

Prüfbericht - Nr.: 16009859 001

Test Report No.:

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Auftraggeber:

Client:

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

Gegenstand der Prüfung: Audio Transmitter

Test item:

Bezeichnung:

Identification:

HP3991

FCC ID:

FCC ID

MVAHP3990 - 001T

Wareneingangs-Nr.:

Receipt No.:

173029547

Eingangsdatum:

Date of receipt:

26.03.2007

Prüfart:

Testing location:

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

Listed test laboratory
according to FCC rules
section 2.948 for
measuring devices under
Parts 15

Prüfgrundlage:

Test specification:

ANSI C63.4: 2003

Conduct Emissions with limits described at FCC Part 15 subpart C section 15.207

Radiated Emissions with limits described at FCC Part 15 Subpart C section 15.209 and 15.249

Prüfergebnis:

Test Result:

Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).
The test item passed the test specification(s).

Prüflaboratorium:

Testing Laboratory:

TÜV Rheinland (Guangdong) Ltd.

geprüft/ tested by:

kontrolliert/ checked by:

27. June 2007

Ricky Liu/Project Engineer

Ricky Liu

29. Jun. 2007

Dave Xie/Project Manager

Dave Xie

Datum

Date

Name/Stellung

Name/Position

Unterschrift

Signature

Datum

Date

Name/Stellung

Name/Position

Unterschrift

Signature

Sonstiges/ Other Aspects:

Abkürzungen:

P(ass)

F(ail)

N/A

N/T

= entspricht Prüfgrundlage
= entspricht nicht Prüfgrundlage
= nicht anwendbar
= nicht getestet

Abbreviations:

P(ass)

F(ail)

N/A

N/T

= passed
= failed
= not applicable
= not tested

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 15.207(A)

RESULT: Pass

5.2 RADIATED EMISSION FOR FCC PART 15 PER SECTION 15.209(A)

RESULT: Pass

5.3 FUNDAMENTAL AND HARMONICS RADIATED EMISSION FOR FCC PART 15 PER SECTION 15.249(A)

RESULT: Pass

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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

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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	29.01.2008
Horn Antenna	Rohde & Schwarz	HF906	100014	29.01.2008
3m Semi-anechoic chamber	Albatross Projects	9X6X6	----	29.01.2008
EMI Test Receiver	Rohde & Schwarz	ESI26	838786/013	29.01.2008
Communications Test Set	Rohde & Schwarz	CMU200	1100.0008.02	29.01.2008
Communications Test Set	HP	HP8920A	3438A05187	29.01.2008
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	29.01.2008
AMN	Rohde & Schwarz	ESH3-Z5	100002	29.01.2008

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.

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2.5 Measurement Uncertainty

Uncertainty for conducted emissions measurements is $\pm 3.5\text{dB}$.

Uncertainty for radiated emissions measurements is $\pm 4.5\text{dB}$ (30MHz-1GHz), $\pm 4.6\text{dB}$ (>1GHz).

The reported expanded uncertainty is based on a standard uncertainty multiply by a coverage factor $k=2$, providing a level of confidence of approximately 95%.

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 TUV 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 with registration number 97379.

3 General Product Information

Brief description of the test sample:

The submitted sample HP3991 is 900MHz transmitter for a wireless speaker/headphone system with 3 channels available. Stereo audio signal input to the audio-in port of the sample and modulated as a FM signal for transmission. 19kHz pilot signal is also included in the RF signal as complete FM transmission. The antenna type is integrated.

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3.1 Product Function and Intended Use

For details, refer to technical document and the user manual.

3.2 Ratings and System Details

Frequency range	:	912.00MHz, 912.50MHz, 913.00MHz
Number of channels	:	3 channels
Type of antenna	:	Integral antenna
FCC ID	:	MVAHP3990 – 001T
Power supply	:	AC/DC adaptor input
Ports	:	Audio input; 12V DC input; DC Charge Output (to the receiver headphone)
RF Power level		<50 mV/m
Protection Class	:	III

Refer to the technical document for further information

3.3 Independent Operation Modes

The basic operation modes are:

Transmitting ,standby and charging

For further information refer to User Manual

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3.4 Submitted Documents

Block Diagram
Circuit Diagram
Components List
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 Linear AC/DC Adaptor:

Model	: UD-1202
Input	: AC 120V 60Hz
Output	: DC 12V / 200mA
Protection class	: II

4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in 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

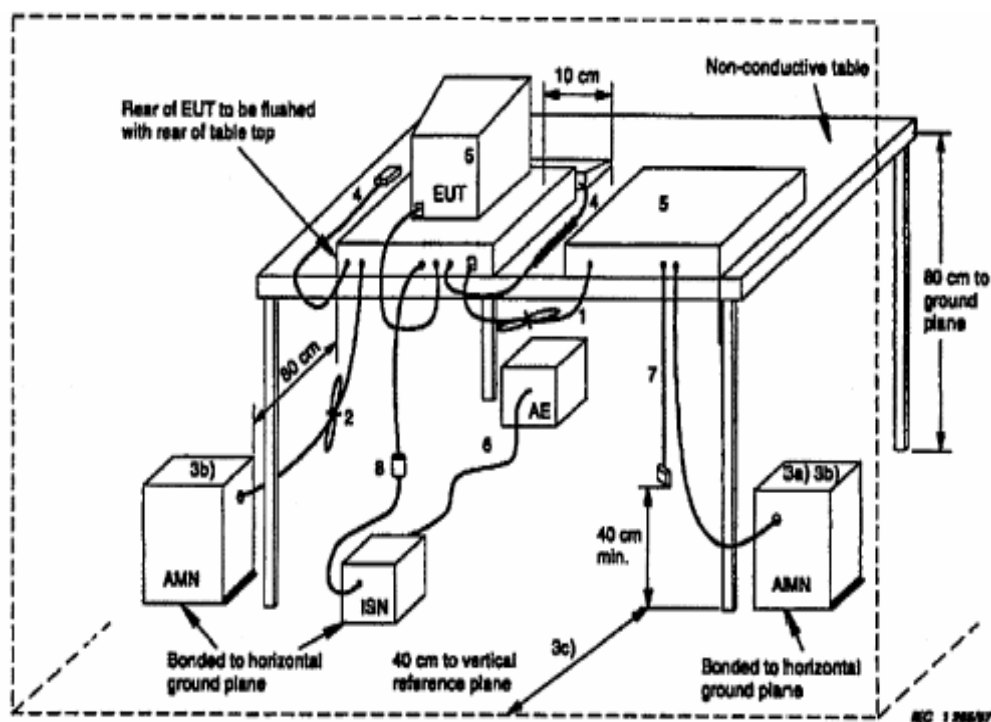
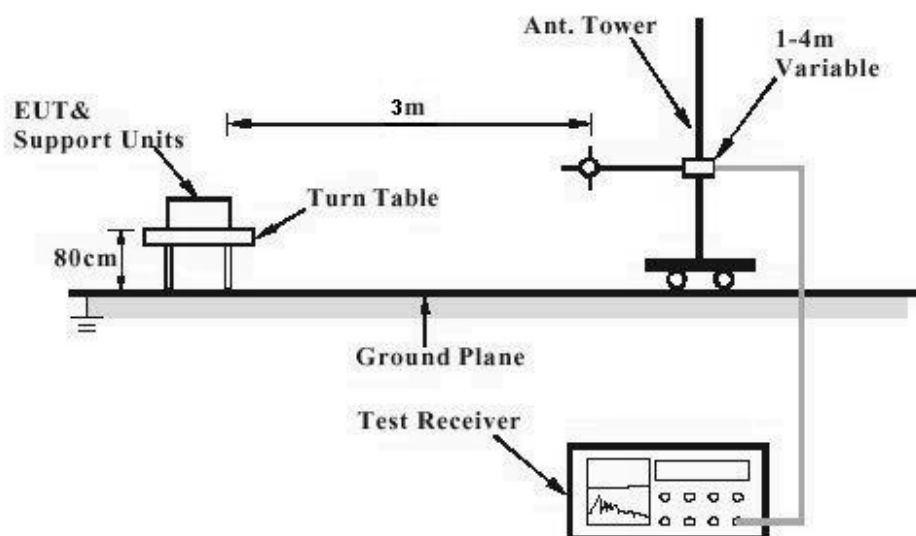


Diagram 2 of Measurement Equipment Configuration for Testing Radiated Emission



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Diagram 3 of Equipment Configuration for Testing Conducted Emission

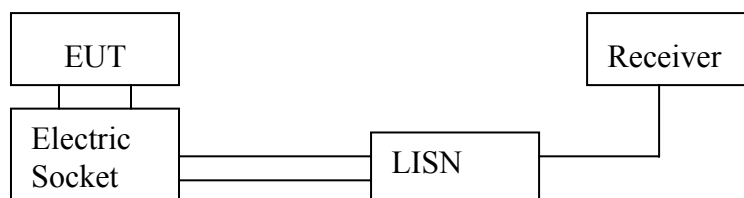
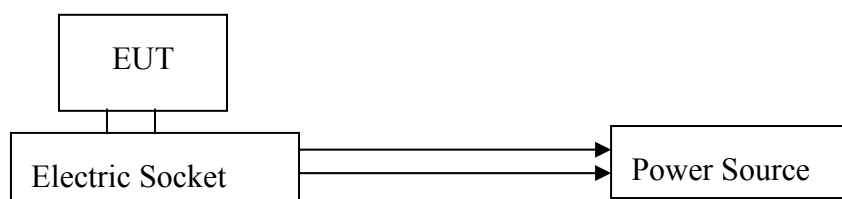


Diagram 4 of Equipment Configuration for Testing Radiated Emission



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5 Test Results EMISSION

5.1 Conducted Emission for FCC Part 15 Per Section 15.207(a)

RESULT:

Pass

Date of testing : 25.04.2007
Test specification : FCC Part 15 Per Section 15.207(a)
Limits : FCC Part 15 Per Section 15.207(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 : Transmitting
Temperature : 23°C
Humidity : 64%

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.

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

Table 2: Disturbance Voltage on AC Mains

Frequency [MHz]	Line	QP [dB μ V]	AV [dB μ V]	Quasi Peak Limit [dB μ V]	Average Limit [dB μ V]
---*					

*) The disturbance measured is far below the limit and therefore, no final measurement was performed.

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5.2 Radiated Emission for FCC Part 15 Per Section 15.209(a)

RESULT:

Pass

Date of testing : 25.04.2007
Test specification : FCC Part 15 Per Section 15.209(a)
Limits : FCC Part 15 Per Section 15.209(a)
Deviations from Standard Test procedures : None
Test procedure : Procedure specified in ANSI C63.4 were followed
Kind of test site : 3m Semi-anechoic chamber
Operation mode : Transmitting
Temperature : 23°C
Humidity : 64%

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 [dBμV/m]	AV [dBμV/m]	Polarity	Limit [dBμV/m]
---*				

*) The disturbance measured is far below the limit and therefore, no final measurement was performed.

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5.3 Fundamental and harmonics Radiated Emission for FCC Part 15 Per Section 15.249(a)

RESULT:

Pass

Date of testing : 25.04.2007
Test specification : FCC Part 15 Per Section 15.249(a)
Limits : FCC Part 15 Per Section 15.249(a)
Deviations from Standard Test
procedures : None
Test procedure : Procedure specified in ANSI C63.4 were followed
Kind of test site : 3m Semi-anechoic chamber
Operation mode : Transmitting
Temperature : 23°C
Humidity : 64%

Measurement was performed with unmodulated signal.

Polarization of the measurement for the larger power level: Vertical

Fundamental Frequency	913.003MHz	
Unit	(dBμV/m)	(mV/m)
Horizontal	90.7	34.28
Vertical	88.9	27.86
limit	93.979	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.

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6 Photographs of the Test Set-Up

Photograph 1: Set-up for Conducted Emission on AC Mains



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



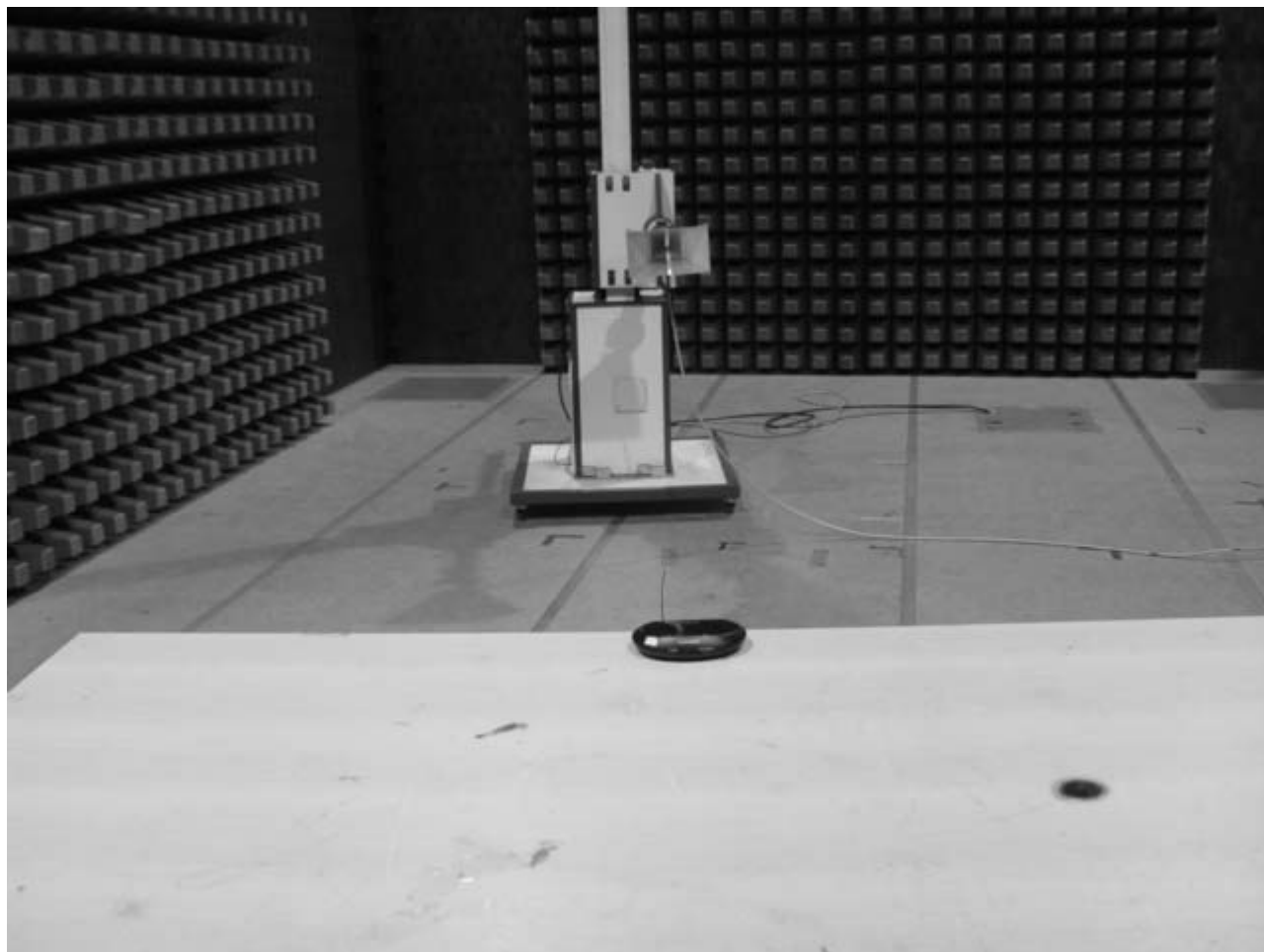
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Photograph 3: Set-up for Radiation Measurement Above 1GHz



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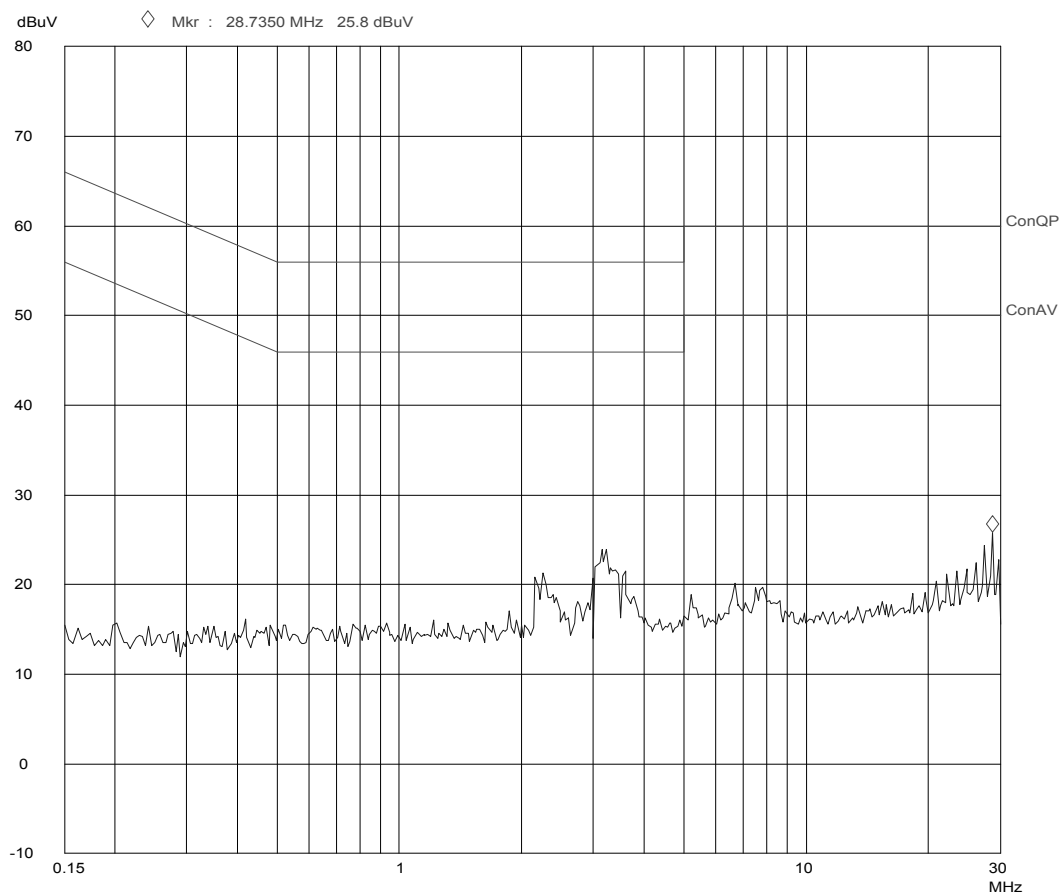
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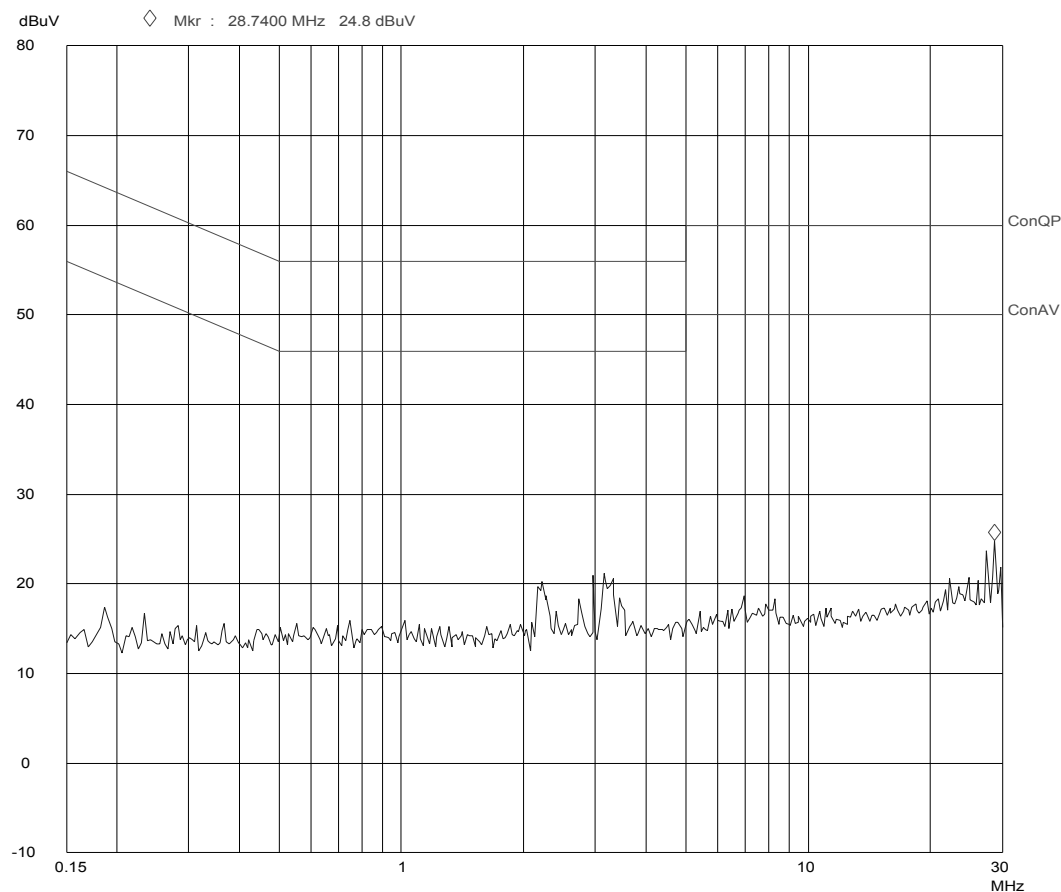
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Conducted Disturbance

EUT: M/N:HP3991
 Op Cond: TX and Charge
 Test Spec: N
 Comment: AC 120V/60Hz



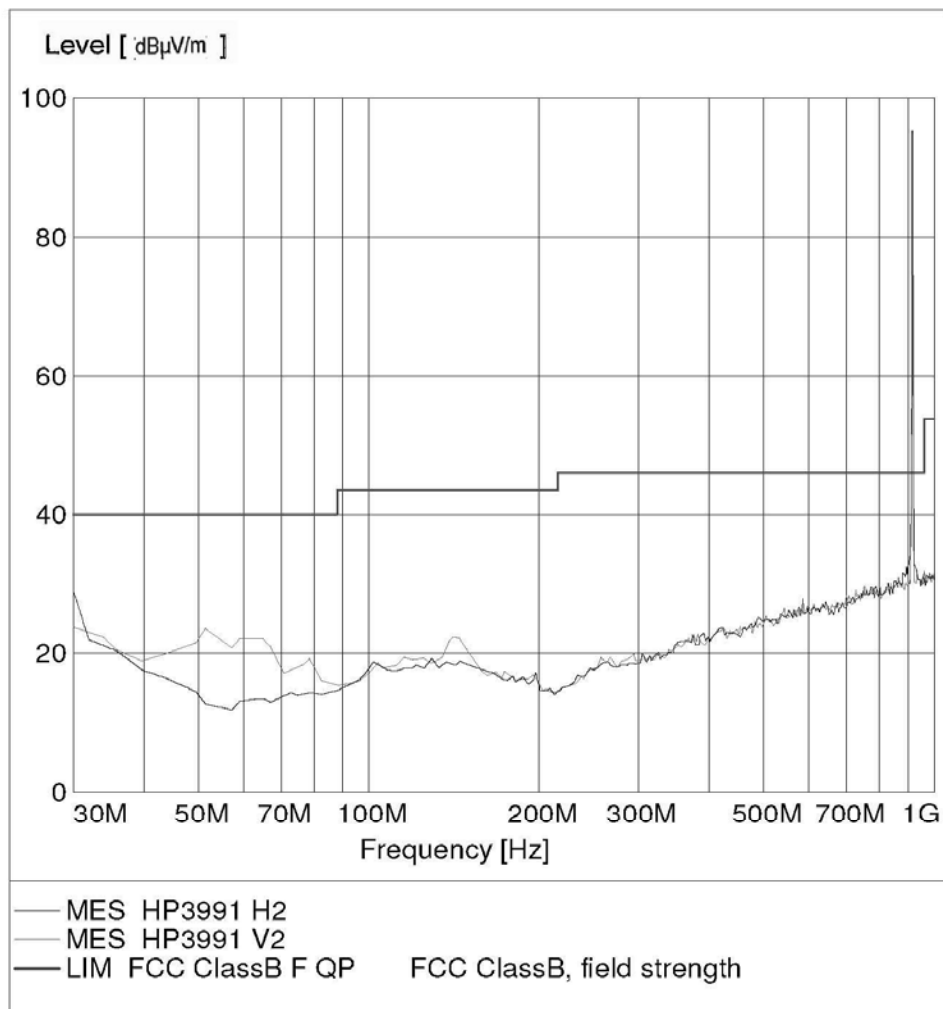
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Conducted Disturbance

EUT: M/N:HP3991
 Op Cond: TX and Charge
 Test Spec: L
 Comment: AC 120V/60Hz



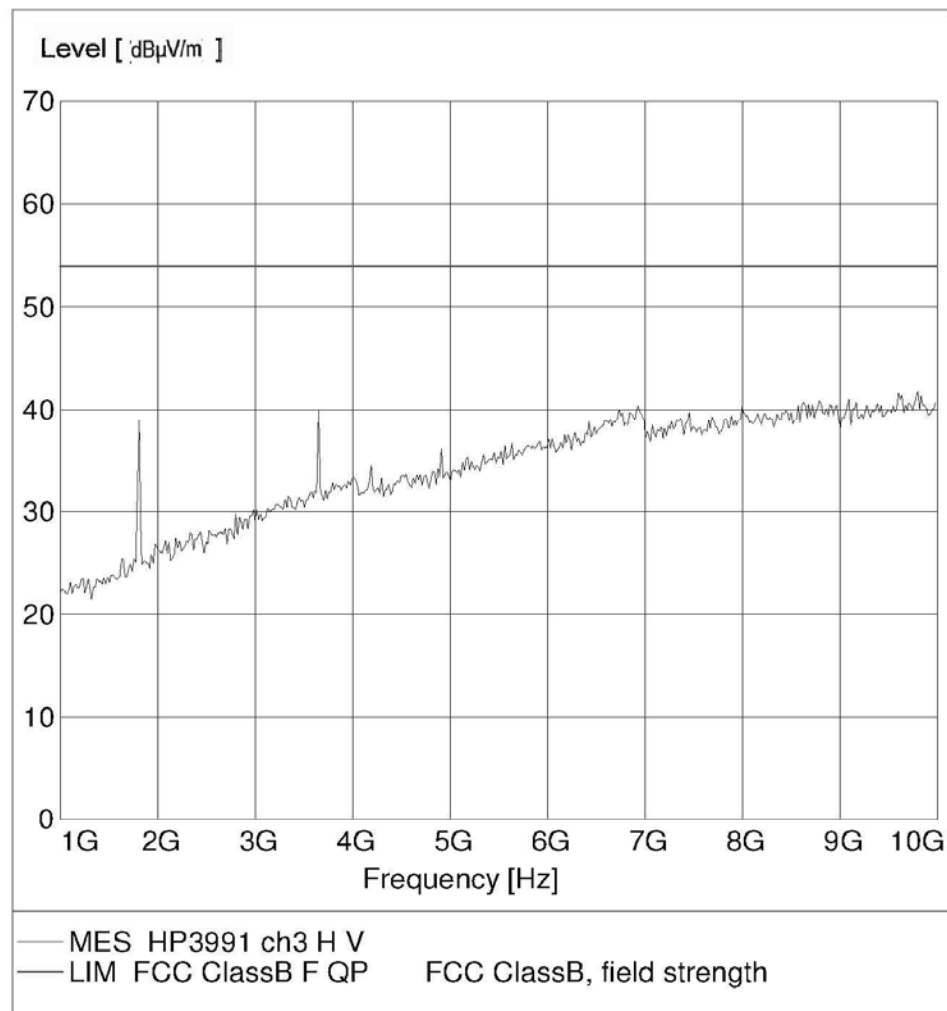
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Radiated Disturbance

EUT: M/N:HP3991
 Manufacturer:
 Operating Condition: Channel 3
 Test Site: SMQ EMC Lab.SAC
 Test Specification: Vertical & Horizontal
 Comment : AC 120V/60Hz



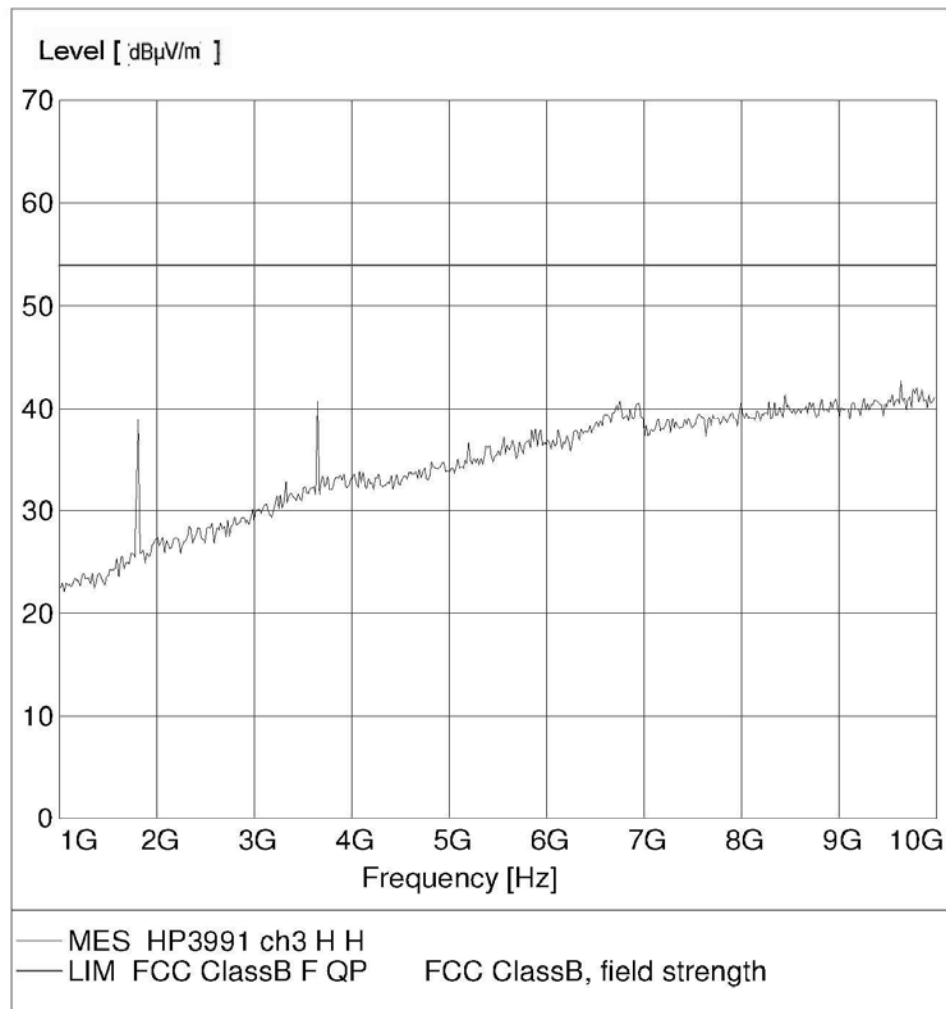
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Radiated Disturbance

EUT: M/N:HP3991
 Manufacturer:
 Operating Condition: ch3 TX
 Test Site: SMQ EMC Lab.SAC
 Operator:
 Test Specification: Vertical
 Comment: AC 120V/60Hz



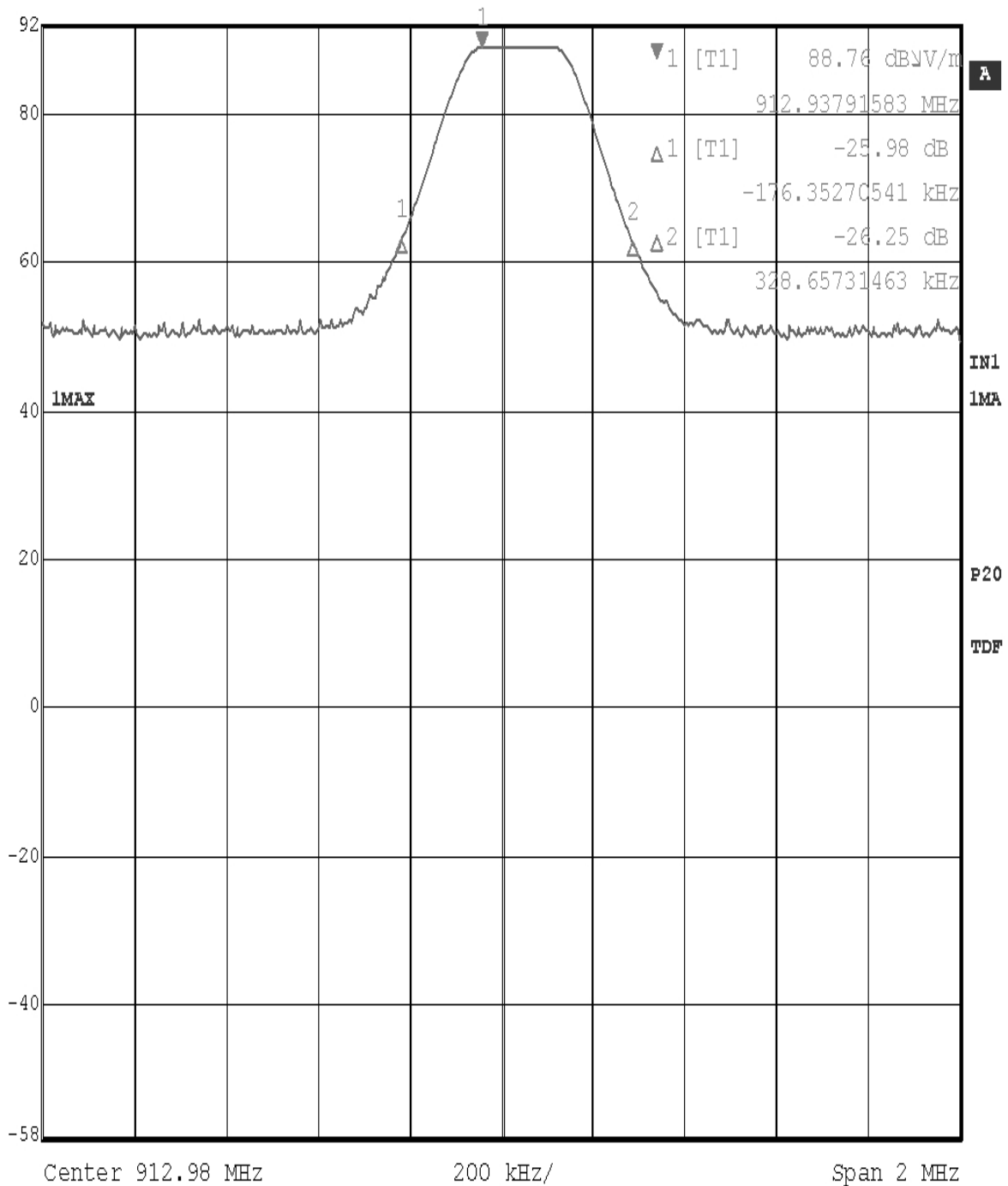
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Radiated Disturbance

EUT: M/N:HP3991
 Manufacturer:
 Operating Condition: ch3 TX
 Test Site: SMQ EMC Lab.SAC
 Operator:
 Test Specification: Horizontal
 Comment: AC 120V/60Hz



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Marker 1 [T1]	RBW	120 kHz	RF Att	20 dB
Ref Lvl	88.76 dB μ V/m	VBW	300 kHz	
92 dB*	912.93791583 MHz	SWT	5 ms	Unit dB μ V/m



Date: 25.APR.2007 23:18:09