CONFORMANCE TEST REPORT
FOR
EN 55022 / EN 55024

Report No.:14-04-RBO-054-02

According to:

- ■ **Electromagnetic Compatibility Directive: 2004/108/EC**
- ☐ **Low Voltage Directive: 2006/95/EC**
- ☐ **Radio Equipment and Telecommunications Terminal Equipment: 1999/5/EC**
- ☐ **Machinery Directives: 2006/42/EC**

Client:	Vecow
Product:	Advanced Box PC
Model No.:	Vecow ABP Series; ABP-XXXX; ABP-2845
Comment Issues:	---
Manufacturer/supplier:	Vecow

Date test item received	: 2014/04/28
Date test campaign completed	: 2014/05/13
Date of issue	: 2014/05/16

The test result only corresponds to the tested sample. It is not permitted to copy this report, in part or in full, without the permission of the test laboratory.
Total number of pages of this test report: 36 pages
Total number of pages of this test photos: 24 pages

Test Engineer	Checked By	Approved By
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Laboratory Introduction: Electronics Testing Center, Taiwan is recognized, filed and mutual recognition arrangement as following:
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❷ ISO/IEC 17025: BSMI, CNLA, DGT, NVLAP, CCIBLAC, UL, Compliance
❸ Filing: FCC, Industry Canada, VCCI
❹ MRA: Australia, Hong Kong, New Zealand, Singapore, USA, Japan, Korea, China, APLAC through CNLA
❺ FCC Registration Number: 90588, 91094, 91095

CONTENTS

1 TEST REPORT CERTIFICATION

Client	:	Vecow
Address	:	12F., No. 111, Zhongcheng Rd., Tucheng Dist., New Taipei City 23674 Taiwan (R. O. C.)
Manufacturer	:	Vecow
Address	:	12F., No. 111, Zhongcheng Rd., Tucheng Dist., New Taipei City 23674 Taiwan (R. O. C.)
EUT	:	Advanced Box PC
Trade Name	:	Vecow
Model No.	:	Vecow ABP Series; ABP-XXXX; ABP-2845
Comment Issues	:	---

Test Standard	:	Emissions	Immunity
		EN 55022:2010(Class A)	EN 55024:2010
		CISPR 22:2008	CISPR 24:2010
		EN61000-3-2:2006/A1:2009/A2:2009	IEC 61000-4-2:2008
		EN61000-3-3:2013	IEC 61000-4-3:2006/A1:2007/A2:2010
			IEC 61000-4-4:2012
			IEC 61000-4-5:2005
			IEC 61000-4-6:2013
			IEC 61000-4-8:2009
			IEC 61000-4-11:2004

The testing described in this report has been carried out to the best of our knowledge and ability, and our responsibility is limited to the exercise of reasonable care. This certification is not intended to believe the sellers from their legal and/or contractual obligations.

2 GENERAL INFORMATIONS

2.1 Description of EUT:

Product: **Advanced Box PC**

2.2 Related Information of EUT:

Power Supply	: Input：100-240Vac, 50/60Hz, 2A ; Output：12Vdc, 5A, 60W
Highest working Frequency	: 1.91GHz
Power Line	: ■ Nonshielded □ Shielded □ None , length: 1.8 m
Signal Line	: □ Nonshielded □ Shielded ■ None , length: _____ m
Control Line	: □ Nonshielded □ Shielded ■ None , length: _____ m
Data Line	: □ Nonshielded □ Shielded ■ None , length: _____ m

* For more detailed features, please refer to *User's Manual*.

2.3 Tested Configuration:

The EUT connected with the following peripheral devices.

Following peripheral devices and interface cables were connected during the measurement:

Product	Manufacturer	Model No.	I/O Cable
Mouse	DELL	MS111-L	1.5m Unshielded Cable
KeyBoard	M056UC	DELL	1.5m Shielded Cable
LCD TV	SONY	KDL-22EX420	1.6m Unshielded AC Power Cord
Earphone	---	---	0.6m Unshielded Cable
2.5吋HDD*2	WD	C4B	0.4m Unshielded USB Cable
2.5吋HDD	BUFFALO	HD-PCT500U3B	0.2m Unshielded USB Cable
HDMI Cable	---	---	1.0m Unshielded Cable
Network Cable	---	---	3.0m Unshielded Cable

2.4 Deviation Record:

(If any deviation from additions to or exclusions from test method must be stated)

N/A

2.5 Modification Record:

No modifications were required. (That is the EUT complied with the requirement as tested.)

2.6 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Electromagnetic Interference		
Measurement	Frequency	Uncertainty
Conducted emissions	150kHz ~ 30MHz	±2.5dB(Mains)
Conducted emission at telecommunication ports	150kHz ~ 30MHz	±2.22dB(Voltage)
		±2.88dB(Current)
Magnetic emissions	9kHz ~ 30MHz	±2.5dB
Radiated emissions	30MHz ~ 1GHz	±3.90dB(30MHz≦f≦300MHz)
		±3.95dB(300MHz＜f≦1GHz)
	Above 1GHz	±4.42dB(1GHz≦f≦18GHz)
		±4.86dB(18GHz≦f≦40GHz)
Electromagnetic Susceptibility		
Measurement	Item	Uncertainty
Electrostatic Discharges (ESD)	---	±0.22(A)、58.67(V)
Radiated RF electromagnetic Fields	---	±1.2(dBμV)
Electrical Fast Transients and bursts	---	±2.95(V)
Surges	---	±2.95(V)
Conducted Disturbances, induced by RF fields	---	±0.7(dB)
Power-frequency Magnetic Field	---	±1.49(dB)
Voltage Dips, Interruptions, and variations	---	±4.18(V)

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

3 SUMMARY OF TEST RESULTS

3.1 Emissions:

3.1.1 Conducted Emissions

■ **–PASS(Neutral)**

EMI value to the limit: -27.9 dB at 22.6550 MHz

■ **–PASS(Line)**

EMI value to the limit: -26.2 dB at 0.1516 MHz

3.1.2 Conducted Telecommunication ports

■ **–PASS(Mode: ISN(10M)-Voltage)**

EMI value to the limit: -11.5 dB at 0.6613 MHz

■ **–PASS(Mode: ISN(100M)-Voltage)**

EMI value to the limit: -11.2 dB at 0.6613 MHz

3.1.3 Radiated Emissions

(30MHz to 1GHz)

■ **–PASS(Horizontal)**

EMI value to the limit: -10.24 dB at 184.5400 MHz

■ **–PASS(Vertical)**

EMI value to the limit: -5.78 dB at 154.2600 MHz

(Above 1GHz~6GHz)

■ **–PASS(Horizontal)**

EMI value to the limit: -22.8 dB at 1620.0000 MHz

■ **–PASS(Vertical)**

EMI value to the limit: -21.0 dB at 1710.0000 MHz

3.1.4 Harmonics Current Emissions

■ **-PASS**

The harmonics current values were under the limits of the class A equipment of the EN 61000-3-2

3.1.5 Voltage Fluctuations and Flicker

■ **-PASS**

The voltage fluctuations and flicker values were under the limits of the EN 61000-3-3 requirements.

3.2 Immunity:

3.2.1 Immunity Criteria:

The results of all of the immunity tests performed on the EUT were evaluated according to the following criteria, and according to the manufacturer's specifications for the EUT:

Performance criterion A: The EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.

Performance criterion B: The EUT continued to operate as intended after the test. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended. During the test, degradation of performance was however allowed. No change of actual operating state or stored data was allowed.

Performance criterion C: Temporary loss of function was allowed, provided the function was self recoverable or could be restored by the operation of the controls.

3.2.2 Electrostatic Discharge Immunity:

	Requirement: Criterion B
☐ - Not Applicable	- Satisfies Criterion A
■ - No Degradation of Function	- Satisfies Criterion A
☐ - Distortion of Function	- Satisfies Criterion B
☐ - Error of Function	- Satisfies Criterion C

3.2.3 RF Radiated Fields Immunity:

	Requirement: Criterion A
☐ - Not Applicable	- Satisfies Criterion A
■ - No Degradation of Function	- Satisfies Criterion A
☐ - Distortion of Function	- Satisfies Criterion B
☐ - Error of Function	- Satisfies Criterion C

3.2.4 EFT/Burst Immunity:

	Requirement: Criterion B
☐ - Not Applicable	- Satisfies Criterion A
■ - No Degradation of Function	- Satisfies Criterion A
☐ - Distortion of Function	- Satisfies Criterion B
☐ - Error of Function	- Satisfies Criterion C

3.2.5 Surge Immunity:

	Requirement: Criterion B
☐ - Not Applicable	- Satisfies Criterion A
■ - No Degradation of Function	- Satisfies Criterion A
☐ - Distortion of Function	- Satisfies Criterion B
☐ - Error of Function	- Satisfies Criterion C

3.2.6 RF Common Mode Immunity:

	Requirement: Criterion A
☐ - Not Applicable	- Satisfies Criterion A
■ - No Degradation of Function	- Satisfies Criterion A
☐ - Distortion of Function	- Satisfies Criterion B
☐ - Error of Function	- Satisfies Criterion C

3.2.7 Power Frequency Magnetic Field Immunity:

	Requirement: Criterion A
☐ - Not Applicable	- Satisfies Criterion A
■ - No Degradation of Function	- Satisfies Criterion A
☐ - Distortion of Function	- Satisfies Criterion B
☐ - Error of Function	- Satisfies Criterion C

3.2.8 Voltage Interruptions and Voltage Dips Immunity:

	Requirement: Criterion C (or better)
■ - No Degradation of Function	- Satisfies Criterion A
☐ - Distortion of Function	- Satisfies Criterion B
☐ - Error of Function	- Satisfies Criterion C

4 TEST DATA & RELATED INFORMATIONS

4.1 Emissions:

4.1.1 Conducted Emissions Test:

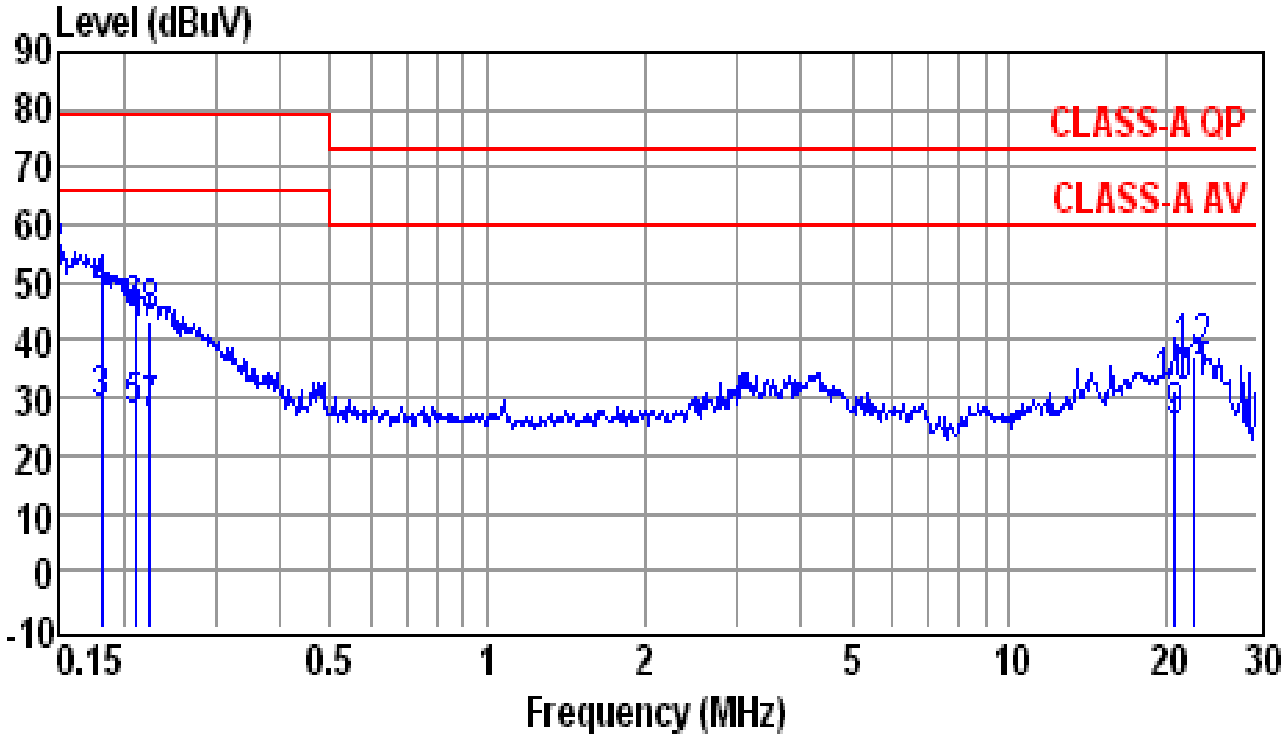
4.1.1.1 Conducted Emissions Test Data:

A. Operating Conditions of the EUT: Operation Mode

Test Date: May 08, 2014

Test Specification	EN 55022
Climatic Condition	Ambient Temperature: 21°C Relative Humidity: 58% RH
Power Supply System	AC Power: 230 Vac 50 Hz

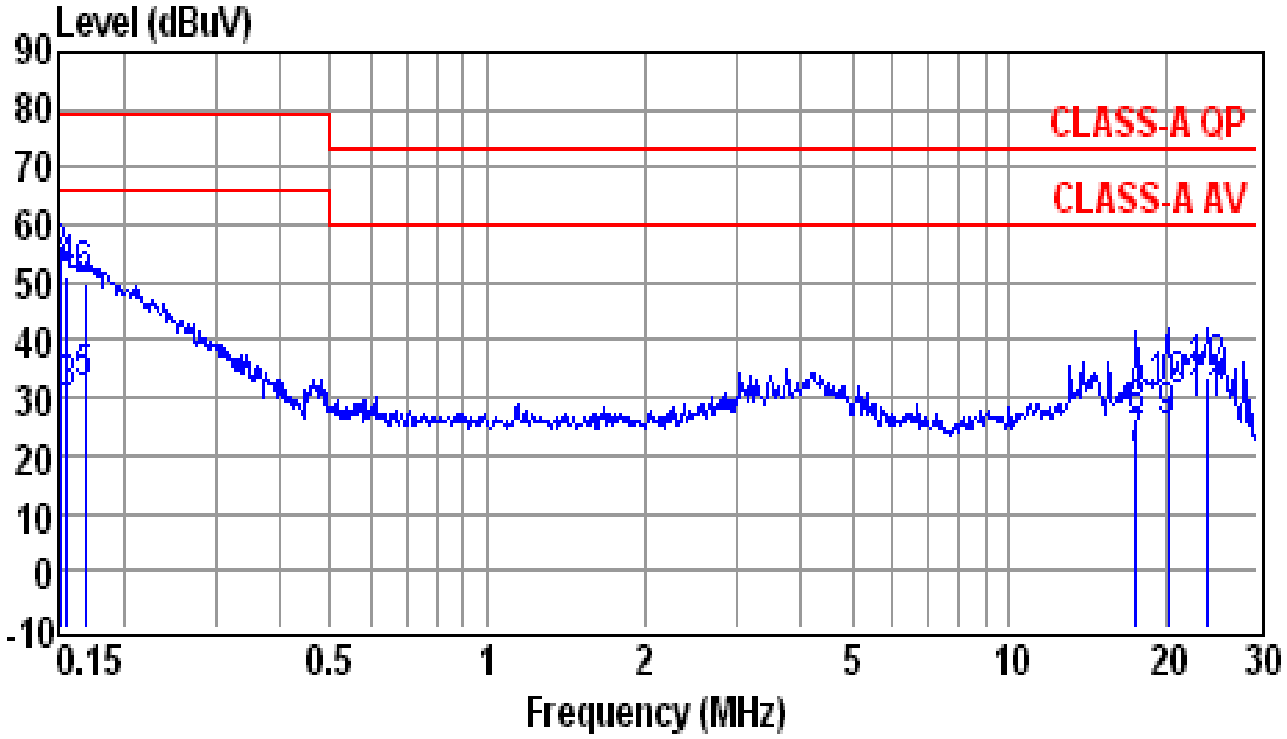
Test data see the next pages.



Site	: conducted #1	Date	: 05-08-2014
Condition	: CLASS-A QP	LISN	: NEUTRAL
Tem / Hum	: 21 ℃ / 58%		
Test Mode	: Operatiom mode (adapter 12Vdc)		
EUT	: Advanced Box PC	Power Rating	: 230V50Hz
Memo	: Vecow ABP Series; ABP-XXXX; ABP-2845	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1500	23.0	10.2	33.2	66.0	-32.8	Average
0.1500	43.4	10.2	53.6	79.0	-25.4	QP
0.1815	18.3	10.2	28.5	66.0	-37.5	Average
0.1815	37.4	10.2	47.6	79.0	-31.4	QP
0.2106	16.8	10.2	27.0	66.0	-39.0	Average
0.2106	33.9	10.2	44.1	79.0	-34.9	QP
0.2256	16.3	10.2	26.5	66.0	-39.5	Average
0.2256	33.2	10.2	43.4	79.0	-35.6	QP
20.8140	14.2	10.9	25.1	60.0	-34.9	Average
20.8140	20.3	10.9	31.2	73.0	-41.8	QP
22.6550	21.2	10.9	32.1	60.0	-27.9	Average
22.6550	26.5	10.9	37.4	73.0	-35.6	QP

Note :
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss



Site	: conducted #1	Date	: 05-08-2014
Condition	: CLASS-A QP	LISN	: LINE
Tem / Hum	: 21 ℃ / 58%		
Test Mode	: Operatiom mode (adapter 12Vdc)		
EUT	: Advanced Box PC	Power Rating	: 230V50Hz
Memo	: Vecow ABP Series; ABP-XXXX; ABP-2845	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1516	21.6	10.1	31.7	66.0	-34.3	Average
0.1516	42.7	10.1	52.8	79.0	-26.2	QP
0.1565	20.2	10.1	30.3	66.0	-35.7	Average
0.1565	40.8	10.1	50.9	79.0	-28.1	QP
0.1694	21.5	10.1	31.6	66.0	-34.4	Average
0.1694	39.8	10.1	49.9	79.0	-29.1	QP
17.5680	9.4	11.0	20.4	60.0	-39.6	Average
17.5680	15.2	11.0	26.2	73.0	-46.8	QP
20.1620	14.3	11.0	25.3	60.0	-34.7	Average
20.1620	20.0	11.0	31.0	73.0	-42.0	QP
24.1420	17.4	11.0	28.4	60.0	-31.6	Average
24.1420	22.7	11.0	33.7	73.0	-39.3	QP

Note :
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

4.1.2 Conducted Telecommunication ports Test:

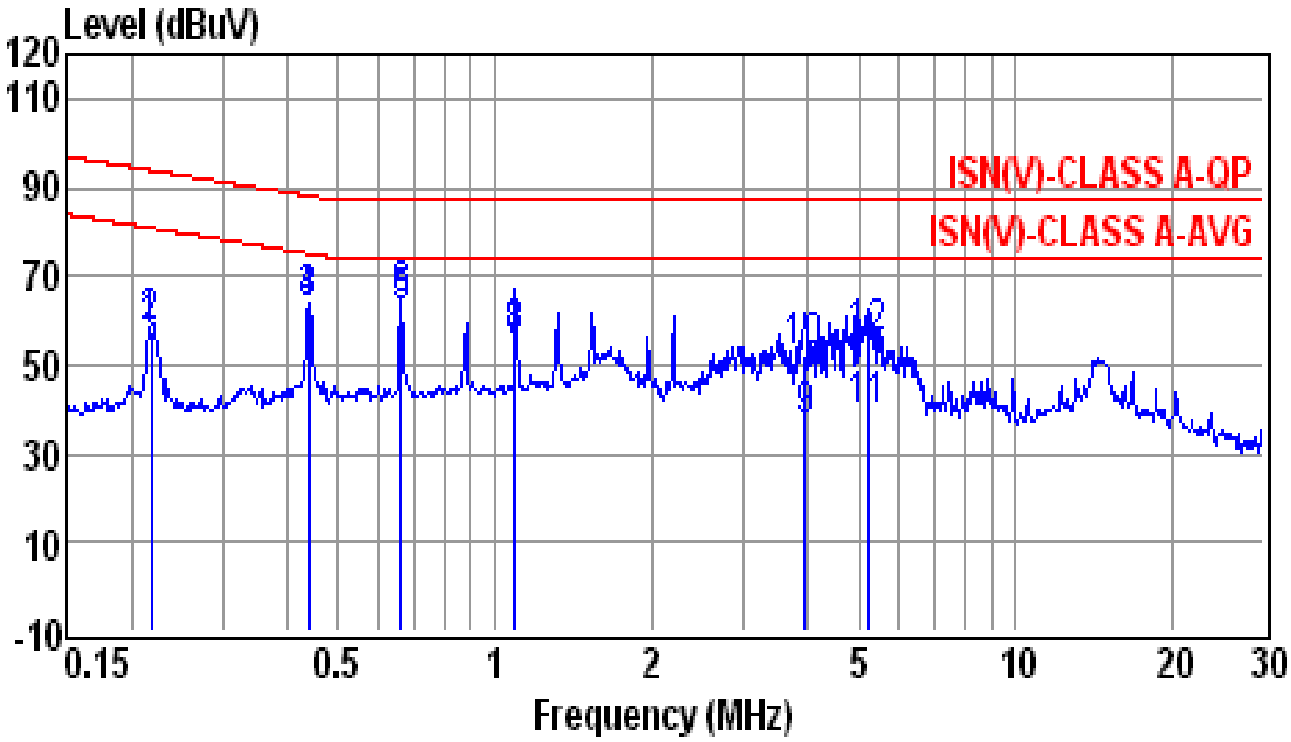
4.1.2.1 Conducted Telecommunication ports Test Data:

A. Operating Conditions of the EUT: ISN(10M)

Test Date: May 08, 2014

Test Specification	EN 55022
Climatic Condition	Ambient Temperature: 23°C Relative Humidity: 52% RH
Power Supply System	AC Power: 230 Vac 50 Hz

Test data see the next pages.



Site	: conducted #1	Date	: 05-08-2014
Condition	: ISN(V)-CLASS A-QP	LISN	:
Tem / Hum	: 23 ℃ / 52%	Test Mode	: 10M
EUT	: Advanced Box PC	Power Rating	: 230V50Hz
Memo	: Vecow ABP Series; ABP-XXXX; ABP-2845	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.2185	37.2	20.0	57.2	80.9	-23.7	Average
0.2185	37.8	20.0	57.8	93.9	-36.1	QP
0.4397	42.9	19.9	62.8	75.1	-12.3	Average
0.4397	43.3	19.9	63.2	88.1	-24.9	QP
0.6613	42.6	19.9	62.5	74.0	-11.5	Average
0.6613	44.0	19.9	63.9	87.0	-23.1	QP
1.0940	34.5	19.9	54.4	74.0	-19.6	Average
1.0940	35.8	19.9	55.7	87.0	-31.3	QP
3.9430	16.5	20.0	36.5	74.0	-37.5	Average
3.9430	31.9	20.0	51.9	87.0	-35.1	QP
5.2210	18.7	20.0	38.7	74.0	-35.3	Average
5.2210	35.6	20.0	55.6	87.0	-31.4	QP

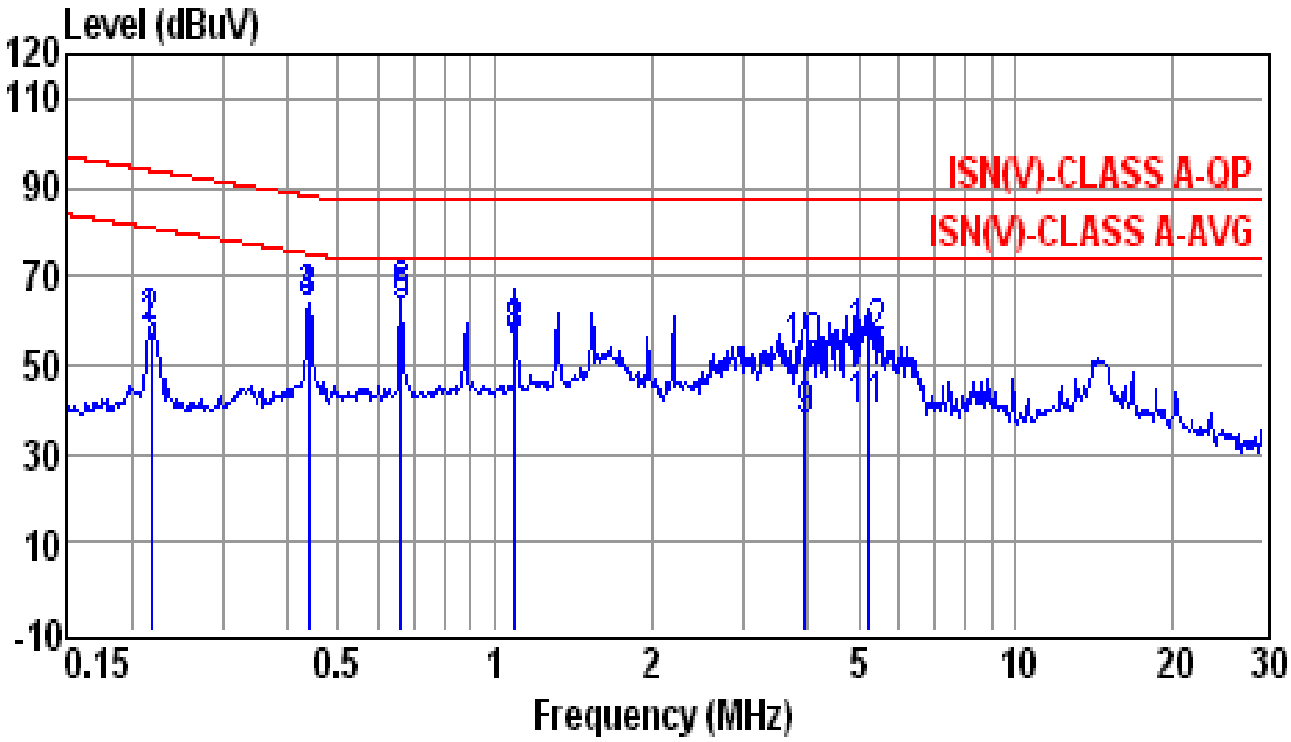
Note :
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

B.Operating Conditions of the EUT: ISN(100M)

Test Date: May 08, 2014

Test Specification	EN 55022
Climatic Condition	Ambient Temperature: 23°C Relative Humidity: 52% RH
Power Supply System	AC Power: 230 Vac 50 Hz

Test data see the next pages.



Site	: conducted #1	Date	: 05-08-2014
Condition	: ISN(V)-CLASS A-QP	LISN	:
Tem / Hum	: 23 ℃ / 52%	Test Mode	: 10M
EUT	: Advanced Box PC	Power Rating	: 230V50Hz
Memo	: Vecow ABP Series; ABP-XXXX; ABP-2845	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.2185	37.2	20.0	57.2	80.9	-23.7	Average
0.2185	37.8	20.0	57.8	93.9	-36.1	QP
0.4397	42.9	19.9	62.8	75.1	-12.3	Average
0.4397	43.3	19.9	63.2	88.1	-24.9	QP
0.6613	42.6	19.9	62.5	74.0	-11.5	Average
0.6613	44.0	19.9	63.9	87.0	-23.1	QP
1.0940	34.5	19.9	54.4	74.0	-19.6	Average
1.0940	35.8	19.9	55.7	87.0	-31.3	QP
3.9430	16.5	20.0	36.5	74.0	-37.5	Average
3.9430	31.9	20.0	51.9	87.0	-35.1	QP
5.2210	18.7	20.0	38.7	74.0	-35.3	Average
5.2210	35.6	20.0	55.6	87.0	-31.4	QP

Note :
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

4.1.3 Radiated Emissions Test:

4.1.3.1 Radiated Emissions Test Data:

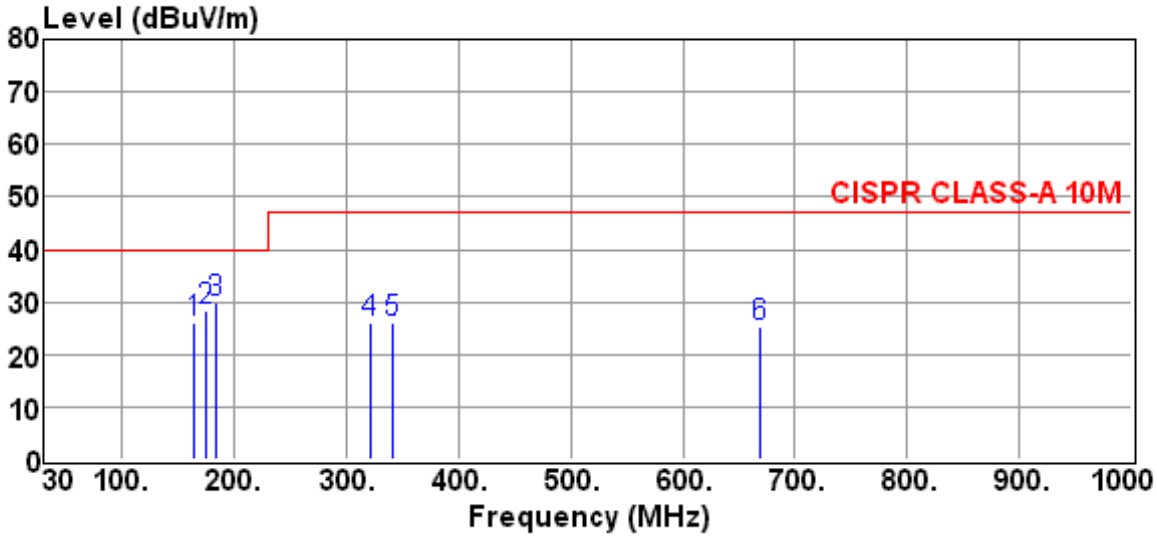
A. Operating Conditions of the EUT: Operation Mode

Test Date: May 13, 2014

Test Specification	EN 55022
Climatic Condition	Ambient Temperature: 27°C Relative Humidity: 52% RH
Power Supply System	AC Power: 230 Vac 50 Hz

Test data see the next pages.

(30MHz to 1GHz)

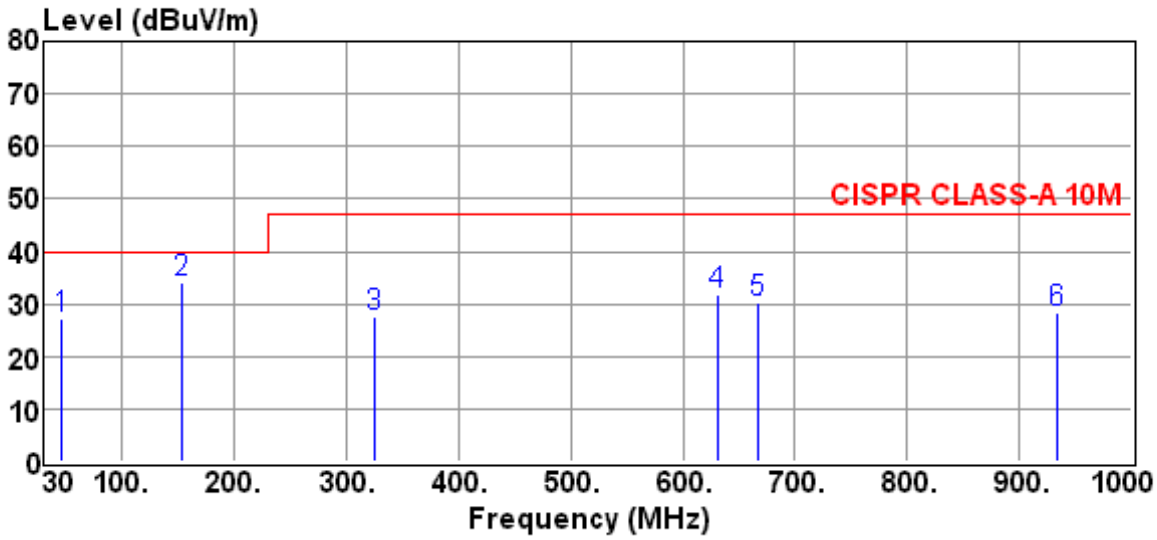


Site	:Open site #2	Date	:2014-05-13
EUT	: Advanced Box PC	Ant. Pol.	:HORIZONTAL
Model	: Vecow ABP Series; ABP-XXXX; ABP-2845		
Detector	:QP		
Power Rating	:230V50Hz	Engineer	:Sky Kuo
Limit	:CISPR CLASS-A 10M	Temp.	:27 ˚C
Memo	:Operation mode	Humi.	:52 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB
164.3400	12.58	13.46	26.04	40.00	-13.96
175.6200	14.92	13.29	28.21	40.00	-11.79
184.5400	16.48	13.28	29.76	40.00	-10.24
321.0800	7.82	18.34	26.16	47.00	-20.84
342.0500	7.45	18.70	26.15	47.00	-20.85
668.2300	-1.91	27.31	25.40	47.00	-21.60

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss
3. The margin value=Limit - Result



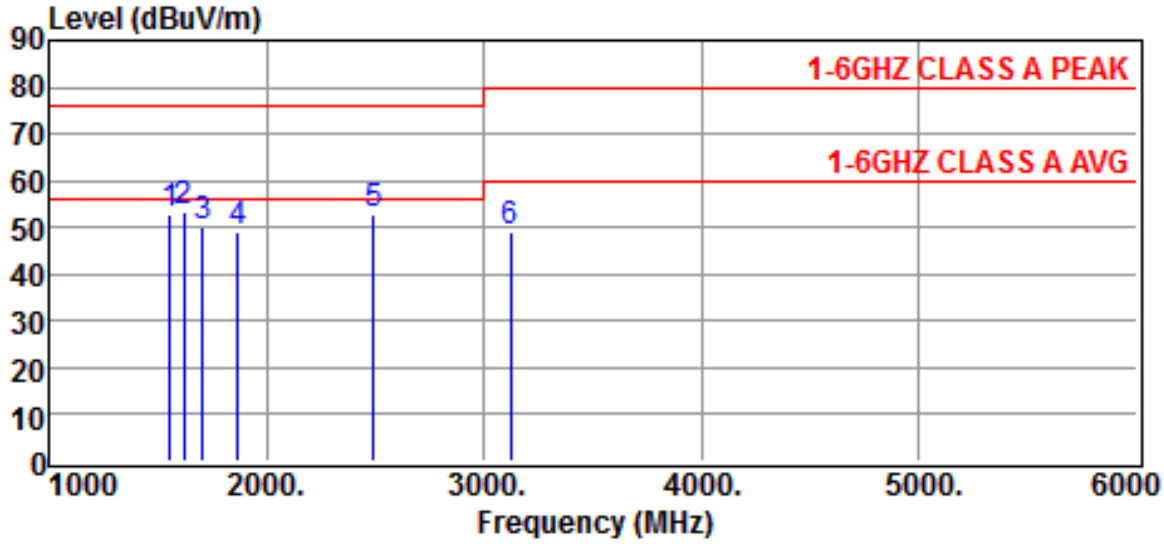
Site	:Open site #2	Date	:2014-05-13
EUT	: Advanced Box PC	Ant. Pol.	:VERTICAL
Model	: Vecow ABP Series; ABP-XXXX; ABP-2845		
Detector	:QP		
Power Rating	:230V50Hz	Engineer	:Sky Kuo
Limit	:CISPR CLASS-A 10M	Temp.	:27 ˚C
Memo	:Operation mode	Humi.	:52 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB
45.7300	15.56	11.49	27.05	40.00	-12.95
154.2600	20.59	13.63	34.22	40.00	-5.78
325.4600	9.20	18.43	27.63	47.00	-19.37
630.4800	5.38	26.44	31.82	47.00	-15.18
667.5400	3.00	27.28	30.28	47.00	-16.72
932.8600	-3.88	32.07	28.19	47.00	-18.81

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss
3. The margin value=Limit – Result

(Above 1GHz~6GHz)

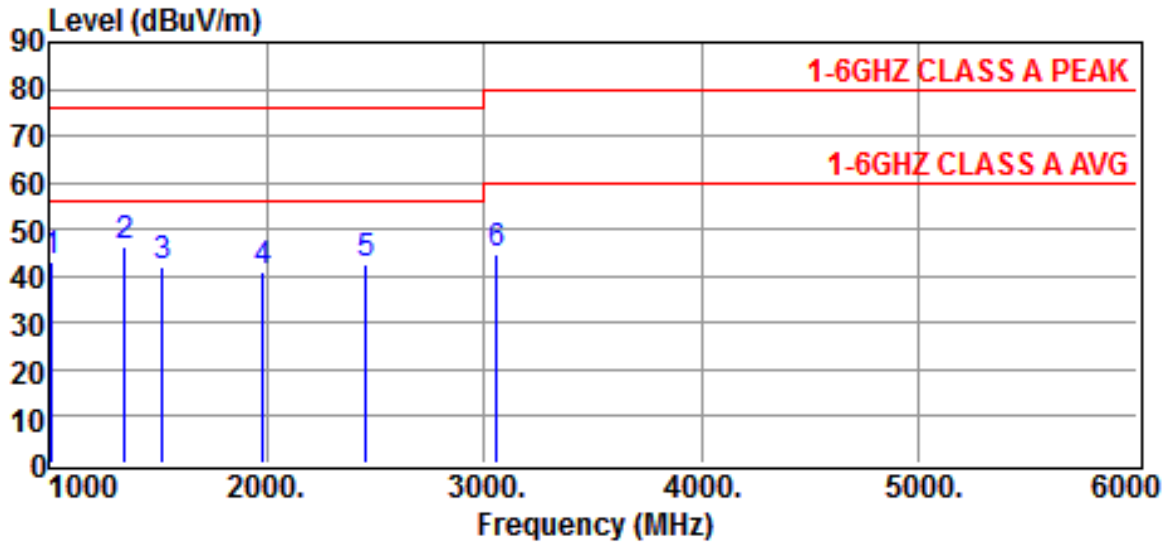


Site	:CHAMBER #2	Date	:2014-05-09
EUT	: Advanced Box PC	Ant. Pol.	:HORIZONTAL
Model	: Vecow ABP Series; ABP-XXXX; ABP-2845		
Detector	:Sky Kuo		
Power Rating	:230V50Hz	Engineer	:Operation mode
Limit	:1-6GHZ CLASS A PEAK	Temp.	:27˚C
Memo	:	Humi.	:58 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
1560.0000	62.2	-9.4	52.8	76.0	-23.2	Peak
1620.0000	62.3	-9.1	53.2	76.0	-22.8	Peak
1710.0000	59.0	-8.6	50.4	76.0	-25.6	Peak
1870.0000	56.5	-7.6	48.9	76.0	-27.1	Peak
2490.0000	58.5	-5.4	53.1	76.0	-22.9	Peak
3120.0000	52.0	-3.1	48.9	80.0	-31.1	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss
3. The margin value=Limit - Result



Site	:Chamber #2	Date	:2014-01-02
Limit	:1-6GHZ CLASS A PEAK	Ant. Pol.	:VERTICAL
EUT	:IP Camera	Temp.	:23
Power Rating	:230V50Hz	Humi.	:52
Model	: AZ6211	Engineer.	:andy.chang
Test Mode	:Operation Mode		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
1015.0000	55.5	-12.2	43.3	76.0	-32.7	Peak
1350.0000	57.0	-10.7	46.3	76.0	-29.7	Peak
1520.0000	52.0	-9.8	42.2	76.0	-33.8	Peak
1985.0000	48.0	-7.1	40.9	76.0	-35.1	Peak
2460.0000	48.3	-5.6	42.7	76.0	-33.3	Peak
3060.0000	48.3	-3.5	44.8	80.0	-35.2	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss
3. The margin value=Limit - Result

4.1.4 Harmonics Current Emissions Test:

4.1.4.1 Harmonics Current Emissions Test Data:

A. Operating Conditions of the EUT: Operation Mode

Test Date: May 08, 2014

Test Specification	EN 61000-3-2
Climatic Condition	Ambient Temperature: 25°C Relative Humidity: 57% RH
Power Supply System	AC Power: 230 Vac 50 Hz

Test data see the next page.

Urms = 230.7V Freq = 50.000 Range: 2 A
Irms = 0.216A Ipk = 1.355A cf = 6.281
P = 16.79W S = 49.79VA pf = 0.337
THDi = 266 % THDu = 0.10 % Class A

Test - Time : 3min (100 %)

Test completed, Result: PASSED

Order	Freq. [Hz]	Iavg [A]	Irms [A]	Imax [A]	Limit [A]	Status
1	50	0.0815	0.0828	0.0872		
2	100	0.0000	0.0031	0.0035	1.0800	
3	150	0.0727	0.0739	0.0785	2.3000	
4	200	0.0000	0.0032	0.0037	0.4300	
5	250	0.0718	0.0730	0.0775	1.1400	
6	300	0.0000	0.0034	0.0039	0.3000	
7	350	0.0703	0.0714	0.0758	0.7700	
8	400	0.0000	0.0037	0.0040	0.2300	
9	450	0.0682	0.0693	0.0735	0.4000	
10	500	0.0000	0.0039	0.0043	0.1840	
11	550	0.0656	0.0667	0.0707	0.3300	
12	600	0.0000	0.0042	0.0045	0.1533	
13	650	0.0625	0.0635	0.0673	0.2100	
14	700	0.0000	0.0044	0.0048	0.1314	
15	750	0.0590	0.0599	0.0634	0.1500	
16	800	0.0000	0.0046	0.0049	0.1150	
17	850	0.0552	0.0560	0.0591	0.1324	
18	900	0.0000	0.0048	0.0050	0.1022	
19	950	0.0512	0.0520	0.0547	0.1184	
20	1000	0.0000	0.0049	0.0052	0.0920	
21	1050	0.0469	0.0476	0.0500	0.1071	
22	1100	0.0001	0.0050	0.0052	0.0836	
23	1150	0.0426	0.0432	0.0453	0.0978	
24	1200	0.0002	0.0050	0.0052	0.0767	
25	1250	0.0383	0.0388	0.0405	0.0900	
26	1300	0.0002	0.0050	0.0052	0.0708	
27	1350	0.0340	0.0344	0.0359	0.0833	
28	1400	0.0001	0.0050	0.0051	0.0657	
29	1450	0.0298	0.0302	0.0313	0.0776	
30	1500	0.0000	0.0049	0.0050	0.0613	
31	1550	0.0257	0.0260	0.0270	0.0726	
32	1600	0.0000	0.0046	0.0048	0.0575	
33	1650	0.0219	0.0221	0.0228	0.0682	
34	1700	0.0000	0.0045	0.0045	0.0541	
35	1750	0.0183	0.0186	0.0189	0.0643	
36	1800	0.0000	0.0043	0.0043	0.0511	
37	1850	0.0150	0.0151	0.0154	0.0608	
38	1900	0.0000	0.0040	0.0040	0.0484	
39	1950	0.0120	0.0121	0.0123	0.0577	
40	2000	0.0000	0.0037	0.0037	0.0460	

4.1.5 Voltage Fluctuations and Flicker Test:

4.1.5.1 Voltage Fluctuations and Flicker Test Data:

A. Operating Conditions of the EUT: Operation Mode

Test Date: May 08, 2014

Test Specification	EN 61000-3-3
Climatic Condition	Ambient Temperature: 25°C Relative Humidity: 57% RH
Power Supply System	AC Power: 230 Vac 50 Hz

	Test Data	Limit	Pass or Fail
Pst	0.072	0.65	Pass
Plt	0.072	1.00	Pass
dc [%]	0.00 ms	500 ms	Pass
dmax [%]	0.00 %	4.0 %	Pass
dt [s]	0.06 %	3.3 %	Pass

4.2 Immunity:

4.2.1 Electrostatic Discharge Immunity Test:

4.2.1.1 Electrostatic Discharge Immunity Test Data:

A. Operating Conditions of the EUT: Operation Mode

Test Date:May 09, 201 4

Test Specification	IEC 61000-4-2
Climatic Condition	Ambient Temperature: 28°C Relative Humidity: 58% RH Atmospheric Pressure: 990 mbar
Power Supply System	AC Power: 230 Vac 50 Hz

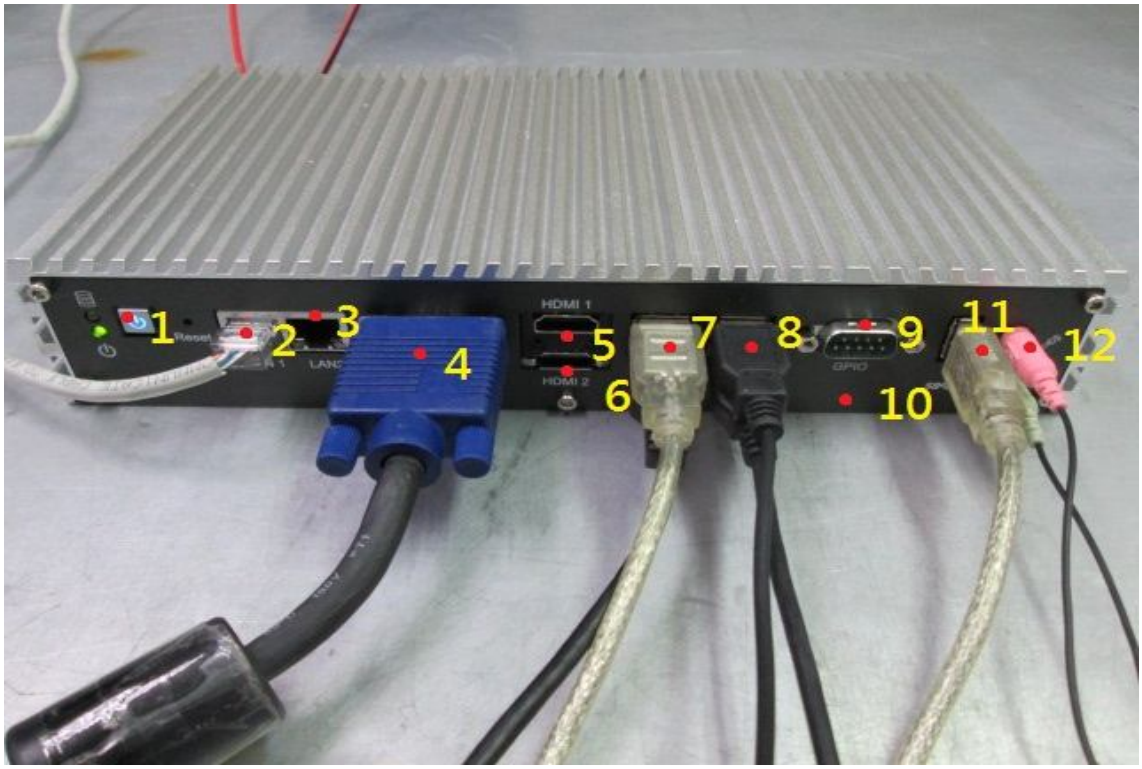
Energy-Storage Capacitor	: 150 pF	Contact Discharge Times	: 25 times/each condition
Discharge Resistor	: 330 Ω	Air Discharge Times	: 10 times/each condition

\ Discharge Mode	Contact Discharge								Air Discharge							
\ESD Voltage	2 kV		4 kV		___ kV		___ kV		2 kV		4 kV		8 kV		___ kV	
\Points\Result\Polarity	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−
VCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
HCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
P3、P5、P6、P9、P10、P16~P21、P23~P32	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
P1、P2~P4、P7、P8、P11~P15、P22、P33~P39	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---

Result:	■ Complied	□ Does not comply	
Criterion Required:	B	Criterion Met:	A

Note: ” A” means the EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.

TEST POINT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HDMI 1
HDMI 2
LAN1
GPIO


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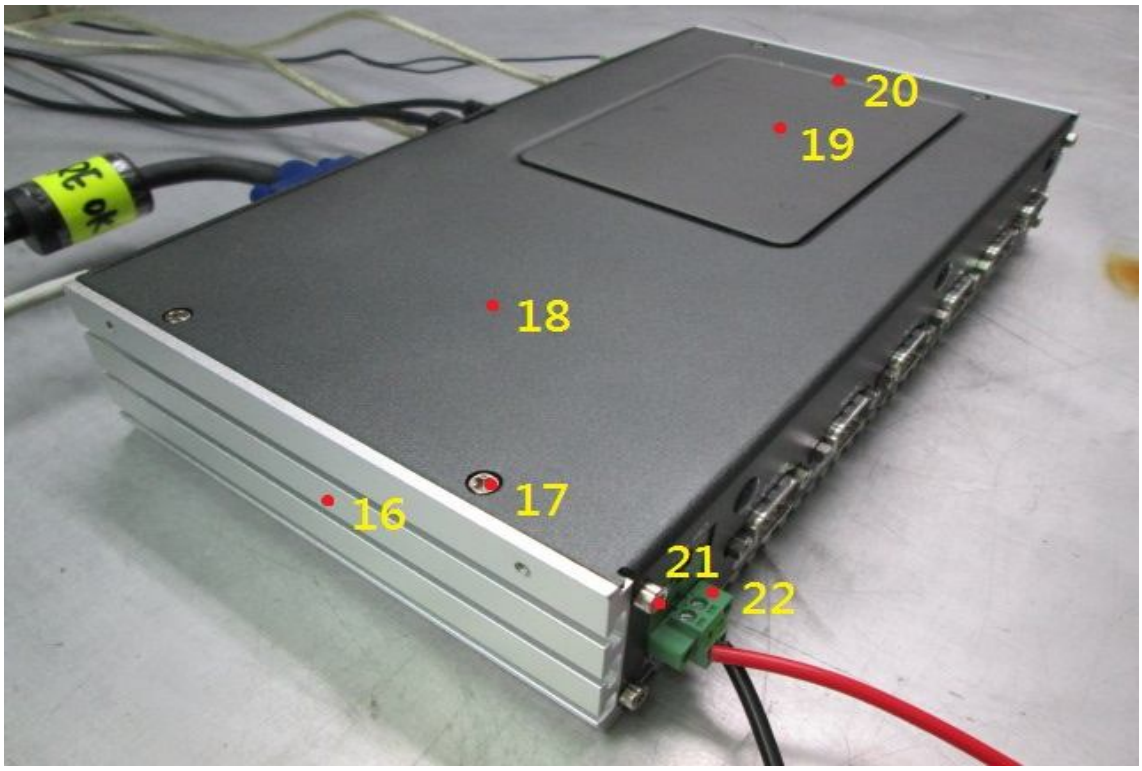
HDMI 2
HDMI 1
VGA
LAN2
LAN 1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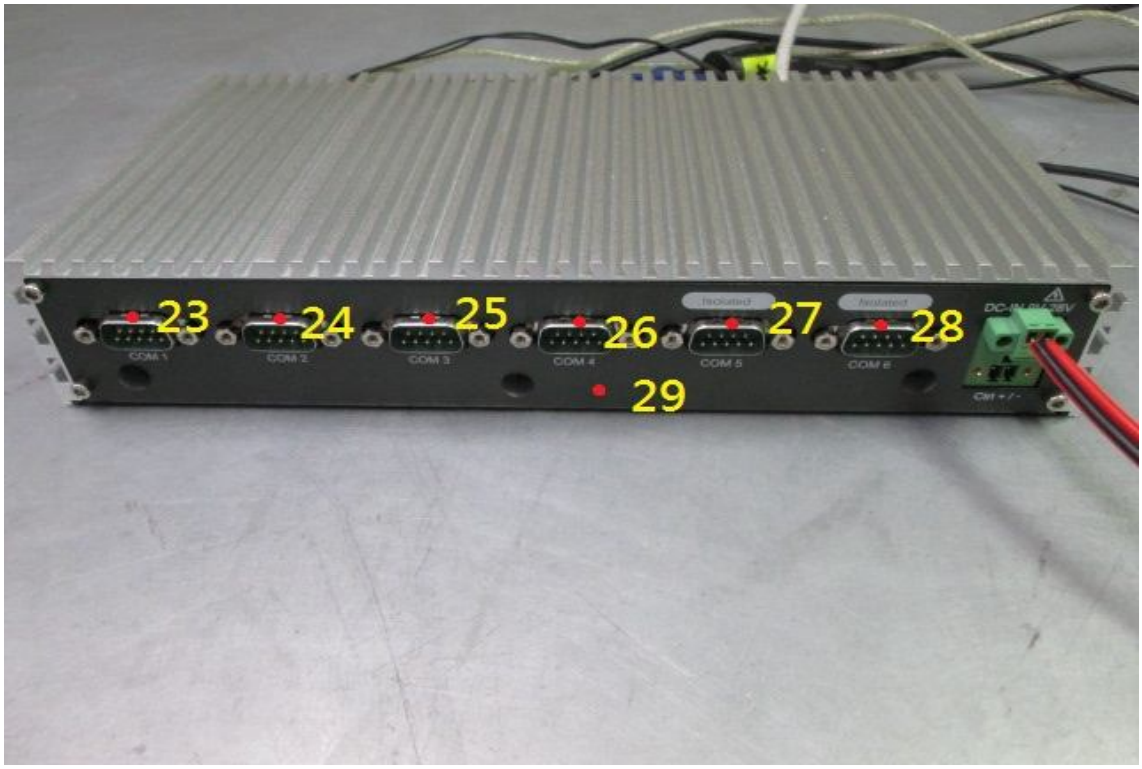
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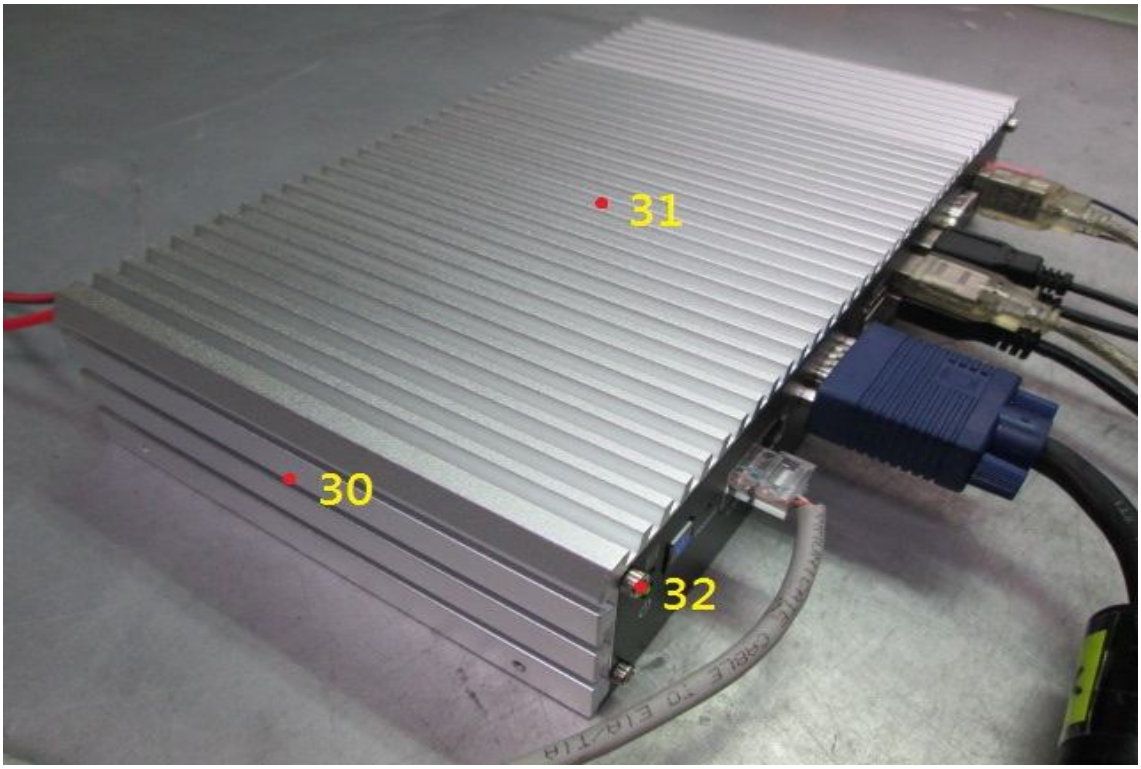
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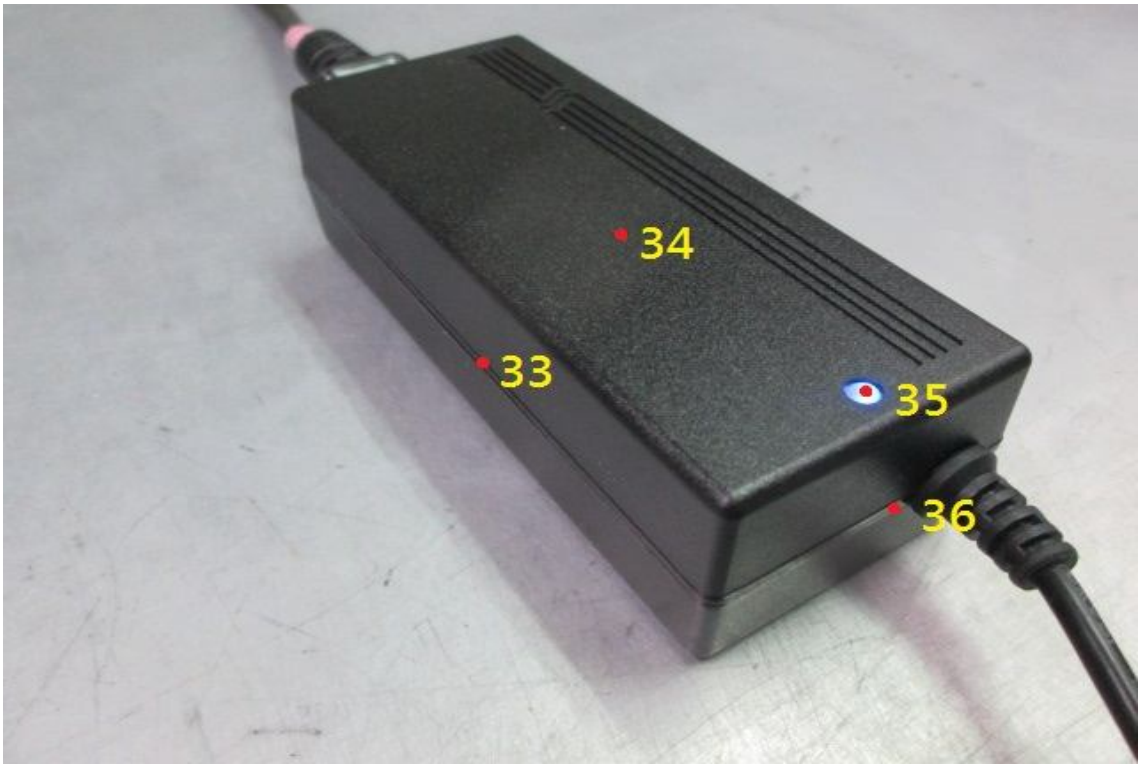
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PSSA1S5003923 Rev:A1N

4.2.2 RF Radiated Fields Immunity Test:

4.2.2.1 RF Radiated Fields Immunity Test Data:

A. Operating Conditions of the EUT: Operation Mode

Test Date: May 09, 2014

Test Specification	IEC 61000-4-3
Climatic Condition	Ambient Temperature: 26°C Relative Humidity: 57% RH
Power Supply System	AC Power: 230 Vac 50 Hz

Frequency Range: 80 MHz ~ 1000 MHz		Field Strength: 3 V/m	Modulation (AM 1kHz 80%)
Sweep Rate: ≦1.5×10^{-3} decades/s	Step Size: ≦1 % of preceding frequency value		Dwell Time: 3 s

Frequency Range (MHz)	Polarization of Device	Directing of Device	Test Result
80 MHz ~ 1000 MHz	Horizontal	Front	
		Rear	
		Left	
		Right	
80 MHz ~ 1000 MHz	Vertical	Front	
		Rear	
		Left	
		Right	

Result:	■ Complied	□ Does not comply	
Criterion Required:	A	Criterion Met:	A

Note: ” A” means the EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.

4.2.3 EFT/Burst Immunity Test:

4.2.3.1 EFT/Burst Immunity Test Data:

A. Operating Conditions of the EUT: Operation Mode

Test Date: May 09, 2014

Test Specification	IEC 61000-4-4
Climatic Condition	Ambient Temperature: 26 °C Relative Humidity: 59 % RH Atmospheric Pressure: 990 mbar
Power Supply System	AC Power: 230 Vac 50 Hz

Pulse : 5 /50ns Burst : 15ms /300ms		Repetition Rate : 5kHz	Test time : 1 min/each condition
Voltage\Polarity\Test Point\Mode\Result		1.0 kV	
		+	-
Power Line	L	A	A
	N	A	A
	L-N	A	A
	PE	A	A
	L-PE	A	A
	N-PE	A	A
	L-N-PE	A	A
Signal Line	LAN Cable	A	A

Result:	■ Complied	□ Does not comply	
Criterion Required:	B	Criterion Met:	A

Note: ” A” means the EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.
” B” means the EUT continued to operate as intended after the test. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended. During the test, degradation of performance was however allowed. No change of actual operating state or stored data was allowed.

4.2.4 Surge Immunity Test:

4.2.4.1 Surge Immunity Test Data:

A. Operating Conditions of the EUT: Operation Mode

Test Date:May 09, 2014

Test Specification	IEC 61000-4-5
Climatic Condition	Ambient Temperature: 28°C Relative Humidity: 58 % RH Atmospheric Pressure: 990 mbar
Power Supply System	AC Power: 230 Vac 50 Hz

Waveform : 1.2/50μs(8/20μs)			Repetition rate : 60 sec		Times : POWER 5 time/each condition	
\Voltage \Mode \Polarity \Result		\Phase	**0°**	**90°**	**180°**	**270°**
0.5kV	**L – N**	+	A	A	A	A
		–	A	A	A	A
1.0kV	**L – N**	+	A	A	A	A
		–	A	A	A	A
0.5kV	**L-PE**	+	A	A	A	A
		–	A	A	A	A
	N-PE	+	A	A	A	A
		–	A	A	A	A
1.0kV	**L-PE**	+	A	A	A	A
		–	A	A	A	A
	N-PE	+	A	A	A	A
		–	A	A	A	A
2.0KV	**L-PE**	+	A	A	A	A
		–	A	A	A	A
	N-PE	+	A	A	A	A
		–	A	A	A	A

Result:	■ Complied	□ Does not comply	
Criterion Required:	B	Criterion Met:	A

Note: ” A” means the EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.
” B” means the EUT continued to operate as intended after the test. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended. During the test, degradation of performance was however allowed. No change of actual operating state or stored data was allowed.

4.2.5 RF Common Mode Immunity Test:

4.2.5.1 RF Common Mode Immunity Test Data:

A. Operating Conditions of the EUT: Operation Mode

Test Date: May 09, 2014

Test Specification	IEC 61000-4-6
Climatic Condition	Ambient Temperature: 27°C Relative Humidity: 57 % RH Atmospheric Pressure: 990 mbar
Power Supply System	AC Power: 230 Vac 50 Hz

Frequency Range	0.15MHz ~80MHz		Test Level	3 Vrms	Modulation (AM 1kHz 80%)
Sweep Rate	: ≤ 1.5×10^{-3} decades/s	Step Size	: ≤ 1 % of preceding frequency value		Dwell Time : 3 s
Frequency Range (MHz)		Tested Line		Test Result	
0.15MHz ~80MHz		AC Power cord		A	

Result:	■ Complied	□ Does not comply	
Criterion Required:	A	Criterion Met:	A

Note: " A" means the EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.

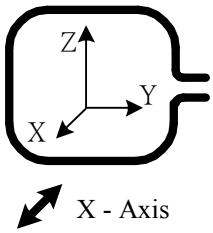
4.2.6 Power Frequency Magnetic Field Immunity Test:

4.2.6.1 Power Frequency Magnetic Field Immunity Test Data:

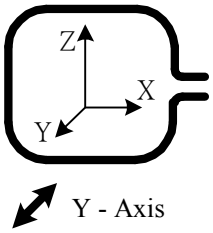
A. Operating Conditions of the EUT: Operation Mode

Test Date: May 09, 2014

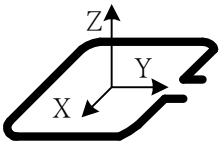
Test Specification	IEC 61000-4-8
Climatic Condition	Ambient Temperature: 27 °C Relative Humidity: 57 % RH
Power Supply System	AC Power: 230 Vac 50 Hz



X - Axis



Y - Axis



Z - Axis

Magnetic field frequency: 50 Hz	Continuous magnetic field strength: 1 A/m
Magnetic field direction	Testing result
X - Axis	A
Y - Axis	A
Z - Axis	A

Result:	■ Complied	□ Does not comply	
Criterion Required:	A	Criterion Met:	A

Note: " **A**" means the EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.

4.2.7 Voltage Interruptions and Voltage Dips Immunity Test:

4.2.7.1 Voltage Interruptions and Voltage Dips Immunity Test Data:

A. Operating Conditions of the EUT: Operation Mode

Test Date:May 09, 2014

Test Specification	IEC 61000-4-11
Climatic Condition	Ambient Temperature: 27°C Relative Humidity: 58 % RH Atmospheric Pressure: 990 mbar
Power Supply System	AC Power: 230 Vac 50 Hz

Test mode	Voltage dips	Durations (periods)	Interval(s)	Times	Phase	Result
Voltage interruptions	>95%	0.5	10	12	0°/90°/180°/270°	A
Voltage dips in %U_T	30%	25	10	12	0°/90°/180°/270°	A
	>95%	250	10	12	0°/90°/180°/270°	A

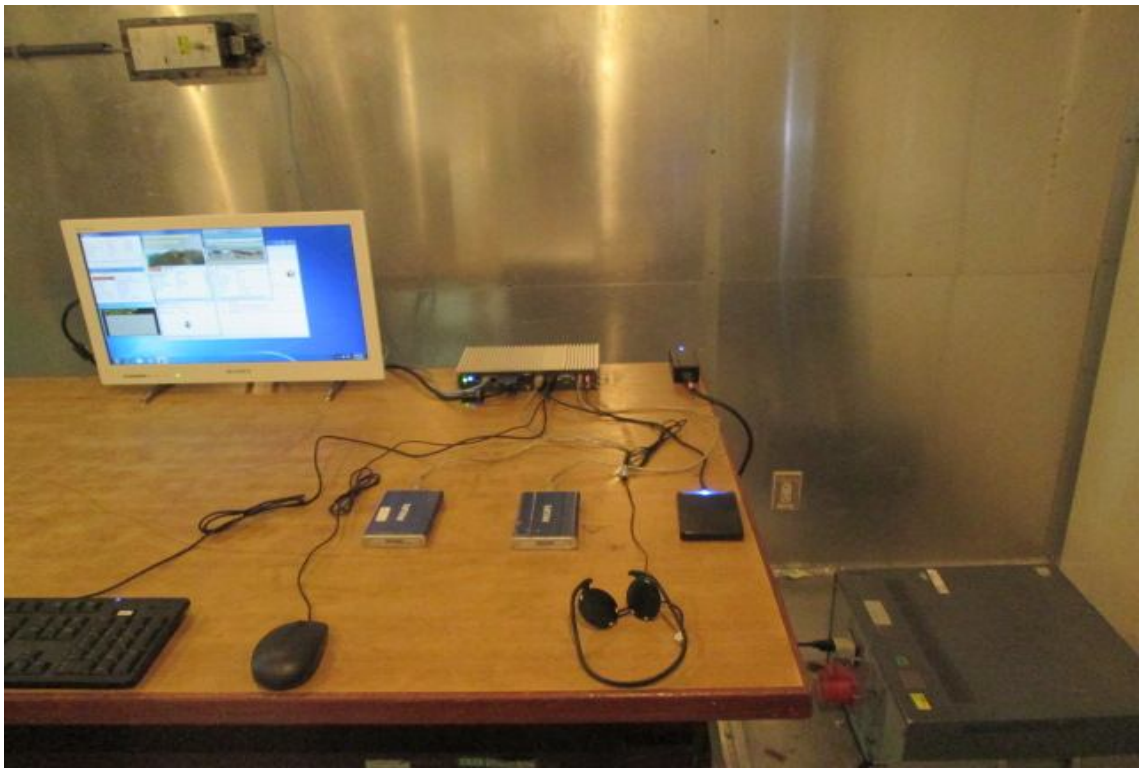
Note : " A " means the EUT's function was correct normal performance during the test.
" C" EUT reset , After the test, the equipment needs operator to reset.

5 EQUIPMENTS LIST FOR TESTING

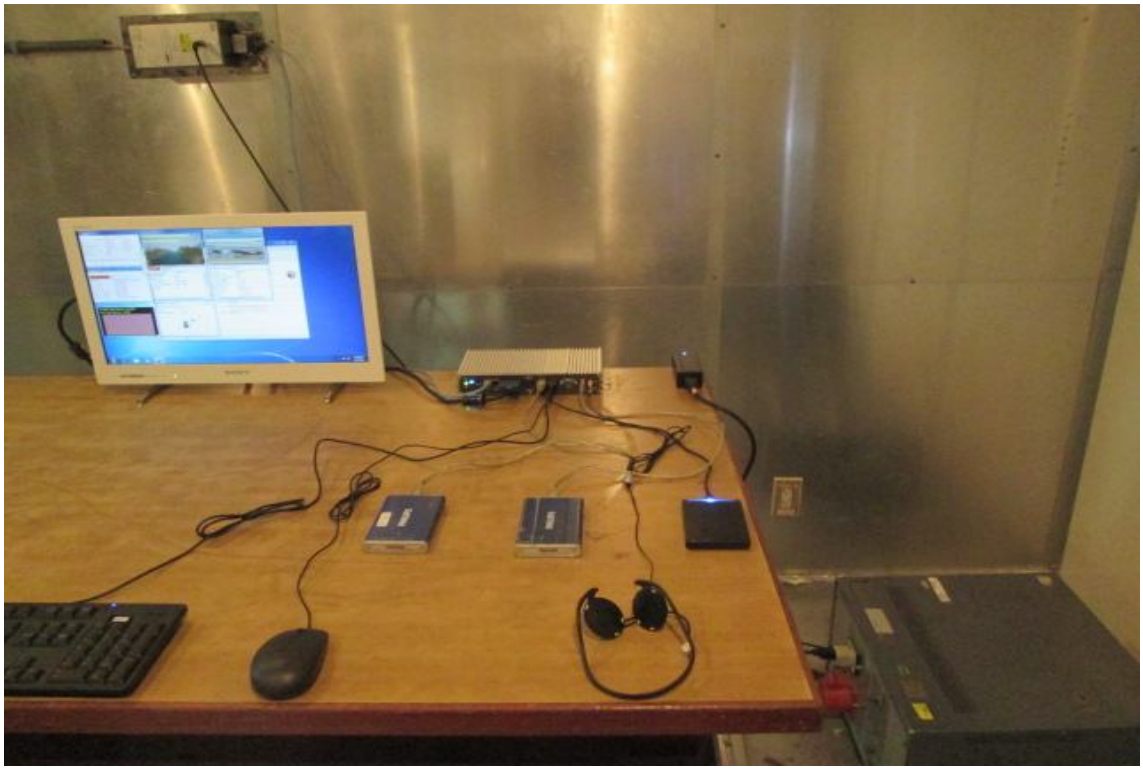
Item	Name	Manufacturer	Model	Calibration Date	Recommended Recal. Date
1	EMI Test Receiver	Rohde & Schwarz	ESCI	2013/05/14	2014/05/13
2	LISN	Rohde & Schwarz	ESH2-Z5	2014/04/12	2015/04/11
3	Cable 0-1GHz		3M.10M	2013/07/20	2014/07/19
4	Antenna Tower	EMCO	1072-2	N/A	N/A
5	Turntable	EMCO	1081-2.5	N/A	N/A
6	LISN	Schwarzbeck	NNBM 8125	2014/02/11	2015/02/10
7	LISN	Schwarzbeck	NNBM 8125	2014/02/11	2015/02/10
8	Test Receiver	Rohde & Schwarz	ESVS30	2014/05/06	2015/05/05
9	Amplifier	HP	8447D	2014/05/03	2015/05/02
10	EMI Test Receiver	Rohde & Schwarz	ESL	2013/07/30	2014/07/29
11	Bi-Log Antenna	ETC	MCTD 2756	2014/01/17	2015/01/16
12	EMI Test Receiver	Rohde & Schwarz	ESCI	2014/05/14	2015/05/13
13	Triple Loop Antenna	EMCO	LLA6142	2013/11/13	2014/11/12
14	HARIMONIC/FLICKER ANALYZER	KIKUSUI	KHA3000	2014/01/25	2015/01/24
15	MiniZAP ESD Simulator r	NoiseKen	ESS-2002	2013/08/07	2014/08/06
16	UPL AUDIO ANALYZER	Rohde & Schwarz	UPL	2014/05/10	2015/05/09
17	Antenna	SUNOL SCIENCES	JB6	N/A	N/A
18	Signal Generator	Rohde & Schwarz	SMC100A	2014/03/25	2015/03/24
19	Amplifier	Ophir	5172F	N/A	N/A
20	Amplifier	Ophir	5127F	N/A	N/A
21	POWER METER	Booton	4232A	2013/09/11	2014/09/10
22	EMC Immunity tester	EMC-PARTNER	TRANSIENT-2000	2013/09/30	2014/09/29
23	CS TESTER	FRANKONIA	CIT-10	2014/05/06	2015/05/05
24	CDN-M2/M3	FRANKONIA	M2/M3	2014/05/10	2015/05/09
25	SCHAFFUER	CS-CLAMP	KEMZ801	2014/05/11	2015/05/10
26	Mfgenerator	EMC-PAPTNER	MF-1000	2013/09/13	2014/09/12
27	CENTER	CLAMP METER	200	2013/07/30	2014/07/29

ANNEX A: PHOTOS

1. Conducted Emissions Test Setup Photos



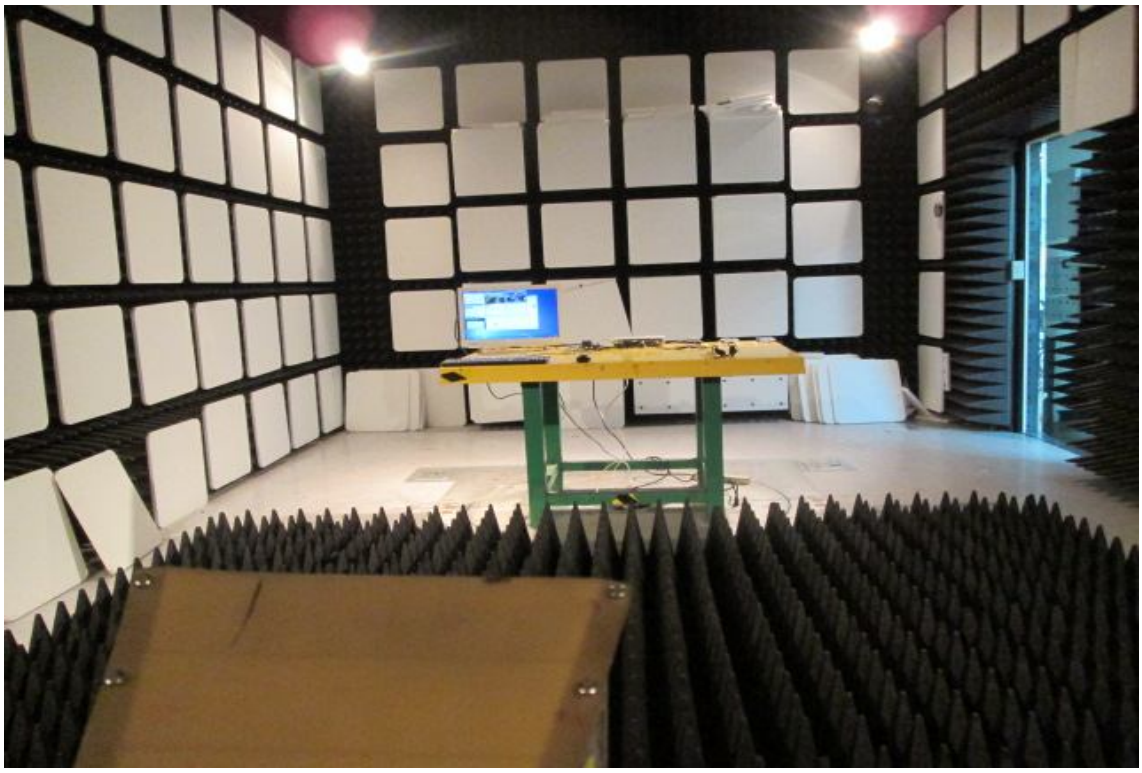
2. Conducted Telecommunication ports Test Setup Photos



3. Radiated Emissions Test Setup Photos

(30MHz to 1GHz)

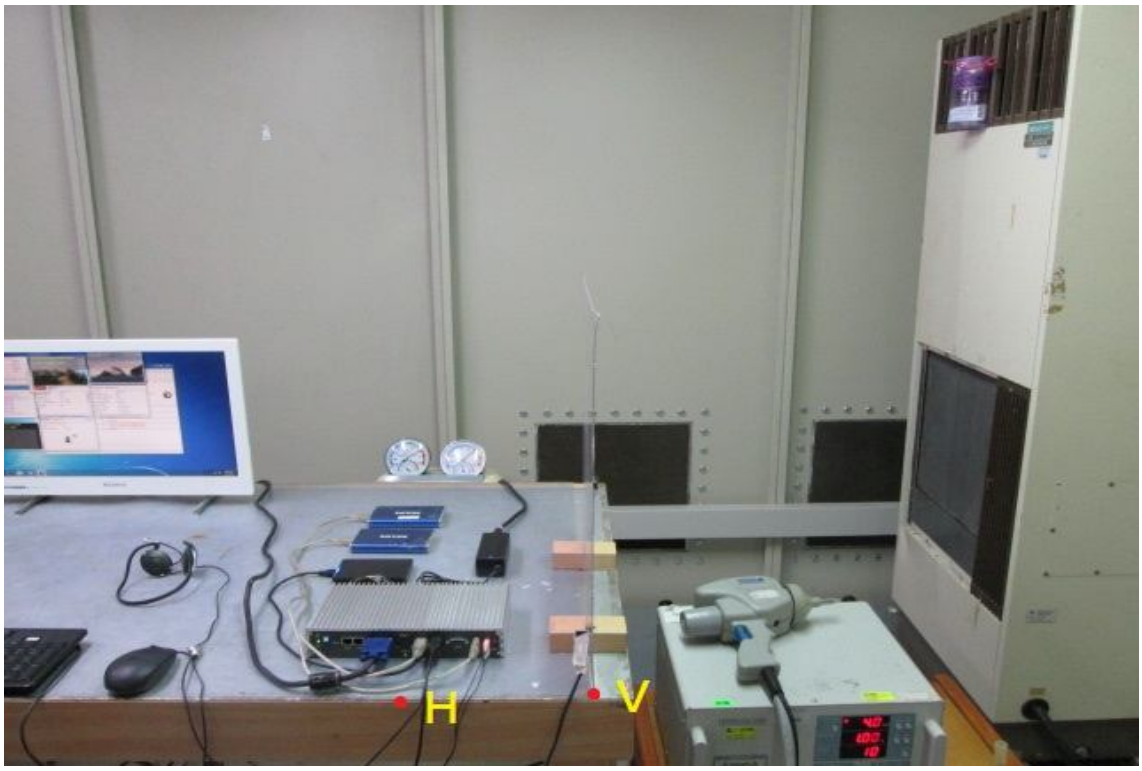
(Above 1GHz~6GHz)



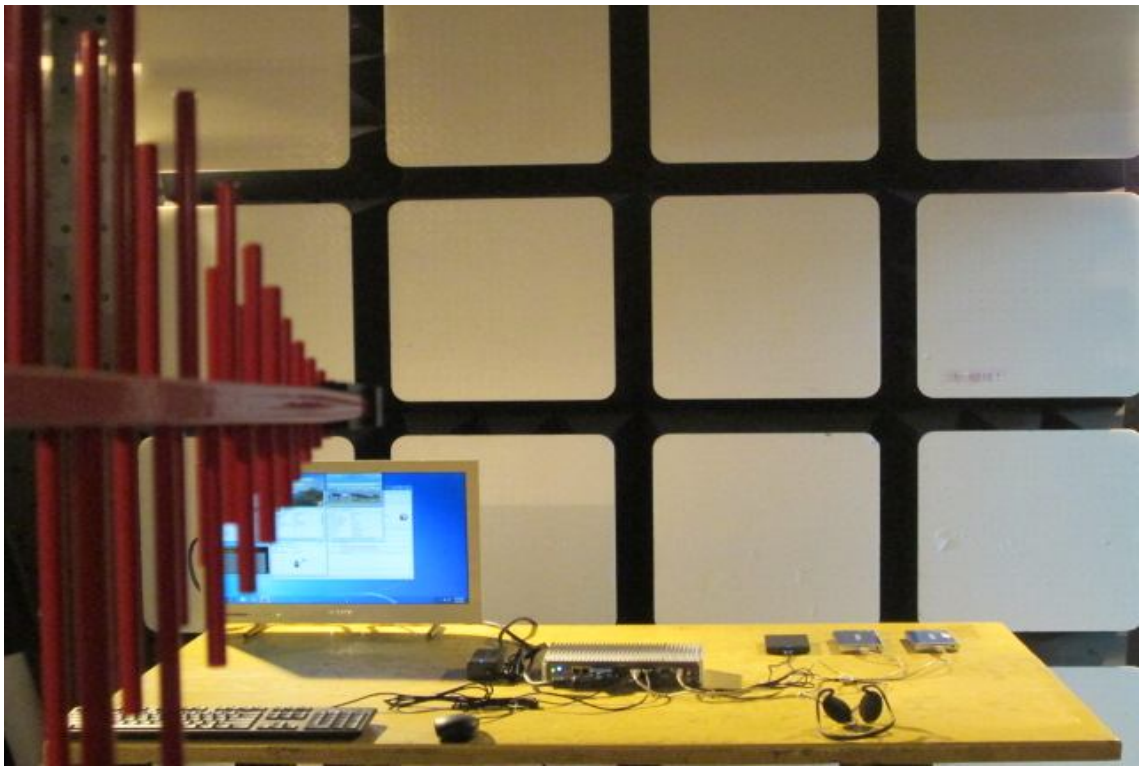
4. Harmonics Current Emissions Test Setup Photo

5. Voltage Fluctuations and Flicker Test Setup Photos

6. Electrostatic Discharge Immunity Test Setup Photo

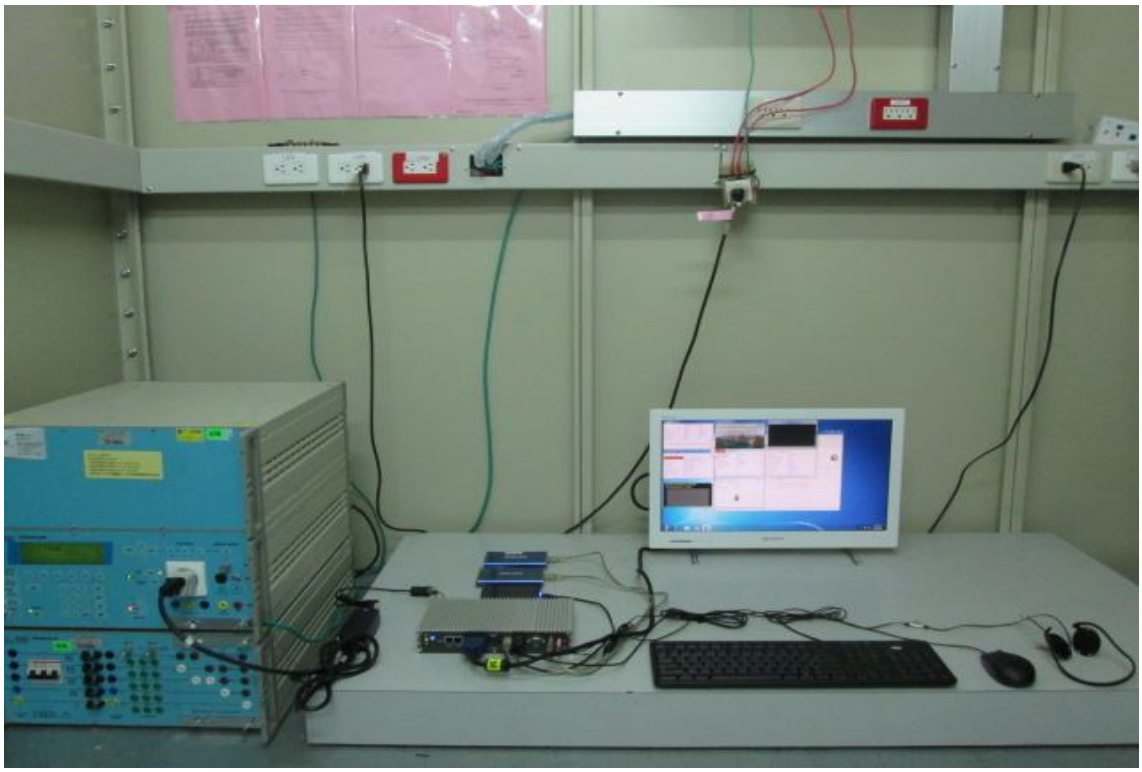


7. RF Radiated Fields Immunity Test Setup Photo



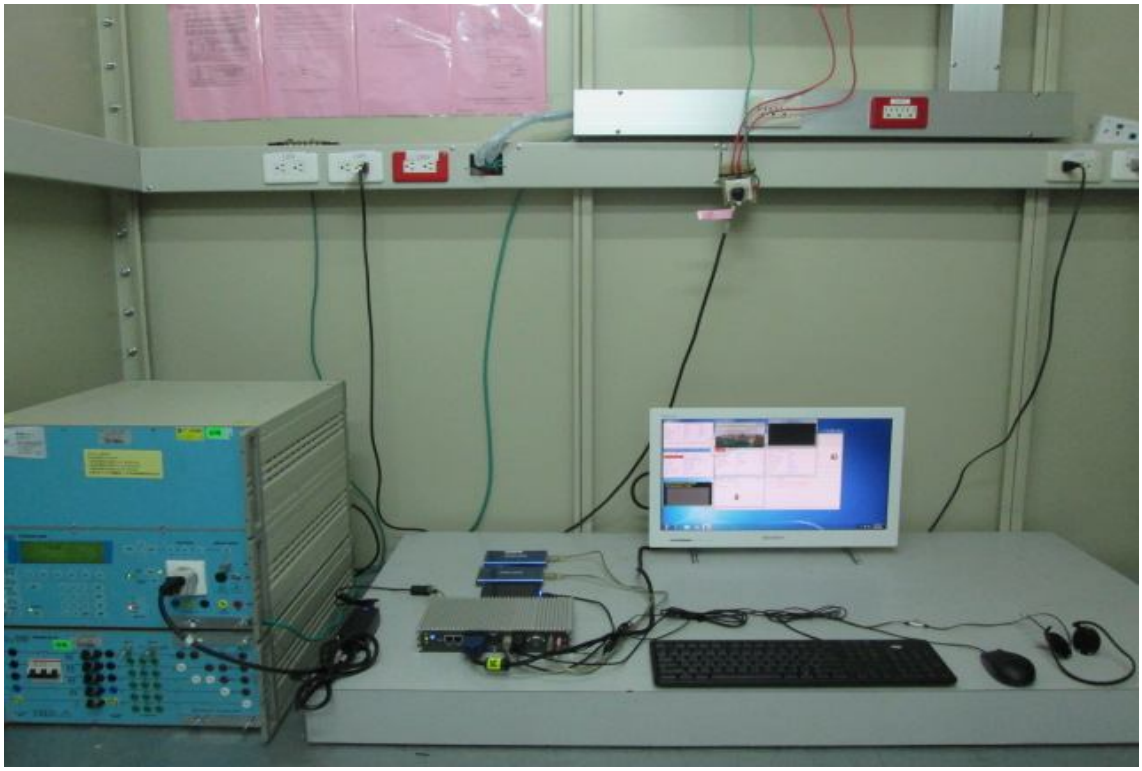
8. EFT/Burst Immunity Test Setup Photo

TEST MODE: AC



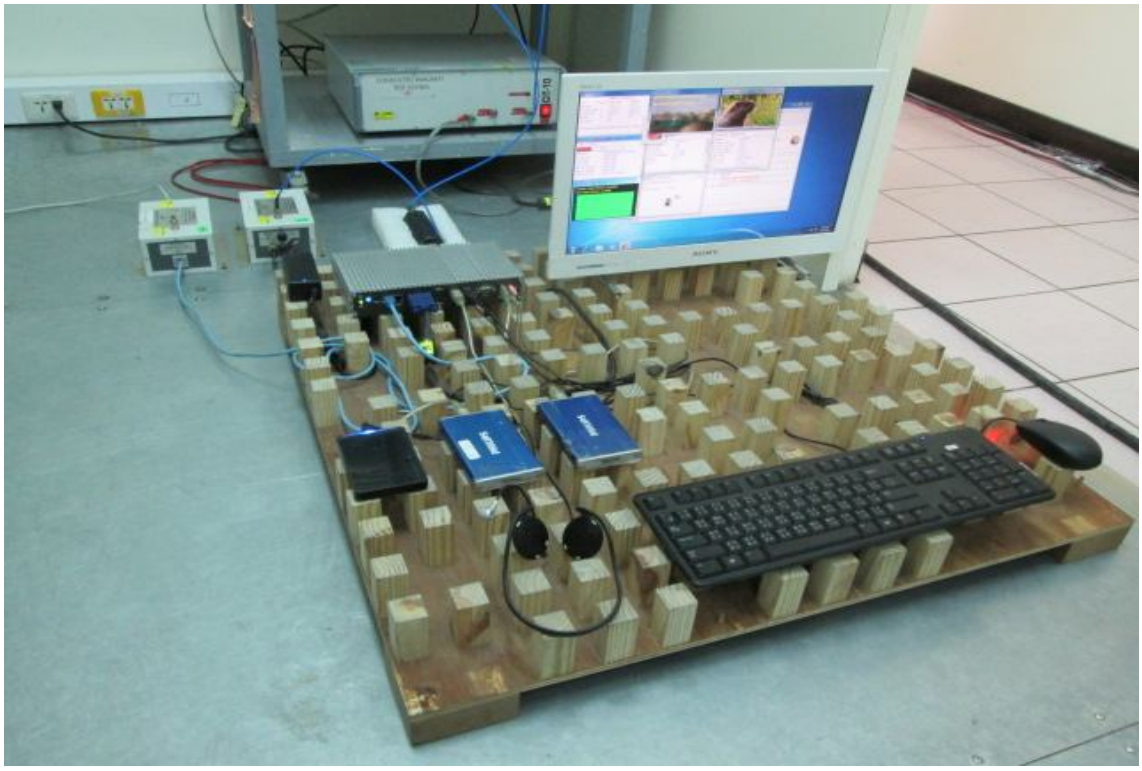
TEST MODE: LAN

9. Surge Immunity Test Setup Photo



10. RF Common Mode Immunity Test Setup Photo

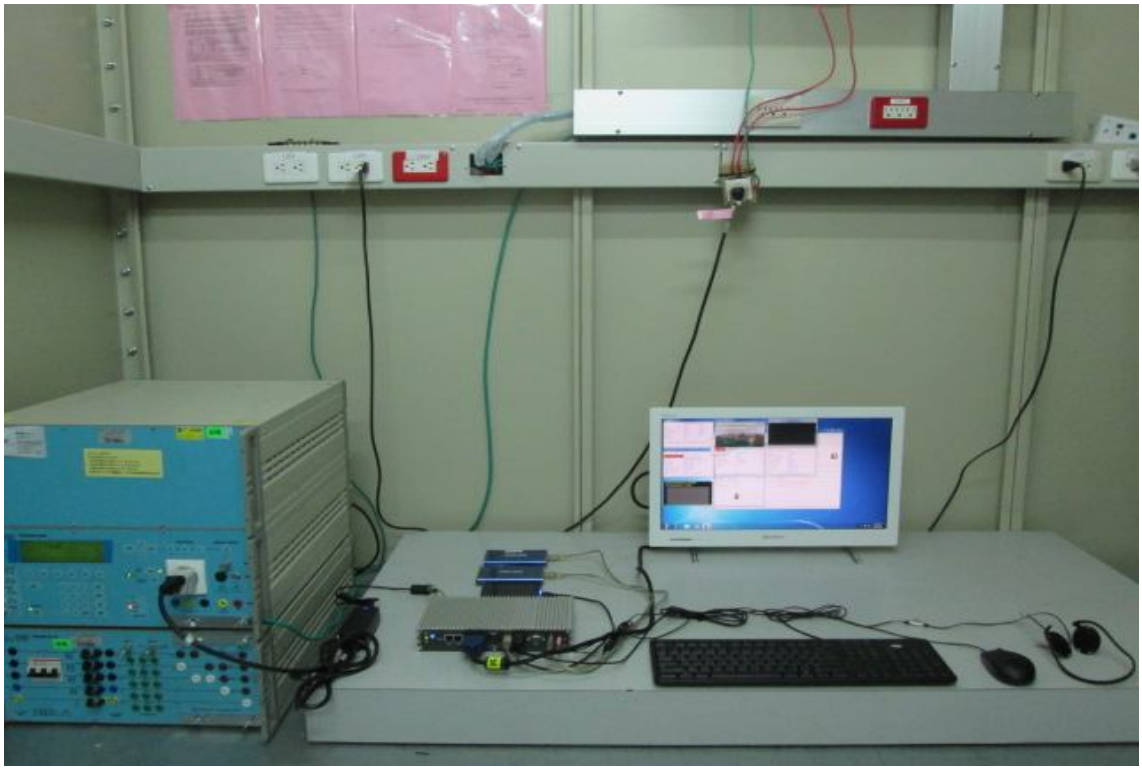
TEST MODE:AC



TEST MODE:LAN

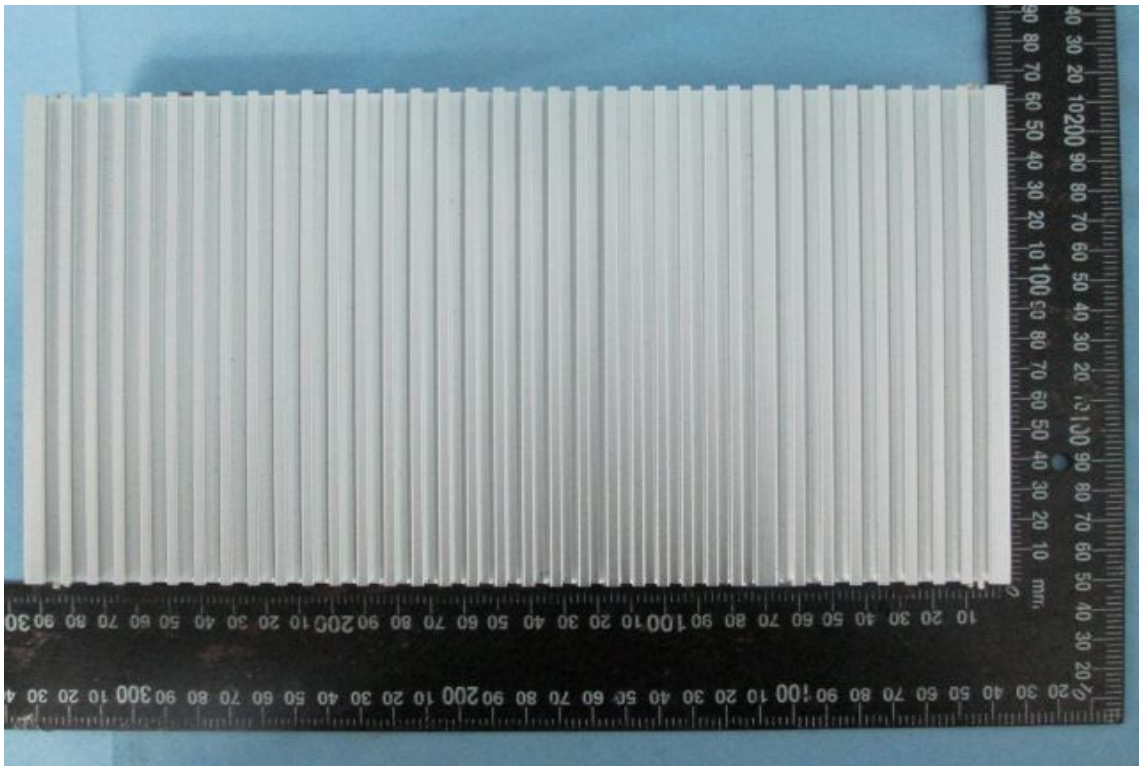
11. Power Frequency Magnetic Field Immunity Test Setup Photo

12. Voltage Interruptions and Voltage Dips Immunity Test Setup Photo
TEST MODE:AC

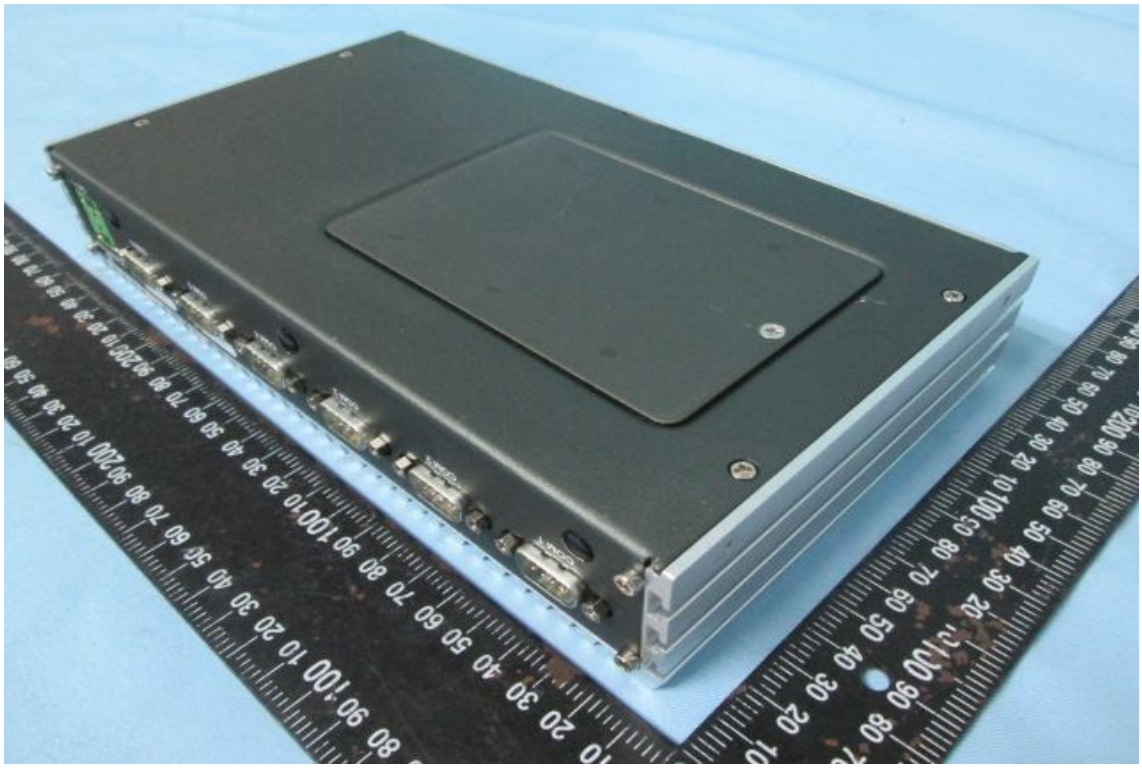


13. Outside view 1 of EUT

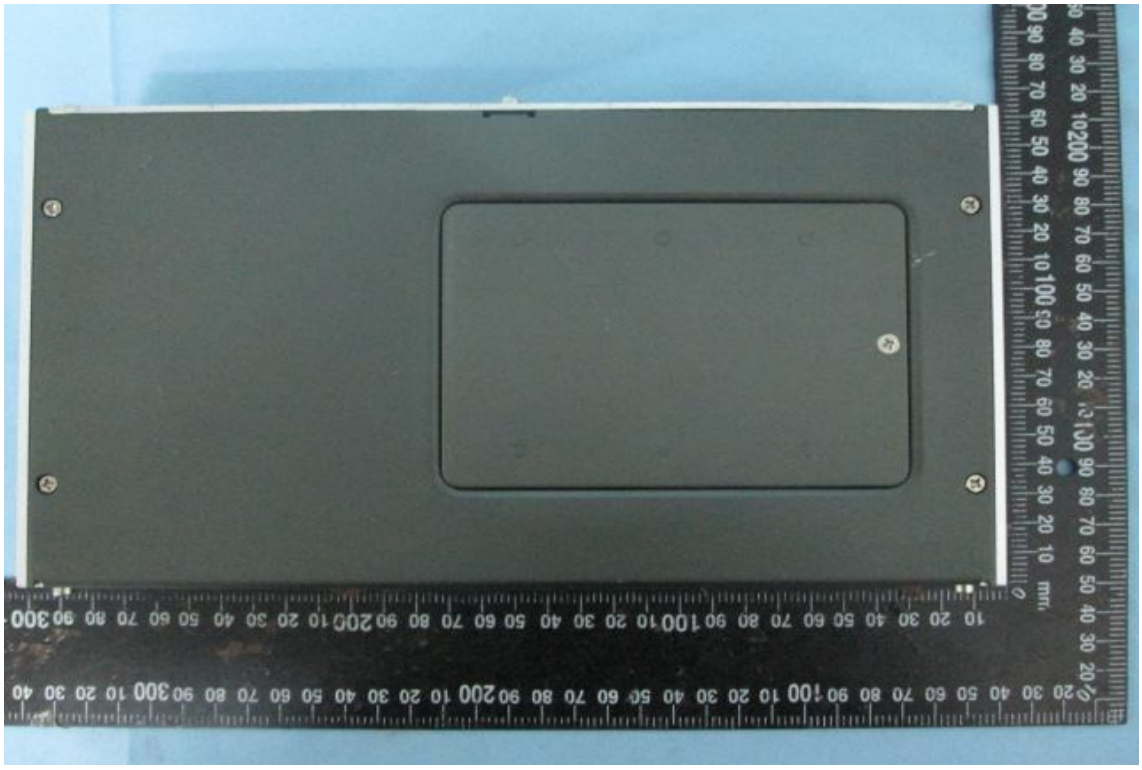
14. Outside view 2 of EUT



15. Outside view 3 of EUT



16. Outside view 4 of EUT



17. Outside view 5 of EUT

18. Outside view 6 of EUT

19. Outside view 7 of EUT

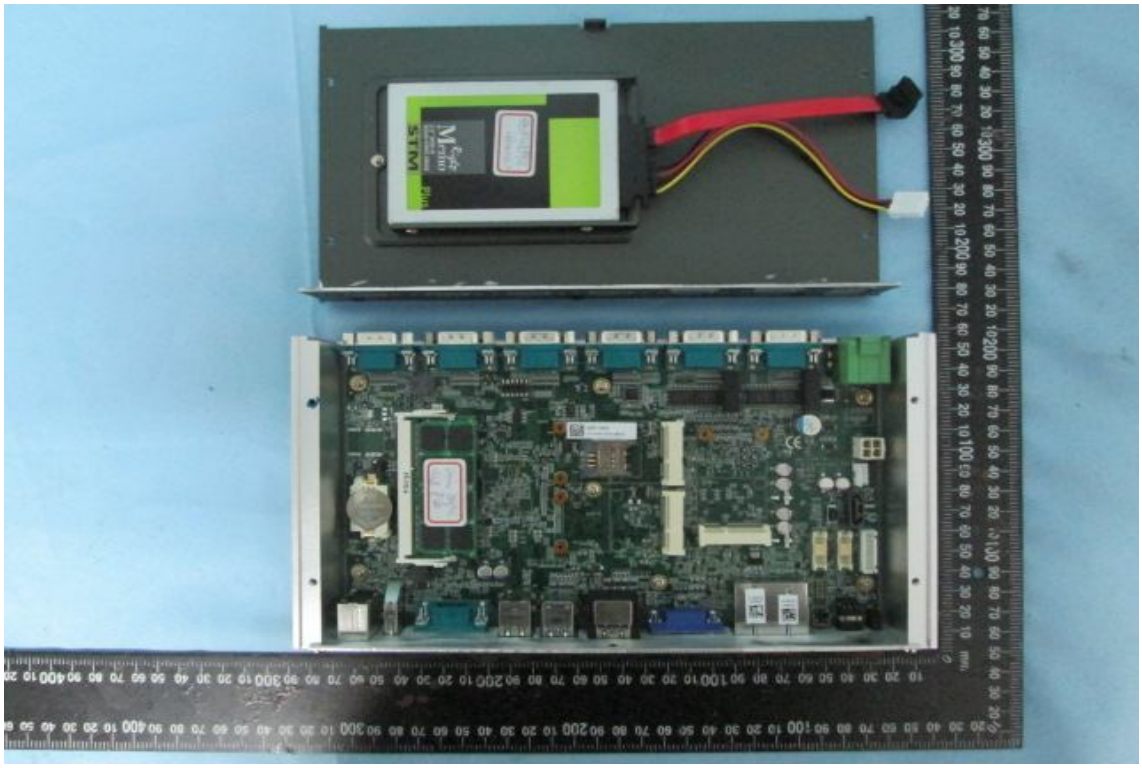
20. Outside view 8 of EUT

21. Outside view 9 of EUT

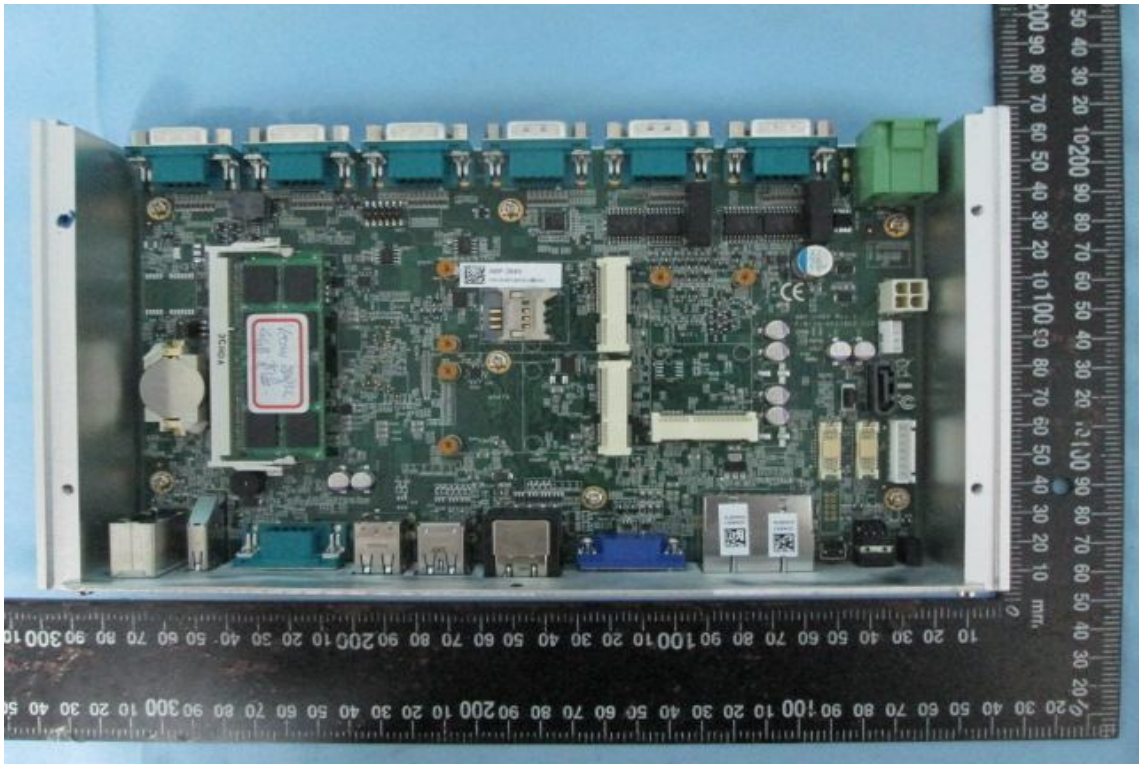
22. Outside view 10 of EUT

23. Outside view 11 of EUT

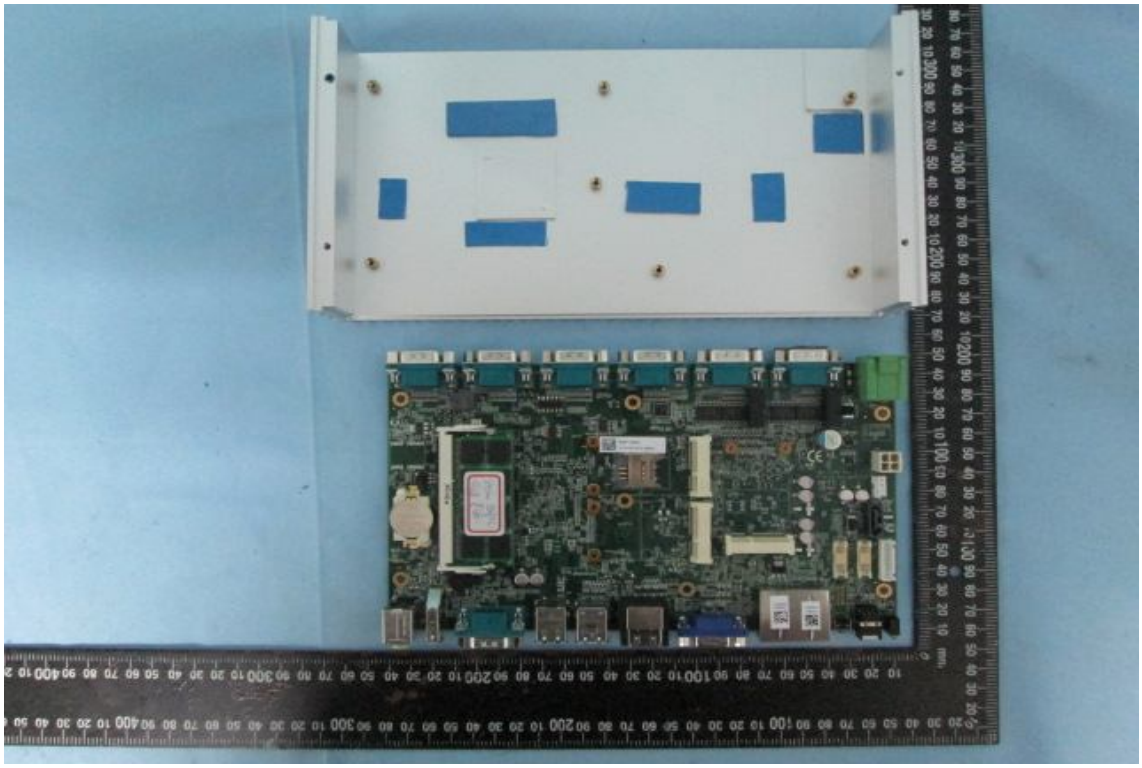
24. Inside view 1 of EUT



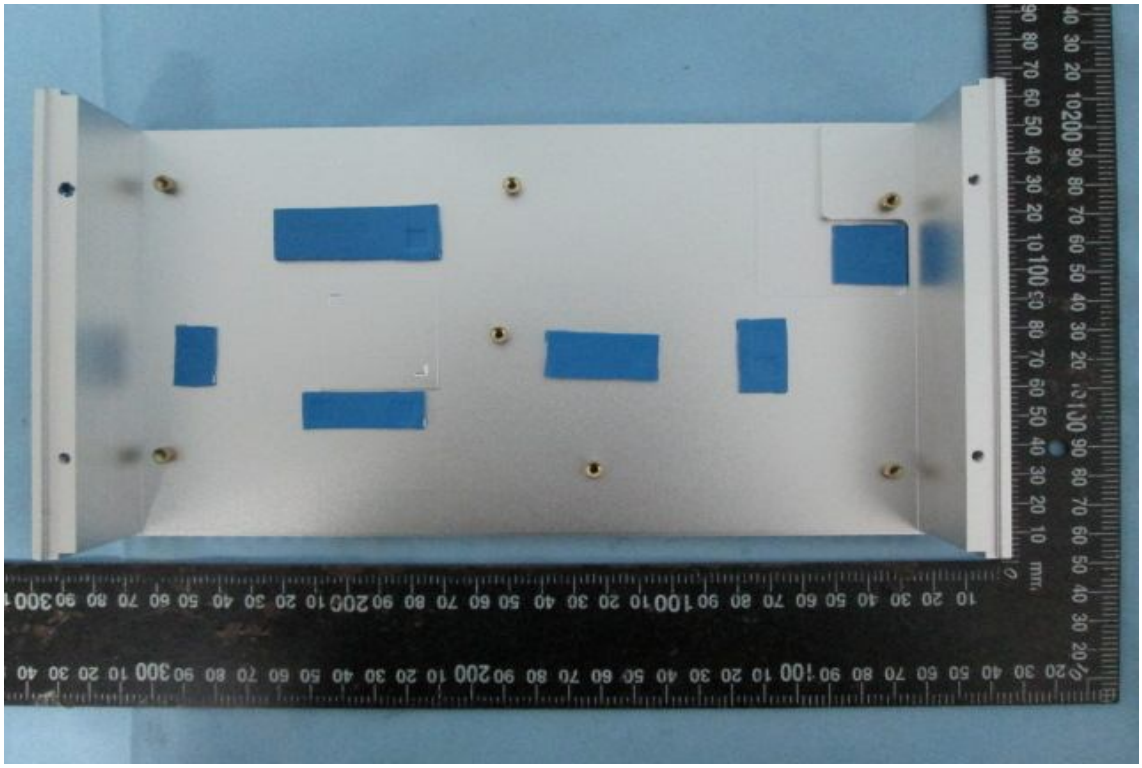
25. Inside view 2 of EUT



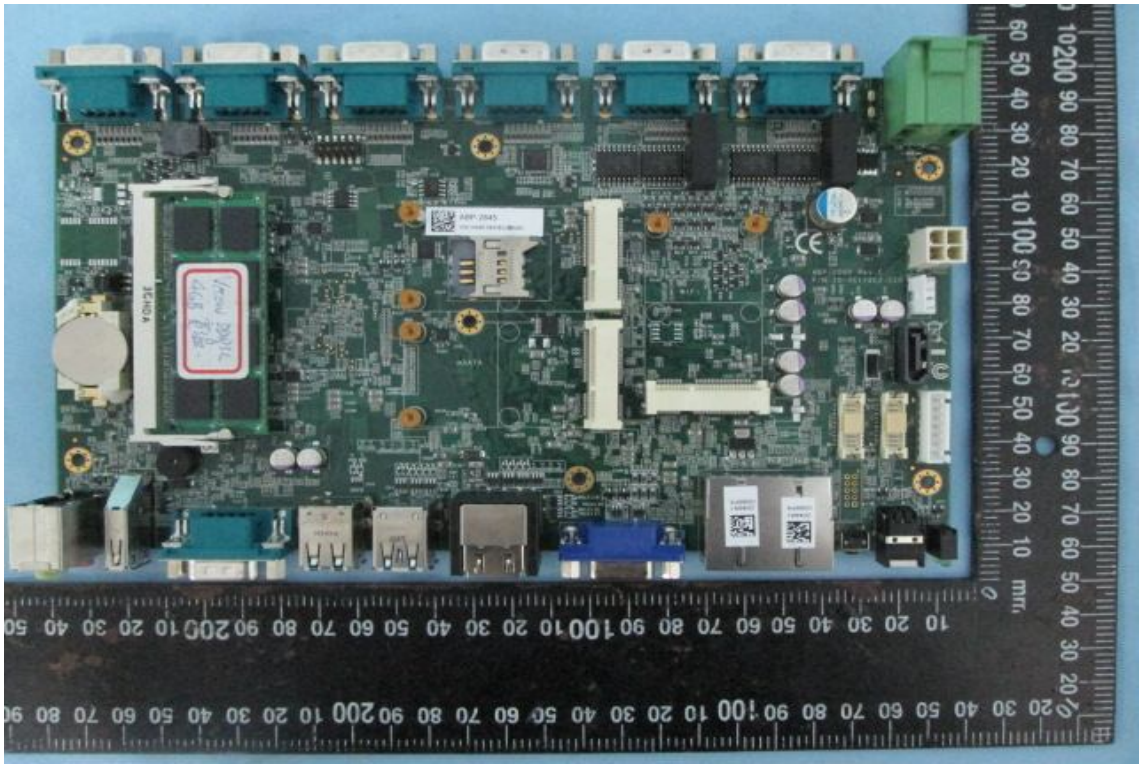
26. Inside view 3 of EUT



27. Inside view 4 of EUT



28. Inside view 5 of EUT



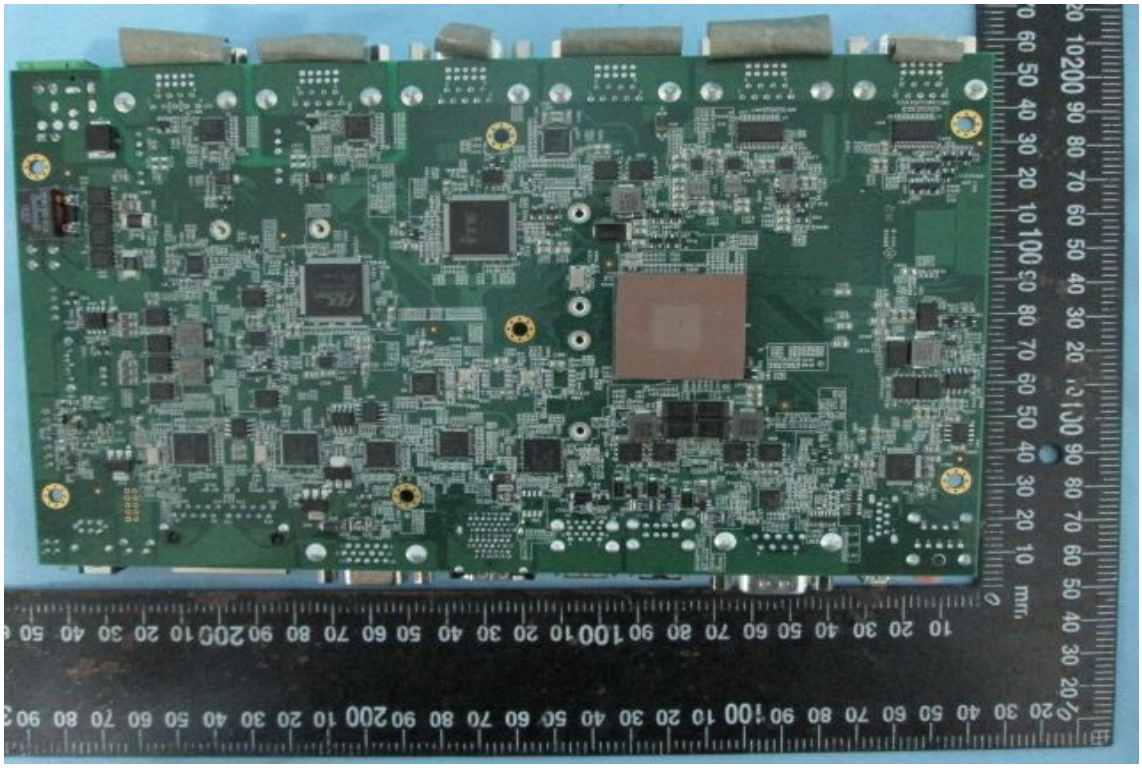
29. Inside view 6 of EUT

30. Inside view 7 of EUT

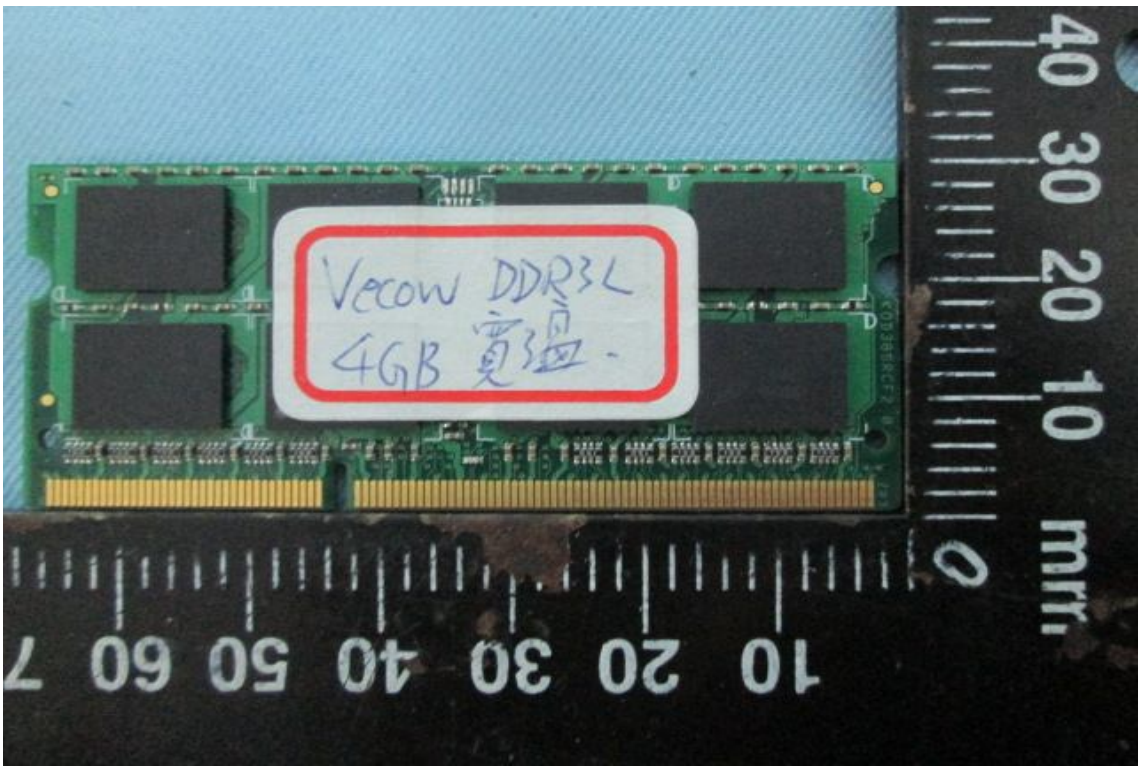
31. Inside view 7 of EUT

32.Front view of PCB 1

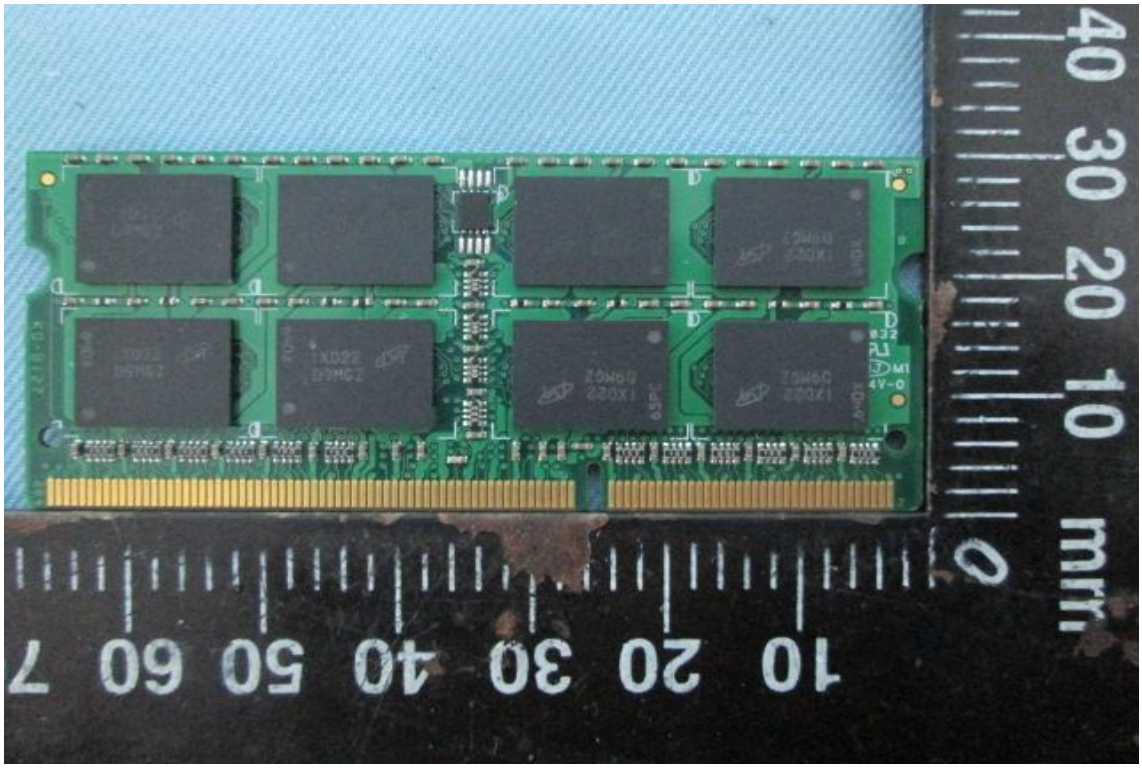
33.Rear view of PCB 1



34. Front view of PCB 2



35. Rear view of PCB 2



ANNEX B

DIFFERENCE INFORMATIONS OF SERIES MODEL

1. Test Model (Main Model): ABP-2845
2. Test Model (Series Model):
3. The Model without test (Series Model): Vecow ABP Series 、ABP-XXXX(X= 0~9, A~Z)

4. The Difference Information:

Model No. / Difference Item	Main Model:	Series Model:	Series Model
	ABP-2845	Vecow ABP Series	ABP-XXXX
PCB Layout and The Circuit Diagram	O	O	O
Components	O	O	O
Material	O	O	O
Function	Software 不同	Software 不同	Software 不同
Shape & Color	O	O	O
Other	O	O	O
Notes: (1) " O " means the item is same with Main model. (2) " X "means the item is different with main model. And please explain it.			

Remark: 1. The multiple listing recognized without test basis is according to information supplied by manufacturer.

2. The manufacturer or supplier's quality system shall ensure that the tested model or apparatus is representative of the series-produced apparatus concerned.

Manufacturer / Supplier

Company Name :Vecow

Signature : 2014.04.29

Name : William.Chen Date :2014/4/29