China

# FCC - TEST REPORT

| | | | | | |
|---|---|---|---|---|---|
| Report Number | : | **60.792.17.014.01A** | Date of Issue | : | July 14, 2017 |
| Model | : | **HG02832A-US-TX, HG02832B-US-TX, HG02832C-US-TX, HG02832D-US-TX** | | | |
| Product Type | : | **Wireless Weather Station** | | | |
| Applicant | : | Lidl US Trading, LLC | | | |
| Address | : | 3500 S. Clark Street, Arlington, Virginia, United States | | | |
| Production Facility | : | DIGI MAX TECHNOLOGY LIMITED | | | |
| Address | : | Room 708, Building 3, Xinyuan B area, Jinshan Industrial District, Fuzhou, China | | | |
| Test Result | : | ■**Positive** ☐**Negative** | | | |
| Total pages including Appendices | : | 21 | | | |





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# 2 Description of Equipment Under Test

**Description of the Equipment Under Test**

| | |
|---|---|
| Product: | Wireless Weather Station |
| Model no.: | HG02832A-US-TX, HG02832B-US-TX, HG02832C-US-TX, HG02832D-US-TX |
| FCC ID: | 2AJ9O-HG116TX |
| Rating: | 3.0VDC (2 x 1.5VDC size “AA“ batteries) |
| Frequency: | 433.92MHz |
| Antenna gain: | 0 dBi |

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# 3 Summary of Test Standards

| Test Standards |
| --- |
| FCC Part 15 Subpart C 10-1-16 Edition<br>Federal Communications Commission, PART 15 — Radio Frequency Devices,<br>Subpart C — Unintentional Radiators |



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# 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 |

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## 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 |



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## 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 |



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# 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 | ☒ | ☐ | ☐ |
| FCC Title 47 Part 15.207 Conduct Emission | N/A | ☐ | ☐ | ☒ |
| FCC Title 47 Part 15.231(c) 20dB Bandwidth | 12 | ☒ | ☐ | ☐ |
| FCC Title 47 Part 15.231(e) Transmission Time | 13-14 | ☒ | ☐ | ☐ |
| FCC Title 47 Part 15.203 Antenna Requirement | 15 | ☒ | ☐ | ☐ |



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# 6 General Remarks

**Remarks**

Client informs that the HG02832A-US-TX have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, with Wireless Weather Station, HG02832B-US-TX, HG02832C-US-TX and HG02832D-US-TX. The difference lies only on different color of the different models. (Client's conformation letter shown at appendix C)

EMC Tests were performed on model: HG02832A-US-TX.

**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: May 9, 2017

Testing Start Date: May 10, 2017

Testing End Date: June 21, 2017

- TÜV SÜD HONG KONG LTD. -

Reviewed by: Prepared by:

| | |
|---|---|
| TSENG Chi Kit | CHAN Kwan Ho Alex |
| EMC Project Engineer | EMC Project Engineer |



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# 7 Emission Test Results

## 7.1 Spurious Radiated Emission

EUT: HG02832A-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
☒ Passed
☐ Not Passed

| Frequency MHz | Result dBµV/m | Limit dBµV/m | Margin dB | Detector |
|---|---|---|---|---|
| 35.927 | 21.81 | 40.0 | 18.19 | Quasi Peak |
| 278.266 | 17.37 | 46.0 | 28.63 | Quasi Peak |
| 433.920 | 72.81 | 92.9 | 20.09 | Peak |
| 433.920 | 33.62 | 72.9 | 39.28 | Average |
| 868.080 | 35.49 | 72.9 | 37.41 | Peak |
| 868.080 | 27.07 | 52.9 | 15.83 | Average |
| 1301.750 | 33.99 | 74.0 | 40.01 | Peak |
| 1301.750 | 25.71 | 54.0 | 28.29 | Average |
| 2169.750 | 43.72 | 74.0 | 30.28 | Peak |
| 2169.750 | 32.28 | 54.0 | 21.72 | Average |
| 3905.500 | 44.09 | 74.0 | 29.91 | Peak |
| 3905.500 | 33.69 | 54.0 | 20.31 | Average |



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## Spurious Radiated Emission

EUT: HG02832A-US-TX
Op Condition: Operated, TX Mode
Test Specification: FCC15.209 & 15.231(e) Antenna: Vertical
Comment: 3.0VDC
Remark: 9kHz to 6GHz

Test Result
☒ Passed
☐ Not Passed

| Frequency MHz | Result dBµV/m | Limit dBµV/m | Margin dB | Detector |
|---|---|---|---|---|
| 38.568 | 22.38 | 40.0 | 17.62 | Quasi Peak |
| 275.625 | 17.67 | 46.0 | 28.33 | Quasi Peak |
| 433.920 | 88.93 | 92.9 | 3.97 | Peak |
| 433.920 | 41.79 | 72.9 | 31.11 | Average |
| 867.756 | 43.51 | 72.9 | 29.39 | Peak |
| 867.756 | 32.75 | 52.9 | 20.15 | Average |
| 1735.750 | 33.73 | 74.0 | 40.27 | Peak |
| 1735.750 | 22.15 | 54.0 | 31.85 | Average |
| 2169.750 | 43.10 | 74.0 | 30.90 | Peak |
| 2169.750 | 32.51 | 54.0 | 21.49 | Average |
| 3037.625 | 45.35 | 74.0 | 28.65 | Peak |
| 3037.625 | 32.98 | 54.0 | 21.02 | Average |


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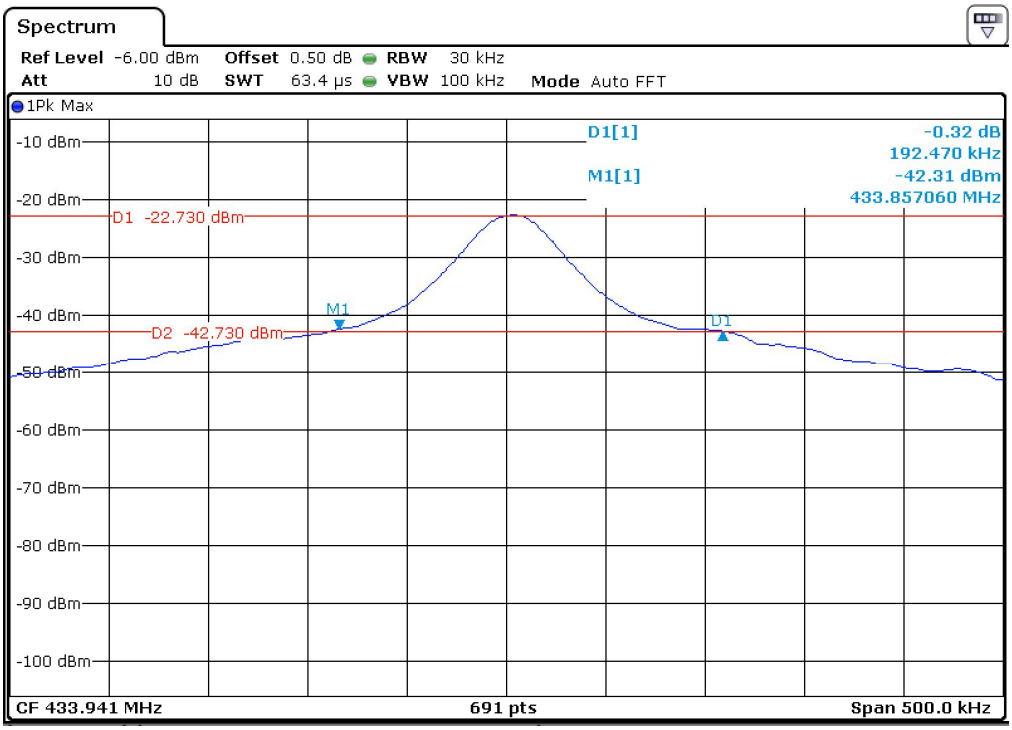
## 7.2 20dB Bandwidth

EUT: HG02832A-US-TX
Op Condition: Operated, TX Mode
Test Specification: FCC15.231(c) 20dB Bandwidth
Comment: 3.0VDC

Test Result
☒ Passed
☐ Not Passed




| 20dB bandwidth | Limit |
|---|---|
| 192.470 kHz | 433.92 x 0.25% =1084.8kHz |



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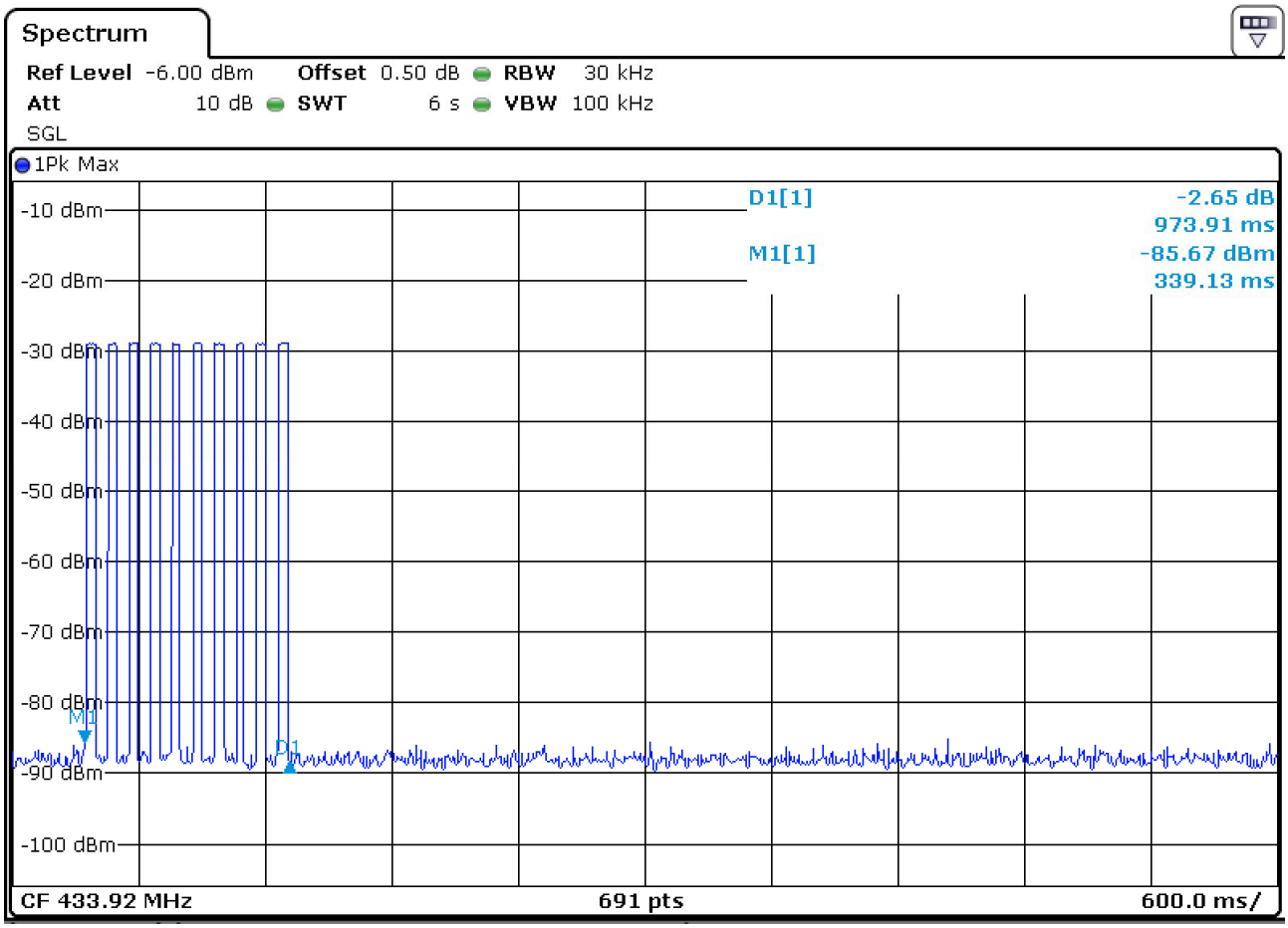
## 7.3 Transmission Time

| | |
|---|---|
| EUT: | HG02832A-US-TX |
| Op Condition: | Operated, TX Mode |
| Test Specification: | FCC15.231(e) Transmission Time |
| Comment: | 3.0VDC |

Test Result
☒ Passed
☐ Not Passed




| The duration of each transmission | Limit |
|---|---|
| 973.91 ms | 1000 ms |



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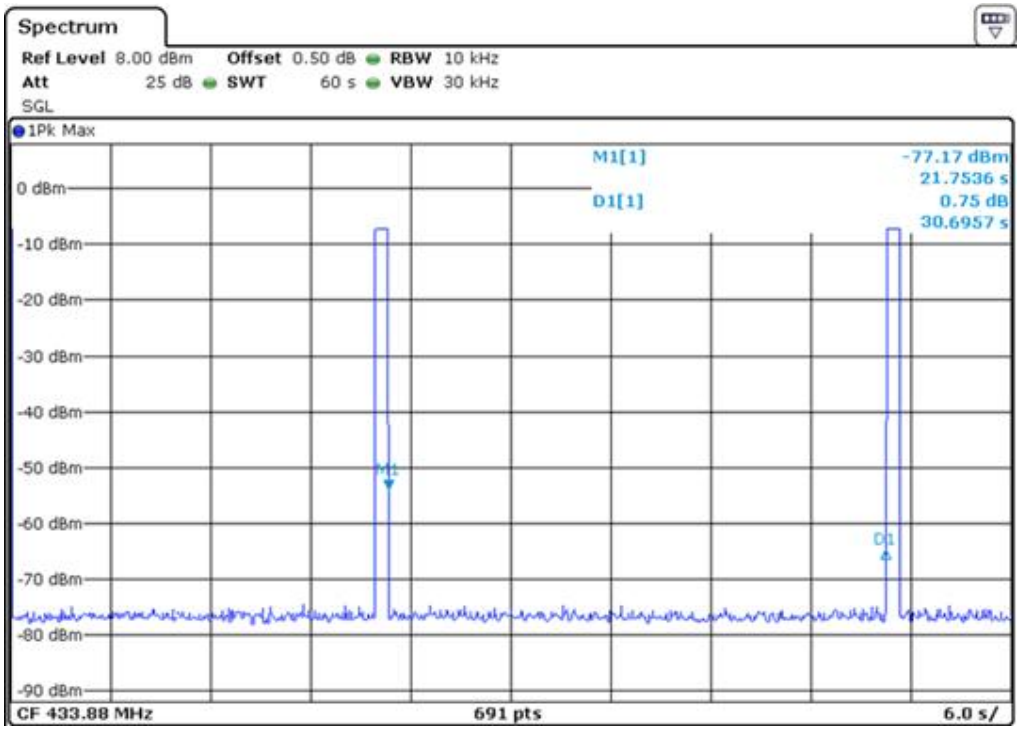
## Transmission Time

EUT: HG02832A-US-TX
Op Condition: Operated, TX Mode
Test Specification: FCC15.231(e) Transmission Time
Comment: 3.0VDC

Test Result
☒ Passed
☐ Not Passed




| The duration of each transmission | Silent duration between transmissions | Result |
|---|---|---|
| 973.91 ms | 30.695 s | 973.91 ms * 30 = 29.217 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.



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## 7.4 Antenna Requirement

| | |
|---|---|
| EUT: | HG02832A-US-TX |
| Op Condition: | Operated, TX Mode |
| Test Specification: | FCC15.203 |
| Comment: | 3.0VDC |

Test Result
☒ Passed
☐ 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.



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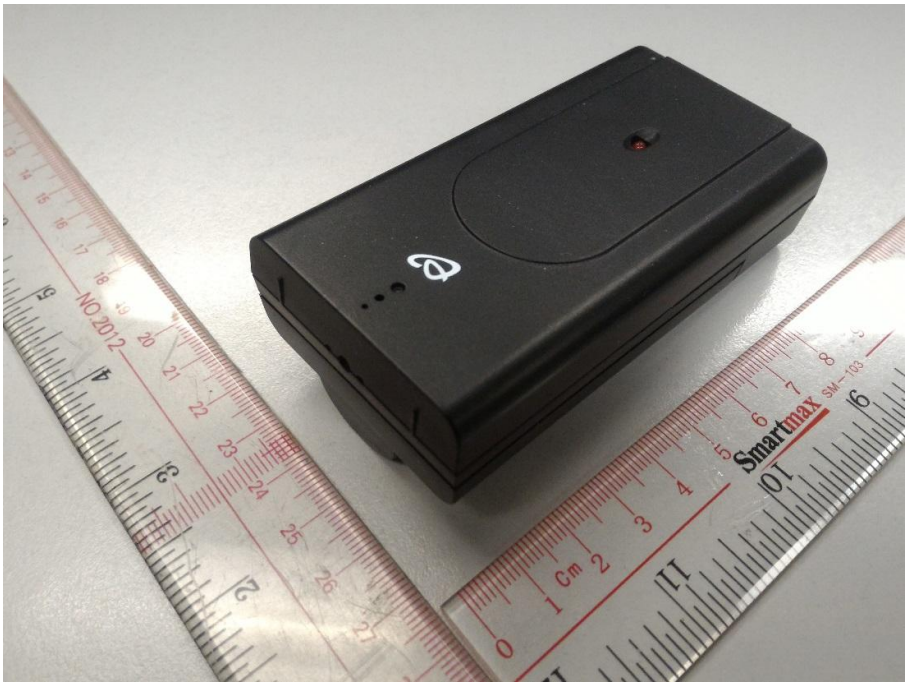
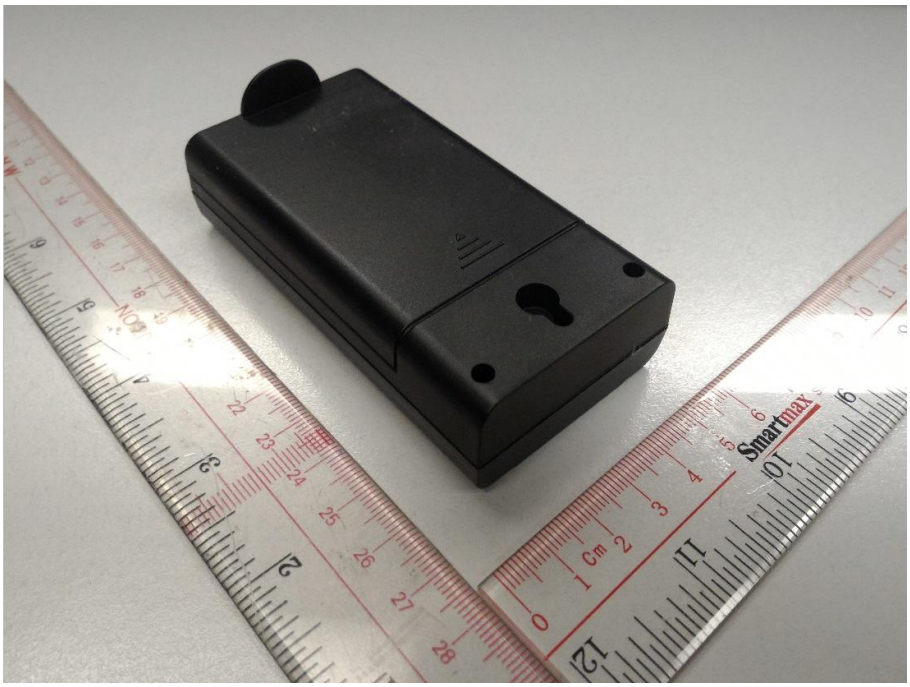
# 8 Appendix A - Photographs of EUT



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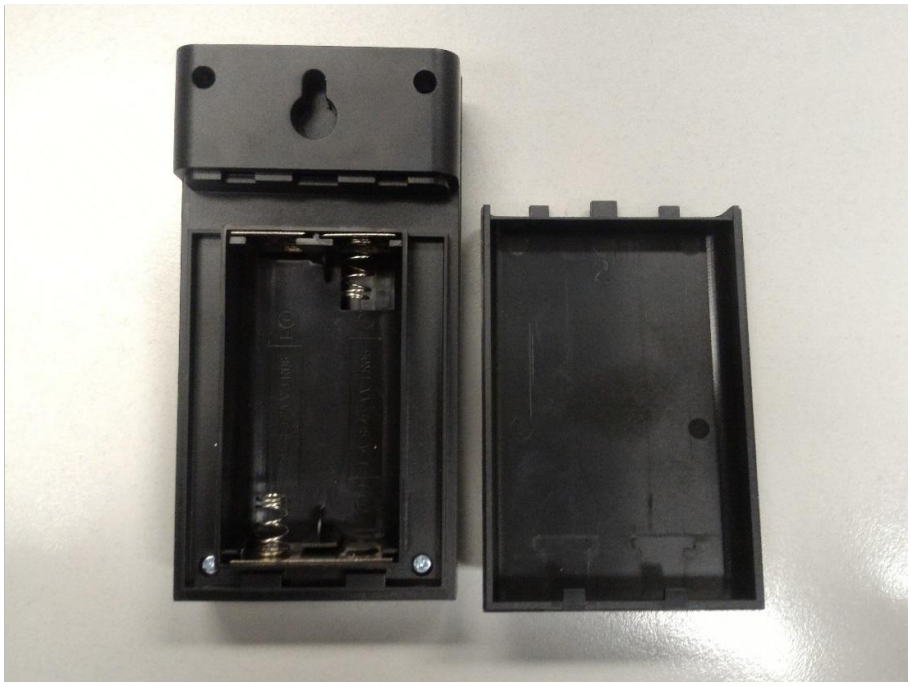
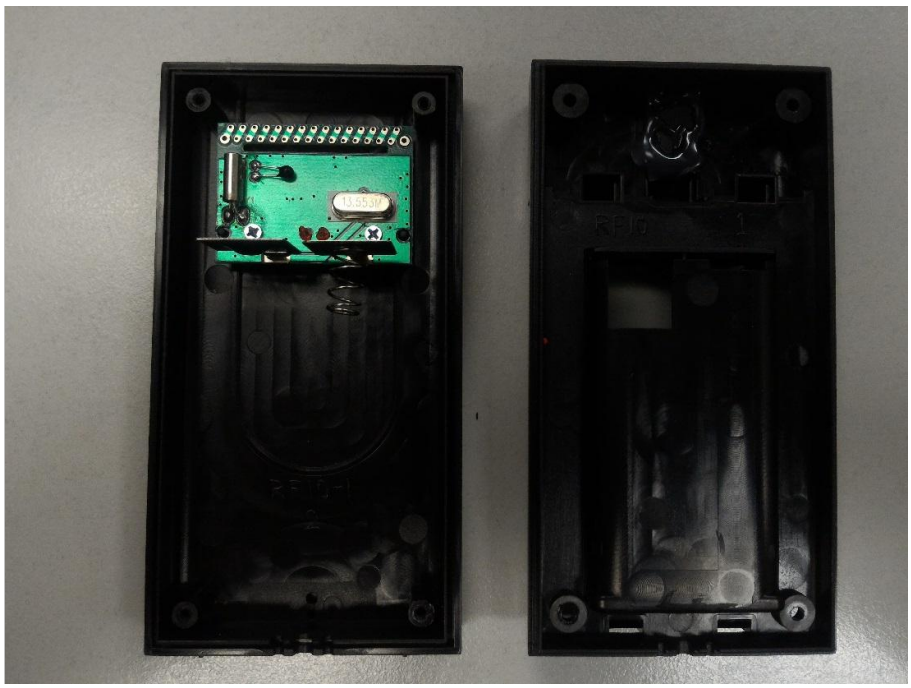
## Appendix A







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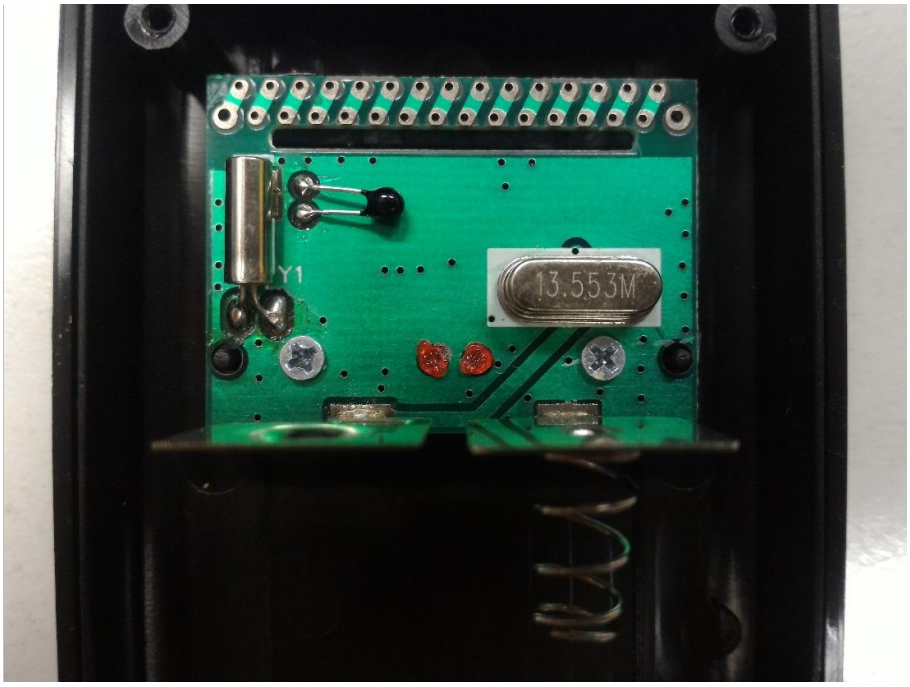
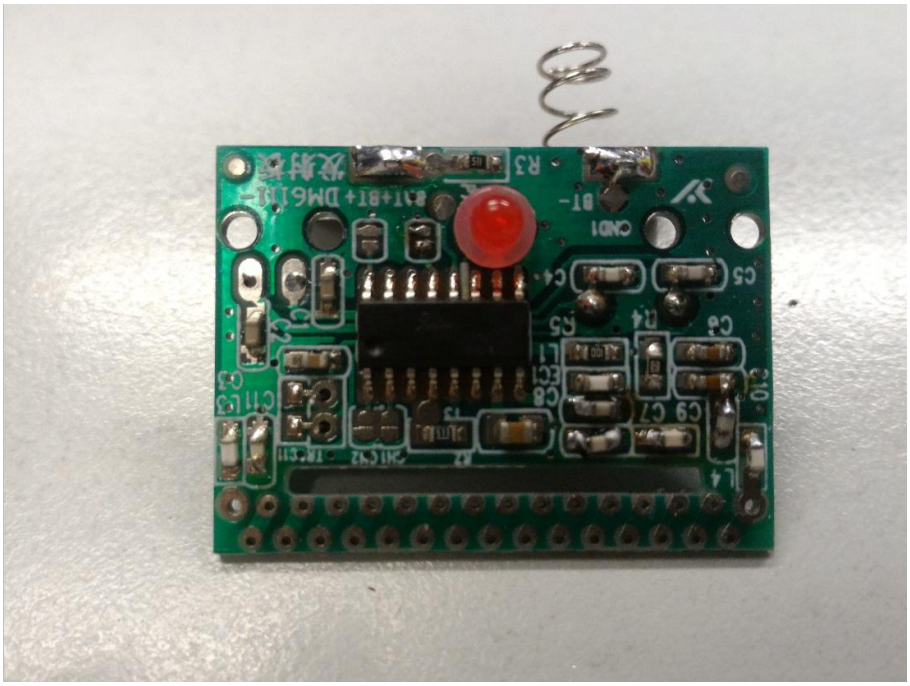
## Appendix A



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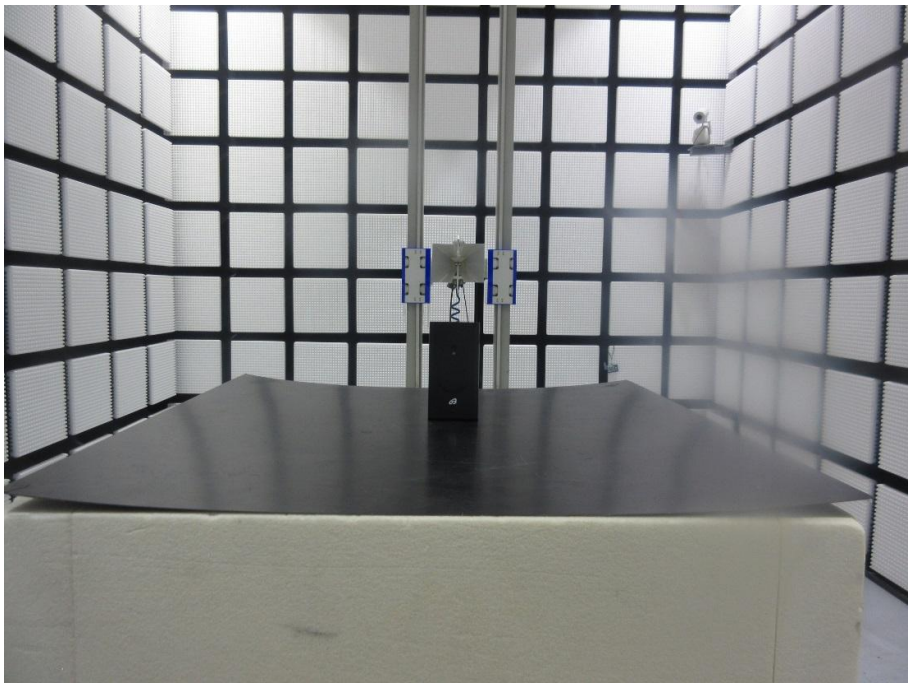
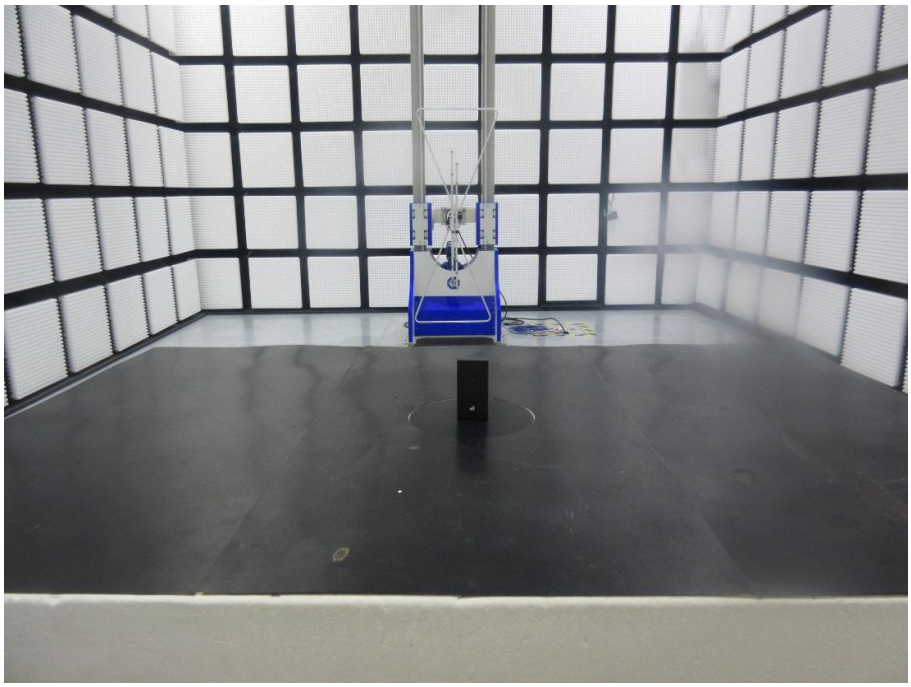
# 9 Appendix B - Setup Photographs of EUT







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# 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)
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR

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

Step a)
>> Numeric threshold, mW / 20mm * √0.43392GHz ≤ 3.0
Numeric threshold ≤ 91.084mW

>> The power of EUT measured is: -8.45dBm = 0.143mW
Which is smaller than the Numeric threshold.
Therefore, the device is exempt from stand-alone SAR test requirements.


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## Appendix C

LIDL

LIDL US LLC. 3500 S Clark Street, Arlington, VA 22202

To: TÜV SÜD HKG Ltd.

Attention: **Mr. Edmond Fung**
From:
Fax No:

Date: July 9, 2017
Total Page (Cover Included): 1

**Declaration Letter**

Subject: Declaration Letter for Model Number

We:

Officially notify TÜV SÜD HKG Ltd. that the <<Additional Model>> have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, with <<PRODUCT>>, <<Main Test Model>>.
The difference lies only on different color of the different models.

<<Additional Model >>: HG02832C-US-RX, HG02832C-US-TX, HG02832D-US-RX, HG02832D-US-TX

<<Main Test Model >>: HG02832A-US-RX, HG02832A-US-TX, HG02832B-US-RX, HG02832B-US-TX

<<Product>>: Wireless Weather Station

Applicant:

David MATTER

Digitally signed by David MATTER
DN: cn=David MATTER, o=LIDL, ou=LLC, email=david.matter@lidl.us, c=US
Date: 2017.07.09 19:00:25 -04'00'

09/Jul/2017
(Date)

(Applicant's authorized signature and company Chop)

file: declaration letter-template

Page 1 of 1