

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 : *IVAN SU*

Approved& Authorized : *Ray Lai.*

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.

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1. General Information about EUT

1.1 Client Information

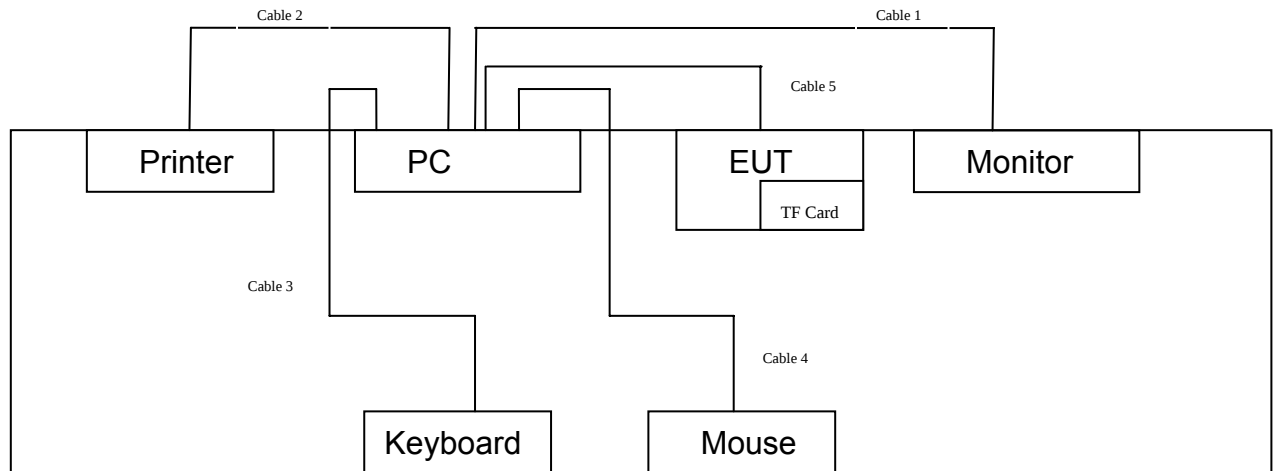
Applicant	:	Shenzhen Sinopine Technology Co., Ltd
Address	:	D Building, Huafeng Industrial Zone, Hangcheng Boulevard, Gushu Village, Xixiang Town, Bao'an District, Shenzhen City, China
Applicant	:	Shenzhen Sinopine Technology Co., Ltd
Address	:	D Building, Huafeng Industrial Zone, Hangcheng Boulevard,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

1.2 General Description of EUT (Equipment Under Test)

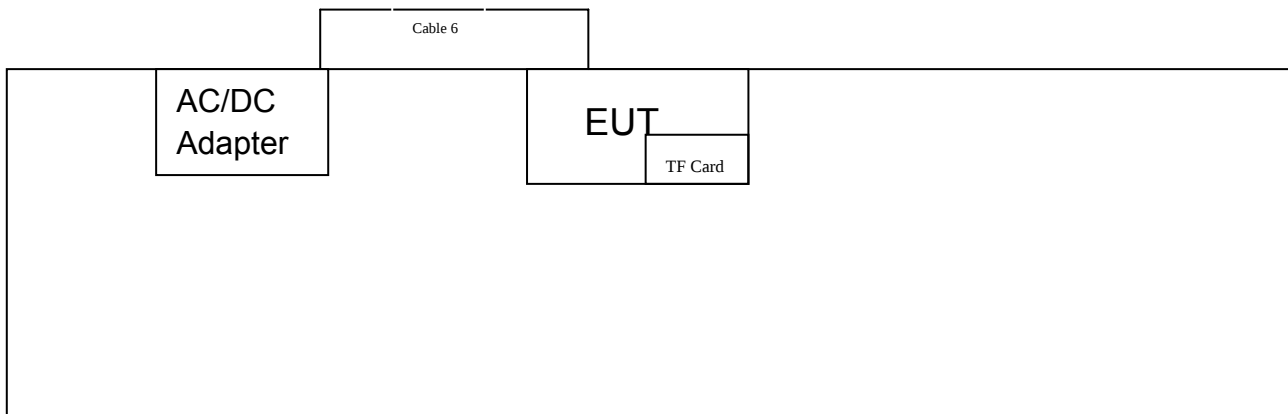
EUT Name	:	GSM Camera Alarm System
Model No.	:	N2, N1
Model difference	:	The different models are identical in schematic, structure and critical component, the only different is the appearance.
Power Supply	:	DC power supplied by AC/DC Adapter DC Voltage supplied from Li-Polymer battery.
Power Rating	:	AC/DC Adapter(FD12SU-090-1000): Input: AC 100~240V 50/60Hz 0.4A Output: DC 9V 1A 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

3.1.1 Test Standard
FCC Part 15.107

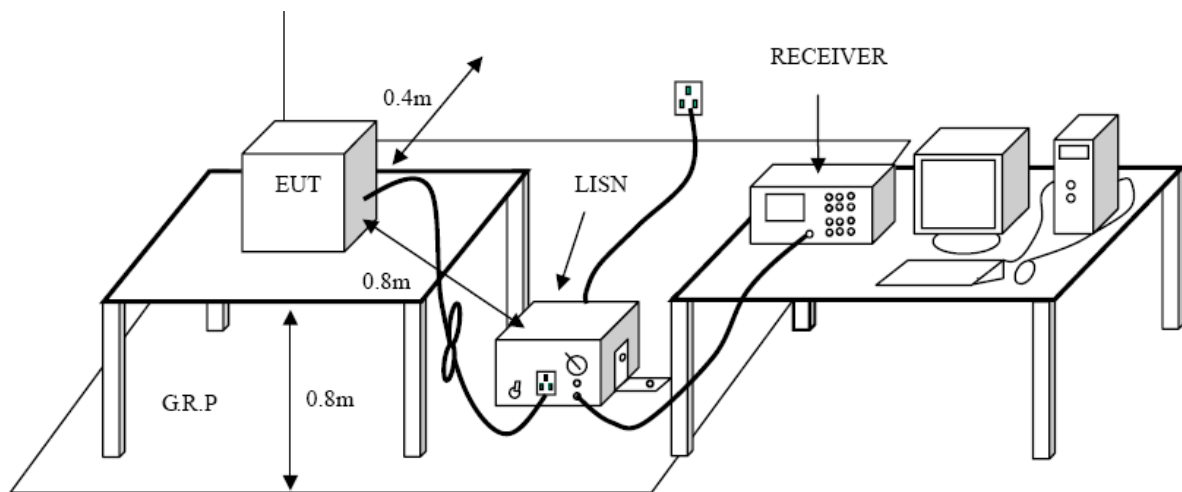
3.1.2 Test Limit

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.
(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.

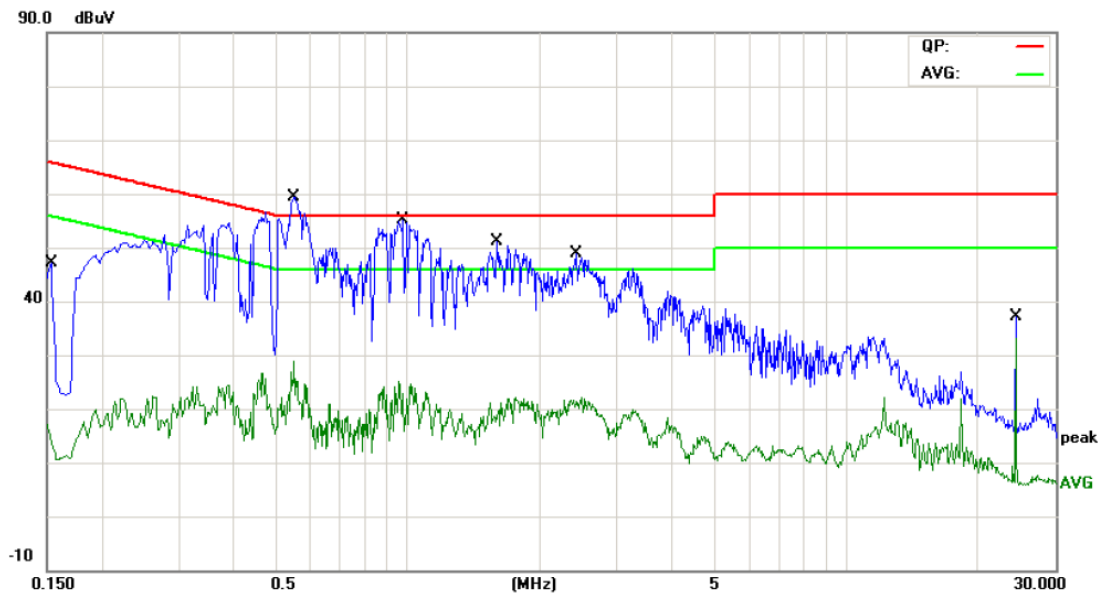
3.6 Deviation

The test is no deviation from the standard.

3.7 Test Data

Please see the next page.

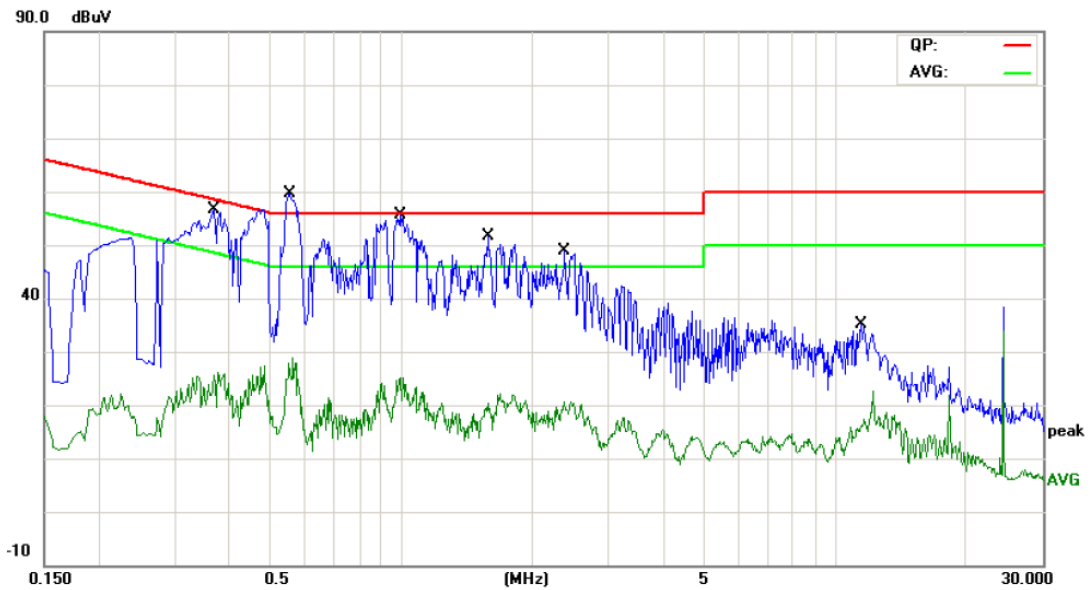
EUT:	GSM Camera Alarm System	Model:	N2
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60 Hz	Terminal:	Line
Test Mode:	Mode 1		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
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 °C	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	Measurement	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

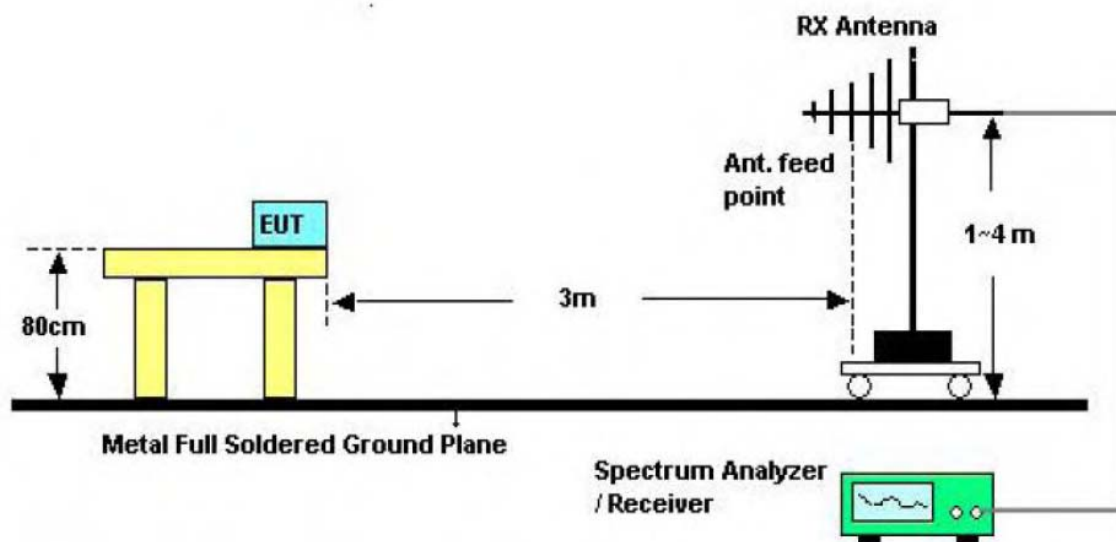
4.1.2 Test Limit

Radiated Emission Limit

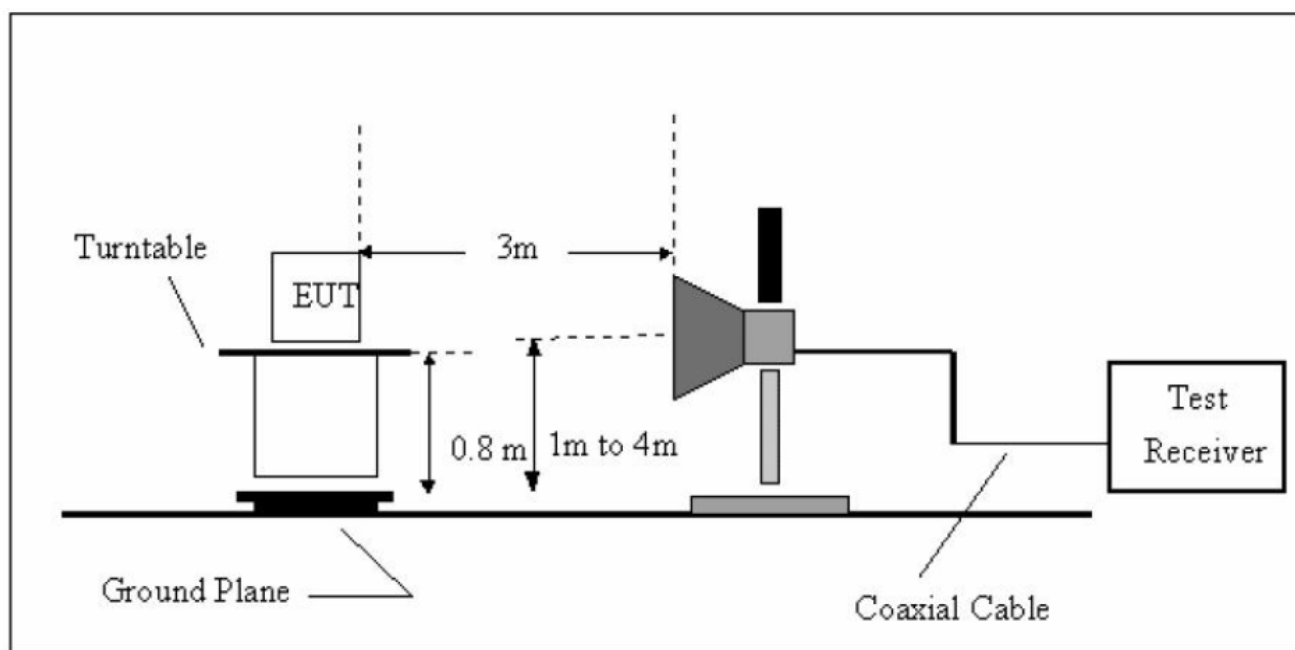
Frequency (MHz)	Field Strength (dBuV/m)	Measurement Distance (meters)
30~88	40	3
88~216	43.5	3
216~960	46	3
Above 960	54	3

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 to 1GHz.
- (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 complies 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+SUHNE R	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.

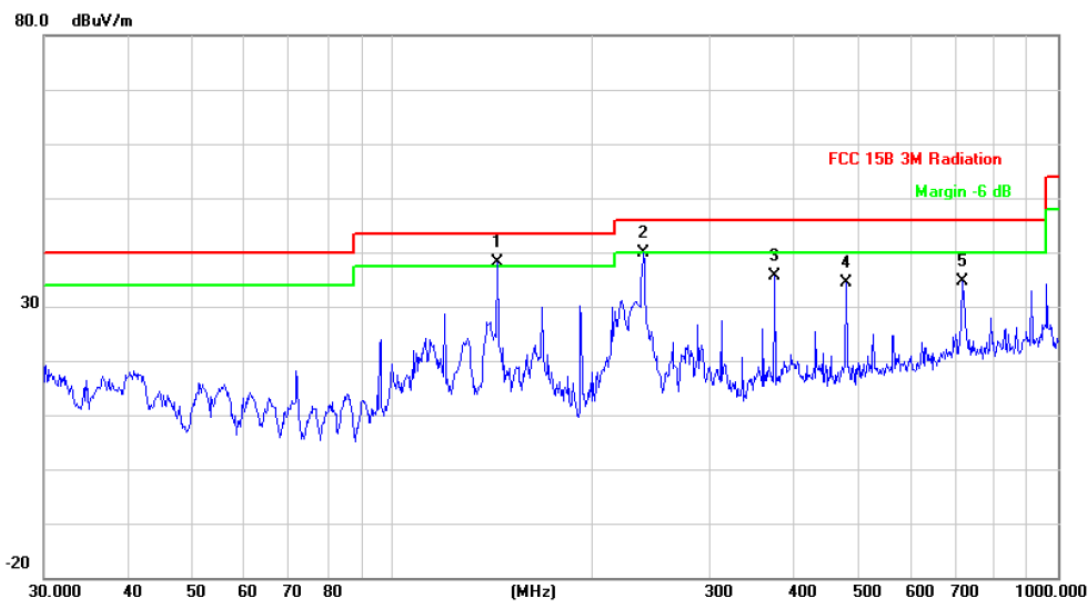
4.6 Deviation

The test is no deviation from the standard.

4.7 Test Data

Below 1 GHz

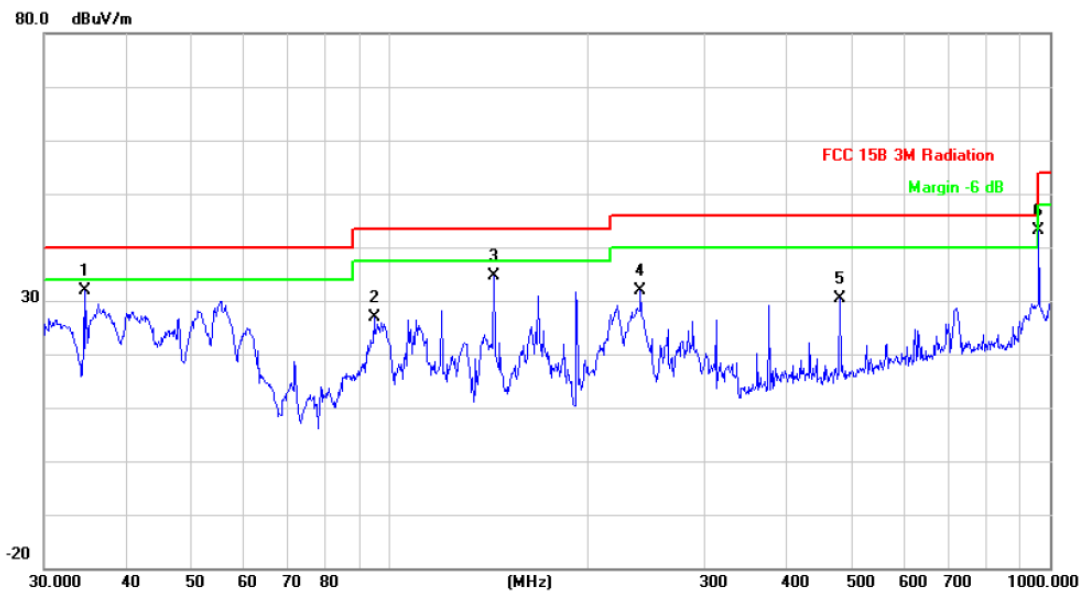
EUT:	GSM Camera Alarm System	Model:	N2
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	Mode 1: AC Charging with loading to PC		
Remark:	N/A		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over 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

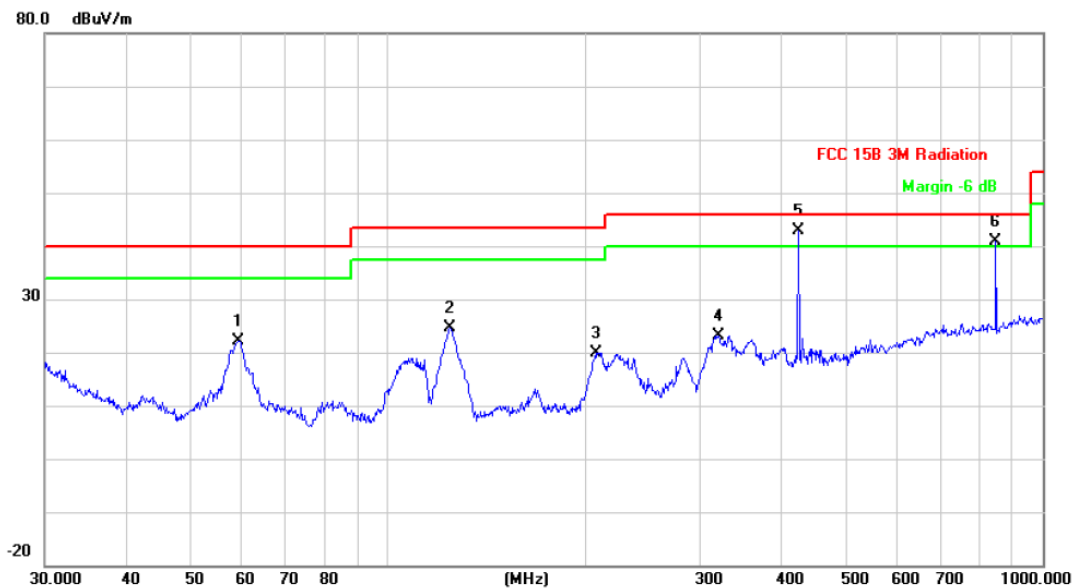
EUT:	GSM Camera Alarm System	Model:	N2
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	Mode 1: USB Charging with loading to PC		
Remark:	N/A		



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

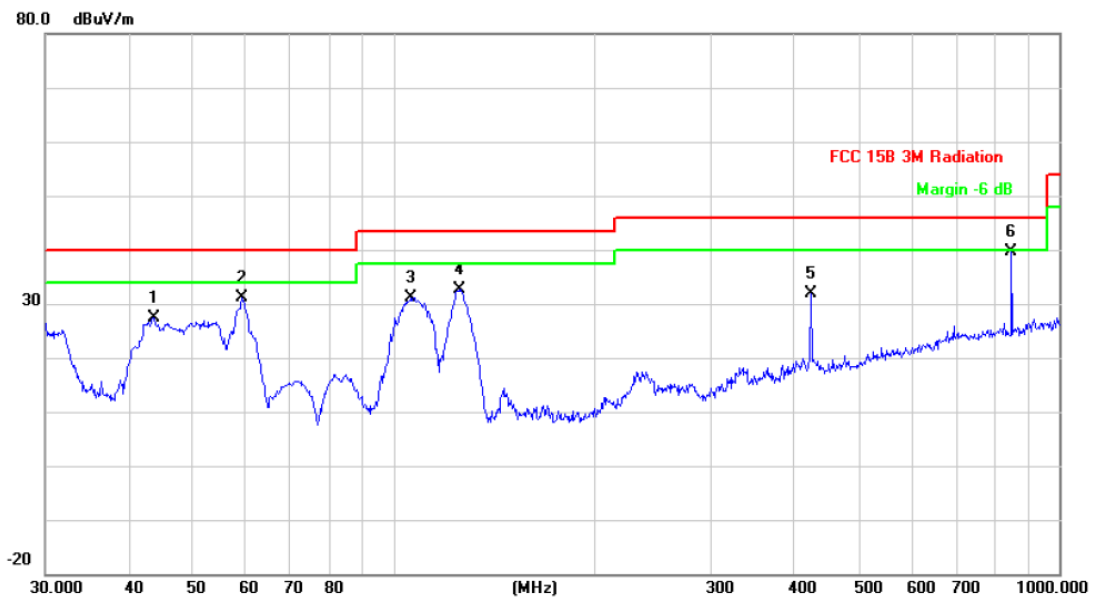
EUT:	GSM Camera Alarm System	Model:	N2
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	Mode 2: Normal Link		
Remark:	N/A		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over 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 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	Mode 2: Normal Link		
Remark:	N/A		

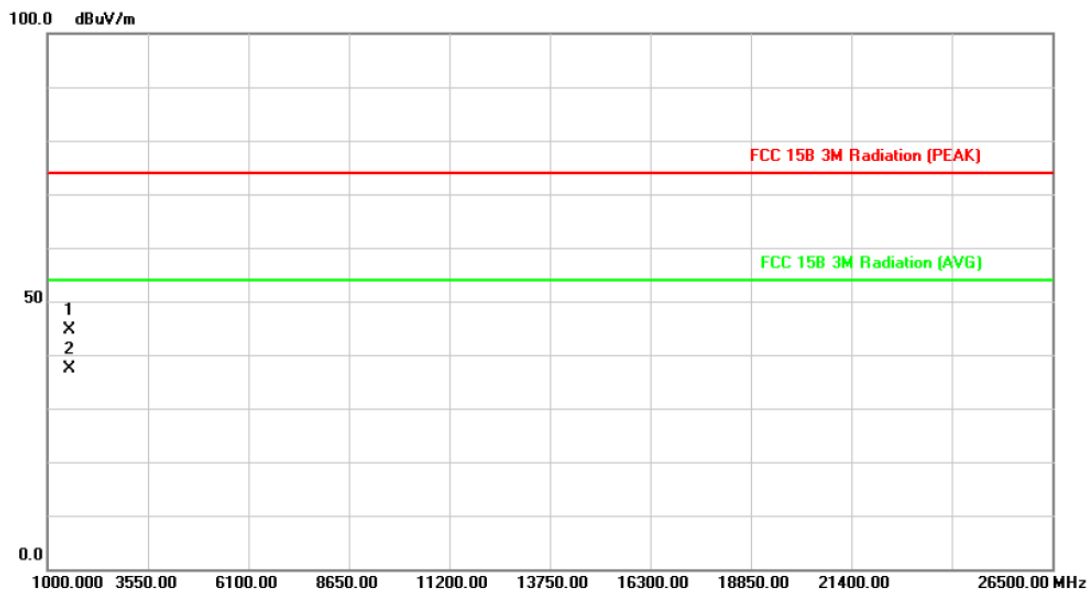


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		43.6584	52.12	-24.65	27.47	40.00	-12.53	peak
2		59.2325	58.62	-27.46	31.16	40.00	-8.84	peak
3		106.3850	55.87	-24.80	31.07	43.50	-12.43	peak
4		125.4457	58.01	-25.28	32.73	43.50	-10.77	peak
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

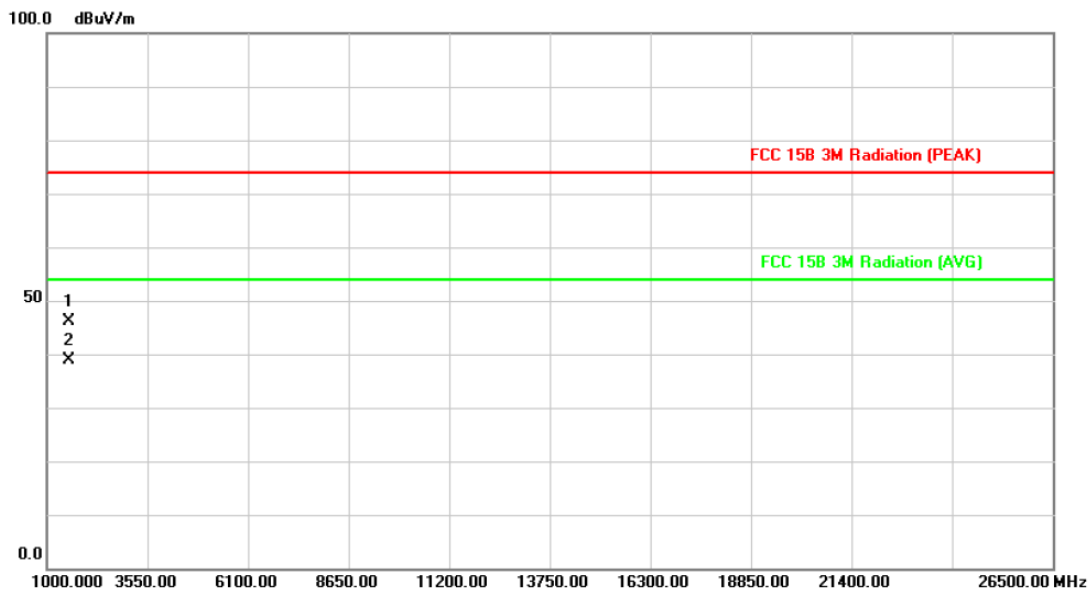
EUT:	GSM Camera Alarm System	Model:	N2
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	Mode 2: Normal Link		
Remark:	No report for the emission which more than 10 dB below the prescribed limit.		



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 °C	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