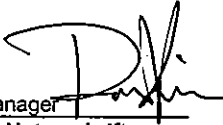
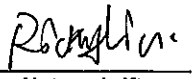


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Auftraggeber: <i>Client:</i>		Sam Ash Music Corporation 262 Duffy Avenue Hicksville NY, 11801 Unite States			
Gegenstand der Prüfung: Wireless Microphone Receiver <i>Test item:</i>					
Bezeichnung: <i>Identification:</i>		CR277	FCC ID: <i>FCC ID</i>	CCRCR277	
Wareneingangs-Nr.: <i>Receipt No.:</i>		173042019	Eingangsdatum: 22.12.2008 <i>Date of receipt:</i>		
Prüfart: <i>Testing location:</i>		TÜV Rheinland (Guangdong) Ltd. EMC Laboratory Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou 510650, 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 C63.4:2003 FCC Part 15: 20, Sep. 2007 Subpart B section 15.107, 15.109			
Prüfresultat: <i>Test Result:</i>		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test item passed the test specification(s).</i>			
Prüflaboratorium: <i>Testing Laboratory:</i>		TÜV Rheinland (Guangdong) Ltd.			
geprüft/ tested by:		kontrolliert/ reviewed by:			
18. Feb. 2009 <i>Date</i>		 <i>Signature</i>		19. Feb. 2009 <i>Date</i>	
Liangdong Xie/Project Manager <i>Name/Position</i>		Ricky Liu/Project Manager <i>Name/Position</i>		 <i>Signature</i>	
Sonstiges/ Other Aspects:					
Abkürzungen:		Abbreviations:			
P(ass) = entspricht Prüfgrundlage		P(ass) = passed			
F(ail) = entspricht nicht Prüfgrundlage		F(ail) = failed			
N/A = nicht anwendbar		N/A = not applicable			
N/T = nicht getestet		N/T = 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. <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: Pass

5.2 RADIATED EMISSION FOR FCC PART 15 PER SECTION 15.109(A)

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

No appendix attached in this report.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory

Guangzhou Auto Market, Yuan Gang Section of Guangshan Road
Guangzhou 510650

P. R. China

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Type	Manufacturer	S/N	Calibrated until	Calibrated Interval
EMI Test Receiver	ESCI-3	Rohde & Schwarz	100216	24.Nov.2009	1 year
Spectrum Analyzer	FSP30	Rohde & Schwarz	100286	27.Aug.2009	1 year
Trilog-Broadband Antenna	VULB9168	SCHWARZBECK MESS-ELEKTRONIK	210	08.May.2009	2 year
Double-Ridged Waveguide Horn Antenna	HF906	Rohde & Schwarz	100385	18.Jul.2009	2 year
Double-Ridged Waveguide Horn Antenna	HF906	Rohde & Schwarz	100407	08.May.2009	2 year
Pre-amplifier	AFS42- 00101800- 25-S-42	MITEQ	1101599	31.Jul.2009	2 year
Band Reject Filter	BRM50702	Micro-Tronics	023	15.Feb.2010	2 year
Standard Gain Horn Antenna	3160-09	EMCO	21642	N/A	2 year
Standard Gain Horn Antenna	3160-09	EMCO	21645	N/A	2 year
Pre-amplifier	AFS33- 18002650- 30-8P-44	MITEQ	1108282	31.Jul.2009	2 year
3m Anechoic Chamber	N/A	Albatross Project GmbH	N/A	16.Apr.2010	2 year
EMI Test Receiver	ESCS30	Rohde & Schwarz	100316	27.Mar.2009	1 year
Two-Line V-Network	ESH3-Z5	Rohde & Schwarz	100308	27.Mar.2009	1 year
Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100701	01.Mar.2009	1 year

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

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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.

2.5 Measurement Uncertainty

Uncertainty for conducted emissions measurements is ± 2.51 dB.

Uncertainty for radiated emissions measurements is ± 4.9 dB (30MHz-1GHz), ± 4.84 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

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory; Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou 510650, P. R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements, the register no. 833845

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3 General Product Information

The submitted sample CR277 is wireless microphones receiver operating within the frequency range of 642.375 MHz to 645.750 MHz.

3.1 Product Function and Intended Use

For details, refer to User Manual.

3.2 Ratings and System Details

Frequency range	:	642.375 MHz - 645.750 MHz.
Type of antenna	:	Integral
FCC ID:		CCRCR277
Power supply	:	DC 15V, 350mA Power by external AC/DC adaptor
Ports	:	DC input, audio output
Protection Class	:	III

Refer to the technical document and user manual for further information.

3.3 Independent Operation Modes

The basic operation modes are:

Receiving at a fixed frequency within the band 642.375 MHz to 645.750 MHz and not being changed by end user.

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 linear AC/DC adaptor:

Adaptor:

Input : AC 120V, 60Hz
Output : DC 15V / 400mA
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 Configuration for Testing Radiated Emission below 1 GHz

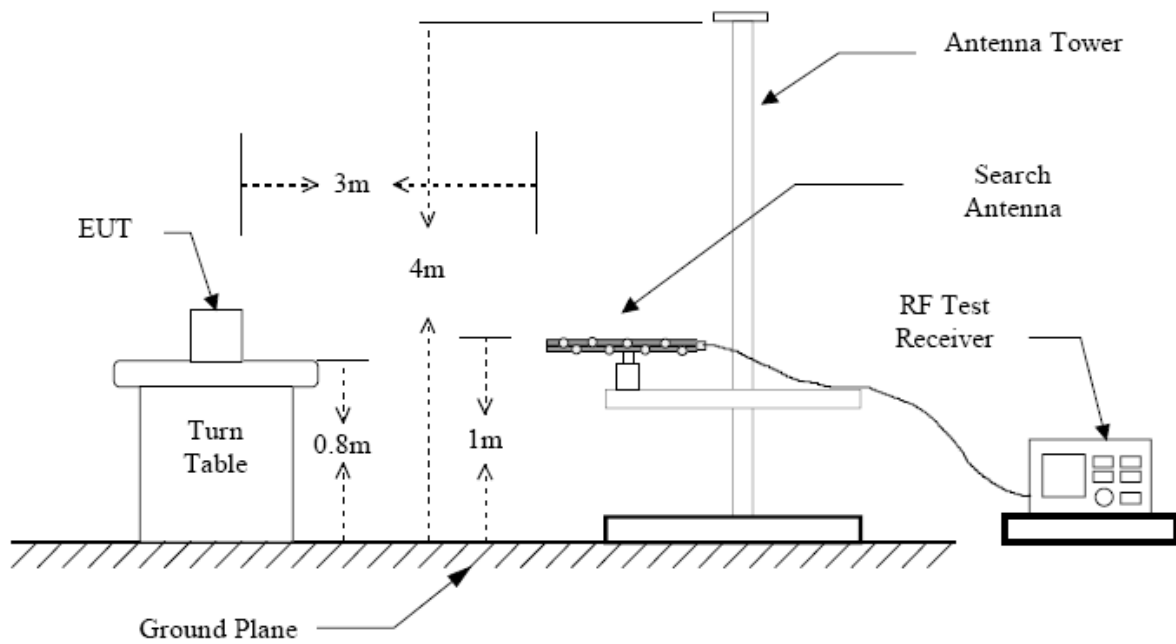


Diagram 2 of Configuration for Testing Radiated Emission above 1 GHz

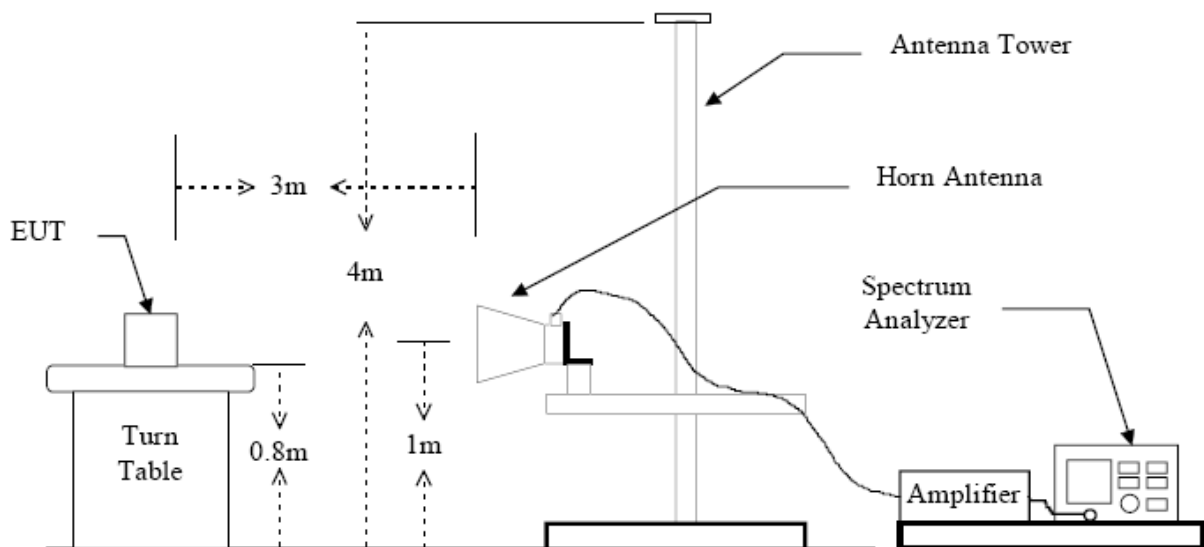
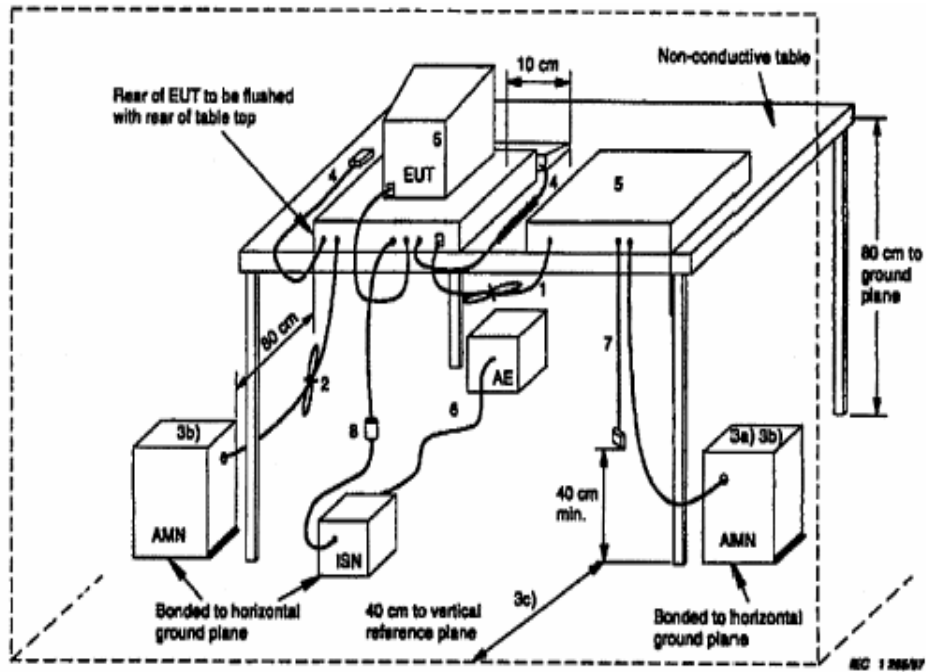


Diagram 3 of Equipment Configuration for Testing Conducted Emission



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5 Test Results EMISSION

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

RESULT:

Pass

Date of testing : 05.Jan.2009
Test specification : FCC Part 15 Per Section 15.107(a)
Limits : FCC Part 15 Per Section 15.107(a)
Test procedure : Procedure specified in ANSI C63.4 were followed

Deviations from Standard Test procedures

: None
Kind of test site : Shielded room
Operation mode : Receiving (powered by linear AC/DC adaptor)
Temperature : 22°C
Humidity : 50%

Test procedure:

1. Place the EUT as specified in ANSI C63.4 Clause 7.2.1
2. Plug the LISN to a correct power source (pay attention to: AC/DC, voltage, frequency).
4. Connect the EUT to LISN and choose N or L1 on the LISN.
5. Connect ESCS30 and LISN via a 50-ohm coaxial cable and a pulse limiter then begin exploratory measurement as specified in ANSI C63.4 Clause 7.2.3
6. Make final measurement as specified in ANSI C63.4 Clause 7.2.4
7. Switch to the other line on the LISN and repeat step 4 to 6.

If the result of the measurement with the Quasi Peak detector is below the Average limit, the measurement with Average Detector may be omitted.

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

*) Disturbances other than those mentioned below are small or not detectable.

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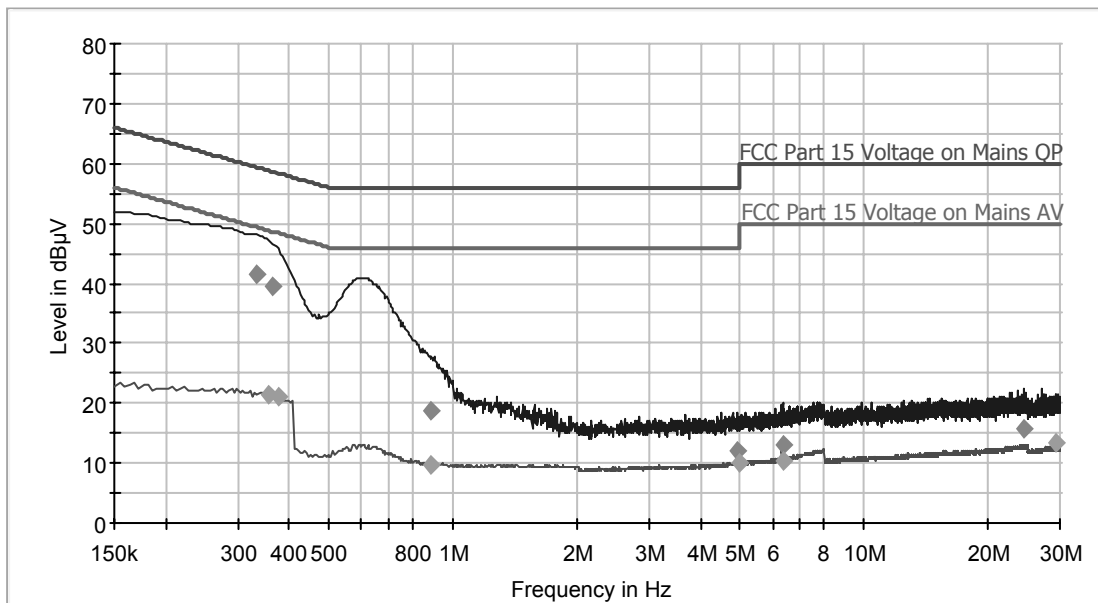
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Test Information

EUT Name: Wireless Receiver
Model/Type: CR277
Operating Conditions: Receiving
Comment: AC 120V 60Hz; L1

Hardware Setup: 1phase LISN ESH3-Z5 to ESCS30
Level Unit: dB μ V

Subrange	Detectors	IF Bandwidth	Step Size	Meas. Time	Receiver
150kHz - 30MHz	Peak; Average	9kHz	4.5kHz	10ms	ESCS 30



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Table 2: Disturbance Voltage on AC Mains (L line)

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.334500	41.4	1000.000	9.000	L1
0.366000	39.5	1000.000	9.000	L1
0.888000	18.6	1000.000	9.000	L1
4.906500	12.2	1000.000	9.000	L1
6.360000	13.0	1000.000	9.000	L1
24.382500	15.7	1000.000	9.000	L1

(continuation of the "Final Measurement Detector 1" table from column 6 ...)

Frequency (MHz)	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.334500	10.1	18.0	59.3	
0.366000	10.2	19.1	58.6	
0.888000	10.2	37.4	56.0	
4.906500	10.5	43.8	56.0	
6.360000	10.5	47.0	60.0	
24.382500	11.8	44.3	60.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.357000	21.5	1000.000	9.000	L1
0.375000	21.1	1000.000	9.000	L1
0.883500	9.8	1000.000	9.000	L1
4.974000	10.1	1000.000	9.000	L1
6.360000	10.3	1000.000	9.000	L1
29.463000	13.3	1000.000	9.000	L1

(continuation of the "Final Measurement Detector 2" table from column 6 ...)

Frequency (MHz)	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.357000	10.2	27.3	48.8	
0.375000	10.1	27.3	48.4	
0.883500	10.2	36.2	46.0	
4.974000	10.5	35.9	46.0	
6.360000	10.5	39.7	50.0	
29.463000	11.9	36.7	50.0	

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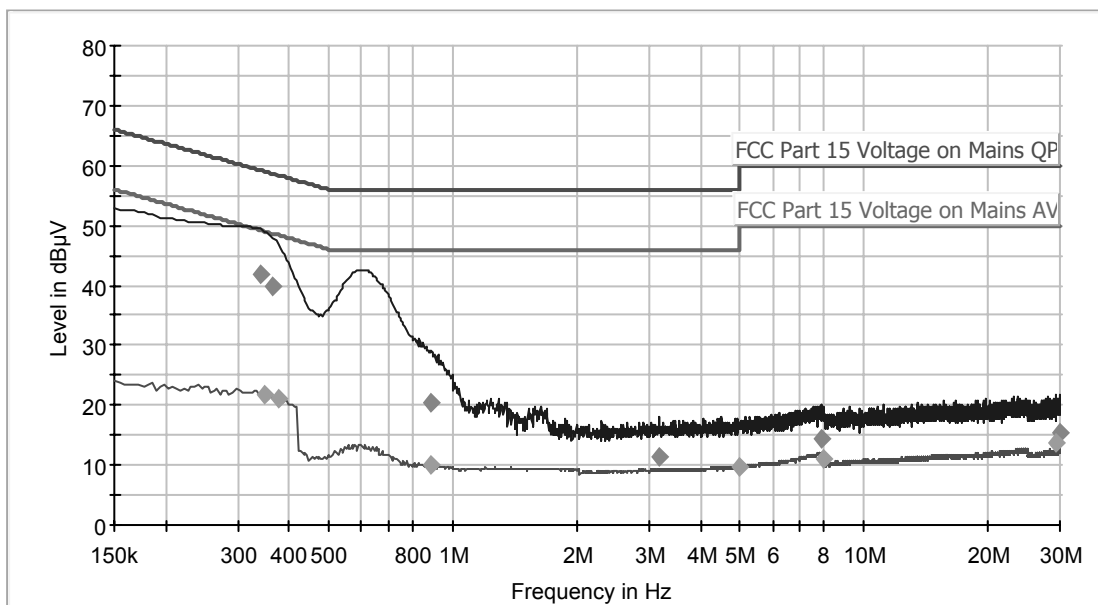
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Test Information

EUT Name: Wireless Receiver
Model/Type: CR277
Operating Conditions: Receiving
Comment: AC 120V 60Hz; N

Hardware Setup: 1phase LISN ESH3-Z5 to ESCS30
Level Unit: dB μ V

Subrange	Detectors	IF Bandwidth	Step Size	Meas. Time	Receiver
150kHz - 30MHz	Peak; Average	9kHz	4.5kHz	10ms	ESCS 30



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Table 3: Disturbance Voltage on AC Mains (N line)

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.339000	41.8	1000.000	9.000	N
0.366000	39.8	1000.000	9.000	N
0.888000	20.3	1000.000	9.000	N
3.178500	11.4	1000.000	9.000	N
7.849500	14.3	1000.000	9.000	N
29.994000	15.5	1000.000	9.000	N

(continuation of the "Final Measurement Detector 1" table from column 6 ...)

Frequency (MHz)	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.339000	10.1	17.5	59.2	
0.366000	10.1	18.8	58.6	
0.888000	10.1	35.7	56.0	
3.178500	10.3	44.6	56.0	
7.849500	10.5	45.7	60.0	
29.994000	11.5	44.5	60.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.348000	21.9	1000.000	9.000	N
0.375000	21.1	1000.000	9.000	N
0.879000	10.0	1000.000	9.000	N
4.983000	9.9	1000.000	9.000	N
8.002500	11.0	1000.000	9.000	N
29.449500	13.6	1000.000	9.000	N

(continuation of the "Final Measurement Detector 2" table from column 6 ...)

Frequency (MHz)	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.348000	10.1	27.1	49.0	
0.375000	10.1	27.3	48.4	
0.879000	10.1	36.0	46.0	
4.983000	10.3	36.1	46.0	
8.002500	10.5	39.0	50.0	
29.449500	11.5	36.4	50.0	

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

RESULT:

Pass

Date of testing	:	06.Jan.2009
Test specification	:	FCC Part 15 Per Section 15.109(a)
Limits	:	FCC Part 15 Per Section 15.109(a)
Test procedure	:	Procedure specified in ANSI C63.4 were followed
Deviations from Standard Test procedures	:	None
Kind of test site	:	3m Semi-anechoic chamber
Operation mode	:	Receiving at high and low channels
Temperature	:	22°C
Humidity	:	50%

Test procedure:

1. The EUT was turned on and placed on the top of a rotatable table 0.8 meters above the ground with 3-orthogonal XYZ direction and be kept close enough to the measurement receiving antenna (especially for the measurement frequency range above 1 GHz). The table was then rotated 360 degrees to detect the suspected emission frequency points. The position of the worst radiation case with both horizontal and vertical receiving antenna polarization was then recorded together with the suspected emission frequency points above-mentioned.
2. The EUT was then set 3 meters away from the receiving antenna, which was mounted on a variable-height antenna tower.
3. For each suspected emission frequency point recorded in step 1, the EUT was arranged to its worst case that the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to read the maximum emission.

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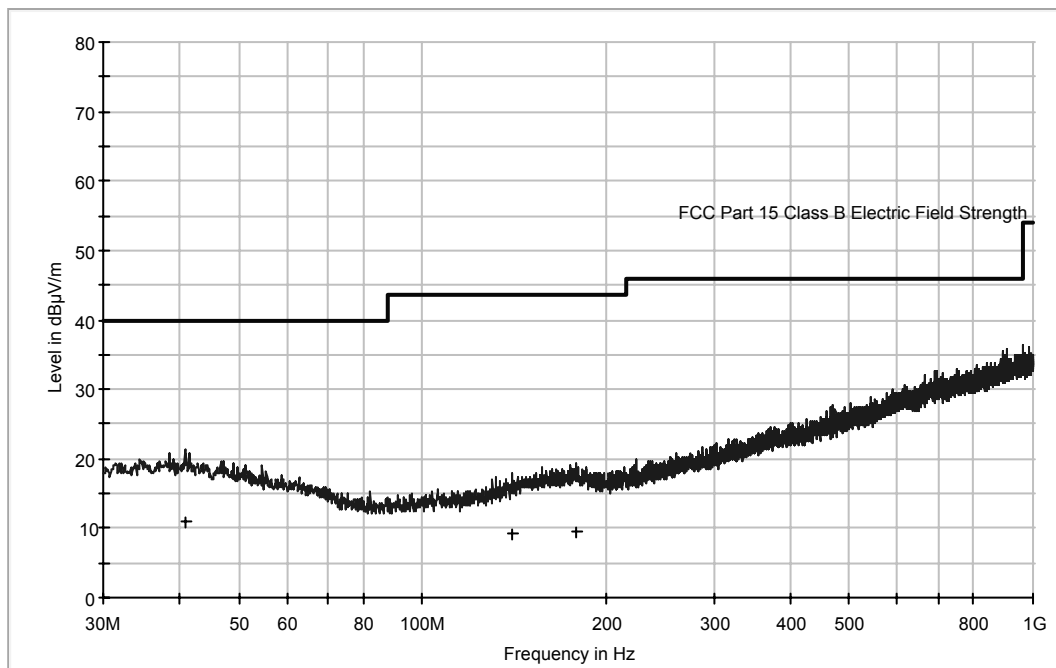
Remark: spurious emission test were performed on two samples with high and low channels individually. As the emission have the similar level at high and low channel, the result of high channel was attached in the following pages.

Test Information

Manufacturer Name: Sekaku
EUT Name: Wireless Receiver
Model Number: CR277
Operating Conditions: RX
Comment: AC 120V 60Hz; Horizontal

Subrange 1

Frequency Range: 30MHz - 1GHz
Receiver: TUV ESCI 3
Transducer: TUV SAC UVLB 9168 / TUV ESCI3 -TUV SAC UVLB 9168



Limit and Margin

Frequency (MHz)	QuasiPeak (dB µ V/m)	Corr. (dB)	Margin (dB)	Limit (dB µ V/m)	Polarity
40.800000	10.9	14.3	29.1	40.0	H
140.200000	9.3	11.5	34.2	43.5	H
178.050000	9.5	13.5	34.0	43.5	H

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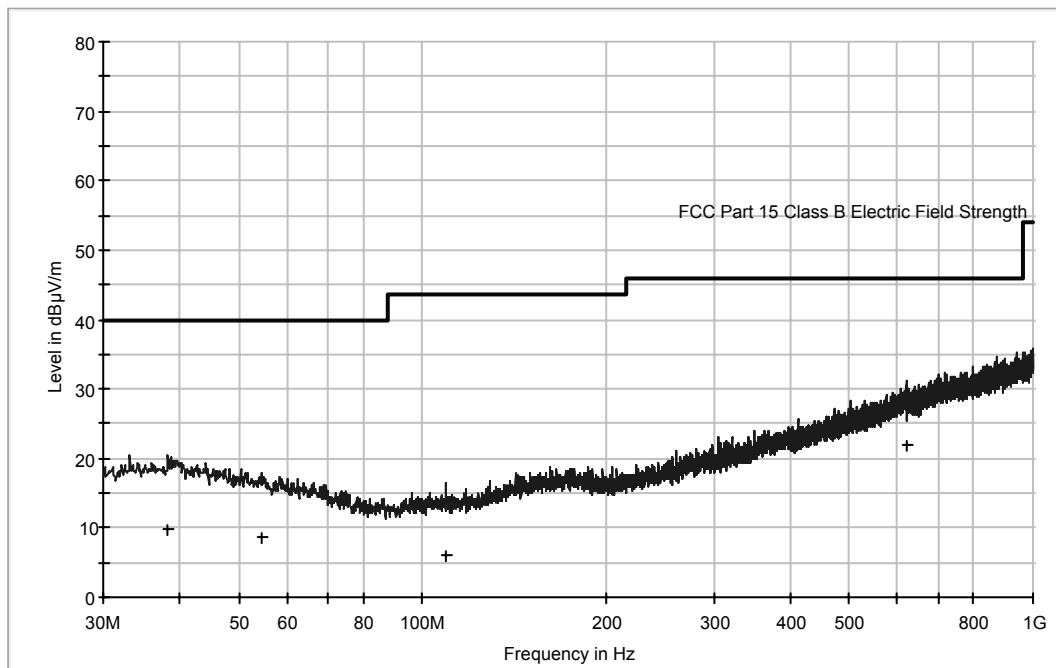
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Test Information

Manufacturer Name: Sekaku
 EUT Name: Wireless Receiver
 Model Number: CR277
 Operating Conditions: RX
 Comment: AC 120V 60Hz; Vertical

Subrange 1

Frequency Range: 30MHz - 1GHz
 Receiver: TUV ESCI 3
 Transducer: TUV SAC UVLB 9168 / TUV ESCI3 -TUV SAC UVLB 9168



Limit and Margin

Frequency (MHz)	QuasiPeak (dB µ V/m)	Corr. (dB)	Margin (dB)	Limit (dB µ V/m)	Polarity
38.250000	10.0	14.4	30.0	40.0	V
54.500000	8.7	12.1	31.3	40.0	V
109.050000	6.0	9.7	37.5	43.5	V
621.200000	22.1	24.5	23.9	46.0	V

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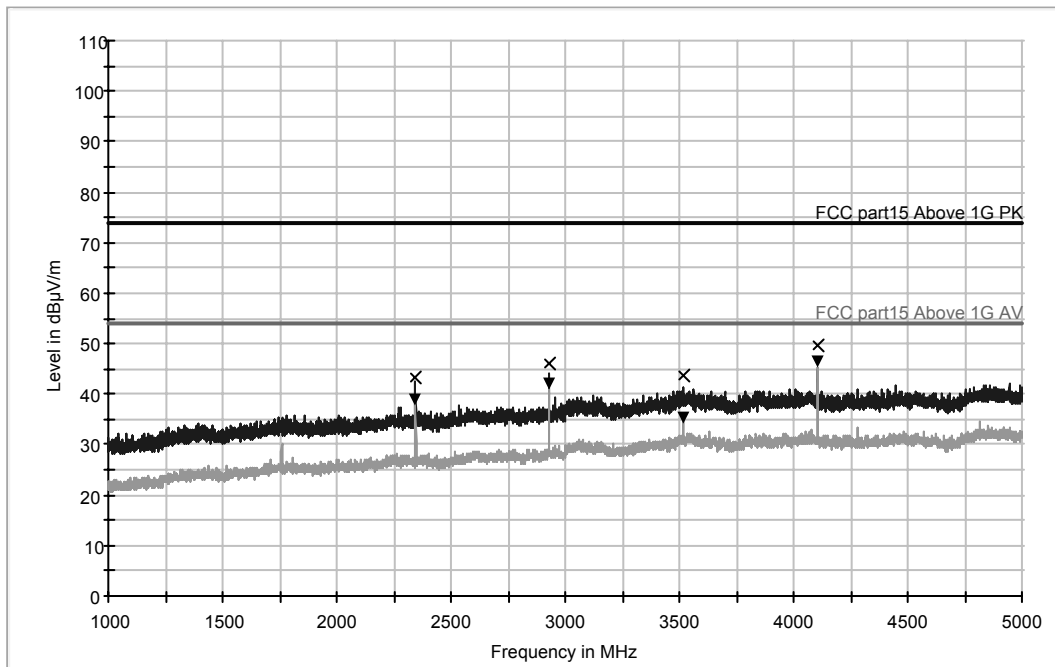
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Test Information

Manufacturer Name: Sekaku
 EUT Name: Wireless Receiver
 Model Number: CR277
 Operating Conditions: RX
 Comment: AC 120V 60Hz; Horizontal

Subrange 1

Frequency Range: 1GHz - 5GHz
 Receiver: TUV FSP 30
 Transducer: TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Limit and Margin PK

Frequency (MHz)	MaxPeak (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
2345.500000	43.3	30.7	74.0	H	-12.0
2931.800000	46.1	27.9	74.0	H	-10.4
3518.000000	43.6	30.4	74.0	H	-8.2
4104.600000	49.8	24.2	74.0	H	-7.8

Limit and Margin AV

Frequency (MHz)	Average (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
2345.500000	39.1	14.9	54.0	H	-12.0
2931.800000	42.0	12.0	54.0	H	-10.4
3518.000000	35.2	18.8	54.0	H	-8.2
4104.600000	46.3	7.7	54.0	H	-7.8

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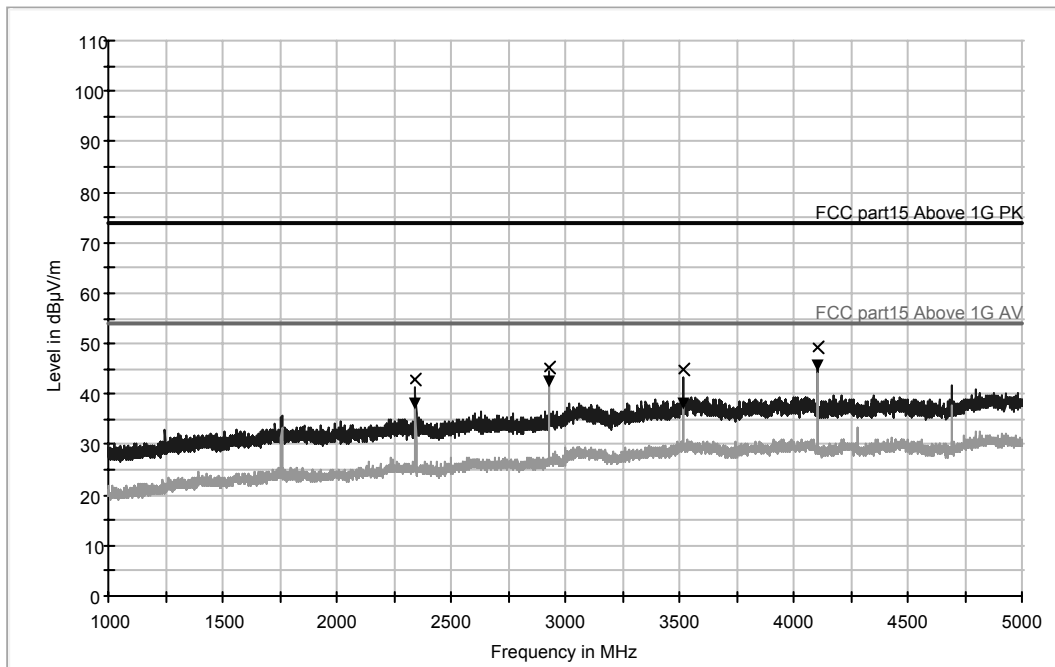
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Test Information

Manufacturer Name: Sekaku
EUT Name: Wireless Receiver
Model Number: CR277
Operating Conditions: RX
Comment: AC 120V 60Hz; Vertical

Subrange 1

Frequency Range: 1GHz - 5GHz
Receiver: TUV FSP 30
Transducer: TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Limit and Margin PK

Frequency (MHz)	MaxPeak (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
2345.500000	42.8	31.2	74.0	V	-12.0
2932.000000	45.4	28.6	74.0	V	-10.4
3518.000000	44.7	29.3	74.0	V	-8.2
4104.500000	49.1	24.9	74.0	V	-7.8

Limit and Margin AV

Frequency (MHz)	Average (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
2345.500000	38.3	15.7	54.0	V	-12.0
2932.000000	42.3	11.7	54.0	V	-10.4
3518.000000	38.2	15.8	54.0	V	-8.2
4104.500000	45.6	8.4	54.0	V	-7.8

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Disturbances other than those mentioned above are far below the limit or not detectable.

The final measurement for frequencies below 1000MHz is performed with Quasi Peak detector; the final measurement for frequencies above 1000MHz is performed with Average and Peak detector.

The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz at frequency below 1GHz.

The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz at frequency above 1GHz.

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6 Photographs of the Test Set-Up

Photograph 1: Set up for Conducted Emission on AC Mains

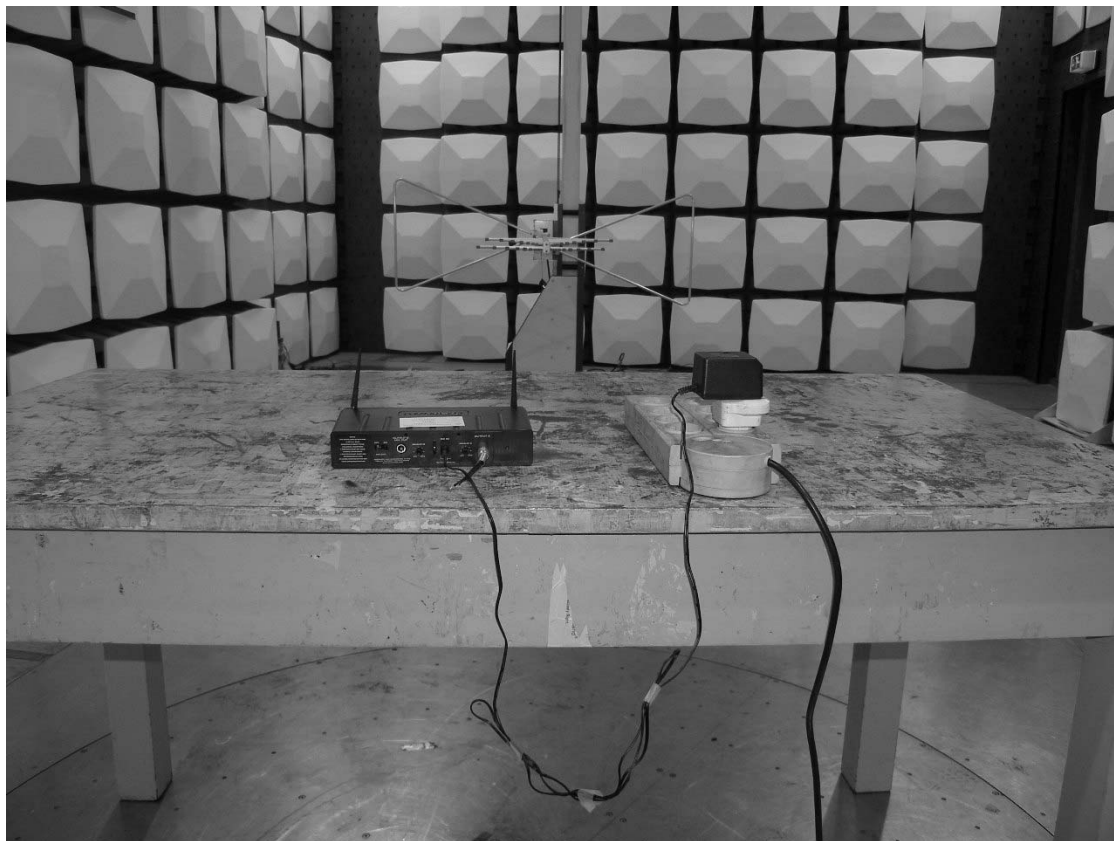


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Photograph 2: Set-up for Radiation Measurement Below 1GHz

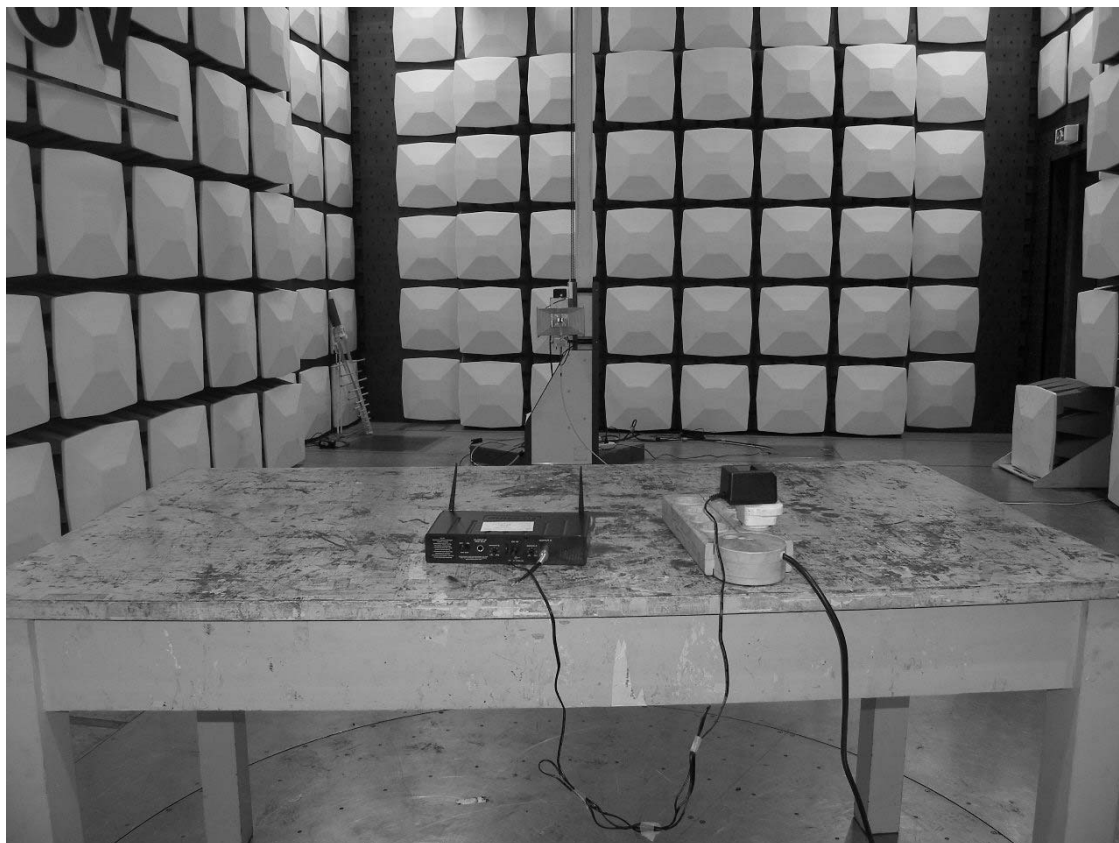


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Photograph 3: Set-up for Radiation Measurement Above 1GHz



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