Certificate of Conformity

The products

EUT : Card Printer
Trade Name : HiTi
Model No. : CS-200e
Serial Model : CTC-940 ;CS-2XXX (X=0-9, A-Z or Blank)
New Serial Model : CS-220e

which produced by

Hiti Digital, Inc.
9F., No.225, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan

Has been tested by Electronics Testing Center, Taiwan ETC
And was found to comply with the EMC requirements of Directive 2004/108/EC on the basis of

EN 55022:2010(Class B)
EN 55024:2010
EN 61000-3-2:2006/A1:2009/A2:2009
EN 61000-3-3:2008

S. S. Liou

Signature
S. S. Liou
Section Manager of EMC Testing
Department II
Electronics Testing Center, Taiwan

Report Number : 13-06-RBF-022-05
Date of Issue: Jul. 23, 2013

Note: 1. The results of the Test Report relate only to the items tested.
2. The Test Report shall not be reproduced except in full, without the written approval of ETC.
3. Together with the applicant's own documented production control, the applicant (or his European authorized representative) could draw up an EC Declaration of Conformity and affix the CE marking.
4. EC Declaration of Conformity is the responsibility of the manufacturer/ importer.

ELECTRONICS TESTING CENTER, TAIWAN
NO. 34. LIN 5, DINGFU VIL., LINKOU DIST.,
NEW TAIPEI CITY, TAIWAN, 24442, R.O.C.

TEL:(02)26023052
INT:+886-2-26023052
FAX:(02)26010910
INT:+886-2-26010910

EMC
TEST REPORT

Responsible Party	: ***Hiti Digital, Inc.***
Manufacturer	: ***HiTi Digital, Inc. Taichung Branch***
Description of Product	: ***Card Printer***
Trade Name	: ***HiTi***
Model No.	**: *CS-200e***
Serial Model	**: *CTC-940 ;CS-2XXX (X=0-9, A-Z or Blank)***
New Serial Model	**: *CS-220e***
Test Report File No.	: ***13-06-RBF-022-05***
Date Test Item Received	: ***Jun. 14, 2013***
Date Test Campaign Completed	: ***Jun. 14, 2013***
Date of Issue	: ***Jul. 23, 2012***

Test Performed by

ELECTRONICS TESTING CENTER (ETC) , TAIWAN
NO. 34. LIN 5, DINGFU VIL., LINKOU DIST.,
NEW TAIPEI CITY, TAIWAN, 24442, R.O.C.
TEL : (02)26023052 FAX : (02)26010910
http:// www.etc.org.tw ; e-mail: emc@etc.org.tw

Note : 1. The results of the Test Report relate only to the items tested.
2. The Test Report shall not be reproduced except in full , without the written approval of ETC.

CONTENTS

Declaration of Revision of Test Report

Date: Jul. 23, 2013

Applicant:	Hiti Digital, Inc.
EUT:	Card Printer
Trade Name:	HiTi
Model No.:	CS-200e
Serial Model No.:	CTC-940 ;CS-2XXX (X=0-9, A-Z or Blank)
New Serial Model	CS-220e

The following revisions have been made to ETC report No. 12-09-RBF-017-05

Date	Report No.	Description
Oct. 30, 2012	12-09-RBF-017-05	Original test report. CS-200e Serial Model No.: CTC-940 ;CS-2XXX (X=0-9, A-Z or Blank)
Jul. 23, 2013	13-06-RBF-022-05	1. Add new serial model: CS-220e 2. Change the printing function and adding the second source of some parts on the PCB. The RF module is the same.

Test Engineer : Vincent Chang
(Vincent Chang, Engineer)

Approve & Authorized : S. S. Liou
S. S. Liou
EMC Dept. II of ELECTRONICS TESTING CENTER, TAIWAN

Equipment Modification Descriptions

Jul. 23, 2013

1. Add new serial model: CS-220e

2. Change the printing function and adding the second source of some parts on the PCB. The RF module is the same.

By engineering judgments, retests are necessary due to the PCB and module were changed.

1 TEST REPORT CERTIFICATION

Client	:	Hiti Digital, Inc.
Address	:	9F., No.225, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 23143, Taiwan(R.O.C.)
Manufacturer	:	HiTi Digital, Inc. Taichung Branch
Address	:	No.11, Jing 2nd Rd., Wuqi Dist., Taichung City 43541, Taiwan (R.O.C.)
EUT	:	Card Printer
Trade name	:	HiTi
Model No.	:	CS-200e
Serial Model	:	CTC-940 ;CS-2XXX (X=0-9, A-Z or Blank)
New Serial Model	:	CS-220e
Test specifications	:	
Emissions	:	EN 55022:2010 (Class B) EN 61000-3-2:2006/A1:2009/A2:2009 EN 61000-3-3:2008
Immunity	:	IEC61000-4-2:2008 IEC61000-4-3:2006/A1:2007/A2:2010 IEC61000-4-4:2012 IEC61000-4-5:2005 IEC61000-4-6:2008 IEC61000-4-8:2009 IEC61000-4-11:2004
Regulations applied	:	
Emissions	:	EN 55022:2010 (Class B) EN 61000-3-2:2006/A1:2009/A2:2009 EN 61000-3-3:2008
Immunity	:	EN 55024:2010

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 relieve the sellers from their legal and/or contractual obligations. Besides, the “Comment Issues” highlight above is important information for this test report. Responsible must read carefully about the description.

2 GENERAL INFORMATIONS

2.1 Description of EUT

Card Printer
CS-200e is a high-quality color printer that uses dye-sub technology.
The main component is the 300x300 high resolution thermal print head. This printer has optional devices such as the Magnetic stripe encoding Module & Single/Dual side print Flipper Module & Smartcard Module & Ethernet Module to satisfy multiple purposes.

2.2 Related Information of EUT

Size of EUT	:	500x200x200mm
Power Supply	:	I/P:100-240V,2.5A,50-60Hz O/P:24V,4.16A
Highest working Frequency	:	>108MHz
Power Line	:	[X] Nonshielded [ ] Shielded [ ] None, Length: 1.8 m
USB Cable	:	[X] Nonshielded [ ] Shielded [ ] None, Length: 1.5 m

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

2.3 Tested Configuration

The EUT connected with other devices.

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

Device	Manufacturer	Model	Description
Card Printer*	HiTi Digital, Inc.	CS-220e	1.8m Unshielded AC Adapter 1.5m Unshielded USB Cable
MONITOR	SAMPO	ALPHASCAN718	1.8m Unshielded AC Power Cord 1.6m Shielded D-SUB data line
PC	Lenovo	7298 RN1	1.8mUnshielded AC Power Cord
Mouse	Lenovo	M028UOL	1.5m Unshielded Cable
Keyboard	Lenovo	SK-8115	1.5m Unshielded Cable
PRINTER	EPSON	Stylus photo 700	1.3m Unshielded Single Cable 1.8m Unshielded AC Power line
USB Device	SanDisk	SDCZ2-512	1.5m Unshielded Line
Smart Card	---	---	0.3m Unshielded Line

Remark "*" means equipment under test.

2.4 Deviation Record

No deviations were required.

2.5 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:

Measurement	Frequency	Uncertainty
Conducted emissions	150kHz ~ 30MHz	2.5dB(Mains)
Conducted emission at telecommunication ports	150kHz ~ 30MHz	2.22dB(Voltage)
		2.88dB(Current)
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)

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

2.6 Description of Test Mode

The EUT is designed with AC power supply of 100-240Vac, 50-60Hz or radiated emission evaluation, 230Vac/50Hz had been covered during the pre-test. The worst radiated emission data was found at 230Vac/50Hzand recorded in the applied test report.

The EUT has been pre-tested under following modes, and mode 1~4 are the worst case for final emission test.

Test Mode	Test condition
1	USB PRINT MODE
2	RJ-45 PRINT MODE
3	RFID PRINT MODE
4	SMART CARD MODE

2.7 Modification Record

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

3 SUMMARY OF TEST RESULTS

3.1 Emissions

3.1.1 Conducted Emissions

[X] – PASS (USB PRINT MODE -Neutral)

[X] – PASS (USB PRINT MODE -Line)

[X] – PASS (RJ-45 PRINT MODE -Neutral)

[X] – PASS (RJ-45 PRINT MODE -Line)

[X] – PASS (RFID PRINT MODE -Neutral)

[X] – PASS (RFID PRINT MODE -Line)

[X] – PASS (SMART CARD MODE -Neutral)

[X] – PASS (SMART CARD MODE -Line)

3.1.2 Conducted Telecommunication ports

[X] – PASS (Mode: RJ-45 LINK (10M)Voltage)

[X] – PASS (Mode: RJ-45 LINK (100M)-Voltage)

3.1.3 Radiated Emissions

[X] – PASS (USB PRINT MODE - HOR)

[X] – PASS (USB PRINT MODE - VER)

[X] – PASS (RJ-45 PRINT MODE - HOR)

[X] – PASS (RJ-45 PRINT MODE - VER)

[X] – PASS (RFID PRINT MODE - HOR)

[X] – PASS (RFID PRINT MODE - VER)

[X] – PASS (SMART CARD MODE - HOR)

[X] – PASS (SMART CARD MODE - VER)

3.1.4 Harmonics Current Emissions

[X] –PASS

The harmonics current values were under the limits of the Class B equipment of the EN 61000-3-2.

3.1.5 Voltage Fluctuations and Flicker

[X] –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

(Mode: Operation Mode)

	Requirement :Criterion B (or better)
[X] - 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

(Mode: Operation Mode)

	Requirement :Criterion A
[X] - 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

(Mode: Operation Mode)

Requirement :Criterion B(or better)

[X] - No Degradation of Function - Satisfies Criterion A
[ ] - Distortion of Function - Satisfies Criterion B
[ ] - Error of Function - Satisfies Criterion C

3.2.5 Surge Immunity

(Mode: Operation Mode)

Requirement :Criterion B (or better)

[X] - 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

(Mode: Operation Mode)

Requirement :Criterion A

[X] - 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

(Mode: Operation Mode)

Requirement :Criterion A

[X] - 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

(Mode: Operation Mode)

Requirement :Criterion C (or better)

[ ]	- No Degradation of Function	- Satisfies Criterion A
[X]	- 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 Limit of Conducted Emission Measurement

Frequency (MHz)	Class B (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15-0.5	79	66	66-56	56-46
0.5-5	73	60	56	46
5-30	73	60	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.1.1.2 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESCI	2012/07/16	2013/07/16
LISN	EMCO	3625/2	2013/05/07	2014/05/06
LISN	Rohde & Schwarz	ESH2-Z5	2013/04/12	2014/04/11
Current Probe	Rohde & Schwarz	ESH2-Z1	2012/07/19	2013/07/18
ISN	FCC	FCC-TLISN-T2-02	2012/08/01	2013/07/31
ISN	RCC	FCC-TLISN-T4-02	2012/09/20	2013/09/19
ISN	RCC	FCC-TLISN-T8-02	2012/09/20	2013/09/19
EMI Test Receiver	Rohde & Schwarz	ESCI	2012/07/16	2013/07/16

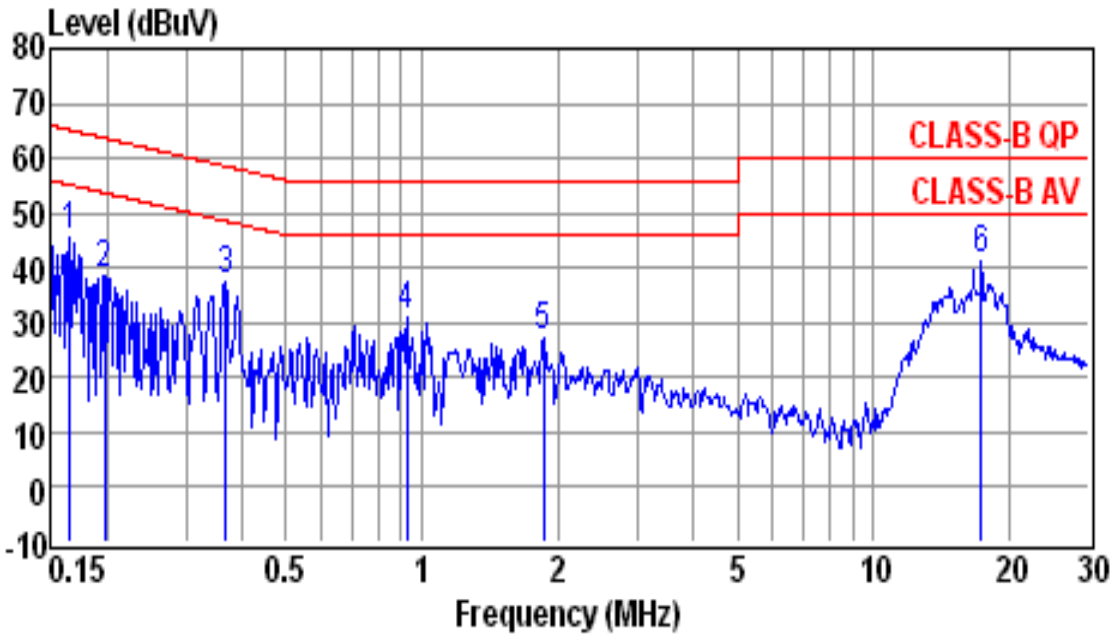
4.1.1.3 Conducted Emissions Test Data

1.Operating Conditions of The EUT: USB PRINT MODE

Test Date : Jun. 14, 2013

Test Specification	EN 55022:2010 (Class B)
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 65 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

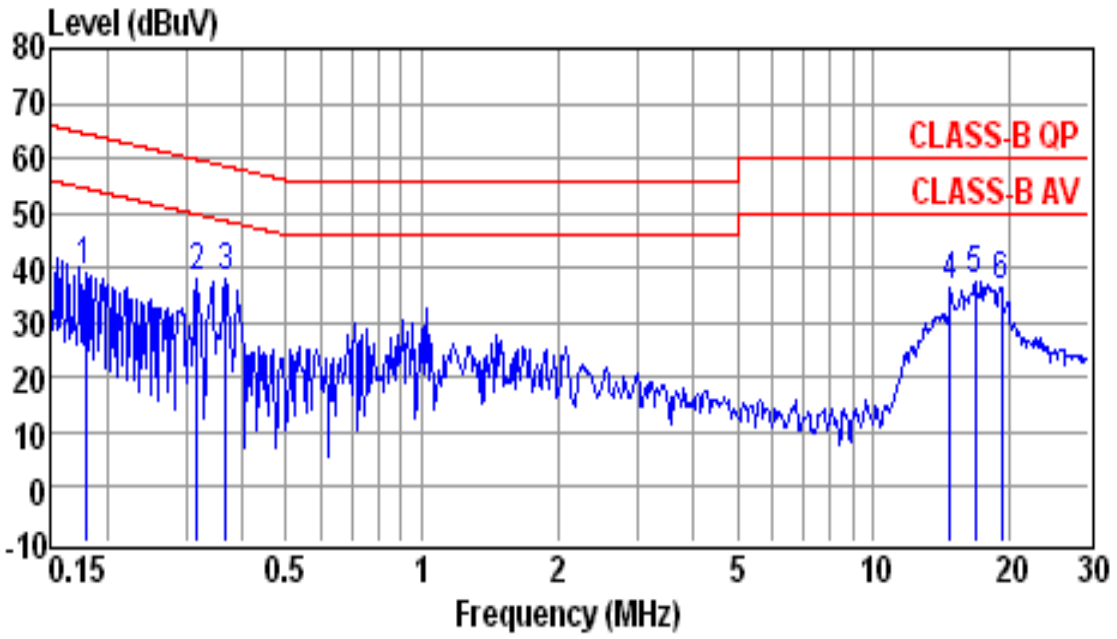


Site	: conducted #1	Date	: 06-14-2013
Condition	: CLASS-B QP	LISN	: NEUTRAL
Tem / Hum	: 25 ℃ / 65%		
Test Mode	: USB PRINT MODE		
EUT	: Card Printer		
Power Rating	: 230Vac/50Hz		

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1659	35.0	10.3	45.3	65.2	-19.9	QP
0.1986	28.5	10.3	38.8	63.7	-24.9	QP
0.3673	27.4	10.3	37.7	58.6	-20.9	QP
0.9233	20.8	10.3	31.1	56.0	-24.9	QP
1.8580	16.7	10.5	27.2	56.0	-28.8	QP
17.3830	30.5	10.8	41.3	60.0	-18.7	QP

Note :

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



Site	: conducted #1	Date	: 06-14-2013
Condition	: CLASS-B QP	LISN	: LINE
Tem / Hum	: 25 ℃ / 65%		
Test Mode	: USB PRINT MODE		
EUT	: Card Printer		
Power Rating	: 230Vac/50Hz		

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1796	28.9	10.3	39.2	64.5	-25.3	QP
0.3166	27.6	10.3	37.9	59.8	-21.9	QP
0.3673	27.7	10.3	38.0	58.6	-20.6	QP
14.8280	25.5	10.8	36.3	60.0	-23.7	QP
16.8390	26.5	11.0	37.5	60.0	-22.5	QP
19.2240	25.6	11.0	36.6	60.0	-23.4	QP

Note :

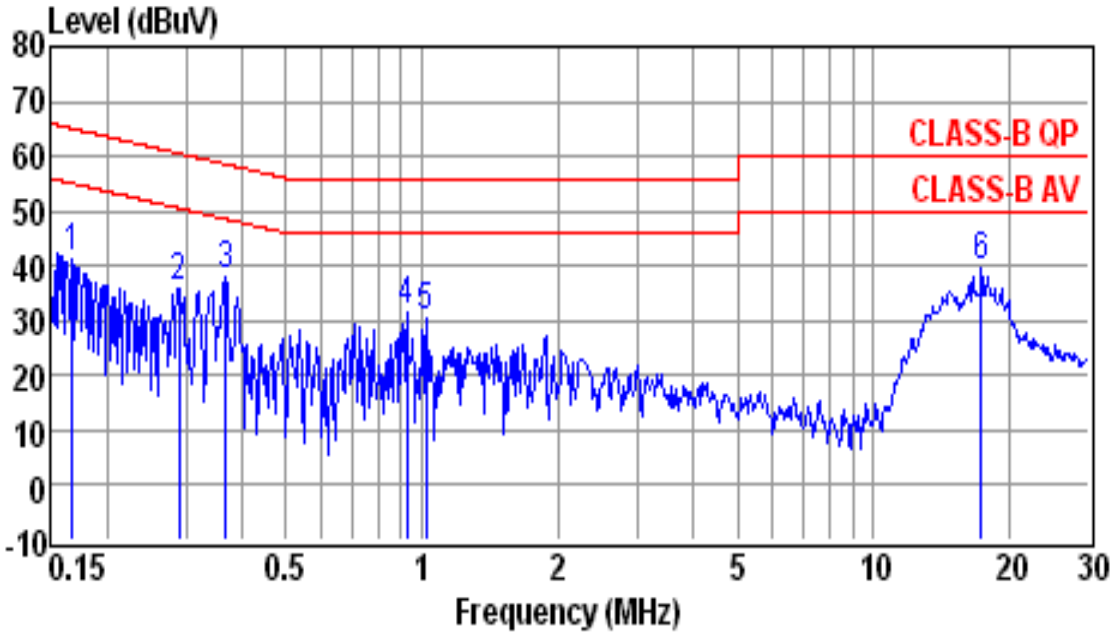
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

2.Operating Conditions of The EUT: RJ-45 PRINT MODE

Test Date : Jun. 14, 2013

Test Specification	EN 55022:2010 (Class B)
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 65 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

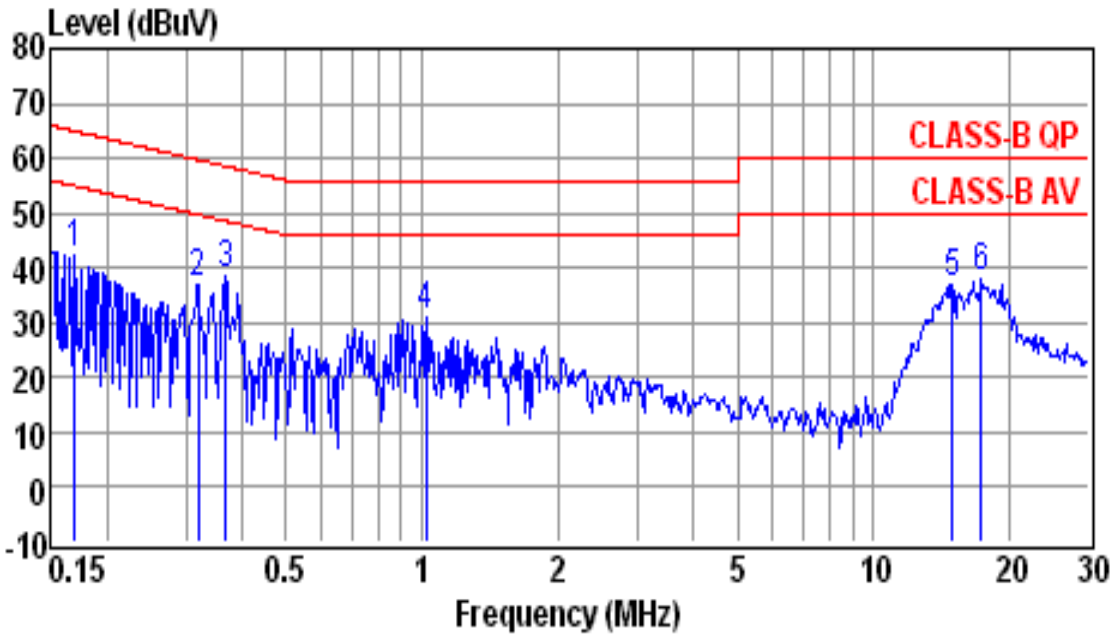


Site : conducted #1
Condition : CLASS-B QP
Tem / Hum : 25 ℃ / 65%
Test Mode : RJ-45 PRINT MODE
EUT : Card Printer
Power Rating : 230Vac/50Hz

Date : 06-14-2013
LISN : NEUTRAL

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1677	30.9	10.3	41.2	65.1	-23.9	QP
0.2894	25.7	10.3	36.0	60.5	-24.5	QP
0.3673	27.6	10.3	37.9	58.6	-20.7	QP
0.9233	21.1	10.3	31.4	56.0	-24.6	QP
1.0210	19.8	10.5	30.3	56.0	-25.7	QP
17.3830	28.9	10.8	39.7	60.0	-20.3	QP

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



Site	: conducted #1	Date	: 06-14-2013
Condition	: CLASS-B QP	LISN	: LINE
Tem / Hum	: 25 ℃ / 65%		
Test Mode	: RJ-45 PRINT MODE		
EUT	: Card Printer		
Power Rating	: 230Vac/50Hz		

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1703	31.8	10.3	42.1	64.9	-22.8	QP
0.3200	26.8	10.3	37.1	59.7	-22.6	QP
0.3673	28.2	10.3	38.5	58.6	-20.1	QP
1.0210	20.6	10.4	31.0	56.0	-25.0	QP
14.9860	26.1	10.8	36.9	60.0	-23.1	QP
17.3830	27.0	11.0	38.0	60.0	-22.0	QP

Note :

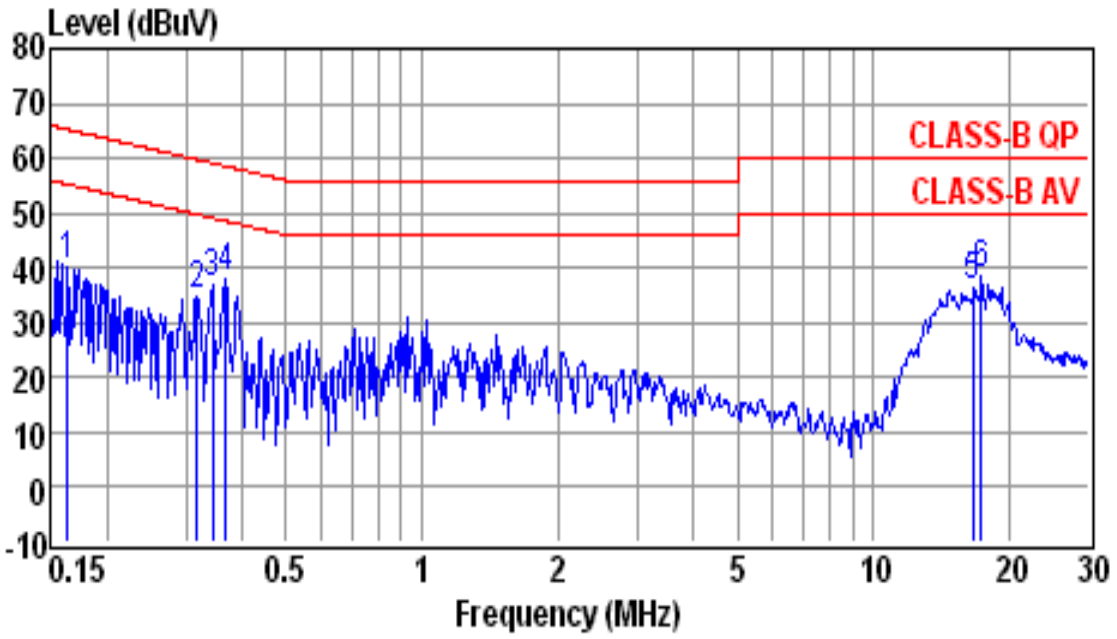
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

3.Operating Conditions of The EUT: RFID PRINT MODE

Test Date : Jun. 14, 2013

Test Specification	EN 55022:2010 (Class B)
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 65 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

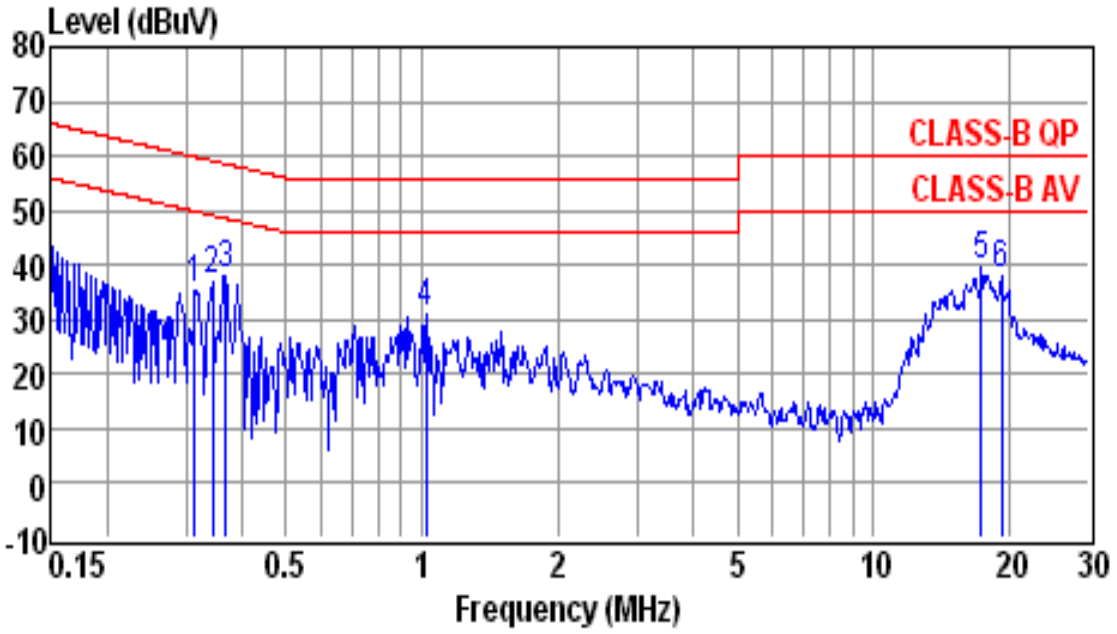


Site	: conducted #1	Date	: 06-14-2013
Condition	: CLASS-B QP	LISN	: NEUTRAL
Tem / Hum	: 25 ℃ / 65%		
Test Mode	: RFID PRINT MODE		
EUT	: Card Printer		
Power Rating	: 230Vac/50Hz		

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1641	29.6	10.3	39.9	65.3	-25.4	QP
0.3166	24.7	10.3	35.0	59.8	-24.8	QP
0.3428	26.5	10.3	36.8	59.1	-22.3	QP
0.3673	27.4	10.3	37.7	58.6	-20.9	QP
16.6610	25.4	10.7	36.1	60.0	-23.9	QP
17.3830	27.6	10.8	38.4	60.0	-21.6	QP

Note :

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



Site	: conducted #1	Date	: 06-14-2013
Condition	: CLASS-B QP	LISN	: LINE
Tem / Hum	: 25 ℃ / 65%		
Test Mode	: RFID PRINT MODE		
EUT	: Card Printer		
Power Rating	: 230Vac/50Hz		

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.3133	25.0	10.3	35.3	59.9	-24.6	QP
0.3428	26.5	10.3	36.8	59.1	-22.3	QP
0.3673	27.6	10.3	37.9	58.6	-20.7	QP
1.0210	20.6	10.4	31.0	56.0	-25.0	QP
17.3830	28.6	11.0	39.6	60.0	-20.4	QP
19.2240	26.9	11.0	37.9	60.0	-22.1	QP

Note :

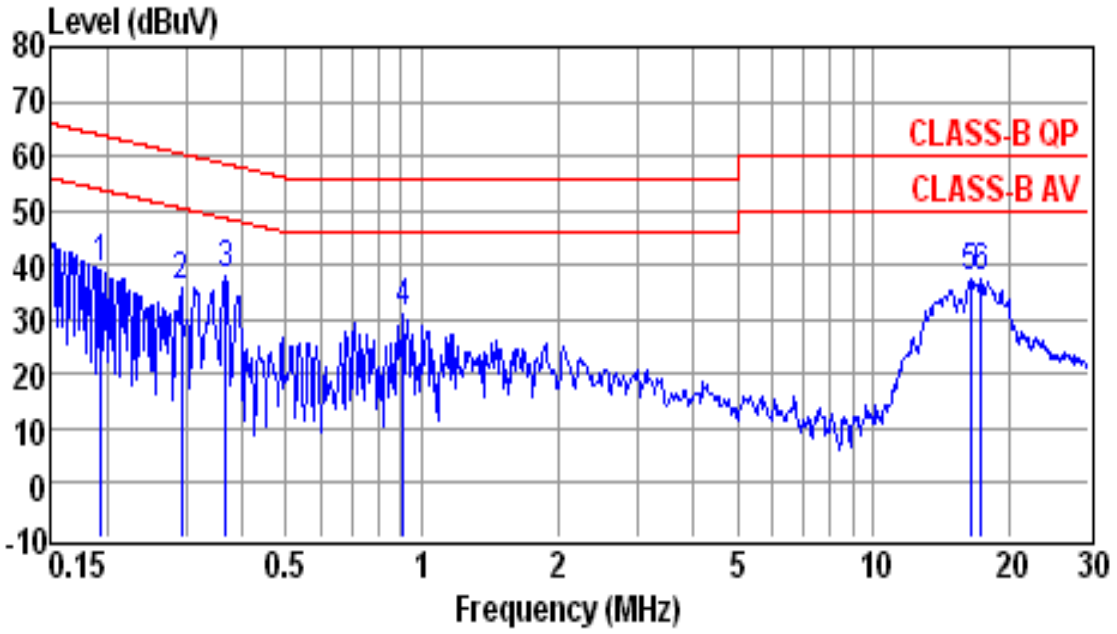
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

4.Operating Conditions of The EUT: SMART CARD PRINT MODE

Test Date : Jun. 14, 2013

Test Specification	EN 55022:2010 (Class B)
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 65 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

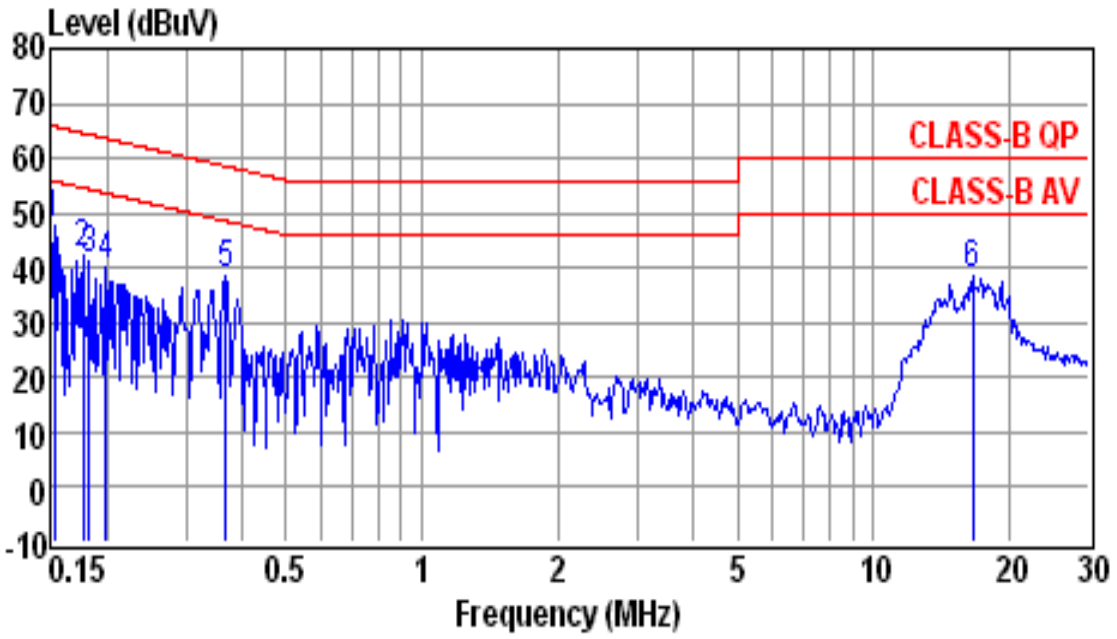


Site	: conducted #1	Date	: 06-14-2013
Condition	: CLASS-B QP	LISN	: NEUTRAL
Tem / Hum	: 25 ℃ / 65%		
Test Mode	: SMART CARD PRINT MODE		
EUT	: Card Printer		
Power Rating	: 230Vac/50Hz		

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1945	28.5	10.3	38.8	63.8	-25.0	QP
0.2924	25.7	10.3	36.0	60.5	-24.5	QP
0.3673	27.6	10.3	37.9	58.6	-20.7	QP
0.9087	20.8	10.3	31.1	56.0	-24.9	QP
16.3980	26.7	10.7	37.4	60.0	-22.6	QP
17.3830	26.7	10.8	37.5	60.0	-22.5	QP

Note :

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



Site	: conducted #1	Date	: 06-14-2013
Condition	: CLASS-B QP	LISN	: LINE
Tem / Hum	: 25 ℃ / 65%		
Test Mode	: SMART CARD PRINT MODE		
EUT	: Card Printer		
Power Rating	: 230Vac/50Hz		

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1532	37.3	10.3	47.6	65.8	-18.2	QP
0.1777	32.2	10.3	42.5	64.6	-22.1	QP
0.1835	30.7	10.3	41.0	64.3	-23.3	QP
0.1997	30.0	10.3	40.3	63.6	-23.3	QP
0.3673	27.9	10.3	38.2	58.6	-20.4	QP
16.6610	27.6	10.9	38.5	60.0	-21.5	QP

Note :

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

4.1.1.4 Conducted Emissions Test Setup Photos

4.1.2 Conducted Telecommunication ports Test

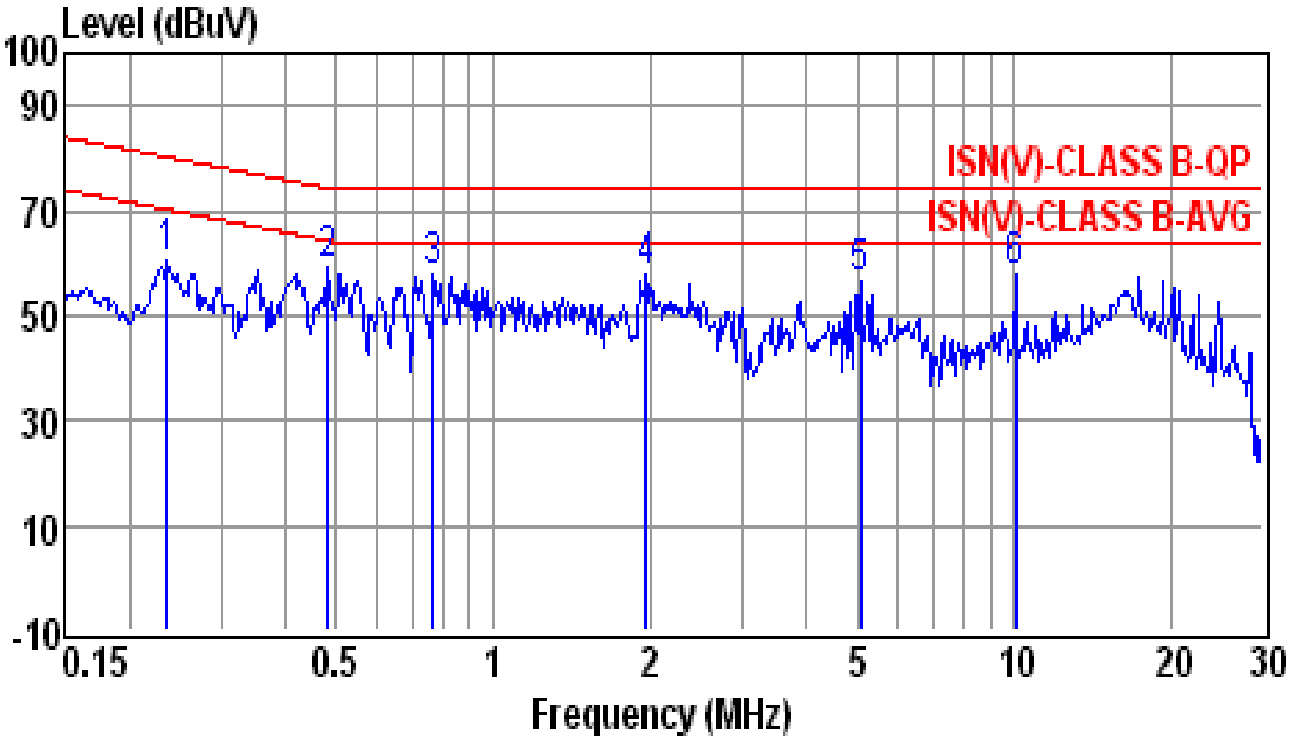
4.1.2.1 Conducted Telecommunication ports Test Data

1.Operating Conditions of The EUT: RJ-45 LINK (10M)

Test Date : Jun. 14, 2013

Test Specification	EN 55022:2010 (Class B)
Climatic Condition	Ambient Temperature: 20 °C Relative Humidity: 65 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.



Site	: conducted #1	Date	: 06-14-2012
Condition	: ISN(V)-CLASS B-QP	LISN	:
Tem / Hum	: 25 ℃ / 65%	Test Mode	: RJ-45 LINK (10M)
EUT	: Card Printer	Power Rating	: 230Vac/50Hz
Memo	:	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.2366	50.3	10.0	60.3	80.2	-19.9	QP
0.4812	49.2	9.9	59.1	74.3	-15.2	QP
0.7670	47.9	9.9	57.8	74.0	-16.2	QP
1.9700	47.8	9.9	57.7	74.0	-16.3	QP
5.0580	46.4	10.0	56.4	74.0	-17.6	QP
10.0720	47.7	10.0	57.7	74.0	-16.3	QP

Note :

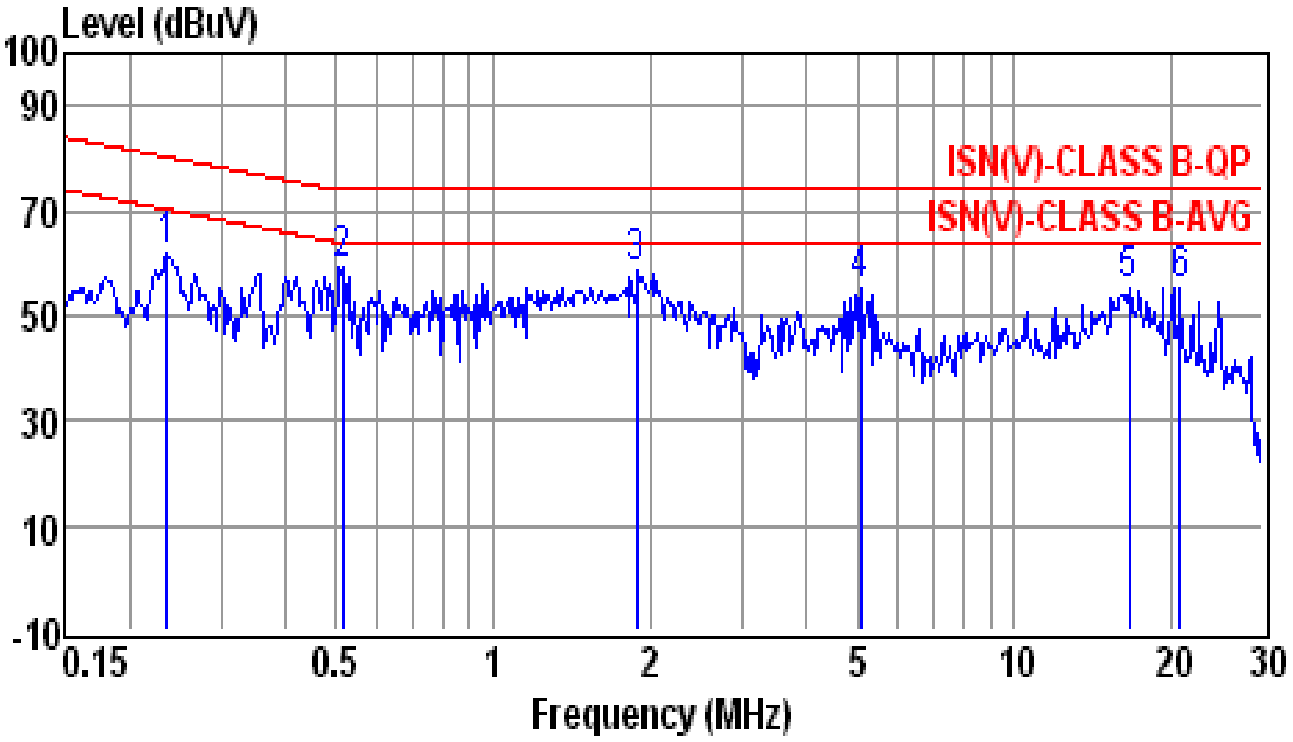
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

2.Operating Conditions of The EUT: RJ-45 LINK (100M)

Test Date : Jun. 14, 2013

Test Specification	EN 55022:2010 (Class B)
Climatic Condition	Ambient Temperature: 20 °C Relative Humidity: 65 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.



Site	: conducted #1	Date	: 06-14-2012
Condition	: ISN(V)-CLASS B-QP	LISN	:
Tem / Hum	: 25 ℃ / 65%	Test Mode	: RJ-45 LINK (100M)
EUT	: Card Printer	Power Rating	: 230Vac/50Hz
Memo	:	Memo	:

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.2366	51.6	10.0	61.6	80.2	-18.6	QP
0.5155	49.2	9.9	59.1	74.0	-14.9	QP
1.8880	48.4	9.9	58.3	74.0	-15.7	QP
5.0580	45.0	10.0	55.0	74.0	-19.0	QP
16.6610	45.2	10.1	55.3	74.0	-18.7	QP
20.8140	45.4	10.1	55.5	74.0	-18.5	QP

Note :

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

4.1.2.2Conducted Telecommunication ports Test Photos:

4.1.3 Radiated Emissions Test

4.1.3.1 Limit of Radiated Emission Measurement.

Frequency (MHz)	Class B (at 10m)	Class B (at 10m)
	Quasi-peak (dBuV/m)	Quasi-peak (dBuV/m)
30-230	40	30
230-1000	47	37

Frequency (MHz)	Class B (at 3m)		Class B (at 3m)	
	Peak (dBuV/m)	Average (dBuV/m)	Peak (dBuV/m)	Average (dBuV/m)
1000-3000	76	56	70	50
3000-6000	80	60	74	54

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

Frequency range of radiated measurement

Highest frequency generated or used within the EUT or on which the WUT operates or tunes (MHz)	Upper frequency of measurement rang (MHz)
Below 108	1000
108-500	2000
500-1000	5000
Above 1000	Up to 5 times of the highest frequency to 6 GHz, whichever is less

4.1.3.2 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Test Receiver	Rohde & Schwarz	ESVS30	2013/05/06	2014/05/05
Amplifier	HP	8447D	2013/05/03	2014/05/02
EMI Test Receiver	Rohde & Schwarz	ESL	2012/07/30	2013/07/29
Bi-Log Antenna	ETC	MCTD 2756	2013/01/17	2014/01/16
Test Receiver	Rohde & Schwarz	ESU40	2012/09/17	2013/09/16
Amplifier	HP	8449B	2013/01/09	2014/01/08
Horn Antenna	EMCO	3115	2013/04/29	2014/04/28

4.1.3.3 Radiated Emissions Test Data

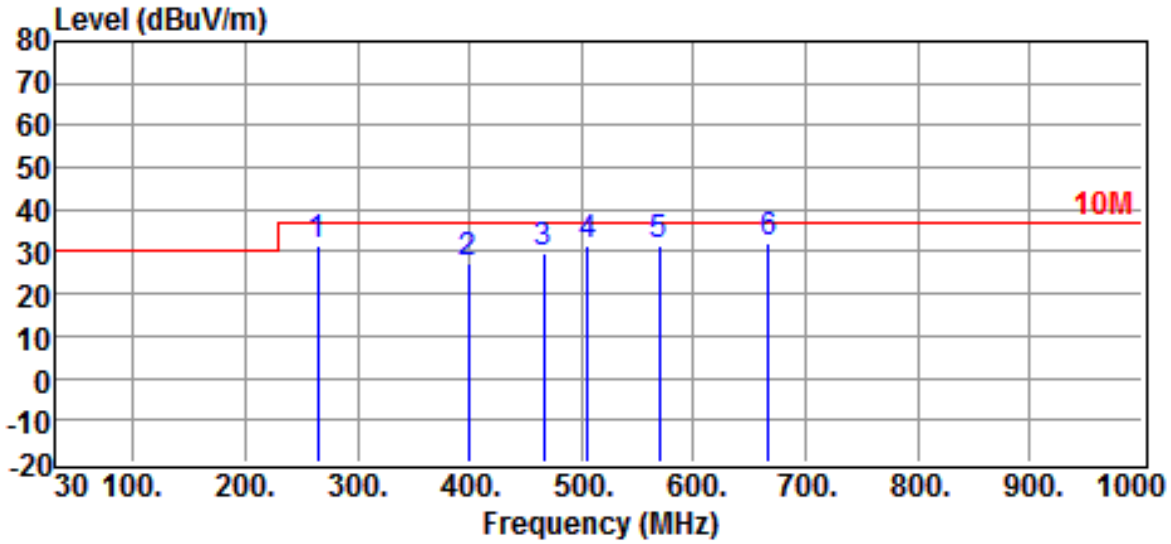
1.Operating Conditions of The EUT : USB PRINT MODE

Test Date : Jun. 14, 2013

Test Specification	EN 55022:2010 (Class B)
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 65 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

(30MHz to 1GHz)

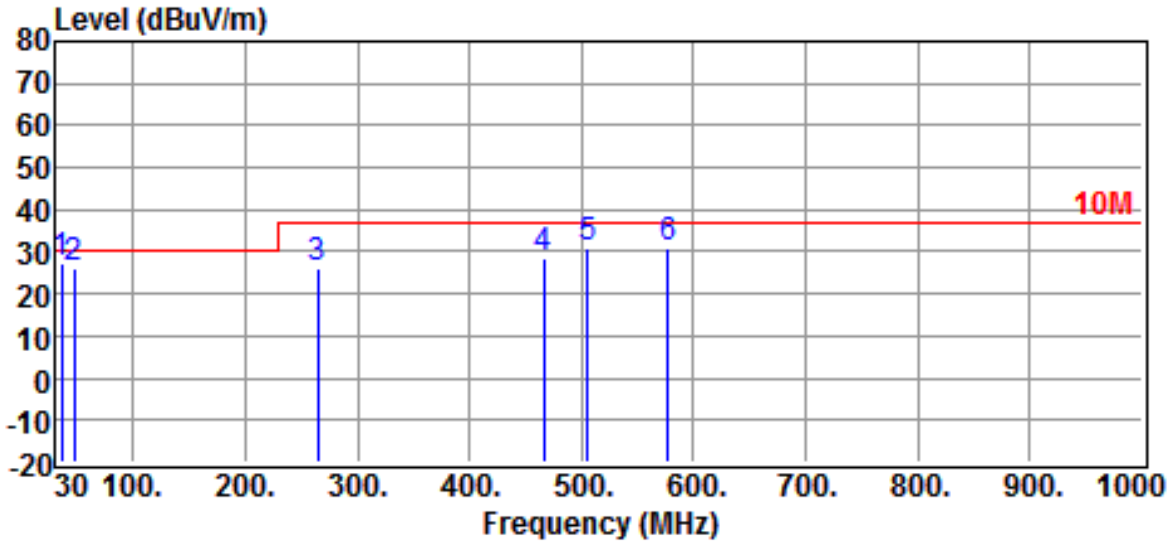


Site	:OPEN SITE	Date	:2013-06-14
Limit	:10M	Ant. Pol.	:HORIZONTAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:USB PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
264.7400	15.1	16.7	31.8	37.0	-5.2	QP
398.6000	6.9	20.3	27.2	37.0	-9.8	QP
466.5000	6.2	23.3	29.5	37.0	-7.5	QP
505.3000	6.6	25.1	31.7	37.0	-5.3	QP
569.3200	6.5	25.0	31.5	37.0	-5.5	QP
666.3200	4.5	27.8	32.3	37.0	-4.7	QP

Note :

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



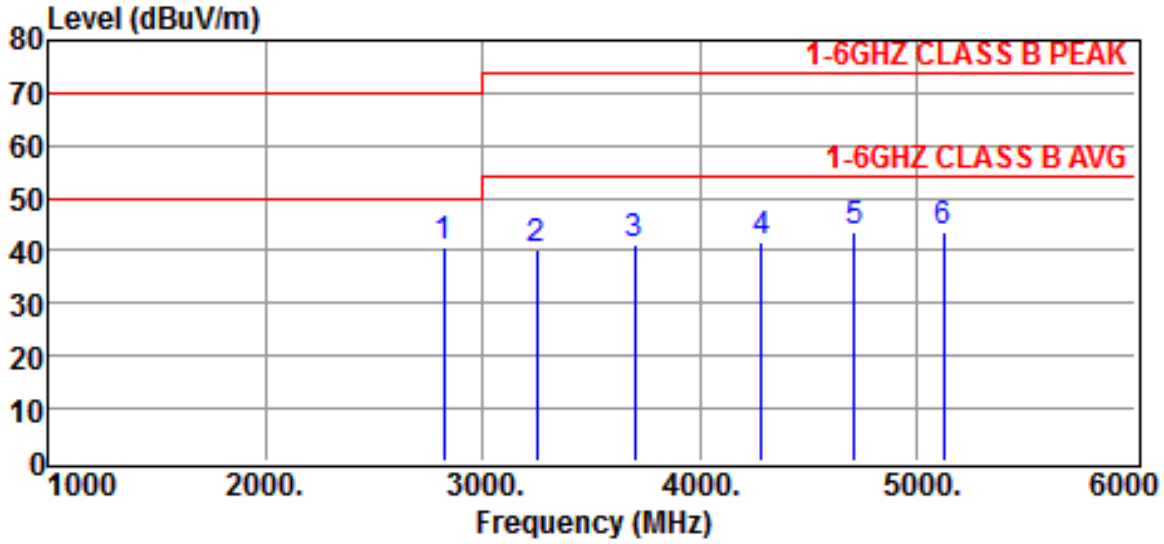
Site	:OPEN SITE	Date	:2013-06-14
Limit	:10M	Ant. Pol.	:VERTICAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:USB PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
35.8200	10.8	16.5	27.3	30.0	-2.7	QP
47.4600	15.1	11.2	26.3	30.0	-3.7	QP
264.7400	9.7	16.7	26.4	37.0	-10.6	QP
466.5000	5.1	23.3	28.4	37.0	-8.6	QP
505.3000	5.6	25.1	30.7	37.0	-6.3	QP
577.0800	5.9	25.1	31.0	37.0	-6.0	QP

Note :

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

(Above 1GHz)

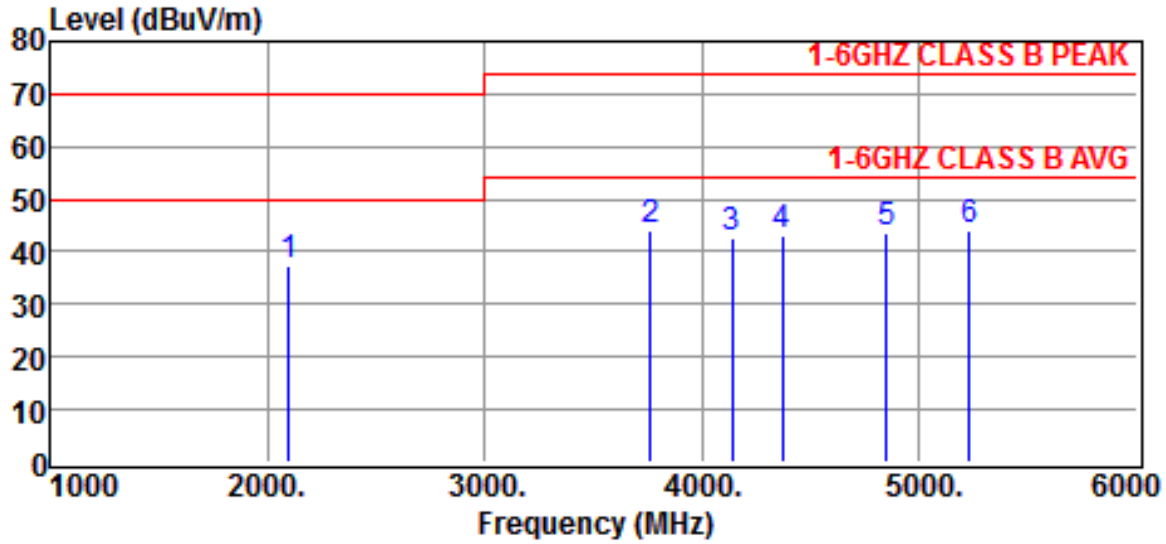


Site	:CHAMBER #2	Date	:2013-06-14
Limit	:1-6GHZ CLASS B PEAK	Ant. Pol.	:HORIZONTAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:USB PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2820.0000	45.0	-4.3	40.7	70.0	-29.3	Peak
3250.0000	43.2	-2.9	40.3	74.0	-33.7	Peak
3700.0000	42.4	-1.1	41.3	74.0	-32.7	Peak
4280.0000	41.7	0.1	41.8	74.0	-32.2	Peak
4710.0000	42.6	0.9	43.5	74.0	-30.5	Peak
5120.0000	41.5	1.9	43.4	74.0	-30.6	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit – Result



Site	:CHAMBER #2	Date	:2013-06-14
Limit	:1-6GHZ CLASS B PEAK	Ant. Pol.	:VERTICAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:USB PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2100.0000	44.2	-6.7	37.5	70.0	-32.5	Peak
3760.0000	44.9	-1.0	43.9	74.0	-30.1	Peak
4140.0000	42.9	0.0	42.9	74.0	-31.1	Peak
4370.0000	43.1	0.1	43.2	74.0	-30.8	Peak
4850.0000	42.3	1.3	43.6	74.0	-30.4	Peak
5230.0000	41.9	2.3	44.2	74.0	-29.8	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit – Result

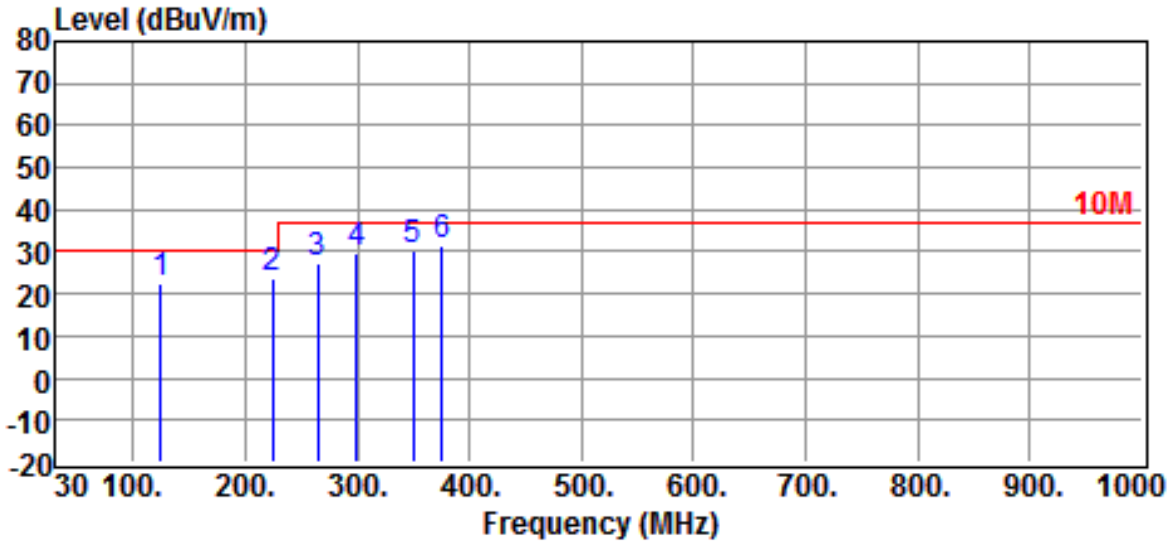
2.Operating Conditions of The EUT : RJ-45 PRINT MODE

Test Date : Jun. 14, 2013

Test Specification	EN 55022:2010 (Class B)
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 65 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

(30MHz to 1GHz)

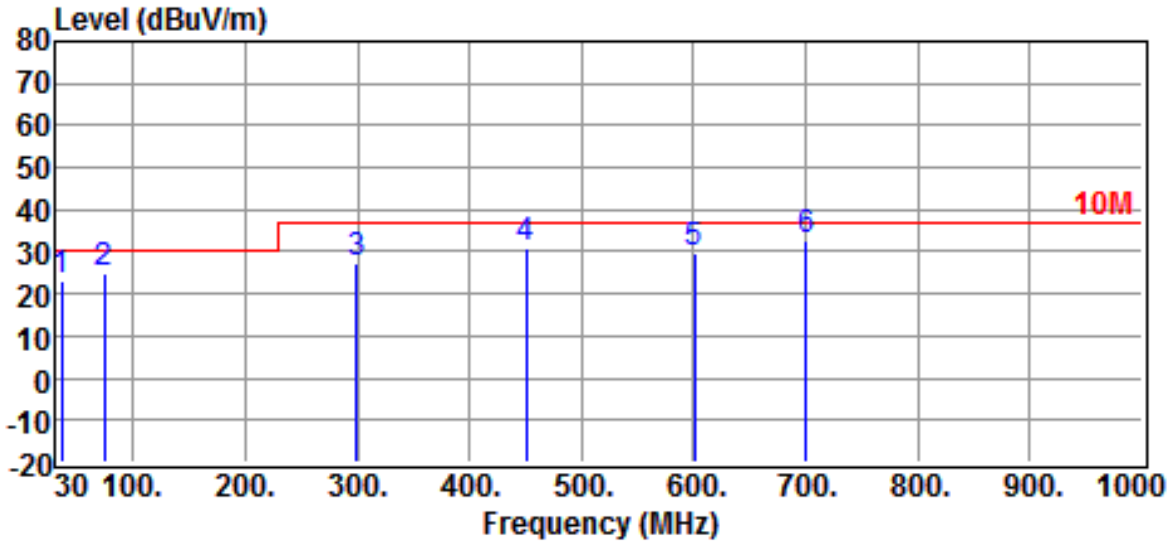


Site	:OPEN SITE	Date	:2013-06-14
Limit	:10M	Ant. Pol.	:HORIZONTAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:RJ-45 PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
125.0600	8.8	13.8	22.6	30.0	-7.4	QP
224.0000	9.5	14.0	23.5	30.0	-6.5	QP
264.7400	10.9	16.7	27.6	37.0	-9.4	QP
299.6600	11.1	18.4	29.5	37.0	-7.5	QP
350.1000	11.2	18.8	30.0	37.0	-7.0	QP
375.3200	12.1	19.6	31.7	37.0	-5.3	QP

Note :

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



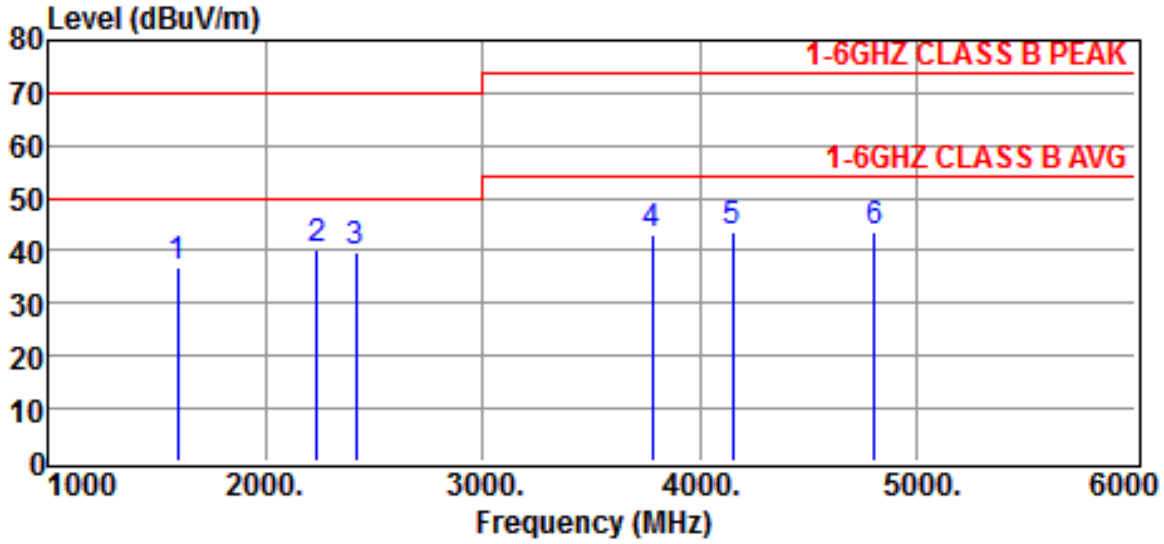
Site	:OPEN SITE	Date	:2013-06-14
Limit	:10M	Ant. Pol.	:VERTICAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:RJ-45 PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
35.8200	6.3	16.5	22.8	30.0	-7.2	QP
74.6200	16.2	9.0	25.2	30.0	-4.8	QP
299.6600	8.8	18.4	27.2	37.0	-9.8	QP
450.9800	8.8	22.4	31.2	37.0	-5.8	QP
600.3600	4.2	25.7	29.9	37.0	-7.1	QP
700.0000	4.0	28.6	32.6	37.0	-4.4	QP

Note :

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

(Above 1GHz)

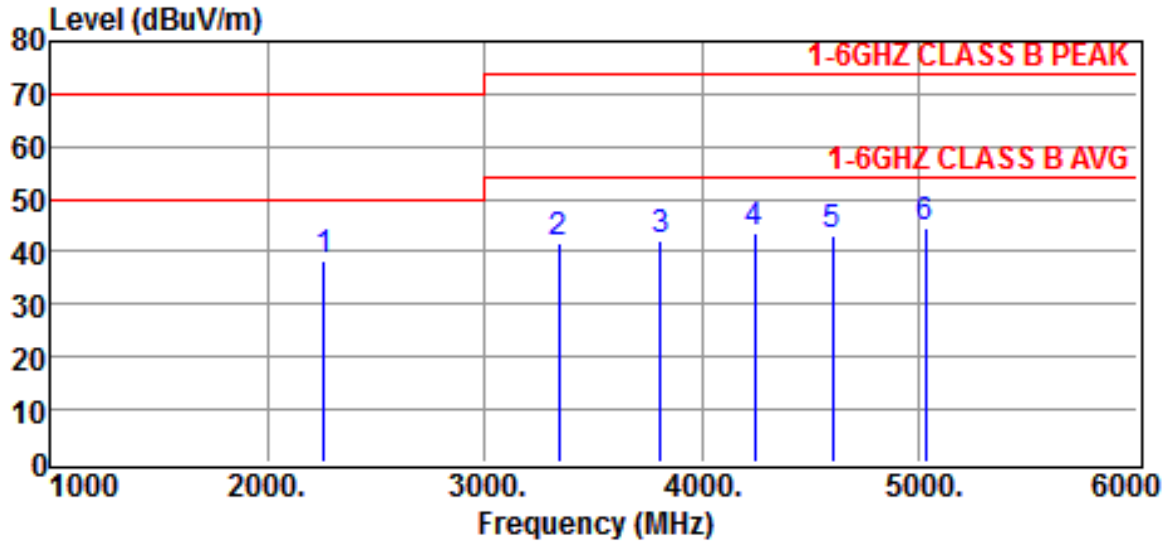


Site	:CHAMBER #2	Date	:2013-06-14
Limit	:1-6GHZ CLASS B PEAK	Ant. Pol.	:HORIZONTAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:RJ45 PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
1600.0000	46.3	-9.3	37.0	70.0	-33.0	Peak
2240.0000	46.7	-6.3	40.4	70.0	-29.6	Peak
2420.0000	45.2	-5.7	39.5	70.0	-30.5	Peak
3780.0000	43.8	-0.9	42.9	74.0	-31.1	Peak
4150.0000	43.7	0.0	43.7	74.0	-30.3	Peak
4800.0000	42.3	1.3	43.6	74.0	-30.4	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit – Result



Site	:CHAMBER #2	Date	:2013-06-14
Limit	:1-6GHZ CLASS B PEAK	Ant. Pol.	:VERTICAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:RJ45 PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2260.0000	44.7	-6.2	38.5	70.0	-31.5	Peak
3340.0000	44.2	-2.5	41.7	74.0	-32.3	Peak
3810.0000	43.0	-0.8	42.2	74.0	-31.8	Peak
4240.0000	43.4	0.2	43.6	74.0	-30.4	Peak
4600.0000	42.7	0.6	43.3	74.0	-30.7	Peak
5030.0000	43.0	1.8	44.8	74.0	-29.2	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit – Result

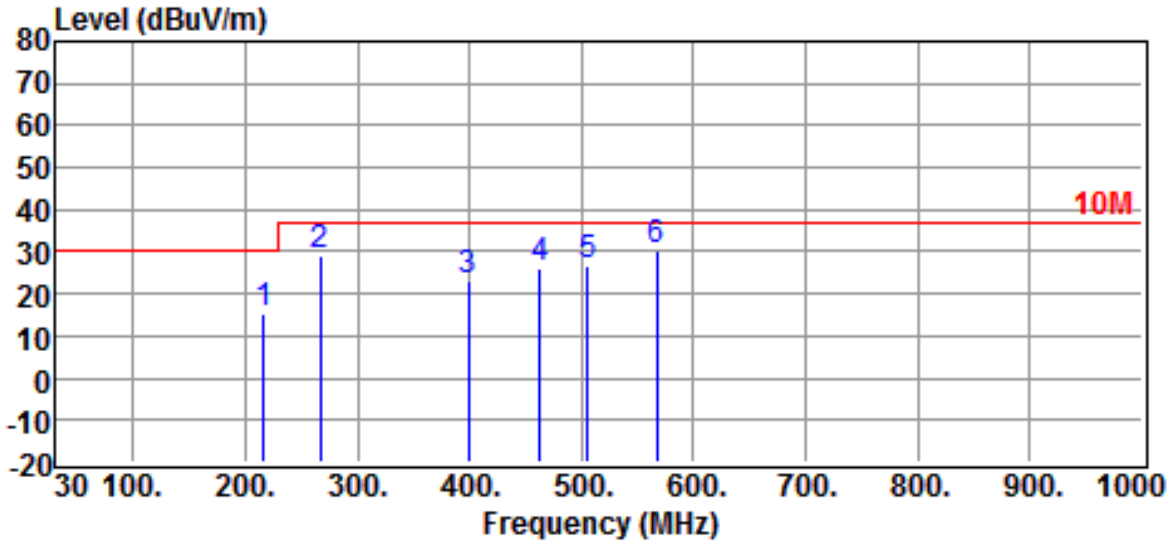
3.Operating Conditions of The EUT : RFID PRINT MODE

Test Date : Jun. 14, 2013

Test Specification	EN 55022:2010 (Class B)
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 65 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

(30MHz to 1GHz)

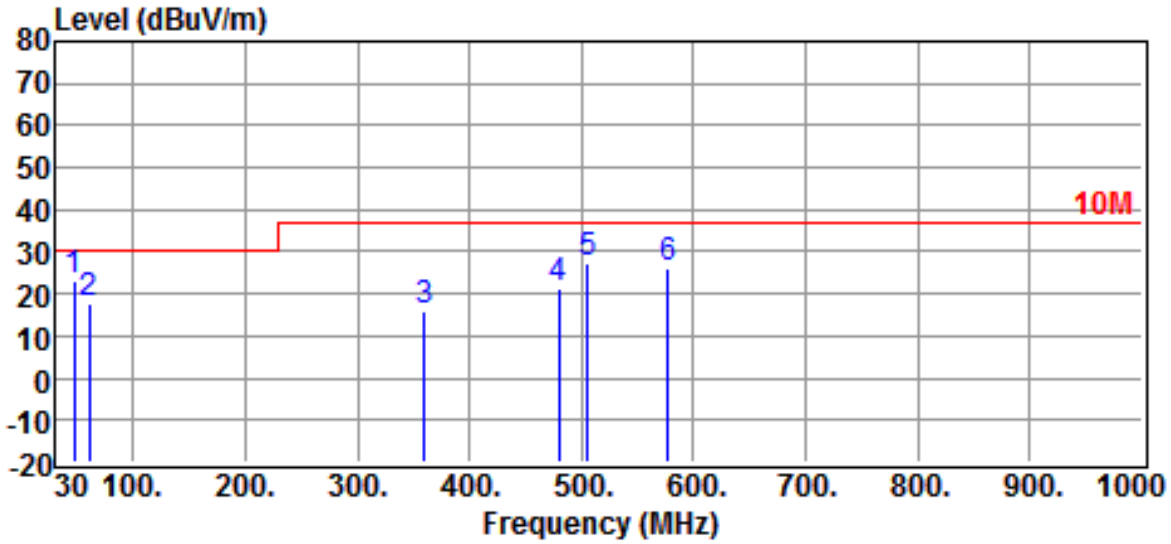


Site	:OPEN SITE	Date	:2013-06-14
Limit	:10M	Ant. Pol.	:HORIZONTAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:RFID PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
216.2400	1.3	14.0	15.3	30.0	-14.7	QP
266.6800	12.3	16.9	29.2	37.0	-7.8	QP
398.6000	3.0	20.3	23.3	37.0	-13.7	QP
462.6200	2.8	23.1	25.9	37.0	-11.1	QP
505.3000	1.5	25.1	26.6	37.0	-10.4	QP
567.3800	5.1	25.0	30.1	37.0	-6.9	QP

Note :

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



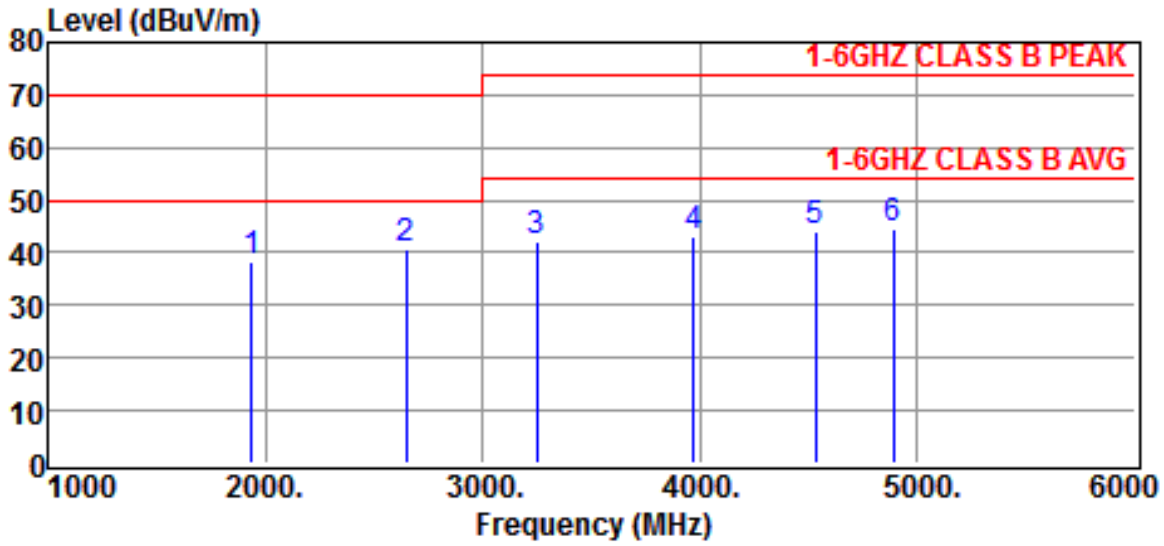
Site	:OPEN SITE	Date	:2013-06-14
Limit	:10M	Ant. Pol.	:VERTICAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:RFID PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
47.4600	11.9	11.2	23.1	30.0	-6.9	QP
61.0400	8.4	9.1	17.5	30.0	-12.5	QP
359.8000	-3.1	19.1	16.0	37.0	-21.0	QP
480.0800	-3.0	24.0	21.0	37.0	-16.0	QP
505.3000	1.9	25.1	27.0	37.0	-10.0	QP
577.0800	1.2	25.1	26.3	37.0	-10.7	QP

Note :

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

(Above 1GHz)

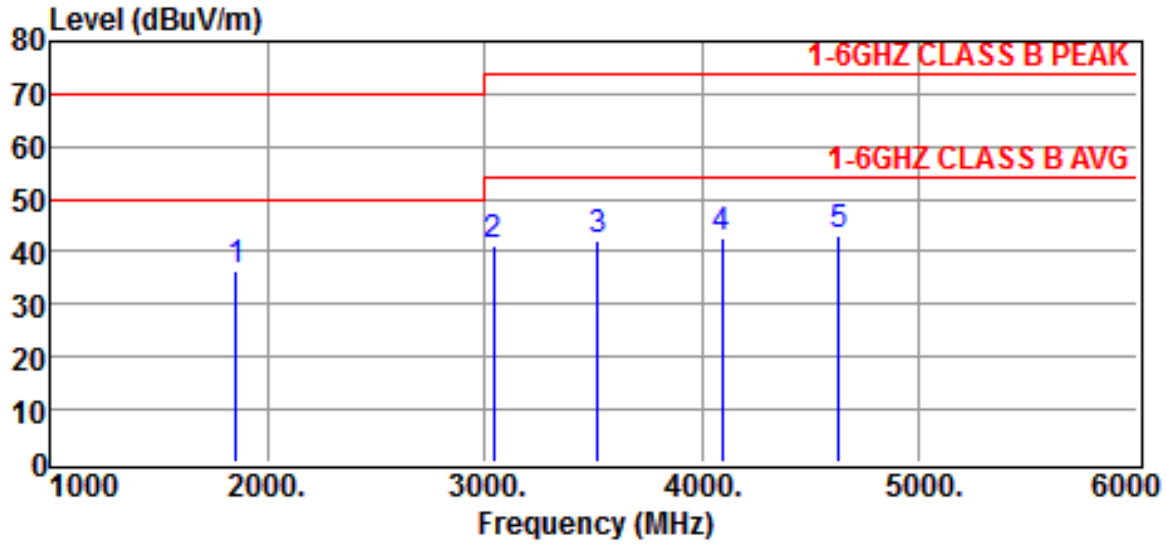


Site	:CHAMBER #2	Date	:2013-06-14
Limit	:1-6GHZ CLASS B PEAK	Ant. Pol.	:HORIZONTAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:RFID PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
1940.0000	46.0	-7.5	38.5	70.0	-31.5	Peak
2650.0000	45.6	-4.9	40.7	70.0	-29.3	Peak
3250.0000	45.1	-2.9	42.2	74.0	-31.8	Peak
3970.0000	43.2	-0.1	43.1	74.0	-30.9	Peak
4530.0000	43.5	0.4	43.9	74.0	-30.1	Peak
4890.0000	43.2	1.4	44.6	74.0	-29.4	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result



Site	:CHAMBER #2	Date	:2013-06-14
Limit	:1-6GHZ CLASS B PEAK	Ant. Pol.	:VERTICAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:RFID PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
1860.0000	44.4	-7.9	36.5	70.0	-33.5	Peak
3040.0000	44.6	-3.5	41.1	74.0	-32.9	Peak
3520.0000	44.3	-2.0	42.3	74.0	-31.7	Peak
4090.0000	42.7	0.0	42.7	74.0	-31.3	Peak
4630.0000	42.5	0.7	43.2	74.0	-30.8	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result

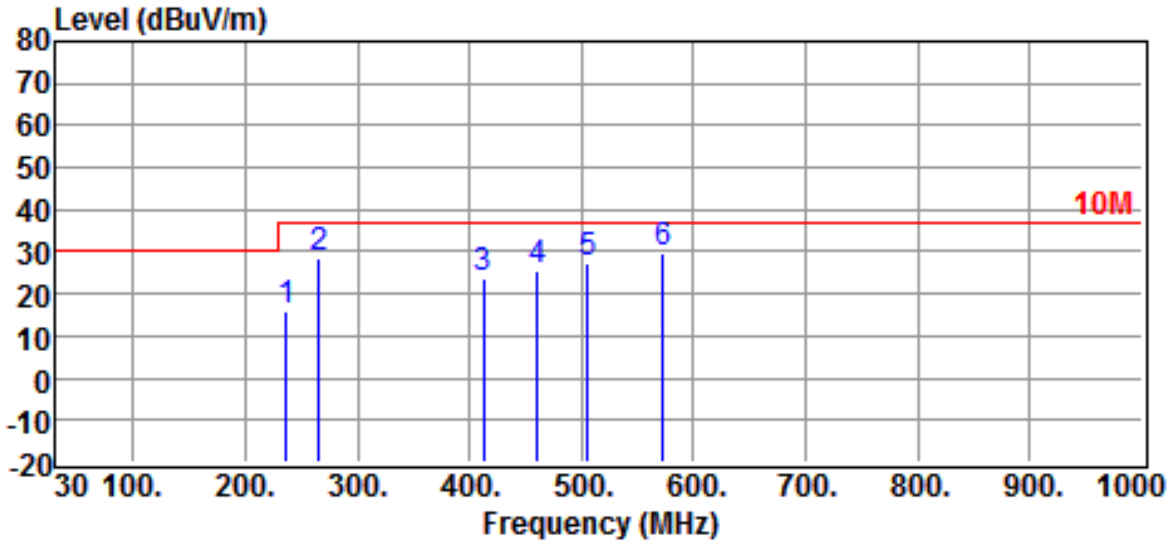
4.Operating Conditions of The EUT : SMART CARD PRINT MODE

Test Date : Jun. 14, 2013

Test Specification	EN 55022:2010 (Class B)
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 65 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

(30MHz to 1GHz)

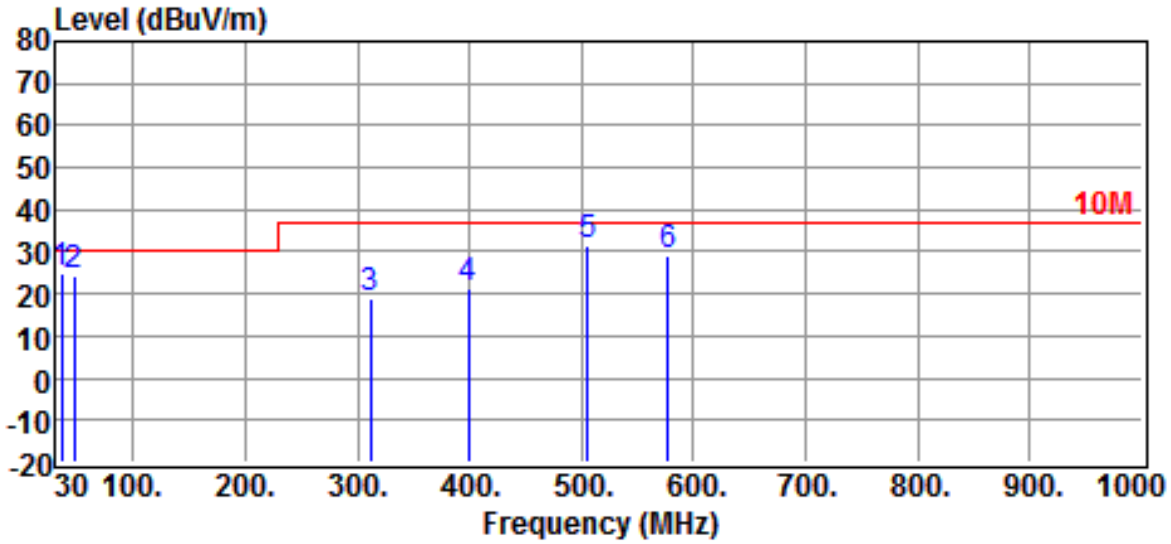


Site	:OPEN SITE	Date	:2013-06-14
Limit	:10M	Ant. Pol.	:HORIZONTAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:SMART CARD PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
236.6100	1.4	14.4	15.8	37.0	-21.2	QP
265.7100	11.7	16.8	28.5	37.0	-8.5	QP
412.1800	2.5	20.9	23.4	37.0	-13.6	QP
460.6800	2.8	23.0	25.8	37.0	-11.2	QP
505.3000	2.2	25.1	27.3	37.0	-9.7	QP
573.2000	4.4	25.1	29.5	37.0	-7.5	QP

Note :

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



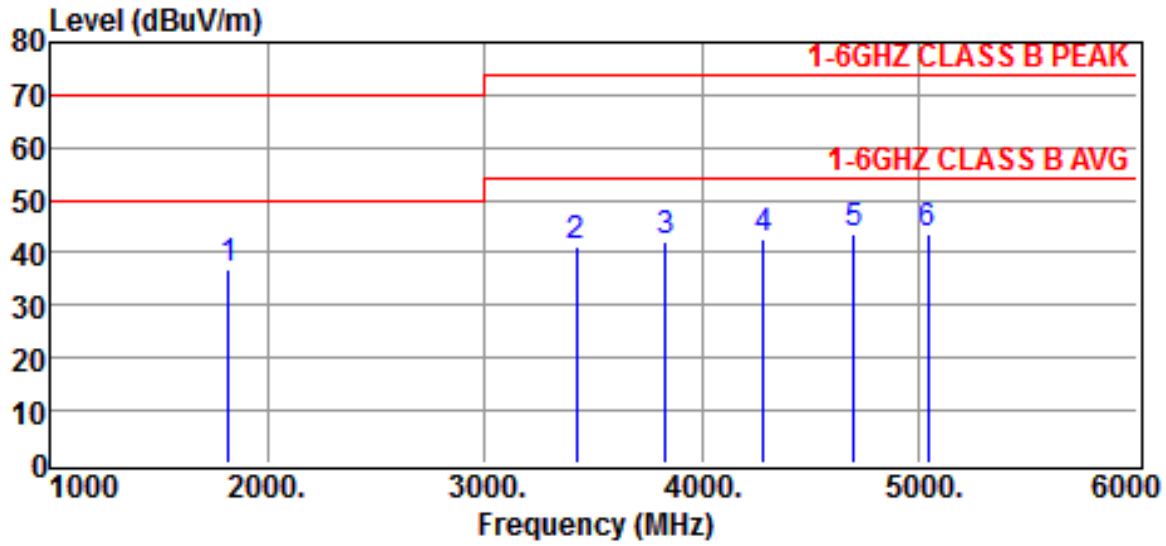
Site	:OPEN SITE	Date	:2013-06-14
Limit	:10M	Ant. Pol.	:VERTICAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:SMART CARD PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
35.8200	8.1	16.5	24.6	30.0	-5.4	QP
47.4600	13.3	11.2	24.5	30.0	-5.5	QP
311.3000	0.6	18.5	19.1	37.0	-17.9	QP
398.6000	1.3	20.3	21.6	37.0	-15.4	QP
505.3000	6.3	25.1	31.4	37.0	-5.6	QP
577.0800	4.0	25.1	29.1	37.0	-7.9	QP

Note :

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

(Above 1GHz)

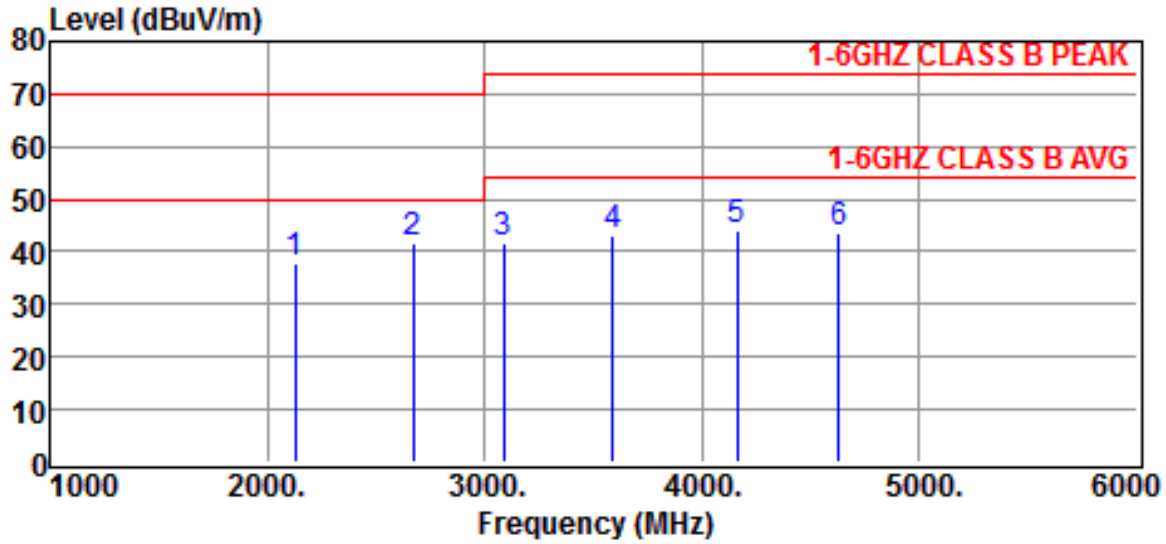


Site	:CHAMBER #2	Date	:2013-06-14
Limit	:1-6GHZ CLASS B PEAK	Ant. Pol.	:HORIZONTAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:SMART CARD PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
1820.0000	45.0	-8.1	36.9	70.0	-33.1	Peak
3420.0000	43.5	-2.3	41.2	74.0	-32.8	Peak
3830.0000	43.1	-0.8	42.3	74.0	-31.7	Peak
4280.0000	42.6	0.1	42.7	74.0	-31.3	Peak
4700.0000	42.6	0.9	43.5	74.0	-30.5	Peak
5040.0000	41.7	1.9	43.6	74.0	-30.4	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result



Site	:CHAMBER #2	Date	:2013-06-14
Limit	:1-6GHZ CLASS B PEAK	Ant. Pol.	:VERTICAL
EUT	: Card Printer	Temp.	:25℃
Power Rating	: 230Vac/50Hz	Humi.	:65%
Model	:CS-220e	Engineer.	:VC
Test Mode	:SMART CARD PRINT MODE		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2130.0000	44.8	-6.7	38.1	70.0	-31.9	Peak
2670.0000	46.3	-4.8	41.5	70.0	-28.5	Peak
3090.0000	45.3	-3.4	41.9	74.0	-32.1	Peak
3590.0000	44.9	-1.7	43.2	74.0	-30.8	Peak
4160.0000	44.2	0.0	44.2	74.0	-29.8	Peak
4630.0000	43.0	0.7	43.7	74.0	-30.3	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result

4.1.3.4 Radiated Emissions Test Setup Photos

(30MHz to 1GHz)

(Above 1GHz)

4.1.4 Harmonics Current Emissions Test

4.1.4.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Hormonics tester	EMC-Partner	Harmonics-1000	2012/10/23	2013/10/22

4.1.4.2 Harmonics Current Emissions Test Data

Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 14, 2013

Test Specification	IEC 61000-3-2:2005/A1:2008/A2:2009
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 50 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

Urms =	230.3V	Freq =	59.963	Range:	2A
Irms =	0.090A	Ipk =	0.462A	cf =	5.141
P =	7.608W	S =	20.69VA	pf =	0.368
THDi =	84.30%	THDu =	0.10%	Class A	
Test - Tim	3min	-100%			

Test completed. Result: PASSED

Order	Freq. [Hz]	Iavg [A]	Iavg% [%]	Iavg%L [%]	Irms [A]	Irms% [%]	Irms%L [%]	Imax [A]	Imax% [%]	Imax%L [%]	Limit [A]
1	60	0.0593	65.95		0.0499	55.571		0.14	155.84		
2	120	0.0079	8.7859	0.7309	0.007	7.7446	0.6443	0.0164	18.207	1.5146	1.08
3	180	0.0416	46.256	1.8069	0.0308	34.239	1.3375	0.1296	144.29	5.6365	2.3
4	240	0.0077	8.599	1.7967	0.0068	7.6087	1.5898	0.0157	17.527	3.6621	0.43
5	300	0.0402	44.717	3.5242	0.0299	33.288	2.6234	0.1232	137.09	10.804	1.14
6	360	0.0073	8.1181	2.4312	0.0065	7.2011	2.1566	0.0146	16.304	4.8828	0.3
7	420	0.0379	42.201	4.924	0.0287	31.929	3.7255	0.1132	125.95	14.696	0.77
8	480	0.0067	7.4978	2.9288	0.0061	6.7935	2.6537	0.0132	14.674	5.732	0.23
9	540	0.035	38.91	8.7395	0.0269	29.891	6.7139	0.1006	111.96	25.146	0.4
10	600	0.0061	6.7386	3.2903	0.0055	6.1141	2.9854	0.0115	12.772	6.2362	0.184
11	660	0.0315	35.072	9.5485	0.0248	27.582	7.5092	0.0864	96.196	26.19	0.33
12	720	0.0018	1.9604	1.1487	0.0048	5.2989	3.1048	0.0095	10.598	6.2097	0.1533
13	780	0.0277	30.88	13.211	0.0223	24.864	10.638	0.0714	79.484	34.005	0.21
14	840	0.0009	0.9936	0.6792	0.004	4.4837	3.065	0.0076	8.4239	5.7585	0.1314
15	900	0.0239	26.574	15.917	0.0198	22.011	13.184	0.0566	63.043	37.76	0.15
16	960	0.0003	0.3236	0.2528	0.0033	3.6685	2.866	0.0057	6.3859	4.989	0.115
17	1020	0.0201	22.369	15.185	0.0172	19.158	13.005	0.043	47.826	32.465	0.1324
18	1080	0	0	0	0.0027	2.9891	2.6272	0.004	4.4837	3.9407	0.1022
19	1140	0.0166	18.515	14.047	0.0148	16.44	12.473	0.0311	34.647	26.286	0.1184
20	1200	0	0	0	0.002	2.1739	2.123	0.0027	2.9891	2.9191	0.092
21	1260	0.0134	14.911	12.504	0.0123	13.723	11.507	0.0215	23.913	20.052	0.1071
22	1320	0	0	0	0.0015	1.6304	1.7514	0.0016	1.7663	1.8974	0.0836
23	1380	0.0107	11.884	10.914	0.0103	11.413	10.482	0.0145	16.168	14.849	0.0978
24	1440	0	0	0	0.0009	0.9511	1.1146	0.001	1.087	1.2738	0.0767
25	1500	0.0084	9.3572	9.341	0.0082	9.1033	9.0875	0.0105	11.685	11.664	0.09
26	1560	0	0	0	0.0006	0.6793	0.8625	0.0009	0.9511	1.2074	0.0708
27	1620	0.0067	7.414	7.9933	0.0065	7.2011	7.7637	0.0087	9.6467	10.4	0.0833
28	1680	0	0	0	0.0005	0.5435	0.743	0.0009	0.9511	1.3003	0.0657
29	1740	0.0053	5.8535	6.7782	0.005	5.5707	6.4507	0.0078	8.6957	10.069	0.0776
30	1800	0	0	0	0.0006	0.6793	0.9951	0.001	1.087	1.5922	0.0613
31	1860	0.0007	0.7335	0.9079	0.0038	4.212	5.2138	0.0068	7.6087	9.4184	0.0726
32	1920	0	0	0	0.0007	0.8152	1.2738	0.0009	0.9511	1.4861	0.0575
33	1980	0.0002	0.2416	0.3183	0.0029	3.2609	4.2969	0.0056	6.25	8.2357	0.0682
34	2040	0	0	0	0.0009	0.9511	1.579	0.0009	0.9511	1.579	0.0541
35	2100	0	0	0	0.0023	2.5815	3.6079	0.0042	4.6196	6.4562	0.0643
36	2160	0	0	0	0.0009	0.9511	1.6718	0.0009	0.9511	1.6718	0.0511
37	2220	0	0	0	0.002	2.1739	3.2118	0.0029	3.2609	4.8177	0.0608
38	2280	0	0	0	0.0007	0.8152	1.5126	0.0009	0.9511	1.7647	0.0484
39	2340	0	0	0	0.002	2.1739	3.3854	0.0023	2.5815	4.0202	0.0577
40	2400	0	0	0	0.0007	0.8152	1.5922	0.0007	0.8152	1.5922	0.046

4.1.4.3 Harmonics Current Emissions Test Setup Photos

4.1.5 Voltage Fluctuations and Flicker Test

4.1.5.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Hormonics tester	EMC-Partner	Harmonics-1000	2012/10/23	2013/10/22

4.1.5.2 Voltage Fluctuations and Flicker Test Data

Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 14, 2013

Test Specification	IEC 61000-3-3:2008
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 50 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

	Test Data	Limit	Pass or Fail
Plt	0.07	0.65	Pass
Pst	0.07	1.00	Pass
dt	0.00ms	500 ms	Pass
dmax	0.000%	4.0 %	Pass
dc	0.00%	3.3 %	Pass

4.1.5.2 Voltage Fluctuations and Flicker Test Setup Photos

4.2 Immunity

4.2.1 Electrostatic Discharge Immunity Test

4.2.1.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Electrostatic Discharge Simulator	Noiseken	ESS-2002	2012/08/07	2013/08/06

4.2.1.2 Electrostatic Discharge Immunity Test Data

Test data see the next pages.

Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 14, 2013

Test Specification	IEC 61000-4-2:2008
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 50 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

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

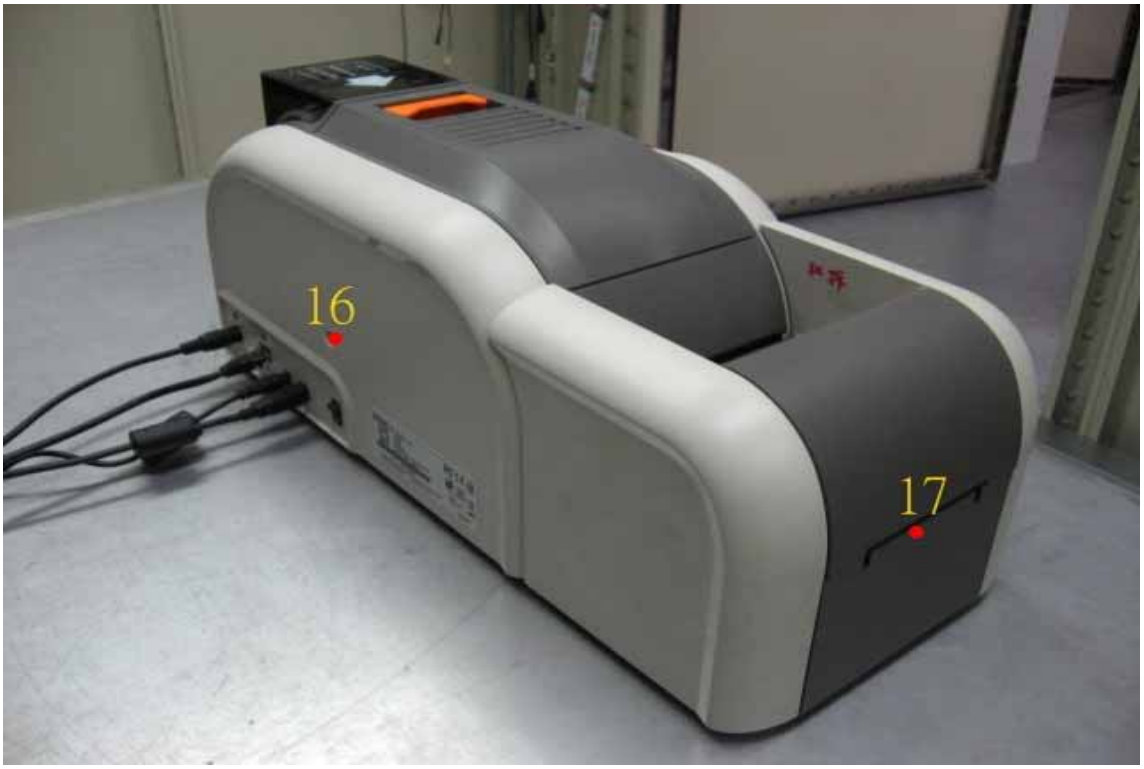
\ Discharge Mode	**Contact Discharge**								**Air Discharge**							
\ESD Voltage	**2 kV**		**4 kV**		**__ kV**		**_ kV**		**2 kV**		**4 kV**		**8 kV**		**_ kV**	
\Points\Result\Polarity	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−
VCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
HCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
P1-P25	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---

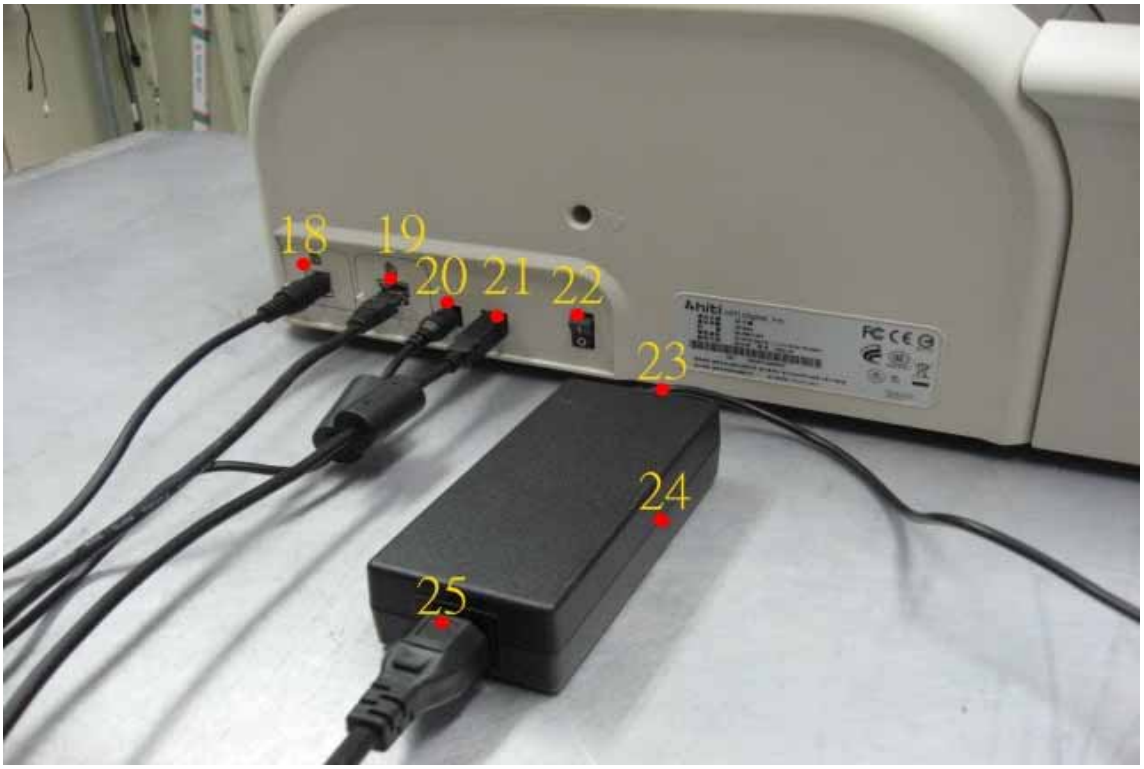
Note : "---"means the test could not be carrier out.

" A " means the EUT's function was correct normal performance during the test.

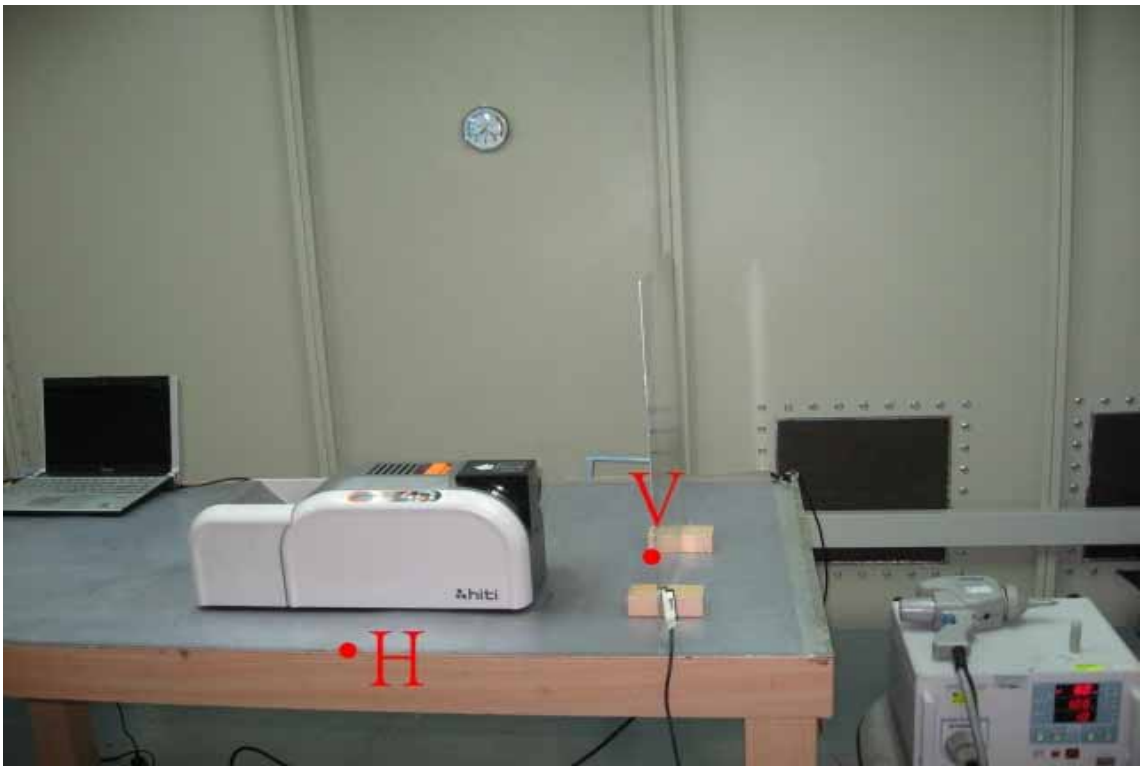
TEST POINTS

TEST POINTS





4.2.1.3 Electrostatic Discharge Immunity Test Setup Photos



4.2.2 RF Radiated Fields Immunity Test

4.2.2.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Antenna	AR	AT5080	N/A	N/A
signal Generator	Aglient	E4421B	2012/09/06	2013/09/05
Amplifier	Ophir	5172	N/A	N/A
Amplifier	Ophir	5127	N/A	N/A
POWER METER	Booton	4232A	2012/09/11	2013/09/10

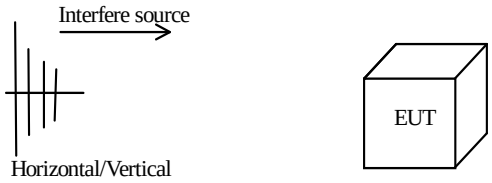
4.2.2.2 RF Radiated Fields Immunity Test Data

Test data see the next pages.

Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 14, 2013

Test Specification	IEC 61000-4-3:2006/A1:2007/A2:2010
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 52 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment



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 : 3.0 s

Frequency Range (MHz)	Antenna-Polarization	Direction of Device	Test Result
80~1000	Horizontal	front	A
		rear	A
		left	A
		right	A
80~1000	Vertical	front	A
		rear	A
		left	A
		right	A

Note : " A " means the EUT's function was correct normal performance during the test.

4.2.2.3 RF Radiated Fields Immunity Test Setup Photos

4.2.3 EFT/Burst Immunity Test

4.2.3.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity tester	EMC-PARTNER	TRANSIENT-2000	2012/10/01	2013/09/30

4.2.3.2 EFT/Burst Immunity Test Data

Test data see the next pages.

Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 14, 2013

Test Specification	IEC 61000-4-4:2004/A1:2010
Climatic Condition	Ambient Temperature: 24 °C Relative Humidity: 50 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Pulse : 5 /50ns Burst : 15ms /300ms		Repetition Rate : 5kHz	Test time : 1 min/each condition
\Voltage\Polarity\		1.0 kV	
\Test Point\Mode\Result\		+	-
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
\Voltage\Polarity\		0.5 kV	
\Test Point\Mode\Result\		+	-
Signal Cable (RJ-45)		A	A

Note : " A " means the EUT's function was correct normal performance during the test.

4.2.3.3 EFT/Burst Immunity Test Setup Photos

4.2.4 Surge Immunity Test

4.2.4.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity tester	EMC-PARTNER	TRANSIENT-2000	2012/10/01	2013/09/30

4.2.4.2 Surge Immunity Test Data

Test data see the next pages.

Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 14, 2013

Test Specification	IEC 61000-4-5:2005
Climatic Condition	Ambient Temperature: 24 °C Relative Humidity: 50 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power: 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Waveform : 1.2/50μs(8/20μs)		Repetition rate : 60 sec		Times : 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

Note : " A " means the EUT's function was correct normal performance during the test.

4.2.4.3 Surge Immunity Test Setup Photos

4.2.5 RF Common Mode Immunity Test

4.2.5.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
CS TESTER	FRANKONIA	CIT-10	2013/05/06	2014/05/05
M2+3 CDN-KIT	FRANKONIA	M2+3	2013/05/10	2014/05/09
SCHAFFUER	CS-CLAMP	KEMZ 801	2013/05/11	2014/05/10

4.2.5.2 RF Common Mode Immunity Test Data

Test data see the next pages.

Operating Conditions of The EUT : Operation Mode

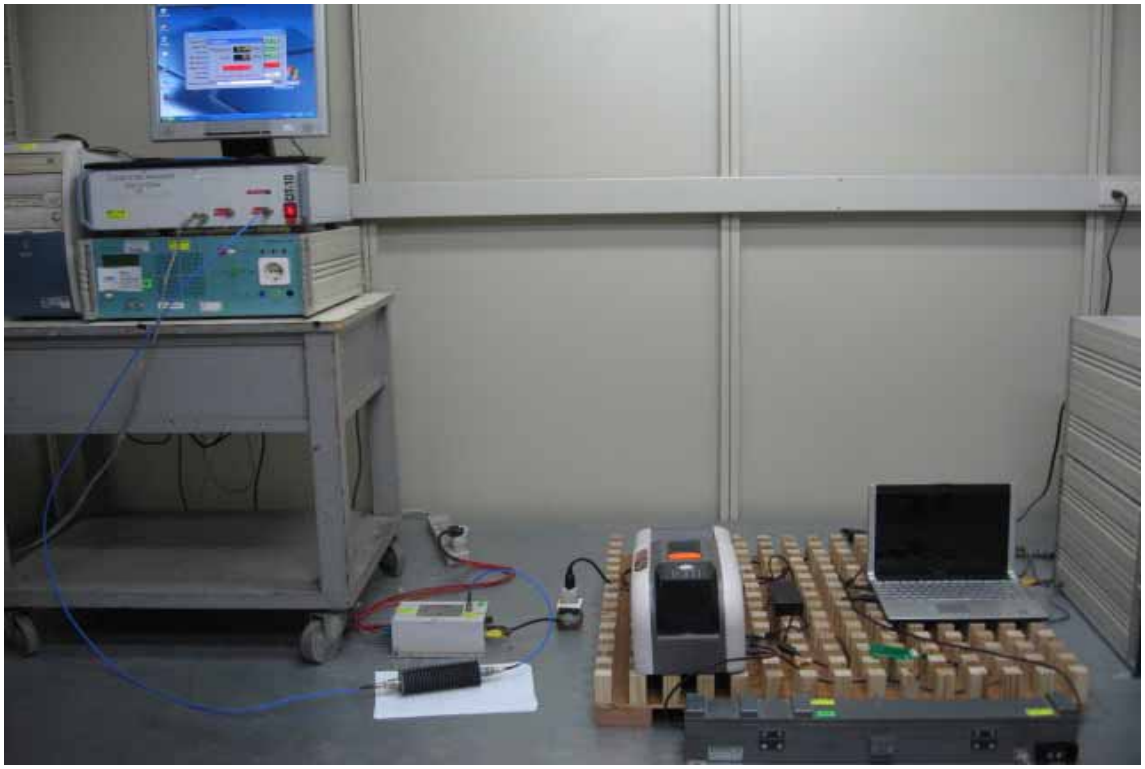
Test Date : Oct, 16, 2012

Test Specification	IEC 61000-4-6:2008
Climatic Condition	Ambient Temperature: 24 °C Relative Humidity: 50 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

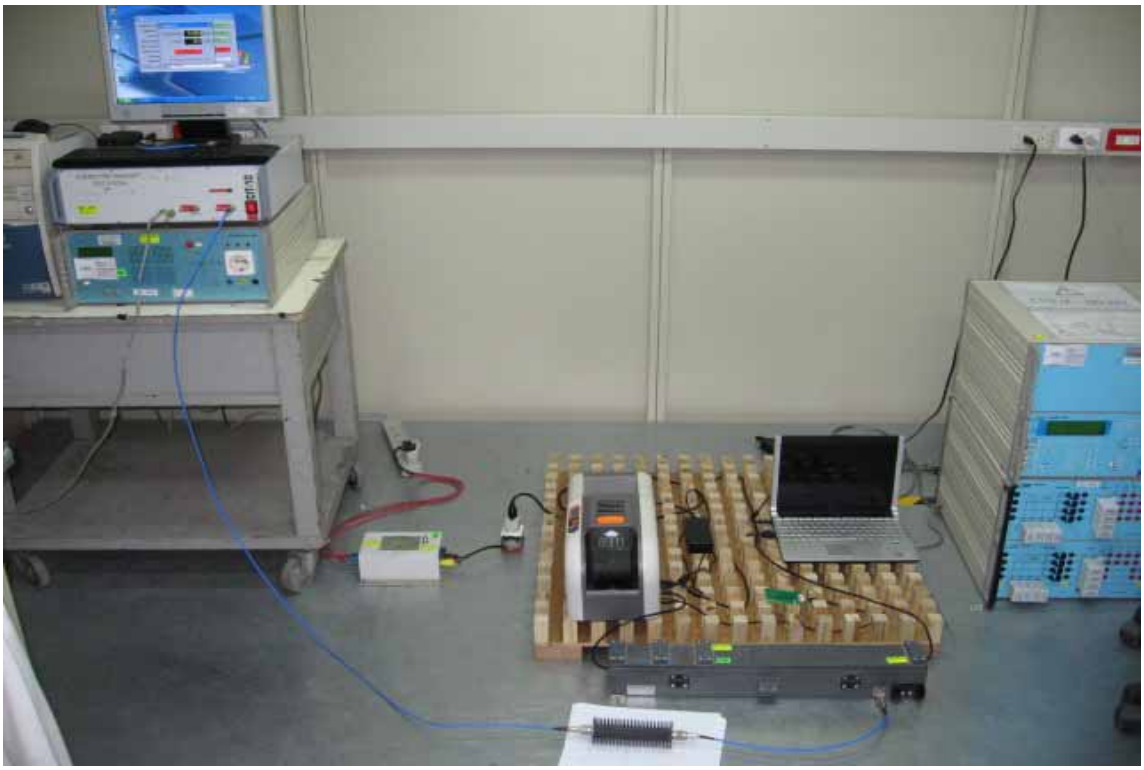
Frequency Range ：0.15 MHz ~ 80 MHz		Test Level ：3 Vrms	Modulation (AM 1kHz 80%)	
Sweep Rate	：≤ 1.5×10^{-3} decades/s	Step Size ：≤ 1 % of preceding frequency value		Dwell Time ：3 s
Frequency Range (MHz)		Tested Line	Test Result	
0.15~80		Power Line (M3)	A	

Note ： “ A ” means the EUT’s function was correct normal performance during the test.

4.2.5.3 RF Common Mode Immunity Test Setup Photos



Signal Cable



4.2.6 Power Frequency Magnetic Field Immunity Test

4.2.6.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity Tester	EMC-PARTNER	TRANSIENT-2000	2012/10/01	2013/10/01
Mfgenerator	EMC-PAPTNER	MF-1000	2012/09/13	2013/09/13

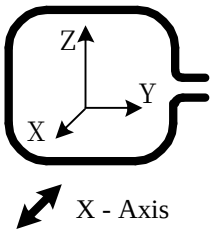
4.2.6.2 Power Frequency Magnetic Field Immunity Test Data

Test data see the next pages.

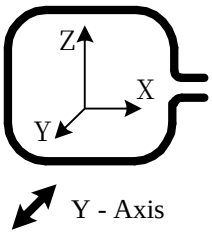
Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 14, 2013

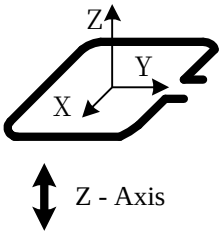
Test Specification	IEC61000-4-8:2009
Climatic Condition	Ambient Temperature: 24 °C Relative Humidity: 50 %RH
	Atmospheric Pressure : 990 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment



X - Axis



Y - Axis



Z - Axis

Magnetic field frequency : 50 Hz	Continuous magnetic field strength : 3 A/m
Magnetic field direction	Testing result
X - Axis	A
Y - Axis	A
Z - Axis	A

Note : " A " means the EUT's function was correct normal performance during the test.

4.2.6.3 Power Frequency Magnetic Field Immunity Test Setup Photos

4.2.7 Voltage Interruptions and Voltage Dips Immunity Test

4.2.7.1 Test Instruments

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity tester	EMC-PARTNER	TRANSIENT-2000	2012/10/01	2013/09/30

4.2.7.2 Voltage Interruptions and Voltage Dips Immunity Test Data

Test data see the next pages.

1.Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 14, 2013

Test Specification	IEC 61000-4-11:2004
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 60 %RH
Power Supply System	AC Power: 100 Vac 60 Hz
Test Set-up	Table-top Equipment

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

Note : " B" EUT Display panel blinks , After the test, the equipment shall continue to operate as intended without operator intervention.

" C" means the EUT's function was temporary loss of function or degradation of performance during the test. After test, the EUT correction of which requires operator intervention.

2. Operating Conditions of The EUT : Operation Mode

Test Date : Jun. 14, 2013

Test Specification	IEC 61000-4-11:2004
Climatic Condition	Ambient Temperature: 25 °C Relative Humidity: 60 %RH
Power Supply System	AC Power: 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test mode	Voltage dips	Durations (periods)	Interval(s)	Times	Phase	Result
Voltage interruptions	>95%	0.5	10	12	0°/180°	C
Voltage dips in %U_T	30%	25	10	12	0°/180°	B
	>95%	300	10	12	0°/180°	C

Note : " B" EUT Display panel blinks , After the test, the equipment shall continue to operate as intended without operator intervention.

" C" means the EUT's function was temporary loss of function or degradation of performance during the test. After test, the EUT correction of which requires operator intervention.

4.2.7.3 Voltage Interruptions and Voltage Dips Immunity Test Setup Photos

CONSTRUCTED PHOTOS of EUT

(A)EUT

1.

2.

CONSTRUCTED PHOTOS of EUT

3.

4.

CONSTRUCTED PHOTOS of EUT

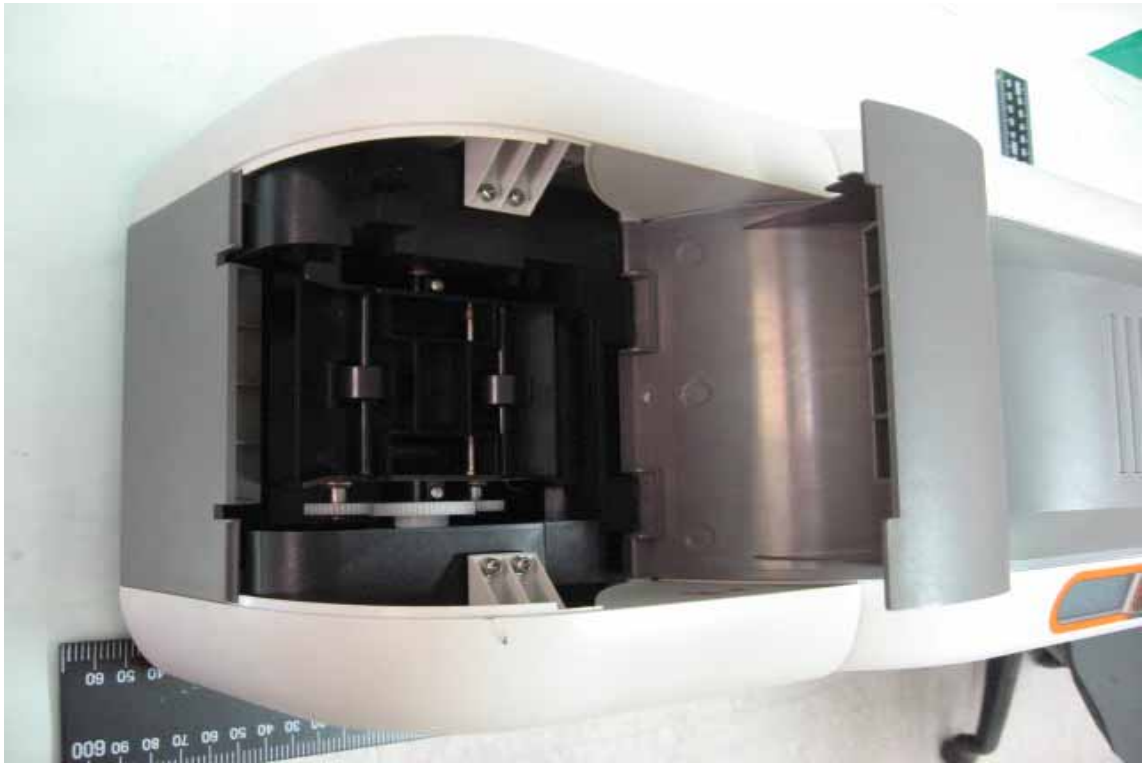
5.

6.

CONSTRUCTED PHOTOS of EUT

7.

8.



CONSTRUCTED PHOTOS of EUT

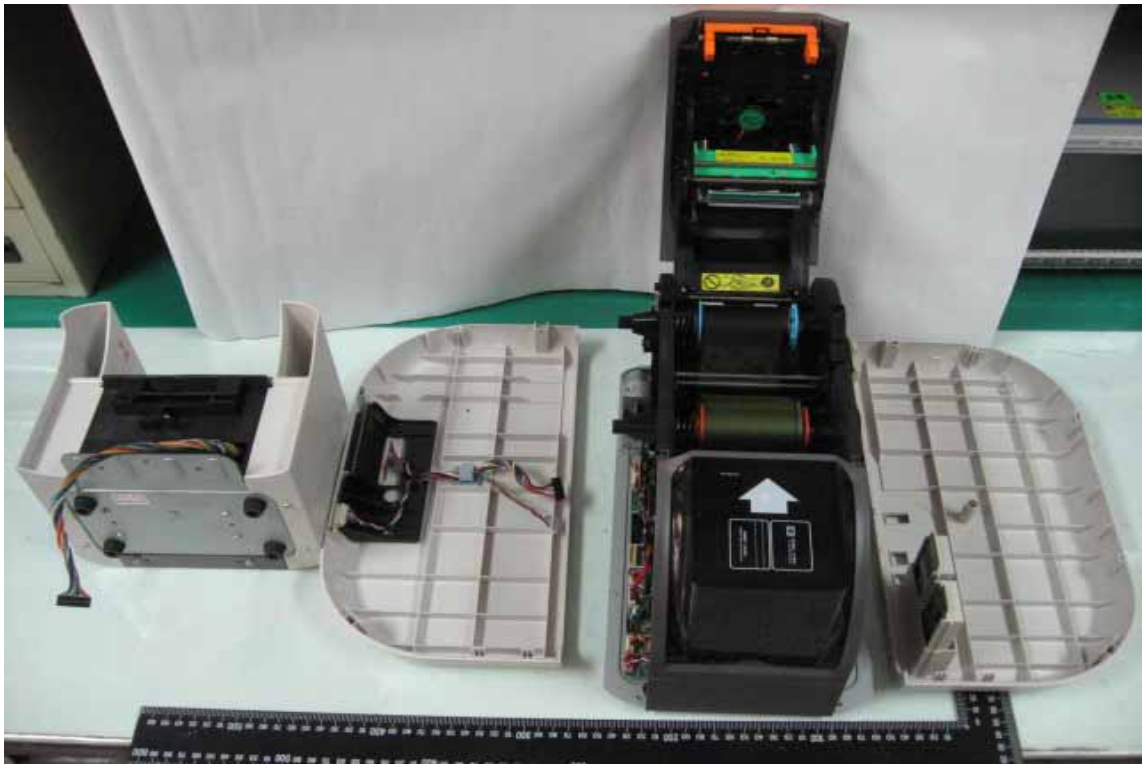
9.

10.

CONSTRUCTED PHOTOS of EUT

11.

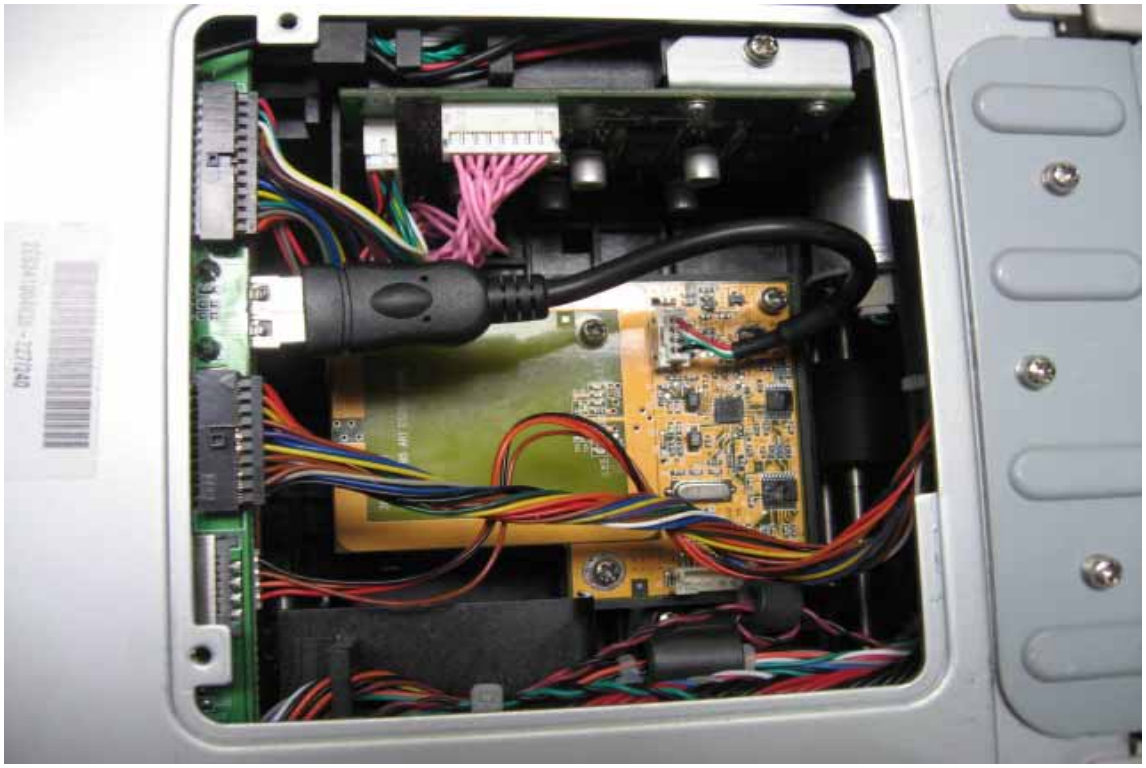
12.



CONSTRUCTED PHOTOS of EUT

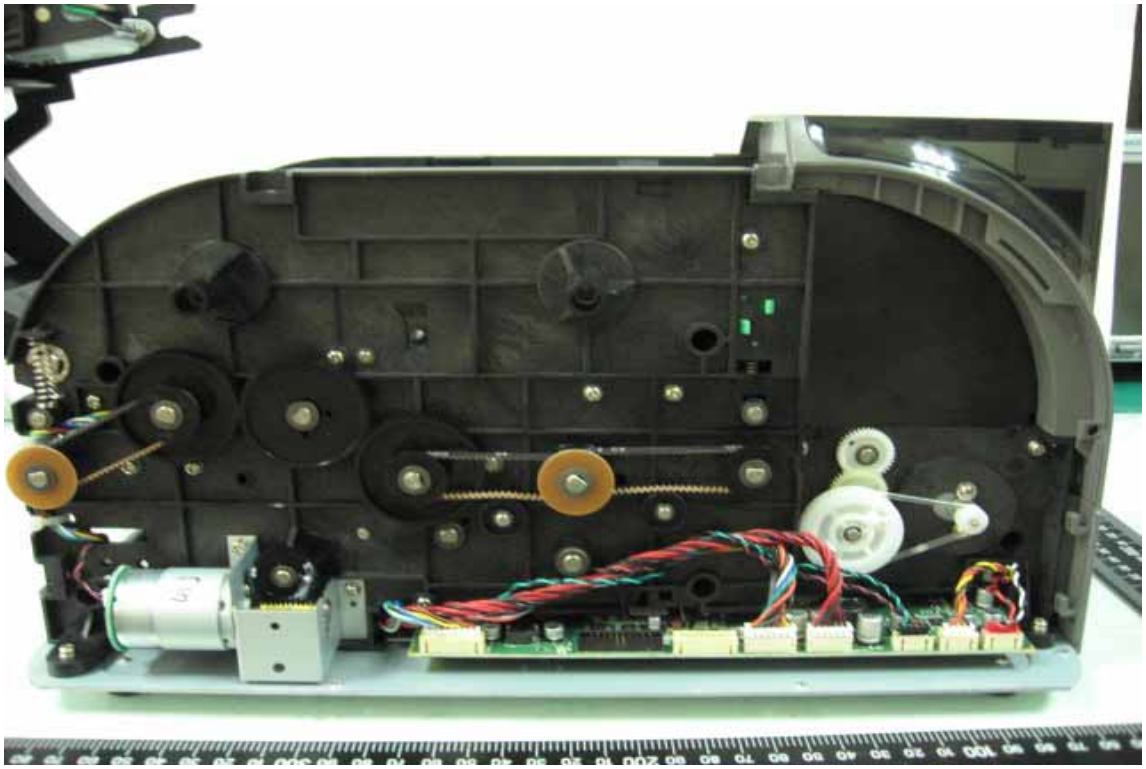
13.

14.

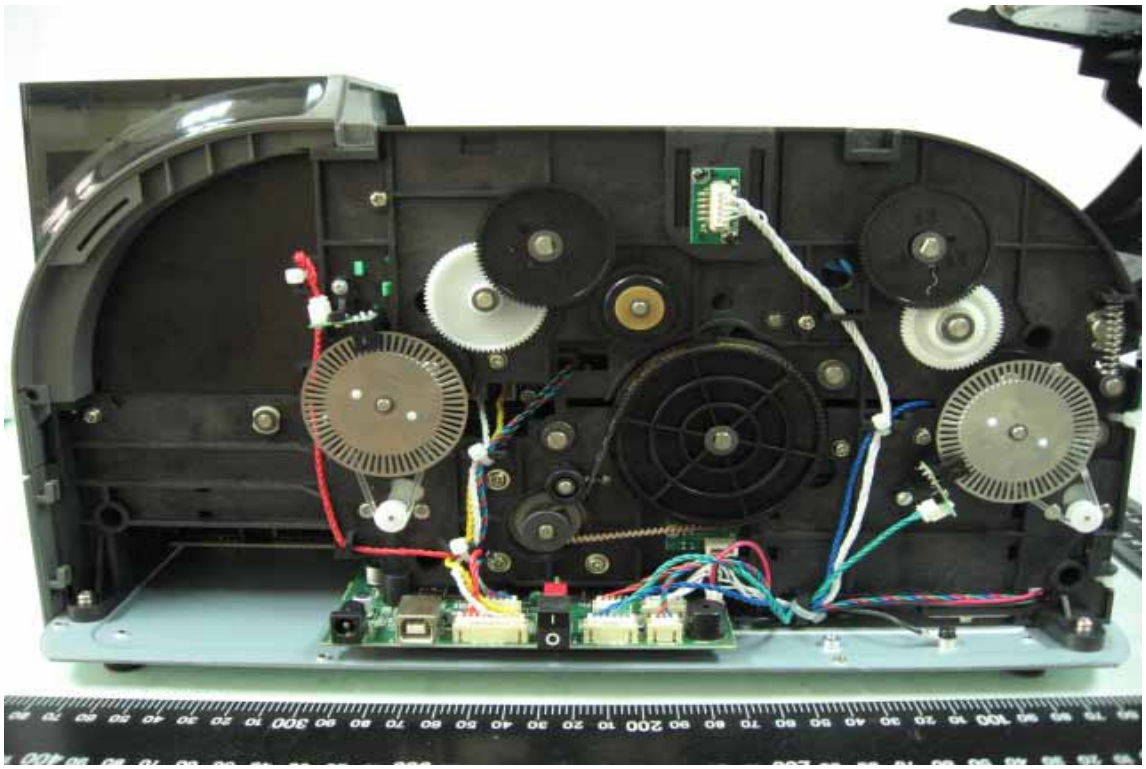


CONSTRUCTED PHOTOS of EUT

15.

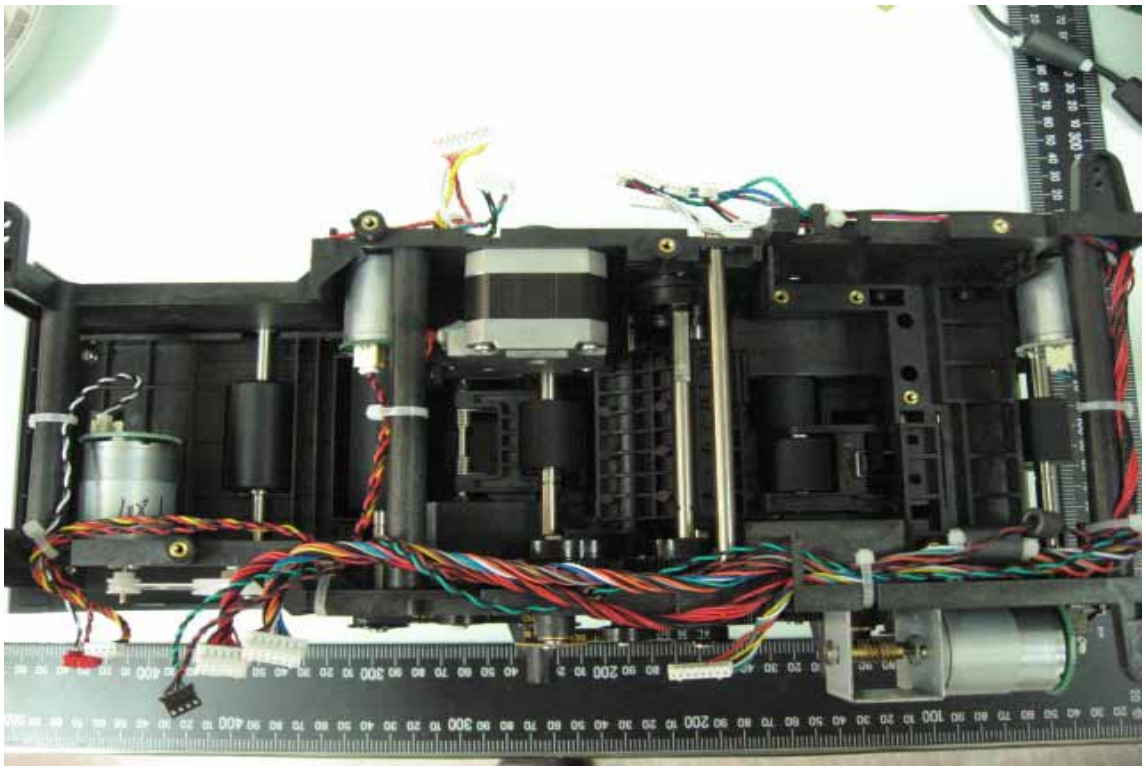


16.



CONSTRUCTED PHOTOS of EUT

17.



18.

CONSTRUCTED PHOTOS of EUT

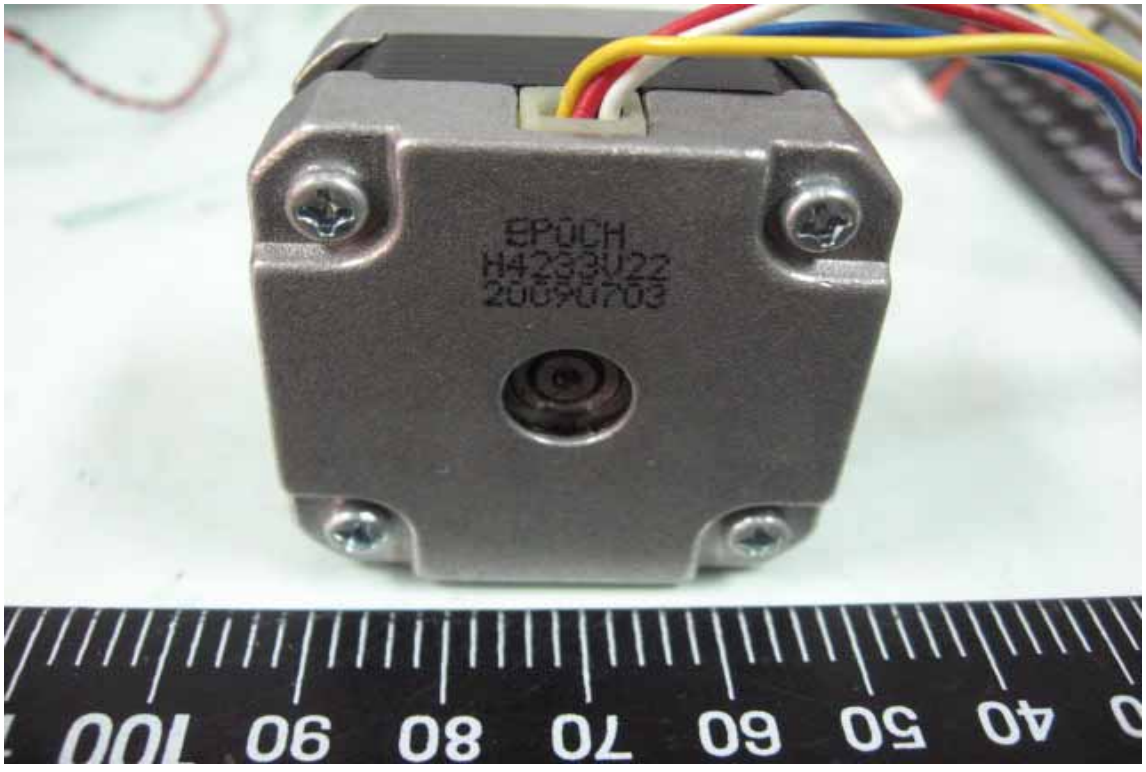
19.

20.

CONSTRUCTED PHOTOS of EUT

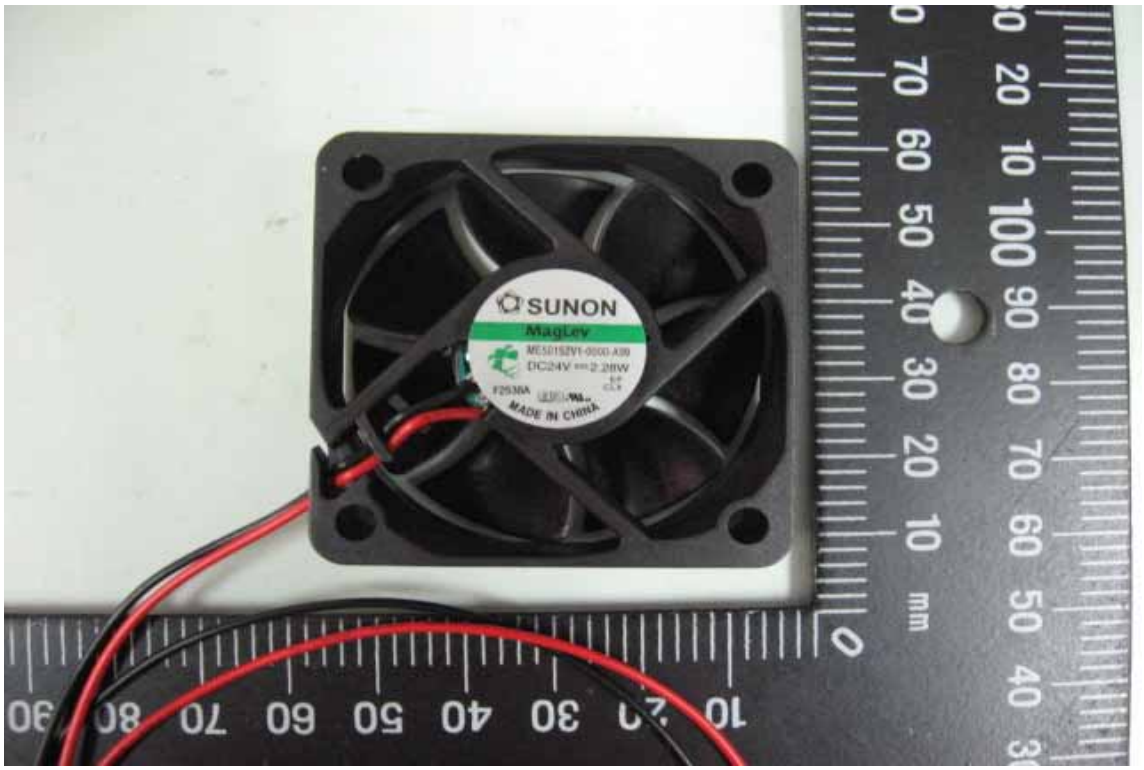
21.

22.



CONSTRUCTED PHOTOS of EUT

23.



24.

CONSTRUCTED PHOTOS of EUT

25.

26.

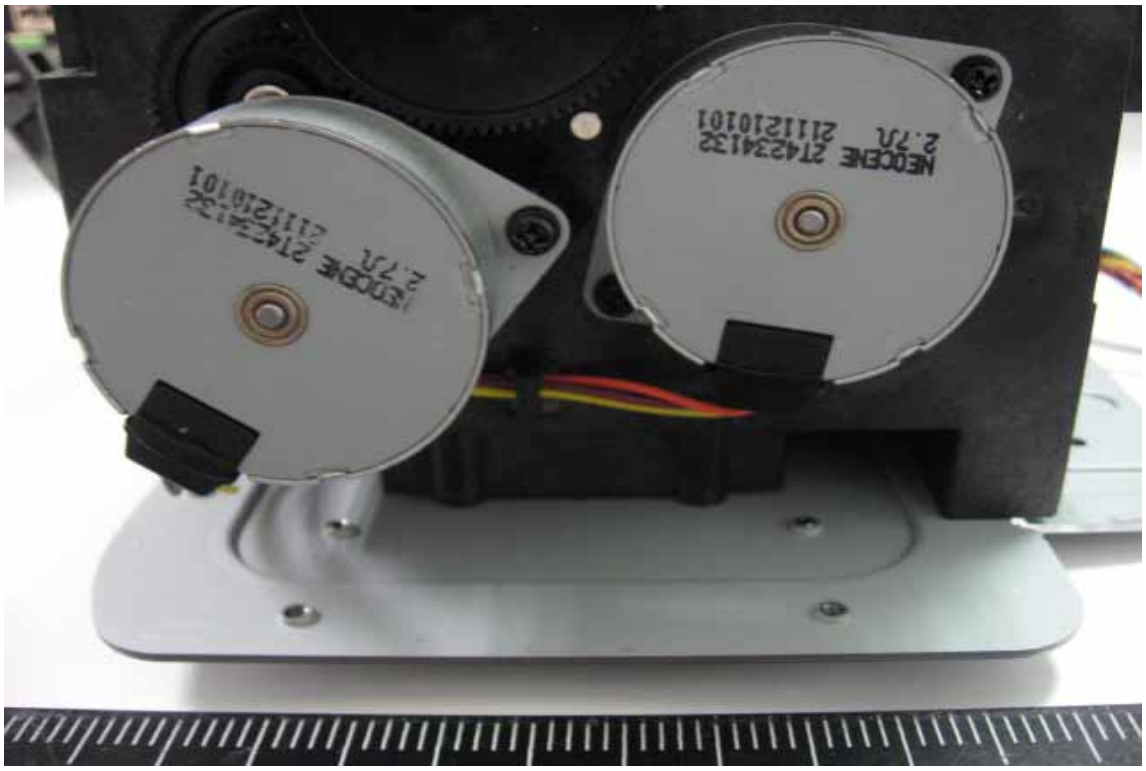
CONSTRUCTED PHOTOS of EUT

27.

28.

CONSTRUCTED PHOTOS of EUT

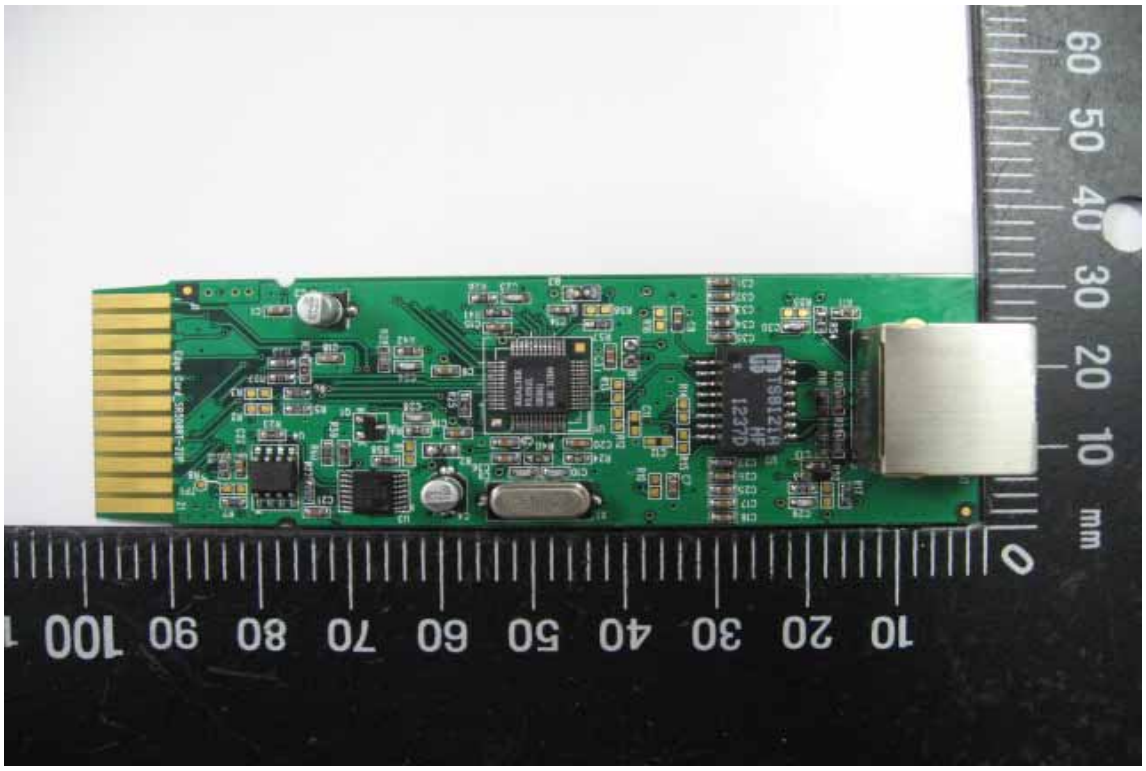
29.



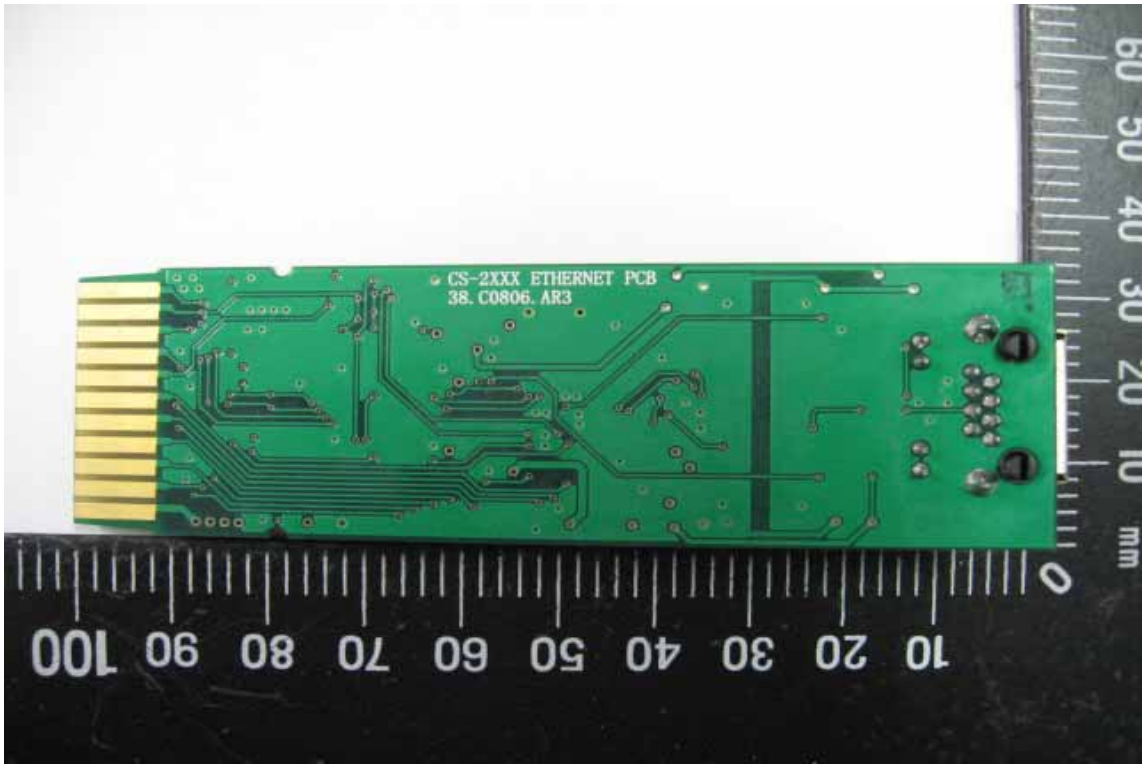
30.

CONSTRUCTED PHOTOS of EUT

31.

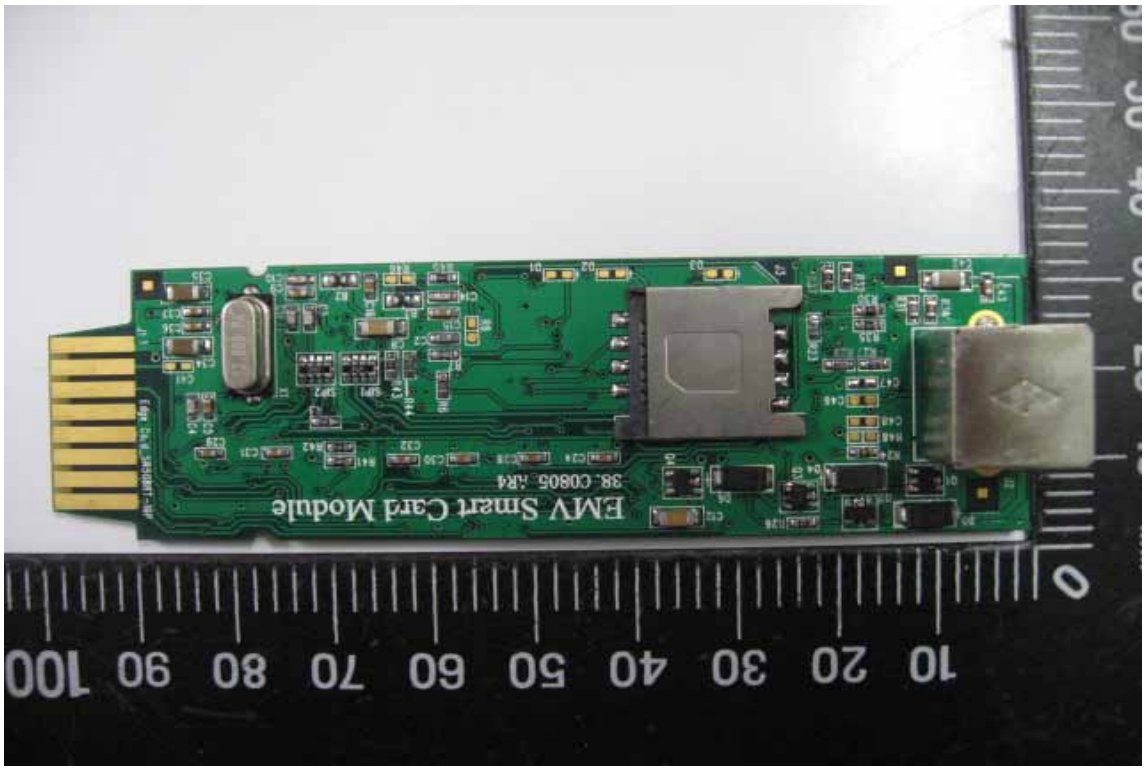


32.

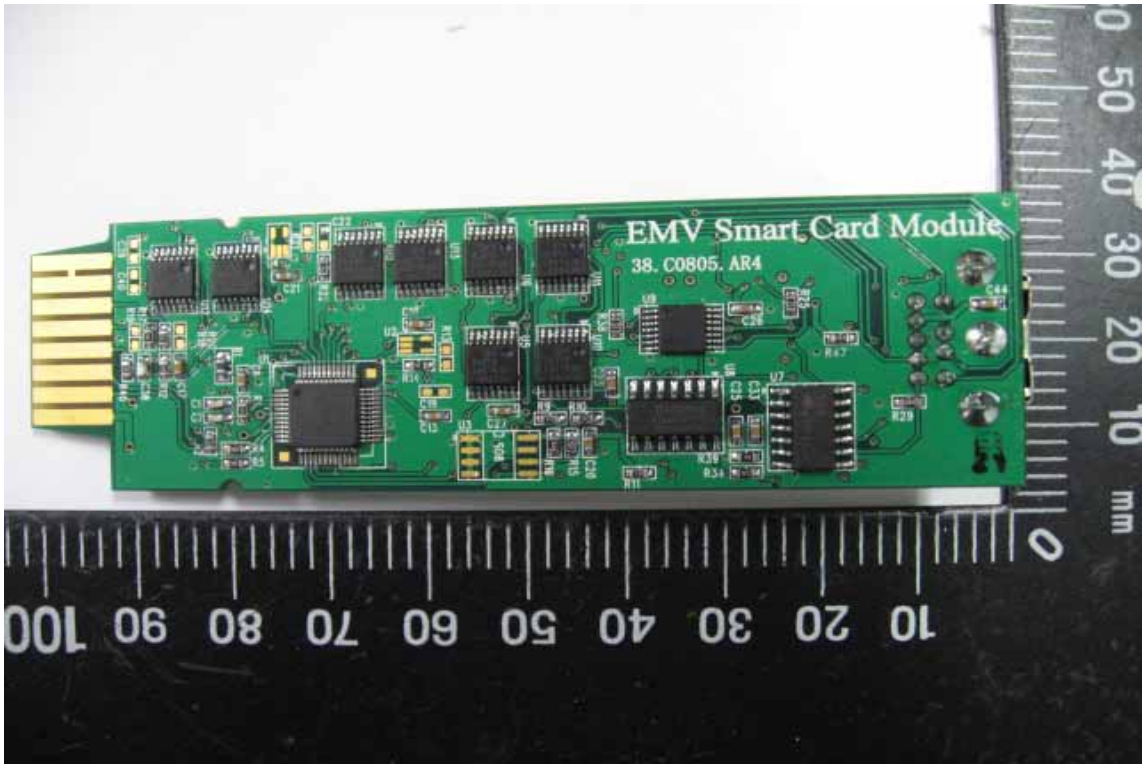


CONSTRUCTED PHOTOS of EUT

33.

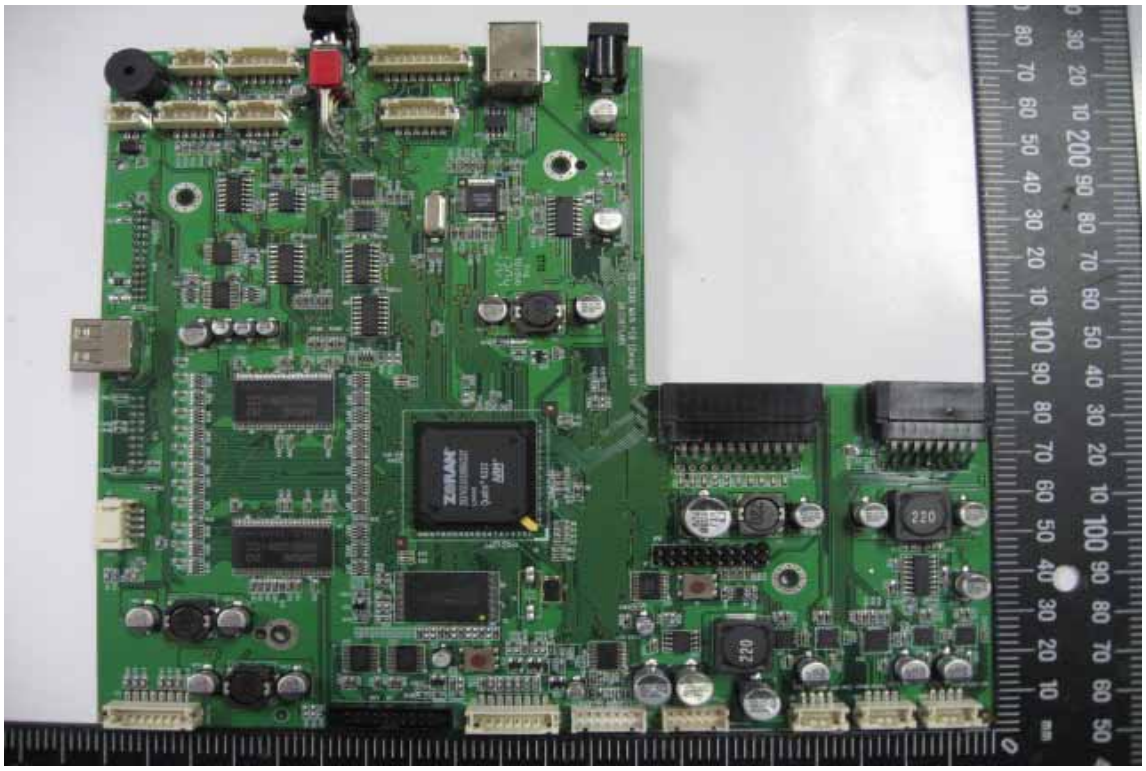


34.

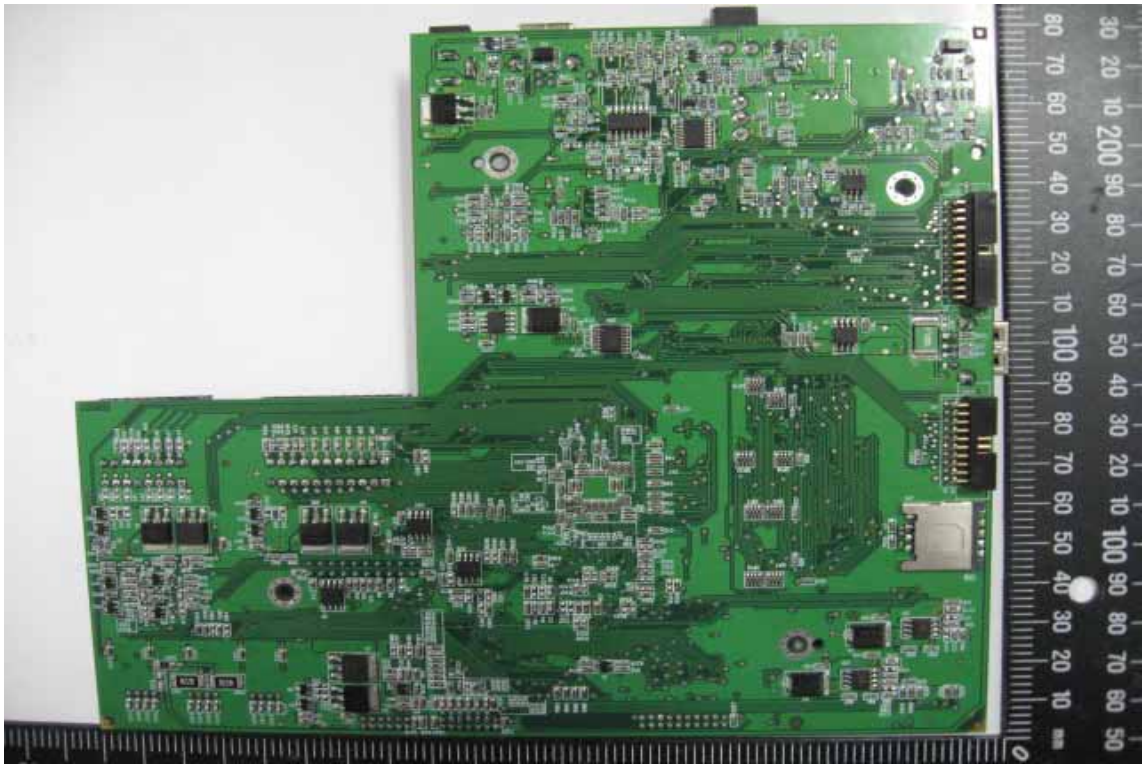


CONSTRUCTED PHOTOS of EUT

35.



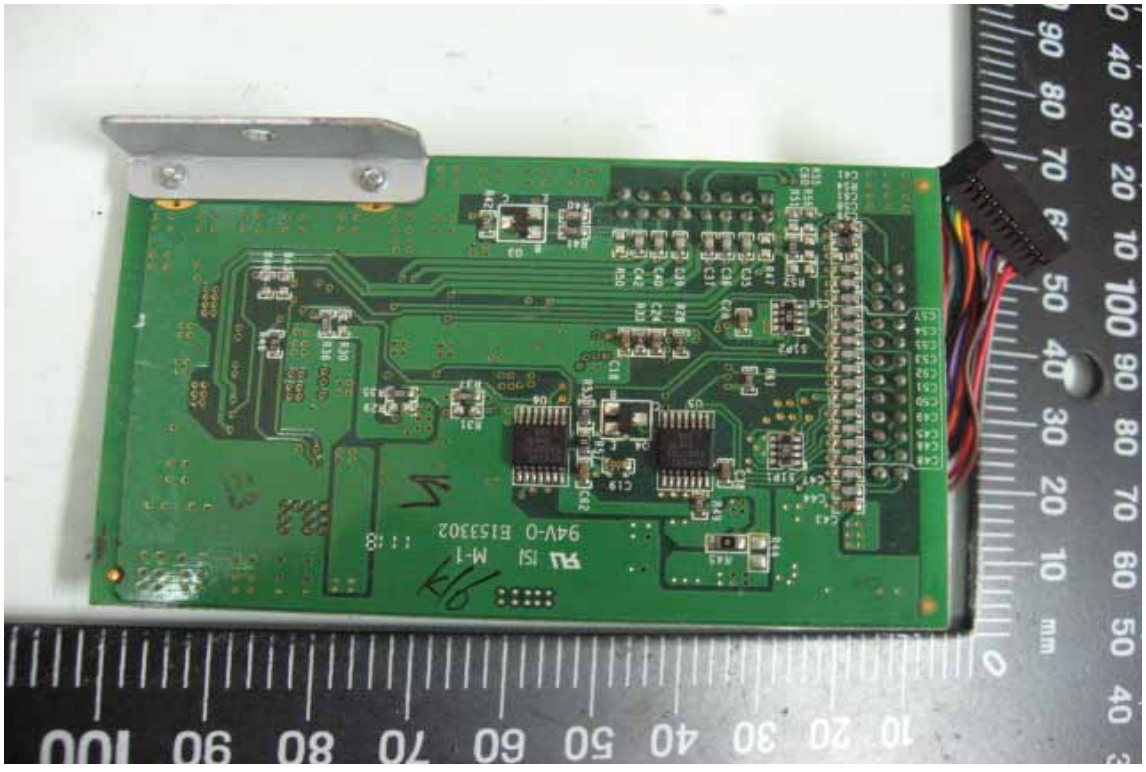
36.



CONSTRUCTED PHOTOS of EUT

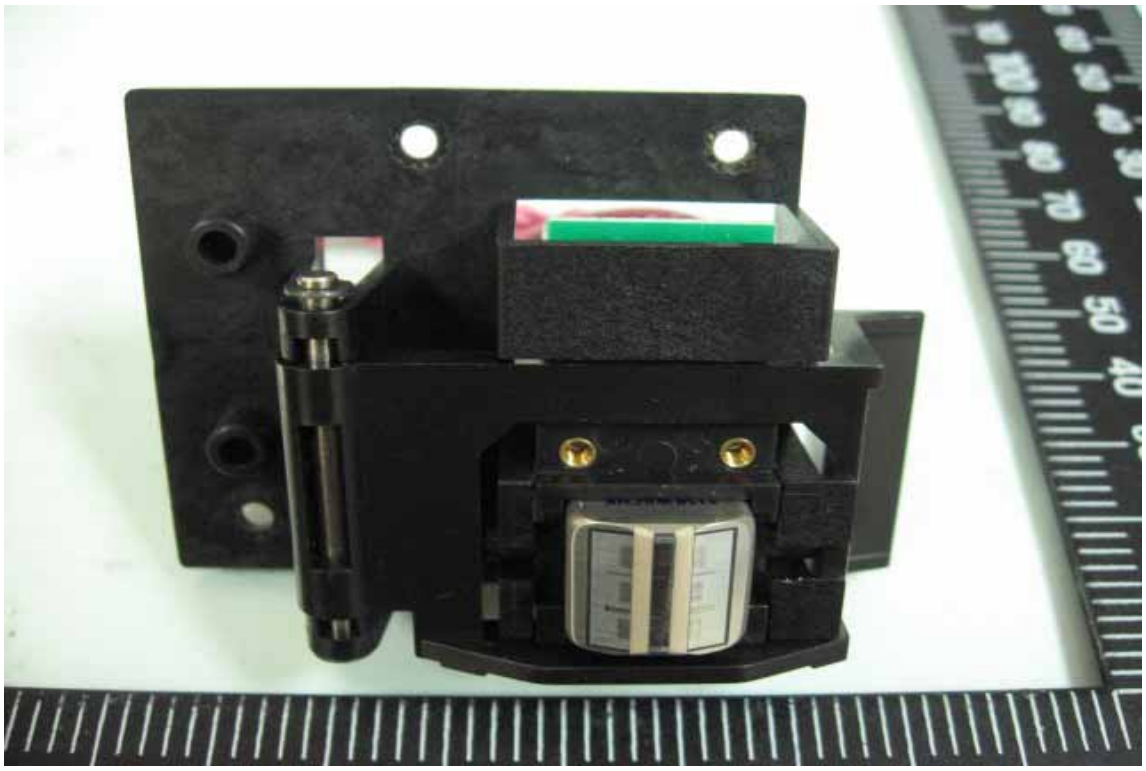
37.

38.

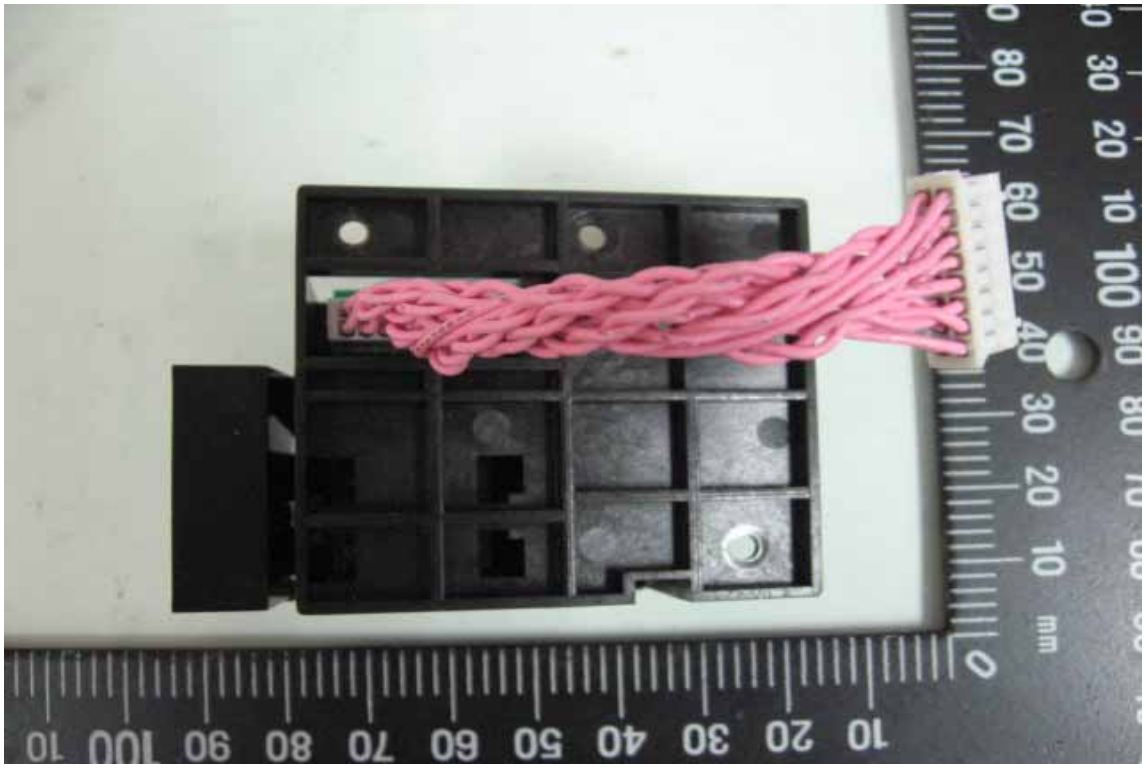


CONSTRUCTED PHOTOS of EUT

39.

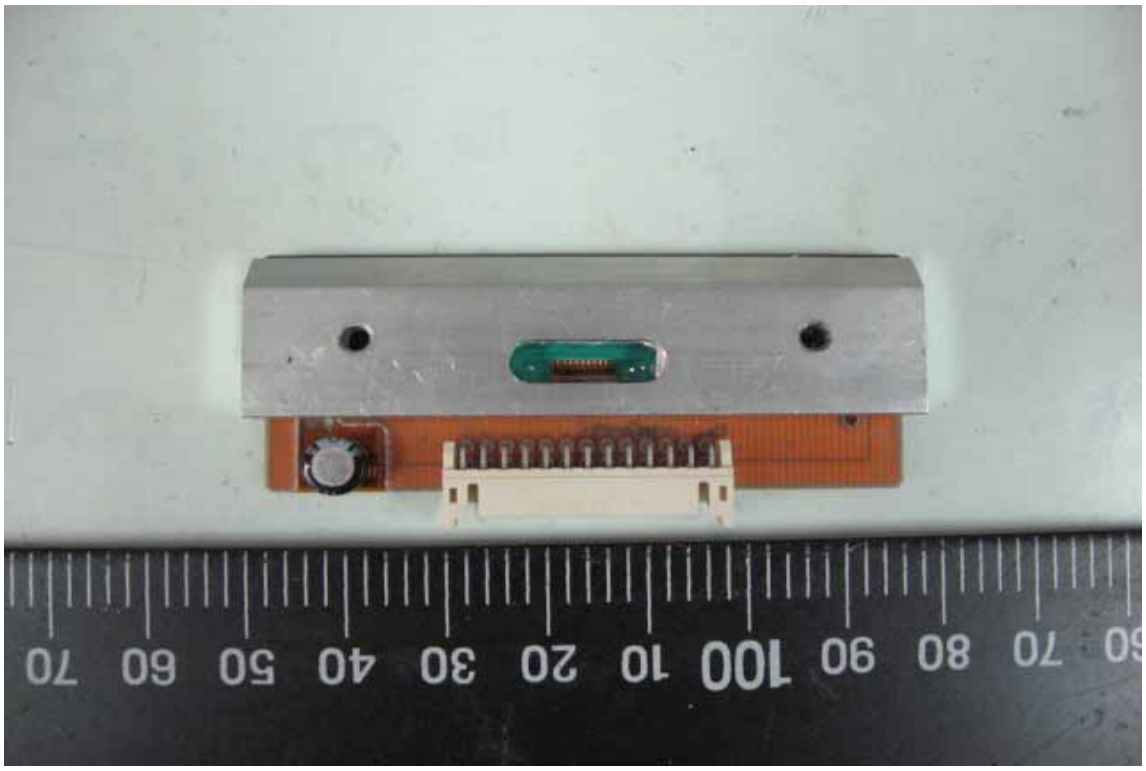


40.

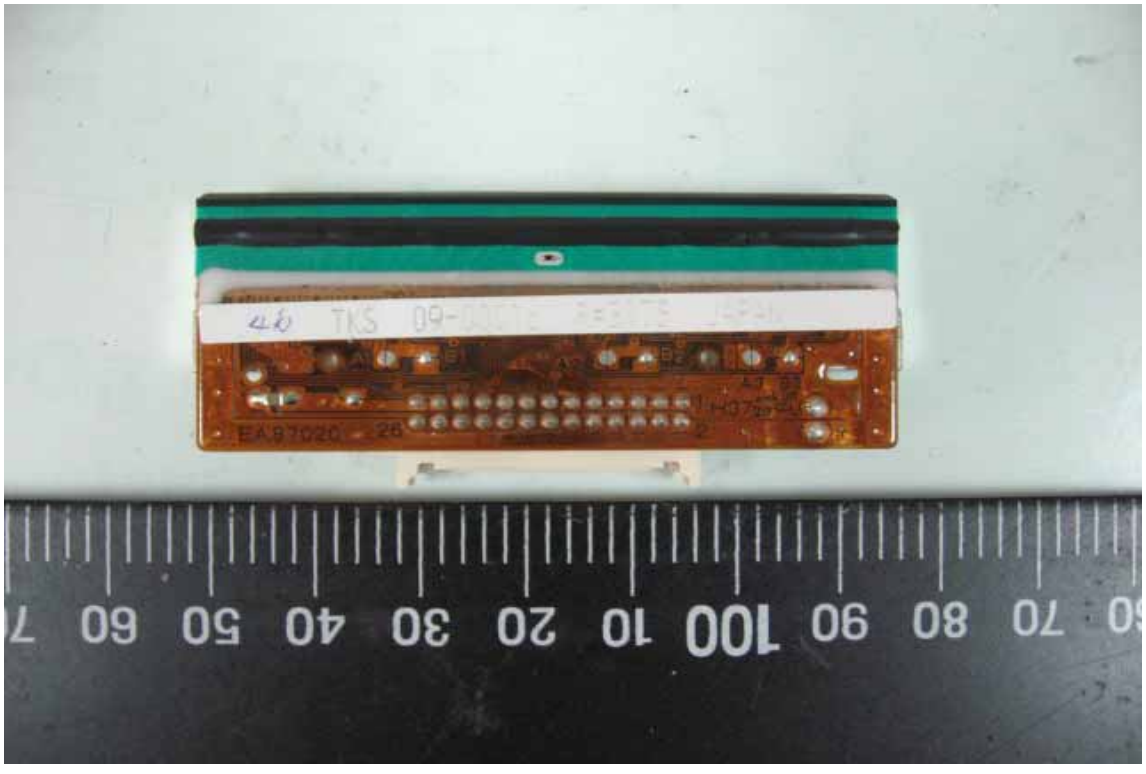


CONSTRUCTED PHOTOS of EUT

41.

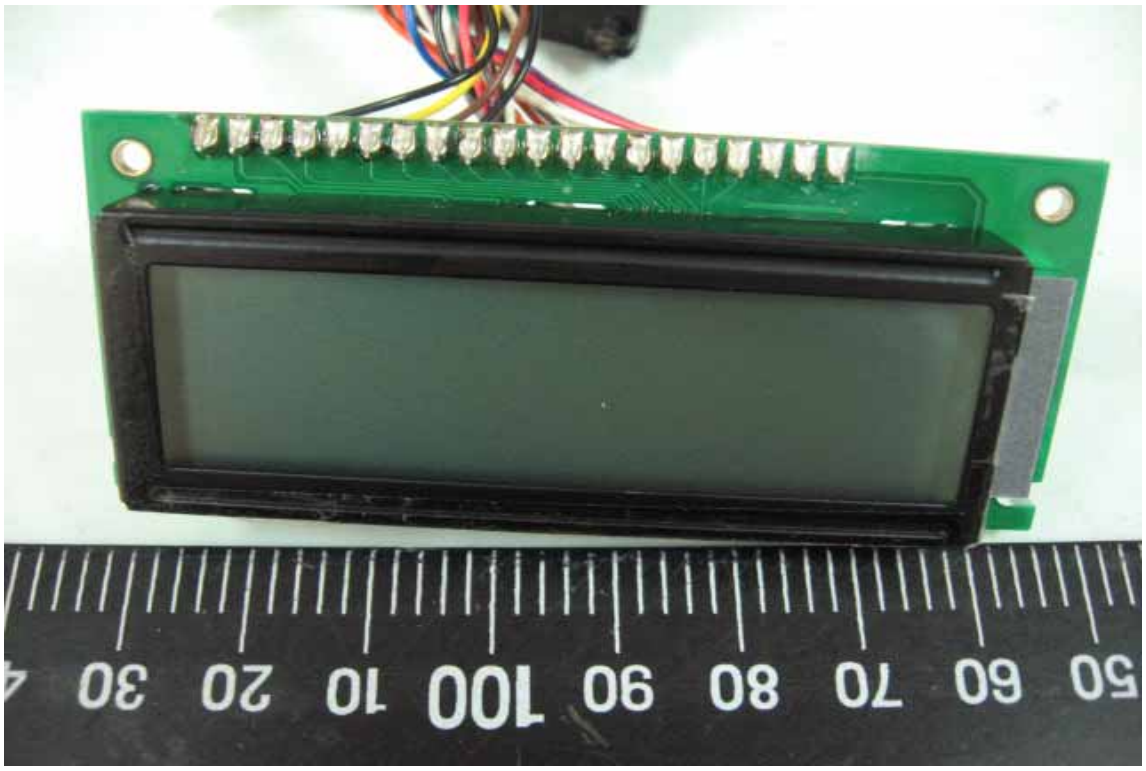


42.

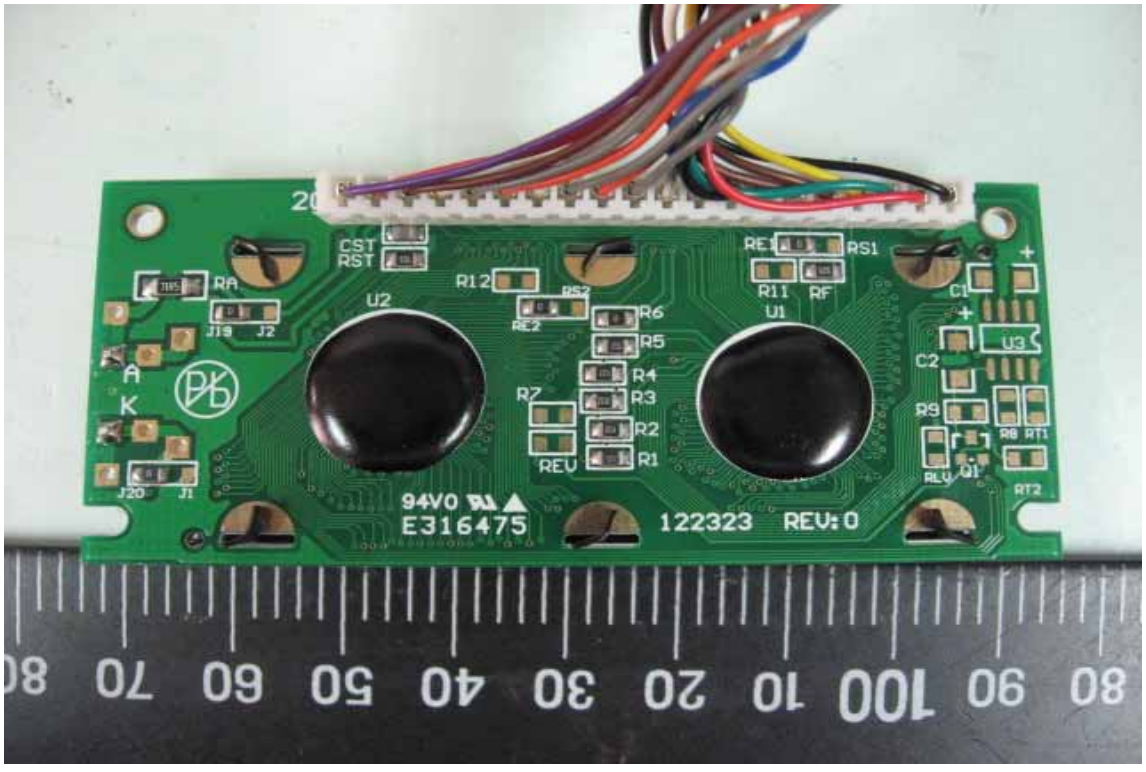


CONSTRUCTED PHOTOS of EUT

43.

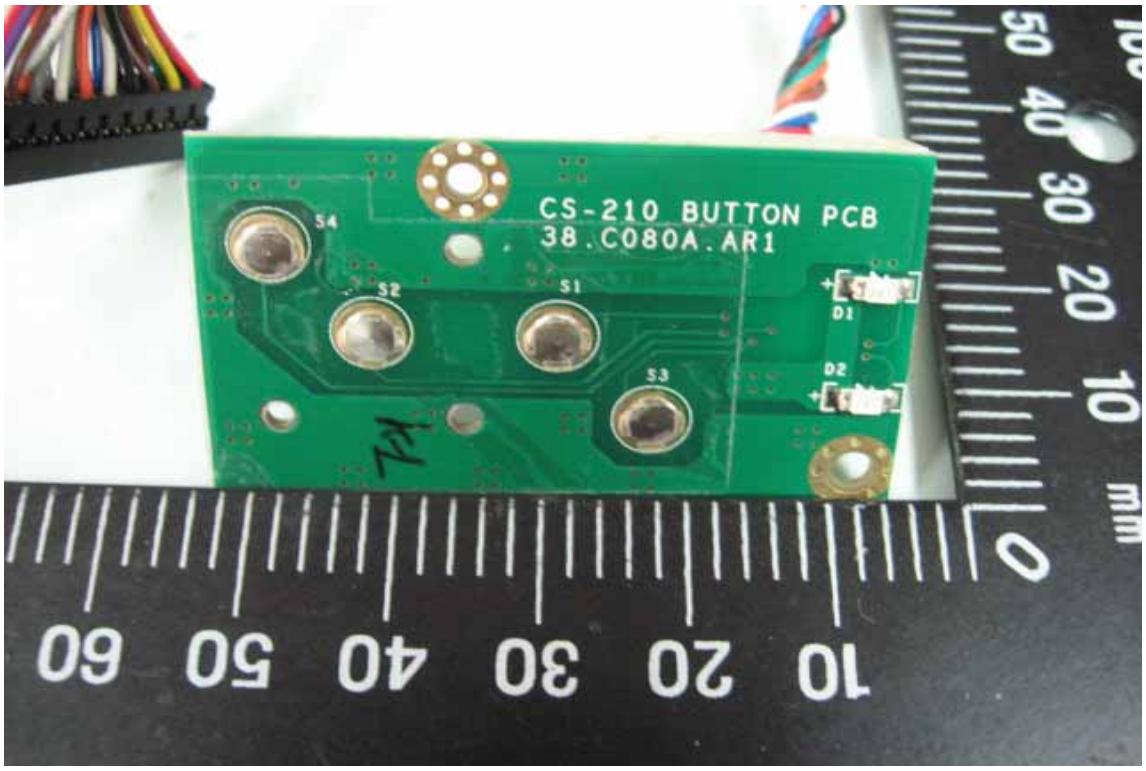


44.

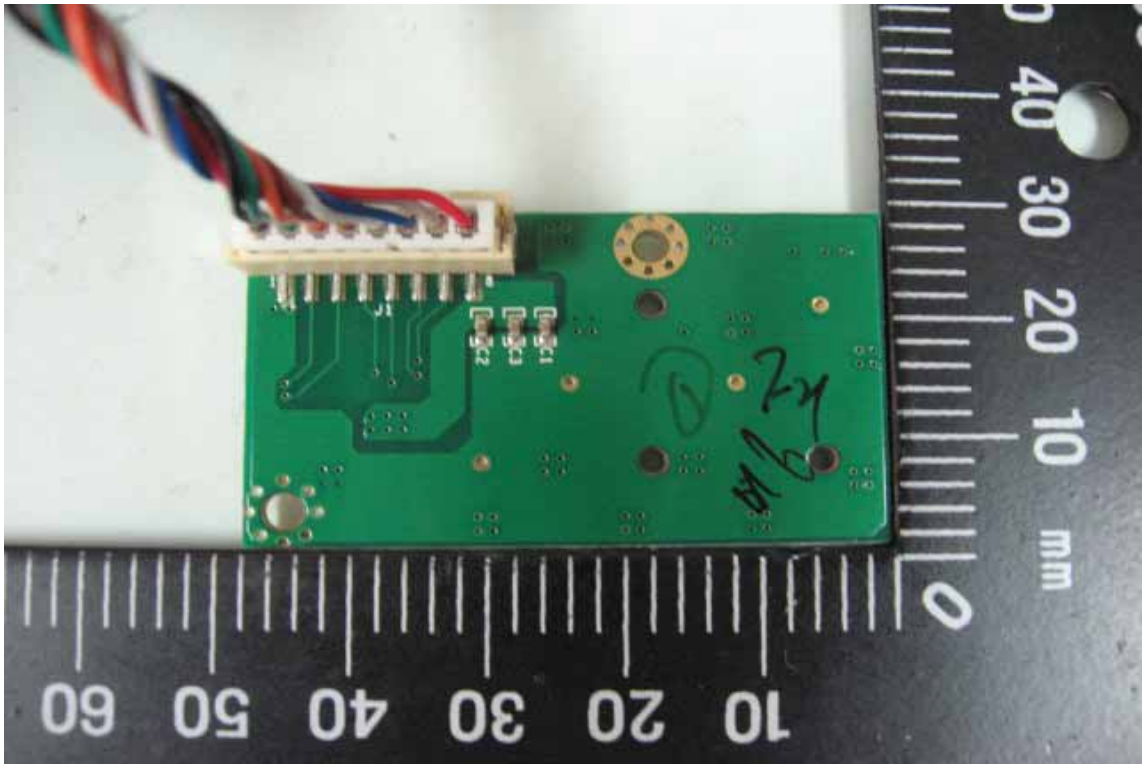


CONSTRUCTED PHOTOS of EUT

45.



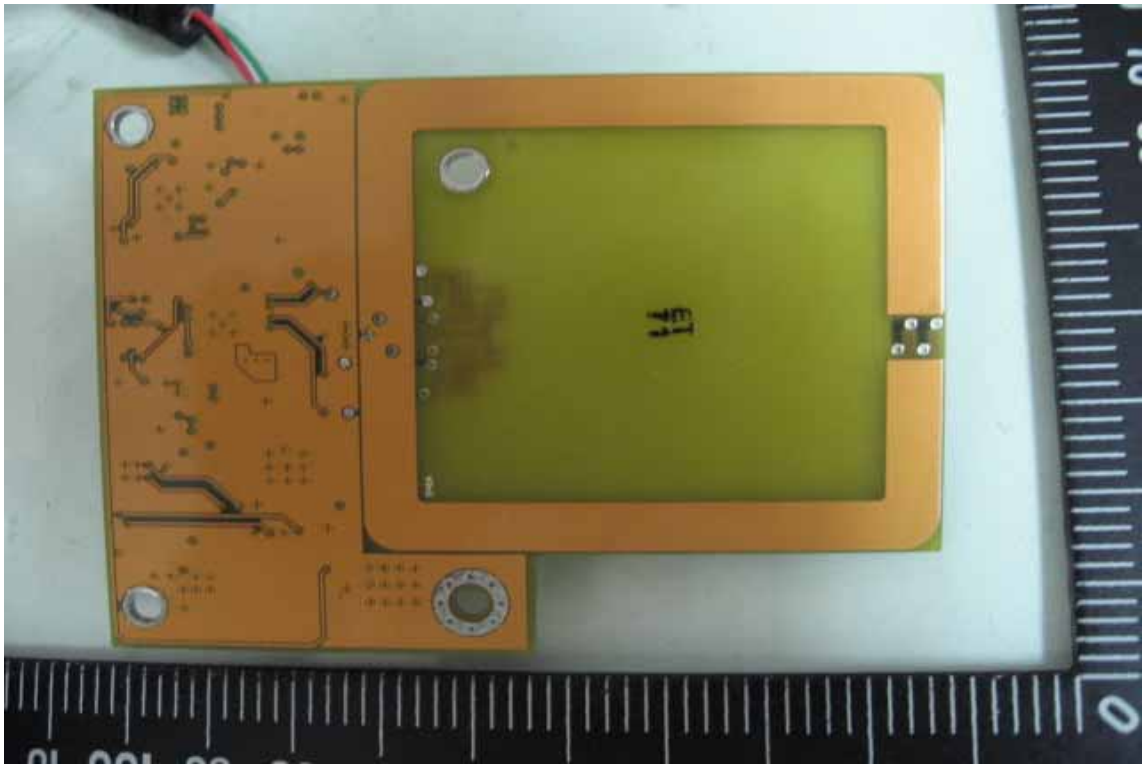
46.



CONSTRUCTED PHOTOS of EUT

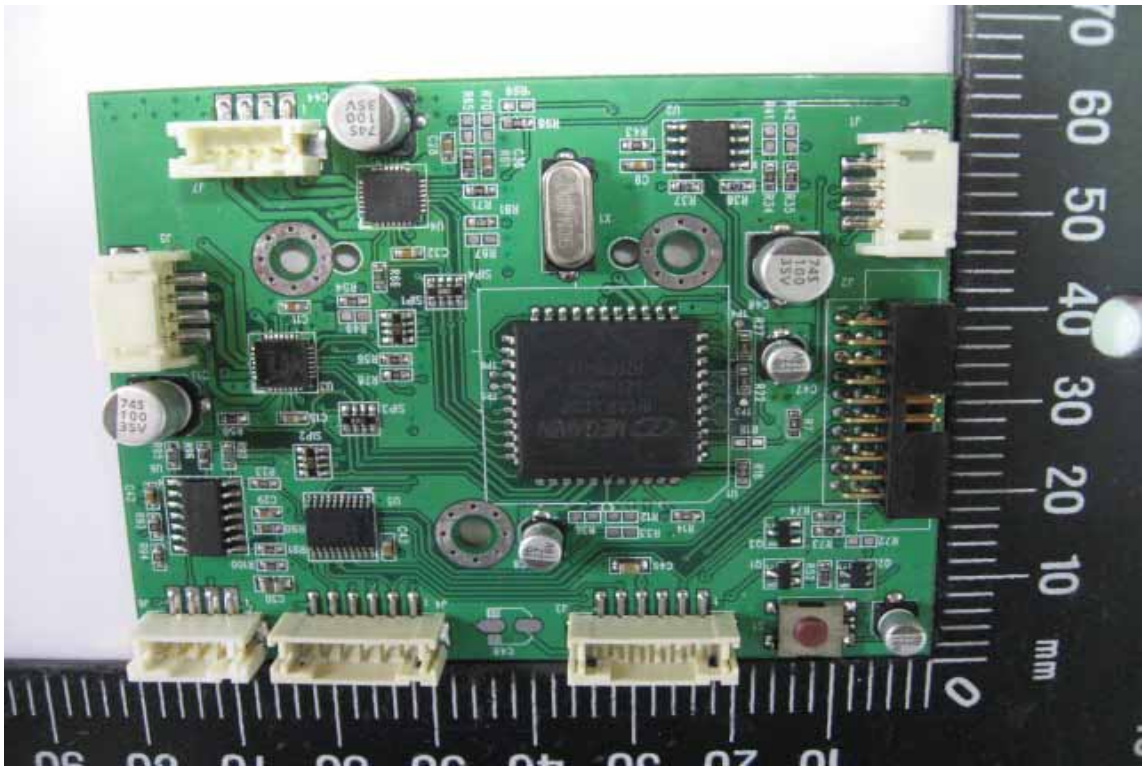
47.

48.

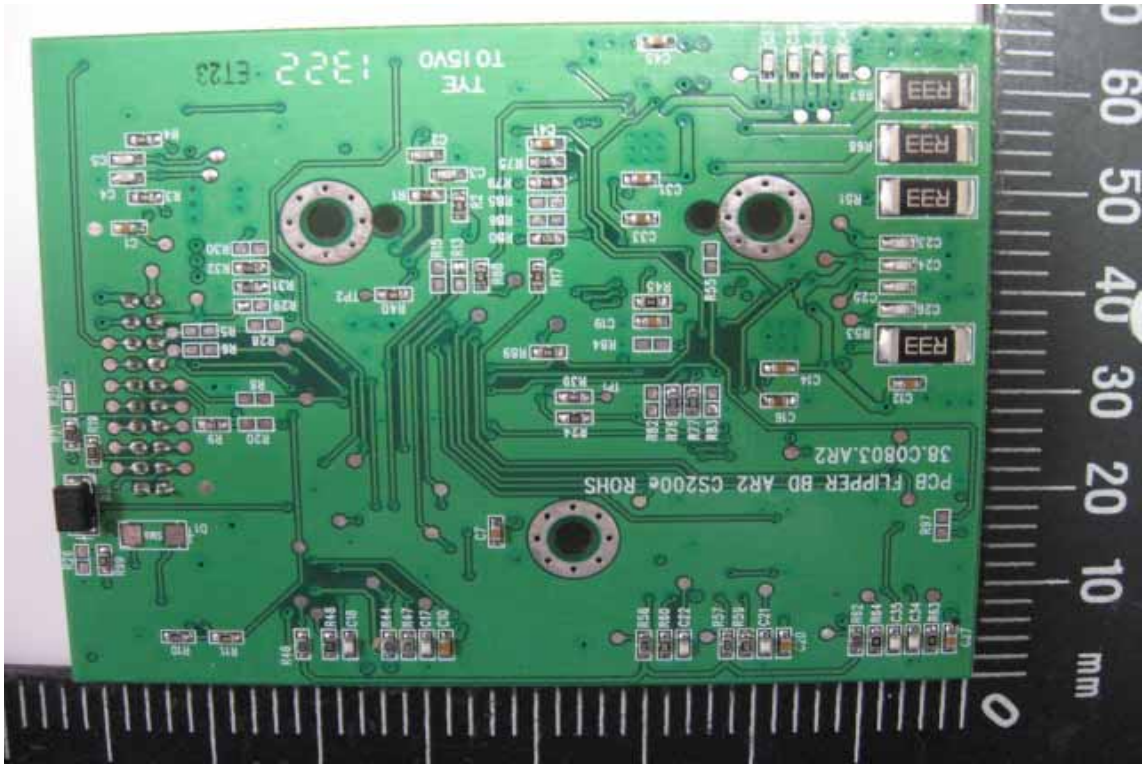


CONSTRUCTED PHOTOS of EUT

49.

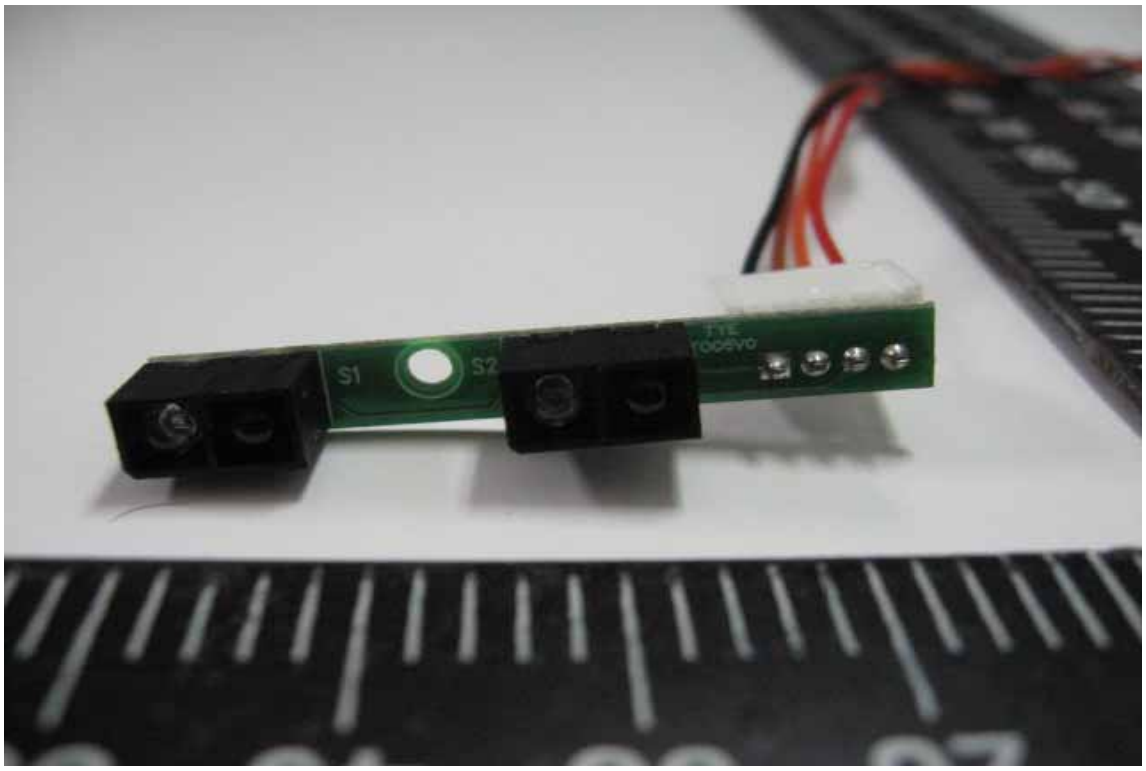


50.

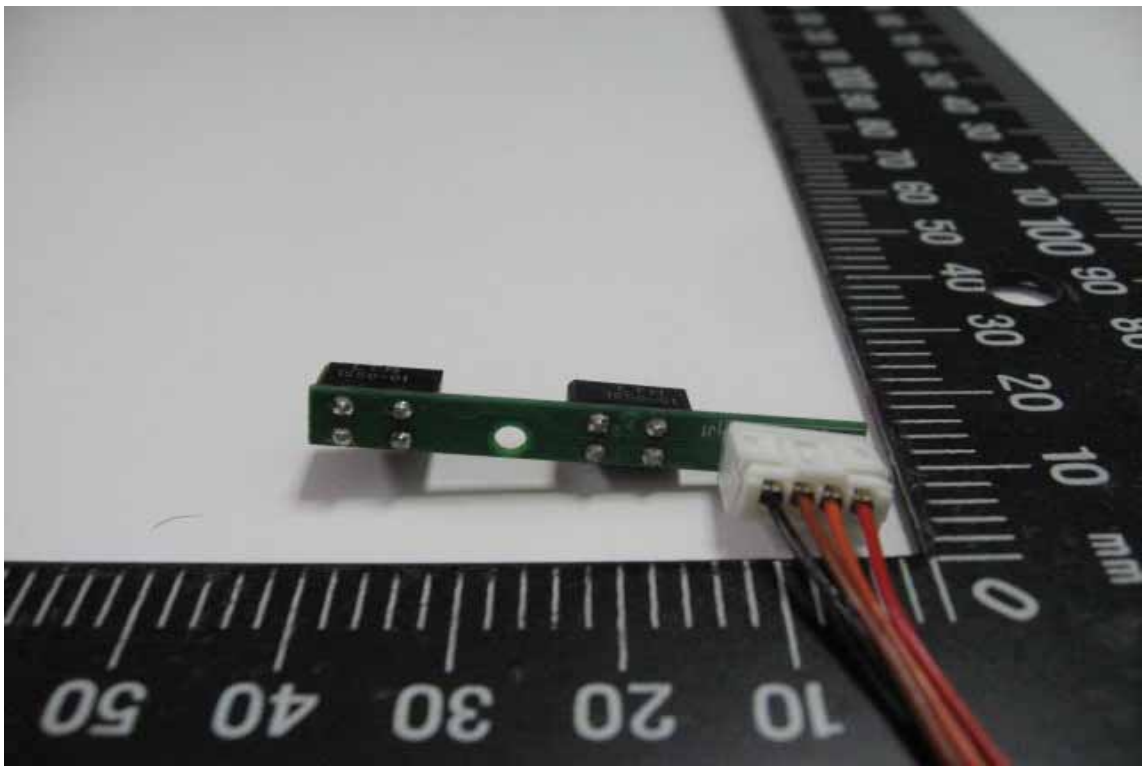


CONSTRUCTED PHOTOS of EUT

51.



52.



CONSTRUCTED PHOTOS of EUT

(B)Adapter

1.

2.

CONSTRUCTED PHOTOS of EUT

3.

4.