



ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test Report No. : E056R-084

Applicant : HANA Micron Inc.
Address : #902 Ssangyong IT Twin-Tower 1, 442-17, Sangdaewon1-Dong, Joongwon-Gu,
Seongnam-City, Gyeonggi-Do, 462-807, Korea

Manufacturer : HANA Micron Inc.
Address : #902 Ssangyong IT Twin-Tower 1, 442-17, Sangdaewon1-Dong, Joongwon-Gu,
Seongnam-City, Gyeonggi-Do, 462-807, Korea

Type of Equipment : Host MP3 Player (Peripheral Device for Class B Computing Device)

FCC ID : QH7-MP3P-BULLET

Model Name : HHMP-1000

Multiple Model Name : HHMP-1000W, HHMP-1000B, HHMP-1000S, HHMP-1000R

Serial number : N/A

Total page of Report : 11 pages (including this page)

Date of Incoming : April 22, 2005

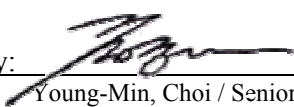
Date of Issuing : June 30, 2005

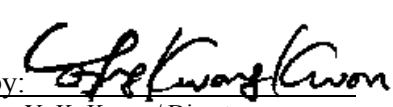
SUMMARY

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

Prepared by: 
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**1. VERIFICATION OF COMPLIANCE**

APPLICANT : HANA Micron Inc.
ADDRESS : #902 Ssangyong IT Twin-Tower 1, 442-17, Sangdaewon1-Dong, Joongwon-Gu,
Seongnam-City, Gyeonggi-Do, 462-807, Korea
CONTACT PERSON : Mr. Woo-Ki, Song / Director
TELEPHONE NO : +82-31-608-5536
FCC ID : QH7-MP3P-BULLET
MODEL NO/NAME : HHMP-1000
BRAND NAME : Aiva / Bullet
SERIAL NUMBER : N/A
DATE : June 30, 2005

EQUIPMENT CLASS	JBP - Peripheral Device for Class B Computing Device
E.U.T. DESCRIPTION	Host MP3 Player – UNINTENTIONAL RADIATOR
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4: 2003
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	PART 15 SUBPART B, 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.



2. GENERAL INFORMATION

2.1 Product Description

The HANA Micron Inc., Model HHMP-1000 (referred to as the EUT in this report) is a Host MP3 Player. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	12 MHz
NUMBER OF LAYERS	Main Board : 6 Layers, Sub Board : 2 Layers
EXTERNAL CONNECTOR	Data Download Port, Audio Out, USB Memory Port

2.2 Model Differences

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

	Model Name	Model Differences
Basic Model	HHMP-1000	-
Multiple Model	HHMP-1000W, HHMP-1000B, HHMP-1000S, HHMP-1000R	Only type designation except for the color of the EUT.

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
HHMP-1000	HANA Micron Inc.	QH7-MP3P-BULLET	Host MP3 Player(EUT)	-
PP05LC	Dell Computer Corp.	DoC	Notebook PC	EUT
2225C	HP	DSI6XU2225	Printer	Notebook PC
020-0470	Cardinal	GDE0196	Modem	Notebook PC



2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2003. 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	N/A	HHMP-1000 MAIN Rev 0.4	N/A
Sub Board	N/A	HHMP-1000 SUB Rev 0.3	N/A

3.2 EUT exercise Software

- After connecting the EUT to a notebook PC, the EUT was operated with firmware downloading mode during the test.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
Host MP3 Player	N	N	1.5(P), 1.5(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)

* 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
Host MP3 Player	Y	EUT END	Y	BOTH END
Notebook PC	-	-	-	-
Printer	N	N/A	Y	BOTH END
Modem	N	N/A	Y	BOTH END

3.5 Equipment Modifications

- None

3.6 Configuration of Test System

Line Conducted Test: 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: 2003 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: 2003 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)
The firmware 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)
The firmware downloading mode	X



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 : 48 %

Temperature: 24 °C

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

Type of Test : CLASS B

Result : PASSED BY -15.67 dB at 0.17 MHz

EUT : Host MP3 Player

Date: June 16, 2005

Operating Condition : The EUT was operated with firmware downloading mode.

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

Frequency (MHz)	Line	Peak (dBuV)		Margin (dB)
		Emission level	Q.P Limits	
0.17	N	49.29	64.96	-15.67
0.27	H	44.56	61.12	-16.56
0.31	H	39.78	59.97	-20.19
3.24	N	34.41	56.00	-21.59
10.17	N	40.77	60.00	-19.23
10.22	H	39.98	60.00	-20.02
Frequency (MHz)	Line	Average (dBuV)		Margin (dB)
		Emission level	Limits	
-				
-				

Line Conducted Emission Tabulated Data

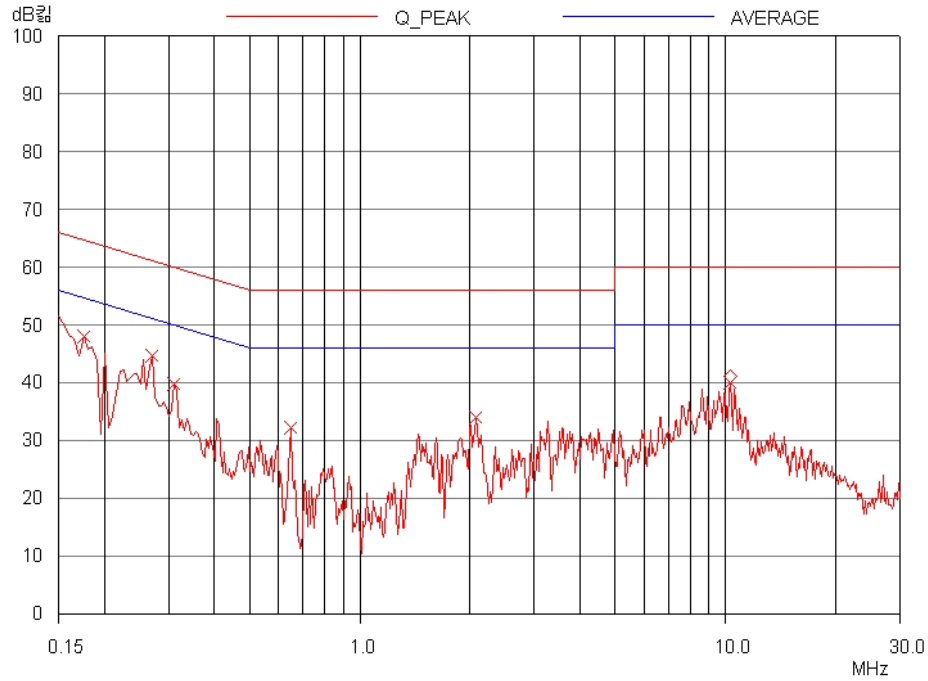
Remark : "H": Hot Line, "N": Neutral line

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

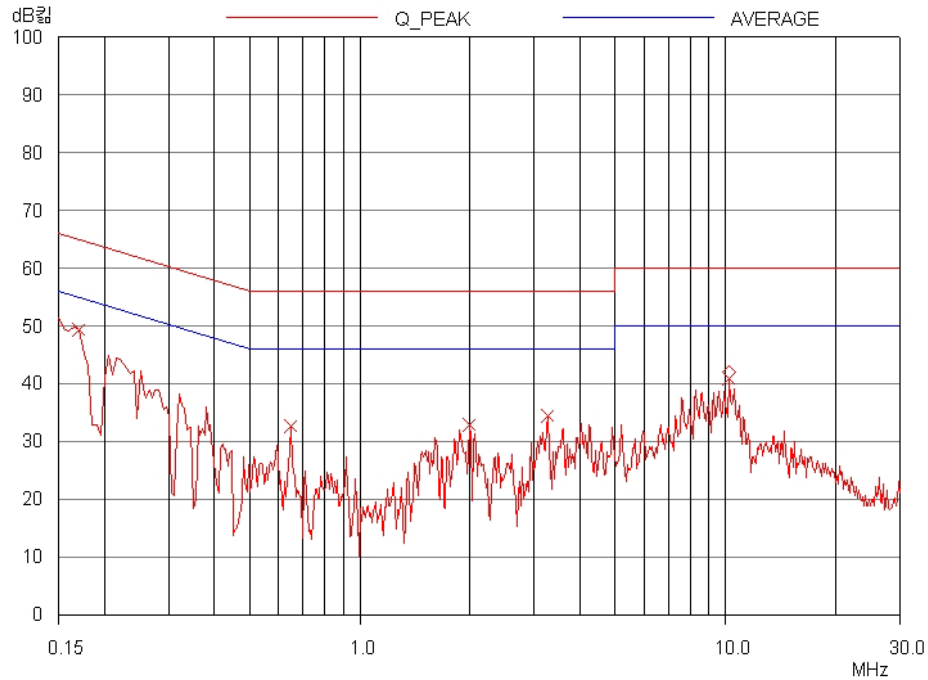
See next page for an overview sweep performed with peak and average detector.

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Tested by: Ki-Hong, Nam / Test Engineer



HOT LINE



NEUTRAL LINE



5.2 Radiated Emission Test

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

Humidity Level : 41 % Temperature: 22 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109(a)
 Type of Test : CLASS B
 Result : PASSED BY -3.10dB at 656.22MHz

EUT : Host MP3 Player Date: June

09, 2005

Operating Condition : The EUT was operated with firmware downloading 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)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
46.88	20.40	V	11.73	1.62	33.75	40.00	-6.25
97.80	19.70	V	9.73	1.90	31.33	43.52	-12.19
182.41	16.30	H	15.96	2.80	35.06	43.52	-8.46
193.88	15.60	V	15.90	2.80	34.30	43.52	-9.22
270.30	18.50	H	17.78	3.48	39.76	46.02	-6.26
389.46	16.60	H	15.22	4.36	36.18	46.02	-9.84
656.22	17.70	H	19.43	5.79	42.92	46.02	-3.10
740.00	14.30	H	21.12	6.80	42.22	46.02	-3.80

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Tested by: Ki-Hong, Nam / 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)

= 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/05	12MONTH	■
3.	Spectrum analyzer	HP	8566B	3407A08547	JUL/04	12MONTH	
4.	Spectrum analyzer	HP	85680B	3001A04955	APR/05	12MONTH	■
5.	RF preselector	HP	85685A	3107A01264	APR/05	12MONTH	■
6.	Quasi-Peak Adapter	HP	8574B	2811A01432	APR/05	12MONTH	■
7.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163 166	FEB/05	12MONTH	
8.	Biconical antenna	EMCO	3110	9003-1121	FEB/05	12MONTH	
		Schwarzbeck	VHA9103	91031852	JAN/05		■
9.	Log Periodic antenna	EMCO	3146	9001-2614	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		■
		Schwarzbeck	NSLK 8128	8126-216	JUN/05		■
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	■