

Prüfbericht - Nr.: 16004798 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: Wireless Speaker Receiver
Test item:

Bezeichnung: <i>Identification:</i>	SP1552 (ARKON) Receiver of System WSP155 (THOMSON)	FCC ID: <i>FCC ID</i>	MVAWSP155 - 001R
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Wareneingangs-Nr.: <i>Receipt No.:</i>	173015906	Eingangsdatum: <i>Date of receipt:</i>	18.03.2005
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Prüfort: <i>Testing location:</i>	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
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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/ review by:

25 May 2005 Ricky Liu
Datum Name Unterschrift
Date Name Signature

26.05.2005 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

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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	29.01.2006
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.

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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 EUT is Wireless Speaker Receiver with 3 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 3 receiving frequencies.

The EUT has also the function of volume control and BASS BOOST, which the user can select.

The EUT is also the receiver part of Wireless Speaker System WSP155 with brand name "THOMSON".

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3.1 Product Function and Intended Use

For details, refer to user manual.

3.2 Ratings and System Details

Frequency range	:	912.00MHz, 912.50 MHz ,913.00MHz
Number of channels	:	3 (auto tunable)
Type of antenna	:	Integral antenna
FCC ID:		MVAWSP155 – 001R
Power supply	:	DC 9V from AC/DC adaptor; 8× “D“ size Alkaline batteries (4 per speaker)
Ports	:	DC power input
Protection Class	:	III

Refer to document for further information

3.3 Independent Operation Modes

The basic operation modes are:

Receiving with volume, BASS BOOST 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 AC/DC Adaptor:

Model	: TEAD-48-0910000U
Input	: AC 120V 60Hz 15W
Output	: DC 9V / 1A
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 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

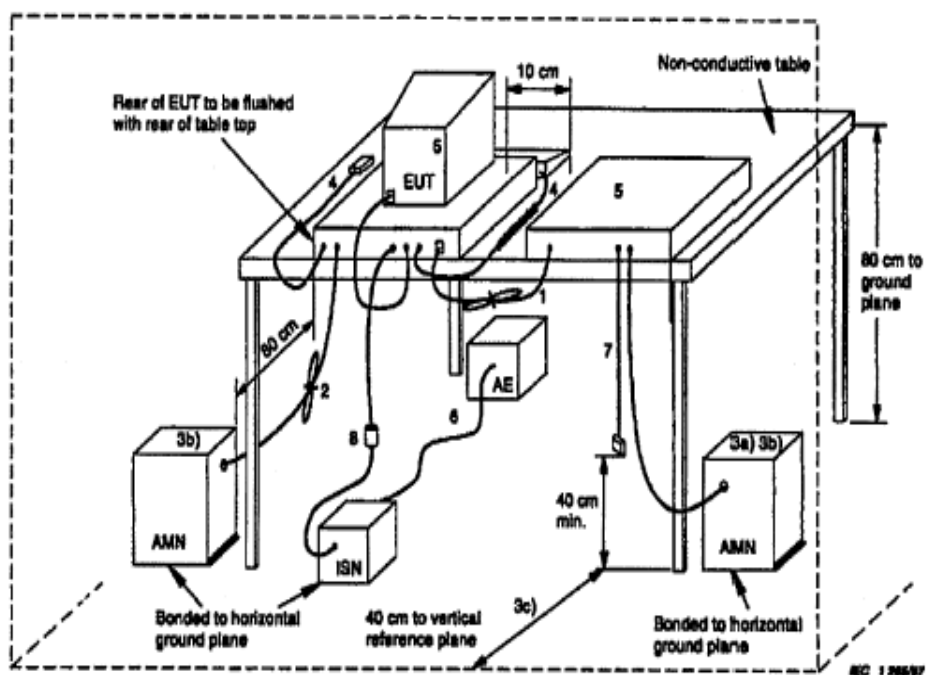
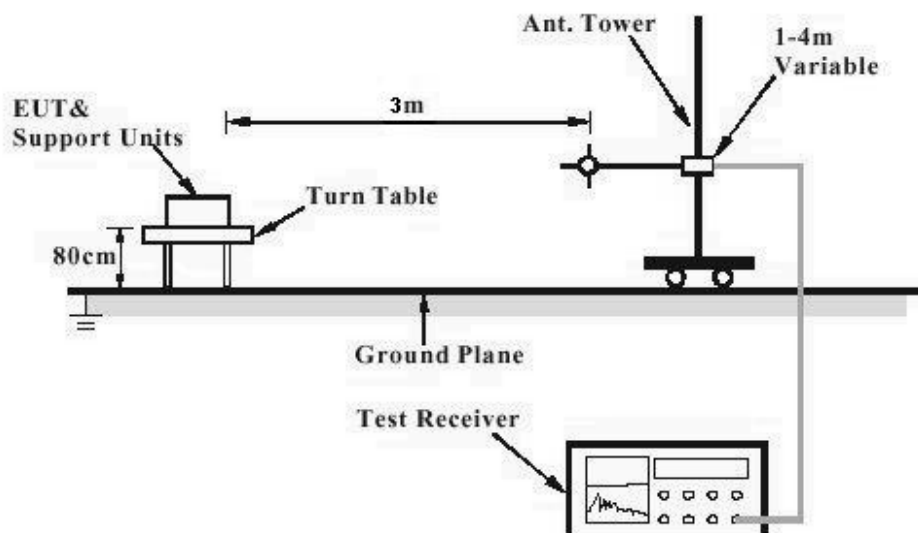


Diagram 2 of Measurement Equipment Configuration for Testing Radiated Emission



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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 : Receiving
Temperature : 21°C
Humidity : 52%

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 15.109(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 : 21°C
Humidity : 52%

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]
---*				

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

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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

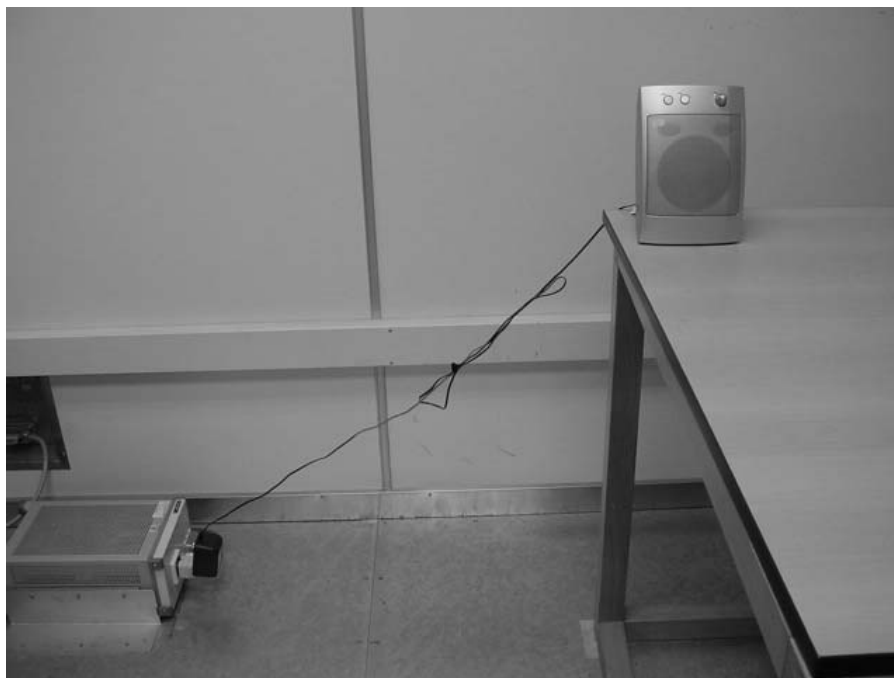
Injection frequency(Cellular) in MHz	Level 12dB SINAD at injected frequency in dBm	Rejection in dB	Limit in dB
824.04	>17	>40	38
836.00	>17	>40	38
848.97	>17	>40	38
869.04	>17	>40	38
881.00	>17	>40	38
893.97	>17	>40	38

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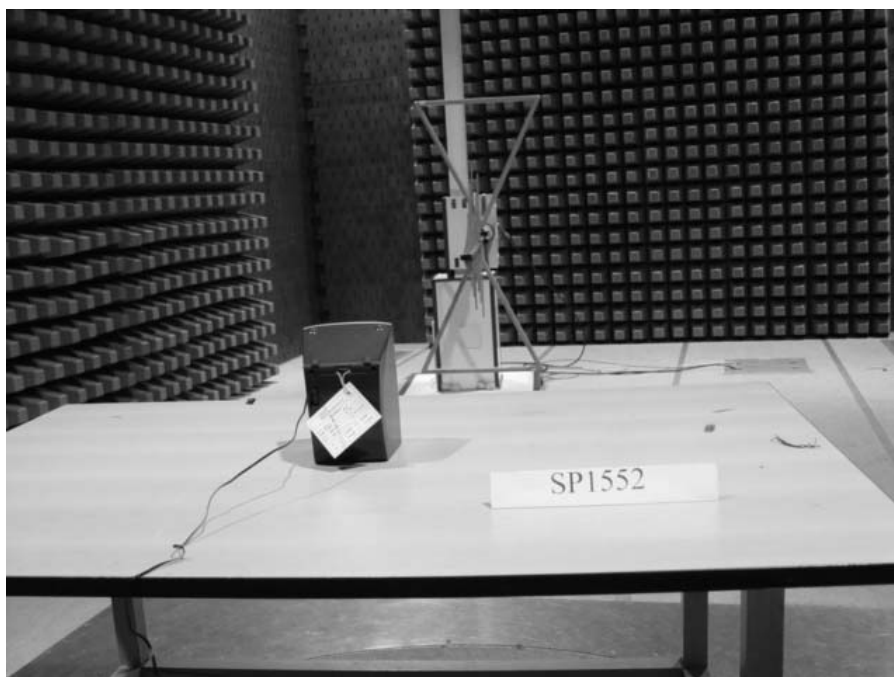
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6 Photographs of the Test Set-Up

Photograph 1: Set up for Conducted Emission on AC Mains



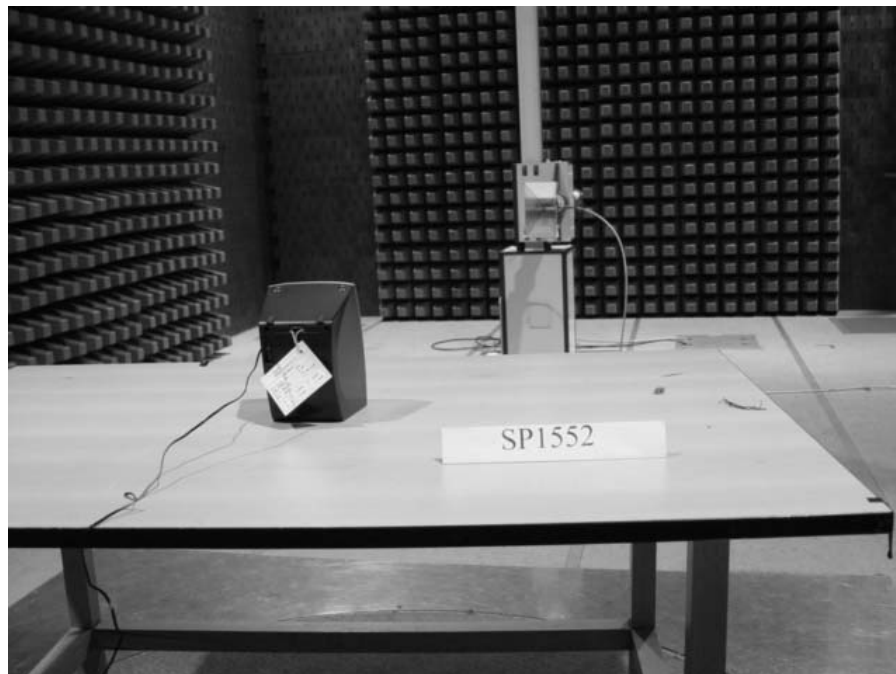
Photograph 2: Set-up for Radiation Measurement Below 1GHz



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



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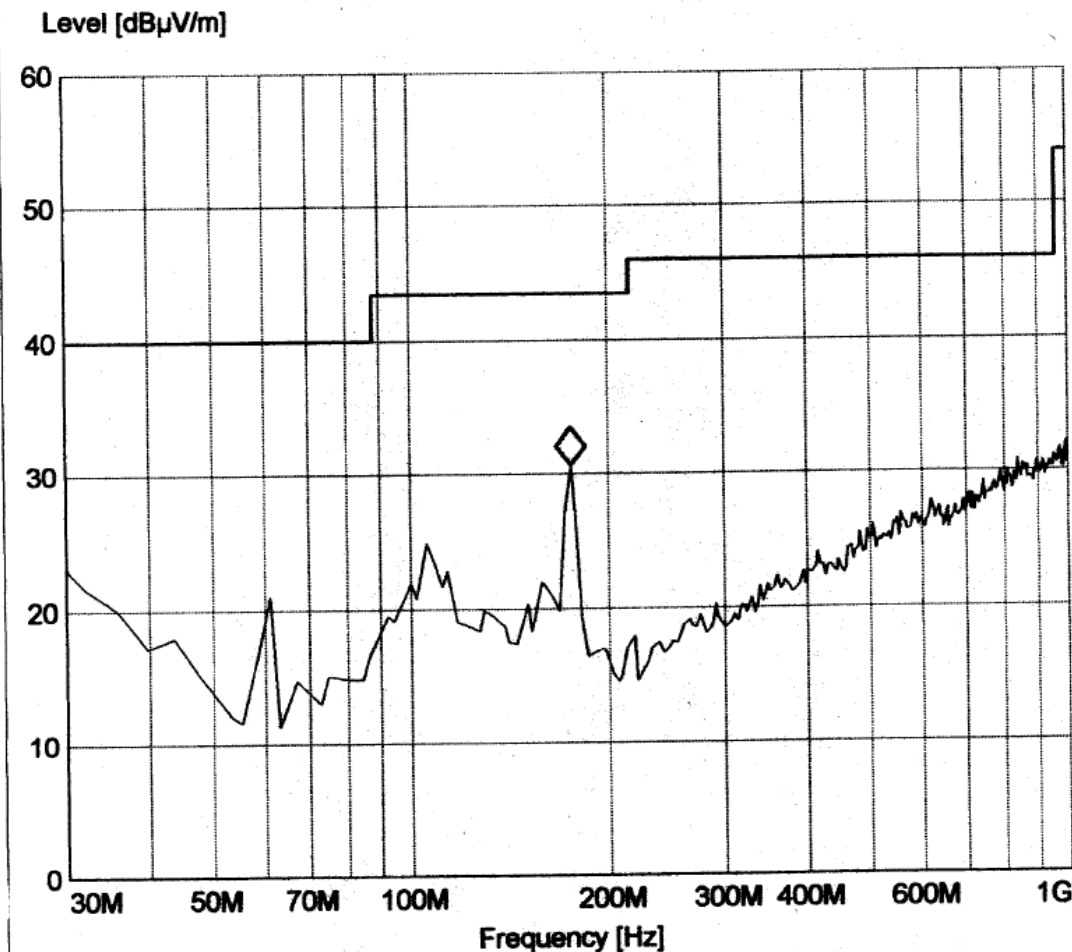
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Radiated Disturbance

FCC Part15

EUT: M/N:SP1552
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Vertical
Comment: AC 120V/60Hz

Marker: 175.791583 MHz 30.63 dBμV/m



— MES SP1552 LVer
— LIM FCC ClassB F QP/AV FCC ClassB, field strength 3m

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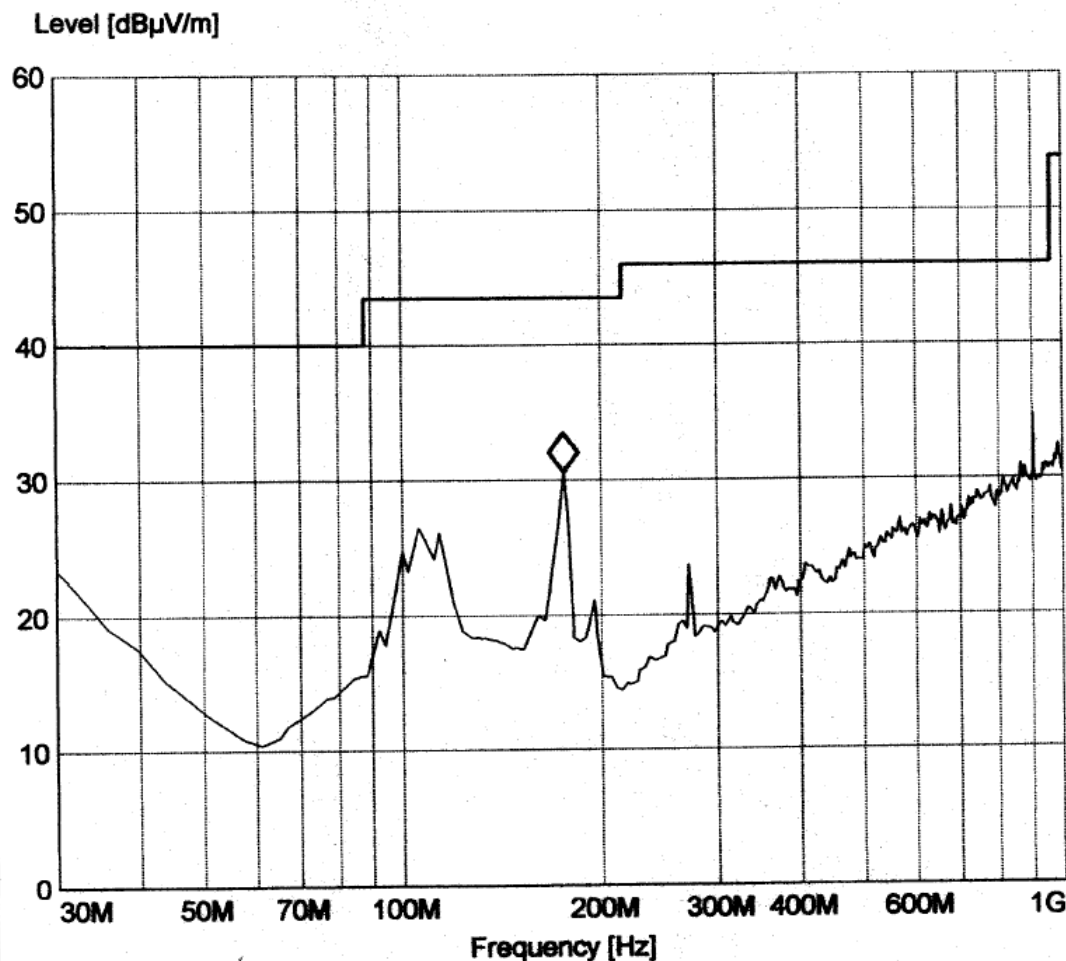
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Radiated Disturbance

FCC Part15

EUT: M/N:SP1552
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Horizontal
Comment: AC 120V/60Hz

Marker: 175.791583 MHz 30.56 dB μ V/m



— MES SP1552 LHor
— LIM FCC ClassB F QP/AV FCC ClassB, field strength 3m

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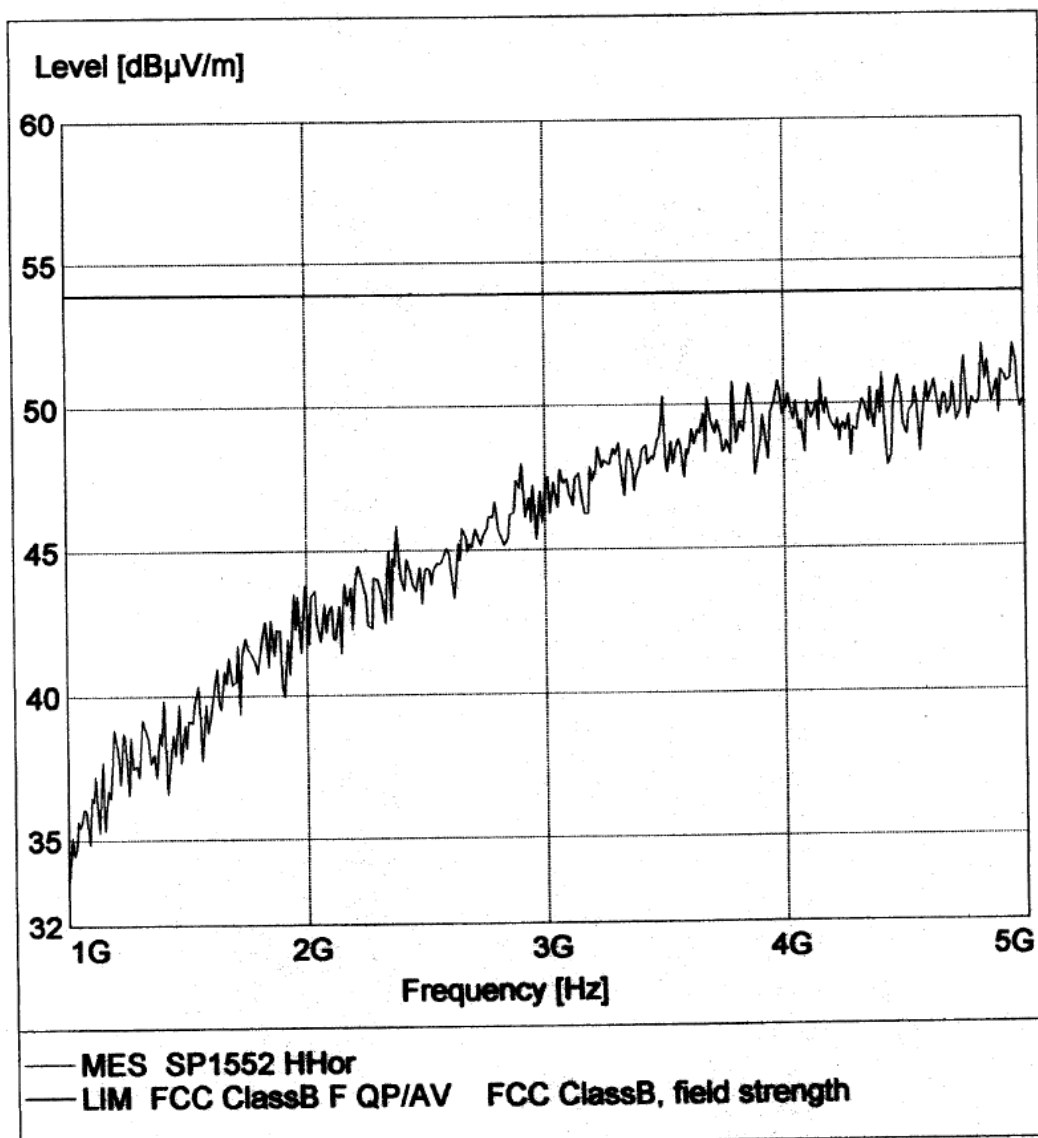
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Radiated Disturbance

FCC Part15

EUT: M/N:SP1552
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Horizontal
Comment: AC 120V/60Hz



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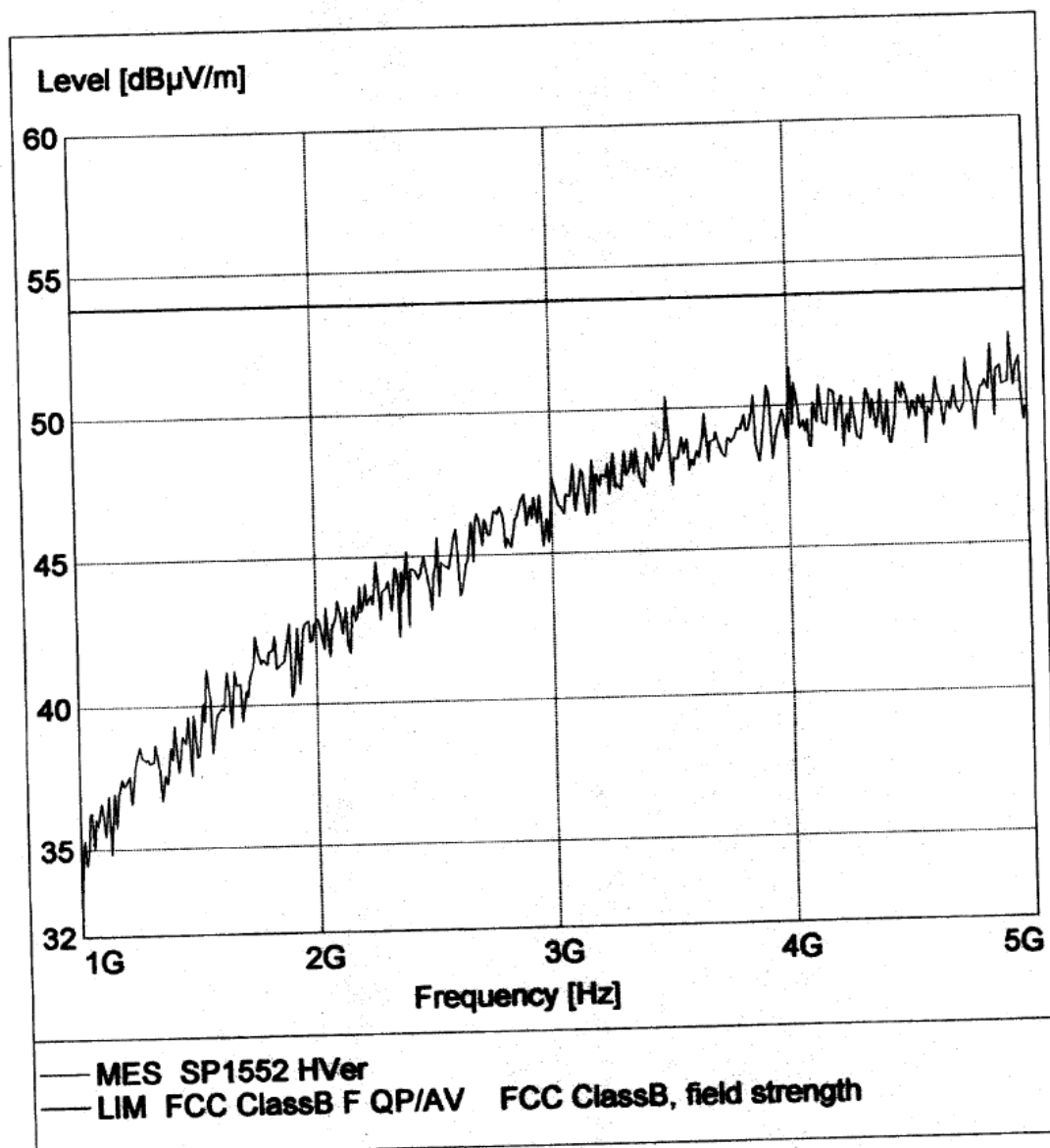
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Radiated Disturbance

FCC Part15

EUT: M/N:SP1552
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Vertical
Comment: AC 120V/60Hz



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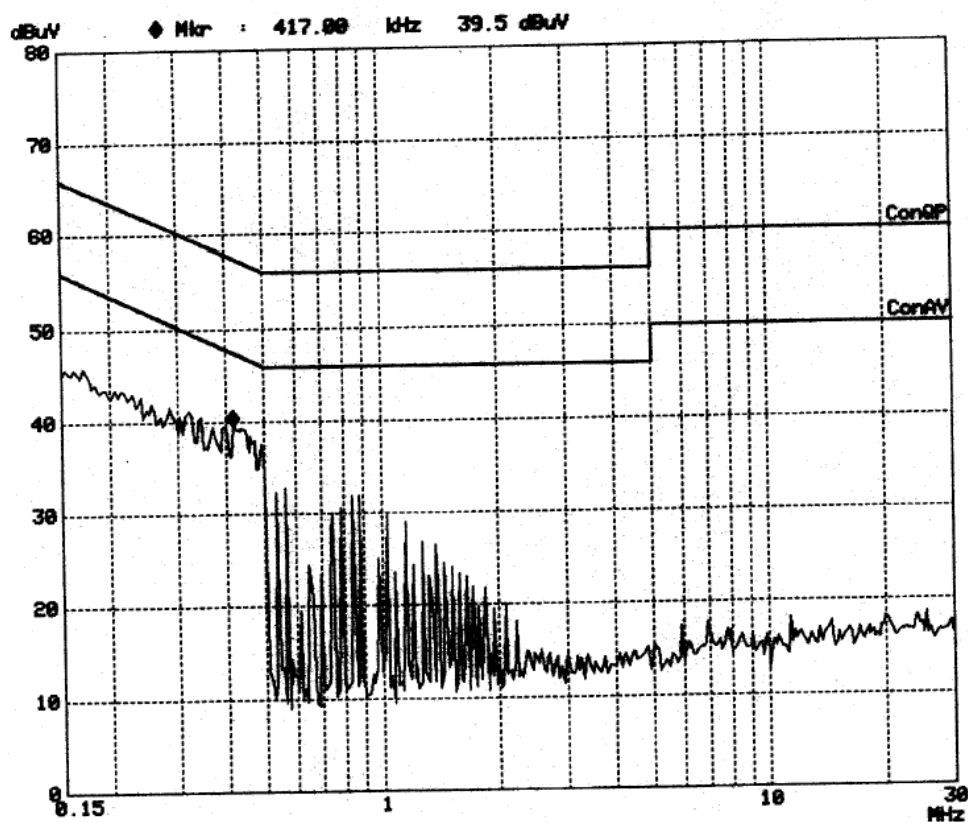
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Conducted Disturbance

EUT: M/N:SP1552
Op Cond: RX
Test Spec: N
Comment: AC 120V/60Hz
Date: 21. Mar 05 10:06



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Conducted Disturbance

EUT: M/N:SP1552
Op Cond: RX
Test Spec: L
Comment: AC 120V/60Hz
Date: 21. Mar 05 10:10

