

EMC Measurement and Test Report

For

Qingdao Haier Air-Condition Electronic Co., Lt

Haier Industrial Park, Qianwangang Road, Eco-Tech Development

Zone, Qingdao 266555, Shandong, P.R. China

Test Standards:	EN 55032:2015/AC:2016-07 EN 61000-3-2:2014 EN 61000-3-3:2013 <u>EN 55035:2017</u>
Product Description:	<u>Web Server</u>
Tested Model:	<u>HC-SA164DBT</u>
Report No.:	<u>WTX19X12089586E</u>
Tested Date:	<u>2019-12-23 to 2019-12-30</u>
Issued Date:	<u>2019-12-30</u>
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TABLE OF CONTENTS

1. GENERAL INFORMATION.....4

1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....4

1.2 TEST STANDARDS.....5

1.3 TEST METHODOLOGY5

1.4 EUT SETUP AND OPERATION MODE6

1.5 PERFORMANCE CRITERIA FOR EMS6

1.6 TEST EQUIPMENT LIST AND DETAILS7

2. SUMMARY OF TEST RESULTS9

3. CONDUCTED EMISSION.....10

3.1 MEASUREMENT UNCERTAINTY10

3.2 TEST PROCEDURE.....10

3.3 BASIC TEST SETUP BLOCK DIAGRAM.....10

3.4 ENVIRONMENTAL CONDITIONS11

3.5 SUMMARY OF TEST RESULTS/PLOTS11

3.6 CONDUCTED EMISSIONS TEST DATA.....11

4. RADIATED EMISSION15

4.1 MEASUREMENT UNCERTAINTY15

4.2 TEST PROCEDURE.....15

4.3 CORRECTED AMPLITUDE & MARGIN CALCULATION.....16

4.4 ENVIRONMENTAL CONDITIONS16

4.5 SUMMARY OF TEST RESULTS/PLOTS16

5. HARMONIC CURRENT EMISSIONS21

5.1 TEST PROCEDURE.....21

5.2 TEST STANDARDS21

5.3 HARMONIC CURRENT EMISSIONS TEST DATA.....21

6. VOLTAGE FLUCTUATION FLICKER.....22

6.1 TEST PROCEDURE.....22

6.2 TEST STANDARDS22

6.3 VOLTAGE FLUCTUATION AND FLICKER TEST DATA.....22

7. ELECTROSTATIC DISCHARGES (ESD)24

7.1 TEST PROCEDURE.....24

7.2 ELECTROSTATIC DISCHARGE IMMUNITY TEST DATA24

8. CONTINUOUS RF ELECTROMAGNETIC FIELD DISTURBANCES (RS)25

8.1 TEST PROCEDURE.....25

8.2 CONTINUOUS RADIATED DISTURBANCES TEST DATA.....25

9. ELECTRICAL FAST TRANSIENTS (EFT).....26

9.1 TEST PROCEDURE.....26

9.2 ELECTRICAL FAST TRANSIENTS TEST DATA26

10. SURGES27

10.1 TEST PROCEDURE.....27

10.2 SURGE TEST DATA.....27

11. CONTINUOUS INDUCED RF DISTURBANCES (C/S)28

11.1 TEST PROCEDURE.....28

11.2 CONTINUOUS CONDUCTED DISTURBANCES TEST DATA28

12. POWER-FREQUENCY MAGNETIC FIELDS (PFMF)29

12.1 TEST PROCEDURE.....29

12.2 POWER-FREQUENCY MAGNETIC FIELD TEST DATA29

13. VOLTAGE DIPS AND INTERRUPTIONS.....30

13.1 TEST PROCEDURE.....30

13.2 VOLTAGE DIPS AND INTERRUPTIONS TEST DATA30

EXHIBIT 1 - PRODUCT LABELING31

PROPOSED CE LABEL FORMAT31
PROPOSED LABEL LOCATION ON EUT31
EXHIBIT 2 - EUT PHOTOGRAPHS.....32
EXHIBIT 3 - TEST SETUP PHOTOGRAPHS36

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Qingdao Haier Air-Condition Electronic Co., Lt
Address of applicant: Haier Industrial Park, Qianwangang Road, Eco-Tech
Development Zone, Qingdao 266555, Shandong, P.R. China

Manufacturer: CLOUD EMBEDDED TECHNOLOGY LIMITED
Address of manufacturer: 4th Floor, Sanhe International Building A, Dalang Street,
Longhua District, Shenzhen, China

General Description of EUT	
Product Name:	Web Server
Trade Name:	CLOUD
Model No.:	HC-SA164DBT
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	DC 12V
Rated Current:	5A
Rated Power:	60W
Power Adaptor Model:	KPL-060F Input: AC 100-240V, 50/60Hz, 1.7A Output: DC 12V, 5.0A
Highest Internal Frequency:	Above 108MHz
Classification of Equipment:	Class B

1.2 Test Standards

The tests were performed according to following standards:

EN 55032:2015/AC:2016-07: Electromagnetic compatibility of multimedia equipment - Emission requirements.

EN 55035:2017: Electromagnetic compatibility of multimedia equipment - Immunity requirements.

EN 61000-3-2:2014: Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase).

EN 61000-3-3:2013: Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with the standards EN55032, EN61000-3-2, EN61000-3-3, and EN55035 for electromagnetic compatibility of multimedia equipment, and all related testing and measurement techniques intentional standards.

1.4 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List			
Test Mode	Description	Remark	Power Supply Mode
TM1	Working	connect laptop	DC 12V with a adapter input AC 230V/50Hz

Note: The product was measured at two nominal voltages of 230V and 110V, using a frequency of 50Hz or 60Hz. This report shows the worst case with 230V/50Hz data.

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Laptop	lenovo	SL410K	/

1.5 Performance Criteria for EMS

All the test data has been collected, reduced, and analyzed within this report in accordance with Immunity requires the following as specific performance criteria:

- A. The apparatus shall continue to operate as intended during and after the test. The manufacturer specifies some minimum performance level. The performance level may be specified by the manufacturer as a permissible loss of performance.
- B. The apparatus shall continue to operate as intended after the test. This indicates that the EUT does not need to function at normal performance levels during the test, but must recover. Again some minimal performance is defined by the manufacture. No change in operating state or loss or data is permitted.
- C. Temporary loss of function is allowed. Operation of the EUT may stop as long as it is either automatically reset or can be manually restored by operation of the controls.

1.6 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal. Date	Due. Date
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2019-04-30	2020-04-29
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2019-04-30	2020-04-29
Amplifier	Agilent	8447F	3113A06717	2019-04-30	2020-04-29
Amplifier	C&D	PAP-1G18	2002	2019-04-30	2020-04-29
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2019-05-05	2021-05-04
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2019-05-05	2021-05-04
Horn Antenna	ETS	3117	00086197	2019-05-05	2021-05-04
Loop Antenna	Schwarz beck	FMZB 1516	9773	2019-05-05	2021-05-04
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2019-04-30	2020-04-29
EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2019-04-30	2020-04-29
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2019-04-30	2020-04-29
AC LISN	Schwarz beck	NSLK8126	8126-224	2019-04-30	2020-04-29
8-WIRE LISN	Schwarz beck	8158	CAT3-8158-0059	2019-04-30	2020-04-29
8-WIRE LISN	Schwarz beck	8158	CAT5-8158-0117	2019-04-30	2020-04-29
PMF Generator	LIONCEL	PMF-801C-C	0171101	2019-04-30	2020-04-29
PMF Antenna	LIONCEL	PMF-801C-A	0180302	2019-04-30	2020-04-29
Instantaneous PMF Generator Module	LIONCEL	PMF-801C-T	0171001	2019-04-30	2020-04-29
Digital Power Analyzer	California Instrument	CTS	72831	2019-04-30	2020-04-29
Power Source	California Instrument	5001IX-CTS-400	25965	2019-04-30	2020-04-29
ESD Generator	LIONCEL	ESD-203B	0170901	2019-05-05	2020-05-04
Amplifier	Agilent	8447D	2944A10179	2019-04-30	2020-04-29
Transient 2000	EMC PARTNER	TRA2000	863	2019-05-21	2020-05-20
Couple Clamp	EMC PARTNER	CN-EFT1000	513	2019-05-21	2020-05-20
CS Immunity Tester	SCHAFFNER	NSG2070	1123	2019-04-30	2020-04-29
Attenuator	EMTEST	MA-5100/6BF2	1009	2019-04-30	2020-04-29
CDN	Luthi	L-801M2/M3	2665	2019-04-30	2020-04-29
Signal Generator	R&S	SMB100A	105942	2019-09-09	2020-09-08
Power Meter	R&S	NRP2	102031	2019-09-09	2020-09-08
RF Power Amplifier	BONN Elektronik	BLWA0830-160/100/40D	128740	2019-09-09	2020-09-08
RF Power Amplifier	NJNT	NTWPAS-2560025	2560025	2019-09-09	2020-09-08
Antenna	SCHWARZBECK	STLP9128D	043	2017-09-11	2020-09-10
Antenna	SCHWARZBECK	BBHA 9120 D	667	2017-09-11	2020-09-10
CS Generator	MARCONI	2024	112260/042	2019-05-31	2020-05-30
Attenuator	FRANKONIA	75-A-FFN-06	1001698	2019-05-31	2020-05-30
CDN	FRANKONIA	CDN M2+M3	A3027019	2019-05-31	2020-05-30

EM Injection Clamp	FCC	F-203I-23mm	91536	2019-05-31	2020-05-30
RF POWER AMPLIFIER	FRANKONIA	FLL-75	102A1109	2019-05-31	2020-05-30

2. SUMMARY OF TEST RESULTS

Standards	Description of Test Item	Result
EN 55032	Conducted Emission	Compliant
	Radiated Emission	Compliant
EN 61000-3-2	Harmonic Current Emission	Compliant
EN 61000-3-3	Voltage Fluctuation and Flicker	Compliant
EN 55035	Electrostatic Discharge Immunity in accordance with EN 61000-4-2	Compliant
	Continuous RF electromagnetic field Disturbances Immunity in accordance with EN 61000-4-3	Compliant
	Electrical Fast Transient/Burst Immunity in accordance with EN 61000-4-4	Compliant
	Surges Immunity in accordance with EN 61000-4-5	Compliant
	Continuous induced RF disturbances Immunity in accordance with EN 61000-4-6	Compliant
	Power-frequency Magnetic Fields Immunity in accordance With EN 61000-4-8	Compliant
	Voltage Dips/Interruptions Immunity in accordance with EN 61000-4-11	Compliant
	Broadband impulse noise disturbances, repetitive	N/A
	Broadband impulse noise disturbances, isolated	N/A

N/A: not applicable

3. Conducted Emission

3.1 Measurement Uncertainty

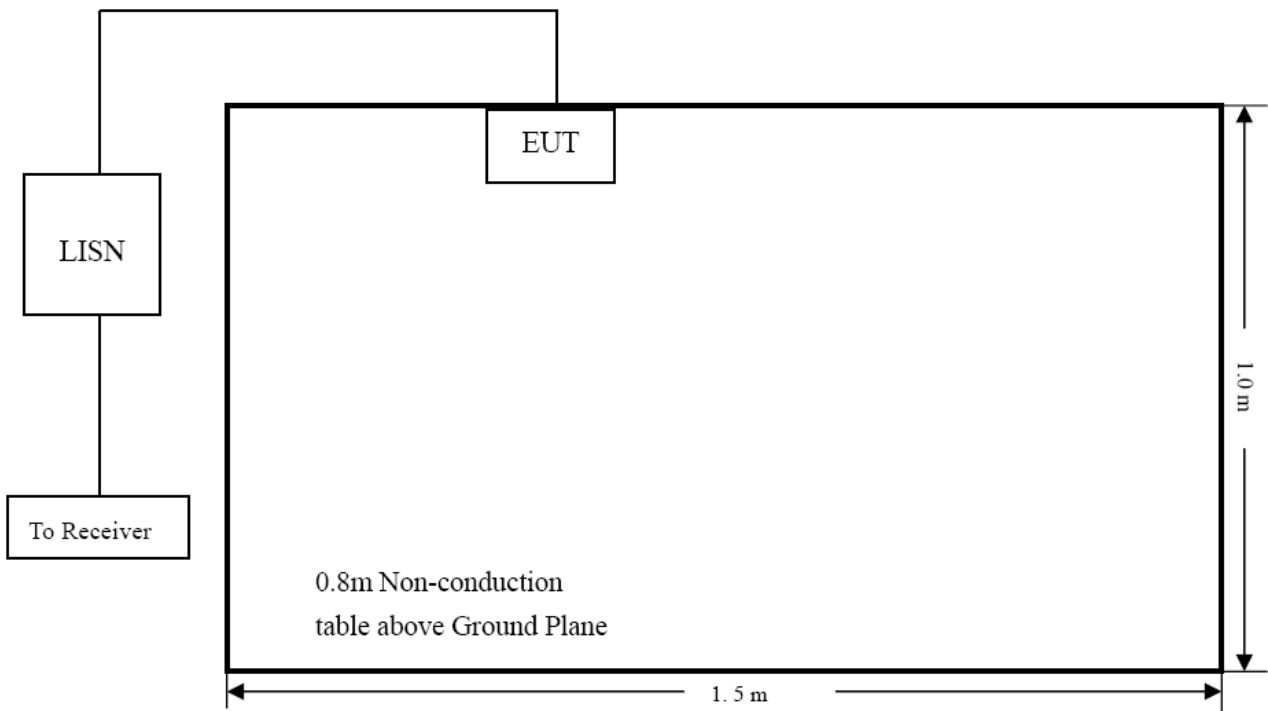
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement:

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz ± 3.74 dB
		0.15-30MHz ± 3.34 dB

3.2 Test Procedure

Test is conducting under the description of EN55032 Annex A.3.5.

3.3 Basic Test Setup Block Diagram



3.4 Environmental Conditions

Temperature:	22 ° C
Relative Humidity:	55 %
ATM Pressure:	1015 mbar

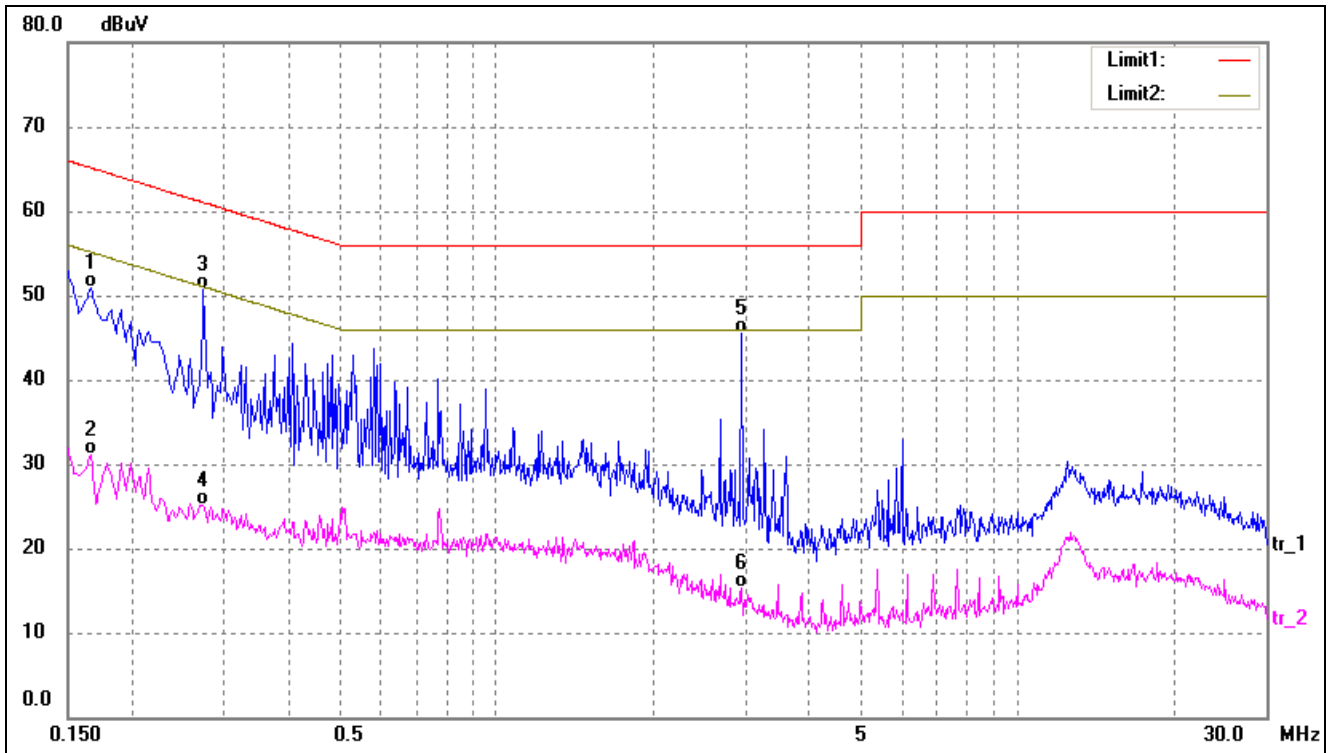
3.5 Summary of Test Results/Plots

According to the data in section 3.6, the EUT complied with the EN55032 conducted margin for a Class B device, with the *worst* margin reading of:

-7.41 dB at 18.2420 MHz in the RJ45 mode, AVG detector, 0.15-30 MHz

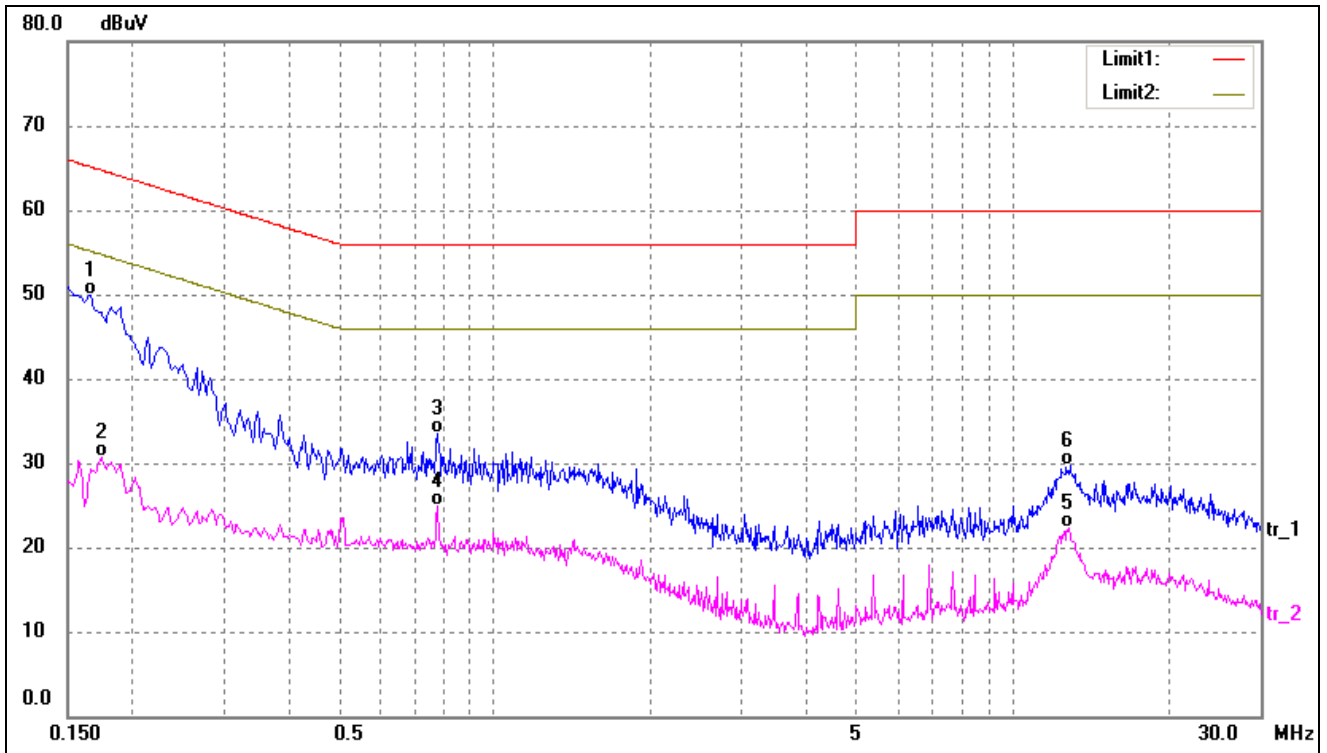
3.6 Conducted Emissions Test Data

Test mode:	TM1	Polarity:	Line
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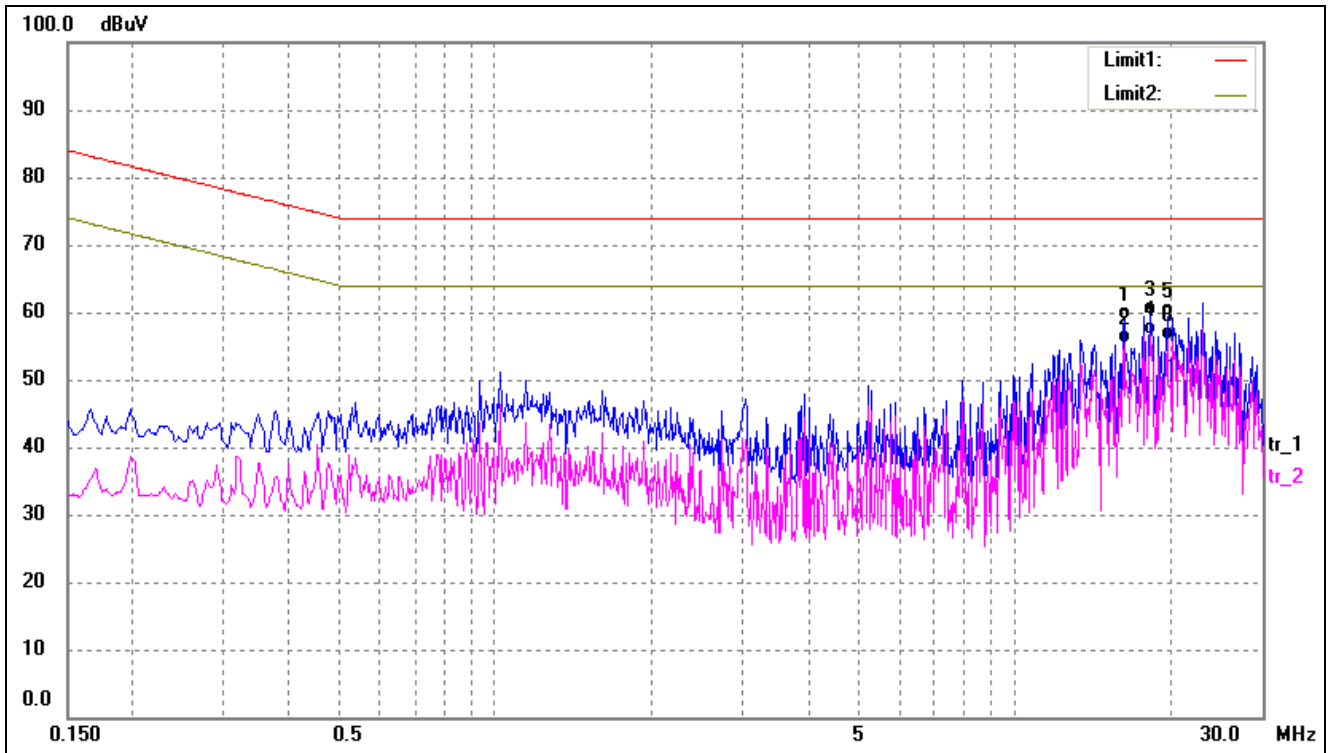
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1660	40.90	9.95	50.85	65.15	-14.30	QP
2	0.1660	21.20	9.95	31.15	55.15	-24.00	AVG
3*	0.2740	40.59	10.02	50.61	60.99	-10.38	QP
4	0.2740	15.16	10.02	25.18	50.99	-25.81	AVG
5	2.9580	35.07	10.39	45.46	56.00	-10.54	QP
6	2.9580	4.88	10.39	15.27	46.00	-30.73	AVG

Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1660	40.04	9.95	49.99	65.15	-15.16	QP
2	0.1740	20.66	9.95	30.61	54.76	-24.15	AVG
3	0.7780	23.29	10.15	33.44	56.00	-22.56	QP
4	0.7780	14.68	10.15	24.83	46.00	-21.17	AVG
5	12.7980	11.70	10.62	22.32	50.00	-27.68	AVG
6	12.8580	19.06	10.62	29.68	60.00	-30.32	QP

Test mode:	TM1	Polarity:	RJ45
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	16.2300	39.18	19.65	58.83	74.00	-15.17	QP
2	16.2300	35.71	19.65	55.36	64.00	-8.64	AVG
3	18.2420	40.02	19.63	59.65	74.00	-14.35	QP
4*	18.2420	36.96	19.63	56.59	64.00	-7.41	AVG
5	19.7099	39.77	19.61	59.38	74.00	-14.62	QP
6	19.7099	36.16	19.61	55.77	64.00	-8.23	AVG

4. Radiated Emission

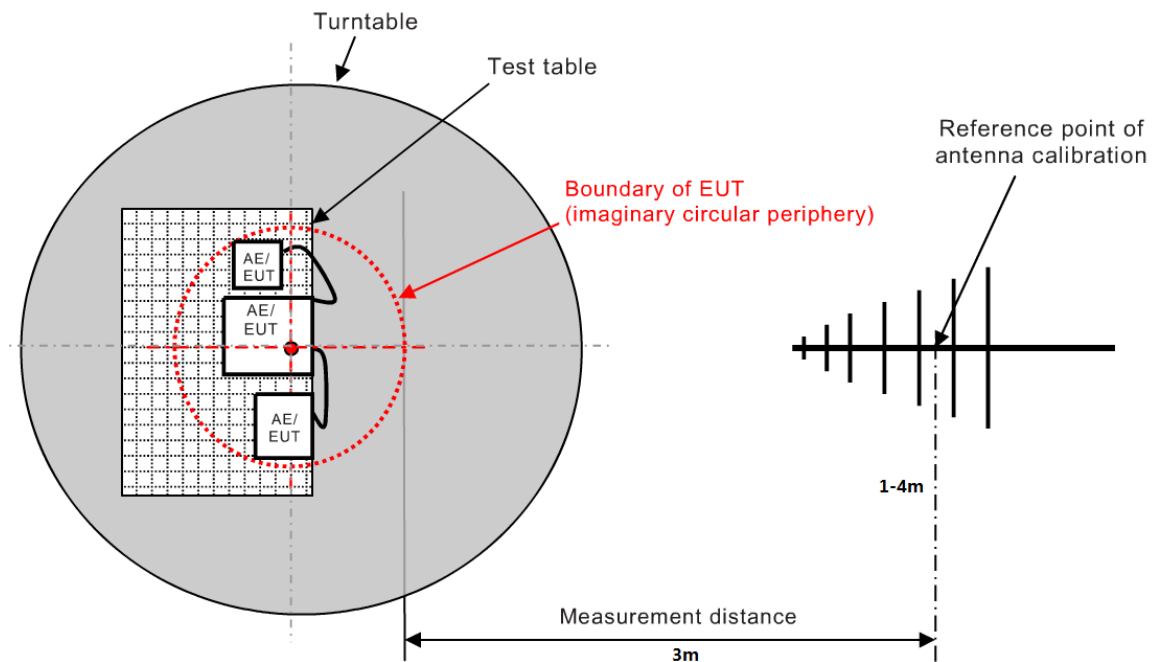
4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement:

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Radiated Emissions	Radiated	30-200MHz $\pm 4.52\text{dB}$
		0.2-1GHz $\pm 5.56\text{dB}$
		1-6GHz $\pm 3.84\text{dB}$
		6-18GHz $\pm 3.92\text{dB}$

4.2 Test Procedure

Test is conducting under the description of EN55032 Annex C.2.2.4



4.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Correct}$$
$$\text{Correct} = \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit for Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{EN55032 Class B Limit}$$

4.4 Environmental Conditions

Temperature:	23° C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

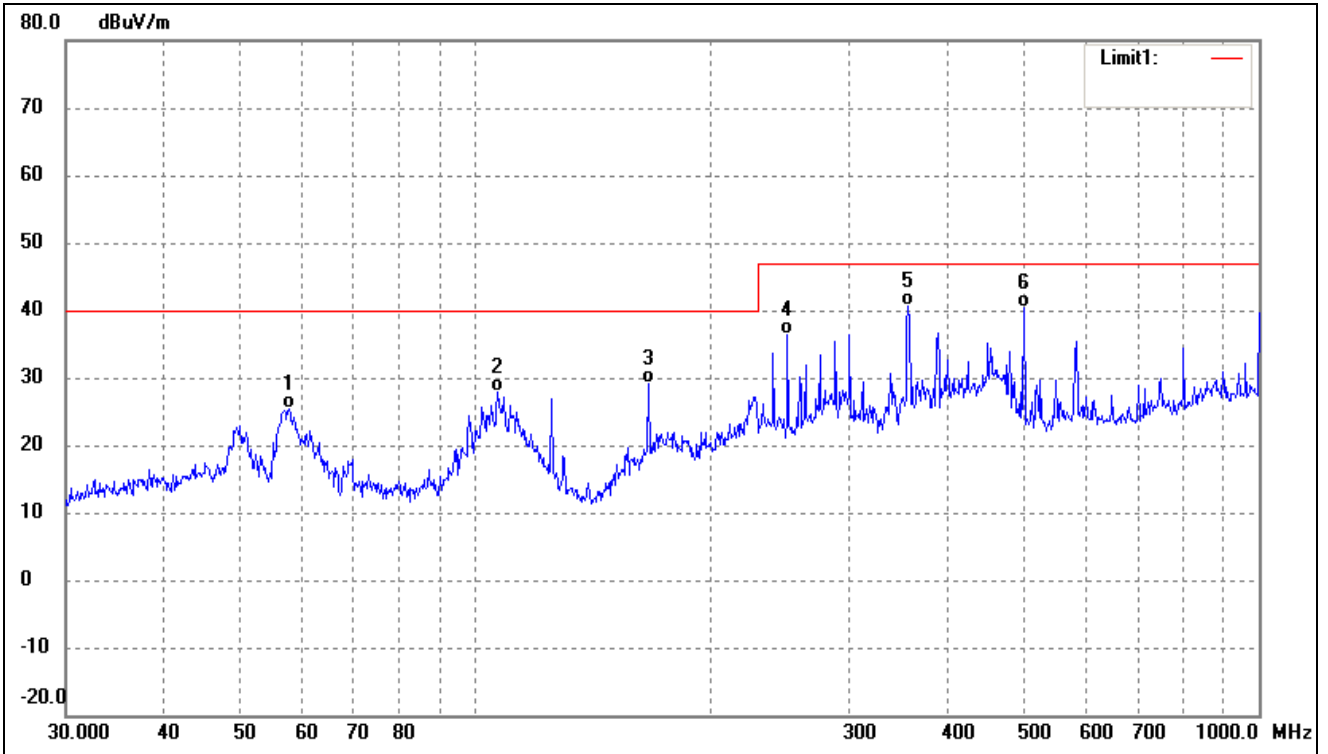
4.5 Summary of Test Results/Plots

According to the data in section 4.5, the EUT complied with the EN55032 Class B standards, and had the worst margin is:

-4.05 dB at 106.7587 MHz in the Vertical polarization, Below 1GHz, 30 MHz to 1 GHz, 3 Meters

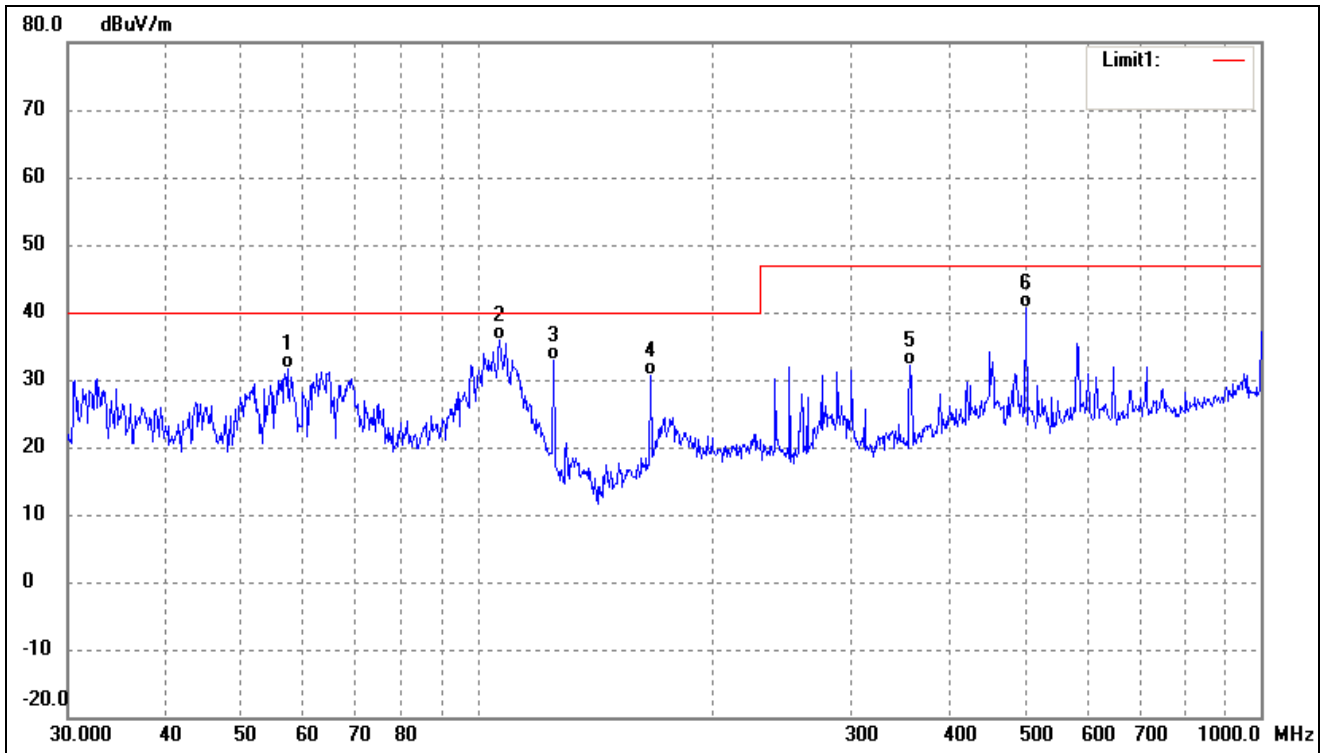
Below 1GHz

Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	57.7962	38.13	-12.82	25.31	40.00	-14.69	281	100	QP
2	106.7587	41.06	-13.07	27.99	40.00	-12.01	92	100	QP
3	166.0680	44.21	-15.12	29.09	40.00	-10.91	331	100	QP
4	250.3012	47.37	-10.99	36.38	47.00	-10.62	97	100	QP
5	356.6758	48.66	-7.92	40.74	47.00	-6.26	217	100	QP
6	501.1789	46.61	-6.17	40.44	47.00	-6.56	115	100	QP

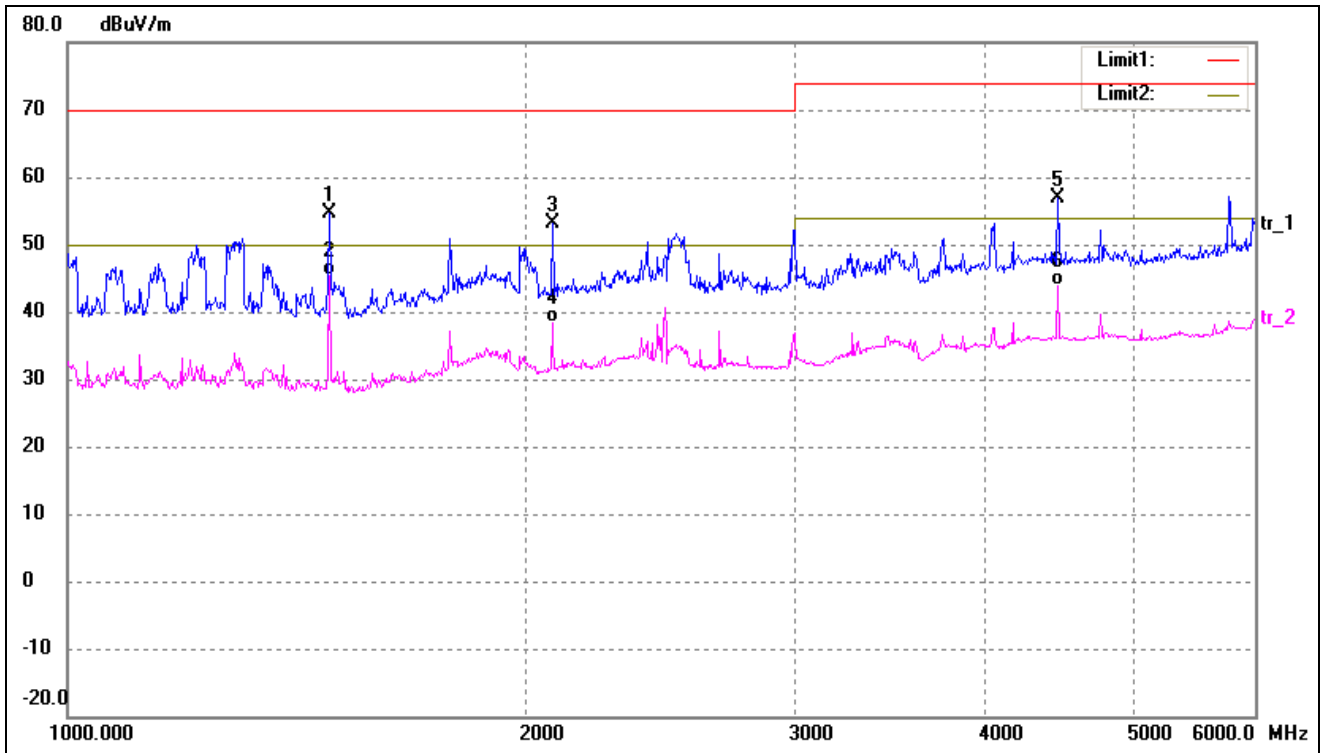
Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	57.1914	44.20	-12.66	31.54	40.00	-8.46	149	100	QP
2	106.7587	49.02	-13.07	35.95	40.00	-4.05	114	100	QP
3	125.0066	48.26	-15.49	32.77	40.00	-7.23	97	100	QP
4	166.0680	45.85	-15.12	30.73	40.00	-9.27	132	100	QP
5	356.6758	40.11	-7.92	32.19	47.00	-14.81	184	100	QP
6	501.1790	46.76	-6.17	40.59	47.00	-6.41	308	100	QP

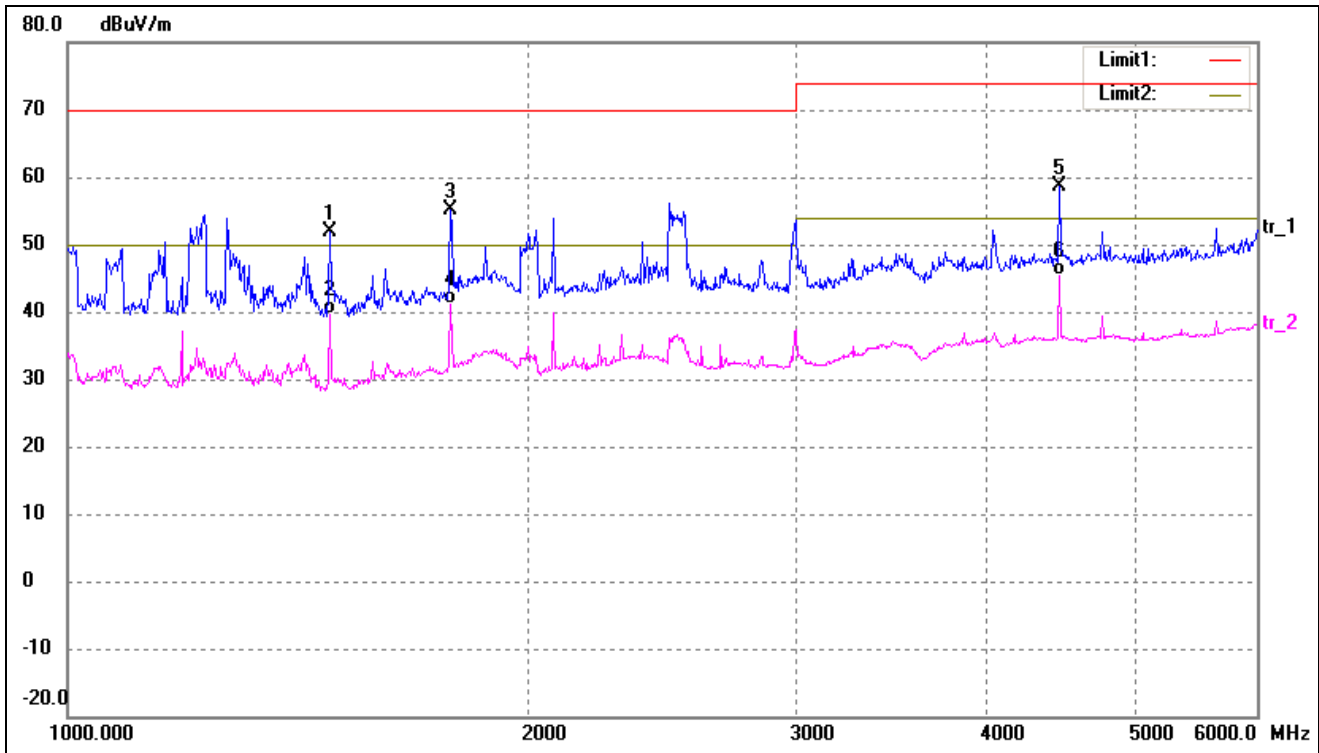
Above 1GHz

Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	1483.178	68.90	-14.23	54.67	70.00	-15.33	85	100	peak
2	1483.178	59.56	-14.23	45.33	50.00	-4.67	230	100	AVG
3	2077.235	63.35	-10.14	53.21	70.00	-16.79	70	100	peak
4	2077.235	48.41	-10.14	38.27	50.00	-11.73	304	100	AVG
5	4456.338	61.66	-4.89	56.77	74.00	-17.23	339	100	peak
6	4456.338	48.75	-4.89	43.86	54.00	-10.14	228	100	AVG

Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	1483.178	66.05	-14.23	51.82	70.00	-18.18	161	100	peak
2	1483.178	53.89	-14.23	39.66	50.00	-10.34	287	100	AVG
3	1780.593	65.17	-9.93	55.24	70.00	-14.76	72	100	peak
4	1780.593	51.13	-9.93	41.20	50.00	-8.80	236	100	AVG
5	4456.338	63.55	-4.89	58.66	74.00	-15.34	125	100	peak
6	4456.338	50.21	-4.89	45.32	54.00	-8.68	248	100	AVG

5. Harmonic Current Emissions

5.1 Test Procedure

Test is conducting under the description of EN 61000-3-2.

5.2 Test Standards

EN61000-3-2, Clause 7.1 Limits for Class A equipment.

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	48%
ATM Pressure:	1022 mbar

5.3 Harmonic Current Emissions Test Data

According to Clause 7 of EN 61000-3-2, the rated power of the EUT is less than 75W, belong to 'equipment with a rated power of 75W or less', therefore 'limits are not specified in this edition of the standards'. It is deem to full fit the requirements of the standards.

Result: The EUT is compliance with the requirements of this section.

6. Voltage Fluctuation Flicker

6.1 Test Procedure

Test is conducting under the description of EN 61000-3-3.

6.2 Test Standards

EN61000-3-3, Limit: Clause 5.

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	48%
ATM Pressure:	1022 mbar

6.3 Voltage Fluctuation and Flicker Test Data

Test mode:	TM1
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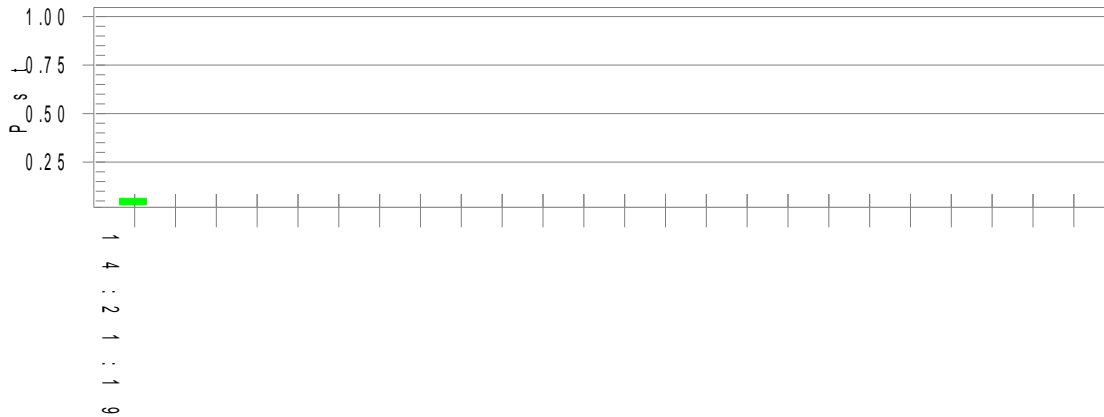
Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

Test Result: Pass

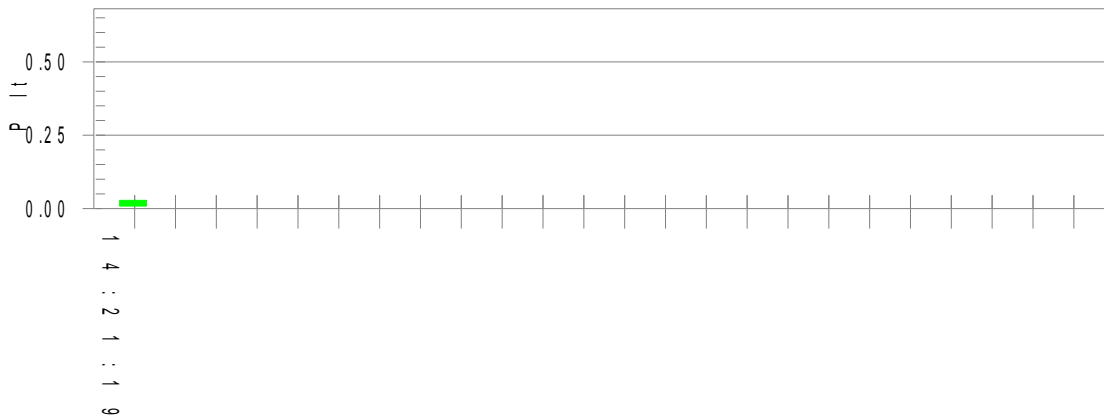
Status: Test Completed

Pst_i and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.99			
T-max (mS):	0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.064	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.028	Test limit:	0.650	Pass

7. Electrostatic Discharges (ESD)

7.1 Test Procedure

Test is conducting under the description of EN 61000-4-2.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

7.2 Electrostatic Discharge Immunity Test Data

Table 1: Electrostatic Discharge Immunity (Air Discharge)

EN 61000-4-2	Test Levels (kV)									
Test Points	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
/	/	/	/	/	/	/	/	/	/	/

Table 2: Electrostatic Discharge Immunity (Direct Contact)

EN 61000-4-2	Test Levels (kV)									
Test Points	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
metal case	A	A	A	A	/	/	/	/	/	/

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP & VCP)

EN 61000-4-2	Test Levels (kV)									
Test Points	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
HCP (6 Sides)	A	A	A	A	/	/	/	/	/	/
VCP (4 Sides)	A	A	A	A	/	/	/	/	/	/

Test Result: Pass

8. Continuous RF electromagnetic field Disturbances (RS)

8.1 Test Procedure

Test is conducting under the description of EN 61000-4-3, EN 61000-4-20, EN 61000-4-21.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1010 mbar

8.2 Continuous Radiated Disturbances Test Data

Frequency step: 1% of fundamental

Dwell time: 1 second

Modulation: AM by 1kHz sine wave with 80% modulation depth

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

Spot frequencies (MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
1800	3	A	A	A	A	A	A	A	A
2600	3	A	A	A	A	A	A	A	A
3500	3	A	A	A	A	A	A	A	A
5000	3	A	A	A	A	A	A	A	A

Test Result: Pass

9. Electrical Fast Transients (EFT)

9.1 Test Procedure

Test is conducting under the description of EN 61000-4-4.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

9.2 Electrical Fast Transients Test Data

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	/	/	A	A	/	/	/	/
	L2	/	/	A	A	/	/	/	/
	PE	/	/	A	A	/	/	/	/
	L1+L2	/	/	A	A	/	/	/	/
	L1 + PE	/	/	A	A	/	/	/	/
	L2 + PE	/	/	A	A	/	/	/	/
	L1+L2+PE	/	/	A	A	/	/	/	/
Signal ports	RJ45	A	A	/	/	/	/	/	/

Test Result: Pass

10. Surges

10.1 Test Procedure

Test is conducting under the description of EN 61000-4-5.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

10.2 Surge Test Data

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	RJ45	A	/
2	1kV	±	L-N	A	/
3	2kV	±	L-PE, N-PE	A	/
4	4kV	±	L-N, L-PE, N-PE	/	/

Test Result: Pass

11. Continuous induced RF disturbances (C/S)

11.1 Test Procedure

Test is conducting under the description of EN 61000-4-6.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

11.2 Continuous Conducted Disturbances Test Data

Sweep frequency range: 0,15 MHz to 10 MHz 3 V; 10 MHz to 30 MHz 3 V to 1 V;30 MHz to 80 MHz 1V

Frequency step: 1% of fundamental

Dwell time: 1 second

AC Port

Frequency MHz	Injected Position	Level	Observations (Performance Criterion)	Result
0.15-10	AC Mains	3Vrms	A	Pass
10-30	AC Mains	3-1Vrms	A	Pass
30-80	AC Mains	1Vrms	A	Pass

RJ45 Port

Frequency MHz	Injected Position	Level	Observations (Performance Criterion)	Result
0.15-10	RJ45 Port	3Vrms	A	Pass
10-30	RJ45 Port	3-1Vrms	A	Pass
30-80	RJ45 Port	1Vrms	A	Pass

Test Result: Pass

12. Power-Frequency Magnetic Fields (PFMF)

12.1 Test Procedure

Test is conducting under the description of EN 61000-4-8.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50%
ATM Pressure:	1011 mbar

12.2 Power-Frequency Magnetic Field Test Data

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Position	Pass	Fail
1	1	50	X, Y, Z	A	/
2	3	50	X, Y, Z	/	/
3	10	50	X, Y, Z	/	/
X	Special	/	/	/	/

Test Result: Pass

13. Voltage Dips and Interruptions

13.1 Test Procedure

Test is conducting under the description of EN 61000-4-11.

Test Performance

Performance Criterion: B/C

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50%
ATM Pressure:	1011 mbar

13.2 Voltage Dips And Interruptions Test Data

U: Vlotage dips in % U_T (U_T is rated voltage for the EUT)

T: Test duration

Level	U	T	Phase Angle	N	Pass	Fail
1	95%	10ms	0/90/180/270	3	B	/
2	30%	500ms	0/90/180/270	3	B	/
3	100%	5000ms	0/90/180/270	3	B	/

Test Result: Pass

EXHIBIT 1 - PRODUCT LABELING

Proposed CE Label Format

Web Server Model: HC-SA164DBT Brand: CLOUD Importer Name: XXX Importer Address: XXX CLOUD EMBEDDED TECHNOLOGY LIMITED 4th Floor, Sanhe International Building A, Dalang Street, Longhua District, Shenzhen, China	
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Specifications: Text is Black in color and is justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT. The 'CE' marking must be affixed to the EUT or to its data plate. Where this is not possible or not warranted on account of the nature of the apparatus, it must be affixed to the packaging, if any, and to the accompanying documents. The 'CE' marking is allowed less than 5 mm but must clear. If the 'CE' marking is reduced or enlarged the proportions given in the above graduated drawing must be respected. The Importer name, address and Manufacturer name and address should indicate on marking label or packaging or in a document accompanying

Proposed Label Location on EUT

CE Label Location

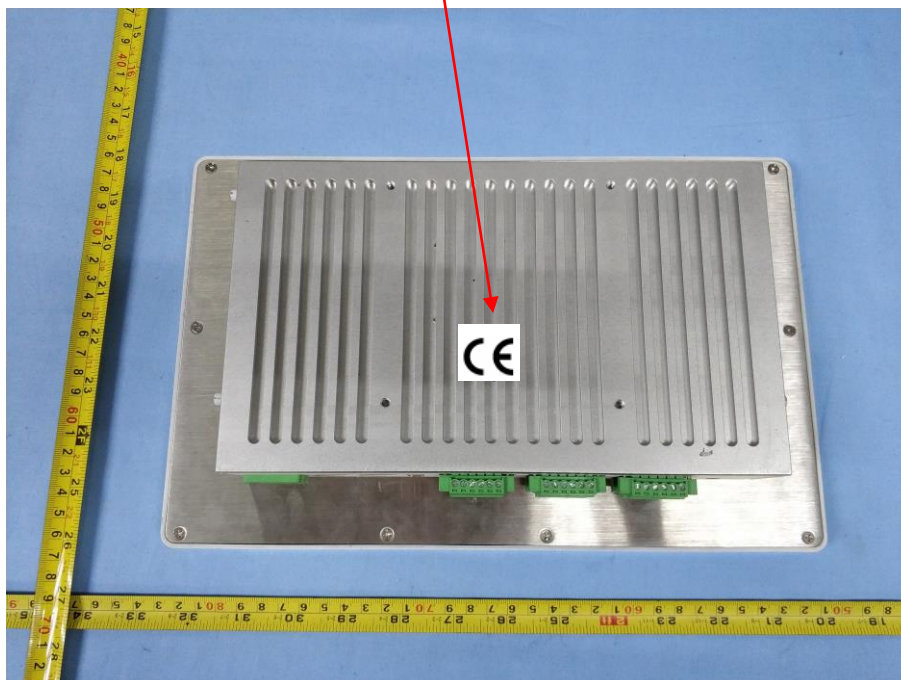
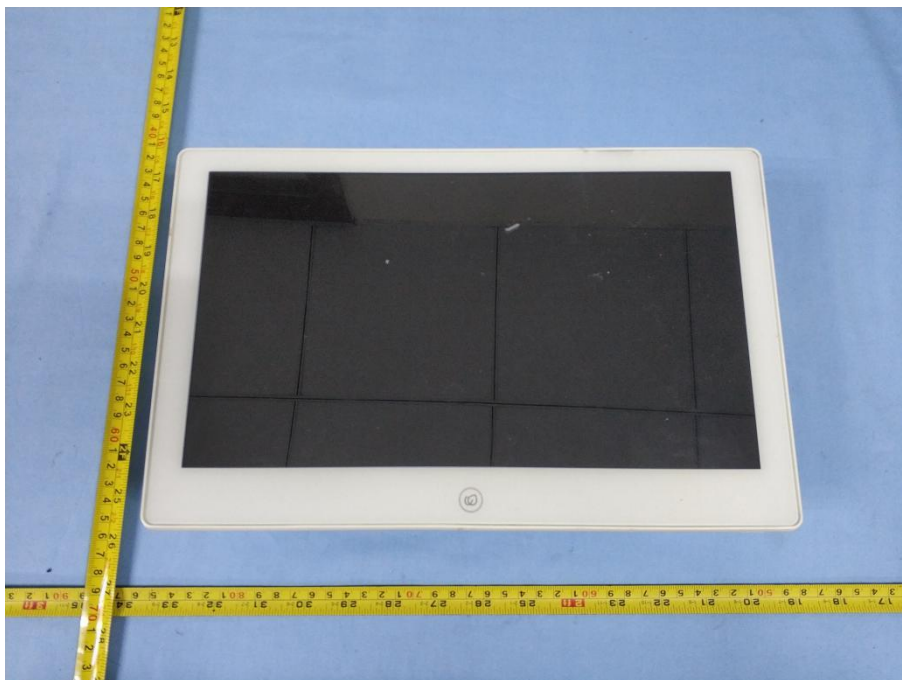


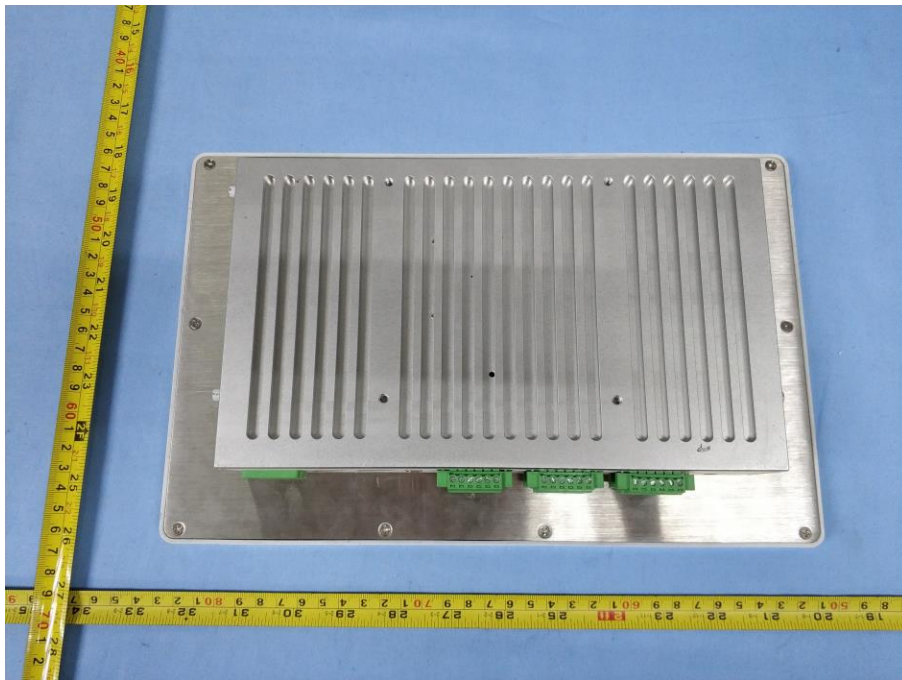
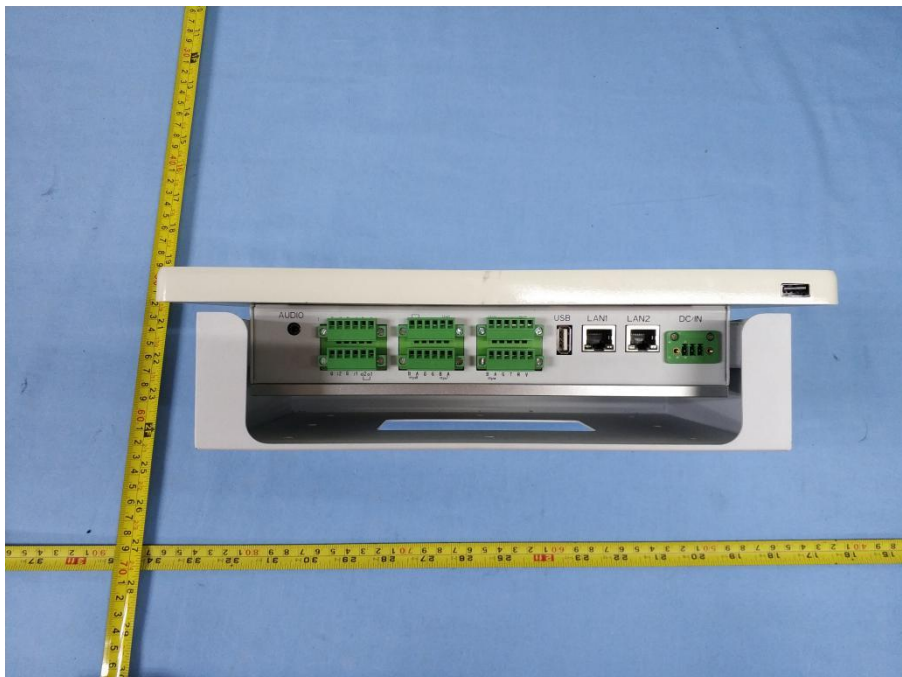
EXHIBIT 2 - EUT PHOTOGRAPHS

EUT View 1



EUT View 2



EUT View 3**EUT View 4**

EUT View 5



EUT View 6



EUT View 7



EUT Housing and Board View 1

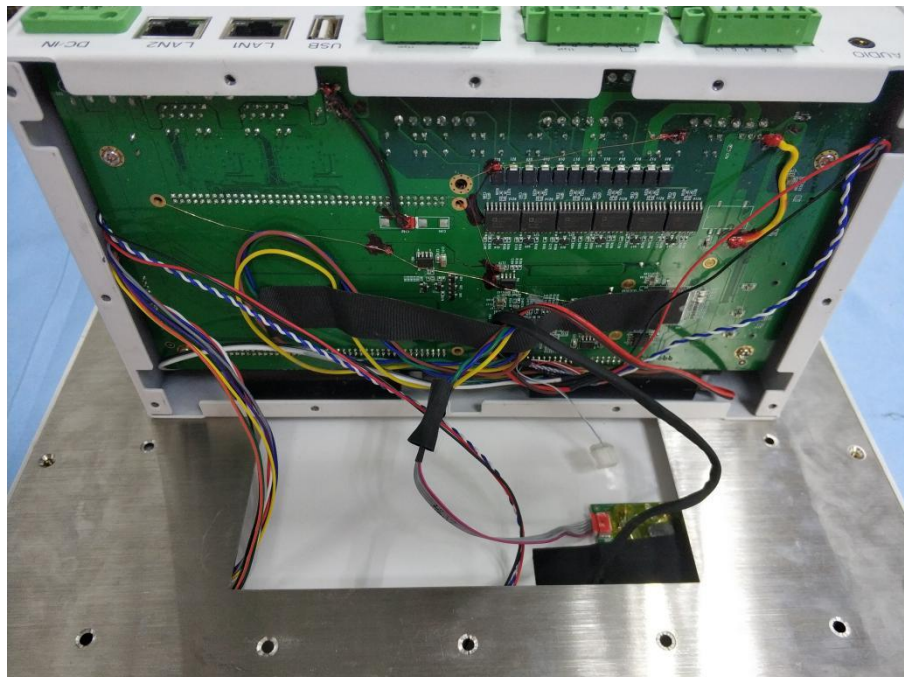
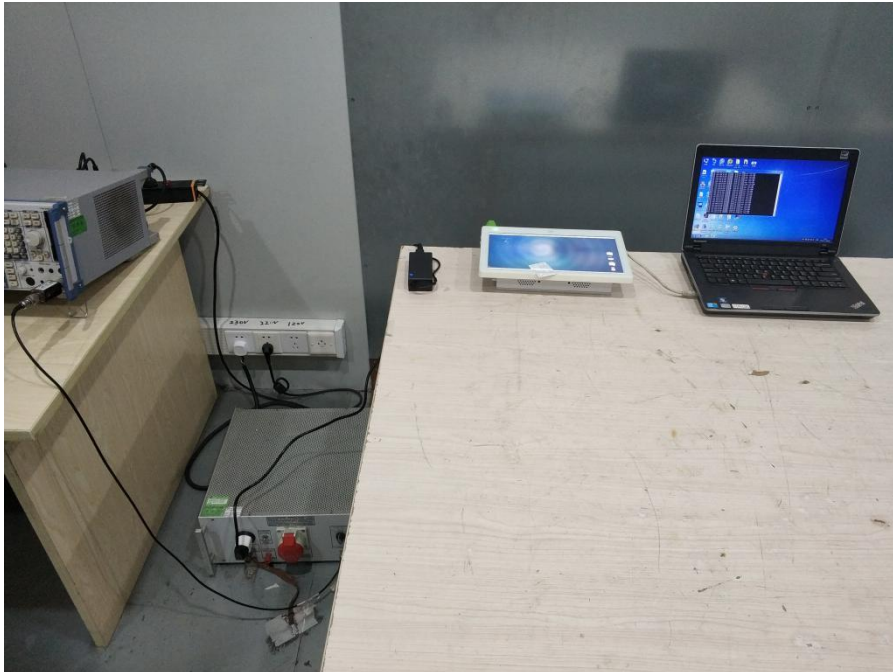


EXHIBIT 3 - TEST SETUP PHOTOGRAPHS

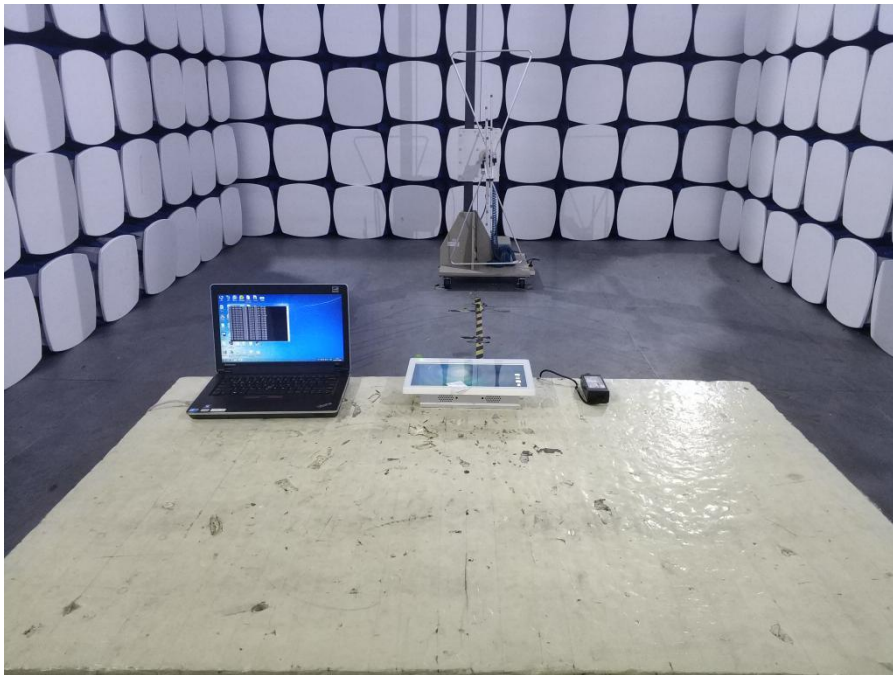
Conduction Emission Test View



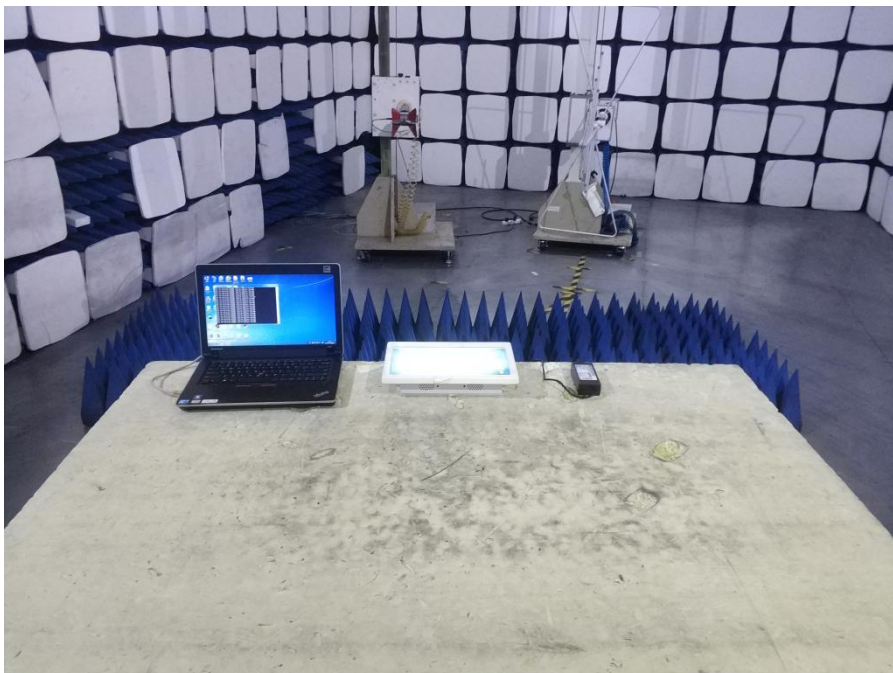
Conduction Emission Test View RJ 45



Radiation Emission Test View Below 1GHz



Radiation Emission Test View Above 1GHz



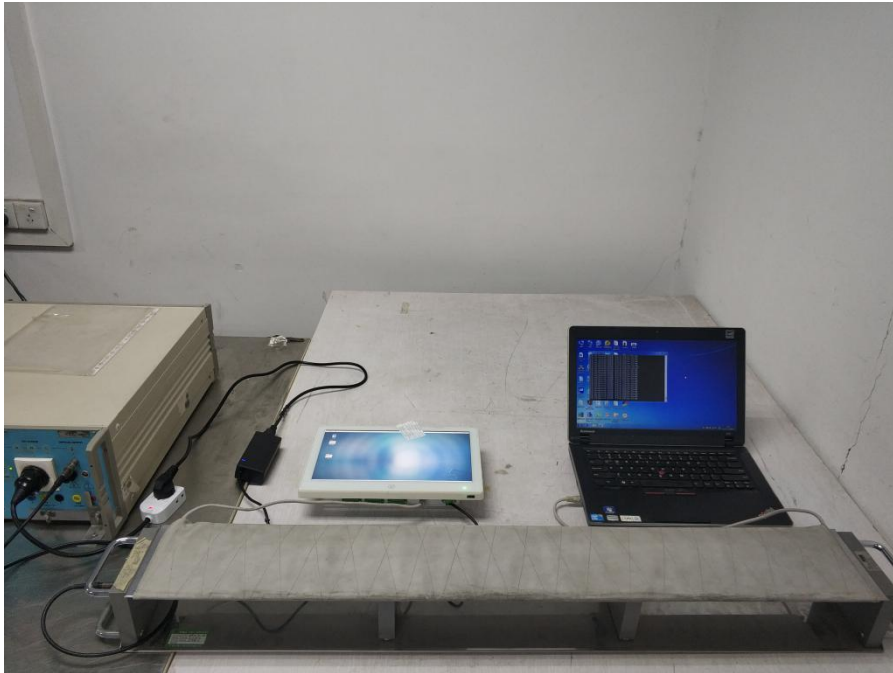
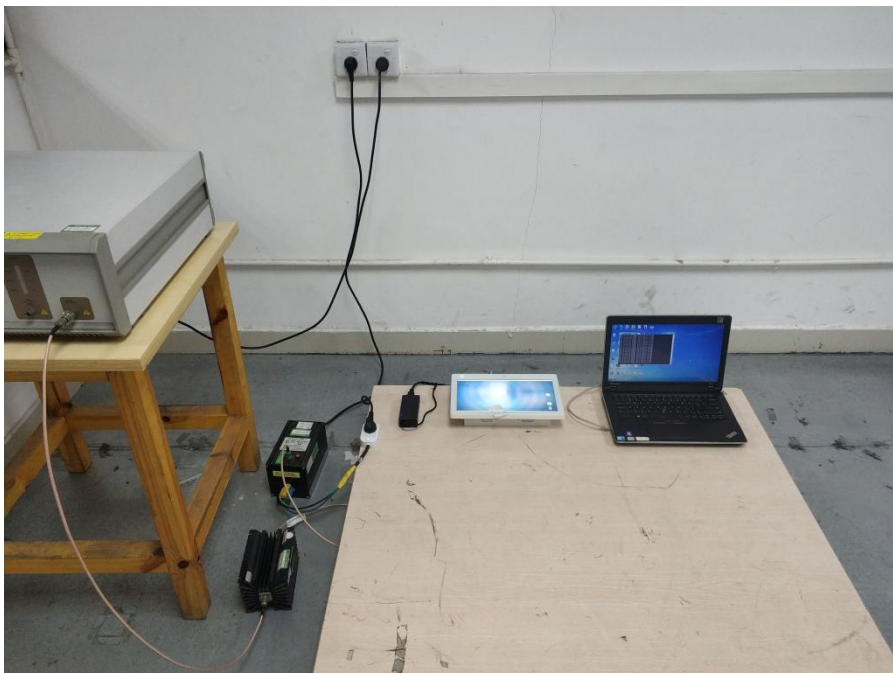
Harmonic/Flicker Test View

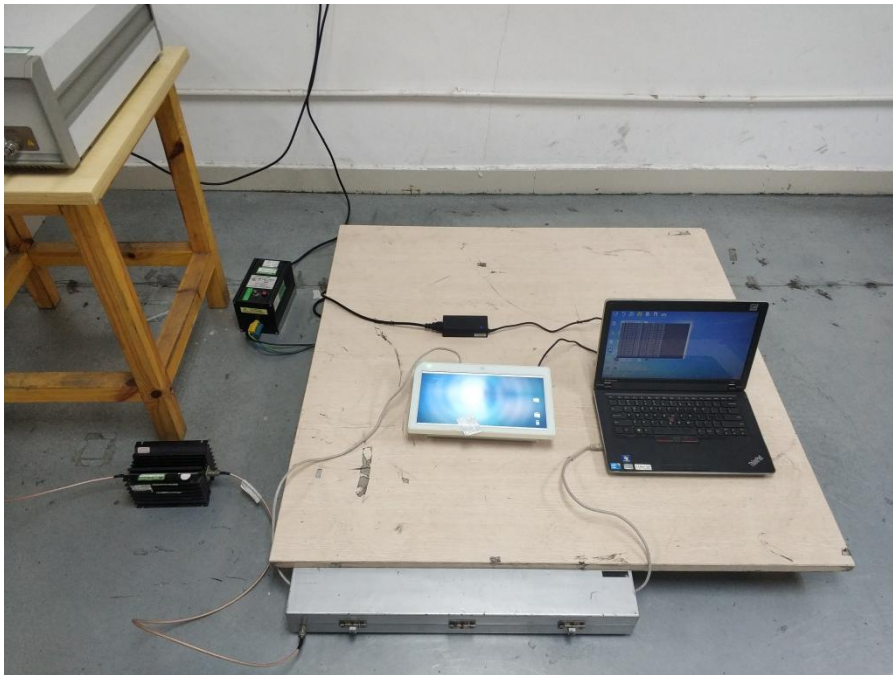
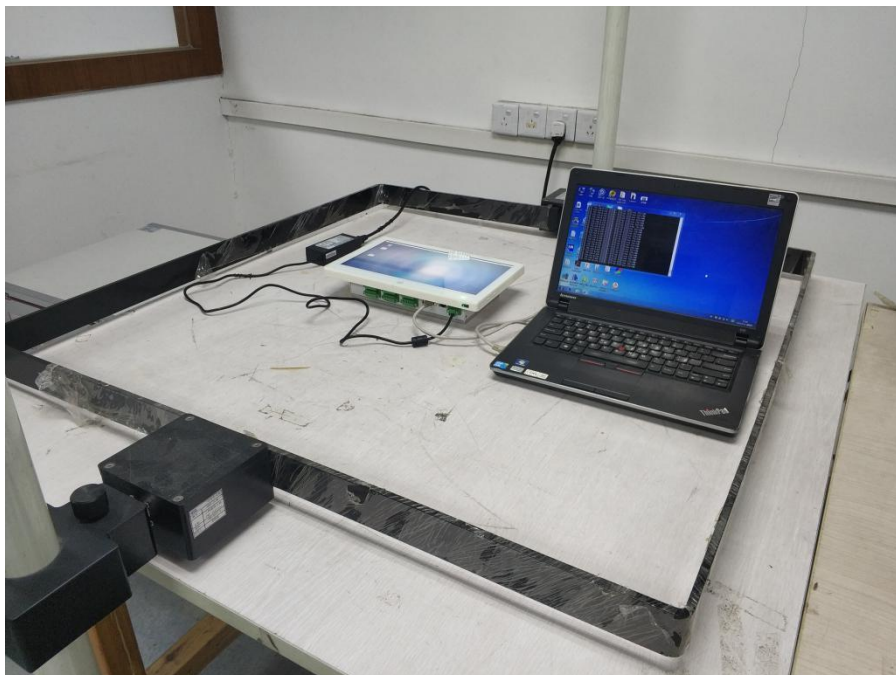


EN 61000-4-2 Test View



EN 61000-4-3 Test View**EN 61000-4-4/5/11 Test View**

EN 61000-4-4 Test View RJ 45**EN 61000-4-6 Test View**

EN 61000-4-6 Test View RJ45**EN 61000-4-8 Test View**

******* END OF REPORT *******