



Test report No. : 10206883S-A  
Page : 1 of 20  
Issued date : April 4, 2014  
Revised date : May 12, 2014  
FCC ID : AX2NX603

# RADIO TEST REPORT

**Test Report No.: 10206883S-A**  
(Original test report No.: 10003129S-A)

**Applicant** : Clarion Co., Ltd.  
**Type of Equipment** : Car Navigation  
**Model No.** : NX604  
**FCC ID** : AX2NX603  
**Test regulation** : FCC Part15 Subpart C: 2013  
**Test item** : Radiated Spurious emission  
**Test result** : Complied

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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.
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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:** March 17 to 18, 2014

**Representative test engineer:**



Akio Hayashi

Engineer

Consumer Technology Division

**Approved by :**



Toyokazu Imamura

Leader

Consumer Technology Division



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 There is no testing item of "Non-accreditation".

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13-EM-F0429



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## **SECTION 1: Customer information**

Company Name : Clarion Co., Ltd.  
Address : 7-2 Shintoshin, Chuo-ku, Saitama-shi, Saitama, 330-0081 Japan  
Telephone Number : +81-48-601-4121  
Facsimile Number : +81-48-601-3802  
Contact Person : Masahiko Shibata

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

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

Type of Equipment : Car Navigation  
Model Number : NX604  
Serial Number : Refer to 4.2 in this report.  
Rating : DC12V  
Country of Mass-production : Japan  
Condition of EUT : Engineering prototype  
(Not for Sale: This sample is equivalent to mass-produced items.)  
Receipt Date of Sample : March 13, 2014  
Modification of EUT : No modification by the test lab.

### **2.2 Product description**

Model: NX604 (referred to as the EUT in this report) is a Car Navigation.

Clock frequency(ies) in the system : 41.6MHz (Xtal), 333MHz (DDR3)

Radio specification:

Equipment type : Transceiver  
Frequency of operation : 2402-2480MHz  
Bandwidth & Channel spacing : 79MHz & 1MHz  
Type of modulation : GFSK,  $\pi/4$ DQPSK, 8DPSK  
Antenna type : Pattern  
Antenna gain : -6.6dBi  
Antenna connector type : None  
ITU code : F1D  
Operation temperature range : -20 to +60 deg.C

FCC 15.31 (e)

The EUT provides stable voltage (DC3.3V) constantly to the wireless transmitter regardless of input voltage. Instead of a new battery, DC power supply was used for the test. That does not affect the test result, therefore the EUT complies with the requirement.

FCC 15.203

The antenna is not removable from the EUT. Therefore the equipment complies with the requirement.

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**SECTION 3: Test specification, procedures & results****3.1 Test specification**

Test specification : FCC Part 15 Subpart C: 2013,  
final revised on September 30, 2013 and effective October 30, 2013

Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators  
Section 15.207 Conducted limits  
Section 15.209 Radiated emission limits, general requirements  
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz,  
and 5725-5850MHz

**3.2 Procedures & Results**

Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin	Results
Conducted emission	ANSI C63.4:2009 7. AC powerline conducted emission measurements	FCC 15.207	-	N/A *1)	-	-
Carrier frequency separation	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (a)(1)	Conducted	*2)	-	-
20dB bandwidth	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (a)(1)	Conducted	*2)		-
Number of hopping frequency	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (a)(1)(iii)	Conducted	*2)		-
Dwell time	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (a)(1)(iii)	Conducted	*2)		-
Maximum peak output power	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (b)(1)	Conducted	*2)		-
Band edge compliance & Spurious emission	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (d) 15.209	Radiated	N/A		2.6dB Freq.: 121.500 MHz Polarization: Horizontal Detection: Quasi-Peak Mode: Tx 2441MHz, DH5
Note: UL Japan's Work Procedures No. 13-EM-W0420 and 13-EM-W0422						
*1) The test is not applicable since the EUT has no AC mains.						
*2) Refer to the original test report: 10003129S-A. (Tested model: NX603)						

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### 3.3 Addition to standard

Other than above, no addition, exclusion nor deviation has been made from the standard.

### 3.4 Uncertainty

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

Item	Frequency range	No.1 SAC <sup>*1</sup> /SR <sup>*2</sup> (±)	No.2 SAC/SR (±)	No.3 SAC/SR (±)
Radiated emission (Measurement distance: 3m)	9kHz-30MHz	3.7 dB	3.7 dB	3.6 dB
	30MHz-300MHz	4.8 dB	5.0 dB	4.8 dB
	300MHz-1GHz	5.0 dB	5.0 dB	4.8 dB
	1GHz-15GHz	4.9 dB	4.9 dB	4.9 dB
Radiated emission (Measurement distance: 1m)	15GHz-18GHz	5.7 dB	5.6 dB	5.6 dB
	18GHz-40GHz	5.2 dB	4.3 dB	4.3 dB

\*1: SAC=Semi-Anechoic Chamber

\*2: SR= Shielded Room is applied besides radiated emission

The data listed in this report meets the limits unless the uncertainty is taken into consideration.

### 3.5 Test location

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JAB Accreditation No. : RTL02610

	FCC Registration No.	IC Registration No.	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
<input type="checkbox"/> No.1 semi-anechoic chamber	697847	2973D-1	20.6 x 11.3 x 7.65	20.6 x 11.3	10m
<input type="checkbox"/> No.2 semi-anechoic chamber	697847	2973D-2	20.6 x 11.3 x 7.65	20.6 x 11.3	10m
<input checked="" type="checkbox"/> No.3 semi-anechoic chamber	697847	2973D-3	12.7 x 7.7 x 5.35	12.7 x 7.7	5m
<input type="checkbox"/> No.4 semi-anechoic chamber	-	-	8.1 x 5.1 x 3.55	8.1 x 5.1	-
<input type="checkbox"/> No.1 shielded room	-	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
<input type="checkbox"/> No.2 shielded room	-	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
<input type="checkbox"/> No.3 shielded room	-	-	6.3 x 4.7 x 2.7	6.3 x 4.7	-
<input type="checkbox"/> No.4 shielded room	-	-	4.4 x 4.7 x 2.7	4.4 x 4.7	-
<input type="checkbox"/> No.5 shielded room	-	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
<input type="checkbox"/> No.6 shielded room	-	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
<input type="checkbox"/> No.1 measurement room	-	-	2.55 x 4.1 x 2.5	-	-

### 3.6 Test setup, Data of test & Test instruments

Refer to APPENDIX 1 to 3.

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

### **4.1 Operating mode**

<b>Test item</b>	<b>Operating mode</b>	<b>Tested frequency</b>
Band edge compliance & Spurious emission	Transmitting (DH5 / 3-DH5), Payload: PRBS9 -Hopping OFF	Band edge compliance: 2402MHz, 2480MHz
		2402MHz, 2441MHz, 2480MHz

\*Remarks: Test was not performed at AFH mode, because the decrease of number of channel (min: 20ch) at AFH mode does not affect the output power and bandwidth of the EUT.

Software: Tera Term ver. 4.67  
Power setting: Fixed

We removed 2-DH mode (2 Mb/s EDR: pi/4DQPSK) except power measurement by using 3-DH mode (3 Mb/s EDR: 8DPSK) as a representative.

The EUT has no Inquiry mode.

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

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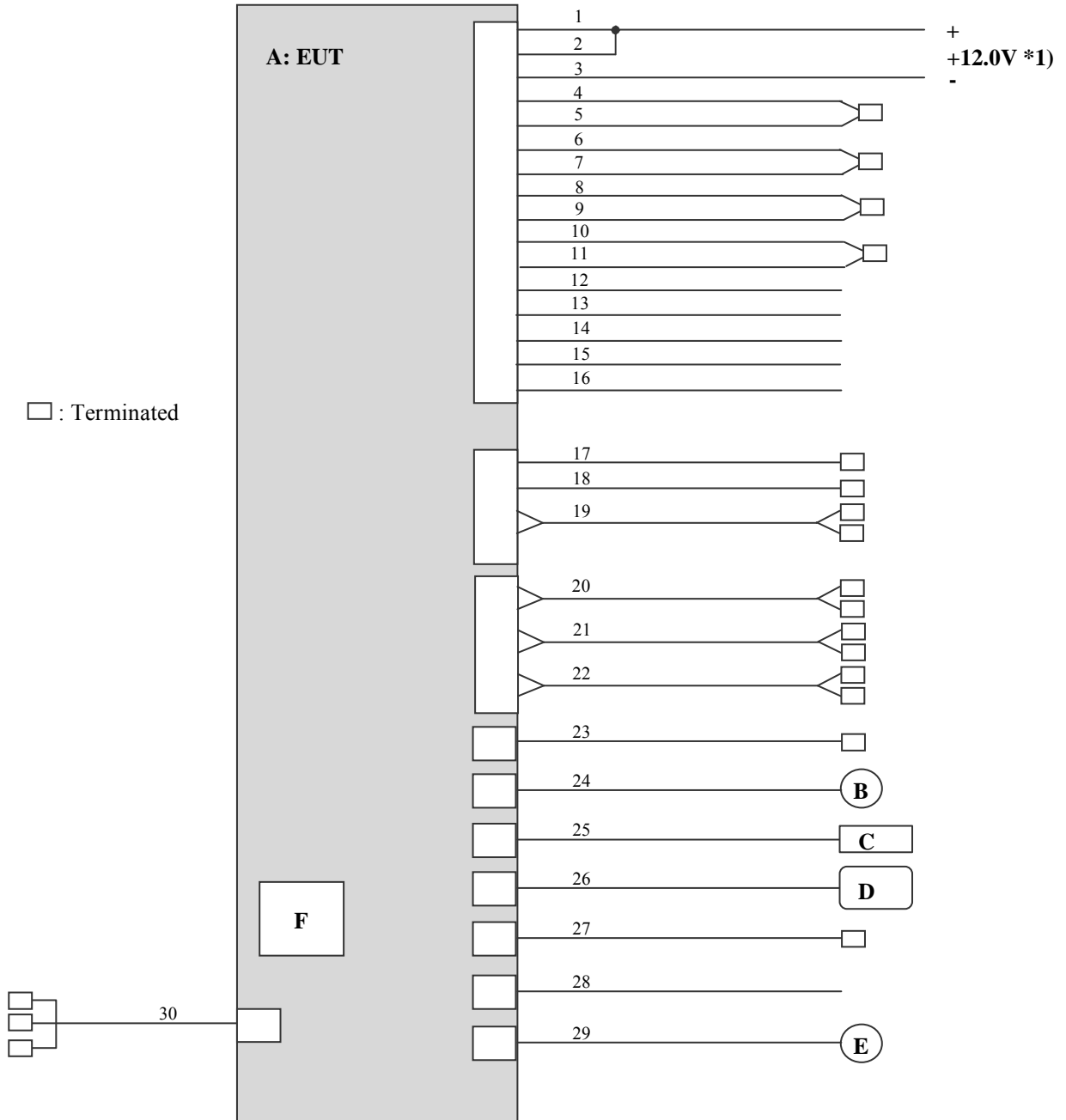
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#### 4.2 Configuration and peripherals



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

\*1) DC power supply (Model No.: PAN35-10A) was used for DC 12V input.

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**Description of EUT and support equipment**

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Car Navigation	NX604	9999548	Clarion	EUT
B	GPS Antenna	-	096016900AA112500414051	-	-
C	USB Memory	-	-	-	-
D	Steering Wheel Interface	SWI-RC	-	-	-
E	Microphone	-	-	-	-
F	Micro SDHC	RP-SMEB08GJK	UJ3AA005833	Panasonic	-

**List of cables used**

No.	Name	Length (m)	Shield- Cable	Shield- Connector	Remarks
1	+12V main power	2.3	Unshielded	Unshielded	-
2	+12V accessory	2.3	Unshielded	Unshielded	-
3	Ground	2.3	Unshielded	Unshielded	-
4	Rear right +	1.9	Unshielded	Unshielded	-
5	Rear right -	1.9	Unshielded	Unshielded	-
6	Front right +	1.9	Unshielded	Unshielded	-
7	Front right -	1.9	Unshielded	Unshielded	-
8	Rear left +	1.9	Unshielded	Unshielded	-
9	Rear left -	1.9	Unshielded	Unshielded	-
10	Front left +	1.9	Unshielded	Unshielded	-
11	Front left -	1.9	Unshielded	Unshielded	-
12	Illumination	1.9	Unshielded	Unshielded	-
13	Parking brake cord	2.8	Unshielded	Unshielded	-
14	Reverse gear cord	5.0	Unshielded	Unshielded	-
15	Auto Antenna	1.9	Unshielded	Unshielded	-
16	Remote terminal	1.9	Unshielded	Unshielded	-
17	Video output	0.2+2.1	Unshielded	Unshielded	-
18	Video input	0.2+2.3	Unshielded	Unshielded	-
19	Audio input	0.2+2.3	Unshielded	Unshielded	-
20	Front audio output	0.2+1.5	Unshielded	Unshielded	-
21	Rear audio output	0.2+1.5	Unshielded	Unshielded	-
22	Subwoofer audio output	0.2+1.5	Unshielded	Unshielded	-
23	Radio antenna	2.0	Shielded	Shielded	-
24	GPS antenna	2.5	Shielded	Shielded	-
25	USB	1.5	Shielded	Shielded	-
26	Steering Wheel Interface	0.9	Unshielded	Unshielded	-
27	Rear View Camera	0.3+3.0	Shielded	Shielded	-
28	HDMI	1.7	Shielded	Shielded	-
29	Microphone	2.9	Shielded	Shielded	-
30	AUX	0.3+2.0	Shielded	Shielded	-

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## **SECTION 5: Radiated emission**

### **5.1 Operating environment**

Test room : See test data (APPENDIX 1)  
 Temperature : See test data (APPENDIX 1)  
 Humidity : See test data (APPENDIX 1)

### **5.2 Test configuration**

EUT was placed on a platform of nominal size, 1.0m by 1.5m, raised 0.8m above the conducting ground plane. The table is made of Styrofoam and covered with polyvinyl chloride. That has very low permittivity. The rear of EUT, including its peripherals was aligned and flushed with rear of tabletop. I/O cables that were connected to the peripherals were bundled in center. They were folded back and for the forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.

Photographs of the set up are shown in APPENDIX 3.

### **5.3 Test conditions**

Frequency range : 30MHz - 25GHz \*1)  
 EUT position : Table top

\*1) Measurement in 9kHz to 30MHz was not performed since the EUT does not use the clock frequency below 30MHz.

### **5.4 Test procedure**

The Radiated Electric Field Strength intensity has been measured on a semi-anechoic chamber with a ground plane and at a distance of 3m (below 15GHz) / 1m (above 15GHz) (Refer to Figure 1). 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 detection.

Frequency	30 - 1000MHz	1 - 25GHz	20dBc	
Detection Type	: Quasi-Peak	Peak	Average *2)	Peak
IF Bandwidth	: 120kHz	RBW:1MHz VBW:3MHz	RBW:1MHz VBW:10Hz	RBW: 100kHz, VBW: 300kHz

\*2) When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold. Although 00-705 accepts VBW=10Hz for AV measurements, confirmed that superfluous smoothing was not performed.

The carrier level and noise levels were confirmed at angle of 0 to 35 deg. based on the product specification to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Test item	Carrier	Spurious emission (Below 1GHz)	Spurious emission (1-15GHz)	Spurious emission (15-18GHz)	Spurious emission (18-25GHz)
Antenna polarization					
Horizontal	35 deg.	0 deg.	0 deg.	0 deg.	0 deg.
Vertical	0 deg.	0 deg.	0 deg.	0 deg.	0 deg.

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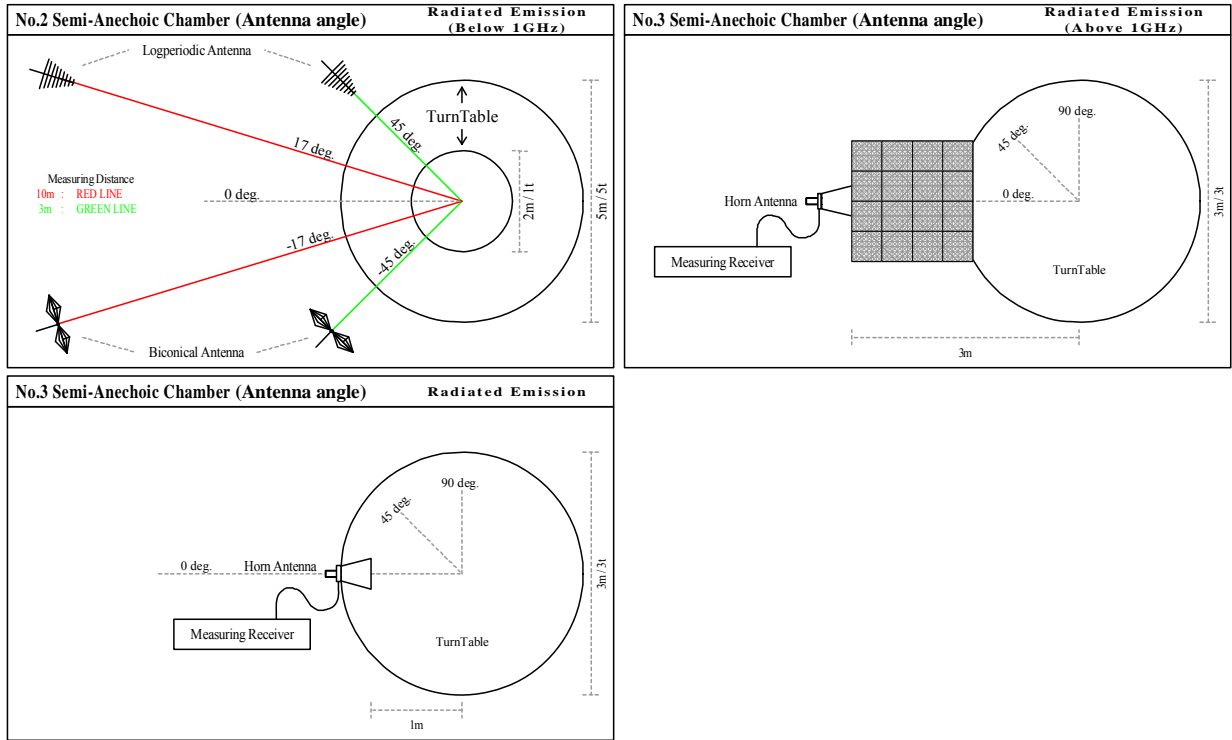
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Figure 1. Antenna angle



### 5.5 Band edge

Band edge level at 2390MHz and 2483.5MHz is below the limits of FCC 15.209 and band edge level at 2400MHz is below the 20dBc. Refer to the data.

### 5.6 Results

Summary of the test results: Pass \*No noise was detected above the 5<sup>th</sup> order harmonics.

Refer to APPENDIX 1.

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Radiated emission

### **APPENDIX 2: Test instruments**

Test instruments

### **APPENDIX 3: Photographs of test setup**

Radiated emission

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**APPENDIX 1: Data of radio tests**

**Radiated Emission**

Test place	No.3 Semi Anechoic Chamber	No.2 Semi Anechoic Chamber
Date	March 17, 2014	March 18, 2014
Temperature / Humidity	24 deg.C, 34 %RH	21 deg.C, 48 %RH
Engineer	Akio Hayashi	Akio Hayashi
Mode	Tx, 2402 MHz Tx, Bluetooth, BDR(DH5), PRBS9	

(\* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	121.500	QP	51.2	13.1	8.2	31.9	40.6	43.5	2.9	279	58	
Hori.	243.001	QP	44.0	17.1	10.2	31.7	39.6	46.0	6.4	150	210	
Hori.	256.503	QP	44.3	17.5	10.4	31.7	40.5	46.0	5.5	132	254	
Hori.	2390.000	PK	43.3	26.8	14.7	38.2	46.6	73.9	27.3	204	74	
Hori.	3411.179	PK	45.6	28.1	6.7	38.0	42.4	73.9	31.5	100	216	
Hori.	4804.000	PK	44.4	30.9	7.9	37.1	46.1	73.9	27.8	100	213	
Hori.	7206.000	PK	46.0	37.1	9.1	39.4	52.8	73.9	21.1	100	215	
Hori.	9608.000	PK	40.6	38.6	10.2	37.6	51.8	73.9	22.1	100	0	
Hori.	12010.000	PK	41.8	39.6	11.2	38.5	54.1	73.9	19.8	100	0	
Hori.	2390.000	AV	30.9	26.8	14.7	38.2	34.2	53.9	19.7	204	74	
Hori.	3411.179	AV	38.7	28.1	6.7	38.0	35.5	53.9	18.4	100	216	
Hori.	4804.000	AV	31.6	30.9	7.9	37.1	33.3	53.9	20.6	100	213	
Hori.	7206.000	AV	36.8	37.1	9.1	39.4	43.6	53.9	10.3	100	215	
Hori.	9608.000	AV	28.2	38.6	10.2	37.6	39.4	53.9	14.5	100	0	
Hori.	12010.000	AV	30.1	39.6	11.2	38.5	42.4	53.9	11.5	100	0	
Vert.	2390.000	PK	43.0	26.8	14.7	38.2	46.3	73.9	27.6	218	9	
Vert.	3411.179	PK	47.6	28.1	6.7	38.0	44.4	73.9	29.5	100	0	
Vert.	4804.000	PK	45.1	30.9	7.9	37.1	46.8	73.9	27.1	100	0	
Vert.	7206.000	PK	45.2	37.1	9.1	39.4	52.0	73.9	21.9	100	42	
Vert.	9608.000	PK	39.9	38.6	10.2	37.6	51.1	73.9	22.8	100	0	
Vert.	12010.000	PK	42.4	39.6	11.2	38.5	54.7	73.9	19.2	100	0	
Vert.	2390.000	AV	30.9	26.8	14.7	38.2	34.2	53.9	19.7	218	9	
Vert.	3411.179	AV	40.9	28.1	6.7	38.0	37.7	53.9	16.2	100	0	
Vert.	4804.000	AV	33.1	30.9	7.9	37.1	34.8	53.9	19.1	100	0	
Vert.	7206.000	AV	35.7	37.1	9.1	39.4	42.5	53.9	11.4	100	42	
Vert.	9608.000	AV	28.3	38.6	10.2	37.6	39.5	53.9	14.4	100	0	
Vert.	12010.000	AV	30.2	39.6	11.2	38.5	42.5	53.9	11.4	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)  
 Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

**20dBc Data Sheet (RBW 100kHz, VBW 300kHz)**

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	83.6	26.8	14.7	38.2	86.9	-	-	Carrier
Hori.	148.511	PK	49.3	14.8	8.8	31.8	41.1	66.9	25.8	
Hori.	175.501	PK	48.9	15.9	9.1	31.8	42.1	66.9	24.8	
Hori.	202.501	PK	55.6	16.3	9.5	31.8	49.6	66.9	17.3	
Hori.	215.999	PK	52.5	16.6	9.8	31.8	47.1	66.9	19.8	
Hori.	229.498	PK	52.0	16.8	10.0	31.7	47.1	66.9	19.8	
Hori.	2400.000	PK	37.1	26.8	14.7	38.2	40.4	66.9	26.5	
Vert.	2402.000	PK	86.3	26.8	14.7	38.2	89.6	-	-	Carrier
Vert.	33.233	PK	43.7	16.7	6.9	31.9	35.4	69.6	34.2	
Vert.	202.501	PK	49.8	16.3	9.5	31.8	43.8	69.6	25.8	
Vert.	215.999	PK	47.8	16.6	9.8	31.8	42.4	69.6	27.2	
Vert.	229.498	PK	47.6	16.8	10.0	31.7	42.7	69.6	26.9	
Vert.	2400.000	PK	37.7	26.8	14.7	38.2	41.0	69.6	28.6	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)  
 Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

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## Radiated Emission

Test place	No.3 Semi Anechoic Chamber	No.2 Semi Anechoic Chamber
Date	March 17, 2014	March 18, 2014
Temperature / Humidity	24 deg.C, 34 %RH	21 deg.C, 48 %RH
Engineer	Akio Hayashi	Akio Hayashi
Mode	Tx, 2441 MHz Tx, Bluetooth, BDR(DH5), PRBS9	

(\* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	121.500	QP	51.5	13.1	8.2	31.9	40.9	43.5	2.6	249	103	
Hori.	242.998	QP	43.8	17.1	10.2	31.7	39.4	46.0	6.6	146	151	
Hori.	256.500	QP	43.7	17.5	10.4	31.7	39.9	46.0	6.1	141	251	
Hori.	3430.383	PK	45.2	28.1	6.7	38.0	42.0	73.9	31.9	100	216	
Hori.	4882.000	PK	46.0	31.4	7.9	37.0	48.3	73.9	25.6	100	186	
Hori.	7323.000	PK	45.8	37.2	9.1	39.4	52.7	73.9	21.2	100	216	
Hori.	9764.000	PK	40.3	38.8	10.1	37.5	51.7	73.9	22.2	100	0	
Hori.	12205.000	PK	43.3	39.6	11.3	38.3	55.9	73.9	18.0	100	0	
Hori.	3430.383	AV	37.6	28.1	6.7	38.0	34.4	53.9	19.5	100	216	
Hori.	4882.000	AV	32.7	31.4	7.9	37.0	35.0	53.9	18.9	100	186	
Hori.	7323.000	AV	36.1	37.2	9.1	39.4	43.0	53.9	10.9	100	216	
Hori.	9764.000	AV	27.6	38.8	10.1	37.5	39.0	53.9	14.9	100	0	
Hori.	12205.000	AV	29.9	39.6	11.3	38.3	42.5	53.9	11.4	100	0	
Vert.	121.500	QP	46.3	13.1	8.2	31.9	35.7	43.5	7.8	100	301	
Vert.	3430.383	PK	46.9	28.1	6.7	38.0	43.7	73.9	30.2	100	209	
Vert.	4882.000	PK	50.5	31.4	7.9	37.0	52.8	73.9	21.1	100	6	
Vert.	7323.000	PK	44.9	37.2	9.1	39.4	51.8	73.9	22.1	100	55	
Vert.	9764.000	PK	40.9	38.8	10.1	37.5	52.3	73.9	21.6	100	0	
Vert.	12205.000	PK	41.6	39.6	11.3	38.3	54.2	73.9	19.7	100	0	
Vert.	3430.383	AV	40.1	28.1	6.7	38.0	36.9	53.9	17.0	100	209	
Vert.	4882.000	AV	36.3	31.4	7.9	37.0	38.6	53.9	15.3	100	6	
Vert.	7323.000	AV	34.0	37.2	9.1	39.4	40.9	53.9	13.0	100	55	
Vert.	9764.000	AV	27.6	38.8	10.1	37.5	39.0	53.9	14.9	100	0	
Vert.	12205.000	AV	29.8	39.6	11.3	38.3	42.4	53.9	11.5	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)

Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

### 20dBc Data Sheet (RBW 100kHz, VBW 300kHz)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2441.000	PK	82.2	26.8	14.7	38.2	85.5	-	-	Carrier
Hori.	175.504	PK	49.0	15.9	9.1	31.8	42.2	65.5	23.3	
Hori.	202.500	PK	56.2	16.3	9.5	31.8	50.2	65.5	15.3	
Hori.	215.999	PK	53.4	16.6	9.8	31.8	48.0	65.5	17.5	
Hori.	229.497	PK	52.7	16.8	10.0	31.7	47.8	65.5	17.7	
Vert.	2441.000	PK	85.0	26.8	14.7	38.2	88.3	-	-	Carrier
Vert.	33.230	PK	41.8	16.7	6.9	31.9	33.5	68.3	34.8	
Vert.	202.500	PK	50.0	16.3	9.5	31.8	44.0	68.3	24.3	
Vert.	215.999	PK	48.2	16.6	9.8	31.8	42.8	68.3	25.5	
Vert.	229.497	PK	46.7	16.8	10.0	31.7	41.8	68.3	26.5	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)

Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

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## Radiated Emission

Test place	No.3 Semi Anechoic Chamber	No.2 Semi Anechoic Chamber
Date	March 17, 2014	March 18, 2014
Temperature / Humidity	24 deg.C, 34 %RH	21 deg.C, 48 %RH
Engineer	Akio Hayashi	Akio Hayashi
Mode	Tx, 2480 MHz Tx, Bluetooth, BDR(DH5), PRBS9	

(\* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	121.500	QP	49.0	13.1	8.2	31.9	38.4	43.5	5.1	151	64	
Hori.	243.001	QP	43.8	17.1	10.2	31.7	39.4	46.0	6.6	138	128	
Hori.	256.496	QP	42.7	17.5	10.4	31.7	38.9	46.0	7.1	135	255	
Hori.	2483.500	PK	43.1	26.9	14.8	38.1	46.7	73.9	27.2	100	120	
Hori.	3411.142	PK	46.7	28.1	6.7	38.0	43.5	73.9	30.4	100	215	
Hori.	4960.000	PK	50.5	31.8	7.8	37.0	53.1	73.9	20.8	154	168	
Hori.	7440.000	PK	47.4	37.4	9.3	39.4	54.7	73.9	19.2	148	199	
Hori.	9920.000	PK	39.4	38.9	10.1	37.5	50.9	73.9	23.0	100	0	
Hori.	12400.000	PK	40.7	39.7	11.4	38.2	53.6	73.9	20.3	100	0	
Hori.	2483.500	AV	30.8	26.9	14.8	38.1	34.4	53.9	19.5	100	120	
Hori.	3411.142	AV	39.6	28.1	6.7	38.0	36.4	53.9	17.5	100	215	
Hori.	4960.000	AV	35.7	31.8	7.8	37.0	38.3	53.9	15.6	154	168	
Hori.	7440.000	AV	37.0	37.4	9.3	39.4	44.3	53.9	9.6	148	199	
Hori.	9920.000	AV	27.7	38.9	10.1	37.5	39.2	53.9	14.7	100	0	
Hori.	12400.000	AV	30.2	39.7	11.4	38.2	43.1	53.9	10.8	100	0	
Vert.	2483.500	PK	43.5	26.9	14.8	38.1	47.1	73.9	26.8	135	346	
Vert.	3411.142	PK	45.2	28.1	6.7	38.0	42.0	73.9	31.9	100	202	
Vert.	4960.000	PK	53.6	31.8	7.8	37.0	56.2	73.9	17.7	100	215	
Vert.	7440.000	PK	45.4	37.4	9.3	39.4	52.7	73.9	21.2	100	181	
Vert.	9920.000	PK	40.0	38.9	10.1	37.5	51.5	73.9	22.4	100	0	
Vert.	12400.000	PK	40.9	39.7	11.4	38.2	53.8	73.9	20.1	100	0	
Vert.	2483.500	AV	31.0	26.9	14.8	38.1	34.6	53.9	19.3	135	346	
Vert.	3411.142	AV	39.7	28.1	6.7	38.0	36.5	53.9	17.4	100	202	
Vert.	4960.000	AV	39.7	31.8	7.8	37.0	42.3	53.9	11.6	100	215	
Vert.	7440.000	AV	34.3	37.4	9.3	39.4	41.6	53.9	12.3	100	181	
Vert.	9920.000	AV	27.8	38.9	10.1	37.5	39.3	53.9	14.6	100	0	
Vert.	12400.000	AV	30.4	39.7	11.4	38.2	43.3	53.9	10.6	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)  
 Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

### 20dBc Data Sheet (RBW 100kHz, VBW 300kHz)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2480.000	PK	79.5	26.9	14.8	38.2	83.0	-	-	Carrier
Hori.	148.500	PK	48.2	14.8	8.8	31.8	40.0	63.0	23.0	
Hori.	175.499	PK	48.0	15.9	9.1	31.8	41.2	63.0	21.8	
Hori.	202.502	PK	56.2	16.3	9.5	31.8	50.2	63.0	12.8	
Hori.	215.999	PK	52.4	16.6	9.8	31.8	47.0	63.0	16.0	
Hori.	230.000	PK	52.3	16.8	10.0	31.7	47.4	63.0	15.6	
Vert.	2480.000	PK	84.4	26.9	14.8	38.2	87.9	-	-	Carrier
Vert.	33.233	PK	42.0	16.7	6.9	31.9	33.7	67.9	34.2	
Vert.	202.502	PK	49.9	16.3	9.5	31.8	43.9	67.9	24.0	
Vert.	215.999	PK	46.9	16.6	9.8	31.8	41.5	67.9	26.4	
Vert.	230.000	PK	46.7	16.8	10.0	31.7	41.8	67.9	26.1	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)  
 Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

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## Radiated Emission

Test place	No.3 Semi Anechoic Chamber	No.2 Semi Anechoic Chamber
Date	March 17, 2014	March 18, 2014
Temperature / Humidity	24 deg.C, 34 %RH	21 deg.C, 48 %RH
Engineer	Akio Hayashi	Akio Hayashi
Mode	Tx, 2402 MHz Tx, Bluetooth, EDR(3-DH5), PRBS9	

(\* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	121.498	QP	50.6	13.1	8.2	31.9	40.0	43.5	3.5	274	47	
Hori.	242.998	QP	43.0	17.1	10.2	31.7	38.6	46.0	7.4	176	213	
Hori.	256.501	QP	42.7	17.5	10.4	31.7	38.9	46.0	7.1	134	248	
Hori.	2390.000	PK	44.0	26.8	14.7	38.2	47.3	73.9	26.6	100	34	
Hori.	3411.120	PK	46.5	28.1	6.7	38.0	43.3	73.9	30.6	100	214	
Hori.	4804.000	PK	41.5	30.9	7.9	37.1	43.2	73.9	30.7	115	218	
Hori.	7206.000	PK	43.2	37.1	9.1	39.4	50.0	73.9	23.9	100	215	
Hori.	9608.000	PK	41.6	38.6	10.2	37.6	52.8	73.9	21.1	100	0	
Hori.	12010.000	PK	42.6	39.6	11.2	38.5	54.9	73.9	19.0	100	0	
Hori.	2390.000	AV	31.4	26.8	14.7	38.2	34.7	53.9	19.2	100	34	
Hori.	3411.120	AV	39.9	28.1	6.7	38.0	36.7	53.9	17.2	100	214	
Hori.	4804.000	AV	28.5	30.9	7.9	37.1	30.2	53.9	23.7	115	218	
Hori.	7206.000	AV	30.9	37.1	9.1	39.4	37.7	53.9	16.2	100	215	
Hori.	9608.000	AV	28.1	38.6	10.2	37.6	39.3	53.9	14.6	100	0	
Hori.	12010.000	AV	30.1	39.6	11.2	38.5	42.4	53.9	11.5	100	0	
Vert.	2390.000	PK	43.5	26.8	14.7	38.2	46.8	73.9	27.1	100	11	
Vert.	3411.120	PK	0.0	28.1	6.7	38.0	-3.2	73.9	77.1	100	209	
Vert.	4804.000	PK	42.5	30.9	7.9	37.1	44.2	73.9	29.7	100	0	
Vert.	7206.000	PK	42.6	37.1	9.1	39.4	49.4	73.9	24.5	100	43	
Vert.	9608.000	PK	40.7	38.6	10.2	37.6	51.9	73.9	22.0	100	0	
Vert.	12010.000	PK	43.0	39.6	11.2	38.5	55.3	73.9	18.6	100	0	
Vert.	2390.000	AV	31.5	26.8	14.7	38.2	34.8	53.9	19.1	100	11	
Vert.	3411.120	AV	39.7	28.1	6.7	38.0	36.5	53.9	17.4	100	209	
Vert.	4804.000	AV	28.6	30.9	7.9	37.1	30.3	53.9	23.6	100	0	
Vert.	7206.000	AV	30.5	37.1	9.1	39.4	37.3	53.9	16.6	100	43	
Vert.	9608.000	AV	28.1	38.6	10.2	37.6	39.3	53.9	14.6	100	0	
Vert.	12010.000	AV	30.1	39.6	11.2	38.5	42.4	53.9	11.5	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)  
 Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

### 20dBc Data Sheet (RBW 100kHz, VBW 300kHz)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	77.8	26.8	14.7	38.2	81.1	-	-	Carrier
Hori.	148.499	PK	48.7	14.8	8.8	31.8	40.5	61.1	20.6	
Hori.	175.500	PK	48.2	15.9	9.1	31.8	41.4	61.1	19.7	
Hori.	202.500	PK	56.0	16.3	9.5	31.8	50.0	61.1	11.1	
Hori.	215.999	PK	52.2	16.6	9.8	31.8	46.8	61.1	14.3	
Hori.	229.498	PK	52.2	16.8	10.0	31.7	47.3	61.1	13.8	
Hori.	2400.000	PK	35.6	26.8	14.7	38.2	38.9	61.1	22.2	
Vert.	2402.000	PK	83.8	26.8	14.7	38.2	87.1	-	-	Carrier
Vert.	33.231	PK	42.7	16.7	6.9	31.9	34.4	67.1	32.7	
Vert.	202.500	PK	49.4	16.3	9.5	31.8	43.4	67.1	23.7	
Vert.	215.999	PK	47.2	16.6	9.8	31.8	41.8	67.1	25.3	
Vert.	229.498	PK	47.1	16.8	10.0	31.7	42.2	67.1	24.9	
Vert.	2400.000	PK	36.3	26.8	14.7	38.2	39.6	67.1	27.5	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)  
 Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

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## Radiated Emission

Test place	No.3 Semi Anechoic Chamber	No.2 Semi Anechoic Chamber
Date	March 17, 2014	March 18, 2014
Temperature / Humidity	24 deg.C, 34 %RH	21 deg.C, 48 %RH
Engineer	Akio Hayashi	Akio Hayashi
Mode	Tx, 2441 MHz Tx, Bluetooth, EDR(3-DH5), PRBS9	

(\* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	121.500	QP	50.9	13.1	8.2	31.9	40.3	43.5	3.2	269	44	
Hori.	243.000	QP	42.7	17.1	10.2	31.7	38.3	46.0	7.7	147	280	
Hori.	256.503	QP	42.6	17.5	10.4	31.7	38.8	46.0	7.2	136	251	
Hori.	3417.580	PK	46.9	28.1	6.7	38.0	43.7	73.9	30.2	100	195	
Hori.	4882.000	PK	42.0	31.4	7.9	37.0	44.3	73.9	29.6	100	186	
Hori.	7323.000	PK	43.0	37.2	9.1	39.4	49.9	73.9	24.0	150	201	
Hori.	9764.000	PK	40.5	38.8	10.1	37.5	51.9	73.9	22.0	100	0	
Hori.	12205.000	PK	42.1	39.6	11.3	38.3	54.7	73.9	19.2	100	0	
Hori.	3417.580	AV	39.5	28.1	6.7	38.0	36.3	53.9	17.6	100	195	
Hori.	4882.000	AV	28.6	31.4	7.9	37.0	30.9	53.9	23.0	100	186	
Hori.	7323.000	AV	30.5	37.2	9.1	39.4	37.4	53.9	16.5	150	201	
Hori.	9764.000	AV	27.7	38.8	10.1	37.5	39.1	53.9	14.8	100	0	
Hori.	12205.000	AV	30.0	39.6	11.3	38.3	42.6	53.9	11.3	100	0	
Vert.	3417.580	PK	42.7	28.1	6.7	38.0	39.5	73.9	34.4	100	210	
Vert.	4882.000	PK	46.0	31.4	7.9	37.0	48.3	73.9	25.6	100	6	
Vert.	7323.000	PK	42.1	37.2	9.1	39.4	49.0	73.9	24.9	100	125	
Vert.	9764.000	PK	39.7	38.8	10.1	37.5	51.1	73.9	22.8	100	0	
Vert.	12205.000	PK	42.8	39.6	11.3	38.3	55.4	73.9	18.5	100	0	
Vert.	3417.580	AV	39.6	28.1	6.7	38.0	36.4	53.9	17.5	100	210	
Vert.	4882.000	AV	29.0	31.4	7.9	37.0	31.3	53.9	22.6	100	6	
Vert.	7323.000	AV	30.1	37.2	9.1	39.4	37.0	53.9	16.9	100	125	
Vert.	9764.000	AV	27.7	38.8	10.1	37.5	39.1	53.9	14.8	100	0	
Vert.	12205.000	AV	30.0	39.6	11.3	38.3	42.6	53.9	11.3	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)

Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

### 20dBc Data Sheet (RBW 100kHz, VBW 300kHz)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2441.000	PK	76.7	26.8	14.7	38.2	80.0	-	-	Carrier
Hori.	148.501	PK	48.6	14.8	8.8	31.8	40.4	60.0	19.6	
Hori.	175.500	PK	48.5	15.9	9.1	31.8	41.7	60.0	18.3	
Hori.	202.500	PK	56.1	16.3	9.5	31.8	50.1	60.0	9.9	
Hori.	215.999	PK	52.3	16.6	9.8	31.8	46.9	60.0	13.1	
Hori.	229.498	PK	52.5	16.8	10.0	31.7	47.6	60.0	12.4	
Vert.	2441.000	PK	84.1	26.8	14.7	38.2	87.4	-	-	Carrier
Vert.	33.232	PK	42.9	16.7	6.9	31.9	34.6	67.4	32.8	
Vert.	202.500	PK	49.9	16.3	9.5	31.8	43.9	67.4	23.5	
Vert.	215.999	PK	47.1	16.6	9.8	31.8	41.7	67.4	25.7	
Vert.	229.498	PK	47.4	16.8	10.0	31.7	42.5	67.4	24.9	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)

Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

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## Radiated Emission

Test place	No.3 Semi Anechoic Chamber	No.2 Semi Anechoic Chamber
Date	March 17, 2014	March 18, 2014
Temperature / Humidity	24 deg.C, 34 %RH	21 deg.C, 48 %RH
Engineer	Akio Hayashi	Akio Hayashi
Mode	Tx, 2480 MHz Tx, Bluetooth, EDR(3-DH5), PRBS9	

(\* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	121.499	QP	51.2	13.1	8.2	31.9	40.6	43.5	2.9	285	53	
Hori.	243.000	QP	42.6	17.1	10.2	31.7	38.2	46.0	7.8	147	287	
Hori.	256.500	QP	42.8	17.5	10.4	31.7	39.0	46.0	7.0	130	53	
Hori.	2483.500	PK	45.9	26.9	14.8	38.1	49.5	73.9	24.4	100	228	
Hori.	3417.575	PK	45.5	28.1	6.7	38.0	42.3	73.9	31.6	100	202	
Hori.	4960.000	PK	45.0	31.8	7.8	37.0	47.6	73.9	26.3	100	64	
Hori.	7440.000	PK	42.8	37.4	9.3	39.4	50.1	73.9	23.8	100	181	
Hori.	9920.000	PK	39.3	38.9	10.1	37.5	50.8	73.9	23.1	100	0	
Hori.	12400.000	PK	42.1	39.7	11.4	38.2	55.0	73.9	18.9	100	0	
Hori.	2483.500	AV	31.6	26.9	14.8	38.1	35.2	53.9	18.7	100	228	
Hori.	3417.575	AV	38.0	28.1	6.7	38.0	34.8	53.9	19.1	100	202	
Hori.	4960.000	AV	29.0	31.8	7.8	37.0	31.6	53.9	22.3	100	64	
Hori.	7440.000	AV	31.2	37.4	9.3	39.4	38.5	53.9	15.4	100	181	
Hori.	9920.000	AV	28.0	38.9	10.1	37.5	39.5	53.9	14.4	100	0	
Hori.	12400.000	AV	30.4	39.7	11.4	38.2	43.3	53.9	10.6	100	0	
Vert.	2483.500	PK	45.6	26.9	14.8	38.1	49.2	73.9	24.7	100	16	
Vert.	3417.575	PK	41.8	28.1	6.7	38.0	38.6	73.9	35.3	100	204	
Vert.	4960.000	PK	49.0	31.8	7.8	37.0	51.6	73.9	22.3	100	206	
Vert.	7440.000	PK	43.7	37.4	9.3	39.4	51.0	73.9	22.9	100	242	
Vert.	9920.000	PK	40.8	38.9	10.1	37.5	52.3	73.9	21.6	100	0	
Vert.	12400.000	PK	41.5	39.7	11.4	38.2	54.4	73.9	19.5	100	0	
Vert.	2483.500	AV	31.7	26.9	14.8	38.1	35.3	53.9	18.6	100	16	
Vert.	3417.575	AV	38.9	28.1	6.7	38.0	35.7	53.9	18.2	100	204	
Vert.	4960.000	AV	29.5	31.8	7.8	37.0	32.1	53.9	21.8	100	206	
Vert.	7440.000	AV	31.2	37.4	9.3	39.4	38.5	53.9	15.4	100	242	
Vert.	9920.000	AV	28.0	38.9	10.1	37.5	39.5	53.9	14.4	100	0	
Vert.	12400.000	AV	29.0	39.7	11.4	38.2	41.9	53.9	12.0	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)  
 Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

### 20dBc Data Sheet (RBW 100kHz, VBW 300kHz)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2480.000	PK	78.2	26.9	14.8	38.2	81.7	-	-	Carrier
Hori.	148.500	PK	48.6	14.8	8.8	31.8	40.4	61.7	21.3	
Hori.	175.500	PK	48.4	15.9	9.1	31.8	41.6	61.7	20.1	
Hori.	202.500	PK	56.1	16.3	9.5	31.8	50.1	61.7	11.6	
Hori.	215.999	PK	52.2	16.6	9.8	31.8	46.8	61.7	14.9	
Hori.	229.501	PK	52.0	16.8	10.0	31.7	47.1	61.7	14.6	
Vert.	2480.000	PK	83.1	26.9	14.8	38.2	86.6	-	-	Carrier
Vert.	33.235	PK	42.5	16.7	6.9	31.9	34.2	66.6	32.4	
Vert.	202.500	PK	49.7	16.3	9.5	31.8	43.7	66.6	22.9	
Vert.	215.999	PK	46.7	16.6	9.8	31.8	41.3	66.6	25.3	
Vert.	229.501	PK	47.3	16.8	10.0	31.7	42.4	66.6	24.2	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18GHz)-Distance factor(above 15GHz)) - Gain(Amplifier)  
 Distance factor : 15GHz -40GHz : 20log(3.0m/1.0m)= 9.5dB

**UL Japan, Inc.**

**Shonan EMC Lab.**

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## APPENDIX 2 Test Instruments

### EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2013/07/09 * 12
SAF-06	Pre Amplifier	TOYO Corporation	TPA0118-36	1440491	RE	2013/07/22 * 12
SCC-G03	Coaxial Cable	Suhner	SUCOFLEX 104A	46499/4A	RE	2013/04/11 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2013/05/22 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2013/08/19 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2014/02/21 * 12
SSA-03	Spectrum Analyzer	Agilent	E4448A	MY48250152	RE	2014/02/03 * 12
SJM-11	Measure	PROMART	SEN1935	-	RE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RF,LMF)	-	RE	-
SAT10-06	Attenuator	Agilent	8493C-010	74865	RE	2013/11/22 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2013/11/22 * 12
SAF-02	Pre Amplifier	SONOMA	310N	290212	RE	2014/02/17 * 12
SAT6-02	Attenuator	JFW	50HF-006N	-	RE	2014/02/17 * 12
KAT3-11	Attenuator	JFW IND. INC.	50HF-003N	-	RE	2013/08/19 * 12
SBA-02	Biconical Antenna	Schwarzbeck	BBA9106	91032665	RE	2013/11/24 * 12
SCC-B1/B3/B5/B7/B8/B13/SRSE-02	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	RE	2013/04/03 * 12
SCC-B2/B4/B6/B7/B8/B13/SRSE-02	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	RE	2013/04/03 * 12
SLA-02	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0893	RE	2013/11/24 * 12
SOS-03	Humidity Indicator	A&D	AD-5681	4063325	RE	2014/02/21 * 12
STR-07	Test Receiver	Rohde & Schwarz	ESU26	100484	RE	2014/02/18 * 12
SJM-02	Measure	KOMELON	KMC-36	-	RE	-
SAEC-02(NSA)	Semi-Anechoic Chamber	TDK	SAEC-02(NSA)	2	RE	2013/07/06 * 12
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE	2014/03/15 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE	2014/03/14 * 12
SCC-G15	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	RE	2014/03/13 * 12
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	RE	2014/03/04 * 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 valid calibrations . Each measurement data is traceable to the national or international standards .

Test Item :

RE: Radiated emission