



# ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test Report No. : E054R-038  
Applicant : DIGITAL & DIGITAL INC  
Address : 169-25, Samsung-Dong, Kangnam-Gu, Seoul, 135-882, Korea  
Manufacturer : TRIGEM KOREA INC  
Address : 1055, Shingil-Dong, Danwon-Gu, Ansan-City, Kyunggi-Do, 425-839, Korea  
Type of Equipment : HOME MEDIA CENTER  
FCC ID : S8EHT-3000  
Model Name : HT-3080ND  
Multiple Model Name : HT-3120ND, HMC-1000, HD-2000AV  
Serial number : N/A  
Total page of Report : 12 pages (including this page)  
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## SUMMARY

The equipment complies with the regulation; **FCC CFR 47 PART 15 SUBPART B, Class B.**

This test report contains only the result 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

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**1. VERIFICATION OF COMPLIANCE**

APPLICANT : DIGITAL & DIGITAL INC  
ADDRESS : 169-25, Samsung-Dong, Kangnam-Gu, Seoul, 135-882, Korea  
CONTACT PERSON : Mr. Ho-Jung, Kim / Senior Manager  
TELEPHONE NO : +82-2-538-7788  
FCC ID : S8EHT-3000  
MODEL NO/NAME : HT-3080ND  
SERIAL NUMBER : N/A  
DATE : April 18, 2005

DEVICE TYPE	Peripheral Device for Class B Computing Device
E.U.T. DESCRIPTION	HOME MEDIA CENTER
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4: 2001
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT	CERTIFICATION
AUTHORIZATION REQUESTED	
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	PART 15 SUBPART B, SECTION 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	Yes
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.



## 2. GENERAL INFORMATION

### 2.1 Product Description

The DIGITAL & DIGITAL INC, Model HT-3080ND (referred to as the EUT in this report) is a HOME MEDIA CENTER. The verification report for the TV tuner part shall be issued with other test report number. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Metal
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	24.576MHz, 25MHz, 27MHz, 30MHz, 32.11MHz, 33MHz, 48MHz and 100MHz
NUMBER OF LAYERS	6 Layers
ELECTRICAL RATING	Input : AC100-240V~, 50/60Hz, 68W
TUNER M/N / MFR	TCMN0682PA12D(4) / SAMSUNG
EXTERNAL TERMINALS	Composite In/Out, S-Video In, Component In/Out, USB Port, LAN Port, DVI Out, Tuner

### 2.2 Model Differences

- The difference(s) compared to the EUT is as follows:

	Model Name	Model Differences
Basic Model	HT-3080ND	-
Multiple Model	HT-3120ND, HMC-1000, HD-2000AV	Only type designation by a HDD memory size of the EUT and buyer's request.

### 2.3 Related Submittal(s) / Grant(s)

Original submittal only

### 2.4 Test System Details

The model numbers for all the equipments which were used in the tested system is:

Model	Manufacturer	FCC ID	Description	Connected to
HT-3080ND	TRIGEM KOREA INC	N/A	HOME MEDIA CENTER (EUT)	-
S690	SAMSUNG Elec.	N/A	Notebook PC	EUT
NP201	NewQ	DoC	LCD Monitor	EUT
LT416	LEADER	N/A	Pattern Generator	EUT
DVD 2000	TAEYOUNG	N/A	DVD Player	EUT
ZIDA20	Hana Micron	N/A	Memory Stick	EUT
2225C	HP	DSI6XU2225	Printer	Notebook PC



## 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-Eup, Kwangju-City, Kyunggi-Do, 464-080, Korea. Description details of test facilities were submitted to the Commission on April 04, 2003. (Registration Number: 340658)

# 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	DIGITAL & DIGITAL INC	HT3000 PVR-PP	N/A
Front Board	DIGITAL & DIGITAL INC	HT-3000 Front-PS	N/A
Power Board	N/A	HT-3000	N/A
HDD	SAMSUNG	SV0802E1NBM	N/A

## 3.2 EUT exercise Software

The following two modes were operated during compliance testing, but worst emissions were recorded in this report.

- 1) The EUT was operated with audio and video playing mode from HDD of the EUT during the test.
- 2) After connecting the EUT to the USB port of the PC, data were continuously read and written from HDD of the PC.



### 3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
HOME MEDIA CENTER	N	N	1.5(P), 1.5(D)
Notebook PC	N	-	1.5(P)
LCD Monitor	N	N	1.5(P), 1.5(D)
Pattern Generator	N	N	1.5(P), 1.5(D)
DVD Player	N	N	1.5(P), 1.5(D)
Memory Stick	N/A	N/A	-
Printer	N	Y	1.5(P), 1.5(D)

\* The marked "(P)" means the Power Cable and "(D)" means Signal Cable.

### 3.4 Noise Suppression Parts on Cable

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
HOME MEDIA CENTER	N	N/A	Y	BOTH END
Notebook PC	-	-	-	-
LCD Monitor	N	N/A	Y	BOTH END
Pattern Generator	N	N/A	Y	BOTH END
DVD Player	N	N/A	Y	BOTH END
Memory Stick	N	N/A	Y	EUT END
Printer	N	N/A	Y	BOTH END

### 3.5 Equipment Modifications

- The rating of bead for L22 was changed from 0uH to 600 Ohm.
- The rating of bead for L23 was changed from 10uH to 600 Ohm.
- The resistors(R452~454) were changed to bead(600 Ohm).
- The bead(600 Ohm) was added to the DGND for U46.



### 3.6 Configuration of Test System

**Line Conducted Test:** The power of the EUT 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.

## 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)
Audio and Video Playing mode	X
Data read and written via USB port	

### 4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Audio and Video Playing mode	X
Data read and written via USB port	



## 5. FINAL RESULT OF MEASUREMENT

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

### 5.1 Conducted Emission Test

Humidity Level	: <u>45 %</u>	Temperature: <u>21 °C</u>
Limits apply to	: <u>FCC CFR 47, PART 15, SUBPART B, SECTION 15.107(a)</u>	
Type of Test	: <u>CLASS B</u>	
Result	: <u>PASSED BY -10.65 dB at 0.18 MHz</u>	

EUT	: HOME MEDIA CENTER	Date: March 16, 2005
Operating Condition	: Audio and Video Playing mode	
Detector	: CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)	

Frequency (MHz)	Line	Peak (dBuV)		Margin (dB)
		Emission level	Q.P Limits	
0.18	H	53.61	64.26	-10.65
4.73	H	38.50	56.00	-17.50
6.82	H	42.00	60.00	-18.00
18.65	N	45.73	60.00	-14.27
19.89	H	42.86	60.00	-17.14
22.02	N	45.58	60.00	-14.42

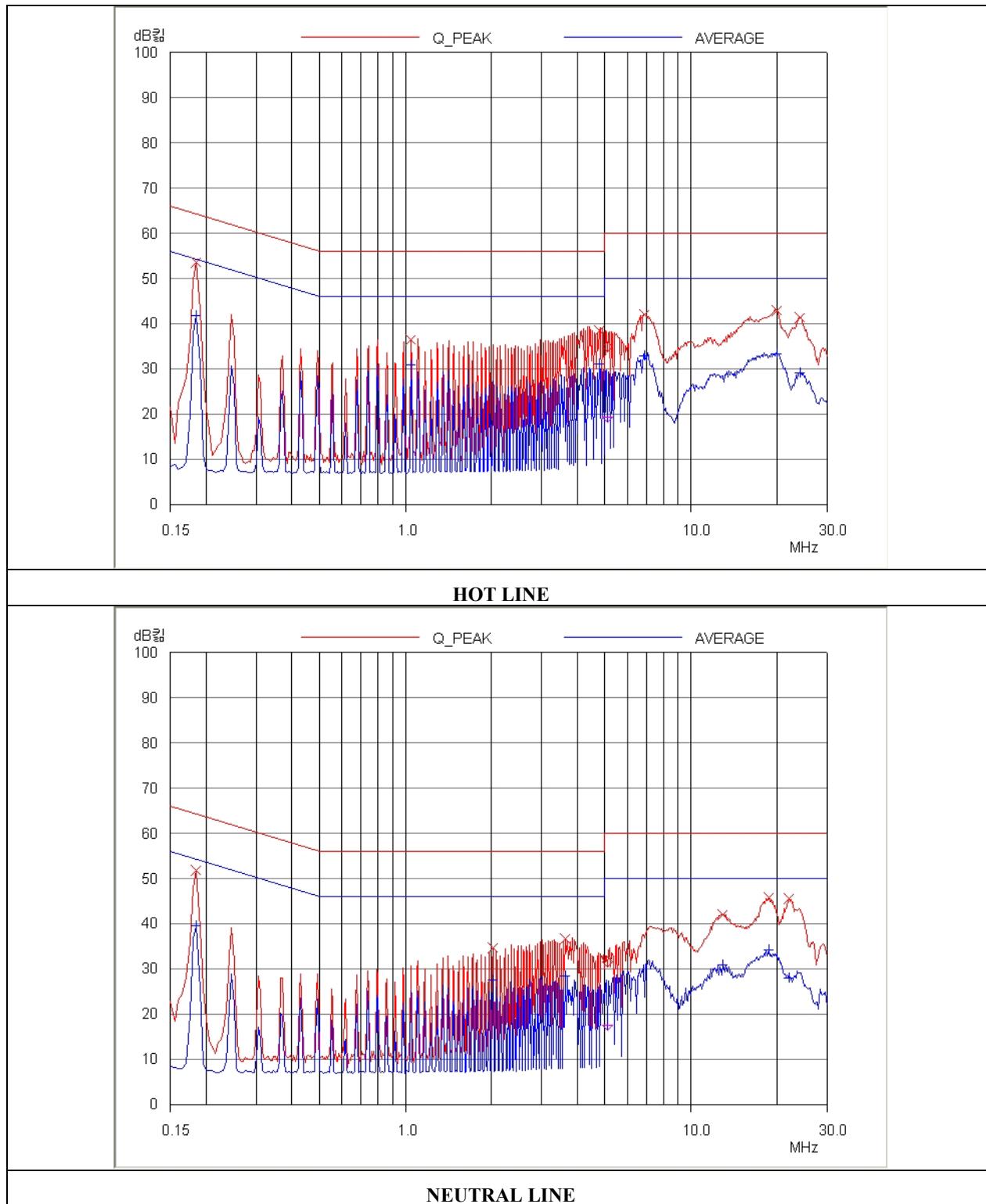
Frequency (MHz)	Line	Average (dBuV)		Margin (dB)
		Emission level	Limits	
0.18	H	41.67	54.26	-12.59
18.65	N	34.27	50.00	-15.73
19.89	H	33.34	50.00	-16.66
22.02	N	27.97	50.00	-22.03

Line Conducted Emission Tabulated Data

Remark : "H": Hot Line, "N": Neutral line

See next page for an overview sweep performed with peak and average detector.

Tested by: Sue-Yong, Lee / Test Engineer





## 5.2 Radiated Emission Test

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

Humidity Level	: <u>41 %</u>	Temperature: <u>19 °C</u>
Limits apply to	: <u>FCC CFR 47, PART 15, SUBPART B, SECTION 15.109(a)</u>	
Type of Test	: <u>CLASS B</u>	
Result	: <u>PASSED BY -3.90dB at 699.56MHz</u>	

EUT	: HOME MEDIA CENTER	Date: March
29, 2005		
Operating Condition	: Audio and Video Playing mode	
Frequency range	: 30MHz – 1000MHz	
Detector	: CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)	
Distance	: 3 Meter	

Radiated Emission		Ant	Correction Factors		Total	FCC		
Freq. (MHz)	Amp. (dBuV)		Pol.	Ant. (dBuV/m)		Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
108.00	16.60	V		11.28	1.90	29.78	43.52	-13.74
162.00	11.50	V		15.38	2.40	29.28	43.52	-14.24
519.20	11.10	H		17.69	5.42	34.21	46.02	-11.81
603.00	12.60	V		18.69	5.32	36.61	46.02	-9.41
699.56	15.20	V		20.53	6.39	42.12	46.02	-3.90
798.96	9.90	V		20.40	7.19	37.49	46.02	-8.53
809.95	13.80	V		20.81	7.18	41.79	46.02	-4.23

Tested by: Sue-Yong, Lee / Test Engineer



## 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)

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= Corrected Reading (dBuV/meter)

- Specification Limit (dBuV/meter)

= dB Relative to Spec (+/- dB)



## 7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUe CAL	USE
1.	Test receiver	R/S	ESVS10	827864/005	DEC/04	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/05	12MONTH	
8.	Biconical antenna	EMCO	3104C	9109-4443	MAY/04	12MONTH	
		Schwarzbeck	VHA9103	91031852	JAN/05		■
9.	Log Periodic antenna	EMCO	3146	9109-3213	FEB/05	12MONTH	
				9109-3217	MAY/04		
		Schwarzbeck	9108-A(494)	62281001	JAN/05		■
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	■