EMC Research Institute
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EMC TEST REPORT

Emission of electromagnetic disturbance

Test Report No. : **ERI-FCC05-0050**
Equipment : : **MP3 PLAYER**
Name of basic model : **GMP-M6G**
Family model : **GMP-M6H, GMP-M6F, GMP-M6I**
Manufacturer : **CENIX DIGICOM CO., LTD**
Applicant : **CENIX DIGICOM CO., LTD**
Date of receipt EUT : **Nov 29, 2005.**
Tested date : **Nov 30, 2005. ~ Dec 01, 2005.**
Issued date : **Dec 12, 2005.**
Test results : **PASS**
Test Standards : **FCC Part 15 Subpart B (Class B)**
/ Class B digital devices, peripherals

Affirmation	Measurements performed by Name : Myung Chul, Park (signature)	Approved by Title : Manager Name : Young Sik, Kim (signature)

EMC Research Institute President

DEC 12, 2005

CONTENTS

1. CLIENT INFORMATION

The EUT has been tested by request of :

Company : CENIX DIGICOM CO., LTD

Address : #584-4 PAJANG-DONG, JANGAN-KU, SUWON-CITY, GYEONGGI-DO, KOREA

Name of contact : Park, Keun Woo

Telephone : +82-31-245-2900

Facsimile : +82-31-251-6425

2. LABORATORY INFORMATION

The 10m semi-anechoic chamber and/or EMC facilities are used for these testing.
These facilities were accredited by KOLAS, EK, MIC of Korea, FCC of USA. and VCCI of Japan.

Address

ELECTROMAGNETIC RESEARCH INSTITUTE.

66-6, Jeil-ri, Yangji-myun, Youngin-si, Gyeonggi-do, Korea.

Telephone No. : +82-31-336-1186~7

Facsimile No. : +82-31-336-1184

Registered No.

KOLAS : 111

EK : J

MIC : KR0030

FCC Filing No. : 302567

VCCI Reg. No. : C-2363, R-2183

3. EQUIPMENT UNDER TEST INFORMATION(EUT)

3.1 Identification of the EUT

Type of equipment: USB Flash Drive

Model name : MP3 Plyer

Brand name : NONE

Manufacturer : CENIX DIGICOM CO., LTD

Address : #584-4 PAJANG-DONG, JANGAN-KU, SUWON-CITY, GYEONGGI -DO, KOREA

Telephone : +82-31-245-2900

Facsimile : +82-31-251-6425

Power Rating: : DC 3.7 V

Country of origin : KOREA

3.2 Additional information about the EUT

Class B, Family Models List:

Basic Model	Family Model	Different Point
GMP-M6G	GMP-M6H	Model name & Memory size(1 Gbyte)
	GMP-M6F	Model name & Memory size(256 Mbyte)
	GMP-M6I	Model name & Memory size(2 Gbyte)

3.3 Peripheral equipment

Equipment needed for correct operation of the EUT is given below.

Description	Model No.	Serial No.	Manufacture
Personal computer	MTC2	PSZS91S	Dell Asia pacific Sdn
Monitor	750S	P017H8WR333347	Chang Jin Co.,LTD
Keyboard	K291	51R4198	MONTEREY INTERNATIONAL CORP.
Mouse	OMC3CB	OMC3CBGLDRT021002877	KTech Co., LTD
Printer	C6427A	CN13V1B1RY	JIT Electronics(Shanghai) Co., Ltd
MP3 PLAYER	GMP-M6G	-	CENIX DIGICOM CO., LTD
Earphone	-	-	-

4. TEST SPECIFICATIONS

4.1 Standards

The standard for a EUT is given below.

FCC Part 15 Subpart B (Class B) /Other Class B digital devices & peripherals

5. TEST RESULTS SUMMARY

5.1 Test Results

Standards	Test items / Frequency	Result
ANSI C63.4-1992	1. Main Terminal disturbance voltage : 150 kHz – 30 MHz	**Pass**
ANSI C63.4-1992	2. Radiated disturbance : 30 MHz – 1000 MHz	**Pass**

5.2 Measurement Uncertainty

Although the measured emissions indicate that the EUT complies with required limits, some measurements are close to these limits. When the uncertainty of measurement is considered, there is some possibility that the EUT may not be compliant

Compliance or non-compliance with a disturbance limit shall be determined in the following manner.

If U_{lab} is less than or equal to U_{cispr}

- compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit

If U_{lab} is greater than U_{cispr}

- compliance is deemed to occur if no measured disturbance, increased by (U_{lab}-U_{cispr}), exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance, increased by (U_{lab}-U_{cispr}), exceeds the disturbance limit;

- **Measurement uncertainty for Test Items**

- **Conducted disturbance(150 kHz ~ 30 MHz) : ± 3.0 dB(k=2)**
- **Radiated disturbance(30 MHz ~ 300 MHz) : ± 4.6 dB(k=2)**
- **Radiated disturbance (300 MHz ~ 1 000 MHz) : ± 4.7 dB(k=2)**

6, TEST RESULTS

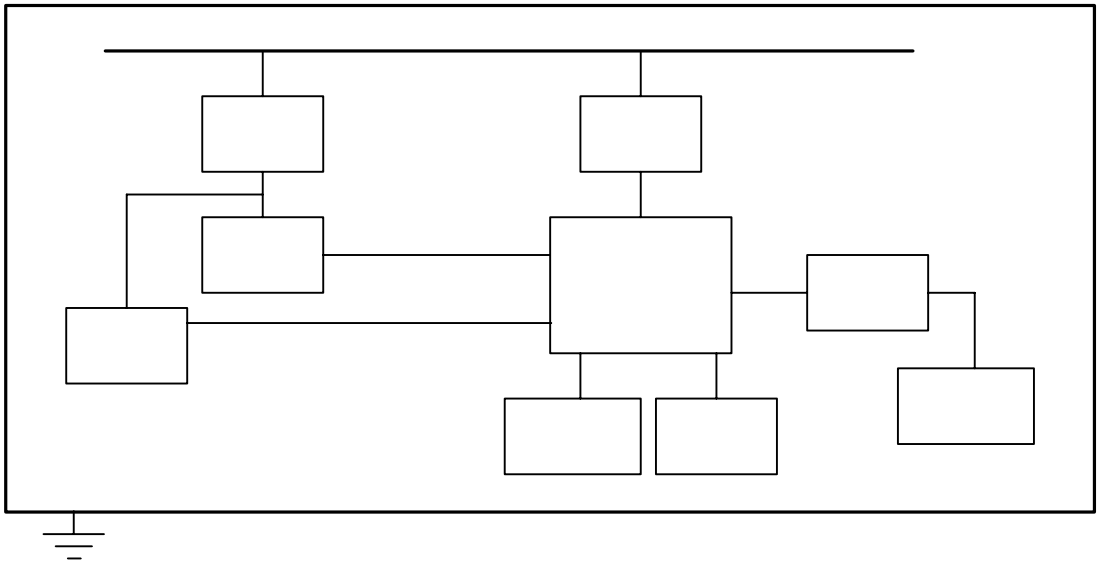
6.1 CONTINUOUS DISTURBANCE VOLTAGE, MAIN TERMINAL
: Frequency range 0.15 MHz to 30 MHz

6.1.1 Operating environment

Temperature	: 23.0 ℃ ± 0.7 ℃
Relative Humidity	: 32.0 % ± 4.5 %
Atmospheric pressure	: 1 001 hpa ± 0.25 hpa
Test location	: Shield room

6.1.2 Test set-up and test procedures

- Photograph -



The EUT was connected to an artificial mains network (LISN) placed on the floor. The EUT was placed on non-metallic table 0.8m above the metallic, grounded floor. The distance to other metallic surface was 0.8 m. Amplitude measurements were performed with a quasi-peak detector and an average detector.

Operation condition: Within this test report, EUT was tested under operation mode of Data transmitting with PC Via USB port and tested under rated USB voltage. When the EUT is in the mode of data transmitting with the PC, the EUT is connected with the PC USB port make use of USB cable.

6.13 Test instrument

Instrument	Model No	Serial No.	Makers	Range (MHz)	Next cal.date	Used
Test receiver	ESCS30	100021	R&S	0.009 ~ 2 750	2006. 2. 6	O
L.I.S.N.	ESH3-Z5	827246/008	R&S	0.009 ~ 30	2006. 3. 31	O
	ESH3-Z5	831887/018	R&S	-	2006. 3. 31	
Shield room	8 × 6 × 3.3m/H	-	-	-	-	O

6.1.4 Test results

Date of test: Dec 01, 2005

An overview sweep performed with the peak detector & the average detector was included in the report **as test reports.**

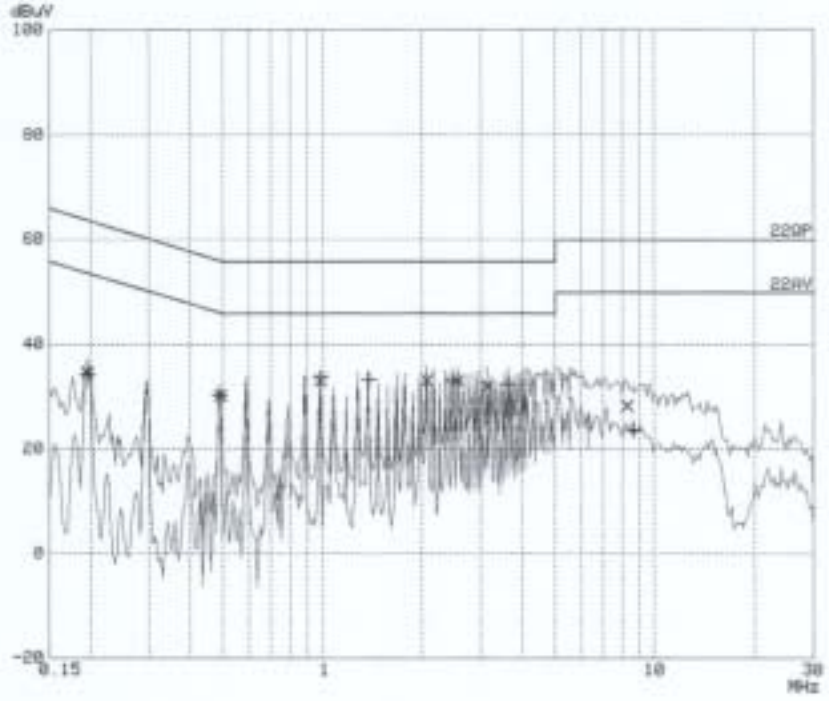
CONTINUOUS DISTURBANCE VOLTAGE

EUT: MP3
Op Cond: L
Operator: ERI
Date: 01. Dec 05 11:28

Scan Settings (2 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	3M	3k	9k	PK+AV	5ms	AUTO	ON
3M	30M	10k	9k	PK+AV	5ms	AUTO	ON

Final Measurement: x QP / + AV
Meas Time: 1 s
Subranges: 8
Acc Margin: 30dB



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[Live line]

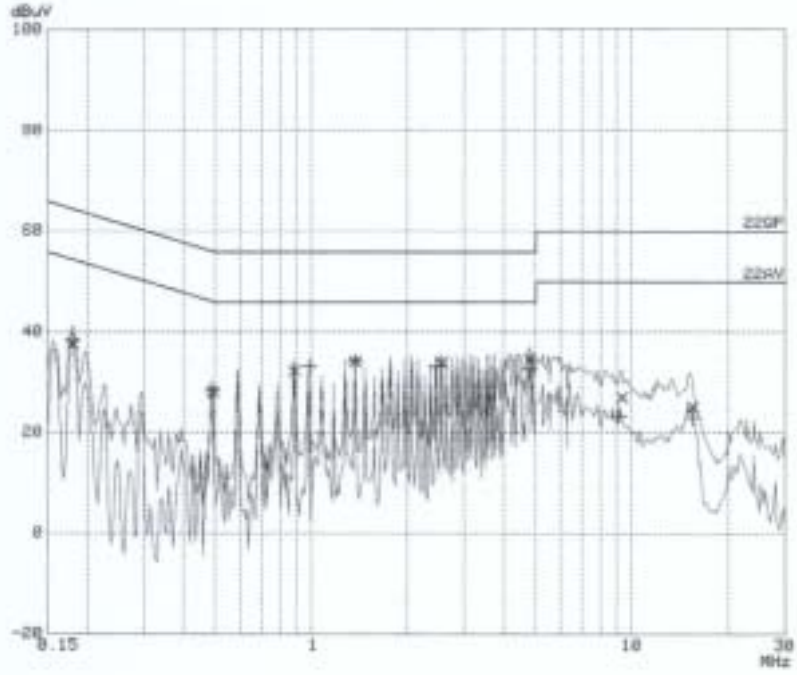
CONTINUOUS DISTURBANCE VOLTAGE

EUT: MP3
Op Cond: N
Operator: ERI
Date: 01. Dec 05 11:39

Scan Settings (2 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	3M	3k	9k	PK+AV	5ms	AUTO	LN ON
3M	30M	10k	9k	PK+AV	5ms	AUTO	LN ON

Final Measurement: x QP / + AV
Meas Time: 1 s
Subranges: 8
Acc Margin: 30dB



PAGE 1

[Neutral line]

Comments: All over frequencies had found below specified limits of this standard.

6.2 RADIATED DISTURBANCE : 30 MHz – 1 000 MHz

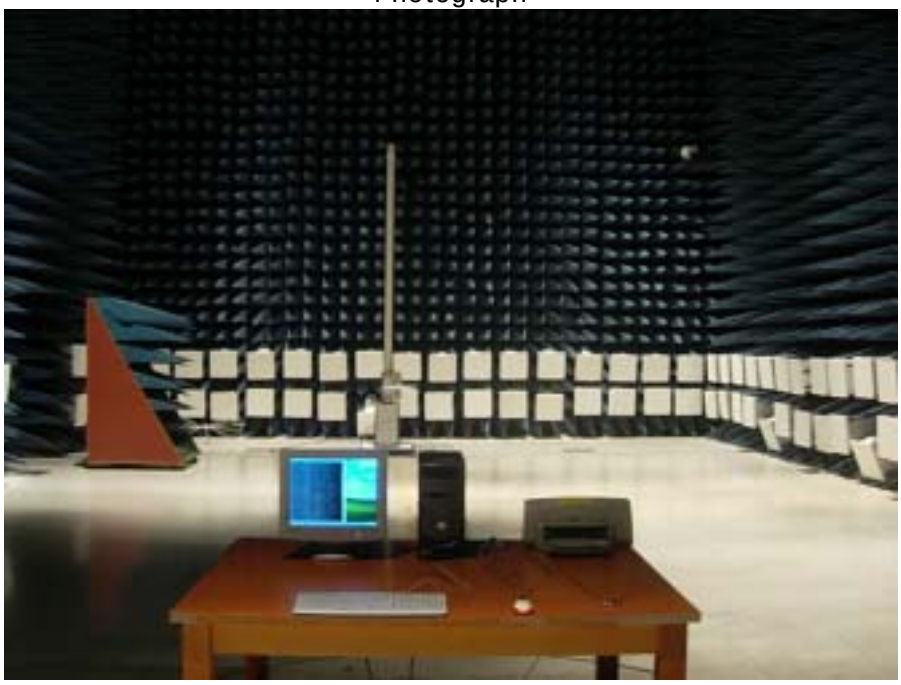
6.2.1 Operating environment

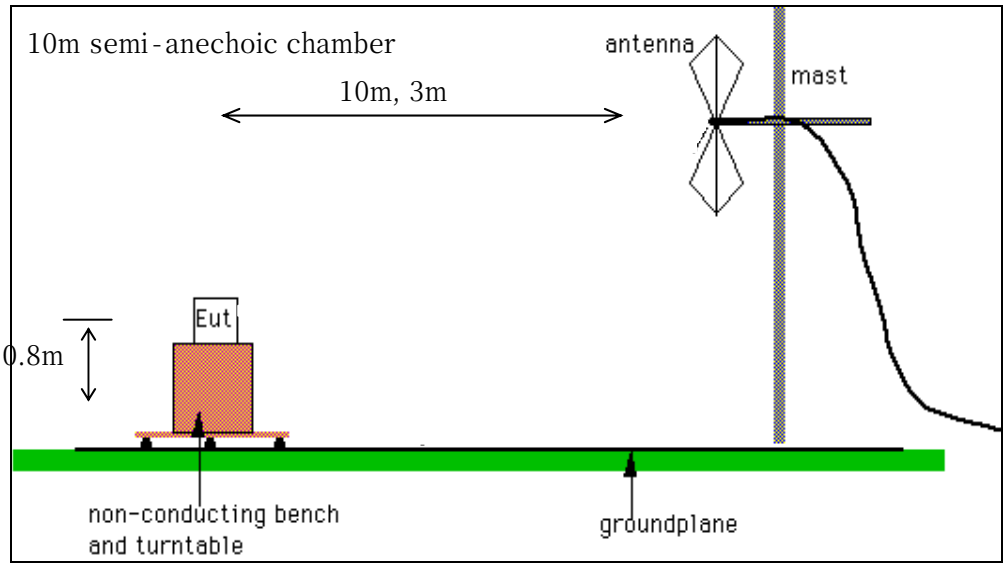
Temperature	: 22.0 ℃ ± 0.7 ℃
Relative Humidity	: 33.0 % ± 4.5 %
Atmospheric pressure	: 1 003.00 hpa ± 0.25 hpa
Test location	: 10m semi-anechoic chamber

6.2.2 Test set-up

The frequency range investigated was 30 MHz to 1 000MHz. All readings are quasi-peak unless stated otherwise. 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 set-up to produce the Maximum emission for the frequency and were placed on top of a 0.8 meter high non-metallic 1 X 1.5 meter table. The EUT, support equipment, and interconnecting cables were re-arranged and manipulated to maximize each EME emission. The turntable containing the system was rotated the antenna height was varied 1 m to 4 m and stopped at the azimuth or height producing the maximum emission. And this device (EUT) was tested in 3 orthogonal planes. The antenna measured both horizontal and vertical polarization.

- Photograph -





<General test set-up for radiated emissions>

6.2.3 Operation Conditions

Within this test report, EUT was tested under operation mode of Data transmitting with PC Via USB port and tested under rated USB voltage. When the EUT is in the mode of data transmitting with the PC, the EUT is connected with the PC USB port make use of USB cable.

6.2.4 Test instrument

Instrument	Model No.	Serial No.	Makers	Range (MHz)	Next cal.date	Used
Test receiver	ESCS30	100021	R&S	0.009~2750	2006. 2. 6	O
L.I.S.N.	ESH3-Z5	827246/008	R&S	-	2006. 3. 31	
	ESH3-Z5	831887/018	R&S	-	2006. 3. 31	
Biconical Antenna	VHA9103	91031950	Schwarzbeck	30~300	2006. 2. 4	O
Log-Periodic Antenna	UHALP9108A	0392	Schwarzbeck	300~2200	2006. 2. 4	O
Antenna Mast	MA240	N/A	HD	-	-	O
Turn Table	DT430S	N/A	HD	-	-	O

6.2.5 Test results

Date of test: NOV 30, 2005

(Test Mode : Up load and Down load mode)

Freq (MHz)	Reading (dBuV)	Ant. POL	AF (dB/m)	CL (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
48.18	11.60	V	11.78	0.93	24.3	30	5.70
54.30	14.58	V	9.72	0.97	25.3	30	4.74
84.68	18.34	H	7.35	1.21	26.9	30	3.10
191.33	9.20	H	16.07	1.72	27.0	30	3.01
210.60	8.50	V	16.57	1.84	26.9	30	3.08
243.30	14.21	V	17.40	1.99	33.6	37	3.40
287.85	12.35	H	19.03	2.06	33.4	37	3.55
297.30	10.71	H	19.65	2.08	32.4	37	4.57
576.50	12.75	H	18.16	3.01	33.9	37	3.08
648.25	9.09	H	19.86	3.23	32.2	37	4.83
720.00	9.73	H	20.21	3.43	33.4	37	3.63

* Receiving Antenna Mode : ***Horizontal, Vertical***

* <5 : mean less than 5dB

Note : Reading = Test Receiver meter
P= Polarization → POL H = Horizontal POL V = Vertical, AF = Antenna Factor
CL = Cable Loss Result = Field Strength(AF + CL+ Reading)

(Test Mode : MP3 Play mode)

Freq (MHz)	Reading (dBuV)	Ant. POL	AF (dB/m)	CL (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
48.22	12.1	V	11.78	0.93	24.8	30	5.16
54.50	15.0	V	9.72	0.97	25.7	30	4.30
191.12	9.0	H	16.07	1.72	26.8	30	3.18
211.43	8.2	V	16.57	1.84	26.6	30	3.35
243.00	13.6	V	17.40	1.99	32.9	37	4.06
297.12	11.2	H	19.65	2.08	33.0	37	4.05
575.55	12.1	H	18.16	3.01	33.3	37	3.71
648.70	9.6	H	19.86	3.23	32.6	37	4.36
720.00	9.6	H	20.21	3.43	33.2	37	3.82

* Receiving Antenna Mode : ***Horizontal, Vertical***

* <5 : mean less than 5dB

Note : Reading = Test Receiver meter
P= Polarization → POL H = Horizontal POL V = Vertical, AF = Antenna Factor
CL = Cable Loss Result = Field Strength(AF + CL+ Reading)

(Test Mode : FM Tuner Mode)

T.	Tested	Meter Reading (quasi-peak)		Limits	Margins	
Frequency	Frequency	H	V		H	V
[MHz]	[MHz]	[dBuV/m]	[dBuV/m]		[dBuV/m]	[dBuV/m]
87.5	98.2	-	-	60.0		
	196.4	-	-	52.0	-	-
	294.6	-	-	52.0	-	-
	392.8	-	-	56.0	-	-
	491.0	-	-	56.0	-	-
	589.2	-	-	56.0	-	-
	687.4	-	-	56.0	-	-
	785.6	-	-	56.0	-	-
	883.8	-	-	56.0	-	-
	982.0	-	-	56.0	-	-
98.0	108.7	-	-	60.0		
	217.4	-	-	52.0	-	-
	326.1	-	-	56.0	-	
	434.8	-	-	56.0	-	-
	543.5	-	-	56.0	-	-
	652.2	-	-	56.0	-	-
	760.9	-	-	56.0	-	-
	869.6	-	-	56.0	-	-
	978.3	-	-	56.0	-	-
108.0	118.7	-		60.0		
	237.4	-	-	52.0	-	-
	356.1	-	-	56.0	-	-
	474.8	-	-	56.0	-	-
	593.5	-	-	56.0	-	-
	712.2	-	-	56.0	-	-
	830.9	-	-	56.0	-	-
	949.6	-	-	56.0	-	-
Others	36.07	-	30.14	40.0	-	9.83
	144.07	30.10	-	40.0	9.90	-
	266.25	27.85	-	47.0	19.15	-
	377.00	27.25	-	47.0	19.75	-

* Meter reading: ***Loss include***
* Margins : ***[Limits] – [Meter reading]***
* Receiving Antenna Mode: ***Horizontal, Vertical***
* 10m chamber
* <5 : mean less than 5dB

Result: Pass

The measured emissions level of the EUT have found the below of the specified limit.

7. PRODUCT PHOTOGRAPHS

7.1 Front Photograph of EUT

7.2 Rear Photograph of EUT