中国认可
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检测
TESTING
CNAS L6478

TEST REPORT

Reference No.	:	WTF20F01000517E
Applicant	:	Mid Ocean Brands B. V.
Address	:	7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Manufacturer	:	111033
Product Name	:	A4 Portfolio
Model No.	:	KC8063
Standards	:	EN 55032:2015 EN 55024:2010+A1:2015
Date of Receipt sample	:	2020-01-09
Date of Test	:	2020-01-09
Date of Issue	:	2020-01-09
Test Report Form No.	:	WEI-55032A-02A
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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Compiled by:

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Approved by:

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1 Test Summary

EMISSION (EN 55032:2015)			
Test Item	**Test Standard**	**Class / Severity**	**Result**
Radiation Emission, 30MHz to 1000MHz	EN 55032:2015	Table A.4	Pass

IMMUNITY (EN 55024:2010+A1:2015)				
Test Item	**Test Method**	**Class / Severity**	**Performance Criteria**	**Result**
Electrostatic Discharge(ESD)	IEC 61000-4-2:2008	±4 kV Contact ±8 kV Air	B	Pass
Radio-Frequency Electromagnetic Fields (80MHz to 1GHz)	IEC 61000-4-3:2010	3V/m, 80%, 1kHz, Amp. Mod.	A	Pass

Remark:

Pass	Test item meets the requirement
N/A	Test case does not apply to the test object

2 Contents

3 General Information

3.1 General Description of E.U.T.

Product Name ..... : A4 Portfolio

Model No. ..... : KC8063

Remark..... : ---

3.2 Details of E.U.T.

Technical Data..... : Battery 3V

3.3 Description of Support Units

The EUT has been tested as an independent unit. KC8063 is the test sample. All tests were performed in the condition of DC 3V.

3.4 Standards Applicable for Testing

The tests were performed according to following standards:

EN 55032:2015	Electromagnetic compatibility of multimedia equipment — Emission Requirements
EN 55024:2010+A1:2015	Information technology equipment — Immunity characteristics — Limits and methods of measurement.

3.5 Test Facility

The test facility has a test site registered with the following organizations:

- **ISED – Registration No.: 21895**

Waltek Services (Foshan) Co., Ltd. has been registered and fully described in a report filed with the Innovation, Science an Economic Development Canada(ISED). The acceptance letter from the ISED is maintained in our files. Registration ISED number:21895, March 12, 2019

- **FCC – Registration No.: 820106**

Waltek Services (Foshan) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 820106, August 16, 2018

- **NVLAP – Lab Code: 600191-0**

Waltek Services (Foshan) Co., Ltd. EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 600191-0.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

3.6 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test items:---

Lab information: ---

3.7 Abnormalities from Standard Conditions

None.

4 Equipment Used during Test

Radiated Emission					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Status**
1.	EMI Test Receiver	R&S	ESR7	101566	Valid
2.	Active Loop Antenna	SCHWARZBECK	FMZB1519B	00004	Valid
3.	Trilog Broadband Antenna	SCHWARZBECK	VULB 9162	9162-117	Valid
ESD					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Status**
1.	ESD Simulator	TESEQ	NSG437	521	Valid
Continuous RF Electromagnetic Field Disturbances					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Status**
1.	RF Power Amplifier	OPHIR	5225R	1051/1712	Valid
2.	RF Power Amplifier	OPHIR	5293RE	1051/171	Valid
3.	Stacked double logarithmic periodic antenna	SCHWARZBECK	STLP9128E-SPECIAL	STLP 9128E	Valid
4.	Stacked double logarithmic periodic antenna	SCHWARZBECK	STLP 9149	STLP 9149 #476	Valid
5.	RF signal generator	Agilent	N5181A	MY48080720	Valid
6.	Power meter	RS	NRP6A	101133	Valid
7.	Power meter	RS	NRP6A	101134	Valid
8.	Electric field probe	Narda S.T.S/PMM	EP 601	---	Valid

4.1 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Radiated Emission	30MHz~1000MHz	±4.56dB	(1)

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5 Emission Test Results

5.1 Radiated Emission , 30MHz to 1000MHz

Test Requirement..... : EN 55032

Test Method..... : EN 55032

Test Limit..... : Table A.4 of EN 55032

Test Result..... : Pass

Frequency Range..... : 30MHz to 1000MHz

Class...... : Class B

5.1.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 23.1°C

Humidity..... : 43.2%RH

Atmospheric Pressure..... : 101.2 kPa

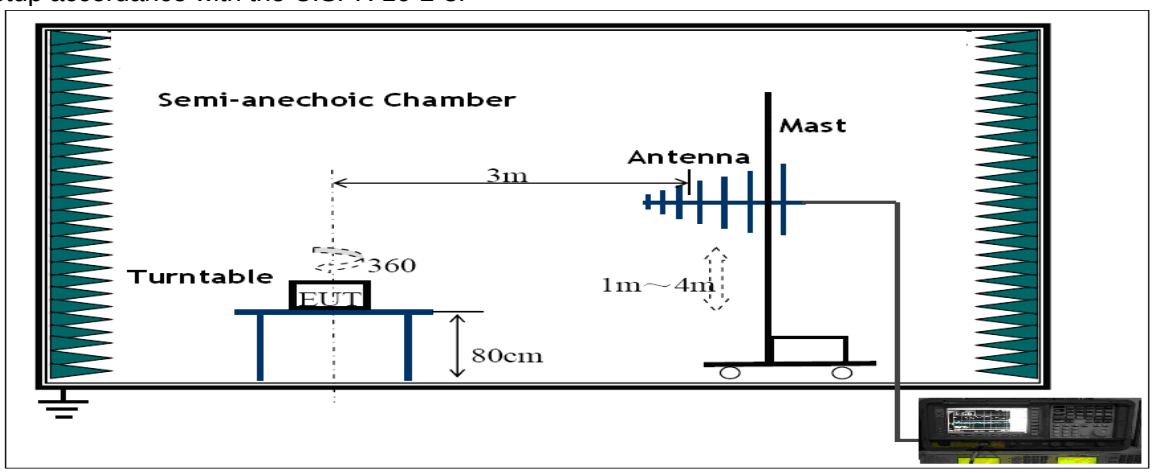
EUT Operation:

Input Voltage ..... : DC 3V

Operating Mode..... : Working mode

5.1.2 Block Diagram of Test Setup

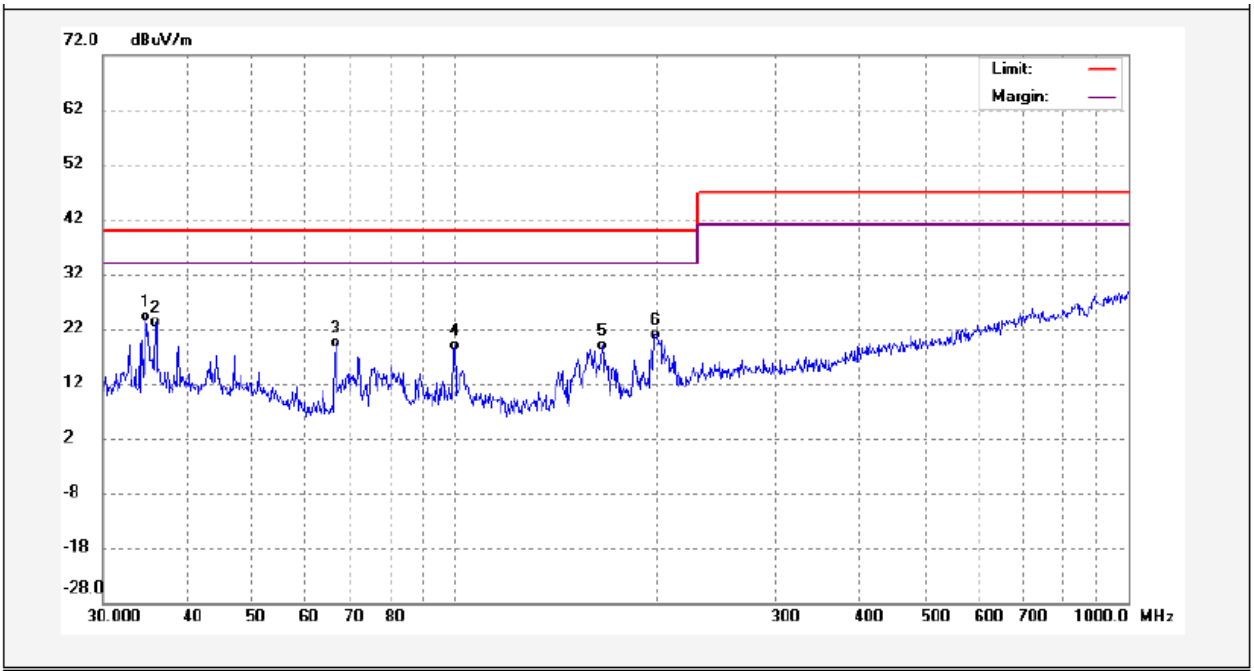
The Radiated Emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the CISPR 16-2-3.



5.1.3 Radiated Emission Test Data

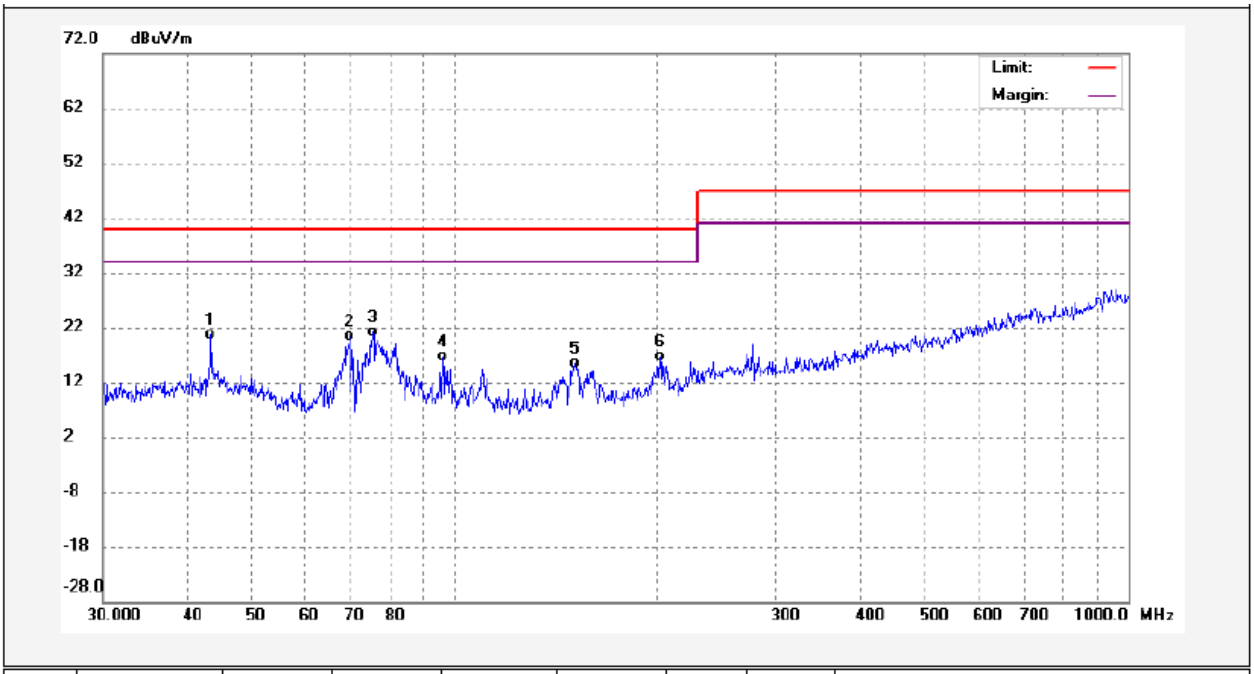
According to the data in section 5.2.4, the EUT complied with the EN 55032 standards.

Vertical Polarization



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	34.7601	11.28	12.73	24.01	40.00	-15.99	QP	
2	35.8746	10.12	13.03	23.15	40.00	-16.85	QP	
3	66.4989	9.80	9.59	19.39	40.00	-20.61	QP	
4	99.8777	7.48	11.44	18.92	40.00	-21.08	QP	
5	165.4866	7.66	11.32	18.98	40.00	-21.02	QP	
6	198.5879	7.89	13.02	20.91	40.00	-19.09	QP	

Horizontal Polarization



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	43.3534	5.41	15.10	20.51	40.00	-19.49	QP	
2	69.8450	10.53	9.85	20.38	40.00	-19.62	QP	
3	75.4464	11.37	9.65	21.02	40.00	-18.98	QP	
4	95.7622	6.03	10.48	16.51	40.00	-23.49	QP	
5	151.0666	4.95	10.45	15.40	40.00	-24.60	QP	
6	201.3930	3.59	13.03	16.62	40.00	-23.38	QP	

6 Immunity Test Results

6.1 Performance Criteria

Performance criterion A: The apparatus shall continue to operate as intended during the test.
No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance criterion B: The apparatus shall continue to operate as intended after the test.
No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however, 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, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance criterion C: Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.
For further details, please refer to EN 55024.

6.2 Electrostatic Discharge (ESD)

Test Requirement	:	EN 55024
Test Method	:	IEC 61000-4-2
Test Result	:	Pass
Discharge Impedance	:	330Ω / 150pF
Discharge Voltage	:	Air Discharge: ±8kV Contact Discharge: ±4kV HCP & VCP: ±4kV
Polarity.....	:	Positive & Negative
Number of Discharge	:	Minimum 10 times at each test point
Discharge Mode.....	:	Single Discharge
Discharge Period	:	1 second minimum

6.2.1 E.U.T. Operation

Operating Environment:

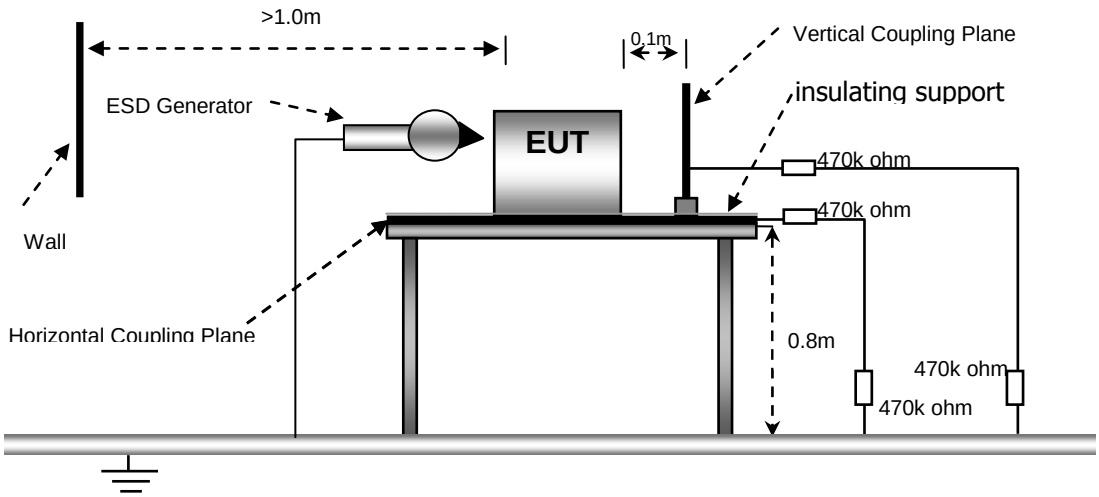
Temperature.....	:	23.1°C
Humidity	:	48.9%RH
Atmospheric Pressure	:	100.1kPa

EUT Operation:

Input Voltage.....	:	DC 3V
Operating Mode	:	Working mode

6.2.2 Block Diagram of Test Setup

The ESD test was performed in accordance with the IEC 61000-4-2.



6.2.3 Direct Discharge Test Results

Observations : **Test points :** **1. All Exposed Surface & Seams;**
2. All metallic part

Direct Discharge			Test Results	
Applied Voltage (kV)	**Performance Criterion**	**Test Point**	**Contact Discharge**	**Air Discharge**
±8	B	1	N/A	Pass*
±4	B	2	Pass*	N/A

Remark: * During the test no deviation was detected to the selected operation mode(s)

6.2.4 Indirect Discharge Test Results

Observations : **Test points :** **1. All sides.**

Indirect Discharge			Test Results	
Applied Voltage (kV)	**Performance Criterion**	**Test Point**	**Horizontal Coupling**	**Vertical Coupling**
±4	B	1	Pass*	Pass*

Remark: * During the test no deviation was detected to the selected operation mode(s)

6.3 Radio-Frequency Electromagnetic Fields, 80MHz to 1GHz

Test Requirement ..... : EN 55024

Test Method ..... : IEC 61000-4-3

Test Result ..... : Pass

Frequency Range ..... : 80MHz to 1GHz

Test level ..... : 3V/m

Modulation ..... : 80%, 1kHz Amplitude Modulation.

Face of EUT ..... : Front, Back, Left, Right

Antenna polarisation ..... : Horizontal & Vertical

6.3.1E.U.T. Operation

Operating Environment:

Temperature..... : 24.1°C

Humidity ..... : 49.3%RH

Barometric Pressure ..... : 100.5Pa

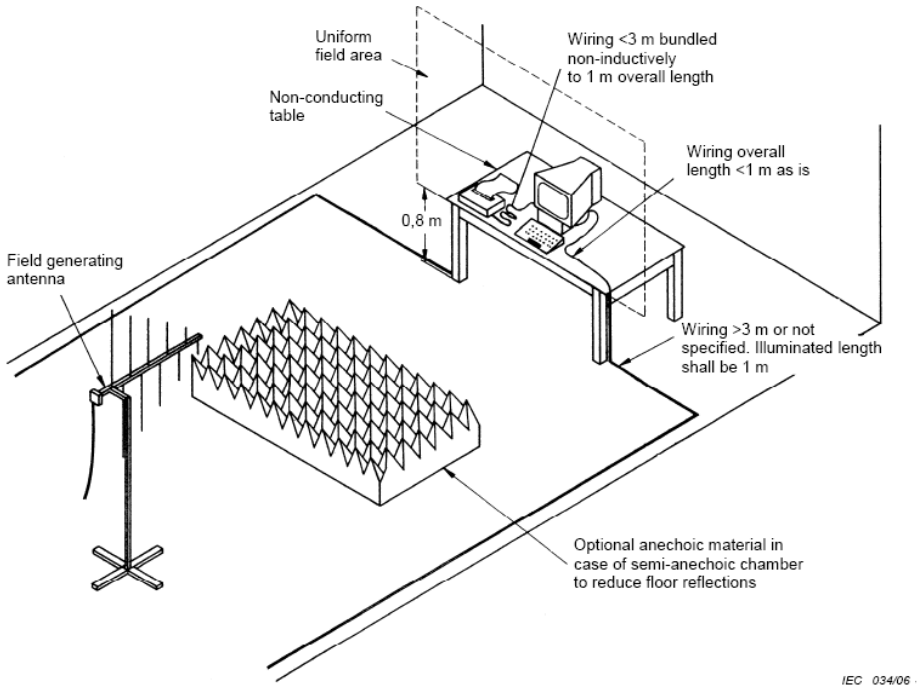
EUT Operation:

Input Voltage..... : DC 3V

Operating Mode..... : Working mode

6.3.2 Block Diagram of Setup

The Radio-frequency electromagnetic fields Immunity test was performed in accordance with the IEC 61000-4-3.



6.3.3 Test Results

Frequency	Face of EUT	Antenna polarisation	Test Level	Step Size	Dwell Time	Performance Criterion	Result
80 to 1000MHz	Front, Back, Left, Right	Horizontal	3V/m	1%	1s	A	Pass*
80 to 1000MHz	Front, Back, Left, Right	Vertical	3V/m	1%	1s	A	Pass*

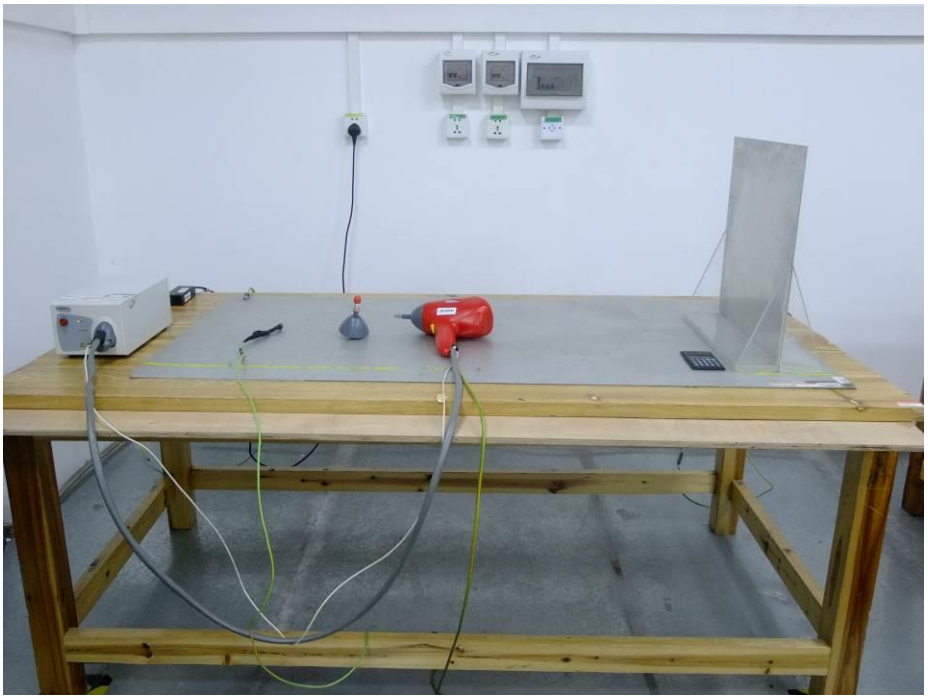
Remark:

* During the test no deviation was detected to the selected operation mode(s)

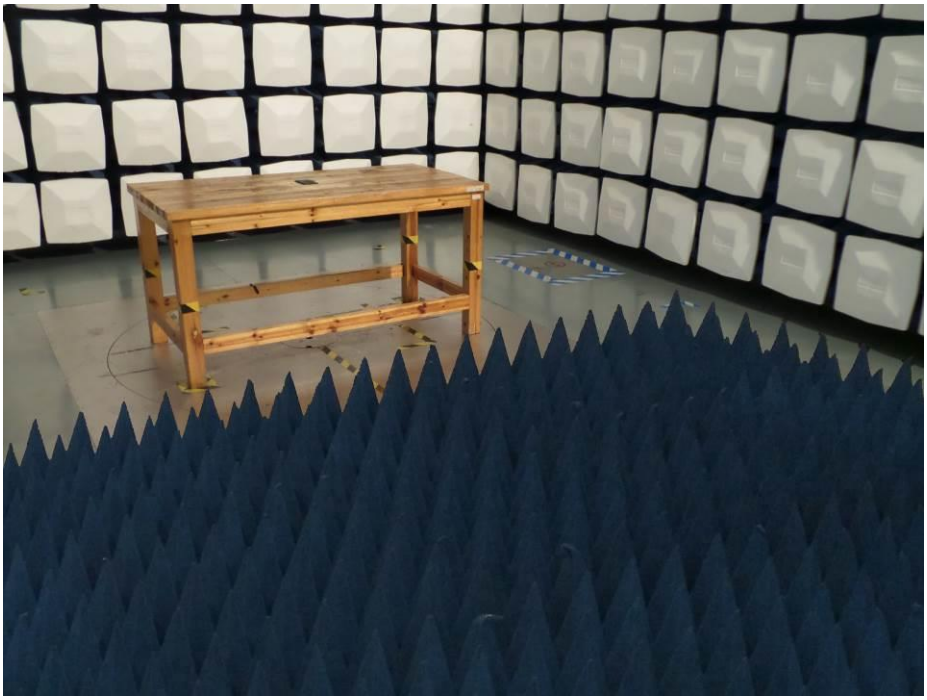
7 Photographs – Test Setup

7.1 Photograph – Radiated Emission Test Setup, 30MHz to 1GHz

7.2 Photograph – ESD Test Setup



7.3 Photograph – Radiated Immunity Test Setup

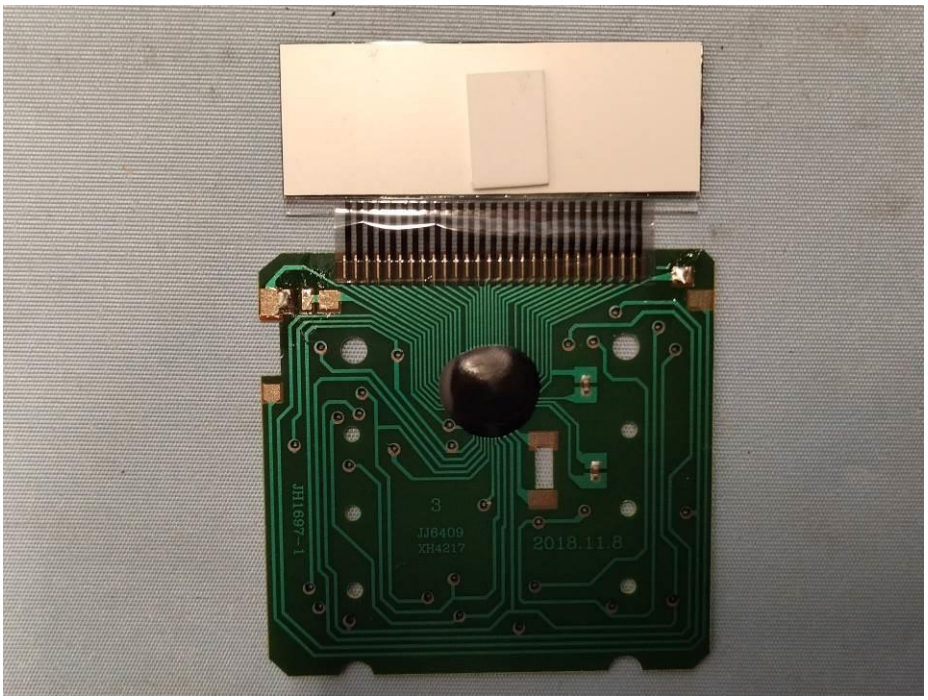


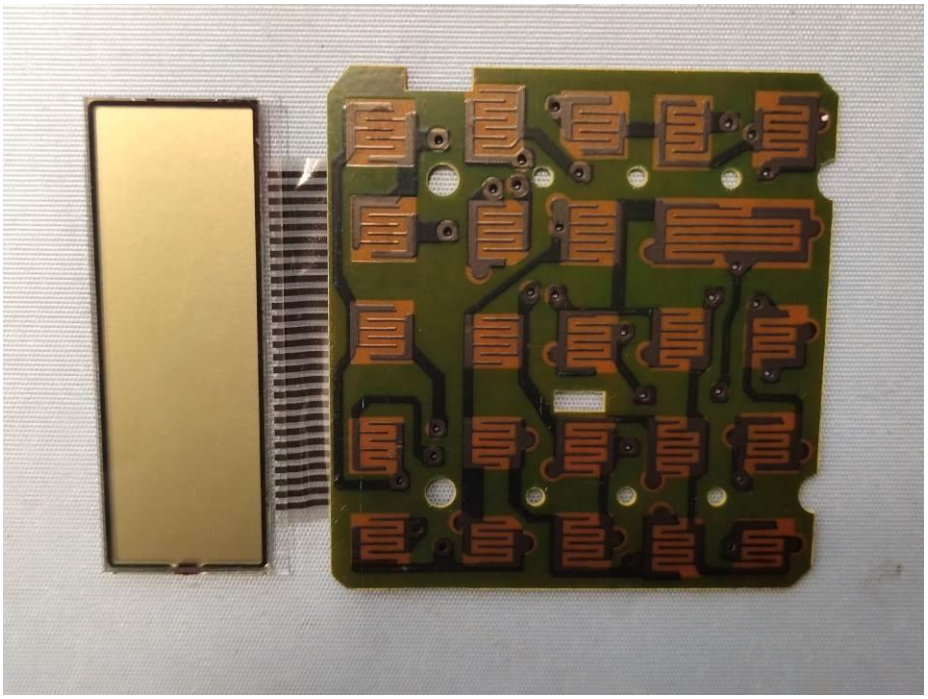
8 Photographs – Constructional Details

8.1 EUT – Front View

8.2 EUT – Back View

8.3 EUT – Internal View





====== End of Report ======