

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

Test Result:	Pass*
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* 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:			
			
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		Bill Wu / Project Engineer	
			
		<hr/>	
		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 at mains port using AMN	±2.6dB (9kHz to 150kHz)
		±2.3dB (150kHz to 30MHz)
2	Conducted Emission at mains port using VP	±1.9 dB (9kHz to 30MHz)
3	Conducted Emission at telecommunication port using AAN	±4.1 dB (150kHz to 30MHz)
4	Radiated Power	±3.0dB
5	Radiated emission	±4.4dB (30MHz-1GHz)
		±4.8dB (1GHz-6GHz)
		±5.2dB (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

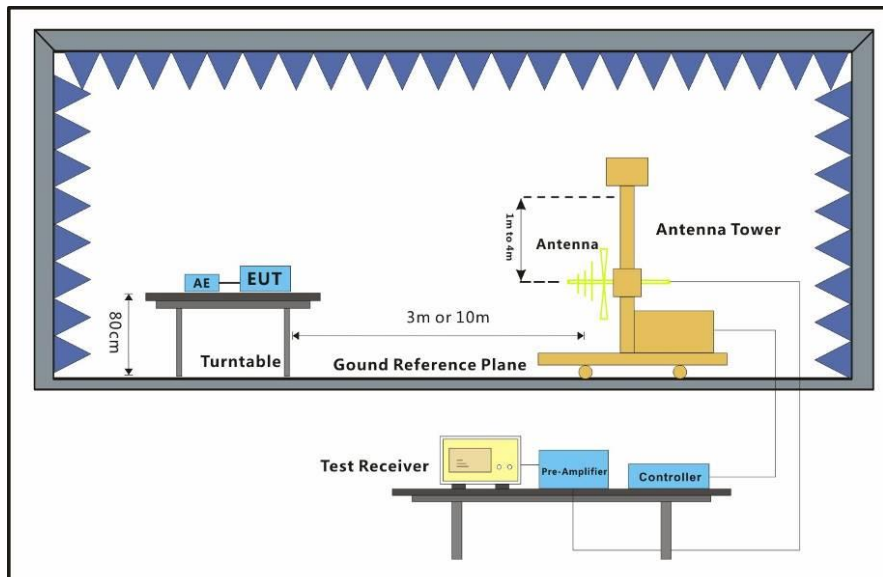
6.1 Radiated Emissions (30MHz-1GHz)

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.		

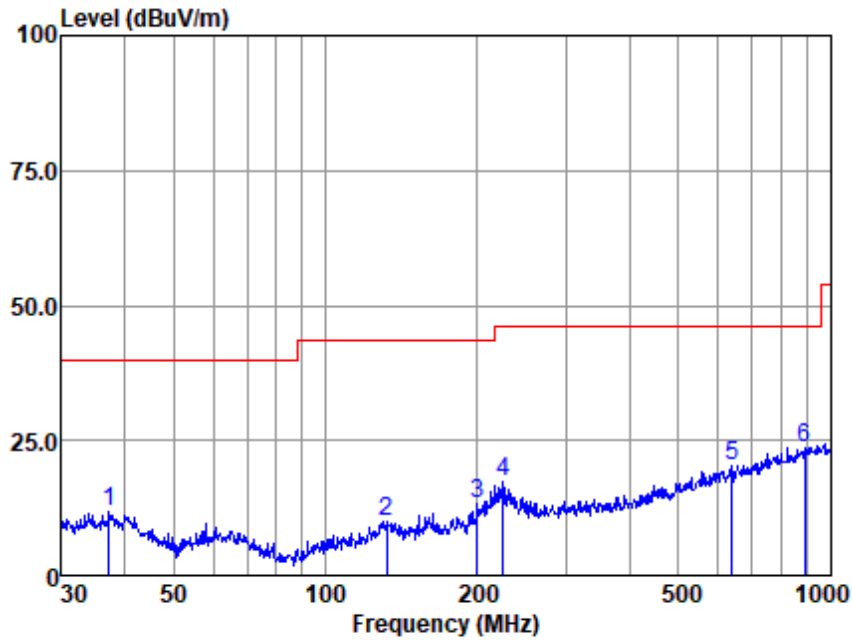
6.1.2 Test Setup Diagram



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

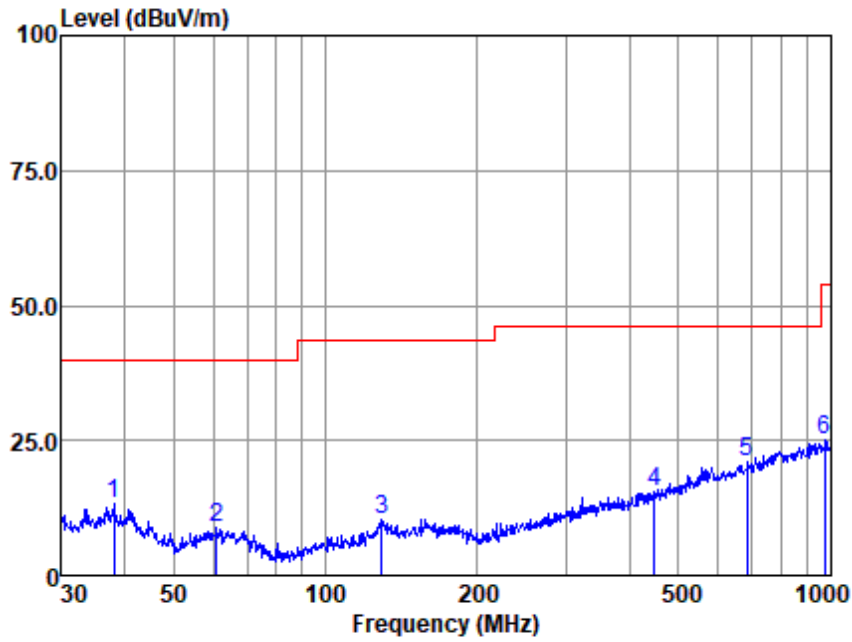


Antenna Polarity :HORIZONTAL
EUT/Project :5452CR
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp 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-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	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(dB μ V/m) peak, 54(dB μ V/m) average
Detector:	Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz

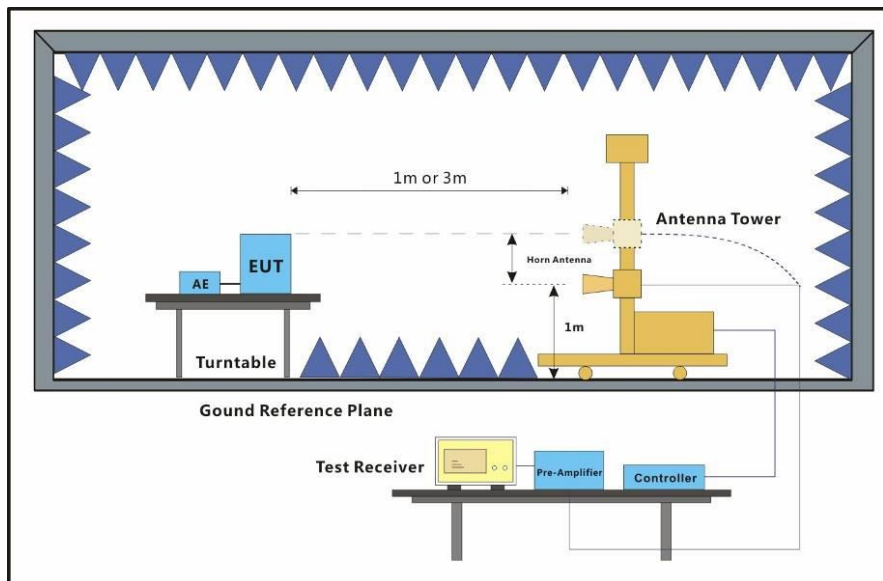
6.2.1 E.U.T. Operation

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

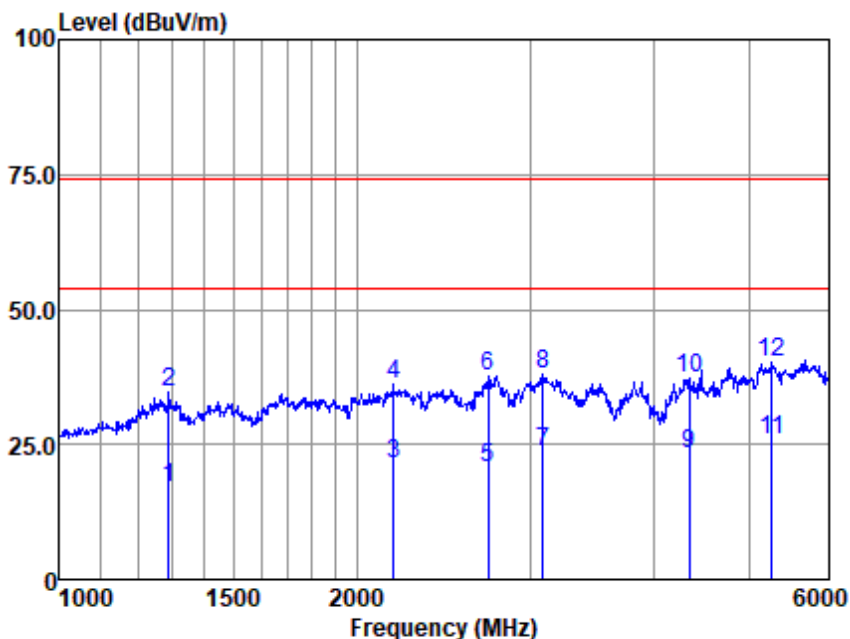


6.2.3 Measurement Data

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

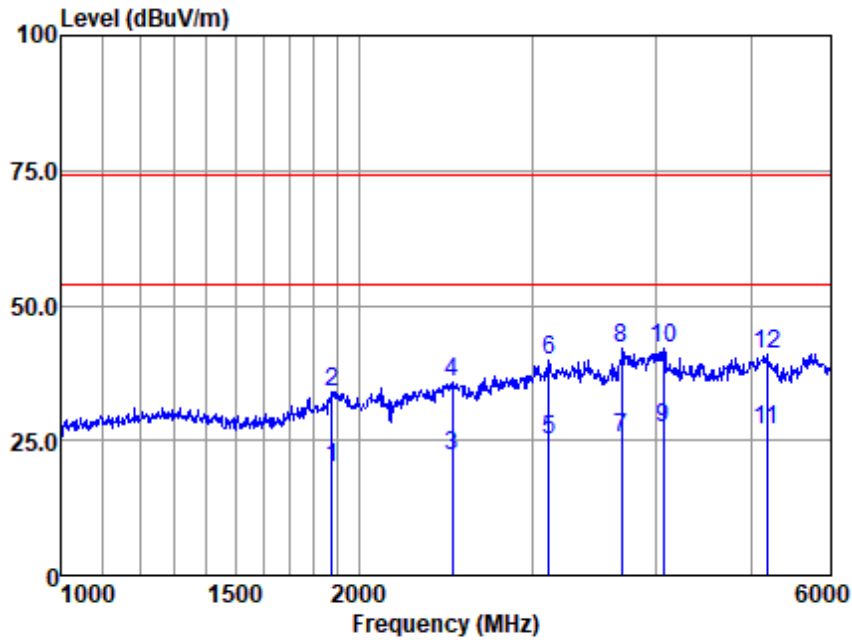


Antenna Polarity :HORIZONTAL
 EUT/Project :5452CR
 Test mode :a

	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

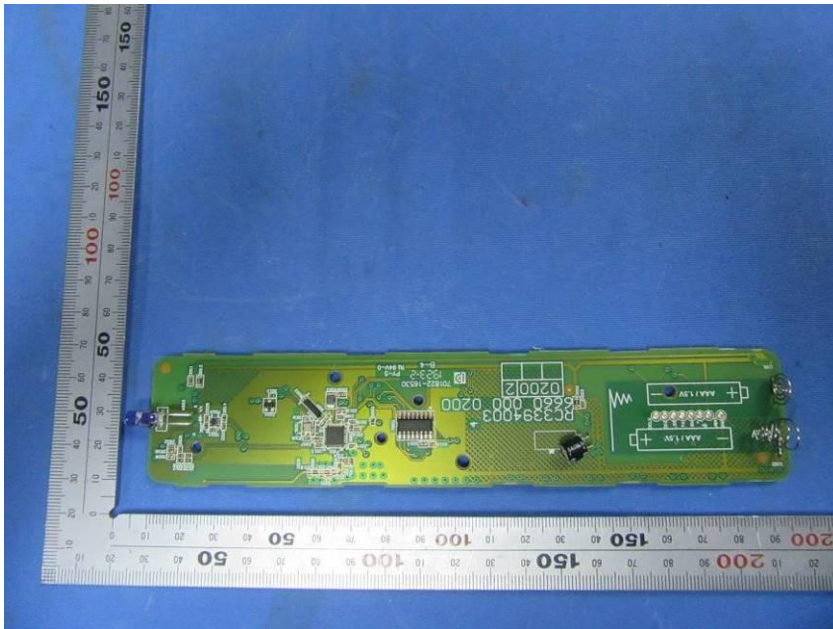
7.1 Radiated Emissions (30MHz-1GHz) Test Setup

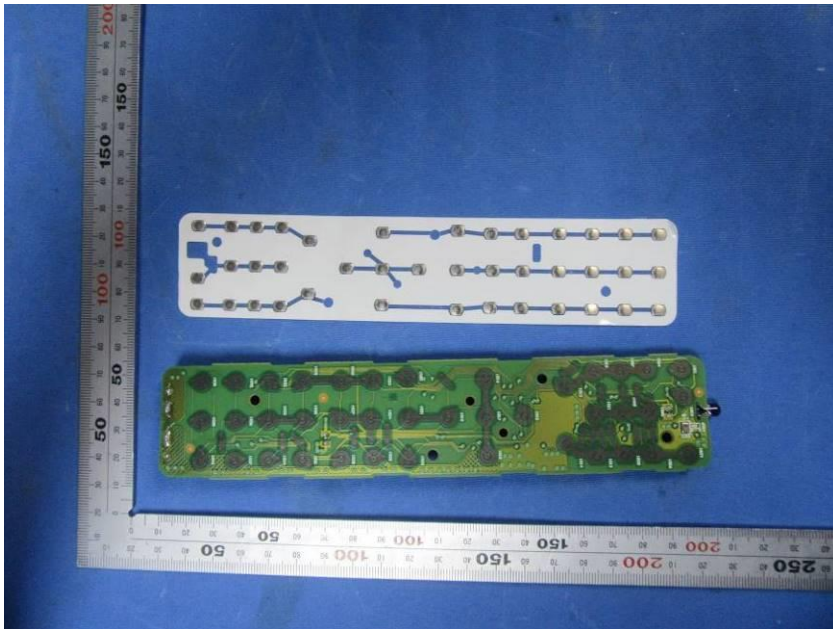


7.2 Radiated Emissions (above 1GHz) Test Setup









- End of the Report -