Nemko Korea Co., Ltd.

300-2, Osan-Ri, Mohyun-Myun, Yongin-City, Kyungki-Do, KOREA
TEL:+82 31 322 2333 FAX:+82 31 322 2332

Applicant :
Keumbee Electronics Co., Ltd.
3-26, Jangsang-Dong, Ansan-Si,
Kyungki-Do, Korea
Attn : Mr. Wang-Lyoul. Kim

Dates of Issue : April 11, 2005
Test Report No. : NK2FE207
Test Site : Nemko Korea Co., Ltd.
EMC site, Korea

FCC ID	***SFTM3000***
Brand Name	***ASONO, SHARP***
Contact Person	**Keumbee Electronics Co., Ltd.** **3-26, Jangsang-Dong, Ansan-Si,** **Kyungki-Do, Korea** **Mr. Wang-Lyoul. Kim** **Telephone No. : +82 31 412 6632**

Applied Standard: Part 15 & 2
Classification : FCC Class B Device
EUT Type: MP3 Player

The device bearing the brand name and FCC ID specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2001.
I attest to the accuracy of data and all measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Tested By : C. S. Choi
Engineer

Reviewed By : H.H. Kim
Manager & Chief Engineer

TABLE OF CONTENTS

SCOPE

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC part 15.

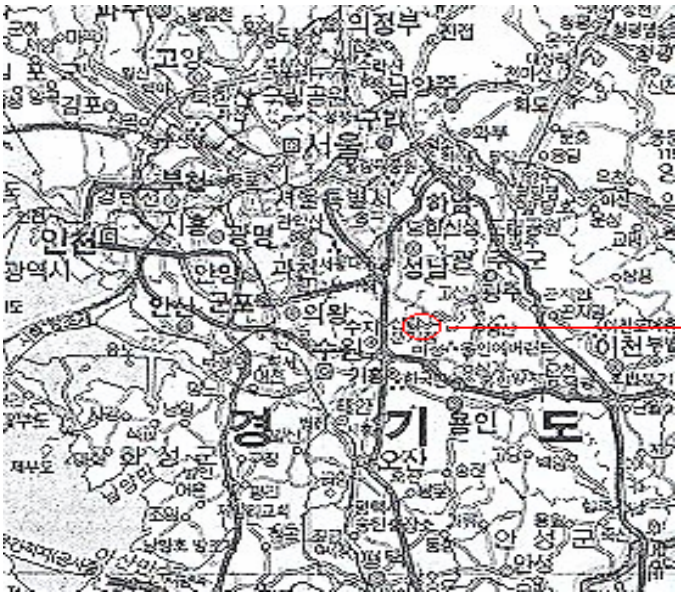
Responsible Party :	Keumbee Electronics Co., Ltd.
Contact Person :	Mr. Wang-Lyoul. Kim
	Tel No.: +82 31 412 6632
Manufacturer :	Keumbee Electronics Co., Ltd.
	3-26, Jangsang-Dong, Ansan-Si, Kyungki-Do, Korea.
Factory :	Keumbee Electronics Co., Ltd.
	3-26, Jangsang-Dong, Ansan-Si, Kyungki-Do, Korea.

- FCC ID: SFTM3000
- Model: IGB-M3000
- Brand Name: ASONO, SHARP
- EUT Type: MP3 Player
- Electric Rating: Input : 100-240Vac, 50/60Hz, 0.2A
  Output : 5Vdc, 0.6A
- Port/Connector: Earphone Jack, USB Mini Jack, Line-in Jack
- Classification: FCC Class B
- Applied Standard: FCC Part 15 & Part 2
- Test Procedure(s): ANSI C63.4 (2001)
- Dates of Test: March 29, 2005 to April 01,2005
- Place of Tests: Nemko Korea Co., Ltd. EMC Site
- Test Report No.: NK2FE207

INTRODUCTION

The measurement procedure described in American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSI C63.4-2001) was used in determining radiated and conducted emissions emanating from **Keumbee Electronics Co., Ltd.**
FCC ID : **SFTM3000, MP3 Player.**

These measurement tests were conducted at ***Nemko Korea Co., Ltd. EMC Laboratory*** .
The site address is 300-2, Osan-Ri, Mohyun-Myun, Yongin-City, Kyungki-Do, KOREA
The area of Nemko Korea Corporation Ltd. EMC Test Site is located in a mountain area at 80 kilometers (48 miles) southeast and Incheon International Airport (Incheon Airport), 30 kilometers (18miles) south-southeast from central Seoul.
It is located in the valley surrounded by mountains in all directions where ambient radio signal conditions are quiet and a favorable area to measure the radio frequency interference on open field test site for the computing and ISM devices manufactures.
The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4 on June 06, 2001.



Nemko Korea Co., Ltd.
OPEN AREA TEST SITE
300-2, Osan-Ri, Mohyun-Myun, Yongin-City Kyungki-Do,KOREA 449-852
Tel)+82-31-322-2333
Fax)+82-31-322-2332

Fig. 1. The map above shows the Seoul in Korea vicinity area.
The map also shows Nemko Korea Corporation Ltd. EMC Lab and Incheon Airport.

TEST CONDITIONS & EUT INFORMATION

Operating During Test

The EUT was connected to PC and was operated at upload, download, erasing, playback and charging mode for the testing and the worst data recorded in the report. The EUT was operated at tuning mode of broadcasting channels for the FM tuner.

Support Equipment

MP3 Player (EUT)	Keumbee Electronics Co., Ltd. FCC ID: SFTM3000	S/N : N/A
Earphone	Keumbee Electronics Co., Ltd. Model : N/A 0.5m Unshielded cable	S/N : N/A
Adaptor (Charger)	Keumbee Electronics Co., Ltd. Model : KBTA-1000 Wall-Mount 1.0m Shielded DC power cable	S/N : P/S040709-077
Notebook Computer	Dell Computer Corp. Model : PPT (Latitude D400)	S/N : N/A
Adaptor	ASTEC, Model : AA22830 1.0m Unshielded AC power cable	S/N : N/A
Keyboard	LG International Corp. Model : LGK-3000Plus 1.5m Unshielded Din cable	S/N : 122060509
PS/2 Mouse	Microsoft Corporation Model : X06-08477 1.5m Unshielded Din cable	S/N : N/A
Serial Mouse	IO. Tec, Model : LASER MOUSE 1.5m Unshielded D-Sub cable	S/N : N/A
Printer	HP, Model: C5870A 1.8m Shielded Parallel cable	S/N : SG88R131GW
Adaptor	Yokogawa, Model : C11557-60104 1.5m Unshielded AC power cable	S/N : N/A

EUT Information

Clock	32.768kHz (X1)
Chipset(s)	U6 (WM8750L), U1(S5L840F)
Port(s)	Earphone Jack, USB Mini Jack, Line-in Jack
Memory Capacity	128Mbytes
FM RADIO	Frequency range : 87.5MHz ~ 108MHz (Korea, Europe, America) 79MHz ~ 90MHz (Japan)
Interface	USB 1.1 (7.0Mbps)
Power	Battery : LI-ION Battery (250MAH)
	Charging : USB Power, AC Adaptor
	Charging Time : 2Hour 30Min.
	Playing : 10Hours
Size	37(W) x 39(H) x 13.3(D) : without earphone head cap
	37(W) x 60(H) x 13.3(D) : with earphone head cap

SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specification:

Name of Test	Paragraph No.	Result	Remark
Conducted Emission	15.107(a)	Complies	
Radiated Emission	15.109(g)	Complies	
	15.109(a)	Complies	

RECOMMENDATION/CONCLUSION

The data collected shows that the **Keumbee Electronics Co., Ltd.**
FCC ID : **SFTM3000, MP3 Player.**
The highest emission observed was at **0.36 MHz** for conducted emissions with a A.V margin of **5.7 dB,** at **126.80 MHz** for radiated emissions with a margin of **5.2 dB.**

SAMPLE CALCULATION

$$\text{dB}\,\mu N = 20 \log_{10}(\mu N/\text{m})$$

$$\mu N = 10^{(\text{dB}\,\mu N/20)}$$

EX. 1.

@165.0 MHz Class B limit = 30.0 dB μN/m

Reading = 38.2 dB μN(calibrated level)
Antenna factor + Cable Loss + Amplifier Gain = -12.9 dB
Total = 25.30 dB μN/m
Margin = 30.0 – 25.30 = 4.70
4.70 dB below the limit

DESCRIPTION OF TESTS

Conducted Emissions

The Line conducted emission test facility is located inside a 4 X 7 X 2.5 meter shielded enclosure.
It is manufactured by EM engineering. The shielding effectiveness of the shielded room is in accordance with MIL-STD-285 or NSA 65-6.
A 1m X 1.5m wooden table 0.8m height is placed 0.4m away from the vertical wall and 1.5m away from the side of wall of the shielded room
Rohde & Schwarz (ESH3-Z5) and Kyoritsu (KNW-407) of the 50ohm/50uH Line Impedance Stabilization Network(LISN) are bonded to the shielded room.
The EUT is powered from the Rohde & Schwarz LISN and the support equipment is powered from the Kyoritsu LISN. Power to the LISN s are filtered by high-current high insertion loss Power line filters. The purpose of filter is to attenuate ambient signal interference and this filter is also bonded to shielded enclosure. All electrical cables are shielded by tinned copper zipper tubing with inner diameter of 1/2".
If DC power device, power will be derived from the source power supply it normally will be powered from and this supply lines will be connected to the LISNs,
All interconnecting cables more than 1 meter were shortened by non inductive bundling (serpentine fashion) to a 1 meter length.
Sufficient time for EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer to determine the frequency producing the maximum EME from the EUT.
The spectrum was scanned from 150kHz to 30MHz with 20msec sweep time.
The frequency producing the maximum level was re-examined using the EMI test receiver. (Rohde & Schwarz ESCS30).
The detector function were set to CISPR quasi-peak mode & average mode.
The bandwidth of receiver was set to 9KHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each EME emission.
Each emission was maximized by; switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux AC outlet, if applicable; which ever determined the worst case emission.
Each EME reported was calibrated using the R&S signal generator.

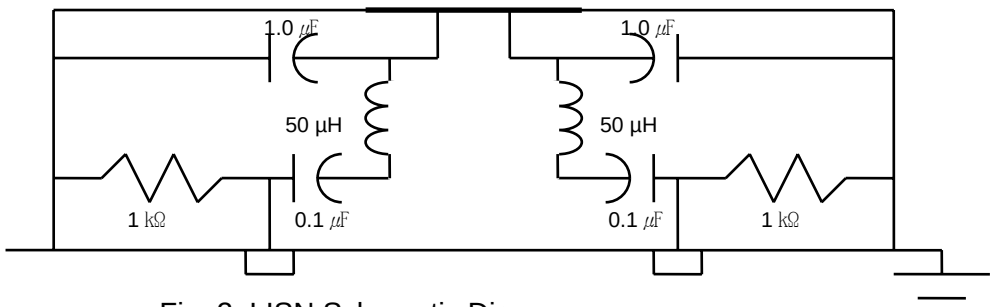


Fig. 2. LISN Schematic Diagram

DESCRIPTION OF TESTS

Radiated Emissions

Preliminary measurement were made indoors at 3 meter using broad band antennas, broadband amplifier, and spectrum analyzer to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The Technology configuration, clock speed, mode of operation or video resolution, turntable azimuth with respect to the antenna was note for each frequency found. The spectrum was scanned from 30 to 1000MHz using Biconical log Antenna(ARA, LPB-2520/A). Above 1GHz, Doppels Teg Horn antenna (EMCO, DAA-37121) was used.

Final Measurements were made outdoors at 3 or 10m test range using Logbicon Super Antenna(ARA, LPB-2520/A) or Doppels Teg Horn antenna (EMCO, DAA-37121).

The test equipment was placed on a wooden table.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

Each frequency found during pre-scan measurements was reexamined and investigated using EMI test receiver.(ESCS30)

The detector function were set to CISPR quasi-peak and peak mode and the bandwidth of the receiver were set to 120KHz and 1MHz depending on the frequency or type of signal.

The half wave dipole antenna was tuned to the frequency found during preliminary radiated measurements.

The EUT support equipment and interconnecting cables were re configured to the setup producing the maximum emission for the frequency and were placed on top of a 0.8m high non- metallic 1.0X 1.5 meter table.

The EUT, support equipment and interconnecting cables were re-arranged and manipulated to maximize each EME emission.

The turn table containing the Technology was rotated; the antenna height was varied 1 to 4meter and stopped at the azimuth or height producing the maximum emission. Each emission was maximized by : switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux AC outlet, if applicable; which ever determined the worst case emission.

Each EME reported was calibrated using the R/S signal generator.

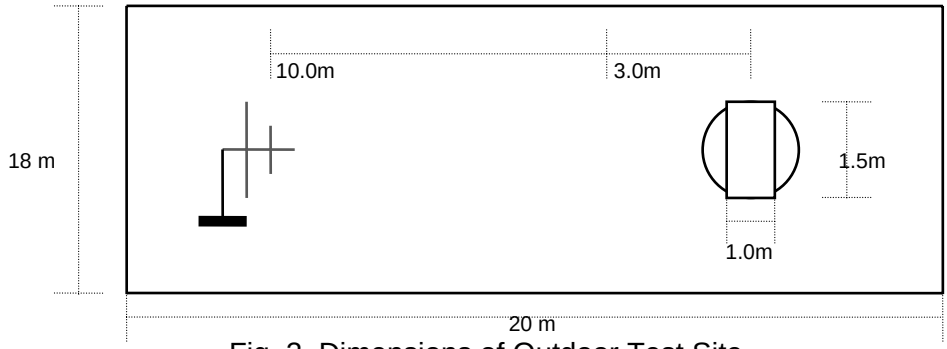


Fig. 3. Dimensions of Outdoor Test Site

TEST DATA

Conducted Emissions

FCC ID : SFTM3000

● **Download mode**

Frequency (MHz)	Level(dBμV)		Line	Limit(dBμV)		Margin(dB)	
	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.20	43.5	27.3	N	63.6	53.6	20.1	26.3
0.36	43.1	43.0	L	58.7	48.7	15.6	5.7
1.83	37.2	37.0	N	56.0	46.0	18.8	9.0
1.84	38.6	37.6	L	56.0	46.0	17.4	8.4
4.04	38.0	34.0	L	56.0	46.0	18.0	12.0
4.41	36.8	35.6	L	56.0	46.0	19.2	10.4

) Correction factor was included to Test Level (dBuV)

● **Charging mode**

Frequency (MHz)	Level(dBμV)		Line	Limit(dBμV)		Margin(dB)	
	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.19	41.4	23.1	L	64.0	54.0	22.6	30.9
0.24	34.0	20.2	N	62.1	52.1	28.1	31.9
0.37	33.2	24.9	N	58.5	48.5	25.3	23.6
0.43	31.1	23.8	N	57.3	47.3	26.2	23.5
0.68	27.5	22.4	L	56.0	46.0	28.5	23.6
0.99	27.8	22.9	L	56.0	46.0	28.2	23.1

) Correction factor was included to Test Level (dBuV)

Table 1. Line Conducted Emissions Tabulated Data

NOTES:

1. Measurements using CISPR quasi-peak mode & average mode.

2. All modes were measured and the worst -case emission are reported. See attached Plots.

3. LINE : L =Line , N = Neutral

4. The limit for Class B device is on the FCC Part section 15.107(a).

Tested by : ***C. S. Choi***

TEST DATA

Radiated Emissions

FCC ID : SFTM3000

● **Download mode**

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
120.00	41.2	V	-17.3	23.9	30.0	6.1
126.80	41.0	V	-16.2	24.8	30.0	5.2
181.00	34.7	H	-13.3	21.4	30.0	8.6
239.98	37.2	V	-12.7	24.5	37.0	12.5
439.99	31.9	H	-7.7	24.2	37.0	12.8
959.98	19.9	H	5.0	24.9	37.0	12.1

NOTES: Measurements using CISPR quasi-peak mode.

● **Playback mode**

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
36.01	34.0	V	-21.8	12.2	30.0	17.8
41.22	33.1	V	-21.2	11.9	30.0	18.1
140.01	26.9	H	-14.2	12.7	30.0	17.3
148.27	24.8	H	-12.9	11.9	30.0	18.1
152.20	25.4	H	-12.7	12.7	30.0	17.3
308.90	26.0	H	-11.1	14.9	37.0	22.1

NOTES: Measurements using CISPR quasi-peak mode.

● **Charging mode**

Frequency (MHz)	Reading (dBμV)	Pol* (H/V)	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
33.97	44.4	V	-22.2	22.2	30.0	7.8
36.51	44.8	V	-21.7	23.1	30.0	6.9
39.18	42.0	V	-21.3	20.7	30.0	9.3
40.52	41.2	V	-21.1	20.1	30.0	9.9
64.65	36.3	V	-21.4	14.9	30.0	15.1
68.54	35.4	V	-21.2	14.2	30.0	15.8

NOTES: Measurements using CISPR quasi-peak mode.

Table 2. Radiated Measurements at 10meters

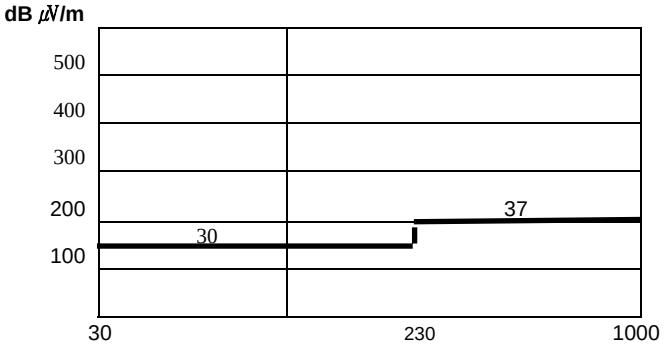


Fig. 4. Limits at 10 meters

NOTES:

1. All modes of operation were investigated the worst-case emission are reported.

NOTES:

1. *Pol. H =Horizontal V=Vertical

2. **AF+CL+Amp. = Antenna Factor + Cable Loss + Amplifier.

3. The limit for Class B device is on the FCC Part section 15.109(g).

Tested by : **C. S. Choi**

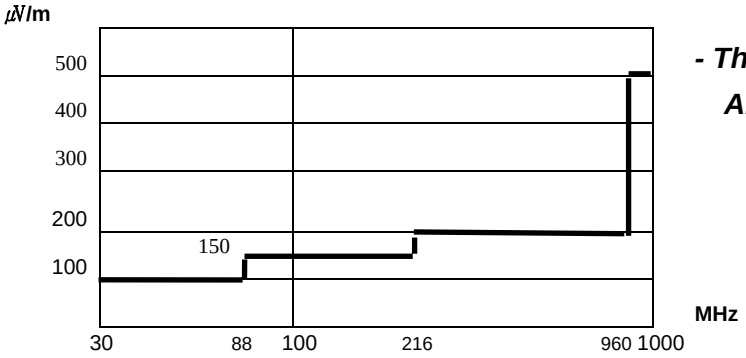
TEST DATA

Radiated Emissions

FCC ID : SFTM3000
Test Mode : Tune to the broadcasting channels

*)T. Freq. (MHz)	Frequency (MHz)	**)Pol. (H/V)	Reading (dB)	***)A.F+C.L+Amp (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
87.5	98.20	-	-	-17.6	-	43.5	-
	196.40	-	-	-13.6	-	43.5	-
	294.60	-	-	-11.4	-	46.0	-
	392.80	-	-	-8.9	-	46.0	-
	491.00	-	-	-6.5	-	46.0	-
	589.20	-	-	-3.9	-	46.0	-
	687.40	-	-	-1.2	-	46.0	-
	785.60	-	-	1.2	-	46.0	-
	883.80	-	-	3.5	-	46.0	-
	982.00	-	-	5.4	-	54.0	-
98.0	108.70	-	-	-17.3	-	43.5	-
	217.40	-	-	-13.3	-	46.0	-
	326.10	-	-	-10.6	-	46.0	-
	434.80	-	-	-7.9	-	46.0	-
	543.50	-	-	-5.1	-	46.0	-
	652.20	-	-	-2.2	-	46.0	-
	760.90	-	-	0.6	-	46.0	-
	869.60	-	-	3.2	-	46.0	-
	978.30	-	-	5.3	-	54.0	-
108.0	118.70	-	-	-17.3	-	43.5	-
	237.40	-	-	-12.8	-	46.0	-
	356.10	-	-	-9.8	-	46.0	-
	474.80	-	-	-6.9	-	46.0	-
	593.50	-	-	-3.8	-	46.0	-
	712.20	-	-	-0.6	-	46.0	-
	830.90	-	-	2.3	-	46.02	-
	949.60	-	-	4.8	-	46.02	-

Table 3. Radiated Measurements at 3meters



- The radiated limits are shown on Figure 4.
Above 1GHz the limit is 500 μV/m.

Fig. 4. Limits at 3 meters

NOTES:

1. ***All modes of operation were investigated the worst-case emission are reported.***
2. ***The emission level was under 20dB below the limit.***
3. ****T.Freq. = Tunning Frequency***
4. *****Pol. H =Horizontal V=Vertical***
5. ******AF+CL+Amp. = Antenna Factor + Cable Loss + Amplifier.***
6. ***Above 1GHz, peak detector function mode is used using a resolution bandwidth of 1MHz and a video bandwidth of 1MHz.***
7. ***The limit for Class B device is on the FCC Part section 15.109(a).***

Tested by : ***C. S. Choi***

PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (Download mode, Line)***

NEMKO KOREA (NK-2F-E-207) 31 Mar 2005 14:54

Conducted Emissions

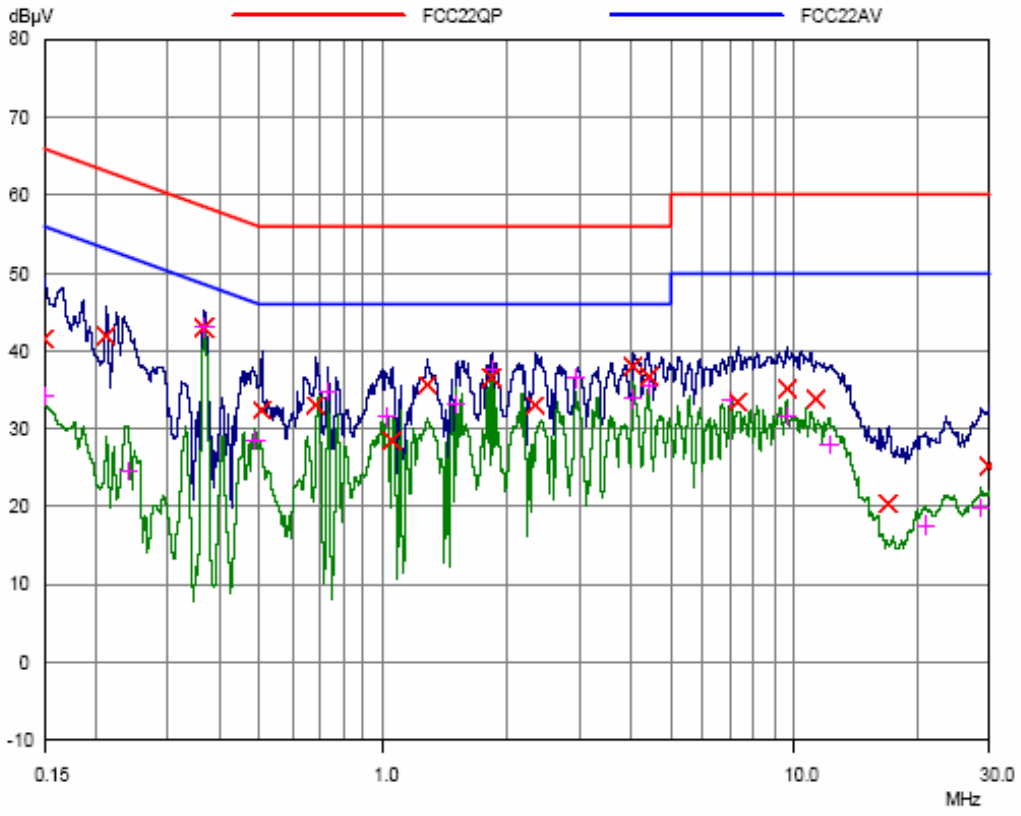
EUT:	MP3 Player
Manuf:	Keumbee Electronics Co., Ltd.
Op Cond:	Read/Write Mode
Operator:	Chang-Soo, Choi
Test Spec:	CISPR Class B
Comment:	MODEL : IGB-M3000 LINE : LINE-PE
Result File:	e207l1.dat : IGB-M3000_FCC_USB

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	10 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	CE_LINE

Final Measurement:		
	Detectors:	X QP / + AV
	Meas Time:	1sec
	Subranges:	16
	Acc Margin:	60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (Download mode, Neutral)***

NEMKO KOREA (NK-2F-E-207) 31 Mar 2005 15:03

Conducted Emissions

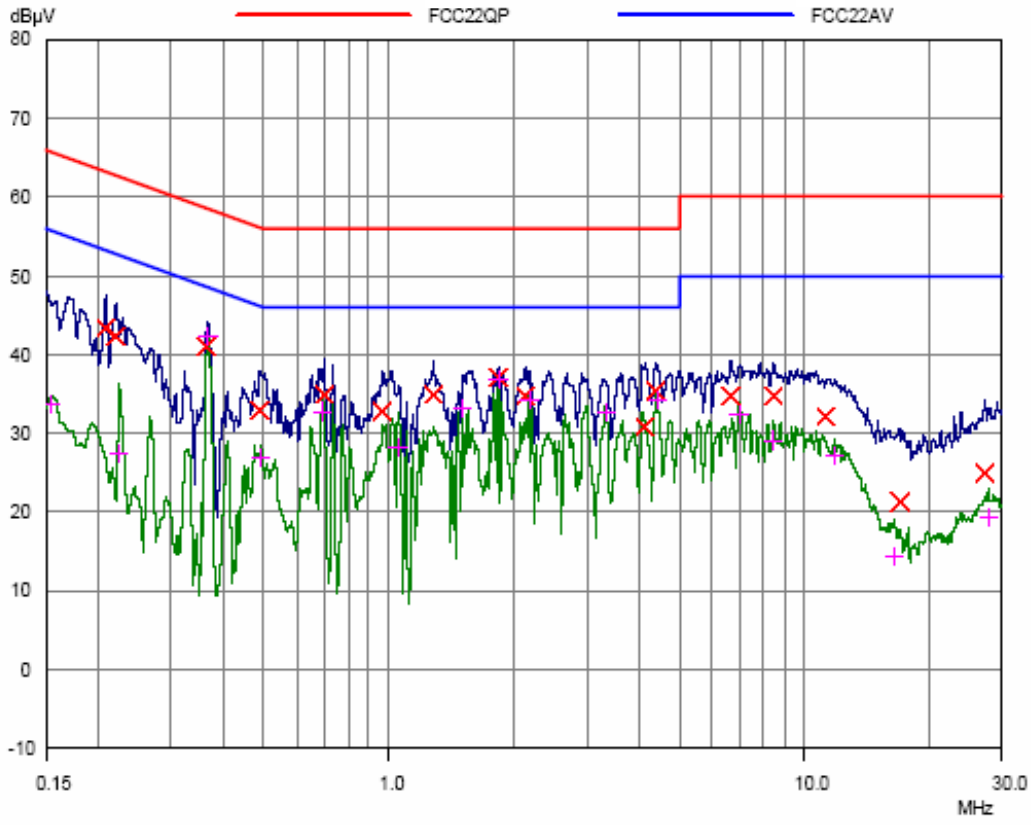
EUT:	MP3 Player
Manuf:	Keumbee Electronics Co., Ltd.
Op Cond:	Read/Write Mode
Operator:	Chang-Soo, Choi
Test Spec:	CISPR Class B
Comment:	MODEL : IGB-M3000 LINE : NEUTRA-PE
Result File:	e207n1.dat : IGB-M3000_FCC_USB

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	10 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	CE_LINE

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 16
Acc Margin: 60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (Charging mode, Line)***

NEMKO KOREA (NK-2F-E-207) 31 Mar 2005 15:50

Conducted Emissions

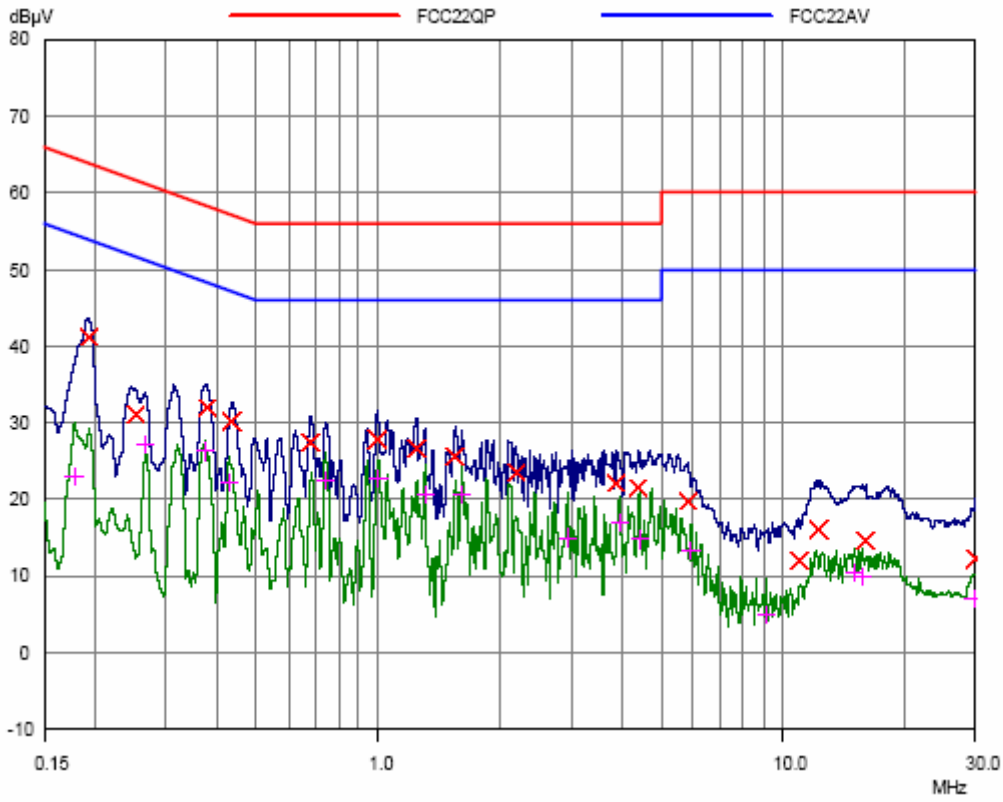
EUT:	MP3 Player
Manuf:	Keumbee Electronics Co., Ltd.
Op Cond:	Charging Mode
Operator:	Chang-Soo, Choi
Test Spec:	CISPR Class B
Comment:	MODEL : IGB-M3000 LINE : LINE-PE
Result File:	e207l2.dat : IGB-M3000_FCC_Charging

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	10 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	CE_LINE

Final Measurement:		
	Detectors:	X QP / + AV
	Meas Time:	1sec
	Subranges:	16
	Acc Margin:	60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (Charging mode, Neutral)***

NEMKO KOREA (NK-2F-E-207) 31 Mar 2005 15:33

Conducted Emissions

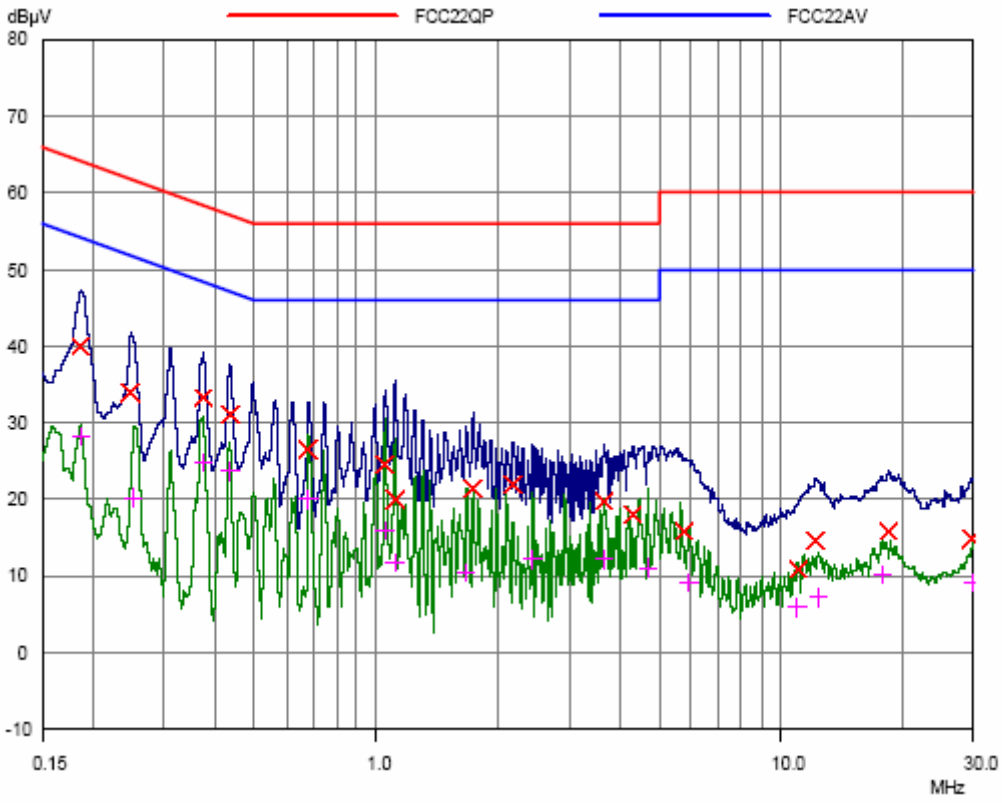
EUT:	MP3 Player
Manuf:	Keumbee Electronics Co., Ltd.
Op Cond:	Charging Mode
Operator:	Chang-Soo, Choi
Test Spec:	CISPR Class B
Comment:	MODEL : IGB-M3000 LINE : NEUTRA-PE
Result File:	e207n2.dat : IGB-M3000_FCC_Charging

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	10 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	CE_LINE

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 16
Acc Margin: 60 dB



ACCURACY OF MEASUREMENT

The Measurement Uncertainties stated were calculated in accordance with the requirements of NIST Technical Note 1297 with the confidence level of 95%

1. Radiation Uncertainty Calculation

Contribution	***Probability Distribution***	***Uncertainty(+/-dB)***
Antenna Factor	Normal (k=2)	± 0.5
Cable Loss	Normal (k=2)	± 0.04
Receiver Specification	Rectangular	± 2.0
Antenna directivity	Rectangular	± 1.0
Antenna Factor variation with Height		
Antenna Phase Center Variation		
Antenna Factor Frequency Interpolation		
Measurement Distance Variation		
Site Inperfections	Rectangular	± 2.0
Mismatch:Receiver VRC ri=0.3 Antenna VRC rR=0.1(Bi)0.4(Lp) Uncertainty Limits 20Log(1+/-ri rR)	U-Shaped	+ 0.25 / - 0.26
System Repeatibilty	Std.deviation	± 0.05
Repeatability of EUT	-	-
Combined Standard Uncertainty	Normal	± 1.77
Expended Uncertainty U	Normal (k=2)	± 3.5

2. Conducted Uncertainty Calculation

Contribution	***Probability Distribution***	***Uncertainty(+/-dB)***
Receiver Specification	Normal (k=2)	± 2.0
LISN coupling spec.	Normal (k=2)	± 0.4
Cable and input attenuator cal.	Rectangular	± 0.4
Mismatch:Receiver VRC ri=0.3 LISN vrc rg=0.1 Uncertainty Limits 20Log(1+/-ri rR)	U-Shaped	± 0.26
System Repeatibilty	Std.deviation	± 0.68
Repeatability of EUT	-	-
Combined Standard Uncertainty	Normal	± 1.18
Expended Uncertainty U	Normal (k=2)	± 2.4

LIST OF TEST EQUIPMENT

No.	Instrument	Manufacturer	Model	Calibration Date
1	*Test Receiver	R & S	ESCS 30	2004.08
2	*Test Receiver	R & S	ESCS 30	2004.12
3	*Amplifier	HP	8447F	2004.07
4	*Amplifier	HP	8447F	2005.01
5	Amplifier	HP	8447F	2004.10
6	*Amplifier	HP	8449B	2005.03
7	*Spectrum Analyzer	HP	8566B	2005.03
8	*Spectrum Analyzer	HP	8568B	2004.10
9	*Logbicon Super Antenna	Schwarzbeck	VULB9166	2004.05
10	*Doppels Teg Horn	EMCO	DAA-37121	2004.10
11	Dipole Antenna	R & S	VHA9103	2004.05
12	Dipole Antenna	R & S	UHA9105	2004.05
13	*Biconical Log Antenna	ARA	LPB-2520/A	2004.05
14	High Voltage Probe	R & S	ESH2-Z3	2004.06
15	Signal Generater	R & S	SMP02	2005.03
16	*LISN	R & S	ESH3-Z5	2004.10
17	*LISN	Kyoritsu	KNW-407	2005.03
18	LISN	Kyoritsu	KNW-408	2004.12
19	CDN	FCC	NCD-T4	2004.05
20	CDN	FCC	NCD-T2	2004.05
21	*Position Controller	EM Eng.	N/A	N/A
22	*Turn Table	EM Eng.	N/A	N/A
23	*Antenna Mast	EM Eng.	N/A	N/A
24	*Anechoic Chamber	EM Eng.	N/A	N/A
25	*Shielded Room	EM Eng.	N/A	N/A
26	*Position Controller	Seo-Young EMC	N/A	N/A
27	*Turn Table	Seo-Young EMC	N/A	N/A
28	*Antenna Mast	Seo-Young EMC	N/A	N/A
29	*Anechoic Chamber	Seo-Young EMC	N/A	N/A

) Test equipment used during the test

APPENDIX D – SCHEMATIC DIAGRAM

APPENDIX E – USER'S MANUAL

APPENDIX F – BLOCK DIAGRAM