



RADIO TEST REPORT

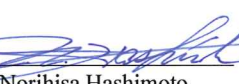
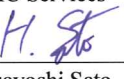
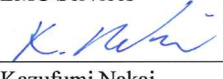
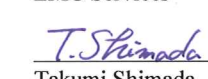
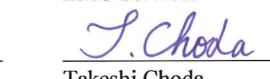
Test Report No. : 28IE0116-HO-02-A

Applicant : silex technology, Inc.
Type of Equipment : MiniPCI Wireless LAN Board
Model No. : SX-10WAN
FCC ID : N6C-SX10WAN
Test regulation : FCC Part 15 Subpart C 2009
Section 15.207, Section 15.247
Test Result : Complied

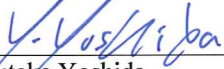
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3. This sample tested is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.
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Date of test: May 16, 2008 to April 8, 2009

Tested by:

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MF060b (09.01.08)

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SECTION 1: Customer information

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

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

2.1 Identification of E.U.T.

Type of Equipment : MiniPCI Wireless LAN Board
Model No. : SX-10WAN
Serial No. : 008092011314, 008092011316, 008092011317
Rating : DC3.3V
Receipt Date of Sample : April 17, 2008
Country of Mass-production : Japan
Condition of EUT : Production prototype
Modification of EUT : No Modification by the test lab

2.2 Product Description

Model No: SX-10WAN (referred to as the EUT in this report) is the MiniPCI Wireless LAN Board.
SX-10WAN is a MiniPCI TypeIII-A Wireless LAN module of the DualBand IEEE802.11a/b/g/n standard equivalent which supported EU RoHS.

Equipment Type : Transceiver
Clock frequency : 40MHz
Method of Frequency Generation : Synthesizer
Operating voltage(Power Supply) : DC3.3V
Operating voltage (inner) : DC1.2V, DC1.8V
Maximum Antenna Gain : 1.5dBi@2.4GHz, 2.1dBi@5.825GHz

	IEEE802.11b	IEEE802.11g	IEEE802.11a	IEEE802.11n (20HT)	IEEE802.11n (40HT)
Frequency of operation	2412-2462MHz		5180 - 5320MHz *1) 5745 - 5825MHz	2412 - 2462MHz 5180 - 5320MHz 5745 - 5825MHz	2422 - 2452MHz 5190 - 5310MHz *2) 5755 - 5795MHz
Type of modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (64QAM, 16QAM, QPSK, BPSK)	OFDM (64QAM, 16QAM, QPSK, BPSK)		
Channel spacing	5MHz		20MHz	<u>2.4GHz band</u> 5MHz <u>5GHz band</u> 20MHz	<u>2.4GHz band</u> 5MHz <u>5GHz band</u> 40MHz
Antenna type	Sleeve antenna (Omni-Directional)				
Antenna Connector type (on Module)	U.FL				
Antenna Connector type (Antenna itself)	Reverse SMA				

*1) 5180 - 5320MHz is applied for other test report.(Test Report No.: 28IE0116-HO-02-C)

*2) 5190 - 5310MHz is applied for other test report.(Test Report No.: 28IE0116-HO-02-C)

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SECTION 3: Test specification procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C: 2009, final revised on February 27, 2009

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

* The revision on February 27, 2009 does not influence the test specification applied to the EUT.

FCC 15.31 (e)

The RF Module has own regulator.

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

Therefore, this EUT complies with the requirement.

FCC Part 15.203/212 Antenna requirement

The EUT has a unique antenna connector (U.FL on the Module and Reverse SMA for Antenna itself).

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

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3.2 Procedures and results

[DSSS and other forms of modulation]

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	Conducted emission	FCC: ANSI C63.4:2003 7. AC powerline conducted emission measurements IC: RSS-Gen 7.2.2	FCC: Section 15.207 IC: RSS-Gen 7.2.2	Conducted	N/A	10.5dB, QP, 0.53402MHz(11g Tx 2412MHz), 7.2dB, AV,0.58267MHz (11n(20HT) Tx 5745MHz)	Complied
2	6dB Bandwidth	FCC: "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247" IC: RSS-Gen 4.6.2	FCC: Section 15.247(a)(2) IC: RSS-210 A8.2(a)	Conducted	N/A	See data.	Complied
3	Maximum Peak Output Power	FCC: "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247" IC: RSS-Gen 4.8	FCC: Section 15.247(b)(3) IC: RSS-210 A8.4(4)	Conducted	N/A		Complied
4	Restricted Band Edges	FCC: "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247" IC: -	FCC: Section 15.247 (d) IC: RSS-210 A8.5	Conducted/ Radiated	N/A		Complied
5	Power Density	FCC: "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247" IC: -	FCC: Section 15.247 (e) IC: RSS-210 A8.2(b)	Conducted	N/A		Complied
6	Spurious Emission	FCC: "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247" IC: RSS-Gen 4.9 RSS-Gen 4.10	FCC: Section15.247(d) IC: RSS-210 A8.5 RSS-Gen 7.2.1 and 7.2.3	Conducted/ Radiated	N/A	[Tx] 1.1dB, AV, 2483.5MHz(11n(40HT) 2452MHz) [Rx] 1.9dB, AV, Hor., 7713.36MHz (11n(20HT) 5785MHz)	Complied

Note: UL Japan, Inc.'s EMI Work Procedures No.QPM05 and QPM15.

*These tests were performed without any deviations from test procedure except for additions or exclusions.

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

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3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	IC: RSS-Gen 4.6.1	IC: RSS-Gen 4.6.1	Conducted	N/A	N/A	N/A

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

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

3.4 Uncertainty

EMI

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

Test room	Conducted emission	Radiated emission (10m*)			Radiated emission (3m*)			Radiated emission (3m*)	
	150kHz-30MHz	9kHz-30MHz	30MHz-300MHz	300MHz-1GHz	9kHz-30MHz	30MHz-300MHz	300MHz-1GHz	1GHz-18GHz	18GHz-40GHz
No.1 semi-anechoic chamber (±)	3.7dB	3.1dB	4.4dB	4.2dB	3.2dB	3.8dB	3.9dB	5.9dB	6.1dB
No.2 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	4.4dB	4.0dB	5.9dB	6.1dB
No.3 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	4.6dB	4.0dB	5.9dB	6.1dB
No.4 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	3.9dB	3.9dB	5.9dB	6.1dB

*10m/3m = Measurement distance

Conducted emission test

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

Radiated emission test(3m and/or 10m)

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

Other test except Conducted Emission and Spurious Emission (Radiated)

The measurement uncertainty for this test is 3.0dB.

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3.5 Test Location

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	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	2973C-1	19.2 x 11.2 x 7.7m	7.0 x 6.0m	No.1 Power source room
No.2 semi-anechoic chamber	655103	2973C-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	2973C-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.3 Preparation room
No.3 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.4 semi-anechoic chamber	134570	2973C-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.4 Preparation room
No.4 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.5 semi-anechoic chamber	-	-	6.0 x 6.0 x 3.9m	6.0 x 6.0m	-
No.6 shielded room	-	-	4.0 x 4.5 x 2.7m	4.75 x 5.4 m	-
No.6 measurement room	-	-	4.75 x 5.4 x 3.0m	4.75 x 4.15 m	-
No.7 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.8 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-
No.9 measurement room	-	-	8.0 x 4.5 x 2.8m	2.0 x 2.0m	-
No.10 measurement room	-	-	2.6 x 2.8 x 2.5m	2.4 x 2.4m	-
No.11 measurement room	-	-	3.1 x 3.4 x 3.0m	2.4 x 3.4m	-

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

3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

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

4.1 Operating Mode(s)

The following modes are used for testing.

1. 11b Transmitting Mode : Refer to Table 1 for detail of this Mode
2. 11g Transmitting Mode : Refer to Table 2 for detail of this Mode
3. 11a Transmitting Mode : Refer to Table 3 for detail of this Mode
4. 11n(20HT) Transmitting Mode : Refer to Table 4 for detail of this Mode
5. 11n(40HT) Transmitting Mode : Refer to Table 5 for detail of this Mode
6. 11b/g Receiving Mode : Refer to Table 6 for detail of this Mode
7. 11a Receiving Mode : Refer to Table 6 for detail of this Mode
8. 11n(20HT) Receiving Mode : Refer to Table 6 for detail of this Mode
9. 11n(40HT) Receiving Mode : Refer to Table 6 for detail of this Mode

[Table 1]

Test Items	Operating Mode			Freq [MHz]	Data Rate [Mbps]	Used Antennas(Ports) for Tx	Serial No.
Conducted Emission	11b	Tx	Lch	2412	11	Ant. 1	008092011314
	11b	Tx	Mch	2437	11	Ant. 1	008092011314
	11b	Tx	Hch	2462	11	Ant. 1	008092011314
6dB Bandwidth	11b	Tx	Lch	2412	11	Ant. 3	008092011316
	11b	Tx	Mch	2437	11	Ant. 3	008092011316
	11b	Tx	Hch	2462	11	Ant. 3	008092011316
Maximum Peak Output Power	11b	Tx	Lch	2412	11	Ant. 3	008092011316
	11b	Tx	Mch	2437	11	Ant. 3	008092011316
	11b	Tx	Hch	2462	11	Ant. 3	008092011316
	11b	Tx	Lch	2412	11	Ant. 1	008092011316
	11b	Tx	Mch	2437	11	Ant. 1	008092011316
	11b	Tx	Hch	2462	11	Ant. 1	008092011316
	11b	Tx	Lch	2412	11	Ant. 2	008092011316
	11b	Tx	Mch	2437	11	Ant. 2	008092011316
	11b	Tx	Hch	2462	11	Ant. 2	008092011316
	11b	Tx	Lch	2412	11	Ant. 3	008092011314
Radiated Spurious Emission(below 1GHz)	11b	Tx	Mch	2437	11	Ant. 3	008092011314
	11b	Tx	Hch	2462	11	Ant. 3	008092011314
	11b	Tx	Lch	2412	11	Ant. 3	008092011317
Radiated Spurious Emission(above 1GHz)	11b	Tx	Mch	2437	11	Ant. 3	008092011317
	11b	Tx	Hch	2462	11	Ant. 3	008092011317
	11b	Tx	Lch	2412	11	Ant. 3	008092011316
Conducted Spurious Emission	11b	Tx	Mch	2437	11	Ant. 3	008092011316
	11b	Tx	Hch	2462	11	Ant. 3	008092011316
	11b	Tx	Lch	2412	11	Ant. 3	008092011316
Conducted Emission Band Edge compliance	11b	Tx	Hch	2462	11	Ant. 3	008092011316
	11b	Tx	Lch	2412	11	Ant. 3	008092011316
Power Density	11b	Tx	Mch	2437	11	Ant. 3	008092011316
	11b	Tx	Hch	2462	11	Ant. 3	008092011316
	11b	Tx	Lch	2412	11	Ant. 3	008092011316
99% Occupied Bandwidth	11b	Tx	Lch	2412	11	Ant. 3	008092011316
	11b	Tx	Mch	2437	11	Ant. 3	008092011316
	11b	Tx	Hch	2462	11	Ant. 3	008092011316

*It was verified Data Rate and Antenna Port with maximum power.

*The formal tests were performed with the above modes, which had the maximum power.

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[Table 2]

Test Items	Operating Mode			Freq [MHz]	Data Rate [Mbps]	Used Antennas(Ports) for Tx	Serial No.
Conducted Emission	11g	Tx	Lch	2412	54	Ant. 1	008092011314
	11g	Tx	Mch	2437	54	Ant. 1	008092011314
	11g	Tx	Hch	2462	54	Ant. 1	008092011314
6dB Bandwidth	11g	Tx	Lch	2412	54	Ant. 3	008092011316
	11g	Tx	Mch	2437	54	Ant. 3	008092011316
	11g	Tx	Hch	2462	54	Ant. 3	008092011316
Mchaximum Peak Output Power	11g	Tx	Lch	2412	54	Ant. 3	008092011316
	11g	Tx	Mch	2437	54	Ant. 3	008092011316
	11g	Tx	Hch	2462	54	Ant. 3	008092011316
	11g	Tx	Lch	2412	54	Ant. 1	008092011316
	11g	Tx	Mch	2437	54	Ant. 1	008092011316
	11g	Tx	Hch	2462	54	Ant. 1	008092011316
	11g	Tx	Lch	2412	54	Ant. 2	008092011316
	11g	Tx	Mch	2437	54	Ant. 2	008092011316
	11g	Tx	Hch	2462	54	Ant. 2	008092011316
	11g	Tx	Lch	2412	54	Ant. 3	008092011314
	11g	Tx	Mch	2437	54	Ant. 3	008092011314
	11g	Tx	Hch	2462	54	Ant. 3	008092011314
Radiated Spurious Emission(below 1GHz)	11g	Tx	Lch	2412	54	Ant. 3	008092011317
Radiated Spurious Emission(above 1GHz)	11g	Tx	Mch	2437	54	Ant. 3	008092011317
	11g	Tx	Hch	2462	54	Ant. 3	008092011317
	11g	Tx	Lch	2412	54	Ant. 3	008092011316
Conducted Spurious Emission	11g	Tx	Mch	2437	54	Ant. 3	008092011316
	11g	Tx	Hch	2462	54	Ant. 3	008092011316
	11g	Tx	Lch	2412	54	Ant. 3	008092011316
Conducted Emission Band Edge compliance	11g	Tx	Hch	2462	54	Ant. 3	008092011316
	11g	Tx	Lch	2412	54	Ant. 3	008092011316
	11g	Tx	Mch	2437	54	Ant. 3	008092011316
Power Density	11g	Tx	Hch	2462	54	Ant. 3	008092011316
	11g	Tx	Lch	2412	54	Ant. 3	008092011316
	11g	Tx	Mch	2437	54	Ant. 3	008092011316
99% Occupied Bandwidth	11g	Tx	Lch	2412	54	Ant. 3	008092011316
	11g	Tx	Mch	2437	54	Ant. 3	008092011316
	11g	Tx	Hch	2462	54	Ant. 3	008092011316

*It was verified Data Rate and Antenna Port with maximum power.

*The formal tests were performed with the above modes, which had the maximum power.

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[Table 3]

Test Items	Operating Mode		Freq [MHz]	Data Rate [Mbps]	Used Antennas(Ports) for Tx	Serial No.
Conducted Emission	11a	Tx Lch	5745	54	Ant. 1	008092011314
	11a	Tx Mch	5785	54	Ant. 1	008092011314
	11a	Tx Hch	5825	54	Ant. 1	008092011314
6dB Bandwidth	11a	Tx Lch	5745	54	Ant. 3	008092011316
	11a	Tx Mch	5785	54	Ant. 3	008092011316
	11a	Tx Hch	5825	54	Ant. 3	008092011316
Maximum Peak Output Power	11a	Tx Lch	5745	54	Ant. 3	008092011316
	11a	Tx Mch	5785	54	Ant. 3	008092011316
	11a	Tx Hch	5825	54	Ant. 3	008092011316
	11a	Tx Lch	5745	54	Ant. 1	008092011316
	11a	Tx Mch	5785	54	Ant. 1	008092011316
	11a	Tx Hch	5825	54	Ant. 1	008092011316
	11a	Tx Lch	5745	54	Ant. 2	008092011316
	11a	Tx Mch	5785	54	Ant. 2	008092011316
	11a	Tx Hch	5825	54	Ant. 2	008092011316
	11a	Tx Lch	5745	54	Ant. 3	008092011314
Radiated Spurious Emission (below 1GHz)	11a	Tx Mch	5785	54	Ant. 3	008092011314
	11a	Tx Hch	5825	54	Ant. 3	008092011314
Radiated Spurious Emission (above 1GHz)	11a	Tx Lch	5745	54	Ant. 3	008092011317
	11a	Tx Mch	5785	54	Ant. 3	008092011317
	11a	Tx Hch	5825	54	Ant. 3	008092011317
Conducted Spurious Emission	11a	Tx Lch	5745	54	Ant. 3	008092011316
	11a	Tx Mch	5785	54	Ant. 3	008092011316
	11a	Tx Hch	5825	54	Ant. 3	008092011316
Conducted Emission Band Edge compliance	11a	Tx Lch	5745	54	Ant. 3	008092011316
	11a	Tx Hch	5825	54	Ant. 3	008092011316
Power Density	11a	Tx Lch	5745	54	Ant. 3	008092011316
	11a	Tx Mch	5785	54	Ant. 3	008092011316
	11a	Tx Hch	5825	54	Ant. 3	008092011316
99% Occupied Bandwidth	11a	Tx Lch	5745	54	Ant. 3	008092011316
	11a	Tx Mch	5785	54	Ant. 3	008092011316
	11a	Tx Hch	5825	54	Ant. 3	008092011316

*It was verified Data Rate and Antenna Port with maximum power.

*The formal tests were performed with the above modes, which had the maximum power.

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[Table 4] (1/2)

Test Items	Operating Mode			Freq [MHz]	Data Rate [Mbps]	Used Antennas(Ports) for Tx	Serial No.
Conducted Emission	11n(20HT)	Tx	Lch	2412	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Tx	Mch	2437	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Tx	Hch	2462	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Tx	Lch	5745	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Tx	Mch	5785	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Tx	Hch	5825	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
6dB Bandwidth	11n(20HT)	Tx	Lch	2412	130	Ant. 1	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 1	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 1	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 1	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 1	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 1	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 2	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 2	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 2	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 2	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 2	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 2	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 3	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 3	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 3	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 3	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 3	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 3	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
Maximum Peak Output Power	11n(20HT)	Tx	Lch	2412	130	Ant. 1	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 1	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 1	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 1	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 1	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 1	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 2	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 2	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 2	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 2	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 2	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 2	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 3	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 3	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 3	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 3	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 3	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 3	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316

*It was verified Data Rate and Antenna Port with maximum power.

*The formal tests were performed with the above modes, which had the maximum power.

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[Table 4] (2/2)

Test Items	Operating Mode			Freq [MHz]	Data Rate [Mbps]	Used Antennas(Ports)for Tx	Serial No.
Radiated Spurious Emission	11n(20HT)	Tx	Lch	2412	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Tx	Mch	2437	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Tx	Hch	2462	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Tx	Lch	5745	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Tx	Mch	5785	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Tx	Hch	5825	130	Ant. 1 +Ant. 2 +Ant. 3	008092011314
Conducted Spurious Emission	11n(20HT)	Tx	Lch	2412	130	Ant. 2	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 2	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 2	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 2	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 2	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 2	008092011316
Conducted Emission Band Edge compliance	11n(20HT)	Tx	Lch	2412	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
Power Density	11n(20HT)	Tx	Hch	5825	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 1	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 1	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 1	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 2	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 2	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 2	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 3	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 3	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 3	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 1	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 1	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 1	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 2	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 2	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 2	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 3	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 3	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 3	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 1	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 1	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 1	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 2	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 2	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 2	008092011316
	11n(20HT)	Tx	Lch	2412	130	Ant. 3	008092011316
	11n(20HT)	Tx	Mch	2437	130	Ant. 3	008092011316
	11n(20HT)	Tx	Hch	2462	130	Ant. 3	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 1	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 1	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 1	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 2	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 2	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 2	008092011316
	11n(20HT)	Tx	Lch	5745	130	Ant. 3	008092011316
	11n(20HT)	Tx	Mch	5785	130	Ant. 3	008092011316
	11n(20HT)	Tx	Hch	5825	130	Ant. 3	008092011316
99% Occupied Bandwidth	11n(20HT)	Tx	Hch	5825	130	Ant. 3	008092011316

*It was verified Data Rate and Antenna Port with maximum power.

*The formal tests were performed with the above modes, which had the maximum power.

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[Table 5] (1/2)

Test Items	Operating Mode			Freq [MHz]	Data Rate [Mbps]	Used Antennas(Ports) for Tx or Rx	Serial No.
Conducted Emission	11n(40HT)	Tx	Lch	2422	270	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(40HT)	Tx	Mch	2437	270	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(40HT)	Tx	Hch	2452	270	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(40HT)	Tx	Lch	5755	270	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(40HT)	Tx	Hch	5795	270	Ant. 1 +Ant. 2 +Ant. 3	008092011314
6dB Bandwidth	11n(40HT)	Tx	Lch	2422	270	Ant. 1	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 1	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 1	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 1	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 1	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 2	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 2	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 2	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 3	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 3	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 3	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 3	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 3	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Lch	2437	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Lch	2452	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 1	008092011316
	11n(40HT)	Tx	Lch	2437	270	Ant. 1	008092011316
Maximum Peak Output Power	11n(40HT)	Tx	Lch	2452	270	Ant. 1	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	2437	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	2452	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 3	008092011316
	11n(40HT)	Tx	Lch	2437	270	Ant. 3	008092011316
	11n(40HT)	Tx	Lch	2452	270	Ant. 3	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 1	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 1	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 2	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 3	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 3	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(40HT)	Tx	Mch	2437	270	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(40HT)	Tx	Hch	2452	270	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(40HT)	Tx	Lch	5755	270	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(40HT)	Tx	Hch	5795	270	Ant. 1 +Ant. 2 +Ant. 3	008092011314
Radiated Spurious Emission	11n(40HT)	Tx	Lch	2422	270	Ant. 2	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 2	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 2	008092011316
Conducted Spurious Emission	11n(40HT)	Tx	Hch	5795	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316

*It was verified Data Rate and Antenna Port with maximum power.

*The formal tests were performed with the above modes, which had the maximum power.

[Table 5] (2/2)

Test Items	Operating Mode			Freq [MHz]	Data Rate [Mbps]	Used Antennas(Ports) for Tx or Rx	Serial No.
Power Density	11n(40HT)	Tx	Lch	2422	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 1	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 1	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 1	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 2	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 2	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 3	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 3	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 3	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 1 +Ant. 2 +Ant. 3	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 1	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 1	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 2	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 3	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 3	008092011316
99% Occupied Bandwidth	11n(40HT)	Tx	Lch	2422	270	Ant. 1	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 1	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 1	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 2	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 2	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	2422	270	Ant. 3	008092011316
	11n(40HT)	Tx	Mch	2437	270	Ant. 3	008092011316
	11n(40HT)	Tx	Hch	2452	270	Ant. 3	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 1	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 1	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 2	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 2	008092011316
	11n(40HT)	Tx	Lch	5755	270	Ant. 3	008092011316
	11n(40HT)	Tx	Hch	5795	270	Ant. 3	008092011316

*It was verified Data Rate and Antenna Port with maximum power.

*The formal tests were performed with the above modes, which had the maximum power.

[Table 6]

Test Items	Operating Mode			Freq [MHz]	Used Antennas(Ports) for Tx or Rx	Serial No.
Conducted Emission	11bg	Rx	Mch	2437	Ant. 1	008092011314
Radiated Spurious Emission (below 1GHz)	11bg	Rx	Mch	2437	Ant. 3	008092011314
Radiated Spurious Emission (above 1GHz)	11bg	Rx	Mch	2437	Ant. 3	008092011317
Conducted Spurious Emission	11bg	Rx	Mch	2437	Ant. 3	008092011316
Conducted Emission	11a	Rx	Mch	5785	Ant. 1	008092011314
Radiated Spurious Emission (below 1GHz)	11a	Rx	Mch	5785	Ant. 3	008092011314
Radiated Spurious Emission (above 1GHz)	11a	Rx	Mch	5785	Ant. 3	008092011317
Conducted Spurious Emission	11a	Rx	Mch	5785	Ant. 3	008092011316
Conducted Emission	11n(20HT)	Rx	Mch	2437	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Rx	Mch	5785	Ant. 1 +Ant. 2 +Ant. 3	008092011314
Radiated Spurious Emission	11n(20HT)	Rx	Mch	2437	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(20HT)	Rx	Mch	5785	Ant. 1 +Ant. 2 +Ant. 3	008092011314
Conducted Spurious Emission	11n(20HT)	Rx	Mch	2437	Ant. 2	008092011316
	11n(20HT)	Rx	Mch	5785	Ant. 2	008092011316
Conducted Emission	11n(40HT)	Rx	Mch	2437	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(40HT)	Rx	Hch	5795	Ant. 1 +Ant. 2 +Ant. 3	008092011314
Radiated Spurious Emission	11n(40HT)	Rx	Mch	2437	Ant. 1 +Ant. 2 +Ant. 3	008092011314
	11n(40HT)	Rx	Hch	5795	Ant. 1 +Ant. 2 +Ant. 3	008092011314
Conducted Spurious Emission	11n(40HT)	Rx	Mch	2437	Ant. 2	008092011316
	11n(40HT)	Rx	Hch	5795	Ant. 2	008092011316

*It was verified Data Rate and Antenna Port with maximum power.

*The formal tests were performed with the above modes, which had the maximum power.

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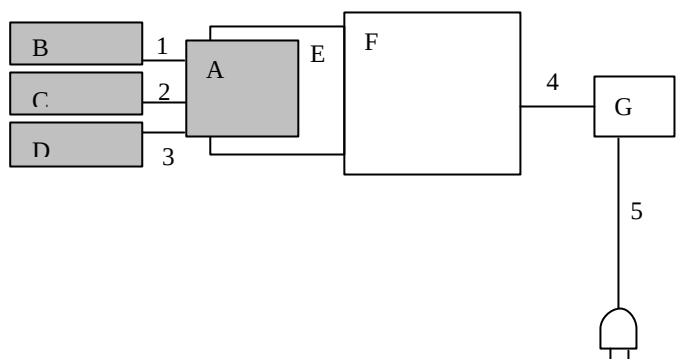
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4.2 Configuration and peripherals

For Conducted emission test and Radiated emission test (above 1GHz)



AC120V/60Hz

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

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	MiniPCI Wireless LAN Board	SX-10WAN	Refer to Clause 4.1	silex	EUT
B	Antenna	TT98061	001	silex	EUT(Antenna 1)
C	Antenna	TT98061	002	silex	EUT(Antenna 2)
D	Antenna	TT98061	003	silex	EUT(Antenna 3)
E	PCI Adapter	-	-	silex	For setting test mode
F	Note PC	T30 (= 2366-LJ7)	97-99D4L	IBM	For setting test mode
G	AC adapter	02K6750	11S02K6750Z1Z2UP29A0TJ	IBM	For setting test mode

List of cables used

No.	Name	Length (m)	Shield	
			Cable	Connector
1	Antenna cable	0.12	Shielded	Shielded
2	Antenna cable	0.12	Shielded	Shielded
3	Antenna cable	0.12	Shielded	Shielded
4	DC cable	1.8	Unshielded	Unshielded
5	AC cable	1.0	Unshielded	Unshielded

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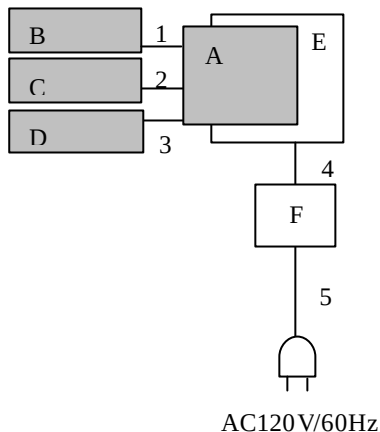
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For Radiated emission test (below 1GHz)



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

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	MiniPCI Wireless LAN Board	SX-10WAN	Refer to Clause 4.1	silex	EUT
B	Antenna	TT98061	001	silex	EUT (Antenna 1)
C	Antenna	TT98061	002	silex	EUT (Antenna 2)
D	Antenna	TT98061	003	silex	EUT (Antenna 3)
E	Jig	-	-	silex	For setting test mode
F	AC Adapter	VE10B-050	-	FAIRWAY	For setting test mode

List of cables used

No.	Name	Length (m)	Shield	
			Cable	Connector
1	Antenna cable	0.10	Shielded	Shielded
2	Antenna cable	0.10	Shielded	Shielded
3	Antenna cable	0.10	Shielded	Shielded
4	DC cable	1.30	Unshielded	Unshielded
5	AC cable	1.0	Unshielded	Unshielded

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SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a urethane platform of nominal size, 1.0m by 1.5m raised 80cm above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from a Line Impedance Stabilization Network (LISN)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

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

I/O cable and AC cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane. All unused 50ohm connectors of the LISN(AMN) were resistivity terminated in 50ohm when not connected to the measuring equipment.

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

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

Detector	: quasi-peak and average detector (IF BW 9 kHz)
Measurement range	: 0.15-30MHz
Test data	: APPENDIX 2
Test result	: Pass

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SECTION 6: Spurious Emission

[Conducted]

Test Procedure

The Out of Band Emission was measured with a spectrum analyzer connected to the antenna port.

It was measured based on "1. RF antenna conducted test" of "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247".

The following spectrum analyzer setting was used:

- RBW: 100kHz
- VBW: 300kHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2

Test result : Pass

[Radiated]

Test Procedure

It was measured based on "2. Radiated emission test" of "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247".

EUT was placed on a urethane platform of nominal size, 0.5m by 0.5m, raised 80cm above the conducting ground plane.

The Radiated Electric Field Strength intensity has been measured in a Semi Anechoic Chamber with a ground plane and at a distance of 3m(Below 10GHz) and 1m(Upper 10GHz).

The height of the measuring 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 with the Test Receiver, or the Spectrum Analyzer (in linear mode).

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

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

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.

20dBc was applied to the frequency over the limit of FCC 15.209 / Table 2 of RSS-210 2.7 (IC) and outside the restricted band of FCC15.205 / Table 1 of RSS-210 2.7 (IC).

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
Detector	QP: BW 120kHz	PK: RBW:1MHz/VBW: 1MHz
IF Bandwidth		AV: RBW:1MHz/VBW:10Hz
		20dBc : RBW:100kHz/VBW:300kHz

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

Test data : APPENDIX 2

Test result : Pass

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SECTION 7: Bandwidth

Test Procedure

6 dB Bandwidth

The bandwidth was measured with a spectrum analyzer connected to the antenna port.

It was measured based on "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247 ".

The following spectrum analyzer setting was used:

- Span: 50MHz (for 11b, 11g, 11a, and 11n(20HT)), 100MHz (for 11n(40HT))
- RBW: 100kHz
- VBW: 300kHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2

Test result : Pass

99% Occupied Bandwidth

Test Procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.

The following spectrum analyzer setting was used:

- Span: Enough width to display 20dB Bandwidth
- RBW: as close to 1% of the Span as is possible without being below 1%
- VBW: Three times of RBW
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2

Test result : Pass

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SECTION 8: Maximum Peak Output Power

Test Procedure

The Maximum Peak Output Power was measured with a power meter (tested bandwidth: 50MHz) connected to the antenna port.

It was measured based on "Power Output Option 1" of "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247".

Test data : APPENDIX 2

Test result : Pass

SECTION 9: Peak Power Density

[Conducted]

Test Procedure

The Peak Power Density was measured with a spectrum analyzer connected to the antenna port.

It was measured based on "PSD Option 1" of "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247".

- Span: 1.5MHz
- RBW: 3kHz
- VBW: 100kHz
- Sweep: 500sec
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2

Test result : Pass

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