# MEASUREMENT/TECHNICAL REPORT

APPLICANT: EDIMAX TECHNOLOGY CO., LTD.

MODEL NO.: PS-3100+, PS-1100+ Series

FCC ID: NDD9531ØØ98Ø3

This report concerns ( che	eck one ): Original Grant	
	Class II Change	
Equipment type:	Print Server	
Deferred grant requested	per 47CFR 0.457(d)(1)(ii)?	
Yes No	✓ If yes, defer until: (date)	
We, the undersigned, agr	ee to notify the Commission by (date) / / /	of the
	e ment of the product so that the grant can be issued on that date.	
		<b>√</b>
Transiyion Rules Request		
	ubpart B for unintentional radiator the new 47 CFR (10-1-90 Edition)	
provision.		
Report Prepared		
by Testing House :	Neutron Engineering Inc.	
·		
for Company Name:	EDIMAX TECHNOLOGY CO., LTD.	
	D. C.	0.0
Address:	3F, No. 50, Wu-Chuan 7 Rd., Wu-Ku Ind. Park, Taipei Hsien, Taiwan, R	.O.C.
	$\omega_{i}$ (2)	
Applicant Signature :	Peter L. J. tan	
	Peter L.J. PAN / R&D Department	

# **Table of Contents**

1.	General Information	
	-1 Product Description	
	-2 Related Submittal(s)/Grant(s)	
	-3 Tested System Details	. 5
	-4 Test Methodology	. 6
	-5 Test Facility	6
2.	roduct Labelling	
	igure 2-1 FCC ID Label	. 7
	igure 2-2 Location of Label on EUT	. 7
3.	ystem Test Configuration	
	-1 Justification	. 8
	-2 EUT Exercise Software	
	-3 Special Accessories	. 9
	-4 Equipment Modifications	. 9
	-5 Configuration of Tested System.	. 10
	igure 3-1 Configuration of Tested System.	. 11
4.	Block Diagram(s)	. 12
5.	Conducted and Radiated Measurement Photos	
	igure 5-1.Conducted Measurement Photos	. 13
	igure 5-2 Radiated Measurement Photos	. 14
6.	Conducted Emission Datas	. 15
7.	Radiated Emission Datas	ı
	-1 Reaiated Emission Data	. 1 <i>6</i>
	-2 Field Strength Calculation	
	7-3 Correction Factor Table VS Frequency.	
8.	Attachment	••
	Photos of Tested EUT	19
	Jser's Manual	20

#### 1. GENERAL INFORMATION

## 1-1. Product Description

The EDIMAX Technology Co., Ltd. Model: PS-3100+/ PS-1100+ Series model (referred to as the EUT in this report) is an Ethernet Printer Server which offers a cost-effective solution for connecting PCs to a central device that processes and traffics printing requests to a parallel printer shared by users on the same network. It provides 10/100Mbps auto-sensing Ethernet Hub connection, Built-in repeater functionality.

A more detailed and/or technical description of EUT is attached in User's Manual.

### 1-2. Related Submittal(s) / Grant (s)

#### 1-2-1. Models Covered

Models coverd in this test report are: PS-3100A+ , PS-3100W+ and PS-1100A+ , PS-1100W+

#### 1-2-2. Models Difference

Model PS-3100+ Series is identical to Model PS-1100+ Series except the numbers of parallel printer connector provided.

Model PS-3100A+ and PS-1100A+ printer server for all protocols, including IPX/SPX, TCP/IP. Supports NetWare Bindery/NDS mode, Windows NT 3.X/4.X, Windows 95/98 Network.

Model PS-3100W+ and PS-1100W+ printer server supports Windows 95/98 Network using TCP/IP protocol only.

## 1-3. Tested System Details

The FCC IDs for all equipments, plus descriptions of all cables used in the tested system (including inserted cards, which have grants) are:

Model No.	FCC ID	Equipment	Cable
PS-3100A+ <sup>(1)</sup>	NDD9531ØØ98Ø3	Printer Server	Shielded (STP) Cable
4500DC-E	GWGMULTI82	Monitor	Shielded Data Cable <sup>(2)</sup> Un-Shielded Power Cord
DFE-500TX	KA2APC500X2	Lan Card	N/A
93V	ANO6282	PC	Un-Shielded Power Cord
FDA-102A	F4Z4K3FDA-102A	Keyboard	Shielded Data Cable
DPU-414	N/A <sup>(3)</sup>	Printer	Shielded Serial Data Cable Un-Shielded Power Cord
DPU-414	N/A <sup>(3)</sup>	Printer	Shielded Serial Data Cable Un-Shielded Power Cord
DPU-414	N/A <sup>(3)</sup>	Printer	Shielded Serial Data Cable Un-Shielded Power Cord
AT-1200CK	E2O5OV1200CK	Modem	Shielded Data Cable Un-Shielded Power Cord

## Notes:

- (1) EUT submitted for grant.
- (2) Monitor's attached video cable without ferrite core.
- (3) The support equipment is authorized by Declaration of Conformity.

## 3. System Test Configuration

#### 3-1. Justification

The system was configured for testing in a typical fashion (as a customer would normally use it). The EUT was connected to a support equipment-LAN Card which added-on PC by a 100Base-TX category 5 STP(Shielded Twist Pair)cable. Peripherals of PC, such as monitor, keyboard, modem, and mouse were contained in this system in order to comply with the ANSI C63.4/CISPR22 Requirement. The PC operated in the default 640x480/31.5KHz VGA Graphic mode.

As the EUT(Printer Server) provides three identical ports for connection to a centronic printer, three centronic printers used as the support equipment to be connected to each of those identical port simultaneously for testing EUT. This operating condition and configuration was used to collect the included data.

### 3-2. EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software, contained on a 3-1/2 inch disk, was inserted into driver A and is auto-starting on power-up. Once loaded, the program sequentially exercises each system component in turn. The sequence used is:

- 1. Read (write) from(to) mass storage device(Disk).
- 2. Send "H" pattern to video port device(Monitor).
- 3. Send "H" pattern to parallel port device(Lan Card→EUT→Printer).
- 4. Send "H" pattern to serial port device(Modem).
- 5. Repeated from 2 to 4 continuously.

As the Keyboard and mouse are strictly input devices, no data is transmitted to (from) them during test, They are, however, continuously scanned for data input activity.

## 3.5 Configuration of Tested System

The configuration of tested system is described as the block diagram shown in next page Figure 3.1 and details information of I/O cable an power cord connection are tabulated as Table A and B. The monitor is powered from a floor mounted receptacle (referred to as the wall outlet in the previous described) was tested.

**TABLE A - Test Equipment** 

Item	Equipment	Mfr.	Model/Type No.	I/O Port	FCC ID	Remark
E-1	Printer Server	EDIMAX	PS-3100A+	RJ45 Port Printer Port	NDD9531009803	EUT
E-2	Monitor	Optiquest	4500DC-E	VGA PC	DZL6QBS2	
E-3	LAN Card	C-Net	DFE-500TX	Add-On PC	KA2APC500X2	
E-4	PC	IBM	93V		ANO6282	
E-5	Keyboard	Forward	FDA-102A	PS/2 KB Port	F4Z4K3FDA-102A	
E-6	Mouse	A DAN	ET-M36	PS/2 Mouse Port	LAT06CHAMP	
E-7	Printer	SII	DPU-414	Parallel Port	N/A <sup>(3)</sup>	
E-8	Printer	SII	DPU-414	Parallel Port	N/A <sup>(3)</sup>	
E-9	Printer	SII	DPU-414	Parallel Port	N/A <sup>(3)</sup>	
E-10	Modem	Datatronics	AT-1200CK	COM Port	E2O5OV1200CK	

#### Remark:

- (1) Unless otherwise denoted as EUT in Remark, column, device(s) used in tested system is a support equipment.
- (2) Unless otherwise marked as % in <sup>r</sup>Remark <sub>J</sub> column, Neutron consigns the supporting equipment(s) to the tested system.
- (3) The support equipment is authorized by Declaration of Conformity.

 NEUTRON EMC LAB.	1.25	18.0		
	 		 ****	 

FCC ID:NDD9531ØØ98Ø3

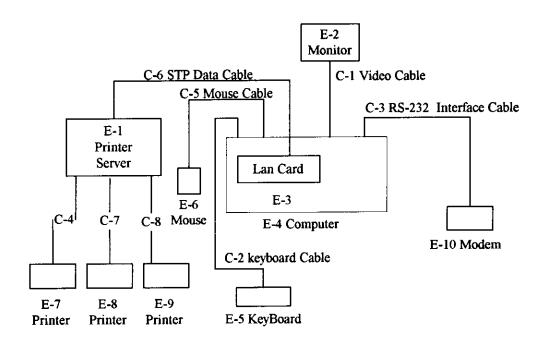
Table B. - Informations Cable Information

Item	I/O Cable	Device Connected	Shielded Type	Ferrite Core	Detachable/ Permanently	Length	Note
C-1	Video Cable	PC-Monitor	Yes	No	Permanently attached on Monitor	150cm	
C-2	Keyboard Cable	PC-Keyboard	Yes	No	Permanently attached on KB	200cm	
C-3	RS-232 Cable	PC-Modem	Yes	No	Part of Modem, Detachable	175cm	
C-4	Centronics Cable	PC-Printer	Yes	No	Detachable type.	120cm	
C-5	Mouse Cable	PC-Mouse	Yes	No	Permanently attached on Mouse	280cm	
C-6	STP Data Cable	EUT-PC	Yes	No	Detachable type.	200cm	*
C-7	Centronics Cable	EUT-Printer	Yes	No	Detachable type.	120cm	
C-8	Centronics Cable	EUT-Printer	Yes	No	Detachable type.	120cm	
	***			•			

# Note:

- (1) Unless otherwise marked as % in  $^{\mathbf{r}}$  Remark  $_{\mathbf{J}}$  column, Neutron consigns the supporting equipment(s) to the tested system.
- (2) For detachable type I/O cable should be specified the length in cm in  $^{\Gamma}$ Length  $_{\perp}$  column.

Fig. 3-1 Configuration of Tested System



#### 6. Conducted Emission Datas

6.1 The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range, significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Judgement: Passed by -11.30 dB in mode of Line terminal 0.79 MHz

Terminal	Measured(dBuV)		Limits	s(dBuV)	Safe N	Margins 1
L/N	QP-Mode	AV-Mode	QP-Mode	AV-Mode	_(dBuV)_	Note
Line	51.95	*	66.00	56.00	-14.05	(QP)
Line	50.28	*	63.21	53.21	-12.93	(QP)
Line	44.70	*	56.00	46.00	-11.30	(QP)
Line	40.02	*	60.00	50.00	-19.98	(QP)
Line	48.18	*	60.00	50.00	-11.82	(QP)
Neutral	52.40	*	66.00	56.00	-13.60	(QP)
Neutral	47.30	*	64.04	54.04	-16.74	(QP)
Neutral	42.30	*	56.00	46.00	-13.70	(QP)
Neutral	45.21	*	60.00	50.00	-14.79	(QP)
Neutral	43.80	*	60.00	50.00	-16.20	(QP)
	L/N Line Line Line Line Line Neutral Neutral Neutral Neutral	L/N QP-Mode  Line 51.95  Line 50.28  Line 44.70  Line 40.02  Line 48.18  Neutral 52.40  Neutral 47.30  Neutral 42.30  Neutral 45.21	L/N         QP-Mode         AV-Mode           Line         51.95         *           Line         50.28         *           Line         44.70         *           Line         40.02         *           Line         48.18         *           Neutral         52.40         *           Neutral         47.30         *           Neutral         42.30         *           Neutral         45.21         *	L/N         QP-Mode         AV-Mode         QP-Mode           Line         51.95         *         66.00           Line         50.28         *         63.21           Line         44.70         *         56.00           Line         40.02         *         60.00           Line         48.18         *         60.00           Neutral         52.40         *         66.00           Neutral         47.30         *         64.04           Neutral         42.30         *         56.00           Neutral         45.21         *         60.00	L/N         QP-Mode         AV-Mode         QP-Mode         AV-Mode           Line         51.95         *         66.00         56.00           Line         50.28         *         63.21         53.21           Line         44.70         *         56.00         46.00           Line         40.02         *         60.00         50.00           Line         48.18         *         60.00         50.00           Neutral         52.40         *         66.00         56.00           Neutral         47.30         *         64.04         54.04           Neutral         42.30         *         56.00         46.00           Neutral         45.21         *         60.00         50.00	L/NQP-ModeAV-ModeQP-ModeAV-Mode(dBuV)Line51.95*66.0056.00-14.05Line50.28*63.2153.21-12.93Line44.70*56.0046.00-11.30Line40.02*60.0050.00-19.98Line48.18*60.0050.00-11.82Neutral52.40*66.0056.00-13.60Neutral47.30*64.0454.04-16.74Neutral42.30*56.0046.00-13.70Neutral45.21*60.0050.00-14.79

#### Remark:

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=100KHz, VBW =100KHz, Swp. Time = 0.3 sec./MHz 
  Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz, VBW=10Hz, Swp. Time =0.3 sec./MHz
- (2) All readings are QP Mode value unless otherwise stated AVG in colum of PNote ... If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemd to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform In this case, a " \* " marked in AVG Mode colum of Interference Voltage Measured •
- (3) Measuring frequency range from 150KHz to 30MHz o

Review: Test Personnel.: Kikey HSU Date: Nov. 04, 1998

#### 7. Radiated Emission Datas

7.1 The following data lists the significant emission frequencise, measured levels, correction factor (includes cable and antenna corrections), the corrected reading, as well as the limit. Explanation of the Correction Factor is given in paragraph 7.2.

Judgement: Passed by -4.30 dB in polarity of Vertical 50.90 MHz

Freq.	Ant.	Reading(RA)	Corr.Factor(CF)	Measured(FS)	Limits(QP)	Safe Mai	rgins
(MHz)	H/V	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Note
47.70	V	12.40	12.05	24.45	30.00	- 5.55	
50.90	H	13.64	12.06	25.70	30.00	- 4.30	
56.90	V	14.77	10.27	25.04	30.00	- 4.96	
143.50	H	12.68	12.42	25.10	30.00	- 4.90	
157.30	V	10.66	13.94	24.60	30.00	- 5.40	
158.90	Н	8.50	14.20	22.70	30.00	- 7.30	
216,00	Н	12.71	11.89	24.60	30.00	- 5.40	
293.60	Н	13.14	16.46	29.60	37.00	- 7.40	
383.20	V	8.80	17.60	26.40	37.00	- 10.60	
420.80	Η	10.15	18.35	28.50	37.00	- 8.50	
428.00	V	8.75	18.55	27.30	37.00	- 9.70	
436.80	V	9.70	18.90	28.60	37.00	- 8.40	

#### Remark:

- Reading inwhich marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz; SPA setting in RBW=1MHz, VBW =1MHz, Swp. Time = 0.3 sec./MHz ∘
- (2) All readings are Peak unless otherwise stated QP in colum of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (3) Measuring frequency range from 30MHz to 1000MHz o
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table •

Review: Test Personnel.: Test Personnel.: July 07, 1998



FCC ID:NDD9531ØØ98Ø3

## 1-3. Tested System Details

The FCC IDs for all equipments, plus descriptions of all cables used in the tested system (including inserted cards, which have grants) are:

Model No.	FCC ID	Equipment	Cable
PS-3100A+ <sup>(1)</sup>	NDD9531ØØ98Ø3	Printer Server	Shieldinged (STP) Cable
HP2225C+	DSI6XU2225	Printer	Shielded Serial Data Cable Un-Shielded Power Cord
HP2225C+	DSI6XU2225	Printer	Shielded Serial Data Cable Un-Shielded Power Cord
5152002	BKM9A85152002	Printer	Shielded Serial Data Cable Shielded Power Cord

## Notes:

- (1) EUT submitted for grant.
- (2) Monitor's attached video cable without ferrite core.



FCC ID:NDD9531ØØ98Ø3

### 1-4. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (1992)/CISPR 22 (1996). Radiated testing was performed at an antenna to EUT distance 10 meters.

## 1-5. Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the address of No. 5, All 2, Lane 220, Kang Lo St., Nei Hwu, Taipei, Taiwan, R.O.C. of NEUTRON ENGINEERING INC. This site has been fully described in report dated Feb.4,1998 Submitted to your office, and accepted in a letter dated March 28, 1998 (31040/SIT-1300F2).

## 3. System Test Configuration

#### 3-1. Justification

The system was configured for testing in a typical fashion (as a customer would normally use it). The EUT was connected to printer used as a printer server. A PC workstation located at faraway side from the test site and used as the support equipment to exercise the EUT RJ-45 STP Port. The PC workstation operated in the default 640x480/31.5 KHz VGA Graphic mode. All three 25-P parallel printer ports were connected with a printer ( support equipment ) by each. Also, 100 Base-TX category 5 cabling was used for testing. This operating condition was tested and used to collect the included data.

#### 3-2. EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software, contained on a 3-1/2 inch disk, was inserted into driver A and is auto-starting on power-up. Once loaded, the program sequentially exercises each system component in turn. The sequence used is:

- 1. Read(write) from(to) mass storage device(Disk).
- 2. Send "H" pattern to Parallel port device(Printer).
- 3. Repeated from 1 to 2 continuously.

## 3-3. Special Accessories

As shown in Figure 3-1, all interface cables used for compliance testing are shielded type except the power cord which marked as shielded. All cable connectors are integrated by metal hoods for shielding. This equipment is required to use a shielded video interface cable without a ferrite attached in order to comply with FCC requirements.

## 3-4. Equipment Modifications

In order to achieve in compliance with Class B levels, the following change(s) were made by NEUTRON test house during the compliance testing:

Please refer to the next page as the modifications described and cross reference of photos of tested EUT.

The above modifications will be implemented in all product models of this equipment.

Applicant Signature: August 18,1998

Type/Printed Name: Peter L.J. PAN Position: R&D Department

3F, NO.50, WU-CHUAN 7 ROAD. WU-KU IND. PARK, TAIPELHSIEN, R.O.C. P. O. BOX 81-474 TAIPEI TAIWAN TEL: 886-2-2995648 TELEX: 32347 JHARVEST

## **Modification Report**

Company: EDIMAX Technology CO., LTD.

Model No.: PS-3100+, PS-1100+ Series

Page 1 of 1

FCC ID: NDD9531ØØ98Ø3

Date: August 18, 1998

A. Add Capacitors(C=390pf) on the output of printer port.

All the above modification will be implemented and relayout in the mass production to meer the FCC Class B requirements.

EDIMAX Technology Co., Ltd.

Peter L.J. PAN

**R&D** Department

## 3.5 Configuration of Tested System

The configuration of tested system is described as the block diagram shown in next page Figure 3.1 and details information of I/O cable an power cord connection are tabulated as Table A and B. The monitor is powered from a floor mounted receptacle (referred to as the wall outlet in the previous described) was tested.

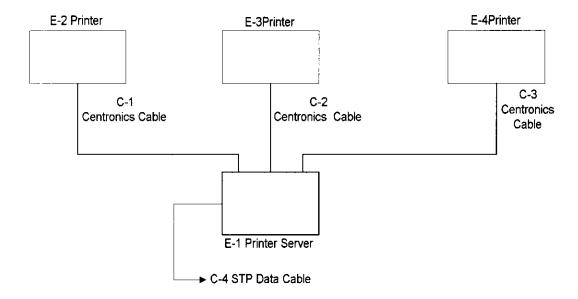
**TABLE A - Test Equipment** 

Item	Equipment	Mfr.	Model/Type No.	I/O Port	FCC ID	Remark
E-1	Printer Server	EDIMAX	PS-3100A+	RJ45 Port	N/A	EUT
E-2	Printer	НР	HP2225+	parallel Port	DSI6XU2225	
E-3	Printer	HP	HP2225+	parallel Port	DSI6XU2225	
E-4	Printer	IBM	5152002	parallel Port	BKM9A85152002	
	•					

#### Remark:

- (1) Unless otherwise denoted as EUT in Remark column, device(s) used in tested system is a support equipment.
- (2) Unless otherwise marked as % in Remark column, Neutron consigns the supporting equipment(s) to the tested system.

Fig. 3-1 Configuration of Tested System



NEUTRON EMC LAB.	
	ECC ID-NDD0524/2/209/22

# 4. Block Diagram(s)

Figure 4.1 Block diagram of system

#### 6. Conducted Emission Datas

6.1 The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

> Judgement: Passed by -3.66 dB in mode of Neutral terminal 12.00 MHz

Freq.	Terminal	Measure	Measured(dBuV)		s(dBuV)	Safe N	<b>Margins</b>
(MHz)	_L/N_	QP-Mode	AV-Mode	QP-Mode	AV-Mode	_(dBuV)	Note
0.15	Line	51.95	*	66.00	56.00	-14.05	(QP)
0.21	Line	50.28	*	63.33	53.33	-13.05	(QP)
0.79	Line	44.70	14.90	56.00	46.00	-11.30	(QP)
6.91	Line	40.02	*	60.00	50.00	-19.98	(QP)
12.00	Line	48.18	45.80	60.00	50.00	-4.20	(AV)
0.15	Neutral	51.25	*	66.00	56.00	-14.75	(QP)
0.19	Neutral	50.97	*	63.86	53.86	-12.89	(QP)
0.76	Neutral	46.80	11.50	56.00	46.00	-9.20	(QP)
6.91	Neutral	42.87	*	60.00	50.00	-17.13	(QP)
12.00	Neutral	48.27	46.34	60.00	50.00	-3.66	(AV)

#### Remark:

- (1) Reading inwhich marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=100KHz, VBW =100KHz, Swp. Time = 0.3 sec./MHz · Reading inwhich marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz, VBW=10Hz, Swp. Time =0.3 sec./MHz •
- (2) All readings are QP Mode value unless otherwise stated AVG in colum of PNote ... If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemd to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform . In this case, a " \* " marked in AVG Mode colum of Interference Voltage Measured •
- (3) Measuring frequency range from 150KHz to 30MHz •

(CTest Personnel: Ricker //SIL Date:

#### 7. Radiated Emission Datas

7.1 The following data lists the significant emission frequencise, measured levels, correction factor (includes cable and antenna corrections ), the corrected reading, as well as the limit. Explanation of the Correction Factor is given in paragraph 7.2.

Judgement: Passed by -5.93 **dB** in polarity of **Vertical** 56.90

Freq.	Ant.	Reading(RA)	Corr.Factor(CF)	Measured(FS)	Limits(QP)	Safe M	largins
(MHz)	H/V	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Note
47.70	V	11.50	12.06	23.56	30.00	- 6.44	
50.90	H	11.80	11.89	23.69	30.00	- 6.31	
56.90	V	13.80	10.27	24.07	30.00	- 5.93	
143.40	Н	10.60	12.40	23.00	30.00	- 7.00	
157.30	V	10.00	13.97	23.97	30.00	- 6.03	
158.90	Н	9.70	14.22	23.92	30.00	- 6.08	
216.00	H	11.30	11.89	23.19	30.00	- 6.81	
293.60	Н	13.40	16.46	29.86	37.00	- 7.14	
383.20	V	10.60	17.60	28.20	37.00	- 8.80	
420.80	Н	12.40	18.34	30.74	37.00	- 6.26	
428.00	V	11.00	18.56	29.56	37.00	- 7.44	
436.80	V	11.30	18.90	30.20	37.00	- 6.80	

#### Remark:

- (1) Reading inwhich marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz; SPA setting in RBW=1MHz. VBW =1MHz, Swp. Time = 0.3 sec./MHz •
- (2) All readings are Peak unless otherwise stated QP in colum of Note ... Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform •
- (3) Measuring frequency range from 30MHz to 1000MHz •
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table o

Test Personnel: Ricker / Su Date: July 07, 1998

### 7-2. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where

**FS** = **Field** Strength

**RA** = Receiver Amplitude

AF = Antenna Factor (1)

CL = Cable Attenuation Factor(Cable Loss) (1)

AG = Amplifier Gain (1) (2)

#### Remark:

- (1) The Correction Factor = AF + CL AG, as shown in the data tables' Correction Factor column.
- (2) AG is not available for Neutron's Open Site Facility

#### Example of Calculation:

Assume a Receiver Reading of 23.7 dBuV is obtained with an Antenna Factor of 7.2 dB and a Cable Factor of 1.1 dB. Then:

1. The Correction Factor will be caculated by

Correction Factor = 
$$AF + CL - AG = 7.2 + 1.1 - 0 = 8.3$$
 (dB)

as shown in the data tables' Correction Factor column.

2. The Field Strength will be calculated by

$$FS = RA + Correction Factor = 23.7 + 8.3 = 32 (dBuV/m)$$
.

FS is the value shown in the data tables' Corrected Reading column and RA is the value shown in the data tables' Receiver Reading column. The 32 dBuV/m value was mathe matically converted to its corresponding level in uV/m as:

$$Log^{-1}$$
 [(32.0dBuV/m)/20] = 39.8 (uV/m)

# 7-3. Correction Factor VS Frequency

Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)
30.00	11.10	0.20
35.00	10.80	0.00
40.00	11.20	0.40
45.00	11.50	0.40
50.00	11.30	0.90
55.00	10.50	0.00
60.00	9.90	0.00
65.00	8.70	0.20
70.00	7.60	0.00
75.00	6.40	0.50
80.00	6.10	0.10
85.00	7.00	0.80
90.00	8.00	0.30
95.00	10.00	0.40
100.00	11.20	0.60
110.00	12.60	0.60
120.00	13.00	0.60
130.00	12.50	0.50
140.00	12.00	0.20
150.00	12.00	1.00
160.00	13.20	1.20
170.00	14.80	1.60
180.00	16.30	1.90
190.00	17.00	1.90
200.00	17.30	1.40
225.00	10.50	1.10
250.00	11.70	2.00
275.00	12.80	2.40
300.00	14.50	2.40
325.00	14.00	1.90
350.00	14.20	2.40
375.00	14.60	2.90
400.00	15.10	2.70
450.00	16.20	3.20
500.00	17.60	3.70
550.00	17.80	3.90
600.00	18.40	4.30
650.00	19.50	4.00
700.00	20.80	4.10
750.00	20.50	5.30
800.00	21.10	5.90
850.00	22,40	5.80
900.00	23.50	5.50
950.00	24.00	6.30
1000.00	24.80	5.20
	19/20	

**-** 18/20

## 8. Photos of Tested EUT:

- 1. Photo # 1. Front View
- 2. Photo # 2. Front View
- 3. Photo #3. Rear View
- 4. Photo # 4. Cover/Enclosurer Removed
- 5. Photo # 5. Unit Partially Disassembled
- 6. Photo # 6. Unit Partially Disassembled
- 7. Photo # 7. Unit Partially Disassembled
- 8. Photo #8. Front View
- 9. Photo #9. Front View
- 10. Photo # 10. Rear View
- 11. Photo # 11. Cover/Enclosurer Removed
- 12. Photo # 12. Unit Partially Disassembled
- 13. Photo # 13. Unit Partially Disassembled
- 14. Photo # 14. Unit Partially Disassembled