MEASUREMENT/TECHNICAL REPORT

APPLICTNT: Chaplet Systems USA Inc.

MODEL NO.: FM300

FCC ID: GXLHFM3ØØ

This report concerns (check one) : **Original Grant** ✓
Class II Change _____

Equipment type: Fax/Modem Card

Deferred grant requested per 47CFR 0.457(d)(1)(ii)?
Yes _____ No ✓ If yes, defer until: _____ (date)
We, the undersigned, agree to notify the Commission by (date) _____ / _____ / _____ of the intended date of announce ment of the product so that the grant can be issued on that date.

Transiyion Rules Request per 15.37? Yes _____ No ✓
If no, assumed Part 15, Subpart B for unintentional radiator the new 47 CFR (10-1-90 Edition) provision.

Report Prepared

by Testing House : **Neutron Engineering Inc.**

for Company Name: Chaplet Systems USA Inc.

Address: 252 North Wolfe Road, Sunnyvale, U.S.A.

Applicant Signature : _____
Taizen Chien / Manager

CERTIFICATION

We hereby certify that:
The test data , data evaluation , test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (1992) and the energy emitted by the sample EUT tested as described in this report is in compliance with CLASS B conducted and radiated emission limits of FCC Part 15, Subpart B/CISPR 22.

Prepared by : Sherry Kuo

Reviewed by : Andy Chiu

Approved by : George Yao

Issued Date : Sep. 28, 1998

Report No. : NEI-FCCB-98162

Company Stamp :

NEUTRON ENGINEERING INC.
20, Alley 50, Lane 119, Dong Hwu Rd.,
P.O. Box 6-158, Nei Hwu,
Taipei, Taiwan
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Table of Contents

1. GENERAL INFORMATION

1-1. Product Description

The Chaplet System Inc. Model: FM300 (referred to as the EUT in this report) is a Fax/Modem Card. The summarized features of EUT are described as following:

- 14400bps send and receive fax modem with automatic fallback to 12000,9600,7200,4800 and 2400bps.
- 33600bps data modem with automatic fallback.
- Group 3 sends and receive facsimile.
- Voice mode allows a DTE to record and playback voice.
- Extend AT command set.
- Support fax service Class 1 commands.
- Full-duplex speakerphone. (FDSP)
- RS232 interface.

A more detailed and/or technical information is attached in **Attachment-G**

1-2. Connecting I/O Port(s)

(1) Phone Jack : One provided for telephone/PBX.

1-3. Related Submittal(s)/Grant(s)

1. This submittal is an application for FCC ID: GXLHFM3∅∅ for the Chaplet Systems USA Inc. Fax/Modem Card model FM300 only.
2. Application for equipment authorization grants for Notebook PC, model M187, presently available for Fax/Modem Card model FM300 was made at the same time as this submittal (see Sec.1.4 for the proposed ID No. of Notebook PC). The Notebook PC application was made with a separate test report and additional Form 731.

1-4. 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
M187	GXLKPM187	Notebook PC	Shielded Power Cord
4500DC-E	GWGMULTI82	Monitor	Shielded Data Cable(2) Un-Shielded Power Cord
HP2225C+	DSI6XU2225	Printer, Parallel I/F	Shielded Parallel Data Cable Un-Shielded Power Cord
AT-1200CK	E2O5OV1200CK	Modem, Serial I/F	Shielded Serial Data Cable Un-Shielded Power Cord
KT-V860	N/A	Walkman	Un-Shielded Audio Singal Cable
KA-309K	N/A	Microphone	
GRS-455	N/A	Speakers	
8257	N/A (4)	Joystick	Shielded Data Cable
PVM-1390	AK896APVM1390	TV Monitor	Unshielded Power Cable
KB-8923	28HKB-5923	PS/2 Keyboard	Shielded Data Cable
BTC7932	N/A (3)	USB Keyboard	Shielded Data Cable
MOSXT	N/A (3)	USB Mouse	Shielded Data Cable
FM300	GXLHFM3ØØ (1)	Fax Modem Card	Unshielded Data Cable

Notes:

(1) EUT submitted for grant.
(2) Monitor's video cable without ferrite core attached.
(3) Support equipment was authorized under Declaraation of Conformity.
(4) Non-digital circuitry passive add-on device.

1-5. Test Methodology

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

1-6. 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). A typical memory card was added in PCMCIA slot in addition a music CD disc was placed in CD-ROM drive compartment as the peripherals of PCMCIA and CD-ROM connection. Other peripherals of EUT external device connection such as keyboard, modem, printer, CRT monitor, TV as well as the Audio I/O jack, microphone, walkman and speakers were also contained in this system in order to comply with the ANSI C63.4/CISPR 22(1996) Rules requirement. Further, a twisted phone line (approx.2 meters) terminated with a 600Ω resistor at one end as a dumy load was used to connect with the Fax/Modem card interface port. Moreover, the EUT provides two USB ports for interface with the USB interface standard devices, two USB devices (such as KB and Mouse) were connected respectly during the measuring.

Since the EUT is designed for an alternative AC/DC power adapter which is used to power the PC system, and two types of LCD Panel. Therefore, there are totally four versions of testing configuration (two types, model F1700C and model SYS2011-6019, of AC/DC adapter as well as two types of LCD Panel, 13.3" and 14.1") should be considered.

Further, the PC system's VGA controller supports simultaneous display output on the system's LCD and an external CRT monitor connected to the system. It supports resolution mode from 640 × 480/31.5KHz to max. of 1024 × 768/65KHz. The RFI performance investigation was carried out by pre-scanning the resolution mode from 640 × 480/31.5 KHz to 1024 × 768/65KHz for each of four versions of testing configuration.

Moreover, the EUT having a designation of alternative CPU processor of Intel Pentium-II Series with internal processor speed from 233MHz to 300MHz which operated with an external clock generator frequency on 66MHz. The EUT operated with CPU internal processor speed/external clock frequency setting under 300MHz/66MHz in conjunction with the VGA highest resolution mode of 1024 × 768/65KHz was used to carry out the final testing for each of four versions of testing configuration.

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 from the storage device (DVD-ROM).
2. Send Voice to LINE- OUT device (Speakers).
3. Repeated form 1to 2 continuously during to "H" pattern exercised each system component from 4 to 7 simultaneously.
4. Read (Write) from (to) to the storage devices (HDD, FDD).
5. Send "H" pattern to the video port device (Monitor).
6. Send "H" pattern to the parallel port device (Printer).
7. Send "H" pattern to the Serial port device (Modem).
8. Repeated from 4 to 7 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.

3-3. Special Accessories

N/A

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 : Taizen Chien **Date :** Sep. 28, 1998

Type/Printed Name : Taizen Chien **Position :** Manager

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/Brand	Model/Type No.	Port Connected	FCC ID	Series No.	Note
E-1	Notebook PC	Chaplet	M187		GXLKPM187	N/A	※
E-2	Monitor	Optiquest	4500DC-E	VGA Port	GWGMULTI82	3650200046	
E-3	Printer, Parallel I/F	HP	HP2225C+	Printer Port	DSI6XU2225	2927S50245	
E-4	Modem, Serial I/F	Datatronics	AT-1200CK	Com Port	E2O5OV1200CK	06-240088	
E-5	Keyboard	IBM	KB-8923	PS/2 Port	28HKB-5923	10155362	
E-6	Walkman	N/A	KT-V860	LINE IN	N/A	N/A	
E-7	Microphone	N/A	KA-309K	MIC IN	N/A	N/A	
E-8	Speakers	N/A	GRS-455	SPK OUT	N/A	N/A	
E-9	Joystick	N/A	8257	Game Port	N/A	N/A	
E-10	TV Set	SONY	PVM-1390	Video Port	AK896APVM1390	N/A	
E-11	USB KB	BTC	BTC7932	USB Port	N/A	174250001	
E-12	USB Mouse	PRIMAX	MOSXT	USB Port	N/A	N/A	
E-13	Fax/Modem Card	Chaplet	FM300	RS-232 Port	GXLHFM3∅∅	N/A	EUT

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.

Table B. - Informations Cable Information

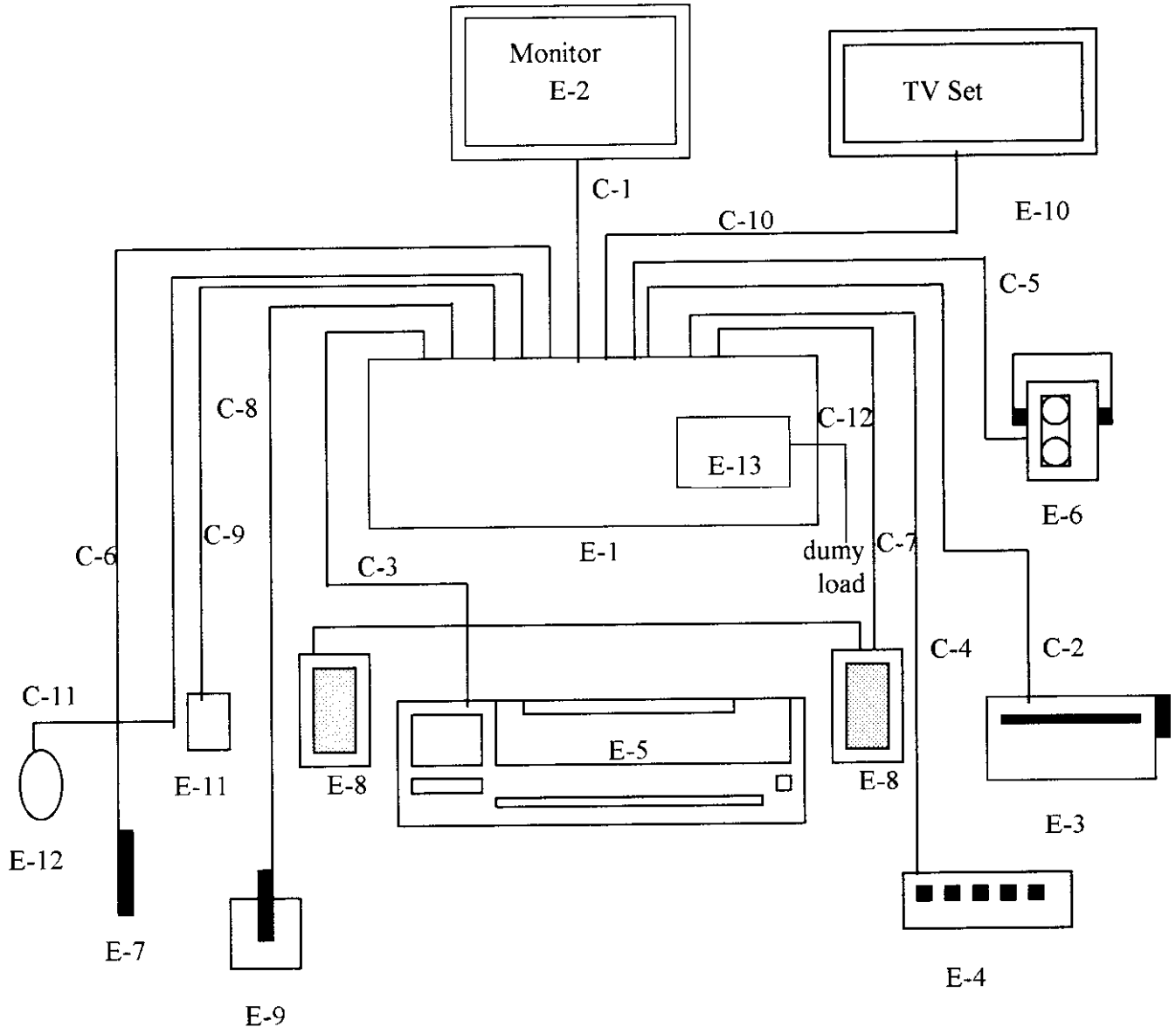
Item	I/O Cable	Device Connected	Shielded	Ferrite Core	Detachable/Permanently	Length	Note
C-1	Video Cable	EUT -Monitor	Yes	No	Permanently attached on Monitor	150cm	
C-2	Centronics Cable	EUT -Printer	Yes	No	Detachable type	200cm	
C-3	PS/2 KB Cable	EUT -Keyboard	Yes	No	Permanently attached on PS/2 KB	200cm	
C-4	RS-232 Cable	EUT -Modem	Yes	No	Detachable type	120cm	
C-5	Walkman Cable	EUT-Walkman	No	No	Detachable type	180cm	
C-6	Microphone Cable	EUT-Microphone	No	No	Permanently attached on Mic	600cm	
C-7	Speaker Cable	EUT-Speakers	No	No	Detachable type	120cm	
C-8	Joystick Cable	EUT-Joystick	Yes	No	Permanently attached on Joystick	100cm	
C-9	USB KB Cable	EUT-USB KB	Yes	No	Permanently attached on USB KB	200cm	
C-10	Video Cable	EUT -TV	No	No	Detachable type	120cm	
C-11	USB Mouse Cable	EUT –USB Mouse	Yes	No	Permanently attached on USB Mouse	280cm	
C-12	Telephone Cable	EUT- dumy load	No	No	Detachable type	200cm	

Note:

(1) Unless otherwise marked as ※ in 『Remark』 colum, 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 『Length』 colum.

Flgure 3.1 Configuration of Tested System



4. Block Diagram(s)

Figure 4.1 Block diagram of system, Page 13.A

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.

Test mode:1024*768/65KHZ Adaptor No. SYS2011-6019 14.1 panel
Judgement: Passed by **-14.51 dB** in mode of **Line** terminal **0.21 MHz**

Freq.	Terminal	Measured(dBuV)		Limits(dBuV)		Safe Margins	
(MHz)	L/N	QP-Mode	AV-Mode	QP-Mode	AV-Mode	(dBuV)	Note
0.15	Line	49.69	*	65.89	55.89	-16.20	(QP)
0.21	Line	48.82	*	63.33	53.33	-14.51	(QP)
0.31	Line	40.05	*	59.92	49.92	-19.87	(QP)
0.41	Line	34.13	*	57.59	47.59	-23.46	(QP)
11.93	Line	31.07	*	60.00	50.00	-28.93	(QP)
29.68	Line	39.53	*	60.00	50.00	-20.47	(QP)
0.15	Neutral	44.17	*	66.00	56.00	-21.83	(QP)
0.20	Neutral	48.91	*	63.45	53.45	-14.54	(QP)
0.31	Neutral	40.83	*	59.97	49.97	-19.14	(QP)
0.41	Neutral	33.58	*	57.59	47.59	-24.01	(QP)
11.56	Neutral	31.94	*	60.00	50.00	-28.06	(QP)
28.60	Neutral	37.13	*	60.00	50.00	-22.87	(QP)

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 『Note』. 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 ◦

Review : Test Personnel. : Date: Sep. 18, 1998

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.

Test mode:1024*768/65KHZ **Adaptor No. F1700C** **14.1 panel**
Judgement: Passed by **-11.84** **dB** in mode of **Line** terminal **0.18** **MHz**

Freq.	Terminal	Measured(dBuV)		Limits(dBuV)		Safe Margins	
(MHz)	L/N	QP-Mode	AV-Mode	QP-Mode	AV-Mode	(dBuV)	Note
0.16	Line	49.77	*	65.41	55.41	-15.64	(QP)
0.18	Line	52.51	*	64.35	54.35	-11.84	(QP)
0.25	Line	43.61	*	61.79	51.79	-18.18	(QP)
4.62	Line	31.85	*	56.00	46.00	-24.15	(QP)
24.53	Line	34.19	*	60.00	50.00	-25.81	(QP)
0.16	Neutral	50.86	*	65.67	55.67	-14.81	(QP)
0.19	Neutral	49.33	*	64.04	54.04	-14.71	(QP)
0.51	Neutral	33.14	*	56.00	46.00	-22.86	(QP)
0.69	Neutral	31.22	*	56.00	46.00	-24.78	(QP)
15.72	Neutral	32.48	*	60.00	50.00	-27.52	(QP)
23.76	Neutral	34.59	*	60.00	50.00	-25.41	(QP)

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 『Note』. 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。

Review : Test Personnel. : Date: Sep. 18, 1998

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.

Test mode:1024*768/65KHZ Adaptor No. SYS2011-6019 13.3 panel
Judgement: Passed by **-14.09** **dB** in mode of **Netural** terminal **0.21** **MHz**

Freq.	Terminal	Measured(dBuV)		Limits(dBuV)		Safe Margins	
(MHz)	L/N	QP-Mode	AV-Mode	QP-Mode	AV-Mode	(dBuV)	Note
0.15	Line	40.23	*	65.89	55.89	-25.66	(QP)
0.21	Line	47.53	*	63.33	53.33	-15.80	(QP)
0.31	Line	38.21	*	59.97	49.97	-21.76	(QP)
0.42	Line	32.82	*	57.51	47.51	-24.69	(QP)
3.22	Line	33.05	*	56.00	46.00	-22.95	(QP)
15.80	Line	40.19	*	60.00	50.00	-19.81	(QP)
0.15	Neutral	37.76	*	66.00	56.00	-28.24	(QP)
0.21	Neutral	49.24	*	63.33	53.33	-14.09	(QP)
0.31	Neutral	39.76	*	59.97	49.97	-20.21	(QP)
0.42	Neutral	34.32	*	57.51	47.51	-23.19	(QP)
3.84	Neutral	33.41	*	56.00	46.00	-22.59	(QP)
15.72	Neutral	39.16	*	60.00	50.00	-20.84	(QP)

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 『Note』. 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。

Review : Test Personnel. : Date: Sep. 20, 1998

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.

Test mode:1024*768/65KHZ Adaptor No. F1700C 13.3 panel
Judgement: Passed by **-12.15 dB** in mode of **Netural** terminal **0.18 MHz**

Freq.	Terminal	Measured(dBuV)		Limits(dBuV)		Safe Margins	
(MHz)	L/N	QP-Mode	AV-Mode	QP-Mode	AV-Mode	(dBuV)	Note
0.15	Line	50.97	*	66.00	56.00	-15.03	(QP)
0.18	Line	50.95	*	64.72	54.72	-13.77	(QP)
0.23	Line	43.73	*	62.31	52.31	-18.58	(QP)
0.47	Line	36.01	*	56.53	46.53	-20.52	(QP)
4.50	Line	34.99	*	56.00	46.00	-21.01	(QP)
0.18	Neutral	52.57	*	64.72	54.72	-12.15	(QP)
0.23	Neutral	44.35	*	62.34	52.34	-17.99	(QP)
0.29	Neutral	38.14	*	60.55	50.55	-22.41	(QP)
4.72	Neutral	31.55	*	56.00	46.00	-24.45	(QP)
25.59	Neutral	37.99	*	60.00	50.00	-22.01	(QP)
28.60	Neutral	37.13	*	60.00	50.00	-22.87	(QP)

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 『Note』. 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 ◦

Review : Test Personnel. : Date: Sep. 17, 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.

Test mode: 1024*768/65KHZ Adaptor No.SYS2011-6019 14.1 panel
Judgement: Passed by **-2.88 dB** in polarity of **Horizon 197.65 MHz**

Freq. (MHz)	Polar. H/V	Reading(RA) (dBuV)	Corr.Factor. (dB)	Corrected FS (dBuV)	Limits (QP) (dBuV/m)	Margins (dBuV/m)	Note (QP)
116.54	V	13.50	13.46	26.96	30.00	- 3.04	
125.40	H	13.60	13.32	26.92	30.00	- 3.08	
128.84	V	13.50	13.08	26.58	30.00	- 3.42	
133.50	H	13.50	12.69	26.19	30.00	- 3.81	
134.60	V	14.50	12.59	27.09	30.00	- 2.91	
197.65	H	8.40	18.72	27.12	30.00	- 2.88	
200.03	H	13.50	12.40	25.90	30.00	- 4.10	
200.40	V	13.50	12.39	25.89	30.00	- 4.11	
208.60	V	14.50	12.12	26.62	30.00	- 3.38	
209.80	H	14.80	12.09	26.89	30.00	- 3.11	
220.50	V	13.60	11.74	25.34	30.00	- 4.66	
420.50	H	14.30	18.33	32.63	37.00	- 4.37	

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 measure-ment 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 ◦

Review : Andy Chen Test Personnel. : Ricky Hsu Date: Sep. 20, 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.

Test mode: 1024*768/65KHZ Adaotor No. F1700C 14.1 panel
Judgement: Passed by **-2.98 dB** in polarity of **Horizon 197.60 MHz**

Freq. (MHz)	Polar. H/V	Reading(RA) (dBuV)	Corr.Factor. (dB)	Corrected FS (dBuV)	Limits (QP) (dBuV/m)	Margins (dBuV/m)	Note (QP)
116.20	V	13.50	13.45	26.95	30.00	- 3.05	
125.60	H	13.60	13.31	26.91	30.00	- 3.09	
128.50	V	13.50	13.10	26.60	30.00	- 3.40	
150.60	V	12.60	13.07	25.67	30.00	- 4.33	
171.60	H	9.00	16.74	25.74	30.00	- 4.26	
197.60	H	8.30	18.72	27.02	30.00	- 2.98	
200.50	V	14.50	12.38	26.88	30.00	- 3.12	
200.60	H	14.50	12.38	26.88	30.00	- 3.12	
204.30	H	13.50	12.26	25.76	30.00	- 4.24	
208.60	V	13.50	12.12	25.62	30.00	- 4.38	
220.80	V	12.60	11.73	24.33	30.00	- 5.67	
300.50	H	14.20	16.88	31.08	37.00	- 5.92	

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 measure-ment 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 ◦

Review : Test Personnel. : Date: Sep. 20, 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.

Test mode: 1024*768/65KHZ Adaptor No. SYS2011-6019 13.3 panel
Judgement: Passed by **-2.95 dB** in polarity of **Vertical 171.67 MHz**

Freq. (MHz)	Polar. H/V	Reading(RA) (dBuV)	Corr.Factor. (dB)	Corrected FS (dBuV)	Limits (QP) (dBuV/m)	Margins (dBuV/m)	Note (QP)
47.83	H	13.60	12.07	25.67	30.00	- 4.33	
128.76	V	12.30	13.09	25.39	30.00	- 4.61	
133.17	H	14.00	12.71	26.71	30.00	- 3.29	
134.89	V	14.30	12.56	26.86	30.00	- 3.14	
171.60	H	10.00	16.74	26.74	30.00	- 3.26	
171.67	V	10.30	16.75	27.05	30.00	- 2.95	
200.03	V	13.00	12.40	25.40	30.00	- 4.60	
200.05	H	14.30	12.40	26.70	30.00	- 3.30	
208.40	V	14.70	12.13	26.83	30.00	- 3.17	
220.71	V	15.00	11.74	26.74	30.00	- 3.26	
254.60	H	18.90	13.98	32.88	37.00	- 4.12	
420.60	H	14.63	18.34	32.97	37.00	- 4.03	

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 measure-ment 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 ◦

Review : Test Personnel. : Date: Sep. 20, 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.

Test mode: 1024*768/65KHZ Adaptor No. F1700C 13.3 panel
Judgement: Passed by **-3.06 dB** in polarity of **Horizon 171.60 MHz**

(MHz)	H/V	(dBuV)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(QP)
48.60	H	13.50	12.12	25.62	30.00	- 4.38	
128.60	V	12.31	13.10	25.41	30.00	- 4.59	
134.60	V	12.30	12.59	24.89	30.00	- 5.11	
149.60	H	12.50	12.96	25.46	30.00	- 4.54	
171.50	H	9.60	16.72	26.32	30.00	- 3.68	
171.60	V	10.20	16.74	26.94	30.00	- 3.06	
200.00	H	13.50	12.40	25.90	30.00	- 4.10	
208.40	H	14.60	12.13	26.73	30.00	- 3.27	
208.60	V	13.50	12.12	25.62	30.00	- 4.38	
220.21	H	13.40	11.75	25.15	30.00	- 4.85	
254.60	V	18.90	13.98	32.88	37.00	- 4.12	
420.60	V	14.30	18.34	32.64	37.00	- 4.36	

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 measure-ment 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 ◦

Review : Test Personnel. : Date: Sep. 20, 1998

7. Radiated Emission Datas (30MHz~1GHz)

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.

Test mode: 1024*768/65KHZ Adaptor No. SYS2011-6019 14.1 panel
Judgement: Passed by **-16.57 dB** in polarity of **Vertical 1837.65 MHz**

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Safe Margins (dBuV/m)	Note
1000.00	H	6.19	24.63	30.81	54.00	-23.19	
1000.43	V	12.69	24.63	37.32	54.00	-16.68	
1092.45	V	9.98	25.74	35.72	54.00	-18.28	
1096.60	H	10.62	25.58	36.20	54.00	-17.80	
1306.99	V	5.52	26.91	32.43	54.00	-21.57	
1814.00	V	4.82	29.40	34.22	54.00	-19.78	
1835.80	H	7.27	29.28	36.55	54.00	-17.45	
1837.65	V	8.15	29.28	37.43	54.00	-16.57	

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 measure-ment didn't perform ◦

(3) Measuring frequency range from 1000MHz to 3000MHz ◦

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table ◦

Review : Test Personnel. : Date: Sep. 23, 1998

7. Radiated Emission Datas (30MHz~1GHz)

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.

Test mode: 1024*768/65KHZ Adaptor No. F1700C 14.1 panel
Judgement: Passed by **-16.57 dB** in polarity of **Horizontal 1837.98 MHz**

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Safe Margins (dBuV/m)	Note
1000.78	H	7.77	24.63	32.40	54.00	-21.60	
1001.43	V	11.80	24.63	36.43	54.00	-17.57	
1091.40	V	8.60	25.74	34.34	54.00	-19.66	
1097.44	H	9.85	25.58	35.43	54.00	-18.57	
1175.65	H	3.67	26.22	29.89	54.00	-24.11	
1307.90	V	4.52	26.91	31.43	54.00	-22.57	
1811.00	V	4.05	29.40	33.45	54.00	-20.55	
1836.78	V	7.50	29.28	36.78	54.00	-17.22	
1837.98	H	8.15	29.28	37.43	54.00	-16.57	

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 measure-ment didn't perform ◦

(3) Measuring frequency range from 1000MHz to 3000MHz ◦

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table ◦

Review : Test Personnel. : Date: Sep. 23, 1998

7. Radiated Emission Datas (30MHz~1GHz)

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.

Test mode: 1024*768/65KHZ Adaptor No. SYS2011-6019 13.3 panel
Judgement: Passed by **-16.57 dB** in polarity of **Horizontal 1837.90 MHz**

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Safe Margins (dBuV/m)	Note
1000.43	V	11.38	24.63	36.01	54.00	-17.99	
1000.44	H	4.82	24.63	29.45	54.00	-24.55	
1090.44	V	8.16	25.74	33.90	54.00	-20.10	
1096.44	H	9.72	25.58	35.30	54.00	-18.70	
1175.60	H	3.56	26.22	29.78	54.00	-24.22	
1307.30	V	4.21	26.91	31.12	54.00	-22.88	
1834.43	V	5.15	29.28	34.43	54.00	-19.57	
1837.90	H	8.15	29.28	37.43	54.00	-16.57	

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 measure-ment didn't perform ◦

(3) Measuring frequency range from 1000MHz to 3000MHz ◦

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table ◦

Review : Test Personnel. : Date: Sep. 23, 1998

7. Radiated Emission Datas (30MHz~1GHz)

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.

Test mode: 1024*768/65KHZ Adaptor No. F1700C 13.3 panel
Judgement: Passed by **-16.79 dB** in polarity of **Horizon 1835.77 MHz**

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Safe Margins (dBuV/m)	Note
1000.32	V	10.80	24.63	35.43	54.00	-18.57	
1000.34	H	5.81	24.63	30.44	54.00	-23.56	
1090.43	V	7.69	25.74	33.43	54.00	-20.57	
1096.77	H	10.98	25.58	36.56	54.00	-17.44	
1306.65	V	3.85	26.91	30.76	54.00	-23.24	
1810.24	V	3.01	29.40	32.41	54.00	-21.59	
1835.76	V	5.05	29.28	34.33	54.00	-19.67	
1835.77	H	7.93	29.28	37.21	54.00	-16.79	

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 measure-ment didn't perform ◦

(3) Measuring frequency range from 1000MHz to 3000MHz ◦

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table ◦

Review : _____ Test Personnel. : Rika H/54 Date: Sep. 23, 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 (1)

AG = Amplifier Gain (1) (2)

Remark :

(1) The Correction Factor = AF + CF - 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 dBuV. Then:

1. The Correction Factor will be caculated by

   Correction Factor = AF + CF - 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 mathematically converted to its corresponding level in uV/m as:

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

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

8. Photos of Tested EUT:

1. Photo # 1 Front View
2. Photo # 2 Rear View