FCC Part 15C Test Report

FCC ID: 2AIXWNEX-530

Product Name:	DESKTOP READER
Trademark:	nexqo
Model Name :	NEX-530
Prepared For : Address :	Shenzhen Nexqo Technology Co., Ltd 7C/D West Coast Building, 2251 Nanhai Blvd, Shenzhen, China
Prepared By : Address :	Shenzhen BCTC Technology Co., Ltd. No.101,Yousong Road,Longhua New District, Shenzhen,China
Test Date:	Jun. 12–Jun. 24, 2016
Date of Report :	Jun. 25, 2016
Report No.:	BCTC-160607157E

TEST RESULT CERTIFICATION

Applicant's name	:	Shenzhen Nexqo Technology Co., Ltd
Address	:	7C/D West Coast Building, 2251 Nanhai Blvd, Shenzhen, China
Manufacture's Name	:	Shenzhen Nexqo Technology Co., Ltd
Address	:	7C/D West Coast Building, 2251 Nanhai Blvd, Shenzhen, China
Product description		
Product name	:	DESKTOP READER
Trademark	:	nexqo
Model and/or type reference	:	NEX-530
Standards	:	FCC Part15.225 ANSI C63.10:2013

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

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Testing Engineer	:	Eric Yang
Reviewer (Supervisor)	:	Jade Yang
Approved & Authorized Signer(Manager)	:	Carson Zhang

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.225) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.225 (c)	Radiated Emission	PASS	
15.225 15.215C	20dB Bandwidth	PASS	
15.205	Frequency stability	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

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

1.1 TEST FACILITY

Shenzhen BCTC Technology Co., Ltd.
Add. : No.101,Yousong Road,Longhua New District, Shenzhen,China
FCC Registered No.: 187086

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U** , where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2** , providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	DESKTOP READER
Trade Name	nexgo
Model Name	NEX-530
Model Difference	N/A
Product Description	The EUT is a DESKTOP READER Operation Frequency: 13.56MHz Modulation Type: ASK Number Of Channel 1 CH Antenna Designation: Please see Note 2. 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	DC 5V from PC
Adapter	--
hardware version	--
Software version	--
Serial number	--
Connecting I/O Port(s)	Please refer to the User's Manual

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	Internal Antenna		0	

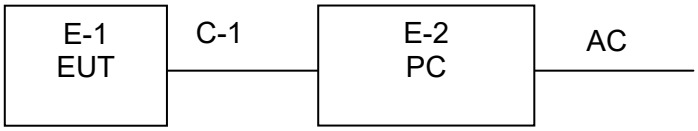
2.2 DESCRIPTION OF TEST MODES

Conducted Emission	
Final Test Mode	Description
Mode 1	TX Mode

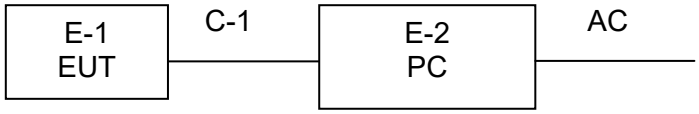
For Radiated Emission	
Final Test Mode	Description
Mode 1	TX Mode

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission Test



Radiated Spurious Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	DESKTOP READER	N/A	NEX-530	N/A	EUT
E-2	PC	ASUS	AWT8000	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	0.8M	USB Cable

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.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer	Agilent	E4407B	MY45109572	2015.08.25	2016.08.24
2	Test Receiver	R&S	ESPI	101396	2015.08.25	2016.08.24
3	Bilog Antenna	SCHWARZBECK	VULB9160	VULB9160-3369	2015.08.25	2016.08.24
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2015.07.06	2016.07.05
5	Spectrum Analyzer	Agilent	N9020A	MY5051041	2015.07.06	2016.07.05
6	Horn Antenna	SCHWARZBECK	9120D	9120D-1275	2015.08.25	2016.08.24
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2015.07.06	2016.07.05
8	Amplifier	SCHWARZBECK	BBV9718	9718-270	2015.08.25	2016.08.24
9	Amplifier	SCHWARZBECK	BBV9743	9743-119	2015.08.25	2016.08.24
10	Loop Antenna	ARA	PLNEX-53030/B	1029	2015.07.06	2016.07.05
11	Power Meter	R&S	NRVS	100696	2015.07.06	2016.07.05
12	Power Sensor	R&S	URV5-Z4	0395.1619.05	2015.07.06	2016.07.05
13	RF cables	R&S	N/A	N/A	2015.07.06	2016.07.05

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Test Receiver	R&S	ESCI	1166.5950K03-101165-ha	2015.08.24	2016.08.23
2	LISN	R&S	NSLK8126	8126466	2015.08.24	2016.08.23
3	LISN	R&S	NSLK8126	8126487	2015.08.24	2016.08.23
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2015.08.24	2016.08.23
5	RF cables	R&S	R204	R20X	2015.08.24	2016.08.23

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

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	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

a. 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.

b. 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.

c. 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.

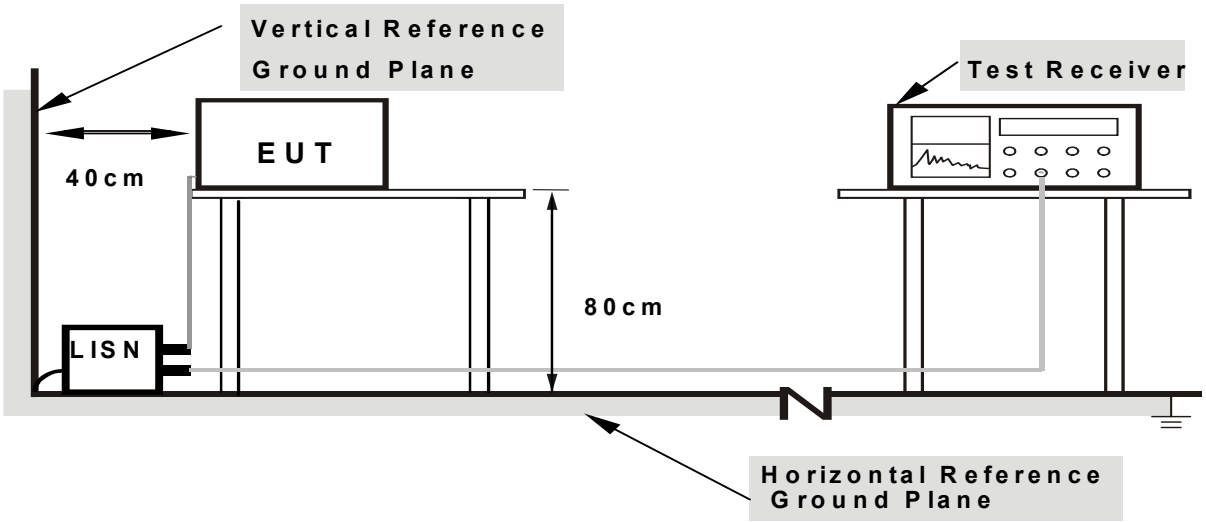
d. LISN at least 80 cm from nearest part of EUT chassis.

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

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 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

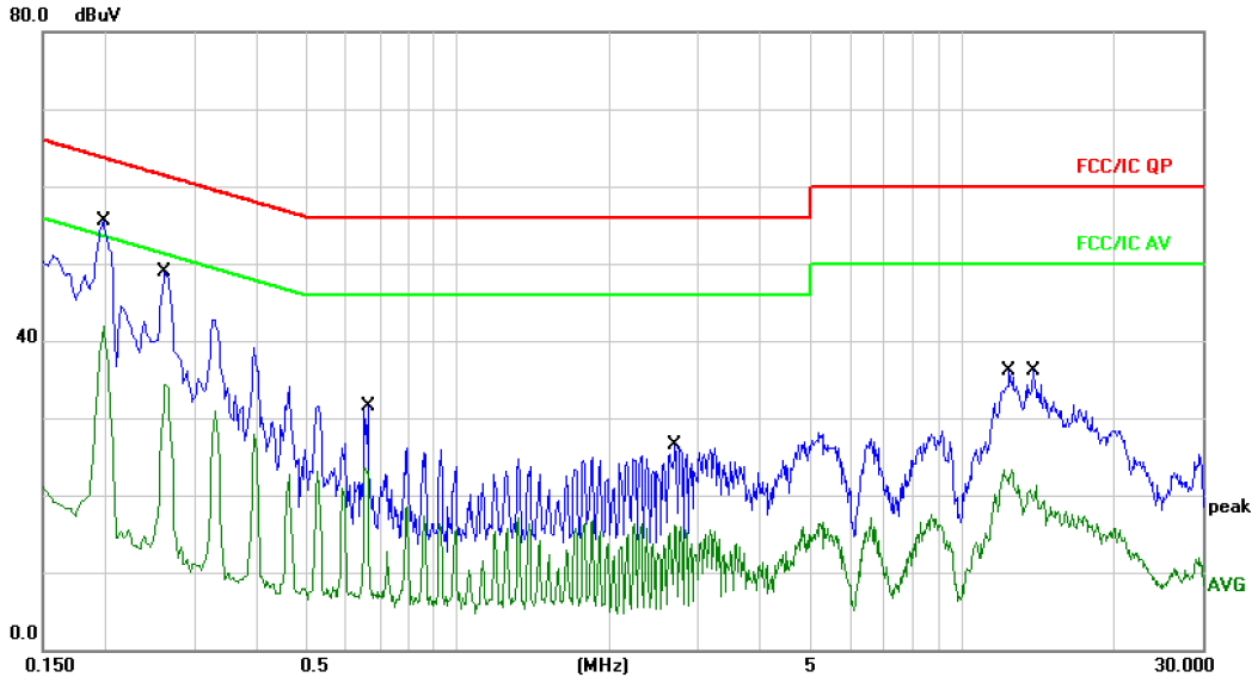
3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

3.1.6 TEST RESULTS

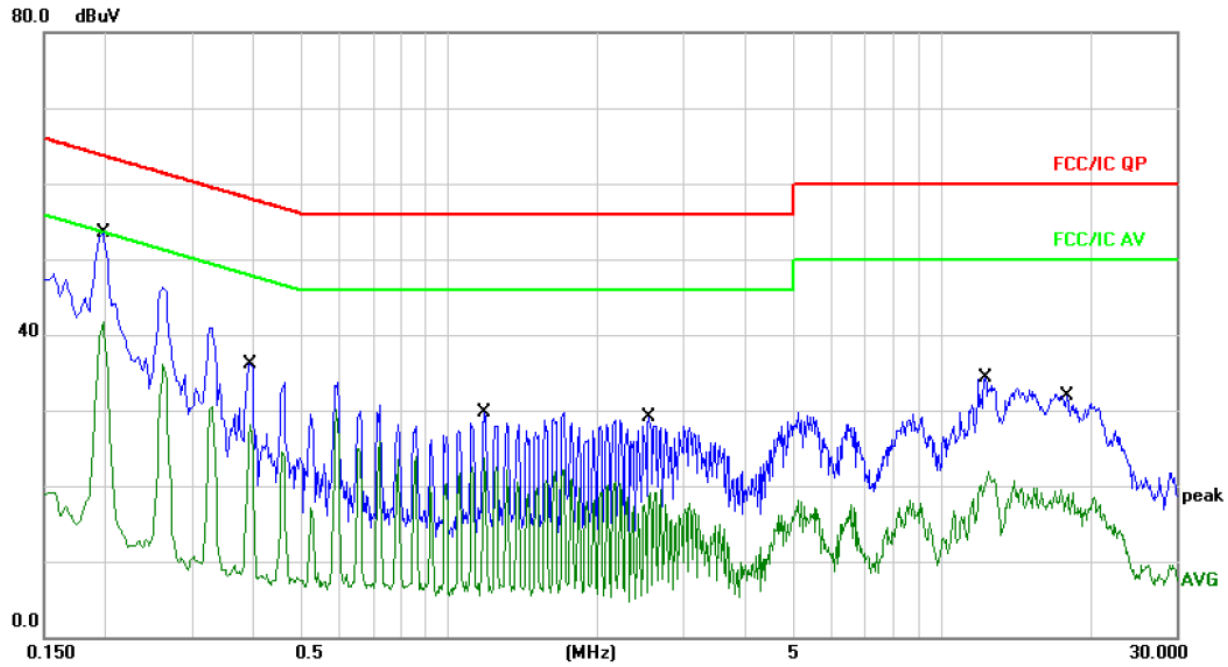
Temperature：	26℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V from PC input AC 120V/60Hz	Test Mode：	Mode 1



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1980	45.51	10.06	55.57	63.69	-8.12	QP	
2		0.1980	31.77	10.06	41.83	53.69	-11.86	AVG	
3		0.2620	38.92	10.08	49.00	61.36	-12.36	QP	
4		0.2620	24.28	10.08	34.36	51.36	-17.00	AVG	
5		0.6543	21.32	10.13	31.45	56.00	-24.55	QP	
6		0.6543	13.34	10.13	23.47	46.00	-22.53	AVG	
7		2.7020	16.39	10.19	26.58	56.00	-29.42	QP	
8		2.7020	5.89	10.19	16.08	46.00	-29.92	AVG	
9		12.4379	25.98	10.13	36.11	60.00	-23.89	QP	
10		12.4379	13.09	10.13	23.22	50.00	-26.78	AVG	
11		13.6340	26.00	10.14	36.14	60.00	-23.86	QP	
12		13.6340	10.54	10.14	20.68	50.00	-29.32	AVG	

Temperature：	26℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V from PC input AC 120V/60Hz	Test Mode：	Mode 1



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1980	43.54	10.06	53.60	63.69	-10.09	QP	
2		0.1980	31.68	10.06	41.74	53.69	-11.95	AVG	
3		0.3940	26.01	10.10	36.11	57.98	-21.87	QP	
4		0.3940	18.09	10.10	28.19	47.98	-19.79	AVG	
5		1.1780	19.44	10.17	29.61	56.00	-26.39	QP	
6		1.1780	13.44	10.17	23.61	46.00	-22.39	AVG	
7		2.5500	18.88	10.19	29.07	56.00	-26.93	QP	
8		2.5500	8.98	10.19	19.17	46.00	-26.83	AVG	
9		12.2940	24.24	10.13	34.37	60.00	-25.63	QP	
10		12.2940	11.72	10.13	21.85	50.00	-28.15	AVG	
11		17.9540	21.83	10.16	31.99	60.00	-28.01	QP	
12		17.9540	8.69	10.16	18.85	50.00	-31.15	AVG	

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209, the field strength of emissions from intentional radiators shall not exceed the following:

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Notes:
(1)The limit for radiated test was performed according to FCC PART 15C.
(2)The tighter limit applies at the band edges.
(3)Emission level (dBuV/m)=20log Emission level (uV/m).

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

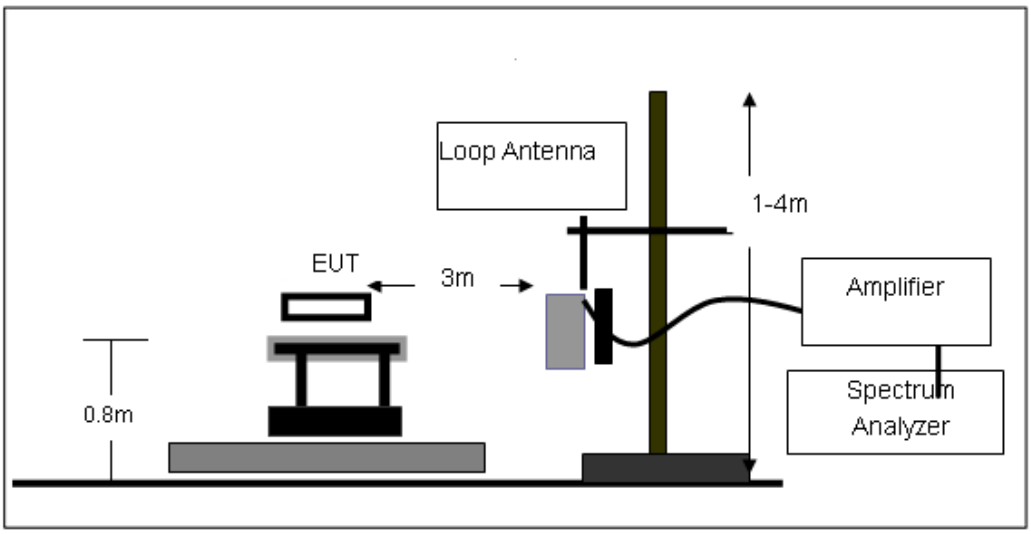
Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

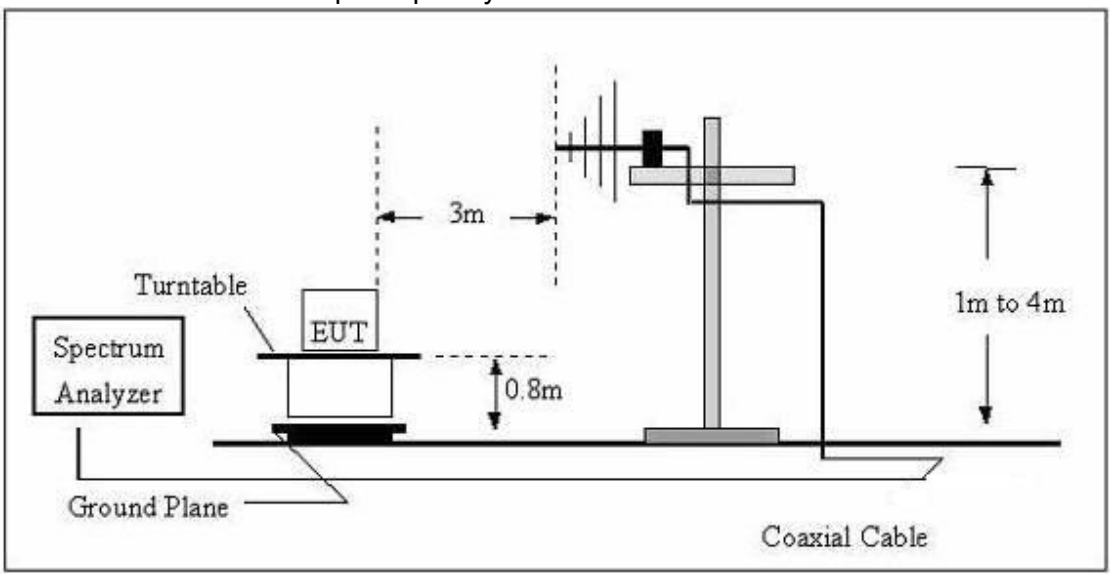
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Note:
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD
No deviation

3.2.4 TEST SETUP
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

Temperature：	20℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 5V from PC
Test Mode ：	Mode 1	Polarization :	--

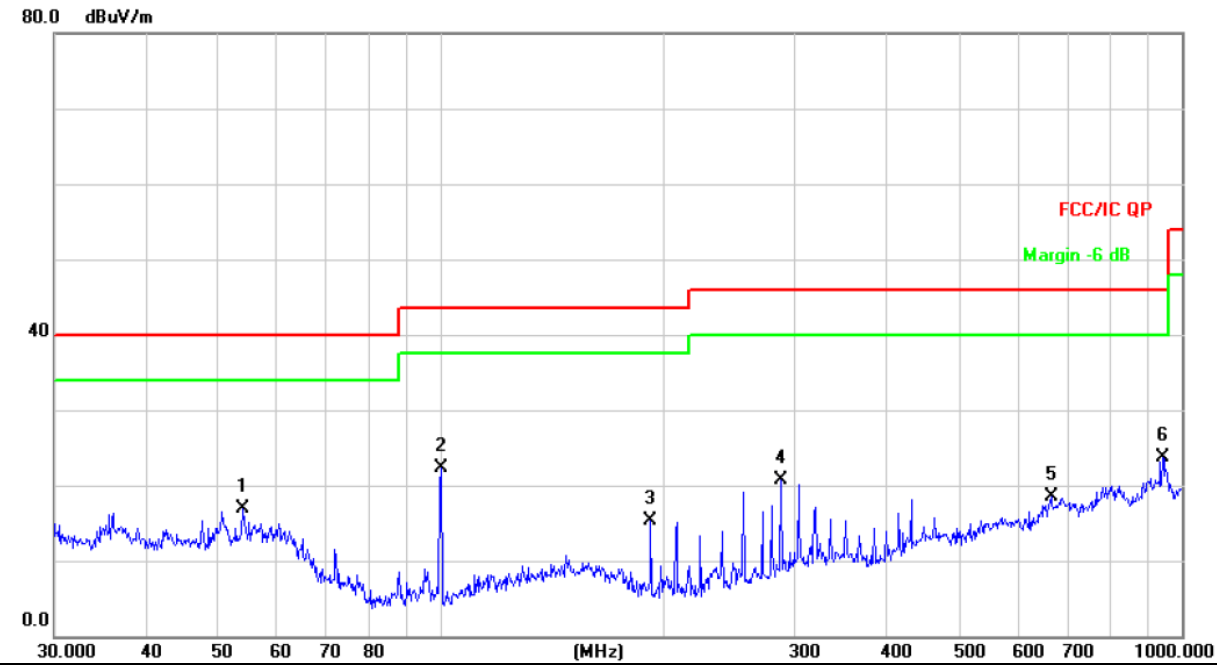
Freq.	Reading	Correct Factor	Measurement	Limit	Margin	State
(MHz)	(dBuV/m)	dB	dBuV/m	(dBuV/m)	(dB)	P/F
13.56	73.35	-18.87	54.48	124.00	69.52	PASS
27.12	53.12	-14.92	38.20	69.54	31.34	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

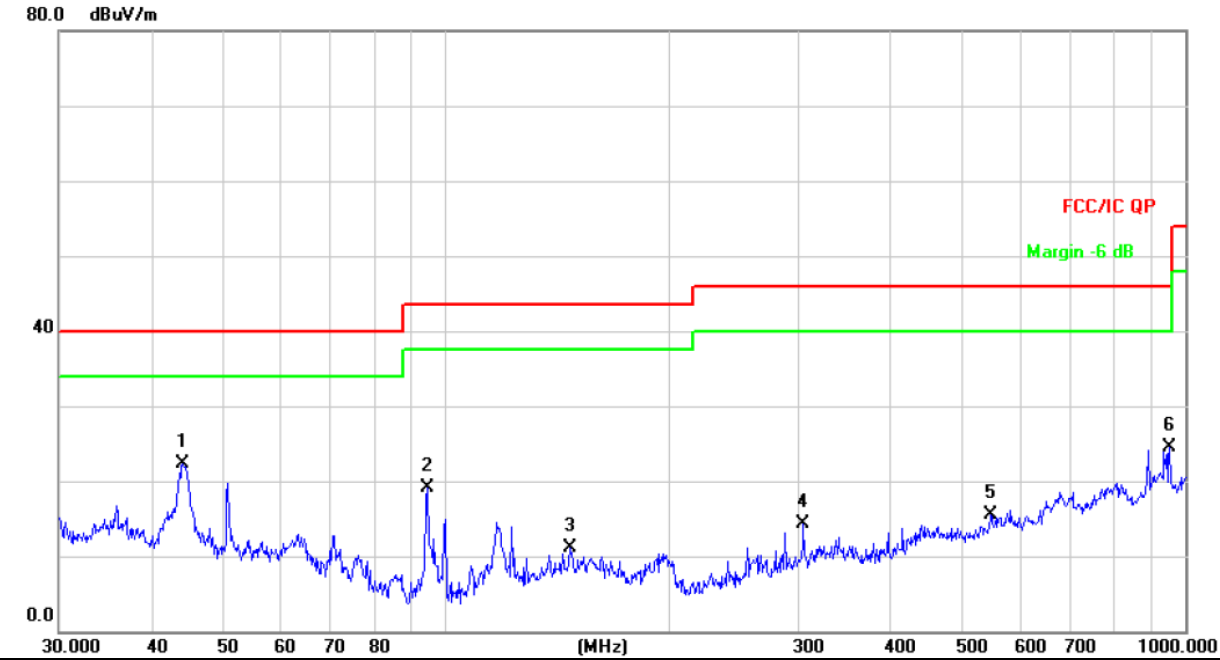
Temperature :	26℃	Relative Humidity :	54%
Pressure :	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC 5V from PC		
Test Mode :	Mode 1		



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		53.8818	27.87	-10.93	16.94	40.00	-23.06	QP			
2	*	99.8777	38.78	-16.49	22.29	43.50	-21.21	QP			
3		191.7450	31.06	-15.69	15.37	43.50	-28.13	QP			
4		286.9823	33.66	-12.92	20.74	46.00	-25.26	QP			
5		665.8035	23.31	-4.89	18.42	46.00	-27.58	QP			
6		942.1305	24.26	-0.63	23.63	46.00	-22.37	QP			

Temperature :	26℃	Relative Humidity :	54%
Pressure :	1010 hPa	Polarization :	Vertical
Test Voltage :	DC 5V from PC		
Test Mode :	Mode 1		



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	44.1202	31.77	-9.37	22.40	40.00	-17.60	QP			
2		94.4284	36.16	-17.08	19.08	43.50	-24.42	QP			
3		147.4036	24.16	-13.00	11.16	43.50	-32.34	QP			
4		304.6099	26.80	-12.47	14.33	46.00	-31.67	QP			
5		545.1826	22.67	-7.25	15.42	46.00	-30.58	QP			
6		952.0937	25.00	-0.46	24.54	46.00	-21.46	QP			

4. BANDWIDTH TEST

4.1 APPLIED PROCEDURES

15.215 requirement: Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

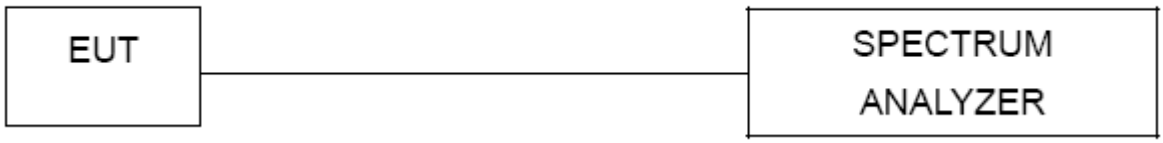
4.1.1 TEST PROCEDURE

1. Set RBW = 10 kHz.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



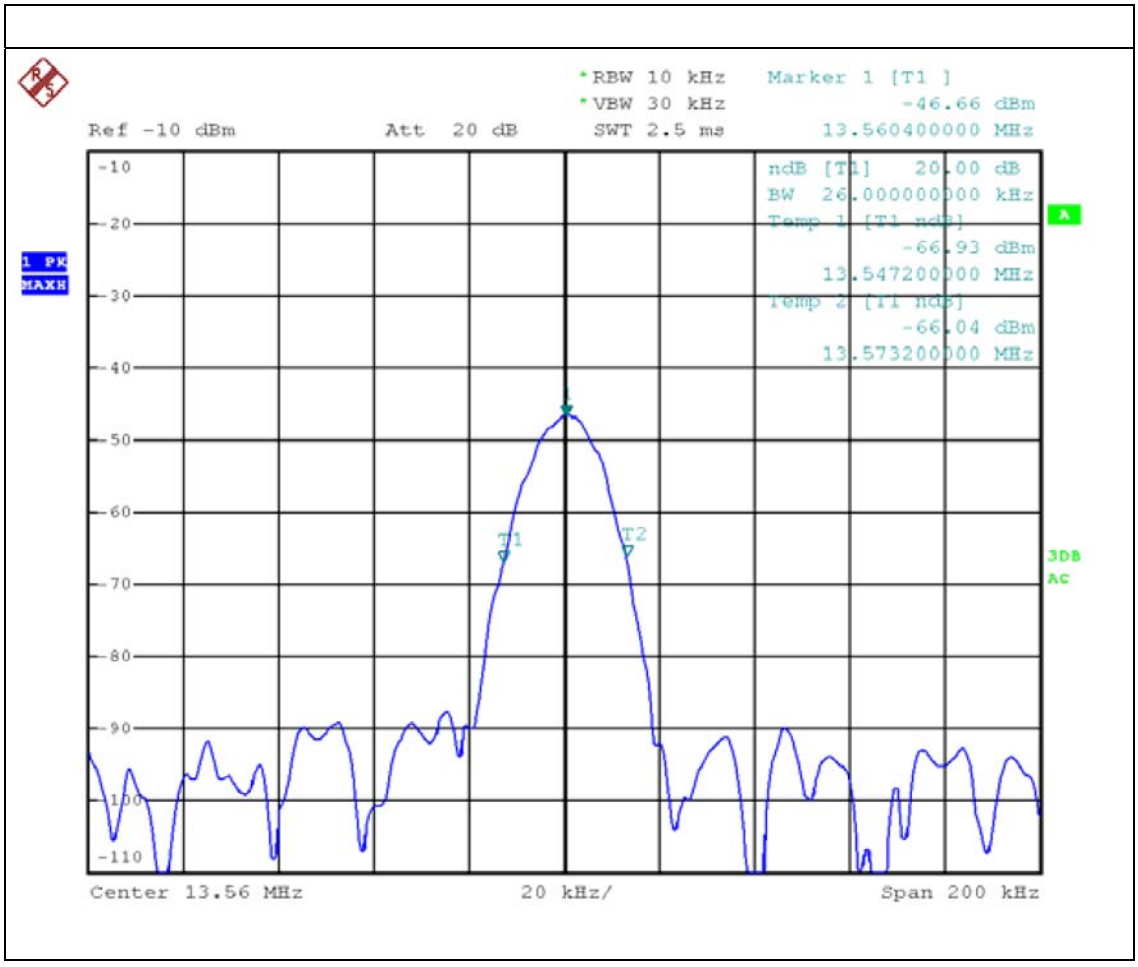
4.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5 TEST RESULTS

Temperature：	25℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from PC
Test Mode ：	TX Mode		

Frequency (MHz)	20dB bandwidth (kHz)	Result
13.56	26	Pass



5. FREQUENCY STABILITY

5.1 APPLIED PROCEDURES / LIMIT

The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of −20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

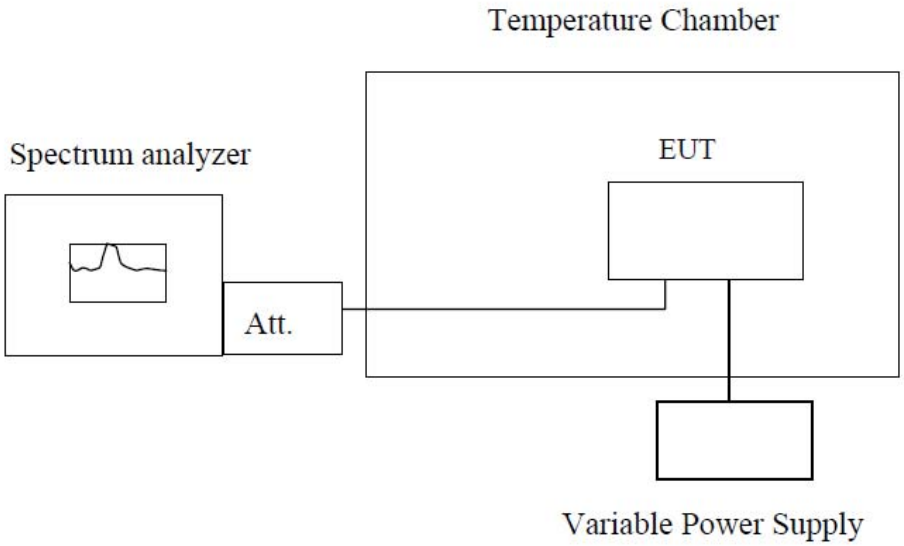
5.1.1 TEST PROCEDURE

a. The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber.
The EUT is commanded by the System Simulator (SS) to operate at the maximum output power

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



Note : Measurement setup for testing on Antenna connector

5.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 TEST RESULTS

Temperature：	25℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from PC

Test Conditions			Frequency Deviation			Result
Frequency	Power(Vdc)	Temperature(℃)	Frequency (MHz)	Deviation (%)	Limit	
13.56MHz	5.0	-20	13.560333	0.0025	+/-0.01%	PASS
	5.0	-10	13.560286	0.0021		
	5.0	0	13.560288	0.0021		
	5.0	10	13.560208	0.0015		
	5.0	20	13.560165	0.0012		
	5.0	30	13.560132	0.0010		
	5.0	40	13.560230	0.0017		
	5.0	50	13.560201	0.0015		

6. ANTENNA REQUIREMENT

6.1 STANDARD REQUIREMENT

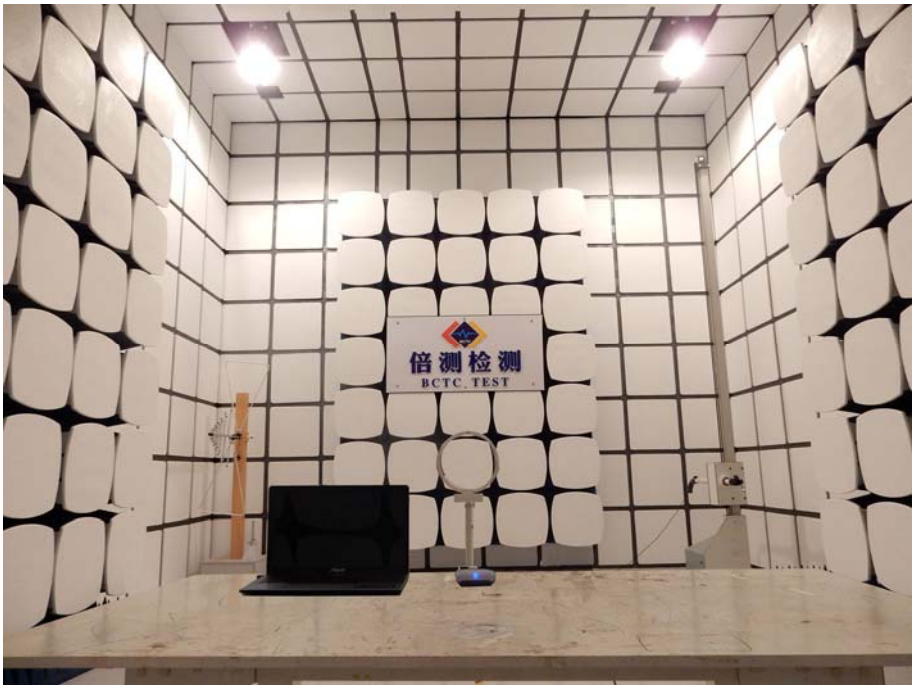
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

6.2 EUT ANTENNA

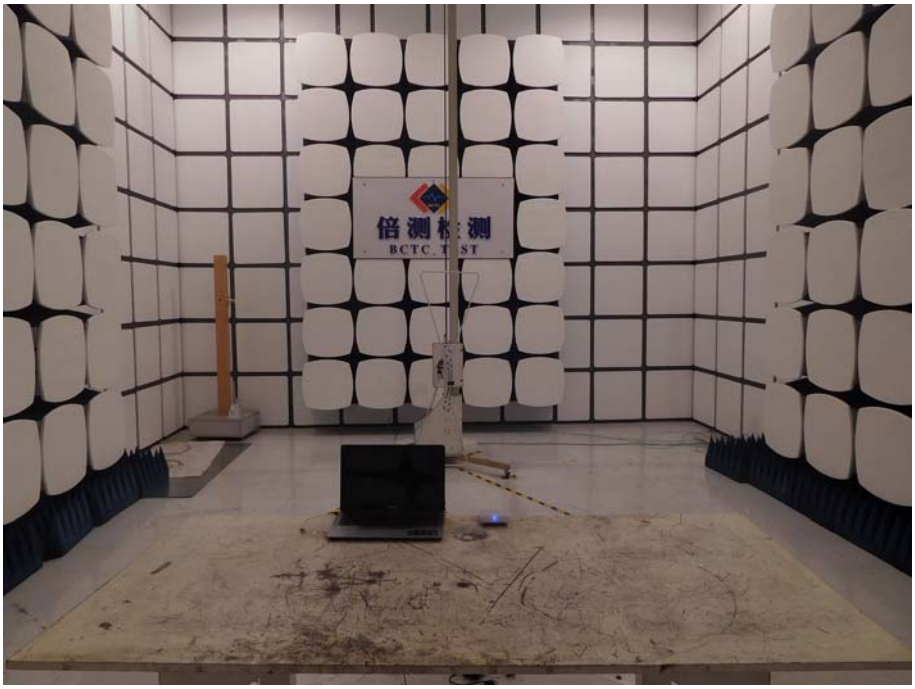
The EUT antenna is intrnal antenna, It comply with the standard requirement.

7. EUT TEST PHOTO

Radiated Measurement Photos

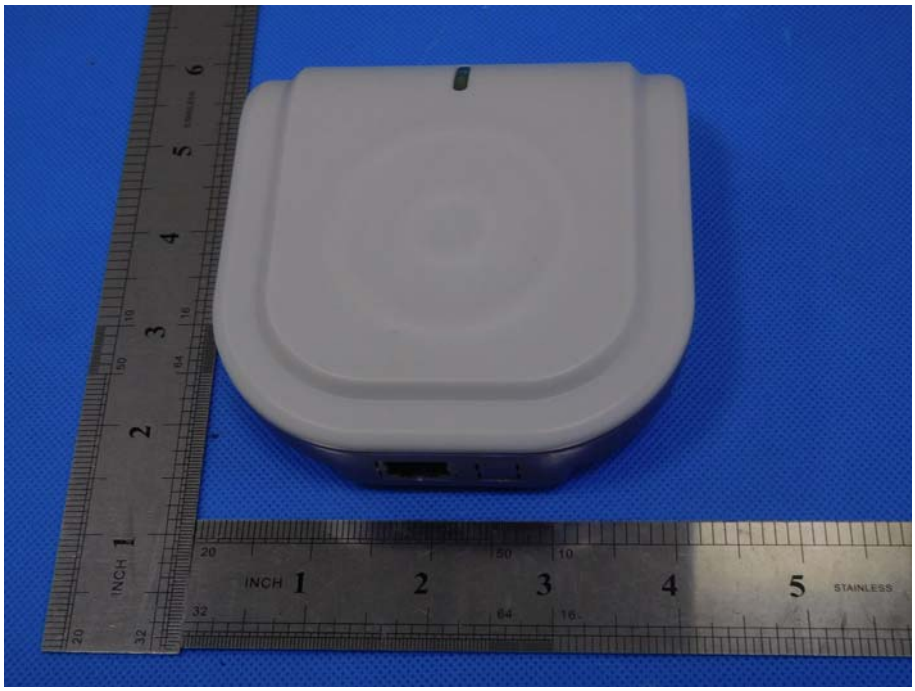


Radiated Measurement Photos

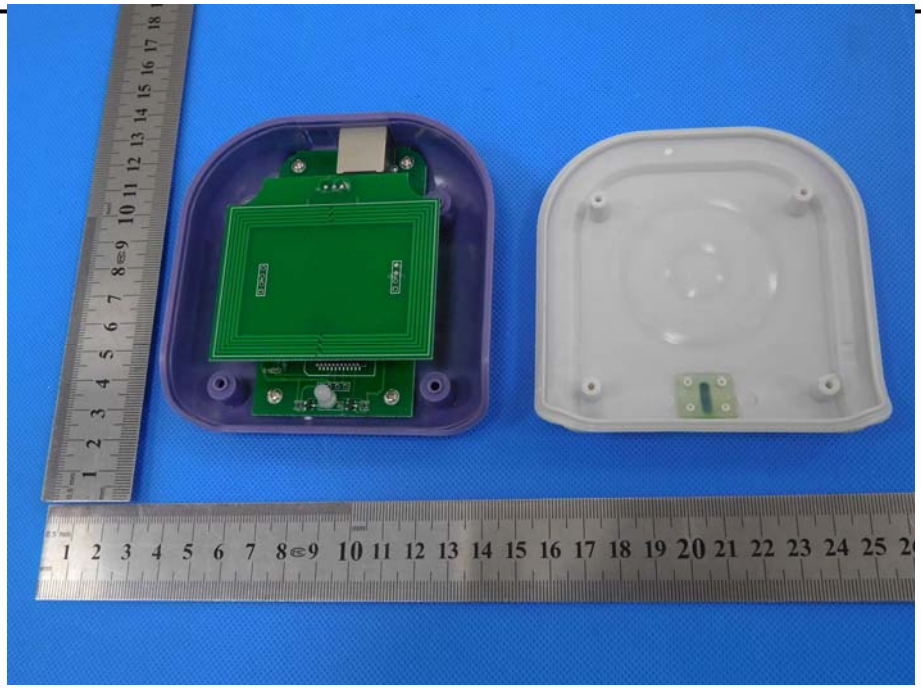


Conducted Measurement Photos

8. EUT PHOTO


INCH
STAINLESS


Radio Frequency Identification
INCH
STAINLESS



※ ※ ※ ※ ※ **END OF REPORT** ※ ※ ※ ※ ※