



# EMI TEST REPORT

Test Report No. : 29BE0120-YK

**Applicant** : DATRON WORLD COMMUNICATIONS, INC.  
**Type of Equipment** : VHF Handheld Transceiver  
**Model No.** : HH7700  
**FCC ID** : B3THH7700  
**Test regulation** : FCC Part15 Subpart B: 2008  
**Test Result** : Complied

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by any agency of the Federal Government.
6. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.

**Date of test:** September 24, 2008

**Tested by:** T. Arai  
Tatsuya Arai

**Approved by:** T. Imamura  
Toyokazu Imamura  
Engineer of Yamakita EMC Lab.

- The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan.  
 There is no testing item of "Non-accreditation".



**UL Japan, Inc.**  
**YAMAKITA EMC LAB.**  
907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

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MF060d (01.04.08)

## 1 Applicant Information

Company Name : DATRON WORLD COMMUNICATIONS, INC.  
Brand Name : DATRON  
Address : 3030Enterprise Court Vista, CA 92081, USA  
Telephone Number : +1-760-597-1500  
Facsimile Number : +1-760-597-1510  
Contact Person : Sheri Nasim

## 2 Product Description

Type of Equipment : VHF Handheld Transceiver  
Model No. : HH7700  
Serial No. : Sample1  
Rating : DC7.2V  
Country of Manufacture : CHINA  
Receipt Date of Sample : September 22, 2008  
Condition of EUT : Production prototype  
(Not for sale: This sample is equivalent to mass-produced items.)

DATRON WORLD COMMUNICATIONS, INC., Model: HH7700 (referred to as the EUT in this report) is a VHF Handheld Transceiver.

Frequency of operation : 30-50MHz, 72-76MHz  
Emission designator : 16K0F3E / 11K0F3E  
Intermediate frequency : 1st IF: 130.5MHz / 2nd IF: 450kHz  
Other clock frequency : CPU: 3.6864MHz, 2nd Local: 130.05MHz, TCXO: 12.8MHz  
Type of receiver : Duple-conversion super heterodyne  
Antenna type : Helical Antenna  
Antenna connector type : TNC  
Operation temperature range : -30 ~ +60 deg. C.

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### 3 Test Specification, Procedures and Results

#### 3.1 Test specification

Test Specification : FCC Part 15 Subpart B: 2008, final revised on May 19, 2008  
Title : FCC 47CFR Part 15 Radio Frequency Device  
Subpart B Unintentional Radiators

#### 3.2 Procedures & Results

Item	Test Procedure	Limits	Deviation	Worst margin	Result
Conducted emission	ANSI C63.4: 2003 7. AC powerline conducted emission measurements	CISPR 22	N/A *1	N/A	N/A
Radiated emission	ANSI C63.4: 2003 8. Radiated emission measurements	FCC §15.109(a)	N/A	7.0dB (1445.33MHz, Horizontal, AV, Rx 75.975MHz)	Complied
Antenna power conduction for receivers	ANSI C63.4: 2003 12.1.5 Antenna-conducted power measurements	FCC §15.111(a)	Excluded *2	N/A	N/A

\*1) The test is not applicable since the EUT has no AC mains.

\*2) The test was not performed according to the customer's request.

Note: UL Japan's EMI Work Procedures No.QPM05.

#### 3.3 Addition to standard

Other than above, no addition, deviation or exclusion has been made from the standard.

#### 3.4 Confirmation

**UL Japan, Inc. hereby confirms the E.U.T., in the configuration tested, complies with the specifications FCC Part 15 Subpart B: 2008.**

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### 3.5 Uncertainty

The following uncertainties have been calculated to provide a confidence level of 95% using a coverage factor k=2.

	No.1 open site (±)	No.2 open site (±)	No.1 anechoic chamber (±)
<b>Radiated emission (3m)</b>			
30-300MHz	4.3 dB	4.3 dB	4.6 dB
300-1000MHz	4.3 dB	4.3 dB	4.5 dB
1GHz<	5.7 dB	5.8 dB	5.7 dB

#### Radiated Emission Test

The data listed in this test report has enough margin, more than site margin.

### 3.6 Test Location

UL Japan, Inc. Yamakita EMC Lab.

907, Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken 258-0124 JAPAN

Telephone number : +81 465 77 1011

Facsimile number : +81 465 77 2112

NVLAP Lab. code : 200441-0

No. 1 test site has been fully described in a report submitted to FCC office, and accepted on July 23, 2008 (Registration No.: 95486).

IC Registration No. : 2973B-1

No. 2 test site has been fully described in a report submitted to FCC office, and accepted on February 27, 2008 (Registration No.: 466226).

IC Registration No. : 2973B-3

No. 1 anechoic chamber has been fully described in a report submitted to FCC office, and accepted on November 2, 2005 (Registration No.: 95967).

IC Registration No. : 2973B-2

Test room	Width x Depth x Height (m)	Test room	Width x Depth x Height (m)
No.1 shielded room	8.0 x 5.0 x 2.5	No.1 Semi-anechoic chamber	10.0 x 7.5 x 5.7
No.2 shielded room	5.0 x 4.0 x 2.5		
No.3 shielded room	4.0 x 5.0 x 2.7		

### 3.7 Test Setup, Data of EMI & Test instruments

Refer to Appendix 1 to 3.

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## 4 System Test Configuration

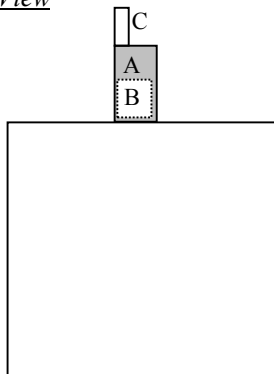
### 4.1 Justification

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

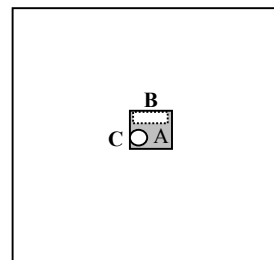
Test mode: Receiving mode  
 - Channel 1 : 30.5750MHz  
 - Channel 2 : 39.9750MHz  
 - Channel 3 : 49.5750MHz  
 - Channel 4 : 72.1250MHz  
 - Channel 5 : 75.9750MHz

### 4.2 Configuration of Tested System

*Front View*



*Top View*



\* Test data was taken under worst case conditions.

#### Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	FCC ID (Remarks)
A	Transceiver	HH7700	Sample1	Darton World communications, Inc.	B3THH7700 (EUT)
B	Battery	HH-2200BAT	Sample1	Darton World communications, Inc.	-
C	ANTENNA	HH-ANT1	Sample1	Darton World communications, Inc.	-

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## 5 Radiated Emissions

### 5.1 Operating environment

The test was carried out in No.1 Anechoic Chamber.

### 5.2 Test configuration

EUT was placed on a platform of nominal size, 0.5m by 0.5m, raised 80cm above the conducting ground plane. Photographs of the setup are shown in Appendix 1.

### 5.3 Test conditions

Frequency range : 30MHz – 2000MHz  
Test distance : 3m  
EUT operation mode : Receiving

### 5.4 Test procedure

The Radiated Electric Field Strength intensity has been measured on an anechoic chamber with a ground plane and at a distance of 3m. Measurements were performed with quasi-peak, peak and average detector.

The measuring antenna height was varied between 1 and 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.

	30-1000MHz	1000-2000MHz
Detector Type	: Quasi-Peak	PK / AV
IF Bandwidth	: 120kHz	RBW:1MHz, VBW:1MHz / RBW:1MHz, VBW:10Hz

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

The equipment was previously checked at each position of three axes X, Y and Z. The position in which the maximum noise occurred was chosen to put into measurement. See the table below and photographs in page 10.

With the position, the noise levels of all the frequencies were measured.

Frequency	Below 1GHz	Above 1GHz
Antenna: Horizontal	Y	Y
Antenna: Vertical	Z	Z

### 5.5 Results

Summary of the test results : Pass

Date : September 24, 2008      Test engineer : Tatsuya Arai

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### **APPENDIX 1: Photographs of test setup**

Page 9 : Radiated emission  
Page 10 : Pre-check of the worst position

### **APPENDIX 2: Test Data**

Page 11 - 30 : Radiated emission

### **APPENDIX 3: Test instruments**

Page 31 : Test instruments

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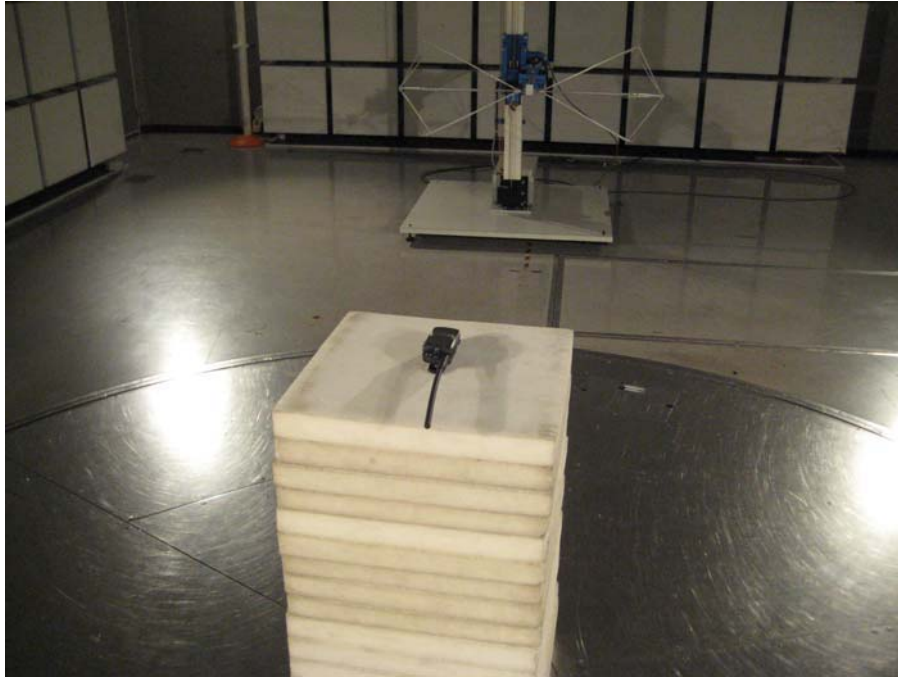
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**Radiated emission**



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**Pre-check of worst position**

X-axis



Y-axis



Z-axis



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# DATA OF RADIATION TEST

UL Japan, Inc.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
Kind of Equipment : VHF Handheld Transceiver  
Model No. : HH7700  
Serial No. : sample1  
Power : DC7.2V  
Mode : Receiving (CH1:30.575MHz)  
Remarks :  
Date : 9/24/2008  
Test Distance : 3 m  
Temperature : 23 °C Engineer : Tatsuya Arai  
Humidity : 78 %  
Regulation : FCC Part15B § 15.109(a)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	161.08	BB	33.2	29.8	15.3	27.5	2.7	6.0	29.7	26.3	43.5	13.8	17.2	
2.	322.15	BB	22.3	21.0	15.1	27.3	3.9	6.0	20.0	18.7	46.0	26.0	27.3	
3.	483.23	BB	21.1	20.6	18.4	27.1	5.0	6.0	23.4	22.9	46.0	22.6	23.1	
4.	644.30	BB	20.3	20.5	20.2	27.2	5.9	6.0	25.2	25.4	46.0	20.8	20.6	
5.	805.38	BB	19.9	19.9	21.5	27.2	6.6	6.1	26.9	26.9	46.0	19.1	19.1	
6.	966.45	BB	20.8	20.3	23.1	26.6	7.4	6.1	30.8	30.3	54.0	23.2	23.7	

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

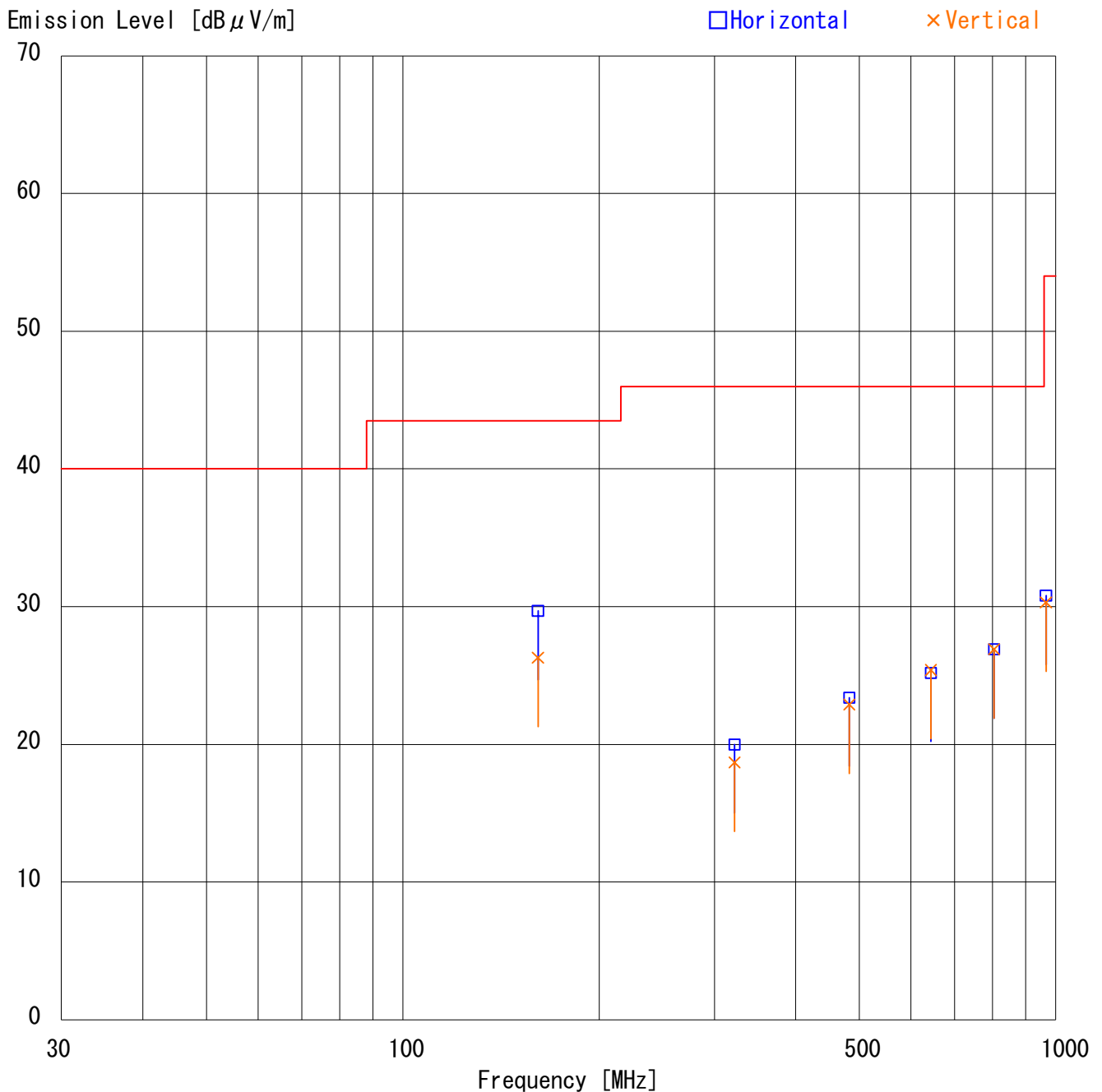
■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz

■ CABLE: KCC-30/31/32/34 ■ PREAMP: KAF-08 (MH648A) ■ EMI RECEIVER: KTR-04 (ESVS)

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Kind of Equipment : VHF Handheld Transceiver  
Model No. : HH7700  
Serial No. : sample1  
Power : DC7.2V  
Mode : Receiving (CH1:30.575MHz)  
Remarks : PK (RBW: 1MHz, VBW: 1MHz)  
Date : 9/24/2008  
Test Distance : 3 m  
Temperature : 23 °C Engineer : Tatsuya Arai  
Humidity : 78 %  
Regulation : FCC Part15B CLASS B (PK)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	1127.53	BB	47.2	47.2	23.6	38.6	3.4	0.0	35.6	35.6	74.0	38.4	38.4	
2.	1288.60	BB	46.8	46.7	24.3	38.1	3.6	0.0	36.6	36.5	74.0	37.4	37.5	
3.	1449.68	BB	48.0	46.5	25.0	37.7	3.9	0.0	39.2	37.7	74.0	34.8	36.3	
4.	1610.75	BB	46.0	45.6	26.0	37.5	4.1	0.0	38.6	38.2	74.0	35.4	35.8	

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

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz

■ CABLE:KCC-D18/D19 ■ PREAMP:KAF-02 (8449B) ■ SPECTRUMANALYZER: R3265 (APSPA04)

# DATA OF RADIATION TEST

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 Model No. : HH7700  
 Serial No. : sample1  
 Power : DC7.2V  
 Mode : Receiving (CH1:30.575MHz)  
 Remarks : AV (RBW: 1MHz, VBW: 10Hz)  
 Date : 9/24/2008  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 78 %  
 Regulation : FCC Part15B § 15.109(a)

Engineer : Tatsuya Arai

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.	1127.53	BB	35.5	35.4	23.6	38.6	3.4	0.0	23.9	23.8	54.0	30.1	30.2
2.	1288.60	BB	35.9	35.3	24.3	38.1	3.6	0.0	25.7	25.1	54.0	28.3	28.9
3.	1449.68	BB	39.5	36.1	25.0	37.7	3.9	0.0	30.7	27.3	54.0	23.3	26.7
4.	1610.75	BB	34.3	34.2	26.0	37.5	4.1	0.0	26.9	26.8	54.0	27.1	27.2

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

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz  
 ■ CABLE:KCC-D18/D19 ■ PREAMP:KAF-02 (8449B) ■ SPECTRUMANALYZER: R3265 (APSPA04)

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 Kind of Equipment : VHF Handheld Transceiver  
 Model No. : HH7700  
 Serial No. : sample1  
 Power : DC7.2V  
 Mode : Receiving (CH2:39.975MHz)  
 Remarks :  
 Date : 9/24/2008  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 78 %  
 Regulation : FCC Part15B § 15.109(a)

Engineer : Tatsuya Arai

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	170.48	BB	31.0	26.0	15.8	27.2	2.8	6.0	28.4	23.4	43.5	15.1	20.1	
2.	340.95	BB	22.3	21.5	15.6	27.3	4.1	6.0	20.7	19.9	46.0	25.3	26.1	
3.	511.43	BB	20.5	20.7	18.8	27.0	5.1	6.0	23.4	23.6	46.0	22.6	22.4	
4.	681.90	BB	20.6	21.0	20.3	27.1	6.0	6.1	25.9	26.3	46.0	20.1	19.7	
5.	852.38	BB	21.6	20.9	21.8	27.2	6.9	6.1	29.2	28.5	46.0	16.8	17.5	

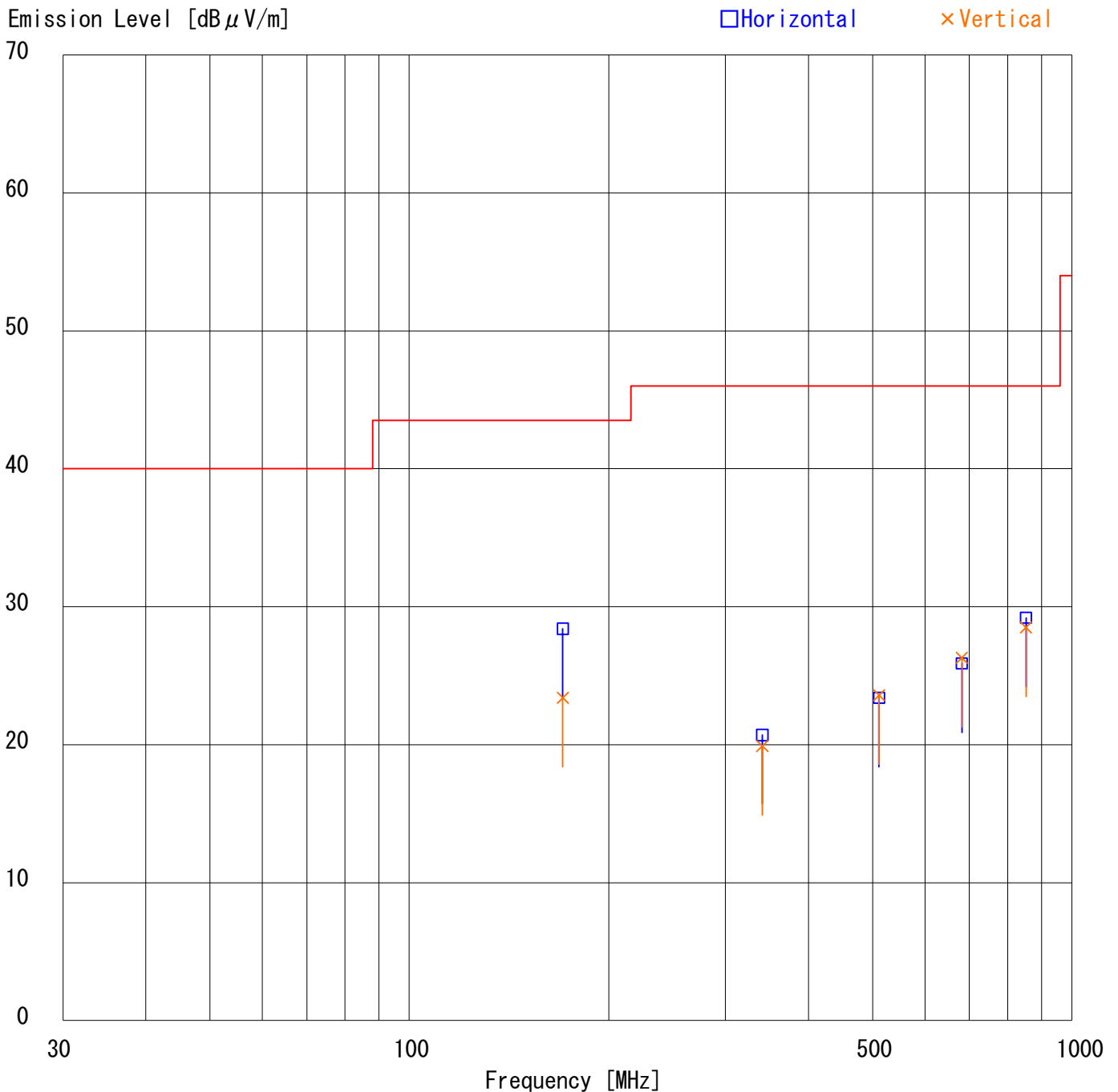
CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz  
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 Date : 9/24/2008  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 78 %  
 Regulation : FCC Part15B CLASS B (PK)

Engineer : Tatsuya Arai

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	1022.85	BB	51.8	50.4	23.1	38.8	3.3	0.0	39.4	38.0	74.0	34.6	36.0	
2.	1193.33	BB	47.4	47.6	23.9	38.4	3.5	0.0	36.4	36.6	74.0	37.6	37.4	
3.	1363.80	BB	48.2	47.9	24.6	38.0	3.7	0.0	38.5	38.2	74.0	35.5	35.8	
4.	1534.28	BB	46.2	46.5	25.5	37.6	4.0	0.0	38.1	38.4	74.0	35.9	35.6	
5.	1704.75	BB	45.7	45.3	26.6	37.4	4.2	0.0	39.1	38.7	74.0	34.9	35.3	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz  
 ■ CABLE: KCC-D18/D19 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUMANALYZER: R3265 (APSPA04)

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Humidity : 78 %  
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No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	1022.85	BB	43.3	42.6	23.1	38.8	3.3	0.0	30.9	30.2	54.0	23.1	23.8	
2.	1193.33	BB	36.8	37.0	23.9	38.4	3.5	0.0	25.8	26.0	54.0	28.2	28.0	
3.	1363.80	BB	38.3	36.5	24.6	38.0	3.7	0.0	28.6	26.8	54.0	25.4	27.2	
4.	1534.28	BB	34.6	34.5	25.5	37.6	4.0	0.0	26.5	26.4	54.0	27.5	27.6	
5.	1704.75	BB	33.6	33.7	26.6	37.4	4.2	0.0	27.0	27.1	54.0	27.0	26.9	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz

■ CABLE: KCC-D18/D19 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUMANALYZER: R3265 (APSPA04)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
 Kind of Equipment : VHF Handheld Transceiver  
 Model No. : HH7700  
 Serial No. : sample1  
 Power : DC7.2V  
 Mode : Receiving (CH3:49.575MHz)  
 Remarks :  
 Date : 9/24/2008  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 78 %  
 Regulation : FCC Part15B § 15.109(a)

Engineer : Tatsuya Arai

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	180.08	BB	31.4	27.1	16.3	27.3	2.9	6.0	29.3	25.0	43.5	14.2	18.5	
2.	360.15	BB	21.7	21.1	16.1	27.3	4.2	6.0	20.7	20.1	46.0	25.3	25.9	
3.	540.23	BB	21.2	21.0	19.2	27.0	5.3	6.0	24.7	24.5	46.0	21.3	21.5	
4.	720.30	BB	24.2	22.9	20.6	27.1	6.2	6.1	30.0	28.7	46.0	16.0	17.3	
5.	900.38	BB	24.6	22.5	22.1	27.2	7.1	6.1	32.7	30.6	46.0	13.3	15.4	

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

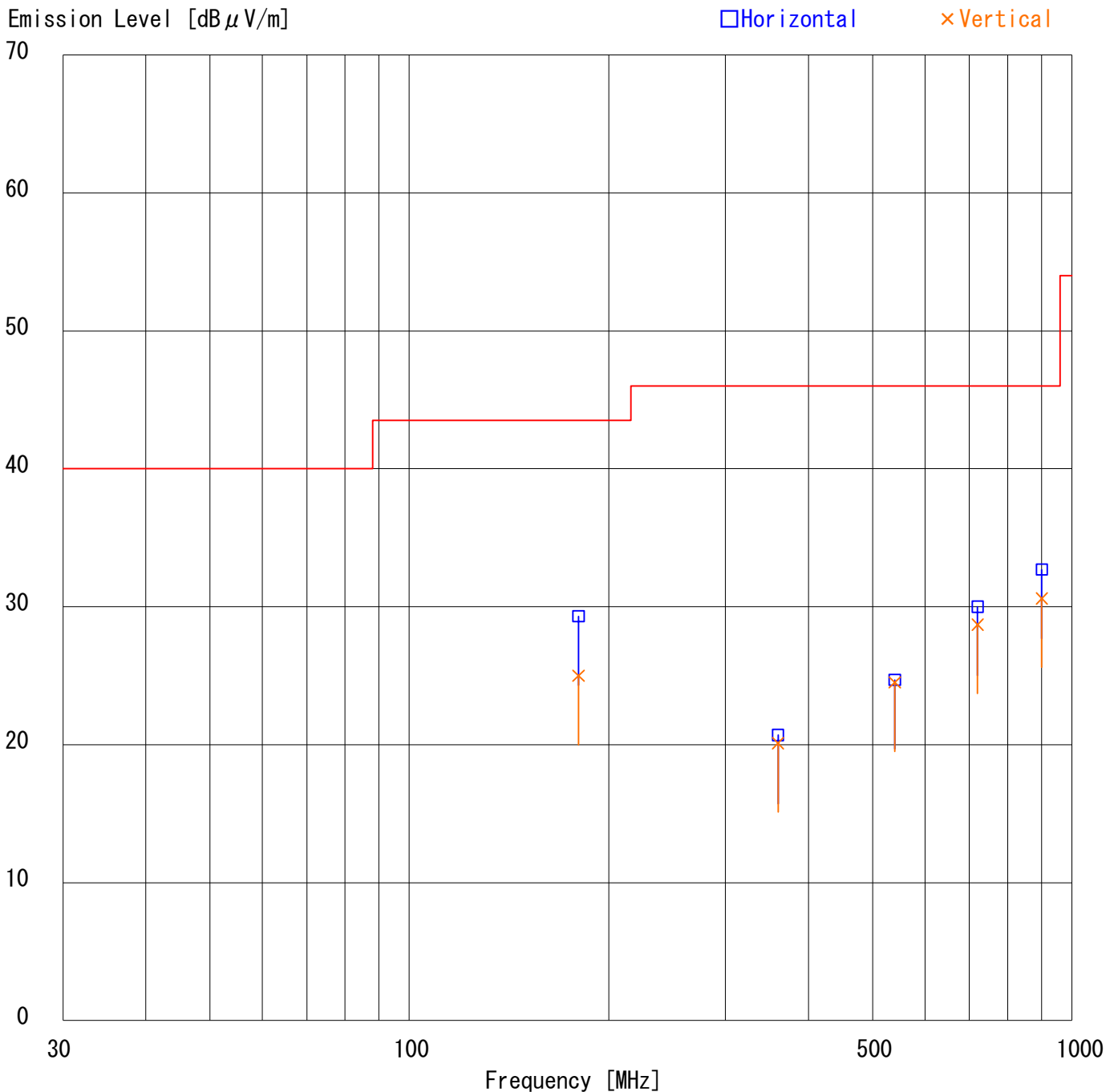
■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz  
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-08 (MH648A) ■ EMI RECEIVER : KTR-04 (ESVS)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
Kind of Equipment : VHF Handheld Transceiver  
Model No. : HH7700  
Serial No. : sample1  
Power : DC7.2V  
Mode : Receiving (CH3:49.575MHz)  
Remarks :  
Date : 9/24/2008  
Test Distance : 3 m  
Temperature : 23 °C  
Humidity : 78 %  
Regulation : FCC Part15B § 15.109(a)

Engineer : Tatsuya Arai



# DATA OF RADIATION TEST

UL Japan, Inc.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
Kind of Equipment : VHF Handheld Transceiver  
Model No. : HH7700  
Serial No. : sample1  
Power : DC7.2V  
Mode : Receiving (CH3:49.575MHz)  
Remarks : PK (RBW: 1MHz, VBW: 1MHz)  
Date : 9/24/2008  
Test Distance : 3 m  
Temperature : 23 °C Engineer : Tatsuya Arai  
Humidity : 78 %  
Regulation : FCC Part15B CLASS B (PK)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	1080.45	BB	50.7	50.3	23.4	38.7	3.3	0.0	38.7	38.3	74.0	35.3	35.7	
2.	1260.53	BB	48.0	48.2	24.2	38.2	3.6	0.0	37.6	37.8	74.0	36.4	36.2	
3.	1440.60	BB	52.5	50.3	24.9	37.8	3.8	0.0	43.4	41.2	74.0	30.6	32.8	
4.	1620.68	BB	48.4	46.9	26.1	37.5	4.1	0.0	41.1	39.6	74.0	32.9	34.4	
5.	1800.75	BB	44.9	45.2	27.3	37.3	4.3	0.0	39.2	39.5	74.0	34.8	34.5	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz

■ CABLE: KCC-D18/D19 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUMANALYZER: R3265 (APSPA04)

# DATA OF RADIATION TEST

UL Japan, Inc.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
Kind of Equipment : VHF Handheld Transceiver  
Model No. : HH7700  
Serial No. : sample1  
Power : DC7.2V  
Mode : Receiving (CH3:49.575MHz)  
Remarks : AV (RBW: 1MHz, VBW: 10Hz)  
Date : 9/24/2008  
Test Distance : 3 m  
Temperature : 23 °C Engineer : Tatsuya Arai  
Humidity : 78 %  
Regulation : FCC Part15B § 15.109(a)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	1080.45	BB	43.5	43.7	23.4	38.7	3.3	0.0	31.5	31.7	54.0	22.5	22.3	
2.	1260.53	BB	38.4	38.4	24.2	38.2	3.6	0.0	28.0	28.0	54.0	26.0	26.0	
3.	1440.60	BB	48.5	43.9	24.9	37.8	3.8	0.0	39.4	34.8	54.0	14.6	19.2	
4.	1620.68	BB	37.2	37.1	26.1	37.5	4.1	0.0	29.9	29.8	54.0	24.1	24.2	
5.	1800.75	BB	33.7	33.7	27.3	37.3	4.3	0.0	28.0	28.0	54.0	26.0	26.0	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz

■ CABLE: KCC-D18/D19 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUMANALYZER: R3265 (APSPA04)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
 Kind of Equipment : VHF Handheld Transceiver  
 Model No. : HH7700  
 Serial No. : sample1  
 Power : DC7.2V  
 Mode : Receiving (CH4:72.125MHz)  
 Remarks :  
 Date : 9/24/2008  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 78 %  
 Regulation : FCC Part15B § 15.109(a)

Engineer : Tatsuya Arai

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	202.63	BB	25.5	23.1	16.9	27.5	3.1	6.0	24.0	21.6	43.5	19.5	21.9	
2.	405.25	BB	20.9	21.0	17.2	27.2	4.5	6.0	21.4	21.5	46.0	24.6	24.5	
3.	607.88	BB	21.3	24.5	20.1	27.2	5.7	6.0	25.9	29.1	46.0	20.1	16.9	
4.	810.50	BB	24.2	23.7	21.5	27.2	6.7	6.1	31.3	30.8	46.0	14.7	15.2	

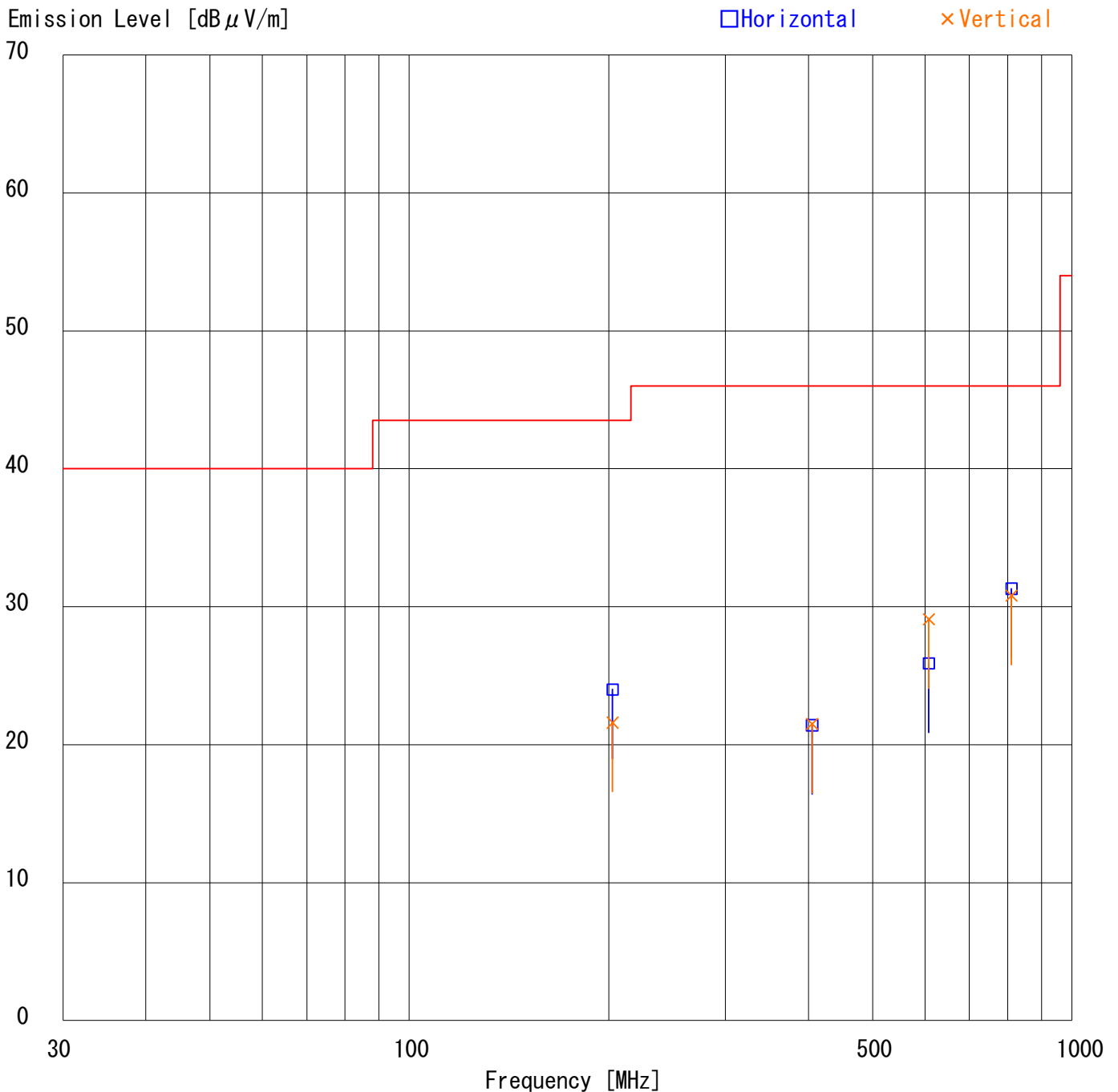
CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz / KLA-03 (USLP9143) 300-1000MHz  
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-08 (MH648A) ■ EMI RECEIVER : KTR-04 (ESVS)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
Kind of Equipment : VHF Handheld Transceiver  
Model No. : HH7700  
Serial No. : sample1  
Power : DC7.2V  
Mode : Receiving (CH4:72.125MHz)  
Remarks :  
Date : 9/24/2008  
Test Distance : 3 m  
Temperature : 23 °C  
Humidity : 78 %  
Regulation : FCC Part15B § 15.109(a)  
Engineer : Tatsuya Arai





# DATA OF RADIATION TEST

UL Japan, Inc.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
Kind of Equipment : VHF Handheld Transceiver  
Model No. : HH7700  
Serial No. : sample1  
Power : DC7.2V  
Mode : Receiving (CH4:72.125MHz)  
Remarks : PK (RBW: 1MHz, VBW: 1MHz)  
Date : 9/24/2008  
Test Distance : 3 m  
Temperature : 23 °C Engineer : Tatsuya Arai  
Humidity : 78 %  
Regulation : FCC Part15B CLASS B (PK)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	1013.13	BB	53.9	53.7	23.1	38.8	3.2	0.0	41.4	41.2	74.0	32.6	32.8	
2.	1215.75	BB	49.2	51.0	24.0	38.3	3.5	0.0	38.4	40.2	74.0	35.6	33.8	
3.	1418.38	BB	56.1	53.4	24.9	37.8	3.8	0.0	47.0	44.3	74.0	27.0	29.7	
4.	1621.00	BB	48.6	49.3	26.1	37.5	4.1	0.0	41.3	42.0	74.0	32.7	32.0	
5.	1823.63	BB	49.1	48.5	27.5	37.3	4.3	0.0	43.6	43.0	74.0	30.4	31.0	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz

■ CABLE: KCC-D18/D19 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUMANALYZER: R3265 (APSPA04)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
 Kind of Equipment : VHF Handheld Transceiver  
 Model No. : HH7700  
 Serial No. : sample1  
 Power : DC7.2V  
 Mode : Receiving (CH4:72.125MHz)  
 Remarks : AV (RBW: 1MHz, VBW: 10Hz)  
 Date : 9/24/2008  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 78 %  
 Regulation : FCC Part15B § 15.109(a)

Engineer : Tatsuya Arai

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	1013.13	BB	49.4	48.5	23.1	38.8	3.2	0.0	36.9	36.0	54.0	17.1	18.0	
2.	1215.75	BB	40.1	44.7	24.0	38.3	3.5	0.0	29.3	33.9	54.0	24.7	20.1	
3.	1418.38	BB	53.9	49.9	24.9	37.8	3.8	0.0	44.8	40.8	54.0	9.2	13.2	
4.	1621.00	BB	41.0	40.3	26.1	37.5	4.1	0.0	33.7	33.0	54.0	20.3	21.0	
5.	1823.63	BB	38.5	40.8	27.5	37.3	4.3	0.0	33.0	35.3	54.0	21.0	18.7	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz  
 ■ CABLE: KCC-D18/D19 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUMANALYZER: R3265 (APSPA04)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
 Kind of Equipment : VHF Handheld Transceiver  
 Model No. : HH7700  
 Serial No. : sample1  
 Power : DC7.2V  
 Mode : Receiving (CH5:75.975MHz)  
 Remarks :  
 Date : 9/24/2008  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 78 %  
 Regulation : FCC Part15B § 15.109(a)

Engineer : Tatsuya Arai

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	206.48	BB	25.2	22.9	16.9	27.5	3.1	6.0	23.7	21.4	43.5	19.8	22.1	
2.	412.95	BB	21.1	21.0	17.3	27.2	4.6	6.0	21.8	21.7	46.0	24.2	24.3	
3.	619.43	BB	23.7	24.4	20.1	27.2	5.7	6.0	28.3	29.0	46.0	17.7	17.0	
4.	825.90	BB	24.9	23.9	21.6	27.3	6.7	6.1	32.0	31.0	46.0	14.0	15.0	

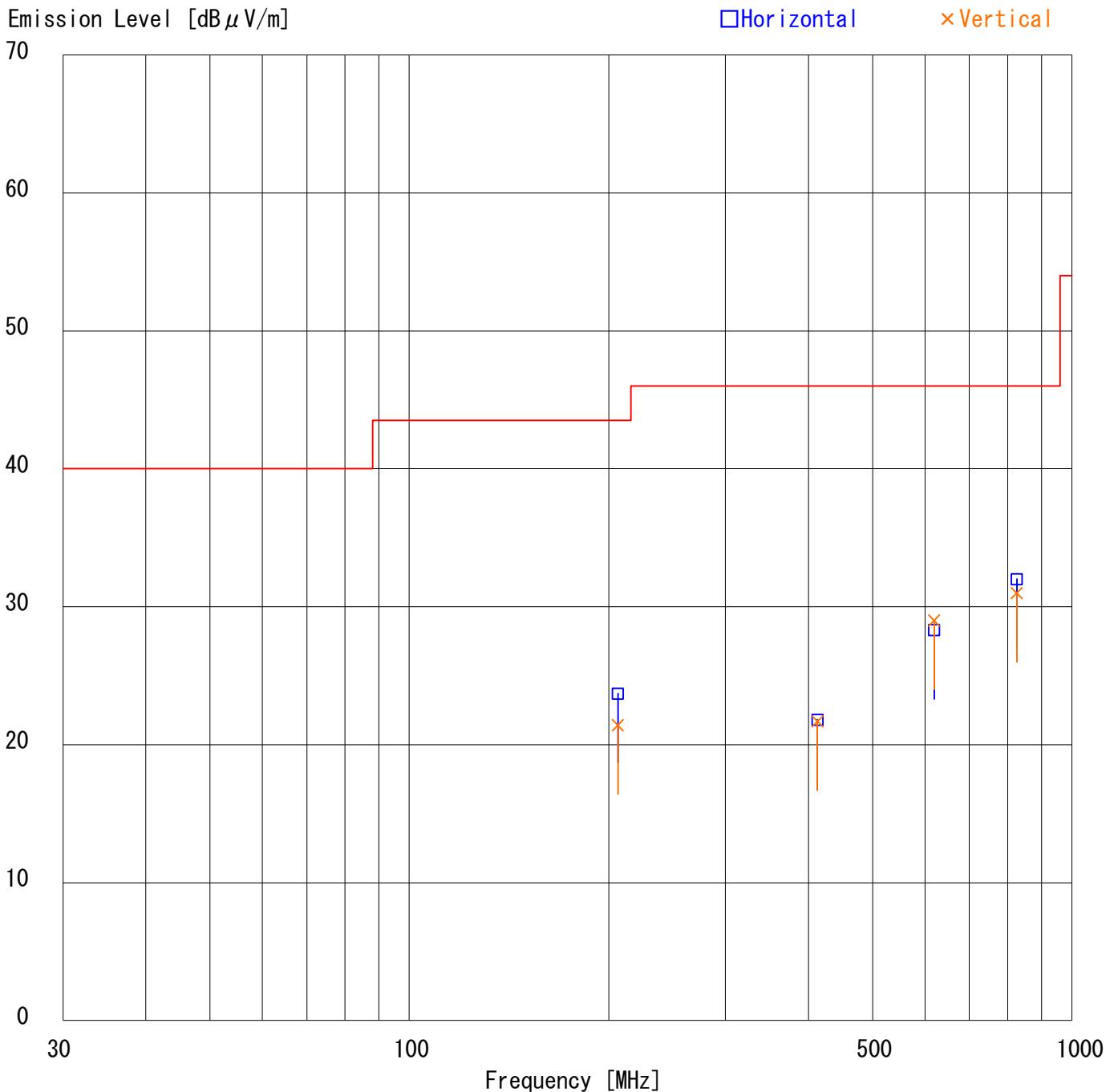
CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz / KLA-03 (USLP9143) 300-1000MHz  
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-08 (MH648A) ■ EMI RECEIVER : KTR-04 (ESVS)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
Kind of Equipment : VHF Handheld Transceiver  
Model No. : HH7700  
Serial No. : sample1  
Power : DC7.2V  
Mode : Receiving (CH5:75.975MHz)  
Remarks :  
Date : 9/24/2008  
Test Distance : 3 m  
Temperature : 23 °C  
Humidity : 78 %  
Regulation : FCC Part15B § 15.109(a)  
Engineer : Tatsuya Arai



# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
 Kind of Equipment : VHF Handheld Transceiver  
 Model No. : HH7700  
 Serial No. : sample1  
 Power : DC7.2V  
 Mode : Receiving (CH5:75.975MHz)  
 Remarks : PK (RBW: 1MHz, VBW: 1MHz)  
 Date : 9/24/2008  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 78 %  
 Regulation : FCC Part15B CLASS B (PK)

Engineer : Tatsuya Arai

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	1032.38	BB	50.8	50.3	23.2	38.8	3.3	0.0	38.5	38.0	74.0	35.5	36.0	
2.	1238.85	BB	50.7	51.3	24.1	38.3	3.6	0.0	40.1	40.7	74.0	33.9	33.3	
3.	1445.33	BB	58.0	54.2	25.0	37.7	3.9	0.0	49.2	45.4	74.0	24.8	28.6	
4.	1651.80	BB	48.9	50.0	26.3	37.5	4.1	0.0	41.8	42.9	74.0	32.2	31.1	
5.	1858.28	BB	48.2	47.4	27.7	37.3	4.4	0.0	43.0	42.2	74.0	31.0	31.8	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz  
 ■ CABLE: KCC-D18/D19 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUMANALYZER: R3265 (APSPA04)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 29BE0120-YK

Applicant : DATRON WORLD COMMUNICATION, INC.  
 Kind of Equipment : VHF Handheld Transceiver  
 Model No. : HH7700  
 Serial No. : sample1  
 Power : DC7.2V  
 Mode : Receiving (CH5:75.975MHz)  
 Remarks : AV (RBW: 1MHz, VBW: 10Hz)  
 Date : 9/24/2008  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 78 %  
 Regulation : FCC Part15B § 15.109(a)

Engineer : Tatsuya Arai

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	1032.38	BB	42.6	41.3	23.2	38.8	3.3	0.0	30.3	29.0	54.0	23.7	25.0	
2.	1238.85	BB	45.0	46.1	24.1	38.3	3.6	0.0	34.4	35.5	54.0	19.6	18.5	
3.	1445.33	BB	55.8	50.9	25.0	37.7	3.9	0.0	47.0	42.1	54.0	7.0	11.9	
4.	1651.80	BB	42.8	44.2	26.3	37.5	4.1	0.0	35.7	37.1	54.0	18.3	16.9	
5.	1858.28	BB	37.6	39.0	27.7	37.3	4.4	0.0	32.4	33.8	54.0	21.6	20.2	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz  
 ■ CABLE: KCC-D18/D19 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUMANALYZER: R3265 (APSPA04)

**APPENDIX 3  
Test Instruments**

**EMI test equipment**

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
YA-RE	Radiated emission(software)	UL Japan	RE(Ver.1.5)	RE	-
KAEC-01	Anechoic Chamber	JSE	Semi 3m	RE	2008/08/06 * 12
KAF-05	Pre Amplifier	Agilent	8447D	RE	2008/04/08 * 12
KAT6-01	Attenuator	INMET	18N-6dB	RE	2008/03/17 * 12
KBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2007/12/27 * 12
KCC-30/31/32 /34/KRM-03	Coaxial Cable/RF Relay Matrix	Fujikura/Suhner/TSJ	5D-2W/S04272B/RFM- E421	RE	2008/05/12 * 12
KLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2007/12/27 * 12
KOS-02	Humidity Indicator	Custom	CTH-190	RE	2008/07/07 * 12
APSPA04	Spectrum Analyzer	Advantest	R3265	RE	2008/07/28 * 12
KTR-04	Test Receiver	Rohde & Schwarz	ESVS10	RE	2007/10/30 * 12
KJM-07	Measure	KOMELON	KMC-36	RE	-
KHA-01	Horn Antenna	A.H.Systems	SAS-200/571	RE	2008/08/11 * 12
KCC-D18/D19	Coaxial cable	Suhner	SCOFLEX104	RE	2008/07/07 * 12
KAF-02	Pre Amplifier	Hewlett Packard	8449B	RE	2008/04/11 * 12

The expiration date of the calibration is the end of the expired month .

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

Test Item :

RE: Radiated emission ,