



RADIO TEST REPORT

Test Report No. : 13734674S-C-R2

Applicant : Canon Inc.
Type of EUT : Built-in Wireless Module with Bluetooth
Model Number of EUT : WM01B
FCC ID : AZDWM01B
Test regulation : FCC Part 15 Subpart E: 2021
(Except for DFS test)
Test result : Complied (Refer to SECTION 3)

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3. This sample tested is in compliance with the limits of the above regulation.
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7. The all test items in this test report are conducted by UL Japan, Inc. Shonan EMC Lab.
8. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
9. The information provided from the customer for this report is identified in SECTION 1.
10. This report is a revised version of 13734674S-C-R1. 13734674S-C-R1 is replaced with this report.

Date of test: March 18 to June 21, 2021

Representative test engineer: *Y. Murakami*
Yosuke Murakami
Engineer

Approved by: *T. Imamura*
Toyokazu Imamura
Leader



CERTIFICATE 1266.03

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

UL Japan, Inc.
Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

REVISION HISTORY

Original Test Report No.: 13734674S-C

Revision	Test report No.	Date	Page revised	Contents
- (Original)	13734674S-C	August 30, 2021	-	-
1	13734674S-C-R1	October 6, 2021	5	Correction of Receipt Date: From: "March 26, 2021" to "February 24, 2021"
			10	Correction of software: From "DUT labtool Version: 1.0.0.164 (Date: 2018.2.9, Storage location: Driven by connected Windows PC)" to "labtool Operation Ver.1.0 (FW Ver.41) (Date: 2021.3.25, Storage location: EUT memory)"
			12, 13	Addition of item "M"
			13	Addition of *3), *4)
2	13734674S-C-R2	October 28, 2021	10	Correction of software: From "labtool Operation Ver.1.0 (FW Ver.41) (Date: 2021.3.25, Storage location: EUT memory)" to "labtool Ver.1.0 (Date: 2021.2.22, Storage location: Driven by connected Windows PC)"

UL Japan, Inc.

Shonan EMC Lab.

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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Reference: Abbreviations (Including words undescribed in this report)

A2LA	The American Association for Laboratory Accreditation	MCS	Modulation and Coding Scheme
AC	Alternating Current	MRA	Mutual Recognition Arrangement
AFH	Adaptive Frequency Hopping	N/A	Not Applicable
AM	Amplitude Modulation	NIST	National Institute of Standards and Technology
Amp, AMP	Amplifier	NS	No signal detect.
ANSI	American National Standards Institute	NSA	Normalized Site Attenuation
Ant, ANT	Antenna	NVLAP	National Voluntary Laboratory Accreditation Program
AP	Access Point	OBW	Occupied Band Width
ASK	Amplitude Shift Keying	OFDM	Orthogonal Frequency Division Multiplexing
Atten., ATT	Attenuator	P/M	Power meter
AV	Average	PCB	Printed Circuit Board
BPSK	Binary Phase-Shift Keying	PER	Packet Error Rate
BR	Bluetooth Basic Rate	PHY	Physical Layer
BT	Bluetooth	PK	Peak
BT LE	Bluetooth Low Energy	PN	Pseudo random Noise
BW	BandWidth	PRBS	Pseudo-Random Bit Sequence
Cal Int	Calibration Interval	PSD	Power Spectral Density
CCK	Complementary Code Keying	QAM	Quadrature Amplitude Modulation
Ch., CH	Channel	QP	Quasi-Peak
CISPR	Comite International Special des Perturbations Radioelectriques	QPSK	Quadri-Phase Shift Keying
CW	Continuous Wave	RBW	Resolution Band Width
DBPSK	Differential BPSK	RDS	Radio Data System
DC	Direct Current	RE	Radio Equipment
D-factor	Distance factor	RF	Radio Frequency
DFS	Dynamic Frequency Selection	RMS	Root Mean Square
DQPSK	Differential QPSK	RSS	Radio Standards Specifications
DSSS	Direct Sequence Spread Spectrum	Rx	Receiving
EDR	Enhanced Data Rate	SA, S/A	Spectrum Analyzer
EIRP, e.i.r.p.	Equivalent Isotropically Radiated Power	SG	Signal Generator
EMC	ElectroMagnetic Compatibility	SVSWR	Site-Voltage Standing Wave Ratio
EMI	ElectroMagnetic Interference	TR	Test Receiver
EN	European Norm	Tx	Transmitting
ERP, e.r.p.	Effective Radiated Power	VBW	Video BandWidth
EU	European Union	Vert.	Vertical
EUT	Equipment Under Test	WLAN	Wireless LAN
Fac.	Factor		
FCC	Federal Communications Commission		
FHSS	Frequency Hopping Spread Spectrum		
FM	Frequency Modulation		
Freq.	Frequency		
FSK	Frequency Shift Keying		
GFSK	Gaussian Frequency-Shift Keying		
GNSS	Global Navigation Satellite System		
GPS	Global Positioning System		
Hori.	Horizontal		
ICES	Interference-Causing Equipment Standard		
IEC	International Electrotechnical Commission		
IEEE	Institute of Electrical and Electronics Engineers		
IF	Intermediate Frequency		
ILAC	International Laboratory Accreditation Conference		
ISED	Innovation, Science and Economic Development Canada		
ISO	International Organization for Standardization		
JAB	Japan Accreditation Board		
LAN	Local Area Network		
LIMS	Laboratory Information Management System		

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SECTION 1: Customer information

Company Name : Canon Inc.
Address : 9-1, Imaikami-cho, Nakahara-ku, Kawasaki, Kanagawa, 211-8501 JAPAN
Telephone Number : +81-3-3758-2111
Facsimile Number : +81-44-739-5495
Contact Person : Tetsuo Watanabe

The information provided from the customer is as follows;

- Applicant, Type of EUT, Model Number of EUT, FCC ID on the cover and other relevant pages
 - Operating/Test Mode(s) (Mode(s)) on all the relevant pages
 - SECTION 1: Customer information
 - SECTION 2: Equipment under test (EUT) other than the Receipt Date
 - SECTION 4: Operation of EUT during testing
- * The laboratory is exempted from liability of any test results affected from the above information in SECTION 2 and 4.

SECTION 2: Equipment under test (EUT)

2.1 Identification of EUT

Type : Built-in Wireless Module with Bluetooth
Model Number : WM01B
Serial Number : Refer to SECTION 4.2
Rating : DC 3.3 V
Receipt Date : February 24, 2021
Country of Mass-production : Japan
Condition : Engineering prototype
(Not for Sale: This sample is equivalent to mass-produced items.)
Modification : No Modification by the test lab.

2.2 Product Description

Model: WM01B (referred to as the EUT in this report) is a Built-in Wireless Module with Bluetooth.

The clock frequencies used in the EUT: 38.4 MHz

Radio Specification

Equipment type : Transceiver
Operating temperature : 0 deg. C to +50 deg. C

Bluetooth (Low Energy)	
Frequency of operation	2402 MHz - 2480 MHz
Channel spacing	2 MHz
Modulation	GFSK
Antenna type	Monopole antenna x2
Antenna Gain	3.4 dBi
Antenna Connector type	U.FL connector (MHF connector)

	IEEE802.11b	IEEE802.11g	IEEE802.11n (20 MHz band)	IEEE802.11n (40 MHz band)
Frequency of operation	2412 MHz - 2462 MHz	2412 MHz - 2462 MHz	2412 MHz - 2462 MHz 5180 MHz - 5240 MHz 5260 MHz - 5320 MHz 5500 MHz - 5700 MHz 5745 MHz - 5825 MHz	2422 MHz - 2452 MHz 5190 MHz - 5230 MHz 5270 MHz - 5310 MHz 5510 MHz - 5670 MHz 5755 MHz - 5795 MHz
Channel spacing	5 MHz		2.4 GHz band 5 MHz 5 GHz band 20 MHz	2.4 GHz band 5 MHz 5 GHz band 40 MHz
Modulation	DSSS: DBPSK, DQPSK, CCK	OFDM: BPSK, QPSK, 16QAM, 64QAM		
	IEEE802.11a	IEEE802.11ac (20 MHz band)	IEEE802.11ac (40 MHz band)	IEEE802.11ac (80 MHz band)
Frequency of operation	5180 MHz - 5240 MHz 5260 MHz - 5320 MHz 5500 MHz - 5700 MHz 5745 MHz - 5825 MHz	5180 MHz - 5240 MHz 5260 MHz - 5320 MHz 5500 MHz - 5700 MHz 5745 MHz - 5825 MHz	5190 MHz - 5230 MHz 5270 MHz - 5310 MHz 5510 MHz - 5670 MHz 5755 MHz - 5795 MHz	5210 MHz 5290 MHz 5530 MHz, 5610 MHz 5775 MHz
Channel spacing	20 MHz		40 MHz	80 MHz
Modulation	OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM (*256QAM is only for IEEE802.11ac 80 MHz band)			
Antenna Gain	(ANT-1, ANT-2): 2.4 GHz band: 3.4 dBi, 5 GHz band: 3.9 dBi			
Antenna type	Monopole antenna x2			
Antenna Connector type	U.FL connector (MHF connector)			

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart E
FCC Part 15 final revised on May 3, 2021 and effective July 2, 2021

Title : FCC 47 CFR Part 15 Radio Frequency Device Subpart E
Unlicensed National Information Infrastructure Devices
Section 15.407 General technical requirements

* The revision does not affect the test result conducted before its effective date.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Conducted Emission	FCC: ANSI C63.10-2013	FCC: 15.407 (b) (6) / 15.207	18.5 dB, 9.13110 MHz, N, AV Tx 11n20 5700 MHz +BT LE 2M-PHY 2402 MHz	Complied a)	-
	ISED: RSS-Gen 8.8	ISED: RSS-Gen 8.8			
26 dB Emission Bandwidth	FCC: KDB Publication Number 789033	FCC: 15.407 (a) (1) (2) (3)	See data	N/A b)	Conducted
	ISED: -	ISED: -			
Maximum Conducted Output Power	FCC: KDB Publication Number 789033	FCC: 15.407 (a) (1) (2) (3)	See data	Complied c)	Conducted
	ISED: -	ISED: RSS-247 6.2.1.1 6.2.2.1 6.2.3.1 6.2.4.1			
Maximum Power Spectral Density	FCC: KDB Publication Number 789033	FCC : 15.407 (a) (1) (2) (3)	See data	Complied d)	Conducted
	ISED: -	ISED: RSS-247 6.2.1.1 6.2.2.1 6.2.3.1 6.2.4.1			
Spurious Emission Restricted Band Edge	FCC: ANSI C63.10-2013 KDB Publication Number 789033	FCC: 15.407 (b), 15.205 and 15.209	2.1 dB 5150.000 MHz, AV, Vertical Tx 11n-40 5190 MHz	Complied e) / f)	Conducted (< 30 MHz) / Radiated (> 30 MHz) *1)
	ISED: -	ISED: RSS-247 6.2.1.2 6.2.2.2 6.2.3.2 6.2.4.2			
6 dB Emission Bandwidth	FCC: ANSI C63.10-2013	FCC: 15.407 (e)	See data	Complied g)	Conducted
	ISED: -	ISED: RSS-247 6.2.4.1			
Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422. *1) Radiated test was selected over 30 MHz based on FCC 15.407 (b) and KDB 789033 D02 G.3.b). a) Refer to APPENDIX 1 (data of Conducted Emission) b) Refer to APPENDIX 1 (data of 26 dB Emission Bandwidth and 99 % Occupied Bandwidth) c) Refer to APPENDIX 1 (data of Maximum Conducted Output Power) d) Refer to APPENDIX 1 (data of Maximum Power Spectral Density) e) Refer to APPENDIX 1 (data of Radiated Spurious Emission) f) Refer to APPENDIX 1 (data of Conducted Spurious Emission) g) Refer to APPENDIX 1 (data of 6 dB Bandwidth) Symbols: Complied The data of this test item has enough margin, more than the measurement uncertainty. Complied# The data of this test item meets the limits unless the measurement uncertainty is taken into consideration.					

* In case any questions arise about test procedure, ANSI C63.10: 2013 is also referred.

UL Japan, Inc.

Shonan EMC Lab.

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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

FCC Part 15.31 (e)

The RF Module has its own regulator. The RF Module is constantly provided voltage through the regulator regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC Part 15.203/212 Antenna requirement

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

3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99% Occupied Bandwidth	ISED: RSS-Gen 6.7	ISED: -	N/A	b)	Conducted
b) Refer to APPENDIX 1 (data of 6 dB Bandwidth and 99 % Occupied Bandwidth)					

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

3.4 Uncertainty

There is no applicable rule of uncertainty in this applied standard. Therefore, the results are derived depending on whether or not laboratory uncertainty is applied.

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor $k=2$.
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Item	Frequency range	Uncertainty (+/-)			
		No. 1 SAC / SR	No. 2 SAC / SR	No. 3 SAC / SR	No. 4,5,6,8 SR
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	2.6 dB	2.6 dB	2.6 dB	2.9 dB
Radiated emission (Measurement distance: 3 m)	9 kHz-30 MHz	3.0 dB	2.7 dB	2.7 dB	-
	30 MHz-200 MHz	4.6 dB	4.6 dB	4.6 dB	-
	200 MHz-1 GHz	6.0 dB	6.0 dB	6.0 dB	-
	1 GHz-6 GHz	4.8 dB	4.8 dB	4.8 dB	-
	6 GHz-18 GHz	5.4 dB	5.4 dB	5.4 dB	-
	18 GHz-40 GHz	5.3 dB	5.3 dB	5.3 dB	-
Radiated emission (Measurement distance: 1 m)	1 GHz-18 GHz	5.7 dB	5.7 dB	5.7 dB	-
	18 GHz-40 GHz	5.6 dB	5.6 dB	5.6 dB	-

SAC=Semi-Anechoic Chamber

SR= Shielded Room is applied besides radiated emission

Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz (Average Detector)_SPM-06	1.4 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-06	1.6 dB
Power Measurement above 1 GHz (Average Detector)_SPM-07	0.89 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-07	1.2 dB
Power Measurement above 1 GHz (Average Detector)_SPM-13	0.91 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-13	1.2 dB
Spurious emission (Conducted) below 1GHz	0.87 dB
Spurious emission (Conducted) 1 GHz-3 GHz	0.96 dB
Spurious emission (Conducted) 3 GHz-18 GHz	3.0 dB
Spurious emission (Conducted) 18 GHz-26.5 GHz	2.6 dB
Spurious emission (Conducted) 26.5 GHz-40 GHz	2.2 dB
Bandwidth Measurement	0.012 %
Duty cycle and Time Measurement	0.27 %
Temperature_SCH-01	0.95 deg.C.
Humidity_SCH-01	0.83 %
Temperature_SCH-02	2.0 deg.C.
Humidity_SCH-02	6.6 %
Voltage	0.86 %

3.5 Test Location

UL Japan, Inc. Shonan EMC Lab.

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

Telephone: +81 463 50 6400, Facsimile: +81 463 50 6401

A2LA Certificate Number: 1266.03

(FCC test firm registration number: 626366, ISED lab company number: 2973D / CAB identifier: JP0001)

Test site	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
No.1 Semi-anechoic chamber	2973D-1	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.2 Semi-anechoic chamber	2973D-2	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.3 Semi-anechoic chamber	2973D-3	12.7 x 7.7 x 5.35	12.7 x 7.7	5 m
No.4 Semi-anechoic chamber	-	8.1 x 5.1 x 3.55	8.1 x 5.1	-
No.1 Shielded room	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.2 Shielded room	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.3 Shielded room	-	6.3 x 4.7 x 2.7	6.3 x 4.7	-
No.4 Shielded room	-	4.4 x 4.7 x 2.7	4.4 x 4.7	-
No.5 Shielded room	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.6 Shielded room	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.8 Shielded room	-	3.45 x 5.5 x 2.4	3.45 x 5.5	-
No.1 Measurement room	-	2.55 x 4.1 x 2.5	-	-

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

SECTION 4: Operation of EUT during testing

4.1 Operating Mode(s)

Test operating mode was determined as follows according to “Section 1 of 6 802.11 a/b/g/n testing - Managing Complex Regulatory Approvals -” of TCB Council Workshop October 2009 and also was judged the necessity of 802.11ac mode by the pre-test.

Mode	Remarks*
IEEE 802.11a (11a)	54 Mbps, PN9
IEEE 802.11n 20 MHz BW (11n-20)	MCS 4, PN9
IEEE 802.11n 40 MHz BW (11n-40)	MCS 6, PN9
IEEE 802.11ac 20 MHz BW (11ac-20)	MCS 8, PN9
IEEE 802.11ac 40 MHz BW (11ac-40)	MCS 7, PN9
IEEE 802.11ac 80 MHz BW (11ac-80)	MCS 8, PN9
*Transmitting duty was 100 % on all tests.	
*The worst antenna (Ant: 1) and condition was determined based on the test result of Maximum Conducted Output Power.	
*Power of the EUT was set by the software as follows; Power settings: 11a/11n-20/11n-40/11ac-20/11ac-40: 11 dBm 11ac-80: 8 dBm Software: labtool Ver.1.0 (Date: 2021.2.22, Storage location: Driven by connected Windows PC)	
*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.	

*The details of Operation mode(s)

Test Item	Operating Mode	Tested Antenna *2)	Tested Frequency			
			Lower Band	Middle Band	Additional Band	Upper Band
Conducted emission	Tx 11n-20 *1) Tx 11n-20 + Tx BT LE 2402 MHz (2 M PHY)	1	-	-	5700 MHz	-
26 dB Emission Bandwidth	Tx 11a Tx 11n-20 Tx 11ac-20	1	-	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	-
	Tx 11n-40 Tx 11ac-40	1	-	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	-
	Tx 11ac-80	2	-	5290 MHz	5530 MHz 5610 MHz	-
99 % Occupied Bandwidth, Maximum Power Spectral Density	Tx 11a Tx 11n-20 Tx 11ac-20	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
	Tx 11n-40 Tx 11ac-40	1	5190 MHz 5230 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
	Tx 11ac-80	2	5210 MHz	5290 MHz	5530 MHz 5610 MHz	5775 MHz
Maximum Conducted Output Power	Tx 11a Tx 11n-20 Tx 11ac-20	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
	Tx 11n-40 Tx 11ac-40	1	5190 MHz 5230 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
	Tx 11ac-80	2	5210 MHz	5290 MHz	5530 MHz 5610 MHz	5775 MHz
6 dB Bandwidth	Tx 11a Tx 11n-20 Tx 11ac-20	1	-	-	-	5745 MHz 5785 MHz 5825 MHz
	Tx 11n-40 Tx 11ac-40	1	-	-	-	5755 MHz 5795 MHz
	Tx 11ac-80	2	-	-	-	5775 MHz
Radiated Spurious Emission (Below 1 GHz)	Tx 11n-20 *1) Tx 11n-20+ Tx BT LE 2402 MHz (2M PHY) *1)	1	-	-	5700 MHz	-
Radiated Spurious Emission (Above 1 GHz)	Tx 11a Tx 11ac-20 Tx 11a + Tx BT LE 2402 MHz (2M PHY) Tx 11ac-20 + Tx BT LE 2402 MHz (2M PHY)	1	5180 MHz	5320 MHz	5500 MHz 5700 MHz	5745 MHz 5825 MHz
	Tx 11n-20 Tx 11n-20+ Tx BT LE 2402 MHz (2M PHY)	1	5180 MHz 5240 MHz	5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	Tx 11n-40 Tx 11n-40+ Tx BT LE 2402 MHz (2M PHY)	1	5190 MHz	5310 MHz	5510 MHz 5670 MHz	5755 MHz 5795 MHz
	Tx 11ac-40 Tx 11ac-40 + Tx BT LE 2402 MHz (2M PHY)	1	5190 MHz 5230 MHz	5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
	Tx 11ac-80 Tx 11ac-80 + Tx BT LE 2402 MHz (2M PHY)	2	5210 MHz	5290 MHz	5530 MHz 5610 MHz	5775 MHz
Conducted Spurious Emission	Tx 11n-20	1	-	-	5700 MHz	-

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

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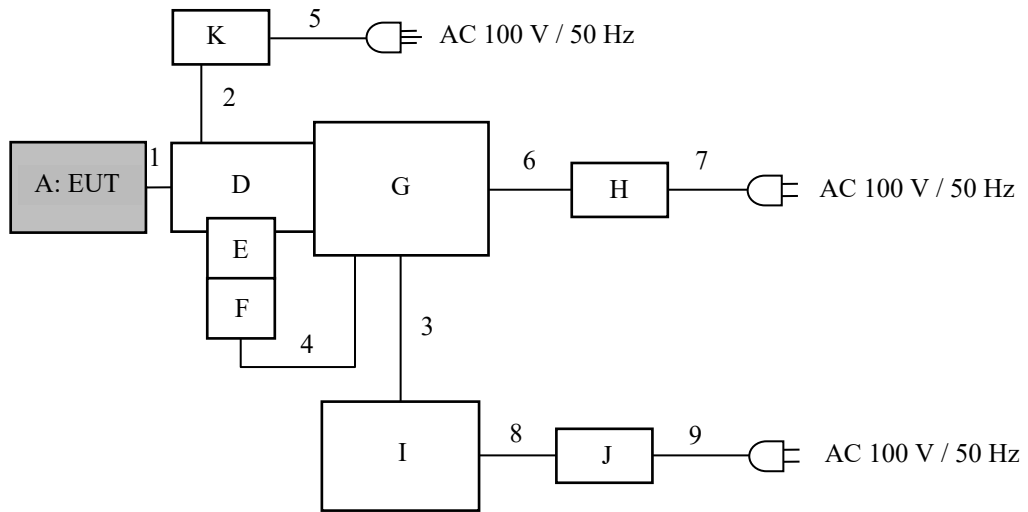
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

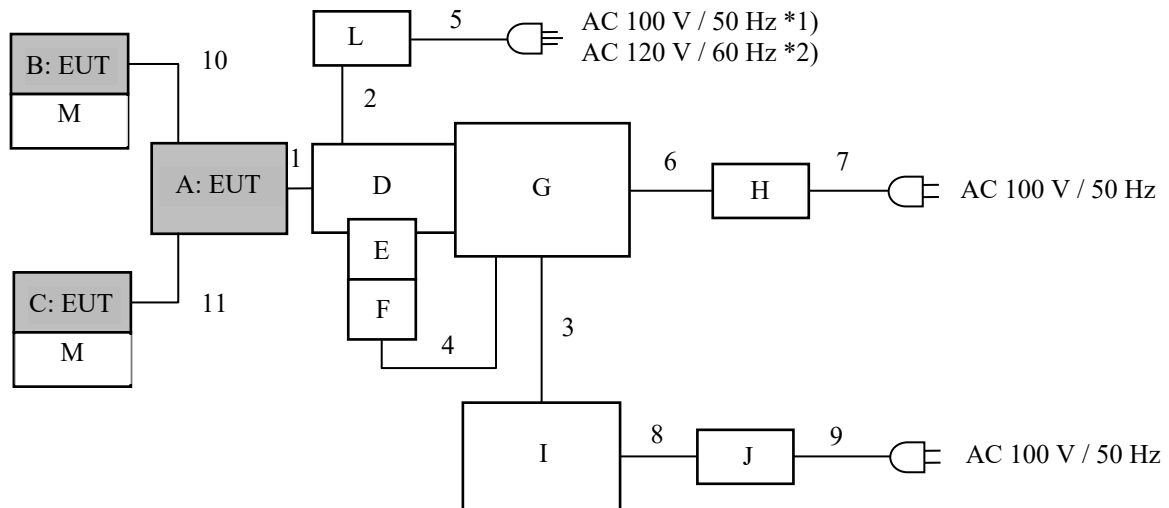
Facsimile : +81 463 50 6401

4.2 Configuration and peripherals

<Antenna Terminal Conducted test>



<Conducted Emission test, Radiated Emission test>



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

*1) Radiated Emission test.

*2) Conducted Emission test.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Built-in Wireless Module with Bluetooth	WM01B	2	Canon	EUT
B	Antenna	ANT2444-16B/M-AB	3	Canon	EUT
C	Antenna	ANT2444-16B/M-AB	4	Canon	EUT
D	Interface board	BM7-4347 & BM7-5313 01	5	Canon	-
E	RS232 Transceiver	BOOSTXL-RS232 HVL161A	5041500092	Canon	-
F	USB-RS232C Converter	BCUSRC06	A80411	BUFFALO	-
G	Personal Computer	CF-N8HCCDDS	0GKSA13816	Panasonic	Linux
H	AC Adapter	CF-AA6412C	6412CM417501135D	Panasonic	-
I	Personal Computer	CF-NX3JDGCS	5CKSA57208	Panasonic	Windows
J	AC Adapter	CF-AA64B2C	64B2CM115206041B	Panasonic	-
K	DC Power Supply	PW16-5ADP	18026330	TEXIO	-
L	DC Power Supply	PAN35-10A	DE001677	KIUSUI	-
M	Grand plate	-	-	Canon	*3)

*3) Grand Plate for matching. Taking in consideration of antenna characteristics, the setup that does not affect spurious emissions was used.

List of cables used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	Signal	0.1	Unshielded	Unshielded	-
2	DC	2.0	Unshielded	Unshielded	-
3	LAN	3.0	Unshielded	Unshielded	-
4	RS232C-USB	1.0	Shielded	Shielded	-
5	AC	2.0	Unshielded	Unshielded	-
6	DC	0.9	Unshielded	Unshielded	-
7	AC	0.8	Unshielded	Unshielded	-
8	DC	0.9	Unshielded	Unshielded	-
9	AC	0.7	Unshielded	Unshielded	-
10	RF	0.1	Shielded	Shielded	*4)
11	RF	0.1	Shielded	Shielded	*4)

*4) The cable length with the maximum emission was selected.

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a platform of nominal size, 1.0 m by 2.0 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 80cm 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.

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 50ohm 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 via AC Adapter in a shielded room.

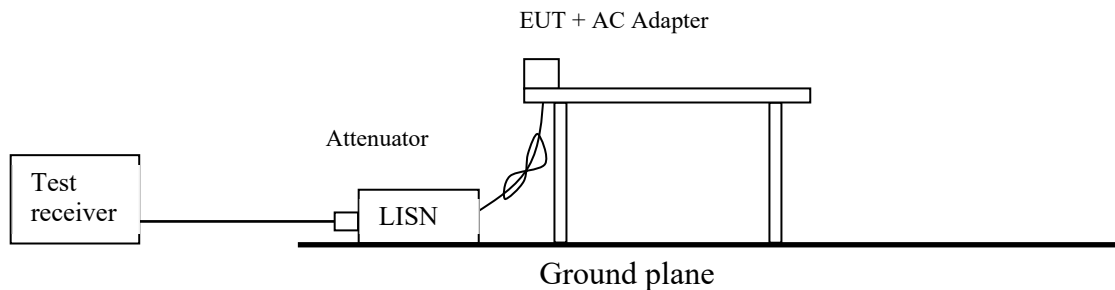
The EUT via AC Adapter was connected to a LISN (AMN).

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

Figure 1: Test Setup



SECTION 6: Radiated Spurious Emission and Band Edge Compliance

Test Procedure

< Below 1GHz >

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

< Above 1GHz >

EUT was placed on a urethane platform of nominal size, 0.5 m by 0.5 m, raised 1.5 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with absorbent materials lined on a ground plane.

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

Test antenna was aimed at the EUT for receiving the maximum signal and always kept within the illumination area of the 3 dB beamwidth of the antenna.

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

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

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

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

< 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).

For W58 Bandedge

-27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge in the section 15.407(b)(4)(i).

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;

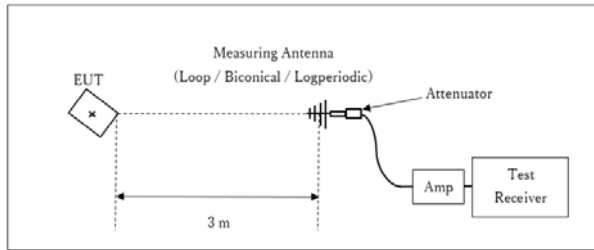
Frequency	30 MHz to 200 MHz	200 MHz to 1 GHz	Above 1 GHz
Antenna Type	Biconical	Logperiodic	Horn

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 VB *1) RBW: 1 MHz VBW: 1/T MHz (T: Burst length, refer to Appendix) Detector: Peak Trace mode: Max hold

*1) The test method was also referred to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E".

Figure 2: Test Setup

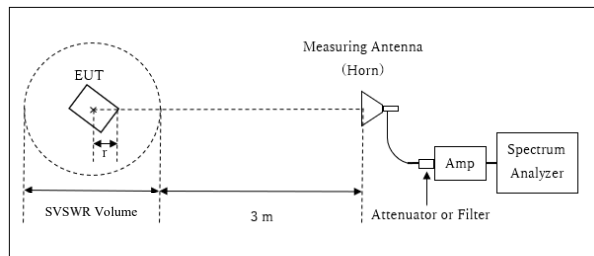
Below 1 GHz



× : Center of turn table

Test Distance: 3 m

1 GHz - 10 GHz

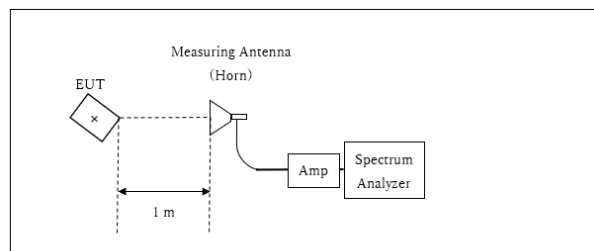


r : Radius of an outer periphery of EUT
 × : Center of turn table

Distance Factor: $20 \times \log(3.83 \text{ m} / 3.0 \text{ m}) = 2.12 \text{ dB}$
 * Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.83 \text{ m}$

SVSWR Volume : 2.0 m
 (SVSWR Volume has been calibrated based on CISPR 16-1-4.)
 $r = 0.17 \text{ m}$

10 GHz - 40 GHz



× : Center of turn table

Distance Factor: $20 \times \log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$
 *Test Distance: 1 m

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

Module

Antenna polarization	Carrier	Spurious (30 MHz - 1 GHz)	Spurious (1 GHz - 6.4 GHz)	Spurious (6.4 GHz - 10 GHz)	Spurious (10 GHz - 18 GHz)	Spurious (18 GHz - 26.5 GHz)	Spurious (26.5 GHz - 40 GHz)
Horizontal	X	X	X	X	Y	X	X
Vertical	X	X	X	X	Y	X	X

Antenna

Antenna polarization	Carrier	Spurious (30 MHz - 1 GHz)	Spurious (1 GHz - 6.4 GHz)	Spurious (6.4 GHz - 10 GHz)	Spurious (10 GHz - 18 GHz)	Spurious (18 GHz - 26.5 GHz)	Spurious (26.5 GHz - 40 GHz)
Horizontal	Y	X	Y	Y	Y	X	X
Vertical	Y	X	Y	Y	Y	X	X

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.
Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN
 Telephone : +81 463 50 6400
 Facsimile : +81 463 50 6401

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
6 dB Bandwidth	Enough to capture the emission	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Maximum Conducted Output Power	-	-	-	Auto	Average	-	Power Meter (Sensor: 160 MHz BW) (Method PM-G)
Maximum Power Spectral Density	Encompass the entire EBW	1 MHz or 100 kHz *2)	≥ 3 RBW	Auto	RMS Power Averaging (100 times)	Clear Write	Spectrum Analyzer
Conducted Spurious Emission*3) *4)	9 kHz – 150 kHz 150 kHz – 30 MHz	200 Hz 10 kHz	620 Hz 30 kHz	Auto	Peak	Max Hold	Spectrum Analyzer

* The test method was also referred to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E".

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

*2) KDB 789033 D02 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 RBW Correction Factor ($10 \log(500 \text{ kHz} / 100 \text{ kHz})$) 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 not detected as shown in the chart. (9 kHz-150 kHz: RBW = 200 Hz, 150 kHz-30 MHz: RBW = 10 kHz)

*4) The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377 Ohms. For example, the measurement at frequency 9 kHz resulted in a level of 45.5 dBuV/m, which is equivalent to $45.5 - 51.5 = -6.0$ dBuA/m, which has the same margin, 3 dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

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

The equipment and cables were not used for factor 0 dB of the data sheets.

Test data : APPENDIX

Test result : Pass

UL Japan, Inc.

Shonan EMC Lab.

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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

APPENDIX 1: Test data

Conducted Emission

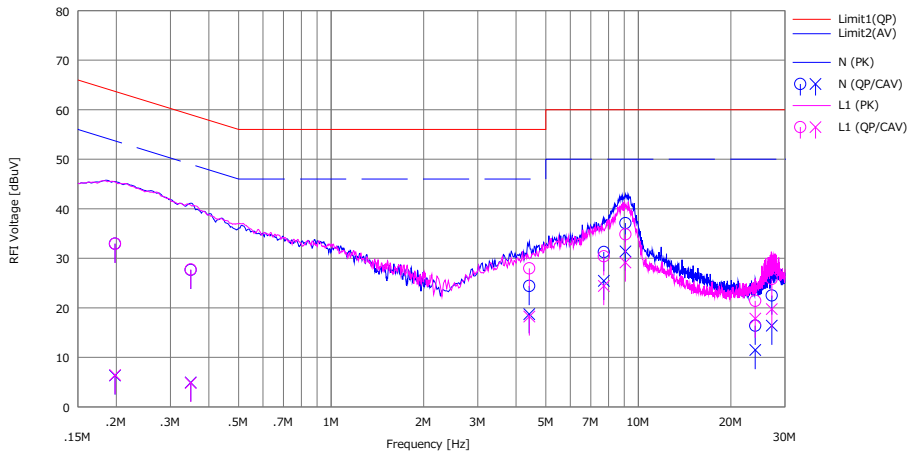
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2021/05/15

Mode : Tx 11n-20 5700 MHz
Power : AC 120 V / 60 Hz (DC 3.3 V)
Temp./Humi. : 24 deg.C / 43 %RH

Limit : FCC_Part 15 Subpart C(15.207)

Engineer : Toshinori Yamada



No.	Freq. [MHz]	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		(QP) [dBuV]	(CAV) [dBuV]		(QP) [dBuV]	(CAV) [dBuV]	(QP) [dBuV]	(AV) [dBuV]	(QP) [dB]	(AV) [dB]		
1	0.19798	20.50	-6.10	12.44	32.94	6.34	63.69	53.69	30.7	47.3	N	
2	0.34926	15.20	-7.50	12.45	27.65	4.95	58.98	48.98	31.3	44.0	N	
3	4.41447	11.70	6.00	12.71	24.41	18.71	56.00	46.00	31.5	27.2	N	
4	7.71860	18.40	12.60	12.85	31.25	25.45	60.00	50.00	28.7	24.5	N	
5	9.07453	24.20	18.50	12.90	37.10	31.40	60.00	50.00	22.9	18.6	N	
6	24.00021	2.90	-2.00	13.49	16.39	11.49	60.00	50.00	43.6	38.5	N	
7	27.18828	8.90	2.80	13.60	22.50	16.40	60.00	50.00	37.5	33.6	N	
8	0.19812	20.50	-6.00	12.44	32.94	6.44	63.69	53.69	30.7	47.2	L1	
9	0.34926	15.30	-7.60	12.44	27.74	4.84	58.98	48.98	31.2	44.1	L1	
10	4.41601	15.30	5.60	12.66	27.96	18.26	56.00	46.00	28.0	27.7	L1	
11	7.71868	17.60	11.60	12.80	30.40	24.40	60.00	50.00	29.6	25.6	L1	
12	9.07488	22.00	16.30	12.84	34.84	29.14	60.00	50.00	25.1	20.8	L1	
13	24.00004	8.20	4.60	13.20	21.40	17.80	60.00	50.00	38.6	32.2	L1	
14	27.18820	12.60	6.50	13.24	25.84	19.74	60.00	50.00	34.1	30.2	L1	

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

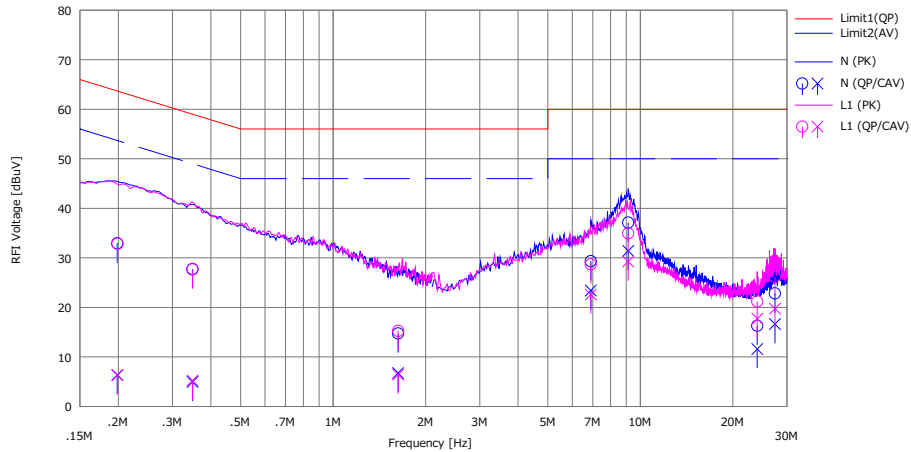
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
 Date : 2021/05/15

Mode : Tx 11n-20 5700 MHz + BT LE 2 M-PHY 2402 MHz
 Power : AC 120 V / 60 Hz (DC 3.3 V)
 Temp./Humi. : 24 deg.C / 43 %RH

Limit : FCC_Part 15 Subpart C(15.207)

Engineer : Toshinori Yamada



No.	Freq. [MHz]	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<CAV> [dBuV]		[dB]	<QP> [dBuV]	<CAV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]		
1	0.19843	20.50	-6.10	12.44	32.94	6.34	63.68	53.68	30.7	47.3	N	
2	0.34892	15.30	-7.50	12.45	27.75	4.95	58.99	48.99	31.2	44.0	N	
3	1.62812	2.20	-5.80	12.54	14.74	6.74	56.00	46.00	41.2	39.2	N	
4	6.89886	16.50	10.60	12.82	29.32	23.42	60.00	50.00	30.6	26.5	N	
5	9.13110	24.20	18.50	12.91	37.11	31.41	60.00	50.00	22.8	18.5	N	
6	24.00152	2.80	-1.90	13.49	16.29	11.59	60.00	50.00	43.7	38.4	N	
7	27.40850	9.20	3.00	13.62	22.82	16.62	60.00	50.00	37.1	33.3	N	
8	0.19892	20.40	-6.10	12.44	32.84	6.34	63.66	53.66	30.8	47.3	L1	
9	0.34852	15.20	-7.20	12.44	27.64	5.24	59.00	49.00	31.3	43.7	L1	
10	1.62872	2.70	-6.10	12.53	15.23	6.43	56.00	46.00	40.7	39.5	L1	
11	6.89940	15.90	9.80	12.78	28.68	22.58	60.00	50.00	31.3	27.4	L1	
12	9.13070	22.10	16.40	12.84	34.94	29.24	60.00	50.00	25.0	20.7	L1	
13	24.00100	8.00	4.50	13.20	21.20	17.70	60.00	50.00	38.8	32.3	L1	
14	27.40900	12.90	6.50	13.25	26.15	19.75	60.00	50.00	33.8	30.2	L1	

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

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Report No.	13734674S-C-R2		
Test place	Shonan EMC Lab. No.5 Shielded Room		
Date	March 23, 2021	March 24, 2021	March 25, 2021
Temperature / Humidity	22 deg. C / 45 % RH	23 deg. C / 40 % RH	22 deg. C / 42 % RH
Engineer	Toshinori Yamada	Toshinori Yamada	Toshinori Yamada
Mode	Tx		

11a

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Antenna 1	5180	-	16796.2
	5220	-	16766.0
	5240	-	16786.3
	5260	19.427	16793.0
	5300	19.409	16790.8
	5320	19.456	16791.3
	5500	19.369	16781.6
	5580	19.416	16797.2
	5700	19.480	16796.7
	5745	-	16798.2
	5785	-	16792.0
5825	-	16799.9	

11n-20

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Antenna 1	5180	-	17844.3
	5220	-	17823.3
	5240	-	17813.6
	5260	20.045	17851.5
	5300	20.065	17837.1
	5320	20.161	17829.1
	5500	20.075	17831.8
	5580	19.908	17838.8
	5700	20.043	17828.0
	5745	-	17815.9
	5785	-	17841.5
5825	-	17841.1	

11ac-20

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Antenna 1	5180	-	17767.2
	5220	-	17773.3
	5240	-	17771.3
	5260	19.783	17764.5
	5300	19.748	17762.4
	5320	19.945	17766.5
	5500	19.881	17766.1
	5580	19.899	17777.3
	5700	19.784	17752.3
	5745	-	17841.7
	5785	-	17815.1
5825	-	17838.1	

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Report No.	13734674S-C-R2		
Test place	Shonan EMC Lab. No.5 Shielded Room		
Date	March 23, 2021	March 24, 2021	March 25, 2021
Temperature / Humidity	22 deg. C / 45 % RH	23 deg. C / 40 % RH	22 deg. C / 42 % RH
Engineer	Toshinori Yamada	Toshinori Yamada	Toshinori Yamada
Mode	Tx		

11n-40

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Antenna 1	5190	-	36300.6
	5230	-	36434.3
	5270	39.780	36458.4
	5310	39.834	36434.6
	5510	39.754	36425.3
	5550	39.809	36455.1
	5670	40.045	36461.2
	5755	-	36435.5
5795	-	36413.1	

11ac-40

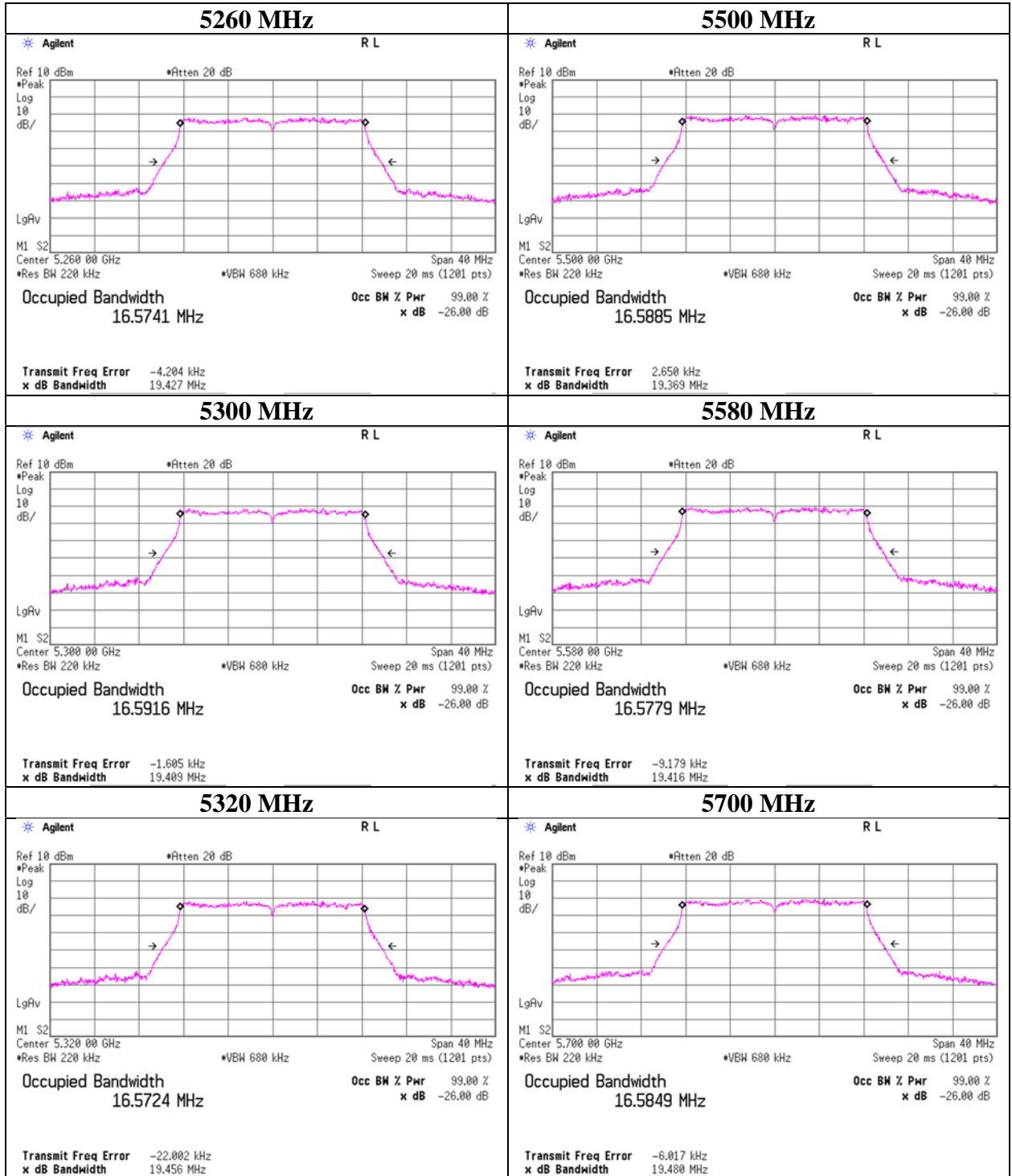
Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Antenna 1	5190	-	36426.5
	5230	-	36400.2
	5270	40.455	36469.5
	5310	40.066	36397.0
	5510	39.875	36443.2
	5550	40.240	36431.9
	5670	40.262	36452.5
	5755	-	36442.9
5795	-	36399.0	

11ac-80

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Antenna 1	5210	-	76146.9
	5290	81.027	76346.2
	5530	81.109	76373.2
	5610	81.137	76289.5
	5775	-	76127.9

26 dB Emission Bandwidth

11a Antenna 1



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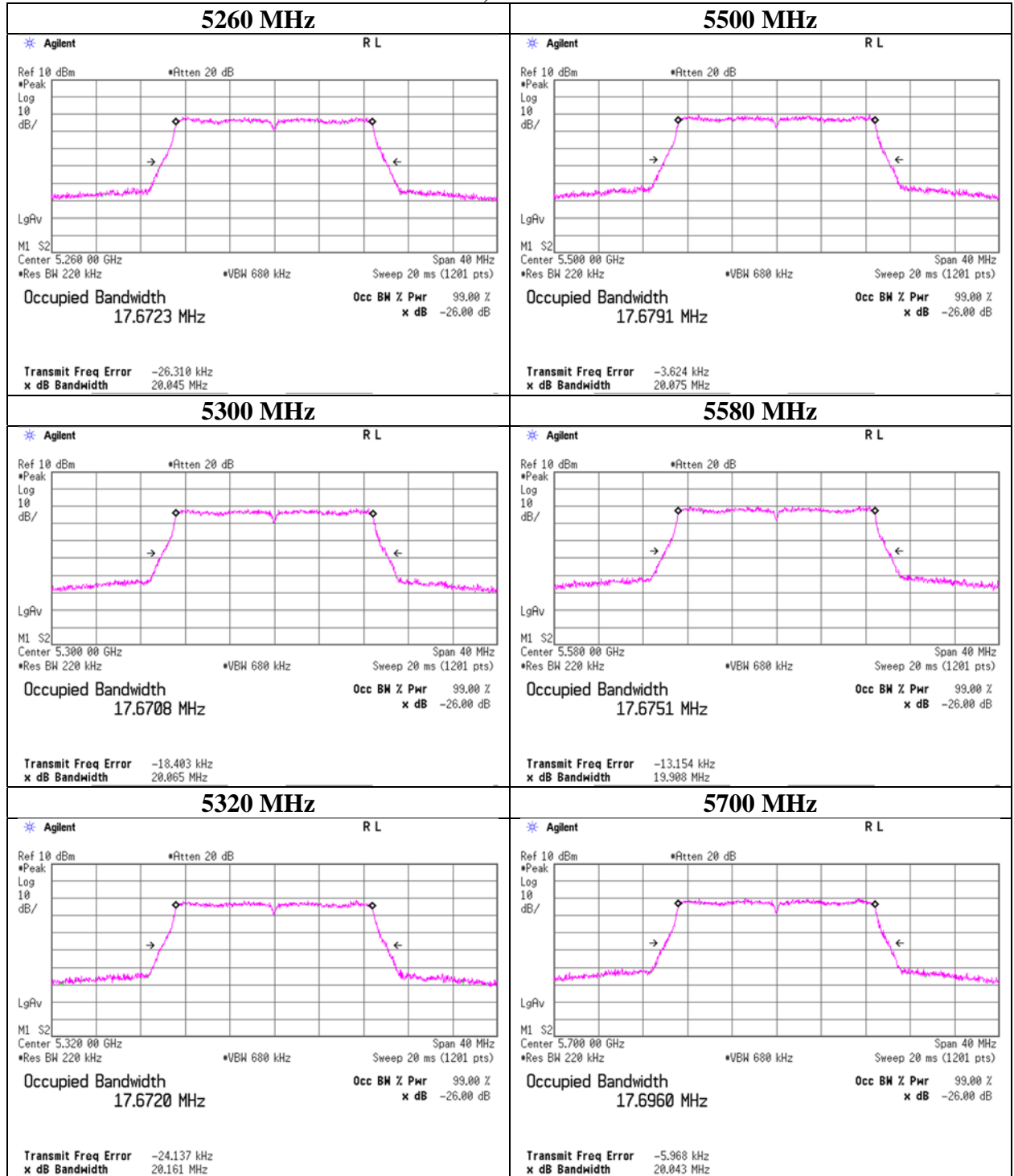
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

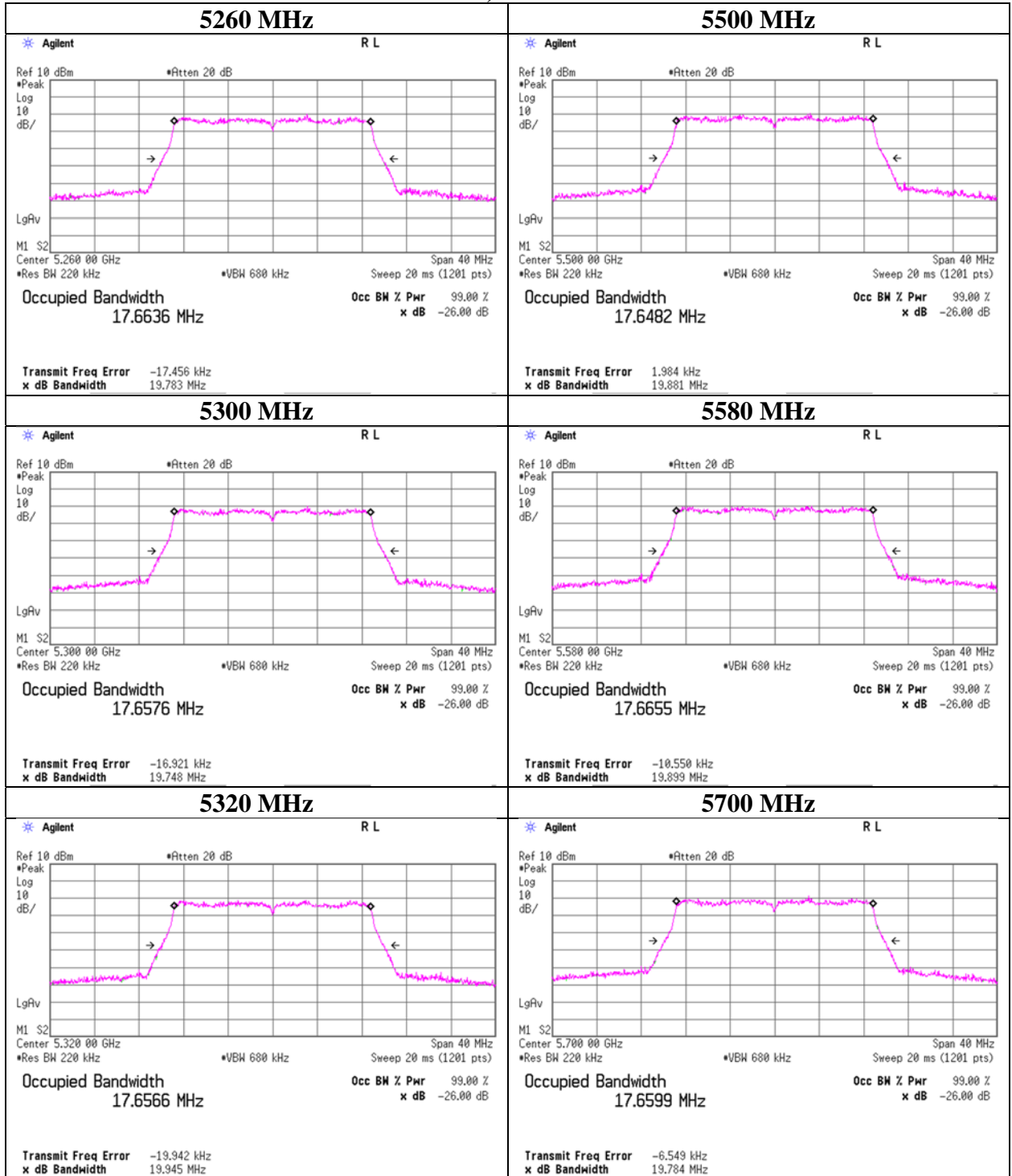
26 dB Emission Bandwidth

11n-20, Antenna 1



26 dB Emission Bandwidth

11ac-20, Antenna 1



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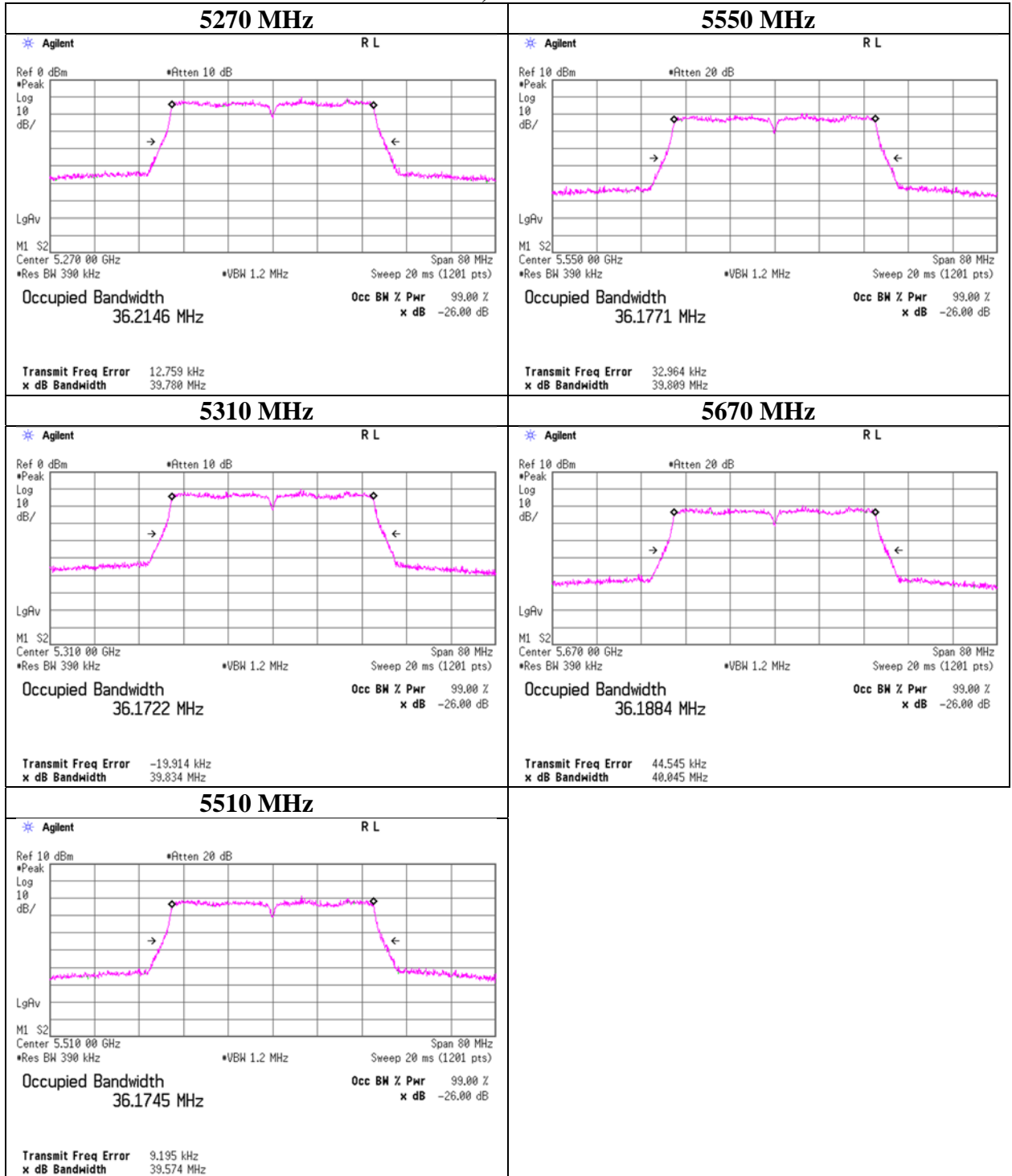
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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26 dB Emission Bandwidth

11n-40, Antenna 1



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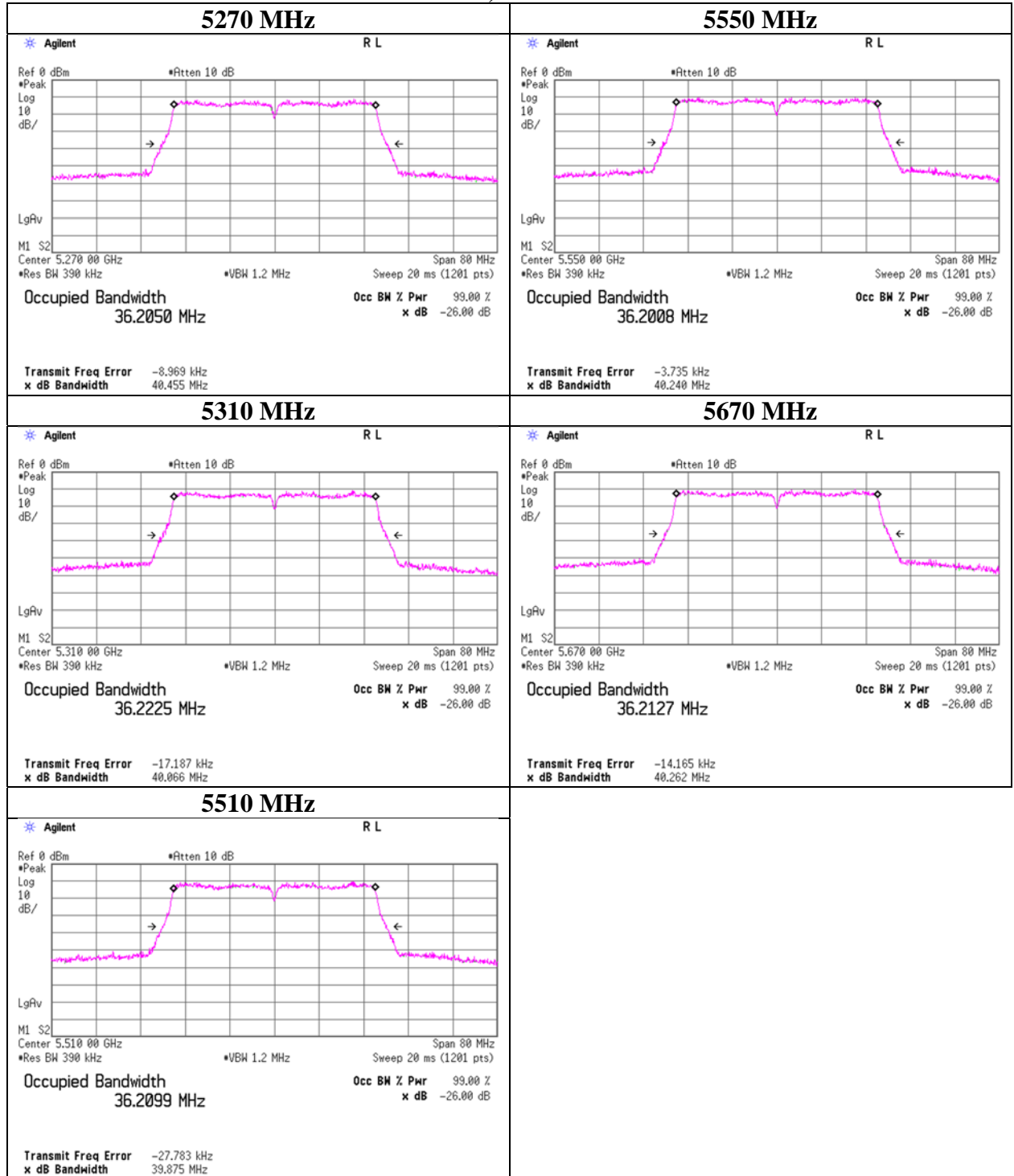
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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Facsimile : +81 463 50 6401

26 dB Emission Bandwidth

11ac-40, Antenna 1



UL Japan, Inc.

Shonan EMC Lab.

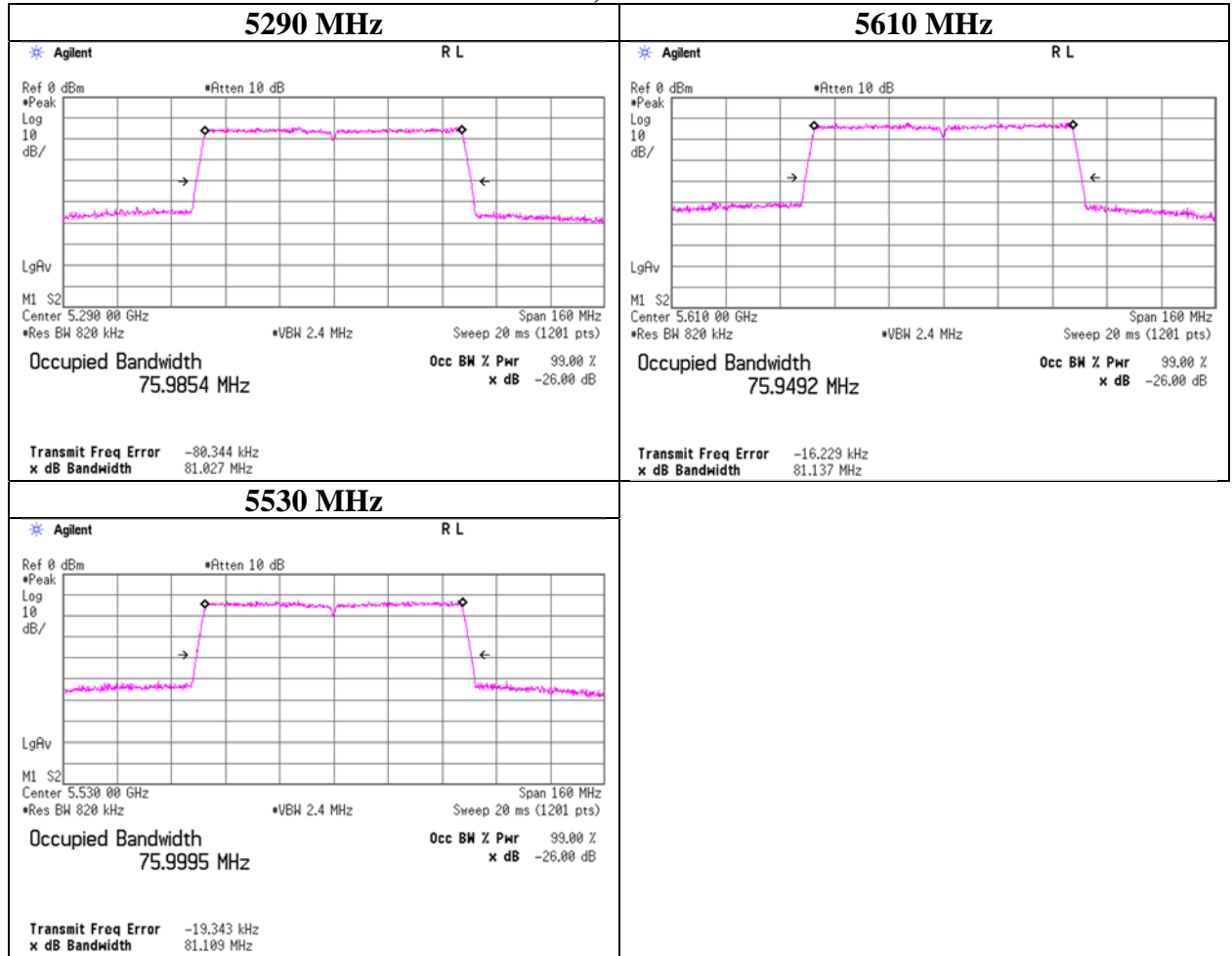
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

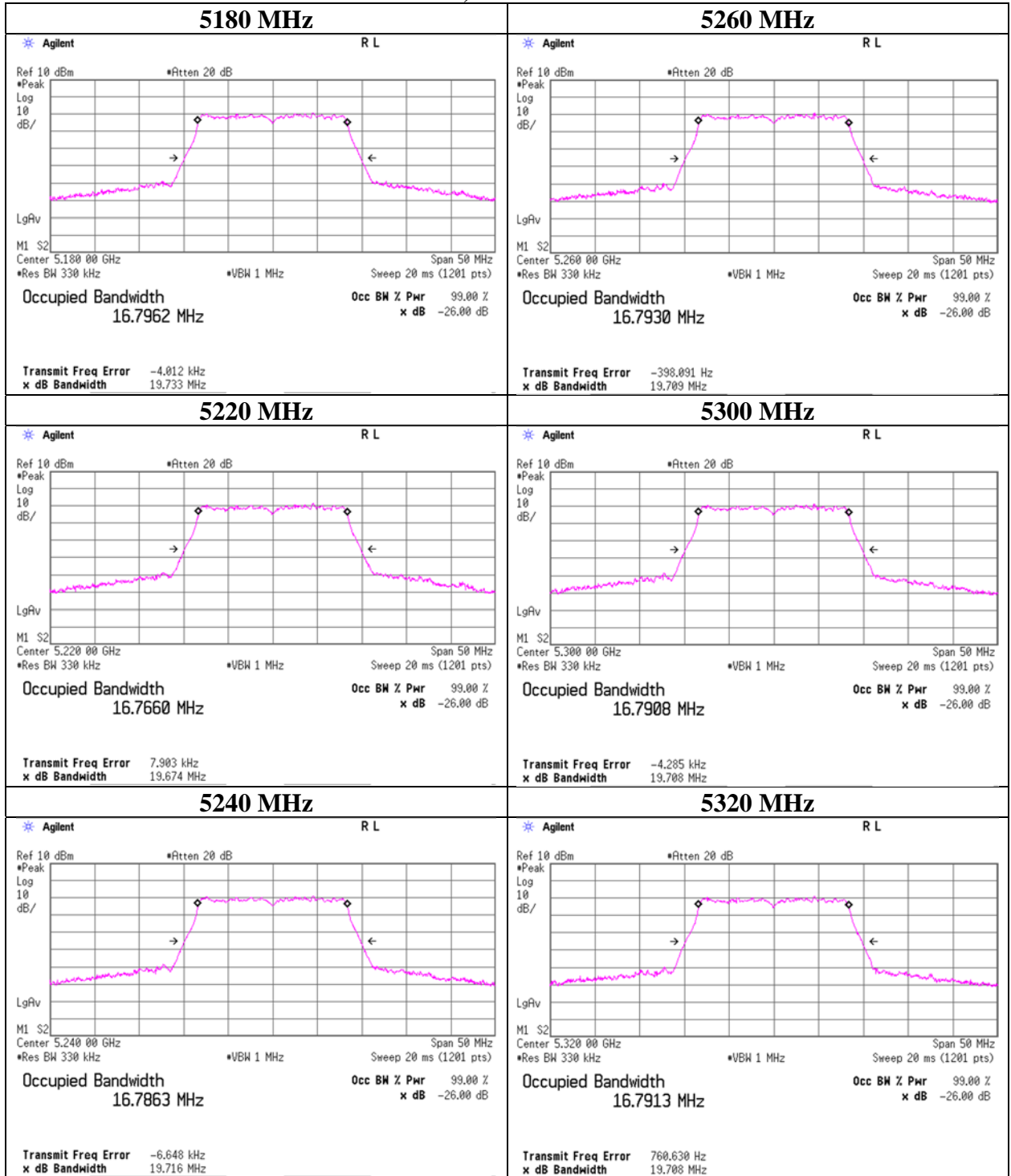
26 dB Emission Bandwidth

11ac-80, Antenna 2



99 % Occupied Bandwidth

11a, Antenna 1



UL Japan, Inc.

Shonan EMC Lab.

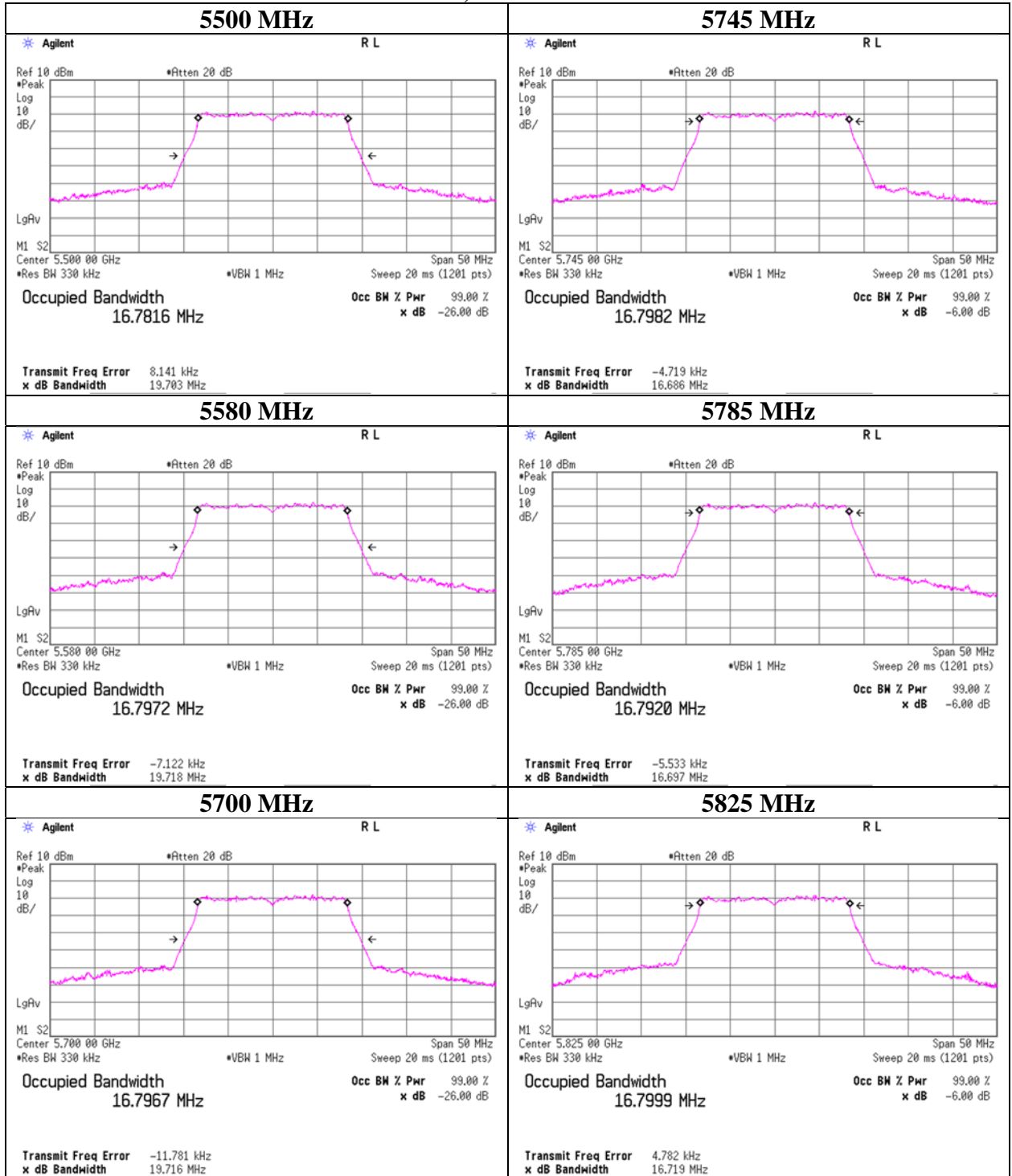
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

11a, Antenna 1



UL Japan, Inc.

Shonan EMC Lab.

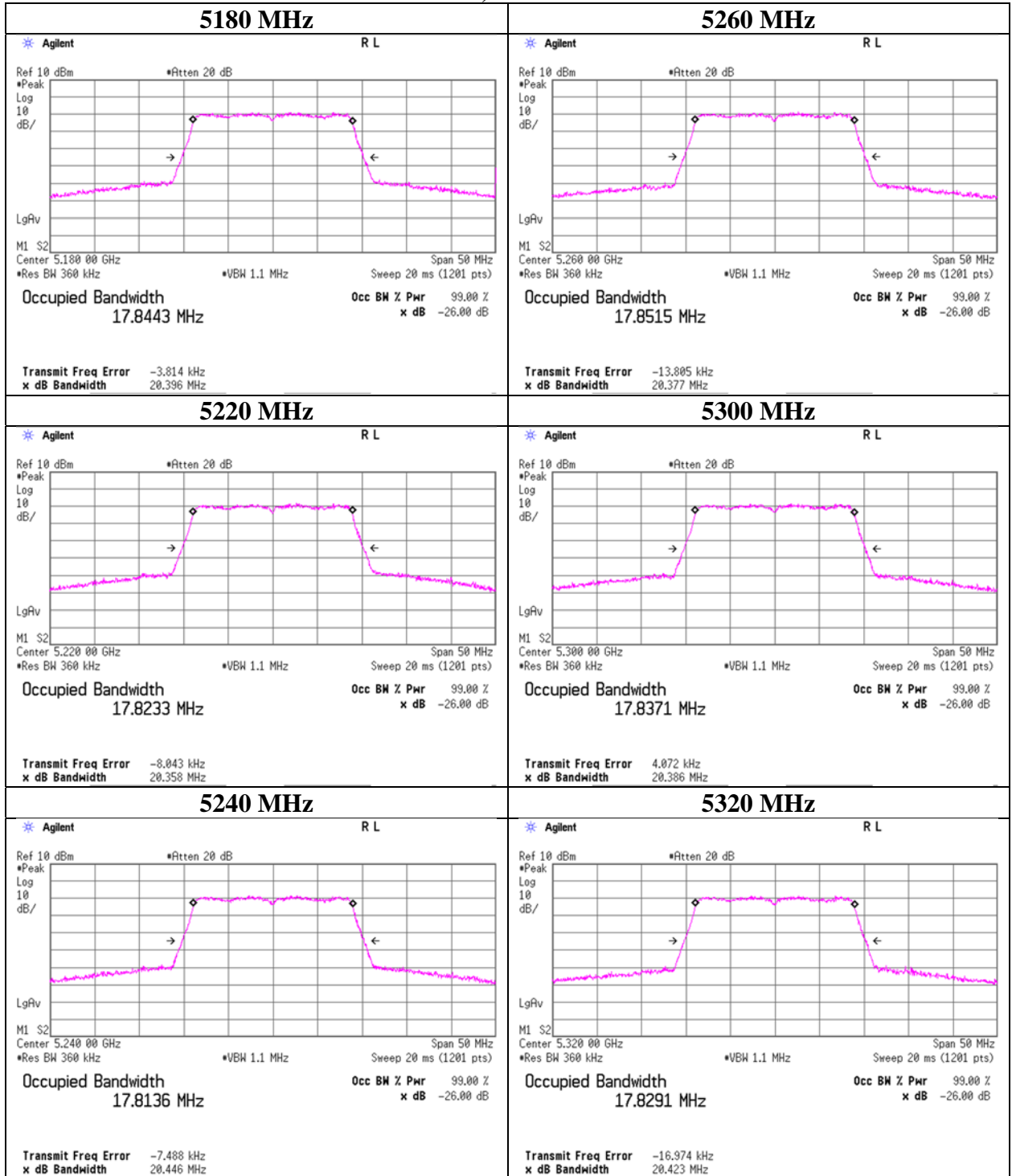
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

11n-20, Antenna 1



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Shonan EMC Lab.

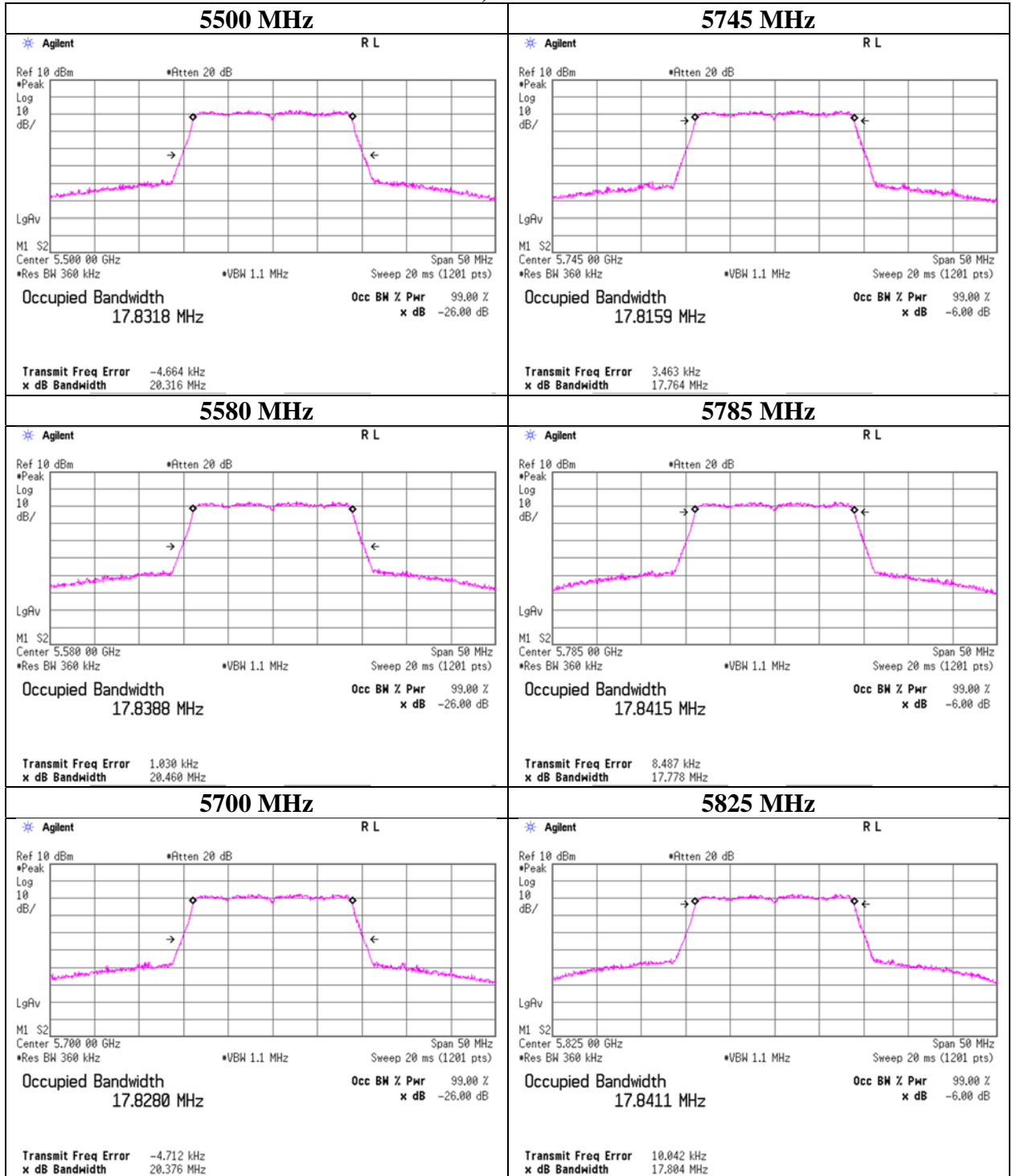
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

11n-20, Antenna 1



UL Japan, Inc.

Shonan EMC Lab.

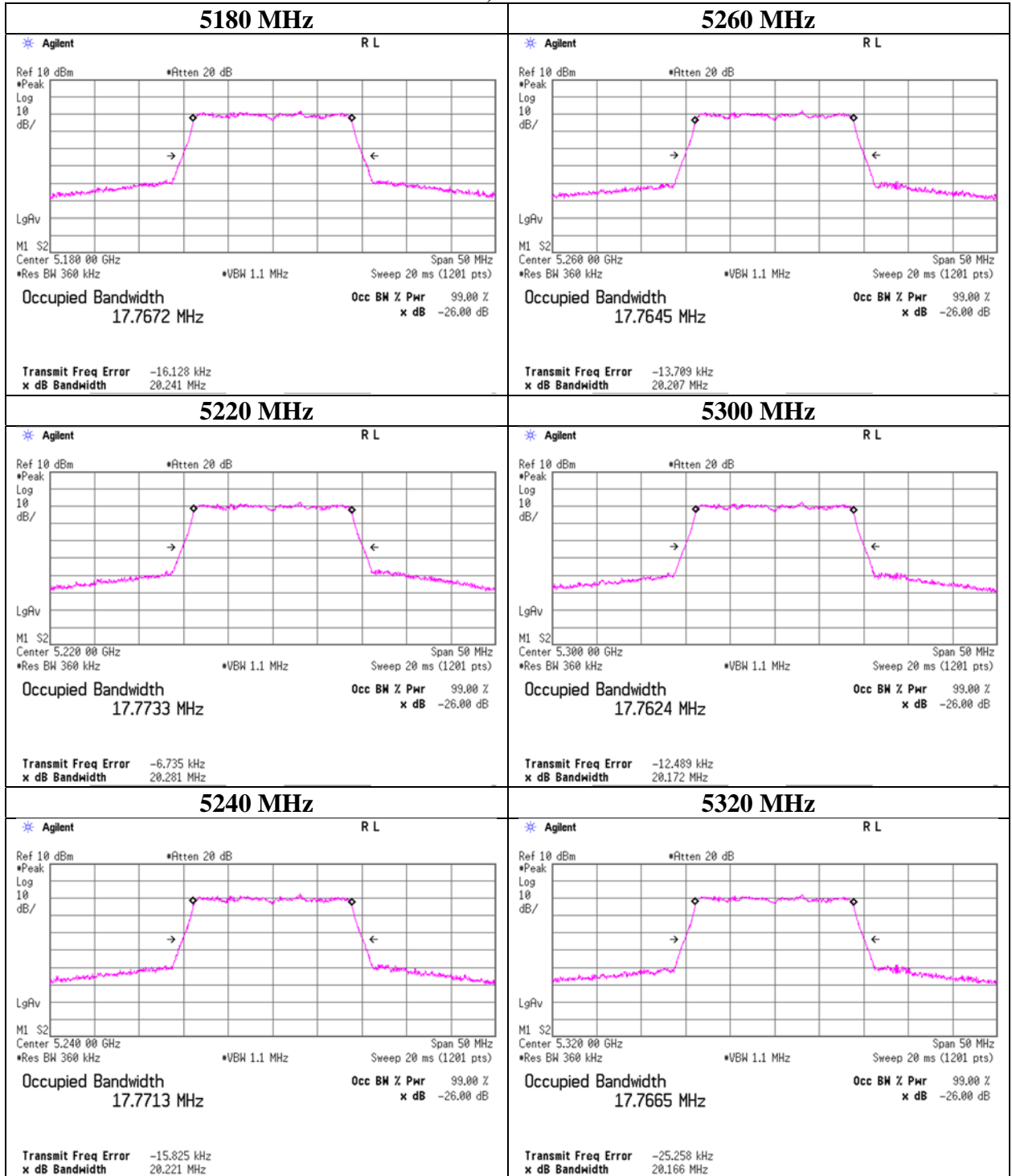
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

11ac-20, Antenna 1



UL Japan, Inc.

Shonan EMC Lab.

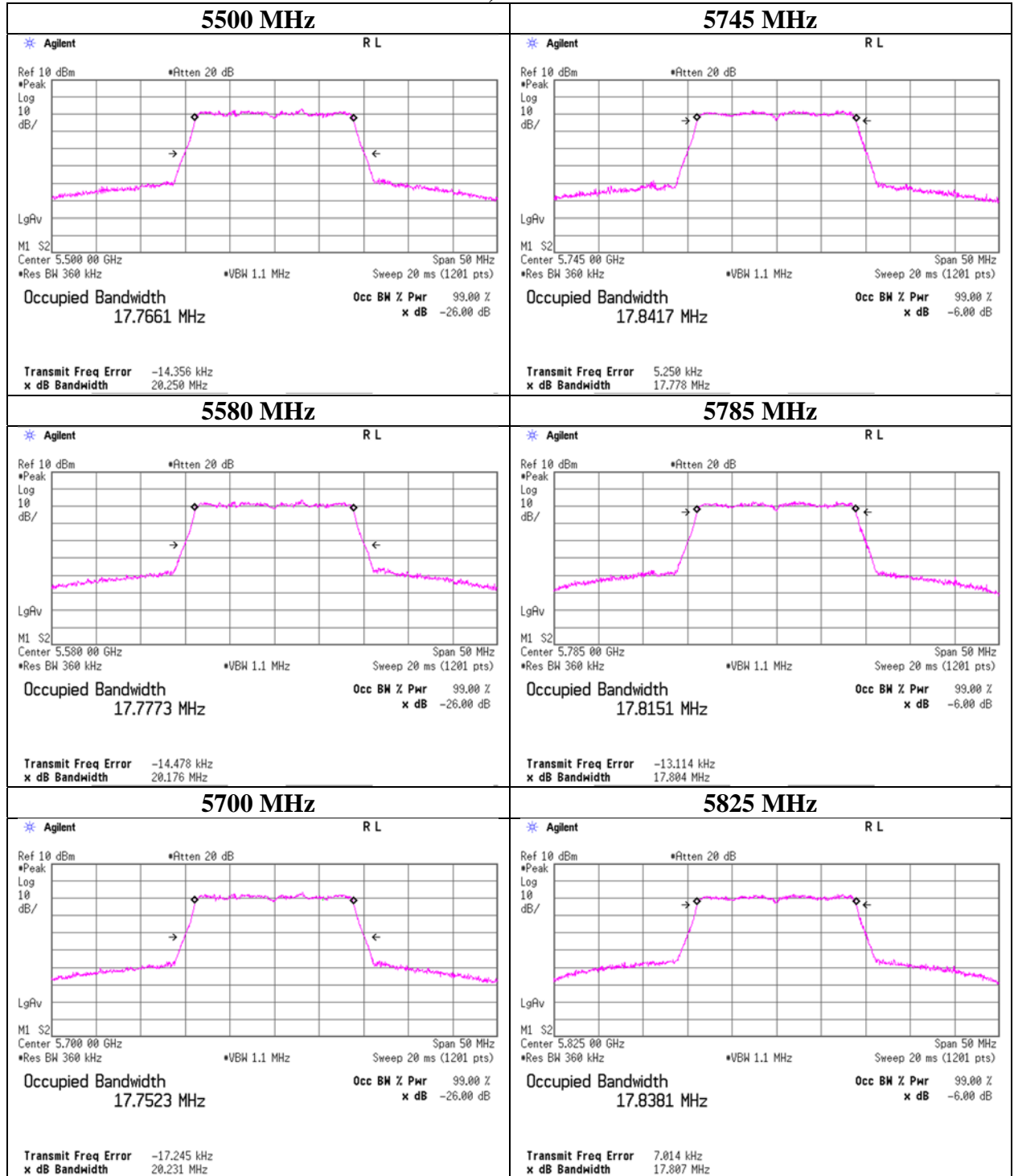
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

11ac-20, Antenna 1



UL Japan, Inc.

Shonan EMC Lab.

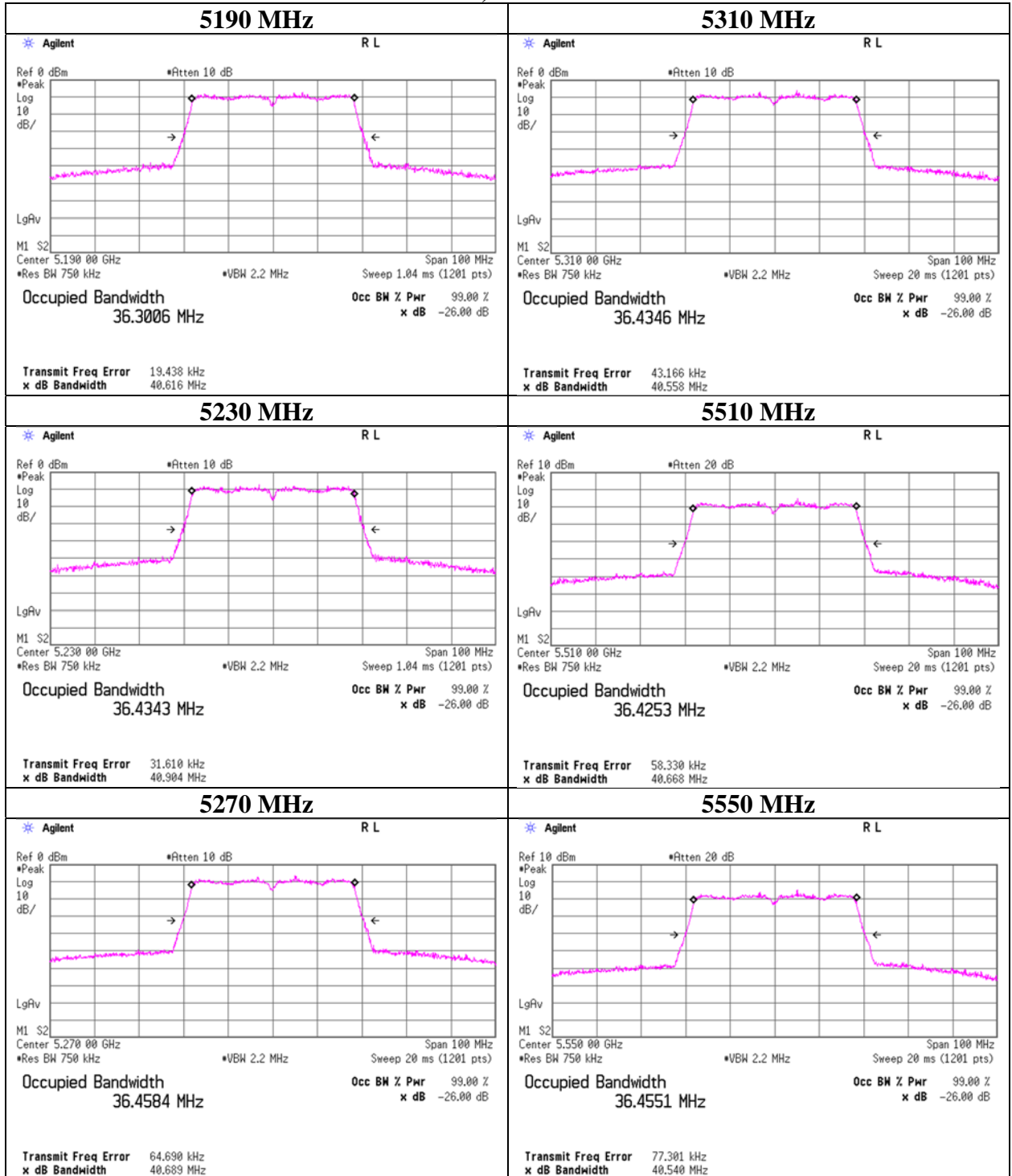
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

11n-40, Antenna 1



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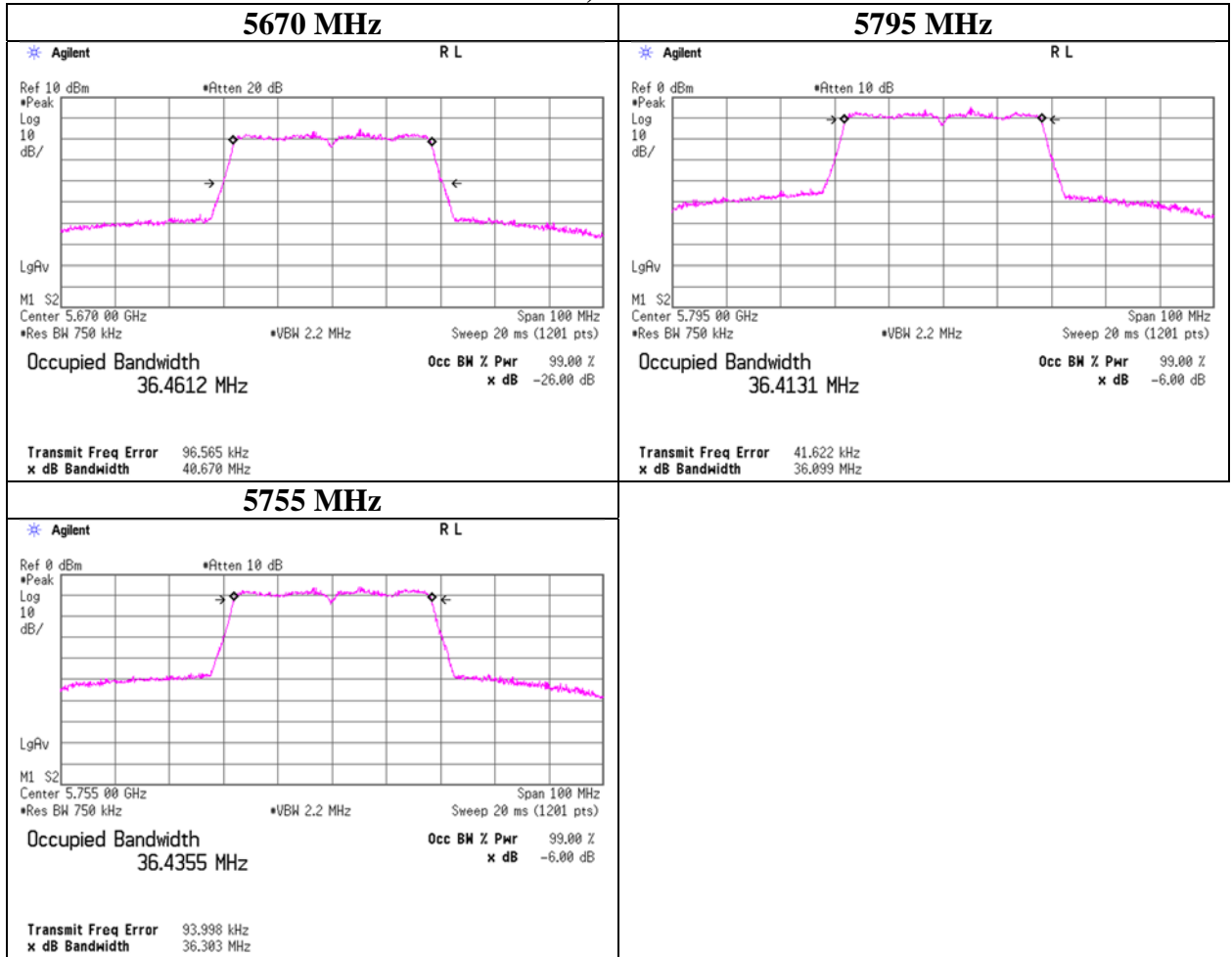
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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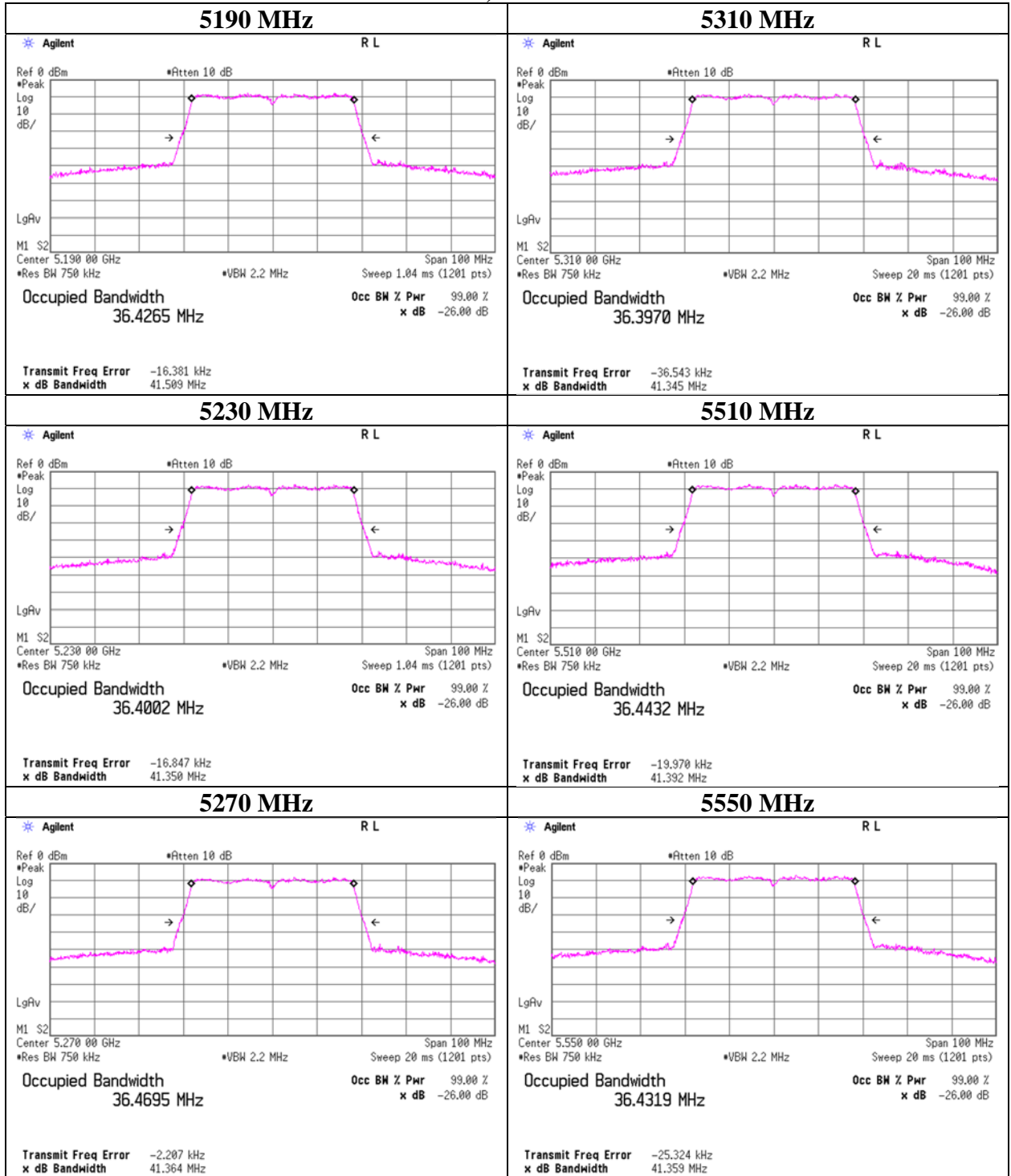
99 % Occupied Bandwidth

11n-40, Antenna 1



99 % Occupied Bandwidth

11ac-40, Antenna 1



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Shonan EMC Lab.

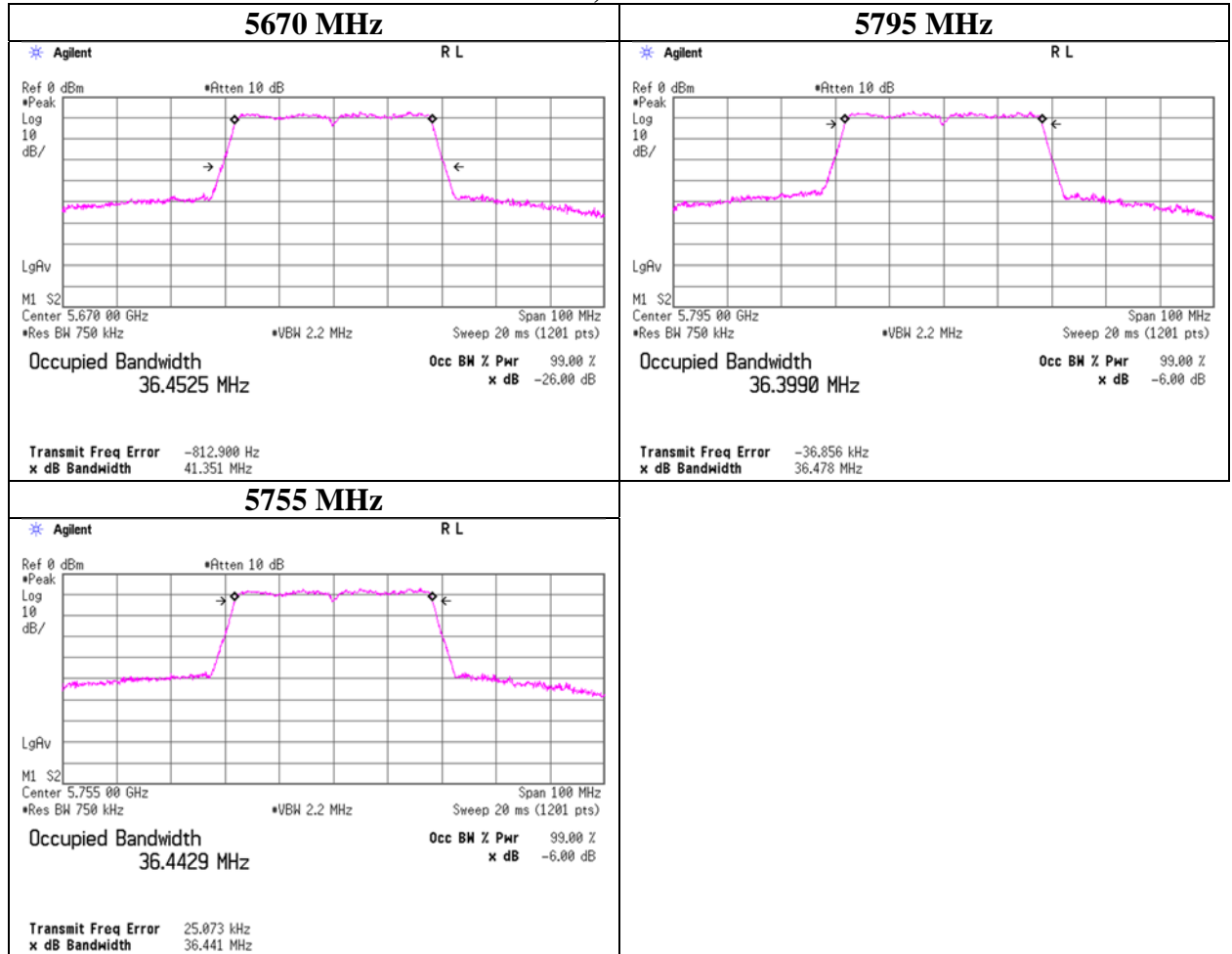
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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99 % Occupied Bandwidth

11ac-40, Antenna 1



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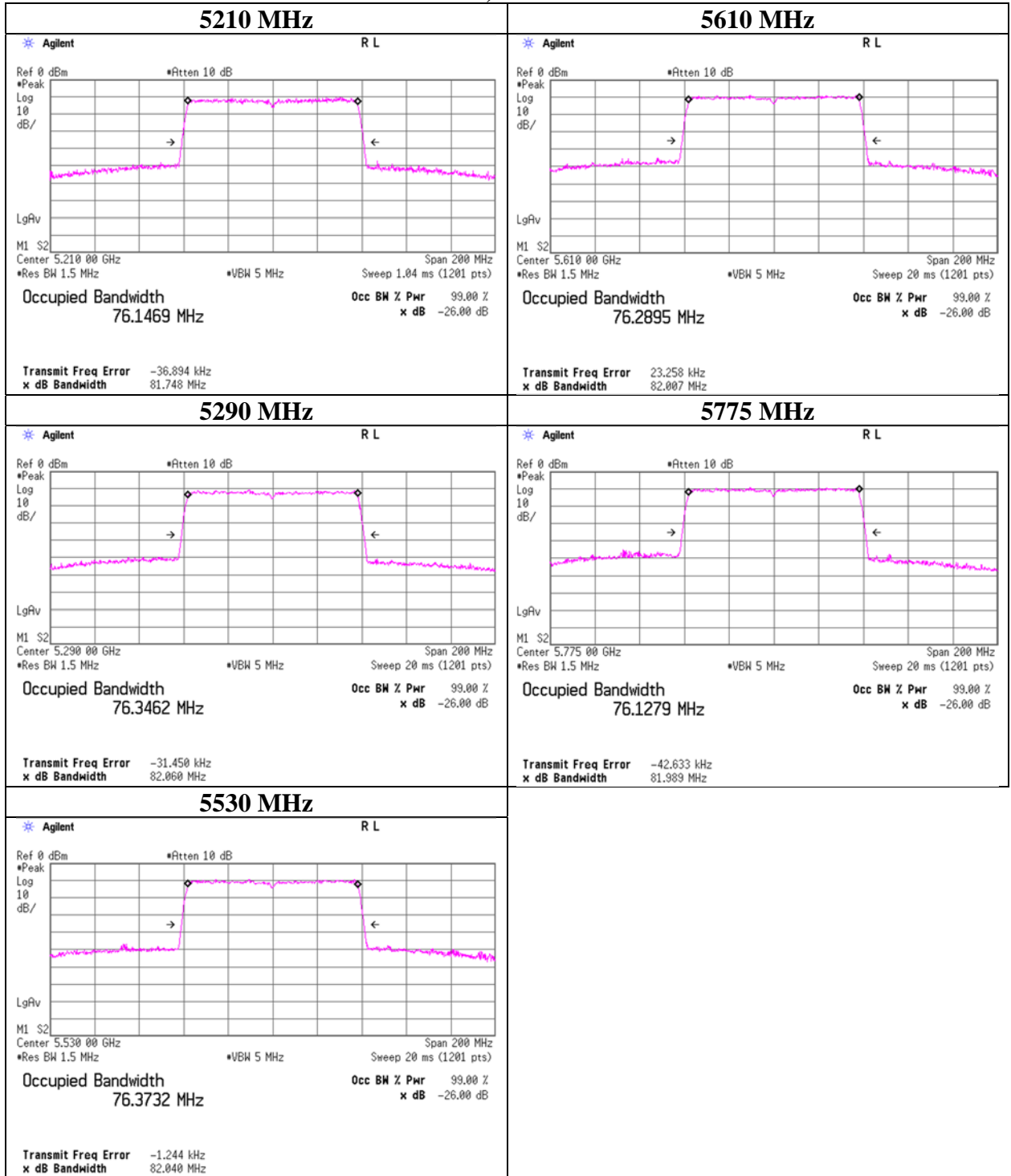
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

11ac-80, Antenna 2



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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

6 dB Bandwidth

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 25, 2021
Temperature / Humidity 23 deg. C / 47 % RH
Engineer Toshinori Yamada
Mode Tx

11a

Antenna	Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
Antenna 1	5745	16.571	> 0.500
	5785	16.553	> 0.500
	5825	16.556	> 0.500

11n-20

Antenna	Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
Antenna 1	5745	17.741	> 0.500
	5785	17.769	> 0.500
	5825	17.769	> 0.500

11ac-20

Antenna	Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
Antenna 1	5745	17.771	> 0.500
	5785	17.755	> 0.500
	5825	17.776	> 0.500

11n-40

Antenna	Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
Antenna 1	5755	36.505	> 0.500
	5795	36.514	> 0.500

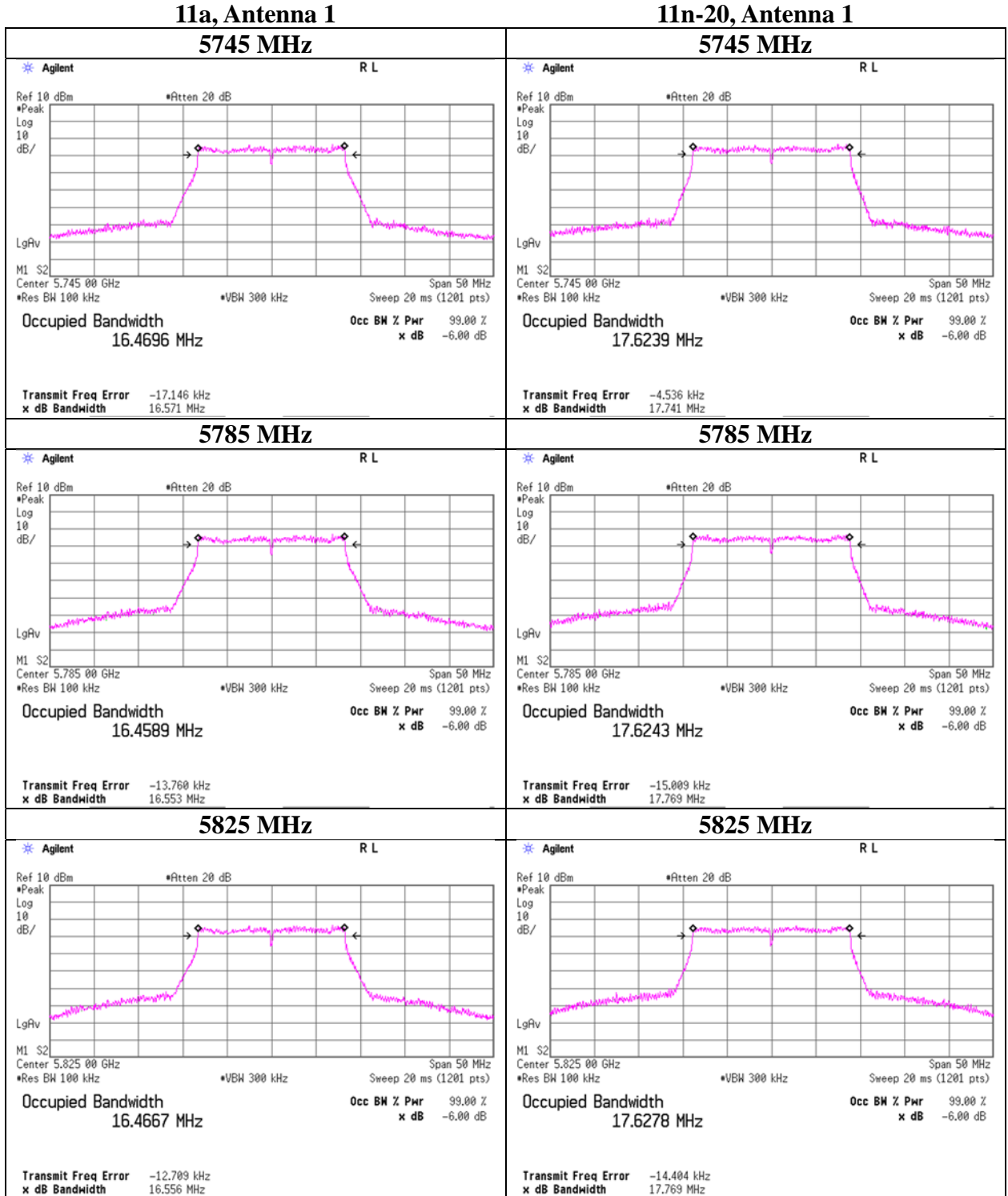
11ac-40

Antenna	Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
Antenna 1	5755	36.532	> 0.500
	5795	36.560	> 0.500

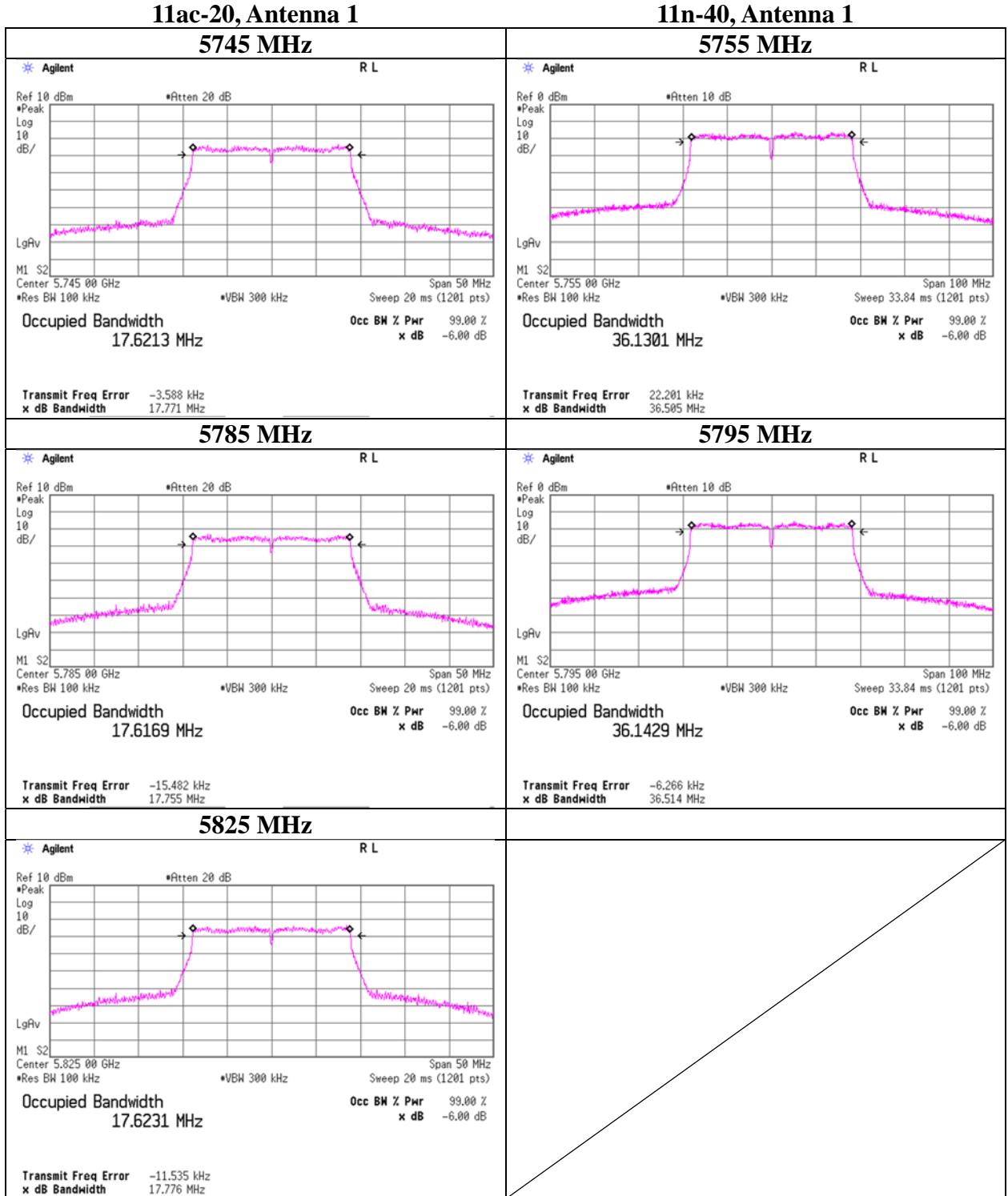
11ac-80

Antenna	Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
Antenna 1	5775	76.699	> 0.500

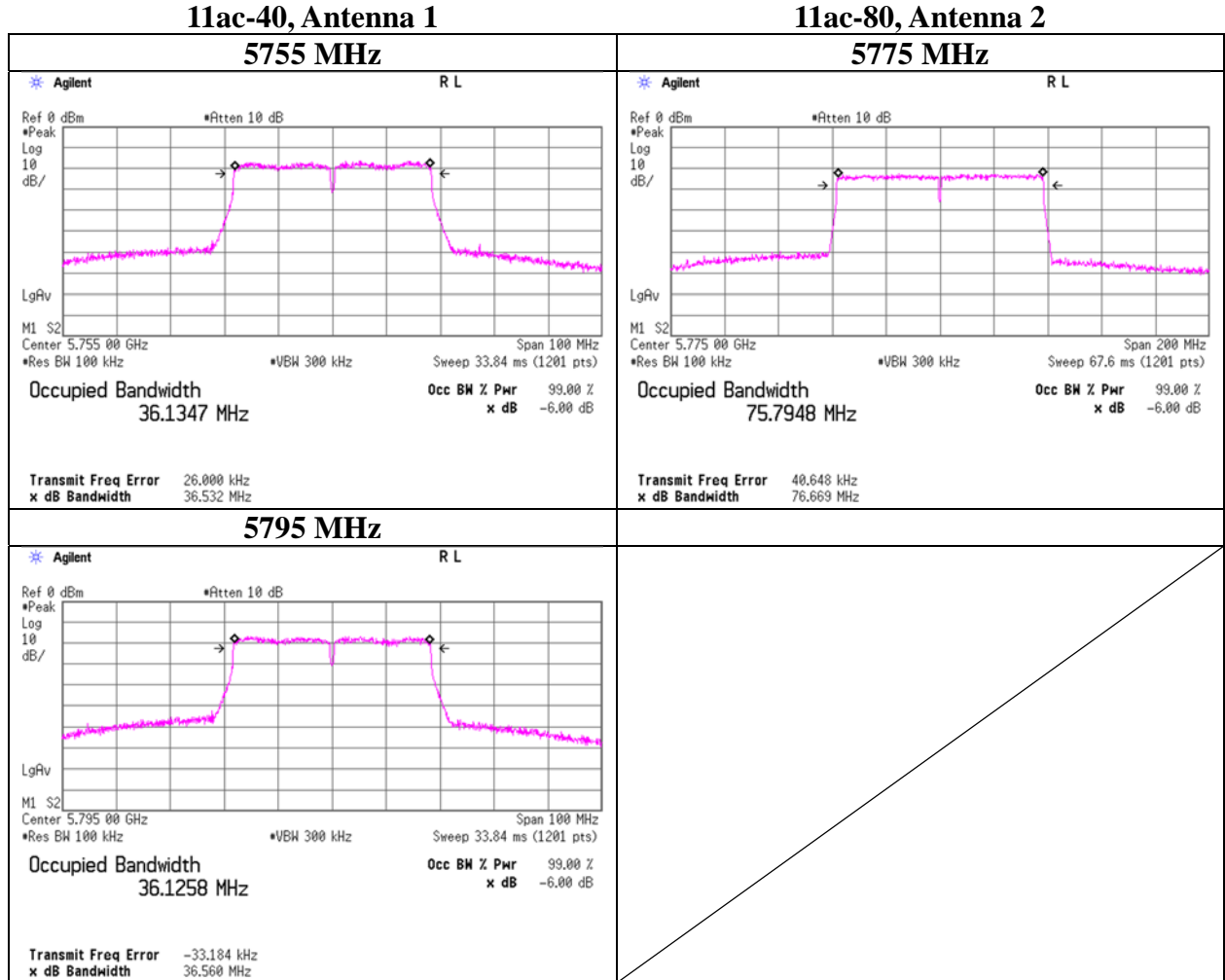
6 dB Bandwidth



6 dB Bandwidth



6 dB Bandwidth



Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 18, 2021 March 22, 2021 March 23, 2021
Temperature / Humidity 22 deg. C / 49 % RH 23 deg. C / 47 % RH 22 deg. C / 48 % RH
Engineer Yohsuke Murakami Toshinori Yamada Toshinori Yamada
Mode Tx 11a

11a

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power			e.i.r.p.				
								Result [dBm]	Limit [dBm]	Margin [dB]	Result [dBm]	Limit [dBm]	Margin [dB]	Result [mW]	Limit [mW]
5180	-1.64	2.53	9.87	0.00	3.90	-	16.796	10.76	11.91	23.97	13.21	14.66	29.24	29.97	15.31
5220	-1.66	2.53	9.87	0.00	3.90	-	16.766	10.74	11.86	23.97	13.23	14.64	29.11	29.97	15.33
5240	-1.65	2.46	9.87	0.00	3.90	-	16.786	10.68	11.69	23.97	13.29	14.58	28.71	29.97	15.39
5260	-2.08	2.49	10.22	0.00	3.90	19.427	16.793	10.63	11.56	23.88	13.25	14.53	28.38	29.97	15.44
5300	-2.51	2.50	10.22	0.00	3.90	19.409	16.791	10.21	10.50	23.88	13.67	14.11	25.76	29.97	15.86
5320	-1.99	2.61	10.22	0.00	3.90	19.456	16.791	10.84	12.13	23.89	13.05	14.74	29.79	29.97	15.23
5500	-1.37	2.67	10.22	0.00	3.90	19.369	16.782	11.52	14.19	23.87	12.35	15.42	34.83	29.97	14.55
5580	-1.03	2.68	10.22	0.00	3.90	19.416	16.797	11.87	15.38	23.88	12.01	15.77	37.76	29.97	14.20
5700	-0.92	2.61	10.22	0.00	3.90	19.480	16.797	11.91	15.52	23.89	11.98	15.81	38.11	29.97	14.16
5745	-0.87	2.58	10.22	0.00	3.90	-	16.798	11.93	15.60	30.00	18.07	15.83	38.28	36.00	20.17
5785	-0.78	2.58	10.22	0.00	3.90	-	16.792	12.02	15.92	30.00	17.98	15.92	39.08	36.00	20.08
5825	-0.74	2.63	10.22	0.00	3.90	-	16.800	12.11	16.26	30.00	17.89	16.01	39.90	36.00	19.99

Sample Calculation:

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

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

Conducted Power Limit (5725 MHz-5850 MHz) = 1W

Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 18, 2021 March 22, 2021 March 23, 2021
Temperature / Humidity 22 deg. C / 49 % RH 23 deg. C / 47 % RH 22 deg. C / 48 % RH
Engineer Yohsuke Murakami Toshinori Yamada Toshinori Yamada
Mode Tx 11n-20

11n-20

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power				e.i.r.p.			
								Result [dBm]	Limit [dBm]	Margin [dB]	Result [dBm]	Limit [dBm]	Margin [dB]		
5180	-1.20	2.53	9.87	0.00	3.90	-	17.844	11.20	13.18	23.97	12.77	15.10	32.36	29.97	14.87
5220	-1.19	2.53	9.87	0.00	3.90	-	17.823	11.21	13.21	23.97	12.76	15.11	32.43	29.97	14.86
5240	-1.21	2.46	9.87	0.00	3.90	-	17.814	11.12	12.94	23.97	12.85	15.02	31.77	29.97	14.95
5260	-1.56	2.49	10.22	0.00	3.90	20.045	17.851	11.15	13.03	23.97	12.82	15.05	31.99	29.97	14.92
5300	-1.40	2.50	10.22	0.00	3.90	20.065	17.837	11.32	13.55	23.97	12.65	15.22	33.27	29.97	14.75
5320	-1.56	2.61	10.22	0.00	3.90	20.161	17.829	11.27	13.40	23.97	12.70	15.17	32.89	29.97	14.80
5500	-0.74	2.67	10.22	0.00	3.90	20.075	17.832	12.15	16.41	23.97	11.82	16.05	40.27	29.97	13.92
5580	-0.40	2.68	10.22	0.00	3.90	19.908	17.839	12.50	17.78	23.97	11.47	16.40	43.65	29.97	13.57
5700	-0.29	2.61	10.22	0.00	3.90	20.043	17.828	12.54	17.95	23.97	11.43	16.44	44.06	29.97	13.53
5745	-0.46	2.58	10.22	0.00	3.90	-	17.816	12.34	17.14	30.00	17.66	16.24	42.07	36.00	19.76
5785	-0.38	2.58	10.22	0.00	3.90	-	17.842	12.42	17.46	30.00	17.58	16.32	42.85	36.00	19.68
5825	-0.33	2.63	10.22	0.00	3.90	-	17.841	12.52	17.86	30.00	17.48	16.42	43.85	36.00	19.58

Sample Calculation:

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

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

Conducted Power Limit (5725 MHz-5850 MHz) = 1W

Maximum Conducted Output Power

Report No.	13734674S-C-R2		
Test place	Shonan EMC Lab. No.5 Shielded Room		
Date	March 18, 2021	March 22, 2021	March 23, 2021
Temperature / Humidity	22 deg. C / 49 % RH	23 deg. C / 47 % RH	22 deg. C / 48 % RH
Engineer	Yohsuke Murakami	Toshinori Yamada	Toshinori Yamada
Mode	Tx 11ac-20		

11ac-20

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [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 [dBm]	Margin [dB]	Result		Limit [dBm]	Margin [dB]
								[dBm]	[mW]			[dBm]	[mW]		
5180	-1.27	2.53	9.87	0.00	3.90	-	17.767	11.13	12.97	23.97	12.84	15.03	31.84	29.97	14.94
5220	-1.25	2.53	9.87	0.00	3.90	-	17.773	11.15	13.03	23.97	12.82	15.05	31.99	29.97	14.92
5240	-1.27	2.46	9.87	0.00	3.90	-	17.771	11.06	12.76	23.97	12.91	14.96	31.33	29.97	15.01
5260	-1.65	2.49	10.22	0.00	3.90	19.783	17.765	11.06	12.76	23.96	12.90	14.96	31.33	29.97	15.01
5300	-1.39	2.50	10.22	0.00	3.90	19.748	17.762	11.33	13.58	23.95	12.62	15.23	33.34	29.97	14.74
5320	-1.54	2.61	10.22	0.00	3.90	19.945	17.767	11.29	13.46	23.97	12.68	15.19	33.04	29.97	14.78
5500	-0.75	2.67	10.22	0.00	3.90	19.881	17.766	12.14	16.37	23.97	11.83	16.04	40.18	29.97	13.93
5580	-0.45	2.68	10.22	0.00	3.90	19.899	17.777	12.45	17.58	23.97	11.52	16.35	43.15	29.97	13.62
5700	-0.35	2.61	10.22	0.00	3.90	19.784	17.752	12.48	17.70	23.96	11.48	16.38	43.45	29.97	13.59
5745	-0.48	2.58	10.22	0.00	3.90	-	17.842	12.32	17.06	30.00	17.68	16.22	41.88	36.00	19.78
5785	-0.39	2.58	10.22	0.00	3.90	-	17.815	12.41	17.42	30.00	17.59	16.31	42.76	36.00	19.69
5825	-0.35	2.63	10.22	0.00	3.90	-	17.838	12.50	17.78	30.00	17.50	16.40	43.65	36.00	19.60

Sample Calculation:

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

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

Conducted Power Limit (5725 MHz-5850 MHz) = 1W

UL Japan, Inc.

Shonan EMC Lab.

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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021 March 24, 2021
Temperature / Humidity 23 deg. C / 47 % RH 22 deg. C / 39 % RH
Engineer Toshinori Yamada Toshinori Yamada
Mode Tx 11n-40

11n-40

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power				e.i.r.p.			
								Result [dBm]	Limit [dBm]	Margin [dB]	Result [dBm]	Limit [dBm]	Margin [dB]		
5190	-1.47	2.53	9.87	0.00	3.90	-	36.301	10.93	12.39	23.97	13.04	14.83	30.41	29.97	15.14
5230	-1.38	2.46	9.87	0.00	3.90	-	36.434	10.95	12.45	23.97	13.02	14.85	30.55	29.97	15.12
5270	-1.47	2.49	10.22	0.00	3.90	39.780	36.458	11.24	13.30	23.97	12.73	15.14	32.66	29.97	14.83
5310	-2.02	2.50	10.22	0.00	3.90	39.834	36.435	10.70	11.75	23.97	13.27	14.60	28.84	29.97	15.37
5510	-1.20	2.67	10.22	0.00	3.90	39.754	36.425	11.69	14.76	23.97	12.28	15.59	36.22	29.97	14.38
5550	-0.88	2.68	10.22	0.00	3.90	39.809	36.455	12.02	15.92	23.97	11.95	15.92	39.08	29.97	14.05
5670	-0.68	2.56	10.22	0.00	3.90	40.045	36.461	12.10	16.22	23.97	11.87	16.00	39.81	29.97	13.97
5745	-0.60	2.58	10.22	0.00	3.90	-	36.436	12.20	16.60	30.00	17.80	16.10	40.74	36.00	19.90
5825	-0.51	2.59	10.22	0.00	3.90	-	36.413	12.30	16.98	30.00	17.70	16.20	41.69	36.00	19.80

Sample Calculation:

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

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

Conducted Power Limit (5725 MHz-5850 MHz) = 1W

Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021 March 24, 2021
Temperature / Humidity 23 deg. C / 47 % RH 22 deg. C / 39 % RH
Engineer Toshinori Yamada Toshinori Yamada
Mode Tx 11ac-40

11ac-40

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power			e.i.r.p.				
								Result [dBm]	Limit [dBm]	Margin [dB]	Result [dBm]	Limit [dBm]	Margin [dB]		
5190	-1.35	2.53	9.87	0.00	3.90	-	36.426	11.05	12.74	23.97	12.92	14.95	31.26	29.97	15.02
5230	-1.34	2.54	9.87	0.00	3.90	-	36.400	11.07	12.79	23.97	12.90	14.97	31.41	29.97	15.00
5270	-1.88	2.49	10.22	0.00	3.90	40.455	36.470	10.83	12.11	23.97	13.14	14.73	29.72	29.97	15.24
5310	-1.85	2.50	10.22	0.00	3.90	40.066	36.397	10.87	12.22	23.97	13.10	14.77	29.99	29.97	15.20
5510	-1.20	2.67	10.22	0.00	3.90	39.875	36.443	11.69	14.76	23.97	12.28	15.59	36.22	29.97	14.38
5550	-0.84	2.68	10.22	0.00	3.90	40.240	36.432	12.06	16.07	23.97	11.91	15.96	39.45	29.97	14.01
5670	-0.66	2.56	10.22	0.00	3.90	40.262	36.453	12.12	16.29	23.97	11.85	16.02	39.99	29.97	13.95
5755	-0.60	2.58	10.22	0.00	3.90	-	36.443	12.20	16.60	30.00	17.80	16.10	40.74	36.00	19.90
5795	-0.53	2.59	10.22	0.00	3.90	-	36.399	12.28	16.90	30.00	17.72	16.18	41.50	36.00	19.82

Sample Calculation:

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

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

Conducted Power Limit (5725 MHz-5850 MHz) = 1W

Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021 March 24, 2021 March 25, 2021
Temperature / Humidity 23 deg. C / 47 % RH 22 deg. C / 39 % RH 23 deg. C / 47 % RH
Engineer Toshinori Yamada Toshinori Yamada Toshinori Yamada
Tx 11ac-80

11ac-80

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power				e.i.r.p.			
								Result [dBm]	[mW]	Limit [dBm]	Margin [dB]	Result [dBm]	[mW]	Limit [dBm]	Margin [dB]
5210	-3.81	2.53	9.87	0.00	3.90	-	76.147	8.59	7.23	23.97	15.38	12.49	17.74	29.97	17.48
5290	-4.68	2.50	10.22	0.00	3.90	81.027	76.346	8.04	6.37	23.97	15.93	11.94	15.63	29.97	18.03
5530	-3.45	2.67	10.22	0.00	3.90	81.109	76.373	9.44	8.79	23.97	14.53	13.34	21.58	29.97	16.63
5610	-2.84	2.55	10.22	0.00	3.90	81.137	76.290	9.93	9.84	23.97	14.04	13.83	24.15	29.97	16.14
5775	-2.96	2.58	10.22	0.00	3.90	-	76.128	9.84	9.64	30.00	20.16	13.74	23.66	36.00	22.26

Sample Calculation:

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

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

Conducted Power Limit (5725 MHz-5850 MHz) = 1W

Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 18, 2021
Temperature / Humidity 22 deg. C / 49 % RH
Engineer Yohsuke Murakami
Mode Tx 11a

5180 MHz Ant 1

Mode	Rate Mbps	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11a	6	-1.80	0.00	-1.80	-
	9	-1.78	0.00	-1.78	-
	12	-1.77	0.00	-1.77	-
	18	-1.78	0.00	-1.78	-
	24	-1.83	0.00	-1.83	-
	36	-1.90	0.00	-1.90	-
	48	-1.85	0.00	-1.85	-
	54	-1.64	0.00	-1.64	*

Ant 2

Mode	Rate Mbps	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11a	6	-1.84	0.00	-1.84	-
	9	-1.81	0.00	-1.81	-
	12	-1.79	0.00	-1.79	-
	18	-1.80	0.00	-1.80	-
	24	-1.84	0.00	-1.84	-
	36	-1.89	0.00	-1.89	-
	48	-1.84	0.00	-1.84	-
	54	-1.65	0.00	-1.65	-

* Worst rate

Sample Calculation:

$$\text{Burst power} = \text{Reading (timed average)} + \text{Duty factor}$$

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

Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 18, 2021
Temperature / Humidity 22 deg. C / 49 % RH
Engineer Yohsuke Murakami
Mode Tx 11n-20

5180 MHz Ant 1

Mode	Rate MCS	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11n-20	0	-1.60	0.00	-1.60	-
	1	-1.67	0.00	-1.67	-
	2	-1.57	0.00	-1.57	-
	3	-1.60	0.00	-1.60	-
	4	-1.20	0.00	-1.20	*
	5	-1.62	0.00	-1.62	-
	6	-1.41	0.00	-1.41	-
	7	-1.45	0.00	-1.45	-

Ant 2

Mode	Rate MCS	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11n-20	0	-1.67	0.00	-1.67	-
	1	-1.71	0.00	-1.71	-
	2	-1.61	0.00	-1.61	-
	3	-1.65	0.00	-1.65	-
	4	-1.26	0.00	-1.26	-
	5	-1.65	0.00	-1.65	-
	6	-1.45	0.00	-1.45	-
	7	-1.48	0.00	-1.48	-

* Worst rate

Sample Calculation:

$$\text{Burst power} = \text{Reading (timed average)} + \text{Duty factor}$$

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

Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 18, 2021
Temperature / Humidity 22 deg. C / 49 % RH
Engineer Yohsuke Murakami
Mode Tx 11ac-20

5180 MHz Ant 1

Mode	Rate MCS	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11ac-20	0	-1.68	0.00	-1.68	-
	1	-1.72	0.00	-1.72	-
	2	-1.62	0.00	-1.62	-
	3	-1.64	0.00	-1.64	-
	4	-1.28	0.00	-1.28	-
	5	-1.67	0.00	-1.67	-
	6	-1.46	0.00	-1.46	-
	7	-1.49	0.00	-1.49	-
	8	-1.27	0.00	-1.27	*

Ant 2

Mode	Rate MCS	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11ac-20	0	-1.73	0.00	-1.73	-
	1	-1.77	0.00	-1.77	-
	2	-1.65	0.00	-1.65	-
	3	-1.69	0.00	-1.69	-
	4	-1.32	0.00	-1.32	-
	5	-1.71	0.00	-1.71	-
	6	-1.52	0.00	-1.52	-
	7	-1.54	0.00	-1.54	-
	8	-1.35	0.00	-1.35	-

* Worst rate

Sample Calculation:

$$\text{Burst power} = \text{Reading (timed average)} + \text{Duty factor}$$

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

Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021
Temperature / Humidity 23 deg. C / 47 % RH
Engineer Toshinori Yamada
Mode Tx 11n-40

5190 MHz Ant 1

Mode	Rate MCS	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11n-40	0	-1.60	0.00	-1.60	-
	1	-1.67	0.00	-1.67	-
	2	-1.69	0.00	-1.69	-
	3	-1.71	0.00	-1.71	-
	4	-1.52	0.00	-1.52	-
	5	-1.75	0.00	-1.75	-
	6	-1.47	0.00	-1.47	*
	7	-1.49	0.00	-1.49	-

Ant 2

Mode	Rate MCS	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11n-40	0	-2.01	0.00	-2.01	-
	1	-1.97	0.00	-1.97	-
	2	-2.02	0.00	-2.02	-
	3	-2.02	0.00	-2.02	-
	4	-1.86	0.00	-1.86	-
	5	-2.07	0.00	-2.07	-
	6	-1.78	0.00	-1.78	-
	7	-1.77	0.00	-1.77	-

* Worst rate

Sample Calculation:

$$\text{Burst power} = \text{Reading (timed average)} + \text{Duty factor}$$

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

Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021
Temperature / Humidity 23 deg. C / 47 % RH
Engineer Toshinori Yamada
Mode Tx 11ac-40

5190 MHz Ant 1

Mode	Rate MCS	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11ac-40	0	-1.60	0.00	-1.60	-
	1	-1.61	0.00	-1.61	-
	2	-1.60	0.00	-1.60	-
	3	-1.64	0.00	-1.64	-
	4	-1.39	0.00	-1.39	-
	5	-1.65	0.00	-1.65	-
	6	-1.36	0.00	-1.36	-
	7	-1.35	0.00	-1.35	*
	8	-1.36	0.00	-1.36	-
	9	-1.65	0.00	-1.65	-

Ant 2

Mode	Rate MCS	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11ac-40	0	-1.61	0.00	-1.61	-
	1	-1.65	0.00	-1.65	-
	2	-1.64	0.00	-1.64	-
	3	-1.68	0.00	-1.68	-
	4	-1.44	0.00	-1.44	-
	5	-1.68	0.00	-1.68	-
	6	-1.40	0.00	-1.40	-
	7	-1.38	0.00	-1.38	-
	8	-1.37	0.00	-1.37	-
	9	-1.65	0.00	-1.65	-

* Worst rate

Sample Calculation:

$$\text{Burst power} = \text{Reading (timed average)} + \text{Duty factor}$$

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

Maximum Conducted Output Power

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021
Temperature / Humidity 23 deg. C / 47 % RH
Engineer Toshinori Yamada
Mode Tx 11ac-80

5210 MHz Ant 1

Mode	Rate MCS	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11ac-80	0	-4.13	0.00	-4.13	-
	1	-4.14	0.00	-4.14	-
	2	-4.12	0.00	-4.12	-
	3	-4.13	0.00	-4.13	-
	4	-3.95	0.00	-3.95	-
	5	-4.27	0.00	-4.27	-
	6	-4.00	0.00	-4.00	-
	7	-4.07	0.00	-4.07	-
	8	-3.94	0.00	-3.94	-
	9	-4.29	0.00	-4.29	-

Ant 2

Mode	Rate MCS	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11ac-80	0	-4.10	0.00	-4.10	-
	1	-4.08	0.00	-4.08	-
	2	-4.06	0.00	-4.06	-
	3	-4.08	0.00	-4.08	-
	4	-3.89	0.00	-3.89	-
	5	-4.21	0.00	-4.21	-
	6	-3.88	0.00	-3.88	-
	7	-3.96	0.00	-3.96	-
	8	-3.81	0.00	-3.81	*
	9	-4.18	0.00	-4.18	-

* Worst rate

Sample Calculation:

$$\text{Burst power} = \text{Reading (timed average)} + \text{Duty factor}$$

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

Average Output Power
(Reference data for RF Exposure)

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 18, 2021 March 22, 2021 March 23, 2021
Temperature / Humidity 22 deg. C / 49 % RH 23 deg. C / 47 % RH 22 deg. C / 48 % RH
Engineer Yohsuke Murakami Toshinori Yamada Toshinori Yamada
Mode Tx 11a

Antenna 1

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average)		Duty factor [dB]	Result (Burst power average)	
				[dBm]	[mW]		[dBm]	[mW]
5180	-1.64	2.53	9.87	10.76	11.91	0.00	10.76	11.91
5220	-1.66	2.53	9.87	10.74	11.86	0.00	10.74	11.86
5240	-1.65	2.46	9.87	10.68	11.69	0.00	10.68	11.69
5260	-2.08	2.49	10.22	10.63	11.56	0.00	10.63	11.56
5300	-2.51	2.50	10.22	10.21	10.50	0.00	10.21	10.50
5320	-1.99	2.61	10.22	10.84	12.13	0.00	10.84	12.13
5500	-1.37	2.67	10.22	11.52	14.19	0.00	11.52	14.19
5580	-1.03	2.68	10.22	11.87	15.38	0.00	11.87	15.38
5700	-0.92	2.61	10.22	11.91	15.52	0.00	11.91	15.52
5745	-0.87	2.58	10.22	11.93	15.60	0.00	11.93	15.60
5785	-0.78	2.58	10.22	12.02	15.92	0.00	12.02	15.92
5825	-0.74	2.63	10.22	12.11	16.26	0.00	12.11	16.26

Sample Calculation:

Result (Timed average) = Reading + Cable Loss + Atten. Loss

Result (Burst power average) = Time average + Duty factor

*The equipment and cables were not used for factor 0 dB of the data sheets.

Average Output Power
(Reference data for RF Exposure)

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 18, 2021 March 22, 2021 March 23, 2021
Temperature / Humidity 22 deg. C / 49 % RH 23 deg. C / 47 % RH 22 deg. C / 48 % RH
Engineer Yohsuke Murakami Toshinori Yamada Toshinori Yamada
Mode Tx 11n-20

Antenna 1

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average)		Duty factor [dB]	Result (Burst power average)	
				[dBm]	[mW]		[dBm]	[mW]
5180	-1.20	2.53	9.87	11.20	13.18	0.00	11.20	13.18
5220	-1.19	2.53	9.87	11.21	13.21	0.00	11.21	13.21
5240	-1.21	2.46	9.87	11.12	12.94	0.00	11.12	12.94
5260	-1.56	2.49	10.22	11.15	13.03	0.00	11.15	13.03
5300	-1.40	2.50	10.22	11.32	13.55	0.00	11.32	13.55
5320	-1.56	2.61	10.22	11.27	13.40	0.00	11.27	13.40
5500	-0.74	2.67	10.22	12.15	16.41	0.00	12.15	16.41
5580	-0.40	2.68	10.22	12.50	17.78	0.00	12.50	17.78
5700	-0.29	2.61	10.22	12.54	17.95	0.00	12.54	17.95
5745	-0.46	2.58	10.22	12.34	17.14	0.00	12.34	17.14
5785	-0.38	2.58	10.22	12.42	17.46	0.00	12.42	17.46
5825	-0.33	2.63	10.22	12.52	17.86	0.00	12.52	17.86

Sample Calculation:

Result (Timed average) = Reading + Cable Loss + Atten. Loss

Result (Burst power average) = Time average + Duty factor

*The equipment and cables were not used for factor 0 dB of the data sheets.

Average Output Power
(Reference data for RF Exposure)

Report No.	13734674S-C-R2		
Test place	Shonan EMC Lab. No.5 Shielded Room		
Date	March 18, 2021	March 22, 2021	March 23, 2021
Temperature / Humidity	22 deg. C / 49 % RH	23 deg. C / 47 % RH	22 deg. C / 48 % RH
Engineer	Yohsuke Murakami	Toshinori Yamada	Toshinori Yamada
Mode	Tx 11ac-20		

Antenna 1

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average)		Duty factor [dB]	Result (Burst power average)	
				[dBm]	[mW]		[dBm]	[mW]
5180	-1.27	2.53	9.87	11.13	12.97	0.00	11.13	12.97
5220	-1.25	2.53	9.87	11.15	13.03	0.00	11.15	13.03
5240	-1.27	2.46	9.87	11.06	12.76	0.00	11.06	12.76
5260	-1.65	2.49	10.22	11.06	12.76	0.00	11.06	12.76
5300	-1.39	2.50	10.22	11.33	13.58	0.00	11.33	13.58
5320	-1.54	2.61	10.22	11.29	13.46	0.00	11.29	13.46
5500	-0.75	2.67	10.22	12.14	16.37	0.00	12.14	16.37
5580	-0.45	2.68	10.22	12.45	17.58	0.00	12.45	17.58
5700	-0.35	2.61	10.22	12.48	17.70	0.00	12.48	17.70
5745	-0.48	2.58	10.22	12.32	17.06	0.00	12.32	17.06
5785	-0.39	2.58	10.22	12.41	17.42	0.00	12.41	17.42
5825	-0.35	2.63	10.22	12.50	17.78	0.00	12.50	17.78

Sample Calculation:

Result (Timed average) = Reading + Cable Loss + Atten. Loss

Result (Burst power average) = Time average + Duty factor

*The equipment and cables were not used for factor 0 dB of the data sheets.

Average Output Power
(Reference data for RF Exposure)

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021 March 24, 2021
Temperature / Humidity 23 deg. C / 47 % RH 22 deg. C / 39 % RH
Engineer Toshinori Yamada Toshinori Yamada
Mode Tx 11n-40

Antenna 1

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average)		Duty factor [dB]	Result (Burst power average)	
				[dBm]	[mW]		[dBm]	[mW]
5190	-1.47	2.53	9.87	10.93	12.39	0.00	10.93	12.39
5230	-1.38	2.54	9.87	11.03	12.68	0.00	11.03	12.68
5270	-1.47	2.49	10.22	11.24	13.30	0.00	11.24	13.30
5310	-2.02	2.50	10.22	10.70	11.75	0.00	10.70	11.75
5510	-1.20	2.67	10.22	11.69	14.76	0.00	11.69	14.76
5550	-0.88	2.68	10.22	12.02	15.92	0.00	12.02	15.92
5670	-0.68	2.56	10.22	12.10	16.22	0.00	12.10	16.22
5755	-0.60	2.58	10.22	12.20	16.60	0.00	12.20	16.60
5795	-0.51	2.59	10.22	12.30	16.98	0.00	12.30	16.98

Sample Calculation:

Result (Timed average) = Reading + Cable Loss + Atten. Loss

Result (Burst power average) = Time average + Duty factor

*The equipment and cables were not used for factor 0 dB of the data sheets.

Average Output Power
(Reference data for RF Exposure)

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021 March 24, 2021
Temperature / Humidity 23 deg. C / 47 % RH 22 deg. C / 39 % RH
Engineer Toshinori Yamada Toshinori Yamada
Mode Tx 11ac-40

Antenna 1

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average)		Duty factor [dB]	Result (Burst power average)	
				[dBm]	[mW]		[dBm]	[mW]
5190	-1.35	2.53	9.87	11.05	12.74	0.00	11.05	12.74
5230	-1.34	2.54	9.87	11.07	12.79	0.00	11.07	12.79
5270	-1.88	2.49	10.22	10.83	12.11	0.00	10.83	12.11
5310	-1.85	2.50	10.22	10.87	12.22	0.00	10.87	12.22
5510	-1.20	2.67	10.22	11.69	14.76	0.00	11.69	14.76
5550	-0.84	2.68	10.22	12.06	16.07	0.00	12.06	16.07
5670	-0.66	2.56	10.22	12.12	16.29	0.00	12.12	16.29
5755	-0.60	2.58	10.22	12.20	16.60	0.00	12.20	16.60
5795	-0.53	2.59	10.22	12.28	16.90	0.00	12.28	16.90

Sample Calculation:

Result (Timed average) = Reading + Cable Loss + Atten. Loss

Result (Burst power average) = Time average + Duty factor

*The equipment and cables were not used for factor 0 dB of the data sheets.

Average Output Power
(Reference data for RF Exposure)

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021 March 24, 2021 March 25, 2021
Temperature / Humidity 23 deg. C / 47 % RH 22 deg. C / 39 % RH 23 deg. C / 47 % RH
Engineer Toshinori Yamada Toshinori Yamada Toshinori Yamada
Mode Tx 11ac-80

Antenna 1

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average)		Duty factor [dB]	Result (Burst power average)	
				[dBm]	[mW]		[dBm]	[mW]
5210	-3.81	2.53	9.87	8.59	7.23	0.00	8.59	7.23
5290	-4.68	2.50	10.22	8.04	6.37	0.00	8.04	6.37
5530	-3.45	2.67	10.22	9.44	8.79	0.00	9.44	8.79
5610	-2.84	2.55	10.22	9.93	9.84	0.00	9.93	9.84
5775	-2.96	2.58	10.22	9.84	9.64	0.00	9.84	9.64

Sample Calculation:

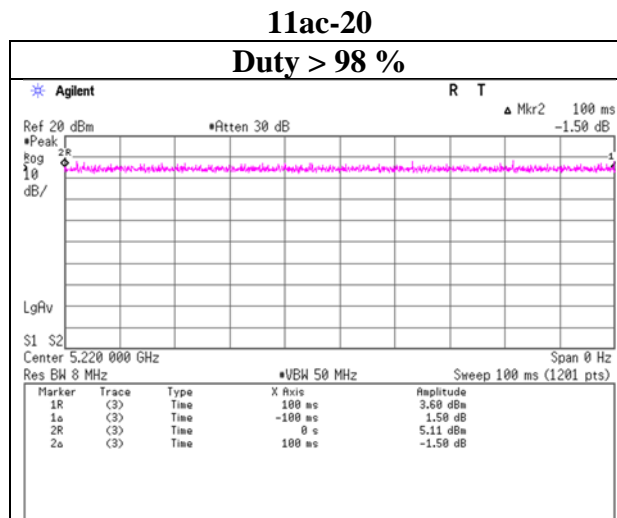
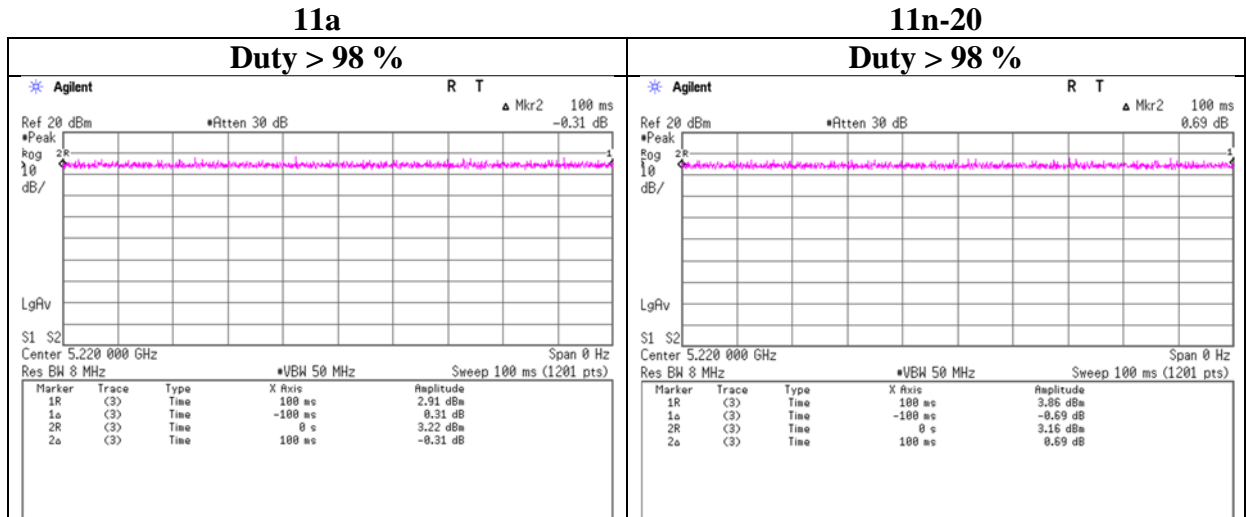
Result (Timed average) = Reading + Cable Loss + Atten. Loss

Result (Burst power average) = Time average + Duty factor

*The equipment and cables were not used for factor 0 dB of the data sheets.

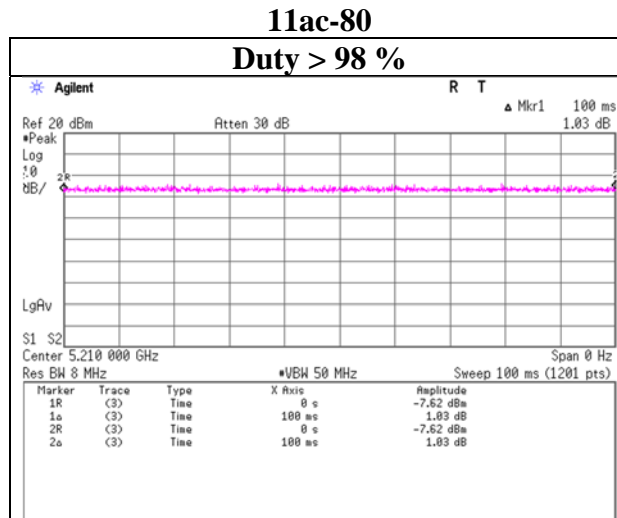
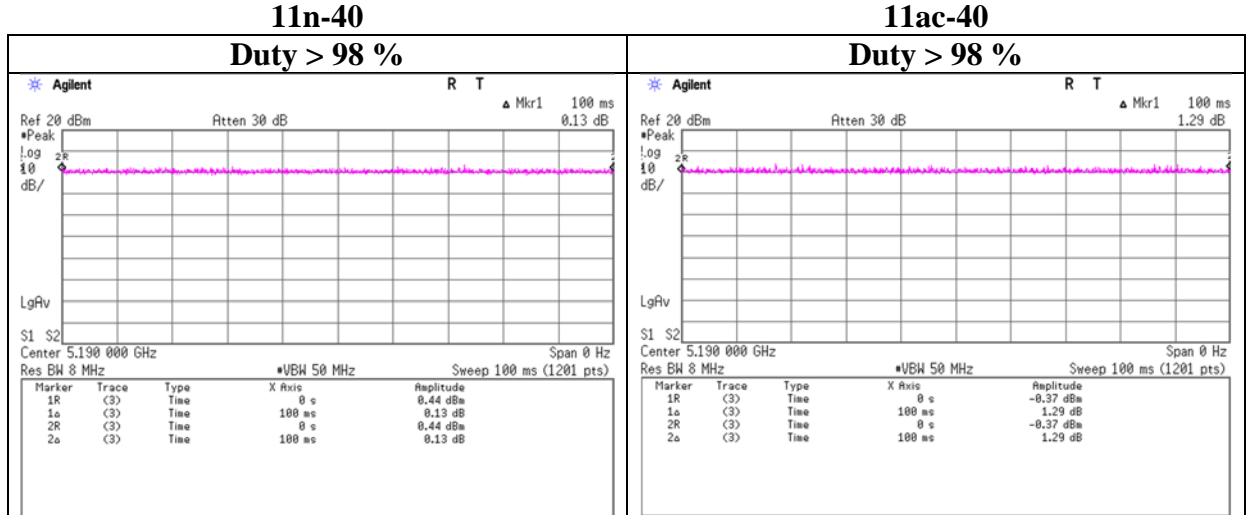
Burst rate confirmation

Report No. 13734674S-C-R2
 Test place Shonan EMC Lab. No.5 Shielded Room
 Date March 22, 2021
 Temperature / Humidity 22 deg. C / 45 % RH
 Engineer Toshinori Yamada
 Mode Tx



Burst rate confirmation

Report No. 13734674S-C-R2
 Test place Shonan EMC Lab. No.5 Shielded Room
 Date March 22, 2021
 Temperature / Humidity 22 deg. C / 45 % RH
 Engineer Toshinori Yamada
 Mode Tx



Maximum Power Spectral Density

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021
Temperature / Humidity 22 deg. C / 45 % RH
Engineer Toshinori Yamada
Mode Tx 11a

Antenna 1

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	-13.30	2.53	10.22	0.00	3.90	0.00	-0.55	11.00	11.55	3.35	17.00	13.65
5220	-13.10	2.53	10.22	0.00	3.90	0.00	-0.35	11.00	11.35	3.55	17.00	13.45
5240	-13.14	2.46	10.22	0.00	3.90	0.00	-0.46	11.00	11.46	3.44	17.00	13.56
5260	-13.47	2.49	10.22	0.00	3.90	0.00	-0.76	11.00	11.76	3.14	17.00	13.86
5300	-13.21	2.50	10.22	0.00	3.90	0.00	-0.49	11.00	11.49	3.41	17.00	13.59
5320	-13.27	2.61	10.22	0.00	3.90	0.00	-0.44	11.00	11.44	3.46	17.00	13.54
5500	-12.42	2.67	10.22	0.00	3.90	0.00	0.47	11.00	10.53	4.37	17.00	12.63
5580	-12.02	2.68	10.22	0.00	3.90	0.00	0.88	11.00	10.12	4.78	17.00	12.22
5700	-11.99	2.61	10.22	0.00	3.90	0.00	0.84	11.00	10.16	4.74	17.00	12.26
5745	-20.73	2.58	10.22	0.00	3.90	6.99	-0.94	30.00	30.94	2.96	36.00	33.04
5785	-20.11	2.58	10.22	0.00	3.90	6.99	-0.32	30.00	30.32	3.58	36.00	32.42
5825	-20.70	2.63	10.22	0.00	3.90	6.99	-0.86	30.00	30.86	3.04	36.00	32.96

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

UL Japan, Inc.

Shonan EMC Lab.

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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Maximum Power Spectral Density

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021
Temperature / Humidity 22 deg. C / 45 % RH
Engineer Toshinori Yamada
Mode Tx 11n-20

Antenna 1

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	-13.18	2.53	10.22	0.00	3.90	0.00	-0.43	11.00	11.43	3.47	17.00	13.53
5220	-12.97	2.53	10.22	0.00	3.90	0.00	-0.22	11.00	11.22	3.68	17.00	13.32
5240	-12.97	2.46	10.22	0.00	3.90	0.00	-0.29	11.00	11.29	3.61	17.00	13.39
5260	-13.31	2.49	10.22	0.00	3.90	0.00	-0.60	11.00	11.60	3.30	17.00	13.70
5300	-12.97	2.50	10.22	0.00	3.90	0.00	-0.25	11.00	11.25	3.65	17.00	13.35
5320	-13.14	2.61	10.22	0.00	3.90	0.00	-0.31	11.00	11.31	3.59	17.00	13.41
5500	-12.15	2.67	10.22	0.00	3.90	0.00	0.74	11.00	10.26	4.64	17.00	12.36
5580	-11.92	2.68	10.22	0.00	3.90	0.00	0.98	11.00	10.02	4.88	17.00	12.12
5700	-11.83	2.61	10.22	0.00	3.90	0.00	1.00	11.00	10.00	4.90	17.00	12.10
5745	-20.68	2.58	10.22	0.00	3.90	6.99	-0.89	30.00	30.89	3.01	36.00	32.99
5785	-20.26	2.58	10.22	0.00	3.90	6.99	-0.47	30.00	30.47	3.43	36.00	32.57
5825	-20.46	2.63	10.22	0.00	3.90	6.99	-0.62	30.00	30.62	3.28	36.00	32.72

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

UL Japan, Inc.

Shonan EMC Lab.

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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Maximum Power Spectral Density

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 22, 2021
Temperature / Humidity 22 deg. C / 45 % RH
Engineer Toshinori Yamada
Mode Tx 11ac-20

Antenna 1

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	-13.16	2.53	10.22	0.00	3.90	0.00	-0.40	11.00	11.41	3.50	17.00	13.51
5220	-12.94	2.53	10.22	0.00	3.90	0.00	-0.19	11.00	11.19	3.71	17.00	13.29
5240	-12.96	2.46	10.22	0.00	3.90	0.00	-0.28	11.00	11.28	3.62	17.00	13.38
5260	-13.24	2.49	10.22	0.00	3.90	0.00	-0.53	11.00	11.53	3.37	17.00	13.63
5300	-12.97	2.50	10.22	0.00	3.90	0.00	-0.25	11.00	11.25	3.65	17.00	13.35
5320	-13.14	2.61	10.22	0.00	3.90	0.00	-0.31	11.00	11.31	3.59	17.00	13.41
5500	-12.15	2.67	10.22	0.00	3.90	0.00	0.74	11.00	10.26	4.64	17.00	12.36
5580	-12.01	2.68	10.22	0.00	3.90	0.00	0.89	11.00	10.11	4.79	17.00	12.21
5700	-11.89	2.61	10.22	0.00	3.90	0.00	0.94	11.00	10.06	4.84	17.00	12.16
5745	-20.15	2.58	10.22	0.00	3.90	6.99	-0.36	30.00	30.36	3.54	36.00	32.46
5785	-19.92	2.58	10.22	0.00	3.90	6.99	-0.13	30.00	30.13	3.77	36.00	32.23
5825	-20.18	2.63	10.22	0.00	3.90	6.99	-0.34	30.00	30.34	3.56	36.00	32.44

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

Maximum Power Spectral Density

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 24, 2021 March 25, 2021
Temperature / Humidity 22 deg. C / 39% RH 23 deg. C / 47% RH
Engineer Toshinori Yamada Toshinori Yamada
Mode Tx 11n-40

Antenna 1

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]
5190	-14.93	2.53	10.22	0.00	3.90	0.00	-2.18	11.00	13.18	1.72	17.00	15.28
5230	-14.97	2.54	10.22	0.00	3.90	0.00	-2.21	11.00	13.21	1.69	17.00	15.31
5270	-16.16	2.49	10.22	0.00	3.90	0.00	-3.45	11.00	14.45	0.45	17.00	16.55
5310	-15.86	2.50	10.22	0.00	3.90	0.00	-3.14	11.00	14.14	0.76	17.00	16.24
5510	-15.30	2.67	10.22	0.00	3.90	0.00	-2.41	11.00	13.41	1.49	17.00	15.51
5550	-14.96	2.68	10.22	0.00	3.90	0.00	-2.06	11.00	13.06	1.84	17.00	15.16
5670	-15.21	2.56	10.22	0.00	3.90	0.00	-2.43	11.00	13.43	1.47	17.00	15.53
5755	-23.28	2.58	10.22	0.00	3.90	6.99	-3.49	30.00	33.49	0.41	36.00	35.59
5795	-23.32	2.59	10.22	0.00	3.90	6.99	-3.52	30.00	33.52	0.38	36.00	35.62

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

UL Japan, Inc.

Shonan EMC Lab.

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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Maximum Power Spectral Density

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 24, 2021 March 25, 2021
Temperature / Humidity 22 deg. C / 39% RH 23 deg. C / 47% RH
Engineer Toshinori Yamada Toshinori Yamada
Mode Tx 11ac-40

Antenna 1

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]
5190	-14.94	2.53	10.22	0.00	3.90	0.00	-2.19	11.00	13.19	1.71	17.00	15.29
5230	-14.76	2.54	10.22	0.00	3.90	0.00	-2.00	11.00	13.00	1.90	17.00	15.10
5270	-16.18	2.49	10.22	0.00	3.90	0.00	-3.47	11.00	14.47	0.43	17.00	16.57
5310	-15.68	2.50	10.22	0.00	3.90	0.00	-2.96	11.00	13.96	0.94	17.00	16.06
5510	-15.16	2.67	10.22	0.00	3.90	0.00	-2.27	11.00	13.27	1.63	17.00	15.37
5550	-15.02	2.68	10.22	0.00	3.90	0.00	-2.12	11.00	13.12	1.78	17.00	15.22
5670	-15.15	2.56	10.22	0.00	3.90	0.00	-2.37	11.00	13.37	1.53	17.00	15.47
5755	-23.24	2.58	10.22	0.00	3.90	6.99	-3.45	30.00	33.45	0.45	36.00	35.55
5795	-23.44	2.59	10.22	0.00	3.90	6.99	-3.64	30.00	33.64	0.26	36.00	35.74

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

UL Japan, Inc.

Shonan EMC Lab.

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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Maximum Power Spectral Density

Report No. 13734674S-C-R2
Test place Shonan EMC Lab. No.5 Shielded Room
Date March 25, 2021
Temperature / Humidity 23 deg. C / 47% RH
Engineer Toshinori Yamada
Mode Tx 11ac-80

Antenna 2

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]
5210	-20.91	2.53	10.22	0.00	3.90	0.00	-8.16	11.00	19.16	-4.26	17.00	21.26
5290	-22.77	2.50	10.22	0.00	3.90	0.00	-10.05	11.00	21.05	-6.15	17.00	23.15
5530	-21.32	2.67	10.22	0.00	3.90	0.00	-8.43	11.00	19.43	-4.53	17.00	21.53
5610	-20.65	2.55	10.22	0.00	3.90	0.00	-7.88	11.00	18.88	-3.98	17.00	20.98
5775	-29.59	2.58	10.22	0.00	3.90	6.99	-9.80	30.00	39.80	-5.90	36.00	41.90

Sample Calculation:

PSD: Power Spectral Density

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

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

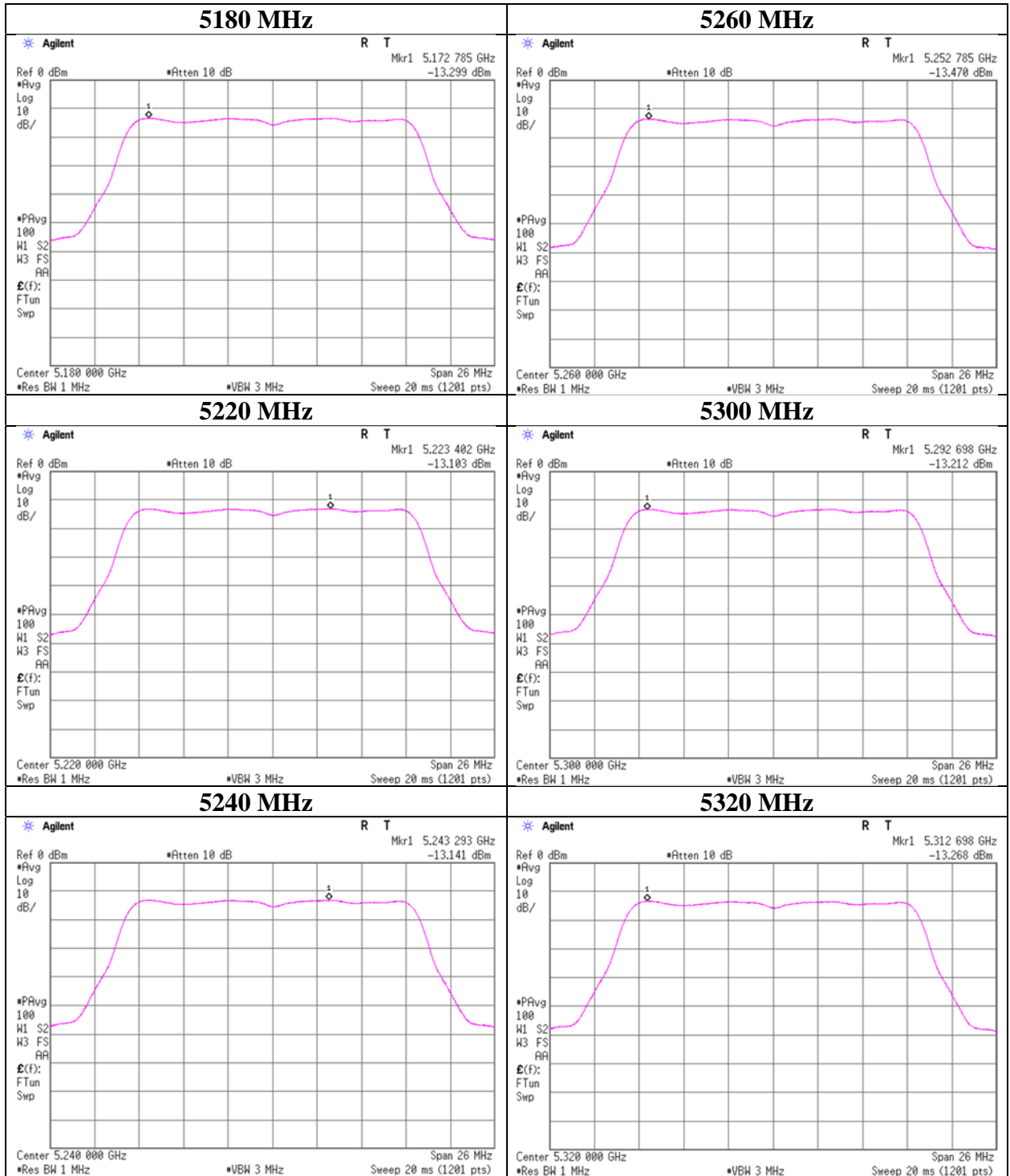
PSD Result (Conducted) = Reading + Cable Loss + Atten. Loss + Duty Factor + RBW Correction Factor

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

Maximum Power Spectral Density

Report No.	13734674S-C-R2
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 22, 2021
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Toshinori Yamada
Mode	Tx 11a

11a



UL Japan, Inc.

Shonan EMC Lab.

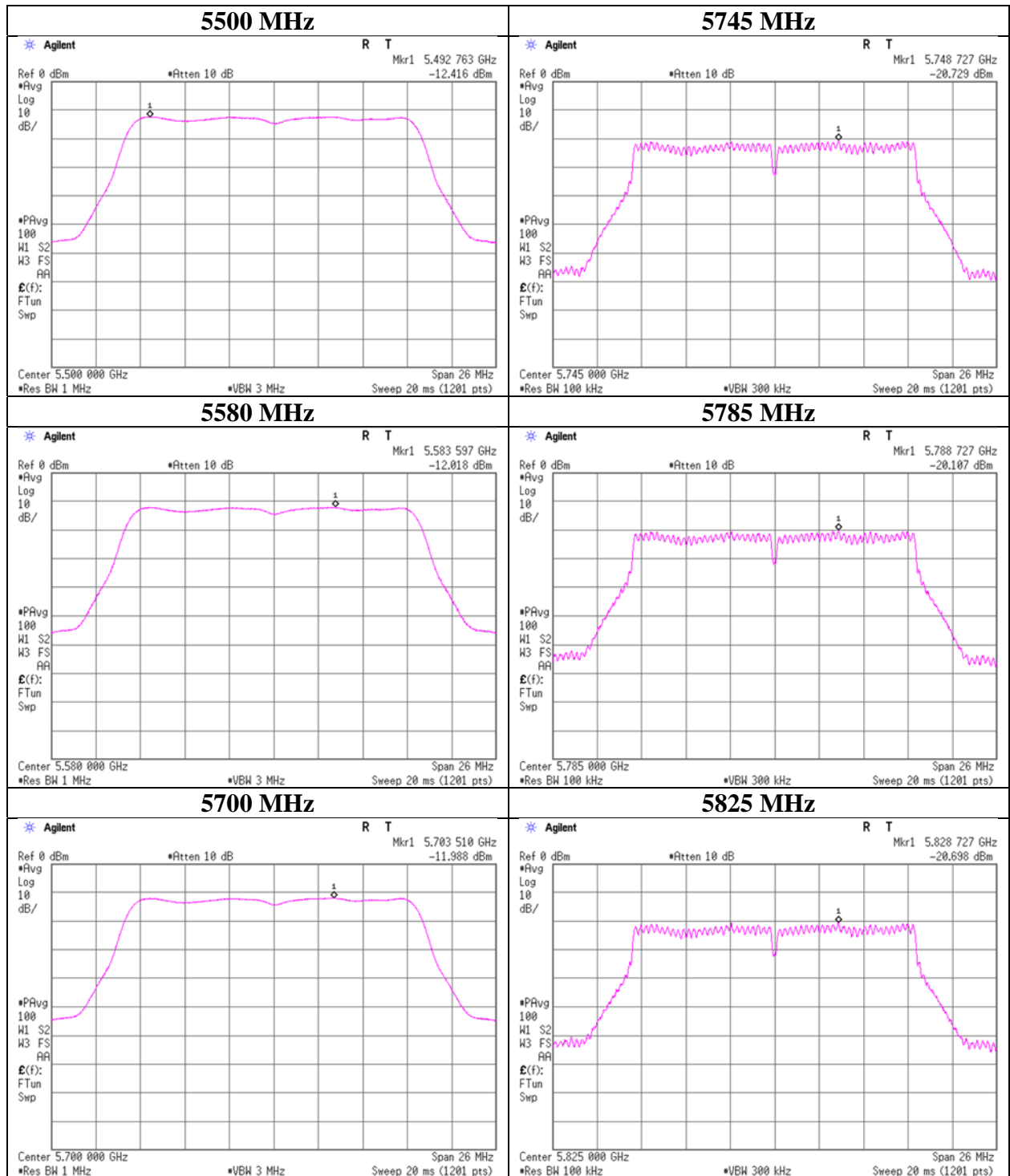
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Facsimile : +81 463 50 6401

Maximum Power Spectral Density

Report No.	13734674S-C-R2
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 22, 2021
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Toshinori Yamada
Mode	Tx 11a



UL Japan, Inc.

Shonan EMC Lab.

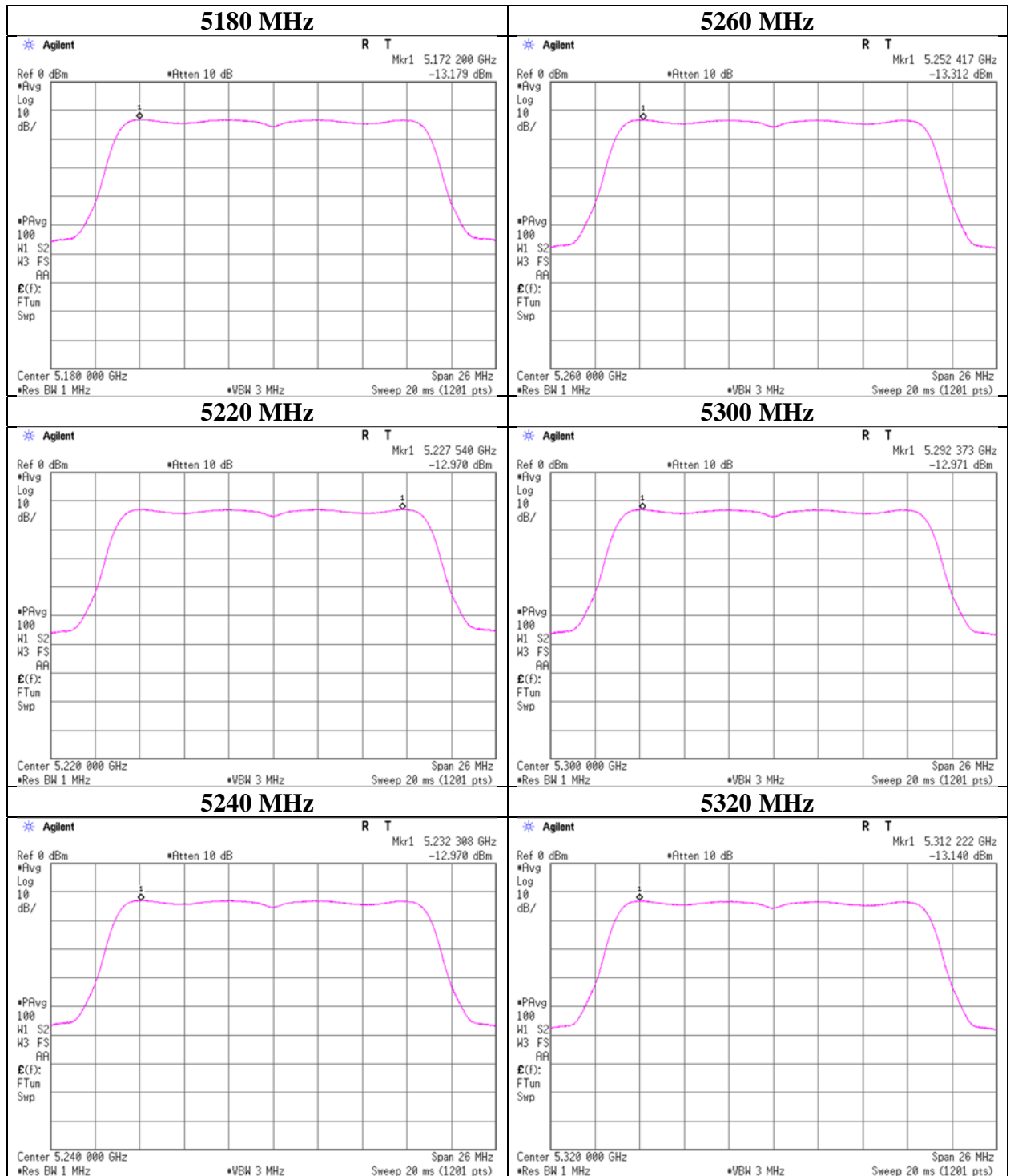
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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Maximum Power Spectral Density

Report No.	13734674S-C-R2
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 22, 2021
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Toshinori Yamada
Mode	Tx 11n-20



UL Japan, Inc.

Shonan EMC Lab.

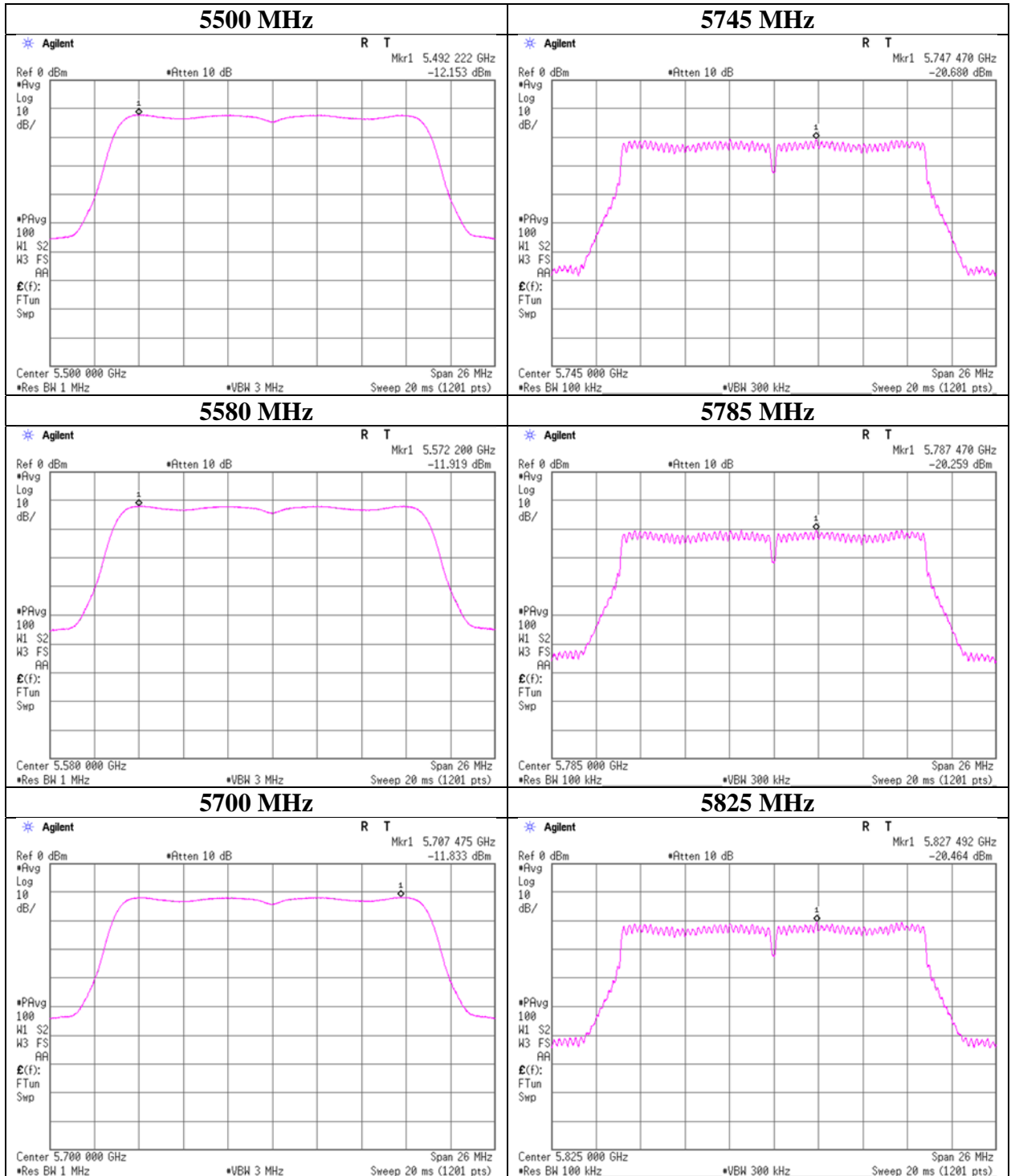
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Maximum Power Spectral Density

Report No.	13734674S-C-R2
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 22, 2021
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Toshinori Yamada
Mode	Tx 11n-20



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Shonan EMC Lab.

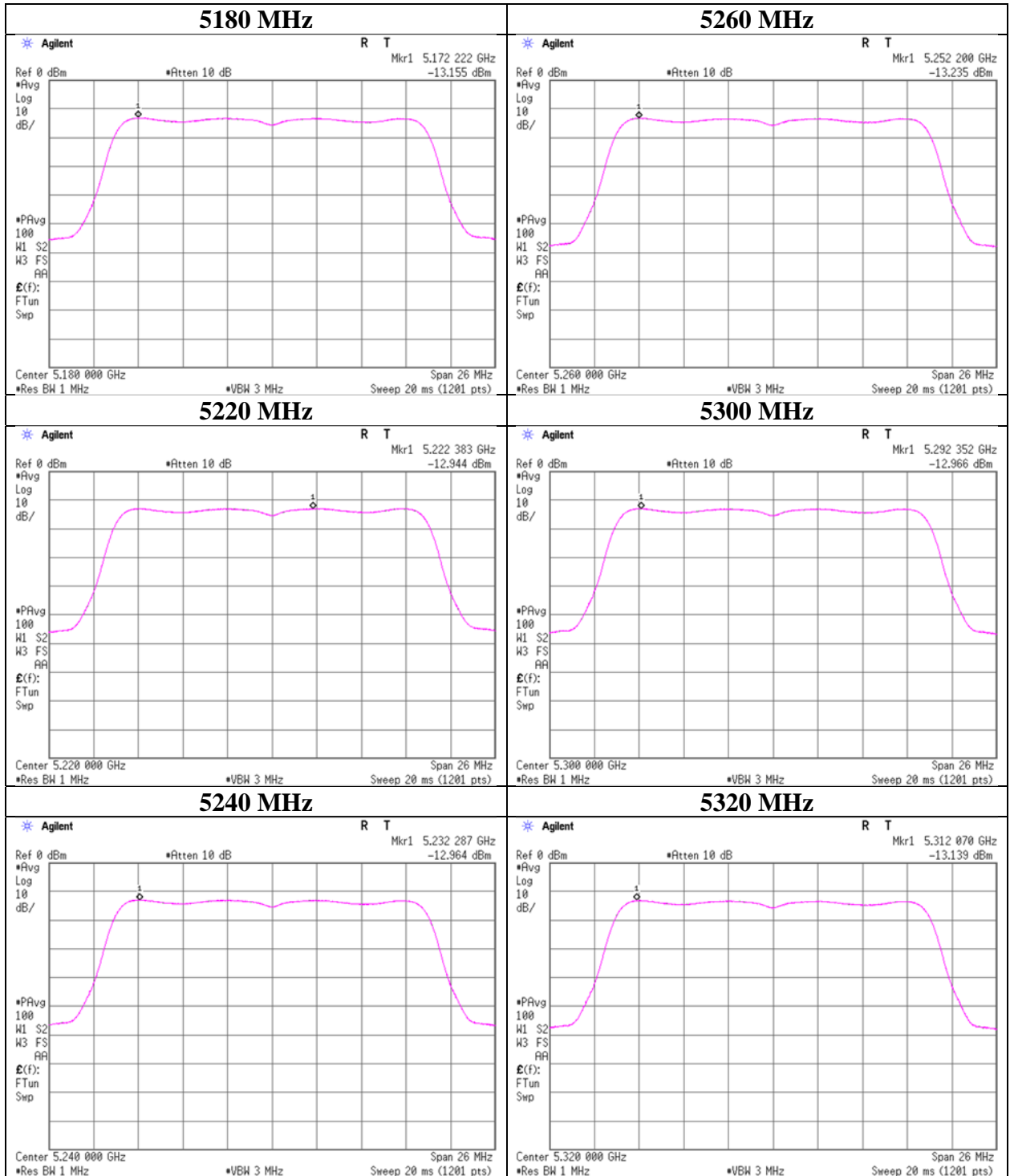
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Maximum Power Spectral Density

Report No.	13734674S-C-R2
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 22, 2021
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Toshinori Yamada
Mode	Tx 11ac-20



UL Japan, Inc.

Shonan EMC Lab.

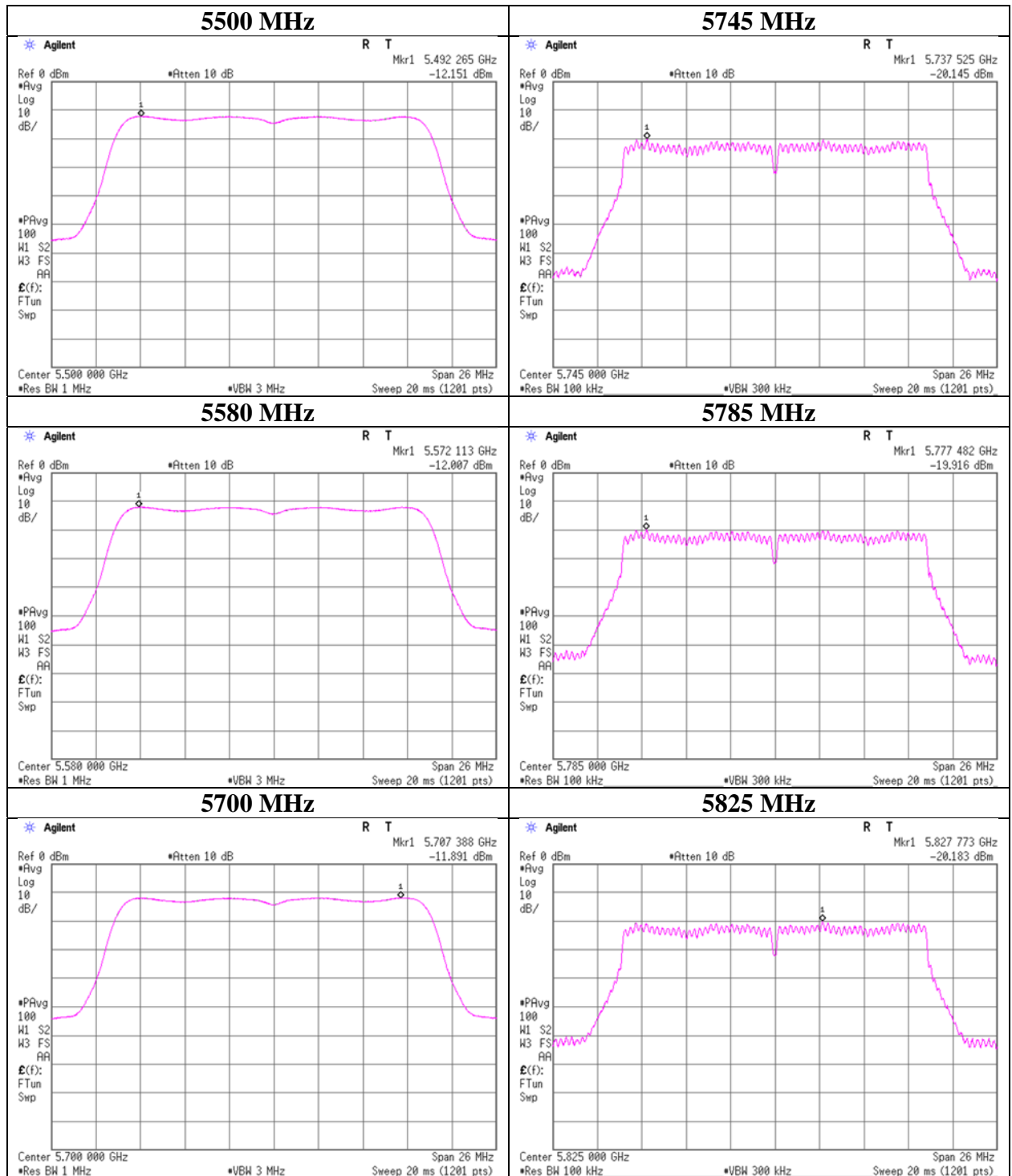
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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Maximum Power Spectral Density

Report No.	13734674S-C-R2
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 22, 2021
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Toshinori Yamada
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