

EXHIBIT B

Test Report

Report No.	S0715597
Specifications Test Method	FCC Part 15 - Notification ANSI C63.4 1992
Applicant address	23, Lane 2, Jing Wu Road, Taichung, R.O.C.
Applicant Items tested Model No.	Sekaku Electron Industry Co., Ltd. WIRELESS MICROPHONE RECEIVER WR-221DR
Results Sample received date	As detailed within this report 05 / 18 /1998 (month / day / year)
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Modifications	None
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★ FCC ID : H38WR-221DR

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Chapter 1 Introduction

Description of EUT :

These products are professionally designed wireless microphone and receiver system made-up of diverse circuit. It can receive frequency range from 174 MHz to 216 MHz. This microphone is a one channel and worn by a performer and other participants in a program, filming , reportingetc.

Connection of EUT :

- (1)Connect the EUT's audio output to guitar amplifier by an audio cable .
- (2)Plug the adapter into the EUT.
- (3)Pull out the antenna vertically .

Test method :

There are three EUTs tested which are operated at 174.1, 194.6 and 214.82 MHz separately. Turn on the receiver and the speaker . There is a signal generator connected with a field probe , which can transmit the receiving frequency , put near the EUT . The test data also showed three EUT's emission .

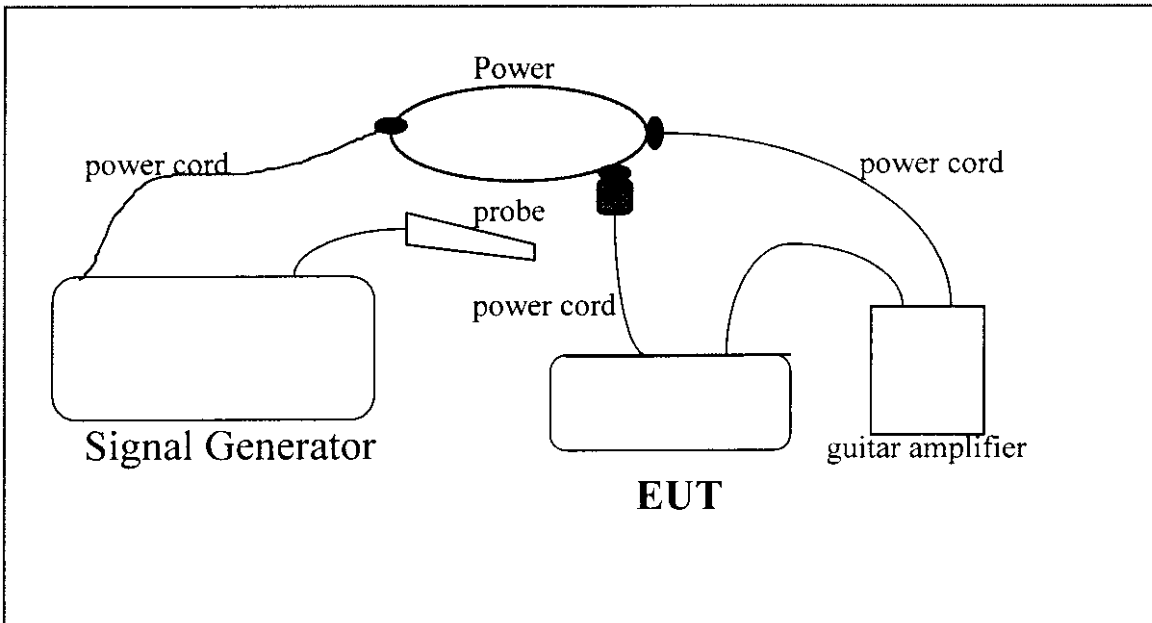
(If the emission is close to the ambience, the resolution BW and view resolution will be reduced and the data will be recorded by detection of maximum hold peak mode.)

Statement of transition provision for compliance with the rules

The EUT receives the signal which only send from the wireless microphone. The EUT won't be influenced by the transition provision , it will be continue to comply with the regulations of the FCC Part 15 . (The relative wireless microphone FCC ID :H38VXM-198TS).

The testing configuration of test setup is showing in the next page.

Configuration of test setup



Connections :

- * The Adapter 120Vac/15Vdc,400 mA, 190 cm long, non-shielded.
- * The Audio cable dual head 6.3Ø, 126 cm, non-shielded.

List of support equipment

Conducted (Radiated) test :

Guitar Amplifier : Dragon (KIKUTANI MUSIC COL,LTD.)

Model No. : GA-10 (RMS-100)
Power type : 110vac 60Hz
Power code : Non-shield , 1.2m long

Field Probe : HP Field Probe 30MHz~1GHz

Model No. : HP11940A
Serial No. : 2650A03038

Signal Generator : HP 9KHz~4000MHz

Model No. : 8648D
Serial No. : 3613A00117
Power type : 110vac 60Hz
Power cord : Non - Shielded

Chapter 2 Conducted emission test

Test condition and set up :

All the equipment is placed and setup according to the ANSI C63.4 - 1992 . The EUT is assembled on a wooden table which is 80 cm high , is placed 40 cm from the back-wall which is a vertical conducting plane . One LISN is for EUT ,the other LISN is for support equipment. They are all placed on the conductive ground .The EUT's LISN is connected to a line switch box for selecting L1 or L2 ,then connect to a preamplifier and spectrum.

The spectrum scans from 450KHz to 30MHz . Conducted emission levels are detected at max. peak mode . But if the max. peak mode failed ,it will be measured by CISPR's quasi-peak detection mode .

While testing, there is a worst-emission plot printed at peak detection mode ,and there are more than 6 highest emissions relative to limit recorded. The plot is kept as the original data, not included in test report .

List of test Instrument :

Instrument Name	Model No.	Brand	Serial No.	Calibration Date	
				Last time	Next time
Spectrum analyzer	8591EM	H P	3619A00821	08/29/97	08/29/98
LISN (EUT)	3825/2	EMCO	9411-2284	05/15/98	05/15/99
LISN (Support E.)	3825/2	EMCO	9210-2007	05/15/98	05/15/99
Preamplifier	8447F	H P	2944A03706	05/13/98	05/15/99
Line switch box	AC1-003	TRC	-----	05/15/98	05/15/99
Line selector	AC1-002	TRC	-----	05/15/98	05/15/99

The level of confidence of 95% ,the uncertainty of measurement of conducted emission is ± 2.4 dB .

Test Result : Pass (Appendix A)

Chapter 3 Radiated emission test

Test condition and set up :

Pretest : Prior to the final test (OATS test), the EUT is placed in a shielded enclosure, GTEM, and scan from 30MHz to 1GHz. This is done to ensure the radiation exactly emits from the EUT.

Final test : Final radiation measurements is made on a **3 - meter**, open-field test site. The EUT is placed on a nonconductive table which is 0.8 m height, the top surface is 1.0 x 1.5 meter. All the placement is according to ANSI C63.4 - 1992.

The spectrum is examined from 30 MHz to 1000 MHz measured by HP spectrum.

The EMCO whole range Antenna is used to measure frequency from 30 MHz to 1GHz. The final test is used the spectrum HP 8594EM .

Measure more than six top marked frequencies generated from pretest by computer step by step at each frequency . The EUT is rotated 360 degrees, and antenna is raised and lowered from 1 to 4 meter to find the maximum emission levels. The antenna is used with both horizontal and vertical polarization.

Appropriated preamplifier which is made by TRC is used for improving sensitivity and precautions is taken to avoid overloading .The spectrum analyzer's 6dB bandwidth is set to 120 K Hz , and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambience ,the data will be rechecked by the tester and the corrected data will be written in the test data sheet. If the emission is just within the ambience ,the data from GTEM will be taken as the final data.

List of test Instrument :

Instrument name	Model No.	Brand	Serial No.	<u>Calibration Date</u>	
				Last	Next
Spectrum analyzer	8568B	H P	3004A18617	05/15/98	05/15/99
Quasi-peak Adapter	85650A	H P	2521A00984	05/15/98	05/15/99
RF Pre-selector	85685A	H P	2947A01011	05/15/98	05/15/99
Spectrum analyzer	8594EM	H P	3619A00198	08/07/97	08/07/98
Antenna(30M-2G Hz)	3142	EMCO	9610-1094	10/30/97	10/30/98
Open test side (Antenna ,Amplify, cable calibrated together)				05/15/98	05/15/99

The level of confidence of 95% ,the uncertainty of measurement of radiated emission is ± 4.96 dB .

Test Result : Pass (Appendix B)

(Frequency 194.6 MHz)

Line 1

<i>Frequency (MHz)</i>	<i>Amplitude (dBuV)</i>	<i>Limit (dBuV/m)</i>	<i>Margin (dB)</i>
0.450	40.42	48	-7.58
1.189	19.12	48	-28.88
22.988	18.60	48	-29.40
24.009	20.53	48	-27.47

Line 2

<i>Frequency (MHz)</i>	<i>Amplitude (dBuV)</i>	<i>Limit (dBuV)</i>	<i>Margin (dB)</i>
0.450	41.30	48	-6.70
1.189	15.57	48	-32.43
4.877	15.18	48	-32.82
13.772	17.51	48	-30.49
17.581	16.65	48	-31.35
20.871	16.90	48	-31.10
22.696	17.53	48	-30.47
24.009	20.75	48	-27.25
27.651	17.87	48	-30.13

Appendix A

Conducted Emission Test Result (Frequency 174.1 MHz)

Testing room : Temperature : 28 ° C Humidity : 72 % RH

Line 1

<i>Frequency (MHz)</i>	<i>Amplitude (dBuV)</i>	<i>Limit (dBuV/m)</i>	<i>Margin (dB)</i>
0.450	40.53	48	-7.47
1.189	31.90	48	-16.10
1.927	21.67	48	-26.33
3.255	15.79	48	-32.21
5.319	15.72	48	-32.28
6.866	15.34	48	-32.66
27.433	19.24	48	-28.76
28.597	18.54	48	-29.46
29.324	18.56	48	-29.44
29.760	18.62	48	-29.38

Line 2

<i>Frequency (MHz)</i>	<i>Amplitude (dBuV)</i>	<i>Limit (dBuV)</i>	<i>Margin (dB)</i>
0.598	42.49	48	-5.51
1.484	28.95	48	-19.05
1.927	21.79	48	-26.21
3.329	17.28	48	-30.72
4.214	16.25	48	-31.75
27.506	19.51	48	-28.49
28.888	22.24	48	-25.76
29.179	18.45	48	-29.55

(Frequency 214.82 MHz)

Line 1

<i>Frequency (MHz)</i>	<i>Amplitude (dBuV)</i>	<i>Limit (dBuV/m)</i>	<i>Margin (dB)</i>
0.450	41.42	48	-6.58
1.189	31.31	48	-16.69
2.001	24.16	48	-23.84
3.550	15.44	48	-32.56
18.825	16.43	48	-31.57
21.821	16.58	48	-31.42
27.433	18.57	48	-29.43
28.815	19.15	48	-28.85

Line 2

<i>Frequency (MHz)</i>	<i>Amplitude (dBuV)</i>	<i>Limit (dBuV)</i>	<i>Margin (dB)</i>
0.524	46.48	48	-1.52
1.632	30.59	48	-17.41
2.075	24.44	48	-23.56
3.181	19.43	48	-28.57
3.919	18.62	48	-29.38
10.175	17.47	48	-30.53
26.778	18.13	48	-29.87
26.996	19.36	48	-28.64
27.578	19.01	48	-28.99
28.306	18.28	48	-29.72

Appendix B**Radiated Emission Test Result :(Frequency 174.1 MH Horizontal)**

Test Conditions:

Testing room : Temperature : 28° C Humidity : 56% RH

Testing site : Temperature : 32° C Humidity : 66 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B limit	Margin
MHz	DBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
136.870	34.99	1	222	-14.08	20.91	43.50	-22.59
163.400	45.50	1	192	-23.02	22.48	43.50	-21.02
205.300	47.39	1	265	-20.44	26.95	43.50	-16.55
381.260	39.73	1	110	-13.50	26.23	46	-19.77
479.030	35.21	1	212	-10.65	24.56	46	-21.44
547.460	34.88	1	109	-10.81	24.07	46	-21.93
653.600	45.29	1	29	-13.11	32.18	46	-13.82
708.060	45.75	1	285	-13.12	32.63	46	-13.37

Note:

1. Margin = Amplitude - limit, *if margin is minus means under limit.*

2. Corrected Amplitude = Reading Amplitude - Correction Factors

3. Correction factor = Antenna factor + (Cable Loss - Amplitude gain)

(For example : 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

Radiated Emission Test Result :(Vertical)

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B limit	Margin
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
136.866	35.01	1	3	-14.08	20.93	43.50	-22.57
163.399	47.64	1	28	-23.02	24.62	43.50	-18.88
205.299	39.58	1	152	-20.44	19.14	43.50	-24.36
381.264	37.53	1	17	-13.50	24.03	46	-21.97
410.597	39.32	1	256	-10.65	25.98	46	-20.02
547.462	35.58	1	114	-10.81	24.77	46	-21.23
653.600	49.50	1	36	-13.11	36.39	46	-9.61
708.060	45.53	1	279	-13.12	32.41	46	-13.59

Radiated Emission Test Result :(Frequency 194.6 MH Horizontal)

Frequency	Reading	Ant.	Table	Correction	Corrected	Class B	Margin
	Amplitude	Height		Factors	Amplitude	limit	
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
75.174	41.71	2.98	133	-24.58	17.13	40	-22.87
150.349	38.50	2.99	136	-23.78	14.27	43.50	-29.23
225.520	37.77	1	233	-19.93	17.84	46	-28.16
451.040	33.16	1	82	-10.17	22.99	46	-23.01
526.212	34.82	1	35	-10.86	23.96	46	-22.04
601.385	37.02	1	108	-12.99	24.03	46	-21.97
676.558	37.83	1	22	-12.44	25.39	46	-20.61
751.732	41.94	1	59	-13.29	28.65	46	-17.35

Radiated Emission Test Result :(Vertical)

Frequency	Reading	Ant.	Table	Correction	Corrected	Class B	Margin
	Amplitude	Height		Factors	Amplitude	limit	
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
75.170	46.16	1	48	-24.58	21.58	40	-18.42
150.350	36.18	1	110	-23.78	12.40	43.50	-31.10
225.520	33.99	1	124	-19.93	14.06	46	-31.94
451.040	33.20	1	19	-10.17	23.03	46	-22.97
526.210	35.06	1	20	-10.86	24.20	46	-21.80
601.380	38.01	1	206	-12.99	25.02	46	-20.98
676.560	41.83	1	273	-12.44	29.39	46	-16.61
751.730	40.88	1	7	-13.29	27.59	46	-18.41

Radiated Emission Test Result :(Frequency 214.82 MH Horizontal)

Frequency MHz	Reading Amplitude dBuV	Ant. Height m	Table degree	Correction Factors dB/m	Corrected Amplitude dBuV/m	Class B limit dBuV/m	Margin dB
136.866	43.41	3.99	264	-14.08	29.33	43.50	-14.17
205.299	39.49	1	83	-20.44	19.05	43.50	-24.45
342.164	39.28	1	188	-14.72	24.56	46	-21.44
410.597	40.15	1	104	-13.34	26.81	46	-19.19
479.030	37.43	1	67	-10.65	26.78	46	-19.22
547.462	35.14	1	115	-10.81	24.33	46	-21.67
615.895	42.26	1	267	-13.45	28.81	46	-17.19
684.327	44.11	1	1	-12.41	31.70	46	-14.30

Radiated Emission Test Result :(Vertical)

Frequency	Reading Amplitude	Ant. Height	Table degree	Correction Factors	Corrected Amplitude	Class B limit	Margin
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
136.866	35.13	3.99	277	-14.08	21.05	43.50	-22.45
205.299	42.26	1	231	-20.44	21.82	43.50	-21.68
342.163	36.70	1	244	-14.72	21.98	46	-24.02
410.597	39.85	1	30	-13.34	26.51	46	-19.49
479.030	39.27	1	12	-10.65	28.62	46	-17.38
547.462	36.65	1	226	-10.81	25.84	46	-20.16
615.895	46.58	1	228	-13.45	33.13	46	-12.87
684.327	47.68	1	278	-12.41	35.27	46	-10.73

Final statement :

This test report, measurements made by TRC are traceable to the NIST.