

Prüfbericht-Nr.: Test report no.:	CN25TA2Z 001	Auftrags-Nr.: Order no.:	168541455	Seite 1 von 20 Page 1 of 20
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2025-02-19	
Auftraggeber: Client:	Shenzhen HOPE Microelectronics Co., Ltd. 30th floor of 8th Building, C Zone, Vanke Cloud City, Xili Sub-district, Nanshan, Shenzhen, GD, P.R. China			
Prüfgegenstand: Test item:	LoRa Module			
Bezeichnung / Typ-Nr.: Identification / Type no.:	RFM6601			
Auftrags-Inhalt: Order content:	Test Report			
Prüfgrundlage: Test specification:	CFR Title 47 FCC Part 15: Subpart C Section 15.247			
Wareneingangsdatum: Date of sample receipt:	2025-04-30	Please refer to Photo Document		
Prüfmuster-Nr.: Test sample no:	A003986907-001-007 A003997948-001-002			
Prüfzeitraum: Testing period:	2025-05-29 - 2025-06-15			
Ort der Prüfung: Place of testing:	Refer to section 2.1			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	 X <u>Bell Hu</u>		genehmigt von: authorized by:	 X <u>Jonathan Li</u>
Datum: Date:	2025-06-26 Signed by: Bell Hu	Ausstellungsdatum: Issue date:	2025-06-26 Signed by: Jonathan Li	
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert
Sonstiges / Other:	FCC ID: 2ASEO-RFM6601 This report is under FCC C2PC application for the module integration into the Host (Product: Wireless Emergency-stop, Model: ES-W1-E, Manufacturer: Shanghai Zhiyuan New Innovation Technology Co., Ltd), the antennas changed and output power decreased. The related items got re-tested.			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

Prüfbericht-Nr.: CN25TA2Z 001
Test report no.:

Seite 2 von 20
Page 2 of 20

Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
2	Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. Informationen zur Verifizierung der Authentizität unserer Dokumente erhalten Sie auf folgender Webseite: go.tuv.com/digital-signature <i>As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. For information on verifying the authenticity of our documents, please visit the following website: go.tuv.com/digital-signature</i>
3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

Prüfbericht - Nr.: CN25TA2Z 001
Test Report No.:

Seite 3 von 20
Page 3 of 20

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.4 CONDUCTED EMISSION ON AC MAINS

RESULT: N/A

Contents

1	GENERAL REMARKS	5
1.1	COMPLEMENTARY MATERIALS.....	5
2	TEST SITES.....	6
2.1	TEST FACILITIES	6
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	6
2.3	TRACEABILITY	7
2.4	CALIBRATION.....	7
2.5	MEASUREMENT UNCERTAINTY	7
2.6	LOCATION OF ORIGINAL DATA	8
2.7	STATUS OF FACILITY USED FOR TESTING	8
3	GENERAL PRODUCT INFORMATION	9
3.1	PRODUCT FUNCTION AND INTENDED USE	9
3.2	RATINGS AND SYSTEM DETAILS.....	9
3.3	INDEPENDENT OPERATION MODES.....	11
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	11
3.5	SUBMITTED DOCUMENTS.....	11
4	TEST SET-UP AND OPERATION MODES.....	12
4.1	PRINCIPLE OF CONFIGURATION SELECTION	12
4.2	TEST OPERATION AND TEST SOFTWARE	12
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	12
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	12
4.5	TEST SETUP DIAGRAM	13
5	TEST RESULTS	15
5.1	TRANSMITTER REQUIREMENT & TEST SUITES.....	15
5.1.1	<i>Antenna Requirement.....</i>	<i>15</i>
5.1.2	<i>Maximum Peak Conducted Output Power</i>	<i>16</i>
5.1.3	<i>Radiated Spurious Emission</i>	<i>18</i>
5.1.4	<i>Conducted Emission on AC Mains.....</i>	<i>19</i>
6	PHOTOGRAPHS OF THE TEST SET-UP	20
7	LIST OF TABLES.....	20

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of FHSS;

Appendix B: Test Results of DTS;

Appendix C: Photographs of Test Set-up.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, People's Republic of China

A2LA Cert. No.: 5162.01

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)					
Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. until
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	2024-09-26	2025-09-25
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	2024-09-26	2025-09-25
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	2024-09-26	2025-09-25
DC power supply	Keysight	E3642A	MY61276100	2024-09-26	2025-09-25
Power Control Unit	Tonscend	JS0806-4ADC	N/A	2024-09-26	2025-09-25
Automation Control Unit	Tonscend	JS0806-2	21C8060396	2024-09-26	2025-09-25
Test Software	Tonscend	JS1120-3	N/A	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A	N/A
Shielding Room	Albatross	SR1	APC17151-SR1	2024-09-14	2027-09-13
Unwanted Emission Testing (TS9975)					
Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2024-09-29	2025-09-28
Signal Analyzer	R&S	FSV 40	101439	2024-09-29	2025-09-28
System Controller Interface	R&S	SCI-100	S10010038	N/A	N/A
Filterbank	R&S	Wlan	100759	2024-09-29	2025-09-28
OSP	R&S	OSP 120	102040	N/A	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2024-09-29	2025-09-28
Amplifier	R&S	SCU-18F	180070	2024-09-29	2025-09-28
Amplifier	R&S	SCU40A	100475	2024-09-29	2025-09-28
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2024-09-28	2025-09-27
Double-Ridged	ETS-LINDGREN	3117	00218717	2024-09-28	2025-09-27

Prüfbericht - Nr.: CN25TA2Z 001
Test Report No.:

Seite 7 von 20
Page 7 of 20

Antenna (1 -18 GHz)					
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2024-09-28	2025-09-27
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2024-09-28	2025-09-27
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151- SAC	2024-09-14	2027-09-13

Conducted Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102680	2026-02-09
Artificial Mains Network	R&S	ENV216	102333	2025-07-22
LISN ENV216-Receiver cable in SR3	Calibration frequency range: 9 kHz~30 MHz			2025-12-20
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Table 2: Measurement Uncertainty

Parameter	Uncertainty (k=2)
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	± 4.17 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB

Prüfbericht - Nr.: CN25TA2Z 001
*Test Report No.:*Seite 8 von 20
Page 8 of 20

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B & C of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The product is Lora module, which supports 915MHz Band Lora wireless function.

This report is under FCC C2PC application for the module integration into the Host (Product: Wireless Emergency-stop, Model: ES-W1-E, Manufacturer: Shanghai Zhiyuan New Innovation Technology Co., Ltd), the antennas changed and output power decreased for SAR exemption. The related items got re-tested.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	LoRa Module
Type Designation	RFM6601
FCC ID	2ASEO-RFM6601
Operating Voltage	3.3V
Technical Specification of LoRa FHSS	
Operating Frequency:	902.3-914.9MHz
Type of Modulation:	CSS
Channel Number:	63 channels
Channel Separation:	0.2MHz
Antenna Type:	Integral Antenna
Antenna Gain:	2.0 dBi (Provided by the Client)
Technical Specification of LoRa DTS	
Operating Frequency	903-914.2MHz, 923.3- 927.5MHz
Type of Modulation	CSS
Channel Number	7 channels
Channel Separation	1.6 MHz
Antenna Type	Integral Antenna
Antenna Number	1Tx1Rx
Antenna Gain	2.0 dBi (Provided by the Client)

Note: The correctness of all data provided by customer in the test report is ensured and responsible of the customer. Any misjudgment of the test results caused by the use of incorrect data provided by customer shall be borne by the customer.

Table 4: Technical Specification of Host

General Information	Description
Kind of Equipment:	Wireless Emergency-stop
Type Designation:	ES-W1-E
Operating Voltage:	3.6V DC Battery Powered
Testing Voltage:	3.6V DC Battery Powered
Manufacturer:	Shanghai Zhiyuan New Innovation Technology Co., Ltd

Note: This Wireless Emergency-stop is for Robot remote control, normally hand-held use.

Table 5: RF Channel and Frequency

Channel information (FHSS Mode)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	902.3	22	906.7	44	911.1
1	902.5	23	906.9	45	911.3
2	902.7	24	907.1	46	911.5
3	902.9	25	907.3	47	911.7
4	903.1	26	907.5	48	911.9
5	903.3	27	907.7	49	912.1
6	903.5	28	907.9	50	912.3
7	903.7	29	908.1	51	912.5
8	903.9	30	908.3	52	912.7
9	904.1	31	908.5	53	912.9
10	904.3	32	908.7	54	913.1
11	904.5	33	908.9	55	913.3
12	904.7	34	909.1	56	913.5
13	904.9	35	909.3	57	913.7
14	905.1	36	909.5	58	913.9
15	905.3	37	909.7	59	914.1
16	905.5	38	909.9	60	914.3
17	905.7	39	910.1	61	914.5
18	905.9	40	910.3	62	914.7
19	906.1	41	910.5	63	914.9
20	906.3	42	910.7		
21	906.5	43	910.9		

Channel information (DTS Mode)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	903	0	923.3
1	904.6	1	923.9
2	906.2	2	924.5
3	907.8	3	925.1
4	909.4	4	925.7
5	911	5	926.3
6	912.6	6	926.9
7	914.2	7	927.5

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Lora FHSS transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. On, Lora DTS transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|-------------------------|------------------------------|
| - Application Form | - User Manual |
| - Operation Description | - Block Diagram |
| - PCB Layout | - ID Label and Location Info |

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model RFM6601 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 6: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N
Laptop	Lenovo	T480	PF-16A6N8

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

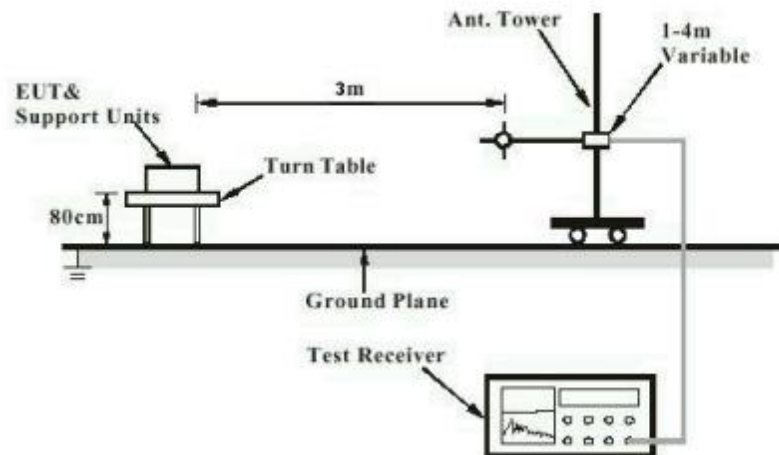


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

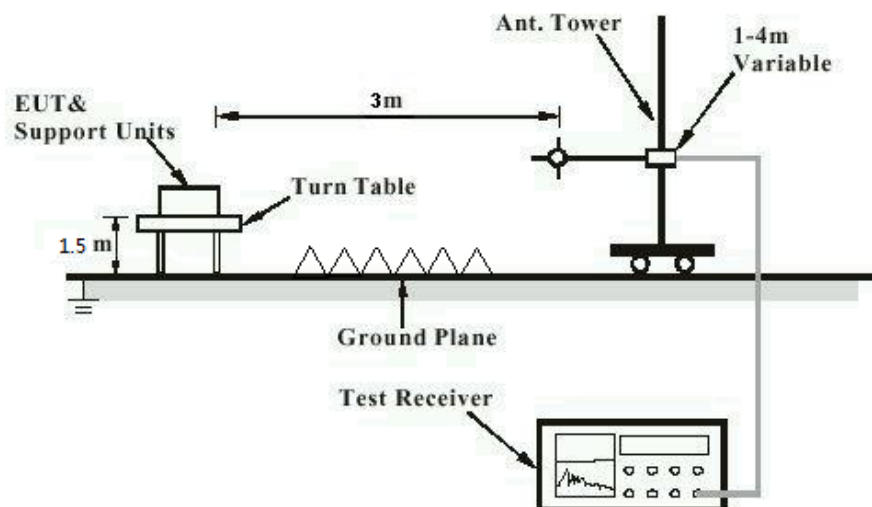


Diagram of Measurement Configuration for Mains Conduction Measurement

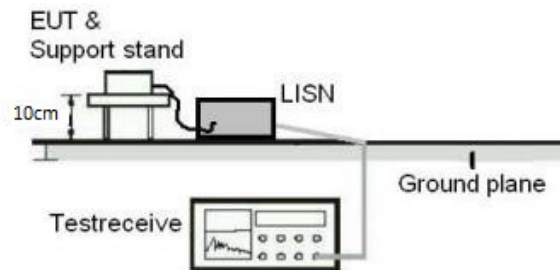
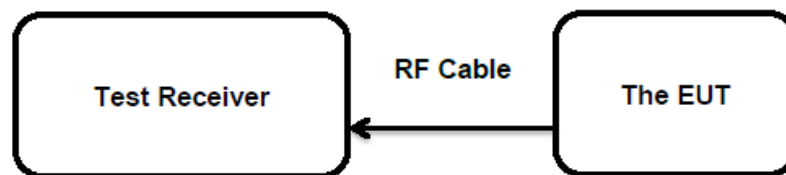


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(b)(4) and Part 15.203

According to the manufacturer declared, the EUT have Integral antenna, permanent attachment and no consideration of replacement, refer to section 3.2 for details.

Therefore EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

Prüfbericht - Nr.: CN25TA2Z 001
Test Report No.:Seite 16 von 20
Page 16 of 20

5.1.2 Maximum Peak Conducted Output Power

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(b)(1)&(3) RSS-247 Clause 5.4(b)&(d)
Basic standard	: ANSI C63.10: 2013
Limits	: FHSS < 0.125 Watts, DSSS < 1.0 Watts
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-05-29 to 2025-06-15
Input voltage	: battery operated (3.6V DC)
Operation mode	: A, B
Test channel	: Low / Middle / High
Ambient temperature	: 22.8 °C
Relative humidity	: 35 %
Atmospheric pressure	: 101 kPa

For details refer to following test result.

In order to satisfy the SAR exemption, the output power get decreased by power setting.

Table 7: Test Result of Maximum Peak Conducted Output Power

Mode	Channel	Freq. (MHz)	Peak Conducted Power (dBm)	Limit (dBm)	Verdict
FHSS	0	902.3	15.94	30	Pass
	31	908.5	15.87	30	Pass
	63	914.9	15.65	30	Pass
DTS (Uplink)	0	903	16.04	30	Pass
	4	909.4	15.89	30	Pass
	7	914.2	15.76	30	Pass
DTS (Downlink)	0	923.3	15.61	30	Pass
	4	925.7	15.53	30	Pass
	7	927.5	15.43	30	Pass

Mode	Channel	Freq. (MHz)	Measured Average Conducted Power (For reference only)	Limit (dBm)	Verdict
FHSS	0	902.3	13.76	30	Pass
	31	908.5	13.64	30	Pass
	63	914.9	13.47	30	Pass
DTS (Uplink)	0	903	13.86	30	Pass
	4	909.4	13.68	30	Pass
	7	914.2	13.59	30	Pass
DTS (Downlink)	0	923.3	13.44	30	Pass
	4	925.7	13.36	30	Pass
	7	927.5	13.29	30	Pass

Note:

The cable loss is taken into account in results.

Antenna gain(G): 2.0 dBi

Prüfbericht - Nr.: CN25TA2Z 001
Test Report No.:Seite 18 von 20
Page 18 of 20

5.1.3 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.247(d) & FCC Part 15.205
RSS-247 Clause 3.3

Basic standard : ANSI C63.10: 2013

Limits : Refer to 15.209(a) of FCC part 15.247(d)
RSS-Gen Section 8.9 & 8.10

Kind of test site : 3m Semi-anechoic Chamber

Test Setup

Date of testing : 2025-05-29 to 2025-06-15

Input voltage : battery operated (3.6V DC)

Operation mode : A, B

Test channel : Low / Middle / High

Ambient temperature : Refer to test result

Relative humidity : Refer to test result

Atmospheric pressure : 101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst-case spurious emissions configuration of each mode were reported.

For the measurement records, refer to the appendix A & B.

Prüfbericht - Nr.: CN25TA2Z 001
Test Report No.:

Seite 19 von 20
Page 19 of 20

5.1.4 Conducted Emission on AC Mains

RESULT:

N/A

Test Specification

Test standard	: FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	: ANSI C63.4:2014
Frequency range	: 0.15 – 30MHz
Classification	: Class B
Limits	: FCC Part 15.207(a) RSS-Gen Table 4
Kind of test site	: Shielded Room

Note: The wireless functions will be disabled when product is in charging.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix C.

7 List of Tables

Table 1: List of Test and Measurement Equipment.....	6
Table 2: Measurement Uncertainty	7
Table 3: Technical Specification of EUT.....	9
Table 3: Technical Specification of Host	10
Table 4: RF Channel and Frequency	10
Table 7: List of Accessories and Auxiliary Equipment.....	12
Table 8: Test Result of Maximum Peak Conducted Output Power	17

Appendix A: Test Results of Lora FHSS

APPENDIX A: TEST RESULTS OF LORA FHSS.....	1
APPENDIX A.1: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS	2
30 MHz - 1GHz	2
1GHz - 10GHz	6

Appendix A.1: Test Results of Radiated Spurious Emissions

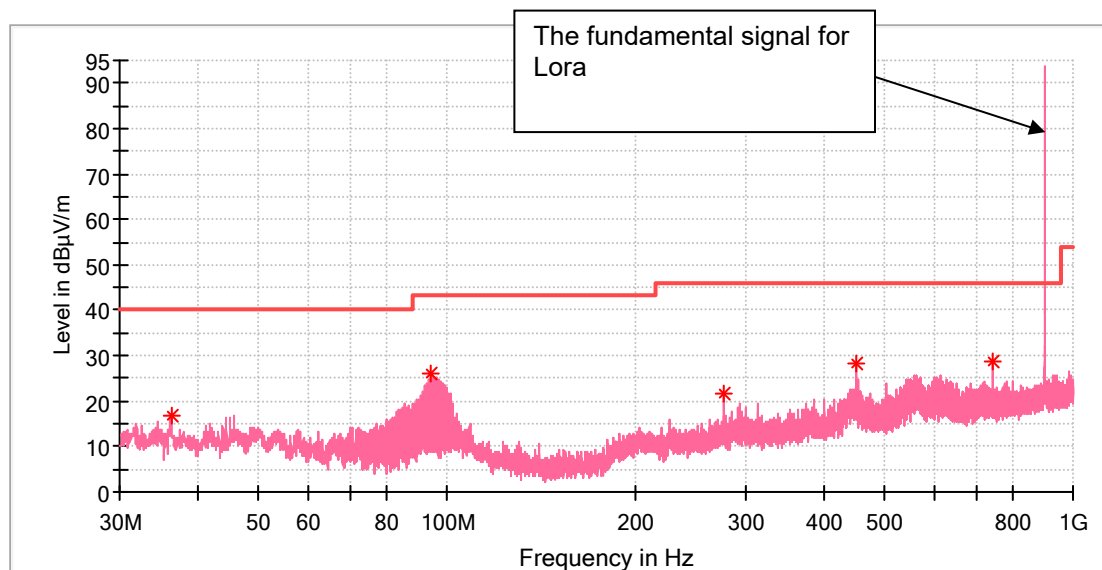
Note:

- 1) This testing was carried out on different modulations for all channels, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 10GHz were reported.

30 MHz - 1GHz

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_FHSS 125K_SF7_902.3MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

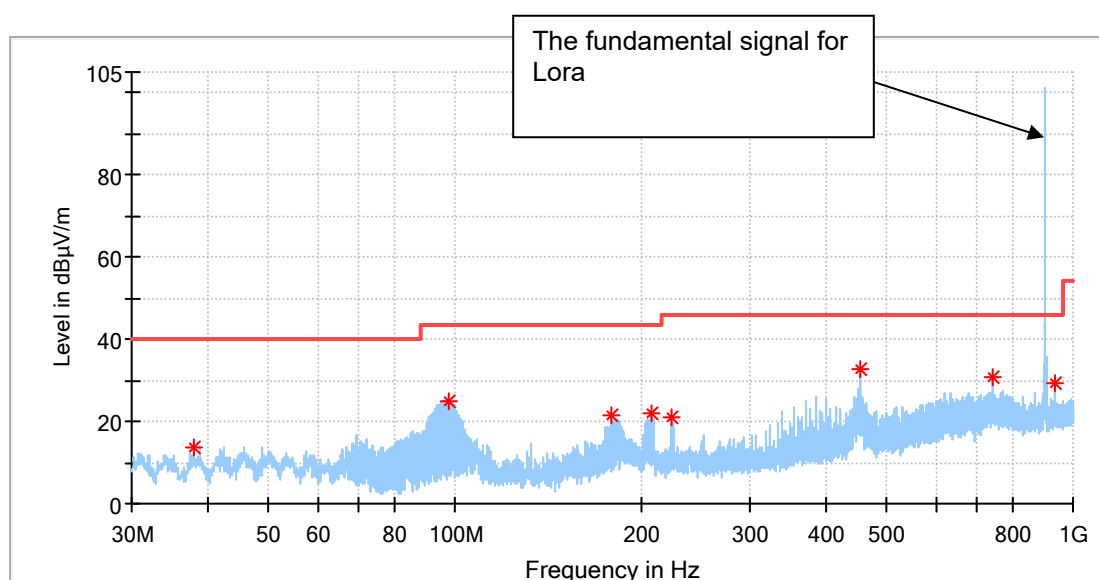
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
36.230385	16.75	40.00	23.25	100.0	V	129.0	-21.5
94.206539	25.85	43.50	17.65	100.0	V	91.0	-20.0
277.648462	21.83	46.00	24.17	100.0	V	84.0	-16.8
451.166539	28.44	46.00	17.56	100.0	V	137.0	-12.7
742.502308	28.70	46.00	17.30	100.0	V	238.0	-7.2

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_FHSS 125K_SF7_902.3MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

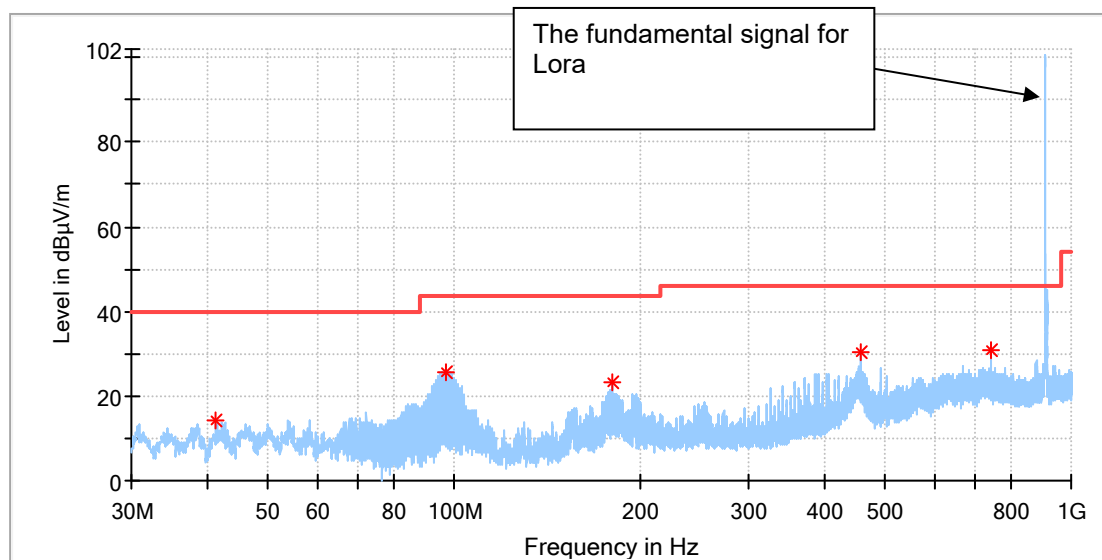
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.834615	13.87	40.00	26.13	100.0	H	319.0	-20.9
98.123846	24.97	43.50	18.53	100.0	H	0.0	-19.4
179.491923	21.32	43.50	22.18	100.0	H	24.0	-20.6
208.144231	21.76	43.50	21.74	100.0	H	0.0	-18.9
224.485000	20.99	46.00	25.01	100.0	H	33.0	-18.4
451.203846	32.69	46.00	13.31	100.0	H	84.0	-12.7
742.465000	30.96	46.00	15.04	100.0	H	282.0	-7.2
937.546923	29.49	46.00	16.51	100.0	H	241.0	-4.4

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: Wireless Emergency-stop
Model: ES-W1-E
Test Mode: Lora_FHSS 125K_SF7_914.9MHz
Order No/Sample No: 168541455/A003997948-002
Test Voltage:: Battery
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

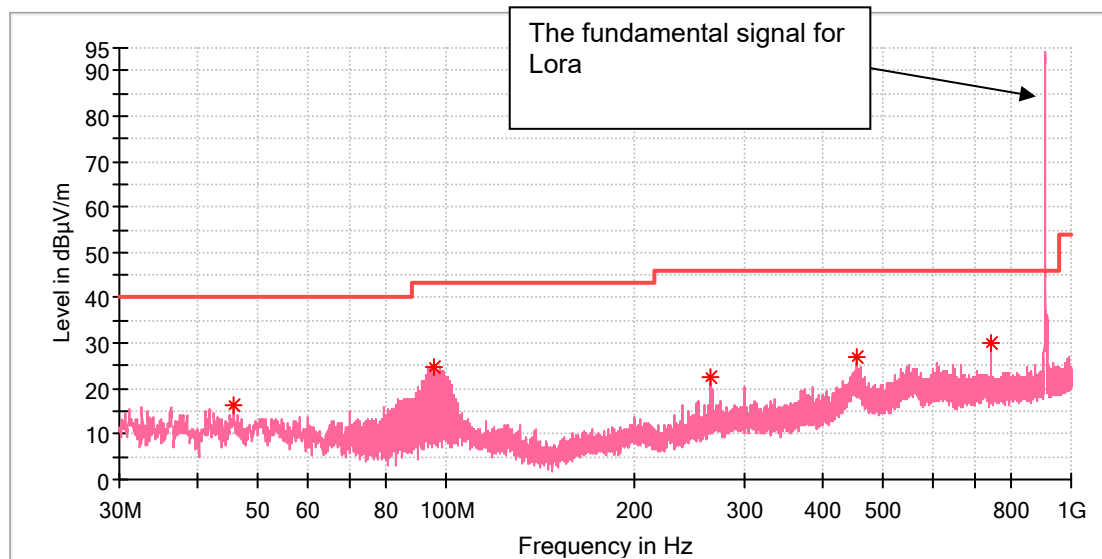
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
41.192308	14.21	40.00	25.79	100.0	H	179.0	-19.9
96.855385	25.56	43.50	17.94	100.0	H	21.0	-19.6
180.872308	23.22	43.50	20.28	100.0	H	31.0	-20.5
454.673462	30.27	46.00	15.73	100.0	H	115.0	-12.7
742.502308	30.76	46.00	15.24	100.0	H	357.0	-7.2

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_FHSS 125K_SF7_914MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
45.781154	16.26	40.00	23.74	100.0	V	273.0	-18.8
95.549615	24.91	43.50	18.59	100.0	V	107.0	-19.8
265.560769	22.53	46.00	23.47	100.0	V	38.0	-17.0
454.710769	27.02	46.00	18.98	100.0	V	312.0	-12.7
742.502308	30.26	46.00	15.74	100.0	V	352.0	-7.2

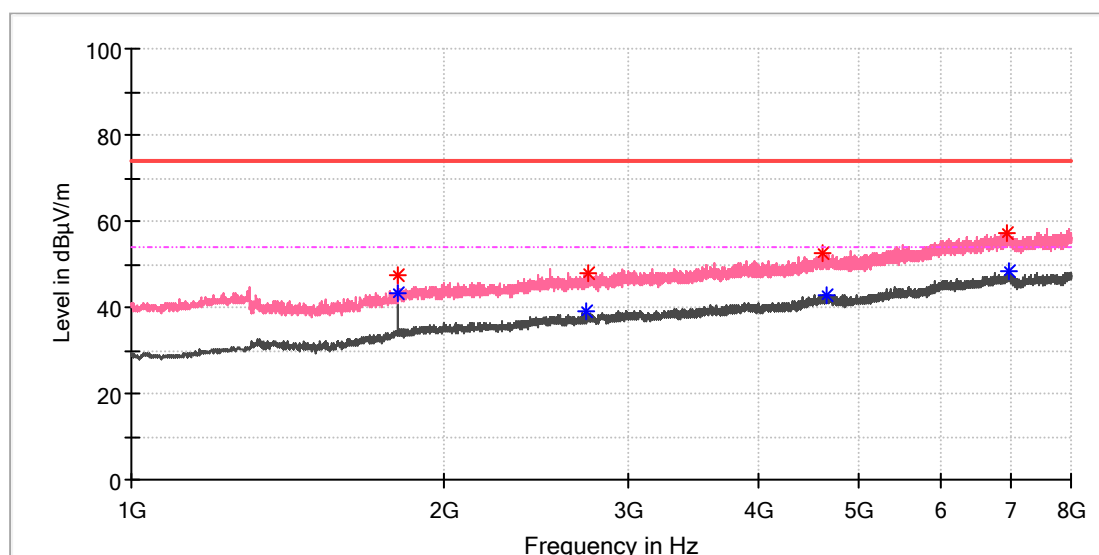
Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

1GHz - 10GHz

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_FHSS 125K_SF7_902.3MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

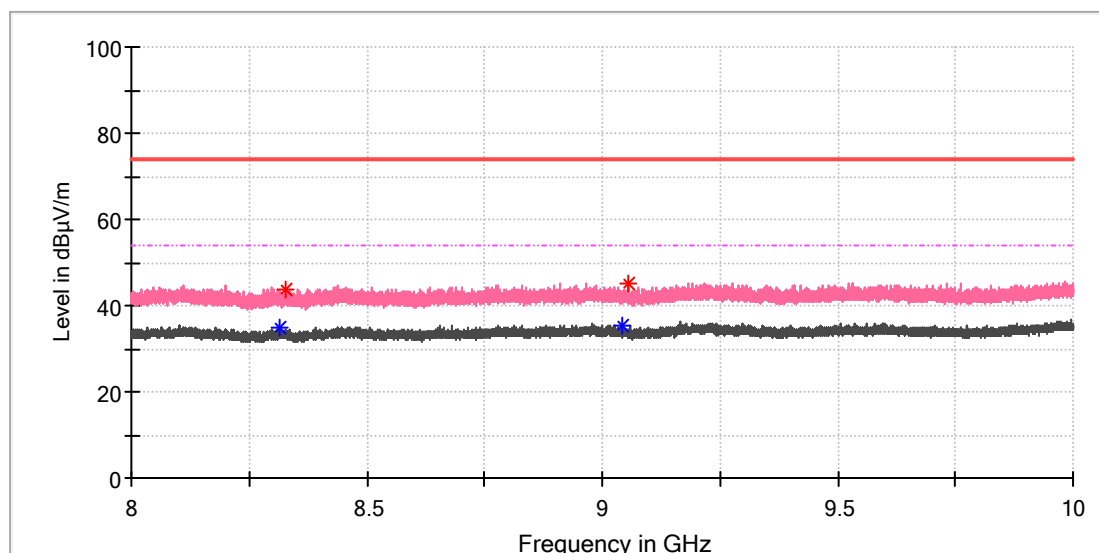
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1804.175000	47.39	---	74.00	26.61	150.0	V	331.0	6.2
1804.175000	---	43.14	54.00	10.86	150.0	V	331.0	6.2
2737.150000	---	39.11	54.00	14.89	150.0	V	160.0	9.3
2745.525000	47.76	---	74.00	26.24	150.0	V	180.0	9.3
4620.966667	52.42	---	74.00	21.58	150.0	V	324.0	13.5
4666.750000	---	42.83	54.00	11.17	150.0	V	331.0	13.5
6947.541667	57.20	---	74.00	16.80	150.0	V	22.0	18.9
6979.925000	---	48.55	54.00	5.45	150.0	V	324.0	19.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_FHSS 125K_SF7_902.3MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

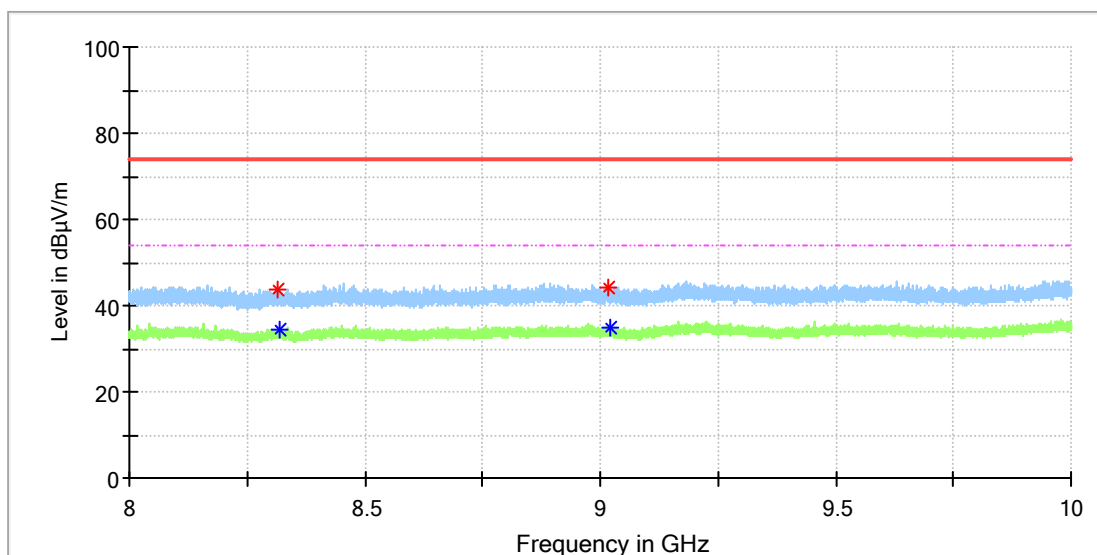
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8314.300000	---	34.77	54.00	19.23	150.0	V	172.0	8.8
8326.100000	43.92	---	74.00	30.08	150.0	V	0.0	8.8
9044.600000	---	35.54	54.00	18.46	150.0	V	160.0	9.6
9053.800000	44.96	---	74.00	29.04	150.0	V	290.0	9.7

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_FHSS 125K_SF7_902.3MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

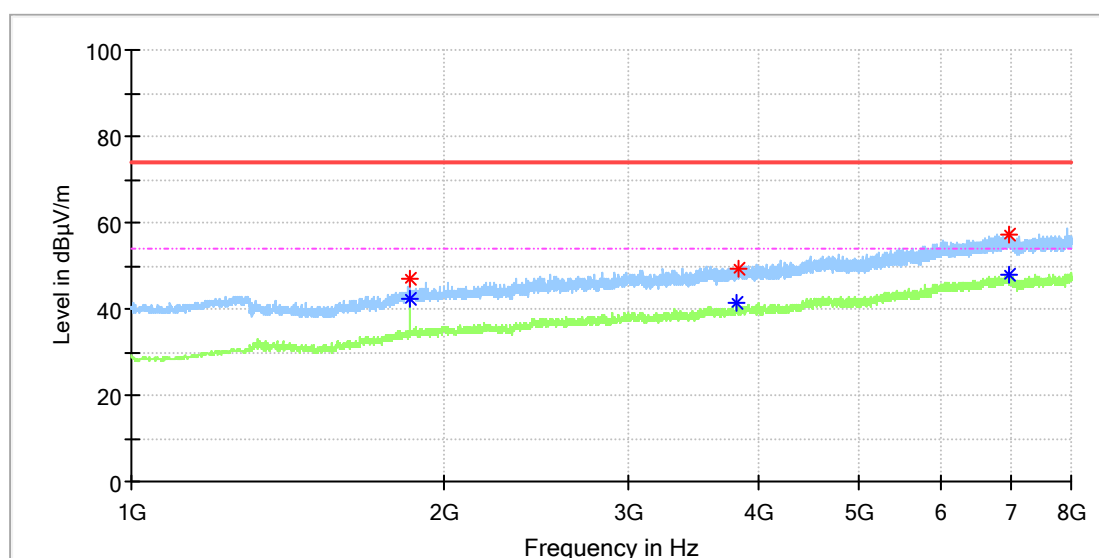
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8315.900000	43.94	---	74.00	30.06	150.0	H	109.0	8.8
8318.200000	---	34.54	54.00	19.46	150.0	H	352.0	8.8
9015.600000	44.31	---	74.00	29.69	150.0	H	308.0	9.5
9022.000000	---	34.85	54.00	19.15	150.0	H	0.0	9.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_FHSS 125K_SF7_914.9MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

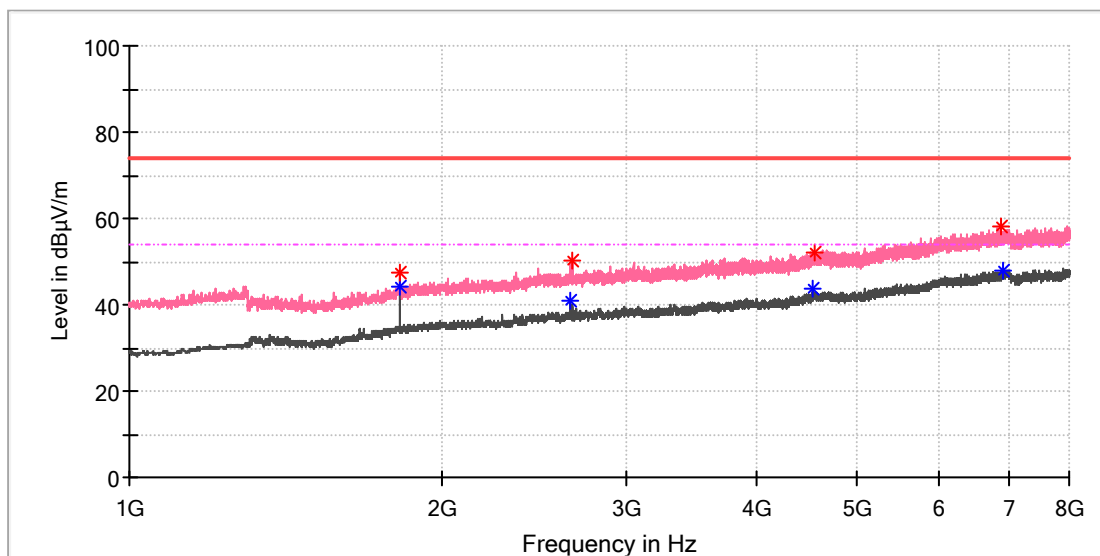
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1854.425000	46.78	---	74.00	27.22	150.0	H	134.0	6.5
1854.983333	---	42.32	54.00	11.68	150.0	H	169.0	6.5
3816.966667	---	41.47	54.00	12.53	150.0	H	141.0	11.4
3825.341667	49.46	---	74.00	24.54	150.0	H	307.0	11.4
6969.875000	57.44	---	74.00	16.56	150.0	H	352.0	19.0
6977.691667	---	48.08	54.00	5.92	150.0	H	155.0	19.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name: Wireless Emergency-stop
Model: ES-W1-E
Test Mode: Lora_FHSS 125K_SF7_914.9MHz
Order No/Sample No: 168541455/A003997948-002
Test Voltage:: Battery
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1818.691667	47.54	---	74.00	26.46	150.0	V	164.0	6.3
1818.691667	---	44.28	54.00	9.72	150.0	V	164.0	6.3
2656.191667	---	40.97	54.00	13.03	150.0	V	261.0	9.1
2665.683333	50.29	---	74.00	23.71	150.0	V	261.0	9.1
4532.750000	---	43.57	54.00	10.43	150.0	V	6.0	13.3
4547.825000	52.25	---	74.00	21.75	150.0	V	90.0	13.4
6866.583333	57.97	---	74.00	16.03	150.0	V	261.0	18.6
6905.666667	---	48.05	54.00	5.95	150.0	V	143.0	18.8

Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
-----------------	------------------	------------------	----------------	-------------	-------------	-----	---------------	--------------

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	-----

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	-----

Appendix B: Test Results of Lora DTS

APPENDIX B: TEST RESULTS OF LORA DTS	1
APPENDIX B.1: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS	2
30 MHz - 1GHz	2
1GHz - 10GHz	8

Appendix B.1: Test Results of Radiated Spurious Emissions

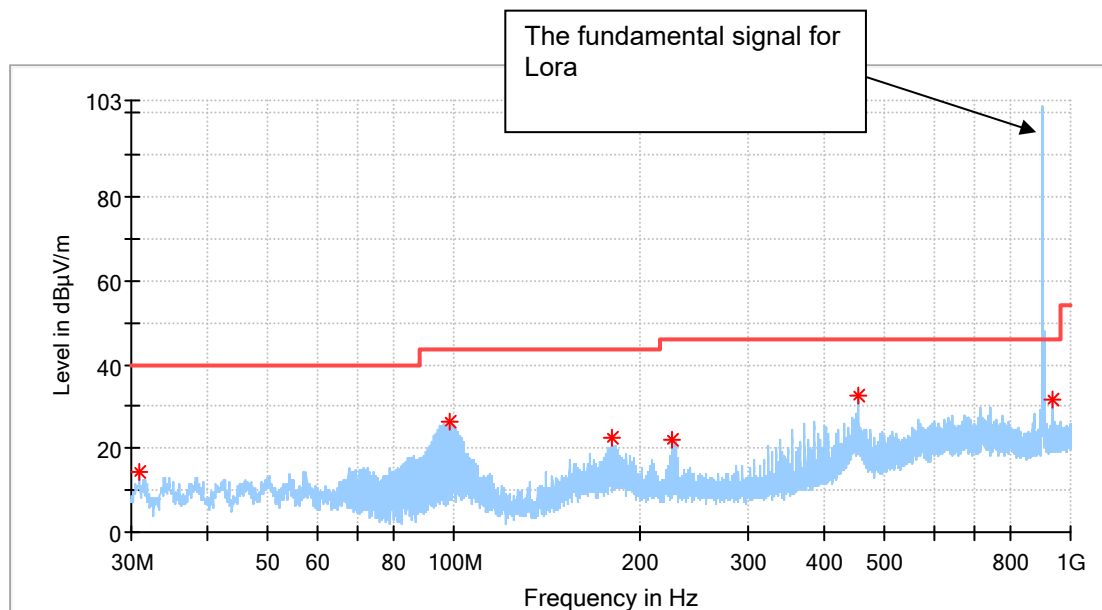
Note:

- 1) This testing was carried out on different modulations for all channels, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 10GHz were reported.

30 MHz - 1GHz

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_903MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

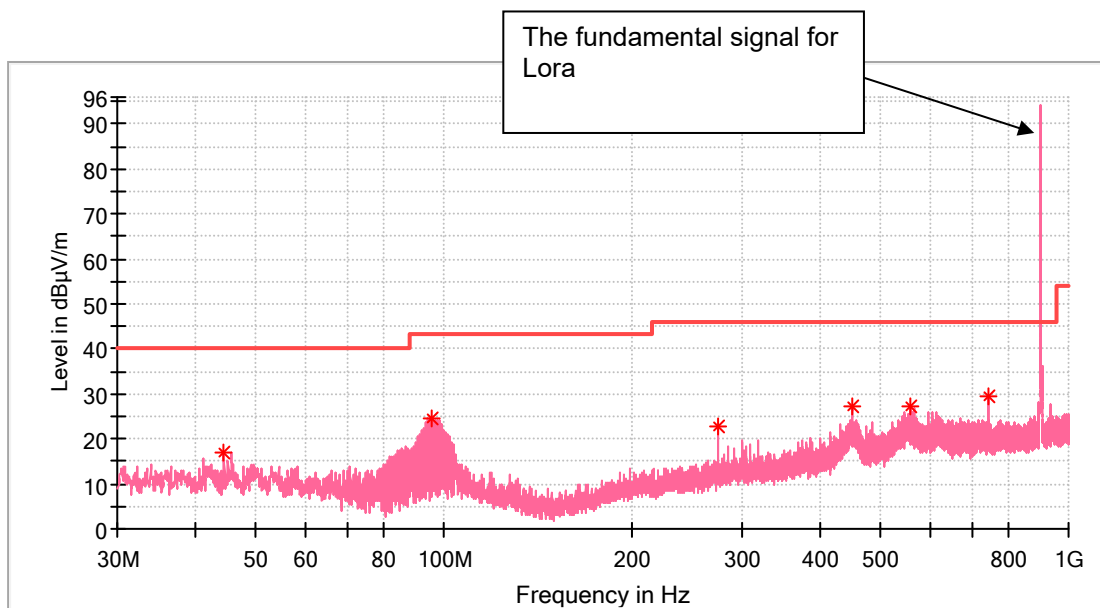
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.970000	14.18	40.00	25.82	100.0	H	327.0	-22.9
98.198462	26.19	43.50	17.31	100.0	H	26.0	-19.4
180.946923	22.48	43.50	21.02	100.0	H	36.0	-20.5
226.201154	22.22	46.00	23.78	100.0	H	17.0	-18.3
451.390385	32.51	46.00	13.49	100.0	H	106.0	-12.7
937.546923	31.44	46.00	14.56	100.0	H	259.0	-4.4

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: Wireless Emergency-stop
Model: ES-W1-E
Test Mode: Lora_DTS 500K_SF12_903MHz
Order No/Sample No: 168541455/A003997948-002
Test Voltage:: Battery
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

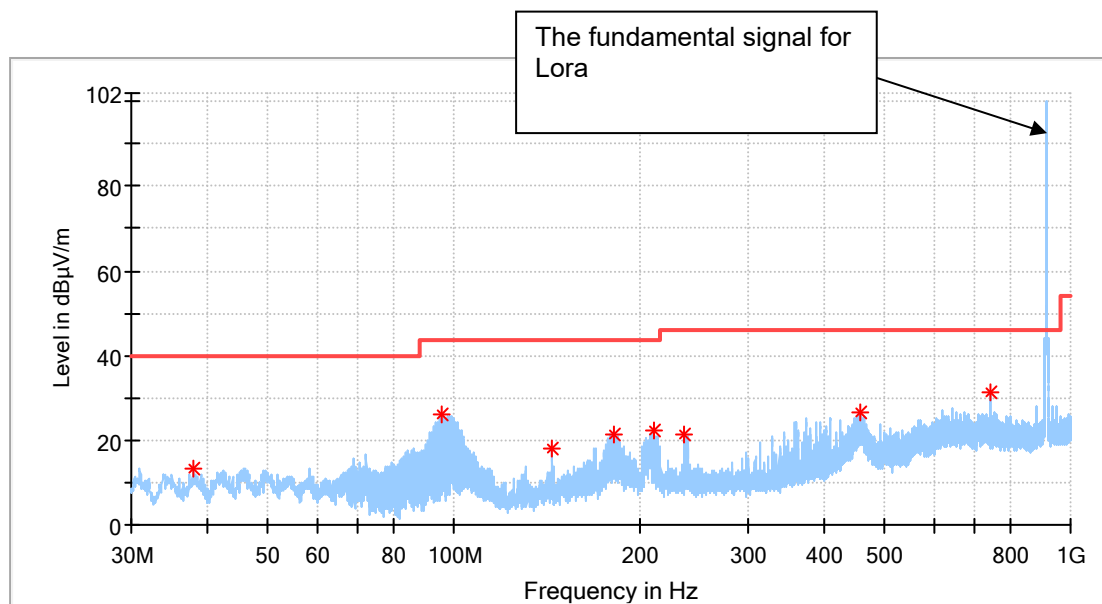
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
44.475385	16.87	40.00	23.13	100.0	V	97.0	-19.1
95.586923	24.71	43.50	18.79	100.0	V	90.0	-19.8
273.917692	22.63	46.00	23.37	100.0	V	51.0	-16.9
451.390385	27.12	46.00	18.88	100.0	V	217.0	-12.7
559.620000	27.08	46.00	18.92	100.0	V	133.0	-10.6
742.502308	29.35	46.00	16.65	100.0	V	97.0	-7.2

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: Wireless Emergency-stop
Model: ES-W1-E
Test Mode: Lora_DTS 500K_SF12_914.2MHz
Order No/Sample No: 168541455/A003997948-002
Test Voltage:: Battery
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

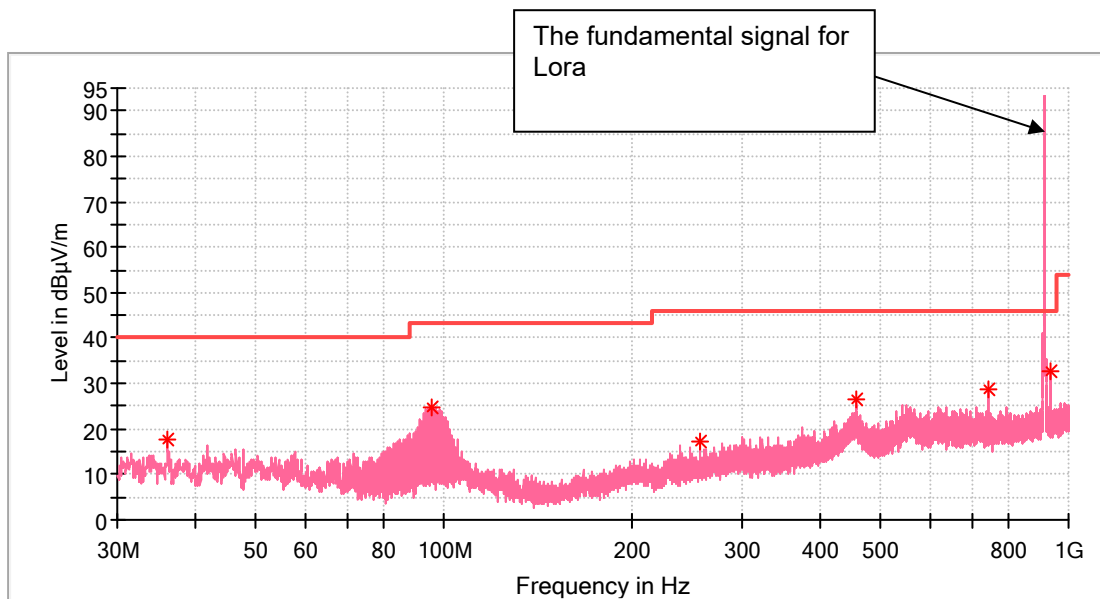
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.722692	13.44	40.00	26.56	100.0	H	0.0	-20.9
95.549615	25.96	43.50	17.54	100.0	H	22.0	-19.8
144.646539	17.95	43.50	25.55	100.0	H	49.0	-22.4
181.543846	21.21	43.50	22.29	100.0	H	4.0	-20.4
210.905000	22.35	43.50	21.15	100.0	H	359.0	-18.9
236.199615	21.25	46.00	24.75	100.0	H	0.0	-17.9
457.061154	26.72	46.00	19.28	100.0	H	123.0	-12.6
742.502308	31.12	46.00	14.88	100.0	H	203.0	-7.2

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: Wireless Emergency-stop
Model: ES-W1-E
Test Mode: Lora_DTS 500K_SF12_914.2MHz
Order No/Sample No: 168541455/A003997948-002
Test Voltage:: Battery
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

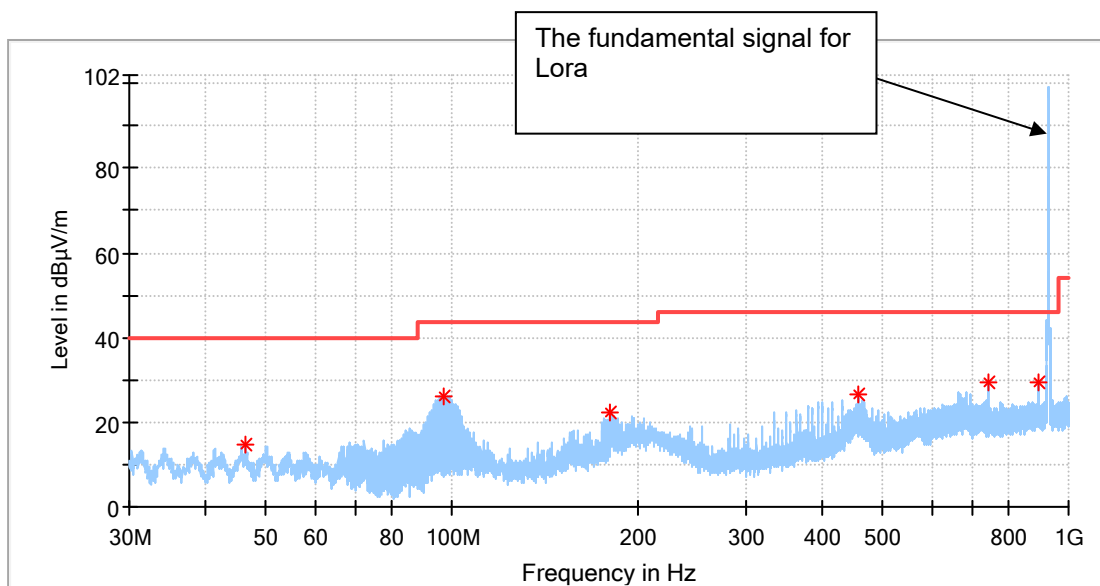
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
36.081154	17.50	40.00	22.50	100.0	V	71.0	-21.6
95.549615	24.76	43.50	18.74	100.0	V	93.0	-19.8
256.868077	17.40	46.00	28.60	100.0	V	140.0	-17.2
457.135769	26.44	46.00	19.56	100.0	V	180.0	-12.6
742.502308	28.75	46.00	17.25	100.0	V	227.0	-7.2
937.546923	32.61	46.00	13.39	100.0	V	156.0	-4.4

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_927.5MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

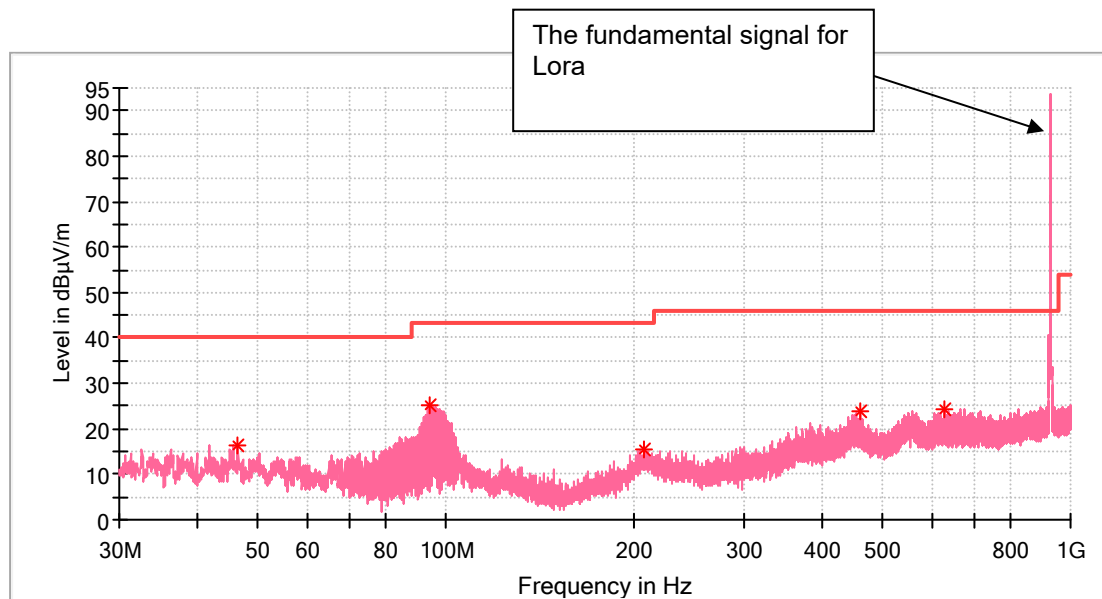
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
46.303462	14.79	40.00	25.21	100.0	H	344.0	-18.7
96.892692	26.08	43.50	17.42	100.0	H	18.0	-19.6
180.946923	22.31	43.50	21.19	100.0	H	0.0	-20.5
457.471539	26.34	46.00	19.66	100.0	H	123.0	-12.6
742.502308	29.45	46.00	16.55	100.0	H	336.0	-7.2
895.613077	29.29	46.00	16.71	100.0	H	245.0	-4.8

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_927.5MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
46.490000	16.55	40.00	23.45	100.0	V	248.0	-18.7
94.281154	25.33	43.50	18.17	100.0	V	76.0	-20.0
207.360769	15.41	43.50	28.09	100.0	V	48.0	-18.9
459.598077	23.92	46.00	22.08	100.0	V	248.0	-12.6
625.990385	24.20	46.00	21.80	100.0	V	102.0	-9.2

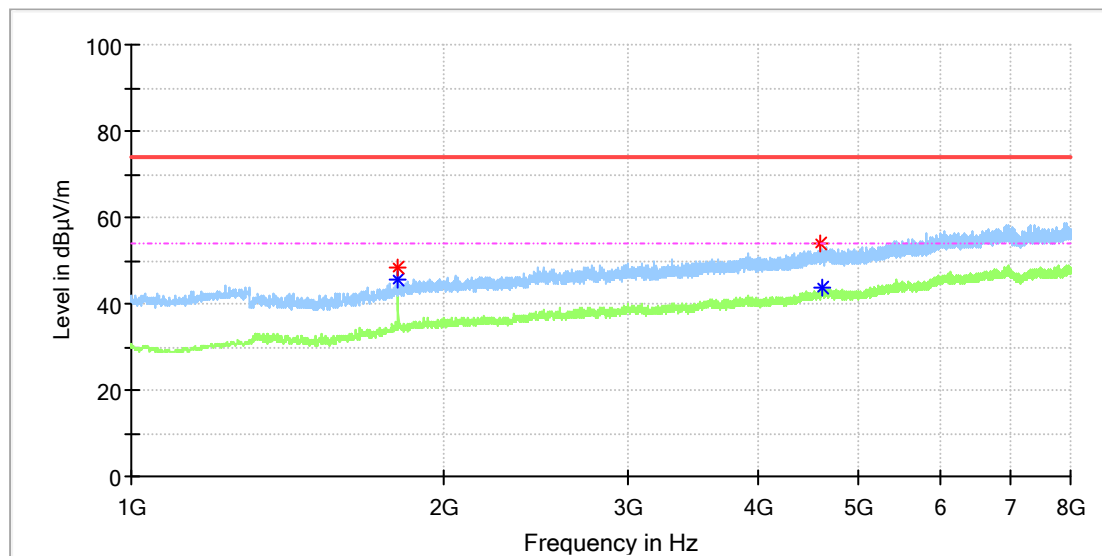
Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

1GHz - 10GHz

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_903MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1805.291667	48.28	---	74.00	25.72	150.0	H	168.0	6.3
1805.850000	---	45.52	54.00	8.48	150.0	H	168.0	6.3
4595.283333	53.95	---	74.00	20.05	150.0	H	302.0	13.5
4613.150000	---	43.54	54.00	10.46	150.0	H	347.0	13.5

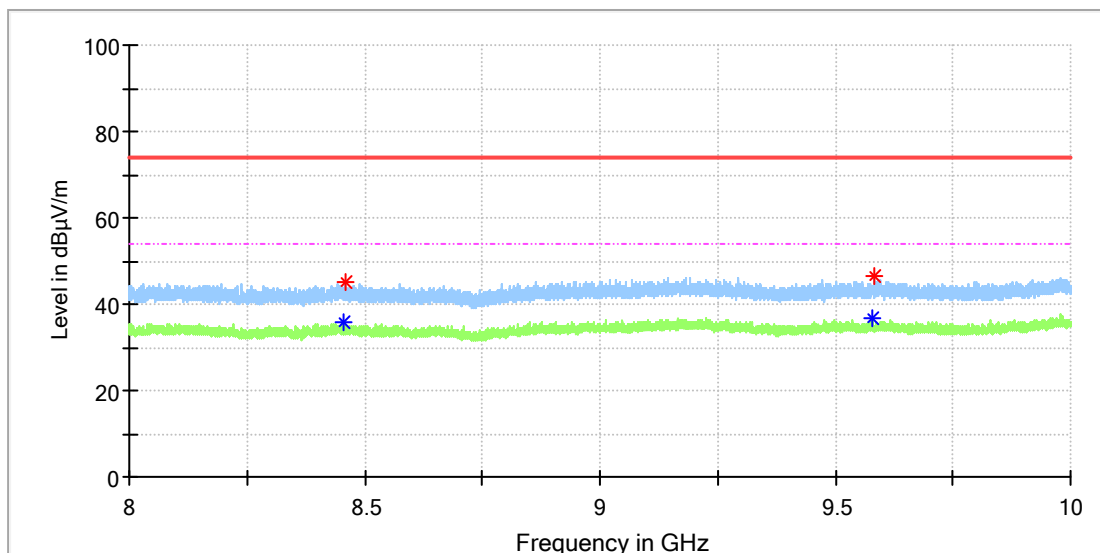
Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
100.000	-85.00	-90.00	-75.00	-10.00	100.00	N/A	0.00	0.00

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_903MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

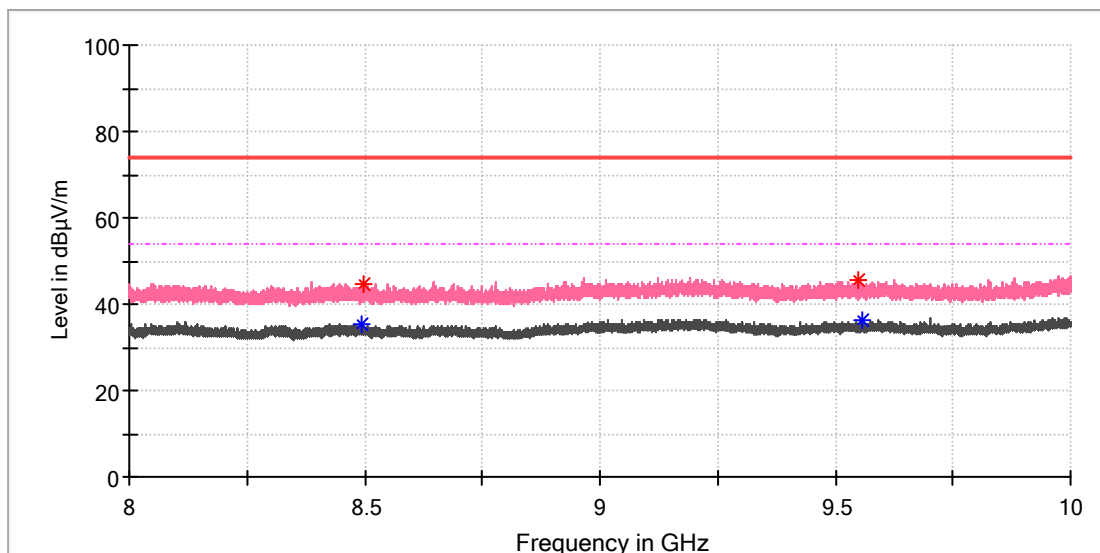
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8456.700000	---	35.62	54.00	18.38	150.0	H	6.0	9.1
8457.500000	45.19	---	74.00	28.81	150.0	H	174.0	9.1
9578.400000	---	36.61	54.00	17.39	150.0	H	15.0	10.3
9583.100000	46.62	---	74.00	27.38	150.0	H	15.0	10.3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_903MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

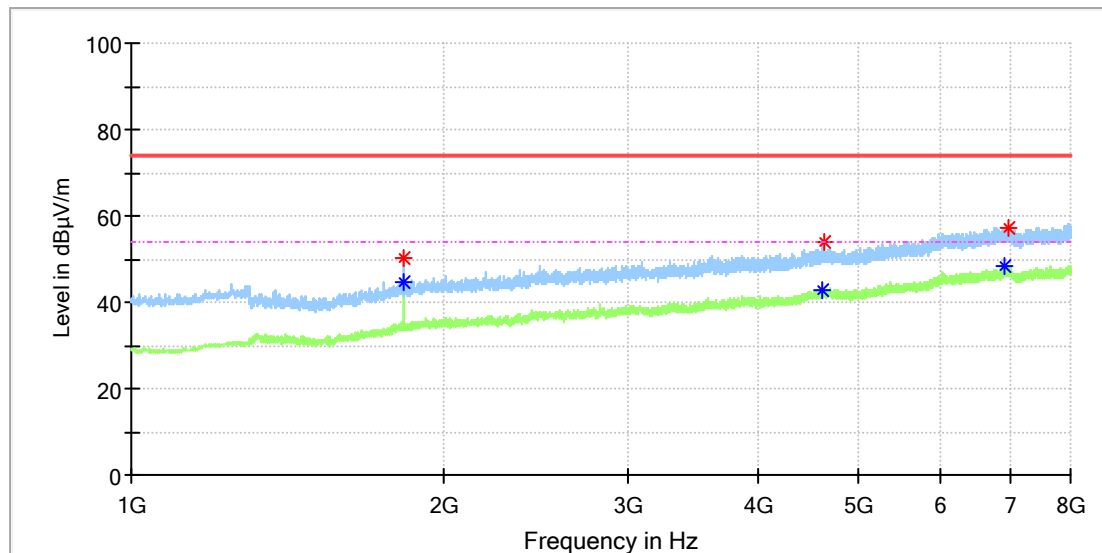
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8495.000000	---	35.27	54.00	18.73	150.0	V	322.0	8.9
8498.900000	44.74	---	74.00	29.26	150.0	V	105.0	8.9
9550.300000	45.45	---	74.00	28.55	150.0	V	311.0	10.2
9556.600000	---	36.23	54.00	17.77	150.0	V	0.0	10.2

Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_914.2MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

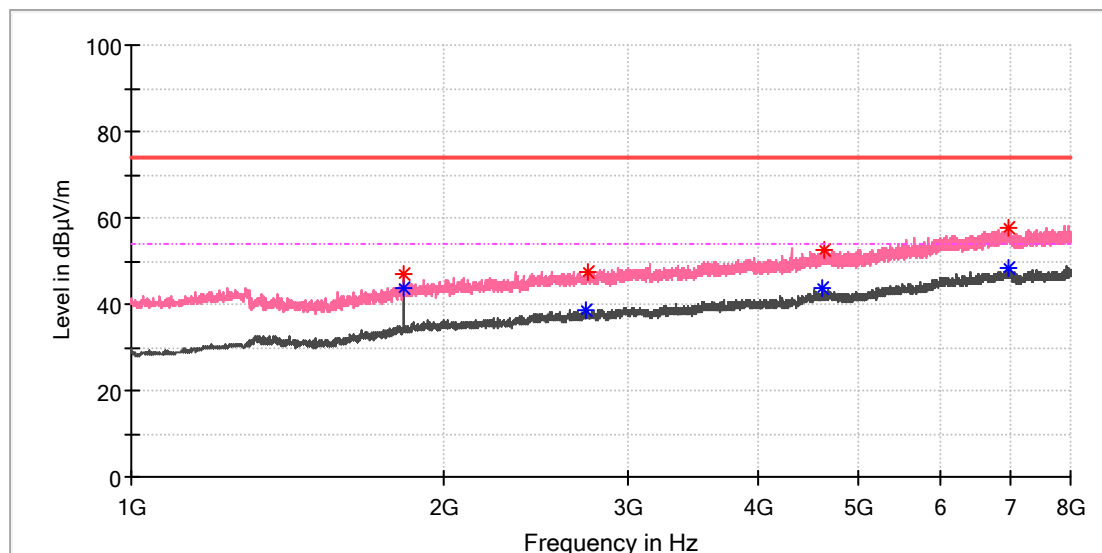
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1827.625000	50.08	---	74.00	23.92	150.0	H	95.0	6.4
1828.741667	---	44.67	54.00	9.33	150.0	H	121.0	6.4
4620.408333	---	42.84	54.00	11.16	150.0	H	307.0	13.5
4630.458333	53.85	---	74.00	20.15	150.0	H	313.0	13.5
6922.416667	---	48.23	54.00	5.77	150.0	H	307.0	18.8
6959.266667	57.33	---	74.00	16.67	150.0	H	307.0	18.9

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_914.2MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

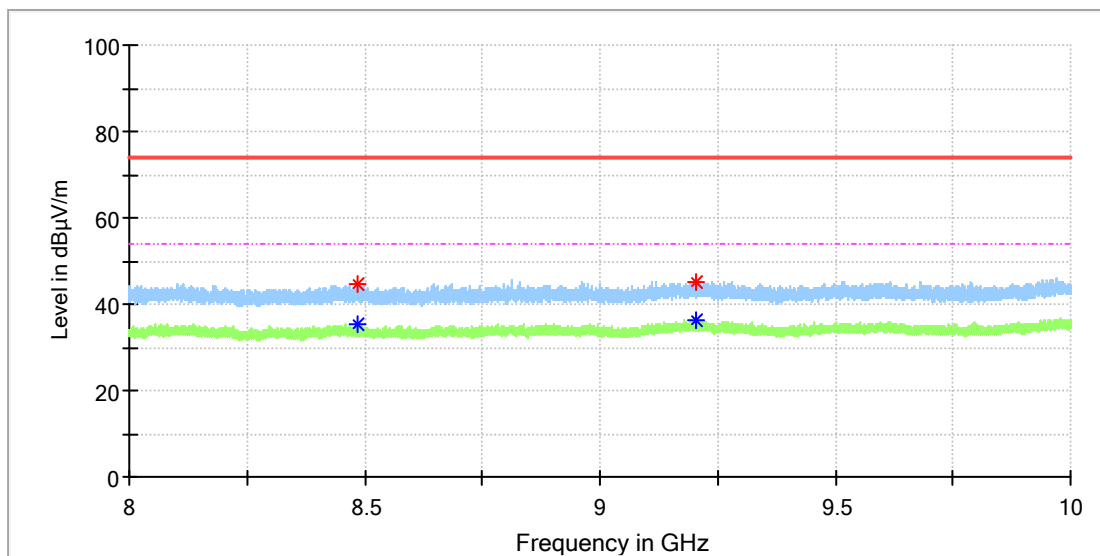
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1828.183333	46.90	---	74.00	27.10	150.0	V	347.0	6.4
1828.183333	---	43.68	54.00	10.32	150.0	V	347.0	6.4
2734.916667	---	38.49	54.00	15.51	150.0	V	271.0	9.2
2744.966667	47.40	---	74.00	26.60	150.0	V	12.0	9.3
4618.175000	---	43.76	54.00	10.24	150.0	V	288.0	13.5
4631.575000	52.37	---	74.00	21.63	150.0	V	308.0	13.5
6962.616667	57.63	---	74.00	16.37	150.0	V	339.0	18.9
6977.133333	---	48.19	54.00	5.81	150.0	V	315.0	19.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_914.2MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

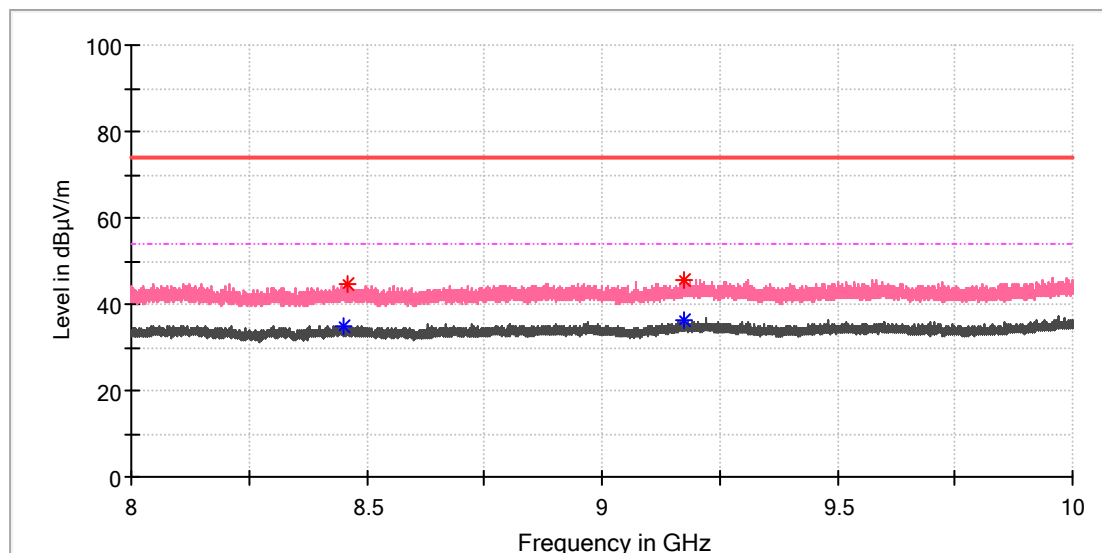
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8483.700000	44.78	---	74.00	29.22	150.0	H	0.0	9.0
8484.300000	---	35.19	54.00	18.81	150.0	H	136.0	8.9
9204.900000	45.28	---	74.00	28.72	150.0	H	27.0	10.6
9205.500000	---	36.16	54.00	17.84	150.0	H	200.0	10.6

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_914.2MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

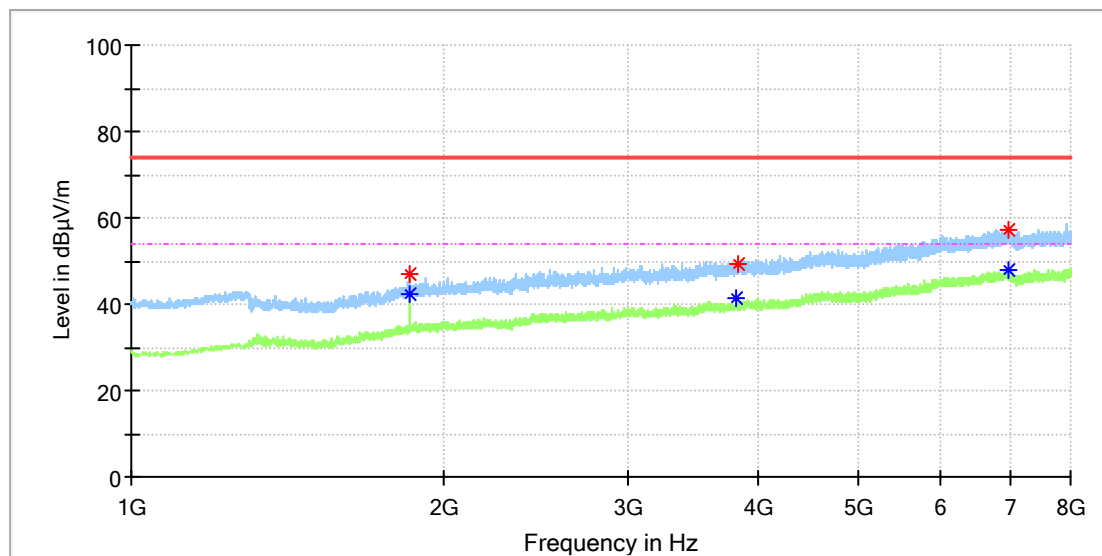
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8450.400000	---	35.06	54.00	18.94	150.0	V	107.0	9.2
8457.700000	44.85	---	74.00	29.15	150.0	V	266.0	9.1
9172.400000	---	36.21	54.00	17.79	150.0	V	242.0	10.5
9173.700000	45.64	---	74.00	28.36	150.0	V	0.0	10.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_927.5MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

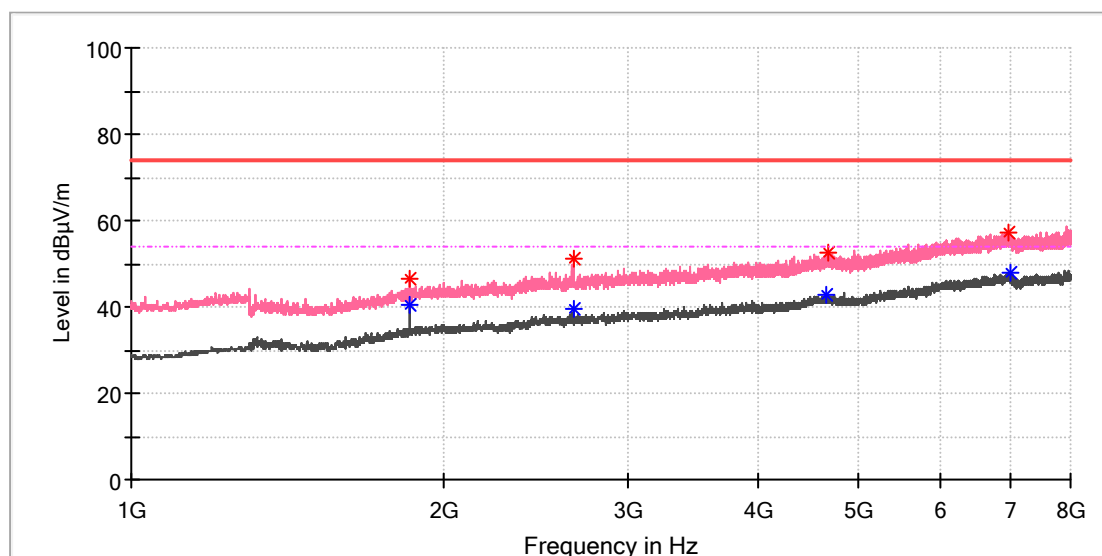
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
1854.425000	46.78	---	74.00	27.22	150.0	H	134.0	6.5
1854.983333	---	42.32	54.00	11.68	150.0	H	169.0	6.5
3816.966667	---	41.47	54.00	12.53	150.0	H	141.0	11.4
3825.341667	49.46	---	74.00	24.54	150.0	H	307.0	11.4
6969.875000	57.44	---	74.00	16.56	150.0	H	352.0	19.0
6977.691667	---	48.08	54.00	5.92	150.0	H	155.0	19.0

Final_Result

[illegible]

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_927.5MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

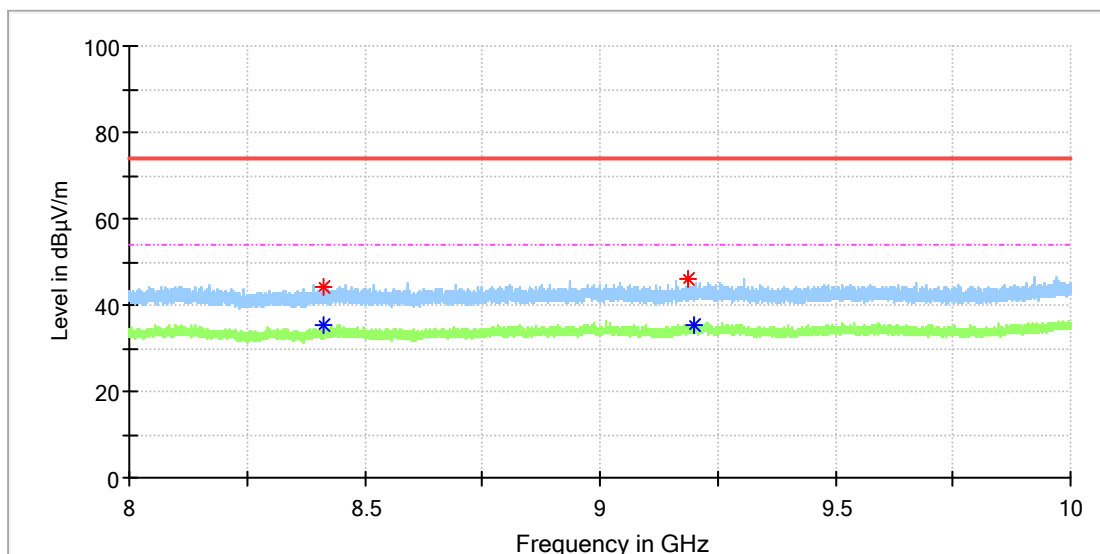
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1854.425000	---	40.27	54.00	13.73	150.0	V	328.0	6.5
1855.541667	46.52	---	74.00	27.48	150.0	V	29.0	6.5
2662.891667	51.30	---	74.00	22.70	150.0	V	258.0	9.1
2662.891667	---	39.37	54.00	14.63	150.0	V	258.0	9.1
4660.050000	---	42.85	54.00	11.15	150.0	V	233.0	13.5
4686.850000	52.50	---	74.00	21.50	150.0	V	354.0	13.5
6987.741667	57.27	---	74.00	16.73	150.0	V	240.0	19.0
6999.466667	---	48.04	54.00	5.96	150.0	V	285.0	19.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_927.5MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

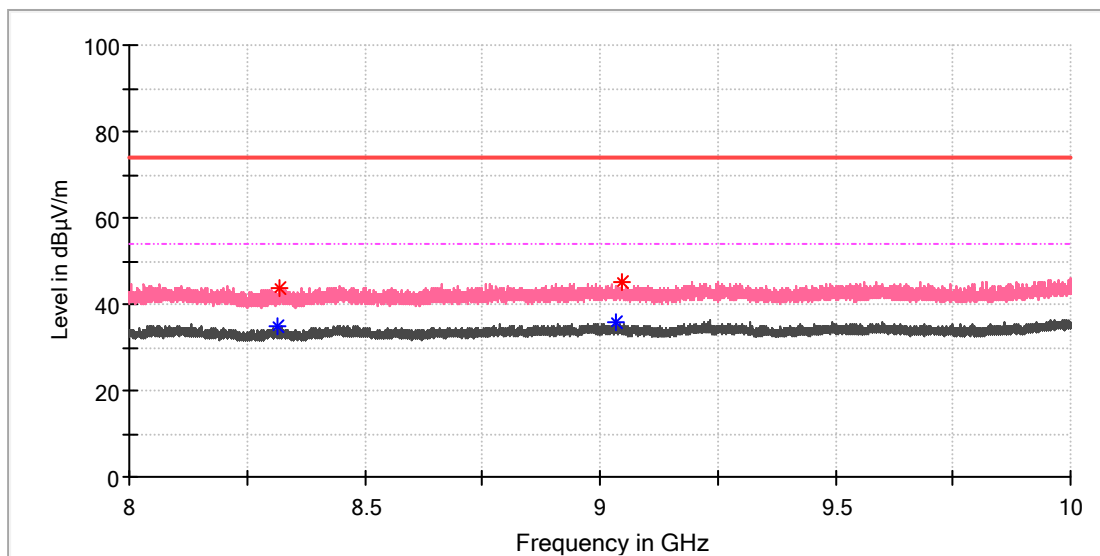
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8412.100000	44.11	---	74.00	29.89	150.0	H	34.0	9.1
8414.800000	---	35.55	54.00	18.45	150.0	H	122.0	9.2
9189.200000	45.90	---	74.00	28.10	150.0	H	4.0	10.6
9201.800000	---	35.53	54.00	18.47	150.0	H	268.0	10.6

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	Wireless Emergency-stop
Model:	ES-W1-E
Test Mode:	Lora_DTS 500K_SF12_927.5MHz
Order No/Sample No:	168541455/A003997948-002
Test Voltage::	Battery
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8316.500000	---	34.99	54.00	19.01	150.0	V	254.0	8.8
8320.500000	43.53	---	74.00	30.47	150.0	V	281.0	8.8
9034.100000	---	35.60	54.00	18.40	150.0	V	80.0	9.6
9045.700000	45.34	---	74.00	28.66	150.0	V	80.0	9.6

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---