

# CE EMC Test Report

**Equipment** : IP65 Integrated Temperature / Humidity sensor  
with LoRa and BLE – EU Version

**Model No.** : Sentrius™ RS186 Sensors

**Brand Name** : Laird

**Applicant** : Laird Technologies

**Address** : W66N220 Commerce Court, Cedarburg,  
Wisconsin 53012, USA

**Standard** : Draft EN 301 489-1 V2.2.0 (2017-03)  
Final draft EN 301 489-3 V2.1.1 (2017-03)  
Draft EN 301 489-17 V3.2.0 (2017-03)

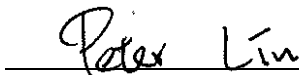
**Received Date** : Oct, 06, 2017

**Tested Date** : Oct. 27 ~ Oct. 30, 2017

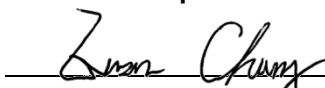
We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

Approved by:



Peter Lin / Supervisor



Eason Chang / Assistant Manager



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## Release Record

Report No.	Version	Description	Issued Date
EW7O0602	Rev. 01	Initial issue	Nov. 09, 2017

## Summary of Test Results

Draft EN 301 489-1 Emission Tests				
Ref. Std. Clause	Test Standard	Test Items	Measured	Result
8.3/8.4	EN 55032:2015/AC:2016, Class B	Conducted Emissions from the AC mains power ports	Note <sup>1</sup>	N/A
8.7	EN 55032:2015/AC:2016, Class B	Asymmetric Mode Conducted Emissions	Note <sup>2</sup>	N/A
8.2	EN 55032:2015/AC:2016, Class B	Radiated Emissions	Note <sup>3</sup>	N/A
8.5	EN 61000-3-2:2014, Class A	Harmonic Current Emissions	Note <sup>1</sup>	N/A
8.6	EN 61000-3-3:2013	Voltage Fluctuations and Flicker	Note <sup>1</sup>	N/A
<p>N/A means Not Applicable.</p> <p>Note<sup>1</sup>: The EUT consumes DC power from battery, so the test is not required.</p> <p>Note<sup>2</sup>: The EUT w/o telecom port.</p> <p>Note<sup>3</sup>: According to Clause 7.1 of EN 301 489-1, the test is not required.</p>				

Draft EN 301 489-1 Immunity Tests					
Ref. Std. Clause	Test Standard	Description of Test		Pass Criterion	Result
9.3	EN 61000-4-2:2009	Electrostatic Discharge (ESD)		CT/CR (A)	Pass
9.2	EN 61000-4-3:2006/A1:2008/A2:2010	Radio Frequency Electromagnetic Field (RS)		CT/CR (A)	Pass
9.4	EN 61000-4-4:2012	Electrical Fast Transient/Burst (EFT)		Note <sup>1</sup>	N/A
9.8	EN 61000-4-5:2014	Surge		Note <sup>2</sup>	N/A
9.5	EN 61000-4-6:2014	Conducted Disturbances (CS)		Note <sup>1</sup>	N/A
9.7	EN 61000-4-11:2004	Voltage Dips	0% residual for 0.5 cycle	Note <sup>2</sup>	N/A
			0% residual for 1 cycle	Note <sup>2</sup>	N/A
			70% residual for 25 cycle	Note <sup>2</sup>	N/A
		Voltage Interruption	0% residual for 250 cycle (w/o battery back-up)	Note <sup>2</sup>	N/A
Note <sup>1</sup> : The EUT consumes DC power, and it is not intended to be used with cables longer than 3m. So this test is not carried out.					
Note <sup>2</sup> : The EUT consumes DC power from battery , so the test is not required.					

# 1 General Description

## 1.1 Information

### 1.1.1 Specification of the Equipment under Test (EUT)

<b>S/W Version</b>	1.2
<b>BT</b>	
<b>Operating Frequency</b>	2402 ~ 2480 MHz
<b>Antenna Type</b>	Chip Antenna
<b>Modulation Type</b>	GFSK
<b>LoRa</b>	
<b>Operating Frequency</b>	863 MHz ~ 870 MHz
<b>Antenna Type</b>	Slot Antenna
<b>Modulation Type</b>	LoRa

### 1.1.2 Power Supply Type of the Equipment under Test (EUT)

<b>Power Supply Type</b>	3Vdc from battery (1.5Vdc AA battery x2).
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### 1.1.3 Accessories

N/A

## 1.2 Test Equipment and Calibration Data

<b>Test Item</b>	ESD				
<b>Test Site</b>	ESD room 1 / (ES01-WS)				
<b>Tested Date</b>	Oct. 30, 2017				
<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
ESD Generator	EMTest	Dito	V1248114239	Aug. 16, 2017	Aug. 15, 2018
Note: Calibration Interval of instruments listed above is one year.					

<b>Test Item</b>	Radiated Immunity (80 MHz - 6 GHz)				
<b>Test Site</b>	RS room 1 / (RS01-WS)				
<b>Tested Date</b>	Oct. 27, 2017				
<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Signal Generator	R & S	SMB100A	103924HA	Oct. 16, 2017	Oct. 15, 2018
Power Sensor	R & S	NRP-Z91	101094-UL	Oct. 16, 2017	Oct. 15, 2018
Power Sensor	R & S	NRP-Z91	101095-KY	Oct. 16, 2017	Oct. 15, 2018
Power Amplifier	BONN	BLWA 0810-160/100D	107972A	N/A	N/A
Power Amplifier	BONN	BLMA 1060-100D	107972B	N/A	N/A
Antenna	SCHWARZBECK MESS-ELEKTRONIK	STLP 9149	9149-073	N/A	N/A
Antenna	R & S	HL046E	100076-Cd	N/A	N/A
Note: Calibration Interval of instruments listed above is one year.					

## 1.3 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

Draft EN 301 489-1 V2.2.0 (2017-03)  
 Final draft EN 301 489-3 V2.1.1 (2017-03)  
 Draft EN 301 489-17 V3.2.0 (2017-03)

## 2 Test Configuration

### 2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
ESD	ES01-WS	24°C/50%/99kPa	JN Chen
RS	RS01-WS	24°C/60%/100kPa	Jun Tseng

### 2.2 The Worst Case Measurement Configuration

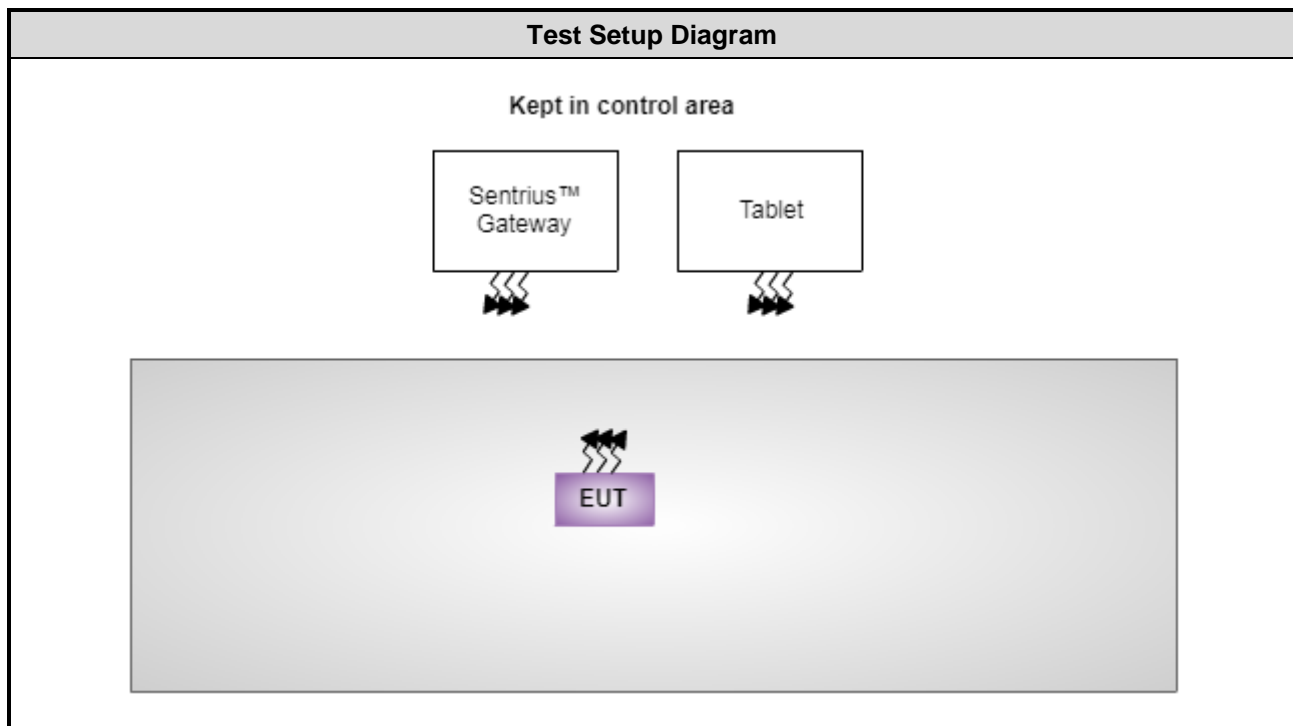
The Determined Worst Case Configurations	
ESD & RS Test	
Test Mode	Operating Description
1	BT & LoRa Link, battery mode

## 2.3 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	S/N	Signal cable / Length (m)
1	Tablet	SONY	SGP511TW/B	CB5126VXTX	---
2	Sentrius™ Gateway	Laird	Sentrius™ RG186	---	---

Note: No.2 was supplied by applicant.

## 2.4 Test Setup Chart



## 2.5 Test Software and Operating Condition

- To enable all function of test system.
- The support Tablet executed "BLE scanner" to link with EUT by BT function..
- The support Sentrius™ Gateway link to the EUT by Lora function and checked the LED Lights of EUT.



## Immunity Tests

### 2.6 General Description

Product Standard: Draft EN 301 489-1, Final draft EN 301 489-3, Draft EN 301 489-17		
Basic Standard	Spec. Requirement	Performance Criteria
EN 61000-4-2 (ESD)	Contact Discharge: $\pm 4$ kV Air Discharge: $\pm 8$ kV	TT/TR (B)
EN 61000-4-3 (RS)	80 MHz to 6000 MHz 3 V/m, 1 kHz Sine Wave 80%, AM Modulation	CT/CR (A)

### 2.7 Performance Criteria Description

Final draft EN 301 489-3		
Criteria	During test	After test
A	Operate as intended No loss of function No unintentional responses	Operate as intended No loss of function No degradation of performance No loss of stored data or user programmable functions
B	May show loss of function No unintentional responses	Operate as intended Lost function(s) shall be self-recoverable No degradation of performance No loss of stored data or user programmable functions

Draft EN 301 489-17		
Criteria	During test	After test
A	<p>Shall operate as intended.</p> <p>May show degradation of performance (see note 1).</p> <p>Shall be no loss of function.</p> <p>Shall be no unintentional transmissions.</p>	<p>Shall operate as intended.</p> <p>Shall be no degradation of performance (see note 3).</p> <p>Shall be no loss of function.</p> <p>Shall be no loss of stored data or user programmable functions.</p>
B	<p>May show loss of function (one or more).</p> <p>May show degradation of performance (see note 2).</p> <p>No unintentional transmissions.</p>	<p>Functions shall be self-recoverable.</p> <p>Shall operate as intended after recovering.</p> <p>Shall be no degradation of performance (see note 3).</p> <p>Shall be no loss of stored data or user programmable functions.</p>
C	<p>May be loss of function (one or more).</p>	<p>Functions shall be recoverable by the operator.</p> <p>Shall operate as intended after recovering.</p> <p>Shall be no degradation of performance (see note 3).</p>
<p>Note 1: Operate as intended during the test allows a level of degradation not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.</p>		
<p>Note 2: Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance.</p> <p>If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.</p>		
<p>Note 3: No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.</p>		

#### Draft EN 301 489-17 Performance Criteria

CT	The performance criteria A shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an ACKnowledgement (ACK) or Not ACKnowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.
TT	The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.
CR	The performance criteria A shall apply. Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.
TR	The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration for which performance criteria C shall apply. Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

#### Performance Criteria by Manufacturer

A	Without any BT or LoRa signal loss or any degradation of performance.
B	The BT or LoRa signal loss or degradation of performance. Functions shall be self-recoverable after the test.

## 2.8 Special Conditions for EMC Measurements

### 2.8.1 Special Conditions for Emission Measurements

#### Final draft EN 301 489-3

The provisions of EN 301 489-1 [1], clause 7.1 shall apply.

#### Draft EN 301 489-17

No special conditions.

### 2.8.2 Special Conditions for Immunity Measurements

#### Final draft EN 301 489-3

Reference to clauses in EN 301 489-1 [1]	Special product-related conditions, additional to or modifying the test conditions in EN 301 489-1 [1], clause 9
9.2.2: Test method; Radio frequency electromagnetic field	<p>The test shall be performed over the range 80 MHz to 2 700 MHz with the exception of the exclusion bands defined in clause 4.6.</p> <p>Where the EUT is subject to EMC Immunity testing under a Harmonised Standard of a Directive other than the Directive 2014/53/EU [i.3] then the modulating signal frequency specified in that Harmonised Standard may be used. If this alternative modulating frequency is used, then the applicable Directive, Harmonised Standard &amp; modulating frequency shall be noted in the test report.</p>
9.5.2: Test method; Radio frequency, common mode	<p>Where the EUT is subject to EMC Immunity testing under a Harmonised Standard of a Directive other than the Directive 2014/53/EU [i.3] then the modulating signal frequency specified in that Harmonised Standard may be used. If this alternative modulating frequency is used, then the applicable Directive, Harmonised Standard &amp; modulating frequency shall be noted in the test report.</p>

#### Draft EN 301 489-17

No special conditions.

## 2.9 Electrostatic Discharge (ESD)

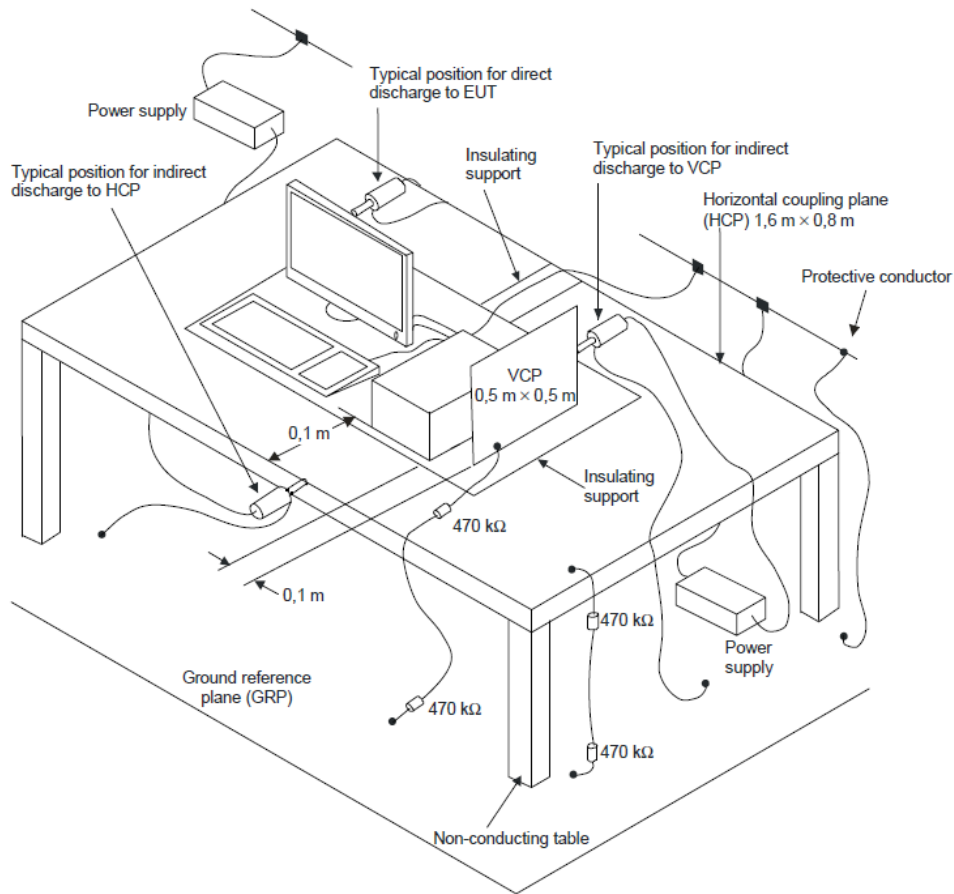
### 2.9.1 Test Specification of Electrostatic Discharge (ESD)

<b>Basic Standard</b>	EN 61000-4-2
<b>Discharge Voltage</b>	Contact Discharge: $\pm 2$ kV / $\pm 4$ kV Air Discharge: $\pm 2$ kV / $\pm 4$ kV / $\pm 8$ kV
<b>Discharge Impedance</b>	330 ohm / 150 pF
<b>Number of Discharge</b>	Air Discharge: minimum 20 times at each test point Contact Discharge: minimum 20 times at each test point
<b>Discharge Mode</b>	Single Discharge
<b>Discharge Period</b>	1 second minimum

### 2.9.2 Test Procedures

- a. In the case of air discharge testing the climatic conditions shall be within the following ranges:
  - ambient temperature: 15°C to 35°C;
  - relative humidity : 30% to 60%;
  - atmospheric pressure : 86 kPa (860 mbar) to 106 kPa (1060 mbar).
- b. Test programs and software shall be chosen so as to exercise all normal modes of operation of the EUT. The use of special exercising software is encouraged, but permitted only where it can be shown that the EUT is being comprehensively exercised.
- c. The test voltage shall be increased from the minimum to the selected test severity level, in order to determine any threshold of failure. The final severity level should not exceed the product specification value in order to avoid damage to the equipment.
- d. The test shall be performed with both air discharge and contact discharge. On preselected points at least 10 single discharges (in the most sensitive polarity) shall be applied on air discharge. On preselected points at least 10 single discharges (in the most sensitive polarity) shall be applied on contact discharge.
- e. For the time interval between successive single discharges an initial value of one second is recommended. Longer intervals may be determined whether a system failure has occurred.
- f. In the case of contact discharges, the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.
- g. In the case of painted surface covering a conducting substrate, the following procedure shall be adopted:
  - If the coating is not declared to be an insulating coating by the equipment manufacturer, then the pointed tip of the generator shall penetrate the coating so as to make contact with the conducting substrate.
  - Coating declared as insulating by the manufacturer shall only be submitted to the air discharge.
  - The contact discharge test shall not be applied to such surfaces.
- h. In the case of air discharges, the round discharge tip of the discharge electrode shall be approached as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator (discharge electrode) shall be removed from the EUT. The generator is then retriggered for a new single discharge. This procedure shall be repeated until the discharges are completed. In the case of an air discharge test, the discharge switch, which is used for contact discharge, shall be closed.

### 2.9.3 Test Setup



The test setup shall consist of a non-conductive table,  $(0.8 \pm 0.08) \text{ m}$  high, standing on the ground reference plane.

A horizontal coupling plane (HCP),  $(1.6 \pm 0.02) \text{ m} \times (0.8 \pm 0.02) \text{ m}$ , shall be placed on the table. The EUT and its cables shall be isolated from the coupling plane by an insulating support  $(0.5 \pm 0.05) \text{ mm}$  in thickness.

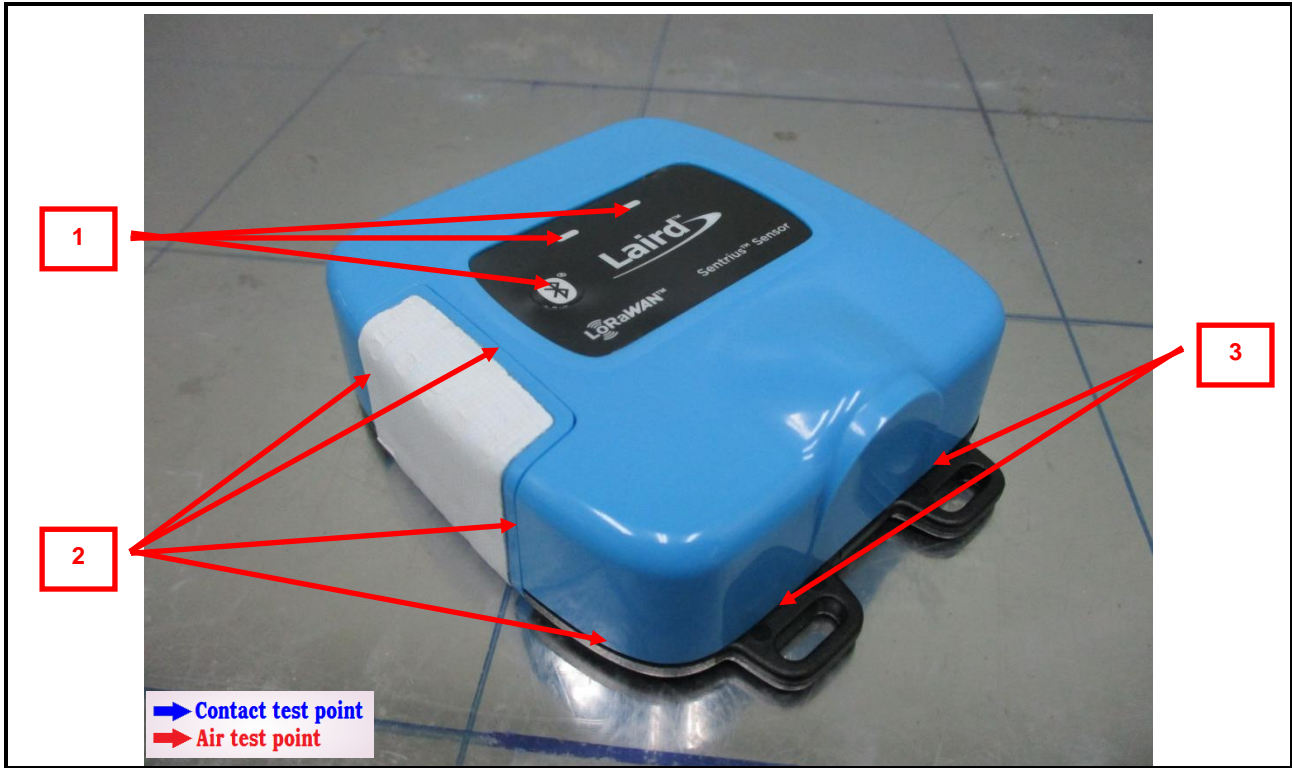
#### 2.9.4 Test Result of Electrostatic Discharge (ESD)

Test Mode	1				
Direct Application					
Test Voltage (kV)	Polarity	Test Point	Contact Discharge	Air Discharge	Performance Criteria
2, 4, 8	+/-	1 ~ 5	N/A	Note	CT/CR (A)
2, 4	+/-	6	Note	N/A	CT/CR (A)
Indirect Application					
Test Voltage (kV)	Polarity	Test Point	Horizontal Coupling Plane (HCP)	Vertical Coupling Plane (VCP)	Performance Criteria
2, 4	+/-	At front, rear, left and right side	Note	Note	CT/CR (A)

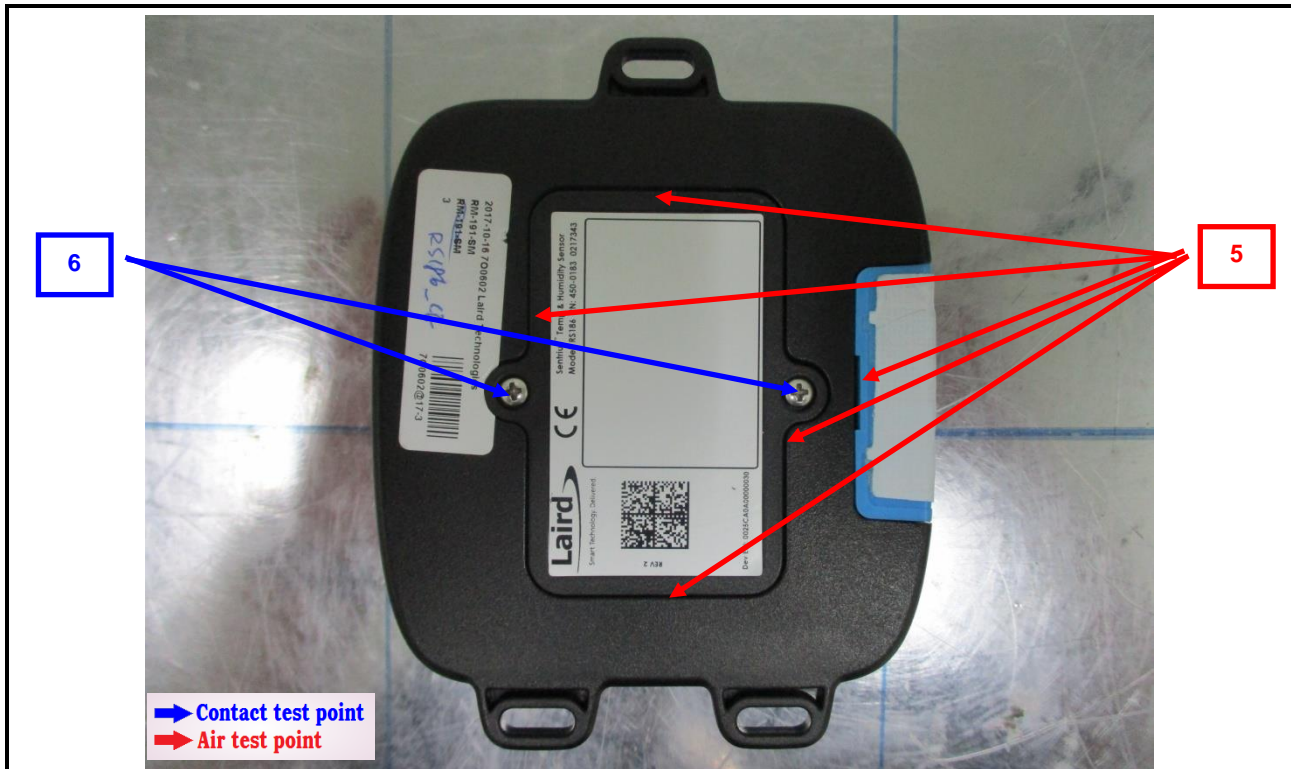
Note: There was no abnormal situation during the test compared with initial operation.



## 2.9.5 Test Point Photo







## 2.10 Radio Frequency Electromagnetic Field (RS)

### 2.10.1 Test Specification of Radio Frequency Electromagnetic Field (RS)

<b>Basic Standard</b>	EN 61000-4-3
<b>Frequency Range</b>	80 MHz ~ 6000 MHz
<b>Field Strength</b>	3 V/m
<b>Modulation</b>	1 kHz Sine Wave, 80%, AM Modulation
<b>Frequency Step</b>	1 % of preceding frequency value
<b>Polarity of Antenna</b>	Horizontal and Vertical
<b>Antenna Height</b>	1.5 m
<b>Antenna Distance</b>	80 MHz ~ 1000 MHz: 3 m 1000 MHz ~ 6000 MHz: 1 m
<b>Dwell Time</b>	3 seconds

### 2.10.2 Test Procedures

- The test level shall be 3 V/m (measured unmodulated). The test signal shall be amplitude modulated to a depth of 80 % by a sinusoidal audio signal of 1000 Hz. If the wanted signal is modulated at 1000 Hz, then an audio signal of 400 Hz shall be used.
- The test shall be performed over the frequency range 80 MHz to 6000 MHz with the exception of the exclusion band for transmitters, receivers and duplex transceivers, as appropriate.
- For receivers and transmitters the stepped frequency increments shall be 1 % frequency increment of the momentary used frequency, unless specified otherwise in the part of EN 301 489 series [i.13] dealing with the relevant type of radio equipment.
- Further product related spot frequency tests may be specified in the relevant part of EN 301 489 series [i.13] dealing with the particular type of radio equipment.
- Responses on receivers occurring at discrete frequencies, which are narrow band responses, shall be disregarded from the test.
- The frequencies selected and used during the test shall be recorded in the test report.
- When testing at frequencies above 1 GHz, the test distance shall be 1 m when using the independent windows method. Compliance with the field uniformity requirement shall be verified for the selected test distance.
- The alternative method for frequencies above 1 GHz divides the calibration area into a suitable array of 0,5 m × 0,5 m windows such that the whole area to be occupied by the face of the EUT is covered. The field uniformity shall be independently calibrated over each window.
- During the test, at each frequency the forward power shall be applied to the field-generating antenna. The test shall be repeated with the field-generating antenna repositioned to illuminate each of the required windows in turn.

### 2.10.3 Exclusion bands

Final draft EN 301 489-3

- Transmitters

The exclusion band shall be those frequencies specified in the relevant radio standard as the operating frequency band and the Out of Band domain.

Where this is not so specified the exclusions bands shall be as below:

For transmitters operating, or intended to operate, in a channelized frequency band, the exclusion band is five times (i.e.  $\pm 250\%$ ) the maximum operating channel width (OCW) allowed for that service, centred around the operating frequency.

For wide band transmitters, i.e. transmitters in a non-channelized frequency band, the exclusion band is twice the intended operating frequency band centred around the centre frequency of the intended operating frequency band.

The exclusion band shall only apply when the EUT is in transmit mode of operation.

- Receivers

The exclusion band is based on an extension value.

The lower limit of the exclusion band is the lower edge of the Operating Channel (OC) minus the extension value, or zero, whichever is the greater.

The upper limit is the upper edge of the OC plus the extension value.

The extension value is given in below table. The OC is defined in the relevant radio standard.

Receiver operating frequency fo	Extension value
< 300 kHz	300 kHz
300 kHz to < 30 MHz	3 MHz
30 MHz to < 1 GHz	15 MHz, or $5\% \times f_o$ , whichever is greater
1 GHz to < 6 GHz	100 MHz
$\geq 6$ GHz	$5\% \times f_o$

NOTE: The receiver exclusion band frequency range aligns as far as possible with the blocking test frequency range defined in ETSI EN 300 220-1.

- Duplex and multi-mode equipment

In the case of EUT tested with a simultaneous transmit and receive mode, the exclusion band used shall be the combination of the exclusion band for the transmitter and the exclusion band for the receiver. I.e. both exclusion bands shall be applied.

In the case of transmitters capable of operating on more than one frequency band, testing shall be carried out on each band separately.

In the case of receivers operating on more than one frequency, the exclusion band used shall be the combination of the exclusion bands for each frequency, i.e. an exclusion band for each frequency shall be applied.

NOTE: Where the frequencies are in the same operational frequency band, the result will usually be an enlarged single exclusion band. Where the frequencies are widely spaced, e.g. in different bands, the result will be to create multiple separate exclusion bands.

#### Draft EN 301 489-17

The frequencies on which the transmitter part of the EUT is intended to operate shall be excluded from radiated emission measurements when performed in transmit mode of operation.

There shall be no frequency exclusion band applied to emission measurements of the receiver part of transceivers or the stand alone receiver under test, and/or associated ancillary equipment.

The exclusion band for immunity testing of equipment operating in the 2,4 GHz band shall be:

- lower limit of exclusion band = lowest allocated band edge frequency -120 MHz, i.e. 2 280 MHz;
- upper limit of exclusion band = highest allocated band edge frequency +120 MHz, i.e. 2 603,5MHz.

The exclusion band for immunity testing of equipment operating in the 5 GHz Wi-Fi band shall be:

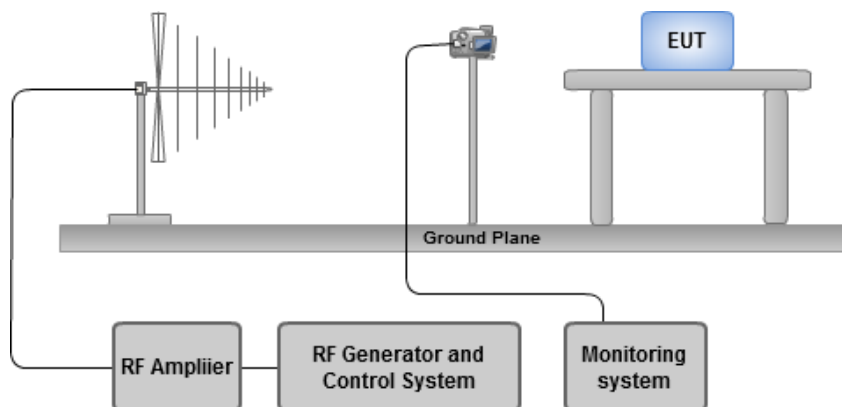
- lower limit of exclusion band = lowest allocated band edge frequency -270 MHz, i.e. 4 880 MHz;
- upper limit of exclusion band = highest allocated band edge frequency +270 MHz, i.e. 5 995 MHz.

The exclusion band for immunity testing of equipment operating in the 5,8 GHz band shall be:

- lower limit of exclusion band = lowest allocated band edge frequency -270 MHz, i.e. 5 455 MHz;
- as the immunity requirements have an upper frequency range of 6 GHz and any upper edge exclusion band would be greater than this for the 5,8 GHz band. The above frequency shall also be regarded as the upper end of the test range.

NOTE: These receiver exclusion band ranges align with the relevant blocking test ranges.

### 2.10.4 Test Setup



Note: The procedure defined in this part requires the generation of electromagnetic fields within which the test sample is placed and its operation observed. To generate fields that are useful for simulation of actual (field) conditions may require significant antenna drive power and the resultant high field strength levels. To comply with local regulations and to prevent biological hazards to the testing personnel, it is recommended that these tests be carried out in a shielded enclosure or semi-anechoic chamber.

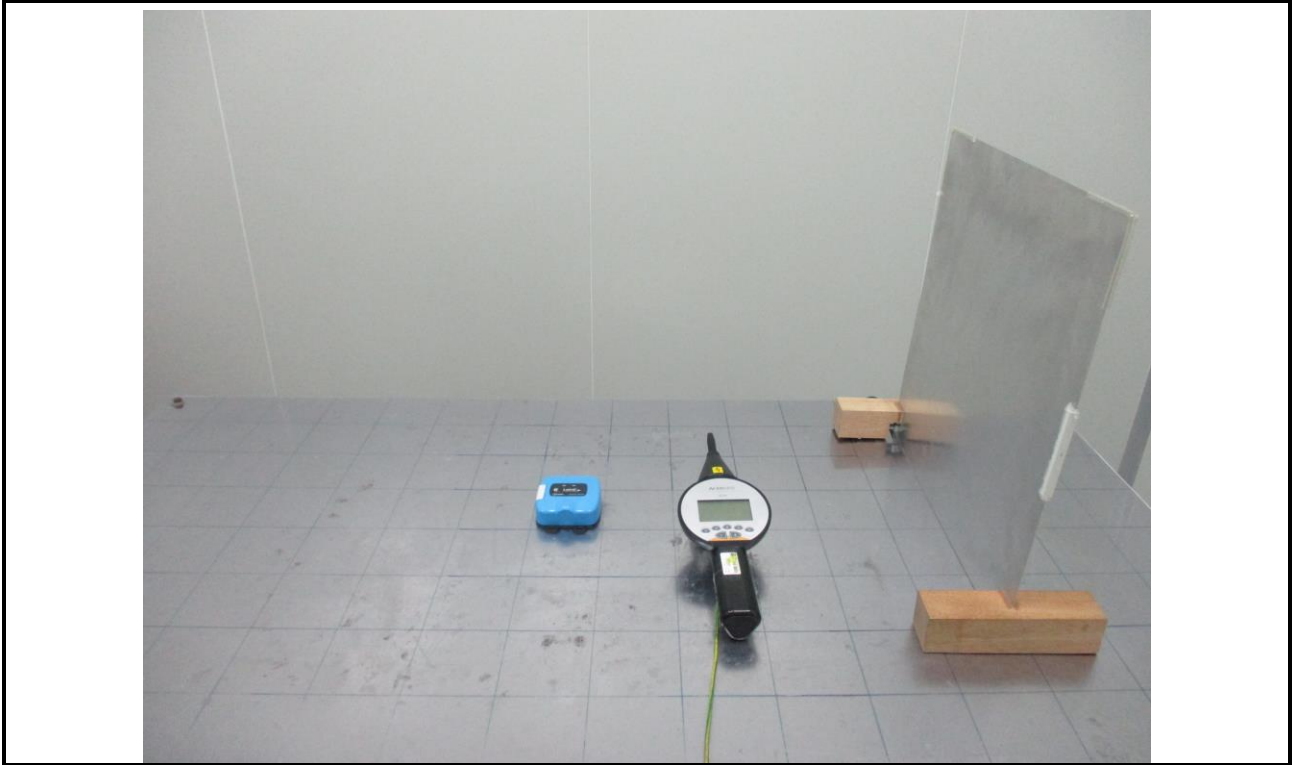
### 2.10.5 Test Result of Radio Frequency Electromagnetic Field (RS)

Test Mode	1				
Frequency Range (MHz)	Azimuth	Polarity	Test Field Strength (V/m)	Observation	Performance Criteria
80 - 6000	0	V&H	3	Note	CT/CR (A)
80 - 6000	90	V&H	3	Note	CT/CR (A)
80 - 6000	180	V&H	3	Note	CT/CR (A)
80 - 6000	270	V&H	3	Note	CT/CR (A)

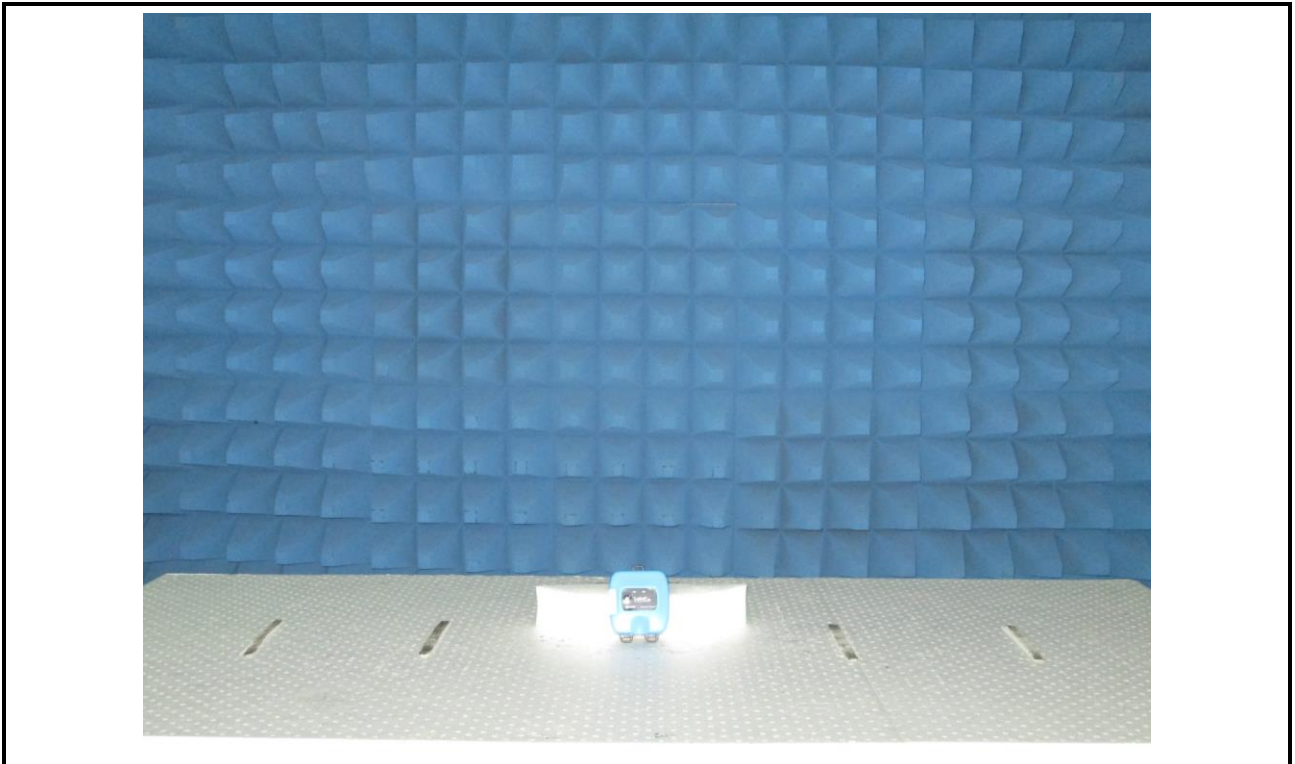
Note: There was no abnormal situation during the test compared with initial operation.

### 3 Photographs of the Test Configuration

ESD Test



RS Test



## 4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

### **Linkou**

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If you have any suggestion, please feel free to contact us as below information

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