



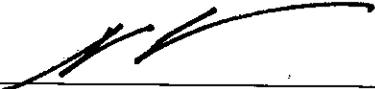
# EMI TEST REPORT

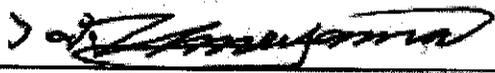
Test Report No. : 24BE0092-HO-1

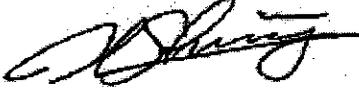
**Applicant** : Sony Corporation  
**Type of Equipment** : RF Stereo Transmitter  
**Model No.** : TMR-RF960R  
**Test standard** : FCC Part 15 Subpart C  
Section 15.207 and Section 15.249  
**FCC ID** : AK8TMRRF960R  
**Test Result** : Complied

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this report are traceable to the national or international standards.
5. This test report does not constitute an endorsement by NIST/NVLAP or U.S. Government.

**Date of test** : October 29, 30 and 31, 2003

**Tested by** :   
Naoki Sakamoto  
EMC Service

:   
Hiroka Umeyama  
EMC Service

**Approved by** :   
Hironobu Shimoji  
Group Leader of EMC Service

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## SECTION 1: Client information

Company Name : Sony Corporation  
Address : Sony EMCS Corporation Saitama TEC  
Shinagawa INTERCITY C Tower, 2-15-3 Konan Minato-ku, 108-6201  
Tokyo  
Telephone Number : +81-3-5769-5640  
Facsimile Number : +81-3-5768-5962  
Contact Person : Kikuo Murata

## SECTION 2: Equipment under test (E.U.T.)

### 2.1 Identification of E.U.T.

Type of Equipment : RF Stereo Transmitter  
Model No. : TMR-RF960R  
Serial No. : N/A  
Country of Manufacture : Korea  
Receipt Date of Sample : October 29, 2003  
Rating : DC9V (AC Adapter : AC120V / 60Hz)  
Condition of EUT : Engineering prototype

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**UL Apex Co., Ltd.**

**Head Office EMC Lab.**

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Facsimile : +81 596 24 8124

## 2.2 Product Description

Sony Corporation., Model No:TMR-RF960R is the RF Stereo Transmitter.  
This model is RF stereo Transmitter is intended to transfer the sound from AV equipment.

Equipment Type	:	Transmitter
Emission designation	:	F8E
Frequency operation	:	913.5MHz, 914.0MHz, 914.5MHz
IF frequency	:	46.8MHz
Other clock frequency	:	0.019MHz (PILOT Signal)/1.2MHz(Microcomputer clock)
Type of modulation	:	FM
Channel spacing	:	500kHz
Mode of operation	:	Simplex
Antenna Type	:	Integral
Power Supply	:	AC Power Adaptor, AC-S901 (Input:120V, 60Hz 4W)

### FCC Part 15.203 Antenna requirement

Since RF Stereo Transmitter uses a transmitting antenna that is an integral part of the equipment, it is impossible for end users to replace the antenna without use of a special tool. Therefore, the equipment complies with the requirement of 15.203.

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## SECTION 3: Test specification, procedures & results

### 3.1 Test Specification

Test Specification : FCC Part 15 Subpart C Section 15.207 and 15.249  
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators  
Section 15.207 Conducted emission limits; general requirements  
Section 15.249 Operation within the bands 902-928MHz, 2400-2483.5MHz,  
5725-5875MHz and 24.0-24.25GHz

### 3.2 Procedures and results

No.	Item	Test Procedure	Specification	Deviation	Worst margin	Results
1	Conducted Emission	ANSI C63.4:2001	Section 15.207(a)	N/A	30.1dB (0.3384MHz, L1)	Complied
2	Radiated Emission	ANSI C63.4:2001	Section 15.249	N/A	Fundamental 7.8dB(913.92MHz, Horizontal) Spurious 8.3dB(2743.5MHz, Horizontal)	Complied
3	-26dB Bandwidth	ANSI C63.4:2001	Reference	N/A	N/A	Complied
4	Frequency Stability	ANSI C63.4:2001	Section 15.31(e)	N/A	N/A	Complied

\*Note: UL Apex's EMI Work Procedure QPM05.

\*These tests were performed without any deviations from test procedure except for additions or exclusions.

### 3.3 Confirmation

UL Apex Co., Ltd. hereby confirms that E.U.T. , in the configuration tested, complies with the specifications FCC Part15 Subpart C Section 15.207 and 15.249.

### 3.4 Uncertainty

#### Conducted Emission

The measurement uncertainty (with a 95% confidence level) for this test is  $\pm 1.3$ dB.  
The data listed in this test report has enough margin.

#### Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is  $\pm 4.5$ dB(3m).  
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is  $\pm 5.2$ dB(3m).  
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is  $\pm 6.6$ dB.  
The data listed in this test report has enough margin.

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### 3.5 Test Location

UL Apex Co., Ltd. Head Office EMC Lab.  
No.2 semi anechoic chamber  
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN  
Telephone : +81 596 24 8116  
Facsimile : +81 596 24 8124

No.2 semi anechoic chamber has been fully described in a report submitted to FCC office, and listed on June 05, 2002. (Registration number: No.2:846015 Industry Canada: No.2: IC4247-2)  
\*NVLAP Lab. code: 200572-0

### 3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

## SECTION 4: Operation of E.U.T. during testing

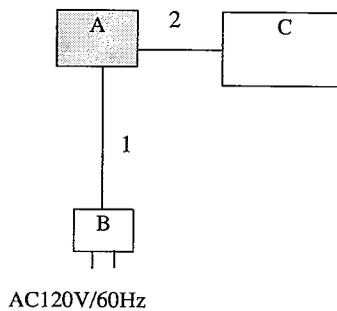
### 4.1 Operating Modes

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to typical use.

The sequence is used : Transmitting (CH1:913.5MHz/CH2:914.0MHz/CH3:914.5MHz) and charge mode  
\*1kHz Audio Signal Input

Justification: The system was configured in typical fashion (as a customer would normally use it) for testing.

### 4.2 Configuration and peripherals



\* Cabling was taken into consideration and test data was taken under worse case conditions.

#### Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks	FCC ID
A	RF Stereo Transmitter	TMR-RF960R	N/A	SONY	EUT	AK8TMRRF960R
B	AC Adaptor	AC-S901	-	SONY	-	N/A
C	Cassette Corder	TCM-20DV	-	SONY	-	N/A

#### List of cables used

No.	Name	Length (m)	Shield	Backshell Material
1	DC Power Cable	2.0	N	Polyvinyl chloride
2	Audio Cable	1.0	Y	Polyvinyl chloride

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## **SECTION 5: Conducted Emission**

### **5.1 Operating environment**

The test was carried out on a reference ground plane 4.0 x 4.0m in No.2 semi anechoic chamber, 7.5 x 5.8 x 5.2 m.

Temperature : See data  
Humidity : See data

### **5.2 Test configuration**

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT and its peripherals was aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from LISN and excess AC cable was bundled in center. I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane. Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN to the input power source. A drawing of the set up is shown in the photos of APPENDIX 1.

### **5.3 Test conditions**

Frequency range : 0.15MHz-30MHz  
EUT position : Table top  
EUT operation mode : Transmitting (CH1:913.5MHz/CH2:914.0MHz/CH3:914.5MHz), charge and standby

### **5.4 Test procedure**

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT within No.2 semi anechoic chamber. The EUT was connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection has been performed. The measurements have been performed with a quasi-peak detector and if required, with an average detector.

The conducted emission measurements were made with the following detector function of the test receiver.

Detector Type : Quasi-Peak  
IF Bandwidth : 9 kHz

### **5.5 Results**

Summary of the test results: Pass

Date: October 30, 2003

Test engineer: Hiroka Umeyama

---

**UL Apex Co., Ltd.**

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## **SECTION 6: Radiated emission (Fundamental and Spurious Emission)**

### **6.1 Operating environment**

The test was carried out in a No.2 semi anechoic chamber, 7.5 x 5.8 x 5.2m.

Temperature : See data  
Humidity : See data

### **6.2 Test configuration**

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane. The EUT was set on the center of the tabletop and the rear the peripheral was aligned and flushed with rear of tabletop. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. A drawing of the set up is shown in the photos of APPENDIX 1.

### **6.3 Test conditions**

Frequency range : 30MHz - 300MHz(Biconical antenna) / 300MHz - 1000MHz(Logperiodic antenna) / 1GHz - 10GHz(Horn antenna)  
Test distance : 3m  
EUT position : Tabletop  
EUT operation mode : Transmitting (CH1:913.5MHz/CH2:914.0MHz/CH3:914.5MHz)

### **6.4 Test procedure**

The Radiated Electric Field Strength intensity has been measured on No.2 semi anechoic chamber with a ground plane and at a distance of 3m.

Measurements were performed with a quasi-peak detector, average detector or peak detector.

The measuring antenna height was varied between 1 to 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

The measurements were performed for both vertical and horizontal antenna polarization.

The radiated emission measurements were made with the following detector function of the test receiver and spectrum Analyzer.

	Below 1GHz (T/R)	Above 1GHz (S/A)
Detector Type	Quasi-Peak	Average/Peak
IF Bandwidth	120kHz	RBW 1MHz, VBW 10Hz/ RBW 1MHz, VBW 1MHz

### **6.5 Results**

Summary of the test results: Pass

Date: October 29, 2003

Tested by: Naoki Sakamoto

**UL Apex Co., Ltd.**

**Head Office EMC Lab.**

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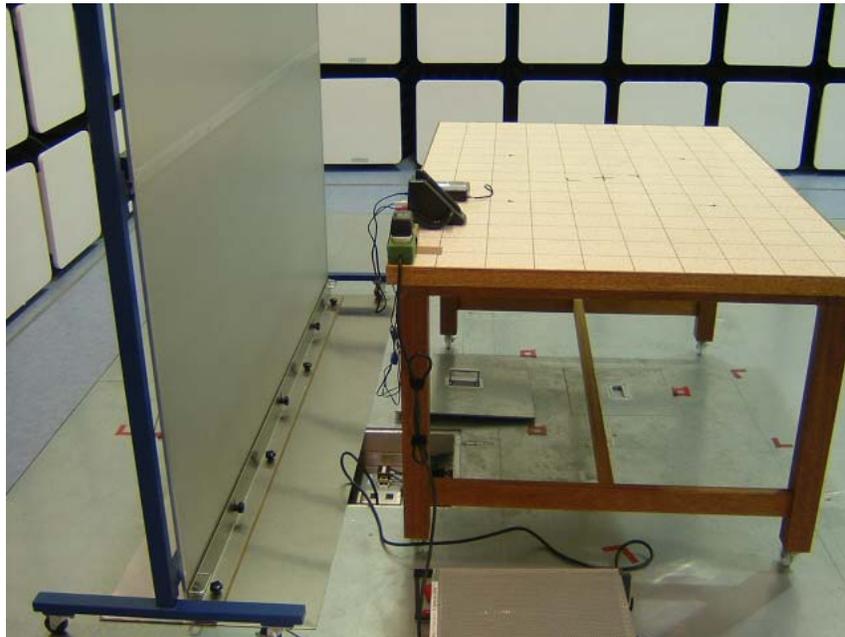
**APPENDIX 1: Photographs of test setup**

**Conducted Emission**

**Front**

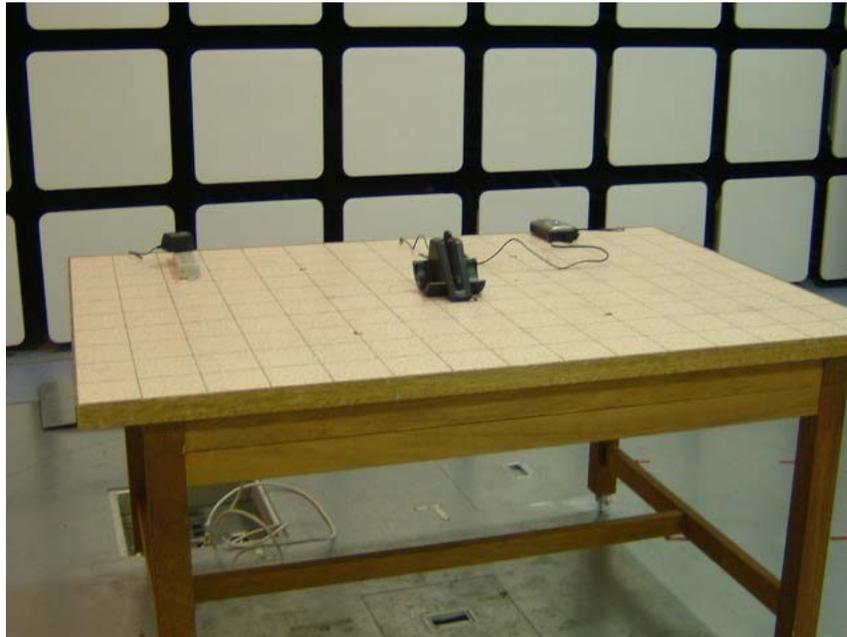


**Side**

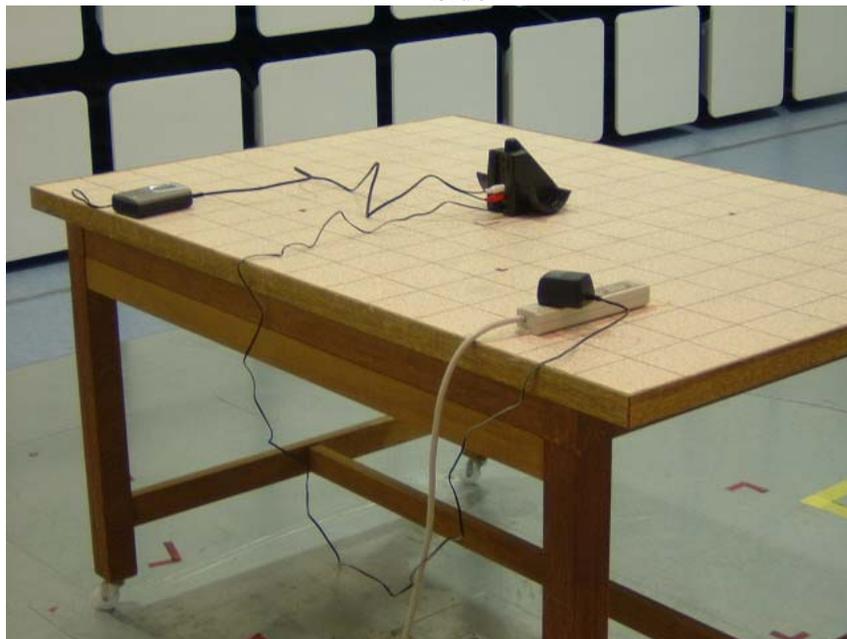


## Radiated Emission

Front



Side



**APPENDIX 2: Test instruments**

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	1,2	2003/04/11 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	1(EUT)	2003/03/18 * 12
MCC-13	Coaxial Cable	Fujikura/Agilent	-	1	2003/05/08 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	1,2	2003/01/31 * 12
SA-07	Spectrum Analyzer	Advantest	R3273	1,2	2002/12/10 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	2	2003/04/28 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	2	2003/04/28 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	2	2002/12/24 * 12
MPA-02	Pre Amplifier	Agilent	87405A	2	2003/04/17 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	2	2003/01/11 * 12
MPA-01	Pre Amplifier	Agilent	8449B	2	2003/02/08 * 12
MCC-04	Microwave Cable	Storm	421-011	2	2003/01/14 * 12
MCC-24	Microwave Cable	Storm	-	2	2003/04/30 * 12
MAT-23	Attenuator	Orient Microwave	BX10-0476-00	2	2003/03/31 * 12
MHF-02	High Pass Filter	Tokimec	TF323DCA	2	2003/09/19 * 12

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Test Item:

- 1: Conducted emission
- 2: Except for Conducted emission

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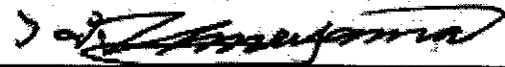
**APPENDIX 3: Data of EMI test**

**Conducted Emission**

**DATA OF CONDUCTION TEST**

UL Apex Co., Ltd. Head Office EMC Lab.  
No.2 Semi Anechoic Chamber  
Report No. : 24BE0092 - HO -1

Applicant : SONY Corporation  
Kind of Equipment : RF Stereo Transmitter  
Model No. : TMR-RF960R  
Serial No. :  
Power : AC120V/60Hz  
Mode : Ch914MHz Transmitting  
Remarks :  
Date : 10/30/2003  
Phase : Single Phase  
Temperature : 22 °C  
Humidity : 46 %  
Regulation : FCC Part15C § 15. 207 (0. 15-30MHz)



Engineer : Hiroka Umeyama

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dBuV]	AV	QP [dBuV]	AV				QP [dBuV]	AV	QP [dBuV]	AV	QP [dBuV]	AV
1.	0. 1500	24. 6	-	24. 2	-	0. 0	0. 1	0. 0	24. 7	-	66. 0	56. 0	41. 3	-
2.	0. 3384	28. 5	0. 5	29. 0	0. 7	0. 0	0. 1	0. 0	29. 1	0. 8	59. 2	49. 2	30. 1	48. 4
3.	0. 1787	28. 4	-	28. 5	-	0. 0	0. 1	0. 0	28. 6	-	64. 5	54. 5	35. 9	-
4.	0. 5063	23. 5	0. 2	24. 6	0. 1	0. 1	0. 1	0. 0	24. 8	0. 4	56. 0	46. 0	31. 2	45. 6
5.	1. 0060	6. 9	-	7. 0	-	0. 1	0. 2	0. 0	7. 3	-	56. 0	46. 0	48. 7	-
6.	11. 0000	0. 8	-	0. 7	-	0. 4	1. 0	0. 0	2. 2	-	60. 0	50. 0	57. 8	-

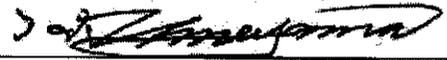
CALCULATION: READING[dBμV] + LISN FACTOR[dB] + CABLE LOSS[dB] + ATTEN[dB].

All other spurious emissions were less than 20dB for the limit.

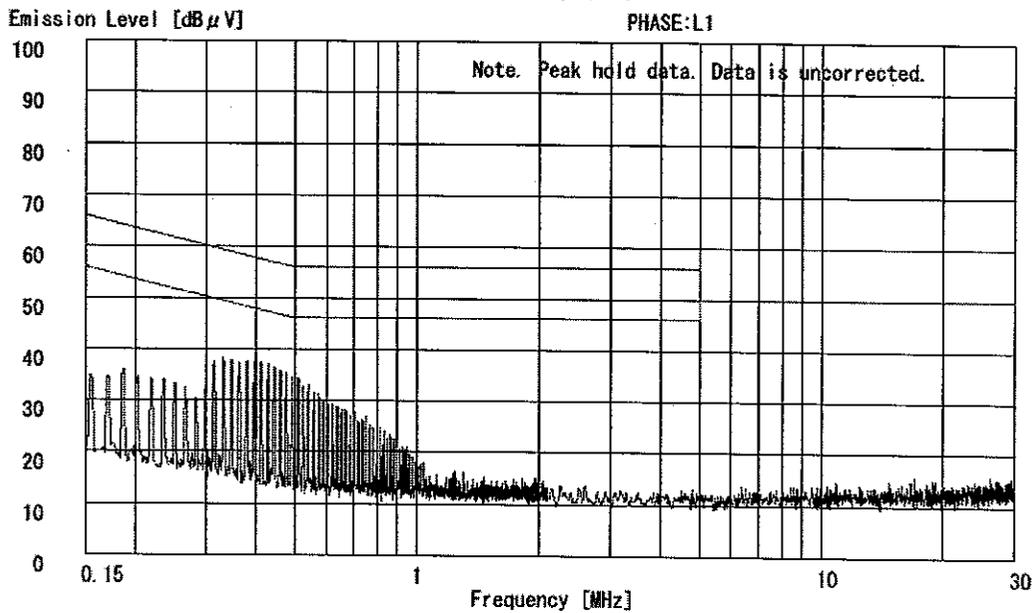
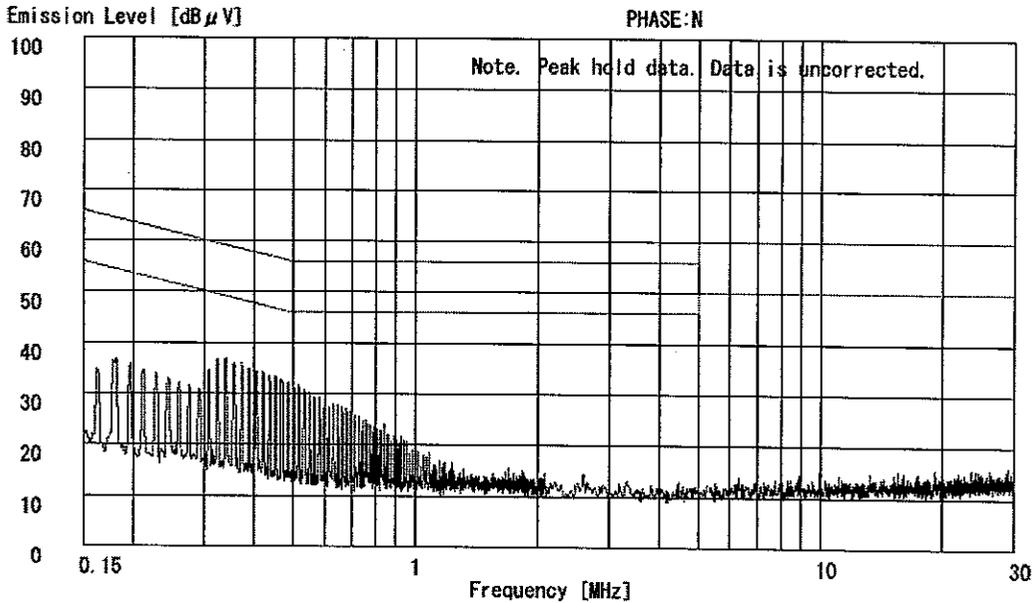
**DATA OF CONDUCTION TEST CHART**

UL Apex Co., Ltd. Head Office EMC Lab.  
 No.2 Semi Anechoic Chamber  
 Report No. : 24BE0092 - HO

Applicant : SONY Corporation  
 Kind of Equipment : RF Stereo Transmitter  
 Model No. : TMR-RF960R  
 Serial No. :  
 Power : AC120V/60Hz  
 Mode : Ch913.5MHz Transmitting  
 Remarks :  
 Date : 10/30/2003  
 Phase : Single Phase  
 Temperature : 22 °C  
 Humidity : 46 %  
 Regulation 1 : FCC Part15C § 15. 207 (0.15-30MHz)  
 Regulation 2 : None



Engineer : Hiroka Umeyama



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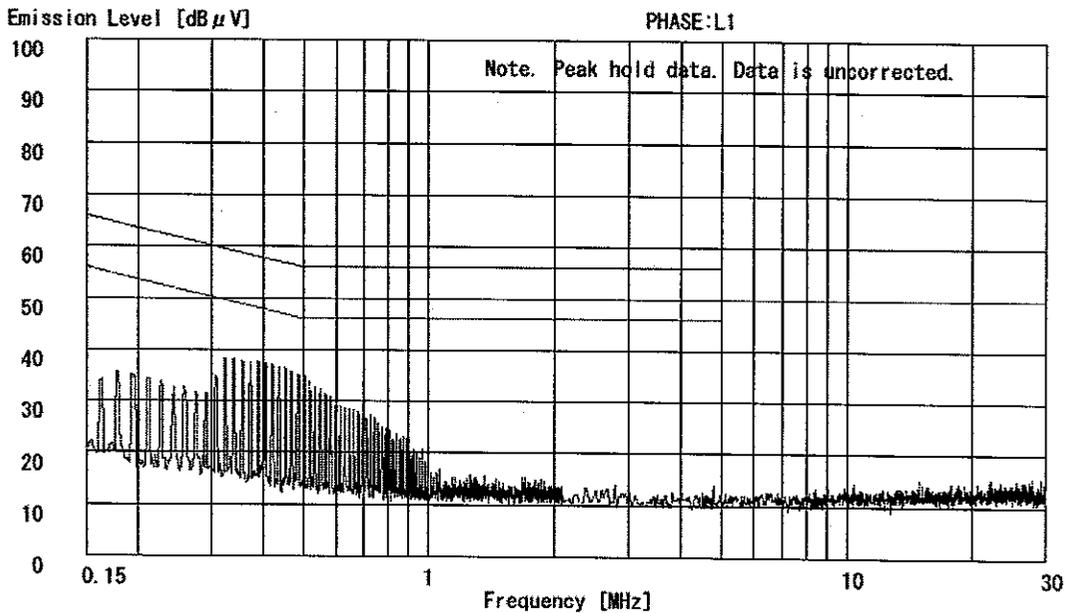
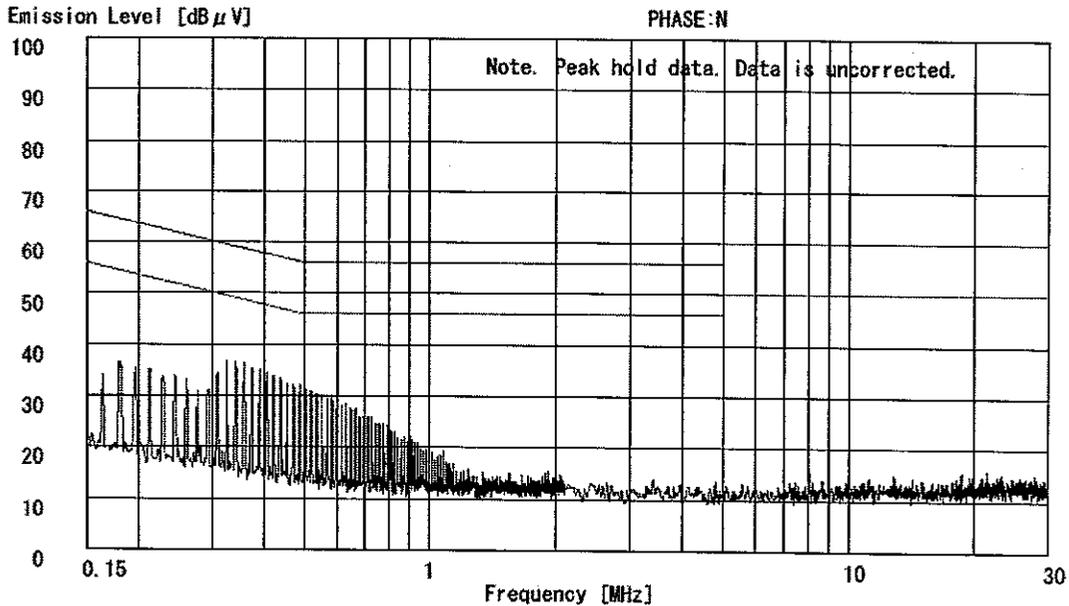
**DATA OF CONDUCTION TEST CHART**

UL Apex Co., Ltd. Head Office EMC Lab.  
 No.2 Semi Anechoic Chamber  
 Report No. : 24BE0092 - HO

Applicant : SONY Corporation  
 Kind of Equipment : RF Stereo Transmitter  
 Model No. : TMR-RF960R  
 Serial No. :  
 Power : AC120V/60Hz  
 Mode : Ch914MHz Transmitting  
 Remarks :  
 Date : 10/30/2003  
 Phase : Single Phase  
 Temperature : 22 °C  
 Humidity : 46 %  
 Regulation 1 : FCC Part15C § 15.207 (0.15-30MHz)  
 Regulation 2 : None

*[Handwritten Signature]*

Engineer : Hiroka Umeyama



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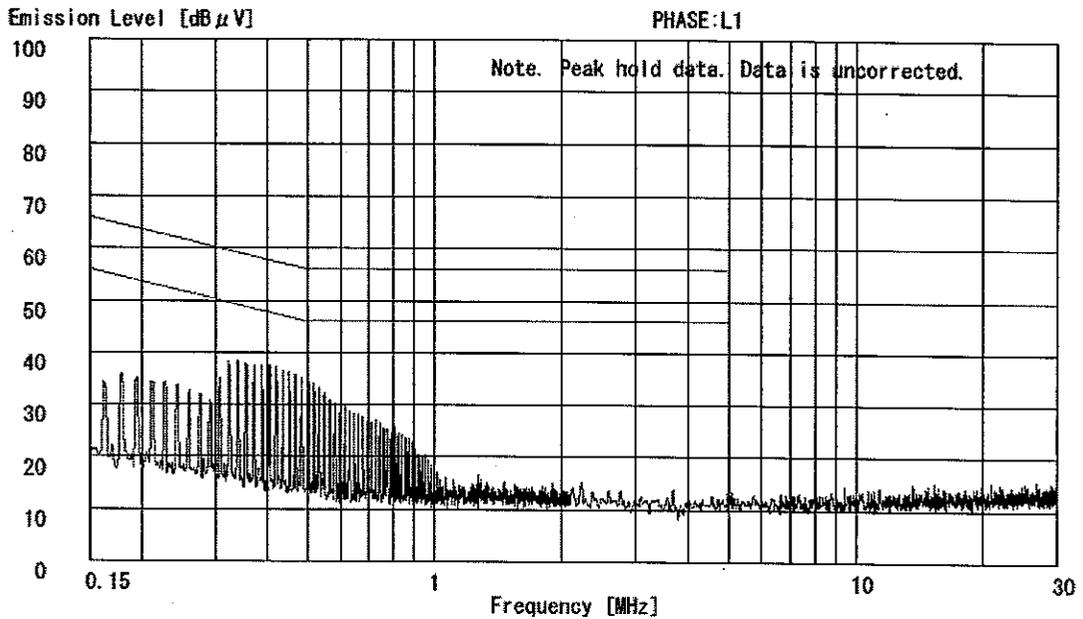
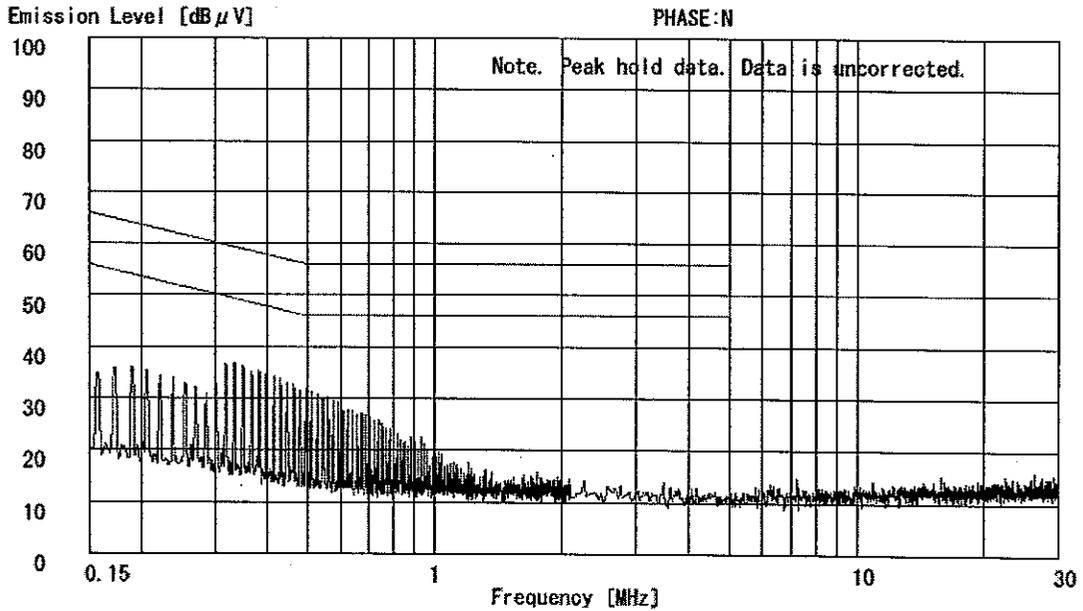
**DATA OF CONDUCTION TEST CHART**

UL Apex Co., Ltd. Head Office EMC Lab.  
 No.2 Semi Anechoic Chamber  
 Report No. : 24BE0092 - H0

Applicant : SONY Corporation  
 Kind of Equipment : RF Stereo Transmitter  
 Model No. : TMR-RF960R  
 Serial No. :  
 Power : AC120V/60Hz  
 Mode : Ch914.5MHz Transmitting  
 Remarks :  
 Date : 10/30/2003  
 Phase : Single Phase  
 Temperature : 22 °C  
 Humidity : 46 %  
 Regulation 1 : FCC Part15C § 15. 207 (0. 15-30MHz)  
 Regulation 2 : None

*Hiroka Umeyama*

Engineer : Hiroka Umeyama

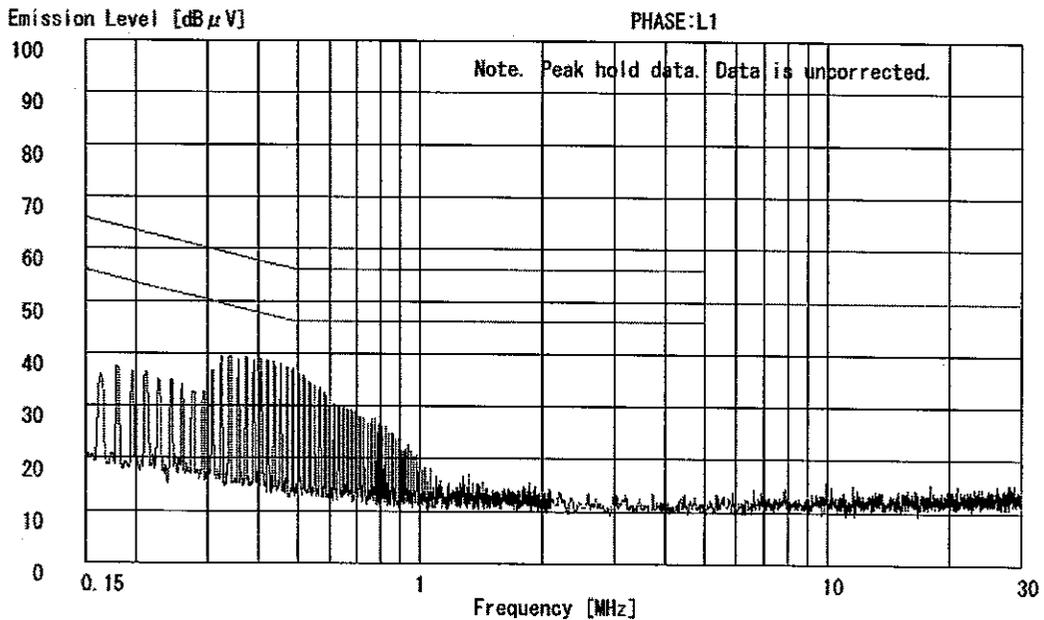
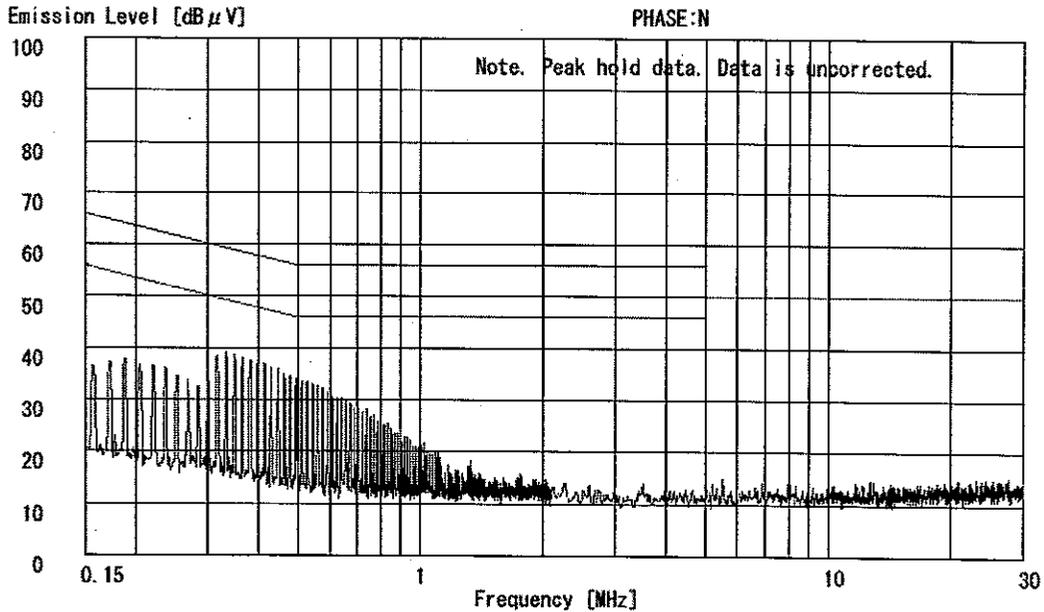


**DATA OF CONDUCTION TEST CHART**

UL Apex Co., Ltd. Head Office EMC Lab.  
 No.2 Semi Anechoic Chamber  
 Report No. : 24BE0092 - HO

Applicant : SONY Corporation  
 Kind of Equipment : RF Stereo Transmitter  
 Model No. : TMR-RF960R  
 Serial No. :  
 Power : AC120V/60Hz  
 Mode : Charging  
 Remarks :  
 Date : 10/30/2003  
 Phase : Single Phase  
 Temperature : 22 °C  
 Humidity : 46 %  
 Regulation 1 : FCC Part15C § 15.207 (0.15-30MHz)  
 Regulation 2 : None

*Hiroka Umeyama*  
 Engineer : Hiroka Umeyama

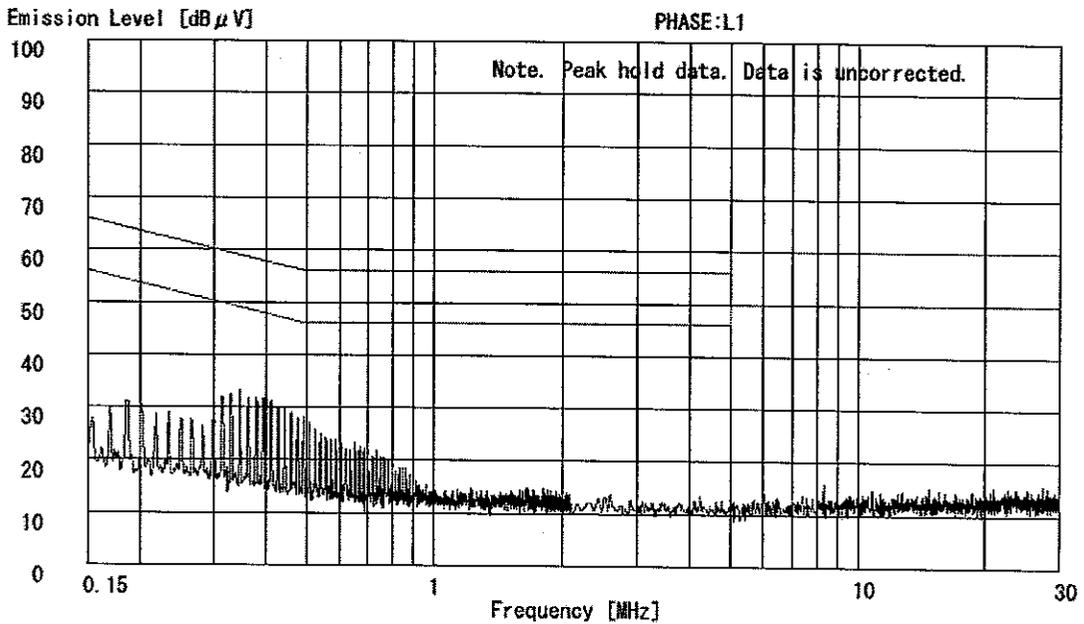
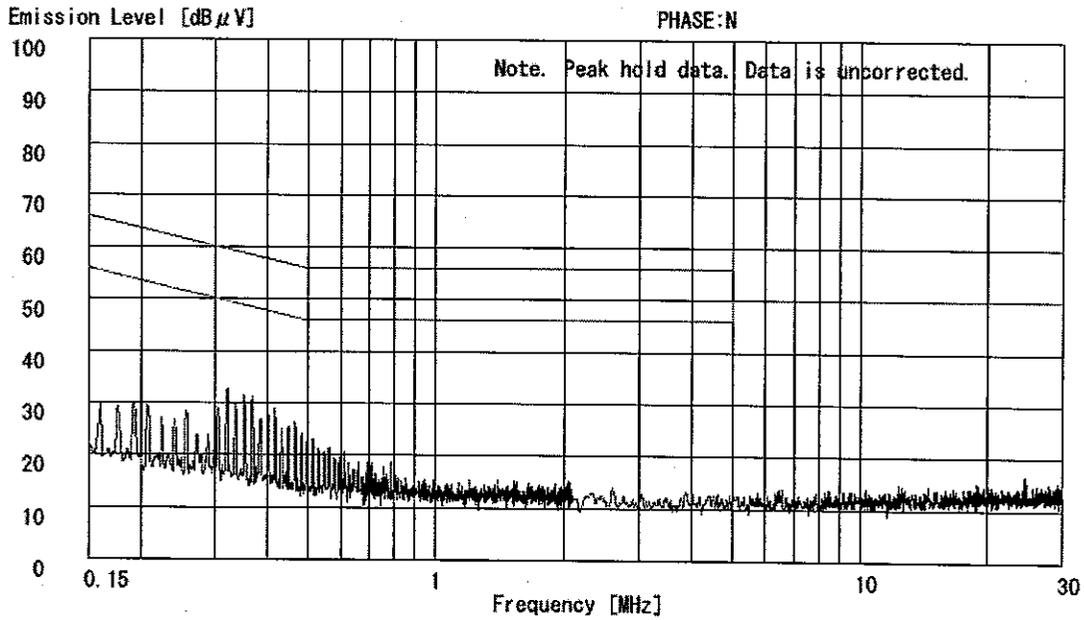


**DATA OF CONDUCTION TEST CHART**

UL Apex Co., Ltd. Head Office EMC Lab.  
 No.2 Semi Anechoic Chamber  
 Report No. : 24BE0092 - H0

Applicant : SONY Corporation  
 Kind of Equipment : RF Stereo Transmitter  
 Model No. : TMR-RF960R  
 Serial No. :  
 Power : AC120V/60Hz  
 Mode : Standby  
 Remarks :  
 Date : 10/30/2003  
 Phase : Single Phase  
 Temperature : 22 °C  
 Humidity : 46 %  
 Regulation 1 : FCC Part15C s 15. 207 (0. 15-30MHz)  
 Regulation 2 : None

*Hiroka Umeyama*  
 Engineer : Hiroka Umeyama



**Radiated Emission (Electric Field Strength of Fundamental and Spurious Emission)**

**DATA OF ELECTRIC FIELD STRENGTH OF FUNDAMENTAL**

UL Apex Co., Ltd.  
 EMC HEAD OFFICE DIVISION No.2 SEMI ANECHOIC CHAMBER

COMPANY	: SONY	REPORT NO	: 24BE0092-HO-1
EQUIPMENT	: RF Stereo Transmitter	REGULATION	: Fcc Part15 Subpart C 15.249
MODEL	: TMR-RF960R	TEST DISTANCE	: 3m
S/N	:	DATE	: 2003/10/29
FCC ID	: AK8TMRRF960R	TEMPERATURE	: 21°C
IC Number	: 409B-TMRRF960	HUMIDITY	: 45%
POWER	: AC120V/60Hz		
MODE	: Transmitting		

Engineer :   
 Naoki Sakamoto

**QP DETECT**

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Atten. [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Atten.</b>												
1	913.42	76.1	70.7	21.5	23.1	4.5	6.1	85.1	79.7	94.0	8.9	14.3
2	913.92	77.1	70.5	21.6	23.1	4.5	6.1	86.2	79.6	94.0	7.8	14.4
3	914.49	76.0	70.6	21.6	23.1	4.5	6.1	85.1	79.7	94.0	8.9	14.3

**UL Apex Co., Ltd.**

**Head Office EMC Lab.**

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

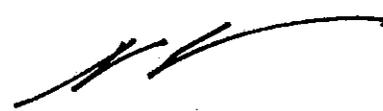
Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

## DATA OF RADIATION TEST

UL Apex Co., Ltd. Head Office EMC Lab.  
No.2 Semi Anechoic Chamber  
Report No. : 24BE0092-HO-1

Applicant : SONY Corporation  
Kind of Equipment : RF Stereo Transmitter  
Model No. : TMR-RF960R  
Serial No. :  
Power : AC120V/60Hz  
Mode : Ch913.5MHz Transmitting  
Remarks : 1kHz Audio Signal input  
Date : 10/29/2003  
Test Distance : 3 m  
Temperature : 21 °C  
Humidity : 45 %  
Regulation : Fcc 15C § 15.209(a)

  
Engineer : Naoki Sakamoto

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	49.16	BB	24.9	26.2	11.3	23.7	0.8	6.0	19.3	20.6	40.0	20.7	19.4
2.	56.78	BB	25.7	30.1	9.2	23.6	0.9	6.0	18.2	22.6	40.0	21.8	17.4
3.	120.00	BB	25.5	25.5	13.3	23.3	1.4	6.0	22.9	22.9	43.5	20.6	20.6

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

All other spurious emissions were less than 20dB for the limit.  
ANT. TYPE: 30-300MHz: Biconical, 300-1000MHz: Logperiodic, 1GHz-: Horn

## DATA OF RADIATION TEST

UL Apex Co., Ltd. Head Office EMC Lab.  
No.2 Semi Anechoic Chamber  
Report No. : 24BE0092-HO-1

Applicant : SONY Corporation  
Kind of Equipment : RF Stereo Transmitter  
Model No. : TMR-RF960R  
Serial No. :  
Power : AC120V/60Hz  
Mode : Ch914.0MHz Transmitting  
Remarks : 1kHz Audio Signal input  
Date : 10/29/2003  
Test Distance : 3 m  
Temperature : 21 °C  
Humidity : 45 %  
Regulation : Fcc 15C § 15.209 (a)

Engineer : Naoki Sakamoto

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μV/m]	MARGIN	
			HOR [dB μV]	VER					HOR [dB μV/m]	VER		HOR [dB]	VER
1.	49.16	BB	24.0	27.4	11.3	23.7	0.8	6.0	18.4	21.8	40.0	21.6	18.2
2.	56.78	BB	28.0	33.0	9.2	23.6	0.9	6.0	20.5	25.5	40.0	19.5	14.5
3.	120.00	BB	24.9	25.0	13.3	23.3	1.4	6.0	22.3	22.4	43.5	21.2	21.1

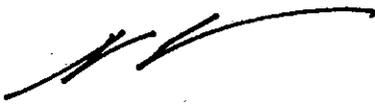
CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

All other spurious emissions were less than 20dB for the limit.  
ANT. TYPE:30-300MHz:Biconical, 300-1000MHz:Logperiodic, 1GHz-:Horn

## DATA OF RADIATION TEST

UL Apex Co., Ltd. Head Office EMC Lab.  
No.2 Semi Anechoic Chamber  
Report No. : 24BE0092-HO-1

Applicant : SONY Corporation  
Kind of Equipment : RF Stereo Transmitter  
Model No. : TMR-RF960R  
Serial No. :  
Power : AC120V/60Hz  
Mode : Ch914.5MHz Transmitting  
Remarks : 1kHz Audio Signal input  
Date : 10/29/2003  
Test Distance : 3 m  
Temperature : 21 °C  
Humidity : 45 %  
Regulation : Fcc 15C § 15.209(a)

  
Engineer : Naoki Sakamoto

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μV]	VER [dB μV]					HOR [dB μV/m]	VER [dB μV/m]	HOR [dB]	VER [dB]		
1.	49.16	BB	25.8	27.7	11.3	23.7	0.8	6.0	20.2	22.1	40.0	19.8	17.9	
2.	56.78	BB	28.2	32.6	9.2	23.6	0.9	6.0	20.7	25.1	40.0	19.3	14.9	
3.	120.00	BB	24.9	25.0	13.3	23.3	1.4	6.0	22.3	22.4	43.5	21.2	21.1	

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

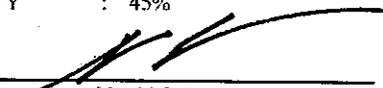
All other spurious emissions were less than 20dB for the limit.  
ANT. TYPE:30-300MHz:Biconical, 300-1000MHz:Logperiodic, 1GHz-:Horn

## DATA OF SPURIOUS EMISSIONS(1GHz to 10GHz)

UL Apex Co., Ltd.  
EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY : SONY  
EQUIPMENT : RF Stereo Transmitter  
MODEL : TMR-RF960R  
S/N :  
FCC ID : AK8TMRRF960R  
IC Number : 409B-TMRRF960  
POWER : AC120V/60Hz  
MODE : Ch913.5MHz Transmitting

REPORT NO : 24BE0092-HO-1  
REGULATION : Fcc Part15 Subpart C 15.209( a )  
TEST DISTANCE : 3m  
DATE : 2003/10/29  
TEMPERATURE : 21°C  
HUMIDITY : 45%

Engineer :   
Naoki Sakamoto

**PK DETECT (S/A : RBW 1MHz / VBW 1MHz)**

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High Pass or ATTEN [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER [dBuV/m]					HOR [dB]	VER [dB]			
<b>RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Atten or High Pass.</b>												
1	1827.1	45.9	46.9	28.1	37.0	3.9	10.0	50.9	51.9	74.0	23.1	22.1
2	2740.5	43.4	43.6	31.5	37.1	4.8	10.0	52.6	52.8	74.0	21.4	21.2
3	3654.1	47.0	45.8	31.1	36.9	5.6	1.6	48.4	47.2	74.0	25.6	26.8
4	4567.5	40.8	40.8	34.0	37.0	6.3	0.8	44.9	44.9	74.0	29.1	29.1
5	5481.0	40.2	40.5	36.1	36.4	6.8	0.8	47.5	47.8	74.0	26.5	26.2
6	6394.5	41.0	40.8	37.9	36.6	7.3	0.7	50.3	50.1	74.0	23.7	23.9
7	7308.0	40.5	40.3	37.8	36.6	7.7	0.5	49.9	49.7	74.0	24.1	24.3
8	8221.5	40.5	40.7	36.7	36.9	8.2	0.6	49.1	49.3	74.0	24.9	24.7
9	9135.0	41.0	40.4	38.2	36.9	8.7	0.3	51.3	50.7	74.0	22.7	23.3

**AV DETECT (S/A : RBW 1MHz / VBW 10Hz)**

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER [dBuV/m]					HOR [dB]	VER [dB]			
<b>RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Atten or High Pass.</b>												
1	1827.1	38.6	38.4	28.1	37.0	3.9	10.0	43.6	43.4	54.0	10.4	10.6
2	2740.5	33.6	33.6	31.5	37.1	4.8	10.0	42.8	42.8	54.0	11.2	11.2
3	3654.1	43.3	38.3	31.1	36.9	5.6	1.6	44.7	39.7	54.0	9.3	14.3
4	4567.5	29.8	30.7	34.0	37.0	6.3	0.8	33.9	34.8	54.0	20.1	19.2
5	5481.0	29.9	29.6	36.1	36.4	6.8	0.8	37.2	36.9	54.0	16.8	17.1
6	6394.5	30.5	31.1	37.9	36.6	7.3	0.7	39.8	40.4	54.0	14.2	13.6
7	7308.0	29.5	29.4	37.8	36.6	7.7	0.5	38.9	38.8	54.0	15.1	15.2
8	8221.5	29.9	30.0	36.7	36.9	8.2	0.6	38.5	38.6	54.0	15.5	15.4
9	9135.0	29.8	29.8	38.2	36.9	8.7	0.3	40.1	40.1	54.0	13.9	13.9

\*Except for the above table : All other spurious emissions were less than 20dB for the limit.

Remarks : 1 to 3.5GHz Atten(10dB)  
: 3.5 to 10GHz High Pass Filter

## DATA OF SPURIOUS EMISSIONS(1GHz to 10GHz)

UL Apex Co., Ltd.  
EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY : SONY	REPORT NO : 24BE0092-HO-1
EQUIPMENT : RF Stereo Transmitter	REGULATION : Fcc Part15 Subpart C 15.209( a )
MODEL : TMR-RF960R	TEST DISTANCE : 3m
S/N :	DATE : 2003/10/29
FCC ID : AK8TMRRF960R	TEMPERATURE : 21℃
IC Number : 409B-TMRRF960	HUMIDITY : 45%
POWER : AC120V/60Hz	
MODE : Ch914.0MHz Transmitting	

Engineer : Naoki Sakamoto

**PK DETECT** (S/A : RBW 1MHz / VBW 1MHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High Pass or ATTEN [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER [dBuV/m]					HOR [dB]	VER [dB]			
<b>RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Atten or High Pass.</b>												
1	1828.0	45.3	44.8	28.1	37.0	3.9	10.0	50.3	49.8	74.0	23.7	24.2
2	2742.0	44.2	43.9	31.5	37.1	4.8	10.0	53.4	53.1	74.0	20.6	20.9
3	3656.0	48.4	44.7	31.1	36.9	5.6	1.6	49.8	46.1	74.0	24.2	27.9
4	4570.0	40.6	40.1	34.0	37.0	6.3	0.8	44.7	44.2	74.0	29.3	29.8
5	5484.0	40.4	40.6	36.1	36.4	6.8	0.8	47.7	47.9	74.0	26.3	26.1
6	6398.0	41.5	41.4	37.9	36.6	7.3	0.7	50.8	50.7	74.0	23.2	23.3
7	7312.0	40.3	40.6	37.8	36.6	7.7	0.5	49.7	50.0	74.0	24.3	24.0
8	8226.0	40.6	41.0	36.7	36.9	8.2	0.6	49.2	49.6	74.0	24.8	24.4
9	9140.0	40.4	40.1	38.2	36.9	8.7	0.3	50.7	50.4	74.0	23.3	23.6

**AV DETECT** (S/A : RBW 1MHz / VBW 10Hz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER [dBuV/m]					HOR [dB]	VER [dB]			
<b>RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Atten or High Pass.</b>												
1	1828.0	37.5	35.6	28.1	37.0	3.9	10.0	42.5	40.6	54.0	11.5	13.4
2	2742.0	35.5	34.1	31.5	37.1	4.8	10.0	44.7	43.3	54.0	9.3	10.7
3	3656.0	43.5	37.1	31.1	36.9	5.6	1.6	44.9	38.5	54.0	9.1	15.5
4	4570.0	30.2	30.5	34.0	37.0	6.3	0.8	34.3	34.6	54.0	19.7	19.4
5	5484.0	29.6	29.7	36.1	36.4	6.8	0.8	36.9	37.0	54.0	17.1	17.0
6	6398.0	30.7	31.5	37.9	36.6	7.3	0.7	40.0	40.8	54.0	14.0	13.2
7	7312.0	29.6	29.5	37.8	36.6	7.7	0.5	39.0	38.9	54.0	15.0	15.1
8	8226.0	30.0	30.0	36.7	36.9	8.2	0.6	38.6	38.6	54.0	15.4	15.4
9	9140.0	30.1	29.9	38.2	36.9	8.7	0.3	40.4	40.2	54.0	13.6	13.8

\*Except for the above table : All other spurious emissions were less than 20dB for the limit.

Remarks : 1 to 3.5GHz Atten(10dB)  
: 3.5 to 10GHz High Pass Filter

## DATA OF SPURIOUS EMISSIONS(1GHz to 10GHz)

UL Apex Co., Ltd.  
EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY : SONY  
EQUIPMENT : RF Stereo Transmitter  
MODEL : TMR-RF960R  
S/N :  
FCC ID : AK8TMRRF960  
IC Number : 409B-TMMRRF960  
POWER : AC120V/60Hz  
MODE : Ch914.5MHz Transmitting

REPORT NO : 24BE0092-HO-1  
REGULATION : Fcc Part15 Subpart C 15.209( a )  
TEST DISTANCE : 3m  
DATE : 2003/10/29  
TEMPERATURE : 21°C  
HUMIDITY : 45%

Engineer : Naoki Sakamoto

### PK DETECT (S/A : RBW 1MHz / VBW 1MHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High Pass or ATTEN [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER [dBuV/m]					HOR [dB]	VER [dB]			
<b>RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Atten or High Pass.</b>												
1	1829.0	47.0	45.1	28.1	37.0	3.9	10.0	52.0	50.1	74.0	22.0	23.9
2	2743.5	44.5	44.3	31.5	37.1	4.8	10.0	53.7	53.5	74.0	20.3	20.5
3	3658.0	46.9	45.0	31.1	36.9	5.6	1.6	48.3	46.4	74.0	25.7	27.6
4	4572.5	41.0	41.7	34.0	37.0	6.3	0.8	45.1	45.8	74.0	28.9	28.2
5	5487.0	40.1	40.0	36.1	36.4	6.8	0.8	47.4	47.3	74.0	26.6	26.7
6	6401.5	41.1	41.2	37.9	36.6	7.3	0.7	50.4	50.5	74.0	23.6	23.5
7	7316.0	40.9	40.1	37.8	36.6	7.7	0.5	50.3	49.5	74.0	23.7	24.5
8	8230.5	40.5	40.3	36.7	36.9	8.2	0.6	49.1	48.9	74.0	24.9	25.1
9	9145.0	40.8	40.4	38.2	36.9	8.7	0.3	51.1	50.7	74.0	22.9	23.3

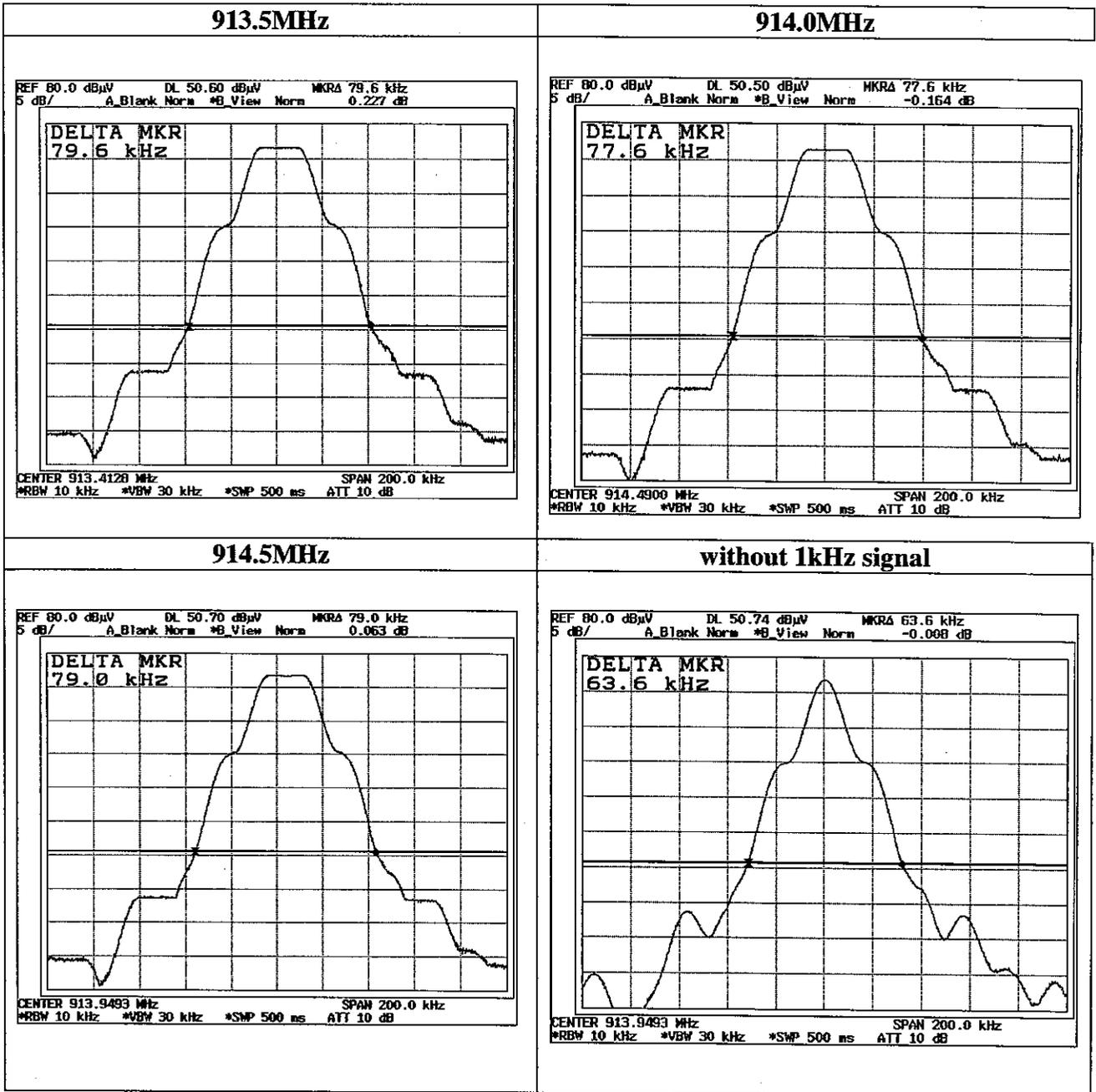
### AV DETECT (S/A : RBW 1MHz / VBW 10Hz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER [dBuV/m]					HOR [dB]	VER [dB]			
<b>RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Atten or High Pass.</b>												
1	1829.0	40.1	35.7	28.1	37.0	3.9	10.0	45.1	40.7	54.0	8.9	13.3
2	2743.5	36.5	34.1	31.5	37.1	4.8	10.0	45.7	43.3	54.0	8.3	10.7
3	3658.0	41.6	37.8	31.1	36.9	5.6	1.6	43.0	39.2	54.0	11.0	14.8
4	4572.5	30.9	31.0	34.0	37.0	6.3	0.8	35.0	35.1	54.0	19.0	18.9
5	5487.0	29.8	29.8	36.1	36.4	6.8	0.8	37.1	37.1	54.0	16.9	16.9
6	6401.5	31.8	31.6	37.9	36.6	7.3	0.7	41.1	40.9	54.0	12.9	13.1
7	7316.0	29.6	29.5	37.8	36.6	7.7	0.5	39.0	38.9	54.0	15.0	15.1
8	8230.5	29.9	30.0	36.7	36.9	8.2	0.6	38.5	38.6	54.0	15.5	15.4
9	9145.0	30.1	30.1	38.2	36.9	8.7	0.3	40.4	40.4	54.0	13.6	13.6

\*Except for the above table : All other spurious emissions were less than 20dB for the limit.

Remarks : 1 to 3.5GHz Atten(10dB)  
: 3.5 to 10GHz High Pass Filter

**-26dB Bandwidth**



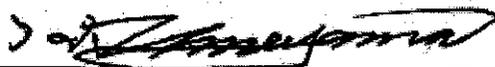
Frequency Stability

DATA OF FREQUENCY STABILITY

UL Apex Co., Ltd.  
HEAD OFFICE EMC LAB. No.2 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation  
EQUIPMENT : RF Stereo Transmitter  
MODEL : TMR-RF960R  
S/N :  
POWER : AC120V / 60Hz  
MODE : Transmitting  
FCC ID : AK8TMRRF960R  
IC Number : 409B-TMRRF960

REPORT NO : 24BE0092-HO-1  
REGULATION : Fcc Part15 Subpart C 15.31(e)  
DATE : 10/31/2003  
TEMPERATURE : 24°C  
HUMIDITY : 49%

  
Engineer : Hiroka Umeyama

		Frequency[MHz]	Level[dBuV/m]
AC102V(85%)	CH1	913.4859	86.0
	CH2	914.0476	86.2
	CH3	914.5752	86.3
AC120V(100%)	CH1	913.4893	86.2
	CH2	914.0351	85.9
	CH3	914.5667	86.0
AC138V(115%)	CH1	913.4624	86.2
	CH2	914.0267	86.0
	CH3	914.5484	86.0