EMC - Test Report

Model : MP-K80

FCC ID	O8TMP-K80		
Product type	MP3 PLAYER + FM TRANSMITTER	Serial No.	-
Applicant	EIGER M&C CO., LTD.		
Address	562-6, Woman-Dong, Paldal-Gu, Suwon-City, Kyungki-Do, KOREA		
Manufacturer	EIGER M&C CO., LTD.		
Address	562-6, Woman-Dong, Paldal-Gu, Suwon-City, Kyungki-Do, KOREA		
TX Frequency Range	106.7MHz – 107.9MHz		

Test specification (Standard) : **FCC Part15 Subpart B Class B , Subpart C**

Test Result : **In compliance**

Tested by (Test engineer)			*Reviewed by (EMC Manager)*		
2001-04-20	Young Joon, Park		2001-04-20	James, Hong	
Date	Name	Signature	Date	Name	Signature

Definition ☒ : Applicable, ☐ : Not Applicable, **N/A** : Not Applicable, **-** : Not Applicable

The test result only responds to the tested sample.

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1. EUT description

Introduction

MP-K80 is a MP3 PLAYER + FM TRANSMITER.

Identification

Receipt date : 2001-03-19

Model : MP-K80

Manufacturer : EIGER M&C CO., LTD.

Address : 562-6, Woman-Dong, Paldal-Gu, Suwon-City, Kyungki-Do, KOREA

Contact person : Y. J. LEE

Telephone : +82 - 31 - 211 - 7092

Peripheral Device Ports

Port name	Description
USB	DATA Download Port
EARPHONE	Connect to Earphone
DC 4.2V	Connect to Adaptor

Electrical rating

Input : DC 4.2V (Embedded Li-ion Rechargeable Battery)

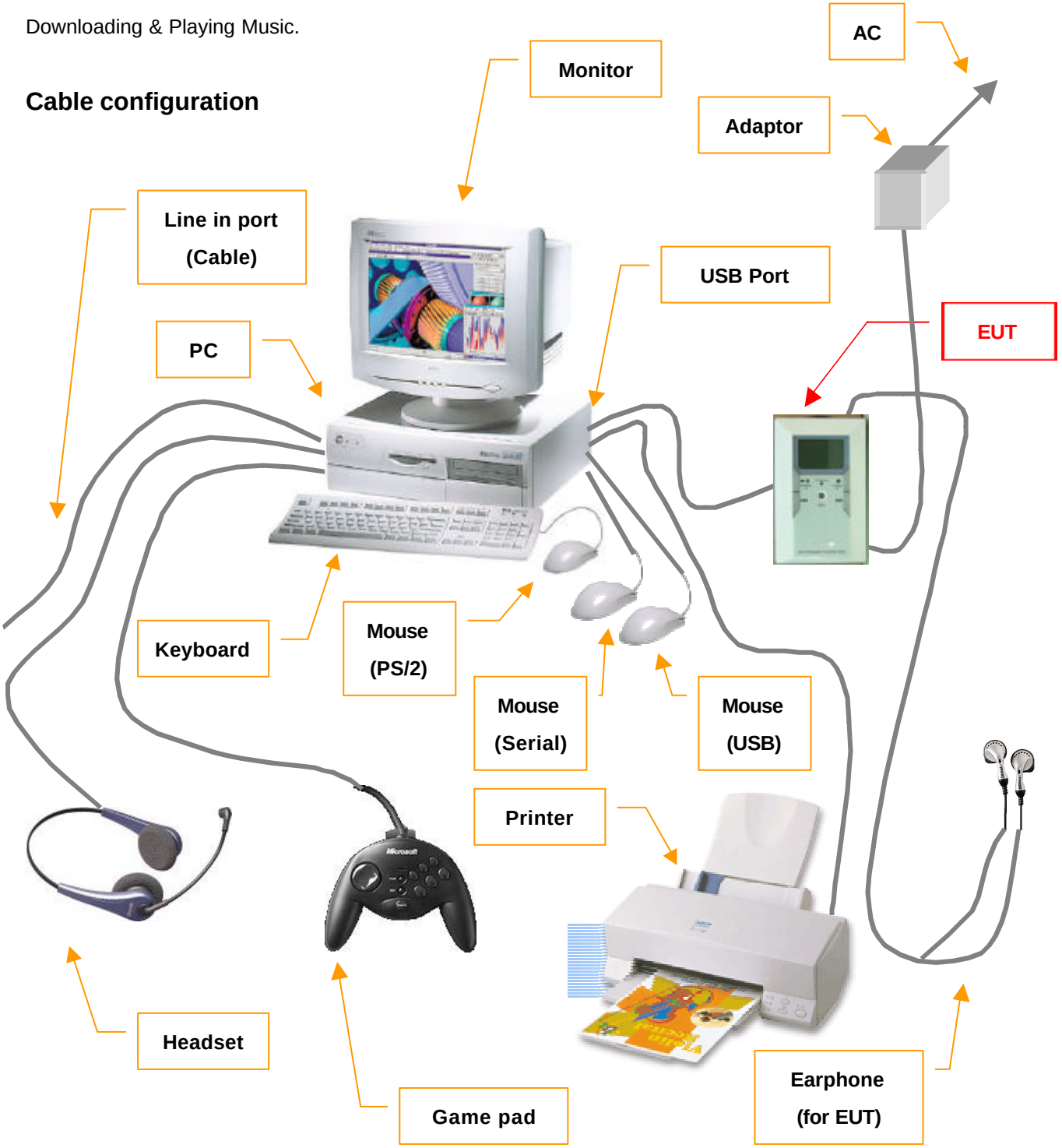
Output : -

2. Test Set-up

Test Mode

Downloading & Playing Music.

Cable configuration



Cable description

	Port name (start / end)	Type	Length (m)	Remark
A	EUT' s Earphone / Earphone	Unshielded	1.5	Connected Earphone
B	EUT' s USB / PC' s USB	Unshielded	1.5	Connected to PC' s USB port
C	EUT' s DC IN / Adaptor	Unshielded	1.5	Connected Adaptor
D	PC' s Serial / Mouse	Unshielded	1.6	Connected Serial Mouse
E	PC' s Parallel / Printer	Unshielded	1.6	Connected Printer
F	PC' s Keyboard / Keyboard	Unshielded	1.6	Connected PS/2 Keyboard
G	PC' s Mouse / Mouse	Unshielded	1.6	Connected PS/2 Mouse
H	PC' s Sound (Speaker / Mic / Line in) / Headset & Cable	Unshielded	2.0	Connected Headset & Cable
I	PC' s Game Port / Game pad	Unshielded	2.0	Connected Game pad
J	PC' s Video / Monitor	Shielded (With Ferrite Core)	1.8	Connected Monitor

Auxiliary equipment

	Description	Model name	Serial No.	Manufacturer	FCC ID or DOC
1	Earphone (for EUT)	-	-	-	N/A
2	Adaptor (for EUT)	STP045045E	-	SIGMA TELECOM	N/A
3	PC	DTPC-17	G1703009	HEWLETT PACKARD	DOC
4	Monitor	PG17HS	301661	SAMSUNG	DOC
5	Printer	Stylus COLOR 460	BWCE143331	EPSON	DOC
6	Keyboard	SK-2502C	M000351491	HEWLETT PACKARD	DOC
7	Mouse (PS/2)	M-S48	LZA84601000	LOGITECH	JNZ201213
8	Mouse (USB)	M-BB48	LZE93853176	LOGITECH	DOC
9	Mouse (Serial)	M-S48	LZA91153127	SOTEC	DZL211153
10	Game pad	Side Winder	03421317	Microsoft Corporation	DOC
11	Headset	Hi-sonic	-	-	N/A

Test software

Software name	Manufacturer	Version	Description
-	-	-	-

Measurement Procedures

Preliminary AC power line conducted emissions tests were performed shielded room. To find worst mode, several typical mode and typical cable position were tested.
Final AC power line conducted emissions test was performed shielded room.(location is same as Preliminary test) Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

Preliminary radiated emissions test were performed anechoic chamber (Distance of antenna and EUT was 3m). To find worst mode, several typical mode and typical cable position were tested and peak level and frequency were recorded.
Final radiated emissions test was performed Open Area Test Site. Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

∗ Measurement procedures was In accordance with ANSI C63.4-1992 7.2.3, 7.2.4 and 8.3.1.1, 8.3.1.2

3. Test Result

Test summary

Test	Result	Remark
Emission test (EMI)		
Emissions from the intentional radiator #1 (200kHz Bandwidth)	**Met**	
Emissions from the intentional radiator #2 (Field Strength)	**Met**	
Emissions from the intentional radiator #3 (Spurious)	**Met**	
Radiated emission	**Met**	
Conducted emission	**Met**	

Measurement uncertainty (k=2)

150kHz~30MHz: ±2.68, 30MHz~300MHz: +4.58, -4.66, 300MHz ~ 1GHz: +3.78, -3.74

Uncertainty parameter was calculated according to ‘ NAMAS Publication NIS 80’

The tested MP-K80 fully meets the Requirements of ANSI C63.4-1992, when operated as described in this report.

Emissions from the intentional radiator #1

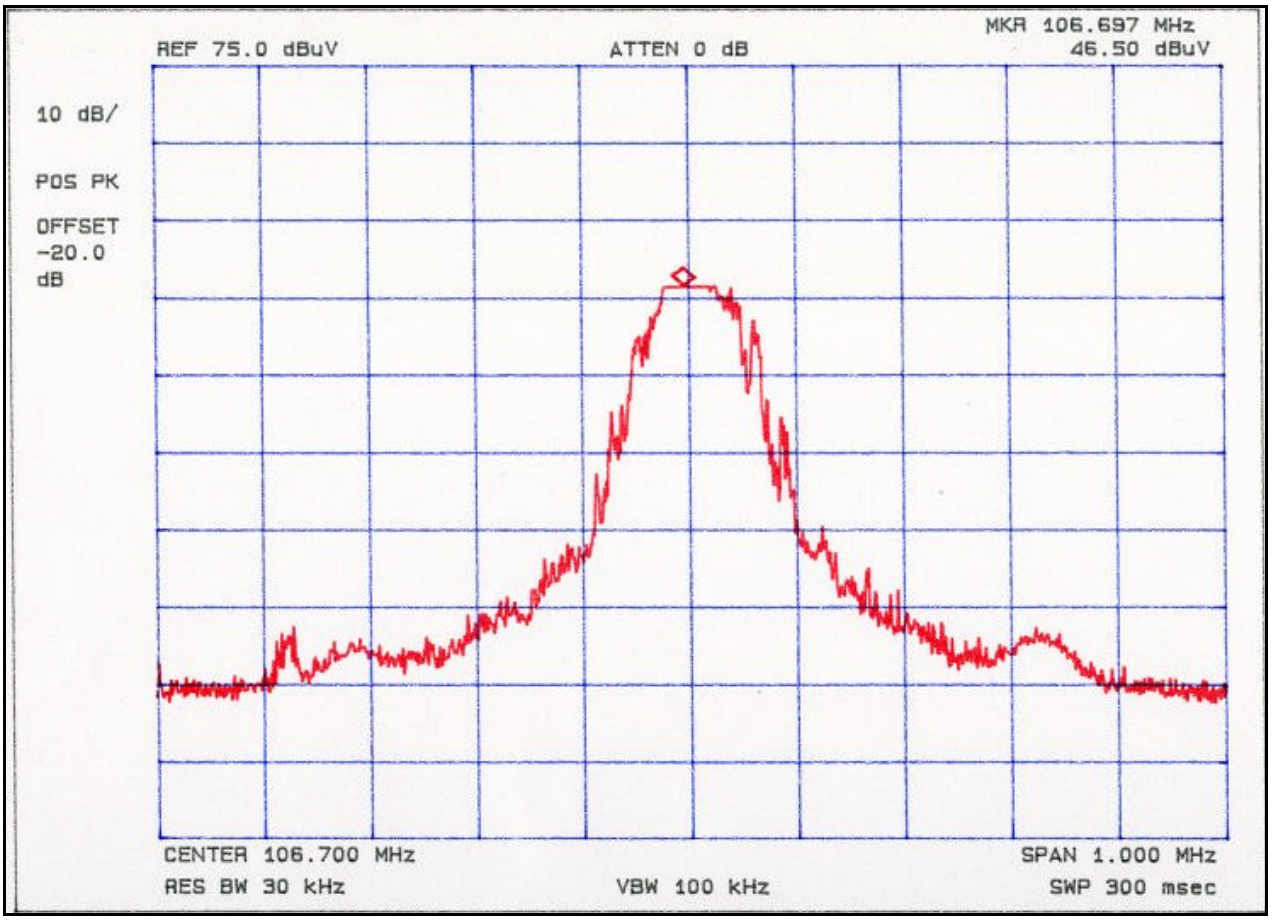
Test result: **Met**

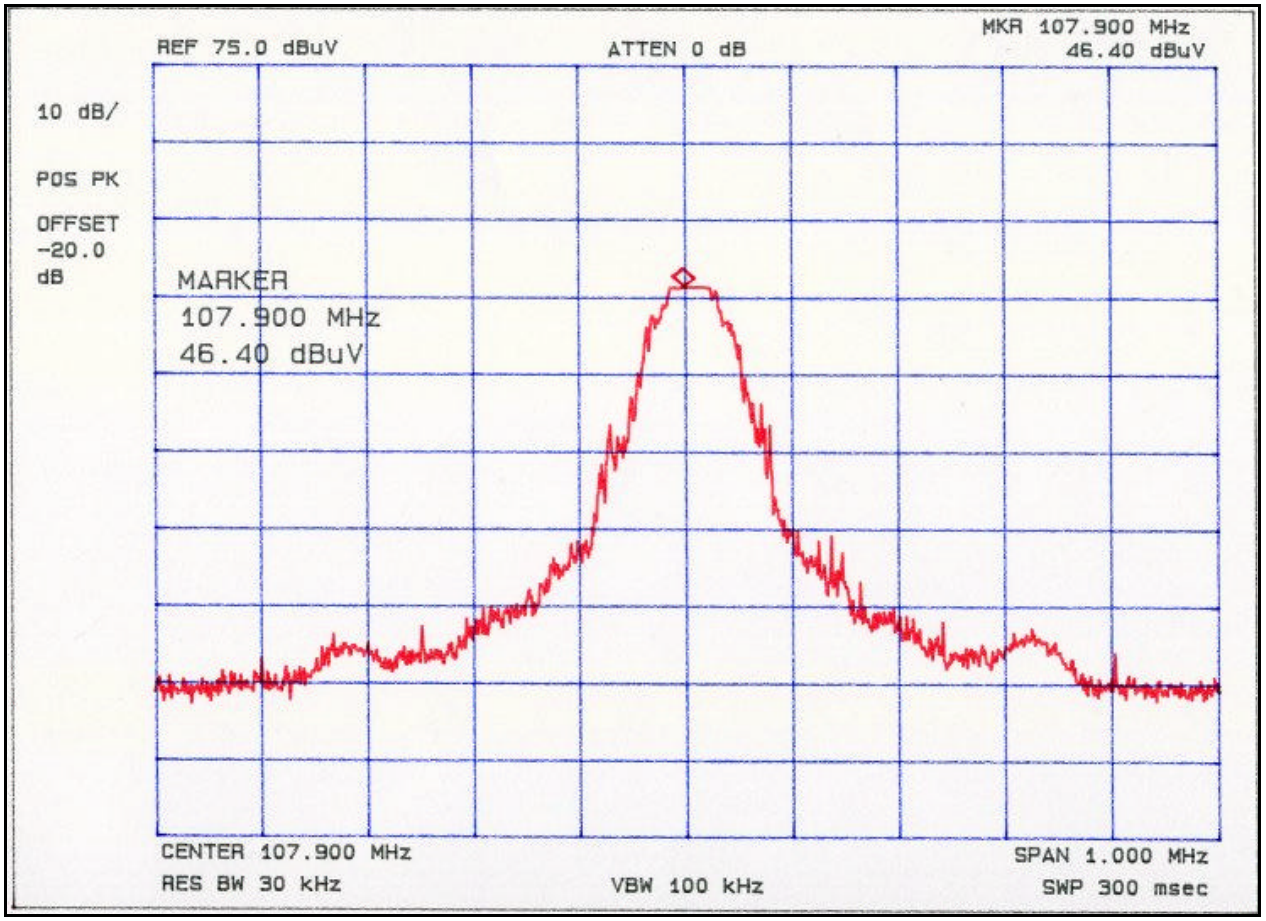
Reference Standard: **FCC Part15 Subpart C, Sec. 15.239 (a) 200kHz Bandwidth**

TX Frequency Range: 106.7MHz - 107.9MHz

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
8568B	HP	Spectrum Analyzer	3217A05610




REF 75.0 dBuV
ATTEN 0 dB
MKR 107.900 MHz
46.40 dBuV
10 dB/
POS PK
OFFSET
-20.0
dB
MARKER
107.900 MHz
46.40 dBuV
CENTER 107.900 MHz
RES BW 30 kHz
VBW 100 kHz
SPAN 1.000 MHz
SWP 300 msec

Emissions from the intentional radiator #2

Test result: **Met**

Date of testing : 2001-04-20

Ambient temperature: 20°C, Relative humidity: 35%, Atmospheric pressure: 1000hPa(mbar)

Test site type: Open area test site

Reference Standard: **FCC Part15 Subpart C, Sec. 15.239 (b) Field Strength of Radiation**

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
3146	EMCO	Biconical antenna	9607-4567
3110B	EMCO	Log-periodic antenna	9607-2564
ESVS30	Rohde Schwarz	Field strength meter	826638/008
-	-	-	-

TX Frequency Range 106.7MHz - 107.9MHz

Instrument settings IF Band Width : 120KHz

Antenna distance 3m (From the EUT)

Test data sheet (Quasi-Peak reading)

Frequency	Reading	Pol.	Height	Correction Factor		Limits	Result	Margin
[MHz]	[dBuV/m]		[m]	Antenna	Cable	[dBuV/m]	[dBuV/m]	[dB]
106.70	30.2	H	2.0	10.65	1.10	48.0	41.95	6.05
106.70	31.0	V	1.0	10.65	1.10	48.0	42.75	5.25
107.90	30.9	H	2.0	10.65	1.10	48.0	42.65	5.35
107.90	30.4	V	1.0	10.65	1.10	48.0	42.15	5.85

Comment : 106.7MHz Low Frequency, 107.9MHz – High Frequency.

Y axes is produced the highest emission level.

Emissions from the intentional radiator #3

Test result: **Met**

Date of testing : 2001-04-20

Ambient temperature: 20°C, Relative humidity: 35%, Atmospheric pressure: 1000hPa(mbar)

Test site type: Open area test site

Reference Standard: **FCC Part15 Subpart C, Sec. 15.209 (c) Field Strength of Spurious Radiation**

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
3146	EMCO	Biconical antenna	9607-4567
3110B	EMCO	Log-periodic antenna	9607-2564
ESVS30	Rohde Schwarz	Field strength meter	826638/008
-	-	-	-

TX Frequency Range 106.7MHz - 107.9MHz

Instrument settings IF Band Width : 120KHz

Antenna distance 3m (From the EUT)

Test data sheet (Quasi-Peak reading)

Frequency	Reading	Pol.	Height	Correction Factor		Limits	Result	Margin
[MHz]	[dBuV/m]		[m]	Antenna	Cable	[dBuV/m]	[dBuV/m]	[dB]
213.40	4.6	H	2.0	16.10	1.80	43.5	22.50	21.00
213.40	3.3	V	1.0	16.10	1.80	43.5	21.20	22.30
215.80	3.0	H	4.0	16.30	1.80	43.5	21.10	22.40
215.80	3.6	V	1.0	16.30	1.80	43.5	21.70	21.80
426.80	0.9	H	1.0	16.26	3.00	46.0	20.16	25.84
426.80	0.7	V	1.3	16.26	3.00	46.0	19.96	26.04
431.60	1.1	H	1.0	16.26	3.00	46.0	20.36	25.64
431.60	1.3	V	1.8	16.26	3.00	46.0	20.56	25.44

Comment : 106.7MHz Low Frequency, 107.9MHz – High Frequency

Radiated emission

Test result: **Met**

Date of testing : 2001-04-20

Ambient temperature: 20°C, Relative humidity: 35%, Atmospheric pressure: 1000hPa(mbar)

Test site type: Open area test site

Reference Standard: FCC Part15 Subpart B , Class B

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
3146	EMCO	Biconical antenna	9607-4567
3110B	EMCO	Log-periodic antenna	9607-2564
ESVS30	Rohde Schwarz	Field strength meter	826638/008
-	-	-	-

Frequency Band 30MHz - 1000MHz

Antenna distance 3m (From the EUT)

Test data sheet

Frequency	Reading	Pol.	Height	Correction Factor		Limits	Result	Margin
[MHz]	[dBuV/m]		[m]	Antenna	Cable	[dBuV/m]	[dBuV/m]	[dB]
96.00	20.3	H	2.0	9.90	0.90	43.5	31.10	12.40
96.00	18.3	V	1.0	9.90	0.90	43.5	29.10	14.40
106.40	26.0	H	4.0	10.65	1.10	43.5	37.75	5.75
106.40	15.0	V	1.0	10.65	1.10	43.5	26.75	16.75
169.30	20.0	H	1.0	12.90	1.60	43.5	34.50	9.00
169.30	18.0	V	1.3	12.90	1.60	43.5	32.50	11.00
226.90	10.3	H	1.0	17.30	1.90	46.0	29.50	16.50
226.90	9.6	V	1.8	17.30	1.90	46.0	28.80	17.20
230.00	21.6	H	2.0	17.50	2.00	46.0	41.10	4.90
230.00	18.0	V	1.0	17.50	2.00	46.0	37.50	8.50

Comment : -

Conducted emission

Test result: **Met**

Date of testing : 2001-04-20

Ambient temperature: 22°C, Relative humidity: 38%, Atmospheric pressure: 999hPa(mbar)

Test site type: Shielded room

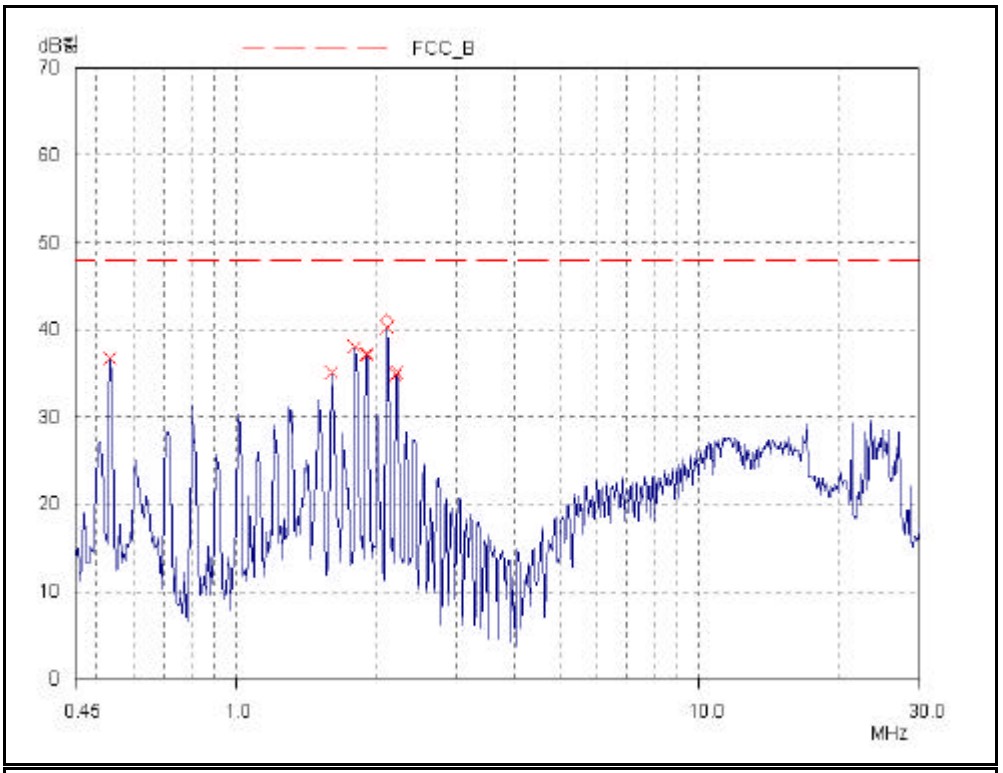
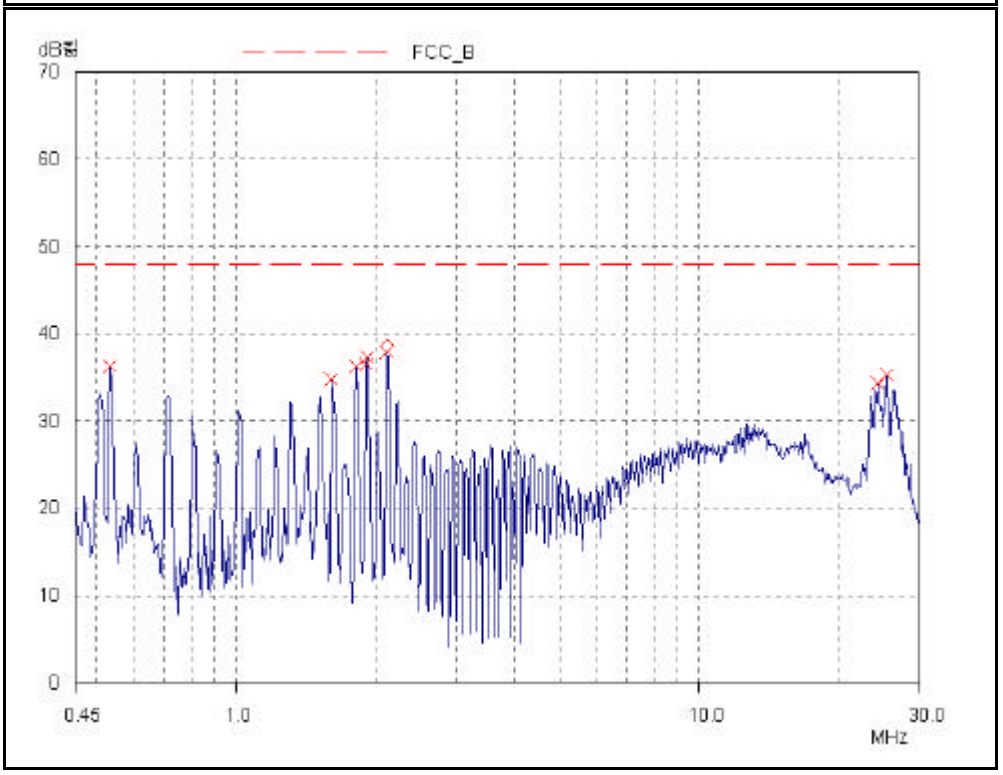
Reference Standard: FCC Part15 Subpart B , Class B

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
3825/2	EMCO	LISN	9206-1971
ESHS30	Rohde Schwarz	Field strength meter	828144/002
-	-	-	-

Test data sheet

Frequency	Correction Factor		Line	Quasi-peak				Average			
				Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
[MHz]	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]
0.54	0.3	0.1	H	48.0	36.6	37.0	11.0				
1.61	0.3	0.1	H	48.0	35.0	35.4	12.6				
1.81	0.3	0.1	H	48.0	37.9	38.3	9.7				
1.91	0.3	0.1	H	48.0	37.0	37.4	10.6				
1.93	0.3	0.1	N	48.0	37.3	37.7	10.3				
2.12	0.3	0.1	H	48.0	40.1	40.5	7.5				
2.23	0.3	0.1	H	48.0	34.7	35.1	12.9				
2.24	0.3	0.1	H	48.0	35.0	35.4	12.6				
24.42	0.5	0.4	N	48.0	34.2	35.1	12.9				
25.41	0.6	0.4	N	48.0	35.1	36.1	11.9				

Comment : -

Test data graphic