



FCC Test Report

FCC ID: N3A-NWS01IN

Computing Device Peripheral

Report No. : TB-FCC123996

Applicant : Netatmo

Equipment Under Test (EUT)

EUT Name : Netatmo Weather Station

Model No. : NWS01

Serial No. : N/A

Brand Name : Netatmo

Receipt Date : 2012-05-14

Test Date : 2012-05-15 to 2012-05-25

Issue Date : 2012-05-28

Standards : FCC Part 15: 2011, 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.

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1. General Information About EUT

1.1 Client Information

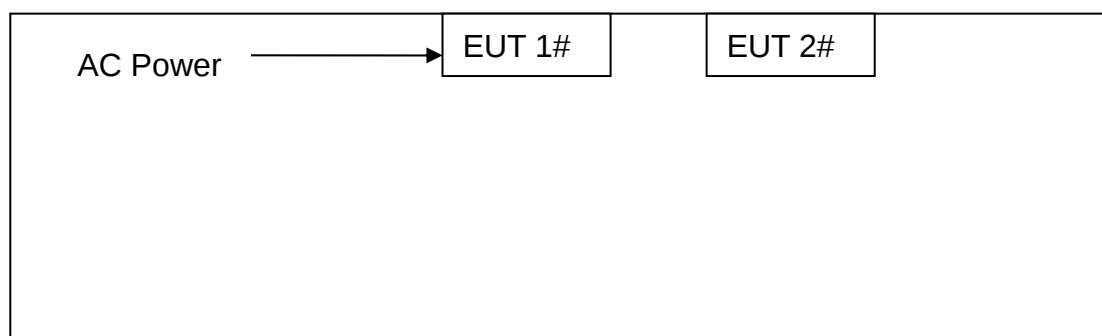
Applicant	:	Netatmo
Address	:	17, route de la Reine - 92100 Boulogne Billancourt - France
Manufacturer	:	Netatmo
Address	:	17, route de la Reine - 92100 Boulogne Billancourt - France

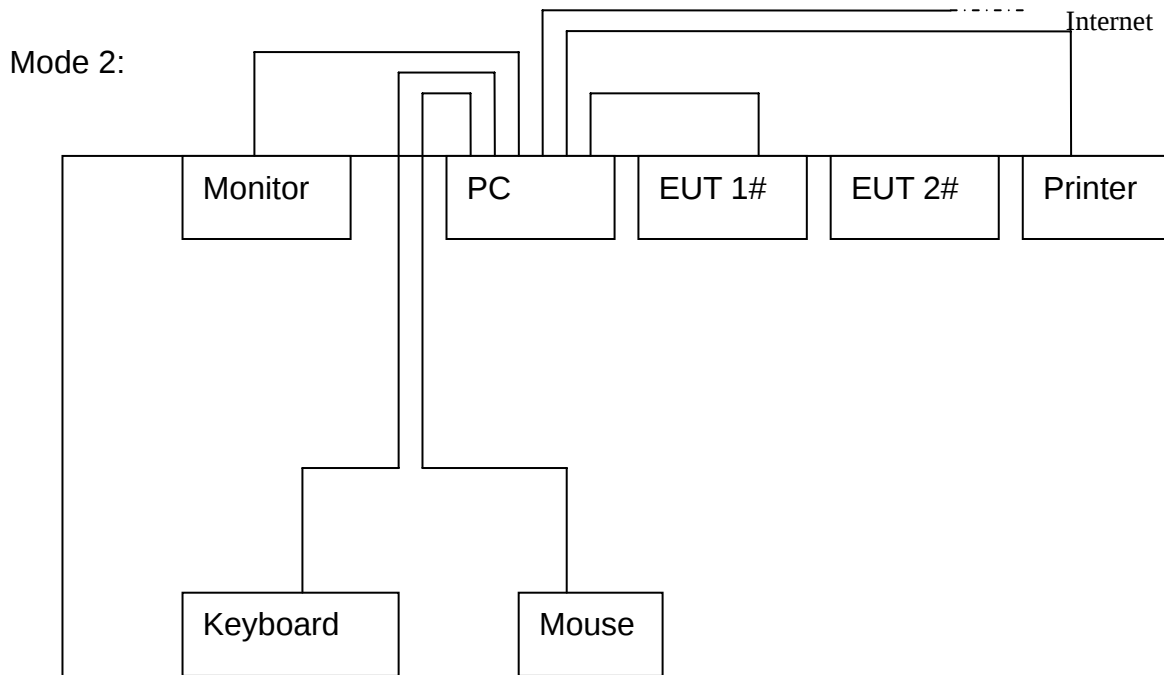
1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Netatmo Weather Station
Model No.	:	NWS01
Serial No.	:	N/A
Model difference	:	N/A
Power Supply	:	Indoor: AC Adapter: Input: 100~240V 50/60Hz 0.3A Output: 5V 1000mA DC 5.0V by USB cable from PC. DC 6.0V by 4*AAA batteries Outdoor: DC 6.0V by 4*AAA batteries
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: For a 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

Mode 1:





EUT 1#: Netatmo Weather Station (Indoor) FCC ID: N3A-NWS01IN

EUT 2#: Netatmo Weather Station (Outdoor) FCC ID: N3A-NWS01OUT

1.4 Description of Support Units

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	√

1.5 Description of Test Mode

Mode	Description
Mode 1: Normal Mode	Normal Mode
Mode 2: PC Mode	PC control equipment to work in the Normal 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 tests were performed at:

Bontek Compliance Testing Laboratory Ltd

1/F., Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, 518055 China

Tel: 86-755-86337020 Fax: 86-755-86337028

At the time of testing, the Laboratory is accredited. It is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 338263.

The test report was fulfilled by Shenzhen Meihua Electronic Co., Ltd. Shenzhen Meihua Electronic Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements results.

2. Test Summary

FCC Part15, Subpart B				
Section	Test Method	Test Item	Limit	Judgment
15.109	ANSI C63.4:2003	Radiated Emission (9KHz to 30MHz)	Class B	PASS
15.107	ANSI C63.4:2003	Conducted Emission (9KHz 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

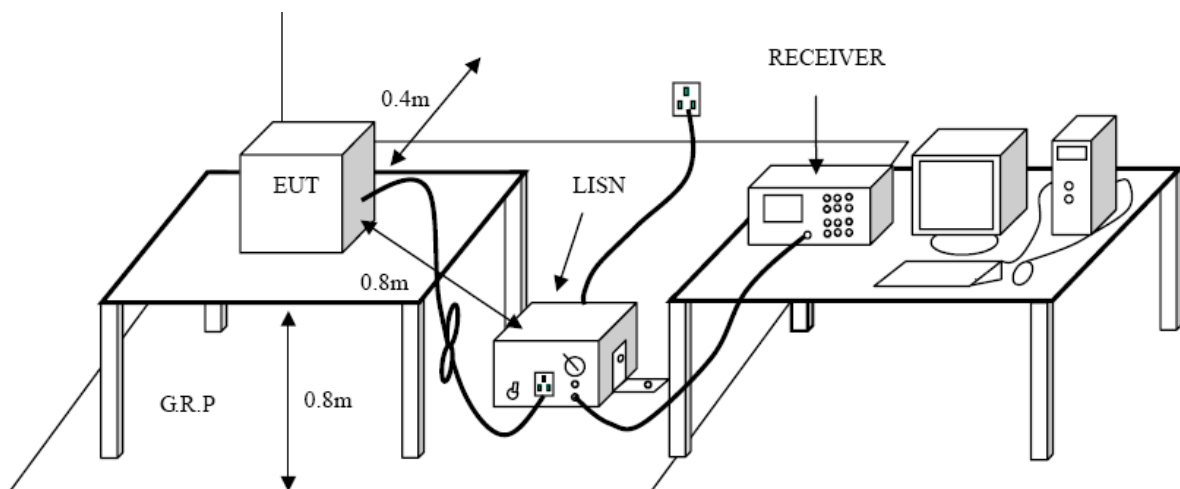
3.1.2 Test Limit

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. Date
EMI Test Receiver	ROHDE& SCHWARZ	ESCI	100627	2011-08-11	2012-08-11
L.I.S.N	ROHDE& SCHWARZ	ENV216	100055	2011-08-11	2012-08-11
L.I.S.N	SCHWARZBEC K	NSLK8127	100056	2011-08-11	2012-08-11

3.5 EUT Operating Mode

- (1) Setup the EUT and peripherals refer to the description of test mode.
- (2) Use PC to control the EUT working in the normal mode by software.

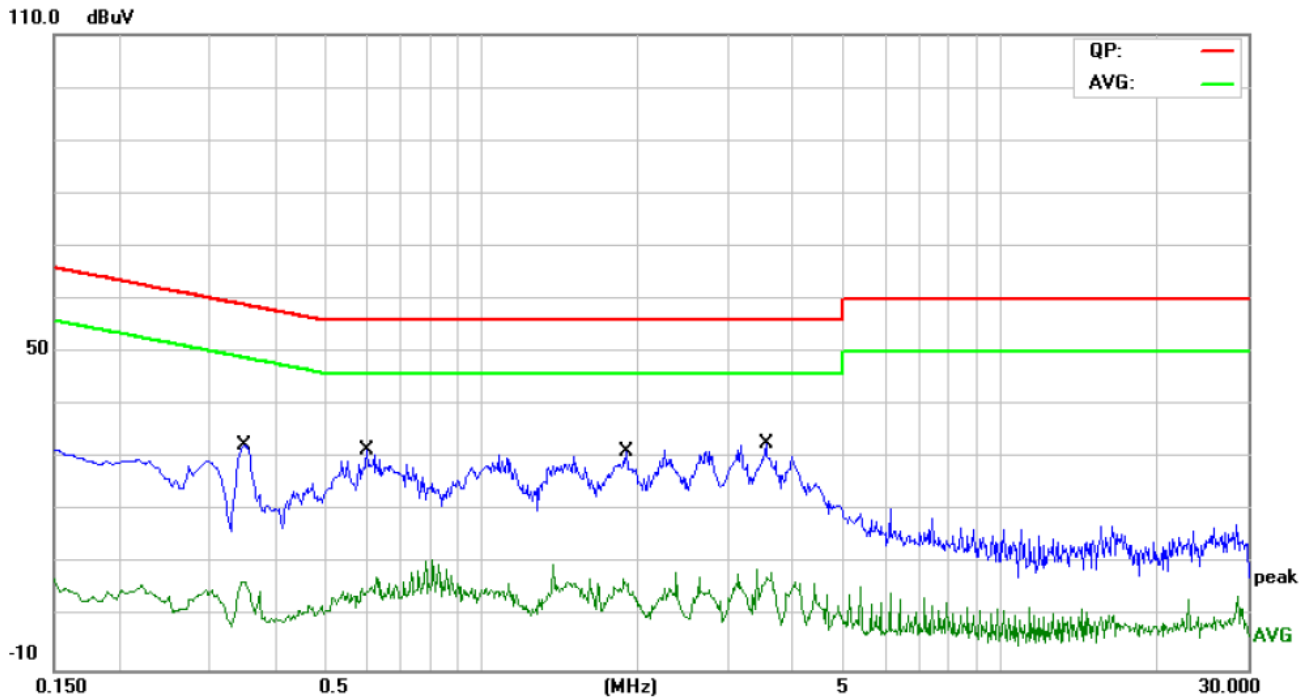
3.6 Deviation

The test is no deviation from the standard.

3.7 Test Data

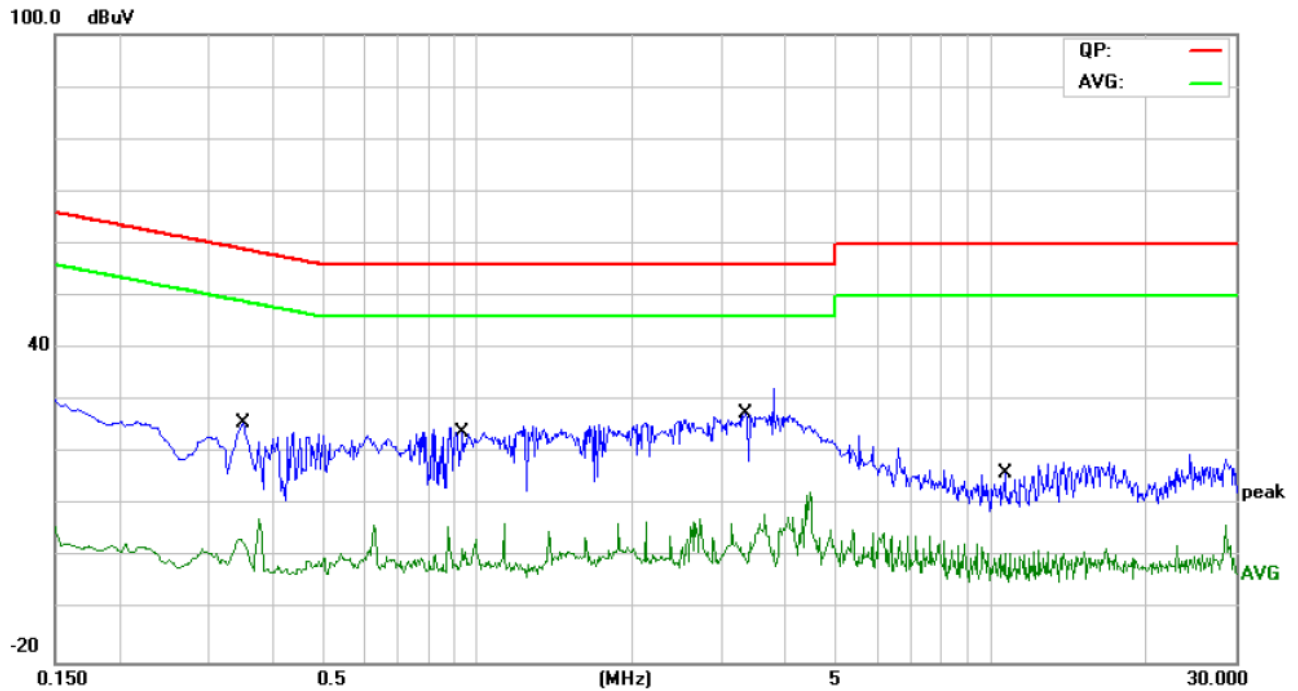
Please see the next page.

E.U.T :	Netatmo Weahter Station	Model Name :	NWS01
Temperature :	26°C	Relative Humidity :	51 %
Terminal	Line		
Test Voltage :	AC 120 V / 60Hz		
Test Mode :	Mode 1: Normal Mode		



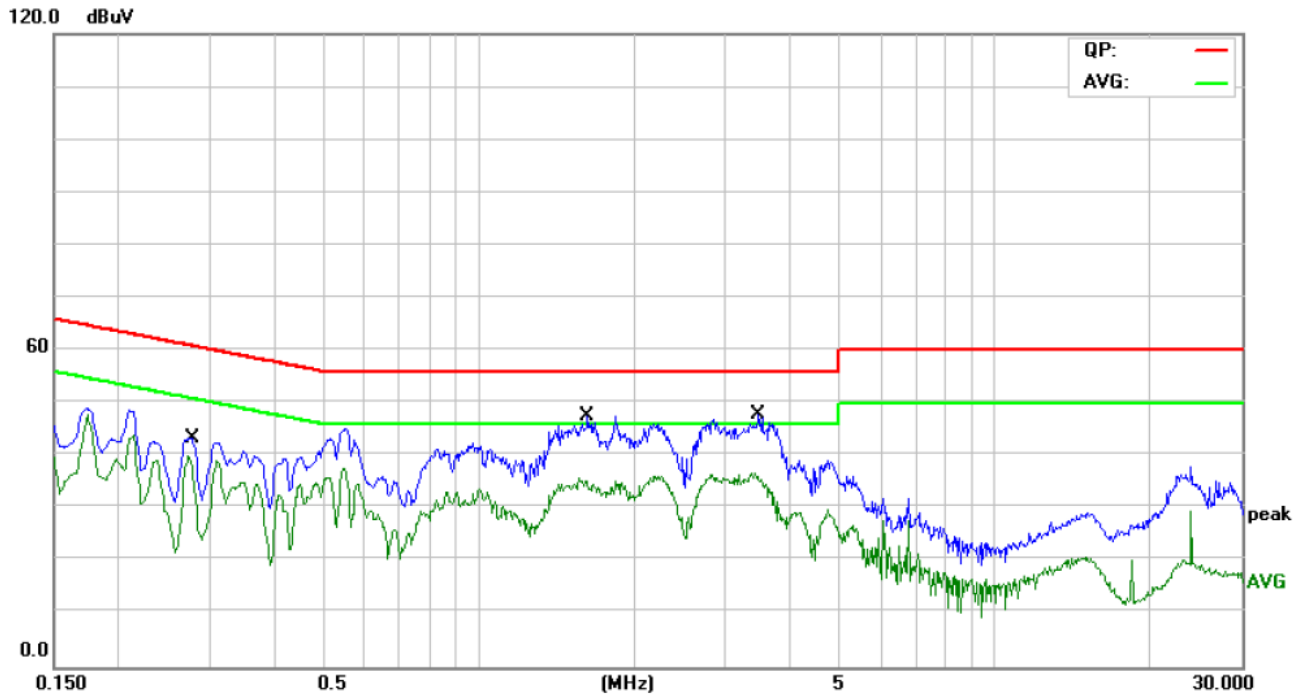
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3500	14.86	9.72	24.58	58.96	-34.38	QP	
2		0.3500	-4.43	9.72	5.29	48.96	-43.67	AVG	
3		0.6020	11.60	9.43	21.03	56.00	-34.97	QP	
4		0.6020	-5.76	9.43	3.67	46.00	-42.33	AVG	
5		1.9020	11.32	9.36	20.68	56.00	-35.32	QP	
6		1.9020	-5.32	9.36	4.04	46.00	-41.96	AVG	
7	*	3.5460	13.69	9.43	23.12	56.00	-32.88	QP	
8		3.5460	-3.10	9.43	6.33	46.00	-39.67	AVG	

E.U.T :	Netatmo Weahter Station	Model Name :	NWS01
Temperature :	26°C	Relative Humidity :	51 %
Terminal	Neutral		
Test Voltage :	AC 120 V / 60Hz		
Test Mode :	Mode 1: Normal Mode		



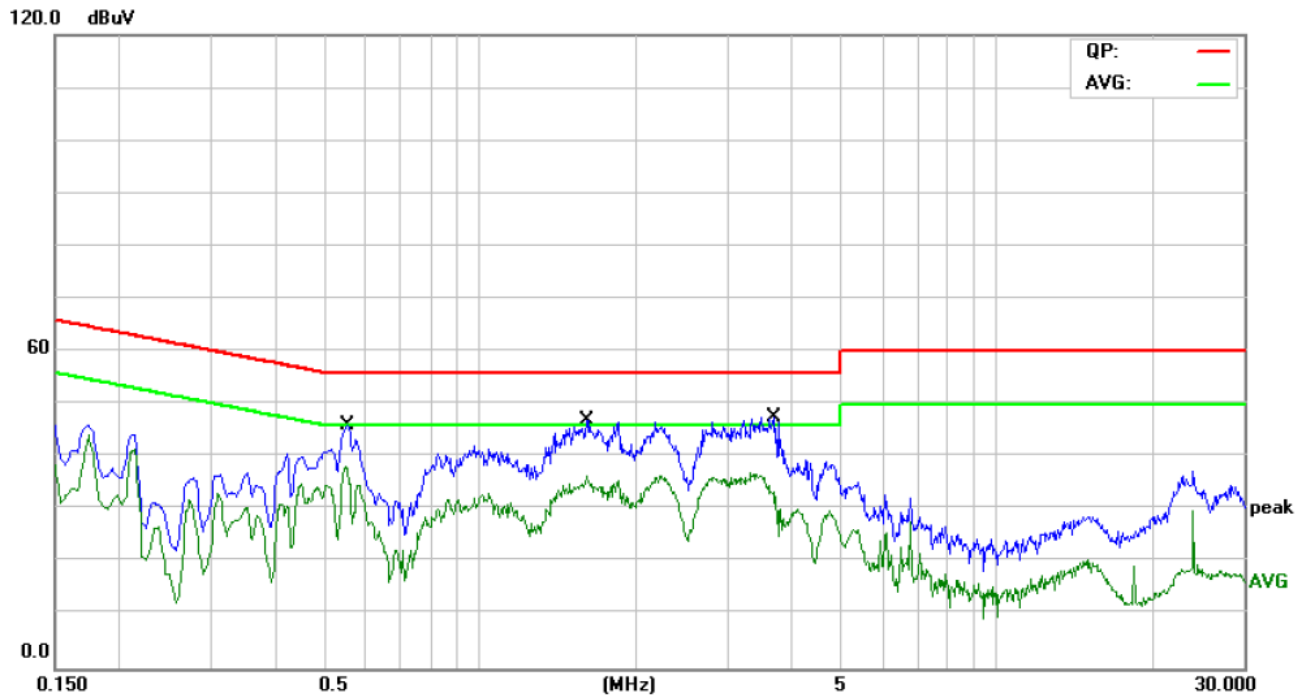
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.3500	7.18	9.72	16.90	58.96	-42.06	QP	
2		0.3500	-7.47	9.72	2.25	48.96	-46.71	AVG	
3		0.9380	3.14	9.37	12.51	56.00	-43.49	QP	
4		0.9380	-12.82	9.37	-3.45	46.00	-49.45	AVG	
5		3.3340	2.76	9.42	12.18	56.00	-43.82	QP	
6		3.3340	-12.23	9.42	-2.81	46.00	-48.81	AVG	
7		10.6420	-3.70	9.93	6.23	60.00	-53.77	QP	
8		10.6420	-12.41	9.93	-2.48	50.00	-52.48	AVG	

E.U.T :	Netatmo Weahter Station	Model Name :	NWS01
Temperature :	26°C	Relative Humidity :	51 %
Terminal	Line		
Test Voltage :	AC 120 V / 60Hz		
Test Mode :	Mode 2: PC Mode		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.2779	33.20	9.87	43.07	60.88	-17.81	QP	
2		0.2779	27.28	9.87	37.15	50.88	-13.73	AVG	
3		1.6220	31.33	9.35	40.68	56.00	-15.32	QP	
4		1.6220	24.84	9.35	34.19	46.00	-11.81	AVG	
5		3.4900	32.29	9.43	41.72	56.00	-14.28	QP	
6	*	3.4900	26.18	9.43	35.61	46.00	-10.39	AVG	

E.U.T :	Netatmo Weahter Station	Model Name :	NWS01
Temperature :	26°C	Relative Humidity :	51 %
Terminal	Neutral		
Test Voltage :	AC 120 V / 60Hz		
Test Mode :	Mode 2: PC Mode		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5540	36.23	9.46	45.69	56.00	-10.31	QP	
2	*	0.5540	28.36	9.46	37.82	46.00	-8.18	AVG	
3		1.6100	32.10	9.35	41.45	56.00	-14.55	QP	
4		1.6100	25.79	9.35	35.14	46.00	-10.86	AVG	
5		3.6900	33.91	9.44	43.35	56.00	-12.65	QP	
6		3.6900	23.13	9.44	32.57	46.00	-13.43	AVG	

4. Radiated Emission Test

4.1 Test Standard and Limit

4.1.1 Test Standard

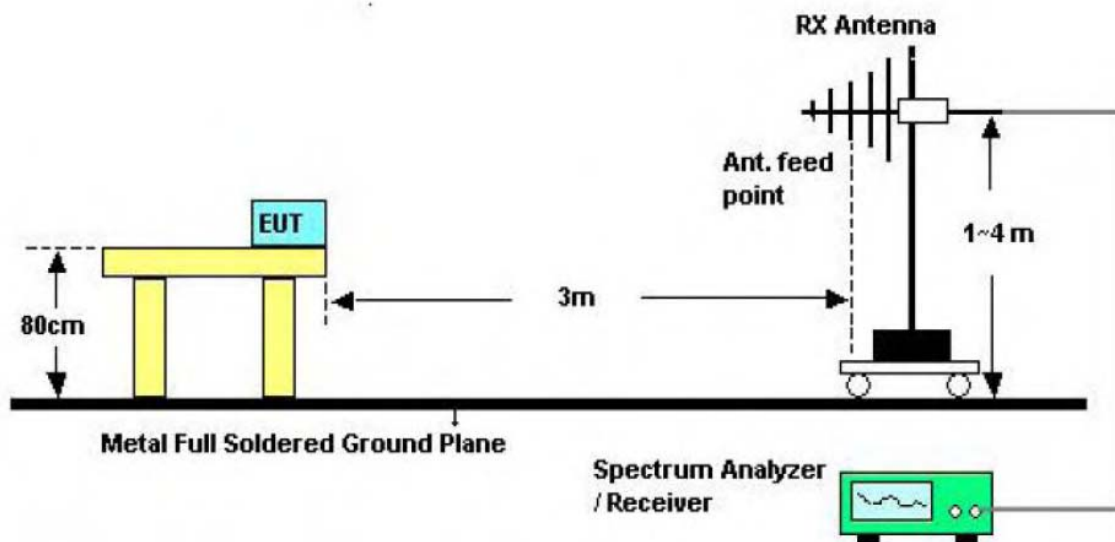
FCC Part 15.109

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

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

Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Date
Spectrum Analyzer	Agilent	E7405A	MY45114970	2011-08-12	2012-08-11
Pre-Amplifier	CD	PAM0203	804203	2011-08-12	2012-08-11
RF Switch	CD	RSU-M3	RSU-M3	2011-07-21	2012-07-20
Trilog Broadband Antenna	SCHWARZBEC K	VULB9163	345	2011-07-21	2012-07-20
Coaxial Cable	SCHWARZBEC K	RG214-N-8	11065	2011-08-12	2012-08-11
Broadband Preamplifier 0.5-18GHz	SCHWARZBECK	BBV9718	9718-148	2011-08-12	2012-08-11
Horn Antenna	SCHWARZBEC K	BBHA9120D	667	2011-08-12	2012-08-11
Coaxial Cable	SCHWARZBEC K	AK9513	9513-10	2011-08-12	2012-08-11
Coaxial Cable	SCHWARZBEC K	AK9515H	9515-10	2011-08-12	2012-08-11

4.5 EUT Operating Condition

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

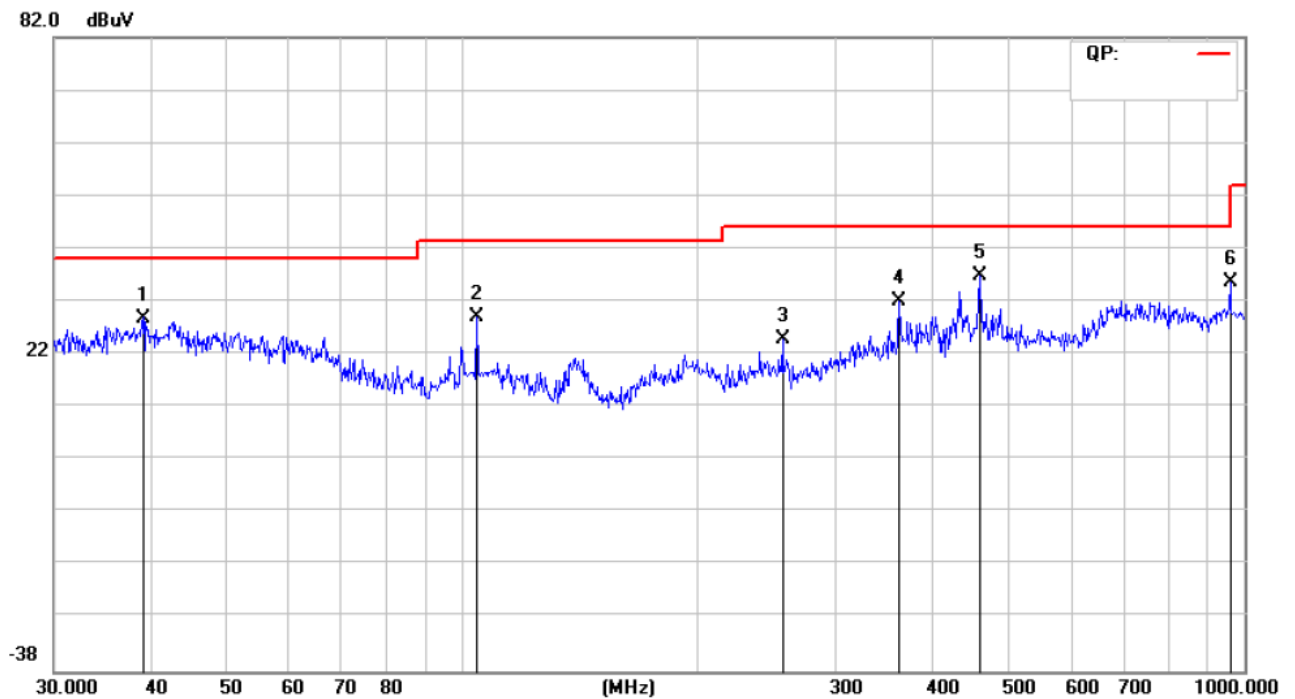
(2) Use PC to control the EUT working in the normal mode by software.

4.6 Deviation

The test is no deviation from the standard.

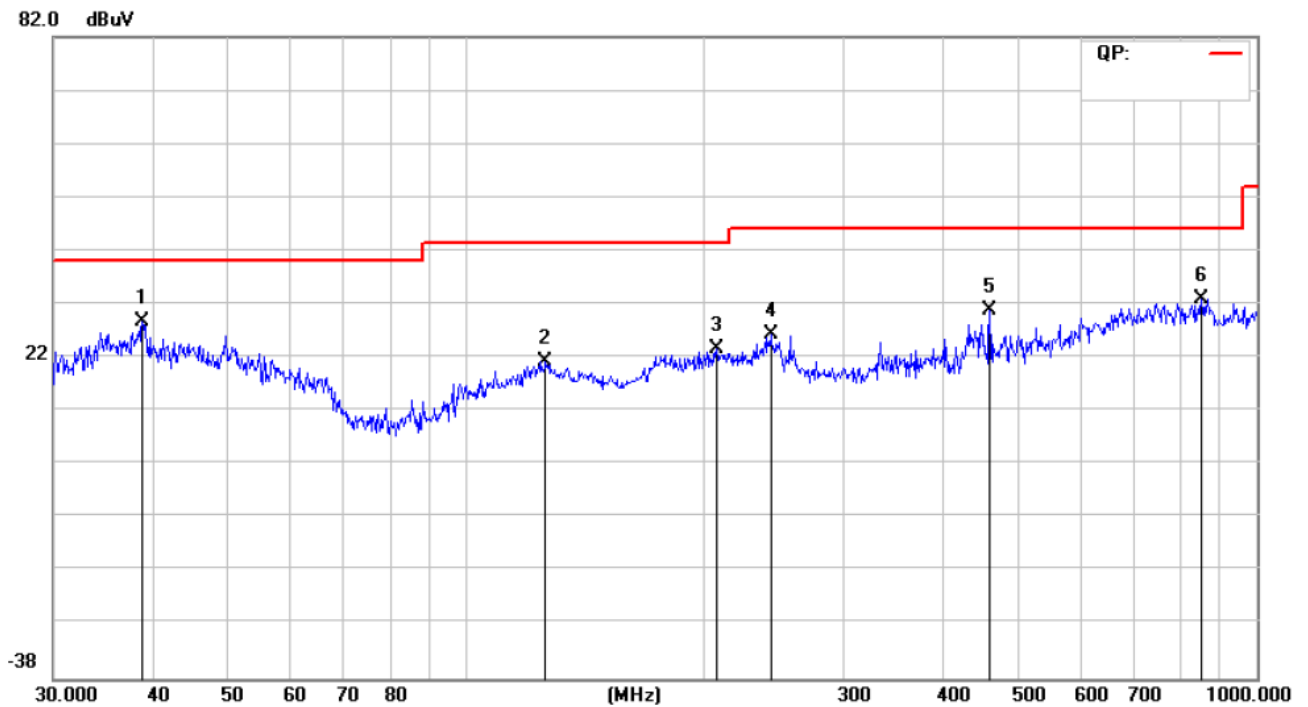
4.7 Test Data

E.U.T :	Netatmo Weather Station	Model Name :	NWS01
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 1: Normal Mode		



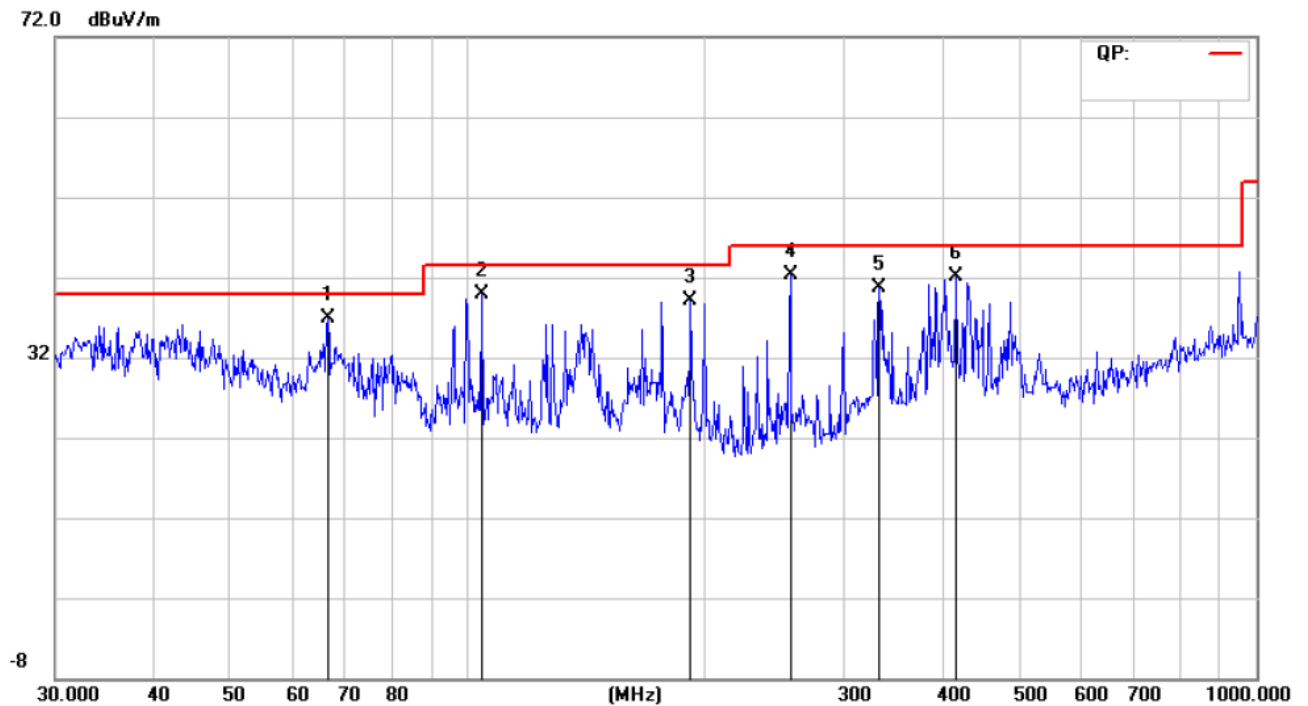
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		39.0245	5.56	23.34	28.90	40.00	-11.10	peak	
2		104.1701	11.18	17.78	28.96	43.50	-14.54	peak	
3		256.5211	7.59	17.23	24.82	46.00	-21.18	peak	
4		361.7139	10.41	21.63	32.04	46.00	-13.96	peak	
5	*	459.1144	13.70	23.05	36.75	46.00	-9.25	peak	
6		958.7943	7.30	28.47	35.77	46.00	-10.23	peak	

E.U.T :	Netatmo Weather Station	Model Name :	NWS01
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Vertical		
Test Mode :	Mode 1: Normal Mode		



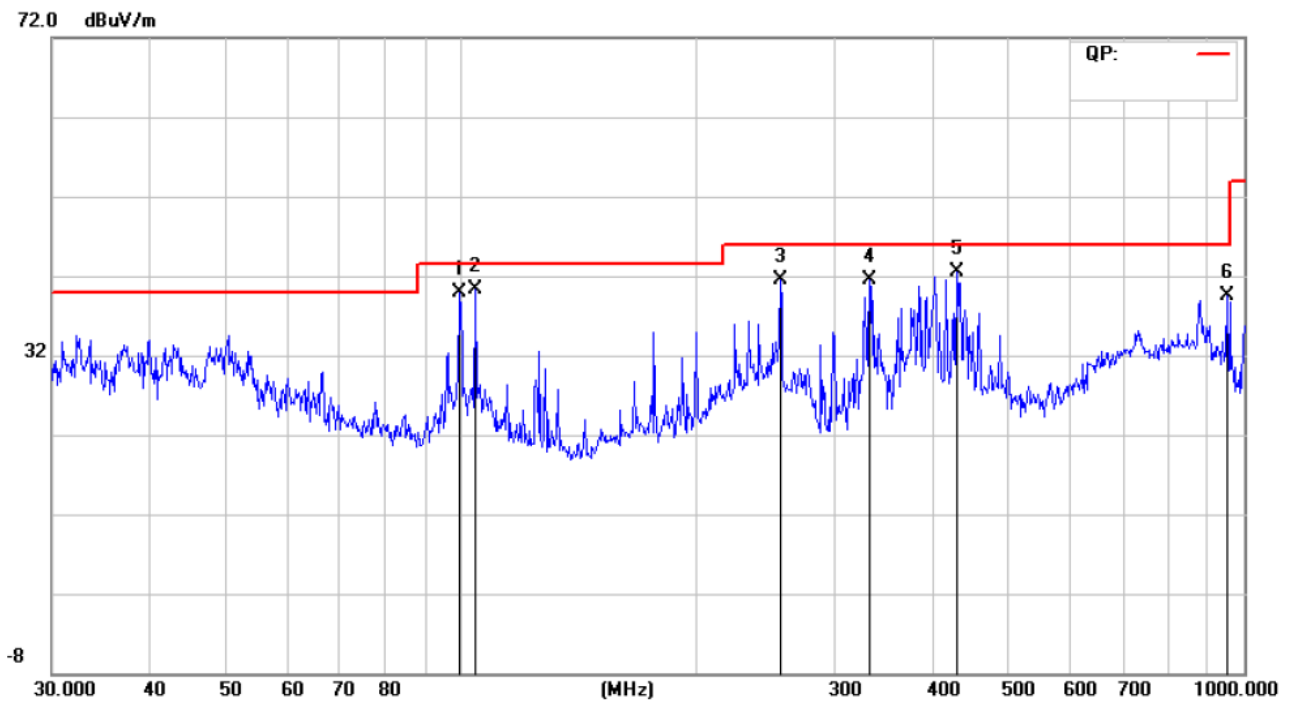
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	38.8878	14.25	14.51	28.76	40.00	-11.24	peak	
2		125.8864	16.06	5.28	21.34	43.50	-22.16	peak	
3		207.1226	16.80	6.77	23.57	43.50	-19.93	peak	
4		242.5253	17.07	9.16	26.23	46.00	-19.77	peak	
5		459.1144	16.69	14.03	30.72	46.00	-15.28	peak	
6		851.0353	14.43	18.57	33.00	46.00	-13.00	peak	

E.U.T :	Netatmo Weather Station	Model Name :	NWS01
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 2: PC Mode		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	66.4989	16.54	20.41	36.95	40.00	-3.05	peak	
2		104.1701	22.22	17.78	40.00	43.50	-3.50	peak	
3		191.7450	23.55	15.64	39.19	43.50	-4.31	peak	
4		256.5210	25.00	17.23	42.23	46.00	-3.77	peak	
5		332.5187	19.91	20.85	40.76	46.00	-5.24	peak	
6		416.1791	19.51	22.54	42.05	46.00	-3.95	peak	

E.U.T :	Netatmo Weather Station	Model Name :	NWS01
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Vertical		
Test Mode :	Mode 2: PC Mode		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		99.5281	31.70	8.16	39.86	43.50	-3.64	peak	
2	*	104.1701	32.07	8.28	40.35	43.50	-3.15	peak	
3		255.6231	32.65	8.76	41.41	46.00	-4.59	peak	
4		332.5187	29.38	12.03	41.41	46.00	-4.59	peak	
5		429.5228	28.68	13.74	42.42	46.00	-3.58	peak	
6		952.0937	20.09	19.35	39.44	46.00	-6.56	peak	