

FCC Part 15B Measurement and Test Report

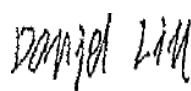
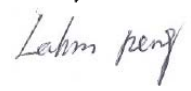

For

Shenzhen Anbash Technology Co., Ltd.

Area B, 4/FL, Block G, Heng Chang Rong XingHui Technology Park, West

Hua Ning Road, Da Lang Community, Bao'an District, Shenzhen, P.R.C

FCC ID: Z6BNC325PW

Test Standards:	<u>FCC Part 15 Subpart B</u>
Product Description:	<u>Network Camera</u>
Tested Model:	<u>NC325PW</u>
Report No.:	<u>STR13118271I-1</u>
Tested Date:	<u>2013-11-20 to 2013-12-02</u>
Issued Date:	<u>2013-12-04</u>
Tested By:	<u>Daniel Liu / Engineer</u> 
Reviewed By:	<u>Lahm Peng / EMC Manager</u> 
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Shenzhen Anbash Technology Co., Ltd.
 Address of applicant: Area B, 4/FL, Block G, Heng Chang Rong XingHui Technology Park, West Hua Ning Road, Da Lang Community, Bao'an District, Shenzhen, P.R.C

Manufacturer: Shenzhen Anbash Technology Co., Ltd.
 Address of manufacturer: Area B, 4/FL, Block G, Heng Chang Rong XingHui Technology Park, West Hua Ning Road, Da Lang Community, Bao'an District, Shenzhen, P.R.C

General Description of EUT	
Product Name:	Network Camera
Trade Name:	Anbash
Model No.:	NC325PW
Adding Model(s):	NC315PW, NC315W, NC315P, NC325W, NC325P, NC335PW, NC335W, NC335P, NC312W, NC322W
<i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model NC325PW, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	DC 12V adapter
Rated Current:	/
Rated Power:	/
Power Adapter Model:	NLB100120W1A Input: AC 100-240V Max 0.4A Output: DC 12V 1A
Highest Internal Frequency:	40MHz
Lowest Internal Frequency:	32.768kHz
Classification of ITE:	Class B
Support Interface:	RF45

1.2 Test Standards

The following report is prepared on behalf of the Shenzhen Anbash Technology Co., Ltd. in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

- **FCC – Registration No.: 934118**

Shenzhen SEM.Test Technology 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 and the Registration is 934118.

- **Industry Canada (IC) Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Working	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
RJ45	1.0	Unshielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E23	EB12648265

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 15.107 (a)	Conducted Emissions	Compliant
§ 15.109 (a)	Radiated Emissions	Compliant

N/A: not applicable

3. Conducted Emissions

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

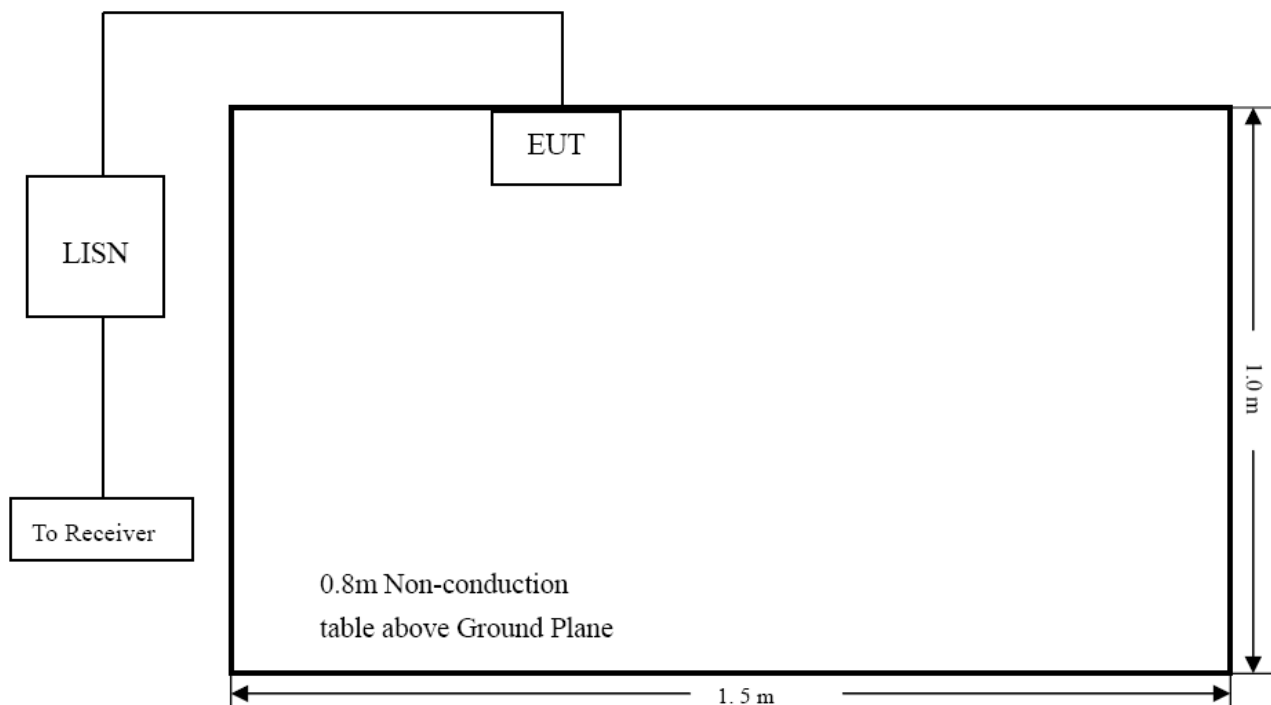
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2013-05-07	2014-05-06
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2013-05-07	2014-05-06
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2013-05-07	2014-05-06

3.3 Test Procedure

Test is conducting under the description of ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

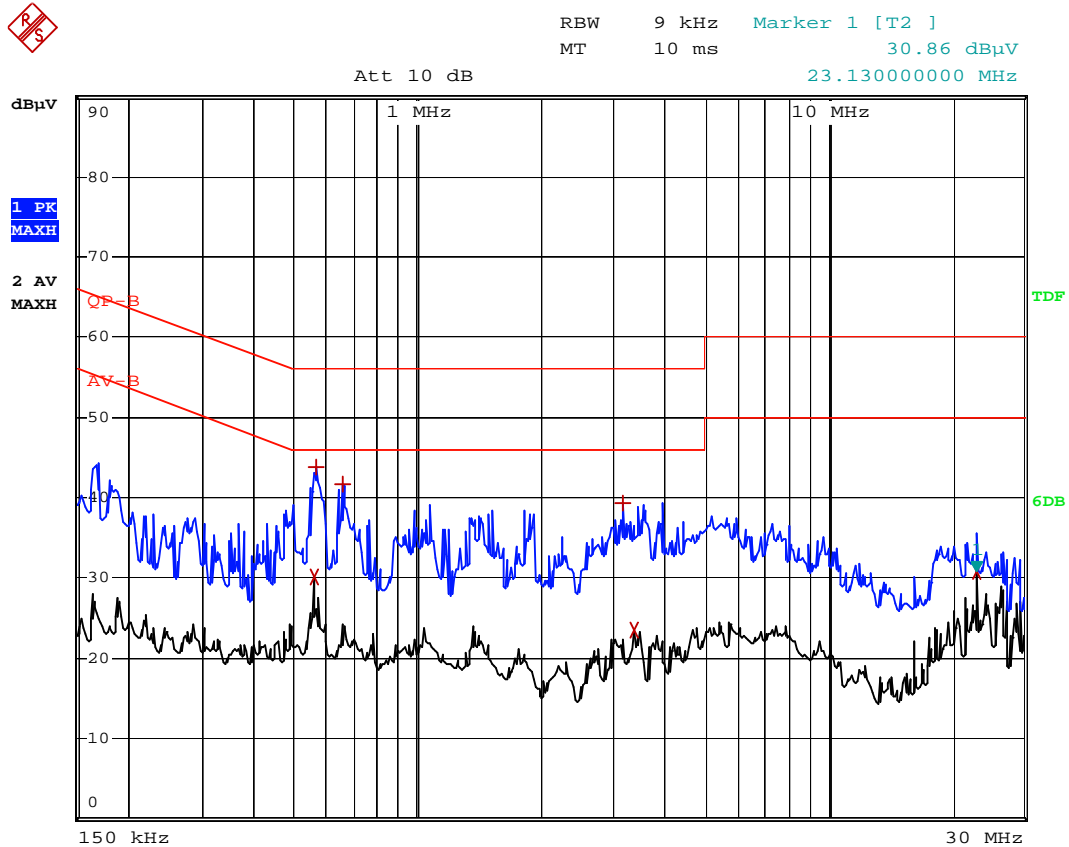
-9.24 dB at 0.574 MHz in the **Line** mode, **Peak** detector, **0.15-30MHz**

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

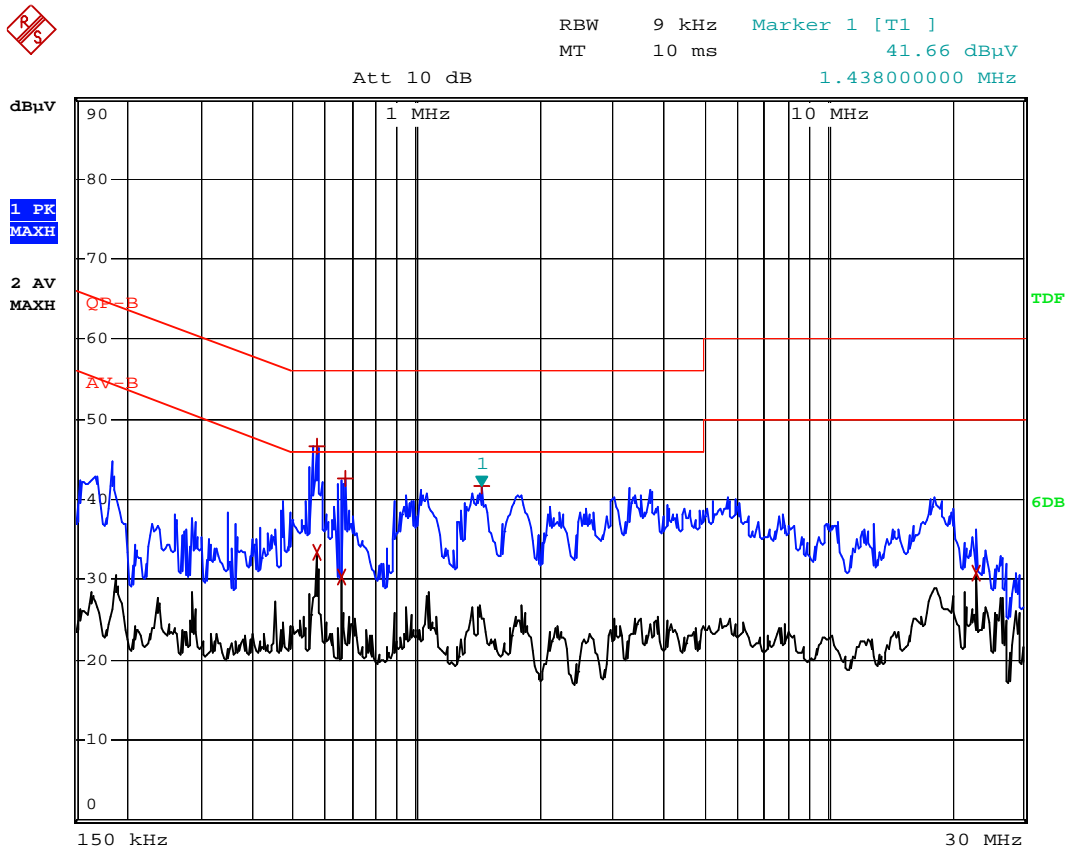
EUT: Network Camera
 Tested Model: NC325PW
 Operating Condition: TM1
 Comment: AC 120V/60Hz; Adapter DC 12V

Test Specification: Neutral



EDIT PEAK LIST (Prescan Results)				
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB	
Trace1:	QP-B			
Trace2:	AV-B			
Trace3:	---			
2 Average	558 kHz	30.03	-15.96	
1 Max Peak	566 kHz	43.90	-12.10	
1 Max Peak	658 kHz	41.77	-14.22	
1 Max Peak	3.166 MHz	39.29	-16.71	
2 Average	3.382 MHz	23.43	-22.56	
2 Average	23.13 MHz	30.85	-19.14	

Test Specification: Line



EDIT PEAK LIST (Prescan Results)			
Trace1:	QP-B		
Trace2:	AV-B		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Max Peak	574 kHz	46.75	-9.24
2 Average	574 kHz	33.49	-12.51
2 Average	658 kHz	30.27	-15.72
1 Max Peak	670 kHz	42.56	-13.44
1 Max Peak	1.438 MHz	41.65	-14.34
2 Average	23.13 MHz	30.85	-19.14

4. Radiated Emissions

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

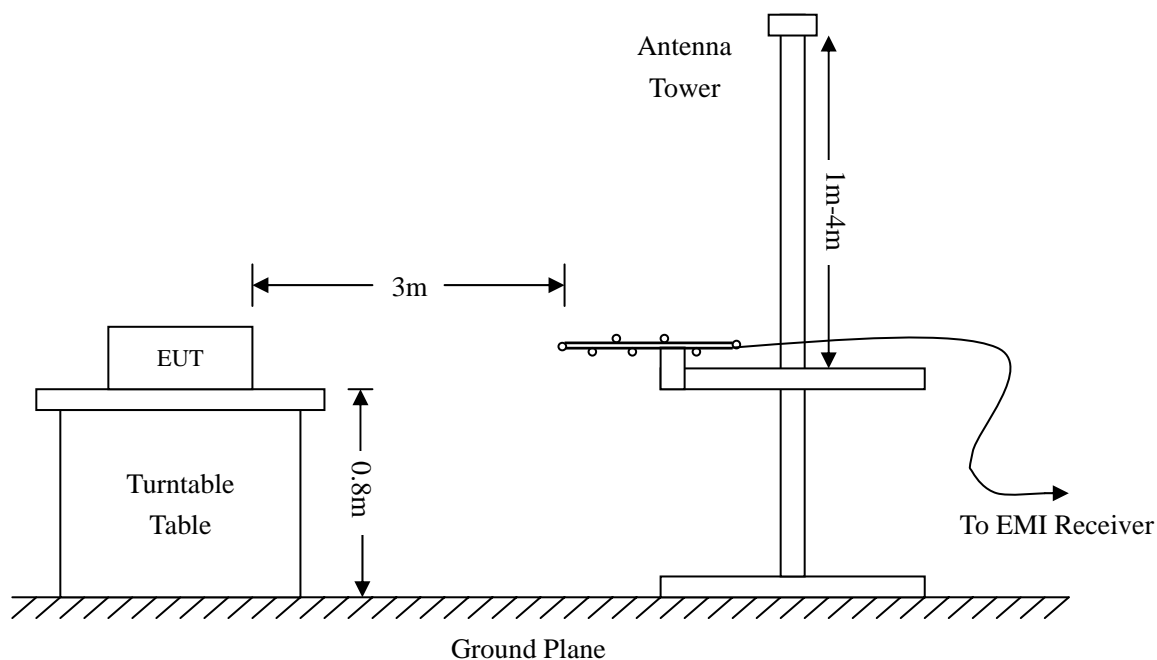
4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
EMI Test Receiver	R&S	ESVB	825471/005	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	2014-05-06
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-04-20	2014-04-19
Horn Antenna	ETS	3117	00086197	2013-04-20	2014-04-19
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2013-04-20	2014-04-19

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.



4.4 Test Receiver Setup

During the radiated emission test for above 1GHz, the test receiver was set with the following configurations:

For peak detector:

RBW = 1000kHz, VBW = 3000kHz, Sweep Time = Auto

For average detector:

RBW = 1000kHz, VBW = 10Hz, Sweep Time = Auto

4.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit for a Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

4.6 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

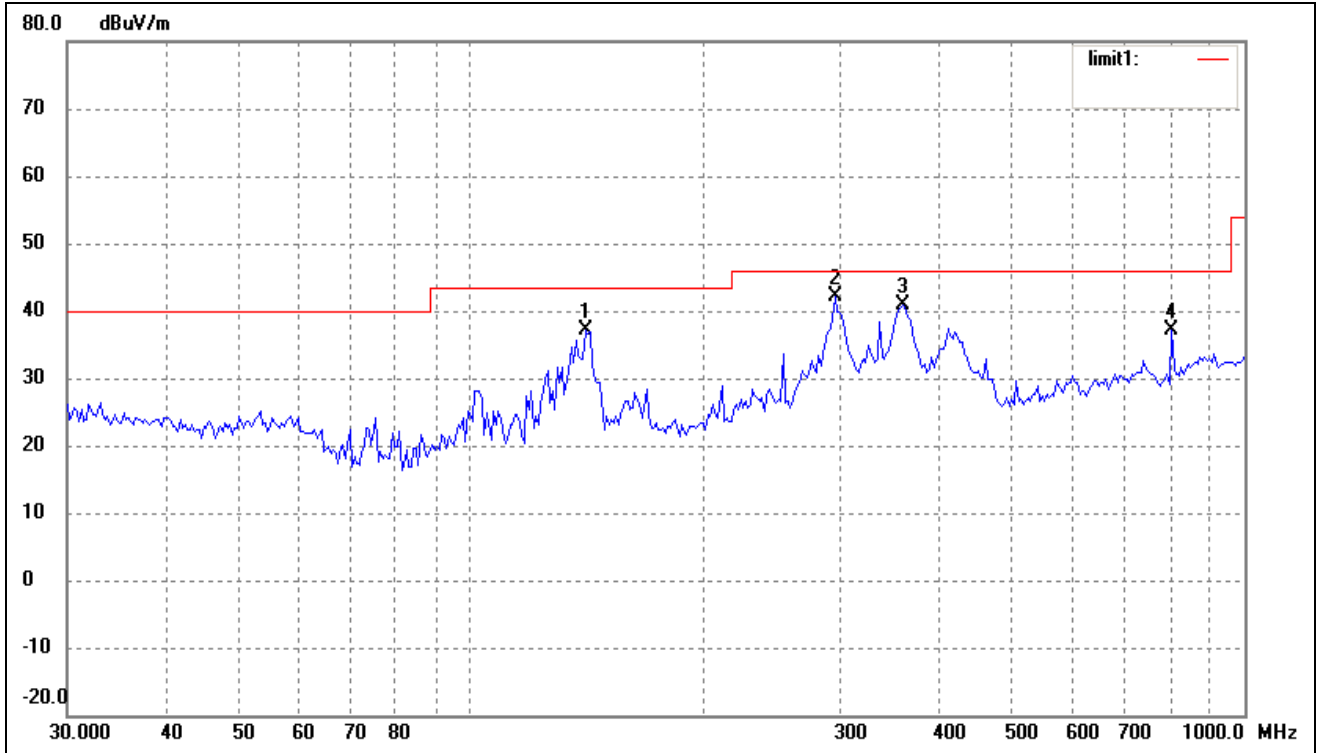
4.7 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-1.70 dB at 356.6758 MHz in the Vertical polarization, 9 kHz to 1 GHz, 3Meters

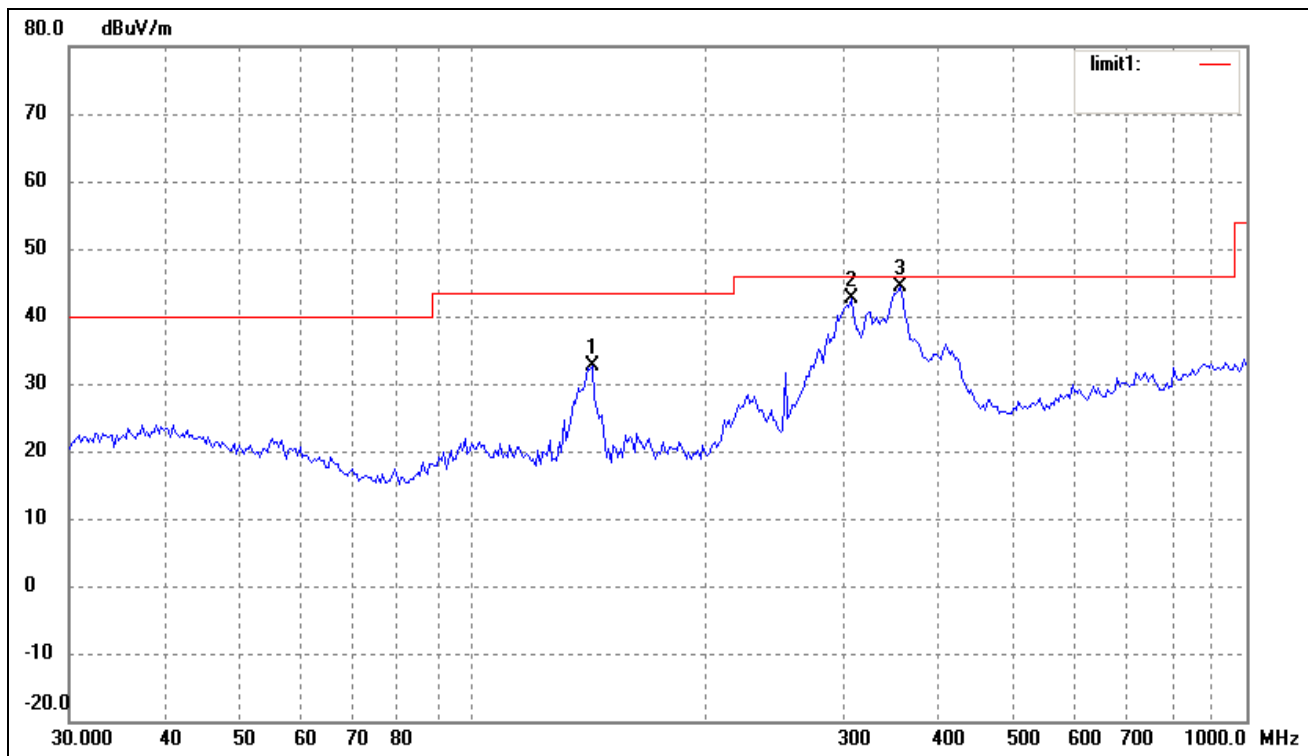
Plot of Radiated Emissions Test Data (Below 1GHz)

EUT: Network Camera
 Tested Model: NC325PW
 Operating Condition: TM1
 Comment: AC 120V/60Hz; Adapter DC 12V
 Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	140.3421	34.65	2.41	37.06	43.50	-6.44	360	100	peak
2	295.1469	33.10	8.99	42.09	46.00	-3.91	360	100	peak
3	361.7139	31.53	9.24	40.77	46.00	-5.23	360	100	peak
4	804.6028	22.71	14.45	37.16	46.00	-8.84	360	100	peak

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	142.3243	30.17	2.42	32.59	43.50	-10.91	360	100	peak
2	307.8313	33.29	9.22	42.51	46.00	-3.49	360	100	peak
3	356.6758	35.15	9.15	44.30	46.00	-1.70	360	100	peak

***** END OF REPORT *****