



**FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8
CERTIFICATION TEST REPORT**

FOR

REMOTE CONTROL STARTER SYSTEM

MODEL NUMBER: RS-07AC-1 / RS-08AC-1

**FCC ID: TIC-RS07AC1
IC: 2500C-RS07AC1**

REPORT NUMBER: 31JE0182-AP-R1

ISSUE DATE: JULY 8, 2011

Prepared for
**Honda Access Corp.
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Haga-gun, Tochigi, 321-3393,
Japan**

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NVLAP LAB CODE: 200572-0

This laboratory is accredited by the NVLAP LAB CODE 200572-0, U.S.A. The tests reported herein have been performed in accordance with its terms of accreditation. *As for the range of Accreditation in NVLAP, you may refer to the WEB address, <http://www.ul.com/japan/jpn/pages/services/emc/about/mark1/index.jsp#nvlap>

Revision History

Rev.	Issue Date	Revisions	Revised By
---	06/29/11	Initial Issue	T.Hatakeda
1	07/08/11	Revise the sentence regarding uncertainty in Section 4.2 * This report is a revised version of 30JE0182-AP. 30JE0182-AP is replaced with this report.	T.Hatakeda

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Honda Access Corp.
4630 Shimotakanezawa, Haga-gun, Tochigi, 321-3393, Japan

EUT DESCRIPTION: REMOTE CONTROL STARTER SYSTEM

MODEL: RS-07AC-1 (Tested model), RS-08AC-1 (Variant model)

SERIAL NUMBER: 001, 002, AND 003

DATE TESTED: JUNE 16 AND 17, 2011

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	PASS
INDUSTRY CANADA RSS-210 ISSUE 8	PASS

UL Japan, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Japan, Inc. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Japan, Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Japan, Inc. will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For UL Japan, Inc. By:



TAKAHIRO HATAKEDA
Leader of WiSE Japan
UL Verification Services
UL Japan, Inc.

Tested By:



KAZUYA YOSHIOKA
Engineer of WiSE Japan
UL Verification Services
UL Japan, Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2 and FCC CFR 47 Part 15, IC RSS-GEN and IC RSS-210.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN.

UL Japan, Inc. is accredited by NVLAP, Laboratory Code 200572-0
The full scope of accreditation can be viewed at
<http://www.ul.com/japan/jpn/pages/services/emc/about/mark1/index.jsp#nvlap>

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

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

Test room (semi-anechoic chamber)	Radiated emission						
	(3m*)(+dB)				(1m*)(+dB)		(0.5m*)(+dB)
	9kHz -30MHz	30MHz - 300MHz	300MHz -1GHz	1GHz -10GHz	10GHz -18GHz	18GHz -26.5GHz	26.5GHz -40GHz
No.1	3.5dB	5.1dB	5.2dB	4.8dB	5.1dB	4.4dB	4.3dB
No.2	4.0dB	5.1dB	5.2dB	4.8dB	5.0dB	4.3dB	4.2dB
No.3	4.2dB	4.7dB	5.2dB	4.8dB	5.0dB	4.5dB	4.2dB
No.4	4.0dB	5.0dB	5.1dB	4.8dB	5.0dB	5.1dB	4.2dB

*3m/1m/0.5m = Measurement distance

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Equipment Type	429.175 MHz Transmitter
Fundamental Frequency	429.175 MHz
Power Source	3V DC
Transmitting Time	Periodic ≤ 5 seconds
Manufacturer	Honda Access Corp.

5.2. MODEL DIFFERENCES

The difference between RS-07AC-1 and RS-08AC-1 is Software at CPU with some minor different commands. There is no change in radio frequency, RF output power, radio frequency circuitry, Antenna, PCB and functional capabilities.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a Chip antenna with a maximum gain of -7 dBi.

5.4. SOFTWARE AND FIRMWARE

Modified the ON switch circuitry to activate either continuous transmitting or receiving

5.5. MODIFICATIONS

No modifications were made during testing.

5.6. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined by X, Y, and Z-axis. The highest measured output power was at X-axis.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

N/A

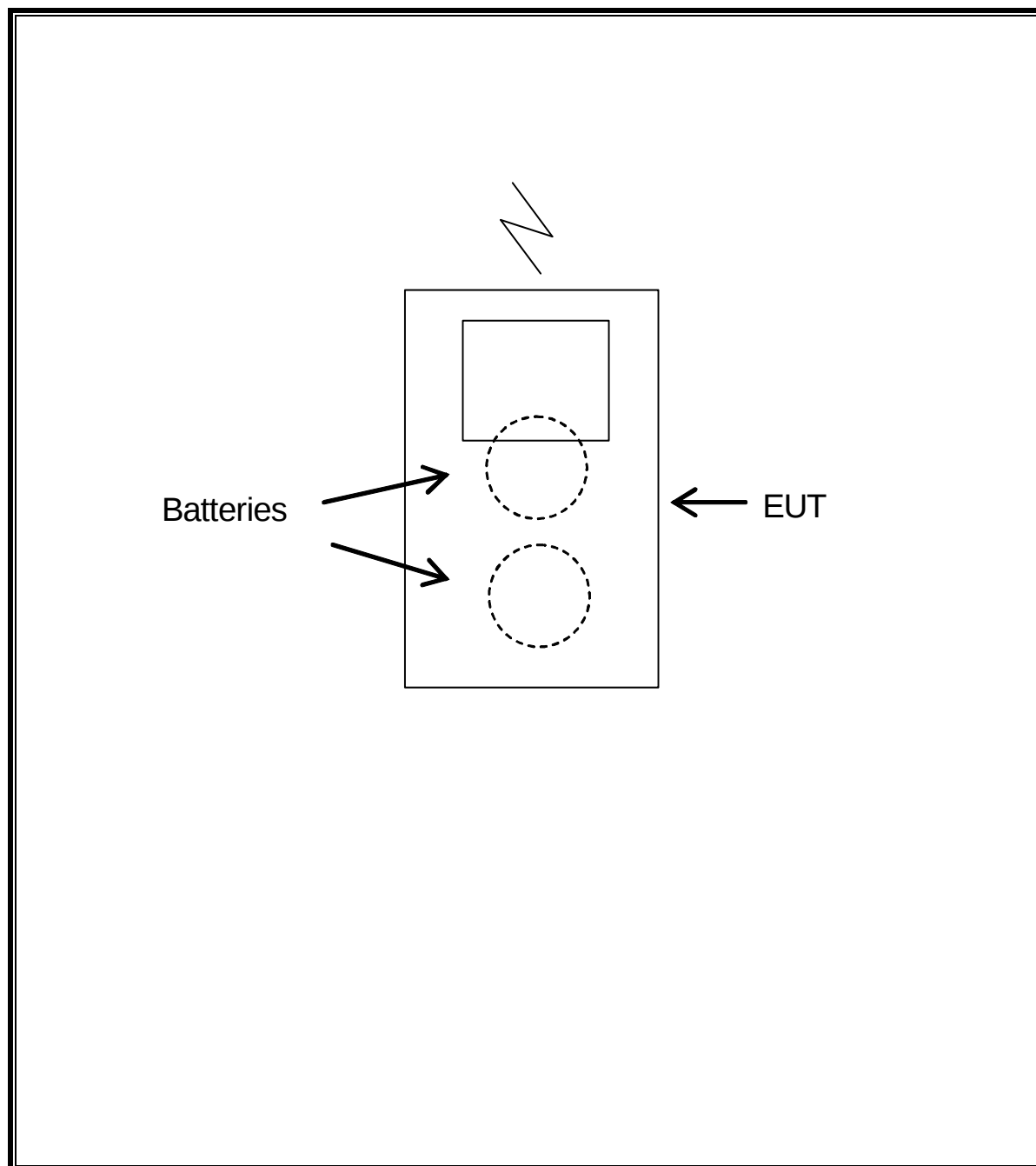
I/O CABLES

N/A

TEST SETUP

The EUT is stand-alone unit and is battery operated.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Control No.	Instrument	Manufacturer	Model No	Serial No	Calibration Date * Interval(month)
MAEC-02	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	2010/09/01 * 12
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	2011/02/23 * 12
MJM-05	Measure	PROMART	SEN1955	-	
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	-
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	2010/11/30 * 12
MTR-03	Test Receiver	Rohde & Schwarz	ESCI	100300	2011/04/15 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	VHA91032008	2010/10/11 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	201	2010/10/11 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	-	2011/02/18 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	BK7970	2010/11/05 * 12
MPA-09	Pre Amplifier	Agilent	8447D	2944A10845	2010/09/09 * 12
MHA-06	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	254	2011/01/16 * 12
MPA-10	Pre Amplifier	Agilent	8449B	3008A02142	2010/09/30 * 12
MCC-56	Microwave Cable	Suhner	SUCOFLEX104	270875/4(1m) / 284655(5m)	2011/03/02 * 12

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

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

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

7. LIMITS AND RESULTS

7.1. 20dB & 99% BANDWIDTHS

LIMITS

FCC §15.231 (c)

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

IC A1.1.3

For the purpose of Section A1.1, the 99% Bandwidth shall be no wider than 0.25% of the center frequency for devices operating between 70-900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency.

TEST PROCEDURE

ANSI C63.4

The transmitter output is connected to the spectrum analyzer.

20dB Bandwidth: The RBW is set to 30 KHz. The VBW is set to 91 KHz. The sweep time is coupled. Bandwidth is determined at the points 20 dB down from the modulated carrier.

99% Bandwidth: The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

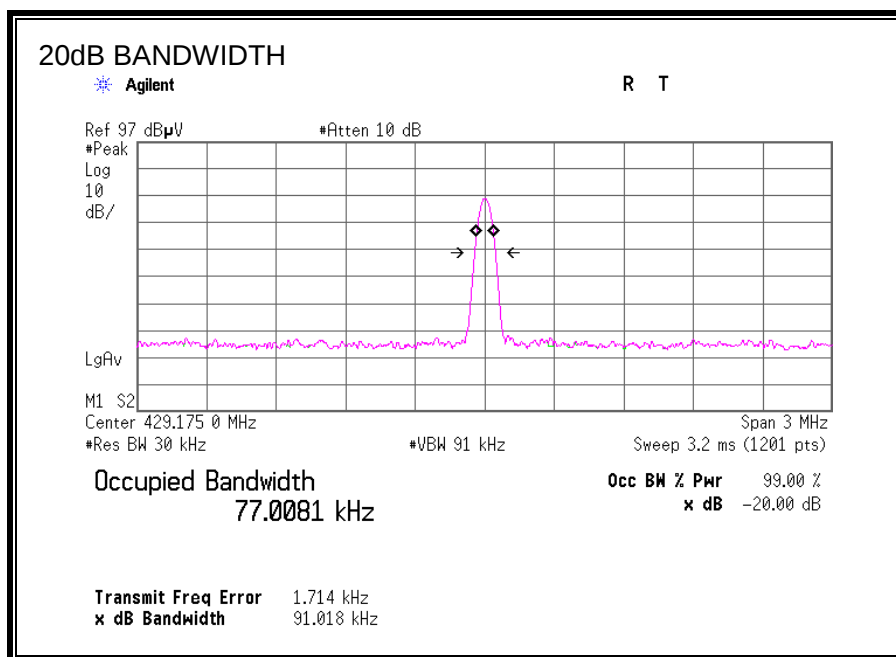
20dB Bandwidth

Frequency (MHz)	20dB Bandwidth (KHz)	Limit (KHz)	Margin (KHz)
429.175	91.018	1072.938	-981.920

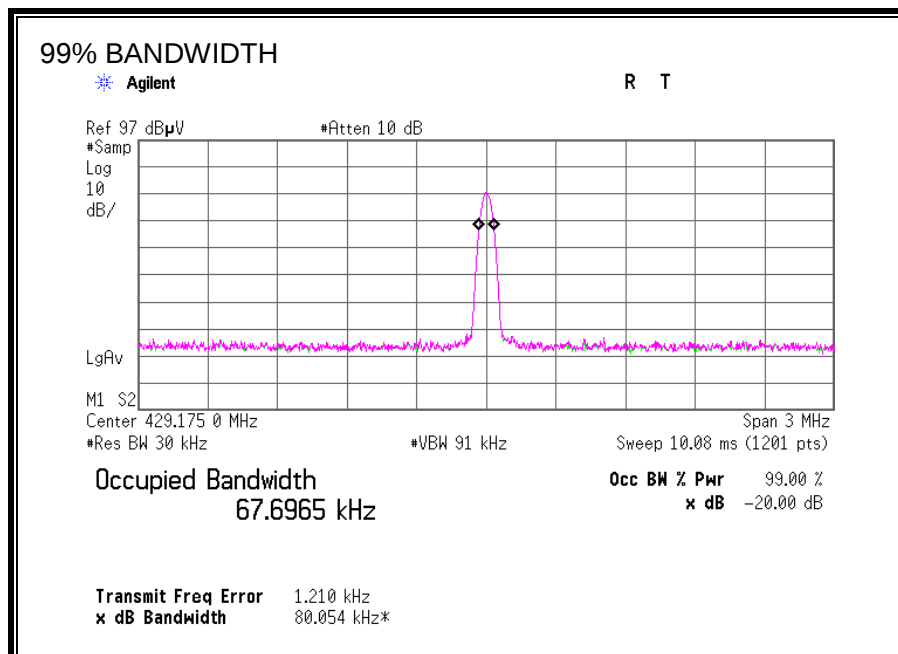
99% Bandwidth

Frequency (MHz)	99% Bandwidth (KHz)	Limit (KHz)	Margin (KHz)
429.175	67.697	1072.938	-1005.241

20dB BANDWIDTH



99% BANDWIDTH



7.2. DUTY CYCLE

LIMITS

FCC §15.35 (c)

The measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification or shall be retained in the measurement data file for equipment subject to notification or verification.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer or radiated field strength. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled and the span is set to 0 Hz. The number of pulses is measured and calculated in a 100 ms scan.

CALCULATION

Average Reading = Peak Reading (dBuV/m) + 20log (Duty Cycle), Where Duty Cycle is (# of long pulses * long pulse width) + (# of short pulses * short pulse width) / 100 or T

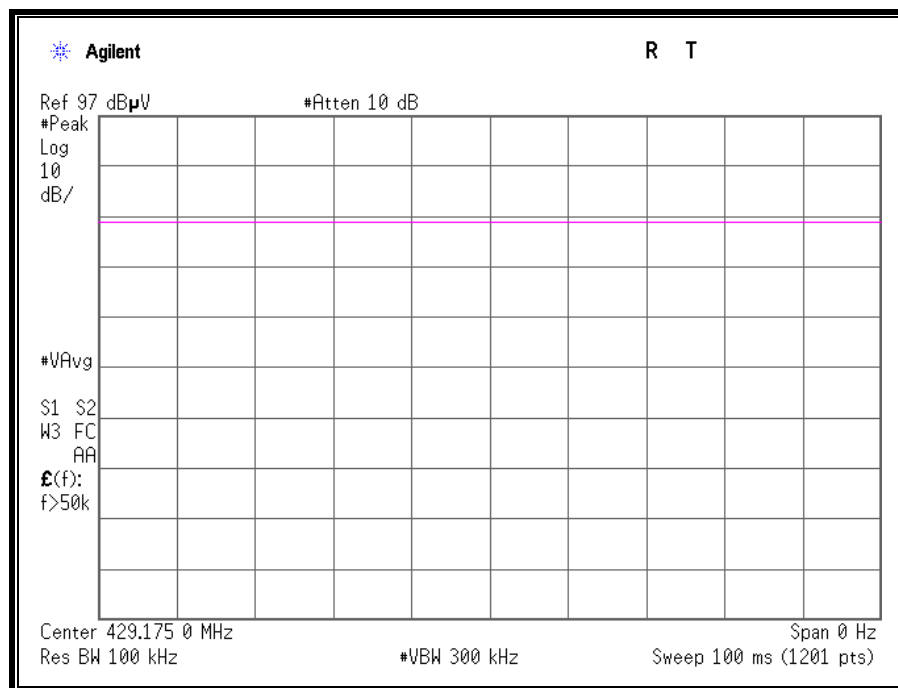
RESULTS

(Total)

ON time [ms]	Cycle [ms]	Duty (On time/Cycle)	Duty [dB]
100.00	100.00	1.00	0.0

*1)Duty = 20log₁₀(ON time/Cycle)

Duty Cycle



7.3. TRANSMISSION TIME

LIMITS

FCC §15.231 (a) (2)

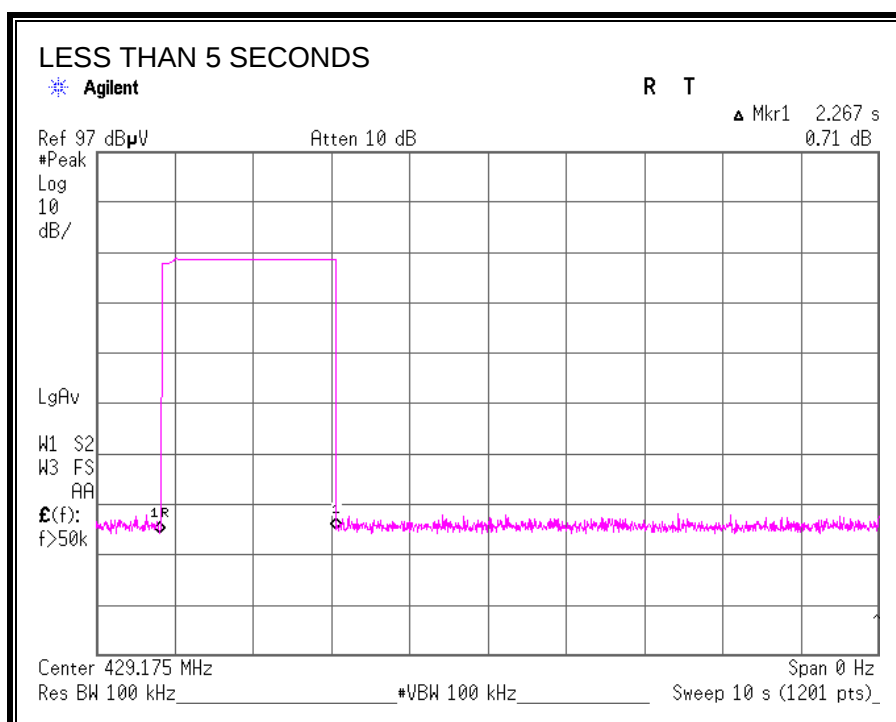
IC A1.1.1 (b)

A transmitter activated automatically shall cease transmission within 5 seconds after activation.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer or radiated field strength. The RBW is set to 100 kHz and the VBW is set to 100 kHz. The sweep time is set to 10 seconds and the span is set to 0 Hz.

RESULTS



7.4. RADIATED EMISSION TEST RESULTS

FUNDAMENTAL, HARMONICS AND TX SPURIOUS EMISSION

Test place	Head Office EMC Lab. No.2 Semi Anechoic Chamber
Report No.	31JE0182-AP
Date	06/16/2011
Temperature/ Humidity	21 deg. C / 62% RH
Engineer	Kazuya Yoshioka
Mode	Transmitting mode

For FCC

QP or PK

Frequency [MHz]	Detector	Reading [dBuV]		Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]		Limit dBuV/m	Margin [dB]		Remark Inside or Outside of Restricted Bands
		Hor	Ver					Hor	Ver		Hor	Ver	
429.175	QP	78.1	77.2	17.5	9.4	28.5	-	76.5	75.6	80.6	4.1	5.0	Carrier
858.350	QP	22.4	22.4	21.9	11.1	28.1	-	27.3	27.3	60.6	33.3	33.3	Outside
1287.525	PK	44.9	45.8	24.8	1.8	33.4	-	38.1	39.0	80.6	42.5	41.6	Outside
1716.700	PK	43.9	47.5	26.1	2.1	32.8	-	39.3	42.9	80.6	41.3	37.7	Outside
2145.875	PK	43.3	44.8	27.0	2.4	32.5	-	40.2	41.7	80.6	40.4	38.9	Outside
2575.050	PK	44.6	45.7	27.7	2.6	32.4	-	42.5	43.6	80.6	38.1	37.0	Outside
3004.225	PK	43.4	43.2	28.3	2.8	32.4	-	42.1	41.9	80.6	38.5	38.7	Outside
3433.400	PK	43.1	43.0	29.1	3.1	32.0	-	43.3	43.2	80.6	37.3	37.4	Outside
3862.575	PK	42.0	41.1	30.0	3.3	31.7	-	43.6	42.7	73.9	30.3	31.2	Inside
4291.750	PK	41.0	41.0	30.3	3.5	31.5	-	43.3	43.3	73.9	30.6	30.6	Inside

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

PK with Duty factor

Frequency [MHz]	Detector	Reading [dBuV]		Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]		Limit dBuV/m	Margin [dB]		Remark
		Hor	Ver					Hor	Ver		Hor	Ver	
1287.525	AV	44.9	45.8	24.8	1.8	33.4	0.0	38.1	39.0	60.6	22.5	21.6	Outside
1716.700	AV	43.9	47.5	26.1	2.1	32.8	0.0	39.3	42.9	60.6	21.3	17.7	Outside
2145.875	AV	43.3	44.8	27.0	2.4	32.5	0.0	40.2	41.7	60.6	20.4	18.9	Outside
2575.050	AV	44.6	45.7	27.7	2.6	32.4	0.0	42.5	43.6	60.6	18.1	17.0	Outside
3004.225	AV	43.4	43.2	28.3	2.8	32.4	0.0	42.1	41.9	60.6	18.5	18.7	Outside
3433.400	AV	43.1	43.0	29.1	3.1	32.0	0.0	43.3	43.2	60.6	17.3	17.4	Outside
3862.575	AV	42.0	41.1	30.0	3.3	31.7	0.0	43.6	42.7	53.9	10.3	11.2	Inside
4291.750	AV	41.0	41.0	30.3	3.5	31.5	0.0	43.3	43.3	53.9	10.6	10.6	Inside

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier) + Duty factor (Refer to Duty factor data sheet)

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).

For IC

QP or PK

Frequency [MHz]	Detector	Reading [dBuV]		Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]		Limit dBuV/m	Margin [dB]		Remark Inside or Outside of Restricted Bands
		Hor	Ver					Hor	Ver		Hor	Ver	
429.175	QP	78.1	77.2	17.5	9.4	28.5	-	76.5	75.6	80.6	4.1	5.0	Carrier
858.350	QP	22.4	22.4	21.9	11.1	28.1	-	27.3	27.3	60.6	33.3	33.3	Outside
1287.525	PK	44.9	45.8	24.8	1.8	33.4	-	38.1	39.0	73.9	35.8	34.9	Inside
1716.700	PK	43.9	47.5	26.1	2.1	32.8	-	39.3	42.9	80.6	41.3	37.7	Outside
2145.875	PK	43.3	44.8	27.0	2.4	32.5	-	40.2	41.7	80.6	40.4	38.9	Outside
2575.050	PK	44.6	45.7	27.7	2.6	32.4	-	42.5	43.6	80.6	38.1	37.0	Outside
3004.225	PK	43.4	43.2	28.3	2.8	32.4	-	42.1	41.9	80.6	38.5	38.7	Outside
3433.400	PK	43.1	43.0	29.1	3.1	32.0	-	43.3	43.2	80.6	37.3	37.4	Outside
3862.575	PK	42.0	41.1	30.0	3.3	31.7	-	43.6	42.7	73.9	30.3	31.2	Inside
4291.750	PK	41.0	41.0	30.3	3.5	31.5	-	43.3	43.3	73.9	30.6	30.6	Inside

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

PK with Duty factor

Frequency [MHz]	Detector	Reading [dBuV]		Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]		Limit dBuV/m	Margin [dB]		Remark
		Hor	Ver					Hor	Ver		Hor	Ver	
1287.525	AV	44.9	45.8	24.8	1.8	33.4	0.0	38.1	39.0	53.9	15.8	14.9	Inside
1716.700	AV	43.9	47.5	26.1	2.1	32.8	0.0	39.3	42.9	60.6	21.3	17.7	Outside
2145.875	AV	43.3	44.8	27.0	2.4	32.5	0.0	40.2	41.7	60.6	20.4	18.9	Outside
2575.050	AV	44.6	45.7	27.7	2.6	32.4	0.0	42.5	43.6	60.6	18.1	17.0	Outside
3004.225	AV	43.4	43.2	28.3	2.8	32.4	0.0	42.1	41.9	60.6	18.5	18.7	Outside
3433.400	AV	43.1	43.0	29.1	3.1	32.0	0.0	43.3	43.2	60.6	17.3	17.4	Outside
3862.575	AV	42.0	41.1	30.0	3.3	31.7	0.0	43.6	42.7	53.9	10.3	11.2	Inside
4291.750	AV	41.0	41.0	30.3	3.5	31.5	0.0	43.3	43.3	53.9	10.6	10.6	Inside

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier) + Duty factor (Refer to Duty factor data sheet)

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).

*The test below 1GHz was performed with QP detect because the transmitting duty was 100% on all tests.

7.5. RX RADIATED SPURIOUS EMISSION

LIMITS

IC RSS-Gen Issue 3, section 6

All spurious emissions shall comply with the limits shown below:

Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB μ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54
Note: The lower limit shall apply at the transition frequency.	

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to receive in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

The spectrum from 30 MHz to 5th harmonic is investigated with the transmitter set to the middle channel.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

RESULTS

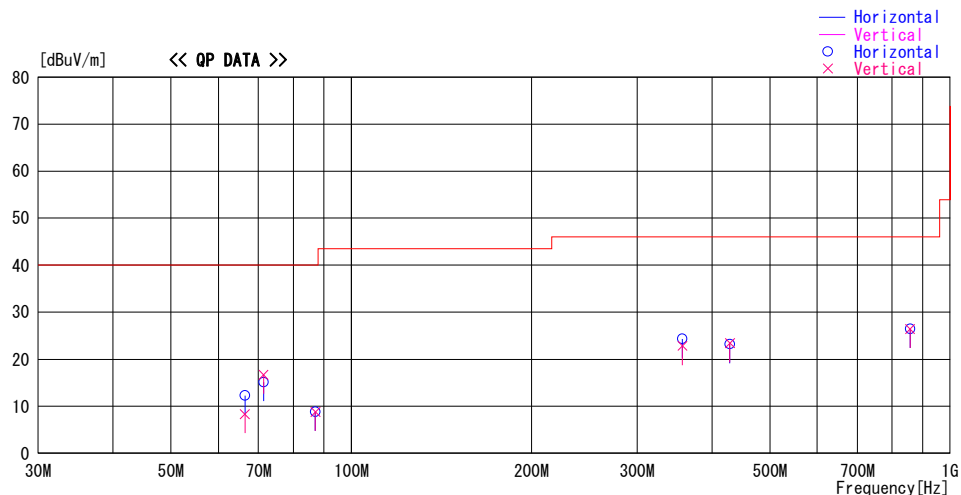
See data

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2011/06/17

Report No. : 31JE0182-AP

Temp. / Humi. : 21deg. C / 62% RH
Engineer : Kazuya Yoshioka



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	Margin
			Factor [dB/m]	Gain [dB]					[dBuV/m]	[dB]
66.450	26.5	QP	7.2	-21.4	12.3	0	100	Hori.	40.0	27.7
66.450	22.5	QP	7.2	-21.4	8.3	0	100	Vert.	40.0	31.7
71.400	29.9	QP	6.6	-21.4	15.1	144	230	Hori.	40.0	24.9
71.400	31.5	QP	6.6	-21.4	16.7	74	178	Vert.	40.0	23.3
87.150	22.2	QP	7.7	-21.1	8.8	0	300	Hori.	40.0	31.2
87.150	22.2	QP	7.7	-21.1	8.8	0	100	Vert.	40.0	31.2
357.266	25.4	QP	16.4	-19.0	22.8	276	160	Vert.	46.0	23.2
357.266	26.9	QP	16.4	-19.0	24.3	276	100	Hori.	46.0	21.7
428.725	25.0	QP	17.5	-19.1	23.4	281	119	Vert.	46.0	22.6
428.725	24.8	QP	17.5	-19.1	23.2	259	100	Hori.	46.0	22.8
857.450	21.5	QP	21.9	-17.0	26.4	0	100	Vert.	46.0	19.6
857.450	21.5	QP	21.9	-17.0	26.4	0	100	Hori.	46.0	19.6

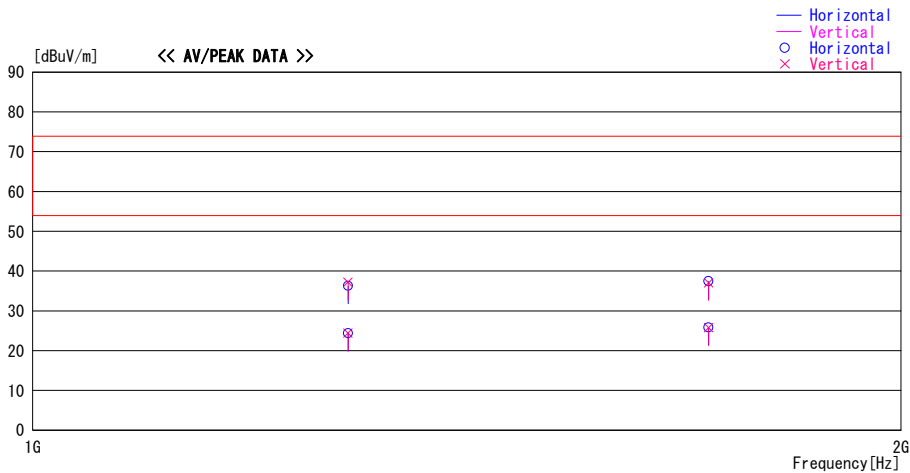
CHART: WITH FACTOR ANT TYPE: -30MHz: LOOP, 30-300MHz: BICONICAL, 300MHz-1000MHz: LOGPERIODIC, 1000MHz-: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2011/06/17

Report No. : 31JE0182-AP

Temp. / Humi. : 21deg. C / 62% RH
Engineer : Kazuya Yoshioka



Frequency	Reading	DET	Antenna	Loss&	Level	Angle	Height	Polar.	Limit	Margin
			Factor	Gain						
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]
1286.175	43.1	PK	24.8	-31.6	36.3	0	100	Hori.	73.9	37.6
1286.175	44.0	PK	24.8	-31.6	37.2	0	100	Vert.	73.9	36.7
1286.175	31.2	AV	24.8	-31.6	24.4	0	100	Hori.	53.9	29.5
1286.175	31.2	AV	24.8	-31.6	24.4	0	100	Vert.	53.9	29.5
1714.900	42.1	PK	26.1	-30.7	37.5	0	100	Hori.	73.9	36.4
1714.900	41.7	PK	26.1	-30.7	37.1	0	100	Vert.	73.9	36.8
1714.900	30.4	AV	26.1	-30.7	25.8	0	100	Hori.	53.9	28.1
1714.900	30.4	AV	26.1	-30.7	25.8	0	100	Vert.	53.9	28.1

CHART:WITH FACTOR ANT TYPE: -30MHz:LOOP, 30-300MHz:BICONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz-:HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)