



Test Report

Product Name	Network Camera
Model No.	IP8133W

Applicant	VIVOTEK INC.
Address	6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C.

Date of Receipt	Sep. 19, 2011
Issued Date	Oct. 28, 2011
Report No.	119338R-RFCEP14V01
Report Version	V1.0

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Test Report Certification

Issued Date : Oct. 28, 2011

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Product Name	Network Camera
Applicant	VIVOTEK INC.
Address	6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C.
Manufacturer	VIVOTEK INC.
Model No.	IP8133W
EUT Rated Voltage	AC 100-240V, 50-60Hz
EUT Test Voltage	AC 230V/50Hz
Trade Name	VIVOTEK
Applicable Standard	ETSI EN 300 328:V1.7.1 (2006-10)
Test Result	Complied

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of Quietek Corporation.

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Approved By : Vincent Lin
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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Network Camera
Trade Name	VIVOTEK
Model No.	IP8133W
Frequency Range	2412-2472MHz for 802.11b/g/n-20BW, 2422-2462MHz for 802.11n-40BW
Number of Channels	802.11b/g/n-20MHz: 13, n-40MHz: 9
Data Rate	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 270Mbps
Channel Separation	802.11b/g/n: 5 MHz
Type of Modulation	802.11b:DSSS, DBPSK, DQPSK, CCK 802.11g/n:OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna type	Dipole Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto
Power Adapter	MFR: JENTEC, M/N: CF1205-E Input: AC 100-240V ~ 0.4A, 50-60Hz Output: DC +5V, 2A Cable Out: Non-Shielded, 1.6m
Contain Module	WPER-120GN

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	WANSHIH	SO1WFI0017A	Dipole Antenna	2.0dBi for 2.4 GHz

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz	Channel 12:	2467 MHz
Channel 13:	2472 MHz						

802.11n-40MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 03:	2422 MHz	Channel 04:	2427 MHz	Channel 05:	2432 MHz	Channel 06:	2437 MHz
Channel 07:	2442 MHz	Channel 08:	2447 MHz	Channel 09:	2452 MHz	Channel 10:	2457 MHz
Channel 11:	2462 MHz						

Note:

- 1 The EUT is a Network Camera with a 2.4GHz WLAN transceiver.
- 2 Quietek is verified all construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS8 13Mbps 20MBW)
	Mode 4: Transmit (802.11n MCS8 27Mbps 40MBW)
	Mode 5: Receive (802.11n MCS8 13Mbps 20MBW)
	Mode 6: Receive (802.11n MCS8 27Mbps 40MBW)

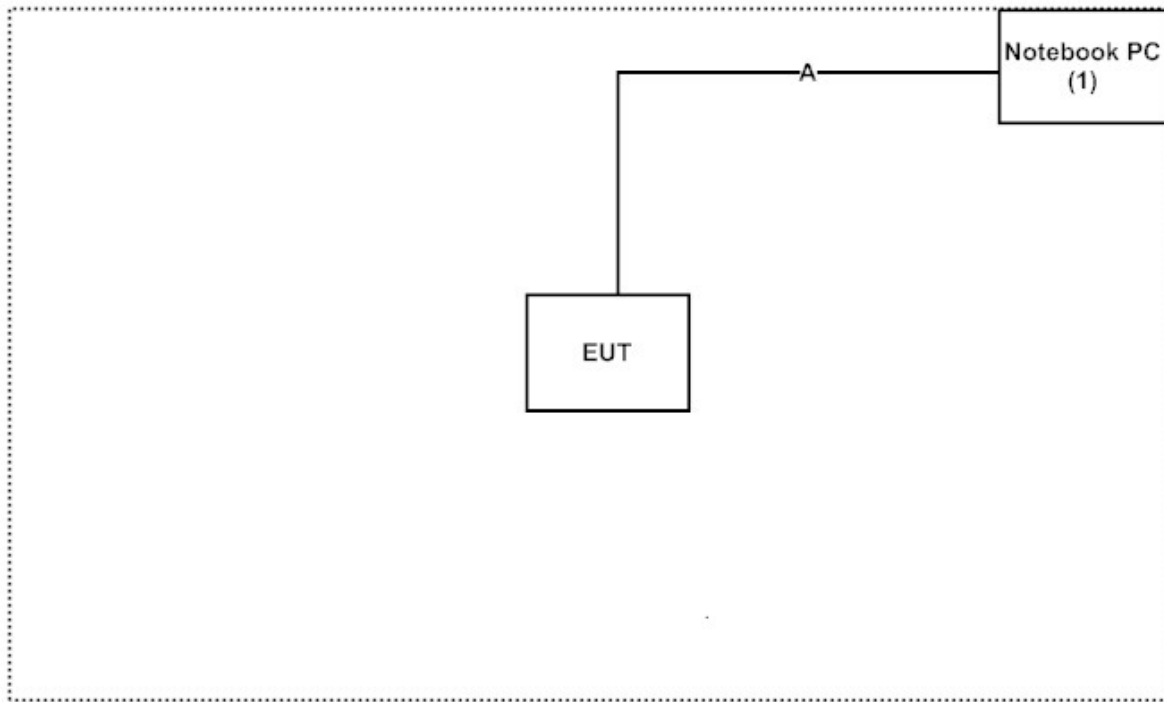
1.2. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	Dell	D400	N/A	N/A

	Signal Cable Type	Signal cable Description
A	LAN Cable	Non-Shielded, 1.5m

1.3. Configuration of tested System



1.4. EUT Exercise Software

- (1) Setup the EUT and peripherals as shown in Section 1.3.
- (2) Execute “Pie TTY.exe ver0.3.26.24” on the Notebook.
- (3) Configure the test mode, the test channel, and the data rate to start the continuous transmit.
- (4) Verify that the EUT works properly.

1.5. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required	Actual
Temperature (°C)	ETSI EN 300 328	15-35	20-35
Humidity (%RH)		20-75	50-55

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation’s Web Site: <http://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of Quietek Corporation’s laboratories can be founded in our Web site: <http://www.quietek.com/>

Site Description: Accreditation on NVLAP
 NVLAP Lab Code: 200533-0

Accreditation on DNV
 Statement No. : 413-99-LAB11



Accredited by TUV Rheinland
 Certificate No.: 10011438-1-2010



Accreditation on Nemko
 Certificate No.: ELA 165



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2. Effective radiated Power

2.1. Test Equipment

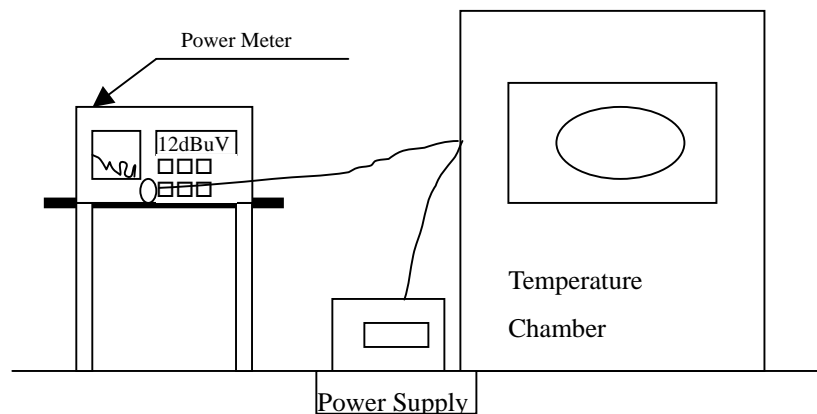
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2011
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2011
X	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2011
X	Temperature Chamber	TDE	CHM 150CT	March, 2011

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.
3. The power combiner is used for measure 11n mode.

2.2. Test Setup

Conduction Power Measurement



2.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

2.4. Limits

The effective radiated power is defined as the total power of the transmitter.

The effective radiated power shall be equal to or less than -10 dBW (100 mW) e.i.r.p. This limit shall apply for any combination of power level and intended antenna assembly.

2.5. Test Procedure

The following method of measurement shall apply to both conducted and radiated measurements. The measurement shall be performed using normal operation of the equipment with modulation, using the test data sequence, applied. Using a suitable means, the output of the transmitter shall be coupled to a diode detector; the output of the diode detector shall be connected to the vertical channel of an oscilloscope; the combination of the diode detector and the oscilloscope shall be capable of faithfully reproducing the envelope peaks and the duty cycle of the transmitter output signal.

The measurement shall be repeated at the lowest, the middle, and highest frequency of the stated frequency range.

FHSS equipment shall be made to hop continuously to each of these three frequencies separately.

2.6. Uncertainty

The measurement uncertainty is defined as $\pm 1.27\text{dB}$

2.7. Test Specification

According to ETSI EN 300 328:V1.7.1 (2006-10)

2.8. Test Result

The emission from the EUT was below the specified limits. The worst-case emissions are shown in section 9. The acceptance criterion was met and the EUT passed the test.

3. Peak Power Density

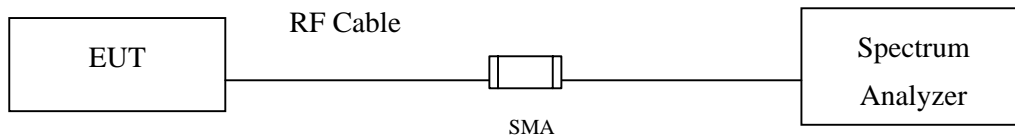
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2011
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2011
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2011
X	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2011

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.
3. The power combiner is used for measure 11n mode.

3.2. Test Setup



3.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

3.4. Limits

The maximum spectral power density is defined as the highest level of power in Watts per Hertz generated by the transmitter within the power envelope.

For equipment using FHSS modulation, the maximum spectral power density shall be limited to -10 dBW (100 mW) per 100 kHz e.i.r.p. For equipment using other types of modulation, the maximum spectral power density shall be limited to -20 dBW (10 mW) per MHz e.i.r.p.

3.5. Test Procedure

The maximum spectral power density shall be determined using a spectrum analyzer of adequate bandwidth for the type of modulation being used in combination with an RF power meter.

Connect an RF power meter to the IF output of the spectrum analyzer and correct its reading using a known reference source, e.g. a signal generator.

The above procedure shall be repeated for each of the three frequencies identified by the procedure given in limit (sub clause 5.7.2.2.)

Where the spectrum analyzer bandwidth is non-Gaussian, a suitable correction factor shall be determined and applied.

Where a spectrum analyzer is equipped with a facility to measure power density, this facility may be used instead of the above procedure.

3.6. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

3.7. Test Specification

According to ETSI EN 300 328:V1.7.1 (2006-10)

3.8. Test Result

The emission from the EUT was below the specified limits. The worst-case emissions are shown in section 9. The acceptance criterion was met and the EUT passed the test.

4. Frequency Range

4.1. Test Equipment

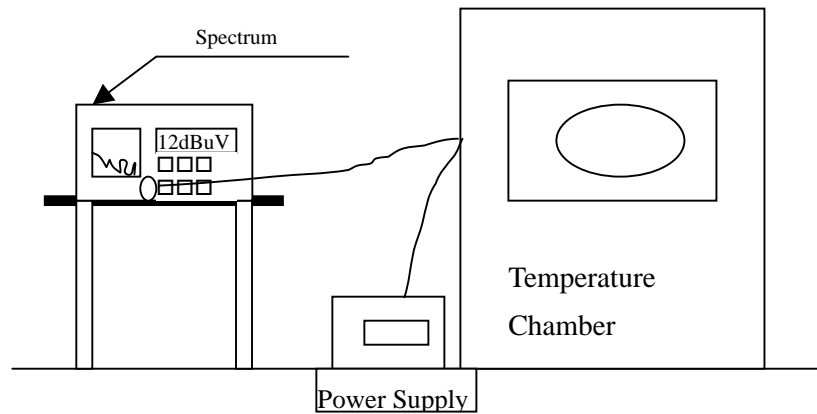
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2011
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2011
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2011
X	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2011
X	Temperature Chamber	TDE	CHM 150CT	March, 2011

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.
3. The power combiner is used for measure 11n mode.

4.2. Test Setup

Conduction Power Measurement



4.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

4.4. Limits

The frequency range of the equipment is determined by the lowest and highest frequencies occupied by the power envelope.

f_H is the highest frequency of the power envelope: it is the frequency furthest above the frequency of maximum power where the output power drops below the level of -80 dBm/Hz e.i.r.p. spectral power density (-30 dBm if measured in a 100 kHz bandwidth).

f_L is the lowest frequency of the power envelope; it is the frequency furthest below the frequency of maximum power where the output power drops below the level equivalent to -80 dBm/Hz e.i.r.p. spectral power density (or -30 dBm if measured in a 100 kHz bandwidth).

For a given operating frequency, the width of the power envelope is ($f_H - f_L$). In equipment that allows adjustment or selection of difference operation frequencies, the power envelope takes up difference positions in the allowed band. The frequency range is determined by the lowest value of f_L and the highest value of f_H resulting from the adjustment of the equipment to the lowest and highest operating frequencies.

For all equipment the frequency range shall lie within the band 2.4GHz to 2.4835GHz ($f_L > 2.4\text{GHz}$ and $f_H < 2.4835\text{GHz}$).

4.5. Test Procedure

The measurement procedure shall be as follows:

- a) Place the spectrum analyzer in video averaging mode with a minimum of 50 sweeps selected and activate the transmitter with modulation applied. The RF emission of the equipment shall be displayed on the spectrum analyzer;
- b) Select lowest operating frequency of the equipment under test;
- c) Using the marker of the spectrum analyzer, find lowest frequency below the operating frequency at which spectral power density drops below the level given in limit (subclause 5.2.3);
- d) Select the highest operating frequency of the equipment under test;
- e) Find the highest frequency at which the spectral power density drops below the value given in limit (subclause 5.2.3.);
- f) The difference between the frequencies measured in steps c) and e) is the frequency range.

4.6. Uncertainty

The measurement uncertainty is defined as ± 100 kHz

4.7. Test Specification

According to ETSI EN 300 328:V1.7.1 (2006-10)

4.8. Test Result

The emission from the EUT was below the specified limits. The worst-case emissions are shown in section 9. The acceptance criterion was met and the EUT passed the test.

5. Spurious Emission

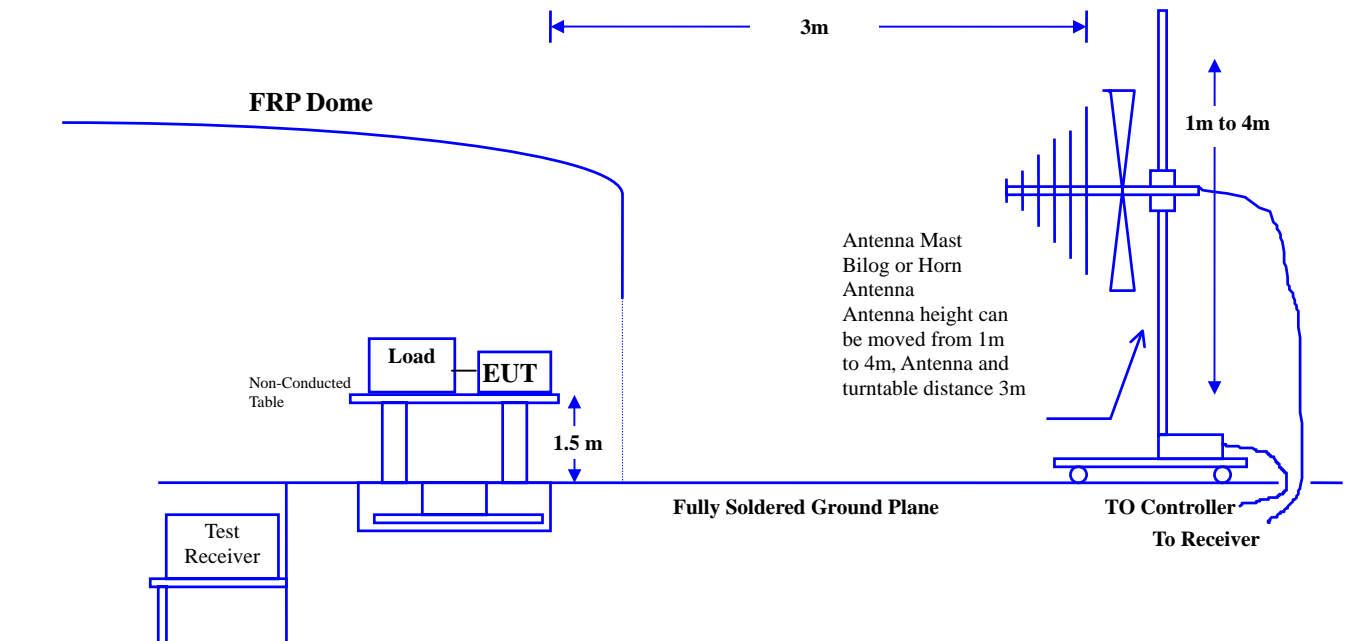
5.1. Test Equipment

The following test equipment are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2011
	X Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2011
	X Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2011
	X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2011
	X Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2011
	X Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2011
	X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2011

- Note:
1. All equipments that need to calibrate are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

5.2. Test Setup



5.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

5.4. Limits

Transmitter limits for narrowband spurious emission

Frequency Range	Limit when operating	Limit when in standby
30MHz to 1 GHz	-36 dBm	-57 dBm
Above 1 GHz to 12.75 GHz	-30 dBm	-47 dBm
1.8 GHz to 1.9 GHz	-47 dBm	-47 dBm
5.15 GHz to 5.3 GHz	-47 dBm	-47 dBm

Transmitter limits for wideband spurious emission

Frequency Range	Limit when operating	Limit when in standby
30MHz to 1 GHz	-86 dBm/Hz	-107 dBm/Hz
Above 1 GHz to 12.75 GHz	-80 dBm/Hz	-97 dBm/Hz
1.8 GHz to 1.9 GHz	-97 dBm/Hz	-97 dBm/Hz
5.15 GHz to 5.3 GHz	-97 dBm/Hz	-97 dBm/Hz

Narrowband spurious emission limit for receivers

Frequency Range	Limit
30MHz to 1 GHz	-57 dBm
Above 1 GHz to 12.75 GHz	-47 dBm

Wideband spurious emission limit for receivers

Frequency Range	Limit
30MHz to 1 GHz	-107 dBm/Hz
Above 1 GHz to 12.75 GHz	-97 dBm/Hz

5.5. Test Procedure

The EUT is placed on a turn table which is 1.5 meters above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Broadband antenna (calibrated bi-log and horn antenna) are used as a receiving antenna.

Both horizontal and vertical polarization of the antenna are set on measurement. And a high frequency preamplifier were used increase the sensitivity of the measuring. In order to find the maximum emission, all of the interface cables must be manipulated according to ETSI EN 300 328:V1.7.1 (2006-10) on radiated measurement.

The additional notch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement. The bandwidth setting on the field strength meter (R & S Spectrum Analyzer ESI26) is 100 kHz. The frequency range from 30MHz to 12.75GHz is checked.

5.6. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB
under 1G is defined as ± 3.8 dB

5.7. Test Specification

According to ETSI EN 300 328:V1.7.1 (2006-10)

5.8. Test Result

The emission from the EUT was below the specified limits. The worst-case emissions are shown in section 9. The acceptance criterion was met and the EUT passed the test.

6. Medium access protocol

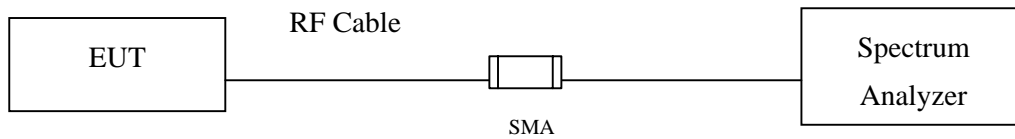
6.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2011
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2011
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2011
X	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2011

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.
3. The power combiner is used for measure 11n mode.

6.2. Test Setup



6.3. Test Condition

Normal test condition.

6.4. Requirement

A medium access protocol shall be implemented by the equipment.

6.5. Test Specification

According to ETSI EN 300 328:V1.7.1 (2006-10)

6.6. Test Result

The test data is shown in Section 9. The EUT complies the specified limits and passes the test.

7. Measurement Uncertainty Values

The maximum values of the absolute measurement uncertainties of the measurements defined in the present document shall not exceed the values given below:

Parameter	Uncertainty
Radio frequency	$\pm 1 \times 10^{-5}$
Total RF power, conducted	± 1.5 dB
RF power density, conducted	± 3 dB
Spurious emissions, conducted	± 3 dB
All emissions, radiated	± 6 dB
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	± 5 %
DC and low frequency voltages	± 3 %

8. EMC Reduction Method During Compliance Testing

No modification was made during testing.

9. Test Result

The test results in the emission and the immunity were performed according to the requirements of measurement standard and process. Quietek Corporation is assumed full responsibility for the accuracy and completeness of these measurements. The test data of the emission is listed as below.

All the tests were carried out with the EUT in normal operation, which was defined as:

Test Mode	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS8 13Mbps 20MBW)
	Mode 4: Transmit (802.11n MCS8 27Mbps 40MBW)
	Mode 5: Receive (802.11n MCS8 13Mbps 20MBW)
	Mode 6: Receive (802.11n MCS8 27Mbps 40MBW)

9.1. Test Data of Effective Radiated Power

Product : Network Camera
 Test Item : Effective Radiated Power
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Antenna Gain: 2.0dBi, Duty Cycle: 1, Cable Loss: 0.5dB						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	1	2412	16.02	18.52	20
		7	2442	16.04	18.54	20
		13	2472	16.13	18.63	20
Tmax (35) °C	Vmax (253) V	1	2412	13.74	16.24	20
		7	2442	13.93	16.43	20
		13	2472	13.42	15.92	20
Tmax (35) °C	Vnim (207) V	1	2412	13.72	16.22	20
		7	2442	13.88	16.38	20
		13	2472	13.52	16.02	20
Tnim (0) °C	Vmax (253) V	1	2412	17.17	19.67	20
		7	2442	17.37	19.87	20
		13	2472	17.23	19.73	20
Tnim (0) °C	Vnim (207) V	1	2412	17.19	19.69	20
		7	2442	17.21	19.71	20
		13	2472	17.16	19.66	20

* Emission Level = Reading Level + Antenna Gain + Cable loss + 10 log (1/Duty Cycle)

Product : Network Camera
 Test Item : Effective Radiated Power
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Antenna Gain: 2.0dBi, Duty Cycle: 1, Cable Loss: 0.5dB						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	1	2412	15.07	17.57	20
		7	2442	15.30	17.80	20
		13	2472	14.92	17.42	20
Tmax (35) °C	Vmax (253) V	1	2412	13.29	15.79	20
		7	2442	13.48	15.98	20
		13	2472	13.10	15.60	20
Tmax (35) °C	Vnim (207) V	1	2412	13.10	15.60	20
		7	2442	13.45	15.95	20
		13	2472	12.83	15.33	20
Tnim (0) °C	Vmax (253) V	1	2412	16.65	19.15	20
		7	2442	16.97	19.47	20
		13	2472	16.92	19.42	20
Tnim (0) °C	Vnim (207) V	1	2412	16.79	19.29	20
		7	2442	17.09	19.59	20
		13	2472	16.96	19.46	20

* Emission Level = Reading Level + Antenna Gain + Cable loss + 10 log (1/Duty Cycle)

Product : Network Camera
 Test Item : Effective Radiated Power
 Test Mode : Mode 3: Transmit (802.11n MCS8 13Mbps 20MBW)

Antenna Gain: 2.0dBi, Duty Cycle: 1, Cable Loss: 0.5dB						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	1	2412	13.64	16.14	20
		7	2442	13.78	16.28	20
		13	2472	13.28	15.78	20
Tmax (35) °C	Vmax (253) V	1	2412	12.39	14.89	20
		7	2442	11.70	14.20	20
		13	2472	12.06	14.56	20
Tmax (35) °C	Vnim (207) V	1	2412	11.95	14.45	20
		7	2442	11.40	13.90	20
		13	2472	11.86	14.36	20
Tnim (0) °C	Vmax (253) V	1	2412	16.81	19.31	20
		7	2442	16.30	18.80	20
		13	2472	16.40	18.90	20
Tnim (0) °C	Vnim (207) V	1	2412	17.05	19.55	20
		7	2442	16.80	19.30	20
		13	2472	16.81	19.31	20

* Emission Level = Reading Level + Antenna Gain + Cable loss + 10 log (1/Duty Cycle)

Product : Network Camera
 Test Item : Effective Radiated Power
 Test Mode : Mode 4: Transmit (802.11n MCS8 27Mbps 40MBW)

Antenna Gain: 2.0dBi, Duty Cycle: 1, Cable Loss: 0.5dB						
Test Conditions		Channel	Freq. (MHz)	Reading Level (dBm)	Emission Level (dBm)	Limit (dBm)
Tnom (25) °C	Vnom (230) V	3	2422	14.26	16.76	20
		7	2442	14.04	16.54	20
		11	2462	13.65	16.15	20
Tmax (35) °C	Vmax (253) V	3	2422	12.43	14.93	20
		7	2442	11.98	14.48	20
		11	2462	11.76	14.26	20
Tmax (35) °C	Vnim (207) V	3	2422	12.49	14.99	20
		7	2442	11.90	14.40	20
		11	2462	11.60	14.10	20
Tnim (0) °C	Vmax (253) V	3	2422	17.20	19.70	20
		7	2442	16.72	19.22	20
		11	2462	16.65	19.15	20
Tnim (0) °C	Vnim (207) V	3	2422	17.42	19.92	20
		7	2442	16.96	19.46	20
		11	2462	16.76	19.26	20

* Emission Level = Reading Level + Antenna Gain + Cable loss + 10 log (1/Duty Cycle)

9.2. Test Data of Peak Power Density

Product : Network Camera
 Test Item : Peak Power Density
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Antenna Gain: 2.0dBi, Cable Loss: 0.5dB, Duty Cycle: 1				
Channel	Freq. (MHz)	Reading Level (dBm/MHz)	Measure Level (dBm/MHz)	Limit (dBm/MHz)
1	2412	-0.20	2.30	10
7	2442	0.59	3.09	10
13	2472	0.58	3.08	10

* Measure Level = Reading Level + Antenna Gain + Cable loss + 10 log (1/Duty Cycle)

Test Result	PASS
-------------	------

Product : Network Camera
 Test Item : Peak Power Density
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Antenna Gain: 2.0dBi, Cable Loss: 0.5dB, Duty Cycle: 1				
Channel	Freq. (MHz)	Reading Level (dBm/MHz)	Measure Level (dBm/MHz)	Limit (dBm/MHz)
1	2412	-0.76	1.74	10
7	2442	-0.11	2.39	10
13	2472	-0.44	2.06	10

* Measure Level = Reading Level + Antenna Gain + Cable loss + 10 log (1/Duty Cycle)

Test Result	PASS
-------------	------

Product : Network Camera
 Test Item : Peak Power Density
 Test Mode : Mode 3: Transmit (802.11n MCS8 13Mbps 20MBW)

Antenna Gain: 2.0dBi, Cable Loss: 0.5dB, Duty Cycle: 1				
Channel	Freq. (MHz)	Reading Level (dBm/MHz)	Measure Level (dBm/MHz)	Limit (dBm/MHz)
1	2412	-1.24	1.26	10
7	2442	-1.72	0.78	10
13	2472	-1.93	0.57	10

* Measure Level = Reading Level + Antenna Gain + Cable loss + 10 log (1/Duty Cycle)

Test Result	PASS
-------------	------

Product : Network Camera
 Test Item : Peak Power Density
 Test Mode : Mode 4: Transmit (802.11n MCS8 27Mbps 40MBW)

Antenna Gain: 2.0dBi, Cable Loss: 0.5dB, Duty Cycle: 1				
Channel	Freq. (MHz)	Reading Level (dBm/MHz)	Measure Level (dBm/MHz)	Limit (dBm/MHz)
3	2422	-4.04	-1.54	10
7	2442	-4.52	-2.02	10
11	2462	-4.80	-2.30	10

* Measure Level = Reading Level + Antenna Gain + Cable loss + 10 log (1/Duty Cycle)

Test Result	PASS
-------------	------

9.3. Test Data of Frequency Range

Product : Network Camera
 Test Item : Frequency Range
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Test Conditions		Frequency (MHz)	
Tnom (25 °C)	Vnom (230 V)	F _L	2403.60
		F _H	2481.50
Tmax (35 °C)	Vmax (253 V)	F _L	2402.80
		F _H	2482.35
Tmax (35 °C)	Vnim (207 V)	F _L	2402.70
		F _H	2481.45
Tnim (0 °C)	Vmax (253 V)	F _L	2403.60
		F _H	2481.45
Tnim (0 °C)	Vnim (207 V)	F _L	2403.60
		F _H	2482.35

Test Result	F _L : 2402.70 MHz F _H : 2482.35 MHz
-------------	--

Product : Network Camera
 Test Item : Frequency Range
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Test Conditions		Frequency (MHz)	
Tnom (25 °C)	Vnom (230 V)	F _L	2403.80
		F _H	2481.25
Tmax (35 °C)	Vmax (253 V)	F _L	2402.45
		F _H	2482.65
Tmax (35 °C)	Vnim (207 V)	F _L	2402.45
		F _H	2482.90
Tnim (0 °C)	Vmax (253 V)	F _L	2403.80
		F _H	2481.25
Tnim (0 °C)	Vnim (207 V)	F _L	2403.80
		F _H	2481.25

Test Result	F _L : 2402.45 MHz F _H : 2482.90 MHz
-------------	--

Product : Network Camera
 Test Item : Frequency Range
 Test Mode : Mode 3: Transmit (802.11n MCS8 13Mbps 20MBW)

Test Conditions		Frequency (MHz)	
Tnom (25 °C)	Vnom (230 V)	F _L	2402.35
		F _H	2481.70
Tmax (35 °C)	Vmax (253 V)	F _L	2403.15
		F _H	2481.90
Tmax (35 °C)	Vnim (207 V)	F _L	2403.10
		F _H	2481.90
Tnim (0 °C)	Vmax (253 V)	F _L	2403.35
		F _H	2481.70
Tnim (0 °C)	Vnim (207 V)	F _L	2403.35
		F _H	2481.70

Test Result	F _L : 2402.35 MHz F _H : 2481.90MHz
-------------	---

Product : Network Camera
 Test Item : Frequency Range
 Test Mode : Mode 4: Transmit (802.11n MCS8 27Mbps 40MBW)

Test Conditions		Frequency (MHz)	
Tnom (25 °C)	Vnom (230 V)	F _L	2404.00
		F _H	2480.90
Tmax (35 °C)	Vmax (253 V)	F _L	2403.95
		F _H	2481.10
Tmax (35 °C)	Vnim (207 V)	F _L	2403.80
		F _H	2481.10
Tnim (0 °C)	Vmax (253 V)	F _L	2404.15
		F _H	2480.90
Tnim (0 °C)	Vnim (207 V)	F _L	2404.15
		F _H	2480.90

Test Result	F _L : 2403.80 MHz F _H : 2481.10 MHz
-------------	--

9.4. Test Data of Spurious Emission

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
97.900	0.003	-60.566	-60.563	-24.563	-36.000
249.220	-0.565	-68.631	-69.196	-33.196	-36.000
443.220	5.182	-60.506	-55.324	-19.324	-36.000
674.080	7.955	-61.679	-53.724	-17.724	-36.000
738.100	8.080	-71.180	-63.100	-27.100	-36.000
837.040	8.712	-71.831	-63.119	-27.119	-36.000
Vertical					
Peak Detector					
90.140	-0.310	-59.517	-59.827	-23.827	-36.000
288.020	0.951	-68.145	-67.194	-31.194	-36.000
443.220	5.451	-63.469	-58.018	-22.018	-36.000
590.660	7.146	-73.000	-65.854	-29.854	-36.000
674.080	7.308	-49.154	-41.846	-5.846	-36.000
976.720	9.113	-76.830	-67.717	-31.717	-36.000

Note:

1. All Reading are peak value.
2. “” means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
4824.000	16.682	-79.220	-62.538	-32.538	-30.000
7236.000	25.392	-80.920	-55.528	-25.528	-30.000
9648.000	26.800	-81.400	-54.600	-24.600	-30.000
Vertical					
Peak Detector					
4824.000	18.055	-80.430	-62.375	-32.375	-30.000
7236.000	25.342	-81.820	-56.478	-26.478	-30.000
9648.000	25.907	-81.930	-56.023	-26.023	-30.000

Note:

1. All Reading are peak value.
2. " " means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2472MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
4944.000	17.590	-80.830	-63.240	-33.240	-30.000
7416.000	26.954	-83.310	-56.356	-26.356	-30.000
9888.000	26.925	-81.870	-54.945	-24.945	-30.000
Vertical					
Peak Detector					
4944.000	18.480	-80.730	-62.250	-32.250	-30.000
7416.000	26.336	-82.830	-56.494	-26.494	-30.000
9888.000	26.345	-82.040	-55.695	-25.695	-30.000

Note:

1. All Reading are peak value.
2. "██████" means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
97.900	0.003	-61.257	-61.254	-25.254	-36.000
249.220	-0.565	-68.819	-69.384	-33.384	-36.000
443.220	5.182	-63.219	-58.037	-22.037	-36.000
590.660	6.963	-73.153	-66.190	-30.190	-36.000
674.080	7.955	-70.406	-62.451	-26.451	-36.000
844.800	8.886	-68.879	-59.993	-23.993	-36.000
Vertical					
Peak Detector					
158.040	-0.502	-65.512	-66.014	-30.014	-36.000
286.080	0.648	-64.470	-63.822	-27.822	-36.000
443.220	5.451	-62.148	-56.697	-20.697	-36.000
590.660	7.146	-74.143	-66.997	-30.997	-36.000
667.960	7.296	-56.648	-49.352	-13.352	-36.000
848.680	9.146	-72.759	-63.613	-27.613	-36.000

Note:

1. All Reading are peak value.
2. "██████" means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
4824.000	16.682	-81.030	-64.348	-34.348	-30.000
7236.000	25.392	-81.650	-56.258	-26.258	-30.000
9648.000	26.800	-81.780	-54.980	-24.980	-30.000
Vertical					
Peak Detector					
4824.000	18.055	-81.010	-62.955	-32.955	-30.000
7236.000	25.342	-82.120	-56.778	-26.778	-30.000
9648.000	25.907	-82.140	-56.233	-26.233	-30.000

Note:

1. All Reading are peak value.
2. "██████" means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2472MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
4944.000	17.590	-81.270	-63.680	-33.680	-30.000
7416.000	26.954	-83.060	-56.106	-26.106	-30.000
9888.000	26.925	-82.110	-55.185	-25.185	-30.000
Vertical					
Peak Detector					
4944.000	18.480	-80.970	-62.490	-32.490	-30.000
7416.000	26.336	-83.310	-56.974	-26.974	-30.000
9888.000	26.345	-81.970	-55.625	-25.625	-30.000

Note:

1. All Reading are peak value.
2. “ ” means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS8 13Mbps 20MBW) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
154.160	-3.021	-63.933	-66.954	-30.954	-36.000
249.220	-0.565	-69.227	-69.792	-33.792	-36.000
441.280	5.102	-62.972	-57.870	-21.870	-36.000
590.660	6.963	-71.988	-65.025	-29.025	-36.000
755.560	7.785	-71.513	-63.728	-27.728	-36.000
945.680	10.311	-76.780	-66.469	-30.469	-36.000
Vertical					
Peak Detector					
249.220	-0.958	-69.096	-70.054	-34.054	-36.000
443.220	5.451	-62.570	-57.119	-21.119	-36.000
590.660	7.146	-75.187	-68.041	-32.041	-36.000
674.080	7.308	-64.270	-56.962	-20.962	-36.000
738.100	8.676	-71.598	-62.922	-26.922	-36.000
827.340	8.805	-75.325	-66.520	-30.520	-36.000

Note:

1. All Reading are peak value.
2. "██████" means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS8 13Mbps 20MBW) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
4824.000	16.682	-81.130	-64.448	-34.448	-30.000
7236.000	25.392	-81.620	-56.228	-26.228	-30.000
9648.000	26.800	-82.240	-55.440	-25.440	-30.000
Vertical					
Peak Detector					
4824.000	18.055	-81.230	-63.175	-33.175	-30.000
7236.000	25.342	-81.940	-56.598	-26.598	-30.000
9648.000	25.907	-82.030	-56.123	-26.123	-30.000

Note:

1. All Reading are peak value.
2. "██████" means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS8 13Mbps 20MBW) (2472MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
4944.000	17.590	-81.020	-63.430	-33.430	-30.000
7416.000	26.954	-82.510	-55.556	-25.556	-30.000
9888.000	26.925	-82.240	-55.315	-25.315	-30.000
Vertical					
Peak Detector					
4944.000	18.480	-80.710	-62.230	-32.230	-30.000
7416.000	26.336	-82.550	-56.214	-26.214	-30.000
9888.000	26.345	-81.990	-55.645	-25.645	-30.000

Note:

1. All Reading are peak value.
2. "██████" means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS8 27Mbps 40MBW) (2422MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
249.220	-0.565	-68.920	-69.485	-33.485	-36.000
293.840	3.979	-72.623	-68.644	-32.644	-36.000
443.220	5.182	-62.292	-57.110	-21.110	-36.000
590.660	6.963	-72.240	-65.277	-29.277	-36.000
738.100	8.080	-71.658	-63.578	-27.578	-36.000
945.680	10.311	-77.891	-67.580	-31.580	-36.000
Vertical					
Peak Detector					
249.220	-0.958	-69.408	-70.366	-34.366	-36.000
293.840	1.959	-69.755	-67.796	-31.796	-36.000
443.220	5.451	-62.086	-56.635	-20.635	-36.000
590.660	7.146	-73.504	-66.358	-30.358	-36.000
681.840	7.368	-65.704	-58.336	-22.336	-36.000
773.020	8.300	-70.550	-62.250	-26.250	-36.000

Note:

1. All Reading are peak value.
2. "██████" means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS8 27Mbps 40MBW) (2422MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
4844.000	16.845	-80.990	-64.145	-34.145	-30.000
7266.000	25.879	-81.520	-55.641	-25.641	-30.000
9688.000	26.404	-81.470	-55.066	-25.066	-30.000
Vertical					
Peak Detector					
4844.000	18.171	-81.220	-63.049	-33.049	-30.000
7266.000	25.809	-82.090	-56.281	-26.281	-30.000
9688.000	25.535	-81.860	-56.325	-26.325	-30.000

Note:

1. All Reading are peak value.
2. “ ” means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS8 27Mbps 40MBW) (2462MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
4924.000	17.451	-81.390	-63.939	-33.939	-30.000
7386.000	27.008	-82.520	-55.512	-25.512	-30.000
9848.000	27.006	-81.030	-54.024	-24.024	-30.000
Vertical					
Peak Detector					
4924.000	18.480	-80.940	-62.460	-32.460	-30.000
7386.000	26.443	-83.130	-56.687	-26.687	-30.000
9848.000	26.416	-82.020	-55.604	-25.604	-30.000

Note:

1. All Reading are peak value.
2. “ ” means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 5: Receive (802.11n MCS8 13Mbps 20MBW) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
249.220	-0.565	-71.247	-71.812	-14.812	-57.000
293.840	3.979	-72.306	-68.327	-11.327	-57.000
478.140	6.378	-71.188	-64.810	-7.810	-57.000
590.660	6.963	-72.298	-65.335	-8.335	-57.000
738.100	8.080	-70.437	-62.357	-5.357	-57.000
837.040	8.712	-77.943	-69.231	-12.231	-57.000
Vertical					
Peak Detector					
293.840	1.959	-72.110	-70.151	-13.151	-57.000
375.320	3.183	-73.622	-70.439	-13.439	-57.000
480.080	6.210	-71.105	-64.895	-7.895	-57.000
590.660	7.146	-73.763	-66.617	-9.617	-57.000
738.100	8.676	-70.457	-61.781	-4.781	-57.000
893.300	8.877	-74.583	-65.706	-8.706	-57.000

Note:

1. All Reading are peak value.
2. “ ” means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor.

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 5: Receive (802.11n MCS8 13Mbps 20MBW) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
2412.000	11.068	-81.310	-70.242	-23.242	-47.000
4824.000	16.751	-81.180	-64.429	-17.429	-47.000
7236.000	25.241	-81.890	-56.649	-9.649	-47.000
Vertical					
Peak Detector					
2412.000	11.706	-80.780	-69.074	-22.074	-47.000
4824.000	18.143	-81.430	-63.287	-16.287	-47.000
7236.000	25.302	-81.840	-56.538	-9.538	-47.000

Note:

1. All Reading are peak value.
2. “ ” means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 5: Receive (802.11n MCS8 13Mbps 20MBW) (2472MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
2472.000	11.521	-76.850	-65.329	-18.329	-47.000
4944.000	17.630	-81.190	-63.560	-16.560	-47.000
7416.000	26.854	-82.770	-55.916	-8.916	-47.000
Vertical					
Peak Detector					
2472.000	11.495	-77.250	-65.755	-18.755	-47.000
4944.000	18.530	-80.870	-62.340	-15.340	-47.000
7416.000	26.376	-83.200	-56.824	-9.824	-47.000

Note:

1. All Reading are peak value.
2. “ ” means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 6: Receive (802.11n MCS8 27Mbps 40MBW) (2422MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
249.220	-0.565	-70.209	-70.774	-13.774	-57.000
293.840	3.979	-73.186	-69.207	-12.207	-57.000
478.140	6.378	-71.127	-64.749	-7.749	-57.000
590.660	6.963	-72.115	-65.152	-8.152	-57.000
740.040	8.049	-69.536	-61.487	-4.487	-57.000
883.600	9.486	-72.353	-62.867	-5.867	-57.000
Vertical					
Peak Detector					
293.840	1.959	-71.306	-69.347	-12.347	-57.000
375.320	3.183	-73.163	-69.980	-12.980	-57.000
478.140	6.198	-71.077	-64.879	-7.879	-57.000
590.660	7.146	-75.832	-68.686	-11.686	-57.000
738.100	8.676	-73.607	-64.931	-7.931	-57.000
885.540	8.931	-78.173	-69.242	-12.242	-57.000

Note:

1. All Reading are peak value.
2. “ ” means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 6: Receive (802.11n MCS8 27Mbps 40MBW) (2422MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
2422.000	11.144	-77.860	-66.716	-19.716	-47.000
4894.000	17.416	-80.700	-63.284	-16.284	-47.000
7366.000	26.791	-82.650	-55.859	-8.859	-47.000
Vertical					
Peak Detector					
2422.000	11.671	-78.660	-66.989	-19.989	-47.000
4894.000	18.611	-80.290	-61.679	-14.679	-47.000
7366.000	26.479	-82.390	-55.911	-8.911	-47.000

Note:

1. All Reading are peak value.
2. “ ” means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

Product : Network Camera
 Test Item : Spurious Emission
 Test Site : No.3 OATS
 Test Mode : Mode 6: Receive (802.11n MCS8 27Mbps 40MBW) (2462MHz)

Frequency MHz	Correct Factor dB	Reading Level dBm	Measurement Level dBm	Margin dB	Limit dBm
Horizontal					
Peak Detector					
2462.000	11.450	-77.730	-66.280	-19.280	-47.000
4924.000	17.559	-81.050	-63.491	-16.491	-47.000
7386.000	26.944	-82.690	-55.746	-8.746	-47.000
Vertical					
Peak Detector					
2462.000	11.530	-75.870	-64.340	-17.340	-47.000
4924.000	18.589	-80.540	-61.951	-14.951	-47.000
7386.000	26.519	-82.980	-56.461	-9.461	-47.000

Note:

1. All Reading are peak value.
2. “ ” means this data is the worst emission level.
3. Emission Level = Reading Level + Correction Factor

9.5. Test Data of Medium access protocol

A medium access protocol Distributed Coordination Function (DCF) is implemented by this equipment, which is a fundamental MAC technique of the IEEE 802.11 wireless LAN standard. It is a mechanism designed to facilitate spectrum sharing with other devices in a wireless network.

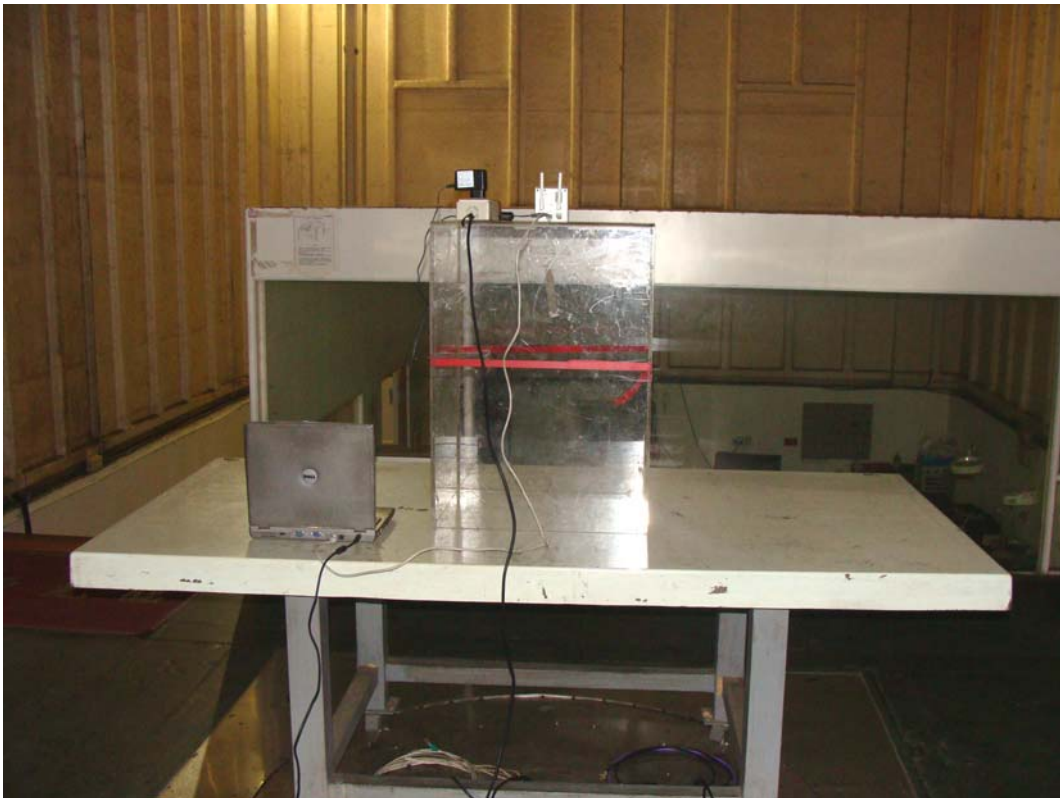
Attachment 1: EUT Test Photographs

Attachment 1: EUT Test Setup Photographs

Front View of Spurious Emission Test



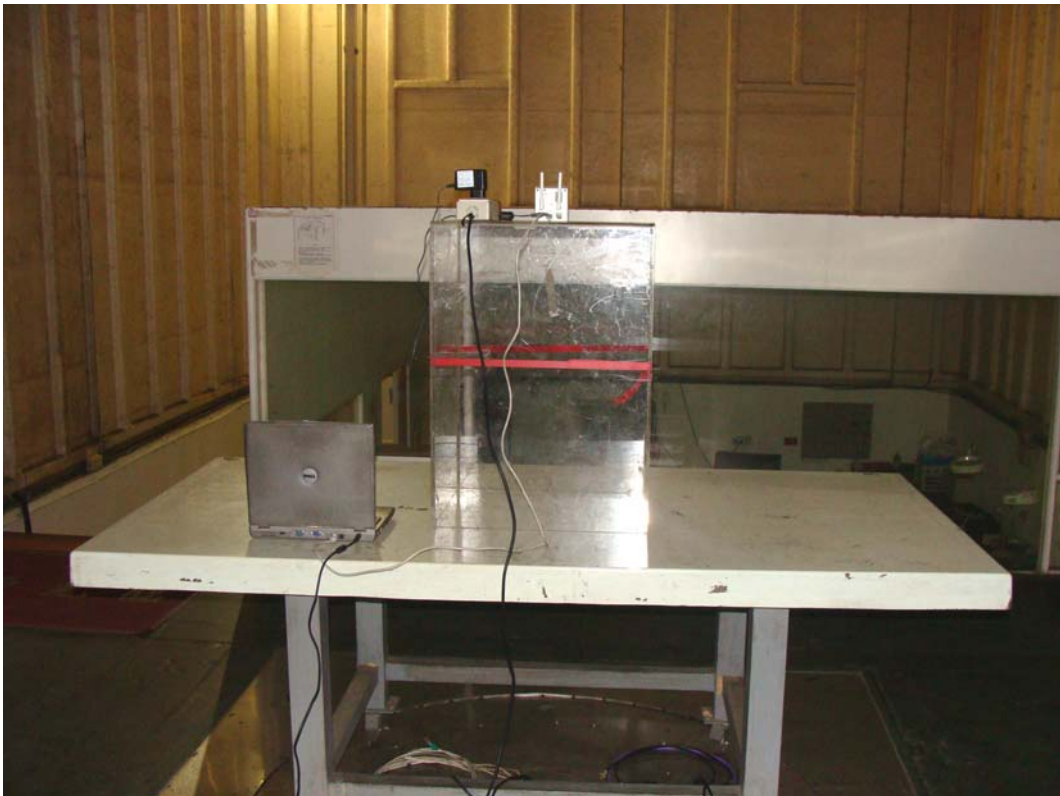
Back View of Spurious Emission Test



Front View of Spurious Emission Test (Horn)



Back View of Spurious Emission Test (Horn)



Attachment 2: EUT Detailed Photographs

Attachment 2 : EUT Detailed Photographs

(1) EUT Photo



(2) EUT Photo



(3) EUT Photo



(4) EUT Photo



(5) EUT Photo



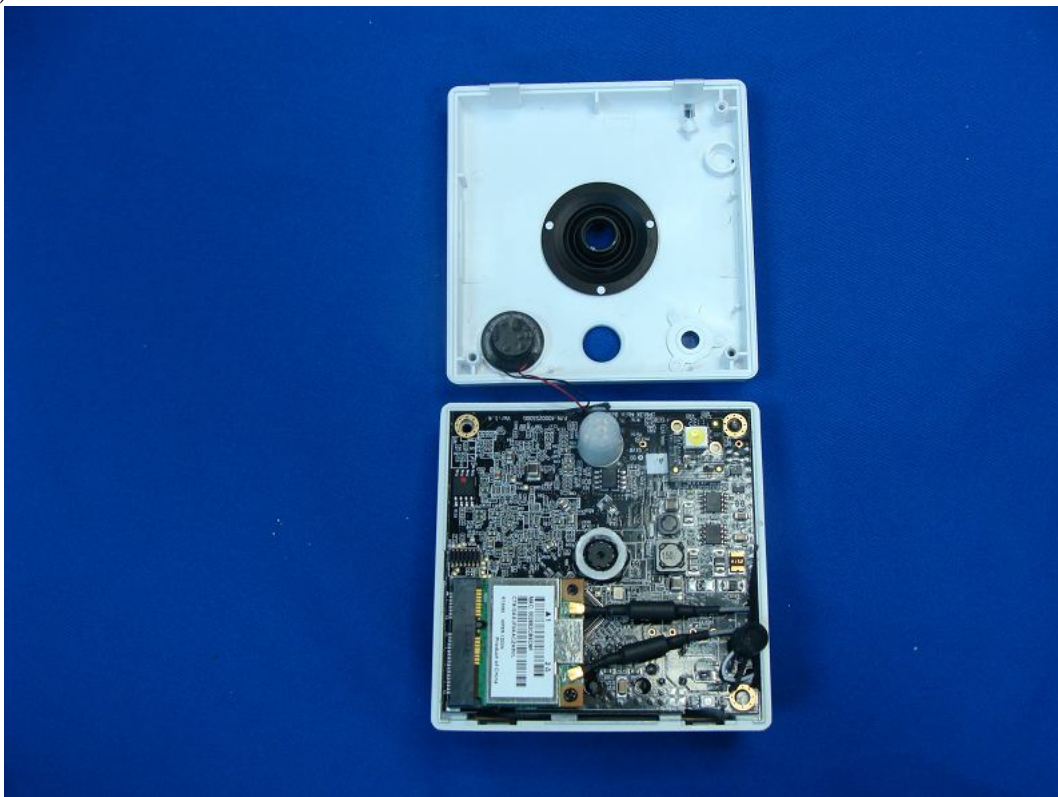
(6) EUT Photo



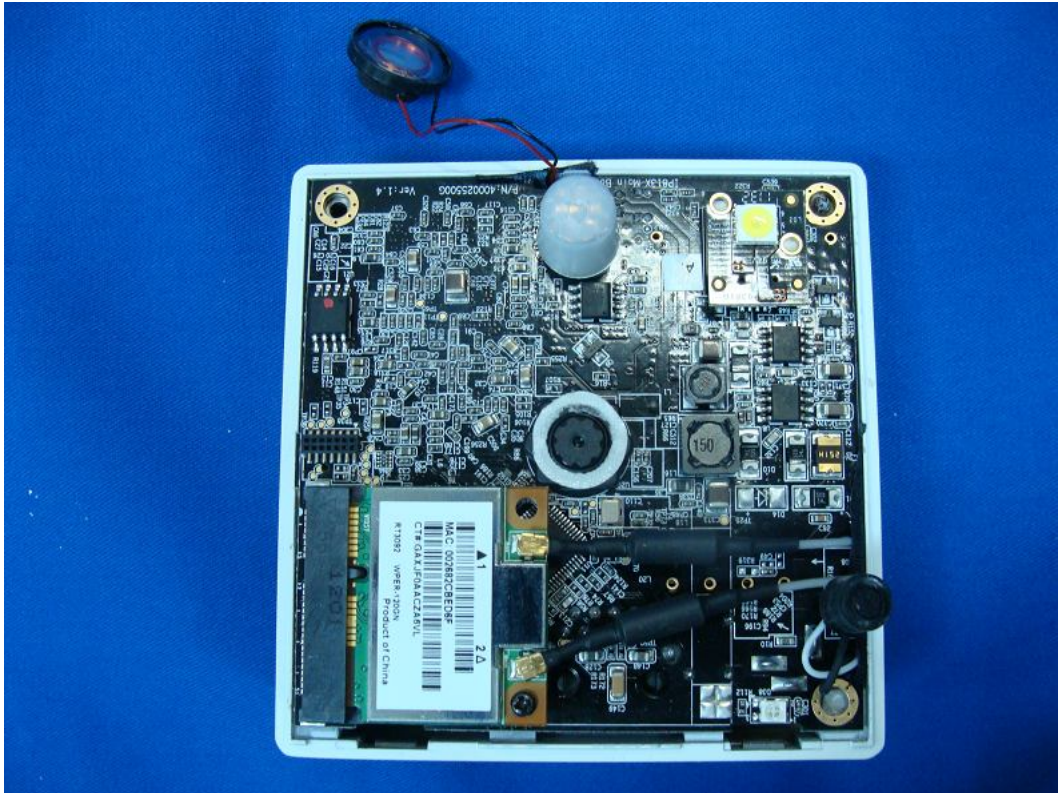
(7) EUT Photo



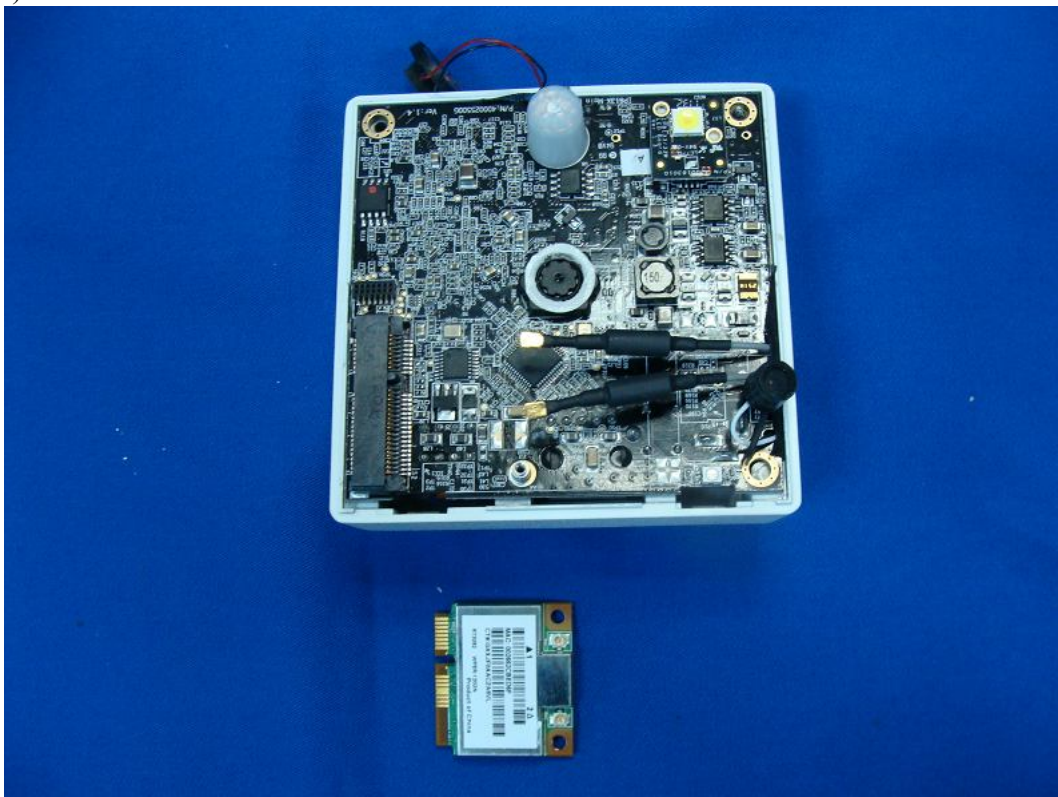
(8) EUT Photo



(9) EUT Photo



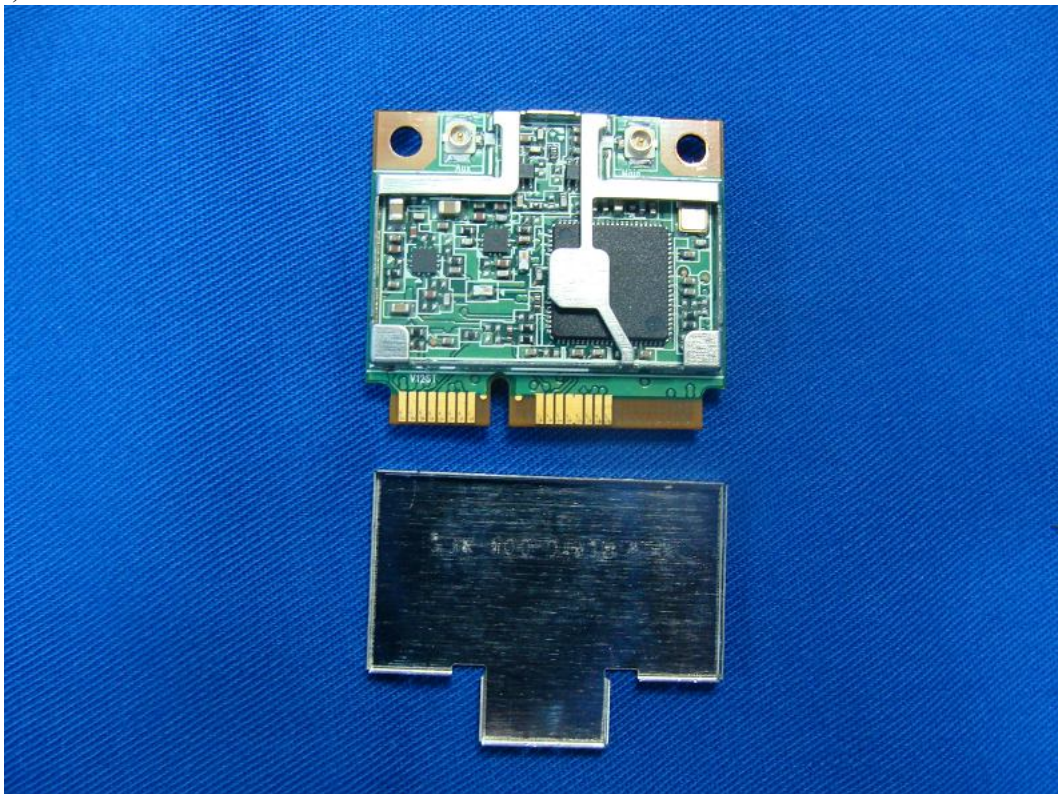
(10) EUT Photo



(11) EUT Photo



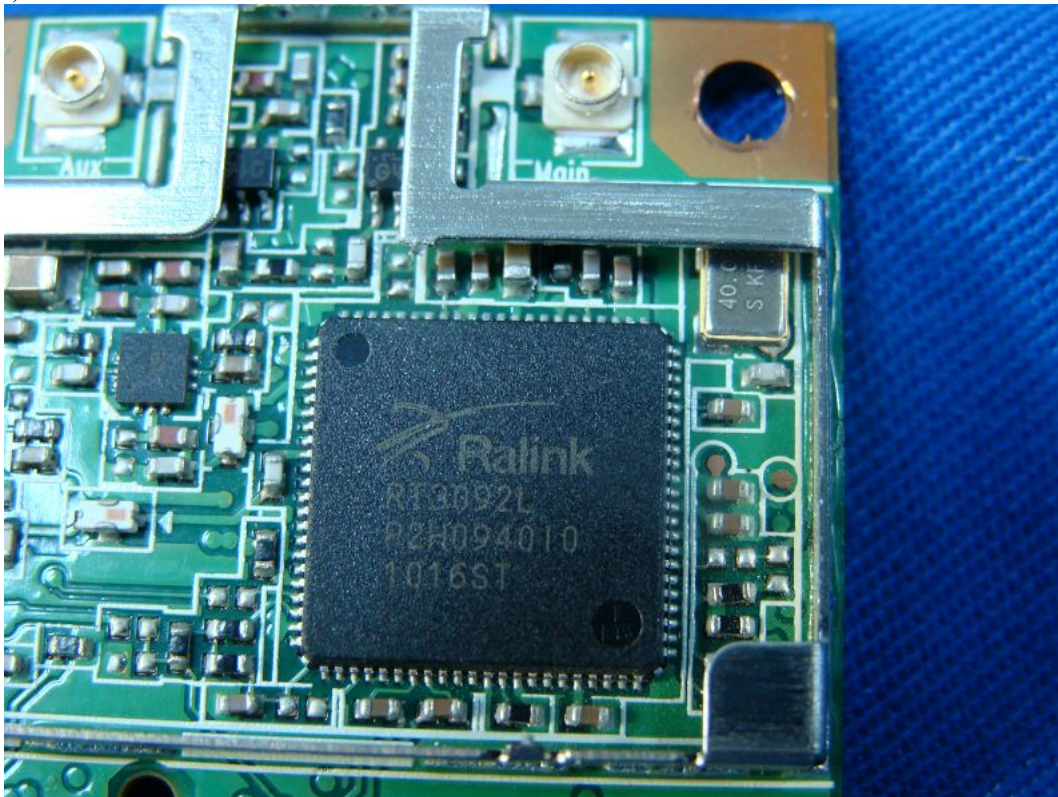
(12) EUT Photo



(13) EUT Photo



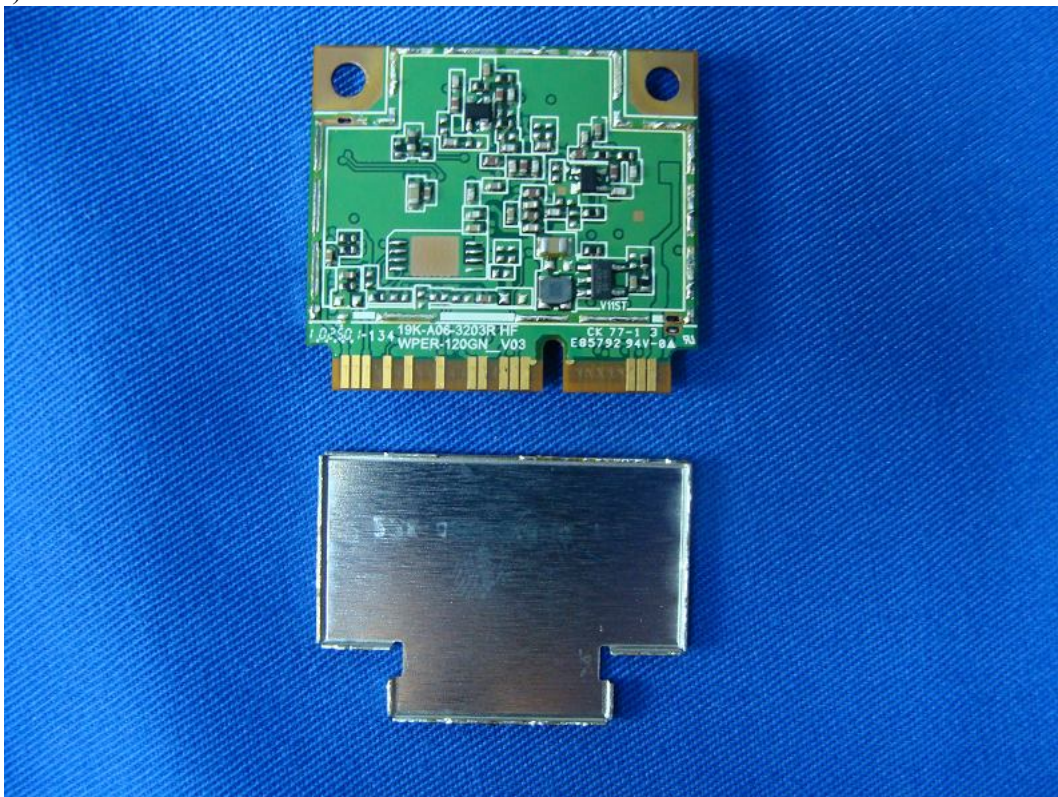
(14) EUT Photo



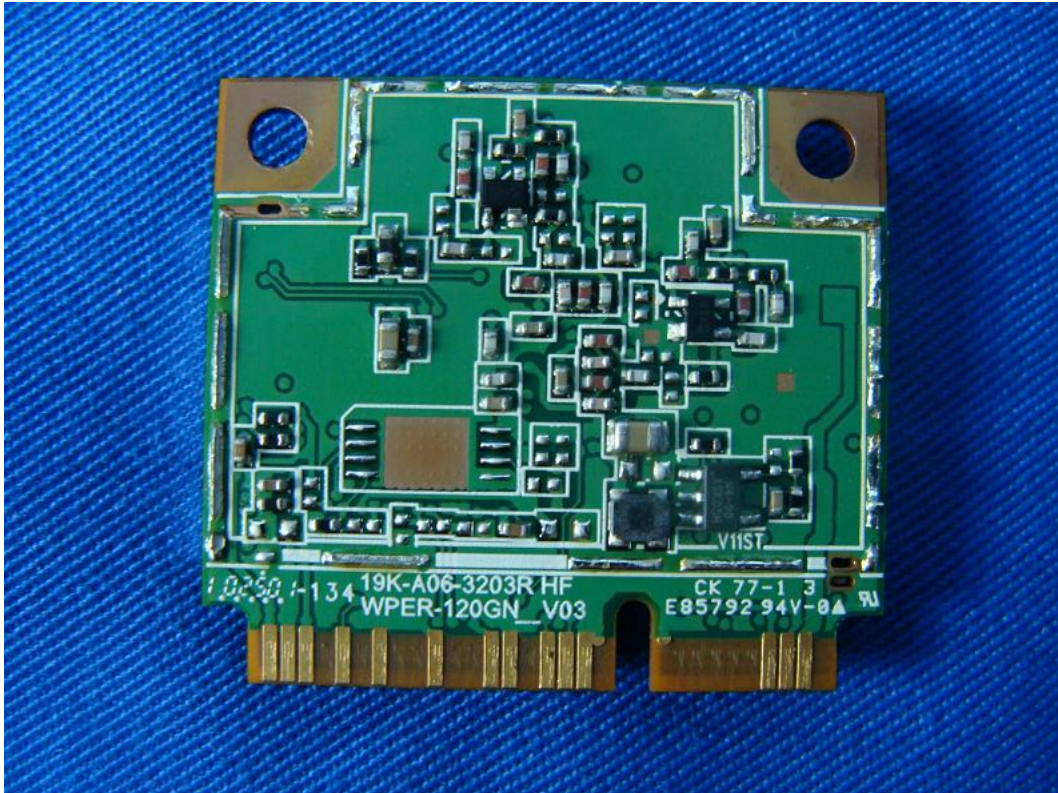
(15) EUT Photo



(16) EUT Photo



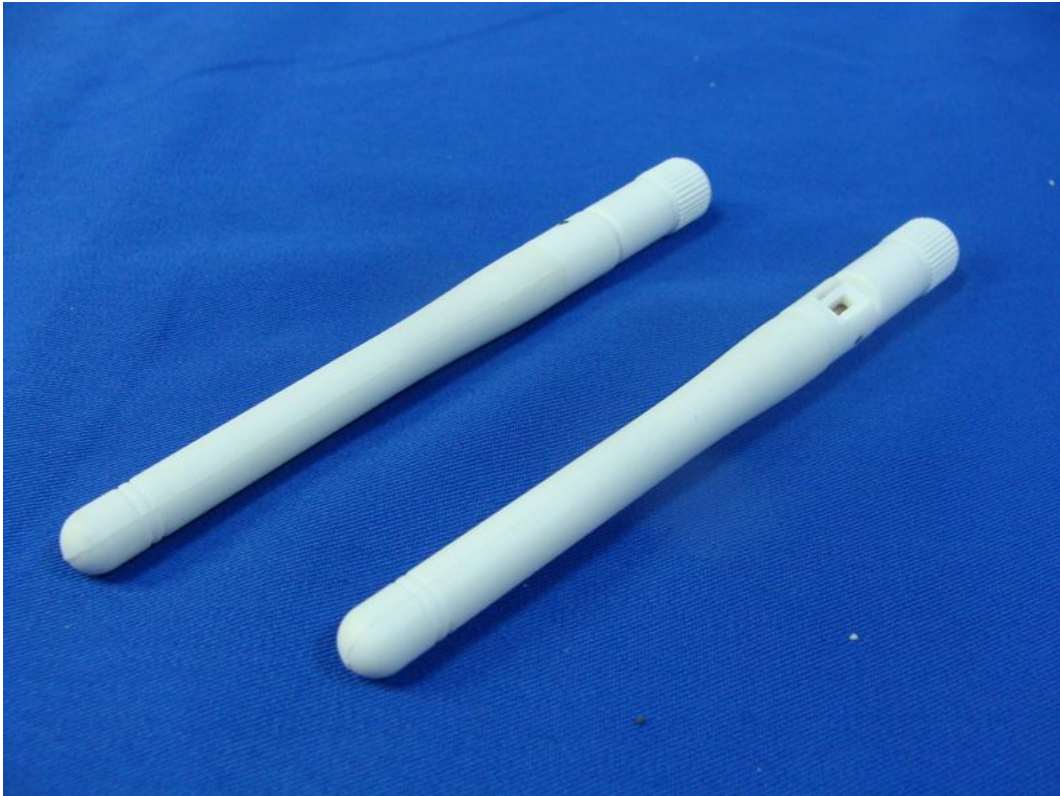
(17) EUT Photo



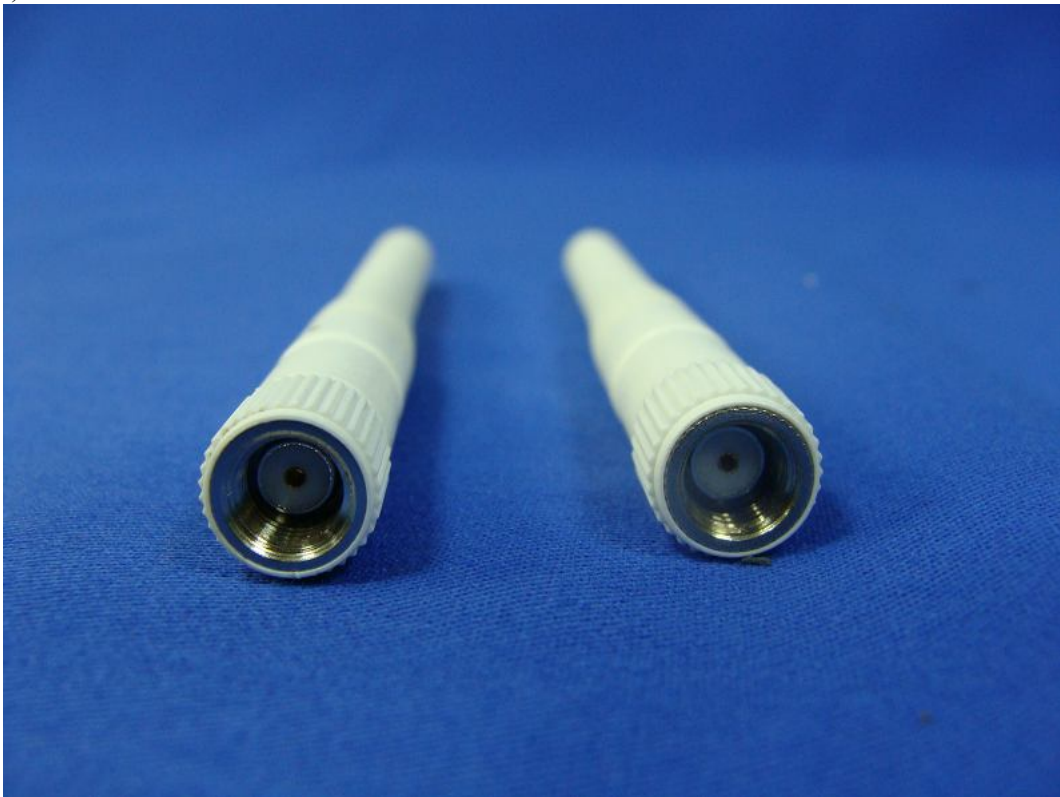
(18) EUT Photo



(19) EUT Photo



(20) EUT Photo



(21) EUT Photo



(22) EUT Photo



(23) EUT Photo

