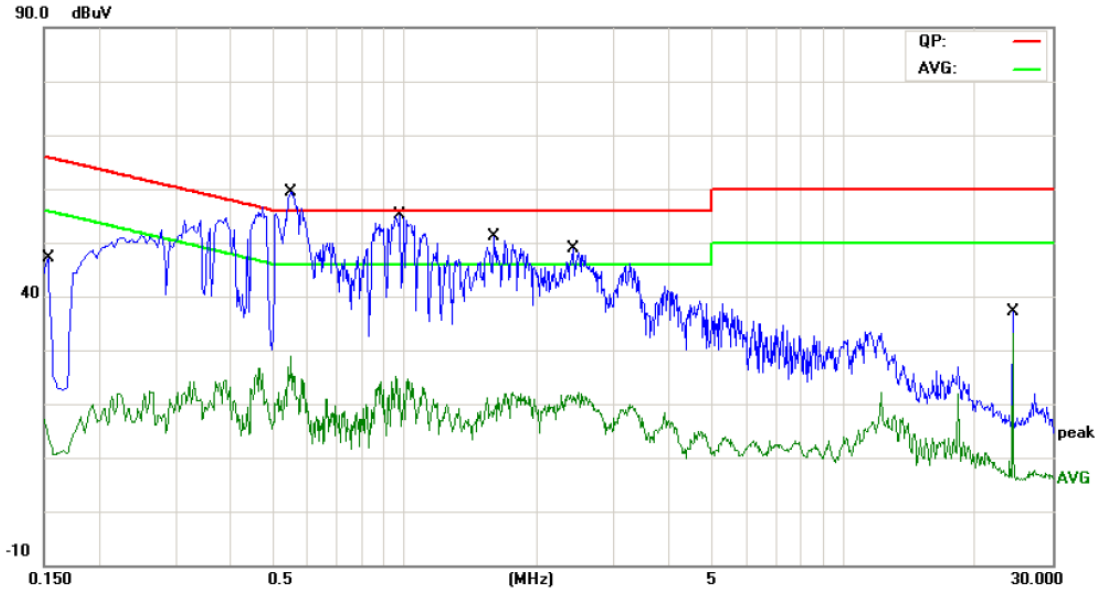
## 3.6 Deviation

The test is no deviation from the standard.

## 3.7 Test Data

Please see the next page.

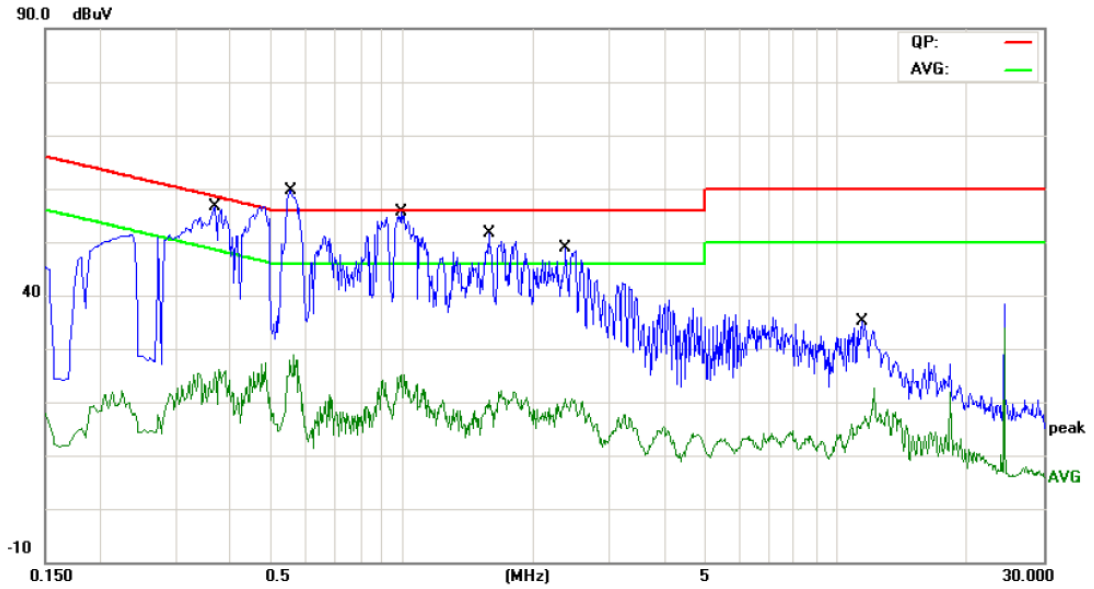
| EUT: | GSM Camera Alarm System | Model: | N2 |
|---|---|---|---|
| Temperature: | 25 ℃ | Relative Humidity: | 55% |
| Test Voltage: | AC 120V/60 Hz | Terminal: | Line |
| Test Mode: | Mode 1 | | |
| Remark: | N/A | | |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1539 | 25.96 | 9.93 | 35.89 | 65.78 | -29.89 | QP | |
| 2 | | 0.1539 | 2.36 | 9.93 | 12.29 | 55.78 | -43.49 | AVG | |
| 3 | * | 0.5500 | 40.28 | 10.04 | 50.32 | 56.00 | -5.68 | QP | |
| 4 | | 0.5500 | 12.75 | 10.04 | 22.79 | 46.00 | -23.21 | AVG | |
| 5 | | 0.9780 | 35.90 | 10.06 | 45.96 | 56.00 | -10.04 | QP | |
| 6 | | 0.9780 | 10.50 | 10.06 | 20.56 | 46.00 | -25.44 | AVG | |
| 7 | | 1.5940 | 29.89 | 10.06 | 39.95 | 56.00 | -16.05 | QP | |
| 8 | | 1.5940 | 7.16 | 10.06 | 17.22 | 46.00 | -28.78 | AVG | |
| 9 | | 2.4140 | 28.31 | 10.05 | 38.36 | 56.00 | -17.64 | QP | |
| 10 | | 2.4140 | 7.33 | 10.05 | 17.38 | 46.00 | -28.62 | AVG | |
| 11 | | 24.3180 | 24.60 | 10.16 | 34.76 | 60.00 | -25.24 | QP | |
| 12 | | 24.3180 | 22.98 | 10.16 | 33.14 | 50.00 | -16.86 | AVG | |

**Emission Level= Read Level+ Correct Factor**

| EUT: | GSM Camera Alarm System | Model: | N2 |
|---|---|---|---|
| Temperature: | 25 ℃ | Relative Humidity: | 55% |
| Test Voltage: | AC 120V/60 Hz | Terminal: | Neutral |
| Test Mode: | Mode 1 | | |
| Remark: | N/A | | |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.3700 | 35.99 | 10.06 | 46.05 | 58.50 | -12.45 | QP | |
| 2 | | 0.3700 | 11.50 | 10.06 | 21.56 | 48.50 | -26.94 | AVG | |
| 3 | * | 0.5540 | 40.56 | 10.02 | 50.58 | 56.00 | -5.42 | QP | |
| 4 | | 0.5540 | 13.55 | 10.02 | 23.57 | 46.00 | -22.43 | AVG | |
| 5 | | 0.9900 | 35.38 | 10.16 | 45.54 | 56.00 | -10.46 | QP | |
| 6 | | 0.9900 | 10.06 | 10.16 | 20.22 | 46.00 | -25.78 | AVG | |
| 7 | | 1.5820 | 30.90 | 10.10 | 41.00 | 56.00 | -15.00 | QP | |
| 8 | | 1.5820 | 8.47 | 10.10 | 18.57 | 46.00 | -27.43 | AVG | |
| 9 | | 2.3740 | 28.03 | 10.06 | 38.09 | 56.00 | -17.91 | QP | |
| 10 | | 2.3740 | 7.61 | 10.06 | 17.67 | 46.00 | -28.33 | AVG | |
| 11 | | 11.4780 | 15.43 | 10.13 | 25.56 | 60.00 | -34.44 | QP | |
| 12 | | 11.4780 | 5.29 | 10.13 | 15.42 | 50.00 | -34.58 | AVG | |

**Emission Level= Read Level+ Correct Factor**

# 4. Radiated Emission Test

## 4.1 Test Standard and Limit

4.1.1 Test Standard

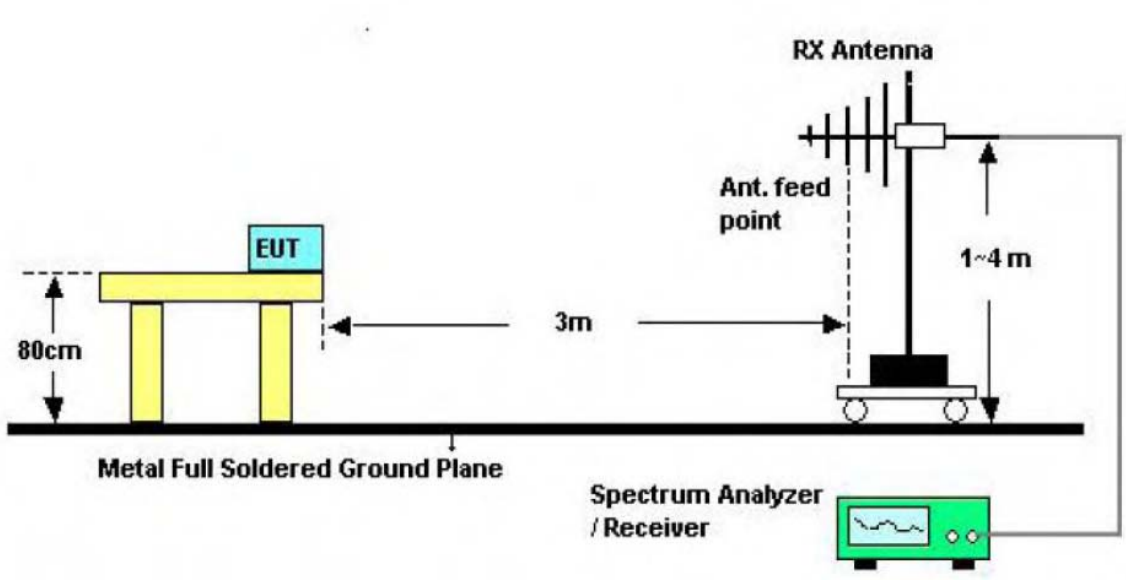
FCC Part 15.109

4.1.2 Test Limit

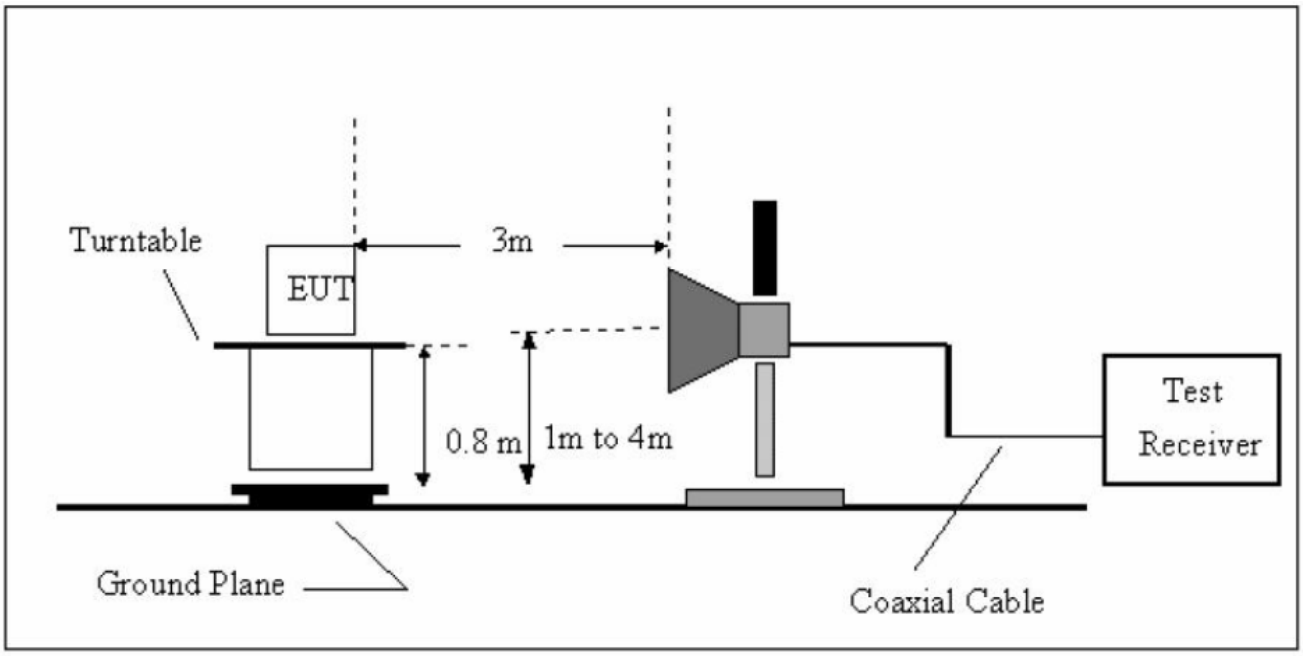
**Radiated Emission Limit**

| Frequency (MHz) | Field Strength (dBuV/m) | Measurement Distance (meters) |
|---|---|---|
| 30~88 | 40 | 3 |
| 88~216 | 43.5 | 3 |
| 216~960 | 46 | 3 |
| Above 960 | 54 | 3 |
| Note: Emission Level(dBuV/m)=20log Emission Level(uV/m) | | |

## 4.2 Test Setup




30MHz to 1000MHz Test Setup




Above 1GHz Test Setup

## 4.3 Test Procedure

(1) The measuring distance of 3m shall be used for measurements at frequency from 30MHz up to1GHz.
(2) The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
(3) The height of the equipment or of the substitution antenna shall be 0.8m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
(4) The initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
(5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
(6) For more details, please refer to the EUT Test Photos.

## 4.4 Test Equipment

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Due Date |
|---|---|---|---|---|---|
| Spectrum Analyzer | Agilent | E4407B | MY45106456 | Mar. 20, 2014 | Mar. 19, 2015 |
| Spectrum Analyzer | Rohde & Schwarz | FSP30 | DE25181 | Aug. 10, 2013 | Aug.09, 2014 |

| | | | | | |
|---|---|---|---|---|---|
| EMI Test Receiver | Rohde & Schwarz | ESCI | 101165 | Aug. 10, 2013 | Aug.09, 2014 |
| Bilog Antenna | ETS-LINDGREN | 3142E | 00117537 | Mar. 07, 2014 | Mar.06, 2015 |
| Bilog Antenna | ETS-LINDGREN | 3142E | 00117542 | Mar. 07, 2014 | Mar.06, 2015 |
| Horn Antenna | ETS-LINDGREN | 3117 | 00143207 | Mar. 07, 2014 | Mar.06, 2015 |
| Horn Antenna | ETS-LINDGREN | 3117 | 00143209 | Mar. 07, 2014 | Mar.06, 2015 |
| Pre-amplifier | HP | 11909A | 185903 | Mar. 07, 2014 | Mar.06, 2015 |
| Pre-amplifier | HP | 8447B | 3008A00849 | Mar. 07, 2014 | Mar.06, 2015 |
| Cable | HUBER+SUHNER | 100 | SUCOFLEX | Mar. 07, 2014 | Mar.06, 2015 |
| Signal Generator | Rohde & Schwarz | SML03 | IKW682-054 | Feb. 11, 2014 | Feb.10, 2015 |
| Positioning Controller | ETS-LINDGREN | 2090 | N/A | N/A | N/A |

## 4.5 EUT Operating Condition

(1) Setup the EUT and peripherals refer to the description of test mode.

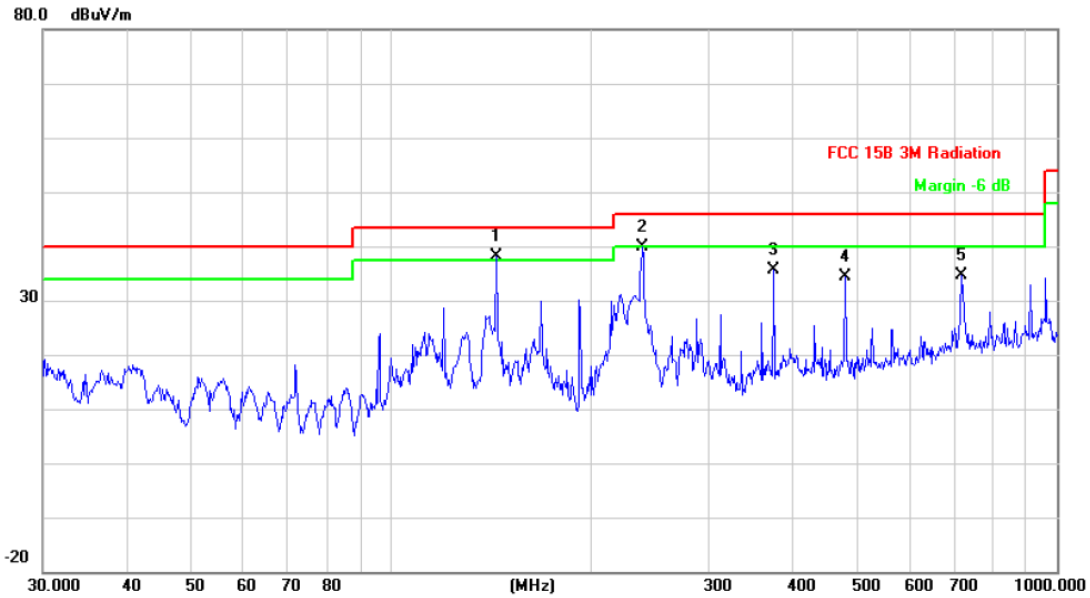
## 4.6 Deviation

The test is no deviation from the standard.

## 4.7 Test Data

## Below 1 GHz

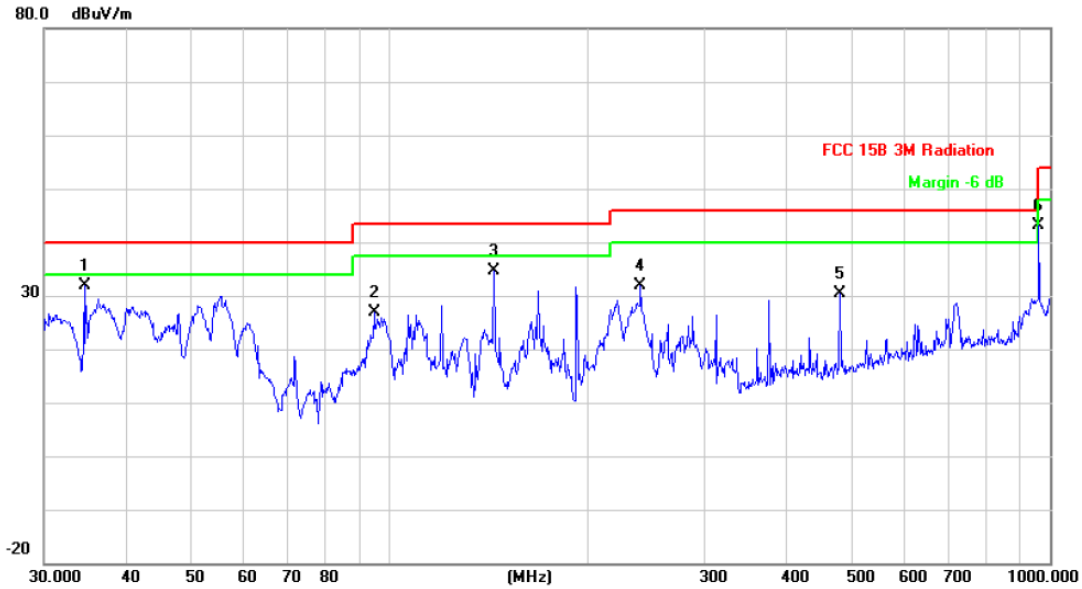
| EUT: | GSM Camera Alarm System | Model: | N2 |
|---|---|---|---|
| Temperature: | 25 ℃ | Relative Humidity: | 55% |
| Test Voltage: | AC 120V/60 Hz | | |
| Ant. Pol. | Horizontal | | |
| Test Mode: | Mode 1: AC Charging with loading to PC | | |
| Remark: | N/A | | |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 143.8295 | 59.69 | -21.67 | 38.02 | 43.50 | -5.48 | peak |
| 2 | | 238.3102 | 58.63 | -18.68 | 39.95 | 46.00 | -6.05 | peak |
| 3 | | 375.9385 | 50.08 | -14.40 | 35.68 | 46.00 | -10.32 | peak |
| 4 | | 480.5276 | 46.11 | -11.62 | 34.49 | 46.00 | -11.51 | peak |
| 5 | | 719.1995 | 41.62 | -7.08 | 34.54 | 46.00 | -11.46 | peak |

**Emission Level= Read Level+ Correct Factor**

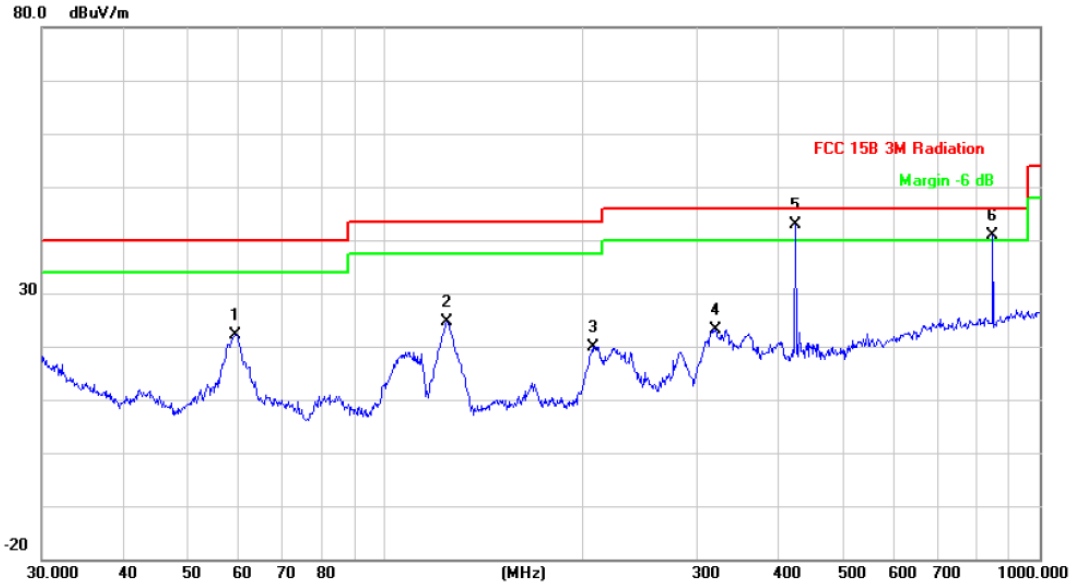
| EUT: | GSM Camera Alarm System | Model: | N2 |
|---|---|---|---|
| Temperature: | 25 ℃ | Relative Humidity: | 55% |
| Test Voltage: | AC 120V/60 Hz | | |
| Ant. Pol. | Vertical | | |
| Test Mode: | Mode 1: USB Charging with loading to PC | | |
| Remark: | N/A | | |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 34.5173 | 48.55 | -16.76 | 31.79 | 40.00 | -8.21 | peak |
| 2 | | 94.7601 | 49.15 | -22.28 | 26.87 | 43.50 | -16.63 | peak |
| 3 | | 143.8295 | 56.41 | -21.67 | 34.74 | 43.50 | -8.76 | peak |
| 4 | | 239.9874 | 50.58 | -18.59 | 31.99 | 46.00 | -14.01 | peak |
| 5 | | 480.5276 | 42.03 | -11.62 | 30.41 | 46.00 | -15.59 | peak |
| 6 | | 962.1623 | 48.09 | -4.84 | 43.25 | 54.00 | -10.75 | peak |

**Emission Level= Read Level+ Correct Factor**

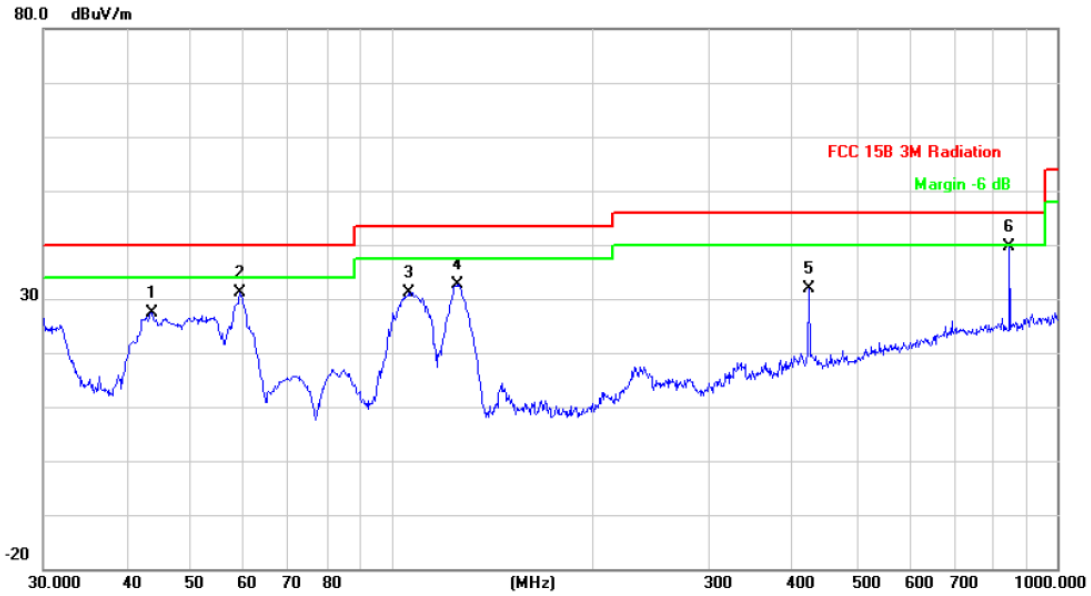
| EUT: | GSM Camera Alarm System | Model: | N2 |
|---|---|---|---|
| Temperature: | 25 ℃ | Relative Humidity: | 55% |
| Test Voltage: | AC 120V/60 Hz | | |
| Ant. Pol. | Horizontal | | |
| Test Mode: | Mode 2: Normal Link | | |
| Remark: | N/A | | |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 59.2325 | 49.69 | -27.46 | 22.23 | 40.00 | -17.77 | peak |
| 2 | | 124.5690 | 49.82 | -25.30 | 24.52 | 43.50 | -18.98 | peak |
| 3 | | 207.8501 | 42.94 | -23.00 | 19.94 | 43.50 | -23.56 | peak |
| 4 | | 319.9370 | 42.45 | -19.28 | 23.17 | 46.00 | -22.83 | peak |
| 5 | * | 423.5403 | 58.64 | -15.87 | 42.77 | 46.00 | -3.23 | peak |
| 6 | ! | 848.0563 | 50.49 | -9.61 | 40.88 | 46.00 | -5.12 | peak |

**Emission Level= Read Level+ Correct Factor**

| EUT: | GSM Camera Alarm System | Model: | N2 |
|---|---|---|---|
| Temperature: | 25 ℃ | Relative Humidity: | 55% |
| Test Voltage: | AC 120V/60 Hz | | |
| Ant. Pol. | Vertical | | |
| Test Mode: | Mode 2: Normal Link | | |
| Remark: | N/A | | |

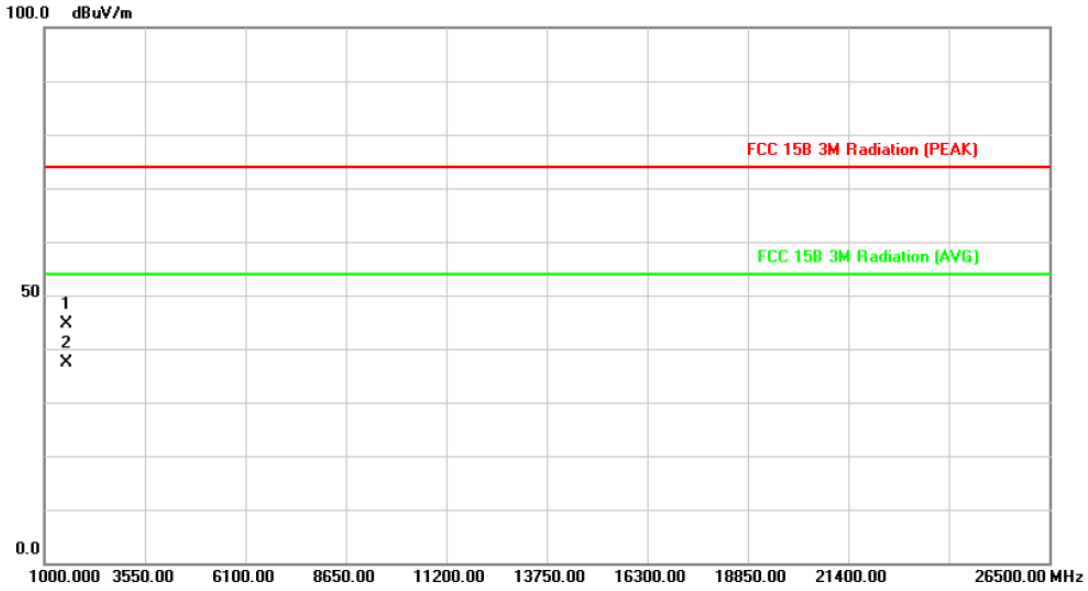



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 43.6584 | 52.12 | -24.65 | 27.47 | 40.00 | -12.53 | peak |
| 2 | | 59.2325 | 58.62 | -27.46 | 31.16 | 40.00 | -8.84 | peak |
| 3 | | 106.3850 | 55.87 | -24.80 | 31.07 | 43.50 | -12.43 | peak |
| 4 | | 125.4457 | 58.01 | -25.28 | 32.73 | 43.50 | -10.77 | peak |
| 5 | | 423.5403 | 47.82 | -15.87 | 31.95 | 46.00 | -14.05 | peak |
| 6 | * | 848.0563 | 49.31 | -9.61 | 39.70 | 46.00 | -6.30 | peak |

**Emission Level= Read Level+ Correct Factor**

## 1 GHz~26.5GHz

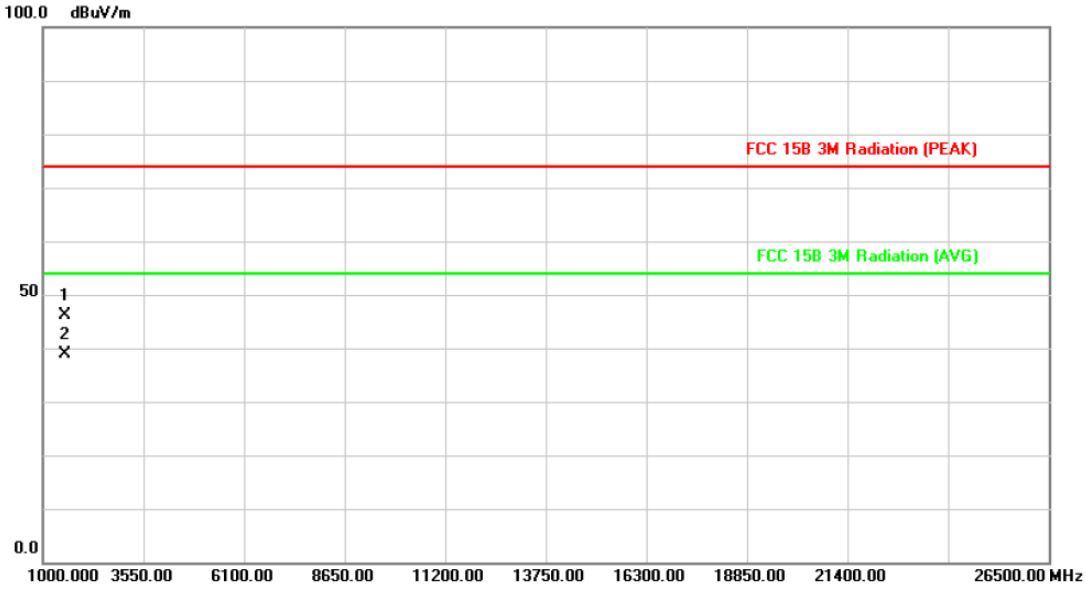
| | | | |
|---|---|---|---|
| **EUT:** | GSM Camera Alarm System | **Model:** | N2 |
| **Temperature:** | 25 ℃ | **Relative Humidity:** | 55% |
| **Test Voltage:** | AC 120V/60 Hz | | |
| **Ant. Pol.** | Horizontal | | |
| **Test Mode:** | Mode 2: Normal Link | | |
| **Remark:** | No report for the emission which more than 10 dB below the prescribed limit. | | |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 1574.050 | 47.50 | -2.78 | 44.72 | 74.00 | -29.28 | peak |
| 2 | * | 1574.050 | 40.07 | -2.78 | 37.29 | 54.00 | -16.71 | AVG |

**Emission Level= Read Level+ Correct Factor**

| | | | |
|---|---|---|---|
| **EUT:** | GSM Camera Alarm System | **Model:** | N2 |
| **Temperature:** | 25 ℃ | **Relative Humidity:** | 55% |
| **Test Voltage:** | AC 120V/60 Hz | | |
| **Ant. Pol.** | Vertical | | |
| **Test Mode:** | Mode 2: Normal Link | | |
| **Remark:** | No report for the emission which more than 10 dB below the prescribed limit. | | |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 1574.050 | 48.83 | -2.78 | 46.05 | 74.00 | -27.95 | peak |
| 2 | * | 1574.050 | 41.56 | -2.78 | 38.78 | 54.00 | -15.22 | AVG |

**Emission Level= Read Level+ Correct Factor**