RADIO TEST REPORT

Test Report No.: 33CE0266-SH-02-A-R1

Applicant	:	**Toshiba Corporation**
Type of Equipment	:	**Notebook Computer**
Model No.	:	**Satellite U930**
FCC ID	:	**CJ6UPSU7FPC2**
Test regulation	:	**FCC Part15 Subpart C: 2012**
Test result	:	**Complied**

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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.
7. This report is a revised version of 33CE0266-SH-02-A. 33CE0266-SH-02-A is replaced with this report.

Date of test: November 15 to December 4, 2012

Tested by:

Tatsuya Arai
Engineer of WiSE Japan,
UL Verification Service

Approved by :

Toyokazu Imamura
Leader of WiSE Japan,
UL Verification Service

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

JAB Testing RTL02610

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REVISION HISTORY

Original Test Report No.: 33CE0266-SH-02-A

Revision	Test report No.	Date	Page revised	Contents
- (Original)	33CE0266-SH-02-A	December 17, 2012	-	-
1	33CE0266-SH-02-A-R1	December 25, 2012	- (Full revision)	Correction of data, etc.

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SECTION 1: Customer information

Company Name	:	Toshiba Corporation
Address	:	2-9, Suehiro-cho, Ome-shi, Tokyo, 198-8710 Japan
Telephone Number	:	+81 42 834 1050
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Contact Person	:	Toshiyuki Echigo

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

2.1 Identification of E.U.T.

Type of Equipment	:	Notebook Computer
Model Number	:	Satellite U930
Serial Number	:	Refer to 4.2 in this report.
Rating	:	DC19V
Country of Mass-production	:	China
Condition of EUT	:	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Receipt Date of Sample	:	November 14, 2012
Modification of EUT	:	No modification by the test lab.

2.2 Product description

Model: Satellite U930 (referred to as the EUT in this report) is a Notebook Computer.

Derived models of the EUT:

Model	Touch screen function
Satellite U930 (EUT)	-
Satellite U930t	Yes
Satellite U935	-
Satellite U935t	Yes

Model: Satellite U930/ Satellite U930t has a different sales channel with Satellite U935/Satellite U935t.

Clock frequency(ies) in the system : 40MHz (XTAL)

Radio specification:
Bluetooth:

Equipment type	:	Transceiver
Frequency of operation	:	2402-2480MHz
Bandwidth	:	79MHz
Channel spacing	:	1MHz (BDR/EDR mode), 2MHz (Low Energy mode)
Type of modulation	:	FHSS, DSSS
Antenna type	:	PIFA
Antenna gain with cable loss	:	3.24dBi
Antenna connector type	:	U.FL
ITU code	:	F1D, G1D

Refer to the test report: 33CE0266-SH-02-B/C for Bluetooth part.

When Bluetooth is used, IEEE 802.11 a/b/g/n is not transmitted.

Wireless LAN:

Equipment type	:	Transceiver	
Frequency of operation *1)	:	2.4GHz:	2412-2462MHz (IEEE 802.11b, 11g, 11n-HT20)
			2422-2452MHz (IEEE 802.11n-HT40)
		W52:	5180-5240MHz (IEEE 802.11a, 11n-HT20)
			5190-5230MHz (IEEE 802.11n-HT40)
		W53:	5260-5320MHz (IEEE 802.11a, 11n-HT20)
			5270-5310MHz (IEEE 802.11n-HT40)
		W56:	5500-5700MHz (IEEE 802.11a, 11n-HT20)
			5510-5670MHz (IEEE 802.11n-HT40)
		W58:	5745-5825MHz (IEEE 802.11a, 11n-HT20)
			5755-5795MHz (IEEE 802.11n-HT40)
Bandwidth	:	20MHz (IEEE 802.11a/b/g/n), 40MHz (IEEE 802.11n)	
Channel spacing	:	5MHz (2.4GHz), 20MHz (11a, 11n (HT20, 5GHz)), 40MHz (11n (HT40, 5GHz))	
Type of modulation	:	DSSS, OFDM	
Antenna type	:	PIFA	
Antenna gain with cable loss	:	3.24dBi (2.4GHz), 3.64dBi (W52), 3.73dBi (W53), 4.77dBi (W56), 4.97dBi (W58)	
Antenna connector type	:	U.FL	
ITU code	:	D1D, G1D	

*1) Refer to the test report 33CE0266-SH-02-D/E for FCC 15.407.

Operation temperature range	:	0 to +80 deg.C

FCC 15.31 (e)
The EUT provides stable voltage (DC3.3V) constantly to the wireless transmitter regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC 15.203
The EUT has a unique coupling/antenna connector (U.FL). Therefore the equipment complies with the requirement.

SECTION 3: Test specification, procedures & results

3.1 Test specification

Test specification : FCC Part 15 Subpart C: 2012, final revised on August 13, 2012 and effective September 12, 2012

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

The EUT will be tested for compliance with FCC Part 15 Subpart B by the customer.

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	4.7dB Freq.: 27.64810MHz Detection: Average Phase: N Mode: Tx 2437MHz, IEEE 802.11n (HT20) Freq.: 27.64810MHz Detection: Average Phase: N Mode: Tx 5755MHz, IEEE 802.11n (HT40) Freq.: 27.64800MHz Detection: Average Phase: N Mode: Tx 5745MHz, IEEE 802.11n (HT20)	Complied
6dB bandwidth	ANSI C63.10:2009	FCC 15.247 (a)(2)	Conducted	N/A	* See data	Complied
Maximum peak output power	ANSI C63.10:2009	FCC 15.247 (b)(3)	Conducted	N/A		Complied
Out of band emission & Restricted band edges	ANSI C63.10:2009	FCC 15.109, 15.247 (d) & 15.209	Conducted / Radiated	N/A	6.0dB Freq.: 2390.000MHz Polarization: Horizontal Detection: Average Mode: Tx 2422MHz, IEEE 802.11n (HT40)	Complied
Power density	ANSI C63.10:2009	FCC 15.247 (e)	Conducted	N/A	* See data	Complied

Note: UL Japan's EMI Work Procedures No.13-EM-W0420 and 13-EM-W0422.
*1) These tests were also referred to KDB 558074 (FCC), "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247".

3.3 Addition to standard

Item	Test Procedure	Specification	Remarks	Worst Margin	Results
Occupied Bandwidth (99%)	ANSI C63.10:2009, RSS-Gen 4.6.1	-	Conducted	-	-
Note: UL Japan's Work Procedures No. 13-EM-W0420 and 13-EM-W0422					

* 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*1/SR*2 (±)	No.2 SAC/SR (±)	No.3 SAC/SR (±)
Conducted emission (AC Mains) LISN	150kHz-30MHz	3.6 dB	3.6 dB	3.5 dB
Radiated emission (Measurement distance: 3m)	9kHz-30MHz	3.7 dB	3.7 dB	3.6 dB
	30MHz-300MHz	4.9 dB	5.1 dB	4.9 dB
	300MHz-1GHz	5.0 dB	5.2 dB	4.9 dB
	1GHz-15GHz	4.8 dB	4.8 dB	4.9 dB
Radiated emission (Measurement distance: 1m)	15GHz-18GHz	5.6 dB	5.6 dB	5.6 dB
	18GHz-40GHz	4.6 dB	4.3 dB	4.4 dB

*1: SAC=Semi-Anechoic Chamber
*2: SR= Shielded Room is applied besides radiated emission

Conducted emission test

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

Radiated emission test

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

Antenna port conducted test

Power measurement uncertainty above 1GHz for this test was: (±) 1.5dB
Spurious emission (Conducted) measurement (below 1GHz) uncertainty for this test was: (±) 1.7dB
Spurious emission (Conducted) measurement (1G-3GHz) uncertainty for this test was: (±) 2.3dB
Spurious emission (Conducted) measurement (3G-18GHz) uncertainty for this test was: (±) 3.0dB
Spurious emission (Conducted) measurement (18G-26.5GHz) uncertainty for this test was: (±) 2.9dB
Bandwidth measurement uncertainty for this test was: (±) 5.4%

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
☐ No.1 semi-anechoic chamber	697847	2973D-1	20.6 x 11.3 x 7.65	20.6 x 11.3	10m
☐ No.2 semi-anechoic chamber	697847	2973D-2	20.6 x 11.3 x 7.65	20.6 x 11.3	10m
☒ No.3 semi-anechoic chamber	697847	2973D-3	12.7 x 7.7 x 5.35	12.7 x 7.7	5m
☐ No.4 semi-anechoic chamber	-	-	8.1 x 5.1 x 3.55	8.1 x 5.1	-
☐ No.1 shielded room	-	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
☐ No.2 shielded room	-	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
☒ No.3 shielded room	-	-	6.3 x 4.7 x 2.7	6.3 x 4.7	-
☐ No.4 shielded room	-	-	4.4 x 4.7 x 2.7	4.4 x 4.7	-
☒ No.5 shielded room	-	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
☐ No.6 shielded room	-	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
☒ No.7 shielded room	-	-	2.76 x 3.76 x 2.4	2.76 x 3.76	-

3.6 Test setup, Test data & Test instruments

Refer to APPENDIX 1 to 3.

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

4.1 Operating mode

Test item	Mode	Tested frequency	Worst data mode *1)
Conducted emission Radiated emission (below 1GHz) *2)	Transmitting IEEE 802.11n (HT20) (SISO)	2437MHz	PN9, MCS0, Mix, Long
	Transmitting IEEE 802.11n (HT40) (SISO)	5755MHz	PN9, MCS0, Mix, Long
	Transmitting IEEE 802.11n (HT40) (MIMO)	2437MHz	PN9, MCS8, Mix, Long, Wide
	Transmitting IEEE 802.11n (HT20) (MIMO)	5745MHz	PN9, MCS8, Mix, Long, Wide
Other items	Transmitting IEEE 802.11b	2412MHz, 2437MHz, 2462MHz	PN9, 1Mbps
	Transmitting IEEE 802.11g *3)	2412MHz, 2437MHz, 2462MHz	PN9, 6Mbps
	Transmitting IEEE 802.11n (HT20) (SISO) *3)	2412MHz, 2437MHz, 2462MHz	PN9, MCS0, Mix, Long
	Transmitting IEEE 802.11n (HT20) (MIMO) *5)	2412MHz, 2437MHz, 2462MHz	PN9, MCS8, Mix, Long
	Transmitting IEEE 802.11n (HT40) (SISO)	2422MHz, 2437MHz, 2452MHz	PN9, MCS0, Mix, Long, Wide
	Transmitting IEEE 802.11n (HT40) (MIMO) *5)	2422MHz, 2437MHz, 2452MHz	PN9, MCS8, Mix, Long, Wide
	Transmitting IEEE 802.11a *4)	5745MHz, 5785MHz, 5825MHz	PN9, 6Mbps
	Transmitting IEEE 802.11n (HT20) (SISO) *4)	5745MHz, 5785MHz, 5825MHz	PN9, MCS0, Mix, Long
	Transmitting IEEE 802.11n (HT20) (MIMO) *5)	5745MHz, 5785MHz, 5825MHz	PN9, MCS8, Mix, Long
	Transmitting IEEE 802.11n (HT40) (SISO)	5755MHz, 5795MHz	PN9, MCS0, Mix, Long, Wide
	Transmitting IEEE 802.11n (HT40) (MIMO) *5)	5755MHz, 5795MHz	PN9, MCS8, Mix, Long, Wide

*1) The worst condition was determined based on the test result of Maximum Peak Output Power.
*2) 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.
*3) Since 11g and 11n (HT20) have the same modulation method and no differences in transmitting specification, test was performed on the representative mode that had the highest peak output power.
*4) Since 11a and 11n (HT20) have the same modulation method and no differences in transmitting specification, test was performed on the representative mode that had the highest peak output power.
*5) As this transmitter has MIMO mode for only MCS8 to MCS15, we need not to consider array gains.

EUT has the power settings by the software as follows;
Test software: DRTU version 1.5.7.0432 (Intel)
Power settings:

	2412MHz/2422MHz		2437MHz		2462MHz/2452MHz	
	Main	Aux	Main	Aux	Main	Aux
11b	23.5	25.0	23.5	23.0	23.5	24.0
11g	25.5	27.0	29.0	30.5	25.5	26.5
11n (HT20)(SISO)	24.5	25.5	29.0	30.5	24.0	25.5
11n (HT20)(MIMO)	26.0	27.5	28.0	29.0	25.5	26.0
11n (HT40)(SISO)	22.0	22.0	25.0	25.5	21.5	23.0
11n (HT40)(MIMO)	21.5	22.5	26.5	28.0	20.5	22.0

	5745MHz/5755MHz		5785MHz		5825MHz/5795MHz	
	Main	Aux	Main	Aux	Main	Aux
11a	28.5	29.0	28.5	29.0	29.0	29.0
11n (HT20)(SISO)	29.0	29.0	29.0	29.0	29.5	29.0
11n (HT20)(MIMO)	31.0	28.0	31.0	28.0	31.0	28.5
11n (HT40)(SISO)	30.0	30.0	-	-	30.5	30.0
11n (HT40)(MIMO)	31.0	29.0	-	-	31.0	29.0

* This setting of software is the worst case. 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.

IEEE 802.11n data mode

11n (HT20)	Guard interval	Long (worst)	Short		
	Bandwidth setting	- (only 20MHz)			
	Frame settings	Green	Mix (worst)		
11n (HT40)	Guard interval	Long (worst)	Short		
	Bandwidth setting	Low	High	Wide (worst)	Dup
	Frame settings	Green	Mix (worst)		

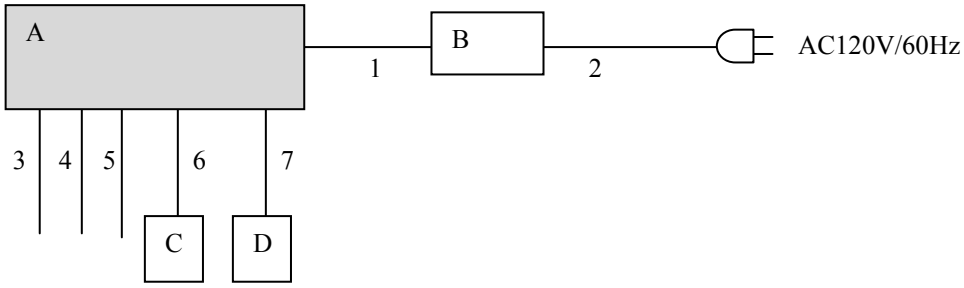
* Long = Long guard interval (800ns), Short = Short guard interval (400ns).
* Green = Green field mode (only used 11n), Mix = Mix mode (The radio of any modes (11a, 11b, 11g, 11n) exists).
* Low = 20MHz lower output from the center of 40MHz, High = 20MHz upper output from the center of 40MHz, Wide = output of full of 40MHz band, Dup = Duplicated Non-HT mode. Output with 2 channels of 20MHz widths.

Antenna port used:

	Single output (11a, 11b, 11g, 11n (SISO))	Multi output (11n (MIMO))
Maximum peak output power	- Main - AUX	Main + Aux
Other tests	- Main (worst)	Main + Aux

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

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	Notebook Computer	Satellite U930	*1)	Toshiba	EUT *2)
B	AC Adaptor	PA5096U-1ACA	G71C000FF1100	Toshiba	-
C	Mouse	MO28UOL	453859	Lenovo	-
D	Headphones	HP-H500N	-	AudioComm	-

*1) XC134402H: Maximum peak output power test, XC125749H: Other test
*2) Intel® Centrino® Advanced -N 6235 (Model: 6235ANHMW, FCC ID: PD96235ANH) is installed in the EUT.

List of cables used

No.	Cable Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC	1.7	Unshielded	Unshielded	-
2	AC	1.7	Unshielded	Unshielded	-
3	HDMI	3.0	Shielded	Shielded	-
4	USB	2.0	Shielded	Shielded	-
5	USB	1.8	Shielded	Shielded	-
6	Audio	1.2	Unshielded	Unshielded	-
7	Mouse	1.8	Unshielded	Unshielded	-

SECTION 5: Conducted emission

5.1 Operating environment

Test place : 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, 1m 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 tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals was aligned and was 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 LISN.
Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN to the input power source. All unused 50ohm connectors of the LISN were resistively terminated in 50ohm when not connected to the measuring equipment.
Photographs of the set up are shown in APPENDIX 3.

5.3 Test conditions

Frequency range : 0.15 - 30MHz
EUT position : Table top

5.4 Test procedure

The AC Mains Terminal Continuous disturbance Voltage had been measured with the EUT within a Shielded room.
The EUT was connected to a Line Impedance Stabilization Network (LISN).
An overview sweep with peak detection has been performed.
The measurements had been performed with a quasi-peak detector and if required, an average detector.
The conducted emission measurements were made with the following detection of the test receiver.

Detection Type : Quasi-Peak/ Average
IF Bandwidth : 9kHz

5.5 Results

Summary of the test results : Pass
Refer to APPENDIX 1

SECTION 6: Radiated emission

6.1 Operating environment

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

6.2 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. The rear of EUT was aligned and flushed with rear of tabletop.
Photographs of the set up are shown in APPENDIX 3.

6.3 Test conditions

Frequency range : 30MHz to 40GHz
EUT position : Table top

6.4 Test procedure

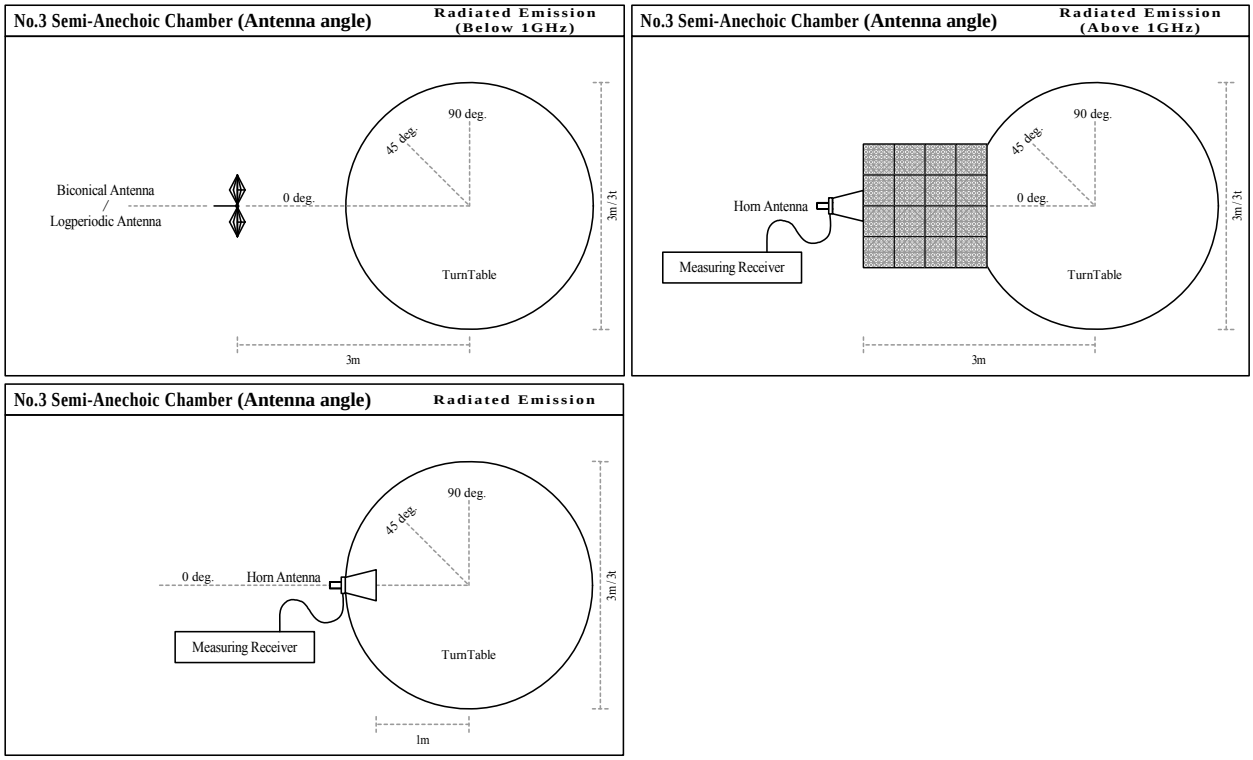
The Radiated Electric Field Strength intensity has been measured on a semi-anechoic chamber with a ground plane and at a distance of 3m (below 15GHz) / 1m (above 15GHz) (Refer to Figure 1). Measurements were performed with quasi-peak, peak and average detector. The measuring antenna height was varied 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	1-40GHz		20dBc
Detection type	Quasi-Peak	Peak	Average *1)	Peak
IF Bandwidth	120kHz	RBW: 1MHz VBW: 3MHz	RBW: 1MHz VBW: 3MHz Detector: RMS	RBW: 100kHz VBW: 300kHz

*1) Average Power Measurement was measured based on 10.2.3.3 and 8.2.1 of "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247".

The carrier level and noise levels were confirmed at each tilt angle of LCD of EUT to see the angle of maximum noise, and the test was made at the tilt angle of 90 deg. that has the maximum noise.

Figure 1. Antenna angle



6.5 Band edge

Band edge level at 2390MHz and 2483.5MHz is below the limits of FCC 15.209 and band edge level at 2400MHz, 5725MHz and 5850MHz is below the 20dBc. Refer to the data.

6.6 Results

Summary of the test results : Pass
* No noise was detected above the 3rd order harmonics.

Refer to APPENDIX 1

SECTION 7: Out of band emissions (Antenna port conducted)

Test procedure
The Out of Band Emissions was measured with a spectrum analyzer connected to the antenna port.
In any 100kHz bandwidth outside the frequency 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.
In the frequency range below 30MHz, RBW was narrowed to separate the noise contents.
Then, wide-band noise near the limit was checked separately, however the noise was not detected as shown in the chart.
(9kHz-150kHz:RBW=200Hz, 150kHz-30MHz:RBW=10kHz)

Summary of the test results: Pass
Refer to APPENDIX

SECTION 8: 6dB bandwidth & Occupied bandwidth (99%)

Test procedure
The bandwidth was measured with a spectrum analyzer connected to the antenna port.
The test was measured based on Method 7.1 Option 1 and 7.2 Option 2 of "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247".

Summary of the test results: Pass
Refer to APPENDIX

SECTION 9: Maximum peak output power

Test procedure
The Maximum Peak Output Power was measured with a power meter connected to the antenna port.
The test was measured based on Method 8.1.3 Option 3 of "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247".
Detection type: Peak / Average *1)

Summary of the test results: Pass
Refer to APPENDIX 1

*1) Average detector was used only for Reference data of SAR testing.

SECTION 10: Peak power density

Test procedure
The peak power density was measured with a spectrum analyzer connected to the antenna port.
Instrument used : Spectrum Analyzer
RBW / VBW : 3kHz / 9.1kHz

The test was measured based on Method 9.1 Option 1 of "Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247".

Summary of the test results: Pass
Refer to APPENDIX

Contents of APPENDIXES

APPENDIX 1: Data of Radio tests

Conducted emission
6dB bandwidth
Maximum peak output power
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Spurious emission (Antenna port conducted)
Peak power density
Occupied bandwidth

APPENDIX 2: Test instruments

Test instruments

APPENDIX 3: Photographs of test setup

Conducted emission
Radiated emission

APPENDIX 1: Data of Radio tests

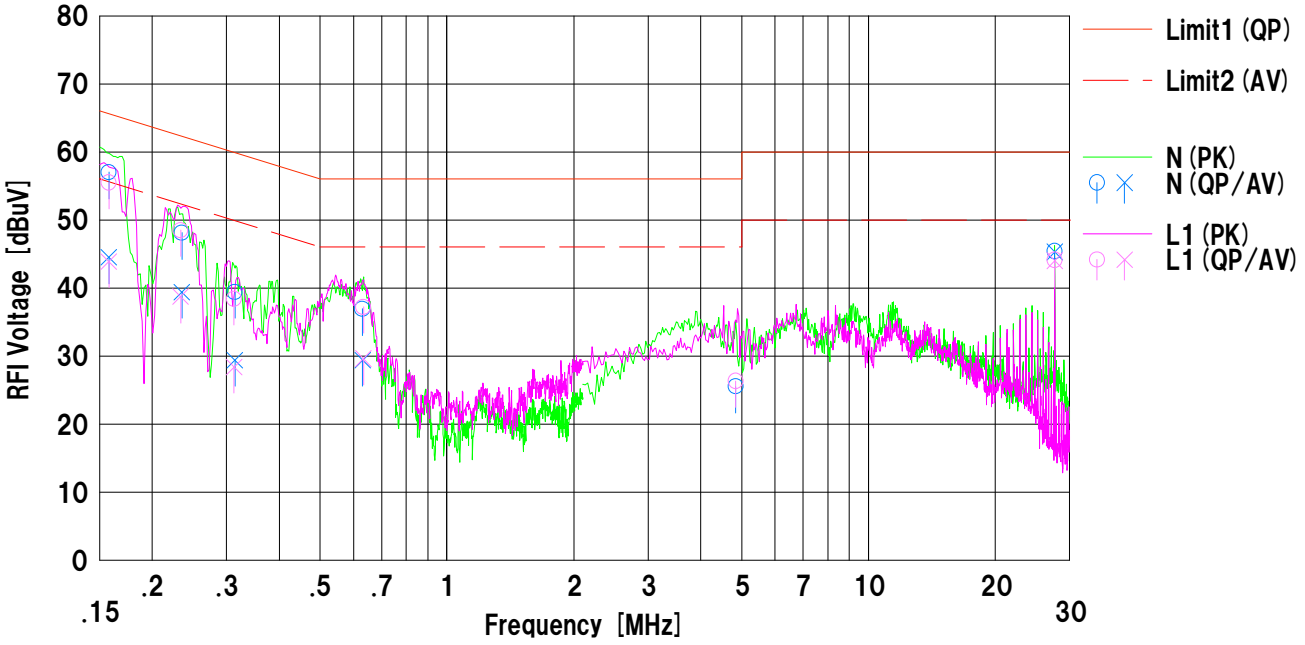
DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2012/12/04

Mode : IEEE802.11n(HT20), Tx2437MHz,MCS0
Report No. : 33CE0266-SH-02-A-R1
Power : AC 120V / 60Hz
Temp./Humi. : 25deg.C / 39%RH

Limit1 : FCC 15C(15.207) QP
Limit2 : FCC 15C(15.207) AV

Engineer : Tatsuya Arai



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
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	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15780	44.3	31.8	12.7	57.0	44.5	65.5	55.5	8.5	11.0	N	
2	0.23500	35.4	26.7	12.7	48.1	39.4	62.2	52.2	14.1	12.8	N	
3	0.31400	26.7	16.7	12.7	39.4	29.4	59.8	49.8	20.4	20.4	N	
4	0.63050	24.2	16.7	12.7	36.9	29.4	56.0	46.0	19.1	16.6	N	
5	4.84100	12.6	---	12.9	25.5	---	56.0	46.0	30.5	---	N	
6	27.64810	31.6	31.5	13.8	45.4	45.3	60.0	50.0	14.6	4.7	N	
7	0.15780	42.8	31.2	12.7	55.5	43.9	65.5	55.5	10.0	11.6	L1	
8	0.23360	35.8	26.0	12.7	48.5	38.7	62.3	52.3	13.8	13.6	L1	
9	0.31250	25.7	15.7	12.7	38.4	28.4	59.9	49.9	21.5	21.5	L1	
10	0.63350	24.5	16.9	12.7	37.2	29.6	56.0	46.0	18.8	16.4	L1	
11	4.84100	13.4	---	12.9	26.3	---	56.0	46.0	29.7	---	L1	
12	27.64810	30.3	30.2	13.8	44.1	44.0	60.0	50.0	15.9	6.0	L1	

Calculation:Result [dBuV] =Reading [dBuV] +C.Fac (LISN+Cable+ATT) [dB]
LISN: SLS-05

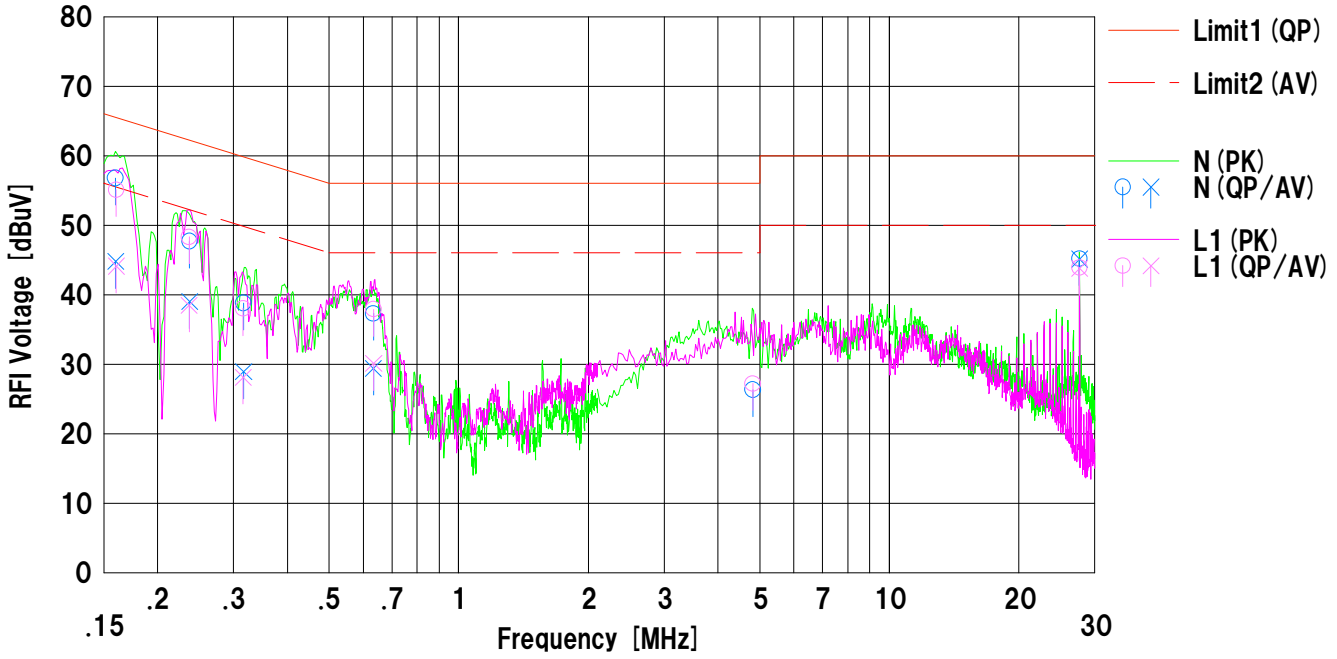
DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2012/12/04

Mode : IEEE802.11n(HT40), Tx2437MHz,MCS8
Report No. : 33CE0266-SH-02-A-R1
Power : AC 120V / 60Hz
Temp./Humi. : 25deg.C / 39%RH

Limit1 : FCC 15C(15.207) QP
Limit2 : FCC 15C(15.207) AV

Engineer : Tatsuya Arai



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<AV>		<QP>	<AV>	<QP>	<AV>	<QP>	<AV>		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15970	44.1	32.1	12.7	56.8	44.8	65.4	55.4	8.6	10.6	N	
2	0.23720	35.0	26.3	12.7	47.7	39.0	62.1	52.1	14.4	13.1	N	
3	0.31650	26.1	16.2	12.7	38.8	28.9	59.7	49.7	20.9	20.8	N	
4	0.63400	24.6	16.7	12.7	37.3	29.4	56.0	46.0	18.7	16.6	N	
5	4.82300	13.4	---	12.9	26.3	---	56.0	46.0	29.7	---	N	
6	27.64850	31.4	31.3	13.8	45.2	45.1	60.0	50.0	14.8	4.9	N	
7	0.16020	42.4	31.4	12.7	55.1	44.1	65.4	55.4	10.3	11.3	L1	
8	0.23660	35.6	25.8	12.7	48.3	38.5	62.2	52.2	13.9	13.7	L1	
9	0.31600	25.3	15.4	12.7	38.0	28.1	59.8	49.8	21.8	21.7	L1	
10	0.63450	25.2	17.4	12.7	37.9	30.1	56.0	46.0	18.1	15.9	L1	
11	4.82300	14.3	---	12.9	27.2	---	56.0	46.0	28.8	---	L1	
12	27.64850	30.1	30.0	13.8	43.9	43.8	60.0	50.0	16.1	6.2	L1	

Calculation:Result [dBuV] =Reading [dBuV] +C.Fac (LISN+Cable+ATT) [dB]
LISN: SLS-05

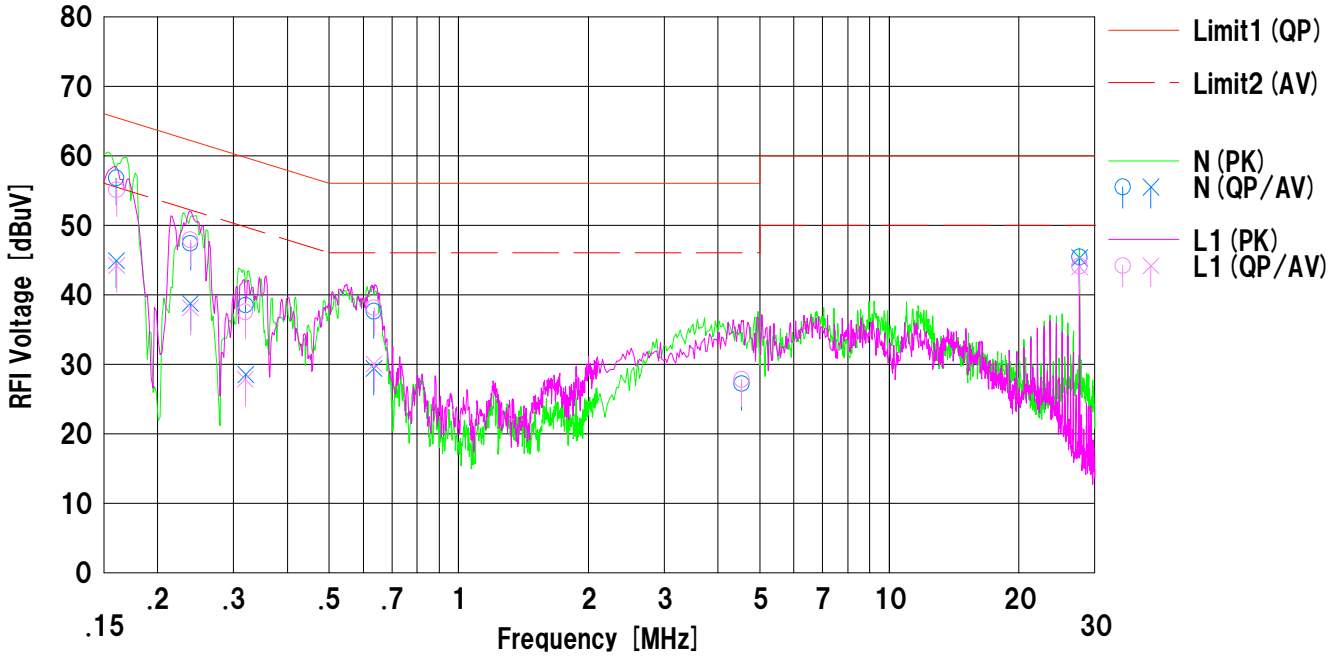
DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2012/12/04

Mode : IEEE802.11n(HT20), Tx5745MHz,MCS8
Report No. : 33CE0266-SH-02-A-R1
Power : AC 120V / 60Hz
Temp./Humi. : 23deg.C / 38%RH

Limit1 : FCC 15C(15.207) QP
Limit2 : FCC 15C(15.207) AV

Engineer : Tatsuya Arai



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<AV>		<QP>	<AV>	<QP>	<AV>	<QP>	<AV>		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.16020	44.1	32.2	12.7	56.8	44.9	65.4	55.4	8.6	10.5	N	
2	0.23840	34.7	26.0	12.7	47.4	38.7	62.1	52.1	14.7	13.4	N	
3	0.32000	25.8	15.8	12.7	38.5	28.5	59.7	49.7	21.2	21.2	N	
4	0.63550	24.9	16.7	12.7	37.6	29.4	56.0	46.0	18.4	16.6	N	
5	4.54000	14.3	---	12.9	27.2	---	56.0	46.0	28.8	---	N	
6	27.64800	31.6	31.5	13.8	45.4	45.3	60.0	50.0	14.6	4.7	N	
7	0.16070	42.4	31.5	12.7	55.1	44.2	65.4	55.4	10.3	11.2	L1	
8	0.23840	35.2	25.4	12.7	47.9	38.1	62.1	52.1	14.2	14.0	L1	
9	0.31950	24.8	15.1	12.7	37.5	27.8	59.7	49.7	22.2	21.9	L1	
10	0.63650	25.4	17.3	12.7	38.1	30.0	56.0	46.0	17.9	16.0	L1	
11	4.54000	14.9	---	12.9	27.8	---	56.0	46.0	28.2	---	L1	
12	27.64800	30.3	30.2	13.8	44.1	44.0	60.0	50.0	15.9	6.0	L1	

Calculation:Result [dBuV] =Reading [dBuV] +C.Fac (LISN+Cable+ATT) [dB]
LISN: SLS-05

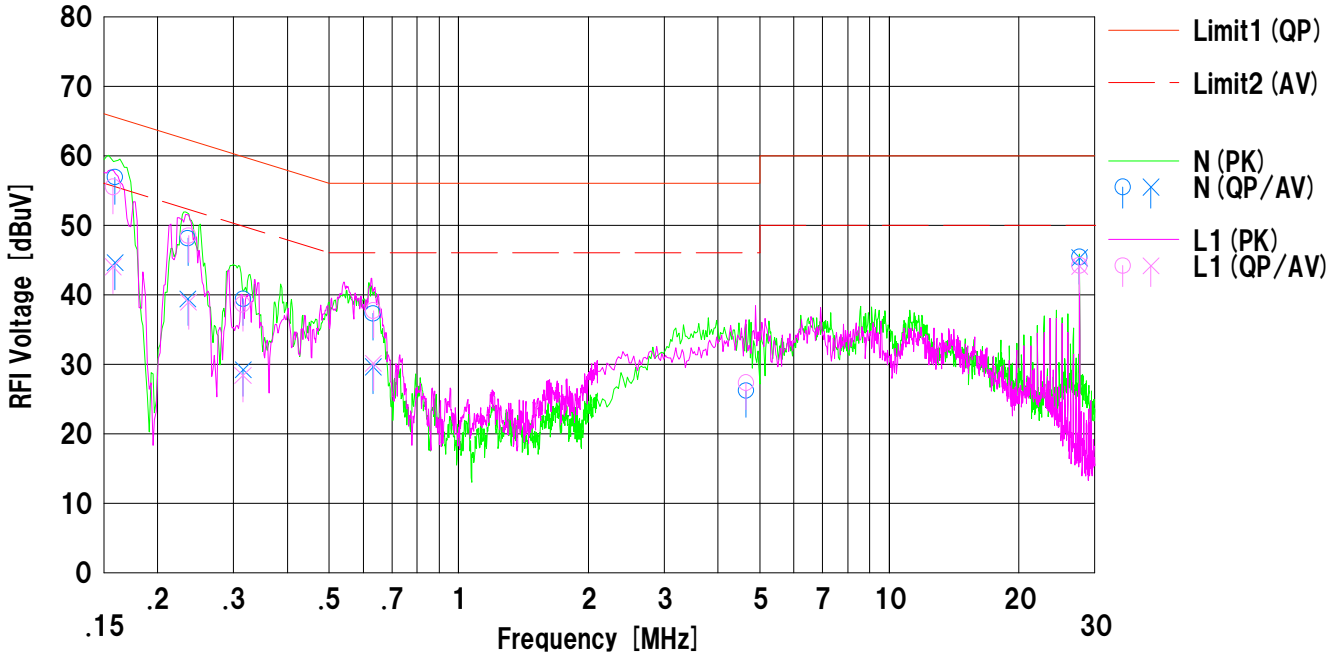
DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2012/12/04

Mode : IEEE802.11n(HT40), Tx5755MHz,MCS0
Report No. : 33CE0266-SH-02-A-R1
Power : AC 120V / 60Hz
Temp./Humi. : 23deg.C / 38%RH

Limit1 : FCC 15C(15.207) QP
Limit2 : FCC 15C(15.207) AV

Engineer : Tatsuya Arai



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<AV>		<QP>	<AV>	<QP>	<AV>	<QP>	<AV>		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15920	44.2	31.9	12.7	56.9	44.6	65.5	55.5	8.6	10.9	N	
2	0.23500	35.4	26.7	12.7	48.1	39.4	62.2	52.2	14.1	12.8	N	
3	0.31600	26.7	16.5	12.7	39.4	29.2	59.8	49.8	20.4	20.6	N	
4	0.63250	24.6	16.9	12.7	37.3	29.6	56.0	46.0	18.7	16.4	N	
5	4.64500	13.3	---	12.9	26.2	---	56.0	46.0	29.8	---	N	
6	27.64810	31.6	31.5	13.8	45.4	45.3	60.0	50.0	14.6	4.7	N	
7	0.15760	42.8	31.3	12.7	55.5	44.0	65.5	55.5	10.0	11.5	L1	
8	0.23580	35.8	26.2	12.7	48.5	38.9	62.2	52.2	13.7	13.3	L1	
9	0.31550	25.9	15.7	12.7	38.6	28.4	59.8	49.8	21.2	21.4	L1	
10	0.63350	25.0	17.4	12.7	37.7	30.1	56.0	46.0	18.3	15.9	L1	
11	4.64500	14.4	---	12.9	27.3	---	56.0	46.0	28.7	---	L1	
12	27.64810	30.4	30.3	13.8	44.2	44.1	60.0	50.0	15.8	5.9	L1	

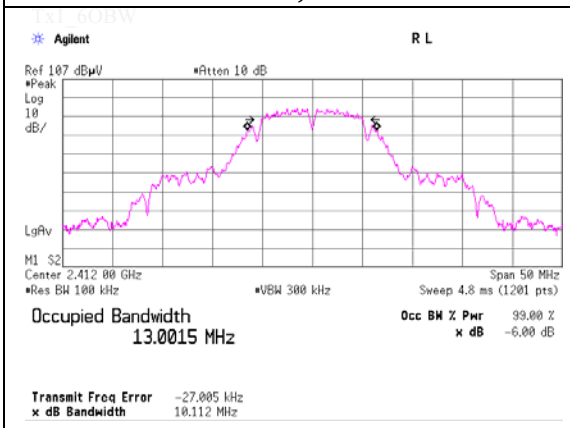
Calculation:Result [dBuV] =Reading [dBuV] +C.Fac (LISN+Cable+ATT) [dB]
LISN: SLS-05

-6dB Bandwidth

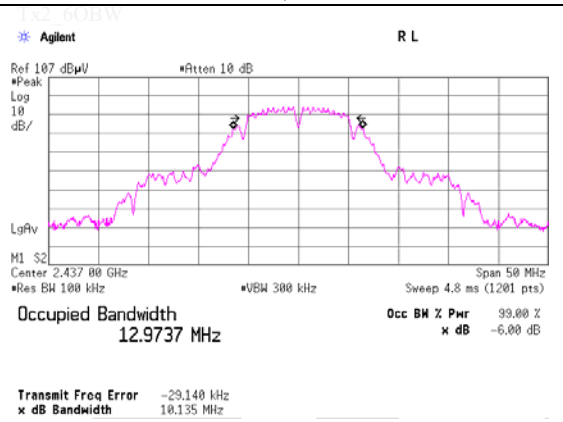
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 28, 2012	
Temperature / Humidity	22deg.C , 50%RH	
Engineer	Akio Hayashi	
Mode	Tx, IEEE802.11b, PN9, worst antenna port Main, worst data mode 1Mbps	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2412.0000	10.112	> 0.500
2437.0000	10.135	> 0.500
2462.0000	10.088	> 0.500

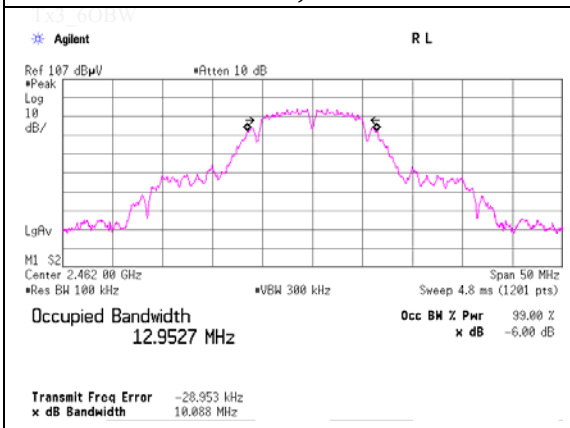
Tx, 2412MHz



Tx, 2437MHz



Tx, 2462MHz



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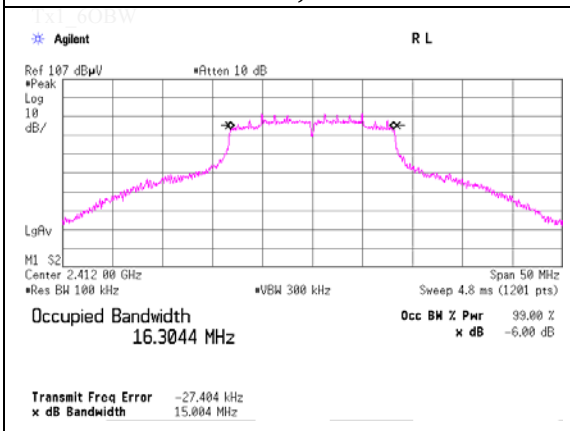
-6dB Bandwidth

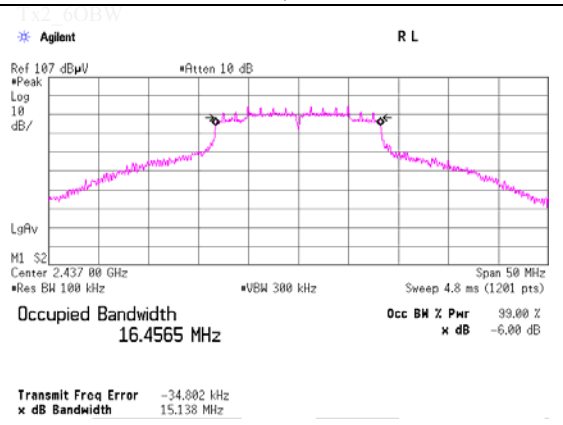
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 28, 2012	
Temperature / Humidity	22deg.C , 50%RH	
Engineer	Akio Hayashi	
Mode	Tx, IEEE802.11g, PN9, worst antenna port Main, worst data mode 6Mbps	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2412.0000	15.004	> 0.500
2437.0000	15.138	> 0.500
2462.0000	15.154	> 0.500

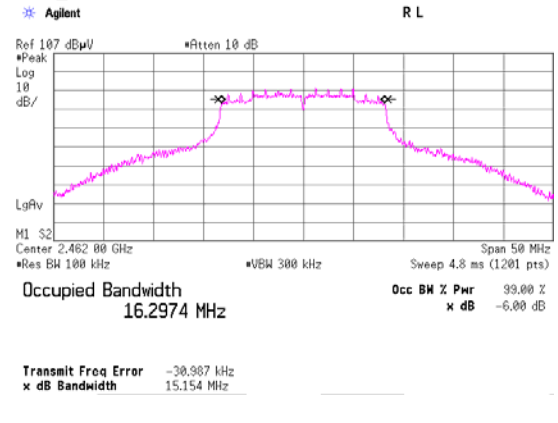
Tx, 2412MHz



Tx, 2437MHz



Tx, 2462MHz



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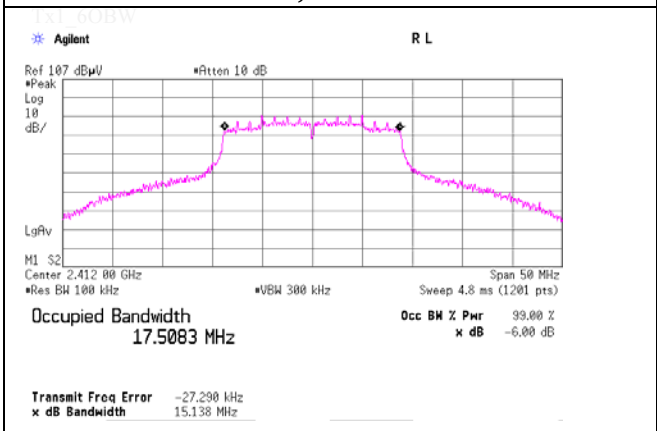
Facsimile : +81 463 50 6401

-6dB Bandwidth

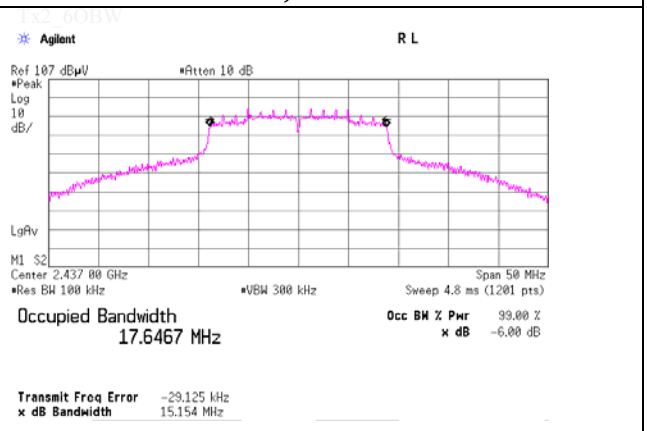
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 28, 2012	
Temperature / Humidity	22deg.C , 50%RH	
Engineer	Akio Hayashi	
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst antenna port Main, worst data mode 0(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2412.0000	15.138	> 0.500
2437.0000	15.154	> 0.500
2462.0000	15.157	> 0.500

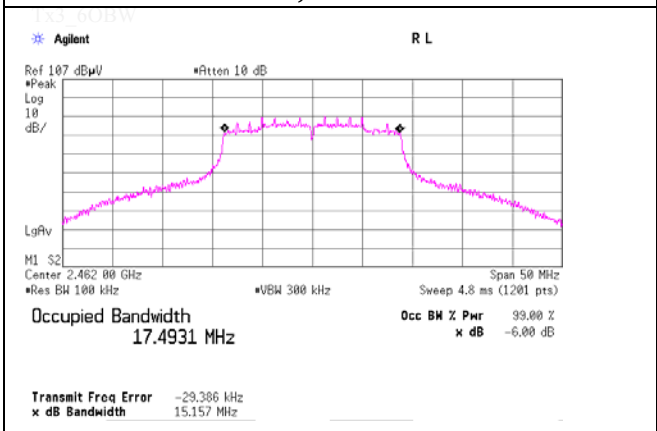
Tx, 2412MHz



Tx, 2437MHz



Tx, 2462MHz



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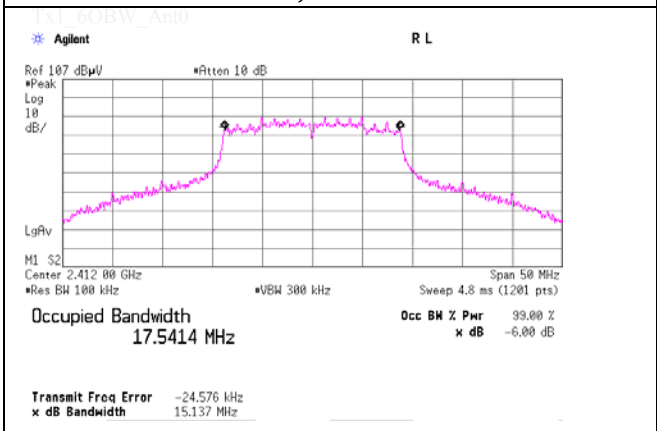
-6dB Bandwidth

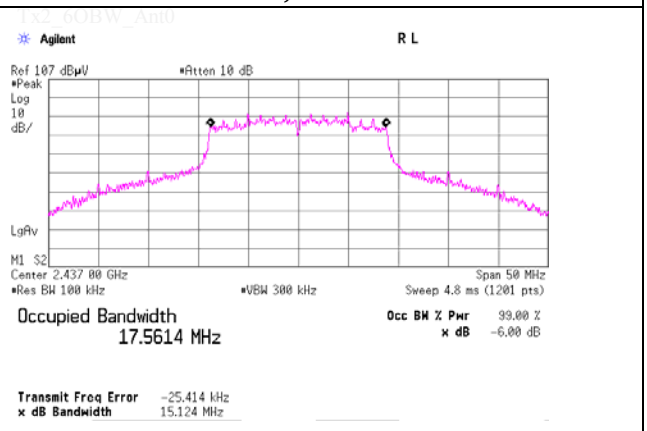
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 28, 2012	
Temperature / Humidity	22deg.C , 50%RH	
Engineer	Akio Hayashi	
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9, antenna port Main, worst data mode 8(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2412.0000	15.137	> 0.500
2437.0000	15.124	> 0.500
2462.0000	15.136	> 0.500

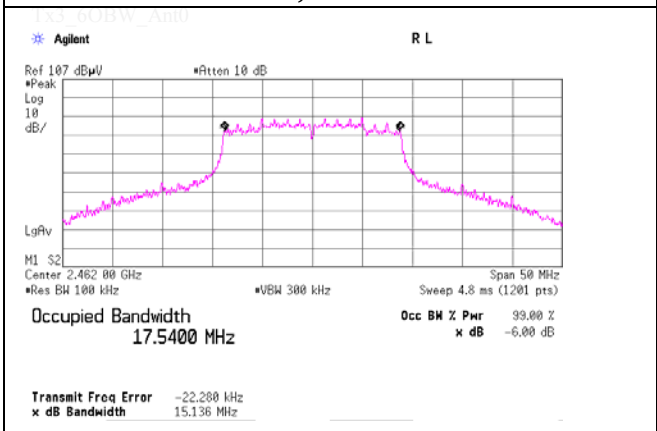
Tx, 2412MHz



Tx, 2437MHz



Tx, 2462MHz



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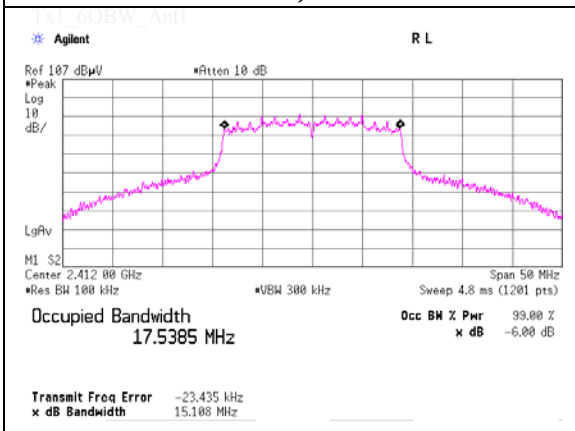
-6dB Bandwidth

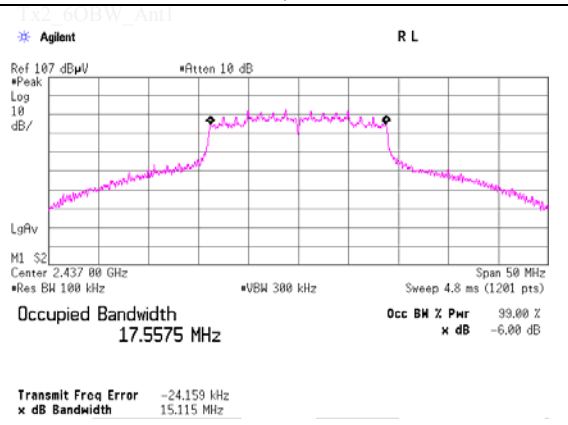
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 28, 2012	
Temperature / Humidity	22deg.C , 50%RH	
Engineer	Akio Hayashi	
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9, antenna port Aux, worst data mode 8(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2412.0000	15.108	> 0.500
2437.0000	15.115	> 0.500
2462.0000	15.114	> 0.500

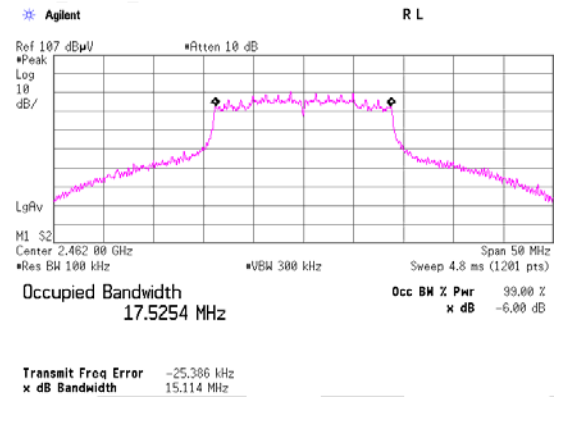
Tx, 2412MHz



Tx, 2437MHz



Tx, 2462MHz



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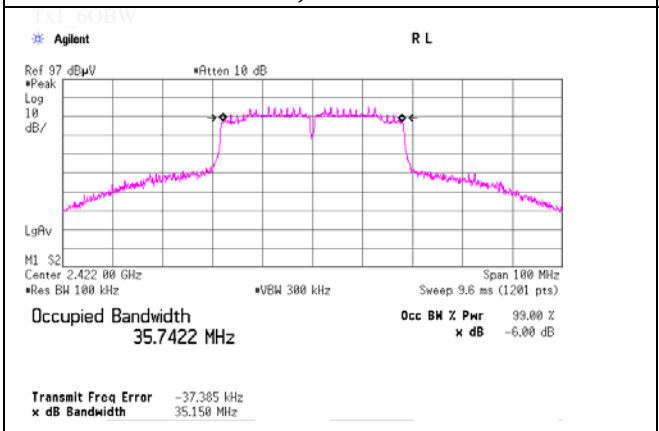
-6dB Bandwidth

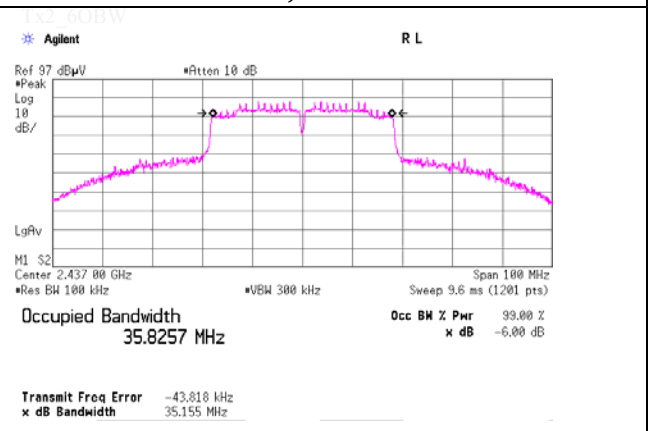
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 28, 2012	
Temperature / Humidity	22deg.C , 50%RH	
Engineer	Akio Hayashi	
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9, worst antenna port Main, worst data mode 0(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2422.0000	35.150	> 0.500
2437.0000	35.155	> 0.500
2452.0000	35.178	> 0.500

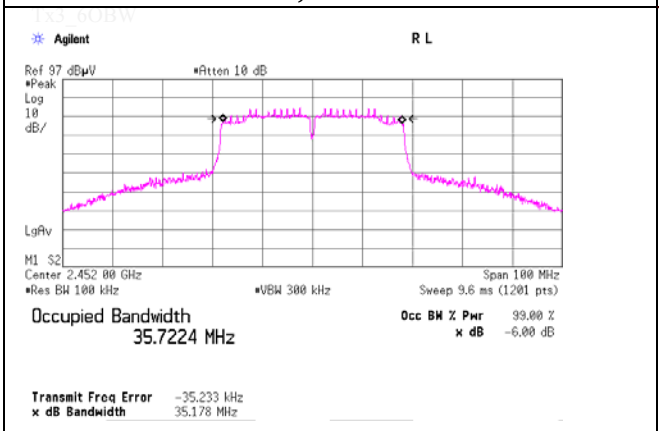
Tx, 2422MHz



Tx, 2437MHz



Tx, 2452MHz



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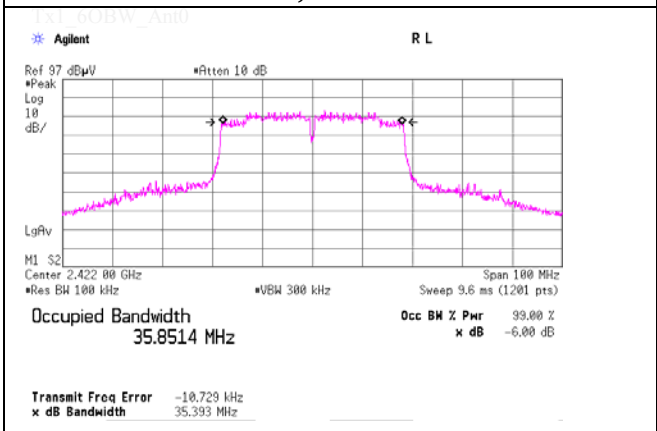
-6dB Bandwidth

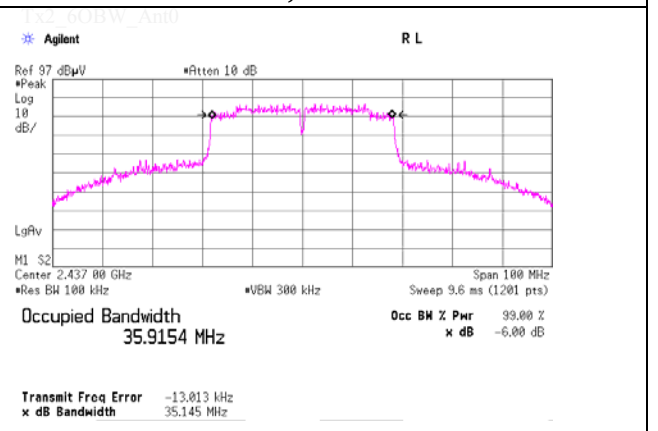
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 28, 2012	
Temperature / Humidity	22deg.C , 50%RH	
Engineer	Akio Hayashi	
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9, antenna port Main, worst data mode 8(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2422.0000	35.393	> 0.500
2437.0000	35.145	> 0.500
2452.0000	35.448	> 0.500

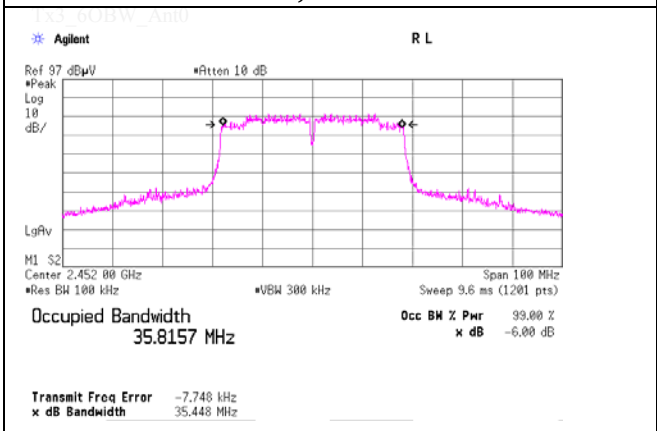
Tx, 2422MHz



Tx, 2437MHz



Tx, 2452MHz



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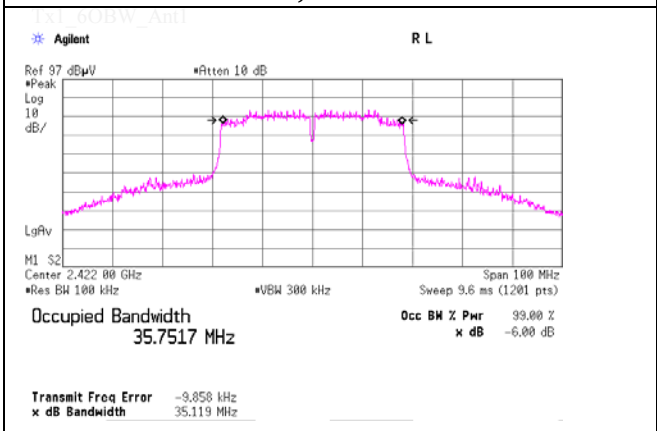
Facsimile : +81 463 50 6401

-6dB Bandwidth

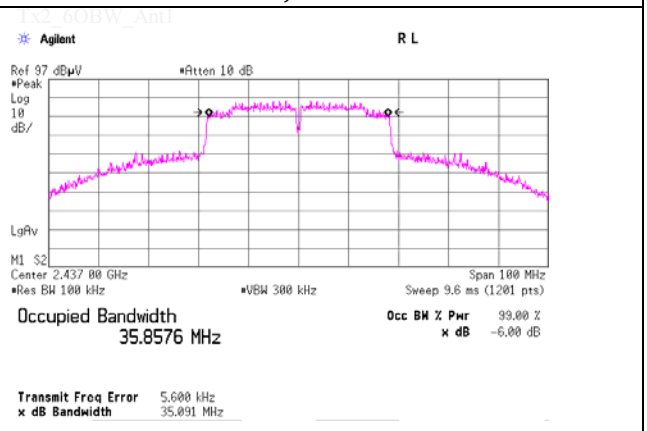
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 28, 2012	
Temperature / Humidity	22deg.C , 50%RH	
Engineer	Akio Hayashi	
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9, antenna port Aux, worst data mode 8(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2422.0000	35.119	> 0.500
2437.0000	35.091	> 0.500
2452.0000	35.119	> 0.500

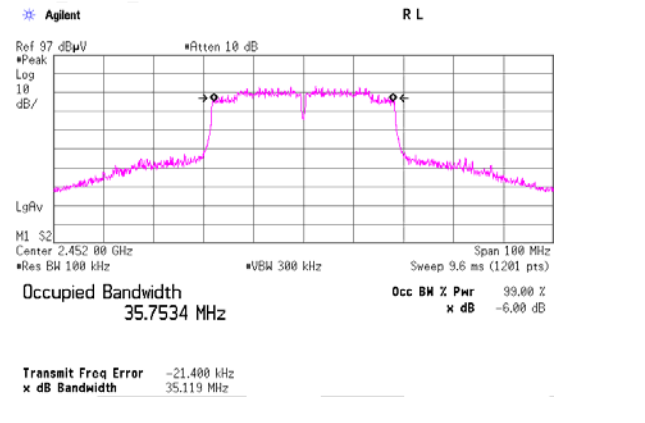
Tx, 2422MHz



Tx, 2437MHz



Tx, 2452MHz



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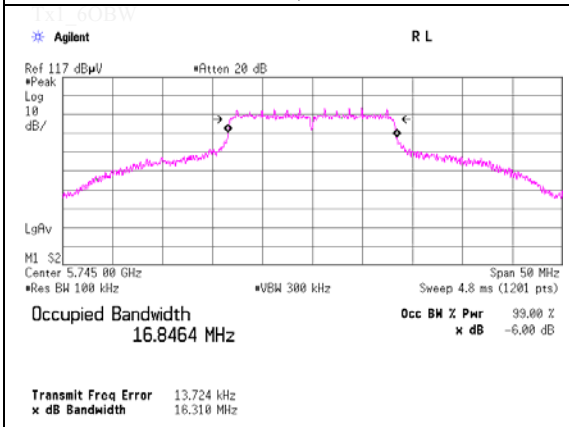
-6dB Bandwidth

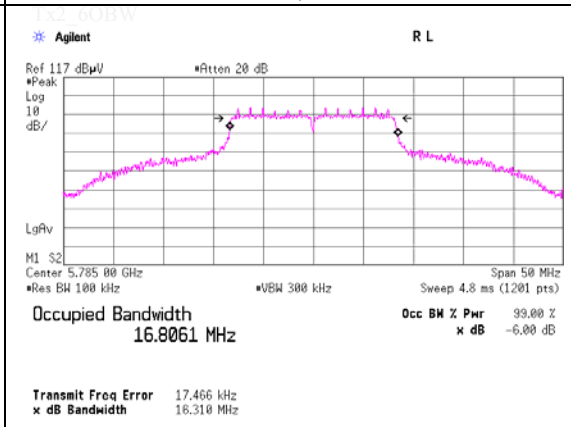
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 29, 2012	
Temperature / Humidity	23deg.C , 42%RH	
Engineer	Akio Hayashi	
Mode	Tx, IEEE802.11a, PN9, worst antenna port Main, worst data mode 6Mbps	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
5745.0000	16.310	> 0.500
5785.0000	16.310	> 0.500
5825.0000	16.109	> 0.500

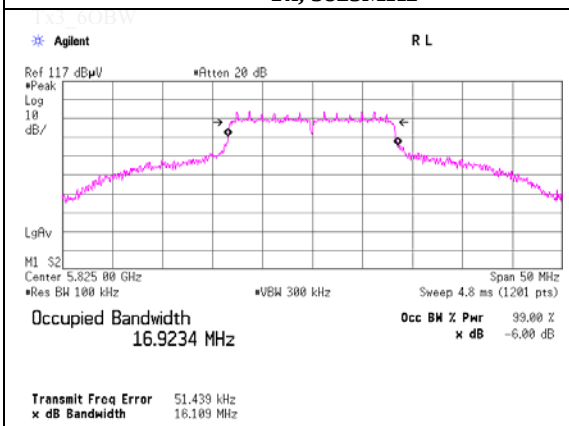
Tx, 5745MHz



Tx, 5785MHz



Tx, 5825MHz



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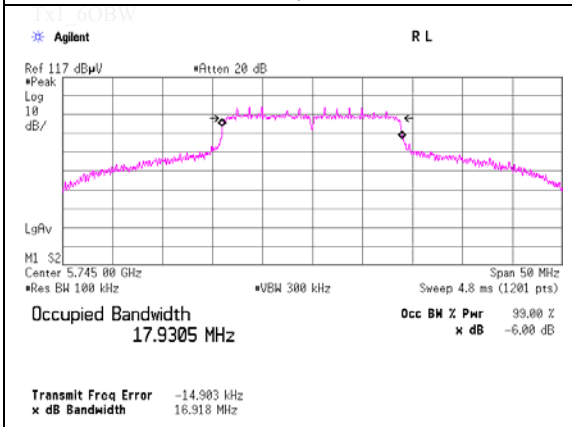
-6dB Bandwidth

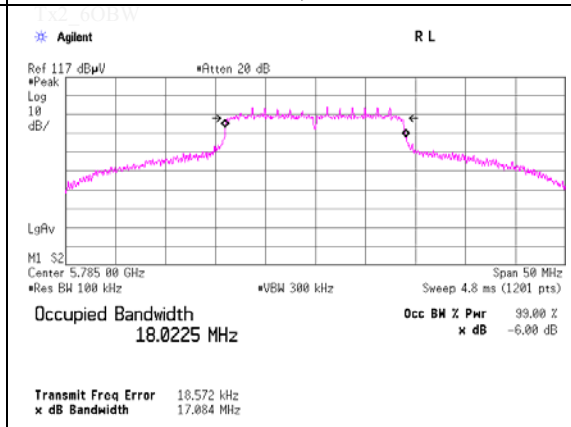
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 29, 2012	
Temperature / Humidity	23deg.C , 41%RH	
Engineer	Akio Hayashi	
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst antenna port Main, worst data mode 0(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
5745.0000	16.918	> 0.500
5785.0000	17.084	> 0.500
5825.0000	16.985	> 0.500

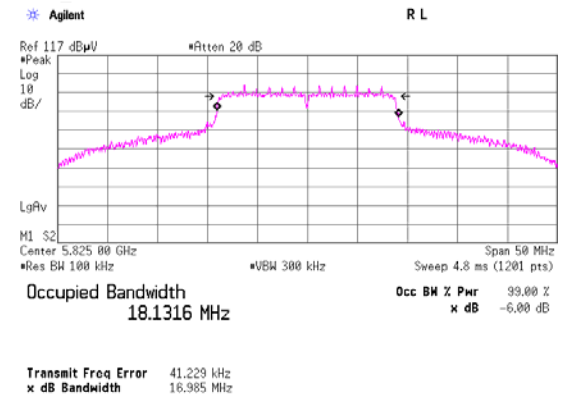
Tx, 5745MHz



Tx, 5785MHz



Tx, 5825MHz



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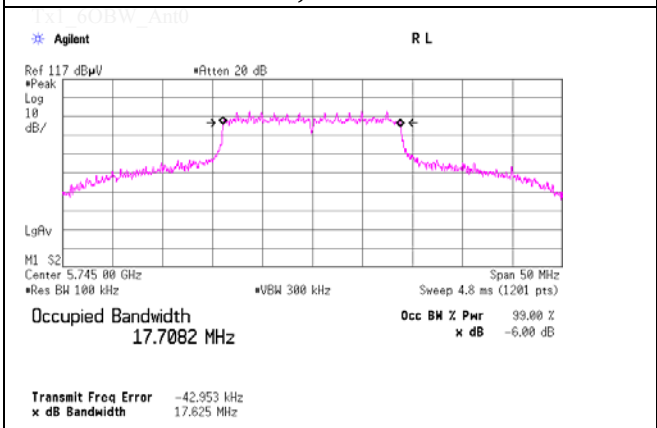
-6dB Bandwidth

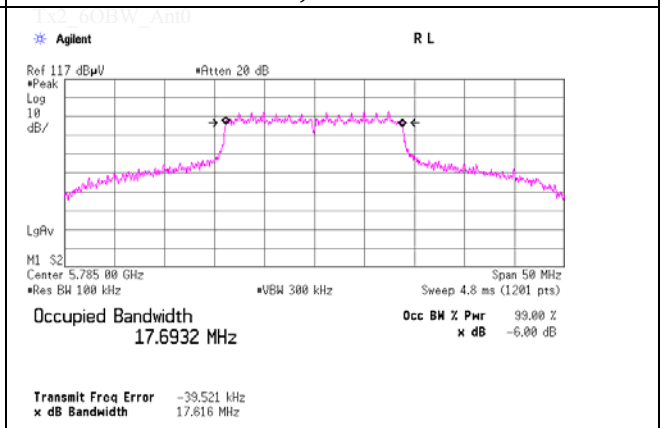
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 29, 2012	
Temperature / Humidity	23deg.C , 41%RH	
Engineer	Akio Hayashi	
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9, antenna port Main, worst data mode 8(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
5745.0000	17.625	> 0.500
5785.0000	17.616	> 0.500
5825.0000	17.619	> 0.500

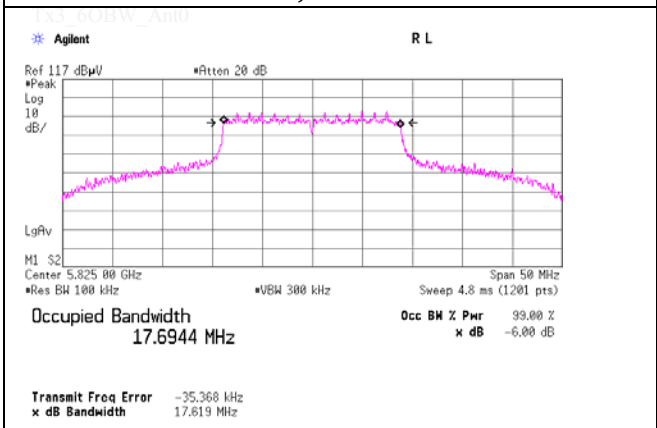
Tx, 5745MHz



Tx, 5785MHz



Tx, 5825MHz



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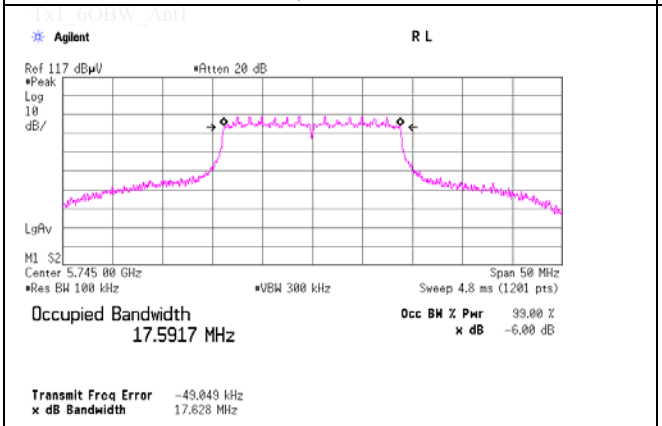
-6dB Bandwidth

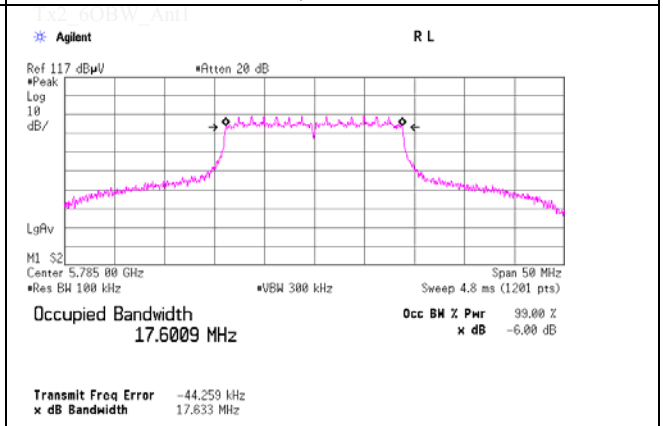
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 29, 2012	
Temperature / Humidity	23deg.C , 41%RH	
Engineer	Akio Hayashi	
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9, antenna port Aux, worst data mode 8(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
5745.0000	17.628	> 0.500
5785.0000	17.633	> 0.500
5825.0000	17.612	> 0.500

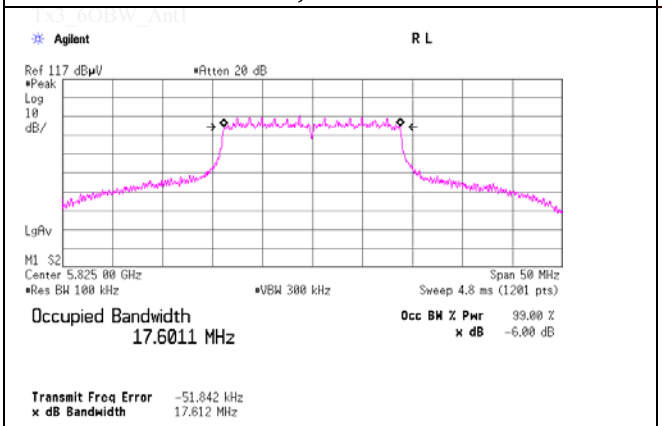
Tx, 5745MHz



Tx, 5785MHz



Tx, 5825MHz



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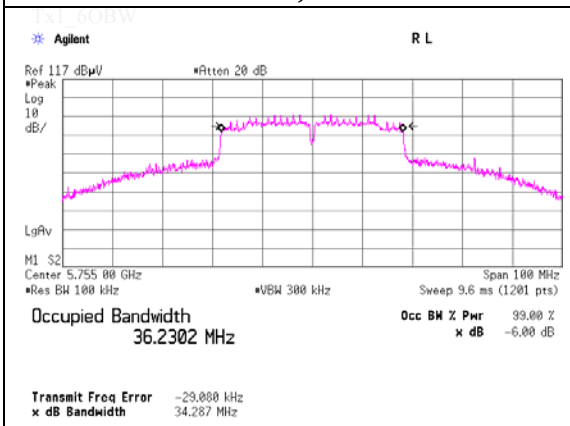
-6dB Bandwidth

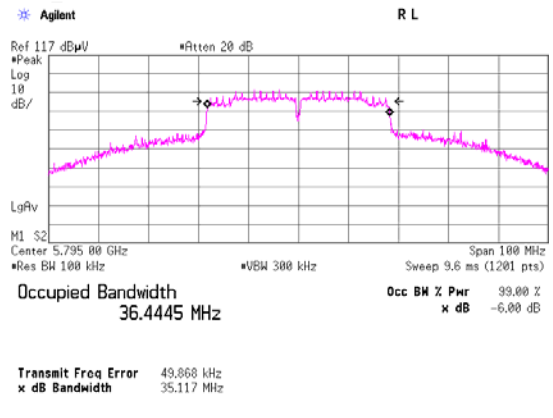
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 29, 2012	
Temperature / Humidity	23deg.C , 41%RH	
Engineer	Akio Hayashi	
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9, worst antenna port Main, worst data mode 0(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
5755.0000	34.287	> 0.500
		> 0.500
5795.0000	35.117	> 0.500

Tx, 5755MHz



Tx, 5795MHz



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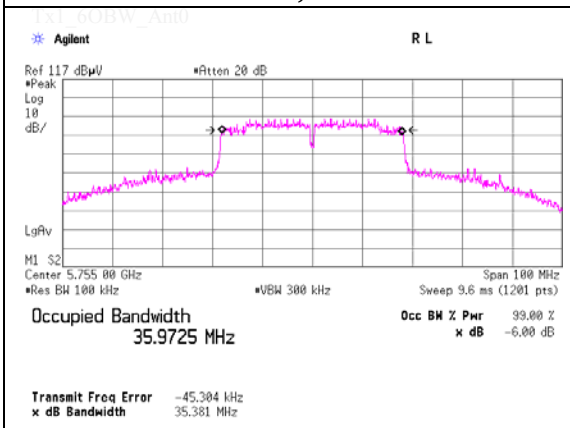
-6dB Bandwidth

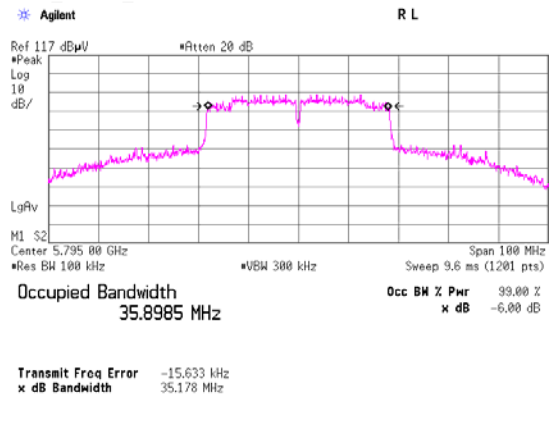
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 29, 2012	
Temperature / Humidity	23deg.C , 41%RH	
Engineer	Akio Hayashi	
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9, antenna port Main, worst data mode 8(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
5755.0000	35.381	> 0.500
		> 0.500
5795.0000	35.178	> 0.500

Tx, 5755MHz



Tx, 5795MHz



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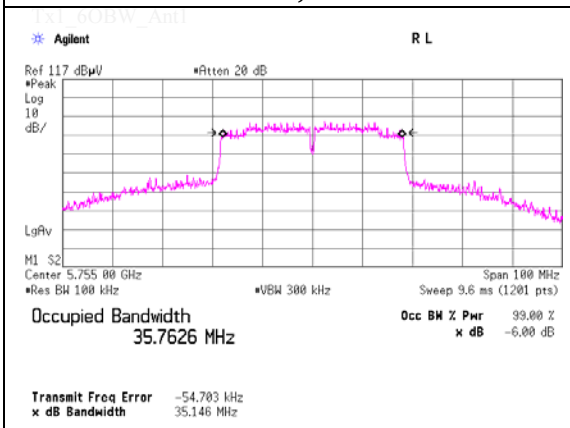
-6dB Bandwidth

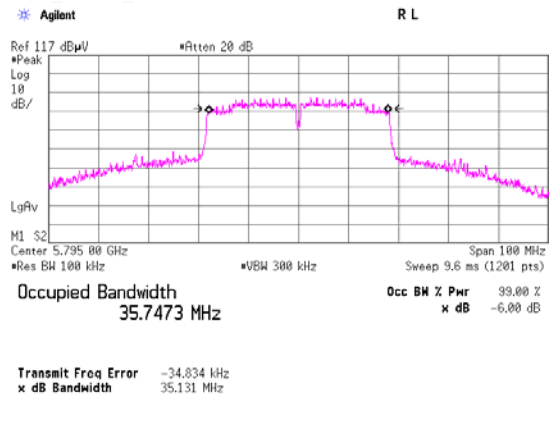
Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 29, 2012	
Temperature / Humidity	23deg.C , 41%RH	
Engineer	Akio Hayashi	
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9, antenna port Aux, worst data mode 8(MCS)	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
5755.0000	35.146	> 0.500
		> 0.500
5795.0000	35.131	> 0.500

Tx, 5755MHz



Tx, 5795MHz



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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 17, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, IEEE802.11b, PN9,	worst antenna : Main	worst data mode : 1 Mbps

(* P/M: Power Meter with power sensor)

Ch	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	2412.0	9.13	0.74	10.00	19.87	97.05	30.00	1000	10.13	
Mid	2437.0	9.29	0.75	10.00	20.04	100.93	30.00	1000	9.96	Worst Data
High	2462.0	9.04	0.75	10.00	19.79	95.28	30.00	1000	10.21	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

Antenna Main

	Data rate [Mbps]	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	1	2437.0	9.29	0.75	10.00	20.04	100.93	30.00	1000	9.96	Worst Rate
Main	2	2437.0	9.22	0.75	10.00	19.97	99.31	30.00	1000	10.03	
Main	5.5	2437.0	9.20	0.75	10.00	19.95	98.86	30.00	1000	10.05	
Main	11	2437.0	9.17	0.75	10.00	19.92	98.17	30.00	1000	10.08	

Antenna Aux

	Data rate [Mbps]	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	1	2412.0	9.23	0.74	10.00	19.97	99.31	30.00	1000	10.03
Aux	1	2437.0	7.78	0.75	10.00	18.53	71.29	30.00	1000	11.47
Aux	1	2462.0	8.35	0.75	10.00	19.10	81.28	30.00	1000	10.90

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 17, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, IEEE802.11b, PN9,	worst antenna : Main	worst data mode : 1 Mbps

(* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	2412.0	6.23	0.74	10.00	0.04	17.01	50.23	30.00	1000	12.99	
Mid	2437.0	6.37	0.75	10.00	0.04	17.16	52.00	30.00	1000	12.84	Worst Data
High	2462.0	6.18	0.75	10.00	0.04	16.97	49.77	30.00	1000	13.03	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

[Pre check]

Antenna Main

	Data rate [Mbps]	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	1	2437.0	6.37	0.75	10.00	0.04	17.16	52.00	30.00	1000	12.84	Worst Rate
Main	2	2437.0	6.27	0.75	10.00	0.04	17.06	50.82	30.00	1000	12.94	
Main	5.5	2437.0	6.27	0.75	10.00	0.05	17.07	50.93	30.00	1000	12.93	
Main	11	2437.0	6.30	0.75	10.00	0.09	17.14	51.76	30.00	1000	12.86	

Antenna Aux

	Data rate [Mbps]	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	1	2412.0	6.34	0.74	10.00	0.04	17.12	51.52	30.00	1000	12.88
Aux	1	2437.0	4.89	0.75	10.00	0.04	15.68	36.98	30.00	1000	14.32
Aux	1	2462.0	5.46	0.75	10.00	0.04	16.25	42.17	30.00	1000	13.75

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 17, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, IEEE802.11g, PN9,	worst antenna : Main	worst data mode : 6 Mbps

(* P/M: Power Meter with power sensor)

Ch	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	2412.0	10.92	0.74	10.00	21.66	146.55	30.00	1000	8.34	
Mid	2437.0	12.05	0.75	10.00	22.80	190.55	30.00	1000	7.20	Worst Data
High	2462.0	10.83	0.75	10.00	21.58	143.88	30.00	1000	8.42	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

Antenna Main

	Data rate [Mbps]	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	6	2437.0	12.05	0.75	10.00	22.80	190.55	30.00	1000	7.20	Worst Rate
Main	9	2437.0	11.85	0.75	10.00	22.60	181.97	30.00	1000	7.40	
Main	12	2437.0	11.85	0.75	10.00	22.60	181.97	30.00	1000	7.40	
Main	18	2437.0	11.65	0.75	10.00	22.40	173.78	30.00	1000	7.60	
Main	24	2437.0	11.88	0.75	10.00	22.63	183.23	30.00	1000	7.37	
Main	36	2437.0	11.78	0.75	10.00	22.53	179.06	30.00	1000	7.47	
Main	48	2437.0	11.70	0.75	10.00	22.45	175.79	30.00	1000	7.55	
Main	54	2437.0	11.64	0.75	10.00	22.39	173.38	30.00	1000	7.61	

Antenna Aux

	Data rate [Mbps]	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	6	2412.0	10.33	0.74	10.00	21.07	127.94	30.00	1000	8.93
Aux	6	2437.0	11.21	0.75	10.00	21.96	157.04	30.00	1000	8.04
Aux	6	2462.0	10.14	0.75	10.00	20.89	122.74	30.00	1000	9.11

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 17, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, IEEE802.11g, PN9,	worst antenna : Main	worst data mode : 6 Mbps

(* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	2412.0	3.45	0.74	10.00	0.05	14.24	26.55	30.00	1000	15.76	
Mid	2437.0	6.23	0.75	10.00	0.05	17.03	50.47	30.00	1000	12.97	Worst Data
High	2462.0	3.31	0.75	10.00	0.05	14.11	25.76	30.00	1000	15.89	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

[Pre check]

Antenna Main

	Data rate [Mbps]	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	6	2437.0	6.23	0.75	10.00	0.05	17.03	50.47	30.00	1000	12.97	Worst Rate
Main	9	2437.0	6.08	0.75	10.00	0.09	16.92	49.20	30.00	1000	13.08	
Main	12	2437.0	5.97	0.75	10.00	0.10	16.82	48.08	30.00	1000	13.18	
Main	18	2437.0	5.94	0.75	10.00	0.15	16.84	48.31	30.00	1000	13.16	
Main	24	2437.0	5.75	0.75	10.00	0.20	16.70	46.77	30.00	1000	13.30	
Main	36	2437.0	5.72	0.75	10.00	0.29	16.76	47.42	30.00	1000	13.24	
Main	48	2437.0	5.72	0.75	10.00	0.39	16.86	48.53	30.00	1000	13.14	
Main	54	2437.0	5.66	0.75	10.00	0.43	16.84	48.31	30.00	1000	13.16	

Antenna Aux

	Data rate [Mbps]	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	6	2412.0	3.26	0.74	10.00	0.05	14.05	25.41	30.00	1000	15.95
Aux	6	2437.0	5.71	0.75	10.00	0.05	16.51	44.77	30.00	1000	13.49
Aux	6	2462.0	2.84	0.75	10.00	0.05	13.64	23.12	30.00	1000	16.36

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab. No.7 Shielded Room		
Date	November 17, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9,	worst antenna : Main	worst data mode : 0 (MCS)

(* P/M: Power Meter with power sensor)

Ch	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	2412.0	10.80	0.74	10.00	21.54	142.56	30.00	1000	8.46	
Mid	2437.0	12.22	0.75	10.00	22.97	198.15	30.00	1000	7.03	Worst Data
High	2462.0	10.33	0.75	10.00	21.08	128.23	30.00	1000	8.92	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

Antenna Main

	Mode (MCS)	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	0	2437.0	12.22	0.75	10.00	22.97	198.15	30.00	1000	7.03	Worst Rate
Main	1	2437.0	11.66	0.75	10.00	22.41	174.18	30.00	1000	7.59	
Main	2	2437.0	11.60	0.75	10.00	22.35	171.79	30.00	1000	7.65	
Main	3	2437.0	11.58	0.75	10.00	22.33	171.00	30.00	1000	7.67	
Main	4	2437.0	11.57	0.75	10.00	22.32	170.61	30.00	1000	7.68	
Main	5	2437.0	11.62	0.75	10.00	22.37	172.58	30.00	1000	7.63	
Main	6	2437.0	11.82	0.75	10.00	22.57	180.72	30.00	1000	7.43	
Main	7	2437.0	11.77	0.75	10.00	22.52	178.65	30.00	1000	7.48	

Antenna Aux

	Mode (MCS)	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	0	2412.0	9.94	0.74	10.00	20.68	116.95	30.00	1000	9.32
Aux	0	2437.0	11.25	0.75	10.00	22.00	158.49	30.00	1000	8.00
Aux	0	2462.0	9.97	0.75	10.00	20.72	118.03	30.00	1000	9.28

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 17, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9,	worst antenna : Main	worst data mode : 0 (MCS)

(* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	2412.0	2.51	0.74	10.00	0.05	13.30	21.38	30.00	1000	16.70	
Mid	2437.0	5.99	0.75	10.00	0.05	16.79	47.75	30.00	1000	13.21	Worst Data
High	2462.0	1.99	0.75	10.00	0.05	12.79	19.01	30.00	1000	17.21	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

[Pre check]
Antenna Main

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	0	2437.0	5.99	0.75	10.00	0.05	16.79	47.75	30.00	1000	13.21	Worst Rate
Main	1	2437.0	5.67	0.75	10.00	0.11	16.53	44.98	30.00	1000	13.47	
Main	2	2437.0	5.67	0.75	10.00	0.16	16.58	45.50	30.00	1000	13.42	
Main	3	2437.0	5.57	0.75	10.00	0.20	16.52	44.87	30.00	1000	13.48	
Main	4	2437.0	5.55	0.75	10.00	0.30	16.60	45.71	30.00	1000	13.40	
Main	5	2437.0	5.54	0.75	10.00	0.38	16.67	46.45	30.00	1000	13.33	
Main	6	2437.0	5.48	0.75	10.00	0.40	16.63	46.03	30.00	1000	13.37	
Main	7	2437.0	5.47	0.75	10.00	0.43	16.65	46.24	30.00	1000	13.35	

Antenna Aux

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	0	2412.0	2.32	0.74	10.00	0.05	13.11	20.46	30.00	1000	16.89
Aux	0	2437.0	5.65	0.75	10.00	0.05	16.45	44.16	30.00	1000	13.55
Aux	0	2462.0	1.81	0.75	10.00	0.05	12.61	18.24	30.00	1000	17.39

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 17, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9,	worst data mode :	8 (MCS)

Antenna Main + Antenna Aux

Ch	Freq.	Result Ant Main	Result Ant Aux		Result Ant Main + Ant Aux		Limit		Margin
	[MHz]	[mW]	[mW]		[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2412.0	105.20	88.10		22.86	193.30	30.00	1000	7.14
Mid	2437.0	138.68	118.58		24.10	257.26	30.00	1000	5.90
High	2462.0	86.70	68.55		21.91	155.25	30.00	1000	8.09

Worst Data

Antenna Main (* P/M: Power Meter with power sensor)

Ch	Freq.	P/M (Peak) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2412.0	9.48	0.74	10.00	20.22	105.20	30.00	1000	9.78
Mid	2437.0	10.67	0.75	10.00	21.42	138.68	30.00	1000	8.58
High	2462.0	8.63	0.75	10.00	19.38	86.70	30.00	1000	10.62

Antenna Aux (* P/M: Power Meter with power sensor)

Ch	Freq.	P/M (Peak) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2412.0	8.71	0.74	10.00	19.45	88.10	30.00	1000	10.55
Mid	2437.0	9.99	0.75	10.00	20.74	118.58	30.00	1000	9.26
High	2462.0	7.61	0.75	10.00	18.36	68.55	30.00	1000	11.64

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

Mode	Freq.	Reading Antenna Main		Reading Antenna Aux		Result Antenna Main + Aux	
(MCS)	[MHz]	[dBm]	[mW]	[dBm]	[mW]	[dBm]	[mW]
8	2437.0	10.67	11.67	9.99	9.98	13.35	21.65
9	2437.0	10.18	10.42	9.22	8.36	12.74	18.78
10	2437.0	10.11	10.26	9.48	8.87	12.82	19.13
11	2437.0	10.09	10.21	9.50	8.91	12.82	19.12
12	2437.0	10.05	10.12	9.28	8.47	12.69	18.59
13	2437.0	10.11	10.26	9.22	8.36	12.70	18.61
14	2437.0	10.09	10.21	9.40	8.71	12.77	18.92
15	2437.0	10.02	10.05	9.36	8.63	12.71	18.68

Worst Rate

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 17, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9,	worst data mode :	8 (MCS)

Antenna Main + Antenna Aux

Ch	Freq.	Ant Main Result	Ant Aux Result		Result		Limit		Margin	
	[MHz]	[mW]	[mW]		[dBm]	[mW]	[dBm]	[mW]	[dB]	
Low	2412.0	19.23	16.03		15.47	35.26	30.00	1000	14.53	
Mid	2437.0	26.85	24.38		17.10	51.23	30.00	1000	12.90	Worst Data
High	2462.0	14.19	11.89		14.16	26.08	30.00	1000	15.84	

Antenna Main (* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2412.0	1.99	0.74	10.00	0.11	12.84	19.23	30.00	1000	17.16
Mid	2437.0	3.43	0.75	10.00	0.11	14.29	26.85	30.00	1000	15.71
High	2462.0	0.66	0.75	10.00	0.11	11.52	14.19	30.00	1000	18.48

Antenna Aux (* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2412.0	1.20	0.74	10.00	0.11	12.05	16.03	30.00	1000	17.95
Mid	2437.0	3.01	0.75	10.00	0.11	13.87	24.38	30.00	1000	16.13
High	2462.0	-0.11	0.75	10.00	0.11	10.75	11.89	30.00	1000	19.25

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

[Pre check]

Mode	Freq.	Reading Antenna Main		Reading Antenna Aux		Duty factor	Result Antenna Main + Aux		
(MCS)	[MHz]	[dBm]	[mW]	[dBm]	[mW]	[dB]	[dBm]	[mW]	
8	2437.0	3.43	2.20	3.01	2.00	0.11	6.35	4.31	Worst Rate
9	2437.0	3.25	2.11	2.22	1.67	0.22	6.00	3.98	
10	2437.0	3.12	2.05	2.19	1.66	0.31	6.00	3.98	
11	2437.0	3.06	2.02	2.02	1.59	0.37	5.95	3.94	
12	2437.0	2.78	1.90	2.03	1.60	0.53	5.96	3.95	
13	2437.0	2.73	1.87	2.05	1.60	0.65	6.06	4.04	
14	2437.0	2.71	1.87	2.07	1.61	0.68	6.09	4.07	
15	2437.0	2.65	1.84	2.05	1.60	0.73	6.10	4.07	

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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 17, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9,	worst antenna : Main	worst data mode : 0 (MCS)

(* P/M: Power Meter with power sensor)

Ch	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	2422.0	9.28	0.74	10.00	20.02	100.46	30.00	1000	9.98	
Mid	2437.0	10.77	0.75	10.00	21.52	141.91	30.00	1000	8.48	Worst Data
High	2452.0	8.59	0.75	10.00	19.34	85.90	30.00	1000	10.66	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]
Antenna Main

	Mode (MCS)	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	0	2437.0	10.77	0.75	10.00	21.52	141.91	30.00	1000	8.48	Worst Rate
Main	1	2437.0	10.16	0.75	10.00	20.91	123.31	30.00	1000	9.09	
Main	2	2437.0	10.53	0.75	10.00	21.28	134.28	30.00	1000	8.72	
Main	3	2437.0	10.55	0.75	10.00	21.30	134.90	30.00	1000	8.70	
Main	4	2437.0	10.45	0.75	10.00	21.20	131.83	30.00	1000	8.80	
Main	5	2437.0	10.41	0.75	10.00	21.16	130.62	30.00	1000	8.84	
Main	6	2437.0	10.37	0.75	10.00	21.12	129.42	30.00	1000	8.88	
Main	7	2437.0	9.99	0.75	10.00	20.74	118.58	30.00	1000	9.26	

Antenna Aux

	Mode (MCS)	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	0	2422.0	7.74	0.74	10.00	18.48	70.47	30.00	1000	11.52
Aux	0	2437.0	9.71	0.75	10.00	20.46	111.17	30.00	1000	9.54
Aux	0	2452.0	8.51	0.75	10.00	19.26	84.33	30.00	1000	10.74

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 17, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9,	worst antenna : Main	worst data mode : 0 (MCS)

(* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	2422.0	0.67	0.74	10.00	0.12	11.53	14.22	30.00	1000	18.47	
Mid	2437.0	3.31	0.75	10.00	0.12	14.18	26.18	30.00	1000	15.82	Worst Data
High	2452.0	0.01	0.75	10.00	0.12	10.88	12.25	30.00	1000	19.12	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

[Pre check]

Antenna Main

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	0	2437.0	3.31	0.75	10.00	0.12	14.18	26.18	30.00	1000	15.82	Worst Rate
Main	1	2437.0	3.06	0.75	10.00	0.22	14.03	25.29	30.00	1000	15.97	
Main	2	2437.0	2.96	0.75	10.00	0.29	14.00	25.12	30.00	1000	16.00	
Main	3	2437.0	2.75	0.75	10.00	0.51	14.01	25.18	30.00	1000	15.99	
Main	4	2437.0	2.63	0.75	10.00	0.59	13.97	24.95	30.00	1000	16.03	
Main	5	2437.0	2.58	0.75	10.00	0.66	13.99	25.06	30.00	1000	16.01	
Main	6	2437.0	2.55	0.75	10.00	0.68	13.98	25.00	30.00	1000	16.02	
Main	7	2437.0	2.52	0.75	10.00	0.74	14.01	25.18	30.00	1000	15.99	

Antenna Aux

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	0	2422.0	-0.83	0.74	10.00	0.12	10.03	10.07	30.00	1000	19.97
Aux	0	2437.0	2.03	0.75	10.00	0.12	12.90	19.50	30.00	1000	17.10
Aux	0	2452.0	0.00	0.75	10.00	0.12	10.87	12.22	30.00	1000	19.13

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 15, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9,	worst data mode :	8 (MCS)

Antenna Main + Antenna Aux

Ch	Freq.	Result Ant Main	Result Ant Aux		Result Ant Main + Ant Aux		Limit		Margin
	[MHz]	[mW]	[mW]		[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2422.0	104.95	41.40		21.65	146.35	30.00	1000	8.35
Mid	2437.0	147.23	117.49		24.23	264.72	30.00	1000	5.77
High	2452.0	101.16	38.90		21.46	140.06	30.00	1000	8.54

Worst Data

Antenna Main (* P/M: Power Meter with power sensor)

Ch	Freq.	P/M (Peak) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2422.0	9.47	0.74	10.00	20.21	104.95	30.00	1000	9.79
Mid	2437.0	10.93	0.75	10.00	21.68	147.23	30.00	1000	8.32
High	2452.0	9.30	0.75	10.00	20.05	101.16	30.00	1000	9.95

Antenna Aux (* P/M: Power Meter with power sensor)

Ch	Freq.	P/M (Peak) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2422.0	5.43	0.74	10.00	16.17	41.40	30.00	1000	13.83
Mid	2437.0	9.95	0.75	10.00	20.70	117.49	30.00	1000	9.30
High	2452.0	5.15	0.75	10.00	15.90	38.90	30.00	1000	14.10

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

Mode	Freq.	Reading Antenna Main		Reading Antenna Aux		Result Antenna Main + Aux	
(MCS)	[MHz]	[dBm]	[mW]	[dBm]	[mW]	[dBm]	[mW]
8	2437.0	10.93	12.39	9.95	9.89	13.48	22.27
9	2437.0	10.32	10.76	9.48	8.87	12.93	19.64
10	2437.0	10.29	10.69	9.27	8.45	12.82	19.14
11	2437.0	10.21	10.50	9.42	8.75	12.84	19.25
12	2437.0	10.11	10.26	9.27	8.45	12.72	18.71
13	2437.0	10.12	10.28	9.16	8.24	12.68	18.52
14	2437.0	10.06	10.14	9.01	7.96	12.58	18.10
15	2437.0	10.01	10.02	9.08	8.09	12.58	18.11

Worst Rate

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.7 Shielded Room	
Date	November 15, 2012		
Temperature / Humidity	24deg.C , 34%RH		
Engineer	Kenichi Adachi		
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9,	worst data mode :	8 (MCS)

Antenna Main + Antenna Aux

Ch	Freq.	Ant Main Result	Ant Aux Result		Result		Limit		Margin	
	[MHz]	[mW]	[mW]		[dBm]	[mW]	[dBm]	[mW]	[dB]	
Low	2422.0	18.24	6.56		13.94	24.80	30.00	1000	16.06	
Mid	2437.0	29.44	23.60		17.25	53.05	30.00	1000	12.75	Worst Data
High	2452.0	15.28	5.79		13.24	21.07	30.00	1000	16.76	

Antenna Main (* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2422.0	1.65	0.74	10.00	0.22	12.61	18.24	30.00	1000	17.39
Mid	2437.0	3.72	0.75	10.00	0.22	14.69	29.44	30.00	1000	15.31
High	2452.0	0.87	0.75	10.00	0.22	11.84	15.28	30.00	1000	18.16

Antenna Aux (* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2422.0	-2.79	0.74	10.00	0.22	8.17	6.56	30.00	1000	21.83
Mid	2437.0	2.76	0.75	10.00	0.22	13.73	23.60	30.00	1000	16.27
High	2452.0	-3.34	0.75	10.00	0.22	7.63	5.79	30.00	1000	22.37

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

[Pre check]

Mode	Freq.	Reading Antenna Main		Reading Antenna Aux		Duty factor	Result Antenna Main + Aux		
(MCS)	[MHz]	[dBm]	[mW]	[dBm]	[mW]	[dB]	[dBm]	[mW]	
8	2437.0	3.72	2.36	2.76	1.89	0.22	6.50	4.46	Worst Rate
9	2437.0	3.33	2.15	1.95	1.57	0.39	6.09	4.07	
10	2437.0	2.99	1.99	1.68	1.47	0.52	5.91	3.90	
11	2437.0	2.74	1.88	1.52	1.42	0.66	5.84	3.84	
12	2437.0	2.58	1.81	1.17	1.31	0.82	5.76	3.77	
13	2437.0	2.56	1.80	1.14	1.30	1.00	5.92	3.91	
14	2437.0	2.52	1.79	1.12	1.29	1.04	5.93	3.91	
15	2437.0	2.51	1.78	1.11	1.29	1.08	5.96	3.94	

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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 21, 2012	November 22, 2012
Temperature / Humidity	22 deg.C , 38 %RH	22 deg.C , 46 %RH
Engineer	Hikaru Shirasawa	Hikaru Shirasawa
Mode	Tx, IEEE802.11a, PN9,	worst antenna : Main worst data mode : 6 Mbps

(* P/M: Power Meter with power sensor)

Ch	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	5745.0	10.72	2.15	9.73	22.60	181.97	30.00	1000	7.40	Worst Data
Mid	5785.0	10.42	2.16	9.73	22.31	170.22	30.00	1000	7.69	
High	5825.0	10.00	2.46	9.74	22.20	165.96	30.00	1000	7.80	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]
Antenna Main

	Data rate [Mbps]	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	6	5785.0	10.42	2.16	9.73	22.31	170.22	30.00	1000	7.69	Worst Rate
Main	9	5785.0	10.31	2.16	9.73	22.20	165.96	30.00	1000	7.80	
Main	12	5785.0	10.40	2.16	9.73	22.29	169.43	30.00	1000	7.71	
Main	18	5785.0	10.31	2.16	9.73	22.20	165.96	30.00	1000	7.80	
Main	24	5785.0	10.41	2.16	9.73	22.30	169.82	30.00	1000	7.70	
Main	36	5785.0	10.27	2.16	9.73	22.16	164.44	30.00	1000	7.84	
Main	48	5785.0	10.34	2.16	9.73	22.23	167.11	30.00	1000	7.77	
Main	54	5785.0	10.36	2.16	9.73	22.25	167.88	30.00	1000	7.75	

Antenna Aux

	Data rate [Mbps]	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	6	5745.0	10.70	2.15	9.73	22.58	181.13	30.00	1000	7.42
Aux	6	5785.0	10.40	2.16	9.73	22.29	169.43	30.00	1000	7.71
Aux	6	5825.0	10.31	2.46	9.74	22.51	178.24	30.00	1000	7.49

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.		No.5 Shielded Room	
Date	November 21, 2012	November 22, 2012		
Temperature / Humidity	22 deg.C , 38 %RH	22 deg.C , 46 %RH		
Engineer	Hikaru Shirasawa	Hikaru Shirasawa		
Mode	Tx, IEEE802.11a, PN9,	worst antenna : Main	worst data mode :	6 Mbps

(* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	5745.0	6.10	2.15	9.73	0.05	18.03	63.53	30.00	1000	11.97	
Mid	5785.0	6.06	2.16	9.73	0.05	18.00	63.10	30.00	1000	12.00	
High	5825.0	5.95	2.46	9.74	0.05	18.20	66.07	30.00	1000	11.80	Worst Data

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

[Pre check]

Antenna Main

	Data rate [Mbps]	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	6	5785.0	6.06	2.16	9.73	0.05	**18.00**	63.10	30.00	1000	**12.00**	Worst Rate
Main	9	5785.0	5.84	2.16	9.73	0.10	17.83	60.67	30.00	1000	12.17	
Main	12	5785.0	5.90	2.16	9.73	0.10	17.89	61.52	30.00	1000	12.11	
Main	18	5785.0	5.88	2.16	9.73	0.15	17.92	61.94	30.00	1000	12.08	
Main	24	5785.0	5.74	2.16	9.73	0.19	17.82	60.53	30.00	1000	12.18	
Main	36	5785.0	5.65	2.16	9.73	0.29	17.83	60.67	30.00	1000	12.17	
Main	48	5785.0	5.67	2.16	9.73	0.37	17.93	62.09	30.00	1000	12.07	
Main	54	5785.0	5.60	2.16	9.73	0.40	17.89	61.52	30.00	1000	12.11	

Antenna Aux

	Data rate [Mbps]	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	6	5745.0	5.59	2.15	9.73	0.05	17.52	56.49	30.00	1000	12.48
Aux	6	5785.0	5.49	2.16	9.73	0.05	17.43	55.34	30.00	1000	12.57
Aux	6	5825.0	5.24	2.46	9.74	0.05	17.49	56.10	30.00	1000	12.51

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room		
Date	November 21, 2012	November 22, 2012		
Temperature / Humidity	22 deg.C , 38 %RH	22 deg.C , 46 %RH		
Engineer	Hikaru Shirasawa	Hikaru Shirasawa		
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9,	worst antenna :	Main	worst data mode : 0 (MCS)

(* P/M: Power Meter with power sensor)

Ch	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	5745.0	10.73	2.15	9.73	22.61	182.39	30.00	1000	7.39	Worst Data
Mid	5785.0	10.53	2.16	9.73	22.42	174.58	30.00	1000	7.58	
High	5825.0	9.88	2.46	9.74	22.08	161.44	30.00	1000	7.92	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

Antenna Main

	Mode (MCS)	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	0	5785.0	10.53	2.16	9.73	22.42	174.58	30.00	1000	7.58	Worst Rate
Main	1	5785.0	10.42	2.16	9.73	22.31	170.22	30.00	1000	7.69	
Main	2	5785.0	10.34	2.16	9.73	22.23	167.11	30.00	1000	7.77	
Main	3	5785.0	10.39	2.16	9.73	22.28	169.04	30.00	1000	7.72	
Main	4	5785.0	10.37	2.16	9.73	22.26	168.27	30.00	1000	7.74	
Main	5	5785.0	10.38	2.16	9.73	22.27	168.66	30.00	1000	7.73	
Main	6	5785.0	10.48	2.16	9.73	22.37	172.58	30.00	1000	7.63	
Main	7	5785.0	10.40	2.16	9.73	22.29	169.43	30.00	1000	7.71	

Antenna Aux

	Mode (MCS)	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	0	5745.0	10.69	2.15	9.73	22.57	180.72	30.00	1000	7.43
Aux	0	5785.0	10.52	2.16	9.73	22.41	174.18	30.00	1000	7.59
Aux	0	5825.0	10.32	2.46	9.74	22.52	178.65	30.00	1000	7.48

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.		No.5 Shielded Room	
Date	November 21, 2012	November 22, 2012		
Temperature / Humidity	22 deg.C , 38 %RH	22 deg.C , 46 %RH		
Engineer	Hikaru Shirasawa	Hikaru Shirasawa		
Mode	Tx, IEEE802.11n (HT20, Mix, Long), PN9,	worst antenna : Main	worst data mode :	0 (MCS)

(* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	5745.0	6.16	2.15	9.73	0.05	18.09	64.42	30.00	1000	11.91	Worst Data
Mid	5785.0	5.95	2.16	9.73	0.05	17.89	61.52	30.00	1000	12.11	
High	5825.0	5.77	2.46	9.74	0.05	18.02	63.39	30.00	1000	11.98	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

[Pre check]
Antenna Main

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	0	5785.0	5.95	2.16	9.73	0.05	17.89	61.52	30.00	1000	12.11	Worst Rate
Main	1	5785.0	5.60	2.16	9.73	0.10	17.59	57.41	30.00	1000	12.41	
Main	2	5785.0	5.57	2.16	9.73	0.15	17.61	57.68	30.00	1000	12.39	
Main	3	5785.0	5.51	2.16	9.73	0.20	17.60	57.54	30.00	1000	12.40	
Main	4	5785.0	5.50	2.16	9.73	0.28	17.67	58.48	30.00	1000	12.33	
Main	5	5785.0	5.45	2.16	9.73	0.37	17.71	59.02	30.00	1000	12.29	
Main	6	5785.0	5.41	2.16	9.73	0.40	17.70	58.88	30.00	1000	12.30	
Main	7	5785.0	5.33	2.16	9.73	0.43	17.65	58.21	30.00	1000	12.35	

Antenna Aux

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	0	5745.0	5.45	2.15	9.73	0.05	17.38	54.70	30.00	1000	12.62
Aux	0	5785.0	5.31	2.16	9.73	0.05	17.25	53.09	30.00	1000	12.75
Aux	0	5825.0	5.11	2.46	9.74	0.05	17.36	54.45	30.00	1000	12.64

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 21, 2012	November 22, 2012
Temperature / Humidity	22 deg.C , 38 %RH	22 deg.C , 46 %RH
Engineer	Hikaru Shirasawa	Hikaru Shirasawa
Mode	Tx, IEEE802.11n-HT20, PN9,	worst data mode : 8 (MCS)

Antenna Main + Antenna Aux

Ch	Freq.	Result Ant Main	Result Ant Aux		Result Ant Main + Ant Aux		Limit		Margin	
	[MHz]	[mW]	[mW]		[dBm]	[mW]	[dBm]	[mW]	[dB]	
Low	5745.0	142.89	119.95		24.20	262.84	30.00	1000	5.80	Worst Data
Mid	5785.0	131.83	117.22		23.96	249.05	30.00	1000	6.04	
High	5825.0	132.74	119.12		24.01	251.86	30.00	1000	5.99	

Antenna Main (* P/M: Power Meter with power sensor)

Ch	Freq.	P/M (Peak) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	5745.0	9.67	2.15	9.73	21.55	142.89	30.00	1000	8.45
Mid	5785.0	9.31	2.16	9.73	21.20	131.83	30.00	1000	8.80
High	5825.0	9.03	2.46	9.74	21.23	132.74	30.00	1000	8.77

Antenna Aux (* P/M: Power Meter with power sensor)

Ch	Freq.	P/M (Peak) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	5745.0	8.91	2.15	9.73	20.79	119.95	30.00	1000	9.21
Mid	5785.0	8.80	2.16	9.73	20.69	117.22	30.00	1000	9.31
High	5825.0	8.56	2.46	9.74	20.76	119.12	30.00	1000	9.24

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

Mode	Freq.	Reading Antenna Main		Reading Antenna Aux		Result Antenna Main + Aux		
(MCS)	[MHz]	[dBm]	[mW]	[dBm]	[mW]	[dBm]	[mW]	
8	5785.0	9.31	8.53	8.80	7.59	12.07	16.12	Worst Rate
9	5785.0	8.84	7.66	8.76	7.52	11.81	15.17	
10	5785.0	9.14	8.20	8.83	7.64	12.00	15.84	
11	5785.0	9.19	8.30	8.59	7.23	11.91	15.53	
12	5785.0	9.25	8.41	8.56	7.18	11.93	15.59	
13	5785.0	9.23	8.38	8.65	7.33	11.96	15.70	
14	5785.0	9.24	8.39	8.71	7.43	11.99	15.82	
15	5785.0	9.34	8.59	8.75	7.50	12.07	16.09	

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.		No.5 Shielded Room
Date	November 21, 2012	November 22, 2012	
Temperature / Humidity	22 deg.C , 38 %RH	22 deg.C , 46 %RH	
Engineer	Hikaru Shirasawa	Hikaru Shirasawa	
Mode	Tx, IEEE802.11n-HT20, PN9,		worst data mode : 8 (MCS)

Antenna Main + Antenna Aux

Ch	Freq.	Ant Main Result	Ant Aux Result		Result		Limit		Margin	
	[MHz]	[mW]	[mW]		[dBm]	[mW]	[dBm]	[mW]	[dB]	
Low	5745.0	42.56	22.96		18.16	65.52	30.00	1000	11.84	
Mid	5785.0	40.74	23.17		18.06	63.91	30.00	1000	11.94	
High	5825.0	42.76	23.55		18.22	66.31	30.00	1000	11.78	Worst Data

Antenna Main (* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	5745.0	4.30	2.15	9.73	0.11	16.29	42.56	30.00	1000	13.71
Mid	5785.0	4.10	2.16	9.73	0.11	16.10	40.74	30.00	1000	13.90
High	5825.0	4.00	2.46	9.74	0.11	16.31	42.76	30.00	1000	13.69

Antenna Aux (* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	5745.0	1.62	2.15	9.73	0.11	13.61	22.96	30.00	1000	16.39
Mid	5785.0	1.65	2.16	9.73	0.11	13.65	23.17	30.00	1000	16.35
High	5825.0	1.41	2.46	9.74	0.11	13.72	23.55	30.00	1000	16.28

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

[Pre check]

Mode	Freq.	Reading Antenna Main		Reading Antenna Aux		Duty factor	Result Antenna Main + Aux		
(MCS)	[MHz]	[dBm]	[mW]	[dBm]	[mW]	[dB]	[dBm]	[mW]	
8	5785.0	4.10	2.57	1.65	1.46	0.11	6.17	4.14	Worst Rate
9	5785.0	3.44	2.21	1.45	1.40	0.20	5.77	3.77	
10	5785.0	3.52	2.25	1.51	1.42	0.29	5.93	3.92	
11	5785.0	3.58	2.28	1.05	1.27	0.38	5.89	3.88	
12	5785.0	3.53	2.25	1.12	1.29	0.50	6.00	3.98	
13	5785.0	3.45	2.21	1.05	1.27	0.60	6.02	4.00	
14	5785.0	3.41	2.19	1.08	1.28	0.66	6.07	4.05	
15	5785.0	3.42	2.20	1.03	1.27	0.71	6.11	4.08	

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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room	
Date	November 21, 2012	November 22, 2012	
Temperature / Humidity	22 deg.C , 38 %RH	22 deg.C , 46 %RH	
Engineer	Hikaru Shirasawa	Hikaru Shirasawa	
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9,	worst antenna : Main	worst data mode : 0 (MCS)

(* P/M: Power Meter with power sensor)

Ch	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	5755.0	10.80	2.15	9.73	22.68	185.35	30.00	1000	7.32	Worst Data
High	5795.0	10.20	2.16	9.73	22.09	161.81	30.00	1000	7.91	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

Antenna Main

	Mode (MCS)	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	0	5755.0	10.80	2.15	9.73	**22.68**	185.35	30.00	1000	**7.32**	Worst Rate
Main	1	5755.0	10.25	2.15	9.73	22.13	163.31	30.00	1000	7.87	
Main	2	5755.0	10.35	2.15	9.73	22.23	167.11	30.00	1000	7.77	
Main	3	5755.0	10.37	2.15	9.73	22.25	167.88	30.00	1000	7.75	
Main	4	5755.0	10.35	2.15	9.73	22.23	167.11	30.00	1000	7.77	
Main	5	5755.0	10.37	2.15	9.73	22.25	167.88	30.00	1000	7.75	
Main	6	5755.0	10.45	2.15	9.73	22.33	171.00	30.00	1000	7.67	
Main	7	5755.0	10.24	2.15	9.73	22.12	162.93	30.00	1000	7.88	

Antenna Aux

	Mode (MCS)	Freq. [MHz]	P/M (Peak) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	0	5755.0	10.73	2.15	9.73	22.61	182.39	30.00	1000	7.39
Aux	0	5795.0	10.60	2.16	9.73	22.49	177.42	30.00	1000	7.51

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room	
Date	November 21, 2012	November 22, 2012	
Temperature / Humidity	22 deg.C , 38 %RH	22 deg.C , 46 %RH	
Engineer	Hikaru Shirasawa	Hikaru Shirasawa	
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9,	worst antenna : Main	worst data mode : 0 (MCS)

(* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Low	5755.0	6.06	2.15	9.73	0.11	18.05	63.83	30.00	1000	11.95	Worst Data
High	5795.0	6.03	2.16	9.73	0.11	18.03	63.53	30.00	1000	11.97	

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

[Pre check]

Antenna Main

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]	
Main	0	5755.0	6.06	2.15	9.73	0.11	**18.05**	63.83	30.00	1000	**11.95**	Worst Rate
Main	1	5755.0	5.73	2.15	9.73	0.21	17.82	60.53	30.00	1000	12.18	
Main	2	5755.0	5.62	2.15	9.73	0.29	17.79	60.12	30.00	1000	12.21	
Main	3	5755.0	5.44	2.15	9.73	0.38	17.70	58.88	30.00	1000	12.30	
Main	4	5755.0	5.39	2.15	9.73	0.52	17.79	60.12	30.00	1000	12.21	
Main	5	5755.0	5.28	2.15	9.73	0.63	17.79	60.12	30.00	1000	12.21	
Main	6	5755.0	5.31	2.15	9.73	0.68	17.87	61.24	30.00	1000	12.13	
Main	7	5755.0	5.28	2.15	9.73	0.74	17.90	61.66	30.00	1000	12.10	

Antenna Aux

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
Aux	0	5755.0	5.50	2.15	9.73	0.11	17.49	56.10	30.00	1000	12.51
Aux	0	5795.0	5.42	2.16	9.73	0.11	17.42	55.21	30.00	1000	12.58

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss + Duty factor

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Maximum Peak Conducted Output Power

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	November 21, 2012	November 22, 2012
Temperature / Humidity	22 deg.C , 38 %RH	22 deg.C , 46 %RH
Engineer	Hikaru Shirasawa	Hikaru Shirasawa
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9,	worst data mode : 8 (MCS)

Antenna Main + Antenna Aux

Ch	Freq.	Result Ant Main	Result Ant Aux		Result Ant Main + Ant Aux		Limit		Margin	
	[MHz]	[mW]	[mW]		[dBm]	[mW]	[dBm]	[mW]	[dB]	
Low	5755.0	141.25	129.12		24.32	270.38	30.00	1000	5.68	Worst Data
High	5795.0	132.43	127.64		24.15	260.08	30.00	1000	5.85	

Antenna Main (* P/M: Power Meter with power sensor)

Ch	Freq.	P/M (Peak) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	5755.0	9.62	2.15	9.73	21.50	141.25	30.00	1000	8.50
High	5795.0	9.33	2.16	9.73	21.22	132.43	30.00	1000	8.78

Antenna Aux (* P/M: Power Meter with power sensor)

Ch	Freq.	P/M (Peak) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	5755.0	9.23	2.15	9.73	21.11	129.12	30.00	1000	8.89
High	5795.0	9.17	2.16	9.73	21.06	127.64	30.00	1000	8.94

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

Mode	Freq.	Reding Antenna Main		Reding Antenna Aux		Result Antenna Main + Aux		
(MCS)	[MHz]	[dBm]	[mW]	[dBm]	[mW]	[dBm]	[mW]	
8	5755.0	9.62	9.16	9.23	8.38	12.44	17.54	Worst Rate
9	5755.0	9.36	8.63	8.67	7.36	12.04	15.99	
10	5755.0	9.41	8.73	8.75	7.50	12.10	16.23	
11	5755.0	9.52	8.95	8.87	7.71	12.22	16.66	
12	5755.0	9.55	9.02	8.81	7.60	12.21	16.62	
13	5755.0	9.44	8.79	8.84	7.66	12.16	16.45	
14	5755.0	9.59	9.10	8.93	7.82	12.28	16.92	
15	5755.0	9.54	8.99	9.15	8.22	12.36	17.22	

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Average Conducted Output Power (Reference Data)

(Option 3)

Test place	UL Japan, Inc. Shonan EMC Lab.		No.5 Shielded Room
Date	November 21, 2012	November 22, 2012	
Temperature / Humidity	22 deg.C , 38 %RH	22 deg.C , 46 %RH	
Engineer	Hikaru Shirasawa	Hikaru Shirasawa	
Mode	Tx, 11n (HT40, Wide, Mix, Long), PN9,		worst data mode : 8 (MCS)

Antenna Main + Antenna Aux

Ch	Freq.	Ant Main Result	Ant Aux Result		Result		Limit		Margin	
	[MHz]	[mW]	[mW]		[dBm]	[mW]	[dBm]	[mW]	[dB]	
Low	5755.0	37.07	26.36		18.02	63.43	30.00	1000	11.98	Worst Data
High	5795.0	35.56	27.23		17.98	62.79	30.00	1000	12.02	

Antenna Main (* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	5755.0	3.60	2.15	9.73	0.21	15.69	37.07	30.00	1000	14.31
High	5795.0	3.41	2.16	9.73	0.21	15.51	35.56	30.00	1000	14.49

Antenna Aux (* P/M: Power Meter with power sensor, AV: Average)

Ch	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	5755.0	2.12	2.15	9.73	0.21	14.21	26.36	30.00	1000	15.79
High	5795.0	2.25	2.16	9.73	0.21	14.35	27.23	30.00	1000	15.65

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

Mode	Freq.	Reding Antenna Main		Reding Antenna Aux		Duty factor	Result Antenna Main + Aux		
(MCS)	[MHz]	[dBm]	[mW]	[dBm]	[mW]	[dB]	[dBm]	[mW]	
8	5755.0	3.60	2.29	2.12	1.63	0.21	6.14	4.11	Worst Rate
9	5755.0	3.13	2.06	1.48	1.41	0.36	5.75	3.76	
10	5755.0	2.97	1.98	1.15	1.30	0.53	5.69	3.71	
11	5755.0	2.82	1.91	1.07	1.28	0.64	5.68	3.70	
12	5755.0	2.74	1.88	0.88	1.22	0.82	5.74	3.75	
13	5755.0	2.72	1.87	0.99	1.26	0.93	5.88	3.87	
14	5755.0	2.68	1.85	1.10	1.29	1.04	6.01	3.99	
15	5755.0	2.65	1.84	1.02	1.26	1.05	5.97	3.95	

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2412 MHz	

Tx, IEEE802.11b, PN9, worst antenna port Main, worst data mode 1Mbps

(* 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.	2390.000	PK	51.8	27.4	14.2	41.4	52.0	73.9	21.9	100	302	
Hori.	4824.000	PK	51.1	31.1	6.8	41.2	47.8	73.9	26.1	100	74	
Hori.	7236.000	PK	47.9	36.6	8.5	41.4	51.6	73.9	22.3	100	0	
Hori.	2390.000	AV	39.5	27.4	14.2	41.4	39.7	53.9	14.2	100	302	
Hori.	4824.000	AV	45.3	31.1	6.8	41.2	42.0	53.9	11.9	100	74	
Hori.	7236.000	AV	38.1	36.6	8.5	41.4	41.8	53.9	12.1	100	0	
Vert.	2390.000	PK	50.1	27.4	14.2	41.4	50.3	73.9	23.6	100	314	
Vert.	4824.000	PK	51.7	31.1	6.8	41.2	48.4	73.9	25.5	100	299	
Vert.	7236.000	PK	47.4	36.6	8.5	41.4	51.1	73.9	22.8	100	0	
Vert.	2390.000	AV	38.5	27.4	14.2	41.4	38.7	53.9	15.2	100	314	
Vert.	4824.000	AV	47.3	31.1	6.8	41.2	44.0	53.9	**9.9**	100	299	
Vert.	7236.000	AV	38.4	36.6	8.5	41.4	42.1	53.9	11.8	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2412.000	PK	95.4	27.5	14.2	41.4	95.7	-	-	Carrier
Hori.	2397.294	PK	58.6	27.4	14.2	41.4	58.8	75.7	16.9	
Hori.	2400.000	PK	55.8	27.4	14.2	41.4	56.0	75.7	19.7	
Vert.	2412.000	PK	94.7	27.5	14.2	41.4	95.0	-	-	Carrier
Vert.	2397.294	PK	58.6	27.4	14.2	41.4	58.8	75.0	16.2	
Vert.	2400.000	PK	54.8	27.4	14.2	41.4	55.0	75.0	20.0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2437 MHz	

Tx, IEEE802.11b, PN9, worst antenna port Main, worst data mode 1Mbps

(* 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.	4874.000	PK	49.2	31.3	6.9	41.1	46.3	73.9	27.6	100	74	
Hori.	7311.000	PK	47.5	36.6	8.6	41.4	51.3	73.9	22.6	100	0	
Hori.	4874.000	AV	42.6	31.3	6.9	41.1	39.7	53.9	14.2	100	74	
Hori.	7311.000	AV	37.9	36.6	8.6	41.4	41.7	53.9	12.2	100	0	
Vert.	4874.000	PK	50.4	31.3	6.9	41.1	47.5	73.9	26.4	105	300	
Vert.	7311.000	PK	47.0	36.6	8.6	41.4	50.8	73.9	23.1	100	0	
Vert.	4874.000	AV	45.6	31.3	6.9	41.1	42.7	53.9	**11.2**	105	300	
Vert.	7311.000	AV	37.6	36.6	8.6	41.4	41.4	53.9	12.5	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2462 MHz	

Tx, IEEE802.11b, PN9, worst antenna port Main, worst data mode 1Mbps

(* 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.	2483.500	PK	51.4	27.5	14.3	41.4	51.8	73.9	22.1	124	43	
Hori.	2484.700	PK	51.4	27.5	14.3	41.4	51.8	73.9	22.1	124	43	
Hori.	4924.000	PK	47.3	31.5	6.9	41.0	44.7	73.9	29.2	100	46	
Hori.	7386.000	PK	47.2	36.7	8.7	41.5	51.1	73.9	22.8	100	0	
Hori.	2483.500	AV	39.9	27.5	14.3	41.4	40.3	53.9	13.6	124	43	
Hori.	2484.700	AV	39.4	27.5	14.3	41.4	39.8	53.9	14.1	124	43	
Hori.	4924.000	AV	38.3	31.5	6.9	41.0	35.7	53.9	18.2	100	46	
Hori.	7386.000	AV	37.6	36.7	8.7	41.5	41.5	53.9	**12.4**	100	0	
Vert.	2483.500	PK	51.0	27.5	14.3	41.4	51.4	73.9	22.5	124	284	
Vert.	2484.700	PK	50.2	27.5	14.3	41.4	50.6	73.9	23.3	124	284	
Vert.	4924.000	PK	48.7	31.5	6.9	41.0	46.1	73.9	27.8	152	307	
Vert.	7386.000	PK	46.4	36.7	8.7	41.5	50.3	73.9	23.6	100	0	
Vert.	2483.500	AV	39.7	27.5	14.3	41.4	40.1	53.9	13.8	124	284	
Vert.	2484.700	AV	38.0	27.5	14.3	41.4	38.4	53.9	15.5	124	284	
Vert.	4924.000	AV	41.4	31.5	6.9	41.0	38.8	53.9	15.1	152	307	
Vert.	7386.000	AV	37.6	36.7	8.7	41.5	41.5	53.9	**12.4**	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2412 MHz	

Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	2390.000	PK	60.2	27.4	14.2	41.4	60.4	73.9	13.5	100	302	
Hori.	4824.000	PK	46.9	31.1	6.8	41.2	43.6	73.9	30.3	100	75	
Hori.	7236.000	PK	48.2	36.6	8.5	41.4	51.9	73.9	22.0	100	0	
Hori.	2390.000	AV	44.6	27.4	14.2	41.4	44.8	53.9	**9.1**	100	302	
Hori.	4824.000	AV	37.5	31.1	6.8	41.2	34.2	53.9	19.7	100	75	
Hori.	7236.000	AV	38.2	36.6	8.5	41.4	41.9	53.9	12.0	100	0	
Vert.	2390.000	PK	58.9	27.4	14.2	41.4	59.1	73.9	14.8	100	316	
Vert.	4824.000	PK	47.1	31.1	6.8	41.2	43.8	73.9	30.1	100	298	
Vert.	7236.000	PK	47.3	36.6	8.5	41.4	51.0	73.9	22.9	100	0	
Vert.	2390.000	AV	43.7	27.4	14.2	41.4	43.9	53.9	10.0	100	316	
Vert.	4824.000	AV	37.7	31.1	6.8	41.2	34.4	53.9	19.5	100	298	
Vert.	7236.000	AV	38.2	36.6	8.5	41.4	41.9	53.9	12.0	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2412.000	PK	91.7	27.5	14.2	41.4	92.0	-	-	Carrier
Hori.	2400.000	PK	56.6	27.4	14.2	41.4	56.8	72.0	15.2	
Vert.	2412.000	PK	91.9	27.5	14.2	41.4	92.2	-	-	Carrier
Vert.	2400.000	PK	56.3	27.4	14.2	41.4	56.5	72.2	15.7	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012	December 2, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH	23deg.C, 30 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Kenichi Adachi
Mode	Tx, 2437 MHz		

Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	82.118	QP	43.8	6.8	7.5	32.2	25.9	40.0	14.1	225	214	
Hori.	149.248	QP	43.2	14.8	7.7	32.1	33.6	43.5	9.9	198	319	
Hori.	179.253	QP	41.6	15.8	7.8	32.1	33.1	43.5	10.4	194	176	
Hori	313.662	QP	32.5	14.3	8.6	32.0	23.4	46.0	22.6	100	284	
Hori.	4874.000	PK	47.0	31.3	6.9	41.1	44.1	73.9	29.8	100	76	
Hori.	7311.000	PK	47.3	36.6	8.6	41.4	51.1	73.9	22.8	100	0	
Hori.	4874.000	AV	37.4	31.3	6.9	41.1	34.5	53.9	19.4	100	76	
Hori.	7311.000	AV	37.8	36.6	8.6	41.4	41.6	53.9	12.3	100	0	
Vert.	32.251	QP	34.2	17.1	6.5	32.2	25.6	40.0	14.4	100	75	
Vert.	82.118	QP	50.5	6.8	7.5	32.2	32.6	40.0	**7.4**	100	263	
Vert.	149.248	QP	42.8	14.8	7.7	32.1	33.2	43.5	10.3	100	73	
Vert.	179.253	QP	39.8	15.8	7.8	32.1	31.3	43.5	12.2	100	344	
Vert.	313.662	QP	31.4	14.3	8.6	32.0	22.3	46.0	23.7	100	296	
Vert.	4874.000	PK	46.6	31.3	6.9	41.1	43.7	73.9	30.2	112	300	
Vert.	7311.000	PK	46.9	36.6	8.6	41.4	50.7	73.9	23.2	100	0	
Vert.	4874.000	AV	38.3	31.3	6.9	41.1	35.4	53.9	18.5	112	300	
Vert.	7311.000	AV	37.8	36.6	8.6	41.4	41.6	53.9	12.3	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2462 MHz	

Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	2483.500	PK	57.9	27.5	14.3	41.4	58.3	73.9	15.6	207	78	
Hori.	4924.000	PK	47.6	31.5	6.9	41.0	45.0	73.9	28.9	100	74	
Hori.	7386.000	PK	48.9	36.7	8.7	41.5	52.8	73.9	21.1	100	0	
Hori.	2483.500	AV	43.6	27.5	14.3	41.4	44.0	53.9	9.9	207	78	
Hori.	4924.000	AV	36.9	31.5	6.9	41.0	34.3	53.9	19.6	100	74	
Hori.	7386.000	AV	37.7	36.7	8.7	41.5	41.6	53.9	12.3	100	0	
Vert.	2483.500	PK	58.6	27.5	14.3	41.4	59.0	73.9	14.9	120	283	
Vert.	4924.000	PK	47.0	31.5	6.9	41.0	44.4	73.9	29.5	100	304	
Vert.	7386.000	PK	48.2	36.7	8.7	41.5	52.1	73.9	21.8	100	0	
Vert.	2483.500	AV	44.9	27.5	14.3	41.4	45.3	53.9	**8.6**	120	283	
Vert.	4924.000	AV	37.4	31.5	6.9	41.0	34.8	53.9	19.1	100	304	
Vert.	7386.000	AV	38.0	36.7	8.7	41.5	41.9	53.9	12.0	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2412 MHz	
	Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst data mode 8(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.	2390.000	PK	57.0	27.4	14.2	41.4		57.2	73.9	16.7	172	299	
Hori.	4824.000	PK	47.2	31.1	6.8	41.2		43.9	73.9	30.0	100	75	
Hori.	7236.000	PK	47.9	36.6	8.5	41.4		51.6	73.9	22.3	100	0	
Vert.	2390.000	PK	59.3	27.4	14.2	41.4		59.5	73.9	14.4	161	308	
Vert.	4824.000	PK	46.6	31.1	6.8	41.2		43.3	73.9	30.6	112	10	
Vert.	7236.000	PK	46.9	36.6	8.5	41.4		50.6	73.9	23.3	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2390.000	AV	45.0	27.4	14.2	41.4	0.2	45.4	53.9	8.5	172	299	
Hori.	4824.000	AV	37.3	31.1	6.8	41.2	0.2	34.2	53.9	19.7	100	75	
Hori.	7236.000	AV	38.3	36.6	8.5	41.4	0.2	42.2	53.9	11.7	100	0	
Vert.	2390.000	AV	46.5	27.4	14.2	41.4	0.2	46.9	53.9	**7.0**	161	308	
Vert.	4824.000	AV	37.8	31.1	6.8	41.2	0.2	34.7	53.9	19.2	112	10	
Vert.	7236.000	AV	38.3	36.6	8.5	41.4	0.2	42.2	53.9	11.7	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]		Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2412.000	PK	95.3	27.5	14.2	41.4		95.6	-	-	Carrier
Hori.	2400.000	PK	58.6	27.4	14.2	41.4		58.8	75.6	16.8	
Vert.	2412.000	PK	97.1	27.5	14.2	41.4		97.4	-	-	Carrier
Vert.	2400.000	PK	60.0	27.4	14.2	41.4		60.2	77.4	17.2	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2437 MHz	
	Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst data mode 8(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.	4874.000	PK	46.6	31.3	6.9	41.1		43.7	73.9	30.2	100	68	
Hori.	7311.000	PK	47.4	36.6	8.6	41.4		51.2	73.9	22.7	100	0	
Vert.	4874.000	PK	48.8	31.3	6.9	41.1		45.9	73.9	28.0	113	300	
Vert.	7311.000	PK	47.1	36.6	8.6	41.4		50.9	73.9	23.0	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	4874.000	AV	37.3	31.3	6.9	41.1	0.2	34.6	53.9	19.3	100	68	
Hori.	7311.000	AV	37.5	36.6	8.6	41.4	0.2	41.5	53.9	12.4	100	0	
Vert.	4874.000	AV	37.7	31.3	6.9	41.1	0.2	35.0	53.9	18.9	113	300	
Vert.	7311.000	AV	37.7	36.6	8.6	41.4	0.2	41.7	53.9	**12.2**	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2462 MHz	
	Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst data mode 8(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.	2483.500	PK	55.2	27.5	14.3	41.4		55.6	73.9	18.3	100	298	
Hori.	4924.000	PK	46.2	31.5	6.9	41.0		43.6	73.9	30.3	100	0	
Hori.	7386.000	PK	47.5	36.7	8.7	41.5		51.4	73.9	22.5	100	0	
Vert.	2483.500	PK	54.3	27.5	14.3	41.4		54.7	73.9	19.2	100	178	
Vert.	4924.000	PK	47.2	31.5	6.9	41.0		44.6	73.9	29.3	100	306	
Vert.	7386.000	PK	46.0	36.7	8.7	41.5		49.9	73.9	24.0	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2483.500	AV	42.9	27.5	14.3	41.4	0.2	43.5	53.9	10.4	100	298	
Hori.	4924.000	AV	36.9	31.5	6.9	41.0	0.2	34.5	53.9	19.4	100	0	
Hori.	7386.000	AV	37.9	36.7	8.7	41.5	0.2	42.0	53.9	11.9	100	0	
Vert.	2483.500	AV	43.3	27.5	14.3	41.4	0.2	43.9	53.9	**10.0**	100	178	
Vert.	4924.000	AV	37.0	31.5	6.9	41.0	0.2	34.6	53.9	19.3	100	306	
Vert.	7386.000	AV	37.9	36.7	8.7	41.5	0.2	42.0	53.9	11.9	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2422 MHz	

Tx, 11n (HT40, Wide, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	2390.000	PK	60.6	27.4	14.2	41.4		60.8	73.9	13.1	100	300	
Hori.	4844.000	PK	45.9	31.2	6.8	41.1		42.8	73.9	31.1	100	0	
Hori.	7266.000	PK	46.5	36.6	8.5	41.4		50.2	73.9	23.7	100	0	
Vert.	2390.000	PK	59.5	27.4	14.2	41.4		59.7	73.9	14.2	100	315	
Vert.	4844.000	PK	46.8	31.2	6.8	41.1		43.7	73.9	30.2	100	13	
Vert.	7266.000	PK	47.1	36.6	8.5	41.4		50.8	73.9	23.1	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2390.000	AV	47.5	27.4	14.2	41.4	0.2	47.9	53.9	**6.0**	100	300	
Hori.	4844.000	AV	37.0	31.2	6.8	41.1	0.2	34.1	53.9	19.8	100	0	
Hori.	7266.000	AV	38.0	36.6	8.5	41.4	0.2	41.9	53.9	12.0	100	0	
Vert.	2390.000	AV	46.7	27.4	14.2	41.4	0.2	47.1	53.9	6.8	100	315	
Vert.	4844.000	AV	37.7	31.2	6.8	41.1	0.2	34.8	53.9	19.1	100	13	
Vert.	7266.000	AV	38.0	36.6	8.5	41.4	0.2	41.9	53.9	12.0	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]		Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2422.000	PK	86.0	27.5	14.2	41.4		86.3	-	-	Carrier
Hori.	2400.000	PK	51.6	27.4	14.2	41.4		51.8	66.3	14.5	
Vert.	2422.000	PK	86.8	27.5	14.2	41.4		87.1	-	-	Carrier
Vert.	2400.000	PK	51.5	27.4	14.2	41.4		51.7	67.1	15.4	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2437 MHz	

Tx, 11n (HT40, Wide, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	4874.000	PK	46.2	31.3	6.9	41.1		43.3	73.9	30.6	100	0	
Hori.	7311.000	PK	47.0	36.6	8.6	41.4		50.8	73.9	23.1	100	0	
Vert.	4874.000	PK	47.2	31.3	6.9	41.1		44.3	73.9	29.6	104	301	
Vert.	7311.000	PK	47.6	36.6	8.6	41.4		51.4	73.9	22.5	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	4874.000	AV	36.8	31.3	6.9	41.1	0.2	34.1	53.9	19.8	100	0	
Hori.	7311.000	AV	37.5	36.6	8.6	41.4	0.2	41.5	53.9	12.4	100	0	
Vert.	4874.000	AV	37.4	31.3	6.9	41.1	0.2	34.7	53.9	19.2	104	301	
Vert.	7311.000	AV	37.7	36.6	8.6	41.4	0.2	41.7	53.9	**12.2**	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2452 MHz	

Tx, 11n (HT40, Wide, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	2483.500	PK	58.5	27.5	14.3	41.4		58.9	73.9	15.0	211	79	
Hori.	4904.000	PK	46.6	31.4	6.9	41.0		43.9	73.9	30.0	100	0	
Hori.	7356.000	PK	47.2	36.6	8.7	41.5		51.0	73.9	22.9	100	0	
Vert.	2483.500	PK	59.5	27.5	14.3	41.4		59.9	73.9	14.0	119	284	
Vert.	4904.000	PK	47.2	31.4	6.9	41.0		44.5	73.9	29.4	121	304	
Vert.	7356.000	PK	47.5	36.6	8.7	41.5		51.3	73.9	22.6	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2483.500	AV	45.5	27.5	14.3	41.4	0.2	46.1	53.9	7.8	211	79	
Hori.	4904.000	AV	37.0	31.4	6.9	41.0	0.2	34.5	53.9	19.4	100	0	
Hori.	7356.000	AV	38.0	36.6	8.7	41.5	0.2	42.0	53.9	11.9	100	0	
Vert.	2483.500	AV	47.2	27.5	14.3	41.4	0.2	47.8	53.9	**6.1**	119	284	
Vert.	4904.000	AV	37.6	31.4	6.9	41.0	0.2	35.1	53.9	18.8	121	304	
Vert.	7356.000	AV	38.0	36.6	8.7	41.5	0.2	42.0	53.9	11.9	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2422 MHz	
	Tx, 11n (HT40, Wide, Mix, Long), PN9, worst data mode 8(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.	2390.000	PK	56.9	27.4	14.2	41.4		57.1	73.9	16.8	100	0	
Hori.	4844.000	PK	45.1	31.2	6.8	41.1		42.0	73.9	31.9	100	0	
Hori.	7266.000	PK	48.1	36.6	8.5	41.4		51.8	73.9	22.1	100	0	
Vert.	2390.000	PK	57.2	27.4	14.2	41.4		57.4	73.9	16.5	100	178	
Vert.	4844.000	PK	46.3	31.2	6.8	41.1		43.2	73.9	30.7	100	0	
Vert.	7266.000	PK	46.8	36.6	8.5	41.4		50.5	73.9	23.4	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2390.000	AV	42.3	27.4	14.2	41.4	0.4	42.9	53.9	**11.0**	100	0	
Hori.	4844.000	AV	37.2	31.2	6.8	41.1	0.4	34.5	53.9	19.4	100	0	
Hori.	7266.000	AV	38.3	36.6	8.5	41.4	0.4	42.4	53.9	11.5	100	0	
Vert.	2390.000	AV	42.1	27.4	14.2	41.4	0.4	42.7	53.9	11.2	100	178	
Vert.	4844.000	AV	37.3	31.2	6.8	41.1	0.4	34.6	53.9	19.3	100	0	
Vert.	7266.000	AV	37.9	36.6	8.5	41.4	0.4	42.0	53.9	11.9	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]		Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2422.000	PK	87.6	27.5	14.2	41.4		87.9	-	-	Carrier
Hori.	2400.000	PK	46.9	27.4	14.2	41.4		47.1	67.9	20.8	
Vert.	2422.000	PK	88.8	27.5	14.2	41.4		89.1	-	-	Carrier
Vert.	2400.000	PK	46.2	27.4	14.2	41.4		46.4	69.1	22.7	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012	December 2, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH	23deg.C, 30 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Kenichi Adachi
Mode	Tx, 2437 MHz		

Tx, 11n (HT40, Wide, Mix, Long), PN9, worst data mode 8(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.	82.112	QP	43.4	6.8	7.5	32.2		25.5	40.0	14.5	222	219	
Hori.	149.252	QP	43.0	14.8	7.7	32.1		33.4	43.5	10.1	197	321	
Hori.	179.251	QP	41.4	15.8	7.8	32.1		32.9	43.5	10.6	192	181	
Hori.	313.671	QP	32.6	14.3	8.6	32.0		23.5	46.0	22.5	100	281	
Hori.	4874.000	PK	44.9	31.3	6.9	41.1		42.0	73.9	31.9	100	0	
Hori.	7311.000	PK	47.4	36.6	8.6	41.4		51.2	73.9	22.7	100	0	
Vert.	32.248	QP	34.3	17.1	6.5	32.2		25.7	40.0	14.3	100	82	
Vert.	82.112	QP	50.3	6.8	7.5	32.2		32.4	40.0	**7.6**	100	259	
Vert.	149.252	QP	42.7	14.8	7.7	32.1		33.1	43.5	10.4	100	78	
Vert.	179.251	QP	39.9	15.8	7.8	32.1		31.4	43.5	12.1	100	341	
Vert.	313.671	QP	31.2	14.3	8.6	32.0		22.1	46.0	23.9	100	298	
Vert.	4874.000	PK	46.7	31.3	6.9	41.1		43.8	73.9	30.1	100	0	
Vert.	7311.000	PK	46.5	36.6	8.6	41.4		50.3	73.9	23.6	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	4874.000	AV	36.8	31.3	6.9	41.1	0.4	34.3	53.9	19.6	100	0	
Hori.	7311.000	AV	37.6	36.6	8.6	41.4	0.4	41.8	53.9	12.1	100	0	
Vert.	4874.000	AV	36.9	31.3	6.9	41.1	0.4	34.4	53.9	19.5	100	0	
Vert.	7311.000	AV	37.6	36.6	8.6	41.4	0.4	41.8	53.9	12.1	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	November 23, 2012	November 25, 2012
Temperature / Humidity	23deg.C, 38 %RH	22deg.C, 33 %RH
Engineer	Tatsuya Arai	Shinichi Takano
Mode	Tx, 2452 MHz	
	Tx, 11n (HT40, Wide, Mix, Long), PN9, worst data mode 8(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.	2483.500	PK	54.7	27.5	14.3	41.4		55.1	73.9	18.8	100	300	
Hori.	4904.000	PK	47.1	31.4	6.9	41.0		44.4	73.9	29.5	100	0	
Hori.	7356.000	PK	47.1	36.6	8.7	41.5		50.9	73.9	23.0	100	0	
Vert.	2483.500	PK	54.5	27.5	14.3	41.4		54.9	73.9	19.0	100	177	
Vert.	4904.000	PK	47.5	31.4	6.9	41.0		44.8	73.9	29.1	100	0	
Vert.	7356.000	PK	46.2	36.6	8.7	41.5		50.0	73.9	23.9	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2483.500	AV	41.1	27.5	14.3	41.4	0.4	41.9	53.9	12.0	100	300	
Hori.	4904.000	AV	37.2	31.4	6.9	41.0	0.4	34.9	53.9	19.0	100	0	
Hori.	7356.000	AV	37.9	36.6	8.7	41.5	0.4	42.1	53.9	11.8	100	0	
Vert.	2483.500	AV	41.4	27.5	14.3	41.4	0.4	42.2	53.9	**11.7**	100	177	
Vert.	4904.000	AV	37.2	31.4	6.9	41.0	0.4	34.9	53.9	19.0	100	0	
Vert.	7356.000	AV	38.0	36.6	8.7	41.5	0.4	42.2	53.9	**11.7**	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber
Date	November 24, 2012	November 27, 2012	November 28, 2012
Temperature / Humidity	22deg.C, 36 %RH	25deg.C, 39 %RH	24deg.C, 35 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Shinichi Takano
Mode	Tx, 5745 MHz		

Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	11490.000	PK	44.3	40.1	9.8	39.5	54.7	73.9	19.2	100	0	
Hori.	17235.000	PK	44.2	42.5	2.7	39.5	49.9	73.9	24.0	100	0	
Hori.	11490.000	AV	35.6	40.1	9.8	39.5	46.0	53.9	7.9	100	0	
Hori.	17235.000	AV	35.6	42.5	2.7	39.5	41.3	53.9	12.6	100	0	
Vert.	11490.000	PK	46.0	40.1	9.8	39.5	56.4	73.9	17.5	126	299	
Vert.	17235.000	PK	45.2	42.5	2.7	39.5	50.9	73.9	23.0	100	0	
Vert.	11490.000	AV	36.4	40.1	9.8	39.5	46.8	53.9	**7.1**	126	299	
Vert.	17235.000	AV	35.9	42.5	2.7	39.5	41.6	53.9	12.3	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5745.000	PK	80.8	32.7	16.7	40.2	90.0	-	-	Carrier
Hori.	5725.000	PK	49.2	32.6	16.7	40.2	58.3	70.0	11.7	
Vert.	5745.000	PK	87.7	32.7	16.7	40.2	96.9	-	-	Carrier
Vert.	5725.000	PK	54.2	32.6	16.7	40.2	63.3	76.9	13.6	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber
Date	November 24, 2012	November 27, 2012	November 28, 2012
Temperature / Humidity	22deg.C, 36 %RH	25deg.C, 39 %RH	24deg.C, 35 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Shinichi Takano
Mode	Tx, 5785 MHz		

Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	11570.000	PK	44.7	40.0	9.8	39.5	55.0	73.9	18.9	100	0	
Hori.	17355.000	PK	45.2	43.2	2.6	39.5	51.5	73.9	22.4	100	0	
Hori.	11570.000	AV	35.2	40.0	9.8	39.5	45.5	53.9	8.4	100	0	
Hori.	17355.000	AV	36.3	43.2	2.6	39.5	42.6	53.9	11.3	100	0	
Vert.	11570.000	PK	45.4	40.0	9.8	39.5	55.7	73.9	18.2	134	303	
Vert.	17355.000	PK	44.9	43.2	2.6	39.5	51.2	73.9	22.7	100	0	
Vert.	11570.000	AV	36.4	40.0	9.8	39.5	46.7	53.9	**7.2**	134	303	
Vert.	17355.000	AV	36.2	43.2	2.6	39.5	42.5	53.9	11.4	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber
Date	November 24, 2012	November 27, 2012	November 28, 2012
Temperature / Humidity	22deg.C, 36 %RH	25deg.C, 39 %RH	24deg.C, 35 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Shinichi Takano
Mode	Tx, 5825 MHz		

Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	11650.000	PK	44.1	39.9	9.8	39.5	54.3	73.9	19.6	100	0	
Hori.	17475.000	PK	46.5	43.9	2.6	39.5	53.5	73.9	20.4	100	0	
Hori.	11650.000	AV	34.7	39.9	9.8	39.5	44.9	53.9	9.0	100	0	
Hori.	17475.000	AV	36.3	43.9	2.6	39.5	43.3	53.9	10.6	100	0	
Vert.	11650.000	PK	45.2	39.9	9.8	39.5	55.4	73.9	18.5	132	303	
Vert.	17475.000	PK	45.3	43.9	2.6	39.5	52.3	73.9	21.6	100	0	
Vert.	11650.000	AV	35.3	39.9	9.8	39.5	45.5	53.9	**8.4**	132	303	
Vert.	17475.000	AV	36.2	43.9	2.6	39.5	43.2	53.9	10.5	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5825.000	PK	86.0	32.9	16.7	40.3	95.3	-	-	Carrier
Hori.	5850.000	PK	45.7	33.0	16.7	40.3	55.1	75.3	20.2	
Vert.	5825.000	PK	88.6	32.9	16.7	40.3	97.9	-	-	Carrier
Vert.	5850.000	PK	47.6	33.0	16.7	40.3	57.0	77.9	20.9	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber	
Date	November 24, 2012	November 27, 2012	November 28, 2012	December 2, 2012
Temperature / Humidity	22deg.C, 36 %RH	25deg.C, 39 %RH	24deg.C, 35 %RH	23deg.C, 30 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Shinichi Takano	Kenichi Adachi
Mode	Tx, 5745 MHz			
	Tx, IEEE802.11n-HT20, PN9, worst data mode 8(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.	82.117	QP	43.3	6.8	7.5	32.2		25.4	40.0	14.6	221	215	
Hori.	149.244	QP	42.9	14.8	7.7	32.1		33.3	43.5	10.2	200	313	
Hori.	179.258	QP	41.4	15.8	7.8	32.1		32.9	43.5	10.6	192	173	
Hori.	313.441	QP	32.6	14.3	8.6	32.0		23.5	46.0	22.5	100	280	
Hori.	11490.000	PK	45.0	40.1	9.8	39.5		55.4	73.9	18.5	100	0	
Hori.	17235.000	PK	45.7	42.5	2.7	39.5		51.4	73.9	22.5	100	0	
Vert.	32.261	QP	34.4	17.1	6.5	32.2		25.8	40.0	14.2	100	72	
Vert.	82.117	QP	50.4	6.8	7.5	32.2		32.5	40.0	7.5	100	273	
Vert.	149.244	QP	42.6	14.8	7.7	32.1		33.0	43.5	10.5	100	79	
Vert.	179.258	QP	31.5	15.8	7.8	32.1		23.0	43.5	20.5	100	348	
Vert.	313.441	QP	31.3	14.3	8.6	32.0		22.2	46.0	23.8	100	290	
Vert.	11490.000	PK	46.5	40.1	9.8	39.5		56.9	73.9	17.0	117	297	
Vert.	17235.000	PK	45.4	42.5	2.7	39.5		51.1	73.9	22.8	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11490.000	AV	35.5	40.1	9.8	39.5	0.2	46.1	53.9	7.8	100	0	
Hori.	17235.000	AV	36.1	42.5	2.7	39.5	0.2	42.0	53.9	11.9	100	0	
Vert.	11490.000	AV	36.6	40.1	9.8	39.5	0.2	47.2	53.9	**6.7**	117	297	
Vert.	17235.000	AV	36.2	42.5	2.7	39.5	0.2	42.1	53.9	11.8	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]		Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5745.000	PK	86.8	32.7	16.7	40.2		96.0	-	-	Carrier
Hori.	5725.000	PK	47.3	32.6	16.7	40.2		56.4	76.0	19.6	
Vert.	5745.000	PK	88.5	32.7	16.7	40.2		97.7	-	-	Carrier
Vert.	5725.000	PK	53.1	32.6	16.7	40.2		62.2	77.7	15.5	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber
Date	November 24, 2012	November 27, 2012	November 28, 2012
Temperature / Humidity	22deg.C, 36 %RH	25deg.C, 39 %RH	24deg.C, 35 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Shinichi Takano
Mode	Tx, 5785 MHz		
	Tx, IEEE802.11n-HT20, PN9, worst data mode 8(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.	11570.000	PK	44.5	40.0	9.8	39.5		54.8	73.9	19.1	100	0	
Hori.	17355.000	PK	46.3	43.2	2.6	39.5		52.6	73.9	21.3	100	0	
Vert.	11570.000	PK	45.9	40.0	9.8	39.5		56.2	73.9	17.7	134	301	
Vert.	17355.000	PK	45.6	43.2	2.6	39.5		51.9	73.9	22.0	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11570.000	AV	35.5	40.0	9.8	39.5	0.2	46.0	53.9	7.9	100	0	
Hori.	17355.000	AV	36.2	43.2	2.6	39.5	0.2	42.7	53.9	11.2	100	0	
Vert.	11570.000	AV	36.8	40.0	9.8	39.5	0.2	47.3	53.9	**6.6**	134	301	
Vert.	17355.000	AV	36.0	43.2	2.6	39.5	0.2	42.5	53.9	11.4	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber
Date	November 24, 2012	November 27, 2012	November 28, 2012
Temperature / Humidity	22deg.C, 36 %RH	25deg.C, 39 %RH	24deg.C, 35 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Shinichi Takano
Mode	Tx, 5825 MHz		
	Tx, IEEE802.11n-HT20, PN9, worst data mode 8(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.	11650.000	PK	45.3	39.9	9.8	39.5		55.5	73.9	18.4	100	0	
Hori.	17475.000	PK	45.9	43.9	2.6	39.5		52.9	73.9	21.0	100	0	
Vert.	11650.000	PK	45.8	39.9	9.8	39.5		56.0	73.9	17.9	219	349	
Vert.	17475.000	PK	46.5	43.9	2.6	39.5		53.5	73.9	20.4	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11650.000	AV	34.5	39.9	9.8	39.5	0.2	44.9	53.9	9.0	100	0	
Hori.	17475.000	AV	36.2	43.9	2.6	39.5	0.2	43.4	53.9	10.5	100	0	
Vert.	11650.000	AV	36.2	39.9	9.8	39.5	0.2	46.6	53.9	**7.3**	219	349	
Vert.	17475.000	AV	36.4	43.9	2.6	39.5	0.2	43.6	53.9	10.3	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]		Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5825.000	PK	87.2	32.9	16.7	40.3		96.5	-	-	Carrier
Hori.	5850.000	PK	39.8	33.0	16.7	40.3		49.2	76.5	27.3	
Vert.	5825.000	PK	89.0	32.9	16.7	40.3		98.3	-	-	Carrier
Vert.	5850.000	PK	42.6	33.0	16.7	40.3		52.0	78.3	26.3	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber	
Date	November 24, 2012	November 27, 2012	November 28, 2012	December 2, 2012
Temperature / Humidity	22deg.C, 36 %RH	25deg.C, 39 %RH	24deg.C, 35 %RH	23deg.C, 30 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Shinichi Takano	Kenichi Adachi
Mode	Tx, 5755 MHz			

Tx, 11n (HT40, Wide, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	82.109	QP	43.1	6.8	7.5	32.2		25.2	40.0	14.8	224	211	
Hori.	149.250	QP	43.3	14.8	7.7	32.1		33.7	43.5	9.8	201	299	
Hori.	179.263	QP	41.7	15.8	7.8	32.1		33.2	43.5	10.3	200	179	
Hori.	313.453	QP	32.4	14.3	8.6	32.0		23.3	46.0	22.7	100	278	
Hori.	11510.000	PK	44.6	40.1	9.8	39.5		55.0	73.9	18.9	100	0	
Hori.	17265.000	PK	44.2	42.7	2.7	39.5		50.1	73.9	23.8	100	0	
Vert.	32.147	QP	34.4	17.2	6.5	32.2		25.9	40.0	14.1	100	68	
Vert.	82.109	QP	50.2	6.8	7.5	32.2		32.3	40.0	7.7	100	273	
Vert.	149.250	QP	40.0	14.8	7.7	32.1		30.4	43.5	13.1	100	74	
Vert.	179.263	QP	39.5	15.8	7.8	32.1		31.0	43.5	12.5	100	341	
Vert.	313.453	QP	31.2	14.3	8.6	32.0		22.1	46.0	23.9	100	289	
Vert.	11510.000	PK	45.7	40.1	9.8	39.5		56.1	73.9	17.8	129	301	
Vert.	17265.000	PK	45.5	42.7	2.7	39.5		51.4	73.9	22.5	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11510.000	AV	35.7	40.1	9.8	39.5	0.2	46.3	53.9	7.6	100	0	
Hori.	17265.000	AV	36.1	42.7	2.7	39.5	0.2	42.2	53.9	11.7	100	0	
Vert.	11510.000	AV	35.9	40.1	9.8	39.5	0.2	46.5	53.9	**7.4**	129	301	
Vert.	17265.000	AV	35.8	42.7	2.7	39.5	0.2	41.9	53.9	12.0	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]		Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5755.000	PK	77.7	32.7	16.7	40.2		86.9	-	-	Carrier
Hori.	5725.000	PK	48.4	32.6	16.7	40.2		57.5	66.9	9.4	
Vert.	5755.000	PK	86.4	32.7	16.7	40.2		95.6	-	-	Carrier
Vert.	5725.000	PK	56.3	32.6	16.7	40.2		65.4	75.6	10.2	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber
Date	November 24, 2012	November 27, 2012	November 28, 2012
Temperature / Humidity	22deg.C, 36 %RH	25deg.C, 39 %RH	24deg.C, 35 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Shinichi Takano
Mode	Tx, 5795 MHz		

Tx, 11n (HT40, Wide, Mix, Long), PN9, worst antenna port Main, worst data mode 0(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.	11590.000	PK	44.8	40.0	9.8	39.5		55.1	73.9	18.8	100	0	
Hori.	17385.000	PK	46.1	43.4	2.6	39.5		52.6	73.9	21.3	100	0	
Vert.	11590.000	PK	44.5	40.0	9.8	39.5		54.8	73.9	19.1	100	0	
Vert.	17385.000	PK	44.9	43.4	2.6	39.5		51.4	73.9	22.5	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11590.000	AV	35.3	40.0	9.8	39.5	0.2	45.8	53.9	**8.1**	100	0	
Hori.	17385.000	AV	36.2	43.4	2.6	39.5	0.2	42.9	53.9	11.0	100	0	
Vert.	11590.000	AV	35.0	40.0	9.8	39.5	0.2	45.5	53.9	8.4	100	0	
Vert.	17385.000	AV	36.3	43.4	2.6	39.5	0.2	43.0	53.9	10.9	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]		Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5795.000	PK	82.5	32.8	16.7	40.3		91.7	-	-	Carrier
Hori.	5850.000	PK	42.6	33.0	16.7	40.3		52.0	71.7	19.7	
Vert.	5795.000	PK	85.6	32.8	16.7	40.3		94.8	-	-	Carrier
Vert.	5850.000	PK	43.7	33.0	16.7	40.3		53.1	74.8	21.7	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber
Date	November 24, 2012	November 27, 2012	November 28, 2012
Temperature / Humidity	22deg.C, 36 %RH	25deg.C, 39 %RH	24deg.C, 35 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Shinichi Takano
Mode	Tx, 5755 MHz		
	Tx, 11n (HT40, Wide, Mix, Long), PN9, worst data mode 8(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.	11510.000	PK	46.1	40.1	9.8	39.5		56.5	73.9	17.4	100	0	
Hori.	17265.000	PK	44.3	42.7	2.7	39.5		50.2	73.9	23.7	100	0	
Vert.	11510.000	PK	47.8	40.1	9.8	39.5		58.2	73.9	15.7	129	301	
Vert.	17265.000	PK	45.2	42.7	2.7	39.5		51.1	73.9	22.8	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11510.000	AV	35.8	40.1	9.8	39.5	0.4	46.6	53.9	7.3	100	0	
Hori.	17265.000	AV	36.0	42.7	2.7	39.5	0.4	42.3	53.9	11.6	100	0	
Vert.	11510.000	AV	36.3	40.1	9.8	39.5	0.4	47.1	53.9	**6.8**	129	301	
Vert.	17265.000	AV	35.7	42.7	2.7	39.5	0.4	42.0	53.9	11.9	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]		Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5755.000	PK	83.4	32.7	16.7	40.2		92.6	-	-	Carrier
Hori.	5725.000	PK	48.7	32.6	16.7	40.2		57.8	72.6	14.8	
Vert.	5755.000	PK	86.8	32.7	16.7	40.2		96.0	-	-	Carrier
Vert.	5725.000	PK	51.9	32.6	16.7	40.2		61.0	76.0	15.0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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Radiated Emission

Test place	UL Japan, Inc. Shonan EMC Lab.		No.3 Semi Anechoic Chamber
Date	November 24, 2012	November 27, 2012	November 28, 2012
Temperature / Humidity	22deg.C, 36 %RH	25deg.C, 39 %RH	24deg.C, 35 %RH
Engineer	Tatsuya Arai	Shinichi Takano	Shinichi Takano
Mode	Tx, 5795 MHz		
	Tx, 11n (HT40, Wide, Mix, Long), PN9, worst data mode 8(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.	11590.000	PK	46.5	40.0	9.8	39.5		56.8	73.9	17.1	100	0	
Hori.	17385.000	PK	45.9	43.4	2.6	39.5		52.4	73.9	21.5	100	0	
Vert.	11590.000	PK	47.7	40.0	9.8	39.5		58.0	73.9	15.9	138	301	
Vert.	17385.000	PK	46.2	43.4	2.6	39.5		52.7	73.9	21.2	100	0	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11590.000	AV	35.2	40.0	9.8	39.5	0.4	45.9	53.9	8.0	100	0	
Hori.	17385.000	AV	35.8	43.4	2.6	39.5	0.4	42.7	53.9	11.2	100	0	
Vert.	11590.000	AV	35.8	40.0	9.8	39.5	0.4	46.5	53.9	**7.4**	138	301	
Vert.	17385.000	AV	35.9	43.4	2.6	39.5	0.4	42.8	53.9	11.1	100	0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier) + Duty factor (refer to "Duty Factor Calculation")

*8.2.4 Alternative 1 was applied to AV detection, since the duty cycle is less than 98% and video triggering or signal gating cannot be used.

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

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 Factor [dB/m]	Loss [dB]	Gain [dB]		Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5795.000	PK	83.7	32.8	16.7	40.3		92.9	-	-	Carrier
Hori.	5850.000	PK	38.0	33.0	16.7	40.3		47.4	72.9	25.5	
Vert.	5795.000	PK	86.9	32.8	16.7	40.3		96.1	-	-	Carrier
Vert.	5850.000	PK	37.5	33.0	16.7	40.3		46.9	76.1	29.2	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 15GHz)) - Gain(Amprifier)

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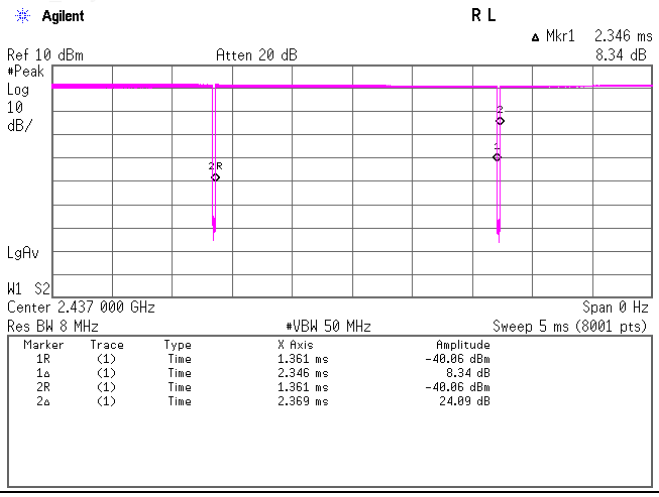
Burst rate confirmation

Tx, IEEE802.11b, PN9, worst antenna port Main, worst data mode 1Mbps

duty cycle = 2.346 / 2.369 = 0.99 (99%)	
	

(Reference)

* for power sheet duty factor (1Mbps) = 10 x log (2.369 / 2.346) = 0.04 dB
* for power sheet duty factor (2Mbps) = 10 x log (2.333 / 2.309) = 0.04 dB
* for power sheet duty factor (5.5Mbps) = 10 x log (2.313 / 2.289) = 0.05 dB
* for power sheet duty factor (11Mbps) = 10 x log (1.158 / 1.133) = 0.09 dB

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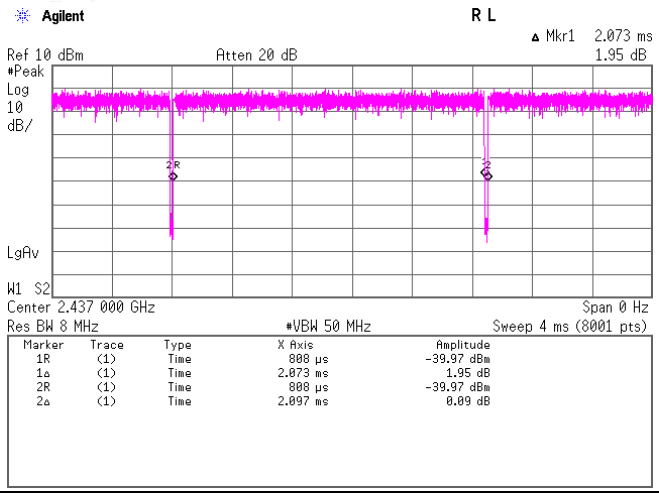
Burst rate confirmation

Tx, IEEE802.11g, PN9, worst antenna port Main, worst data mode 6Mbps

duty cycle = 2.073 / 2.097 = 0.989 (98.9%)	
	

(Reference)

* for power sheet duty factor (6Mbps) = 10 x log (2.097 / 2.073) = 0.05 dB
* for power sheet duty factor (9Mbps) = 10 x log (1.158 / 1.134) = 0.09 dB
* for power sheet duty factor (12Mbps) = 10 x log (1.073 / 1.048) = 0.10 dB
* for power sheet duty factor (18Mbps) = 10 x log (0.729 / 0.705) = 0.15 dB
* for power sheet duty factor (24Mbps) = 10 x log (0.562 / 0.537) = 0.20 dB
* for power sheet duty factor (36Mbps) = 10 x log (0.385 / 0.360) = 0.29 dB
* for power sheet duty factor (48Mbps) = 10 x log (0.293 / 0.268) = 0.39 dB
* for power sheet duty factor (54Mbps) = 10 x log (0.274 / 0.248) = 0.43 dB

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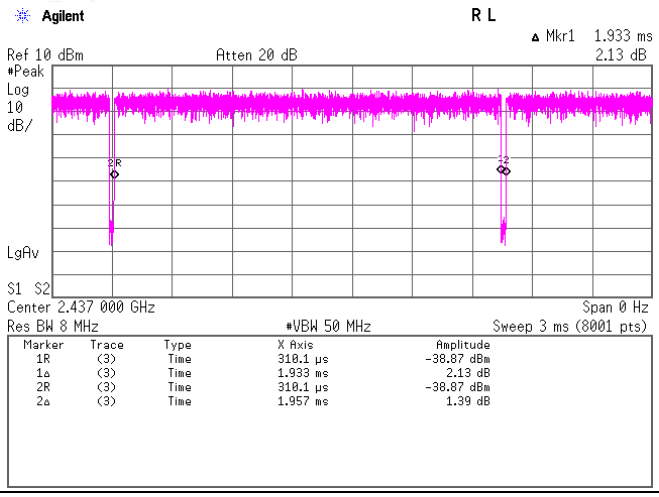
Burst rate confirmation

Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst antenna port Main, worst data mode 0(MCS)

duty cycle = 1.933 / 1.957 = 0.988 (98.8%)	
	

(Reference)

* for power sheet duty factor (MCS0) = 10 x log (1.957 / 1.933) = 0.05 dB
* for power sheet duty factor (MCS1) = 10 x log (1.010 / 0.984) = 0.11 dB
* for power sheet duty factor (MCS2) = 10 x log (0.694 / 0.669) = 0.16 dB
* for power sheet duty factor (MCS3) = 10 x log (0.537 / 0.513) = 0.20 dB
* for power sheet duty factor (MCS4) = 10 x log (0.379 / 0.354) = 0.30 dB
* for power sheet duty factor (MCS5) = 10 x log (0.295 / 0.270) = 0.38 dB
* for power sheet duty factor (MCS6) = 10 x log (0.274 / 0.250) = 0.40 dB
* for power sheet duty factor (MCS7) = 10 x log (0.254 / 0.230) = 0.43 dB

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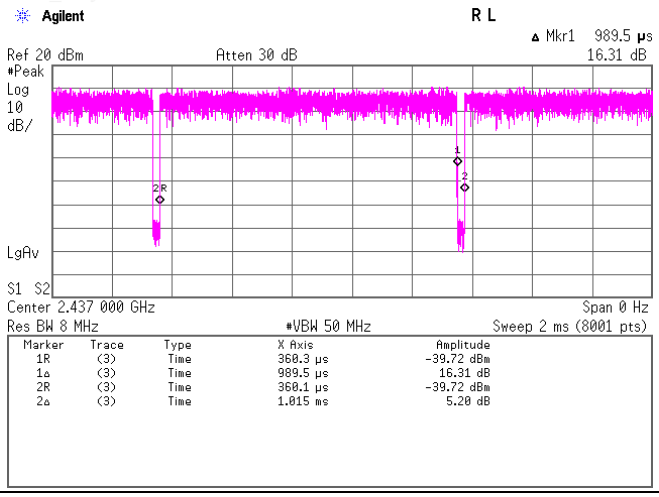
Duty Factor Calculation chart

Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst data mode 8(MCS)

Duty Factor: 20log (1/duty cycle) = 0.2dB	
duty cycle = 0.9895 / 1.015 = 0.975 (97.5%)	
	

(Reference)

* for power sheet duty factor (MCS8) = 10 x log (1.0150 / 0.9895) = 0.11 dB
* for power sheet duty factor (MCS9) = 10 x log (0.5425 / 0.5162) = 0.22 dB
* for power sheet duty factor (MCS10) = 10 x log (0.3825 / 0.3563) = 0.31 dB
* for power sheet duty factor (MCS11) = 10 x log (0.2934 / 0.2693) = 0.37 dB
* for power sheet duty factor (MCS12) = 10 x log (0.2265 / 0.2004) = 0.53 dB
* for power sheet duty factor (MCS13) = 10 x log (0.1825 / 0.1572) = 0.65 dB
* for power sheet duty factor (MCS14) = 10 x log (0.1745 / 0.1491) = 0.68 dB
* for power sheet duty factor (MCS15) = 10 x log (0.1625 / 0.1372) = 0.73 dB

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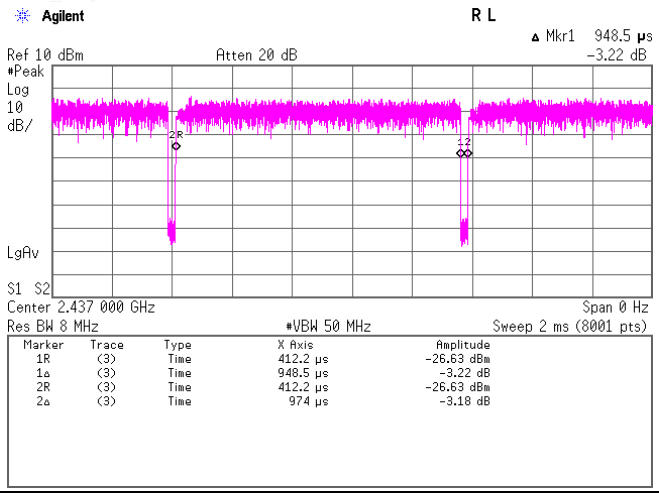
Duty Factor Calculation chart

Tx, 11n (HT40, Wide, Mix, Long), PN9, worst antenna port Main, worst data mode 0(MCS)

Duty Factor: 20log (1/duty cycle) = 0.2dB	
duty cycle = 0.9485 / 0.974 = 0.974 (97.4%)	
	

(Reference)

* for power sheet duty factor (MCS0) = 10 x log (0.9740 / 0.9485) = 0.12 dB
* for power sheet duty factor (MCS1) = 10 x log (0.5184 / 0.4931) = 0.22 dB
* for power sheet duty factor (MCS2) = 10 x log (0.3652 / 0.3413) = 0.29 dB
* for power sheet duty factor (MCS3) = 10 x log (0.2986 / 0.2656) = 0.51 dB
* for power sheet duty factor (MCS4) = 10 x log (0.2142 / 0.1868) = 0.59 dB
* for power sheet duty factor (MCS5) = 10 x log (0.1787 / 0.1534) = 0.66 dB
* for power sheet duty factor (MCS6) = 10 x log (0.1657 / 0.1416) = 0.68 dB
* for power sheet duty factor (MCS7) = 10 x log (0.1536 / 0.1295) = 0.74 dB

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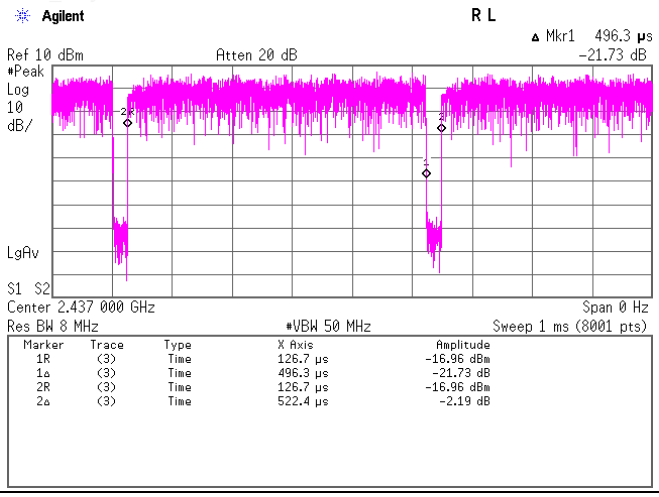
Duty Factor Calculation chart

Tx, 11n (HT40, Wide, Mix, Long), PN9, antenna port Main, worst data mode 8(MCS)

Duty Factor: 20log (1/duty cycle) = 0.4dB	
duty cycle = 0.4963 / 0.5224 = 0.95 (95%)	
	

(Reference)

* for power sheet duty factor (MCS8) = 10 x log (0.5224 / 0.4963) = 0.22 dB
* for power sheet duty factor (MCS9) = 10 x log (0.2936 / 0.2682) = 0.39 dB
* for power sheet duty factor (MCS10) = 10 x log (0.2135 / 0.1892) = 0.52 dB
* for power sheet duty factor (MCS11) = 10 x log (0.1785 / 0.1533) = 0.66 dB
* for power sheet duty factor (MCS12) = 10 x log (0.1415 / 0.1172) = 0.82 dB
* for power sheet duty factor (MCS13) = 10 x log (0.1225 / 0.0972) = 1.00 dB
* for power sheet duty factor (MCS14) = 10 x log (0.1184 / 0.0932) = 1.04 dB
* for power sheet duty factor (MCS15) = 10 x log (0.1145 / 0.0892) = 1.08 dB

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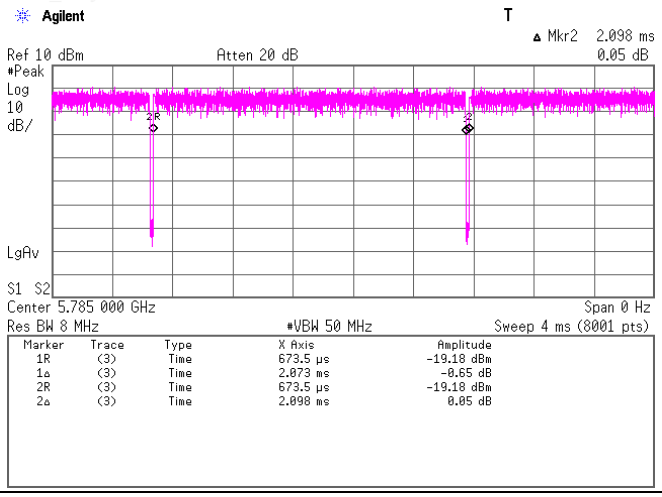
Burst rate confirmation

Tx, IEEE802.11a, PN9, worst antenna port Main, worst data mode 6Mbps

Band: 5GHz (W58)	
duty cycle = 2.073 / 2.098 = 0.988 (98.8%)	
	

(Reference)

* for power sheet duty factor (6Mbps) = 10 x log (2.098 / 2.073) =	0.05 dB
* for power sheet duty factor (9Mbps) = 10 x log (1.160 / 1.134) =	0.10 dB
* for power sheet duty factor (12Mbps) = 10 x log (1.074 / 1.050) =	0.10 dB
* for power sheet duty factor (18Mbps) = 10 x log (0.730 / 0.706) =	0.15 dB
* for power sheet duty factor (24Mbps) = 10 x log (0.562 / 0.538) =	0.19 dB
* for power sheet duty factor (36Mbps) = 10 x log (0.387 /0.362) =	0.29 dB
* for power sheet duty factor (48Mbps) = 10 x log (0.294 / 0.270) =	0.37 dB
* for power sheet duty factor (54Mbps) = 10 x log (0.274 / 0.250) =	0.40 dB

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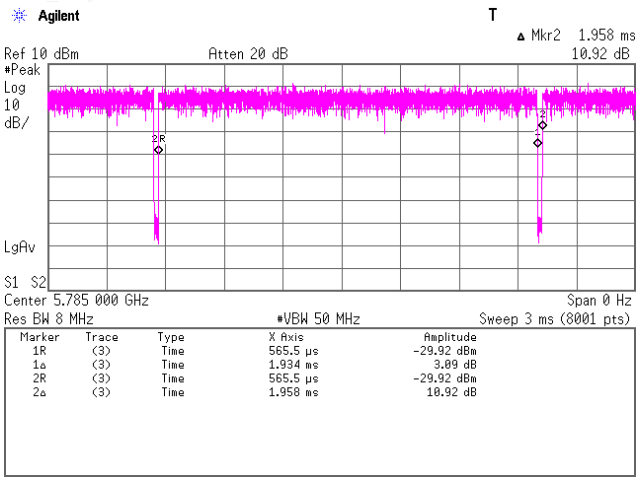
Burst rate confirmation

Tx, IEEE802.11n (HT20, Mix, Long), PN9, worst antenna port Main, worst data mode 0(MCS)

Band: 5GHz (W58)	
duty cycle = 1.934 / 1.958 = 0.988 (98.8%)	
	

(Reference)

* for power sheet duty factor (MCS0) = 10 x log (1.958 / 1.934) = 0.05 dB
* for power sheet duty factor (MCS1) = 10 x log (1.010 / 0.986) = 0.10 dB
* for power sheet duty factor (MCS2) = 10 x log (0.694 / 0.670) = 0.15 dB
* for power sheet duty factor (MCS3) = 10 x log (0.538 / 0.514) = 0.20 dB
* for power sheet duty factor (MCS4) = 10 x log (0.378 / 0.354) = 0.28 dB
* for power sheet duty factor (MCS5) = 10 x log (0.294 / 0.270) = 0.37 dB
* for power sheet duty factor (MCS6) = 10 x log (0.274 / 0.250) = 0.40 dB
* for power sheet duty factor (MCS7) = 10 x log (0.254 / 0.230) = 0.43 dB

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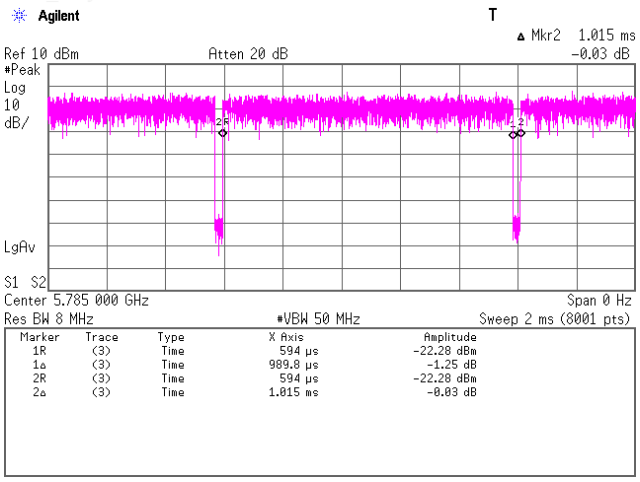
Duty Factor Calculation chart

Tx, IEEE802.11n-HT20, PN9, worst data mode 8(MCS)

Band: 5GHz (W58)	
Duty Factor: 20log (1/duty cycle) = 0.2dB	
duty cycle = 0.9898 / 1.015 = 0.975 (97.5%)	
	

(Reference)

* for power sheet duty factor (MCS8) = 10 x log (1.0150 / 0.9898) = 0.11 dB
* for power sheet duty factor (MCS9) = 10 x log (0.5425 / 0.5177) = 0.20 dB
* for power sheet duty factor (MCS10) = 10 x log (0.3825 / 0.3580) = 0.29 dB
* for power sheet duty factor (MCS11) = 10 x log (0.2945 / 0.2698) = 0.38 dB
* for power sheet duty factor (MCS12) = 10 x log (0.2265 / 0.2019) = 0.50 dB
* for power sheet duty factor (MCS13) = 10 x log (0.1815 / 0.1580) = 0.60 dB
* for power sheet duty factor (MCS14) = 10 x log (0.1745/ 0.1500) = 0.66 dB
* for power sheet duty factor (MCS15) = 10 x log (0.1625 / 0.1380) = 0.71 dB

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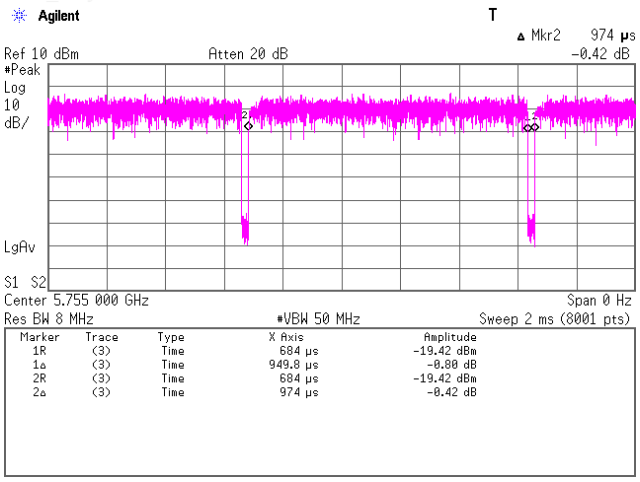
Duty Factor Calculation chart

Tx, 11n (HT40, Wide, Mix, Long), PN9, worst antenna port Main, worst data mode 0(MCS)

Duty Factor Calculation	
Duty Factor: 20log (1/duty cycle) = 0.2dB	
duty cycle = 0.9498 / 0.974 = 0.975 (97.5%)	
	

(Reference)

* for power sheet duty factor (MCS0) = 10 x log (0.974 / 0.950) = 0.11 dB
* for power sheet duty factor (MCS1) = 10 x log (0.518 / 0.494) = 0.21 dB
* for power sheet duty factor (MCS2) = 10 x log (0.366 / 0.342) = 0.29 dB
* for power sheet duty factor (MCS3) = 10 x log (0.290 / 0.266) = 0.38 dB
* for power sheet duty factor (MCS4) = 10 x log (0.214 / 0.190) = 0.52 dB
* for power sheet duty factor (MCS5) = 10 x log (0.178 / 0.154) = 0.63 dB
* for power sheet duty factor (MCS6) = 10 x log (0.166 / 0.142) = 0.68 dB
* for power sheet duty factor (MCS7) = 10 x log (0.154 / 0.130) = 0.74 dB

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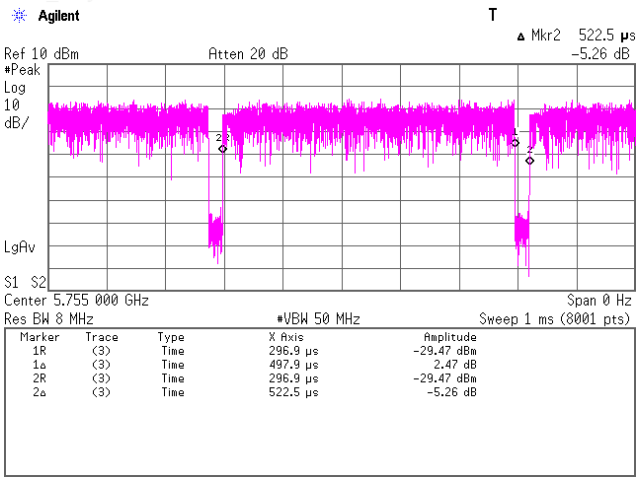
Duty Factor Calculation chart

Tx, 11n (HT40, Wide, Mix, Long), PN9, worst data mode 8(MCS)

Band: 5GHz (W58)	
Duty Factor: 20log (1/duty cycle) = 0.4dB	
duty cycle = 0.4979 / 0.5225 = 0.953 (95.3%)	
	

(Reference)

* for power sheet duty factor (MCS8) = 10 x log (0.5225 / 0.4979) = 0.21 dB
* for power sheet duty factor (MCS9) = 10 x log (0.2935 / 0.2703) = 0.36 dB
* for power sheet duty factor (MCS10) = 10 x log (0.2145 / 0.1899) = 0.53 dB
* for power sheet duty factor (MCS11) = 10 x log (0.1785 / 0.1539) = 0.64 dB
* for power sheet duty factor (MCS12) = 10 x log (0.1425 / 0.1179) = 0.82 dB
* for power sheet duty factor (MCS13) = 10 x log (0.1215 / 0.0980) = 0.93 dB
* for power sheet duty factor (MCS14) = 10 x log (0.1195 / 0.0940) = 1.04 dB
* for power sheet duty factor (MCS15) = 10 x log (0.1145 / 0.0900) = 1.05 dB

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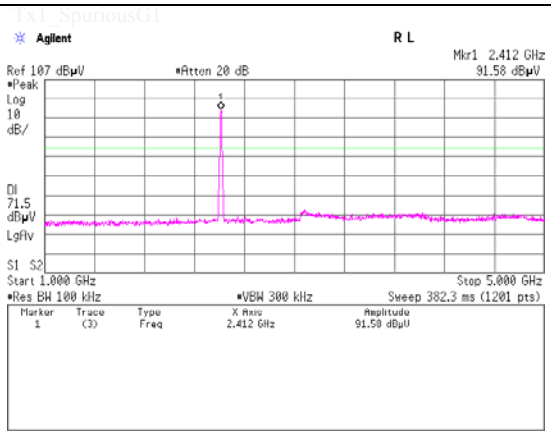
(Reference chart) Spurious emission (Conducted)

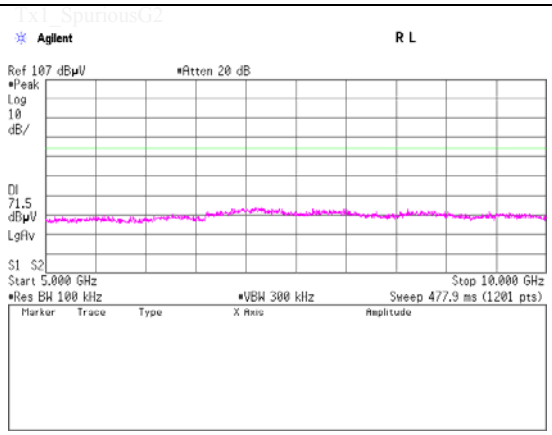
Tx, IEEE802.11b, PN9, worst antenna port Main, worst data mode 1Mbps

Tx, 2412MHz (above 1GHz)

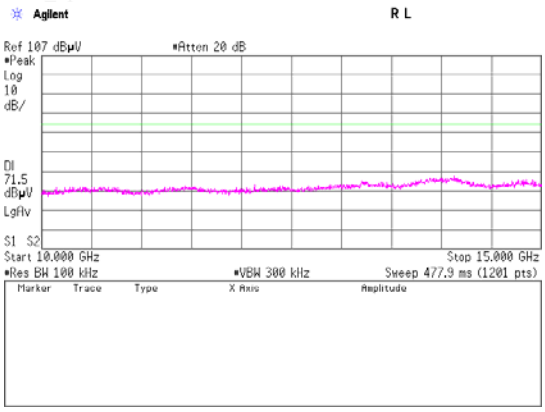
1GHz - 5GHz



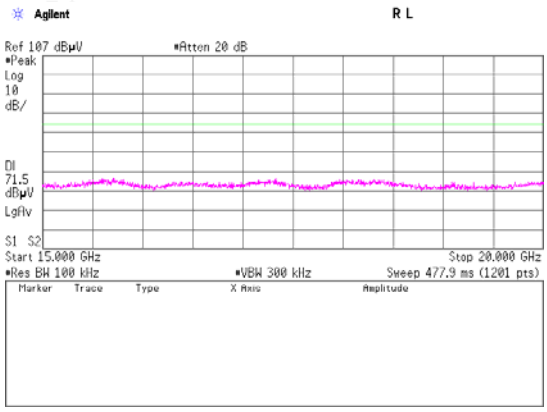
5GHz - 10GHz



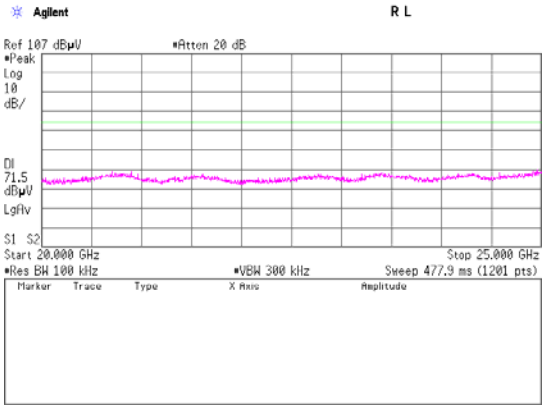
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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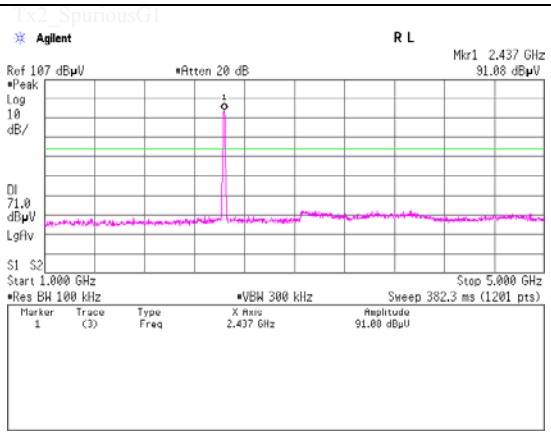
(Reference chart) Spurious emission (Conducted)

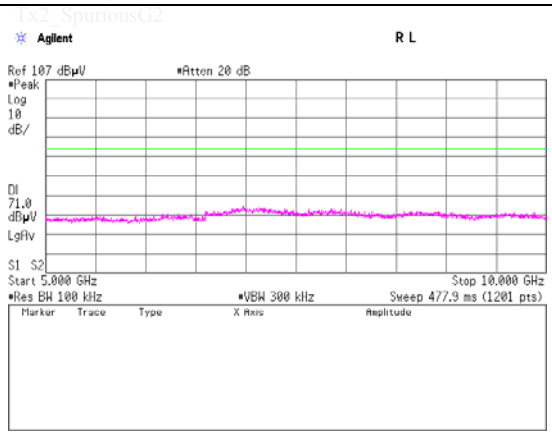
Tx, IEEE802.11b, PN9, worst antenna port Main, worst data mode 1Mbps

Tx, 2437MHz (above 1GHz)

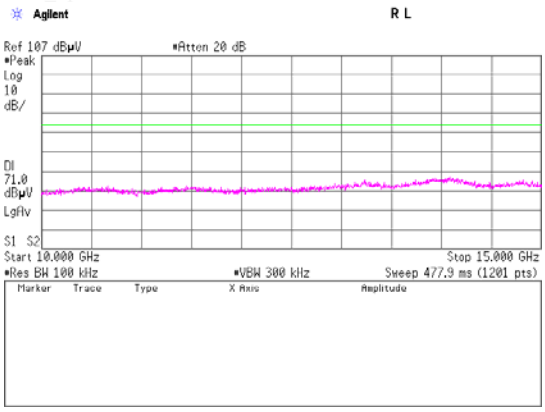
1GHz - 5GHz



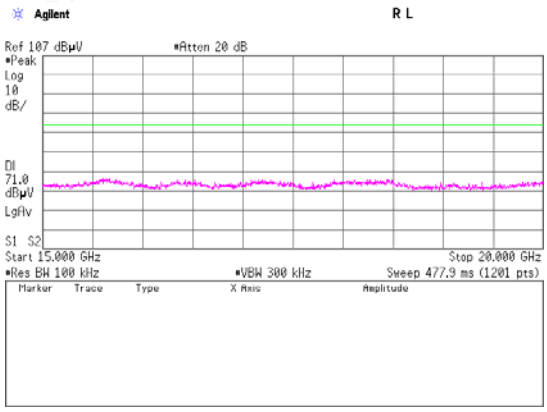
5GHz - 10GHz



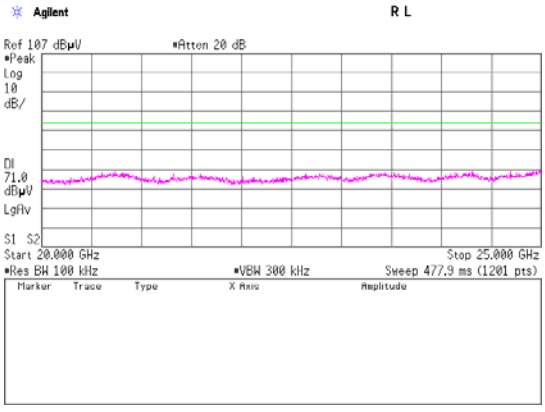
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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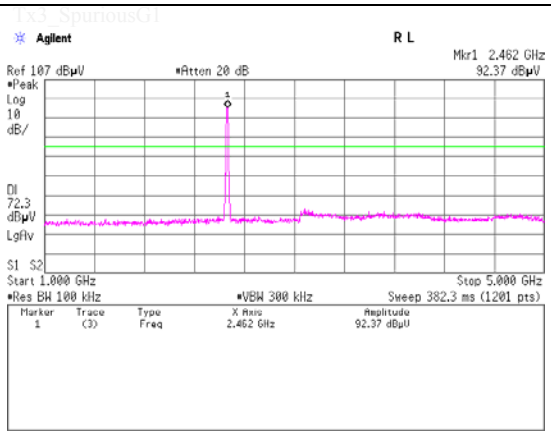
(Reference chart) Spurious emission (Conducted)

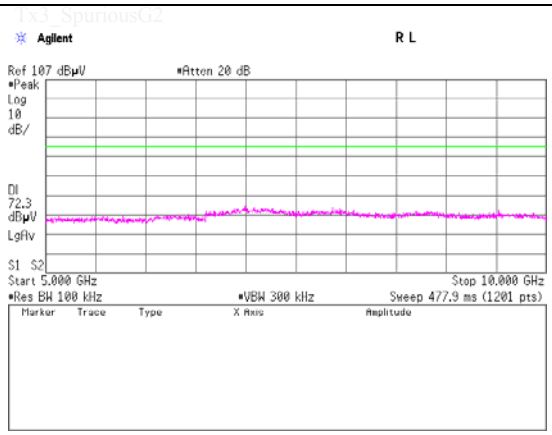
Tx, IEEE802.11b, PN9, worst antenna port Main, worst data mode 1Mbps

Tx, 2462MHz (above 1GHz)

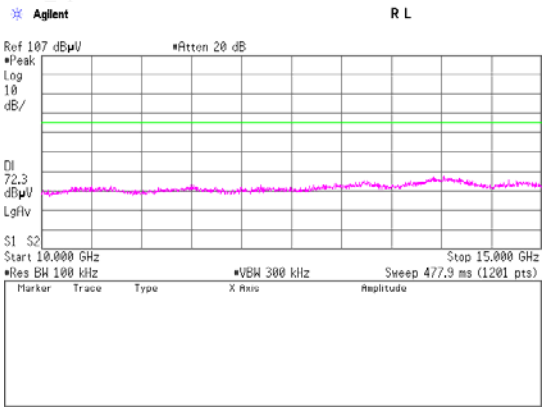
1GHz - 5GHz



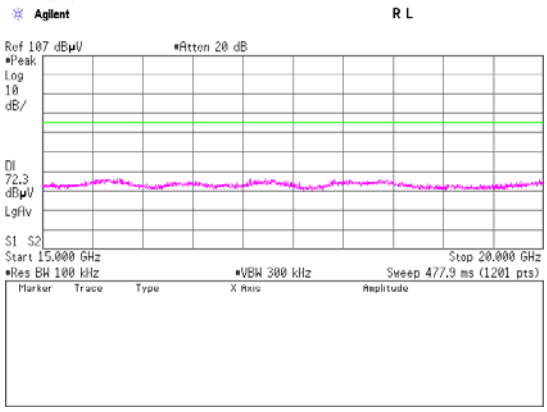
5GHz - 10GHz



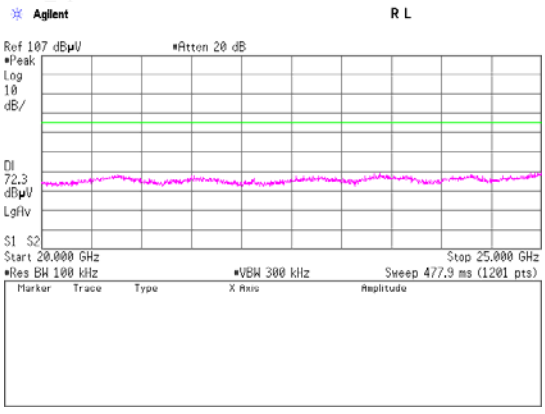
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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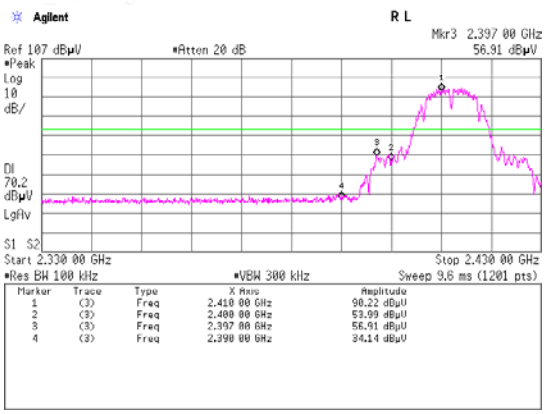
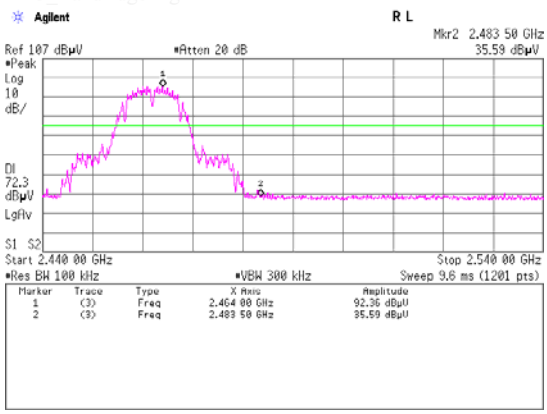
(Reference chart) Spurious emission (Conducted)

Band Edge compliance

Tx, IEEE802.11b, PN9, worst antenna port Main, worst data mode 1Mbps	
Tx, 2412MHz	**Tx, 2462MHz**
	

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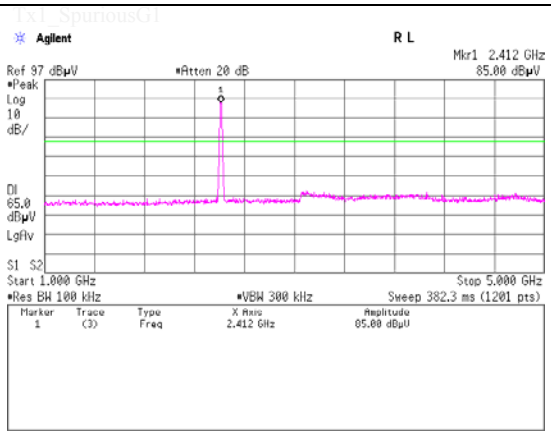
(Reference chart) Spurious emission (Conducted)

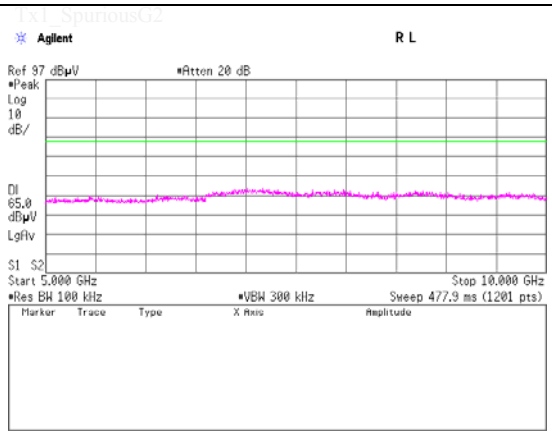
Tx, IEEE802.11g, PN9, worst antenna port Main, worst data mode 6Mbps

Tx, 2412MHz (above 1GHz)

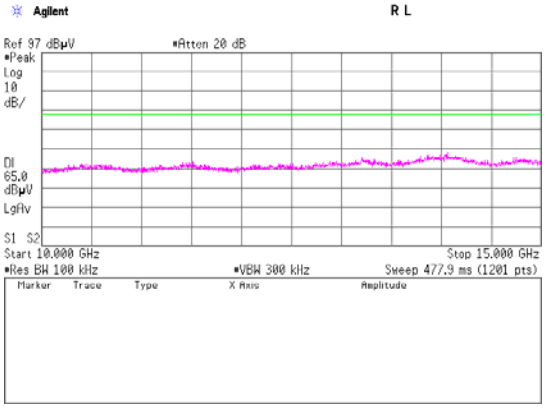
1GHz - 5GHz



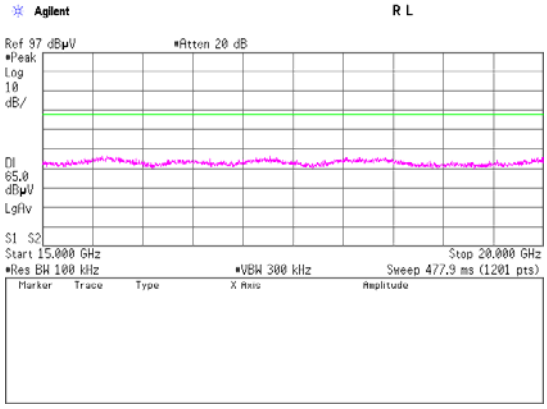
5GHz - 10GHz



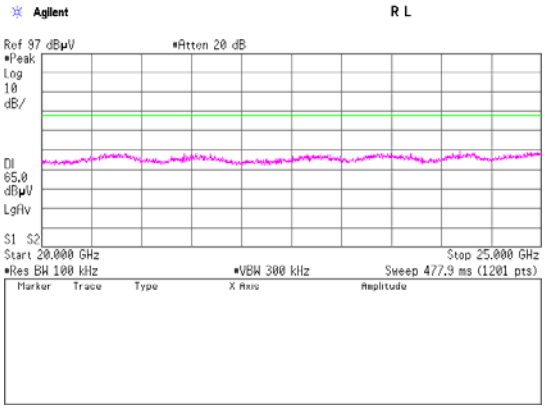
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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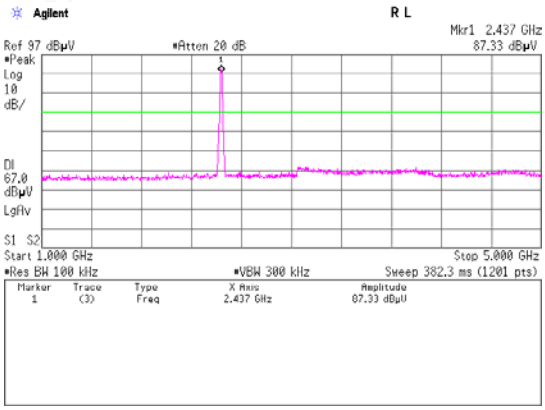
(Reference chart) Spurious emission (Conducted)

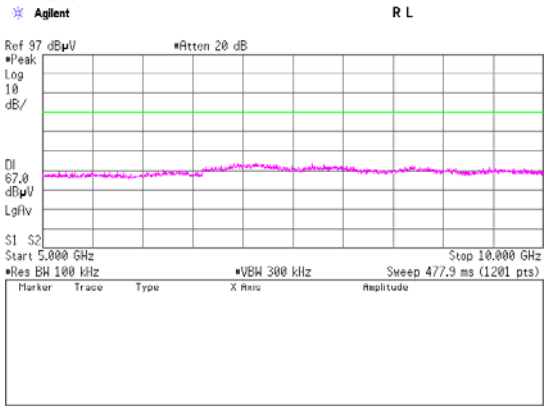
Tx, IEEE802.11g, PN9, worst antenna port Main, worst data mode 6Mbps

Tx, 2437MHz (above 1GHz)

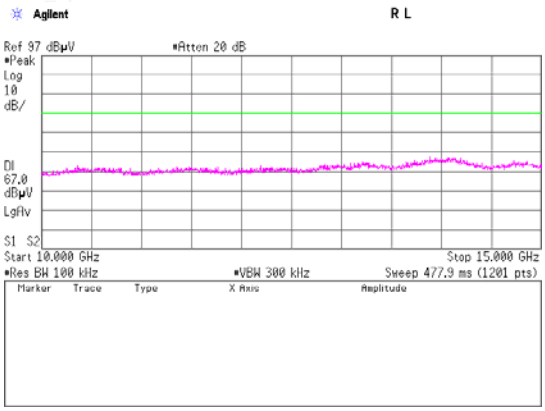
1GHz - 5GHz



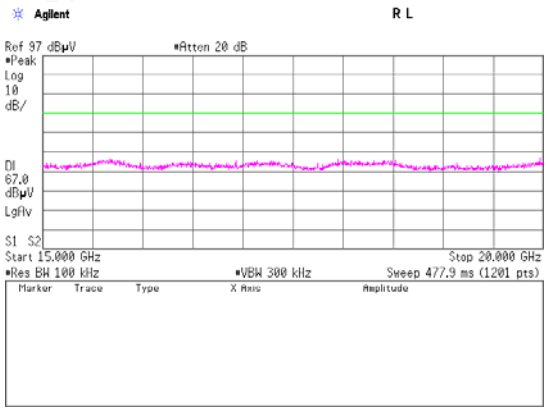
5GHz - 10GHz



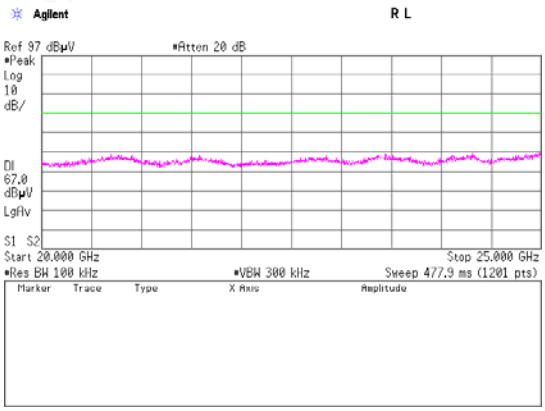
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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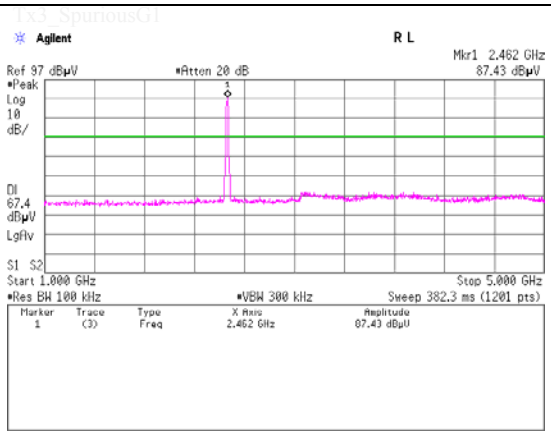
(Reference chart) Spurious emission (Conducted)

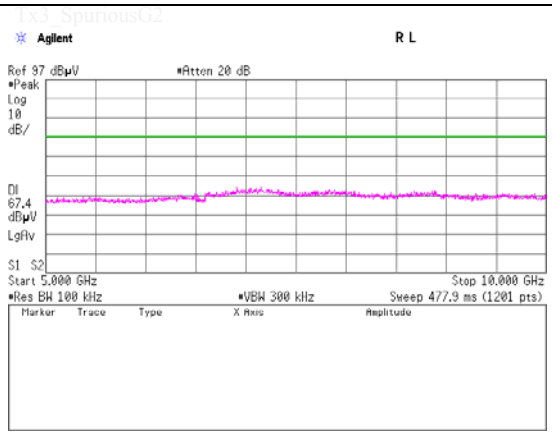
Tx, IEEE802.11g, PN9, worst antenna port Main, worst data mode 6Mbps

Tx, 2462MHz (above 1GHz)

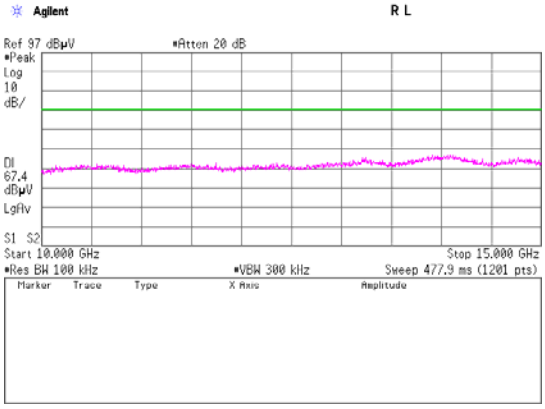
1GHz - 5GHz



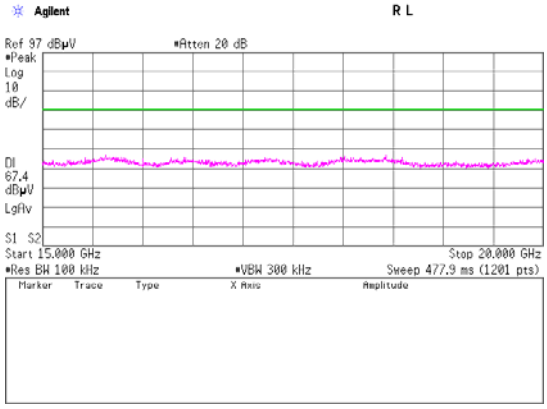
5GHz - 10GHz



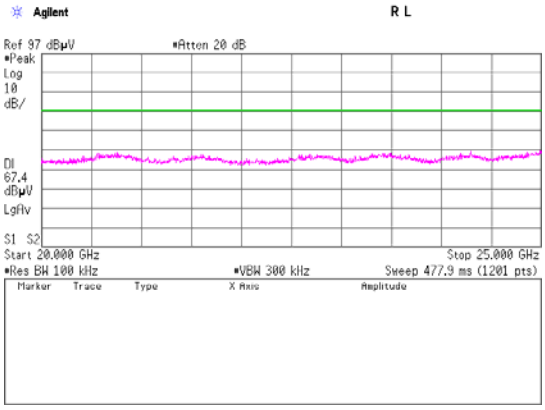
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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