TOSHIBA TEC CORPORATION

570,OHITO,OHITO-CHO,TAGATA-GUN,SHIZUOKA-KEN,410-2392,JAPAN

PHONE:0558-76-9607 FAX 0558-76-9844

REPORT OF MEASUREMENT ON DIGITAL DEVICE

Data :December 16, 2002
Report Number : OF-02033

1.Applicant	: TOSHIBA TEC CORPORATION Document Processing & Telecommunication Company 6-78 Minami-cho,Mishima-shi,Shizuoka-ken 411-8521,Japan
2.Manufacture	: TOSHIBA TEC CORPORATION Document Processing & Telecommunication Company 6-78 Minami-cho,Mishima-shi,Shizuoka-ken 411-8521,Japan
3.Produtc Tested	: Dot Matrix Printer
4.Data of Application received	: December 16, 2002
5.Data of Measurement	: December 5, 2002 (Completed)
6.Regulations Applied	: FCC Part 15 Subpart B
7.Mesurement Procedure	: ANSI C63.4-1992
8.SUMMARY OF TEST RESULTS	: PASEED
9.Place of Measurement	: TOSHIBA TEC CORPORATION FUNABARA SITE 696-3,Kami-Funabara,Amagi-Yugashima-cho Tagata-gun,Shizuoka-ken,410-3621,Japan Site No.31040/SIT 1300F2

Toyoyasu Kusaka

Toyoyasu Kusaka, Group Manager
Power Supply Group.
Components Business Group

I HEREBY CERTIFY THAT : The data shown in this report were made in coordinate with the procedures given in ANSI C63.4-1992 and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

Note : These results are deemed satisfactory evidence of compliance with ICES-003 of the Canadian Interference-Causing Equipment Regulation.

GENERAL EQUIPMENT INFORMATION :

DESCRIPTION OF EQUIPMENT :

1) Category	: Class B
2) Trade Name	: APTi
3) Model No.	: T2240/9
4) FCC-ID	: QRTOH-0201
5) Power-Rating	: 120V 60Hz
6) Type of EUT	: Desktop

TEST CONDITION OF EQUIPMENT UNDER TEST(EUT)

1) Test Configuration of the EUT	: Refer to Page No.7,8,9,10 and 11.
2) Operating Mode	: 1) Stand-by Mode 2) Printing With the Program Prepared by the applicant Program to printing alternately from the interface of Parallel·Serial.
3) Power Supply	: 120V 60Hz
4) EUT Grounding	: Grounded at the plug end of line cord.
5) EUT Warm-up Time	: 5 minutes
6) Temp/Humi.	: Temp. 17 ℃ Humi.28 %

Tested by : J. Watanabe

Tetsuya Watanabe

RADIATED RADIO NOISE MEASUREMENT

Description of Device : Dot Matrix Printer Model No. : T2240/9

Test Condition of Equipment under Test (EUT)

Configuration of EUT : Refer to sheet No.7

Operating Condition : Refer to sheet No.2

Mode of Interface : Parallel & Serial

Date : December 5,2002 : 17℃ 28%

Frequency (MHz)	Antenna Factor (dB)	Meter Reading at 3 m (dB/uV)		Limits (dB/uV/m)	Emission Level at 3 m (dB/uV/m)	
		Horizontal	Vertical		Horizontal	Vertical
31.1	18.3	0.0	11.5	40.0	0.0	29.8
34.0	18.0	0.0	9.5	40.0	0.0	27.5
65.8	8.8	14.0	25.5	40.0	22.8	34.3
75.3	8.8	20.5	27.0	40.0	29.3	35.8
80.0	9.5	23.5	28.0	40.0	33.0	37.5
90.4	11.5	15.0	19.0	43.5	26.5	30.5
144.0	18.4	12.0	13.0	43.5	30.4	31.4
206.9	21.8	4.0	3.0	43.5	25.8	24.8
232.0	22.1	4.5	2.0	46.0	26.6	24.1
243.7	22.3	1.0	0.1	46.0	23.3	22.4

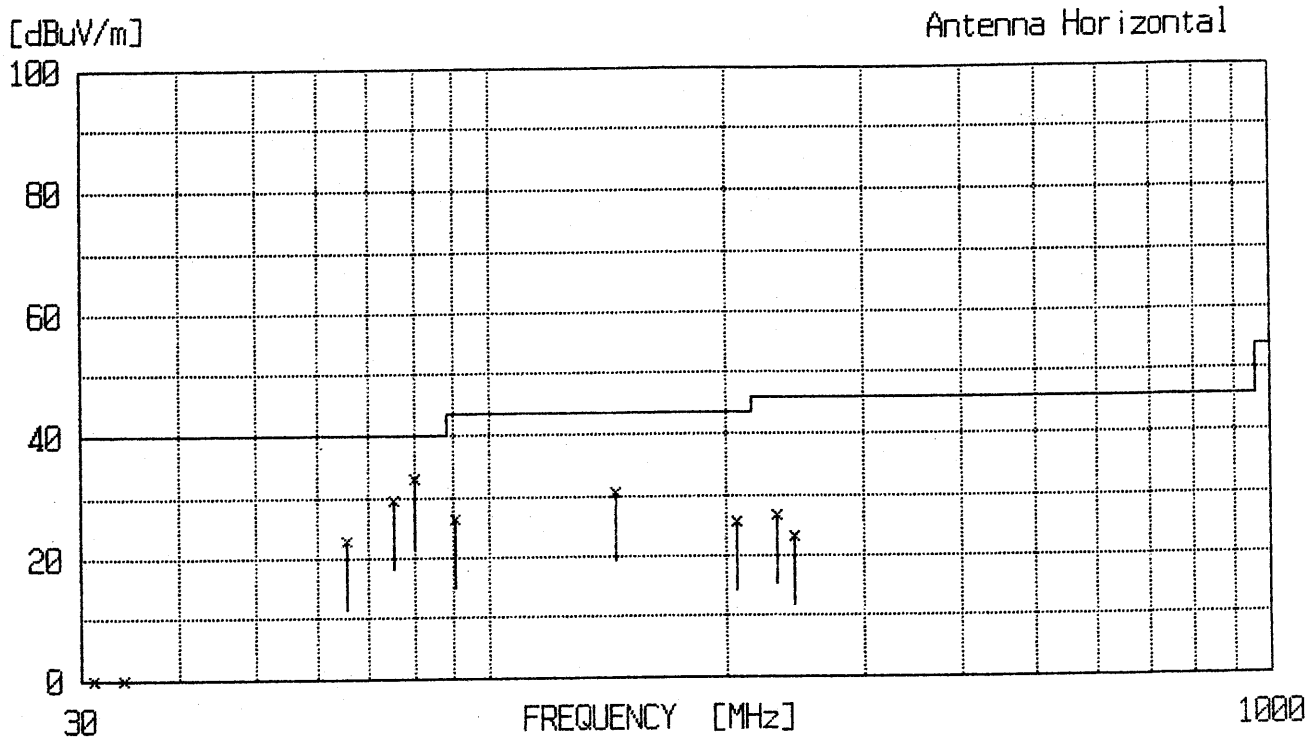
NOTES : 1) The cable (53m) loss is included in the antenna factor.

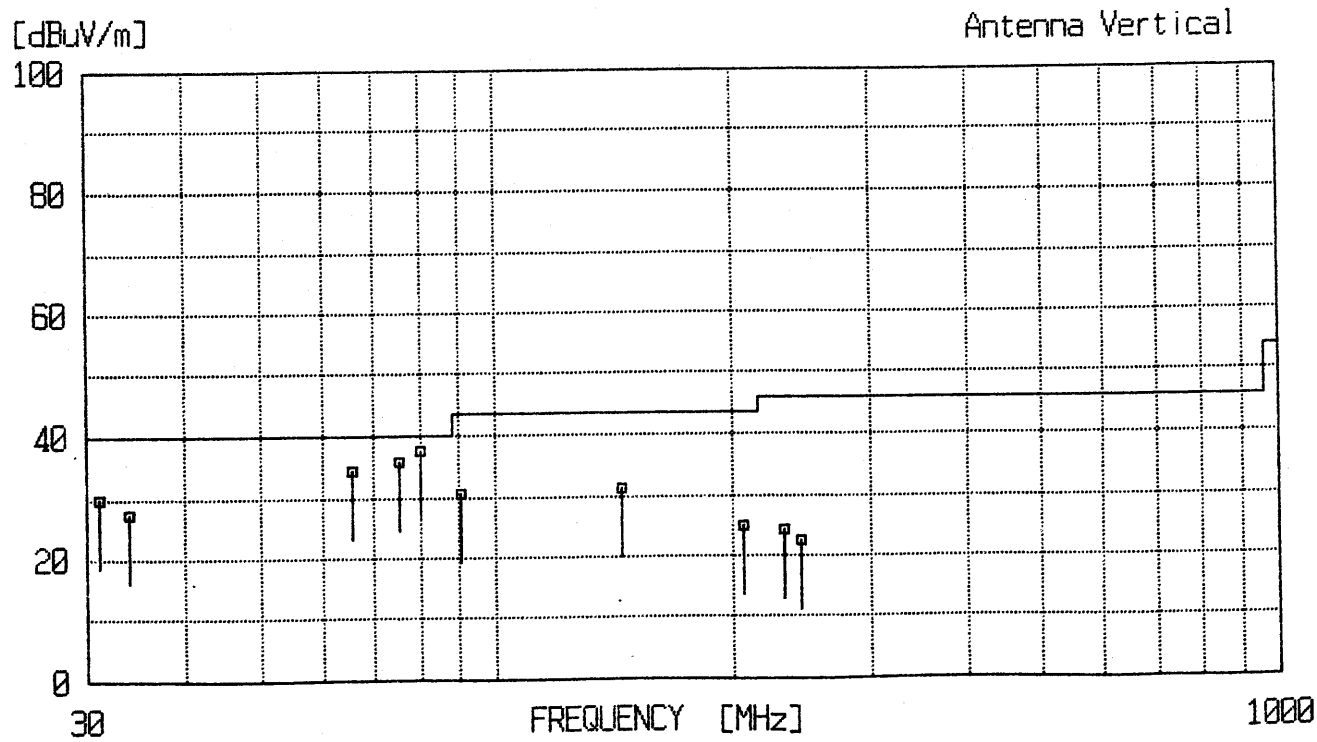
2) The symbol of [*] means [With Dipole Antenna] and the rest means [With Broadband Antenna].

3) Meter Reading + Antenna Factor = Emission Level
Sample of calculation at 31.1 MHz : 0.0 + 18.3 = 0.0 dB/uV/m

RADIATED RADIO NOISE MEASUREMENT

Description of Device : Dot Matrix Printer
Model No. : T2240/9
Operating Condition : Refer to sheet No.7
Mode of Interface : Parallel & Serial





LINE CONDUCTED RF VOLTAGE MEASURMENT

Description of Device : Dot Matrix Printer Model No. : T2240/9

Test Condition of Equipment under Test (EUT)

Configuration of EUT : Refer to sheet No.7

Operating Condition : Refer to sheet No.2

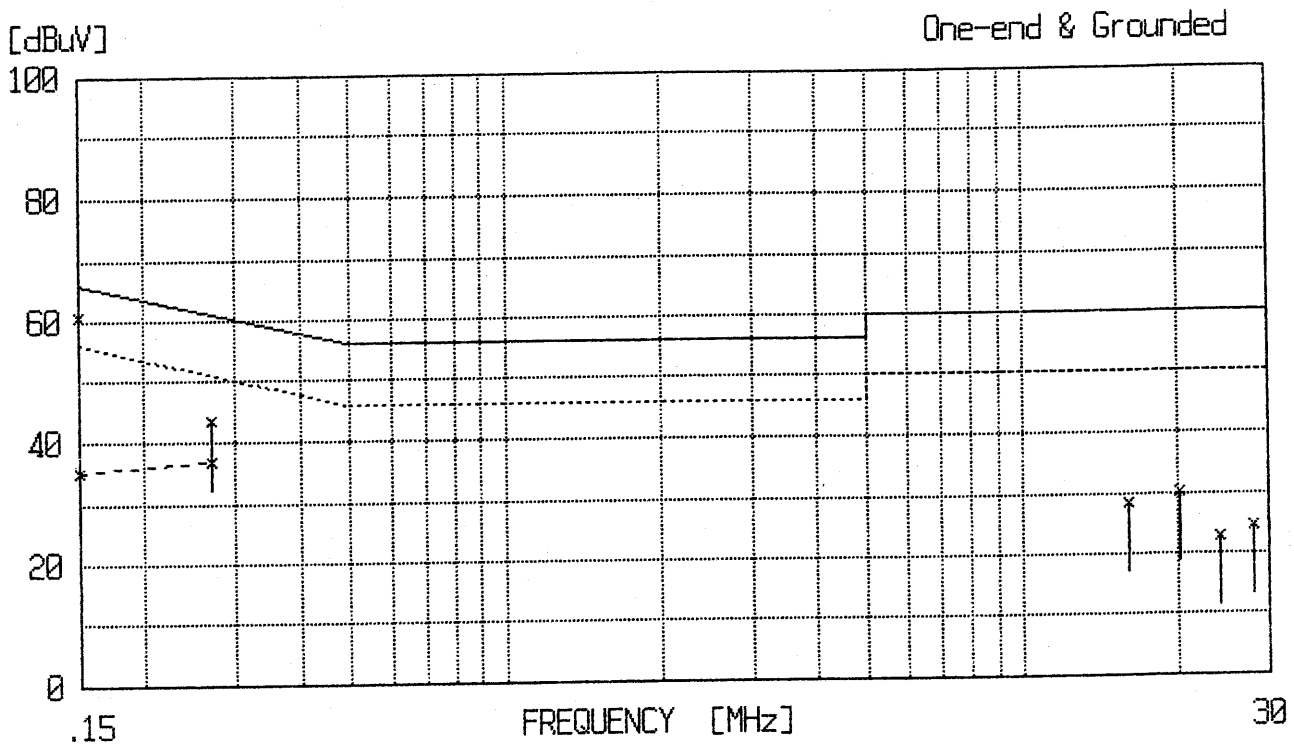
Mode of Interface : Parallel & Serial

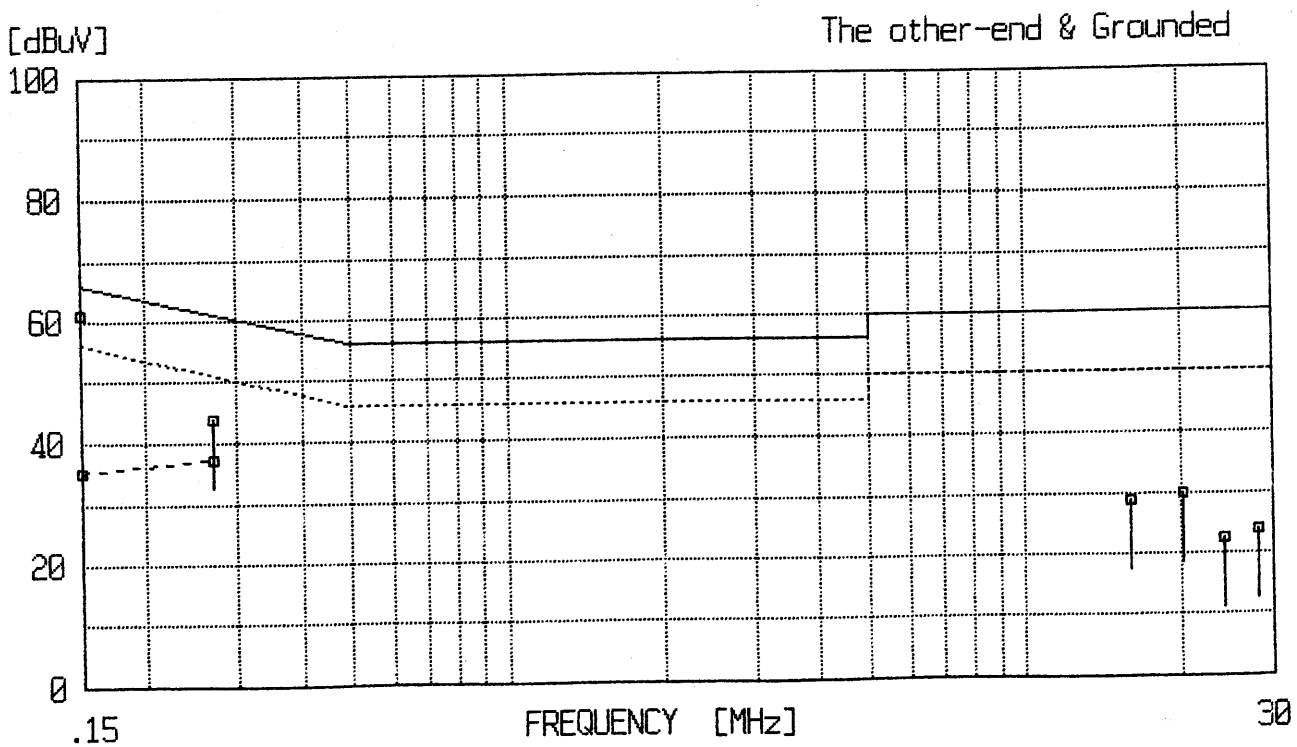
Date : December 5,2002 : 17℃ 28%

Frequency (MHz)	Limits (dB/uV)		Conducted Interference Voltage (dB/uV)			
			One-end and Grounded		The other-end and Grounded	
	Quasi Peak	Average	Quasi Peak	Average	Quasi Peak	Average
0.150	66.0	----	60.8	----	60.9	----
0.271	61.1	----	43.4	----	43.7	----
16.068	60.0	----	28.3	----	28.6	----
20.084	60.0	----	30.1	----	29.8	----
24.100	60.0	----	22.9	----	22.3	----
28.117	60.0	----	24.5	----	23.7	----
0.150	----	56.0	----	35.2	----	35.1
0.271	----	51.1	----	36.9	----	37.1

LINE CONDUCTED RF VOLTAGE MEASURMENT

Description of Device : Dot Matrix Printer
Model No. : T2240/9
Operating Condition : Refer to sheet No.7
Mode of Interface : Parallel & Serial





TEST CONDITIONS AND CONFIGURATION OF ITE

1.The information technology equipment(ITE) consists of EUT

Description	Manufacturer	Model No.	FCC ID
Dot Matrix Printer	Toshiba Tec Corporation	T2240/9	QRTOH-0201
Push Tractors	Toshiba Tec Corporation	PT2030	N/A

2.The measurement was carried out with the following equipment connected:

Description	Manufacturer	Model No.	FCC ID
Personal Computer	Dell Computer Corporation	MCM	N/A
Color Monitor	Action Electronics Co,ltd	CV-1053	ATI9R3CV-1053
Keyboard	Dell Computer Corporation	SK-8000	N/A
Mouse	Microsoft Corporation	IntelliMouse 1.2A	N/A

3.Type of interface cable

Description	Shielded Cable	Ferrite core	Length(m)
Dot Matrix Printer / Push Tractors	Yes	No	0.2m
Dot Matrix Printer / (Parallel) Personal Computer	Yes	No	2.0m
Dot Matrix Printer / (Serial) Personal Computer	Yes	No	2.1m
Personal Computer / Keyboard	Yes	Yes	2.1m
Personal Computer / Mouse	Yes	Yes	1.9m
Personal Computer / Color Monitor	Yes	Yes	1.4m
Dot Matrix Printer / / (Power Cable) AC120V	No	No	1.8m
Personal Computer / (Power Cable) AC100V	No	No	1.8m
Color Monitor / (Power Cable) AC100V	No	No	2.9m

4.Configuration of the equipment under test

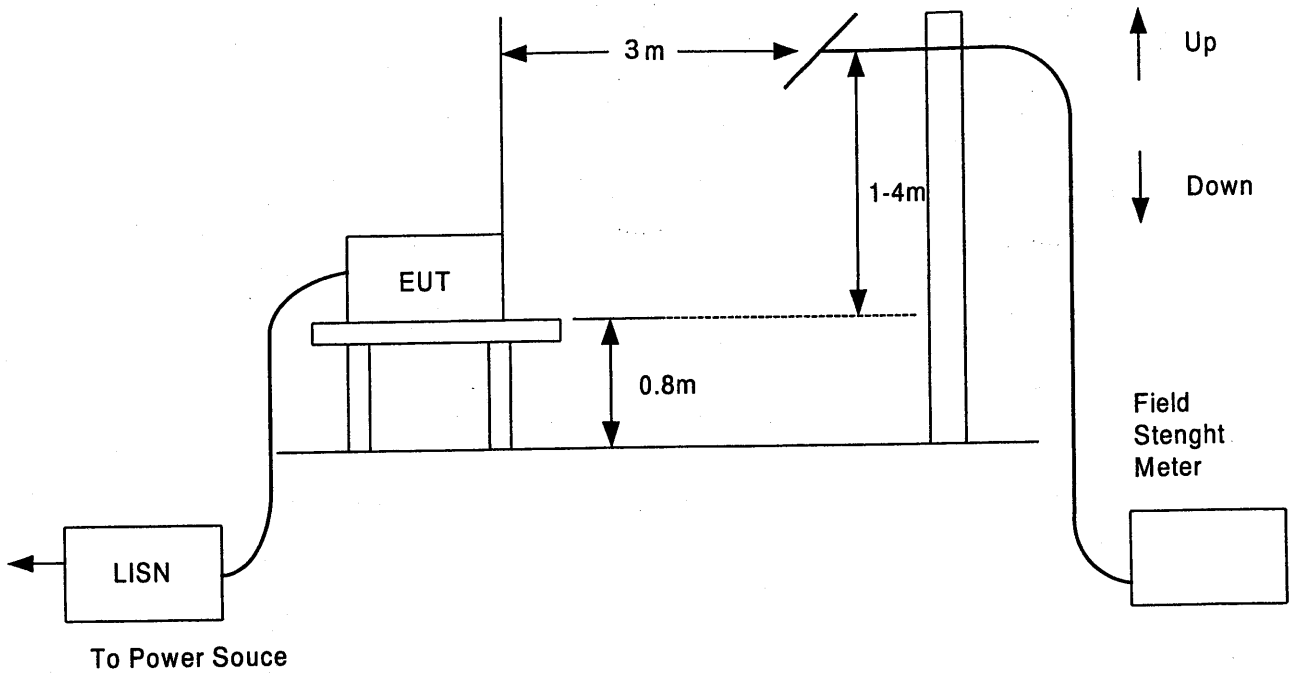
Refer to Page No. 9 ,10 to 11
The System was configured to maximize emission. The test reflects the worst case with the System active Operating.

5. Arrangement of the Interface Cable(s)

Refer to sheet No 9 ,10 To 11
These interface cables were positioned so as to produce the highest maximum at every frequency between 30 MHz and 1000MHz, being within the manner assumed to be a typical operating condition.

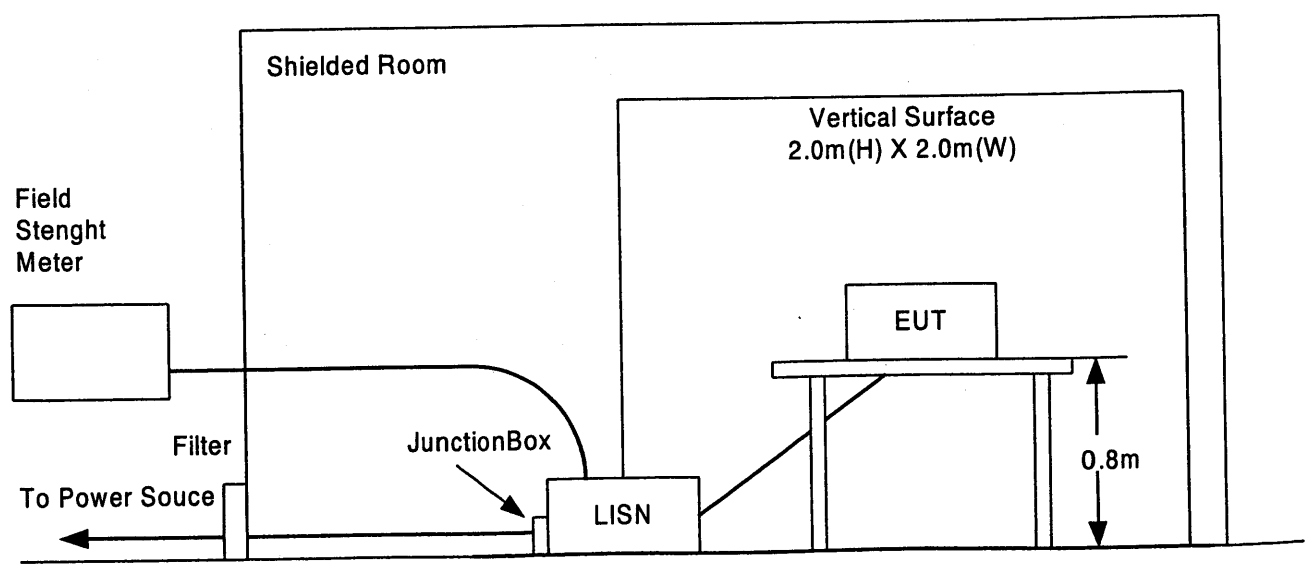
RADIATED RADIO NOISE MEASURMENT

TEST SET-UP SKETCH



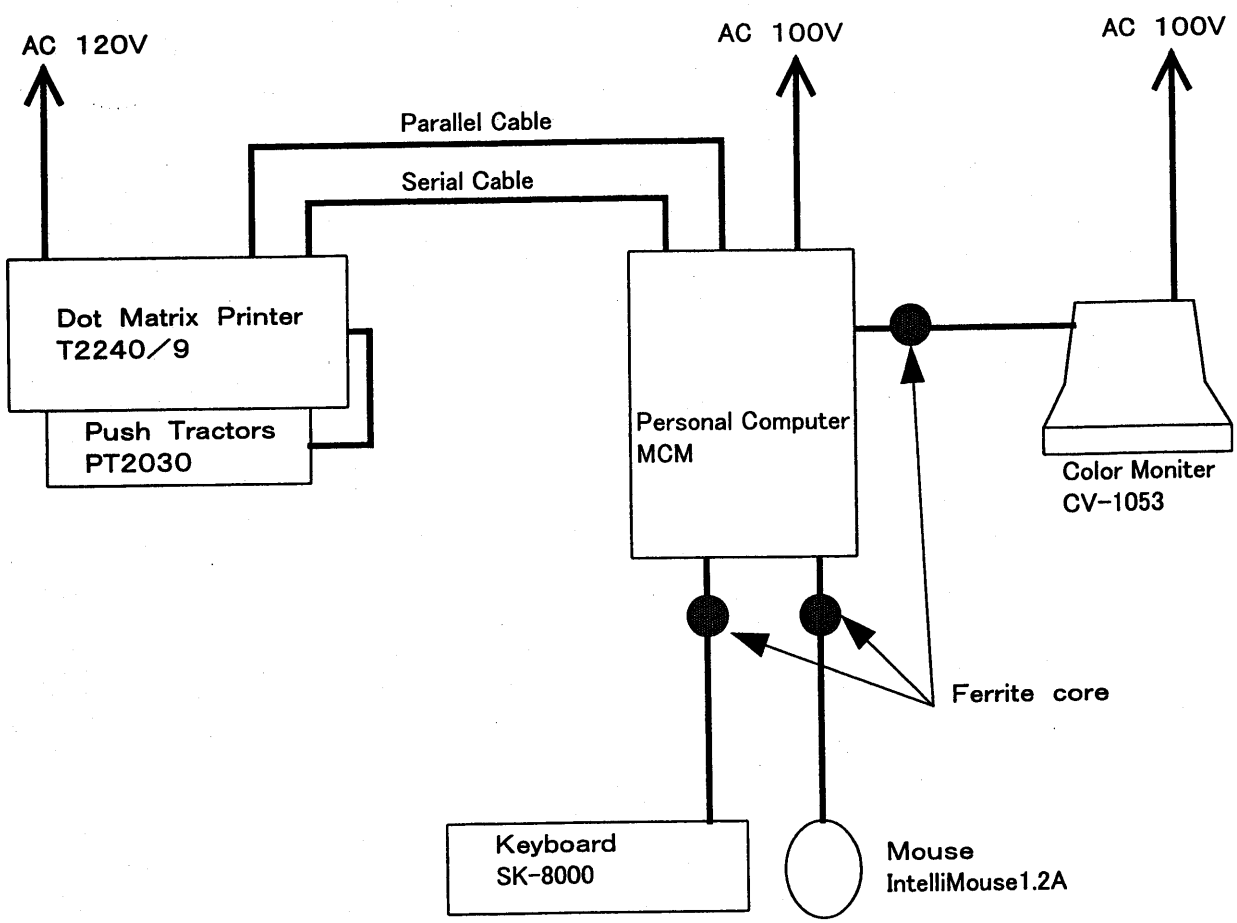
LINE CONDUCTED RF VOLTAGE MEASUREMENT

TEST SET-UP SKETCH

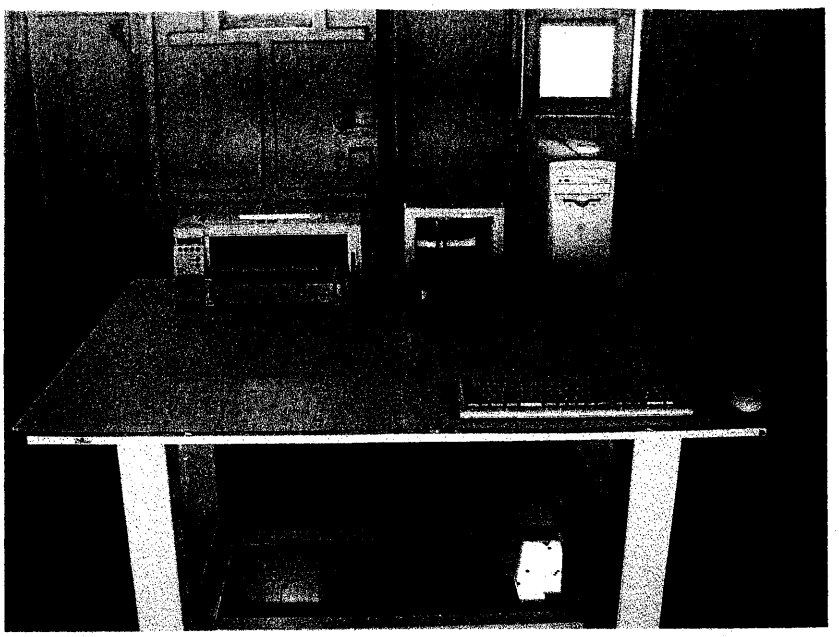


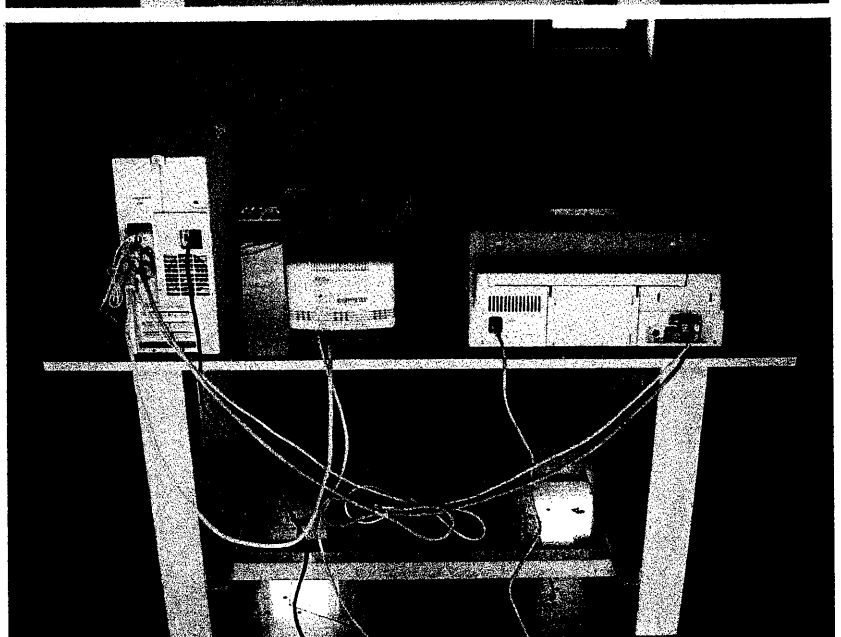
Ground Plane 2.0m(L) X 3.0m(W)
LISN and Junction Boxes bonded to Ground Plane

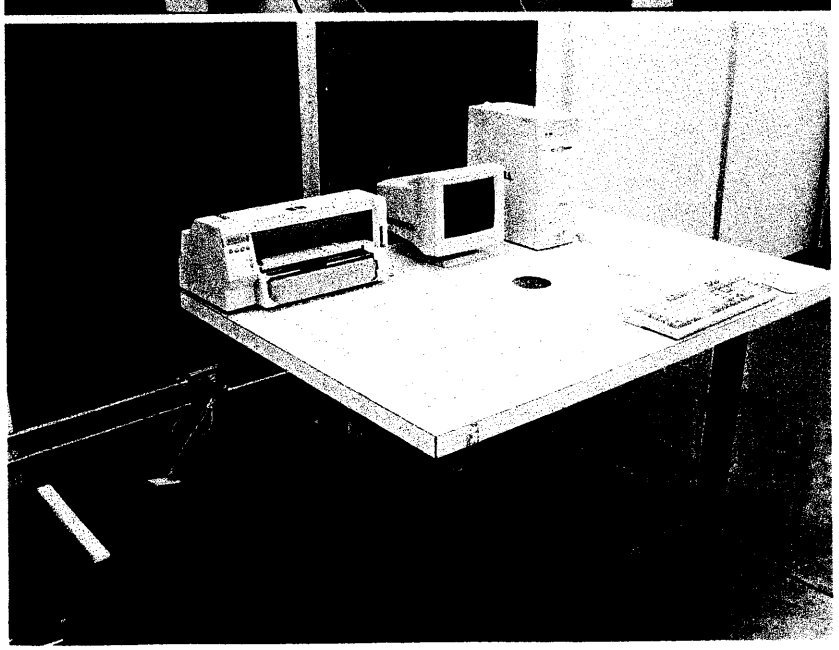
TEST CONDITIONS AND CONFIGURATION OF EUT



TEST CONDITIONS AND CONFIGURATION OF EUT







TEST INSTRUMENT:

Instrument Manufactuere	Model No. [Serial No.]	Specification	List Calibration [Cal. Intarval]
Test Receiver Rohde&Schwarz	ESH3 [892378/021]	0.01-30MHz CISPR Q.P and Ave.	[1 year]
Test Receiver Rohde&Schwarz	ESU2	30-1000MHz CISPR Q.P	[1 year]
Test Receiver Rohde&Schwarz	ESV [89493/004]	30-1000MHz CISPR Q.P	[1 year]
Spectrum Analyzer Hewlett Packrd	8568B [2542A12456]	0.1-1500MHz	[1 year]
Spectrum Analyzer Advantest	TR-4135 [87800094]	0.01-3600MHz	[1 year]
Line ImpedanceStabilization Network (LISN) Rohde&Schwarz	ESH2-Z5 [892107/016]	50Ω//50μH	[1 year]
Dipole Antenna Schwarzbeck	VHA9103	30-300MHz	[1 year]
Dipole Antenna Schwarzbeck	UHA9105	300-1000MHz	[1 year]
Broabband Antenna Schwarzbeck	BBA9106	30-300MHz	[1 year]
Broabband Antenna Schwarzbeck	UHALP9107 [9107795]	300-1000MHz	[1 year]