

Report No.: KSCR220500068901

Page: 1 of 20

# TEST REPORT

Application No.: KSCR2205000689AT

**FCC ID:** 2A5U7-RR115

Applicant: 1320 International, LLC

Address of Applicant: 66 Main Street Suite 2457 Farmingdale NEW JERSEY 07727

Manufacturer:ShangHai HaoWei Precision mold & Injection Co., Ltd.Address of Manufacturer:No.333,6 Building,Changta rd,litahu Town,shanghai city.Factory:ShangHai HaoWei Precision mold & Injection Co., Ltd.Address of Factory:No.333,6 Building,Changta rd,litahu Town,shanghai city.

**Equipment Under Test (EUT):** 

**EUT Name:** Remote Control **Model No.:** RR115-6BT

Standard(s): 47 CFR Part 15, Subpart C 15.231

**Date of Receipt:** 2022-05-10

**Date of Test:** 2022-07-31 to 2022-08-08

**Date of Issue:** 2022-08-09

Test Result: Pass\*

Eric Lin Laboratory Manager

Esia fin



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions.aspx</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx</a>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, \*\*Certificate, please contact us at telephone: (86-755) 8307 1443, \*\*Certificate, please contact us at telephone: (86-755) 8307 1443, \*\*Certificate, please contact us at telephone: (86-755) 8307 1443, \*\*Certificate, please contact us at telephone: (86-755) 8307 1443, \*\*Certificate, please contact us at telephone: (86-755) 8307 1443, \*\*Certificate, please contact us at telephone: (86-755) 8307 1443, \*\*Certificate, please contact us at telephone: (86-755)

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 (186-512)57355888 (186-512)57370818 www.sgsgroup.com.cn 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300 (186-512)57355888 (186-512)57370818 sgs.china@sgs.com

<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above.



Report No.: KSCR220500068901

Page: 2 of 20

	Revision Record					
Version	Chapter	Date	Modifier	Remark		
01		2022-08-09		Original		

Authorized for issue by:			
	Tomnie Tang		
	Tommie_Tang/Project Engineer	-	
	Eric Li		
	Eric Lin /Reviewer	-	



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

or email: <u>CN.Doccheck@sgs.com</u> | No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 |中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 3 of 20

# 2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.231	N/A	47 CFR Part 15, Subpart C 15.203	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
20dB Bandwidth		ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.231(c)	Pass
Radiated Emissions below 1GHz		ANSI C63.10 (2013) Section 6.4&6.5	47 CFR Part 15C Section 15.231(b) and 15.209	Pass
Dwell Time (15.231(a))	47 CFR Part 15, Subpart C 15.231	ANSI C63.10 (2013) Section 7.5	47 CFR Part 15, Subpart C 15.231(a)	Pass
Field Strength of the Fundamental Signal (15.231(b))	- Subpart 0 13.231	ANSI C63.10 (2013) Section 6.5	47 CFR Part 15, Subpart C 15.231(b)	Pass
Radiated Emissions above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15C Section 15.231(b) and 15.209	Pass



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国•江苏•昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 4 of 20

### 3 Contents

			Page
1	COV	'ER PAGE	1
2	TES	T SUMMARY	3
3	CON	ITENTS	4
4	GEN	IERAL INFORMATION	6
	4.1	DETAILS OF E.U.T.	6
	4.2	DESCRIPTION OF SUPPORT UNITS	6
	4.3	MEASUREMENT UNCERTAINTY	
	4.4	TEST LOCATION	7
	4.5	TEST FACILITY	7
	4.6	DEVIATION FROM STANDARDS	
	4.7	ABNORMALITIES FROM STANDARD CONDITIONS	8
5	EQU	IIPMENT LIST	9
•			
6	RAD	NO SPECTRUM TECHNICAL REQUIREMENT	10
	6.1	ANTENNA REQUIREMENT	10
	6.1.1	1 Test Requirement:	10
	6.1.2	2 Conclusion	10
7	RAD	NO SPECTRUM MATTER TEST RESULTS	11
	7.1	20dB Bandwidth	11
	7.1.1	1 E.U.T. Operation	11
	7.1.2	Part Mode Description	11
	7.1.3	B Test Setup Diagram	11
	7.1.4		
	7.2	RADIATED EMISSIONS BELOW 1GHz	12
	7.2.1	,	
	7.2.2	·	
	7.2.3	, 5	
	7.2.4		
	7.3	DWELL TIME (15.231(A))	
	7.3.1		
		? Test Mode Description	
	7.3.3		14
	7.3.4		
	7.4	FIELD STRENGTH OF THE FUNDAMENTAL SIGNAL (15.231(B))	
	7.4.1 7.4.2	- P	
	7.4.2 7.4.3		
	7.4.3 7.4.4	, ,	
	7.4.4	RADIATED EMISSIONS ABOVE 1GHz	
	7.0	TADIATED ENGOIDING ADOVE TOTIL	1 /



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms



Report No .:	KSCR22050006890
--------------	-----------------

Page: 5 of 20

EUT C	CONSTRUCTIONAL DETAILS (FUT DUOTOS)	20
TEST	SETUP PHOTO	20
7.5.4	Measurement Procedure and Data	19
7.5.3	Test Setup Diagram	18
7.5.1	E.U.T. Operation	18
	7.5.2 7.5.3 7.5.4 TEST	7.5.1 E.U.T. Operation



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 6 of 20

## 4 General Information

### 4.1 Details of E.U.T.

Power supply:	DC 3V by battery
Operation Frequency	313.8MHz
Channel Numbers:	1
Modulation Type:	FSK
Antenna Type:	PCB Antenna

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
The EUT has been tested as an independent unit.			

### 4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4 x 10 <sup>-8</sup>
2	Timeout	2s
3	Duty Cycle	0.37%
4	Occupied Bandwidth	3%
5	RF Conducted Power	0.6dB
6	RF Power Density	2.9dB
7	Conducted Spurious Emissions	0.75dB
8	RF Radiated Power	5.2dB (Below 1GHz)
0	NF Natiated Fower	5.9dB (Above 1GHz)
		4.2dB (Below 30MHz)
9	Radiated Spurious Emission Test	4.5dB (30MHz-1GHz)
9	Radiated Spurious Emission Test	5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
10	Temperature Test	1°C
11	Humidity Test	3%
12	Supply Voltages	1.5%
13	Time	3%

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms-a-Documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-a-Document.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms-a-Document.aspx</a>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-75) 83071443, or email: CN.Doccheck@sas.com



Report No.: KSCR220500068901

Page: 7 of 20

#### 4.4 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

### 4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### CNAS (No. CNAS L4354)

CNAS has accredited Compliance Certification Services (Kunshan) Inc. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

#### A2LA (Certificate No. 2541.01)

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

#### • FCC (Designation Number: CN1172)

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory.

Designation Number: CN1172.

#### ISED (CAB identifier: CN0072)

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

Company Number: 2324E

#### VCCI (Member No.: 1938)

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

#### 4.6 Deviation from Standards

None



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 8 of 20

### 4.7 Abnormalities from Standard Conditions

None



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms



Report No.: KSCR220500068901

Page: 9 of 20

# 5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
RF Ra	RF Radiated Test					
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	10/11/2021	10/10/2022
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	04/01/2022	03/31/2023
3	Signal Generator	Agilent	E8257C	KS301066	10/18/2021	10/17/2022
4	Loop Antenna	COM-POWER	AL-130R	KUS1806E001	04/13/2021	04/12/2023
5	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E005	06/29/2021	06/28/2023
6	Bilog Antenna	SCHWARZBECK	VULB9160	CZ301016	04/13/2021	04/12/2024
7	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	10/26/2020	10/25/2022
8	Horn-antenna(1-18GHz)	ETS-LINDGREN	3117	KS301186	02/22/2021	02/21/2023
9	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	CZ301058	03/22/2022	03/21/2023
10	Amplifier(30MHz~18GHz)	PANSHAN TECHNOLOGY	LNA:1~18G	KSEM010-1	01/22/2022	01/21/2023
11	Amplifier(18~40GHz)	COM-POWER	PAM-840A	KUS1710E001	01/22/2022	01/21/2023
12	RE Test Cable	REBES MICROWAVE	/	CZ301097	11/14/2021	11/13/2022
13	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	01/04/2022	31/03/2023
14	Software	Faratronic	EZ_EMC-v 3A1	/	N/A	N/A



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国•江苏•昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 10 of 20

# 6 Radio Spectrum Technical Requirement

### 6.1 Antenna Requirement

### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

#### 6.1.2 Conclusion

15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

There is PCB antenna and no consideration of replacement.

Antenna location: Refer to Appendix (Internal Photos)



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 11 of 20

# 7 Radio Spectrum Matter Test Results

### 7.1 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.231(c)
Test Method: ANSI C63.10 (2013) Section 6.9

#### Limit:

Frequency range(MHz)	Limit
70-900	No wider than 0.25% of the center frequency
Above 900	No wider than 0.5% of the center frequency

### 7.1.1 E.U.T. Operation

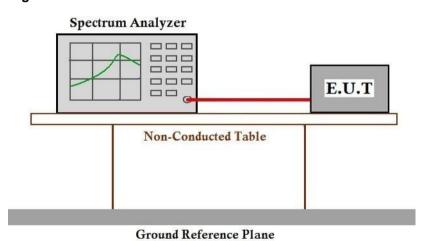
Operating Environment:

Temperature: 22.0 °C Humidity: 57.3 % RH Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with FSK modulation

#### 7.1.3 Test Setup Diagram



### 7.1.4 Measurement Procedure and Data

The detailed test data see: Appendix A for KSCR220500068901



Test Report Form Version: Rev01

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 12 of 20

#### 7.2 Radiated Emissions below 1GHz

Test Requirement 47 CFR Part 15C Section 15.231(b) and 15.209

Test Method: ANSI C63.10 (2013) Section 6.4&6.5

#### Limit:

Frequency(MHz)	Field strength(microvolts/meter)	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

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

### 7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C Humidity: 57.4 % RH Atmospheric Pressure: 1010 mbar

### 7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with FSK modulation



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

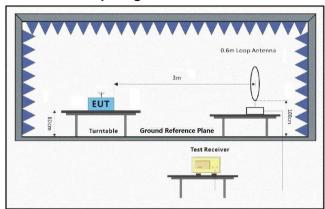
No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300

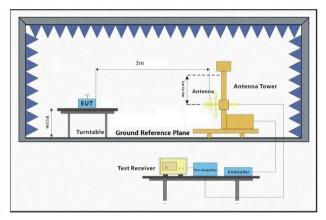


Report No.: KSCR220500068901

Page: 13 of 20

#### 7.2.3 Test Setup Diagram





#### 7.2.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

#### Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Final Test Level =Receiver Reading + Antenna Factor + Cable Factor Preamplifier Factor
- 2) Scan from 9kHz to 1GHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

The detailed test data see: Appendix A for KSCR220500068901



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 14 of 20

### 7.3 Dwell Time (15.231(a))

Test Requirement 47 CFR Part 15, Subpart C 15.231(a)
Test Method: ANSI C63.10 (2013) Section 7.5

#### Limit:

Device type	Limit
Manually operated transmitter	The switch automatically deactivate the transmitter within not more than 5 seconds of being released
Automatically actived transmitter	Cease transmission within 5 seconds after activation
Periodic transmissions to determine system integrity of transmitters used in security or safety applications	The total transmission time does not exceed 2 seconds per hour

#### 7.3.1 E.U.T. Operation

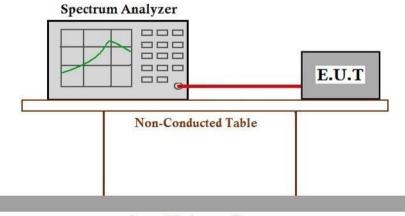
Operating Environment:

Temperature: 22.0 °C Humidity: 57.3 % RH Atmospheric Pressure: 1010 mbar

#### 7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with FSK modulation

#### 7.3.3 Test Setup Diagram



**Ground Reference Plane** 

#### 7.3.4 Measurement Procedure and Data

The detailed test data see: Appendix A for KSCR220500068901



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms-a-Documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-a-Document.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms-a-Document.aspx</a>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-75) 83071443, or email: CN.Doccheck@sas.com

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 15 of 20

### 7.4 Field Strength of the Fundamental Signal (15.231(b))

Test Requirement 47 CFR Part 15, Subpart C 15.231(b)
Test Method: ANSI C63.10 (2013) Section 6.5

#### Limit:

Fundamental frequency(MHz)	Field strength of fundamental(microvolts/meter)	Field strength of spurious emissions(microvolts/meter)
40.66-40.70	2250	225
70-130	1250	125
130-174	1250 to 3750	125 to 375
174-260	3750	375
260-470	3750 to 12500	375 to 1250
Above 470	12500	1250

Remark: the emission limit is based on measurement instrumentation employing an average detector at a distance of 3 meters. The frequencies above 1000MHz are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

### 7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C Humidity: 57.3 % RH Atmospheric Pressure: 1010 mbar

### 7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with FSK modulation



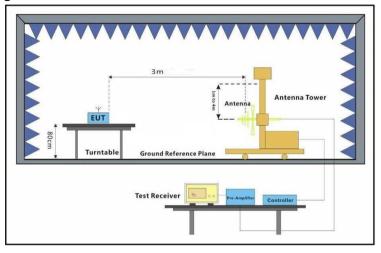
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms



Report No.: KSCR220500068901

Page: 16 of 20

#### 7.4.3 Test Setup Diagram



#### 7.4.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

The detailed test data see: Appendix A for KSCR220500068901



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国•江苏•昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 17 of 20

#### 7.5 Radiated Emissions above 1GHz

Test Requirement 47 CFR Part 15C Section 15.231(b) and 15.209

Test Method: ANSI C63.10 (2013) Section 6.6

Measurement Distance: 3m

Limit:

For Restricted bands

Frequency(MHz)	Field strength(microvolts/meter)	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

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

#### For Other bands

Fundamental Frequency MHz	Field Strength of Fundamental (dBµV/m @ 3 m)	Field Strength of Hasrmonics and Spurious Emissions (dBµV/m @ 3 m)
40.66 to 40.70	67.04	47.04
70 to 130	61.94	41.94
130 to 174	**61.94 to 71.48	41.94 to 51.48
174 to 260	71.48	51.48
260 to 470	**71.48 to 81.94	51.48 to 61.94
Above 470	81.94	61.94
Detector:	Peak for pre-scan	
QP for 30MHz to1000 MHz:120 kHz resolution bandwidth		resolution bandwidth
Peak for Above 1 GHz: 1 MHz resolution bandwidth		ition bandwidth

<sup>\*\*</sup> linear interpolations

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows:

for the band 130-174 MHz, uV/m at 3 meters = 56.81818(F) - 6136.3636; for the band 260-470 MHz, uV/m at 3 meters = 41.6667(F) - 7083.3333.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 18 of 20

The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

The fundamental frequency of the EUT is 313.80 MHz

The limit for average or QP field strength dBuv/m for the fundamental emission= 75.55 dBµV/m

No fundamental is allowed in the restricted bands.

The limit for average field strength dBuv/m for the spurious emission=55.55 dBuV/m. Spurious in the restricted bands must be less than 55.55 dBuV/m or 15.209, whichever limit permits a higher field strength.

#### 7.5.1 E.U.T. Operation

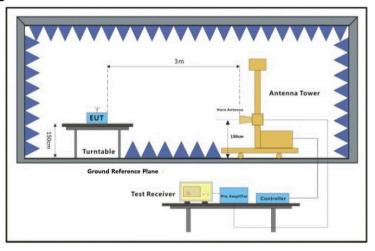
Operating Environment:

Temperature: 25.5 °C Humidity: 52.1 % RH Atmospheric Pressure: 1010 mbar

#### 7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with FSK modulation

#### 7.5.3 Test Setup Diagram





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 19 of 20

#### 7.5.4 Measurement Procedure and Data

- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Final Test Level =Receiver Reading + Antenna Factor + Cable Factor Preamplifier Factor
- 2) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

The detailed test data see: Appendix A for KSCR220500068901



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300 中国・江苏・昆山市留学生创业园伟业路10号 邮编 215300



Report No.: KSCR220500068901

Page: 20 of 20

# 8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2205000689AT

# 9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2205000689AT

- End of the Report -



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms-a-Documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-a-Document.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms-a-Document.aspx</a>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-75) 83071443, or email: CN.Doccheck@sas.com