

JAPAN EMC Test Report



(Declaration of Conformity)
For
Electromagnetic Interference
Of

Product : IP Camera

Trade Mark : Sricam

Model Number : SP019, SP006, SP007, SP008, SP009, SP010,
SP011, SP015, SP017, SP018, SP020, SP023,
SP024, SP025, SP026, SP027, SP028, NVS001,
NVS002

Prepared for

Shenzhen Sricctv Technology Co., Ltd.

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's Name..... : Shenzhen Sricctv Technology Co., Ltd.

Address : The 4th Floor of Building46, 5th Industrial Park of
HuaideCuigang, FuyongStreet, Bao'an, Shenzhen, China

Manufacture's Name..... : Shenzhen Sricctv Technology Co., Ltd.

Address : The 4th Floor of Building46, 5th Industrial Park of
HuaideCuigang, FuyongStreet, Bao'an, Shenzhen, China

Product description

Product name : IP Camera

Model and/or type reference : SP019, SP006, SP007, SP008, SP009, SP010, SP011, SP015,
SP017, SP018, SP020, SP023, SP024, SP025, SP026, SP027,
SP028, NVS001, NVS002

Standards : J55032(H29)

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with Paragraph 1 of Article 8 requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test..... :

Date (s) of performance of tests : 18 May. 2018 ~01 Jun. 2018

Date of Issue..... : 01 Jun. 2018

Test Result..... : **Pass**

Testing Engineer :

Allen. Huang

(Allen Huang)

Technical Manager :

Sky Zhang

(Sky Zhang)

Authorized Signatory :

Sam. Chen

(Sam Chen)



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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
J55032(H29)	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

(2) For client's request and manual description, the test will not be executed.

1.1 TEST FACILITY

Shenzhen NTEK Testing Technology Co., Ltd.

Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street Bao'an District, Shenzhen 518126 P.R. China

CNAS-Lab. : The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)
The Certificate Registration Number is L5516

IC-Registration : The Certificate Registration Number is 9270A-1

FCC- Accredited : Test Firm Registration Number: 463705
Designation Number: CN1184

A2LA-Lab. : The Certificate Registration Number is 4298.01
This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

Test Item	Measurement Frequency Range	K	U(dB)
AC Mains Conducted Emission	0.009kHz ~ 0.15MHz	2	2.66
AC Mains Conducted Emission	0.15MHz ~ 30MHz	2	2.80
Telecom Conducted Emission (Cat 3)	0.15MHz ~ 30MHz	2	2.40
Telecom Conducted Emission (Cat 5)	0.15MHz ~ 30MHz	2	2.58
Radiated Emission	30MHz ~ 1000MHz	2	2.64
Radiated Emission	1000MHz ~ 6000MHz	2	2.40
Radiated Emission	6000MHz ~ 18000MHz	2	2.52
Power Clamp	30MHz ~ 300MHz	2	2.20

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	IP Camera	
Model Name.	SP019	
Additional Model Number(s)	SP006, SP007, SP008, SP009, SP010, SP011, SP015, SP017, SP018, SP020, SP023, SP024, SP025, SP026, SP027, SP028, NVS001, NVS002	
Model Difference	All models are identical except mode name and appearance.	
Product Description	The EUT is an IP Camera.	
	Operating frequency:	30 MHz (Declaration by factory)
	Connecting I/O port:	N/A
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Power Source	AC Voltage	
Power Rating	Adapter Model: KA1503-0502000JPS Adapter Rating: Input: AC 100-240V, 50/60Hz, 0.35A Output: DC 5V, 2000mA	

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

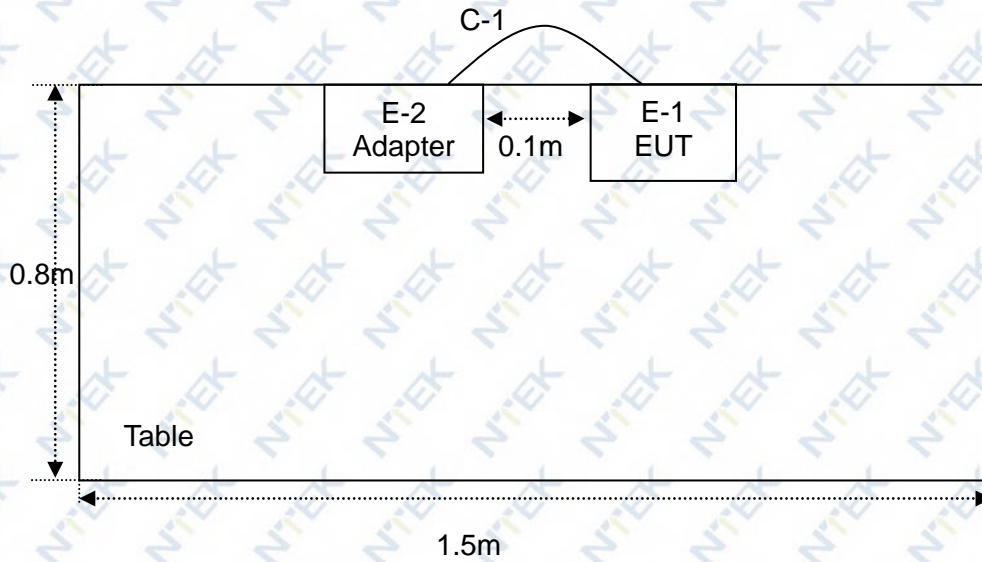
Pretest Mode	Description
Mode 1	Working
Mode 2	LAN

For Conducted Test	
Final Test Mode	Description
Mode 1	Working
Mode 2	LAN

For Radiated Test	
Final Test Mode	Description
Mode 1	Working

2.3 DESCRIPTION OF TEST SETUP

Mode RE: Burning Test



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	IP Camera	Sricam	SP019	N/A	EUT
E-2	Adapter	N/A	KA1503-0502000JP S	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	150cm	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.

2.5 MEASUREMENT INSTRUMENTS LIST

2.5.1 CONDUCTED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Low frequency cable	N/A	C-01	N/A	Jun. 06, 2017	Jun. 05, 2020	3 years
2	LISN	R&S	ENV216	101313	Apr. 09, 2018	Apr. 08, 2019	1 year
3	LISN	R&S	ENV216	101490	Oct. 19, 2017	Oct. 18, 2018	1 year
4	LISN	SCHWARZBECK	NNLK 8129	8129245	Jun. 06, 2017	Jun. 05, 2018	1 year
5	50Ω Switch	Anritsu	MP59B	6200983704	Jun. 06, 2017	Jun. 05, 2018	1 year
6	EMI Test Receiver	R&S	ESCI	101160	Jun. 06, 2017	Jun. 05, 2018	1 year
7	Impedance Stabilisation Network	SCHWARZBECK	NTFM8158	8158-0090	Jun. 06, 2017	Jun. 05, 2018	1 year
8	Impedance Stabilisation Network	SCHWARZBECK	ISN S8	29	Aug. 07, 2017	Aug. 06, 2018	1 year

2.5.2 RADIATED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Antenna Mast	SKET	N/A	N/A	N/A	N/A	N/A
2	Antenna Mast	EM	SC100	N/A	Apr. 26, 2017	Apr. 25, 2020	3 years
3	Test Cable	N/A	R-01	N/A	Aug. 08, 2016	Aug. 07, 2019	3 years
4	Test Cable	N/A	R-03	N/A	Jun. 26, 2016	Jun. 25, 2019	3 years
5	Bilog Antenna	TESEQ	CBL6111D	31216	Apr. 08, 2018	Apr. 07, 2019	1 year
6	Broadband Horn Antenna	EM	EM-AH-10180	2011071402	Apr. 08, 2018	Apr. 07, 2019	1 year
7	Spectrum Analyzer	Agilent	E4440A	MY41000130	Mar. 28, 2018	Mar. 28, 2019	1 year
8	Pre-Amplifier	EMC	EMC051835SE	980246	Aug. 07, 2017	Aug. 06, 2018	1 year
9	50Ω Switch	Anritsu	MP59B	6200983705	Jun. 06, 2017	Jun. 05, 2018	1 year
10	EMI Test Receiver	R&S	ESCI	101160	Jun. 06, 2017	Jun. 05, 2018	1 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150kHz-30MHz)

FREQUENCY (MHz)		
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

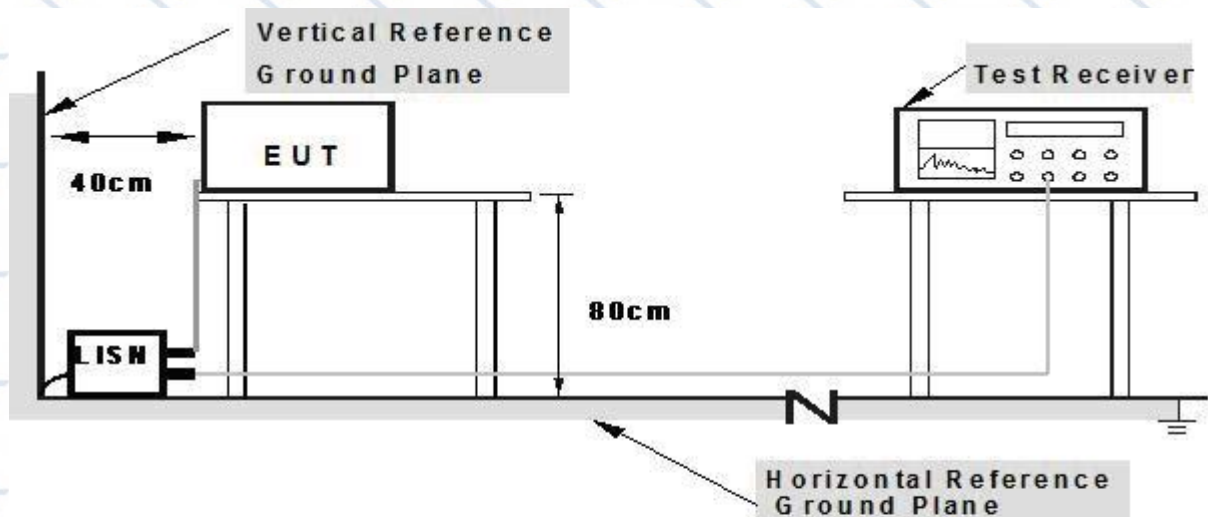
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.009 MHz
Stop Frequency	30 MHz
IF Bandwidth	200Hz and 9 kHz

3.1.2 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.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



Note: 1.Support units were connected to second LISN.

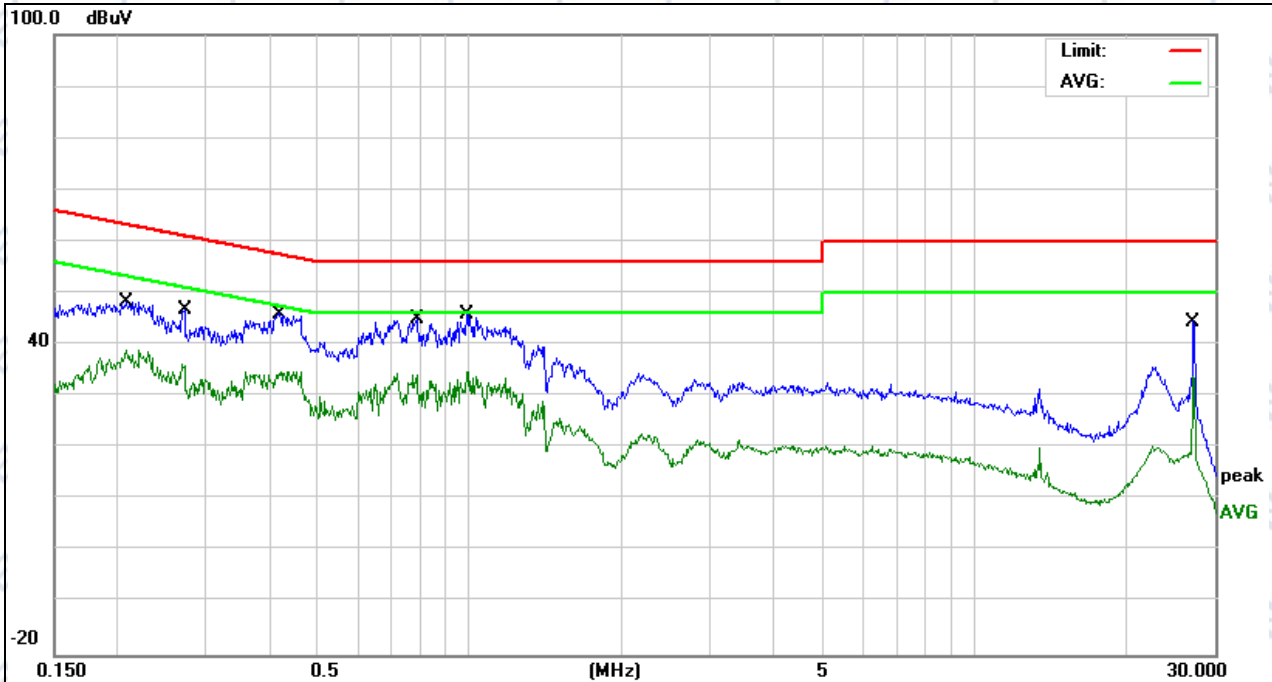
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.1.5 TEST RESULTS

EUT :	IP Camera	Model Name :	SP019
Temperature :	23°C	Relative Humidity :	55%
Pressure :	1010hPa	Test Date :	2018-05-29
Test Mode :	Working	Phase :	L
Test Voltage :	AC 100V/60Hz		

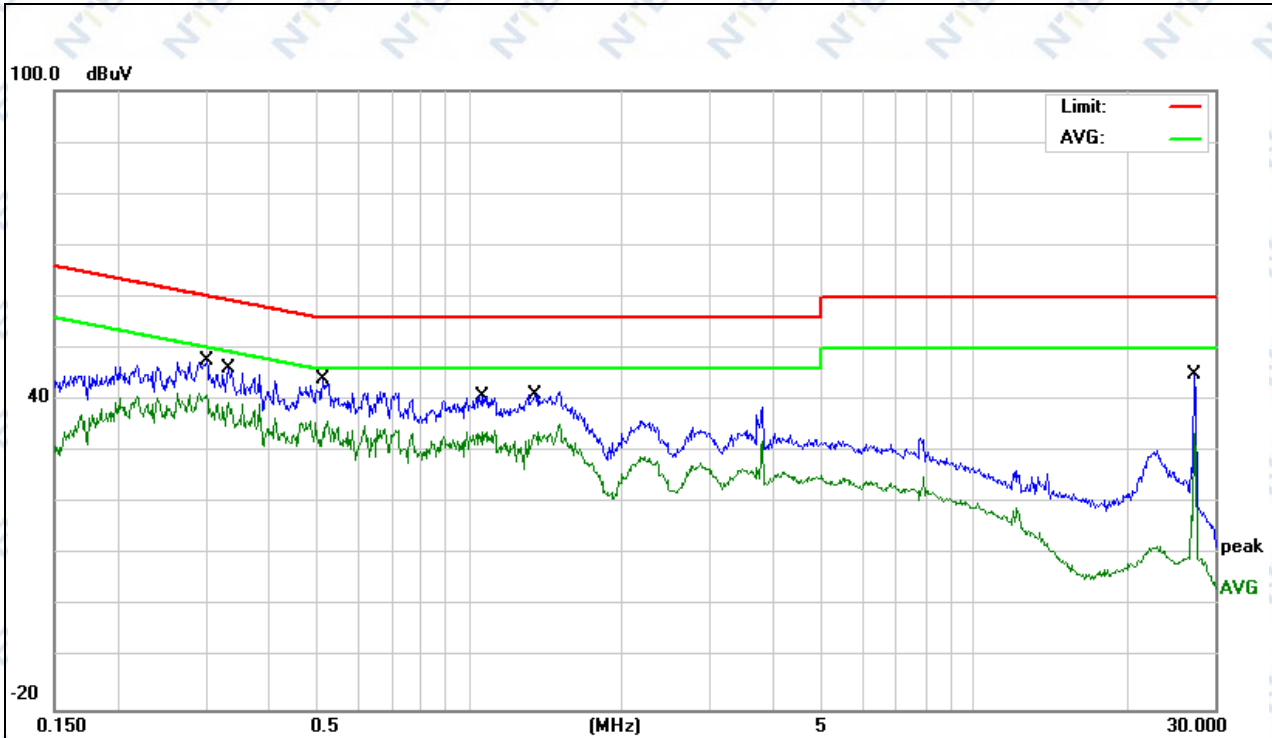


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2083	38.58	9.82	48.40	63.27	-14.87	QP	
2		0.2083	29.18	9.82	39.00	53.27	-14.27	AVG	
3		0.2714	36.98	9.82	46.80	61.07	-14.27	QP	
4		0.2714	26.46	9.82	36.28	51.07	-14.79	AVG	
5		0.4192	36.17	9.83	46.00	57.46	-11.46	QP	
6		0.4192	24.88	9.83	34.71	47.46	-12.75	AVG	
7		0.7860	35.04	9.86	44.90	56.00	-11.10	QP	
8		0.7860	24.27	9.86	34.13	46.00	-11.87	AVG	
9	*	0.9858	35.97	9.93	45.90	56.00	-10.10	QP	
10		0.9858	24.90	9.93	34.83	46.00	-11.17	AVG	
11		27.1700	34.18	10.32	44.50	60.00	-15.50	QP	
12		27.1700	23.44	10.32	33.76	50.00	-16.24	AVG	

Remark:

Factor = Insertion Loss + Cable Loss.

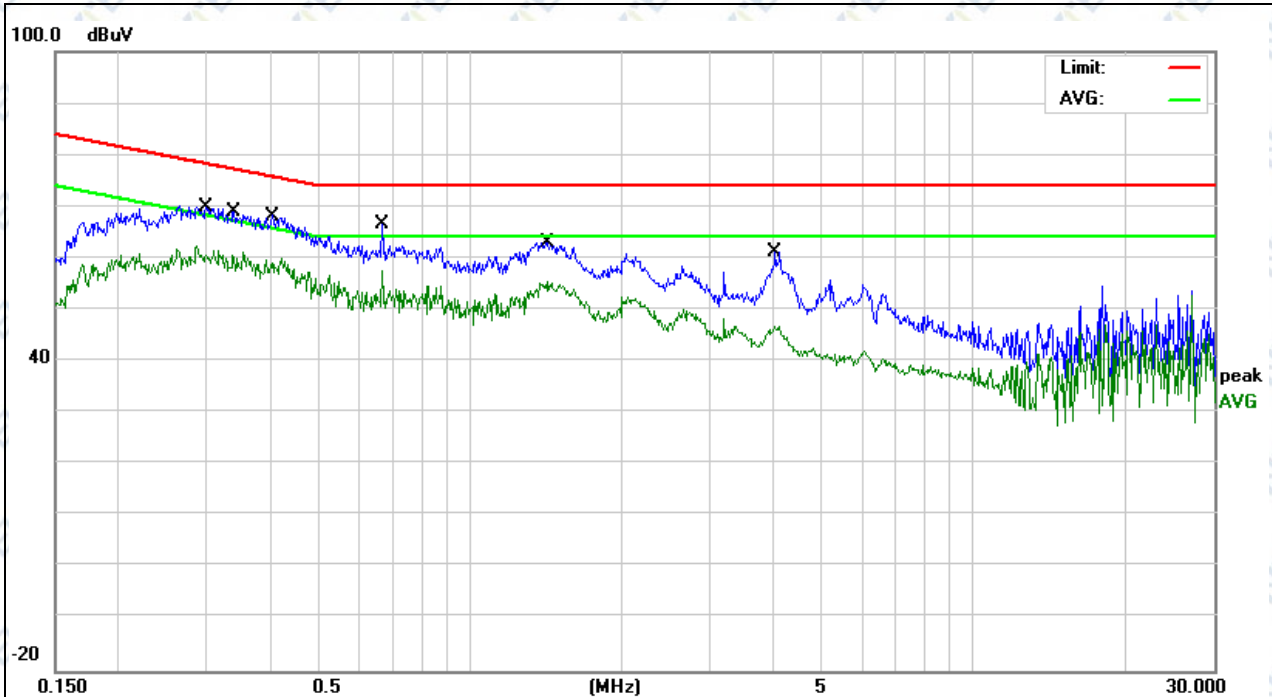
EUT :	IP Camera	Model Name :	SP019
Temperature :	23°C	Relative Humidity :	55%
Pressure :	1010hPa	Test Date :	2018-05-29
Test Mode :	Working	Phase :	N
Test Voltage :	AC 100V/60Hz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3002	37.68	9.92	47.60	60.23	-12.63	QP	
2	*	0.3002	31.25	9.92	41.17	50.23	-9.06	AVG	
3		0.3320	36.28	9.92	46.20	59.40	-13.20	QP	
4		0.3320	29.53	9.92	39.45	49.40	-9.95	AVG	
5		0.5100	34.07	9.93	44.00	56.00	-12.00	QP	
6		0.5100	26.16	9.93	36.09	46.00	-9.91	AVG	
7		1.0580	30.97	9.93	40.90	56.00	-15.10	QP	
8		1.0580	24.15	9.93	34.08	46.00	-11.92	AVG	
9		1.3460	31.07	9.93	41.00	56.00	-15.00	QP	
10		1.3460	25.29	9.93	35.22	46.00	-10.78	AVG	
11		27.4054	34.60	10.40	45.00	60.00	-15.00	QP	
12		27.4054	23.05	10.40	33.45	50.00	-16.55	AVG	

Remark:
Factor = Insertion Loss + Cable Loss.

EUT :	IP Camera	Model Name :	SP019
Temperature :	23℃	Relative Humidity :	55%
Pressure :	1010hPa	Test Date :	2018-05-29
Test Mode :	LAN		
Test Voltage :	AC 100V/60Hz		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2983	60.51	9.29	69.80	78.29	-8.49	QP	
2		0.2983	52.96	9.29	62.25	68.29	-6.04	AVG	
3		0.3392	59.77	9.33	69.10	77.22	-8.12	QP	
4	*	0.3392	52.22	9.33	61.55	67.22	-5.67	AVG	
5		0.4060	58.79	9.41	68.20	75.73	-7.53	QP	
6		0.4060	50.42	9.41	59.83	65.73	-5.90	AVG	
7		0.6700	56.86	9.61	66.47	74.00	-7.53	QP	
8		0.6700	47.94	9.61	57.55	64.00	-6.45	AVG	
9		1.4256	53.25	9.76	63.01	74.00	-10.99	QP	
10		1.4256	45.56	9.76	55.32	64.00	-8.68	AVG	
11		4.0377	51.16	9.99	61.15	74.00	-12.85	QP	
12		4.0377	36.82	9.99	46.81	64.00	-17.19	AVG	

Remark:
Factor = Insertion Loss + Cable Loss.

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT (Below 1000MHz)

FREQUENCY (MHz)	At 10m	At 3m
	dBuV/m	dBuV/m
30 – 230	30	40
230 – 1000	37	47

3.2.2 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (at 3m) dBuV/m		Class B (at 3m) dBuV/m	
	Peak	Avg	Peak	Avg
1000-3000	76	56	70	50
3000-6000	80	60	74	54

Notes:

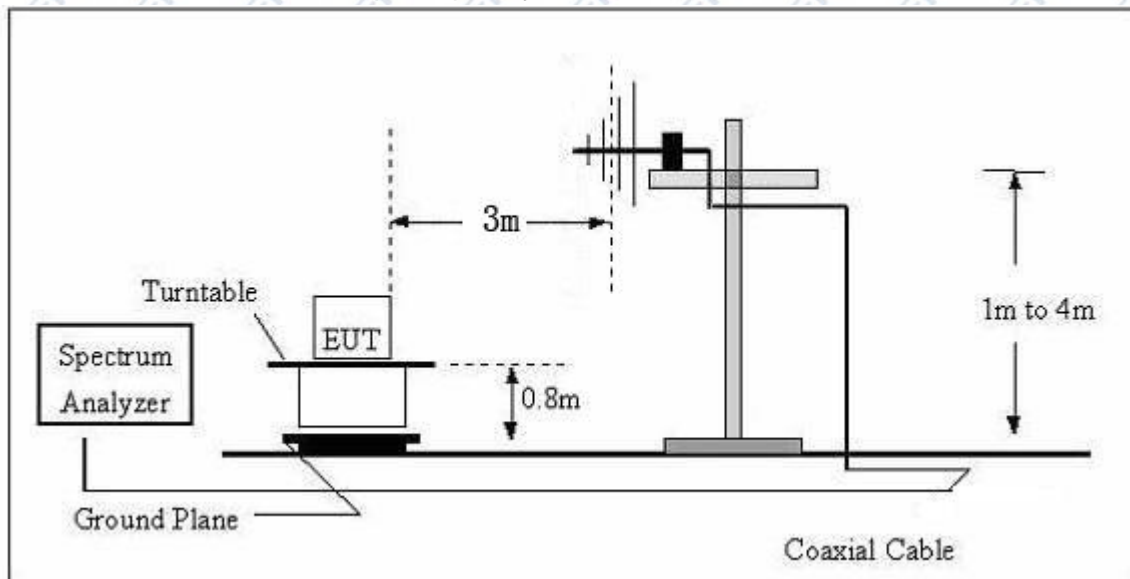
- (1) The limit for radiated test was performed according to as following: J55022.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.3 TEST PROCEDURE

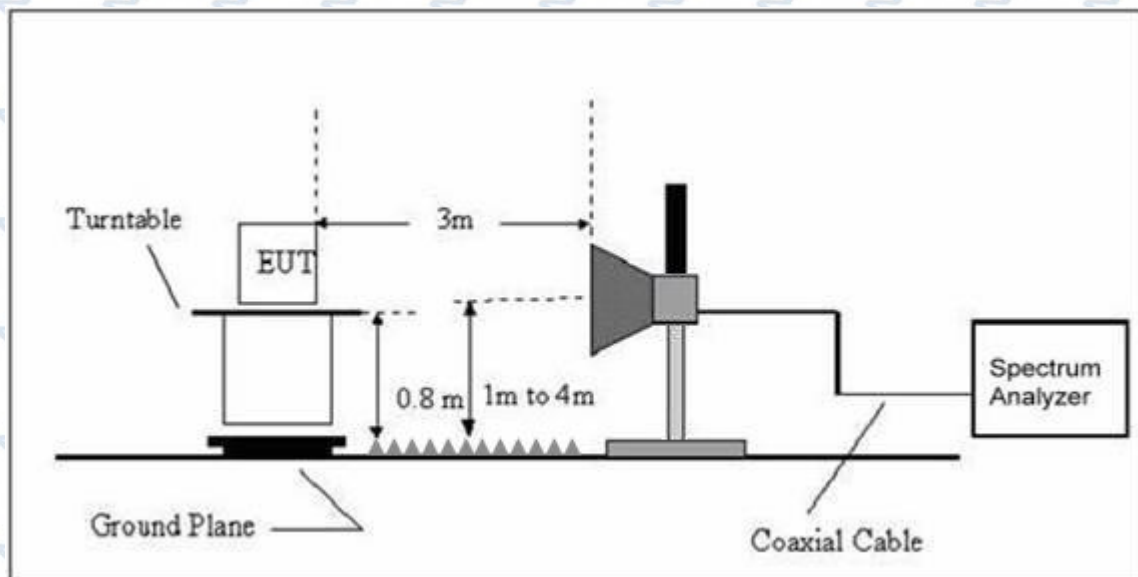
- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; 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.
- d. The initial step in collecting conducted 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, above 1G Average detector mode will be instead.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.4 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Above 30 MHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz

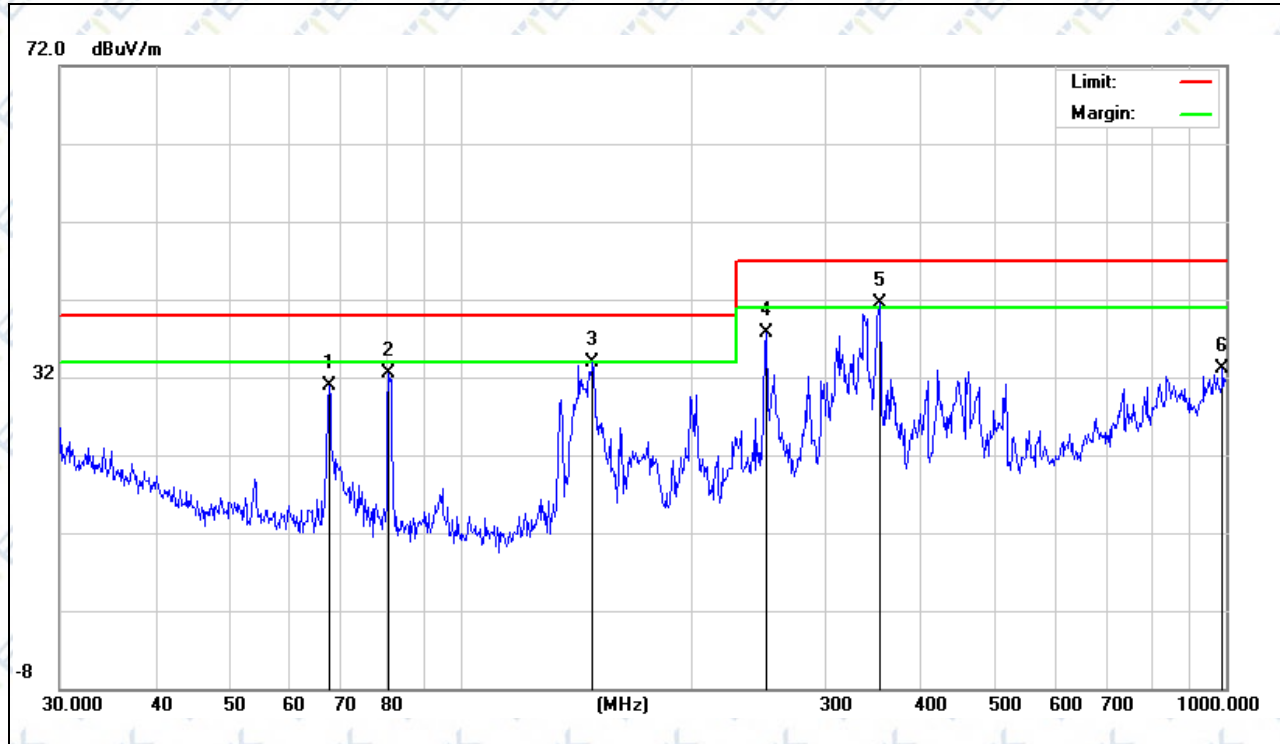


3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS(30MHz-1000MHz)

EUT :	IP Camera	Model Name :	SP019
Temperature :	26℃	Relative Humidity :	71%
Pressure :	1010hPa	Test Date :	2018-05-29
Test Mode :	Working	Polarization :	Horizontal
Test Power :	AC 100V/60Hz		

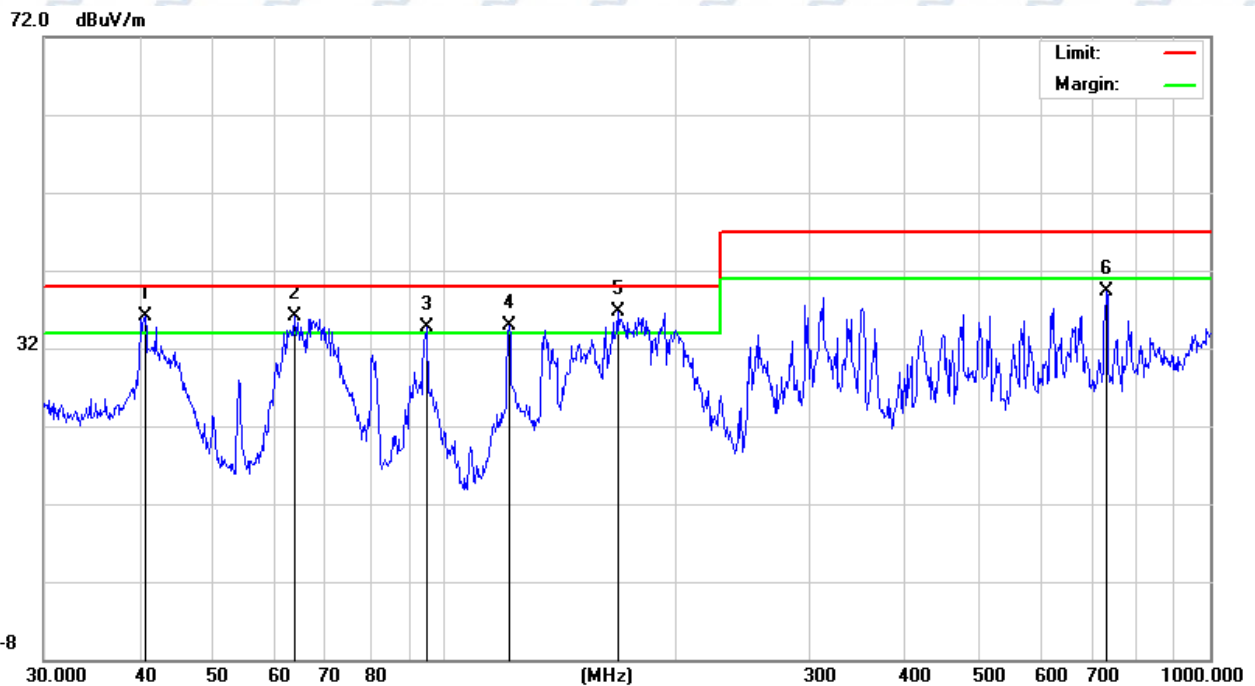


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		67.4381	21.69	9.17	30.86	40.00	-9.14	QP		
2		80.6442	21.11	11.34	32.45	40.00	-7.55	QP		
3		148.9625	22.59	11.29	33.88	40.00	-6.12	QP		
4		251.1804	25.59	12.20	37.79	47.00	-9.21	QP		
5	*	352.9433	27.20	14.39	41.59	47.00	-5.41	QP		
6		989.5353	5.31	27.74	33.05	47.00	-13.95	QP		

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	IP Camera	Model Name :	SP019
Temperature :	26°C	Relative Humidity :	71%
Pressure :	1010hPa	Test Date :	2018-05-29
Test Mode :	Working	Polarization :	Vertical
Test Power :	AC 100V/60Hz		

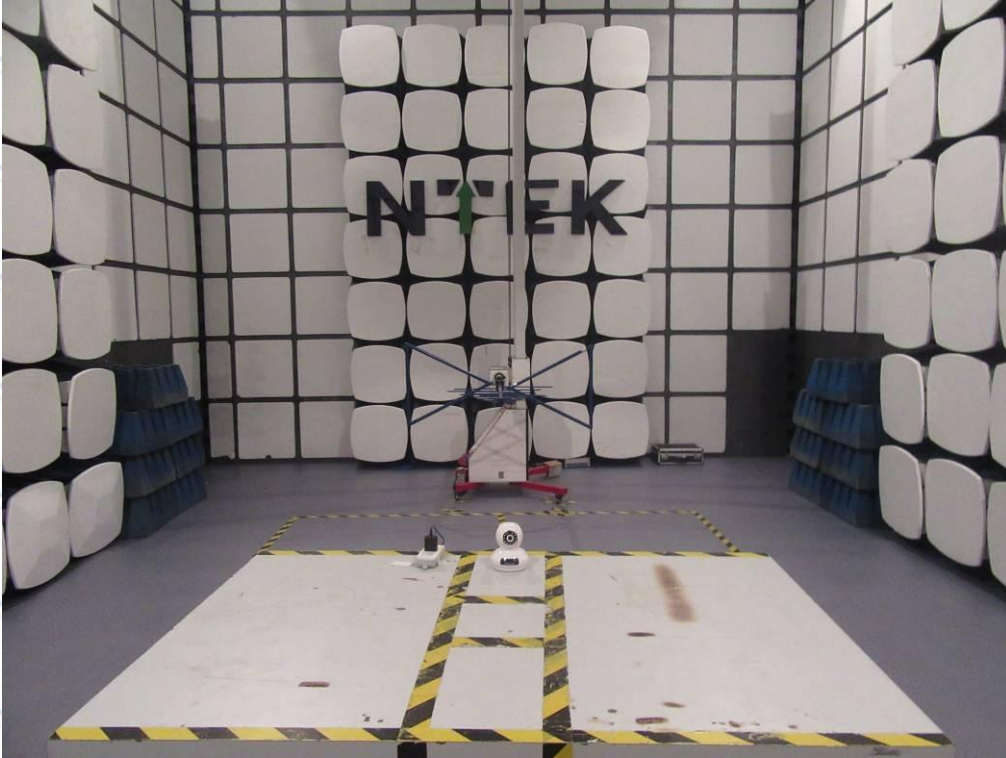


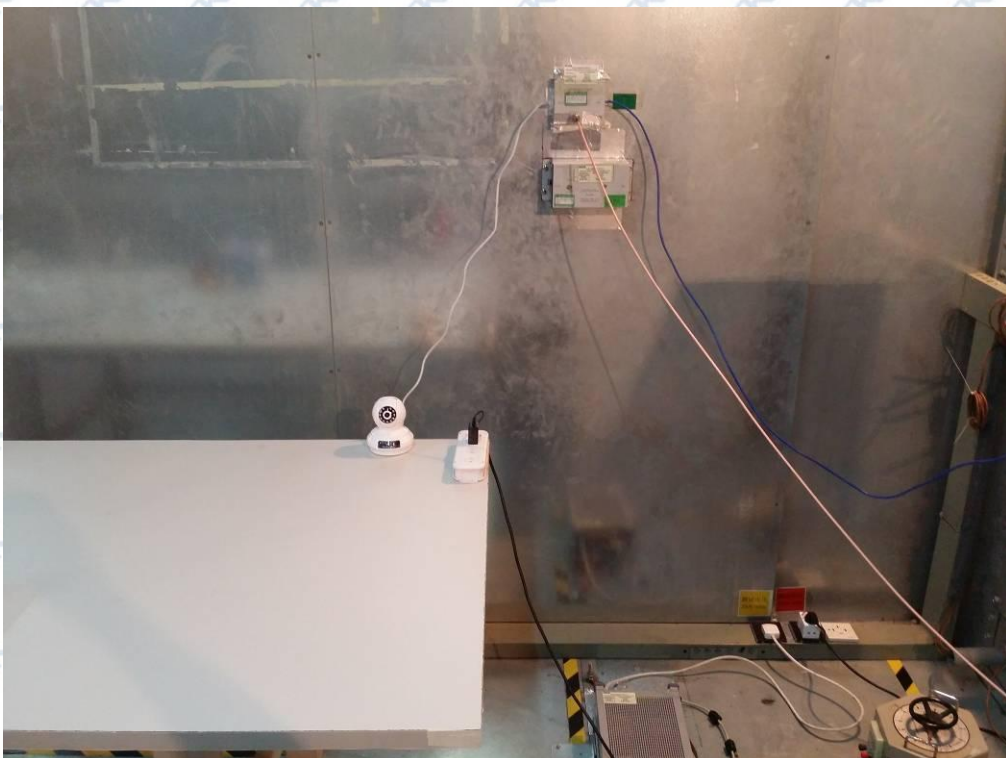
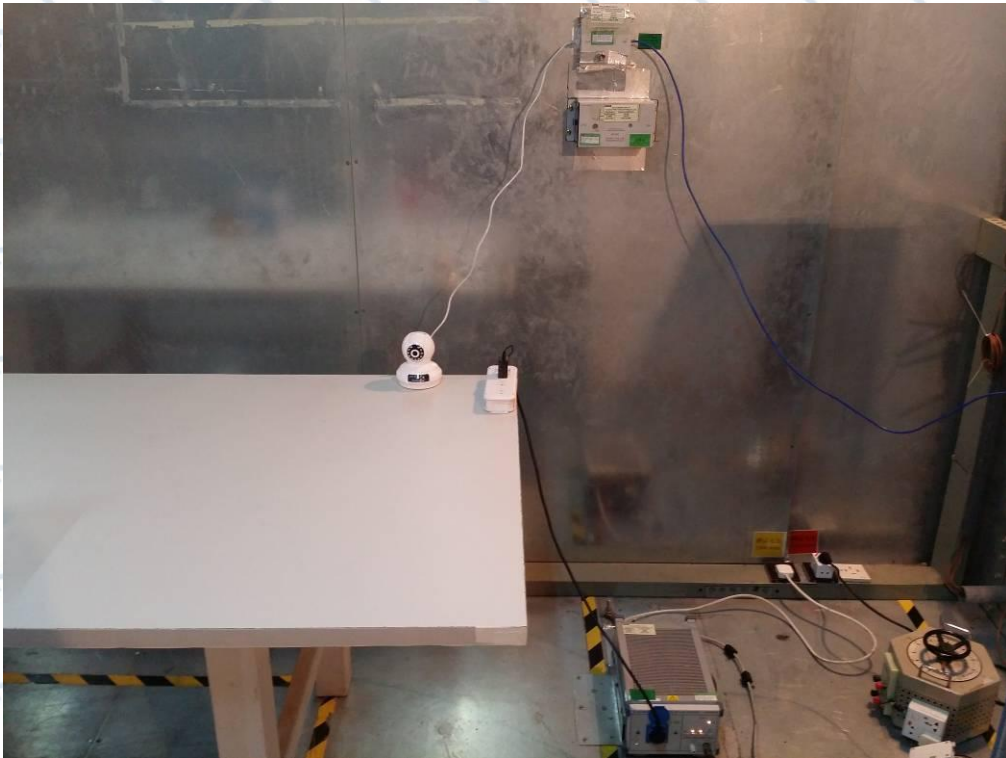
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1	!	40.7014	20.10	16.00	36.10	40.00	-3.90	QP		
2	!	63.7588	27.13	8.89	36.02	40.00	-3.98	QP		
3	!	94.7600	22.71	12.06	34.77	40.00	-5.23	QP		
4	!	121.5485	24.27	10.60	34.87	40.00	-5.13	QP		
5	*	168.4138	24.15	12.60	36.75	40.00	-3.25	QP		
6		731.9202	16.90	22.33	39.23	47.00	-7.77	QP		

Remark:
Factor = Antenna Factor + Cable Loss.

4. EUT TEST PHOTO

Radiated Measurement Photos



Conducted Measurement Photos

ATTACHMENT PHOTOGRAPHS OF EUT

Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

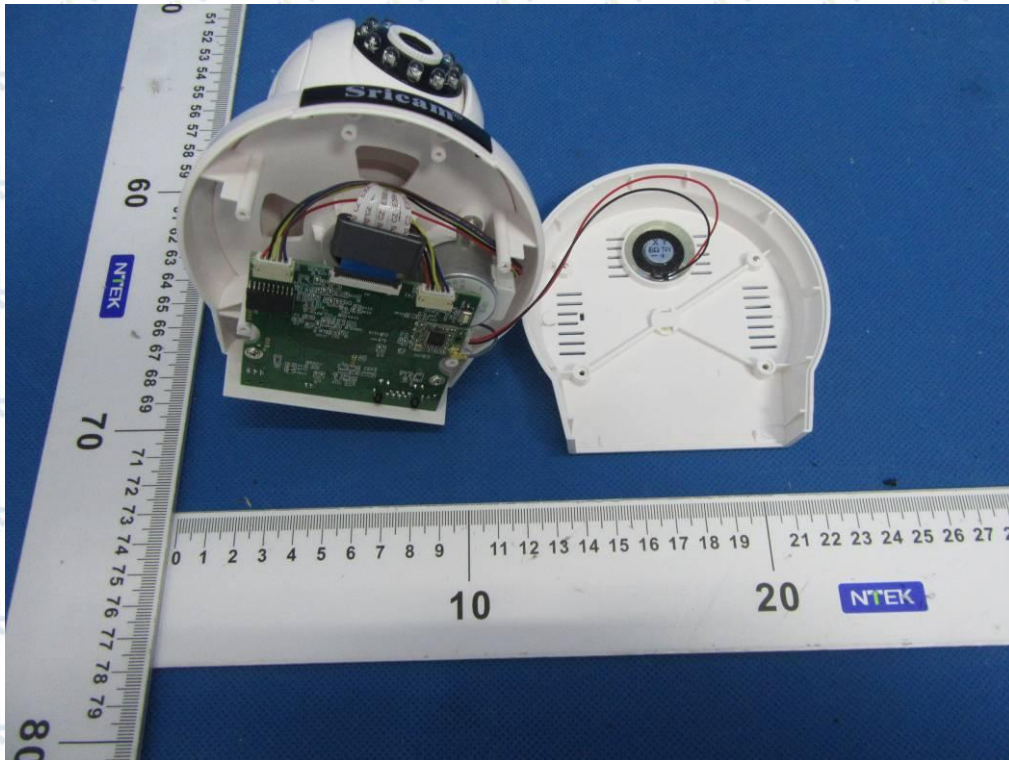


Photo 6



Photo 7

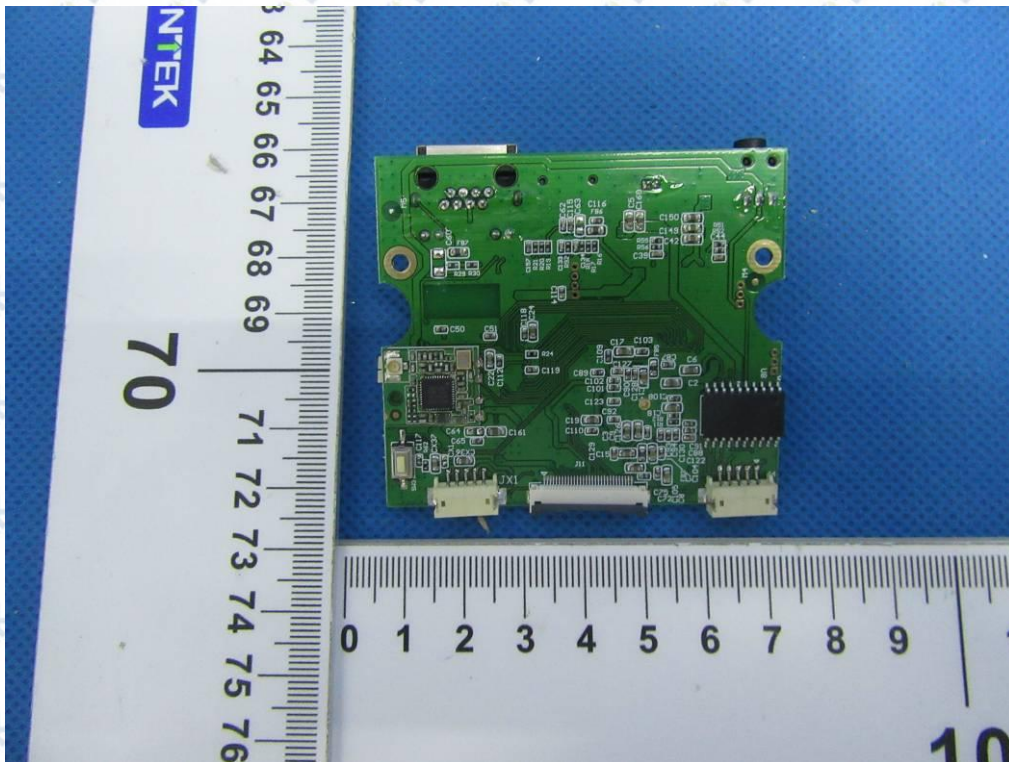


Photo 8

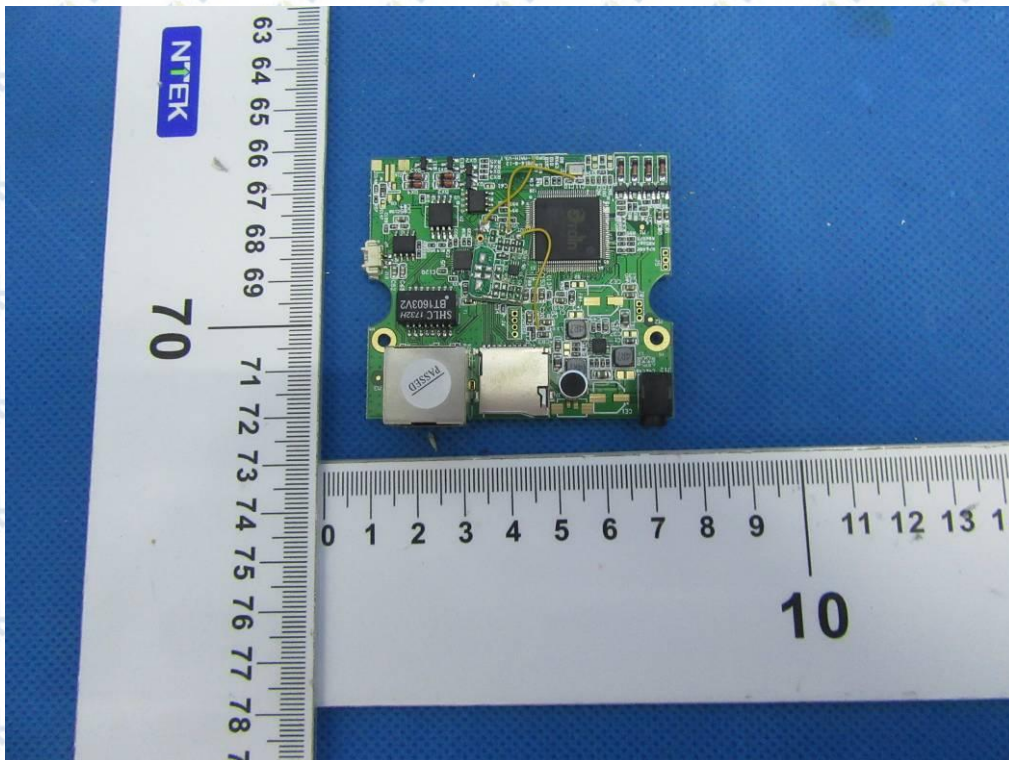


Photo 9

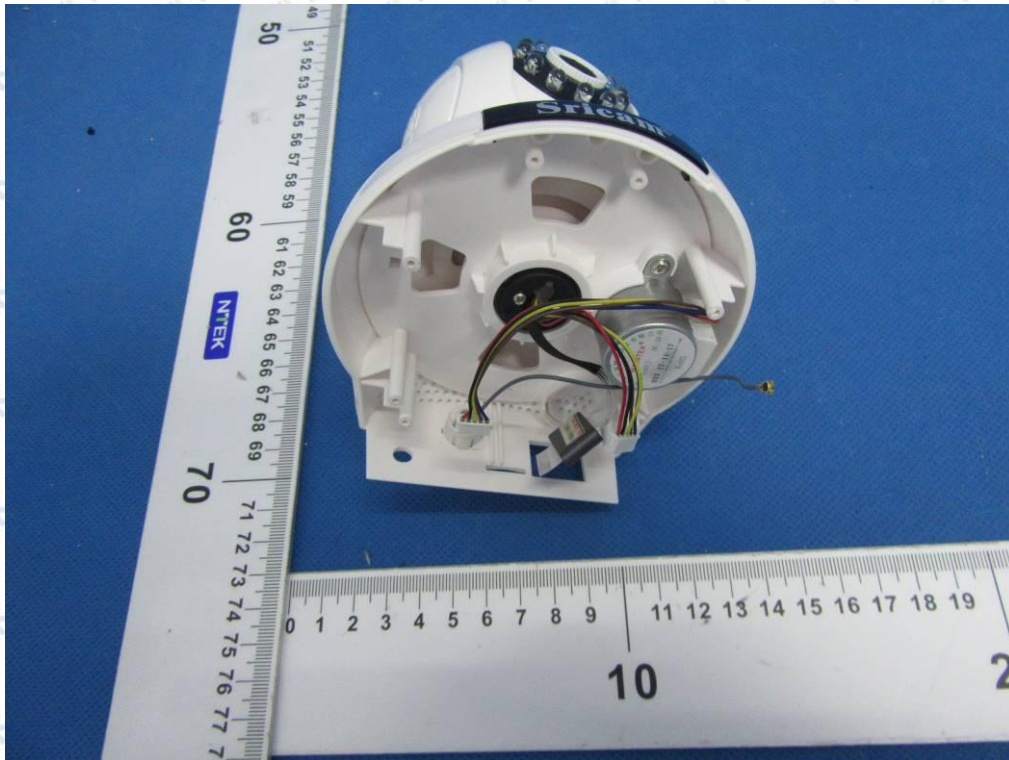


Photo 10



Photo 11

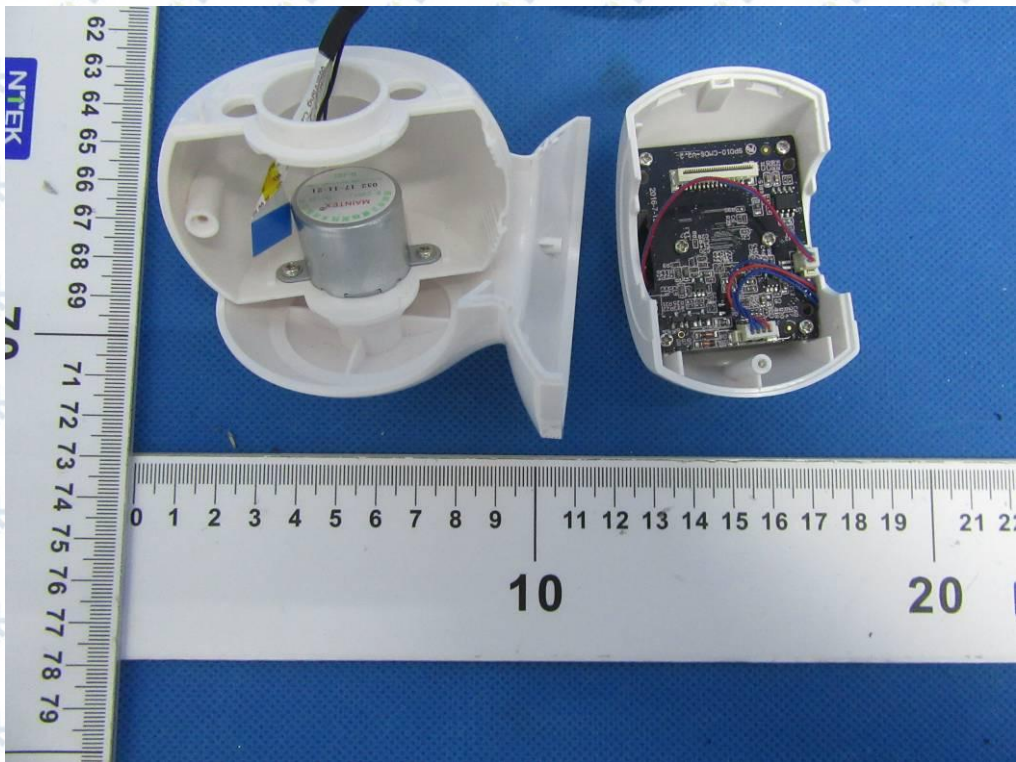


Photo 12



Photo 13

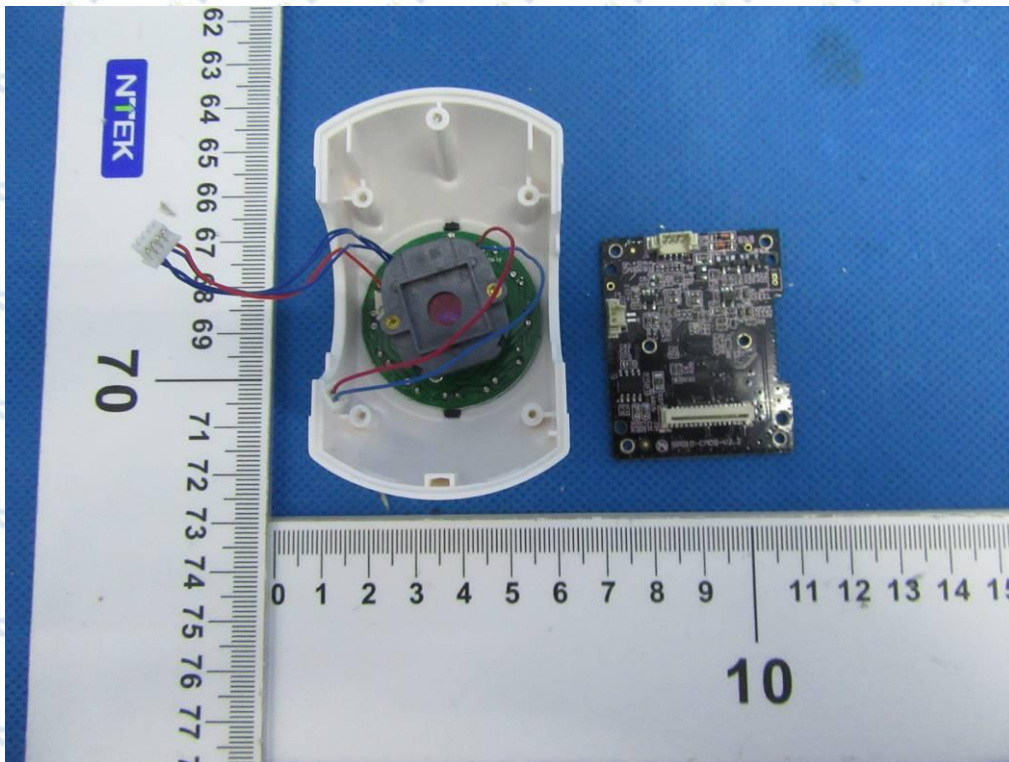


Photo 14

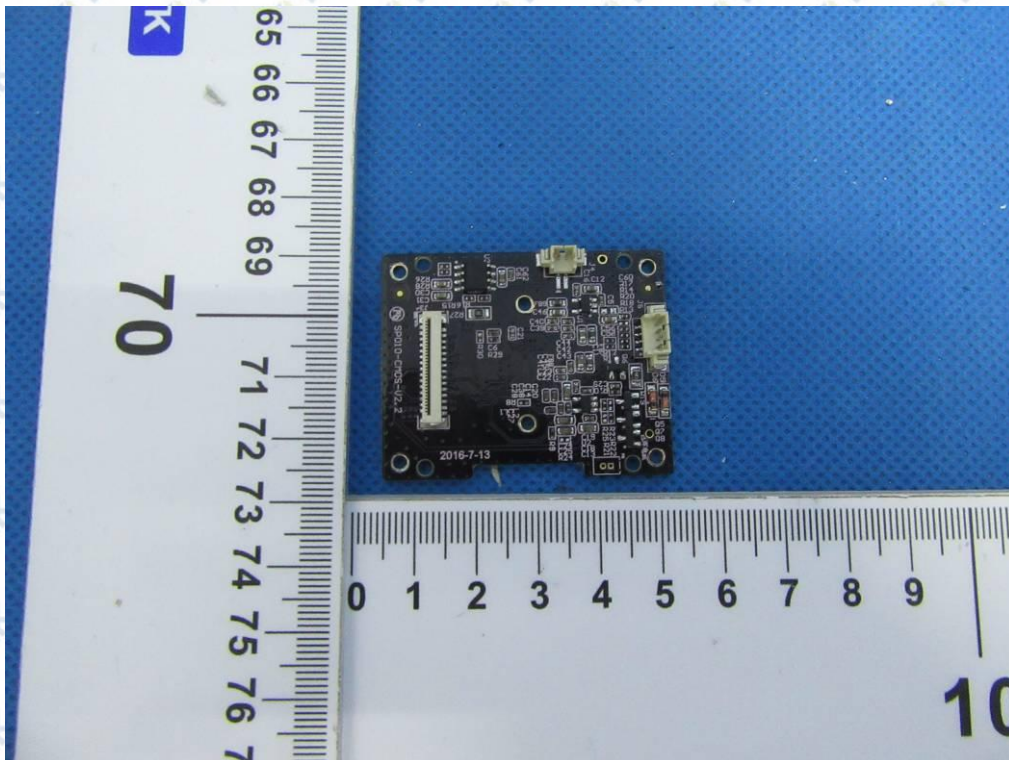


Photo 15

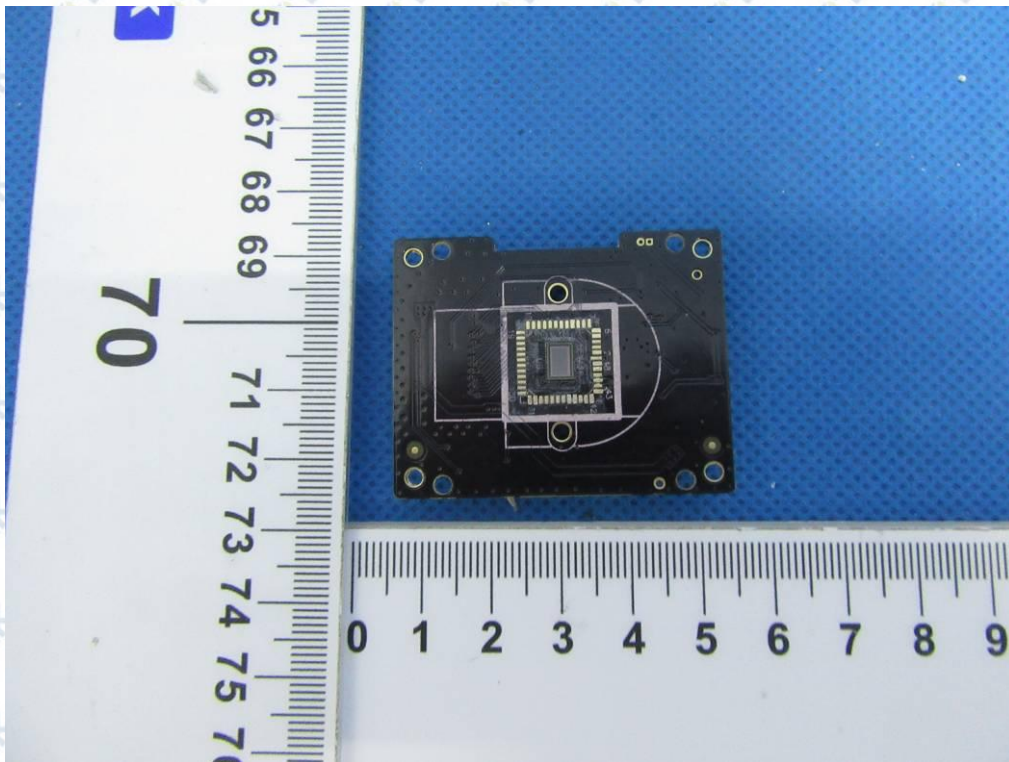


Photo 16

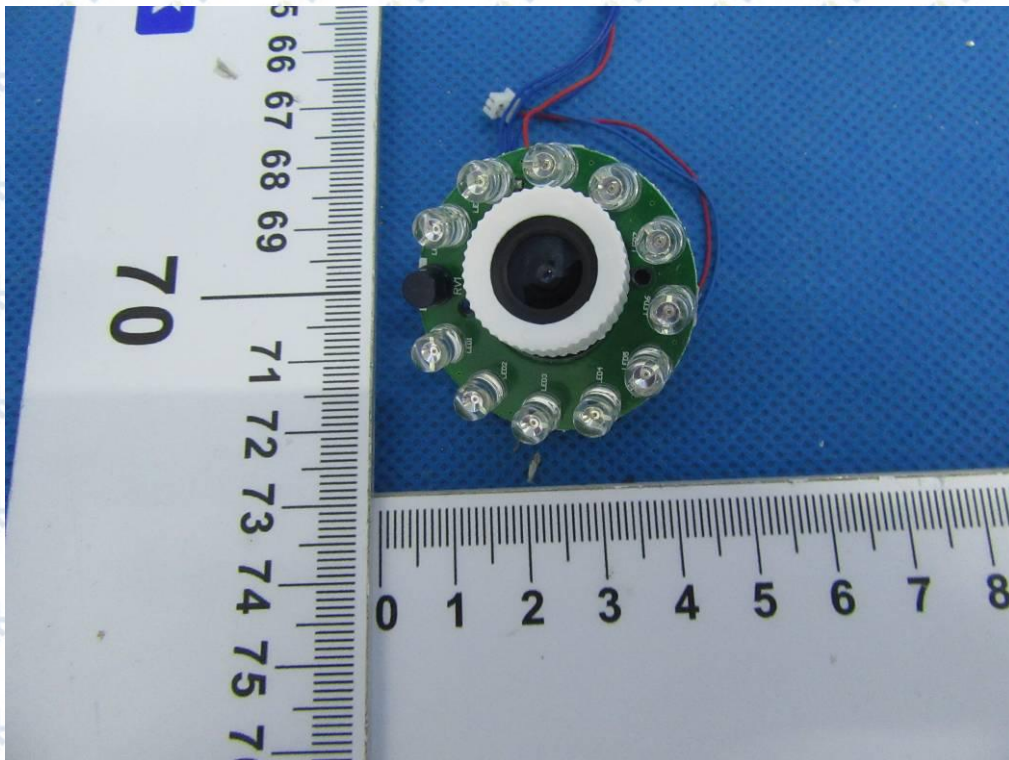


Photo 17



Photo 18

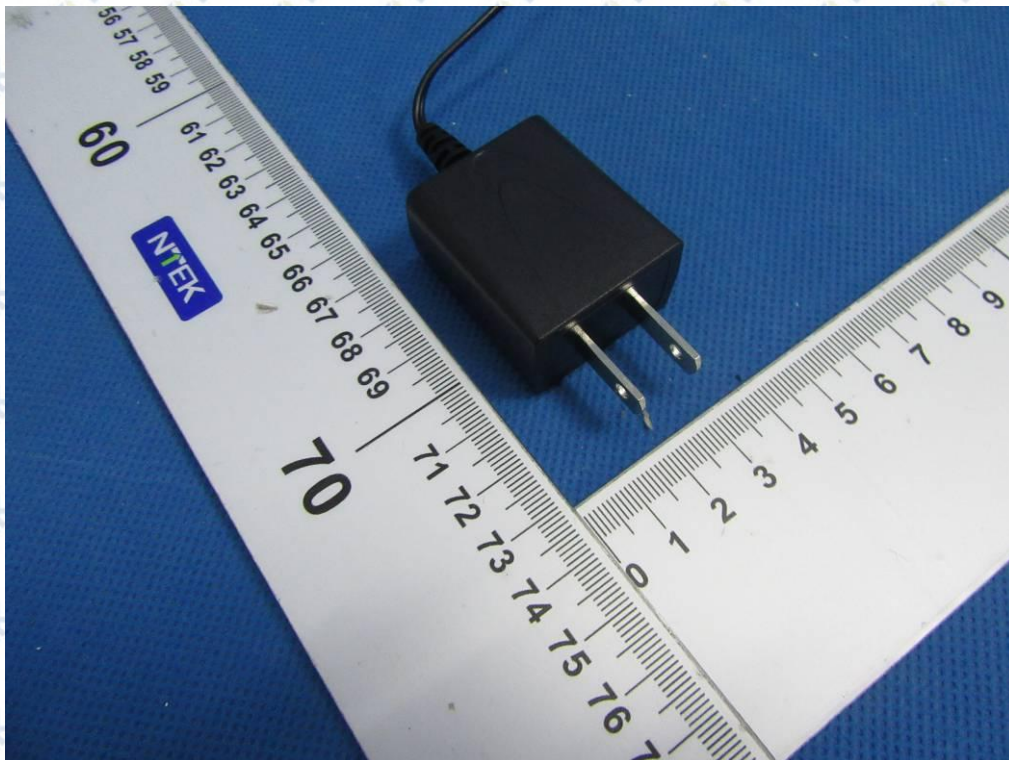


Photo 19

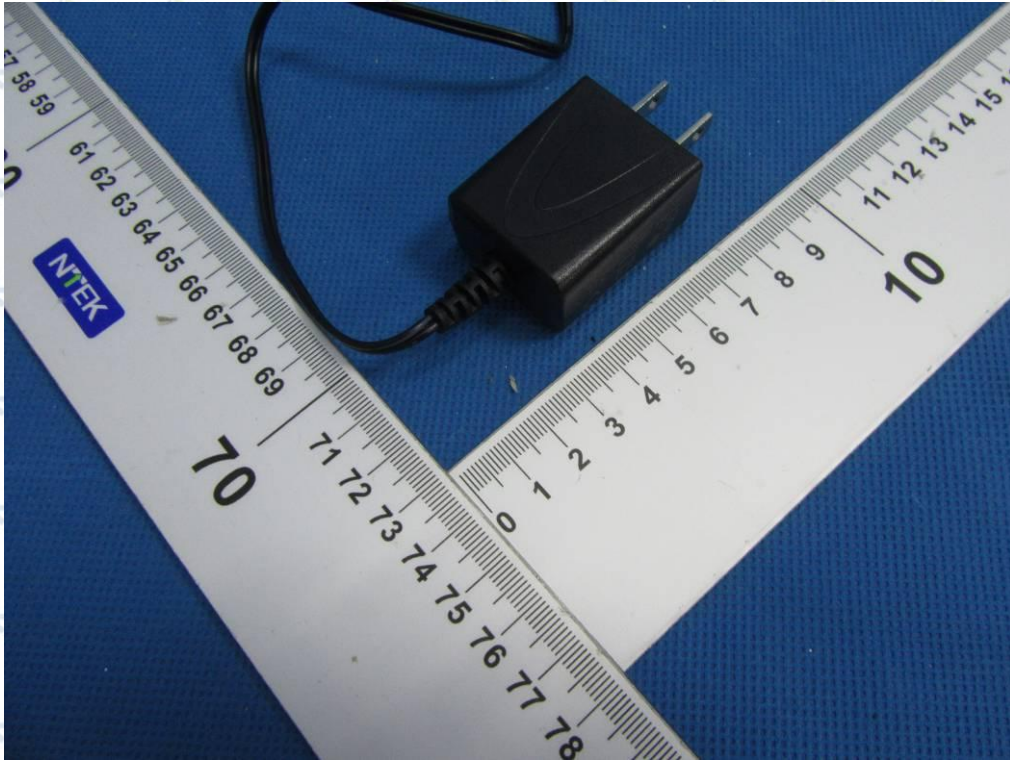


Photo 20

