



RADIO TEST REPORT

Test Report No. : 10748020H-C-R1

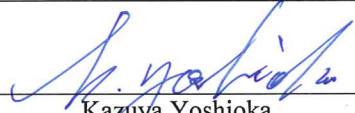
Applicant : silex technology, Inc.
Type of Equipment : Wireless LAN SDIO module
Model No. : SX-SDMAN2
FCC ID : N6C-SDMAN2
Test regulation : FCC Part 15 Subpart E: 2015
Test Result : Complied

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with above regulation.
4. The test results in this report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
6. This test report covers Radio technical requirements. It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
7. This report is a revised version of 10748020H-C. 10748020H-C is replaced with this report.

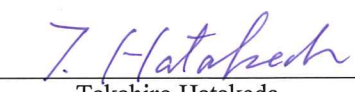
Date of test:

May 1 to July 23, 2015

Representative test engineer:


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Consumer Technology Division



NVLAP LAB CODE: 200572-0

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*As for the range of Accreditation in NVLAP, you may refer to the WEB address,
<http://www.ul.com/japan/jpn/pages/services/emc/about/mark1/index.jsp#nvlap>

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13-EM-F0429

REVISION HISTORY

Original Test Report No.: 10748020H-C

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SECTION 1: Customer information

Company Name	:	silex technology, Inc.
Address	:	2-3-1 Hikaridai, Seika-cho, Kyoto 619-0237, Japan
Telephone Number	:	+81-774-98-3878
Facsimile Number	:	+81-774-98-3758
Contact Person	:	Toshiro Kometani

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

2.1 Identification of E.U.T.

Type of Equipment	:	Wireless LAN SDIO module
Model No.	:	SX-SDMAN2
Serial No.	:	Refer to Clause 4.2
Rating	:	DC 3.3 V
Receipt Date of Sample	:	April 20, 2015
Country of Mass-production	:	Japan
Condition of EUT	:	Production prototype
		(Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT	:	No Modification by the test lab

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2.2 Product Description

Model: SX-SDMAN2 (referred to as the EUT in this report) is a Wireless LAN SDIO module.

General Specification

Clock frequency(ies) in the system : 26 MHz
 Operating Temperature : -20 deg. C - +85 deg. C

Radio Specification

Radio Type : Transceiver
 Method of Frequency Generation : Synthesizer
 Power Supply (inner) : DC 1.27 V

	IEEE802.11b	IEEE802.11g/n (20 M band)	IEEE802.11a/n (20 M band)	IEEE802.11n (40 M band)	Bluetooth Ver.4.0 with EDR function
Frequency of operation	2412 MHz - 2462 MHz	2412 MHz - 2462 MHz	5180 MHz - 5240 MHz *1) 5260 MHz - 5320 MHz *1) 5500 MHz - 5700 MHz *1) 5745 MHz - 5825 MHz *1)	5190 MHz - 5230 MHz *1) 5270 MHz - 5310 MHz *1) 5510 MHz - 5670 MHz *1) 5755 MHz - 5795 MHz *1)	2402 MHz - 2480 MHz
Type of modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (64QAM, 16QAM, QPSK, BPSK)	OFDM (64QAM, 16QAM, QPSK, BPSK)		BT: FHSS (GFSK, $\pi/4$ -DQPSK, 8-DPSK) LE: GFSK
Channel spacing	5 MHz		20 MHz	40 MHz	BT: 1 MHz LE: 2 MHz
Antenna type	[Antenna 1] Antenna port 0: External antenna (WLAN) Antenna port 1: External antenna (WLAN / Bluetooth)				
	[Antenna 2] Antenna port 0: Chip antenna (WLAN) Antenna port 1: Chip antenna (WLAN / Bluetooth)				
Antenna Connector type	Antenna 1: U.FL Alternative connector Antenna 2: none				
Antenna Gain	Antenna 1: 1.8 dBi (2.4 GHz Band), 3.9 dBi (5 GHz Band) Antenna 2: 1.4 dBi (2.4 GHz Band), 2.3 dBi (5 GHz Band)				

*1) This test report applies to IEEE802.11a / n-20 / n-40 (5GHz band).

* Spurious emission test was performed with two antenna type (external antenna and chip antenna).

** WLAN and Bluetooth do not transmit simultaneously.

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SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart E: 2015, final revised on June 12, 2015 and effective July 13, 2015

Title : FCC 47CFR Part15 Radio Frequency Device Subpart E
Unlicensed National Information Infrastructure Devices
Section 15.407 General technical requirements

* The revision on June 12, 2015 does not affect the test specification applied to the EUT.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Conducted Emission	FCC: ANSI C63.4-2009	FCC: 15.407 (b) (6) / 15.207	QP 8.0 dB, 0.15940 MHz, L AV 12.9 dB, 0.47560 MHz, N	Complied	-
	IC: RSS-Gen 8.8	IC: RSS-Gen 8.8			
26 dB Emission Bandwidth	FCC: KDB Publication Number 789033 IC: -	FCC: 15.407 (a) (1) (2) (3) IC: -	See data	N/A	Conducted
Maximum Conducted Output Power	FCC: KDB Publication Number 789033 IC: -	FCC: 15.407 (a) (1) (2) (3) IC: RSS-247 6.2.1 (1) 6.2.2 (1) 6.2.3 (1) 6.2.4 (1)		Complied	Conducted
Maximum Power Spectral Density	FCC: KDB Publication Number 789033 IC: -	FCC : 15.407 (a) (1) (2) (3) IC: RSS-247 6.2.1 (1) 6.2.2 (1) 6.2.3 (1) 6.2.4 (1)		Complied	Conducted
Spurious Emission Restricted Band Edge	FCC: ANSI C63.4-2009 KDB Publication Number 789033 IC: -	FCC: 15.407 (b), 15.205 and 15.209 IC: RSS-247 6.2.1 (2) 6.2.2 (2) 6.2.3 (2) 6.2.4 (2)	2.1 dB 5150.000 MHz, AV, Hori.	Complied	Conducted (< 30 MHz) / Radiated (> 30 MHz) *1)
20dB Emission Bandwidth	FCC :ANSI C63.4:2009	FCC : 15.215	See data	Reference data	Conducted
6 dB Emission Bandwidth	FCC: ANSI C63.4-2009	FCC: 15.407 (e)	See data	Complied	Conducted
	IC: -	IC: RSS-247 6.2.4 (1)			

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

* For DFS tests, please see the test report number 10748020H-D-R1 issued by UL Japan, Inc.

*1) Radiated test was selected over 30 MHz based on section FCC 15.407 (b) and KDB 789033 D02 G.3.b).

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FCC 15.31 (e)

The RF Module has own regulator.

The RF Module is constantly provided voltage through own regulator regardless of input voltage (DC 3.3 V).

Therefore, this EUT complies with the requirement.

FCC Part 15.203/212 Antenna requirement

[Antenna 1]

The EUT has a unique coupling/antenna connector (U.FL Alternative connector). Therefore the equipment complies with the requirement of 15.203/212.

[Antenna 2]

It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203/212.

3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99 % Occupied Band Width	RSS-Gen 6.6	IC: -	N/A	N/A	Conducted

Other than above, 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 $k=2$.

Use EMC Lab.

Test site (semi anechoic chamber)	Conducted emission Uncertainty (+/-)			
	No. 1	No. 2	No. 3	No. 4
150 kHz - 30 MHz	3.5 dB	3.5 dB	3.4 dB	3.5 dB

Test site (semi anechoic chamber)	Radiated emission Uncertainty (+/-)						
	Measurement distance: 3 m				1 m		0.5 m
	9 kHz -30 MHz	30 MHz -300 MHz	300 MHz -1 GHz	1 GHz -10 GHz	10 GHz -18 GHz	18 GHz -26.5 GHz	26.5 GHz -40 GHz
No. 1	4.3 dB	5.1 dB	6.2 dB	5.5 dB	5.8 dB	5.8 dB	4.3 dB
No. 2	4.2 dB	5.1 dB	6.2 dB	5.4 dB	5.7 dB	5.9 dB	5.6 dB
No. 3	4.4 dB	5.1 dB	6.3 dB	5.2 dB	5.5 dB	5.8 dB	5.5 dB
No. 4	4.7 dB	5.3 dB	6.3 dB	5.3 dB	5.7 dB	5.9 dB	5.5 dB

Antenna terminal test Uncertainty (+/-)							
Power meter		Conducted emission and Power density			Conducted emission		Channel power
Below 1 GHz	Above 1 GHz	Below 1 GHz	1 GHz -3 GHz	3 GHz -18 GHz	18 GHz -26.5 GHz	26.5 GHz -40 GHz	
0.7 dB	1.5 dB	1.5 dB	1.7 dB	2.8 dB	2.8 dB	2.9 dB	

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 report meets the limits unless the uncertainty is taken into consideration.

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3.5 Test Location

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Test site	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms	Maximum measurement distance
No.1 semi-anechoic chamber	2973C-1	19.2 x 11.2 x 7.7	7.0 x 6.0	No.1 Power source room	10 m
No.2 semi-anechoic chamber	2973C-2	7.5 x 5.8 x 5.2	4.0 x 4.0	-	3 m
No.3 semi-anechoic chamber	2973C-3	12.0 x 8.5 x 5.9	6.8 x 5.75	No.3 Preparation room	3 m
No.3 shielded room	-	4.0 x 6.0 x 2.7	N/A	-	-
No.4 semi-anechoic chamber	2973C-4	12.0 x 8.5 x 5.9	6.8 x 5.75	No.4 Preparation room	3 m
No.4 shielded room	-	4.0 x 6.0 x 2.7	N/A	-	-
No.5 semi-anechoic chamber	-	6.0 x 6.0 x 3.9	6.0 x 6.0	-	-
No.6 shielded room	-	4.0 x 4.5 x 2.7	4.0 x 4.5	-	-
No.6 measurement room	-	4.75 x 5.4 x 3.0	4.75 x 4.15	-	-
No.7 shielded room	-	4.7 x 7.5 x 2.7	4.7 x 7.5	-	-
No.8 measurement room	-	3.1 x 5.0 x 2.7	N/A	-	-
No.9 measurement room	-	8.8 x 4.6 x 2.8	2.4 x 2.4	-	-
No.11 measurement room	-	6.2 x 4.7 x 3.0	4.8 x 4.6	-	-

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

3.6 Test data, Test instruments, and Test set up

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

4.1 Operating Modes

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.

Mode	Remarks*
IEEE 802.11a (11a)	24 Mbps, PN9
IEEE 802.11n MIMO 20MHz BW (11n-20)	MCS 11 (Long GI), PN9
IEEE 802.11n MIMO 40MHz BW (11n-40)	MCS 8 (Long GI), PN9
*The worst condition was determined based on the test result of Maximum Conducted Output Power.	
*The power value of the EUT was set for testing as follows (setting value might be different from product specification value); Power settings: Refer to the following table - Software: Atheros Radio Test Tool (ART-2-GUI) Version 2.3 *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.	

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[Power setting]

	Rate	Antenna port		Target Power	Power Setting	
					Antenna 1	Antenna 2
11a	24Mbps	Antenna port 0	5180 MHz	10.5	13	11
			5220 MHz	10.5	13	-
			5240 MHz	10.5	13	-
			5260 MHz	10.5	13	12
			5300 MHz	10.5	13	-
			5320 MHz	10.5	14	12
			5500 MHz	10.5	14	11
			5580 MHz	10.5	14	11.5
			5700 MHz	10.5	14	11.5
			5745 MHz	10	12.5	11
			5785 MHz	10	13	11
			5825 MHz	10	13.5	10.5
11n-20	MCS11 (Long GI)	Antenna port 0+1	5180 MHz	10.5	13	11.5
			5220 MHz	10.5	13	-
			5240 MHz	10.5	13	-
			5260 MHz	10.5	13	12
			5300 MHz	10.5	13	-
			5320 MHz	10.5	13	12
			5500 MHz	11	13	11
			5580 MHz	11	14	11.5
			5700 MHz	11	14	11.5
			5745 MHz	10	13	11
			5785 MHz	10	13.5	11
			5825 MHz	10	14	10.5
11n-40	MCS8 (Long GI)	Antenna port 0+1	5190 MHz	7	9	7
			5230 MHz	10.5	13	-
			5270 MHz	10.5	13	12.5
			5310 MHz	8	10	9.5
			5510 MHz	9.5	11.5	10.5
			5550 MHz	10.5	14	12
			5670 MHz	10.5	14	12
			5755 MHz	10	12.5	11.5
			5795 MHz	10	13.5	11.5

*Above values of “Power Setting” were setting values in the test tool in order to output the Target power.
Since the serial number of the product was different for antenna 1 and antenna 2, there were two different power setting values.

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*The details of Operating mode(s)

Test Item	Operating Mode	Tested Antenna port	Tested Frequency			
			Lower Band	Middle Band	Additional Band	Upper Band
Conducted emission *1)	11n-20 Tx	0+1	-	-	5550 MHz	-
26dB Emission Bandwidth	11a Tx	0 *2)	-	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	-
	11n-20 Tx	1 *2)	-	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	-
	11n-40 Tx	1 *2)	-	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	-
99% Occupied Bandwidth, 20dB Bandwidth	11a Tx	0 *2)	5180 MHz 5220 MHz 5240 MHz	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	11n-20 Tx	1 *2)	5180 MHz 5220 MHz 5240 MHz	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	11n-40 Tx	1 *2)	5190 MHz 5230 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
6dB Bandwidth	11a Tx	0 *2)	-	-	-	5745 MHz 5785 MHz 5825 MHz
	11n-20 Tx	1 *2)	-	-	-	5745 MHz 5785 MHz 5825 MHz
	11n-40 Tx	1 *2)	-	-	-	5755 MHz 5795 MHz
Maximum Conducted Output Power, Maximum Power Spectral Density	11a Tx	0	5180 MHz 5220 MHz 5240 MHz	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	11n-20 Tx	0, 1, 0+1	5180 MHz 5220 MHz 5240 MHz	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	11n-40 Tx	0, 1, 0+1	5190 MHz 5230 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
Radiated Spurious Emission (Below 1GHz) *1)	11n-20 Tx	0+1	-	-	5550 MHz	-
Radiated Spurious Emission (Above 1GHz)	11n-20 Tx *3)	0+1	5180 MHz	5260 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	11n-40 Tx	0+1	5190 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
Conducted Spurious Emission *1)	11n-20 Tx	1 *2)	-	-	5550 MHz	-

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

*2) After the comparison between Antenna port 0 and Antenna port 1, test was performed with the antenna that had higher power as a representative.

*3) Since 11a and 11n-20 have the same modulation method and no differences in transmitting specification, test was performed on the representative mode that had the highest conducted output power.

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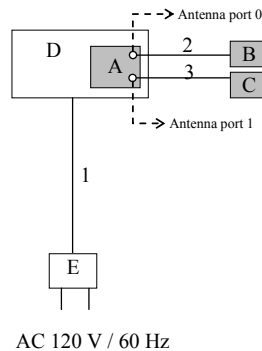
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4.2 Configuration and peripherals

[Antenna 1]



* 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	Remark
A	Wireless LAN SDIO module	SX-SDMAN2	84253F-010541	silex technology, Inc.	EUT
B	External antenna	H2B1PC1A1C	1	Unictron Technologies Corporation	EUT
C	External antenna	H2B1PC1A1C	2	Unictron Technologies Corporation	EUT
D	Jig	-	-	silex technology, Inc.	-
E	AC Adapter	US115-05	B12-0112765	UNIFIVE	-

List of cables used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	DC Cable	1.80	Unshielded	Unshielded	-
2	RF Cable	0.15	Shielded	Shielded	-
3	RF Cable	0.15	Shielded	Shielded	-

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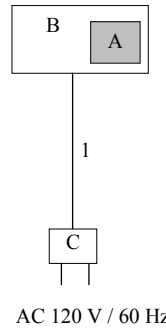
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[Antenna 2]



* 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	Remark
A	Wireless LAN SDIO module	SX-SDMAN2	84253F-0106D4	silex technology, Inc.	EUT
B	Jig	-	-	silex technology, Inc.	-
C	AC Adapter	US115-05	B12-0112765	UNIFIVE	-

List of cables used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	DC Cable	1.80	Unshielded	Unshielded	-

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SECTION 5: Conducted Emission

Test Procedure and conditions

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

The rear of tabletop was located 40 cm 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 80 cm from any other grounded conducting surface. EUT was located 80 cm from a Line Impedance Stabilization Network (LISN) / Artificial mains Network (AMN) and excess AC cable was bundled in center.

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

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

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

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

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

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

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SECTION 6: Radiated Spurious Emission and Band Edge Compliance

Test Procedure

EUT was placed on a urethane platform of nominal size, 2.0 m by 1.0 m (Antenna 1) / 1.5 m by 0.5 m (Antenna 2), raised 0.8 m above the conducting ground plane.

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

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

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

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

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.

< Below 1 GHz >

The result also satisfied with the general limits specified in section 15.209 (a).

< Above 1 GHz >

Inside of restricted bands (Section 15.205):

Apply to limit in the Section 15.209 (a).

Outside of the restricted bands:

Apply to limit 68.2 dBuV/m, 3 m (-27 dBm e.i.r.p. ^{*}) in the Section 15.407 (b) (1) (2) (3).

Apply to limit 68.2 dBuV/m, 3 m (-27 dBm e.i.r.p. ^{*}) or

78.2 dBuV/m, 3 m (-17 dBm e.i.r.p. ^{*}) in the Section 15.407 (b).

Restricted band edge:

Apply to limit in the Section 15.209 (a).

Since this limit is severer than the limit of the inside of restricted bands.

*Electric field strength to e.i.r.p. conversion:

$$E = \frac{1000000\sqrt{30P}}{3} \text{ (uV/m)} \quad : P \text{ is the e.i.r.p. (Watts)}$$

Test Antennas are used as below;

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

Frequency	Below 1 GHz	Above 1 GHz	
Instrument used	Test Receiver	Spectrum Analyzer	
Detector	QP	Peak	Average
IF Bandwidth	BW: 120 kHz	RBW: 1 MHz VBW: 3 MHz	Method AD *1) RBW: 1 MHz VBW: 3 MHz Detector: Power Averaging (RMS) Trace: ≥ 100 traces Duty factor was added to the results.
Test Distance	3 m	3 m (below 10 GHz), 1 m*2) (above 10 GHz), 0.5 m*3) (above 26.5 GHz)	

*1) The test method was also referred to KDB 789033 D02 General UNII Test Procedures New Rules v01 "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E (Issued on June 6, 2014)".

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

*3) Distance Factor: $20 \times \log(3.0 \text{ m}/0.5 \text{ m}) = 15.6 \text{ dB}$

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

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

Measurement range : 30 MHz - 40 GHz
Test data : APPENDIX
Test result : Pass

UL Japan, Inc.

Ise EMC Lab.

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SECTION 7: Antenna Terminal Conducted Tests

Test Procedure

The tests were made with below setting connected to the antenna port.

Test	Span	RBW	VBW	Sweep time	Detector	Trace	Instrument used and Test method
26 dB Bandwidth	Enough to capture the emission	Close to 1 % of EBW	> RBW	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth *1)	Enough width to display emission skirts	1 % to 5 % of OBW	≥ 3 RBW	Auto	Peak	Max Hold	Spectrum Analyzer
20 dB Bandwidth	40 MHz, 80 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
6 dB Bandwidth	40 MHz, 80 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Maximum Conducted Output Power	-	-	-	Auto	Average	-	Power Meter (Sensor: 80 MHz BW) (Method PM-G)
Maximum Power Spectral Density	40 MHz, 80 MHz	1 MHz or 470 kHz *2)	3 MHz or 1.5 MHz	Auto	RMS Power Averaging (200 times)	Clear Write	Spectrum Analyzer
Conducted Spurious Emission*3)	9 kHz – 150 kHz 150 kHz – 30 MHz	200 Hz 9.1 kHz	620 Hz 27 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Band Edge confirmation *4)	100 MHz	1 MHz	3 MHz	Auto	Peak / RMS Power Averaging (200 times)	Max Hold	Spectrum Analyzer (Method VD)

* The test method was also referred to KDB 789033 D02 General UNII Test Procedures New Rules v01 "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E (Issued on June 6, 2014)".

*1) Peak hold was applied as Worst-case measurement.

*2) FCC standard says that RBW is set to be 500 kHz for 5.725 GHz-5.850 GHz, but it is not possible with spectrum analyzer, so $10\log(500 \text{ kHz} / 470 \text{ kHz})$ was added to the test result.

*3) In the frequency range below 30 MHz, RBW was narrowed to separate the noise contents.

Then, wide-band noise near the limit was checked separately, however the noise was low enough as shown in the chart. (9 kHz-150 kHz: RBW = 200 Hz, 150 kHz-30 MHz: RBW = 9.1 kHz).

*4) Reference data

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

Test data : APPENDIX

Test result : Pass

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APPENDIX 1: Test data

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

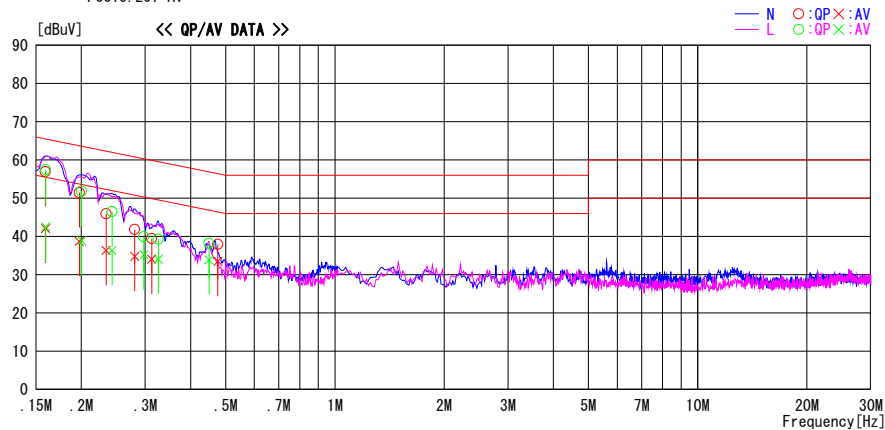
UL Japan, Inc. Ise EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2015/05/27

Report No. : 10748020H

Temp./Humi. : 24deg. C / 41% RH
Engineer : Tomoki Matsui

Mode / Remarks : Tx 11n-20 5500MHz

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15940	44.2	29.2	13.3	57.5	42.5	65.5	55.5	8.0	13.0	L	
0.15928	43.6	28.8	13.3	56.9	42.1	65.5	55.5	8.6	13.4	N	
0.20040	38.5	25.6	13.3	51.8	38.9	63.6	53.6	11.8	14.7	L	
0.19751	38.2	25.4	13.3	51.5	38.7	63.7	53.7	12.2	15.0	N	
0.23403	32.6	23.0	13.3	45.9	36.3	62.3	52.3	16.4	16.0	N	
0.24288	33.2	23.0	13.3	46.5	36.3	62.0	52.0	15.5	15.7	L	
0.28070	28.5	21.5	13.3	41.8	34.8	60.8	50.8	19.0	16.0	N	
0.29740	26.6	21.9	13.3	39.9	35.2	60.3	50.3	20.4	15.1	L	
0.32577	26.0	20.8	13.3	39.3	34.1	59.6	49.6	20.3	15.5	L	
0.31238	26.2	20.8	13.3	39.5	34.1	59.9	49.9	20.4	15.8	N	
0.47560	24.6	20.2	13.3	37.9	33.5	56.4	46.4	18.5	12.9	N	
0.45000	24.9	20.6	13.3	38.2	33.9	56.9	46.9	18.7	13.0	L	

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

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26dB Emission Bandwidth and 99% Occupied Bandwidth

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/21/2015
Temperature/ Humidity : 23 deg. C / 46 % RH
Engineer : Kazuya Yoshioka
Mode : Tx

11a Antenna port 0

Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
5180	-	17.0135	-
5220	-	16.9533	-
5240	-	16.9857	-
5260	22.638	17.0631	-
5300	21.526	17.0152	-
5320	22.343	17.0647	-
5500	22.649	16.9569	-
5580	21.846	16.9624	-
5700	22.411	16.9664	-
5745	-	16.9587	-
5785	-	16.9371	-
5825	-	16.9112	-

11n-20 Antenna port 1

Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
5180	-	17.9188	-
5220	-	17.9422	-
5240	-	17.9970	-
5260	21.133	17.9817	-
5300	21.763	17.9664	-
5320	20.336	18.0212	-
5500	21.428	17.9488	-
5580	21.199	17.9856	-
5700	21.041	17.9119	-
5745	-	17.9891	-
5785	-	17.9396	-
5825	-	18.0023	-

11n-40 Antenna port 1

Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99% Occupied Bandwidth [MHz]	Limit [MHz]
5190	-	35.8251	-
5230	-	35.9491	-
5270	42.011	35.9141	-
5310	41.452	35.8661	-
5510	41.111	35.9245	-
5550	40.883	35.8747	-
5670	41.862	35.8922	-
5755	-	35.8884	-
5795	-	36.0032	-

UL Japan, Inc.

Ise EMC Lab.

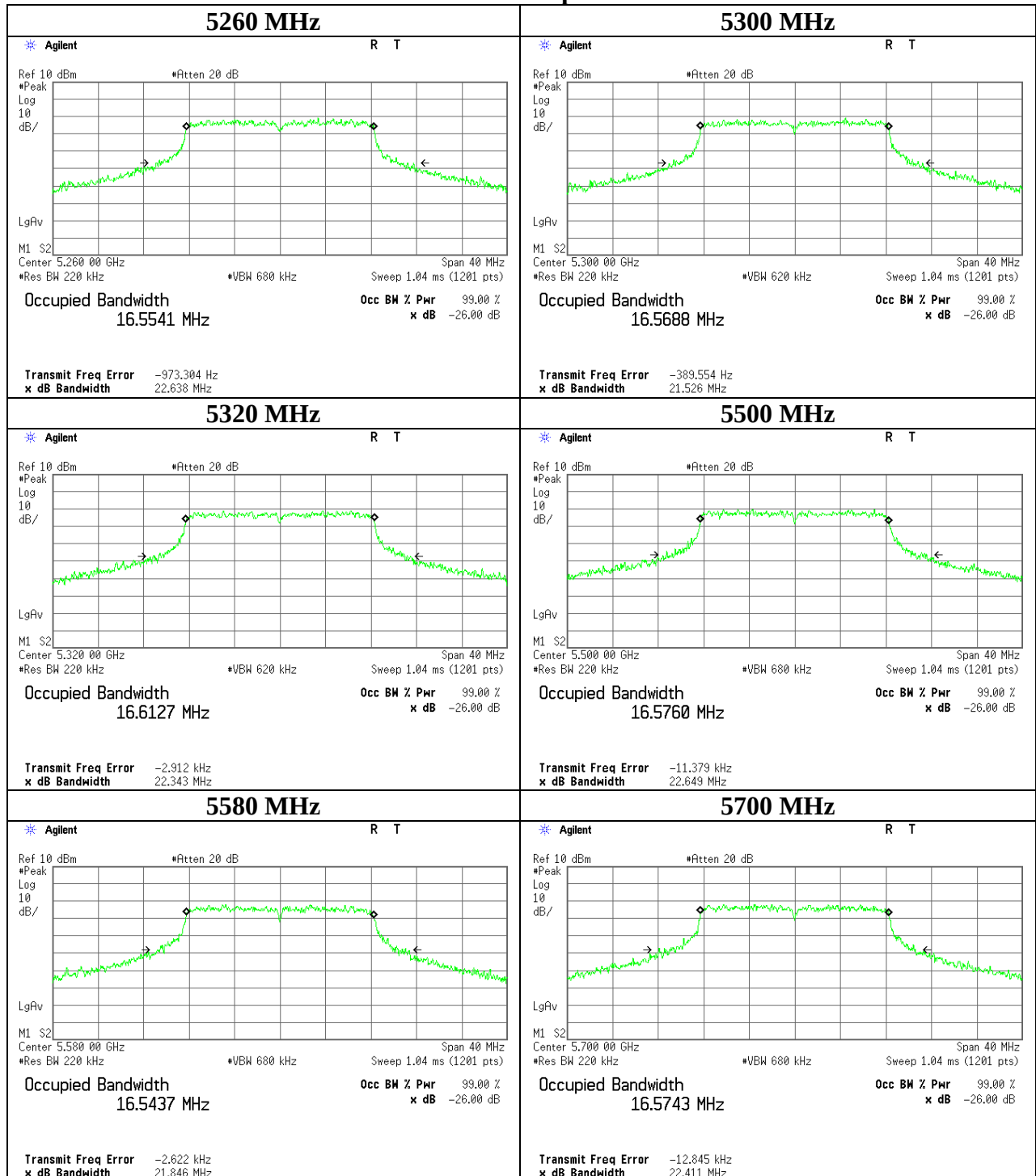
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Facsimile : +81 596 24 8124

26dB Emission Bandwidth

11a Antenna port 0



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Ise EMC Lab.

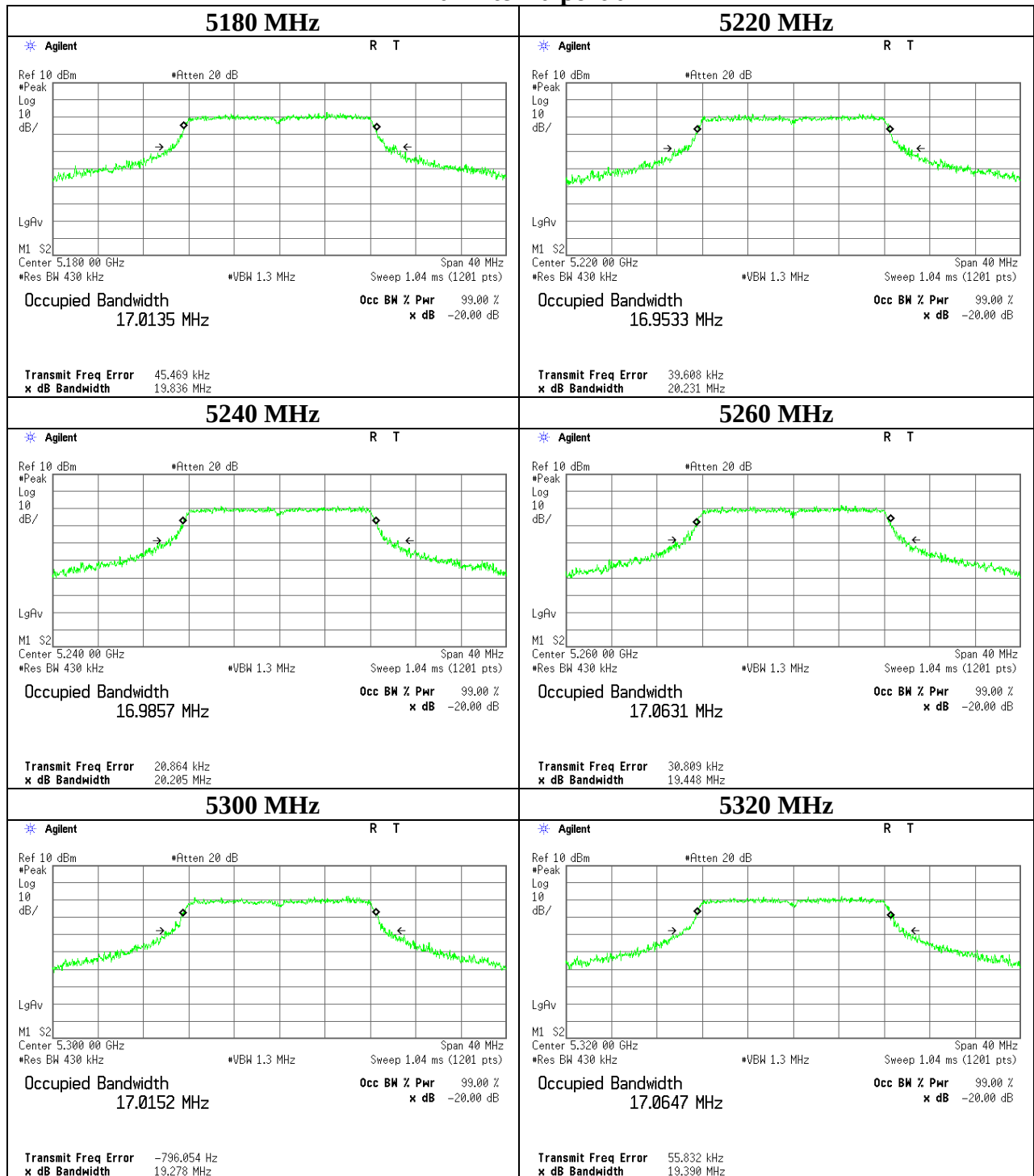
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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Facsimile : +81 596 24 8124

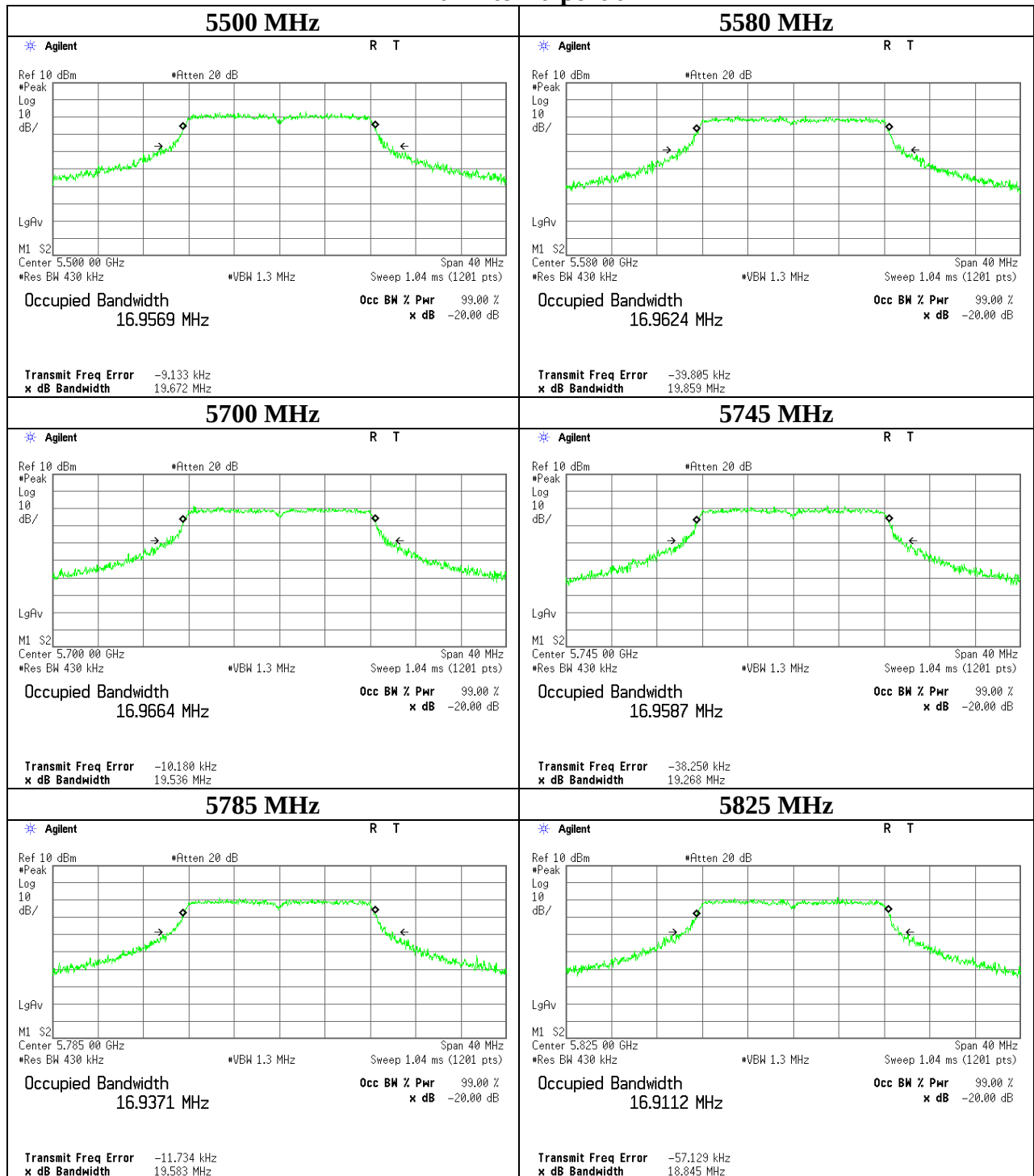
99% Occupied Bandwidth

11a Antenna port 0



99% Occupied Bandwidth

11a Antenna port 0



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Ise EMC Lab.

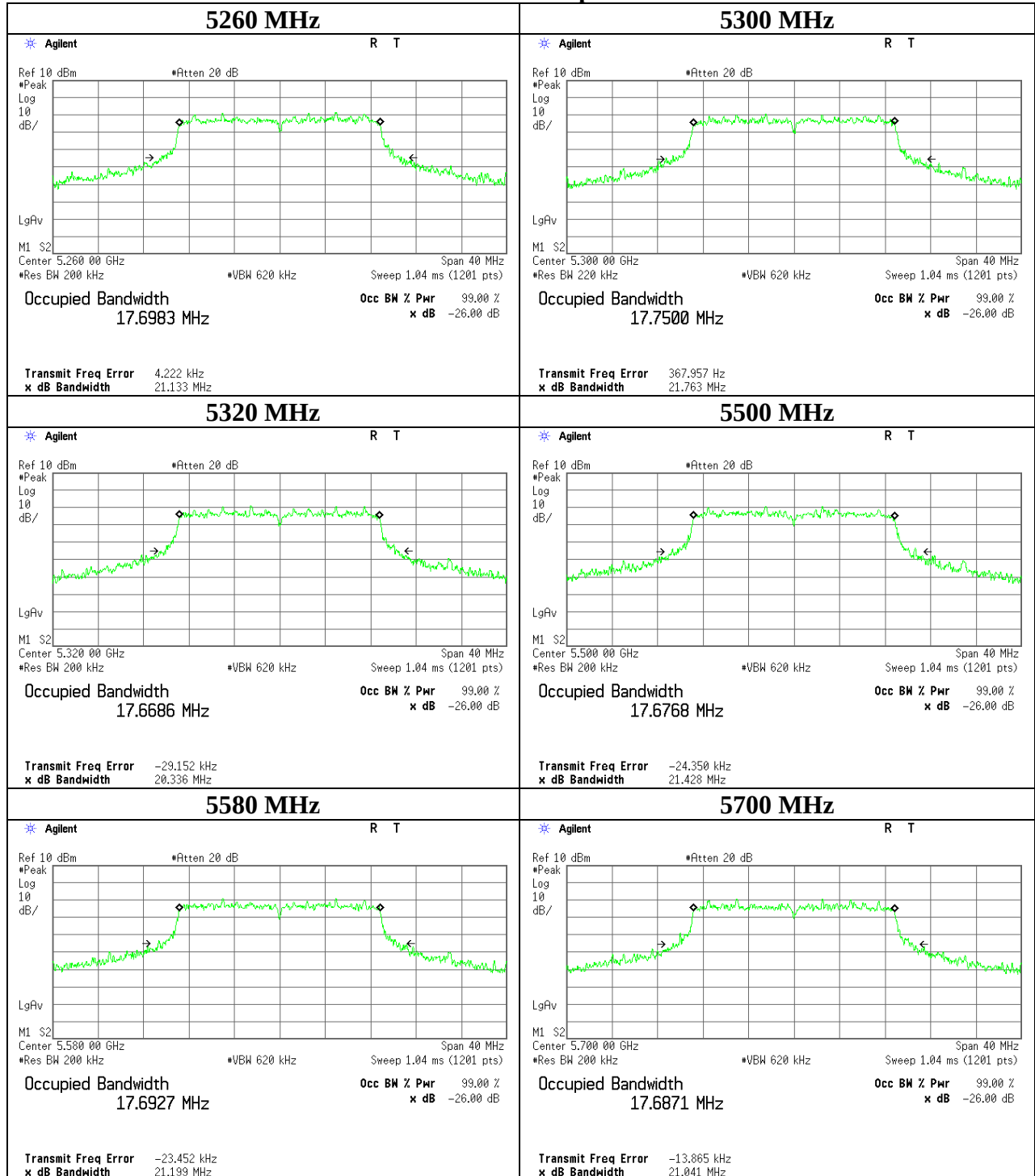
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26dB Emission Bandwidth

11n-20 Antenna port 1



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Ise EMC Lab.

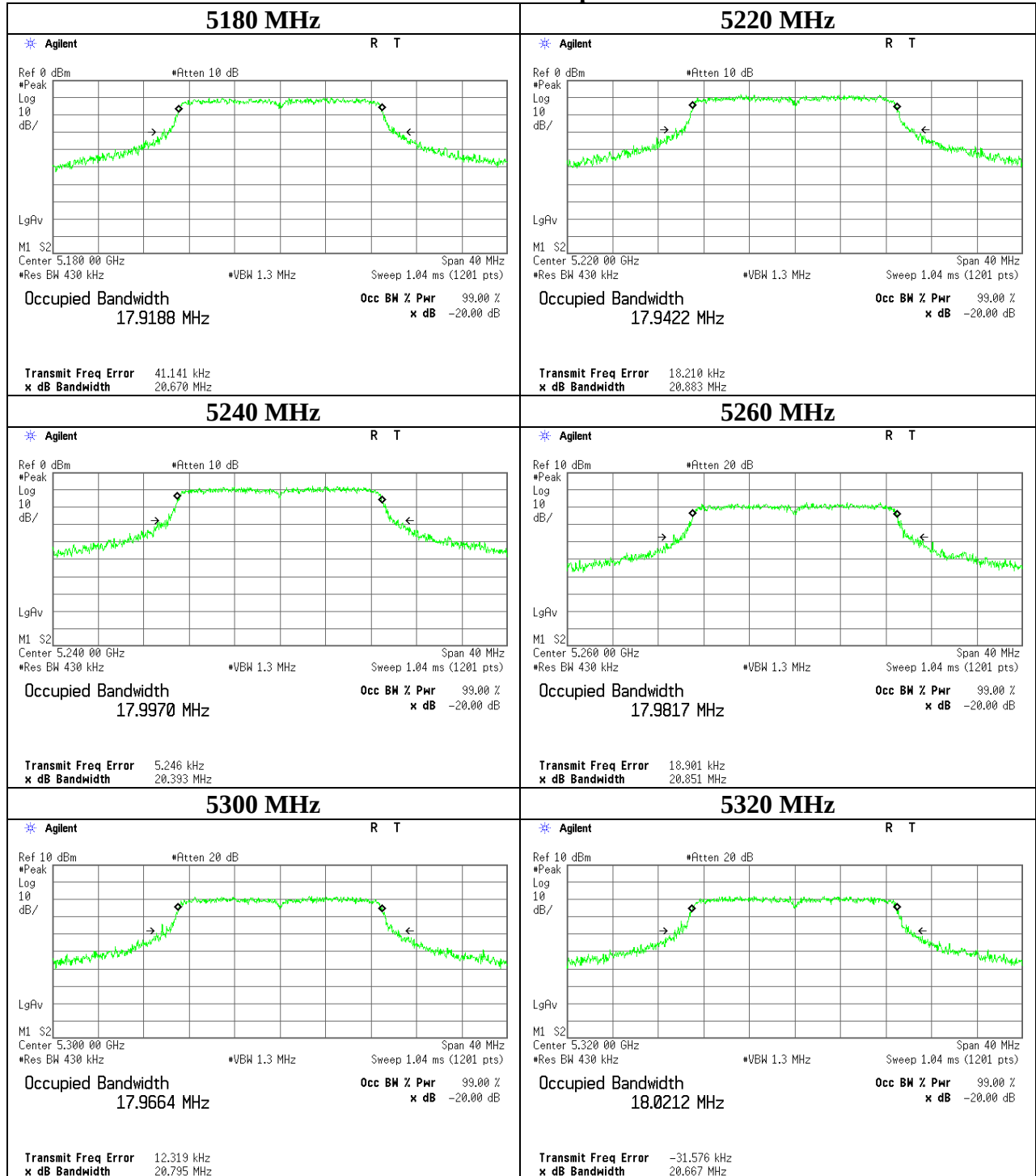
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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Facsimile : +81 596 24 8124

99% Occupied Bandwidth

11n-20 Antenna port 1



UL Japan, Inc.

Ise EMC Lab.

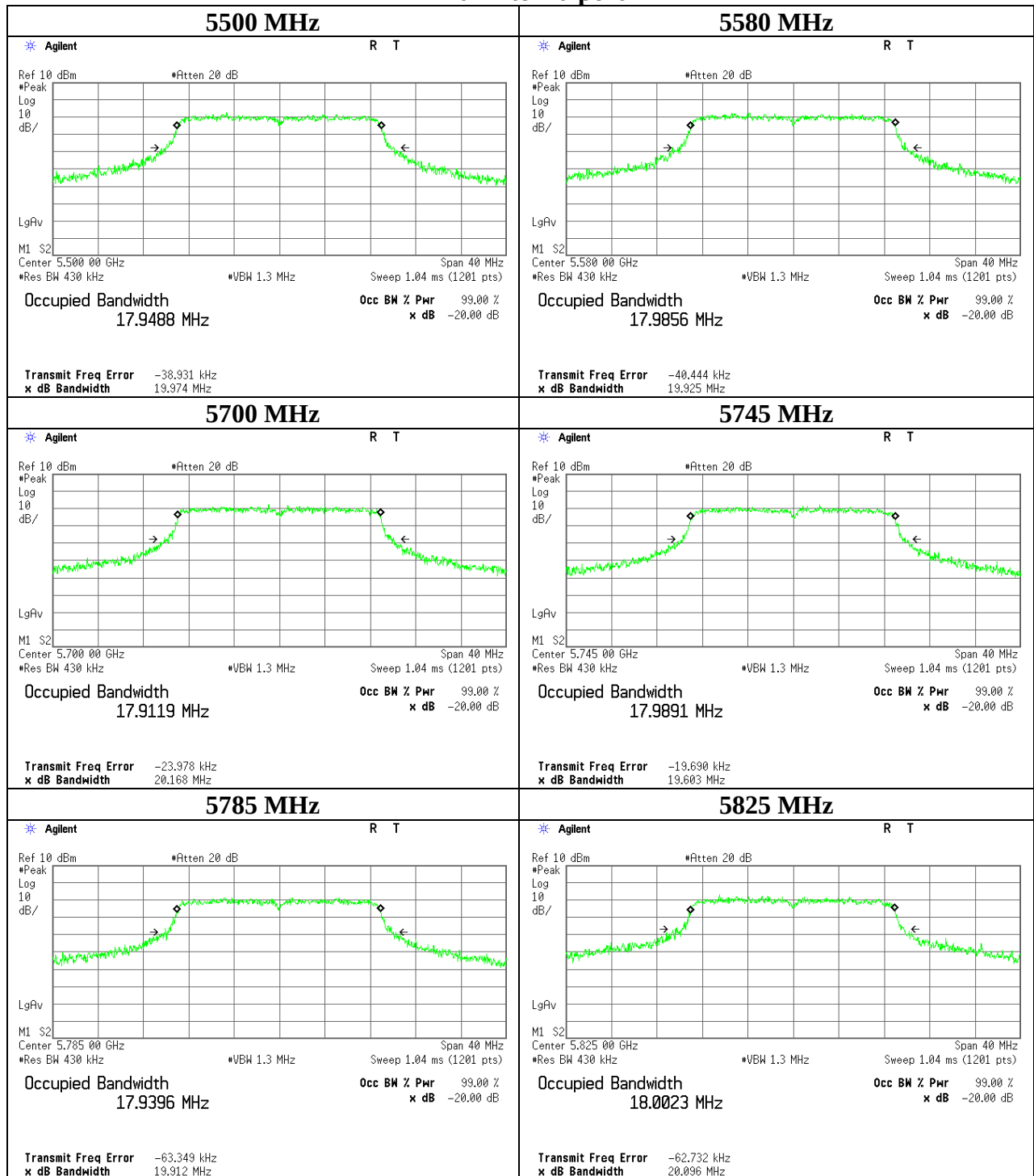
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Facsimile : +81 596 24 8124

99% Occupied Bandwidth

11n-20 Antenna port 1



UL Japan, Inc.

Ise EMC Lab.

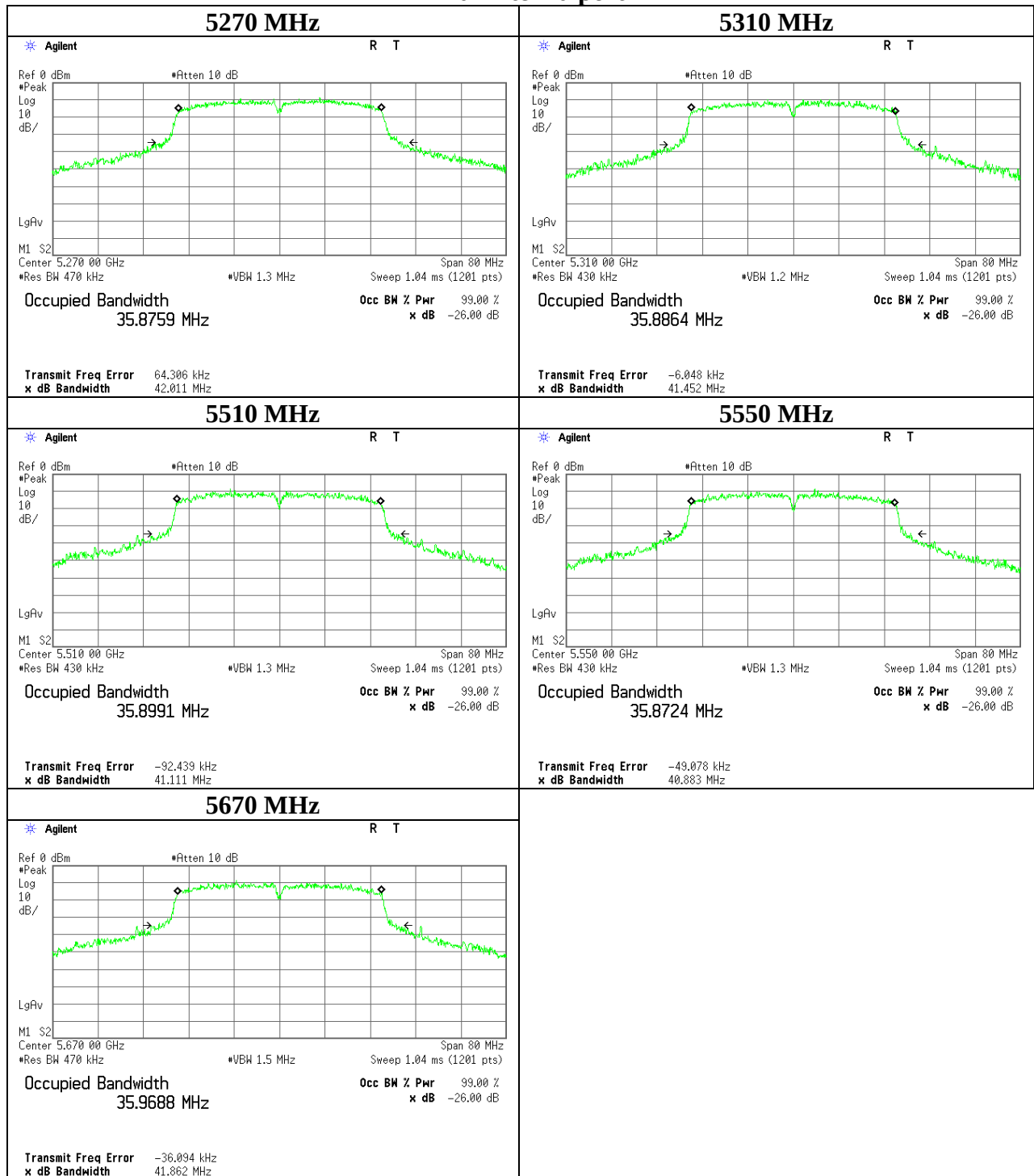
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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Facsimile : +81 596 24 8124

26dB Emission Bandwidth

11n-40 Antenna port 1



UL Japan, Inc.

Ise EMC Lab.

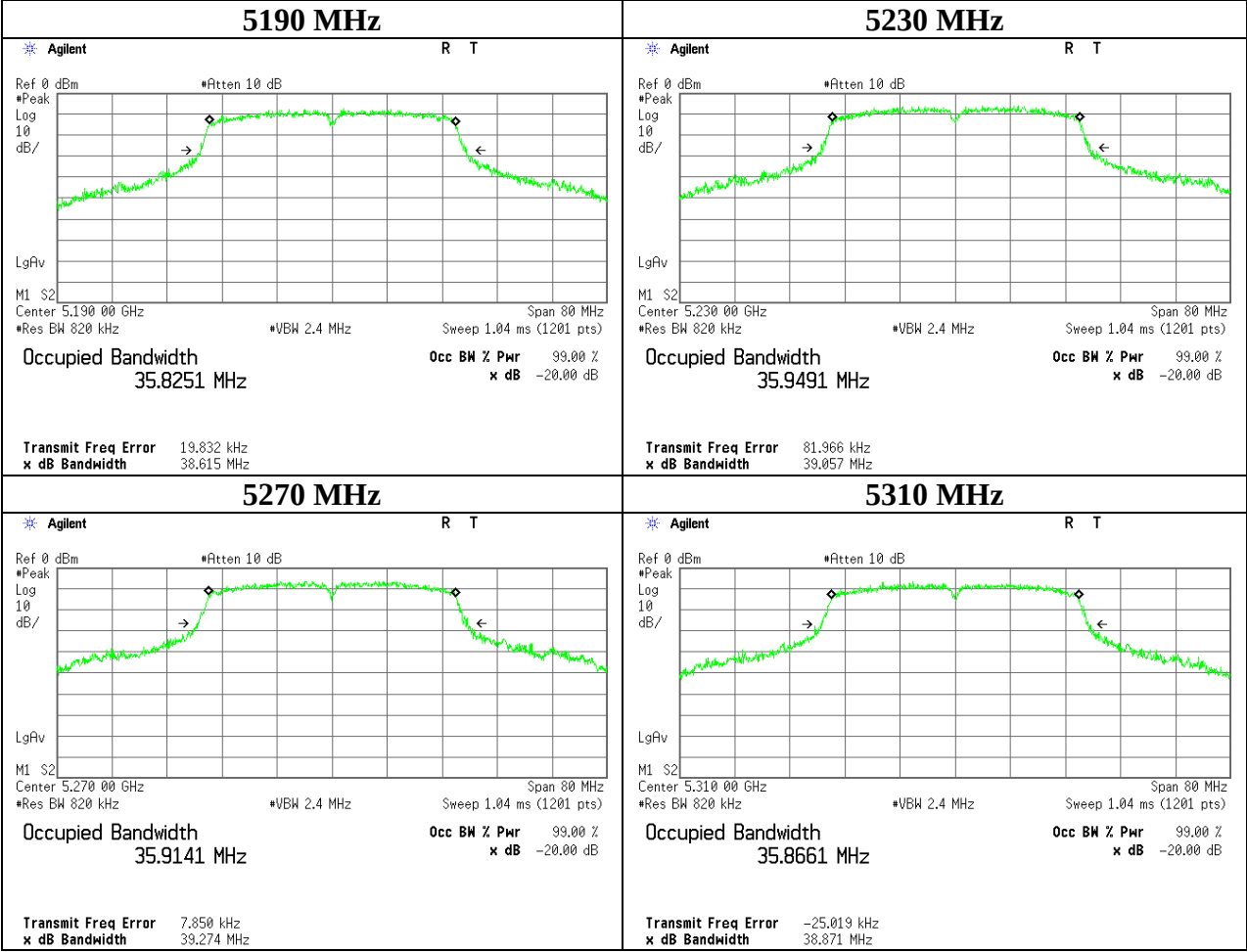
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

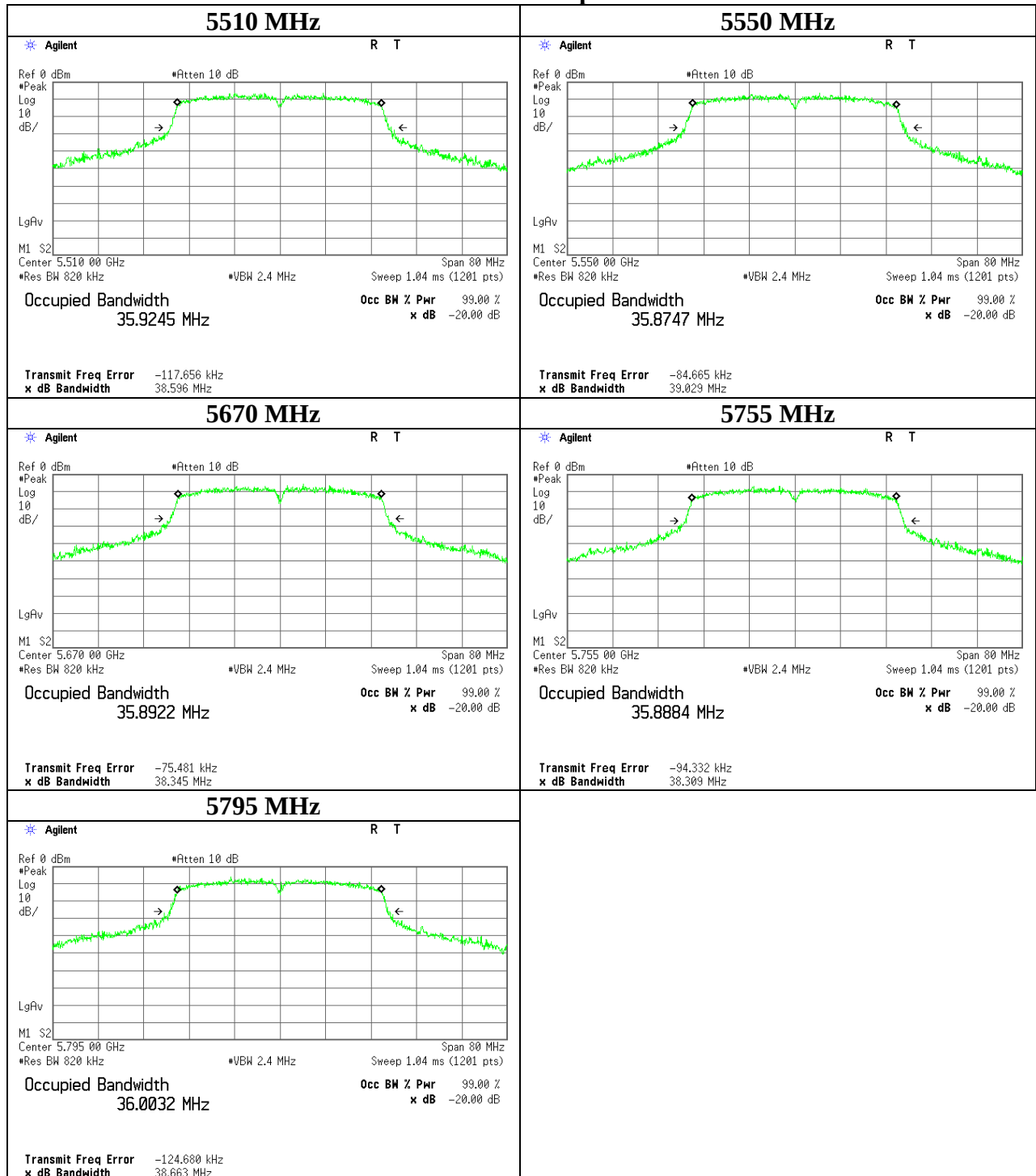
99% Occupied Bandwidth

11n-40 Antenna port 1



99% Occupied Bandwidth

11n-40 Antenna port 1



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Ise EMC Lab.

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Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

20dB Bandwidth

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/21/2015
Temperature/ Humidity : 23 deg. C / 46 % RH
Engineer : Kazuya Yoshioka
Mode : Tx

11a Antenna port 0

Frequency [MHz]	20 dB Bandwidth [MHz]	Limit [MHz]
5180	17.611	-
5220	17.559	-
5240	17.457	-
5260	17.541	-
5300	17.564	-
5320	17.575	-
5500	17.576	-
5580	17.501	-
5700	17.458	-
5745	17.441	-
5785	17.398	-
5825	17.423	-

11n-20 Antenna port 1

Frequency [MHz]	20 dB Bandwidth [MHz]	Limit [MHz]
5180	18.471	-
5220	18.333	-
5240	18.390	-
5260	18.436	-
5300	18.418	-
5320	18.482	-
5500	18.512	-
5580	18.325	-
5700	18.364	-
5745	18.386	-
5785	18.397	-
5825	18.386	-

11n-40 Antenna Port 1

Frequency [MHz]	20 dB Bandwidth [MHz]	Limit [MHz]
5190	36.965	-
5230	36.756	-
5270	36.820	-
5310	36.969	-
5510	36.870	-
5550	36.937	-
5670	36.949	-
5755	36.846	-
5795	36.989	-

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Ise EMC Lab.

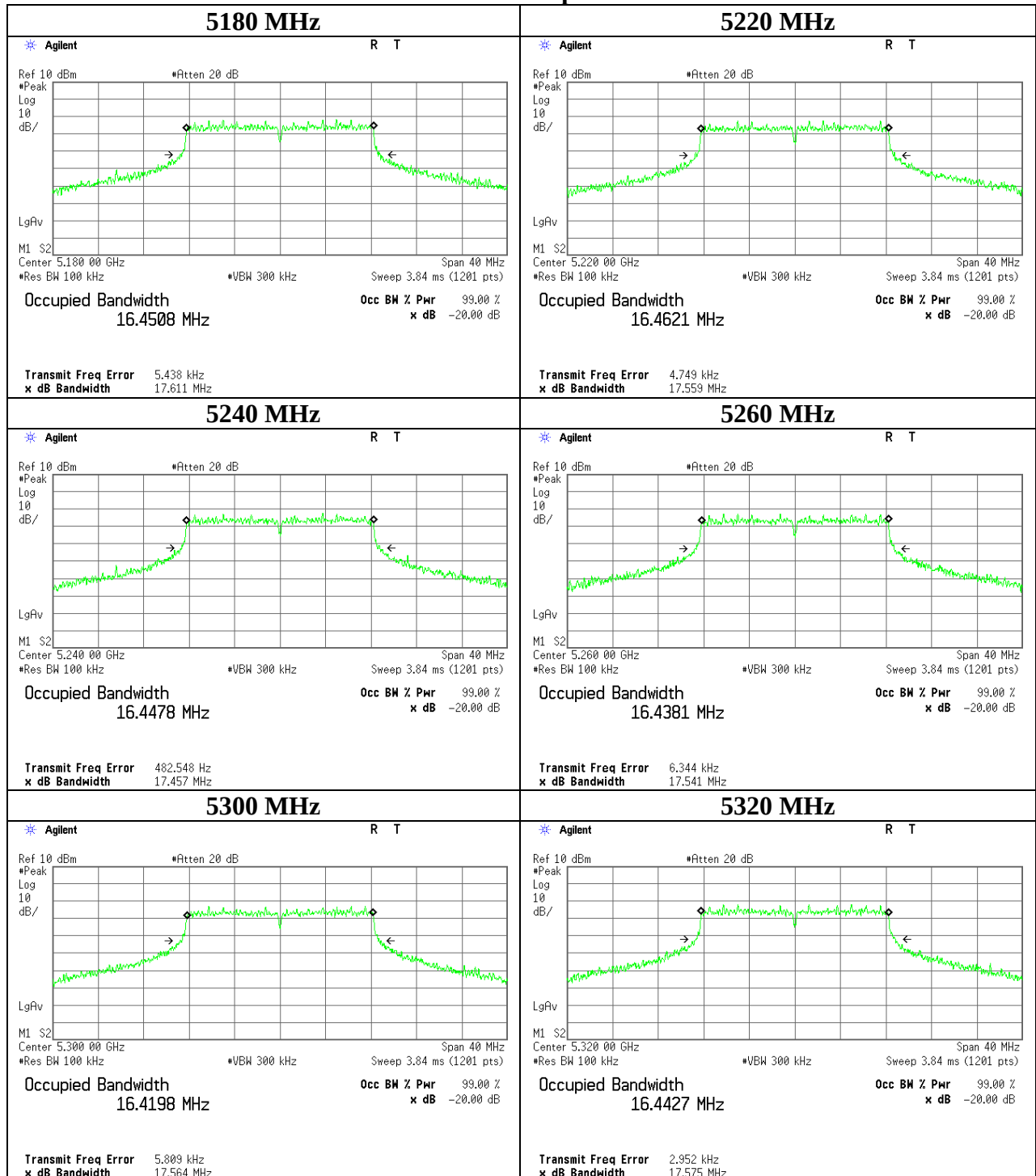
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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Facsimile : +81 596 24 8124

20dB Bandwidth

11a Antenna port 0



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Ise EMC Lab.

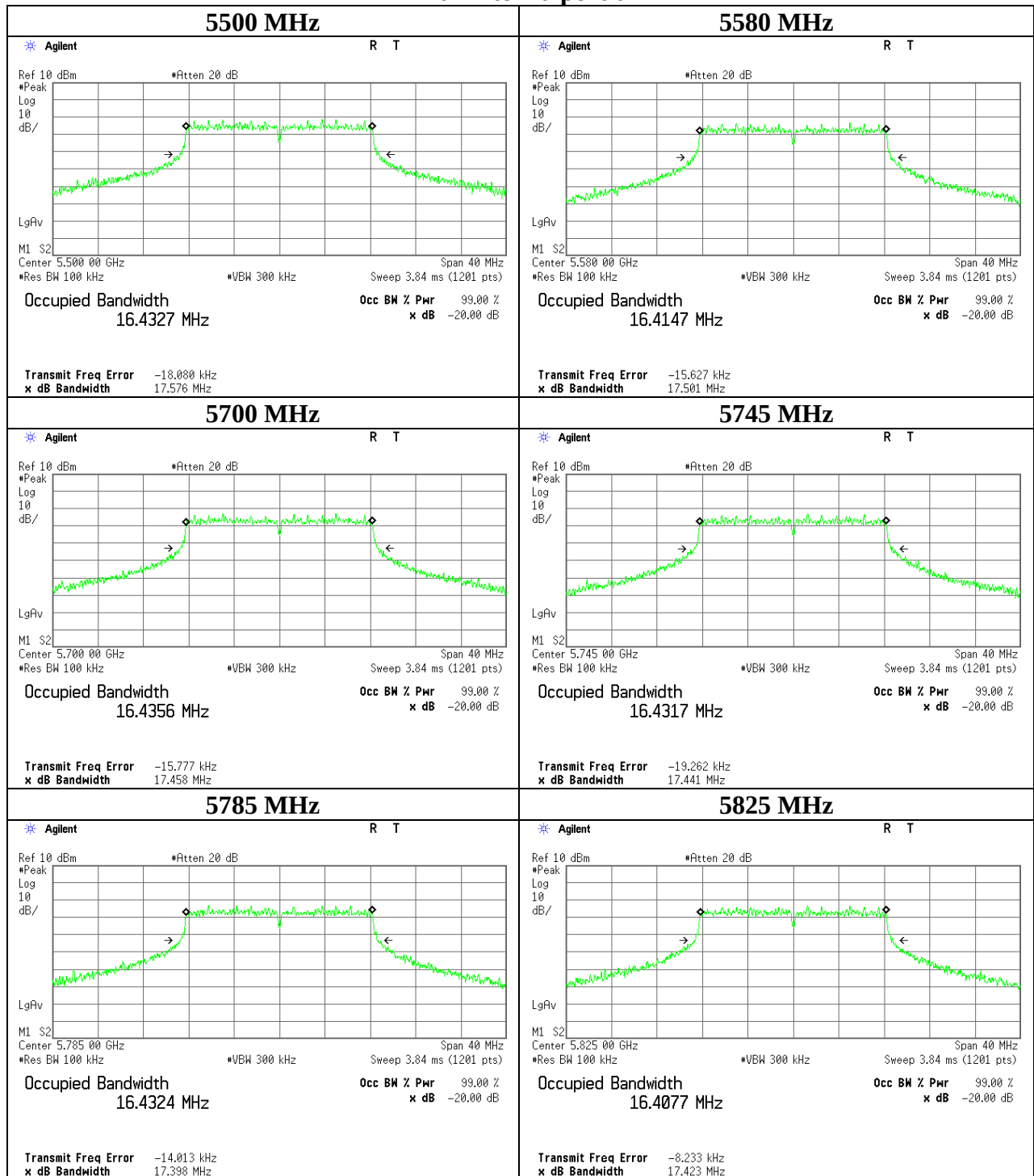
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

20dB Bandwidth

11a Antenna port 0



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Ise EMC Lab.

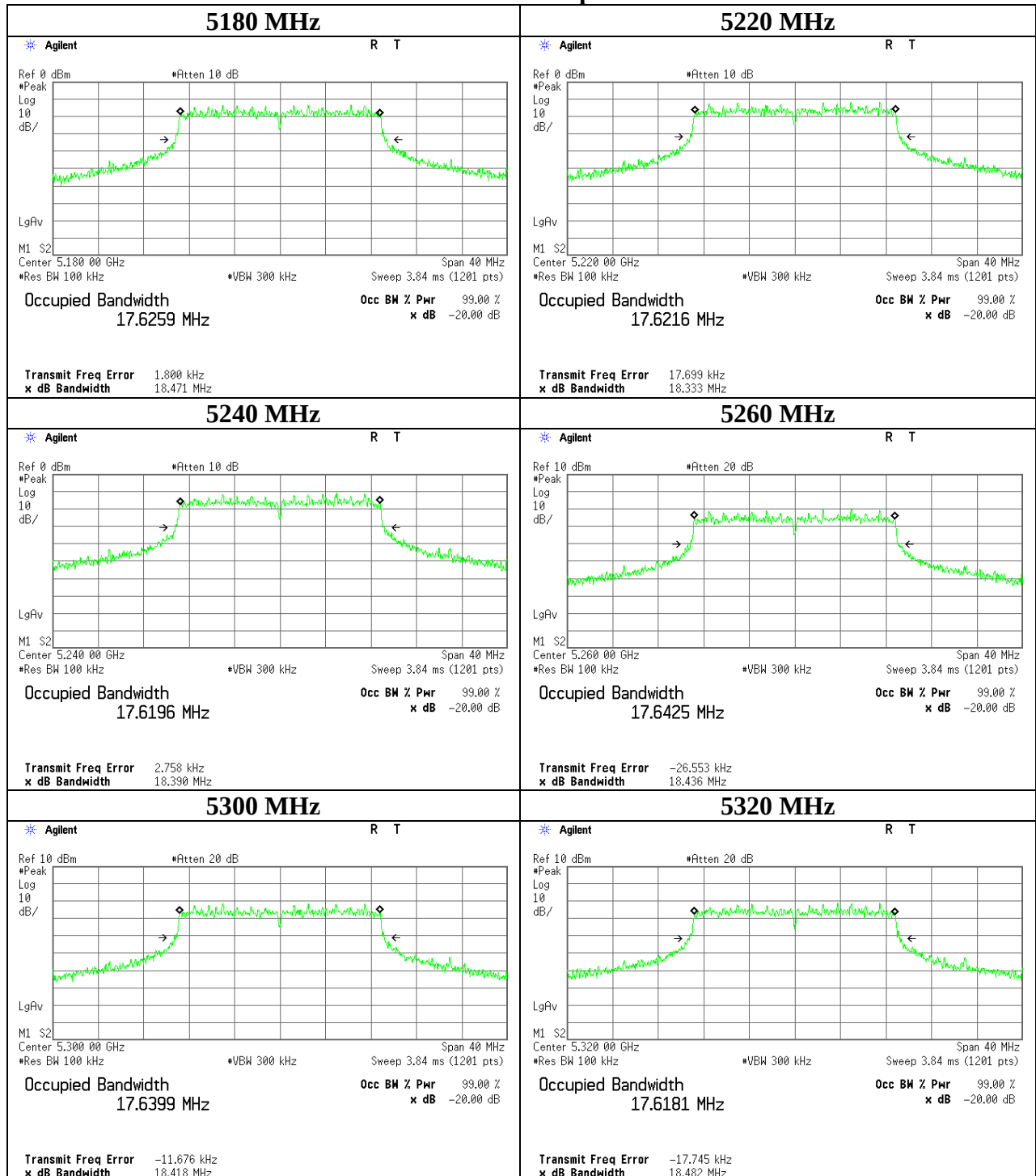
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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20dB Bandwidth

11n-20 Antenna port 0



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Ise EMC Lab.

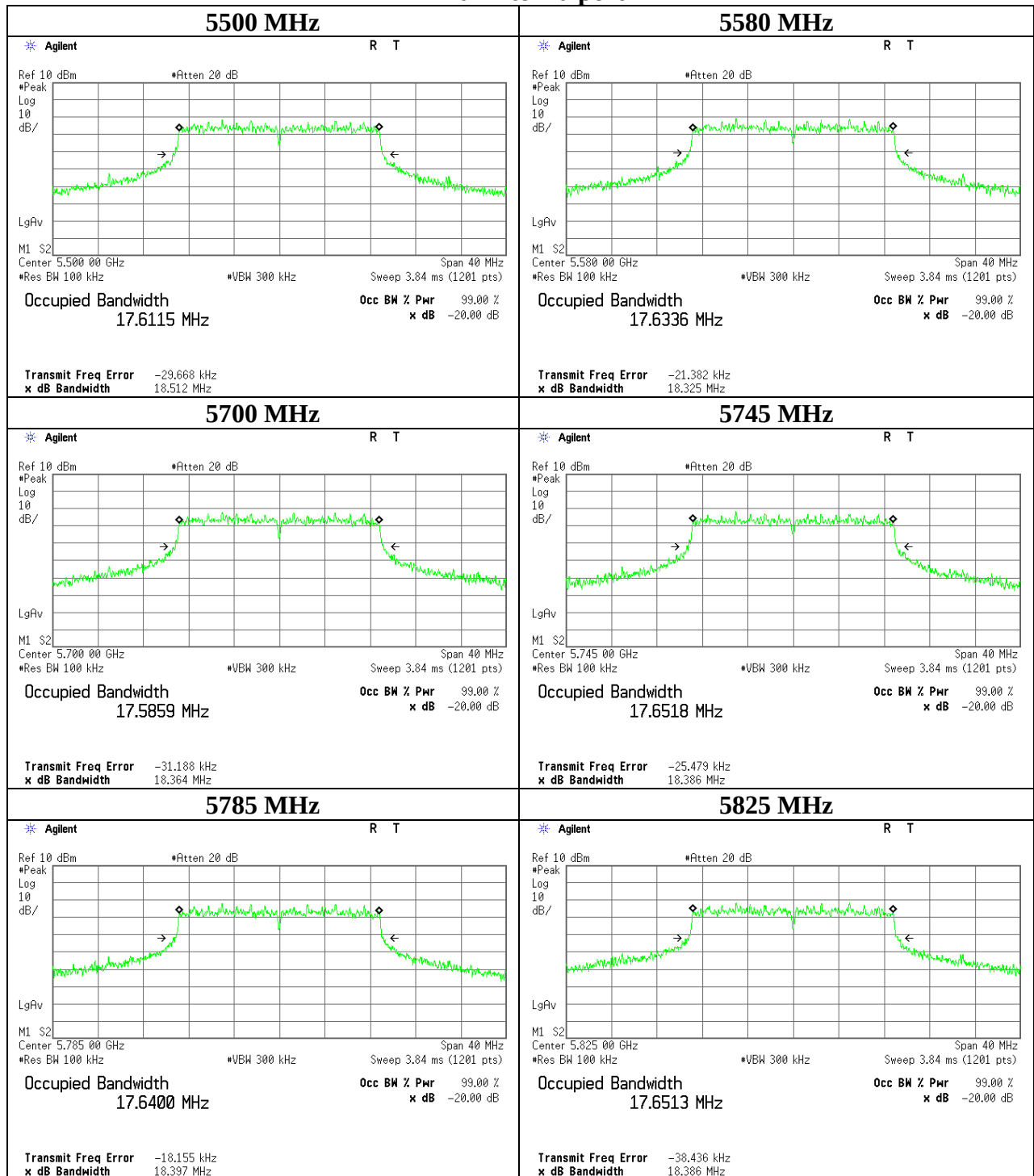
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Telephone : +81 596 24 8999

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20dB Bandwidth

11n-20 Antenna port 1



UL Japan, Inc.

Ise EMC Lab.

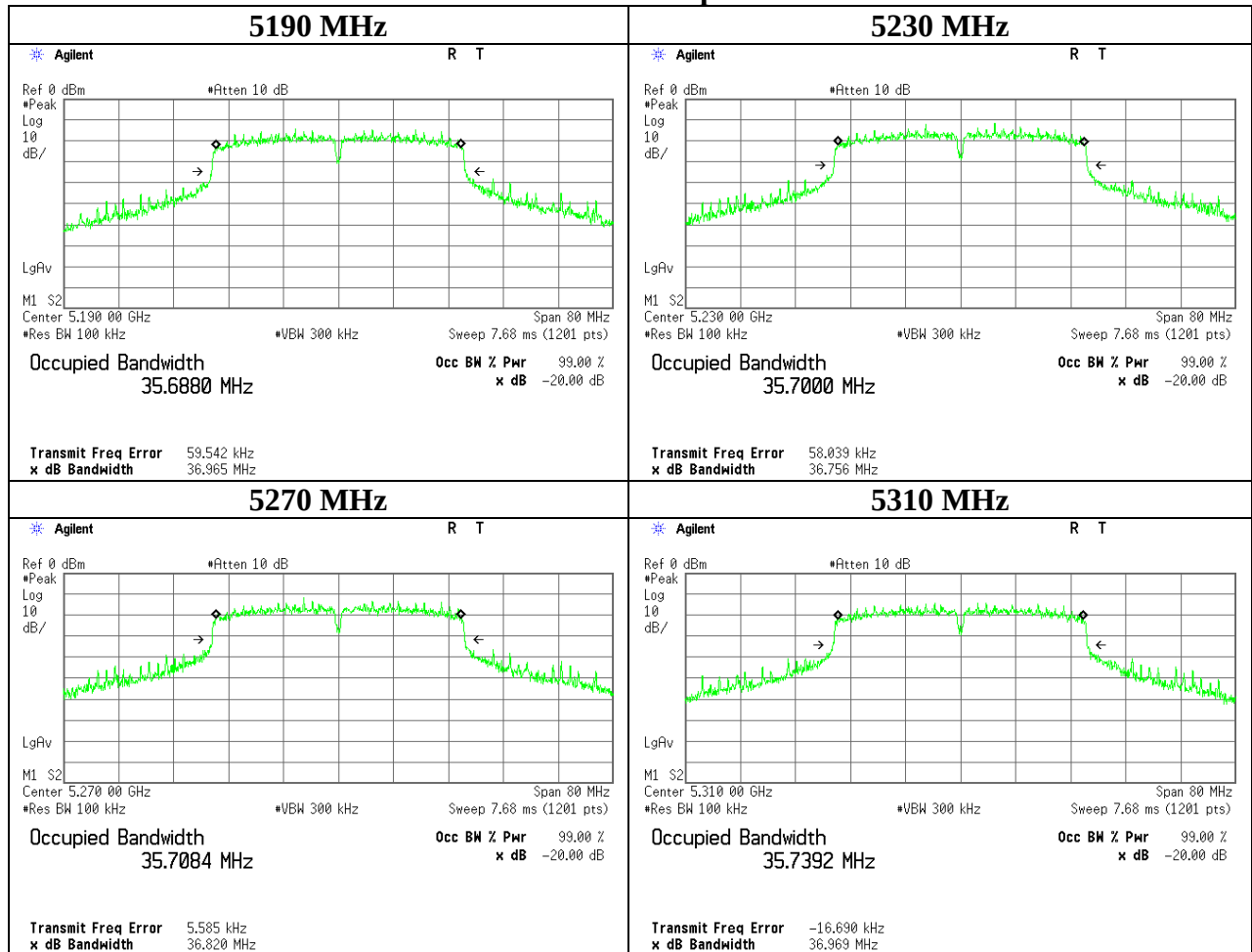
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Facsimile : +81 596 24 8124

20dB Bandwidth

11n-40 Antenna port 1



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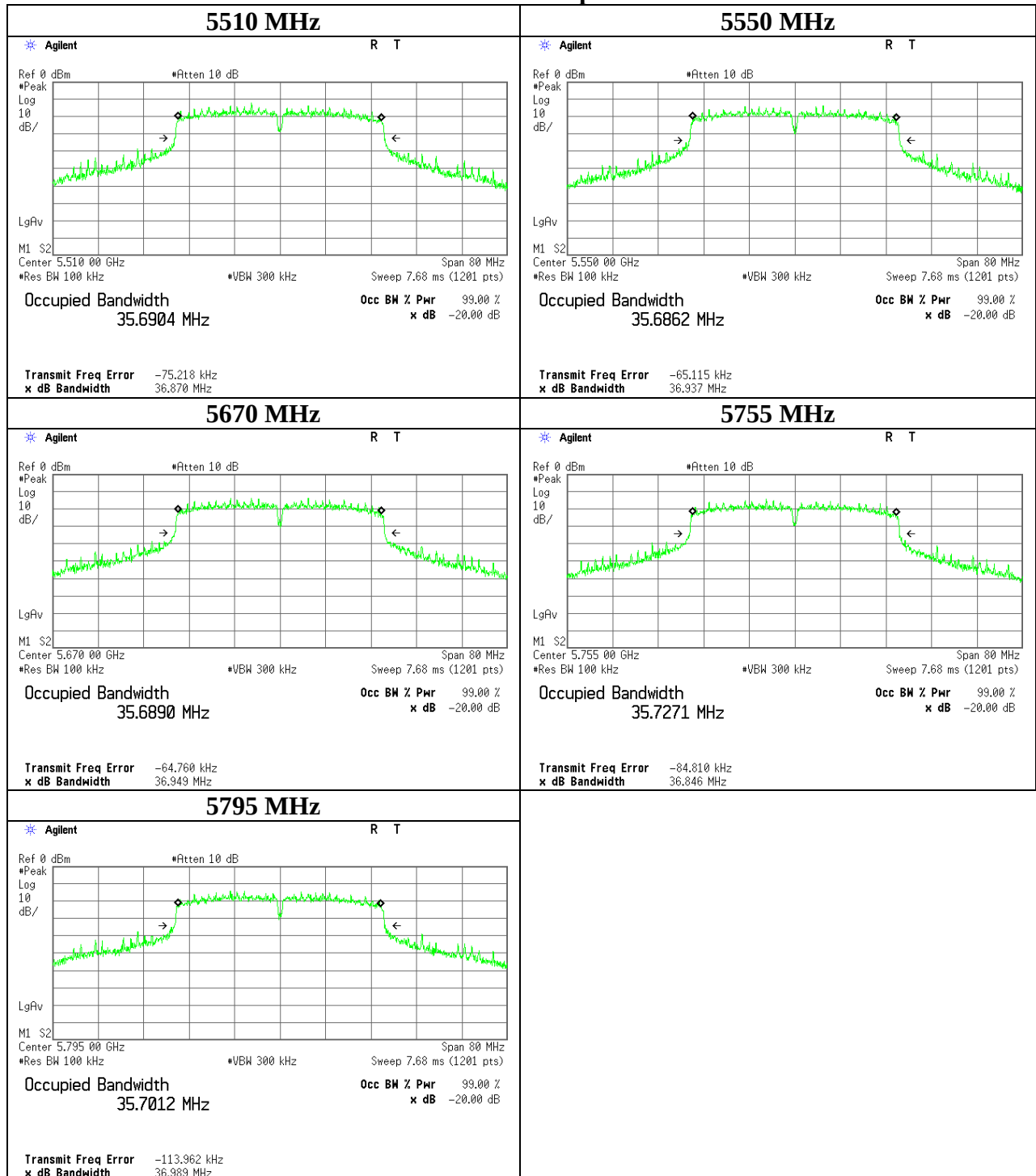
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20dB Bandwidth

11n-40 Antenna port 1



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Ise EMC Lab.

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Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

6dB Bandwidth

Test place Ise EMC Lab. No.6 Measurement Room
Report No. 10748020H
Date 05/21/2015
Temperature/ Humidity 23deg. C / 46% RH
Engineer Kazuya Yoshioka
Mode Tx

11a

Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [kHz]
5745	16.402	> 500
5785	16.422	> 500
5825	16.358	> 500

11n-20

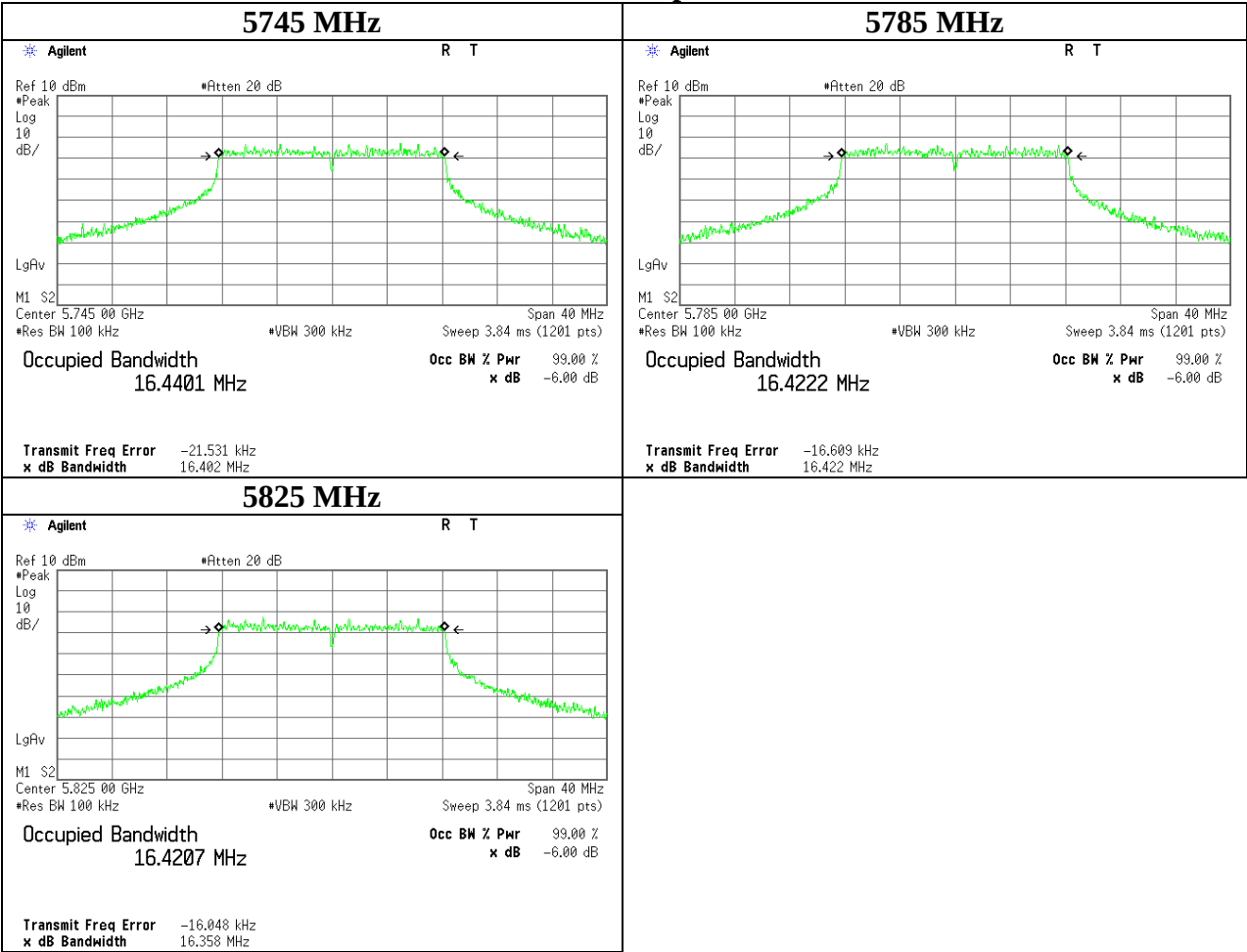
Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [kHz]
5745	17.050	> 500
5785	17.535	> 500
5825	17.328	> 500

11n-40

Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [kHz]
5755	31.404	> 500
5795	34.225	> 500

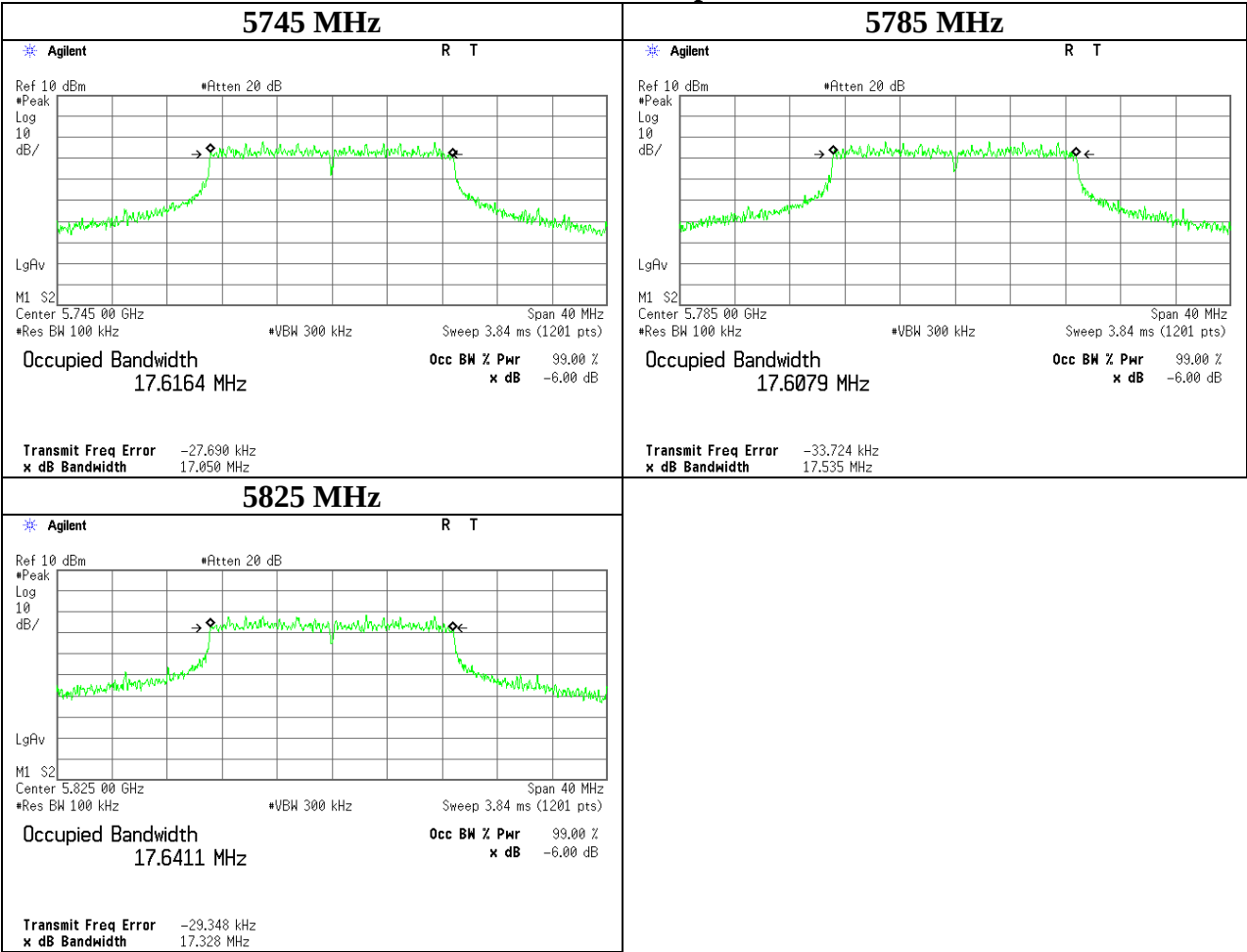
6dB Bandwidth

11a Antenna port 0



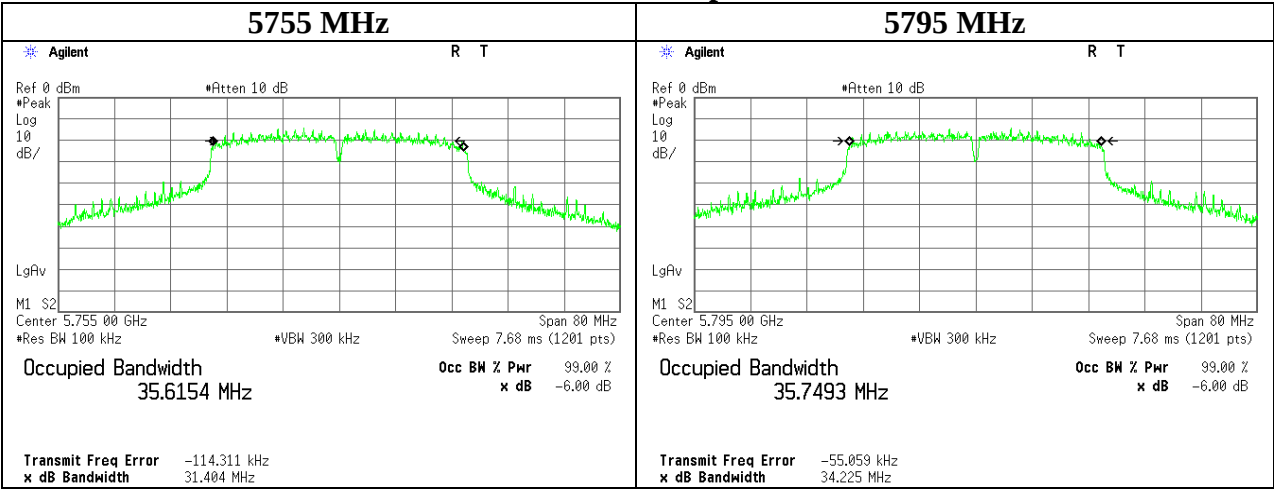
6dB Bandwidth

11n-20 Antenna port 1



6dB Bandwidth

11n-40 Antenna port 1



Maximum Conducted Output Power

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/01/2015
Temperature/ Humidity : 23 deg. C / 52 % RH
Engineer : Kazuya Yoshioka
Mode : 11a Tx

Antenna port 0

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power				e.i.r.p.			
							Result		Limit	Margin	Result		Limit	Margin
							[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5180	-2.15	3.14	10.05	3.90	-	17.014	11.04	12.71	23.97	12.93	14.94	31.19	29.97	15.03
5220	-2.21	3.15	10.05	3.90	-	16.953	10.99	12.56	23.97	12.98	14.89	30.83	29.97	15.08
5240	-2.21	3.16	10.05	3.90	-	16.986	11.00	12.59	23.97	12.97	14.90	30.90	29.97	15.07
5260	-2.10	3.16	10.05	3.90	22.638	17.063	11.11	12.91	23.97	12.86	15.01	31.70	29.97	14.96
5300	-2.20	3.17	10.05	3.90	21.526	17.015	11.02	12.65	23.97	12.95	14.92	31.05	29.97	15.05
5320	-2.65	3.18	10.05	3.90	22.343	17.065	10.58	11.43	23.97	13.39	14.48	28.05	29.97	15.49
5500	-2.20	3.23	10.05	3.90	22.649	16.957	11.08	12.82	23.97	12.89	14.98	31.48	29.97	14.99
5580	-1.64	3.27	10.05	3.90	21.846	16.962	11.68	14.72	23.97	12.29	15.58	36.14	29.97	14.39
5700	-1.56	3.32	10.05	3.90	22.411	16.966	11.81	15.17	23.97	12.16	15.71	37.24	29.97	14.26
5745	-3.32	3.34	10.04	3.90	-	-	10.06	10.14	30.00	19.94	13.96	24.89	36.00	22.04
5785	-3.41	3.36	10.04	3.90	-	-	9.99	9.98	30.00	20.01	13.89	24.49	36.00	22.11
5825	-2.63	3.38	10.04	3.90	-	-	10.79	11.99	30.00	19.21	14.69	29.44	36.00	21.31

Sample Calculation:

Conducted Power Result = Reading + Cable Loss + Atten. Loss

e.i.r.p. Result = Conducted Power Result + Antenna Gain

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

e.i.r.p. Limit = Conducted Power Limit + 6dBi

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Facsimile : +81 596 24 8124

Maximum Conducted Output Power

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/01/2015
Temperature/ Humidity : 23 deg. C / 52 % RH
Engineer : Kazuya Yoshioka
Mode : 11n-20 Tx

Antenna port 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power						e.i.r.p.					
			Antenna port			Result [dBm]	Limit [dBm]	Margin [dB]	Antenna port			Result [dBm]	Limit [dBm]	Margin [dB]
			0 [mW]	1 [mW]	Sum [mW]				0 [mW]	1 [mW]	Sum [mW]			
5180	-	17.919	11.83	13.30	25.13	14.00	23.97	9.97	29.04	32.66	61.70	17.90	29.97	12.07
5220	-	17.942	12.16	13.80	25.97	14.14	23.97	9.83	29.85	33.88	63.74	18.04	29.97	11.93
5240	-	17.997	11.89	13.58	25.47	14.06	23.97	9.91	29.17	33.34	62.52	17.96	29.97	12.01
5260	21.133	17.982	12.33	14.19	26.52	14.24	23.97	9.73	30.27	34.83	65.10	18.14	29.97	11.83
5300	21.763	17.966	12.13	12.59	24.72	13.93	23.97	10.04	29.79	30.90	60.69	17.83	29.97	12.14
5320	20.336	18.021	11.64	17.74	29.38	14.68	23.97	9.29	28.58	43.55	72.13	18.58	29.97	11.39
5500	21.428	17.949	16.56	16.71	33.27	15.22	23.97	8.75	40.64	41.02	81.66	19.12	29.97	10.85
5580	21.199	17.986	11.48	12.19	23.67	13.74	23.97	10.23	28.18	29.92	58.11	17.64	29.97	12.33
5700	21.041	17.912	12.25	13.12	25.37	14.04	23.97	9.93	30.06	32.21	62.27	17.94	29.97	12.03
5745	-	-	11.25	11.56	22.81	13.58	30.00	16.42	27.61	28.38	55.98	17.48	36.00	18.52
5785	-	-	10.23	10.28	20.51	13.12	30.00	16.88	25.12	25.23	50.35	17.02	36.00	18.98
5825	-	-	10.33	10.47	20.80	13.18	30.00	16.82	25.35	25.70	51.06	17.08	36.00	18.92

	Antenna port 0						Antenna port 1					
Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result		Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result	
					Cond. Power [dBm]	e.i.r.p. [dBm]					Cond. Power [dBm]	e.i.r.p. [dBm]
5180	-2.46	3.14	10.05	3.90	10.73	14.63	-1.95	3.14	10.05	3.90	11.24	15.14
5220	-2.35	3.15	10.05	3.90	10.85	14.75	-1.80	3.15	10.05	3.90	11.40	15.30
5240	-2.46	3.16	10.05	3.90	10.75	14.65	-1.88	3.16	10.05	3.90	11.33	15.23
5260	-2.30	3.16	10.05	3.90	10.91	14.81	-1.69	3.16	10.05	3.90	11.52	15.42
5300	-2.38	3.17	10.05	3.90	10.84	14.74	-2.22	3.17	10.05	3.90	11.00	14.90
5320	-2.57	3.18	10.05	3.90	10.66	14.56	-0.74	3.18	10.05	3.90	12.49	16.39
5500	-1.09	3.23	10.05	3.90	12.19	16.09	-1.05	3.23	10.05	3.90	12.23	16.13
5580	-2.72	3.27	10.05	3.90	10.60	14.50	-2.46	3.27	10.05	3.90	10.86	14.76
5700	-2.49	3.32	10.05	3.90	10.88	14.78	-2.19	3.32	10.05	3.90	11.18	15.08
5745	-2.87	3.34	10.04	3.90	10.51	14.41	-2.75	3.34	10.04	3.90	10.63	14.53
5785	-3.30	3.36	10.04	3.90	10.10	14.00	-3.28	3.36	10.04	3.90	10.12	14.02
5825	-3.28	3.38	10.04	3.90	10.14	14.04	-3.22	3.38	10.04	3.90	10.20	14.10

Sample Calculation:

Conducted Power Result = Reading + Cable Loss + Atten. Loss

e.i.r.p. Result = Conducted Power Result + Antenna Gain

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

e.i.r.p. Limit = Conducted Power Limit + 6dBi

UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8999

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Maximum Conducted Output Power

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/01/2015 05/21/2015
Temperature/ Humidity : 23 deg. C / 52 % RH 23 deg. C / 52 % RH
Engineer : Kazuya Yoshioka Kazuya Yoshioka
Mode : 11n-40 Tx

Antenna port 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power						e.i.r.p.					
			Antenna port			Result [dBm]	Limit [dBm]	Margin [dB]	Antenna port			Result [dBm]	Limit [dBm]	Margin [dB]
			0 [mW]	1 [mW]	Sum [mW]				0 [mW]	1 [mW]	Sum [mW]			
5190	-	35.825	5.14	5.53	10.67	10.28	23.97	13.69	12.62	13.58	26.20	14.18	29.97	15.79
5230	-	35.949	13.27	16.63	29.91	14.76	23.97	9.21	32.58	40.83	73.42	18.66	29.97	11.31
5270	42.011	35.914	12.94	14.35	27.30	14.36	23.97	9.61	31.77	35.24	67.01	18.26	29.97	11.71
5310	41.452	35.866	7.14	8.53	15.68	11.95	23.97	12.02	17.54	20.94	38.48	15.85	29.97	14.12
5510	41.111	35.925	10.57	11.30	21.87	13.40	23.97	10.57	25.94	27.73	53.67	17.30	29.97	12.67
5550	40.883	35.875	13.68	13.74	27.42	14.38	23.97	9.59	33.57	33.73	67.30	18.28	29.97	11.69
5670	41.862	35.892	11.75	12.02	23.77	13.76	23.97	10.21	28.84	29.51	58.35	17.66	29.97	12.31
5755	-	-	12.68	12.71	25.38	14.05	30.00	15.95	31.12	31.19	62.31	17.95	36.00	18.05
5795	-	-	10.79	10.81	21.60	13.35	30.00	16.65	26.49	26.55	53.03	17.25	36.00	18.75

	Antenna port 0						Antenna port 1					
Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Antenna Gain	Result		Power Meter Reading	Cable Loss	Atten. Loss	Antenna Gain	Result	
[MHz]	[dBm]	[dB]	[dB]	[dBi]	Cond. Power [dBm]	e.i.r.p. [dBm]	[dBm]	[dB]	[dB]	[dBi]	Cond. Power [dBm]	e.i.r.p. [dBm]
5190	-6.08	3.14	10.05	3.90	7.11	11.01	-5.76	3.14	10.05	3.90	7.43	11.33
5230	-1.97	3.15	10.05	3.90	11.23	15.13	-0.99	3.15	10.05	3.90	12.21	16.11
5270	-2.10	3.17	10.05	3.90	11.12	15.02	-1.65	3.17	10.05	3.90	11.57	15.47
5310	-4.69	3.18	10.05	3.90	8.54	12.44	-3.92	3.18	10.05	3.90	9.31	13.21
5510	-3.05	3.24	10.05	3.90	10.24	14.14	-2.76	3.24	10.05	3.90	10.53	14.43
5550	-1.95	3.26	10.05	3.90	11.36	15.26	-1.93	3.26	10.05	3.90	11.38	15.28
5670	-2.66	3.31	10.05	3.90	10.70	14.60	-2.56	3.31	10.05	3.90	10.80	14.70
5755	-2.36	3.35	10.04	3.90	11.03	14.93	-2.35	3.35	10.04	3.90	11.04	14.94
5795	-3.07	3.36	10.04	3.90	10.33	14.23	-3.06	3.36	10.04	3.90	10.34	14.24

Sample Calculation:

Conducted Power Result = Reading + Cable Loss + Atten. Loss

e.i.r.p. Result = Conducted Power Result + Antenna Gain

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

e.i.r.p. Limit = Conducted Power Limit + 6dBi

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Maximum Conducted Output Power
(Reference data)

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/01/2015
Temperature/ Humidity : 23 deg. C / 52 % RH
Engineer : Kazuya Yoshioka
Mode : 11a Tx

5180 MHz

Rate [Mbps]	Reading Antenna port 0 [dBm]	Reading Antenna port 1 [dBm]	Remark
6	-2.67	-	
9	-2.52	-	
12	-2.33	-	
18	-2.44	-	
24	-2.15	-2.17	*
36	-3.00	-	
48	-4.46	-	
54	-5.64	-	

*: Worst Rate

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Maximum Conducted Output Power (Reference data)

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/01/2015
Temperature/ Humidity : 23 deg. C / 52 % RH
Engineer : Kazuya Yoshioka
Mode : 11n-20 Tx

5180 MHz

MCS Number	Reading		Reading		Result		Remark
	Antenna port 0		Antenna port 1		Antenna port 0 + 1		
	[dBm]	[mW]	[dBm]	[mW]	[dBm]	[mW]	
0	-2.24	0.60	-	-	-	-	
1	-2.11	0.62	-2.41	0.57	-	-	*SISO
2	-2.23	0.60	-	-	-	-	
3	-2.13	0.61	-	-	-	-	
4	-2.92	0.51	-	-	-	-	
5	-4.14	0.39	-	-	-	-	
6	-5.77	0.26	-	-	-	-	
7	-7.12	0.19	-	-	-	-	
8	-1.80	0.66	-1.68	0.68	1.27	1.34	
9	-1.89	0.65	-1.88	0.65	1.13	1.30	
10	-1.46	0.71	-1.49	0.71	1.54	1.42	
11	-1.45	0.72	-1.44	0.72	1.57	1.43	*MIMO
12	-2.23	0.60	-2.21	0.60	0.79	1.20	
13	-3.38	0.46	-3.37	0.46	-0.36	0.92	
14	-6.11	0.24	-6.10	0.25	-3.09	0.49	
15	-7.01	0.20	-7.00	0.20	-3.99	0.40	

* Worst MCS

All comparisons were carried out on same frequency and measurement factors.

5180 MHz

MCS Number	Reading Antenna port 0 [dBm]	Reading Antenna port 1 [dBm]	Result Antenna port 0+1 [dBm]	GI	Remark
1	-2.11	-	-	Long	*
1	-2.14	-	-	Short	
11	-1.45	-1.44	1.57	Long	*
11	-1.48	-1.59	1.48	Short	

* Worst GI

All comparisons were carried out on same frequency and measurement factors.

Maximum Conducted Output Power (Reference data)

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/01/2015
Temperature/ Humidity : 23 deg. C / 52 % RH
Engineer : Kazuya Yoshioka
Mode : 11n-40 Tx

5190 MHz

MCS Number	Reading		Reading		Result		Remark
	Antenna port 0		Antenna port 1		Antenna port 0 + 1		
	[dBm]	[mW]	[dBm]	[mW]	[dBm]	[mW]	
0	-1.88	0.65	-2.16	0.61	-	-	*SISO
1	-2.11	0.62	-	-	-	-	
2	-2.10	0.62	-	-	-	-	
3	-2.41	0.57	-	-	-	-	
4	-3.26	0.47	-	-	-	-	
5	-4.82	0.33	-	-	-	-	
6	-6.41	0.23	-	-	-	-	
7	-7.16	0.19	-	-	-	-	
8	-1.87	0.65	-1.68	0.68	1.24	1.33	*MIMO
9	-1.96	0.64	-1.90	0.65	1.08	1.28	
10	-2.25	0.60	-2.14	0.61	0.82	1.21	
11	-2.29	0.59	-2.22	0.60	0.76	1.19	
12	-3.11	0.49	-2.97	0.50	-0.03	0.99	
13	-4.09	0.39	-4.09	0.39	-1.08	0.78	
14	-5.28	0.30	-5.25	0.30	-2.25	0.60	
15	-6.50	0.22	-6.23	0.24	-3.35	0.46	

* Worst MCS

All comparisons were carried out on same frequency and measurement factors.

5190 MHz

MCS Number	Reading Antenna port 0 [dBm]	Reading Antenna port 1 [dBm]	Result Antenna port 0+1 [dBm]	GI	Remark
0	-1.88	-	-	Long	*
0	-1.92	-	-	Short	
8	-1.87	-1.68	1.24	Long	*
8	-2.28	-1.93	0.91	Short	

* Worst GI

All comparisons were carried out on same frequency and measurement factors.

UL Japan, Inc.

Ise EMC Lab.

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Maximum Average Output Power (Reference data for SAR testing)

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/21/2015
Temperature/ Humidity : 23 deg. C / 46 % RH
Engineer : Kazuya Yoshioka
Mode : 11a Tx

[AV]

6Mbps

Antenna port 0

Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result (Cond.)		Result (e.i.r.p.)	
					[dBm]	[mW]	[dBm]	[mW]
5180.0	-2.32	3.14	10.05	3.90	10.87	12.22	14.77	29.99
5220.0	-2.60	3.15	10.05	3.90	10.60	11.48	14.50	28.18
5240.0	-2.69	3.16	10.05	3.90	10.52	11.27	14.42	27.67
5260.0	-2.40	3.16	10.05	3.90	10.81	12.05	14.71	29.58
5300.0	-2.41	3.17	10.05	3.90	10.81	12.05	14.71	29.58
5320.0	-2.86	3.18	10.05	3.90	10.37	10.89	14.27	26.73
5500.0	-2.63	3.23	10.05	3.90	10.65	11.61	14.55	28.51
5580.0	-2.15	3.27	10.05	3.90	11.17	13.09	15.07	32.14
5700.0	-1.94	3.32	10.05	3.90	11.43	13.90	15.33	34.12
5745.0	-3.41	3.34	10.04	3.90	9.97	9.93	13.87	24.38
5785.0	-3.58	3.36	10.04	3.90	9.82	9.59	13.72	23.55
5825.0	-2.85	3.38	10.04	3.90	10.57	11.40	14.47	27.99

Result(Cond.) = Reading + Cable Loss + Atten.Loss

Result(e.i.r.p.) = Reading + Cable Loss + Atten.Loss + Antenna Gain

*As a result of preliminary test, the formal test was performed with the worst rate.

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Maximum Average Output Power (Reference data for SAR testing)

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/21/2015
Temperature/ Humidity : 23 deg. C / 46 % RH
Engineer : Kazuya Yoshioka
Mode : 11n-20 Tx

[AV]
MCS 8

Antenna port 0+1

Freq. [MHz]	Antenna Port 0 Result		Antenna Port 1 Result		Result Antenna Port 0+1 (Cond.)		Result Antenna Port 0+1 (e.i.r.p.)	
	(Cond.) [mW]	(e.i.r.p.) [mW]	(Cond.) [mW]	(e.i.r.p.) [mW]	[dBm]	[mW]	[dBm]	[mW]
5180.0	11.72	28.77	12.85	31.55	13.90	24.57	17.80	60.32
5220.0	11.83	29.04	13.34	32.73	14.01	25.17	17.91	61.77
5240.0	11.56	28.38	13.15	32.28	13.93	24.71	17.83	60.66
5260.0	11.83	29.04	13.65	33.50	14.06	25.48	17.96	62.54
5300.0	11.78	28.91	11.97	29.38	13.76	23.74	17.66	58.28
5320.0	11.56	28.38	16.71	41.02	14.51	28.27	18.41	69.40
5500.0	11.83	29.04	15.24	37.41	14.33	27.07	18.23	66.45
5580.0	11.78	28.91	11.12	27.29	13.60	22.89	17.50	56.20
5700.0	11.56	28.38	12.25	30.06	13.77	23.81	17.67	58.44
5745.0	11.07	27.16	11.19	27.48	13.48	22.26	17.38	54.64
5785.0	9.77	23.99	9.82	24.10	12.92	19.59	16.82	48.09
5825.0	9.86	24.21	10.14	24.89	13.01	20.00	16.91	49.10

Antenna port 0

Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result (Cond.)		Result (e.i.r.p.)	
					[dBm]	[mW]	[dBm]	[mW]
5180.0	-2.50	3.14	10.05	3.90	10.69	11.72	14.59	28.77
5220.0	-2.47	3.15	10.05	3.90	10.73	11.83	14.63	29.04
5240.0	-2.58	3.16	10.05	3.90	10.63	11.56	14.53	28.38
5260.0	-2.48	3.16	10.05	3.90	10.73	11.83	14.63	29.04
5300.0	-2.51	3.17	10.05	3.90	10.71	11.78	14.61	28.91
5320.0	-2.60	3.18	10.05	3.90	10.63	11.56	14.53	28.38
5500.0	-1.37	3.23	10.05	3.90	11.91	15.52	15.81	38.11
5580.0	-2.81	3.27	10.05	3.90	10.51	11.25	14.41	27.61
5700.0	-2.61	3.32	10.05	3.90	10.76	11.91	14.66	29.24
5745.0	-2.94	3.34	10.04	3.90	10.44	11.07	14.34	27.16
5785.0	-3.50	3.36	10.04	3.90	9.90	9.77	13.80	23.99
5825.0	-3.48	3.38	10.04	3.90	9.94	9.86	13.84	24.21

Antenna port 1

Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result (Cond.)		Result (e.i.r.p.)	
					[dBm]	[mW]	[dBm]	[mW]
5180.0	-2.10	3.14	10.05	3.90	11.09	12.85	14.99	31.55
5220.0	-1.95	3.15	10.05	3.90	11.25	13.34	15.15	32.73
5240.0	-2.02	3.16	10.05	3.90	11.19	13.15	15.09	32.28
5260.0	-1.86	3.16	10.05	3.90	11.35	13.65	15.25	33.50
5300.0	-2.44	3.17	10.05	3.90	10.78	11.97	14.68	29.38
5320.0	-1.00	3.18	10.05	3.90	12.23	16.71	16.13	41.02
5500.0	-1.45	3.23	10.05	3.90	11.83	15.24	15.73	37.41
5580.0	-2.86	3.27	10.05	3.90	10.46	11.12	14.36	27.29
5700.0	-2.49	3.32	10.05	3.90	10.88	12.25	14.78	30.06
5745.0	-2.89	3.34	10.04	3.90	10.49	11.19	14.39	27.48
5785.0	-3.48	3.36	10.04	3.90	9.92	9.82	13.82	24.10
5825.0	-3.36	3.38	10.04	3.90	10.06	10.14	13.96	24.89

Result(Cond.) = Reading + Cable Loss + Atten.Loss

Result(e.i.r.p.) = Reading + Cable Loss + Atten.Loss + Antenna Gain

*As a result of preliminary test, the formal test was performed with the worst rate.

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Maximum Average Output Power (Reference data for SAR testing)

Test place Ise EMC Lab. No.6 Measurement Room
Report No. 10748020H
Date 05/21/2015
Temperature/ Humidity 23 deg. C / 46 % RH
Engineer Kazuya Yoshioka
Mode 11n-40 Tx

[AV]
MCS 8

Antenna port 0+1

Freq. [MHz]	Antenna Port 0 Result		Antenna Port 1 Result		Result Antenna Port 0+1 (Cond.)		Result Antenna Port 0+1 (e.i.r.p.)	
	(Cond.) [mW]	(e.i.r.p.) [mW]	(Cond.) [mW]	(e.i.r.p.) [mW]	(Cond.) [dBm]	[mW]	(e.i.r.p.) [dBm]	[mW]
5190.0	4.80	11.78	5.31	13.03	10.05	10.11	13.95	24.81
5230.0	11.83	29.04	15.52	38.11	14.37	27.35	18.27	67.15
5270.0	11.80	28.97	13.12	32.21	13.97	24.93	17.87	61.18
5310.0	6.52	16.00	7.60	18.66	11.50	14.12	15.40	34.66
5510.0	9.20	22.59	10.00	24.55	12.83	19.20	16.73	47.14
5550.0	6.52	16.00	7.60	18.66	11.50	14.12	15.40	34.66
5670.0	9.20	22.59	10.00	24.55	12.83	19.20	16.73	47.14
5755.0	11.80	28.97	11.59	28.44	13.69	23.39	17.59	57.42
5795.0	9.93	24.38	9.86	24.21	12.97	19.79	16.87	48.59

Antenna port 0

Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result (Cond.)		Result (e.i.r.p.)	
					[dBm]	[mW]	[dBm]	[mW]
5190.0	-6.38	3.14	10.05	3.90	6.81	4.80	10.71	11.78
5230.0	-2.47	3.15	10.05	3.90	10.73	11.83	14.63	29.04
5270.0	-2.50	3.17	10.05	3.90	10.72	11.80	14.62	28.97
5310.0	-5.09	3.18	10.05	3.90	8.14	6.52	12.04	16.00
5510.0	-3.65	3.24	10.05	3.90	9.64	9.20	13.54	22.59
5550.0	-2.25	3.26	10.05	3.90	11.06	12.76	14.96	31.33
5670.0	-2.98	3.31	10.05	3.90	10.38	10.91	14.28	26.79
5755.0	-2.67	3.35	10.04	3.90	10.72	11.80	14.62	28.97
5795.0	-3.43	3.36	10.04	3.90	9.97	9.93	13.87	24.38

Antenna port 1

Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result (Cond.)		Result (e.i.r.p.)	
					[dBm]	[mW]	[dBm]	[mW]
5190.0	-5.94	3.14	10.05	3.90	7.25	5.31	11.15	13.03
5230.0	-1.29	3.15	10.05	3.90	11.91	15.52	15.81	38.11
5270.0	-2.04	3.17	10.05	3.90	11.18	13.12	15.08	32.21
5310.0	-4.42	3.18	10.05	3.90	8.81	7.60	12.71	18.66
5510.0	-3.29	3.24	10.05	3.90	10.00	10.00	13.90	24.55
5550.0	-2.33	3.26	10.05	3.90	10.98	12.53	14.88	30.76
5670.0	-2.86	3.31	10.05	3.90	10.50	11.22	14.40	27.54
5755.0	-2.75	3.35	10.04	3.90	10.64	11.59	14.54	28.44
5795.0	-3.46	3.36	10.04	3.90	9.94	9.86	13.84	24.21

Result(Cond.) = Reading + Cable Loss + Atten.Loss

Result(e.i.r.p.) = Reading + Cable Loss + Atten.Loss + Antenna Gain

*As a result of preliminary test, the formal test was performed with the worst rate.

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Maximum Power Spectral Density

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/21/2015
Temperature/ Humidity : 23 deg. C / 46 % RH
Engineer : Kazuya Yoshioka
Mode : 11a Tx

Antenna port 0

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted)			PSD (e.i.r.p.)		
							Result [dBm /MHz]	Limit [dBm /MHz]	Margin [dB]	Result [dBm /MHz]	Limit [dBm /MHz]	Margin [dB]
5180	-12.54	3.14	10.05	0.26	3.90	0.00	0.91	11.00	10.09	4.81	17.00	12.19
5220	-12.95	3.15	10.05	0.26	3.90	0.00	0.51	11.00	10.49	4.41	17.00	12.59
5240	-13.17	3.16	10.05	0.26	3.90	0.00	0.30	11.00	10.70	4.20	17.00	12.80
5260	-14.61	3.16	10.05	0.26	3.90	0.00	-1.14	11.00	12.14	2.76	17.00	14.24
5300	-13.34	3.17	10.05	0.26	3.90	0.00	0.15	11.00	10.86	4.05	17.00	12.96
5320	-11.79	3.18	10.05	0.26	3.90	0.00	1.70	11.00	9.30	5.60	17.00	11.40
5500	-11.85	3.23	10.05	0.26	3.90	0.00	1.69	11.00	9.31	5.59	17.00	11.41
5580	-12.63	3.27	10.05	0.26	3.90	0.00	0.96	11.00	10.05	4.86	17.00	12.15
5700	-12.48	3.32	10.05	0.26	3.90	0.00	1.15	11.00	9.85	5.05	17.00	11.95
5745	-16.54	3.34	10.04	0.26	3.90	0.27	-2.63	30.00	32.63	1.27	36.00	34.73
5785	-16.35	3.36	10.04	0.26	3.90	0.27	-2.42	30.00	32.42	1.48	36.00	34.52
5825	-16.36	3.38	10.04	0.26	3.90	0.27	-2.41	30.00	32.41	1.49	36.00	34.51

Sample Calculation:

PSD: Power Spectral Density

The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.

RBW Correction Factor = $10 * \log (\text{Specified bandwidth} / \text{Measured bandwidth})$

PSD Result (Conducted) = Reading + Cable Loss + Atten. Loss + Duty Factor + RBW Correction Factor

PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

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Ise EMC Lab.

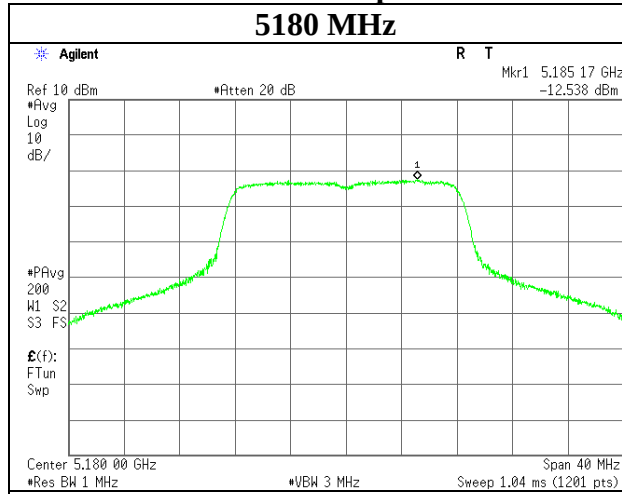
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Telephone : +81 596 24 8999

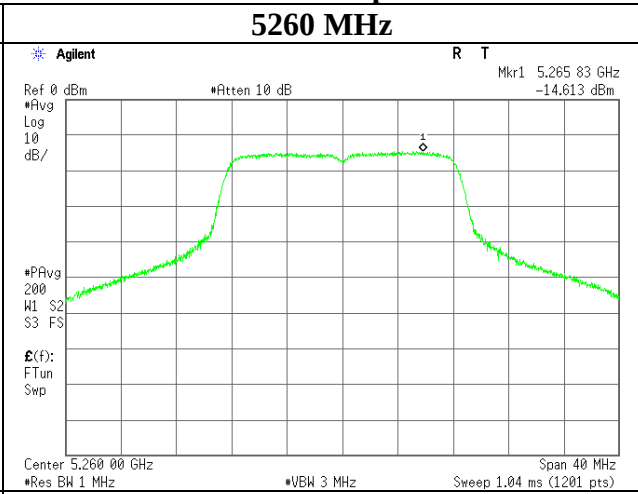
Facsimile : +81 596 24 8124

Maximum Power Spectral Density

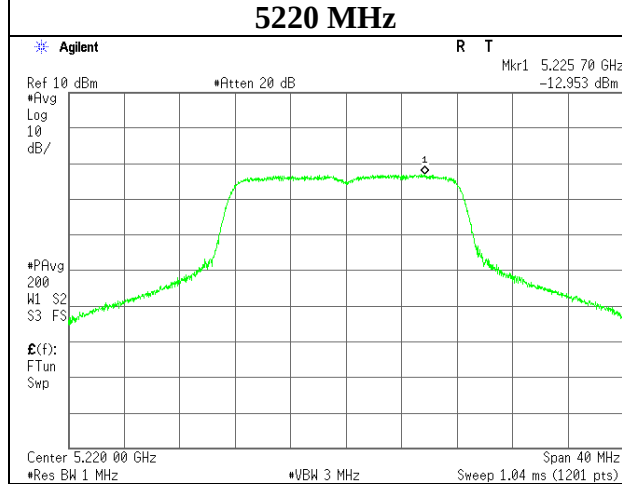
11a Antenna port 0
5180 MHz



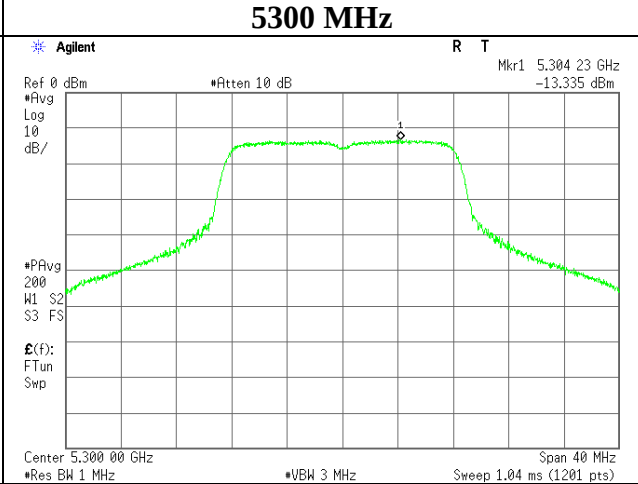
11a Antenna port 0
5260 MHz



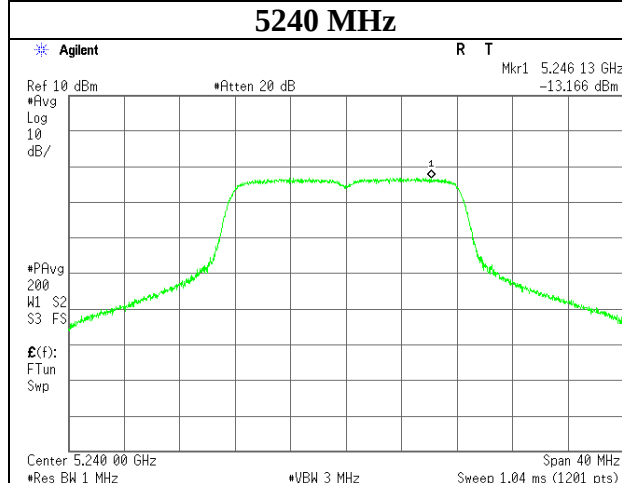
5220 MHz



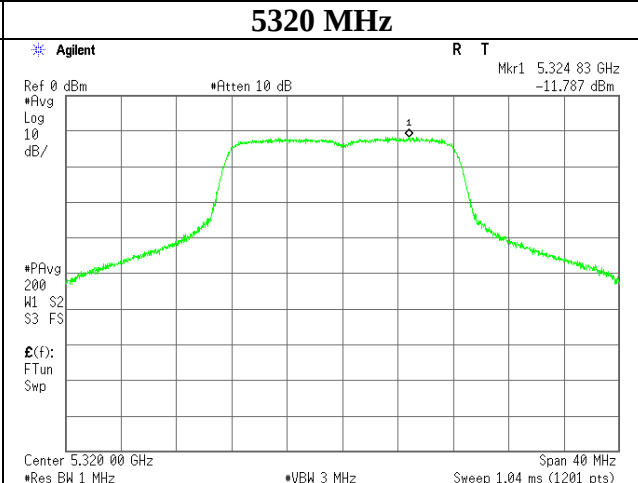
5300 MHz



5240 MHz



5320 MHz



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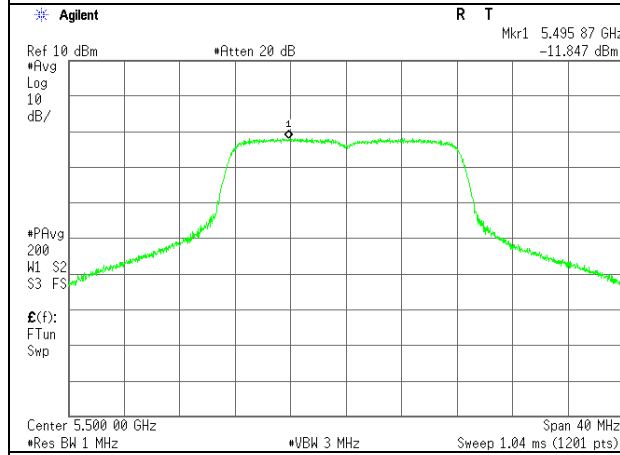
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

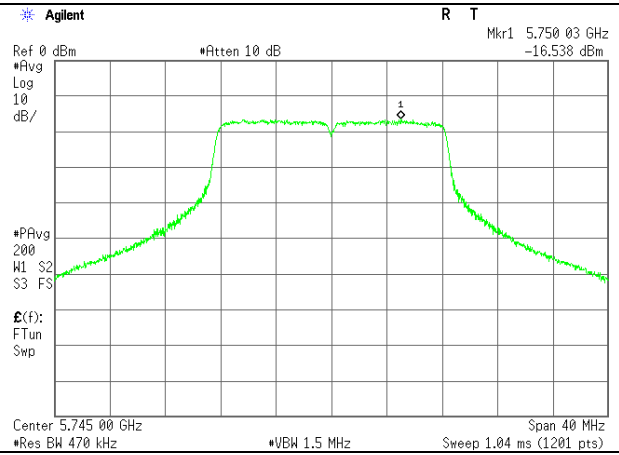
11a Antenna port 0

5500 MHz

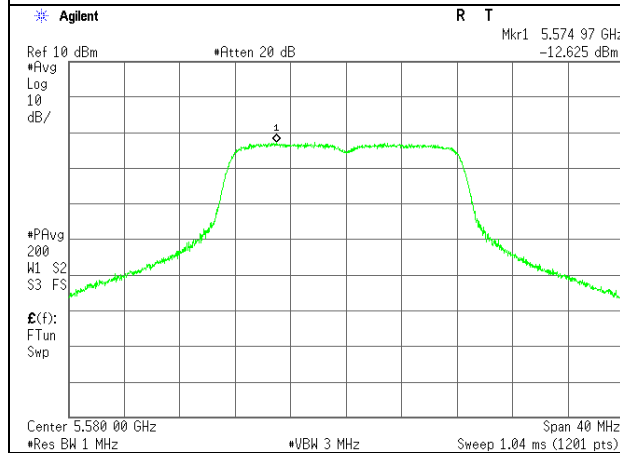


11a Antenna port 0

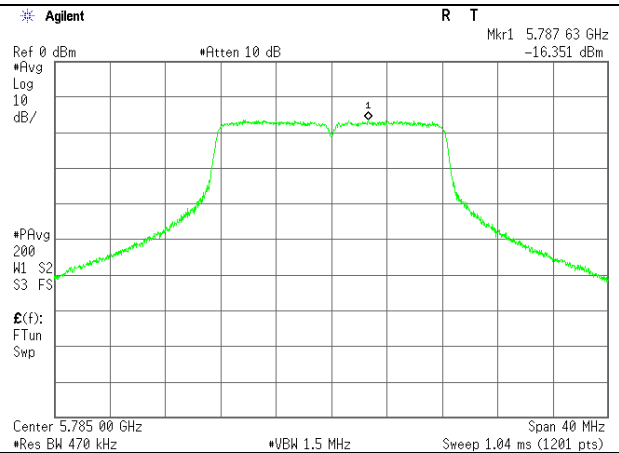
5745 MHz



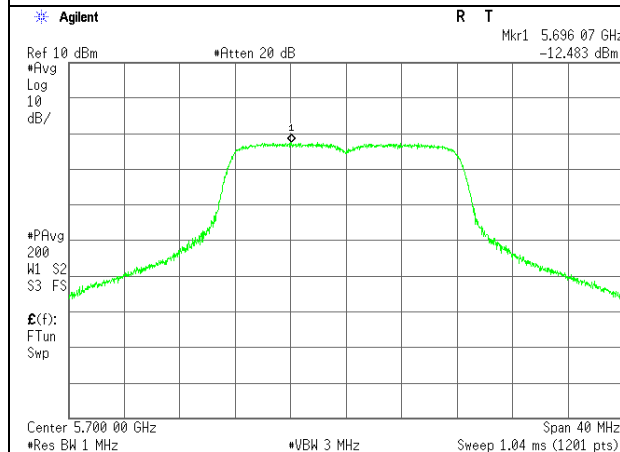
5580 MHz



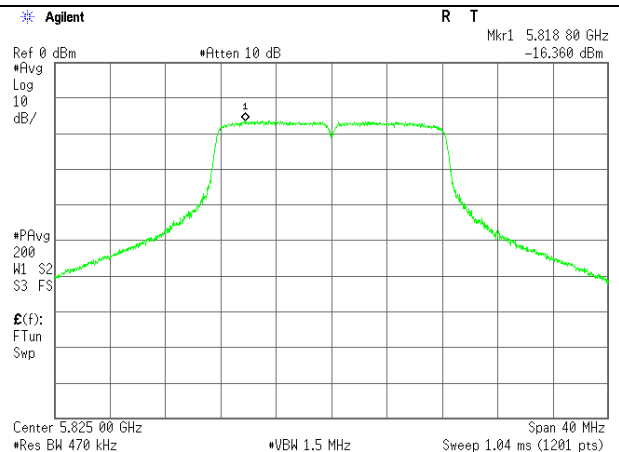
5785 MHz



5700 MHz



5825 MHz



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Telephone : +81 596 24 8999

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Maximum Power Spectral Density

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/25/2015
Temperature/ Humidity : 26 deg. C / 43 % RH
Engineer : Yuta Moriya
Mode : 11n-20 Tx

Antenna port 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna port			Result	Limit	Margin	Antenna port			Result	Limit	Margin
	0	1	Sum				0	1	Sum			
	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5180	1.02	1.02	2.04	3.09	11.00	7.91	2.50	2.50	5.01	6.99	17.00	10.01
5220	1.14	1.13	2.27	3.57	11.00	7.43	2.81	2.77	5.58	7.47	17.00	9.53
5240	0.99	1.11	2.10	3.22	11.00	7.78	2.43	2.73	5.16	7.12	17.00	9.88
5260	1.10	1.43	2.53	4.03	11.00	6.97	2.70	3.51	6.21	7.93	17.00	9.07
5300	1.05	1.17	2.22	3.46	11.00	7.54	2.58	2.87	5.44	7.36	17.00	9.64
5320	1.11	1.20	2.30	3.63	11.00	7.37	2.72	2.94	5.66	7.53	17.00	9.47
5500	1.12	1.16	2.28	3.58	11.00	7.42	2.76	2.84	5.60	7.48	17.00	9.52
5580	1.08	1.33	2.40	3.81	11.00	7.19	2.65	3.25	5.90	7.71	17.00	9.29
5700	1.22	1.20	2.42	3.84	11.00	7.16	3.00	2.94	5.94	7.74	17.00	9.26
5745	0.54	0.56	1.11	0.45	30.00	29.55	1.33	1.39	2.72	4.35	36.00	31.65
5785	0.63	0.53	1.16	0.65	30.00	29.35	1.54	1.31	2.85	4.55	36.00	31.45
5825	0.64	0.64	1.29	1.10	30.00	28.90	1.58	1.58	3.16	5.00	36.00	31.00

Antenna port 0									Antenna port 1					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Cond.	Result e.i.r.p.	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Cond.	Result e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5180	0.48	0.00	-13.61	3.14	10.07	3.90	0.08	3.98	-13.60	3.14	10.07	3.90	0.09	3.99
5220	0.48	0.00	-13.11	3.15	10.07	3.90	0.59	4.49	-13.17	3.15	10.07	3.90	0.53	4.43
5240	0.48	0.00	-13.76	3.16	10.07	3.90	-0.05	3.85	-13.25	3.16	10.07	3.90	0.47	4.37
5260	0.48	0.00	-13.30	3.16	10.07	3.90	0.41	4.31	-12.16	3.16	10.07	3.90	1.55	5.45
5300	0.48	0.00	-13.51	3.17	10.07	3.90	0.21	4.11	-13.05	3.17	10.07	3.90	0.68	4.58
5320	0.48	0.00	-13.29	3.18	10.07	3.90	0.44	4.34	-12.95	3.18	10.07	3.90	0.78	4.68
5500	0.48	0.00	-13.28	3.23	10.07	3.90	0.50	4.40	-13.14	3.23	10.07	3.90	0.64	4.54
5580	0.48	0.00	-13.49	3.27	10.07	3.90	0.33	4.23	-12.60	3.27	10.07	3.90	1.22	5.12
5700	0.48	0.00	-13.00	3.32	10.07	3.90	0.87	4.77	-13.08	3.32	10.07	3.90	0.79	4.69
5745	0.48	0.27	-16.81	3.34	10.07	3.90	-2.65	1.25	-16.64	3.34	10.07	3.90	-2.48	1.42
5785	0.48	0.27	-16.20	3.36	10.07	3.90	-2.03	1.87	-16.90	3.36	10.07	3.90	-2.72	1.18
5825	0.48	0.27	-16.11	3.38	10.07	3.90	-1.91	1.99	-16.11	3.38	10.07	3.90	-1.91	1.99

Sample Calculation:

PSD: Power Spectral Density

The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.

RBW Correction Factor = $10 \cdot \log$ (Specified bandwidth / Measured bandwidth)

PSD Result (Conducted) = Reading + Cable Loss + Atten. Loss + Duty Factor + RBW Correction Factor

PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

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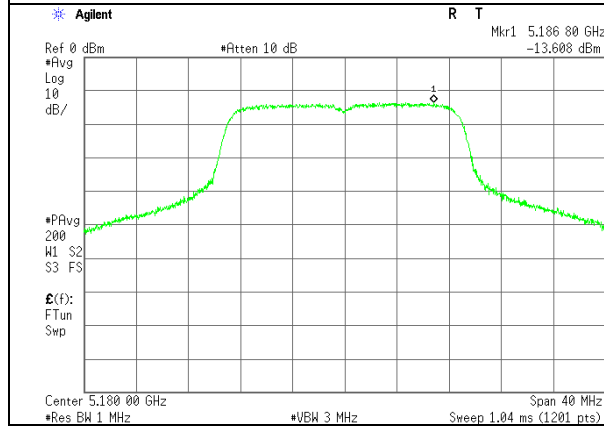
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

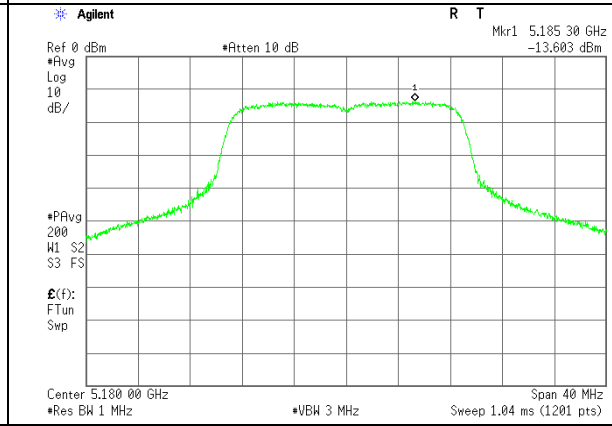
11n-20 Antenna port 0

5180 MHz

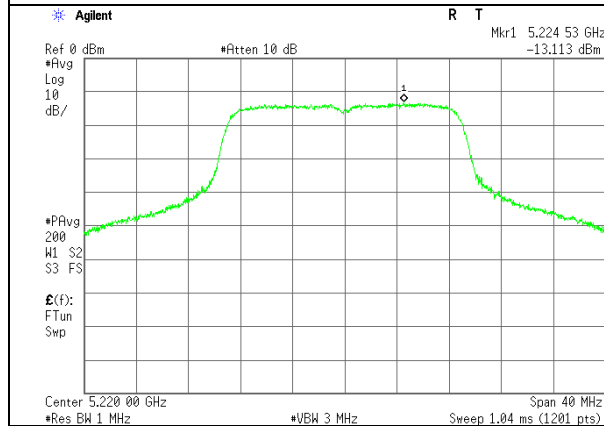


11n-20 Antenna port 1

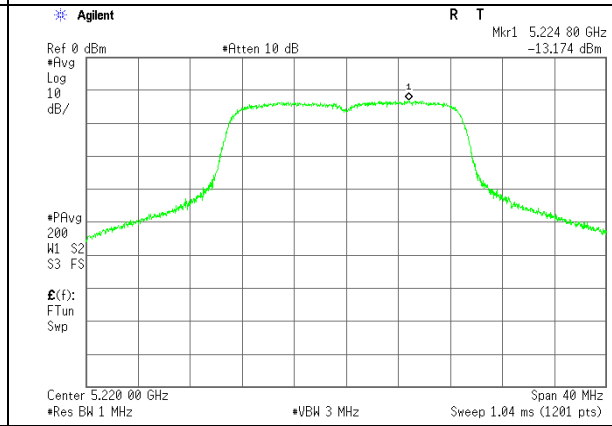
5180 MHz



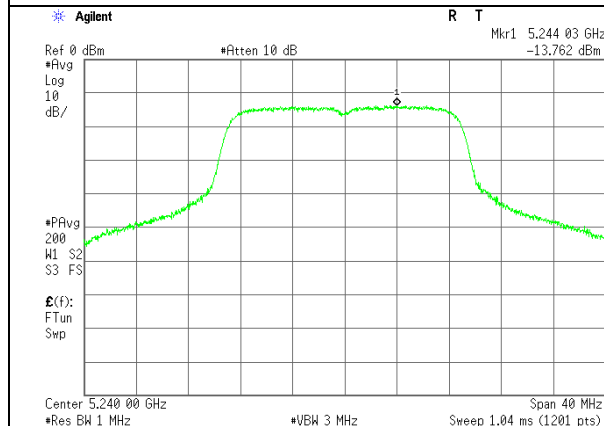
5220 MHz



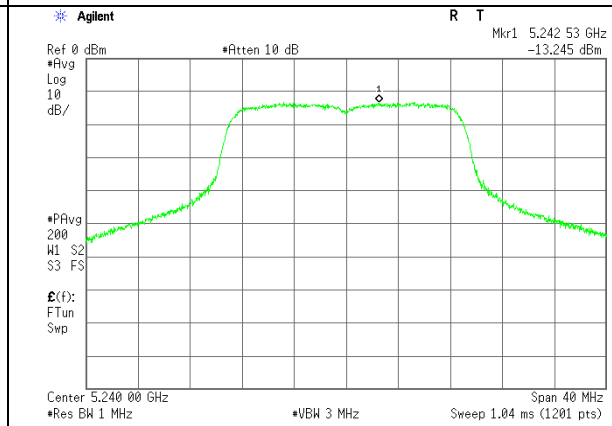
5220 MHz



5240 MHz



5240 MHz



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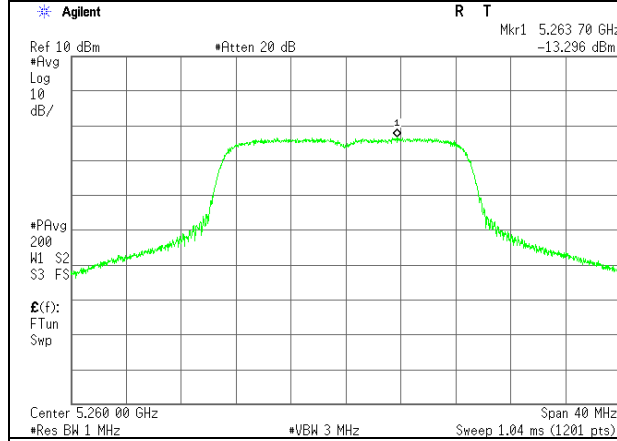
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

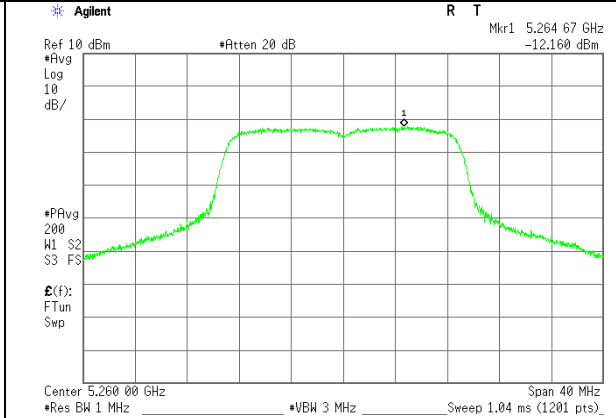
11n-20 Antenna port 0

5260 MHz

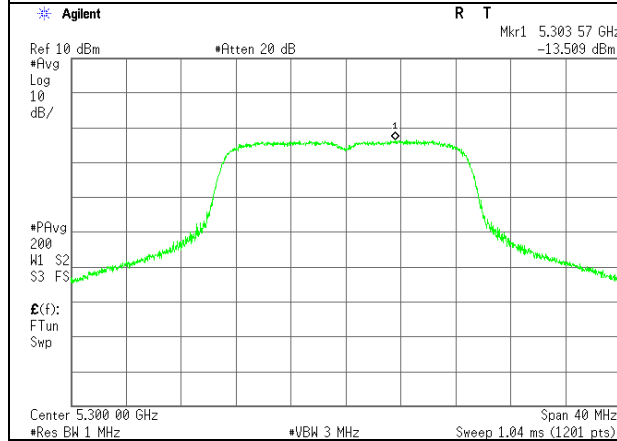


11n-20 Antenna port 1

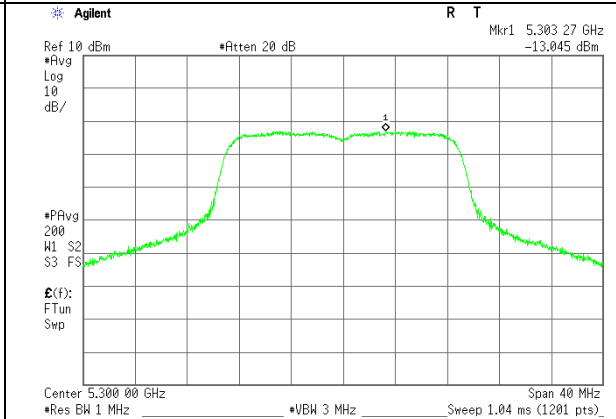
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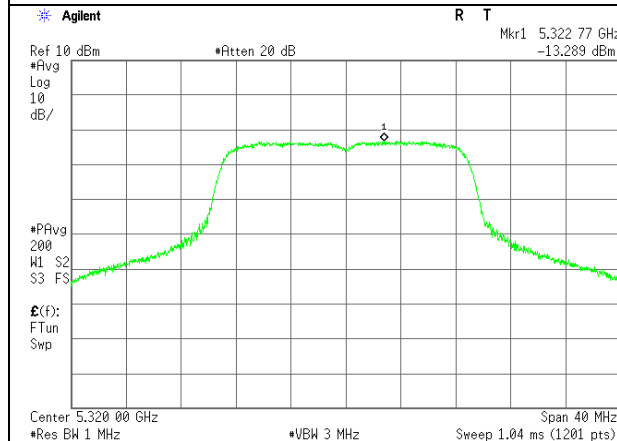
5300 MHz



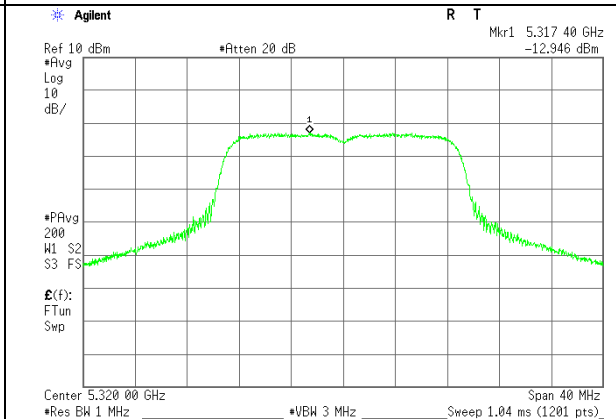
5300 MHz



5320 MHz



5320 MHz



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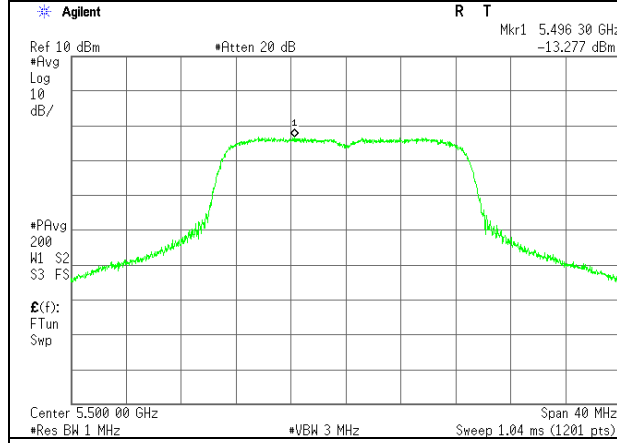
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

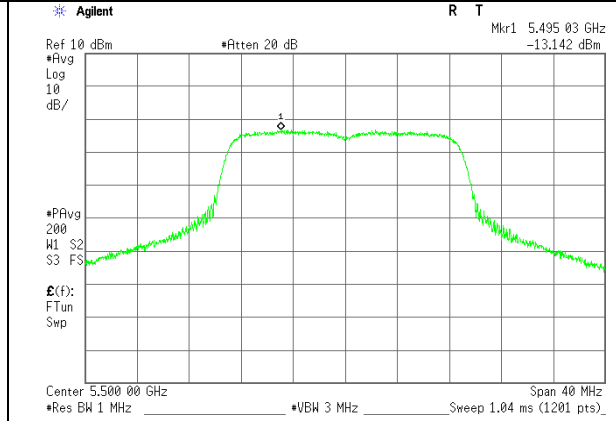
11n-20 Antenna port 0

5500 MHz

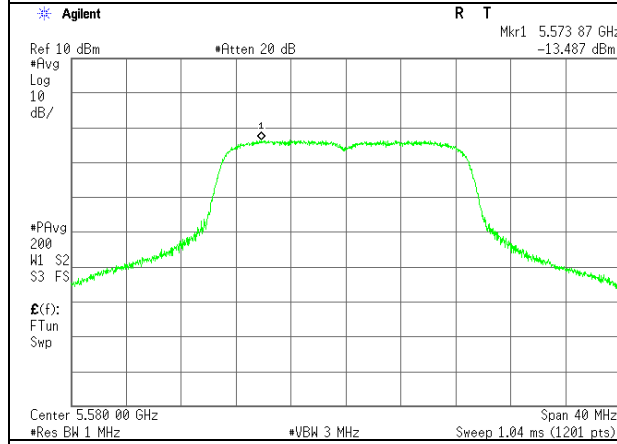


11n-20 Antenna port 1

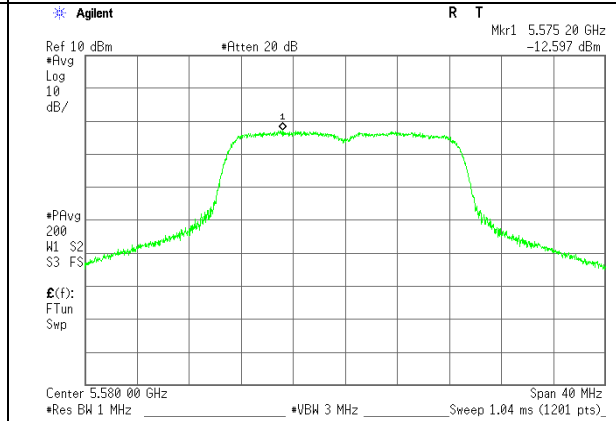
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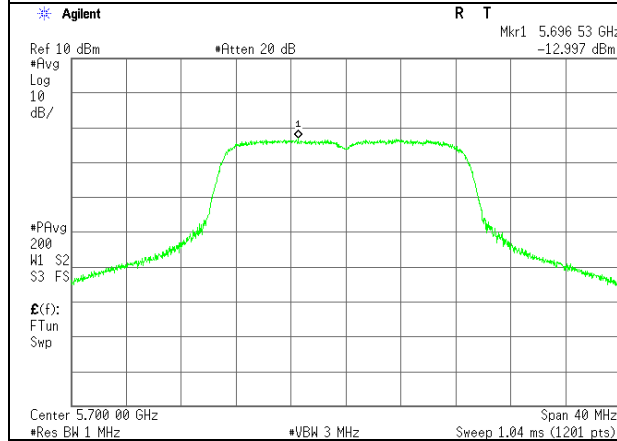
5580 MHz



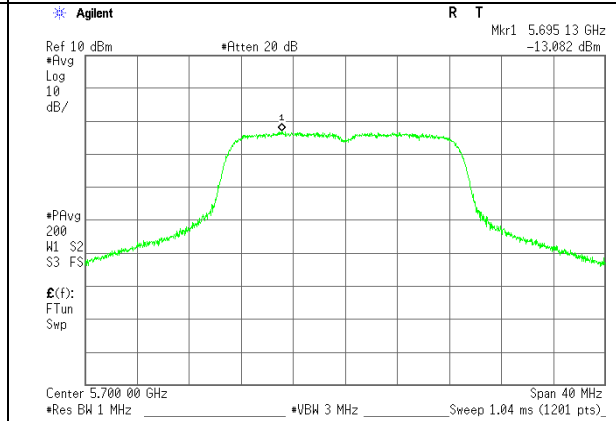
5580 MHz



5700 MHz



5700 MHz



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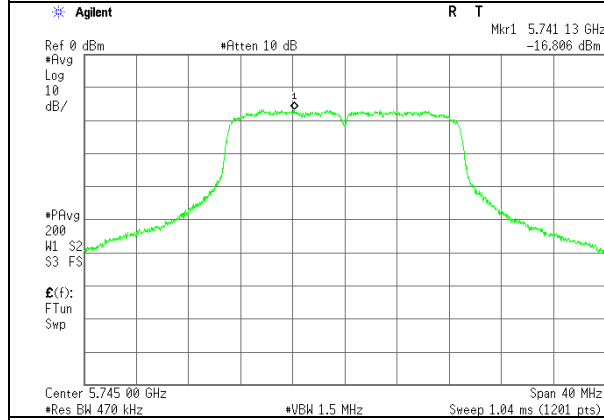
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

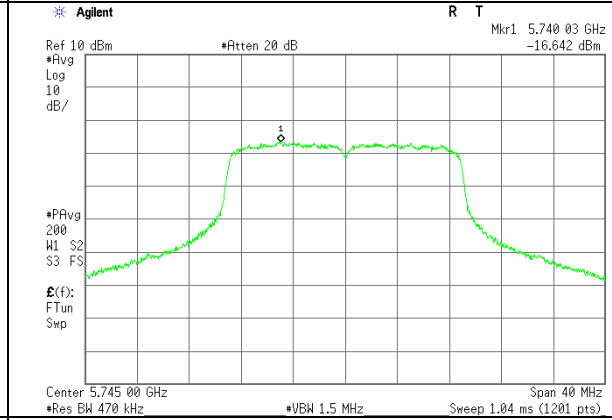
11n-20 Antenna port 0

5745 MHz

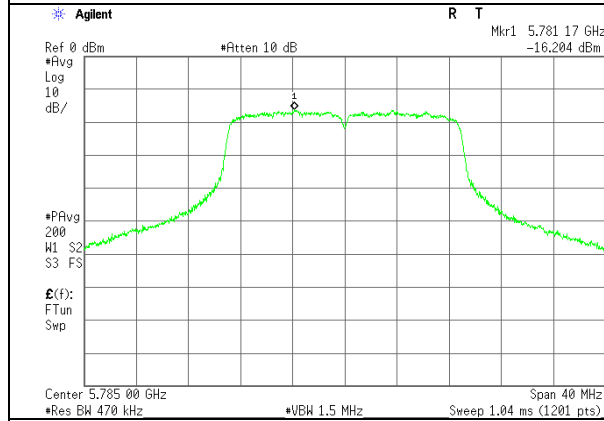


11n-20 Antenna port 1

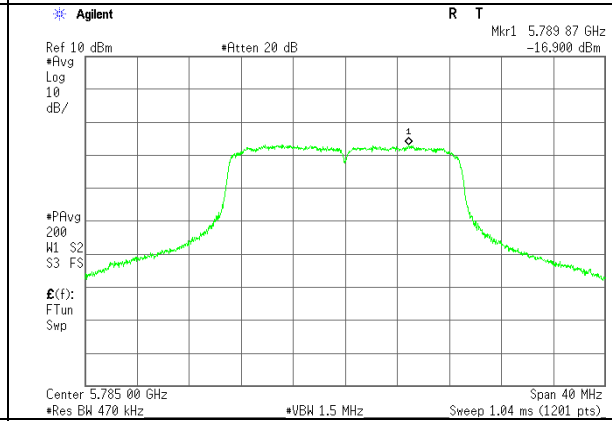
5745 MHz



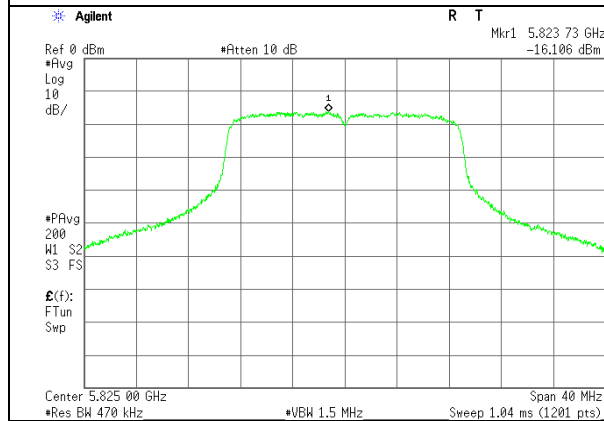
5785 MHz



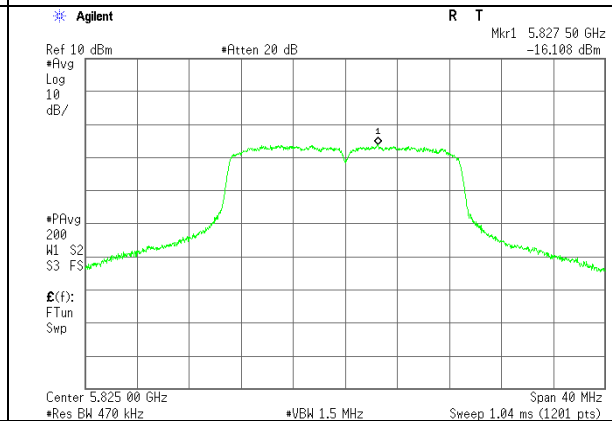
5785 MHz



5825 MHz



5825 MHz



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Ise EMC Lab.

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Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/25/2015
Temperature/ Humidity : 26 deg. C / 43 % RH
Engineer : Yuta Moriya
Mode : 11n-40 Tx

Antenna port 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna port			Result	Limit	Margin	Antenna port			Result	Limit	Margin
	0	1	Sum				0	1	Sum			
	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5190	0.40	0.47	0.87	-0.63	11.00	11.63	0.97	1.15	2.12	3.27	17.00	13.73
5230	0.69	0.85	1.55	1.90	11.00	9.10	1.71	2.09	3.80	5.80	17.00	11.20
5270	0.72	1.10	1.81	2.58	11.00	8.42	1.76	2.69	4.45	6.48	17.00	10.52
5310	0.31	0.48	0.79	-1.02	11.00	12.02	0.76	1.18	1.94	2.88	17.00	14.12
5510	0.52	0.66	1.18	0.71	11.00	10.29	1.27	1.62	2.89	4.61	17.00	12.39
5550	0.89	1.02	1.91	2.82	11.00	8.18	2.18	2.51	4.69	6.72	17.00	10.28
5670	0.67	0.90	1.57	1.96	11.00	9.04	1.64	2.22	3.86	5.86	17.00	11.14
5755	0.31	0.40	0.71	-1.51	30.00	31.51	0.76	0.97	1.74	2.39	36.00	33.61
5795	0.34	0.47	0.82	-0.88	30.00	30.88	0.84	1.16	2.00	3.02	36.00	32.98

Tested Frequency [MHz]	Duty Factor [dB]	RBW Correction Factor [dB]	Antenna port 0					Antenna port 1					PSD Result	
			PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.
			[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5190	0.27	0.00	-17.51	3.14	10.07	3.90	-4.03	-0.13	-17.39	3.14	10.70	3.90	-3.28	0.62
5230	0.27	0.00	-15.07	3.15	10.07	3.90	-1.58	2.32	-14.81	3.15	10.70	3.90	-0.69	3.21
5270	0.27	0.00	-14.96	3.17	10.07	3.90	-1.45	2.45	-13.74	3.17	10.70	3.90	0.40	4.30
5310	0.27	0.00	-18.59	3.18	10.07	3.90	-5.07	-1.17	-17.35	3.18	10.70	3.90	-3.20	0.70
5510	0.27	0.00	-16.43	3.24	10.07	3.90	-2.85	1.06	-16.03	3.24	10.70	3.90	-1.82	2.09
5550	0.27	0.00	-14.11	3.26	10.07	3.90	-0.51	3.39	-14.13	3.26	10.70	3.90	0.10	4.00
5670	0.27	0.00	-15.40	3.31	10.07	3.90	-1.75	2.16	-14.72	3.31	10.70	3.90	-0.44	3.46
5755	0.27	0.27	-19.04	3.35	10.07	3.90	-5.08	-1.18	-18.60	3.35	10.70	3.90	-4.02	-0.12
5795	0.27	0.27	-18.62	3.36	10.07	3.90	-4.65	-0.75	-17.85	3.36	10.70	3.90	-3.25	0.65

Sample Calculation:

PSD: Power Spectral Density

The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.

RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)

PSD Result (Conducted) = Reading + Cable Loss + Atten. Loss + Duty Factor + RBW Correction Factor

PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

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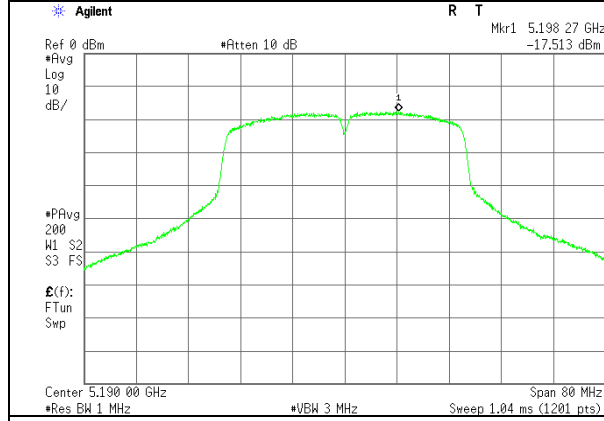
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

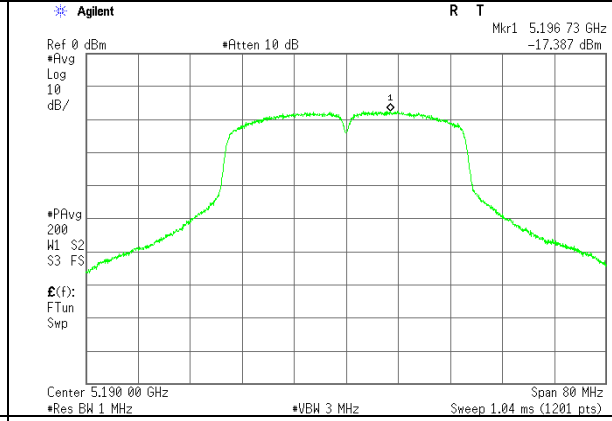
11n-40 Antenna port 0

5190 MHz

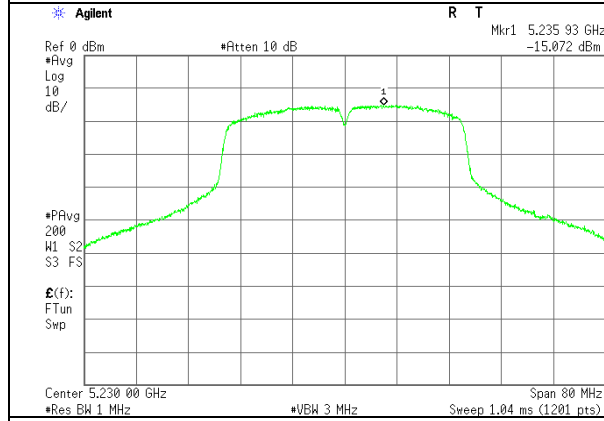


11n-40 Antenna port 1

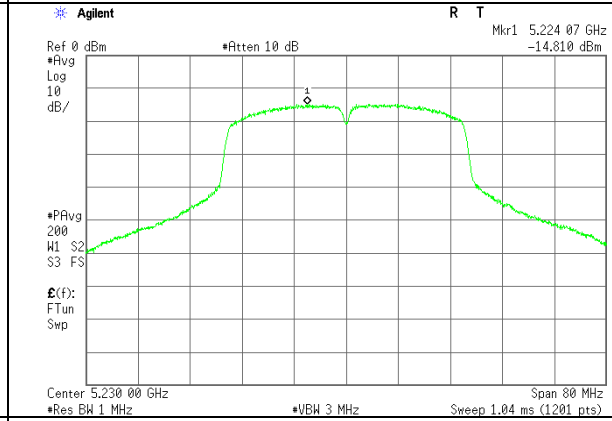
5190 MHz



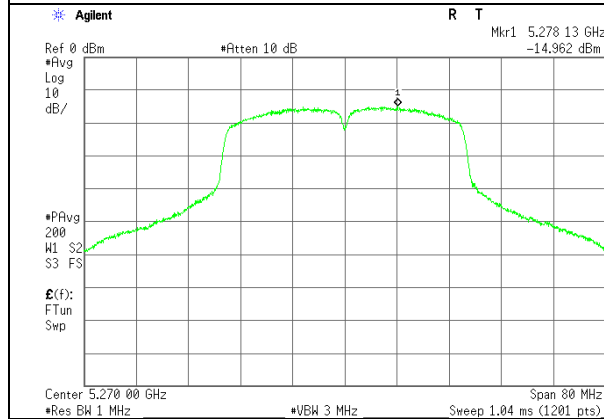
5230 MHz



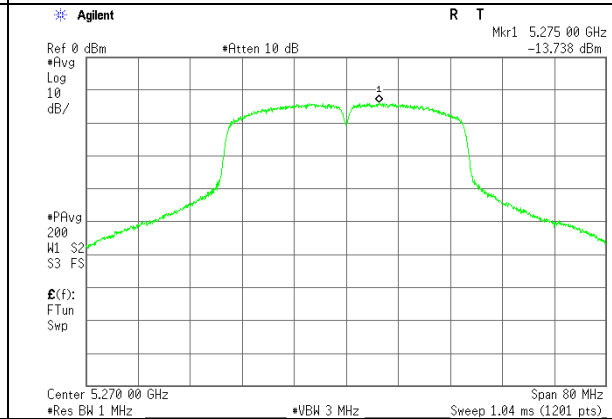
5230 MHz



5270 MHz



5270 MHz



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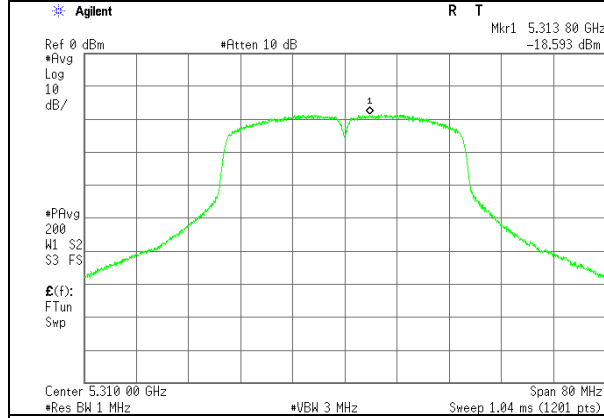
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

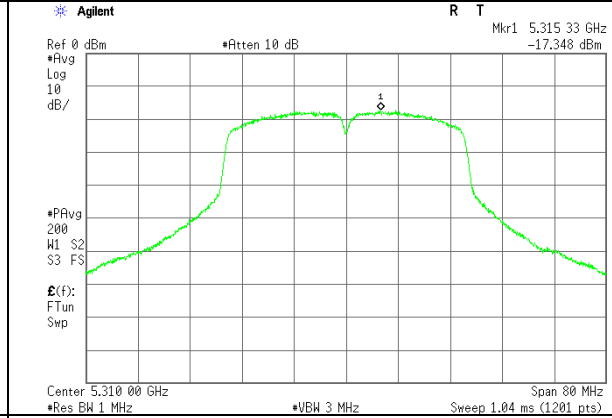
11n-40 Antenna port 0

5310 MHz

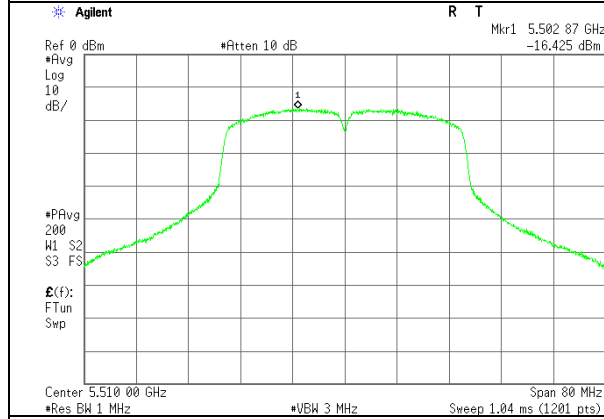


11n-40 Antenna port 1

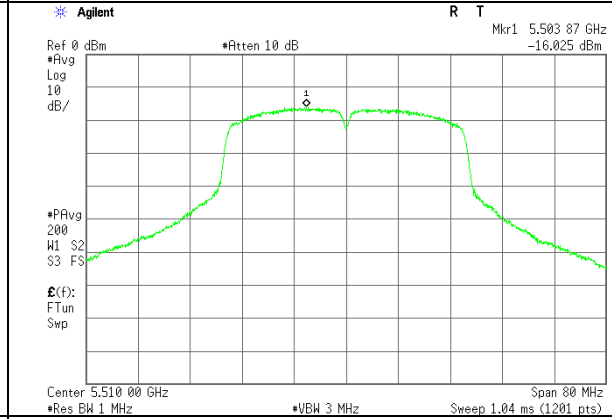
5310 MHz



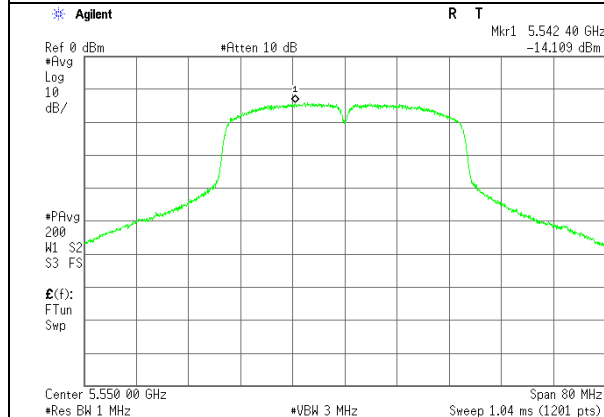
5510 MHz



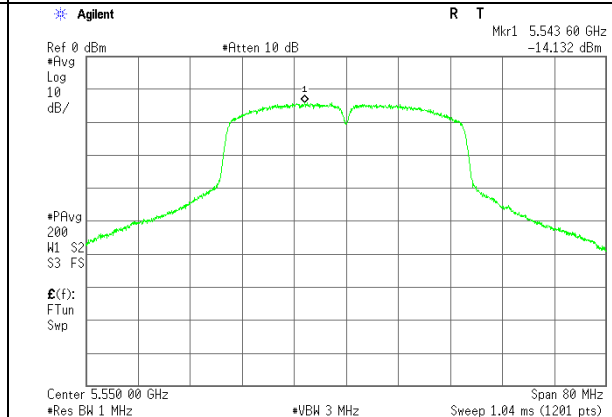
5510 MHz



5550 MHz



5550 MHz



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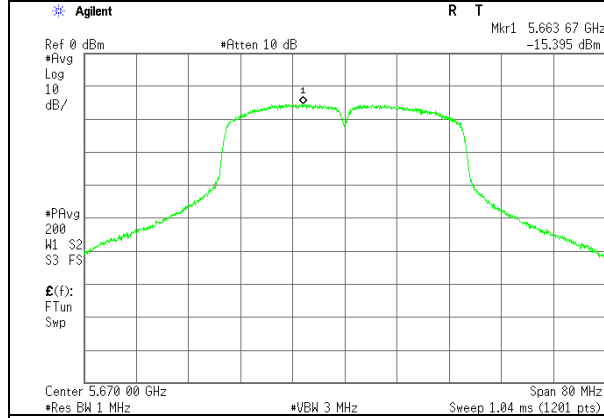
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

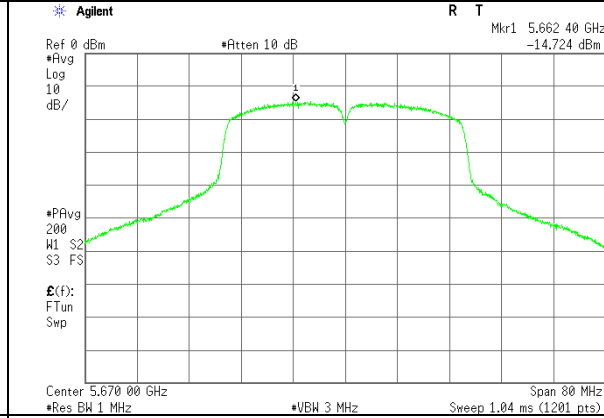
11n-40 Antenna port 0

5670 MHz

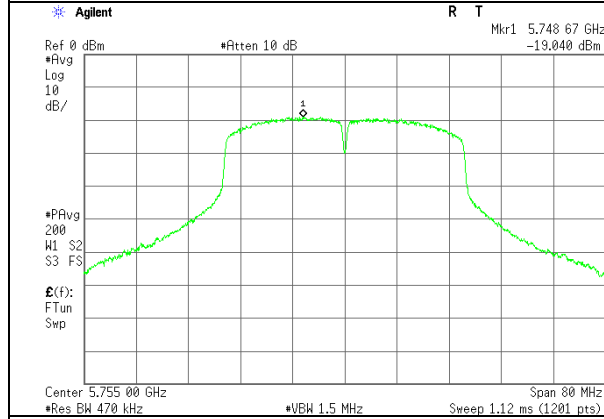


11n-40 Antenna port 1

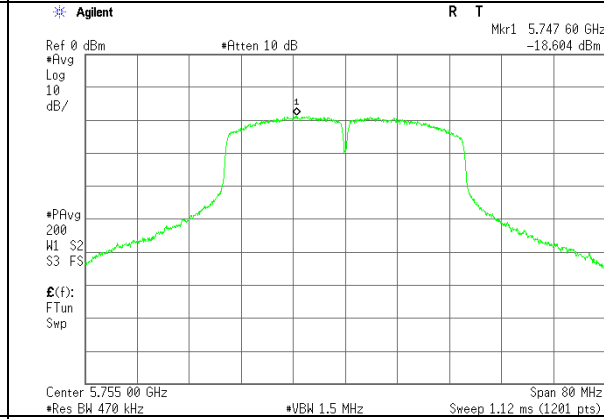
5670 MHz



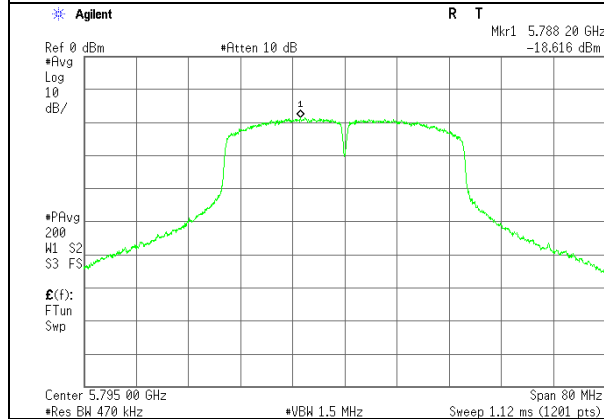
5755 MHz



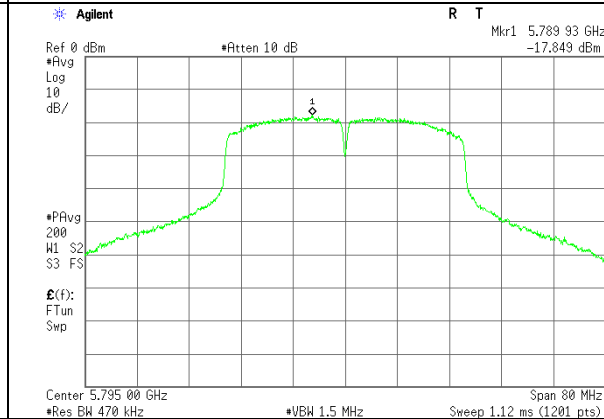
5755 MHz



5795 MHz



5795 MHz



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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.2, No.3 and No.4 Anechoic Chamber
Report No. : 10748020H
Date : 05/04/2015 05/06/2015 05/20/2015 05/20/2015
Temperature/ Humidity : 23 deg. C / 61 % RH 22 deg. C / 49 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Koji Yamamoto Yuta Moriya Keisuke Kawamura
: (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 26.5GHz) (Above 26.5GHz)
Mode : 11n-20 Tx 5180 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5150.000	PK	52.9	32.2	3.8	31.6	-	57.3	73.9	16.6	Inside	
Hori	6906.655	PK	47.6	36.2	4.4	32.5	-	55.7	68.2	12.5	Outside	
Hori	10360.000	PK	49.1	38.8	-2.2	32.7	-	53.0	68.2	15.2	Outside	
Hori	15540.000	PK	43.9	39.1	-0.9	32.0	-	50.1	73.9	23.8	Inside	
Hori	20720.000	PK	44.5	39.5	-0.8	33.2	-	50.0	73.9	23.9	Inside	
Hori	5150.000	AV	40.4	32.2	3.8	31.6	0.5	45.3	53.9	8.6	Inside	*1)
Hori	15540.000	AV	35.5	39.1	-0.9	32.0	0.5	42.2	53.9	11.7	Inside	
Hori	20720.000	AV	36.6	39.5	-0.8	33.2	0.5	42.6	53.9	11.3	Inside	
Vert	5150.000	PK	50.6	32.2	3.8	31.6	-	55.0	73.9	18.9	Inside	
Vert	6906.655	PK	48.5	36.2	4.4	32.5	-	56.6	68.2	11.6	Outside	
Vert	10360.000	PK	56.8	38.8	-2.2	32.7	-	60.7	68.2	7.5	Outside	
Vert	15540.000	PK	43.9	39.1	-0.9	32.0	-	50.1	73.9	23.8	Inside	
Vert	20720.000	PK	44.4	39.5	-0.8	33.2	-	49.9	73.9	24.0	Inside	
Vert	5150.000	AV	38.4	32.2	3.8	31.6	0.5	43.3	53.9	10.6	Inside	*1)
Vert	15540.000	AV	35.3	39.1	-0.9	32.0	0.5	42.0	53.9	11.9	Inside	
Vert	20720.000	AV	36.5	39.5	-0.8	33.2	0.5	42.5	53.9	11.4	Inside	

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

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

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

26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

*1) Not Out of Band emission (Leakage power)

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.2, No.3 and No.4 Anechoic Chamber
Report No. : 10748020H
Date : 05/04/2015 05/06/2015 05/20/2015 05/20/2015
Temperature/ Humidity : 23 deg. C / 61 % RH 22 deg. C / 49 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Koji Yamamoto Yuta Moriya Keisuke Kawamura
: (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 26.5 GHz) (Above 26.5GHz)
Mode : 11n-20 Tx 5260 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	7013.339	PK	47.8	36.5	4.4	32.6	-	56.1	68.2	12.1	Outside	
Hori	10520.000	PK	46.6	38.7	-2.2	32.8	-	50.3	68.2	17.9	Outside	
Hori	15780.000	PK	44.1	38.4	-0.9	32.3	-	49.3	73.9	24.6	Inside	
Hori	21040.000	PK	44.9	39.6	-0.7	33.3	-	50.5	73.9	23.4	Inside	
Hori	15780.000	AV	35.2	38.4	-0.9	32.3	0.5	40.9	53.9	13.0	Inside	
Hori	21040.000	AV	36.9	39.6	-0.7	33.3	0.5	43.0	53.9	10.9	Inside	
Vert	7013.339	PK	49.9	36.5	4.4	32.6	-	58.2	68.2	10.0	Outside	
Vert	10520.000	PK	52.9	38.7	-2.2	32.8	-	56.6	68.2	11.6	Outside	
Vert	15780.000	PK	43.5	38.4	-0.9	32.3	-	48.7	73.9	25.2	Inside	
Vert	21040.000	PK	44.6	39.6	-0.7	33.3	-	50.2	73.9	23.7	Inside	
Vert	15780.000	AV	35.0	38.4	-0.9	32.3	0.5	40.7	53.9	13.2	Inside	
Vert	21040.000	AV	36.6	39.6	-0.7	33.3	0.5	42.7	53.9	11.2	Inside	

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

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

Distance factor: 10GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$
 26.5GHz-40GHz $20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.2, No.3 and No.4 Anechoic Chamber
Report No. : 10748020H
Date : 05/04/2015 05/06/2015 05/20/2015 05/20/2015
Temperature/ Humidity : 23 deg. C / 61 % RH 22 deg. C / 49 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Koji Yamamoto Yuta Moriya Keisuke Kawamura
Mode : (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 26.5 GHz) (Above 26.5 GHz)
11n-20 Tx 5320 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5350.000	PK	53.7	32.3	3.8	31.7	-	58.1	73.9	15.8	Inside	
Hori	7093.352	PK	49.3	36.6	4.4	32.7	-	57.6	68.2	10.6	Outside	
Hori	10640.000	PK	44.4	38.7	-2.2	32.9	-	48.0	73.9	25.9	Inside	
Hori	15960.000	PK	43.1	37.8	-0.9	32.5	-	47.5	73.9	26.4	Inside	
Hori	21280.000	PK	44.9	39.8	-0.7	33.3	-	50.7	73.9	23.2	Inside	
Hori	5350.000	AV	43.9	32.3	3.8	31.7	0.5	48.8	53.9	5.1	Inside	*1)
Hori	10640.000	AV	35.3	38.7	-2.2	32.9	0.5	39.4	53.9	14.5	Inside	
Hori	15960.000	AV	35.0	37.8	-0.9	32.5	0.5	39.9	53.9	14.0	Inside	
Hori	21280.000	AV	36.7	39.8	-0.7	33.3	0.5	43.0	53.9	10.9	Inside	
Vert	5350.000	PK	55.2	32.3	3.8	31.7	-	59.6	73.9	14.3	Inside	
Vert	7093.352	PK	49.2	36.6	4.4	32.7	-	57.5	68.2	10.7	Outside	
Vert	10640.000	PK	49.8	38.7	-2.2	32.9	-	53.4	73.9	20.5	Inside	
Vert	15960.000	PK	44.1	37.8	-0.9	32.5	-	48.5	73.9	25.4	Inside	
Vert	21280.000	PK	44.2	39.8	-0.7	33.3	-	50.0	73.9	23.9	Inside	
Vert	5350.000	AV	44.5	32.3	3.8	31.7	0.5	49.4	53.9	4.5	Inside	*1)
Vert	10640.000	AV	39.6	38.7	-2.2	32.9	0.5	43.7	53.9	10.2	Inside	
Vert	15960.000	AV	35.1	37.8	-0.9	32.5	0.5	40.0	53.9	13.9	Inside	
Vert	21280.000	AV	36.3	39.8	-0.7	33.3	0.5	42.6	53.9	11.3	Inside	

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

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

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

26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

*1) Not Out of Band emission (Leakage power)

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.2, No.3 and No.4 Anechoic Chamber
Report No. : 10748020H
Date : 05/04/2015 05/06/2015 05/20/2015 05/20/2015 05/27/2015
Temperature/ Humidity : 23 deg. C / 61 % RH 22 deg. C / 49 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH 22 deg. C / 43 % RH
Engineer : Koji Yamamoto Koji Yamamoto Yuta Moriya Keisuke Kawamura Tomohisa Nakagawa
 (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 26.5 GHz) (Above 26.5 GHz) (Below 1 GHz)
Mode : 11n-20 Tx 5500 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	47.414	QP	25.2	11.6	7.0	28.5	-	15.3	40.0	24.7	Outside	
Hori	102.324	QP	25.4	10.4	7.5	28.2	-	15.1	43.5	28.4	Outside	
Hori	399.599	QP	33.1	17.6	9.4	28.3	-	31.8	46.0	14.2	Outside	
Hori	411.422	QP	36.3	17.7	9.5	28.3	-	35.2	46.0	10.8	Outside	
Hori	450.008	QP	29.6	18.1	9.5	28.4	-	28.8	46.0	17.2	Outside	
Hori	499.997	QP	29.7	18.6	9.7	28.5	-	29.5	46.0	16.5	Outside	
Hori	5460.000	PK	44.9	32.4	3.9	31.7	-	49.5	73.9	24.4	Inside	
Hori	5470.000	PK	52.3	32.4	3.9	31.7	-	56.9	68.2	11.3	Outside	
Hori	7333.352	PK	45.9	37.0	4.5	32.8	-	54.6	73.9	19.3	Inside	
Hori	11000.000	PK	44.1	38.8	-2.2	33.0	-	47.7	73.9	26.2	Inside	
Hori	16500.000	PK	43.6	38.9	-0.5	32.2	-	49.8	68.2	18.4	Outside	
Hori	22000.000	PK	44.4	40.5	-0.7	33.1	-	51.1	68.2	17.1	Outside	
Hori	5460.000	AV	35.3	32.4	3.9	31.7	0.5	40.4	53.9	13.5	Inside	
Hori	7333.352	AV	39.3	37.0	4.5	32.8	0.5	48.5	53.9	5.4	Inside	
Hori	11000.000	AV	35.5	38.8	-2.2	33.0	0.5	39.6	53.9	14.3	Inside	
Vert	47.414	QP	42.4	11.6	7.0	28.5	-	32.5	40.0	7.5	Outside	
Vert	102.324	QP	31.1	10.4	7.5	28.2	-	20.8	43.5	22.7	Outside	
Vert	399.599	QP	32.1	17.6	9.4	28.3	-	30.8	46.0	15.2	Outside	
Vert	411.422	QP	35.7	17.7	9.5	28.3	-	34.6	46.0	11.4	Outside	
Vert	450.008	QP	29.6	18.1	9.5	28.4	-	28.8	46.0	17.2	Outside	
Vert	499.997	QP	31.6	18.6	9.7	28.5	-	31.4	46.0	14.6	Outside	
Vert	5460.000	PK	47.0	32.4	3.9	31.7	-	51.6	73.9	22.3	Inside	
Vert	5470.000	PK	54.9	32.4	3.9	31.7	-	59.5	68.2	8.7	Outside	
Vert	7333.352	PK	44.1	37.0	4.5	32.8	-	52.8	73.9	21.1	Inside	
Vert	11000.000	PK	45.2	38.8	-2.2	33.0	-	48.8	73.9	25.1	Inside	
Vert	16500.000	PK	44.6	38.9	-0.5	32.2	-	50.8	68.2	17.4	Outside	
Vert	22000.000	PK	44.9	40.5	-0.7	33.1	-	51.6	68.2	16.6	Outside	
Vert	5460.000	AV	37.4	32.4	3.9	31.7	0.5	42.5	53.9	11.4	Inside	
Vert	7333.352	AV	37.9	37.0	4.5	32.8	0.5	47.1	53.9	6.8	Inside	
Vert	11000.000	AV	36.0	38.8	-2.2	33.0	0.5	40.1	53.9	13.8	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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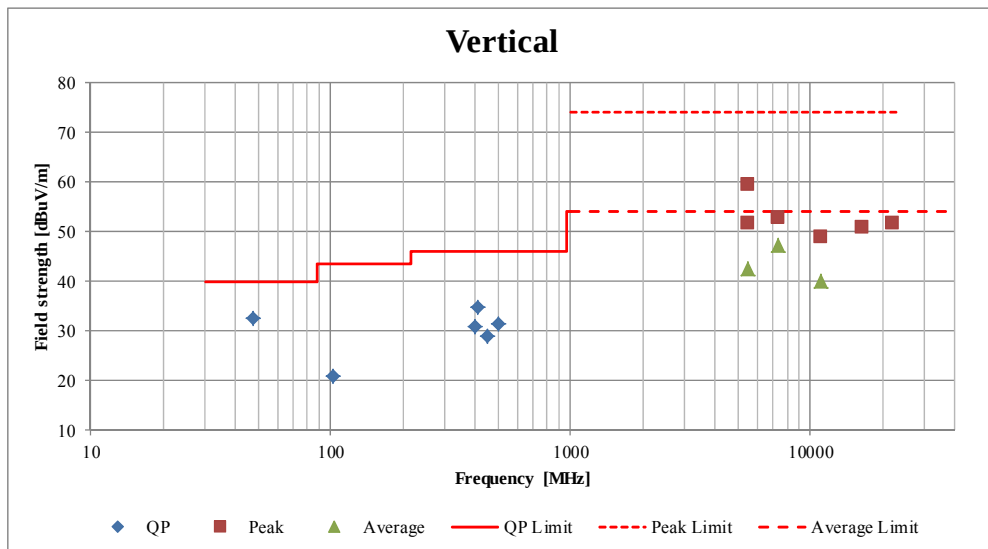
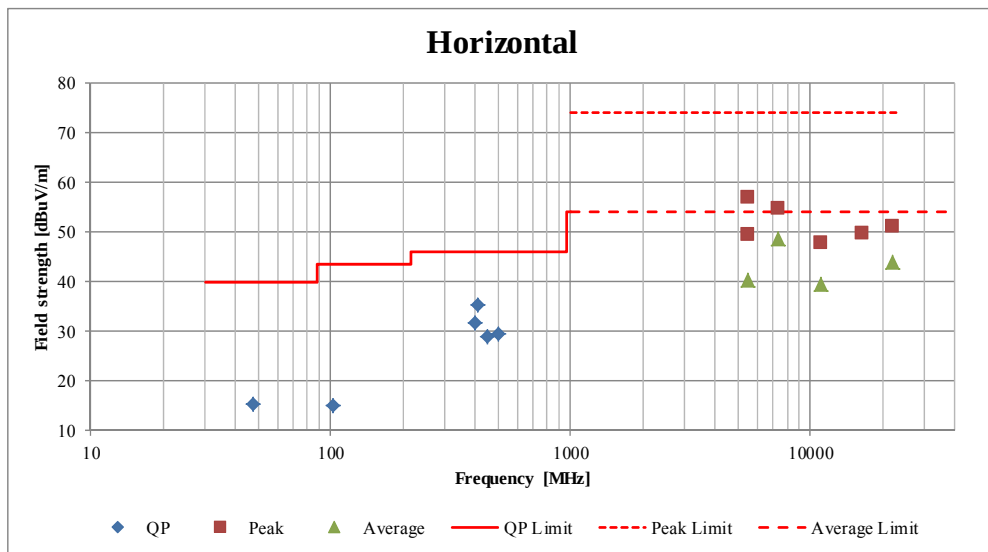
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Radiated Spurious Emission
(Plot data, Worst case)
(Antenna 1)

Test place	Ise EMC Lab. No.2, No.3 and No.4 Anechoic Chamber				
Report No.	10748020H				
Date	05/04/2015	05/06/2015	05/20/2015	05/20/2015	05/27/2015
Temperature/ Humidity	23 deg. C / 61 % RH	22 deg. C / 49 % RH	20 deg. C / 52 % RH	22 deg. C / 50 % RH	22 deg. C / 43 % RH
Engineer	Koji Yamamoto (1 GHz - 10 GHz)	Koji Yamamoto (10 GHz - 18 GHz)	Yuta Moriya (18 GHz - 26.5 GHz)	Keisuke Kawamura (Above 26.5 GHz)	Tomohisa Nakagawa (Below 1 GHz)
Mode	11n-20 Tx 5500 MHz				



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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.2, No.3 and No.4 Anechoic Chamber
Report No. : 10748020H
Date : 05/04/2015 05/06/2015 05/20/2015 05/20/2015
Temperature/ Humidity : 23 deg. C / 61 % RH 22 deg. C / 49 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Koji Yamamoto Yuta Moriya Keisuke Kawamura
: (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 26.5 GHz) (Above 26.5 GHz)
Mode : 11n-20 Tx 5580 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	7440.060	PK	46.7	37.2	4.6	32.9	-	55.6	73.9	18.3	Inside	
Hori	11160.000	PK	43.9	39.0	-2.0	32.9	-	48.0	73.9	25.9	Inside	
Hori	16740.000	PK	44.2	39.5	-0.5	32.1	-	51.1	68.2	17.1	Outside	
Hori	22320.000	PK	44.1	40.6	-0.6	32.7	-	51.4	73.9	22.5	Inside	
Hori	7440.060	AV	39.6	37.2	4.6	32.9	0.5	49.0	53.9	4.9	Inside	
Hori	11160.000	AV	35.3	39.0	-2.0	32.9	0.5	39.9	53.9	14.0	Inside	
Hori	22320.000	AV	36.0	40.6	-0.6	32.7	0.5	43.8	53.9	10.1	Inside	
Vert	7440.060	PK	45.3	37.2	4.6	32.9	-	54.2	73.9	19.7	Inside	
Vert	11160.000	PK	44.3	39.0	-2.0	32.9	-	48.4	73.9	25.5	Inside	
Vert	16740.000	PK	43.6	39.5	-0.5	32.1	-	50.5	68.2	17.7	Outside	
Vert	22320.000	PK	44.6	40.6	-0.6	32.7	-	51.9	73.9	22.0	Inside	
Vert	7440.060	AV	38.8	37.2	4.6	32.9	0.5	48.2	53.9	5.7	Inside	
Vert	11160.000	AV	34.9	39.0	-2.0	32.9	0.5	39.5	53.9	14.4	Inside	
Vert	22320.000	AV	36.5	40.6	-0.6	32.7	0.5	44.3	53.9	9.6	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.3 and No. 4 Anechoic Chamber
Report No. : 10748020H
Date : 05/04/2015 05/06/2015 05/20/2015 05/20/2015
Temperature/ Humidity : 23 deg. C / 61 % RH 22 deg. C / 49 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Koji Yamamoto Yuta Moriya Keisuke Kawamura
: (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 26.5 GHz) (Above 26.5 GHz)
Mode : 11n-20 Tx 5700 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	3800.008	PK	46.3	29.8	3.2	31.9	-	47.4	73.9	26.5	Inside	
Hori	5725.000	PK	58.7	32.9	4.0	31.7	-	63.9	68.2	4.3	Outside	
Hori	7600.026	PK	45.8	37.4	4.6	33.0	-	54.8	73.9	19.1	Inside	
Hori	11400.000	PK	43.6	39.4	-1.8	32.7	-	48.5	73.9	25.4	Inside	
Hori	17100.000	PK	43.9	41.0	-0.3	31.9	-	52.7	68.2	15.5	Outside	
Hori	22800.000	PK	44.4	40.7	-0.5	32.2	-	52.4	73.9	21.5	Inside	
Hori	3800.008	AV	43.6	29.8	3.2	31.9	0.5	45.2	53.9	8.7	Inside	
Hori	7600.026	AV	38.6	37.4	4.6	33.0	0.5	48.1	53.9	5.8	Inside	
Hori	11400.000	AV	34.3	39.4	-1.8	32.7	0.5	39.7	53.9	14.2	Inside	
Hori	22800.000	AV	36.4	40.7	-0.5	32.2	0.5	44.9	53.9	9.0	Inside	
Vert	3800.008	PK	49.1	29.8	3.2	31.9	-	50.2	73.9	23.7	Inside	
Vert	5725.000	PK	60.8	32.9	4.0	31.7	-	66.0	68.2	2.2	Outside	
Vert	7600.026	PK	44.8	37.4	4.6	33.0	-	53.8	73.9	20.1	Inside	
Vert	11400.000	PK	43.8	39.4	-1.8	32.7	-	48.7	73.9	25.2	Inside	
Vert	17100.000	PK	44.3	41.0	-0.3	31.9	-	53.1	68.2	15.1	Outside	
Vert	22800.000	PK	44.5	40.7	-0.5	32.2	-	52.5	73.9	21.4	Inside	
Vert	3800.008	AV	45.9	29.8	3.2	31.9	0.5	47.5	53.9	6.4	Inside	
Vert	7600.026	AV	38.8	37.4	4.6	33.0	0.5	48.3	53.9	5.6	Inside	
Vert	11400.000	AV	34.5	39.4	-1.8	32.7	0.5	39.9	53.9	14.0	Inside	
Vert	22800.000	AV	36.6	40.7	-0.5	32.2	0.5	45.1	53.9	8.8	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.4 and No.2 Anechoic Chamber
Report No. : 10748020H
Date : 05/04/2015 05/19/2015 05/20/2015 05/20/2015
Temperature/ Humidity : 23 deg. C / 61 % RH 25 deg. C / 57 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Keisuke Kawamura Yuta Moriya Keisuke Kawamura
Mode : (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 26.5 GHz) (Above 26.5 GHz)
11n-20 Tx 5745 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5715.000	PK	47.5	32.8	4.0	31.7	-	52.6	68.2	15.6	Outside	
Hori	5725.000	PK	66.2	32.9	4.0	31.7	-	71.4	78.2	6.8	Outside	
Hori	7660.020	PK	45.1	37.4	4.6	33.1	-	54.0	73.9	19.9	Inside	
Hori	11490.000	PK	44.3	41.1	-1.2	33.7	-	50.5	73.9	23.4	Inside	
Hori	17235.000	PK	42.6	42.8	0.3	32.7	-	53.0	68.2	15.2	Outside	
Hori	22980.000	PK	44.6	40.8	-0.4	32.1	-	52.9	73.9	21.0	Inside	
Hori	7660.020	AV	38.3	37.4	4.6	33.1	0.5	47.7	53.9	6.2	Inside	
Hori	11490.000	AV	35.4	41.1	-1.2	33.7	0.5	42.1	53.9	11.8	Inside	
Hori	22980.000	AV	36.2	40.8	-0.4	32.1	0.5	45.0	53.9	8.9	Inside	
Vert	5715.000	PK	49.0	32.8	4.0	31.7	-	54.1	68.2	14.1	Outside	
Vert	5725.000	PK	66.5	32.9	4.0	31.7	-	71.7	78.2	6.5	Outside	
Vert	7660.020	PK	44.5	37.4	4.6	33.1	-	53.4	73.9	20.5	Inside	
Vert	11490.000	PK	42.8	41.1	-1.2	33.7	-	49.0	73.9	24.9	Inside	
Vert	17235.000	PK	43.3	42.8	0.3	32.7	-	53.7	68.2	14.5	Outside	
Vert	22980.000	PK	44.8	40.8	-0.4	32.1	-	53.1	73.9	20.8	Inside	
Vert	7660.020	AV	36.8	37.4	4.6	33.1	0.5	46.2	53.9	7.7	Inside	
Vert	11490.000	AV	34.5	41.1	-1.2	33.7	0.5	41.2	53.9	12.7	Inside	
Vert	22980.000	AV	36.8	40.8	-0.4	32.1	0.5	45.6	53.9	8.3	Inside	

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

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

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

26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.4 and No.2 Anechoic Chamber
Report No. : 10748020H
Date : 05/04/2015 05/19/2015 05/20/2015 05/20/2015
Temperature/ Humidity : 23 deg. C / 61 % RH 25 deg. C / 57 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Keisuke Kawamura Yuta Moriya Keisuke Kawamura
Mode : (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 26.5 GHz) (Above 26.5 GHz)
11n-20 Tx 5785 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	11570.000	PK	42.9	41.0	-1.1	33.7	-	49.1	73.9	24.8	Inside	
Hori	17355.000	PK	42.6	43.4	0.4	32.7	-	53.7	68.2	14.5	Outside	
Hori	23140.000	PK	44.4	40.6	-0.4	32.0	-	52.6	68.2	15.6	Outside	
Hori	11570.000	AV	35.0	41.0	-1.1	33.7	0.5	41.7	53.9	12.2	Inside	
Vert	11570.000	PK	42.3	41.0	-1.1	33.7	-	48.5	73.9	25.4	Inside	
Vert	17355.000	PK	43.3	43.4	0.4	32.7	-	54.4	68.2	13.8	Outside	
Vert	23140.000	PK	44.8	40.6	-0.4	32.0	-	53.0	68.2	15.2	Outside	
Vert	11570.000	AV	34.0	41.0	-1.1	33.7	0.5	40.7	53.9	13.2	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.4 and No.2 Anechoic Chamber
Report No. : 10748020H
Date : 05/04/2015 05/19/2015 05/20/2015 05/20/2015
Temperature/ Humidity : 23 deg. C / 61 % RH 25 deg. C / 57 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Keisuke Kawamura Yuta Moriya Keisuke Kawamura
Mode : (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 26.5 GHz) (Above 26.5 GHz)
11n-20 Tx 5825 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5850.000	PK	64.0	33.1	4.0	31.7	-	69.4	78.2	8.8	Outside	
Hori	5860.000	PK	52.8	33.1	4.0	31.7	-	58.2	68.2	10.0	Outside	
Hori	11650.000	PK	47.2	40.9	-1.1	33.6	-	53.4	73.9	20.5	Inside	
Hori	17475.000	PK	42.6	43.9	0.5	32.7	-	54.3	68.2	13.9	Outside	
Hori	23300.000	PK	44.2	40.3	-0.4	32.0	-	52.1	68.2	16.1	Outside	
Hori	11650.000	AV	38.0	40.9	-1.1	33.6	0.5	44.7	53.9	9.2	Inside	
Vert	5850.000	PK	61.7	33.1	4.0	31.7	-	67.1	78.2	11.1	Outside	
Vert	5860.000	PK	50.2	33.1	4.0	31.7	-	55.6	68.2	12.6	Outside	
Vert	11650.000	PK	46.2	40.9	-1.1	33.6	-	52.4	73.9	21.5	Inside	
Vert	17475.000	PK	43.3	43.9	0.5	32.7	-	55.0	68.2	13.2	Outside	
Vert	23300.000	PK	44.5	40.3	-0.4	32.0	-	52.4	68.2	15.8	Outside	
Vert	11650.000	AV	36.5	40.9	-1.1	33.6	0.5	43.2	53.9	10.7	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.4 and No.2 Semi Anechoic Chamber
Report No. : 10748020H
Date : 05/05/2015 05/20/2015 05/20/2015
Temperature / Humidity : 23 deg. C / 46 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Yuta Moriya Keisuke Kawamura
(1 GHz - 10 GHz) (10 GHz - 26.5 GHz) (Above 26.5 GHz)
Mode : 11n-40 Tx 5190 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5150.000	PK	58.3	32.2	3.8	31.6	-	62.7	73.9	11.2	Inside	
Hori	6929.063	PK	48.5	36.3	4.4	32.6	-	56.6	68.2	11.6	Outside	
Hori	10380.000	PK	49.7	40.0	-1.7	34.4	-	53.6	68.2	14.6	Outside	
Hori	15570.000	PK	43.5	39.5	-0.1	33.5	-	49.4	73.9	24.5	Inside	
Hori	20760.000	PK	44.1	39.5	-0.8	33.2	-	49.6	73.9	24.3	Inside	
Hori	5150.000	AV	47.1	32.2	3.8	31.6	0.3	51.8	53.9	2.1	Inside	*1)
Hori	15570.000	AV	35.2	39.5	-0.1	33.5	0.3	41.4	53.9	12.5	Inside	
Hori	20760.000	AV	36.5	39.5	-0.8	33.2	0.3	42.3	53.9	11.6	Inside	
Vert	5150.000	PK	55.0	32.2	3.8	31.6	-	59.4	73.9	14.5	Inside	
Vert	6929.063	PK	49.4	36.3	4.4	32.6	-	57.5	68.2	10.7	Outside	
Vert	10380.000	PK	50.9	40.0	-1.7	34.4	-	54.8	68.2	13.4	Outside	
Vert	15570.000	PK	43.5	39.5	-0.1	33.5	-	49.4	73.9	24.5	Inside	
Vert	20760.000	PK	44.5	39.5	-0.8	33.2	-	50.0	73.9	23.9	Inside	
Vert	5150.000	AV	46.4	32.2	3.8	31.6	0.3	51.1	53.9	2.8	Inside	*1)
Vert	15570.000	AV	35.2	39.5	-0.1	33.5	0.3	41.4	53.9	12.5	Inside	
Vert	20760.000	AV	36.7	39.5	-0.8	33.2	0.3	42.5	53.9	11.4	Inside	

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

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

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

26.5GHz-40GHz $20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

*1) Not Out of Band emission (Leakage power)

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.3 and No.2 Semi Anechoic Chamber
Report No. : 10748020H
Date : 05/06/2015 05/20/2015 05/20/2015
Temperature / Humidity : 22 deg. C / 43 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Yuta Moriya Keisuke Kawamura
 (1 GHz - 10 GHz) (10 GHz - 26.5 GHz) (Above 26.5 GHz)
Mode : 11n-40 Tx 5270 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	7026.684	PK	47.6	35.9	4.4	32.0	-	55.9	68.2	12.3	Outside	
Hori	10540.000	PK	51.1	40.5	-1.7	34.3	-	55.6	68.2	12.6	Outside	
Hori	15810.000	PK	43.4	38.8	-0.2	33.6	-	48.4	73.9	25.5	Inside	
Hori	21080.000	PK	44.0	39.6	-0.7	33.3	-	49.6	73.9	24.3	Inside	
Hori	15810.000	AV	35.3	38.8	-0.2	33.6	0.3	40.6	53.9	13.3	Inside	
Hori	21080.000	AV	36.5	39.6	-0.7	33.3	0.3	42.4	53.9	11.5	Inside	
Vert	7026.684	PK	46.9	35.9	4.4	32.0	-	55.2	68.2	13.0	Outside	
Vert	10540.000	PK	53.0	40.5	-1.7	34.3	-	57.5	68.2	10.7	Outside	
Vert	15810.000	PK	43.6	38.8	-0.2	33.6	-	48.6	73.9	25.3	Inside	
Vert	21080.000	PK	44.8	39.6	-0.7	33.3	-	50.4	73.9	23.5	Inside	
Vert	15810.000	AV	35.3	38.8	-0.2	33.6	0.3	40.6	53.9	13.3	Inside	
Vert	21080.000	AV	36.4	39.6	-0.7	33.3	0.3	42.3	53.9	11.6	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 1)

Test place	Ise EMC Lab. No.3 and No.2 Semi Anechoic Chamber		
Report No.	10748020H		
Date	05/06/2015	05/20/2015	05/20/2015
Temperature / Humidity	22 deg. C / 43 % RH	20 deg. C / 52 % RH	22 deg. C / 50 % RH
Engineer	Koji Yamamoto	Yuta Moriya	Keisuke Kawamura
	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(Above 26.5 GHz)
Mode	11n-40 Tx 5310 MHz		

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]	Inside or Outside of Restricted Bands	Remark
Hori	5350.000	PK	58.4	31.6	3.8	31.2	-	62.6	73.9	11.3	Inside	
Hori	7080.034	PK	46.3	35.9	4.4	32.0	-	54.6	68.2	13.6	Outside	
Hori	10620.000	PK	46.8	40.7	-1.7	34.2	-	51.6	73.9	22.3	Inside	
Hori	15930.000	PK	43.4	38.5	-0.1	33.7	-	48.1	73.9	25.8	Inside	
Hori	21240.000	PK	44.9	39.8	-0.7	33.3	-	50.7	73.9	23.2	Inside	
Hori	5350.000	AV	47.1	31.6	3.8	31.2	0.3	51.6	53.9	2.3	Inside	*1)
Hori	10620.000	AV	35.9	40.7	-1.7	34.2	0.3	41.0	53.9	12.9	Inside	
Hori	15930.000	AV	35.9	38.5	-0.1	33.7	0.3	40.9	53.9	13.0	Inside	
Hori	21240.000	AV	36.9	39.8	-0.7	33.3	0.3	43.0	53.9	10.9	Inside	
Vert	5350.000	PK	57.0	31.6	3.8	31.2	-	61.2	73.9	12.7	Inside	
Vert	7080.034	PK	48.0	35.9	4.4	32.0	-	56.3	68.2	11.9	Outside	
Vert	10620.000	PK	45.6	40.7	-1.7	34.2	-	50.4	73.9	23.5	Inside	
Vert	15930.000	PK	43.9	38.5	-0.1	33.7	-	48.6	73.9	25.3	Inside	
Vert	21240.000	PK	44.6	39.8	-0.7	33.3	-	50.4	73.9	23.5	Inside	
Vert	5350.000	AV	46.7	31.6	3.8	31.2	0.3	51.2	53.9	2.7	Inside	*1)
Vert	10620.000	AV	35.2	40.7	-1.7	34.2	0.3	40.3	53.9	13.6	Inside	
Vert	15930.000	AV	36.1	38.5	-0.1	33.7	0.3	41.1	53.9	12.8	Inside	
Vert	21240.000	AV	36.8	39.8	-0.7	33.3	0.3	42.9	53.9	11.0	Inside	

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

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

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

26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

*1) Not Out of Band emission (Leakage power)

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.3 and No.2 Semi Anechoic Chamber
Report No. : 10748020H
Date : 05/06/2015 05/20/2015 05/20/2015
Temperature / Humidity : 22 deg. C / 43 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Yuta Moriya Keisuke Kawamura
: (1 GHz - 10 GHz) (10 GHz - 26.5 GHz) (Above 26.5 GHz)
Mode : 11n-40 Tx 5510 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5460.000	PK	52.3	31.8	3.8	31.2	-	56.7	73.9	17.2	Inside	
Hori	5470.000	PK	61.3	31.8	3.8	31.2	-	65.7	68.2	2.5	Outside	
Hori	11020.000	PK	43.2	41.9	-1.5	33.9	-	49.7	73.9	24.2	Inside	
Hori	16530.000	PK	44.6	40.1	0.0	33.1	-	51.6	68.2	16.6	Outside	
Hori	22040.000	PK	44.3	40.5	-0.7	33.0	-	51.1	73.9	22.8	Inside	
Hori	5460.000	AV	43.5	31.8	3.8	31.2	0.3	48.2	53.9	5.7	Inside	*1)
Hori	11020.000	AV	34.5	41.9	-1.5	33.9	0.3	41.3	53.9	12.6	Inside	
Hori	22040.000	AV	36.1	40.5	-0.7	33.0	0.3	43.2	53.9	10.7	Inside	
Vert	5460.000	PK	53.1	31.8	3.8	31.2	-	57.5	73.9	16.4	Inside	
Vert	5470.000	PK	61.6	31.8	3.8	31.2	-	66.0	68.2	2.2	Outside	
Vert	11020.000	PK	43.8	41.9	-1.5	33.9	-	50.3	73.9	23.6	Inside	
Vert	16530.000	PK	44.0	40.1	0.0	33.1	-	51.0	68.2	17.2	Outside	
Vert	22040.000	PK	44.7	40.5	-0.7	33.0	-	51.5	73.9	22.4	Inside	
Vert	5460.000	AV	43.4	31.8	3.8	31.2	0.3	48.1	53.9	5.8	Inside	*1)
Vert	11020.000	AV	34.6	41.9	-1.5	33.9	0.3	41.4	53.9	12.5	Inside	
Vert	22040.000	AV	36.6	40.5	-0.7	33.0	0.3	43.7	53.9	10.2	Inside	

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

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

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

26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

*1) Not Out of Band emission (Leakage power)

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Radiated Spurious Emission (Antenna 1)

Test place	Ise EMC Lab. No.3 and No.2 Semi Anechoic Chamber		
Report No.	10748020H		
Date	05/06/2015	05/20/2015	05/20/2015
Temperature / Humidity	22 deg. C / 43 % RH	20 deg. C / 52 % RH	22 deg. C / 50 % RH
Engineer	Koji Yamamoto	Yuta Moriya	Keisuke Kawamura
	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(Above 26.5 GHz)
Mode	11n-40 Tx 5550 MHz		

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]	Inside or Outside of Restricted Bands	Remark
Hori	11100.000	PK	43.5	41.8	-1.5	33.9	-	49.9	73.9	24.0	Inside	
Hori	16650.000	PK	44.3	40.6	0.0	33.0	-	51.9	68.2	16.3	Outside	
Hori	22200.000	PK	44.7	40.5	-0.6	32.9	-	51.7	73.9	22.2	Inside	
Hori	11100.000	AV	34.1	41.8	-1.5	33.9	0.3	40.8	53.9	13.1	Inside	
Hori	22200.000	AV	36.2	40.5	-0.6	32.9	0.3	43.5	53.9	10.4	Inside	
Vert	11100.000	PK	42.9	41.8	-1.5	33.9	-	49.3	73.9	24.6	Inside	
Vert	16650.000	PK	43.8	40.6	0.0	33.0	-	51.4	68.2	16.8	Outside	
Vert	22200.000	PK	44.3	40.5	-0.6	32.9	-	51.3	73.9	22.6	Inside	
Vert	11100.000	AV	34.1	41.8	-1.5	33.9	0.3	40.8	53.9	13.1	Inside	
Vert	22200.000	AV	36.9	40.5	-0.6	32.9	0.3	44.2	53.9	9.7	Inside	

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

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

Distance factor: 10GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$
 26.5GHz-40GHz $20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

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Radiated Spurious Emission (Antenna 1)

Test place Ise EMC Lab. No.3 and No.2 Semi Anechoic Chamber
Report No. 10748020H
Date 05/06/2015 05/20/2015 05/20/2015
Temperature / Humidity 22 deg. C / 43 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer Koji Yamamoto Yuta Moriya Keisuke Kawamura
(1 GHz - 10 GHz) (10 GHz - 26.5 GHz) (Above 26.5 GHz)
Mode 11n-40 Tx 5670 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5725.000	PK	43.7	32.1	3.9	31.2	-	48.5	68.2	19.7	Outside	
Hori	11340.000	PK	42.6	41.4	-1.3	33.8	-	48.9	73.9	25.0	Inside	
Hori	17010.000	PK	43.9	41.8	0.2	32.7	-	53.2	68.2	15.0	Outside	
Hori	22680.000	PK	44.5	40.7	-0.5	32.4	-	52.3	73.9	21.6	Inside	
Hori	11340.000	AV	34.2	41.4	-1.3	33.8	0.3	40.8	53.9	13.1	Inside	
Hori	22680.000	AV	36.7	40.7	-0.5	32.4	0.3	44.8	53.9	9.1	Inside	
Vert	5725.000	PK	43.7	32.1	3.9	31.2	-	48.5	68.2	19.7	Outside	
Vert	11340.000	PK	43.2	41.4	-1.3	33.8	-	49.5	73.9	24.4	Inside	
Vert	17010.000	PK	44.0	41.8	0.2	32.7	-	53.3	68.2	14.9	Outside	
Vert	22680.000	PK	44.7	40.7	-0.5	32.4	-	52.5	73.9	21.4	Inside	
Vert	11340.000	AV	34.2	41.4	-1.3	33.8	0.3	40.8	53.9	13.1	Inside	
Vert	22680.000	AV	36.5	40.7	-0.5	32.4	0.3	44.6	53.9	9.3	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.4 and No.2 Semi Anechoic Chamber
Report No. : 10748020H
Date : 05/05/2015 05/20/2015 05/20/2015
Temperature / Humidity : 23 deg. C / 46 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Yuta Moriya Keisuke Kawamura
 (1 GHz - 10 GHz) (10 GHz - 26.5 GHz) (Above 26.5 GHz)
Mode : Tx 11n-40 5755 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5715.000	PK	59.9	32.8	4.0	31.7	-	65.0	68.2	3.2	Outside	
Hori	5725.000	PK	65.6	32.9	4.0	31.7	-	70.8	78.2	7.4	Outside	
Hori	11510.000	PK	41.8	41.1	-1.1	33.7	-	48.1	73.9	25.8	Inside	
Hori	17265.000	PK	44.0	43.0	0.3	32.7	-	54.6	68.2	13.6	Outside	
Hori	23020.000	PK	44.8	40.8	-0.4	32.0	-	53.2	73.9	20.7	Inside	
Hori	11510.000	AV	34.0	41.1	-1.1	33.7	0.3	40.6	53.9	13.3	Inside	
Hori	23020.000	AV	36.8	40.8	-0.4	32.0	0.3	45.5	53.9	8.4	Inside	
Vert	5715.000	PK	58.0	32.8	4.0	31.7	-	63.1	68.2	5.1	Outside	
Vert	5725.000	PK	64.2	32.9	4.0	31.7	-	69.4	78.2	8.8	Outside	
Vert	11510.000	PK	41.3	41.1	-1.1	33.7	-	47.6	73.9	26.3	Inside	
Vert	17265.000	PK	43.4	43.0	0.3	32.7	-	54.0	68.2	14.2	Outside	
Vert	23020.000	PK	44.6	40.8	-0.4	32.0	-	53.0	73.9	20.9	Inside	
Vert	11510.000	AV	33.7	41.1	-1.1	33.7	0.3	40.3	53.9	13.6	Inside	
Vert	23020.000	AV	36.6	40.8	-0.4	32.0	0.3	45.3	53.9	8.6	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 1)

Test place : Ise EMC Lab. No.4 and No.2 Semi Anechoic Chamber
Report No. : 10748020H
Date : 05/05/2015 05/20/2015 05/20/2015
Temperature / Humidity : 23 deg. C / 46 % RH 20 deg. C / 52 % RH 22 deg. C / 50 % RH
Engineer : Koji Yamamoto Yuta Moriya Keisuke Kawamura
 (1 GHz - 10 GHz) (10 GHz - 26.5 GHz) (Above 26.5 GHz)
Mode : Tx 11n-40 5795 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5382.004	PK	47.8	32.3	3.8	31.7	-	52.2	73.9	21.7	Inside	
Hori	5850.000	PK	44.0	33.1	4.0	31.7	-	49.4	73.9	24.5	Outside	
Hori	11590.000	PK	42.7	41.0	-1.1	33.7	-	48.9	73.9	25.0	Inside	
Hori	17385.000	PK	43.5	43.5	0.4	32.7	-	54.7	68.2	13.5	Outside	
Hori	23180.000	PK	44.4	40.5	-0.4	32.0	-	52.5	68.2	15.7	Outside	
Hori	5382.004	AV	42.3	32.3	3.8	31.7	0.3	47.0	53.9	6.9	Inside	
Hori	5850.000	AV	36.0	33.1	4.0	31.7	0.3	41.7	53.9	12.2	Outside	*1)
Hori	11590.000	AV	33.9	41.0	-1.1	33.7	0.3	40.4	53.9	13.5	Inside	
Vert	5382.004	PK	48.8	32.3	3.8	31.7	-	53.2	73.9	20.7	Inside	
Vert	5850.000	PK	43.7	33.1	4.0	31.7	-	49.1	73.9	24.8	Outside	
Vert	11590.000	PK	43.1	41.0	-1.1	33.7	-	49.3	73.9	24.6	Inside	
Vert	17385.000	PK	43.7	43.5	0.4	32.7	-	54.9	68.2	13.3	Outside	
Vert	23180.000	PK	44.4	40.5	-0.4	32.0	-	52.5	68.2	15.7	Outside	
Vert	5382.004	AV	42.8	32.3	3.8	31.7	0.3	47.5	53.9	6.4	Inside	
Vert	5850.000	AV	35.3	33.1	4.0	31.7	0.3	41.0	53.9	12.9	Outside	*1)
Vert	11590.000	AV	33.9	41.0	-1.1	33.7	0.3	40.4	53.9	13.5	Inside	

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

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

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

26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

*1) Not Out of Band emission (Leakage power)

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Radiated Spurious Emission (Antenna 2)

Test place Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. 10748020H
Date 07/14/2015 07/15/2015 07/16/2015
Temperature / Humidity 22 deg. C / 40 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer Kazuya Yoshioka Tomohisa Nakagawa Tomohisa Nakagawa
(1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode Tx 11n-20 5180 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5150.000	PK	49.5	32.2	3.9	31.2	-	54.4	73.9	19.5	Inside	
Hori	6907.026	PK	50.9	35.7	4.6	31.9	-	59.3	68.2	8.9	Outside	
Hori	10360.000	PK	54.2	38.7	-1.9	32.7	-	58.3	68.2	9.9	Outside	
Hori	15540.000	PK	45.0	39.8	-0.6	32.0	-	52.2	73.9	21.7	Inside	
Hori	5150.000	AV	45.1	32.2	3.9	31.2	0.5	50.5	53.9	3.4	Inside	*1)
Hori	15540.000	AV	36.3	39.8	-0.6	32.0	0.5	44.0	53.9	9.9	Inside	
Vert	5150.000	PK	50.0	32.2	3.9	31.2	-	54.9	73.9	19.0	Inside	
Vert	6907.026	PK	51.8	35.7	4.6	31.9	-	60.2	68.2	8.0	Outside	
Vert	10360.000	PK	56.6	38.7	-1.9	32.7	-	60.7	68.2	7.5	Outside	
Vert	15540.000	PK	44.2	39.8	-0.6	32.0	-	51.4	73.9	22.5	Inside	
Vert	5150.000	AV	45.4	32.2	3.9	31.2	0.5	50.8	53.9	3.1	Inside	*1)
Vert	15540.000	AV	36.1	39.8	-0.6	32.0	0.5	43.8	53.9	10.1	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

*1) Not Out of Band emission (Leakage power)

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Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	10748020H		
Date	07/14/2015	07/15/2015	07/16/2015
Temperature / Humidity	22 deg. C / 40 % RH	22 deg. C / 49 % RH	25 deg. C / 58 % RH
Engineer	Kazuya Yoshioka (1 GHz - 10 GHz)	Tomohisa Nakagawa (10 GHz - 18 GHz)	Tomohisa Nakagawa (18 GHz - 40 GHz)
Mode	Tx 11n-20 5260 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dBm]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Inside or Outside of Restricted Bands	Remark
Hori	7013.484	PK	49.1	35.9	4.6	32.0	-	57.6	68.2	10.6	Outside	
Hori	10520.000	PK	45.3	38.9	-1.8	32.8	-	49.6	68.2	18.6	Outside	
Hori	15780.000	PK	44.7	39.6	-0.6	32.3	-	51.4	73.9	22.5	Inside	
Hori	15780.000	AV	36.0	39.6	-0.6	32.3	0.5	43.2	53.9	10.7	Inside	
Vert	7013.484	PK	50.1	35.9	4.6	32.0	-	58.6	68.2	9.6	Outside	
Vert	10520.000	PK	48.5	38.9	-1.8	32.8	-	52.8	68.2	15.4	Outside	
Vert	15780.000	PK	45.0	39.6	-0.6	32.3	-	51.7	73.9	22.2	Inside	
Vert	15780.000	AV	36.3	39.6	-0.6	32.3	0.5	43.5	53.9	10.4	Inside	

Distance factor:	10GHz-26.5GHz	$20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$
	26.5GHz-40GHz	$20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

Radiated Spurious Emission (Antenna 2)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	10748020H		
Date	07/14/2015	07/15/2015	07/16/2015
Temperature / Humidity	22 deg. C / 40 % RH	22 deg. C / 49 % RH	25 deg. C / 58 % RH
Engineer	Kazuya Yoshioka	Tomohisa Nakagawa	Tomohisa Nakagawa
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11n-20 5320 MHz		

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]	Inside or Outside of Restricted Bands	Remark
Hori	5350.000	PK	48.8	32.2	4.0	31.2	-	53.8	73.9	20.1	Inside	
Hori	7093.484	PK	48.1	36.0	4.7	32.0	-	56.8	68.2	11.4	Outside	
Hori	10640.000	PK	44.1	39.1	-1.8	32.9	-	48.5	73.9	25.4	Inside	
Hori	15960.000	PK	44.5	39.4	-0.5	32.5	-	50.9	73.9	23.0	Inside	
Hori	5350.000	AV	40.8	32.2	4.0	31.2	0.5	46.3	53.9	7.6	Inside	*1)
Hori	10640.000	AV	35.3	39.1	-1.8	32.9	0.5	40.2	53.9	13.7	Inside	
Hori	15960.000	AV	35.3	39.4	-0.5	32.5	0.5	42.2	53.9	11.7	Inside	
Vert	5350.000	PK	52.0	32.2	4.0	31.2	-	57.0	73.9	16.9	Inside	
Vert	7093.484	PK	47.6	36.0	4.7	32.0	-	56.3	68.2	11.9	Outside	
Vert	10640.000	PK	46.9	39.1	-1.8	32.9	-	51.3	73.9	22.6	Inside	
Vert	15960.000	PK	44.4	39.4	-0.5	32.5	-	50.8	73.9	23.1	Inside	
Vert	5350.000	AV	44.0	32.2	4.0	31.2	0.5	49.5	53.9	4.4	Inside	*1)
Vert	10640.000	AV	37.8	39.1	-1.8	32.9	0.5	42.7	53.9	11.2	Inside	
Vert	15960.000	AV	35.3	39.4	-0.5	32.5	0.5	42.2	53.9	11.7	Inside	

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

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

Distance factor: 10GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$
 26.5GHz-40GHz $20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

*1) Not Out of Band emission (Leakage power)

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Radiated Spurious Emission (Antenna 2)

Test place Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. 10748020H
Date 07/14/2015 07/15/2015 07/16/2015 07/17/2015
Temperature / Humidity 22 deg. C / 40 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH 23 deg. C / 60 % RH
Engineer Kazuya Yoshioka Tomohisa Nakagawa Tomohisa Nakagawa Tomohisa Nakagawa
(1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz) (Below 1 GHz)
Mode Tx 11n-20 5500 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	30.900	QP	22.7	17.1	7.0	32.3	-	14.5	40.0	25.5	Outside	
Hori	47.550	QP	28.8	11.5	7.3	32.2	-	15.4	40.0	24.6	Outside	
Hori	93.900	QP	24.7	9.1	8.0	32.2	-	9.6	43.5	33.9	Outside	
Hori	411.424	QP	26.3	17.6	10.7	32.1	-	22.5	46.0	23.5	Outside	
Hori	636.632	QP	25.3	19.8	12.0	32.1	-	25.0	46.0	21.0	Outside	
Hori	822.847	QP	30.1	22.3	12.9	31.4	-	33.9	46.0	12.1	Outside	
Hori	5148.113	PK	47.0	32.2	3.9	31.2	-	51.9	73.9	22.0	Inside	
Hori	5460.000	PK	43.4	32.2	4.0	31.2	-	48.4	73.9	25.5	Inside	
Hori	5470.000	PK	50.6	32.2	4.0	31.2	-	55.6	68.2	12.6	Outside	
Hori	11000.000	PK	46.3	39.9	-1.7	33.0	-	51.5	73.9	22.4	Inside	
Hori	16500.000	PK	44.9	40.4	-0.2	32.2	-	52.9	68.2	15.3	Outside	
Hori	5148.113	AV	40.6	32.2	3.9	31.2	0.5	46.0	53.9	7.9	Inside	*1)
Hori	5460.000	AV	36.8	32.2	4.0	31.2	0.5	42.3	53.9	11.6	Inside	
Hori	11000.000	AV	35.8	39.9	-1.7	33.0	0.5	41.5	53.9	12.4	Inside	
Vert	30.900	QP	24.3	17.1	7.0	32.3	-	16.1	40.0	23.9	Outside	
Vert	47.550	QP	42.4	11.5	7.3	32.2	-	29.0	40.0	11.0	Outside	
Vert	93.900	QP	32.9	9.1	8.0	32.2	-	17.8	43.5	25.7	Outside	
Vert	411.424	QP	25.2	17.6	10.7	32.1	-	21.4	46.0	24.6	Outside	
Vert	636.632	QP	25.5	19.8	12.0	32.1	-	25.2	46.0	20.8	Outside	
Vert	822.847	QP	31.1	22.3	12.9	31.4	-	34.9	46.0	11.1	Outside	
Vert	5148.113	PK	49.4	32.2	3.9	31.2	-	54.3	73.9	19.6	Inside	
Vert	5460.000	PK	44.4	32.2	4.0	31.2	-	49.4	73.9	24.5	Inside	
Vert	5470.000	PK	56.0	32.2	4.0	31.2	-	61.0	68.2	7.2	Outside	
Vert	11000.000	PK	49.2	39.9	-1.7	33.0	-	54.4	73.9	19.5	Inside	
Vert	16500.000	PK	44.6	40.4	-0.2	32.2	-	52.6	68.2	15.6	Outside	
Vert	5148.113	AV	44.3	32.2	3.9	31.2	0.5	49.7	53.9	4.2	Inside	*1)
Vert	5460.000	AV	38.2	32.2	4.0	31.2	0.5	43.7	53.9	10.2	Inside	
Vert	11000.000	AV	38.2	39.9	-1.7	33.0	0.5	43.9	53.9	10.0	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

*1) Not Out of Band emission (Leakage power)

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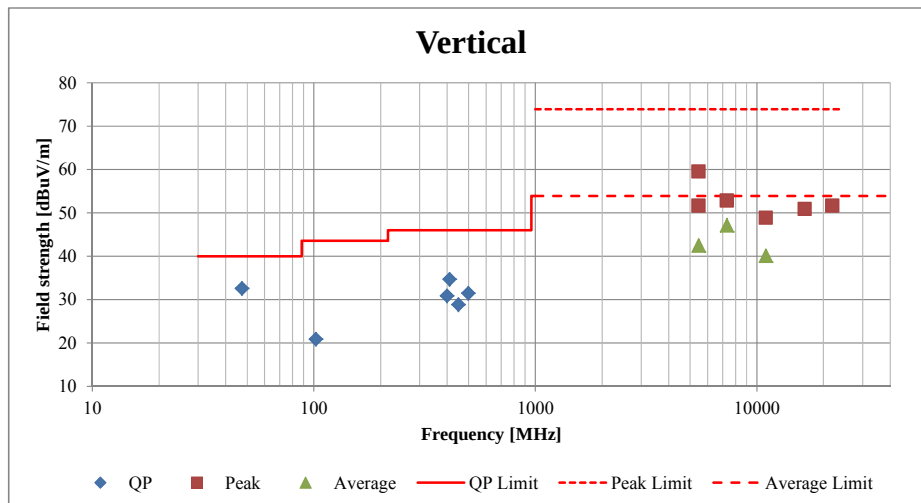
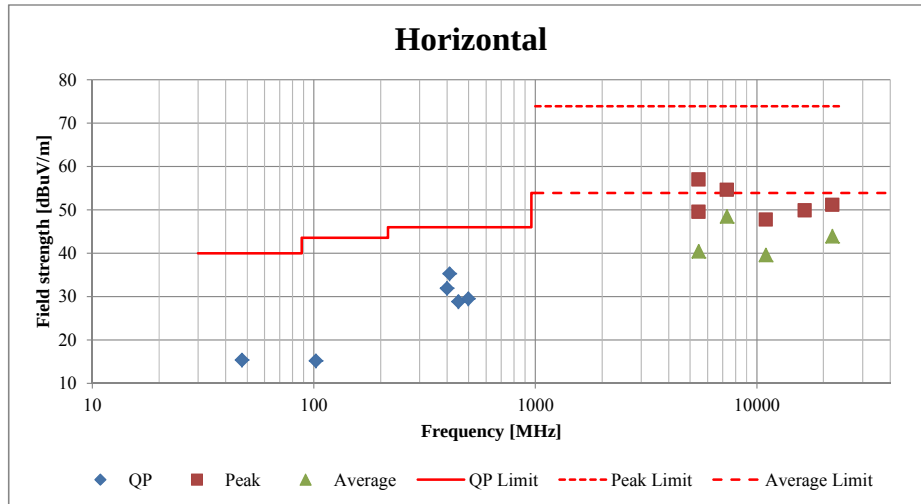
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Radiated Spurious Emission (Antenna 2)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10748020H			
Date	07/14/2015	07/15/2015	07/16/2015	07/17/2015
Temperature / Humidity	22 deg. C / 40 % RH	22 deg. C / 49 % RH	25 deg. C / 58 % RH	23 deg. C / 60 % RH
Engineer	Kazuya Yoshioka	Tomohisa Nakagawa	Tomohisa Nakagawa	Tomohisa Nakagawa
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)	(Below 1 GHz)
Mode	Tx 11n-20 5500 MHz			



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Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	10748020H		
Date	07/14/2015	07/15/2015	07/16/2015
Temperature / Humidity	22 deg. C / 40 % RH	22 deg. C / 49 % RH	25 deg. C / 58 % RH
Engineer	Kazuya Yoshioka (1 GHz - 10 GHz)	Tomohisa Nakagawa (10 GHz - 18 GHz)	Tomohisa Nakagawa (18 GHz - 40 GHz)
Mode	Tx 11n-20 5580 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dBm]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Inside or Outside of Restricted Bands	Remark
Hori	5120.070	PK	44.6	32.2	3.9	31.2	-	49.5	73.9	24.4	Inside	
Hori	5356.167	PK	46.9	32.2	4.0	31.2	-	51.9	73.9	22.0	Inside	
Hori	11160.000	PK	44.0	40.3	-1.6	32.9	-	49.8	73.9	24.1	Inside	
Hori	16740.000	PK	45.1	40.9	-0.1	32.1	-	53.8	68.2	14.4	Outside	
Hori	5120.070	AV	40.1	32.2	3.9	31.2	0.5	45.5	53.9	8.4	Inside	
Hori	5356.167	AV	40.8	32.2	4.0	31.2	0.5	46.3	53.9	7.6	Inside	
Hori	11160.000	AV	34.9	40.3	-1.6	32.9	0.5	41.2	53.9	12.7	Inside	
Vert	5120.070	PK	46.2	32.2	3.9	31.2	-	51.1	73.9	22.8	Inside	
Vert	5356.167	PK	50.5	32.2	4.0	31.2	-	55.5	73.9	18.4	Inside	
Vert	11160.000	PK	44.3	40.3	-1.6	32.9	-	50.1	73.9	23.8	Inside	
Vert	16740.000	PK	43.9	40.9	-0.1	32.1	-	52.6	68.2	15.6	Outside	
Vert	5120.070	AV	42.0	32.2	3.9	31.2	0.5	47.4	53.9	6.5	Inside	
Vert	5356.167	AV	42.3	32.2	4.0	31.2	0.5	47.8	53.9	6.1	Inside	
Vert	11160.000	AV	35.1	40.3	-1.6	32.9	0.5	41.4	53.9	12.5	Inside	

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

Distance factor:	10GHz-26.5GHz	$20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$
	26.5GHz-40GHz	$20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

Radiated Spurious Emission (Antenna 2)

Test place : Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. : 10748020H
Date : 07/14/2015 07/15/2015 07/16/2015
Temperature / Humidity : 22 deg. C / 40 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer : Kazuya Yoshioka Tomohisa Nakagawa Tomohisa Nakagawa
(1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode : Tx 11n-20 5700 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	3800.174	PK	47.5	29.6	3.4	31.5	-	49.0	73.9	24.9	Inside	
Hori	5122.089	PK	43.6	32.2	3.9	31.2	-	48.5	73.9	25.4	Inside	
Hori	5725.000	PK	58.6	32.6	4.2	31.2	-	64.2	68.2	4.0	Outside	
Hori	11400.000	PK	48.6	40.8	-1.4	32.7	-	55.3	73.9	18.6	Inside	
Hori	17100.000	PK	45.3	41.8	0.1	31.9	-	55.3	68.2	12.9	Outside	
Hori	3800.174	AV	43.5	29.6	3.4	31.5	0.5	45.5	53.9	8.4	Inside	
Hori	5122.089	AV	39.7	32.2	3.9	31.2	0.5	45.1	53.9	8.8	Inside	
Hori	11400.000	AV	37.3	40.8	-1.4	32.7	0.5	44.5	53.9	9.4	Inside	
Vert	3800.174	PK	46.1	29.6	3.4	31.5	-	47.6	73.9	26.3	Inside	
Vert	5122.089	PK	46.7	32.2	3.9	31.2	-	51.6	73.9	22.3	Inside	
Vert	5725.000	PK	58.5	32.6	4.2	31.2	-	64.1	68.2	4.1	Outside	
Vert	11400.000	PK	47.0	40.8	-1.4	32.7	-	53.7	73.9	20.2	Inside	
Vert	17100.000	PK	44.8	41.8	0.1	31.9	-	54.8	68.2	13.4	Outside	
Vert	3800.174	AV	40.9	29.6	3.4	31.5	0.5	42.9	53.9	11.0	Inside	
Vert	5122.089	AV	39.5	32.2	3.9	31.2	0.5	44.9	53.9	9.0	Inside	
Vert	11400.000	AV	37.1	40.8	-1.4	32.7	0.5	44.3	53.9	9.6	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 2)

Test place Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. 10748020H
Date 07/14/2015 07/15/2015 07/16/2015
Temperature / Humidity 22 deg. C / 40 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer Kazuya Yoshioka Tomohisa Nakagawa Tomohisa Nakagawa
(1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode Tx 11n-20 5745 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	3830.168	PK	48.3	29.7	3.4	31.5	-	49.9	73.9	24.0	Inside	
Hori	5122.076	PK	48.5	32.2	3.9	31.2	-	53.4	73.9	20.5	Inside	
Hori	5715.000	PK	52.0	32.6	4.1	31.2	-	57.5	68.2	10.7	Outside	
Hori	5725.000	PK	67.7	32.6	4.2	31.2	-	73.3	78.2	4.9	Outside	
Hori	11490.000	PK	43.3	41.0	-1.3	32.7	-	50.3	73.9	23.6	Inside	
Hori	17235.000	PK	44.3	42.4	0.2	31.9	-	55.0	68.2	13.2	Outside	
Hori	3830.168	AV	44.0	29.7	3.4	31.5	0.5	46.1	53.9	7.8	Inside	
Hori	5122.076	AV	43.7	32.2	3.9	31.2	0.5	49.1	53.9	4.8	Inside	
Hori	11490.000	AV	35.3	41.0	-1.3	32.7	0.5	42.8	53.9	11.1	Inside	
Vert	3830.168	PK	45.9	29.7	3.4	31.5	-	47.5	73.9	26.4	Inside	
Vert	5122.076	PK	51.1	32.2	3.9	31.2	-	56.0	73.9	17.9	Inside	
Vert	5715.000	PK	49.5	32.6	4.1	31.2	-	55.0	68.2	13.2	Outside	
Vert	5725.000	PK	65.7	32.6	4.2	31.2	-	71.3	78.2	6.9	Outside	
Vert	11490.000	PK	43.9	41.0	-1.3	32.7	-	50.9	73.9	23.0	Inside	
Vert	17235.000	PK	45.1	42.4	0.2	31.9	-	55.8	68.2	12.4	Outside	
Vert	3830.168	AV	41.1	29.7	3.4	31.5	0.5	43.2	53.9	10.7	Inside	
Vert	5122.076	AV	45.5	32.2	3.9	31.2	0.5	50.9	53.9	3.0	Inside	
Vert	11490.000	AV	34.8	41.0	-1.3	32.7	0.5	42.3	53.9	11.6	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 2)

Test place : Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. : 10748020H
Date : 07/14/2015 07/15/2015 07/16/2015
Temperature / Humidity : 22 deg. C / 40 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer : Kazuya Yoshioka Tomohisa Nakagawa Tomohisa Nakagawa
(1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode : Tx 11n-20 5785 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	3856.586	PK	48.6	29.7	3.4	31.5	-	50.2	73.9	23.7	Inside	
Hori	5148.115	PK	47.1	32.2	3.9	31.2	-	52.0	73.9	21.9	Inside	
Hori	5382.172	PK	43.8	32.2	4.0	31.2	-	48.8	73.9	25.1	Inside	
Hori	11570.000	PK	44.8	40.9	-1.2	32.6	-	51.9	73.9	22.0	Inside	
Hori	17355.000	PK	45.0	42.9	0.2	31.9	-	56.2	68.2	12.0	Outside	
Hori	3856.586	AV	44.3	29.7	3.4	31.5	0.5	46.4	53.9	7.5	Inside	
Hori	5148.115	AV	40.6	32.2	3.9	31.2	0.5	46.0	53.9	7.9	Inside	
Hori	5382.172	AV	37.9	32.2	4.0	31.2	0.5	43.4	53.9	10.5	Inside	
Hori	11570.000	AV	36.7	40.9	-1.2	32.6	0.5	44.3	53.9	9.6	Inside	
Vert	3856.586	PK	46.8	29.7	3.4	31.5	-	48.4	73.9	25.5	Inside	
Vert	5148.115	PK	51.5	32.2	3.9	31.2	-	56.4	73.9	17.5	Inside	
Vert	5382.172	PK	49.4	32.2	4.0	31.2	-	54.4	73.9	19.5	Inside	
Vert	11570.000	PK	44.8	40.9	-1.2	32.6	-	51.9	73.9	22.0	Inside	
Vert	17355.000	PK	44.9	42.9	0.2	31.9	-	56.1	68.2	12.1	Outside	
Vert	3856.586	AV	41.5	29.7	3.4	31.5	0.5	43.6	53.9	10.3	Inside	
Vert	5148.115	AV	46.1	32.2	3.9	31.2	0.5	51.5	53.9	2.4	Inside	
Vert	5382.172	AV	44.7	32.2	4.0	31.2	0.5	50.2	53.9	3.7	Inside	
Vert	11570.000	AV	35.1	40.9	-1.2	32.6	0.5	42.7	53.9	11.2	Inside	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 2)

Test place Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. 10748020H
Date 07/14/2015 07/15/2015 07/16/2015
Temperature / Humidity 22 deg. C / 40 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer Kazuya Yoshioka Tomohisa Nakagawa Tomohisa Nakagawa
(1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode Tx 11n-20 5825 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	3883.406	PK	49.2	29.8	3.4	31.5	-	50.9	73.9	23.0	Inside	
Hori	5148.133	PK	49.4	32.2	3.9	31.2	-	54.3	73.9	19.6	Inside	
Hori	5850.000	PK	58.6	32.8	4.2	31.2	-	64.4	78.2	13.8	Outside	
Hori	5860.000	PK	46.5	32.8	4.2	31.2	-	52.3	68.2	15.9	Outside	
Hori	11650.000	PK	48.2	40.8	-1.1	32.6	-	55.3	73.9	18.6	Inside	
Hori	17475.000	PK	44.4	43.4	0.3	31.8	-	56.3	68.2	11.9	Outside	
Hori	3883.406	AV	46.5	29.8	3.4	31.5	0.5	48.7	53.9	5.2	Inside	
Hori	5148.133	AV	44.4	32.2	3.9	31.2	0.5	49.8	53.9	4.1	Inside	
Hori	11650.000	AV	38.4	40.8	-1.1	32.6	0.5	46.0	53.9	7.9	Inside	
Vert	3883.406	PK	48.3	29.8	3.4	31.5	-	50.0	73.9	23.9	Inside	
Vert	5148.133	PK	51.0	32.2	3.9	31.2	-	55.9	73.9	18.0	Inside	
Vert	5850.000	PK	59.3	32.8	4.2	31.2	-	65.1	78.2	13.1	Outside	
Vert	5860.000	PK	47.3	32.8	4.2	31.2	-	53.1	68.2	15.1	Outside	
Vert	11650.000	PK	46.7	40.8	-1.1	32.6	-	53.8	73.9	20.1	Inside	
Vert	17475.000	PK	44.4	43.4	0.3	31.8	-	56.3	68.2	11.9	Outside	
Vert	3883.406	AV	43.6	29.8	3.4	31.5	0.5	45.8	53.9	8.1	Inside	
Vert	5148.133	AV	45.3	32.2	3.9	31.2	0.5	50.7	53.9	3.2	Inside	
Vert	11650.000	AV	36.0	40.8	-1.1	32.6	0.5	43.6	53.9	10.3	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 2)

Test place : Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. : 10748020H
Date : 07/14/2015 07/15/2015 07/16/2015
Temperature / Humidity : 22 deg. C / 40 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer : Kazuya Yoshioka Tomohisa Nakagawa Tomohisa Nakagawa
(1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode : Tx 11n-40 5190 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5150.000	PK	49.2	32.2	3.9	31.2	-	54.1	73.9	19.8	Inside	
Hori	6920.227	PK	48.7	35.7	4.6	31.9	-	57.1	68.2	11.1	Outside	
Hori	10380.000	PK	44.5	38.7	-1.9	32.7	-	48.6	68.2	19.6	Outside	
Hori	15570.000	PK	44.5	39.8	-0.6	32.0	-	51.7	73.9	22.2	Inside	
Hori	5150.000	AV	42.0	32.2	3.9	31.2	0.3	47.2	53.9	6.7	Inside	*1)
Hori	15570.000	AV	36.4	39.8	-0.6	32.0	0.3	43.9	53.9	10.0	Inside	
Vert	5150.000	PK	51.5	32.2	3.9	31.2	-	56.4	73.9	17.5	Inside	
Vert	6920.227	PK	51.1	35.7	4.6	31.9	-	59.5	68.2	8.7	Outside	
Vert	10380.000	PK	48.5	38.7	-1.9	32.7	-	52.6	68.2	15.6	Outside	
Vert	15570.000	PK	45.0	39.8	-0.6	32.0	-	52.2	73.9	21.7	Inside	
Vert	5150.000	AV	45.6	32.2	3.9	31.2	0.3	50.8	53.9	3.1	Inside	*1)
Vert	15570.000	AV	36.8	39.8	-0.6	32.0	0.3	44.3	53.9	9.6	Inside	

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

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

Distance factor: 10GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$
 26.5GHz-40GHz $20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

*1) Not Out of Band emission (Leakage power)

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Radiated Spurious Emission (Antenna 2)

Test place : Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. : 10748020H
Date : 07/15/2015 07/15/2015 07/16/2015
Temperature / Humidity : 23 deg. C / 57 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer : Ken Fujita Tomohisa Nakagawa Tomohisa Nakagawa
 (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode : Tx 11n-40 5270 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	7040.876	PK	48.2	35.9	4.7	32.0	-	56.8	68.2	11.4	Outside	
Hori	10540.000	PK	44.5	38.9	-1.8	32.8	-	48.8	68.2	19.4	Outside	
Hori	15810.000	PK	45.0	39.5	-0.6	32.3	-	51.6	73.9	22.3	Inside	
Hori	15810.000	AV	36.4	39.5	-0.6	32.3	0.3	43.3	53.9	10.6	Inside	
Vert	7040.160	PK	47.0	35.9	4.7	32.0	-	55.6	68.2	12.6	Outside	
Vert	10540.000	PK	45.6	38.9	-1.8	32.8	-	49.9	68.2	18.3	Outside	
Vert	15810.000	PK	44.6	39.5	-0.6	32.3	-	51.2	73.9	22.7	Inside	
Vert	15810.000	AV	36.0	39.5	-0.6	32.3	0.3	42.9	53.9	11.0	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 2)

Test place : Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. : 10748020H
Date : 07/15/2015 07/15/2015 07/16/2015
Temperature / Humidity : 23 deg. C / 57 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer : Ken Fujita Tomohisa Nakagawa Tomohisa Nakagawa
 (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode : Tx 11n-40 5310 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5350.000	PK	51.2	32.2	4.0	31.2	-	56.2	73.9	17.7	Inside	
Hori	7080.207	PK	46.0	36.0	4.7	32.0	-	54.7	68.2	13.5	Outside	
Hori	10620.000	PK	43.2	39.1	-1.8	32.8	-	47.7	73.9	26.2	Inside	
Hori	15930.000	PK	45.0	39.4	-0.5	32.4	-	51.5	73.9	22.4	Inside	
Hori	5350.000	AV	40.1	32.2	4.0	31.2	0.3	45.4	53.9	8.5	Inside	*1)
Hori	10620.000	AV	34.6	39.1	-1.8	32.8	0.3	39.4	53.9	14.5	Inside	
Hori	15930.000	AV	36.2	39.4	-0.5	32.4	0.3	43.0	53.9	10.9	Inside	
Vert	5350.000	PK	54.5	32.2	4.0	31.2	-	59.5	73.9	14.4	Inside	
Vert	7080.207	PK	48.2	36.0	4.7	32.0	-	56.9	68.2	11.3	Outside	
Vert	10620.000	PK	44.1	39.1	-1.8	32.8	-	48.6	73.9	25.3	Inside	
Vert	15930.000	PK	44.9	39.4	-0.5	32.4	-	51.4	73.9	22.5	Inside	
Vert	5350.000	AV	44.9	32.2	4.0	31.2	0.3	50.2	53.9	3.7	Inside	*1)
Vert	10620.000	AV	35.0	39.1	-1.8	32.8	0.3	39.8	53.9	14.1	Inside	
Vert	15930.000	AV	35.7	39.4	-0.5	32.4	0.3	42.5	53.9	11.4	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

*1) Not Out of Band emission (Leakage power)

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Radiated Spurious Emission (Antenna 2)

Test place Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. 10748020H
Date 07/15/2015 07/15/2015 07/16/2015
Temperature / Humidity 23 deg. C / 57 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer Ken Fujita Tomohisa Nakagawa Tomohisa Nakagawa
(1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode Tx 11n-40 5510 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	5460.000	PK	46.4	32.2	4.0	31.2	-	51.4	73.9	22.5	Inside	
Hori	5470.000	PK	54.8	32.2	4.0	31.2	-	59.8	68.2	8.4	Outside	
Hori	11020.000	PK	44.2	39.9	-1.7	33.0	-	49.4	73.9	24.5	Inside	
Hori	16530.000	PK	45.2	40.5	-0.2	32.2	-	53.3	68.2	14.9	Outside	
Hori	5460.000	AV	37.4	32.2	4.0	31.2	0.3	42.7	53.9	11.2	Inside	*1)
Hori	11020.000	AV	35.2	39.9	-1.7	33.0	0.3	40.7	53.9	13.2	Inside	
Hori	16530.000	AV	36.1	40.5	-0.2	32.2	0.3	44.5	53.9	9.4	Outside	
Vert	5460.000	PK	49.6	32.2	4.0	31.2	-	54.6	73.9	19.3	Inside	
Vert	5470.000	PK	60.0	32.2	4.0	31.2	-	65.0	68.2	3.2	Outside	
Vert	11020.000	PK	45.5	39.9	-1.7	33.0	-	50.7	73.9	23.2	Inside	
Vert	16530.000	PK	44.7	40.5	-0.2	32.2	-	52.8	68.2	15.4	Outside	
Vert	5460.000	AV	38.5	32.2	4.0	31.2	0.3	43.8	53.9	10.1	Inside	*1)
Vert	11020.000	AV	35.7	39.9	-1.7	33.0	0.3	41.2	53.9	12.7	Inside	
Vert	16530.000	AV	36.9	40.5	-0.2	32.2	0.3	45.3	53.9	8.6	Outside	

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

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

*The 10th harmonic was not seen so the result was its base noise level.

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

26.5GHz-40GHz $20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

*1) Not Out of Band emission (Leakage power)

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Radiated Spurious Emission (Antenna 2)

Test place Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. 10748020H
Date 07/15/2015 07/15/2015 07/16/2015
Temperature / Humidity 23 deg. C / 57 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer Ken Fujita Tomohisa Nakagawa Tomohisa Nakagawa
(1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode Tx 11n-40 5550 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	11100.000	PK	46.8	40.1	-1.6	33.0	-	52.3	73.9	21.6	Inside	
Hori	16650.000	PK	44.5	40.7	-0.1	32.2	-	52.9	68.2	15.3	Outside	
Hori	11100.000	AV	35.6	40.1	-1.6	33.0	0.3	41.4	53.9	12.5	Inside	
Vert	11100.000	PK	49.3	40.1	-1.6	33.0	-	54.8	73.9	19.1	Inside	
Vert	16650.000	PK	45.0	40.7	-0.1	32.2	-	53.4	68.2	14.8	Outside	
Vert	11100.000	AV	36.5	40.1	-1.6	33.0	0.3	42.3	53.9	11.6	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission **(Antenna 2)**

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	10748020H		
Date	07/15/2015	07/15/2015	07/16/2015
Temperature / Humidity	23 deg. C / 57 % RH	22 deg. C / 49 % RH	25 deg. C / 58 % RH
Engineer	Ken Fujita	Tomohisa Nakagawa	Tomohisa Nakagawa
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11n-40 5670 MHz		

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]	Inside or Outside of Restricted Bands	Remark
Hori	3781.183	PK	47.4	29.6	3.4	31.5	-	48.9	73.9	25.0	Inside	
Hori	5148.251	PK	47.3	32.2	3.9	31.2	-	52.2	73.9	21.7	Inside	
Hori	5725.000	PK	45.3	32.6	4.2	31.2	-	50.9	68.2	17.3	Outside	
Hori	11340.000	PK	44.6	40.7	-1.4	32.8	-	51.1	73.9	22.8	Inside	
Hori	17010.000	PK	44.8	41.5	0.1	32.0	-	54.4	68.2	13.8	Outside	
Hori	3781.183	AV	42.9	29.6	3.4	31.5	0.3	44.7	53.9	9.2	Inside	
Hori	5148.251	AV	42.3	32.2	3.9	31.2	0.3	47.5	53.9	6.4	Inside	
Hori	11340.000	AV	36.4	40.7	-1.4	32.8	0.3	43.2	53.9	10.7	Inside	
Vert	3781.183	PK	45.8	29.6	3.4	31.5	-	47.3	73.9	26.6	Inside	
Vert	5124.008	PK	48.8	32.2	3.9	31.2	-	53.7	73.9	20.2	Inside	
Vert	5725.000	PK	47.7	32.6	4.2	31.2	-	53.3	68.2	14.9	Outside	
Vert	11340.000	PK	45.1	40.7	-1.4	32.8	-	51.6	73.9	22.3	Inside	
Vert	17010.000	PK	44.7	41.5	0.1	32.0	-	54.3	68.2	13.9	Outside	
Vert	3781.183	AV	40.2	29.6	3.4	31.5	0.3	42.0	53.9	11.9	Inside	
Vert	5124.008	AV	40.4	32.2	3.9	31.2	0.3	45.6	53.9	8.3	Inside	
Vert	11340.000	AV	35.4	40.7	-1.4	32.8	0.3	42.2	53.9	11.7	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 2)

Test place : Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. : 10748020H
Date : 07/15/2015 07/15/2015 07/16/2015
Temperature / Humidity : 23 deg. C / 57 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer : Ken Fujita Tomohisa Nakagawa Tomohisa Nakagawa
 (1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode : Tx 11n-40 5755 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	3836.684	PK	47.4	29.7	3.4	31.5	-	49.0	73.9	24.9	Inside	
Hori	5177.009	PK	48.9	32.2	3.9	31.2	-	53.8	68.2	14.4	Outside	
Hori	5715.000	PK	55.1	32.6	4.1	31.2	-	60.6	68.2	7.6	Outside	
Hori	5725.000	PK	60.9	32.6	4.2	31.2	-	66.5	78.2	11.7	Outside	
Hori	11510.000	PK	43.6	41.0	-1.2	32.7	-	50.7	73.9	23.2	Inside	
Hori	17265.000	PK	45.1	42.5	0.2	31.9	-	55.9	68.2	12.3	Outside	
Hori	3836.684	AV	42.9	29.7	3.4	31.5	0.3	44.8	53.9	9.1	Inside	
Hori	11510.000	AV	34.5	41.0	-1.2	32.7	0.3	41.9	53.9	12.0	Inside	
Vert	3836.684	PK	45.8	29.7	3.4	31.5	-	47.4	73.9	26.5	Inside	
Vert	5174.075	PK	51.3	32.2	3.9	31.2	-	56.2	68.2	12.0	Outside	
Vert	5715.000	PK	56.6	32.6	4.1	31.2	-	62.1	68.2	6.1	Outside	
Vert	5725.000	PK	62.3	32.6	4.2	31.2	-	67.9	78.2	10.3	Outside	
Vert	11510.000	PK	43.1	41.0	-1.2	32.7	-	50.2	73.9	23.7	Inside	
Vert	17265.000	PK	44.8	42.5	0.2	31.9	-	55.6	68.2	12.6	Outside	
Vert	3836.684	AV	40.1	29.7	3.4	31.5	0.3	42.0	53.9	11.9	Inside	
Vert	11510.000	AV	34.4	41.0	-1.2	32.7	0.3	41.8	53.9	12.1	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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Radiated Spurious Emission (Antenna 2)

Test place : Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No. : 10748020H
Date : 07/15/2015 07/15/2015 07/16/2015
Temperature / Humidity : 23 deg. C / 57 % RH 22 deg. C / 49 % RH 25 deg. C / 58 % RH
Engineer : Ken Fujita Tomohisa Nakagawa Tomohisa Nakagawa
(1 GHz - 10 GHz) (10 GHz - 18 GHz) (18 GHz - 40 GHz)
Mode : Tx 11n-40 5795 MHz

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]	Inside or Outside of Restricted Bands	Remark
Hori	3861.351	PK	48.7	29.7	3.4	31.5	-	50.3	73.9	23.6	Inside	
Hori	5124.008	PK	49.2	32.2	3.9	31.2	-	54.1	73.9	19.8	Inside	
Hori	5850.000	PK	43.6	32.8	4.2	31.2	-	49.4	78.2	28.8	Outside	
Hori	5860.000	PK	42.7	32.8	4.2	31.2	-	48.5	68.2	19.7	Outside	
Hori	11590.000	PK	43.9	40.9	-1.1	32.6	-	51.1	73.9	22.8	Inside	
Hori	17385.000	PK	44.9	43.0	0.3	31.8	-	56.4	68.2	11.8	Outside	
Hori	3861.351	AV	44.3	29.7	3.4	31.5	0.3	46.2	53.9	7.7	Inside	
Hori	5124.008	AV	42.9	32.2	3.9	31.2	0.3	48.1	53.9	5.8	Inside	
Hori	11590.000	AV	35.0	40.9	-1.1	32.6	0.3	42.5	53.9	11.4	Inside	
Vert	3861.351	PK	45.2	29.7	3.4	31.5	-	46.8	73.9	27.1	Inside	
Vert	5150.508	PK	48.6	32.2	3.9	31.2	-	53.5	68.2	14.7	Outside	
Vert	5850.000	PK	46.7	32.8	4.2	31.2	-	52.5	78.2	25.7	Outside	
Vert	5860.000	PK	43.2	32.8	4.2	31.2	-	49.0	68.2	19.2	Outside	
Vert	11590.000	PK	43.8	40.9	-1.1	32.6	-	51.0	73.9	22.9	Inside	
Vert	17385.000	PK	45.1	43.0	0.3	31.8	-	56.6	68.2	11.6	Outside	
Vert	3861.351	AV	39.7	29.7	3.4	31.5	0.3	41.6	53.9	12.3	Inside	
Vert	11590.000	AV	35.1	40.9	-1.1	32.6	0.3	42.6	53.9	11.3	Inside	

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

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

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
 26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

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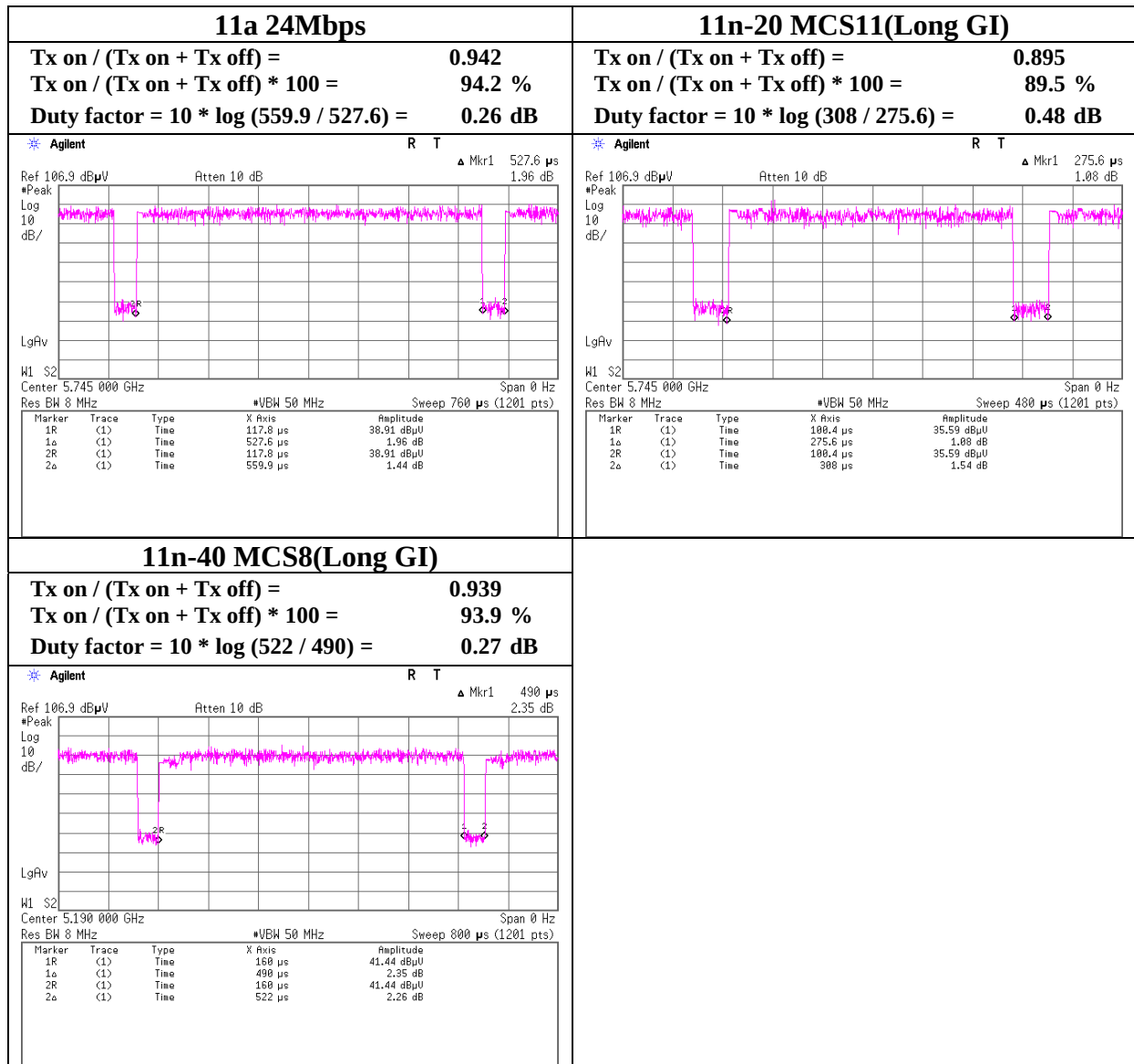
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Burst rate confirmation

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	10748020H
Date	05/04/2015
Temperature/ Humidity	23 deg. C / 53 % RH
Engineer	Koji Yamamoto
Mode	11a / 11n-20 / 11n-40 Tx



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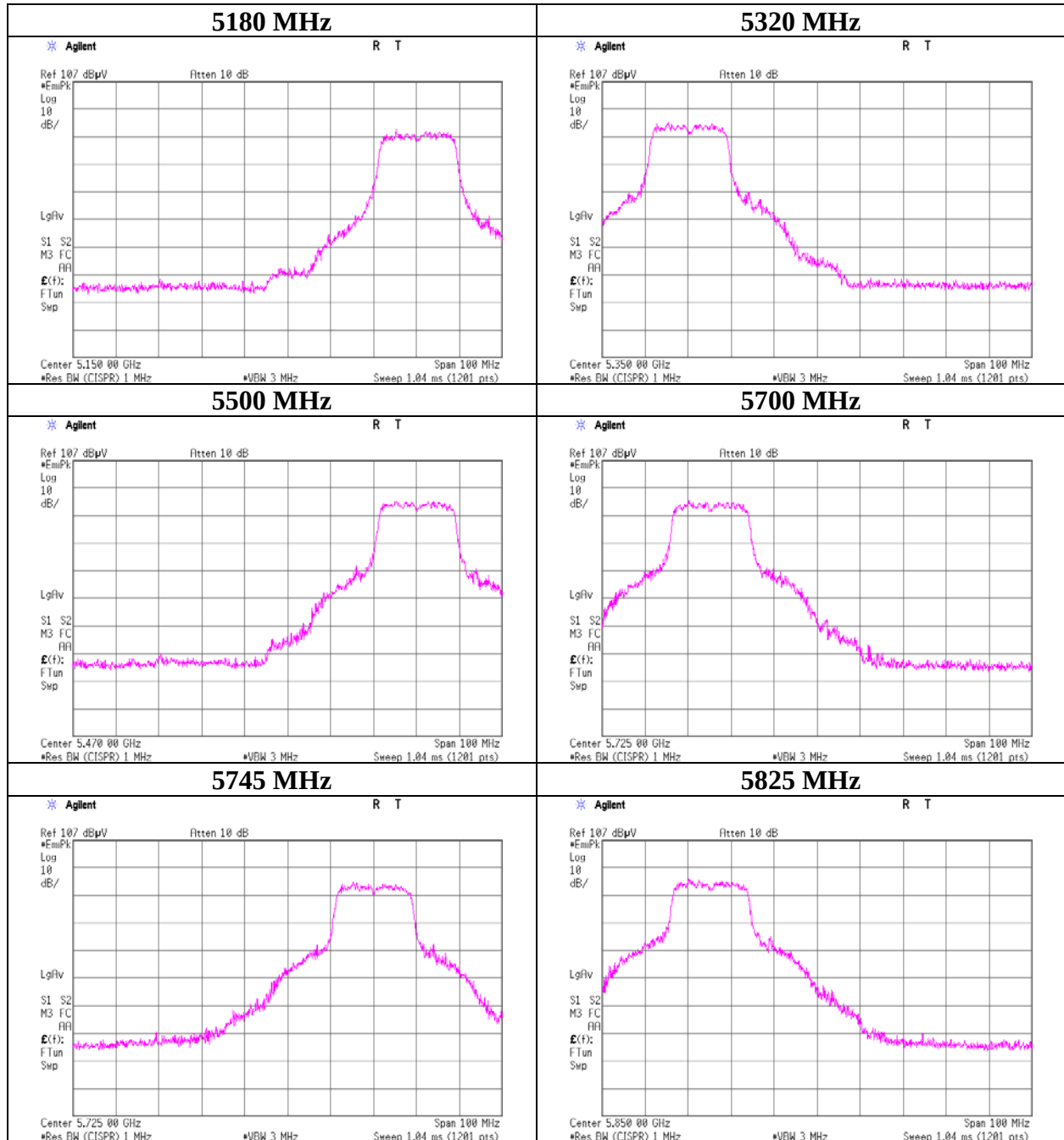
Telephone : +81 596 24 8999

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Band Edge confirmation

Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10748020H
Date	07/23/2015
Temperature/ Humidity	24deg. C / 60% RH
Engineer	Kazuya Yoshioka
Mode	11n-20

11n-20 Peak detect



* Final result of band edge was measured as Radiated Spurious Emission. Refer to Radiated Spurious Emission's pages.

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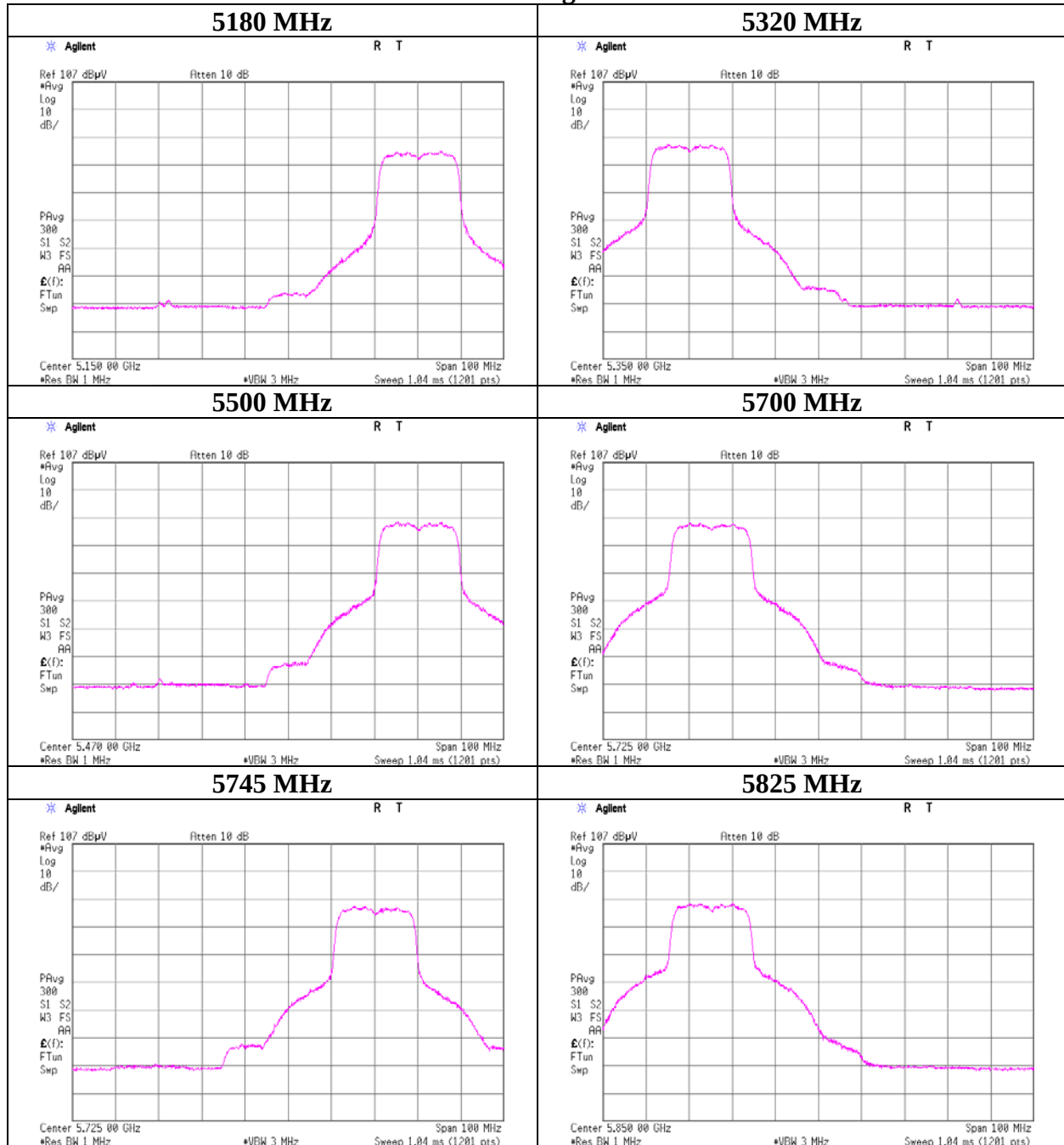
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Band Edge confirmation

Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10748020H
Date	07/23/2015
Temperature/ Humidity	24deg. C / 60% RH
Engineer	Kazuya Yoshioka
Mode	11n-20

11n-20 Average detect



* Final result of band edge was measured as Radiated Spurious Emission. Refer to Radiated Spurious Emission's pages.

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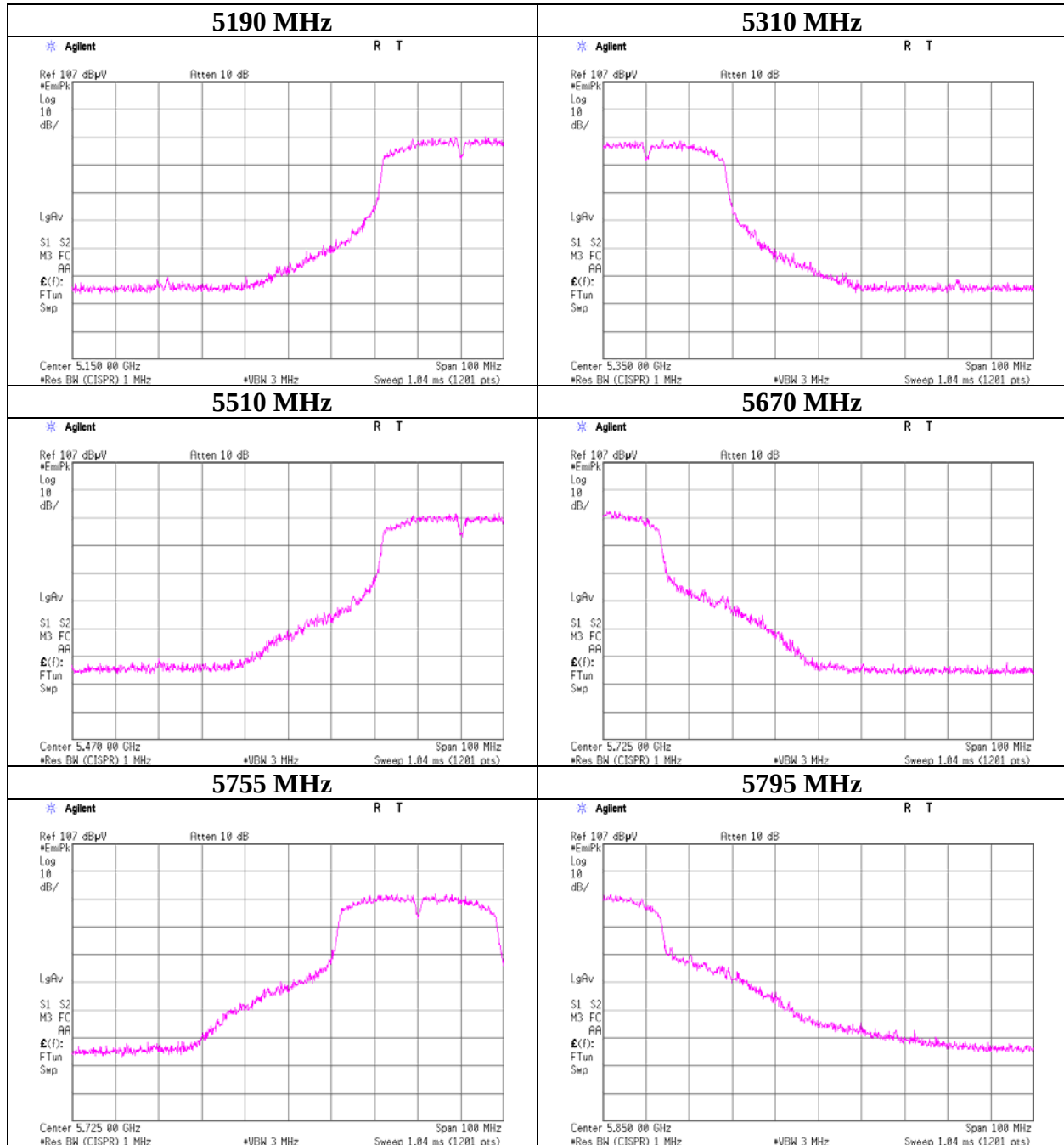
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Band Edge confirmation

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 07/23/2015
Temperature/ Humidity : 24deg. C / 60% RH
Engineer : Kazuya Yoshioka
Mode : 11n-40

11n-40 Peak detect



* Final result of band edge was measured as Radiated Spurious Emission. Refer to Radiated Spurious Emission's pages.

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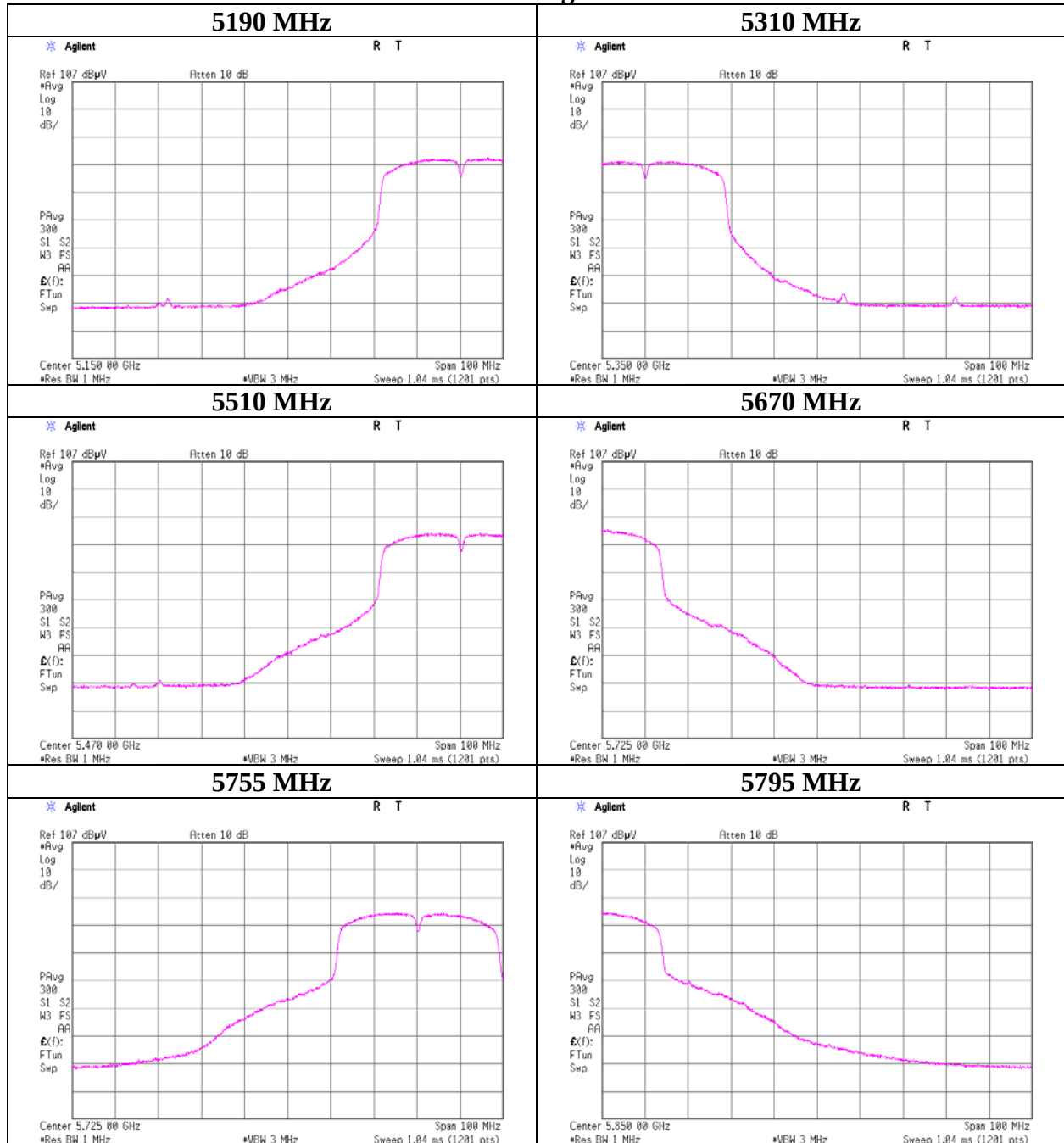
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Band Edge confirmation

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 07/23/2015
Temperature/ Humidity : 24deg. C / 60% RH
Engineer : Kazuya Yoshioka
Mode : 11n-40

11n-40 Average detect



* Final result of band edge was measured as Radiated Spurious Emission. Refer to Radiated Spurious Emission's pages.

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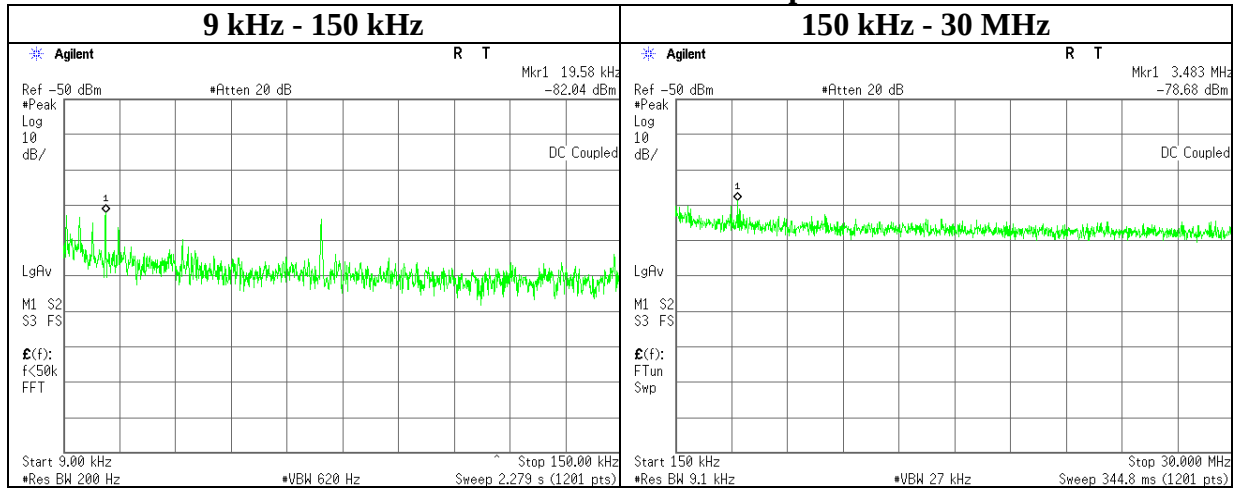
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Conducted Spurious Emission

Test place : Ise EMC Lab. No.6 Measurement Room
Report No. : 10748020H
Date : 05/21/2015
Temperature/ Humidity : 23 deg. C / 46 % RH
Engineer : Kazuya Yoshioka
Mode : 11n-20 Tx

11n-20 Tx 5500 MHz Antenna port 1



Frequency	Reading	Cable Loss	Attenuator	Antenna Gain	N (Number of Output)	EIRP	Distance	Ground bounce	E (field strength)	Limit	Margin	Remark
[kHz]	[dBm]	[dB]	[dB]	[dBi]		[dBm]	[m]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
19.58	-82.0	0.00	9.83	3.9	2	-65.3	300	6.0	-4.0	41.7	45.7	
3483.00	-78.7	0.00	9.82	3.9	2	-62.0	30	6.0	19.3	29.5	10.2	

$$E = \text{EIRP} - 20 \log(D) + \text{Ground bounce} + 104.8 [\text{dBuV/m}]$$

$$\text{EIRP} = \text{Reading} + \text{Cable Loss} + \text{Attenuator} + \text{Antenna Gain} + 10 * \log(N)$$

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APPENDIX 2: Test instruments

EMI test equipment (1/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MPM-16	Power Meter	Agilent	8990B	MY51000271	AT	2015/04/01 * 12
MPSE-22	Power sensor	Agilent	N1923A	MY54070003	AT	2015/04/01 * 12
MCC-103	Microwave Cable	Hirose Electric	U.FL-2LP-066J1-A(200)	-	AT	2014/06/12 * 12 *1)
MCC-137	Microwave cable	HUBER+SUHNER	SUCOFLEX 102	37954/2	AT	2014/10/02 * 12
MAT-22	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	AT	2015/03/18 * 12
MTA-37	Terminator	-	50Ω SMA	-	AT	Pre Check
MCC-105	Microwave Cable	Hirose Electric	U.FL-2LP-066J1-A(200)	-	AT	2014/06/12 * 12 *1)
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	AT	2015/02/26 * 12
MCC-35	Microwave Cable	Hirose Electric	U.FL-2LP-066-A-(200)	-	AT	2014/09/12 * 12
MCC-36	Microwave Cable	Hirose Electric	U.FL-2LP-066-A-(200)	-	AT	2014/09/12 * 12
MTA-46	Terminator	Mini-Circuits	ANNE-50X+	MUU3460143	AT	Pre Check
MAT-23	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	AT	2015/03/13 * 12
MAT-22	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	AT	2015/03/18 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-201	1401	AT	2015/01/13 * 12
MAEC-04	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2015/02/26 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	1501	RE	2015/01/13 * 12
MJM-23	Measure	ASKUL	-	-	RE	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE/AT	2014/11/12 * 12
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2014/08/12 * 12
MCC-141	Microwave Cable	Junkosha	MWX221	1305S002R(1m) / 1405S146(5m)	RE	2014/06/11 * 12 *1)
MPA-12	MicroWave System Amplifier	Agilent	83017A	MY39500780	RE	2015/03/12 * 12
MHA-06	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	254	RE	2015/02/05 * 12
MCC-166	Microwave Cable	Junkosha	MWX221	1303S120(1m) / 1311S167(5m)	RE	2014/09/24 * 12
MPA-10	Pre Amplifier	Agilent	8449B	3008A02142	RE	2015/01/28 * 12
MHF-16	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCA	7001	RE	2014/09/29 * 12
MCC-176	Microwave Cable	Junkosha	MMX221-00500DMSDMS	1502S303	RE	2015/03/27 * 12
MTW-02	Torque wrench	HUBER+SUHNER	74 Z-0-0-21	98190	RE	2015/01/16 * 36
MSA-14	Spectrum Analyzer	Agilent	E4440A	MY48250080	RE	2014/10/17 * 12
MHA-02	Horn Antenna 18-26.5GHz	EMCO	3160-09	1265	RE	2015/02/05 * 12
MCC-38	Coaxial Cable	UL Japan	-	-	AT	2014/12/02 * 12
MAT-10	Attenuator(10dB)	Weinschel Corp	2	BL1173	AT	2014/11/19 * 12
MAEC-02	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	CE/RE	2014/06/25 * 12 *1)
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	CE/RE	2015/01/13 * 12
MJM-14	Measure	KOMELON	KMC-36	-	CE/RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	CE/RE	-
MTR-03	Test Receiver	Rohde & Schwarz	ESCI	100300	CE/RE	2014/06/03 * 12 *1)
MLS-24	LISN(AMN)	Schwarzbeck	NSLK8127	8127-730	CE(EUT)	2014/07/10 * 12
MCC-13	Coaxial Cable	Fujikura	3D-2W(12m)/5D-2W(5m)/5D-2W(0.8m)/5D-2W(1m)	-	CE	2015/02/06 * 12
MAT-65	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2015/01/29 * 12
MSA-16	Spectrum Analyzer	Agilent	E4440A	MY46186390	CE/RE	2015/02/16 * 12
MMM-12	DIGITAL HiTESTER	Hioki	3805	060500120	AT	2015/02/05 * 12

*1) This test equipment was used for the tests before the expiration date of the calibration.

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EMI test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2015/05/18 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2015/03/19 * 12
MHF-22	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCB	602	RE	2015/01/27 * 12
MCC-177	Microwave Cable	Junkosha	MMX221-00500DMSDMS	1502S304	RE	2015/03/27 * 12
MCC-167	Microwave Cable	Junkosha	MWX221	1404S374(1m) / 1405S074(5m)	RE	2015/05/21 * 12
MHA-16	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170306	RE	2015/05/19 * 12
MHA-29	Horn Antenna 26.5-40GHz	ETS LINDGREN	3160-10	00152399	RE	2014/09/02 * 12
MPA-22	Pre Amplifier	MITEQ, Inc	AMF-6F-2600400-33-8P / AMF-4F-2600400-33-8P	1871355 / 1871328	RE	2014/09/11 * 12
MCC-54	Microwave Cable	Suhner	SUCOFLEX101	2873(1m) / 2876(5m)	RE	2015/03/09 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE	2014/08/19 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2014/10/18 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2014/10/18 * 12
MCC-51	Coaxial cable	UL Japan	-	-	RE	2015/07/13 * 12
MAT-70	Attenuator(6dB)	Agilent	8491A-006	MY52460153	RE	2015/04/08 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2015/03/10 * 12
MPA-09	Pre Amplifier	Agilent	8447D	2944A10845	RE	2014/09/26 * 12
MAEC-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2015/02/19 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	1301	RE	2015/01/13 * 12
MJM-16	Measure	KOMELON	KMC-36	-	RE	-
MCC-12	Coaxial Cable	Fujikura/Agilent	-	-	RE	2015/02/06 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	BK7970	RE	2014/11/11 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	VHA91032008	RE	2014/10/18 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	201	RE	2014/10/18 * 12
MMM-01	Digital Tester	Fluke	FLUKE 26-3	78030611	RE	2014/08/28 * 12
MMM-08	DIGITAL HiTESTER	Hioki	3805	051201197	RE	2015/01/16 * 12
MMM-10	DIGITAL HiTESTER	Hioki	3805	051201148	RE	2015/01/16 * 12

The expiration date of the calibration is the end of the expired month.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

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

Test Item: CE: Conducted Emission

RE: Radiated Emission

AT: Antenna Terminal Conducted test

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