TEST REPORT

Application No.:	SHEM2011010062MD
Applicant:	Tianjin Yolin Technology Co.,Ltd
Address of Applicant:	52-1 Factory Building,Yougu New Science Park east of Jinfu Road,Medical and Medical Device Industrial Park,Tianjin Beichen Economic and Technological Development Zone,Beichen District.
Manufacturer:	Tianjin Yolin Technology Co.,Ltd
Address of Manufacturer:	52-1 Factory Building,Yougu New Science Park east of Jinfu Road,Medical and Medical Device Industrial Park,Tianjin Beichen Economic and Technological Development Zone,Beichen District.
Factory:	Tianjin Yolin Technology Co.,Ltd
Address of Factory:	52-1 Factory Building,Yougu New Science Park east of Jinfu Road,Medical and Medical Device Industrial Park,Tianjin Beichen Economic and Technological Development Zone,Beichen District.
Equipment Under Test (EUT):	
EUT Name:	YL81C
Model No.:	YL81C
Standard(s) :	EN 61000-6-3:2007 +A1:2011
	EN IEC 61000-6-1:2019
Date of Receipt:	2020-11-30
Date of Test:	2020-12-02 to 2020-12-03
Date of Issue:	2020-12-04
Test Result:	**Pass***

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

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.

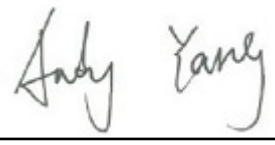
CE

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.

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. Testing Center EMC Section
NO.588 West Jindu Road,Songjiang District,Shanghai,China 201612 t(86-21)61915666 f(86-21)61915678 www.sgsgroup.com.cn
中国·上海·松江区金都西路588号 邮编: 201612 t(86-21)61915666 f(86-21)61915678 e sgs.china@sgs.com

Revision Record			
Version	**Description**	**Date**	**Remark**
00	Original	2020-12-04	/

Authorized for issue by:				
				
		Andy Yang / Project Engineer		
				
		Bruce Tang / Reviewer		

2 Test Summary

Emission Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Radiated Emissions (30MHz-1GHz)	EN 61000-6-3:2007 +A1:2011	CISPR 16-2-3	N/A	Pass

N/A: Not applicable

Immunity Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Electrostatic Discharge	EN IEC 61000-6-1:2019	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass
Radiated Immunity (80MHz-6GHz)	EN IEC 61000-6-1:2019	EN 61000-4-3:2006 +A1:2008+A2:2010	3V/m, 80%, 1kHz Amp. Mod. 3V/m, 80%, 1kHz Amp. Mod.	Pass

N/A: Not applicable

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply: DC 36V
Test voltage: DC 36V
Cable: DC cable 30cm

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)
		2.4dB (150kHz to 30MHz)
2	Conducted Emission at mains port using VP	1.8 dB (9kHz to 30MHz)
3	Conducted Emission at telecommunication port using AAN	4.2 dB (150kHz to 30MHz)
4	Radiated Power	3.2dB
5	Radiated Emission	4.5dB (30MHz-1GHz)
		5.1dB (1GHz-6GHz)
		5.4dB (6GHz-18GHz)
6	Radiated Disturbance (disturbance current in a LLAS)	2.4dB (9kHz to 30MHz)

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 17025:2017 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.

• NVLAP (LAB CODE: 201034-0)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

• FCC (Designation Number: CN5033)

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

• ISED (CAB Identifier: CN0020)

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

• 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

4.8 Monitoring of EUT for All Immunity Test

Visual: Working status of EUT.

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	2019-12-20	2020-12-19
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	2019-10-14	2021-10-13
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2020-05-25	2023-05-24
Low Amplifier	CLAVIIO	BDLNA-0001-412010	SHEM164-1	2020-08-13	2021-08-12

Electrostatic Discharge					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Electrostatic Discharge Simulator	TESEQ	NSG 437	SHEM041-2	2020-08-13	2021-08-12

Radiated Immunity (80MHz-6GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Signal generator	Rohde & Schwarz	SMJ100A	SHEM141-1	2020-08-13	2021-08-12
Power Meter	Rohde & Schwarz	NRP	SHEM057-1	2020-04-15	2021-04-14
Power meter sensor	Rohde & Schwarz	NRP-Z91	SHEM057-2	2020-04-15	2021-04-14
Antenna	SCHWARZBECK	STLP9128D	SHEM130-1	N/A	N/A
Amplifier	MILMEGA	AS0840-55-55	SHEM133-1	2019-12-20	2020-12-19
Power meter sensor	Rohde & Schwarz	NRP-Z22	SHEM136-1	2020-04-15	2021-04-14
ElectroMagnetic Field Probe	ETS-Lindgren	HI-6105	SHEM134-1	2020-08-13	2021-08-12

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	2020-09-11	2021-09-10
Digital Multimeter	FLUKE	17B	SHEM043-3	2020-09-09	2021-09-08
Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	SHEM150-1	N/A	N/A
Multi-purpose tong tester	FLUKE	316	SHEM001-1	2019-12-20	2020-12-19

6 Emission Test Results

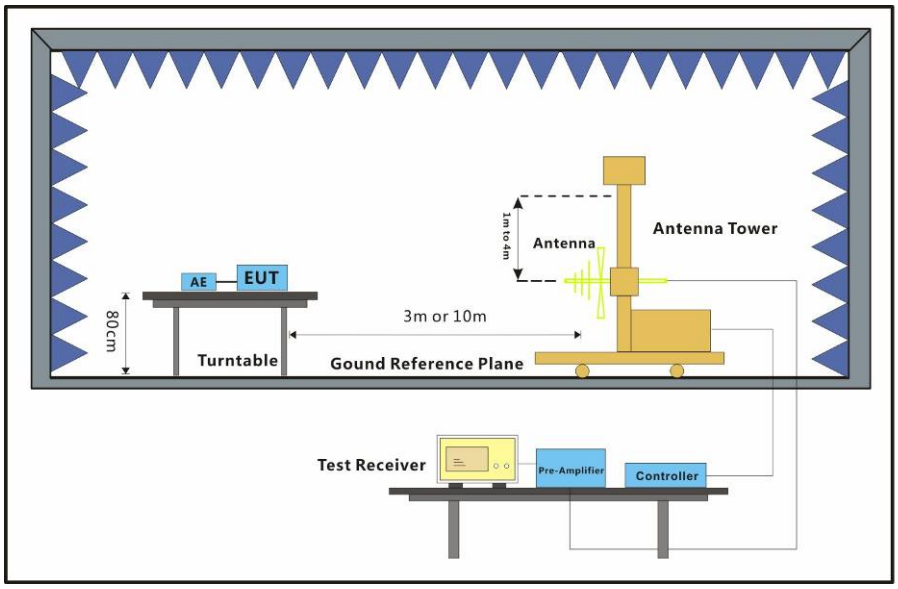
6.1 Radiated Emissions (30MHz-1GHz)

Test Requirement: EN 61000-6-3:2007 +A1:2011
Test Method: CISPR 16-2-3
Frequency Range: 30MHz to 1GHz
Measurement Distance: 3m
Limit:
30MHz-230MHz 40 dB(μV/m) quasi-peak
230MHz-1GHz 47 dB(μV/m) quasi-peak
Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

6.1.1 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar
Test mode a: Running mode: Keep EUT running continuously.

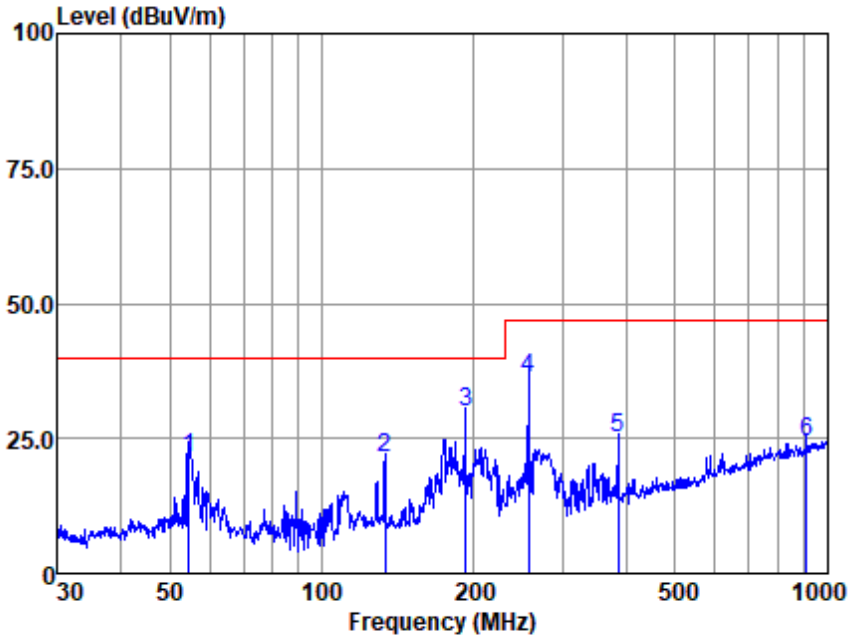
6.1.2 Test Setup Diagram



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

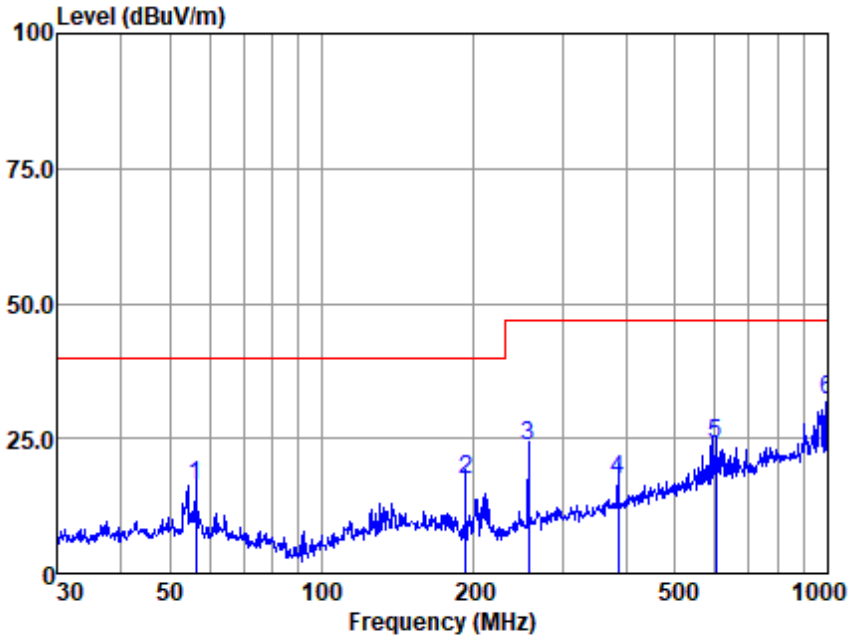


Antenna Polarity :HORIZONTAL
EUT/Project :0062MD
Test mode :a

	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	54.643	49.07	13.41	1.08	42.33	21.23	40.00	-18.77	QP
2	133.151	49.94	12.03	1.60	42.26	21.31	40.00	-18.69	QP
3	192.419	59.61	10.34	1.96	42.19	29.72	40.00	-10.28	QP
4	256.521	64.02	11.96	2.24	42.10	36.12	47.00	-10.88	QP
5	385.281	49.00	15.21	2.63	41.93	24.91	47.00	-22.09	QP
6	909.667	38.52	23.52	3.92	41.61	24.35	47.00	-22.65	QP

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

Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL
EUT/Project :0062MD
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	56.197	44.21	13.32	1.08	42.33	16.28	40.00	-23.72	QP
2	192.419	47.07	10.34	1.96	42.19	17.18	40.00	-22.82	QP
3	256.521	51.36	11.96	2.24	42.10	23.46	47.00	-23.54	QP
4	385.281	41.55	15.21	2.63	41.93	17.46	47.00	-29.54	QP
5	603.539	42.85	19.66	3.23	41.68	24.06	47.00	-22.94	QP
6	1000.000	44.99	24.00	4.10	40.95	32.14	47.00	-14.86	QP

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

7 Immunity Test Results

7.1 Performance Criteria Description in EN IEC 61000-6-1:2019

Criterion A The EUT shall continue to operate as intended during and after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the EUT is used as intended. If the performance level is not specified by the manufacturer, this may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

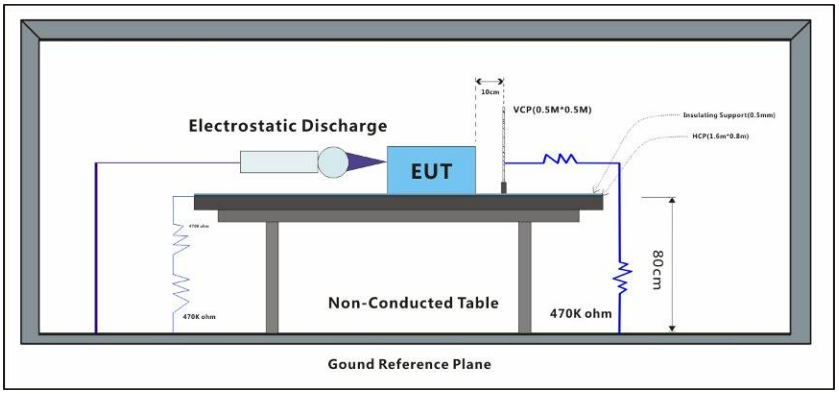
Criterion B The EUT shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the EUT is used as intended. The performance level may be replaced by a permissible loss of performance. However, during the test degradation of performance is allowed but no change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

Criterion C Temporary loss of function is allowed during the test, provided the function is self-recoverable or can be restored by the operation of the controls.

7.2 Electrostatic Discharge

Test Requirement: EN IEC 61000-6-1:2019
Test Method: EN 61000-4-2:2009
Performance Criterion: B
Discharge Impedance: 330Ω/150pF
Number of Discharge: Minimum 10 times at each test point
Discharge Mode: Single Discharge
Discharge Period: 1 second minimum

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar
Test mode: a: Running mode: Keep EUT running continuously.

7.2.3 Test Results:

Observations: Test Point:
1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

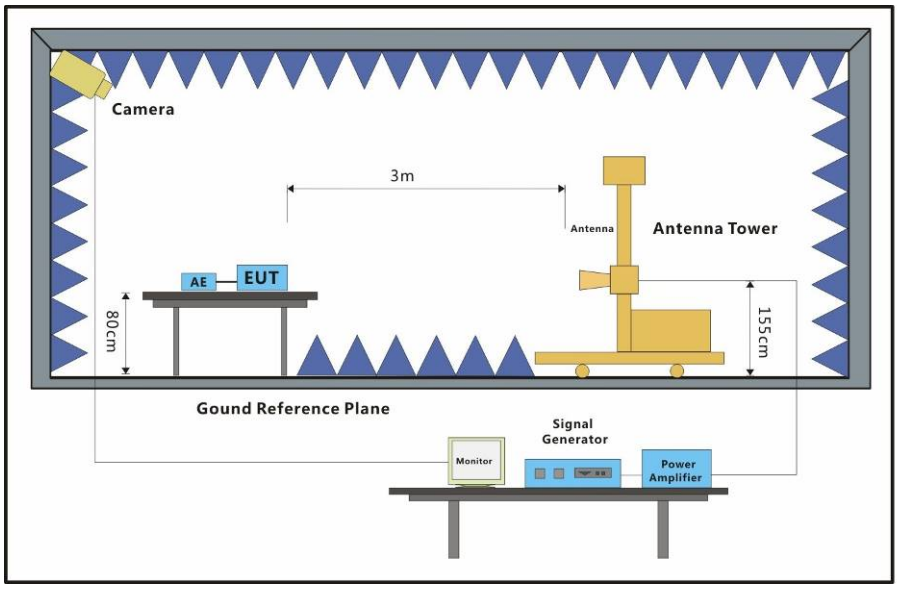
Results:

A: No degradation in the performance of the EUT was observed.

7.3 Radiated Immunity (80MHz-6GHz)

Test Requirement: EN IEC 61000-6-1:2019
Test Method: EN 61000-4-3:2006 +A1:2008+A2:2010
Performance Criterion: A
Frequency Range: 80MHz to 1GHz, 1.4GHz to 6GHz
Antenna Polarisation: Vertical and Horizontal
Modulation: 1kHz,80% Amp. Mod,1% increment

7.3.1 Test Setup Diagram



7.3.2 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar
Test mode: a: Running mode: Keep EUT running continuously.

7.3.3 Test Results:

Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-1GHz	3	Front	3s	A
80MHz-1GHz	3	Back	3s	A
80MHz-1GHz	3	Left	3s	A
80MHz-1GHz	3	Right	3s	A
80MHz-1GHz	3	Top	3s	A
80MHz-1GHz	3	Underside	3s	A
1.4GHz-6GHz	3	Front	3s	A
1.4GHz-6GHz	3	Back	3s	A
1.4GHz-6GHz	3	Left	3s	A
1.4GHz-6GHz	3	Right	3s	A
1.4GHz-6GHz	3	Top	3s	A
1.4GHz-6GHz	3	Underside	3s	A

Results:

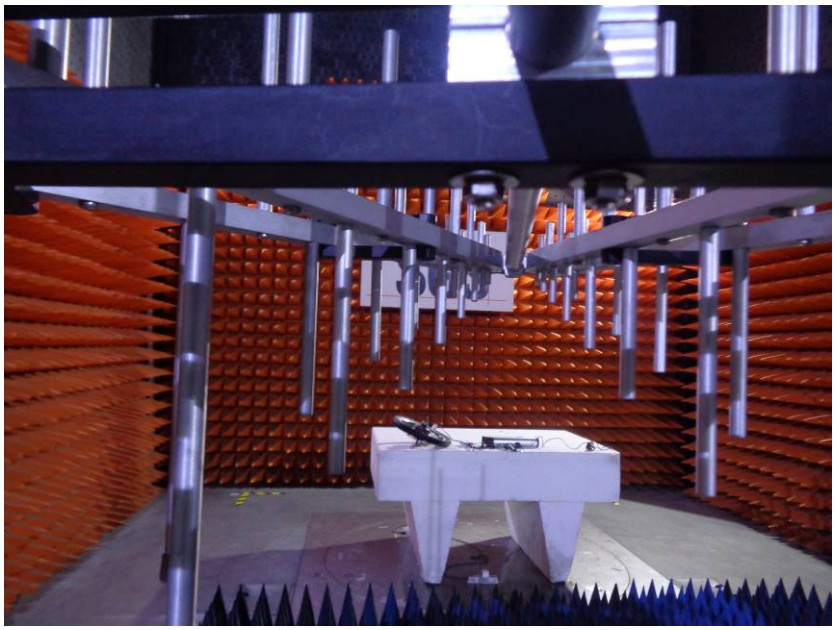
A: No degradation in the performance of the EUT was observed.

8 Photographs

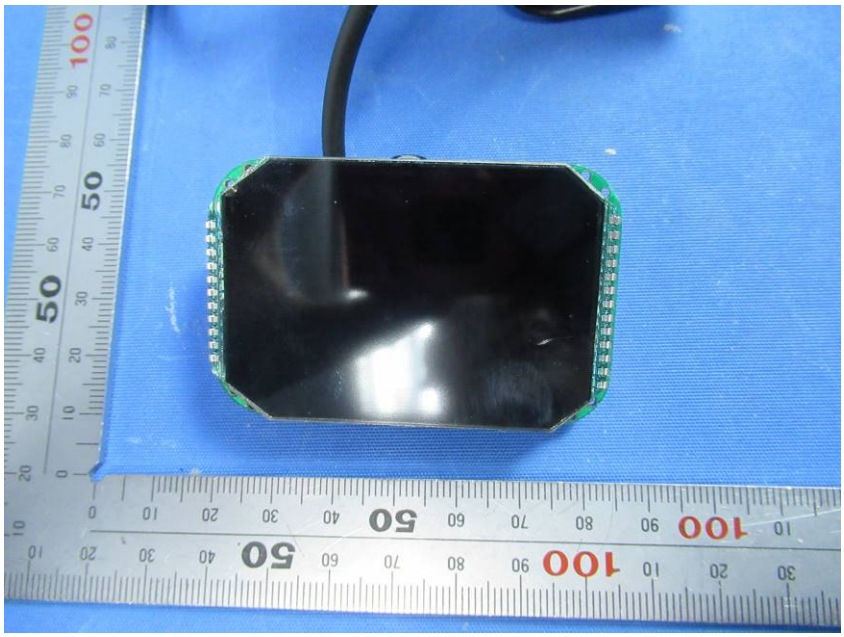
8.1 Radiated Emissions (30MHz-1GHz) Test Setup

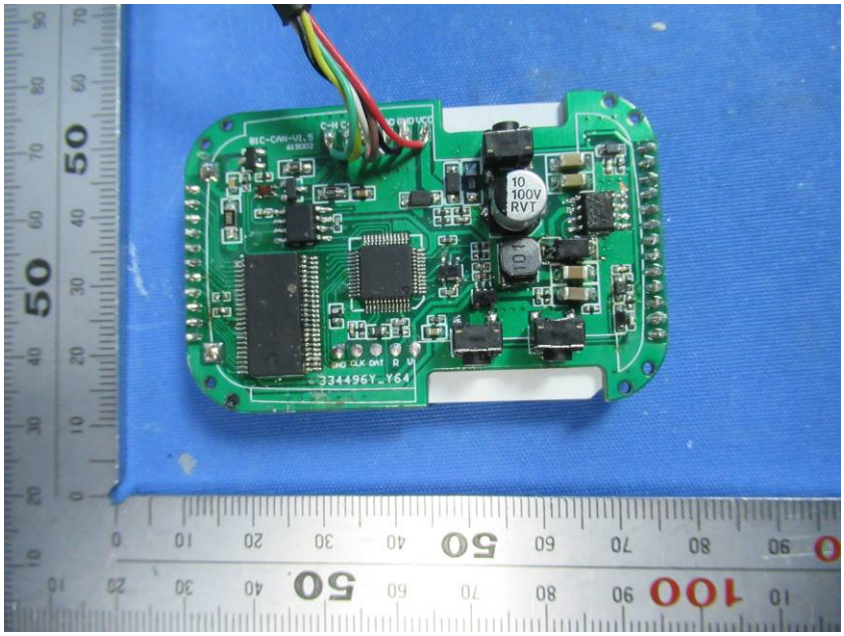
8.2 Electrostatic Discharge Test Setup

8.3 Radiated Immunity (80MHz-6GHz) Test Setup



8.4 EUT Constructional Details (EUT Photos)





- End of the Report -