



RADIO TEST REPORT

Test Report No. : 10008991H-A-R2

Applicant : silex technology, Inc.
Type of Equipment : SDIO Wireless Module
Model No. : SX-SDMGN
FCC ID : N6C-SDMGN
Test regulation : **FCC Part 15 Subpart C: 2013**
(Permissive Change Class II Application)
***Conducted emission and Radiated Spurious Emission test only**
Test Result : **Complied**

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the above regulation.
4. The test results in this 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 NVLAP, NIST, or any agency of the Federal Government.
6. This report is a revised version of 10008991H-A-R1. 10008991H-A-R1 is replaced with this report.

Date of test: December 16, 2013 to January 15, 2014

Representative test engineer:

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Approved by:

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UL Verification Service



NVLAP LAB CODE: 200572-0

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13-EM-F0429

REVISION HISTORY

Original Test Report No.: 10008991H-A

| Revision | Test report No. | Date | Page revised | Contents |
|-----------------|-----------------|---------------------|--------------|--|
| - (Original) | 10008991H-A | January 21, 2014 | - | - |
| 1 | 10008991H-A-R1 | January 31, 2014 | P.9 | Section 4: Addition of explanatory note for Antenna "EUT has two antenna ports. They do not transmit simultaneously." |
| 2 | 10008991H-A-R2 | February 5, 2014 | P.9 | Section 4.2: Correction of test configuration and addition of explanatory notes as below: "Only one antenna is connected and used with the EUT." "Radiated emission was tested with the EUT on a single jig board in original application. For this testing, the antenna radiation was focused, and different jig boards were used." |
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SECTION 1: Customer information

Company Name : silex technology, Inc.
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Telephone Number : +81-774-98-3878
Facsimile Number : +81-774-98-3758
Contact Person : Toshiro Kometani

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

2.1 Identification of E.U.T.

Type of Equipment : SDIO Wireless Module
Model No. : SX-SDMGN
Serial No. : Refer to Clause 4.2
Rating : DC3.3V
Receipt Date of Sample : December 6, 2013
Country of Mass-production : Japan
Condition of EUT : Production model
Modification of EUT : No Modification by the test lab

2.2 Product Description

Model No: SX-SDMGN (referred to as the EUT in this report) is the SDIO Wireless Module.

General Specification

Clock frequency(ies) in the system : 26MHz

Radio Specification

Radio Type : Transceiver
Method of Frequency Generation : Synthesizer
Power Supply (inner) : DC1.8V
Antenna Gain : 3dBi

| | IEEE802.11b | IEEE802.11g | IEEE802.11n (20 M band) |
|------------------------|-----------------------------|--|------------------------------------|
| Frequency of operation | 2412-2462MHz | 2412-2462MHz | 2412 - 2462MHz |
| Type of modulation | DSSS (CCK, DQPSK, DBPSK) | OFDM-CCK (64QAM, 16QAM, QPSK, BPSK) | OFDM (64QAM, 16QAM, QPSK, BPSK) |
| Channel spacing | 5MHz | | 5MHz |
| Antenna type | PCB Printed antenna | | |
| Antenna Connector type | U.FL Alternative connector | | |

<Contents of the change from original model>

Test Report Number of original model is 32IE0153-HO-01-A-R2.

Specification was changed from the original model as follows:

*Antenna of the EUT was modified. The radio specification is identical to the original.

Therefore only Conducted emission test and Radiated Spurious Emission test were performed in this report. Additionally, only the information of modified antenna is described in this report.

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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 15.247 Operation within the bands 902-928MHz,
2400-2483.5MHz, and 5725-5850MHz

3.2 Procedures and results

| Item | Test Procedure | Specification | Worst Margin | Results | Remarks |
|--|--|---|--|----------|----------|
| Conducted Emission | FCC: ANSI C63.4:2003 7. AC powerline Conducted Emission measurements IC: RSS-Gen 7.2.4 | FCC: Section 15.207 ----- IC: RSS-Gen 7.2.4 | QP 19.4dB, 0.15000MHz, L AV 22.8dB, 0.21800MHz, L | Complied | - |
| Spurious Emission & Band Edge Compliance | FCC: FCC Public Notice DA 00-705 ----- IC: RSS-Gen 4.9 | FCC: Section15.247(d) ----- IC: RSS-210 A8.5 RSS-Gen 6 and 7.2.3 | 2.3dB 2483.500MHz, AV, Hori | Complied | Radiated |

Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422.

* In case any questions arise about test procedure, ANSI C63.4: 2003 is also referred.

FCC 15.31 (e)

The RF Module has own regulator.

The RF Module is constantly provided voltage through own regulator regardless of input voltage (DC3.3V).

Therefore, this EUT complies with the requirement.

FCC Part 15.203/212 Antenna requirement

The EUT has a unique antenna connector (U.FL on the Module).

Therefore the equipment complies with the requirement of 15.203/212.

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3.3 Addition to standard

No addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

EMI

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

| Test room (semi-anechoic chamber) | Conducted emission (+dB) |
|--------------------------------------|-----------------------------|
| | 150kHz-30MHz |
| No.1 | 3.5dB |
| No.2 | 3.5dB |
| No.3 | 3.6dB |
| No.4 | 3.5dB |

| 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 | 4.0dB | 5.1dB | 5.0dB | 5.1dB | 6.0dB | 4.9dB | 4.3dB |
| No.2 | 3.9dB | 5.2dB | 5.0dB | 4.9dB | 5.9dB | 4.7dB | 4.2dB |
| No.3 | 4.3dB | 5.1dB | 5.2dB | 5.2dB | 6.0dB | 4.8dB | 4.2dB |
| No.4 | 4.6dB | 5.2dB | 5.0dB | 5.2dB | 6.0dB | 5.7dB | 4.2dB |

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

Conducted Emission test

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

Radiated emission test(3m)

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

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3.5 Test Location

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| | FCC Registration Number | IC Registration Number | Width x Depth x Height (m) | Size of reference ground plane (m) / horizontal conducting plane | Other rooms |
|----------------------------|-------------------------|------------------------|----------------------------|--|------------------------|
| No.1 semi-anechoic chamber | 313583 | 2973C-1 | 19.2 x 11.2 x 7.7m | 7.0 x 6.0m | No.1 Power source room |
| No.2 semi-anechoic chamber | 655103 | 2973C-2 | 7.5 x 5.8 x 5.2m | 4.0 x 4.0m | - |
| No.3 semi-anechoic chamber | 148738 | 2973C-3 | 12.0 x 8.5 x 5.9m | 6.8 x 5.75m | No.3 Preparation room |
| No.3 shielded room | - | - | 4.0 x 6.0 x 2.7m | N/A | - |
| No.4 semi-anechoic chamber | 134570 | 2973C-4 | 12.0 x 8.5 x 5.9m | 6.8 x 5.75m | No.4 Preparation room |
| No.4 shielded room | - | - | 4.0 x 6.0 x 2.7m | N/A | - |
| No.5 semi-anechoic chamber | - | - | 6.0 x 6.0 x 3.9m | 6.0 x 6.0m | - |
| No.6 shielded room | - | - | 4.0 x 4.5 x 2.7m | 4.0 x 4.5 m | - |
| No.6 measurement room | - | - | 4.75 x 5.4 x 3.0m | 4.75 x 4.15 m | - |
| No.7 shielded room | - | - | 4.7 x 7.5 x 2.7m | 4.7 x 7.5m | - |
| No.8 measurement room | - | - | 3.1 x 5.0 x 2.7m | N/A | - |
| No.9 measurement room | - | - | 8.0 x 4.6 x 2.8m | 2.4 x 2.4m | - |
| No.11 measurement room | - | - | 6.2 x 4.7 x 3.0m | 2.4 x 3.4m | - |

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1, No.2, No.3, and No.4 semi-anechoic chambers and No.3 and No.4 shielded rooms.

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

Refer to APPENDIX.

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

4.1 Operating Mode(s)

Test operating mode was determined as follows according to “Section 1 of 6 802.11 a/b/g/n testing- Managing Complex Regulatory Approvals - ” of TCB Council Workshop October 2009.

*The worst test mode in original test report was used in this report.

| Mode | Remarks* |
|--|-----------------------|
| IEEE 802.11b (11b) | 11Mbps (Long GI), PN9 |
| IEEE 802.11g (11g) | 24Mbps (Long GI), PN9 |
| IEEE 802.11n 20MHz BW (11n-20) | MCS 4 (Long GI), PN9 |
| *Transmitting duty was close to 100% on all tests. | |
| *The worst condition was determined based on the test result of Maximum Peak Output Power (Mid Channel) | |
| *EUT has the power settings by the software as follows; Power settings: 11b 11Mbps(Long GI): 13.0 dBm 11g 24Mbps(Long GI): 2412MHz: 10.5 dBm, 2437MHz: 14.5 dBm, 2462MHz: 10.5 dBm 11n-20 MCS 4(Long GI): 2412MHz: 10.0 dBm, 2437MHz: 14.5 dBm, 2462MHz: 10.0 dBm Software: Atheros Test Command (Athtestcmd) v3.1.1 Build 563 | |
| *Any conditions under the normal use do not exceed the condition of setting. In addition, end users cannot change the settings of the output power of the product. | |

*The details of Operating mode(s)

| Test Item | Operating Mode | Tested Antenna | Tested frequency |
|------------------------------|-----------------------|-----------------------|-------------------------------|
| Conducted Emission | 11g Tx *1) | CN1 *2) | 2437MHz |
| Spurious Emission (Radiated) | 11b Tx 11g Tx | CN1 *2) | 2412MHz 2437MHz 2462MHz |
| | 11n-20 Tx | | CN1 *2) |

*1) The mode was tested as a representative, because it had the highest power at antenna terminal test.

Please see test report No. 32IE0153-HO-01-A-R2 for Antenna terminal test result.

*2) After the comparison between CN1 and CN2, test was performed with the antenna that had higher power as a representative.

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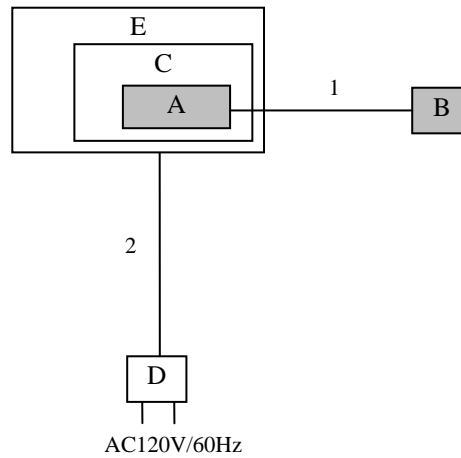
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4.2 Configuration and peripherals



- * Cabling and setup were taken into consideration and test data was taken under worse case conditions.
- * EUT has two antenna ports. They do not transmit simultaneously.
- * Only one antenna is connected and used with the EUT.
- * Radiated emission was tested with the EUT on a single jig board in original application. For this testing, the antenna radiation was focused, and different jig boards were used.

Description of EUT and Support equipment

| No. | Item | Model number | Serial number | Manufacturer | Remark |
|-----|----------------------|----------------|---------------|------------------------|--------|
| A | SDIO Wireless Module | SX-SDMGN | 008092012D59 | silex technology, Inc. | EUT |
| B | Antenna | FMM2.4W48A-235 | 1310012 | NISSEI Limited | EUT |
| C | Jig | - | - | silex technology, Inc. | - |
| D | AC Adaptor | US115-05 | C08-0259307 | UNIFIVE | - |
| E | Jig | - | - | silex technology, Inc. | - |

List of cables used

| No. | Name | Length (m) | Shield | | Remark |
|-----|---------------|------------|------------|------------|--------|
| | | | Cable | Connector | |
| 1 | Antenna Cable | 0.2 | Shielded | Shielded | - |
| 2 | DC Cable | 1.8 | Unshielded | Unshielded | - |

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SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a urethane platform of nominal size, 1.0m by 1.5m, raised 0.8m above the conducting ground plane.

The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals 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 a Line Impedance Stabilization Network (LISN)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

For the tests on EUT with other peripherals (as a whole system)

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. All unused 50ohm connectors of the LISN(AMN) were resistivity terminated in 50ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber.

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

The test results and limit are rounded off to one decimal place, so some differences might be observed.

| | |
|--------------------------|--------------------------|
| Detector | : QP and CISPR AV |
| Measurement range | : 0.15-30MHz |
| Test data | : APPENDIX |
| Test result | : Pass |

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SECTION 6: Radiated Spurious Emission

Test Procedure

It was measured based on "11.0 Emissions in non-restricted frequency bands" of "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 (Issued on April 9, 2013)".

EUT was placed on a urethane platform of nominal size, 0.5m by 1.0m, raised 0.8m above the conducting ground plane.

The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

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

The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.

The measurements were made with the following detector function of the test receiver and the Spectrum analyzer (in linear mode).

The test was made with the detector (RBW/VBW) in the following table.

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

Test Antennas are used as below;

| | | | |
|--------------|-----------------|----------------|------------|
| Frequency | 30MHz to 300MHz | 300MHz to 1GHz | Above 1GHz |
| Antenna Type | Biconical | Logperiodic | Horn |

In any 100kHz bandwidth outside the restricted band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

20dBc was applied to the frequency over the limit of FCC 15.209 / Table 5 of RSS-Gen 7.2.5(IC) and outside the restricted band of FCC15.205 / Table 3 of RSS-Gen 7.2.2 (IC).

| | | | | |
|-----------------|----------------|---|------------------------|---|
| Frequency | Below 1GHz | Above 1GHz | | 20dBc |
| Instrument used | Test Receiver | Spectrum Analyzer | | Spectrum Analyzer |
| Detector | QP | PK | AV *1) | PK |
| IF Bandwidth | BW 120kHz(T/R) | RBW: 1MHz VBW: 3MHz | RBW: 1MHz VBW: 10Hz | RBW: 100kHz VBW: 300kHz (S/A) |
| Test Distance | 3m | 3m (below 10GHz), 1m *2) (above 10GHz) | | 3m (below 10GHz), 1m *2) (above 10GHz) |

*1) Average Power Measurement was performed based on 12.2.7 of "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 (Issued on April 9, 2013)"

*2) Distance Factor: $20 \times \log(3.0\text{m}/1.0\text{m}) = 9.5\text{dB}$

- The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT and antenna to see the position of maximum noise, and the test was made at the position that has the maximum noise.

The test results and limit are rounded off to one decimal place, so some differences might be observed.

Measurement range : 30M-26.5GHz
Test data : APPENDIX
Test result : Pass

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APPENDIX 1: Data of EMI test

Conducted Emission

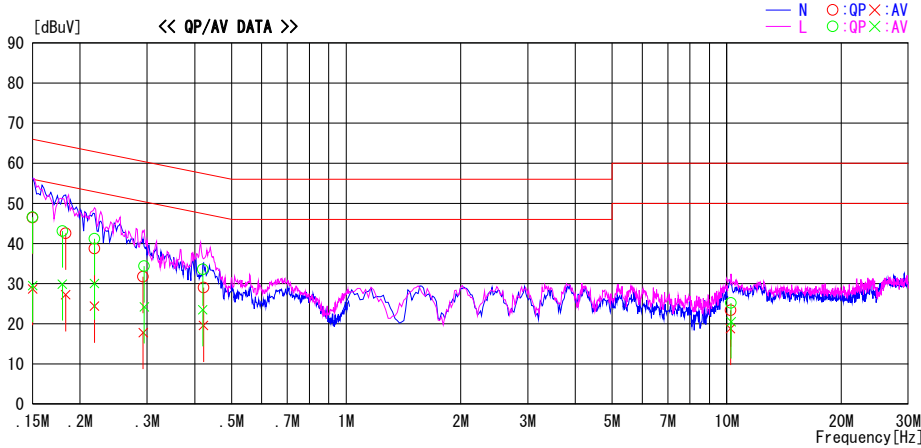
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2013/12/18

Report No. : 10008991H
 Power : AC 120V / 60Hz
 Temp./Humi. : 23deg. C / 30% RH
 Engineer : Katsunori Okai

Mode / Remarks : 11g Tx 2437MHz

LIMIT : FCC15.207 QP
 FCC15.207 AV



| Frequency [MHz] | Reading Level | | Corr. Factor [dB] | Results | | Limit | | Margin | | Phase | Comment |
|--------------------|---------------|--------------|-------------------------|--------------|--------------|--------------|--------------|------------|------------|-------|---------|
| | QP [dBuV] | AV [dBuV] | | QP [dBuV] | AV [dBuV] | QP [dBuV] | AV [dBuV] | QP [dB] | AV [dB] | | |
| 0.15000 | 33.1 | 15.3 | 13.4 | 46.5 | 28.7 | 66.0 | 56.0 | 19.5 | 27.3 | N | |
| 0.18313 | 29.2 | 13.8 | 13.4 | 42.6 | 27.2 | 64.3 | 54.3 | 21.7 | 27.1 | N | |
| 0.21800 | 25.3 | 11.0 | 13.4 | 38.7 | 24.4 | 62.9 | 52.9 | 24.2 | 28.5 | N | |
| 0.29297 | 18.3 | 4.4 | 13.4 | 31.7 | 17.8 | 60.4 | 50.4 | 28.7 | 32.6 | N | |
| 0.42198 | 15.6 | 6.2 | 13.4 | 29.0 | 19.6 | 57.4 | 47.4 | 28.4 | 27.8 | N | |
| 10.23126 | 8.3 | 3.7 | 15.1 | 23.4 | 18.8 | 60.0 | 50.0 | 36.6 | 31.2 | N | |
| 0.15000 | 33.2 | 16.1 | 13.4 | 46.6 | 29.5 | 66.0 | 56.0 | 19.4 | 26.5 | L | |
| 0.17964 | 29.7 | 16.5 | 13.4 | 43.1 | 29.9 | 64.5 | 54.5 | 21.4 | 24.6 | L | |
| 0.21800 | 27.8 | 16.7 | 13.4 | 41.2 | 30.1 | 62.9 | 52.9 | 21.7 | 22.8 | L | |
| 0.29471 | 21.0 | 10.8 | 13.4 | 34.4 | 24.2 | 60.4 | 50.4 | 26.0 | 26.2 | L | |
| 0.42024 | 20.2 | 10.1 | 13.4 | 33.6 | 23.5 | 57.4 | 47.4 | 23.8 | 23.9 | L | |
| 10.27144 | 10.1 | 5.4 | 15.1 | 25.2 | 20.5 | 60.0 | 50.0 | 34.8 | 29.5 | L | |

CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT[dBuV]=READING[dBuV]+C.F[dB] (LISN+CABLE+ATTEN.)
Except for the above table : adequate margin data below the limits.

Radiated Spurious Emission

Test place : Head Office EMC Lab. No.2 and No.4 Semi Anechoic Chamber
 Report No. : 10008991H
 Date : 01/15/2014 12/17/2013
 Temperature/ Humidity : 22 deg. C / 30% RH 23 deg. C / 31% RH
 Engineer : Tomohisa Nakagawa Katsunori Okai
 (1-10GHz) (10-26.5GHz)
 Mode : 11b Tx 2412MHz

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|-----------------|----------------|-------------|--------|
| Hori | 2390.000 | PK | 54.1 | 26.8 | 3.0 | 35.7 | 48.2 | 73.9 | 25.7 | |
| Hori | 3216.061 | PK | 48.7 | 27.8 | 3.6 | 35.0 | 45.1 | 73.9 | 28.8 | |
| Hori | 4824.000 | PK | 43.2 | 30.7 | 5.4 | 34.9 | 44.4 | 73.9 | 29.6 | |
| Hori | 7236.000 | PK | 44.3 | 35.6 | 6.5 | 34.9 | 51.5 | 73.9 | 22.4 | |
| Hori | 9648.000 | PK | 44.1 | 38.2 | 7.2 | 35.4 | 54.1 | 73.9 | 19.8 | |
| Hori | 2390.000 | AV | 40.9 | 26.8 | 3.0 | 35.7 | 35.0 | 53.9 | 18.9 | |
| Hori | 3216.061 | AV | 41.5 | 27.8 | 3.6 | 35.0 | 37.9 | 53.9 | 16.0 | |
| Hori | 4824.000 | AV | 31.9 | 30.7 | 5.4 | 34.9 | 33.1 | 53.9 | 20.8 | |
| Hori | 7236.000 | AV | 32.2 | 35.6 | 6.5 | 34.9 | 39.4 | 53.9 | 14.5 | |
| Hori | 9648.000 | AV | 31.5 | 38.2 | 7.2 | 35.4 | 41.5 | 53.9 | 12.4 | |
| Vert | 2390.000 | PK | 51.9 | 26.8 | 3.0 | 35.7 | 46.0 | 73.9 | 27.9 | |
| Vert | 3216.024 | PK | 52.1 | 27.8 | 3.6 | 35.0 | 48.5 | 73.9 | 25.4 | |
| Vert | 4824.000 | PK | 43.4 | 30.7 | 5.4 | 34.9 | 44.6 | 73.9 | 29.3 | |
| Vert | 7236.000 | PK | 43.2 | 35.6 | 6.5 | 34.9 | 50.4 | 73.9 | 23.5 | |
| Vert | 9648.000 | PK | 44.1 | 38.2 | 7.2 | 35.4 | 54.1 | 73.9 | 19.8 | |
| Vert | 2390.000 | AV | 38.9 | 26.8 | 3.0 | 35.7 | 33.0 | 53.9 | 20.9 | |
| Vert | 3216.024 | AV | 48.5 | 27.8 | 3.6 | 35.0 | 44.9 | 53.9 | 9.0 | |
| Vert | 4824.000 | AV | 30.4 | 30.7 | 5.4 | 34.9 | 31.6 | 53.9 | 22.3 | |
| Vert | 7236.000 | AV | 30.7 | 35.6 | 6.5 | 34.9 | 37.9 | 53.9 | 16.1 | |
| Vert | 9648.000 | AV | 31.5 | 38.2 | 7.2 | 35.4 | 41.5 | 53.9 | 12.4 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

Distance factor: 10GHz-26.5GHz $20\log(3.0m/1.0m) = 9.5dB$

20dBc Data Sheet

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant Factor [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-------------------|-----------|-----------|-----------------|----------------|-------------|---------|
| Hori | 2412.000 | PK | 106.6 | 26.8 | 3.0 | 35.7 | 100.7 | - | - | Carrier |
| Hori | 2397.008 | PK | 65.5 | 26.8 | 3.0 | 35.7 | 59.6 | 80.7 | 21.1 | |
| Hori | 2400.000 | PK | 61.8 | 26.8 | 3.0 | 35.7 | 55.9 | 80.7 | 24.8 | |
| Vert | 2412.000 | PK | 103.7 | 26.8 | 3.0 | 35.7 | 97.8 | - | - | Carrier |
| Vert | 2397.008 | PK | 67.7 | 26.8 | 3.0 | 35.7 | 61.8 | 77.8 | 16.0 | |
| Vert | 2400.000 | PK | 55.1 | 26.8 | 3.0 | 35.7 | 49.2 | 77.8 | 28.6 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

UL Japan, Inc.
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Radiated Spurious Emission

Test place Head Office EMC Lab. No.4 and No.2 Semi Anechoic Chamber
Report No. 10008991H
Date 12/17/2013 01/15/2014
Temperature/ Humidity 23 deg. C / 31% RH 22 deg. C / 30% RH
Engineer Katsunori Okai Tomohisa Nakagawa
(10-26.5GHz) (1-10GHz)
Mode 11b Tx 2437MHz

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|-----------------|----------------|-------------|--------|
| Hori | 3249.240 | PK | 48.8 | 27.9 | 3.7 | 35.0 | 45.4 | 73.9 | 28.5 | |
| Hori | 4874.000 | PK | 43.3 | 30.8 | 5.4 | 34.9 | 44.6 | 73.9 | 29.3 | |
| Hori | 7311.000 | PK | 43.3 | 35.7 | 6.6 | 34.9 | 50.7 | 73.9 | 23.3 | |
| Hori | 9748.000 | PK | 44.3 | 38.4 | 7.3 | 35.4 | 54.6 | 73.9 | 19.3 | |
| Hori | 3249.240 | AV | 43.1 | 27.9 | 3.7 | 35.0 | 39.7 | 53.9 | 14.2 | |
| Hori | 4874.000 | AV | 30.2 | 30.8 | 5.4 | 34.9 | 31.5 | 53.9 | 22.4 | |
| Hori | 7311.000 | AV | 30.4 | 35.7 | 6.6 | 34.9 | 37.8 | 53.9 | 16.1 | |
| Hori | 9748.000 | AV | 31.6 | 38.4 | 7.3 | 35.4 | 41.9 | 53.9 | 12.0 | |
| Vert | 3249.240 | PK | 50.6 | 27.9 | 3.7 | 35.0 | 47.2 | 73.9 | 26.7 | |
| Vert | 4874.000 | PK | 43.6 | 30.8 | 5.4 | 34.9 | 44.9 | 73.9 | 29.0 | |
| Vert | 7311.000 | PK | 43.2 | 35.7 | 6.6 | 34.9 | 50.6 | 73.9 | 23.3 | |
| Vert | 9748.000 | PK | 44.7 | 38.4 | 7.3 | 35.4 | 55.0 | 73.9 | 19.0 | |
| Vert | 3249.240 | AV | 45.3 | 27.9 | 3.7 | 35.0 | 41.9 | 53.9 | 12.0 | |
| Vert | 4874.000 | AV | 30.4 | 30.8 | 5.4 | 34.9 | 31.7 | 53.9 | 22.2 | |
| Vert | 7311.000 | AV | 30.4 | 35.7 | 6.6 | 34.9 | 37.8 | 53.9 | 16.1 | |
| Vert | 9748.000 | AV | 31.6 | 38.4 | 7.3 | 35.4 | 41.9 | 53.9 | 12.0 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

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Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 and No.4 Semi Anechoic Chamber
Report No. 10008991H
Date 12/16/2013 01/15/2014
Temperature/ Humidity 23 deg. C / 40% RH 22 deg. C / 30% RH
Engineer Katsunori Okai Tomohisa Nakagawa
(1-10GHz) (1-10GHz)
Mode 11b Tx 2462MHz

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|-----------------|----------------|-------------|--------|
| Hori | 2483.500 | PK | 55.5 | 26.7 | 3.1 | 35.7 | 49.6 | 73.9 | 24.3 | |
| Hori | 3282.752 | PK | 48.5 | 27.9 | 3.7 | 35.0 | 45.1 | 73.9 | 28.8 | |
| Hori | 4924.000 | PK | 43.3 | 31.0 | 5.4 | 34.9 | 44.8 | 73.9 | 29.1 | |
| Hori | 7386.000 | PK | 43.9 | 35.8 | 6.6 | 34.9 | 51.3 | 73.9 | 22.6 | |
| Hori | 9848.000 | PK | 44.3 | 38.6 | 7.3 | 35.4 | 54.8 | 73.9 | 19.1 | |
| Hori | 2483.500 | AV | 44.6 | 26.7 | 3.1 | 35.7 | 38.7 | 53.9 | 15.2 | |
| Hori | 3282.752 | AV | 42.3 | 27.9 | 3.7 | 35.0 | 38.9 | 53.9 | 15.0 | |
| Hori | 4924.000 | AV | 30.1 | 31.0 | 5.4 | 34.9 | 31.6 | 53.9 | 22.3 | |
| Hori | 7386.000 | AV | 31.1 | 35.8 | 6.6 | 34.9 | 38.6 | 53.9 | 15.3 | |
| Hori | 9848.000 | AV | 31.4 | 38.6 | 7.3 | 35.4 | 41.9 | 53.9 | 12.0 | |
| Vert | 2483.500 | PK | 50.8 | 26.7 | 3.1 | 35.7 | 44.9 | 73.9 | 29.0 | |
| Vert | 3282.752 | PK | 50.4 | 27.9 | 3.7 | 35.0 | 47.0 | 73.9 | 26.9 | |
| Vert | 4924.000 | PK | 43.9 | 31.0 | 5.4 | 34.9 | 45.4 | 73.9 | 28.5 | |
| Vert | 7386.000 | PK | 43.4 | 35.8 | 6.6 | 34.9 | 50.9 | 73.9 | 23.0 | |
| Vert | 9848.000 | PK | 43.8 | 38.6 | 7.3 | 35.4 | 54.3 | 73.9 | 19.6 | |
| Vert | 2483.500 | AV | 40.0 | 26.7 | 3.1 | 35.7 | 34.1 | 53.9 | 19.8 | |
| Vert | 3282.752 | AV | 45.0 | 27.9 | 3.7 | 35.0 | 41.6 | 53.9 | 12.4 | |
| Vert | 4924.000 | AV | 30.2 | 31.0 | 5.4 | 34.9 | 31.7 | 53.9 | 22.2 | |
| Vert | 7386.000 | AV | 31.1 | 35.8 | 6.6 | 34.9 | 38.6 | 53.9 | 15.3 | |
| Vert | 9848.000 | AV | 31.4 | 38.6 | 7.3 | 35.4 | 41.9 | 53.9 | 12.0 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

UL Japan, Inc.

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Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 and No.4 Semi Anechoic Chamber
Report No. 10008991H
Date 01/15/2014 12/17/2013
Temperature/ Humidity 22 deg. C / 30% RH 23 deg. C / 31% RH
Engineer Tomohisa Nakagawa Katsunori Okai
(1-10GHz) (10-26.5GHz)
Mode 11g Tx 2412MHz

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|-----------------|----------------|-------------|--------|
| Hori | 2390.000 | PK | 69.8 | 26.8 | 3.0 | 35.7 | 63.9 | 73.9 | 10.0 | |
| Hori | 3215.959 | PK | 49.1 | 27.8 | 3.6 | 35.0 | 45.5 | 73.9 | 28.4 | |
| Hori | 4824.000 | PK | 44.1 | 30.7 | 4.6 | 34.9 | 44.5 | 73.9 | 29.4 | |
| Hori | 7236.000 | PK | 43.4 | 35.6 | 5.7 | 34.9 | 49.8 | 73.9 | 24.1 | |
| Hori | 9648.000 | PK | 44.6 | 38.2 | 6.5 | 35.4 | 53.9 | 73.9 | 20.0 | |
| Hori | 2390.000 | AV | 53.9 | 26.8 | 3.0 | 35.7 | 48.0 | 53.9 | 5.9 | |
| Hori | 3215.959 | AV | 43.0 | 27.8 | 3.6 | 35.0 | 39.4 | 53.9 | 14.6 | |
| Hori | 4824.000 | AV | 30.4 | 30.7 | 4.6 | 34.9 | 30.8 | 53.9 | 23.1 | |
| Hori | 7236.000 | AV | 30.7 | 35.6 | 5.7 | 34.9 | 37.1 | 53.9 | 16.9 | |
| Hori | 9648.000 | AV | 31.5 | 38.2 | 6.5 | 35.4 | 40.8 | 53.9 | 13.1 | |
| Vert | 2390.000 | PK | 66.7 | 26.8 | 3.0 | 35.7 | 60.8 | 73.9 | 13.1 | |
| Vert | 3215.959 | PK | 52.0 | 27.8 | 3.6 | 35.0 | 48.4 | 73.9 | 25.5 | |
| Vert | 4824.000 | PK | 43.6 | 30.7 | 5.4 | 34.9 | 44.8 | 73.9 | 29.1 | |
| Vert | 7236.000 | PK | 44.0 | 35.6 | 5.7 | 34.9 | 50.4 | 73.9 | 23.5 | |
| Vert | 9648.000 | PK | 44.5 | 38.2 | 6.5 | 35.4 | 53.8 | 73.9 | 20.1 | |
| Vert | 2390.000 | AV | 50.9 | 26.8 | 3.0 | 35.7 | 45.0 | 53.9 | 8.9 | |
| Vert | 3215.959 | AV | 48.4 | 27.8 | 3.6 | 35.0 | 44.8 | 53.9 | 9.1 | |
| Vert | 4824.000 | AV | 30.4 | 30.7 | 5.4 | 34.9 | 31.6 | 53.9 | 22.3 | |
| Vert | 7236.000 | AV | 30.7 | 35.6 | 5.7 | 34.9 | 37.1 | 53.9 | 16.8 | |
| Vert | 9648.000 | AV | 31.5 | 38.2 | 6.5 | 35.4 | 40.8 | 53.9 | 13.1 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

20dBc Data Sheet

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant Factor [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-------------------|-----------|-----------|-----------------|----------------|-------------|---------|
| Hori | 2412.000 | PK | 103.6 | 26.8 | 3.0 | 35.7 | 97.7 | - | - | Carrier |
| Hori | 2400.000 | PK | 72.7 | 26.8 | 3.0 | 35.7 | 66.8 | 77.7 | 10.9 | |
| Vert | 2412.000 | PK | 99.5 | 26.8 | 3.0 | 35.7 | 93.6 | - | - | Carrier |
| Vert | 2400.000 | PK | 69.3 | 26.8 | 3.0 | 35.7 | 63.4 | 73.6 | 10.2 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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Radiated Spurious Emission

Test place Head Office EMC Lab. No.2and No.4 Semi Anechoic Chamber
Report No. 10008991H
Date 01/15/2014 12/17/2013
Temperature/ Humidity 22 deg. C / 30% RH 23 deg. C / 31% RH
Engineer Tomohisa Nakagawa Katsunori Okai
(1-10GHz) (10-26.5GHz)
Mode 11g Tx 2437MHz

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|-----------------|----------------|-------------|--------|
| Hori | 45.721 | QP | 31.1 | 12.3 | 7.4 | 32.2 | 18.6 | 40.0 | 21.4 | |
| Hori | 61.343 | QP | 23.4 | 7.7 | 7.6 | 32.2 | 6.5 | 40.0 | 33.5 | |
| Hori | 272.942 | QP | 27.1 | 18.5 | 9.7 | 31.9 | 23.4 | 46.0 | 22.6 | |
| Hori | 299.786 | QP | 22.2 | 19.8 | 9.9 | 32.0 | 19.9 | 46.0 | 26.1 | |
| Hori | 733.468 | QP | 22.8 | 22.6 | 12.4 | 32.1 | 25.7 | 46.0 | 20.3 | |
| Hori | 813.423 | QP | 38.2 | 23.4 | 12.9 | 31.6 | 42.9 | 46.0 | 3.1 | |
| Hori | 3250.843 | PK | 43.3 | 29.4 | 3.8 | 32.0 | 44.5 | 73.9 | 29.4 | |
| Hori | 4874.000 | PK | 42.6 | 32.4 | 4.6 | 31.6 | 48.0 | 73.9 | 25.9 | |
| Hori | 7311.000 | PK | 44.9 | 36.6 | 5.8 | 32.7 | 54.6 | 73.9 | 19.3 | |
| Hori | 9748.000 | PK | 42.1 | 38.6 | 6.6 | 33.4 | 53.9 | 73.9 | 20.0 | |
| Hori | 3250.843 | AV | 41.5 | 29.4 | 3.8 | 32.0 | 42.7 | 53.9 | 11.2 | |
| Hori | 4874.000 | AV | 32.3 | 32.4 | 4.6 | 31.6 | 37.7 | 53.9 | 16.2 | |
| Hori | 7311.000 | AV | 31.7 | 36.6 | 5.8 | 32.7 | 44.4 | 53.9 | 12.5 | |
| Hori | 9748.000 | AV | 30.1 | 38.6 | 6.6 | 33.4 | 47.9 | 53.9 | 12.0 | |
| Vert | 45.691 | QP | 49.0 | 12.3 | 7.4 | 32.2 | 36.5 | 40.0 | 3.5 | |
| Vert | 60.301 | QP | 37.3 | 7.9 | 7.6 | 32.2 | 20.6 | 40.0 | 19.4 | |
| Vert | 271.862 | QP | 27.5 | 18.4 | 9.7 | 31.9 | 23.7 | 46.0 | 22.3 | |
| Vert | 304.208 | QP | 22.6 | 16.3 | 9.9 | 32.0 | 16.8 | 46.0 | 29.2 | |
| Vert | 733.471 | QP | 21.8 | 22.6 | 12.4 | 32.1 | 24.7 | 46.0 | 21.3 | |
| Vert | 813.432 | QP | 32.7 | 23.4 | 12.9 | 31.6 | 37.4 | 46.0 | 8.6 | |
| Vert | 3250.843 | PK | 44.7 | 29.4 | 3.8 | 32.0 | 45.9 | 73.9 | 28.0 | |
| Vert | 4874.000 | PK | 41.1 | 32.4 | 5.4 | 31.6 | 47.3 | 73.9 | 26.6 | |
| Vert | 7311.000 | PK | 42.4 | 36.6 | 6.6 | 32.7 | 52.9 | 73.9 | 21.0 | |
| Vert | 9748.000 | PK | 41.7 | 38.6 | 7.3 | 33.4 | 54.2 | 73.9 | 19.7 | |
| Vert | 3250.843 | AV | 39.8 | 29.4 | 3.8 | 32.0 | 41.0 | 53.9 | 12.9 | |
| Vert | 4874.000 | AV | 35.0 | 32.4 | 5.4 | 31.6 | 41.2 | 53.9 | 12.7 | |
| Vert | 7311.000 | AV | 31.1 | 36.6 | 6.6 | 32.7 | 44.6 | 53.9 | 13.1 | |
| Vert | 9748.000 | AV | 30.6 | 38.6 | 7.3 | 33.4 | 51.1 | 53.9 | 11.5 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

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Radiated Spurious Emission

Test place Head Office EMC Lab. No.2 and No.4 Semi Anechoic Chamber
Report No. 10008991H
Date 01/15/2014 12/17/2013
Temperature/ Humidity 22 deg. C / 30% RH 23 deg. C / 31% RH
Engineer Tomohisa Nakagawa Katsunori Okai
(1-10GHz) (10-26.5GHz)
Mode 11g Tx 2462MHz

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|-----------------|----------------|-------------|--------|
| Hori | 2483.500 | PK | 71.9 | 26.7 | 3.1 | 35.7 | 66.0 | 73.9 | 7.9 | |
| Hori | 3282.752 | PK | 48.1 | 27.9 | 3.7 | 35.0 | 44.7 | 73.9 | 29.2 | |
| Hori | 4924.000 | PK | 43.5 | 31.0 | 5.4 | 34.9 | 45.0 | 73.9 | 28.9 | |
| Hori | 7386.000 | PK | 44.3 | 35.8 | 6.6 | 34.9 | 51.8 | 73.9 | 22.1 | |
| Hori | 9848.000 | PK | 43.8 | 38.6 | 7.3 | 35.4 | 54.3 | 73.9 | 19.7 | |
| Hori | 2483.500 | AV | 56.1 | 26.7 | 3.1 | 35.7 | 50.2 | 53.9 | 3.7 | |
| Hori | 3282.752 | AV | 39.5 | 27.9 | 3.7 | 35.0 | 36.1 | 53.9 | 17.9 | |
| Hori | 4924.000 | AV | 30.1 | 31.0 | 5.4 | 34.9 | 31.6 | 53.9 | 22.4 | |
| Hori | 7386.000 | AV | 31.1 | 35.8 | 6.6 | 34.9 | 38.6 | 53.9 | 15.3 | |
| Hori | 9848.000 | AV | 31.4 | 38.6 | 7.3 | 35.4 | 41.9 | 53.9 | 12.0 | |
| Vert | 2483.500 | PK | 67.1 | 26.7 | 3.1 | 35.7 | 61.2 | 73.9 | 12.7 | |
| Vert | 3282.752 | PK | 50.7 | 27.9 | 3.7 | 35.0 | 47.3 | 73.9 | 26.7 | |
| Vert | 4924.000 | PK | 42.6 | 31.0 | 5.4 | 34.9 | 44.1 | 73.9 | 29.8 | |
| Vert | 7386.000 | PK | 43.8 | 35.8 | 6.6 | 34.9 | 51.3 | 73.9 | 22.6 | |
| Vert | 9848.000 | PK | 43.7 | 38.6 | 7.3 | 35.4 | 54.2 | 73.9 | 19.7 | |
| Vert | 2483.500 | AV | 51.2 | 26.7 | 3.1 | 35.7 | 45.3 | 53.9 | 8.6 | |
| Vert | 3282.752 | AV | 46.6 | 27.9 | 3.7 | 35.0 | 43.2 | 53.9 | 10.7 | |
| Vert | 4924.000 | AV | 30.4 | 31.0 | 5.4 | 34.9 | 31.9 | 53.9 | 22.0 | |
| Vert | 7386.000 | AV | 31.1 | 35.8 | 6.6 | 34.9 | 38.6 | 53.9 | 15.3 | |
| Vert | 9848.000 | AV | 31.4 | 38.6 | 7.3 | 35.4 | 41.9 | 53.9 | 12.0 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

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Radiated Spurious Emission

Test place Head Office EMC Lab. No.2 Semi Anechoic Chamber
 Report No. 10008991H
 Date 01/15/2014
 Temperature/ Humidity 22 deg. C / 30% RH
 Engineer Tomohisa Nakagawa
 (Band Edge)
 Mode 11n-20 Tx 2412MHz

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|--------------------|----------|-------------------|--------------------|--------------|--------------|--------------------|-------------------|----------------|--------|
| Hori | 2390.000 | PK | 70.3 | 26.8 | 3.0 | 35.7 | 64.4 | 73.9 | 9.5 | |
| Hori | 2390.000 | AV | 55.4 | 26.8 | 3.0 | 35.7 | 49.5 | 53.9 | 4.4 | |
| Vert | 2390.000 | PK | 67.9 | 26.8 | 3.0 | 35.7 | 62.0 | 73.9 | 11.9 | |
| Vert | 2390.000 | AV | 52.8 | 26.8 | 3.0 | 35.7 | 46.9 | 53.9 | 7.0 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

20dBc Data Sheet

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant Factor [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|--------------------|----------|-------------------|-------------------------|--------------|--------------|--------------------|-------------------|----------------|---------|
| Hori | 2412.000 | PK | 103.0 | 26.8 | 3.0 | 35.7 | 97.1 | - | - | Carrier |
| Hori | 2400.000 | PK | 73.7 | 26.8 | 3.0 | 35.7 | 67.8 | 77.1 | 9.3 | |
| Vert | 2412.000 | PK | 99.9 | 26.8 | 3.0 | 35.7 | 94.0 | - | - | Carrier |
| Vert | 2400.000 | PK | 70.9 | 26.8 | 3.0 | 35.7 | 65.0 | 74.0 | 9.0 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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Head Office EMC Lab.

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Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No. 10008991H
Date 01/15/2014
Temperature/ Humidity 22 deg. C / 30% RH
Engineer Tomohisa Nakagawa
(Band Edge)
Mode 11n-20 Tx 2462MHz

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|-----------------|----------------|-------------|--------|
| Hori | 2483.500 | PK | 72.4 | 26.7 | 3.1 | 35.7 | 66.5 | 73.9 | 7.4 | |
| Hori | 2483.500 | AV | 57.5 | 26.7 | 3.1 | 35.7 | 51.6 | 53.9 | 2.3 | |
| Vert | 2483.500 | PK | 67.1 | 26.7 | 3.1 | 35.7 | 61.2 | 73.9 | 12.7 | |
| Vert | 2483.500 | AV | 52.2 | 26.7 | 3.1 | 35.7 | 46.3 | 53.9 | 7.7 | |

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

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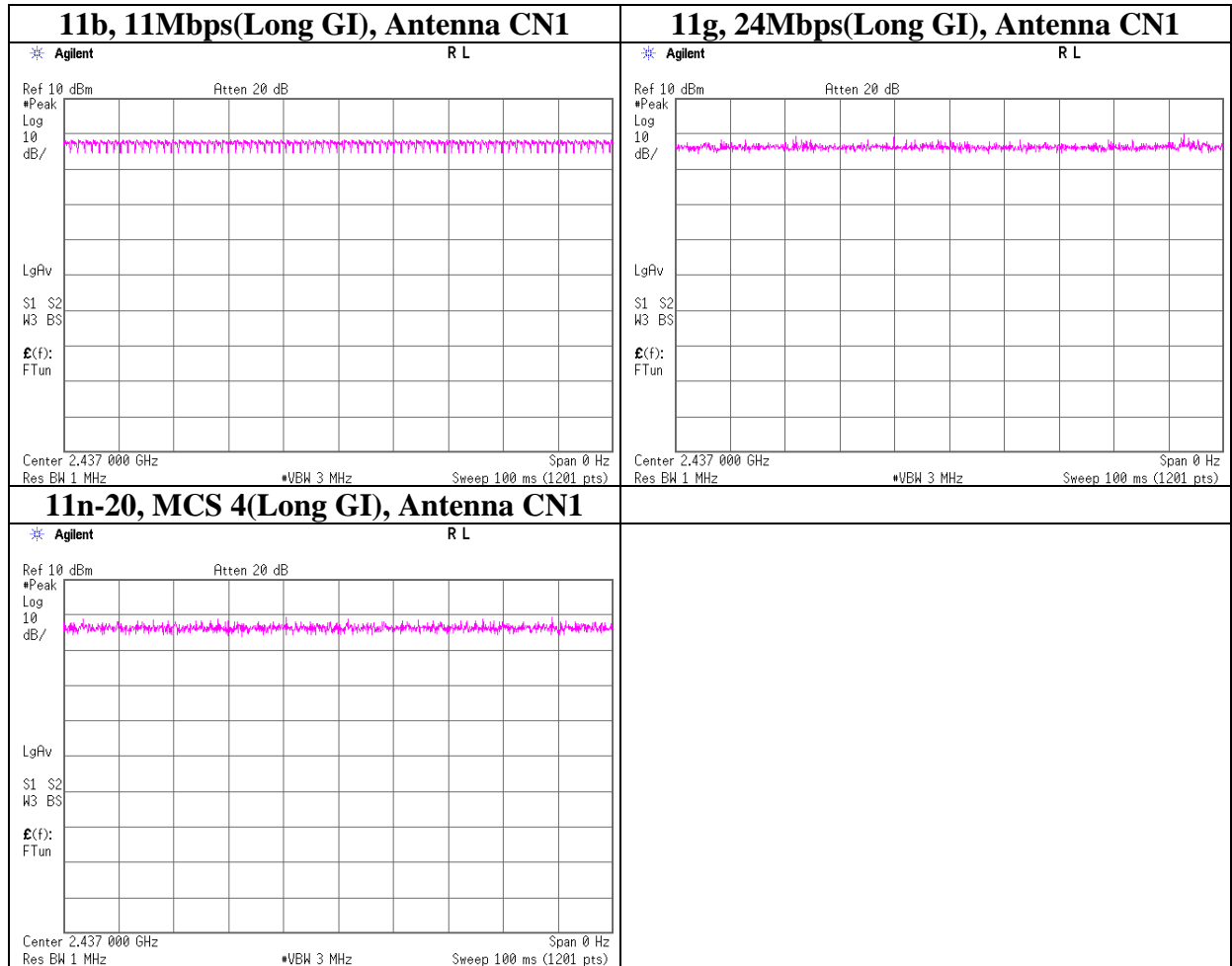
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Burst rate confirmation



APPENDIX 2: Test instruments

EMI test equipment

| Control No. | Instrument | Manufacturer | Model No | Serial No | Test Item | Calibration Date * Interval(month) |
|-------------|------------------------------|----------------------|---|-------------------------------------|-----------|---------------------------------------|
| MAEC-03 | Semi Anechoic Chamber(NSA) | TDK | Semi Anechoic Chamber 3m | DA-10005 | RE | 2013/02/28 * 12 |
| MOS-13 | Thermo-Hygrometer | Custom | CTH-180 | - | RE | 2013/02/26 * 12 |
| MJM-16 | Measure | KOMELON | KMC-36 | - | RE | - |
| COTS-MEMI | EMI measurement program | TSJ | TEPTO-DV | - | RE | - |
| MRENT-114 | Spectrum Analyzer | Agilent | E4440A | MY46187105 | RE | 2013/11/11 * 12 |
| MHA-20 | Horn Antenna 1-18GHz | Schwarzbeck | BBHA9120D | 258 | RE | 2013/05/17 * 12 |
| MCC-133 | Microwave Cable | HUBER+SUHNER | SUCOFLEX104 | 336164/4(1m) / 340640(5m) | RE | 2013/09/27 * 12 |
| MPA-11 | MicroWave System Amplifier | Agilent | 83017A | MY39500779 | RE | 2013/03/12 * 12 |
| MHF-25 | High Pass Filter 3.5-18.0GHz | UL Japan | HPF SELECTOR | 001 | RE | 2013/09/01 * 12 |
| MAEC-04 | Semi Anechoic Chamber(NSA) | TDK | Semi Anechoic Chamber 3m | DA-10005 | RE/CE | 2013/02/28 * 12 |
| MOS-15 | Thermo-Hygrometer | Custom | CTH-180 | - | RE/CE | 2013/02/26 * 12 |
| MJM-09 | Measure | KDS | E19-55 | - | RE/CE | - |
| MSA-10 | Spectrum Analyzer | Agilent | E4448A | MY46180655 | RE/CE | 2013/02/22 * 12 |
| MTR-03 | Test Receiver | Rohde & Schwarz | ESCI | 100300 | RE/CE | 2013/06/11 * 12 |
| MBA-05 | Biconical Antenna | Schwarzbeck | BBA9106 | 1302 | RE | 2013/11/24 * 12 |
| MLA-08 | Logperiodic Antenna | Schwarzbeck | UKLP9140-A | N/A | RE | 2013/11/24 * 12 |
| MCC-50 | Coaxial Cable | UL Japan | - | - | RE | 2013/06/18 * 12 |
| MAT-68 | Attenuator | Anritsu | MP721B | 6200961025 | RE | 2013/11/26 * 12 |
| MPA-14 | Pre Amplifier | SONOMA INSTRUMENT | 310 | 260833 | RE | 2013/03/12 * 12 |
| MHA-21 | Horn Antenna 1-18GHz | Schwarzbeck | BBHA9120D | 9120D-557 | RE | 2013/08/12 * 12 |
| MCC-141 | Microwave Cable | Junkosha | MWX221 | 1305S002R(1m))/ 1204S062(5m) | RE | 2013/05/28 * 12 |
| MPA-12 | MicroWave System Amplifier | Agilent | 83017A | MY39500780 | RE | 2013/03/19 * 12 |
| MHA-17 | Horn Antenna 15-40GHz | Schwarzbeck | BBHA9170 | BBHA9170307 | RE | 2013/06/30 * 12 |
| MLS-07 | LISN(AMN) | Schwarzbeck | NSLK8127 | 8127364 | CE | 2013/01/07 * 12 |
| MAT-67 | Attenuator | JFW Industries, Inc. | 50FP-013H2 N | - | CE | 2013/01/09 * 12 |
| MCC-113 | Coaxial cable | Fujikura/Suhner/TSJ | 5D-2W(10m)/SFM141(5m)/421-010(1m)/sucoform141-PE(1m)/RFM-E121(Switcher) | -/04178 | CE | 2013/07/23 * 12 |
| MHF-26 | High Pass Filter 3.5-18.0GHz | UL Japan | HPF SELECTOR | 002 | RE | 2013/09/01 * 12 |

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**The expiration date of the calibration is the end of the expired month.
All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.**

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

**Test Item: CE: Conducted Emission
RE: Radiated Emission**