FCC TEST REPORT

For

Anhui Ronds Science & Technology Incorporated Company

Wireless Machinery Monitoring Station

Model No.: RH560-WL

Prepared For	:	Anhui Ronds Science & Technology Incorporated Company
Address	:	8th Floor, B1 Building, High-techInnovation Park, No.800 Wangjiang West Road, Hefei, Anhui, 230088, China
Prepared By	:	Shenzhen Anbotek Compliance Laboratory Limited
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Report Number	:	R0117011038W2
Date of Test	:	Feb. 07~Mar. 27, 2017
Date of Report	:	Mar. 27, 2017

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TEST REPORT

Applicant	:	Anhui Ronds Science & Technology Incorporated Company
Manufacturer	:	Anhui Ronds Science & Technology Incorporated Company
Product Name	:	Wireless Machinery Monitoring Station
Model No.	:	RH560-WL
Trade Mark	:	RONDS
Rating(s)	:	AC 100-240V, 50/60Hz, 0.35A

Test Standard(s)	**:**	**FCC Part15 Subpart C, Paragraph 15.249**
Test Method(s)	**:**	**ANSI C63.10: 2013**

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 : : Feb. 07~Mar. 27, 2017

Prepared by : : Winkey Wang

(Tested Engineer / Winkey Wang)

Reviewer : : Brown Lu

(Project Manager / Brown Lu)

Approved & Authorized Signer : : Tom Chen

(Manager / Tom Chen)

1. General Information

1.1. Client Information

Applicant	:	Anhui Ronds Science & Technology Incorporated Company
Address	:	8th Floor, B1 Building, High-techInnovation Park, No.800 Wangjiang West Road, Hefei, Anhui, 230088, China
Manufacturer	:	Anhui Ronds Science & Technology Incorporated Company
Address	:	8th Floor, B1 Building, High-techInnovation Park, No.800 Wangjiang West Road, Hefei, Anhui, 230088, China

1.2. Description of Device (EUT)

Product Name	:	Wireless Machinery Monitoring Station	
Model No.	:	RH560-WL	
Trade Mark	:	RONDS	
Test Power Supply	:	AC 120V, 60Hz /AC 240V, 60Hz	
Product Description	:	Operation Frequency:	WiFi: 2412-2462MHz for 11b/g/n(HT20) Zigbee: 2405-2480MHz
		Number of Channel:	WiFi: 11 Channels Zigbee: 16 Channels
		Modulation Type:	WiFi: 802.11b CCK; 802.11g OFDM; 802.11n MCS Zigbee: O-QPSK
		Antenna Type:	WiFi: Plate Antenna Zigbee: Rod Antenna
		Antenna Gain(Peak):	WiFi: 1.5 dBi Zigbee: 4.0 dBi
Remark: 1)For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2)This report is for Zigbee.			

1.3. Auxiliary Equipment Used During Test

N/A		

1.4. 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	Zigbee Mode
Mode 2	CH01
Mode 3	CH08
Mode 4	CH16

For Conducted Emission	
Final Test Mode	Description
Mode 4	Zigbee Mode

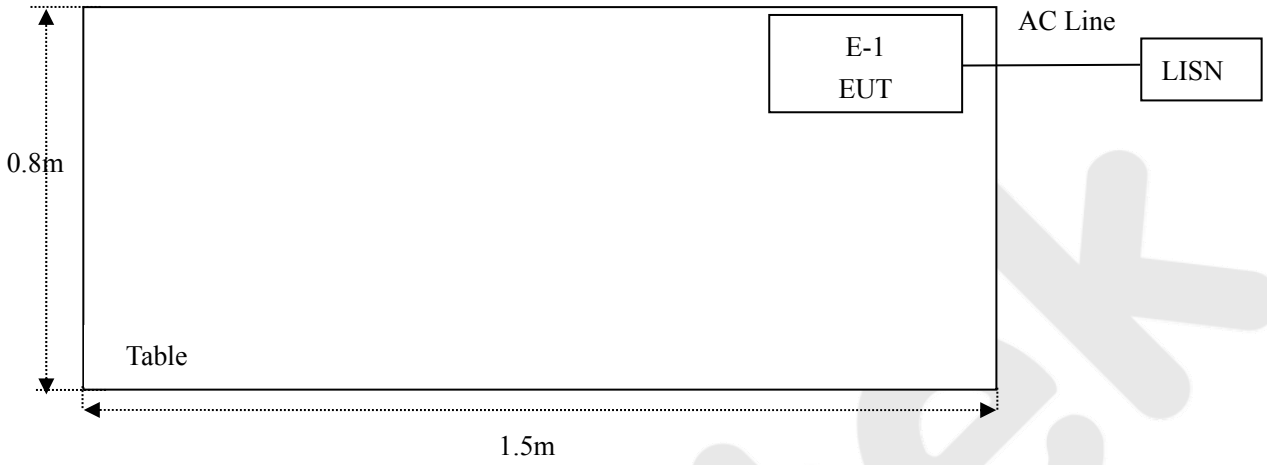
For Radiated Emission	
Final Test Mode	Description
Mode 1	Zigbee Mode
Mode 2	CH01
Mode 3	CH08
Mode 4	CH16

1.5. List of Channels

Channel	Frequency	Channel	Frequency
01	2405 MHz	09	2445 MHz
02	2410 MHz	10	2450 MHz
03	2415 MHz	11	2455 MHz
04	2420 MHz	12	2460 MHz
05	2425 MHz	13	2465 MHz
06	2430 MHz	14	2470 MHz
07	2435 MHz	15	2475 MHz
08	2440 MHz	16	2480 MHz

1.6. Description of Test Setup

CE



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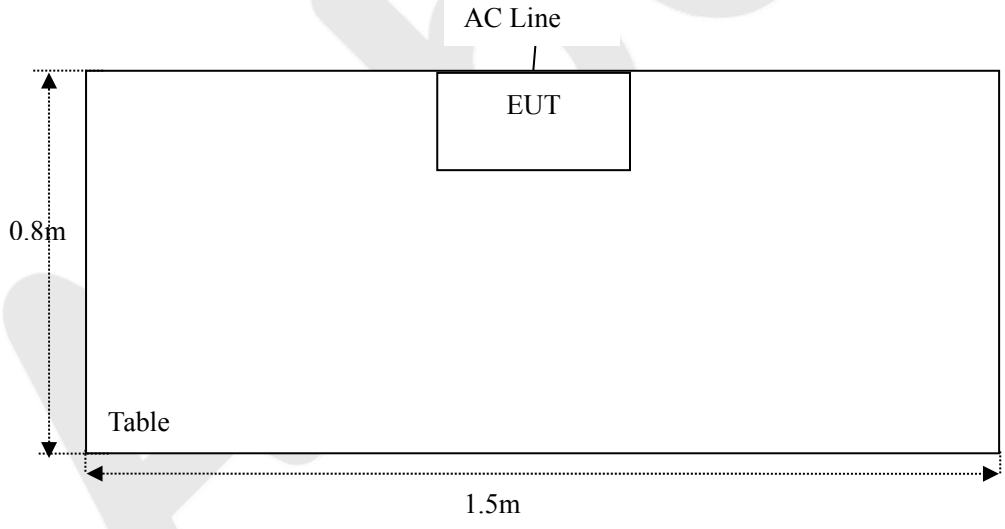


1.7. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Two-Line V-network	Rohde & Schwarz	ENV216	100055	Jul. 19, 2016	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Jun. 17, 2016	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Jun. 17, 2016	1 Year
4.	Spectrum Analysis	Agilent	E4407B	US39390582	Jul. 12, 2016	1 Year
5	Preamplifier	Instruments corporation	EMC011830	980100	Jun. 17, 2016	1 Year
6.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Jun. 17, 2016	1 Year
7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	May 06, 2016	1 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	May 06, 2016	1 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519	012	May 11, 2016	1 Year
10.	Pre-amplifier	SONOMA	310N	186860	Jun. 17, 2016	1 Year
11	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
12.	Power Sensor	Agilent	KFSW150502	15I00041SN045	Jun. 17, 2016	1 Year
13.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Jun. 17, 2016	1 Year
14.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Jun. 17, 2016	1 Year
15	Signal Generator	Agilent	E4421B	MY41000743	Jun. 17, 2016	1 Year
16.	DC Power supply	IV	IV-8080	YQSB0096	Jun. 17, 2016	1 Year
17.	TEMP&HUMI PROGRAMMABLE CHAMBER	Bell Group	BE-THK-150 M8	SE-0137	Jun. 17, 2016	1 Year

1.8. Measurement Uncertainty

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

1.9. Description of Test Facility

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

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 06, 2016.

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, June 13, 2016.

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

2. Summary of Test Results

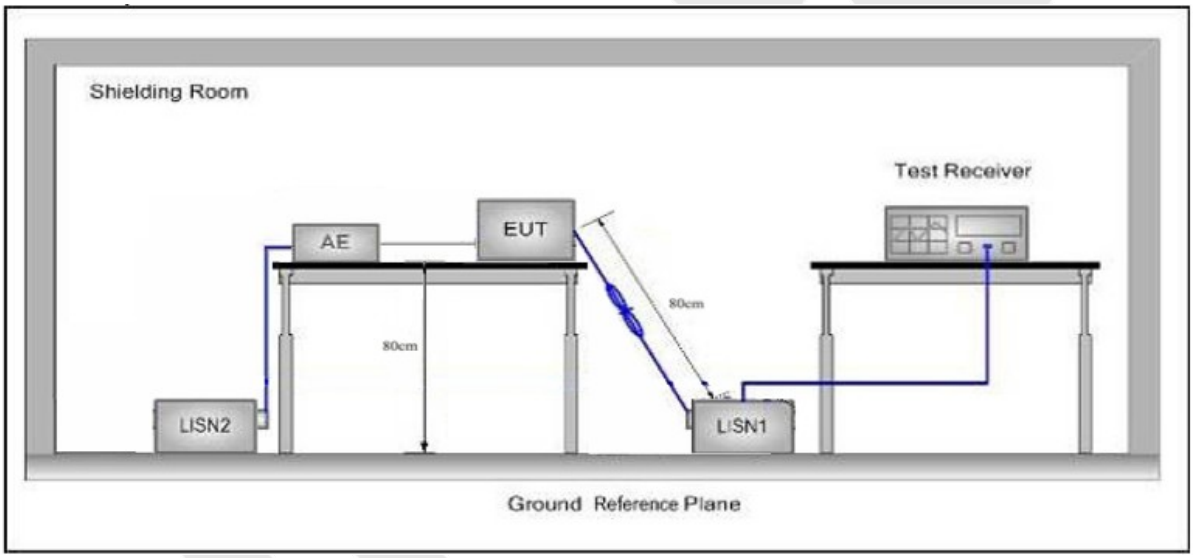
Standard Section	Test Item	Result
15.203	Antenna Requirement	PASS
15.207	Conducted Emission	PASS
15.249	Spurious Emission	PASS
15.215(c)	20dB Bandwidth	PASS
15.249(c)	Band Edge	PASS
Remark: "N/A" is an abbreviation for Not Applicable.		

3. Conducted Emission Test

3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.207		
Test Limit	Frequency	Maximum RF Line Voltage (dBuV)	
		Quasi-peak Level	Average Level
	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
	500kHz~5MHz	56	46
	5MHz~30MHz	60	50
Remark: (1) *Decreasing linearly with logarithm of the frequency. (2) The lower limit shall apply at the transition frequency.			

3.2. Test Setup



3.3. 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.

3.4. Test Data

Please to see the following pages

Conducted Emission Test Data

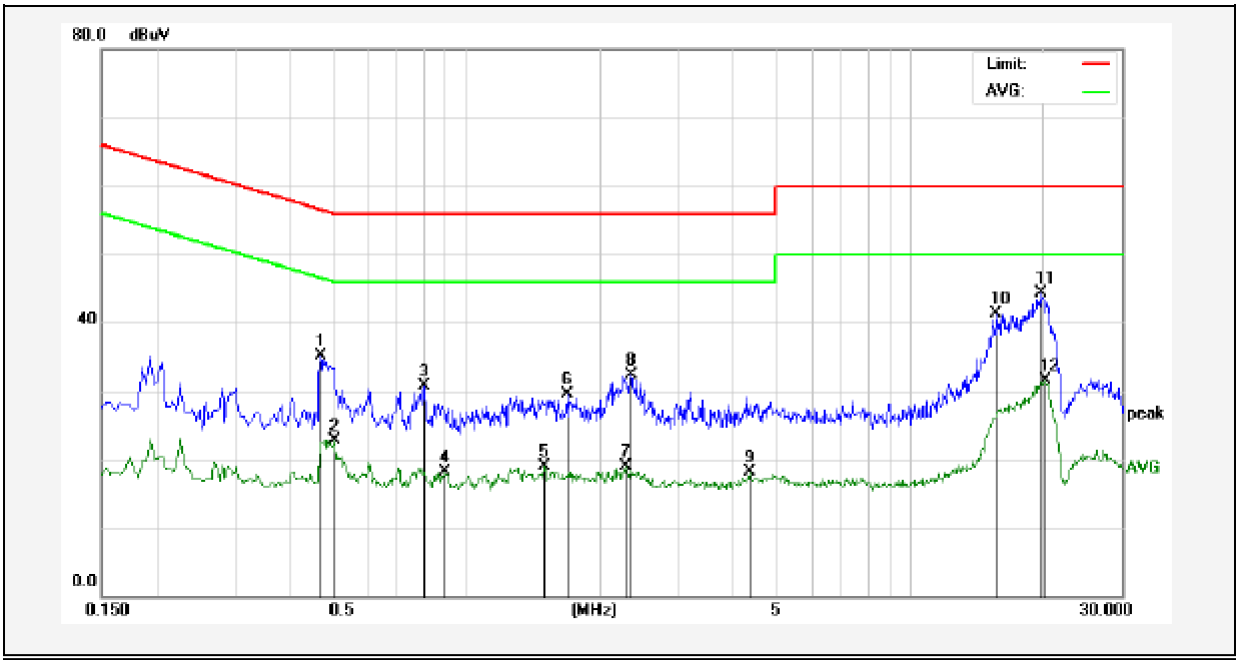
Test Site: 1# Shielded Room

Operating Condition: Zigbee mode

Test Specification: AC 120V, 60Hz

Comment: Live Line

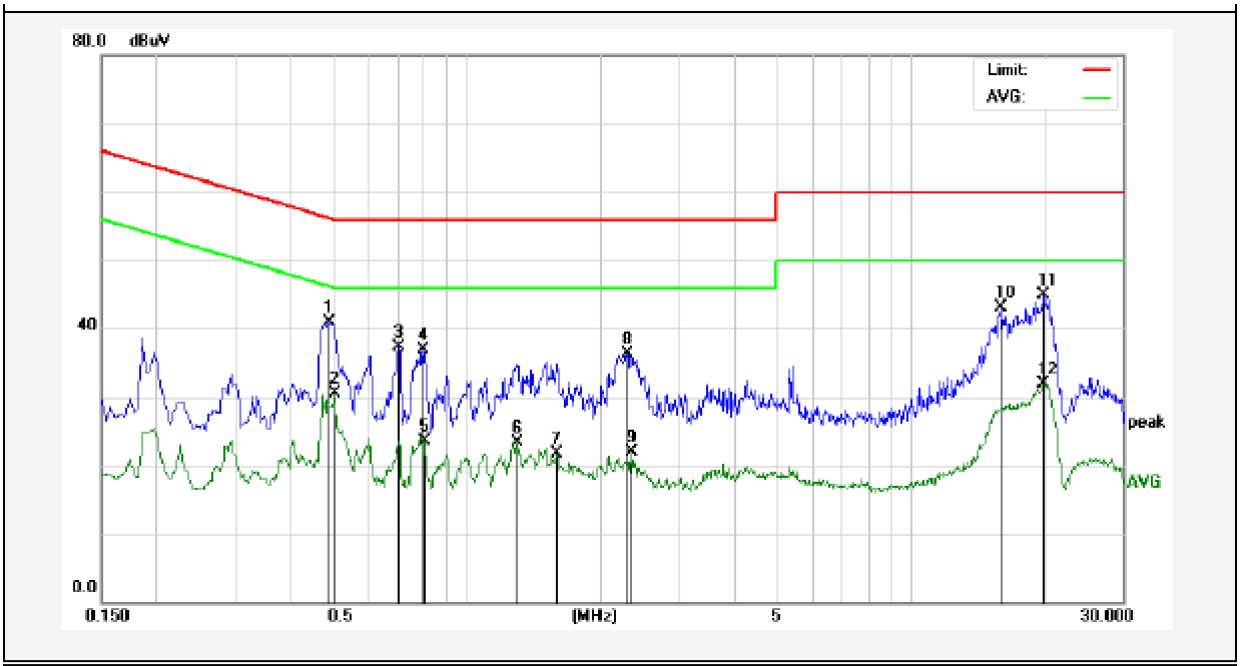
Tem.:25℃ Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.4700	15.11	19.97	35.08	56.51	-21.43	QP	
2	0.5020	2.68	19.98	22.66	46.00	-23.34	AVG	
3	0.8020	10.56	20.07	30.63	56.00	-25.37	QP	
4	0.8980	-2.00	20.09	18.09	46.00	-27.91	AVG	
5	1.5020	-1.29	20.13	18.84	46.00	-27.16	AVG	
6	1.6860	9.29	20.13	29.42	56.00	-26.58	QP	
7	2.2900	-1.22	20.15	18.93	46.00	-27.07	AVG	
8	2.3460	12.16	20.15	32.31	56.00	-23.69	QP	
9	4.3420	-2.11	20.19	18.08	46.00	-27.92	AVG	
10	15.6460	20.99	20.27	41.26	60.00	-18.74	QP	
11	19.6820	24.04	20.33	44.37	60.00	-15.63	QP	
12	20.0740	11.23	20.34	31.57	50.00	-18.43	AVG	

Conducted Emission Test Data

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



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.4900	20.94	19.98	40.92	56.17	-15.25	QP	
2	0.5020	10.47	19.98	30.45	46.00	-15.55	AVG	
3	0.7019	17.28	20.04	37.32	56.00	-18.68	QP	
4	0.7980	16.90	20.07	36.97	56.00	-19.03	QP	
5	0.8020	3.40	20.07	23.47	46.00	-22.53	AVG	
6	1.3020	3.10	20.13	23.23	46.00	-22.77	AVG	
7	1.6019	1.66	20.13	21.79	46.00	-24.21	AVG	
8	2.2980	16.16	20.15	36.31	56.00	-19.69	QP	
9	2.3500	1.82	20.15	21.97	46.00	-24.03	AVG	
10	16.0260	22.90	20.28	43.18	60.00	-16.82	QP	
11	19.9260	24.56	20.34	44.90	60.00	-15.10	QP	
12	19.9260	11.54	20.34	31.88	50.00	-18.12	AVG	

Conducted Emission Test Data

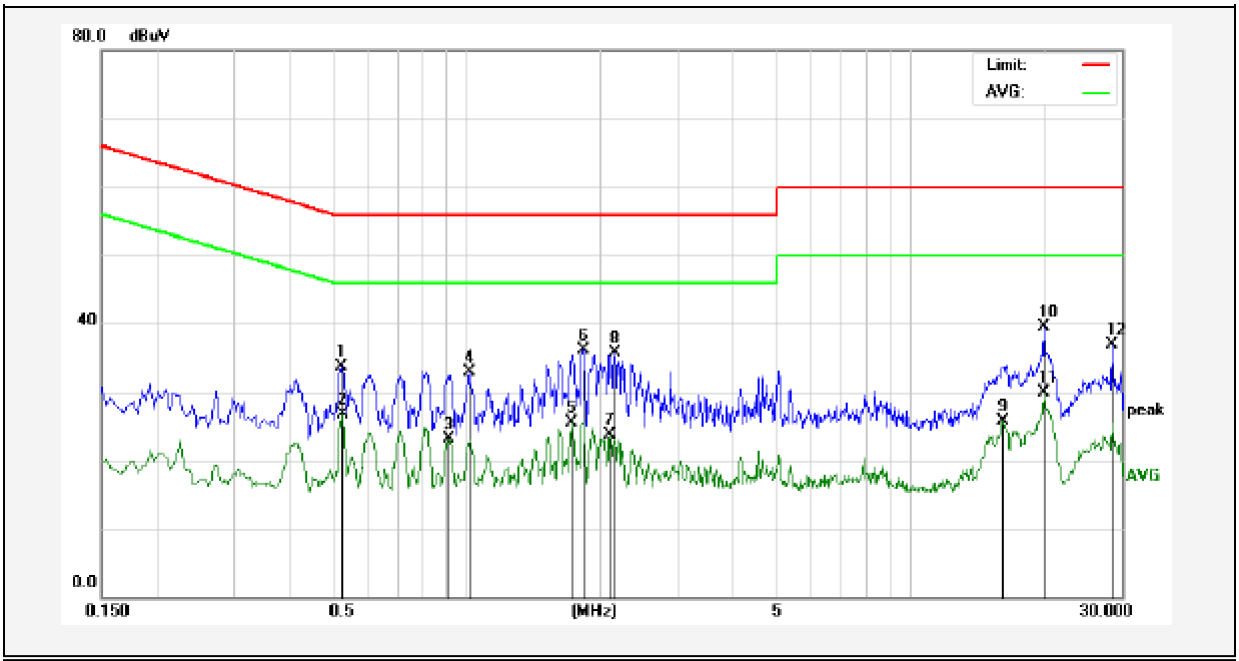
Test Site: 1# Shielded Room

Operating Condition: Zigbee mode

Test Specification: AC 240V, 60Hz

Comment: Live Line

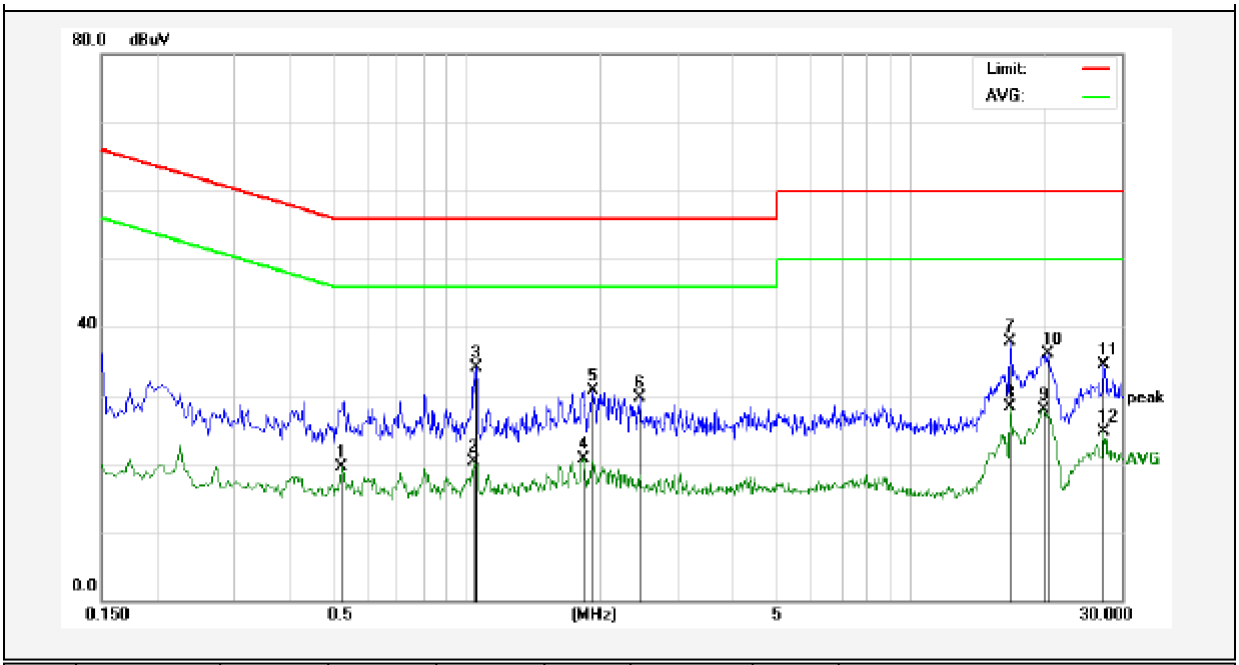
Tem.:25℃ Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.5220	13.63	19.99	33.62	56.00	-22.38	QP	
2	0.5260	6.75	19.99	26.74	46.00	-19.26	AVG	
3	0.9140	3.09	20.10	23.19	46.00	-22.81	AVG	
4	1.0140	12.69	20.12	32.81	56.00	-23.19	QP	
5	1.7260	5.47	20.13	25.60	46.00	-20.40	AVG	
6	1.8300	15.97	20.14	36.11	56.00	-19.89	QP	
7	2.1060	3.55	20.14	23.69	46.00	-22.31	AVG	
8	2.1580	15.54	20.14	35.68	56.00	-20.32	QP	
9	16.2139	5.47	20.28	25.75	50.00	-24.25	AVG	
10	20.0020	19.22	20.34	39.56	60.00	-20.44	QP	
11	20.0020	9.66	20.34	30.00	50.00	-20.00	AVG	
12	28.5260	16.68	20.27	36.95	60.00	-23.05	QP	

Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: Zigbee mode
Test Specification: AC 240V, 60Hz
Comment: Neutral Line
Tem.:25℃ Hum.:50%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.5220	-0.40	19.99	19.59	46.00	-26.41	AVG	
2	1.0380	0.17	20.12	20.29	46.00	-25.71	AVG	
3	1.0540	14.05	20.12	34.17	56.00	-21.83	QP	
4	1.8300	0.66	20.14	20.80	46.00	-25.20	AVG	
5	1.9380	10.64	20.14	30.78	56.00	-25.22	QP	
6	2.4580	9.62	20.15	29.77	56.00	-26.23	QP	
7	16.8180	17.63	20.29	37.92	60.00	-22.08	QP	
8	16.8180	8.00	20.29	28.29	50.00	-21.71	AVG	
9	19.9020	7.62	20.34	27.96	50.00	-22.04	AVG	
10	20.4020	15.68	20.34	36.02	60.00	-23.98	QP	
11	27.4020	14.17	20.28	34.45	60.00	-25.55	QP	
12	27.4020	4.42	20.28	24.70	50.00	-25.30	AVG	

4. Radiation Spurious Emission and Band Edge

4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.209 and 15.205				
Test Limit	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz~0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz~88MHz	100	40.0	Quasi-peak	3
	88MHz~216MHz	150	43.5	Quasi-peak	3
	216MHz~960MHz	200	46.0	Quasi-peak	3
	960MHz~1000MHz	500	54.0	Quasi-peak	3
	Above 1000MHz	500	54.0	Average	3
		-	74.0	Peak	3

Remark:

(1)The lower limit shall apply at the transition frequency.

(2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Test Standard	FCC Part15 C Section 15.249					
Test Limit	Frequency (MHz)	Field Strength of fundamental ((millivolts /meter)	Field Strength of Harmonics (microvolts/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	2400~2483.5	50	-	114.0	Peak	3
	2400~2483.5	50	-	94.0	Average	3
	2400~2483.5	-	500	74.0	Peak	3
	2400~2483.5	-	500	54.0	Average	3

Remark:

(1) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

4.2. Test Setup

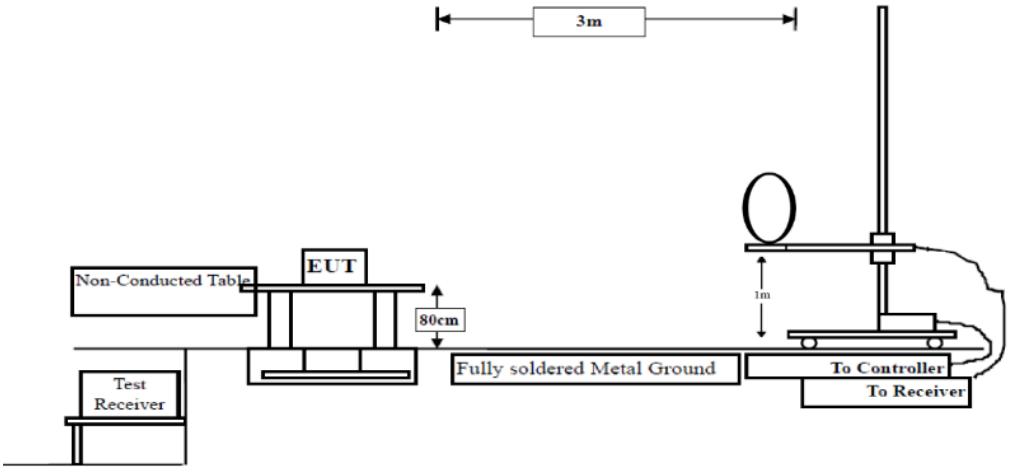


Figure 1. Below 30MHz

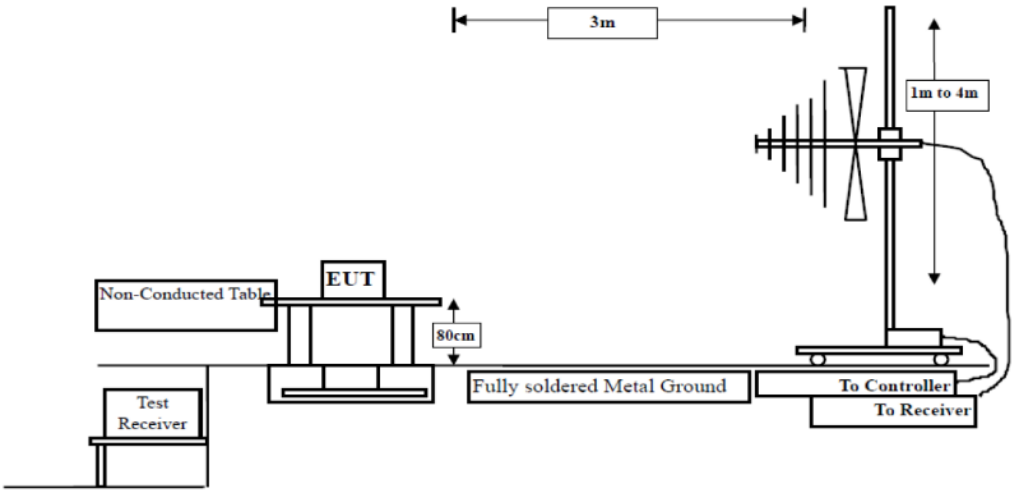


Figure 2. 30MHz to 1GHz

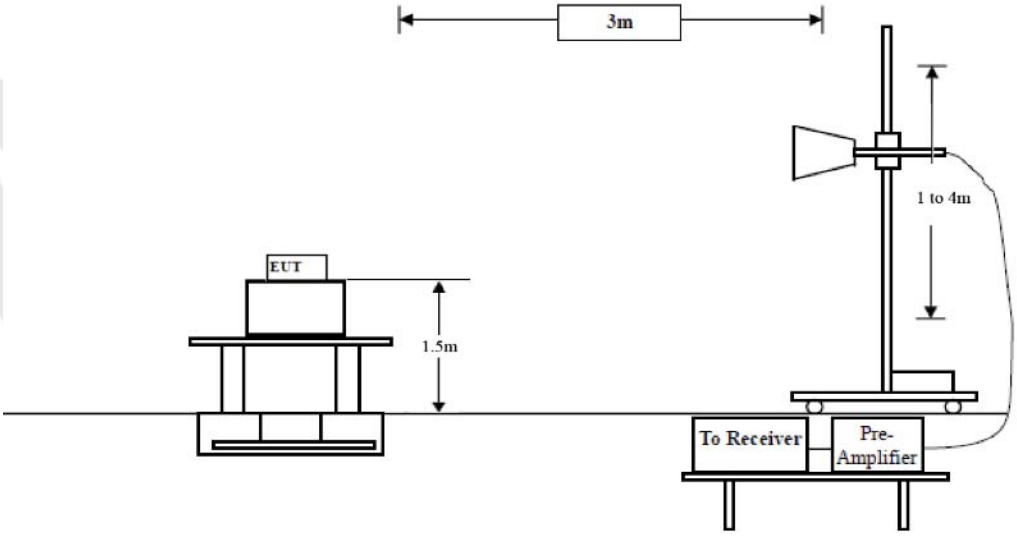


Figure 3. Above 1 GHz

4.3. 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. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

For 9kHz to 150kHz, Set the spectrum analyzer as:
RBW = 200Hz, VBW =1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:
RBW = 9KHz, VBW =30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:
RBW = 100kHz, VBW =300kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.
.
For above 1GHz,Set the spectrum analyzer as:
RBW =1MHz, VBW =10Hz, Detector= Average, Trace mode= Max hold, Sweep- auto couple.

4.4. Test Data

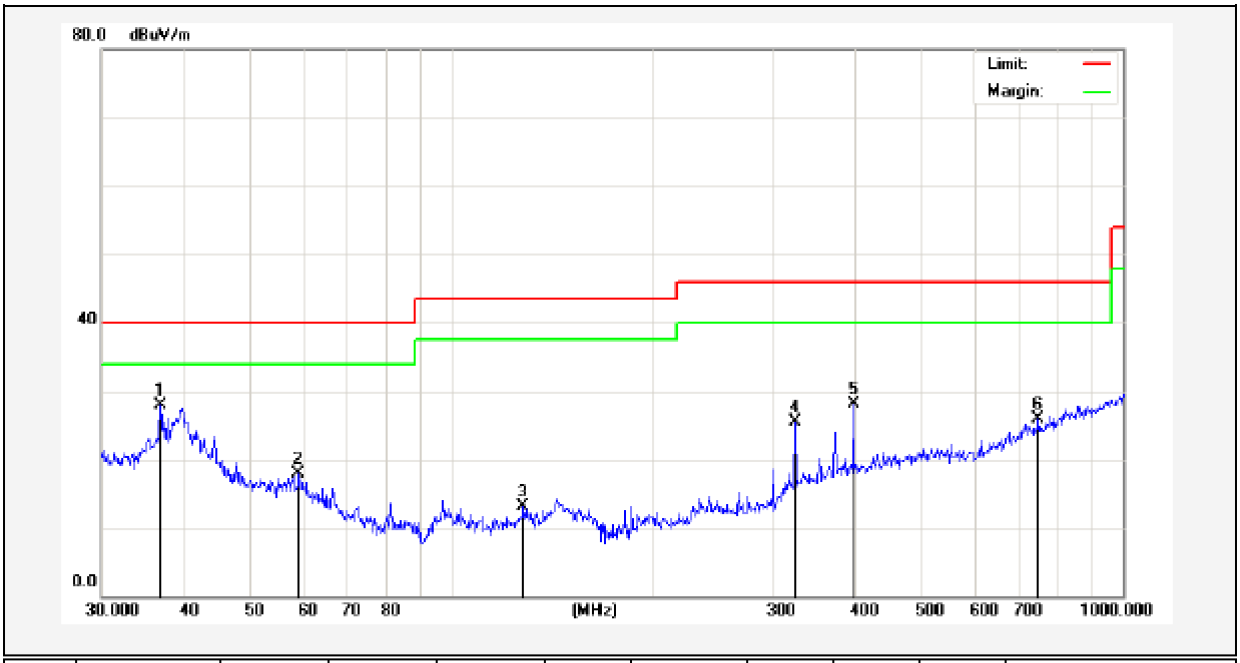
PASS

During the test, Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis is the worst case.

The test results of 9kHz-30MHz and above 18000MHz are attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Test Results (30~1000MHz)

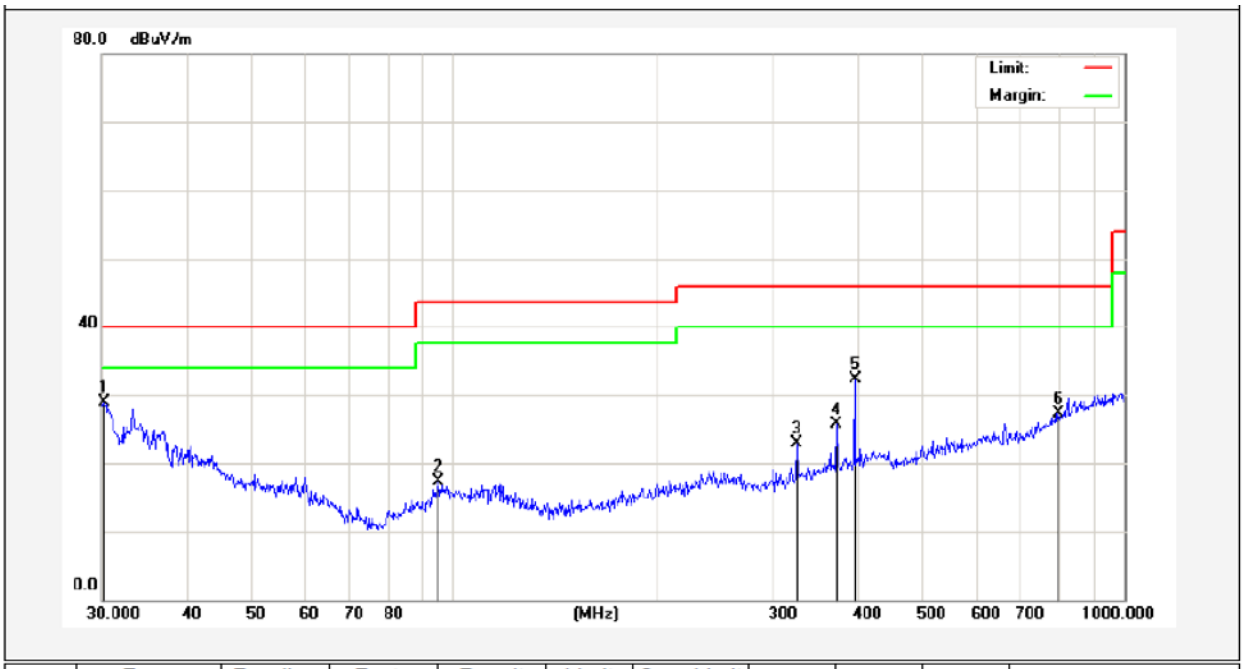
Job No.:	0117011038W	Temp.(℃)/Hum.(%RH):	24.3℃/55%RH
Standard:	FCC PART 15C	Power Source:	AC120V/60Hz
Test Mode:	Zigbee Mode	Polarization:	Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	36.7662	40.82	-12.91	27.91	40.00	-12.09	peak			
2	59.0251	33.23	-15.31	17.92	40.00	-22.08	peak			
3	127.6645	30.62	-17.47	13.15	43.50	-30.35	peak			
4	324.4561	39.61	-14.04	25.57	46.00	-20.43	peak			
5	396.2415	40.10	-11.94	28.16	46.00	-17.84	peak			
6	747.4825	32.96	-7.07	25.89	46.00	-20.11	peak			

Test Results (30~1000MHz)

Job No.:	0117011038W	Temp.(℃)/Hum.(%RH):	24.3℃/55%RH
Standard:	FCC PART 15C	Power Source:	AC120V/60HZ
Test Mode:	WIFI Mode	Polarization:	Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	30.2111	45.65	-16.84	28.81	40.00	-11.19	peak			
2	95.0930	38.38	-21.00	17.38	43.50	-26.12	peak			
3	324.4561	37.87	-15.04	22.83	46.00	-23.17	peak			
4	372.0045	39.13	-13.43	25.70	46.00	-20.30	peak			
5	396.2415	45.20	-12.94	32.26	46.00	-13.74	peak			
6	796.1830	33.99	-6.65	27.34	46.00	-18.66	peak			

Test Results (Above 1000MHz)

Horizontal
CH Low (2405MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBµV	Level dBµV/m	Limit dBµV/m	Over Limit dB	Remark
2405.000	2.17	31.21	35.30	87.25	85.33	114.0	-28.67	Peak
2405.000	2.17	31.21	35.30	79.45	77.53	94.0	-16.47	AV
4810.240	2.56	34.01	34.71	48.28	50.14	74.0	-23.86	Peak
4810.240	2.56	34.01	34.71	34.74	36.60	54.0	-17.40	AV
7215.510	2.98	36.16	35.15	42.13	46.12	74.0	-27.88	Peak
7215.510	2.98	36.16	35.15	34.05	38.04	54.0	-15.96	AV
9620.000	---	---	---	---	---	---	---	---
12035.00	---	---	---	---	---	---	---	---
14440.00	---	---	---	---	---	---	---	---
16845.00	---	---	---	---	---	---	---	---

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Vertical
CH Low (2405MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBµV	Level dBµV/m	Limit dBµV/m	Over Limit dB	Remark
2405.000	2.17	31.21	35.30	89.58	87.66	114.0	-26.34	Peak
2405.000	2.17	31.21	35.30	81.24	79.32	94.0	-14.68	AV
4810.240	2.56	34.01	34.71	44.12	45.98	74.0	-28.02	Peak
4810.240	2.56	34.01	34.71	35.26	37.12	54.0	-16.88	AV
7215.510	2.98	36.16	35.15	40.25	44.24	74.0	-29.76	Peak
7215.510	2.98	36.16	35.15	34.74	38.73	54.0	-15.27	AV
9620.000	---	---	---	---	---	---	---	---
12035.00	---	---	---	---	---	---	---	---
14440.00	---	---	---	---	---	---	---	---
16845.00	---	---	---	---	---	---	---	---

Horizontal
CH Middle (2440MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2440.000	2.19	31.22	34.60	88.41	87.22	114.0	-26.78	Peak
2440.000	2.19	31.22	34.60	80.15	78.96	94.0	-15.04	AV
4880.730	2.57	35.00	34.58	45.13	48.12	74.0	-25.88	Peak
4880.730	2.57	35.00	34.58	33.12	36.11	54.0	-17.89	AV
7320.270	3.00	36.17	35.14	41.87	45.90	74.0	-28.10	Peak
7320.270	3.00	36.17	35.14	35.94	39.97	54.0	-14.03	AV
9760.000	---	---	---	---	---	---	---	---
12200.00	---	---	---	---	---	---	---	---
14640.00	---	---	---	---	---	---	---	---
17080.00	---	---	---	---	---	---	---	---

Vertical
CH Middle (2440MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2440.000	2.19	31.22	34.60	91.45	90.26	114.0	-23.74	Peak
2440.000	2.19	31.22	34.60	82.33	81.14	94.0	-12.86	AV
4880.390	2.57	35.00	34.58	48.27	51.26	74.0	-22.74	Peak
4880.390	2.57	35.00	34.58	40.12	43.11	54.0	-10.89	AV
7320.660	3.00	36.17	35.14	43.62	47.65	74.0	-26.35	Peak
7320.660	3.00	36.17	35.14	35.06	39.09	54.0	-14.91	AV
9760.000	---	---	---	---	---	---	---	---
12200.00	---	---	---	---	---	---	---	---
14640.00	---	---	---	---	---	---	---	---
17080.00	---	---	---	---	---	---	---	---

Horizontal

CH High (2480MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2480.000	2.20	31.65	36.00	92.14	89.99	114.0	-24.01	Peak
2480.000	2.20	31.65	36.00	80.58	78.43	94.0	-15.57	AV
4960.430	2.58	35.06	34.79	44.26	47.11	74.0	-26.89	Peak
4960.430	2.58	35.06	34.79	38.41	41.26	54.0	-12.74	AV
7440.860	3.02	36.19	34.90	47.05	51.36	74.0	-22.64	Peak
7440.860	3.02	36.20	35.20	39.77	43.79	54.0	-10.21	AV
9920.00	---	---	---	---	---	---	---	---
12400.00	---	---	---	---	---	---	---	---
14480.00	---	---	---	---	---	---	---	---
17360.00	---	---	---	---	---	---	---	---

Vertical

CH High (2480MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
2480.000	2.20	31.65	36.00	94.46	92.31	114.0	-21.69	Peak
2480.000	2.20	31.65	36.00	84.27	82.12	94.0	-11.88	AV
4960.430	2.58	35.06	34.79	46.35	49.20	74.0	-24.80	Peak
4960.430	2.58	35.06	34.79	37.12	39.97	54.0	-14.03	AV
7440.860	3.02	36.19	34.90	43.78	48.09	74.0	-25.91	Peak
7440.860	3.02	36.20	35.20	39.71	43.73	54.0	-10.27	AV
9920.00	---	---	---	---	---	---	---	---
12400.00	---	---	---	---	---	---	---	---
14480.00	---	---	---	---	---	---	---	---
17360.00	---	---	---	---	---	---	---	---

NOTE: " --- " 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.

The results of different modulations are the same.

Radiated Band Edge:

Test Mode:				Test channel: Lowest				
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
2390.00	51.61	29.15	3.41	34.01	50.16	74.00	-23.84	H
2400.00	60.61	29.16	3.43	34.01	59.19	74.00	-14.81	H
2390.00	53.29	29.15	3.41	34.01	51.84	74.00	-22.16	V
2400.00	62.39	29.16	3.43	34.01	60.97	74.00	-13.03	V
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
2390.00	38.38	29.15	3.41	34.01	36.93	54.00	-17.07	H
2400.00	46.67	29.16	3.43	34.01	45.25	54.00	-8.75	H
2390.00	40.20	29.15	3.41	34.01	38.75	54.00	-15.25	V
2400.00	47.79	29.16	3.43	34.01	46.37	54.00	-7.63	V

Test Mode:				Test channel: Highest				
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
2483.50	52.25	29.28	3.53	34.03	51.03	74.00	-22.97	H
2500.00	48.09	29.30	3.56	34.03	46.92	74.00	-27.08	H
2483.50	54.50	29.28	3.53	34.03	53.28	74.00	-20.72	V
2500.00	50.59	29.30	3.56	34.03	49.42	74.00	-24.58	V
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
2483.50	38.74	29.28	3.53	34.03	37.52	54.00	-16.48	H
2500.00	34.85	29.30	3.56	34.03	33.68	54.00	-20.32	H
2483.50	40.68	29.28	3.53	34.03	39.46	54.00	-14.54	V
2500.00	36.73	29.30	3.56	34.03	35.56	54.00	-18.44	V

Remark:

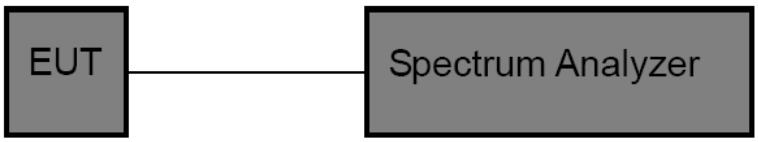
1. Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

5. 20dB Bandwidth Test

5.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.249

5.2. Test Setup



5.3. Test Procedure

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as:

RBW = 10kHz, VBW≥3*RBW =30kHz,

Detector= CISPR quasi-peak

Trace mode= Max hold.

Sweep- auto couple.

4. Mark the peak frequency and –20dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

5.4. Test Data

Test Item	:	20dB Bandwidth	Test Mode	:	TX Mode
Test Voltage	:	AC 120V, 60Hz	Temperature	:	24℃
Test Result	:	PASS	Humidity	:	55%RH

Frequency (MHz)	Bandwidth (kHz)	Result
2405MHZ	6085	PASS
2440MHZ	6062	PASS
2480MHZ	6031	PASS

Test Mode: Low

Test Mode: Middle

Test Mode: High

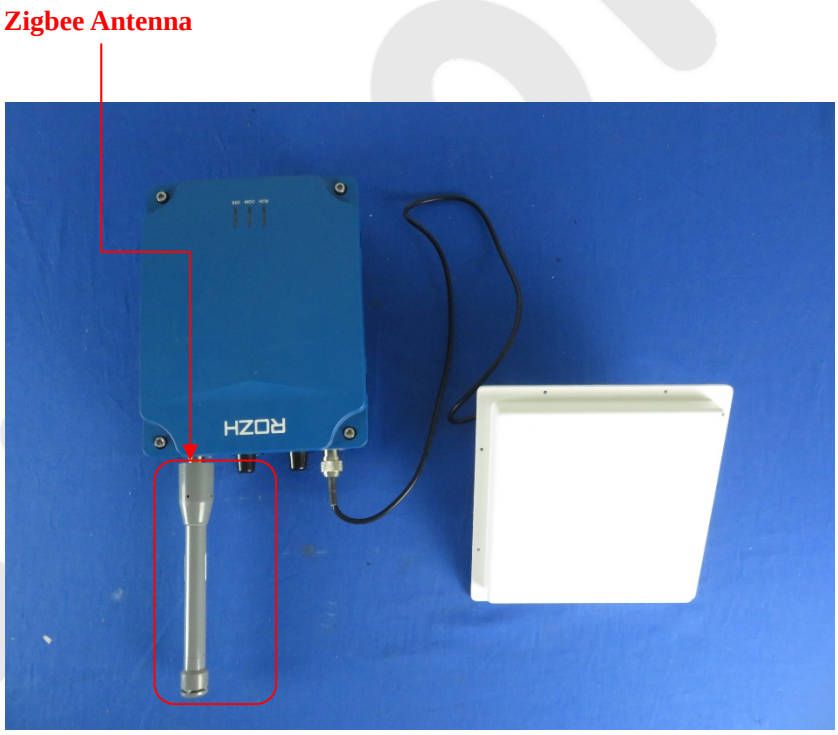
6. Antenna Requirement

6.1. Test Standard and Requirement

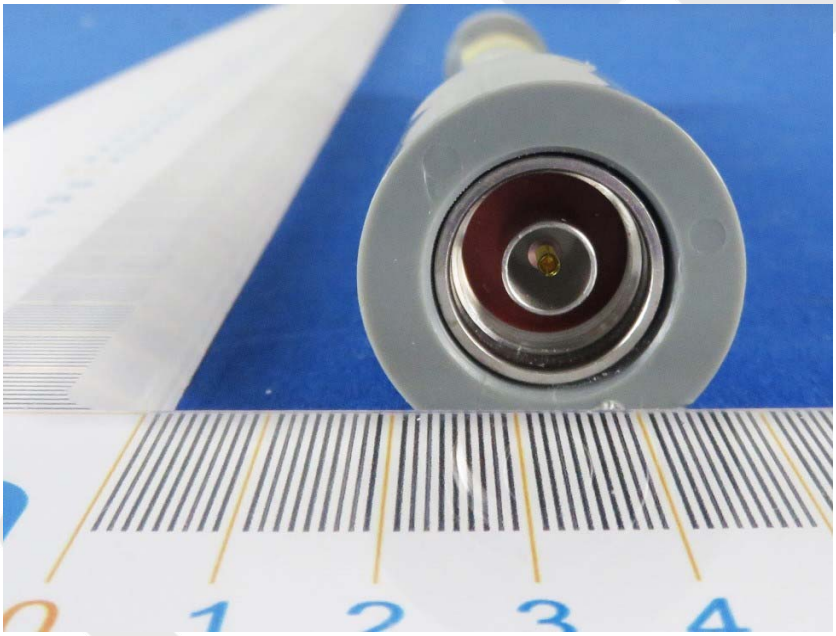
Test Standard	FCC Part15 Section 15.203
Requirement	1) 15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

6.2. Antenna Connected Construction

The antenna is a rod antenna which connect with a RP-connector, and the best case gain of the antenna is 4.0dBi. It complies with the standard requirement.



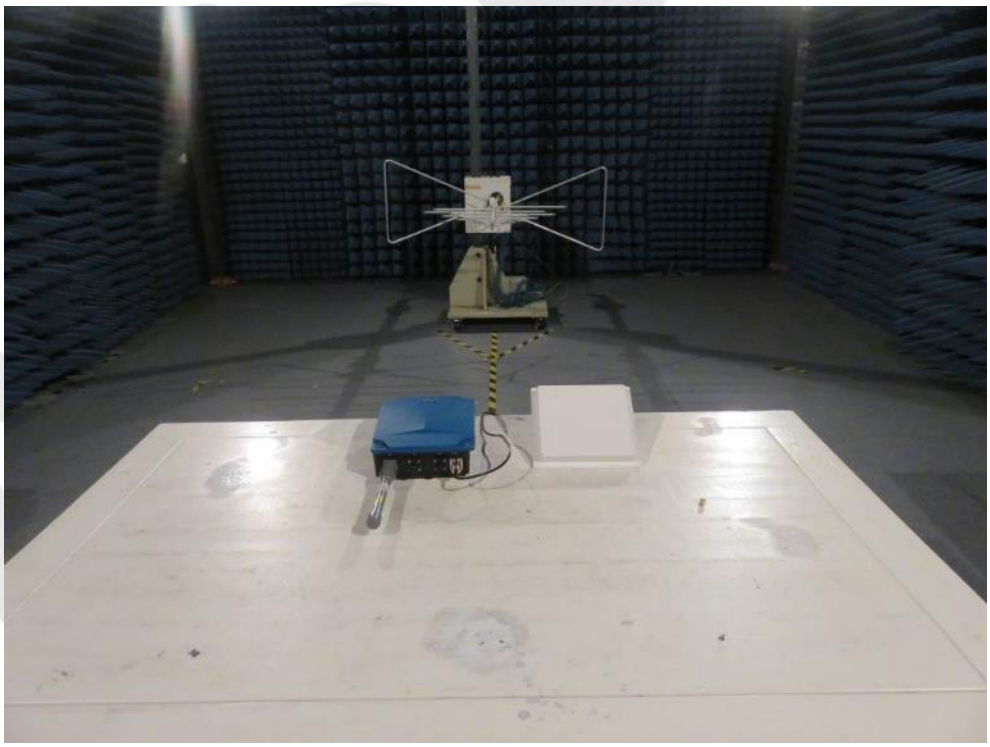

RF
WIFI

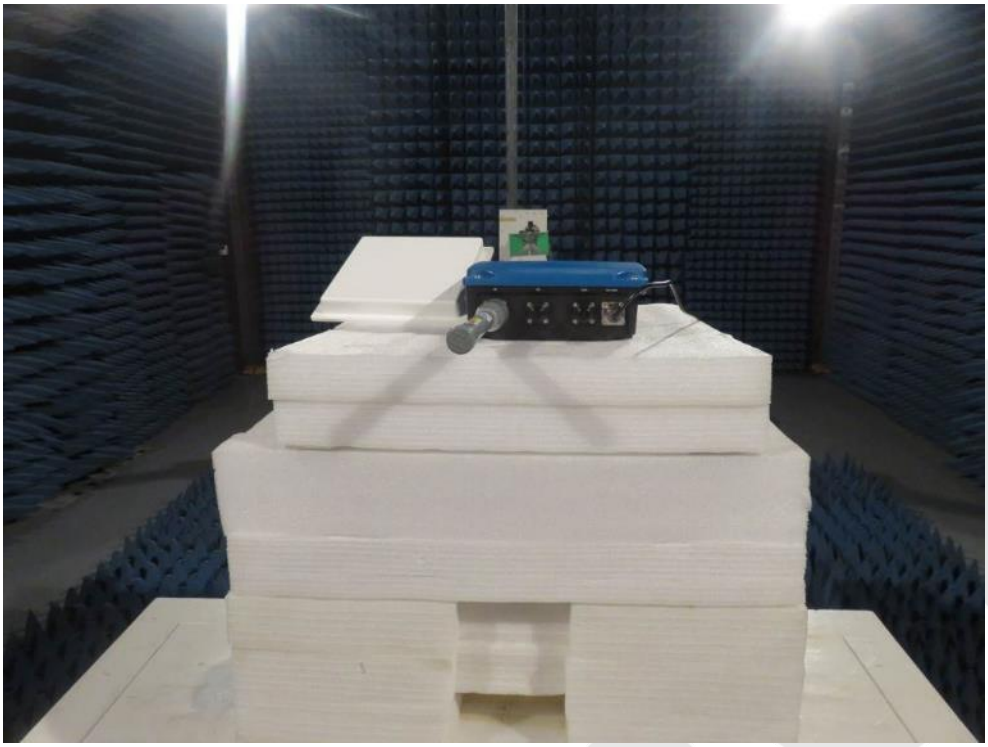


APPENDIX I -- TEST SETUP PHOTOGRAPH

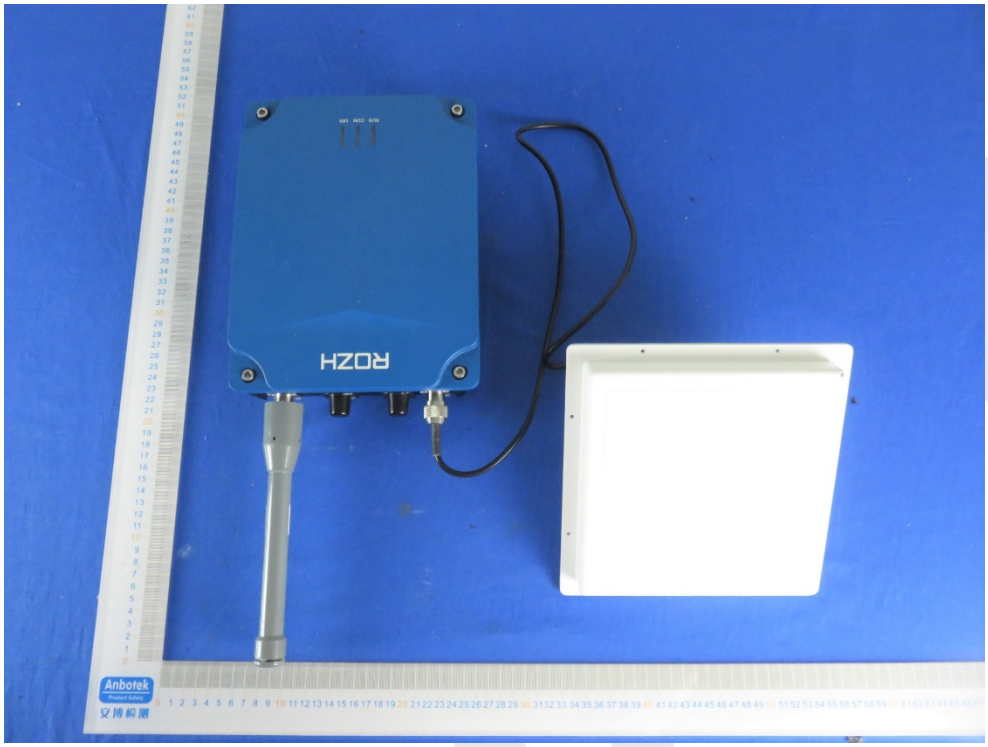
Photo of Conducted Emission Measurement

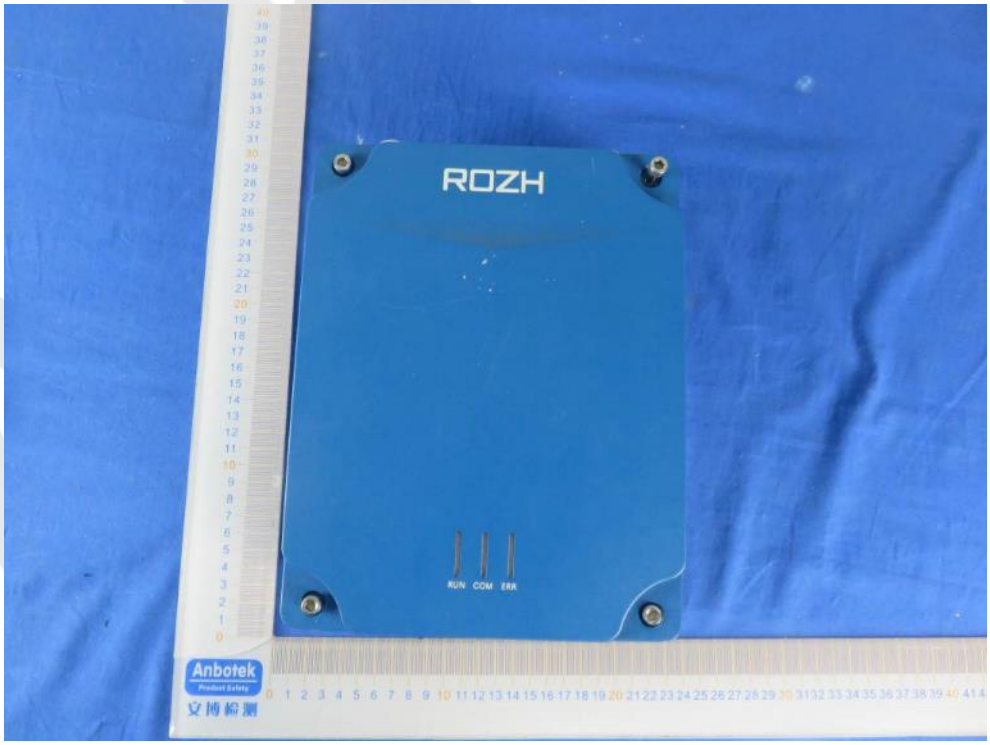
Photo of Radiation Emission Test





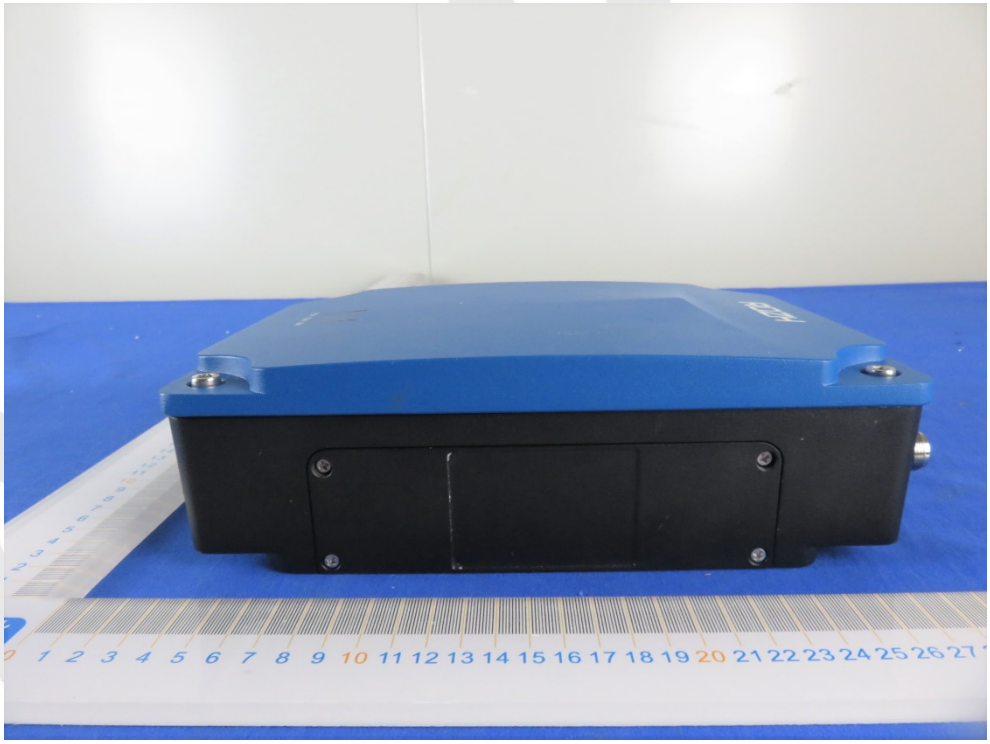
APPENDIX II -- EXTERNAL PHOTOGRAPH

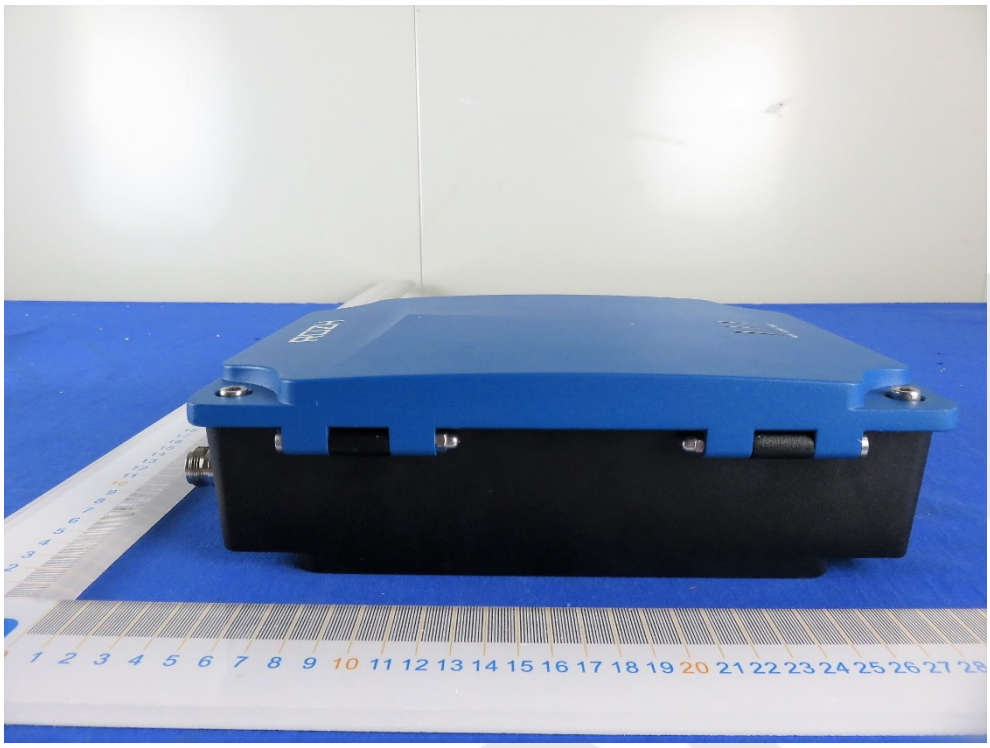




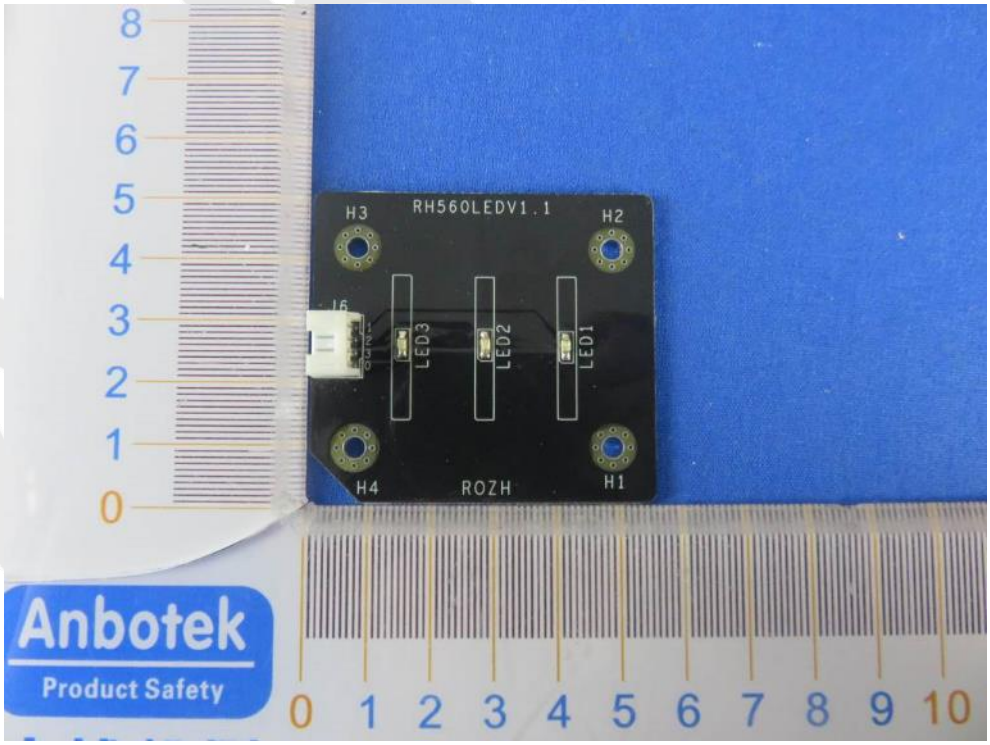

RUN
COM
ERR
COM/Alarm
NET
PWR

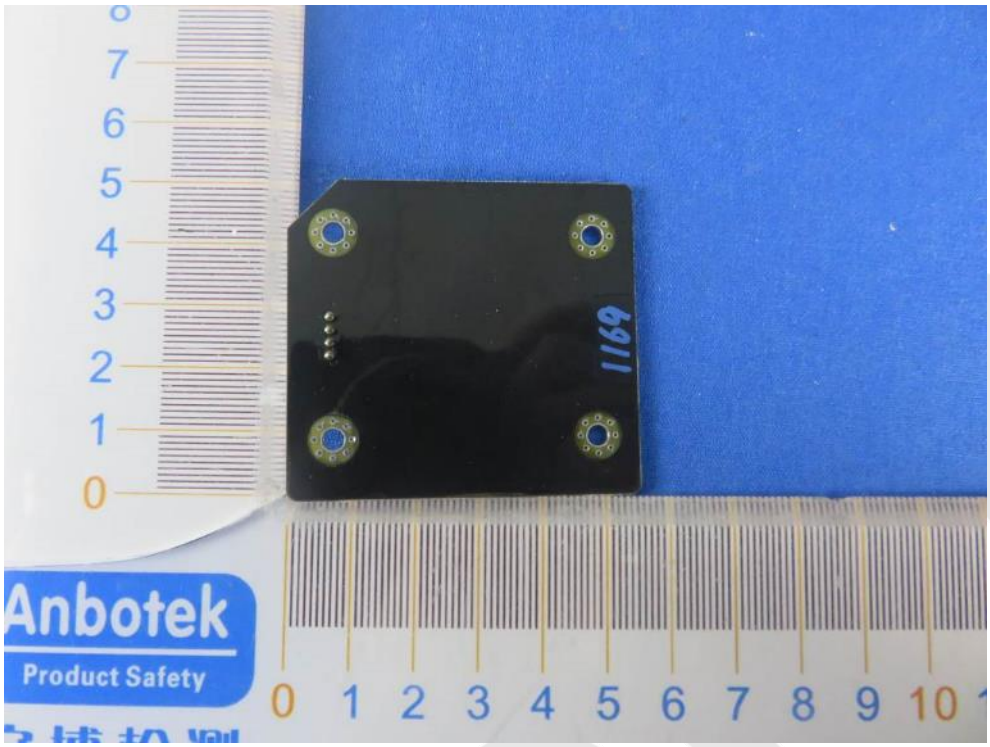

RF
WIFI

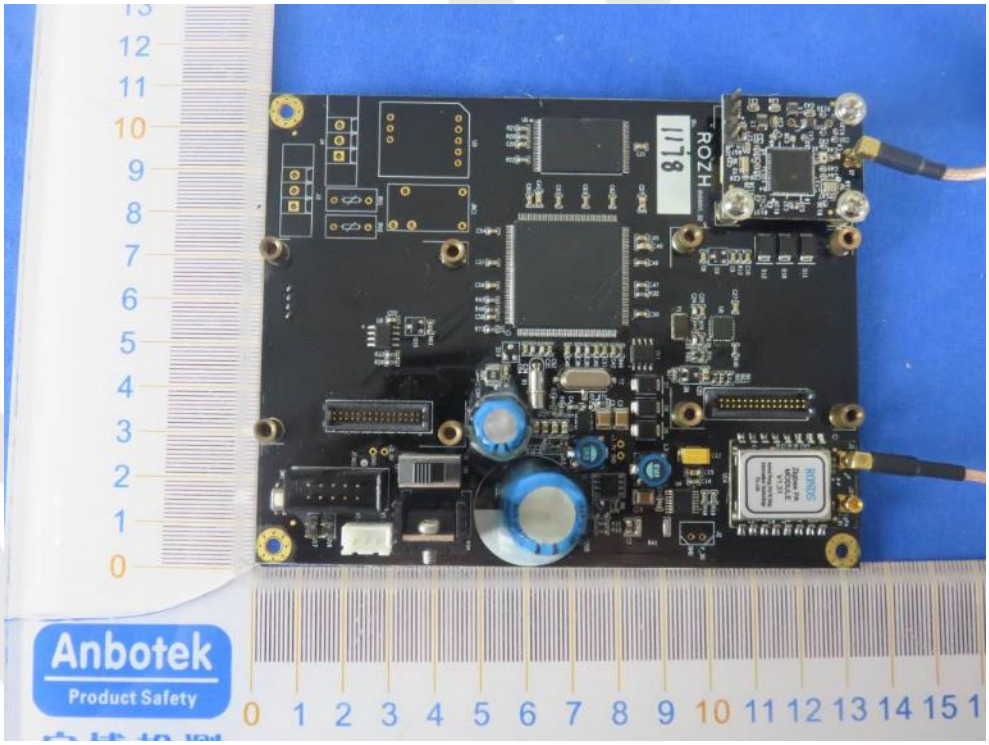




APPENDIX III -- INTERNAL PHOTOGRAPH




1169
Anbotek
Product Safety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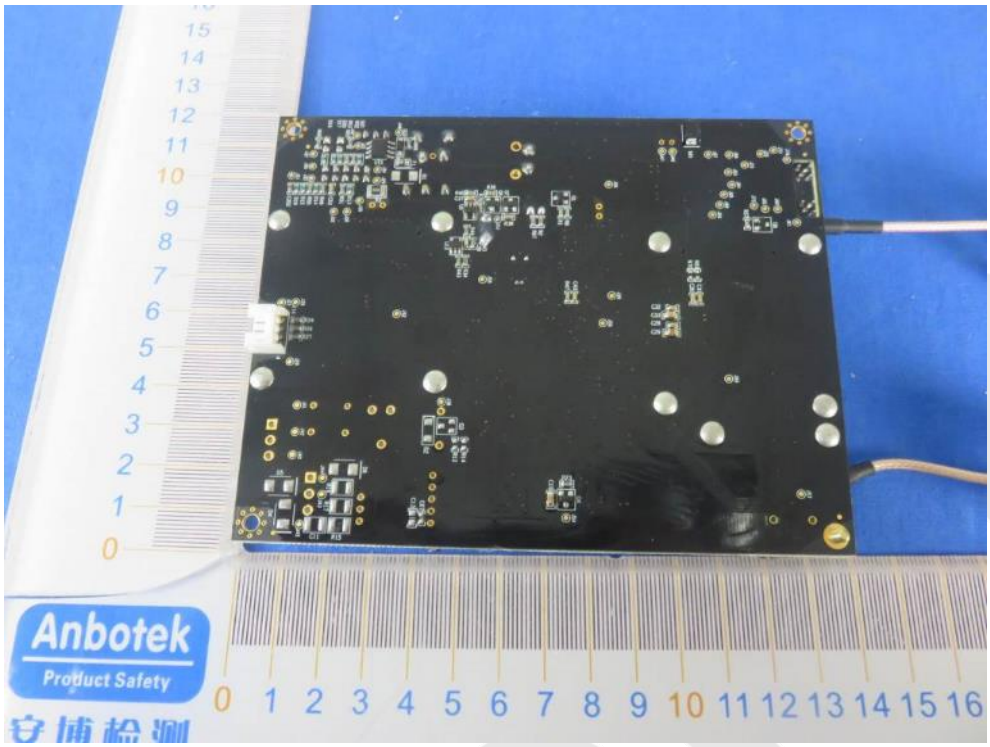
Product Safety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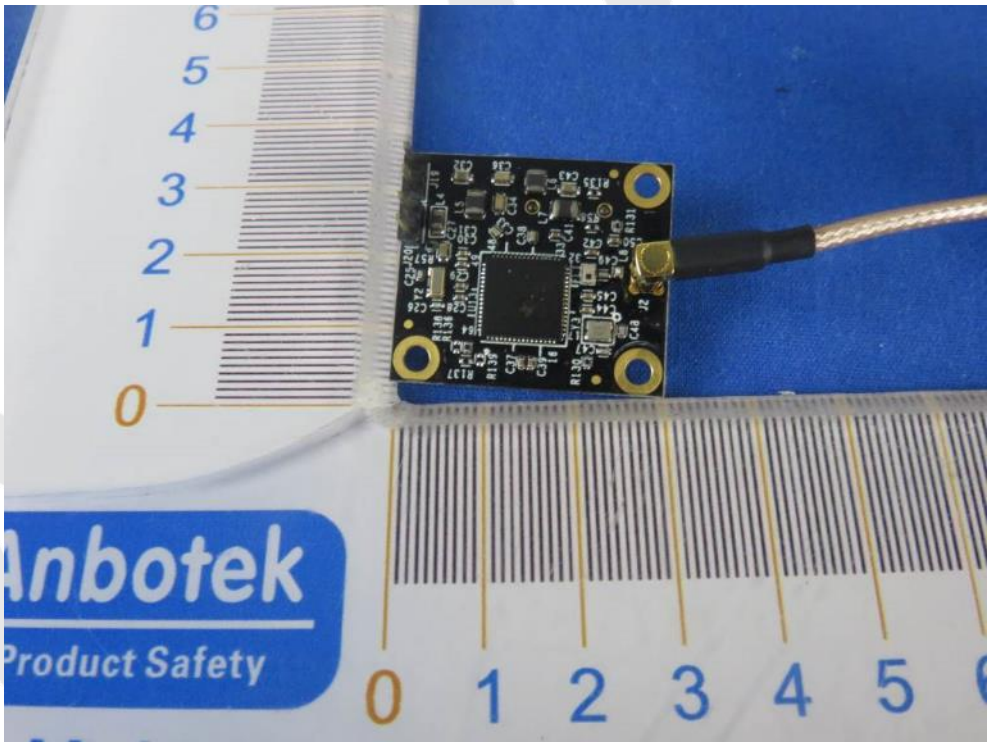
Product Safety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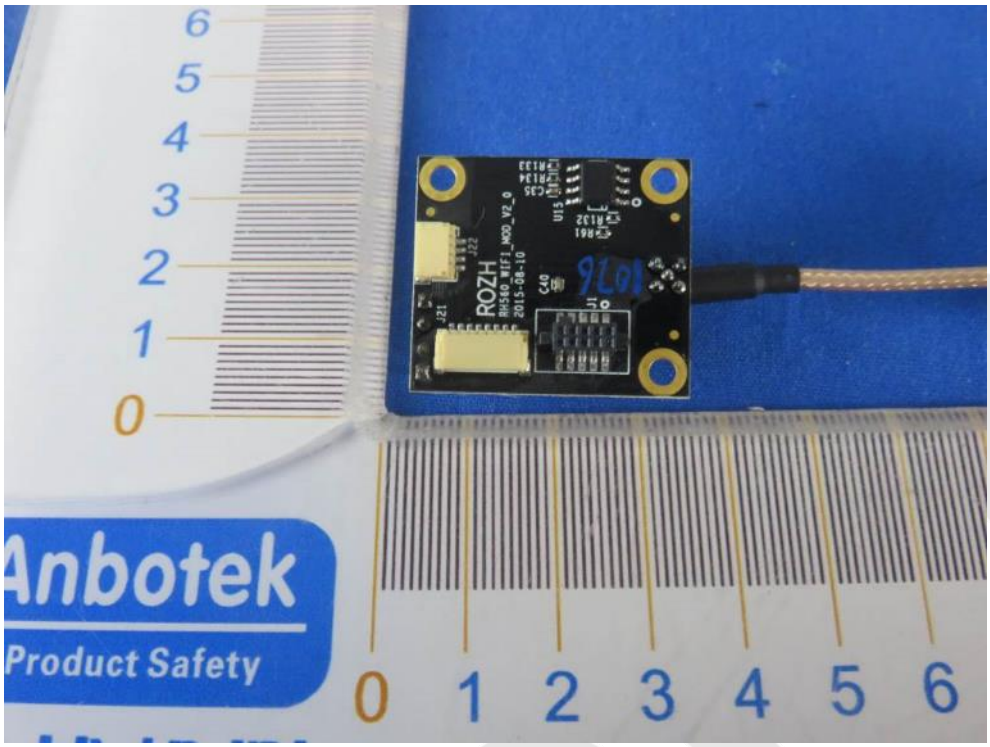
ROZH
Anbotek
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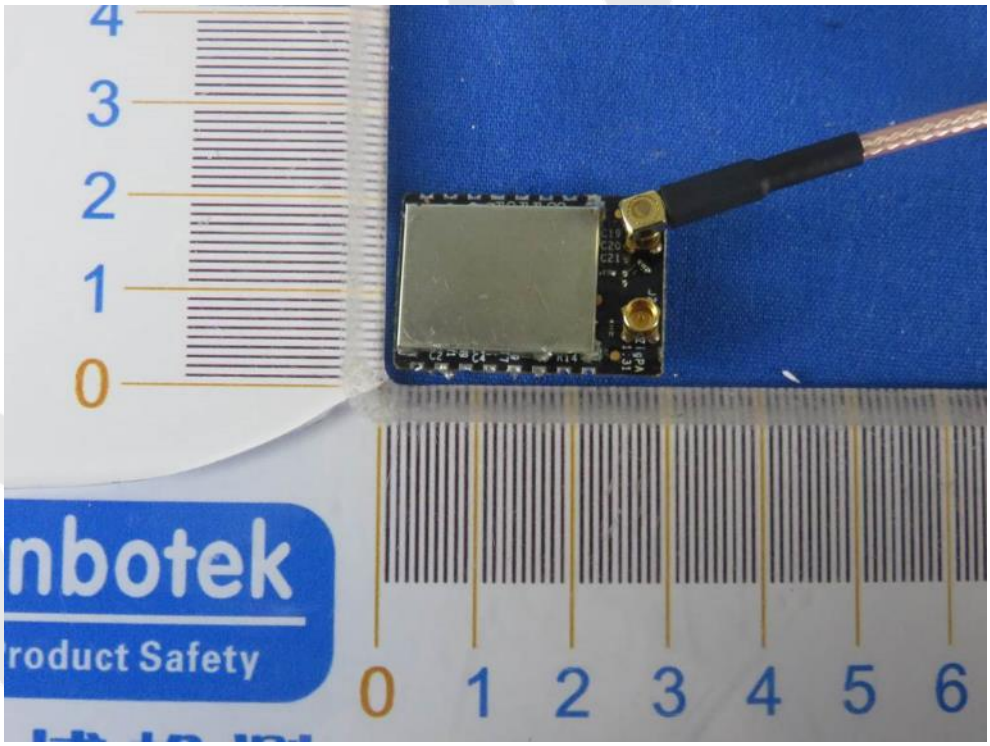
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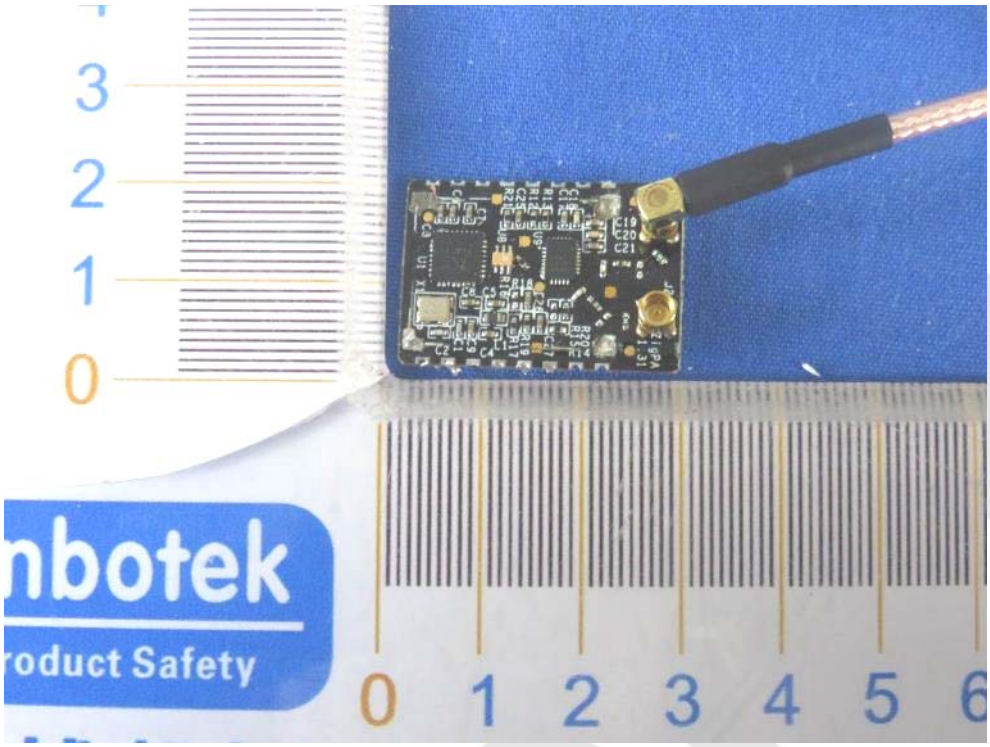
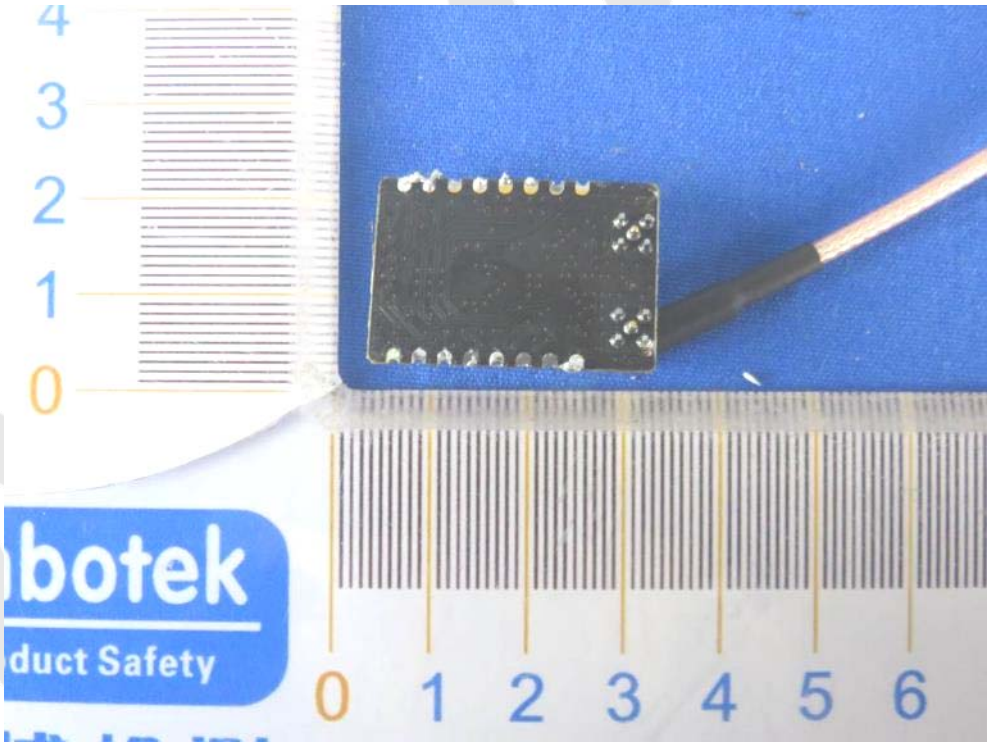
Product Safety






ROZH
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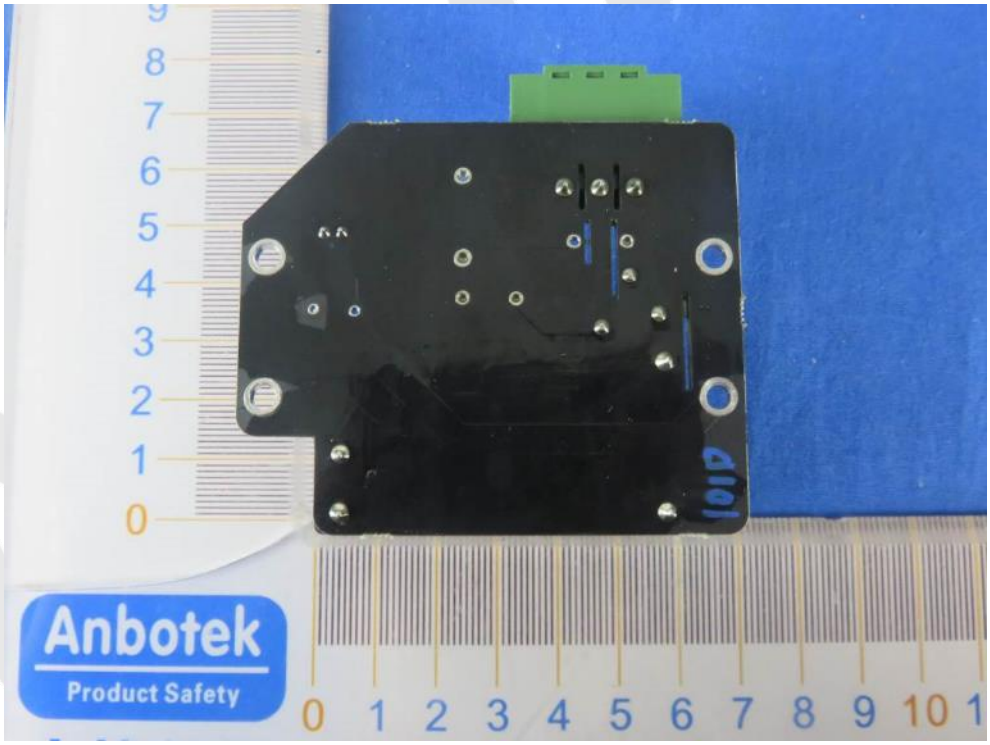
IRM-15-3.3
INPUT: 100-240VAC 0.35A
50/60Hz
OUTPUT: 3.3V 3.5A
AC/L
AC/N
+Vo
-Vo
MW02 MADE IN CHINA
Anbotek
Product Safety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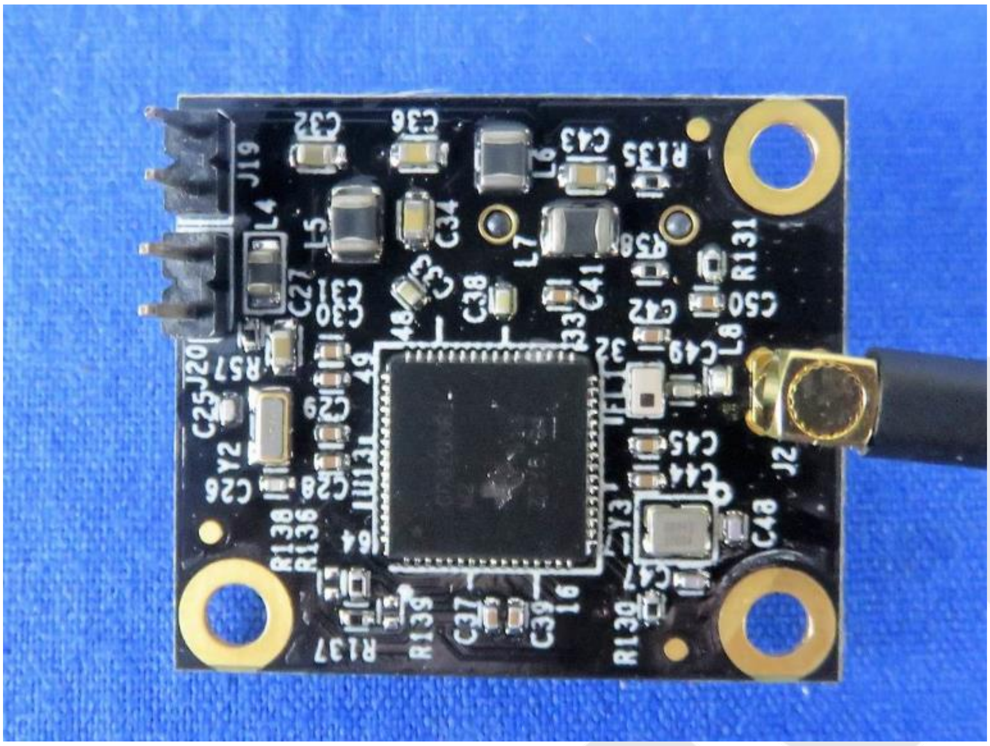
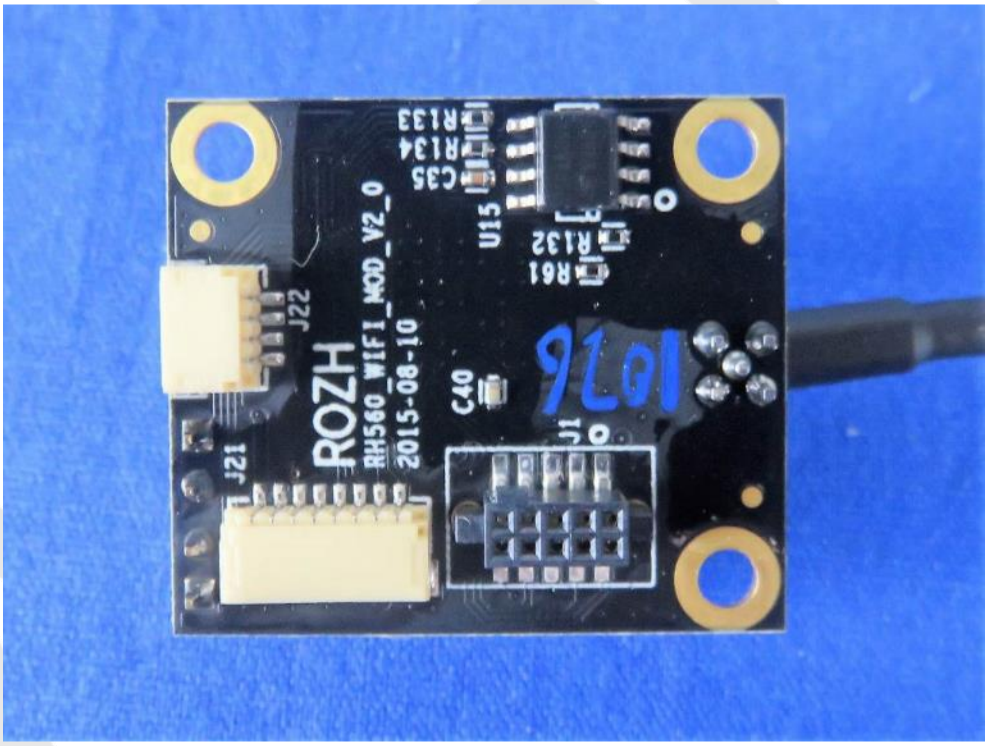
Product Safety

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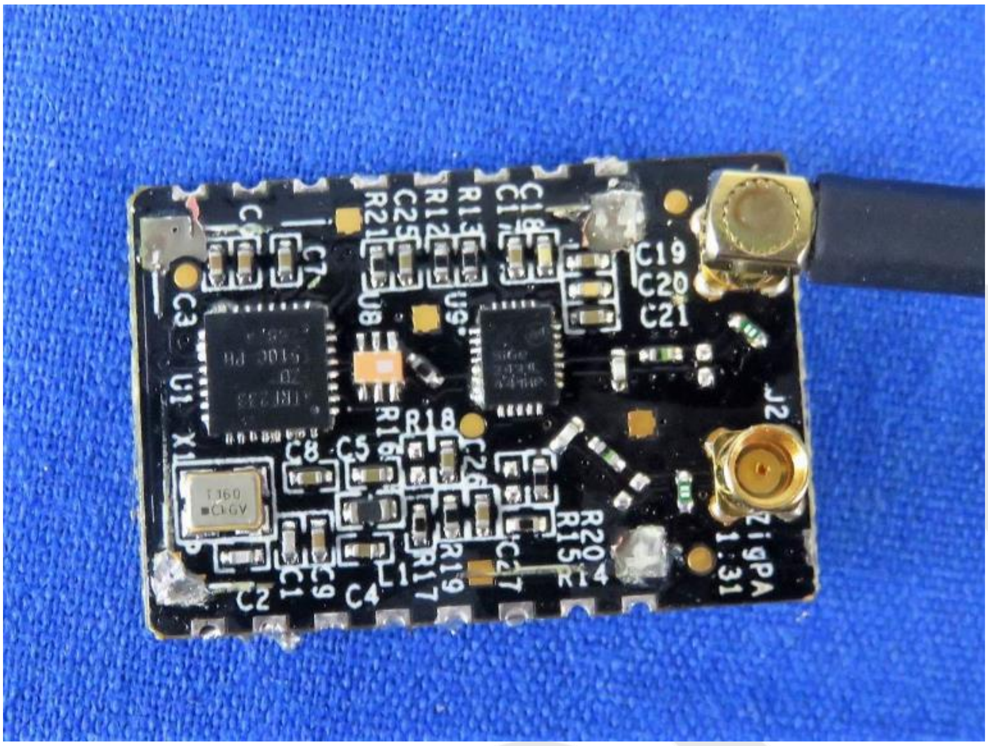
RH560_WIFI_MOD_V2_0
2015-08-10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C20
C21
ZigPA
1:31