



: 02

Report Version

FCC RADIO TEST REPORT

FCC ID : PY321100529

Equipment : Netgear 5G MHS Travel Router

Brand Name : Netgear

Model Name : MR6500

Applicant : Netgear Inc

350 E. Plumeria Drive, San Jose, CA 95134, United States

Manufacturer : Netgear Inc

350 E. Plumeria Drive, San Jose, CA 95134, United States

Standard : FCC Part 15 Subpart E §15.407

The product was received on Nov. 03, 2021 and testing was performed from Nov. 03, 2021 to Jan. 29, 2022. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

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Report Template No.: BU5-FR15EWL AC MA Version 2.4

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History of this test report

Report No.: FR190614D

Report No.	Version	Description	Issue Date
FR190614D	01	Initial issue of report	Jan. 29, 2022
FR190614D	02	Revise frequency typo for ch 233 and sample received date.	Jan. 29, 2022

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Summary of Test Result

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403(i) 15.407(a)(10)	26dB Emission Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)(8)	Maximum Conducted Output Power	Reporting only	-
3.2	15.407(a)(8)	Fundamental Maximum EIRP	Pass	-
3.3	15.407(a)(8)	Fundamental Power Spectral Density	Pass	-
3.4	15.407(b)(6)	In-Band Emissions (Channel Mask)	Pass	-
3.5	15.407(d)(6)	Contention Based Protocol	Pass	
3.6	15.407(b)	Unwanted Emissions	Pass	0.31 dB under the limit at 7125.020 MHz
3.7	15.207	AC Conducted Emission	Pass	9.81 dB under the limit at 0.607 MHz
3.8	15.203 15.407(a)	Antenna Requirement	Pass	-

Declaration of Conformity:

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
 It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
- 2. The measurement uncertainty please refer to report "Uncertainty of Evaluation"

Comments and Explanations:

The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Avis Chuang Report Producer: Cindy Liu

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1 General Description

1.1 Product Feature of Equipment Under Test

LTE/5G NR, Wi-Fi 2.4GHz 802.11b/g/n/ac/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, Wi-Fi 6GHz 802.11a/n/ac/ax, and GPS

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Product Feature				
Antenna Type	WWAN: <ant. 1="">: Monopole Antenna <ant. 2="">: Monopole Antenna WLAN: <ant. 3="">: Monopole Antenna <ant. 4="">: Monopole Antenna GPS: PIFA Antenna</ant.></ant.></ant.></ant.>			

Antenna information					
5925 MHz ~ 6425 MHz					
6425 MHz ~ 6525 MHz	Peak Gain (dBi)	Ant. 3: 3.40			
6525 MHz ~ 6875 MHz	reak Gaill (ubi)	Ant. 4: 1.54			
6875 MHz ~ 7125 MHz					

Remark:

- The above EUT's information is declared by manufacturer. Please refer to Comments and Explanations in report summary.
- 2. The device supports Wi-Fi 6E AP mode, only when the device is connected to the charger to AC mains. The device does not support partial RU configuration.

1.2 Modification of EUT

No modifications made to the EUT during the testing.

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1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
	No.52, Huaya 1st Rd., Guishan Dist.,
Took Cita Lagation	Taoyuan City 333, Taiwan (R.O.C.)
Test Site Location	TEL: +886-3-327-3456
	FAX: +886-3-328-4978
Test Site No.	Sporton Site No.
rest site No.	CO05-HY, 03CH07-HY, DF02-HY

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Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No.
rest site No.	TH05-HY (TAF Code: 3786)
Remark	The Conducted test item subcontracted to Sporton International Inc. Wensan Laboratory.

FCC designation No.: TW1190 and TW3786

1.4 Applicable Standards

According to the specifications declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- FCC KDB 987594 D02 U-NII 6 GHz EMC Measurement v01
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.10-2013

Remark:

- 1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
- 2. The TAF code is not including all the FCC KDB listed without accreditation.
- 3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

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2 Test Configuration of Equipment Under Test

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, , the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find X plane as worst plane.

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b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

BW 20M	Channel	1	5	9	13	17	21	25	29
DVV ZUIVI	Freq. (MHz)	5955	5975	5995	6015	6035	6055	6075	6095
DVA/ 4084	Channel	;	3	1	11		19		7
BW 40M	Freq. (MHz)	5965		60	6005		6045		85
BW 80M	Channel		7	7		23			
DAA OOIAI	Freq. (MHz)		59	85		6065			
BW 160M	Channel	15							
DAA LOOIAL	Freq. (MHz)				60	25			

BW 20M	Channel	33	37	41	45	49	53	57	61	
DVV ZUIVI	Freq. (MHz)	6115	6135	6155	6175	6195	6215	6235	6255	
BW 40M	Channel	35		4	43		51		59	
DVV 4UIVI	Freq. (MHz)	6125		61	6165		6205		45	
BW 80M	Channel		3	9		55				
DAA OOIAI	Freq. (MHz)		61	45		6225				
BW 160M	Channel	47								
DAA LOOIAI	Freq. (MHz)	6185								

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Channel

Freq. (MHz)

BW 160M

								93
Freq. (MHz)	6275	6295	6315	6335	6355	6375	6395	6415
Channel	67		75		83		91	
Freq. (MHz)	62	85	63	6325		65	64	05
Channel		7	1			8	7	
Freq. (MHz)		63	05			63	85	
Channel				7	9			
Freq. (MHz)				63	45			
Channel	97	101	105	109	113	117	121	125
								6575
Channel			-					23
Freq. (MHz)	64	45	64	l85				65
Channel		10	03			1′	19	
Freq. (MHz)		64	65		6545			
Channel				1	11			
Freq. (MHz)					11 605			
Freq. (MHz)	100	400	407	65	05	1.10	450	457
Freq. (MHz)	129	133	137	141	145	149	153	157
Freq. (MHz) Channel Freq. (MHz)	6595	6615	6635	141 6655	145 6675	6695	6715	6735
Freq. (MHz) Channel Freq. (MHz) Channel	6595 13	6615 31	6635 13	141 6655 39	145 6675	6695 17	6715 15	6735 55
Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz)	6595 13	6615 31 05	6635 13	141 6655	145 6675	6695 17 85	6715 15	6735 55
Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz) Channel	6595 13	6615 31 05	6635 13 66 35	141 6655 39	145 6675	6695 17 85	6715 15 67	6735 55
Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz)	6595 13	6615 31 05	6635 13 66 35	65 141 6655 39 45	145 6675 14	6695 17 85	6715 15 67	6735 55
Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz) Channel	6595 13	6615 31 05	6635 13 66 35	141 6655 39 45	145 6675 14 666	6695 17 85	6715 15 67	6735 55
Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz)	6595 13	6615 31 05	6635 13 66 35	141 6655 39 45	145 6675 14	6695 17 85	6715 15 67	6735 55
Freq. (MHz) Channel Channel	6595 13	6615 31 05 13 66	6635 13 66 35	141 6655 39 45	145 6675 14 666	6695 17 85	6715 15 67	6735 55
Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz) Channel Freq. (MHz)	6595 13 66	6615 31 05 13 66	6635 13 66 35 25	141 6655 39 45	145 6675 14 666	6695 17 85 15 67	6715 15 67 51 05	6735 55 25
Freq. (MHz) Channel Freq. (MHz)	6595 13 66 161 6755	6615 31 05 13 66	6635 13 66 35 25 169 6795	141 6655 39 45 14 66	145 6675 14 666 43 65 177 6835	6695 85 15 67	6715 15 67 51 05 185 6875	6735 55 25
Freq. (MHz) Channel Freq. (MHz)	6595 66 161 6755	6615 31 05 13 66 165 6775	6635 66 35 25 169 6795	141 6655 39 45 14 66 173 6815	145 6675 14 666 43 65 177 6835	6695 85 15 67 181 6855	6715 15 67 51 05 185 6875	6735 55 25 189 6895
Freq. (MHz) Channel Freq. (MHz)	6595 66 161 6755	6615 31 05 66 165 6775 63	6635 66 35 25 169 6795	141 6655 39 45 14 66 173 6815	145 6675 14 666 43 65 177 6835	6695 85 15 67 181 6855 79	6715 15 67 51 05 185 6875	6735 55 25 189 6895
	Freq. (MHz) Channel Freq. (MHz)	Freq. (MHz) 6275 Channel 62 Freq. (MHz) 62 Channel Freq. (MHz) Channel 97 Freq. (MHz) 6435 Channel 9 Freq. (MHz) 6435 Channel 9 Freq. (MHz) 6445 Channel 9 Freq. (MHz) 6445	Freq. (MHz) 6275 6295 Channel 67 6285 Channel 7 Freq. (MHz) 63 Channel 97 101 Freq. (MHz) 6435 6455 Channel 99 Freq. (MHz) 6445 Channel 10 Freq. (MHz) 6445 Channel 10 Freq. (MHz) 6445	Freq. (MHz) 6275 6295 6315 Channel 67 7 Freq. (MHz) 6285 63 Channel 71 Freq. (MHz) 6305 Channel 97 101 105 Freq. (MHz) 6435 6455 6475 Channel 99 10 Freq. (MHz) 6445 64 Channel 103 6465	Freq. (MHz) 6275 6295 6315 6335 Channel 67 75 Freq. (MHz) 6285 6325 Channel 71 Freq. (MHz) 6305 Channel 7 Freq. (MHz) 6305 Channel 97 101 105 109 Freq. (MHz) 6435 6455 6475 6495 Channel 99 107 Freq. (MHz) 6445 6485 Channel 103 Freq. (MHz) 6465	Freq. (MHz) 6275 6295 6315 6335 6355 Channel 67 75 85 Freq. (MHz) 6285 6325 636 Channel 71 79 Freq. (MHz) 6305 79 Freq. (MHz) 6345 6455 Channel 97 101 105 109 113 Freq. (MHz) 6435 6455 6475 6495 6515 Channel 99 107 17 Freq. (MHz) 6445 6485 65 Channel 103 6465 Freq. (MHz) 6465 6465	Freq. (MHz) 6275 6295 6315 6335 6355 6375 Channel 67 75 83 Freq. (MHz) 6285 6325 6365 Channel 71 8 Freq. (MHz) 6305 63 Channel 79 Freq. (MHz) 6345 Channel 97 101 105 109 113 117 Freq. (MHz) 6435 6455 6475 6495 6515 6535 Channel 99 107 115 Freq. (MHz) 6445 6485 6525 Channel 103 11 Freq. (MHz) 6465 650	Freq. (MHz) 6275 6295 6315 6335 6355 6375 6395 Channel 67 75 83 9 Freq. (MHz) 6285 6325 6365 64 Channel 71 87 Freq. (MHz) 6305 6385 Channel 79 Freq. (MHz) 6345 Channel 97 101 105 109 113 117 121 Freq. (MHz) 6435 6455 6475 6495 6515 6535 6555 Channel 99 107 115 12 Freq. (MHz) 6445 6485 6525 65 Channel 103 119 Freq. (MHz) 6465 6545

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175

6825

BW 20M	Channel	193	197	201	205	209	213	217	221	
DVV ZUIVI	Freq. (MHz)	6915	6935	6955	6975	6995	7015	7035	7055	
BW 40M	Channel	19	95	20	203		11	219		
DVV 4UIVI	Freq. (MHz)	69	25	69	65	70	05	70	45	
BW 80M	Channel		19	99			2′	15		
DAA OOIAI	Freq. (MHz)		69	45			70	25		
BW 160M	Channel				20	07				
DAA LOOIM	Freq. (MHz)		6985							
	Channel		22	25			22	29		
BW 20M	Freq. (MHz)			75		7095				
	Channel	227								
BW 40M	Freq. (MHz)	7085								
		, , , , , , , , , , , , , , , , , , , ,								
BW 20M	Channel		233							
D 11 2011	Freq. (MHz)				71	15				

2.2 Test Mode

The final test modes consider the modulation and the worst data rates as shown in the table below.

EUT supports AP mode and client mode. The same output power level is used on the two modes. Due to the limit of the client mode is more restrictive than the AP mode, the client mode test data also shows the compliance of the AP mode. Therefore, this report only shows the test data of client mode.

For AP mode is available only when the device is powered by AC adapter connected to AC mains, also illustrated in the user manual.

Modulation	Data Rate
802.11a	6 Mbps
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0
802.11ax HE160	MCS0

Test Cases				
AC Conducted Emission	Mode 1: LTE Band 5 Idle + WLAN (6GHz) Link - Client + LAN Link + USB Cable (Charging from AC Adapter 1) + Battery			
Remark: For Radiated Test Cases, the tests were performed with Adapter 1.				

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Ch. #		UNII-5 (5925-6425 MHz)	UNII-8 (6875-7125 MHz)
		802.11ax HE20	802.11ax HE20
L	Low	001	-
M	Middle	-	-
Н	High	-	233
Straddle		-	-

Ch. #		UNII-5 (5925-6425 MHz) 802.11ax HE40	UNII-8 (6875-7125 MHz) 802.11ax HE40
L	Low	003	-
М	Middle	-	-
Н	High	-	227
5	Straddle	-	-

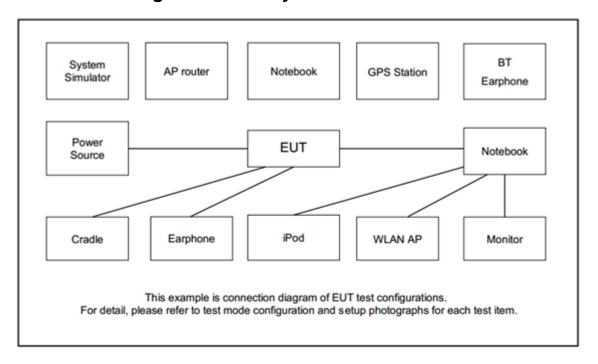
Ch. #		UNII-5 (5925-6425 MHz)	UNII-8 (6875-7125 MHz)
		802.11ax HE80 802.11ax HE80	
L	Low	007	-
M	Middle	-	-
Н	High	-	215
Straddle		-	-

Ch. #		UNII-5 (5925-6425 MHz)	UNII-6 UNII-7 MHz) (6425-6525 MHz) (6525-6875 MHz)		UNII-8 (6875-7125 MHz)	
		802.11ax HE160	802.11ax HE160	802.11ax HE160	802.11ax HE160	
L	Low	015				
М	Middle	047	-	143	207	
Н	High	079				
Straddle		-	111	175	-	

Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

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2.3 Connection Diagram of Test System



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2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	5G Wireless Test Platform	Anritsu	MT8000A	N/A	N/A	Unshielded,1.8m
2.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	PC	msi	A9SC-856TW	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

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2.5 EUT Operation Test Setup

The RF test items, utility "QSPR Version 5.0-00188" was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

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2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).
=
$$4.2 + 10 = 14.2$$
 (dB)

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3 Test Result

The device TX power level is identical between AP mode and client mode, for the test items which associates with different limit for 6ID and 6XD, since the requirement is more stringent in 6XD, the test data has justified the device passing the 6XD limit for compliance for both 6ID and 6XD.

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3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Limit of 26dB & 99% Occupied Bandwidth

<FCC 14-30 CFR 15.407>

(a)(10) The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz.

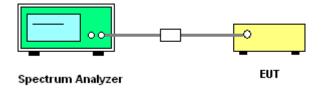
3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.1.3 Test Procedures

- The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
 Section C) Emission bandwidth
- 2. Set RBW = approximately 1% of the emission bandwidth.
- 3. Set the VBW > RBW.
- 4. Detector = Peak.
- 5. Trace mode = max hold
- 6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
- 7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) ≥ 3 * RBW.
- 8. Measure and record the results in the test report.

3.1.4 Test Setup

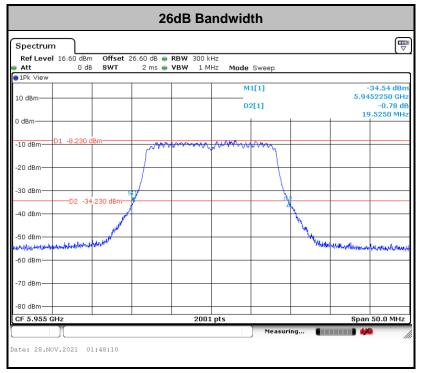


3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

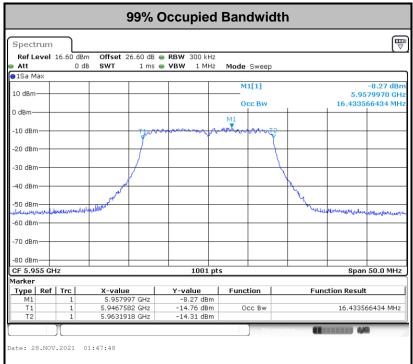
Please refer to Appendix A.

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For 802.11a MHz



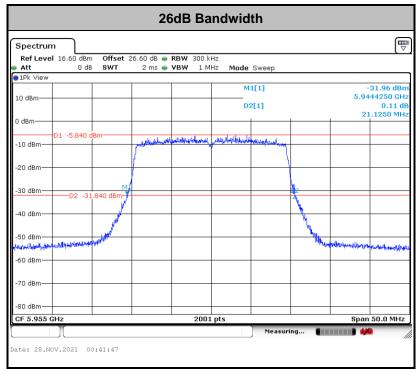
Report No.: FR190614D



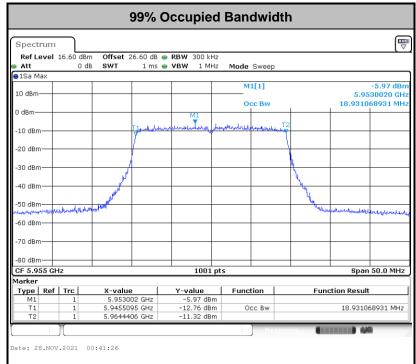
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

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For 802.11ax HE 20 MHz



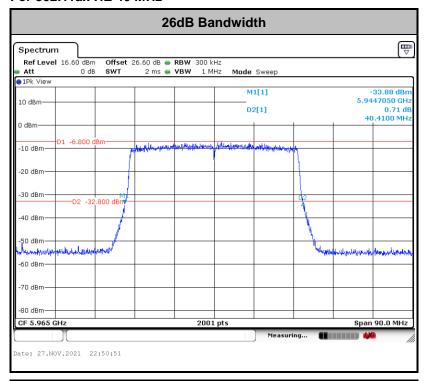
Report No.: FR190614D



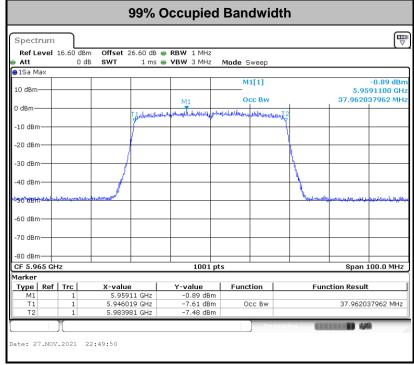
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

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For 802.11ax HE 40 MHz



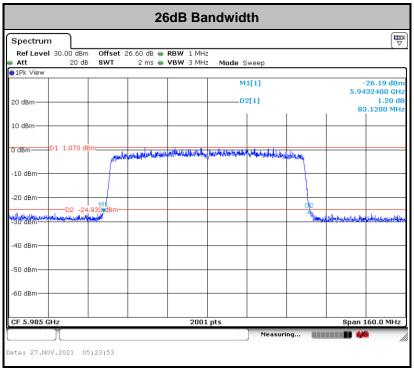
Report No.: FR190614D



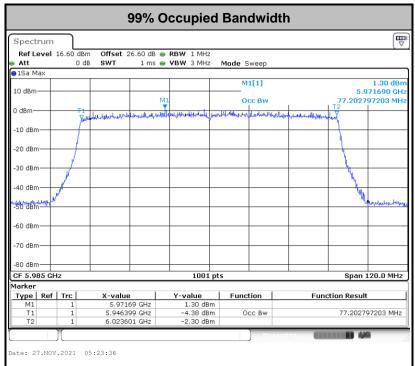
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

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For 802.11ax HE 80 MHz



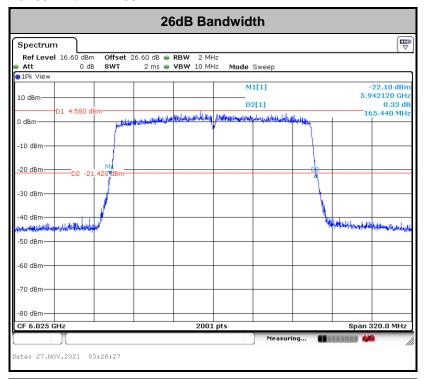
Report No.: FR190614D



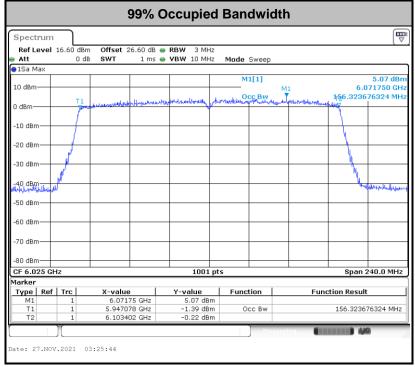
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

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For 802.11ax HE 160 MHz



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Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

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3.2 Maximum conducted Output Power and Fundamental Maximum EIRP Measurement

3.2.1 Limit of Fundamental Maximum EIRP

<FCC 14-30 CFR 15.407>

(a)(8) For client devices operating under the control of an indoor access point in the 5.925-7.125 GHz bands, the maximum e.i.r.p. over the frequency band of operation must not exceed 24 dBm.

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(a)(5) For an indoor access point operating in the 5.925-7.125 GHz band, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.

3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

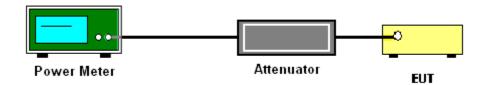
3.2.3 Test Procedures

The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM-G (Measurement using a gated RF average power meter):

- 1. Measurement is performed using a wideband RF power meter.
- 2. The EUT is configured to transmit at its maximum power control level.
- 3. Measure the average power of the transmitter.
- 4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.
- 5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

3.2.4 Test Setup



3.2.5 Test Result of Fundamental Maximum EIRP

Please refer to Appendix A.

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3.3 Fundamental Power Spectral Density Measurement

3.3.1 Limit of Fundamental Power Spectral Density

<FCC 14-30 CFR 15.407>

(a)(8) For client devices operating under the control of an indoor access point in the 5.925-7.125 GHz bands, the maximum power spectral density must not exceed −1 dBm e.i.r.p. in any 1-megahertz band.

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(a)(5) For an indoor access point operating in the 5.925-7.125 GHz band, the maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band.

3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

Method SA-3

(power averaging (rms) detection with max hold):

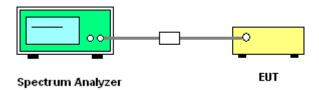
- · Set span to encompass the entire emission bandwidth (EBW) of the signal.
- · Set RBW = 1 MHz.
- Set VBW ≥ 3 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time ≤ (number of points in sweep) x T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
 Detector = power averaging (rms).
- Trace mode = max hold.
- · Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.
- 1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
- 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
- 3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (a): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points; the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

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3.3.4 Test Setup

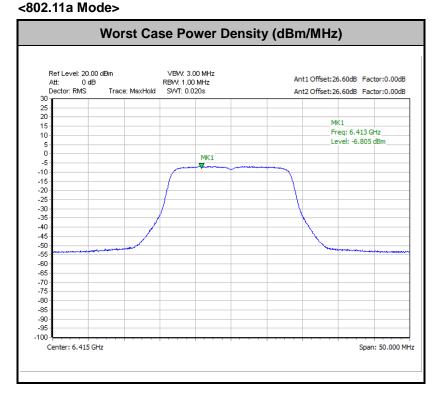


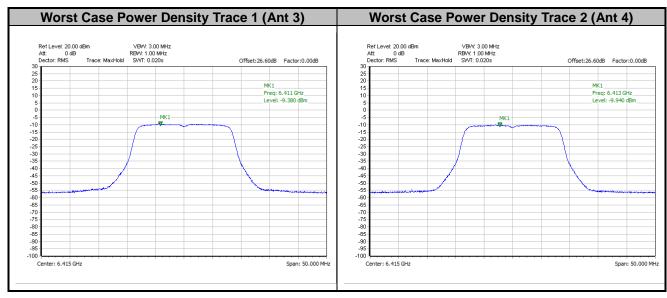
Report No.: FR190614D

3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

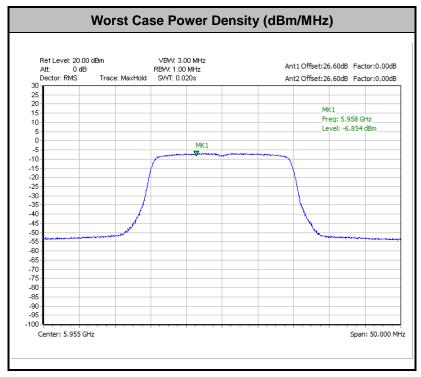
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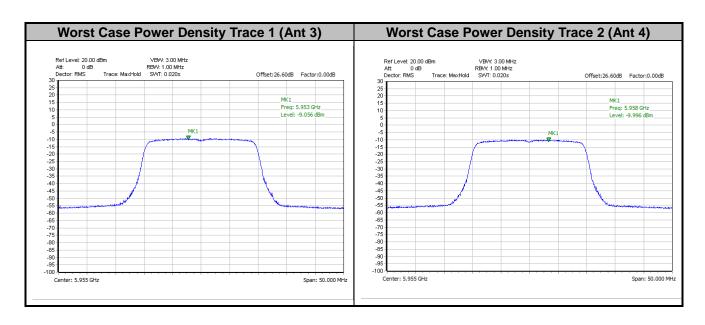


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<802.11ax HE20 Mode>

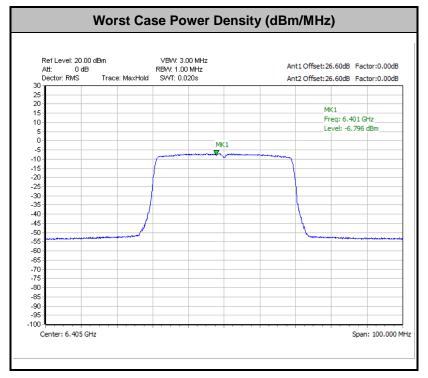


Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

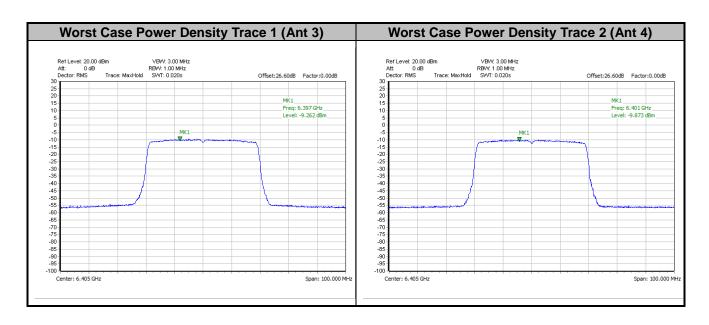


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<802.11ax HE40 Mode>

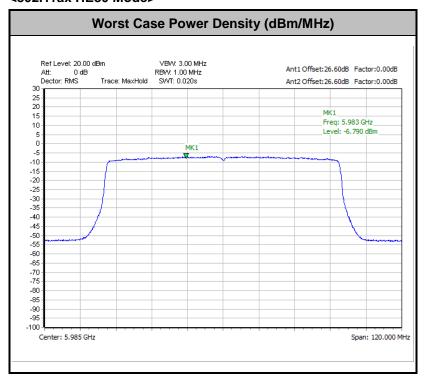


Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

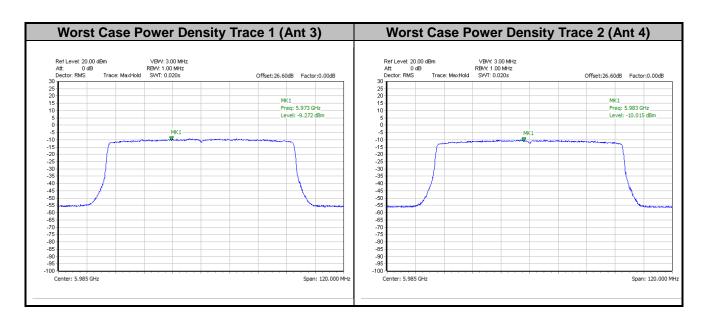


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<802.11ax HE80 Mode>

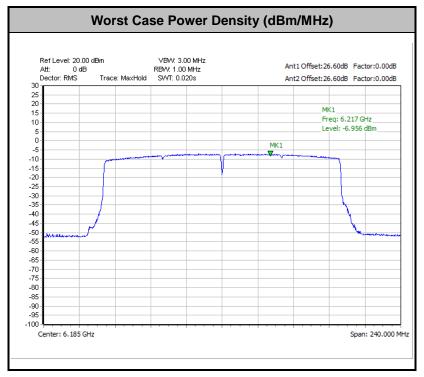


Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

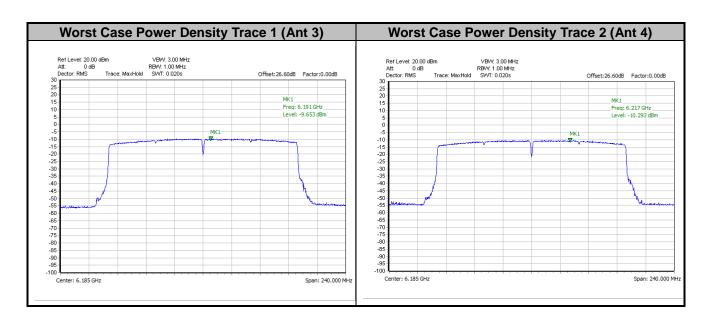


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<802.11ax HE160 Mode>



Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.



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3.4 In-Band Emissions (Channel Mask)

3.4.1 Limit of Unwanted Emissions

<FCC 14-30 CFR 15.407>

(a)(6) For transmitters operating within the 5.925-7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

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3.4.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

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3.4.3 Test Procedures

The testing follows FCC KDB 987594 D02 U-NII 6GHz EMC Measurement v01.

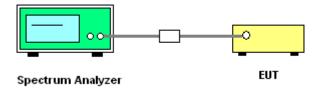
Section J) In-Band Emissions.

 Take nominal bandwidth as reference channel bandwidth provided that 26 dB emission bandwidth is always larger than nominal bandwidth

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- 2. Measure the power spectral density (which will be used for emissions mask reference) using the following procedure:
 - a) Set the span to encompass the entire 26 dB EBW of the signal.
 - b) Set RBW = same RBW used for 26 dB EBW measurement.
 - c) Set VBW ≥ 3 X RBW
 - d) Number of points in sweep ≥ [2 X span / RBW].
 - e) Sweep time = auto.
 - f) Detector = RMS (i.e., power averaging)
 - g) Trace average at least 100 traces in power averaging (rms) mode.
 - h) Use the peak search function on the instrument to find the peak of the spectrum.
- 3. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:
 - a. Suppressed by 20 dB at 1 MHz outside of the channel edge.
 - b. Suppressed by 28 dB at one channel bandwidth from the channel center.
 - c. Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
- 4. Adjust the span to encompass the entire mask as necessary.
- 5. Clear trace.
- 6. Trace average at least 100 traces in power averaging (rms) mode.
- Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

3.4.4 Test Setup



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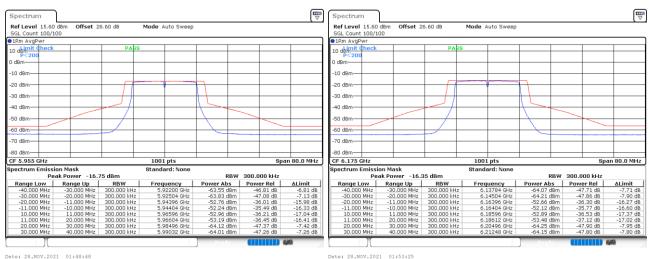
3.4.5 Test Result

MIMO <Ant. 3+4(3)>

Plot on Channel 5955MHz

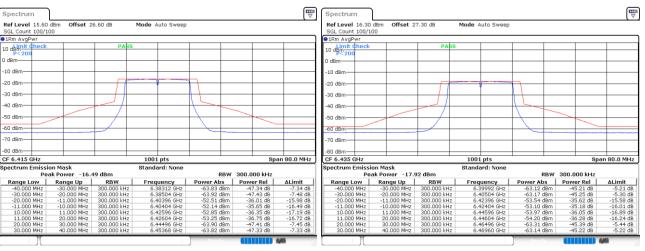
Plot on Channel 6175MHz

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Plot on Channel 6415MHz

Plot on Channel 6435MHz



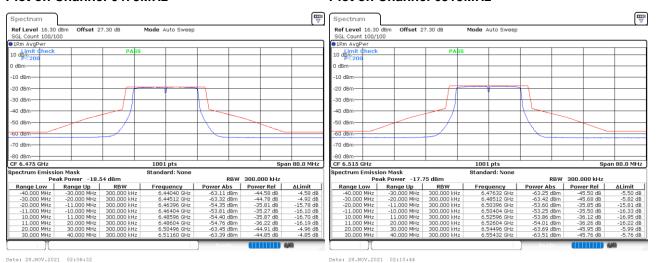
Date: 28.NOV.2021 01:58:01 Date: 28.NOV.2021 02:02:13

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Plot on Channel 6475MHz

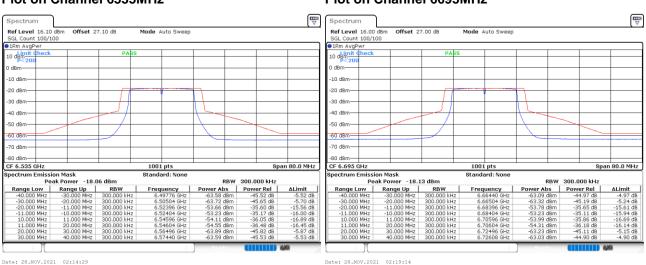
Plot on Channel 6515MHz

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Plot on Channel 6535MHz

Plot on Channel 6695MHz



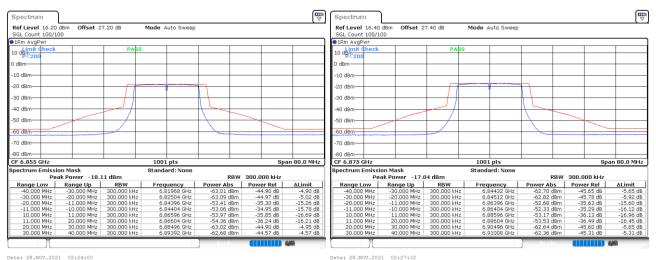
Date: 28.NOV.2021 02:14:29 Date: 28.NOV.2021 02:19:1

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Plot on Channel 6855MHz

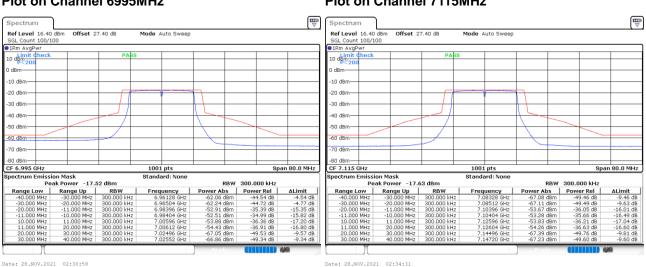
Plot on Channel 6875MHz

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Plot on Channel 6995MHz

Plot on Channel 7115MHz



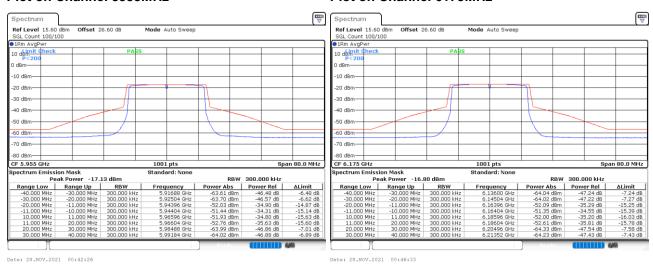
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EUT Mode : 802.11ax HE20

Plot on Channel 5955MHz

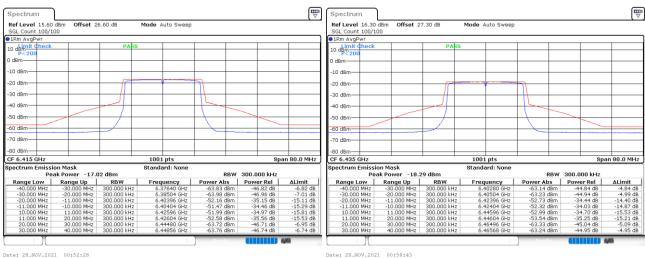
Plot on Channel 6175MHz

Report No.: FR190614D



Plot on Channel 6415MHz

Plot on Channel 6435MHz



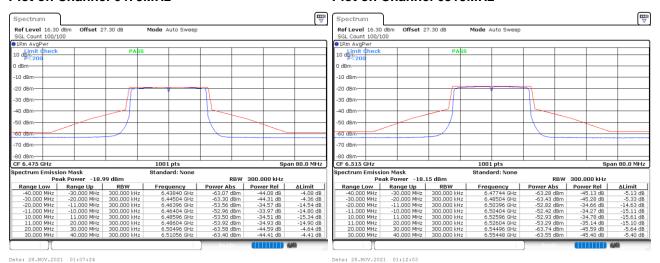
Date: 28.NOV.2021 00:52:28 Date: 28.NOV.2021 00:58:4

TEL: 886-3-327-3456 Page Number : 32 of 80 FAX: 886-3-328-4978 Issue Date : Jan. 29, 2022

Plot on Channel 6475MHz

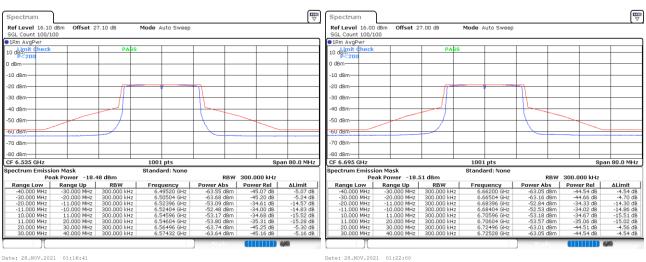
Plot on Channel 6515MHz

Report No.: FR190614D



Plot on Channel 6535MHz

Plot on Channel 6695MHz



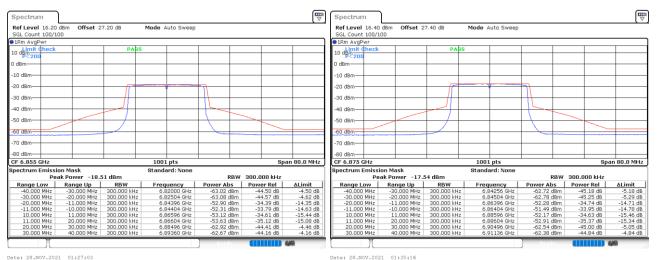
ate: 28.NOV.2021 01:16:41 Date: 28.NOV.2021 01:22:

TEL: 886-3-327-3456 Page Number : 33 of 80
FAX: 886-3-328-4978 Issue Date : Jan. 29, 2022

Plot on Channel 6855MHz

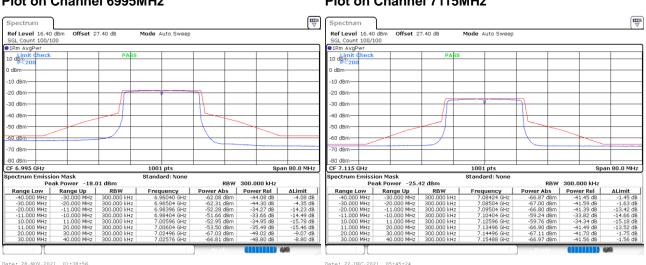
Plot on Channel 6875MHz

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Plot on Channel 6995MHz

Plot on Channel 7115MHz



Date: 28.NOV.2021 01:38:56 Date: 22.DEC.2021 05:45:24

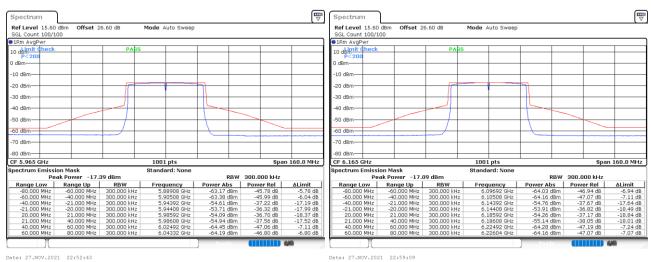
TEL: 886-3-327-3456 Page Number : 34 of 80 Issue Date FAX: 886-3-328-4978 : Jan. 29, 2022

EUT Mode: 802.11ax HE40

Plot on Channel 5965MHz

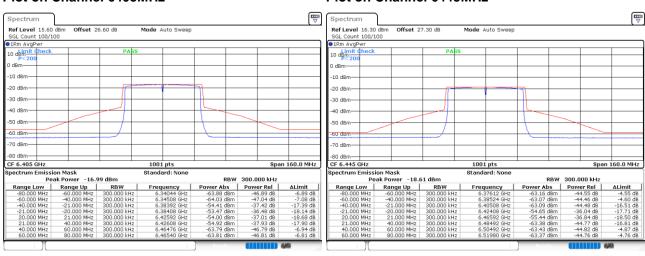
Plot on Channel 6165MHz

Report No.: FR190614D



Plot on Channel 6405MHz

Plot on Channel 6445MHz



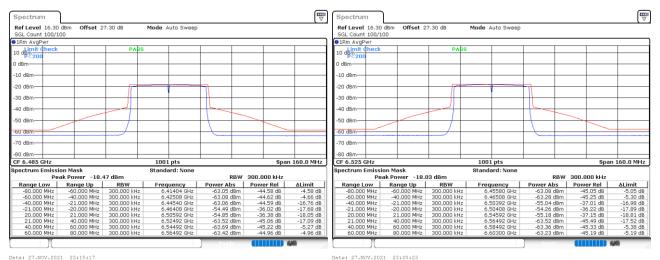
Date: 27.NOV.2021 23:05:08 Date: 27.NOV.2021 23:09:43

TEL: 886-3-327-3456 Page Number : 35 of 80 FAX: 886-3-328-4978 Issue Date : Jan. 29, 2022

Plot on Channel 6485MHz

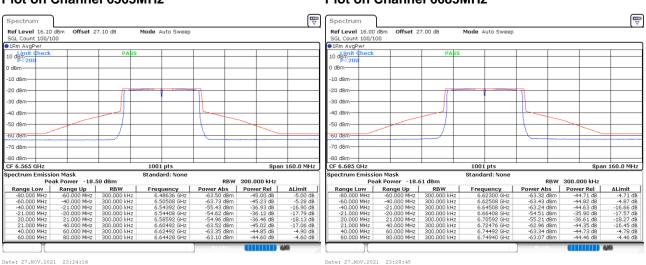
Plot on Channel 6525MHz

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Plot on Channel 6565MHz

Plot on Channel 6685MHz



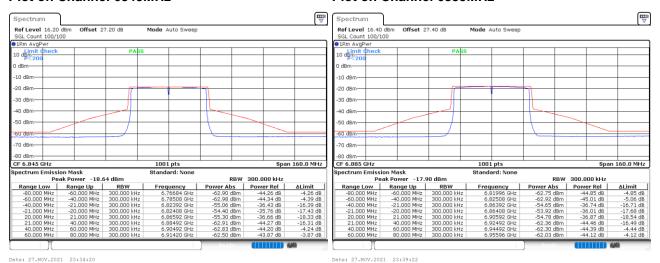
ate: 27.NOV.2021 23:24:16 Date: 27.NOV.2021 23:28:

TEL: 886-3-327-3456 Page Number : 36 of 80
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Plot on Channel 6845MHz

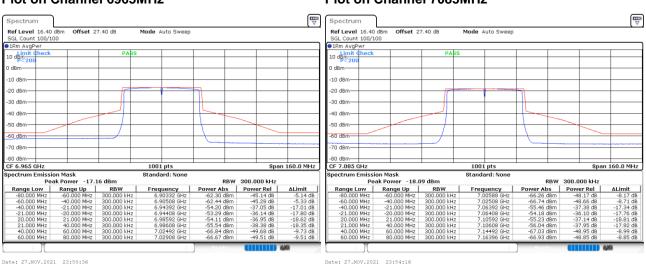
Plot on Channel 6885MHz

Report No.: FR190614D



Plot on Channel 6965MHz

Plot on Channel 7085MHz



ate: 27.NOV.2021 23:50:36 Date: 27.NOV.2021 23:54:

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EUT Mode: 802.11ax HE80

Plot on Channel 5985MHz Plot on Channel 6145MHz PASS 10 demit 10 demit -10 dBn -30 dBm -30 dBn 40 dBm 40 dBn 50 dBm -60 dBmen gew-CF 5.985 GHz Span 320.0 MHz Span 320.0 MHz pectrum Emission Mask Peak Power -10.88 dBm ectrum Emission Mask Peak Power -10.65 dBm RBW 1,000 MHz

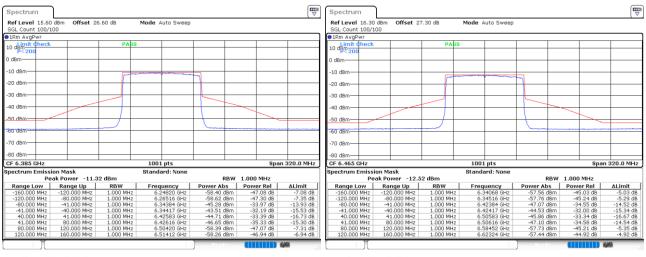
Plot on Channel 6385MHz

Date: 27.NOV.2021 05:24:41

Plot on Channel 6465MHz

Date: 27.NOV.2021 05:29:07

Report No.: FR190614D



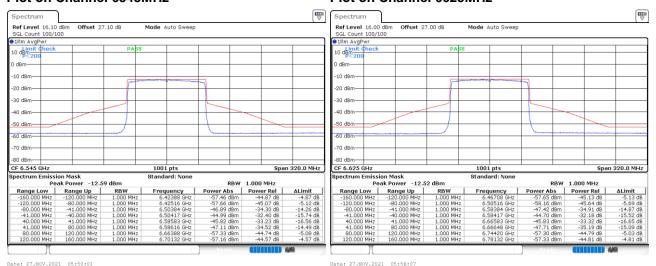
Date: 27.NOV.2021 05:33:18 Date: 27.NOV.2021 05:38:11

TEL: 886-3-327-3456 Page Number : 38 of 80 FAX: 886-3-328-4978 Issue Date : Jan. 29, 2022

Plot on Channel 6545MHz

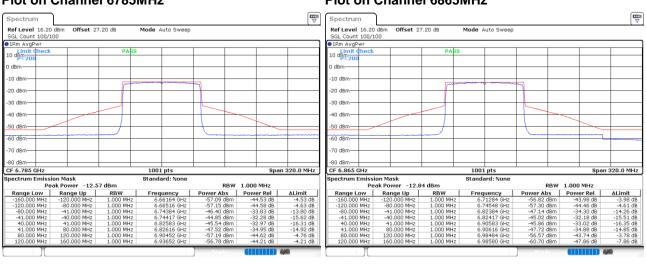
Plot on Channel 6625MHz

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Plot on Channel 6785MHz

Plot on Channel 6865MHz



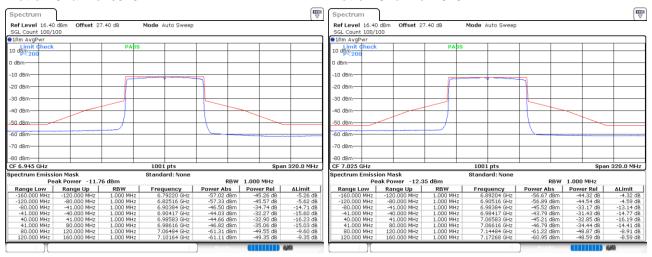
Date: 27.NOV.2021 06:10:16 Date: 27.NOV.2021 06:20:13

TEL: 886-3-327-3456 Page Number : 39 of 80 FAX: 886-3-328-4978 Issue Date : Jan. 29, 2022

Plot on Channel 6945MHz

Plot on Channel 7025MHz

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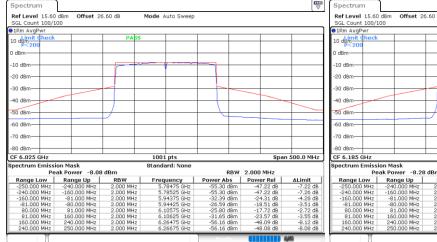


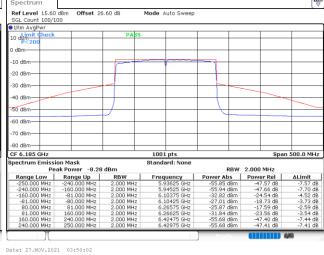
Date: 27.NOV.2021 06:30:18 Date: 27.NOV.2021 06:37:16

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EUT Mode: 802.11ax HE160

Plot on Channel 6025MHz Plot on Channel 6185MHz Spectrum Spectrum



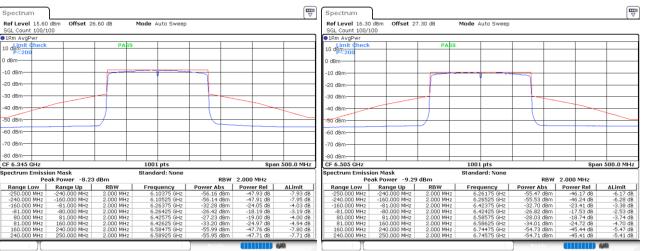


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Plot on Channel 6345MHz

Date: 27.NOV.2021 03:30:49

Plot on Channel 6505MHz



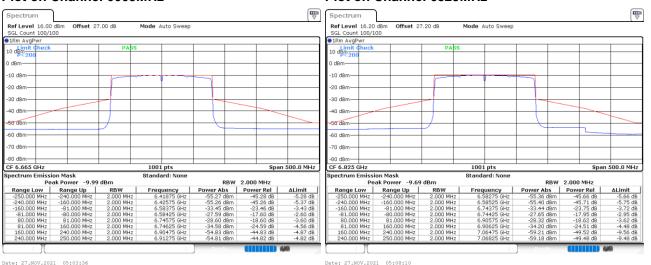
Date: 27.NOV.2021 04:40:45 Date: 27.NOV.2021 04:58:36

TEL: 886-3-327-3456 Page Number : 41 of 80 FAX: 886-3-328-4978 Issue Date : Jan. 29, 2022

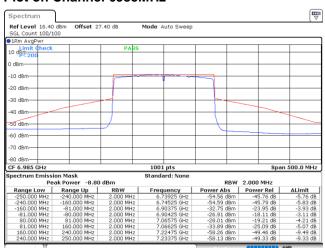
Plot on Channel 6665MHz

Plot on Channel 6825MHz

Report No.: FR190614D



Plot on Channel 6985MHz



Date: 27.NOV.2021 05:14:00

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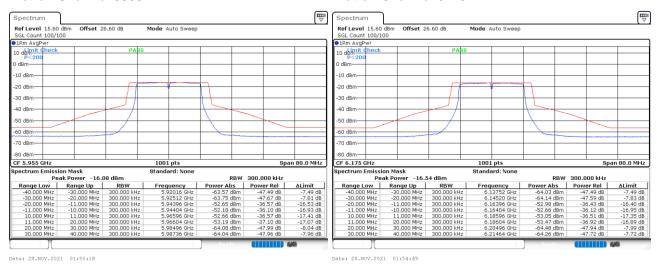
MIMO <Ant. 3+4(4)>

EUT Mode: 802.11a

Plot on Channel 5955MHz

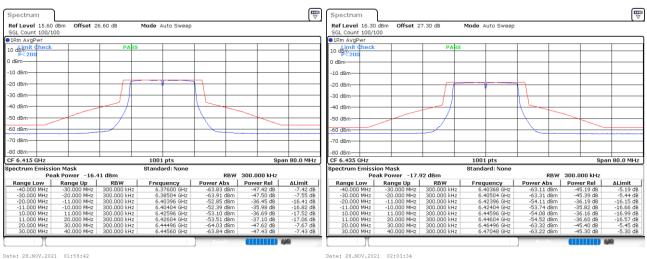
Plot on Channel 6175MHz

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Plot on Channel 6415MHz

Plot on Channel 6435MHz



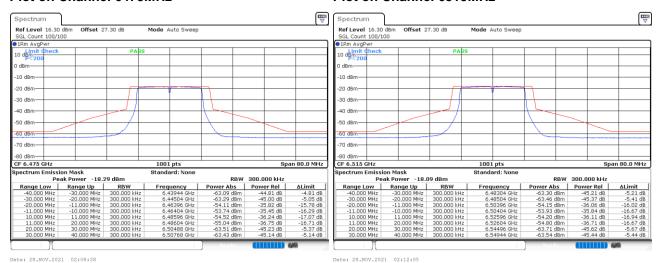
Date: 28.NOV.2021 01:59:42 Date: 28.NOV.2021 02:03:5

TEL: 886-3-327-3456 Page Number : 43 of 80 FAX: 886-3-328-4978 Issue Date : Jan. 29, 2022

Plot on Channel 6475MHz

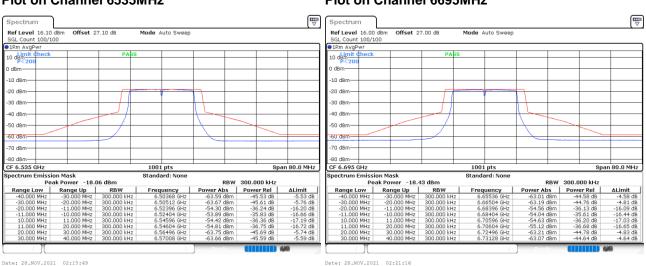
Plot on Channel 6515MHz

Report No.: FR190614D



Plot on Channel 6535MHz

Plot on Channel 6695MHz



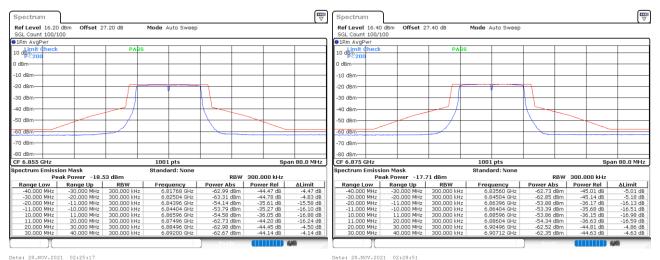
ate: 28.NOV.2021 02:15:49 Date: 28.NOV.2021 02:21:

TEL: 886-3-327-3456 Page Number : 44 of 80
FAX: 886-3-328-4978 Issue Date : Jan. 29, 2022

Plot on Channel 6855MHz

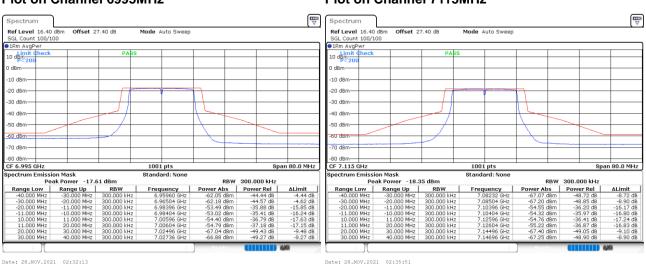
Plot on Channel 6875MHz

Report No.: FR190614D



Plot on Channel 6995MHz

Plot on Channel 7115MHz



tte: 28.NOV.2021 02:32:13 Date: 28.NOV.2021 02:35:

TEL: 886-3-327-3456 Page Number : 45 of 80 FAX: 886-3-328-4978 Issue Date : Jan. 29, 2022