

Prüfbericht - Nr.: 16005847 001 <i>Test Report No.:</i>		Seite 1 von 16 <i>Page 1 of 16</i>	
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: Audio Transmitter <i>Test item:</i>			
Bezeichnung: SP2591 <i>Identification:</i>		FCC ID: REDSP2591 – 001T <i>FCC ID</i>	
Wareneingangs-Nr.: 173017936 <i>Receipt No.:</i>		Eingangsdatum: 25.07.2005 <i>Date of receipt:</i>	
Prüfört: 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 C section 15.207 Radiated Emissions with limits described at FCC Part 15 Subpart C section 15.209 and 15.249			
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 _____ Datum Name Unterschrift <i>Date</i> <i>Name</i> <i>Signature</i>		Yuxin Huang _____ Datum Name Unterschrift <i>Date</i> <i>Name</i> <i>Signature</i>	
Sonstiges/ Other Aspects:			
Abkürzungen: <i>ok / P</i> = <i>entspricht Prüfgrundlage</i> <i>fail / F</i> = <i>entspricht nicht Prüfgrundlage</i> <i>n.a. / N</i> = <i>nicht anwendbar</i> Abbreviations: <i>ok / P</i> = <i>passed</i> <i>fail / F</i> = <i>failed</i> <i>n.a. / N</i> = <i>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>			

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TEST SUMMARY

5.1 CONDUCTED EMISSION FOR FCC PART 15 PER SECTION 15.207(A)

RESULT: ok

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

RESULT: ok

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

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
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	29.01.2006
AMN	Rohde & Schwarz	ESH3-Z5	100002	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 submitted sample SP2591 is 900MHz transmitter for a wireless speaker system with 2 channels available. Stereo audio signal input to the audio-in port of the sample and modulated as a FM signal for transition. 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, 913.00MHz
Number of channels	:	2 channels
Type of antenna	:	Integral antenna
FCC ID	:	REDSP2591 – 001T
Power supply	:	AC/DC adaptor input
Ports	:	Audio input 15V DC input
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 and standby

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 AC/DC Adaptor:

Model : TEAD-48-150600U
Input : AC 120V 60Hz 13W
Output : DC 15V / 650mA
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.

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4.5 Test set-up

Diagram 1 of Measurement Equipment Configuration for Testing Conducted Emission

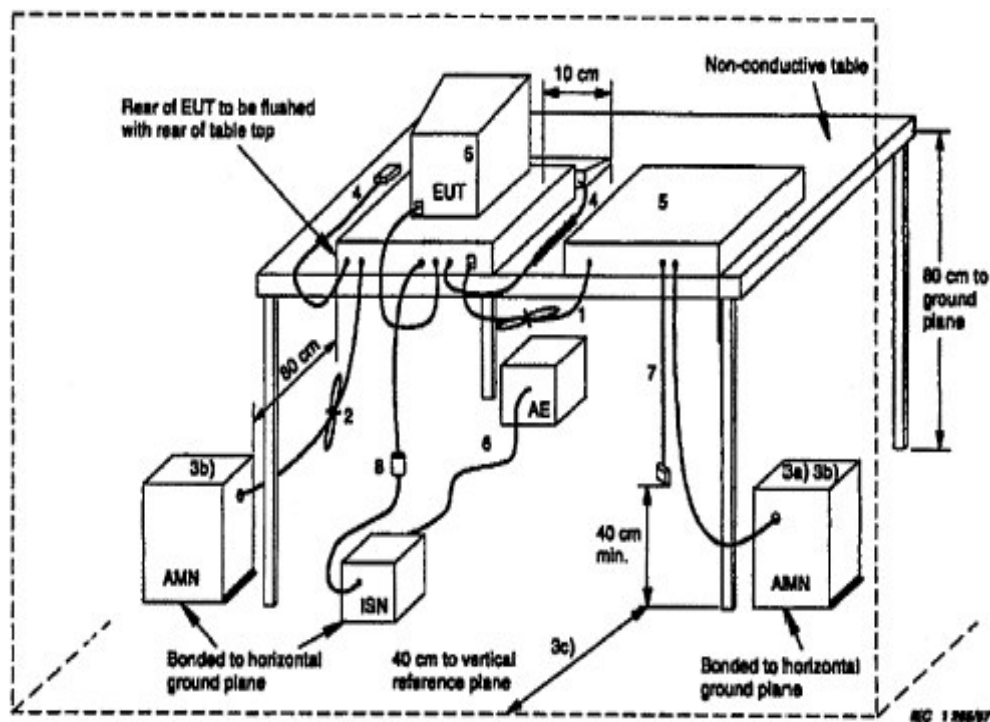
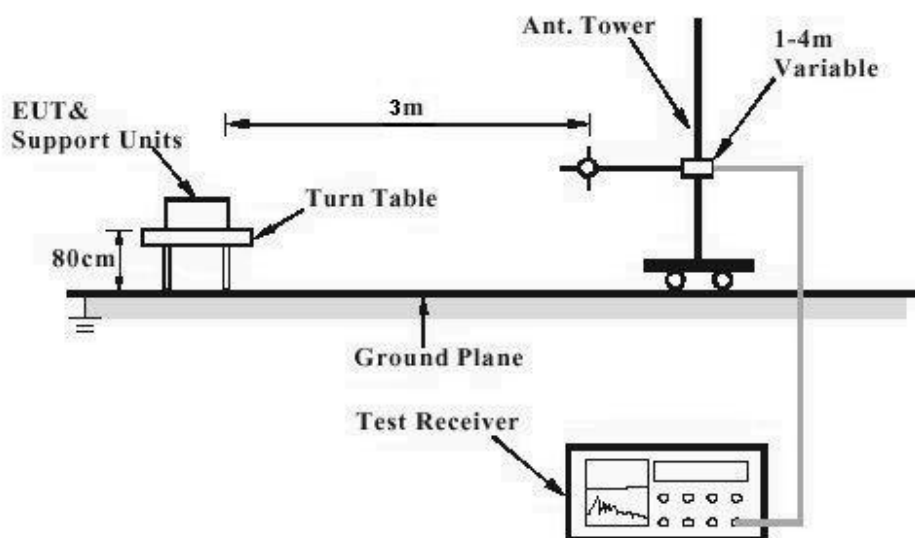


Diagram 2 of Measurement Equipment Configuration for Testing Radiated Emission



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Diagram 3 of Equipment Configuration for Testing Conducted Emission

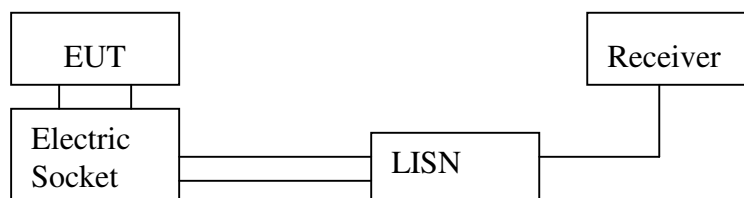
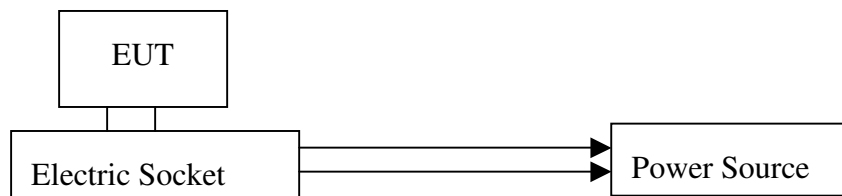


Diagram 4 of Equipment Configuration for Testing Radiated Emission



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5 Test Results EMISSION

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

RESULT:

ok

Date of testing : 29.07.2005
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 at channel 1
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 [dBμV]	AV [dBμV]	Quasi Peak Limit [dBμV]	Average Limit [dBμV]
0.162	L	44.3	15.4	65.4	55.4
0.150	N	44.0	15.2	66	56

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

RESULT:

ok

Date of testing : 29.07.2005
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 at channel 1
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]
---*				

*) 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:

ok

Date of testing : 29.07.2005
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 at channel 1
Temperature : 23°C
Humidity : 64%

Measurement was performed with unmodulated signal.

Polarization of the measurement for the larger power level: Vertical

Test conditions		Fundamental Frequency		2nd Harmonics	
		Channel 1 (912MHz)		Channel 1 (1824MHz)	
T _{nom} (22°C)	Unit	(dBμV/m)	(mV/m)	(dBμV/m)	(μV/m)
	Horizontal	89.8	30.90	44.4	166.0
	Vertical	89.8	30.90	38.9	90.0
limit		93.979	50	53.979	500

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.

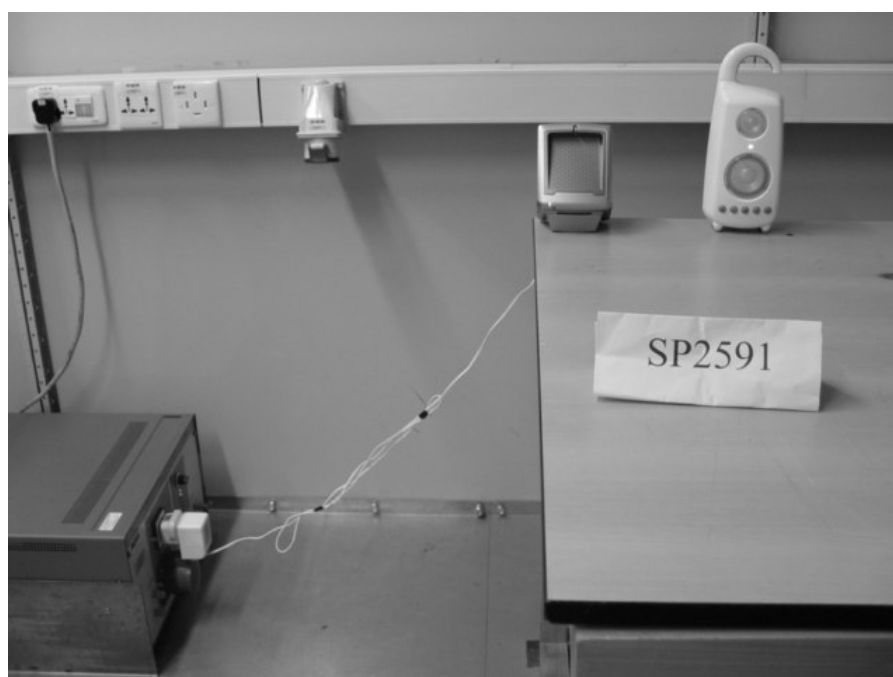
The spectral diagrams in appendix 1 display the measurement of un-weighted peak values.

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6 Photographs of the Test Set-Up

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



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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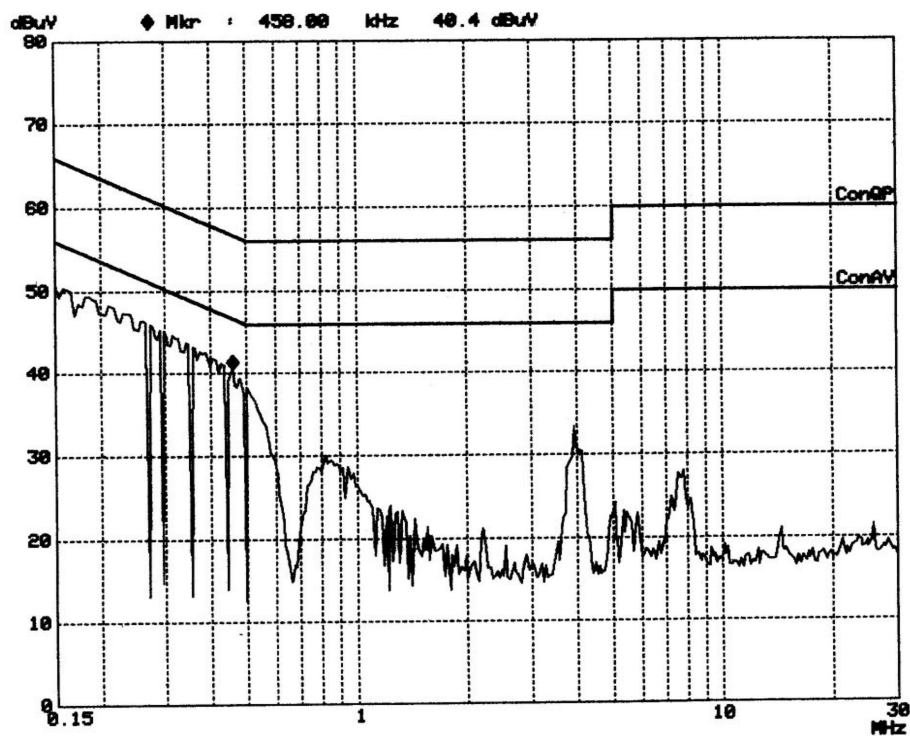
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Conducted Disturbance

EUT: M/N:SP2591
Op Cond: TX CH1
Test Spec: N
Comment: AC 120V/60Hz
Date: 29. Jul 05 09:04



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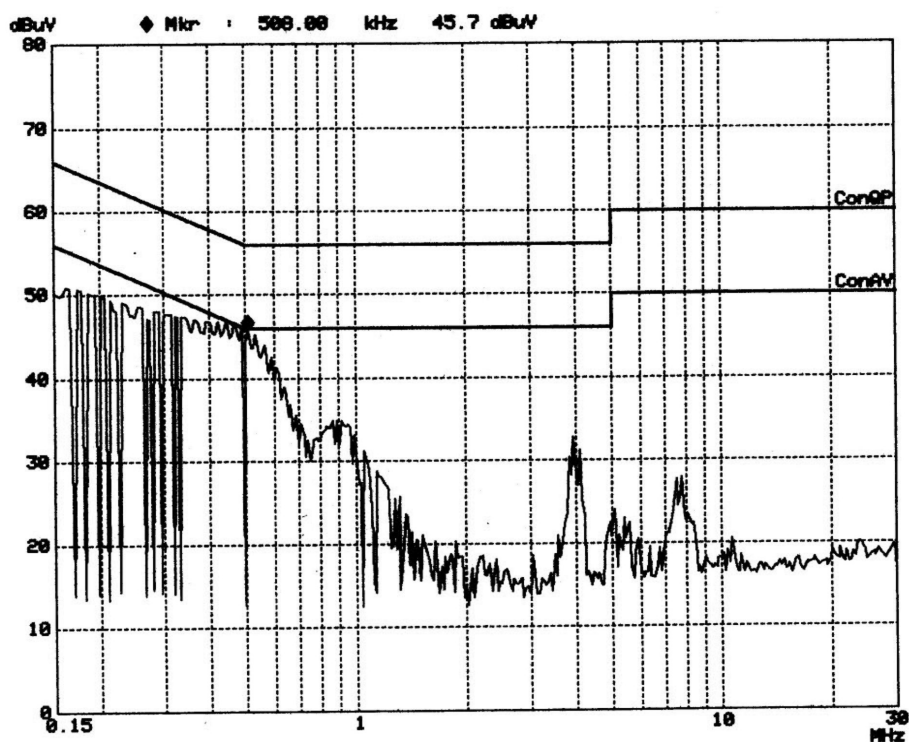
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Conducted Disturbance

EUT: M/N:SP2591
Op Cond: TX CH1
Test Spec: L
Comment: AC 120V/60Hz
Date: 29. Jul 05 08:50



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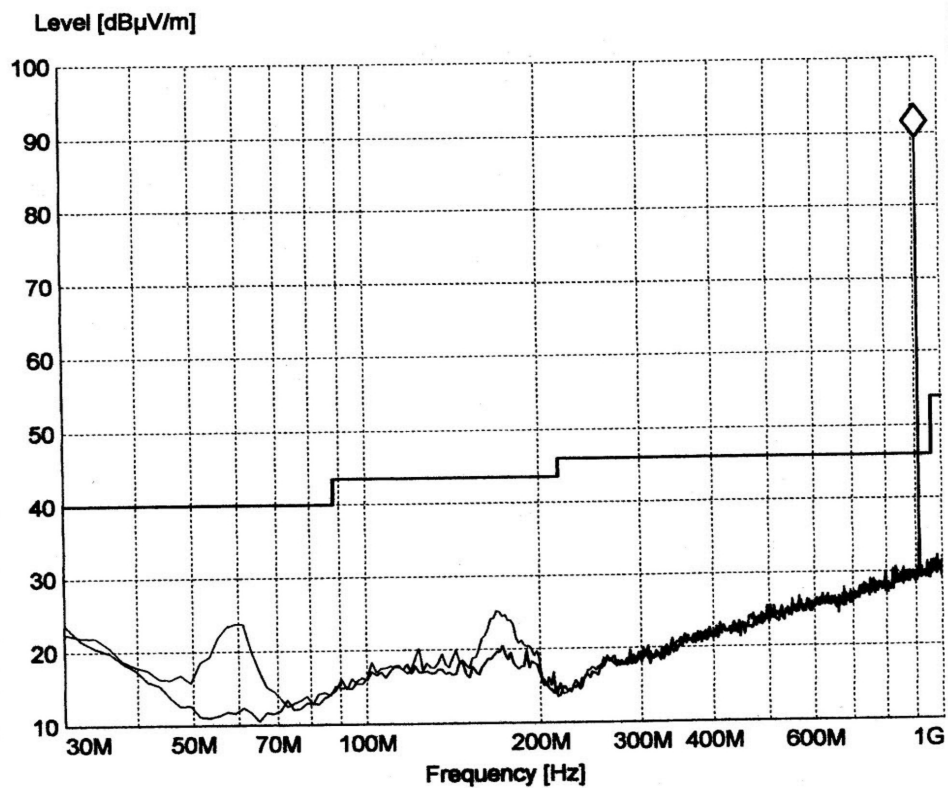
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Radiated Disturbance

EUT: M/N:SP2591
Manufacturer:
Operating Condition: TX(CH1)
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Horizontal & Vertical
Comment: AC 120V/60Hz
:

Marker: 912.52505 MHz 89.38 dB μ V/m



— MES SP2591 L T C1 Hor
— MES SP2591 L T C1 Ver
— LIM FCC ClassB F QP/AV FCC ClassB, field strength 3m

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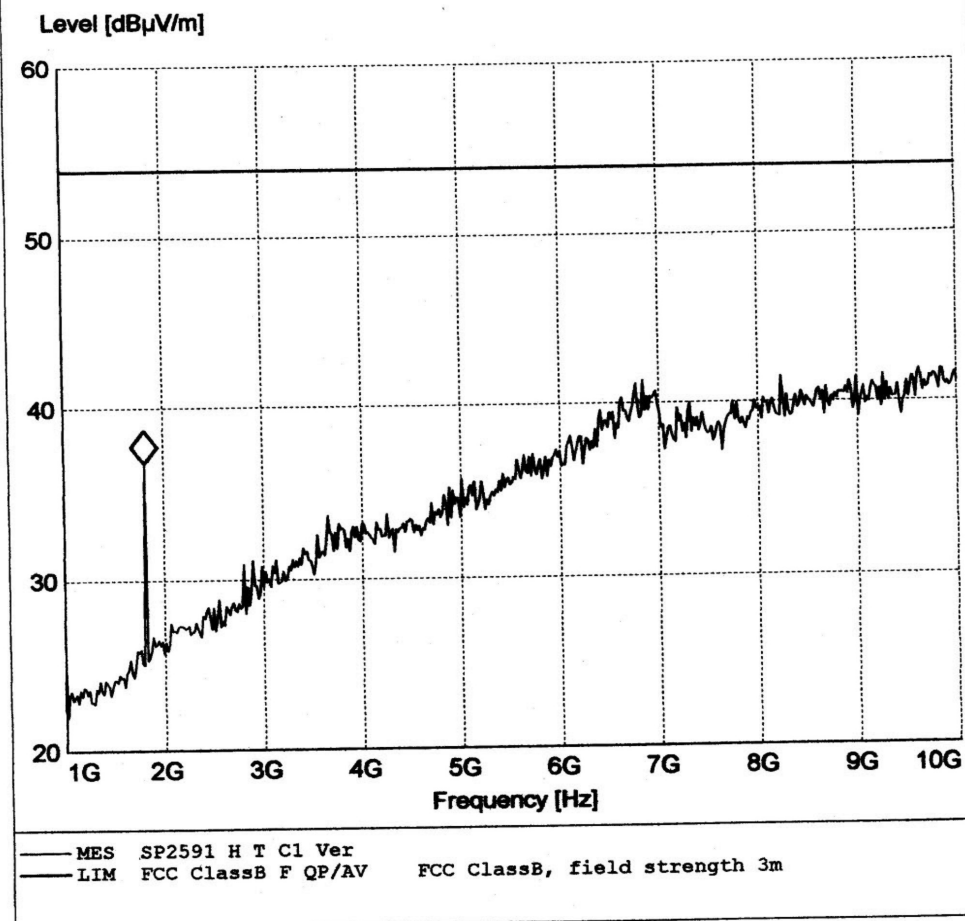
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Radiated Disturbance

EUT: M/N:SP2591
Manufacturer:
Operating Condition: TX(CH1)
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Vertical
Comment: AC 120V/60Hz
:

Marker: 1.811623246 GHz 36.84 dB μ V/m



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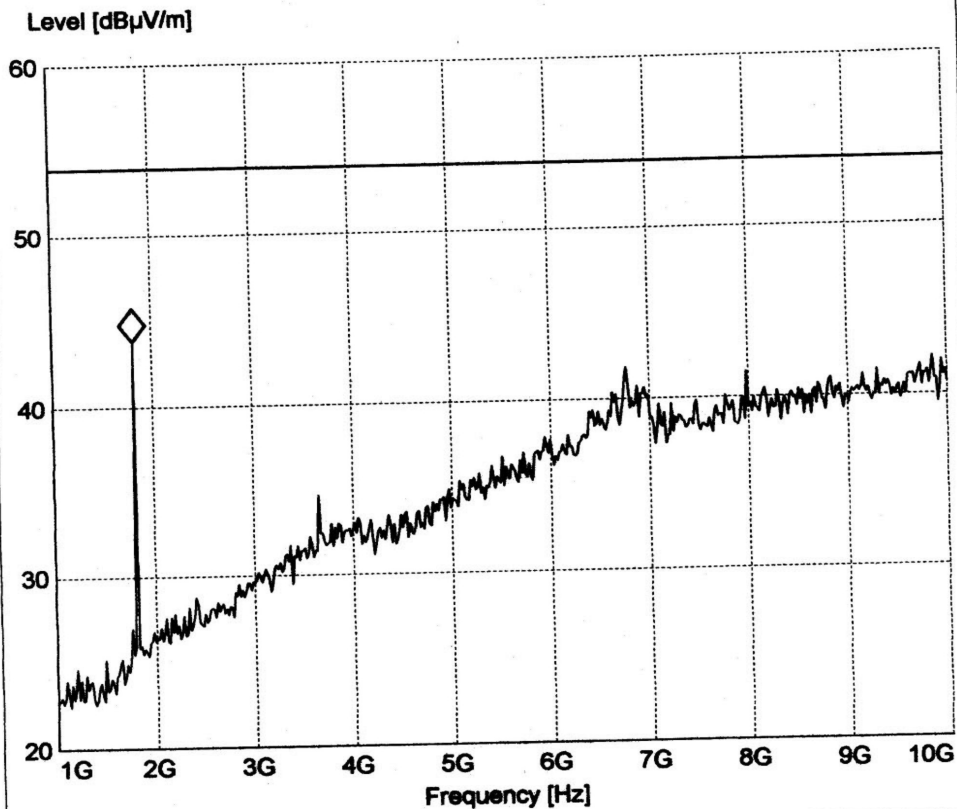
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Radiated Disturbance

EUT: M/N:SP2591
Manufacturer:
Operating Condition: TX(CH1)
Test Site: SMQ EMC Lab.SAC
Operator:
Test Specification: Horizontal
Comment: AC 120V/60Hz
:

Marker: 1.811623246 GHz 43.83 dB μ V/m



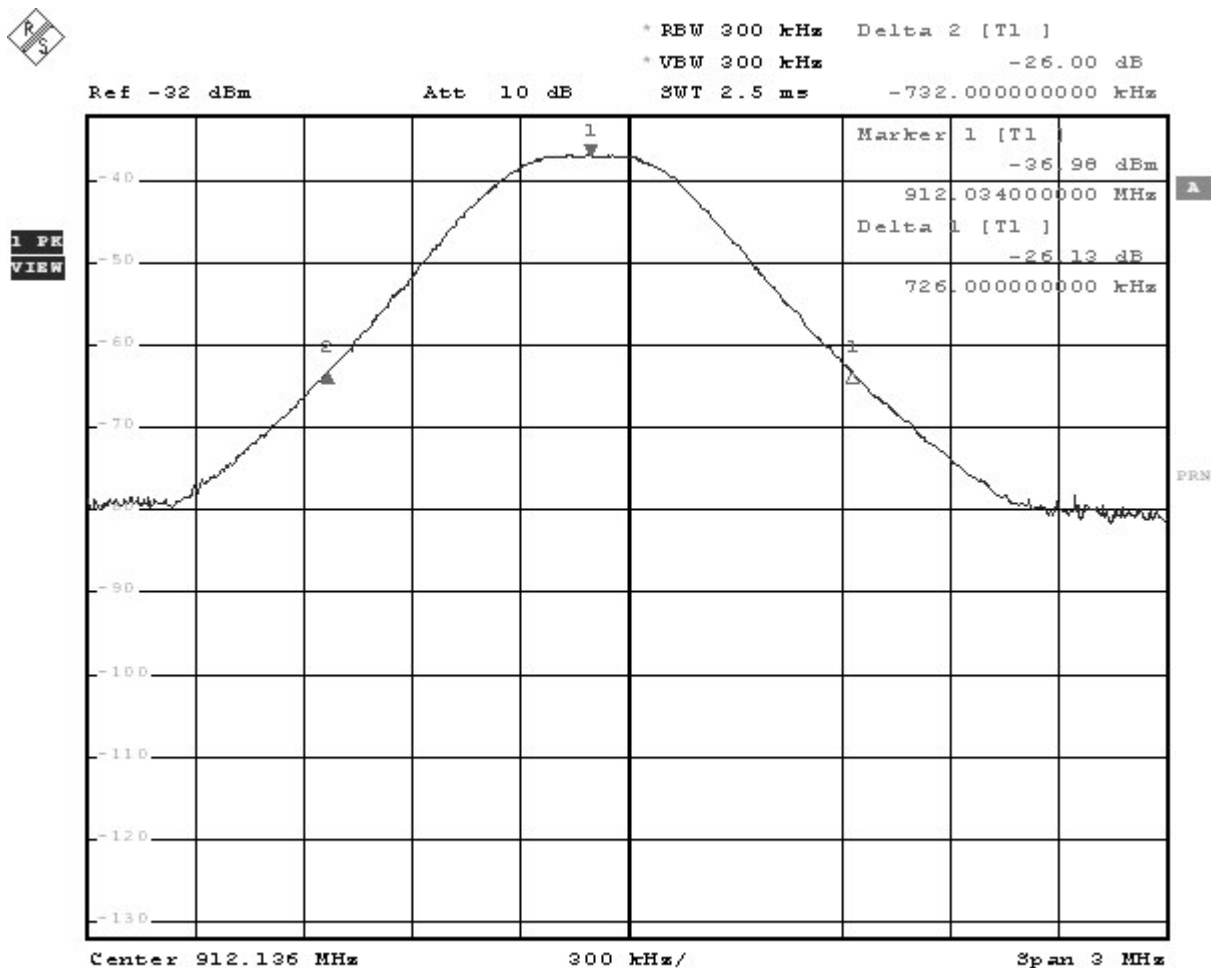
— MES SP2591 H T C1 Hor
— LIM FCC ClassB F QP/AV FCC ClassB, field strength 3m

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