EMC TEST REPORT

for

Wacom Co., Ltd.

2-510-1 Toyonodai Otonemachi,Kita Saitama-Gun, Saitama, Japan.

Equipment Under Test:	Digitizer
Model Name:	PTK-1240
Standard:	FCC Part 15 Sub.part B/ Sub.partC Class B Digital Device
Tokin Report No.:	TAP089142
Date of Issue:	November 11, 2008

Approved by

Mickey Fukuda
Manager, Tsukuba Testing Lab.
Tokin EMC Engineering Co., Ltd.

NVLAP Lab. Code: 200221-0

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1 DESCRIPTION OF DEVICE

A) Kind of Equipment :	Digitizer
B) FCC ID:	HV4PTKL
C) Model Name :	PTK-1240
D) Serial No. :	8HTS00024
E) Type of Sample Tested :	Pre-production
F) Dimension:	Width 623.0 x Depth 462.0 x Height 28.0 mm
G) High Frequency Used :	0.666MHz (Communication between pen and tablet) 48MHz (USB) 16MHz (CPU)
H) Rating Power Supply :	1phase DC 5V, 0.3A
I) Tested Condition:	1phase AC120V, 60Hz (PC Power Supply) DC5V(EUT)
J) Date of Manufacture :	September 2008
K) Manufacturer :	Wacom Co., Ltd. 2-510-1 Toyonodai, Otonemachi, Kita Saitama-Gun, Saitama, Japan.
L) Description of Operating :	Normal Operation

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M) Options: Using Devices: KP-501E (Grip Pen)
KP-300E (Classic Pen)
KP-130 (Inking Pen)
KP-400E (Airbrush)
KP-701E (Art Pen)
KC-100 (Mouse)
KC-210 (Lens Cursor)

-Digitizer has an USB I/F cable and is connected by PC and USB.
-As a device which can be used on digitizer, there are Grip pen, Airbrush, Inking pen, Art pen, Classic pen, Mouse and Lens cursor.
These devices do function for only the Digitizer.

N) Date of Sample Received : September 10, 2008

O) Test Engineer : Tohru Hirahara

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2 TEST FACILITY

The semi anechoic chamber and conducted measurement facility are used for these testing, where are located following address. This chamber's FCC Test firm registration number: 91023.This laboratory is accredited by NVLAP for NVLAP Lab. Code : 200221-0.

Tokin EMC Engineering Co., Ltd.
Tsukuba Testing Laboratory, Shielded Room No.2 and Semi Anechoic Chamber No.1 and Semi Anechoic Chamber No.2.

Address ; 28-1, Hanashimashinden, Tsukuba-city, Ibaraki 305-0875, Japan

3 SUMMARY OF RESULTS

3.1 Electromagnetic Emission

RFI Voltage Measurement .....**PASS**

RFI Field Strength Measurement .....**PASS**
<0.009MHz to 30MHz>

RFI Field Strength Measurement .....**PASS**
<30MHz to 1000MHz>

Test results are traceable to PTB, NMI and NPL.

3.2 Modifications to The EUT : This EUT was taken countermeasures.

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4 TESTED SYSTEM DETAILS

4.1 Peripherals and Others :

Description	Model Name	Serial No.	Manufacturer	FCC ID
PC	Presario SR1000	CNN5250F4B	COMPAQ	Doc
Monitor	D5063	TWKDS01276	COMPAQ	Doc
Monitor AC Adapter	LSE9901B1250	A2013800277	LISHIN	Doc
Mouse	M-S69	---	COMPAQ	JNZ211443
Keyboard	RT7H00	250801506	COMPAQ	Doc
Modem	1414	970024523	ACEEX	IFAXDM1414
Printer	STYLUS C60	C41808000W34 1Y22485	EPSON	Doc

4.2 Type of Used Cables :

Description	Length	Type of shield	Model name	Manufacturer
Keyboard Cable（PC- Keyboard）	1.5m	Shielded	---	---
Mouse Cable (PC - Mouse)	1.8m	Shielded	---	---
Monitor Cable (PC - Monitor)	1.8m	Shielded	---	---
RS232C Cable (PC - Modem)	1.0m	Shielded	---	---
IEEE1284 Cable (PC - Printer)	1.5m	Shielded	---	---
USB Cable (PC - EUT)	2.0m	Shielded	---	---
Printer AC Cable (Printer - AC Power Supply)	1.8m	Non-shielded	---	---
Modem AC Cable (Modem - AC Power Supply)	1.8m	Non-shielded	---	---
PC AC Cable (PC - AC Power Supply)	1.8m	Non-shielded	---	---
Monitor AC Cable (Monitor AC Adapter -AC Power Supply)	1.8m	Non-shielded	---	---
Monitor DC Cable (Monitor - AC Adapter)	1.8m	Non-shielded	---	---

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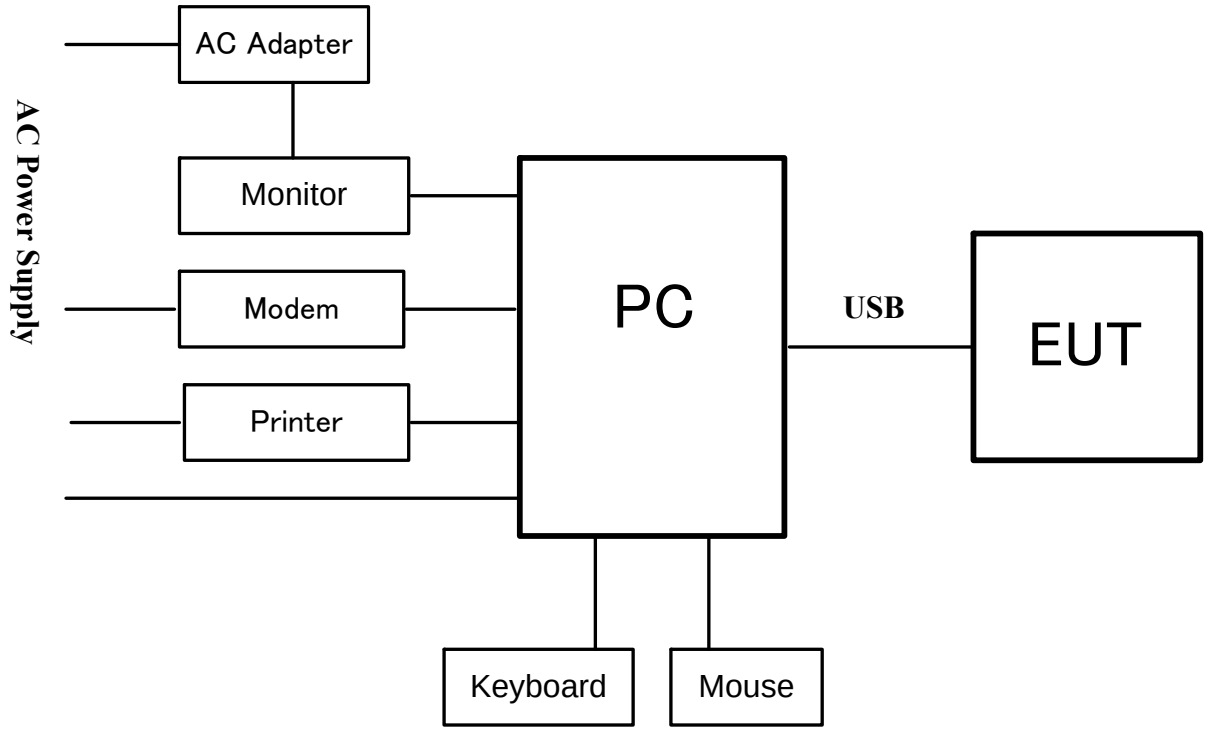

Figure 4-1 System Configuration Diagram

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5 TECHINICAL COUNTERMEASURE:

5.1 Countermeasure of the hardware

5.2 PTK-1240
Sensor-PCBA is contacted to Electrical-Steel-Sheet with two copper tapes.

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6 TEST RESULTS

6.1 RFI Voltage Measurement

6.1.1 Measurement Instrumentation Used

(*model/serial no./manufacturer/Tokin control no./last calibration/next calibration*)

Field strength meter.....(ESCI/100608/ ROHDE&SCHWARZ /---/22 Mar.'08/Mar.'09)
L.I.S.N.....(KNW-407/8-1866-7/Kyoritsu/LI075/23 Sep.'08/Sep.'09)
2nd L.I.S.N. .....(PN-T22/9401/Tokin/LI064/02 Oct.'08/Oct.'09)
Spectrum analyzer ..... (ESCI/100608/ ROHDE&SCHWARZ /---/22 Mar.'08/Mar.'09)
Coaxial cable ..... (RG-223U/---/ SUNNER/DK286/9 April.'08/April.'09)
Software.....(Software Data Calculation Software 2.04/---/AES/---/---/---)
Shielded Room ..... (Tsukuba No.2 S/---/Tokin/SA017/---/---)

The measurement instrumentation used, are calibrated according to Quality Manual.

6.1.2 Measurement Procedure

The power line conducted interference measurements were performed according to ANSI C63.4-2003 (In-house Test Procedure: FCC Part 15 Test Procedure / Document No. IS-QR-030 / Revision No. 2-3) in shielded room No.2.
The EUT placed on a non-conductive table such that it is 0.8m above the horizontal ground reference plane. The rear of the EUT separated from the vertical ground reference plane at 0.4m. Mains cable is longer than 1.0m, the excess folded at the centre into a bundle no longer than 0.4m. The EUT separated from any other ground plane at least 0.8m. There were no deviations from the standard. The standard limit was adopted CISPR 22:1997 Class B.
The EUT was plugged into the LISN and the frequency range of interest scanned.
Reported are maximized emission levels.
These tests were performed at 9kHz of 6dB bandwidth.

Test results were obtained from following equation.
Result (dBμV) = Level (dBμV) + Total Factor (dB)

6.1.3 Deviation from the specification: None

6.1.4 Measurement Uncertainty

Measurement uncertainty is +/-3.67dB(k=2).

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T. Hirahara

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6.1.5 Test Data

Table 6.1-1 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name:	PTK-1240	Optional:	KP-501E
Operating mode:	Normal Operation	Date of measurement:	September 22, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

	Frequency	Level		Total	Result		Limit		Margin	
		QP	AV	Factor	QP	AV	QP	AV	QP	AV
	(MHz)	(dBµV)		(dB)	(dBµV)		(dBµV)		(dB)	
N-E	0.672	34.0	30.5	0.1	34.1	30.6	56.0	46.0	21.9	15.4
	6.000	42.6	37.2	0.4	43.0	37.6	60.0	50.0	17.0	12.4
	8.666	40.0	34.9	0.4	40.4	35.3	60.0	50.0	19.6	14.7
	10.000	46.1	40.6	0.4	46.5	41.0	60.0	50.0	13.5	9.0
	11.333	50.3	45.6	0.5	50.8	46.1	60.0	50.0	9.2	3.9
	12.666	39.7	34.3	0.5	40.2	34.8	60.0	50.0	19.8	15.2
L1-E	0.667	35.7	31.6	0.1	35.8	31.7	56.0	46.0	20.2	14.3
	6.000	42.4	37.0	0.3	42.7	37.3	60.0	50.0	17.3	12.7
	8.666	39.6	34.5	0.4	40.0	34.9	60.0	50.0	20.0	15.1
	10.000	46.0	40.5	0.5	46.5	41.0	60.0	50.0	13.5	9.0
	11.333	50.2	45.0	0.6	50.8	45.6	60.0	50.0	9.2	4.4
	12.666	39.7	34.5	0.6	40.3	35.1	60.0	50.0	19.7	14.9

CISPR 22: 1997 Class B Limit

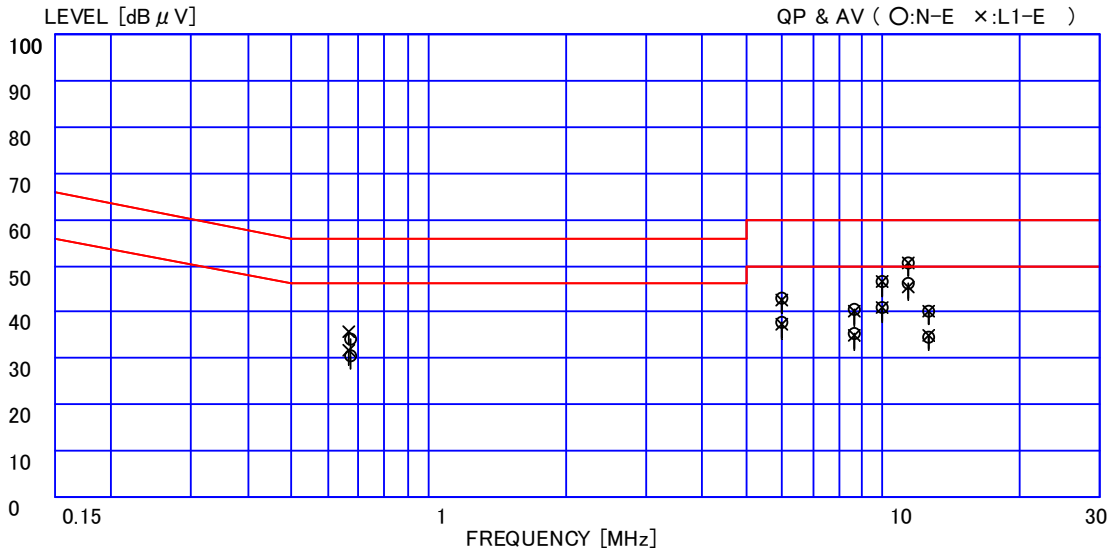

Figure 6.1-1 RFI Voltage Measurement Results

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Table 6.1-2 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name:	PTK-1240	Optional:	KP-300E
Operating mode:	Normal Operation	Date of measurement:	September 22, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

	Frequency	Level		Total	Result		Limit		Margin	
		QP	AV	Factor	QP	AV	QP	AV	QP	AV
	(MHz)	(dBμV)		(dB)	(dBμV)		(dBμV)		(dB)	
N-E	0.670	35.5	31.2	0.1	35.6	31.3	56.0	46.0	20.4	14.7
	6.000	42.0	36.8	0.4	42.4	37.2	60.0	50.0	17.6	12.8
	8.666	39.6	34.5	0.4	40.0	34.9	60.0	50.0	20.0	15.1
	10.000	47.0	41.3	0.4	47.4	41.7	60.0	50.0	12.6	8.3
	11.333	50.2	44.2	0.5	50.7	44.7	60.0	50.0	9.3	5.3
	12.666	39.4	33.6	0.5	39.9	34.1	60.0	50.0	20.1	15.9
L1-E	0.670	35.7	31.9	0.1	35.8	32.0	56.0	46.0	20.2	14.0
	6.000	42.0	36.8	0.3	42.3	37.1	60.0	50.0	17.7	12.9
	8.666	39.4	34.5	0.4	39.8	34.9	60.0	50.0	20.2	15.1
	10.000	46.6	41.5	0.5	47.1	42.0	60.0	50.0	12.9	8.0
	11.333	50.1	44.9	0.6	50.7	45.5	60.0	50.0	9.3	4.5
	12.666	39.3	33.6	0.6	39.9	34.2	60.0	50.0	20.1	15.8

CISPR 22: 1997 Class B Limit

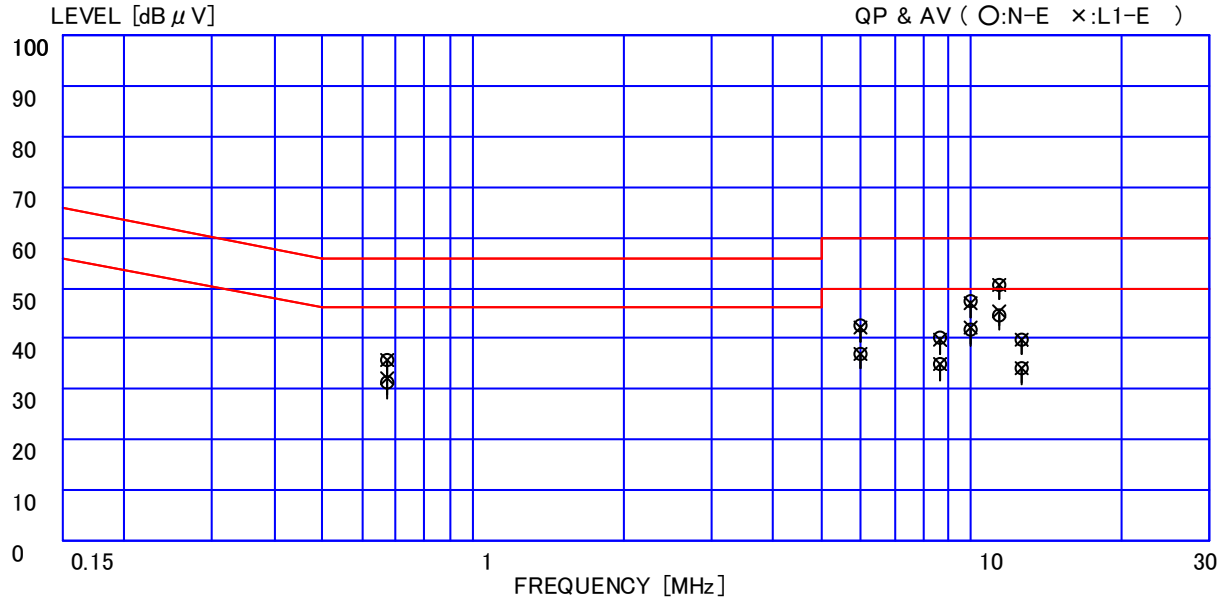

Figure 6.1-2 RFI Voltage Measurement Results

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Table 6.1-3 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name:	PTK-1240	Optional:	KP-130
Operating mode:	Normal Operation	Date of measurement:	September 22, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

	Frequency	Level		Total	Result		Limit		Margin	
		QP	AV	Factor	QP	AV	QP	AV	QP	AV
	(MHz)	(dBµV)		(dB)	(dBµV)		(dBµV)		(dB)	
N-E	0.671	35.7	31.8	0.1	35.8	31.9	56.0	46.0	20.2	14.1
	6.000	42.6	38.0	0.4	43.0	38.4	60.0	50.0	17.0	11.6
	8.666	39.0	34.0	0.4	39.4	34.4	60.0	50.0	20.6	15.6
	10.000	44.6	40.6	0.4	45.0	41.0	60.0	50.0	15.0	9.0
	11.333	50.4	44.6	0.5	50.9	45.1	60.0	50.0	9.1	4.9
	12.666	38.9	33.6	0.5	39.4	34.1	60.0	50.0	20.6	15.9
L1-E	0.671	35.6	31.8	0.1	35.7	31.9	56.0	46.0	20.3	14.1
	6.000	41.9	36.7	0.3	42.2	37.0	60.0	50.0	17.8	13.0
	8.666	39.1	34.0	0.4	39.5	34.4	60.0	50.0	20.5	15.6
	10.000	47.0	41.6	0.5	47.5	42.1	60.0	50.0	12.5	7.9
	11.333	50.3	45.0	0.6	50.9	45.6	60.0	50.0	9.1	4.4
	12.666	39.6	34.0	0.6	40.2	34.6	60.0	50.0	19.8	15.4

CISPR 22: 1997 Class B Limit

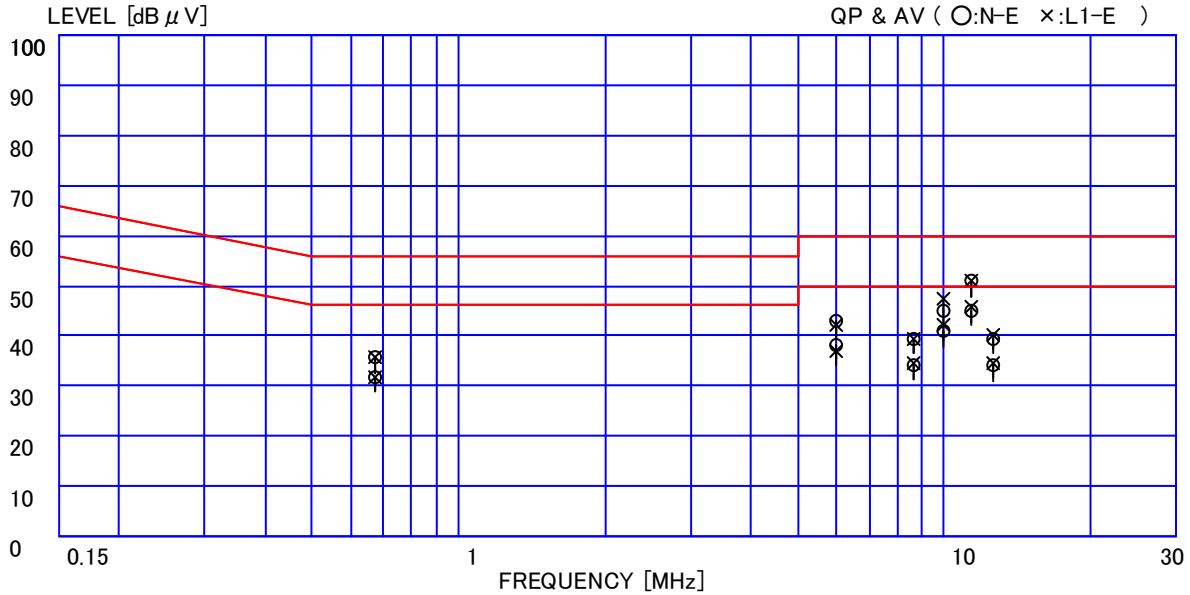

Figure 6.1-3 RFI Voltage Measurement Results

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Table 6.1-4 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name:	PTK-1240	Optional:	KP-400E
Operating mode:	Normal Operation	Date of measurement:	September 22, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

	Frequency	Level		Total	Result		Limit		Margin	
		QP	AV	Factor	QP	AV	QP	AV	QP	AV
	(MHz)	(dBµV)		(dB)	(dBµV)		(dBµV)		(dB)	
N-E	0.667	34.0	30.7	0.1	34.1	30.8	56.0	46.0	21.9	15.2
	6.000	42.7	37.7	0.4	43.1	38.1	60.0	50.0	16.9	11.9
	8.666	40.0	35.0	0.4	40.4	35.4	60.0	50.0	19.6	14.6
	10.000	45.6	40.0	0.4	46.0	40.4	60.0	50.0	14.0	9.6
	11.333	50.3	45.3	0.5	50.8	45.8	60.0	50.0	9.2	4.2
	12.666	38.4	32.0	0.5	38.9	32.5	60.0	50.0	21.1	17.5
L1-E	0.667	35.6	31.9	0.1	35.7	32.0	56.0	46.0	20.3	14.0
	6.000	42.5	37.6	0.3	42.8	37.9	60.0	50.0	17.2	12.1
	8.666	40.0	34.5	0.4	40.4	34.9	60.0	50.0	19.6	15.1
	10.000	45.7	40.0	0.5	46.2	40.5	60.0	50.0	13.8	9.5
	11.336	50.5	45.3	0.6	51.1	45.9	60.0	50.0	8.9	4.1
	12.666	38.6	33.4	0.6	39.2	34.0	60.0	50.0	20.8	16.0

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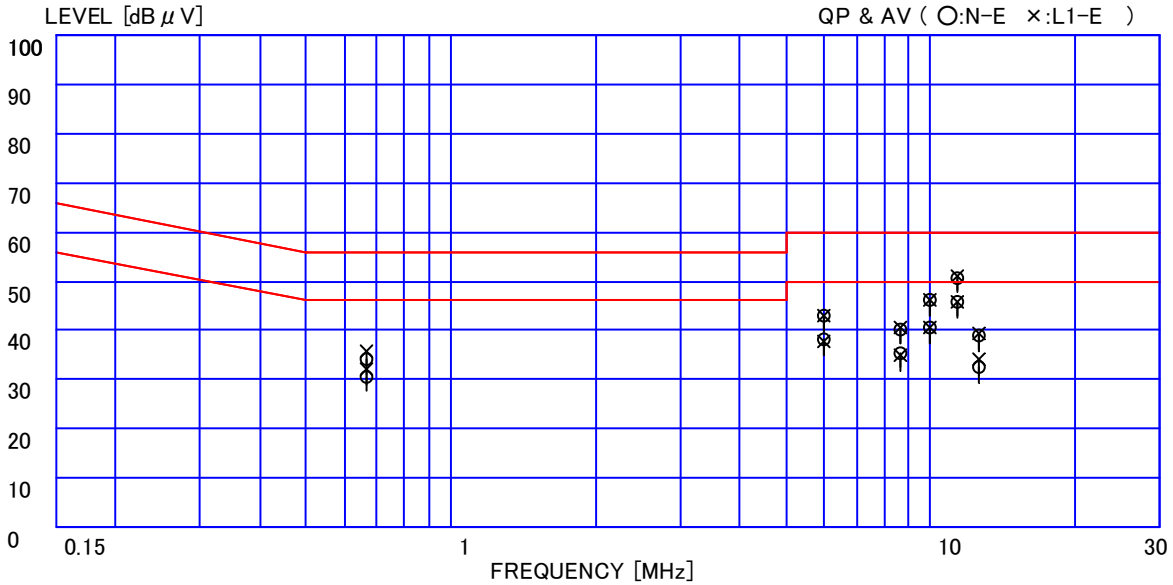

Figure 6.1-4 RFI Voltage Measurement Results

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Table 6.1-5 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name:	PTK-1240	Optional:	KP-701E
Operating mode:	Normal Operation	Date of measurement:	September 22, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

	Frequency	Level		Total	Result		Limit		Margin	
		QP	AV	Factor	QP	AV	QP	AV	QP	AV
	(MHz)	(dBµV)		(dB)	(dBµV)		(dBµV)		(dB)	
N-E	0.667	35.6	32.0	0.1	35.7	32.1	56.0	46.0	20.3	13.9
	6.000	42.6	37.0	0.4	43.0	37.4	60.0	50.0	17.0	12.6
	8.666	40.0	34.0	0.4	40.4	34.4	60.0	50.0	19.6	15.6
	10.000	46.2	40.0	0.4	46.6	40.4	60.0	50.0	13.4	9.6
	11.333	50.4	44.2	0.5	50.9	44.7	60.0	50.0	9.1	5.3
	12.666	40.0	31.3	0.5	40.5	31.8	60.0	50.0	19.5	18.2
L1-E	0.667	35.6	32.0	0.1	35.7	32.1	56.0	46.0	20.3	13.9
	6.000	42.4	37.0	0.3	42.7	37.3	60.0	50.0	17.3	12.7
	8.666	39.0	33.0	0.4	39.4	33.4	60.0	50.0	20.6	16.6
	10.000	46.1	40.1	0.5	46.6	40.6	60.0	50.0	13.4	9.4
	11.333	50.5	44.1	0.6	51.1	44.7	60.0	50.0	8.9	5.3
	12.666	39.1	32.0	0.6	39.7	32.6	60.0	50.0	20.3	17.4

CISPR 22: 1997 Class B Limit

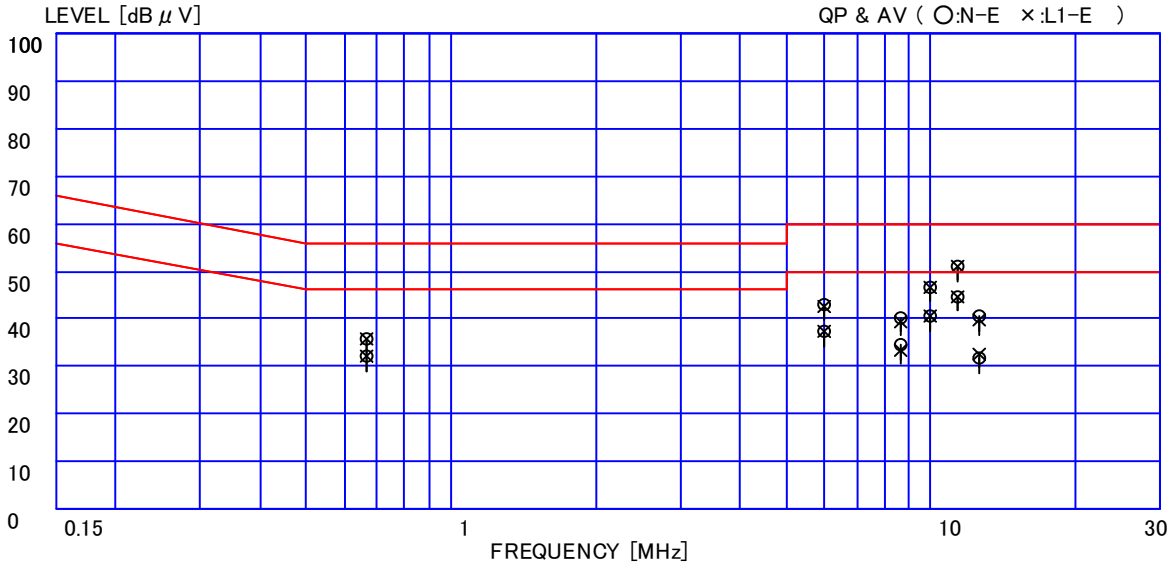

Figure 6.1-5 RFI Voltage Measurement Results

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Table 6.1-6 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name:	PTK-1240	Optional:	KC-100
Operating mode:	Normal Operation	Date of measurement:	September 22, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

	Frequency	Level		Total	Result		Limit		Margin	
		QP	AV	Factor	QP	AV	QP	AV	QP	AV
	(MHz)	(dBµV)		(dB)	(dBµV)		(dBµV)		(dB)	
N-E	0.667	35.5	33.0	0.1	35.6	33.1	56.0	46.0	20.4	12.9
	6.000	42.3	37.0	0.4	42.7	37.4	60.0	50.0	17.3	12.6
	8.666	40.0	33.0	0.4	40.4	33.4	60.0	50.0	19.6	16.6
	10.000	47.0	42.0	0.4	47.4	42.4	60.0	50.0	12.6	7.6
	11.333	50.4	45.2	0.5	50.9	45.7	60.0	50.0	9.1	4.3
	12.666	39.0	33.3	0.5	39.5	33.8	60.0	50.0	20.5	16.2
L1-E	0.667	35.5	32.0	0.1	35.6	32.1	56.0	46.0	20.4	13.9
	6.000	42.3	37.0	0.3	42.6	37.3	60.0	50.0	17.4	12.7
	8.666	40.0	33.5	0.4	40.4	33.9	60.0	50.0	19.6	16.1
	10.000	46.2	41.0	0.5	46.7	41.5	60.0	50.0	13.3	8.5
	11.333	50.3	45.0	0.6	50.9	45.6	60.0	50.0	9.1	4.4
	12.666	38.7	33.0	0.6	39.3	33.6	60.0	50.0	20.7	16.4

CISPR 22: 1997 Class B Limit

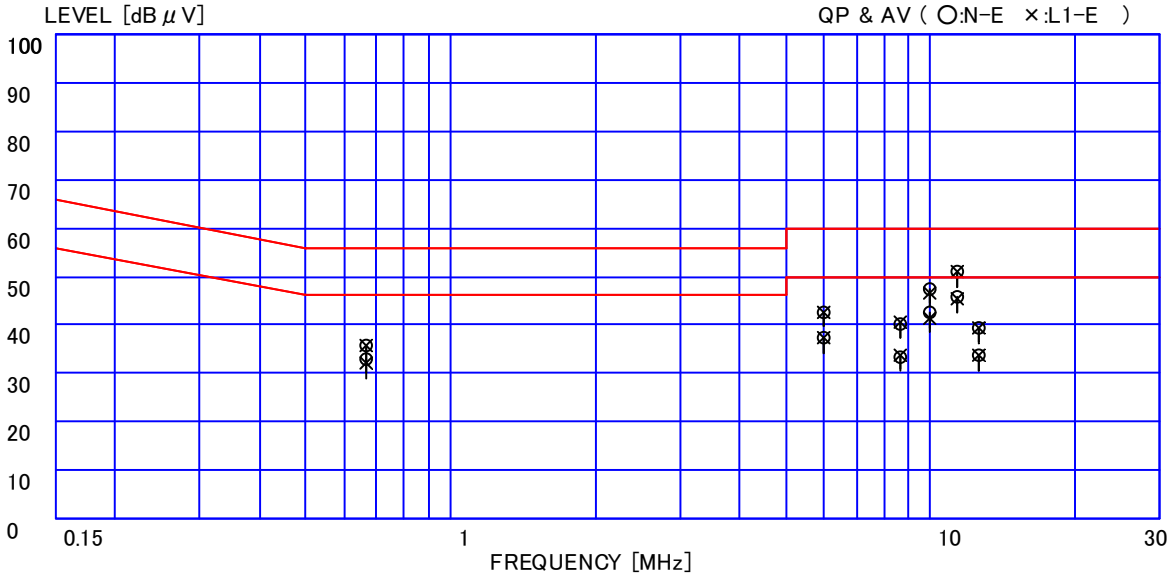

Figure 6.1-6 RFI Voltage Measurement Results

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11/Nov./2008

Tested by

Tohru Hirahara, Engineer

Table 6.1-7 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name:	PTK-1240	Optional:	KC-210
Operating mode:	Normal Operation	Date of measurement:	September 22, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

	Frequency	Level		Total	Result		Limit		Margin	
		QP	AV	Factor	QP	AV	QP	AV	QP	AV
	(MHz)	(dBµV)		(dB)	(dBµV)		(dBµV)		(dB)	
N-E	0.667	35.6	32.9	0.1	35.7	33.0	56.0	46.0	20.3	13.0
	6.000	44.0	38.2	0.4	44.4	38.6	60.0	50.0	15.6	11.4
	8.666	43.0	37.9	0.4	43.4	38.3	60.0	50.0	16.6	11.7
	10.000	40.0	45.0	0.4	40.4	45.4	60.0	50.0	19.6	4.6
	11.333	47.0	41.0	0.5	47.5	41.5	60.0	50.0	12.5	8.5
	12.666	38.0	32.0	0.5	38.5	32.5	60.0	50.0	21.5	17.5
L1-E	0.667	35.6	32.9	0.1	35.7	33.0	56.0	46.0	20.3	13.0
	6.000	43.5	38.2	0.3	43.8	38.5	60.0	50.0	16.2	11.5
	8.666	42.6	37.3	0.4	43.0	37.7	60.0	50.0	17.0	12.3
	10.000	40.0	34.5	0.5	40.5	35.0	60.0	50.0	19.5	15.0
	11.333	47.2	42.0	0.6	47.8	42.6	60.0	50.0	12.2	7.4
	12.666	37.6	32.0	0.6	38.2	32.6	60.0	50.0	21.8	17.4

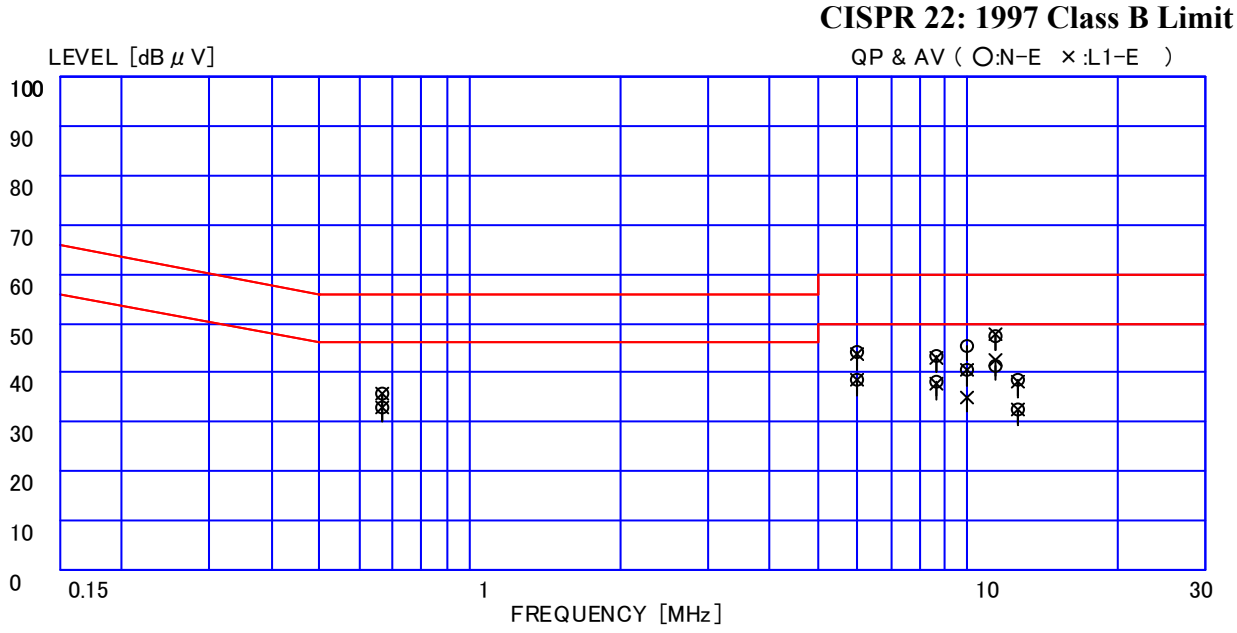

Figure 6.1-7 RFI Voltage Measurement Results

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6.2 RFI Field Strength Measurement

6.2.1 Measurement Instrumentation Used

(*model/serial no./manufacturer/Tokin control no./last calibration/next calibration*)

<0.009MHz to 30MHz>

Field strength meter..... (FCKL1528/137/Schwarzbeck/RE043/15 Sep.'08/Sep.'09)
Loop antenna..... (HFH2-Z2/100184/Rohde&Schwarz/AN051/29 Apr.'08/Apr.'09)
Spectrum analyzer ..... (E4407B/MY41444416/AgilentTechnology/SP065/19May.'08/May.'09)
Coaxial cable..... (5D-2W/---/Tokin/DKT12/01 Jul.'08/Jun.'09)
Software ..... (Software Data Calculation Software 2.04/---/AES/---/---/---)
Semi anechoic chamber.....(Tsukuba No.1 AC /---/Tokin/SA012/14 Jul.'08/Jul.'09)

<30MHz to 1000MHz>

Field strength meter..... (FCLE1535/104/Schwarzbeck/RE064/09 Apr.'08/Apr.'09)
Bi-Log Antenna..... (VULB9168/245/Schwarzbech/TB037/23 Aug.'08/Aug.'09)
Pre-amplifier ..... (310/261802/SONOMA/AM041/11 Nov.'07/Nov.'08*)
Spectrum analyzer ..... (E4407B/MY41444416/AgilentTechnology/SP065/19May.'08/May.'09)
Coaxial cable..... (---/---/HUBER+SUHNER/DKT45/15 Aug.'08/Aug.'09)
Software ..... (Software Data Calculation Software 2.04/---/AES/---/---/---)
Semi anechoic chamber..... (Tsukuba No.2 AC/---/Tokin/SA028/09 Aug.'08/Aug.'09)

The measurement instrumentation used, are calibrated according to Quality Manual.

* Note : After the test, calibration date was expired.

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6.2.2 Measurement Procedure

<0.009MHz to 30MHz>

Final test was performed according to ANSI C63.4-2003 at Semi anechoic chamber No.1. There were no deviations from the standard.
The EUT was placed along with the peripherals. The turntable was separated from the antenna distance 10 meter. Cables were placed in a position to produce maximum emissions as determined by experimentation, and operation mode was selected for maximum.
The frequencies and amplitudes of maximum emission were measured at varying azimuths, antenna polarities. Reported are maximized emission levels.
These tests were performed at the following condition.

<0.009MHz to 150kHz>

These tests were performed at 200Hz of 6dB bandwidth.
Test results were obtained from following equation.
Result (dBμV/m) = Level (dBμV) + Ant. Factor (dB/m) + Cable Loss (dB)

<150kHz to 30MHz>

These tests were performed at 9kHz of 6dB bandwidth.
Test results were obtained from following equation.
Result (dBμV/m) = Level (dBμV) + Ant. Factor (dB/m) + Cable Loss (dB)

<30MHz to 1000MHz>

Final test was performed according to ANSI C63.4-2003 (In-house Test Procedure : FCC Part 15 Test Procedure / Document No. IS-QR-030 / Revision No.2-3) at the semi anechoic chamber No.2. There were no deviations from the standard. The standard limit was adopted CISPR 22:1997 Class B.
The EUT placed upon a non-conductive table 0.8m above the horizontal ground reference plane.
The turntable was separated from the antenna distance 10 meter. Cables were placed in a position to produce maximum emissions as determined by experimentation, and operation mode was selected for maximum.
The frequencies and amplitudes of maximum emission were measured at varying azimuths, antenna polarities. Reported are maximized emission levels.
These tests were performed at 120kHz of 6dB bandwidth.

Test results were obtained from following equation.
Result (dBμV/m) = Level (dBμV) + Ant. Factor (dB/m) + Cable Loss (dB) – Amp. Gain (dB)

6.2.3 Deviation from the specification: None

6.2.4 Measurement Uncertainty

Measurement uncertainty of 0.009MHz to 30MHz is +/-4.04dB(k=2), 30MHz to 300MHz is +/-4.04dB(k=2), 300MHz to 1000MHz is +/-3.88dB(k=2).

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6.2.5 Test Data

Table 6.2-1 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-1240	Optional:	KP-501E
Operating mode:	Normal Operation	Date of measurement:	September 13, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	25 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

<0.009MHz to 30MHz>

Frequency (MHz)	Level (dBµV)	Cable Loss (dB)	Ant. Factor (dB/m)	Result (dBµV/m)	10m Limit (dBµV/m)	Margin (dB)
0.67	8.0	0.2	20.0	28.2	50.2	22.0
2.00	8.0	0.3	20.0	28.3	48.6	20.3
3.33	8.0	0.4	20.0	28.4	48.6	20.2
4.67	8.0	0.5	19.9	28.4	48.6	20.2

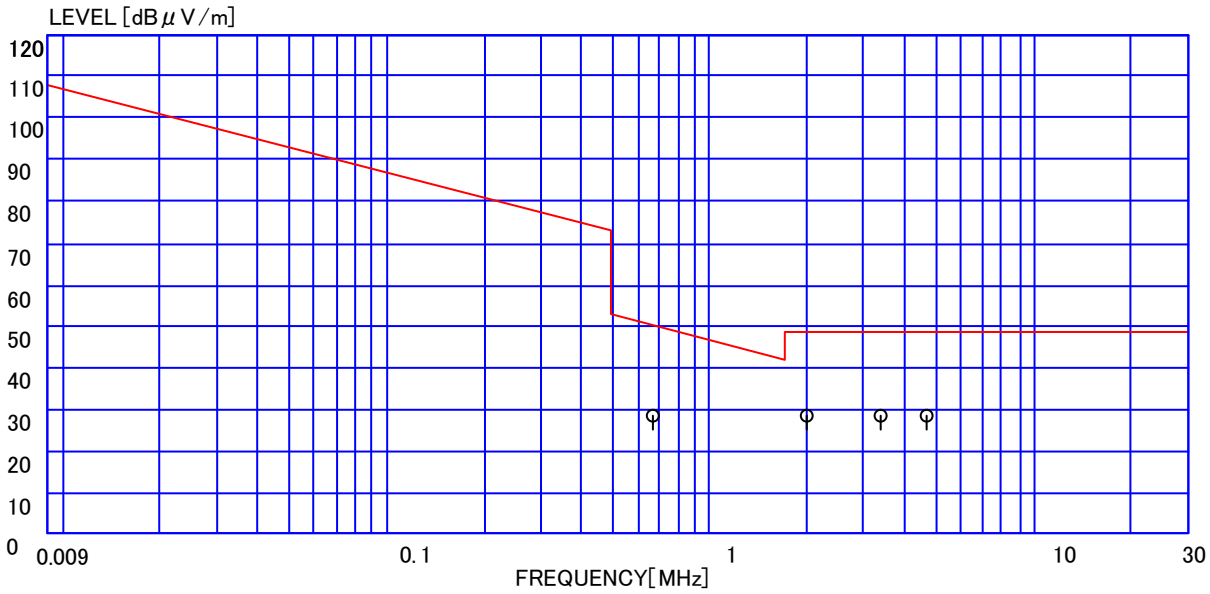

Figure 6.2-1 RFI Field Strength Measurement Results

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Table 6.2-2 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-1240	Optional:	KP-300E
Operating mode:	Normal Operation	Date of measurement:	September 13, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	25 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

<0.009MHz to 30MHz>

Frequency (MHz)	Level (dBμV)	Cable Loss (dB)	Ant. Factor (dB/m)	Result (dBμV/m)	10m Limit (dBμV/m)	Margin (dB)
0.67	8.0	0.2	20.0	28.2	50.2	22.0
2.00	8.0	0.3	20.0	28.3	48.6	20.3
3.33	8.0	0.4	20.0	28.4	48.6	20.2
4.67	8.0	0.5	19.9	28.4	48.6	20.2

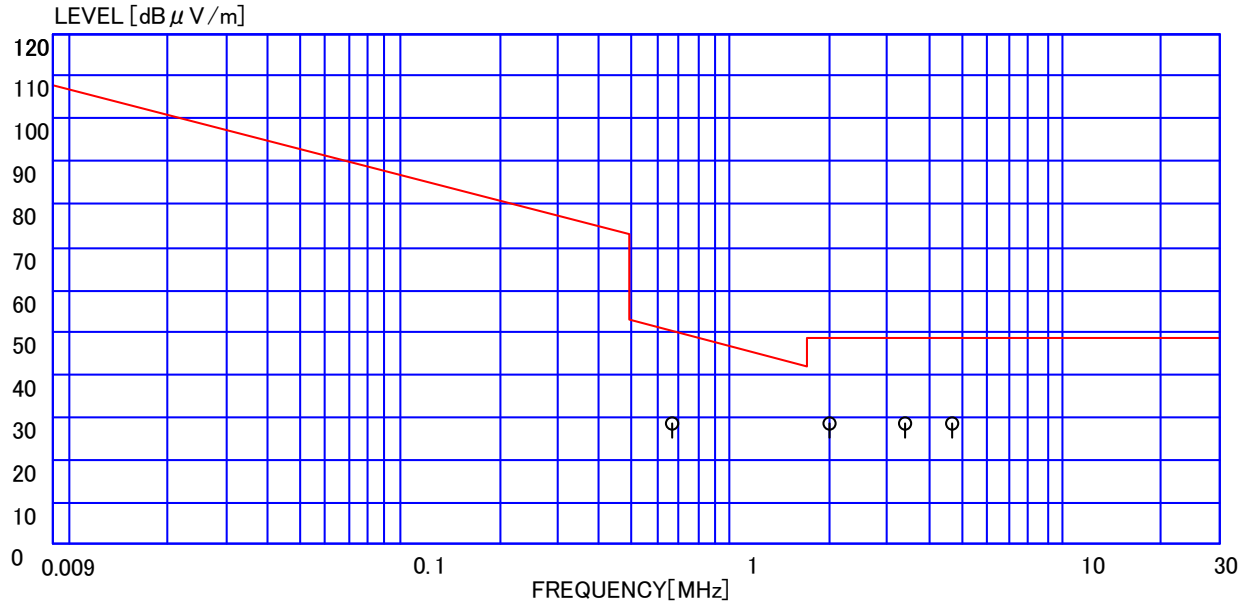

Figure 6.2-2 RFI Field Strength Measurement Results

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Table 6.2-3 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-1240	Optional:	KP-130
Operating mode:	Normal Operation	Date of measurement:	September 13, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	25 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

<0.009MHz to 30MHz>

Frequency (MHz)	Level (dBμV)	Cable Loss (dB)	Ant. Factor (dB/m)	Result (dBμV/m)	10m Limit (dBμV/m)	Margin (dB)
0.67	8.0	0.2	20.0	28.2	50.2	22.0
2.00	8.0	0.3	20.0	28.3	48.6	20.3
3.33	8.0	0.4	20.0	28.4	48.6	20.2
4.67	8.0	0.5	19.9	28.4	48.6	20.2

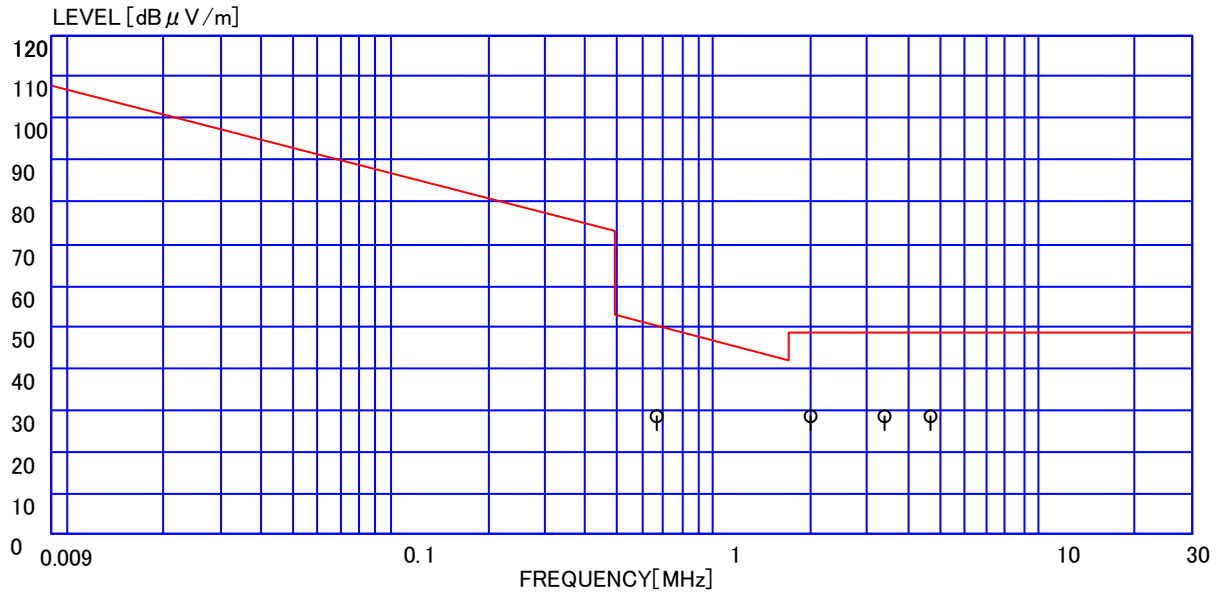

Figure 6.2-3 RFI Field Strength Measurement Results

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Table 6.2-4 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-1240	Optional:	KP-400E
Operating mode:	Normal Operation	Date of measurement:	September 13, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	25 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

<0.009MHz to 30MHz>

Frequency (MHz)	Level (dBµV)	Cable Loss (dB)	Ant. Factor (dB/m)	Result (dBµV/m)	10m Limit (dBµV/m)	Margin (dB)
0.67	8.0	0.2	20.0	28.2	50.2	22.0
2.00	8.0	0.3	20.0	28.3	48.6	20.3
3.33	8.0	0.4	20.0	28.4	48.6	20.2
4.67	8.0	0.5	19.9	28.4	48.6	20.2

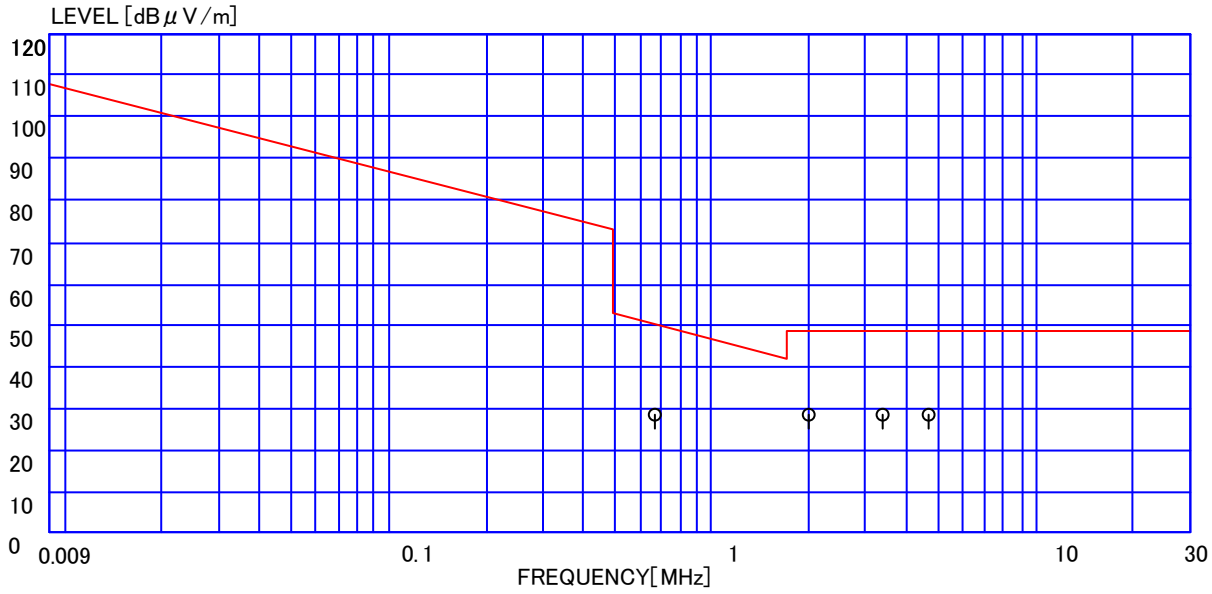

Figure 6.2-4 RFI Field Strength Measurement Results

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Table 6.2-5 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-1240	Optional:	KP-701E
Operating mode:	Normal Operation	Date of measurement:	September 13, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	25 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

<0.009MHz to 30MHz>

Frequency (MHz)	Level (dBμV)	Cable Loss (dB)	Ant. Factor (dB/m)	Result (dBμV/m)	10m Limit (dBμV/m)	Margin (dB)
0.67	8.0	0.2	20.0	28.2	50.2	22.0
2.00	8.0	0.3	20.0	28.3	48.6	20.3
3.33	8.0	0.4	20.0	28.4	48.6	20.2
4.67	8.0	0.5	19.9	28.4	48.6	20.2

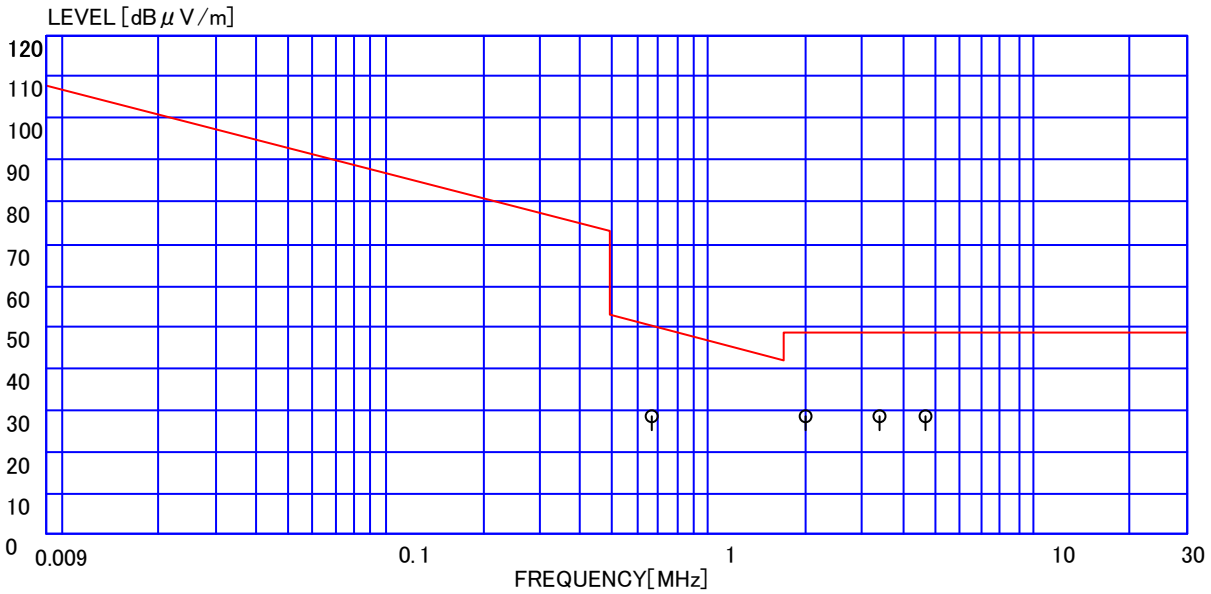

Figure 6.2-5 RFI Field Strength Measurement Results

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Table 6.2-6 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-1240	Optional:	KC-100
Operating mode:	Normal Operation	Date of measurement:	September 13, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	25 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

<0.009MHz to 30MHz>

Frequency (MHz)	Level (dBμV)	Cable Loss (dB)	Ant. Factor (dB/m)	Result (dBμV/m)	10m Limit (dBμV/m)	Margin (dB)
0.67	8.0	0.2	20.0	28.2	50.2	22.0
2.00	8.0	0.3	20.0	28.3	48.6	20.3
3.33	8.0	0.4	20.0	28.4	48.6	20.2
4.67	8.0	0.5	19.9	28.4	48.6	20.2

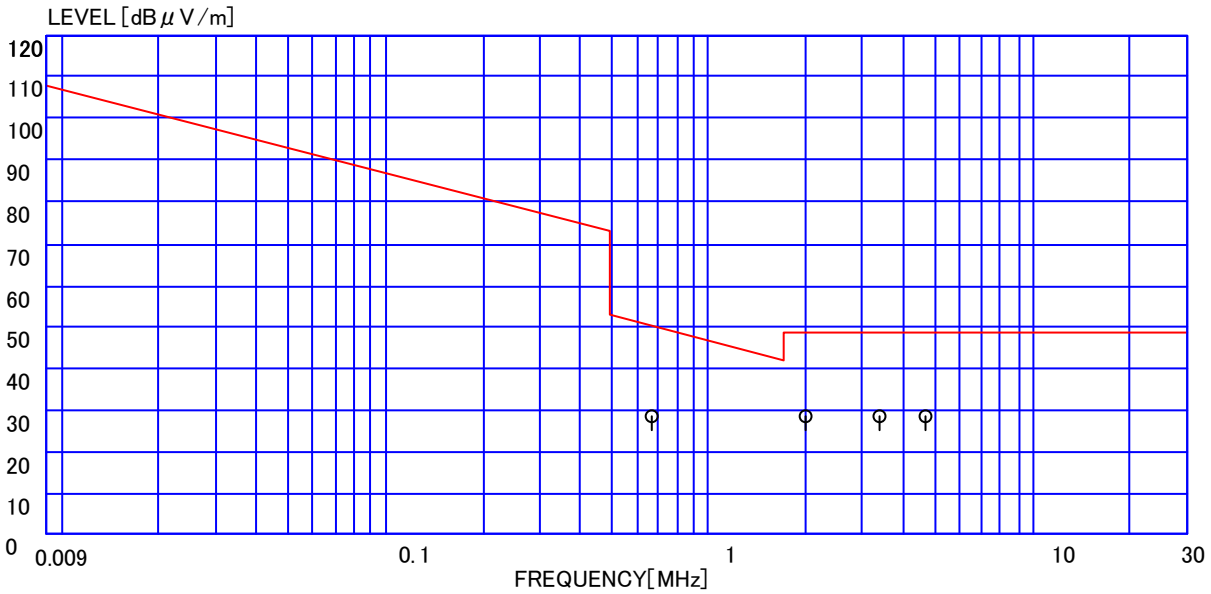

Figure 6.2-6 RFI Field Strength Measurement Results

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Table 6.2-7 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name: PTK-1240 Optional: KC-210
Operating mode: Normal Operation Date of measurement: September 13, 2008
Test procedure: ANSI C63.4-2003 Temperature: 25 degree C
Test condition: Power input 1phase AC120V(DC5V) Humidity: 58 %
<0.009MHz to 30MHz>

Frequency (MHz)	Level (dBµV)	Cable Loss (dB)	Ant. Factor (dB/m)	Result (dBµV/m)	10m Limit (dBµV/m)	Margin (dB)
0.67	8.0	0.2	20.0	28.2	50.2	22.0
2.00	8.0	0.3	20.0	28.3	48.6	20.3
3.33	8.0	0.4	20.0	28.4	48.6	20.2
4.67	8.0	0.5	19.9	28.4	48.6	20.2

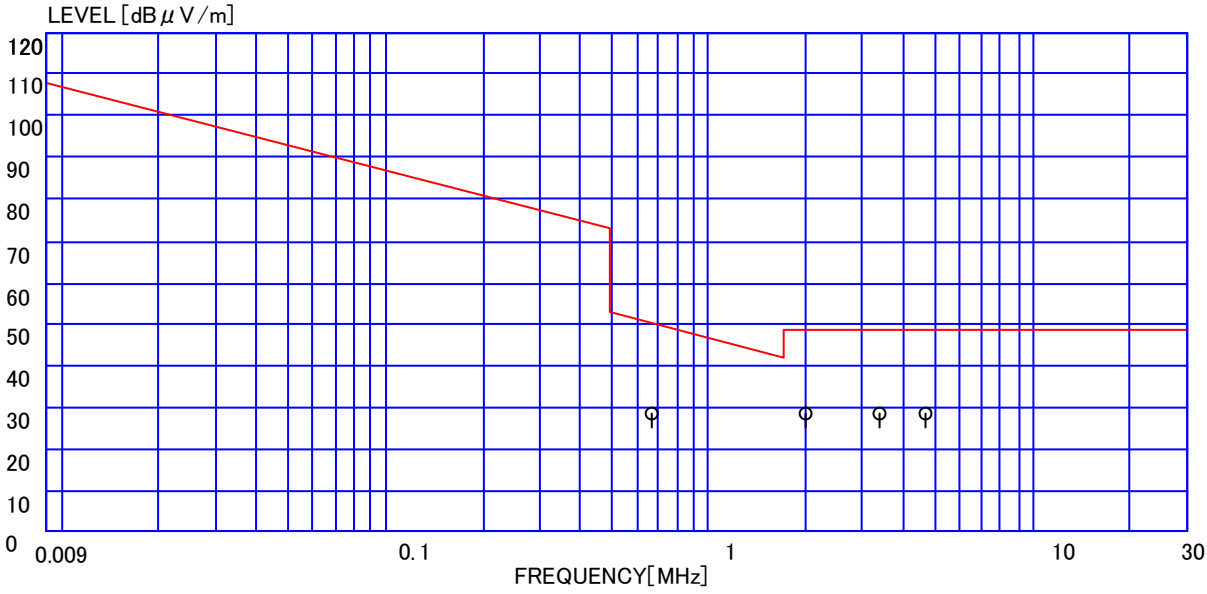

Figure 6.2-7 RFI Field Strength Measurement Results

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Table 6.2-8 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name: PTK-1240 Optional: KP-501E
Operating mode: Normal Operation Date of measurement: September 28, 2008
Test procedure: ANSI C63.4-2003 Temperature: 24 degree C
Test condition: Power input 1phase AC120V(DC5V) Humidity: 41 %
<30MHz to 1000MHz>

Frequency	Level		Cable	Amp.	Ant.	Result		10m	Margin	
	Ver.	Hor.	Loss	Gain	Factor	Ver.	Hor.	Limit	Ver.	Hor.
(MHz)	(dBμV)		(dB)	(dB)	(dB/m)	(dBμV/m)		dBμV/m	(dB)	
96.00	36.0	36.0	2.0	-31.9	8.3	14.4	14.4	30.0	15.6	15.6
108.00	42.0		2.1	-31.9	10.0	22.2		30.0	7.8	
137.48	34.0	34.0	2.4	-31.9	12.7	17.2	17.2	30.0	12.8	12.8
144.00	28.0	33.0	2.5	-31.9	13.0	11.6	16.6	30.0	18.4	13.4
180.00	40.0	36.0	2.8	-31.9	11.6	22.5	18.5	30.0	7.5	11.5
396.10		45.0	4.2	-31.7	15.4		32.9	37.0		4.1
480.00	30.0	20.0	4.7	-31.6	17.2	20.3	10.3	37.0	16.7	26.7
960.00	20.0	20.0	6.8	-29.7	23.3	20.4	20.4	37.0	16.6	16.6

CISPR 22: 1997 Class B Limit

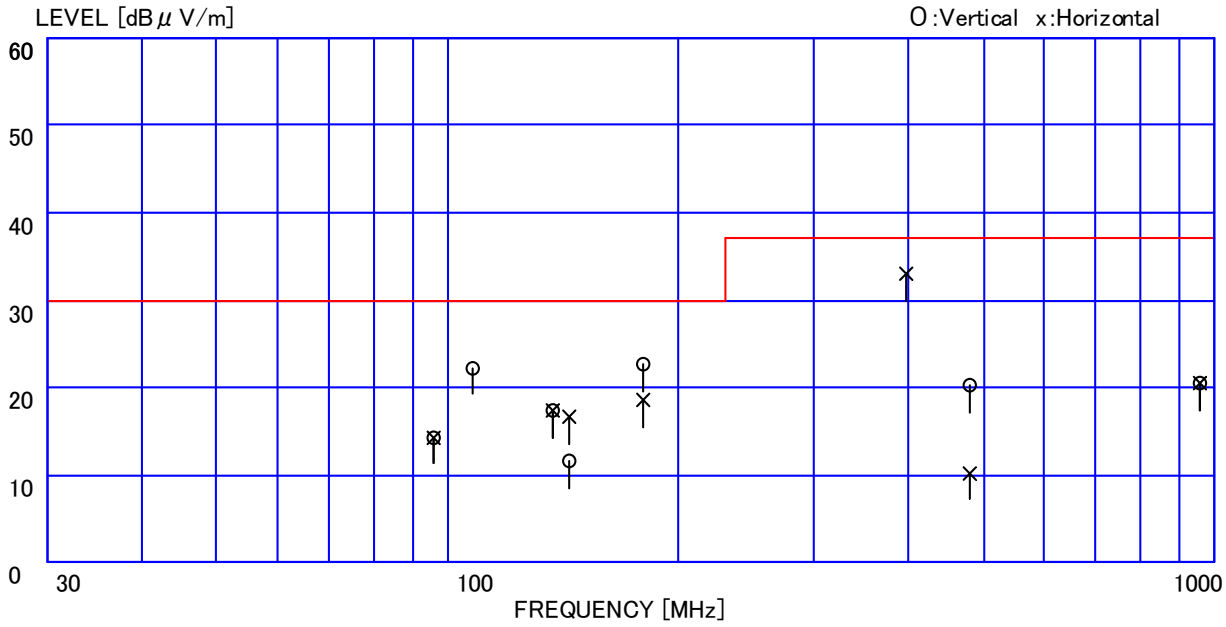

Figure 6.2-8 RFI Field Strength Measurement Results

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Table 6.2-9 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name: PTK-1240 Optional: KP-300E
Operating mode: Normal Operation Date of measurement: September 28, 2008
Test procedure: ANSI C63.4-2003 Temperature: 24 degree C
Test condition: Power input 1phase AC120V(DC5V) Humidity: 41 %
<30MHz to 1000MHz>

Frequency	Level		Cable	Amp.	Ant.	Result		10m	Margin	
	Ver.	Hor.	Loss	Gain	Factor	Ver.	Hor.	Limit	Ver.	Hor.
(MHz)	(dBµV)		(dB)	(dB)	(dB/m)	(dBµV/m)		dBµV/m	(dB)	
96.00	35.0	36.0	2.0	-31.9	8.3	13.4	14.4	30.0	16.6	15.6
108.00	40.0		2.1	-31.9	10.0	20.2		30.0	9.8	
137.48	34.0	32.0	2.4	-31.9	12.7	17.2	15.2	30.0	12.8	14.8
144.00	28.0	33.0	2.5	-31.9	13.0	11.6	16.6	30.0	18.4	13.4
180.00	42.0	36.0	2.8	-31.9	11.6	24.5	18.5	30.0	5.5	11.5
396.10		43.0	4.2	-31.7	15.4		30.9	37.0		6.1
480.00	30.0	20.0	4.7	-31.6	17.2	20.3	10.3	37.0	16.7	26.7
960.00	20.0	20.0	6.8	-29.7	23.3	20.4	20.4	37.0	16.6	16.6

CISPR 22: 1997 Class B Limit

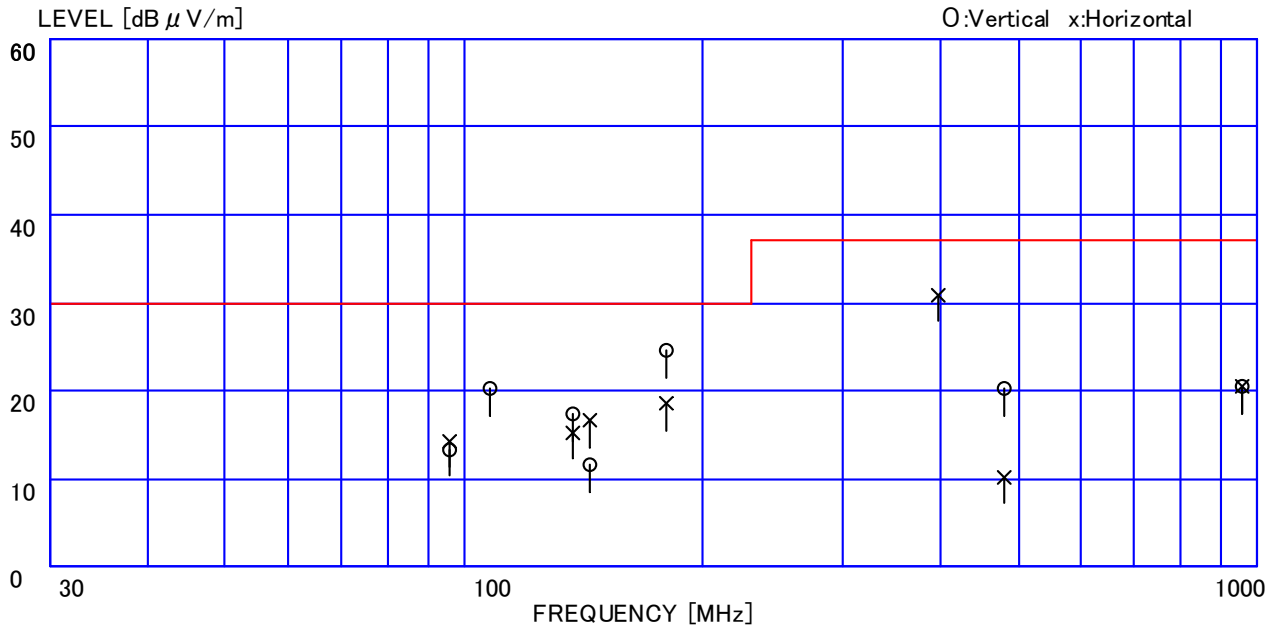

Figure 6.2-9 RFI Field Strength Measurement Results

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Table 6.2-10 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name: PTK-1240 Optional: KP-130
Operating mode: Normal Operation Date of measurement: September 28, 2008
Test procedure: ANSI C63.4-2003 Temperature: 24 degree C
Test condition: Power input 1phase AC120V(DC5V) Humidity: 41 %
<30MHz to 1000MHz>

Frequency	Level		Cable	Amp.	Ant.	Result		10m	Margin	
	Ver.	Hor.	Loss	Gain	Factor	Ver.	Hor.	Limit	Ver.	Hor.
(MHz)	(dBμV)		(dB)	(dB)	(dB/m)	(dBμV/m)		dBμV/m	(dB)	
96.00	35.0	36.0	2.0	-31.9	8.3	13.4	14.4	30.0	16.6	15.6
108.00	40.0		2.1	-31.9	10.0	20.2		30.0	9.8	
137.48	36.0	32.0	2.4	-31.9	12.7	19.2	15.2	30.0	10.8	14.8
144.00	30.0	33.0	2.5	-31.9	13.0	13.6	16.6	30.0	16.4	13.4
180.00	40.0	36.0	2.8	-31.9	11.6	22.5	18.5	30.0	7.5	11.5
396.10		40.0	4.2	-31.7	15.4		27.9	37.0		9.1
480.00	30.0	20.0	4.7	-31.6	17.2	20.3	10.3	37.0	16.7	26.7
960.00	20.0	20.0	6.8	-29.7	23.3	20.4	20.4	37.0	16.6	16.6

CISPR 22: 1997 Class B Limit

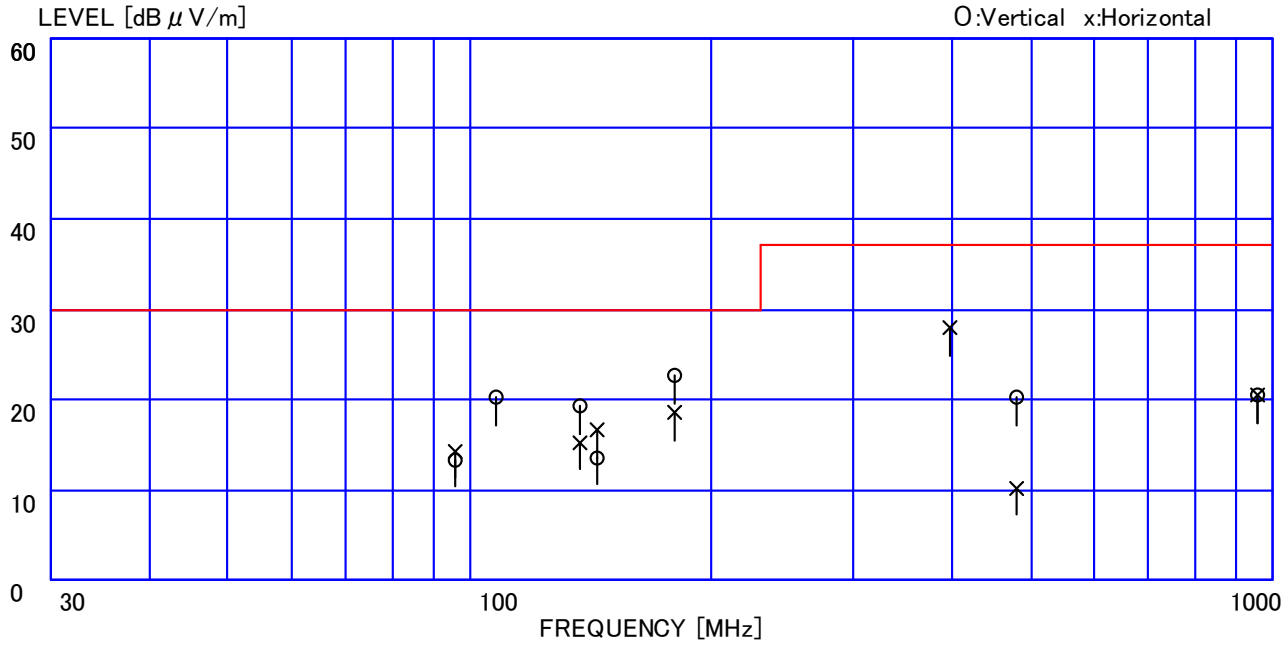

Figure 6.2-10 RFI Field Strength Measurement Results

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Table 6.2-11 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name: PTK-1240 Optional: KP-400E
Operating mode: Normal Operation Date of measurement: September 28, 2008
Test procedure: ANSI C63.4-2003 Temperature: 24 degree C
Test condition: Power input 1phase AC120V(DC5V) Humidity: 41 %
<30MHz to 1000MHz>

Frequency	Level		Cable	Amp.	Ant.	Result		10m	Margin	
	Ver.	Hor.	Loss	Gain	Factor	Ver.	Hor.	Limit	Ver.	Hor.
(MHz)	(dBμV)		(dB)	(dB)	(dB/m)	(dBμV/m)		dBμV/m	(dB)	
96.00	35.0	36.0	2.0	-31.9	8.3	13.4	14.4	30.0	16.6	15.6
108.00	42.0		2.1	-31.9	10.0	22.2		30.0	7.8	
137.48	36.0	32.0	2.4	-31.9	12.7	19.2	15.2	30.0	10.8	14.8
144.00	30.0	33.0	2.5	-31.9	13.0	13.6	16.6	30.0	16.4	13.4
180.00	42.0	35.0	2.8	-31.9	11.6	24.5	17.5	30.0	5.5	12.5
396.10		44.0	4.2	-31.7	15.4		31.9	37.0		5.1
480.00	30.0	20.0	4.7	-31.6	17.2	20.3	10.3	37.0	16.7	26.7
960.00	20.0	20.0	6.8	-29.7	23.3	20.4	20.4	37.0	16.6	16.6

CISPR 22: 1997 Class B Limit

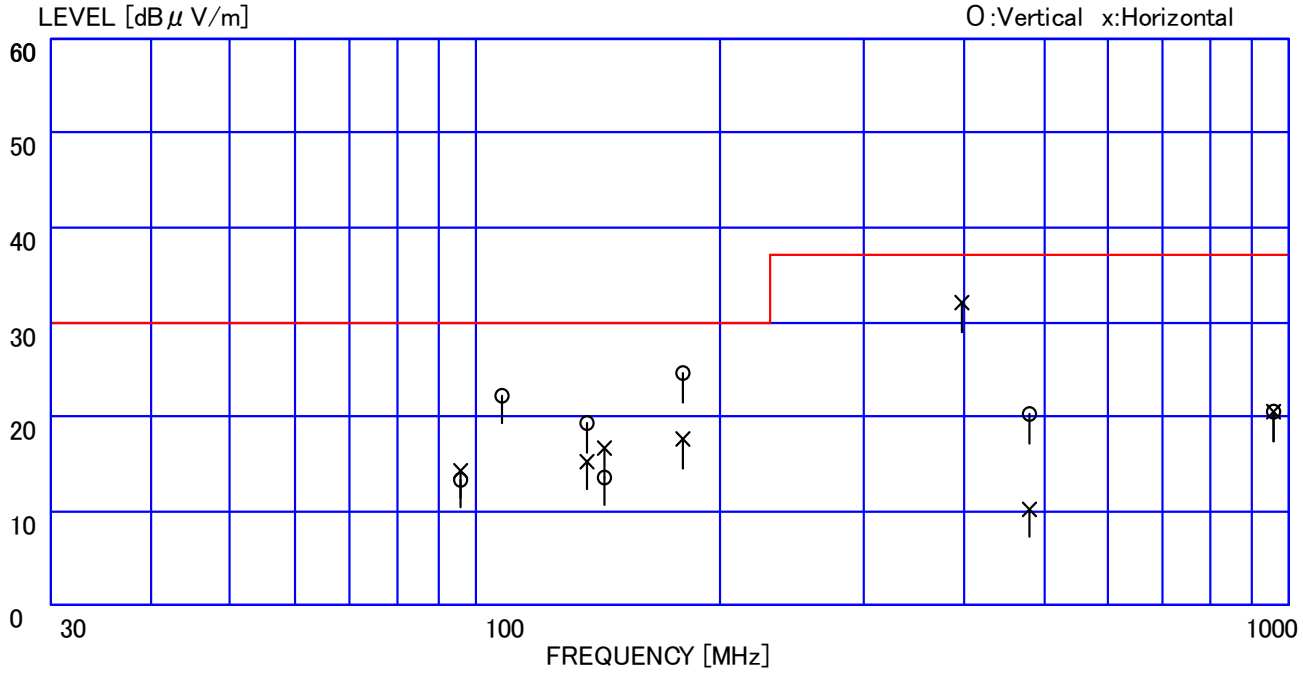

Figure 6.2-11 RFI Field Strength Measurement Results

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11/Nov./2008

Tested by

Tohru Hirahara, Engineer

Table 6.2-12 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name: PTK-1240 Optional: KP-701E
Operating mode: Normal Operation Date of measurement: September 28, 2008
Test procedure: ANSI C63.4-2003 Temperature: 24 degree C
Test condition: Power input 1phase AC120V(DC5V) Humidity: 41 %

<30MHz to 1000MHz>

Frequency	Level		Cable	Amp.	Ant.	Result		10m	Margin	
	Ver.	Hor.	Loss	Gain	Factor	Ver.	Hor.	Limit	Ver.	Hor.
(MHz)	(dBµV)		(dB)	(dB)	(dB/m)	(dBµV/m)		dBµV/m	(dB)	
96.00	36.0	36.0	2.0	-31.9	8.3	14.4	14.4	30.0	15.6	15.6
108.00	42.0		2.1	-31.9	10.0	22.2		30.0	7.8	
137.48	36.0	32.0	2.4	-31.9	12.7	19.2	15.2	30.0	10.8	14.8
144.00	32.0	35.0	2.5	-31.9	13.0	15.6	18.6	30.0	14.4	11.4
180.00	42.0	36.0	2.8	-31.9	11.6	24.5	18.5	30.0	5.5	11.5
396.10		44.0	4.2	-31.7	15.4		31.9	37.0		5.1
480.00	30.0	20.0	4.7	-31.6	17.2	20.3	10.3	37.0	16.7	26.7
960.00	20.0	20.0	6.8	-29.7	23.3	20.4	20.4	37.0	16.6	16.6

CISPR 22: 1997 Class B Limit

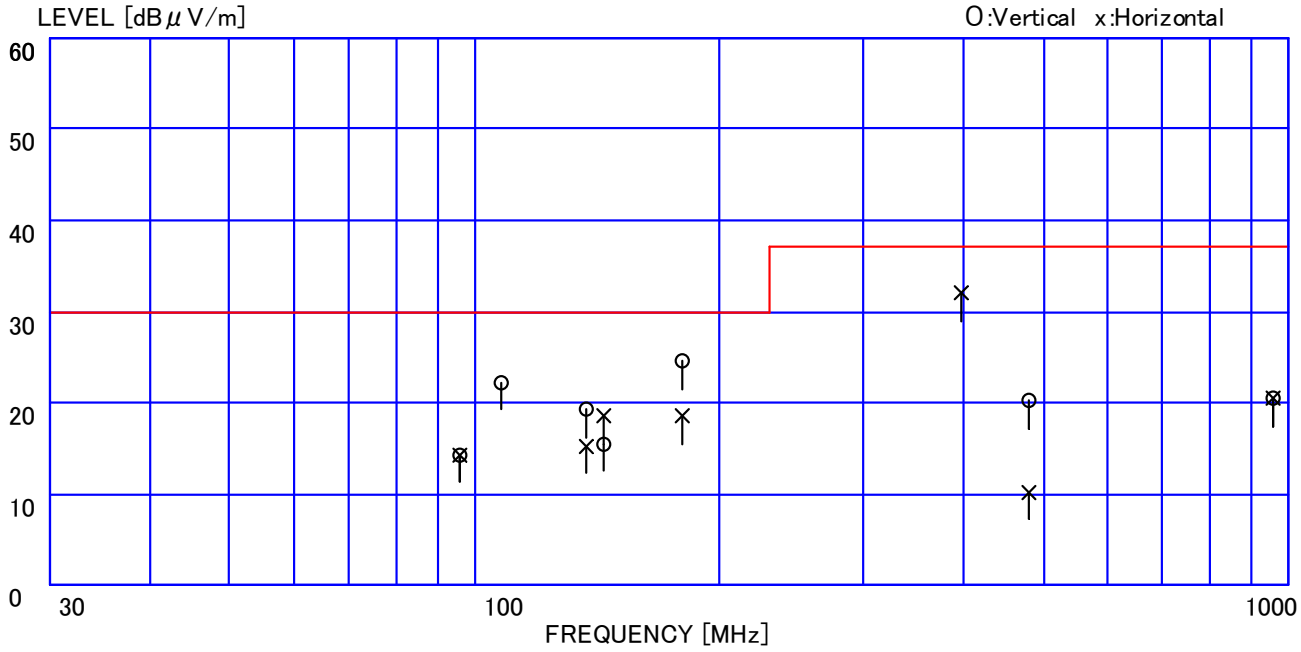

Figure 6.2-12 RFI Field Strength Measurement Results

Report processed by

Sayo Tsuchida
11/Nov./2008

Tested by

Tohru Hirahara, Engineer

Table 6.2-13 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name: PTK-1240 Optional: KC-100
Operating mode: Normal Operation Date of measurement: September 28, 2008
Test procedure: ANSI C63.4-2003 Temperature: 24 degree C
Test condition: Power input 1phase AC120V(DC5V) Humidity: 41 %
<30MHz to 1000MHz>

Frequency	Level		Cable	Amp.	Ant.	Result		10m	Margin	
	Ver.	Hor.	Loss	Gain	Factor	Ver.	Hor.	Limit	Ver.	Hor.
(MHz)	(dBμV)		(dB)	(dB)	(dB/m)	(dBμV/m)		dBμV/m	(dB)	
96.00	36.0	36.0	2.0	-31.9	8.3	14.4	14.4	30.0	15.6	15.6
108.00	42.0		2.1	-31.9	10.0	22.2		30.0	7.8	
137.48	36.0	32.0	2.4	-31.9	12.7	19.2	15.2	30.0	10.8	14.8
144.00	32.0	35.0	2.5	-31.9	13.0	15.6	18.6	30.0	14.4	11.4
180.00	40.0	33.0	2.8	-31.9	11.6	22.5	15.5	30.0	7.5	14.5
396.10		42.0	4.2	-31.7	15.4		29.9	37.0		7.1
480.00	30.0	20.0	4.7	-31.6	17.2	20.3	10.3	37.0	16.7	26.7
960.00	20.0	20.0	6.8	-29.7	23.3	20.4	20.4	37.0	16.6	16.6

CISPR 22: 1997 Class B Limit

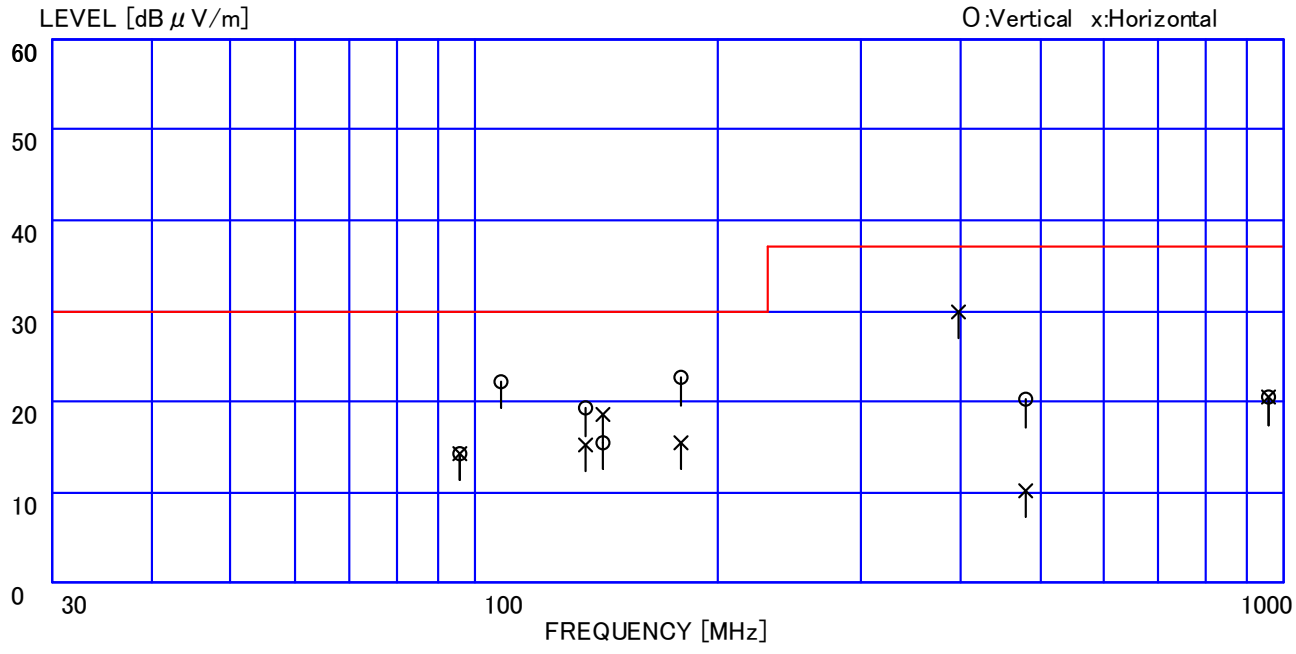

Figure 6.2-13 RFI Field Strength Measurement Results

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Sayo Tsuchida
11/Nov./2008

Tested by

Tohru Hirahara, Engineer

Table 6.2-14 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name: PTK-1240 Optional: KC-210
Operating mode: Normal Operation Date of measurement: September 28, 2008
Test procedure: ANSI C63.4-2003 Temperature: 24 degree C
Test condition: Power input 1phase AC120V(DC5V) Humidity: 41 %

<30MHz to 1000MHz>

Frequency	Level		Cable	Amp.	Ant.	Result		10m	Margin	
	Ver.	Hor.	Loss	Gain	Factor	Ver.	Hor.	Limit	Ver.	Hor.
(MHz)	(dBμV)		(dB)	(dB)	(dB/m)	(dBμV/m)		dBμV/m	(dB)	
96.00	36.0	36.0	2.0	-31.9	8.3	14.4	14.4	30.0	15.6	15.6
108.00	41.0		2.1	-31.9	10.0	21.2		30.0	8.8	
137.48	36.0	36.0	2.4	-31.9	12.7	19.2	19.2	30.0	10.8	10.8
144.00	32.0	35.0	2.5	-31.9	13.0	15.6	18.6	30.0	14.4	11.4
180.00	42.0	36.0	2.8	-31.9	11.6	24.5	18.5	30.0	5.5	11.5
396.10		40.0	4.2	-31.7	15.4		27.9	37.0		9.1
480.00	30.0	20.0	4.7	-31.6	17.2	20.3	10.3	37.0	16.7	26.7
960.00	20.0	20.0	6.8	-29.7	23.3	20.4	20.4	37.0	16.6	16.6

CISPR 22: 1997 Class B Limit

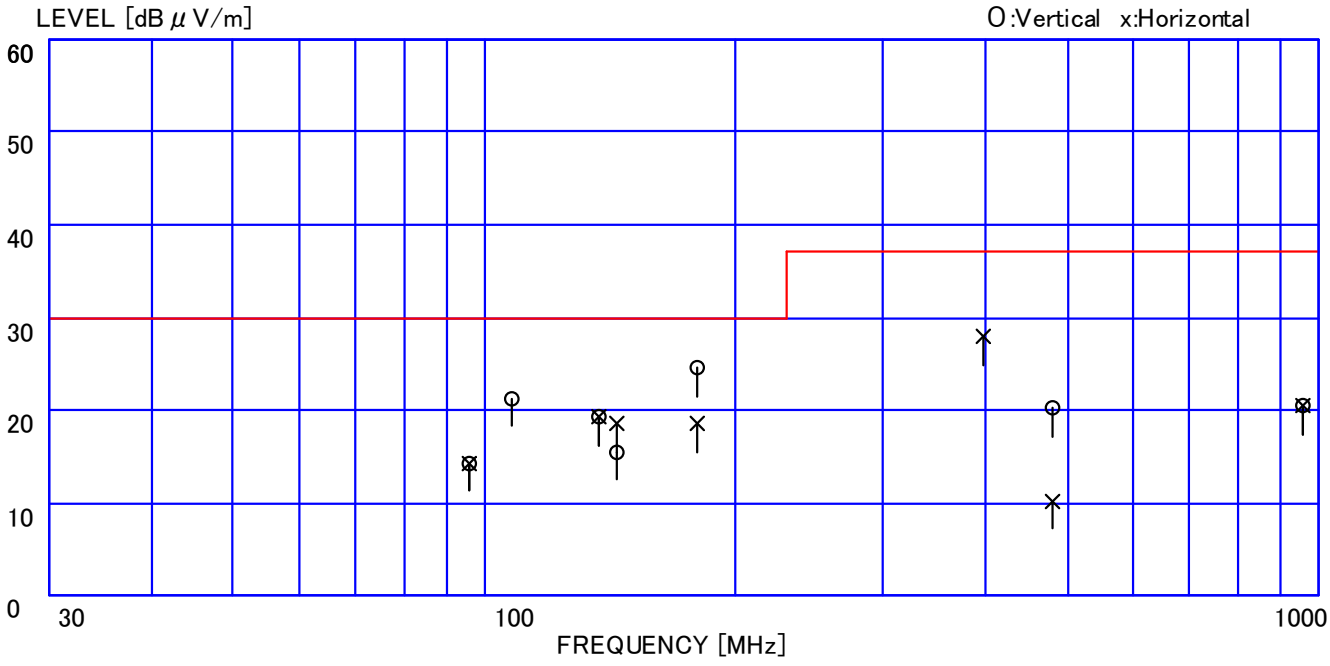

Figure 6.2-14 RFI Field Strength Measurement Results

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11/Nov./2008

Tested by

Tohru Hirahara, Engineer

Table 6.2-15 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-1240	Optional:	KP-501E (Left-handed person)
Operating mode:	Normal Operation	Date of measurement:	September 28, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	41 %

<30MHz to 1000MHz>

Frequency	Level		Cable	Amp.	Ant.	Result		10m	Margin	
	Ver.	Hor.	Loss	Gain	Factor	Ver.	Hor.	Limit	Ver.	Hor.
(MHz)	(dBµV)		(dB)	(dB)	(dB/m)	(dBµV/m)		dBµV/m	(dB)	
96.00	36.0	36.0	2.0	-31.9	8.3	14.4	14.4	30.0	15.6	15.6
108.00	40.0		2.1	-31.9	10.0	20.2		30.0	9.8	
137.48	30.0	34.0	2.4	-31.9	12.7	13.2	17.2	30.0	16.8	12.8
144.00	28.0	33.0	2.5	-31.9	13.0	11.6	16.6	30.0	18.4	13.4
180.00	42.0	36.0	2.8	-31.9	11.6	24.5	18.5	30.0	5.5	11.5
396.10		40.0	4.2	-31.7	15.4		27.9	37.0		9.1
480.00	30.0	20.0	4.7	-31.6	17.2	20.3	10.3	37.0	16.7	26.7
960.00	20.0	20.0	6.8	-29.7	23.3	20.4	20.4	37.0	16.6	16.6

CISPR 22: 1997 Class B Limit

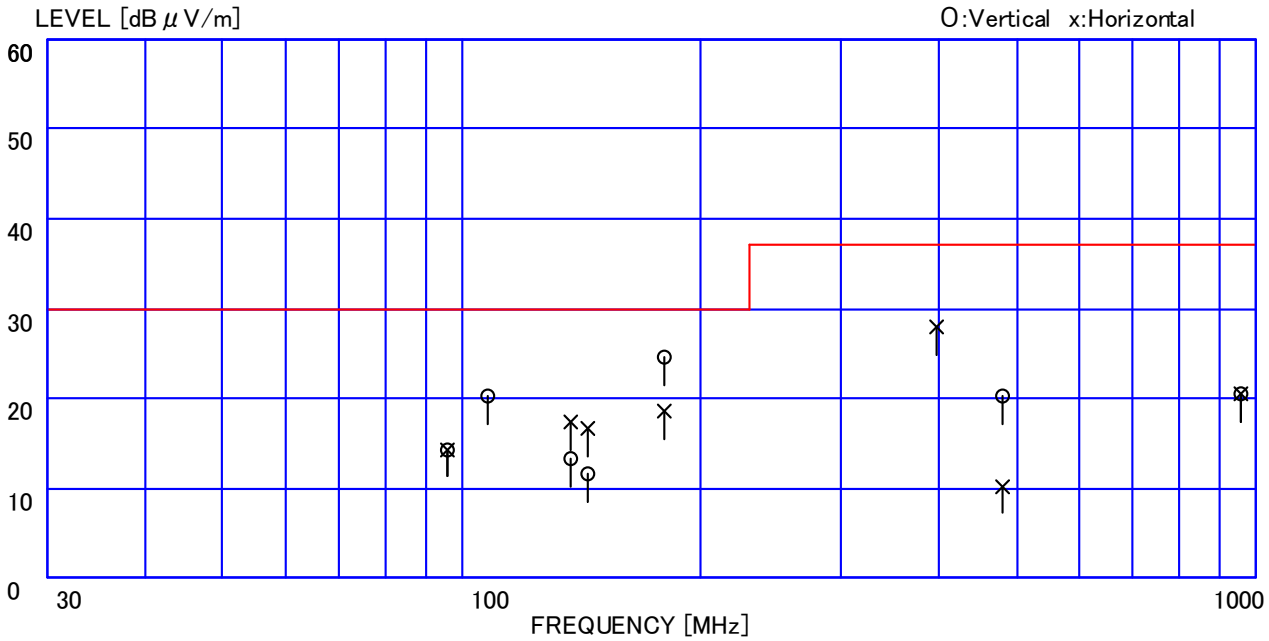

Figure 6.2-15 RFI Field Strength Measurement Results

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11/Nov./2008

Tested by

Tohru Hirahara, Engineer

6.3 Minimum Margin

Table 6.3-1 Minimum Margin

RFI Voltage Emission Level

Normal operation mode: 11.333 MHz, 3.9 dB (KP-501E)

RFI Field Strength Emission Level

Normal operation mode: 396.10 MHz, 4.1 dB (KP-501E)

Antenna Height: 2.58 m (Horizontal polarization)
Turntable Degrees: 253 deg

6.4 Calculation of Measurement of RFI Field Strength Emission

Table 6.4-1 Calculation of Measurement of RFI Field Strength Emission

Test results of measurement of RFI Field Strength Emission use the following calculation.

<0.009MHz to 30MHz>

E = V + AF+ CL

E:	Radiated Emission Level	(dBμV/m)
V:	Field Strength Meter Reading	(dBμV)
AF:	Antenna Factor	(dB/m)
CL:	Cable Loss	(dB)

<30MHz to 1000MHz>

E = V + AF+ CL – AG

E:	Radiated Emission Level	(dBμV/m)
V:	Field Strength Meter Reading	(dBμV)
AF:	Antenna Factor	(dB/m)
CL:	Cable Loss	(dB)
AG:	Amplifier Gain	(dB)

Report processed by

Sayo Tsuchida
11/Nov./2008

Tested by

Tohru Hirahara, Engineer