



## TEST REPORT

**Application No.:** SHEM1907015452CR  
**FCC ID:** 2AGOFRC339A  
**Applicant:** HCS (Suzhou) Limited  
**Address of Applicant:** 19F-20F, Building B-3rd, No. 209 Zhuyuan Road, New District, Suzhou, P.R.China  
**Manufacturer:** HCS (Suzhou) Limited  
**Address of Manufacturer:** 19F-20F, Building B-3rd, No. 209 Zhuyuan Road, New District, Suzhou, P.R.China  
**Factory:** Wujiang Century Billion Electronic Technology Co., Ltd  
**Address of Factory:** No.149 Tuncunwest Road, Tongli Town. Wujiang. Jiangsu Province. China  
**Equipment Under Test (EUT):**  
**EUT Name:** Remote control  
**Model No.:** RC3394003/01BR  
**Standard(s) :** 47 CFR Part 15, Subpart B  
**Date of Receipt:** 2019-07-24  
**Date of Test:** 2019-07-26  
**Date of Issue:** 2019-08-05

|                     |              |
|---------------------|--------------|
| <b>Test Result:</b> | <b>Pass*</b> |
|---------------------|--------------|

\* In the configuration tested, the EUT complied with the standards specified above.

Parlam Zhan

Parlam Zhan  
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



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| Revision Record |             |            |        |
|-----------------|-------------|------------|--------|
| Version         | Description | Date       | Remark |
| 00              | Original    | 2019-08-05 | /      |
|                 |             |            |        |
|                 |             |            |        |

|                          |  |                            |  |  |
|--------------------------|--|----------------------------|--|--|
| Authorized for issue by: |  |                            |  |  |
|                          |  | Bill Wu                    |  |  |
|                          |  | Bill Wu / Project Engineer |  |  |
|                          |  | Parlam Zhan                |  |  |
|                          |  | Parlam Zhan / Reviewer     |  |  |

## 2 Test Summary

| Emission Part                   |                           |                 |             |        |
|---------------------------------|---------------------------|-----------------|-------------|--------|
| Item                            | Standard                  | Method          | Requirement | Result |
| Radiated Emissions (30MHz-1GHz) | 47 CFR Part 15, Subpart B | ANSI C63.4:2014 | Class B     | Pass   |
| Radiated Emissions (above 1GHz) | 47 CFR Part 15, Subpart B | ANSI C63.4:2014 | Class B     | Pass   |

| InternalSource     | UpperFrequency  |
|--------------------|---|
| Below 1.705MHz     | 30MHz   |
| 1.705MHz to 108MHz | 1GHz  |
| 108MHz to 500MHz   | 2GHz  |
| 500MHz to 1GHz     | 5GHz  |
| Above 1GHz         | 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower |



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## 4 General Information

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

Power supply: DC 3V By 2\*AAA size batteries

Test voltage: DC 3V

### 4.2 Description of Support Units

The EUT has been tested as an independent unit.

### 4.3 Measurement Uncertainty

| No. | Item  | Measurement Uncertainty               |
|-----|---|---------------------------------------|
| 1   | Conducted Emission<br>at mains port using AMN             | $\pm 2.6\text{dB}$ (9kHz to 150kHz)   |
|     |   | $\pm 2.3\text{dB}$ (150kHz to 30MHz)  |
| 2   | Conducted Emission<br>at mains port using VP              | $\pm 1.9\text{ dB}$ (9kHz to 30MHz)   |
| 3   | Conducted Emission<br>at telecommunication port using AAN | $\pm 4.1\text{ dB}$ (150kHz to 30MHz) |
| 4   | Radiated Power  | $\pm 3.0\text{dB}$                    |
| 5   | Radiated emission   | $\pm 4.4\text{dB}$ (30MHz-1GHz)       |
|     |   | $\pm 4.8\text{dB}$ (1GHz-6GHz)        |
|     |   | $\pm 5.2\text{dB}$ (6GHz-18GHz)       |

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

#### 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

#### 4.5 Test Facility

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

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 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.

- **NVLAP (Certificate No. 201034-0)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Certificate No. 201034-0.

- **FCC –Designation Number: CN5033**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

Designation Number: CN5033. Test Firm Registration Number: 479755.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

IC Registration No.: 8617A-1. CAB identifier: CN0020.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

#### 4.6 Deviation from Standards

None

#### 4.7 Abnormalities from Standard Conditions

None

## 5 Equipment List

| Radiated Emissions (30MHz-1GHz) |                 |                   |              |            |              |
|---------------------------------|-----------------|-------------------|--------------|------------|--------------|
| Equipment                       | Manufacturer    | Model No          | Inventory No | Cal Date   | Cal Due Date |
| EMI test receiver               | Rohde & Schwarz | ESU40             | SHEM051-1    | 2018-12-20 | 2019-12-19   |
| CONTROLLER                      | INNCO           | CO200             | SHEM047-1    | N/A        | N/A          |
| ANTENNA MAST                    | INNCO           | MA400-EP          | SHEM047-2    | N/A        | N/A          |
| TURN DEVICE                     | INNCO           | DE 3600-RH        | SHEM047-3    | N/A        | N/A          |
| Broadband UHF-VHF ANTENNA       | SCHWARZBECK     | VULB9168          | SHEM048-1    | 2017-02-28 | 2020-02-27   |
| Semi/Fully Anechoic             | ST              | 11*6*6M           | SHEM078-2    | 2017-07-22 | 2020-07-21   |
| Low Amplifier                   | CLAVIIO         | BDLNA-0001-412010 | SHEM164-1    | 2018-08-13 | 2019-08-12   |

| Radiated Emissions (above 1GHz)      |                 |                      |              |            |              |
|--------------------------------------|-----------------|----------------------|--------------|------------|--------------|
| Equipment                            | Manufacturer    | Model No             | Inventory No | Cal Date   | Cal Due Date |
| EMI test receiver                    | Rohde & Schwarz | ESU40                | SHEM051-1    | 2018-12-20 | 2019-12-19   |
| CONTROLLER                           | INNCO           | CO200                | SHEM047-1    | N/A        | N/A          |
| ANTENNA MAST                         | INNCO           | MA400-EP             | SHEM047-2    | N/A        | N/A          |
| TURN DEVICE                          | INNCO           | DE 3600-RH           | SHEM047-3    | N/A        | N/A          |
| Double ridged broadband horn ANTENNA | SCHWARZBECK     | BBHA9120D            | SHEM050-1    | 2017-01-14 | 2020-01-13   |
| High-amplifier                       | SCHWARZBECK     | SCU-F0118-G40-BZ4-CS | SHEM050-2    | 2018-12-20 | 2019-12-19   |
| Semi/Fully Anechoic                  | ST              | 11*6*6M              | SHEM078-2    | 2017-07-22 | 2020-07-21   |
| High Amplifier                       | CLAVIIO         | BDLNA-0118-352810    | SHEM165-1    | 2018-08-13 | 2019-08-12   |

| General used equipment        |                             |            |              |            |              |
|-------------------------------|-----------------------------|------------|--------------|------------|--------------|
| Equipment                     | Manufacturer                | Model No   | Inventory No | Cal Date   | Cal Due Date |
| Digital pressure meter        | YONGZHI                     | DYM3-01    | SHEM082-1    | 2018-01-25 | 2021-01-24   |
| Temperature&humidity recorder | ShangHai weather meter work | ZJ 1-2B    | SHEM042-1~6  | 2018-08-31 | 2019-08-30   |
| Digital Multimeter            | FLUKE                       | 17B        | SHEM043-3    | 2018-09-03 | 2019-09-02   |
| Autoformer regulator          | Guangzhou bao de            | TDGC2-5KVA | SHEM150-1    | N/A        | N/A          |
| Multi-purpose tong tester     | FLUKE                       | 316        | SHEM001-1    | 2018-12-20 | 2019-12-19   |

## 6 Emission Test Results

### 6.1 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Frequency Range: 30MHz to 1GHz

Measurement Distance: 3m

Limit:

30MHz -88MHz 40.0(dBμV/m) quasi-peak

88MHz-216MHz 43.5(dBμV/m) quasi-peak

216MHz-960MHz 46.0(dBμV/m) quasi-peak

960MHz-1000MHz 54.0(dBμV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz

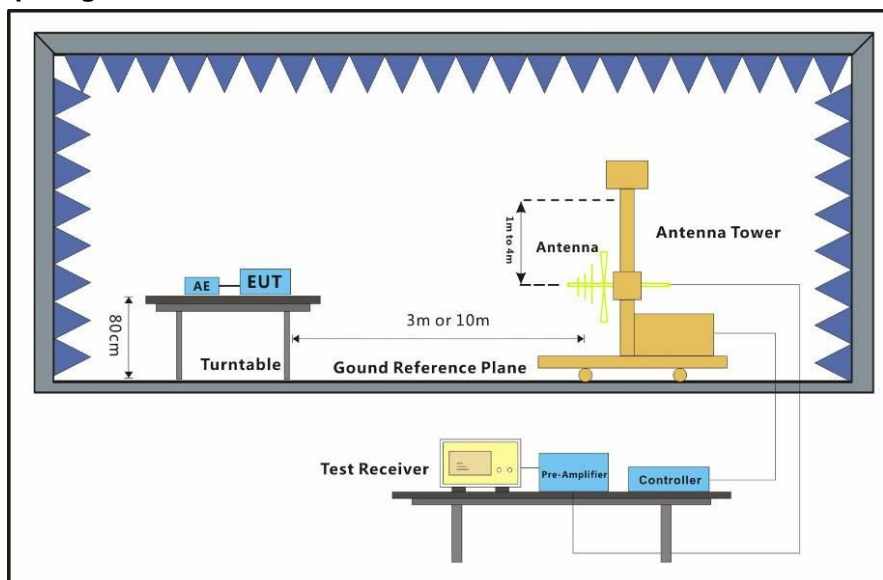
#### 6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar

Test mode a:Normal Working\_Keep the EUT working continuously.

#### 6.1.2 Test Setup Diagram

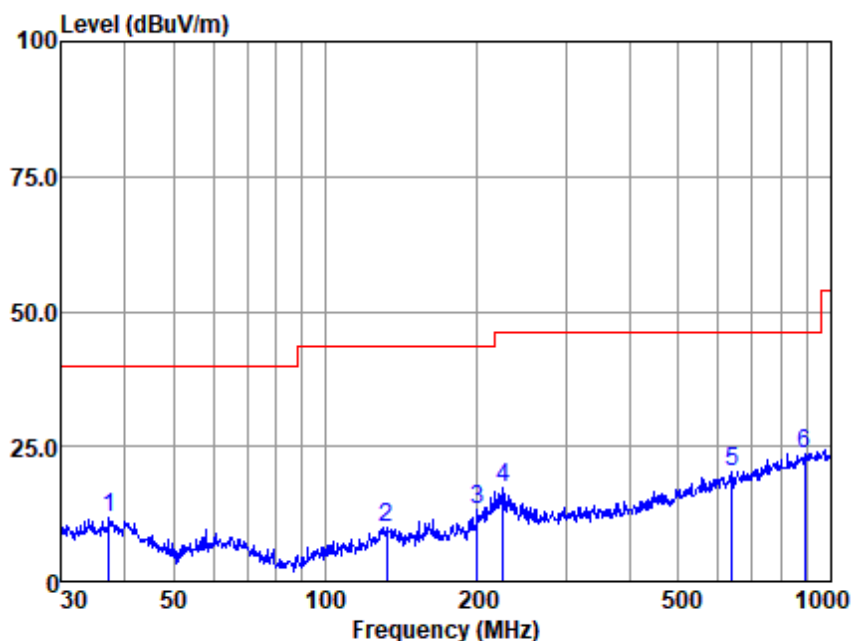


#### 6.1.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.



Mode:a; Polarization:Horizontal



Antenna Polarity :HORIZONTAL

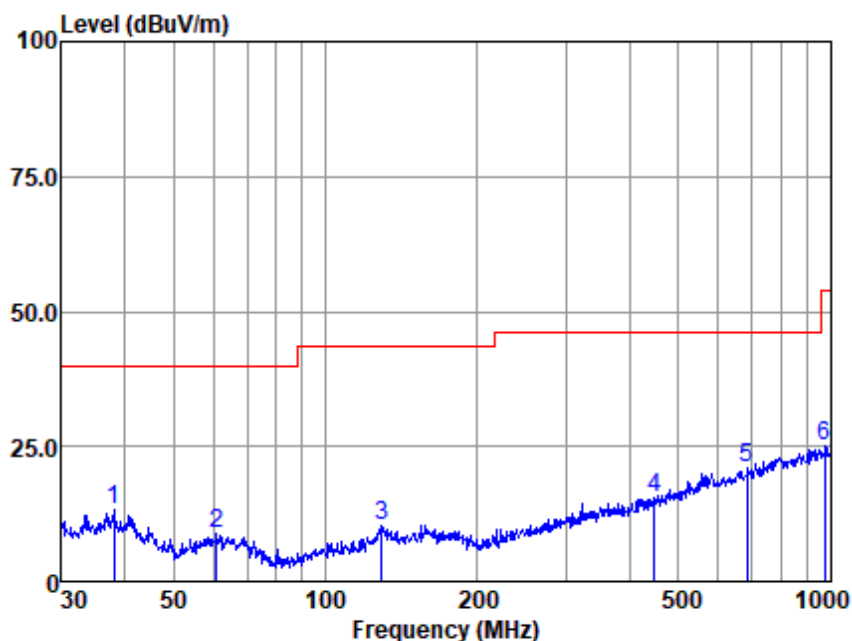
EUT/Project :5452CR

Test mode :a

|   | Freq    | Read Level | Antenna Factor | Cable Loss | Preamplifier Factor | Emission Level | Limit Line | Over Limit | Remark |
|---|---------|------------|----------------|------------|---------------------|----------------|------------|------------|--------|
|   | MHz     | dBuV       | dB/m           | dB         | dB                  | dBuV/m         | dBuV/m     | dB         |        |
| 1 | 37.285  | 37.72      | 16.06          | 0.42       | 42.34               | 11.86          | 40.00      | -28.14     | Peak   |
| 2 | 132.221 | 38.36      | 12.45          | 1.42       | 42.26               | 9.97           | 43.50      | -33.53     | Peak   |
| 3 | 199.986 | 44.43      | 9.40           | 1.75       | 42.18               | 13.40          | 43.50      | -30.10     | Peak   |
| 4 | 224.519 | 46.93      | 10.48          | 2.00       | 42.14               | 17.27          | 46.00      | -28.73     | Peak   |
| 5 | 638.369 | 38.57      | 19.72          | 3.89       | 41.70               | 20.48          | 46.00      | -25.52     | Peak   |
| 6 | 890.728 | 38.05      | 22.61          | 4.61       | 41.69               | 23.58          | 46.00      | -22.42     | Peak   |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamplifier Factor

Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL

EUT/Project :5452CR

Test mode :a

|   | Freq    | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---|---------|------------|----------------|------------|---------------|----------------|------------|------------|--------|
|   | MHz     | dBuV       | dB/m           | dB         | dB            | dBuV/m         | dBuV/m     | dB         |        |
| 1 | 38.078  | 38.97      | 16.14          | 0.46       | 42.34         | 13.23          | 40.00      | -26.77     | Peak   |
| 2 | 60.918  | 38.22      | 12.49          | 0.59       | 42.32         | 8.98           | 40.00      | -31.02     | Peak   |
| 3 | 129.468 | 38.53      | 12.80          | 1.43       | 42.26         | 10.50          | 43.50      | -33.00     | Peak   |
| 4 | 447.982 | 37.98      | 16.17          | 3.19       | 41.76         | 15.58          | 46.00      | -30.42     | Peak   |
| 5 | 684.745 | 38.43      | 20.08          | 4.10       | 41.76         | 20.85          | 46.00      | -25.15     | Peak   |
| 6 | 975.753 | 38.05      | 23.55          | 4.81       | 41.17         | 25.24          | 54.00      | -28.76     | Peak   |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

## 6.2 Radiated Emissions (above 1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Frequency Range: Above 1GHz

Measurement Distance: 3m

Limit:

Above 1GHz 74(dBμV/m) peak, 54(dBμV/m) average

Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000M to 18000MHz

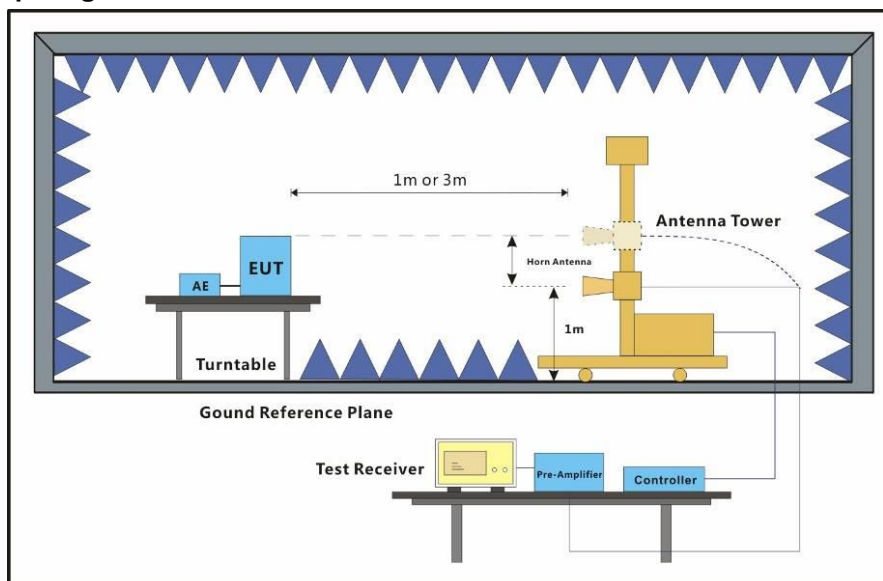
### 6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar

Test mode a: Normal Working\_Keep the EUT working continuously.

### 6.2.2 Test Setup Diagram

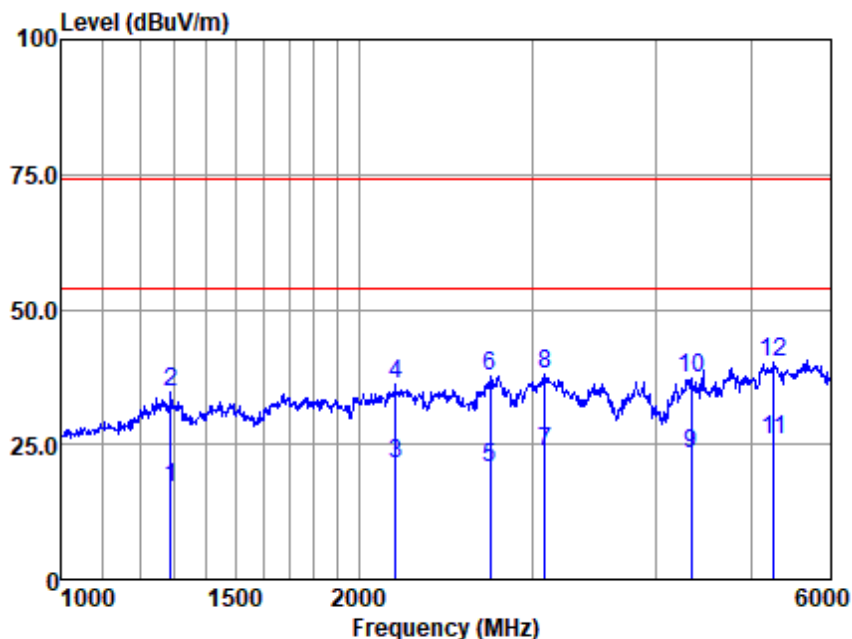


### 6.2.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

**Note:** Scan from 1GHz to 25GHz, the disturbance above 6GHz was very low. So only show the data from 1GHz to 6GHz.

Mode:a; Polarization:Horizontal

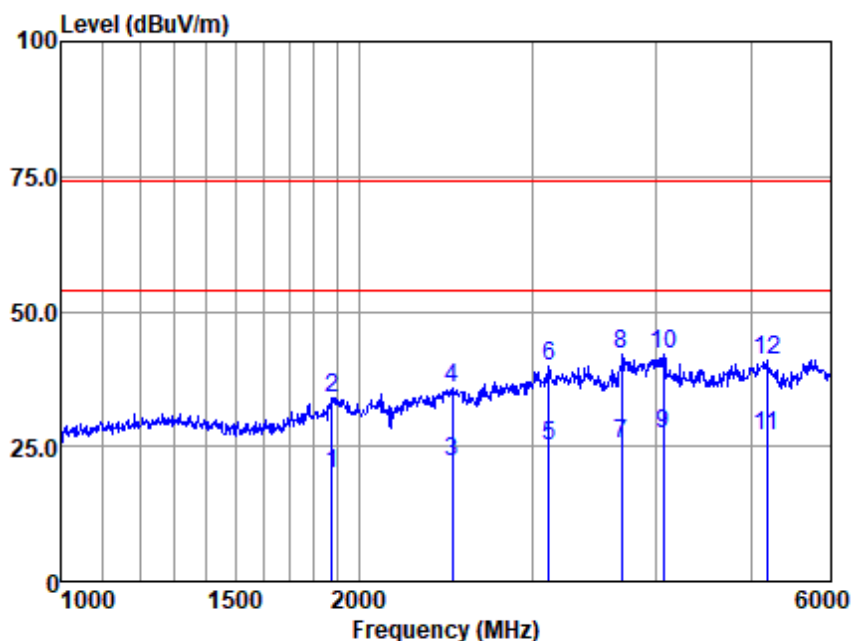


Antenna Polarity :HORIZONTAL  
EUT/Project :5452CR  
Test mode :a

|    | Freq     | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark  |
|----|----------|------------|----------------|------------|---------------|----------------|------------|------------|---------|
|    | MHz      | dBuV       | dB/m           | dB         | dB            | dBuV/m         | dBuV/m     | dB         |         |
| 1  | 1289.726 | 29.31      | 24.79          | 5.35       | 42.45         | 17.00          | 54.00      | -37.00     | Average |
| 2  | 1289.726 | 47.14      | 24.79          | 5.35       | 42.45         | 34.83          | 74.00      | -39.17     | Peak    |
| 3  | 2176.294 | 30.25      | 26.53          | 7.12       | 42.36         | 21.54          | 54.00      | -32.46     | Average |
| 4  | 2176.294 | 44.75      | 26.53          | 7.12       | 42.36         | 36.04          | 74.00      | -37.96     | Peak    |
| 5  | 2717.743 | 26.89      | 27.91          | 8.18       | 42.32         | 20.66          | 54.00      | -33.34     | Average |
| 6  | 2717.743 | 43.89      | 27.91          | 8.18       | 42.32         | 37.66          | 74.00      | -36.34     | Peak    |
| 7  | 3086.435 | 28.69      | 28.56          | 8.70       | 42.31         | 23.64          | 54.00      | -30.36     | Average |
| 8  | 3086.435 | 43.07      | 28.56          | 8.70       | 42.31         | 38.02          | 74.00      | -35.98     | Peak    |
| 9  | 4338.163 | 24.26      | 30.33          | 11.14      | 42.44         | 23.29          | 54.00      | -30.71     | Average |
| 10 | 4338.163 | 38.26      | 30.33          | 11.14      | 42.44         | 37.29          | 74.00      | -36.71     | Peak    |
| 11 | 5254.943 | 24.03      | 31.75          | 12.60      | 42.54         | 25.84          | 54.00      | -28.16     | Average |
| 12 | 5254.943 | 38.30      | 31.75          | 12.60      | 42.54         | 40.11          | 74.00      | -33.89     | Peak    |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL

EUT/Project :5452CR

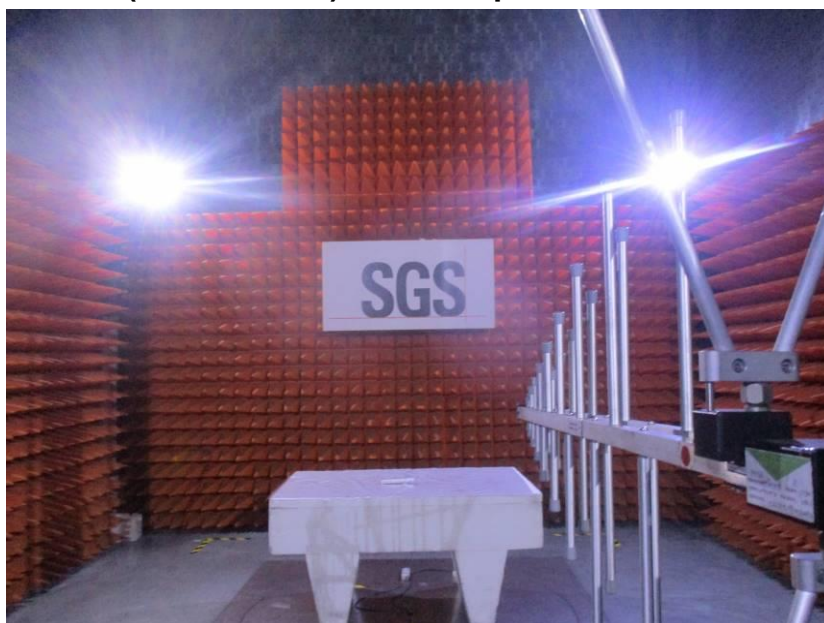
Test mode :a

|    | Freq     | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark  |
|----|----------|------------|----------------|------------|---------------|----------------|------------|------------|---------|
|    | MHz      | dBuV       | dB/m           | dB         | dB            | dBuV/m         | dBuV/m     | dB         |         |
| 1  | 1878.924 | 30.17      | 25.82          | 6.46       | 42.39         | 20.06          | 54.00      | -33.94     | Average |
| 2  | 1878.924 | 44.17      | 25.82          | 6.46       | 42.39         | 34.06          | 74.00      | -39.94     | Peak    |
| 3  | 2484.854 | 29.49      | 27.36          | 7.78       | 42.33         | 22.30          | 54.00      | -31.70     | Average |
| 4  | 2484.854 | 43.05      | 27.36          | 7.78       | 42.33         | 35.86          | 74.00      | -38.14     | Peak    |
| 5  | 3114.210 | 30.11      | 28.57          | 8.77       | 42.31         | 25.14          | 54.00      | -28.86     | Average |
| 6  | 3114.210 | 44.67      | 28.57          | 8.77       | 42.31         | 39.70          | 74.00      | -34.30     | Peak    |
| 7  | 3692.090 | 28.16      | 29.16          | 10.69      | 42.38         | 25.63          | 54.00      | -28.37     | Average |
| 8  | 3692.090 | 44.52      | 29.16          | 10.69      | 42.38         | 41.99          | 74.00      | -32.01     | Peak    |
| 9  | 4067.171 | 28.36      | 29.81          | 11.40      | 42.42         | 27.15          | 54.00      | -26.85     | Average |
| 10 | 4067.171 | 43.11      | 29.81          | 11.40      | 42.42         | 41.90          | 74.00      | -32.10     | Peak    |
| 11 | 5180.156 | 25.20      | 31.71          | 12.59      | 42.53         | 26.97          | 54.00      | -27.03     | Average |
| 12 | 5180.156 | 39.03      | 31.71          | 12.59      | 42.53         | 40.80          | 74.00      | -33.20     | Peak    |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

## 7 Photographs

### 7.1 Radiated Emissions (30MHz-1GHz) Test Setup



### 7.2 Radiated Emissions (above 1GHz) Test Setup



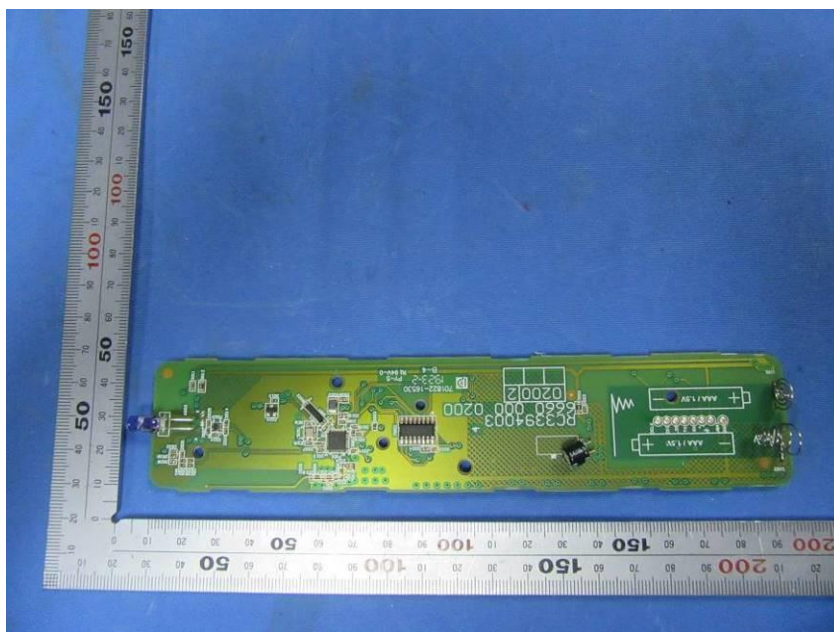
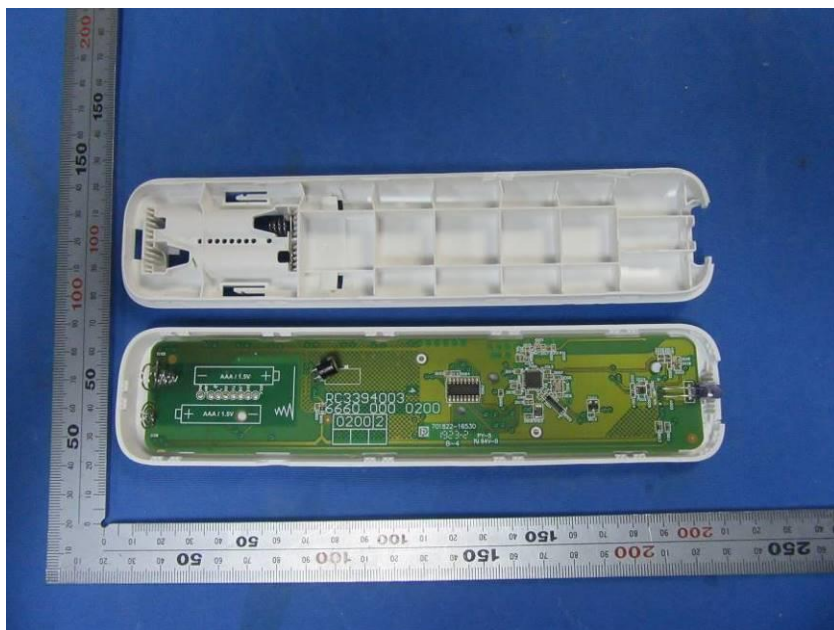


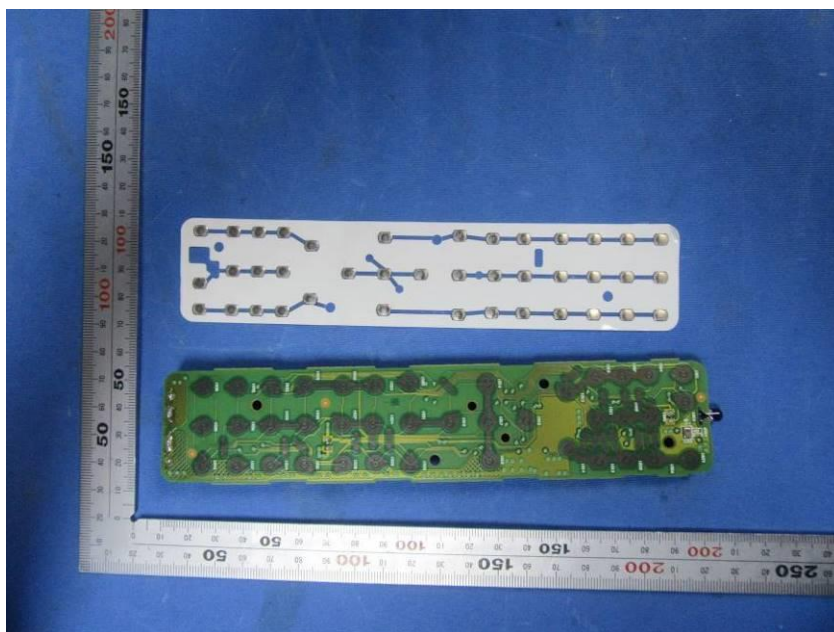
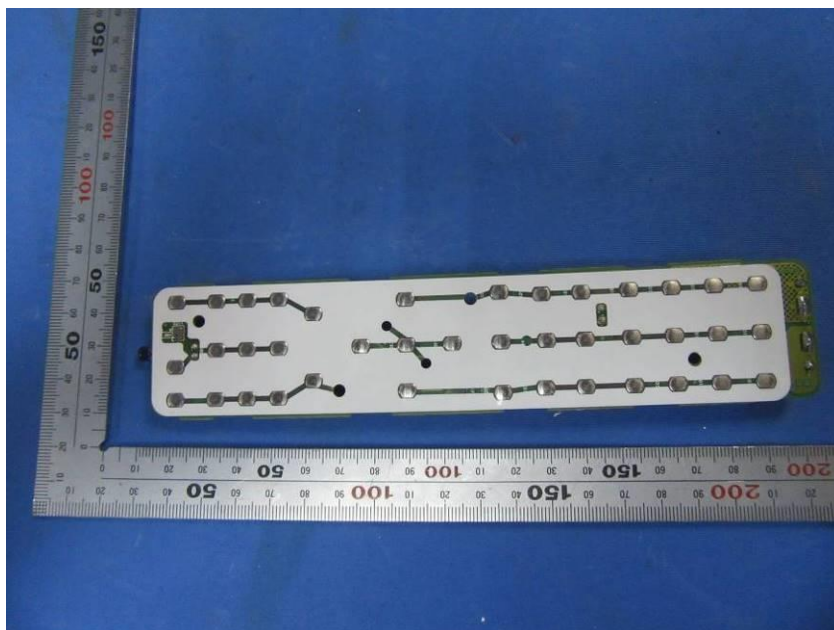
### 7.3 EUT Constructional Details (EUT Photos)











- End of the Report -