

# TEST REPORT

**Report No. :** 15050811-2

**Product description:** Universal transmitter

**Model/Type :** SIGNOLUXUTX-A,  
SIGNOLUXUTX-B

**Applicant's name:** Adec & Partner AG

---

Lab: I-Test Laboratory

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# TEST REPORT

**FCC Part 15.249: 2014**

**FCC ID: U94SIGNOLUXUTX**

**Report Reference No.** .....: 15050811-2

**Tested by (+ signature)** .....: *Jumy qiu* Jumy Qiu

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**Date of issue** .....: May 30, 2015

**Total number of pages** .....: 41 Pages

**Testing Laboratory**.....: I-Test Laboratory  
(Accredited by CNAS, Accredited Number: L4957)  
FCC- Registration No: 935596 Renewal on April. 19, 2012  
IC Assigned Code: 8368A

**Address** .....: 1-2 floor, South Block, Building A2 No3 Keyan Lu, Science City,  
Guangzhou, Guangdong, China

**Applicant's name** .....: Adec & Partner AG

**Address** .....: Staldenbachstrasse 30 CH-8808 pfaffikon, Switzerland

**Manufacturer's name** .....: Dtech audio company limited

**Address** .....: No. B1 Enping District Zone II, Jiangmen Industrial Transfer District,  
Guangdong, China

**Test specification**.....: Entrusted testing

**Standard**.....: FCC Part 15.249: 2014

**Non-standard test method**.....: N/A

**Date of Sample Receive** .....: Mar. 15, 2015

**Date of Test**.....: Mar. 18, 2015 to May 28, 2015

**Test item description**.....: Universal transmitter

**Trade Mark** .....: Humantechnik

**Model/Type reference** .....: SIGNOLUXUTX-A, SIGNOLUXUTX-B

**Ratings** .....: 4.5Vdc 3\*AAA Batteries

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## 1 TEST SUMMARY

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (9kHz to 9.3 GHz)	FCC PART 15.249a)d)	ANSI C63.10:2013	In FCC PART 15.249a)d)	PASS
Occupied Bandwidth	FCC PART 15.215	ANSI C63.10:2013	In FCC PART 15.215	PASS
Conducted Emissions at Mains Terminals	FCC PART 15.207	ANSI C63.10: 2013: Clause 6.2	In FCC PART 15.207	N/A

Note:

N/A: Not applicable, since the EUT was solely powered by batteries.

Remark:

Model: **SIGNOLUXUTX-A, SIGNOLUXUTX-B**

SIGNOLUXUTX-A is a signolux acoustic transmitter with microphone cable input, SIGNOLUXUTX-B is a signolux galvanic transmitter with telephone cable input. RF part's current and parameters are electric identical with only difference being the signal input. But the telephone cable did not be used for telecommunication network.

## 2 GENERAL INFORMATION

### 2.1 Client Information

Applicant: Adec & Partner AG  
 Address of Applicant: Staldenbachstrasse 30 CH-8808 pfaffikon, Switzerland

### 2.2 General Description of E.U.T.

EUT Name: Universal transmitter  
 Item No.: SIGNOLUXUTX-A, SIGNOLUXUTX-B  
 Serial No.: Not supplied by client

### 2.3 Details of E.U.T.

Power Supply: 4.5Vdc 3\*AAA Batteries  
 Main Function: Copied from the SIGNOLUXUTX-A's manual  
 The "Acoustic universal transmitter" registers acoustic events by means of a microphone and in consequence generates radio signals. The radio signals are transmitted to all accordingly programmed "signolux" –receivers within range.  
 The receivers convert the radio signals into light-, vibration- or acoustic signals (depending on the type of receiver).

Copied from the SIGNOLUXUTX-B's manual  
 The "Direct universal transmitter" picks up electrical signals by means of a directly connected cable and in consequence gnerates radio signals.  
 The radio signals are transmitted to all accordingly programmed "signolux" receivers within range.  
 The receivers convert the radio signals into light-, vibration- or acoustic signals (depending on the type of receiver).

Oscillating Frequency: RF module IC ( TH72031 )(@U3), crystal (@Y2) frequency: 28.59 MHz; CPU(MCV14A)(@U1), crystal (@Y1) frequency: 12.0 MHz

Frequency Range: 915 MHz  
 Modulation: FSK; Emission designator: 560KF1D  
 Occupied bandwidth (99 % BW): 560kHz  
 Antenna Number & Type: One & Fixed on PCB; Gained: 2 dBi; Antenna length: 20mm; Impedance: 50-Ohm; Antenna min distance to the shell: 6mm

1	Product SW/HW version	N/A
2	Radio SW/HW version	N/A
3	Test SW Version	push_door. hex
4	RF power setting in TEST SW	1.0 mW

## 2.4 Description of Support Units

/

## 2.5 Standards Applicable for Testing

The standard used was 47 CFR Part 15.249: 2014

The EUT belongs to low power communication device transmitter, and it's an unlicensed low power auxiliary device.

## 2.6 Test Location

I-Test Laboratory

Address: 1-2 floor, South Block, Building A2 No3 Keyan Lu, Science City, Guangzhou, Guangdong, China

Accredited by CNAS, Accredited Number: L4957

FCC- Registration No: 935596 Renewal on April. 19, 2012

IC Assigned Code: 8368A

## 2.7 Deviation from Standards

None.

## 2.8 Abnormalities from Standard Conditions

None.

### 3 TEST RESULTS

#### 3.1 Radiation Interference

Test Requirement: FCC Part15.249, a) & FCC Part15.209  
 Test Method: ANSI C63.10:2013  
 Detector: Peak for pre-scan (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.)  
 Average detector if maximised peak within 6dB of limit

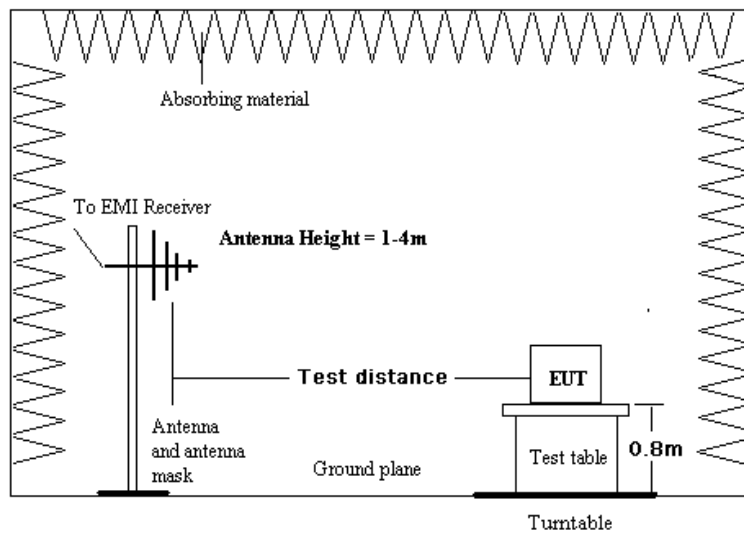
##### 3.1.1 E.U.T. Operation

Operating Environment:  
 Temperature: 20°C Humidity:50% RH Atmospheric Pressure: 103 kPa

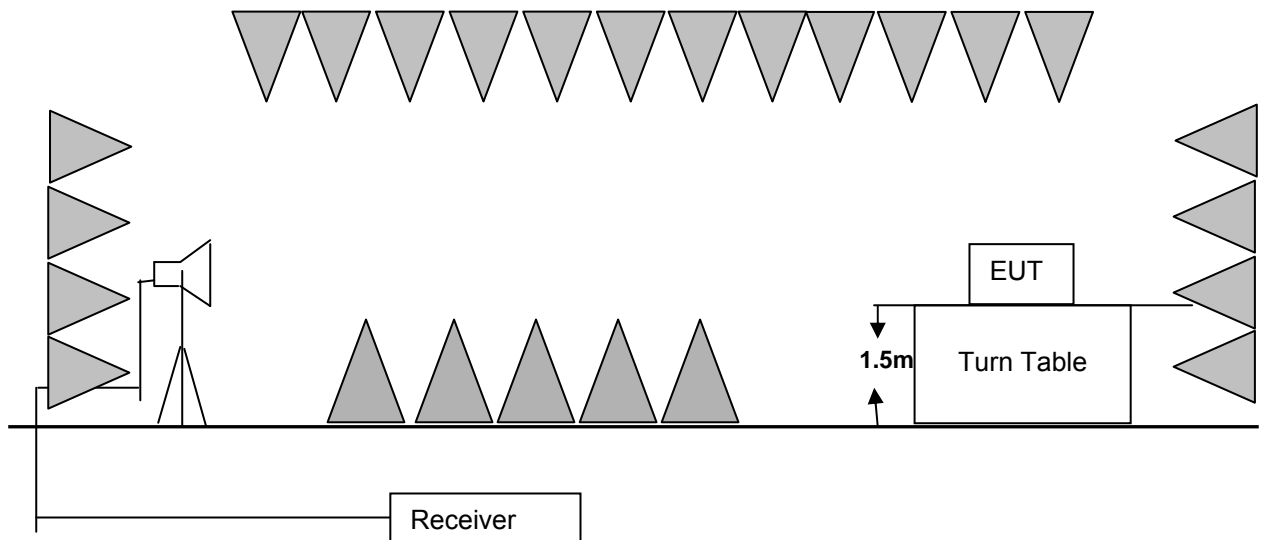
EUT Operation:

In the fundamental test, connecting the EUT to peripheral devices.  
 Test the EUT work normally in on mode during the whole test.

##### 3.1.2 Test Setup



1 GHz to 40 GHz emissions:



### 3.1.3 Test Procedure

#### **ANSI STANDARD C63.10-2013 6.5 Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz**

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. 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 polarities. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X/ Y/ Z orthogonal planes for the final measurement.



### 3.1.4 Measurement Data

Copy from FCC Part 15.249.a)

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency MHz	Field Strength	
	Fundamental millivolts/meter(mV/m)	Harmonics microvolts/meter(uV/m)
902 - 928	50	500
2400 - 2483.5	50	500
5725 - 5875	50	500
24000 - 24250	250	2500

## Test for SIGNOLUXUTX-A:

Quasi-Peak measurement of carrier						
Frequency	Level		Transducer	Limit	Margin	
MHz	dBuV/m		dB	dBuV/m	dB	
	V	H			V	H
915.0	89.8	90.5	24.0	94	4.2	3.5

Note:

50mV/m (94dBuV/m) for QP limit in band (902MHz to 928MHz).  
The transducer factor = antenna factor + cable loss - preamplifier.  
The Level = Read level + transducer factor.

H: Antenna polarization horizontal direction. V: Antenna polarization vertical direction.

The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X orthogonal plane for the final measurement.

## Test for SIGNOLUXUTX-B:

Quasi-Peak measurement of carrier						
Frequency	Level		Transducer	Limit	Margin	
MHz	dBuV/m		dB	dBuV/m	dB	
	V	H			V	H
915.0	89.7	90.2	24.0	94	4.3	3.8

Note:

50mV/m (94dBuV/m) for QP limit in band (902MHz to 928MHz).  
The transducer factor = antenna factor + cable loss - preamplifier.  
The Level = Read level + transducer factor.

H: Antenna polarization horizontal direction. V: Antenna polarization vertical direction.

The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X orthogonal plane for the final measurement.

Test for SIGNOLUXUTX-A:

<b>Peak measurement of harmonics and spurious emission at 915.0 MHz</b>							
Frequency		Level		Transducer	Limit	Min. Margin	
MHz		dBuV/m		dB	dBuV/m	dB	
		V	H			V	H
2 <sup>nd</sup>	1830.0	40.2	40.3	27.4	74dB	33.8	33.7
3 <sup>rd</sup>	2745.0	43.2	43.5	27.9		30.8	30.5
4 <sup>th</sup>	3660.0	43.5	44.2	30.3		30.5	29.8
5 <sup>th</sup>	4575.0	43.6	44.1	34.1		30.4	29.9
6 <sup>th</sup>	5490.0	44.1	44.5	31.0		29.9	29.5
7 <sup>th</sup>	6405.0	44.2	44.5	35.1		29.8	29.5
8 <sup>th</sup>	7320.0	44.0	44.8	35.0		30.0	29.2
9 <sup>th</sup>	8235.0	44.6	45.2	36.0		29.4	28.8
10 <sup>th</sup>	9150.0	44.7	45.3	37.3		29.3	28.7
<b>Average measurement of harmonics and spurious emission at 915.0 MHz</b>							
Frequency		Level		Transducer	Limit	Min. Margin	
MHz		dBuV/m		dB	dBuV/m	dB	
		V	H			V	H
2 <sup>nd</sup>	1830.0	32.2	33.3	27.4	54dB	21.8	20.7
3 <sup>rd</sup>	2745.0	31.2	33.2	27.9		22.8	20.8
4 <sup>th</sup>	3660.0	32.3	34.2	30.3		21.7	19.8
5 <sup>th</sup>	4575.0	33.3	34.3	34.1		20.7	19.7
6 <sup>th</sup>	5490.0	33.1	34.7	31.0		20.9	19.3
7 <sup>th</sup>	6405.0	34.0	34.4	35.1		20.0	19.6
8 <sup>th</sup>	7320.0	34.2	34.8	35.0		19.8	19.2
9 <sup>th</sup>	8235.0	34.5	35.2	36.0		19.5	18.8
10 <sup>th</sup>	9150.0	34.7	35.8	37.3		19.3	18.2
<b>Note:</b>							
500 $\mu$ V/m (54dBuV/m) for AVG limit, and Peak limit= AVG limit + 20dB.							
The transducer factor = antenna factor + cable loss - preamplifier.							
The Level = Read level + transducer factor.							
H: Antenna polarization horizontal direction. V: Antenna polarization vertical direction.							
The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X orthogonal plane for the final measurement.							

Test for SIGNOLUXUTX-B:

Peak measurement of harmonics and spurious emission at 915.0 MHz							
Frequency		Level		Transducer	Limit	Min. Margin	
MHz		dBuV/m		dB	dBuV/m	dB	
		V	H			V	H
2 <sup>nd</sup>	1830.0	40.5	40.4	27.4	74dB	33.5	33.6
3 <sup>rd</sup>	2745.0	42.8	43.3	27.9		31.2	30.7
4 <sup>th</sup>	3660.0	43.2	44.4	30.3		30.8	29.6
5 <sup>th</sup>	4575.0	43.1	43.7	34.1		30.9	30.3
6 <sup>th</sup>	5490.0	44.0	44.4	31.0		30.0	29.6
7 <sup>th</sup>	6405.0	44.7	44.5	35.1		29.3	29.5
8 <sup>th</sup>	7320.0	44.2	44.9	35.0		29.8	29.1
9 <sup>th</sup>	8235.0	44.5	45.6	36.0		29.5	28.4
10 <sup>th</sup>	9150.0	44.1	45.8	37.3		29.9	28.2
Average measurement of harmonics and spurious emission at 915.0 MHz							
Frequency		Level		Transducer	Limit	Min. Margin	
MHz		dBuV/m		dB	dBuV/m	dB	
		V	H			V	H
2 <sup>nd</sup>	1830.0	32.5	33.4	27.4	54dB	21.5	20.6
3 <sup>rd</sup>	2745.0	31.6	33.2	27.9		22.4	20.8
4 <sup>th</sup>	3660.0	32.1	34.5	30.3		21.9	19.5
5 <sup>th</sup>	4575.0	33.4	34.6	34.1		20.6	19.4
6 <sup>th</sup>	5490.0	33.3	34.8	31.0		20.7	19.2
7 <sup>th</sup>	6405.0	34.3	34.5	35.1		19.7	19.5
8 <sup>th</sup>	7320.0	34.3	34.5	35.0		19.7	19.5
9 <sup>th</sup>	8235.0	34.4	35.7	36.0		19.6	18.3
10 <sup>th</sup>	9150.0	34.3	35.5	37.3		19.7	18.5
Note:							
500 $\mu$ V/m (54dBuV/m) for AVG limit, and Peak limit= AVG limit + 20dB.							
The transducer factor = antenna factor + cable loss - preamplifier.							
The Level = Read level + transducer factor.							
H: Antenna polarization horizontal direction. V: Antenna polarization vertical direction.							
The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X orthogonal plane for the final measurement.							

Note:

The EUT's transmitting frequency range belonged to 902MHz to 928 MHz, and it is complied with the requirements of FCC Part 15.249.a).

### 3.1.5 Radiated outside of the specified frequency bands

Copy from FCC Part 15.249.d)

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Copy from FCC Part 15.209: Radiated emission limits, general requirements

(a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency MHz	Field Strength microvolts/meter(uV/m)	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

\*\* Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Note:

Since the fundamental emissions peak and average values are shown on section 6.1.4 of this report, the general radiated emission limits in Section 15.209 is the lesser attenuation.

**Limits for the frequency bands of 902M-928M Hz**

Frequency	FCC Part 15.209 General Radiated limits	
MHz	dBuV/m@3m	
	QP	AVG
30 - 88	40	/
88 - 216	43.5	/
216 - 960	46	/
960 - 1000	54	/
Above 1000	74(PK)	54

Frequency	FCC Part 15.249.d) limits	
MHz	dBuV/m@3m	
	QP	AVG
30 - 88	40	/
88 - 216	43.5	/
216 - 902	46	/
928-960	46	/
960 - 1000	54	/
1000-9150	74(PK)	54

## Remark:

1. RF line voltage (dBuV)= 20 log RF line 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.

### 3.1.6 Measurement Data for FCC Part 15.249.d

Test the EUT work normally in transmitting mode in mains.

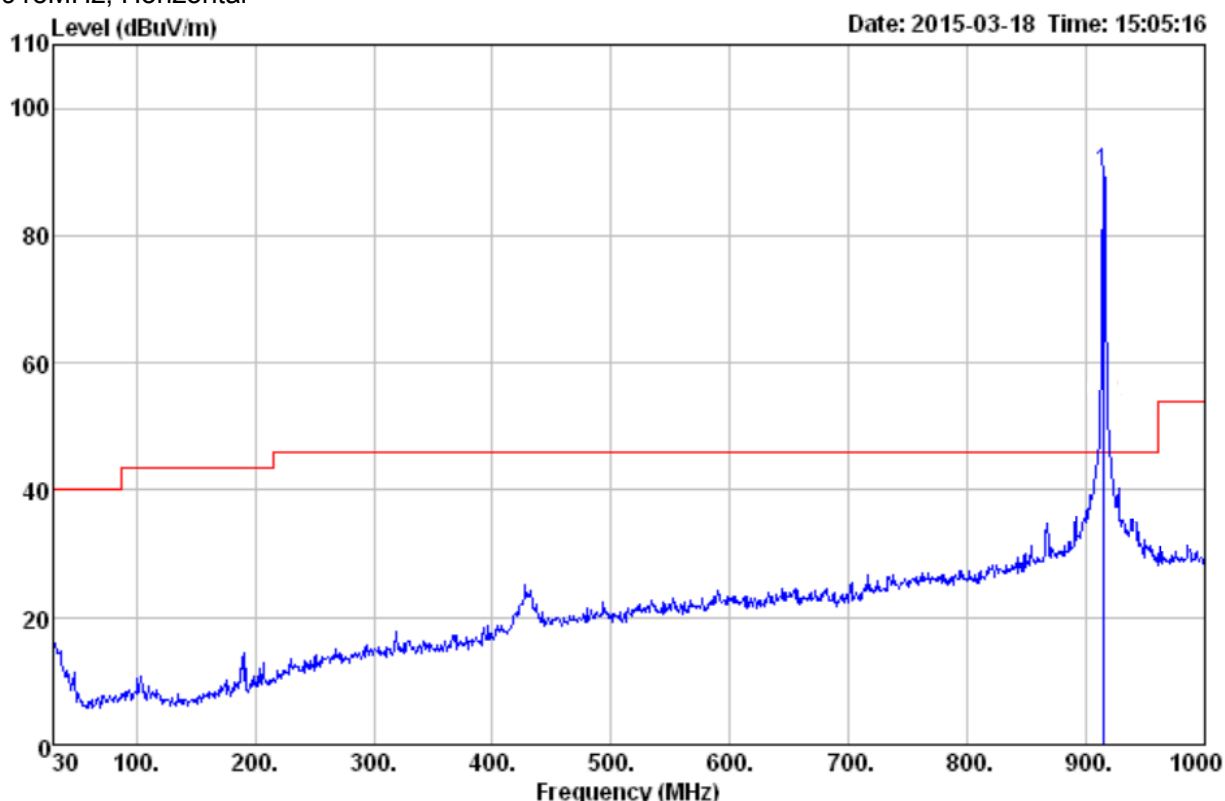
#### 1) 9kHz~30MHz Test result

The Low frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not report.

#### 2) 30 MHz~1 GHz Spurious Emissions. Quasi-Peak Measurement

Test curves ( with the Quasi-peak measurement and QP limit), 30M-1GHz, Horizontal & Vertical:

Test for SIGNOLUXUTX-A:  
915MHz, Horizontal



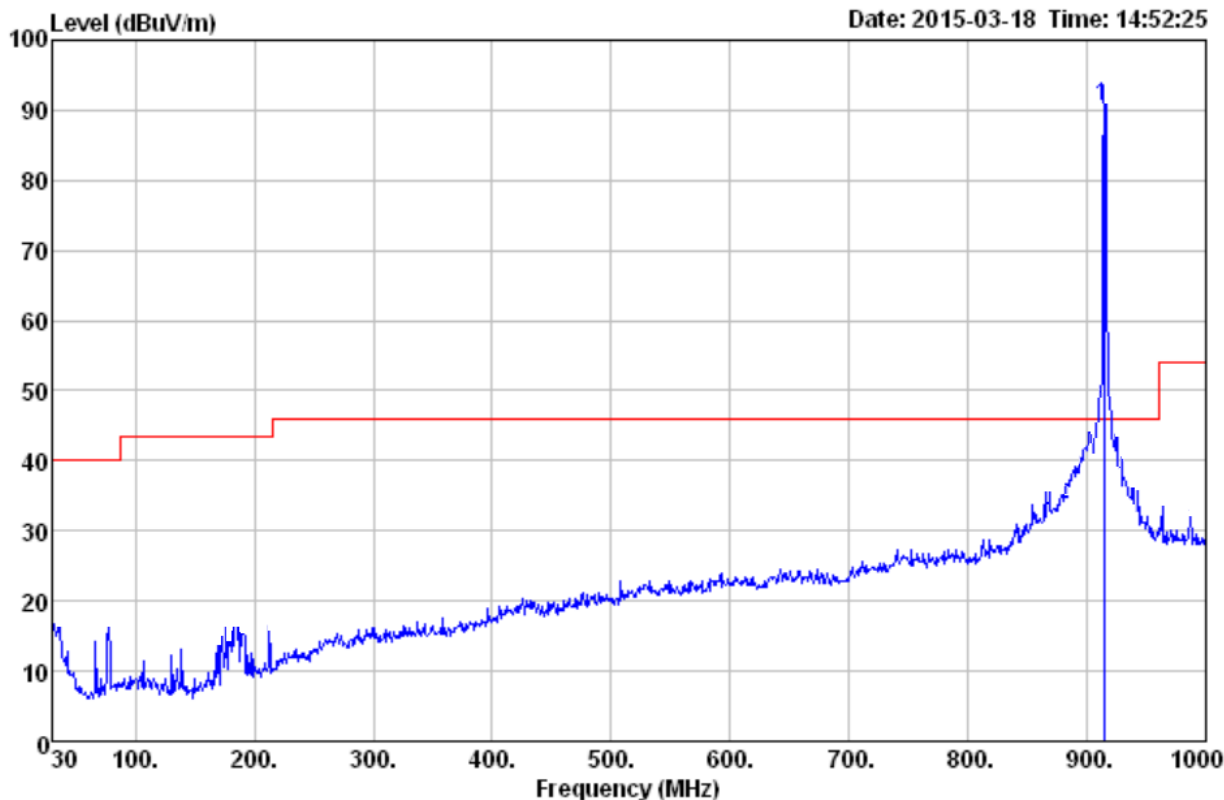
Quasi-peak measurement

Frequency MHz	Level dBuV/m	Transducer dB	Limit dBuV/m	Margin dB
30.0	17.3	17.9	40	22.7
185.3	16.5	8.9	43.5	27.0
423.1	24.1	16.6	46	21.9
859.2*	35.2	23.0	46	10.8
936.2*	35.8	24.2	46	10.2
973.5	33.1	23.9	54	20.9

Note: The transducer factor includes antenna factor and cable loss.  
 \* means the max Quasi peak value for band-edge (frequency range of 802 MHz to 902MHz, except for harmonics) is the plot measurement at 859.2 MHz.  
 \* means the max Quasi peak value for band-edge (frequency range of 928 MHz to 1000 MHz, except for harmonics) is the plot measurement at 936.2 MHz.  
 The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X orthogonal plane for the final measurement.

Test for SIGNOLUXUTX-A:  
915MHz, Vertical

Date: 2015-03-18 Time: 14:52:25



Quasi-peak measurement

Frequency MHz	Level dBuV/m	Transducer dB	Limit dBuV/m	Margin dB
30.0	15.3	17.9	40	24.7
182.7	15.8	8.9	43.5	27.7
523.7	22.5	18.8	46	23.5
900.3*	41.2	23.9	46	4.8
935.5*	37.8	24.2	46	8.2
981.0	33.6	23.7	54	20.4

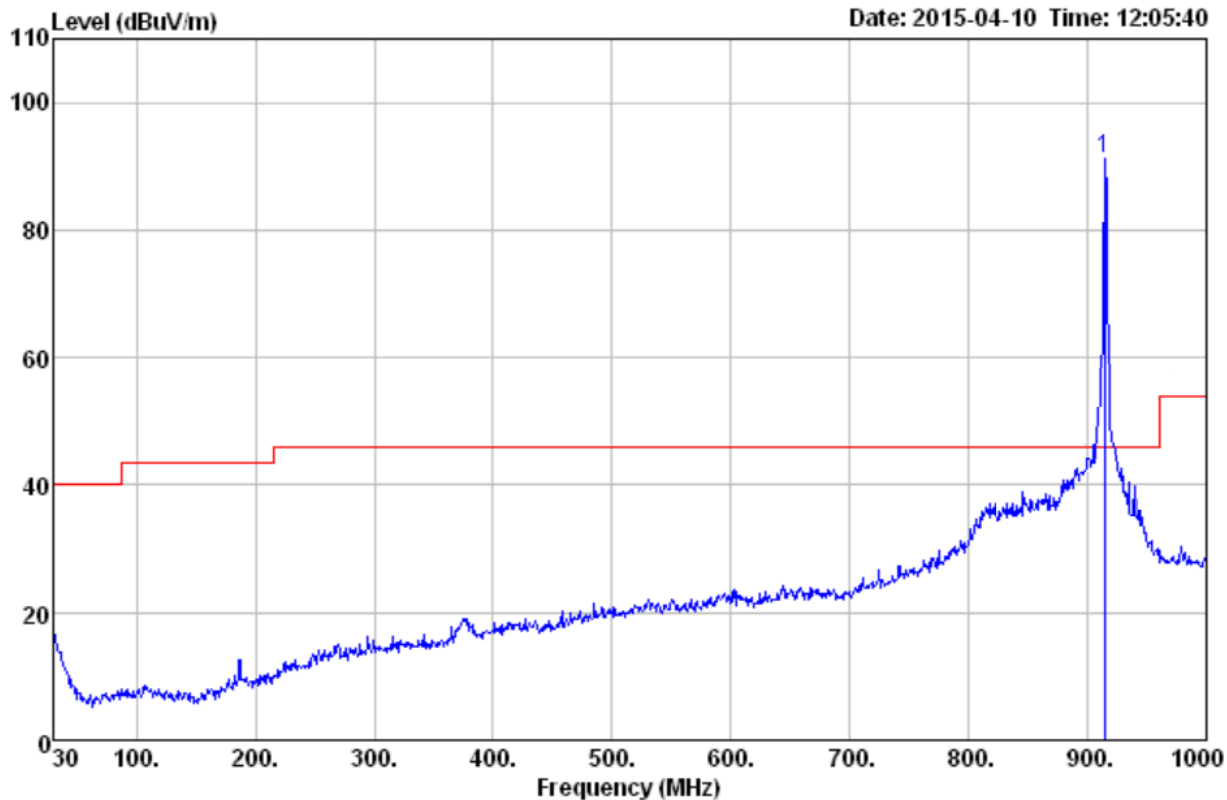
Note:

The transducer factor includes antenna factor and cable loss.  
 \* means the max Quasi peak value for band-edge (frequency range of 802 MHz to 902MHz, except for harmonics) is the plot measurement at 900.3 MHz.  
 \* means the max Quasi peak value for band-edge (frequency range of 928 MHz to 1000 MHz, except for harmonics) is the plot measurement at 935.5 MHz.  
 The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X orthogonal plane for the final measurement.



Test for SIGNOLUXUTX-B:  
915MHz, Horizontal

Date: 2015-04-10 Time: 12:05:40



Quasi-peak measurement

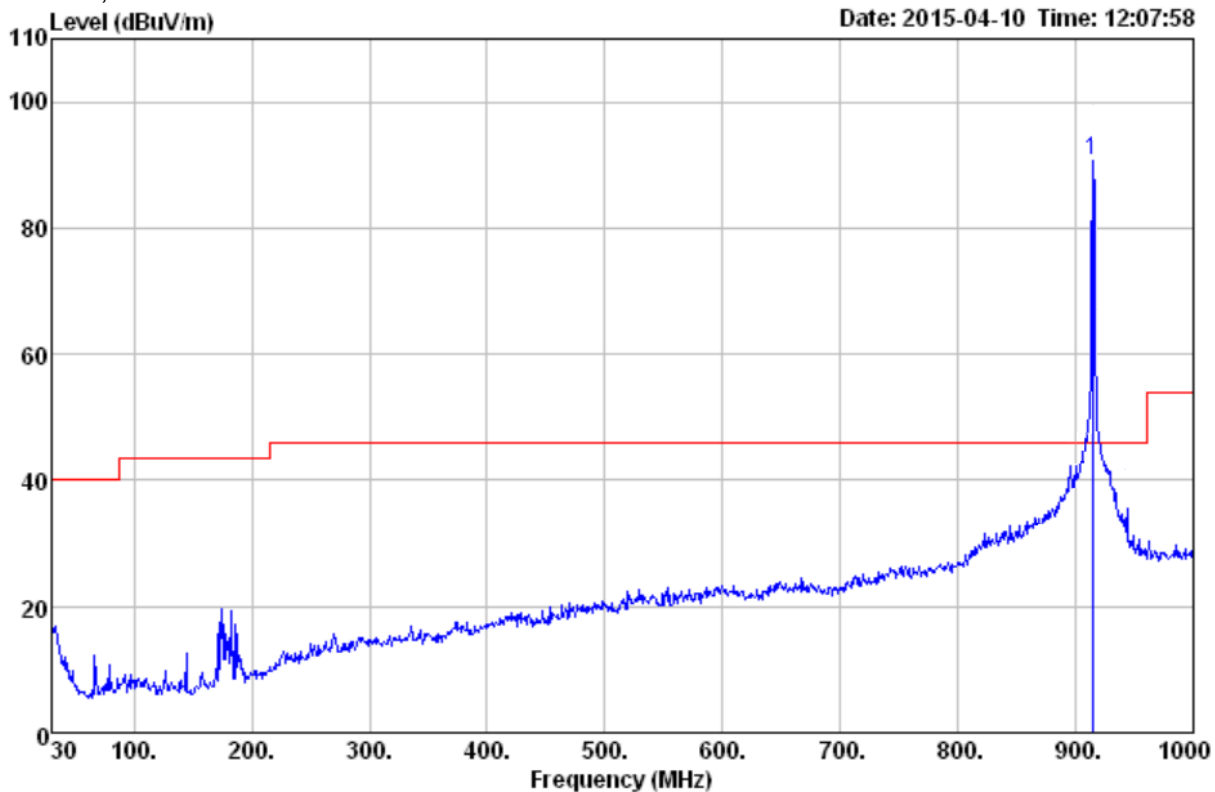
Frequency MHz	Level dBuV/m	Transducer dB	Limit dBuV/m	Margin dB
30.0	17.6	17.9	40	22.4
184.5	15.8	8.3	43.5	27.7
374.1	19.5	14.9	46	26.5
900.2*	42.2	41.2	46	3.8
933.2*	39.8	24.0	46	6.2
973.4	33.2	23.9	54	20.8

Note:

The transducer factor includes antenna factor and cable loss.  
 \* means the max Quasi peak value for band-edge (frequency range of 802 MHz to 902MHz, except for harmonics) is the plot measurement at 900.2 MHz.  
 \* means the max Quasi peak value for band-edge (frequency range of 928 MHz to 1000 MHz, except for harmonics) is the plot measurement at 933.2 MHz.  
 The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X orthogonal plane for the final measurement.

Test for SIGNOLUXUTX-B:  
915MHz, Vertical

Date: 2015-04-10 Time: 12:07:58



Quasi-peak measurement

Frequency	Level	Transducer	Limit	Margin
MHz	dBuV/m	dB	dBuV/m	dB
30.0	17.6	17.9	40	22.4
178.3	19.8	8.3	43.5	23.7
541.6	22.4	19.3	46	23.6
897.3*	41.3	23.9	46	4.7
940.0*	37.9	24.2	46	8.1
982.0	33.2	23.7	54	20.8

Note:

The transducer factor includes antenna factor and cable loss.  
 \* means the max Quasi peak value for band-edge (frequency range of 802 MHz to 902MHz, except for harmonics) is the plot measurement at 897.3 MHz.  
 \* means the max Quasi peak value for band-edge (frequency range of 928 MHz to 1000 MHz, except for harmonics) is the plot measurement at 940.0 MHz.  
 The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X orthogonal plane for the final measurement.

**3) 1 GHz~9.30 GHz Spurious Emissions .Average & PK Measurement**

Test for SIGNOLUXUTX-A:

Horizontal &amp; Vertical:

Average measurement at 915 MHz

Frequency	Level		Transducer	Limit	Margin	
GHz	dBuV/m		dB	dBuV/m	dB	
	Horizontal	Vertical			Horizontal	Vertical
1.202	40.5	39.1	24.8	54	13.5	14.9
2.394	40.2	42.3	26.6		13.8	11.7
2.554	40.5	39.6	26.8		13.5	14.4
5.232	40.5	39.7	33.1		13.5	14.3
7.452	40.9	39.1	35.9		13.1	14.9
9.243	40.6	40.5	37.5		13.4	13.5

Peak measurement at 915 MHz

Frequency	Level		Transducer	Limit	Margin	
GHz	dBuV/m		dB	dBuV/m	dB	
	Horizontal	Vertical			Horizontal	Vertical
1.202	50.1	50.2	24.8	74	23.9	23.8
2.394	50.3	51.0	26.6		23.7	23.0
2.554	50.4	49.4	26.8		23.6	24.6
5.232	50.5	49.9	33.1		23.5	24.1
7.452	49.9	50.7	35.9		24.1	23.3
9.243	50.6	50.9	37.5		23.4	23.1

Note:

The transducer factor includes antenna factor and cable loss.

The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X orthogonal plane for the final measurement.

Test for SIGNOLUXUTX-B:

Horizontal &amp; Vertical:

Average measurement at 915 MHz

Frequency	Level		Transducer	Limit	Margin	
GHz	dBuV/m		dB	dBuV/m	dB	
	Horizontal	Vertical			Horizontal	Vertical
1.240	40.7	40.2	24.8	54	13.3	13.8
2.382	40.2	40.8	26.6		13.8	13.2
2.489	50.9	47.8	25.7		3.1	6.2
5.335	40.6	40.4	32.4		13.4	13.6
7.478	40.4	40.2	35.9		13.6	13.8
9.118	40.3	39.7	37.3		13.7	14.3

Peak measurement at 915 MHz

Frequency	Level		Transducer	Limit	Margin	
GHz	dBuV/m		dB	dBuV/m	dB	
	Horizontal	Vertical			Horizontal	Vertical
1.240	50.4	50.1	24.8	74	23.6	23.9
2.382	50.4	50.2	26.6		23.6	23.8
2.489	54.6	51.6	25.7		19.4	22.4
5.335	50.5	50.1	32.4		23.5	23.9
7.478	50.5	50.7	35.9		23.5	23.3
9.118	50.5	50.3	37.3		23.5	23.7

Note:

The transducer factor includes antenna factor and cable loss.

The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes and choose the worst case of X orthogonal plane for the final measurement.

### 3.2 Occupied Bandwidth

Test Requirement: FCC Part15.215  
 Test Method: ANSI C63.10: 2013  
 Detector: Peak for scan (The resolution bandwidth was 10kHz and the video bandwidth was 30kHz, span was 2MHz)  
 maximised peak hold

#### 3.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25°C

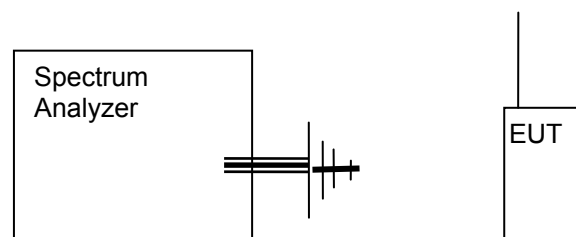
Humidity:45% RH

Atmospheric Pressure: 1020mBar

EUT Operation:

Test the EUT work normally in on mode during the whole test.

#### 3.2.2 Test Setup



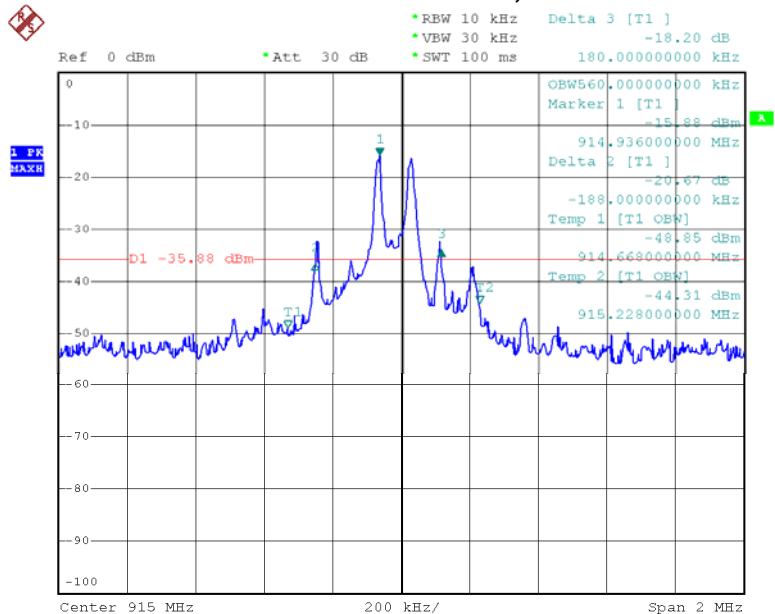
#### 3.2.3 Test Procedure

##### **ANSI STANDARD C63.10-2013 6.9 Occupied bandwidth tests:**

An initial pre-scan was performed in the 3m chamber using the spectrum analyzer in peak detection mode. Average measurements were conducted based on the peak sweep graph. 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 polarities.

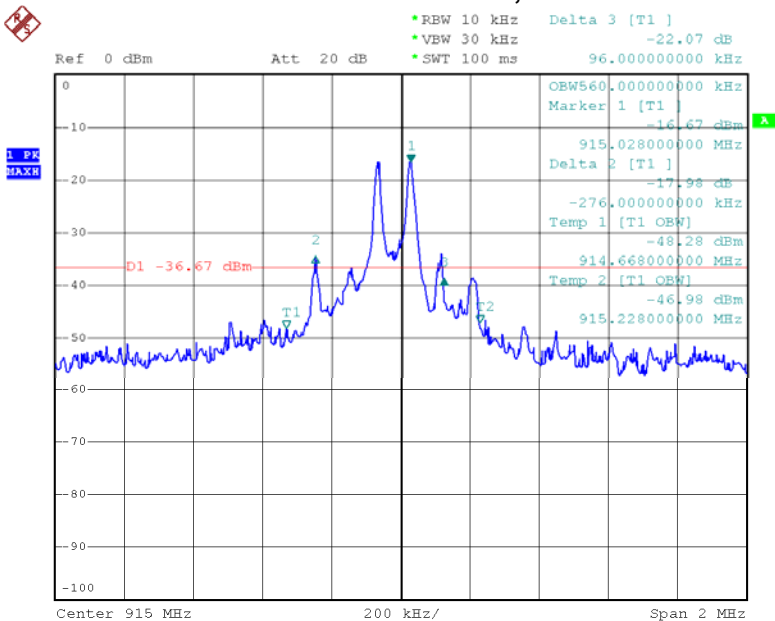
3.2.4 Measurement Data  
 Test for the EUT with switch ON.

Maximum Peak hold measurement for 915.0 MHz, Test for SIGNOLUXUTX-A



Date: 28.MAY.2015 09:13:30

Maximum Peak hold measurement for 915.0 MHz, Test for SIGNOLUXUTX-B



Date: 16.MAY.2015 08:21:11

Center Frequency:	$\Delta FL^-$ / kHz	$\Delta FL^+$ / kHz	-20dB Bandwidth/ kHz	Occupied Bandwidth ( 99% of total power)/ kHz
915MHz				
SIGNOLUXUTX-A	-180	188	368	560
SIGNOLUXUTX-B	-276	96	372	560

## 4 PHOTOGRAPHS

### 4.1 Radiated Emission Test Setup

SIGNOLUXUTX-A: 9kHz - 30MHz



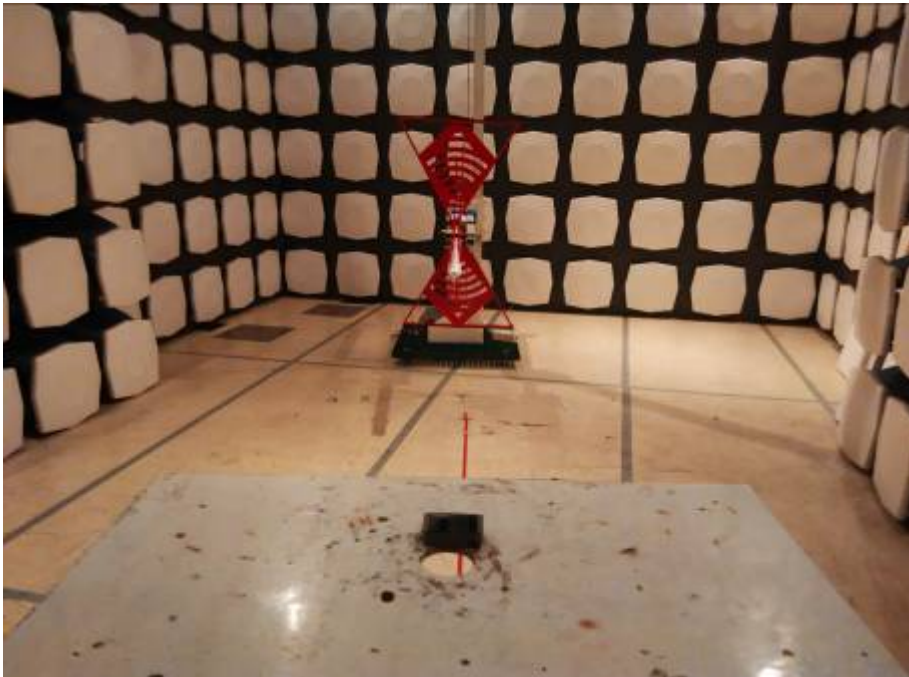
SIGNOLUXUTX-B: 9kHz - 30MHz



SIGNOLUXUTX-A: 30MHz – 1GHz



SIGNOLUXUTX-B: 30MHz – 1GHz





SIGNOLUXUTX-A: 1GHz – 9.3GHz

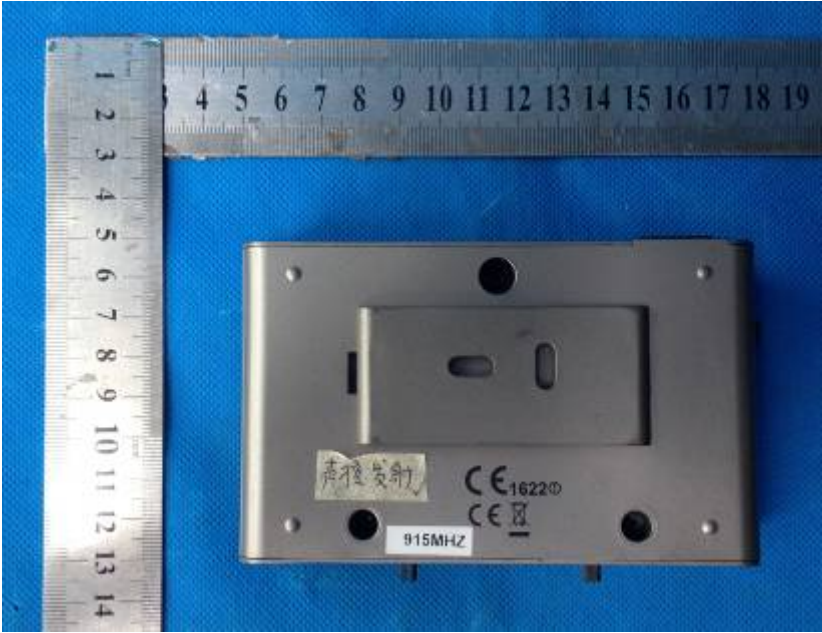


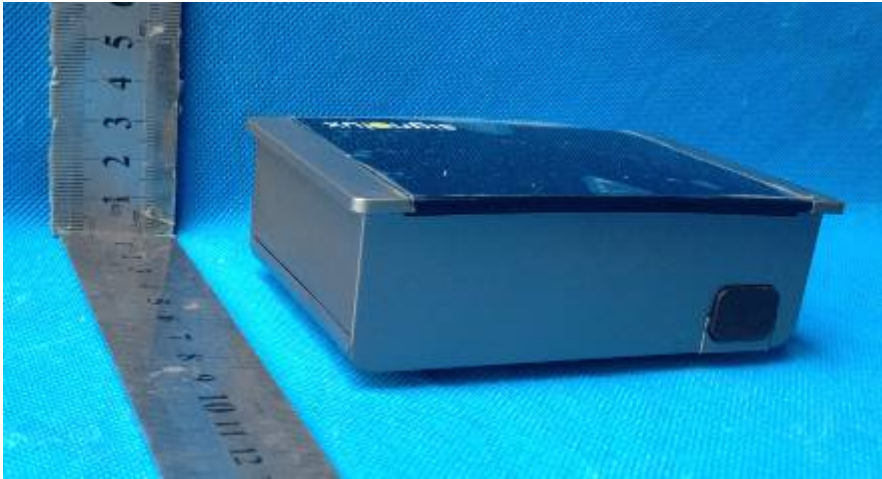
SIGNOLUXUTX-B: 1GHz – 9.3GHz

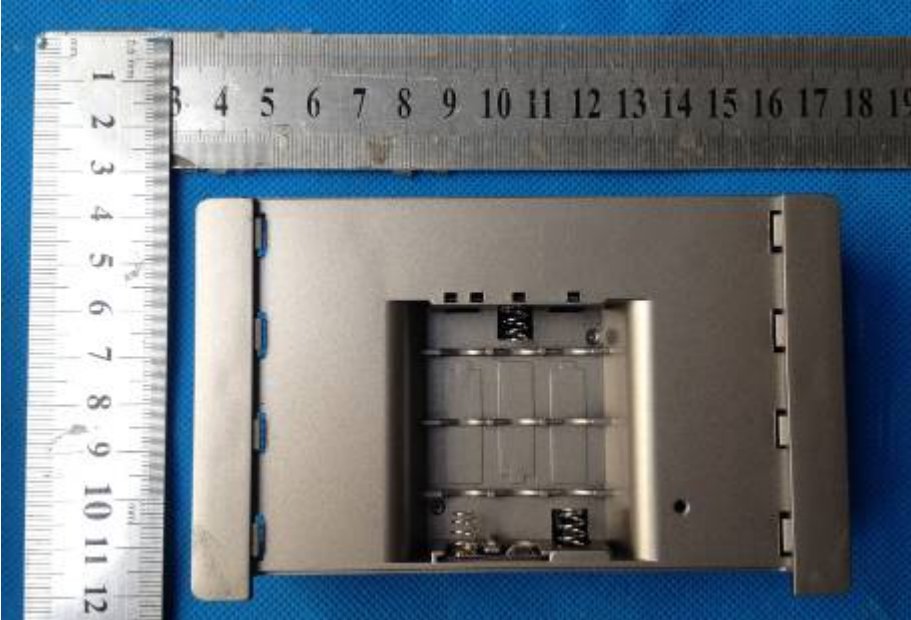


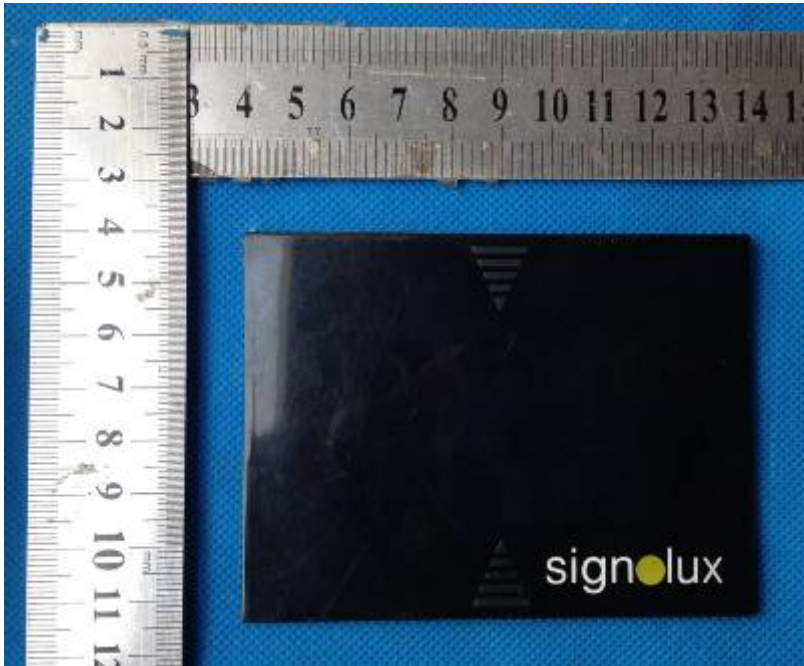
4.2 EUT Constructional Details

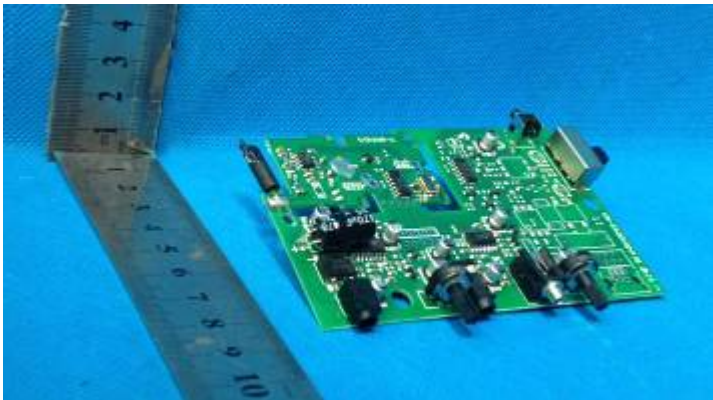
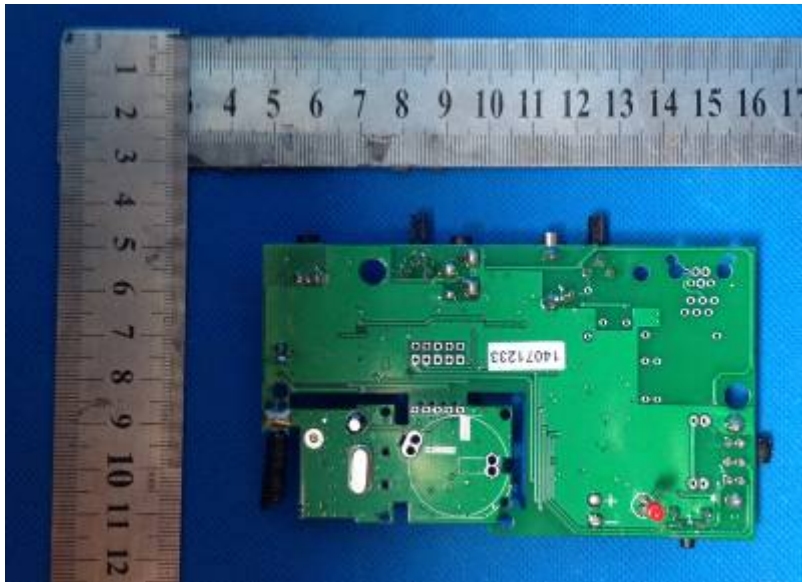
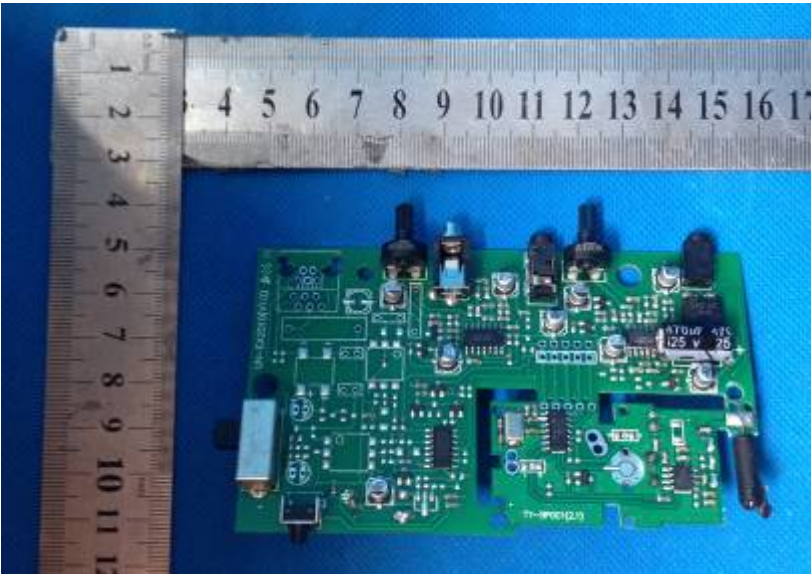
SIGNOLUXUTX-A

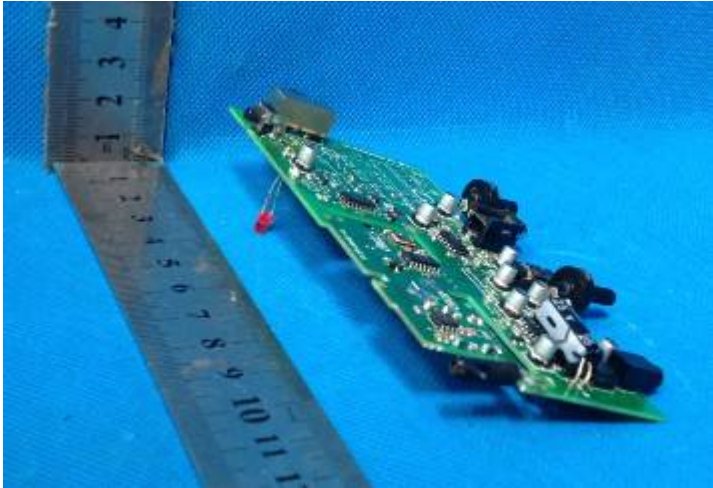
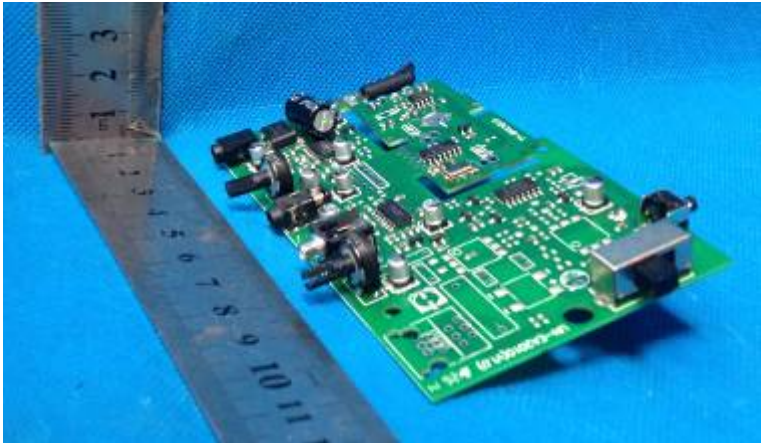
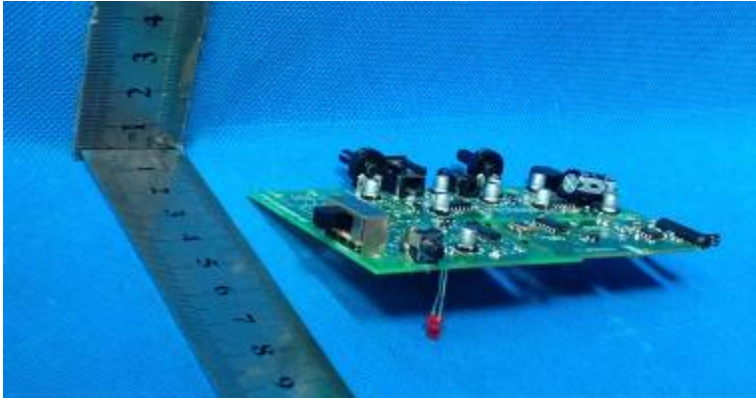


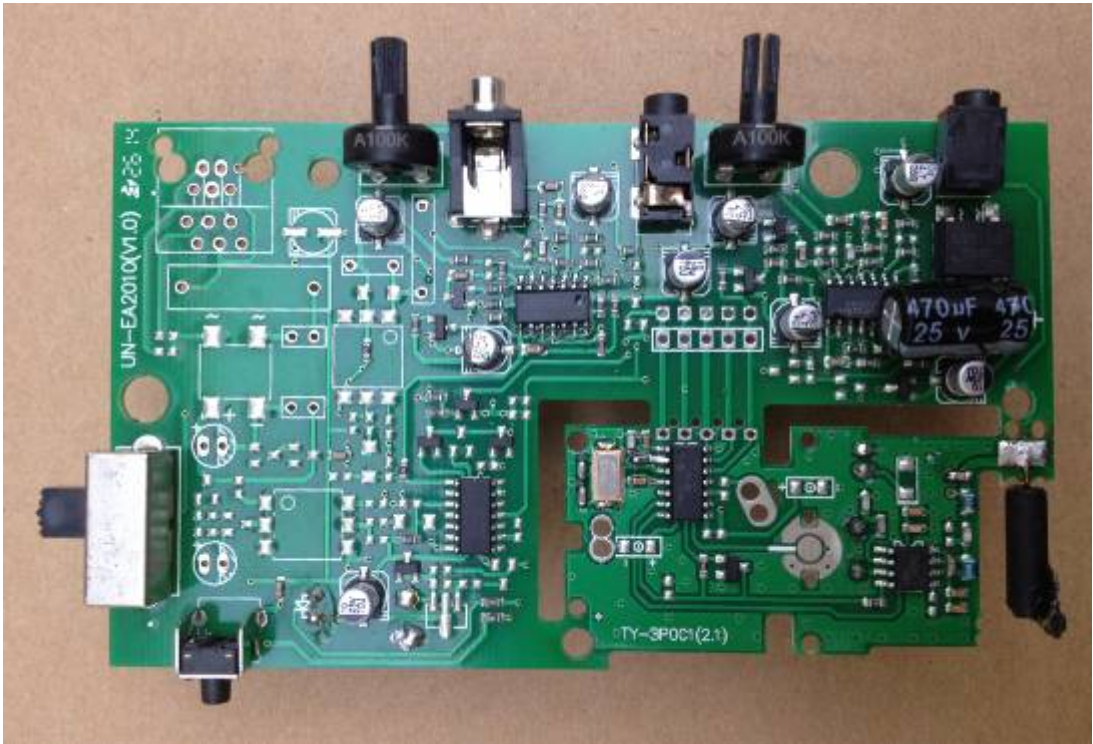






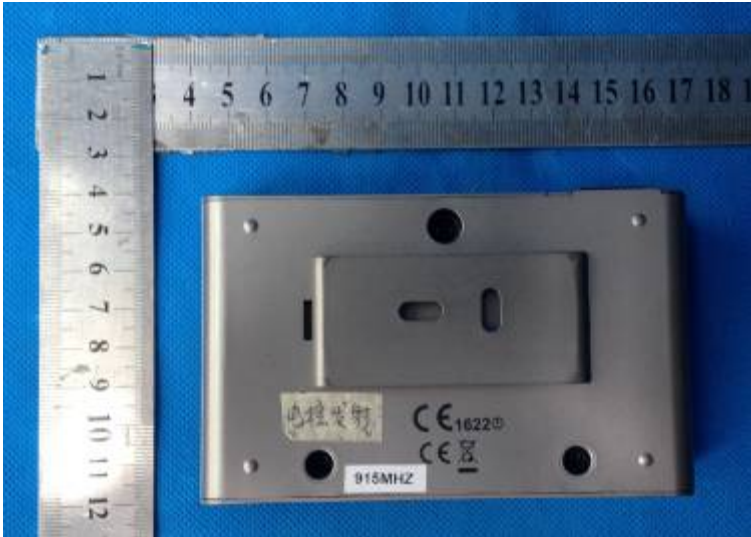
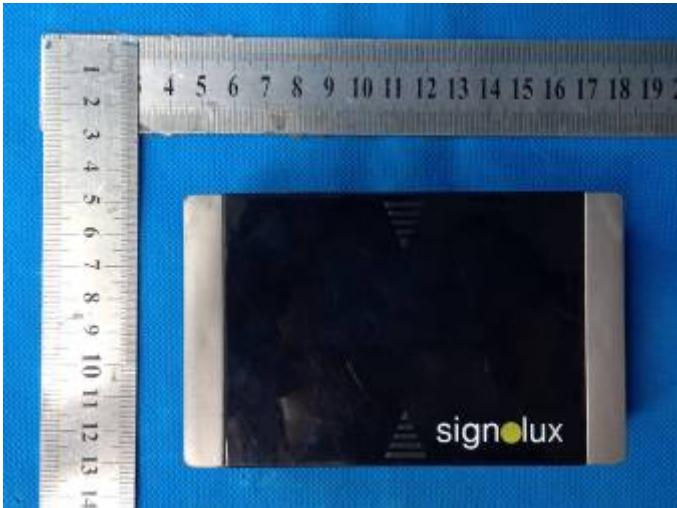


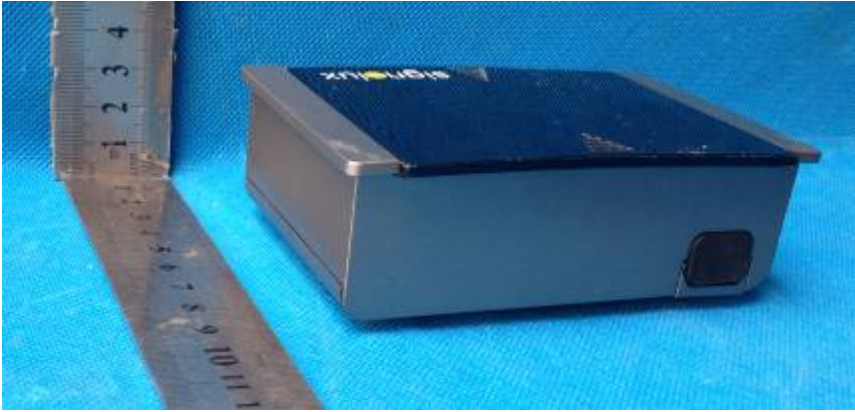


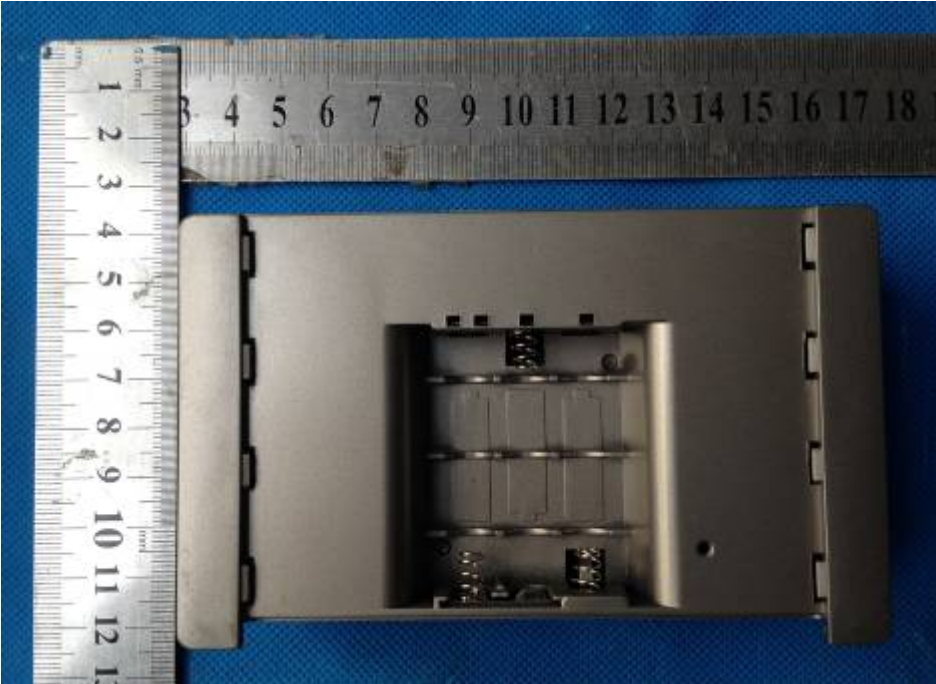


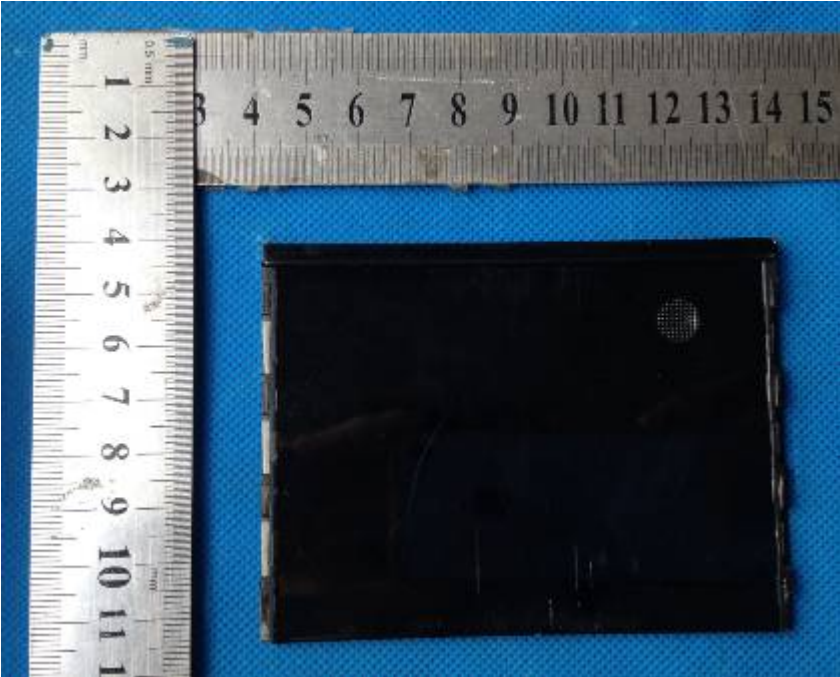


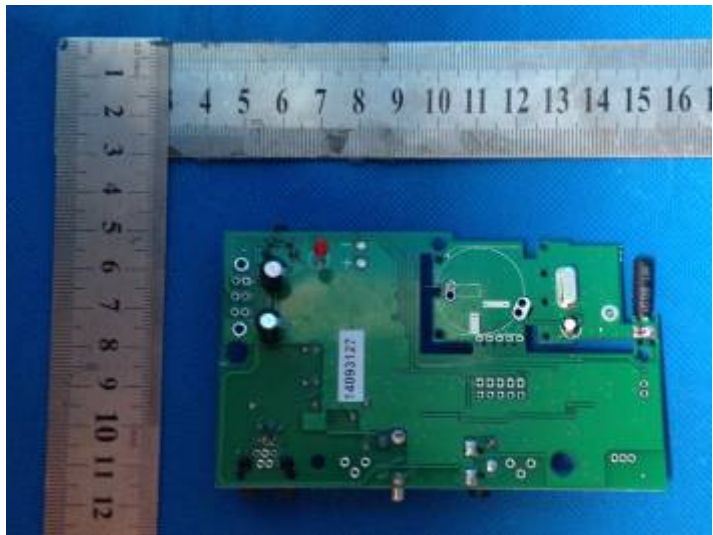
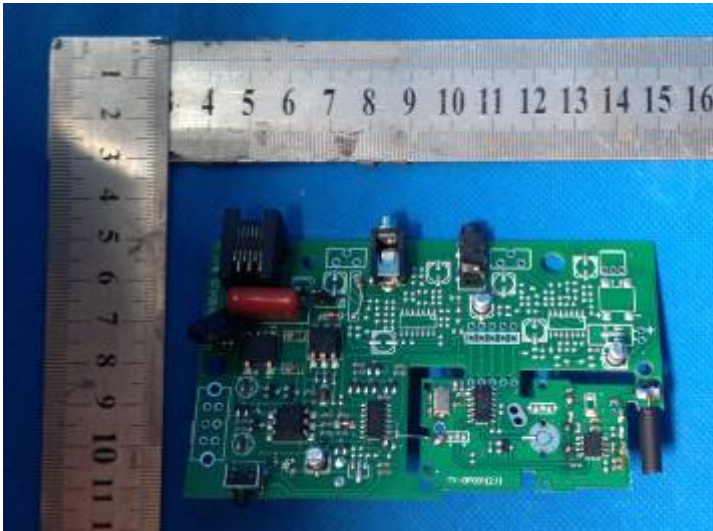
SIGNOLUXUTX-B

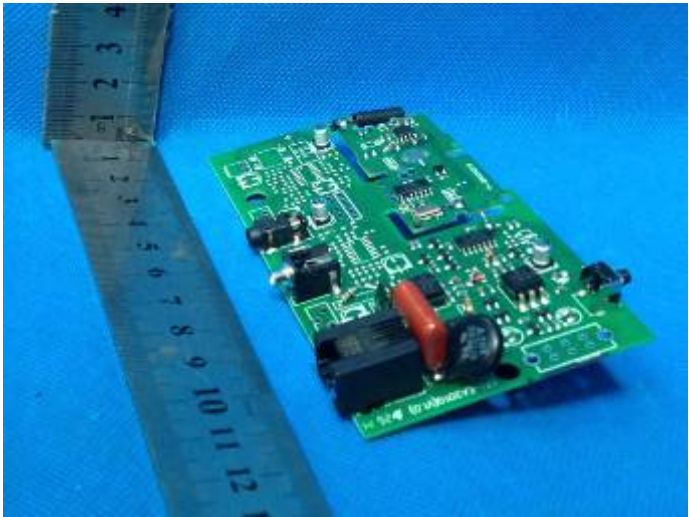
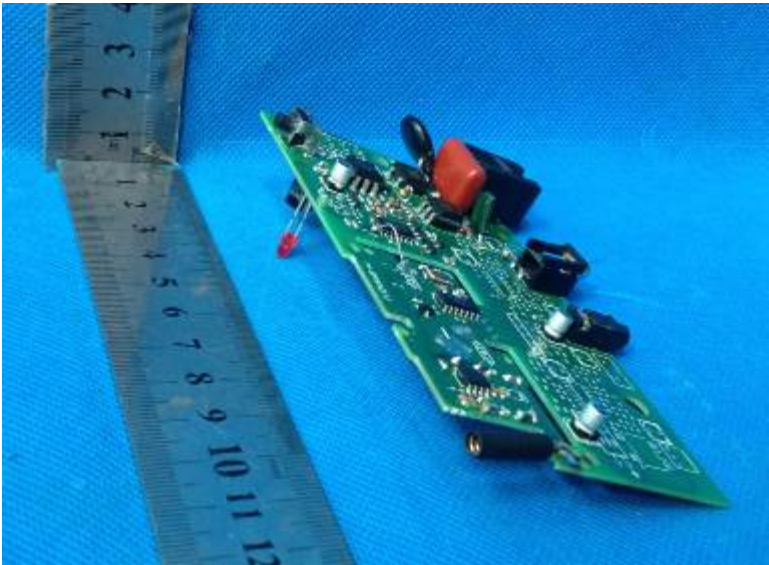
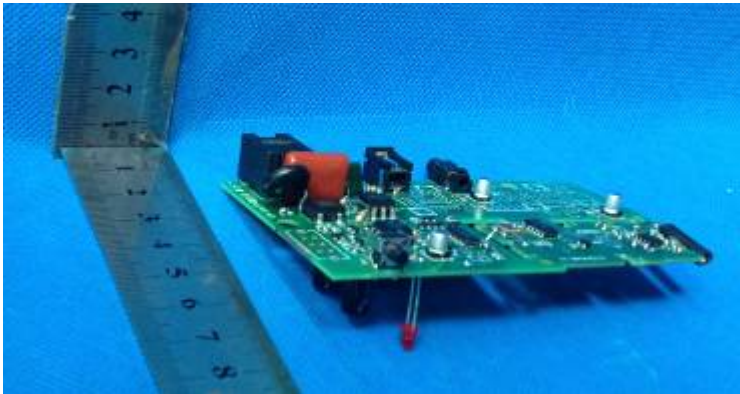


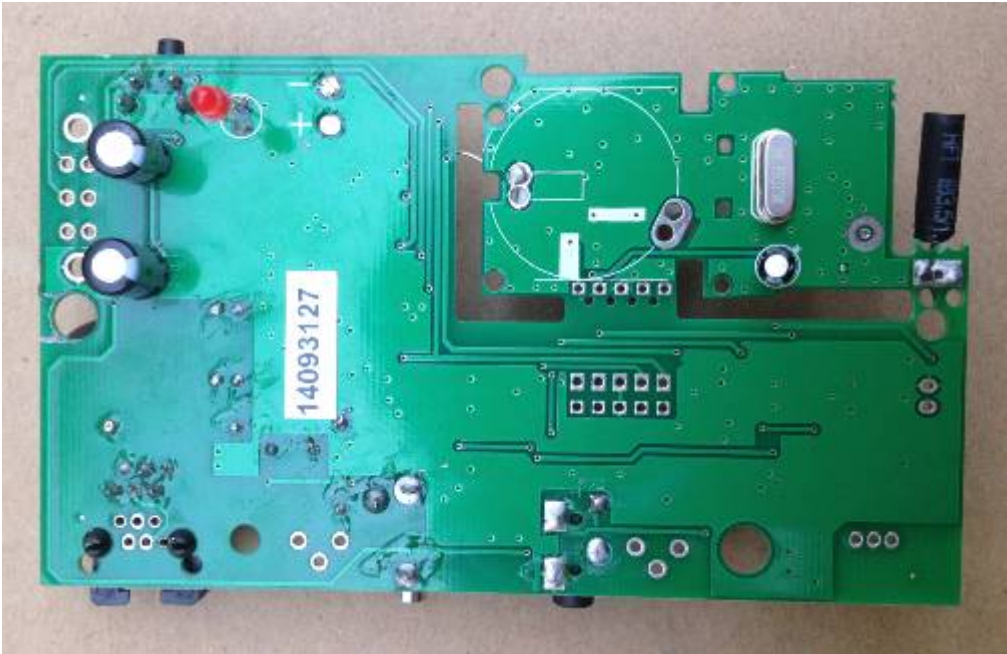
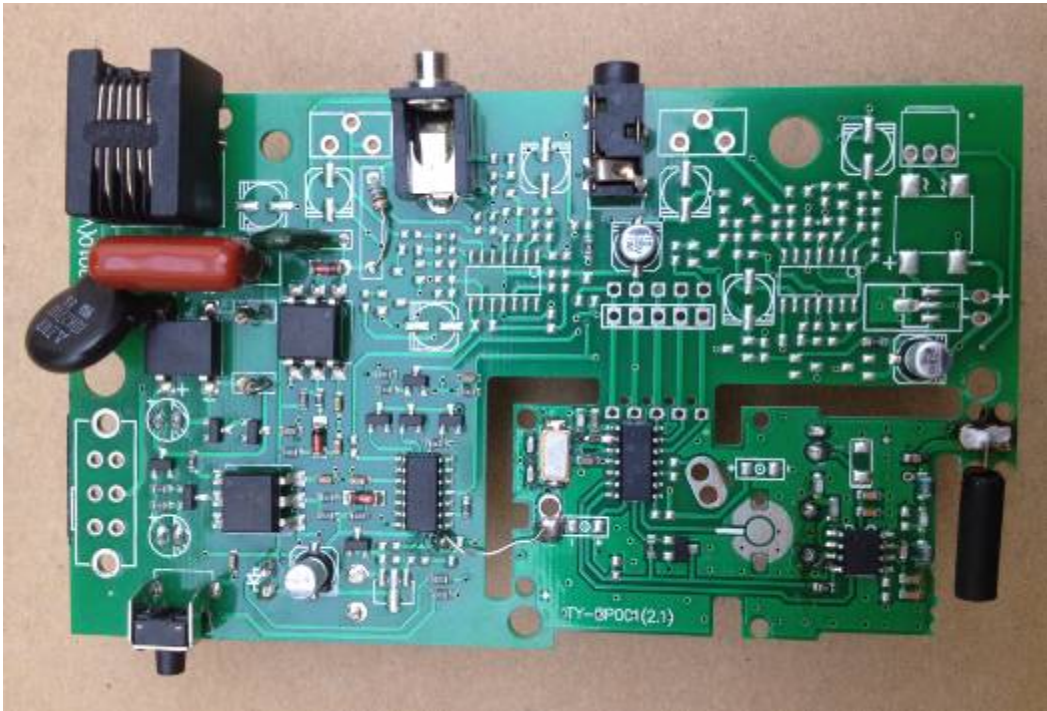








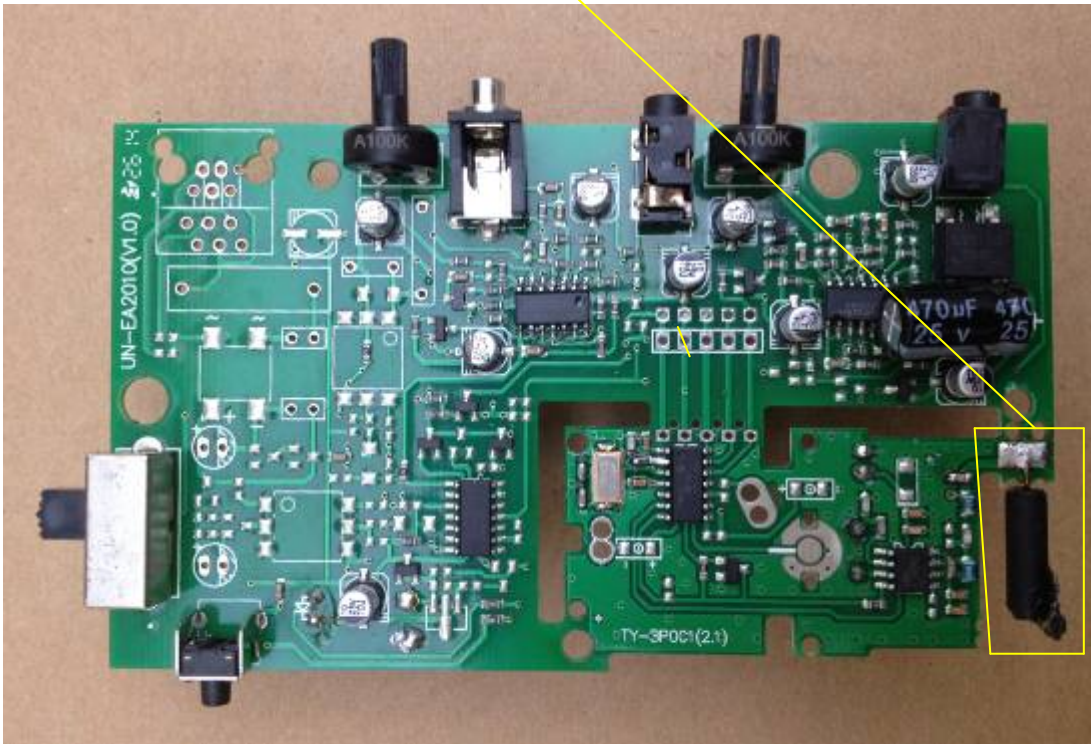




4.3 Antenna Photo

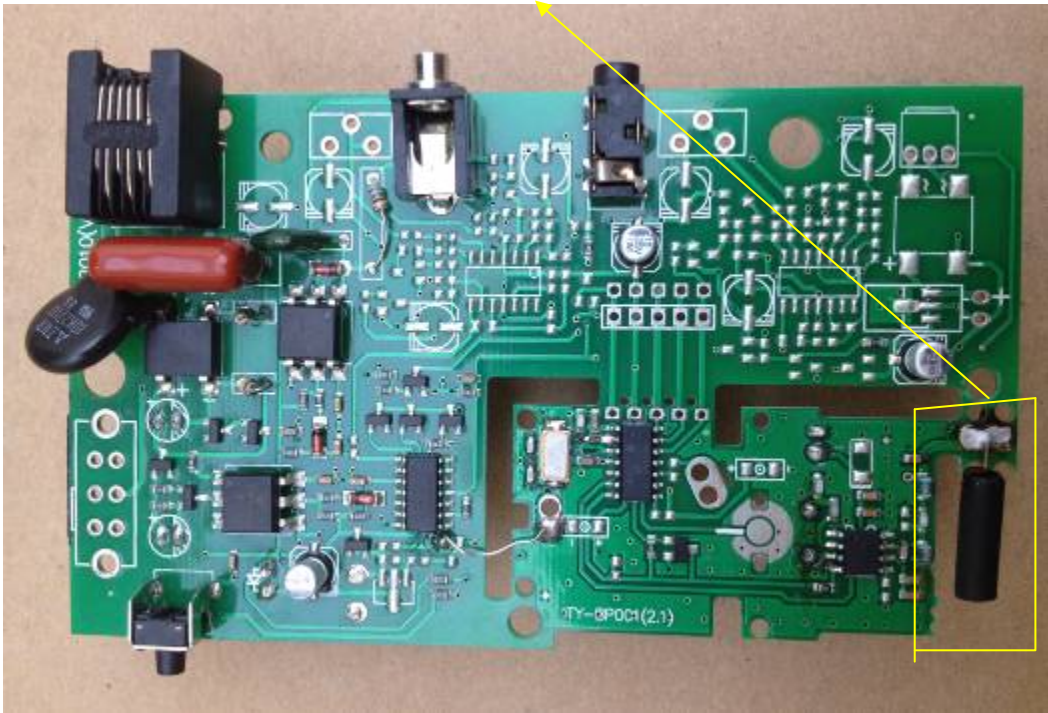
SIGNOLUXUTX-A

Antenna



SIGNOLUXUTX-B

Antenna



Note:  
The EUT was used permanently attached antenna, and it's complied with the requirements of section 15.203: antenna requirement.



## 5 EQUIPMENTS USED DURING TEST

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
1	RF Generator	Rohde & Schwarz	SMB100A-B106	1.031	2014-5-10	2015-5-10
					2015-5-10	2016-5-10
2	Spectrum Analyzer	Rohde & Schwarz	FSP30	EMC0001	2015-3-24	2016-3-24
3	EMI Test Receiver	Rohde & Schwarz	ESCI	EMC1002	2015-3-24	2016-3-24
4	2-Channel Power Meter	Rohde & Schwarz	NRP2	1.033	2014-5-10	2015-5-10
					2015-5-10	2016-5-10
5	Audio Analyzer	Hewlett Packard	8903B	EMC0011	2014-11-5	2015-11-5
6	Power Sensor	Rohde & Schwarz	NRP-Z91	1.034	2014-5-10	2015-5-10
					2015-5-10	2016-5-10
7	Power Sensor	Rohde & Schwarz	NRP-Z91	1.035	2014-5-10	2015-5-10
					2015-5-10	2016-5-10
8	Temperature Chamber	Gongwen	GDS-250	SFT0009	2014-11-5	2015-11-5
9	D.C. Power Supply	KIKUSUI	PAN35-10A	SFT0319	2014-11-5	2015-11-5
10	Temperature Chamber	Gongwen	GDS-250	SFT0009	2014-11-5	2015-11-5
11	D.C. Power Supply	KIKUSUI	PAN35-10A	SFT0319	2014-11-5	2015-11-5
12	Humidity/ Temperature Meter	Anymetre	TH101B	SFT0063	2014-11-5	2015-11-5
13	Barometer	ChangChun	DYM3	SEL0088	2014-6-8	2015-6-8
14	Multimeter	UNI-T	UT70A	EMC0017	2014-11-5	2015-11-5
15	Monopole Antenna	HST	N/A	EMC0089	2014-11-5	2015-11-5
16	Low loss coaxial cable	HST	2 m	EMC1008	2014-11-5	2015-11-5
17	Monopole Antenna	HST	N/A	N/A	2014-11-5	2015-11-5
18	Noise Generator	Ningbo Zhongce	DF1681	EMC0009	2014-11-5	2015-11-5
19	Semi-Anechoic chamber	ETS•Lindgren	FACT3 2.0	ITL-100	2013-6-17	2016-6-17
20	EMI Test receiver	R&S	ESVS10	ITL-111	2015-1-19	2016-1-19
21	EXA Spectrum Analyzer	Agilent Technologies	N9010A	ITL-114	2015-1-19	2016-1-19
22	Biconilog Antenna	ETS•Lindgren	3142D	ITL-105	2015-1-24	2018-1-24
23	Pre Amplifier	HP	8447F	ITL-116	2015-1-19	2016-1-19
24	Wideband Amplifier Super Ultra	Mini-circuits	ZVA-183-S+	ITL-117	2015-1-19	2016-1-19
25	Horn Antenna	A-INFOMW	JXTXLB-10180-N	ITL-110	2015-1-24	2018-1-24
26	Software	Audix	E3	ITL-109	/	/
27	Loop Antenna	BJ 2nd Factory	ZN30900A	EMC6001	2013-7-29	2016-7-29

\*\*\*End of report\*\*\*