

Prüfbericht - Nr.: 16005756 001			Seite 1 von 15 <i>Page 1 of 15</i>		
Test Report No.:					
Auftraggeber: Classic Tech Development Ltd. <i>Client:</i>					
11-12/F., YUE XIU IND'L BLDG. 87 HUNG TO ROAD, KWUN TONG, KOWLOON HONG KONG					
Gegenstand der Prüfung: Wireless Shower Speaker Receiver <i>Test item:</i>					
Bezeichnung: SP2592 <i>Identification:</i>		FCC ID: REDSP2592 – 001R <i>FCC ID</i>			
Wareneingangs-Nr.: 173017936 <i>Receipt No.:</i>		Eingangsdatum: 25.07.2005 <i>Date of receipt:</i>			
Prüfort: Shenzhen Bureau of Quality Technical <i>Testing location:</i> 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 <i>Test specification:</i>		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 <i>Test Result:</i> entspricht oben genannter Prüfgrundlage. The a. m. test item passed the test <i>specification</i> .					
Prüflaboratorium: TÜV Rheinland (Guangdong) Ltd. <i>Testing Laboratory:</i>					
zusammengestellt/ compiled by:			kontrolliert/ review by:		
Ricky Liu			Yuxin Huang		
Datum <i>Date</i>	Name <i>Name</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name <i>Name</i>	Unterschrift <i>Signature</i>
Sonstiges/ Other Aspects:					
Abkürzungen: <i>ok / P = entspricht Prüfgrundlage</i> <i>fail / F = entspricht nicht Prüfgrundlage</i> <i>n.a. / N = nicht anwendbar</i>					
Abbreviations: <i>ok / P = passed</i> <i>fail / F = failed</i> <i>n.a. / N = not applicable</i>					
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>					

Prüfbericht - Nr.: 16005756 001

Test Report No.:

Seite 2 von 15

Page 2 of 15

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

Prüfbericht - Nr.: 16005756 001
Test Report No.:

Seite 3 von 15
Page 3 of 15

Contents

1	GENERAL REMARKS.....	4
1.1	COMPLEMENTARY MATERIALS	4
2	TEST SITES.....	4
2.1	TEST FACILITIES	4
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	5
2.3	TRACE ABILITY	5
2.4	CALIBRATION	5
2.5	MEASUREMENT UNCERTAINTY	6
2.6	LOCATION OF ORIGINAL DATA.....	6
2.7	STATUS OF FACILITY USED FOR TESTING.....	6
3	GENERAL PRODUCT INFORMATION.....	6
3.1	PRODUCT FUNCTION AND INTENDED USE	7
3.2	RATINGS AND SYSTEM DETAILS	7
3.3	INDEPENDENT OPERATION MODES	7
3.4	SUBMITTED DOCUMENTS	7
4	TEST SET-UP AND OPERATION MODE	8
4.1	PRINCIPLE OF CONFIGURATION SELECTION.....	8
4.2	TEST OPERATION AND TEST SOFTWARE.....	8
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	8
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE.....	8
4.5	TEST SET-UP.....	9
5	TEST RESULTS EMISSION	10
5.1	CONDUCTED EMISSION FOR FCC PART 15 PER SECTION 15.107(A)	10
5.2	RADIATED EMISSION FOR FCC PART 15 PER SECTION 15.109(A).....	11
5.3	38 dB REJECTION SIGNAL FROM CELLULAR FREQUENCY BAND.....	12
6	PHOTOGRAPHS OF THE TEST SET-UP	13
7	LIST OF TABLES.....	15
8	LIST OF PHOTOGRAPHS.....	15

Prüfbericht - Nr.: 16005756 001
Test Report No.:

Seite 4 von 15
Page 4 of 15

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

Prüfbericht - Nr.: 16005756 001

Test Report No.:

Seite 5 von 15

Page 5 of 15

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.

Prüfbericht - Nr.: 16005756 001
Test Report No.:

Seite 6 von 15
Page 6 of 15

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 2 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 2 receiving frequencies.

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

Prüfbericht - Nr.: 16005756 001

Test Report No.:

Seite 7 von 15

Page 7 of 15

3.1 Product Function and Intended Use

For details, refer to user manual.

3.2 Ratings and System Details

Frequency range	:	912.00MHz, 913.00MHz
Number of channels	:	2 (auto tunable)
Type of antenna	:	Integral antenna
FCC ID:		REDSP2592 – 001R
Power supply	:	DC 9V from AC/DC adaptor; 6×AA batteries
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. auto tune.

For further information refer to User Manual

3.4 Submitted Documents

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

Prüfbericht - Nr.: 16005756 001
Test Report No.:

Seite 8 von 15
Page 8 of 15

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.

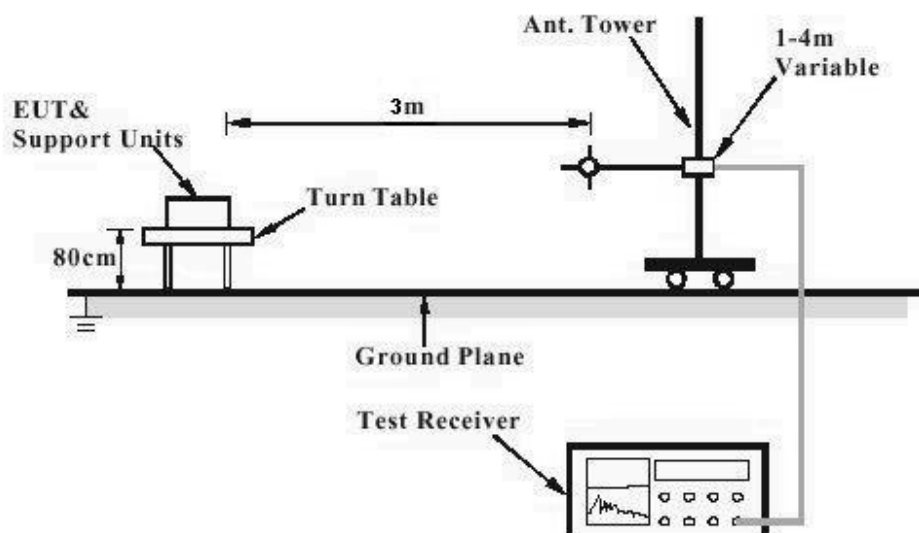
4.3 Special Accessories and Auxiliary Equipment

The product has been tested together with the following AC/DC Adaptor:

Model	: TEAD-41-090500U
Brand	: The Shaper Image
Input	: AC 120V 60Hz 9W
Output	: DC 9V / 0.5A
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.



Prüfbericht - Nr.: 16005756 001
Test Report No.:

Seite 10 von 15
Page 10 of 15

5 Test Results EMISSION

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

RESULT:

ok

Date of testing : 29.07.2005
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 : 25°C
Humidity : 68%

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.

Prüfbericht - Nr.: 16005756 001
Test Report No.:

Seite 11 von 15
Page 11 of 15

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

RESULT:

ok

Date of testing : 29.07.2005
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 : 25°C
Humidity : 68%

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]
2706.886	---	45.2	H	53.9
2706.886	---	40.2	V	53.9

Prüfbericht - Nr.: 16005756 001
Test Report No.:

Seite 12 von 15
Page 12 of 15

5.3 38 dB rejection signal from Cellular Frequency band

RESULT:

ok

Date of testing : 29.07.2005
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	>60	38
836.00	>17	>60	38
848.97	>17	>60	38
869.04	>17	>60	38
881.00	>17	>60	38
893.97	>17	>60	38

Prüfbericht - Nr.: 16005756 001
Test Report No.:

Seite 13 von 15
Page 13 of 15

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



Prüfbericht - Nr.: 16005756 001

Test Report No.:

Seite 14 von 15

Page 14 of 15

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



7 List of Tables

Table 1: List of Test and Measurement Equipment5
Table 2: Disturbance Voltage on AC Mains10
Table 3: Radiated Emission11
Table 4: 38 dB Rejection12

8 List of Photographs

Photograph 1: Set up for Conducted Emission on AC Mains13
Photograph 2: Set-up for Radiation Measurement Below 1GHz13
Photograph 3: Set-up for Radiation Measurement Above 1GHz14

Prüfbericht - Nr.: 16005756 001

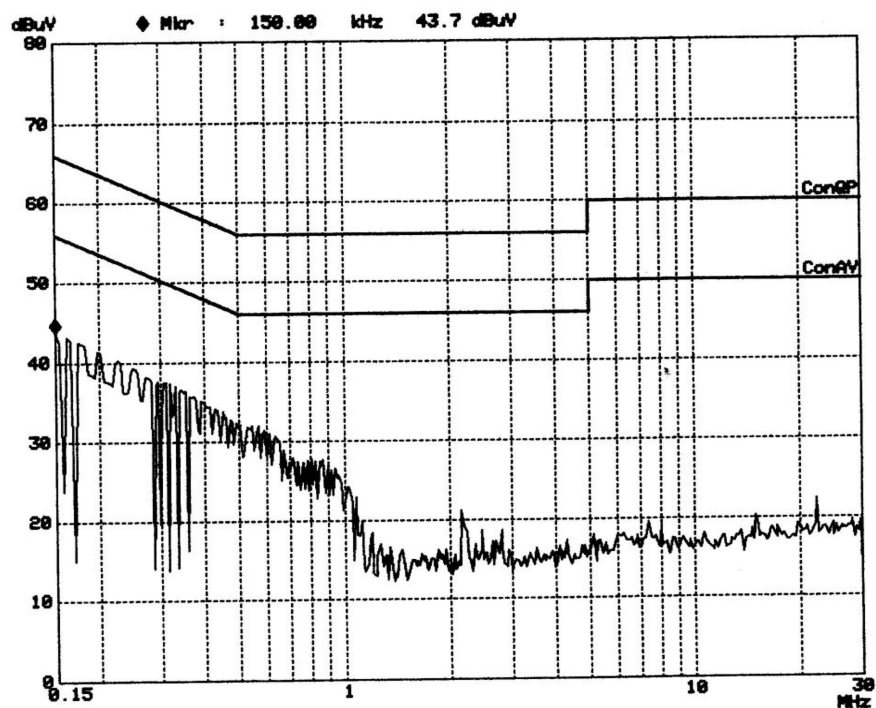
Test Report No.:

Seite 1 von 5

Page 1 of 5

Conducted Disturbance

EUT: M/N:SP2592
Op Cond: RX
Test Spec: L
Comment: AC 120V/60Hz
Date: 29. Jul 05 09:35



Prüfbericht - Nr.: 16005756 001

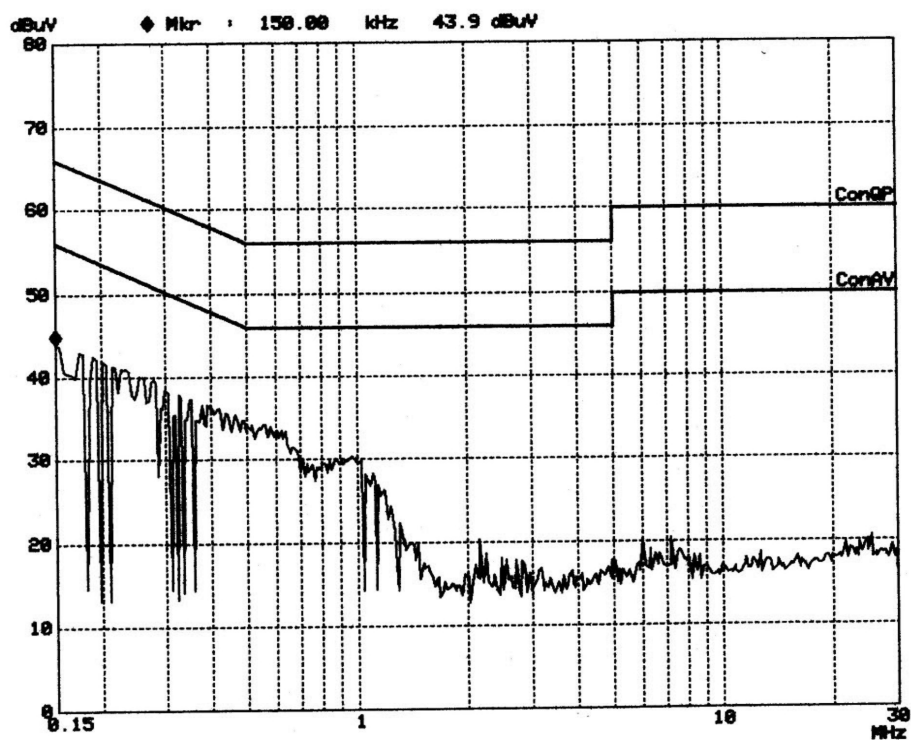
Test Report No.:

Seite 2 von 5

Page 2 of 5

Conducted Disturbance

EUT: M/N:SP2592
Op Cond: RX
Test Spec: N
Comment: AC 120V/60Hz
Date: 29. Jul 05 09:28



Prüfbericht - Nr.: 16005756 001

Test Report No.:

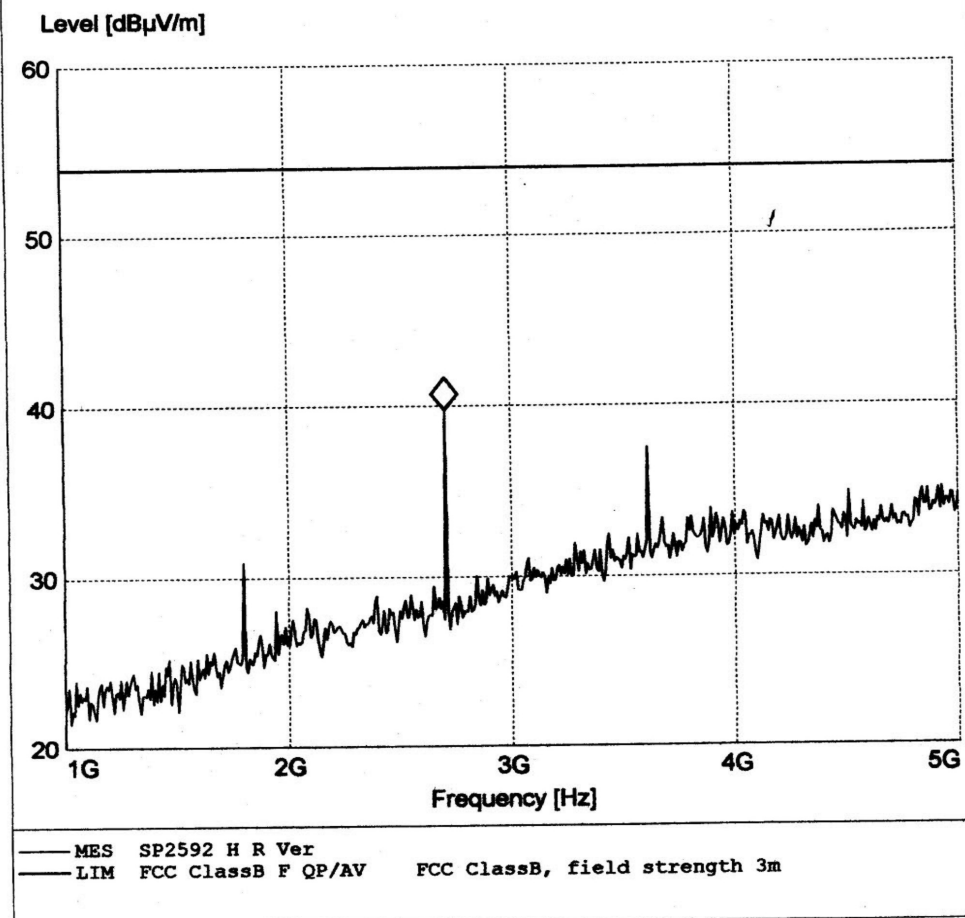
Seite 3 von 5

Page 3 of 5

Radiated Disturbance

EUT: M/N:SP2592
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Vertical
Comment: AC 120V/60Hz
:

Marker: 2.70741483 GHz 39.78 dB μ V/m



Prüfbericht - Nr.: 16005756 001

Test Report No.:

Seite 4 von 5

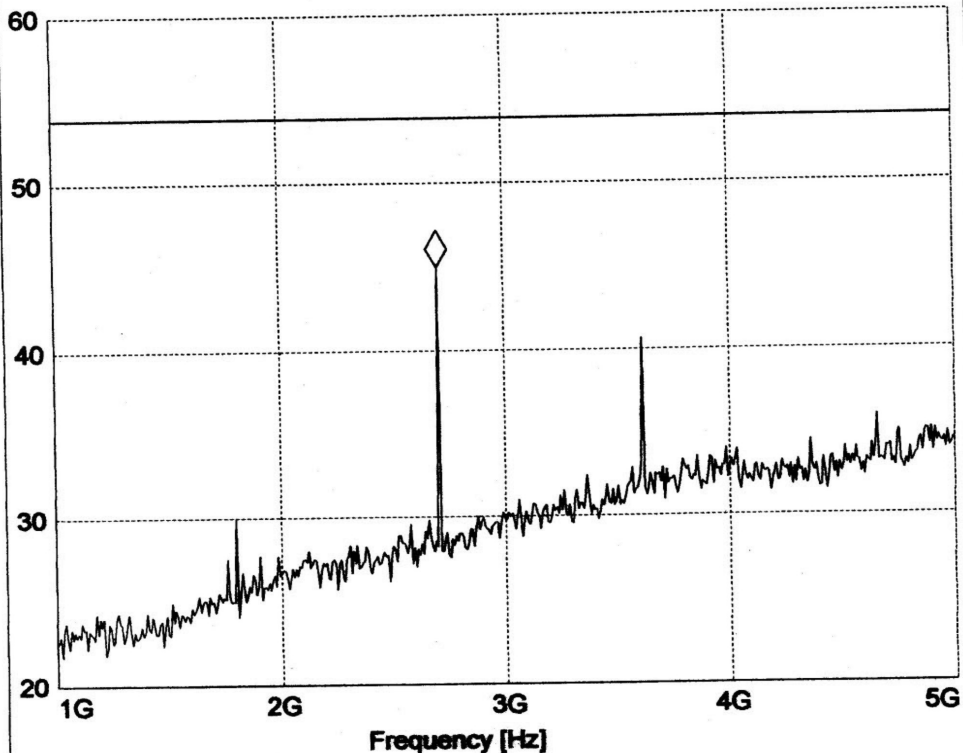
Page 4 of 5

Radiated Disturbance

EUT: M/N:SP2592
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Horizontal
Comment: AC 120V/60Hz
:

Marker: 2.70741483 GHz 44.88 dB μ V/m

Level [dB μ V/m]



— MES SP2592 H R Hor
— LIM FCC ClassB F QP/AV FCC ClassB, field strength

7/26/2005 11:54PM

Prüfbericht - Nr.: 16005756 001

Test Report No.:

Seite 5 von 5

Page 5 of 5

Radiated Disturbance

EUT: M/N:SP2592
Manufacturer:
Operating Condition: RX
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Horizontal & Vertical
Comment: AC 120V/60Hz
:

