





RADIO TEST REPORT

Test Report No. 14615663S-B-R1

Customer	CANON INC.
Description of EUT	Wireless LAN Module
Model Number of EUT	FM3-L998
FCC ID	AZDFM3L998
Test Regulation	FCC Part 15 Subpart E
Test Result	Complied
Issue Date	December 19, 2023
Remarks	WLAN (5 GHz band) part Except for DFS test

<p>Representative Test Engineer</p> <div style="text-align: center; margin: 10px 0;">  </div> <p style="text-align: center;">Miku Ikudome Engineer</p>	<p>Approved By</p> <div style="text-align: center; margin: 10px 0;">  </div> <p style="text-align: center;">Toyokazu Imamura Leader</p>
<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="text-align: right; margin-top: 5px;">CERTIFICATE 1266.03</p>	
<p><input type="checkbox"/> The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan, Inc.</p> <p><input checked="" type="checkbox"/> There is no testing item of "Non-accreditation".</p>	

Report Cover Page - Form-ULID-003532 (DCS:13-EM-F0429) Issue# 22.0







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- The all test items in this test report are conducted by UL Japan, Inc. Shonan EMC Lab.
- The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan, Inc. has been accredited.
- The information provided from the customer for this report is identified in Section 1.
- For test report(s) referred in this report, the latest version (including any revisions) is always referred.

REVISION HISTORY

Original Test Report No.: 14615663S-B

This report is a revised version of 14615663S-B. 14615663S-B is replaced with this report.

Revision	Test Report No.	Date	Revised Contents								
- (Original)	14615663S-B	September 6, 2023	-								
1	14615663S-B-R1	December 19, 2023	<p>Change of test standards' version: From "ANSI C63.10-2020" to "ANSI C63.10-2013"</p> <p>Correction of 4.2 Configuration and Peripherals for Conducted Emission test:</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 15%;">From</td> <td>  <p style="font-size: small;">* 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.</p> </td> </tr> <tr> <td>To</td> <td>  <p style="font-size: small;">* 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 240 V of the worst voltage as representative.</p> </td> </tr> </table> <p>Correction of distance factor of 1 GHz to 10 GHz band for Radiated Spurious Emission:</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 15%;">From</td> <td>Distance Factor: $20 \times \log(3.975 \text{ m} / 3.0 \text{ m}) = 2.45 \text{ dB}$ * Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.975 \text{ m}$ [...] $r = 0.025 \text{ m}$</td> </tr> <tr> <td>To</td> <td>Distance Factor: $20 \times \log(3.98 \text{ m} / 3.0 \text{ m}) = 2.45 \text{ dB}$ * Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.98 \text{ m}$ [...] $r = 0.02 \text{ m}$</td> </tr> </table> <p>Correction of reading value for Conducted Spurious Emission: From "-100.83" to "-100.03"</p>	From	 <p style="font-size: small;">* 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.</p>	To	 <p style="font-size: small;">* 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 240 V of the worst voltage as representative.</p>	From	Distance Factor: $20 \times \log(3.975 \text{ m} / 3.0 \text{ m}) = 2.45 \text{ dB}$ * Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.975 \text{ m}$ [...] $r = 0.025 \text{ m}$	To	Distance Factor: $20 \times \log(3.98 \text{ m} / 3.0 \text{ m}) = 2.45 \text{ dB}$ * Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.98 \text{ m}$ [...] $r = 0.02 \text{ m}$
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Reference: Abbreviations (Including words undescribed in this report)

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

CONTENTS	PAGE
SECTION 1: Customer Information	5
SECTION 2: Equipment Under Test (EUT).....	5
SECTION 3: Test specification, Procedures & Results	7
SECTION 4: Operation of EUT during testing	10
SECTION 5: Conducted Emission.....	15
SECTION 6: Radiated Spurious Emission and Band Edge Compliance	16
SECTION 7: Antenna Terminal Conducted Tests	19
APPENDIX 1: Test Data	20
Conducted Emission.....	20
26 dB Emission Bandwidth and 99 % Occupied Bandwidth	21
6 dB Bandwidth.....	79
Maximum Conducted Output Power	89
Burst rate confirmation.....	112
Maximum Power Spectral Density	114
Radiated Spurious Emission.....	169
Conducted Spurious Emission.....	272
APPENDIX 2: Test Instruments	273
APPENDIX 3: Photographs of Test Setup	276
Conducted Emission	276
Radiated Spurious Emission.....	277
Precheck of Worst Case Position	278
Antenna Terminal Conducted Tests	279

SECTION 1: Customer Information

Company Name	CANON INC.
Address	16-1, Shimonoge 3-chome, Takatsu-ku, Kawasaki-shi, Kanagawa 213-8512, Japan
Telephone Number	+81 3-3758-2111
Contact Person	Yoshihiro Funamizu

The information provided from the customer is as follows;

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

SECTION 2: Equipment Under Test (EUT)

2.1 Identification of EUT

Description	Wireless LAN Module
Model Number	FM3-L998
Serial Number	Refer to SECTION 4.2
Condition	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification	No Modification by the test lab
Receipt Date	January 23, 2023
Test Date	February 1, 2023 to April 21, 2023

2.2 Product Description

General Specification

Rating	DC 5.0 V
Operating temperature	10 deg. C to 50 deg. C

Radio Specification

WLAN (IEEE802.11b/11g/11n-20/11ax-20)

Equipment Type	Transceiver
Frequency of Operation	2412 MHz to 2462 MHz
Type of Modulation	DSSS, OFDM, OFDMA
Antenna Type	Monopole Antenna
Antenna Gain: G _{ANT}	Ant A: -0.75 dBi Ant B: -0.26 dBi
Directional Gain *1)	2.51 dBi

WLAN (IEEE802.11a/11n-20/11ac-20/11ax-20)

Equipment Type	Transceiver	
Frequency of Operation	20 MHz Band:	5180 MHz to 5240 MHz 5260 MHz to 5320 MHz 5500 MHz to 5720 MHz 5745 MHz to 5825 MHz
Type of Modulation	OFDM, OFDMA	
Antenna Type	Monopole Antenna	
Antenna Gain: G _{ANT}	W52 5150 MHz to 5250 MHz:	Ant A: 0.67 dBi (W52) Ant B: 0.91 dBi (W52)
	W53 5250 MHz to 5350 MHz	Ant A: 0.85 dBi (W53) Ant B: 1.50 dBi (W53)
	W56 5470 MHz to 5725 MHz:	Ant A: 0.97 dBi (W56) Ant B: 1.59 dBi (W56)
	W58 5725 MHz to 5850 MHz:	Ant A: 1.15 dBi (W58) Ant B: 1.50 dBi (W58)
Directional Gain *1)	W52 5150 MHz to 5250 MHz:	3.81 dBi
	W53 5250 MHz to 5350 MHz	4.20 dBi
	W56 5470 MHz to 5725 MHz:	4.30 dBi
	W58 5725 MHz to 5850 MHz:	4.34 dBi

*1) Directional Antenna Gain = $10 \log\left\{\left(10^{\frac{G_{ANT1}}{20}} + 10^{\frac{G_{ANT2}}{20}}\right)^2 / 2\right\}$

* Following channels are not used.
- 20 MHz Bandwidth (5600 MHz - 5640 MHz)

SECTION 3: Test specification, Procedures & Results

3.1 Test Specification

Test Specification	FCC Part 15 Subpart E The latest version on the first day of the testing period
Title	FCC 47 CFR Part 15 Radio Frequency Device Subpart E Unlicensed National Information Infrastructure Devices Section 15.407 General technical requirements

3.2 Procedures and Results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	FCC: ANSI C63.10-2013 ISED: RSS-Gen 8.8	FCC: 15.407 (b) (6) / 15.207 ISED: RSS-Gen 8.8	10.6 dB, 0.49444 MHz, N, AV Mode: Tx 11ax-20 (OFDM), 5580 MHz	Complied	-
26 dB Emission Bandwidth	FCC: KDB Publication Number 789033 ISED: -	FCC: 15.407 (a) (1) (2) (3) ISED: -	See data	N/A	Conducted
Maximum Conducted Output Power	FCC: KDB Publication Number 789033 ISED: -	FCC: 15.407 (a) (1) (2) (3) ISED: RSS-247 6.2.1.1 6.2.2.1 6.2.3.1 6.2.4.1		Complied	Conducted
Maximum Power Spectral Density	FCC: KDB Publication Number 789033 ISED: -	FCC : 15.407 (a) (1) (2) (3) ISED: RSS-247 6.2.1.1 6.2.2.1 6.2.3.1 6.2.4.1		N/A	Conducted
Spurious Emission Restricted Band Edge	FCC: ANSI C63.10-2013 KDB Publication Number 789033 ISED: -	FCC: 15.407 (b), 15.205 and 15.209 ISED: RSS-247 6.2.1.2 6.2.2.2 6.2.3.2 6.2.4.2	3.3 dB 36.813 MHz, QP, Ver., Mode: Tx, 11ax-20 (OFDM), 5580 MHz	Complied	Conducted (< 30 MHz) / Radiated (> 30 MHz) *1)
6 dB Emission Bandwidth	FCC: ANSI C63.10-2013 ISED: -	FCC: 15.407 (e) ISED: RSS-247 6.2.4.1	See data	Complied	Conducted
Note: UL Japan, Inc.'s EMI Work Procedures: Work Instructions-ULID-003591 and Work Instructions-ULID-003593. * In case any questions arise about test procedure, ANSI C63.10: 2013 is also referred.					
*1) Radiated test was selected over 30 MHz based on FCC 15.407 (b) and KDB 789033 D02 G.3.b).					

FCC Part 15.31 (e)

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

FCC Part 15.203 Antenna requirement

The antenna is not removable from 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	-	Conducted

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

3.4 Uncertainty

Measurement uncertainty is not taken into account when stating conformity with a specified requirement.
Note: When margins obtained from test results are less than the measurement uncertainty, the test results may exceed the limit.

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

Item	Frequency range	Uncertainty (+/-)
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	3.1 dB
Radiated emission (Measurement distance: 3 m)	9 kHz-30 MHz	3.3 dB
	30 MHz-200 MHz	4.8 dB
	200 MHz-1 GHz	6.1 dB
	1 GHz-6 GHz	4.7 dB
	6 GHz-18 GHz	5.3 dB
Radiated emission (Measurement distance: 1 m)	18 GHz-40 GHz	5.5 dB
	1 GHz-18 GHz	5.6 dB
	18 GHz-40 GHz	5.8 dB

Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz (Average Detector)_SPM-06	1.3 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-06	2.1 dB
Power Measurement above 1 GHz (Average Detector)_SPM-07	1.1 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-07	1.2 dB
Power Measurement above 1 GHz (Average Detector)_SPM-13	1.1 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-13	1.4 dB
Spurious emission (Conducted) below 1 GHz	0.84 dB
Conducted emissions Power Density Measurement 1 GHz-3 GHz	0.86 dB
Conducted emissions Power Density Measurement 3 GHz-18 GHz	2.4 dB
Spurious emission (Conducted) 18 GHz-26.5 GHz	2.4 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	0.87 deg.C.
Humidity_SCH-01	3.5 %
Temperature_SCH-02	2.0 deg.C.
Humidity_SCH-02	6.7 %
Voltage	0.92 %

3.5 Test Location

UL Japan, Inc. Shonan EMC Lab.

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

Telephone: +81 463 50 6400

A2LA Certificate Number: 1266.03

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

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

3.6 Test Data, Test Instruments, and Test Set Up

Refer to APPENDIX.

SECTION 4: Operation of EUT during testing

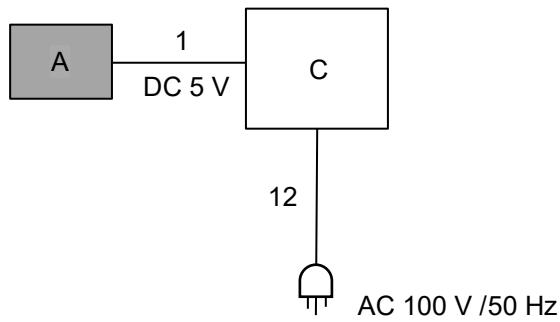
4.1 Operating Mode(s)

Mode	Remarks*
IEEE 802.11a CDD (11a)	54 Mbps, PN9
IEEE 802.11n MIMO (CDD/SDM) 20 MHz BW (11n-20)	MCS 0 (1SS), PN9
IEEE 802.11ac MIMO (CDD/SDM) 20 MHz BW (11ac-20)	MCS 0 (1SS), PN9
IEEE 802.11ax MIMO (CDD/SDM) 20 MHz BW, OFDM (11ax-20 (OFDM))	MCS 0 (1SS), PN9
IEEE 802.11ax MIMO (CDD/SDM) 20 MHz BW, OFDM, pre-correction mode (11ax-20 (OFDM), pre-correction)	MCS 0 (1SS), PN9
IEEE 802.11ax MIMO (CDD/SDM) 20 MHz BW, OFDMA, 26-tone Resource Unit (11ax-20 (OFDMA) 26-tone RU)	MCS 0 (1SS), PN9
IEEE 802.11ax MIMO (CDD/SDM) 20 MHz BW, OFDMA, 26-tone Resource Unit, pre-correction mode (11ax-20 (OFDMA) 26-tone RU, pre-correction)	MCS 0 (1SS), PN9
IEEE 802.11ax MIMO (CDD/SDM) 20 MHz BW, OFDMA, 52-tone Resource Unit (11ax-20 (OFDMA) 52-tone RU)	MCS 0 (1SS), PN9
IEEE 802.11ax MIMO (CDD/SDM) 20 MHz BW, OFDMA, 52-tone Resource Unit, pre-correction mode (11ax-20 (OFDMA) 52-tone RU, pre-correction)	MCS 0 (1SS), PN9
IEEE 802.11ax MIMO (CDD/SDM) 20 MHz BW, OFDMA, 106-tone Resource Unit (11ax-20 (OFDMA) 106-tone RU)	MCS 0 (1SS), PN9
IEEE 802.11ax MIMO (CDD/SDM) 20 MHz BW, OFDMA, 106-tone Resource Unit, pre-correction mode (11ax-20 (OFDMA) 106-tone RU, pre-correction)	MCS 0 (1SS), PN9
IEEE 802.11ax MIMO (CDD/SDM) 20 MHz BW, OFDMA, 242-tone Resource Unit (11ax-20 (OFDMA) 242-tone RU)	MCS 0 (1SS), PN9
IEEE 802.11ax MIMO (CDD/SDM) 20 MHz BW, OFDMA, 242-tone Resource Unit, pre-correction mode (11ax-20 (OFDMA) 242-tone RU, pre-correction)	MCS 0 (1SS), PN9
The worst condition was determined based on the test result of Maximum Peak Output Power. (SS: Spatial Stream)	
*Power of the EUT was set by the software as follows; Power Setting: 11a / 11n-20 / 11ac-20 / 11ax-20 (OFDM): 10 dBm *1) 11ax-20 (OFDMA) 26-tone RU: -1 dBm 11ax-20 (OFDMA) 52-tone RU : 2 dBm 11ax-20 (OFDMA) 106-tone RU: 5 dBm 11ax-20 (OFDMA) 242-tone RU: 9 dBm 11ax-20, pre-correction: -8 dBm Software: DutApiMimoApApp.exe Version: 1.0.0.119 for EUT (Date: 2023.01 23, Storage location: Driven by connected PC) DutApiMimoApApp.exe Version: 1.0.0.115 for trigger module (Date: 2023.01 23, Storage location: Driven by connected PC) Labtool Version: 1.0.0.119.1 (Date: 2023.01 23, Storage location: Driven by connected PC)	
*1) Actual measurement output power and set-up output power are different. *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.	
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/ax mode by the pre-test.	

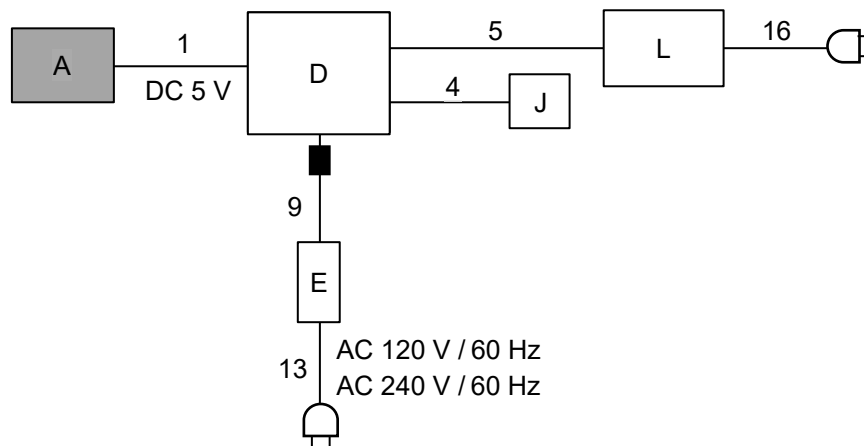
*The Details of Operation Mode(s)

Test Item	Operating Mode	Tested Antenna	Tested Frequency			
			Lower Band	Middle Band	Additional Band	Upper Band
Conducted emission	Tx 11ax-20 (OFDM) *1)	ANT A + ANT B	-	-	5580 MHz	-
26 dB Emission Bandwidth	Tx 11a, Tx 11n-20, Tx 11ac-20, Tx 11ax-20 (OFDM), Tx 11ax-20 (OFDMA)	ANT B *2)	-	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz 5720 MHz	-
99 % Occupied Bandwidth	Tx 11a, Tx 11n-20, Tx 11ac-20, Tx 11ax-20 (OFDM), Tx 11ax-20 (OFDMA)	ANT B *2)	5180 MHz 5220 MHz 5240 MHz	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz 5720 MHz	5745 MHz 5785 MHz 5825 MHz
Maximum Conducted Output Power	Tx 11a, Tx 11n-20, Tx 11ac-20, Tx 11ax-20 (OFDM), Tx 11ax-20 (OFDMA), Tx 11ax-20 (OFDMA) pre-correction	ANT A + ANT B	5180 MHz 5220 MHz 5240 MHz	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz 5720 MHz	5745 MHz 5785 MHz 5825 MHz
Maximum Power Spectral Density	Tx 11a, Tx 11n-20, Tx 11ac-20, Tx 11ax-20 (OFDM)	ANT A + ANT B	5180 MHz 5220 MHz 5240 MHz	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz 5720 MHz	5745 MHz 5785 MHz 5825 MHz
	Tx 11ax-20 (OFDMA)	ANT B *2)	5180 MHz 5220 MHz 5240 MHz	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz 5720 MHz	5745 MHz 5785 MHz 5825 MHz
6 dB Bandwidth	Tx 11a, Tx 11n-20, Tx 11ac-20, Tx 11ax-20 (OFDM), Tx 11ax-20 (OFDMA)	ANT B *2)	-	-	-	5745 MHz 5785 MHz 5825 MHz
Conducted Spurious Emission	Tx 11ax-20 (OFDM) *1)	ANT B *2)	-	-	5580 MHz	-
Radiated Spurious Emission (Below 1 GHz)	Tx 11ax-20 (OFDM) *1)	ANT A + ANT B	-	-	5580 MHz	-
Radiated Spurious Emission (Above 1 GHz)	Tx 11a, Tx 11n-20, Tx 11ac-20,	ANT A + ANT B	5180 MHz 5240 MHz	5320 MHz	5500 MHz 5700 MHz	5745 MHz 5825 MHz
	Tx 11ax-20 (OFDM)	ANT A + ANT B	5180 MHz 5240 MHz	5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	Tx 11ax-20 (OFDMA) *3)	ANT A + ANT B	5180 MHz	5320 MHz	5500 MHz 5700 MHz	5745 MHz 5825 MHz
<p>*1) The mode was tested as a representative, because it had the highest power at antenna terminal test. *2) The test was performed with the antenna that had higher power as a representative. *3) OFDMA configuration tests were conducted only at the band edge since preliminary testing indicated that the other spurious emission was lower than OFDM.</p>						

<For Radiated Emission tests (OFDM mode)>



<For Conducted Emission tests>



■ : Standard Ferrite Core

* 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 240 V of the worst voltage as representative.

Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remarks
A	Wireless LAN Module	FM3-L998	2 *1) 4 *2)	Canon	EUT
B	Wireless LAN Module	FM3-L998	5	Canon	Trigger module (Auxiliary equipment) for OFDMA mode
C	Power Supply(DC)	PAN35-10A	DE001677	KIKUSUI	-
D	Laptop Computer	dynabook Satellite B453 M	ZE127581H	TOSHIBA	-
E	AC Adapter	PA3917U-1ACA	G71C000DP410	TOSHIBA	-
F	Laptop Computer	7666-77J	LV-B8R1X 08/05	Lenovo	-
G	AC Adapter	42T4422	11S92P1154Z1DXF1DBFDN	Lenovo	-
H	Laptop Computer	ThinkPad L580	PF-1LTWLZ	LENOVO	-
I	AC Adapter	ADLX45YLC2A	8SSA10E75842L1CZ94J0D3R	LENOVO	-
J	Portable HDD	LGB-PBSU3	27A674402225 A	Logitec INA Solutions Co, Ltd.	-
K	Portable HDD	LGB-PBSU3	24A674401370 A	Logitec INA Solutions Co, Ltd.	-
L	HUB	CG-SW05TXLV2	1082980090200734	Corega Inc.	-

*1) Used for Antenna Terminal conducted test

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

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	USB	1.0	Shielded	Shielded	-
2	USB	1.0	Shielded	Shielded	-
3	USB	0.5	Shielded	Shielded	-
4	USB	0.5	Shielded	Shielded	-
5	LAN	3.0	Unshielded	Unshielded	-
6	LAN	3.0	Unshielded	Unshielded	-
7	LAN	3.0	Unshielded	Unshielded	-
8	DC	2.0	Unshielded	Unshielded	-
9	DC	1.7	Unshielded	Unshielded	-
10	DC	1.8	Unshielded	Unshielded	-
11	DC	1.8	Unshielded	Unshielded	-
12	AC	2.0	Unshielded	Unshielded	-
13	AC	0.8	Unshielded	Unshielded	-
14	AC	0.9	Unshielded	Unshielded	-
15	AC	0.9	Unshielded	Unshielded	-
16	AC	1.8	Unshielded	Unshielded	-

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 40cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from a Line Impedance Stabilization Network (LISN) / Artificial mains Network (AMN) and excess AC cable was bundled in center.

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

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

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT via Auxiliary equipment in a Shielded rom.

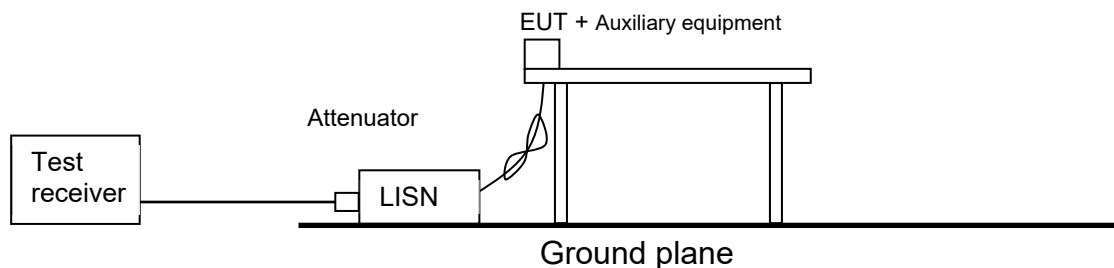
The EUT via Auxiliary equipment was connected to a LISN (AMN).

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 to 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, 1.5 m by 1.0 m, raised 0.8 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

< Above 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. 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 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.

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

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

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

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

< Below 1 GHz >

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

< Above 1 GHz >

Inside of restricted bands (Section 15.205):

Apply to limit in the Section 15.209 (a).

Outside of the restricted bands:

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

For W58 Bandedge

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

Restricted band edge:

Apply to limit in the Section 15.209 (a).

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

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

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

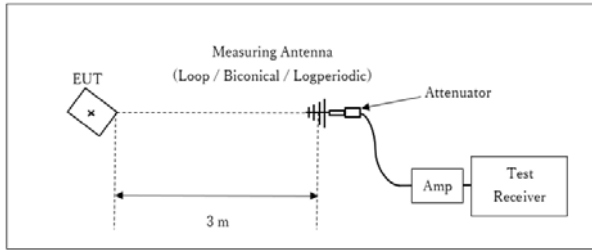
Test Antennas are used as below;

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	RBW: 1 MHz VBW: 1/T (T: burst length, refer to Burst rate confirmation sheet) Detector: Peak

Figure 2: Test Setup

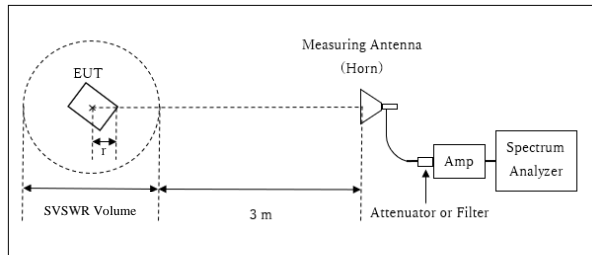
Below 1 GHz



× : Center of turn table

Test Distance: 3 m

1 GHz to 10 GHz

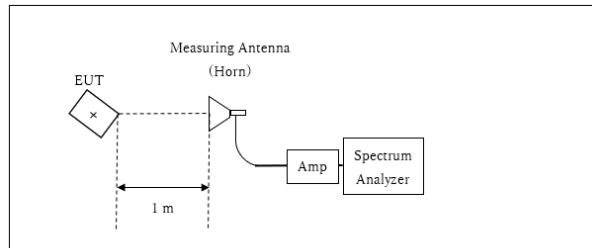


r : Radius of an outer periphery of EUT
× : Center of turn table

Distance Factor: $20 \times \log(3.98 \text{ m} / 3.0 \text{ m}) = 2.45 \text{ dB}$
* Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.98 \text{ m}$

SVSWR Volume : 2.0 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
 $r = 0.02 \text{ m}$

10 GHz to 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.

	Below 1 GHz	1 -10 GHz	10 -18 GHz	18 -26.5 GHz	Above 26.5 GHz
Horizontal	X	X	Z	Z	Z
Vertical	X	Y	Y	X	X

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

Measurement Range : 30 MHz to 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-G)
Maximum Power Spectral Density	Encompass the entire EBW	1 MHz or 100 kHz *2)	≥ 3 RBW	Auto	RMS Power Averaging (100 times)	Clear Write	Spectrum Analyzer
Conducted Spurious Emission *3)	9 kHz to 150 kHz	200 Hz	620 Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150 kHz to 30 MHz	10 kHz	30 kHz				

*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 to 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) 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

APPENDIX 1: Test Data

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

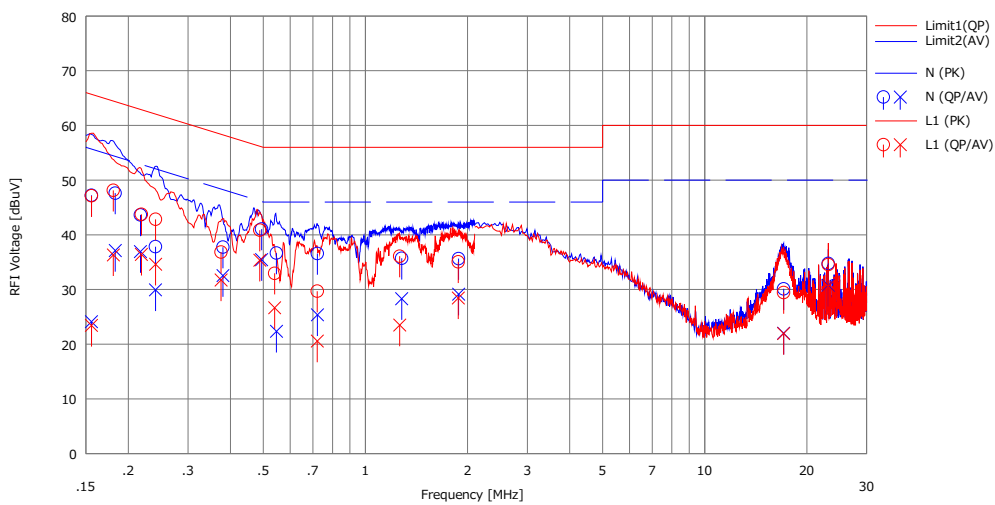
UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2023/03/08

Mode : Tx, 11ax-20 (OFDM), 5580 MHz
Power : DC 5.0 V (AC 240 V / 60 Hz)
Temp./Humi. : 22 deg.C / 26 %RH

Remarks : -

Limit : FCC_Part 15 Subpart C(15.207)

Engineer : Yohsuke Matsuzawa



No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	0.15585	34.80	11.70	12.42	47.22	24.12	65.68	55.68	18.4	31.5	N	
2	0.18310	35.20	24.70	12.42	47.62	37.12	64.34	54.34	16.7	17.2	N	
3	0.21732	31.20	24.50	12.43	43.63	36.93	62.92	52.92	19.2	15.9	N	
4	0.24050	25.40	17.50	12.44	37.84	29.94	62.08	52.08	24.2	22.1	N	
5	0.38035	25.30	20.10	12.44	37.74	32.54	58.27	48.27	20.5	15.7	N	
6	0.49444	28.60	23.00	12.45	41.05	35.45	56.09	46.09	15.0	10.6	N	
7	0.54674	24.20	9.90	12.45	36.65	22.35	56.00	46.00	19.3	23.6	N	
8	0.72191	24.10	12.90	12.47	36.57	25.37	56.00	46.00	19.4	20.6	N	
9	1.27901	23.20	15.80	12.51	35.71	28.31	56.00	46.00	20.2	17.6	N	
10	1.88205	23.10	16.60	12.55	35.65	29.15	56.00	46.00	20.3	16.8	N	
11	17.08270	16.90	8.80	13.21	30.11	22.01	60.00	50.00	29.8	27.9	N	
12	23.12820	21.30	17.30	13.45	34.75	30.75	60.00	50.00	25.2	19.2	N	
13	0.15585	34.70	11.00	12.43	47.13	23.43	65.68	55.68	18.5	32.2	L1	
14	0.18078	35.70	23.90	12.42	48.12	36.32	64.45	54.45	16.3	18.1	L1	
15	0.21860	31.30	24.00	12.43	43.73	36.43	62.87	52.87	19.1	16.4	L1	
16	0.24080	30.40	22.20	12.42	42.82	34.62	62.07	52.07	19.2	17.4	L1	
17	0.37535	24.40	19.30	12.44	36.84	31.74	58.38	48.38	21.5	16.6	L1	
18	0.48846	28.40	22.90	12.46	40.86	35.36	56.19	46.19	15.3	10.8	L1	
19	0.53990	20.50	14.20	12.46	32.96	26.66	56.00	46.00	23.0	19.3	L1	
20	0.72134	17.20	8.10	12.48	29.68	20.58	56.00	46.00	26.3	25.4	L1	
21	1.26208	23.60	11.00	12.50	36.10	23.50	56.00	46.00	19.9	22.5	L1	
22	1.87820	22.50	15.90	12.55	35.05	28.45	56.00	46.00	20.9	17.5	L1	
23	17.08260	16.40	8.90	13.04	29.44	21.94	60.00	50.00	30.5	28.0	L1	
24	23.12811	21.40	17.40	13.17	34.57	30.57	60.00	50.00	25.4	19.4	L1	

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

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place Shonan EMC Lab. No.5 Shielded Room
 Date February 5, 2023 February 24, 2023 February 28, 2023 March 1, 2023
 Temperature / 23 deg. C / 25 % RH 24 deg. C / 29 % RH 23 deg. C / 39 % RH 23 deg. C / 41 % RH
 Humidity
 Engineer Miku Ikudome Miku Ikudome Miku Ikudome Miku Ikudome
 Mode Tx

11a

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Ant B	5180	-	16750.0
	5220	-	16756.2
	5240	-	16738.4
	5260	19.732	16735.7
	5300	19.513	16684.0
	5320	19.857	16721.4
	5500	19.629	16739.8
	5580	19.712	16735.0
	5700	19.612	16744.8
	5720	19.773	16732.0
	5745	-	16720.2
	5785	-	16757.5
	5825	-	16777.6

11n-20

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Ant B	5180	-	17815.5
	5220	-	17765.5
	5240	-	17773.5
	5260	19.814	17790.7
	5300	20.072	17759.8
	5320	20.191	17790.3
	5500	20.293	17789.0
	5580	20.151	17814.1
	5700	20.177	17809.2
	5720	20.105	17776.8
	5745	-	17781.0
	5785	-	17804.5
	5825	-	17785.2

11ac-20

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Ant B	5180	-	17769.1
	5220	-	17784.4
	5240	-	17792.5
	5260	20.035	17779.5
	5300	20.192	17815.2
	5320	20.252	17750.2
	5500	20.151	17797.0
	5580	20.112	17797.1
	5700	20.089	17786.1
	5720	20.196	17793.0
	5745	-	17800.4
	5785	-	17799.9
	5825	-	17789.2

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place Shonan EMC Lab. No.5 Shielded Room
 Date February 5, 2023 February 28, 2023 March 1, 2023
 Temperature / 23 deg. C / 25 % RH 23 deg. C / 39 % RH 23 deg. C / 41 % RH
 Humidity
 Engineer Miku Ikudome Miku Ikudome Miku Ikudome
 Mode Tx 11ax-20 (OFDM)

11ax-20 (OFDM)

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Ant B	5180	-	18857.6
	5220	-	18817.4
	5240	-	18788.5
	5260	20.607	18859.8
	5300	20.301	18841.5
	5320	20.485	18838.7
	5500	20.256	18877.5
	5580	20.452	18809.7
	5700	20.466	18865.4
	5720	20.631	18820.7
	5745	-	18849.4
	5785	-	18796.3
5825	-	18898.1	

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place Shonan EMC Lab. No.5 Shielded Room
 Date February 16, 2023 February 17, 2023
 Temperature / Humidity 24 deg. C / 45 % RH 22 deg. C / 40 % RH
 Engineer Miku Ikudome Akihiro Oda
 Mode Tx 11ax-20 (OFDMA) 26-tone RU

11ax-20 (OFDMA)

Antenna	RU Type	Tested Frequency [MHz]	RU Index	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Ant B	26-tone RU	5180	0	-	18201.6
			4	-	16954.3
			8	-	18148.3
		5220	0	-	18235.1
			4	-	16923.9
			8	-	18164.2
		5240	0	-	18206.8
			4	-	16954.3
			8	-	18198.2
		5260	0	19.199	18198.7
			4	18.034	16867.5
			8	19.169	18164.4
		5300	0	19.159	18223.5
			4	18.016	16946.1
			8	19.185	18177.5
		5320	0	19.080	18201.0
			4	18.005	16943.7
			8	19.239	18170.6
		5500	0	19.187	18356.1
			4	18.046	16994.9
			8	19.254	18137.9
		5580	0	19.243	18321.6
			4	18.071	16900.5
			8	19.224	18181.8
		5700	0	19.229	18313.3
			4	18.010	16933.2
			8	19.269	18157.1
		5720	0	19.299	18328.2
			4	18.068	16915.5
			8	19.251	18239.9
		5745	0	-	18298.8
			4	-	16894.6
			8	-	18175.9
		5785	0	-	18328.6
			4	-	16924.8
			8	-	18186.7
		5825	0	-	18340.4
			4	-	16893.2
			8	-	18255.2

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place Shonan EMC Lab. No.5 Shielded Room
 Date February 17, 2023 February 20, 2023
 Temperature / Humidity 22 deg. C / 40 % RH 23 deg. C / 32 % RH
 Engineer Akihiro Oda Miku Ikudome
 Mode Tx 11ax-20 (OFDMA) 52-tone RU

11ax-20 (OFDMA)

Antenna	RU Type	Tested Frequency [MHz]	RU Index	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Ant B	52-tone RU	5180	37	-	18193.5
			38	-	16845.0
			40	-	18048.9
		5220	37	-	18184.0
			38	-	16880.9
			40	-	18062.6
		5240	37	-	18193.5
			38	-	16884.0
			40	-	18054.9
		5260	37	19.363	18211.2
			38	18.042	16893.7
			40	19.210	18036.0
		5300	37	19.212	18185.3
			38	18.104	16896.5
			40	19.297	18077.8
		5320	37	19.257	18145.2
			38	18.137	16856.6
			40	19.178	18148.8
		5500	37	19.310	18162.1
			38	18.094	16935.5
			40	19.172	18001.5
		5580	37	19.415	18109.1
			38	18.048	16963.1
			40	19.243	18008.6
		5700	37	19.327	18079.6
			38	18.082	16918.4
			40	19.281	18058.0
		5720	37	19.339	18137.9
			38	18.021	16923.4
			40	19.256	18032.7
		5745	37	-	18099.9
			38	-	16967.6
			40	-	18041.5
		5785	37	-	18123.6
			38	-	16902.7
			40	-	17978.2
		5825	37	-	18063.6
			38	-	16906.2
			40	-	18103.3

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place Shonan EMC Lab. No.5 Shielded Room
 Date February 21, 2023 February 22, 2023
 Temperature / Humidity 24 deg. C / 40 % RH 22 deg. C / 41 % RH
 Engineer Miku Ikudome Miku Ikudome
 Mode Tx 11ax-20 (OFDMA) 106-tone RU

11ax-20 (OFDMA)

Antenna	RU Type	Tested Frequency [MHz]	RU Index	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Ant B	106-tone RU	5180	53	-	18050.7
			54	-	17993.3
		5220	53	-	18033.2
			54	-	18011.7
		5240	53	-	18018.4
			54	-	17994.7
		5260	53	19.386	18034.6
			54	19.335	17991.2
		5300	53	19.279	18044.1
			54	19.304	17932.3
		5320	53	19.334	18040.9
			54	19.335	17996.9
		5500	53	19.475	18061.6
			54	19.302	17996.8
		5580	53	19.317	18047.7
			54	19.486	17989.2
		5700	53	19.395	18028.8
			54	19.352	17989.2
		5720	53	19.223	18048.6
			54	19.189	17962.5
		5745	53	-	18066.6
			54	-	17992.7
		5785	53	-	18064.4
			54	-	17988.2
5825	53	-	18035.0		
	54	-	18004.9		

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

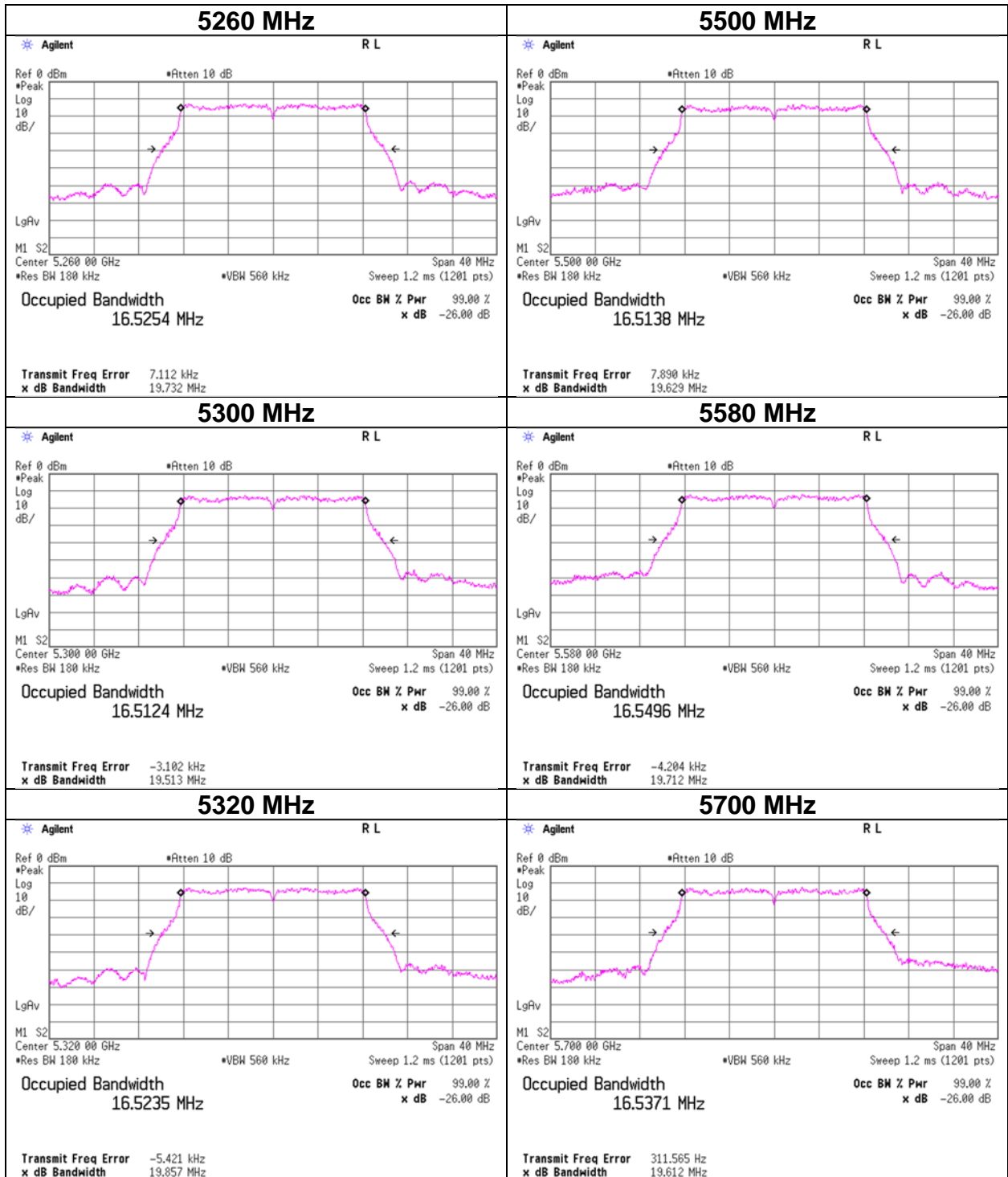
Test place Shonan EMC Lab. No.5 Shielded Room
Date February 22, 2023
Temperature / Humidity 22 deg. C / 41 % RH
Engineer Miku Ikudome
Mode Tx 11ax-20 (OFDMA) 242-tone RU

11ax-20 (OFDMA)

Antenna	RU Type	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
Ant B	242-tone RU	5180	-	18800.1
		5220	-	18776.1
		5240	-	18797.6
		5260	20.416	18800.6
		5300	20.456	18781.8
		5320	20.418	18791.2
		5500	20.320	18784.7
		5580	20.348	18807.1
		5700	20.307	18787.9
		5720	20.669	18821.3
		5745	-	18788.5
		5785	-	18795.2
		5825	-	18800.0

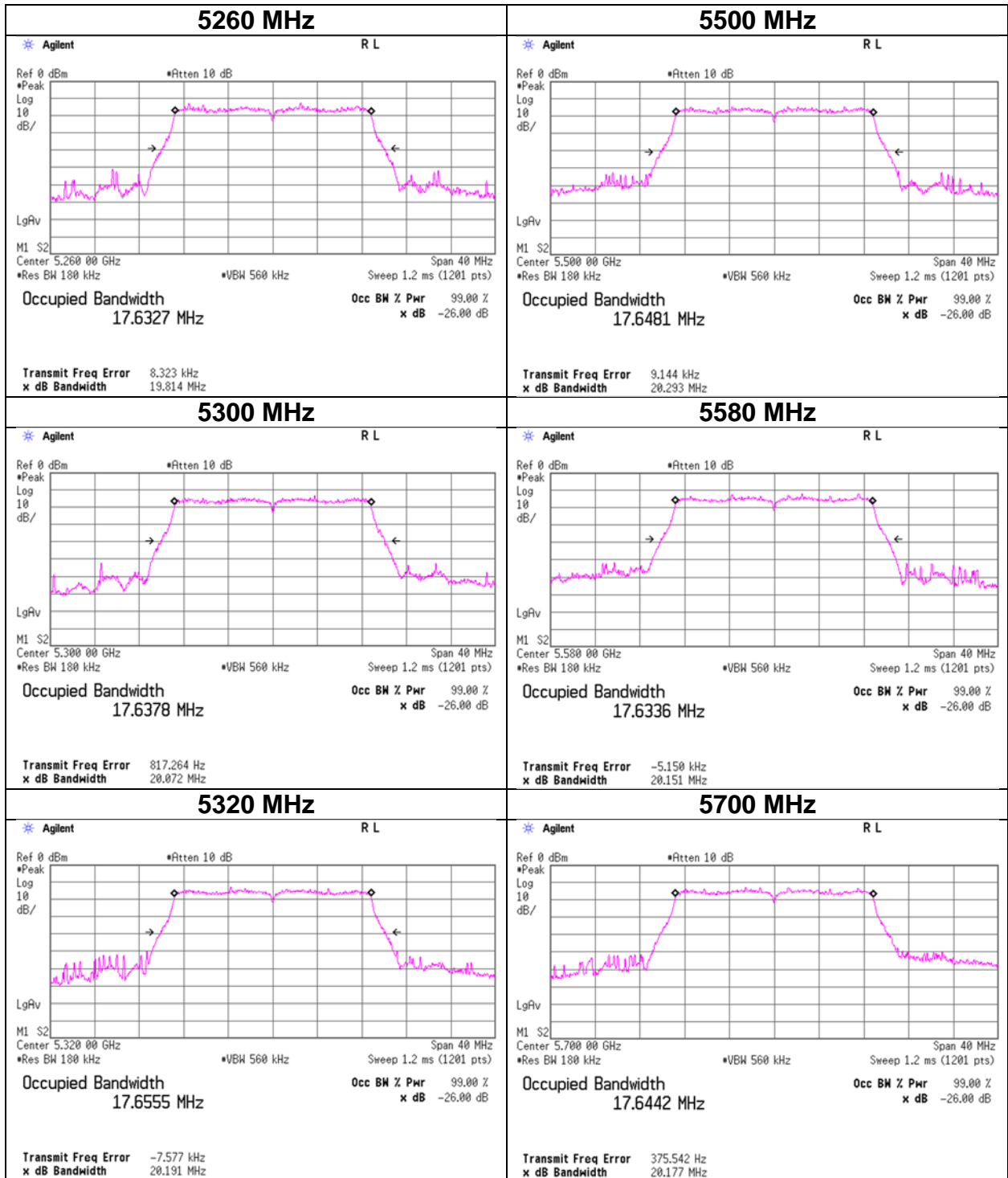
26 dB Emission Bandwidth

11a



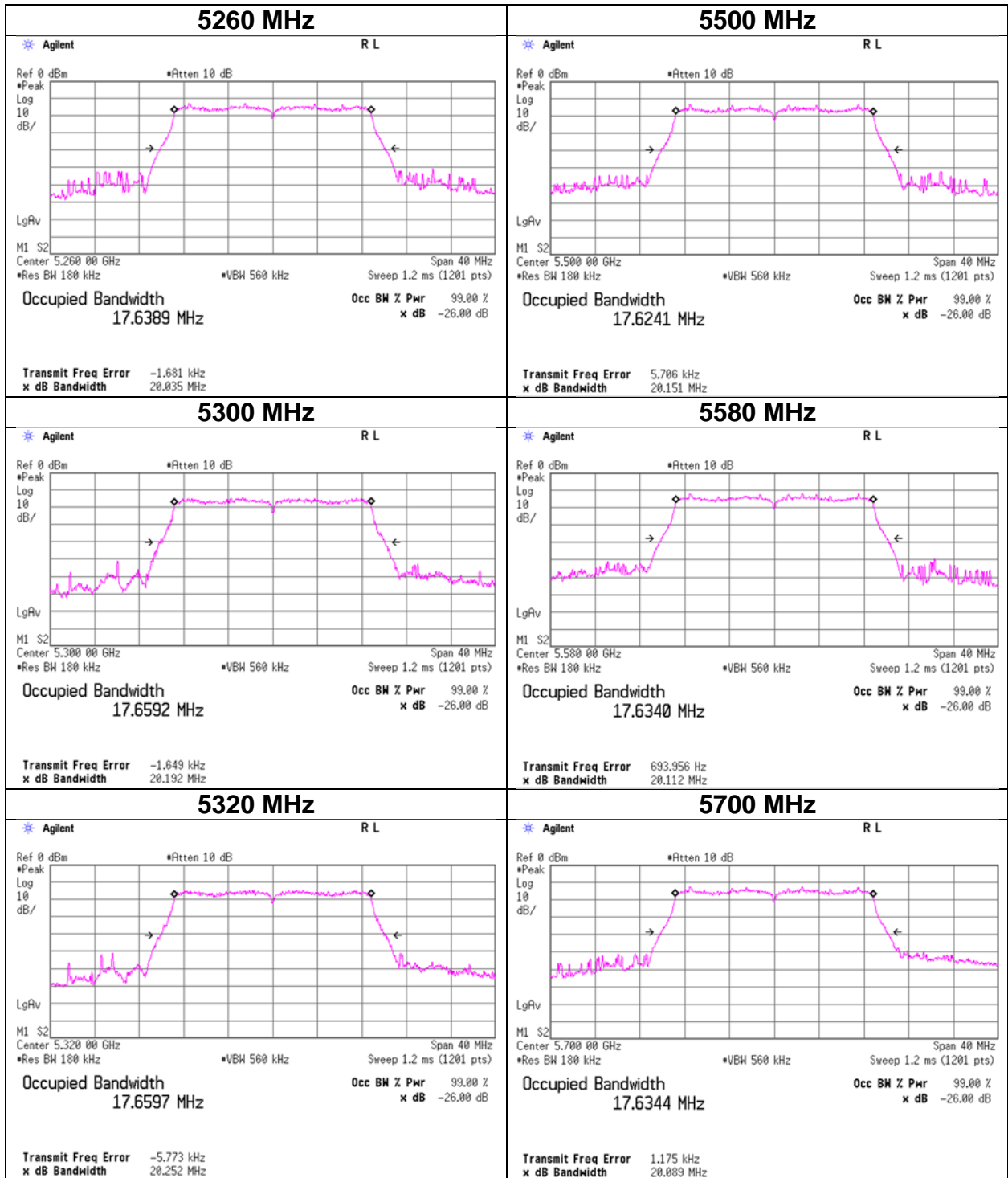
26 dB Emission Bandwidth

11n-20



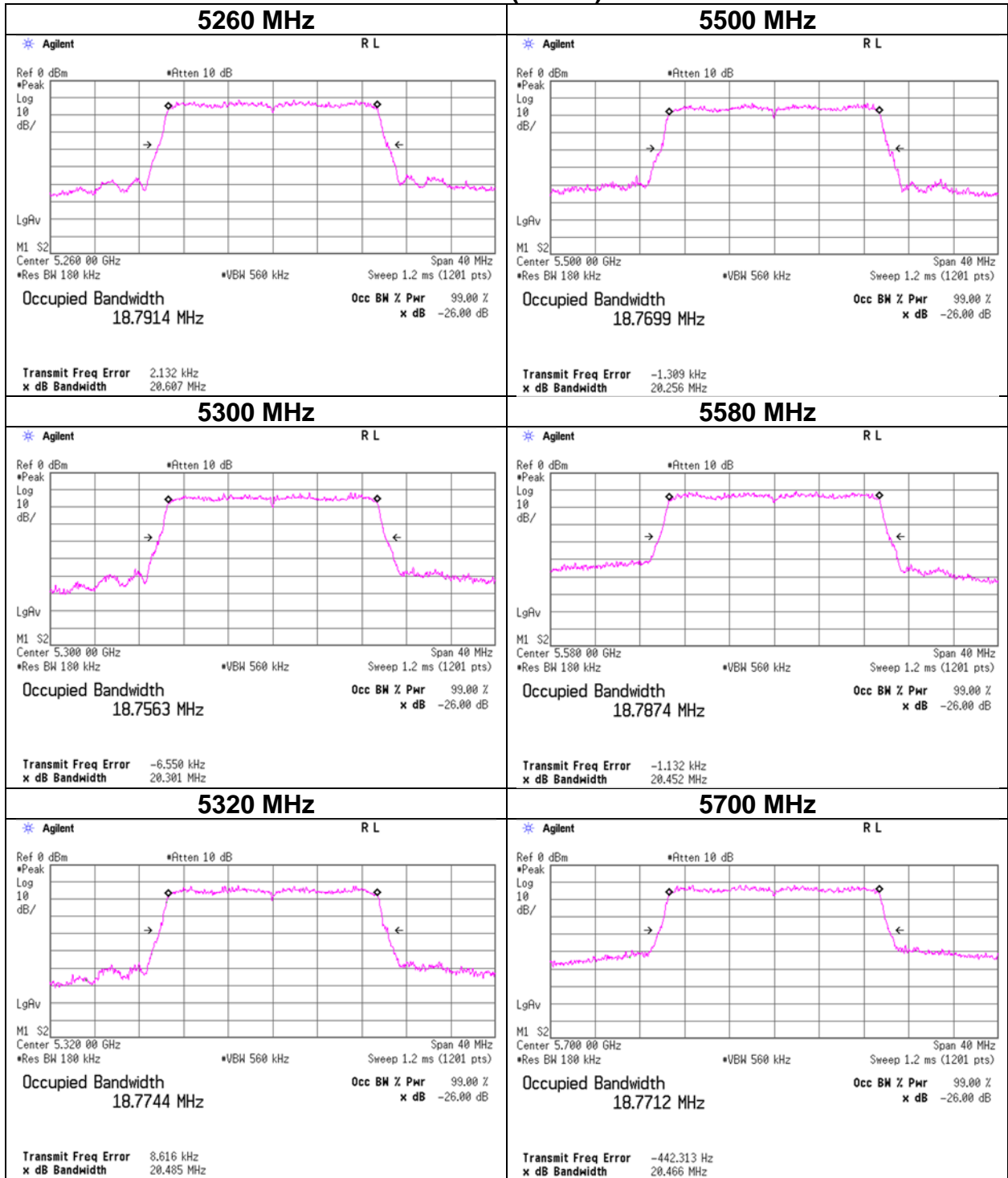
26 dB Emission Bandwidth

11ac-20



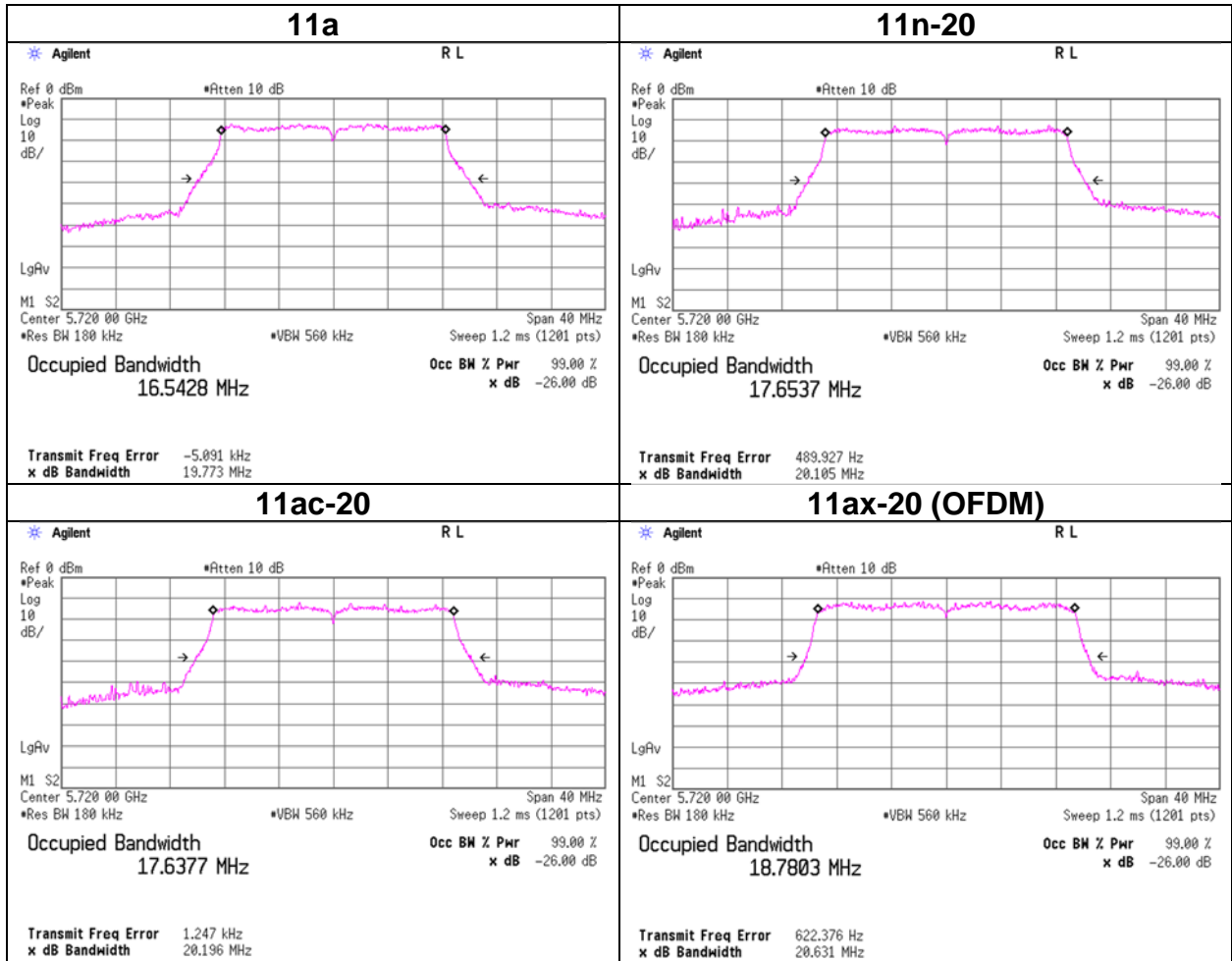
26 dB Emission Bandwidth

11ax-20 (OFDM)



26 dB Emission Bandwidth

5720 MHz

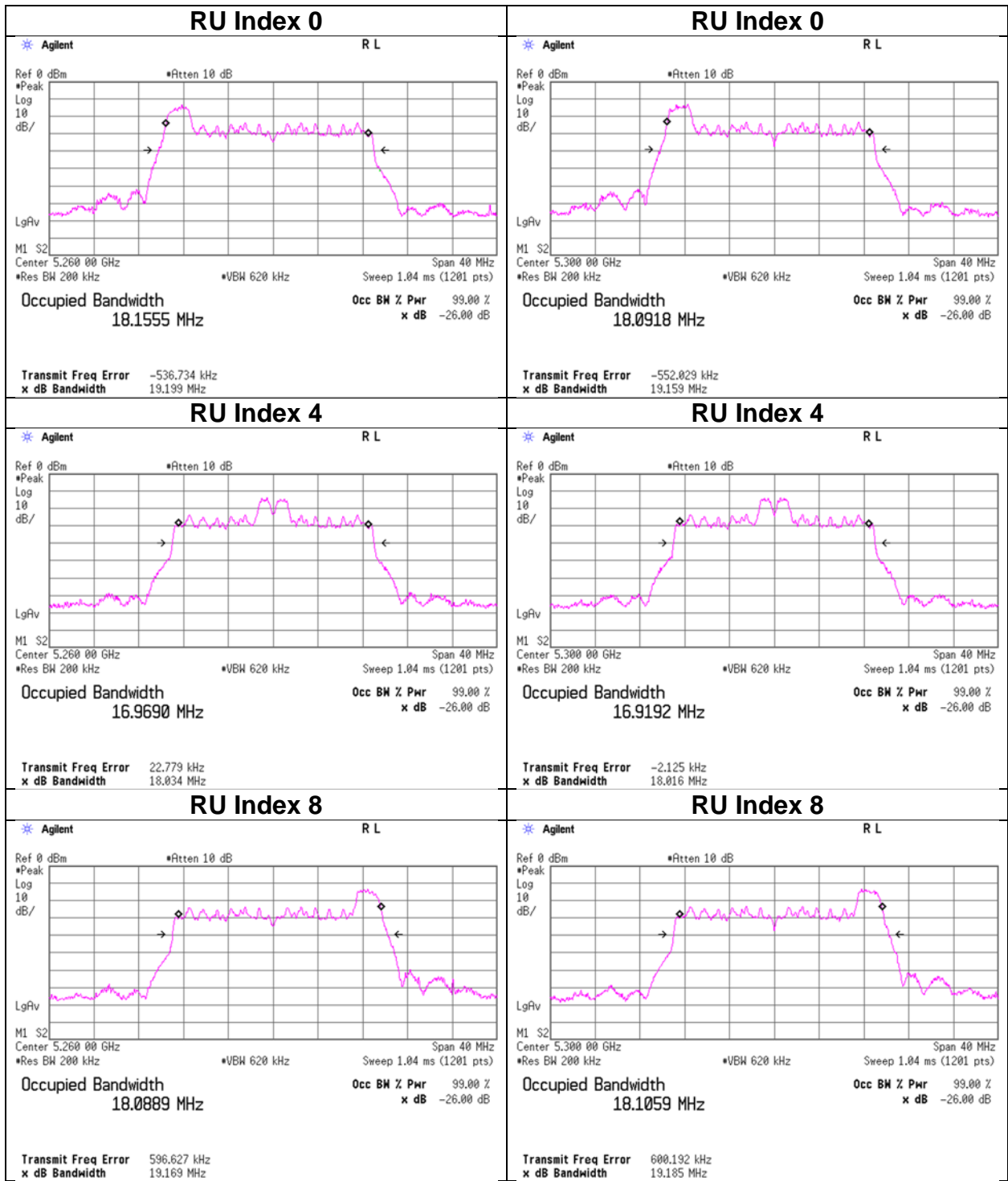


26 dB Emission Bandwidth

11ax-20 (OFDMA)

26-tone RU 5260 MHz

26-tone RU 5300 MHz

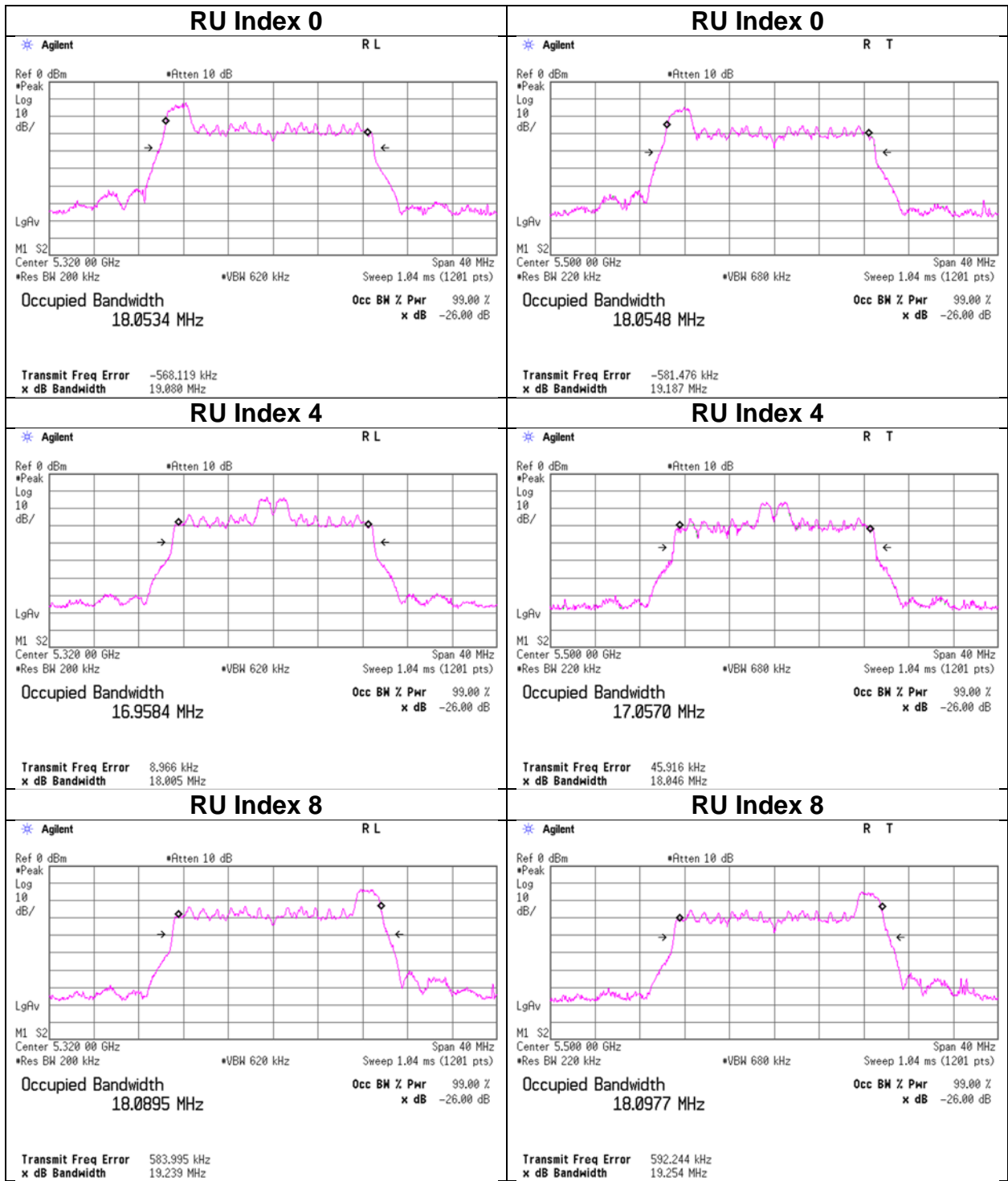


26 dB Emission Bandwidth

11ax-20 (OFDMA)

26-tone RU 5320 MHz

26-tone RU 5500 MHz

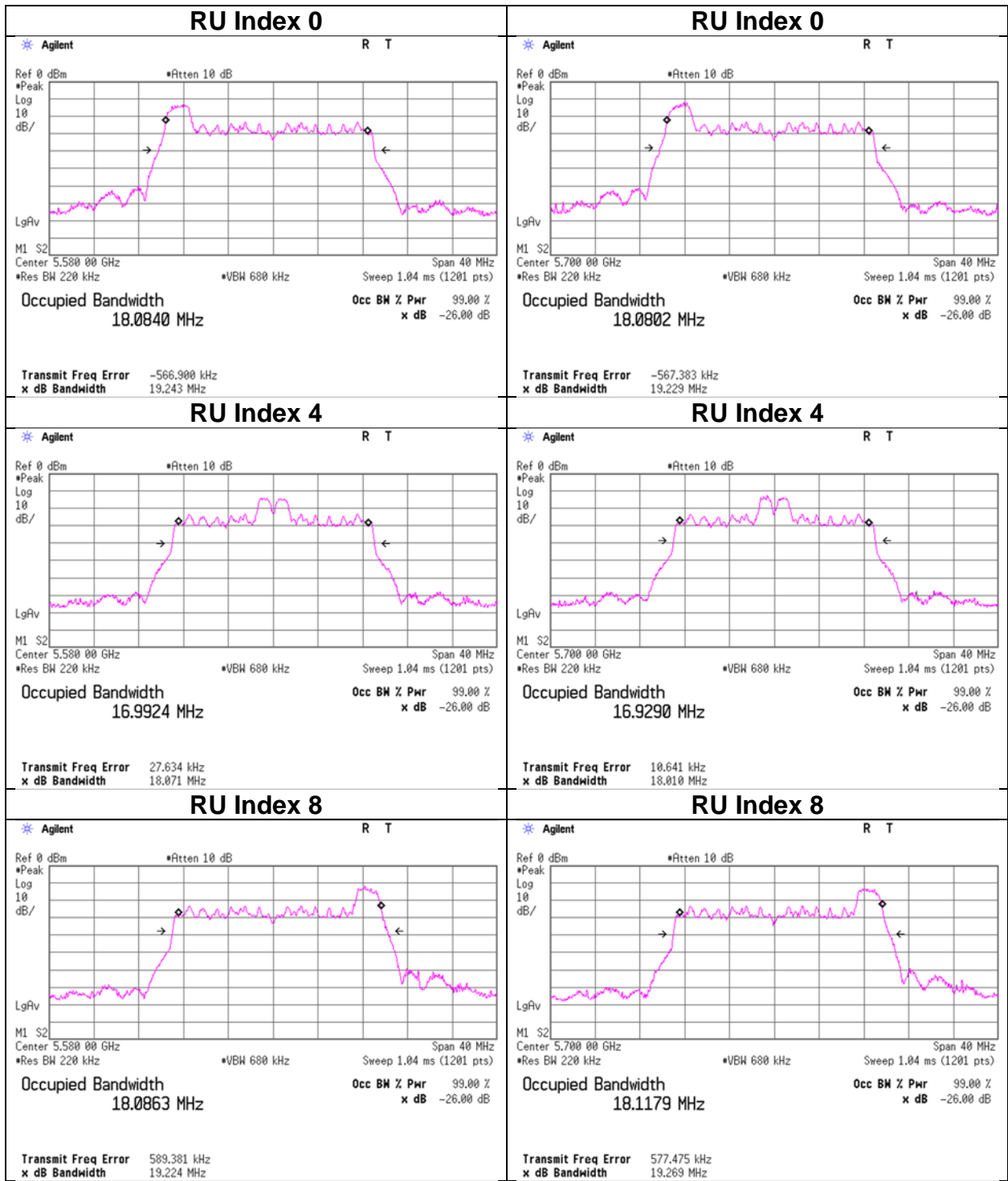


26 dB Emission Bandwidth

11ax-20 (OFDMA)

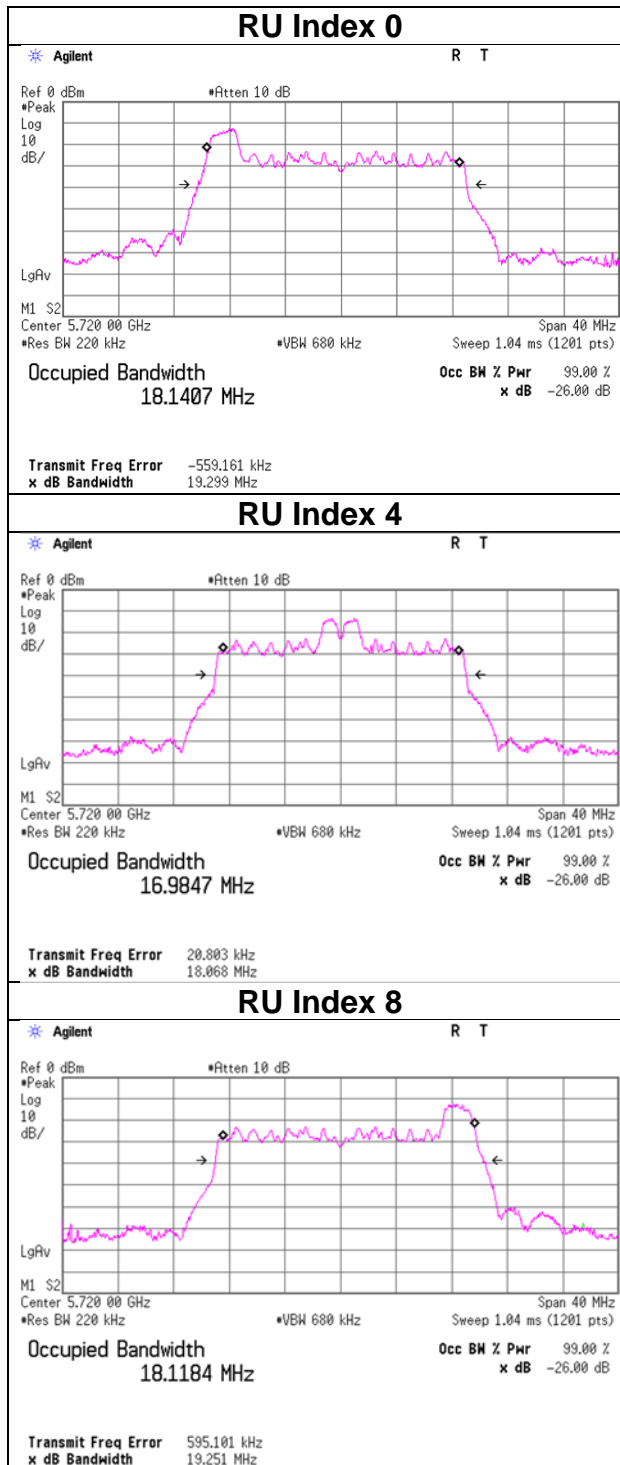
26-tone RU 5580 MHz

26-tone RU 5700 MHz



26 dB Emission Bandwidth

11ax-20 (OFDMA) 26-tone RU 5720 MHz

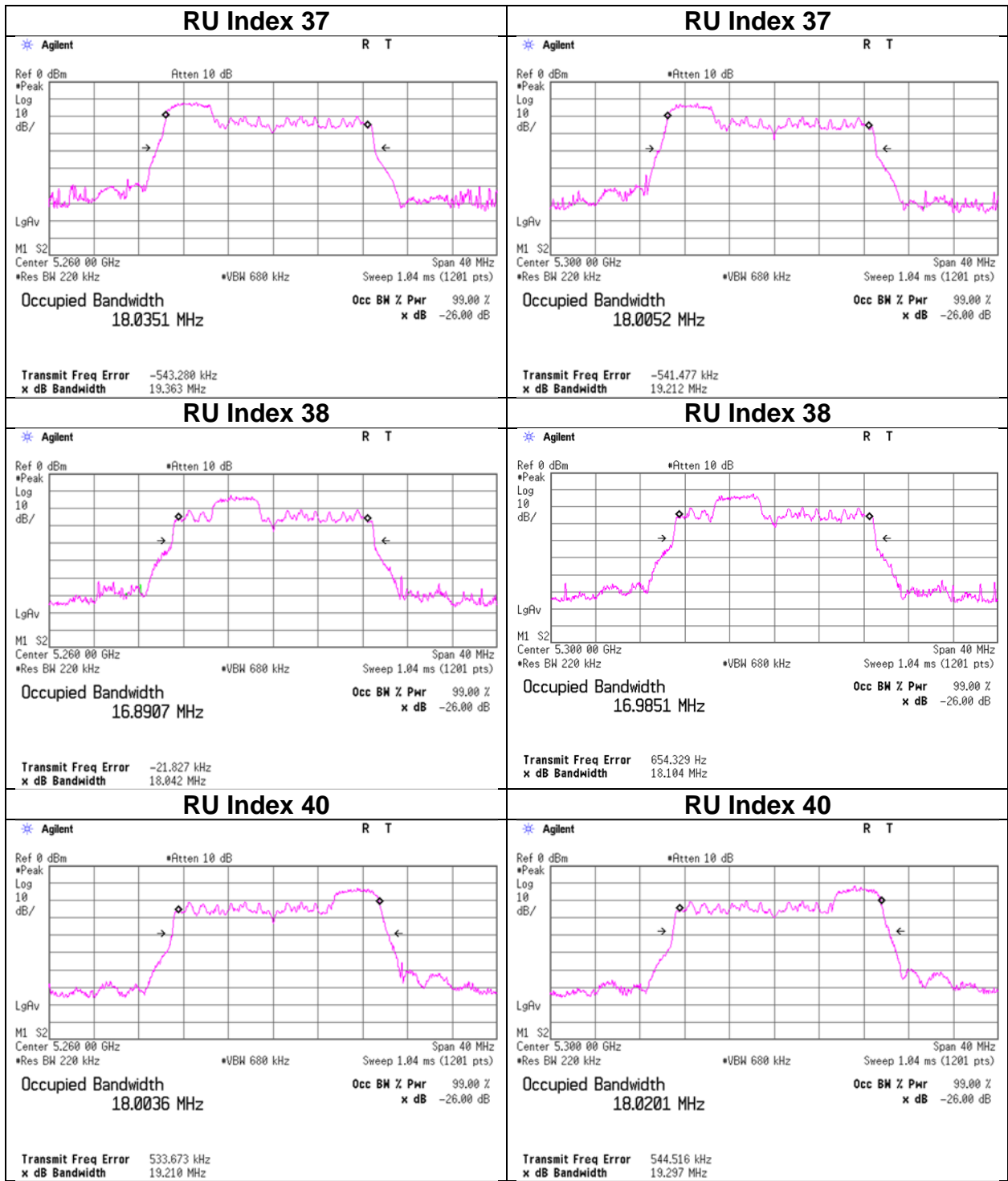


26 dB Emission Bandwidth

11ax-20 (OFDMA)

52-tone RU 5260 MHz

52-tone RU 5300 MHz

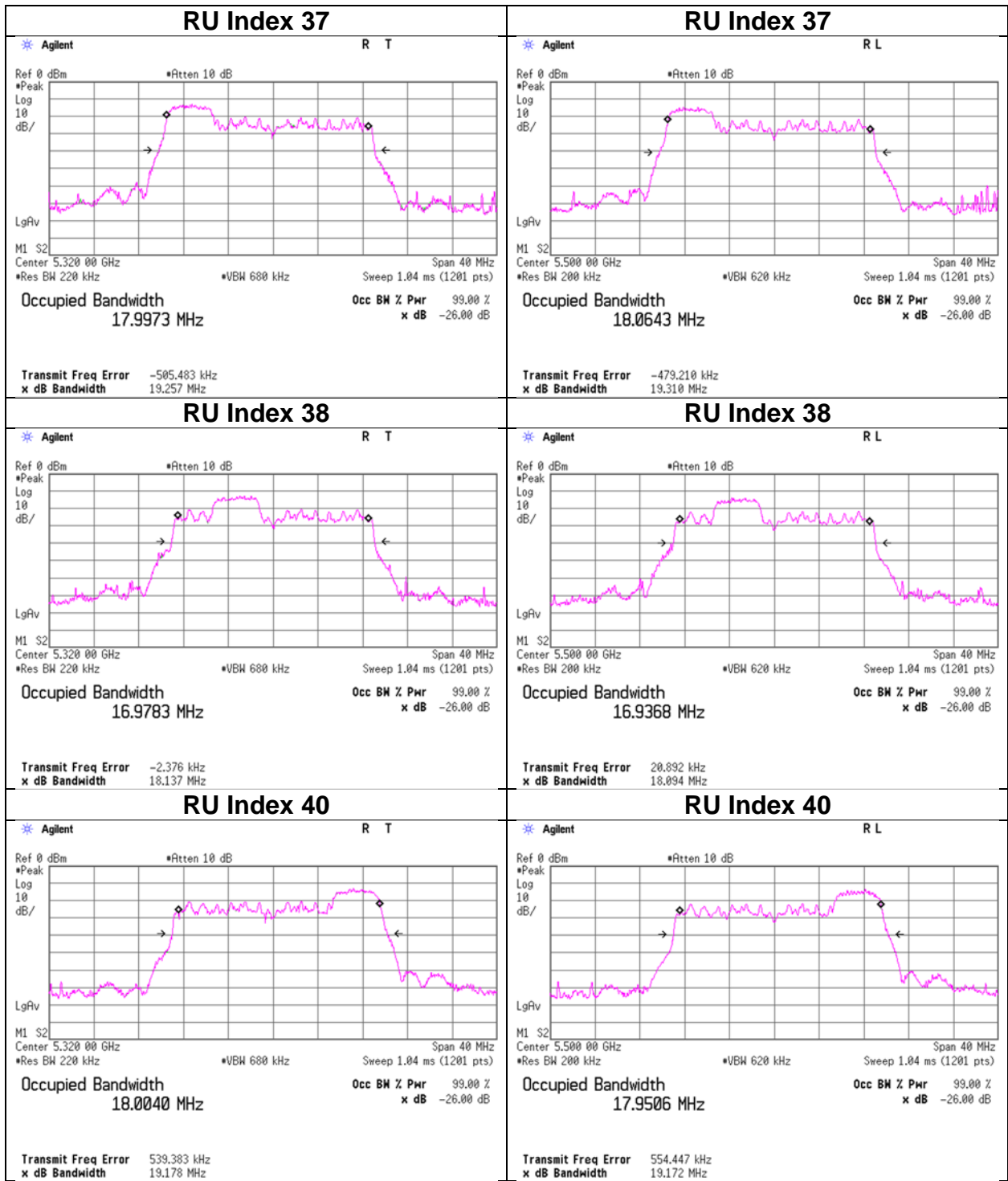


26 dB Emission Bandwidth

11ax-20 (OFDMA)

52-tone RU 5320 MHz

52-tone RU 5500 MHz

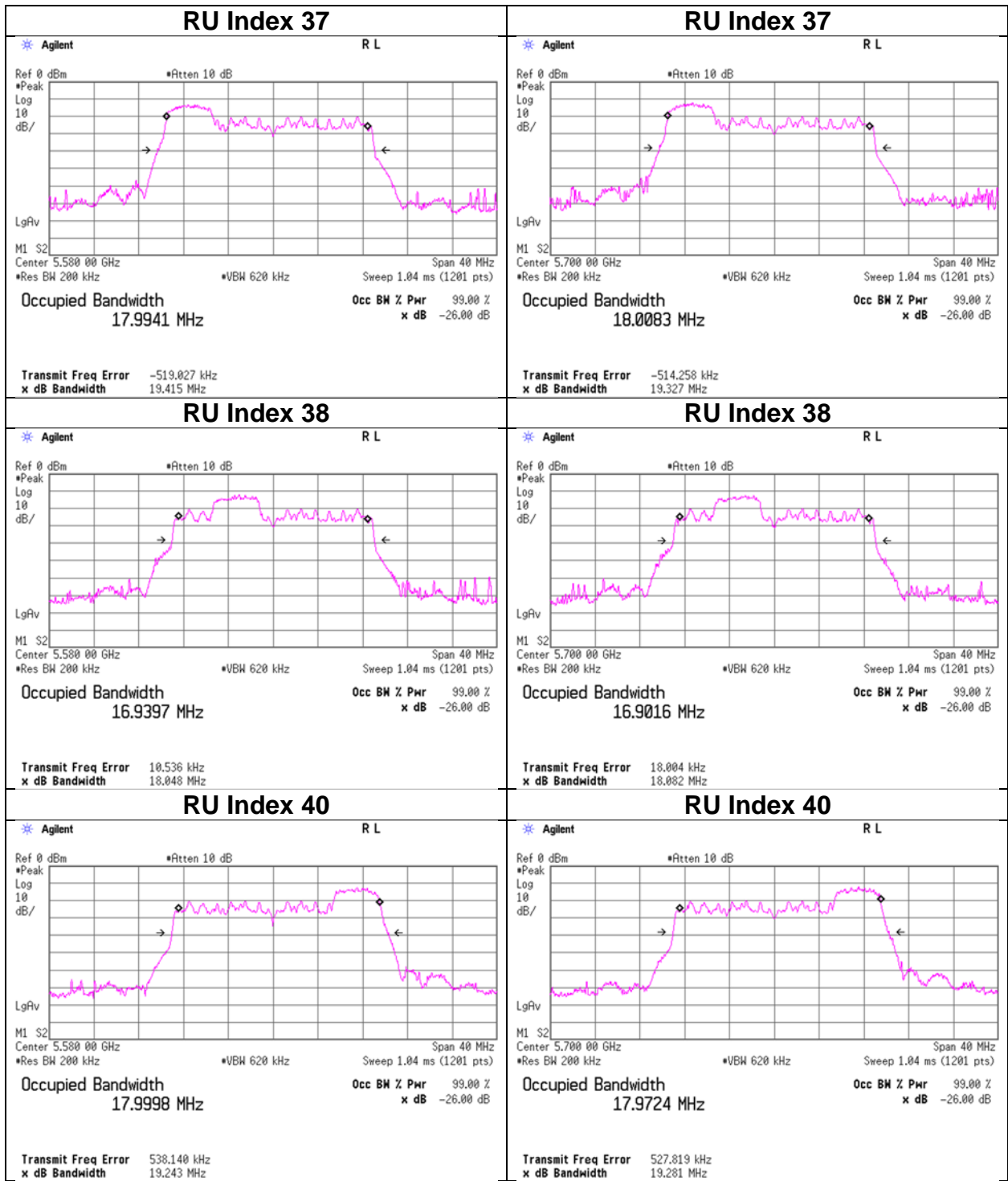


26 dB Emission Bandwidth

11ax-20 (OFDMA)

52-tone RU 5580 MHz

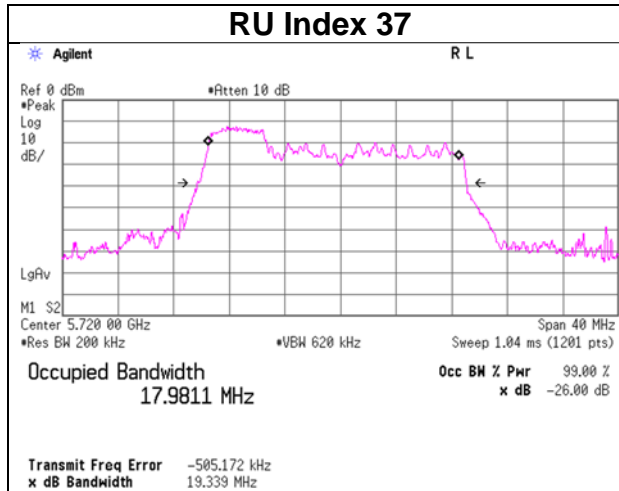
52-tone RU 5700 MHz



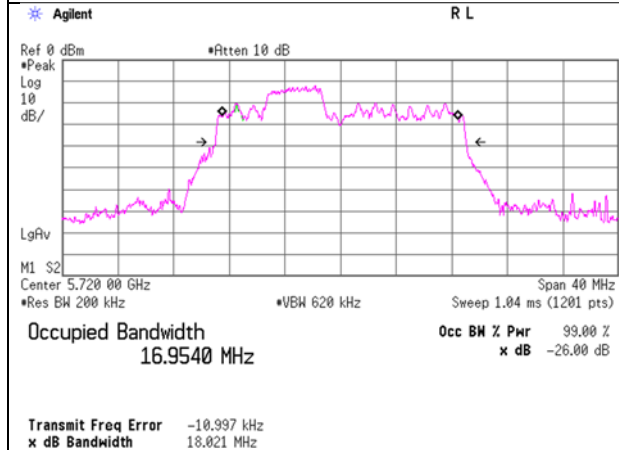
26 dB Emission Bandwidth

11ax-20 (OFDMA) 52-tone RU 5720 MHz

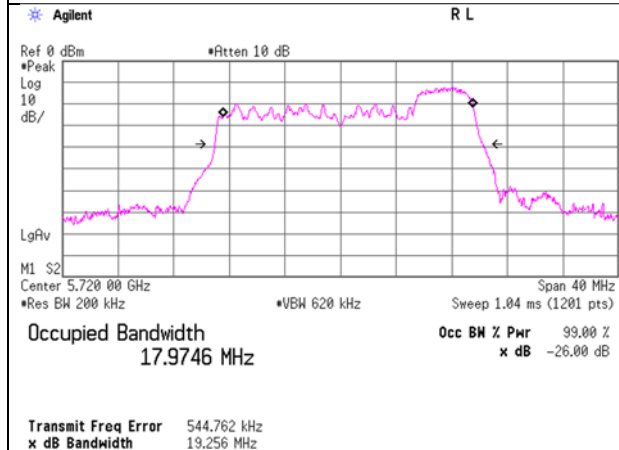
RU Index 37



RU Index 38



RU Index 40

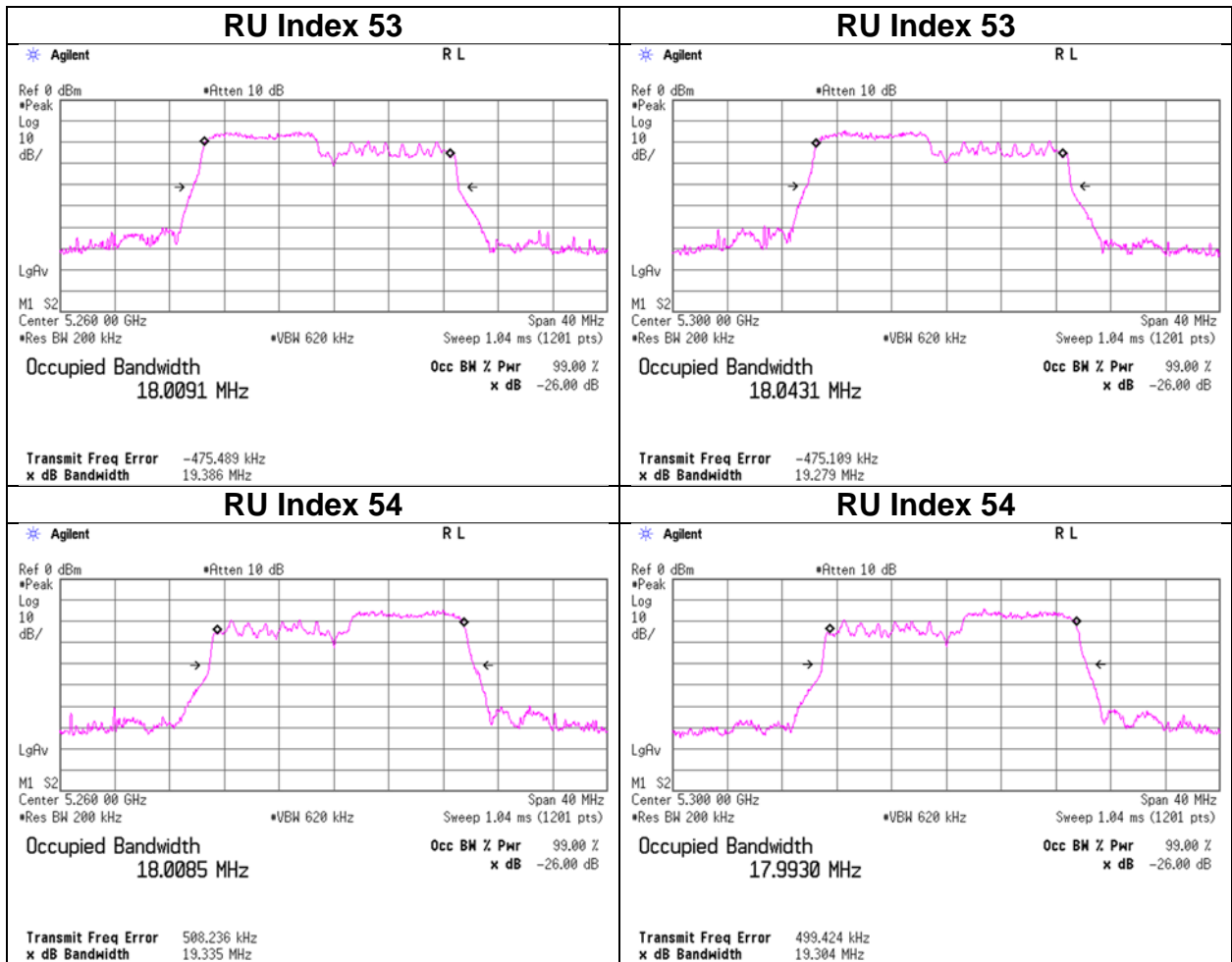


26 dB Emission Bandwidth

11ax-20 (OFDMA)

106-tone RU 5260 MHz

106-tone RU 5300 MHz

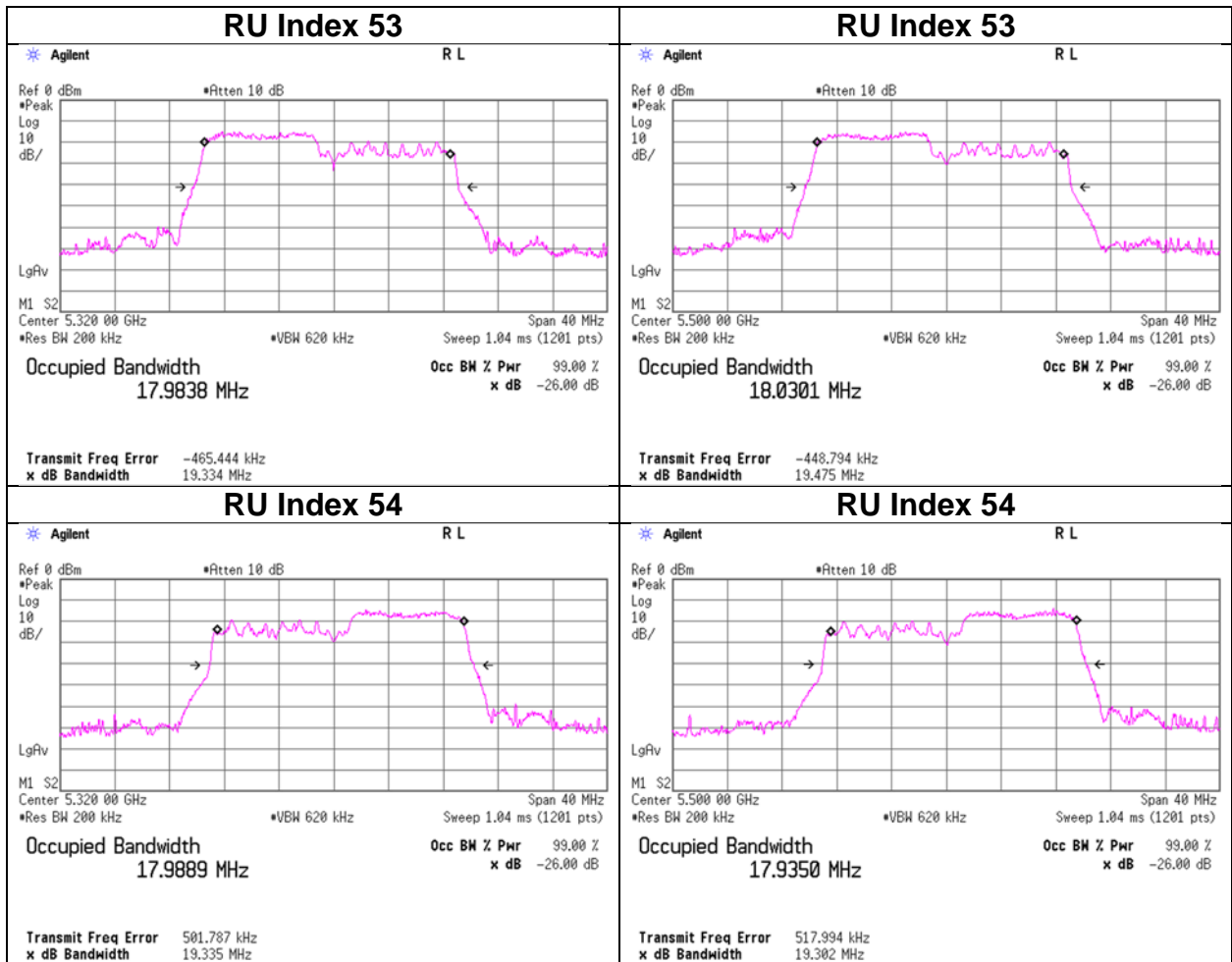


26 dB Emission Bandwidth

11ax-20 (OFDMA)

106-tone RU 5320 MHz

106-tone RU 5500 MHz

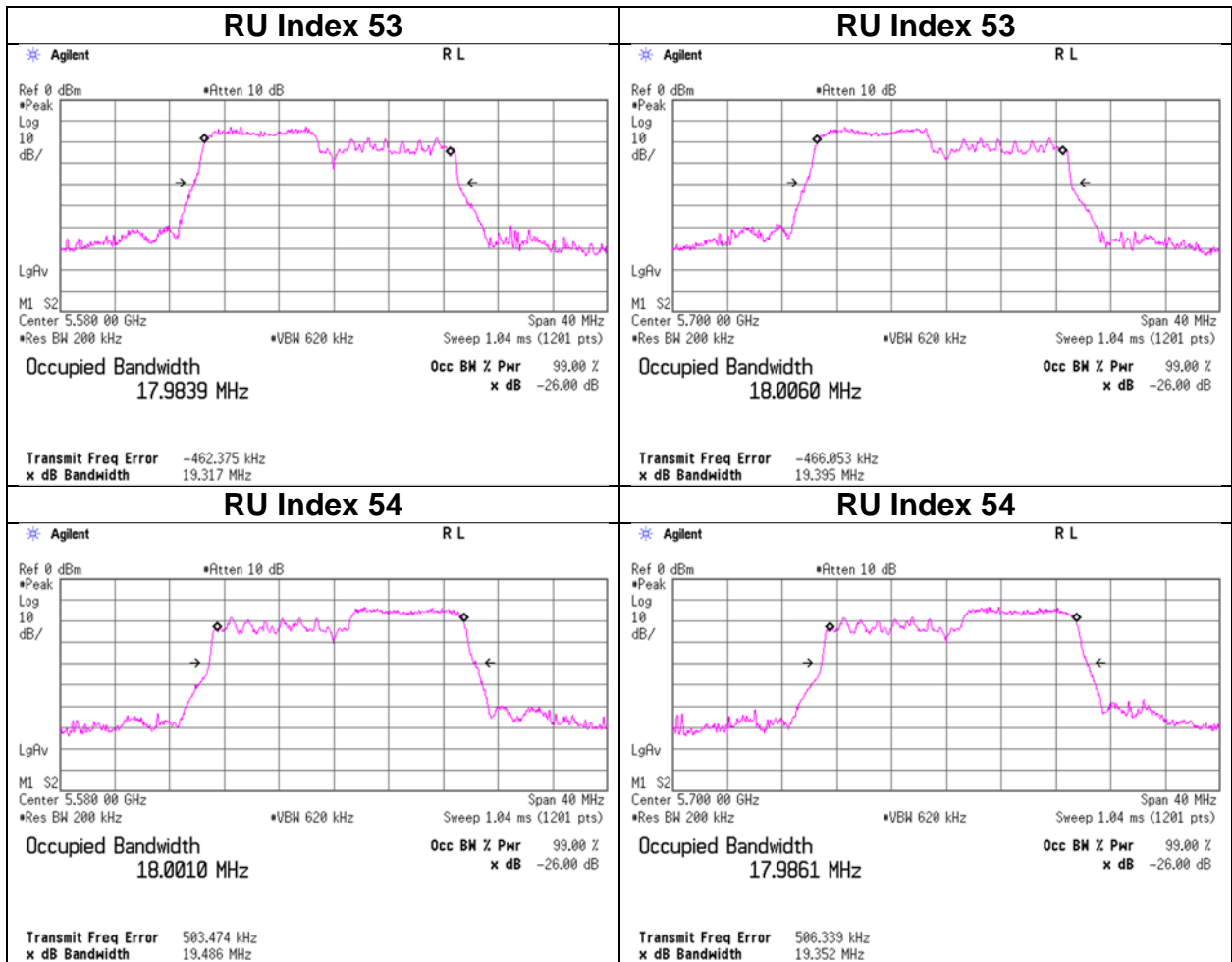


26 dB Emission Bandwidth

11ax-20 (OFDMA)

106-tone RU 5580 MHz

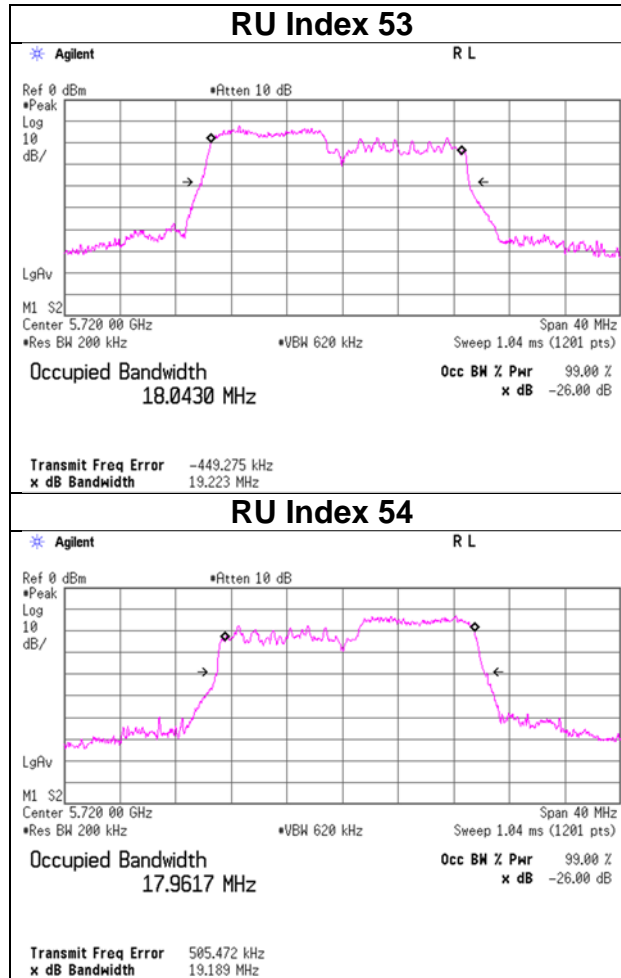
106-tone RU 5700 MHz



26 dB Emission Bandwidth

11ax-20 (OFDMA) 106-tone RU 5720 MHz

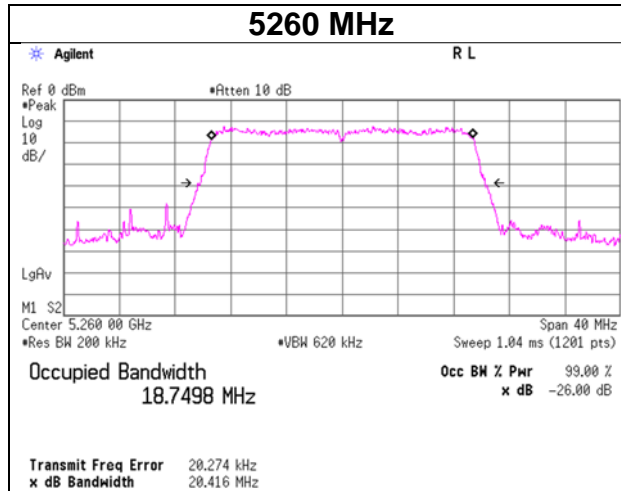
RU Index 53



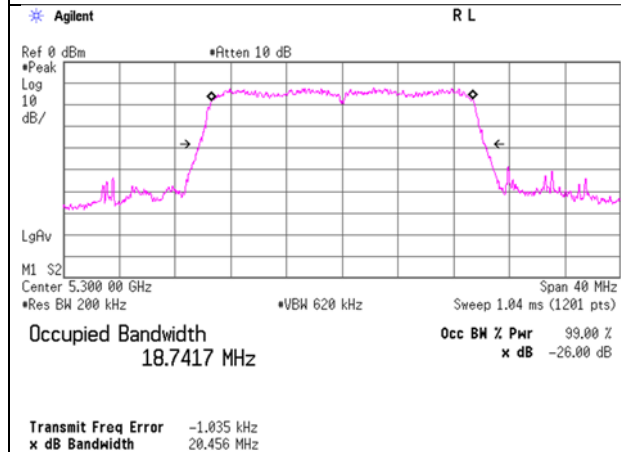
26 dB Emission Bandwidth

11ax-20 (OFDMA) 242-tone RU

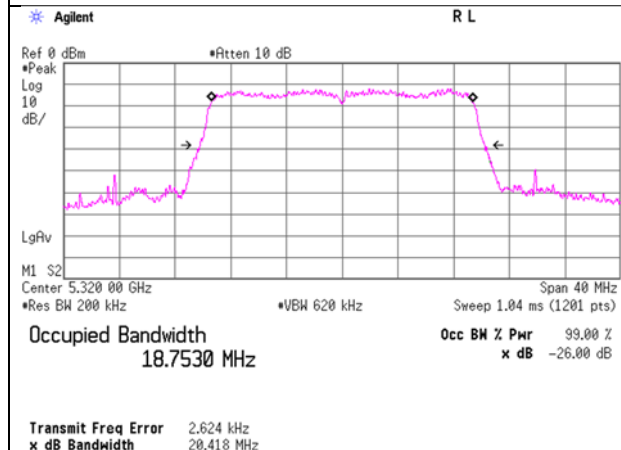
5260 MHz



5300 MHz

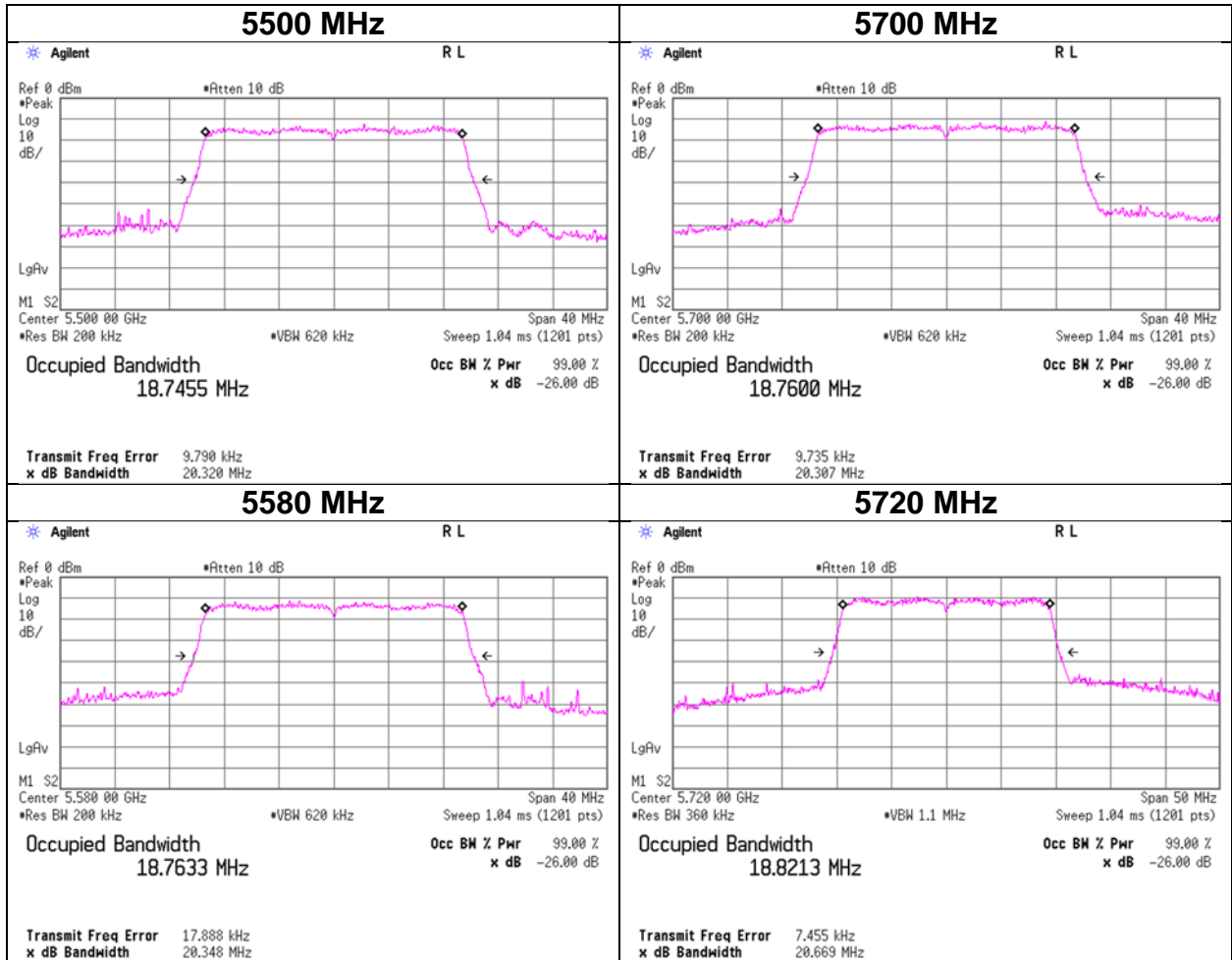


5320 MHz



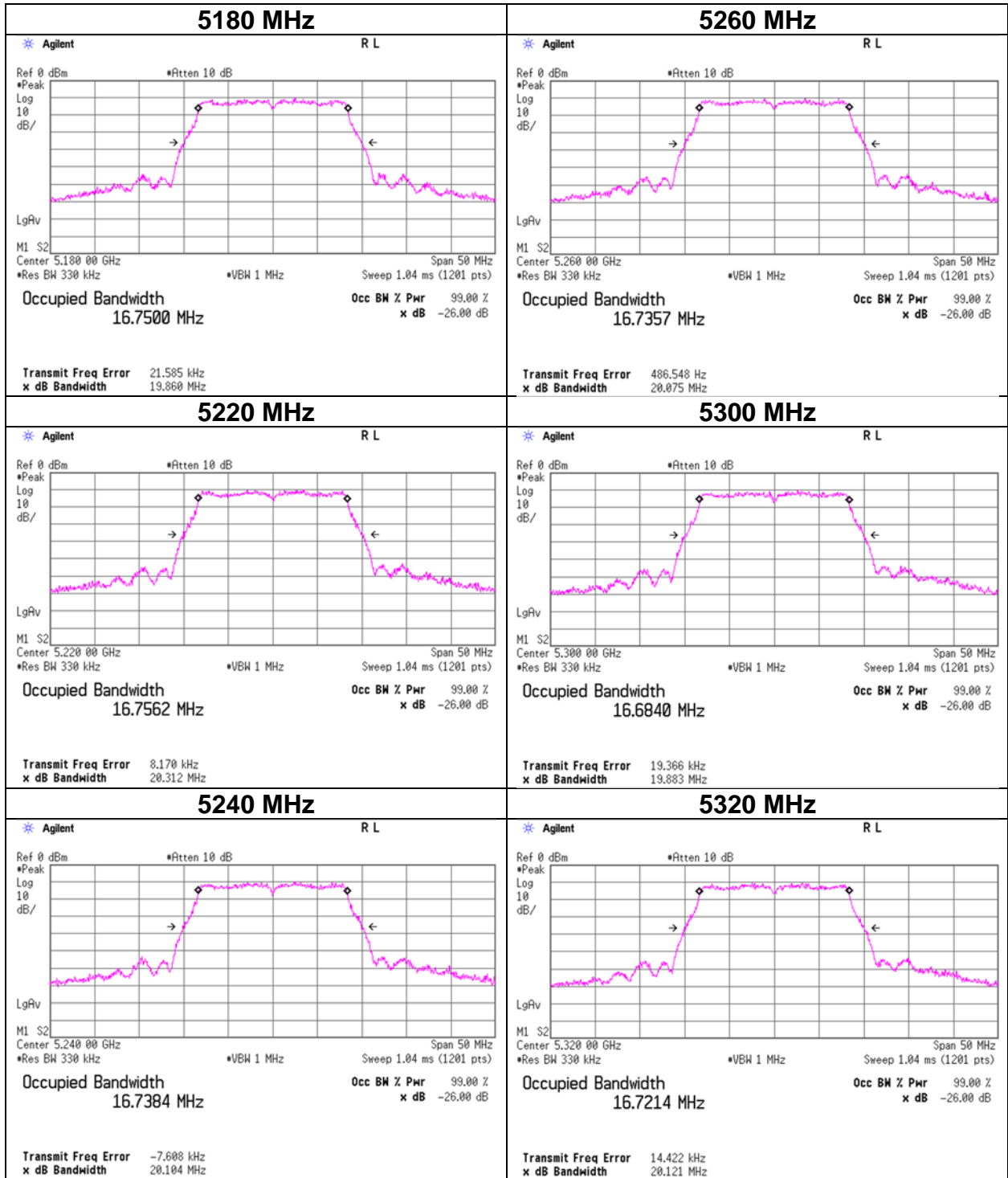
26 dB Emission Bandwidth

11ax-20 (OFDMA) 242-tone RU



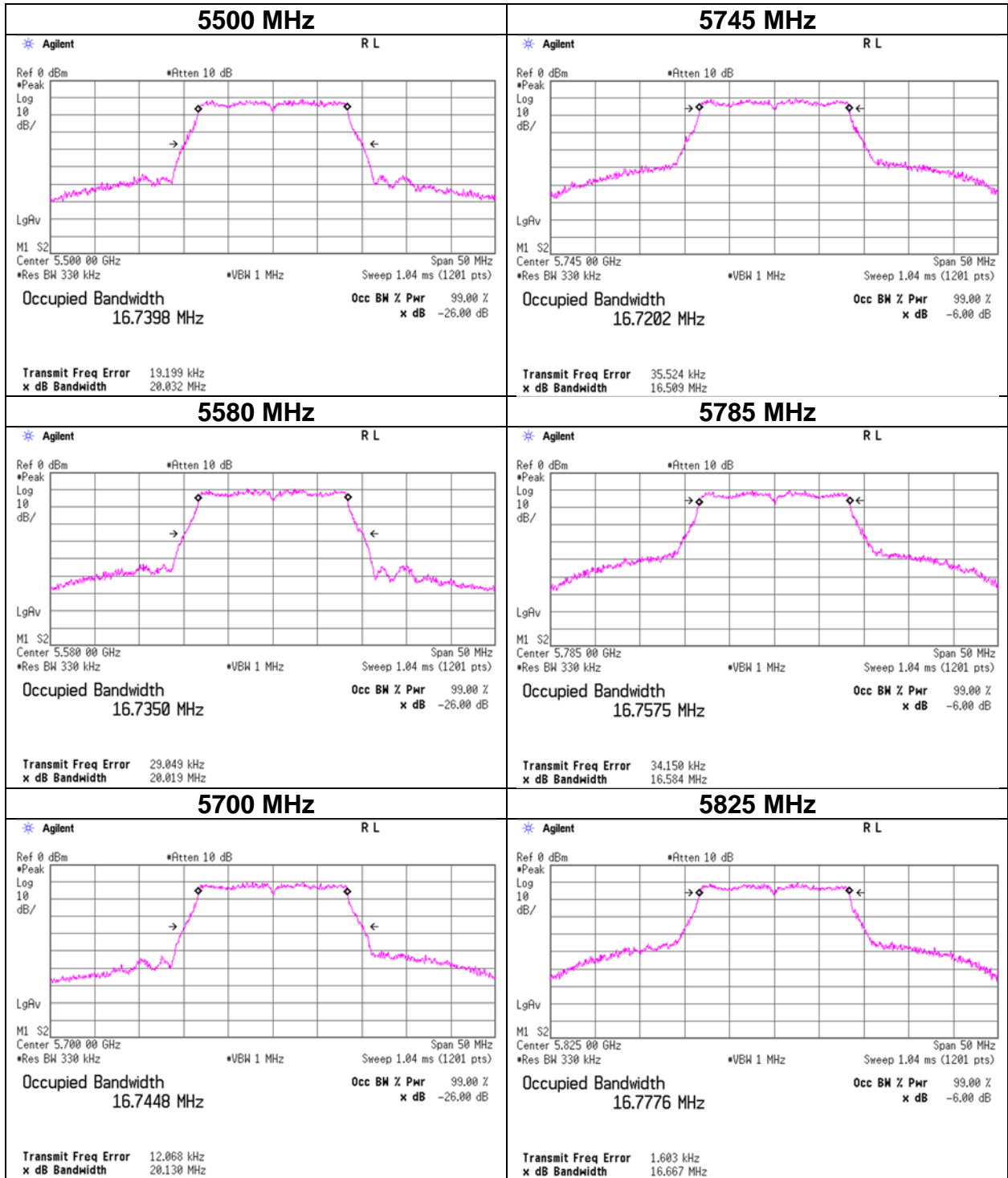
99 % Occupied Bandwidth

11a



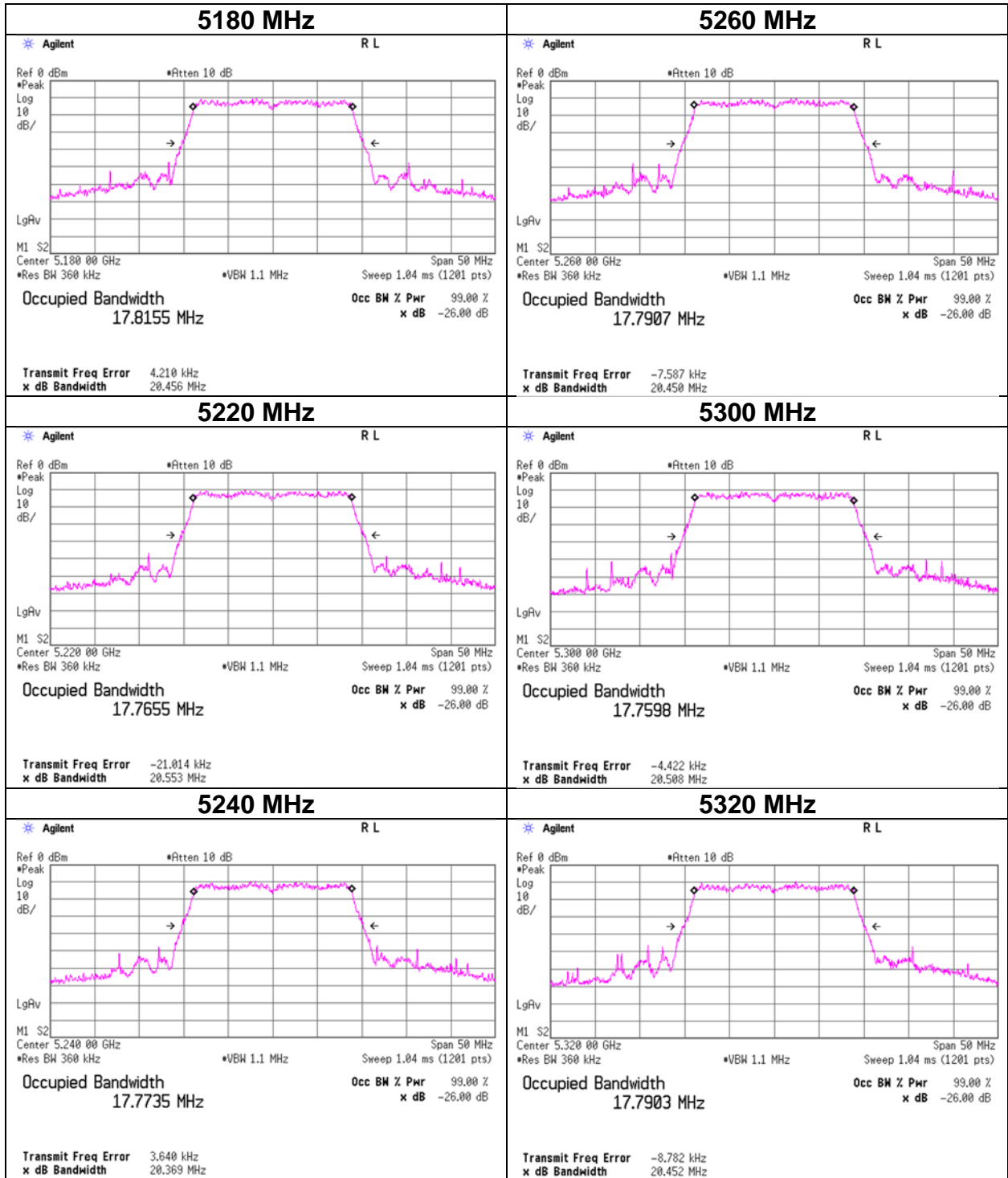
99 % Occupied Bandwidth

11a



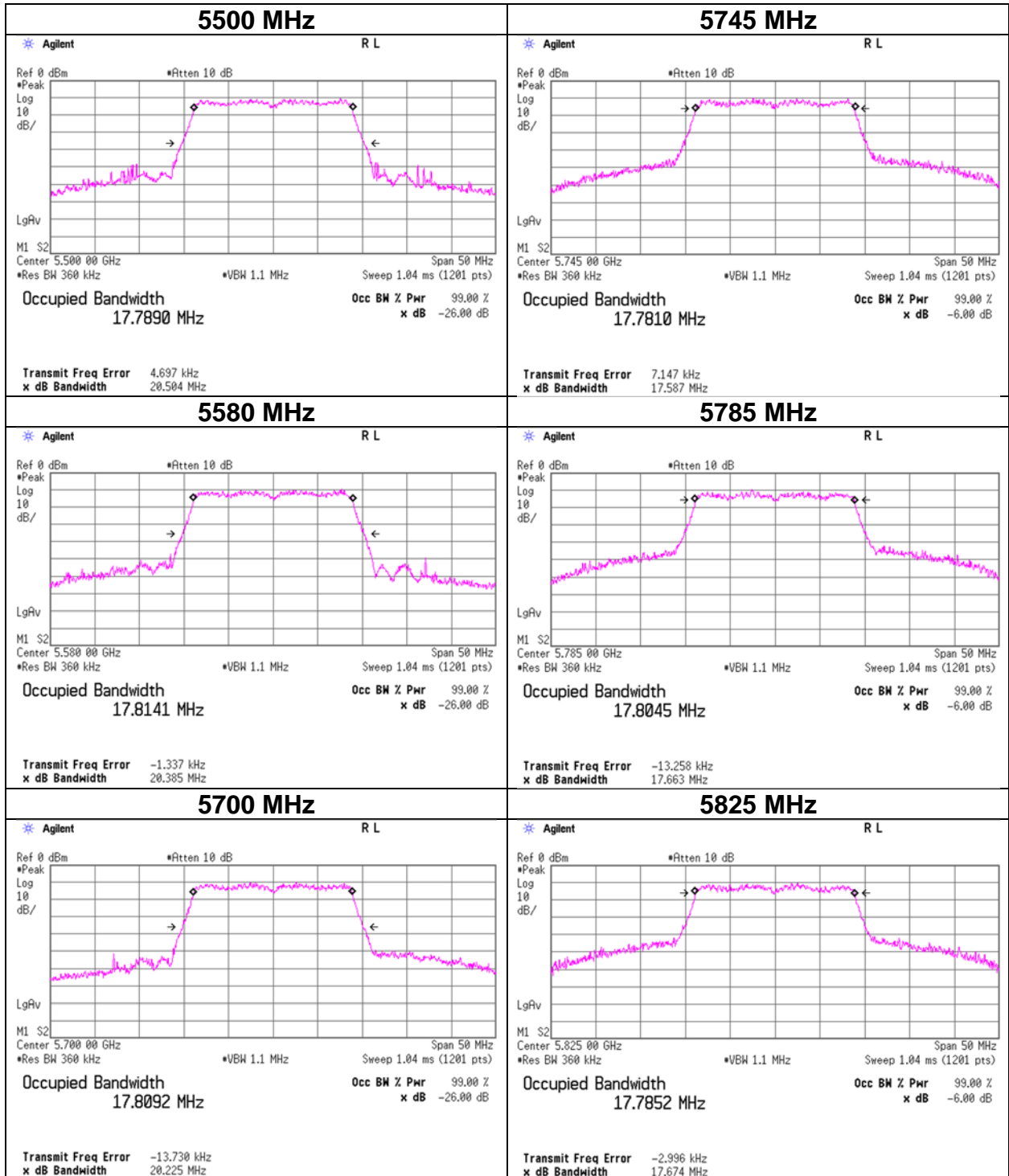
99 % Occupied Bandwidth

11n-20



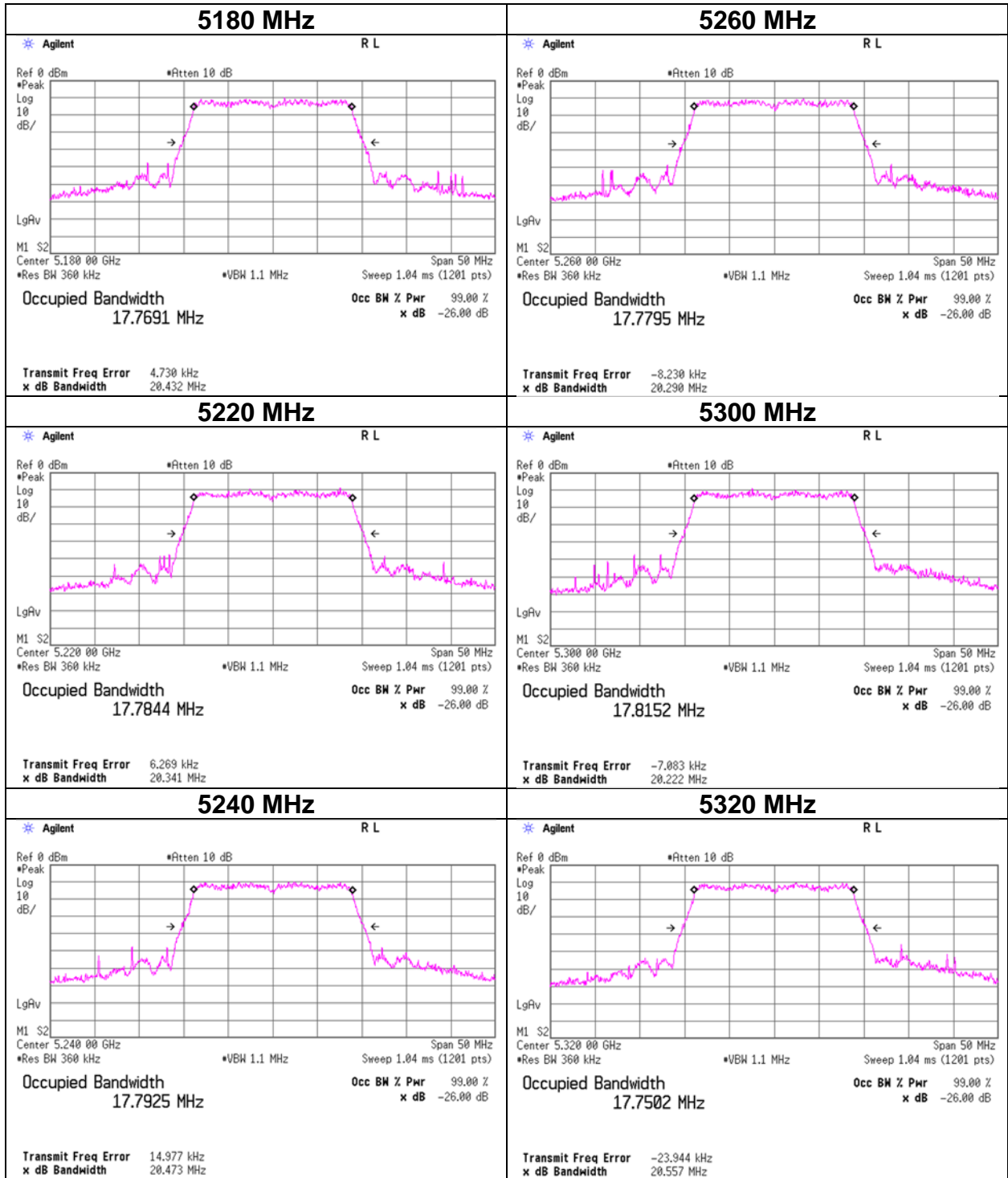
99 % Occupied Bandwidth

11n-20



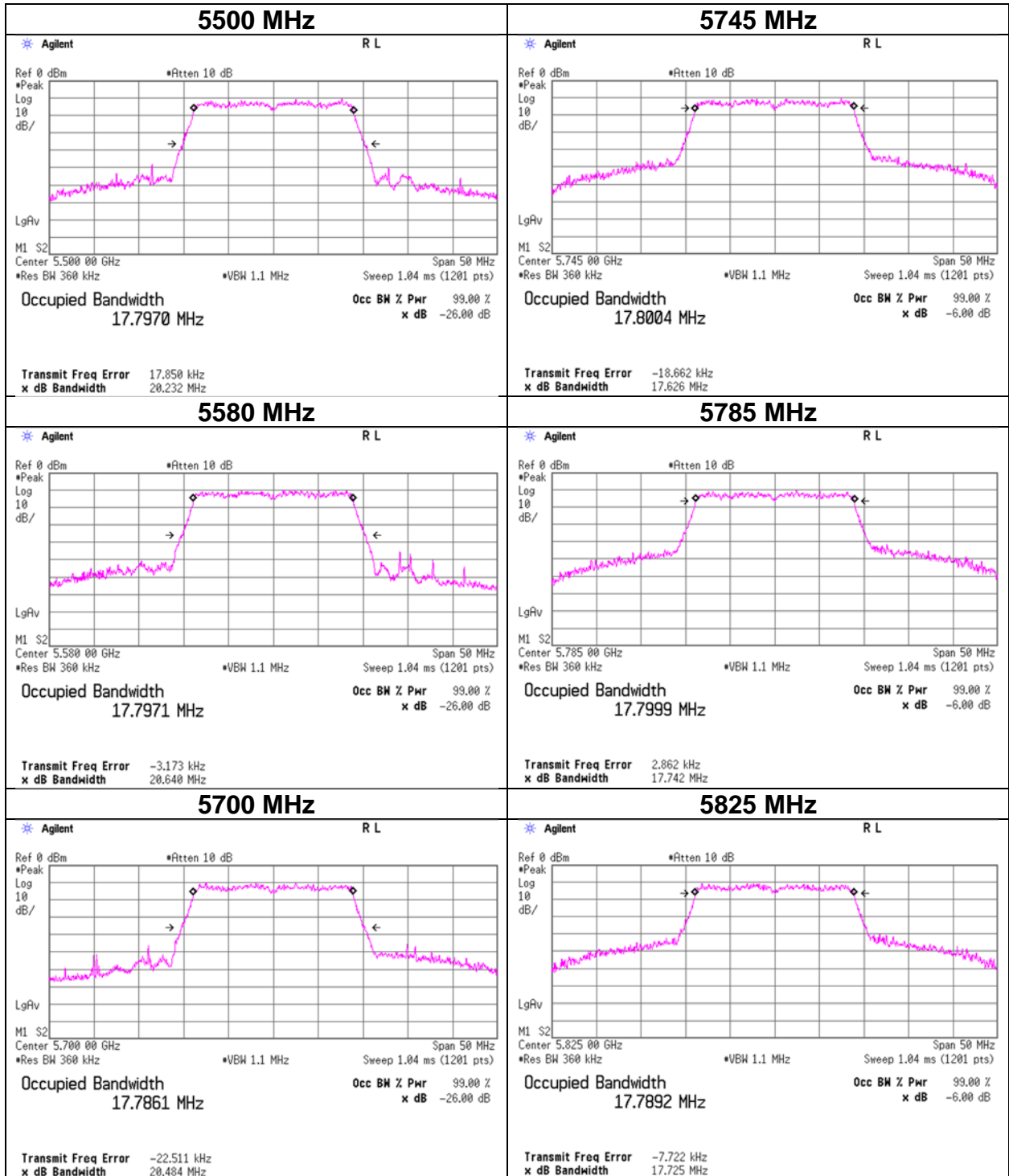
99 % Occupied Bandwidth

11ac-20



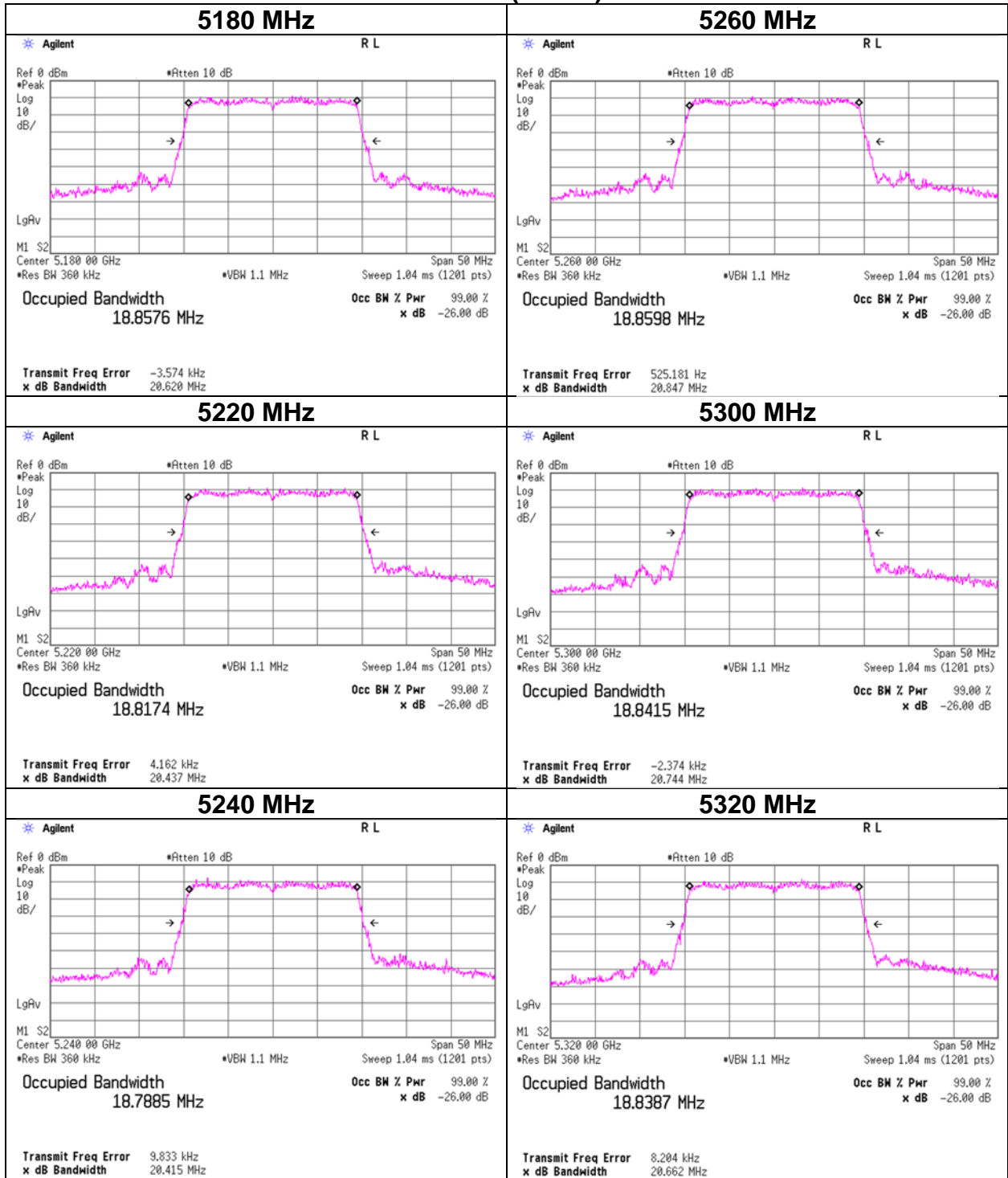
99 % Occupied Bandwidth

11ac-20



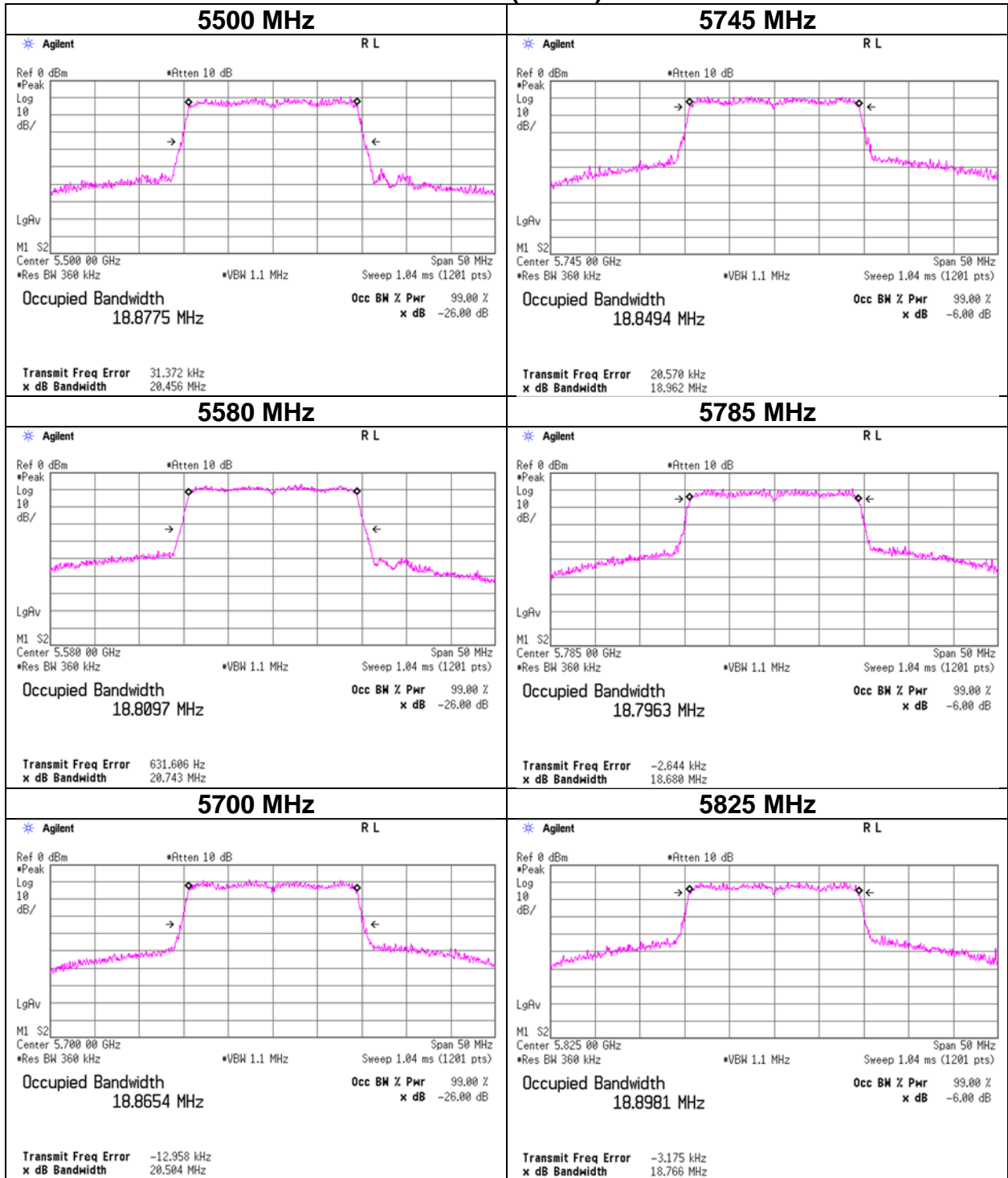
99 % Occupied Bandwidth

11ax-20 (OFDM)



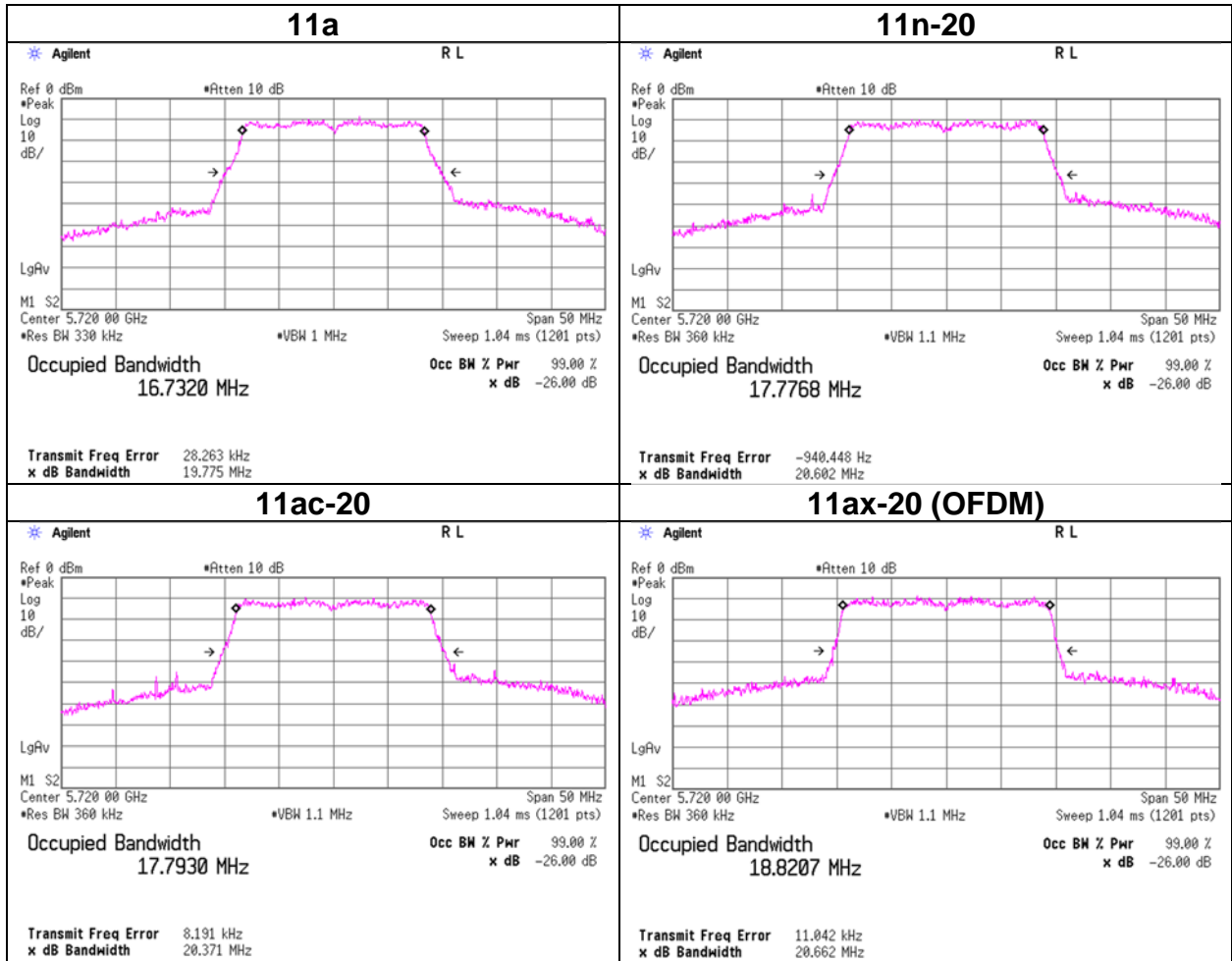
99 % Occupied Bandwidth

11ax-20 (OFDM)



99 % Occupied Bandwidth

5720 MHz



99 % Occupied Bandwidth

11ax-20 (OFDMA)

26-tone RU 5180 MHz

26-tone RU 5220 MHz

