FCC TEST REPORT
for

Risecomm Microelectronics (Shenzhen) Co., Ltd.

Smart Router

Model No.: ZNLY-201

Prepared for	:	Risecomm Microelectronics (Shenzhen) Co., Ltd.
Address	:	Skyworth Bldg. C501, Hi-Tech Industrial Park, Nanshan District, Shenzhen, China

Prepared By	:	Shenzhen Anbotek Compliance Laboratory Limited
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Report Number	:	R011505517I
Date of Test	:	Jul. 01~ 28, 2015
Date of Report	:	Jul. 28, 2015

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TEST REPORT

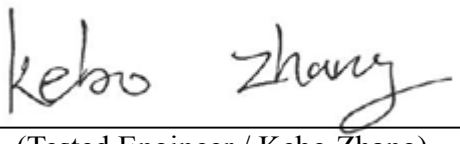
Applicant	:	Risecomm Microelectronics (Shenzhen) Co., Ltd.
Manufacturer	:	Risecomm Microelectronics (Shenzhen) Co., Ltd.
EUT	:	Smart Router
Model No.	:	ZNLY-201
Serial No.	:	N.A.
Trade Mark	:	N.A.
Rating	:	AC 100-240V, 50/60Hz, 38mA

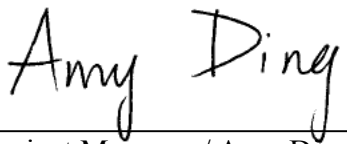
Measurement Procedure Used:
FCC Part15 Subpart C 2014, Paragraph 15.231e

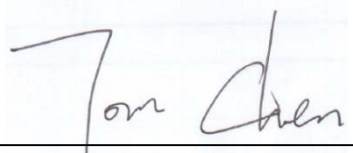
The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Jul. 01~ 28, 2015

Prepared by : 
(Tested Engineer / Kebo Zhang)

Reviewer : 
(Project Manager / Amy Ding)

Approved & Authorized Signer : 
(Manager / Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Smart Router
Model Number	:	ZNLY-201
Test Power Supply	:	AC 120V/60Hz
Frequency	:	433.92MHz
Antenna	:	2dBi Integrated Antenna
Applicant	:	Risecomm Microelectronics (Shenzhen) Co., Ltd.
Address	:	Skyworth Bldg. C501, Hi-Tech Industrial Park, Nanshan District, Shenzhen, China
Manufacturer	:	Risecomm Microelectronics (Shenzhen) Co., Ltd.
Address	:	Skyworth Bldg. C501, Hi-Tech Industrial Park, Nanshan District, Shenzhen, China
Factory	:	Risecomm Microelectronics (Shenzhen) Co., Ltd.
Address	:	Skyworth Bldg. C501, Hi-Tech Industrial Park, Nanshan District, Shenzhen, China
Date of receiver	:	Jul. 01, 2015
Date of Test	:	Jul. 01~ 28, 2015

1.2. Description of Test Facility

PC	:	Manufacturer: DELL M/N: Optiplex 3020 MT S/N: CN-079V51-70163-4AD-089K-A00 Input Rating: AC 100-240V, 50-60Hz 5.4A CE , FCC DOC, CCC
MONITOR	:	Manufacturer: DELL M/N: UZ2215Hf S/N: CN-035VN6-72872-45A-A3AB Input Rating: AC 100-240V, 50-60Hz, 1.5A Output Rating: DC 19.5V, 4.62A TUV-GS FCC CE KCC VCCI
MOUSE	:	Manufacturer: DELL M/N: MS111-T S/N: CN-0KW2YH-71616-488-1CBJ Input Rating: DC 5V,0.1A Cable: 1.8m, unshielded CE FCC VCCI KCC TUV-GS
KEYBOARD	:	Manufacturer: DELL M/N: SK-8120 S/N: CN-0DJ365-71616-49J-0MVR-A00 Input Rating: DC 5V,0.05A CE FCC VCCI KCC TUV-GS Cable: 1.8m, unshielded
Printer	:	Manufacturer:Brother M/N: MFC-3360C S/N: N/A CE, FCC:DOC
Power Line	:	Non-Shielded, 1.5m
VGA Cable	:	Non-Shielded, 1.5m
A/C Manager	:	KTJ-KM02J

1.3. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS - LAB Code: L3503

Shenzhen Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

FCC-Registration No.: 752021

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, July 10, 2013.

IC-Registration No.: 8058A-1

Shenzhen Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A-1, February 22, 2013.

Test Location

All Emissions tests were performed at
Shenzhen Anbotek Compliance Laboratory Limited. at 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

1.4. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 4.1 dB (Horizontal) Ur = 4.3 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4dB

1.5. Test Summary

For the EUT described above. The standards used were FCC Part 15 Subpart C Section 15.231 for Emissions

Tests Carried Out Under FCC Part 15 Subpart C

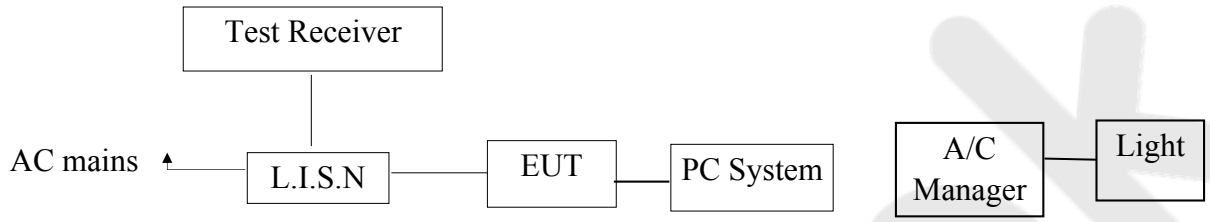
Standard	Test Items	Status	Application
Part 15 Subpart C Section 15.231e	Disturbance Voltage at The Mains Terminals	√	
	Radiation Emission	√	
	20dB Bandwidth	√	
	Duty Cycle	√	
	Transmitter time	√	

√ Indicates that the test is applicable.
x Indicates that the test is not applicable.

2. Conducted Limits

2.1. Block Diagram of Test Setup

2.1.1. Block diagram of connection between the EUT and simulators



2.2. Power Line Conducted Emission Measurement Limits (15.207)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
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.

2.3. 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.

2.4. Operating Condition of EUT

2.4.1. Setup the EUT and simulator as shown as Section 2.1.

2.4.2. Turn on the power of all equipment.

2.4.3. Let the EUT work in test mode (On) and measure it.

2.5. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 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 C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

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

The test results are reported on Section 2.6.

2.6. Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Two-Line V-network	Rohde & Schwarz	ENV216	100055	Apr. 17, 2015	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 17, 2015	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr. 17, 2015	1 Year

2.7. Power Line Conducted Emission Measurement Results

PASS.

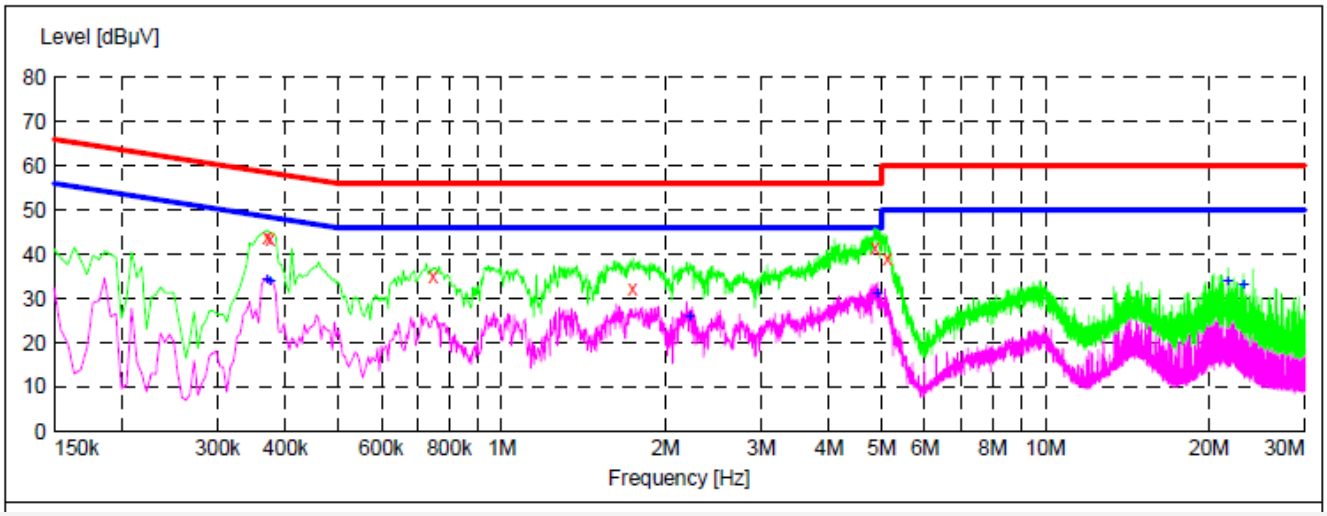
The frequency range from 150KHz to 30 MHz is investigated.

Please refer the following pages.

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	ON
Test Specification:	AC 120V/60Hz
Comment:	Live Line
	Tem:25℃ Hum:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



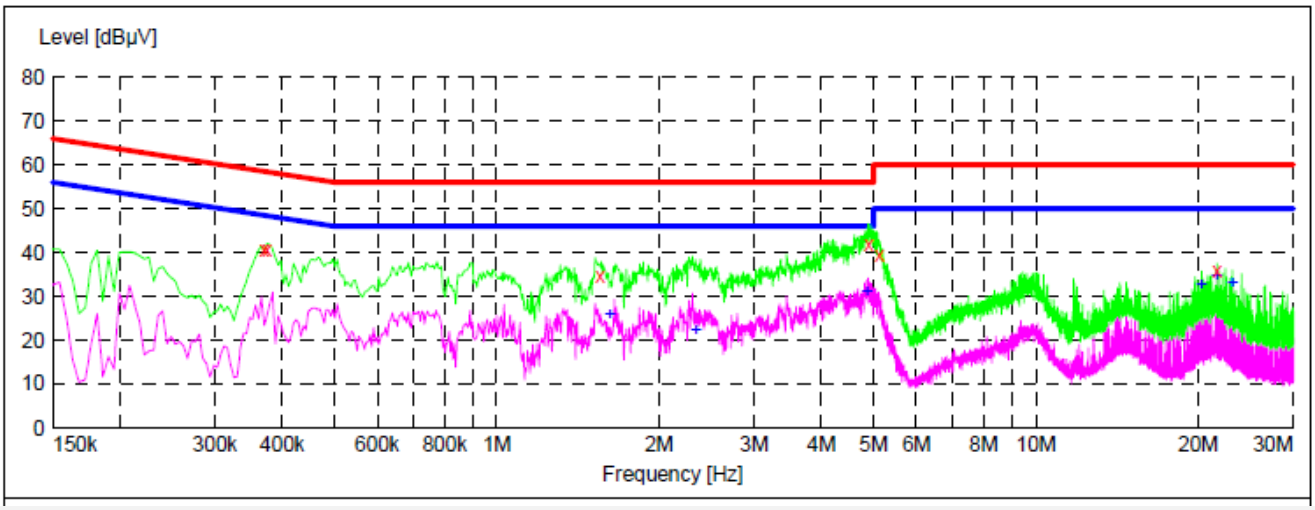
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.370500	44.00	20.1	59	14.5	QP	L1	GND
0.375000	43.70	20.1	58	14.7	QP	L1	GND
0.748500	35.10	20.1	56	20.9	QP	L1	GND
1.742500	32.40	20.3	56	23.6	QP	L1	GND
4.852000	41.50	20.5	56	14.5	QP	L1	GND
5.122000	39.20	20.5	60	20.8	QP	L1	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.370500	34.10	20.1	49	14.4	AV	L1	GND
0.375000	34.00	20.1	48	14.4	AV	L1	GND
2.215000	25.70	20.3	46	20.3	AV	L1	GND
4.892500	31.10	20.5	46	14.9	AV	L1	GND
21.664000	34.00	20.8	50	16.0	AV	L1	GND
23.131000	33.20	20.8	50	16.8	AV	L1	GND

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	ON
Test Specification:	AC 120V/60Hz
Comment:	Neutral Line
	Tem:25℃ Hum:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.370500	40.60	20.1	59	17.9	QP	N	GND
0.375000	40.80	20.1	58	17.6	QP	N	GND
1.553500	34.50	20.3	56	21.5	QP	N	GND
4.892500	41.90	20.5	56	14.1	QP	N	GND
5.113000	39.40	20.5	60	20.6	QP	N	GND
21.664000	35.90	20.8	60	24.1	QP	N	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
1.621000	25.70	20.3	46	20.3	AV	N	GND
2.341000	22.40	20.3	46	23.6	AV	N	GND
4.852000	31.00	20.5	46	15.0	AV	N	GND
20.260000	32.50	20.8	50	17.5	AV	N	GND
21.664000	34.90	20.8	50	15.1	AV	N	GND
23.131000	33.30	20.8	50	16.7	AV	N	GND

3. Test Procedure

JUSTIFICATION
ANSI C63.10 2013 section 12.1.4.1 requires that hand-held or body-worn devices shall include rotation of the EUT through three orthogonal axes to determine the attitude that maximizes the emissions. The EUT is a hand-held device. As such, preliminary tests were performed to determine the orientation that produced the highest level of emissions. This was with the DUT orientated vertically as shown in Section 7.1.

GENERAL:
This report shall NOT be reproduced except in full without the written approval of Anbotek Compliance Lavoratory Limited. The EUT was transmitting a test signal during the testing.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.10-2013 using a spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100KHz and the video bandwidth was 300KHz up to 1.0GHz and 1.0MHz with a video BW of 3.0MHz above 1.0GHz. The ambient temperature of the EUT was 74.3oF with a humidity of 69%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:
Freq (MHz) METER READING + ACF = FS
33 20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

ANSI STANDARD C63.10-2013 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.
When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

4. Radiation Interference

4.1. Requirements (15.231):

According to 15.231(e), the field strength of emissions from Intentional Radiators operated under this section shall not exceed the following:

FCC Part 15 Subpart C Paragraph 15.231(e) Limits				
Fundamental Frequency MHz	Field Strength of Fundamental		Field Strength of Harmonics	
	uV/m	dBuV/m	uV/m	dBuV/m
40.66-40.70	1000	60	100	40
70-130	500	53.98	50	33,98
130-174	500-1500	53.98-63.52	50-150	33.98-43.52
174-260	1500	63.52	150	43.52
260-470	1500-5000	63.52-73.98	150-500	43.52 -53.98
above 470	5000	73.98	500	53.98

Remarks:
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.
4. Fundamental(F) uV/m at 3 meters: 4398.667uV/m at 3 meters at 433.92MHz.
The maximum permitted unwanted emission level is 20dB below the maximum permitted fundamental level.

Spurious electric field strength limits

FCC Part 15 Subpart C Paragraph 15.209 Limits			
Frequency MHz	uV/m	dBuV/m	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	See Remark[1]	300
0.490-1.705	24000/F(kHz)	See Remark[1]	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Remarks:
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.2. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane. For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

4.3. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 17, 2015	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 17, 2015	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 17, 2015	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 20, 2015	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 20, 2015	1 Year
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 17, 2015	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

4.4. Test Results

PASS.

The test data please refer the following pages. Only the worst case (x orientation).

Data:

Horizontal

Frequency	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
MHz	dB	dB/m	dB	dBμV	dBμV/m	dBμV/m	dB	
364.95	1.47	12.35	41.77	62.19	34.24	46.00	-11.76	QP
433.92	1.51	12.53	41.33	91.54	64.25	92.87	-28.62	PK
867.94	1.64	13.33	41.42	73.21	46.76	72.87	-26.11	PK
**1301.76	2.36	18.56	39.95	60.88	41.85	74.00	-32.15	PK
1735.68	3.00	21.32	38.30	59.15	45.17	72.87	-27.70	PK
2169.60	3.10	24.05	38.41	53.26	42.00	72.87	-30.87	PK
2603.52	--	--	--	--	--	--	--	--
3037.44	--	--	--	--	--	--	--	--
3471.36	--	--	--	--	--	--	--	--

Duty Cycle= 100% AV Factor = 0 dB

AV= PK+AV Factor

Frequency	PK Level	AV Factor	AV Level	Limit	Over Limit	Remark
MHz	dBμV/m	dB	dBμV/m	dBμV/m	dB	
433.92	64.25	0	64.25	72.87	-8.62	AV
867.94	46.76	0	46.76	52.87	-6.11	AV
**1301.76	41.85	0	41.85	54.00	-12.15	AV
1735.68	45.17	0	45.17	52.87	-7.70	AV
2169.60	42.00	0	42.00	52.87	-10.87	AV

NOTE: 1. All values measured above 1GHz are recorded as Peak and Average values.

2. " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

3. "" in the table above means the restricted band.**

4. Pulse Desensitization Correction Factor

Pulse Width (PW)= 455.1ms

2/PW=2/455.1=0.0044kHz

RBW(100kHz)＞ 2/PW (0.0044kHz)

Therefore PDCF is not needed.

Vertical

Frequency	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
MHz	dB	dB/m	dB	dBμV	dBμV/m	dBμV/m	dB	
594.22	0.85	9.47	43.68	67.49	34.13	46.00	-11.87	QP
433.92	1.51	12.53	41.33	92.17	64.88	92.87	-27.99	PK
867.94	1.64	13.33	41.42	73.94	47.49	72.87	-25.38	PK
**1301.76	2.36	18.56	39.95	62.25	43.22	74.00	-30.78	PK
1735.68	3.00	21.32	38.30	59.44	45.46	72.87	-27.41	PK
2169.60	3.10	24.05	38.41	53.21	41.95	72.87	-30.92	PK
2603.52	--	--	--	--	--	--	--	--
3037.44	--	--	--	--	--	--	--	--
3471.36	--	--	--	--	--	--	--	--

Duty Cycle= 100% AV Factor = 0 dB
AV= PK+AV Factor

Frequency	PK	AV Factor	Level	Limit	Over Limit	Remark
MHz	dB	dB	dBμV/m	dBμV/m	dB	
433.92	64.88	0	64.88	72.87	-7.99	AV
867.94	47.49	0	47.49	52.87	-5.38	AV
**1301.76	43.22	0	43.22	54.00	-10.78	AV
1735.68	45.46	0	45.46	52.87	-7.41	AV
2169.60	41.95	0	41.95	52.87	-10.92	AV

NOTE: 1. All values measured above 1GHz are recorded as Peak and Average values.

2. " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

3. "" in the table above means the restricted band.**

4. Pulse Desensitization Correction Factor

Pulse Width (PW)= 455.1ms

2/PW=2/455.1=0.0044kHz

RBW(100kHz)＞ 2/PW (0.0044kHz)

Therefore PDCF is not needed.

5. 20dB Bandwidth

5.1. Requirements (15.231):

In accordance with Part15.231(c), the fundamental frequency bandwidth was kept within 0.25% of the center frequency for devices operating>70MHz and <900MHz.

Fundamental Frequency (MHz)	Limit of 20dB Bandwidth (kHz)
433.92	433920x0.0025=1084.8

5.2. EUT Setup

The radiated emission tests were performed in the in the 3m Semi-anechoic chamber, using the setup accordance with the ANSI C63.10-2013.

The EUT was placed on the center of the nonmetal table which is 0.8 meter above a grounded turntable. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level.

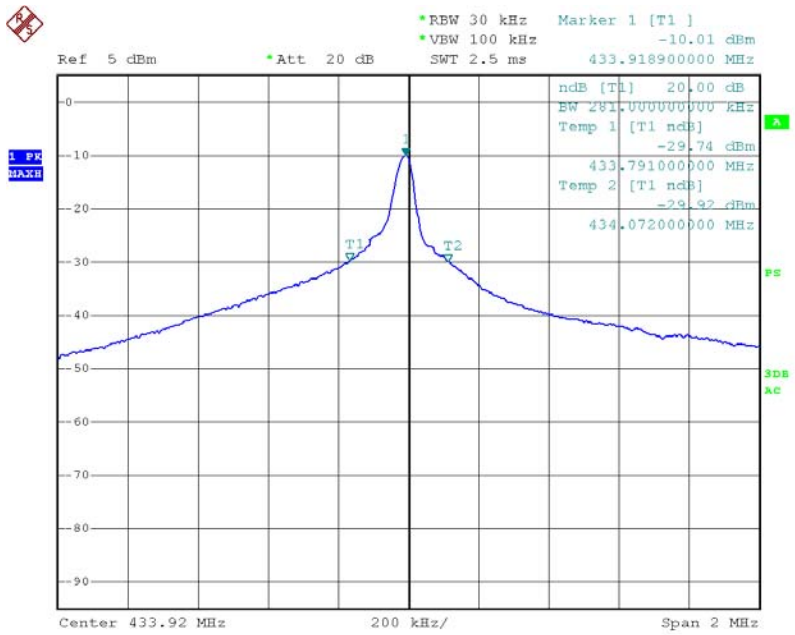
Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

5.3. Test Equipment

Same as clause 4.3.

5.4. Test Results

Pass.
Please refer the following plot.


*RBW 30 kHz
*VBW 100 kHz
Marker 1 [T1]
-10.01 dBm
Ref 5 dBm
*Att 20 dB
SWT 2.5 ms
433.918900000 MHz
ndB [T1] 20.00 dB
BW 281.000000000 kHz
Temp 1 [T1 ndB]
-29.74 dBm
433.791000000 MHz
Temp 2 [T1 ndB]
-29.92 dBm
434.072000000 MHz
1 PK
MAXH
T1
T2
Center 433.92 MHz
200 kHz/
Span 2 MHz

6. DUTY CYCLE

6.1. EUT Setup

The radiated emission tests were performed in the in the 3m Semi-anechoic chamber, using the setup accordance with the ANSI C63.10-2013.

The EUT was placed on the center of the nonmetal table which is 0.8 meter above a grounded turntable. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level.

6.2. Test Procedure

The EUT was placed on a turntable which is 0.8m above ground plane.

Set EUT operating in continuous transmitting mode

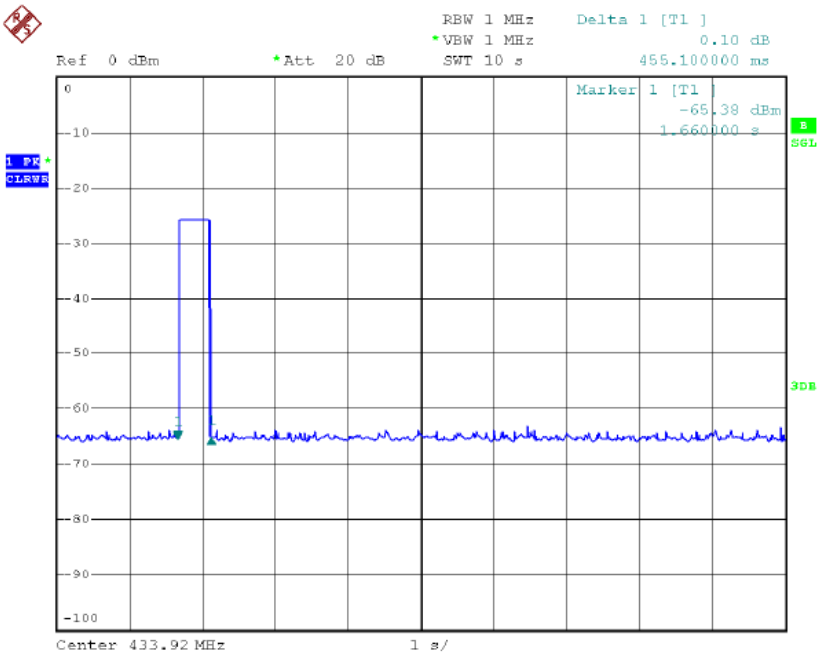
Set Test Receiver into spectrum analyzer mode, Tune the spectrum analyzer to the transmitter carrier frequency, and set the spectrum analyzer resolution bandwidth(RBW) to 100kHz and video bandwidth(VBW) to 100kHz, Span was set to 0Hz.

The Duty Cycle was measured and recorded.

6.3. Requirements & Result

In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

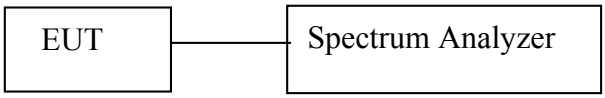
Result:
The lasting time of EUT is 455.1ms after starting transmitting.
Duty Cycle= 100% Duty Cycle Factor = 0 dB
Test plots see following pages.
The EUT meets the requirements of this section.



Note: “Marker 1” means the EUT starts to transmit, and “Delta 1” means the actual ON time when the transmitter deactivated automatically.

7. TRANSMITTER TIME

7.1. EUT Setup



7.2. Test Procedure

Set EUT operating in continuous transmitting mode

Set Test Receiver into spectrum analyzer mode, Tune the spectrum analyzer to the transmitter carrier frequency, and set the spectrum analyzer resolution bandwidth(RBW) to 100kHz and video bandwidth(VBW) to 100kHz, Span was set to 0Hz.

The Duty Cycle was measured and recorded.

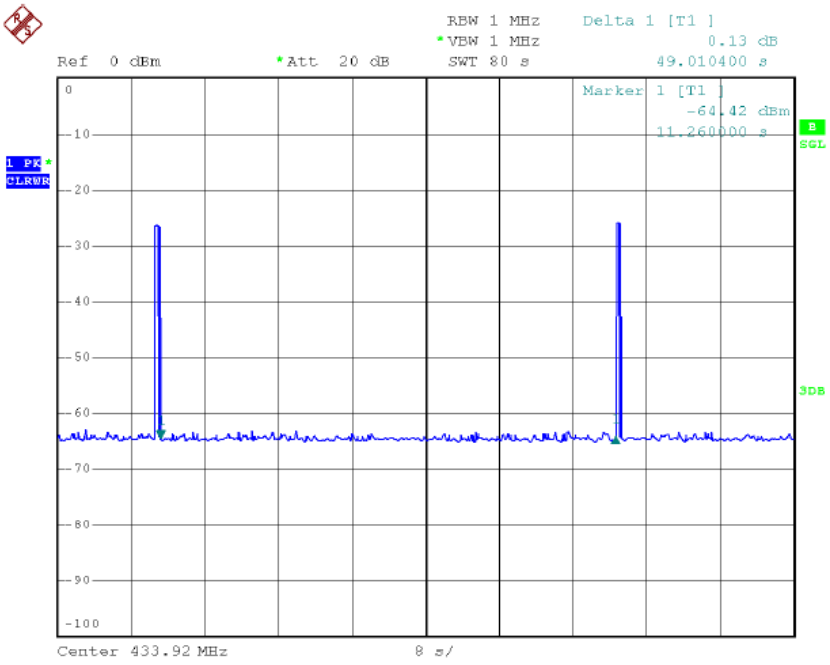
7.3. Requirements & Result

In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

Result:
PASS.
Test plots see following pages.
The EUT meets the requirements of this section.

Frequency (MHz)	Transmitter Time (ms.)		Silent Period (Sec.)	
	Measure Value	Limit	Measure Value	Limit
433.92	455.10	≤1000.00	49.01	≥10.00 or (30*Transmitting time)

Note: Silent Time= 49.01s ＞ 30*Transmitting time= 13.653s


RBW 1 MHz
VBW 1 MHz
SWT 80 s
Delta 1 [T1]
0.13 dB
49.010400 s
Ref 0 dBm
Att 20 dB
Marker 1 [T1]
-64.42 dBm
11.260000 s
1 PK
CLRWR
B
SGL
3DB
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
Center 433.92 MHz
8 s/

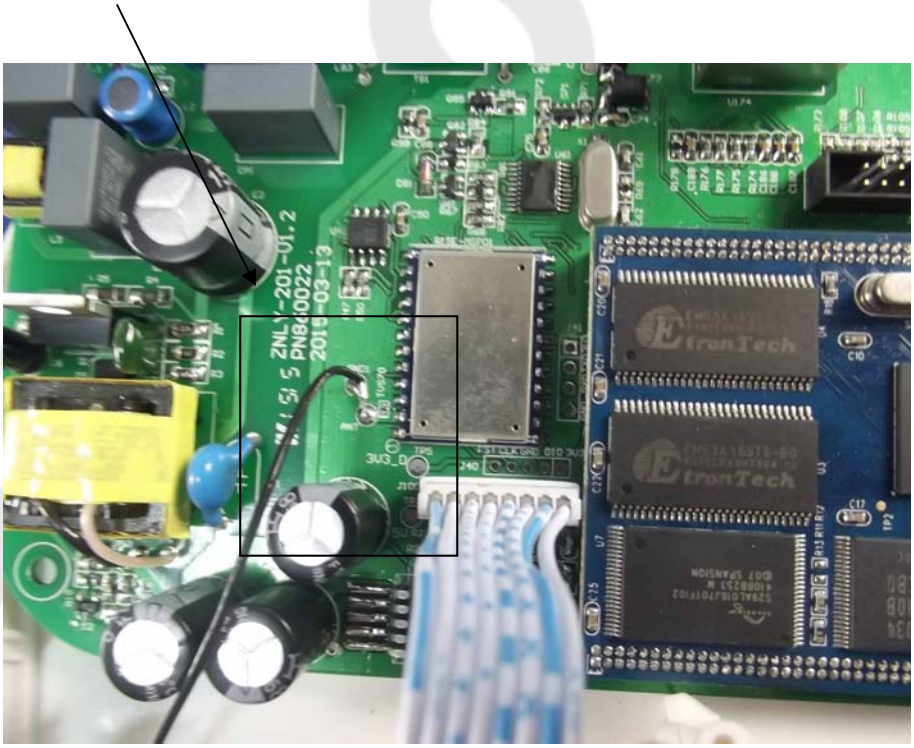
8. Antenna Application

8.1. Antenna Requirement

The EUT'S antenna should meet the requirement of FCC part 15C section 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.
Antenna requirement must meet at least one of the following:
1) Antenna must be permanently attached to device.
2) The antenna must use a unique type of connector to attach to the device.
3) Device must be professionally installed. The installer shall be responsible for ensuring that the correct antenna is employed by the device.

8.2. Result

The antenna is attached permanently to the PCB inside the EUT, which meets the requirement, see the below:



9. TEST PHOTO

9.1. Photo of Conducted Emission Test

9.2. Photo of Radiation Emission Test

APPENDIX I (EXTERNAL PHOTOS)

Figure 1

The EUT-Overall View

Figure 2

The EUT-Top View

Figure 3

The EUT-Bottom View

Figure 4

The EUT-Front View

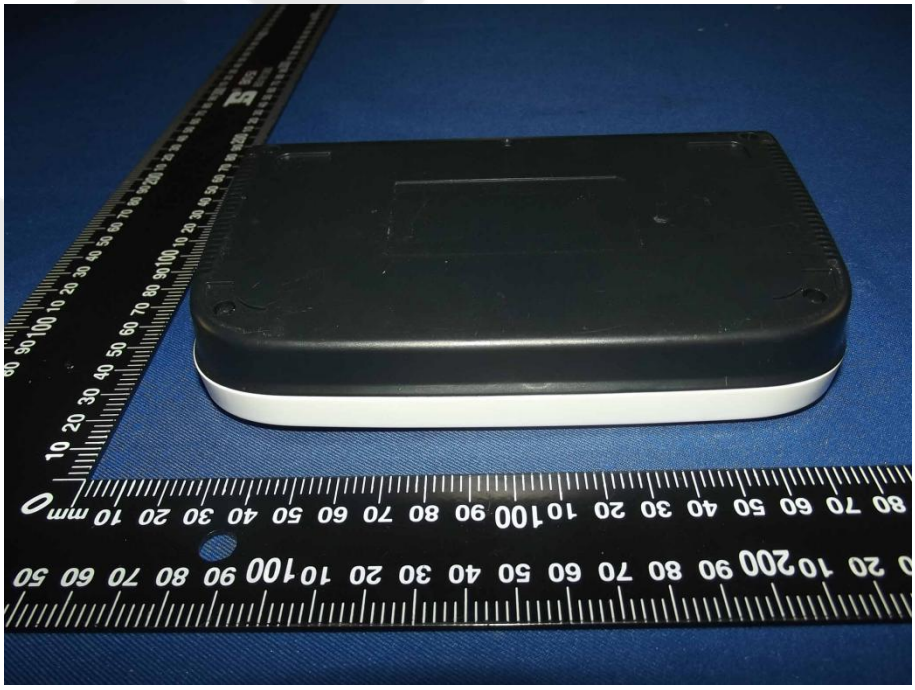


Figure 5

The EUT-Back View

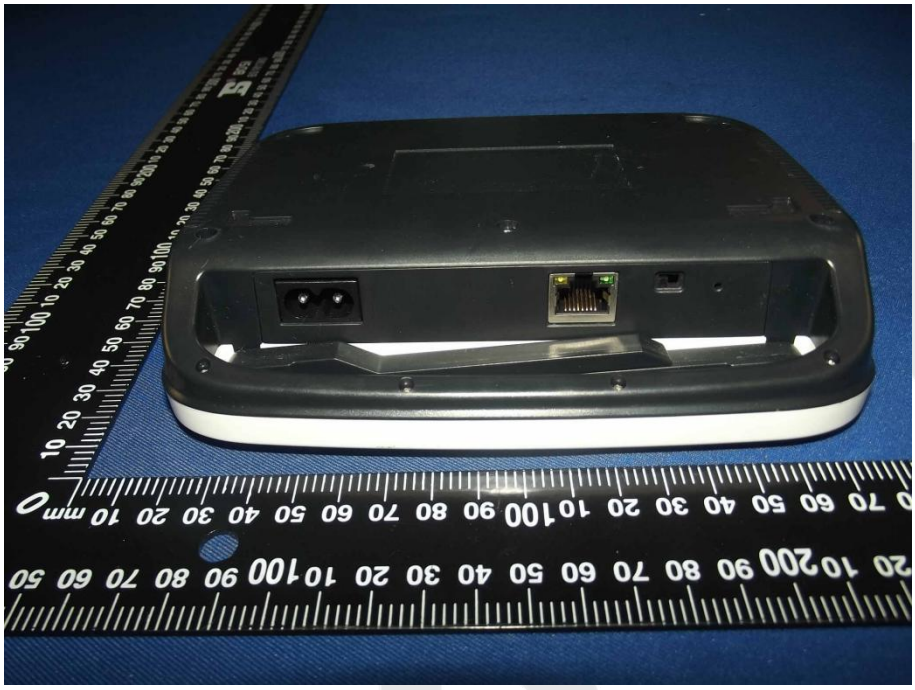
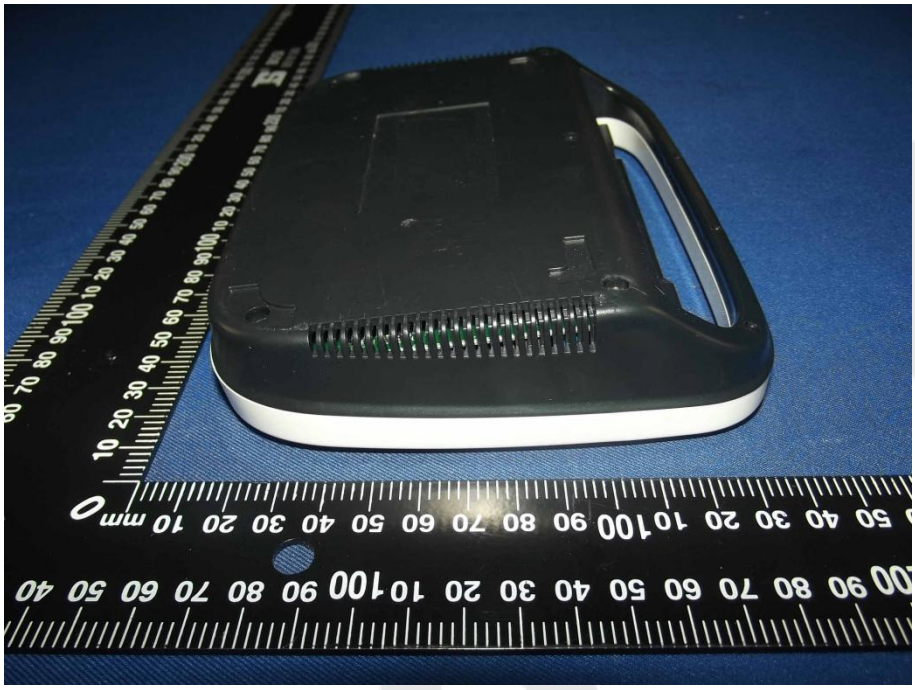


Figure 6

The EUT-Right View

Figure 7

The EUT-Left View



APPENDIX Ⅱ(INTERNAL PHOTOS)

Figure 8

The EUT-Inside View

Figure 9

The EUT-Antenna View (433.92MHz)

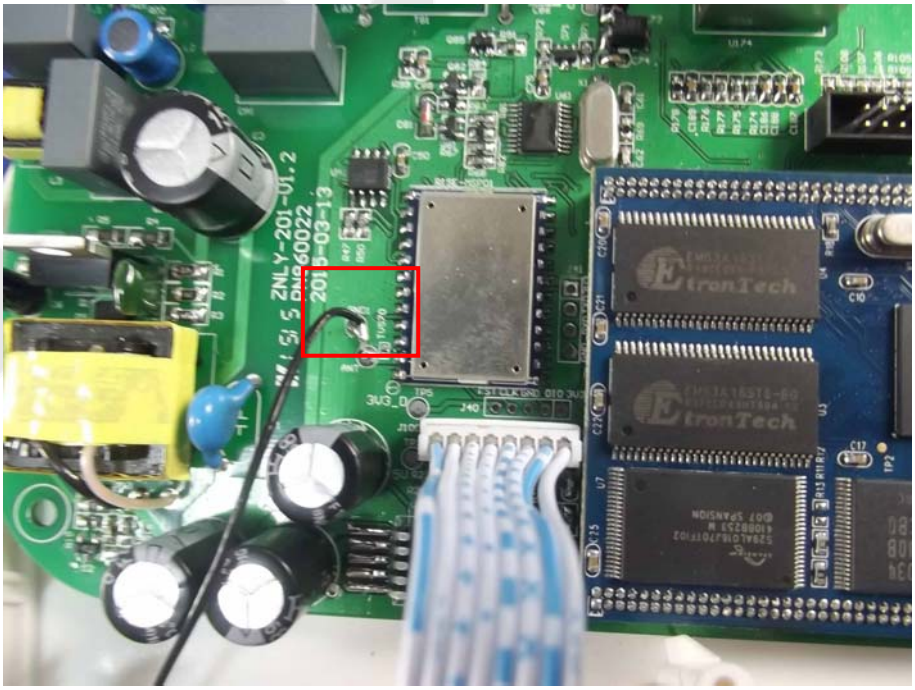


Figure 10

The EUT-Antenna View (WiFi)

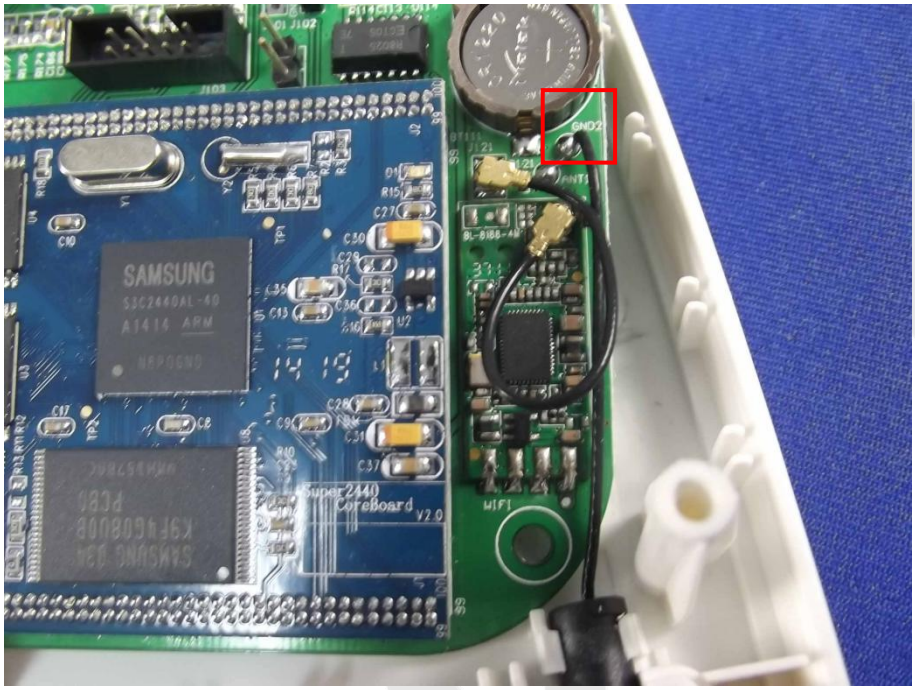


Figure 11

The EUT-Inside View

Figure 12

PCB of the EUT-Front View

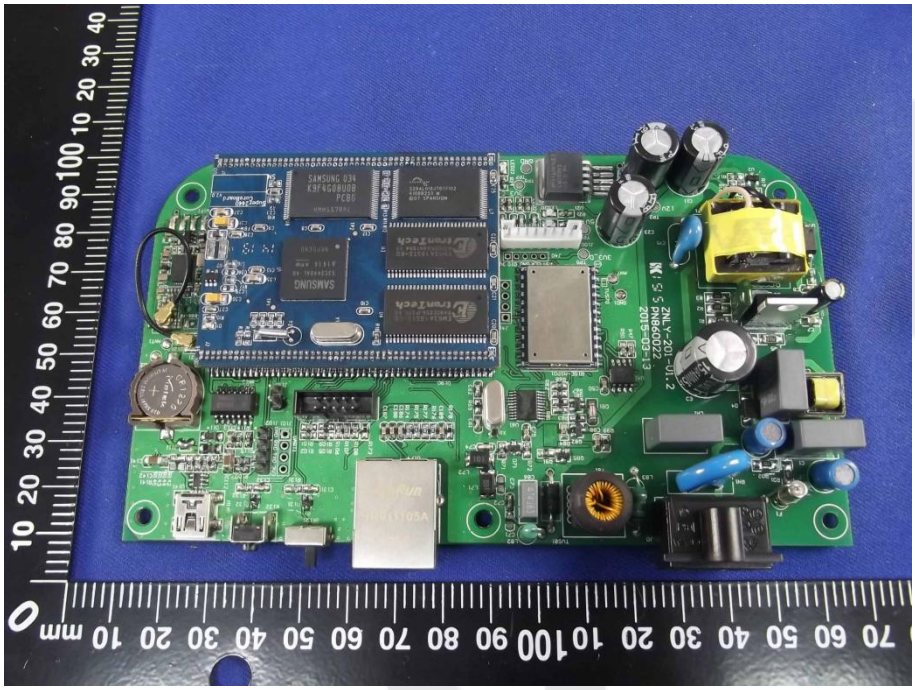


Figure 13

PCB of the EUT-Back View

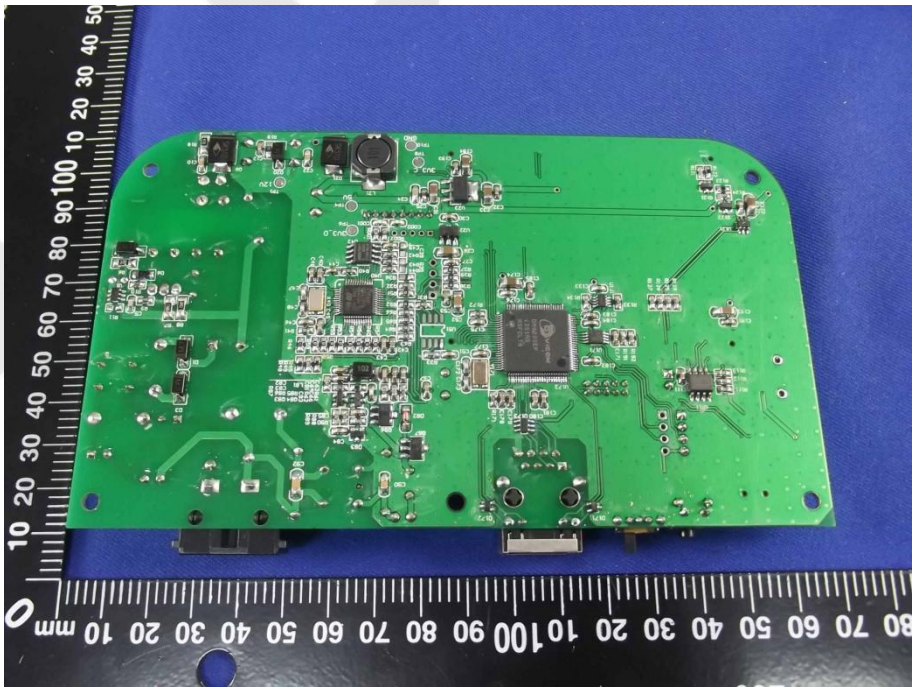


Figure 14

PCB of the EUT-Front View

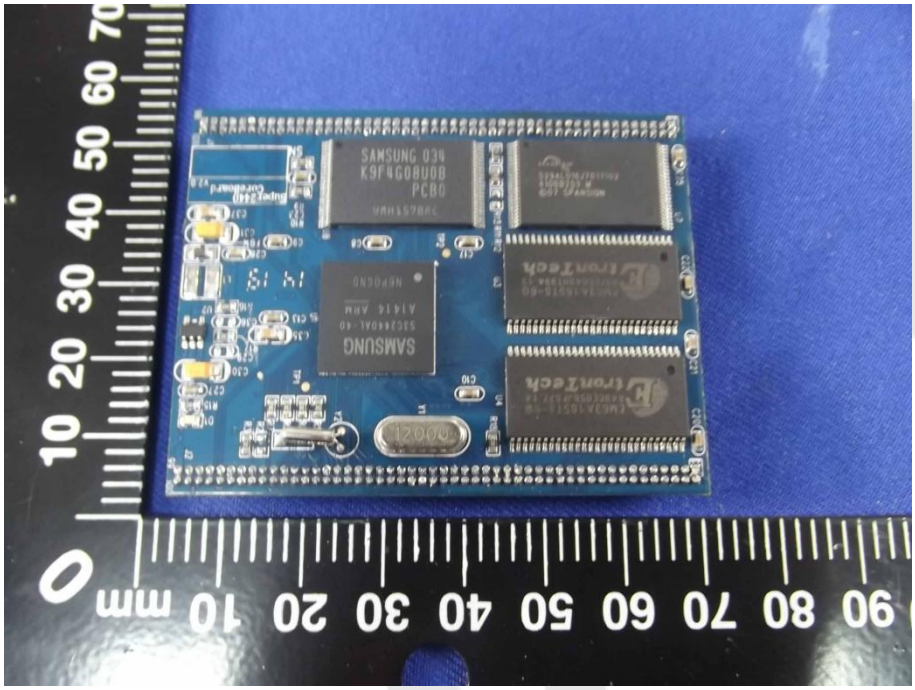


Figure 15

PCB of the EUT-Back View

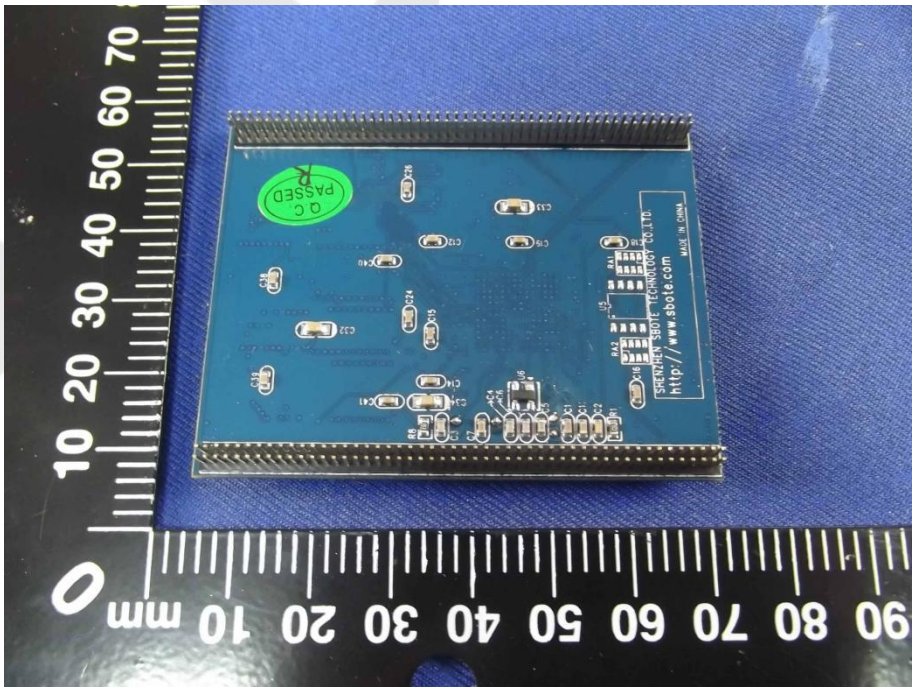


Figure 16

PCB of the EUT-Front View (WiFi Module)

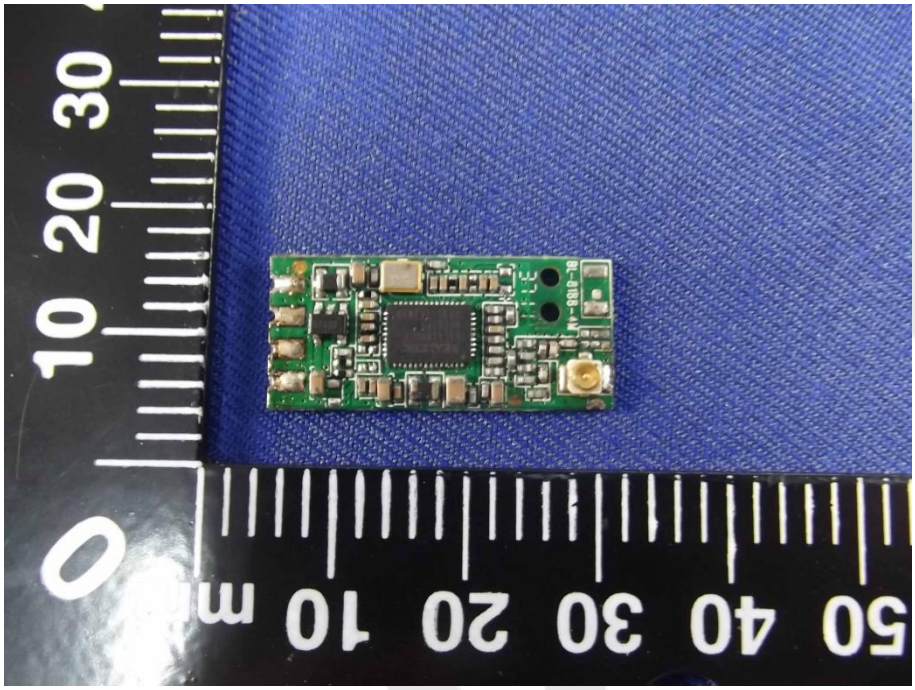


Figure 17

PCB of the EUT-Back View (WiFi Module)

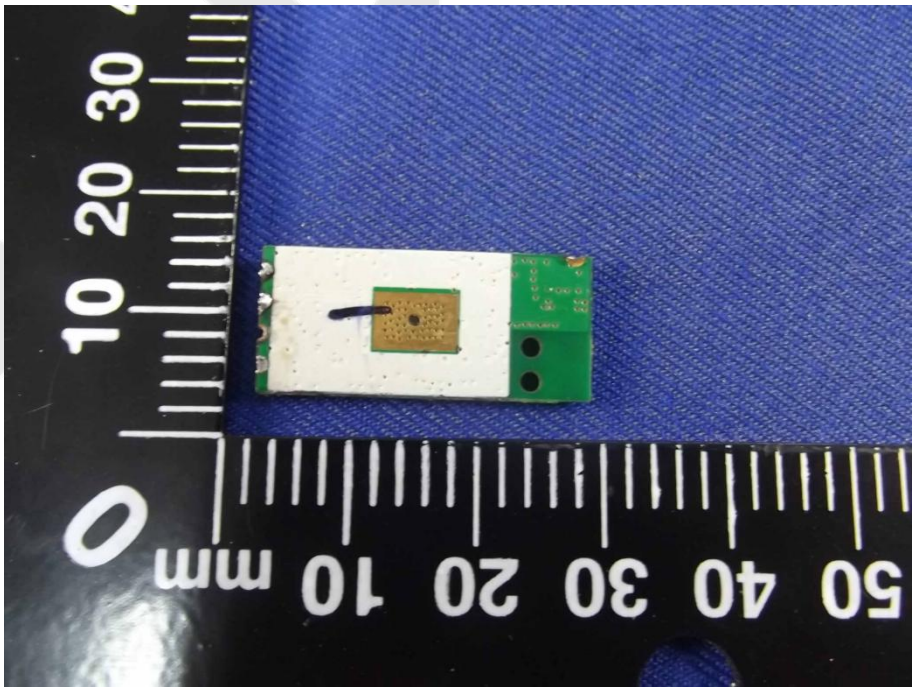


Figure 18

PCB of the EUT-Front View (WiFi Module)

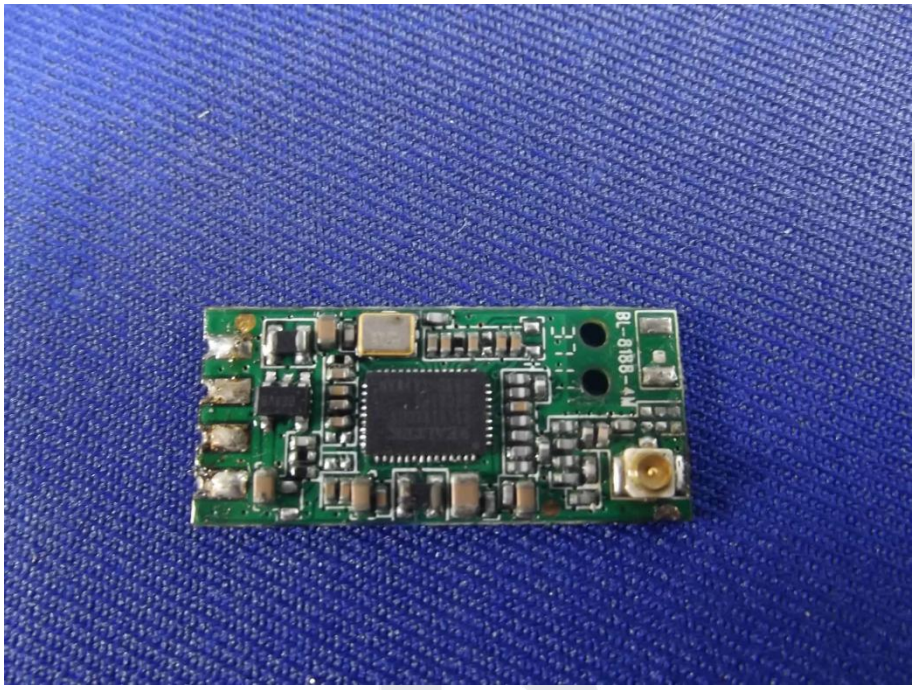


Figure 19

PCB of the EUT-Back View (WiFi Module)

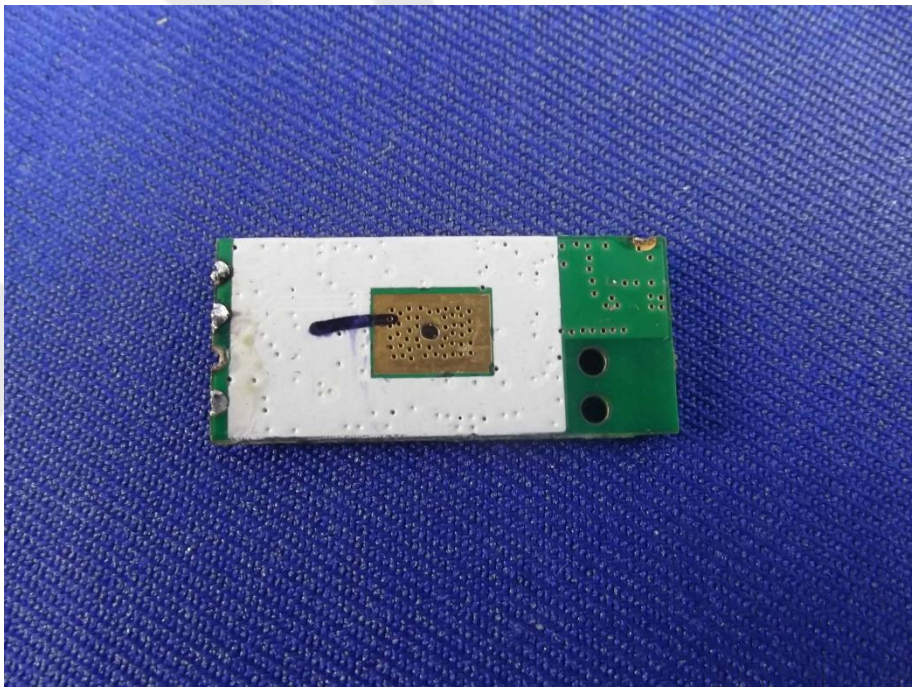


Figure 20

PCB of the EUT-Front View (433.92MHz Module)

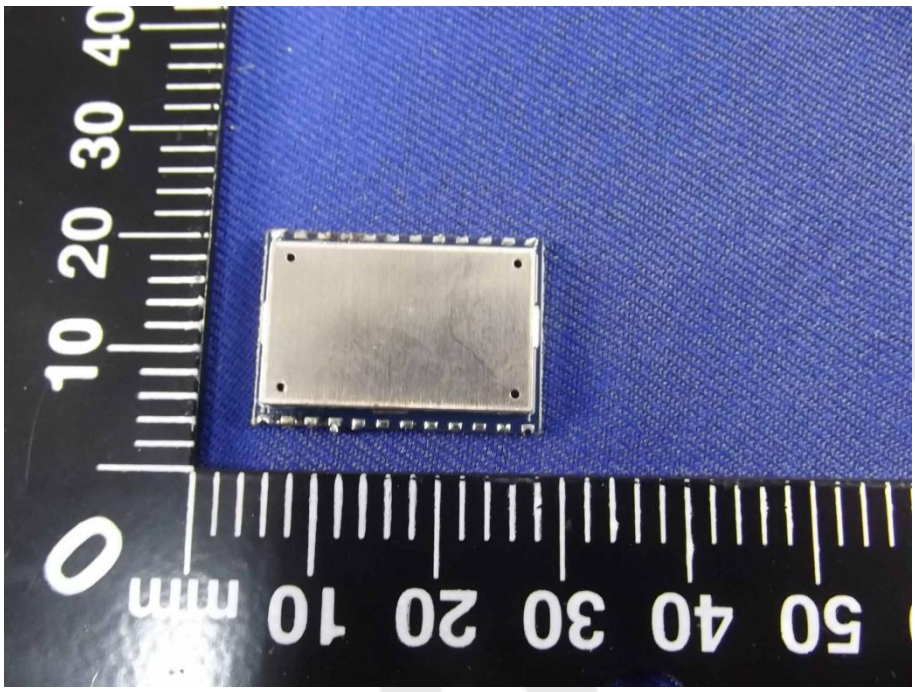


Figure 21

PCB of the EUT-Back View (433.92MHz Module)

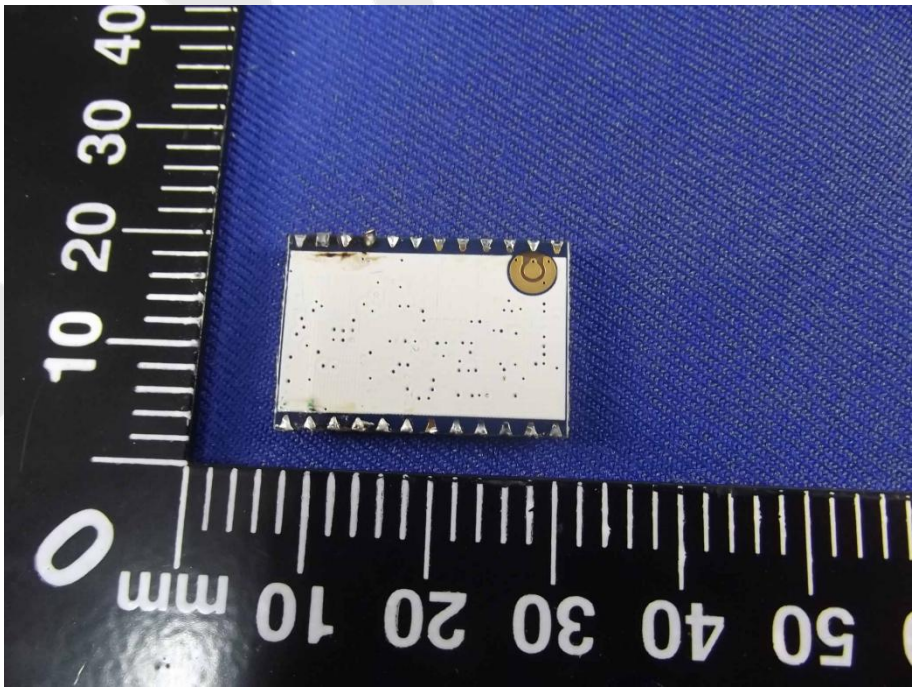


Figure 22

PCB of the EUT-Front View (433.92MHz Module)

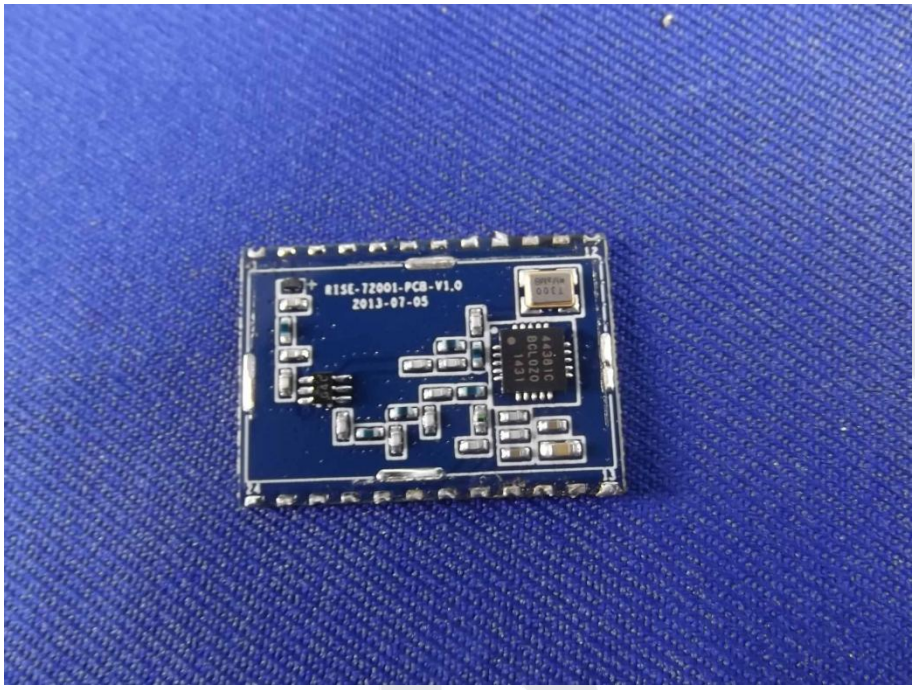


Figure 23

PCB of the EUT-Back View (433.92MHz Module)