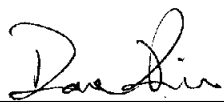


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Auftraggeber: <i>Client:</i>	Classic Tech Development Ltd. 11-12/F., YUE XIU IND'L BLDG. 87 HUNG TO ROAD, KWUN TONG, KOWLOON HONG KONG		
Gegenstand der Prüfung: Receiver of Wireless Speaker System <i>Test item:</i>			
Bezeichnung: <i>Identification:</i>	SP1092	FCC ID: <i>FCC ID</i>	REDSP1092-001R
Wareneingangs-Nr.: <i>Receipt No.:</i>	73011610	Eingangsdatum: <i>Date of receipt:</i>	14.04.2004
Prüfart: <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
Prüfgrundlage: <i>Test specification:</i>	ANSI C63.4:2001 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: <i>Test Result:</i>	Der vorstehend beschriebene Prüfgegenstand wurde geprüft und entspricht oben genannter Prüfgrundlage. The a. m. test item passed.		
Prüflaboratorium/ Testing Laboratory: TÜV Rheinland (Guangdong) Ltd <i>zusammengestellt/ compiled by:</i> <i>kontrolliert/ checked by:</i>			
11.05.2004 <i>Datum</i> <i>Date</i>	Dave Xie <i>Name</i> <i>Name</i>	 <i>Unterschrift</i> <i>Signature</i>	12.05.2004 <i>Datum</i> <i>Date</i>
			Yuxin Huang <i>Name</i> <i>Name</i>
			 <i>Unterschrift</i> <i>Signature</i>
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. <i>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.</i>			

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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	29.01.2005
Horn Antenna	Rohde & Schwarz	HF906	100014	29.01.2005
3m Semi-anechoic chamber	Albatross Projects	9X6X6	----	29.01.2005
EMI Test Receiver	Rohde & Schwarz	ES126	838786/013	29.01.2005
Communications Test Set	Rohde & Schwarz	CMU200	1100.0008.02	29.01.2005
Communications Test Set	HP	HP8920A	3438A05187	29.01.2005
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	29.01.2005
AMN	Rohde & Schwarz	ESH3-Z5	100002	29.01.2005

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 submitted sample is receiver for a mono wireless Speaker system with two 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 two receiving frequencies.

The submitted sample has also the function of volume and SRS audio, which the user can select.

The submitted sample has an IR remote controller.

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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	:	912.03MHz, 913.03MHz
Number of channels	:	2 (auto tunable)
Type of antenna	:	Integral antenna
FCC ID:		REDSP1092-001R
Power supply	:	DC 15V ("AAA" type 12V NiCd battery 1)
Ports	:	None
Protection Class	:	III

Refer to document for further information

3.3 Independent Operation Modes

The basic operation modes are:

Receiving with volume, SRS 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

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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	: PC-1255-DUA
Input	: AC 120V 60Hz 13W
Output	: DC 12V / 550mA
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

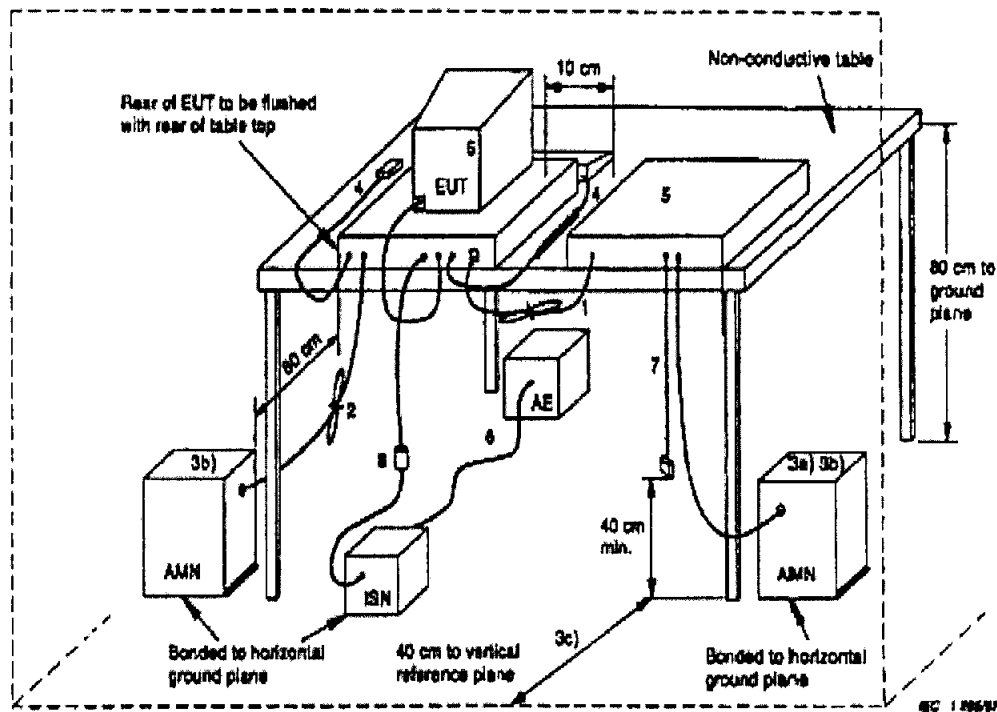
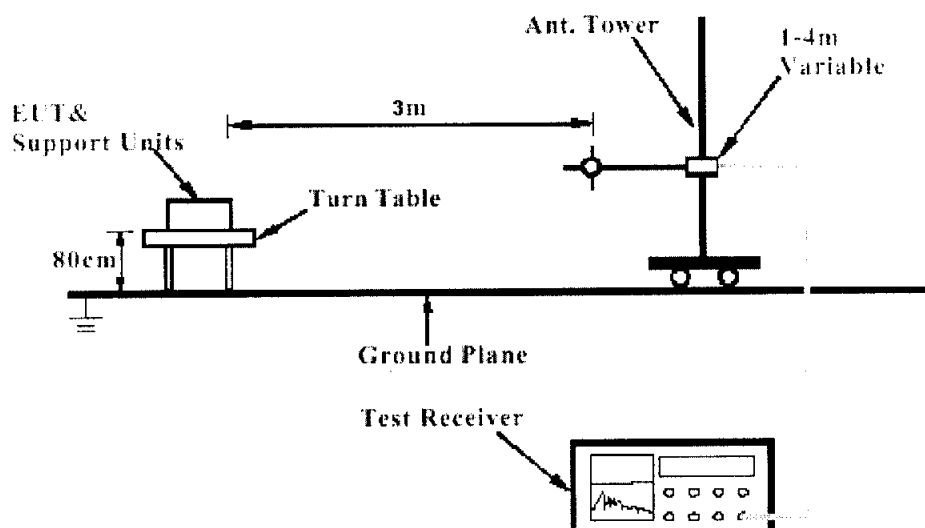


Diagram 2 of Measurement Equipment Configuration for Testing Radiated Emission



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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 : 14.04.2004
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 : 23°C
Humidity : 67%

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 [dBμV]	AV [dBμV]	Quasi Peak Limit [dBμV]	Average Limit [dBμV]
0.150	Live	36.6	10.1	66	56
0.407	Live	37.8	33.0	57.8	47.8
0.816	Live	33.8	25.1	56	46
2.461	Live	29.8	15.6	56	46
0.150	Neutral	36.7	10.2	66	56
0.403	Neutral	38.3	25.9	57.8	47.8
0.807	Neutral	33.3	20.0	20	46
2.455	Neutral	25.8	10.0	56	46

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

RESULT:

ok

Date of testing : 08.05.2004
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 : 62%

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 IR remote controller was put together with EUT for radiated emission test.

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

Table 3: Radiated Emission

Frequency [MHz]	QP [dB μ V]	AV [dB μ V]	Polarity	Limit [dB μ V]
---	*			

*) 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 : 28.04.2004
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

Table 3 : 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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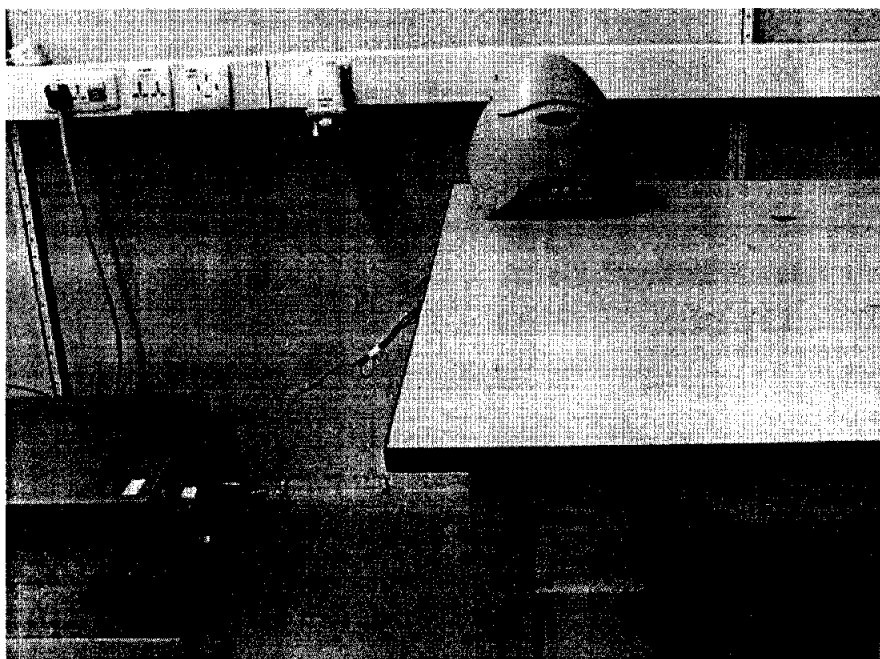
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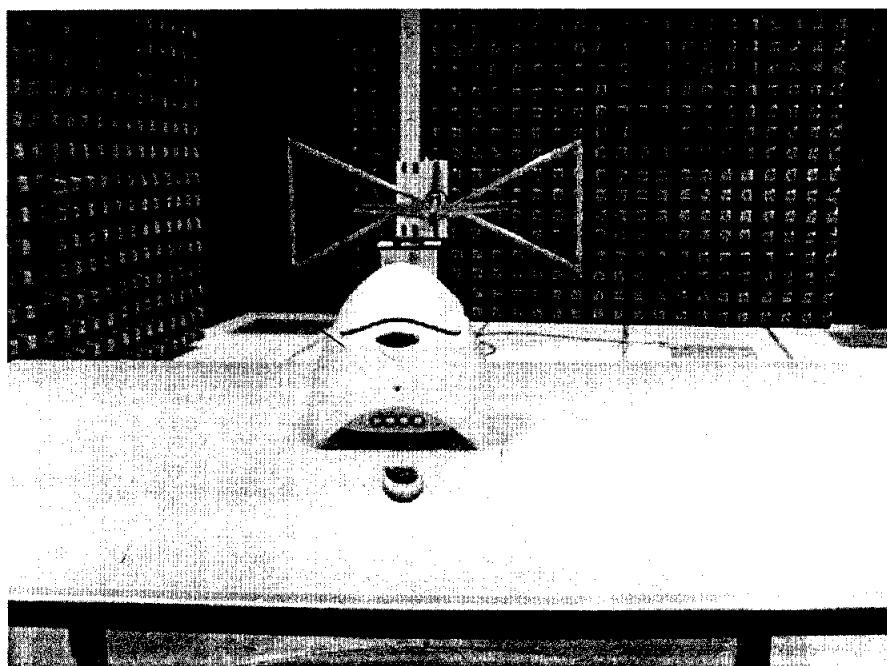
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6 Photographs of the Test Set-Up

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



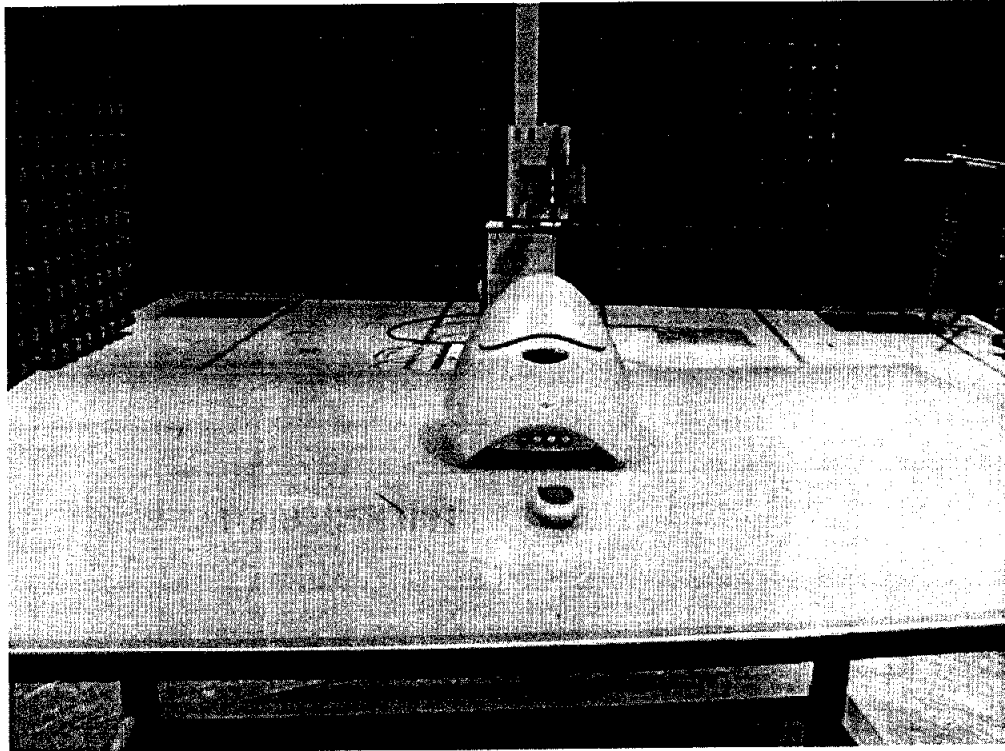
Photograph 2: Set-up for Radiation Measurement Below 1GHz



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



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Conducted Disturbance

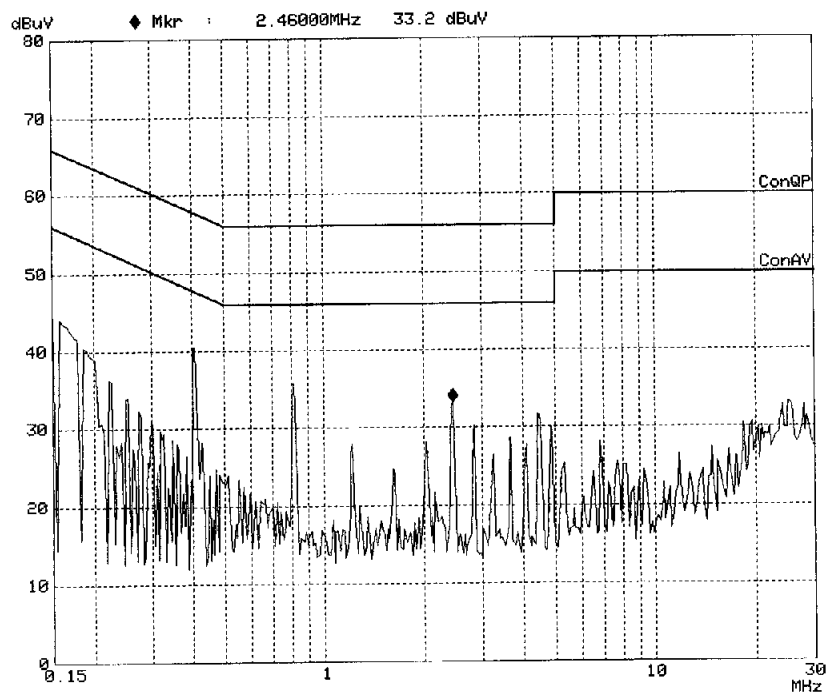
EUT: M/N:SP1092
Op Cond: On
Test Spec: N
Comment: AC 120V/60Hz
Date: 14. Apr 04 21:57

Scan Settings (4 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	500k	4k	9k	PK	5ms	AUTO LN	OFF
500k	1M	4k	9k	PK	5ms	AUTO LN	OFF
1M	3M	5k	9k	PK	2ms	AUTO LN	OFF
3M	30M	5k	9k	PK	1ms	AUTO LN	OFF

Transducer No.	Start	Stop	Name
20	9k	30M	CE

Final Measurement: x QP
Meas Time: 1 s



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Conducted Disturbance

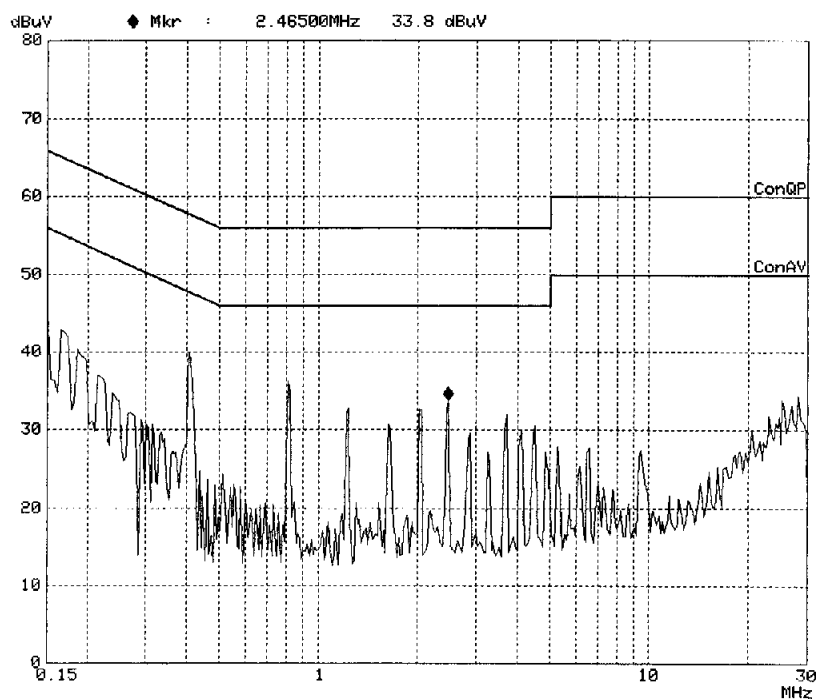
EUT: M/N:SP1092
Op Cond: On
Test Spec: L
Comment: AC 120V/60Hz
Date: 14. Apr 04 21:52

Scan Settings (4 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	500k	4k	9k	PK	5ms	AUTO	LN OFF
500k	1M	4k	9k	PK	5ms	AUTO	LN OFF
1M	3M	5k	9k	PK	2ms	AUTO	LN OFF
3M	30M	5k	9k	PK	1ms	AUTO	LN OFF

Transducer No. Start Stop Name
20 9k 30M CE

Final Measurement: x QP
Meas Time: 1 s



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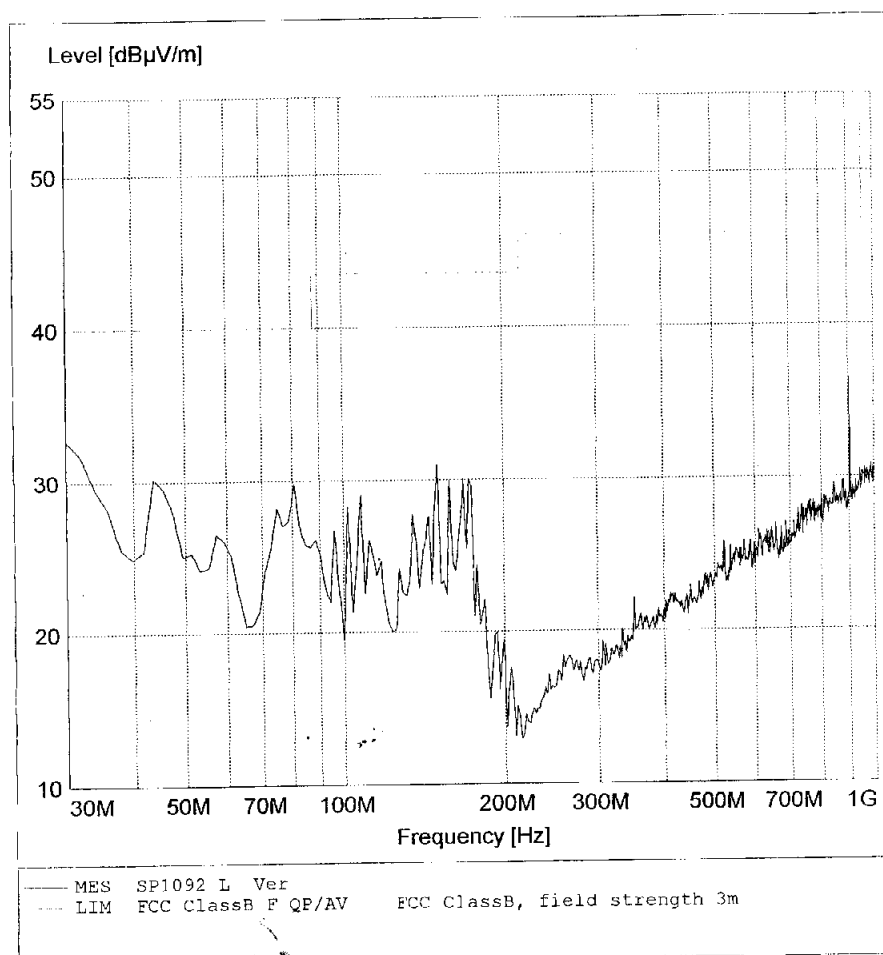
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Radiated Disturbance

FCC ClassB

EUT: M/N:SP1092
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Test Specification:
Comment: Vertical
Comment: AC 120V/60Hz



5/5/04 10:23AM

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Test Report No.:

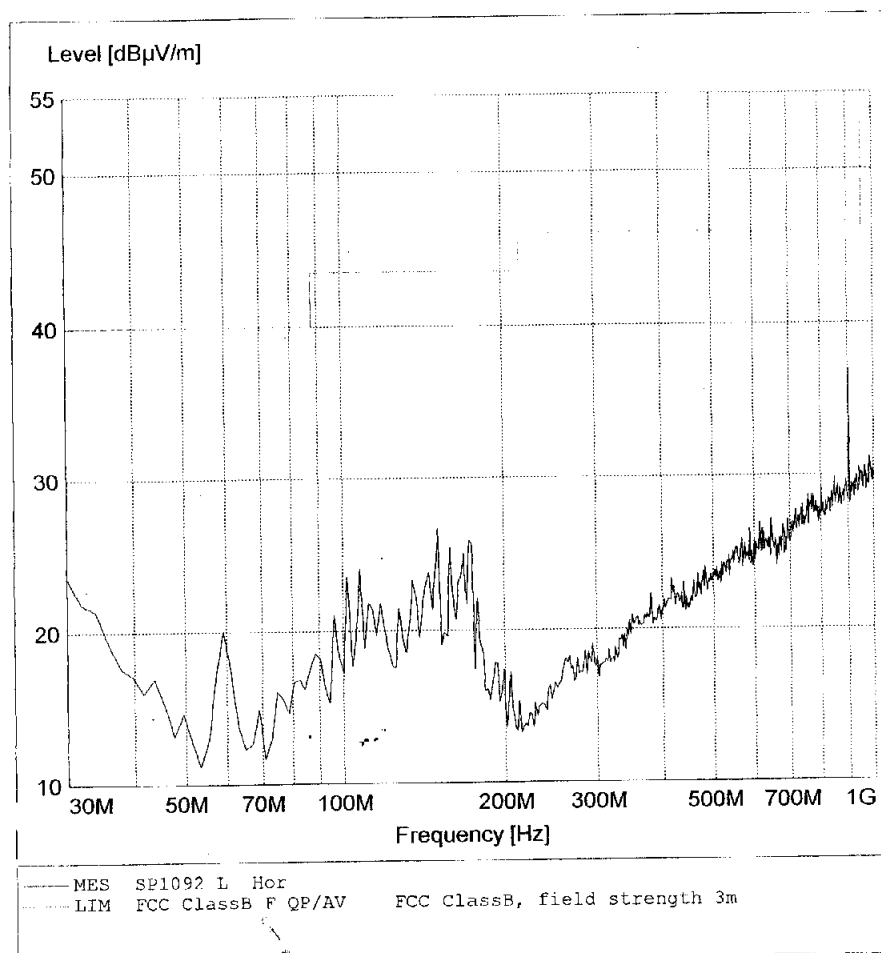
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Radiated Disturbance

FCC ClassB

EUT: M/N:SP1092
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Test Specification:
Comment: Horizontal
Comment: AC 120V/60Hz



5/8/04 10:23AM

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Test Report No.:

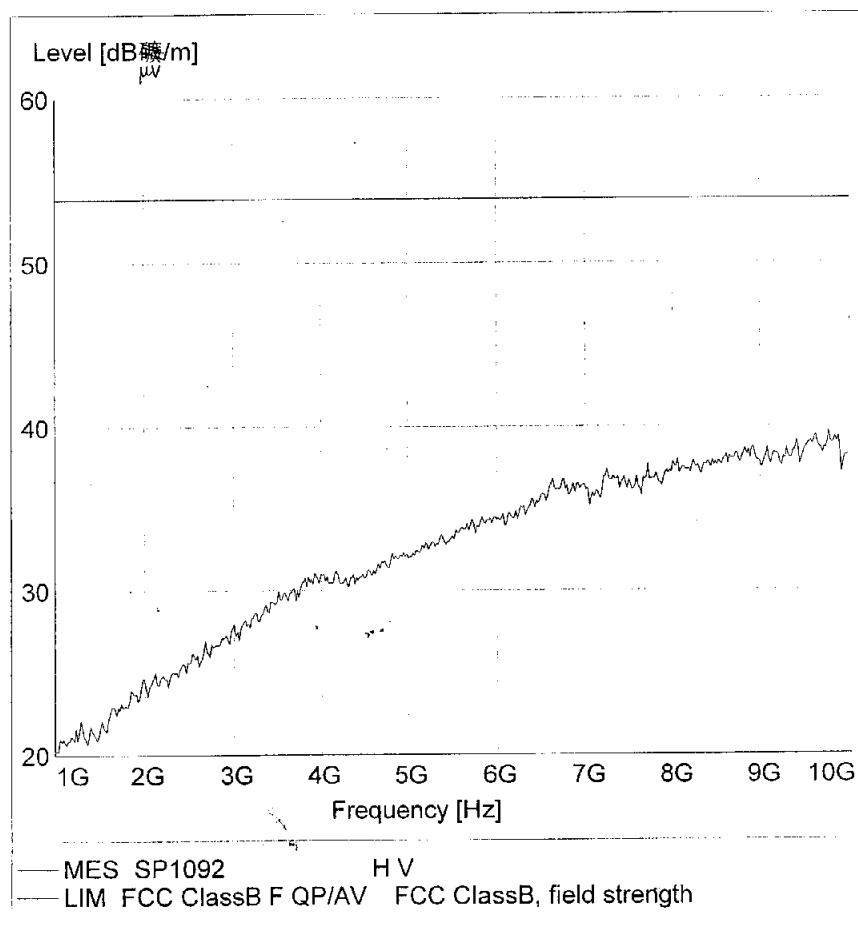
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Radiated Spurious

FCC ClassB

EUT: M/N: SP1092 (with IR remote controller)
Manufacturer:
Operating Condition: TX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Vertical
Comment: AC 120V/60Hz



5/8/04 10:22AM

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Test Report No.:

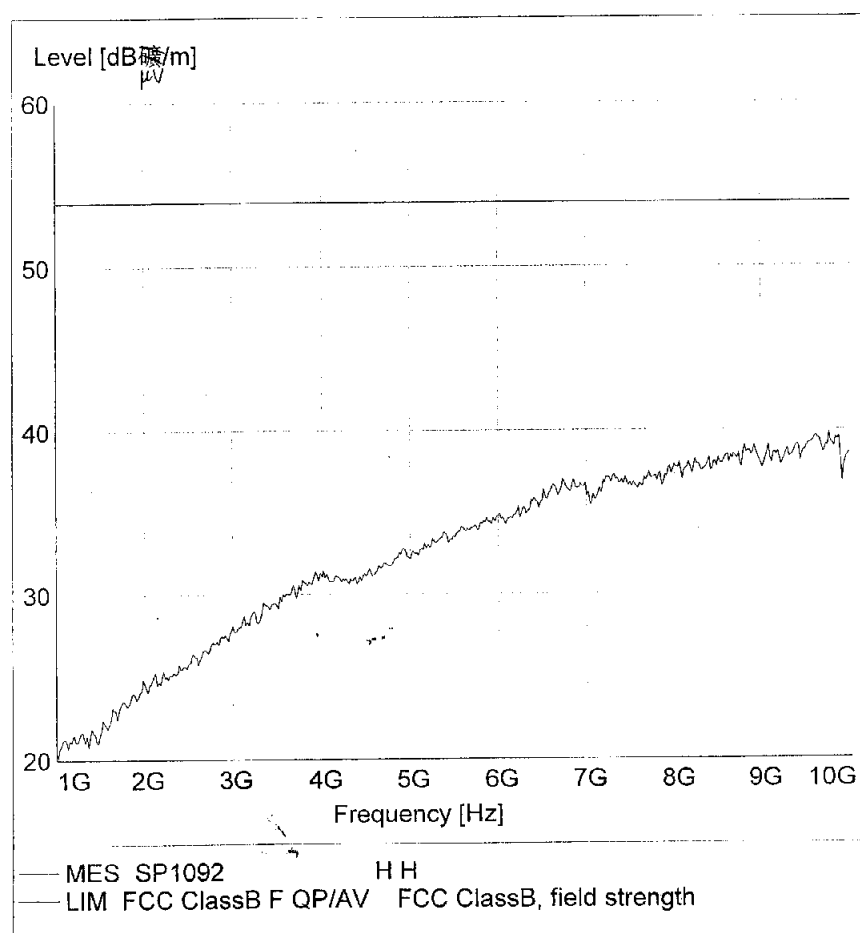
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Radiated Spurious

FCC ClassB

EUT: M/N: SP1092 (with IR remote controller)
Manufacturer:
Operating Condition: TX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Horizontal
Comment: AC 120V/60Hz



5/8/04 10:21AM