

Prüfbericht - Nr.: 16004797 001
Test Report No.:

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Auftraggeber: Uni-Art Precise Products Ltd.
Client:
11-12/F., YUE XIU IND'L BLDG.
87 HUNG TO ROAD,
KWUN TONG, KOWLOON
HONG KONG

Gegenstand der Prüfung: Receiver of Wireless Headphone
Test item:

Bezeichnung: HP1492 (ARKON) **FCC ID:** MVAWHP151- 001R
Identification: Receiver of System WHP151 **FCC ID**
(THOMSON)

Wareneingangs-Nr.: 173015906 **Eingangsdatum:** 18.03.2005
Receipt No.: **Date of receipt:**

Prüfört: Shenzhen Bureau of Quality Technical
Testing location: Supervision Shenzhen Academy of Metrology
and Quality Inspection
Bldg. of Shenzhen Academy of Metrology and
Quality Inspection, Longzhu Road, Nanshan,
Shenzhen,
P.R. China
Listed test laboratory
according to FCC rules
section 2.948 for
measuring devices under
Parts 15

Prüfgrundlage: ANSI C63.4:2001
Test specification: Conduct Emissions with limits described at FCC Part 15 subpart B section
15.107
Radiated Emissions with limits described at FCC Part 15 Subpart B section
15.109
38 dB rejection described at FCC Part 15 Subpart B section 15.121

Prüfergebnis: Der vorstehend beschriebene Prüfgegenstand wurde geprüft und
Test Result: entspricht oben genannter Prüfgrundlage.
The a. m. test item passed the test specification.

Prüflaboratorium: TÜV Rheinland (Guangdong) Ltd
Testing Laboratory

zusammengestellt/ compiled by: **kontrolliert/ reviewed by:**

25. May. 2005 Ricky Liu
Datum Name Unterschrift
Date Name Signature

27.05.2005 Yuxin Huang
Datum Name Unterschrift
Date Name Signature

Sonstiges/ Other Aspects:

Abkürzungen: ok / P = entspricht Prüfgrundlage
fail / F = entspricht nicht Prüfgrundlage
n.a. / N = nicht anwendbar

Abbreviations: ok / P = passed
fail / F = failed
n.a. / N = not applicable

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

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TEST SUMMARY

5.1 CONDUCTED EMISSION FOR FCC PART 15 PER SECTION 15.107(A)

RESULT: ok

5.2 RADIATED EMISSION FOR FCC PART 15 PER SECTION 15.109(A)

RESULT: ok

5.3 38 dB REJECTION SIGNAL FROM CELLULAR FREQUENCY BAND

RESULT: ok

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Test result

2 Test Sites

2.1 Test Facilities

Shenzhen SMQ

Shenzhen Bureau of Quality Technical Supervision
Shenzhen Academy of Metrology and Quality Inspection
Bldg, of Shenzhen Academy of Metrology and Quality Inspection
Longzhu Road, Nanshan, Shenzhen,
P.R. China

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Antenna	Chase	CBL6112B	2591	29.01.2006
Horn Antenna	Rohde & Schwarz	HF906	100014	29.01.2006
3m Semi-anechoic chamber	Albatross Projects	9X6X6	----	29.01.2006
EMI Test Receiver	Rohde & Schwarz	ESI26	838786/013	29.01.2006
Communications Test Set	Rohde & Schwarz	CMU200	1100.0008.02	29.01.2006
Communications Test Set	HP	HP8920A	3438A05187	29.01.2006

2.3 Trace ability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for conducted emissions measurements is ± 3 dB.
The estimated combined standard uncertainty for radiated emissions measurements is ± 3 dB.

2.6 Location of original data

The original copies of all test data taken during actual testing were attached at Appendix 1 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Guangzhou) file for certification follow-up purposes.

2.7 Status of facility used for testing

Shenzhen Bureau of Quality Technical Supervision, Shenzhen Academy of Metrology and Quality Inspection, Bldg. of Shenzhen Academy of Metrology and Quality Inspection, Longzhu Road, Nanshan, Shenzhen, P.R.China is listed on the US Federal Communications Commission list of facilities approved to perform measurements

3 General Product Information

Brief description of the test sample:

The submitted sample HP1492 is Wireless Headphone Receiver with three operating frequencies. An auto scan function can be found in the sample: in case there is not signal detected, the local oscillator is continuously switching for these three receiving frequencies.

The submitted sample has also the function of volume control, which the user can select.

HP1492 is the headphone receiver of the Wireless Headphone system HP1490.

The transmitter part of system HP1490 is HP1491, charge contact for HP1492 is provided from HP1491.

HP1490 also has another type designation: WHP151 with brand name: "THOMSON".

They are identical except the name only.

3.1 Product Function and Intended Use

For details, refer to user manual.

3.2 Ratings and System Details

Frequency range	:	912.0MHz, 912.5MHz, 913.0MHz
Number of channels	:	3 (auto tunable)
Type of antenna	:	Integral antenna
FCC ID:		MVAWHP151– 001R
Power supply	:	DC 2.4V (2×AAA 1.2V rechargeable batteries)
Ports	:	DC charge port from the transmitter, input.
Protection Class	:	III

Refer to document for further information.

3.3 Independent Operation Modes

The basic operation modes are:

Receiving with volume and freq. adjustable

For further information refer to User Manual

3.4 Submitted Documents

Block Diagram
Circuit Diagram
PCB Layout
FCC Label
User Manual
Photo Document

4 Test Set-up and Operation Mode

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Refer to Test set-up in chapter 5.

4.3 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

Transmitter HP1491 from the same system

4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in the Constructional Data Form or the Technical document. No additional measures were employed to achieve compliance.

4.5 Test set-up

Diagram 1 of Measurement Equipment Configuration for Testing Conducted Emission

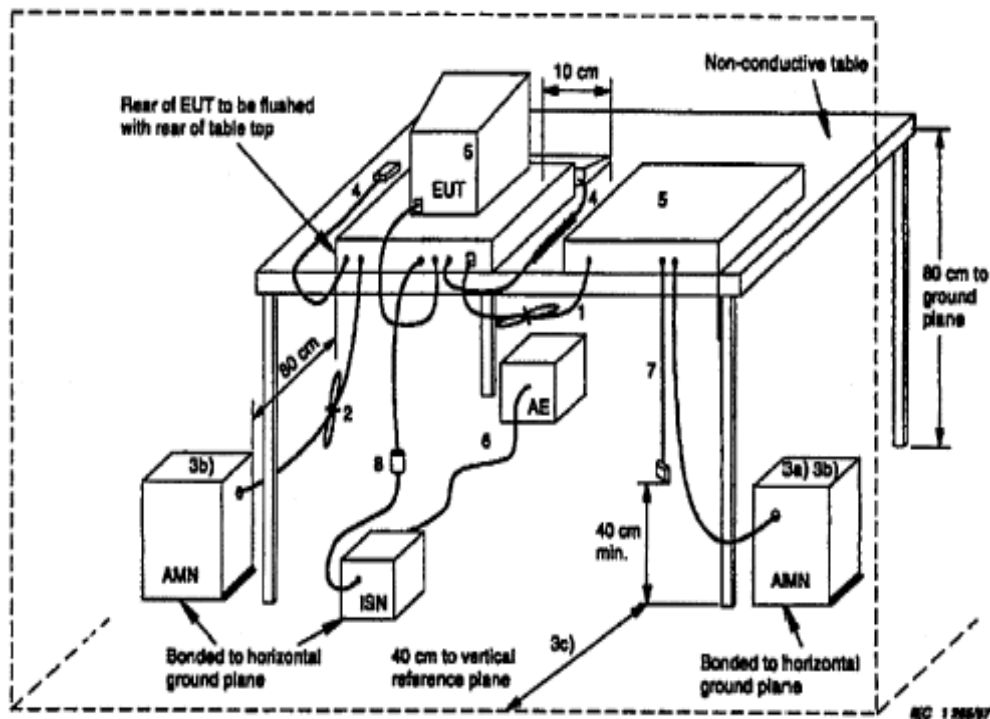
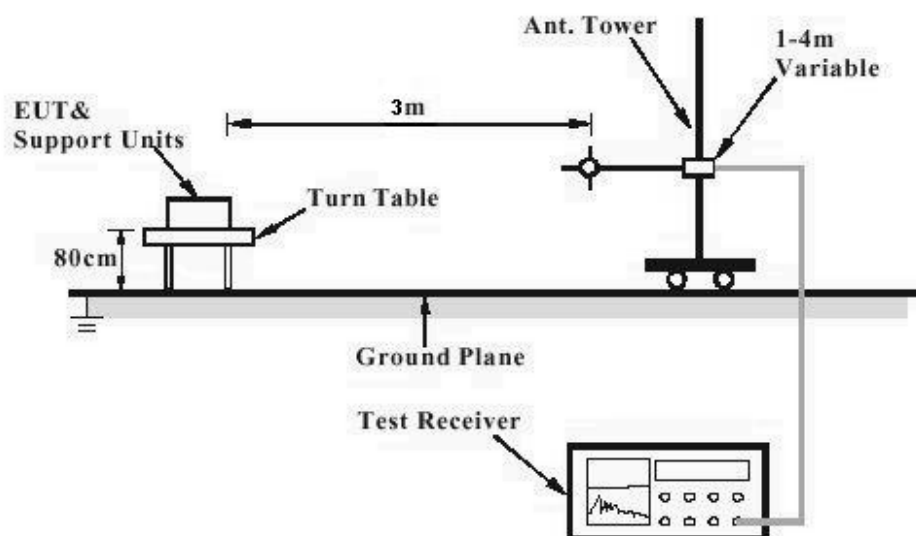


Diagram 2 of Measurement Equipment Configuration for Testing Radiated Emission



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5 Test Results EMISSION

5.1 Conducted Emission for FCC Part 15 Per Section 15.107(a)

RESULT:

ok

Date of testing : 21.03.2005
Test specification : FCC Part 15 Per Section 15.107(a)
Limits : FCC Part 15 Per Section 15.107(a)
Deviations from Standard Test procedures : None
Test procedure : Procedure specified in ANSI C63.4 were followed
Kind of test site : Shielded room
Operation mode : Charging
Temperature : 19°C
Humidity : 50%

The EUT HP1492 is charged from the transmitter HP1491 via the DC charge contact.

Because system HP1490 has the same charge principle and circuit as system HP1390, they deemed to have the same emission level while charging. So, test was performed with system HP1390 instead of HP1490. (Refer to test report 16004796 001 for detail information of system HP1390)

The spectral diagrams in appendix 1 display the measurement of un-weighted peak values of transmitter HP1391 in mains terminal of the AC/DC adaptor.

If the result of the measurement with the Quasi Peak detector is below the Average limit, the measurement with Average Detector has been omitted.

Disturbances other than those mentioned are small or not detectable.

Table 2: Disturbance Voltage on AC Mains of AC/DC adaptor of transmitter HP1391.

Frequency [MHz]	Line	QP [dBµV]	AV [dBµV]	Quasi Peak Limit [dBµV]	Average Limit [dBµV]
0.183	L	43.7	14.7	64.3	54.3
0.333	L	38.4	10.8	59.4	49.4
0.685	L	30.6	6.1	56	46

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5.2 Radiated Emission for FCC Part 15 Per Section 15.109(a)

RESULT:

ok

Date of testing : 21.03.2005
Test specification : FCC Part 15 Per Section 15.109(a)
Limit : FCC Part 15 Per Section 15.109(a)
Operation mode: Receiving
Deviations from Standard Test procedures : None
Test procedure : Procedure specified in ANSI C63.4 were followed
Kind of test site : 3m Semi-anechoic chamber
Temperature : 19°C
Humidity : 50%

The final measurement for frequencies below 1000MHz is performed with Quasi Peak detector; the final measurement for frequencies above 1000MHz is performed with Average detector.

Disturbances other than those mentioned are small or not detectable.

The spectral diagrams in appendix 1 display the measurement of un-weighted peak values.

Table 3: Radiated Emission

Frequency [MHz]	QP [dB μ V/m]	AV [dB μ V/m]	Polarity	Limit [dB μ V/m]
902.311	41.1	---	H	46
902.311	40.0	---	V	46

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5.3 38 dB rejection signal from Cellular Frequency band

RESULT:

ok

Date of testing : 21.03.2005
Test specification : FCC Part 15 Per Section 15.121(b)
Limit : FCC Part 15 Per Section 15.121(b)
Operation mode: Receiving
Test procedure Procedure specified in ANSI C63.4 were followed
Kind of test site : Shielded room
Test signal : RF signal FM at 1kHz audio, 19kHz pilot with
75kHz deviation
Reference level : -40dBm

Test procedure: set the wanted signal to establish a reference sensitivity (12dB SINAD) and then increased the signal level by 3dB, the level of wanted signal was -40dBm, then the unwanted mobile signal was injected into the submitted sample receiver and increased in level until the SINAD was reduced to 12dB, the level of unwanted mobile signal was greater than 17dBm, and then repeated above test steps for other cellular frequencies. Test result are listed as following table:

Table 4: 38 dB Rejection

Injection frequency(Cellular) in MHz	Level 12dB SINAD at injected frequency in dBm	Rejection in dB	Limit in dB
824.04	>17	>40	38
836.00	>17	>40	38
848.97	>17	>40	38
869.04	>17	>40	38
881.00	>17	>40	38
893.97	>17	>40	38

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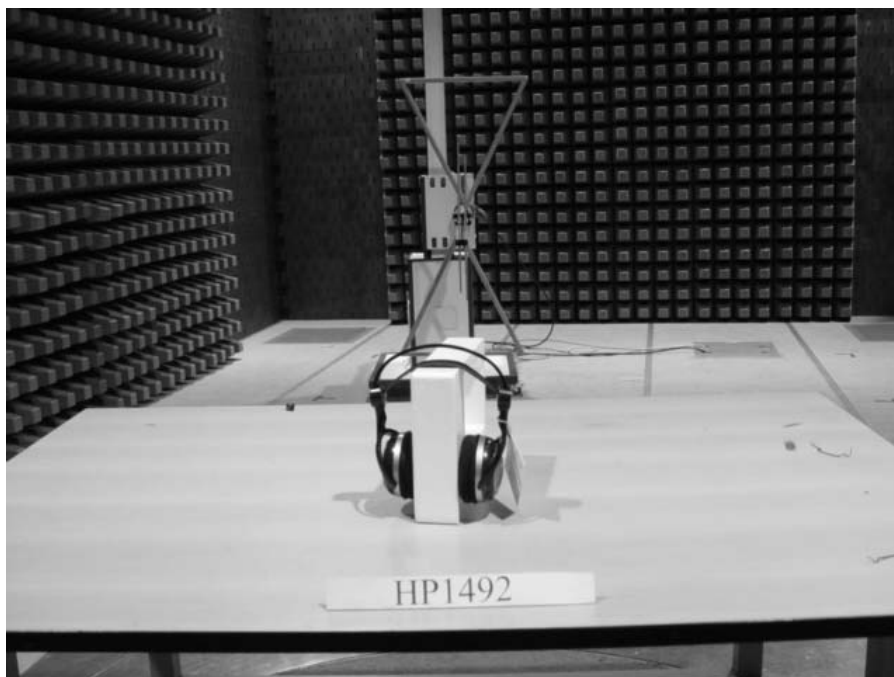
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6 Photographs of the Test Set-Up

Photograph 1: Set up for Conducted Emission on AC Mains of AC/DC adaptor of HP1391



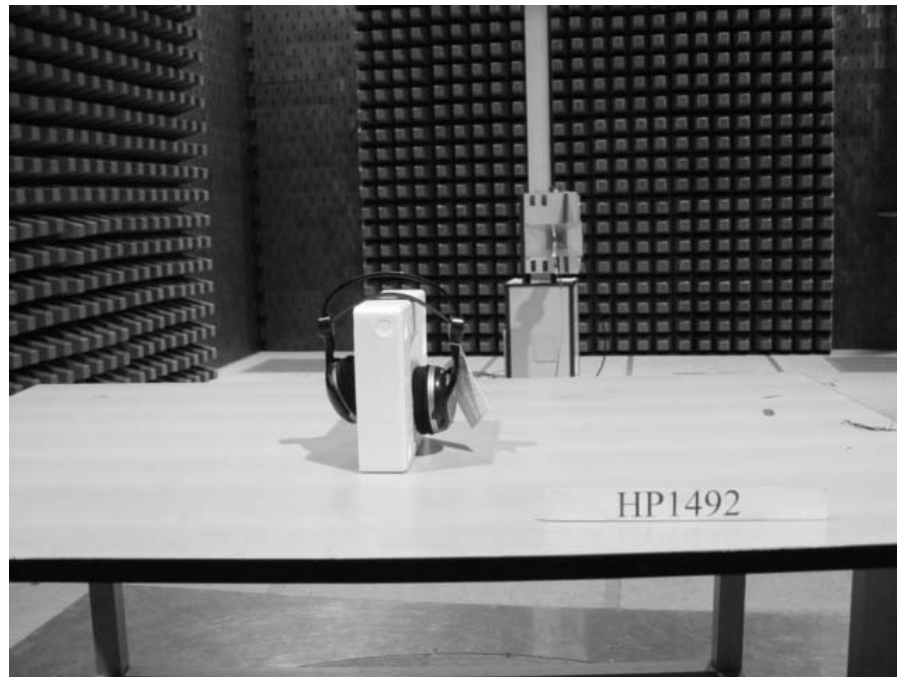
Photograph 2: Set-up for Radiation Measurement Below 1GHz



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Photograph 3: Set-up for Radiation Measurement Above 1GHz



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Photograph 3: Set-up for Radiation Measurement Above 1GHz14

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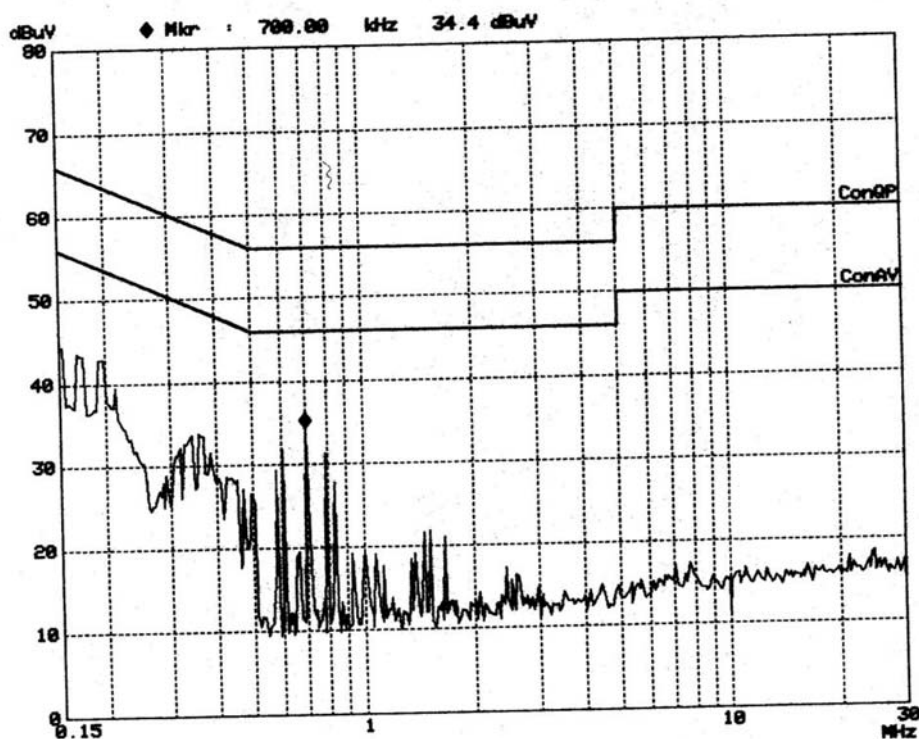
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Conducted Disturbance

EUT: M/N:SP1391
Op Cond: Charging (+MP1392)
Test Spec: N
Comment: AC 120V/60Hz
Date: 21. Mar 05 09:57



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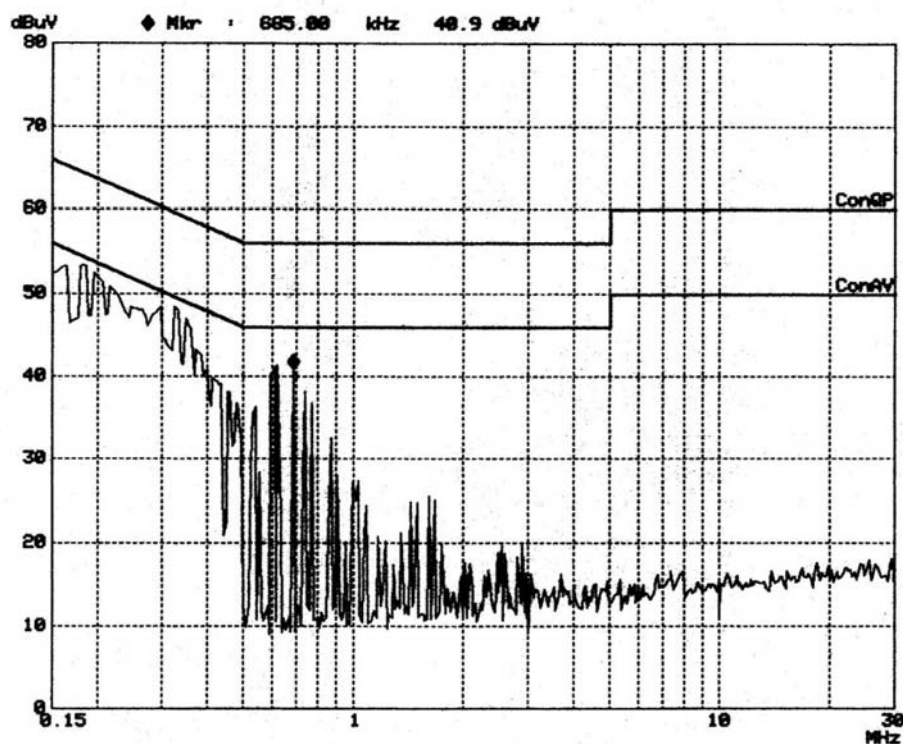
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Conducted Disturbance

EUT: M/N:SP1391
Op Cond: Chargeing (+HP1392)
Test Spec: L
Comment: AC 120V/60Hz
Date: 21. Mar 05 09:53



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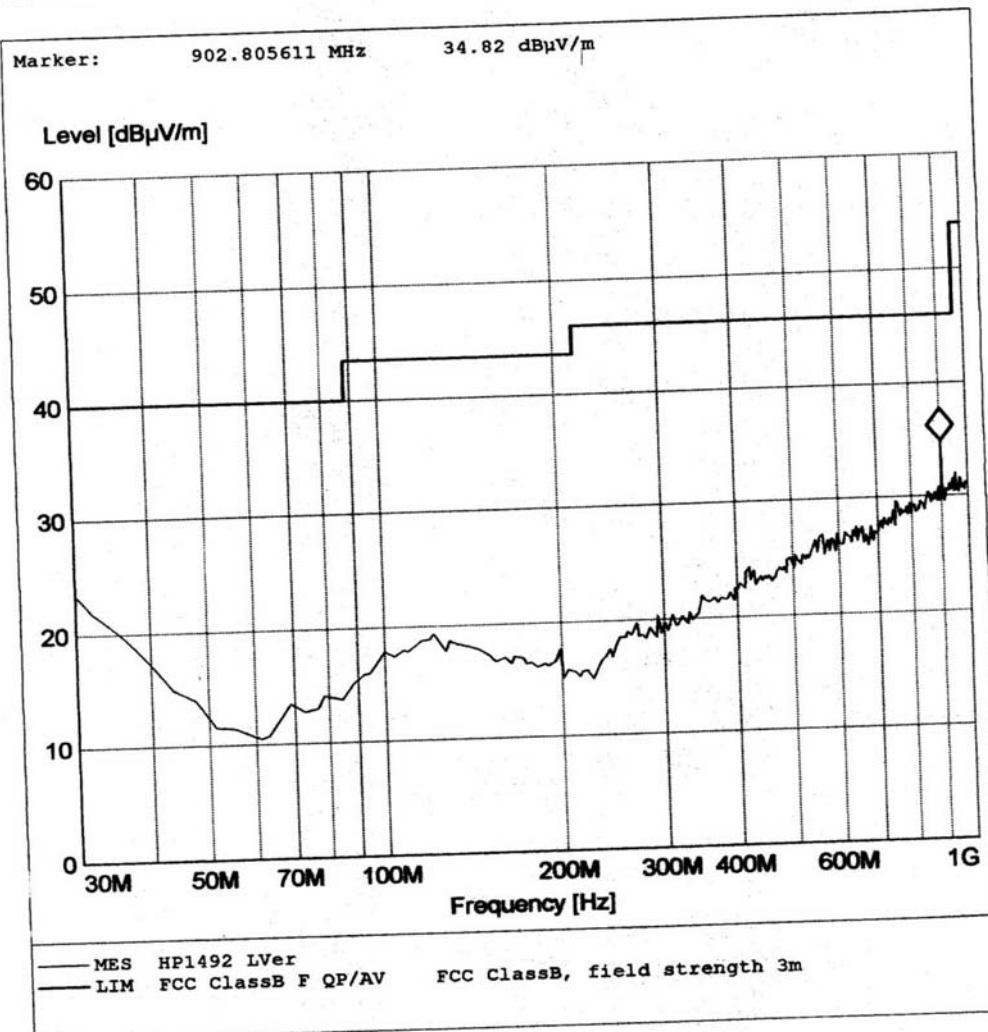
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Radiated Disturbance

FCC Part15

EUT: M/N:HP1492
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Vertical
Comment: DC 2.4V



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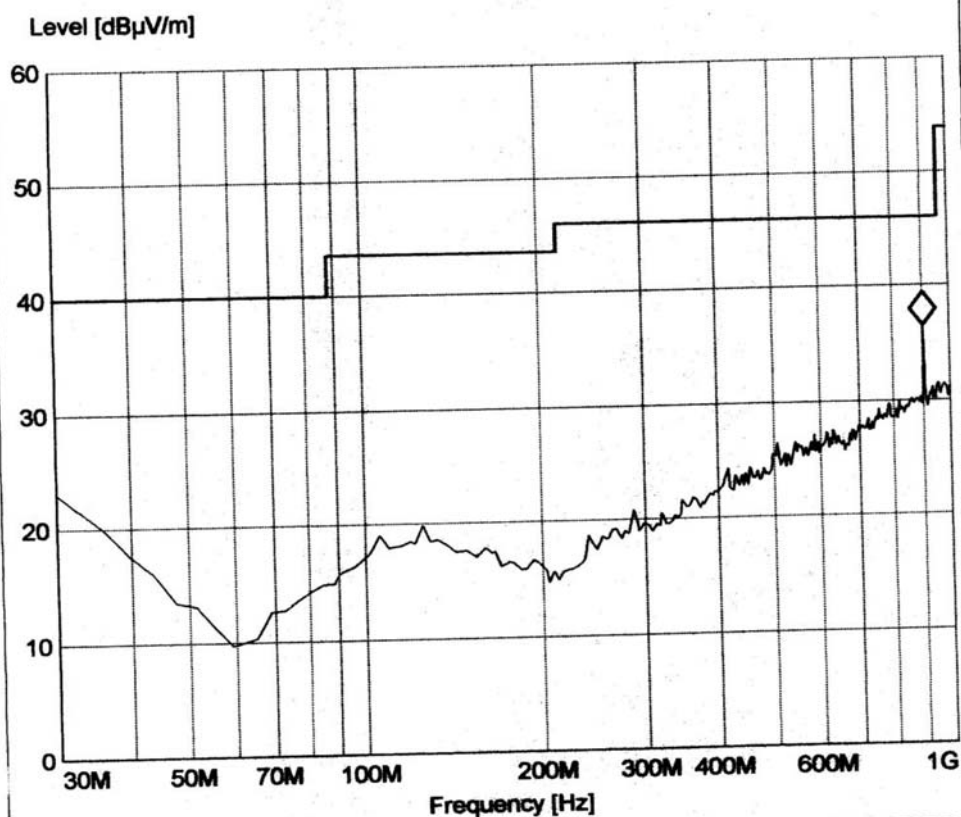
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Radiated Disturbance

FCC Part15

EUT: M/N:HP1492
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Horizontal
Comment: DC 2.4V

Marker: 902.805611 MHz 36.47 dB μ V/m



— MES HP1492 LHor
— LIM FCC ClassB F QP/AV FCC ClassB, field strength 3m

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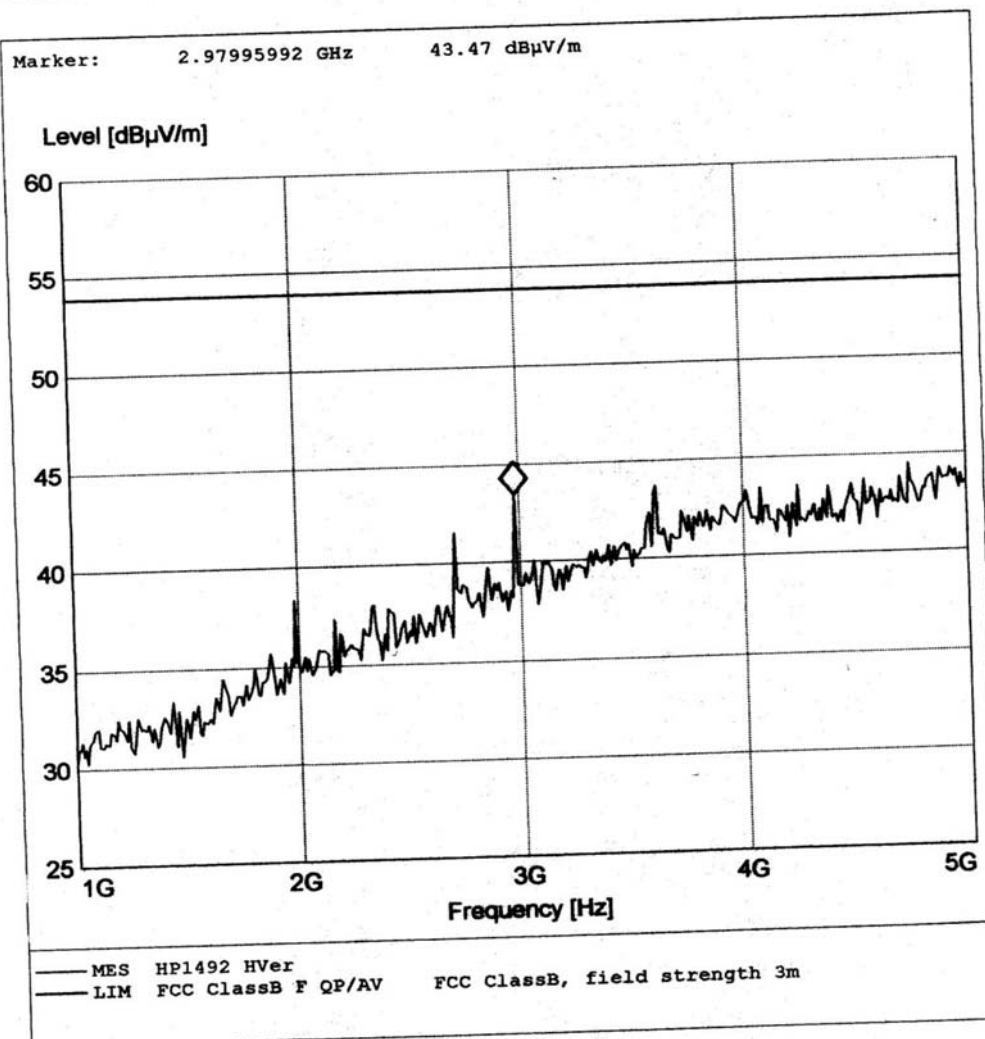
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Radiated Disturbance

FCC Part15

EUT: M/N:HP1492
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Vertical
Comment: AG-120V/60Hz PC 1.0W



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Radiated Disturbance

FCC Part15

EUT: M/N:HP1492
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Horizontal
Comment: AC-120V/60Hz DC 2.4V

