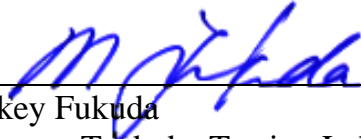


EMC TEST REPORT*for***Wacom Taiwan Information Co., Ltd.**

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

Equipment Under Test: Digitizer
Model Name: (1) PTK-840
(2) PTK-640
(3) PTK-440
Standard: FCC Part 15 Sub.part B/ Sub.partC Class B Digital Device
Tokin Report No.: TAP089141
Date of Issue: November 11, 2008

Approved by



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

-- ATTENTION --

The test results in this report relate only to the following EUT, and this report shall not be reproduced except in full, without the written approval of the laboratory. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.



NVLAP Lab. Code: 200221-0

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1 DESCRIPTION OF DEVICE

- A) Kind of Equipment : Digitizer
- B) FCC ID: HV4PTK
- C) Model Name : (1) PTK-840
(2) PTK-640
(3) PTK-440

**Differences among these models are as follows.*

	PTK-440	PTK-640	PTK-840
OLED ^(*) , OLED glass board	None	Two pieces Used	
Touch sensor board and SW board. (Internal structure)	On a Tablet board	Two pieces SW board and one sensor board.	
Product Dimension (W x D x H mm)	309.0 x 208.0 x 11.5	367.0 x 254.0 x 12.0	472.0 x 320.0 x 12.0
Spec of USB cable	2 kinds (left-handed :STJ-A277-02 Right-handed:STJ-A277-01)	1 kind (STJ-A276)	
Optional divices	6 kinds use	6 kinds use	7 kinds use

^(*)OLED : Organic Light-Emitting Diode

- D) Serial No. : 8GTS00071 (PTK-840)
8GTS00072 (PTK-640)
8HTS00032 (PTK-440)
- E) Type of Sample Tested : Pre-production
- F) Dimension: Width 472.0 x Depth 320.0 x Height 12.0 mm (PTK-840)
Width 367.0 x Depth 254.0 x Height 12.0 mm (PTK-640)
Width 309.0 x Depth 208.0 x Height 11.5 mm (PTK-440)
- 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)
DV 5V (EUT)
- J) Date of Manufacture : September 2008

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11/Nov./2008


Tohru Hirahara, Engineer

K) Manufacturer : Wacom Co., Ltd.
2-510-1 Toyonodai Otonemachi,
Kita Saitama-Gun, Saitama, Japan.

L) Attachment : USB cable
**Details of USB cables are as follows.*

Digitizer	Used USB Cable	Type
PTK-440	STJ-A277-01 (right-handed) STJ-A277-02 (left-handed)	L-form
PTK-640	STJ-A276	straight-form
PTK-840	STJ-A276	straight-form

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, and Mouse. Lens cursor is used for only PTK-840, and these devices do function for only the Digitizer.

N) Description of Operating : Normal Operation

O) Date of Sample Received : September 10, 2008

P) 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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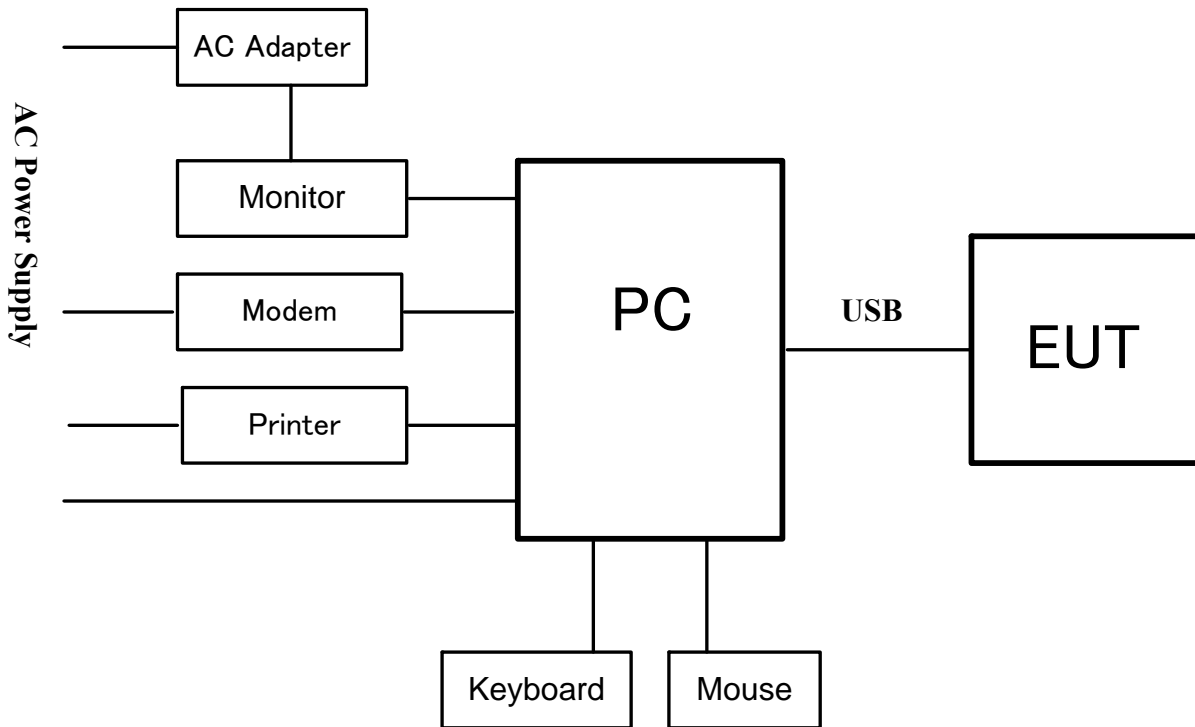


Figure 4-1 System Configuration Diagram

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T. Hirahara

Tohru Hirahara, Engineer

5 TECHNICAL COUNTERMEASURE:

5.1 Countermeasure of the hardware

5.2 Common to PTK-440, PTK-640, PTK-840
A PET-sheet added to Touch-ring SW.

5.3 PTK-440
An Aluminum-PET-sheet added to PCBA,
It is contacted to Electrical-Steel-Sheet and PCBA with two copper tapes.

5.4 PTK-840
An Aluminum-PET-sheet added to PCBA,
It is contacted to PCBA 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/---/---/---)
- Semi anechoic chamber..... (Tsukuba No.3 AC/---/Tokin/SA029/13 July.'08/ July.'09)

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) at Semi anechoic chamber No.3.

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.

$$\text{Result (dB}\mu\text{V)} = \text{Level (dB}\mu\text{V)} + \text{Total Factor (dB)}$$

6.1.3 Deviation from the specification: None

6.1.4 Measurement Uncertainty

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

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6.1.5 Test Data

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

Model name:	PTK-440	Optional:	KP-501E / STJ-A277-01
Operating mode:	Normal Operation	Date of measurement:	September 17, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	23 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dBμV)	AV (dBμV)		QP (dBμV)	AV (dBμV)	QP (dBμV)	AV (dBμV)	QP (dB)	AV (dB)
N-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	34.0	32.0	0.1	34.1	32.1	56.0	46.0	21.9	13.9
	2.609	29.0	28.0	0.4	29.4	28.4	56.0	46.0	26.6	17.6
	8.666	28.0	23.0	0.6	28.6	23.6	60.0	50.0	31.4	26.4
	10.000	34.0	28.0	0.6	34.6	28.6	60.0	50.0	25.4	21.4
	11.333	32.0	27.0	0.7	32.7	27.7	60.0	50.0	27.3	22.3
<hr/>										
L1-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	34.0	32.0	0.1	34.1	32.1	56.0	46.0	21.9	13.9
	2.609	29.0	28.0	0.4	29.4	28.4	56.0	46.0	26.6	17.6
	8.666	28.0	23.0	0.7	28.7	23.7	60.0	50.0	31.3	26.3
	10.000	34.0	28.0	0.7	34.7	28.7	60.0	50.0	25.3	21.3
	11.333	32.0	27.0	0.8	32.8	27.8	60.0	50.0	27.2	22.2

CISPR 22: 1997 Class B Limit

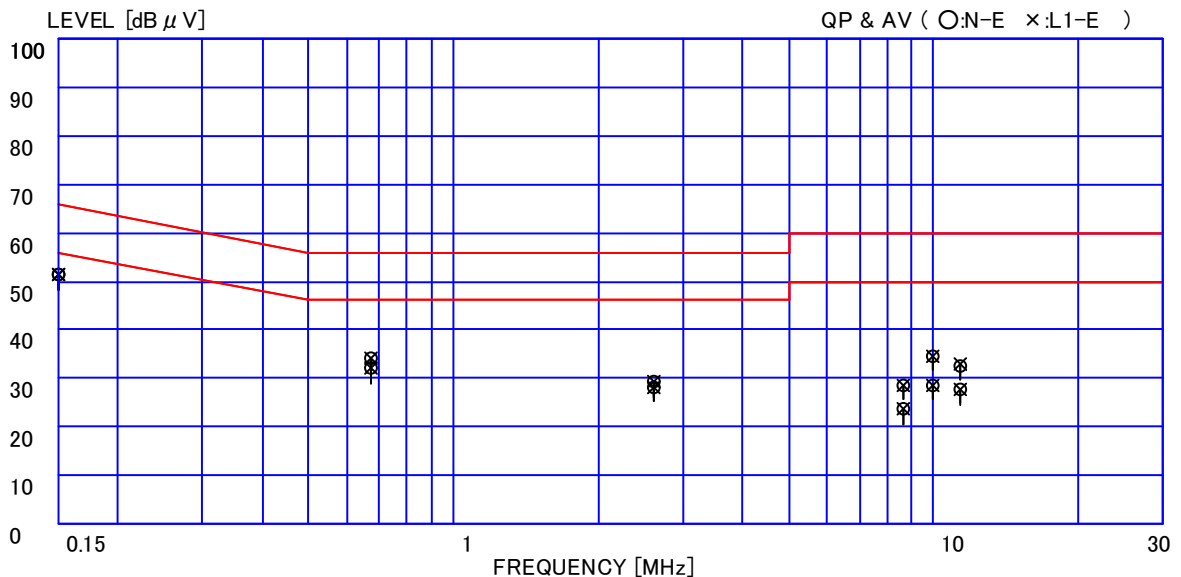


Figure 6.1-1 RFI Voltage Measurement Results

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

Model name: PTK-440 **Optional:** KP-501E / STJ-A277-02
Operating mode: Normal Operation **Date of measurement:** September 17, 2008
Test procedure: ANSI C63.4-2003 **Temperature:** 23 degree C
Test condition: Power input 1phase AC120V(DC5V) **Humidity:** 58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dBμV)	AV		QP (dBμV)	AV	QP (dBμV)	AV	QP (dB)	AV
N-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	34.0	32.0	0.1	34.1	32.1	56.0	46.0	21.9	13.9
	2.609	30.0	28.0	0.4	30.4	28.4	56.0	46.0	25.6	17.6
	8.666	27.0	21.0	0.6	27.6	21.6	60.0	50.0	32.4	28.4
	10.000	33.0	27.0	0.6	33.6	27.6	60.0	50.0	26.4	22.4
	11.333	30.0	25.0	0.7	30.7	25.7	60.0	50.0	29.3	24.3
<hr/>										
L1-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	34.0	32.0	0.1	34.1	32.1	56.0	46.0	21.9	13.9
	2.609	29.0	28.0	0.4	29.4	28.4	56.0	46.0	26.6	17.6
	8.666	28.0	22.0	0.7	28.7	22.7	60.0	50.0	31.3	27.3
	10.000	33.0	27.0	0.7	33.7	27.7	60.0	50.0	26.3	22.3
	11.333	30.0	26.0	0.8	30.8	26.8	60.0	50.0	29.2	23.2

CISPR 22: 1997 Class B Limit

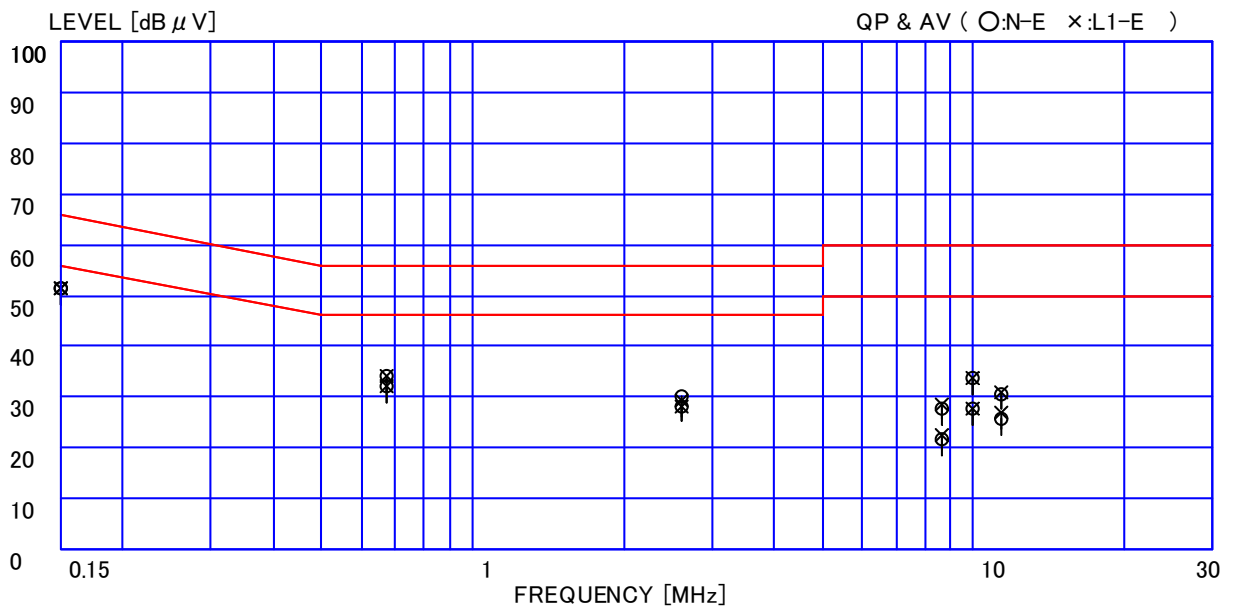


Figure 6.1-2 RFI Voltage Measurement Results

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

Model name: PTK-640 **Optional:** KP-501E / STJ-A276
Operating mode: Normal Operation **Date of measurement:** September 17, 2008
Test procedure: ANSI C63.4-2003 **Temperature:** 23 degree C
Test condition: Power input 1phase AC120V(DC5V) **Humidity:** 58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dBμV)	AV (dBμV)		QP (dBμV)	AV (dBμV)	QP (dBμV)	AV (dBμV)	QP (dB)	AV (dB)
N-E	0.150	50.0	50.0	0.4	50.4	50.4	66.0	56.0	15.6	5.6
	0.670	34.0	31.0	0.1	34.1	31.1	56.0	46.0	21.9	14.9
	2.012	29.0	28.0	0.3	29.3	28.3	56.0	46.0	26.7	17.7
	8.666	36.0	30.0	0.6	36.6	30.6	60.0	50.0	23.4	19.4
	10.000	48.0	44.0	0.6	48.6	44.6	60.0	50.0	11.4	5.4
	11.333	40.0	30.0	0.7	40.7	30.7	60.0	50.0	19.3	19.3
<hr/>										
L1-E	0.150	50.0	50.0	0.4	50.4	50.4	66.0	56.0	15.6	5.6
	0.670	34.0	31.0	0.1	34.1	31.1	56.0	46.0	21.9	14.9
	2.012	29.0	28.0	0.3	29.3	28.3	56.0	46.0	26.7	17.7
	8.666	36.0	30.0	0.7	36.7	30.7	60.0	50.0	23.3	19.3
	10.000	47.0	42.0	0.7	47.7	42.7	60.0	50.0	12.3	7.3
	11.333	39.0	33.0	0.8	39.8	33.8	60.0	50.0	20.2	16.2

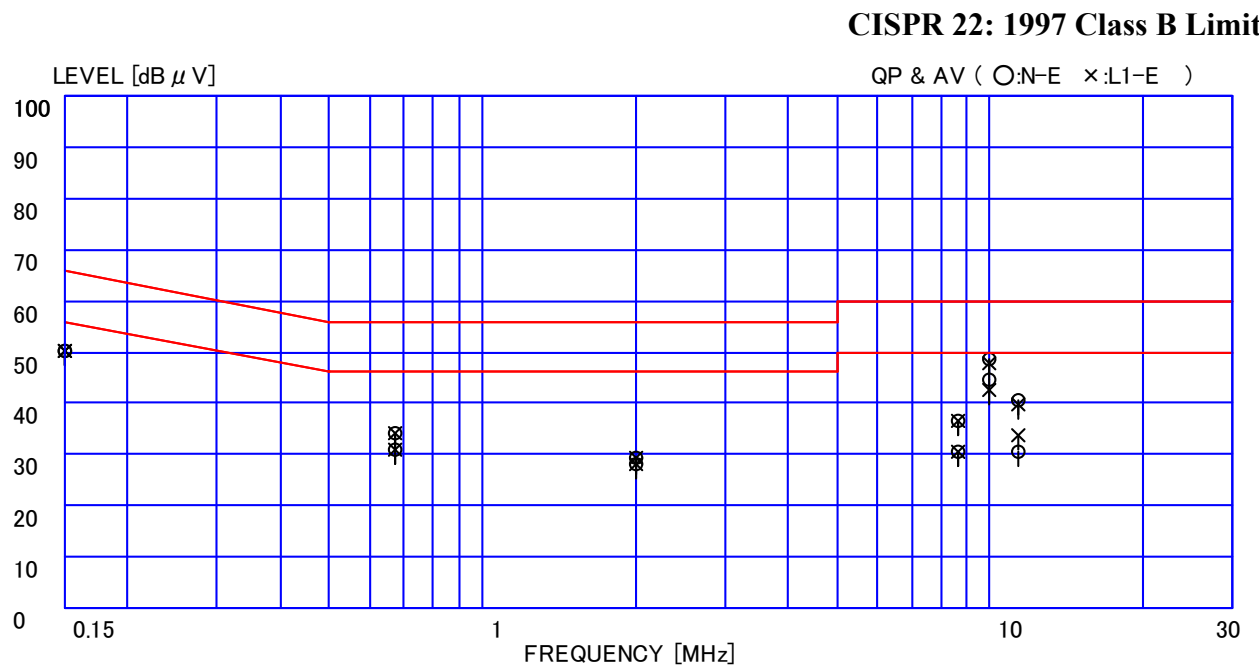


Figure 6.1-3 RFI Voltage Measurement Results

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

Model name: PTK-840 **Optional:** KP-501E / STJ-A276
Operating mode: Normal Operation **Date of measurement:** September 17, 2008
Test procedure: ANSI C63.4-2003 **Temperature:** 23 degree C
Test condition: Power input 1phase AC120V(DC5V) **Humidity:** 58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dBμV)	AV (dBμV)		QP (dBμV)	AV (dBμV)	QP (dBμV)	AV (dBμV)	QP (dB)	AV (dB)
N-E	0.150	50.0	50.0	0.4	50.4	50.4	66.0	56.0	15.6	5.6
	0.670	32.0	29.0	0.1	32.1	29.1	56.0	46.0	23.9	16.9
	2.598	34.0	30.0	0.4	34.4	30.4	56.0	46.0	21.6	15.6
	7.333	44.0	38.0	0.6	44.6	38.6	60.0	50.0	15.4	11.4
	8.666	51.0	45.5	0.6	51.6	46.1	60.0	50.0	8.4	3.9
	10.000	47.0	41.0	0.6	47.6	41.6	60.0	50.0	12.4	8.4
L1-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	33.0	30.0	0.1	33.1	30.1	56.0	46.0	22.9	15.9
	2.598	34.0	31.0	0.4	34.4	31.4	56.0	46.0	21.6	14.6
	7.333	45.0	39.0	0.6	45.6	39.6	60.0	50.0	14.4	10.4
	8.666	51.0	45.5	0.7	51.7	46.2	60.0	50.0	8.3	3.8
	10.000	46.0	41.0	0.7	46.7	41.7	60.0	50.0	13.3	8.3

CISPR 22: 1997 Class B Limit

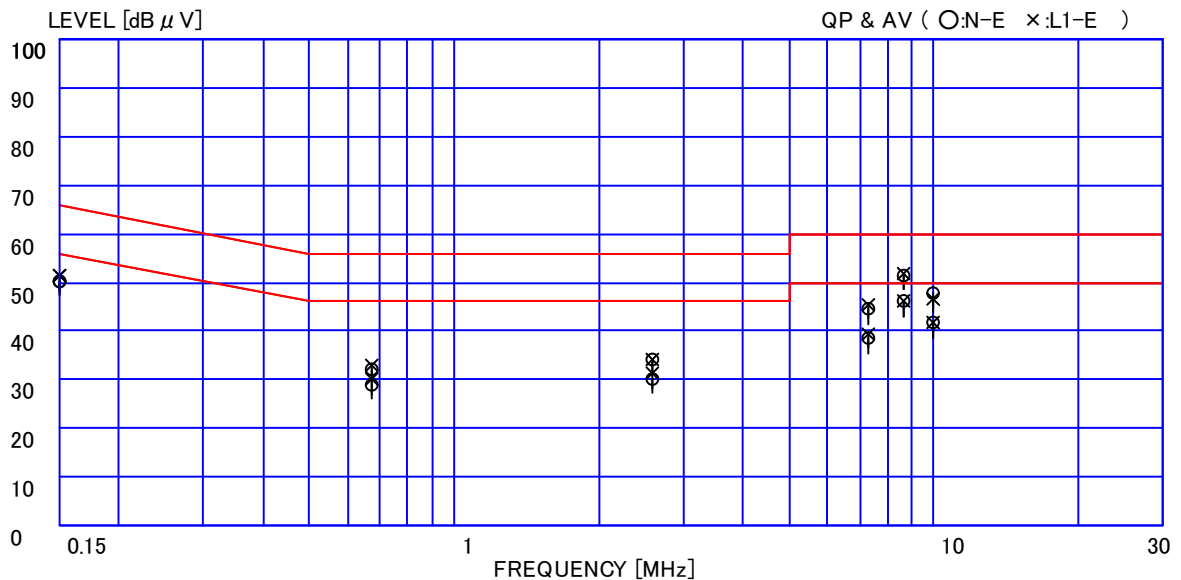


Figure 6.1-4 RFI Voltage Measurement Results

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

Model name: PTK-840 **Optional:** KP-300E / STJ-A276
Operating mode: Normal Operation **Date of measurement:** September 17, 2008
Test procedure: ANSI C63.4-2003 **Temperature:** 23 degree C
Test condition: Power input 1phase AC120V(DC5V) **Humidity:** 58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dB μ V)	AV		QP (dB μ V)	AV	QP (dB μ V)	AV	QP (dB)	AV
N-E	0.150	50.0	50.0	0.4	50.4	50.4	66.0	56.0	15.6	5.6
	0.670	32.0	29.0	0.1	32.1	29.1	56.0	46.0	23.9	16.9
	2.598	34.0	31.0	0.4	34.4	31.4	56.0	46.0	21.6	14.6
	7.333	44.0	38.0	0.6	44.6	38.6	60.0	50.0	15.4	11.4
	8.666	51.0	45.0	0.6	51.6	45.6	60.0	50.0	8.4	4.4
	10.000	47.0	41.0	0.6	47.6	41.6	60.0	50.0	12.4	8.4
<hr/>										
L1-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	33.0	30.0	0.1	33.1	30.1	56.0	46.0	22.9	15.9
	2.598	34.0	30.0	0.4	34.4	30.4	56.0	46.0	21.6	15.6
	7.333	45.0	40.0	0.6	45.6	40.6	60.0	50.0	14.4	9.4
	8.666	51.0	45.0	0.7	51.7	45.7	60.0	50.0	8.3	4.3
	10.000	46.0	41.0	0.7	46.7	41.7	60.0	50.0	13.3	8.3

CISPR 22: 1997 Class B Limit

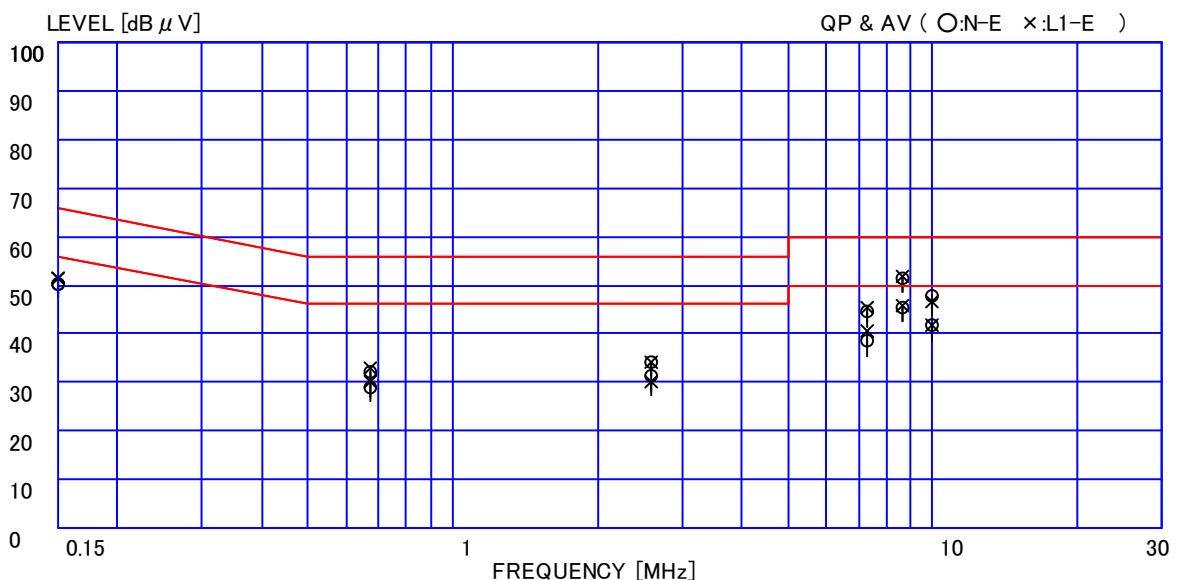


Figure 6.1-5 RFI Voltage Measurement Results

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T. Hirahara

Sayo Tsuchida
11/Nov./2008

Tohru Hirahara, Engineer

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

Model name: PTK-840 **Optional:** KP-130 / STJ-A276
Operating mode: Normal Operation **Date of measurement:** September 17, 2008
Test procedure: ANSI C63.4-2003 **Temperature:** 23 degree C
Test condition: Power input 1phase AC120V(DC5V) **Humidity:** 58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dBμV)	AV (dBμV)		QP (dBμV)	AV (dBμV)	QP (dBμV)	AV (dBμV)	QP (dB)	AV (dB)
N-E	0.150	50.0	50.0	0.4	50.4	50.4	66.0	56.0	15.6	5.6
	0.670	32.0	30.0	0.1	32.1	30.1	56.0	46.0	23.9	15.9
	2.600	32.0	31.0	0.4	32.4	31.4	56.0	46.0	23.6	14.6
	7.333	44.0	38.0	0.6	44.6	38.6	60.0	50.0	15.4	11.4
	8.666	51.0	45.0	0.6	51.6	45.6	60.0	50.0	8.4	4.4
	10.000	47.0	41.0	0.6	47.6	41.6	60.0	50.0	12.4	8.4
<hr/>										
L1-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	33.0	30.0	0.1	33.1	30.1	56.0	46.0	22.9	15.9
	2.601	32.0	30.0	0.4	32.4	30.4	56.0	46.0	23.6	15.6
	7.333	45.0	40.0	0.6	45.6	40.6	60.0	50.0	14.4	9.4
	8.666	51.0	45.0	0.7	51.7	45.7	60.0	50.0	8.3	4.3
	10.000	47.0	41.0	0.7	47.7	41.7	60.0	50.0	12.3	8.3

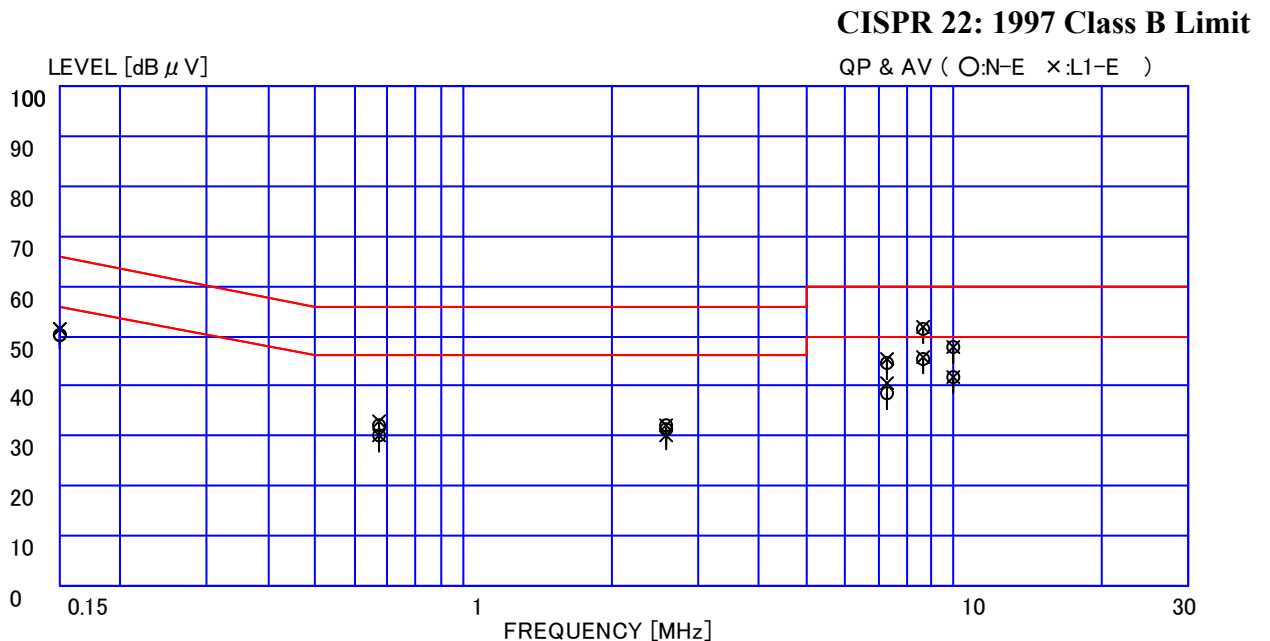


Figure 6.1-6 RFI Voltage Measurement Results

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

Model name:	PTK-840	Optional:	KP-400E / STJ-A276
Operating mode:	Normal Operation	Date of measurement:	September 17, 2008
Test procedure:	ANSI C63.4-2003	Temperature:	23 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dBμV)	AV (dBμV)		QP (dBμV)	AV (dBμV)	QP (dBμV)	AV (dBμV)	QP (dB)	AV (dB)
N-E	0.150	50.0	50.0	0.4	50.4	50.4	66.0	56.0	15.6	5.6
	0.670	32.0	29.0	0.1	32.1	29.1	56.0	46.0	23.9	16.9
	2.600	33.0	30.0	0.4	33.4	30.4	56.0	46.0	22.6	15.6
	7.333	45.0	40.0	0.6	45.6	40.6	60.0	50.0	14.4	9.4
	8.666	52.0	45.0	0.6	52.6	45.6	60.0	50.0	7.4	4.4
	10.000	47.0	42.0	0.6	47.6	42.6	60.0	50.0	12.4	7.4
L1-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	33.0	29.0	0.1	33.1	29.1	56.0	46.0	22.9	16.9
	2.601	32.0	30.0	0.4	32.4	30.4	56.0	46.0	23.6	15.6
	7.333	45.0	40.0	0.6	45.6	40.6	60.0	50.0	14.4	9.4
	8.666	52.0	44.0	0.7	52.7	44.7	60.0	50.0	7.3	5.3
	10.000	47.0	42.0	0.7	47.7	42.7	60.0	50.0	12.3	7.3

CISPR 22: 1997 Class B Limit

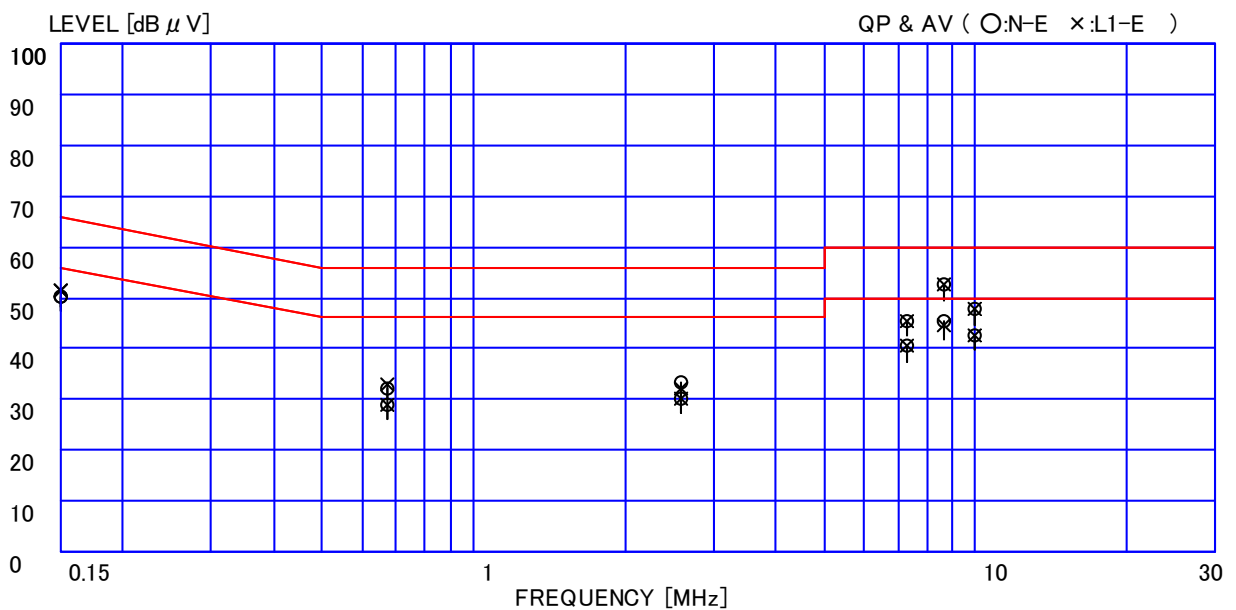


Figure 6.1-7 RFI Voltage Measurement Results

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Table 6.1-8 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name: PTK-840 **Optional:** KP-701E / STJ-A276
Operating mode: Normal Operation **Date of measurement:** September 17, 2008
Test procedure: ANSI C63.4-2003 **Temperature:** 23 degree C
Test condition: Power input 1phase AC120V(DC5V) **Humidity:** 58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dBμV)	AV		QP (dBμV)	AV	QP (dBμV)	AV	QP (dB)	AV
N-E	0.150	50.0	50.0	0.4	50.4	50.4	66.0	56.0	15.6	5.6
	0.670	32.0	29.0	0.1	32.1	29.1	56.0	46.0	23.9	16.9
	2.600	33.0	30.0	0.4	33.4	30.4	56.0	46.0	22.6	15.6
	7.333	45.0	40.0	0.6	45.6	40.6	60.0	50.0	14.4	9.4
	8.666	51.0	44.0	0.6	51.6	44.6	60.0	50.0	8.4	5.4
	10.000	46.0	41.0	0.6	46.6	41.6	60.0	50.0	13.4	8.4
L1-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	33.0	30.0	0.1	33.1	30.1	56.0	46.0	22.9	15.9
	2.601	32.0	30.0	0.4	32.4	30.4	56.0	46.0	23.6	15.6
	7.333	45.0	40.0	0.6	45.6	40.6	60.0	50.0	14.4	9.4
	8.666	51.0	44.0	0.7	51.7	44.7	60.0	50.0	8.3	5.3
	10.000	48.0	41.0	0.7	48.7	41.7	60.0	50.0	11.3	8.3

CISPR 22: 1997 Class B Limit

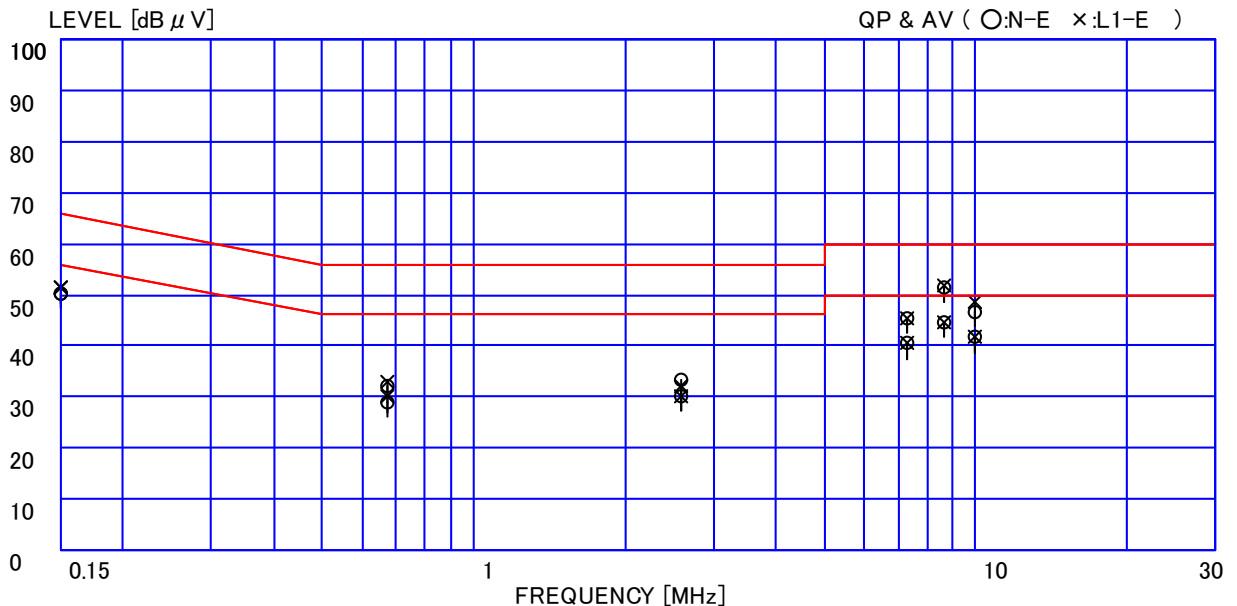


Figure 6.1-8 RFI Voltage Measurement Results

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Table 6.1-9 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name: PTK-840	Optional: KC-100 / STJ-A276
Operating mode: Normal Operation	Date of measurement: September 17, 2008
Test procedure: ANSI C63.4-2003	Temperature: 23 degree C
Test condition: Power input 1phase AC120V(DC5V)	Humidity: 58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dBµV)	AV (dBµV)		QP (dBµV)	AV (dBµV)	QP (dBµV)	AV (dBµV)	QP (dB)	AV (dB)
N-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	34.0	31.0	0.1	34.1	31.1	56.0	46.0	21.9	14.9
	2.601	29.0	27.0	0.4	29.4	27.4	56.0	46.0	26.6	18.6
	7.333	45.0	39.0	0.6	45.6	39.6	60.0	50.0	14.4	10.4
	8.666	50.0	44.0	0.6	50.6	44.6	60.0	50.0	9.4	5.4
	10.000	48.0	40.0	0.6	48.6	40.6	60.0	50.0	11.4	9.4
L1-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	34.0	31.0	0.1	34.1	31.1	56.0	46.0	21.9	14.9
	2.601	29.0	27.0	0.4	29.4	27.4	56.0	46.0	26.6	18.6
	7.333	45.0	39.0	0.6	45.6	39.6	60.0	50.0	14.4	10.4
	8.666	51.0	45.0	0.7	51.7	45.7	60.0	50.0	8.3	4.3
	10.000	48.0	41.0	0.7	48.7	41.7	60.0	50.0	11.3	8.3

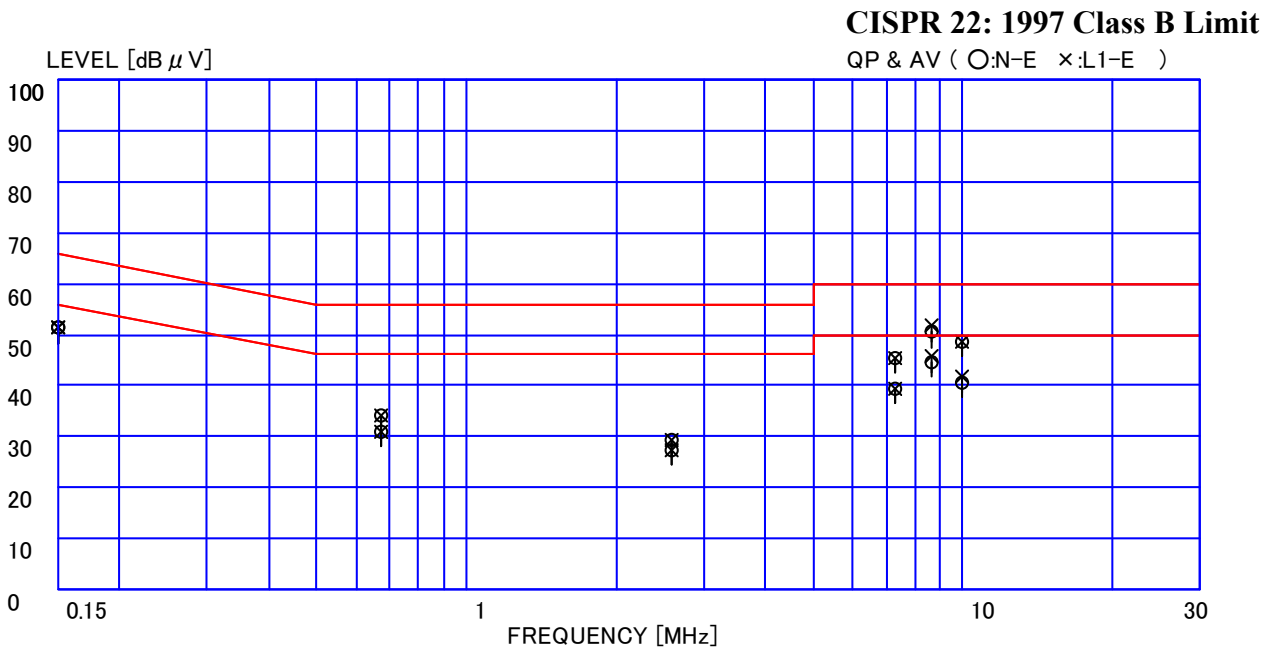


Figure 6.1-9 RFI Voltage Measurement Results

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Table 6.1-10 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name: PTK-840 **Optional:** KC-210 / STJ-A276
Operating mode: Normal Operation **Date of measurement:** September 17, 2008
Test procedure: ANSI C63.4-2003 **Temperature:** 23 degree C
Test condition: Power input 1phase AC120V(DC5V) **Humidity:** 58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dB μ V)	AV		QP (dB μ V)	AV	QP (dB μ V)	AV	QP (dB)	AV
N-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	34.0	31.0	0.1	34.1	31.1	56.0	46.0	21.9	14.9
	2.601	29.0	27.0	0.4	29.4	27.4	56.0	46.0	26.6	18.6
	7.333	45.0	39.0	0.6	45.6	39.6	60.0	50.0	14.4	10.4
	8.666	50.0	44.0	0.6	50.6	44.6	60.0	50.0	9.4	5.4
	10.000	48.0	41.0	0.6	48.6	41.6	60.0	50.0	11.4	8.4
L1-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	34.0	31.0	0.1	34.1	31.1	56.0	46.0	21.9	14.9
	2.601	29.0	27.0	0.4	29.4	27.4	56.0	46.0	26.6	18.6
	7.333	45.0	39.0	0.6	45.6	39.6	60.0	50.0	14.4	10.4
	8.666	51.0	45.0	0.7	51.7	45.7	60.0	50.0	8.3	4.3
	10.000	48.0	41.0	0.7	48.7	41.7	60.0	50.0	11.3	8.3

CISPR 22: 1997 Class B Limit

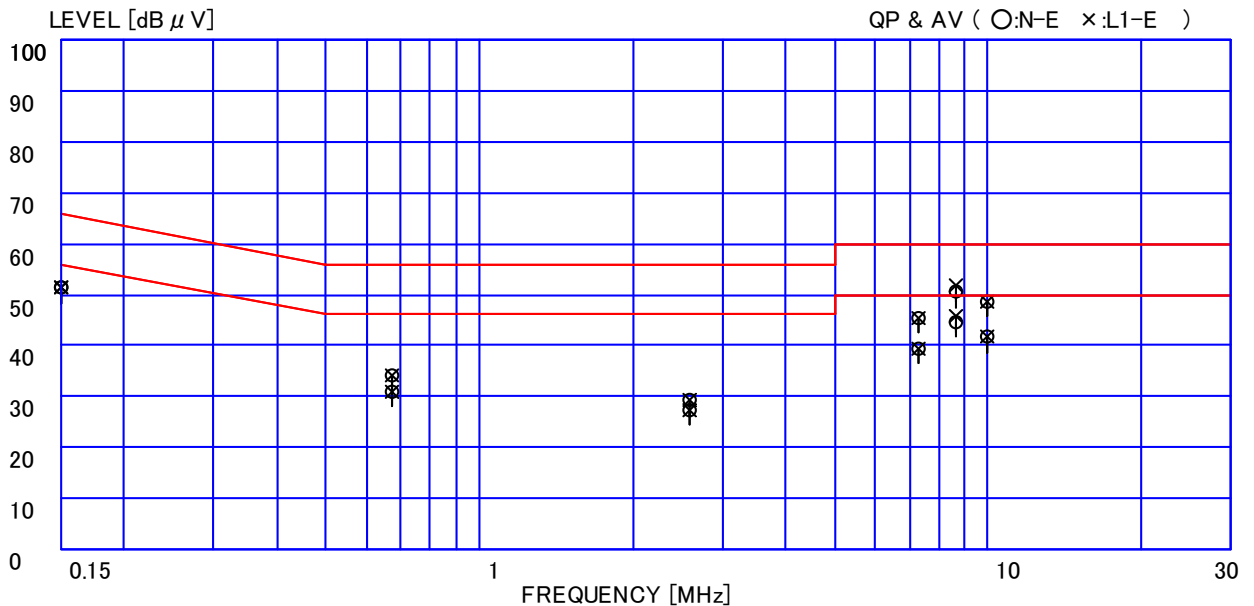


Figure 6.1-10 RFI Voltage Measurement Results

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Table 6.1-11 RFI Voltage Measurement Results (Q-Peak and Average Measurement)

Model name: PTK-840 **Optional:** KP-501E / STJ-A276 / Left-handed
Operating mode: Normal Operation **Date of measurement:** September 17, 2008
Test procedure: ANSI C63.4-2003 **Temperature:** 23 degree C
Test condition: Power input 1phase AC120V(DC5V) **Humidity:** 58 %

	Frequency (MHz)	Level		Total Factor (dB)	Result		Limit		Margin	
		QP (dBμV)	AV		QP (dBμV)	AV	QP (dBμV)	AV	QP (dB)	AV
N-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	34.0	31.0	0.1	34.1	31.1	56.0	46.0	21.9	14.9
	2.601	29.0	27.0	0.4	29.4	27.4	56.0	46.0	26.6	18.6
	7.333	45.0	40.0	0.6	45.6	40.6	60.0	50.0	14.4	9.4
	8.666	50.0	44.0	0.6	50.6	44.6	60.0	50.0	9.4	5.4
	10.000	47.0	40.0	0.6	47.6	40.6	60.0	50.0	12.4	9.4
<hr/>										
L1-E	0.150	51.0	51.0	0.4	51.4	51.4	66.0	56.0	14.6	4.6
	0.670	34.0	31.0	0.1	34.1	31.1	56.0	46.0	21.9	14.9
	2.601	29.0	27.0	0.4	29.4	27.4	56.0	46.0	26.6	18.6
	7.333	45.0	40.0	0.6	45.6	40.6	60.0	50.0	14.4	9.4
	8.666	50.0	44.0	0.7	50.7	44.7	60.0	50.0	9.3	5.3
	10.000	47.0	40.0	0.7	47.7	40.7	60.0	50.0	12.3	9.3

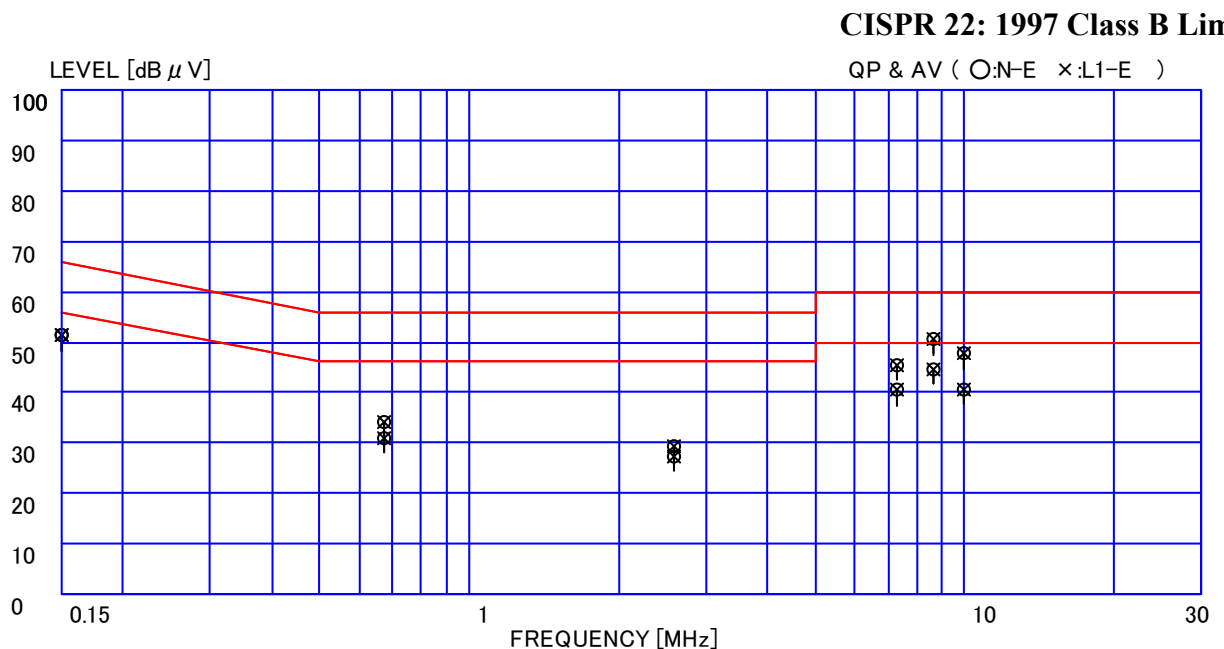


Figure 6.1-11 RFI Voltage Measurement Results

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T. Hirahara

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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/Schwarzbeck/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 the 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.

$$\text{Result (dB}\mu\text{V/m)} = \text{Level (dB}\mu\text{V)} + \text{Ant. Factor (dB/m)} + \text{Cable Loss (dB)}$$

<150kHz to 30MHz>

These tests were performed at 9kHz of 6dB bandwidth.

Test results were obtained from following equation.

$$\text{Result (dB}\mu\text{V/m)} = \text{Level (dB}\mu\text{V)} + \text{Ant. Factor (dB/m)} + \text{Cable Loss (dB)}$$

<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 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.

$$\text{Result (dB}\mu\text{V/m)} = \text{Level (dB}\mu\text{V)} + \text{Ant. Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Amp. Gain (dB)}$$

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-440	Optional:	KP-501E / STJ-A277-01
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) <0.009MHz to 30MHz>	Humidity:	58 %

Frequency (MHz)	Level (dB μ V)	Cable Loss (dB)	Ant. Factor (dB/m)	Result (dB μ V/m)	10m Limit (dB μ V/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

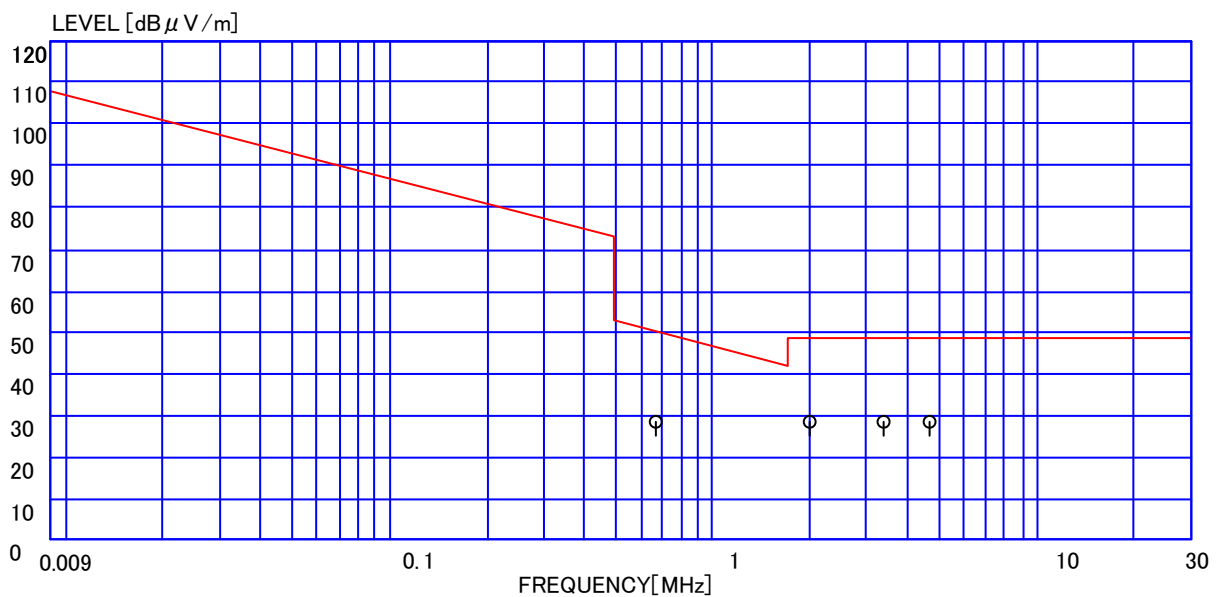


Figure 6.2-1 RFI Field Strength Measurement Results

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

Model name: PTK-440	Optional: KP-501E / STJ-A277-02
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

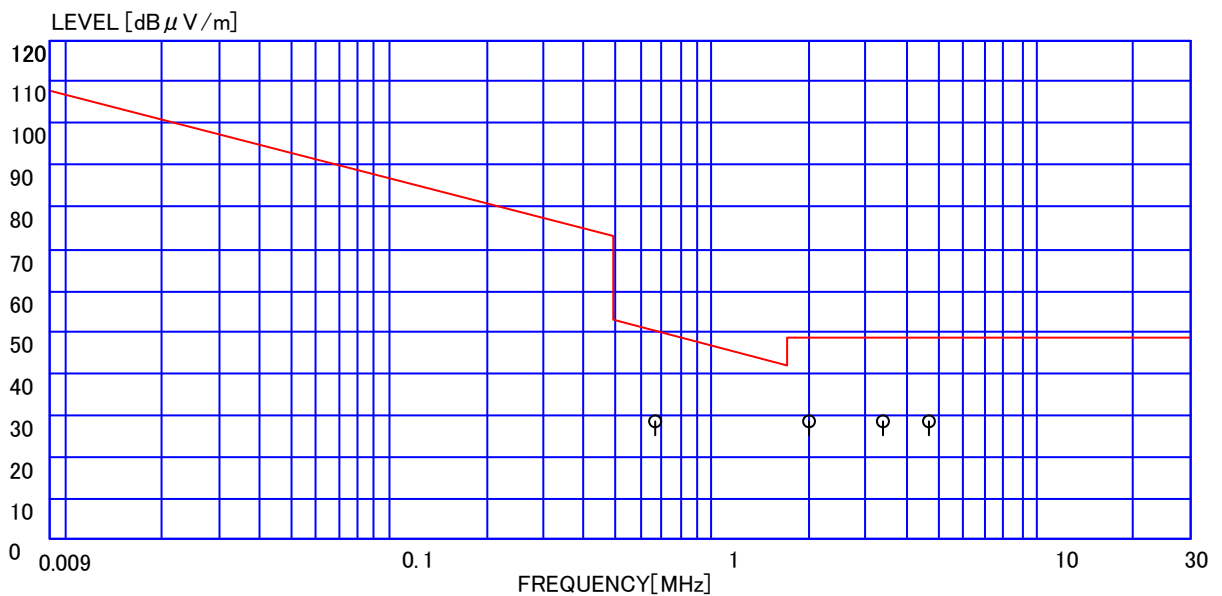


Figure 6.2-2 RFI Field Strength Measurement Results

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

Model name: PTK-640	Optional: KP-501E / STJ-A276
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

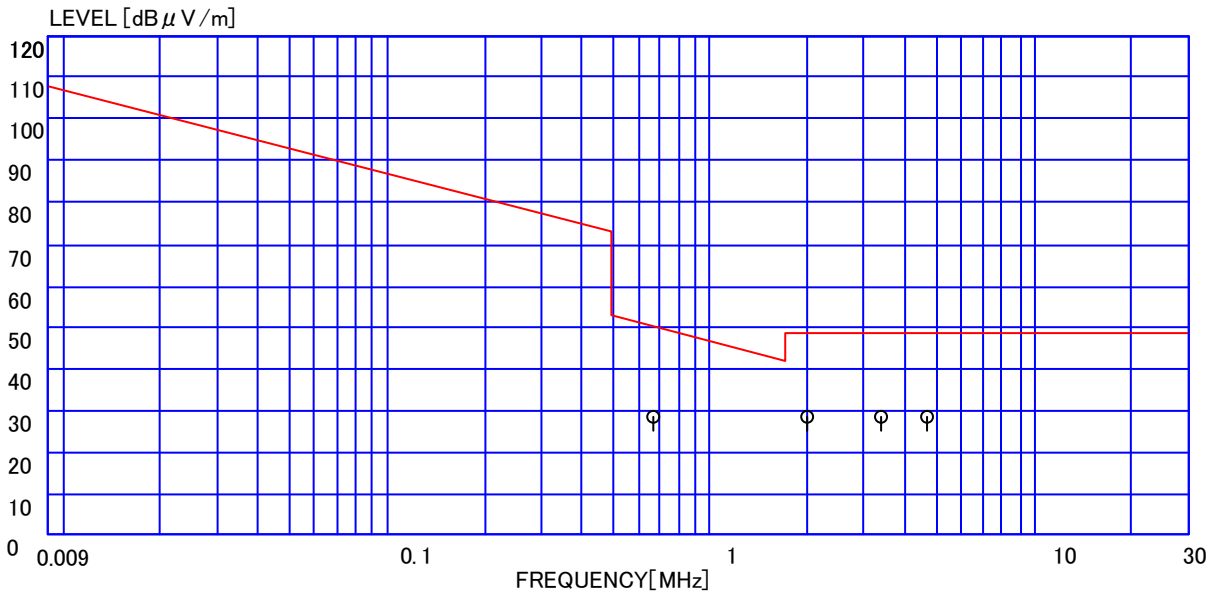


Figure 6.2-3 RFI Field Strength Measurement Results

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11/Nov./2008

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Tohru Hirahara, Engineer

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

Model name: PTK-840	Optional: KP-501E / STJ-A276
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

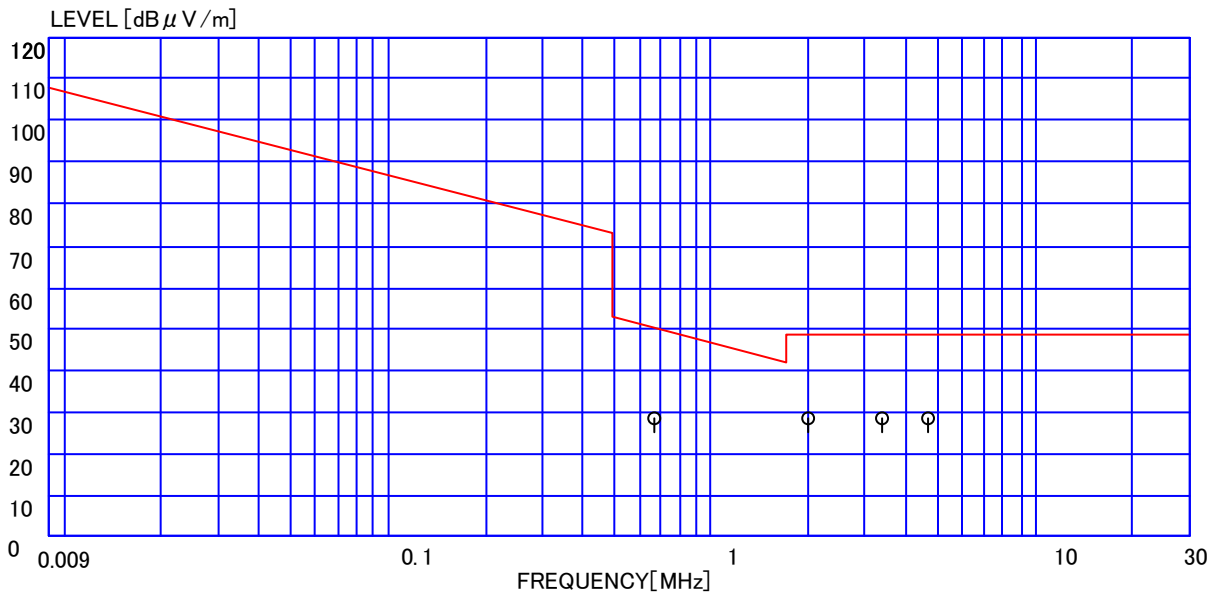


Figure 6.2-4 RFI Field Strength Measurement Results

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

Model name: PTK-840	Optional: KP-300E / STJ-A276
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

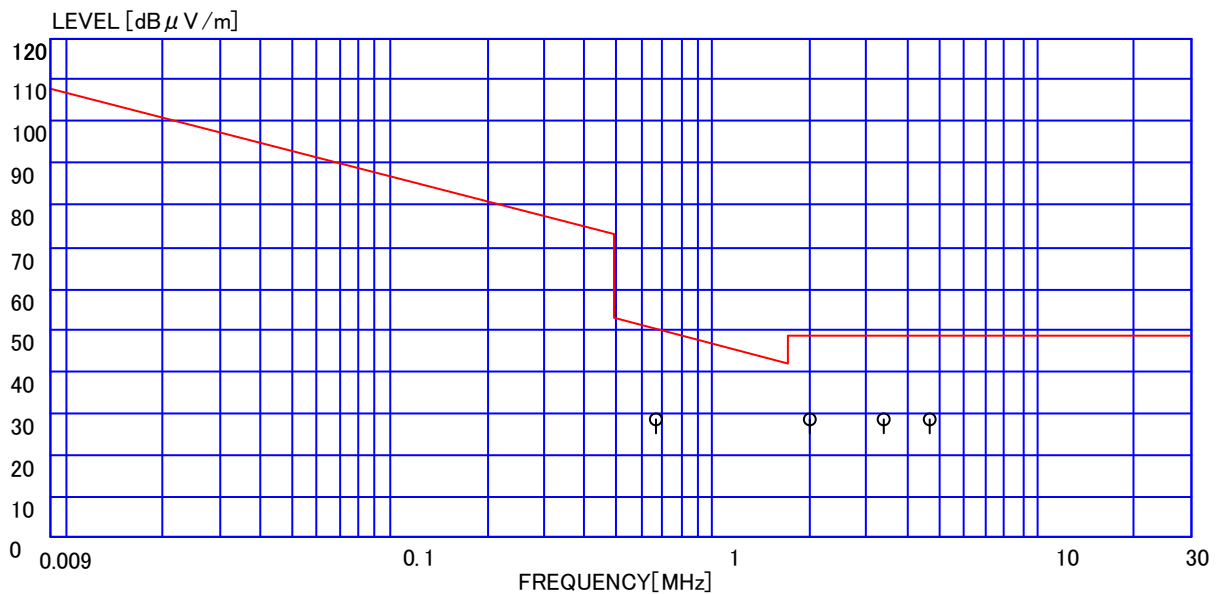


Figure 6.2-5 RFI Field Strength Measurement Results

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

Model name:	PTK-840	Optional:	KP-130 / STJ-A276
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 (dB μ V)	Cable Loss (dB)	Ant. Factor (dB/m)	Result (dB μ V/m)	10m Limit (dB μ V/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

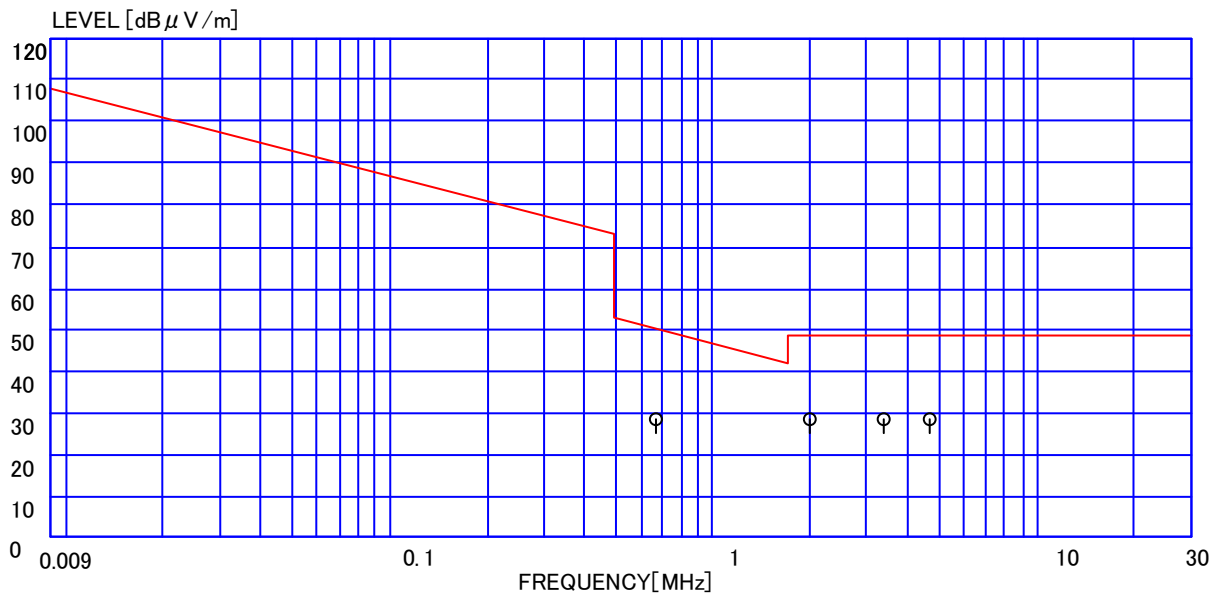


Figure 6.2-6 RFI Field Strength Measurement Results

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Tohru Hirahara, Engineer

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

Model name: PTK-840	Optional: KP-400E / STJ-A276
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

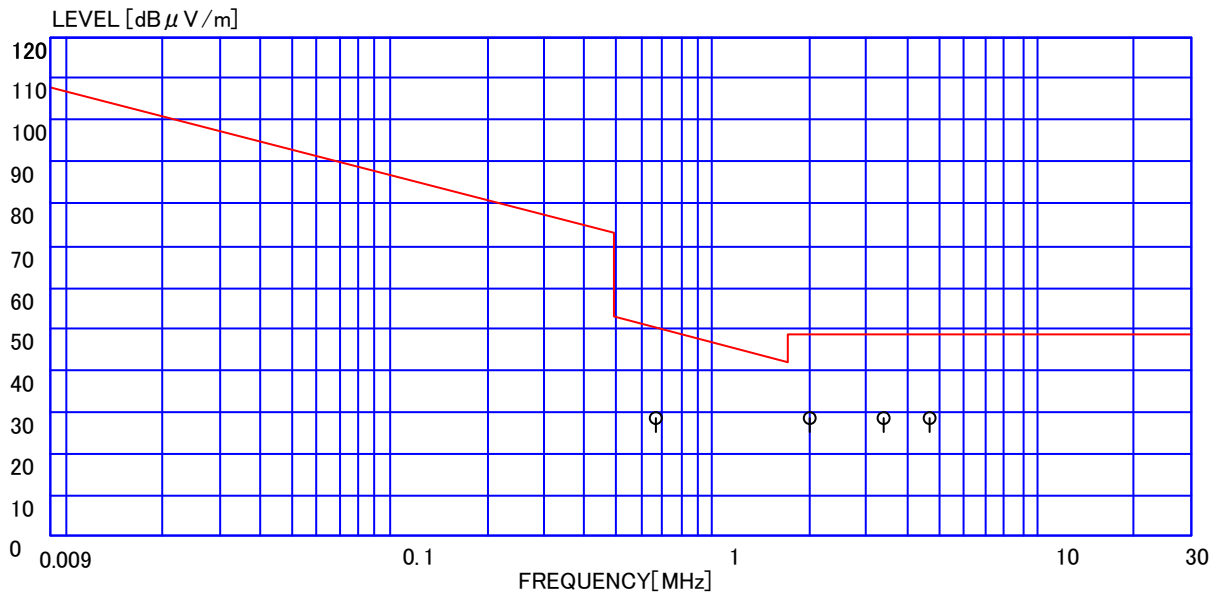


Figure 6.2-7 RFI Field Strength Measurement Results

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Tohru Hirahara, Engineer

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

Model name:	PTK-840	Optional:	KP-701E / STJ-A276
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

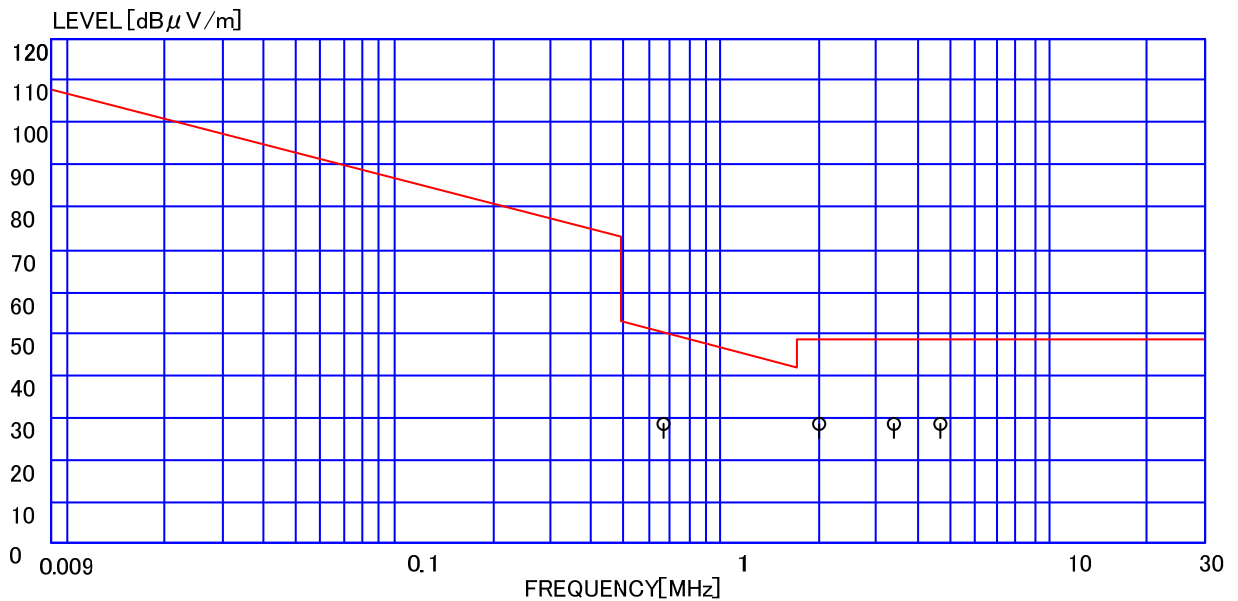


Figure 6.2-8 RFI Field Strength Measurement Results

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Tohru Hirahara, Engineer

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

Model name:	PTK-840	Optional:	KC-100 / STJ-A276
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

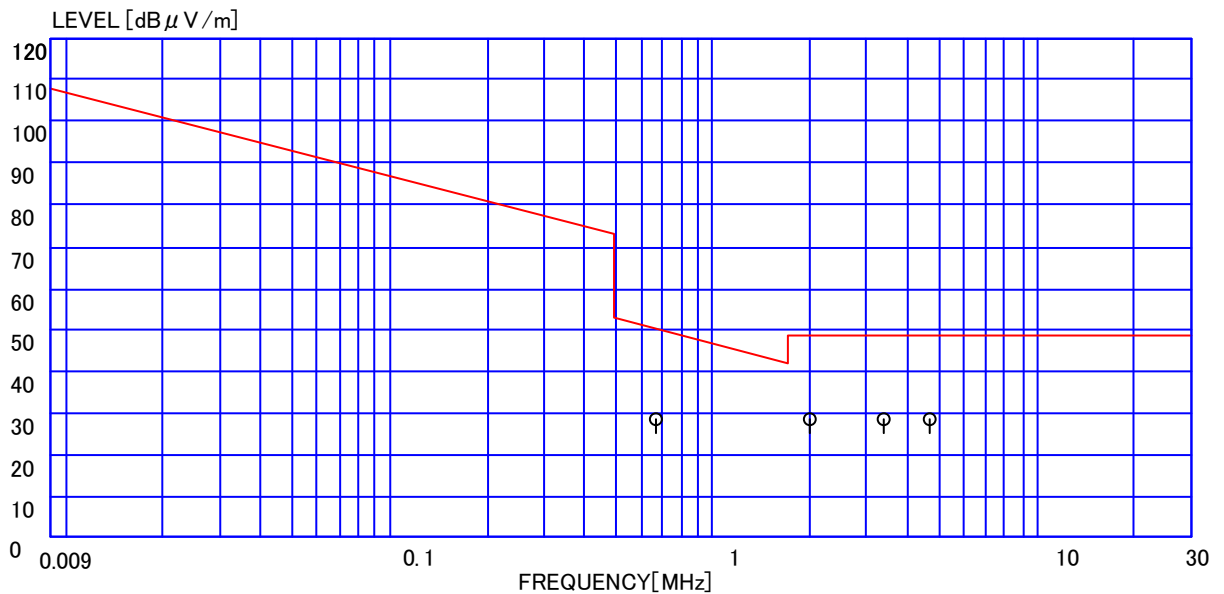


Figure 6.2-9 RFI Field Strength Measurement Results

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Tohru Hirahara, Engineer

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

Model name: PTK-840	Optional: KC-210 / STJ-A276
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

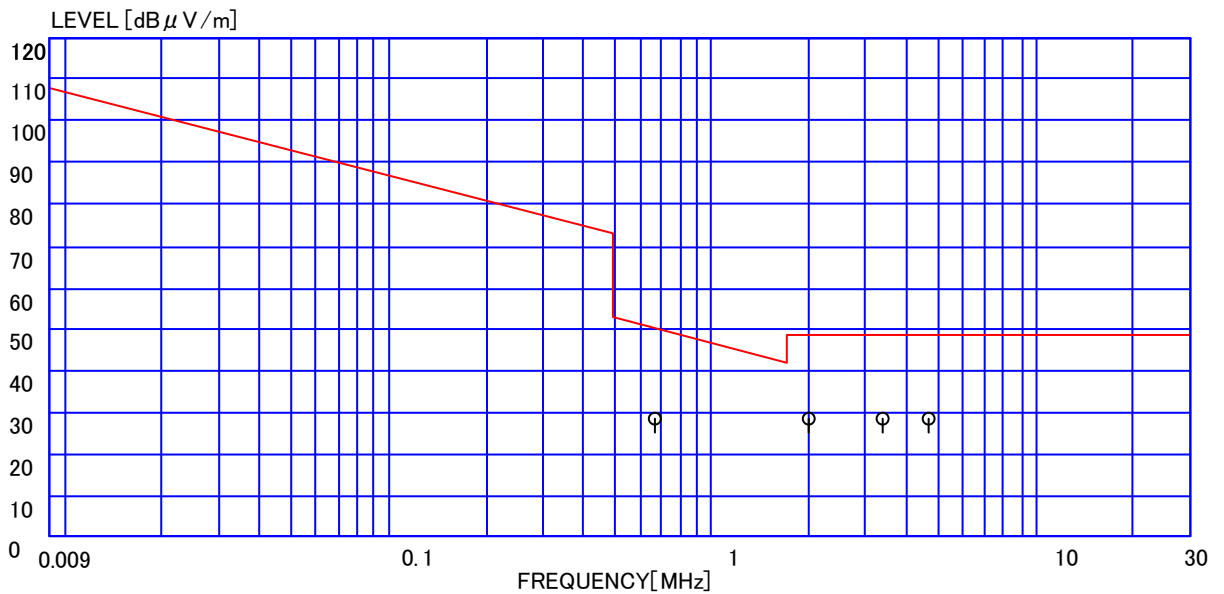


Figure 6.2-10 RFI Field Strength Measurement Results

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T. Hirahara
Tohru Hirahara, Engineer

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

Model name:	PTK-440	Optional:	KP-501E / STJ-A277-01
Operating mode:	Normal Operation	Date of measurement:	September 29, 2008
Test procedure:	ICES-003:2004 Class B	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	41 %

Frequency (MHz)	Level		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result		10m Limit (dBμV/m)	Margin	
	Ver. (dBμV)	Hor.				Ver. (dBμV/m)	Hor.		Ver. (dB)	Hor.
96.00	32.0	30.0	2.0	-31.9	8.3	10.4	8.4	30.0	19.6	21.6
180.00	37.0	30.0	2.8	-31.9	11.6	19.5	12.5	30.0	10.5	17.5
240.00	35.0	35.0	3.2	-31.8	11.3	17.7	17.7	37.0	19.3	19.3
384.00	35.0	44.0	4.1	-31.7	15.1	22.5	31.5	37.0	14.5	5.5
432.00	36.0	42.0	4.4	-31.6	16.5	25.3	31.3	37.0	11.7	5.7
480.00	25.0	30.0	4.7	-31.6	17.2	15.3	20.3	37.0	21.7	16.7
960.00	18.0	18.0	6.8	-29.7	23.3	18.4	18.4	37.0	18.6	18.6

CISPR 22: 1997 Class B Limit

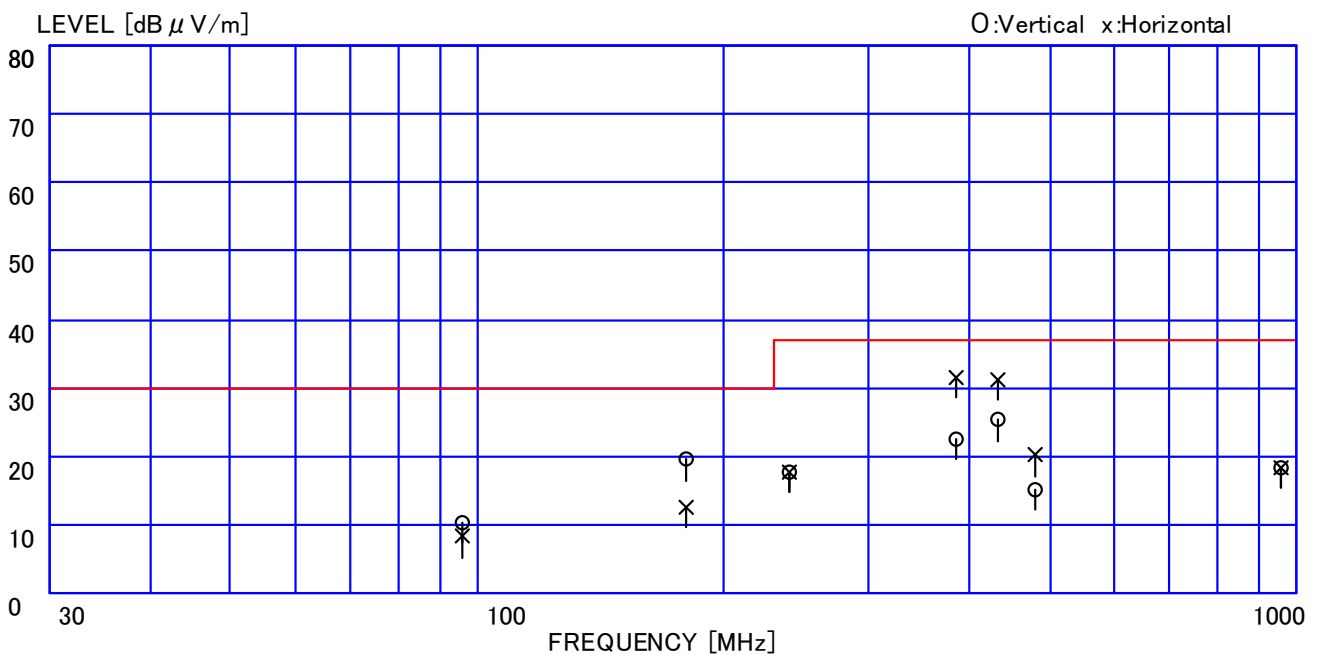


Figure 6.2-11 RFI Field Strength Measurement Results

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Tohru Hirahara, Engineer

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

Model name: PTK-440 **Optional:** KP-501E / STJ-A277-02
Operating mode: Normal Operation **Date of measurement:** September 29, 2008
Test procedure: ICES-003:2004 Class B **Temperature:** 24 degree C
Test condition: Power input 1phase AC120V(DC5V) **Humidity:** 41 %

Frequency (MHz)	Level (dB μ V)		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result (dB μ V/m)		10m Limit dB μ V/m	Margin (dB)	
	Ver.	Hor.				Ver.	Hor.		Ver.	Hor.
112.00	33.0	30.0	2.2	-31.9	10.4	13.7	10.7	30.0	16.3	19.3
144.00	27.0	30.0	2.5	-31.9	13.0	10.6	13.6	30.0	19.4	16.4
216.07	31.0	30.0	3.1	-31.8	10.0	12.3	11.3	30.0	17.7	18.7
384.03	35.0	44.0	4.1	-31.7	15.1	22.5	31.5	37.0	14.5	5.5
432.05	35.0	42.0	4.4	-31.6	16.5	24.3	31.3	37.0	12.7	5.7
464.04	36.0	40.0	4.6	-31.6	17.1	26.1	30.1	37.0	10.9	6.9

CISPR 22: 1997 Class B Limit

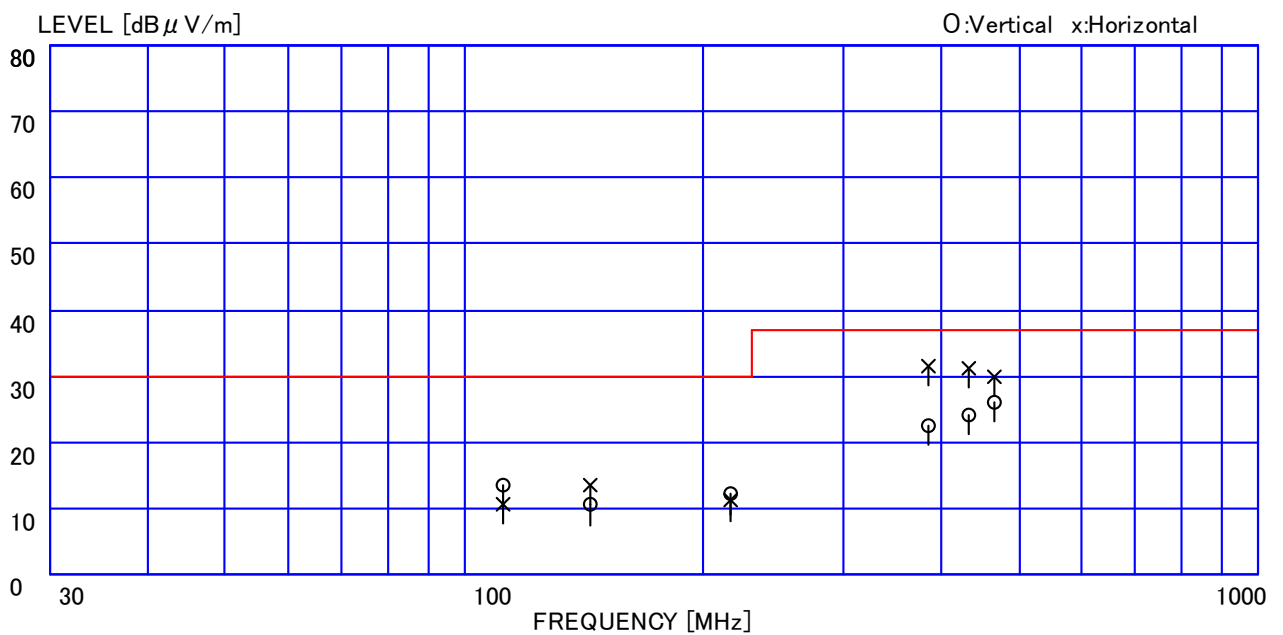


Figure 6.2-12 RFI Field Strength Measurement Results

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

Model name:	PTK-640	Optional:	KP-501E / STJ-A276
Operating mode:	Normal Operation	Date of measurement:	September 29, 2008
Test procedure:	ICES-003:2004 Class B	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	41 %

Frequency (MHz)	Level		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result		10m Limit dBμV/m	Margin	
	Ver. (dBμV)	Hor.				Ver. (dBμV/m)	Hor.		Ver. (dB)	Hor.
96.00	38.0	35.0	2.0	-31.9	8.3	16.4	13.4	30.0	13.6	16.6
180.00	29.0	33.0	2.8	-31.9	11.6	11.5	15.5	30.0	18.5	14.5
240.00	25.0	30.0	3.2	-31.8	11.3	7.7	12.7	37.0	29.3	24.3
384.00	36.0	40.0	4.1	-31.7	15.1	23.5	27.5	37.0	13.5	9.5
432.00	33.0	33.0	4.4	-31.6	16.5	22.3	22.3	37.0	14.7	14.7
480.00	30.0	34.0	4.7	-31.6	17.2	20.3	24.3	37.0	16.7	12.7
960.00	18.0	18.0	6.8	-29.7	23.3	18.4	18.4	37.0	18.6	18.6

CISPR 22: 1997 Class B Limit

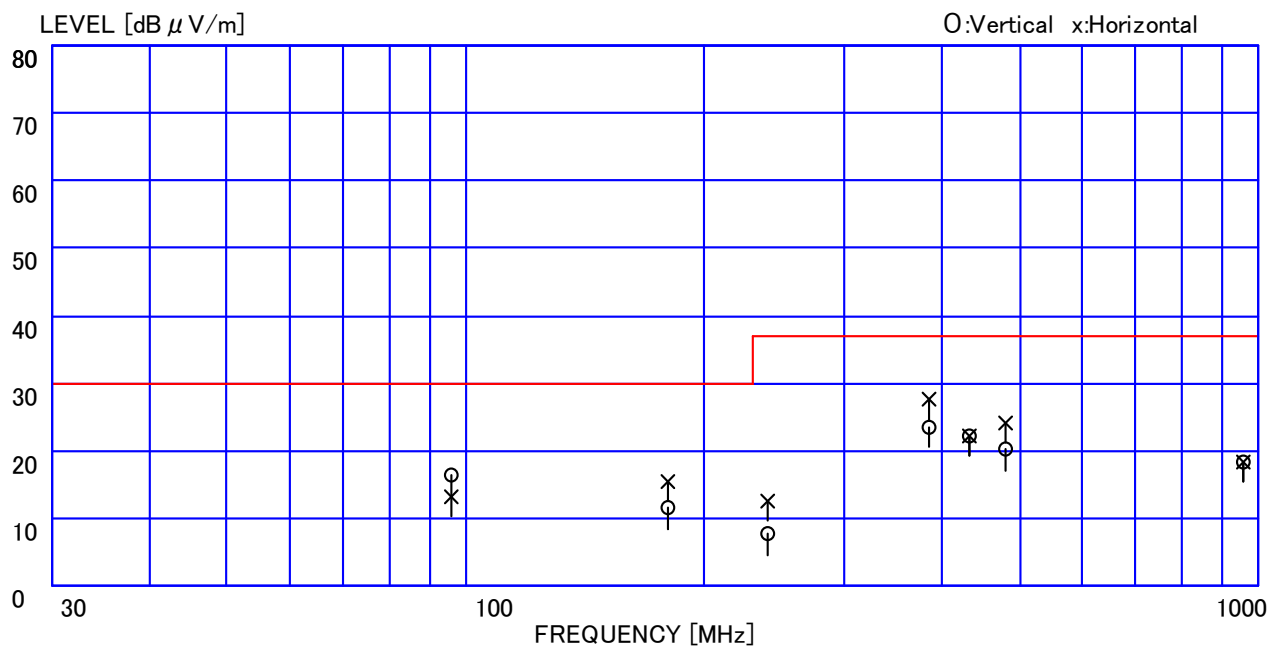


Figure 6.2-13 RFI Field Strength Measurement Results

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

Model name: PTK-840 **Optional:** KP-501E / STJ-A276
Operating mode: Normal Operation **Date of measurement:** September 29, 2008
Test procedure: ICES-003:2004 Class B **Temperature:** 24 degree C
Test condition: Power input 1phase AC120V(DC5V) **Humidity:** 41 %

Frequency (MHz)	Level (dBµV)		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result (dBµV/m)		10m Limit dBµV/m	Margin (dB)	
	Ver.	Hor.				Ver.	Hor.		Ver.	Hor.
96.00	41.0	37.0	2.0	-31.9	8.3	19.4	15.4	30.0	10.6	14.6
112.00	44.0	45.0	2.2	-31.9	10.4	24.7	25.7	30.0	5.3	4.3
144.00		40.0	2.5	-31.9	13.0		23.6	30.0		6.4
192.00	42.0		2.9	-31.8	10.2	23.3		30.0	6.7	
216.07	41.0	40.0	3.1	-31.8	10.0	22.3	21.3	30.0	7.7	8.7
228.07	41.0	40.0	3.1	-31.8	10.3	22.6	21.6	30.0	7.4	8.4
464.02	40.0	42.0	4.6	-31.6	17.1	30.1	32.1	37.0	6.9	4.9
544.04		40.0	5.0	-31.6	18.2		31.6	37.0		5.4
960.00	18.0	18.0	6.8	-29.7	23.3	18.4	18.4	37.0	18.6	18.6

CISPR 22: 1997 Class B Limit

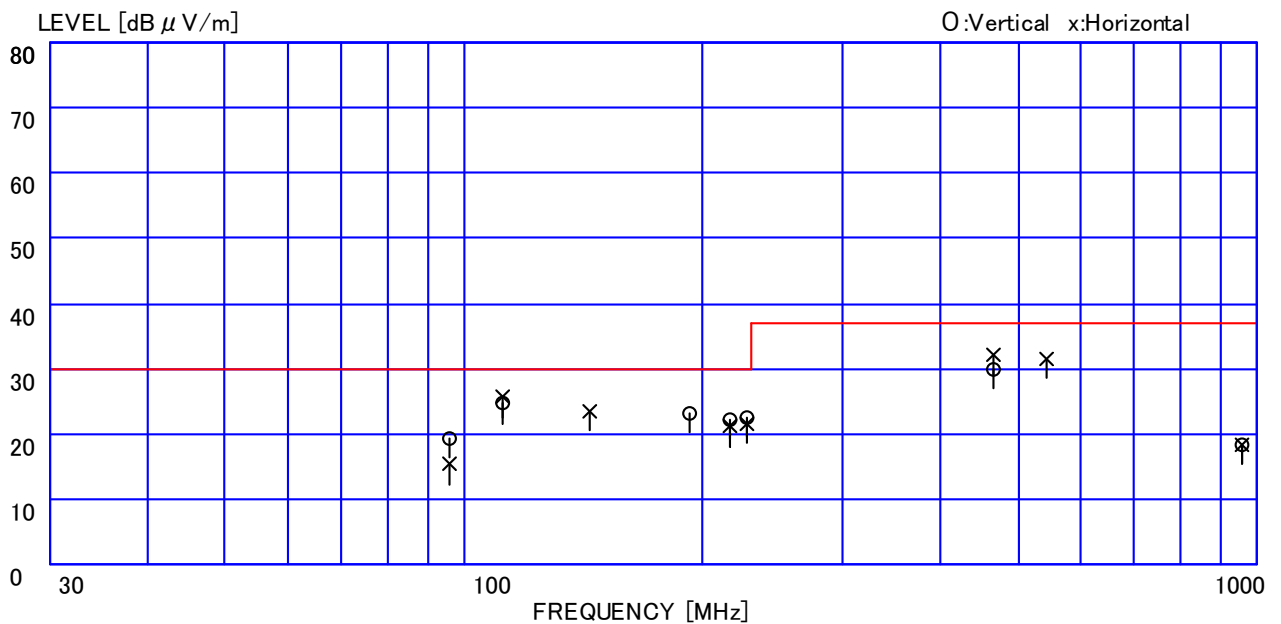


Figure 6.2-14 RFI Field Strength Measurement Results

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

Model name:	PTK-840	Optional:	KP-300E / STJ-A276
Operating mode:	Normal Operation	Date of measurement:	September 29, 2008
Test procedure:	ICES-003:2004 Class B	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	41 %

Frequency (MHz)	Level		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result		10m Limit (dBμV/m)	Margin	
	Ver. (dBμV)	Hor. (dBμV)				Ver. (dBμV/m)	Hor. (dBμV/m)		Ver. (dB)	Hor. (dB)
96.00	41.0	40.0	2.0	-31.9	8.3	19.4	18.4	30.0	10.6	11.6
112.00	44.0	44.0	2.2	-31.9	10.4	24.7	24.7	30.0	5.3	5.3
144.00	40.0	41.0	2.5	-31.9	13.0	23.6	24.6	30.0	6.4	5.4
192.00	42.0	40.0	2.9	-31.8	10.2	23.3	21.3	30.0	6.7	8.7
216.07	40.0	42.0	3.1	-31.8	10.0	21.3	23.3	30.0	8.7	6.7
228.07	40.0	44.0	3.1	-31.8	10.3	21.6	25.6	30.0	8.4	4.4
464.02	34.0	42.0	4.6	-31.6	17.1	24.1	32.1	37.0	12.9	4.9
960.00	18.0	18.0	6.8	-29.7	23.3	18.4	18.4	37.0	18.6	18.6

CISPR 22: 1997 Class B Limit

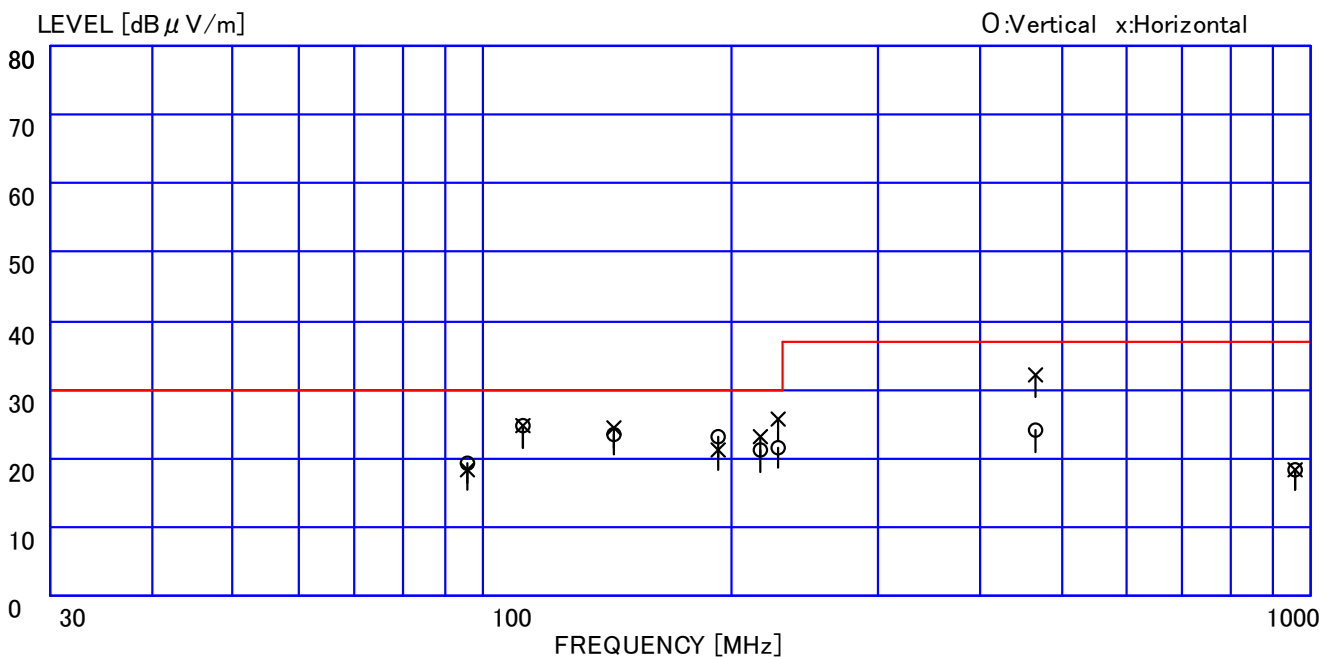


Figure 6.2-15 RFI Field Strength Measurement Results

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Table 6.2-16 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-840	Optional:	KP-130 / STJ-A276
Operating mode:	Normal Operation	Date of measurement:	September 29, 2008
Test procedure:	ICES-003:2004 Class B	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	41 %

Frequency (MHz)	Level		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result		10m Limit dB μ V/m	Margin	
	Ver. (dB μ V)	Hor. (dB μ V)				Ver. (dB μ V/m)	Hor. (dB μ V/m)		Ver. (dB)	Hor. (dB)
96.00	41.0	42.0	2.0	-31.9	8.3	19.4	20.4	30.0	10.6	9.6
112.00	44.0	44.0	2.2	-31.9	10.4	24.7	24.7	30.0	5.3	5.3
144.00	40.0	41.0	2.5	-31.9	13.0	23.6	24.6	30.0	6.4	5.4
192.00	42.0	42.0	2.9	-31.8	10.2	23.3	23.3	30.0	6.7	6.7
216.07	40.0	42.0	3.1	-31.8	10.0	21.3	23.3	30.0	8.7	6.7
228.07	42.0	43.0	3.1	-31.8	10.3	23.6	24.6	30.0	6.4	5.4
464.02	36.0	42.0	4.6	-31.6	17.1	26.1	32.1	37.0	10.9	4.9
960.00	18.0	18.0	6.8	-29.7	23.3	18.4	18.4	37.0	18.6	18.6

CISPR 22: 1997 Class B Limit

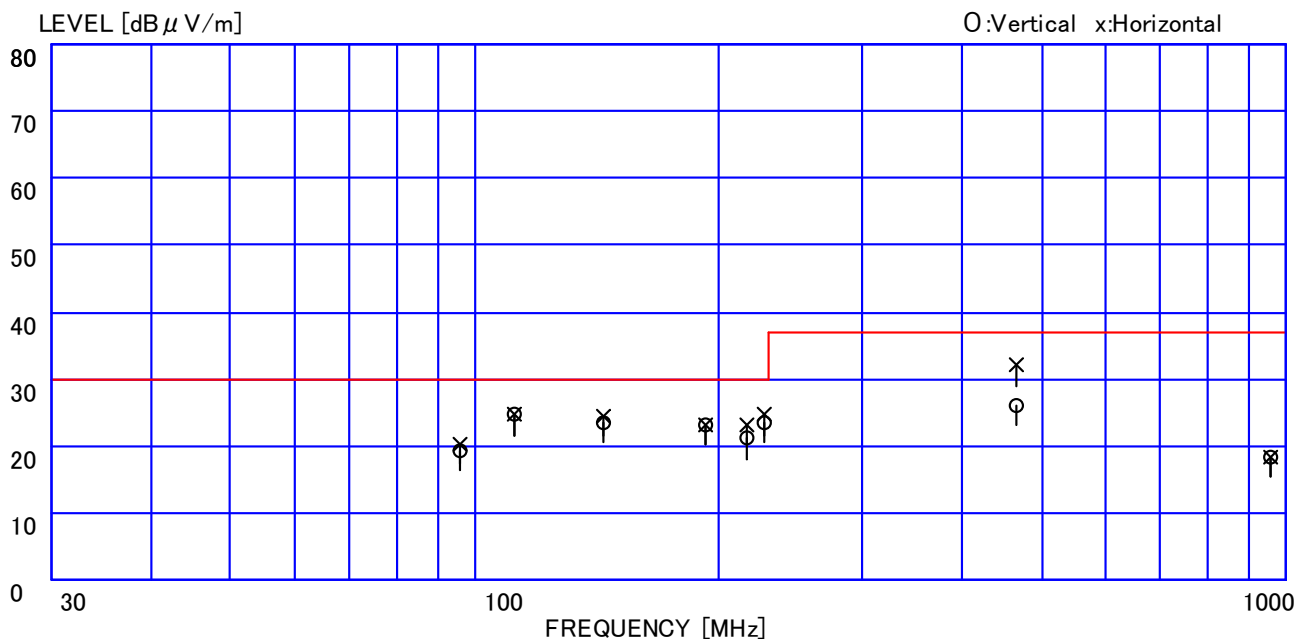


Figure 6.2-16 RFI Field Strength Measurement Results

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Tohru Hirahara, Engineer

Table 6.2-17 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name: PTK-840	Optional: KP-400E / STJ-A276
Operating mode: Normal Operation	Date of measurement: September 29, 2008
Test procedure: ICES-003:2004 Class B	Temperature: 24 degree C
Test condition: Power input 1phase AC120V(DC5V)	Humidity: 41 %

Frequency (MHz)	Level		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result		10m Limit dBμV/m	Margin	
	Ver. (dBμV)	Hor.				Ver. (dBμV/m)	Hor.		Ver. (dB)	Hor.
96.00	30.0	31.0	2.0	-31.9	8.3	8.4	9.4	30.0	21.6	20.6
112.00	43.0	44.0	2.2	-31.9	10.4	23.7	24.7	30.0	6.3	5.3
144.00	30.0	30.0	2.5	-31.9	13.0	13.6	13.6	30.0	16.4	16.4
192.00	42.0	42.0	2.9	-31.8	10.2	23.3	23.3	30.0	6.7	6.7
216.07	38.0	40.0	3.1	-31.8	10.0	19.3	21.3	30.0	10.7	8.7
228.07	40.0	38.0	3.1	-31.8	10.3	21.6	19.6	30.0	8.4	10.4
464.02	40.0	41.0	4.6	-31.6	17.1	30.1	31.1	37.0	6.9	5.9
960.00	18.0	18.0	6.8	-29.7	23.3	18.4	18.4	37.0	18.6	18.6

CISPR 22: 1997 Class B Limit

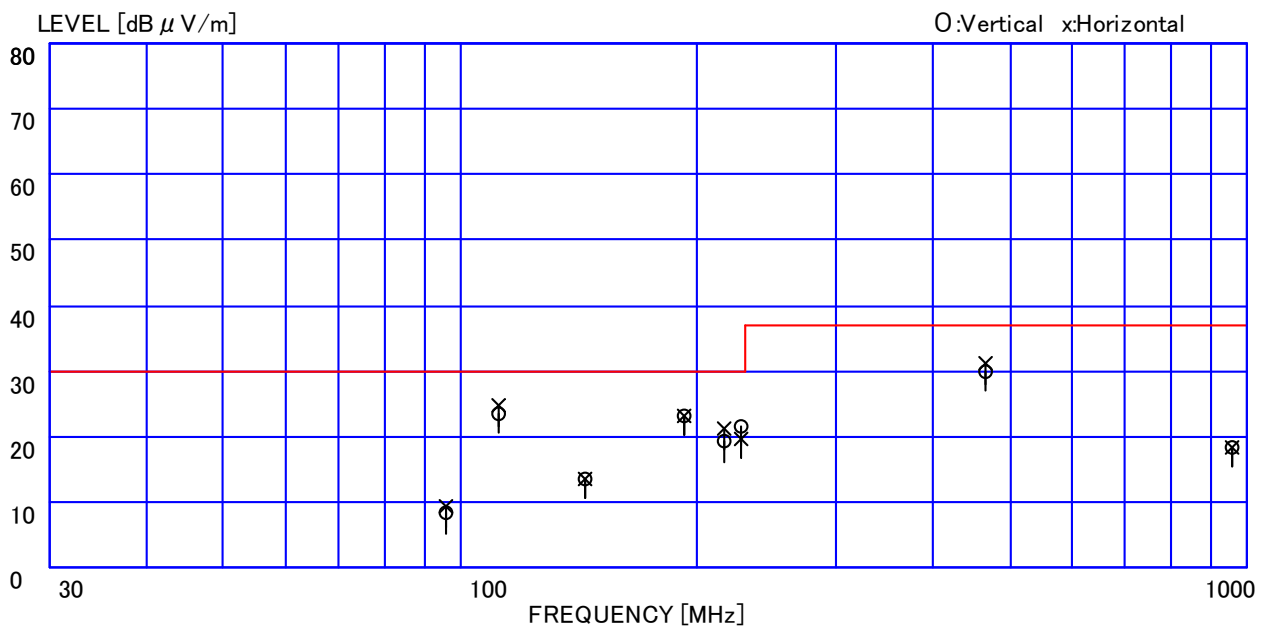


Figure 6.2-17 RFI Field Strength Measurement Results

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Tohru Hirahara, Engineer

Table 6.2-18 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-840	Optional:	KP-701E / STJ-A276
Operating mode:	Normal Operation	Date of measurement:	September 29, 2008
Test procedure:	ICES-003:2004 Class B	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	41 %

Frequency (MHz)	Level		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result		10m Limit dB μ V/m	Margin	
	Ver. (dB μ V)	Hor.				Ver.	Hor.		Ver.	Hor.
96.00	30.0	31.0	2.0	-31.9	8.3	8.4	9.4	30.0	21.6	20.6
112.00	44.0	42.0	2.2	-31.9	10.4	24.7	22.7	30.0	5.3	7.3
144.00	35.0	34.0	2.5	-31.9	13.0	18.6	17.6	30.0	11.4	12.4
192.00	35.0	36.0	2.9	-31.8	10.2	16.3	17.3	30.0	13.7	12.7
216.07	38.0	40.0	3.1	-31.8	10.0	19.3	21.3	30.0	10.7	8.7
228.07	40.0	38.0	3.1	-31.8	10.3	21.6	19.6	30.0	8.4	10.4
464.02	38.0	40.0	4.6	-31.6	17.1	28.1	30.1	37.0	8.9	6.9
960.00	18.0	18.0	6.8	-29.7	23.3	18.4	18.4	37.0	18.6	18.6

CISPR 22: 1997 Class B Limit

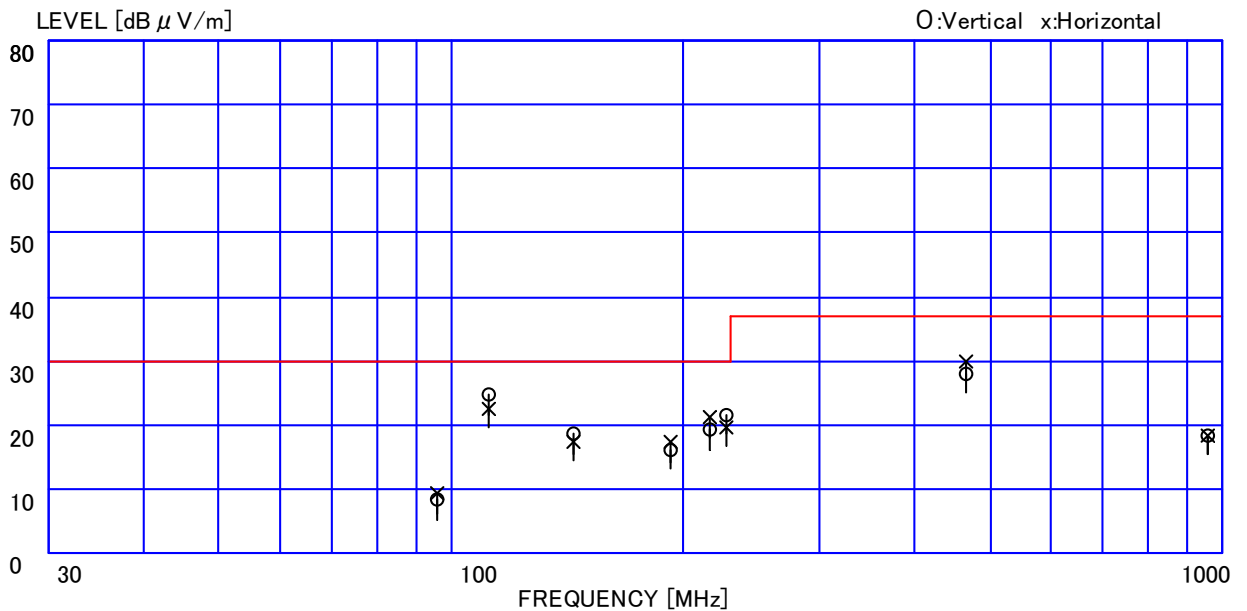


Figure 6.2-18 RFI Field Strength Measurement Results

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T. Hirahara

Tohru Hirahara, Engineer

Table 6.2-19 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-840	Optional:	KC-100 / STJ-A276
Operating mode:	Normal Operation	Date of measurement:	September 29, 2008
Test procedure:	ICES-003:2004 Class B	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	41 %

Frequency (MHz)	Level		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result		10m Limit (dBμV/m)	Margin	
	Ver. (dBμV)	Hor.				Ver. (dBμV/m)	Hor.		Ver. (dB)	Hor.
96.00	32.0	31.0	2.0	-31.9	8.3	10.4	9.4	30.0	19.6	20.6
112.00	40.0	41.0	2.2	-31.9	10.4	20.7	21.7	30.0	9.3	8.3
144.00	30.0	30.0	2.5	-31.9	13.0	13.6	13.6	30.0	16.4	16.4
192.00	35.0	36.0	2.9	-31.8	10.2	16.3	17.3	30.0	13.7	12.7
216.07	38.0	40.0	3.1	-31.8	10.0	19.3	21.3	30.0	10.7	8.7
228.07	40.0	38.0	3.1	-31.8	10.3	21.6	19.6	30.0	8.4	10.4
464.02	40.0	41.0	4.6	-31.6	17.1	30.1	31.1	37.0	6.9	5.9
960.00	18.0	18.0	6.8	-29.7	23.3	18.4	18.4	37.0	18.6	18.6

CISPR 22: 1997 Class B Limit

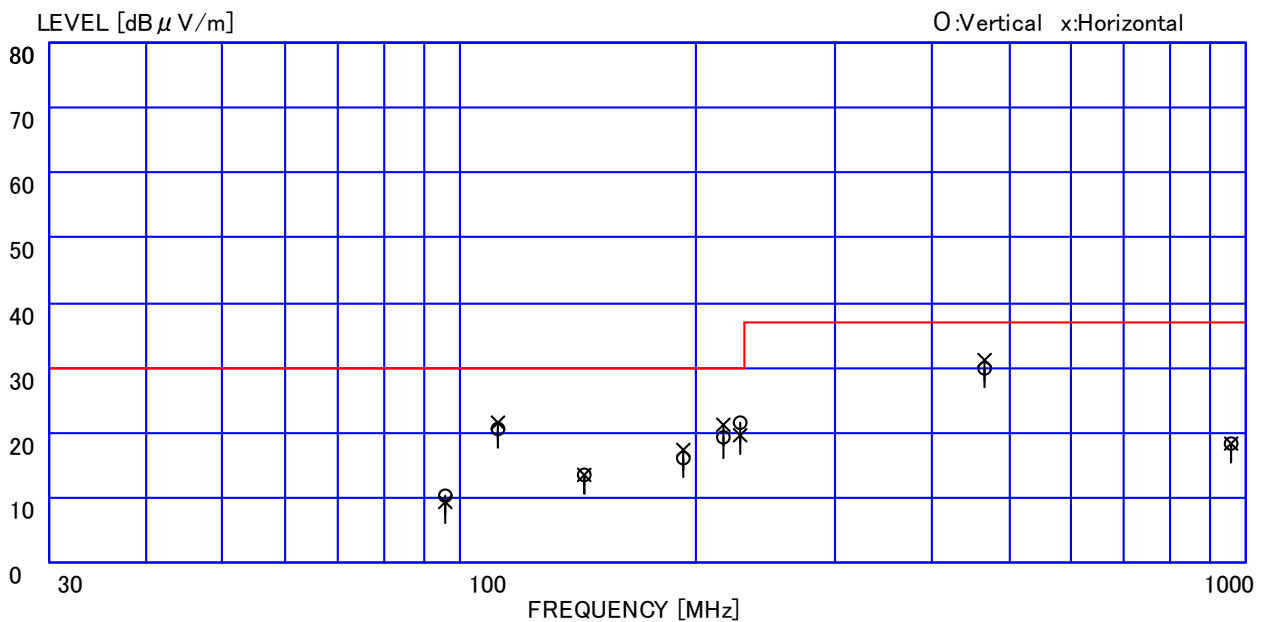


Figure 6.2-19 RFI Field Strength Measurement Results

Report processed by

S. Tsuchida

Sayo Tsuchida
11/Nov./2008

Tested by

T. Hirahara

Tohru Hirahara, Engineer

Table 6.2-20 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name:	PTK-840	Optional:	KC-210 / STJ-A276
Operating mode:	Normal Operation	Date of measurement:	September 29, 2008
Test procedure:	ICES-003:2004 Class B	Temperature:	24 degree C
Test condition:	Power input 1phase AC120V(DC5V)	Humidity:	41 %

Frequency (MHz)	Level		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result		10m Limit dBμV/m	Margin	
	Ver. (dBμV)	Hor. (dBμV)				Ver. (dBμV/m)	Hor. (dBμV/m)		Ver. (dB)	Hor. (dB)
96.00	36.0	36.0	2.0	-31.9	8.3	14.4	14.4	30.0	15.6	15.6
112.00	42.0	44.0	2.2	-31.9	10.4	22.7	24.7	30.0	7.3	5.3
144.00	30.0	30.0	2.5	-31.9	13.0	13.6	13.6	30.0	16.4	16.4
192.00	35.0	32.0	2.9	-31.8	10.2	16.3	13.3	30.0	13.7	16.7
216.07	41.0	40.0	3.1	-31.8	10.0	22.3	21.3	30.0	7.7	8.7
228.07	40.0	38.0	3.1	-31.8	10.3	21.6	19.6	30.0	8.4	10.4
464.02	38.0	42.0	4.6	-31.6	17.1	28.1	32.1	37.0	8.9	4.9
960.00	18.0	18.0	6.8	-29.7	23.3	18.4	18.4	37.0	18.6	18.6

CISPR 22: 1997 Class B Limit

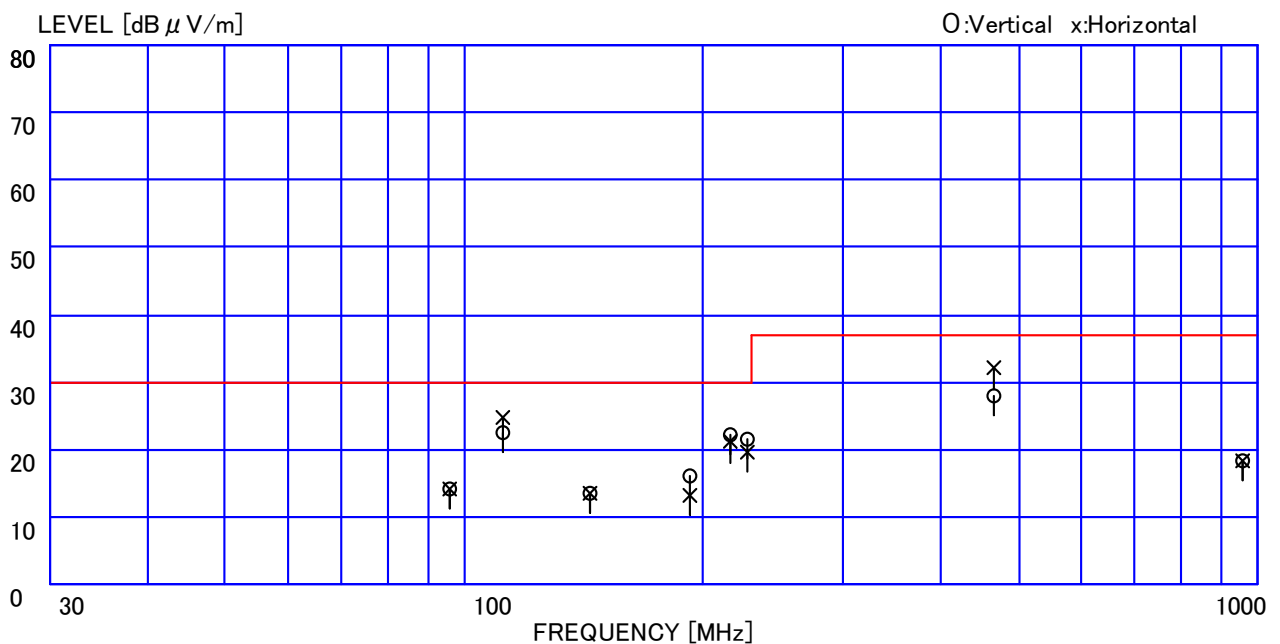


Figure 6.2-20 RFI Field Strength Measurement Results

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Sayo Tsuchida
11/Nov./2008

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Tohru Hirahara, Engineer

Table 6.2-21 RFI Field Strength Measurement Results (Q-Peak Measurement)

Model name: PTK-840 Optional: KP-501E / STJ-A276 / Left-handed
 Operating mode: Normal Operation Date of measurement: September 17, 2008
 Test procedure: ICES-003:2004 Class B Temperature: 23 degree C
 Test condition: Power input 1phase AC120V(DC5V) Humidity: 58 %

Frequency (MHz)	Level		Cable Loss (dB)	Amp. Gain (dB)	Ant. Factor (dB/m)	Result		10m Limit dBµV/m	Margin	
	Ver. (dBµV)	Hor.				Ver. (dBµV/m)	Hor.		Ver. (dB)	Hor.
96.00	30.0	32.0	2.0	-31.9	8.3	8.4	10.4	30.0	21.6	19.6
112.00	43.0	44.0	2.2	-31.9	10.4	23.7	24.7	30.0	6.3	5.3
144.00	40.0	41.0	2.5	-31.9	13.0	23.6	24.6	30.0	6.4	5.4
192.00	35.0	35.0	2.9	-31.8	10.2	16.3	16.3	30.0	13.7	13.7
216.07	35.0	41.0	3.1	-31.8	10.0	16.3	22.3	30.0	13.7	7.7
228.07	35.0	35.0	3.1	-31.8	10.3	16.6	16.6	30.0	13.4	13.4
464.02	34.0	42.0	4.6	-31.6	17.1	24.1	32.1	37.0	12.9	4.9
544.04		30.0	5.0	-31.6	18.2		21.6	37.0		15.4
960.00	18.0	18.0	6.8	-29.7	23.3	18.4	18.4	37.0	18.6	18.6

CISPR 22: 1997 Class B Limit

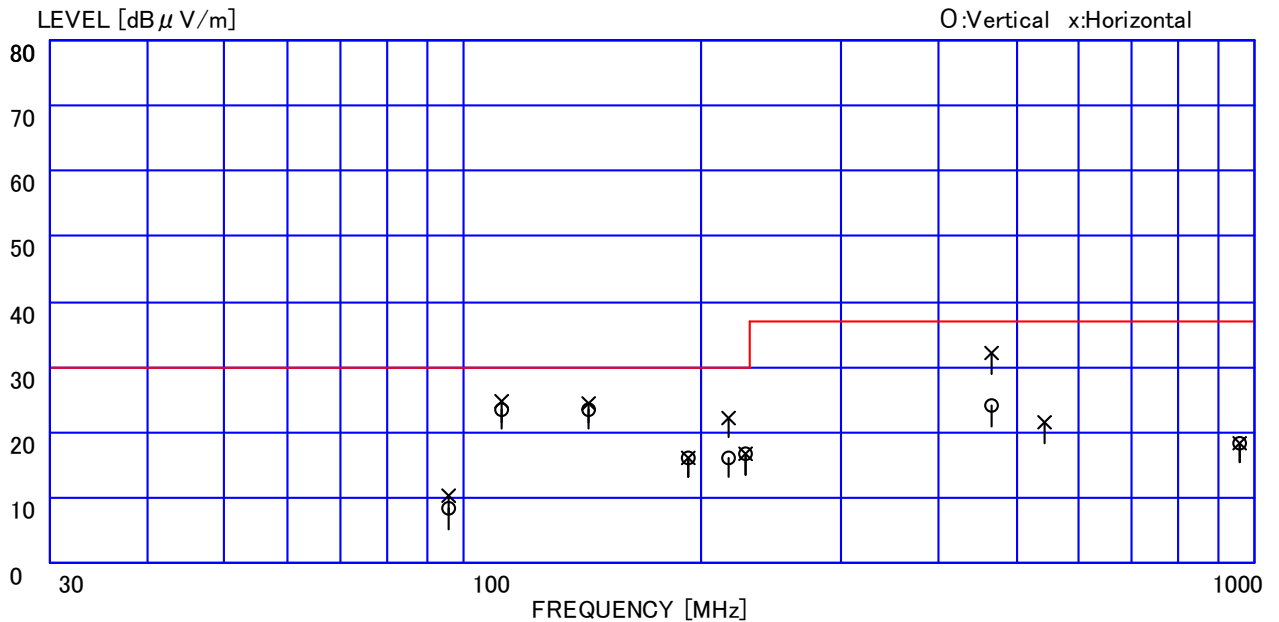


Figure 6.2-21 RFI Field Strength Measurement Results

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Tohru Hirahara, Engineer

6.3 Minimum Margin

Table 6.3-1 Minimum Margin

RFI Voltage Emission Level

Normal operation mode: 8.666 MHz, 3.8 dB
(PTK-840/KP-501E)

RFI Field Strength Emission Level

Normal operation mode: 112.00 MHz, 4.3 dB
(PTK-840/KP-501E)

Antenna Height: 2.73 m (Horizontal polarization)
Turntable Degrees: 307 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)

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