Nemko USA, Inc.
11696 Sorrento Valley Rd., Suite F
San Diego, CA 92121-1024
Phone (858) 793-9911 Fax (858) 793-9914

PART 15.239
IC RSS-210, ISSUE 6

TEST REPORT

For The **Drive + Play RF Interface**

Model: **DP 1US**

FCC ID# TN5DP0100SZ

PREPARED FOR:

Harman Multimedia
8500 Balboa Blvd.
Northridge, CA 91329

PREPARED ON OCTOBER 24, 2005

REPORT NUMBER 2005 080442-FCC

PROJECT NUMBER: 25-442-HAR

Number of Pages: 25

DOCUMENT HISTORY

REVISION	DATE	COMMENTS
-	October 24, 2005	Prepared By: Alan Laudani
-	October 24, 2005	Initial Release: C. Fleury

NOTE: Nemko USA, Inc. hereby makes the following statements so as to conform to Chapter 10 (Test Reports) Requirements of ANSI C63.4 (2003) "Methods and Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz":

- The unit described in this report was received at Nemko USA, Inc.'s facilities on **August 16, 2005** . Testing was performed on the unit described in this report on **August 16, 2005** to August 23, 2005 .
- The Test Results reported herein apply only to the Unit actually tested, and to substantially identical Units.
- This report does not imply the endorsement of the Federal Communications Commission (FCC), NVLAP or any other government agency.

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CERTIFICATION

The Radio Frequency Interference (RFI) testing, data evaluation and this report have been prepared by Nemko USA, Inc., an independent electromagnetic compatibility consulting and test laboratory.

The testing and data collection were accomplished in accordance with the requirements of the ANSI, C63.4-2003 standard and the applicable sections of FCC, Part 15, Subpart B for Class "B" equipment. The testing was also accomplished in accordance with Industry Canada's ICES-003 standard for unintentional radiating device per EMCAB-3, Issue 3 (May 1998). Refer to the Administrative Summary for a description of the test sample.

I certify the data, data evaluation and equipment configuration herein to be a true and accurate representation of the sample's radio frequency interference emission characteristics, as of the test date(s), and for the design of the test sample used to compile this report.

Chip Fleury

Senior EMC Engineer, Frontline Manager

1. ADMINISTRATIVE DATA AND TEST SUMMARY

Administrative Data

CLIENT:	**Harman Multimedia** **8500 Balboa Blvd.** **Northridge, CA 91329** **818.830.8737**
CONTACT:	**Bruce Ryan**
DATE (S) OF TEST:	**August 16, 2005** to August 23, 2005
EQUIPMENT UNDER TEST (EUT):	**Drive + Play RF Interface**
Model	**DP 1US**
Condition Upon Receipt	SN 000105 Suitable for Test
TEST SPECIFICATION:	FCC, Part 15.239

Test Summary

Specification	*Frequency Range*	*Compliance Status*
FCC, CFR 47, Section 15.107 Class "B" Conducted Emissions	0.45 MHz - 30.00 MHz	**N/A***
FCC, CFR 47, Section 15.209 Class "B" Radiated Emissions	30 MHz - 1100 MHz	**PASS**
FCC, CFR 47, Section 15.239	88.1—107.9 MHz	**PASS**

- *Not applicable as EUT is DC powered by a battery.

Refer to the test results section for further details.

2.SYSTEM CONFIGURATION

Description and Method of Exercising the EUT

The DP 1US is a **Drive + Play RF Interface**. Its function is to relay the music or entertainment media to the FM radio sound system in an automobile. The audio source for this product can be an iPod or another auxiliary device plugged in to the Aux In connector.

System Components and Power Cables

EUT is a system with controller and display.

DEVICE	MANUFACTURER MODEL # SERIAL #	POWER CABLE
EUT - **Drive + Play RF Interface**	**Harman Multimedia** **DP 1US** Serial #:	Two wire 12 Vdc cigarette lighter adapter
Ipod	Apple Model: Nano SN: NA	Internal battery

Device Interconnection and I/O Cables

CONNECTION	I/O CABLE
IPOD	Proprietary cable

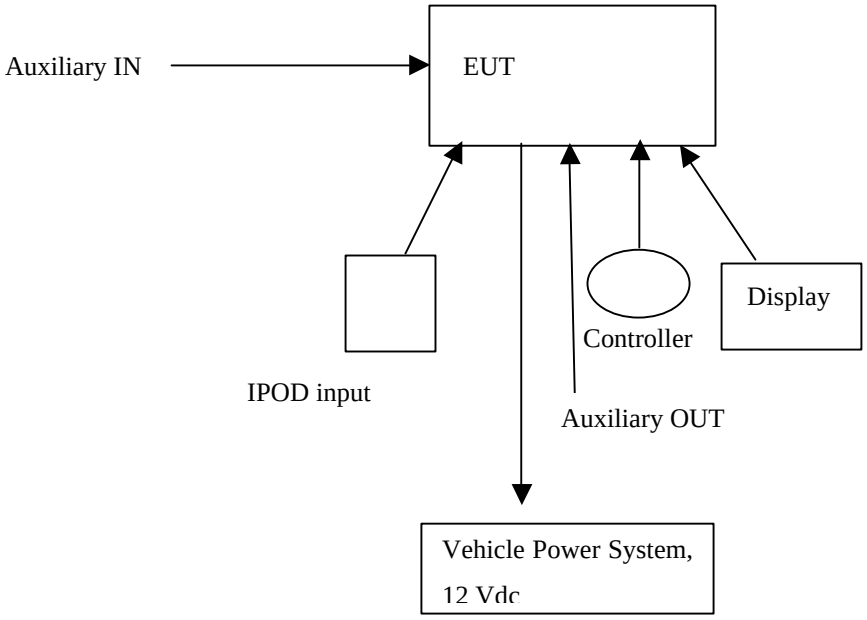
Design Modifications for Compliance

Device: **Drive + Play RF Interface**

Model: **DP 1US**

The following design modifications were made to the EUT during testing.

No design modifications were made to the EUT during testing.



Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart C, 15.239 Operation in the band 88-108 MHz.

(a) Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

(b) The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in Sec. 15.35 for limiting peak emissions apply.

(c) The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed the general radiated emission limits in Sec. 15.209.

(d) A custom built telemetry intentional radiator operating in the frequency band 88-108 MHz and used for experimentation by an educational institute need not be certified provided the device complies with the standards in this part and the educational institution notifies the Engineer in Charge of the local FCC office, in writing, in advance of operation, providing the following information:

(1) The dates and places where the device will be operated;

(2) The purpose for which the device will be used;

(3) A description of the device, including the operating frequency, RF power output, and antenna; and,

(4) A statement that the device complies with the technical provisions of this part.

RSS-210 Low Power License-Exempt Radio-communication Devices (All Frequency Bands)

6.2. (k) 88-108 MHz

The field strength shall comply with the following: (1) not exceeding 250 microvolts/m measured at 3 meters with an averaging meter (equivalent to 19 nW EIRP). Any type of modulation (and carrier frequencies within the 88-108 MHz band) may be used for this category, or
(2) not exceeding 100 microvolts/m measured at 30 meters (equivalent to 1000 µV/m measured at 3 meters, equivalent to 300 nW EIRP) only if the modulation is FM and the carrier frequencies are chosen from the following set: 88.1; 88.3; 88.5; 107.7; 107.9 MHz, i.e. spaced every 200 kHz.

The occupied bandwidth shall not exceed 200 kHz.

Outside this 200 kHz band (as well as outside the band 88-108 MHz), Table 3 limits apply.

Sections 2 to 5, 6.3 to 6.6, 7 to 7.5 and 9 to 15 apply.

Deviations From Laboratory Test Procedures

No deviations were made from laboratory test procedures.

Test Environment

All tests were performed under the following environmental conditions:

Temperature range	:	15 – 30 ºC
Humidity range	:	20 - 75 %
Pressure range	:	86 - 106 kPa
Power supply range	:	+/- 5% of rated voltages

DESCRIPTION OF TEST SITE AND EQUIPMENT

Description of Test Site

The test site is located at 11696 Sorrento Valley Road, Suite F, San Diego, CA 92121. The site is physically located 18 miles Northwest of downtown San Diego. The general area is a valley 1.5 miles east of the Pacific Ocean. This particular part of the valley tends to minimize ambient levels, i.e. radio and TV broadcast stations and land mobile communications. The three and ten-meter Open Area Test Site (OATS) is located behind the office/lab building. It conforms to the normalized site attenuation limits and construction specifications as set in the EN 55022 (1998), CISPR 16 (2000) and 22 (1997) and ANSI C63.4-2003 documents.

3. DESCRIPTION OF TESTING METHODS

Introduction

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C. Radiated tests were conducted is accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

Digital devices sold in Canada are required to comply with the Interference Causing Equipment Standard for Digital Apparatus, ICES-003. These test methods and limits are specified in the Canadian Standards Association's (CSA) Standard C108.8-M1983 (1-1-94 version) and are "essentially equivalent" with FCC, Part 15 and CISPR 22 (EN55022) rules for unintentional radiators per EMCAB-3, Issue 3 (May 1998). No further testing is required for compliance to ICES-003.

Configuration and Methods of Measurements for Radiated Emissions

Section 8 of ANSI C63.4 determines the general configuration and procedures for measuring the radiated emissions of equipment under test. Initially, the primary emission frequencies are identified inside the test lab by positioning a broadband receive antenna one meter from the EUT to locate frequencies of significant radiation. Next, the EUT and associated system are placed on a turntable on a three meter open area test site (registered with the FCC in accord with its Rules and ANSI C63.4) and the receive antenna is located at a distance of three meters from the EUT. The EUT is rotated through all three axis to determine worst case emissions and data is then taken at the orientation for worst case emissions.

The EUT and associated system are configured to operate continuously, representing a "normally operating" mode. All significant radiated emissions are recorded when maximum radiation on each frequency is observed, in accordance with part 8 of ANSI C63.4-2003 and Section 15.33 of the FCC Rules. To ensure that the maximum emission at each discrete frequency of interest is observed, the receive antenna is varied in height from one to four meters and rotated to horizontal and vertical polarities, and the turntable is also rotated to determine the worst emitting configuration. The numerical results of the test are included herein to demonstrate compliance.

The numerical results that are applied to the emissions limits are arrived at by the following method:
Example: A=RR+CL+AF
A = Amplitude dBuV/M
RR = Receiver Reading dBuV
CL = cable loss dB
AF = antenna factor dBm-1

Example Frequency = 110MHz
18.5 dBuV (spectrum analyzer reading)
+3.0 dB (cable loss @ frequency)
21.5 dBuV
+15.4 dBm-1 (antenna factor @ frequency)
36.9 dBuV/M Final adjusted value

The final adjusted value is then compared to the appropriate emission limit to determine compliance.

For Radiated Emissions Test Configuration please refer to Figure 4 on the following page.

Technical Specifications of the EUT

Operating Frequency:	88.1 to 107.9 MHz.
Peak Output Power:	37.5 dBuV/m @ 3m
Emission Designator	173KF3E
Modulation:	FM
Antenna Data:	Integral
Antenna Connector:	none
Power Source:	Vehicle dc power supply

4. TEST RESULTS

This device complies with the technical provisions of Part 15.239:

Power Level and Radiated Spurious Emissions

Sec. 15.**239** Operation in the band 88-108 MHz.

(a) Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

(b) The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in Sec. 15.35 for limiting peak emissions apply.

(c) The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed the general radiated emission limits in Sec. 15.209.

(d) A custom built telemetry intentional radiator operating in the frequency band 88-108 MHz and used for experimentation by an educational institute need not be certified provided the device complies with the standards in this part and the educational institution notifies the Engineer in Charge of the local FCC office, in writing, in advance of operation, providing the following information:

(1) The dates and places where the device will be operated;

(2) The purpose for which the device will be used;

(3) A description of the device, including the operating frequency, RF power output, and antenna; and,

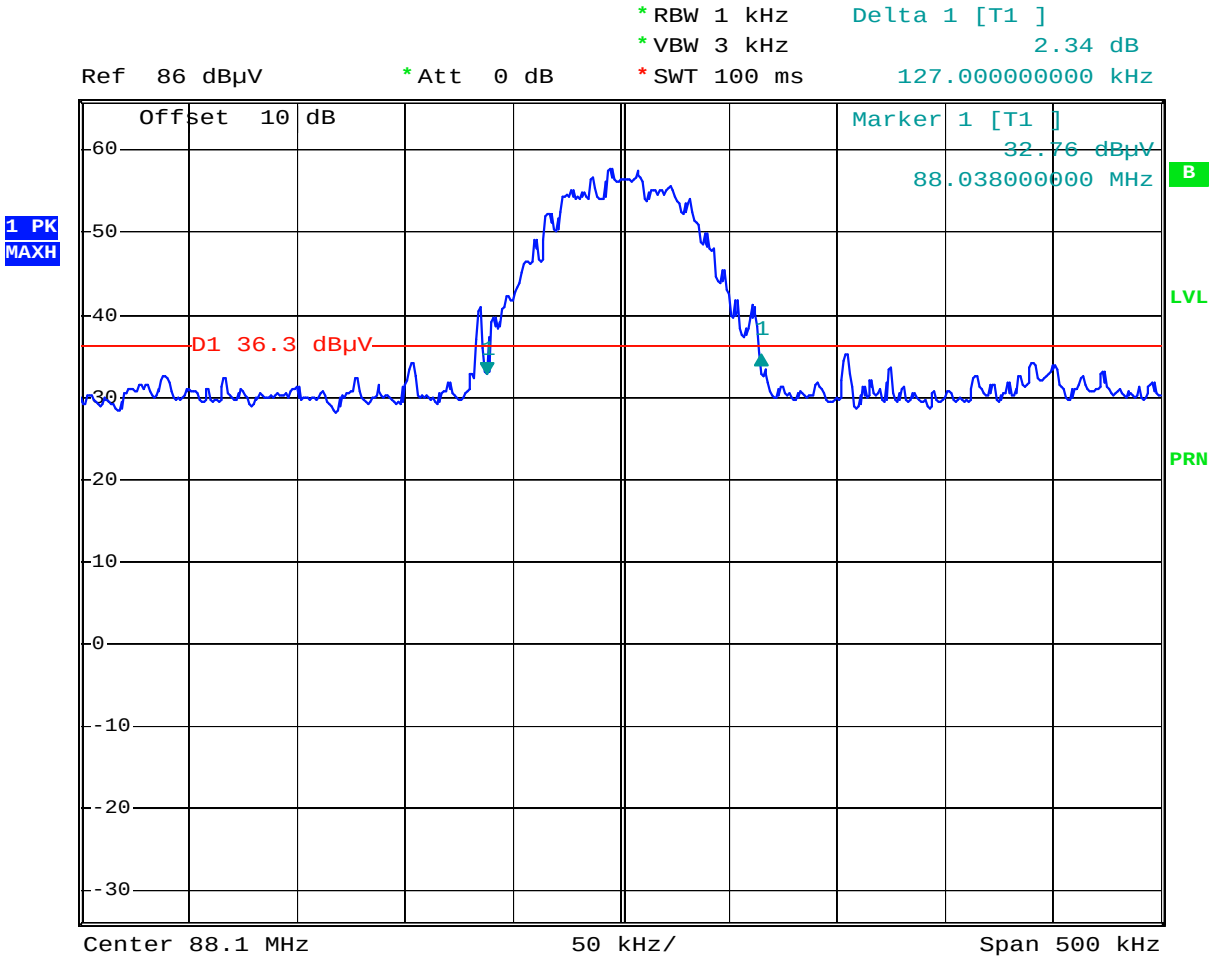
(4) A statement that the device complies with the technical provisions of this part.

Bandwidth

The EUT was modulated by using as the input device, the APPLE IPOD playing music.

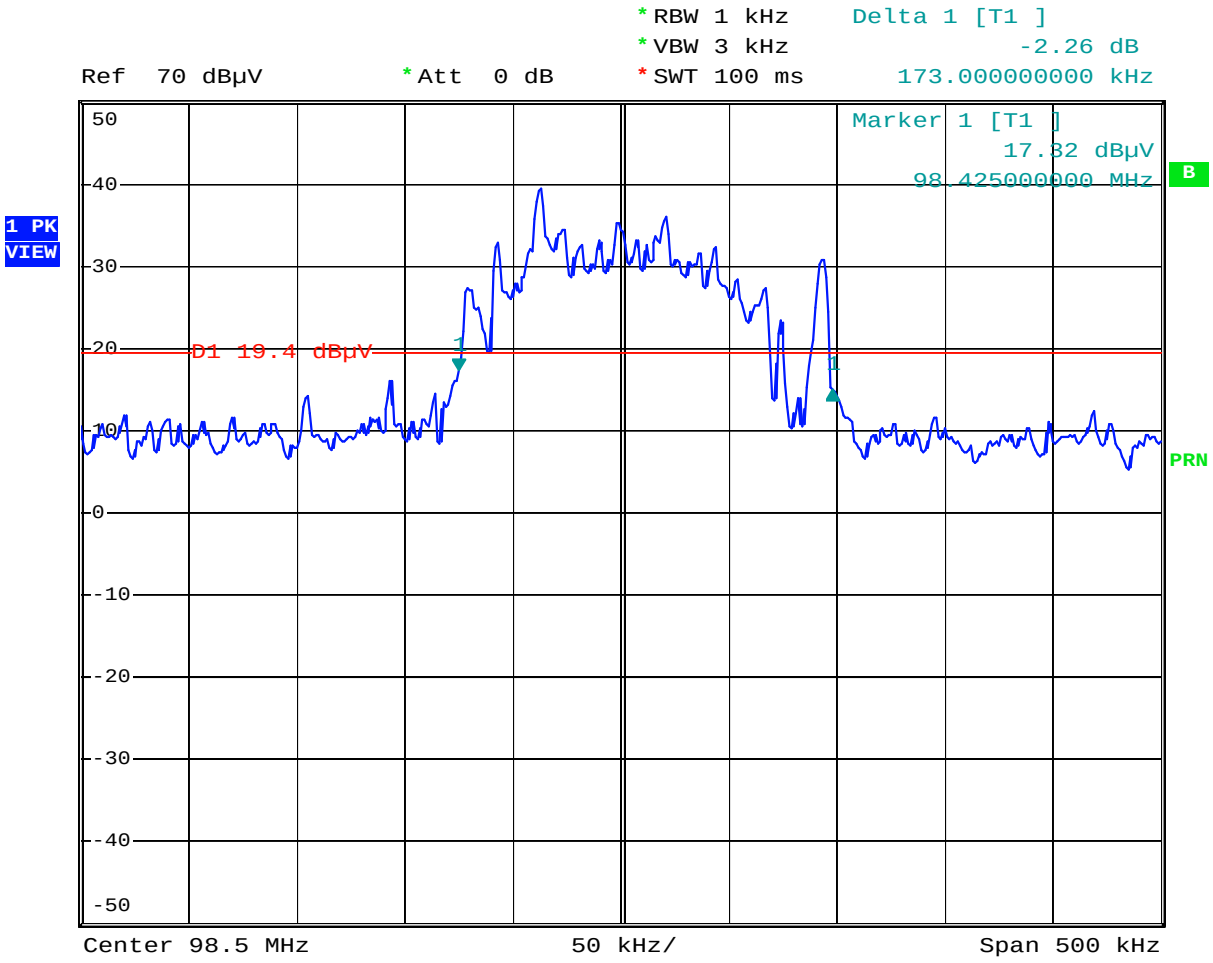
The occupied bandwidth shall not exceed 200 kHz.

Low Frequency 88.1 MHz; Bandwidth = 127.00 kHz



Mid Frequency 88.1 MHz; Bandwidth ≤ 200 kHz

Bandwidth = 173.00 kHz



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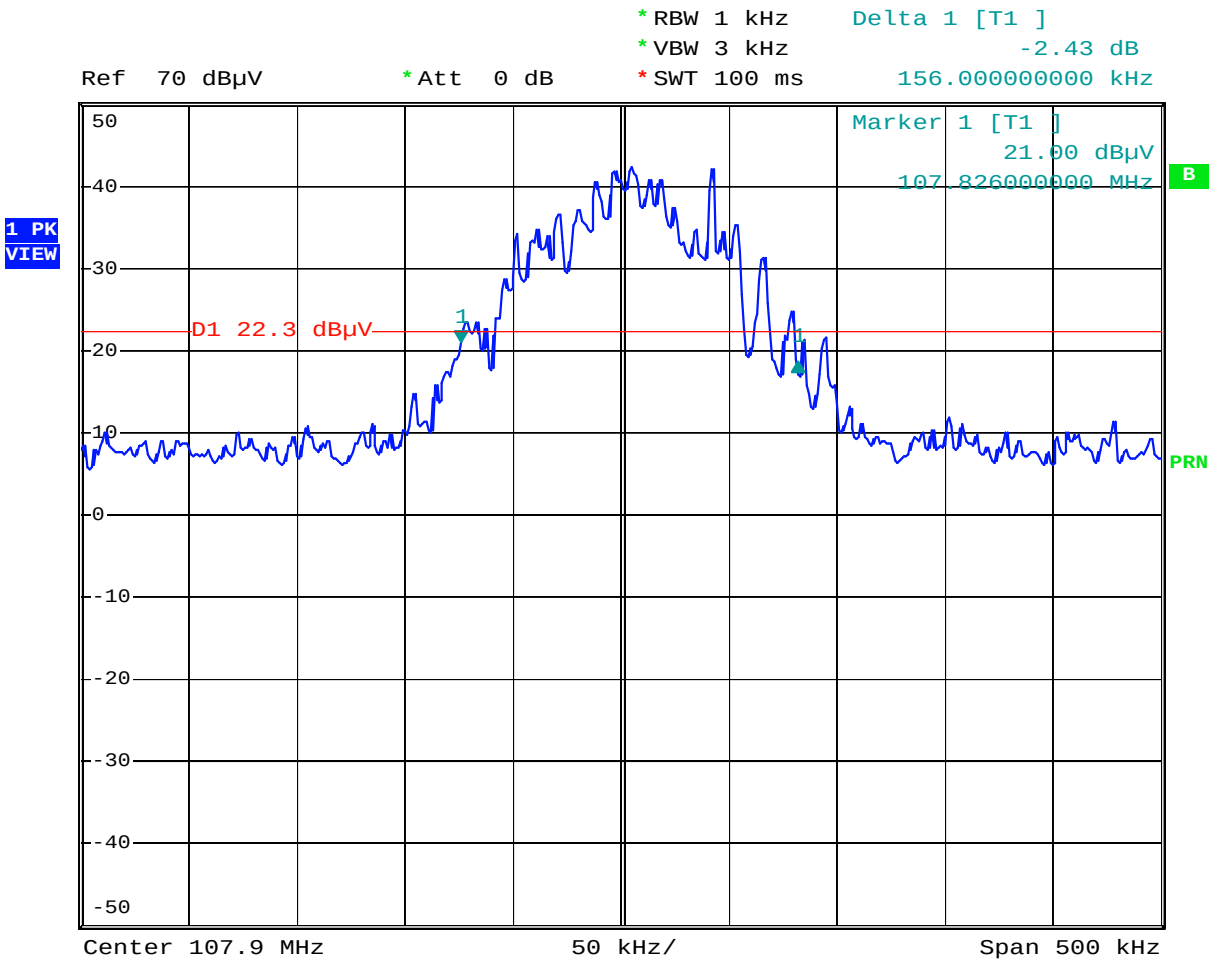
Mid Frequency 98.5 MHz; Bandwidth ≤ 200 kHz

Bandwidth = 156.00 kHz



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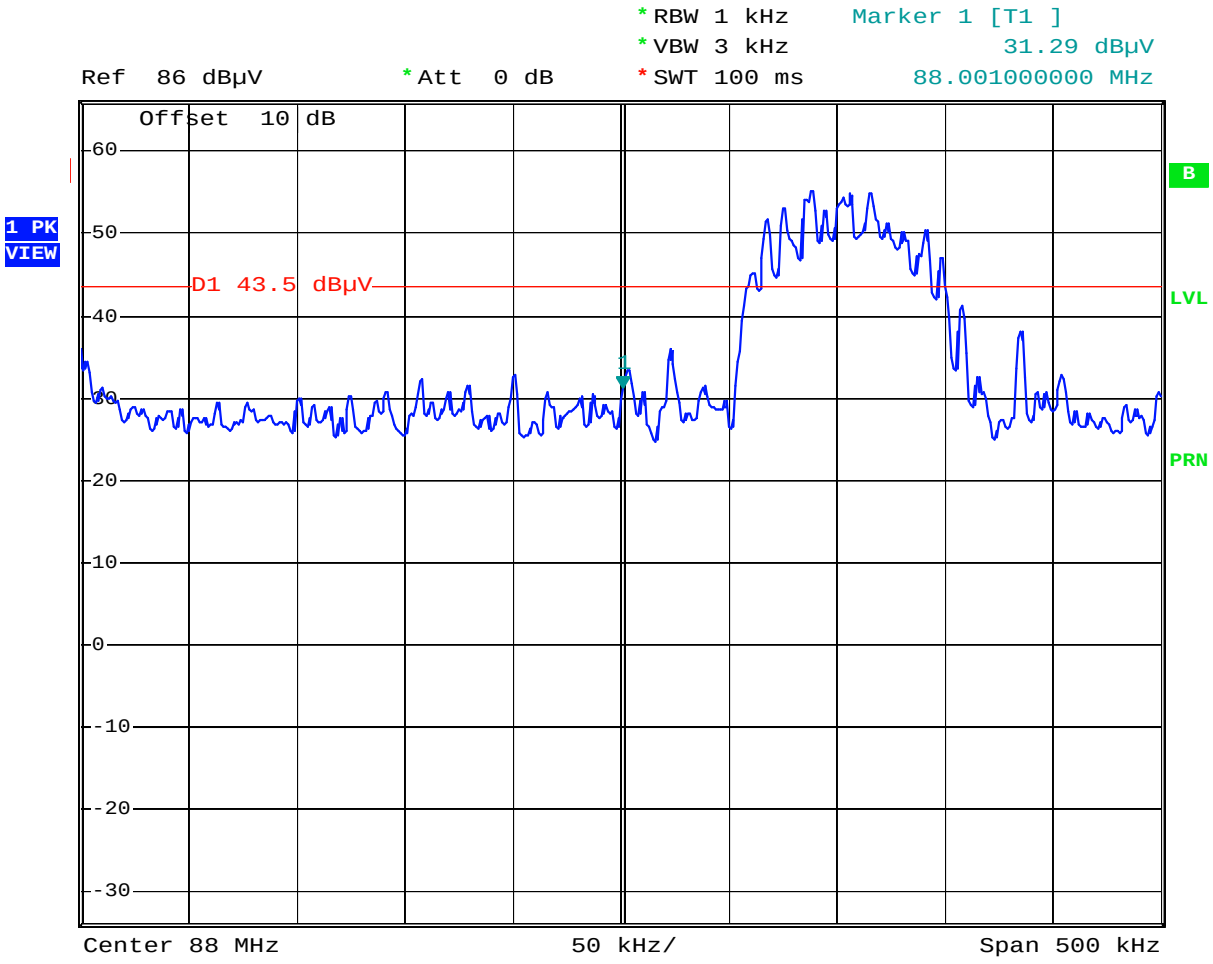
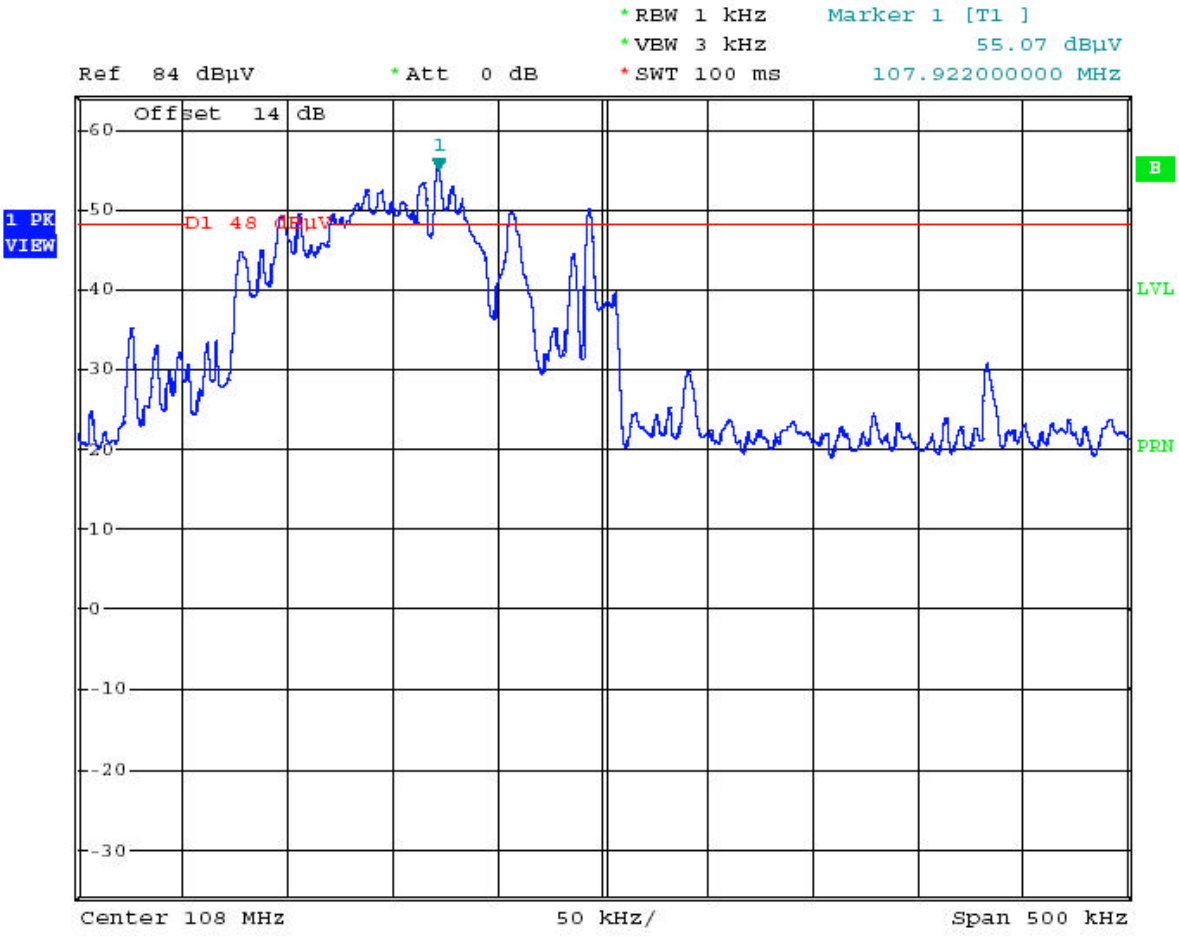
Bandedge Emissions

Bandedge emissions shown are radiated corrected for correction factor and distance.

The lowest frequency 88.1 MHz, peak measurements pass the average limits.



The highest frequency 107.9 MHz, peak measurements pass the average limits.



Radiated Emissions – Intentional Radiating Frequencies

Maximum Output Power = 37.5 dBuV/m @ 3m = 74.99 uV/m = 1.67 nW = -57.8 dBm
Limit is 250 mV/m @ 3m = 48 dBuV/m @ 3m
"small loop" is a reference to the integral antenna used.
Varying the input voltage ± 15% of nominal, internal voltage regulation does not allow RF power level to change.

Radiated Emissions Data

Complete	X			Job # :	25-422-HAR
Preliminary				Page	1
Client Name :	Harman Multimedia				
EUT Name :	Automotive I-Pod Accessory				
EUT Model # :	Drive + Play				
EUT Antenna	Small Loop				
EUT Serial # :	N/A				
EUT Config. :	Small Loop				
Specification :	CFR47 Part 15, Subpart B, Class B			Reference :	
Rod. Ant. #:	NA	Temp. (deg. C) :	24	Date :	8/23/2005
Bicon Ant.#:	114	Humidity (%) :	59	Time :	
Log Ant.#:	110	EUT Voltage :	12vdc	Staff :	MK
DRG Ant. #	NA	EUT Frequency :		Photo ID:	
Dipole Ant.#:	NA	Phase:		Peak Bandwidth:	100 kHz Peak
Cable#:	NOATS	Location:	NOATS	Video Bandwidth	101 kHz Peak
Preamp#:	827	Distance:	3m	Peak Bandwidth:	100 kHz Average
Spec An.#:	535 422			Video Bandwidth	10 Hz Average
QP #:	421				
PreSelect#:	NA	Horizontal emissions lower than vertical.			

Meas. Freq. (MHz)	Ant. Pol. (H/V)	Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. limit (dBuV/m)	CR/SL Diff. (dB)	Pass Fail Unc.	Comment
											low channel
88.1	v		54.2	7.7	1.7	32.4	31.2	68.0	-36.8	Pass	Peak
88.1	v		49.1	7.7	1.7	32.4	26.1	48.0	-21.9	Pass	Ave
											mid channel
98.5	v		48.9	11.5	1.6	32.5	29.5	68.0	-38.5	Pass	Peak
98.5	v		41.7	11.5	1.6	32.5	22.3	48.0	-25.7	Pass	Ave
											high channel
107.9	v		55.1	13.1	1.7	32.4	37.5	68.0	-30.5	Pass	Peak
107.9	v		50.2	13.1	1.7	32.4	32.6	48.0	-15.4	Pass	Ave

Radiated Emissions – Spurious 30 MHz to 1000, quasi-peak

Radiated Emissions Data

Complete	X			Job # :	25-442-HAR	Test # :	1
Preliminary				Page	1	of	1
Client Name :	Harman Multimedia						
EUT Name :	Automotive I-Pod Accessory						
EUT Model # :	Drive + Play						
EUT Part # :							
EUT Serial # :	N/A						
EUT Config. :	Short Loop (12vdc P/S)						
Specification :	CFR47 Part 15, Subpart B, Class B			Reference :			
Rod. Ant. #:	NA	Temp. (deg. C) :	24	Date :	8/23/2005		
Bicon Ant.#:	114	Humidity (%) :	59	Time :			
Log Ant.#:	110	EUT Voltage :	12vdc	Staff :	MK		
DRG Ant. #	NA	EUT Frequency :		Photo ID:			
Dipole Ant.#:	NA	Phase:		Peak Bandwidth:	100 kHz		
Cable#:	NOATS	Location:	NOATS	Video Bandwidth	100 kHz		
Preamp#:	827	Distance:	3m				
Spec An.#:	535 422						
QP #:	421						
PreSelect#:	NA						

Meas. Freq. (MHz)	Ant. Pol. (H/V)	Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. limit (dBuV/m)	CR/SL Diff. (dB)	Pass Fail Unc.	Comment
98.97	V		60.6	11.5	1.6	32.5	41.2	43.5	-2.3	Pass	
230.9	V		47	10.9	2.2	32.7	27.4	46.0	-18.6	Pass	
296.9	V		50	13.6	3.0	32.8	33.8	46.0	-12.2	Pass	
910.31	H		46.4	23	5.8	32.3	42.9	46.0	-3.1	Pass	
959.5	H		44.7	23.4	6.0	32.5	41.6	46.0	-4.4	Pass	

Test Equipment

Radiated Emissions

Client	**Harman Multimedia**	EUT Name	**Drive + Play RF Interface**
PAN #	25-442-HAR	EUT Model	**DP 1US**

Asset Number	Description	Model Number	Serial Number	Last Cal	Cal Due
110	Antenna, LPA, Electrometrics	LPA-25	1217	10/4/04	10/4/05
114	Antenna, Bicon, EMCO	3104	2997	9/30/04	9/30/05
827	Preamplifier, Com-Power	PA-103	161032	10/22/04	10/22/05
535	Spectrum Analyzer, HP	85680A	2517A01757	1/6/05	7/6/06
421	Quasi-Peak Adapter, HP	85650A	3145A01672	1/6/05	7/8/06
752	Antenna, DRWG, EMCO	3115	4943	12/29/04	12/29/05
835	Spectrum Analyzer, Rhode & Schwartz	RHDFSEK	829058/005	12/30/04	12/30/05
317	Preamplifier, HP	8449A	2749A00167	1/6/05	1/6/06

APPENDIX A

A. Conducted & Radiated Emissions Measurement Uncertainties

1. Introduction

ISO Standard 17025 and ANSI/NCSL Z540-1(1994) require that all measurements contained in a test report be "traceable". "Traceability" is defined in the *International Vocabulary of Basic and General Terms in Metrology* (ISO: 1993) as: "the property of the result of a measurement... whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons, *all having stated uncertainties*".

The purposes of this Appendix are to "state the *Measurement Uncertainties*" of the conducted emissions and radiated emissions measurements contained in Section 5 of this Test Report, and to provide a practical explanation of the meaning of these measurement uncertainties.

2. Statement of the Worst-Case Measurement Uncertainties for the Conducted and Radiated Emissions Measurements Contained in This Test Report

Table 1: Worst-Case Expanded Uncertainty "U" of Measurement for a k=2 Coverage Factor

Conducted Emissions Measurement Detection Systems	**Applicable Frequency Range**	**"U" for a k=2 Coverage Factor**
HP8568B Spectrum Analyzer with QPA and HP8447F Preamplifier	150 kHz - 30 MHz	+/- 3.0 dB
HP8566B Spectrum Analyzer with QPA and Preselector	9 kHz - 30 MHz	+/- 2.9 dB
Radiated Emissions Measurement Detection Systems	**Applicable Frequency Range**	**"U" for a k=2 Coverage Factor**
HP8568B Spectrum Analyzer with QPA & HP8447F Preamplifier	30 MHz - 200 MHz	+4.0 dB, -4.1 dB
HP8568B Spectrum Analyzer with QPA & HP8447F Preamplifier	200 MHz-1000 MHz	+/- 3.5 dB
HP8566B Spectrum Analyzer with QPA & Preselector	30 MHz - 200 MHz	+3.9 dB, -4.0 dB
HP8566B Spectrum Analyzer with QPA & Preselector	200 MHz-1000 MHz	+/- 3.4 dB
HP8566B Spectrum Analyzer with QPA & HP 8449A Preamplifier	1 GHz - 18 GHz	+2.5 dB, -2.6 dB
HP8566B Spectrum Analyzer with QPA & HP8449A Preamplifier	18 GHz - 40 GHz	+/- 3.4 dB

NOTES:
1. Applies to 3 and 10 meter measurement distances
2. Applies to all valid combinations of Transducers (i.e. LISNs, Line Voltage Probes, and Antennas, as appropriate)
3. Excludes the Repeatability of the EUT

3. Practical Explanation of the Meaning of the Conducted and Radiated Emissions Measurement Uncertainties

In general, a "Statement of Measurement Uncertainty" means that with a certain (specified) confidence level, the "true" value of a measurand will be between a (stated) upper bound and a (stated) lower bound.

In the specific case of EMC Measurements in this test report, the measurement uncertainties of the conducted emissions measurements and the radiated emissions measurements have been calculated in accordance with the method detailed in the following documents:

- *ISO Guide to the Expression of Uncertainty in Measurement* (ISO, 1993)
- NIS 81:1994, *The Treatment of Uncertainty in EMC Measurements* (NAMAS, 1994)
- NIST Technical Note 1297(1994), *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results* (NIST, 1994)

The calculation method used in these documents requires that the stated uncertainty of the measurements be expressed as *an "expanded uncertainty", U, with a k=2 coverage factor*. The practical interpretation of this method of expressing measurement uncertainty is shown in the following example:

EXAMPLE: Assume that at 39.51 MHz, the (measured) radiated emissions level was equal to +26.5 dBuV/m, and that the +/- 2 standard deviations (i.e. 95% confidence level) measurement uncertainty was +/- 3.4 dB.

In the example above, the phrase "k = 2 Coverage Factor" simply means that the measurement uncertainty is stated to cover +/-2 standard deviations (i.e. a 95% confidence interval) about the measurand. The measurand is the radiated emissions measurement of +26.5 dBuV/m at 39.51 MHz, and the 95% bounds for the uncertainty are –3.4 dB to + 3.4 dB. One can thus be 95% confident that the "true" value of the radiated emissions measurement is between +23.1 dBuV/m and +29.5 dBuV/m. *In effect, this means that in the above example there is only a 2.5% chance that the "true" radiated emissions value exceeds +29.5 dBuV/m.*

APPENDIX B

B. Nemko USA, Inc.'s Test Equipment & Facilities Calibration Program

Nemko USA, Inc. operates a comprehensive Periodic Calibration Program in order to ensure the validity of all test data. Nemko USA's Periodic Calibration Program is fully compliant to the requirements of NVLAP Policy Guide PG-1-1988, ANSI/NCSL Z540-1 (1994), ISO 10012-1 (1993-05-01), ISO Standard 17025, ISO-9000 and EN 45001. Nemko USA, Inc.'s calibrations program therefore meets or exceed the US national commercial and military requirements [N.B. ANSI/NCSL Z540-1 (1994) replaces MIL-STD-45662A].

Specifically, all of Nemko USA's *primary reference standard devices* (e.g. vector voltmeters, multimeters, attenuators and terminations, RF power meters and their detector heads, oscilloscope mainframes and plug-ins, spectrum analyzers, RF preselectors, quasi-peak adapters, interference analyzers, impulse generators, signal generators and pulse/function generators, field-strength meters and their detector heads, etc.) and certain *secondary standard devices* (e.g. RF Preamplifiers used in CISPR 11/22 and FCC Part 15/18 tests) are periodically recalibrated by:

- A Nemko USA-approved independent (third party) metrology laboratory that uses NIST-traceable standards and that is ISO Guide 25-accredited as a calibration laboratories by NIST; or,
- A Nemko USA-approved independent (third party) metrology laboratory that uses NIST-traceable standards and that is ISO Guide 25-accredited as a calibration laboratory by another accreditation body (such as A2LA) that is mutually recognized by NIST; or,
- A manufacturer of Measurement and Test Equipment (M&TE), if the manufacturer uses NIST-traceable standards and is ISO Guide 25-accredited as calibration laboratory either by NIST or by another accreditation body (such as A2LA) that is mutually recognized by NIST; or
- A manufacturer of M&TE (or by a Nemko USA-approved independent third party metrology laboratory) that is not ISO Guide 25-accredited. (In these cases, Nemko USA conducts an annual audit of the manufacturer or metrology laboratory for the purposes of proving traceabilty to NIST, ensuring that adequate and repeatable calibration procedures are being applied, and verifying conformity with the other requirements of ISO Guide 25).

In all cases, the entity performing the Calibration is required to furnish Nemko USA with a calibration test report and/or certificate of calibration, and a "calibration sticker" on each item of M&TE that is successfully calibrated.

Calibration intervals are normally one year, except when the manufacture advises a shorter interval (e.g. the HP 8568B Spectrum Analyzer is recalibrated every six months) or if US Government directives or client requirements demand a shorter interval. Items of instrumentation/related equipment which fail during routine use, or which suffer visible mechanical damage (during use or while in transit), are sidelined pending repair and recalibration. (Repairs are carried out either in-house [if minor] or by a Nemko USA-approved independent [third party] metrology laboratory, or by the manufacturer of the item of M&TE).

Each antenna used for CISPR 11 and CISPR 22 and FCC Part 15 and Part 18 radiated emissions testing (and for testing to the equivalent European Norms) is calibrated annually by either a NIST (or A2LA) ISO Standard 17025-Accredited third-party Antenna Calibration Laboratory or by the antenna's OEM if the OEM is NIST or A2LA ISO Standard 17025-accredited as an antenna calibration laboratory. The antenna calibrations are performed using the methods specified in Annex G.5 of CISPR 16-1(1993) or ANSI C63.4-2003, including the "Three-Antenna Method". Certain other kinds of antennas (e.g. magnetic-shielded loop antennas) are calibrated annually by either a NIST (or A2LA) ISO Standard 17025-accredited third-party antenna calibration laboratory, or by the antenna's OEM if the OEM is NIST or A2LA ISO Standard 17025-accredited as an antenna calibration laboratory using the procedures specified in the latest version of SAE ARP-958.

In accordance with FCC and other regulations, Nemko USA recalibrates its suite of antennas used for radiated emissions tests on an annual basis. These calibrations are performed as a precursor to the FCC-required annual revalidation of the Normalized Site Attenuation properties of Nemko USA's Open Area Test Site. Nemko USA, Inc. uses the procedures given in both Subclause 16.6 and Annex G.2 of CISPR 16-1 (1993), and, ANSI C63.4-2003 when performing the normalized site attenuation measurements.