

## FCC TEST REPORT

On Behalf of

SEELINK TECHNOLOGY CO., LIMITED

IP Camera

Model No.: BX-P041

Additional Model No.: Please refer to page 5.

Prepared for : SEELINK TECHNOLOGY CO., LIMITED  
Address : Bld 5, Minxing Industrial Park, Minzhi, Longhua Dist,  
ShenZhen 518131

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.  
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Date of receipt of test sample : March 10, 2015  
Number of tested samples : 1  
Serial number : Prototype  
Date of Test : March 10, 2015 - April 25, 2015  
Date of Report : April 25, 2015

**FCC TEST REPORT****FCC CFR 47 PART 15 Subpart B: 2014****Report Reference No. .... : LCS1504271289E**

Date Of Issue ..... : April 25, 2015

**Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.**Address ..... : 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue,  
Bao'an District, Shenzhen, Guangdong, ChinaTesting Location/ Procedure ..... : Full application of Harmonised standards ☒  
Partial application of Harmonised standards ☐  
Other standard testing method ☐**Applicant's Name..... : SEELINK TECHNOLOGY CO., LIMITED**Address ..... : Bld 5, Minxing Industrial Park, Minzhi, Longhua Dist, ShenZhen  
518131**Test Specification**

Standard ..... : FCC CFR 47 PART 15 Subpart B: 2014, ANSI C63.4-2014

Test Report Form No. .... : LCSEMC-1.0

TRF Originator ..... : Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF ..... : Dated 2011-03

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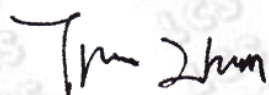
**Test Item Description. .... : IP Camera**

Trade Mark ..... : BOXKAM

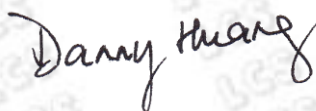
Model/Type Reference..... : BX-P041

Ratings ..... : INPUT: 100-240V~50/60Hz 500mA

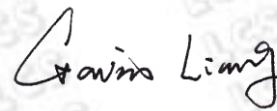
OUTPUT: 12V, 2000mA

**Result ..... : Positive****Compiled by:**

Tree Zhan/ File administrators

**Supervised by:**

Danny Huang/ Technique principal

**Approved by:**

Gavin Liang/ Manager

## FCC -- TEST REPORT

**Test Report No. : LCS1504271289E**April 25, 2015

Date of issue

Type / Model..... : BX-P041

EUT..... : IP Camera

**Applicant..... : SEELINK TECHNOLOGY CO., LIMITED**Address..... : Bld 5, Minxing Industrial Park, Minzhi, Longhua Dist, ShenZhen  
518131

Telephone..... :

Fax..... :

**Manufacturer..... : SEELINK TECHNOLOGY CO., LIMITED**Address..... : Bld 5, Minxing Industrial Park, Minzhi, Longhua Dist, ShenZhen  
518131

Telephone..... :

Fax..... :

**Factory..... : SEELINK TECHNOLOGY CO., LIMITED**Address..... : Bld 5, Minxing Industrial Park, Minzhi, Longhua Dist, ShenZhen  
518131

Telephone..... :

Fax..... :

**Test Result** according to the standards on page 5: **Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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# 1. SUMMARY OF STANDARDS AND RESULTS

## 1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	FCC CFR 47 PART 15 Subpart B: 2014	Class B	PASS
Radiated disturbance	FCC CFR 47 PART 15 Subpart B: 2014	Class B	PASS
N/A is an abbreviation for Not Applicable.			



## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

EUT	: IP Camera
Model Number	: BX-P0411
Power Supply	: INPUT: 100-240V~50/60 500mA OUTPUT: 12V, 2000mA
WIFI	
Frequency Range	: 2412.00-2462.00MHz
Channel Spacing	: 5MHz
Channel Number	: 11 Channels for 20MHz Bandwidth 7 Channels for 40MHz Bandwidth
Modulation	: IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)
Technology	IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM,QPSK,BPSK)
Data Rates	: IEEE 802.11b: 1-11Mbps IEEE 802.11g: 6-54Mbps IEEE 802.11n: MCS0-MCS7
Antenna Description	: PIFA antenna, 2.0dBi

Additional models No.			
BX-P021	BX-P031	BX-P051	BX-P061
BX-F011	BX-F021	BX-F021K	BX-F031
BX-W021	BX-W051	BX-W151	BX-W161
BX-W141	BX-W171	BX-I111	BX-I151
BX-I161	BX-I061	--	--
Remark: PCB board, structure and internal of these model(s) are the same, So no additional models were tested.			

### 2.2. Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	Certificate
--	Switching Adapter	XED-2013S	--	VOC
Lenovo	Note Book	B470	--	DOC

### 2.3. External I/O Cable

I/O Port Description	Quantity	Cable
I/O Alarm	1	N/A
AUDIO Port	1	N/A
RJ45 Slot	1	1.0m
DC IN	1	N/A
TF Card Slot	1	N/A

## 2.4. Description of Test Facility

EMC Lab. : CNAS Registration Number. is L4595.  
FCC Registration Number. is 899208.  
Industry Canada Registration Number. is 9642A-1.  
VCCI Registration Number. is C-4260 and R-3804.  
ESMD Registration Number. is ARCB0108.  
UL Registration Number. is 100571-492.  
TUV SUD Registration Number. is SCN1081.  
TUV RH Registration Number. is UA 50296516-001

## 2.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

## 2.6. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Radiation Uncertainty :	30MHz~200MHz	$\pm 2.96\text{dB}$	(1)
	200MHz~1000MHz	$\pm 3.10\text{dB}$	(1)
	1000MHz~6000MHz	$\pm 4.10\text{dB}$	(1)
Conduction Uncertainty :	150kHz~30MHz	$\pm 1.63\text{dB}$	(1)
Power disturbance :	30MHz~300MHz	$\pm 1.60\text{dB}$	(1)

1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

## 2.7. Description Of Test Modes

There was 2 test Modes. TM1 to TM2 were shown below:

TM1: Normal Operating;

TM2: Idle;

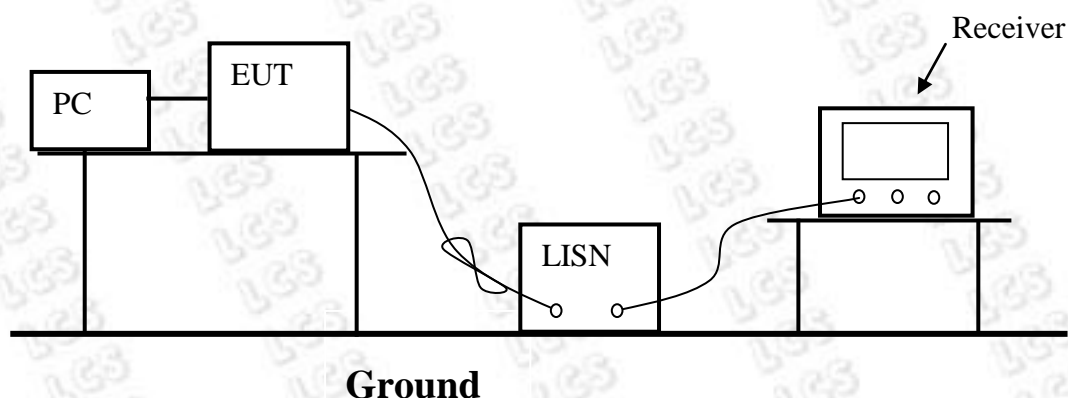
### 3. POWER LINE CONDUCTED MEASUREMENT

#### 3.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2014/06/18
2	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	101840	2014/06/18
3	Artificial Mains	ROHDE & SCHWARZ	ENV216	101288	2014/06/18
4	EMI Test Software	AUDIX	E3	N/A	2014/06/18
5	Coaxial Cable	ACE	S112	N/A	2014-06-18

#### 3.2. Block Diagram of Test Setup



#### 3.3. Power Line Conducted Emission Measurement Limits (Class B)

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 ~ 0.50	66-56	56-46
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. \*Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

#### 3.4. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.



### 3.5. Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown as Section 3.2.

3.5.2. Turn on the power of all equipment.

3.5.3. Let the EUT work in test mode (ON) and measure it.

### 3.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2014 on Conducted Emission Measurement.

The bandwidth of test receiver is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

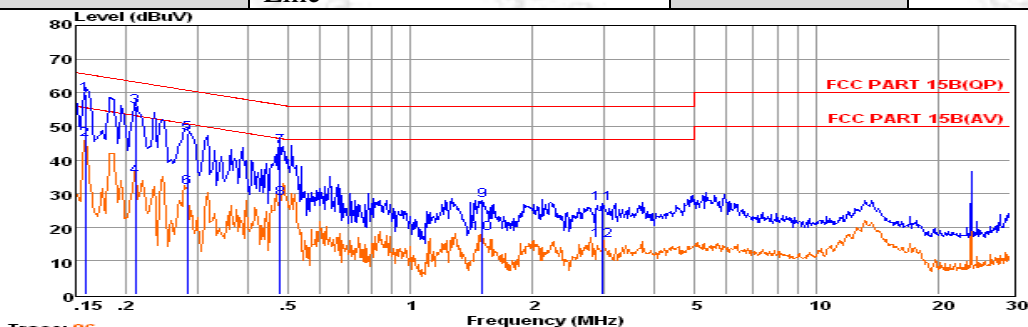
### 3.7. Power Line Conducted Emission Measurement Results

**PASS.**

All the scanning waveforms for Conducted Emission Measurement are refer to the next page.

Model No.	IP Camera	Test Mode	Data transmitting
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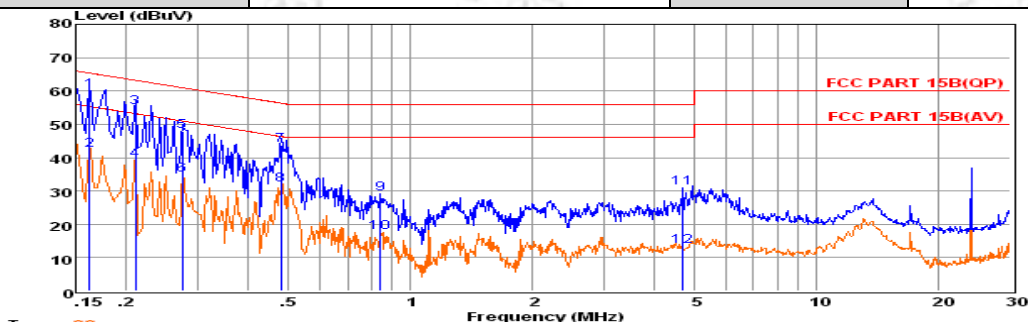
Environmental Conditions	24°C, 56% RH	Test Engineer	Tree
Pol	Line		



	Freq	Reading	LishFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.15816	39.86	9.58	0.02	10.00	59.46	65.56	-6.10	QP
2	0.15817	26.62	9.58	0.02	10.00	46.22	55.56	-9.34	Average
3	0.21055	36.29	9.63	0.03	10.00	55.95	63.18	-7.23	QP
4	0.21056	15.55	9.63	0.03	10.00	35.21	53.18	-17.97	Average
5	0.28178	28.15	9.63	0.03	10.00	47.81	60.76	-12.95	QP
6	0.28179	12.14	9.63	0.03	10.00	31.80	50.76	-18.96	Average
7	0.47865	24.50	9.62	0.04	10.00	44.16	56.36	-12.20	QP
8	0.47866	9.02	9.62	0.04	10.00	28.68	46.36	-17.68	Average
9	1.50328	8.23	9.64	0.05	10.00	27.92	56.00	-28.08	QP
10	1.50378	-1.59	9.64	0.05	10.00	18.10	46.00	-27.90	Average
11	2.97764	7.39	9.64	0.06	10.00	27.09	56.00	-28.91	QP
12	2.97870	-3.71	9.64	0.06	10.00	15.99	46.00	-30.01	Average

Remarks: 1. Measured = Reading + Lish Factor + Cable Loss + Atten\_Fac.  
2. The emission levels that are 20dB below the official limit are not reported.

Model No.	IP Camera	Test Mode	Data transmitting
Environmental Conditions	24°C, 56% RH	Test Engineer	Tree
Pol	Neutral		



	Freq	Reading	LishFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.16241	40.37	9.67	0.02	10.00	60.06	65.34	-5.28	QP
2	0.16243	22.64	9.67	0.02	10.00	42.33	55.34	-13.01	Average
3	0.21055	35.33	9.59	0.03	10.00	54.95	63.18	-8.23	QP
4	0.21056	19.63	9.59	0.03	10.00	39.25	53.18	-13.93	Average
5	0.27442	28.31	9.60	0.03	10.00	47.94	60.98	-13.04	QP
6	0.27443	15.11	9.60	0.03	10.00	34.74	50.98	-16.24	Average
7	0.48119	24.11	9.62	0.04	10.00	43.77	56.32	-12.55	QP
8	0.48120	12.14	9.62	0.04	10.00	31.80	46.32	-14.52	Average
9	0.84378	9.58	9.63	0.04	10.00	29.25	56.00	-26.75	QP
10	0.84379	-2.24	9.63	0.04	10.00	17.43	46.00	-28.57	Average
11	4.69635	11.10	9.66	0.06	10.00	30.82	56.00	-25.18	QP
12	4.69653	-6.41	9.66	0.06	10.00	13.31	46.00	-32.69	Average

Remarks: 1. Measured = Reading + Lish Factor + Cable Loss + Atten\_Fac.  
2. The emission levels that are 20dB below the official limit are not reported.

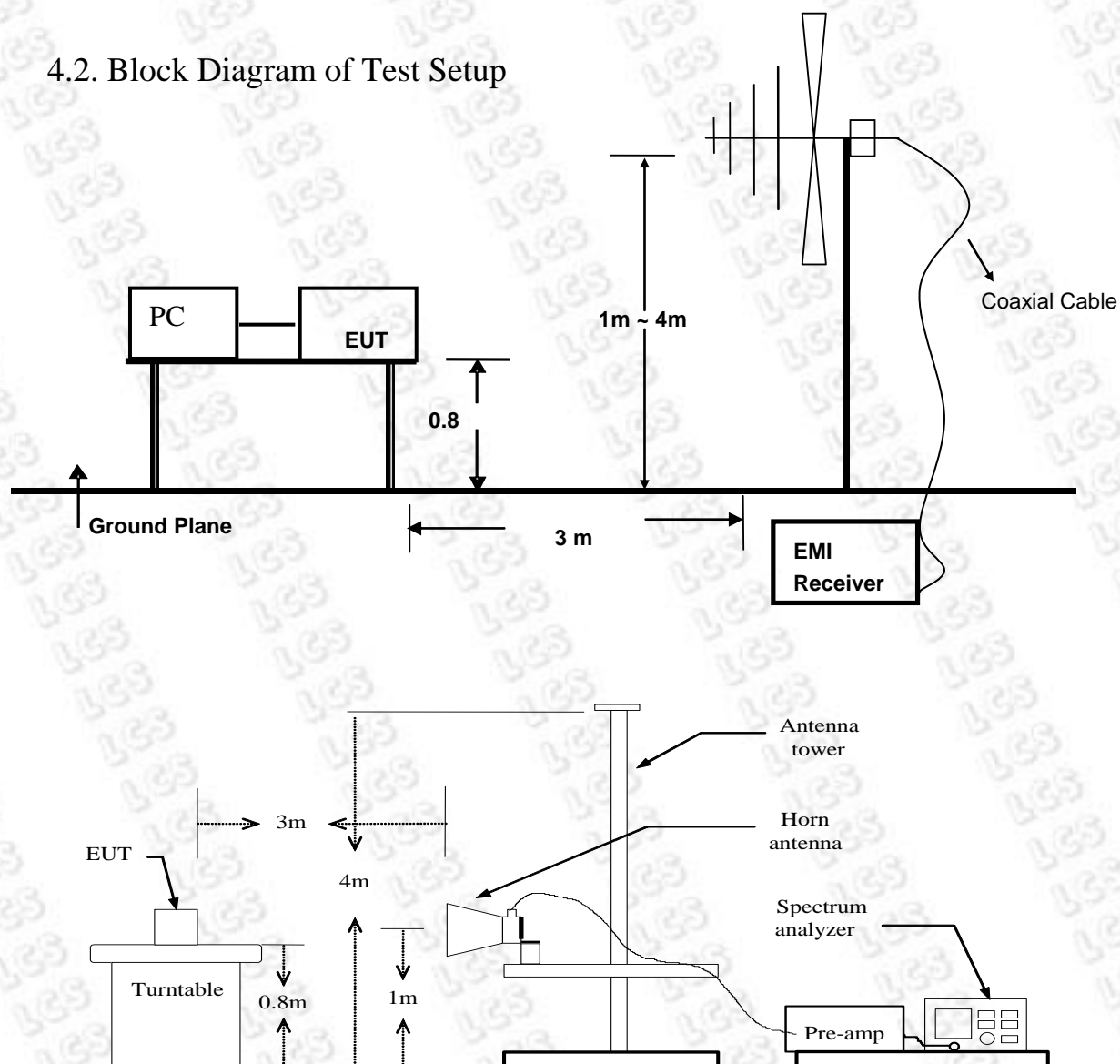
## 4. RADIATED EMISSION MEASUREMENT

### 4.1. Test Equipment

The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2015/02/04
2	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	101840	2014/06/18
3	Log per Antenna	SCHWARZBECK	VULB9163	9163-470	2014/06/18
4	EMI Test Software	AUDIX	E3	N/A	2014/06/18
5	Positioning Controller	MF	MF-7082	/	2014/06/18
6	Coaxial Cable	ACE	S112	N/A	2014-06-18
7	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2014-06-18

### 4.2. Block Diagram of Test Setup



### 4.3. Radiated Emission Limit (Class B)

Limits for radiated disturbance Blow 1GHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46
960 ~ 1000	3	500	54
1000 ~ 6000	3	12500	74
Remark : (1) Emission level $(\text{dB})\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$ (2) The smaller limit shall apply at the cross point between two frequency bands. (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.			

### 4.4. EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 4.5. Operating Condition of EUT

4.5.1. Setup the EUT as shown in Section 4.2.

4.5.2. Let the EUT work in test mode (on) and measure it.

### 4.6. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2014 on radiated emission measurement.

The bandwidth of the EMI test receiver is set at 120kHz, 1000kHz.

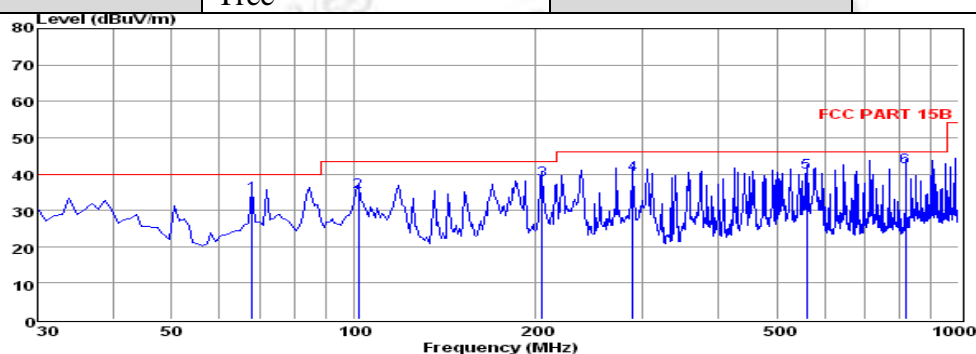
The frequency range from 30MHz to 1000MHz is checked.

### 4.7. Radiated Emission Noise Measurement Result

**PASS.**

The scanning waveforms please refer to the next page. Only record the worst results.

<b>Model No.</b>	IP Camera	<b>Test Mode</b>	Data transmitting
<b>Environmental Conditions</b>	24°C, 56% RH	<b>Detector Function</b>	Quasi-peak
<b>Pol</b>	Vertical	<b>Distance</b>	3m
<b>Test Engineer</b>	Tree		



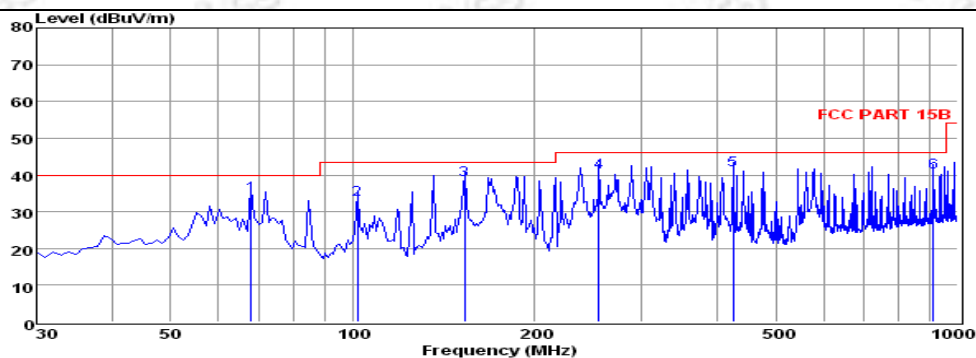
Env./Ins: 24°C/56%  
 EUT: IP Camera  
 M/N: BX-P041  
 Power Rating: AC 120V/60Hz  
 Test Mode: Data transmitting  
 Operator: Tree  
 Memo:  
 pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	67.83	24.03	0.51	9.54	34.08	40.00	-5.92	QP
2	101.78	21.53	0.60	13.00	35.13	43.50	-8.37	QP
3	204.60	26.75	0.99	10.71	38.45	43.50	-5.05	QP
4	288.99	26.06	1.05	12.85	39.96	46.00	-6.04	QP
5	560.59	21.41	1.43	17.71	40.55	46.00	-5.45	QP
6	816.67	19.97	1.79	20.23	41.99	46.00	-4.01	QP

Note: 1. All readings are Quasi-peak values.  
 2. Measured= Reading + Antenna Factor + Cable Loss  
 3. The emission that ate 20db blow the official limit are not reported

<b>Model No.</b>	IP Camera	<b>Test Mode</b>	Data transmitting
<b>Environmental Conditions</b>	24°C, 56% RH	<b>Detector Function</b>	Quasi-peak
<b>Pol</b>	Horizontal	<b>Distance</b>	3m
<b>Test Engineer</b>	Tree		



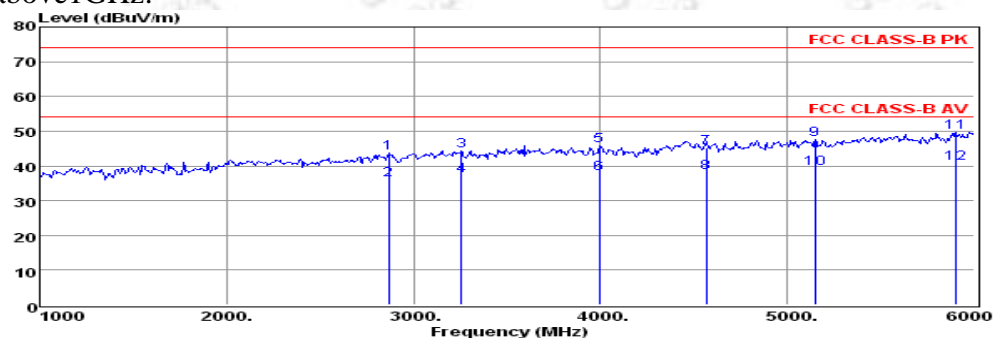


Env./Ins: 24°C/56%  
EUT: IP Camera  
M/N: BX-P041  
Power Rating: AC 120V/60Hz  
Test Mode: Data transmitting  
Operator: Tree  
Memo:  
pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	67.83	24.52	0.51	9.54	34.57	40.00	-5.43	QP
2	101.78	19.67	0.60	13.00	33.27	43.50	-10.23	QP
3	153.19	29.55	0.73	8.39	38.67	43.50	-4.83	QP
4	255.04	27.69	1.02	12.06	40.77	46.00	-5.23	QP
5	424.79	24.67	1.16	15.49	41.32	46.00	-4.68	QP
6	912.70	17.71	1.86	21.17	40.74	46.00	-5.26	QP

Note: 1. All readings are Quasi-peak values.  
2. Measured= Reading + Antenna Factor + Cable Loss  
3. The emission that are 20db below the official limit are not reported

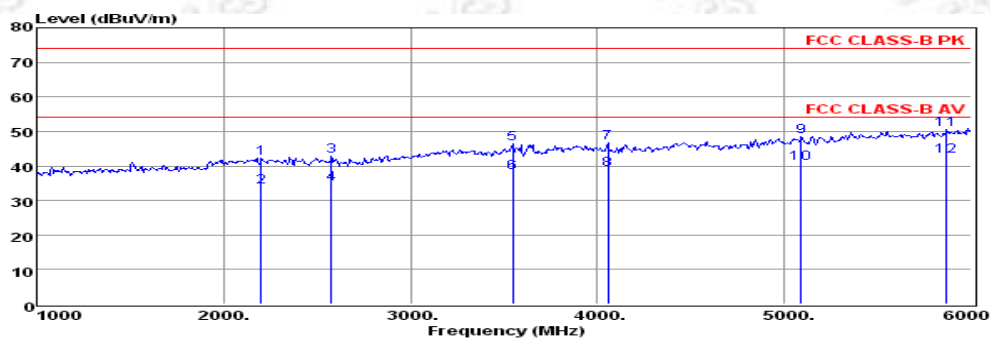
#### The test data above 1GHz:



Env./Ins: 24°C/56%  
EUT: IP Camera  
M/N: BX-P041  
Power Rating: AC 120V/60Hz  
Test Mode: Data transmitting  
Operator: Tree  
Memo:  
pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	2865.00	46.35	5.71	28.82	43.83	74.00	-30.17	Peak
2	2865.10	38.54	5.71	28.82	36.02	54.00	-17.98	Average
3	3255.00	45.07	6.23	30.12	44.46	74.00	-29.54	Peak
4	3255.70	37.74	6.23	30.12	37.13	54.00	-16.87	Average
5	3995.00	42.89	7.19	32.58	45.78	74.00	-28.22	Peak
6	3995.30	34.85	7.19	32.58	37.74	54.00	-16.26	Average
7	4565.00	41.33	7.54	32.71	45.09	74.00	-28.91	Peak
8	4565.50	34.36	7.54	32.71	38.12	54.00	-15.88	Average
9	5150.00	41.87	7.97	34.17	47.51	74.00	-26.49	Peak
10	5150.20	33.68	7.97	34.18	39.33	54.00	-14.67	Average
11	5900.00	41.76	8.79	36.05	49.81	74.00	-24.19	Peak
12	5900.10	32.62	8.79	36.05	40.67	54.00	-13.33	Average

Note: 1. All readings are Quasi-peak values.  
2. Measured= Reading + Antenna Factor + Cable Loss  
3. The emission that are 20db below the official limit are not reported



Env./Ins: 24 °C / 56%  
EUT: IP Camera  
M/N: BX-P041  
Power Rating: AC 120V/60Hz  
Test Mode: Data transmitting  
Operator: Tree  
Memo:  
pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	2200.00	45.98	4.78	28.50	42.18	74.00	-31.82	Peak
2	2200.80	37.83	4.78	28.50	34.03	54.00	-19.97	Average
3	2575.00	46.68	5.31	27.85	42.73	74.00	-31.27	Peak
4	2575.30	38.79	5.31	27.85	34.84	54.00	-19.16	Average
5	3545.00	45.52	6.61	31.08	46.45	74.00	-27.55	Peak
6	3545.20	37.22	6.61	31.08	38.15	54.00	-15.85	Average
7	4055.00	43.91	7.23	32.56	46.83	74.00	-27.17	Peak
8	4055.50	35.95	7.23	32.56	38.88	54.00	-15.12	Average
9	5090.00	43.12	7.90	34.02	48.57	74.00	-25.43	Peak
10	5090.70	35.41	7.90	34.03	40.87	54.00	-13.13	Average
11	5870.00	42.68	8.76	35.97	50.61	74.00	-23.39	Peak
12	5870.10	34.85	8.76	35.98	42.79	54.00	-11.21	Average

Note: 1. All readings are Quasi-peak values.  
2. Measured= Reading + Antenna Factor + Cable Loss  
3. The emission that at 20db below the official limit are not reported

-----THE END OF REPORT-----