



RADIO TEST REPORT

Test Report No. : 13456926S-I-R2

Applicant : Nintendo Co., Ltd.
Type of EUT : Game console
Model Number of EUT : HEG-001
FCC ID : BKEHEG001
Test regulation : FCC Part 15 Subpart E: 2021
(Except for DFS test)
Test result : Complied (Refer to SECTION 3)

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by the A2LA accreditation body.
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. 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 13456926S-I-R1. 13456926S-I-R1 is replaced with this report.

Date of test: December 14, 2020 to February 15, 2021

Representative test engineer: Y. Tanikawara
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Manager



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".

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REVISION HISTORY

Original Test Report No.: 13456926S-I

Revision	Test report No.	Date	Page revised	Contents
- (Original)	13456926S-I	June 21, 2021	-	-
1	13456926S-I-R1	June 24, 2021	5	Rating of Section 2.1 Identification of EUT: From DC 3.8 V (battery) To DC 3.7 V (battery) DC 5 V to DC 15 V (USB type C)
2	13456926S-I-R2	July 6, 2021	98 - 108,159, 162,165,168,171, 174,177,182,187, 190,193,196,199, 204,209,211,213	Delete of description: “Although the EUT operates on Master mode, more stringent limit for Client Device was applied.(W52 for FCC)”

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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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Radio Specification

Wireless LAN, Bluetooth (BR / EDR / Low Energy function) part:

Equipment Type	:	Transceiver
Frequency of Operation	:	Wireless LAN part: (2.4 GHz): 2412 MHz – 2472 MHz, (U-NII-1): 5180 MHz – 5240 MHz, (U-NII-2A): 5260 MHz – 5320 MHz, (U-NII-2C): 5500 MHz – 5700 MHz, (U-NII-3): 5745 MHz- 5825 MHz, Bluetooth (BR / EDR / Low Energy) part: 2402 MHz - 2480 MHz
Radio part clock frequency	:	37.4 MHz
Channel spacing	:	Wireless LAN part: (2.4 GHz): 5 MHz, (5 GHz): 20 MHz, Bluetooth part: (BR / EDR): 1 MHz, (Low Energy): 2 MHz
Type of modulation	:	Wireless LAN part: 2.4 GHz band: DBPSK, DQPSK, CCK, OFDM 5 GHz band: OFDM Bluetooth part: BR: GFSK EDR: $\pi/4$ DQPSK, 8DPSK Low Energy: GFSK
Antenna type	:	LDS antenna
Antenna connector type	:	(Ant: 0): MHF2, (Ant: 1): MHF2
Antenna Gain	:	2.4 GHz band: (Ant: 0): 0.30 dBi, (Ant: 1): 0.19 dBi 5GHz band: (Ant: 0): 4.04 dBi, (Ant: 1): 2.51 dBi
Power supply (radio part input)	:	DC 1.8 V, DC 3.3 V
Operating Temperature	:	+5 deg. C to +35 deg. C

Remarks: This wireless module consists of 1 chip each of 5 GHz band and 2.4 GHz band.

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

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

* Also the EUT complies with FCC Part 15 Subpart B.

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	17.8 dB, 0.19199 MHz AV, L1 Mode: Tx 11n-20 (MIMO), 5320 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	N/A 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	4.4 dB 5460.000 MHz AV, Hori. Mode: Tx 11ac-80 (SISO) 5530 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.

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FCC Part 15.31 (e)

This EUT provides the stable voltage constantly to RF Part regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

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.

3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99 % Occupied Band Width	ISED: RSS-Gen 6.7	ISED: -	N/A	- a)	Conducted
a) Refer to APPENDIX 1 (data of 26 dB Emission 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 following 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
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	2.6 dB	2.6 dB	2.56dB
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

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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 p lane (m) / horizontal conducting p lane	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)	48 Mbps, PN9
IEEE 802.11n SISO 20 MHz BW (11n-20 (SISO))	MCS 6, PN9
IEEE 802.11ac SISO 20 MHz BW (11ac-20 (SISO))	MCS 6, PN9 (Antenna 0) MCS 3, PN9 (Antenna 1)
IEEE 802.11n MIMO 20 MHz BW (11n-20 (MIMO))	MCS 13, PN9
IEEE 802.11ac MIMO 20 MHz BW (11ac-20 (MIMO))	MCS 8, PN9
IEEE 802.11n SISO 40 MHz BW (11n-40 (SISO))	MCS 3, PN9
IEEE 802.11ac SISO 40 MHz BW (11ac-40 (SISO))	MCS 4, PN9 (Antenna 0) MCS 3, PN9 (Antenna 1)
IEEE 802.11n MIMO 40 MHz BW (11n-40 (MIMO))	MCS 14, PN9
IEEE 802.11ac MIMO 40 MHz BW (11ac-40 (MIMO))	MCS 5, PN9
IEEE 802.11ac SISO 80 MHz BW (11ac-80 (SISO))	MCS 4, PN9
IEEE 802.11ac MIMO 80 MHz BW (11ac-80 (MIMO))	MCS 4, PN9
*The worst antenna (Ant: x) 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: 6 dBm *) All tests are carried out with 6.5 dBm setting regarding worst case below modes although typical power setting is 6 dBm. 11n-40 (SISO), 11ac-40 (SISO) : Lower Band, Additional Band, Upper Band 11n-40 (MIMO), 11ac-40 (MIMO) : Lower Band 11ac-80 (SISO) : Lower Band, Upper Band 11ac-80 (MIMO) : Lower Band Software: cmd.exe ver.10.0.18362.657 (Date: 2019.3.19, Storage location: Driven by connected 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, Radiated Spurious Emission (Below 1 GHz), Conducted Spurious Emission	Tx 11n-20 (MIMO) *1)	0 & 1	-	5320 MHz	-	-
-26 dB Emission Bandwidth	Tx 11a Tx 11n-20 (SISO) Tx 11ac-20 (SISO)	1	-	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	-
	Tx 11n-20 (MIMO) Tx 11ac-20 (MIMO)	1	-	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	-
	Tx 11n-40 (SISO) Tx 11ac-40 (SISO)	1	-	5290 MHz	5530 MHz	-
	Tx 11n-40 (MIMO) Tx 11ac-40 (MIMO)	1	-			
	Tx 11ac-80 (SISO)	1	-			
	Tx 11ac-80 (MIMO)	1	-			
99 % Occupied Bandwidth	Tx 11a Tx 11n-20 (SISO) Tx 11ac-20 (SISO)	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-20 (MIMO) Tx 11ac-20 (MIMO)	1				
	Tx 11n-40 (SISO) Tx 11ac-40 (SISO)	1	5190 MHz 5230 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
	Tx 11n-40 (MIMO) Tx 11ac-40 (MIMO)	1				
	Tx 11ac-80 (SISO)	1	5210 MHz	5290 MHz	5530 MHz	5775 MHz
	Tx 11ac-80 (MIMO)	1				
-6 dB Bandwidth	Tx 11a Tx 11n-20 (SISO) Tx 11ac-20 (SISO)	1	-	-	-	5745 MHz 5785 MHz 5825 MHz
	Tx 11n-20 (MIMO) Tx 11ac-20 (MIMO)	1				
	Tx 11n-40 (SISO) Tx 11ac-40 (SISO)	1	-	-	-	5755 MHz 5795 MHz
	Tx 11n-40 (MIMO) Tx 11ac-40 (MIMO)	1				
	Tx 11ac-80 (SISO)	1	-	-	-	5775 MHz
	Tx 11ac-80 (MIMO)	1				
Maximum Conducted Output Power, Maximum Power Spectral Density	Tx 11a Tx 11n-20 (SISO) Tx 11ac-20 (SISO)	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
	Tx 11n-20 (MIMO) Tx 11ac-20 (MIMO)					
	Tx 11n-40 (SISO) Tx 11ac-40 (SISO)		5190 MHz 5230 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
	Tx 11n-40 (MIMO) Tx 11ac-40 (MIMO)					
	Tx 11ac-80 (SISO)		5210 MHz	5290 MHz	5530 MHz	5775 MHz
	Tx 11ac-80 (MIMO)					

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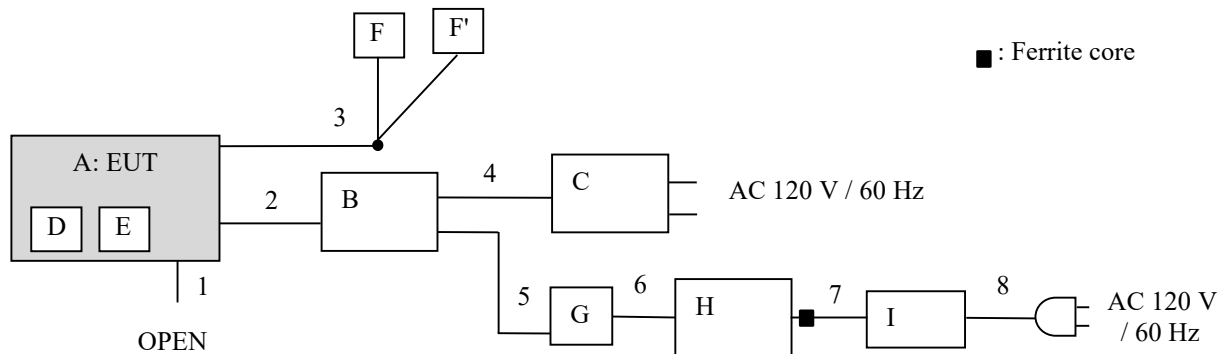
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Radiated Spurious Emission (Above 1 GHz) *3)	Tx 11n-20 (SISO) *4)	0	5180 MHz	5320 MHz	5500 MHz 5700 MHz	5745 MHz 5825 MHz
	Tx 11n-20 (MIMO)	0 & 1	5180 MHz 5240 MHz	5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	Tx 11n-40 (SISO) *4)	0	5190 MHz	5310 MHz	5510 MHz 5670 MHz	5755 MHz 5795 MHz
	Tx 11n-40 (MIMO)	0 & 1	5190 MHz 5230 MHz	5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
	Tx 11ac-80 (SISO) *4)	0	5210 MHz	5290 MHz	5530 MHz	5775 MHz
	Tx 11ac-80 (MIMO)	0 & 1				

*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 EIRP power (for Radiated Spurious Emission test) or higher conducted power (for -26 dB Emission Bandwidth, 99 % Occupied Bandwidth and -6 dB Bandwidth test) as a representative.
 *3) Since 11a, 11n, and 11ac mode have the same modulation method and no differences in transmitting specification, test was performed on the representative mode that had the highest EIRP power.
 *4) This mode wasn't worst, but only band edge of spurious emissions were measured for confirmation.

4.2 Configuration and peripherals



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

*As a result of comparing AC 120 V and AC 240 V at pre-check, conducted emission test was performed with AC 120 V of the worst voltage as representative.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Game console	HEG-001	XTW01000001073 *1) XTW01000011188 *2)	Nintendo Co., Ltd.	EUT
B	SDEV Cradle	HAT-003	XZL01000080825 *1) XZL01000079720 *2)	Nintendo Co., Ltd.	-
C	AC Adapter	HAC-002	-	Nintendo Co., Ltd.	-
D	Game Card	HAC-008	DFCAA22L000	Nintendo Co., Ltd.	-
E	Micro SD Card	-	-	Transcend	-
F, F'	Headphone	-	-	Nintendo Co., Ltd.	*2)
G	GIGA Ethernet Adapter	LAN-GTJU3	67L349603587A	Logitec	*1)
		LUA4-U3-AGT	20227871127320	Buffalo	*2)
H	Laptop PC	CF-S10AWNDS	1EKSA54822	Panasonic	*1)
		CF-SV8RDCVS	0BKSC77598	Panasonic	*2)
I	AC Adapter	CF-AA6402A M1	6402AM111143479A	Panasonic	*1)
		CF-AA6532A M1	6532AM119Y36338A	Panasonic	*2)

*1) Used for Antenna Terminal conducted test

*2) Used for Conducted Emission test and Radiated Emission test

List of cables used

No.	Cable Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Signal	0.05	Unshielded	Unshielded	*3)
2	USB	0.4	Shielded	Shielded	-
3	Headphone	0.9	Unshielded	Unshielded	-
4	USB	1.5	Shielded	Shielded	-
5	USB	0.1 *1) 0.15 *2)	Shielded	Shielded	-
6	LAN	1.0	Unshielded	Unshielded	-
7	DC	0.9	Unshielded	Unshielded	-
8	AC	0.8	Unshielded	Unshielded	-

*1) Used for Antenna Terminal conducted test

*2) Used for Conducted Emission test and Radiated Emission test

*3) Cable for test operation during the development, not used for the product.

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SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a urethane platform of nominal size, 1.0 m by 1.5 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.

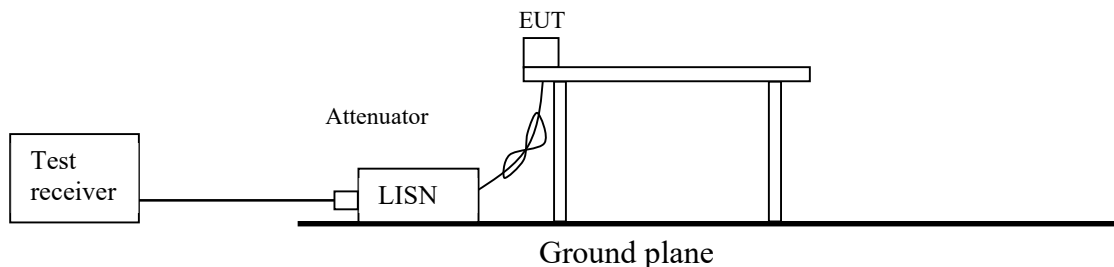
The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber. The EUT was connected to a LISN (AMN).

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

Figure 1: Test Setup



SECTION 6: Radiated Spurious Emission and Band Edge Compliance

Test Procedure

< Below 1 GHz >

EUT was placed on a urethane platform of nominal size, 1.0 m by 1.5 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 1 GHz >

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 1GHz >

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

< Above 1GHz >

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;

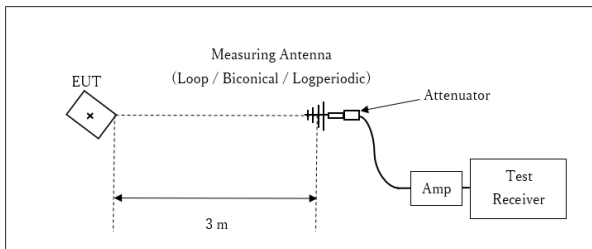
Frequency	30 MHz to 200 MHz	200 MHz to 1 GHz	Above 1 GHz
Antenna Type	Biconical	Logperiodic	Horn

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

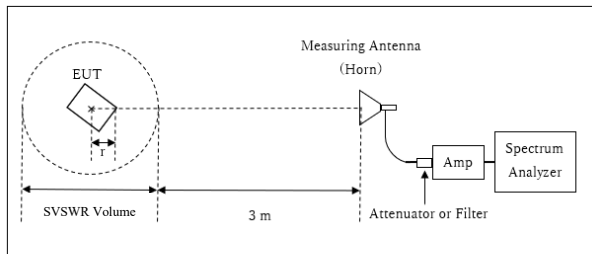
Below 1 GHz



× : Center of turn table

Test Distance: 3 m

1 GHz - 10 GHz

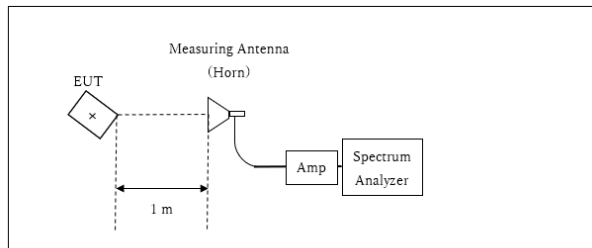


r : Radius of an outer periphery of EUT
× : Center of turn table

Distance Factor: $20 \times \log(3.9 \text{ m} / 3.0 \text{ m}) = 2.28 \text{ dB}$
* Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.9 \text{ m}$

SVSWR Volume : 2.0 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
r = 0.1 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 to see the position of maximum noise, and the test was made at the position that has the maximum noise.

[WLAN (SISO)]

Antenna polarization	Carrier	Spurious (1 GHz - 6.4 GHz)
Horizontal	Z	Z
Vertical	Y	Y

[WLAN (MIMO)]

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	Z	Y	Z	X	X	X	X
Vertical	Y	Y	Y	X	X	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

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)
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

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DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room

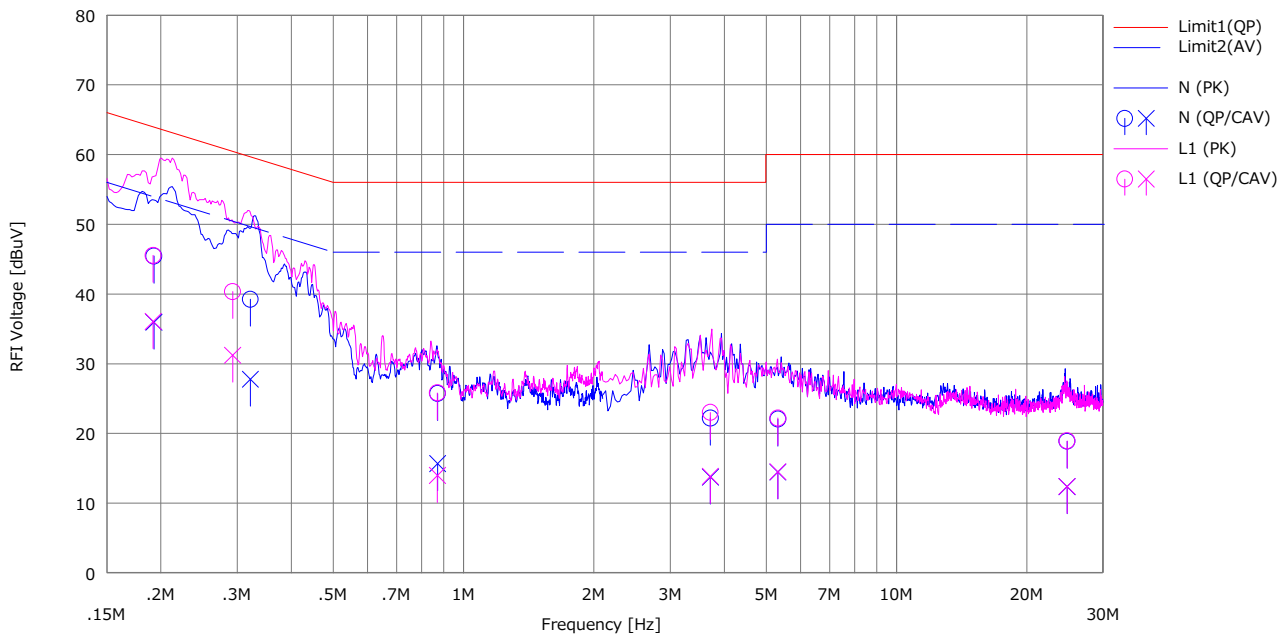
Date : 2021/02/15

Company : Nintendo Co., Ltd.
 Kind of EUT : Game console
 Model No. : HEG-001
 Serial No. : XTW01000011188
 Remarks : -

Mode : Tx 11n-20, MIMO, 5320 MHz
 Order No. : 13456926S
 Power : AC 120 V / 60 Hz(AC adapter input)
 Temp./Humi. : 25 deg.C / 31 %RH

Limit : FCC_Part 15 Subpart C(15.207)

Engineer : Kenichi Adachi



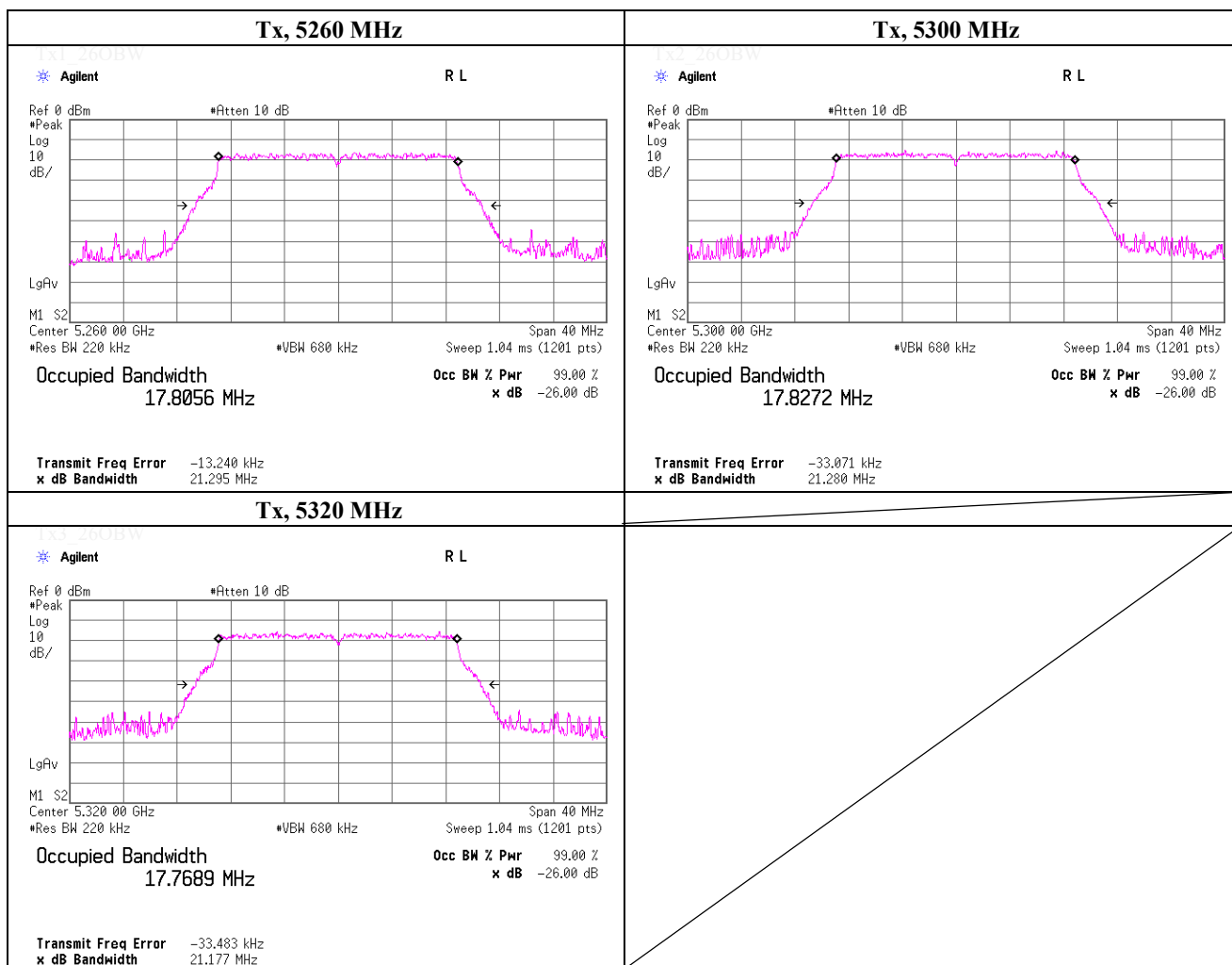
No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<CAV> [dBuV]		<QP> [dBuV]	<CAV> [dBuV]	<QP> [dB]	<AV> [dB]				
1	0.19278	32.85	23.36	12.58	45.43	35.94	63.92	53.92	18.4	17.9	N	
2	0.32189	26.66	15.18	12.59	39.25	27.77	59.66	49.66	20.4	21.8	N	
3	0.87114	13.08	3.03	12.65	25.73	15.68	56.00	46.00	30.2	30.3	N	
4	3.71589	9.28	0.82	12.92	22.20	13.74	56.00	46.00	33.8	32.2	N	
5	5.31942	8.98	1.39	13.07	22.05	14.46	60.00	50.00	37.9	35.5	N	
6	24.75584	4.56	-1.93	14.31	18.87	12.38	60.00	50.00	41.1	37.6	N	
7	0.19199	32.96	23.48	12.58	45.54	36.06	63.95	53.95	18.4	17.8	L1	
8	0.29289	27.74	18.62	12.60	40.34	31.22	60.44	50.44	20.1	19.2	L1	
9	0.87046	13.16	1.32	12.66	25.82	13.98	56.00	46.00	30.1	32.0	L1	
10	3.71360	10.12	0.94	12.90	23.02	13.84	56.00	46.00	32.9	32.1	L1	
11	5.32183	9.18	1.48	13.03	22.21	14.51	60.00	50.00	37.7	35.4	L1	
12	24.75584	4.78	-1.76	14.16	18.94	12.40	60.00	50.00	41.0	37.6	L1	

Calculation: Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
 LISN: SLS-02 with Extention cable

-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 30 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (SISO), PN9, worst antenna port 1, worst data mode 6 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5260.0000	21.295	-
5300.0000	21.280	-
5320.0000	21.177	-

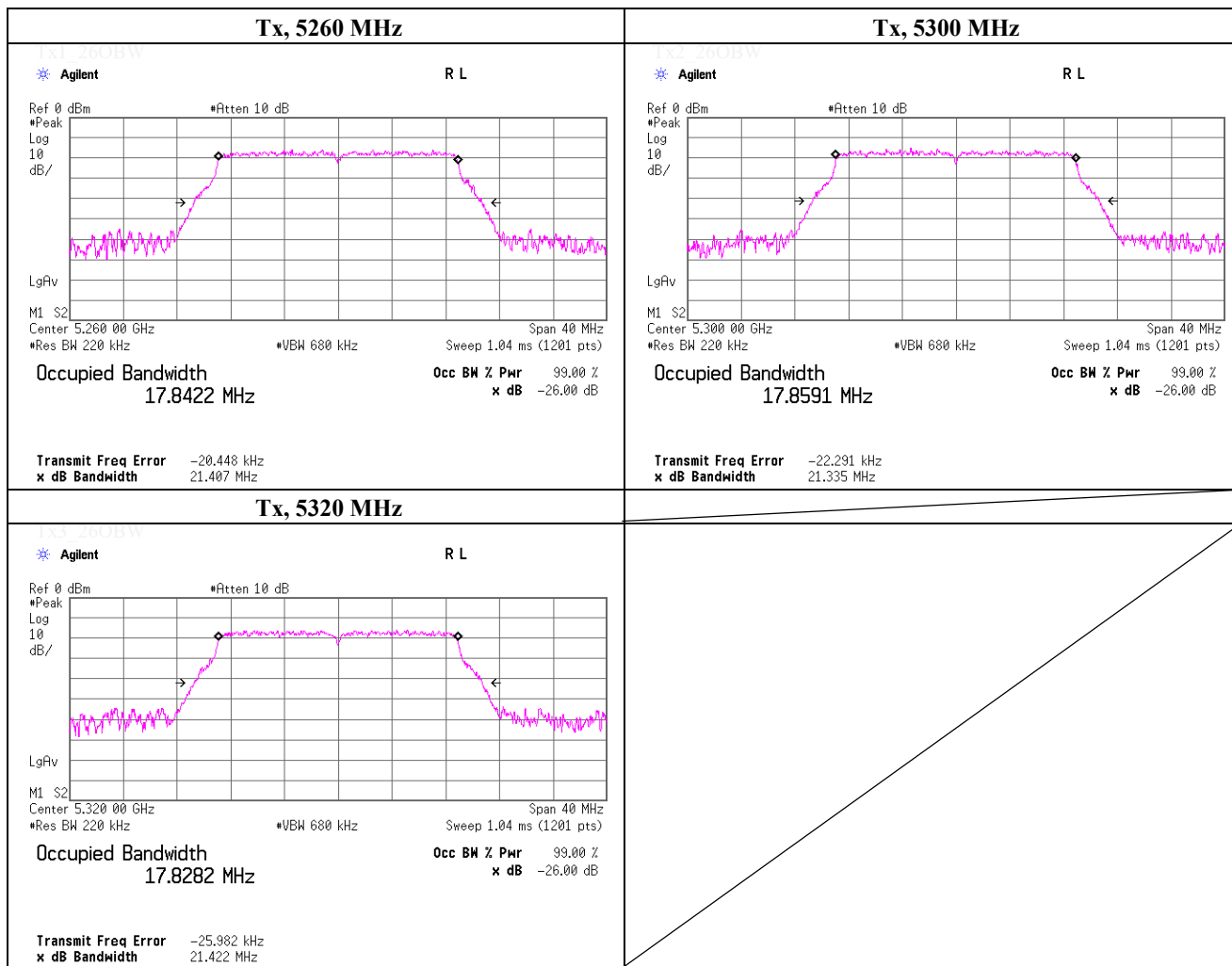


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-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 51 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-20 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5260.0000	21.407	-
5300.0000	21.335	-
5320.0000	21.422	-

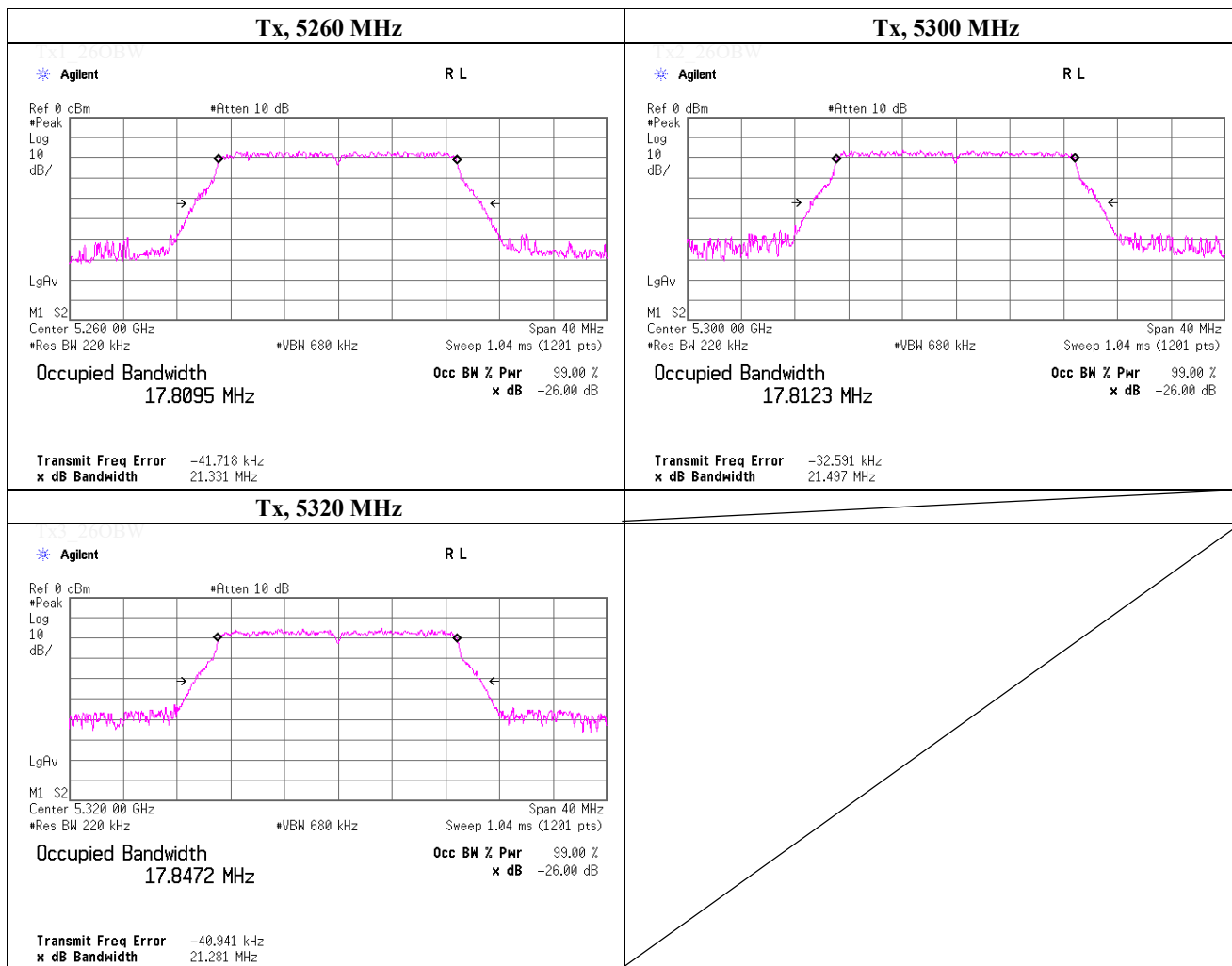


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-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 13, 2021	
Temperature / Humidity	24 deg.C , 41 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (MIMO), PN9, Antenna port 1, worst data mode 13 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5260.0000	21.331	-
5300.0000	21.497	-
5320.0000	21.281	-

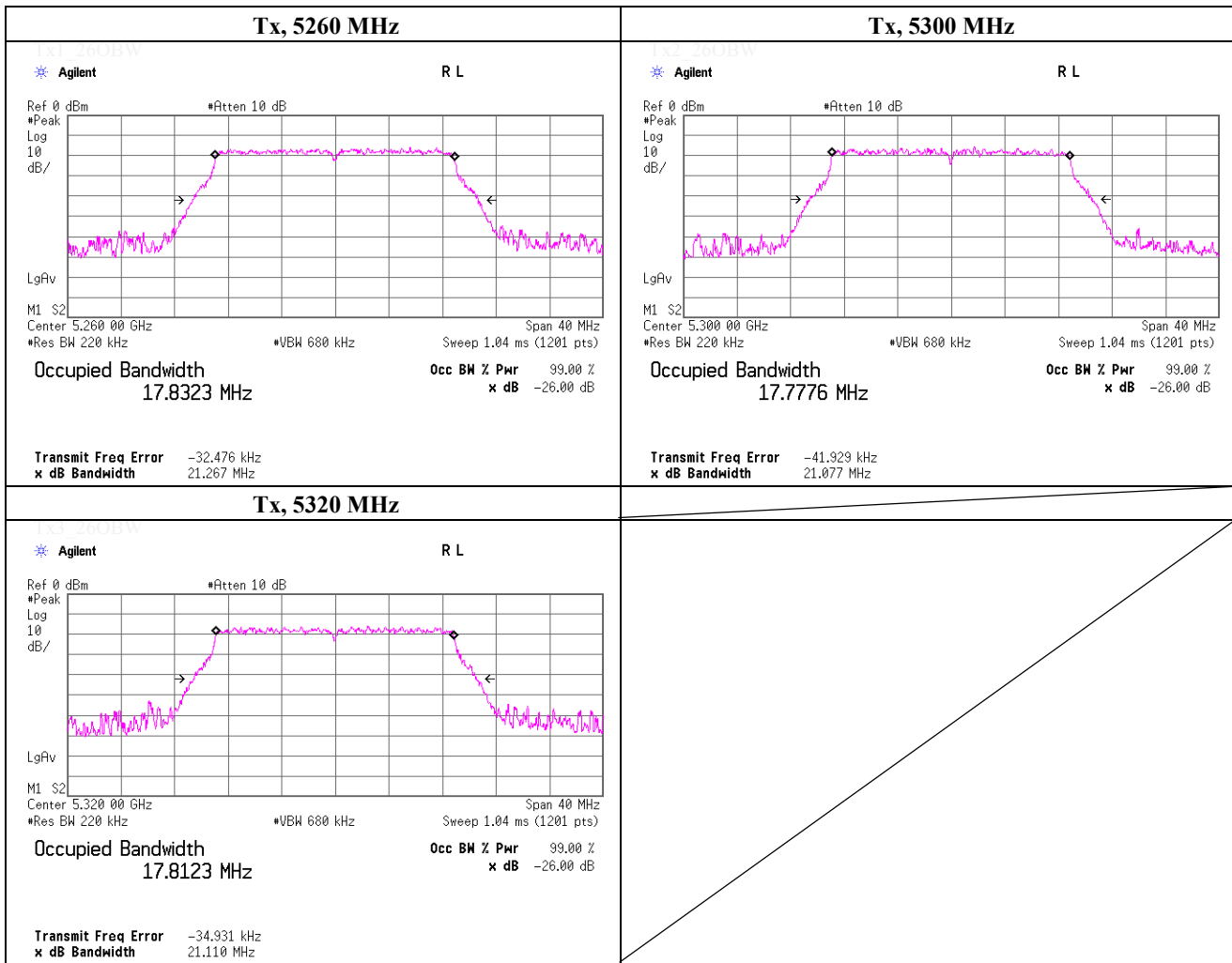


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-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 13, 2021	
Temperature / Humidity	24 deg.C , 41 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-20 (MIMO), PN9, Antenna port 1, worst data mode 8 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5260.0000	21.267	-
5300.0000	21.077	-
5320.0000	21.110	-

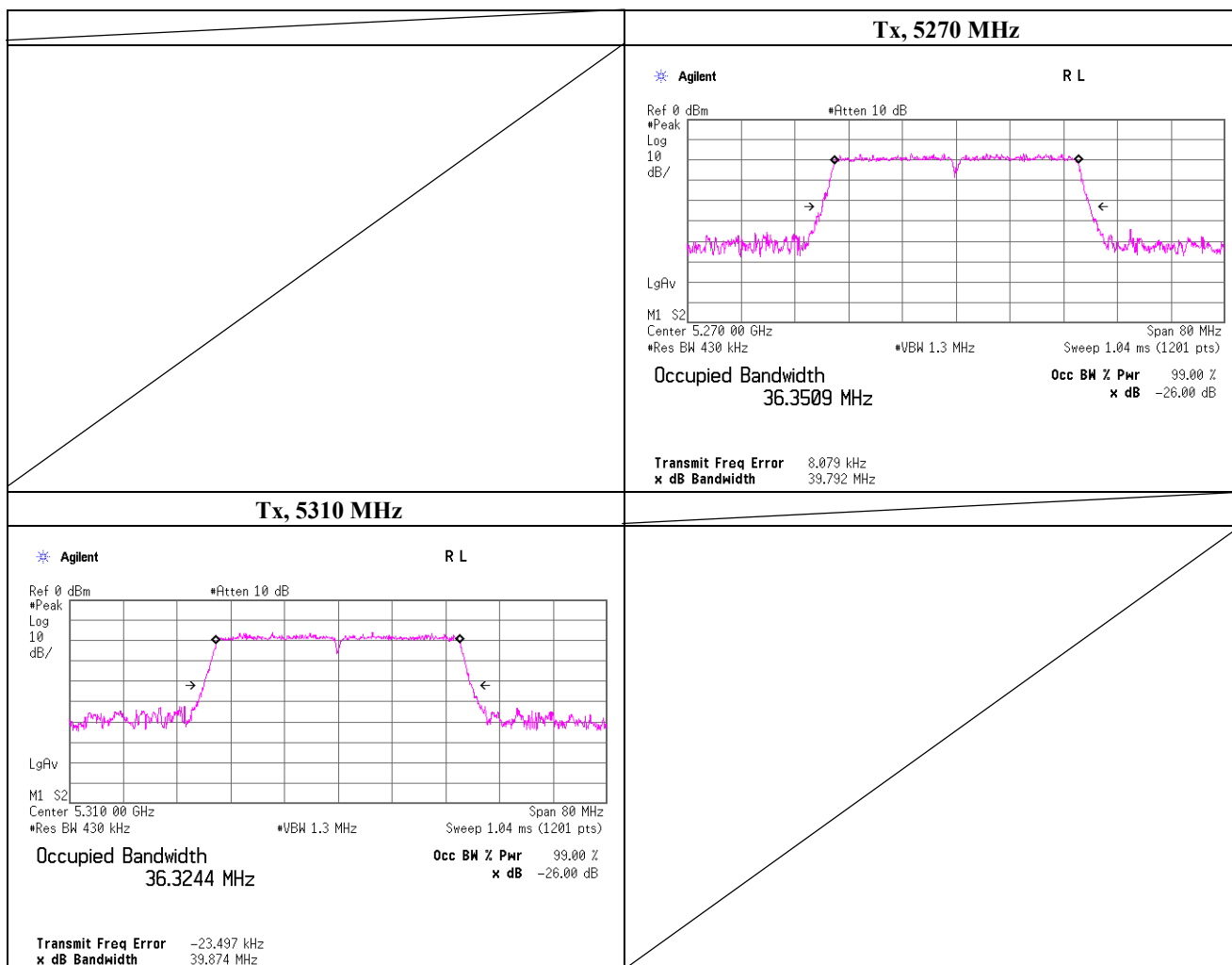


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-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
-	-	-
5270.0000	39.792	-
5310.0000	39.874	-

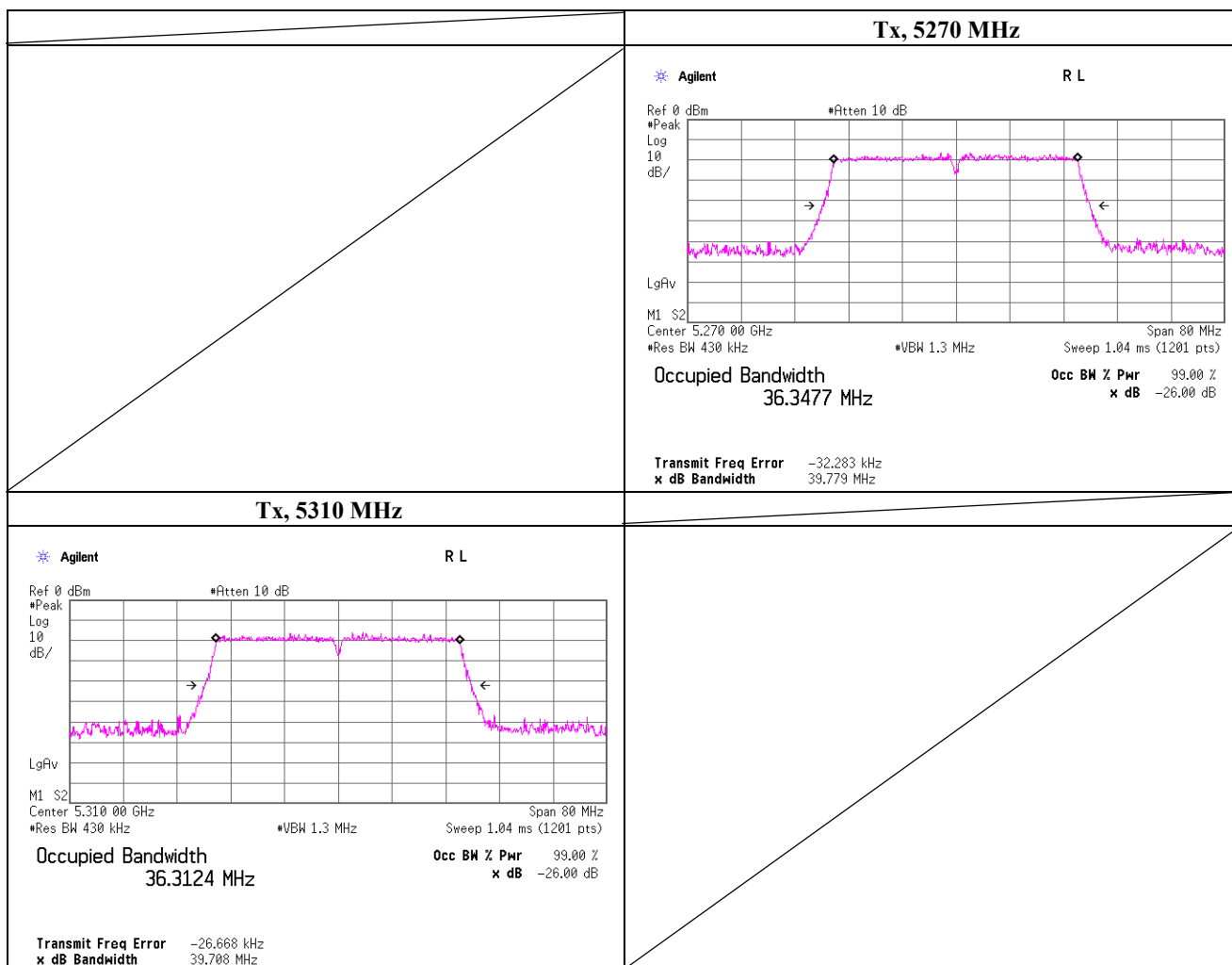


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-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
-	-	-
5270.0000	39.779	-
5310.0000	39.708	-



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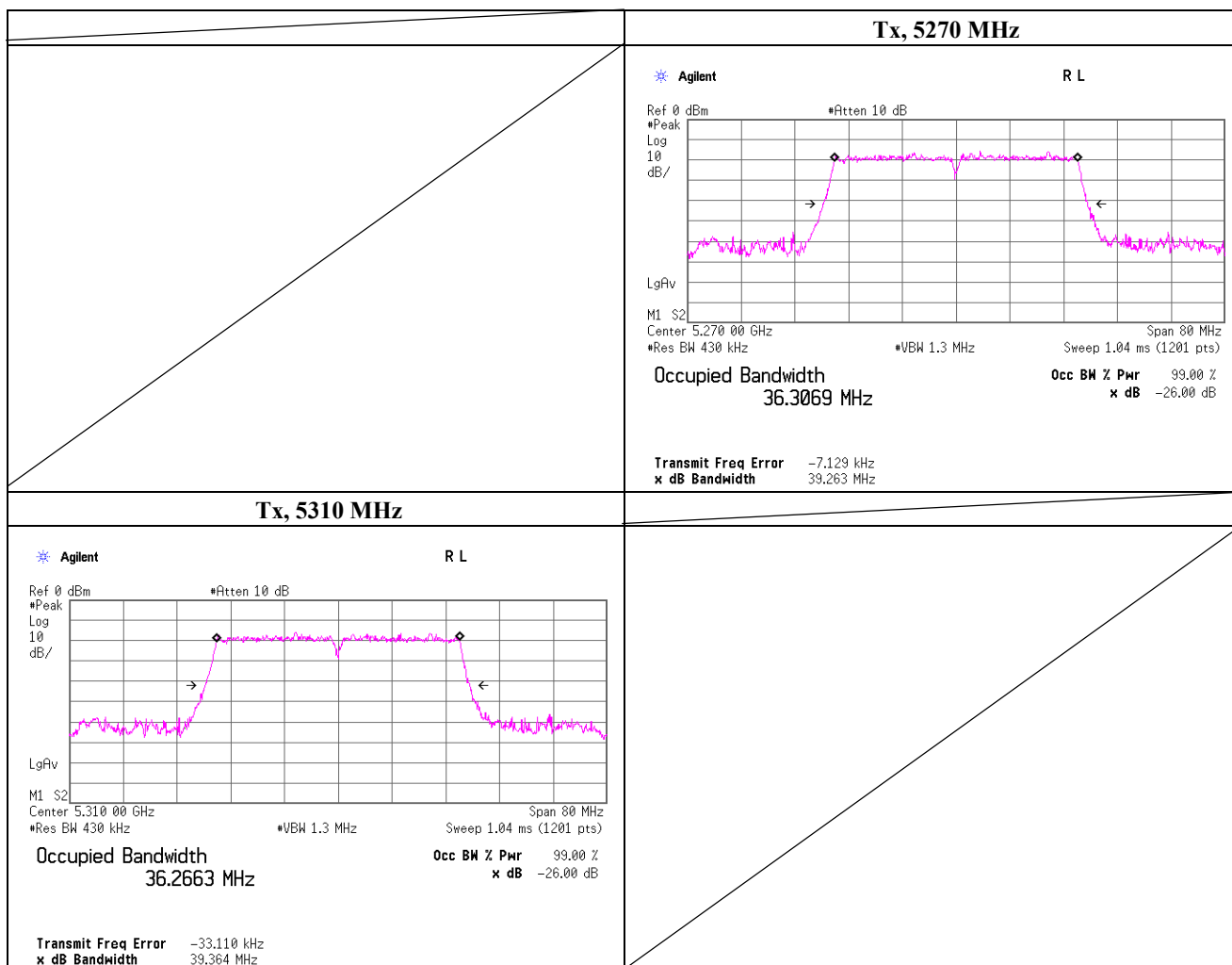
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Facsimile : +81 463 50 6401

-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (MIMO), PN9, Antenna port 1, worst data mode 14 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
-	-	-
5270.0000	39.263	-
5310.0000	39.364	-

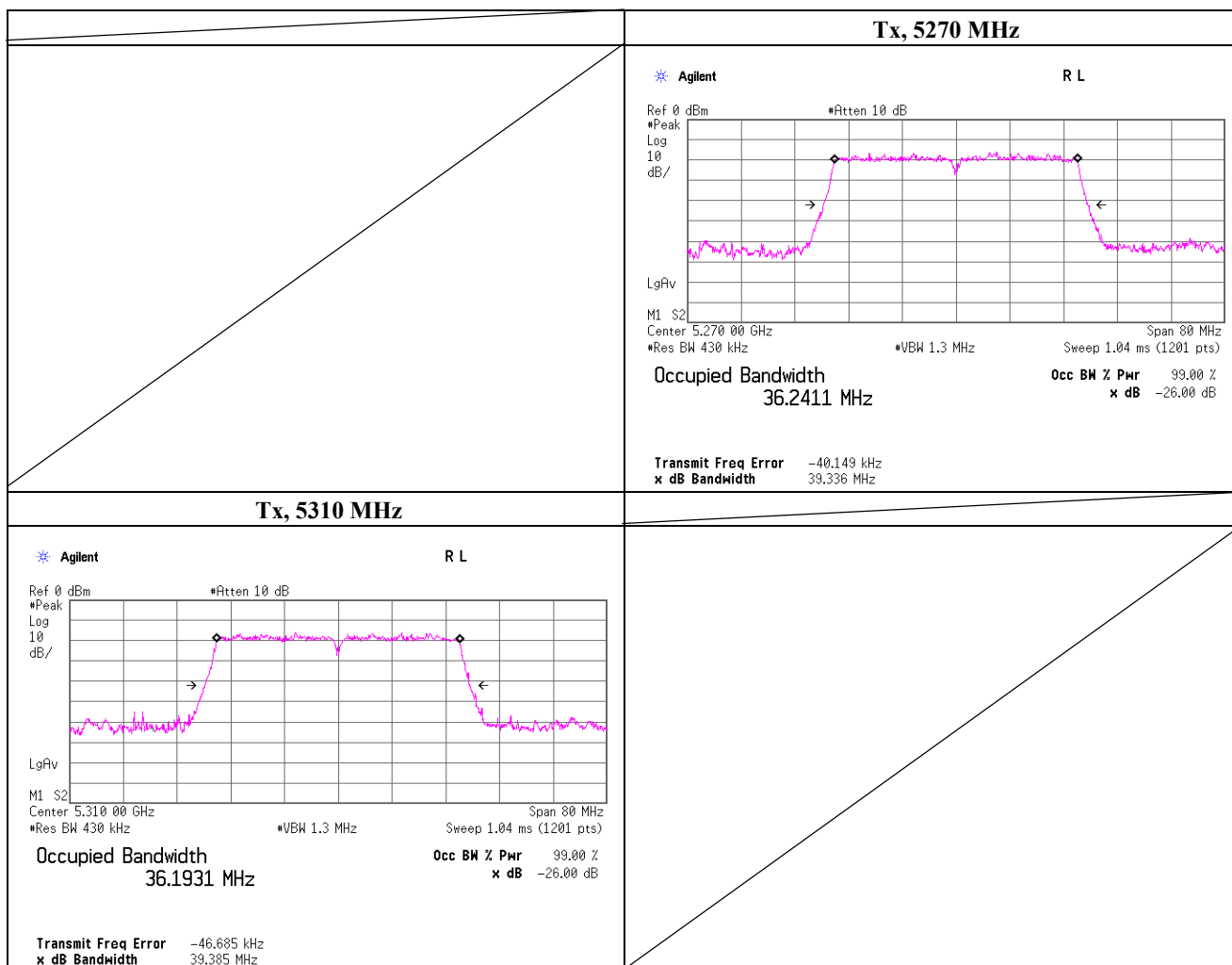


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-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (MIMO), PN9, Antenna port 1, worst data mode 5 (MCS)	

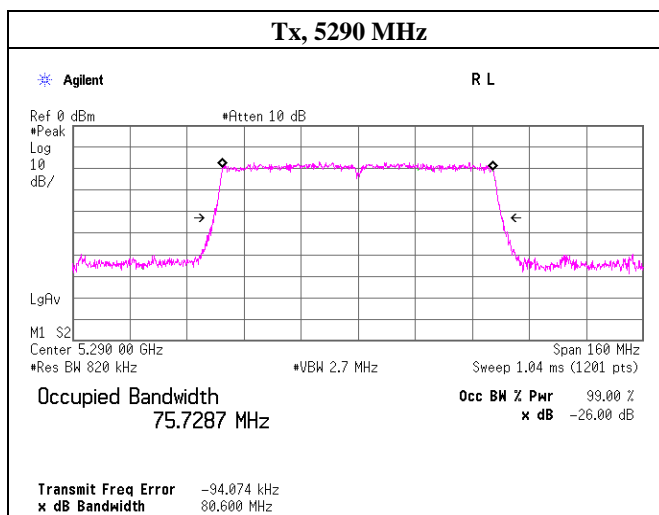
Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
-	-	-
5270.0000	39.336	-
5310.0000	39.385	-



-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 20, 2021	
Temperature / Humidity	23 deg.C , 39 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-80 (MIMO), PN9, Antenna port 1, worst data mode 4 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5290.0000	80.600	-
-	-	-
-	-	-



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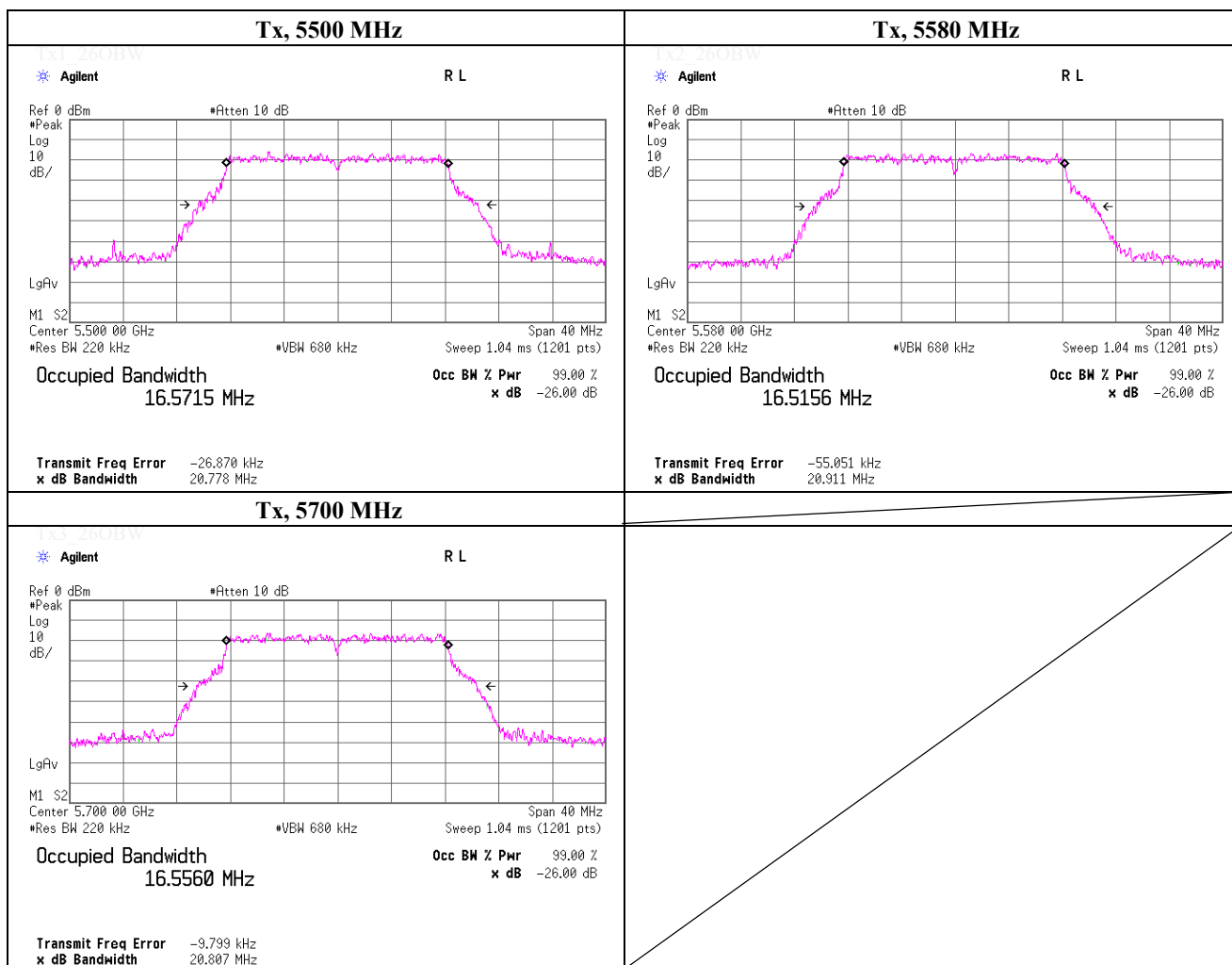
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Facsimile : +81 463 50 6401

-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 8, 2021	
Temperature / Humidity	23 deg.C , 40 %RH	
Engineer	Kenichi Adachi	
Mode	Tx, IEEE802.11a, PN9, worst antenna port 1, worst data mode 48 Mbps	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5500.0000	20.778	-
5580.0000	20.911	-
5700.0000	20.807	-

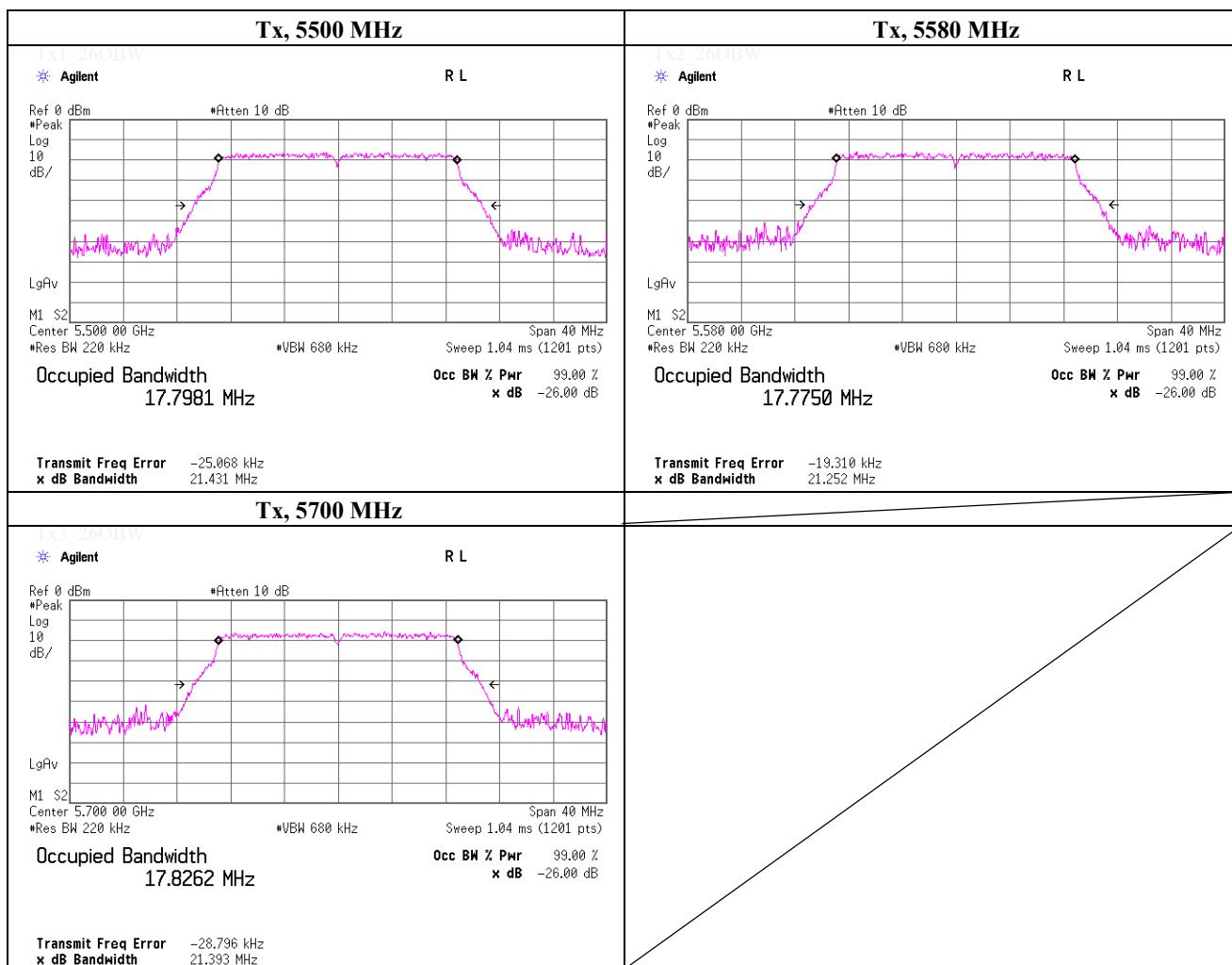


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-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 30 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (SISO), PN9, worst antenna port 1, worst data mode 6 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5500.0000	21.431	-
5580.0000	21.252	-
5700.0000	21.393	-

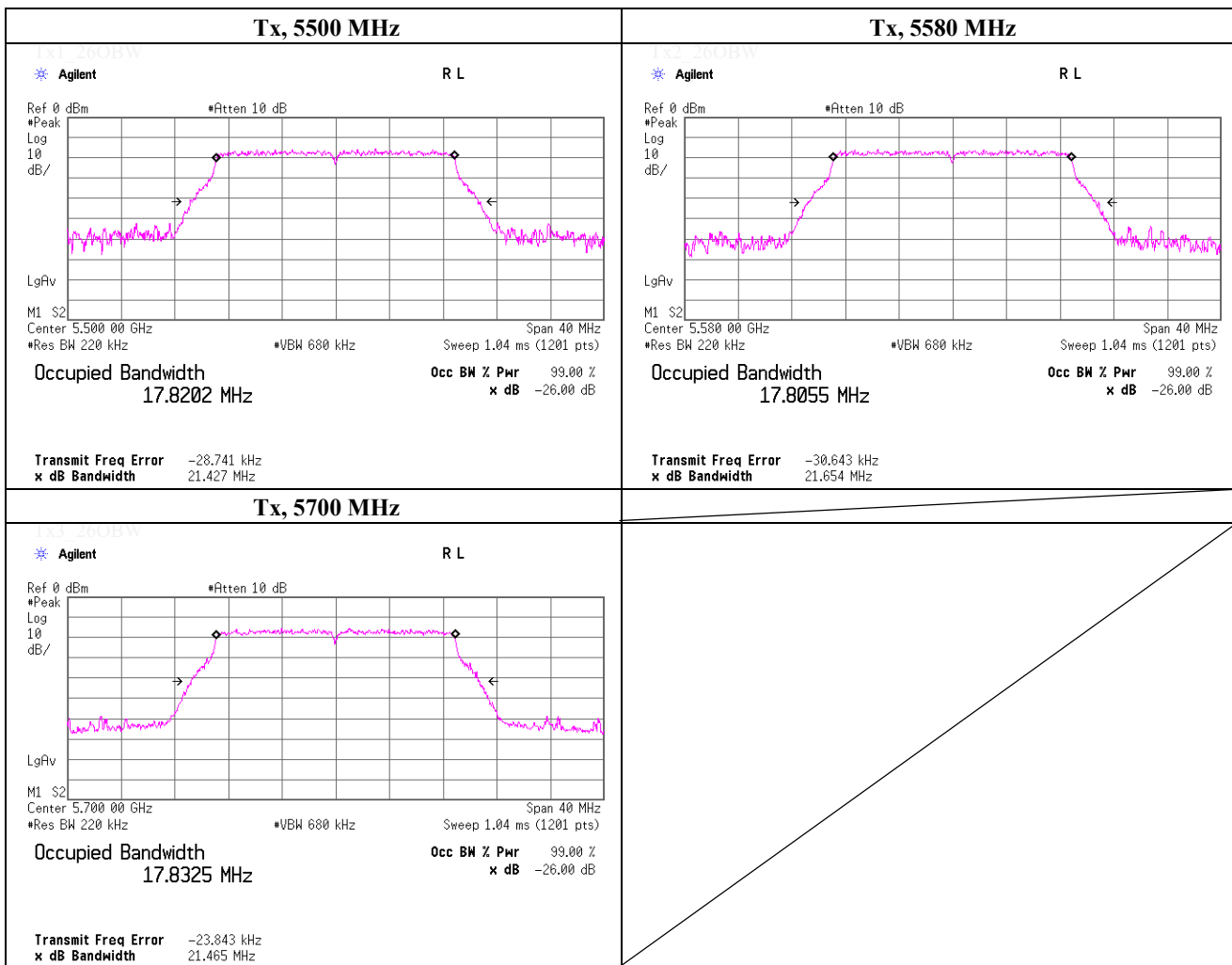


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-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 51 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-20 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5500.0000	21.427	-
5580.0000	21.654	-
5700.0000	21.465	-

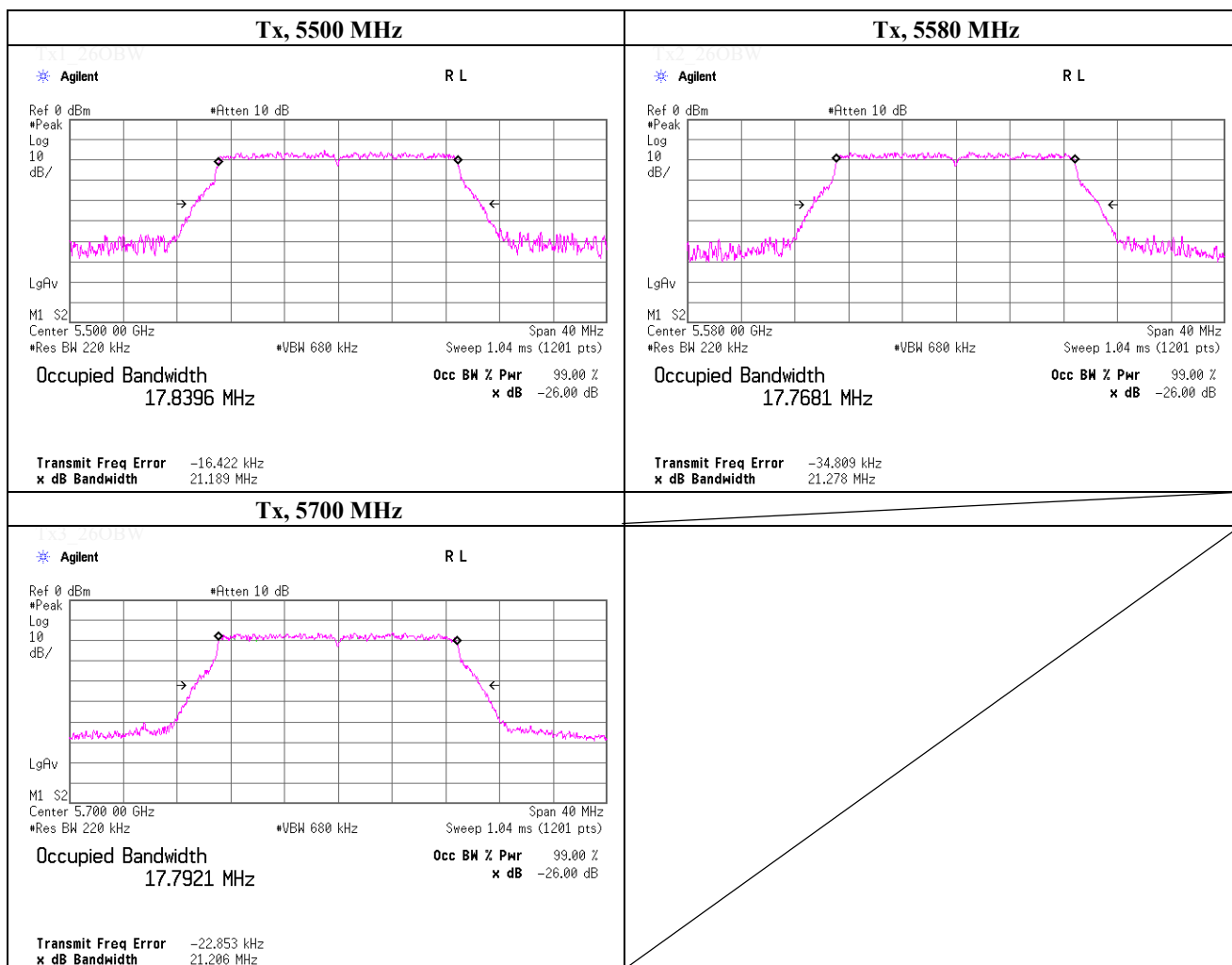


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-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 13, 2021	
Temperature / Humidity	24 deg.C , 41 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (MIMO), PN9, Antenna port 1, worst data mode 13 (MCS)	

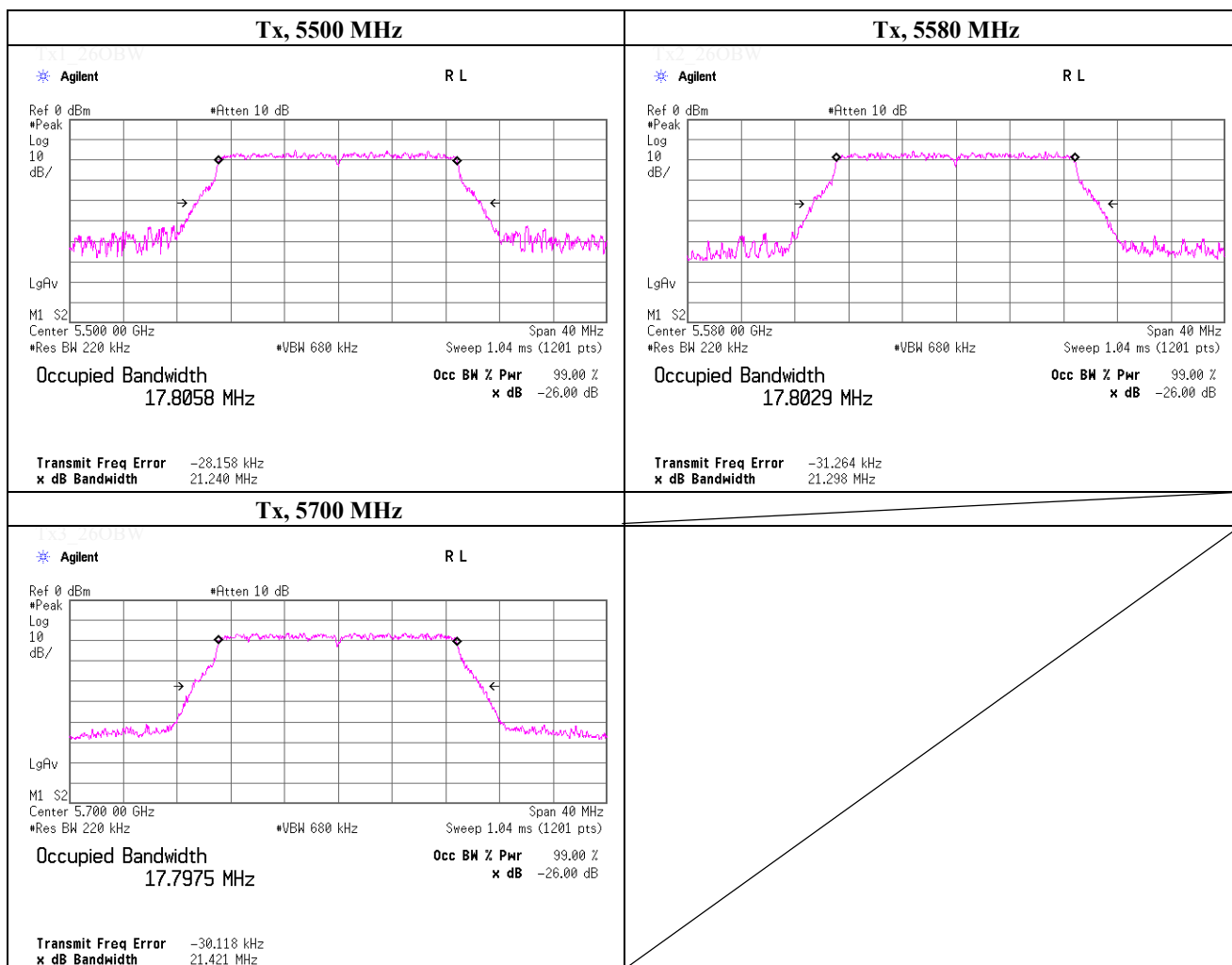
Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5500.0000	21.189	-
5580.0000	21.278	-
5700.0000	21.206	-



-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 13, 2021	
Temperature / Humidity	24 deg.C , 41 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-20 (MIMO), PN9, Antenna port 1, worst data mode 8 (MCS)	

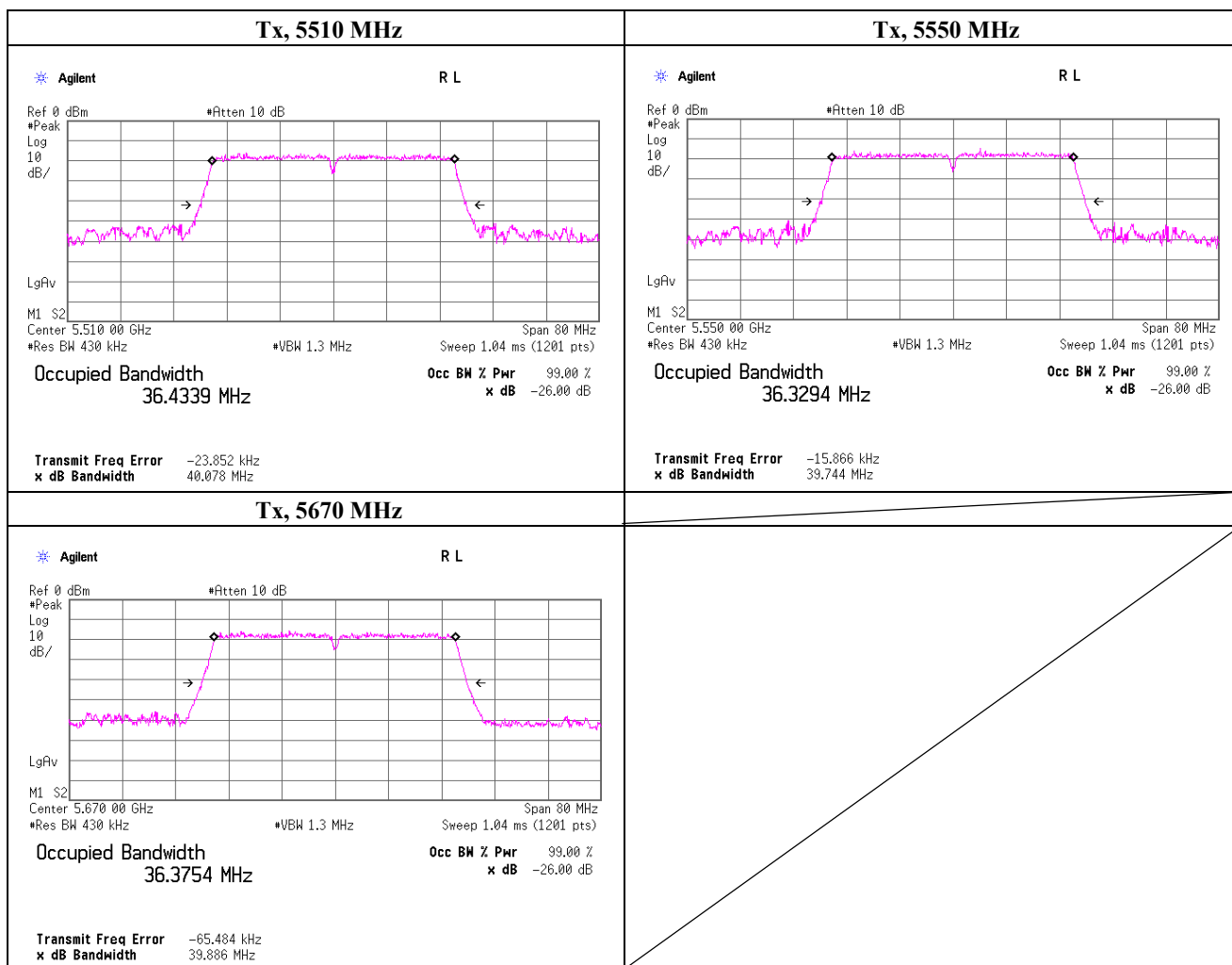
Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5500.0000	21.240	-
5580.0000	21.298	-
5700.0000	21.421	-



-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5510.0000	40.078	-
5550.0000	39.744	-
5670.0000	39.886	-

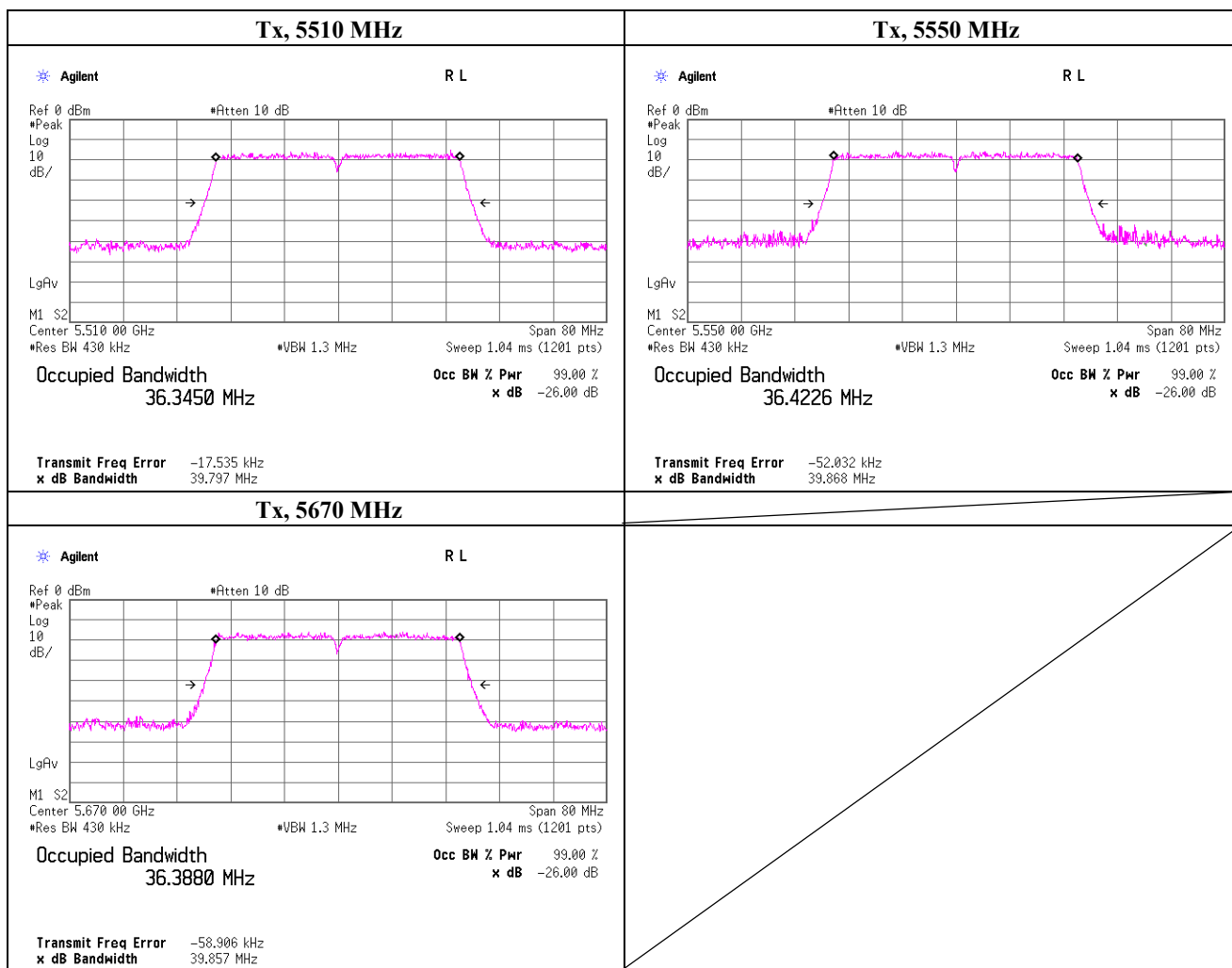


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-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

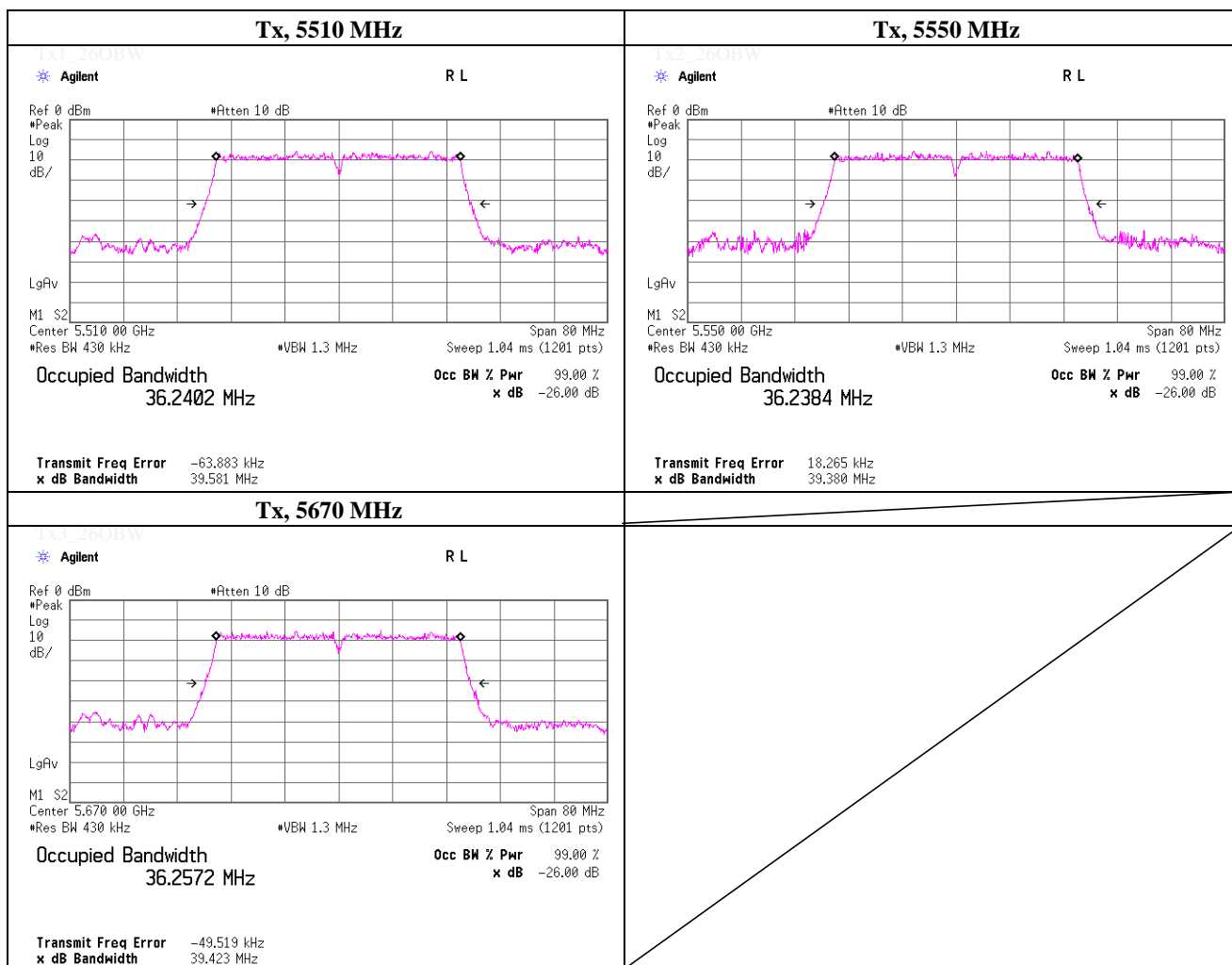
Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5510.0000	39.797	-
5550.0000	39.868	-
5670.0000	39.857	-



-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (MIMO), PN9, Antenna port 1, worst data mode 14 (MCS)	

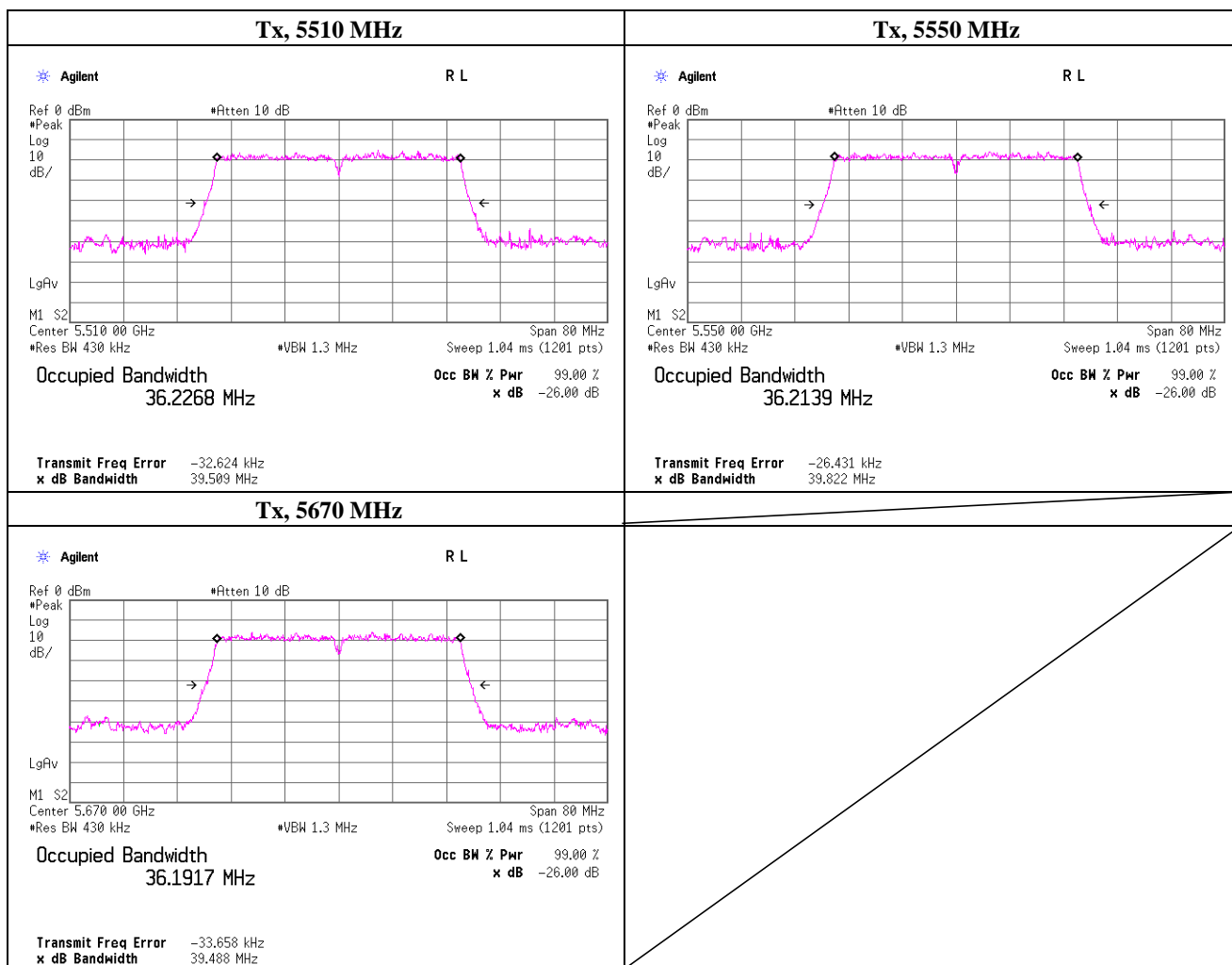
Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5510.0000	39.581	-
5550.0000	39.380	-
5670.0000	39.423	-



-26 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (MIMO), PN9, Antenna port 1, worst data mode 5 (MCS)	

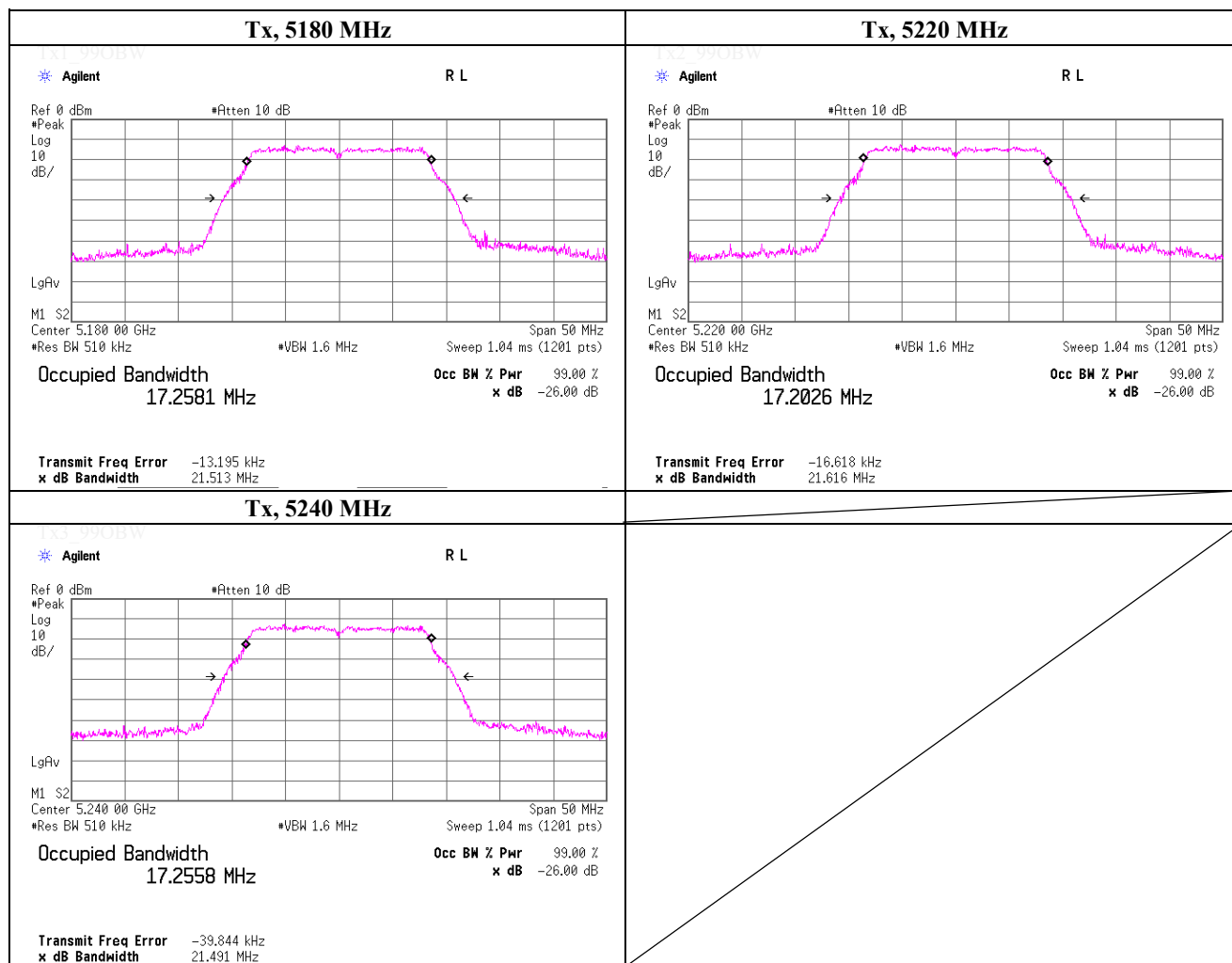
Freq. [MHz]	-26 dB Bandwidth [MHz]	Limit [MHz]
5510.0000	39.509	-
5550.0000	39.822	-
5670.0000	39.488	-



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 8, 2021	
Temperature / Humidity	23 deg.C , 40 %RH	
Engineer	Kenichi Adachi	
Mode	Tx, IEEE802.11a, PN9, worst antenna port 1, worst data mode 48 Mbps	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5180.0000	17258.1
5220.0000	17202.6
5240.0000	17255.8

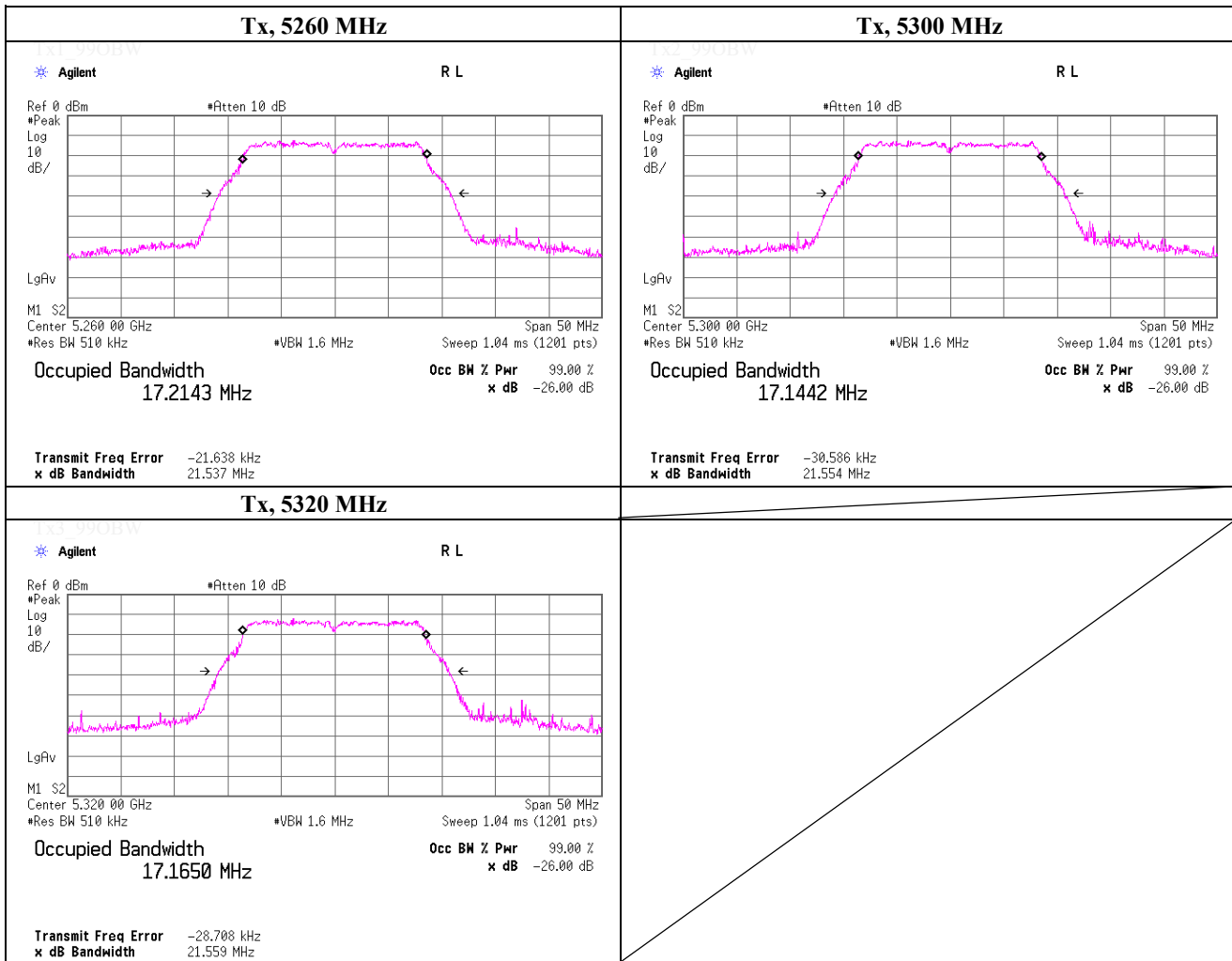


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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 8, 2021	
Temperature / Humidity	23 deg.C , 40 %RH	
Engineer	Kenichi Adachi	
Mode	Tx, IEEE802.11a, PN9, worst antenna port 1, worst data mode 48 Mbps	

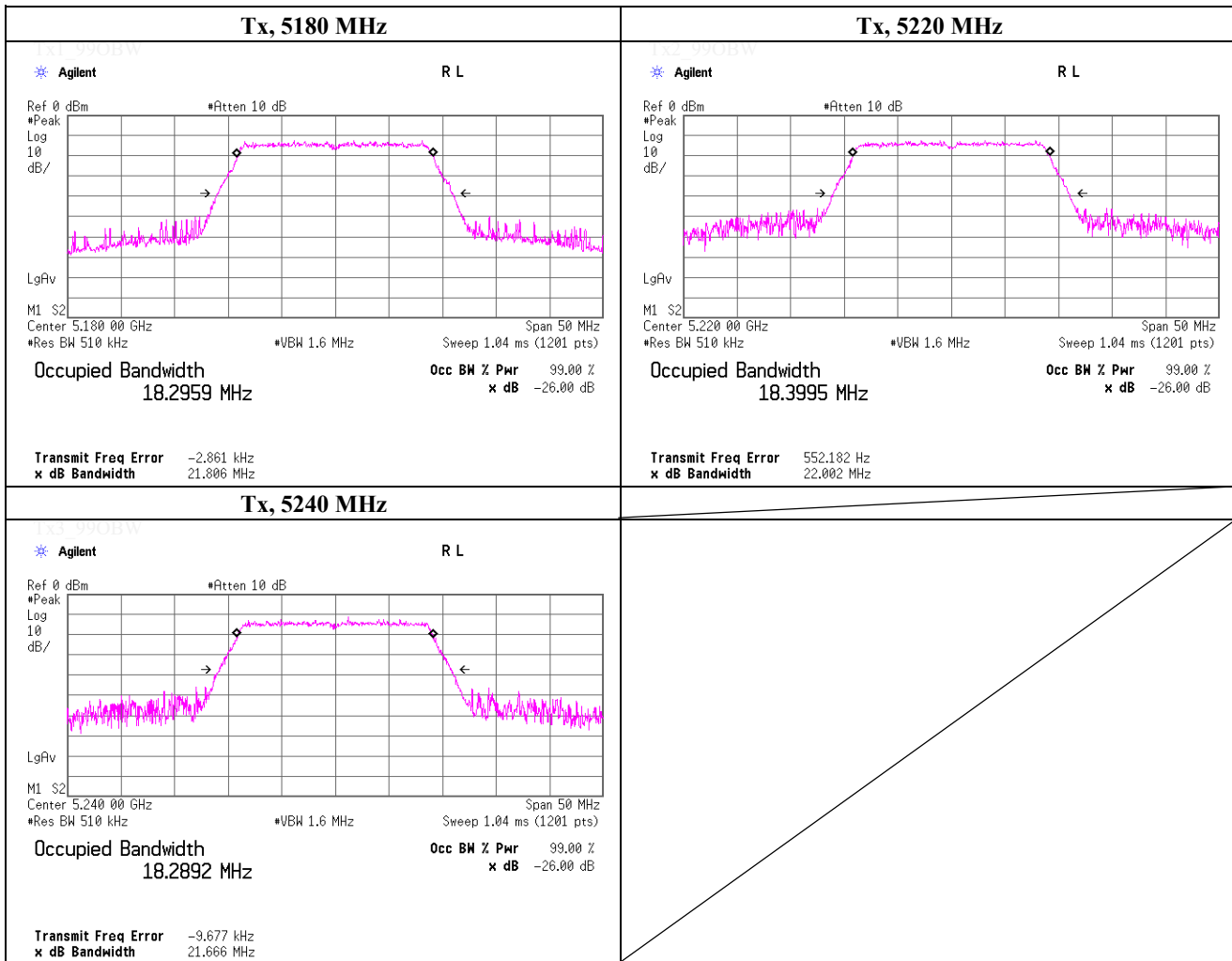
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5260.0000	17214.3
5300.0000	17144.2
5320.0000	17165.0



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 30 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (SISO), PN9, worst antenna port 1, worst data mode 6 (MCS)	

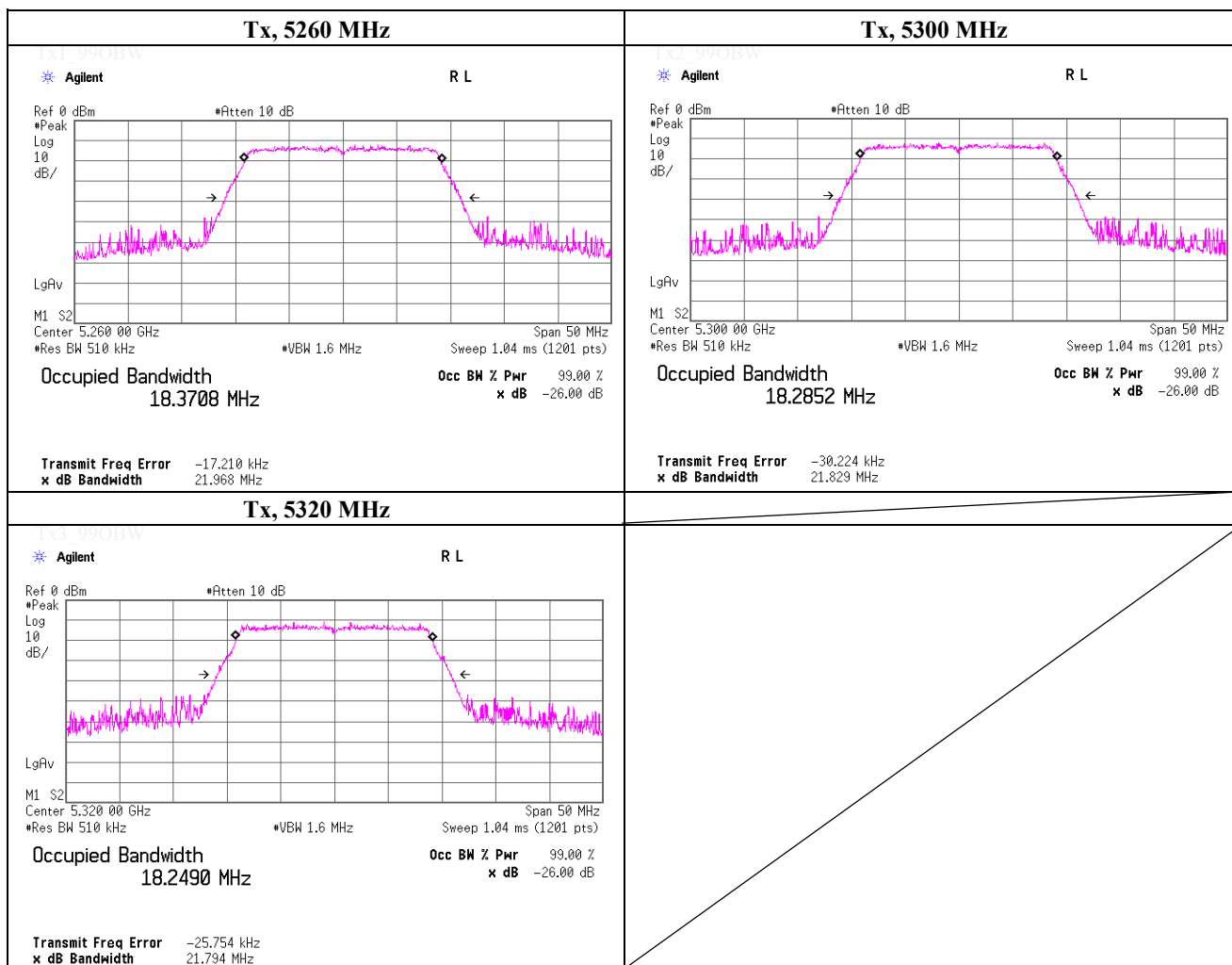
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5180.0000	18295.9
5220.0000	18399.5
5240.0000	18289.2



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 30 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (SISO), PN9, worst antenna port 1, worst data mode 6 (MCS)	

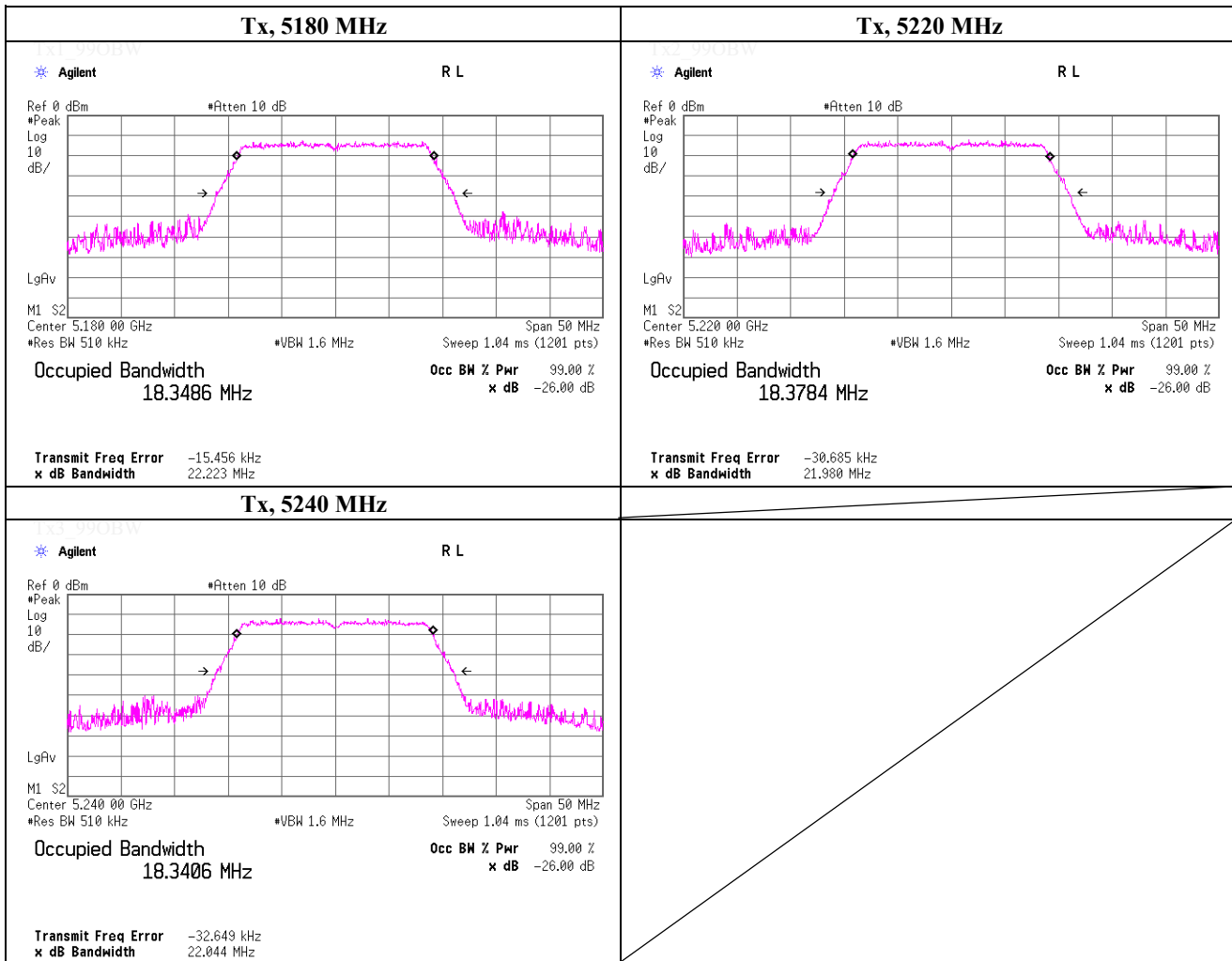
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5260.0000	18370.8
5300.0000	18285.2
5320.0000	18249.0



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 30 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-20 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

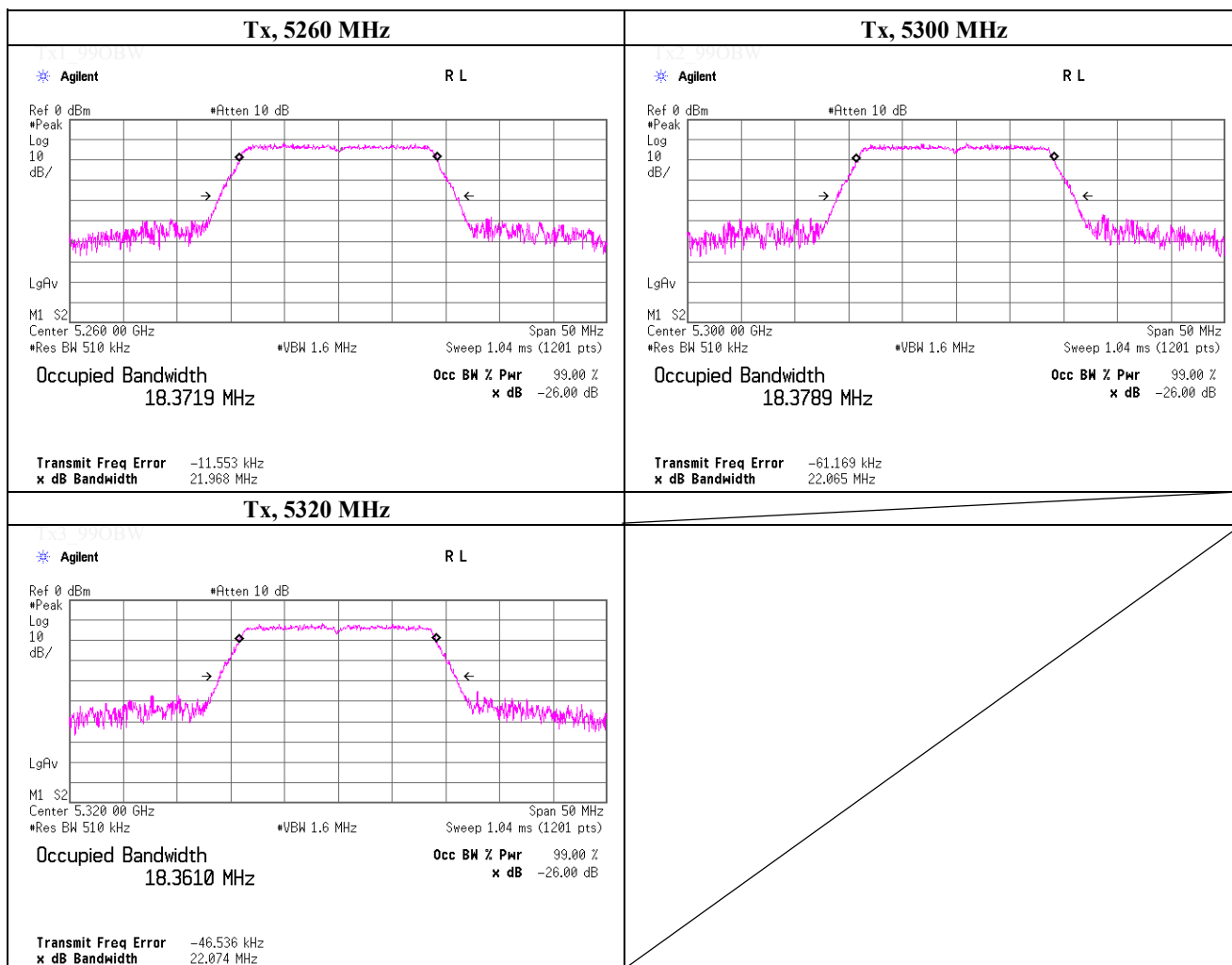
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5180.0000	18348.6
5220.0000	18378.4
5240.0000	18340.6



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 51 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-20 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

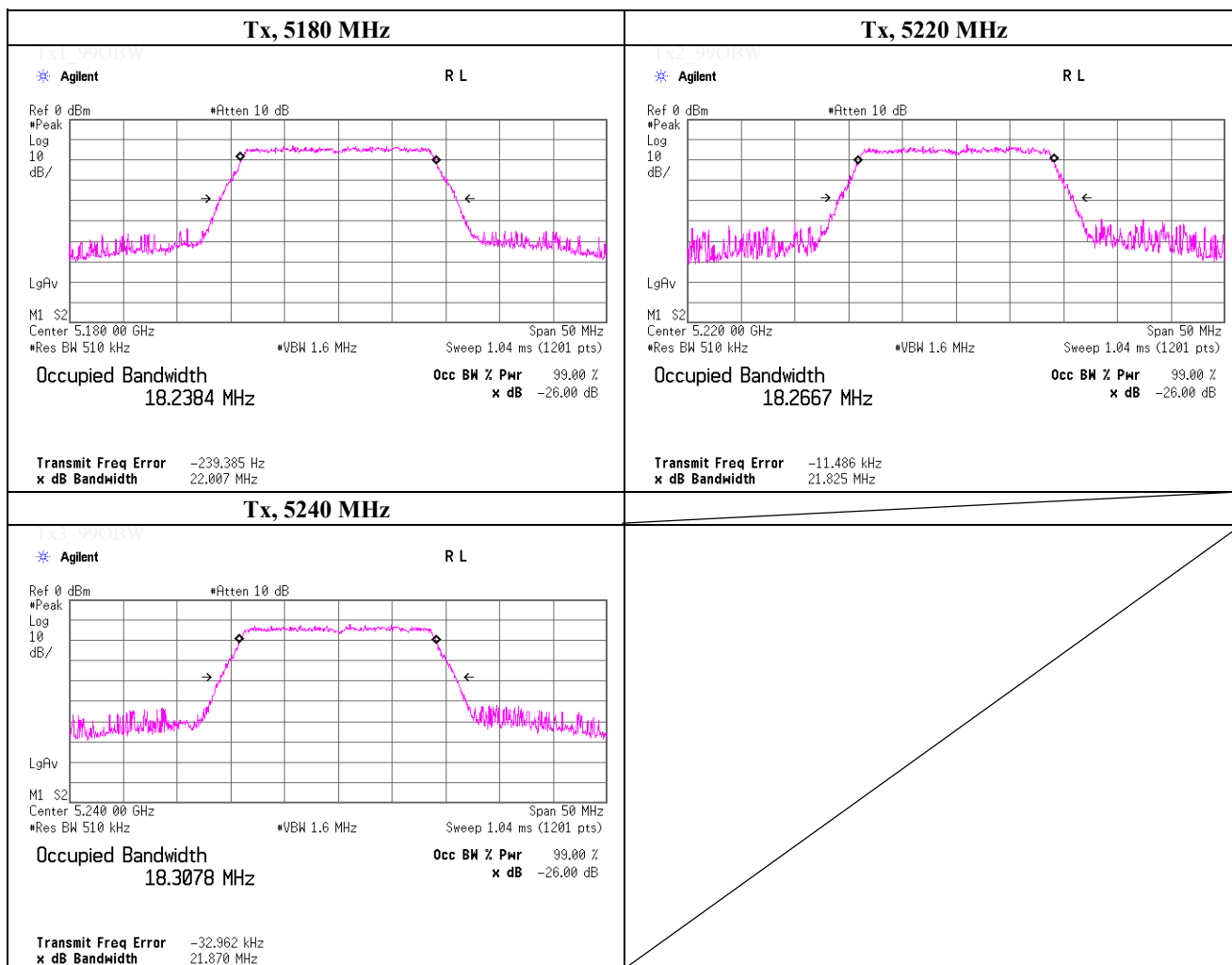
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5260.0000	18371.9
5300.0000	18378.9
5320.0000	18361.0



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 13, 2021	
Temperature / Humidity	24 deg.C , 41 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (MIMO), PN9, Antenna port 1, worst data mode 13 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5180.0000	18238.4
5220.0000	18266.7
5240.0000	18307.8

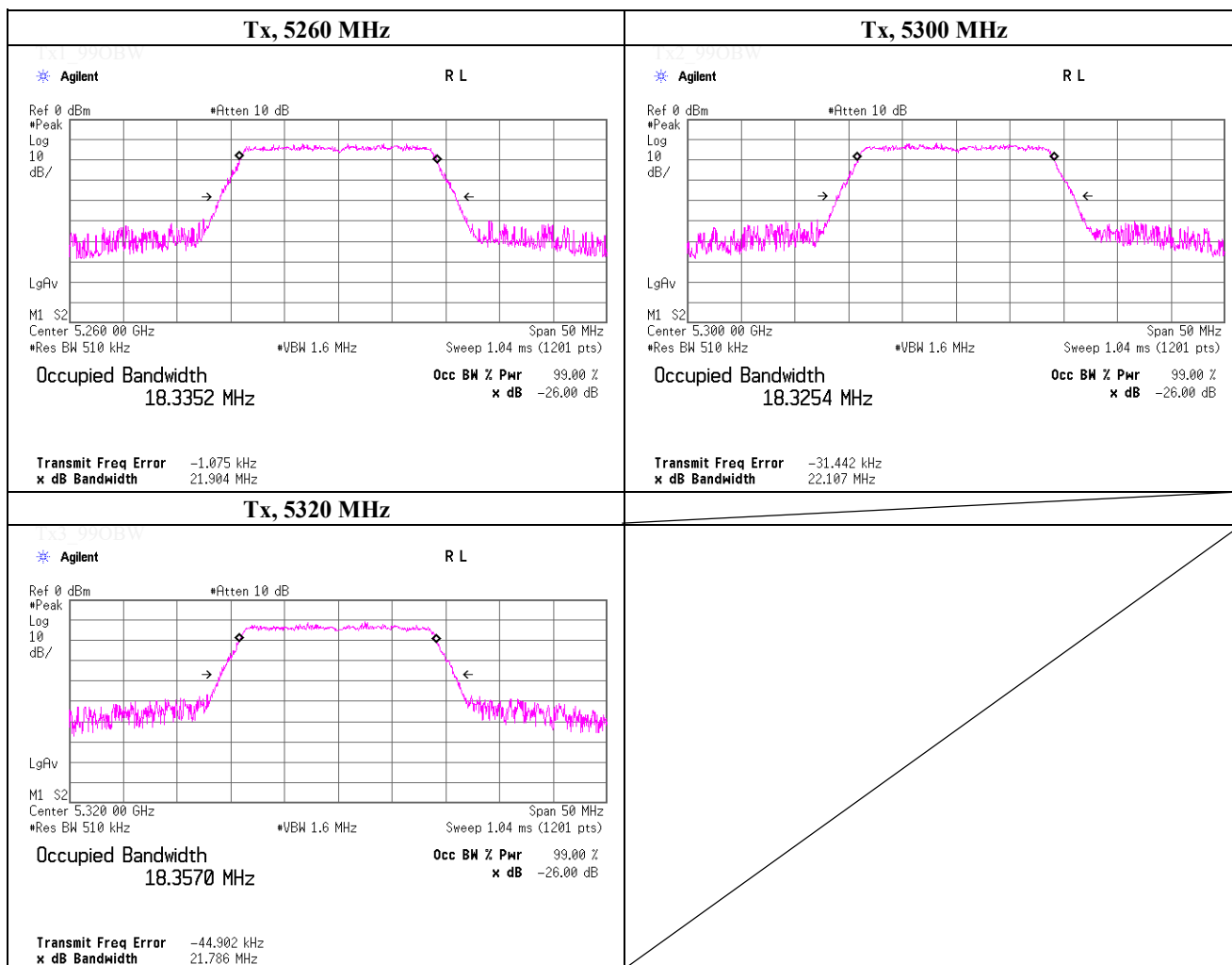


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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 13, 2021	
Temperature / Humidity	24 deg.C , 41 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (MIMO), PN9, Antenna port 1, worst data mode 13 (MCS)	

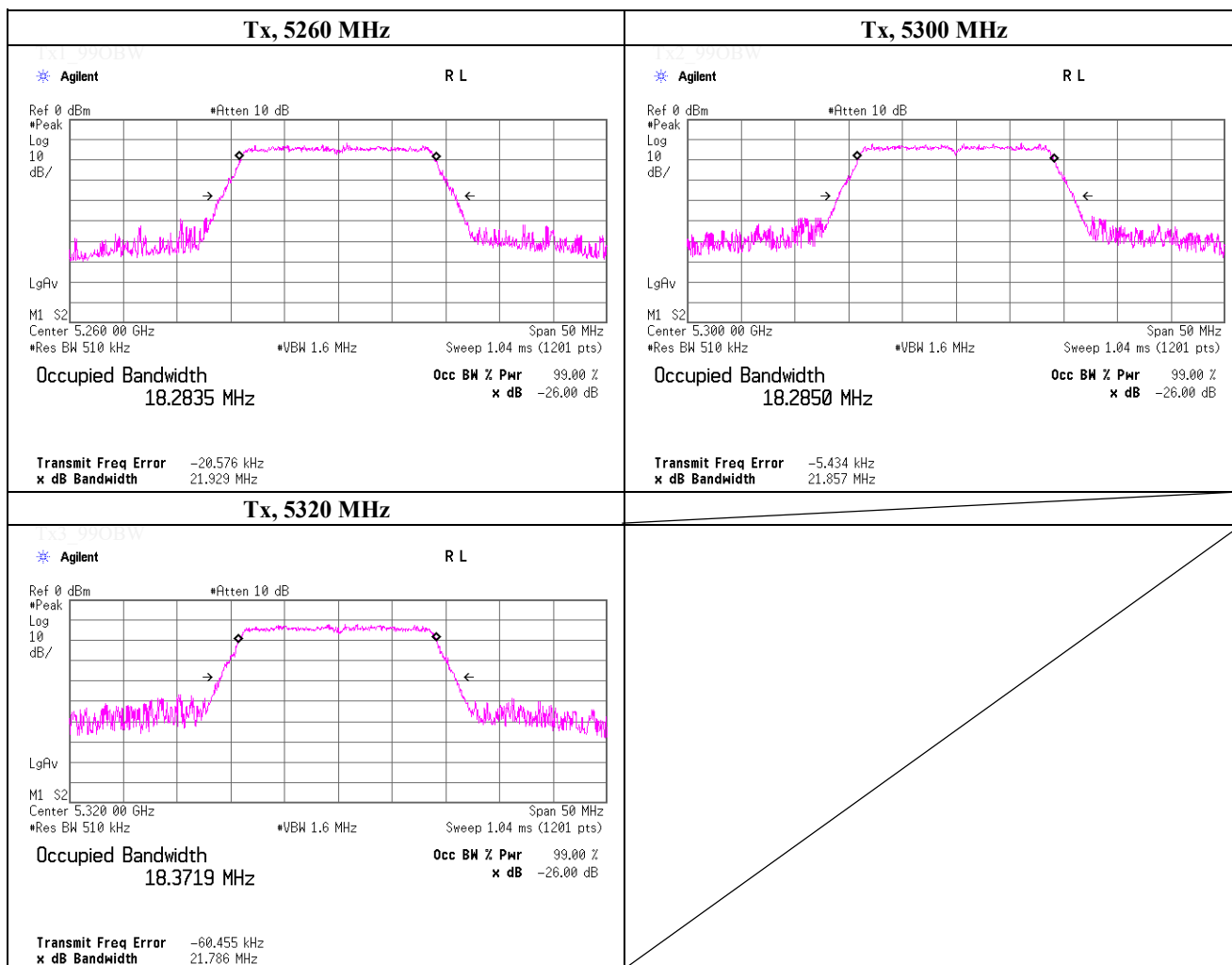
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5260.0000	18335.2
5300.0000	18325.4
5320.0000	18357.0



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 13, 2021	
Temperature / Humidity	24 deg.C , 41 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-20 (MIMO), PN9, Antenna port 1, worst data mode 8 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5260.0000	18283.5
5300.0000	18285.0
5320.0000	18371.9

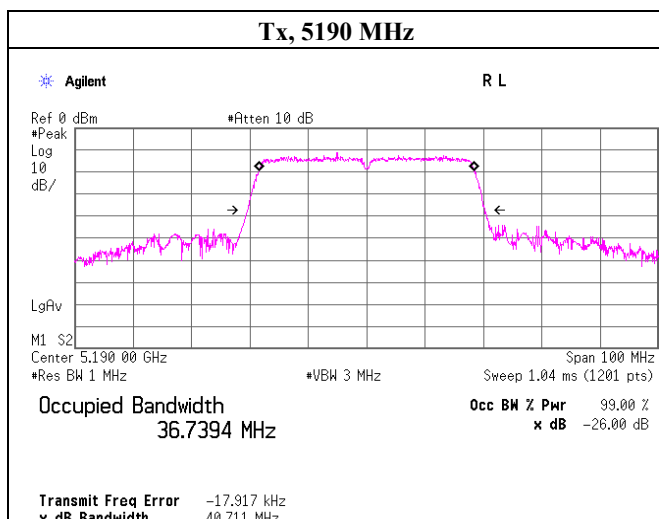


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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5190.0000	36739.4
-	-
-	-



Tx2_99OBW

Tx3_99OBW

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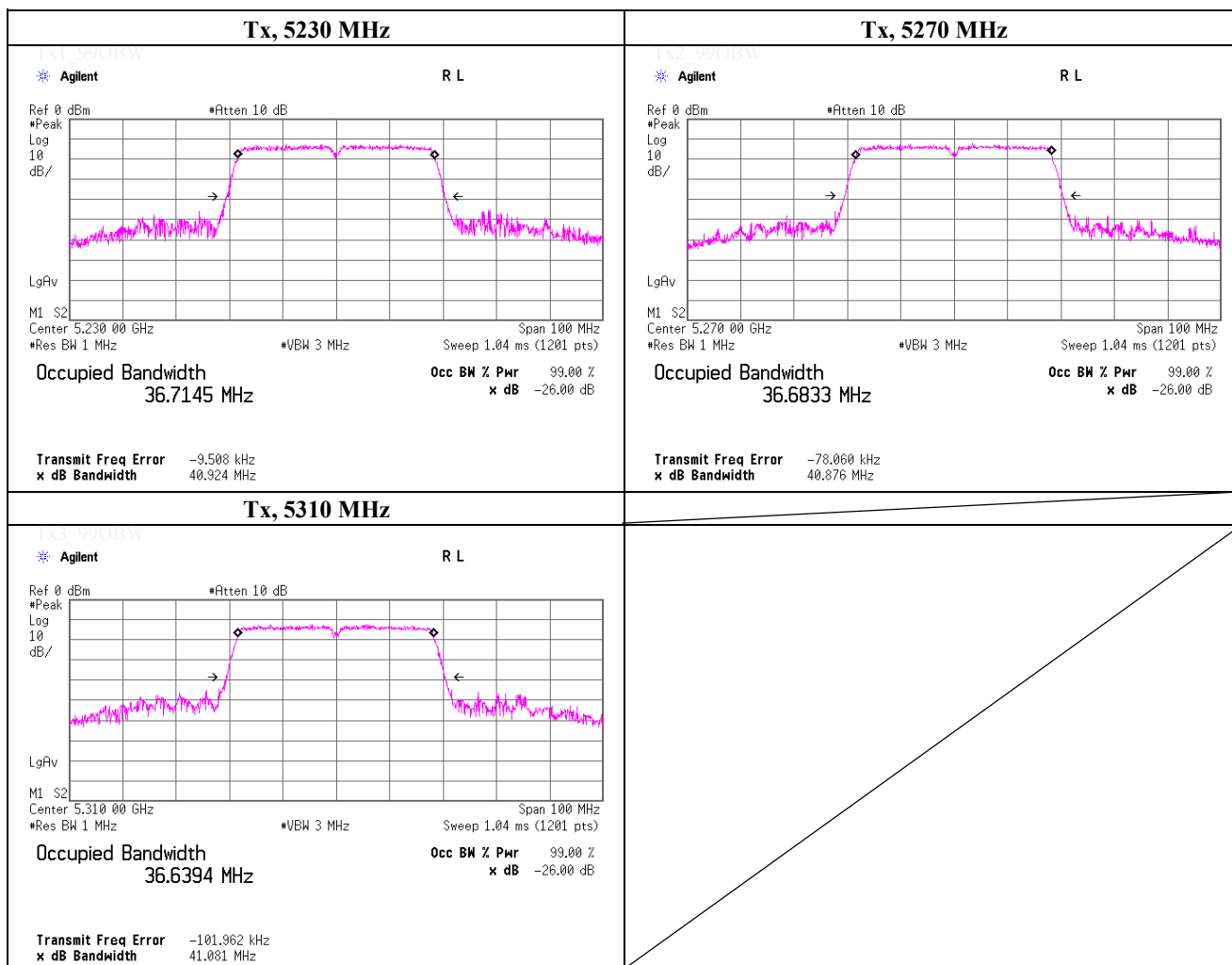
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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5230.0000	36714.5
5270.0000	36683.3
5310.0000	36639.4

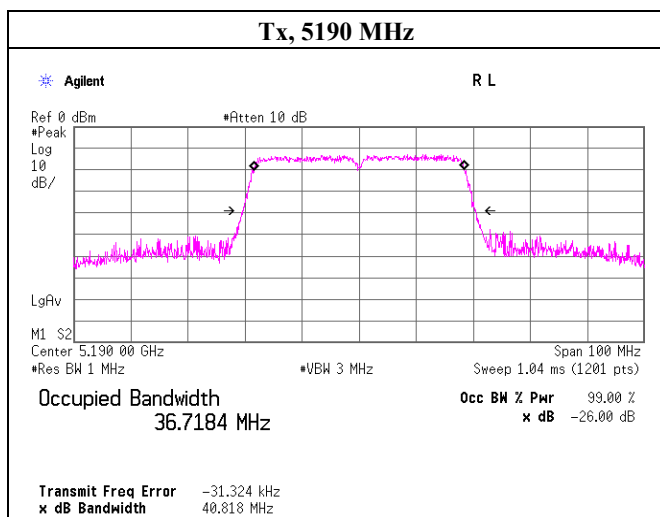


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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5190.0000	36718.4
-	-
-	-



Tx2_99OBW

Tx3_99OBW

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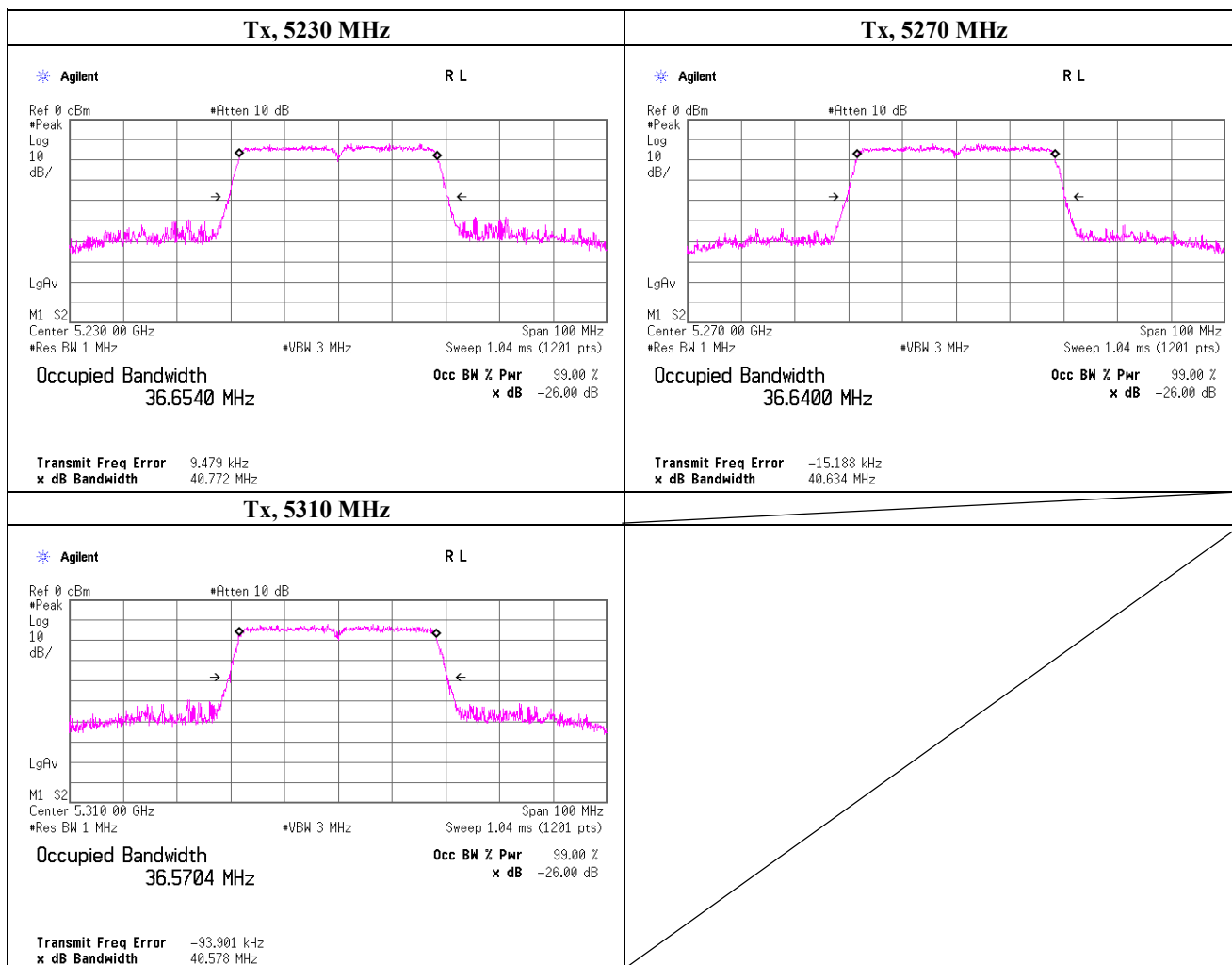
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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5230.0000	36654.0
5270.0000	36640.0
5310.0000	36570.4

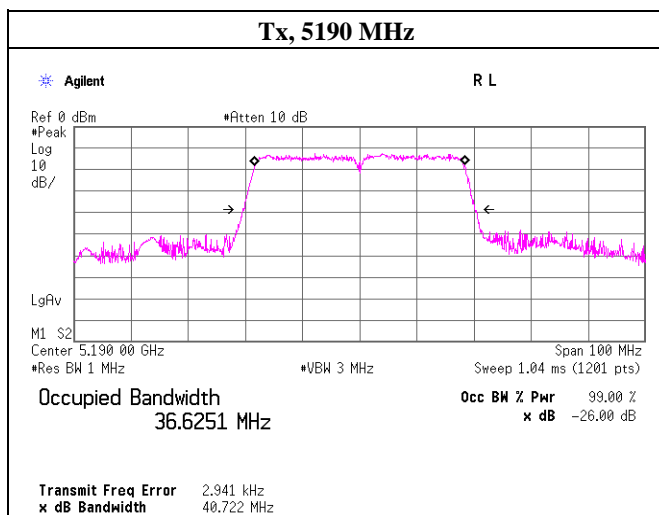


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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (MIMO), PN9, Antenna port 1, worst data mode 14 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5190.0000	36625.1
-	-
-	-



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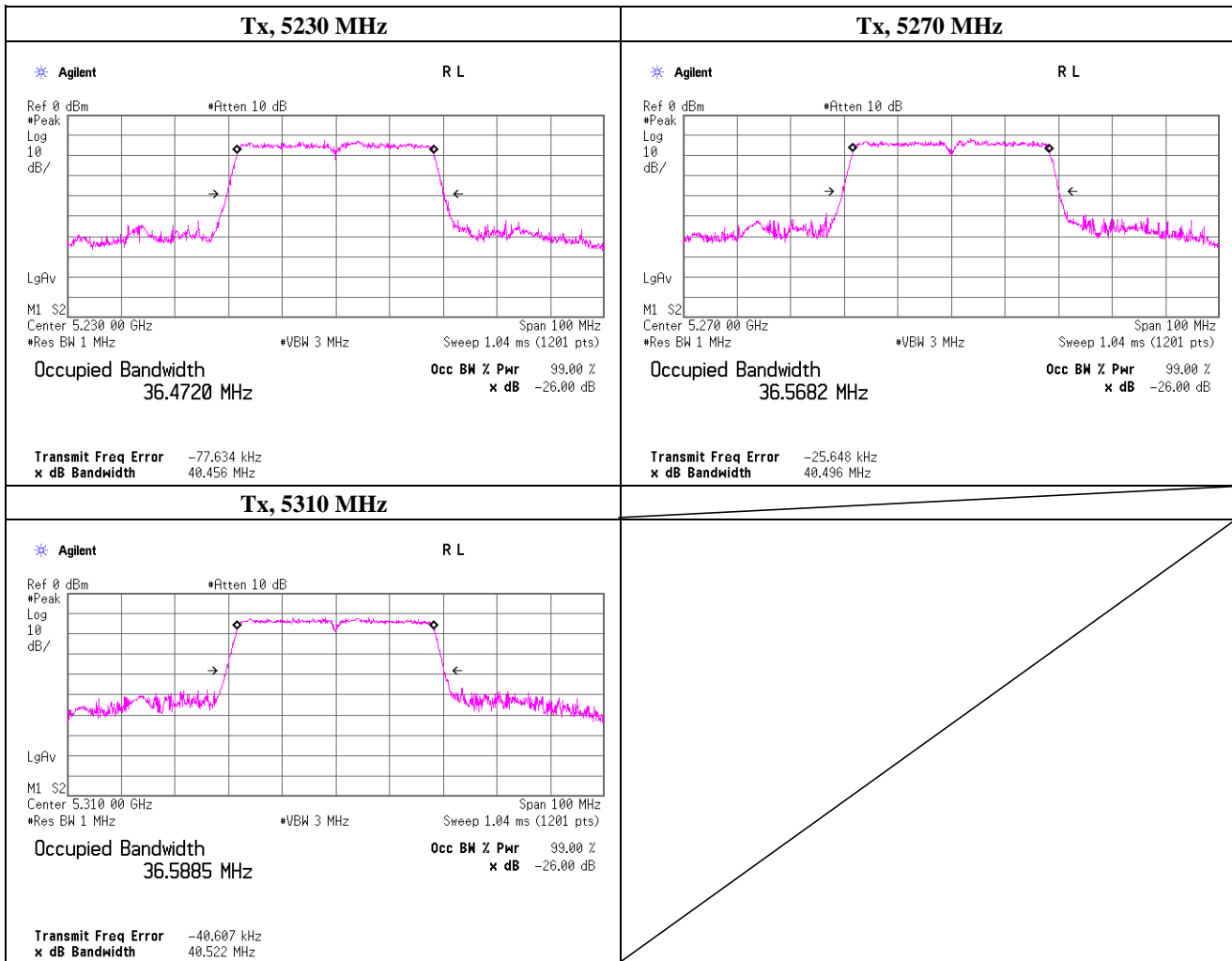
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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (MIMO), PN9, Antenna port 1, worst data mode 14 (MCS)	

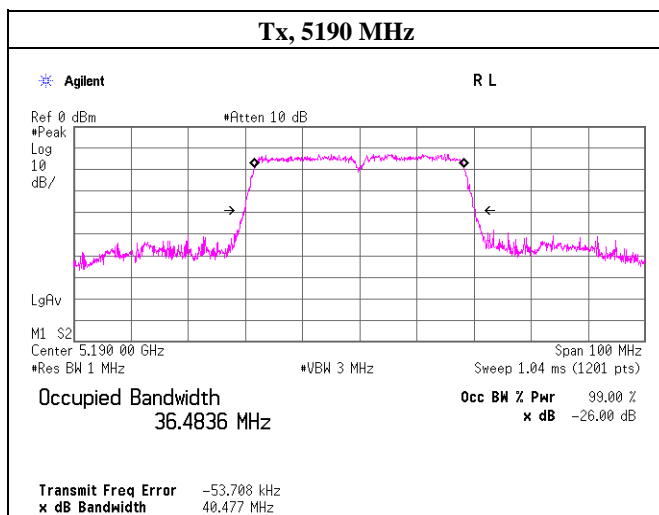
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5230.0000	36472.0
5270.0000	36568.2
5310.0000	36588.5



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (MIMO), PN9, Antenna port 1, worst data mode 5 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5190.0000	36483.6
-	-
-	-



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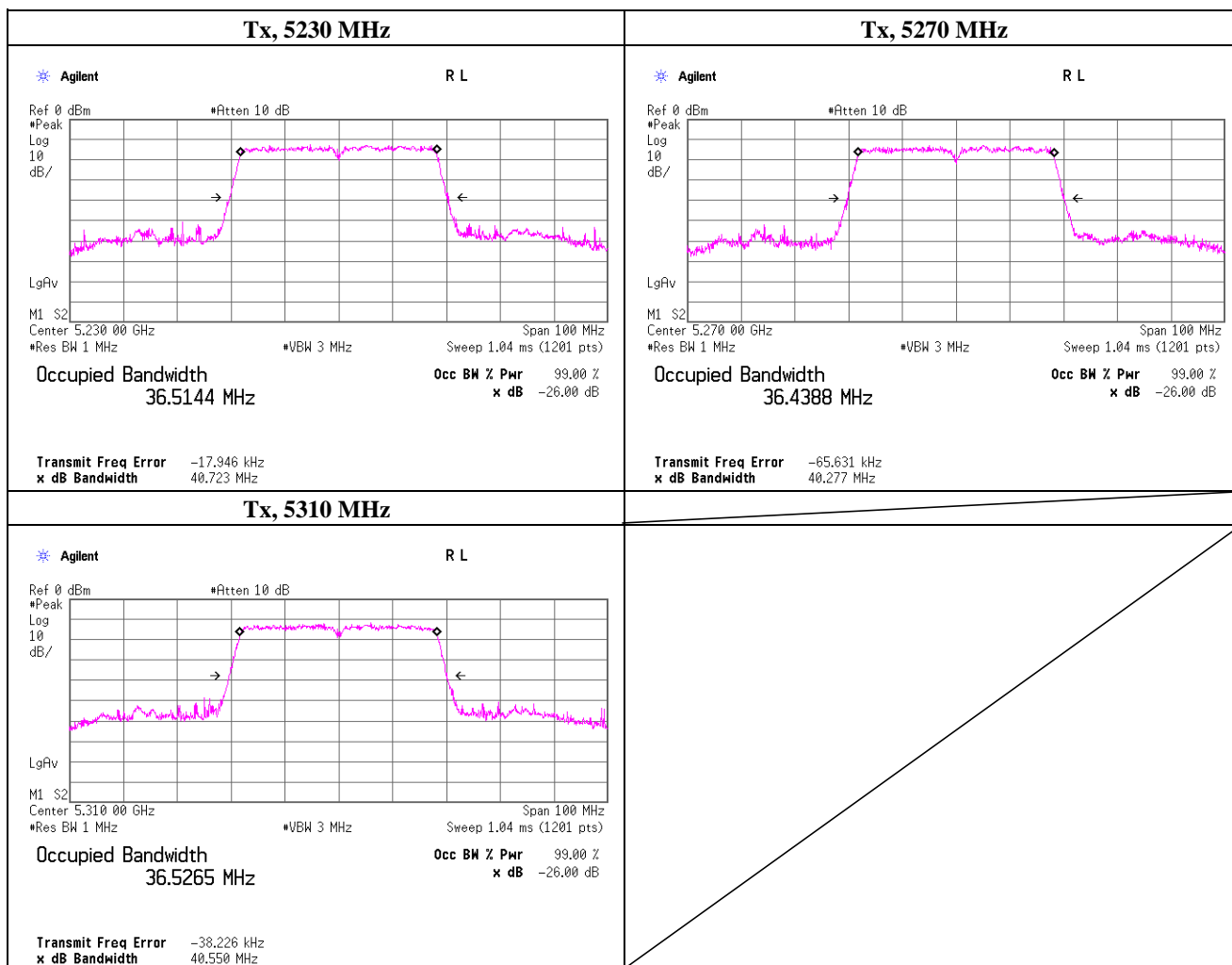
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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (MIMO), PN9, Antenna port 1, worst data mode 5 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5230.0000	36514.4
5270.0000	36438.8
5310.0000	36526.5

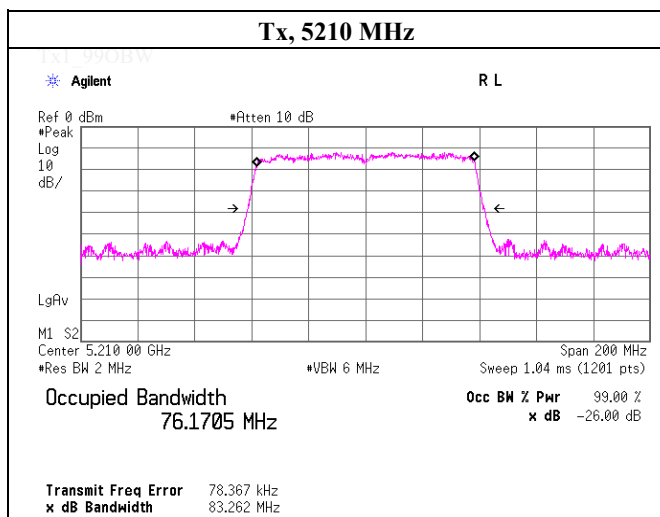


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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 20, 2021	
Temperature / Humidity	23 deg.C , 39 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-80 (SISO), PN9, worst antenna port 1, worst data mode 4 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5210.0000	76170.5
-	-
-	-



Tx2_99OBW

Tx3_99OBW

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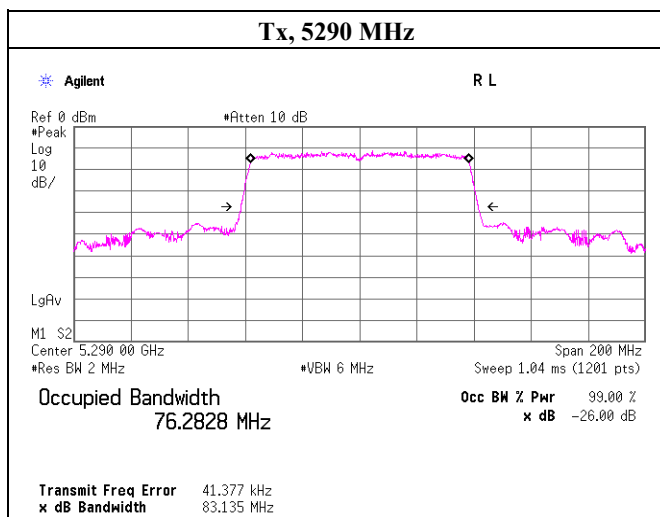
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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 20, 2021	
Temperature / Humidity	23 deg.C , 39 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-80 (SISO), PN9, worst antenna port 1, worst data mode 4 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5290.0000	76282.8
-	-
-	-



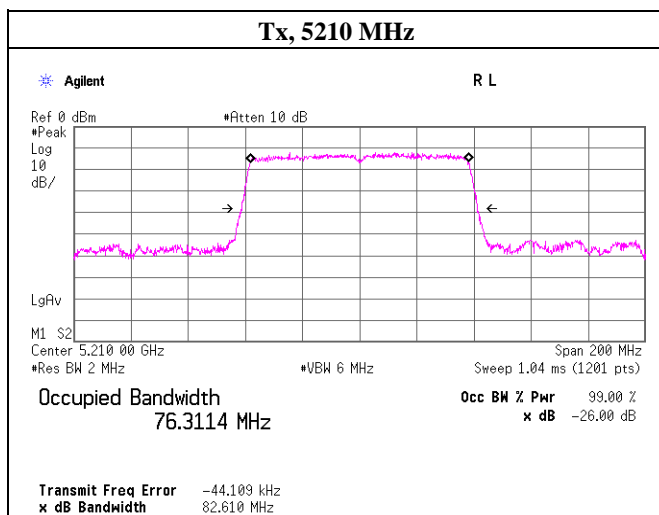
Tx2_99OBW

Tx3_99OBW

99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 20, 2021	
Temperature / Humidity	23 deg.C , 39 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-80 (MIMO), PN9, Antenna port 1, worst data mode 4 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5210.0000	76311.4
-	-
-	-



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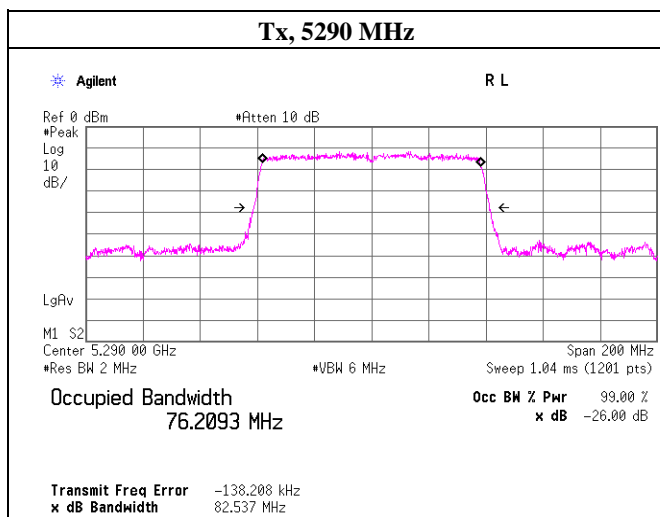
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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 20, 2021	
Temperature / Humidity	23 deg.C , 39 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-80 (MIMO), PN9, Antenna port 1, worst data mode 4 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5290.0000	76209.3
-	-
-	-



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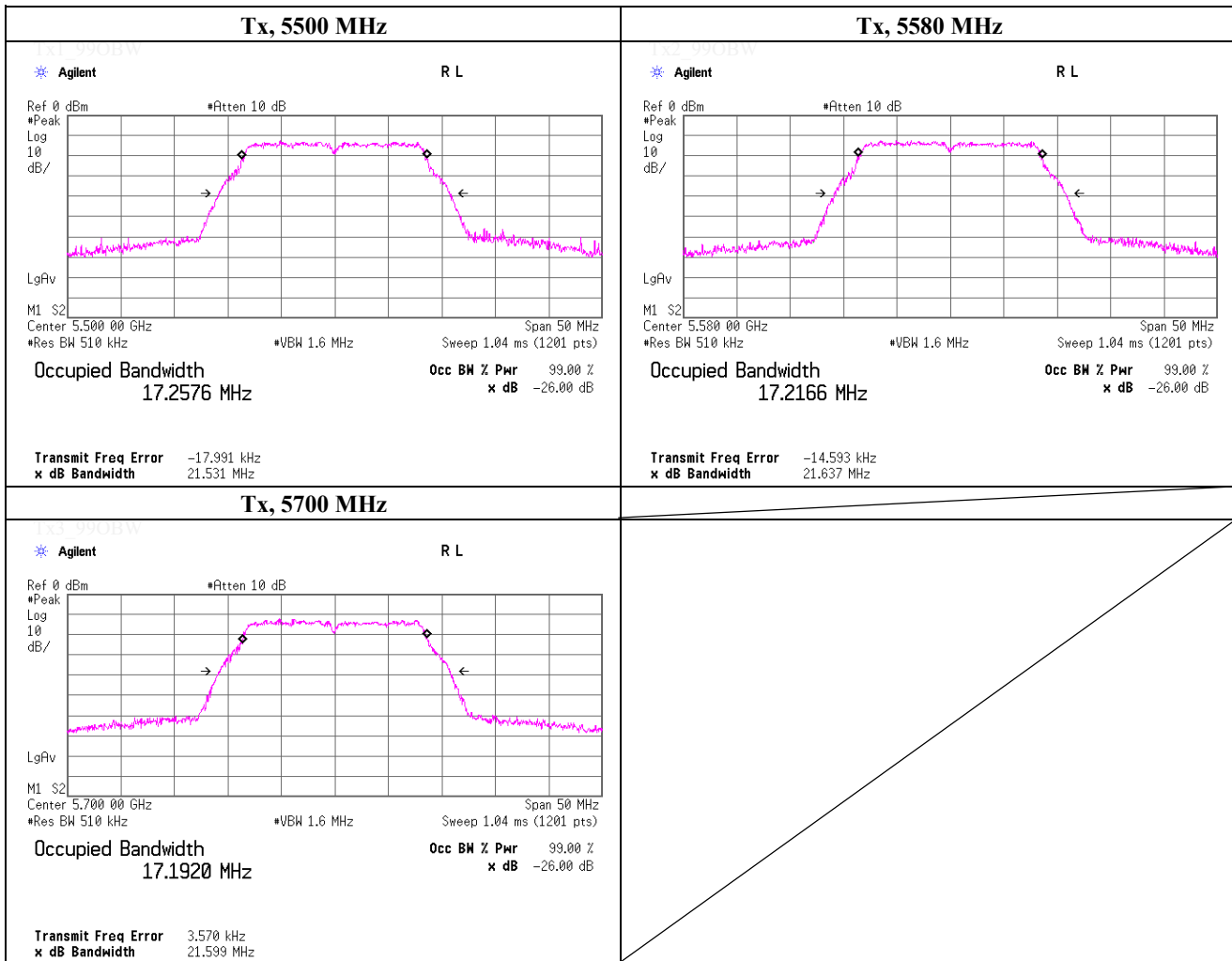
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 8, 2021	
Temperature / Humidity	23 deg.C , 40 %RH	
Engineer	Kenichi Adachi	
Mode	Tx, IEEE802.11a, PN9, worst antenna port 1, worst data mode 48 Mbps	

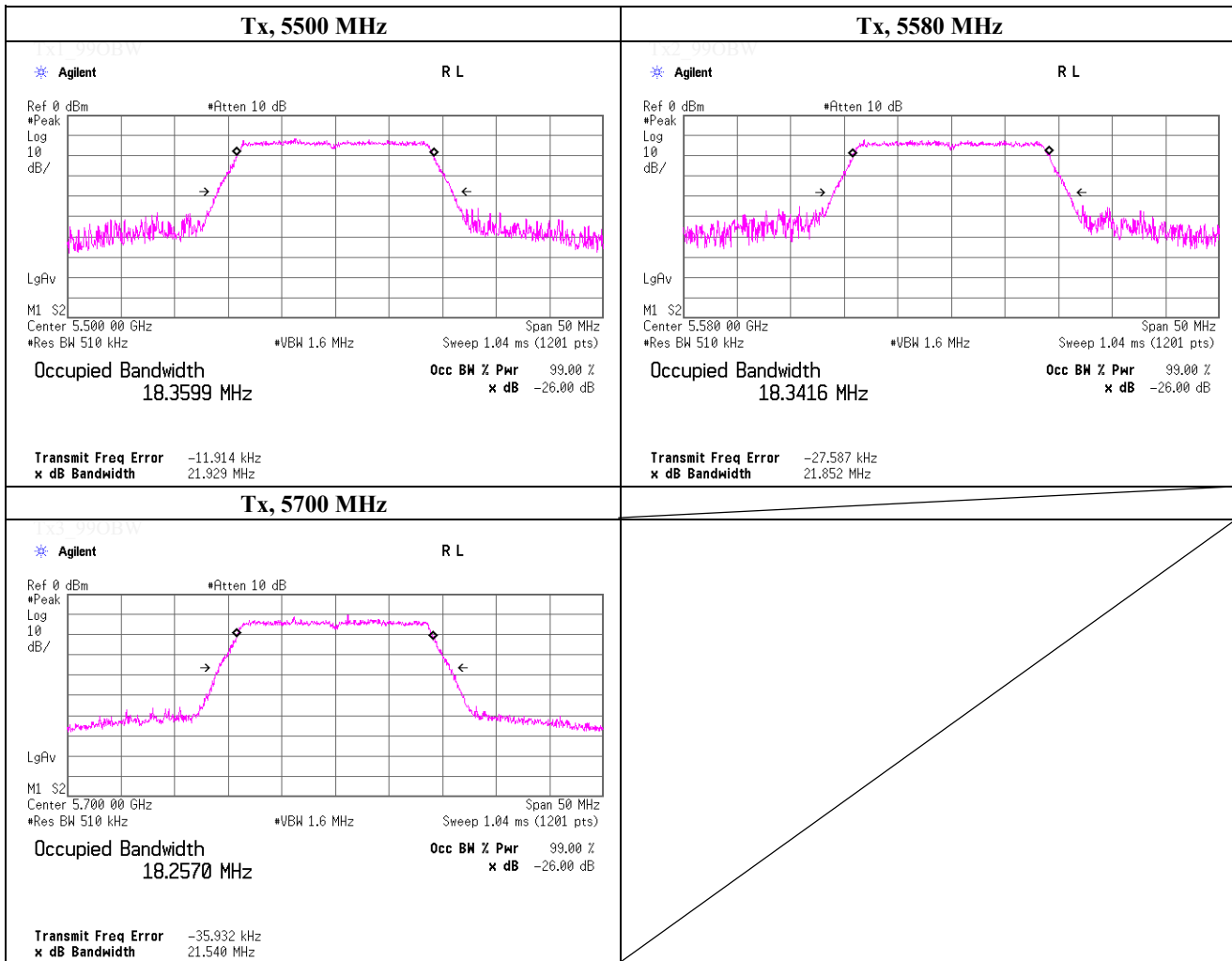
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5500.0000	17257.6
5580.0000	17216.6
5700.0000	17192.0



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 30 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (SISO), PN9, worst antenna port 1, worst data mode 6 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5500.0000	18359.9
5580.0000	18341.6
5700.0000	18257.0

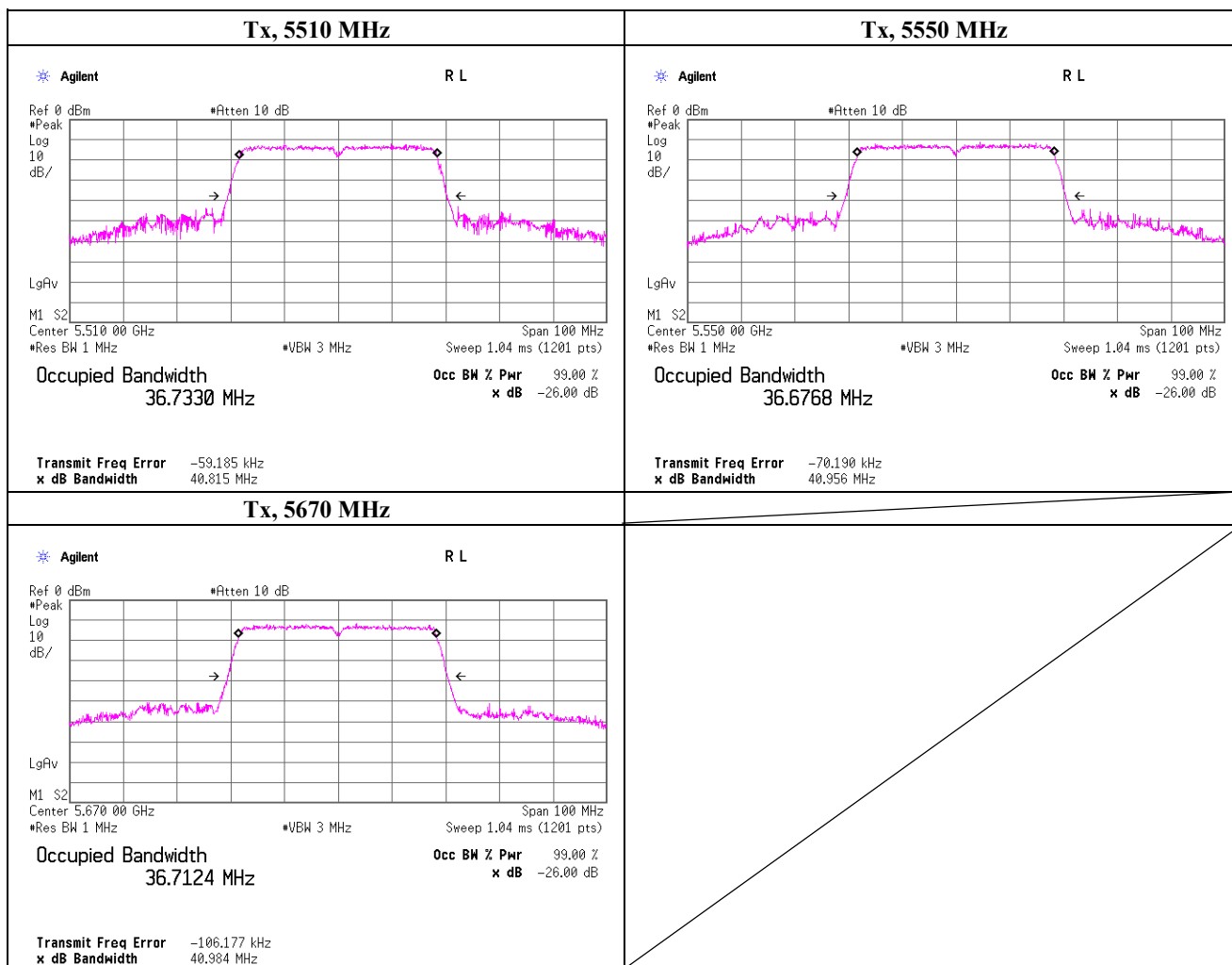


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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5510.0000	36733.0
5550.0000	36676.8
5670.0000	36712.4

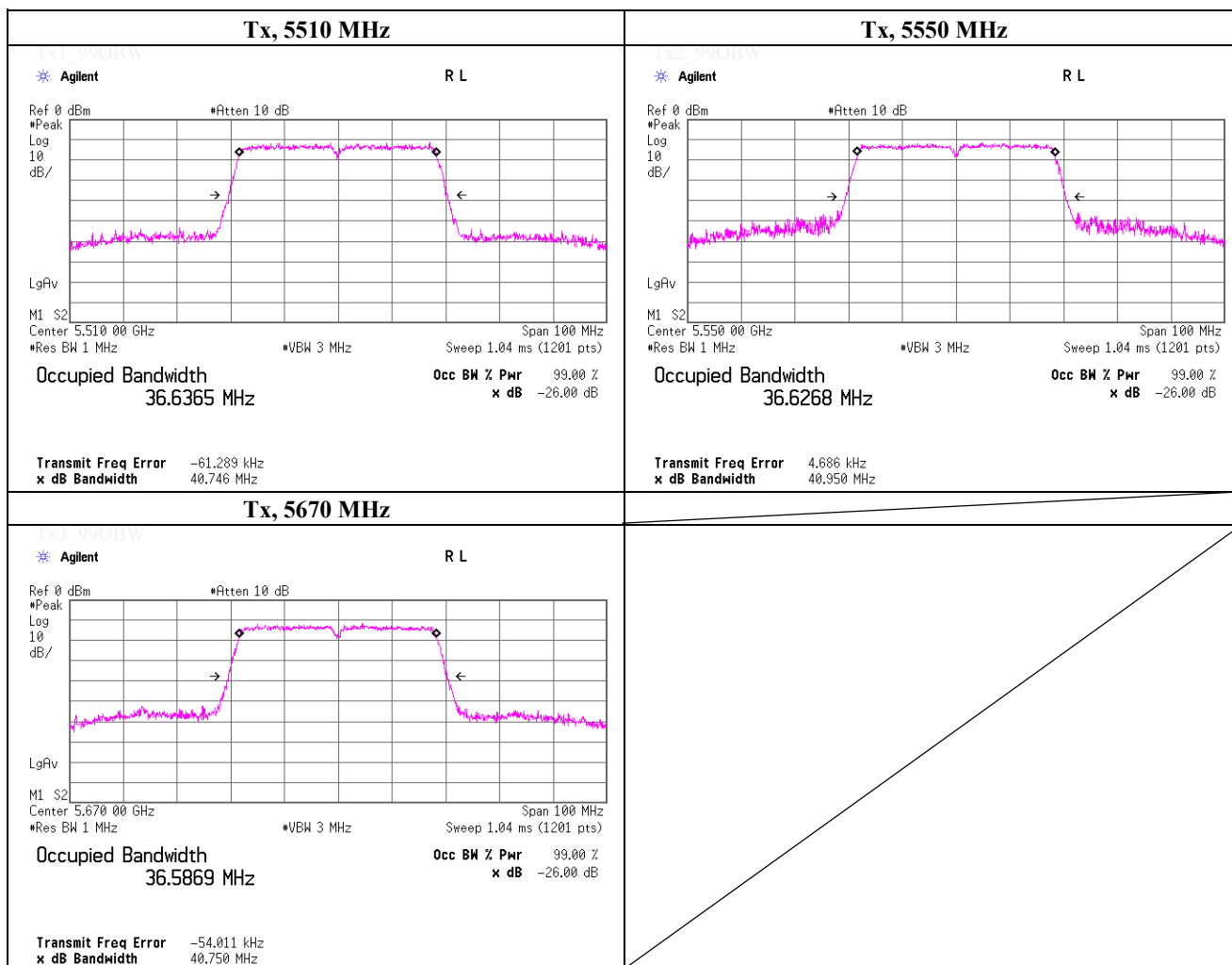


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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5510.0000	36636.5
5550.0000	36626.8
5670.0000	36586.9

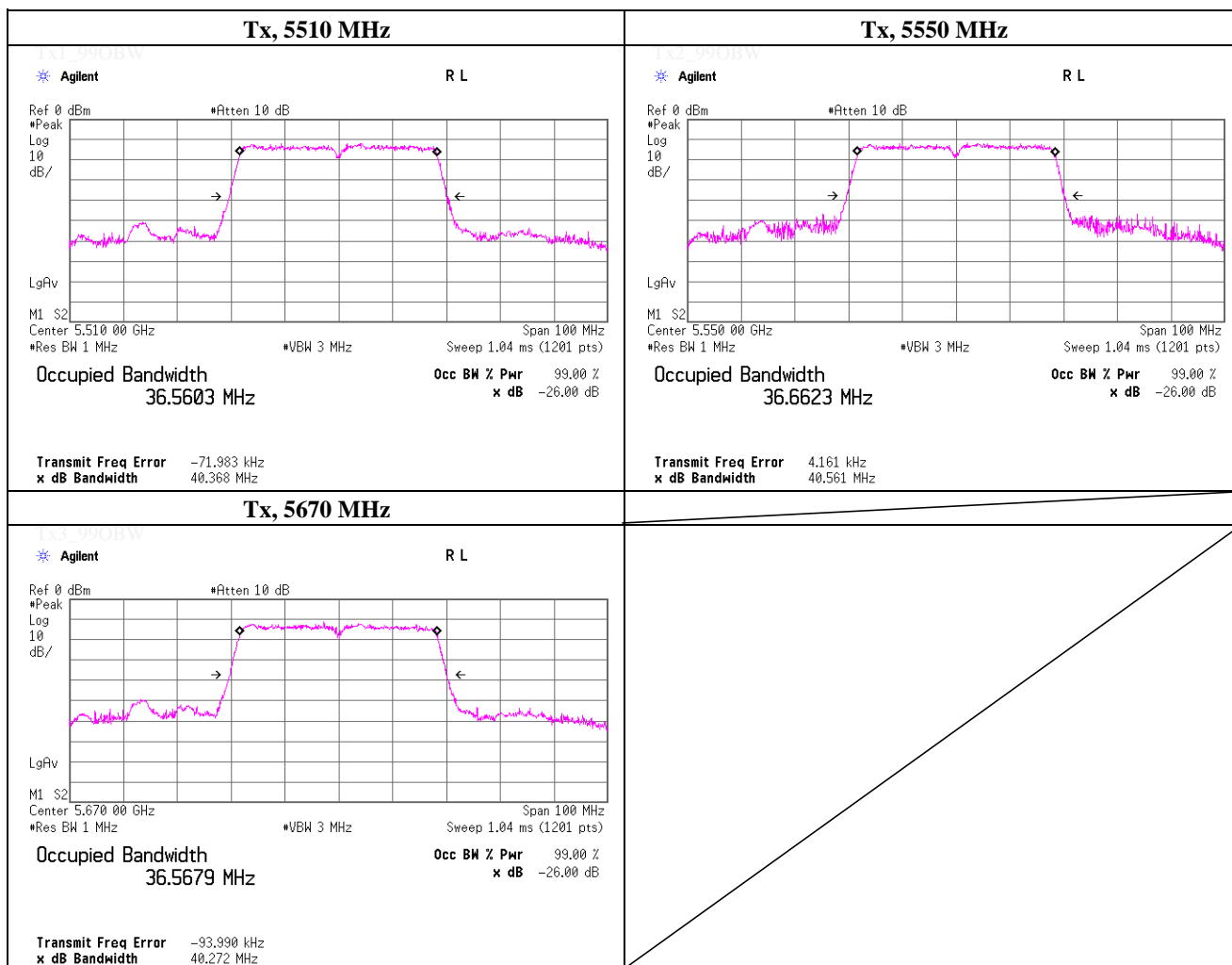


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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (MIMO), PN9, Antenna port 1, worst data mode 14 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5510.0000	36560.3
5550.0000	36662.3
5670.0000	36567.9

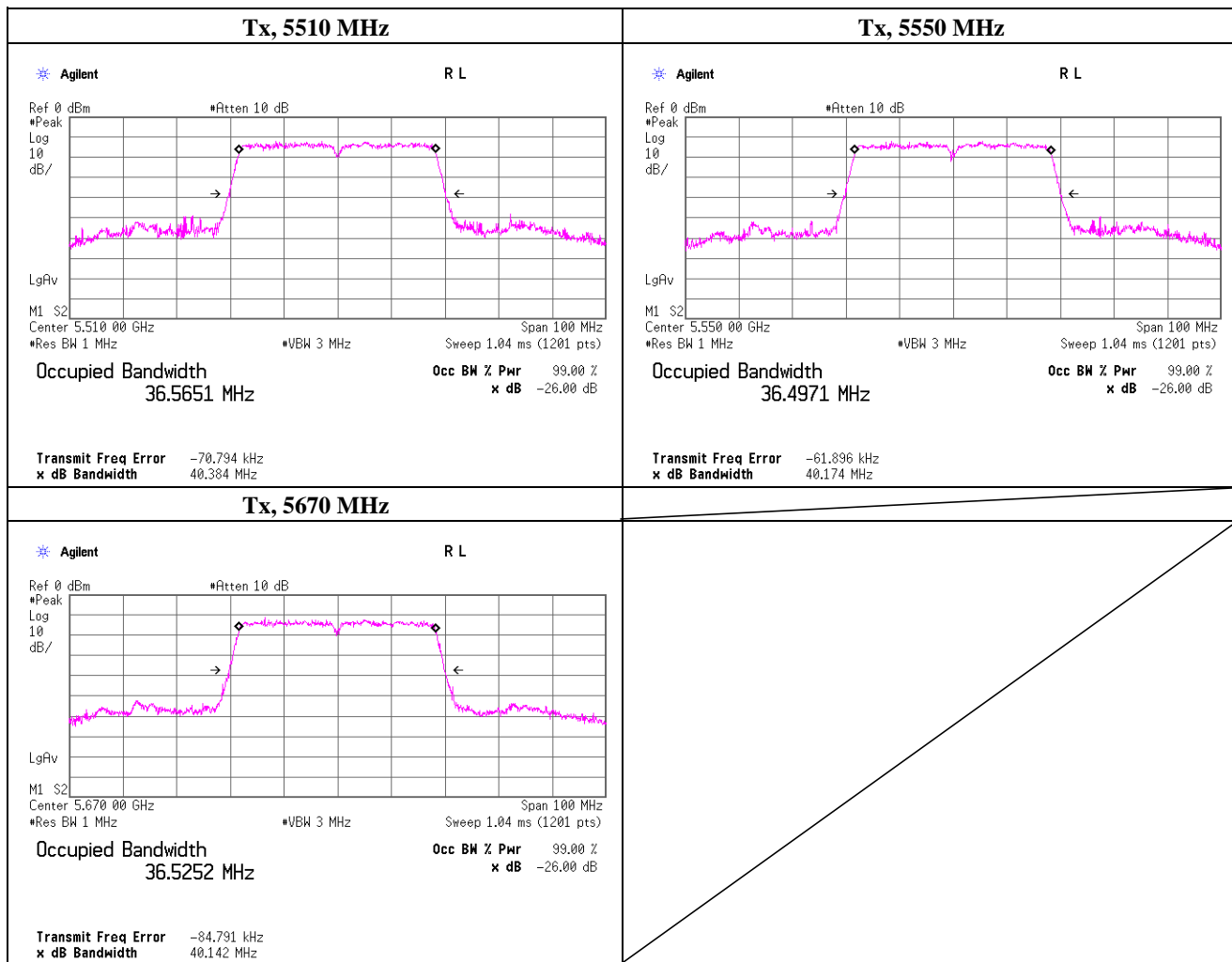


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 Telephone : +81 463 50 6400
 Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (MIMO), PN9, Antenna port 1, worst data mode 5 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5510.0000	36565.1
5550.0000	36497.1
5670.0000	36525.2

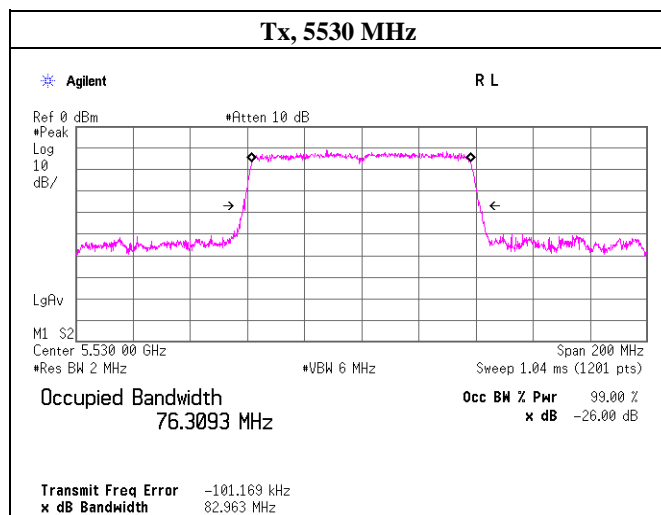


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 Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 20, 2021	
Temperature / Humidity	23 deg.C , 39 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-80 (MIMO), PN9, Antenna port 1, worst data mode 4 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5530.0000	76309.3
-	-
-	-



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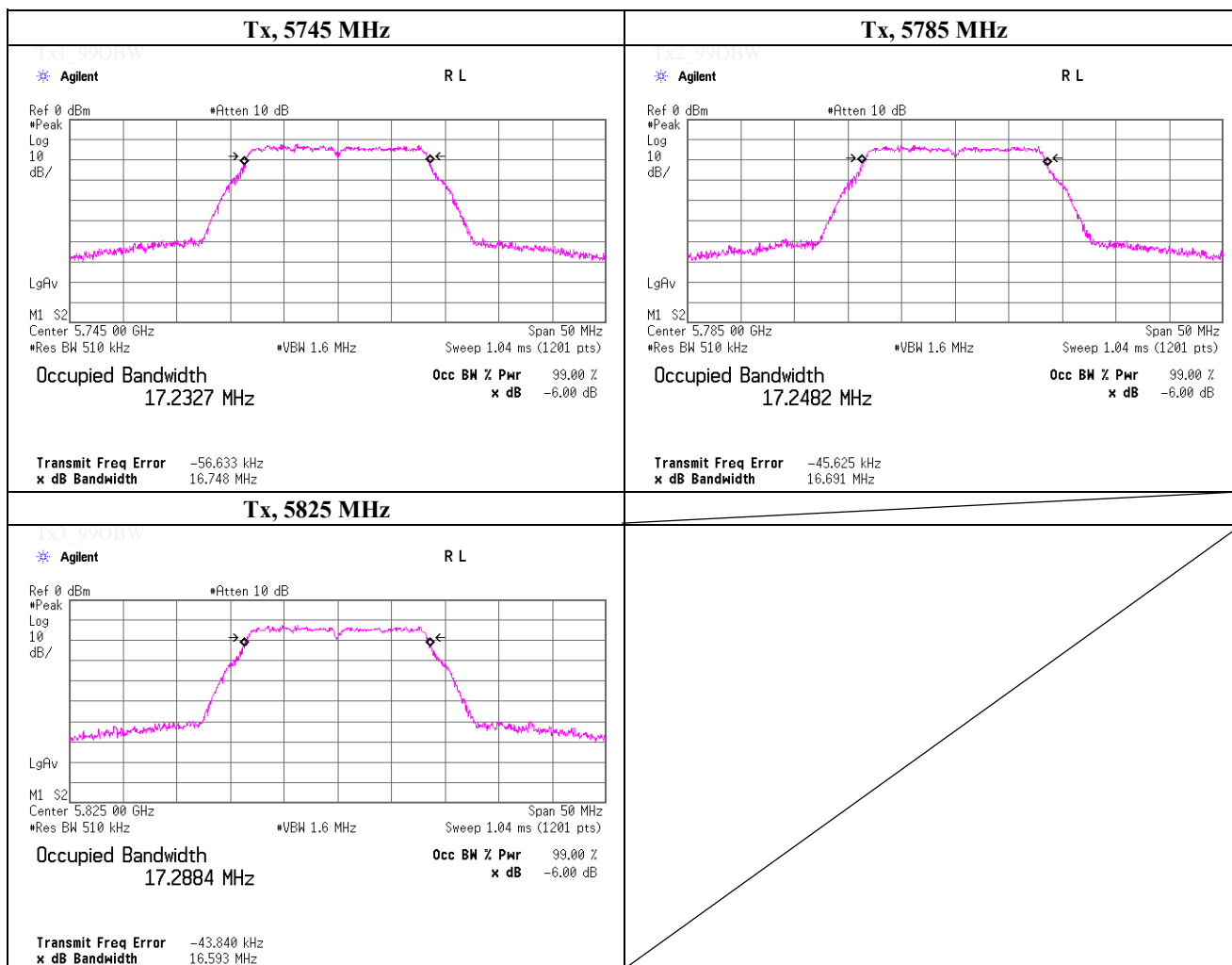
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 8, 2021	
Temperature / Humidity	23 deg.C , 40 %RH	
Engineer	Kenichi Adachi	
Mode	Tx, IEEE802.11a, PN9, worst antenna port 1, worst data mode 48 Mbps	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5745.0000	17232.7
5785.0000	17248.2
5825.0000	17288.4

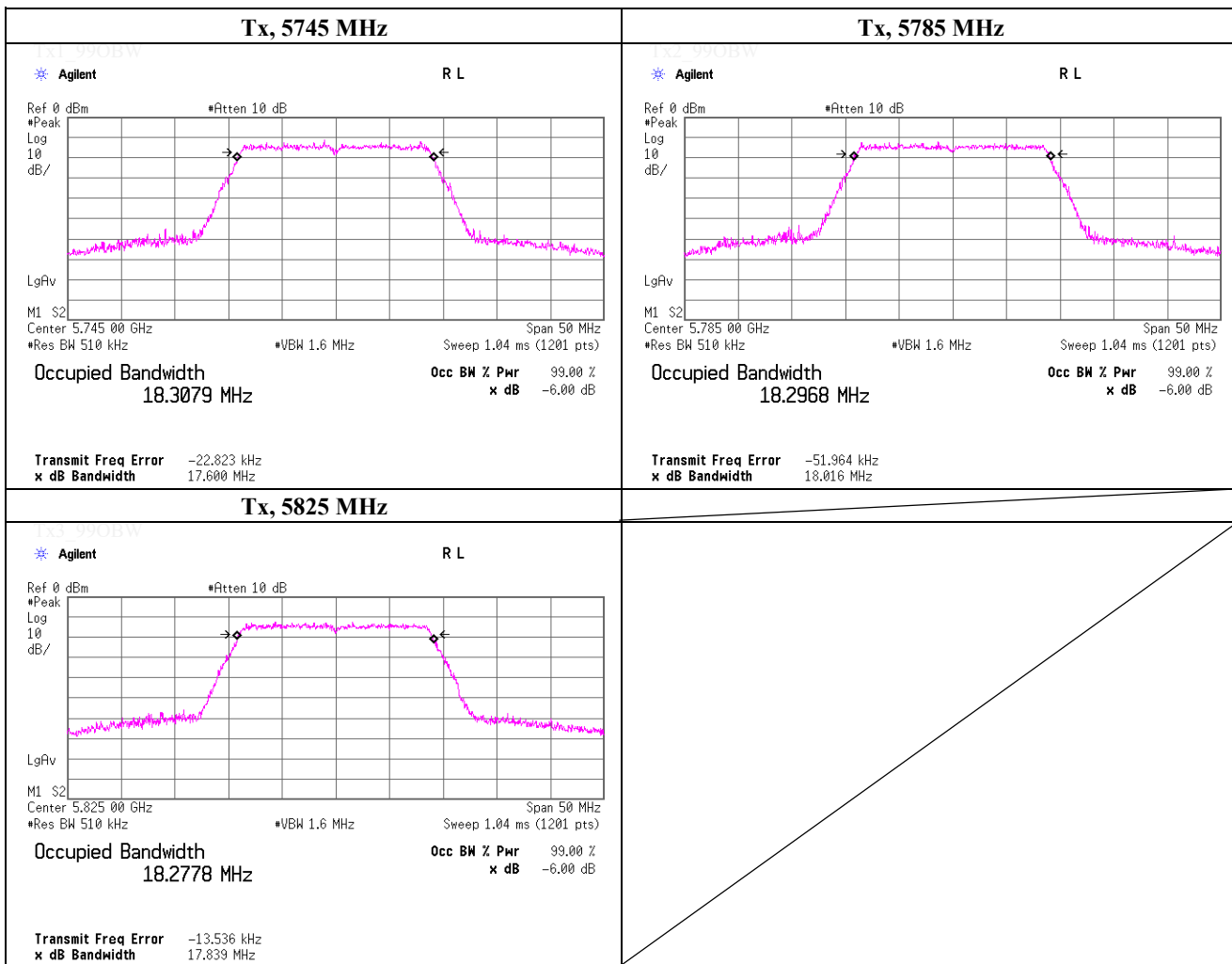


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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 30 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (SISO), PN9, worst antenna port 1, worst data mode 6 (MCS)	

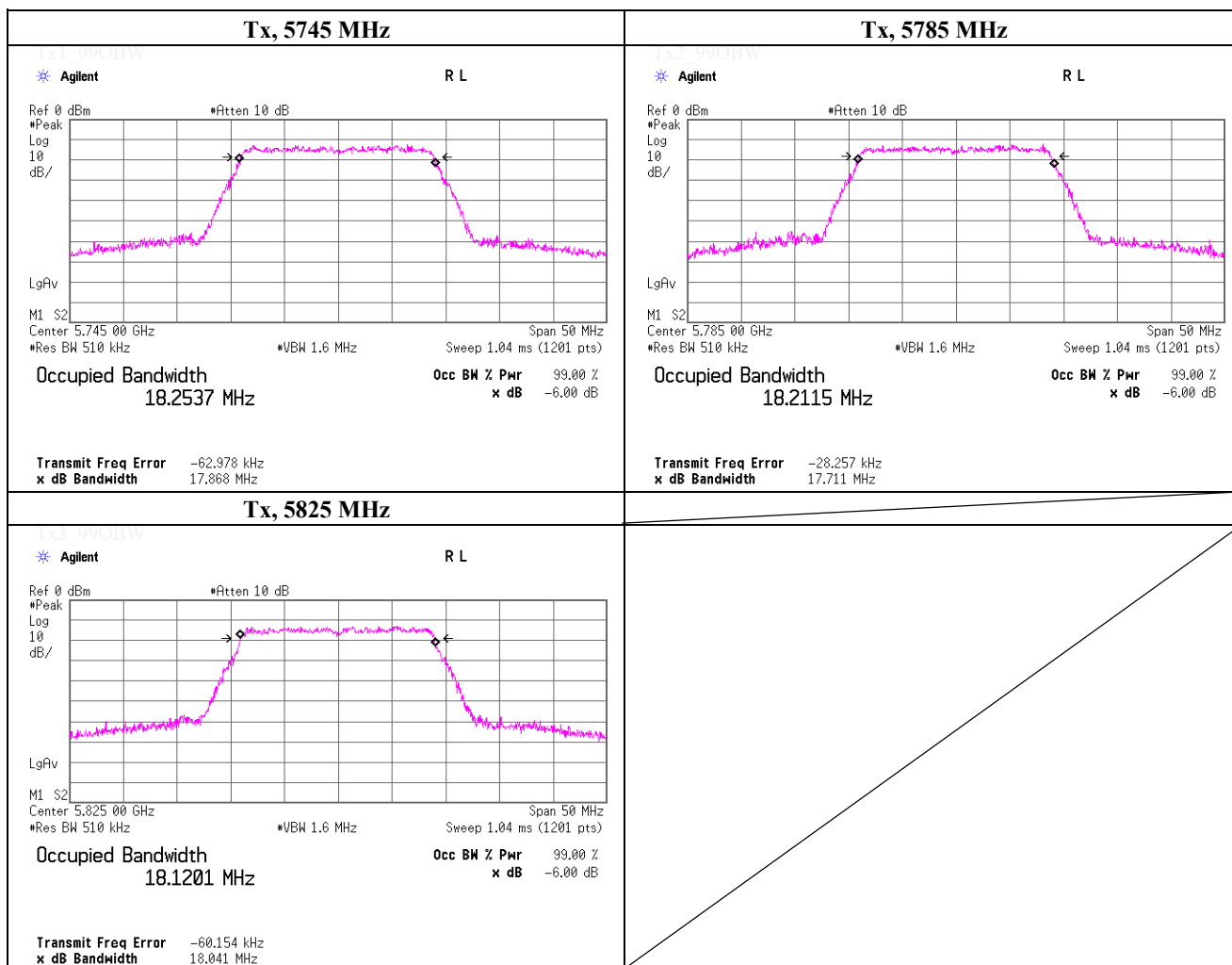
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5745.0000	18307.9
5785.0000	18296.8
5825.0000	18277.8



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 13, 2021	
Temperature / Humidity	24 deg.C , 41 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (MIMO), PN9, Antenna port 1, worst data mode 13 (MCS)	

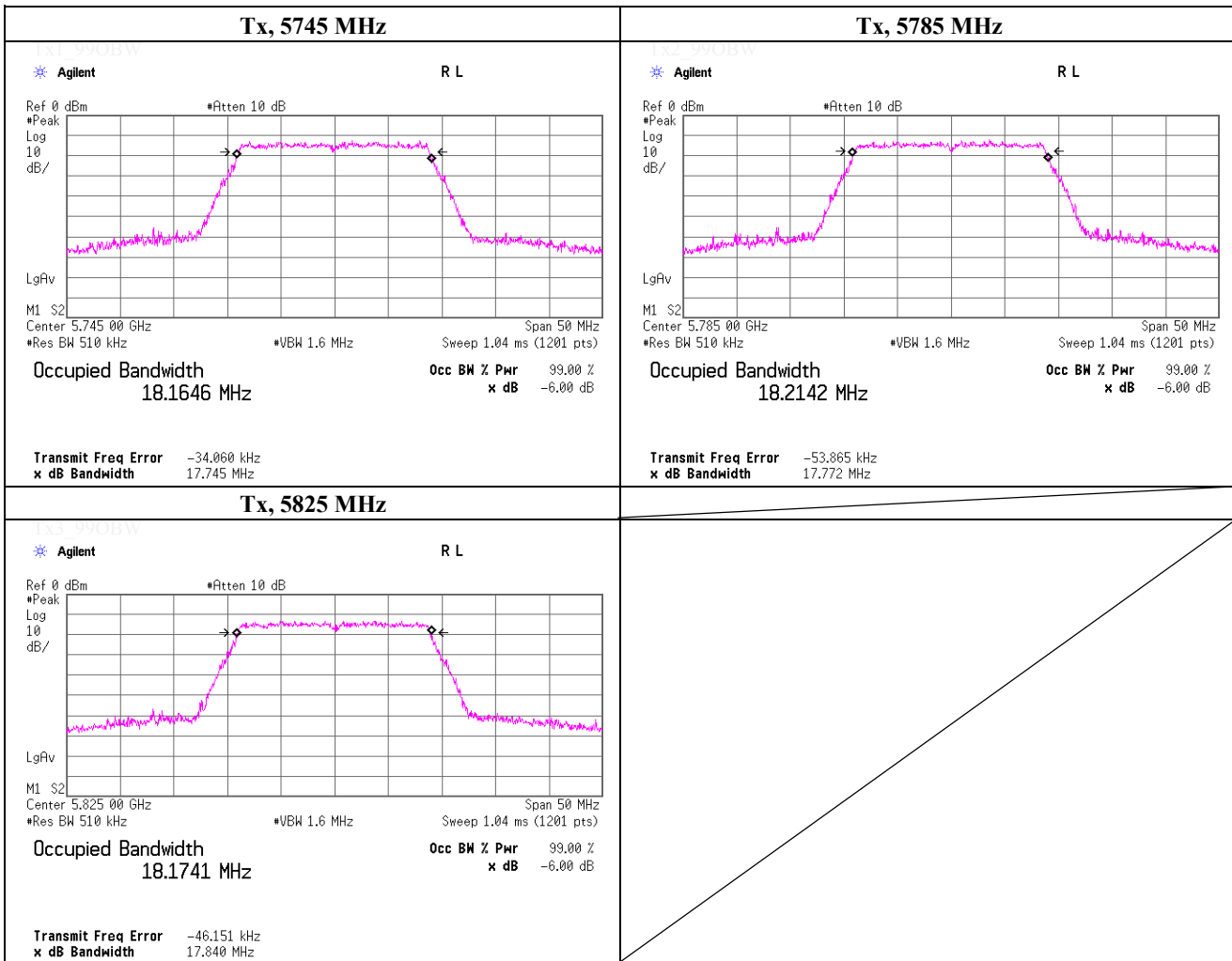
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5745.0000	18253.7
5785.0000	18211.5
5825.0000	18120.1



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 13, 2021	
Temperature / Humidity	24 deg.C , 41 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-20 (MIMO), PN9, Antenna port 1, worst data mode 8 (MCS)	

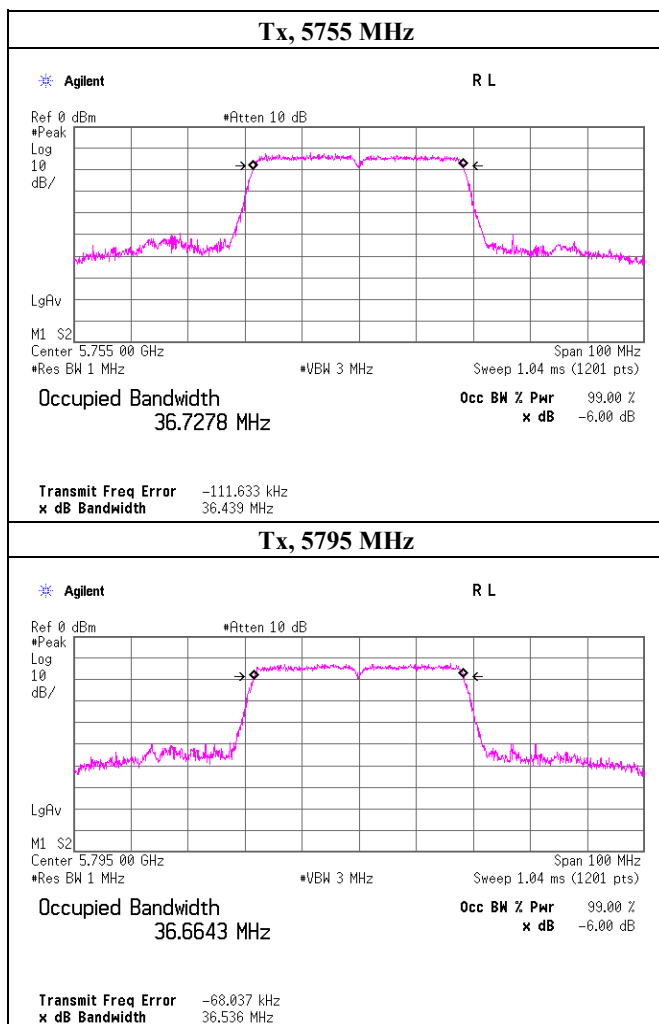
Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5745.0000	18164.6
5785.0000	18214.2
5825.0000	18174.1



99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5755.0000	36727.8
-	-
5795.0000	36664.3



Tx2_99OBW

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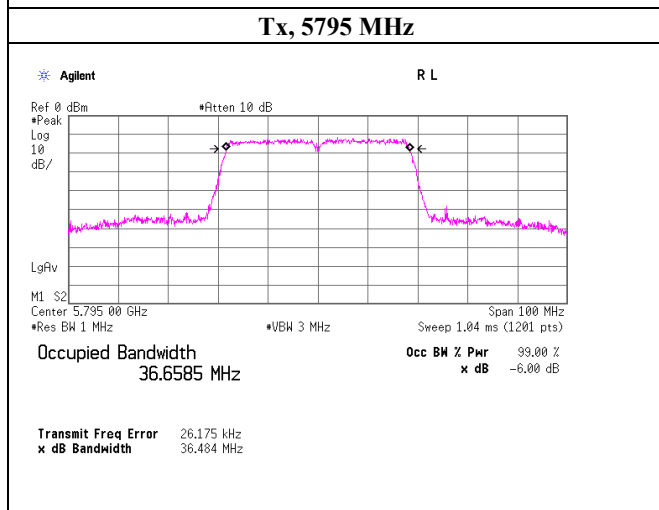
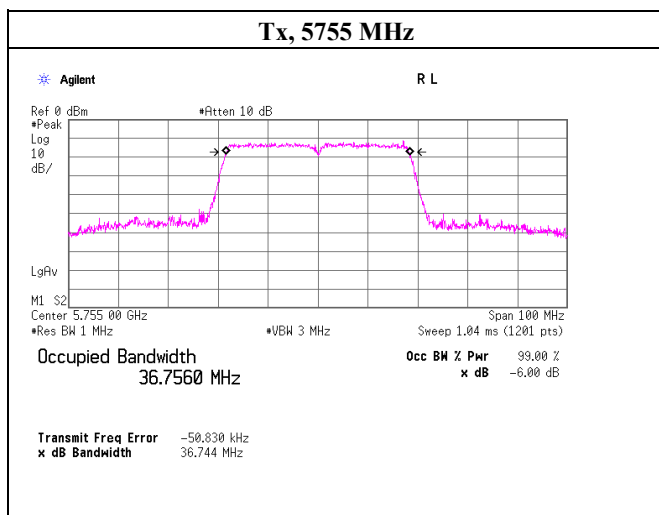
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5755.0000	36756.0
-	-
5795.0000	36658.5



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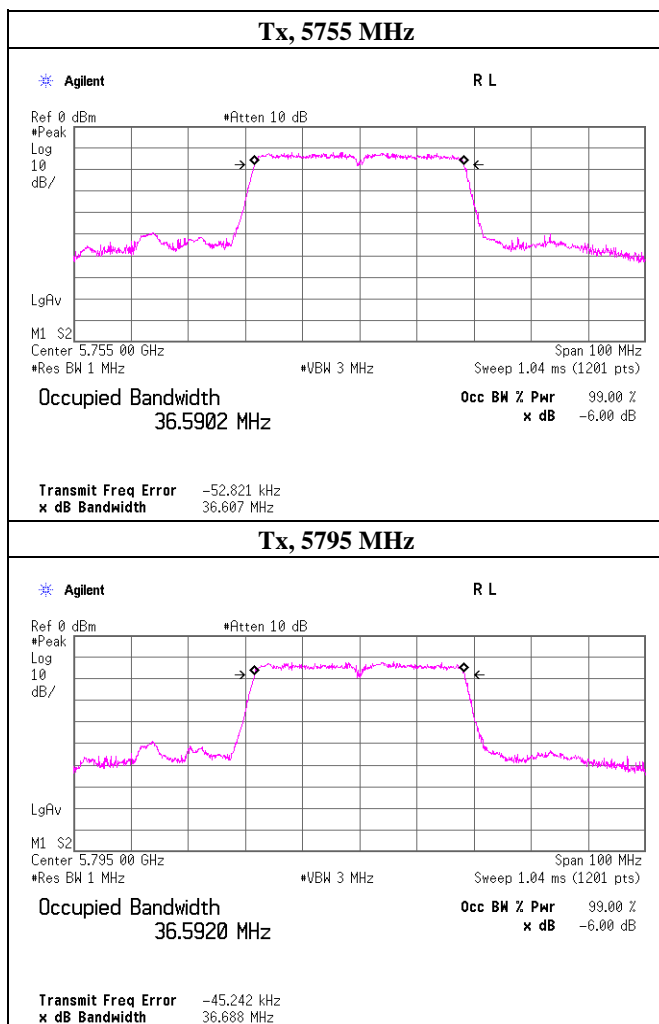
Telephone : +81 463 50 6400

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99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (MIMO), PN9, Antenna port 1, worst data mode 14 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5755.0000	36590.2
-	-
5795.0000	36592.0



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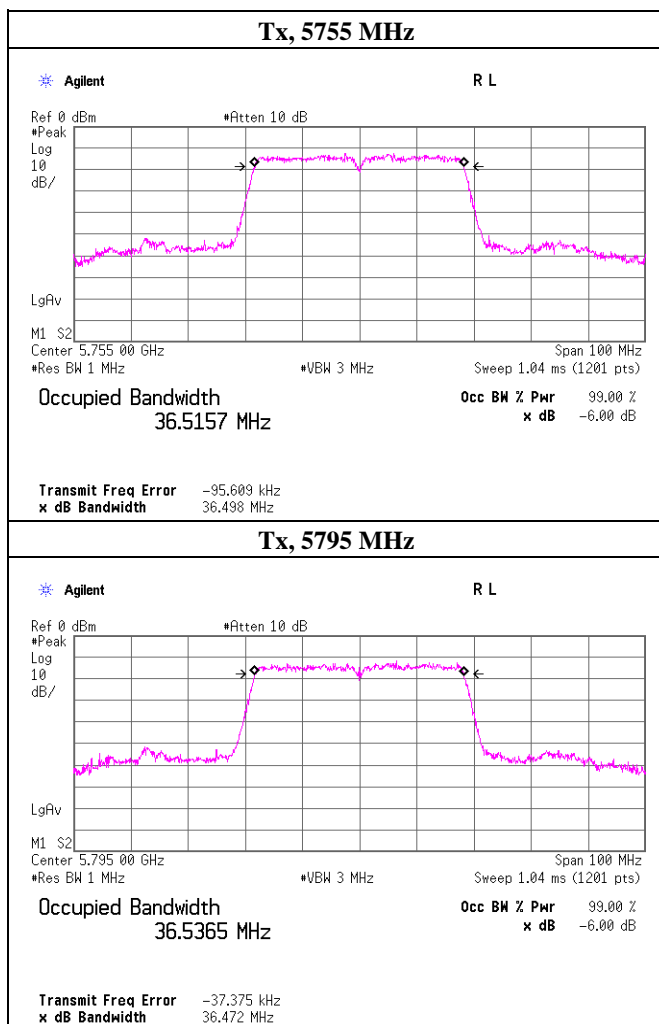
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Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (MIMO), PN9, Antenna port 1, worst data mode 5 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5755.0000	36515.7
-	-
5795.0000	36536.5



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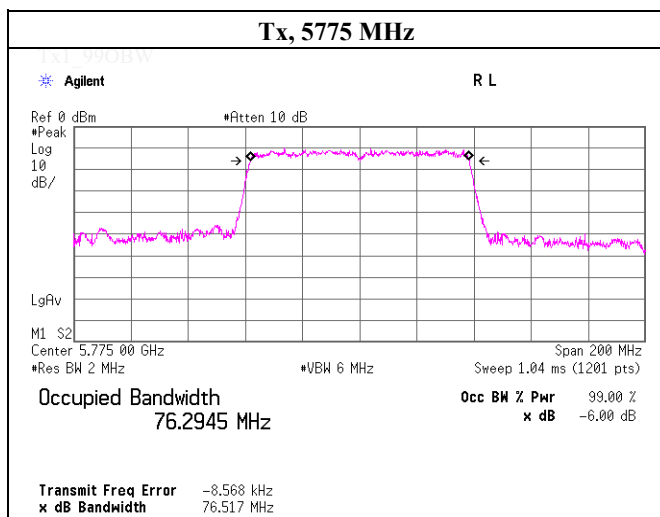
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 20, 2021	
Temperature / Humidity	23 deg.C , 39 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-80 (SISO), PN9, worst antenna port 1, worst data mode 4 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5775.0000	76294.5
-	-
-	-



Tx2_99OBW

Tx3_99OBW

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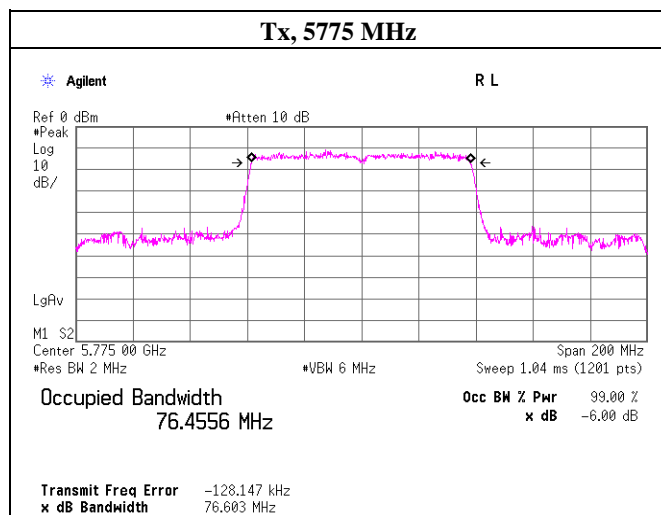
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 % Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 20, 2021	
Temperature / Humidity	23 deg.C , 39 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-80 (MIMO), PN9, Antenna port 1, worst data mode 4 (MCS)	

Freq. [MHz]	99 % Occupied Bandwidth [kHz]
5775.0000	76455.6
-	-
-	-



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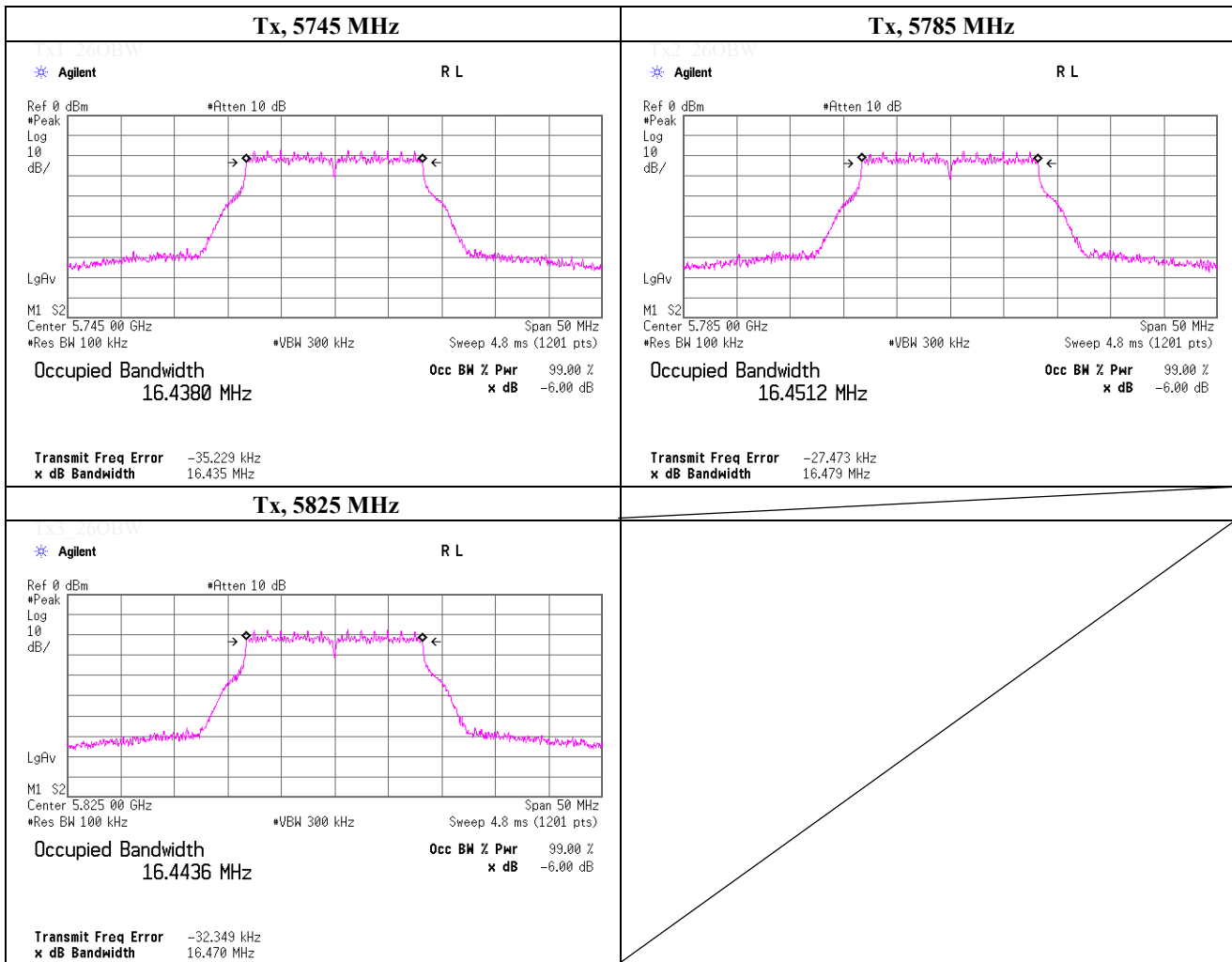
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

-6 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 8, 2021	
Temperature / Humidity	23 deg.C , 40 %RH	
Engineer	Kenichi Adachi	
Mode	Tx, IEEE802.11a, PN9, worst antenna port 1, worst data mode 48 Mbps	

Freq. [MHz]	-6 dB Bandwidth [MHz]	Limit [MHz]
5745.0000	16.435	> 0.500
5785.0000	16.479	> 0.500
5825.0000	16.470	> 0.500

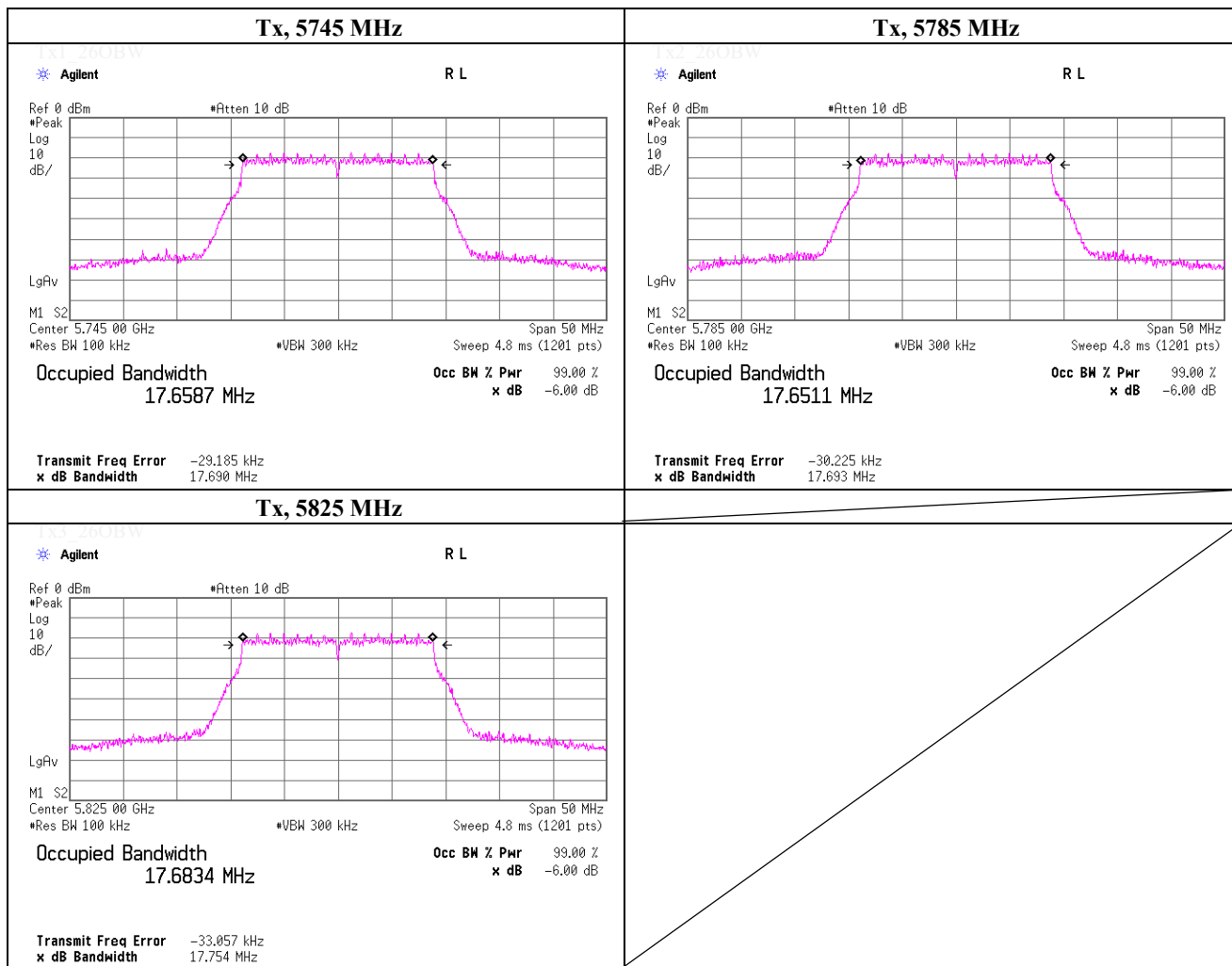


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-6 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 30 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (SISO), PN9, worst antenna port 1, worst data mode 6 (MCS)	

Freq. [MHz]	-6 dB Bandwidth [MHz]	Limit [MHz]
5745.0000	17.690	> 0.500
5785.0000	17.693	> 0.500
5825.0000	17.754	> 0.500

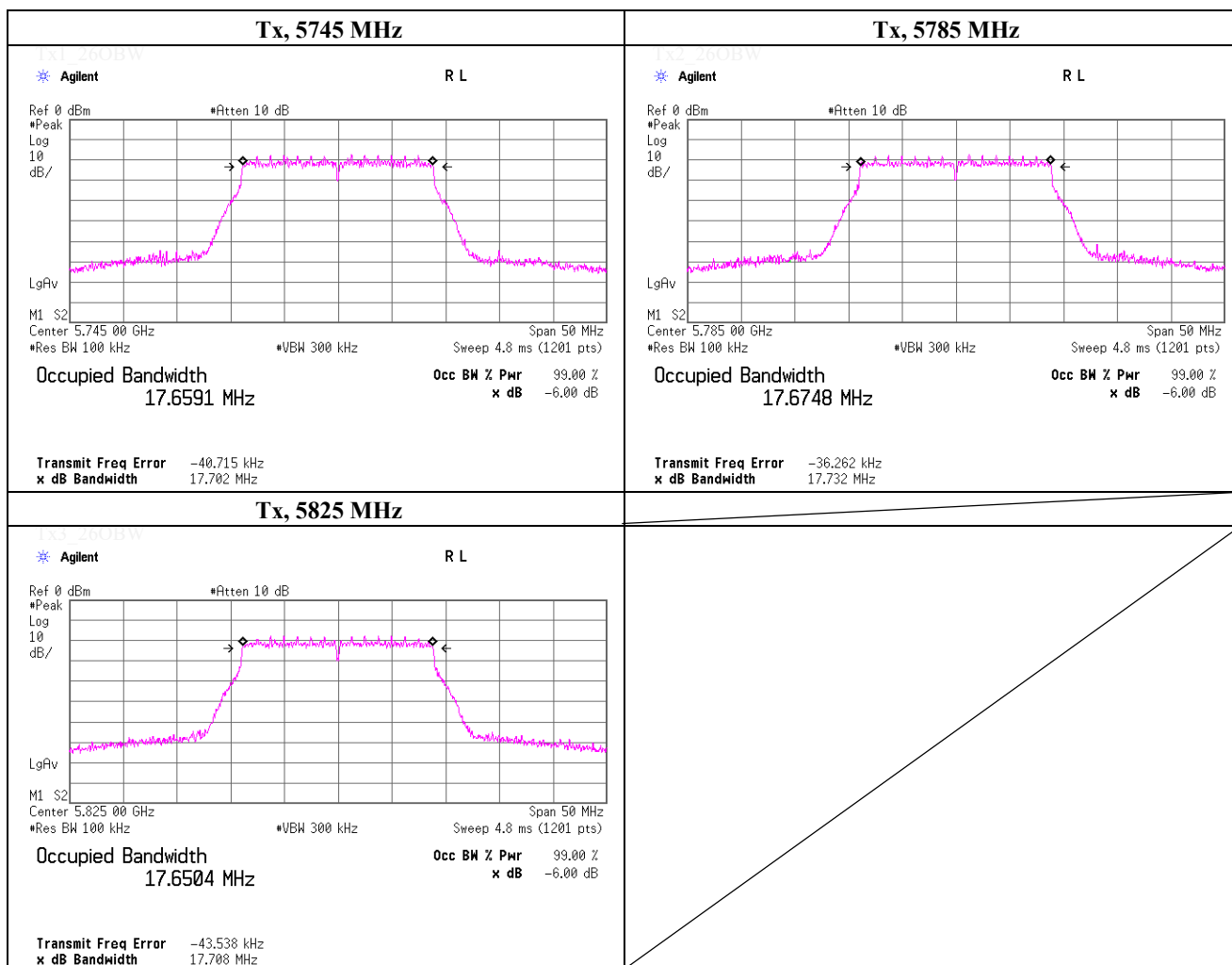


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-6 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 12, 2021	
Temperature / Humidity	23 deg.C , 51 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-20 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	-6 dB Bandwidth [MHz]	Limit [MHz]
5745.0000	17.702	> 0.500
5785.0000	17.732	> 0.500
5825.0000	17.708	> 0.500

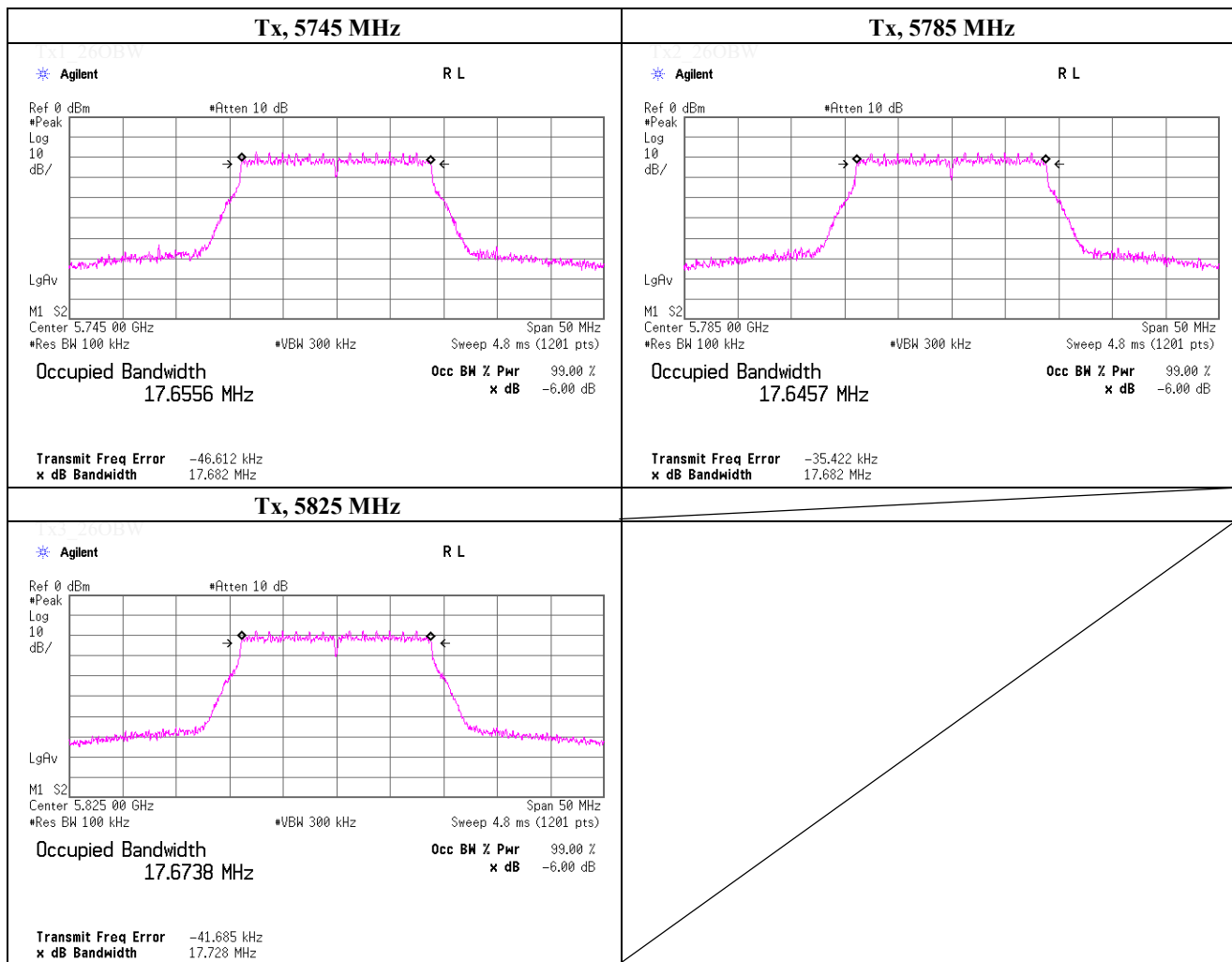


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-6 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 13, 2021	
Temperature / Humidity	24 deg.C , 41 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-20 (MIMO), PN9, Antenna port 1, worst data mode 13 (MCS)	

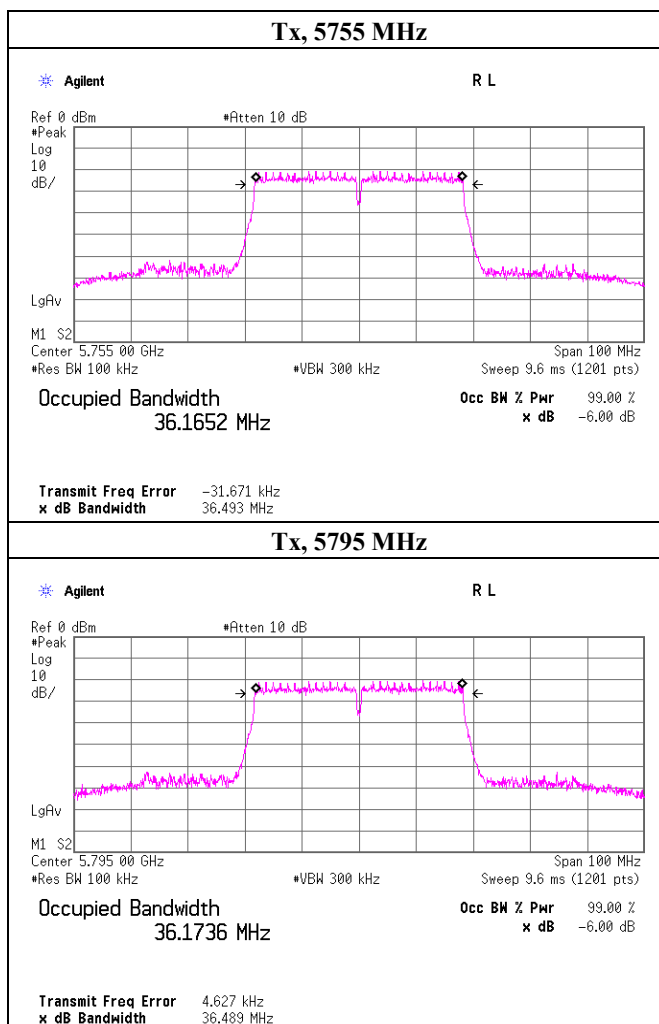
Freq. [MHz]	-6 dB Bandwidth [MHz]	Limit [MHz]
5745.0000	17.682	> 0.500
5785.0000	17.682	> 0.500
5825.0000	17.728	> 0.500



-6 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	-6 dB Bandwidth [MHz]	Limit [MHz]
5755.0000	36.493	> 0.500
-	-	> 0.500
5795.0000	36.489	> 0.500



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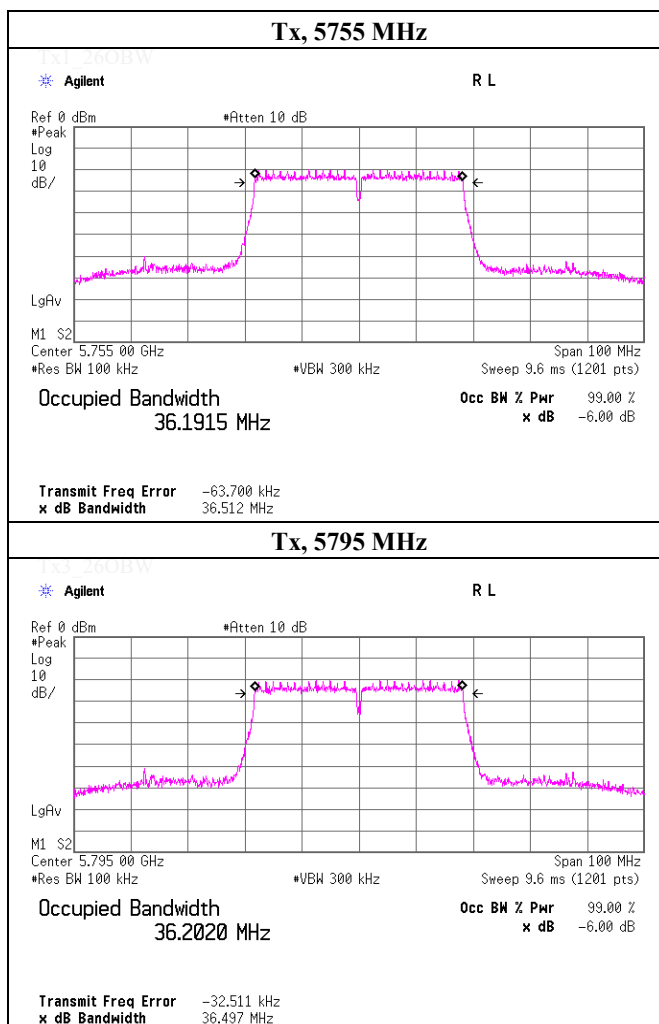
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

-6 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (SISO), PN9, worst antenna port 1, worst data mode 3 (MCS)	

Freq. [MHz]	-6 dB Bandwidth [MHz]	Limit [MHz]
5755.0000	36.512	> 0.500
-	-	> 0.500
5795.0000	36.497	> 0.500



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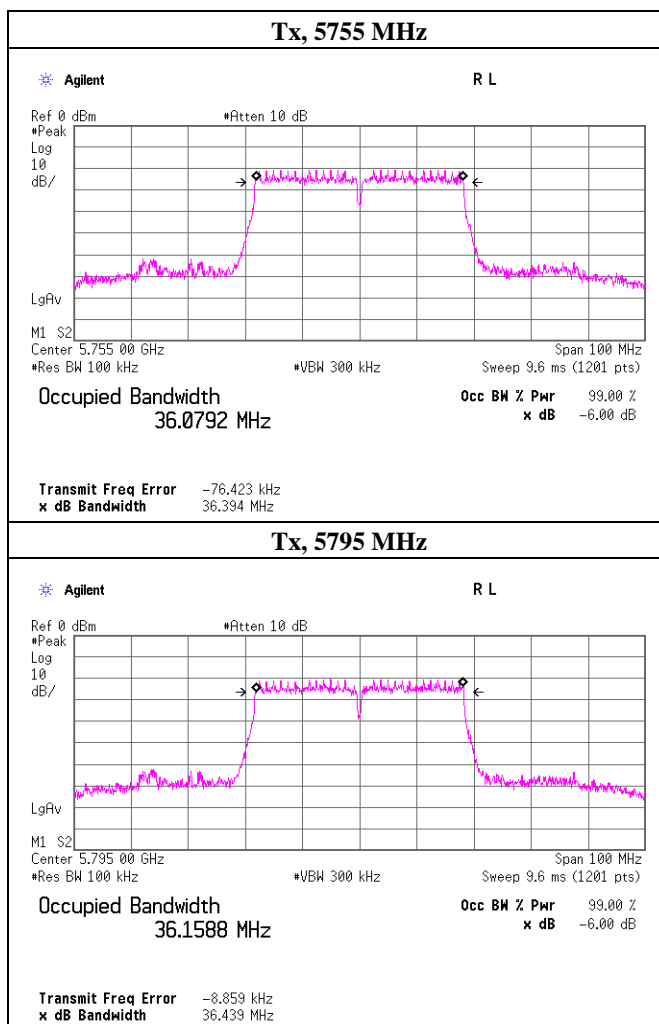
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

-6 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11n-40 (MIMO), PN9, Antenna port 1, worst data mode 14 (MCS)	

Freq. [MHz]	-6 dB Bandwidth [MHz]	Limit [MHz]
5755.0000	36.394	> 0.500
-	-	> 0.500
5795.0000	36.439	> 0.500



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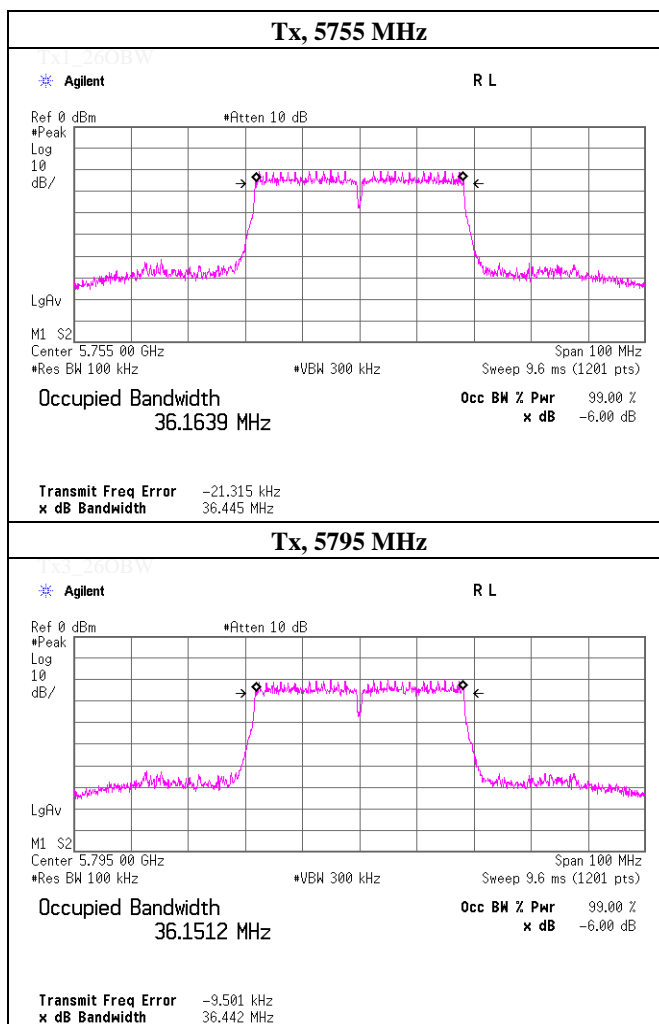
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

-6 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 19, 2021	
Temperature / Humidity	25 deg.C , 40 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-40 (MIMO), PN9, Antenna port 1, worst data mode 5 (MCS)	

Freq. [MHz]	-6 dB Bandwidth [MHz]	Limit [MHz]
5755.0000	36.445	> 0.500
-	-	> 0.500
5795.0000	36.442	> 0.500



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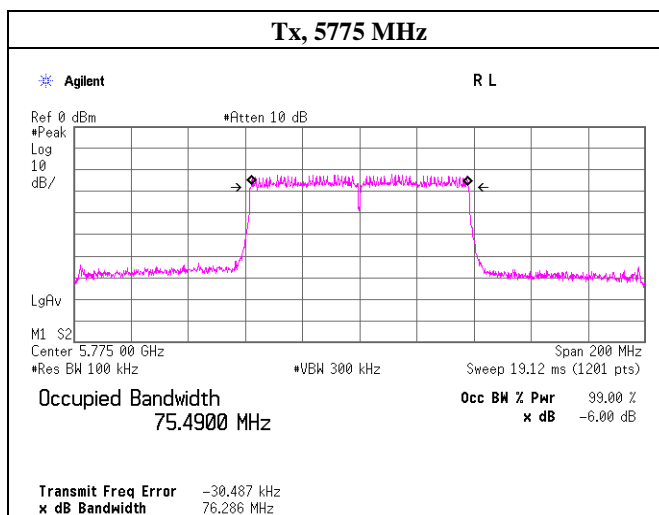
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

-6 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 20, 2021	
Temperature / Humidity	23 deg.C , 39 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-80 (SISO), PN9, worst antenna port 1, worst data mode 4 (MCS)	

Freq. [MHz]	-6 dB Bandwidth [MHz]	Limit [MHz]
5775.0000	76.286	> 0.500
-	-	> 0.500
-	-	> 0.500



TX2_26OBW

TX3_26OBW

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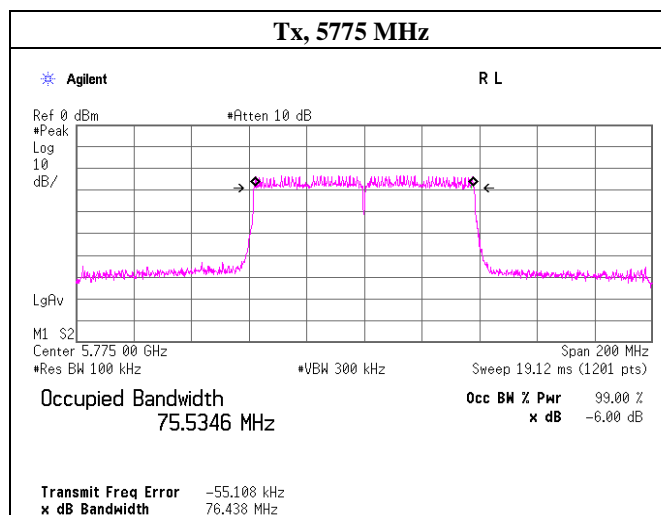
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

-6 dB Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	January 20, 2021	
Temperature / Humidity	23 deg.C , 39 %RH	
Engineer	Takahiro Kawakami	
Mode	Tx, IEEE802.11ac-80 (MIMO), PN9, Antenna port 1, worst data mode 4 (MCS)	

Freq. [MHz]	-6 dB Bandwidth [MHz]	Limit [MHz]
5775.0000	76.438	> 0.500
-	-	> 0.500
-	-	> 0.500



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Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 14, 2020
 Temperature / Humidity 25 deg.C , 31 %RH
 Engineer Kazuya Noda
 Mode Tx, IEEE802.11a, PN9,

Antenna : 0 worst data mode : 48 Mbps 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	-9.07	2.97	9.94	1.74	4.04	-	17.258	5.58	3.61	23.97	18.39	9.62	9.16	29.97	20.35
5220	-9.10	2.97	9.94	1.74	4.04	-	17.203	5.55	3.59	23.97	18.42	9.59	9.10	29.97	20.38
5240	-8.80	2.97	9.94	1.74	4.04	-	17.256	5.85	3.85	23.97	18.12	9.89	9.75	29.97	20.08
5260	-8.80	2.97	9.94	1.74	4.04	20.684	17.214	5.85	3.85	23.97	18.12	9.89	9.75	29.97	20.08
5300	-8.52	2.98	9.94	1.74	4.04	20.816	17.144	6.14	4.11	23.97	17.83	10.18	10.42	29.97	19.79
5320	-8.51	2.98	9.94	1.74	4.04	20.753	17.165	6.15	4.12	23.97	17.82	10.19	10.45	29.97	19.78
5500	-8.97	3.00	9.94	1.74	4.04	20.778	17.258	5.71	3.72	23.97	18.26	9.75	9.44	29.97	20.22
5580	-9.18	3.00	9.94	1.74	4.04	20.911	17.217	5.50	3.55	23.97	18.47	9.54	8.99	29.97	20.43
5700	-9.01	3.01	9.94	1.74	4.04	20.807	17.192	5.68	3.70	23.97	18.29	9.72	9.38	29.97	20.25
5745	-9.18	3.02	9.94	1.74	4.04	-	17.233	5.52	3.56	30.00	24.48	9.56	9.04	36.00	26.44
5785	-9.22	3.02	9.94	1.74	4.04	-	17.248	5.48	3.53	30.00	24.52	9.52	8.95	36.00	26.48
5825	-9.48	3.02	9.94	1.74	4.04	-	17.288	5.22	3.33	30.00	24.78	9.26	8.43	36.00	26.74

Antenna : 1 worst data mode : 48 Mbps 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	-9.02	2.97	9.94	1.74	2.51	-	17.258	5.63	3.66	23.97	18.34	8.14	6.52	29.97	21.83
5220	-8.85	2.97	9.94	1.74	2.51	-	17.203	5.80	3.80	23.97	18.17	8.31	6.78	29.97	21.66
5240	-8.79	2.97	9.94	1.74	2.51	-	17.256	5.86	3.85	23.97	18.11	8.37	6.87	29.97	21.60
5260	-8.40	2.97	9.94	1.74	2.51	20.684	17.214	6.25	4.22	23.97	17.72	8.76	7.52	29.97	21.21
5300	-8.39	2.98	9.94	1.74	2.51	20.816	17.144	6.27	4.24	23.97	17.70	8.78	7.55	29.97	21.19
5320	-8.22	2.98	9.94	1.74	2.51	20.753	17.165	6.44	4.41	23.97	17.53	8.95	7.85	29.97	21.02
5500	-8.12	3.00	9.94	1.74	2.51	20.778	17.258	6.56	4.53	23.97	17.41	9.07	8.07	29.97	20.90
5580	-8.24	3.00	9.94	1.74	2.51	20.911	17.217	6.44	4.41	23.97	17.53	8.95	7.85	29.97	21.02
5700	-8.20	3.01	9.94	1.74	2.51	20.807	17.192	6.49	4.46	23.97	17.48	9.00	7.94	29.97	20.97
5745	-8.21	3.02	9.94	1.74	2.51	-	17.233	6.49	4.46	30.00	23.51	9.00	7.94	36.00	27.00
5785	-8.32	3.02	9.94	1.74	2.51	-	17.248	6.38	4.35	30.00	23.62	8.89	7.74	36.00	27.11
5825	-8.25	3.02	9.94	1.74	2.51	-	17.288	6.45	4.42	30.00	23.55	8.96	7.87	36.00	27.04

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + 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 + 10 log B) dBm, whichever is lower

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

UL Japan, Inc.

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Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda
 Mode Tx, IEEE802.11n-20 (SISO), PN9,

Antenna : 0 worst data mode : 6 (MCS) 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	-9.12	2.97	9.94	1.84	4.04	-	18.296	5.63	3.66	23.97	18.34	9.67	9.27	29.97	20.30
5220	-9.02	2.97	9.94	1.84	4.04	-	18.400	5.73	3.74	23.97	18.24	9.77	9.48	29.97	20.20
5240	-8.85	2.97	9.94	1.84	4.04	-	18.289	5.90	3.89	23.97	18.07	9.94	9.86	29.97	20.03
5260	-8.91	2.97	9.94	1.84	4.04	21.295	18.371	5.84	3.84	23.97	18.13	9.88	9.73	29.97	20.09
5300	-8.68	2.98	9.94	1.84	4.04	21.280	18.285	6.08	4.06	23.97	17.89	10.12	10.28	29.97	19.85
5320	-8.60	2.98	9.94	1.84	4.04	21.177	18.249	6.16	4.13	23.97	17.81	10.20	10.47	29.97	19.77
5500	-9.20	3.00	9.94	1.84	4.04	21.431	18.360	5.58	3.61	23.97	18.39	9.62	9.16	29.97	20.35
5580	-9.25	3.00	9.94	1.84	4.04	21.252	18.342	5.53	3.57	23.97	18.44	9.57	9.06	29.97	20.40
5700	-9.01	3.01	9.94	1.84	4.04	21.393	18.257	5.78	3.78	23.97	18.19	9.82	9.59	29.97	20.15
5745	-9.07	3.02	9.94	1.84	4.04	-	18.308	5.73	3.74	30.00	24.27	9.77	9.48	36.00	26.23
5785	-9.46	3.02	9.94	1.84	4.04	-	18.297	5.34	3.42	30.00	24.66	9.38	8.67	36.00	26.62
5825	-9.55	3.02	9.94	1.84	4.04	-	18.278	5.25	3.35	30.00	24.75	9.29	8.49	36.00	26.71

Antenna : 1 worst data mode : 6 (MCS) 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	-8.92	2.97	9.94	1.84	2.51	-	18.296	5.83	3.83	20.47	14.64	8.34	6.82	29.97	21.63
5220	-9.01	2.97	9.94	1.84	2.51	-	18.400	5.74	3.75	20.29	14.55	8.25	6.68	29.97	21.72
5240	-8.83	2.97	9.94	1.84	2.51	-	18.289	5.92	3.91	20.00	14.08	8.43	6.97	29.97	21.54
5260	-8.60	2.97	9.94	1.84	2.51	21.295	18.371	6.15	4.12	20.20	14.05	8.66	7.35	29.97	21.31
5300	-8.36	2.98	9.94	1.84	2.51	21.280	18.285	6.40	4.37	19.96	13.56	8.91	7.78	29.97	21.06
5320	-8.32	2.98	9.94	1.84	2.51	21.177	18.249	6.44	4.41	19.56	13.12	8.95	7.85	29.97	21.02
5500	-8.08	3.00	9.94	1.84	2.51	21.431	18.360	6.70	4.68	19.92	13.22	9.21	8.34	29.97	20.76
5580	-8.48	3.00	9.94	1.84	2.51	21.252	18.342	6.30	4.27	19.53	13.23	8.81	7.60	29.97	21.16
5700	-8.21	3.01	9.94	1.84	2.51	21.393	18.257	6.58	4.55	19.95	13.37	9.09	8.11	29.97	20.88
5745	-8.22	3.02	9.94	1.84	2.51	-	18.308	6.58	4.55	26.01	19.43	9.09	8.11	36.00	26.91
5785	-8.52	3.02	9.94	1.84	2.51	-	18.297	6.28	4.25	26.16	19.88	8.79	7.57	36.00	27.21
5825	-8.50	3.02	9.94	1.84	2.51	-	18.278	6.30	4.27	30.00	23.70	8.81	7.60	36.00	27.19

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + 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 + 10 log B) dBm, whichever is lower

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

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Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda
 Mode Tx, IEEE802.11ac-20 (SISO), PN9,

Antenna : 0 worst data mode : 6 (MCS) 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	-9.11	2.97	9.94	1.79	4.04	-	18.349	5.59	3.62	23.97	18.38	9.63	9.19	29.97	20.34
5220	-8.99	2.97	9.94	1.79	4.04	-	18.378	5.71	3.73	23.97	18.26	9.75	9.44	29.97	20.22
5240	-9.01	2.97	9.94	1.79	4.04	-	18.341	5.69	3.71	23.97	18.28	9.73	9.40	29.97	20.24
5260	-8.79	2.97	9.94	1.79	4.04	21.407	18.372	5.91	3.90	23.97	18.06	9.95	9.89	29.97	20.02
5300	-8.68	2.98	9.94	1.79	4.04	21.335	18.379	6.03	4.01	23.97	17.94	10.07	10.17	29.97	19.90
5320	-8.63	2.98	9.94	1.79	4.04	21.422	18.361	6.08	4.06	23.97	17.89	10.12	10.28	29.97	19.85
5500	-9.17	3.00	9.94	1.79	4.04	21.427	18.378	5.56	3.60	23.97	18.41	9.60	9.12	29.97	20.37
5580	-9.15	3.00	9.94	1.79	4.04	21.654	18.403	5.58	3.62	23.97	18.39	9.62	9.16	29.97	20.35
5700	-8.96	3.01	9.94	1.79	4.04	21.465	18.355	5.78	3.79	23.97	18.19	9.82	9.60	29.97	20.15
5745	-9.23	3.02	9.94	1.79	4.04	-	18.269	5.52	3.57	30.00	24.48	9.56	9.04	36.00	26.44
5785	-9.32	3.02	9.94	1.79	4.04	-	18.324	5.43	3.49	30.00	24.57	9.47	8.85	36.00	26.53
5825	-9.54	3.02	9.94	1.79	4.04	-	18.299	5.21	3.32	30.00	24.79	9.25	8.42	36.00	26.75

Antenna : 1 worst data mode : 3 (MCS) 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	-8.04	2.97	9.94	1.02	2.51	-	18.349	5.89	3.88	23.97	18.08	8.40	6.92	29.97	21.57
5220	-8.05	2.97	9.94	1.02	2.51	-	18.378	5.88	3.87	23.97	18.09	8.39	6.90	29.97	21.58
5240	-7.95	2.97	9.94	1.02	2.51	-	18.341	5.98	3.96	23.97	17.99	8.49	7.06	29.97	21.48
5260	-7.69	2.97	9.94	1.02	2.51	21.407	18.372	6.24	4.21	23.97	17.73	8.75	7.50	29.97	21.22
5300	-7.63	2.98	9.94	1.02	2.51	21.335	18.379	6.31	4.28	23.97	17.66	8.82	7.62	29.97	21.15
5320	-7.31	2.98	9.94	1.02	2.51	21.422	18.361	6.63	4.60	23.97	17.34	9.14	8.20	29.97	20.83
5500	-7.23	3.00	9.94	1.02	2.51	21.427	18.378	6.73	4.71	23.97	17.24	9.24	8.39	29.97	20.73
5580	-7.50	3.00	9.94	1.02	2.51	21.654	18.403	6.46	4.43	23.97	17.51	8.97	7.89	29.97	21.00
5700	-7.48	3.01	9.94	1.02	2.51	21.465	18.355	6.49	4.46	23.97	17.48	9.00	7.94	29.97	20.97
5745	-7.68	3.02	9.94	1.02	2.51	-	18.269	6.30	4.27	30.00	23.70	8.81	7.60	36.00	27.19
5785	-7.51	3.02	9.94	1.02	2.51	-	18.324	6.47	4.44	30.00	23.53	8.98	7.91	36.00	27.02
5825	-7.83	3.02	9.94	1.02	2.51	-	18.299	6.15	4.12	30.00	23.85	8.66	7.35	36.00	27.34

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + 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 + 10 log B) dBm, whichever is lower

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

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Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place: UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date: December 15, 2020
 Temperature / Humidity: 23 deg.C , 54 %RH
 Engineer: Kazuya Noda
 Mode: Tx, IEEE802.11n-20 (MIMO), PN9, worst data mode : 13 (MCS)

Antenna: 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 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	Antenna 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5180	-	18.238	3.44	3.83	7.26	8.61	23.97	15.36	8.71	6.82	15.53	11.91	29.97	18.06
5220	-	18.267	3.61	3.82	7.43	8.71	23.97	15.26	9.16	6.81	15.97	12.03	29.97	17.94
5240	-	18.308	3.66	3.97	7.64	8.83	23.97	15.14	9.29	7.08	16.37	12.14	29.97	17.83
5260	21.331	18.335	3.87	4.17	8.04	9.05	23.97	14.92	9.82	7.43	17.25	12.37	29.97	17.60
5300	21.497	18.325	3.92	4.37	8.28	9.18	23.97	14.79	9.93	7.78	17.71	12.48	29.97	17.49
5320	21.281	18.357	4.19	4.41	8.59	9.34	23.97	14.63	10.62	7.85	18.47	12.66	29.97	17.31
5500	21.189	18.345	3.72	4.63	8.35	9.22	23.97	14.75	9.42	8.26	17.68	12.47	29.97	17.50
5580	21.278	18.329	3.61	4.37	7.98	9.02	23.97	14.95	9.16	7.78	16.94	12.29	29.97	17.68
5700	21.206	18.355	3.76	4.69	8.45	9.27	23.97	14.70	9.53	8.36	17.88	12.52	29.97	17.45
5745	-	18.254	3.55	4.32	7.86	8.96	30.00	21.04	8.99	7.69	16.69	12.22	36.00	23.78
5785	-	18.212	3.44	4.26	7.69	8.86	30.00	21.14	8.71	7.59	16.30	12.12	36.00	23.88
5825	-	18.120	3.30	4.15	7.45	8.72	30.00	21.28	8.36	7.40	15.75	11.97	36.00	24.03

Tested Frequency [MHz]	Duty Factor [dB]	Antenna: 0						Antenna: 1					
		Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5180	2.50	-10.05	2.97	9.94	4.04	5.36	9.40	-9.58	2.97	9.94	2.51	5.83	8.34
5220	2.50	-9.83	2.97	9.94	4.04	5.58	9.62	-9.59	2.97	9.94	2.51	5.82	8.33
5240	2.50	-9.77	2.97	9.94	4.04	5.64	9.68	-9.42	2.97	9.94	2.51	5.99	8.50
5260	2.50	-9.53	2.97	9.94	4.04	5.88	9.92	-9.21	2.97	9.94	2.51	6.20	8.71
5300	2.50	-9.49	2.98	9.94	4.04	5.93	9.97	-9.02	2.98	9.94	2.51	6.40	8.91
5320	2.50	-9.20	2.98	9.94	4.04	6.22	10.26	-8.98	2.98	9.94	2.51	6.44	8.95
5500	2.50	-9.74	3.00	9.94	4.04	5.70	9.74	-8.78	3.00	9.94	2.51	6.66	9.17
5580	2.50	-9.86	3.00	9.94	4.04	5.58	9.62	-9.04	3.00	9.94	2.51	6.40	8.91
5700	2.50	-9.70	3.01	9.94	4.04	5.75	9.79	-8.74	3.01	9.94	2.51	6.71	9.22
5745	2.50	-9.96	3.02	9.94	4.04	5.50	9.54	-9.11	3.02	9.94	2.51	6.35	8.86
5785	2.50	-10.10	3.02	9.94	4.04	5.36	9.40	-9.17	3.02	9.94	2.51	6.29	8.80
5825	2.50	-10.28	3.02	9.94	4.04	5.18	9.22	-9.28	3.02	9.94	2.51	6.18	8.69

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + 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 + 10 log B) dBm, whichever is lower

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

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Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place: UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date: December 15, 2020
 Temperature / Humidity: 23 deg.C , 54 %RH
 Engineer: Kazuya Noda
 Mode: Tx, IEEE802.11ac-20 (MIMO), PN9, worst data mode : 8 (MCS)

Antenna: 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 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	Antenna 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5180	-	18.266	3.48	3.83	7.31	8.64	23.97	15.33	8.83	6.82	15.65	11.95	29.97	18.02
5220	-	18.189	3.69	3.88	7.57	8.79	23.97	15.18	9.35	6.92	16.27	12.11	29.97	17.86
5240	-	18.277	3.71	3.95	7.66	8.84	23.97	15.13	9.40	7.05	16.44	12.16	29.97	17.81
5260	21.267	18.284	3.93	3.90	7.83	8.94	23.97	15.03	9.95	6.95	16.90	12.28	29.97	17.69
5300	21.077	18.285	3.91	4.27	8.17	9.12	23.97	14.85	9.91	7.60	17.51	12.43	29.97	17.54
5320	21.110	18.372	4.12	4.38	8.50	9.29	23.97	14.68	10.45	7.80	18.25	12.61	29.97	17.36
5500	21.240	18.308	3.59	4.35	7.93	9.00	23.97	14.97	9.10	7.74	16.84	12.26	29.97	17.71
5580	21.298	18.322	3.57	4.19	7.76	8.90	23.97	15.07	9.06	7.46	16.52	12.18	29.97	17.79
5700	21.421	18.215	3.66	4.60	8.26	9.17	23.97	14.80	9.27	8.20	17.47	12.42	29.97	17.55
5745	-	18.165	3.57	4.34	7.91	8.98	30.00	21.02	9.06	7.73	16.78	12.25	36.00	23.75
5785	-	18.214	3.34	4.25	7.59	8.80	30.00	21.20	8.47	7.57	16.04	12.05	36.00	23.95
5825	-	18.174	3.23	4.14	7.37	8.67	30.00	21.33	8.18	7.38	15.56	11.92	36.00	24.08

Tested Frequency [MHz]	Duty Factor [dB]	Antenna: 0						Antenna: 1					
		Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5180	2.90	-10.39	2.97	9.94	4.04	5.42	9.46	-9.98	2.97	9.94	2.51	5.83	8.34
5220	2.90	-10.14	2.97	9.94	4.04	5.67	9.71	-9.92	2.97	9.94	2.51	5.89	8.40
5240	2.90	-10.12	2.97	9.94	4.04	5.69	9.73	-9.84	2.97	9.94	2.51	5.97	8.48
5260	2.90	-9.87	2.97	9.94	4.04	5.94	9.98	-9.90	2.97	9.94	2.51	5.91	8.42
5300	2.90	-9.90	2.98	9.94	4.04	5.92	9.96	-9.52	2.98	9.94	2.51	6.30	8.81
5320	2.90	-9.67	2.98	9.94	4.04	6.15	10.19	-9.41	2.98	9.94	2.51	6.41	8.92
5500	2.90	-10.29	3.00	9.94	4.04	5.55	9.59	-9.46	3.00	9.94	2.51	6.38	8.89
5580	2.90	-10.31	3.00	9.94	4.04	5.53	9.57	-9.62	3.00	9.94	2.51	6.22	8.73
5700	2.90	-10.22	3.01	9.94	4.04	5.63	9.67	-9.22	3.01	9.94	2.51	6.63	9.14
5745	2.90	-10.33	3.02	9.94	4.04	5.53	9.57	-9.49	3.02	9.94	2.51	6.37	8.88
5785	2.90	-10.62	3.02	9.94	4.04	5.24	9.28	-9.58	3.02	9.94	2.51	6.28	8.79
5825	2.90	-10.77	3.02	9.94	4.04	5.09	9.13	-9.69	3.02	9.94	2.51	6.17	8.68

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + 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 + 10 log B) dBm, whichever is lower

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

UL Japan, Inc.

Shonan EMC Lab.

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Facsimile : +81 463 50 6401

Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami
 Mode Tx, IEEE802.11ac-40 (SISO), PN9,

Antenna : 0 worst data mode : 4 (MCS) 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 [dBm]
5190	-9.52	2.97	9.94	2.15	4.04	-	36.718	5.54	3.58	23.97	18.43	9.58	9.08	29.97	20.39
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-9.32	2.97	9.94	2.15	4.04	-	36.654	5.74	3.75	23.97	18.23	9.78	9.51	29.97	20.19
5270	-9.64	2.98	9.94	2.15	4.04	39.779	36.640	5.43	3.49	23.97	18.54	9.47	8.85	29.97	20.50
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	-9.52	2.98	9.94	2.15	4.04	39.708	36.570	5.55	3.59	23.97	18.42	9.59	9.10	29.97	20.38
5510	-9.14	3.00	9.94	2.15	4.04	39.797	36.637	5.95	3.94	23.97	18.02	9.99	9.98	29.97	19.98
5550	-9.25	3.00	9.94	2.15	4.04	39.868	36.627	5.84	3.84	23.97	18.13	9.88	9.73	29.97	20.09
5670	-9.17	3.01	9.94	2.15	4.04	39.857	36.587	5.93	3.92	23.97	18.04	9.97	9.93	29.97	20.00
5755	-9.24	3.02	9.94	2.15	4.04	-	36.756	5.87	3.86	30.00	24.13	9.91	9.79	36.00	26.09
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5795	-9.60	3.02	9.94	2.15	4.04	-	36.659	5.51	3.56	30.00	24.49	9.55	9.02	36.00	26.45

Antenna : 1 worst data mode : 3 (MCS) 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 [dBm]
5190	-8.78	2.97	9.94	1.70	2.51	-	36.718	5.83	3.83	23.97	18.14	8.34	6.82	29.97	21.63
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-8.47	2.97	9.94	1.70	2.51	-	36.654	6.14	4.11	23.97	17.83	8.65	7.33	29.97	21.32
5270	-8.82	2.98	9.94	1.70	2.51	39.779	36.640	5.80	3.80	23.97	18.17	8.31	6.78	29.97	21.66
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	-8.55	2.98	9.94	1.70	2.51	39.708	36.570	6.07	4.05	23.97	17.90	8.58	7.21	29.97	21.39
5510	-7.72	3.00	9.94	1.70	2.51	39.797	36.637	6.92	4.92	23.97	17.05	9.43	8.76	29.97	20.54
5550	-7.93	3.00	9.94	1.70	2.51	39.868	36.627	6.71	4.68	23.97	17.26	9.22	8.35	29.97	20.75
5670	-7.65	3.01	9.94	1.70	2.51	39.857	36.587	7.00	5.01	23.97	16.97	9.51	8.93	29.97	20.46
5755	-8.15	3.02	9.94	1.70	2.51	-	36.756	6.51	4.47	30.00	23.49	9.02	7.97	36.00	26.98
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5795	-8.15	3.02	9.94	1.70	2.51	-	36.659	6.51	4.47	30.00	23.49	9.02	7.97	36.00	26.98

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + 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 + 10 log B) dBm, whichever is lower

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

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Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place: UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date: December 16, 2020
 Temperature / Humidity: 25 deg.C , 35 %RH
 Engineer: Kazuya Noda
 Mode: Tx, IEEE802.11n-40 (MIMO), PN9 worst data mode : 14 (MCS)

Antenna: 0 + 1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW [MHz] (B for FCC)	99 % OBW [MHz] (B for IC)	Conducted power						e.i.r.p.					
			Antenna			Result [dBm]	Limit [dBm]	Margin [dB]	Antenna			Result [dBm]	Limit [dBm]	Margin [dB]
			1 [mW]	2 [mW]	Sum [mW]				1 [mW]	2 [mW]	Sum [mW]			
5190	-	36.625	3.69	3.81	7.50	8.75	23.97	15.22	9.35	6.79	16.15	12.08	29.97	17.89
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-	36.472	3.84	4.09	7.93	8.99	23.97	14.98	9.73	7.29	17.02	12.31	29.97	17.66
5270	39.263	36.568	3.51	3.83	7.34	8.65	23.97	15.32	8.89	6.82	15.72	11.96	29.97	18.01
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	39.364	36.589	3.68	3.93	7.61	8.81	23.97	15.16	9.33	7.00	16.33	12.13	29.97	17.84
5510	39.581	36.560	3.36	4.36	7.71	8.87	23.97	15.10	8.51	7.76	16.27	12.11	29.97	17.86
5550	39.380	36.662	3.24	4.33	7.56	8.79	23.97	15.18	8.20	7.71	15.91	12.02	29.97	17.95
5670	39.423	36.568	3.44	4.54	7.98	9.02	23.97	14.95	8.73	8.09	16.82	12.26	29.97	17.71
5755	-	36.590	3.38	4.14	7.52	8.76	30.00	21.24	8.57	7.38	15.95	12.03	36.00	23.97
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5795	-	36.592	3.08	4.03	7.11	8.52	30.00	21.48	7.82	7.18	14.99	11.76	36.00	24.24

Antenna: 0							Antenna: 1							
Tested Frequency [MHz]	Duty Factor [dB]	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]	
5190	3.51	-10.75	2.97	9.94	4.04	5.67	9.71	-10.61	2.97	9.94	2.51	5.81	8.32	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5230	3.51	-10.58	2.97	9.94	4.04	5.84	9.88	-10.30	2.97	9.94	2.51	6.12	8.63	
5270	3.51	-10.98	2.98	9.94	4.04	5.45	9.49	-10.60	2.98	9.94	2.51	5.83	8.34	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5310	3.51	-10.77	2.98	9.94	4.04	5.66	9.70	-10.49	2.98	9.94	2.51	5.94	8.45	
5510	3.51	-11.19	3.00	9.94	4.04	5.26	9.30	-10.06	3.00	9.94	2.51	6.39	8.90	
5550	3.51	-11.35	3.00	9.94	4.04	5.10	9.14	-10.09	3.00	9.94	2.51	6.36	8.87	
5670	3.51	-11.09	3.01	9.94	4.04	5.37	9.41	-9.89	3.01	9.94	2.51	6.57	9.08	
5755	3.51	-11.18	3.02	9.94	4.04	5.29	9.33	-10.30	3.02	9.94	2.51	6.17	8.68	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5795	3.51	-11.58	3.02	9.94	4.04	4.89	8.93	-10.42	3.02	9.94	2.51	6.05	8.56	

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + 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 + 10 log B) dBm, whichever is lower

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

Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place: UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date: December 16, 2020
 Temperature / Humidity: 25 deg.C , 35 %RH
 Engineer: Kazuya Noda
 Mode: Tx, IEEE802.11ac-40 (MIMO), PN9 worst data mode : 5 (MCS)

Antenna: 0 + 1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW [MHz]	99 % OBW [MHz]	Conducted power						e.i.r.p.					
			Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	(B for FCC)	(B for IC)	1	2	Sum				1	2	Sum			
	[MHz]	[MHz]	[mW]	[mW]	[mW]	[dBm]	[dBm]	[dB]	[mW]	[mW]	[mW]	[dBm]	[dBm]	[dB]
5190	-	36.484	3.60	3.82	7.42	8.70	23.97	15.27	9.12	6.81	15.93	12.02	29.97	17.95
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-	36.514	3.78	3.85	7.63	8.83	23.97	15.14	9.57	6.87	16.44	12.16	29.97	17.81
5270	39.336	36.439	3.48	3.72	7.21	8.58	23.97	15.39	8.83	6.64	15.47	11.89	29.97	18.08
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	39.385	36.527	3.59	4.00	7.59	8.80	23.97	15.17	9.10	7.13	16.23	12.10	29.97	17.87
5510	39.509	36.565	3.35	4.43	7.78	8.91	23.97	15.06	8.49	7.89	16.38	12.14	29.97	17.83
5550	39.822	36.497	3.32	4.22	7.54	8.77	23.97	15.20	8.41	7.52	15.93	12.02	29.97	17.95
5670	39.488	36.525	3.32	4.53	7.85	8.95	23.97	15.02	8.41	8.07	16.49	12.17	29.97	17.80
5755	-	36.516	3.28	4.28	7.56	8.78	30.00	21.22	8.32	7.62	15.94	12.02	36.00	23.98
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5795	-	36.537	3.03	4.15	7.18	8.56	30.00	21.44	7.69	7.40	15.09	11.79	36.00	24.21

Tested Frequency [MHz]	Duty Factor [dB]	Antenna: 0						Antenna: 1					
		Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5190	3.25	-10.60	2.97	9.94	4.04	5.56	9.60	-10.34	2.97	9.94	2.51	5.82	8.33
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	3.25	-10.39	2.97	9.94	4.04	5.77	9.81	-10.30	2.97	9.94	2.51	5.86	8.37
5270	3.25	-10.75	2.98	9.94	4.04	5.42	9.46	-10.46	2.98	9.94	2.51	5.71	8.22
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	3.25	-10.62	2.98	9.94	4.04	5.55	9.59	-10.15	2.98	9.94	2.51	6.02	8.53
5510	3.25	-10.94	3.00	9.94	4.04	5.25	9.29	-9.73	3.00	9.94	2.51	6.46	8.97
5550	3.25	-10.98	3.00	9.94	4.04	5.21	9.25	-9.94	3.00	9.94	2.51	6.25	8.76
5670	3.25	-10.99	3.01	9.94	4.04	5.21	9.25	-9.64	3.01	9.94	2.51	6.56	9.07
5755	3.25	-11.05	3.02	9.94	4.04	5.16	9.20	-9.90	3.02	9.94	2.51	6.31	8.82
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5795	3.25	-11.39	3.02	9.94	4.04	4.82	8.86	-10.03	3.02	9.94	2.51	6.18	8.69

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + 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 + 10 log B) dBm, whichever is lower

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

Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place	UL Japan, Inc. Shonan EMC Lab.	No.1 Measurement Room
Date	December 14, 2020	
Temperature / Humidity	25 deg.C , 31 %RH	
Engineer	Kazuya Noda	
Mode	Tx, IEEE802.11a, PN9,	

worst antenna : 1
worst data mode : 48 Mbps

[Pre check]**Antenna 0**

	Data rate	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Duty factor	Result
	[Mbps]	[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]
0	6	5180.0	-7.88	2.97	9.94	0.28	5.31
0	9	5180.0	-8.07	2.97	9.94	0.42	5.26
0	12	5180.0	-8.11	2.97	9.94	0.54	5.34
0	18	5180.0	-8.38	2.97	9.94	0.78	5.31
0	24	5180.0	-8.40	2.97	9.94	1.00	5.51
0	36	5180.0	-8.92	2.97	9.94	1.40	5.39
0	48	5180.0	-9.07	2.97	9.94	1.74	5.58
0	54	5180.0	-9.27	2.97	9.94	1.87	5.51

Antenna 1

	Data rate	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Duty factor	Result
	[Mbps]	[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]
1	6	5180.0	-7.69	2.97	9.94	0.28	5.50
1	9	5180.0	-7.83	2.97	9.94	0.42	5.50
1	12	5180.0	-7.98	2.97	9.94	0.54	5.47
1	18	5180.0	-8.11	2.97	9.94	0.78	5.58
1	24	5180.0	-8.39	2.97	9.94	1.00	5.52
1	36	5180.0	-8.86	2.97	9.94	1.40	5.45
1	48	5180.0	-9.02	2.97	9.94	1.74	5.63
1	54	5180.0	-9.16	2.97	9.94	1.87	5.62

Worst

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor

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Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda
 Mode Tx, IEEE802.11n-20 (SISO), PN9,

worst antenna : 1
 worst data mode : 6 (MCS)

[Pre check]

Antenna 0

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]
0	0	5180.0	-7.92	2.97	9.94	0.30	5.29
0	1	5180.0	-8.24	2.97	9.94	0.57	5.24
0	2	5180.0	-8.54	2.97	9.94	0.82	5.19
0	3	5180.0	-8.39	2.97	9.94	1.03	5.55
0	4	5180.0	-8.71	2.97	9.94	1.40	5.60
0	5	5180.0	-9.02	2.97	9.94	1.72	5.61
0	6	5180.0	-9.12	2.97	9.94	1.84	5.63
0	7	5180.0	-9.32	2.97	9.94	1.98	5.57

Antenna 1

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]
1	0	5180.0	-7.70	2.97	9.94	0.30	5.51
1	1	5180.0	-8.19	2.97	9.94	0.57	5.29
1	2	5180.0	-8.40	2.97	9.94	0.82	5.33
1	3	5180.0	-8.26	2.97	9.94	1.03	5.68
1	4	5180.0	-8.64	2.97	9.94	1.40	5.67
1	5	5180.0	-8.88	2.97	9.94	1.72	5.75
1	6	5180.0	-8.92	2.97	9.94	1.84	5.83
1	7	5180.0	-9.07	2.97	9.94	1.98	5.82

Worst

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor

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Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda
 Mode Tx, IEEE802.11ac-20 (SISO), PN9,

worst antenna : 1
 worst data mode : 3 (MCS)

[Pre check]

Antenna 0

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]
0	0	5180.0	-8.04	2.97	9.94	0.30	5.17
0	1	5180.0	-8.30	2.97	9.94	0.57	5.18
0	2	5180.0	-8.54	2.97	9.94	0.80	5.17
0	3	5180.0	-8.39	2.97	9.94	1.02	5.54
0	4	5180.0	-8.92	2.97	9.94	1.38	5.37
0	5	5180.0	-9.28	2.97	9.94	1.67	5.30
0	6	5180.0	-9.11	2.97	9.94	1.79	5.59
0	7	5180.0	-9.44	2.97	9.94	1.94	5.41
0	8	5180.0	-9.53	2.97	9.94	2.14	5.52

Antenna 1

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]
1	0	5180.0	-7.83	2.97	9.94	0.30	5.38
1	1	5180.0	-8.02	2.97	9.94	0.57	5.46
1	2	5180.0	-8.22	2.97	9.94	0.80	5.49
1	3	5180.0	-8.04	2.97	9.94	1.02	5.89
1	4	5180.0	-8.45	2.97	9.94	1.38	5.84
1	5	5180.0	-8.93	2.97	9.94	1.67	5.65
1	6	5180.0	-9.01	2.97	9.94	1.79	5.69
1	7	5180.0	-9.24	2.97	9.94	1.94	5.61
1	8	5180.0	-9.41	2.97	9.94	2.14	5.64

Worst

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor

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Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami
 Mode Tx, IEEE802.11n-40 (SISO), PN9,

worst antenna : 1
 worst data mode : 3 (MCS)

[Pre check]

Antenna 0

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]
0	0	5190.0	-8.61	2.97	9.94	0.59	4.89
0	1	5190.0	-9.01	2.97	9.94	1.04	4.94
0	2	5190.0	-9.38	2.97	9.94	1.42	4.95
0	3	5190.0	-9.63	2.97	9.94	1.72	5.00
0	4	5190.0	-10.13	2.97	9.94	2.14	4.92
0	5	5190.0	-10.58	2.97	9.94	2.59	4.92
0	6	5190.0	-10.68	2.97	9.94	2.73	4.96
0	7	5190.0	-10.86	2.97	9.94	2.80	4.85

Antenna 1

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]
1	0	5190.0	-8.33	2.97	9.94	0.59	5.17
1	1	5190.0	-8.68	2.97	9.94	1.04	5.27
1	2	5190.0	-9.04	2.97	9.94	1.42	5.29
1	3	5190.0	-9.22	2.97	9.94	1.72	5.41
1	4	5190.0	-9.71	2.97	9.94	2.14	5.34
1	5	5190.0	-10.18	2.97	9.94	2.59	5.32
1	6	5190.0	-10.27	2.97	9.94	2.73	5.37
1	7	5190.0	-10.62	2.97	9.94	2.80	5.09

Worst

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor

*The power setting was measured by default (6.0 dBm).

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Maximum Conducted Output Power (Conducted)

(Method: PM)

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 25 deg.C , 35 %RH
 Engineer Kazuya Noda
 Mode Tx, IEEE802.11ac-80 (SISO), PN9, 5210 MHz, 5290 MHz

worst antenna : 1
 worst data mode : 4 (MCS)

[Pre check]

Antenna 0

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]
0	0	5210.0	-9.29	2.97	9.94	1.09	4.71
0	1	5210.0	-9.98	2.97	9.94	1.77	4.70
0	2	5210.0	-10.53	2.97	9.94	2.22	4.60
0	3	5210.0	-10.37	2.97	9.94	2.57	5.11
0	4	5210.0	-10.85	2.97	9.94	3.06	5.12
0	5	5210.0	-11.18	2.97	9.94	3.31	5.04
0	6	5210.0	-11.36	2.97	9.94	3.42	4.97
0	7	5210.0	-11.42	2.97	9.94	3.55	5.04
0	8	5210.0	-11.52	2.97	9.94	3.71	5.10
0	9	5210.0	-11.71	2.97	9.94	3.82	5.02

Antenna 1

	Mode (MCS)	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm]
1	0	5210.0	-9.16	2.97	9.94	1.09	4.84
1	1	5210.0	-9.81	2.97	9.94	1.77	4.87
1	2	5210.0	-10.27	2.97	9.94	2.22	4.86
1	3	5210.0	-10.35	2.97	9.94	2.57	5.13
1	4	5210.0	-10.78	2.97	9.94	3.06	5.19
1	5	5210.0	-11.05	2.97	9.94	3.31	5.17
1	6	5210.0	-11.27	2.97	9.94	3.42	5.06
1	7	5210.0	-11.28	2.97	9.94	3.55	5.18
1	8	5210.0	-11.45	2.97	9.94	3.71	5.17
1	9	5210.0	-11.61	2.97	9.94	3.82	5.12

Worst

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor

*The power setting was measured by default (6.0 dBm).

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Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 14, 2020
 Temperature / Humidity 25 deg.C , 31 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11a, PN9, worst antenna :1

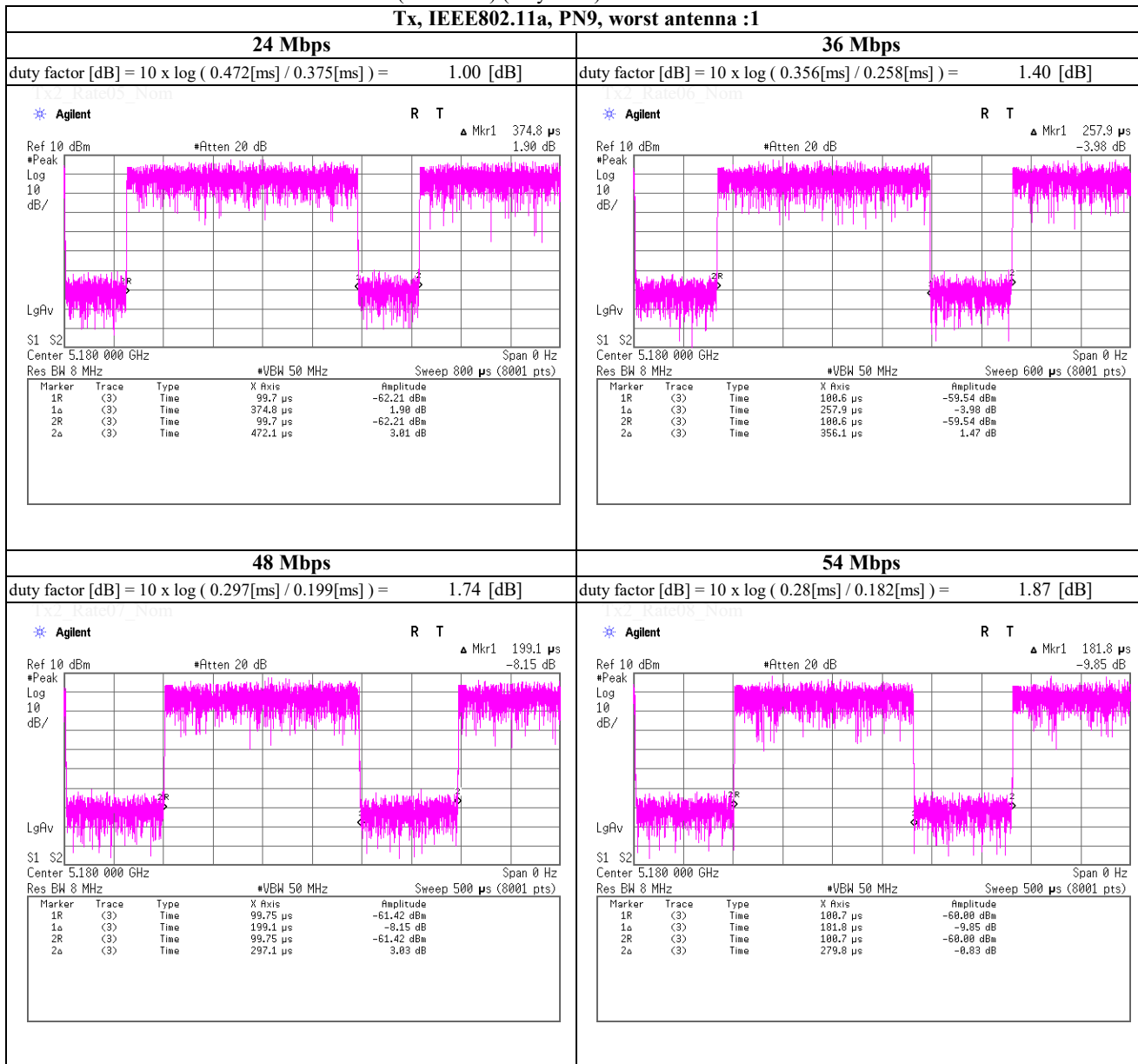


Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 14, 2020
 Temperature / Humidity 25 deg.C , 31 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11a, PN9, worst antenna :1



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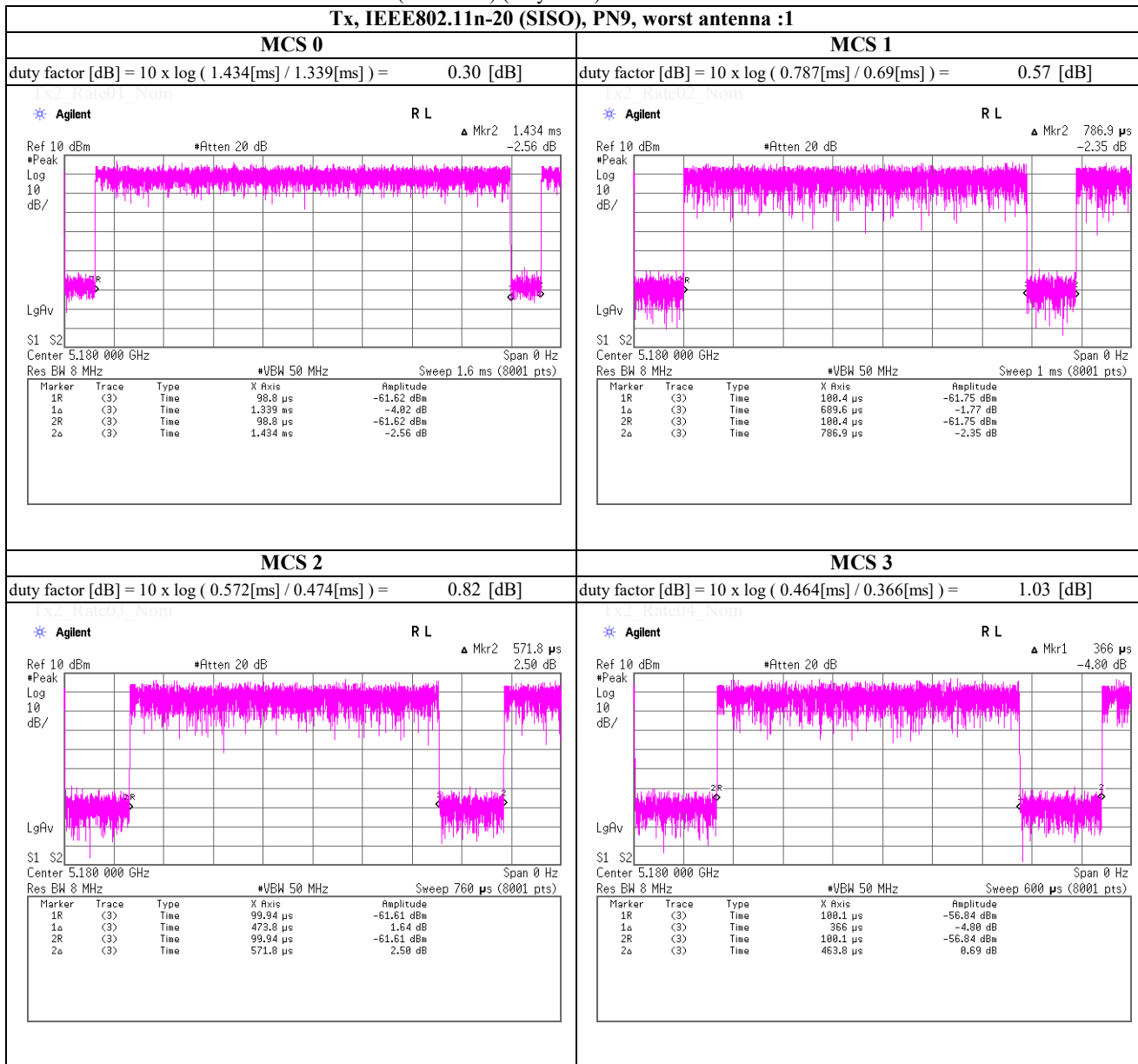
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11n-20 (SISO), PN9, worst antenna :1



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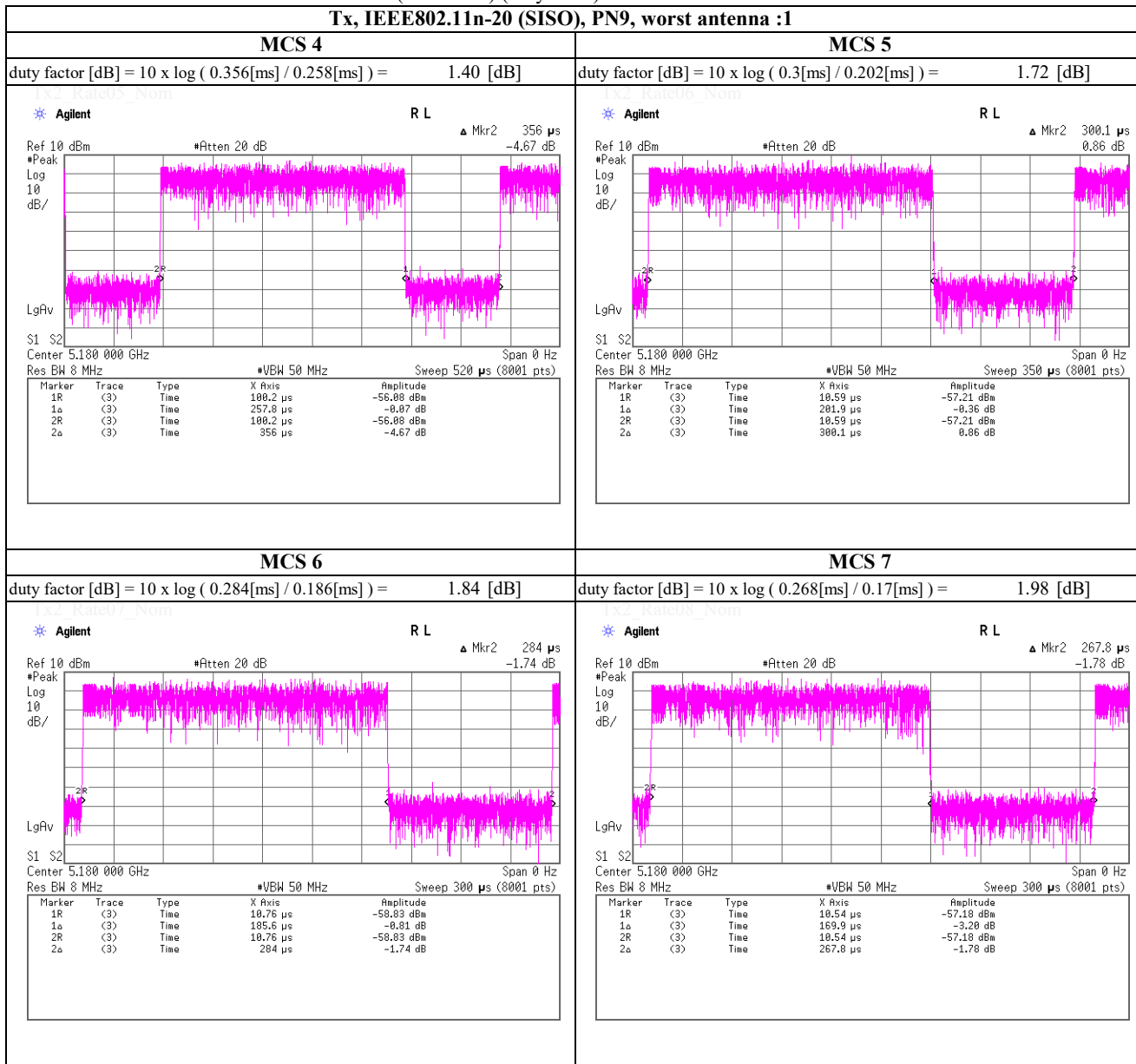
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11n-20 (SISO), PN9, worst antenna :1

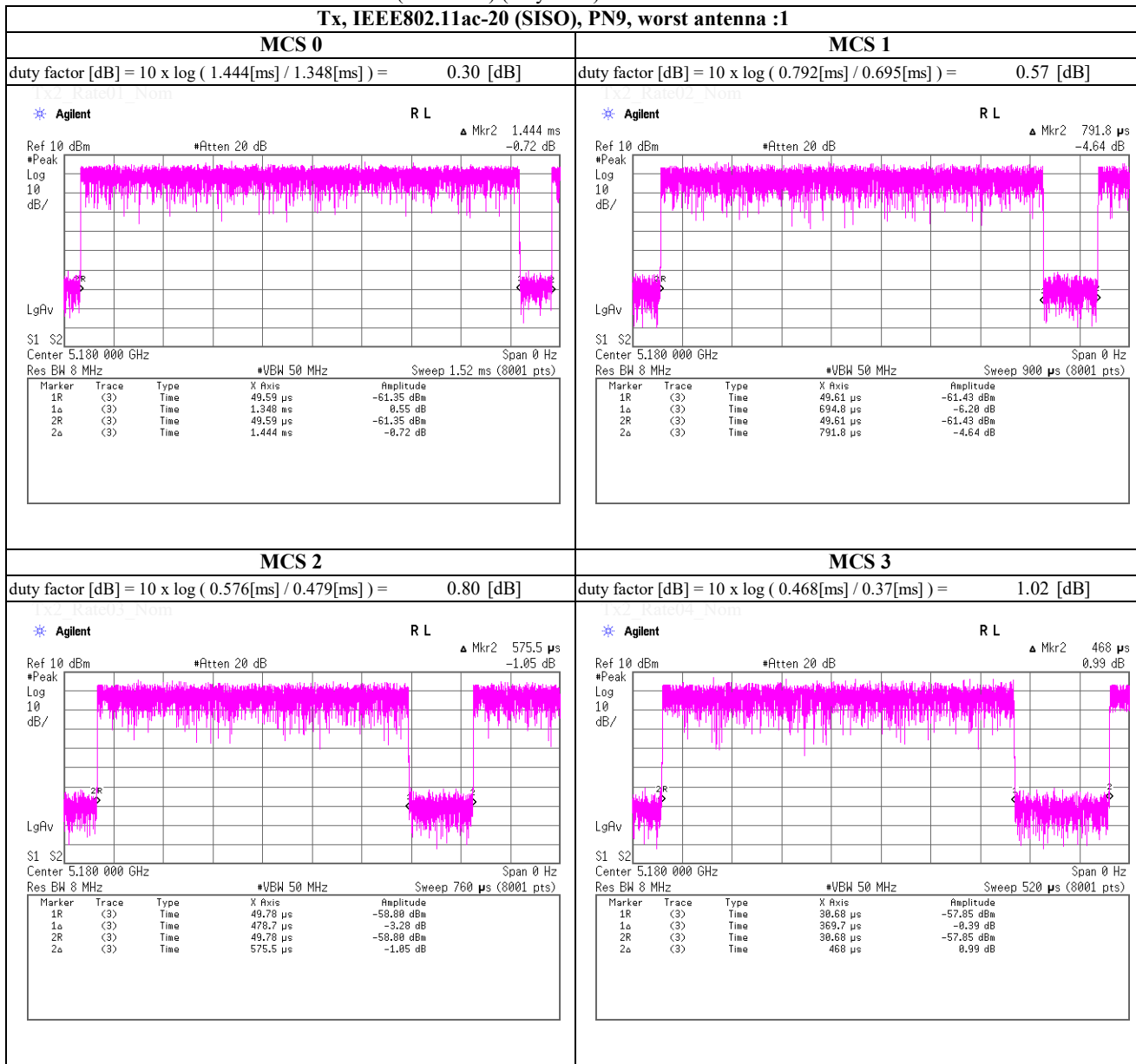


Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-20 (SISO), PN9, worst antenna :1



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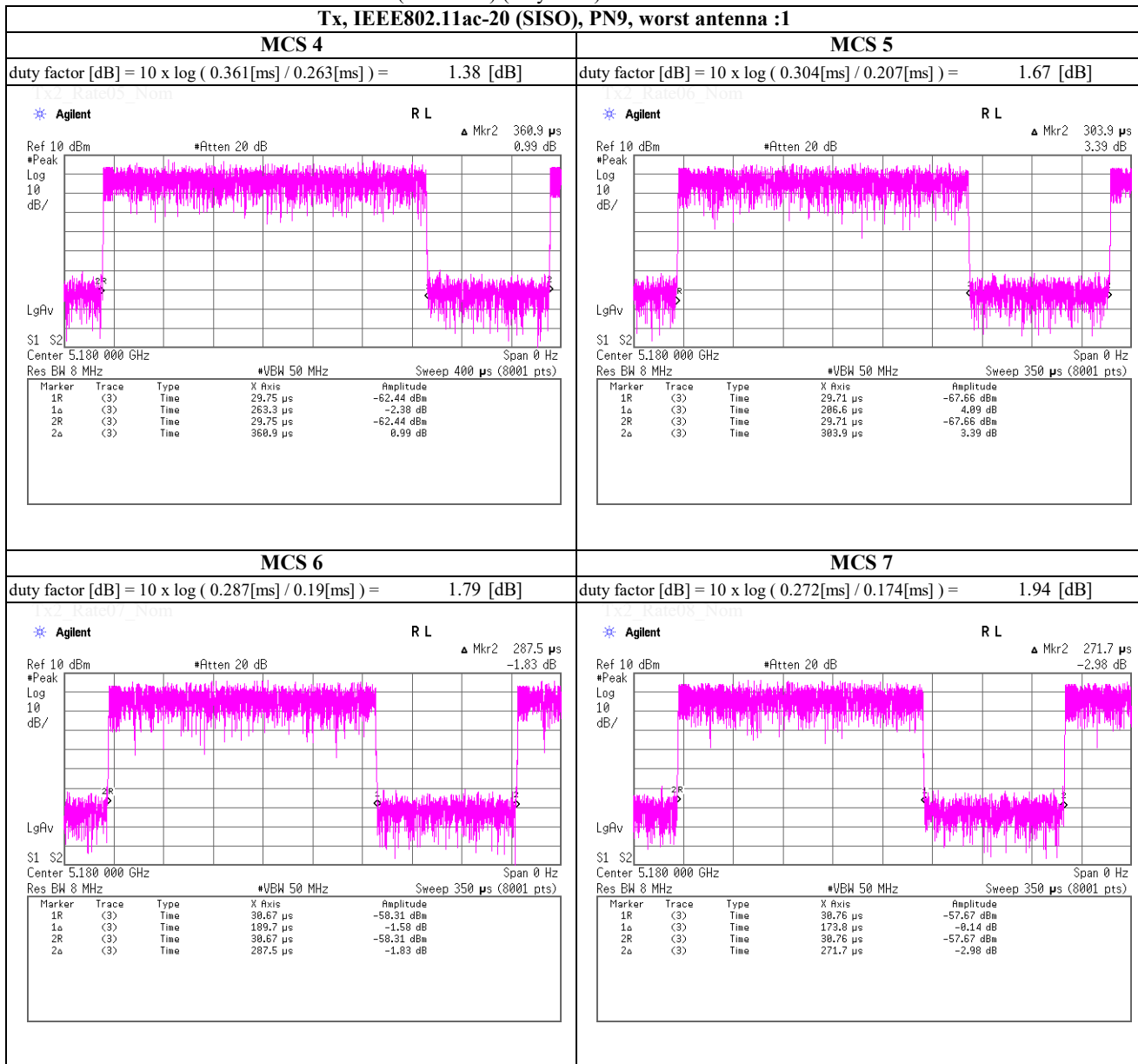
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-20 (SISO), PN9, worst antenna :1

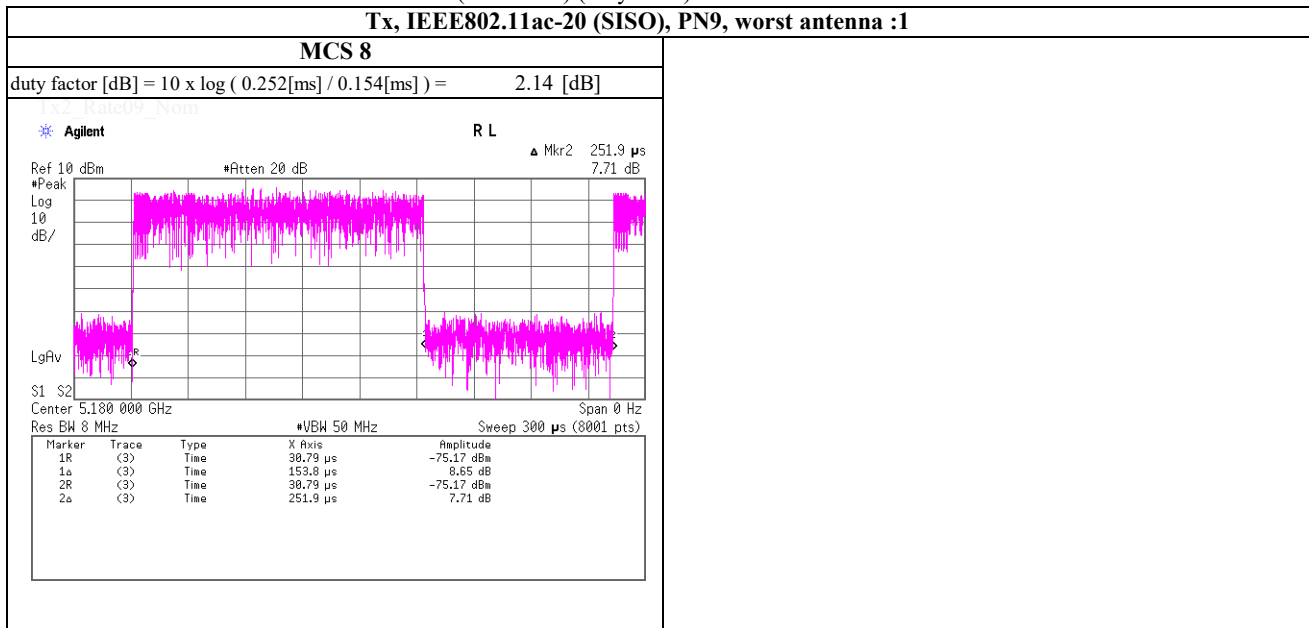


Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-20 (SISO), PN9, worst antenna :1



Tx2_Rate11_Nom

Tx2_Rate12_Nom

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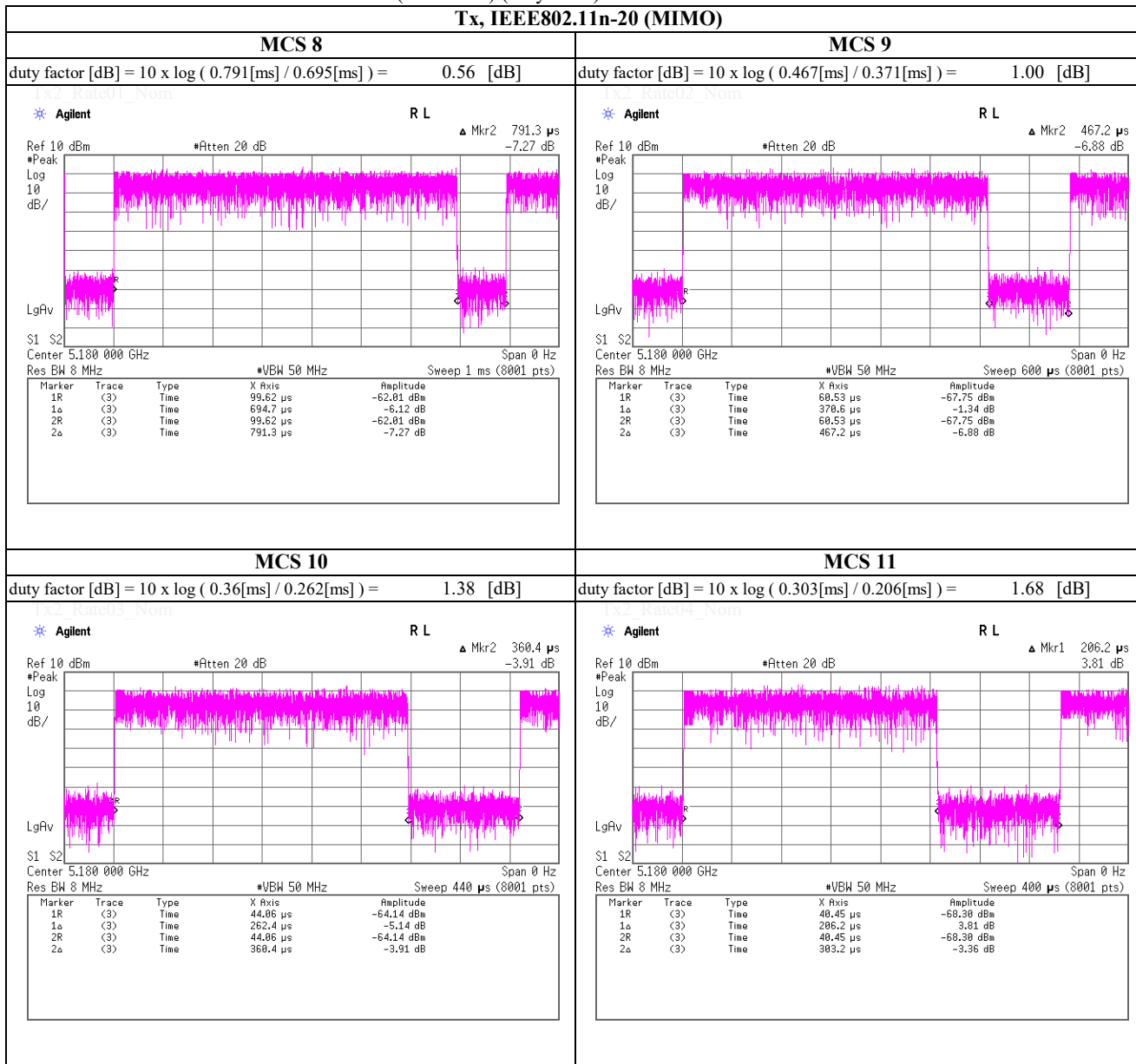
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)



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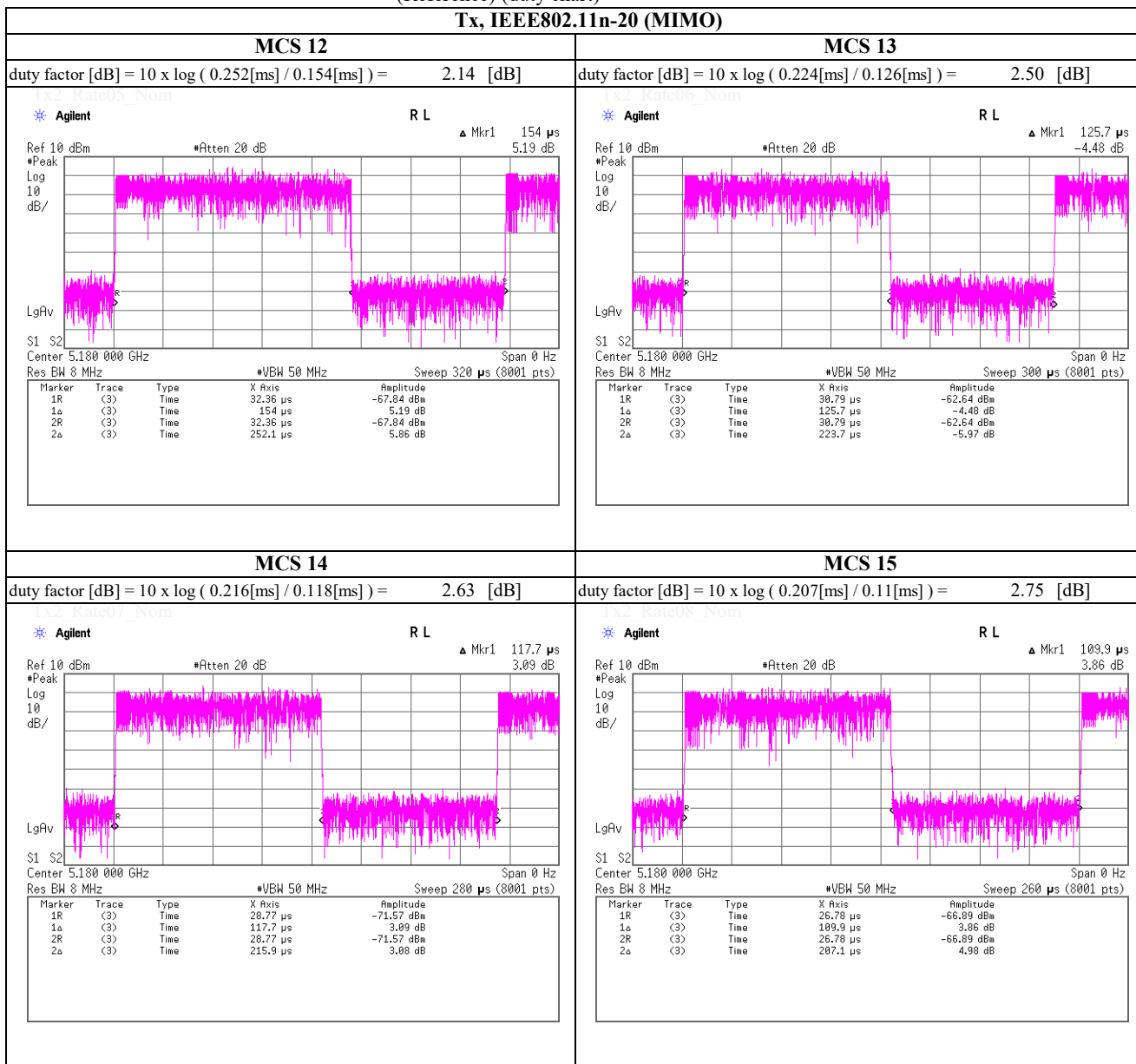
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

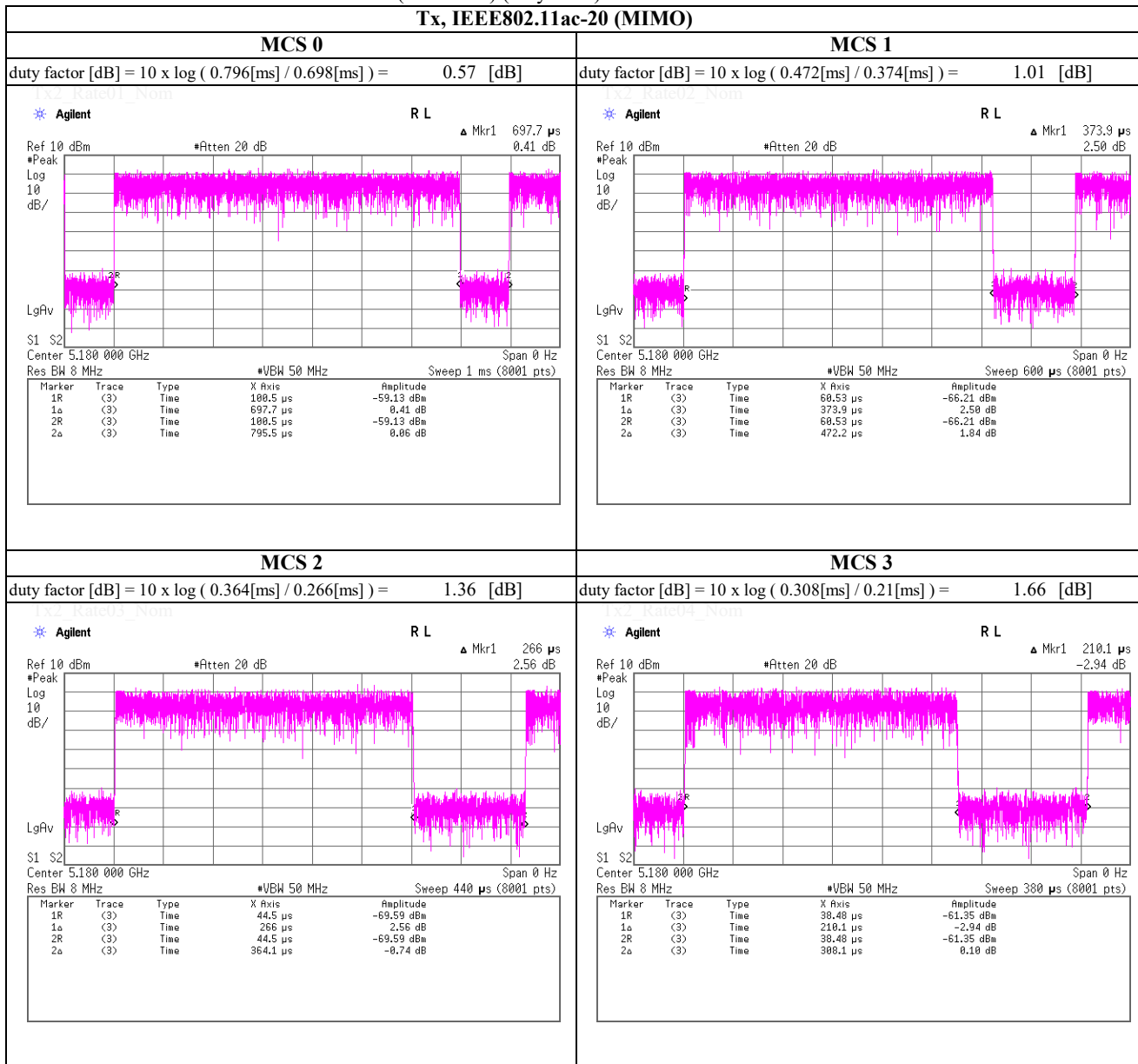
(Reference) (duty chart)



Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

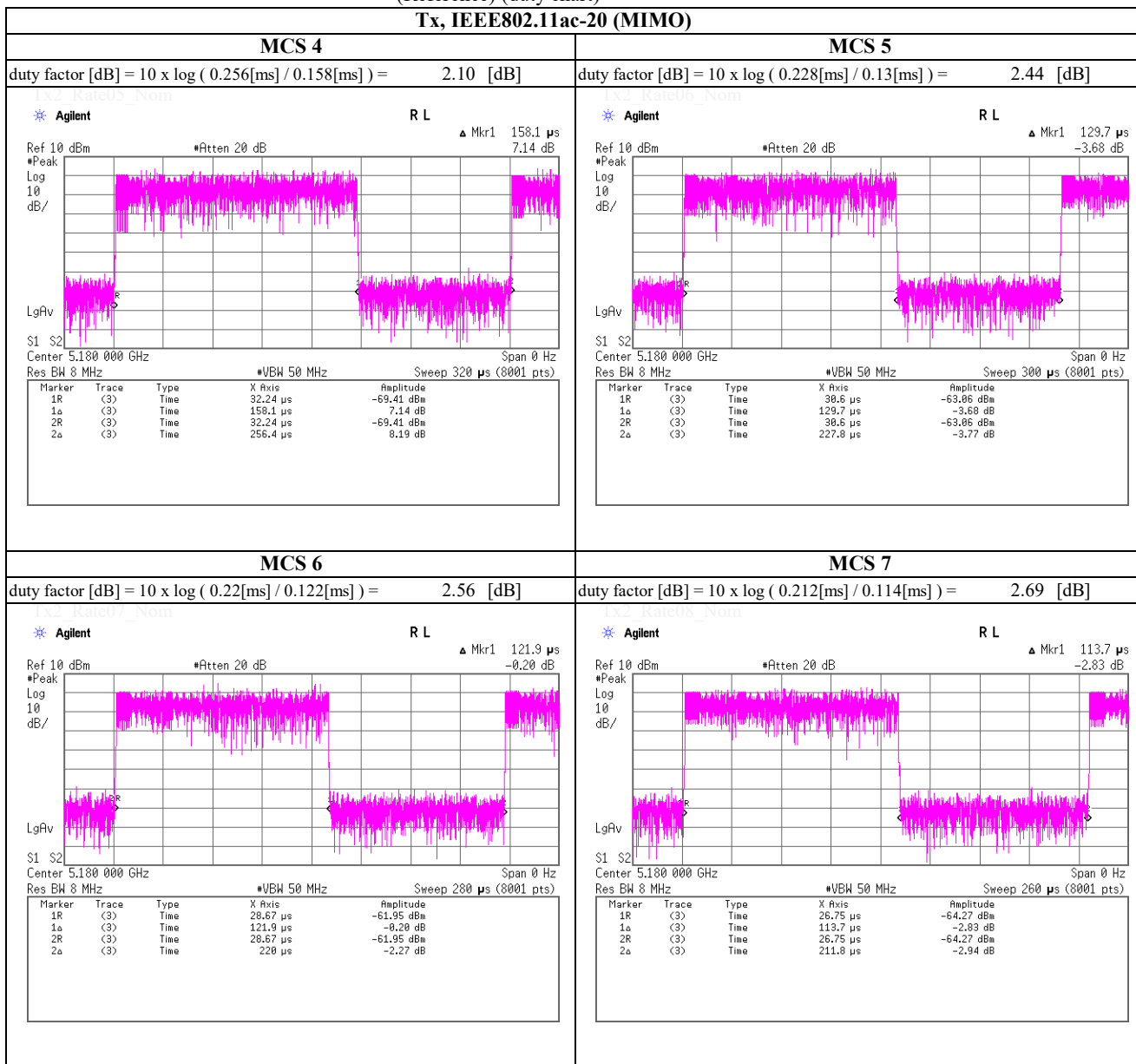
(Reference) (duty chart)



Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)



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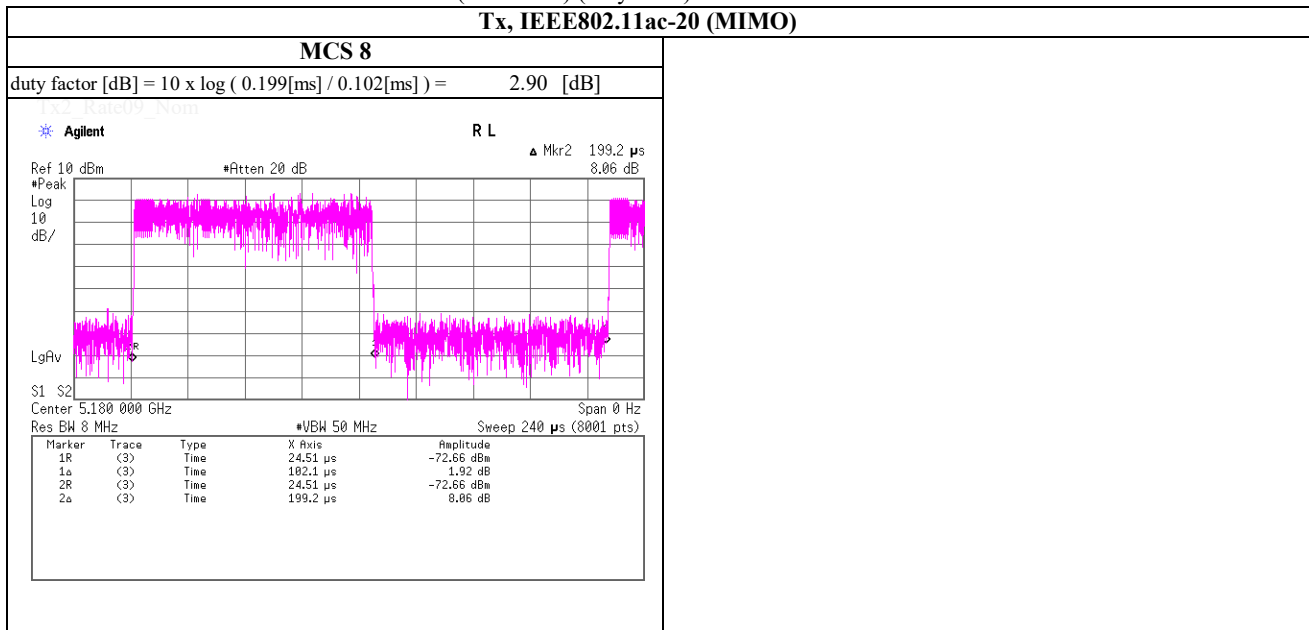
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)



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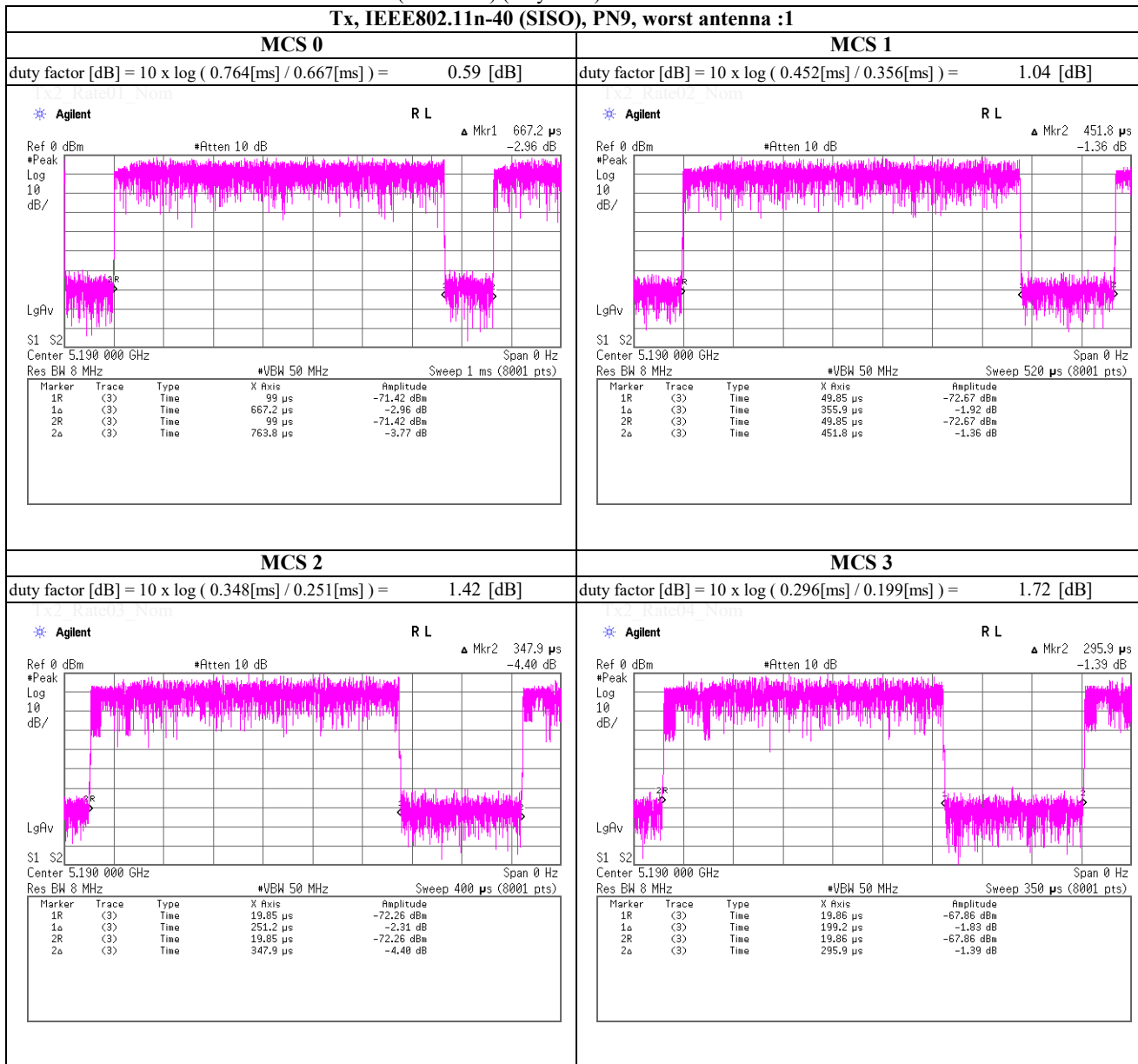
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11n-40 (SISO), PN9, worst antenna :1

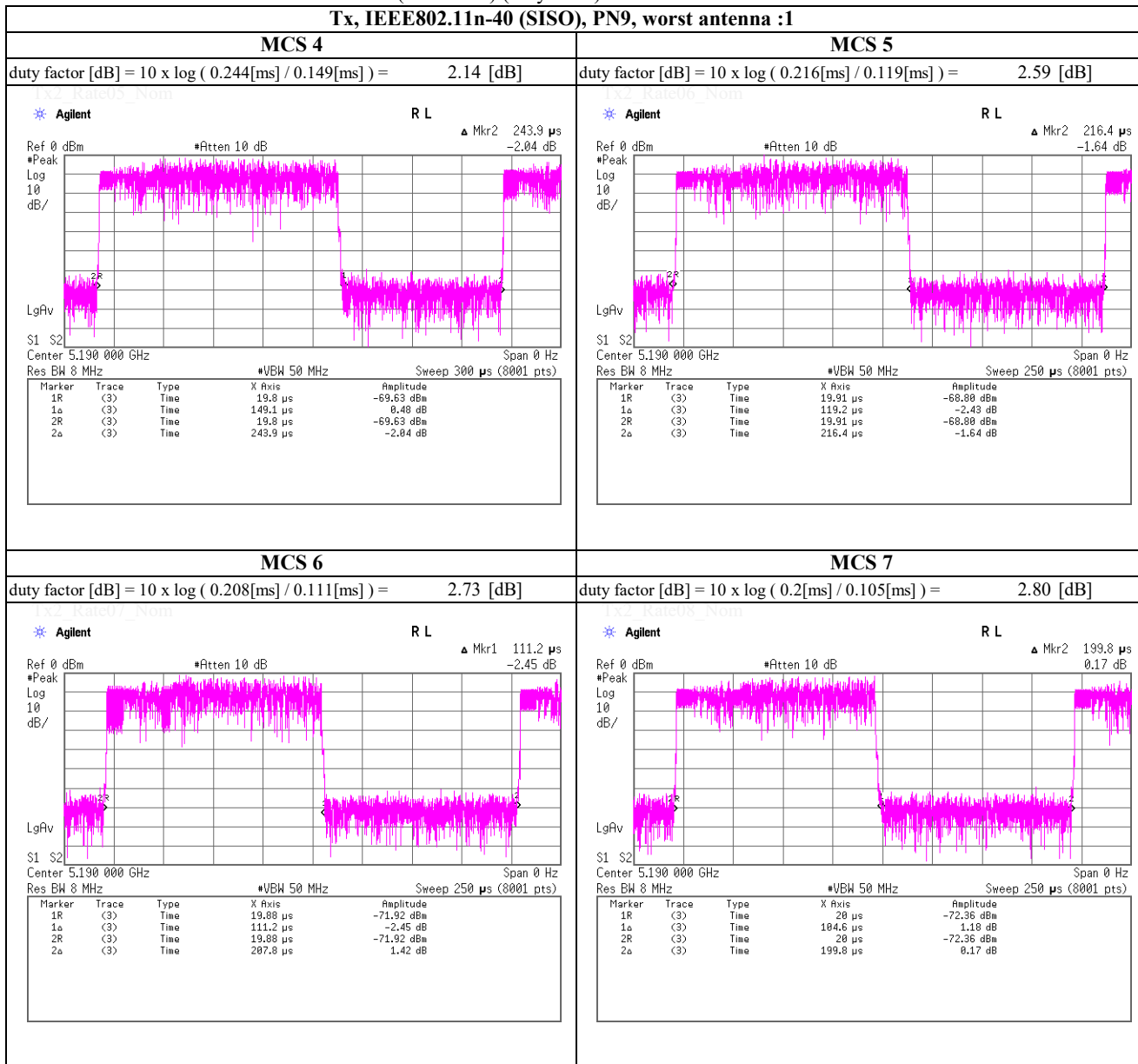


Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11n-40 (SISO), PN9, worst antenna :1



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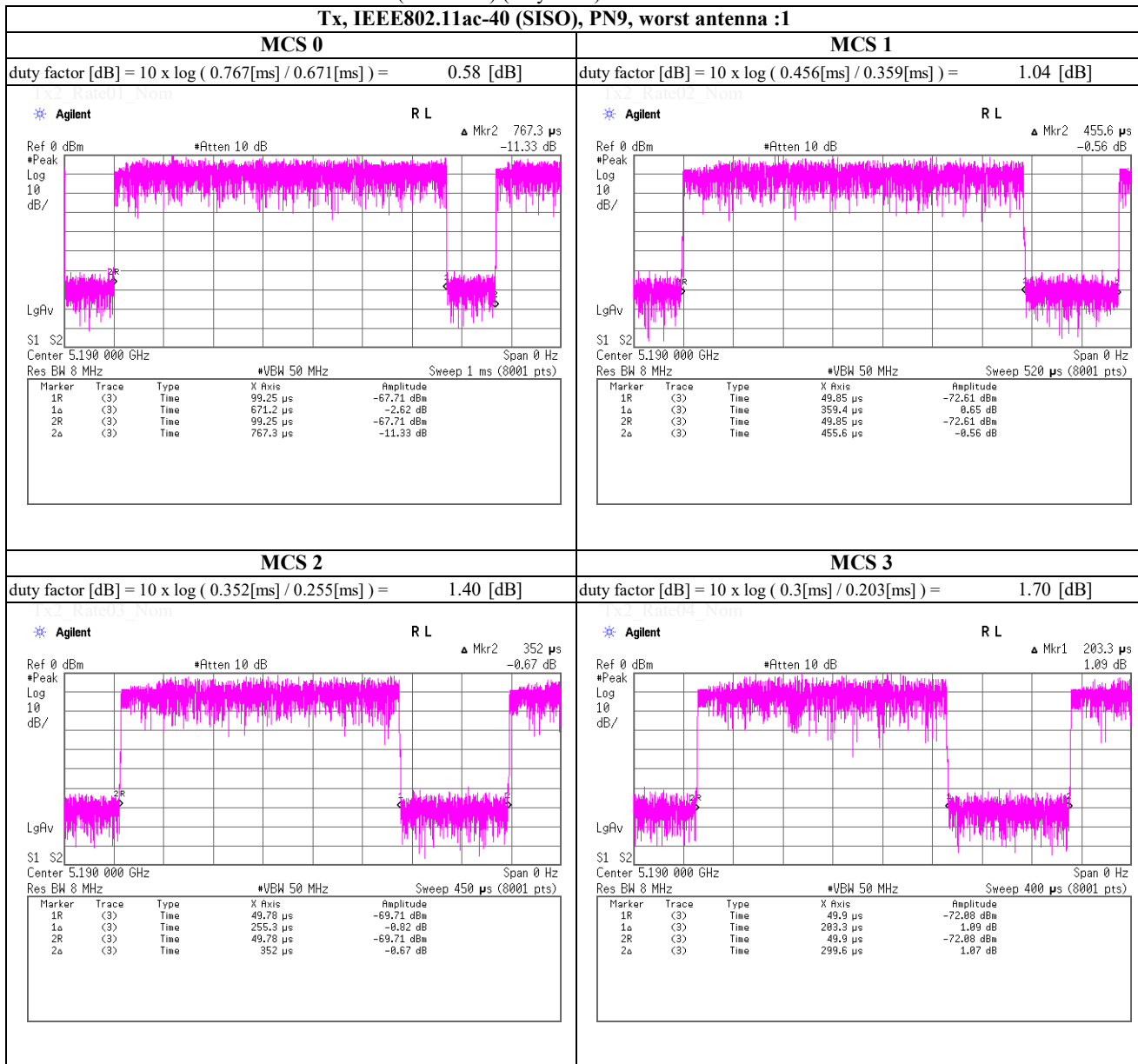
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-40 (SISO), PN9, worst antenna :1



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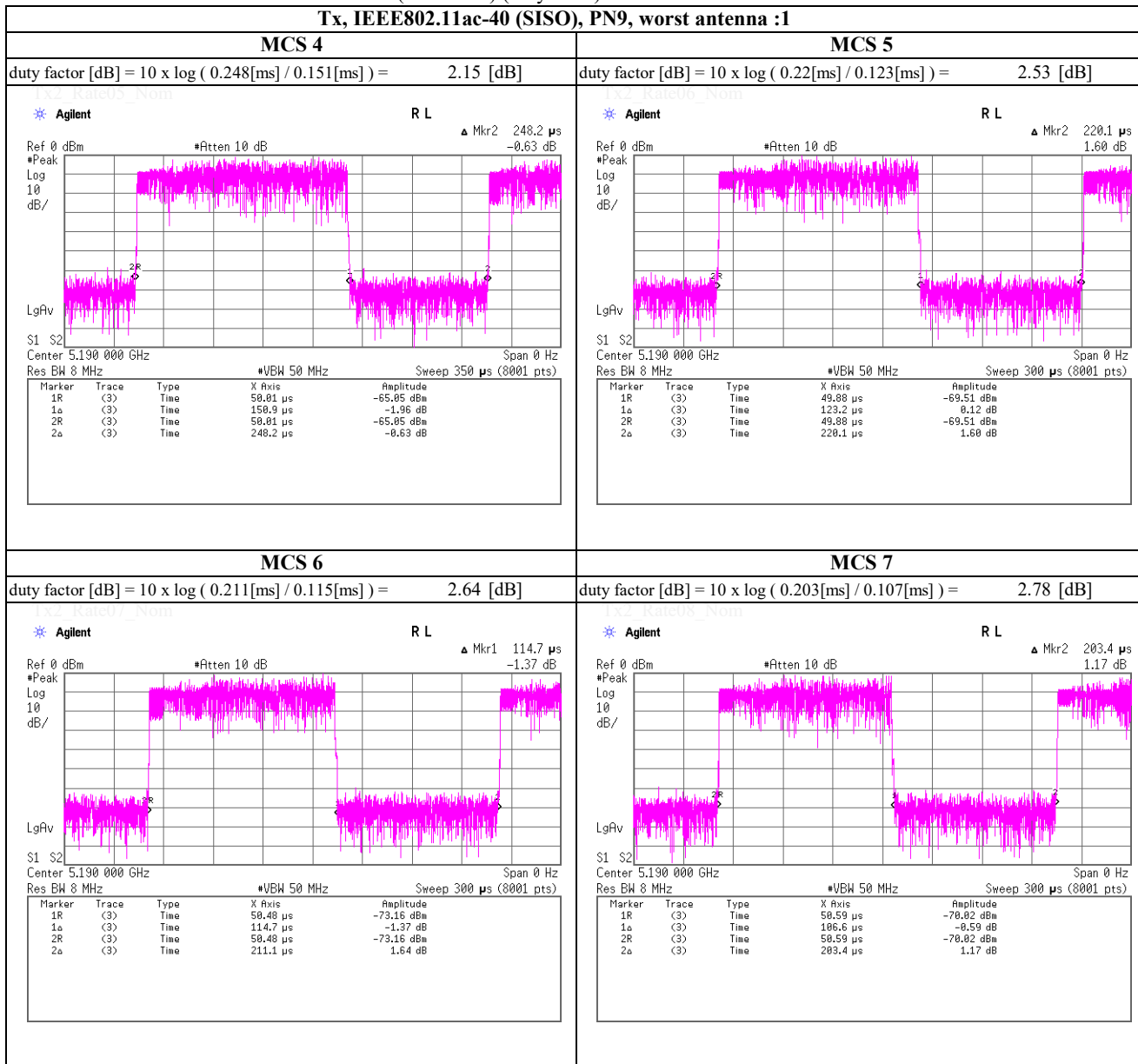
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-40 (SISO), PN9, worst antenna :1

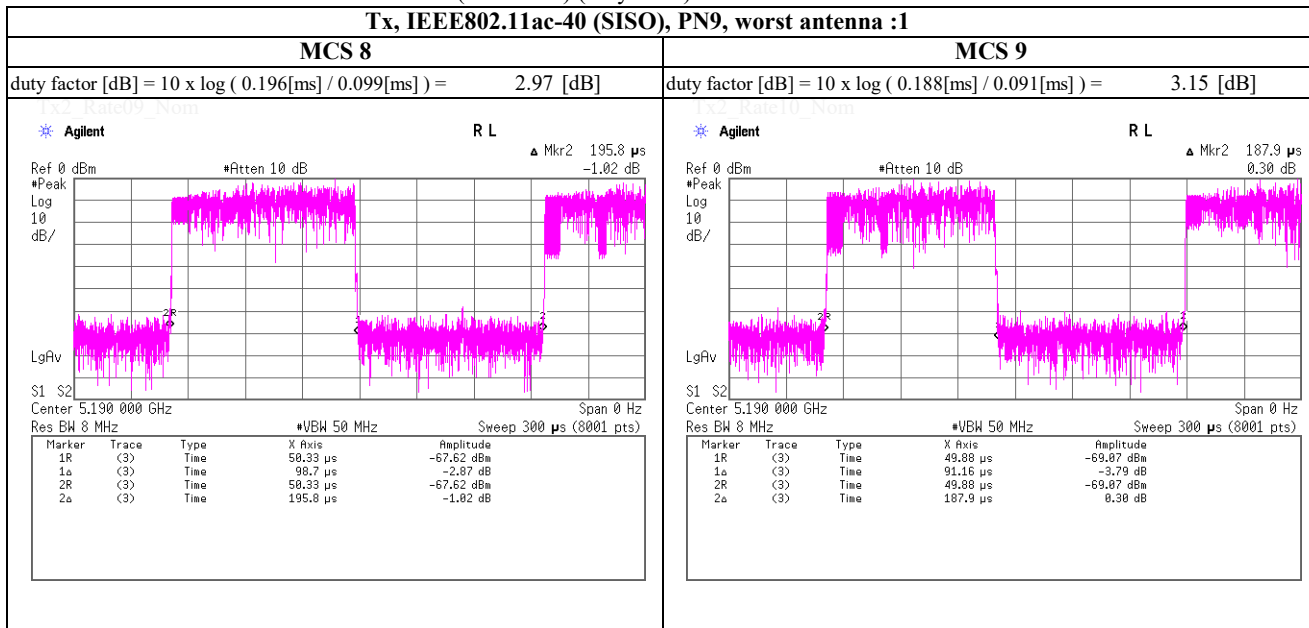


Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-40 (SISO), PN9, worst antenna :1



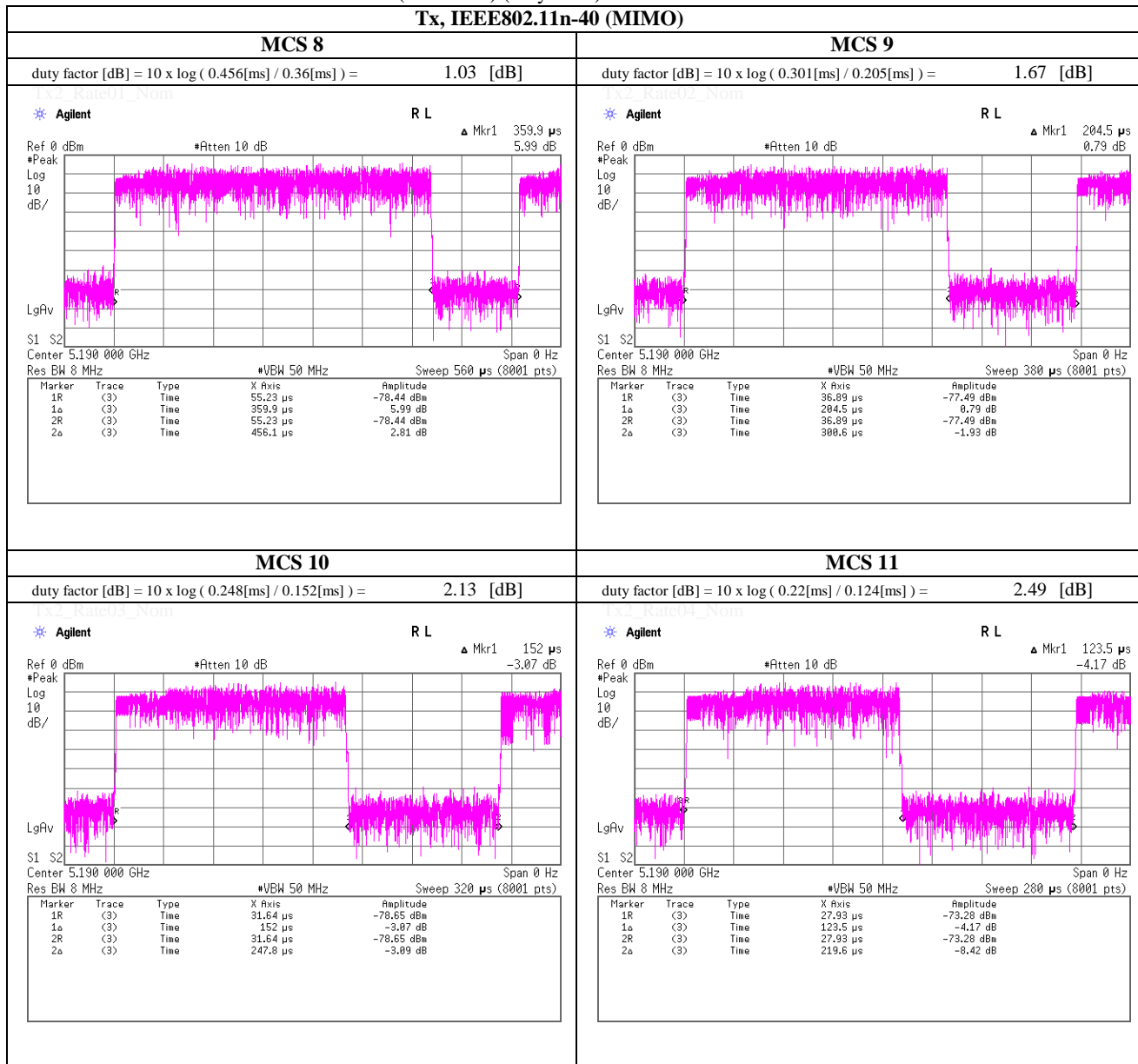
Tx2_Rate11_Nom

Tx2_Rate12_Nom

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)



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Telephone : +81 463 50 6400

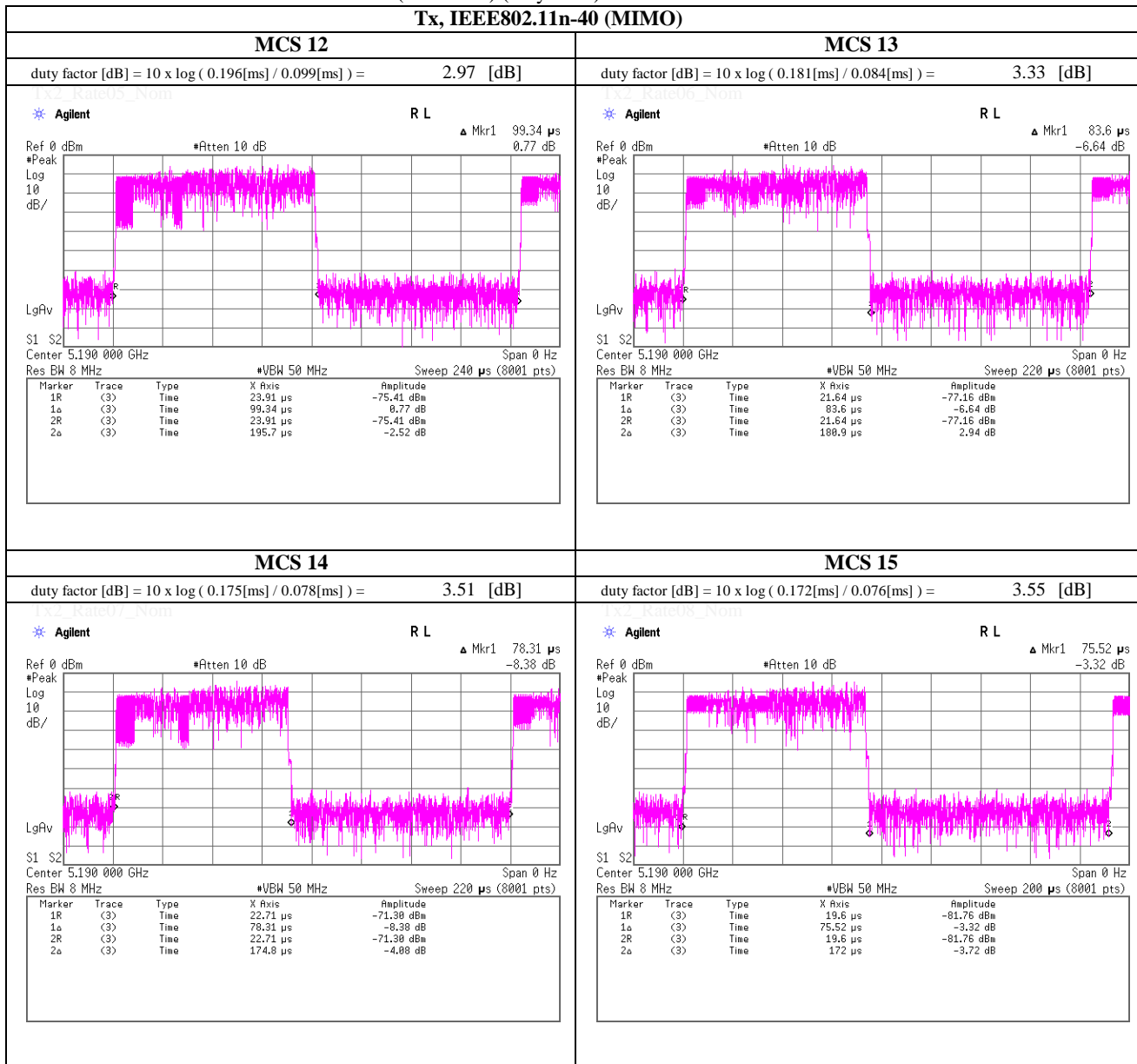
Facsimile : +81 463 50 6401

Test place: UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date: December 16, 2020
 Temperature / Humidity: 23 deg.C , 40 %RH
 Engineer: Takahiro Kawakami

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11n-40 (MIMO)

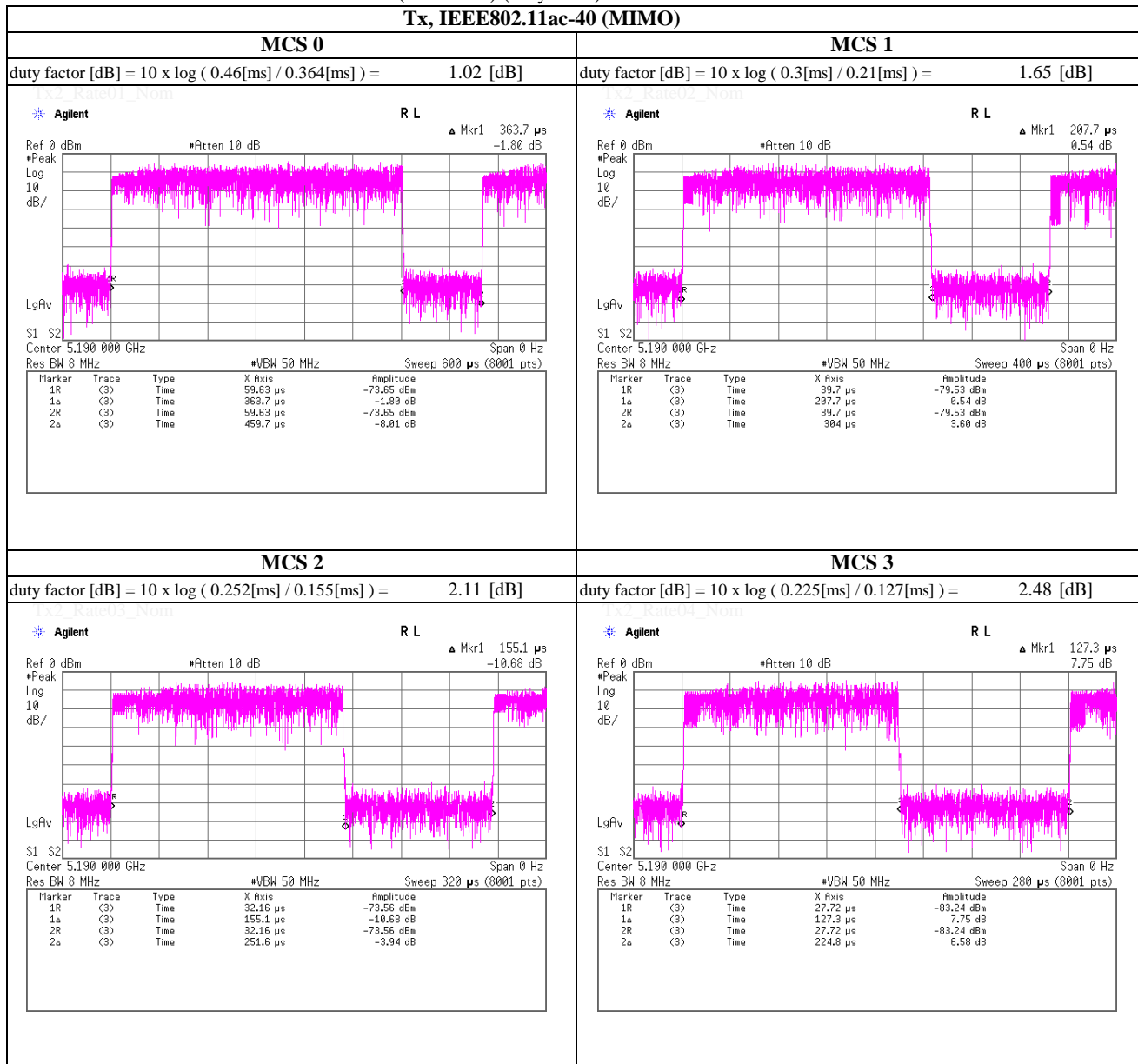


Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 25 deg.C , 35 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-40 (MIMO)

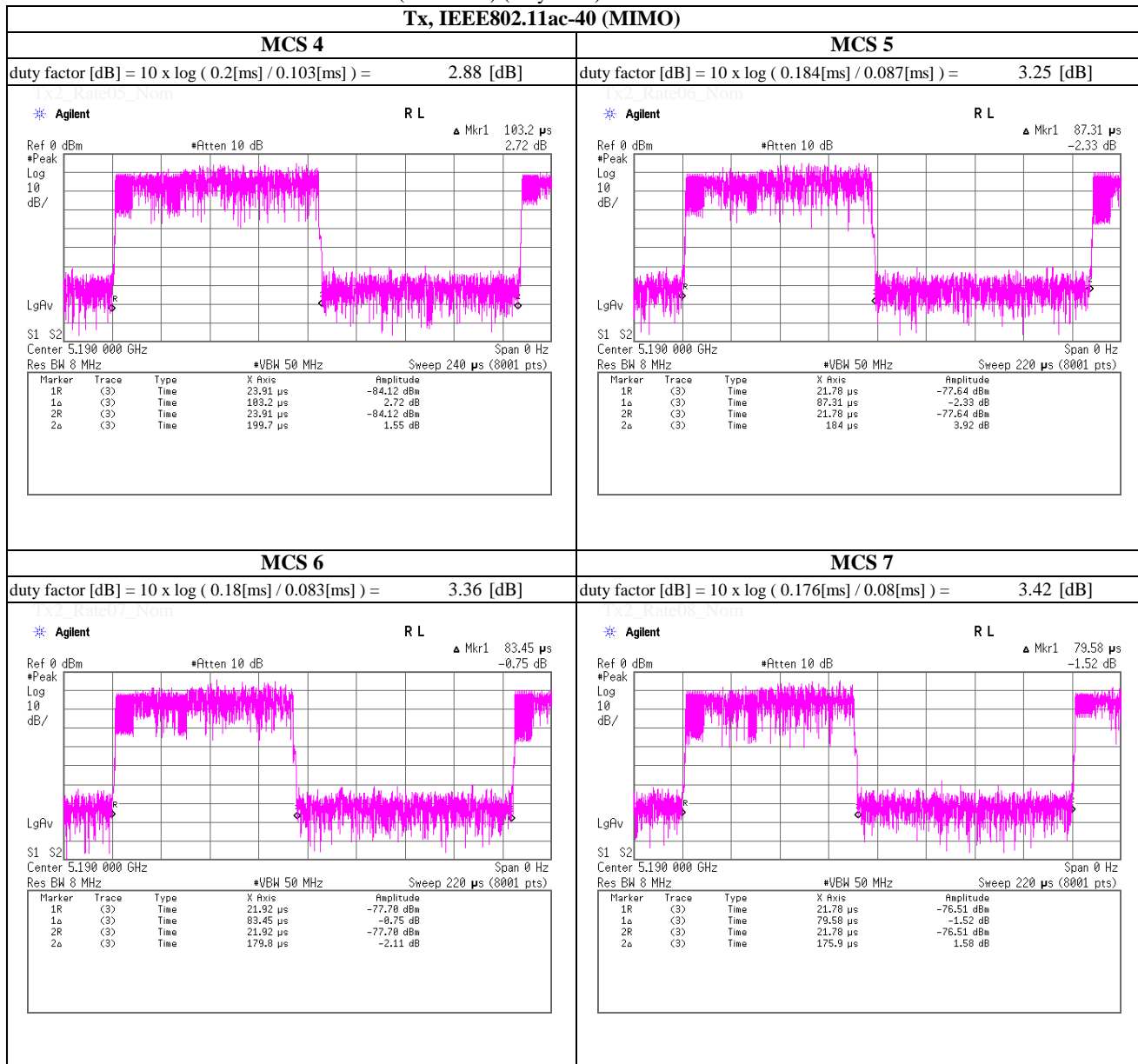


Test place: UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date: December 16, 2020
 Temperature / Humidity: 25 deg.C , 35 %RH
 Engineer: Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-40 (MIMO)

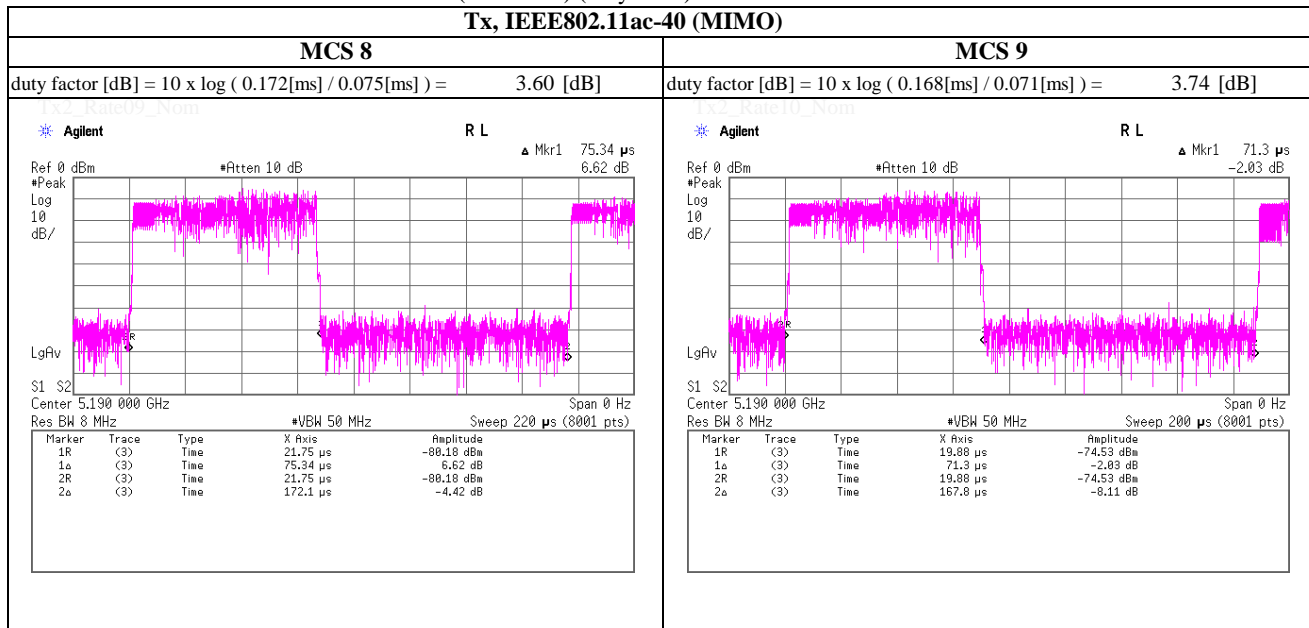


Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 25 deg.C , 35 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-40 (MIMO)



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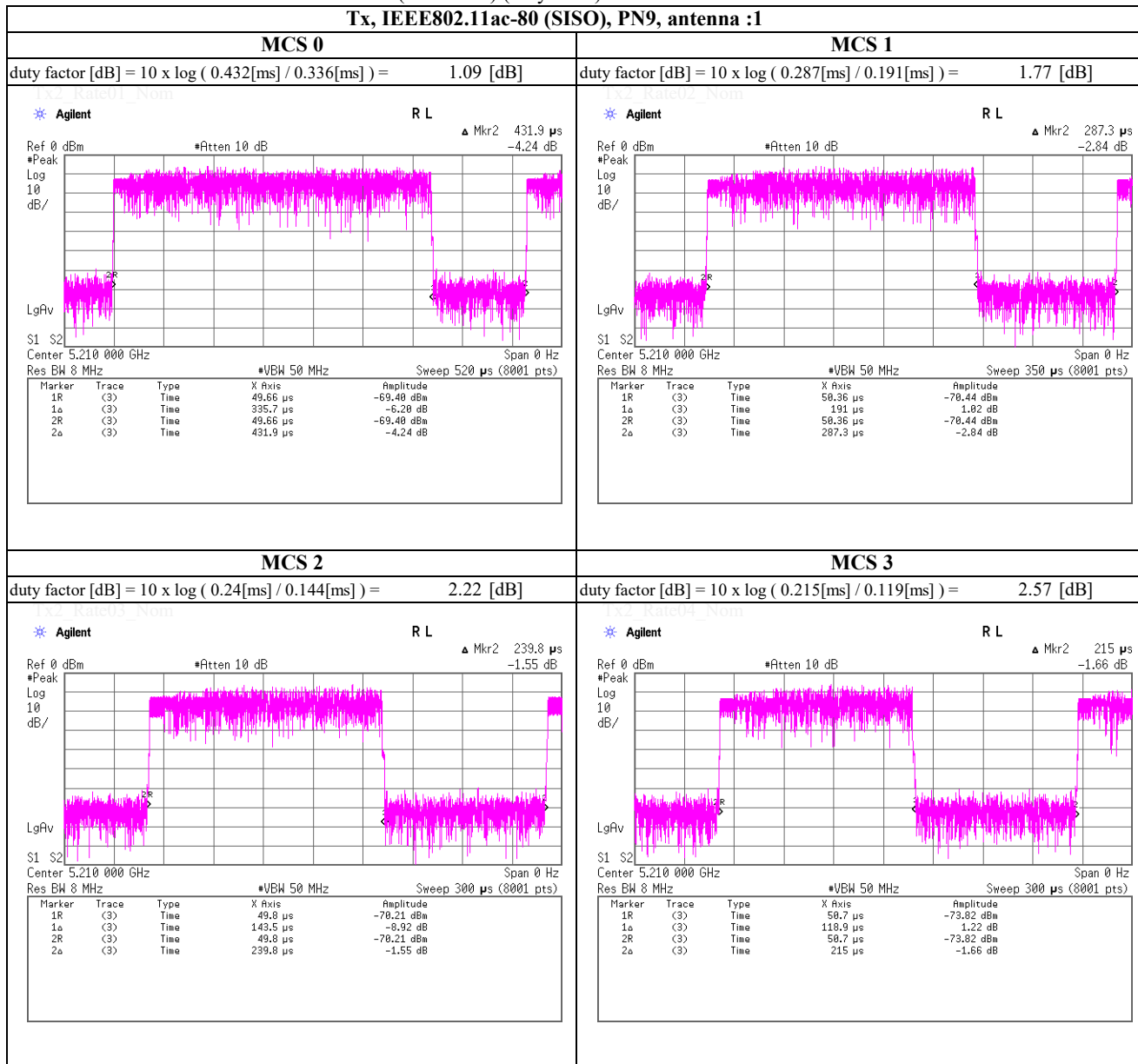
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 25 deg.C , 35 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-80 (SISO), PN9, antenna :1



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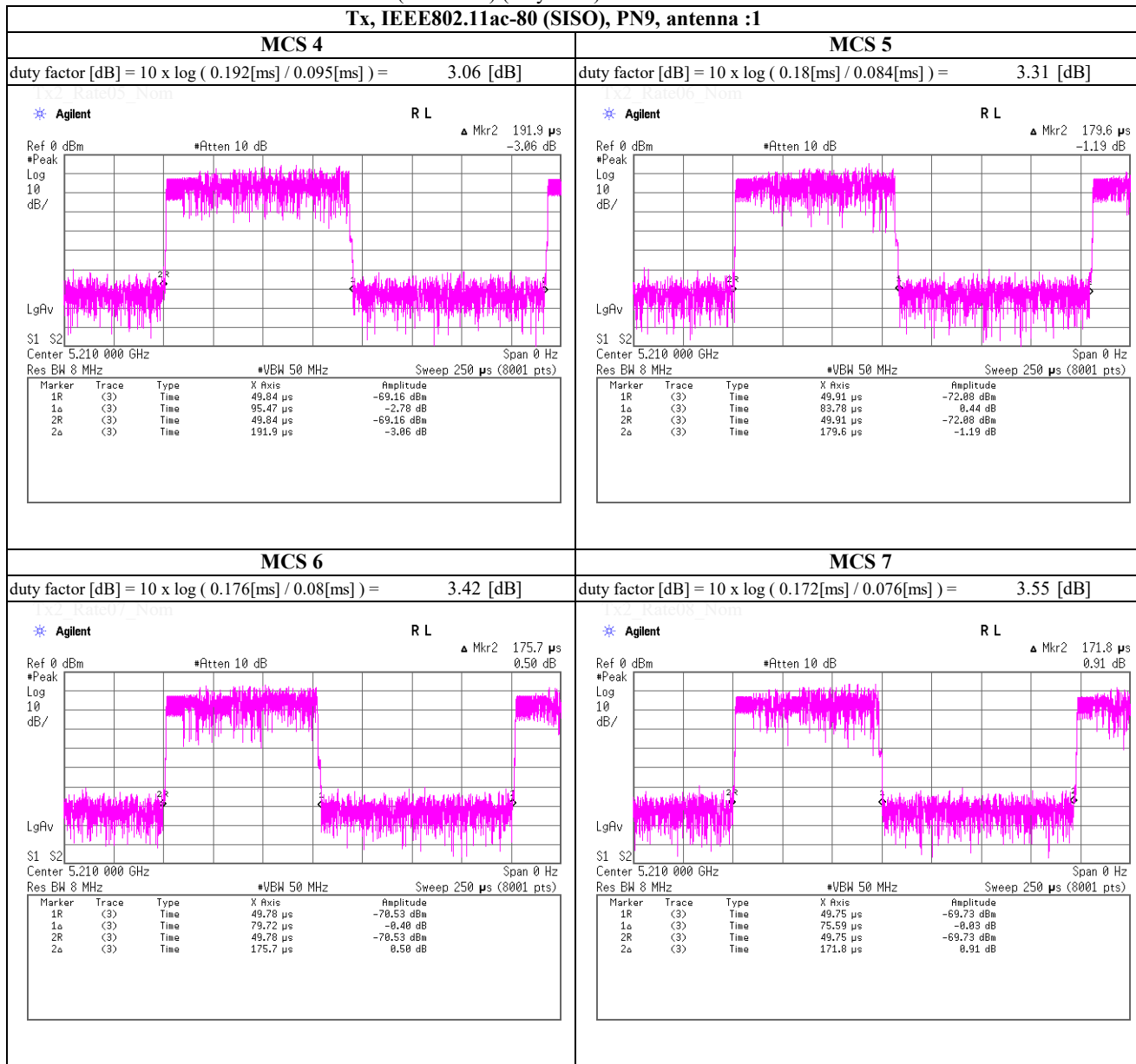
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 25 deg.C , 35 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-80 (SISO), PN9, antenna :1

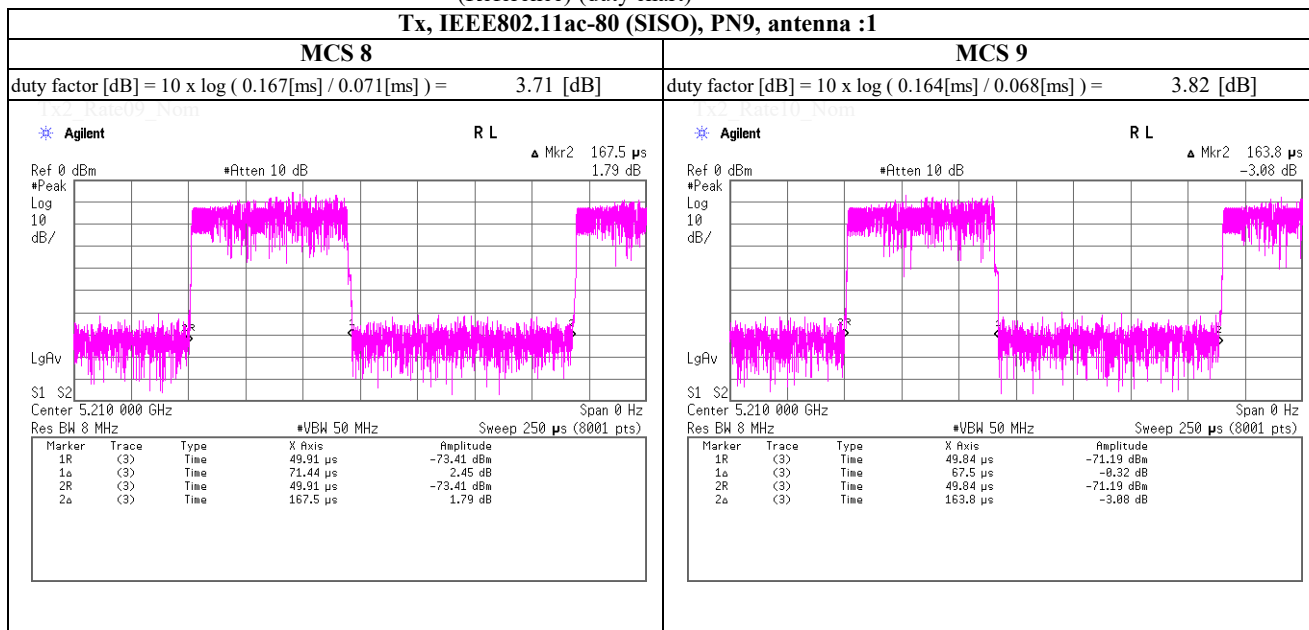


Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 25 deg.C , 35 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-80 (SISO), PN9, antenna :1



Tx2_Rate11_Nom

Tx2_Rate12_Nom

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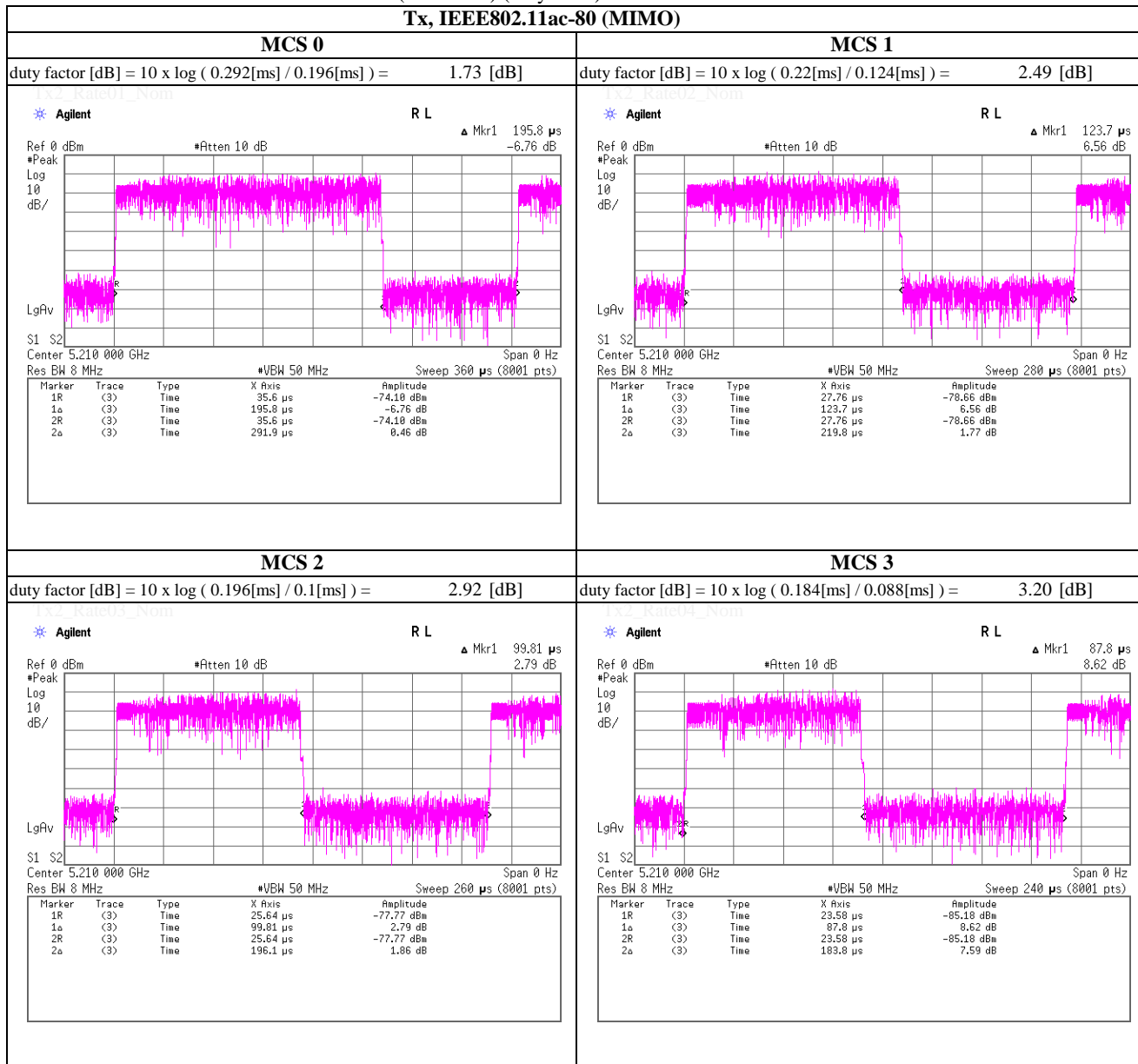
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 17, 2020
 Temperature / Humidity 23 deg.C , 52 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-80 (MIMO)



UL Japan, Inc.

Shonan EMC Lab.

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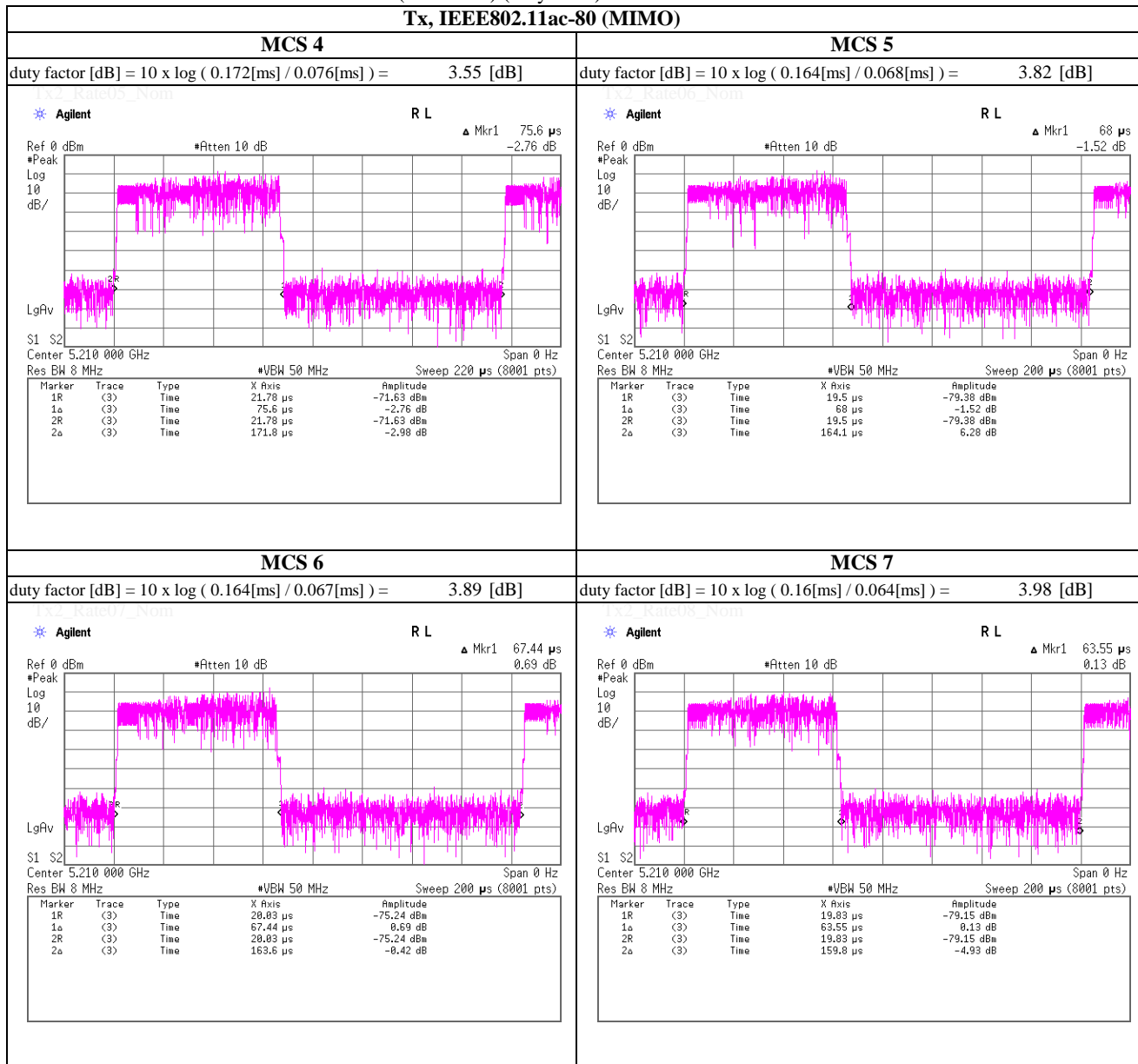
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 17, 2020
 Temperature / Humidity 23 deg.C , 52 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-80 (MIMO)



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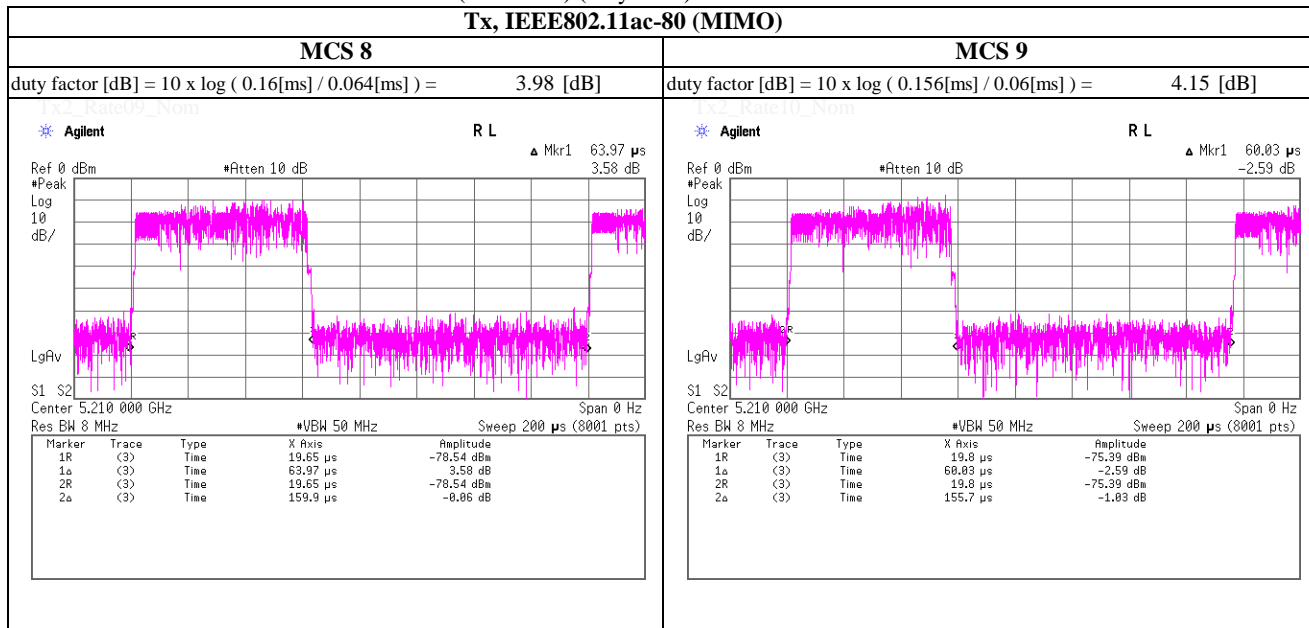
Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 17, 2020
 Temperature / Humidity 23 deg.C , 52 %RH
 Engineer Kazuya Noda

Maximum Conducted Output Power (Conducted)

(Reference) (duty chart)

Tx, IEEE802.11ac-80 (MIMO)



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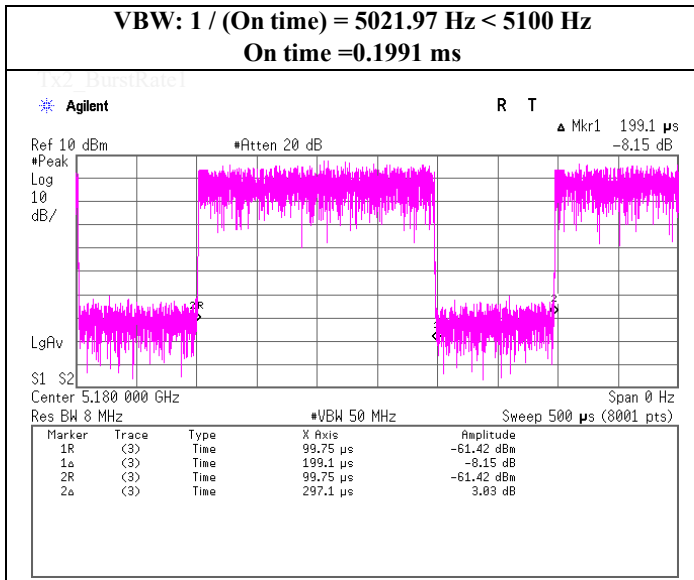
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 14, 2020
 Temperature / Humidity 25 deg.C , 31 %RH
 Engineer Kazuya Noda

VBW (Average) Calculation & Duty chart

Tx, IEEE802.11a, PN9, worst antenna port 1, worst data mode 48 Mbps



Tx2_BurstRate2

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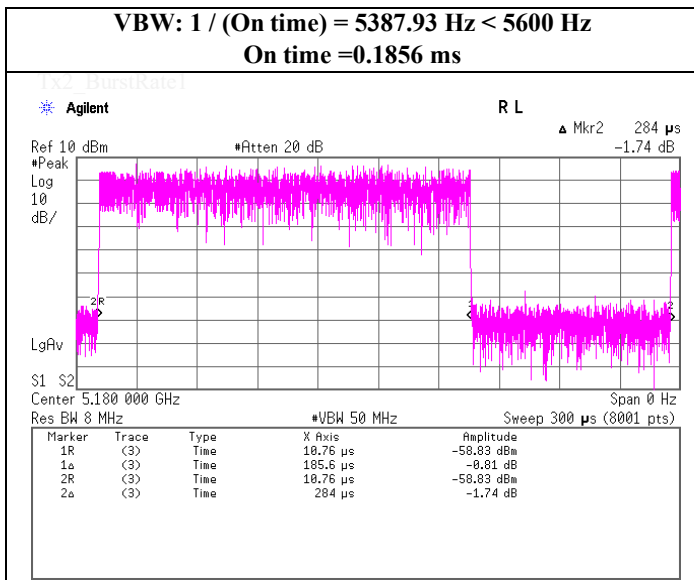
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

VBW (Average) Calculation & Duty chart

Tx, IEEE802.11n-20 (SISO), PN9, worst antenna port 1, worst data mode 6 (MCS)



Tx2_BurstRate2

UL Japan, Inc.

Shonan EMC Lab.

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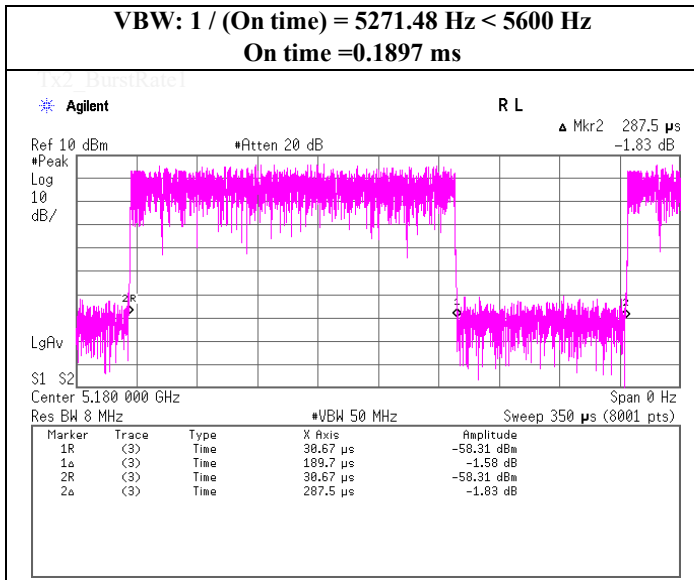
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
Date December 15, 2020
Temperature / Humidity 23 deg.C , 54 %RH
Engineer Kazuya Noda

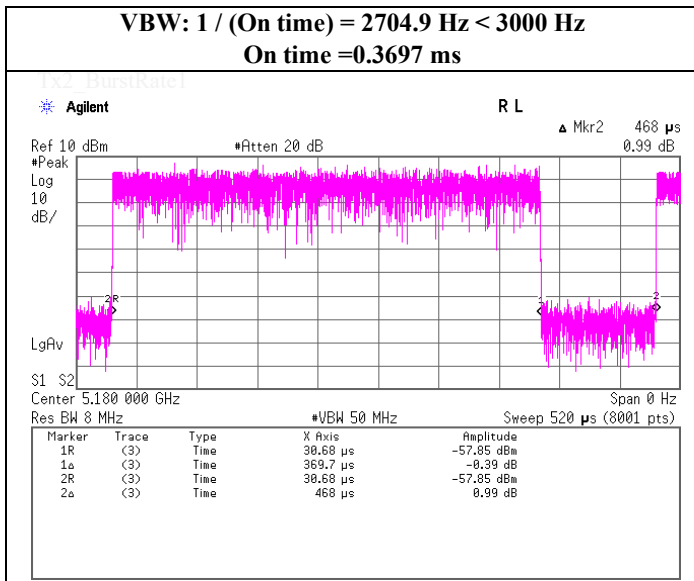
VBW (Average) Calculation & Duty chart

Tx, IEEE802.11ac-20 (SISO), PN9, antenna port 0, worst data mode 6 (MCS)



Tx2_BurstRate2

Tx, IEEE802.11ac-20 (SISO), PN9, antenna port 1, worst data mode 3 (MCS)

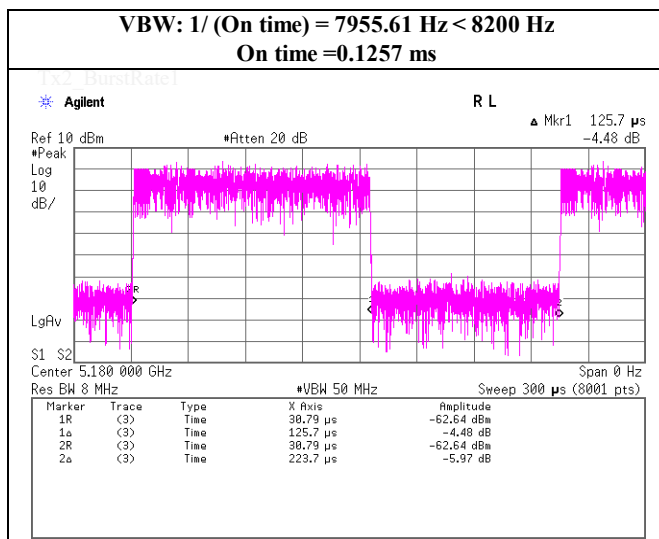


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Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

VBW (Average) Calculation & Duty chart

Tx, IEEE802.11n-20 (MIMO), PN9, worst data mode 13 (MCS)



Tx2_BurstRate2

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Shonan EMC Lab.

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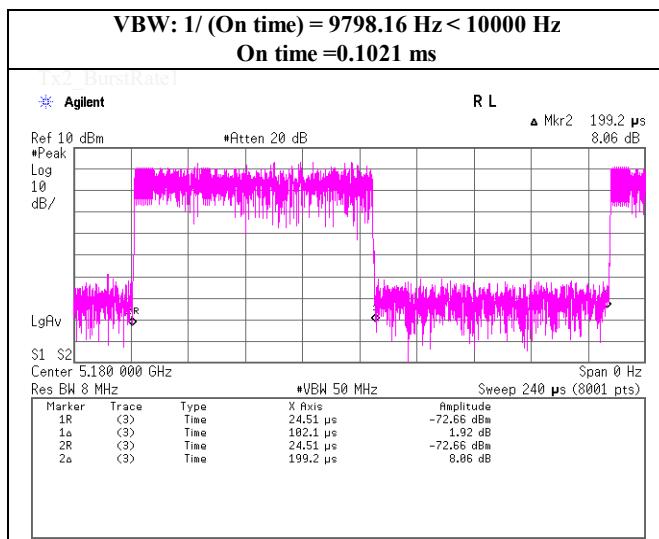
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 15, 2020
 Temperature / Humidity 23 deg.C , 54 %RH
 Engineer Kazuya Noda

VBW (Average) Calculation & Duty chart

Tx, IEEE802.11ac-20 (MIMO), PN9, worst data mode 8 (MCS)



Tx2_BurstRate2

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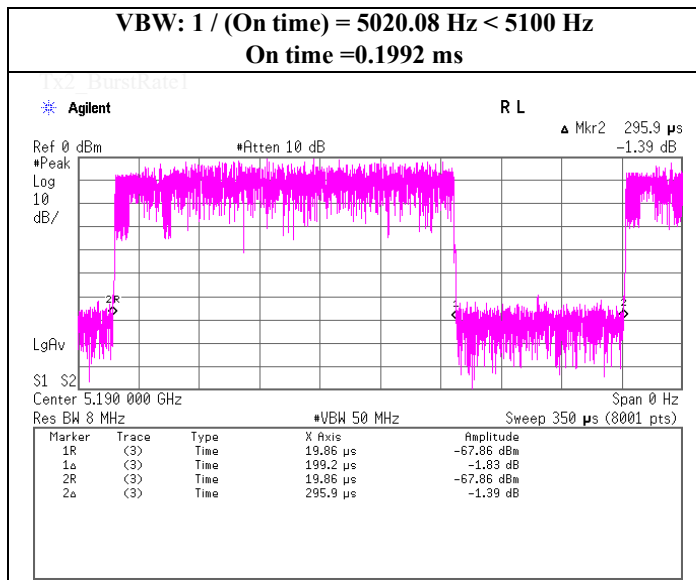
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami

VBW (Average) Calculation & Duty chart

Tx, IEEE802.11n-40 (SISO), PN9, antenna port 1, worst data mode 3 (MCS)



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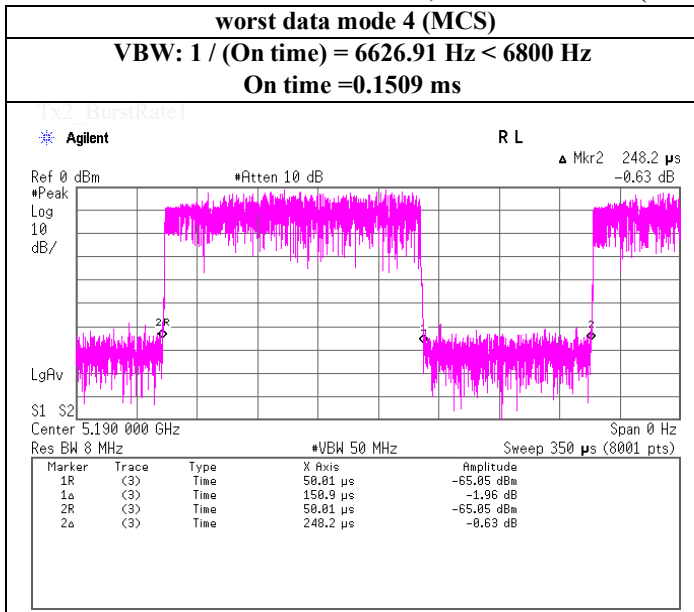
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

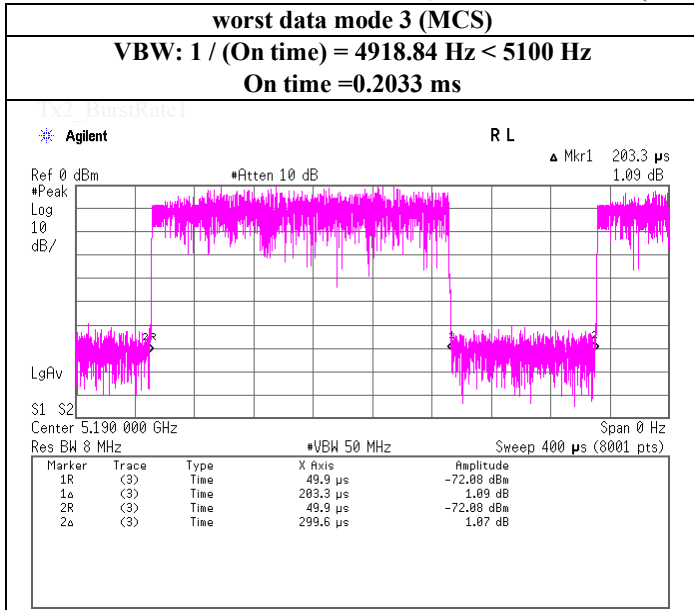
Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami

VBW (Average) Calculation & Duty chart

Tx, IEEE802.11ac-40 (SISO), PN9, antenna port 0



Tx, IEEE802.11ac-40 (SISO), PN9, antenna port 1



Tx2_BurstRate2

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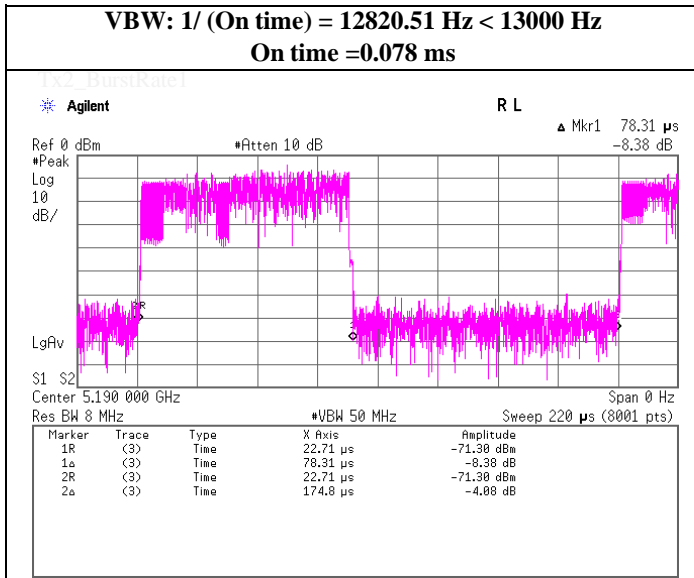
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 23 deg.C , 40 %RH
 Engineer Takahiro Kawakami

VBW (Average) Calculation & Duty chart

Tx, IEEE802.11n-40 (MIMO), PN9, worst data mode 14 (MCS)



Tx2_BurstRate2

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Shonan EMC Lab.

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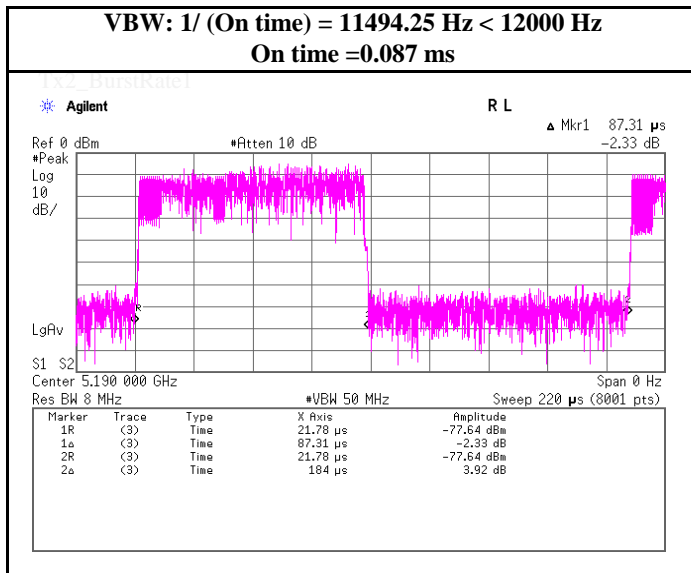
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
 Date December 16, 2020
 Temperature / Humidity 25 deg.C , 35 %RH
 Engineer Kazuya Noda

VBW (Average) Calculation & Duty chart

Tx, IEEE802.11ac-40 (MIMO), PN9, worst data mode 5 (MCS)



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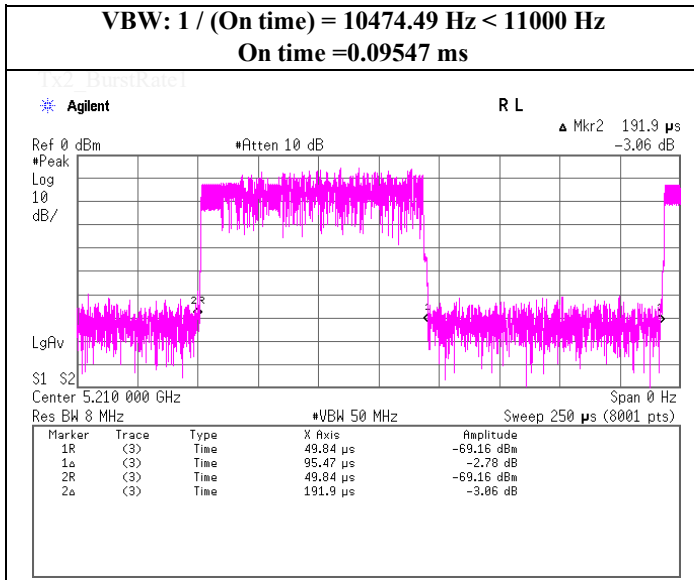
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
Date December 16, 2020
Temperature / Humidity 25 deg.C , 35 %RH
Engineer Kazuya Noda

VBW (Average) Calculation & Duty chart

Tx, IEEE802.11ac-80 (SISO), PN9, antenna port 1, worst data mode 4 (MCS)

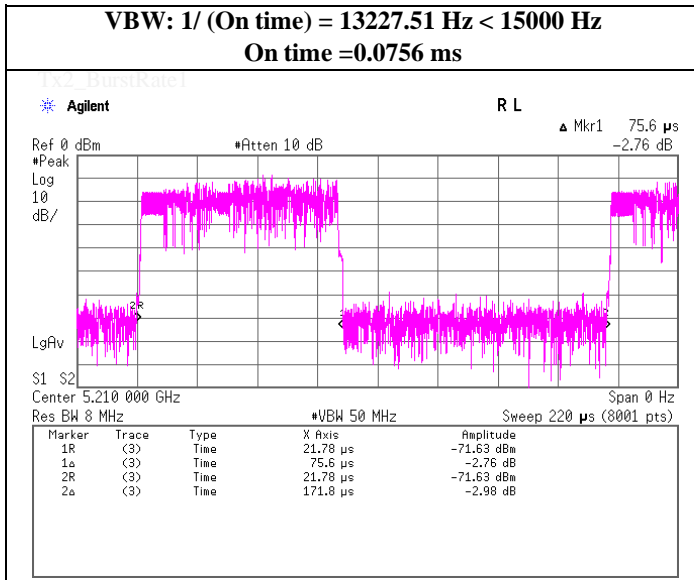


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Telephone : +81 463 50 6400
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Test place UL Japan, Inc. Shonan EMC Lab. No.1 Measurement Room
Date December 17, 2020
Temperature / Humidity 23 deg.C , 52 %RH
Engineer Kazuya Noda

VBW (Average) Calculation & Duty chart

Tx, IEEE802.11ac-80 (MIMO), PN9, worst data mode 4 (MCS)



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