ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test Report No.	**: E04OR-067**
Applicant	**: DIASONIC TECHNOLOGY CO., LTD.**
Address	**: 321-43, Suksu-Dong, Manan-Ku, Anyang-City, Kyungki-Do, Korea**
Manufacturer	**: DIASONIC TECHNOLOGY CO., LTD.**
Address	**: 321-43, Suksu-Dong, Manan-Ku, Anyang-City, Kyungki-Do, Korea**
Type of Equipment	**: HDD MP3**
FCC ID	**: P7KDHD1000**
Model Name	**: DHD-1000**
Serial number	**: N/A**
Total page of Report	**: 15 pages (including this page)**
Date of Incoming	**: September 13, 2004**
Date of Issuing	**: October 25, 2004**

SUMMARY

The equipment complies with the requirements of **FCC CFR 47 PART 15 SUBPART B, Class B.**
This test report contains only the results of a single test of the sample supplied for the examination. It is not a general valid assessment of the features of the respective products of the mass-production.

Prepared by: _____
Sue-Yong, Lee / Test Engineer
EMC Div.
ONETECH Corp.

Reviewed by: _____
Gea-Won, Lee / Chief Engineer
EMC Div.
ONETECH Corp.

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

CONTENTS

Page

1. VERIFICATION OF COMPLIANCE 3

2. GENERAL INFORMATION 4

2.1 PRODUCT DESCRIPTION 4
2.2 MODEL DIFFERENCES: 4
2.3 RELATED SUBMITTAL(S) / GRANT(S) 4
2.4 TEST SYSTEM DETAILS 4
2.5 TEST METHODOLOGY 5
2.6 TEST FACILITY 5

3. SYSTEM TEST CONFIGURATION 6

3.1 JUSTIFICATION 6
3.2 MODE OF OPERATION DURING THE TEST 6
3.3 CABLE DESCRIPTION 6
3.4 NOISE SUPPRESSION PARTS ON CABLE 7
3.5 EQUIPMENT MODIFICATIONS 7
3.6 CONFIGURATION OF TEST SYSTEM 7

4. PRELIMINARY TEST 8

4.1 AC POWER LINE CONDUCTED EMISSION TEST 8
4.2 RADIATED EMISSION TEST 8

5. FINAL RESULT OF MEASURMENT 9

5.1 CONDUCTED EMISSIONS TESTS 9
5.2 RADIATED EMISSION TEST 13

6. FIELD STRENGTH CALCULATION 14

7. LIST OF TEST EQUIPMENT 15

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

1. VERIFICATION OF COMPLIANCE

-. APPLICANT : DIASONIC TECHNOLOGY CO., LTD.
-. ADDRESS : 321-43, Suksu-Dong, Manan-Ku, Anyang-City, Kyungki-Do, Korea
-. CONTACT PERSON : Mr. Jong-Kyu, Lee / Senior Engineer
-. TELEPHONE NO : +82-31-474-0852
-. FCC ID : P7KDHD1000
-. MODEL NAME : DHD-1000
-. SERIAL NUMBER : N/A
-. DATE : October 25, 2004

DEVICE TYPE	Peripheral Device for Class B Computing Device - Unintentional Radiator
E.U.T. DESCRIPTION	HDD MP3
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4: 2001
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15, SECTION 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

-. This device has shown compliance with the conducted emissions limits in 15.107 adopted under FCC 02-107 (ET Docket 98-80). The device may be marketed after July 11, 2005 affected by the 15.37(j) transition provisions.

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

2. GENERAL INFORMATION

2.1 Product Description

The DIASONIC TECHNOLOGY CO., LTD., Model DHD-1000 (referred to as the EUT in this report) is a HDD MP3 that is a personal computer peripheral with USB standard port. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Non-Metal
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	11.2896MHz, 12MHz on the Main Board 12MHz on the Sub Board
FM TUNER MODULE MFR./MODEL NAME	Kwang Sung Electronics Co., Ltd / KST-MK000FX0-5
NUMBER OF LAYERS	Main Board : 6 Layers Sub Board : 4 Layers
EXTERNAL CONNECTOR	Audio Line In/Out, DC In, USB 2.0, USB Host

2.2 Model Differences:

-. None

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Test System Details

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

Model	Manufacturer	FCC ID	Description	Connected to
DHD-1000	DIASONIC TECHNOLOGY CO., LTD.	P7KDHD1000	HDD MP3 (EUT)	NOTEBOOK PC
SR-0515SP	SEORIM ELECTRONICS CO.,LTD	N/A	AC/DC Adaptor	EUT
-	-	N/A	EARPHONE	EUT
PP05LC	Dell Computer Corp.	DOC	NOTEBOOK PC	-
2225C	HP	DSI6XU2225	PRINTER	NOTEBOOK PC
020-0470	Cardinal	GDE0196	MODEM	NOTEBOOK PC
X06-08477	Microsoft Corp	DOC	MOUSE	NOTEBOOK PC

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2001. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.6 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-080 Korea. Description details of test facilities were submitted to the Commission on January 18, 2002. (Registration Number: 92819)

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
Main Board	N/A	-	N/A
HDD	CORNICE	-	N/A
USB Board	N/A	-	N/A

3.2 Mode of operation during the test

-. Play mode and Recording mode

-. After connecting the EUT to USB port of a notebook PC, data were continuously uploading and downloading from HDD of the notebook PC to the EUT.

-. FM receiving mode

- The EUT was tested on up/downloading mode as the worst case.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
HDD MP3 (EUT)	N	Y	1.2 (P), 1.2 (D)
AC/DC Adaptor	N/A	N	1.2 (D)
EARPHONE	N/A	N	1.2 (D)
NOTEBOOK PC	N	-	1.5 (P)
PRINTER	N	Y	1.5(P), 1.5(D)
MODEM	N	Y	1.5(P), 1.5(D)
MOUSE	N/A	N	1.2 (D)

* The marked “(P)” means the Power Cable and “D” means the I/O Cable.

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

3.4 Noise Suppression Parts on Cable

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
HDD MP3 (EUT)	Y	EUT END	Y	BOTH END
AC/DC Adaptor	Y	EUT END	Y	EUT END
EARPHONE	N	N/A	Y	EUT END
NOTEBOOK PC	-	-	-	-
PRINTER	N	N/A	Y	BOTH END
MODEM	N	N/A	Y	BOTH END
MOUSE	N	N/A	Y	Notebook PC END

3.5 Equipment Modifications

To achieve compliance to CLASS B levels, the following change(s) was made by ONETECH Corp. during compliance testing:

"There were no Modified items during EMI test"

3.6 Configuration of Test System

Line Conducted Test : The EUT was connected to AC/DC adaptor and AC/DC adaptor was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4: 2001 7.2.3 to determine the worse operating conditions.

The EUT was inserted to USB port of PC and the power line of PC was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4: 2001 7.2.3 to determine the worse operating conditions.

Radiated Emission Test : Preliminary radiated emission test was conducted using the procedure in ANSI C63.4: 2001 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 3 meters open area test site.

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

4. PRELIMINARY TEST

4.1 AC Power line Conducted Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Play mode	
Recoding mode	
FM Receiving mode	
Files Up/Downloading mode	X

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Play mode	
Recoding mode	
FM Receiving mode	
Files Up/Downloading mode	X

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

5. FINAL RESULT OF MEASURMENT

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level

5.1 Conducted Emissions Tests

Humidity Level : 42 % Temperature: 20 °C

Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107 (a)

Type of Test : Class B

Result : PASSED BY –10.07 dB at 0.19 MHz under power of AC/DC Adaptor mode

---

EUT : HDD MP3 Date: September 19, 2004

Operating Condition : Files Up/Downloading mode

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

Remark : Used by AC/DC Adaptor

Frequency (MHz)	Line	Peak (dBuV)		Margin (dB)
		Emission level	Q.P Limits	
0.16	H	53.61	65.73	-12.12
0.18	H	52.92	64.49	-11.57
0.19	N	54.19	64.26	-10.07
0.24	N	47.24	62.10	-14.86
2.15	N	40.59	56.00	-15.41
4.70	H	38.77	56.00	-17.23
Frequency (MHz)	**Line**	**Average (dBuV)**		**Margin (dB)**
		Emission level	**Limits**	
0.18	H	35.61	54.49	-18.88
0.19	N	42.06	54.26	-12.20
2.15	N	27.60	46.00	-18.40
4.70	H	28.13	46.00	-17.87

Line Conducted Emissions Tabulated Data

Remark : "H": Hot Line, "N": Neutral line, "Q.P": Quasi-Peak detect

See Appendix I for an overview sweep performed with peak and average detector.

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

Remark : Used by PC power line

Frequency (MHz)	Line	Peak (dBuV)		Margin (dB)
		Emission level	Q.P Limits	
0.16	N	47.67	65.46	-17.79
0.17	H	50.54	64.96	-14.42
0.51	N	42.44	56.00	-13.56
1.71	N	40.27	56.00	-15.73
2.17	N	39.71	56.00	-16.29
2.23	H	41.57	56.00	-14.43
Frequency (MHz)	**Line**	**Average (dBuV)**		**Margin (dB)**
		Emission level	**Limits**	
-				
-				

Line Conducted Emissions Tabulated Data

Remark : "H": Hot Line, "N": Neutral line, "Q.P": Quasi-Peak detect

Average mode was not measured, because Peak values were under the average limit.

See Appendix I for an overview sweep performed with peak detector.

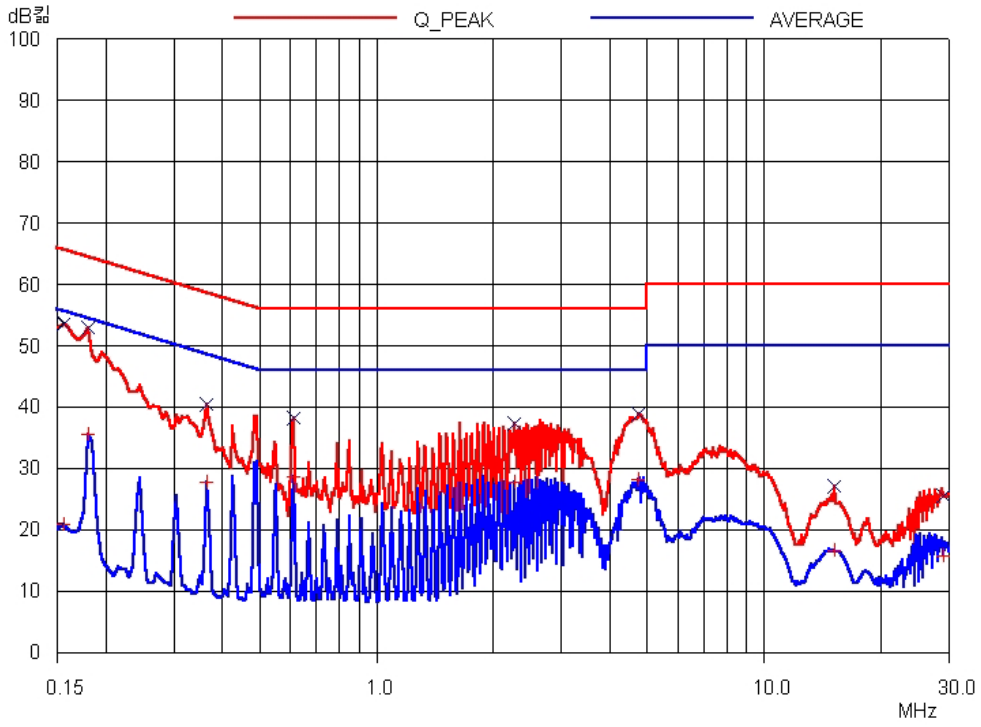
Tested by: Dong-Yub, Lee / Test Engineer

It should not be reproduced except in full, without the written approval of ONETECH.

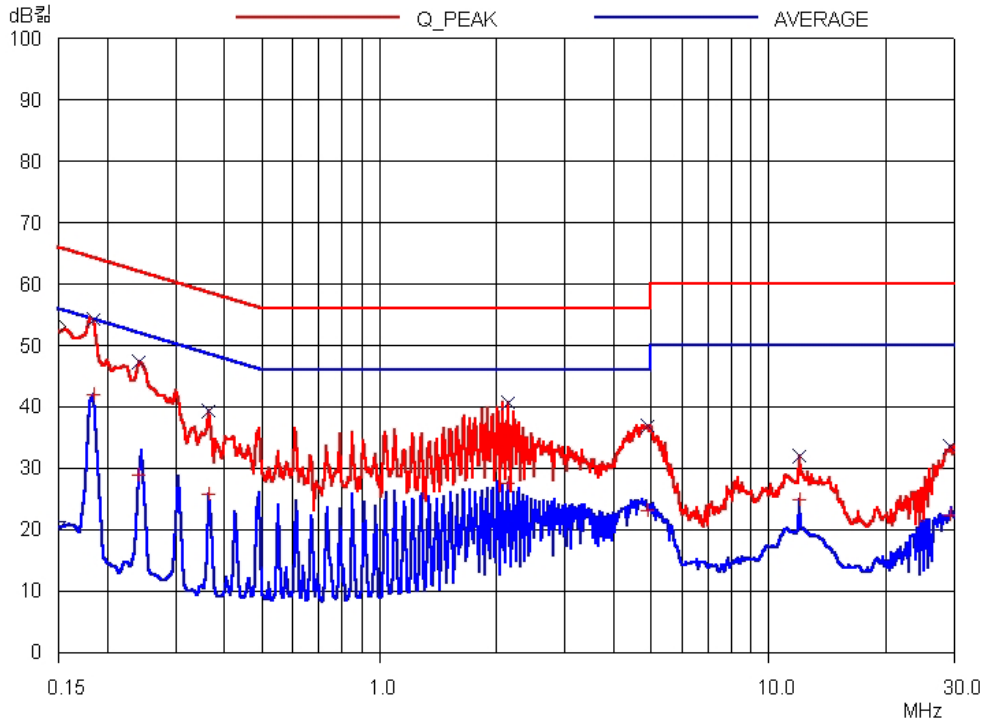
HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

Remark: Used by AC/DC Adaptor



HOT LINE



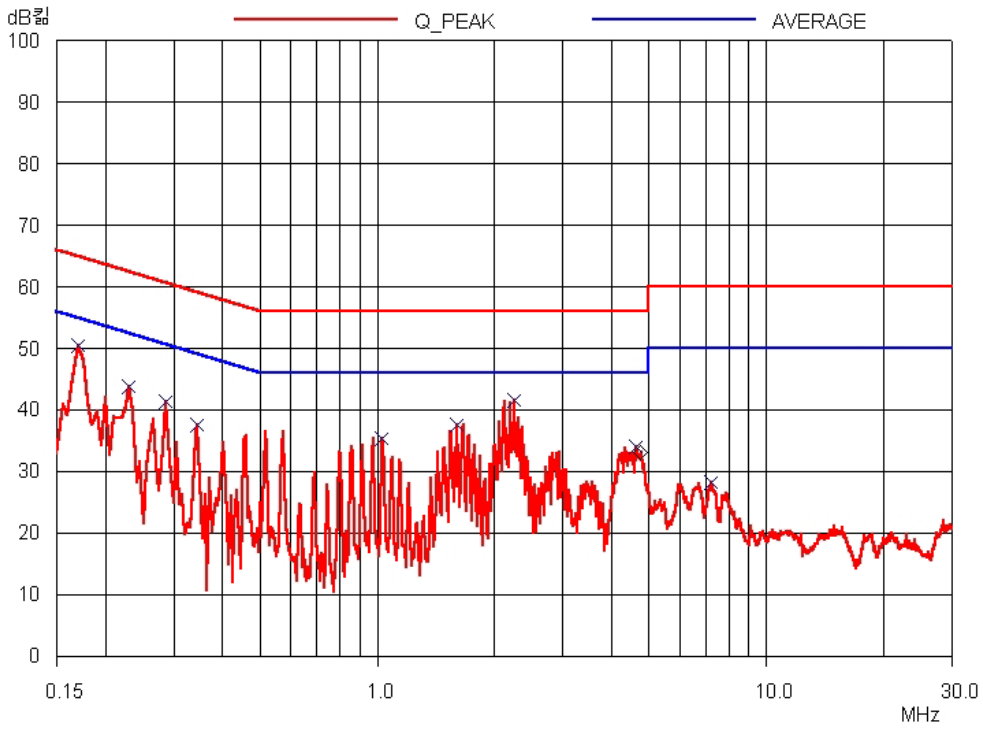
NEUTRAL LINE

It should not be reproduced except in full, without the written approval of ONETECH.

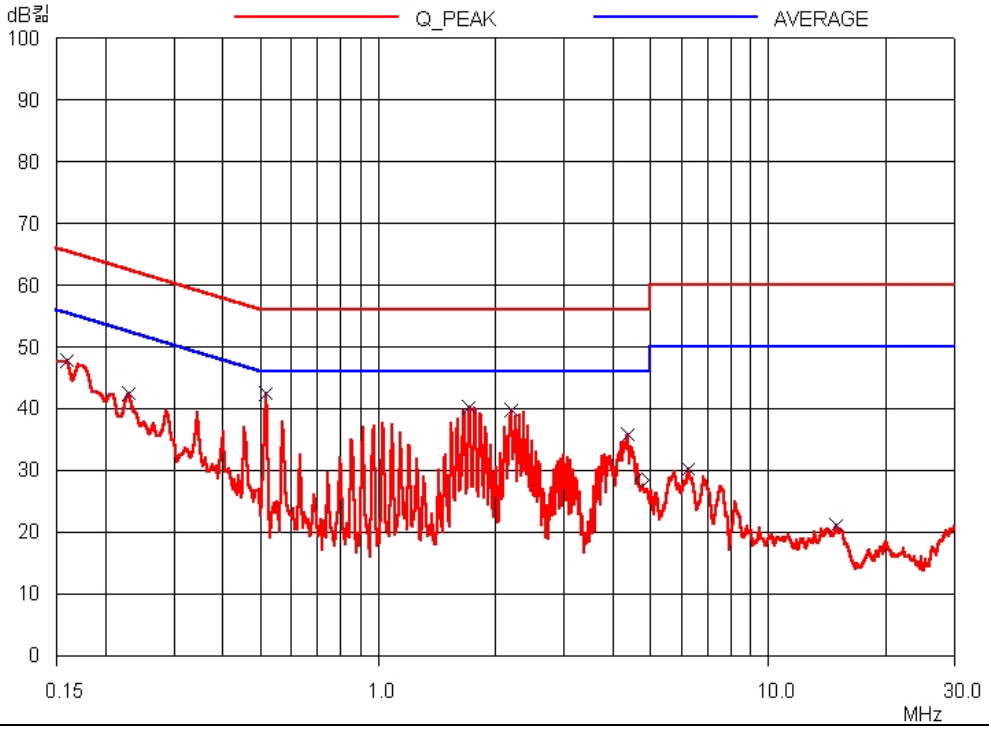
HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

Remark: Used by PC power line



HOT LINE



NEUTRAL LINE

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

5.2 Radiated Emission Test

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

Humidity Level : 43 % Temperature: 20 °C
Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109 (a)
Type of Test : CLASS B
Result : PASSED BY –2.12 dB at 401.14 MHz

EUT : HDD MP3 Date: September 16, 2004
Operating Condition : Files Up/Downloading mode
Frequency range : 30MHz ~ 1000MHz
Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
Distance : 3 Meter

Radiated Emissions		Ant	Correction Factors		Total	FCC CLASS B	
Freq. (MHz)	Amp. (dBuV)	Pol.	Ant. (dBuV/m)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
120.12	21.40	H	13.00	2.20	36.60	43.52	-6.92
180.20	18.92	H	14.98	2.30	36.20	43.52	-7.32
221.87	16.68	H	16.86	2.46	36.00	46.02	-10.02
266.44	20.01	H	17.42	2.67	40.10	46.02	-5.92
401.14	24.55	H	15.85	3.50	43.90	46.02	-2.12
481.57	22.08	H	17.41	3.61	43.10	46.02	-2.92
856.57	14.28	H	23.02	4.90	42.20	46.02	-3.82

Radiated Emissions Tabulated Data

Tested by: Dong-Yub, Lee / Test Engineer

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+	Meter reading	(dBuV)
+	Cable Loss	(dB)
+	Antenna Factor (Loss)	(dB/meter)
=	Corrected Reading	(dBuV/meter)
-	Specification Limit	(dBuV/meter)
=	dB Relative to Spec	(+/- dB)

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS 10	827864/005	DEC/03	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	MAY/04	12MONTH	■
3.	Spectrum analyzer	HP	8566B	3407A08547	JUL/04	12MONTH	
4.	Spectrum analyzer	HP	8568B	3109A05456	JUL/04	12MONTH	■
5.	RF preselector	HP	85685A	3107A01264	APR/04	12MONTH	■
6.	Quasi-Peak Adapter	HP	85650A	3107A01542	JUL/04	12MONTH	■
7.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163 166	FEB/04	12MONTH	
8.	Biconical antenna	EMCO	3104C	9109-4443	MAY/04	12MONTH	
		Schwarzbeck	VHA9103	91031852	JAN/04		■
9.	Log Periodic antenna	EMCO	3146	9109-3213	FEB/04	12MONTH	
				9109-3217	MAY/04		
		Schwarzbeck	9108-A(494)	62281001	JAN/04		■
10.	LISN	EMCO	3825/2	9109-1867	JUL/04	12MONTH	■
				9109-1869	OCT/04		■
11.	Position Controller	HD GmbH	HD100	N/A	N/A	N/A	■
12.	Turn Table	HD GmbH	DS420S	N/A	N/A	N/A	■
13.	Antenna Master	HD GmbH	MA240	N/A	N/A	N/A	■

It should not be reproduced except in full, without the written approval of ONETECH.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)