

FCC - TEST REPORTReport Number : **60.790.16.109.01A** Date of Issue : December 9, 2016Model : **Z31915-US-TX**Product Type : **Radio Control Weather Station**Applicant : Lidl US Trading, LLCAddress : 3500 S. Clark Street, Arlington, Virginia, United StatesProduction Facility : FUZGOU EMAX ELECTRONIC CO., LTDAddress : BULIDING 12-16, CANGSHAN INDUSTRIAL AREA,
JUYUANZHOU JINSHAN DISTRICT FYZHOU CHINATest Result : **Positive** **Negative**Total pages
including
Appendices : 21

TÜV SÜD HONG KONG LTD. is a subcontractor to TÜV SÜD Product Service GmbH according to the principles outlined in ISO 17025. TÜV SÜD HONG KONG LTD. reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations TÜV SÜD HONG KONG LTD. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD HONG KONG LTD. issued reports. This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval.

1 Table of Contents

1 Table of Contents.....	2
2 Description of Equipment Under Test	3
3 Summary of Test Standards	4
4 Details about the Test Laboratory	5
4.1 Test Equipment Site List	6
4.2 Measurement System Uncertainty	7
5 Summary of Test Results.....	8
6 General Remarks.....	9
7 Emission Test Results	10
7.1 Spurious Radiated Emission	10
7.2 20dB Bandwidth.....	12
7.3 Transmission Time.....	13
7.4 Antenna Requirement.....	15
8 Appendix A - Photographs of EUT	16
9 Appendix B - Setup Photographs of EUT.....	20
10 Appendix C - General Product Information	21



2 Description of Equipment Under Test

Description of the Equipment Under Test

Product:	Radio Control Weather Station
Model no.:	Z31915-US-TX
FCC ID:	2AJ90-Z31915T
Rating:	3.0VDC (2 x 1.5VDC size "AA" batteries)
Frequency:	433.92MHz
Antenna gain:	0 dBi



3 Summary of Test Standards

Test Standards

FCC Part 15 Subpart C 10-1-15 Edition Federal Communications Commission, PART 15 — Radio Frequency Devices, Subpart C — Unintentional Radiators

4 Details about the Test Laboratory

Site 1

Company name: TÜV SÜD Hong Kong Ltd.
3/F, West Wing, Lakeside 2,
10 Science Park West Avenue,
Science Park, Shatin, Hong Kong

Site 2

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12&13 Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2,
Shenzhen 518052, P.R.China
FCC Registration Number: 502708

Emission Tests	
Test Item	Test Site
FCC Part 15 Subpart C	
FCC Title 47 Part 15.209 & 15.231(e) Spurious Radiated Emission	Site 2
FCC Title 47 Part 15.207 Conduct Emission	N/A
FCC Title 47 Part 15.231(c) Occupied Bandwidth	Site 2
FCC Title 47 Part 15.231(e) Transmission Time	Site 2
FCC Title 47 Part 15.203 Antenna Requirement	Site 2

4.1 Test Equipment Site List

Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	15-July-17
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	15-July-17
Horn Antenna	Rohde & Schwarz	HF907	102294	15-July-17
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	15-July-17
3m Semi-anechoic chamber	TDK	9X6X6	----	29-May-19

4.2 Measurement System Uncertainty

Measurement System Uncertainty Emissions

System Measurement Uncertainty	
Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 9kHz-30MHz	4.54dB
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.83dB; Vertical: 4.91dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-25000MHz	Horizontal: 4.89dB; Vertical: 4.88dB;
Uncertainty for Conducted RF test	2.04dB

5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart C				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
FCC Title 47 Part 15.209 & 15.231(e) Spurious Radiated Emission	10-11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FCC Title 47 Part 15.207 Conduct Emission	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FCC Title 47 Part 15.231(c) 20dB Bandwidth	12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FCC Title 47 Part 15.231(e) Transmission Time	13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FCC Title 47 Part 15.203 Antenna Requirement	14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6 General Remarks

Remarks

NIL

SUMMARY:

- All tests according to the regulations cited on page 5 were

- Performed

- **Not** Performed

- The Equipment Under Test

- **Fulfills** the general approval requirements.

- **Does not** fulfill the general approval requirements.

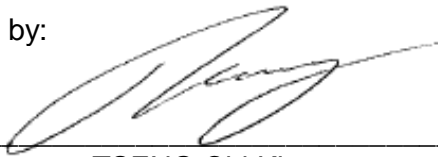
Sample Received Date: November 3, 2016

Testing Start Date: November 4, 2016

Testing End Date: November 30, 2016

- TÜV SÜD HONG KONG LTD. -

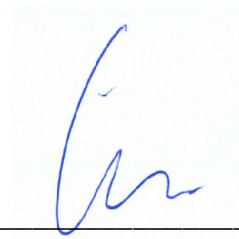
Reviewed by:



TSENG Chi Kit
EMC Project Engineer



Prepared by:



CHAN Kwong Ngai
EMC Test Engineer

7 Emission Test Results

7.1 Spurious Radiated Emission

EUT: Z31915-US-TX
 Op Condition: Operated, TX Mode
 Test Specification: FCC15.209 & 15.231(e) Antenna: Horizontal
 Comment: 3.0VDC
 Remark: 9kHz to 6GHz

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency MHz	Result dB μ V/m	Limit dB μ V/m	Margin dB	Detector
59.046	25.42	40.0	-14.58	Quasi Peak
325.580	28.45	46.0	-17.55	Quasi Peak
433.920	59.99	92.9	-32.91	Peak
433.920	55.67	72.9	-17.23	Average
868.080	37.60	72.9	-35.30	Peak
868.080	33.41	52.9	-19.49	Average
1244.531	29.13	74.0	-44.87	Peak
1244.531	21.45	54.0	-32.55	Average
1736.093	45.70	74.0	-28.30	Peak
1736.093	37.84	54.0	-16.16	Average
2170.156	40.24	74.0	-33.76	Peak
2170.156	32.53	54.0	-21.47	Average
2604.218	32.31	74.0	-41.69	Peak
2604.218	24.18	54.0	-29.82	Average

Spurious Radiated Emission

EUT: Z31915-US-TX
 Op Condition: Operated, TX Mode
 Test Specification: FCC15.209 & 15.231(e) Antenna: Horizontal
 Comment: 3.0VDC
 Remark: 9kHz to 6GHz

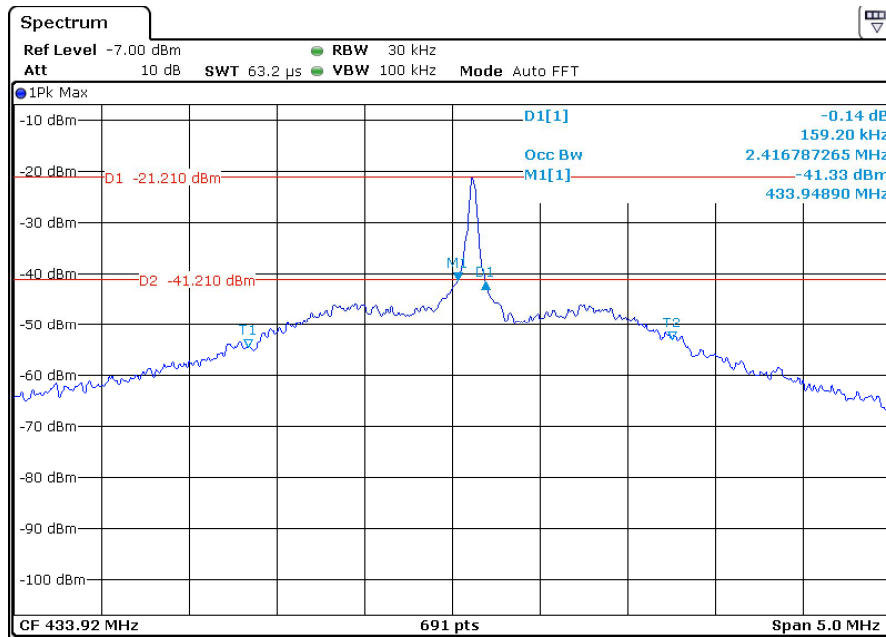
Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
216.994	22.45	46.0	-23.55	Quasi Peak
325.526	36.06	46.0	-9.94	Quasi Peak
433.920	61.94	92.9	-30.96	Peak
433.920	58.62	72.9	-14.28	Average
868.133	37.33	72.9	-35.57	Peak
868.133	34.21	52.9	-18.69	Average
1302.031	36.78	74.0	-37.22	Peak
1302.031	28.38	54.0	-25.62	Average
1736.093	46.70	74.0	-27.30	Peak
1736.093	38.27	54.0	-15.73	Average
2170.156	39.07	74.0	-34.93	Peak
2170.156	31.55	54.0	-22.45	Average
2604.218	44.93	74.0	-29.07	Peak
2604.218	36.23	54.0	-17.77	Average

7.2 20dB Bandwidth

EUT: Z31915-US-TX
 Op Condition: Operated, TX Mode
 Test Specification: FCC15.231(c) 20dB Bandwidth
 Comment: 3.0VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

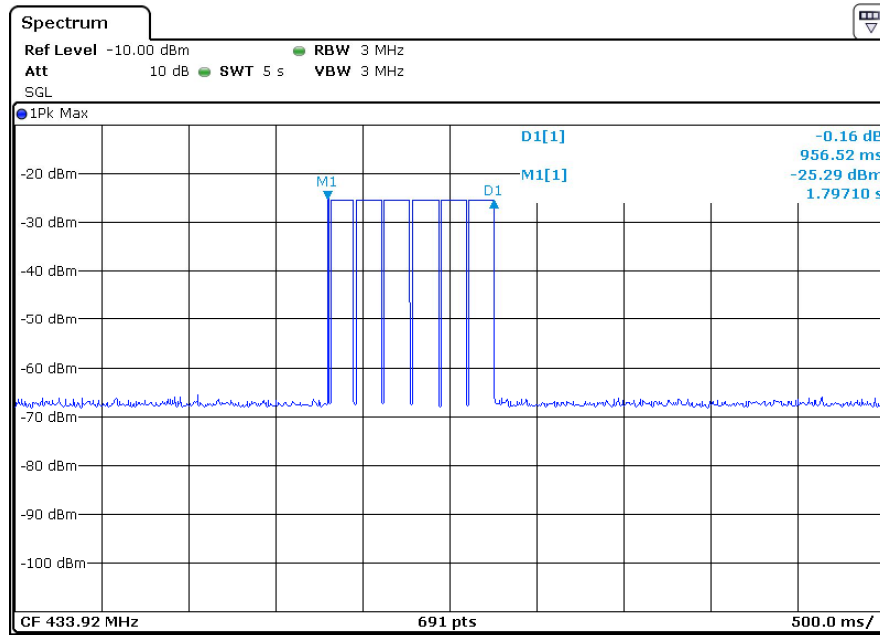


20dB bandwidth	Limit
159.20 kHz	1084.8kHz

7.3 Transmission Time

EUT: Z31915-US-TX
 Op Condition: Operated, TX Mode
 Test Specification: FCC15.231(e) Transmission Time
 Comment: 3.0VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

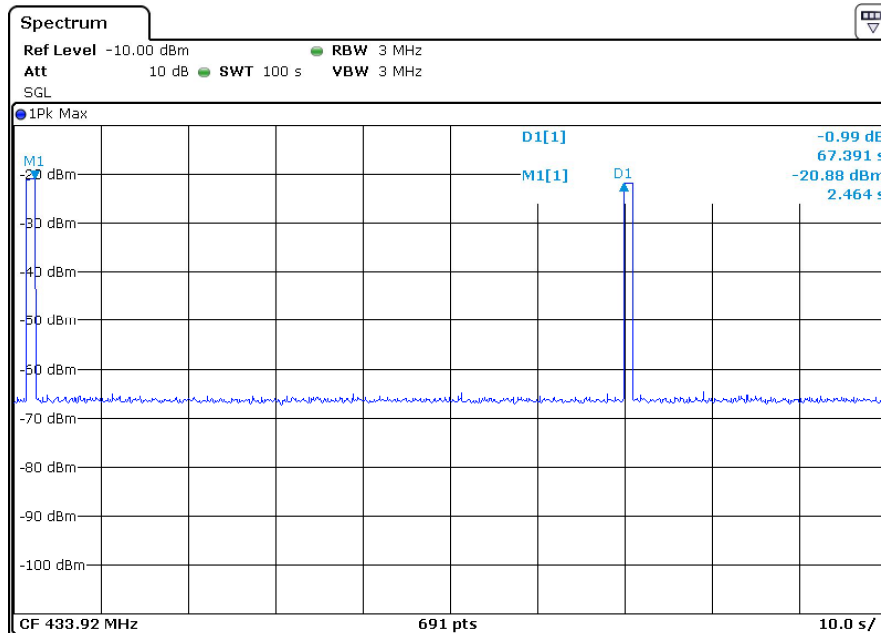


The duration of each transmission	Limit
956.52 ms	1000 ms

Transmission Time

EUT: Z31915-US-TX
 Op Condition: Operated, TX Mode
 Test Specification: FCC15.231(e) Transmission Time
 Comment: 3.0VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



The duration of each transmission	Silent duration between transmissions	Result
956.52 ms	67.391 s	956.52 ms * 30 = 28.696 s

Comment: The silent period between transmissions was found at least 30 times the duration of the transmission and no case less than 10 seconds.

7.4 Antenna Requirement

EUT: Z31915-US-TX
Op Condition: Operated, TX Mode
Test Specification: FCC15.203
Comment: 3.0VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Limit

For intentional device, according to FCC Title 47 Part 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.

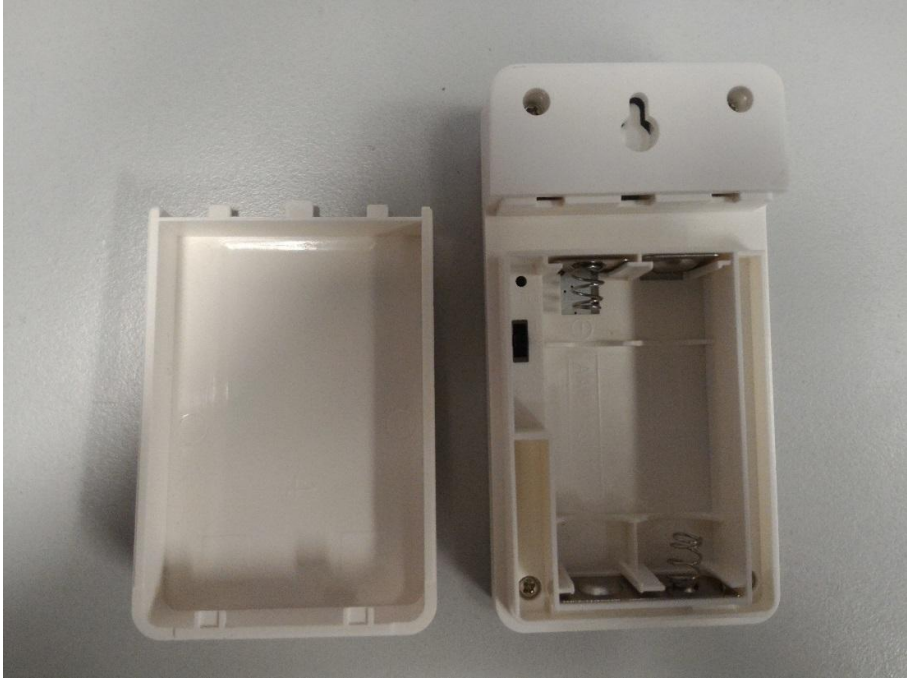
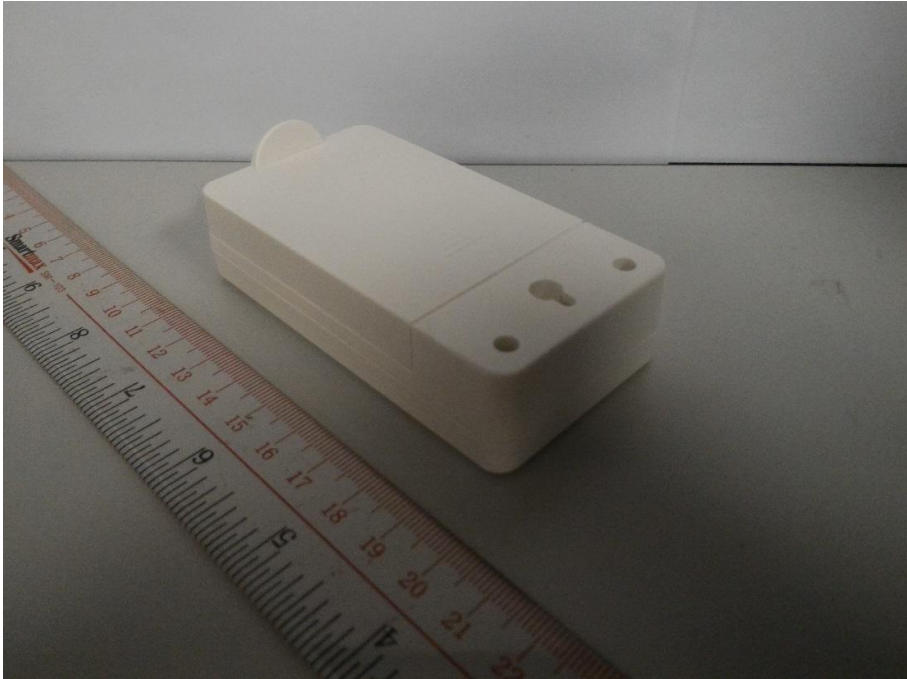
Antenna Connector Construction

The antenna used in this product is PCB antenna, and the maximum gain of this antenna is 0.0 dBi.

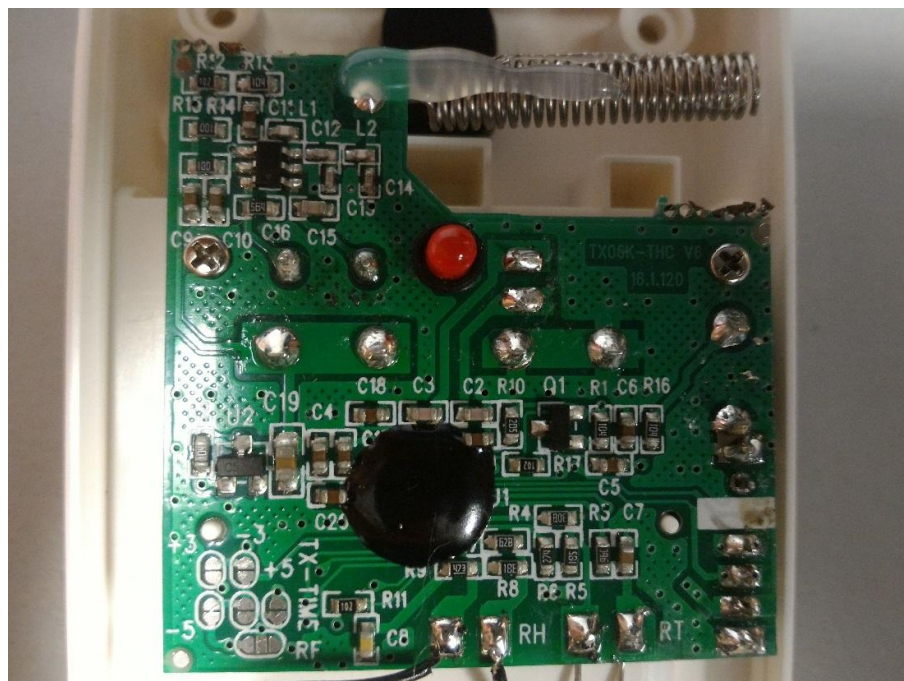
8 Appendix A - Photographs of EUT



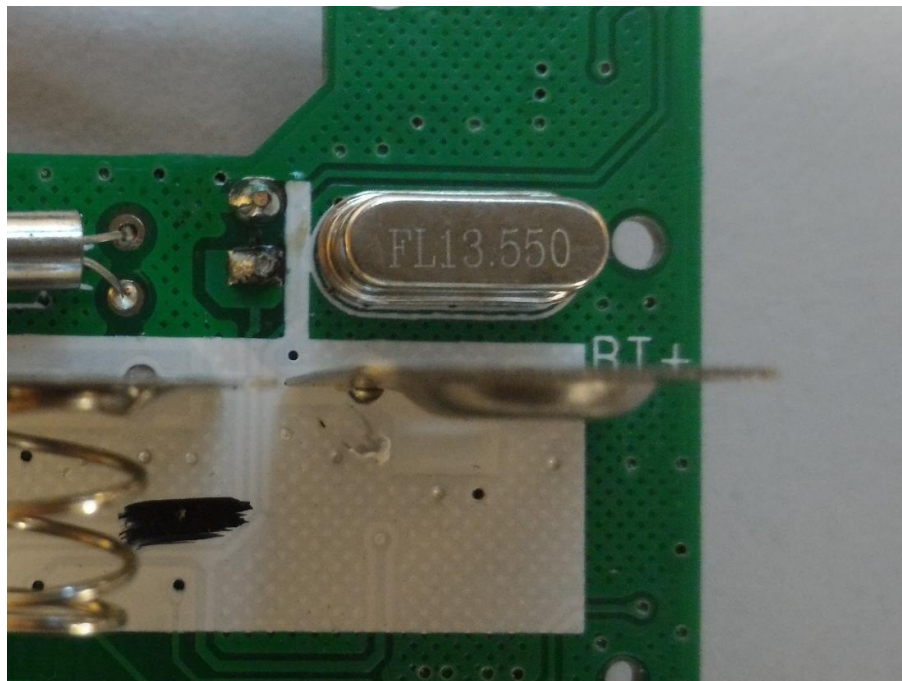
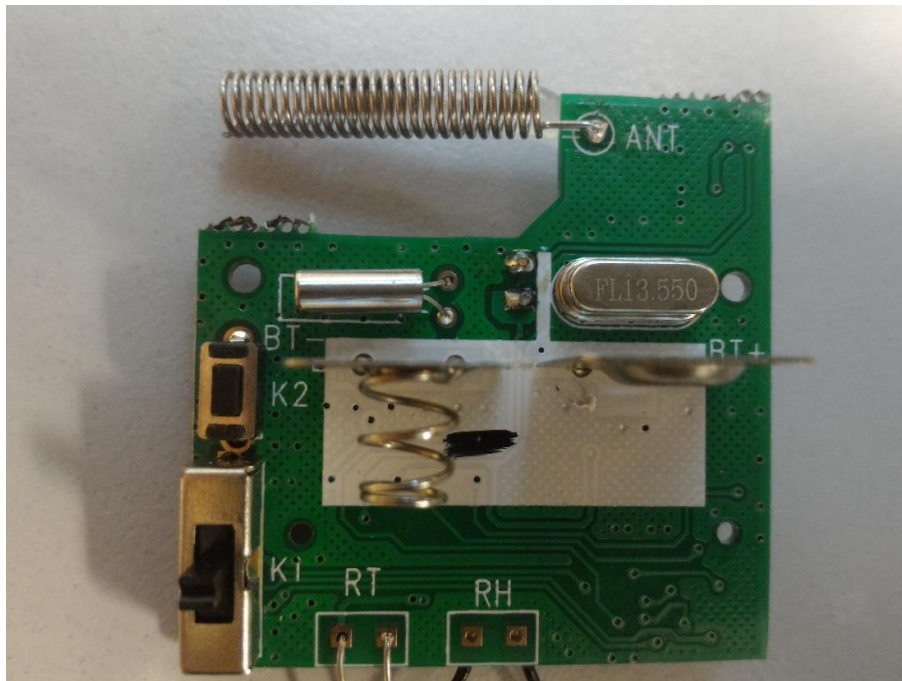
Appendix A



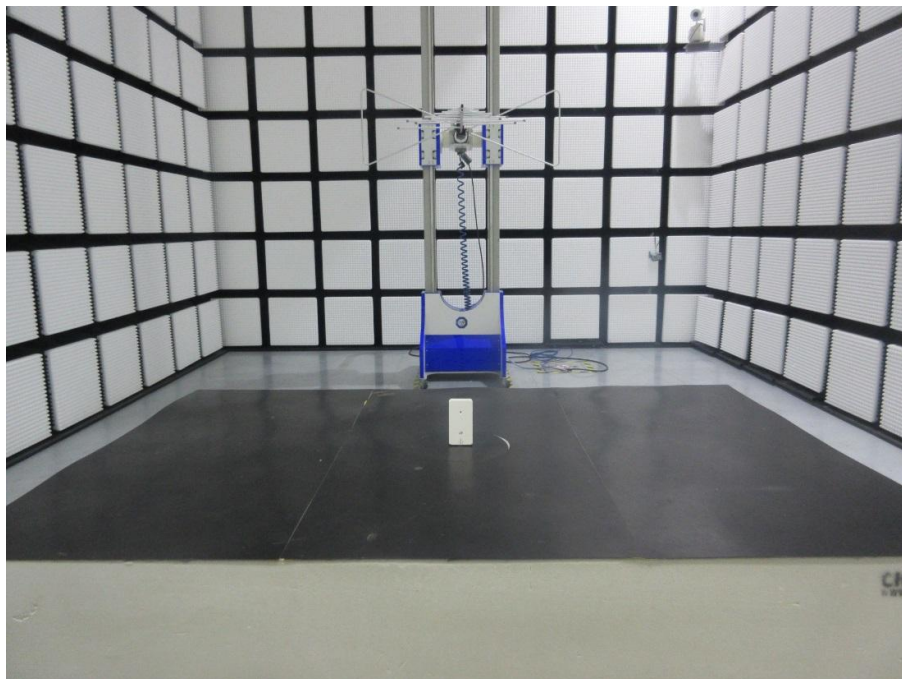
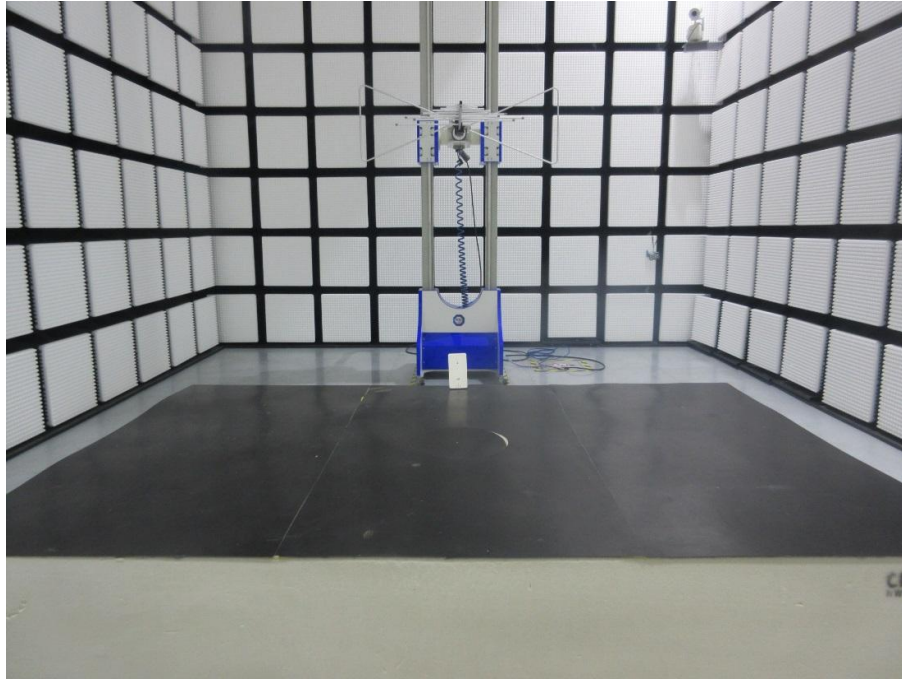
Appendix A



Appendix A



9 Appendix B - Setup Photographs of EUT



10 Appendix C - General Product Information

Radiofrequency radiation exposure evaluation

According to KDB 447498 D01v06 section 4.3.1, For frequencies between 100 MHz to 6GHz and test separation distances ≤ 50 mm, the Numeric threshold is determined as:

Step a)

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR

>> The fundamental frequency of the EUT is 433.92MHz, the test separation distance is ≤ 50 mm.
(Manufacturer specified the separation distance is: 20mm)

Step a)

>> Numeric threshold, $\text{mW} / 20\text{mm} \cdot \sqrt{0.43392\text{GHz}} \leq 3.0$
Numeric threshold $\leq 91.084\text{mW}$

>> The power of EUT measured is: $-35.37\text{dBm} = 0.00029\text{mW}$
Which is smaller than the Numeric threshold.
Therefore, the device is exempt from stand-alone SAR test requirements.