



# RADIO TEST REPORT

**Test Report No.: 10044579S-A**  
(Original test report No.: 32GE0051-SH-03-B)

**Applicant** : Panasonic Corporation  
**Type of Equipment** : Bluetooth/WLAN Module Assy  
**Model No.** : YEAP01B892WLAN  
**FCC ID** : ACJ932YEAP01A473W  
**Test regulation** : FCC Part15 Subpart C: 2013 (Class II change)  
**Test item** : Radiated Spurious emission  
**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 limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by any agency of the Federal Government.
6. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.

**Date of test:** September 2 to 17, 2013

**Tested by:** M. Hosaka

Makoto Hosaka  
Engineer of WiSE Japan,  
UL Verification Service

**Approved by :** G. Ishiwata

Go Ishiwata  
Manager of WiSE Japan,  
UL Verification Service



**JAB**  
Testing  
RTL02610

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

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**Shonan EMC Lab.**

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13-EM-F0429



**Contents**

	<b><u>Page</u></b>
<b>SECTION 1: Customer information.....</b>	<b>4</b>
<b>SECTION 2: Equipment under test (E.U.T.).....</b>	<b>4</b>
<b>SECTION 3: Test specification, procedures &amp; results.....</b>	<b>5</b>
<b>SECTION 4: Operation of E.U.T. during testing.....</b>	<b>7</b>
<b>SECTION 5: Radiated emission .....</b>	<b>8</b>
<b>Contents of APPENDIXES.....</b>	<b>10</b>
<b>APPENDIX 1: Data of Radio tests.....</b>	<b>11</b>
<b>APPENDIX 2: Test instruments .....</b>	<b>23</b>
<b>APPENDIX 3: Photographs of test setup .....</b>	<b>24</b>

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## **SECTION 1: Customer information**

Company Name : Panasonic Corporation  
Brand Name : Panasonic  
Address : 4261 Ikonobe-cho, Tsuzuki-ku, Yokohama-shi, Kanagawa 224-8520 Japan  
Telephone Number : +81-50-3689-6973  
Facsimile Number : +81-45-931-0806  
Contact Person : Ichiro Furuya

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

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

Type of Equipment : Bluetooth/WLAN Module Assy  
Model No. : YEAP01B892WLAN  
Serial No. : Refer to 4.2 in this report.  
Rating : DC5.0V  
Receipt Date of Sample : September 2, 2013  
Country of Mass-production : Japan  
Condition of EUT : Engineering prototype  
(Not for Sale: This sample is equivalent to mass-produced items.)  
Modification of EUT : No modification by the test lab.

### **2.2 Product description**

Model: YEAP01B892WLAN (referred to as the EUT in this report) is a Bluetooth/WLAN Module Assy.

Change from the original sample: YEAP01A473WLAN (Test report No.: 32GE0051-SH-03-B):  
Circuit, Mechanism element, Antennas (BT-MAIN-001, BT-MAIN-002)

Similar model of YEAP01B892WLAN: YEAP01B895WLAN. This model has no additional IC for TFT display.

Clock frequency(ies) in the system : 26MHz, 32.768kHz

### **Radio specification**

Equipment type : Transceiver  
Frequency of operation : 2412-2462MHz  
Bandwidth & channel spacing : 5MHz  
Type of modulation : DSSS: CCK,DQPSK, DBPSK, OFDM: 64QAM, 16QAM, QPSK, BPSK  
Antenna type : Dipole  
Antenna connector type : U.FL  
Antenna gain with cable loss : -2.9dBi (BT-MAIN-001), -4.0dBi (BT-MAIN-002)  
ITU code : G1D, D1D  
Operation temperature range : -30 to +85 deg. C.

\* For Bluetooth part, Refer to the test report: 10044579S-C.

\*1) BT-MAIN-001 or BT-MAIN-002 is installed to the module. The length of coaxial cable is different.

<b>Antenna</b>	<b>Cable length (mm)</b>
BT-MAIN-001	50
BT-MAIN-002	55

FCC 15.31 (e)

The RF module is provided with stable power supply DC 3.3V and DC1.8V from the host device, therefore, the equipment complies with the power supply regulation.

FCC 15.203

The EUT complies with the requirement, because the antenna has a unique coupling (U.FL).

There is 2-type of bottom plate. The size is different. Bottom plate is located on the bottom of the EUT.

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

### **3.1 Test specification**

Test specification : Test specification: FCC Part 15 Subpart C: 2013,  
final revised on June 11, 2013 and effective July 11, 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 *1)	Specification	Remarks	Deviation	Worst Margin	Results
Conducted emission	ANSI C63.10:2009	FCC 15.207	-	N/A *2)	N/A	N/A
6dB bandwidth	ANSI C63.10:2009	FCC 15.247 (a)(2)	Conducted	*3)	N/A	N/A
Maximum peak output power	ANSI C63.10:2009	FCC 15.247 (b)(3)	Conducted	*3)		N/A
Out of band emission & Restricted band edges	ANSI C63.10:2009	FCC 15.109, 15.247 (d) & 15.209	Radiated	N/A	4.5dB Freq.: 4874.000 MHz Polarization: Horizontal Detection: Average Mode: Tx 2437MHz, IEEE 802.11b	Complied
Power density	ANSI C63.10:2009	FCC 15.247 (e)	Conducted	*3)	N/A	N/A

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

\*1) These tests were also referred to KDB 558074 v03 r01 (FCC), "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247".

\*2) The test is not applicable since the EUT does not have AC Mains.

\*3) Refer to the original test report: 32GE0051-SH-03-B. (Tested model: ACJ932YEAP01A473W)

### **3.3 Addition to standard**

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

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### 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 (±)
<b>Radiated emission (Measurement distance: 3m)</b>	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
<b>Radiated emission (Measurement distance: 1m)</b>	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

UL Japan, Inc. Shonan EMC Lab.

1-22-3, Megumigaoka, Hiratsuka-shi, Kanagawa-ken 259-1220 JAPAN

Telephone number : +81 463 50 6400

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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 checked="" 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	-

### 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

Mode	Tested frequency	Worst data rate *1)
Transmitting IEEE 802.11b	2412MHz, 2437MHz, 2462MHz	11Mbps, PN9
Transmitting IEEE 802.11g	2412MHz, 2437MHz, 2462MHz	18Mbps, PN9
Transmitting IEEE 802.11n-20	2412MHz, 2437MHz, 2462MHz	MCS3, PN9

\*The worst mode was selected based on the result in the original test report: 32GE0051-SH-03-B

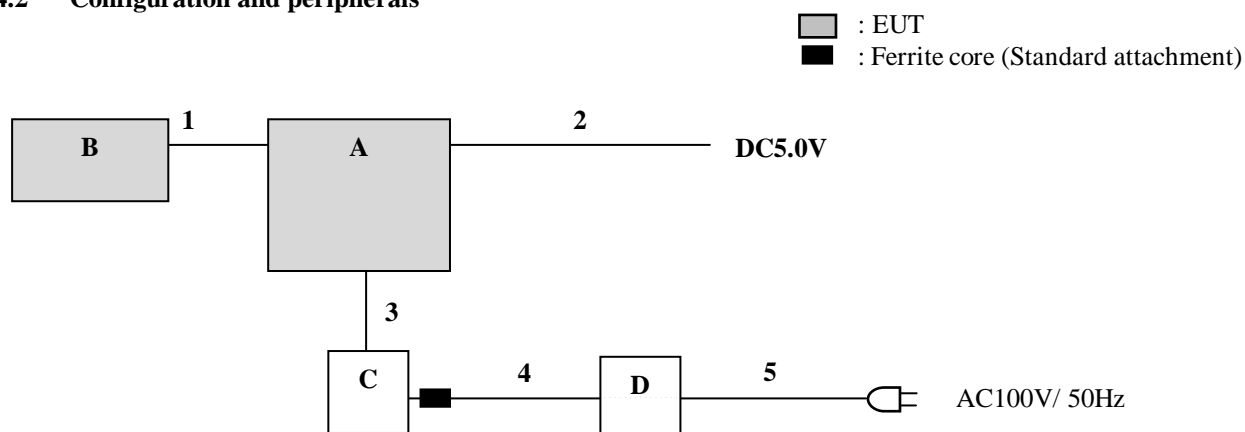
EUT has the power settings by the software as follows;

Power settings	Fixed (The setting is not controlled by the software and it is equivalent to that of mass- produced items.)
Software	Real Time Tuning Tool Ver 2.0.0.17

Antenna used: BT-MAIN-001

The test was made at the worse case that has the maximum noise.

### 4.2 Configuration and peripherals



\* Test data was taken under worse case conditions.

#### Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Bluetooth/WLAN Module Assy	YEAP01B892WLAN	9	Panasonic Corporation	EUT
B	Dipole Antenna	BT-MAIN-001	-	NISSEI ELECTRIC CO., LTD.	EUT
C	Test Jig	PCA-A-036702	48641	Panasonic Corporation	-
D	AC Adaptor	SA06-20S05R-V	R00100300177	AUTEC POWER SYSTEMS	-

#### List of cables used

No.	Cable name	Length (m)	Shield		Remark
			Cable	Connector	
1	Antenna	0.05	Shielded	Shielded	-
2	DC	1.4	Unshielded	Unshielded	-
3	Signal	0.2	Unshielded	Unshielded	-
4	DC	1.2	Unshielded	Unshielded	-
5	AC	2.0	Unshielded	Unshielded	-

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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 urethane platform of nominal size, 0.5m by 0.5m, raised 0.8m above the conducting ground plane. Photographs of the set up are shown in APPENDIX 3.

### **5.3 Test conditions**

Frequency range : 30MHz to 25GHz  
EUT position : Table top

### **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). 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 *1)	Peak
IF Bandwidth	120kHz	RBW: 1MHz VBW: 3MHz	RBW: 1MHz VBW: *2)	RBW: 100kHz VBW: 300kHz

\*1) When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

\*2) Refer to VBW Calculation Chart.

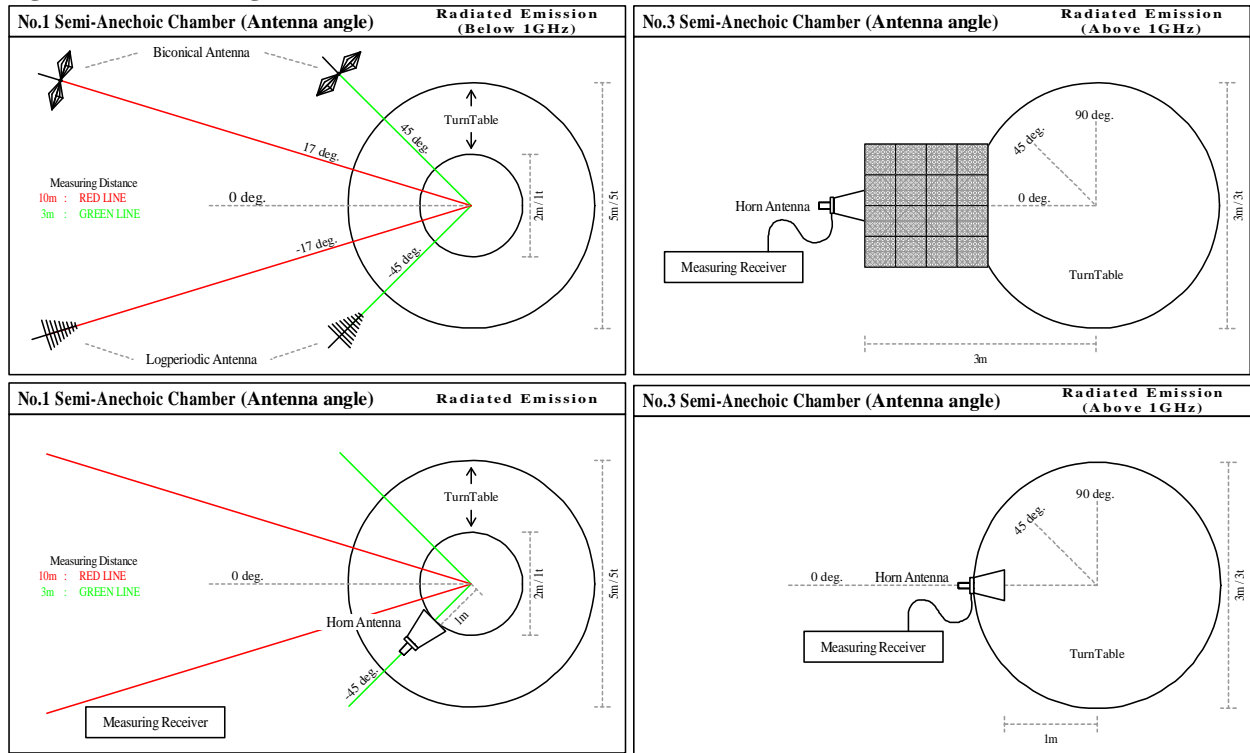
The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Worst position:

Antenna polarization	Carrier	Spurious (Below 1GHz)	Spurious (1-15GHz)	Spurious (15-18GHz)	Spurious (18-25GHz)
Horizontal	X	X	Y	Z	Y
Vertical	Z	X	Y	Y	Y

\* The definition of the axis was listed in a 'Pre-check of the worst position' in APPENDIX 3.

**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 4<sup>th</sup> order harmonics.

Refer to APPENDIX 1.

## **Contents of APPENDIXES**

### **APPENDIX 1: Data of Radio tests**

Radiated emission

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

Test instruments

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

Radiated emission  
Pre-check of the worst position

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## Radiated Emission

Test place	No.3 and 1 Semi Anechoic Chamber			
Date	September 2, 2013	September 3, 2013	September 5, 2013	September 17, 2013
Temperature / Humidity	26 deg.C, 56 %RH	23 deg.C, 54 %RH	24 deg.C, 64 %RH	27 deg.C, 47 %RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Makoto Hosaka	Wataru Kojima
Mode	Tx, 2412 MHz Tx, IEEE802.11b, PN9, worst date mode 11Mbps			

(\* 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.	130.005	QP	36.7	13.9	8.2	31.8	27.0	43.5	16.5	150	103	
Hori.	182.003	QP	36.5	16.1	8.8	31.8	29.6	43.5	13.9	150	143	
Hori.	927.979	QP	23.1	23.1	9.9	31.2	24.9	46.0	21.1	150	2	
Hori.	2390.000	PK	45.8	26.8	24.9	41.1	56.4	73.9	17.5	107	0	
Hori.	4824.000	PK	59.7	31.1	7.5	41.2	57.1	73.9	16.8	100	304	
Hori.	7236.000	PK	51.1	37.1	9.0	41.0	56.2	73.9	17.7	100	334	
Hori.	2390.000	AV	35.0	26.8	24.9	41.1	45.6	53.9	8.3	107	0	VBW:1kHz
Hori.	4824.000	AV	51.5	31.1	7.5	41.2	48.9	53.9	5.0	100	304	VBW:1kHz
Hori.	7236.000	AV	43.4	37.1	9.0	41.0	48.5	53.9	5.4	100	334	VBW:10Hz
Vert.	92.794	QP	31.4	8.8	8.2	31.8	16.6	43.5	26.9	100	4	
Vert.	113.576	QP	29.3	12.2	7.9	31.8	17.6	43.5	25.9	100	197	
Vert.	130.003	QP	38.8	13.9	8.2	31.8	29.1	43.5	14.4	100	144	
Vert.	182.008	QP	35.8	16.1	8.8	31.8	28.9	43.5	14.6	100	206	
Vert.	899.717	QP	23.3	23.1	9.8	31.4	24.8	46.0	21.2	100	2	
Vert.	2390.000	PK	46.3	26.8	24.9	41.1	56.9	73.9	17.0	137	95	
Vert.	4824.000	PK	56.6	31.1	7.5	41.2	54.0	73.9	19.9	100	326	
Vert.	7236.000	PK	52.0	37.1	9.0	41.0	57.1	73.9	16.8	100	352	
Vert.	2390.000	AV	35.0	26.8	24.9	41.1	45.6	53.9	8.3	137	95	VBW:1kHz
Vert.	4824.000	AV	47.7	31.1	7.5	41.2	45.1	53.9	8.8	100	326	VBW:1kHz
Vert.	7236.000	AV	43.5	37.1	9.0	41.0	48.6	53.9	5.3	100	352	VBW:10Hz

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

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

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

**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.	2412.000	PK	83.4	26.8	24.9	41.1	94.0	-	-	
Hori.	2398.150	PK	41.9	26.8	24.9	41.1	52.5	74.0	21.5	
Hori.	2400.000	PK	40.1	26.8	24.9	41.1	50.7	74.0	23.3	
Vert.	2412.000	PK	85.8	28.2	24.9	41.1	97.8	-	-	
Vert.	2398.150	PK	41.6	26.8	24.9	41.1	52.2	77.8	25.6	
Vert.	2400.000	PK	41.4	26.8	24.9	41.1	52.0	77.8	25.8	

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

## Radiated Emission

Test place	No.3 and 1 Semi Anechoic Chamber			
Date	September 2, 2013	September 3, 2013	September 5, 2013	September 17, 2013
Temperature / Humidity	26 deg.C, 56 %RH	23 deg.C, 54 %RH	24 deg.C, 64 %RH	27 deg.C, 47 %RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Makoto Hosaka	Wataru Kojima
Mode	Tx, 2437 MHz Tx, IEEE802.11b, PN9, worst date mode 11Mbps			

(\* 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.	130.000	QP	37.3	13.9	8.2	31.8	27.6	43.5	15.9	150	102	
Hori.	182.003	QP	36.4	16.1	8.8	31.8	29.5	43.5	14.0	150	133	
Hori.	871.216	QP	23.3	22.6	9.7	31.5	24.1	46.0	21.9	150	1	
Hori.	4874.000	PK	60.1	31.3	7.5	41.2	57.7	73.9	16.2	100	307	
Hori.	7311.000	PK	49.4	37.2	9.0	41.1	54.5	73.9	19.4	100	336	
Hori.	4874.000	AV	51.8	31.3	7.5	41.2	49.4	53.9	4.5	100	307	VBW:1kHz
Hori.	7311.000	AV	42.8	37.2	9.0	41.1	47.9	53.9	6.0	100	336	VBW:10Hz
Vert.	90.184	QP	30.2	8.3	8.1	31.8	14.8	43.5	28.7	100	358	
Vert.	113.777	QP	28.8	12.2	7.9	31.8	17.1	43.5	26.4	100	199	
Vert.	130.003	QP	38.5	13.9	8.2	31.8	28.8	43.5	14.7	100	142	
Vert.	182.001	QP	34.8	16.1	8.8	31.8	27.9	43.5	15.6	100	205	
Vert.	944.537	QP	23.2	23.2	10.0	31.0	25.4	46.0	20.6	100	1	
Vert.	4874.000	PK	57.5	31.3	7.5	41.2	55.1	73.9	18.8	100	323	
Vert.	7311.000	PK	49.9	37.2	9.0	41.1	55.0	73.9	18.9	100	349	
Vert.	4874.000	AV	48.8	31.3	7.5	41.2	46.4	53.9	7.5	100	323	VBW:1kHz
Vert.	7311.000	AV	43.0	37.2	9.0	41.1	48.1	53.9	5.8	100	349	VBW:10Hz

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

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

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

## Radiated Emission

Test place	No.3 and 1 Semi Anechoic Chamber			
Date	September 2, 2013	September 3, 2013	September 5, 2013	September 17, 2013
Temperature / Humidity	26 deg.C, 56 %RH	23 deg.C, 54 %RH	24 deg.C, 64 %RH	27 deg.C, 47 %RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Makoto Hosaka	Wataru Kojima
Mode	Tx, 2462 MHz Tx, IEEE802.11b, PN9, worst date mode 11Mbps			

(\* 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.	130.004	QP	35.1	13.9	8.2	31.8	25.4	43.5	18.1	150	103	
Hori.	182.011	QP	35.5	16.1	8.8	31.8	28.6	43.5	14.9	150	135	
Hori.	507.200	QP	23.1	17.7	8.2	32.0	17.0	46.0	29.0	150	2	
Hori.	2483.500	PK	46.0	26.9	25.0	41.0	56.9	73.9	17.0	107	0	
Hori.	4924.000	PK	58.9	31.6	7.5	41.1	56.9	73.9	17.0	100	302	
Hori.	7386.000	PK	50.7	37.3	9.0	41.1	55.9	73.9	18.0	100	328	
Hori.	2483.500	AV	34.7	26.9	25.0	41.0	45.6	53.9	8.3	107	0	VBW:1kHz
Hori.	4924.000	AV	50.1	31.6	7.5	41.1	48.1	53.9	<b>5.8</b>	100	302	VBW:1kHz
Hori.	7386.000	AV	42.3	37.3	9.0	41.1	47.5	53.9	6.4	100	328	VBW:10Hz
Vert.	114.139	QP	29.5	12.3	7.9	31.8	17.9	43.5	25.6	100	205	
Vert.	130.009	QP	37.3	13.9	8.2	31.8	27.6	43.5	15.9	100	140	
Vert.	159.749	QP	27.5	15.4	8.8	31.8	19.9	43.5	23.6	100	180	
Vert.	182.003	QP	32.0	16.1	8.8	31.8	25.1	43.5	18.4	100	203	
Vert.	894.430	QP	23.2	23.0	9.8	31.4	24.6	46.0	21.4	100	1	
Vert.	2483.500	PK	45.9	26.9	25.0	41.0	56.8	73.9	17.1	130	0	
Vert.	4924.000	PK	55.4	31.6	7.5	41.1	53.4	73.9	20.5	100	323	
Vert.	7386.000	PK	51.4	37.3	9.0	41.1	56.6	73.9	17.3	100	348	
Vert.	2483.500	AV	34.9	26.9	25.0	41.0	45.8	53.9	8.1	130	0	VBW:1kHz
Vert.	4924.000	AV	46.8	31.6	7.5	41.1	44.8	53.9	9.1	100	323	VBW:1kHz
Vert.	7386.000	AV	42.5	37.3	9.0	41.1	47.7	53.9	6.2	100	348	VBW:10Hz

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

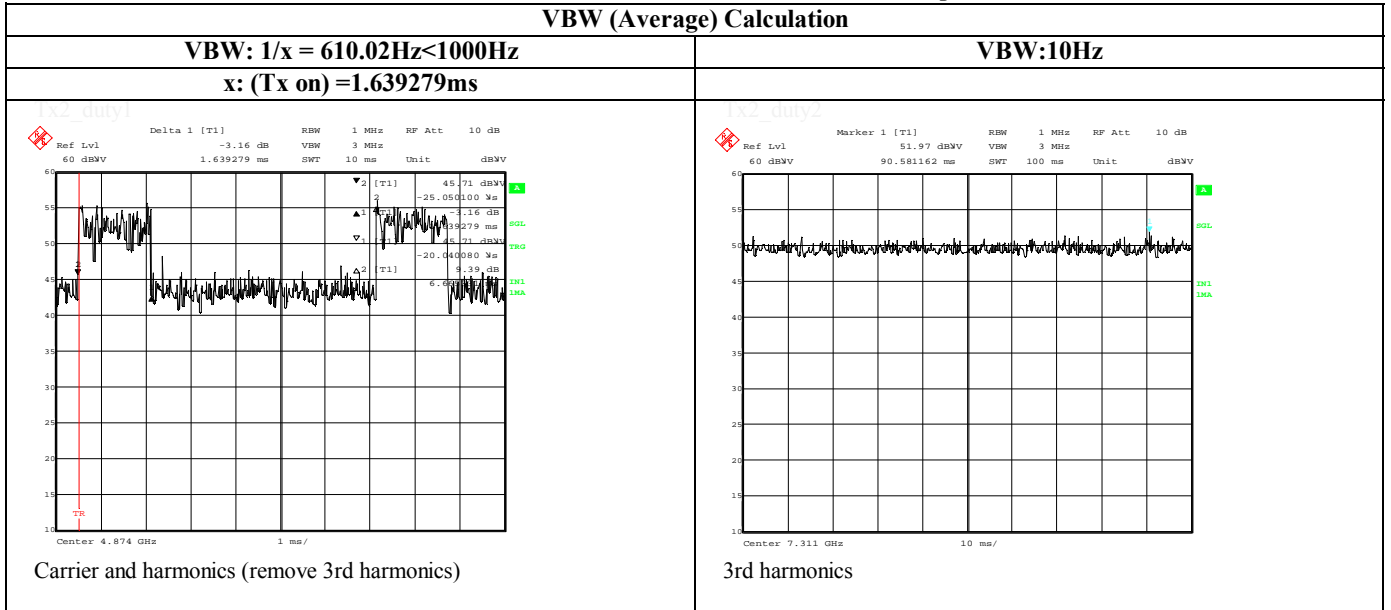
Distance factor : 15GHz -40GHz :  $20\log(3.0m/1.0m) = 9.5dB$ 

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

## VBW(Average) Calculation chart

**Tx, IEEE802.11b, PN9, worst date mode 11Mbps**

### VBW (Average) Calculation



**UL Japan, Inc.**

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## Radiated Emission

Test place	No.3 and 1 Semi Anechoic Chamber			
Date	September 2, 2013	September 3, 2013	September 5, 2013	September 17, 2013
Temperature / Humidity	26 deg.C, 56 %RH	23 deg.C, 54 %RH	24 deg.C, 64 %RH	27 deg.C, 47 %RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Makoto Hosaka	Wataru Kojima
Mode	Tx, 2412 MHz Tx, IEEE802.11g, PN9, worst date mode 48Mbps			

(\* 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.	130.011	QP	34.8	13.9	8.2	31.8	25.1	43.5	18.4	150	123	
Hori.	182.007	QP	35.0	16.1	8.8	31.8	28.1	43.5	15.4	150	131	
Hori.	956.470	QP	23.2	23.2	10.0	30.9	25.5	46.0	20.5	150	239	
Hori.	2390.000	PK	49.1	26.8	24.9	41.1	59.7	73.9	14.2	119	0	
Hori.	4824.000	PK	57.2	31.1	7.5	41.2	54.6	73.9	19.3	100	299	
Hori.	7236.000	PK	50.4	37.1	9.0	41.0	55.5	73.9	18.4	100	329	
Hori.	2390.000	AV	36.9	26.8	24.9	41.1	47.5	53.9	6.4	119	0	VBW:2kHz
Hori.	4824.000	AV	47.4	31.1	7.5	41.2	44.8	53.9	9.1	100	299	VBW:2kHz
Hori.	7236.000	AV	41.9	37.1	9.0	41.0	47.0	53.9	6.9	100	329	VBW:10Hz
Vert.	130.006	QP	37.1	13.9	8.2	31.8	27.4	43.5	16.1	100	135	
Vert.	151.201	QP	27.0	15.1	8.7	31.8	19.0	43.5	24.5	100	347	
Vert.	182.010	QP	32.3	16.1	8.8	31.8	25.4	43.5	18.1	100	352	
Vert.	200.631	QP	24.6	16.6	9.1	31.8	18.5	43.5	25.0	100	1	
Vert.	930.649	QP	23.0	23.1	9.9	31.1	24.9	46.0	21.1	100	1	
Vert.	2390.000	PK	48.7	26.8	24.9	41.1	59.3	73.9	14.6	113	67	
Vert.	4824.000	PK	53.4	31.1	7.5	41.2	50.8	73.9	23.1	100	322	
Vert.	7236.000	PK	51.2	37.1	9.0	41.0	56.3	73.9	17.6	100	351	
Vert.	2390.000	AV	37.1	26.8	24.9	41.1	47.7	53.9	6.2	113	67	VBW:2kHz
Vert.	4824.000	AV	43.2	31.1	7.5	41.2	40.6	53.9	13.3	100	322	VBW:2kHz
Vert.	7236.000	AV	42.7	37.1	9.0	41.0	47.8	53.9	6.1	100	351	VBW:10Hz

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

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

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

### 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.	2412.000	PK	80.0	26.8	24.9	41.1	90.6	-	-	
Hori.	2400.000	PK	49.5	26.8	24.9	41.1	60.1	70.6	10.5	
Vert.	2412.000	PK	82.3	26.8	24.9	41.1	92.9	-	-	
Vert.	2400.000	PK	51.7	26.8	24.9	41.1	62.3	72.9	10.6	

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

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## Radiated Emission

Test place	No.3 and 1 Semi Anechoic Chamber			
Date	September 2, 2013	September 3, 2013	September 5, 2013	September 17, 2013
Temperature / Humidity	26 deg.C, 56 %RH	23 deg.C, 54 %RH	24 deg.C, 64 %RH	27 deg.C, 47 %RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Makoto Hosaka	Wataru Kojima
Mode	Tx, 2437 MHz Tx, IEEE802.11g, PN9, worst date mode 48Mbps			

(\* 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.	130.006	QP	38.3	13.9	8.2	31.8	28.6	43.5	14.9	150	130	
Hori.	182.001	QP	34.3	16.1	8.8	31.8	27.4	43.5	16.1	150	140	
Hori.	937.375	QP	23.3	23.1	9.9	31.1	25.2	46.0	20.8	100	76	
Hori.	4874.000	PK	58.4	31.3	7.5	41.2	56.0	73.9	17.9	100	296	
Hori.	7311.000	PK	49.8	37.2	9.0	41.1	54.9	73.9	19.0	100	331	
Hori.	4874.000	AV	48.2	31.3	7.5	41.2	45.8	53.9	8.1	100	296	VBW:2kHz
Hori.	7311.000	AV	40.8	37.2	9.0	41.1	45.9	53.9	8.0	100	331	VBW:10Hz
Vert.	109.764	QP	30.7	11.7	8.0	31.8	18.6	43.5	24.9	100	181	
Vert.	130.006	QP	40.0	13.9	8.2	31.8	30.3	43.5	13.2	100	111	
Vert.	182.008	QP	32.8	16.1	8.8	31.8	25.9	43.5	17.6	100	353	
Vert.	196.613	QP	28.0	16.5	9.0	31.8	21.7	43.5	21.8	100	7	
Vert.	901.101	QP	23.3	23.1	9.8	31.4	24.8	46.0	21.2	100	2	
Vert.	4874.000	PK	55.0	31.3	7.5	41.2	52.6	73.9	21.3	100	323	
Vert.	7311.000	PK	50.2	37.2	9.0	41.1	55.3	73.9	18.6	100	352	
Vert.	4874.000	AV	44.6	31.3	7.5	41.2	42.2	53.9	11.7	100	323	VBW:2kHz
Vert.	7311.000	AV	41.3	37.2	9.0	41.1	46.4	53.9	7.5	100	352	VBW:10Hz

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

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

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

## Radiated Emission

Test place	No.3 and 1 Semi Anechoic Chamber			
Date	September 2, 2013	September 3, 2013	September 5, 2013	September 17, 2013
Temperature / Humidity	26 deg.C, 56 %RH	23 deg.C, 54 %RH	24 deg.C, 64 %RH	27 deg.C, 47 %RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Makoto Hosaka	Wataru Kojima
Mode	Tx, 2462 MHz Tx, IEEE802.11g, PN9, worst date mode 48Mbps			

(\* 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.	130.004	QP	39.0	13.9	8.2	31.8	29.3	43.5	14.2	150	124	
Hori.	182.007	QP	36.0	16.1	8.8	31.8	29.1	43.5	14.4	150	135	
Hori.	945.639	QP	23.1	23.2	10.0	31.0	25.3	46.0	20.7	100	238	
Hori.	2483.500	PK	50.6	26.9	25.0	41.0	61.5	73.9	12.4	100	0	
Hori.	4924.000	PK	56.3	31.6	7.5	41.1	54.3	73.9	19.6	100	295	
Hori.	7386.000	PK	51.0	37.3	9.0	41.1	56.2	73.9	17.7	100	331	
Hori.	2483.500	AV	36.9	26.9	25.0	41.0	47.8	53.9	6.1	100	0	VBW:2kHz
Hori.	4924.000	AV	46.6	31.6	7.5	41.1	44.6	53.9	9.3	100	295	VBW:2kHz
Hori.	7386.000	AV	42.3	37.3	9.0	41.1	47.5	53.9	6.4	100	331	VBW:10Hz
Vert.	130.005	QP	41.0	13.9	8.2	31.8	31.3	43.5	12.2	100	116	
Vert.	159.749	QP	30.0	15.4	8.8	31.8	22.4	43.5	21.1	100	210	
Vert.	182.005	QP	33.2	16.1	8.8	31.8	26.3	43.5	17.2	100	183	
Vert.	206.235	QP	25.5	16.7	9.2	31.8	19.6	43.5	23.9	100	161	
Vert.	918.222	QP	23.4	23.1	9.9	31.2	25.2	46.0	20.8	100	7	
Vert.	2483.500	PK	51.3	26.9	25.0	41.0	62.2	73.9	11.7	124	0	
Vert.	4924.000	PK	52.6	31.6	7.5	41.1	50.6	73.9	23.3	100	324	
Vert.	7386.000	PK	50.8	37.3	9.0	41.1	56.0	73.9	17.9	100	348	
Vert.	2483.500	AV	37.0	26.9	25.0	41.0	47.9	53.9	6.0	124	0	VBW:2kHz
Vert.	4924.000	AV	42.5	31.6	7.5	41.1	40.5	53.9	13.4	100	324	VBW:2kHz
Vert.	7386.000	AV	42.1	37.3	9.0	41.1	47.3	53.9	6.6	100	348	VBW:10Hz

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

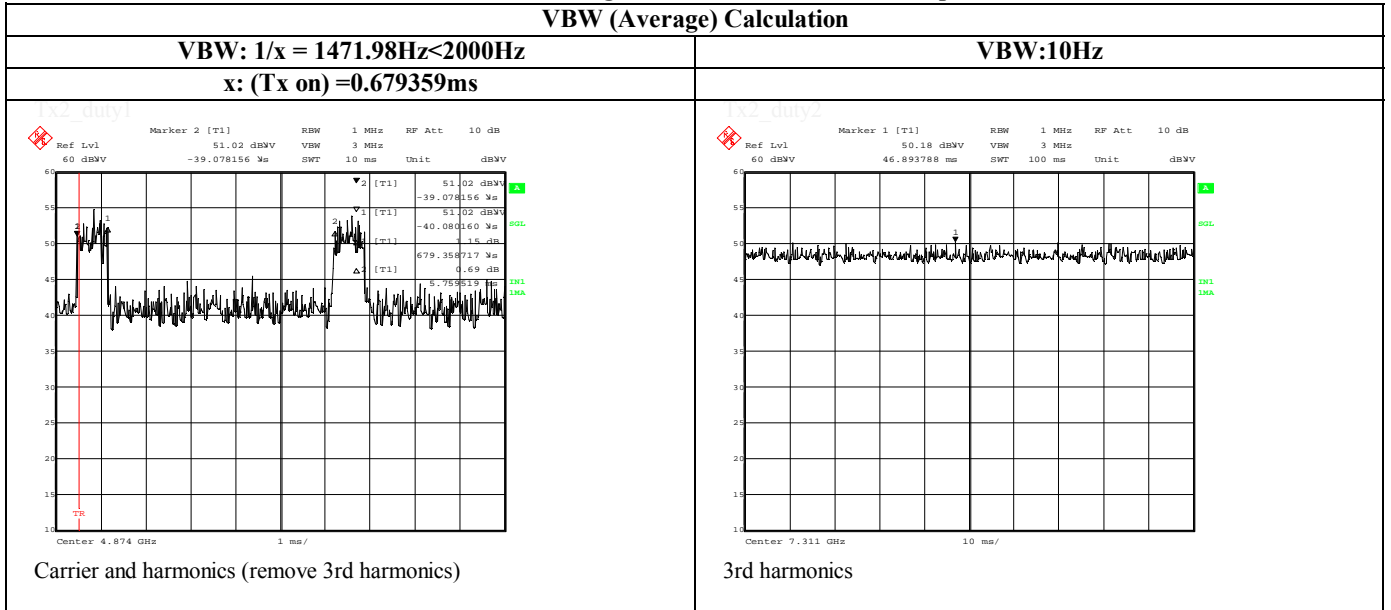
Distance factor : 15GHz -40GHz :  $20\log(3.0m/1.0m) = 9.5dB$ 

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

## VBW(Average) Calculation chart

**Tx, IEEE802.11g, PN9, worst date mode 48Mbps**

### VBW (Average) Calculation



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## Radiated Emission

Test place            No.3 and 1 Semi Anechoic Chamber  
 Date                    September 2, 2013                    September 3, 2013                    September 5, 2013                    September 17, 2013  
 Temperature / Humidity 26 deg.C, 56 %RH                    23 deg.C, 54 %RH                    24 deg.C, 64 %RH                    27 deg.C, 47 %RH  
 Engineer              Hikaru Shirasawa                    Kenichi Adachi                    Makoto Hosaka                    Wataru Kojima  
 Mode                    Tx,                    2412 MHz  
                              Tx, IEEE802.11n(HT20), PN9, worst date mode 3(MCS)

(\* 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.	130.001	QP	39.0	13.9	8.2	31.8	29.3	43.5	14.2	150	110	
Hori.	182.006	QP	35.6	16.1	8.8	31.8	28.7	43.5	14.8	150	129	
Hori.	911.092	QP	23.3	23.1	9.8	31.3	24.9	46.0	21.1	100	355	
Hori.	2390.000	PK	49.7	26.8	24.9	41.1	60.3	73.9	13.6	100	0	
Hori.	4824.000	PK	57.0	31.1	7.5	41.2	54.4	73.9	19.5	100	298	
Hori.	7236.000	PK	50.9	37.1	9.0	41.0	56.0	73.9	17.9	100	329	
Hori.	2390.000	AV	38.3	26.8	24.9	41.1	48.9	53.9	5.0	100	0	VBW:1kHz
Hori.	4824.000	AV	46.4	31.1	7.5	41.2	43.8	53.9	10.1	100	298	VBW:1kHz
Hori.	7236.000	AV	41.8	37.1	9.0	41.0	46.9	53.9	7.0	100	329	VBW:10Hz
Vert.	130.001	QP	41.1	13.9	8.2	31.8	31.4	43.5	12.1	100	126	
Vert.	159.735	QP	28.8	15.4	8.8	31.8	21.2	43.5	22.3	100	7	
Vert.	182.006	QP	33.3	16.1	8.8	31.8	26.4	43.5	17.1	100	179	
Vert.	196.612	QP	30.9	16.5	9.0	31.8	24.6	43.5	18.9	100	11	
Vert.	948.925	QP	23.3	23.2	10.0	31.0	25.5	46.0	20.5	100	358	
Vert.	2390.000	PK	51.8	26.8	24.9	41.1	62.4	73.9	11.5	118	98	
Vert.	4824.000	PK	53.4	31.1	7.5	41.2	50.8	73.9	23.1	100	320	
Vert.	7236.000	PK	51.2	37.1	9.0	41.0	56.3	73.9	17.6	100	350	
Vert.	2390.000	AV	38.5	26.8	24.9	41.1	49.1	53.9	4.8	118	98	VBW:1kHz
Vert.	4824.000	AV	42.6	31.1	7.5	41.2	40.0	53.9	13.9	100	320	VBW:1kHz
Vert.	7236.000	AV	42.0	37.1	9.0	41.0	47.1	53.9	6.8	100	350	VBW:10Hz

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

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

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

### 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.	2412.000	PK	80.5	26.8	24.9	41.1	91.1	-	-	
Hori.	2400.000	PK	52.2	26.8	24.9	41.1	62.8	71.1	8.3	
Vert.	2412.000	PK	81.9	26.8	24.9	41.1	92.5	-	-	
Vert.	2400.000	PK	52.9	26.8	24.9	41.1	63.5	72.5	9.0	

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

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## Radiated Emission

Test place	No.3 and 1 Semi Anechoic Chamber			
Date	September 2, 2013	September 3, 2013	September 5, 2013	September 17, 2013
Temperature / Humidity	26 deg.C, 56 %RH	23 deg.C, 54 %RH	24 deg.C, 64 %RH	27 deg.C, 47 %RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Makoto Hosaka	Wataru Kojima
Mode	Tx, 2437 MHz Tx, IEEE802.11n(HT20), PN9, worst date mode 3(MCS)			

(\* 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.	130.004	QP	38.8	13.9	8.2	31.8	29.1	43.5	14.4	150	113	
Hori.	182.003	QP	34.4	16.1	8.8	31.8	27.5	43.5	16.0	150	123	
Hori.	926.581	QP	23.1	23.1	9.9	31.2	24.9	46.0	21.1	150	349	
Hori.	4874.000	PK	58.7	31.3	7.5	41.2	56.3	73.9	17.6	100	296	
Hori.	7311.000	PK	50.6	37.2	9.0	41.1	55.7	73.9	18.2	100	327	
Hori.	4874.000	AV	48.2	31.3	7.5	41.2	45.8	53.9	8.1	100	296	VBW:1kHz
Hori.	7311.000	AV	41.7	37.2	9.0	41.1	46.8	53.9	7.1	100	327	VBW:10Hz
Vert.	110.055	QP	31.0	11.7	8.0	31.8	18.9	43.5	24.6	100	187	
Vert.	130.003	QP	40.0	13.9	8.2	31.8	30.3	43.5	13.2	100	119	
Vert.	169.838	QP	26.3	15.7	8.9	31.8	19.1	43.5	24.4	100	354	
Vert.	182.002	QP	32.6	16.1	8.8	31.8	25.7	43.5	17.8	100	178	
Vert.	954.507	QP	23.1	23.2	10.0	30.9	25.4	46.0	20.6	100	356	
Vert.	4874.000	PK	56.1	31.3	7.5	41.2	53.7	73.9	20.2	100	318	
Vert.	7311.000	PK	49.8	37.2	9.0	41.1	54.9	73.9	19.0	100	352	
Vert.	4874.000	AV	44.0	31.3	7.5	41.2	41.6	53.9	12.3	100	318	VBW:1kHz
Vert.	7311.000	AV	41.4	37.2	9.0	41.1	46.5	53.9	7.4	100	352	VBW:10Hz

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

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

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

## Radiated Emission

Test place            No.3 and 1 Semi Anechoic Chamber  
 Date                    September 2, 2013                    September 3, 2013                    September 5, 2013                    September 17, 2013  
 Temperature / Humidity 26 deg.C, 56 %RH                    23 deg.C, 54 %RH                    24 deg.C, 64 %RH                    27 deg.C, 47 %RH  
 Engineer              Hikaru Shirasawa                    Kenichi Adachi                    Makoto Hosaka                    Wataru Kojima  
 Mode                    Tx,                    2462 MHz  
                              Tx, IEEE802.11n(HT20), PN9, worst date mode 3(MCS)

(\* 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.	130.003	QP	38.7	13.9	8.2	31.8	29.0	43.5	14.5	150	107	
Hori.	182.004	QP	34.0	16.1	8.8	31.8	27.1	43.5	16.4	150	124	
Hori.	941.241	QP	23.3	23.2	9.9	31.0	25.4	46.0	20.6	100	45	
Hori.	2483.500	PK	52.7	26.9	25.0	41.0	63.6	73.9	10.3	100	0	
Hori.	4924.000	PK	55.8	31.6	7.5	41.1	53.8	73.9	20.1	100	295	
Hori.	7386.000	PK	50.3	37.3	9.0	41.1	55.5	73.9	18.4	100	329	
Hori.	2483.500	AV	37.9	26.9	25.0	41.0	48.8	53.9	5.1	100	0	VBW:1kHz
Hori.	4924.000	AV	45.1	31.6	7.5	41.1	43.1	53.9	10.8	100	295	VBW:1kHz
Hori.	7386.000	AV	41.9	37.3	9.0	41.1	47.1	53.9	6.8	100	329	VBW:10Hz
Vert.	130.005	QP	40.0	13.9	8.2	31.8	30.3	43.5	13.2	100	116	
Vert.	168.798	QP	27.0	15.7	8.9	31.8	19.8	43.5	23.7	100	13	
Vert.	181.999	QP	33.0	16.1	8.8	31.8	26.1	43.5	17.4	100	178	
Vert.	204.666	QP	25.0	16.7	9.2	31.8	19.1	43.5	24.4	100	11	
Vert.	891.338	QP	23.2	23.0	9.8	31.4	24.6	46.0	21.4	100	2	
Vert.	2483.500	PK	52.2	26.9	25.0	41.0	63.1	73.9	10.8	112	359	
Vert.	4924.000	PK	52.9	31.6	7.5	41.1	50.9	73.9	23.0	100	322	
Vert.	7386.000	PK	50.0	37.3	9.0	41.1	55.2	73.9	18.7	100	348	
Vert.	2483.500	AV	38.0	26.9	25.0	41.0	48.9	53.9	5.0	112	359	VBW:1kHz
Vert.	4924.000	AV	41.8	31.6	7.5	41.1	39.8	53.9	14.1	100	322	VBW:1kHz
Vert.	7386.000	AV	41.6	37.3	9.0	41.1	46.8	53.9	7.1	100	348	VBW:10Hz

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

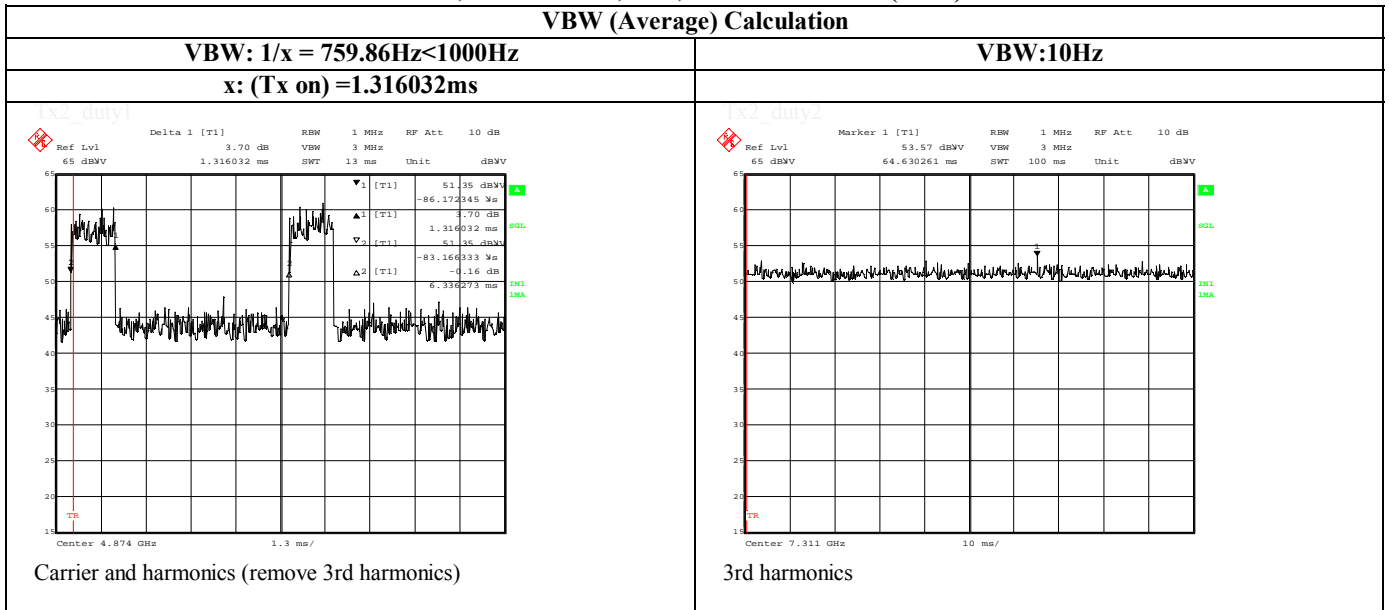
Distance factor : 15GHz -40GHz :  $20\log(3.0m/1.0m) = 9.5dB$ 

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

## VBW(Average) Calculation chart

Tx, IEEE802.11n, PN9, worst date mode 3(MCS)

### VBW (Average) Calculation



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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	2013/02/27 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	RE	2013/03/28 * 12
SJM-11	Measure	PROMART	SEN1935	-	RE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE, RFI,MF)	-	RE	-
SAT20-01	Attenuator(above1GHz)	Agilent	8493C-020	74889	RE	2012/12/18 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2012/12/18 * 12
SFL-03	Highpass Filter	MICRO-TRONICS	HPM50112	028	RE	2012/12/18 * 12
STR-03	Test Receiver	Rohde & Schwarz	ES140	100054/040	RE	2013/07/09 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	RE	2013/03/28 * 12
SCC-G18	Coaxial Cable	Suhner	SUCOFLEX 104A	46292/4A	RE	2013/03/16 * 12
SAF-09	Pre Amplifier	TOYO Corporation	HAP18-26W	00000018	RE	2013/03/19 * 12
SHA-05	Horn Antenna	ETS LINDGREN	3160-09	LM4210	RE	2013/03/14 * 12
SAF-01	Pre Amplifier	SONOMA	310N	290211	RE	2013/02/12 * 12
SAT6-05	Attenuator	JFW	50HF-006N	-	RE	2013/02/12 * 12
KAT3-09	Attenuator	JFW IND. INC.	50HF-003N	-	RE	2013/08/23 * 12
SBA-01	Biconical Antenna	Schwarzbeck	BBA9106	91032664	RE	2012/10/08 * 12
SCC-A1/A3/A5/A7/A8/A13/SRSE-01	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-269(RF Selector)	RE	2013/04/04 * 12
SCC-A2/A4/A6/A7/A8/A13/SRSE-01	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-269(RF Selector)	RE	2013/04/04 * 12
SLA-01	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A0888	RE	2012/11/18 * 12
SOS-01	Humidity Indicator	A&D	AD-5681	4062555	RE	2013/02/27 * 12
STR-01	Test Receiver	Rohde & Schwarz	ESU40	100093	RE	2012/10/04 * 12
SJM-08	Measure	PROMART	SEN1935	-	RE	-
SAEC-01(NSA)	Semi-Anechoic Chamber	TDK	SAEC-01(NSA)	1	RE	2013/07/03 * 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