EMC - Test Report

Model : NPU-10

FCC ID	**O8UNPU-10**		
Product type	**USB PC CAMERA**	**Serial No.**	**-**
Applicant	**NETPOWER CO., LTD.**		
Address	**Baekam Bldg., 6F 123, Karak-Dong, Songpa-Gu, Seoul, KOREA**		
Manufacturer	**NETPOWER CO., LTD.**		
Address	**Baekam Bldg., 6F 123, Karak-Dong, Songpa-Gu, Seoul, KOREA**		

Test specification (Standard) : **FCC Part15 Subpart B Class B**

Test Result : **In compliance**

Tested by (Test engineer)			*Reviewed by (EMC Manager)*		
2000-09-25	**Young Joon, Park**		**2000-09-25**	**James, Hong**	
Date	Name	Signature	Date	Name	Signature

Definition ☒ : Applicable, ☐ : Not Applicable, **N/A** : Not Applicable, **-** : Not Applicable

The test result only responds to the tested sample.

No single part of this document may be reproduced without permission from Certitek Standards Laboratory Co., Ltd.

Tel: +82-31-339-9970, Fax: +82-31-339-9972

Table of contents

1. EUT description 3

Introduction 3
Identification 3
Electrical rating 3

2. Test Set-up 4

Test Mode 4
Cable configuration 4
Cable description 5
Auxiliary equipment 5
Test software 5
Measurement Procedures 6

3. Test Result 7

Test summary 7
Radiated emission 8
Conducted emission 9

4. Photographs 11

EUT (Front/Rear) 11
Main Board (Front/Rear) 12
EUT (Label) 13
Radiated emission 14
Conducted emission 15

1. EUT description

Introduction

NPU-10 is a USB PC CAMERA.

Identification

Receipt date : 2000-09-21

Model : NPU-10

Manufacturer : NETPOWER CO., LTD.

Address : Baekam Bldg., 6F 123, Karak-Dong, Songpa-Gu, Seoul, **KOREA**

Contact person : Y.J. KIM (Manager)

Telephone : +82 - 2 - 403 - 7678~9

Peripheral Device Ports

Port name	Description
Earphone	Connect to Earphone
USB	Connect to PC' s USB Port
DC IN	Connect to Adaptor

Electrical rating

Input : From PC's USB Port.

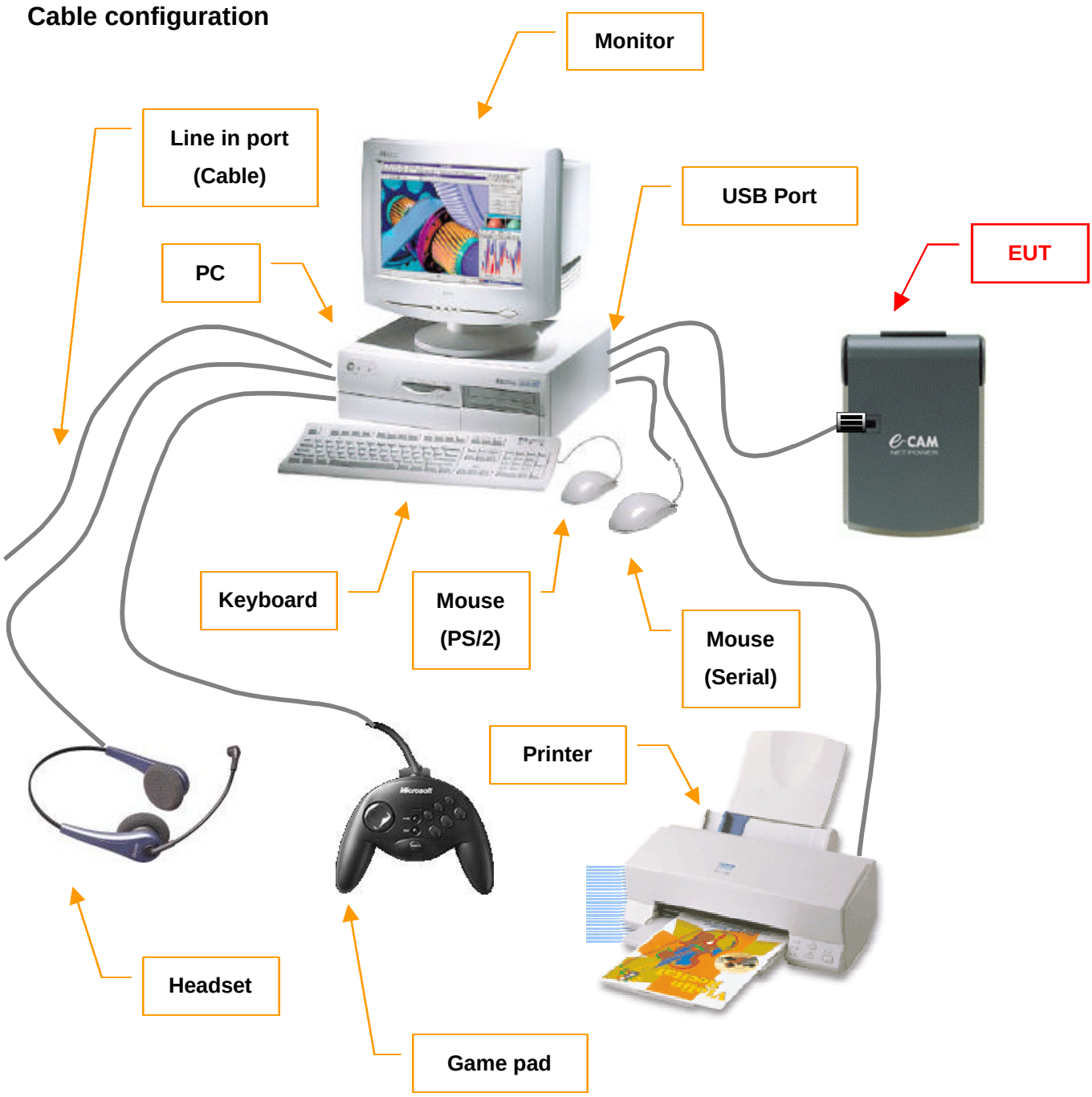
Output : -

2. Test Set-up

Test Mode

Normal operation mode. Display image to monitor screen.

Cable configuration



Cable description

	Port name (start / end)	Type	Length (m)	Remark
A	EUT' s USB / PC' s USB	Shielded	1.2	Connected to PC' s USB port
B	PC' s Serial / Mouse	Shielded	1.6	Connected Serial Mouse
C	PC' s Parallel / Printer	Shielded	1.6	Connected Printer
D	PC' s Keyboard / Keyboard	Shielded	1.5	Connected PS/2 Keyboard
E	PC' s Mouse / Mouse	Shielded	1.6	Connected PS/2 Mouse
F	PC' s Sound (Speaker / Mic / Line in) / Headset & Cable	Unshielded	2.0	Connected Headset & Cable
G	PC' s Game Port / Game pad	Unshielded	2.0	Connected Game pad
H	PC' s Video / Monitor	Shielded (With Ferrite Core)	1.8	Connected Monitor

Auxiliary equipment

	Description	Model name	Serial No.	Manufacturer
1	PC	DTPC-17	G1703009	HEWLETT PACKARD
2	Monitor	PG17HS	301661	SAMSUNG
3	Printer	Stylus COLOR 460	BWCE143331	EPSON
4	Keyboard	SK-2502C	M000351491	HEWLETT PACKARD
5	Mouse (PS/2)	M-S48	LZA84601000	LOGITECH
6	Mouse (USB)	M-BB48	LZE93853176	LOGITECH
7	Mouse (Serial)	M-S48	LZA91153127	SOTEC
8	Game pad	Side Winder	03421317	Microsoft Corporation
9	Headset	Hi-sonic	-	-

Test software

Software name	Manufacturer	Version	Description
e-CAM	NETPOWER CO., LTD.	1.2	-

Measurement Procedures

Preliminary AC power line conducted emissions tests were performed shielded room. To find worst mode, several typical mode and typical cable position were tested.
Final AC power line conducted emissions test was performed shielded room.(location is same as Preliminary test) Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

Preliminary radiated emissions test were performed anechoic chamber (Distance of antenna and EUT was 3m). To find worst mode, several typical mode and typical cable position were tested and peak level and frequency were recorded.
Final radiated emissions test was performed Open Area Test Site. Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

∗ Measurement procedures was In accordance with ANSI C63.4-1992 7.2.3, 7.2.4 and 8.3.1.1, 8.3.1.2

3. Test Result

Test summary

Test	Result	Remark
Emission test (EMI)		
Radiated emission	**Met**	
Conducted emission	**Met**	

Measurement uncertainty (k=2)

150kHz~30MHz: ±2.68, 30MHz~300MHz: +4.58, -4.66, 300MHz ~ 1GHz: +3.78, -3.74

Uncertainty parameter was calculated according to ‘ NAMAS Publication NIS 80’

The tested NPU-10 fully meets the Requirements of ANSI C63.4-1992, when operated as described in this report.

President of Certitek standards laboratory.

Date	Name	Signature
2000-09-25	**Kedin, Lyoum**	Kedin, Lyoum

Radiated emission

Test result: **Met**

Date of testing : 2000-09-23

Ambient temperature: 25°C, Relative humidity: 60%, Atmospheric pressure: 999hPa(mbar)

Test site type: Open area test site

Reference Standard: FCC Part15 Subpart B , Class B

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
BBA9106	Schwarzbeck	Biconical antenna	41-00210
UHALP9107	Schwarzbeck	Log-periodic antenna	1452
ESVS30	Rohde Schwarz	Field strength meter	826638/008
-	-	-	-

Frequency Band 30MHz - 1000MHz

Antenna distance 3m (From the EUT)

Test data sheet

Frequency	Reading	Pol.	Height	Correction Factor		Limits	Result	Margin
[MHz]	[dBuV/m]		[m]	Antenna	Cable	[dBuV/m]	[dBuV/m]	[dB]
47.96	20.1	V	1.5	10.28	0.60	40.0	30.98	9.02
72.01	26.3	H	4.0	8.80	0.90	40.0	36.00	4.00
108.12	21.2	H	3.0	10.65	1.10	43.5	32.95	10.55
143.96	14.7	V	3.1	12.30	1.40	43.5	28.40	15.10
144.02	17.6	H	2.5	12.30	1.40	43.5	31.30	12.20
205.68	17.1	V	1.0	15.45	1.70	43.5	34.25	9.25
480.85	18.6	V	1.2	17.42	3.30	46.0	39.32	6.68
552.01	18.6	H	2.5	18.30	3.50	46.0	40.40	5.60
696.25	14.2	H	2.2	21.60	3.90	46.0	39.70	6.30
744.12	14.1	V	1.3	21.28	4.50	46.0	39.88	6.12
848.23	14.7	V	1.2	21.80	4.50	46.0	41.00	5.00
960.84	13.2	V	2.0	23.30	4.80	54.0	41.30	12.70

Comment : -

Conducted emission

Test result: **Met**

Date of testing : 2000-09-23

Ambient temperature: 23°C, Relative humidity: 40%, Atmospheric pressure: 998hPa(mbar)

Test site type: Shielded room

Reference Standard: FCC Part15 Subpart B , Class B

Test and measurement equipment (Main equipment)

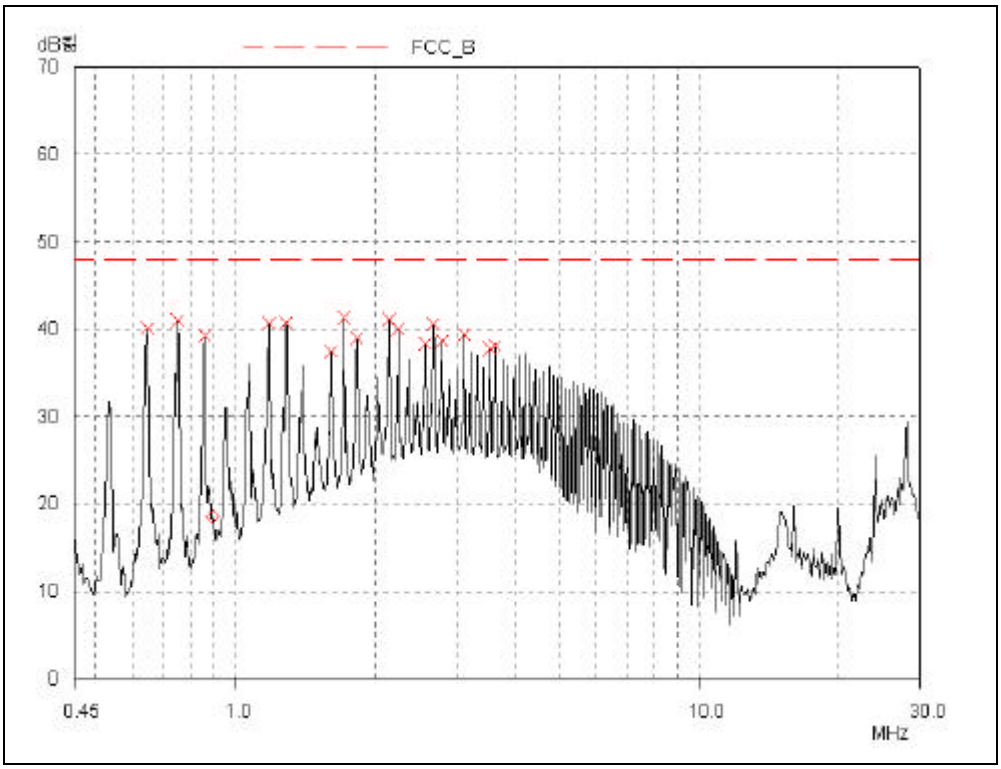
Model name	Manufacturer	Description	Serial No.
3825/2	EMCO	LISN	9206-1971
ESHS30	Rohde Schwarz	Field strength meter	828144/002
-	-	-	-

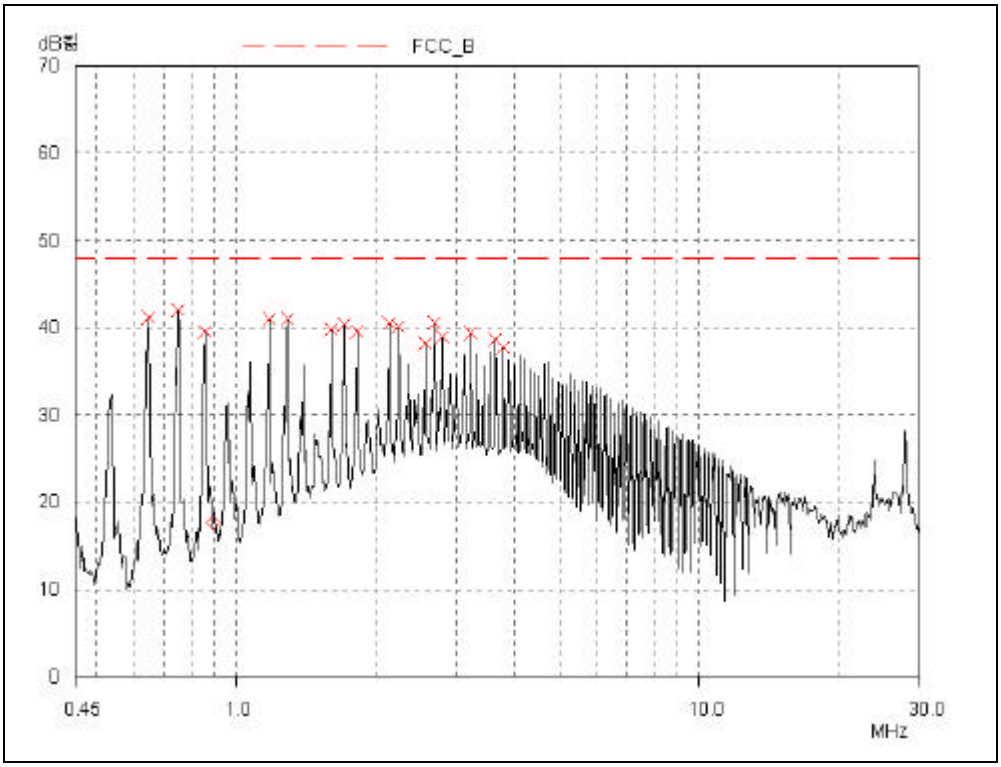
Test data sheet

Frequency	Correction Factor		Line	Quasi-peak				Average			
				Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
[MHz]	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]
0.65	0.2	0.1	N	48.0	42.0	42.3	5.7				
0.78	0.2	0.1	H	48.0	42.0	42.3	5.7				
0.86	0.2	0.1	H	48.0	39.9	40.2	7.8				
1.18	0.2	0.1	H	48.0	41.0	41.3	6.7				
1.31	0.2	0.1	N	48.0	42.0	42.3	5.7				
1.61	0.3	0.1	N	48.0	37.8	38.2	9.8				
1.80	0.3	0.1	H	48.0	41.0	41.4	6.6				
1.83	0.3	0.1	N	48.0	39.5	39.9	8.1				
2.15	0.3	0.1	N	48.0	40.5	40.9	7.1				
2.32	0.3	0.1	H	48.0	40.1	40.5	7.5				
2.58	0.2	0.1	N	48.0	40.7	41.0	7.0				
2.69	0.2	0.1	H	48.0	40.6	40.9	7.1				

Comment : -

Test data graphic

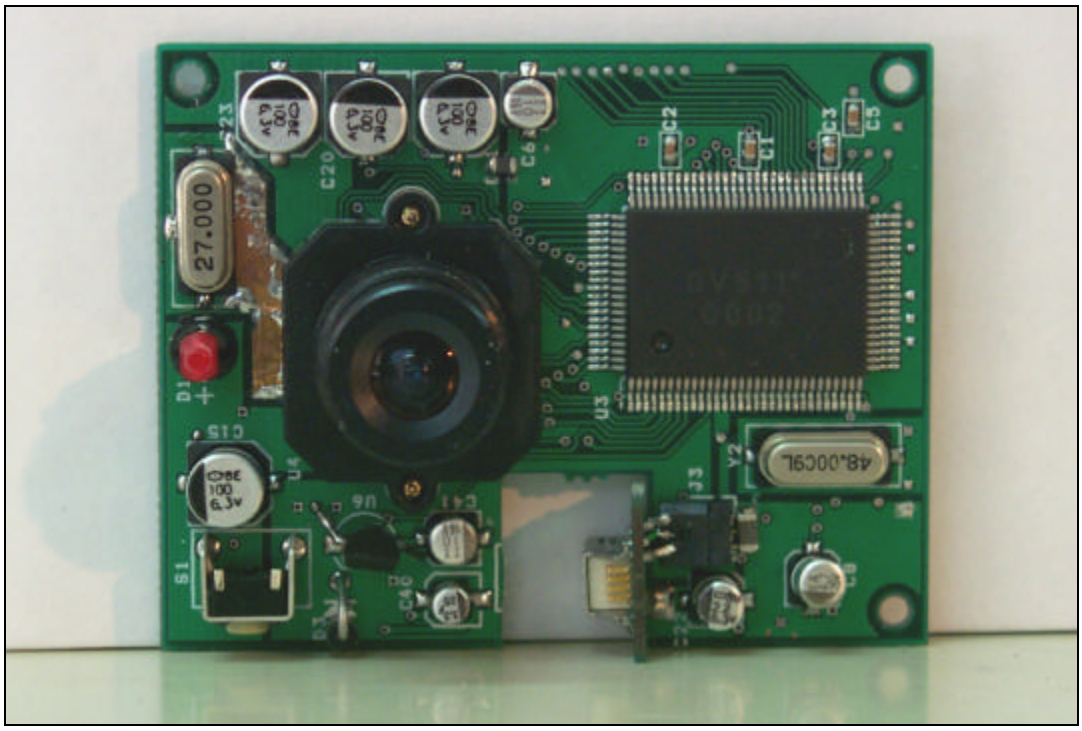


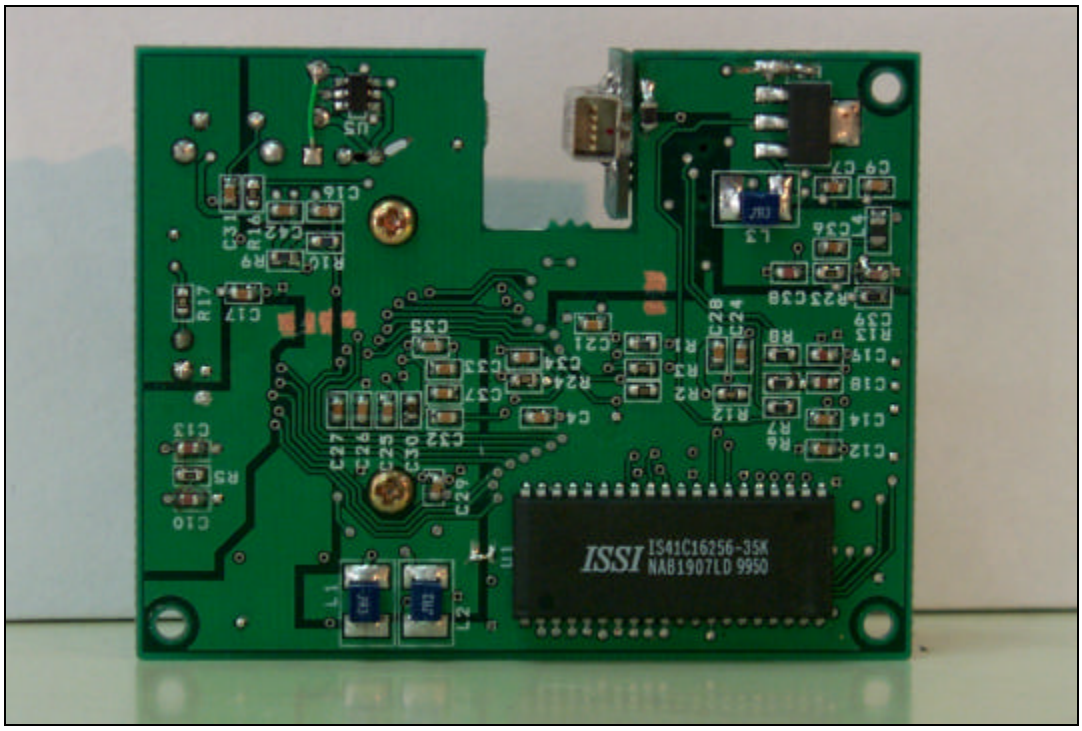


4. Photographs

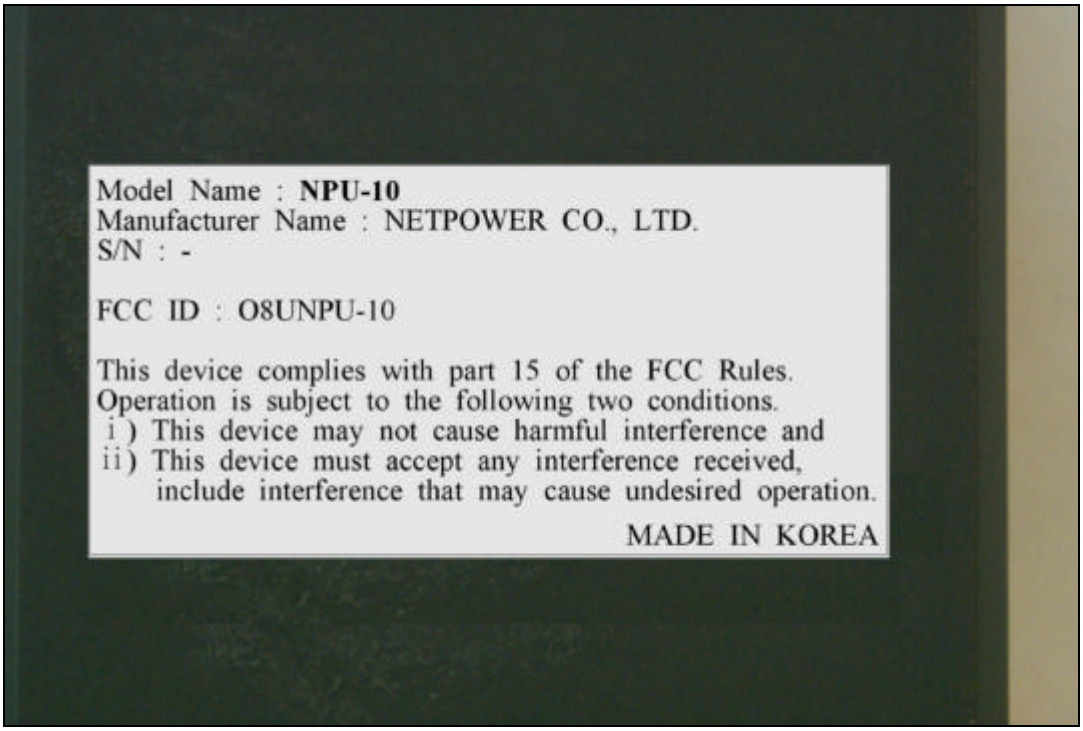
EUT (Front/Rear)

Main Board (Front/Rear)

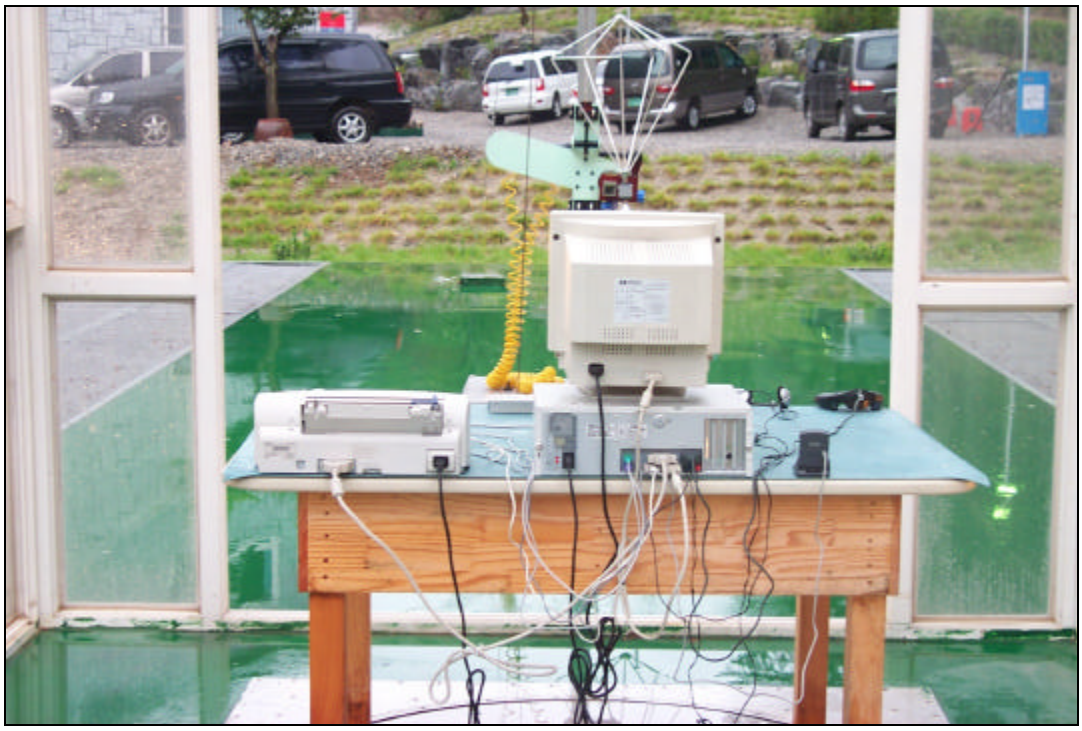




EUT (Label)


Model Name : NPU-10
Manufacturer Name : NETPOWER CO., LTD.
S/N : -
FCC ID : O8UNPU-10
This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions.
i) This device may not cause harmful interference and
ii) This device must accept any interference received,
include interference that may cause undesired operation.
MADE IN KOREA

Radiated emission



Conducted emission