

QTK 98-0003

**Test Report
Application for Certification
Class II Permissive Change
On Behalf Of
Mustek Systems Inc.
Scanner**

Model : 1200 III SP, 12000 SP, 9636 S, 9600 SP III, 9600 S

Project Name: C6S12X

FCC ID : HWFA4SII

**Prepared For:
Mustek Systems Inc.
No. 25, R&D Rd., II, Science-Based Industrial Park,
Hsin-Chu , Taiwan, R.O.C.**

**Report By : QuieTek Corporation
No.75-1, Wang-Yeh Valley, Yung-Hsing,
Chiung-Lin, Hsin-Chu County,
Taiwan, R.O.C.
Tel : (03) 592-8858
Fax : (03) 592-8859**

The test results are traceable to the national or international standards Test results given in this report only relate to the specimen(s) tested or measured. This report shall not be reproduced excepted in full, without the written consent of QuieTek. This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government
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鴻友科技股份有限公司

Mustek Systems Inc.

新竹市新竹科學園區研發二路 25 號

No. 25, R&D Rd., II Science-Based Industrial Park, Hsin-Chu, Taiwan, R.O.C.

Tel: 886-3-577-9373 Fax: 886-3-578-4139

Mustek Systems Inc.

Scanner

Model No.: 1200 II SP, 12000SP, 9636 S, 9600 SP III, 9600 S

FCC ID: HWFA4SII

Application No. : 9809003F

Application Date : Oct. 03, 1998



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Tel: 886-3-577-9373 Fax: 886-3-578-4139

FCC ID : HWFA4SII

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road,
Columbia, MD 21046

Date: Oct. 03, 1998

Subject : RFI related modifications incorporated into unit with FCC ID : HWFA4SII
Class II Permissive Change.

Dear Sir,

This letter services as our declaration that all modifications to FCC ID. : HWFA4SII as listed in Section 6.0 of the test report submitted by QuieTek Corporation. We further declare that the same modifications will be implemented into all production unit to enhance compliance of the unit to FCC limits.

This Scanner apply for Class II Permissive change because :

1. Change power adapter into Hitron's power adapter and Yhi's power adapter.
- 2.. Main board re-layout.

Sincerely Yours,

Miller Hsieh/ Testing Dept, EMI Section
Mustek Systems Inc.

Richard Mullen
Safety & Compliance Consulting
29 Sweetman Lane
West Milford, NJ 07480-2932

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1. Test Report Certification

Applicant : Mustek Systems Inc.

Manufacturer : Mustek Systems Inc.

EUT Description

(A) Model Name : Scanner

(B) Model No. : 1200 III SP, 12000 SP, 9636 S, 9600 SP III, 9600 S

(C) Serial Number : N/A

(D) Power : 120V/60Hz AC

MEASUREMENT STANDARD USED :

CISPR 22 Limits and methods of measurement of radio disturbance characteristics of information technology equipment: 1993

MEASUREMENT PROCEDURE USED :

ANSI C63.4 Methods of Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9kHz to 40GHz. :1992

The device described above was tested by QuieTek Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the CISPR 22 limits for both radiated and conducted emissions.

The measurement results are contained in this test report and QuieTek Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the CISPR 22 limits.

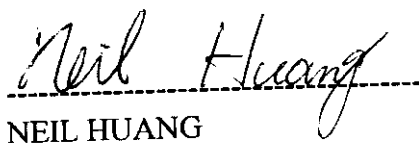
Sample Received Date : September 24, 1998

Test Date : October 03, 1998

Documented by : Cindy Chiu

Test Engineer:

Approve & Authorized Signer:


NEIL HUANG


GENE CHANG

NVLAQ®

2. General Information

2.1 Production Description

Description	: Scanner
Model Number	: 1200IIISP, 12000SP, 9636S, 9600SPIII, 9600S
Serial Number	: N/A
Applicant	: Mustek Systems Inc.
Address	: No. 25, R&D Rd., II, Science-Based Industrial Park, Hsin-Chu, Taiwan, R.O.C.
Manufacturer	: Mustek Systems Inc.
Address	: No. 25, R&D Rd., II, Science-Based Industrial Park, Hsin-Chu, Taiwan, R.O.C.
Power Adaptor #1	: HITRON, M/N: HES10-12010-0-3, Cable: Non-shielded, Undetachable, 1.2m Bonded a ferrite core, but close to the EUT
Power Adaptor #2	: YHI, M/N: YS-1012U12 Cable: Non-shielded, Undetachable, 1.2m Bonded a ferrite core, but close to the EUT
Data cable	: Shielded, Detachable, 1.2m Bonded two ferrite cores

Model Differences:

Mode 1: Scanner w/Adaptor, M/N: HES10-12010-0-3
 Mode 2: Scanner w/Adaptor, M/N: YS-1012U12

Note:

1. This EUT is a modified version of original FCC ID.: HWFA4SII, the difference as below:
 - (1) Changed power adapter into Hitron's power adapter and YIHI's power adapter.
 - (2) Re-layout main Board.
2. The data show in this test report reflects the worst-case data for each operation mode.

2.2 Tested System Details

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

2.2.1 The types for all peripheral devices

☒ Host Personal Computer

Model Number : Serial 3564
Manufacturer : Compaq
CPU : Pentium II 233MHz, Clock: 66MHz
FDD : Mitsubish, MF355F-3490UC
S/N: MF355F-3490UC
HDD : Seagate, ST34321A
S/N: CT0000594
CD-ROM : Hitachi, CDR-8235
S/N: J7K132120
VGA Card : On board
SCSI Card : DTC, 3191D
ID: KQ53191D-1

☒ Scanner (USB)

Model Number : 600 USB
Serial Number : Prototype
FCC ID : HWFA4 USB
Manufacturer : Mustek Systems Inc.

☒ Monitor

Model Number : CM752ET-311
Serial Number : T8E004439
Manufacturer : HITACHI

☒ Keyboard

Model Number : 6311-TW2C
Serial Number : N/A
Manufacturer : ACER

Description of the used cable in tested system

Item	Name	Shielded	Detachable	Length	Port Name	From	To
1	PC Power Cord	No	Yes	1.8m	PC	AC Socket	AC Socket
2	Monitor Cable	Yes	No	1.5m	Monitor	PC	AC Socket
3	Monitor Power Cord	Yes	Yes	1.8m	Monitor	AC Socket	AC Socket
4	Keyboard Cable	Yes	No	1.2m	Keyboard	PC	PC
5	Modem Adaptor	No	Yes	1.9m	Modem	AC Socket	AC Socket
6	Modem Data Cable	Yes	Yes	1.2m	Modem	PC Com1	PC Com1
7	Modem Adaptor	No	Yes	1.9m	Modem	AC Socket	AC Socket
8	Modem Data Cable	Yes	Yes	1.2m	Modem	PC Com2	PC Com2
9	Printer Adaptor	No	Yes	1.9m	Printer	AC Socket	AC Socket
10	Printer Data Cable	Yes	Yes	1.5m	Printer	PC Parallel	PC Parallel
11	Mouse Data Cable	Yes	No	1.5m	Mouse	PC PS2	PC PS2
12	USB Scanner Cable	Yes	Yes	1.2m	USB Scanner	EUT	EUT
13	MO Cable	Yes	Yes	1.2m	MO	EUT	EUT

2.3

Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4-1992.

Radiated testing was performed at an antenna to EUT distance of 10 meters.

2.4 Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	24-27
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

Site Description : July 16, 1998 Accreditation on NVLAP
NVLAP Lab Code: 200347-0

September 9, 1998 Registration on VCCI
Registration No.: 1153

Name of firm : QuietTek Corporation

Site location : No.75-1, Wang-Yeh Valley, Yung-Hsing, Chiung-Lin,
Hsin-Chu County, Taiwan, R.O.C.

3. Conducted Power Line Test

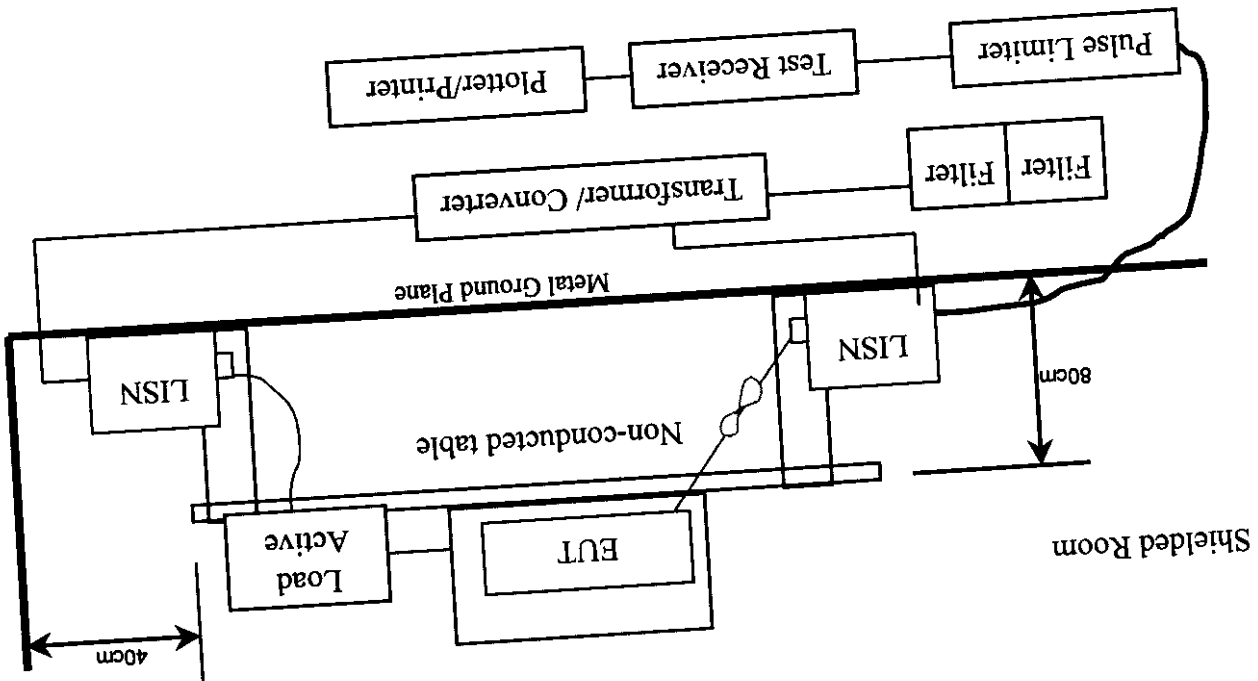
3.1 Test Equipments

The following test equipments are used during the conducted power line tests:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 1998	EUT
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 1998	Peripherals
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 1998	
4	Pulse Limiter	R & S	ESH3-Z2	N/A	
5	NO.2 Shielded Room			N/A	

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

3.2 Block Diagram of Test Setup



3.3 Conducted Powerline Emission Limit

II CISPR 22 Limits

Frequency	Maximum RF Line Voltage dB(uV)		Class A		Class B	
	MHz	QUASI-PEAK	AVERAGE	QUASI-PEAK	AVERAGE	
0.15 - 0.50	79	66	66	66-56	56-46	
0.50-5.0	73	60	60	56	46	
5.0 - 30	73	60	60	60	50	

Remarks : In the Above Table, the tighter limit applies at the band edges.

3.4 EUT Configuration on Measurement

The equipments which is listed 3.2 are installed on Conducted Power Line Test to meet the Commission requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.5 EUT Exercise Software

The EUT exercise program used during conducted testing was designed to exercise the EUT in a manner similar to a typical use. The exercise sequence is listed as below:

- 3.5.1 Setup the EUT and simulators as shown on 3.2
- 3.5.2 Turn on the power of all equipment.
- 3.5.3 Boot the PC from Hard Disk .
- 3.5.4 PC reads test software from disk and then sent to scanner..
- 3.5.5 The Scanner(EUT) will start to operate and scan the video figure into PC.
- 3.5.6 PC will display "video figure" on monitor.
- 3.5.7 Printer and modem will keep at standby mode during Scanner operation.
- 3.5.8 Repeat the above procedure 3.5.4 to 3.5.7

3.6 Test Procedure

The EUT is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables must be changed according to ANSI C63.4-1992 on conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 10KHz. The frequency range from 0.15 MHz to 30 MHz is checked.

3.7 Conducted Emission Data

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range for all the test modes. Then the worst modes were reported the following data pages.

The uncertainty is calculated in accordance with NAMAS NIS 81. The total uncertainty for this test is as follows:

- Uncertainty in the field strength measured: $< \pm 2.0 \text{ dB}$

CONDUCTED EMISSION DATA

Date of Test	:	Oct. 03, 1998	Temperature	:	26 °C
EUT	:	Scanner	Humidity	:	47 %
Test Mode	:	Mode 1	Display Pattern	:	Video Figure
Detector Mode	:	Quasi-Peak & Average			

Frequency	Cable	LISN	Reading Level	Measurement Level	Limits
MHz	Loss Factor	dB	dBuV	dBuV	dBuV

0.163	0.00	0.10	23.73	23.83	65.31
0.218	0.02	0.10	36.41	36.53	62.89
0.455	0.06	0.10	42.18	42.34	56.78
0.615	0.07	0.10	41.27	41.44	56.00
0.821	0.09	0.10	41.37	41.56	56.00
* 14.696	0.32	0.34	48.72	49.38	60.00
16.030	0.33	0.37	47.69	48.39	60.00

Average:

14.693	0.32	0.34	32.87	33.53	50.00
16.030	0.33	0.37	31.40	32.10	50.00

Remarks :

1. " * " means that this data is the worse emission level.
 2. All readings are Quasi-peak and average values.

Attached individual pages of peak scan curve data sheets.

CONDUCTED EMISSION DATA

Temperature	:	26 °C
Humidity	:	47 %
Display Pattern	:	Video Figure
Scanner	:	Mode 1
Test Mode	:	Quasi-Peak & Average
Date of Test	:	Oct. 03, 1998
EUT	:	
Detector Mode	:	

Frequency	Cable	LISN	Loss Factor	dB	MHz
Reading Level	Line2	dBuV	Measurement Level	Line2	dBuV
Limits					
66.00	13.55	14.21	13.65	66.00	66.00
66.00	26.08	14.31	26.19	66.00	64.77
63.91	8.30	8.41	8.41	56.00	63.91
56.00	40.69	40.85	40.85	56.00	56.00
56.00	0.10	0.10	0.10	56.00	56.00
0.510	0.06	0.06	0.06	56.00	56.00
0.791	0.09	0.09	0.09	56.00	56.00
0.941	0.10	0.10	0.10	60.00	60.00
14.698	0.32	0.34	0.32	60.00	60.00
* 16.030	0.33	0.37	0.33	60.00	60.00
24.043	0.38	0.52	0.38	50.00	50.00

Average:

Remarks :
 1. " * " means that this data is the worse emission level.
 2. All readings are Quasi-peak values.

Attached individual pages of peak scan curve data sheets.

CONDUCTED EMISSION DATA

Date of Test	:	Oct. 03, 1998
EUT	:	Scanner
Test Mode	:	Mode 2
Detector Mode	:	Quasi-Peak & Average
Temperature	:	26 °C
Humidity	:	47 %
Display Pattern	:	Video Figure

Frequency	Cable	Loss	Factor	LISN	Reading Level	Line1	dBuV	Measurement Level	Line1	dBuV	Limits
0.150	0.00	0.00	0.10	0.10	31.92	34.00	32.02	34.11	35.70	66.00	66.00
0.172	0.01	0.02	0.10	0.10	35.58	24.19	24.31	25.82	35.49	60.16	60.16
0.200	0.02	0.04	0.10	0.10	22.46	25.68	25.82	25.82	35.49	56.00	56.00
0.220	0.02	0.04	0.10	0.10	22.46	25.68	25.82	25.82	35.49	60.16	60.16
0.297	0.04	0.04	0.10	0.10	22.46	25.68	25.82	25.82	35.49	60.16	60.16
0.303	0.04	0.04	0.10	0.10	22.46	25.68	25.82	25.82	35.49	60.16	60.16
2.081	0.15	0.13	0.56	0.39	43.90	44.84	44.84	44.84	44.84	60.00	60.00
* 26.719	0.39	0.56	0.39	0.56	43.90	44.84	44.84	44.84	44.84	60.00	60.00

Average:

The quasi-peak reading level is lower than the average limits, it is not necessary to measure the average level.

Remarks :

1. " * " means that this data is the worse emission level.
2. All readings are Quasi-peak values.

Attached individual pages of peak scan curve data sheets.

Attached individual pages of peak scan curve data sheets.

2. All readings are Quasi-peak values.

1. " * * " means that this data is the worse emission level.

Remarks :

The quasi-peak reading level is lower than the average limits, it is not necessary to measure the average level.

Average:

Frequency	Cable	LIN	Reading Level	Measurement Level	Limits
MHz	Loss	Factor	Line2	Line2	
	dB	dB	dBuV	dBuV	dBuV
0.154	0.00	0.10	36.78	36.88	65.78
0.178	0.01	0.10	36.41	36.52	64.58
0.213	0.02	0.10	30.31	30.43	63.09
0.272	0.03	0.10	36.40	36.53	61.06
16.031	0.33	0.37	34.69	35.39	60.00
* 22.710	0.37	0.50	50.45	51.32	60.00
25.378	0.38	0.54	45.13	46.05	60.00

CONDUCTED EMISSION DATA

Date of Test	:	Oct. 03, 1998	Temperature	:	26 °C
EUT	:	Scanner	Humidity	:	47 %
Test Mode	:	Mode 2	Display Pattern	:	Video Figure
Detector Mode	:	Quasi-Peak & Average			

☒ Printer

Model Number	:	C2642A
Serial Number	:	MY75N1D2XN
FCC ID	:	B94C2642X
Manufacturer	:	HP

☒ Modem

Model Number	:	1414
Serial Number	:	980033039
FCC ID	:	IFAXDM1414
Manufacturer	:	ACEEX

☒ Mouse

Model Number	:	M-S34
Serial Number	:	LZB75078428
FCC ID	:	DZL211029
Manufacturer	:	HP

☒ Digital Video Camera

Model Number	:	DVC300
Serial Number	:	7480010171500191
FCC ID	:	E4BT1
Manufacturer	:	KODAK

☒ MO

Model Number	:	CS-640
Manufacturer	:	Fujitsu

4. Radiation Emission Test

4.1 Test Equipment

The following test equipments are used during the radiated emission tests:

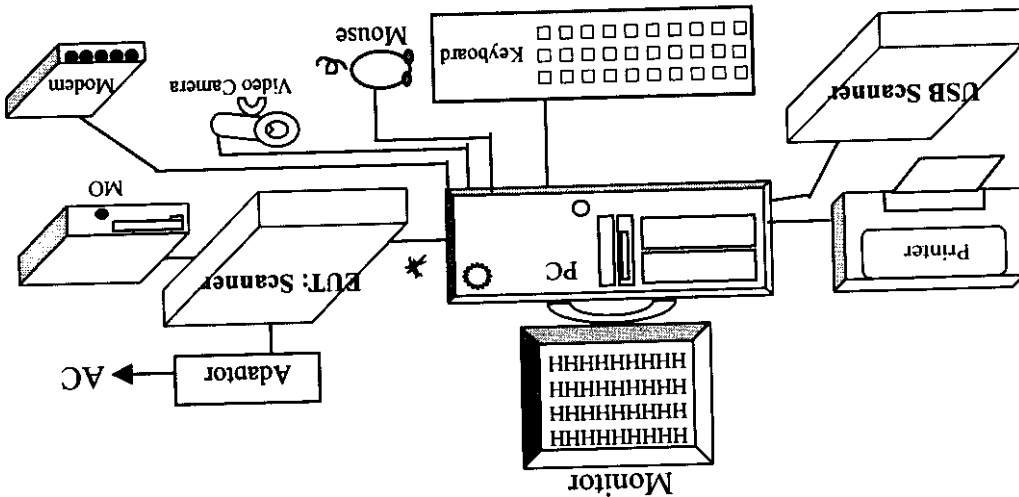
Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.	Remark
SITE # 1 Test Receiver	R & S	ESCS 30 / 825442/14	May, 1998		
	Spectrum Analyzer	Advantest	R3261C / 71720140	May, 1998	
	Pre-Amplifier	HP	8447D/3307A01812	May, 1998	
	Bilog Antenna	Chase	CBL6112B / 12452	Sep, 1998	
	Horn Antenna	EM	EM6917 / 1033325	May, 1998	
	Dipole Antenna	Schwarzbeck	VHAP/866,UHAP/543	May, 1998	
SITE # 2 Test Receiver	R & S	ESCS 30 / 825442/17	May, 1998		
	Spectrum Analyzer	Advantest	R3261C / 71720609	May, 1998	
	Pre-Amplifier	HP	8447D/3307A01814	May, 1998	
	Bilog Antenna	Chase	CBL6112B / 2455	Sep., 1998	
	Horn Antenna	EM	EM6917 / 1033325	May, 1998	
	Dipole Antenna	Schwarzbeck	VHAP/866,UHAP/543	May, 1998	

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.

2. Test Site : ☒ Site #1 , ☐ Site #2

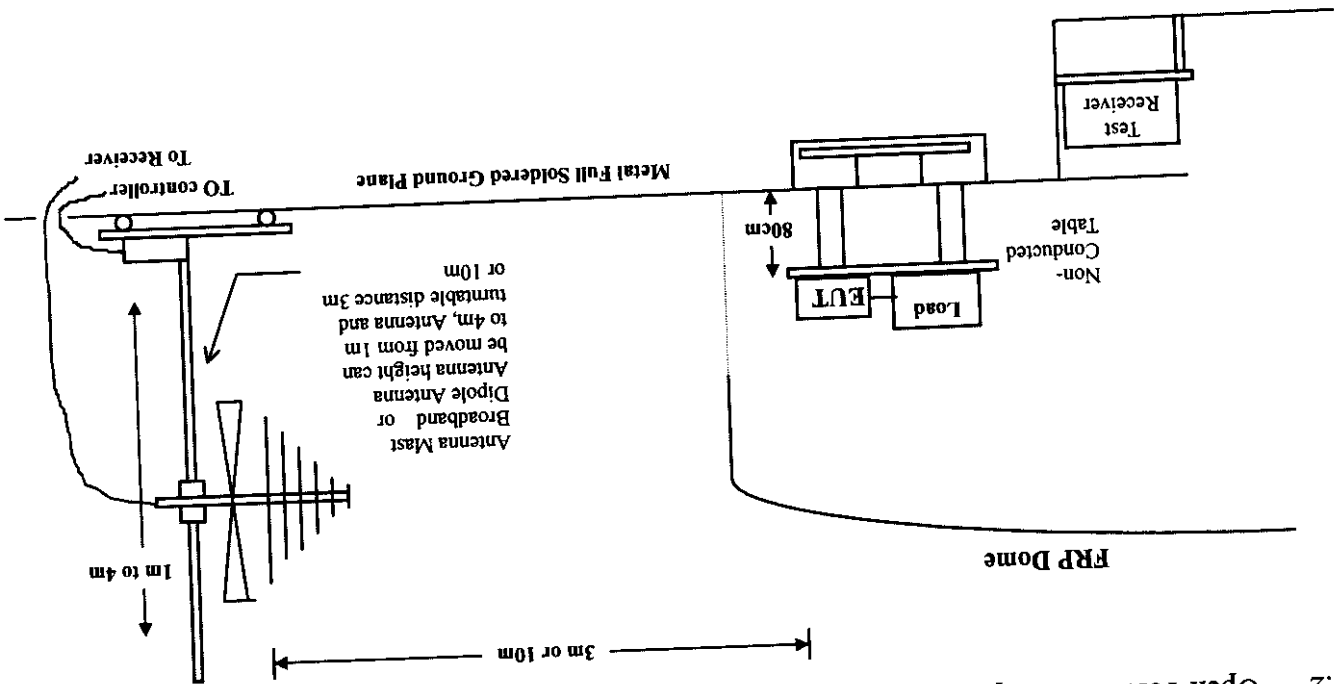
4.2 Test Setup

4.2.1 Block Diagram of Connections between EUT and simulators



* EUT PROVIDED DATA CABLE HAS 2 BOUNDED FEMALE CONNCS

4.2.2 Open Test Site Setup Diagram



4.2.2 Open Test Site Setup Diagram

Frequency	Class A		Class B	
	Distance (m)	Limits (dBuV/m)	Distance (m)	Limits (dBuV/m)
30 – 230	10	40	10	30
230 – 1000	10	47	10	37

Remark: 1. The tighter limit shall apply at the edge between two frequency bands.

2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.4 EUT Configuration

The equipments which is listed 4.2.1 are installed on Radiated Emission Test to meet the Commission requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

4.5 Operating Condition of EUT

Same as Conducted Power Line Test which is listed in 3.5.

4.6 Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 10 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log and horn antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4-1992 on radiated measurement.

The bandwidth below 1Ghz setting on the field strength meter (R&S Test Receiver ESCS 30) is 120 KHz, above 1Ghz are 1 MHz. The frequency range from 30MHz to 1000MHz is checked.

4.7 Radiated Emission Data

The initial step in collecting radiated data is a spectrum analyzer peak scan of the measurement range for all the test modes. Then the worst modes were reported the following data pages.

The uncertainty is calculated in accordance with Nemas NIS 81. The total uncertainty for this test is as follows:
• Uncertainty in the field strength measured: $< \pm 4.0$ dB

Radiated Emission Data

Test of Mode	:	Oct. 03, 1998	Temperature	:	26 °C
EUT	:	Scanner	Humidity	:	65 %
Test Mode	:	Mode 1	Display Pattern	:	N/A

Frequency	Cable	Ant	Reading Level	Emission Level	Limits Ant Table
MHz	Loss	Factor	dB/m	dBuV/m	Horizontal
	dB				dBuV/m
					uV/m cm deg

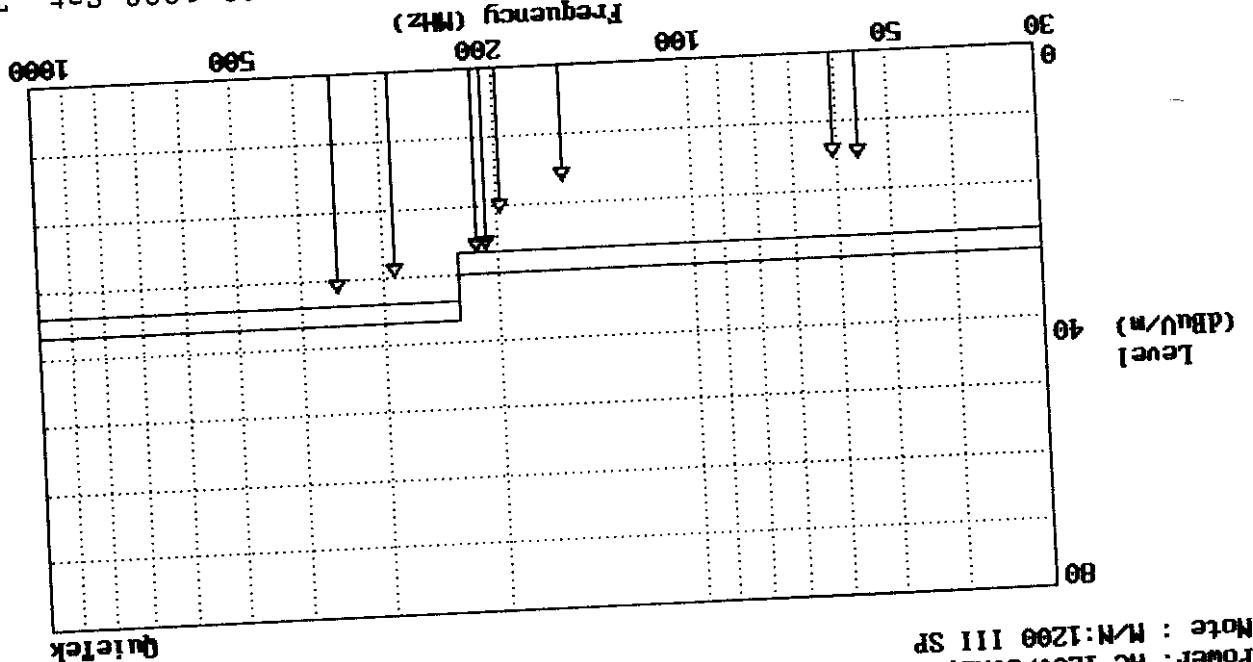
55.790	1.40	5.73	8.45	15.58	30 401	178
61.104	1.45	5.39	8.44	15.28	30 401	150
158.079	2.38	10.34	4.40	17.12	30 401	65
196.600	2.76	9.10	9.38	21.24	30 401	42
207.229	2.86	9.46	14.40	26.72	30 401	97
* 215.200	2.93	9.01	14.87	26.81	30 401	97
286.932	3.63	13.08	13.48	30.19	37 401	83
350.690	4.01	14.25	13.77	32.03	37 340	135

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. " * ", means this data is the worse emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss

Attached individual pages of peak scan curve data sheets.

File#: 9809003.EMI - 10
 Site : Quietek
 Limit: CISPR CLASS-B 10m
 EUT : Scanner
 Power: AC 120V/60Hz, HITRON ADAPTOR
 Note : M/N:1200 III SP
 Discrete Date : 10-03,1998 Sat Time:09:42:54 am
 Probe : QTKANT-01A Horizontal
 Margin: 3 dB
 Quietek



File#: 9809003.EMI - 10
 Site : Quietek
 Limit: CISPR CLASS-B 10m
 EUT : Scanner
 Power: AC 120V/60Hz, HITRON ADAPTOR
 Note : M/N:1200 III SP
 Discrete Date : 10-03,1998 Sat Time:09:42:54 am
 Probe : QTKANT-01A Horizontal
 Margin: 3 dB
 Std :
 Trace :
 Quietek

Measure Reading Level	Frequency	dB	dB	cm	deg
55.790	15.58	8.45	-14.42	30.00	5.73
61.104	15.28	8.44	-14.72	30.00	5.39
158.079	17.12	4.40	-12.88	30.00	10.34
196.600	21.24	9.38	-8.76	30.00	9.10
207.229	26.72	14.40	-3.28	30.00	9.46
215.200	26.81	14.87	-3.19	30.00	9.01
286.932	30.19	13.48	-6.81	37.00	13.08
350.690	32.03	13.77	-4.97	37.00	14.25
55.790	15.58	8.45	-14.42	30.00	5.73
61.104	15.28	8.44	-14.72	30.00	5.39
158.079	17.12	4.40	-12.88	30.00	10.34
196.600	21.24	9.38	-8.76	30.00	9.10
207.229	26.72	14.40	-3.28	30.00	9.46
215.200	26.81	14.87	-3.19	30.00	9.01
286.932	30.19	13.48	-6.81	37.00	13.08
350.690	32.03	13.77	-4.97	37.00	14.25

Radiated Emission Data

Test of Mode	:	Oct. 03, 1998	Temperature	:	26 °C
EUT	:	Scanner	Humidity	:	65 %
Test Mode	:	Mode I	Display Pattern	:	N/A

Frequency Cable Ant Reading Level Emission Level Limits Ant Table
 MHz Loss Factor Vertical Vertical uV/m cm deg

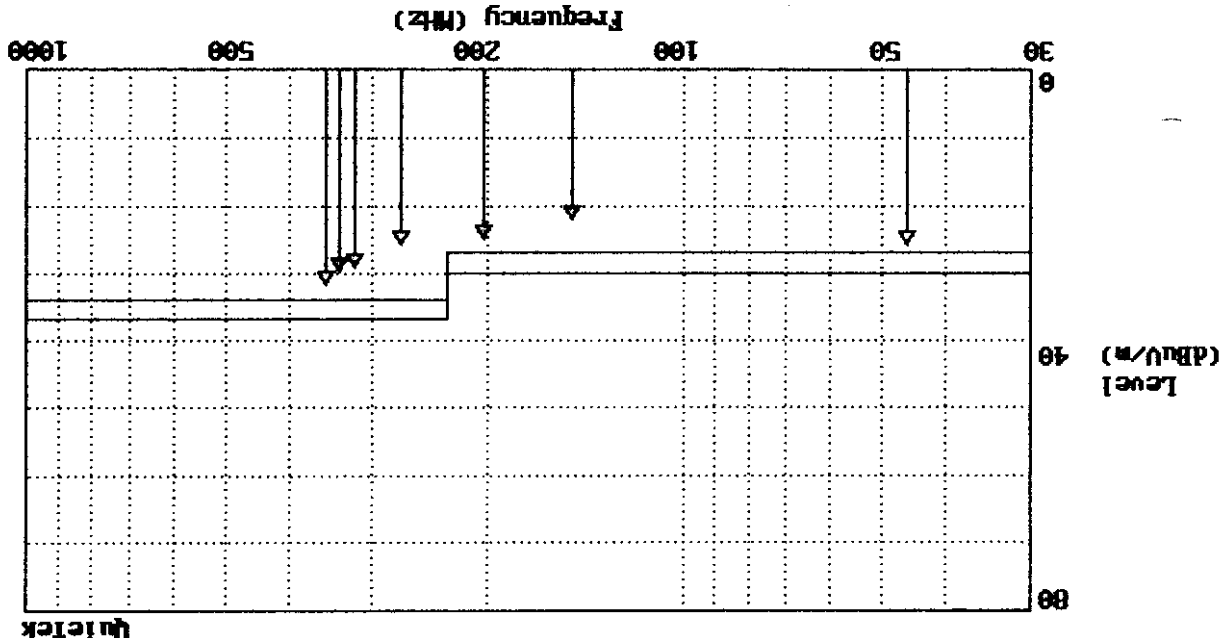
* 45.998	1.31	9.76	14.72	25.78	30	100	76
148.776	2.30	10.38	9.51	22.19	30	100	48
201.910	2.80	9.33	12.95	25.08	30	100	40
270.986	3.48	12.92	9.30	25.69	37	100	41
318.807	3.85	14.11	11.39	29.35	37	100	41
334.749	3.93	14.61	11.25	29.79	37	100	201
350.690	4.01	14.80	12.95	31.76	37	100	135

Remarks :

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. " * ", means this data is the worse emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss

Attached individual pages of peak scan curve data sheets.

File#: 9809003.EMI - 9
 Discrete Date : 10-03,1998 Sat Time: 09:42:00 am
 Site : QuiTek
 Limit: CISPR CLASS-B 10m
 EUT : Scanner
 Power: AC 120V/60Hz,HITRON ADAPTOR
 Note : M/N:1200 III SP
 Trace :
 Std :
 Margin: 3 dB
 Probe : QTKANT-01A Vertical



File#: 9809003.EMI - 9
 Discrete Date : 10-03,1998 Sat Time: 09:42:00 am
 Site : QuiTek
 Limit: CISPR CLASS-B 10m
 EUT : Scanner
 Power: AC 120V/60Hz,HITRON ADAPTOR
 Note : M/N:1200 III SP

QuiTek
 Frequency
 Measure Reading Level
 Over Limit
 Probe Factor
 Cable Loss
 Amp Factor
 Ant Pos
 Tabl

45.998	25.78	14.72	-4.22	30.00	9.76	1.31	0.00	100	76
148.776	22.19	9.51	-7.81	30.00	10.38	2.30	0.00	100	48
201.910	25.08	12.95	-4.92	30.00	9.33	2.80	0.00	100	40
270.986	25.69	9.30	-11.31	37.00	12.92	3.48	0.00	100	41
318.807	29.35	11.39	-7.65	37.00	14.11	3.85	0.00	100	41
334.749	29.79	11.25	-7.21	37.00	14.61	3.93	0.00	100	201
350.690	31.76	12.95	-5.24	37.00	14.80	4.01	0.00	100	135

Radiated Emission Data

Test of Mode	:	Oct. 03, 1998	Temperature	:	26 °C
EUT	:	Scanner	Humidity	:	65 %
Test Mode	:	Mode 2	Display Pattern	:	N/A

Frequency Cable Ant Reading Level Emission Level Limits Ant Table
 MHz Loss Factor Horizontal Horizontal uV/m cm deg

55.792	1.40	5.73	11.53	18.66	30	400	16
127.525	2.09	11.69	7.87	21.65	30	400	122
137.659	2.19	11.59	11.72	25.50	30	400	122
144.003	2.24	11.16	12.78	26.18	30	400	129
172.691	2.52	9.43	11.77	23.72	30	400	32
196.602	2.76	9.10	9.51	21.37	30	400	14
207.230	2.86	9.46	14.00	26.32	30	400	91
223.169	3.01	9.78	10.41	23.20	30	400	147
270.992	3.48	13.03	8.67	25.18	37	400	84
* 350.698	4.01	14.25	15.12	33.38	37	351	153

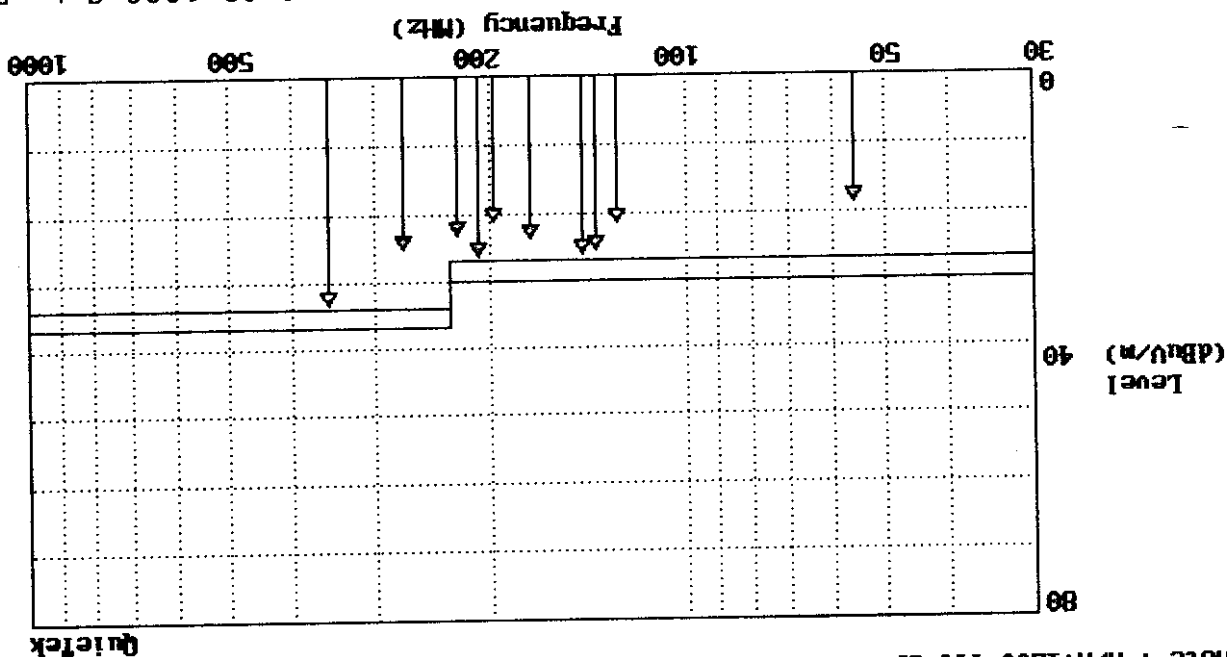
Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. " * ", means this data is the worse emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss

Attached individual pages of peak scan curve data sheets.

File#: 9809003.EMI - 18
 Site : Quietek
 Limit: CISPR CLASS-B 10m
 EUT : Scanner
 Power: AC 120V/60Hz, YHI ADAPTOR
 Note : M/N:1200 III SP

Discrete Date : 10-03,1998 Sat Time:09:58:45 am
 Probe : QTKANT-01A Horizontal
 Margin: 3 dB



File#: 9809003.EMI - 18
 Site : Quietek
 Limit: CISPR CLASS-B 10m
 EUT : Scanner
 Power: AC 120V/60Hz, YHI ADAPTOR
 Note : M/N:1200 III SP

Discrete Date : 10-03,1998 Sat Time: 09:58:45 am
 Probe : QTKANT-01A Horizontal
 Margin: 3 dB
 Std :
 Trace :

Measure Reading	Level	Frequency	Over	Limit	Probe	Cable	Loss	Amp	Ant	Tabl
dB	dB	MHz	dB	dB	dB	dB	dB	cm	deg	Pos
18.66	11.53	15.12	-11.34	30.00	5.73	1.40	0.00	400	16	153
21.65	7.87	15.12	-8.35	30.00	11.69	2.09	0.00	400	122	122
25.50	11.72	15.12	-4.50	30.00	11.59	2.19	0.00	400	122	122
26.18	12.78	15.12	-3.82	30.00	11.16	2.24	0.00	400	129	129
23.72	11.77	15.12	-6.28	30.00	9.43	2.52	0.00	400	32	32
21.37	9.51	15.12	-8.63	30.00	9.10	2.76	0.00	400	14	14
26.32	14.00	15.12	-3.68	30.00	9.46	2.86	0.00	400	91	91
23.20	10.41	15.12	-6.80	30.00	9.78	3.01	0.00	400	147	147
25.18	8.67	15.12	-11.82	37.00	13.03	3.48	0.00	400	84	84
33.38	15.12	15.12	-3.62	37.00	14.25	4.01	0.00	351	153	153

Quietek

Radiated Emission Data

Test of Mode	:	Oct. 03, 1998	Temperature	:	26 °C
EUT	:	Scanner	Humidity	:	65 %
Test Mode	:	Mode 2	Display Pattern	:	N/A

Frequency	Cable	Ant	Reading Level	Emission Level	Limits	Ant Table
	Loss Factor		Vertical	Vertical		
MHz	dB	dB/m	dBuV/m	dBuV/m	uV/m	cm deg

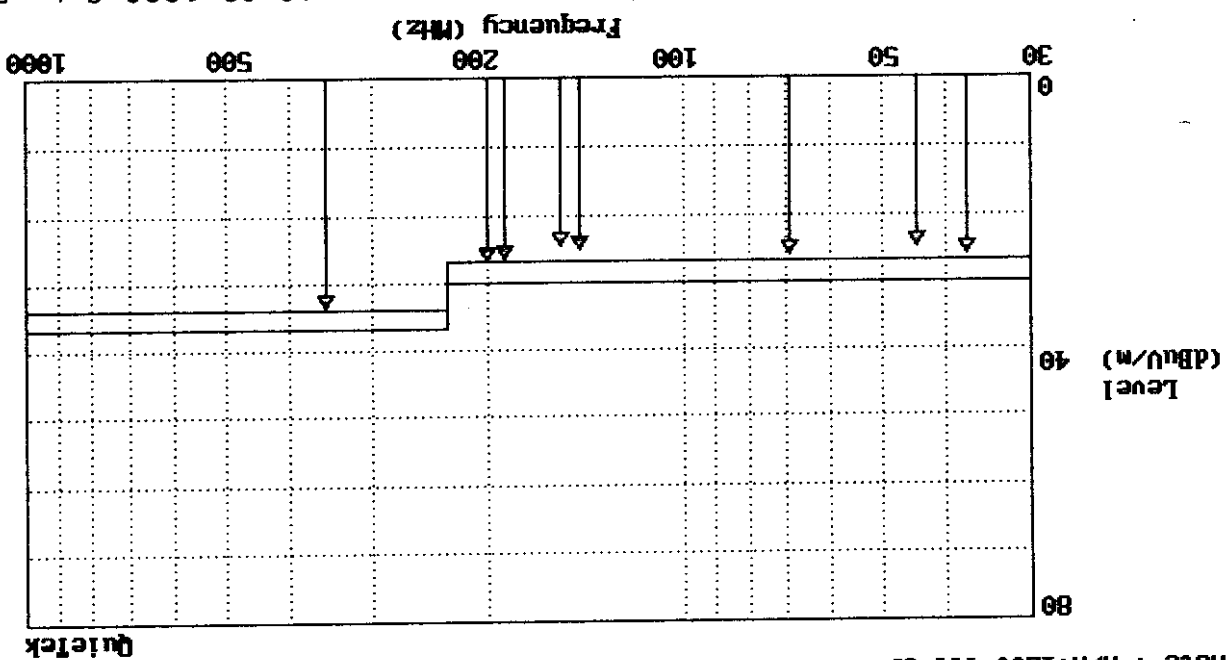
37.194	1.22	14.31	10.70	26.23	30	100	16
44.500	1.29	9.96	13.66	24.91	30	100	190
69.074	1.52	5.27	19.28	26.07	30	100	77
144.001	2.25	10.96	11.98	25.19	30	100	83
154.091	2.35	10.33	12.02	24.70	30	100	73
187.249	2.66	8.96	14.98	26.60	30	100	135
* 199.249	2.78	8.97	15.09	26.84	30	100	65
350.693	4.02	15.02	14.86	33.90	37	100	151

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “*” means this data is the worse emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss

Attached individual pages of peak scan curve data sheets.

File#: 9809003.EMI - 17 Discrete Date : 10-03,1998 Sat Time: 09:57:30 am
 Site : Quietek
 Limit: CISPR CLASS-B 10m
 EUT : Scanner
 Power: AC 120V/60Hz, YHI ADAPTOR
 Note : M/N:1200 III SP



File#: 9809003.EMI - 17 Discrete Date : 10-03,1998 Sat Time: 09:57:58 am
 Site : Quietek
 Limit: CISPR CLASS-B 10m
 EUT : Scanner
 Power: AC 120V/60Hz, YHI ADAPTOR
 Note : M/N:1200 III SP

Frequency	Measure	Reading	Level	Over	Limit	Probe	Cable	Loss	Amp	Ant	Tabl
MHz	dB	dB	dB	dB	dB	dB	dB	dB	cm	deg	Pos
37.194	26.23	10.70	-3.77	30.00	14.31	1.22	0.00	100	16		
44.500	24.91	13.66	-5.09	30.00	9.96	1.29	0.00	100	190		
69.074	26.07	19.28	-3.93	30.00	5.27	1.52	0.00	100	77		
144.001	25.19	11.98	-4.81	30.00	10.96	2.25	0.00	100	83		
154.091	24.70	12.02	-5.30	30.00	10.33	2.35	0.00	100	73		
187.249	26.60	14.98	-3.40	30.00	8.96	2.66	0.00	100	135		
199.249	26.84	15.09	-3.16	30.00	8.97	2.78	0.00	100	65		
350.693	33.90	14.86	-3.10	37.00	15.02	4.02	0.00	100	151		

5. Summarization of Test Results

The test results in the conducted and radiated emission were performed according to the requirements of measurement standard and process. Quietek Corporation is assumed full responsibility for the accuracy and completeness of these measurements. The summarization of the worst value of conducted and radiated emission test is described as below:

☐ The worst value of Conducted Emission Test

Frequency (MHz)	Line	Measurement Level dB(uV)	Limit Level dB(uV)	Comment
14.696	L1	49.38	60	Pass
22.710	L2	51.32	60	Pass

☐ The worst value of Radiated Emission Test

Frequency (MHz)	Polarization	Measurement Level dB(uV)	Limit Level dB(uV)	Comment
215.000	H	26.81	30	Pass
199.249	V	26.84	30	Pass

6. EMI Reduction Method During Compliance Testing

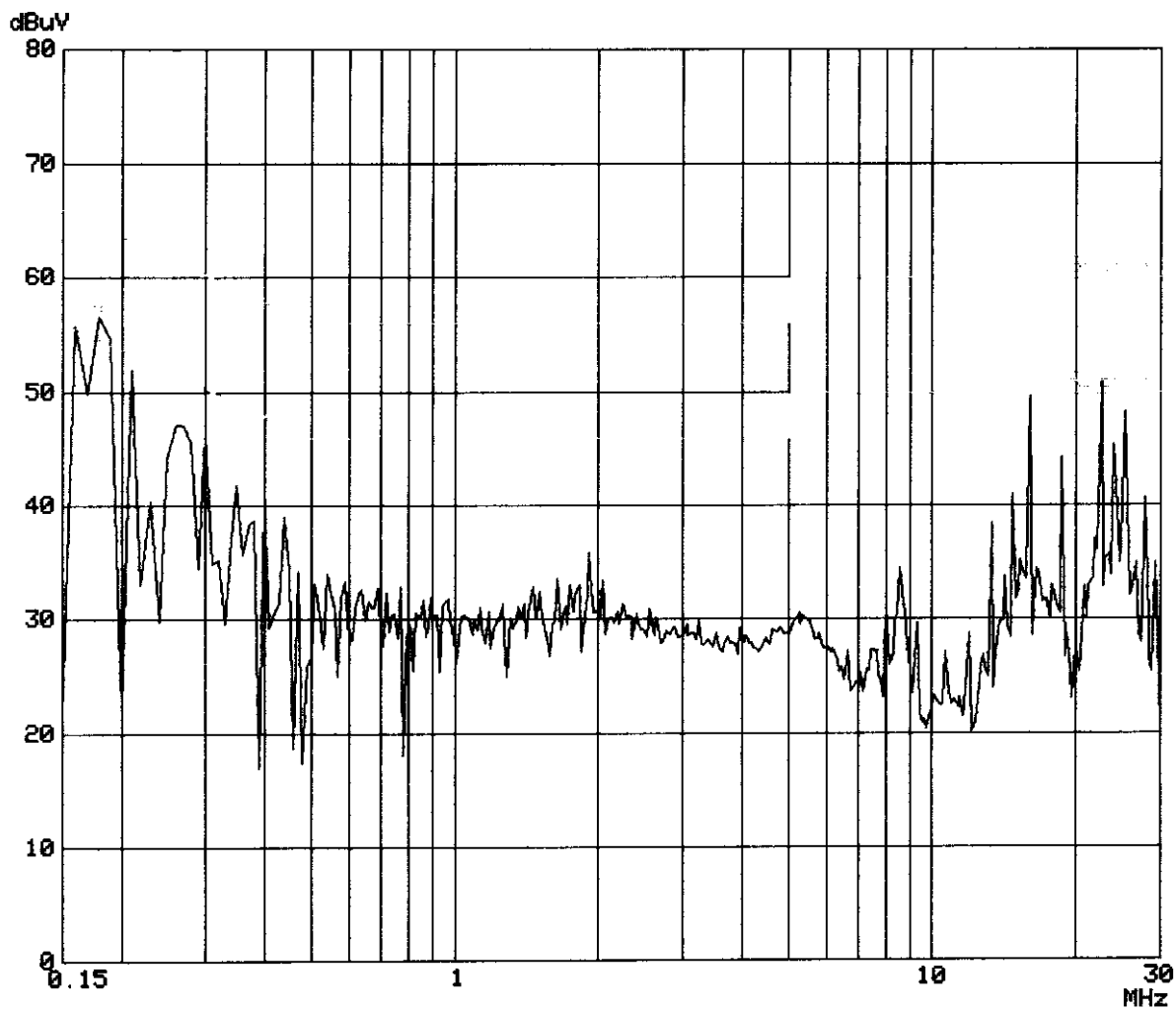
No modification was made during testing.

EUT: SCANNER 1200 III SP
Manuf: MUSTEK
Op Cond: 110V 60Hz FCC
Operator: NEIL
Comment: L2
File name: BCIQ22B.SPC
Date: 24. Sep 98 11:55

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	10k	9k	PK	1ms	10dBLN	OFF

Final Measurement: x QP
Meas Time: 1 s

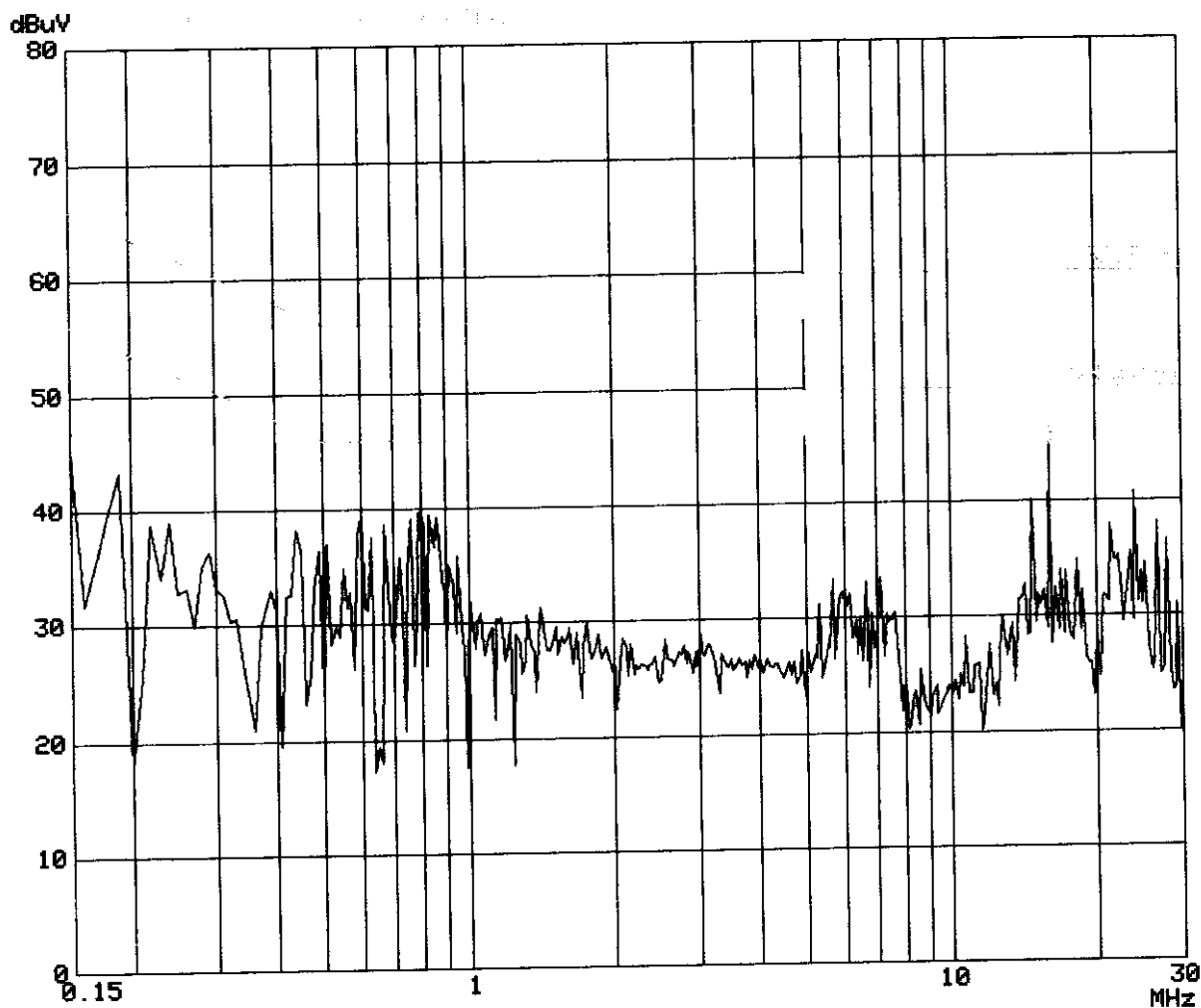


EUT: SCANNER 1200 III SP
Manuf: MUSTEK FCC
Op Cond: 110V 60Hz HITION
Operator: NEIL
Comment: L2
Date: 24. Sep 98 14:54

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	10k	9k	PK	1ms	10dBLN	OFF

Final Measurement: x QP
Meas Time: 1 s

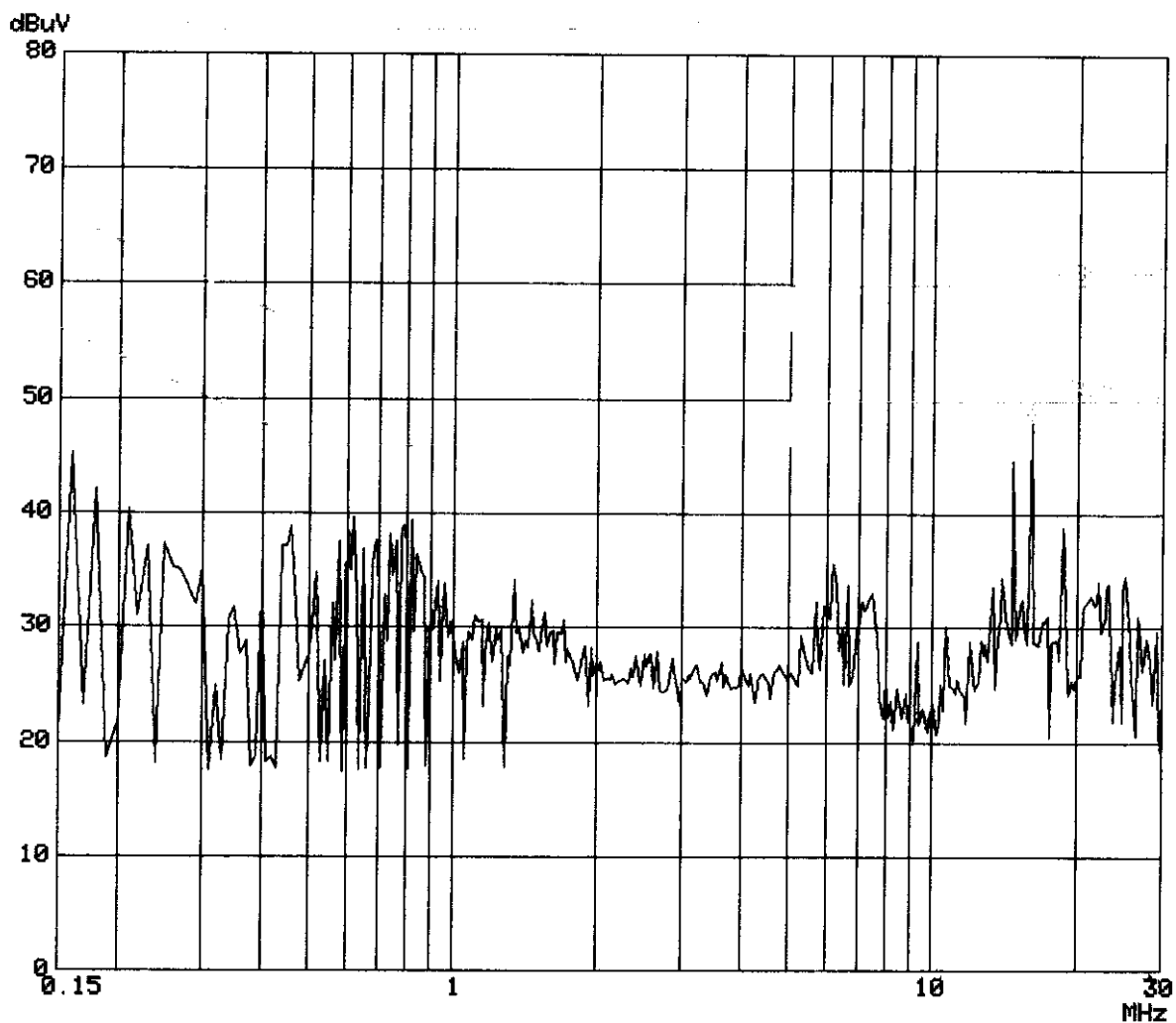


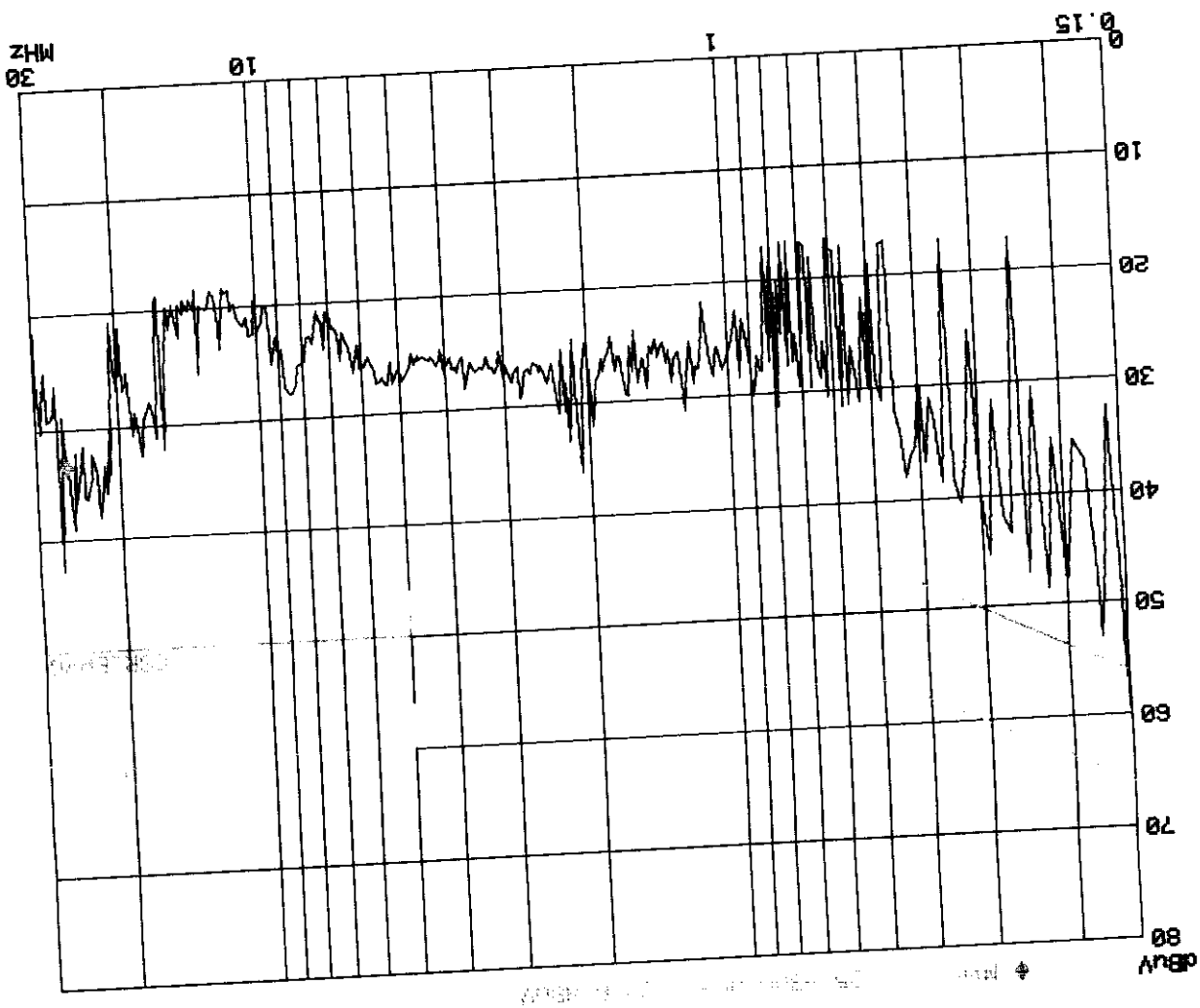
EUT: SCANNER 1200 III SP
Manuf: MUSTEK FCC
Op Cond: 110V 60Hz HITION
Operator: NEIL
Comment: L1
Date: 24. Sep 98 14:30

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	10k	9k	PK	1ms	10dBLN	OFF

Final Measurement: x QP
Meas Time: 1 s





Date: 24. Sep 98 11:34
 File name: BC1Q22B.SPC
 Comment: L1
 Operator: NEIL
 Scan Settings (1 Range)
 Start 150K
 Stop 30M
 Frequencies Step 10K
 IF BW 9K
 Detector PK
 Receiver Settings M-Time 1ms
 M-Time 100BLN
 Preamp OFF
 Final Measurement: X QP
 Meas Time: 1 s