



FCC RADIO TEST REPORT

FCC ID	:	A4RGKV4X
Equipment	:	Phone
Model Name	:	GKV4X
Applicant	:	Google LLC
		1600 Amphitheatre Parkway,
		Mountain View, California, 94043 USA
Standard	:	FCC Part 15 Subpart E §15.407

The product was received on Jul. 11, 2023 and testing was performed from Jul. 27, 2023 to Dec. 07, 2023. We, Sporton International Inc. Wensan 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. Wensan Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)

Page Number	: 1 of 70
Issue Date	: Dec. 12, 2023
Report Version	: 01



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History of this test report

Report No.	Version	Description	Issue Date
FR380307G	01	Initial issue of report	Dec. 12, 2023



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407(a)(10)	26dB Emission Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)(7)	Fundamental Maximum EIRP	Pass	-
3.3	15.407(a)(7)	Fundamental Power Spectral Density	Pass	-
3.4	15.407(b)(6)	In-Band Emissions (Channel Mask)	Pass	-
-	15.407(d)(6)	Contention Based Protocol	Not Required	Dual Client Standard Client
-	15.407 KDB 987594 D02 Section II. K.	Dual Client Test	Not Required	Dual Client EIRP < 24dBm
3.5	15.407(b)	Unwanted Emissions	Pass	2.72 dB under the limit at 5925.00 MHz
3.6	15.207	AC Conducted Emission	Pass	22.19 dB under the limit at 0.47 MHz
3.7	15.203 15.407(a)	Antenna Requirement	Pass	-
Note: Not	required means after	assessing, test items are not necessary to	carry out.	

Conformity Assessment Condition:

 The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.

2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

Disclaimer:

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

Reviewed by: William Chen

Report Producer: Michelle Chen



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature

General Specs

GSM/WCDMA/LTE/5G NR, Bluetooth, BLE, BLE channel sounding, Wi-Fi 2.4GHz 802.11b/g/n/ac/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, Wi-Fi 6GHz 802.11a/ax, NFC, WPC Rx and GNSS Rx.

Antenna Type

WLAN:

<Ant. 4>: ILA Antenna

<Ant. 3>: IFA Antenna

EUT Information List						
S/N			Performed Test Item			
38011JEKB00290			RF Conducted Measurement			
38011JEKB00050			Radiated Spurious Emission			
38011JEKB00085			Conducted Emission			
	Ante	nna inforr	nation			
5925 MHz ~ 6425 MHz	Peak G	ain (dBi)	Ant. 4: -2.7 Ant. 3: -3.8			
6525 MHz ~ 6875 MHz	Peak Gain (dBi)		Ant. 4: -4.1 Ant. 3: -4.1			

Remark: The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

1.1.1 Antenna Directional Gain

<For CDD Mode>

Follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)ii)

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \le 4$.

 $G_{\mbox{\scriptsize ANT}}$ is set equal to the gain of the antenna having the highest gain.

For PSD measurements, the directional gain calculation.

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

 N_{SS} = the number of independent spatial streams of data;

 N_{ANT} = the total number of antennas

 $g_{j,k} = 10^{G_k/20}$ if the *k*th antenna is being fed by spatial stream *j*, or zero if it is not; G_k is the gain in dBi of the kth antenna.

As minimum N_{SS} =1 is supported by EUT, the formula can be simplified as:

Directional gain = $10^{10G_{1/20}} + 10^{G_{2/20}} + ... + 10^{G_{N/20}} / N_{ANT}$ dBi

Where G1, G2....GN denote single antenna gain.

The directional gain "DG" is calculated as following table.

			DG	DG
			for	for
	Ant 4	Ant 3	Power	PSD
	(dBi)	(dBi)	(dBi)	(dBi)
5925 MHz ~ 6425 MHz	-2.70	-3.80	-2.70	-0.22
6525 MHz ~ 6875 MHz	-4.10	-4.10	-4.10	-1.09

Calculation example:

If a device has two antenna, G_{ANT4} = -2.7dBi; G_{ANT3} = -3.8dBi Directional gain of power measurement = max(-2.7, -3.8) + 0 = -2.7 dBi Directional gain of PSD derived from formula which is 10 x log { { [10^ (-2.7 dBi / 20) + 10^ (-3.8 dBi / 20)] ^ 2 } / 2 } = -0.22 dBi



1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

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.			
	TH05-HY, CO07-HY, 03CH15-HY			

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

FCC designation No.: 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 v02r01
- 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.

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 antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape) and accessory (Adapter or Earphone), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find X plane with Adapter as worst plane.
- b. AC power line Conducted Emission was tested under maximum output power.

	Channel	1	5	0	40	47	01	25	20	
BW 20M	Channel		5	9	13	17	21	25	29	
211 2011	Freq. (MHz)	5955	5975	5995	6015	6035	6055	6075	6095	
BW 40M	Channel	3	3	1	11		9	2	.7	
	Freq. (MHz)	59	65	60	05	60	45	60	85	
BW 80M	Channel		-	7			2	3		
	Freq. (MHz)		59	85			60	65		
	Channel	33	37	41	45	49	53	57	61	
BW 20M	Freq. (MHz)	6115	6135	6155	6175	6195	6215	6235	6255	
BW 40M	Channel	3	5	43		51		59		
	Freq. (MHz)	61	25	61	6165		6205		6245	
BW 80M	Channel		3	9		55				
	Freq. (MHz)		61	45		6225				
DW cold	Channel	65	69	73	77	81	85	89	93	
BW 20M	Freq. (MHz)	6275	6295	6315	6335	6355	6375	6395	6415	
DW 40M	Channel	6	67		75		3	91		
BW 40M	Freq. (MHz)	62	85	63	6325		65	6405		
BW 80M	Channel		7	1			8	7		
	Freq. (MHz)		63	05			63	85		

2.1 Carrier Frequency and Channel



	r										
BW 20M	Channel	117			121				125		
DVV 201VI	Freq. (MHz)		6535		6555				6575		
	Channel			-			123				
BW 40M	Freq. (MHz)			-				65	65		
	Channel						-				
BW 80M	Freq. (MHz)						-				
BW 20M	Channel	129	133	137		141	145	149	153	157	
	Freq. (MHz)	6595	6615	6615 6635		6655	6675	6695	6715	6735	
BW 40M	Channel	13	131 6605			139 147			155		
	Freq. (MHz)	66				6645		6685		6725	
BW 80M	Channel		1:	35			151				
	Freq. (MHz)		66	625			6705				
DW cold	Channel	161	1	65		169	173	17	77	181	
BW 20M	Freq. (MHz)	6755	6755 6775			6795	6815	68	35	6855	
	Channel		163			17	71		179		
BW 40M	Freq. (MHz)		6765		6805			6845			
BW 80M	Channel		1	67				•	-		
	Freq. (MHz)		67	6785					_		



2.2 Test Mode

This device support 26/52/106/242/484/996-tone RU channel.

The PSD of partial RU is reduced to be smaller than full RU according to TCB workshop interim guidance Oct. 2022.

The 802.11ax mode is investigated among different tones, full resource units (RU), partial resource units. The partial RU has no higher power than full RU's, thus the full RU is chosen as main test configuration.

The partial RU modes in HE40/HE80 are covered by modes in HE20 because the power setting is identical

The 242-tone RU is covered by 20MHz channel, 484-tone RU is covered by 40MHz channel and 996-tone RU is covered by 80MHz channel.

The SISO mode conducted power is covered by MIMO mode per chain, so only the MIMO mode is tested.

The final test modes include the worst data rates for each modulation shown in the table below.

MIMO Mode

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

Remark: The conducted power level of each chain in MIMO mode is equal or higher than SISO mode.



	Test Cases
AC Conducted	Mode 1 : 5G NR n5 Link + WLAN (6GHz) Link + Bluetooth on + NFC on + USB Cable 3 (Charging from AC Adapter 2) + Handset mode ; Battery <
Emission	50%
Pomark:	

Remark:

1. For Radiated Test Cases, the tests were performed with Adapter 1 and USB Cable 3.

2. During the preliminary test, both charging modes (Adapter mode and WPC Rx mode) were

verified. It is determined that the adaptor mode is the worst case for official test.

Ch. #	UNII-5 (5925-6425 MHz) 802.11a	UNII-7 (6525-6875 MHz) 802.11a		
Low	001	117		
Middle	049	149		
High	093	181		
	Low Middle	802.11a Low 001 Middle 049		

	Ch. #	UNII-5 (5925-6425 MHz) 802.11ax HE20	UNII-7 (6525-6875 MHz) 802.11ax HE20		
L	Low	001	117		
М	Middle	049	149		
Н	High	093	181		

	Ch. #	UNII-5 (5925-6425 MHz) 802.11ax HE40	UNII-7 (6525-6875 MHz) 802.11ax HE40
L	Low	003	123
М	Middle	051	147
н	High	091	179

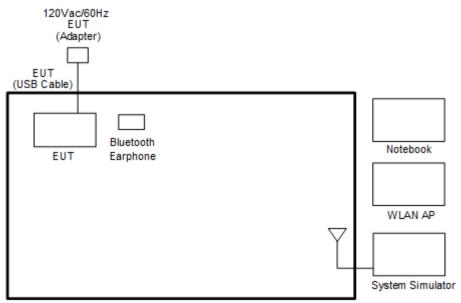
	Ch. #	UNII-5 (5925-6425 MHz) 802.11ax HE80	UNII-7 (6525-6875 MHz) 802.11ax HE80
L	Low	007	135
М	Middle	055	151
Н	High	087	167

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

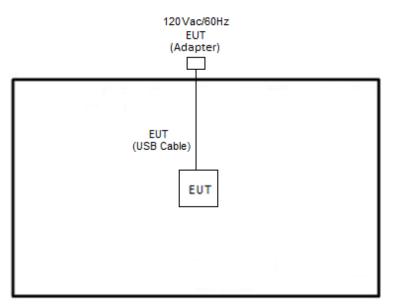


2.3 Connection Diagram of Test System





<WLAN Tx Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded,1.8m
2.	Bluetooth Earphone	Sony Ericsson	MW600	PY700A2029	N/A	N/A
3.	WLAN AP	Netgear	RAXE500	PY320300508	N/A	Unshielded,1.8m
4.	Notebook	Dell	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, utility "cmd Ver.10.0.17134.1304" 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.

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)



3 Test Result

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.

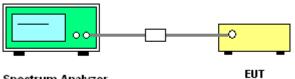
3.1.2 Measuring Instruments

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
- 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%.
- 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



Spectrum Analyzer

3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

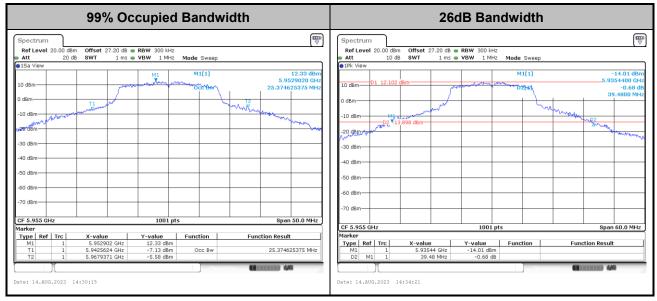
Please refer to Appendix A.



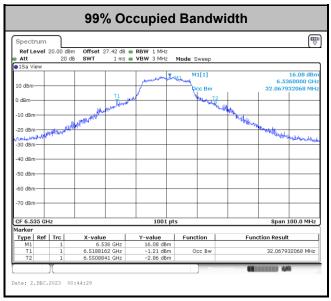
MIMO <Ant. 4+3>

<802.11a>

Channel 001



Channel 117



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

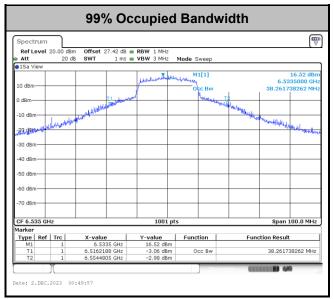


<802.11ax HE20>

Channel 001



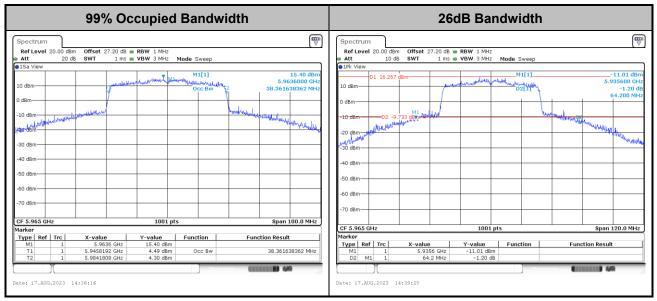
Channel 117



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

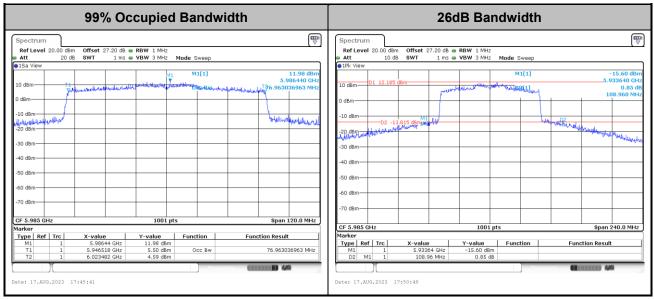


<802.11ax HE40>



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

<802.11ax HE80>



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

3.2 Fundamental Maximum EIRP Measurement

3.2.1 Limit of Fundamental Maximum EIRP

<FCC 14-30 CFR 15.407>

(a)(7) For client devices, except for fixed client devices as defined in this subpart, operating under the control of a standard power access

point in 5.925-6.425 GHz and 6.525-6.875 GHz bands, the maximum power spectral density must not exceed 17 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm and the device must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power.

3.2.2 Measuring Instruments

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

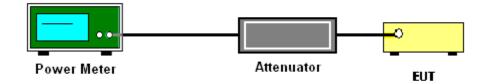
3.2.3 Test Procedures

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.

3.3 Fundamental Power Spectral Density Measurement

3.3.1 Limit of Fundamental Power Spectral Density

<FCC 14-30 CFR 15.407>

(a)(7) For client devices, except for fixed client devices as defined in this subpart, operating under the control of a standard power access point in 5.925-6.425 GHz and 6.525-6.875 GHz bands, the maximum power spectral density must not exceed 17 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-2

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

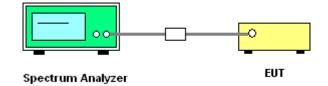
- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz.
- Set VBW ≥ 3 MHz.
- Number of points in sweep \geq 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.
- 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.



3.3.4 Test Setup

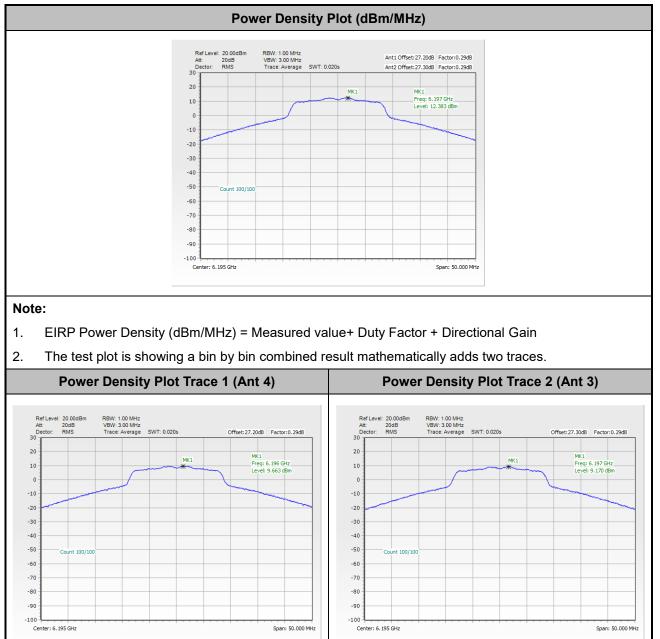


3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

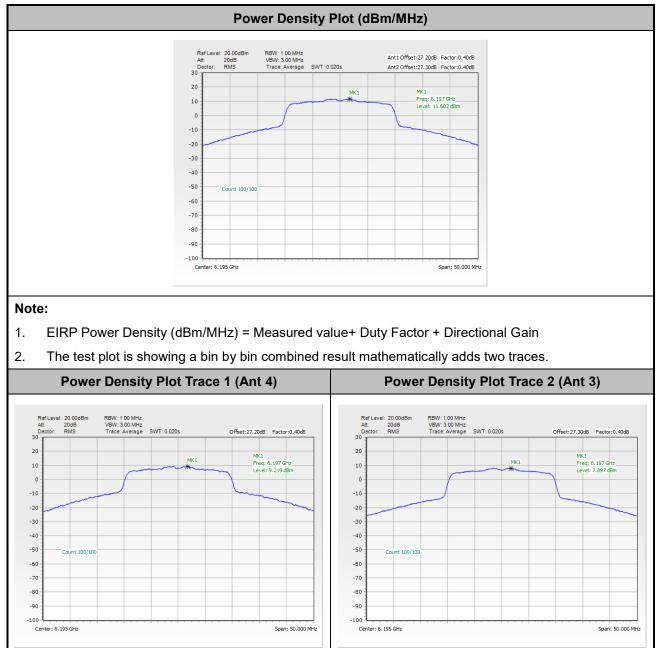


<802.11a>





<802.11ax HE20 Full RU>



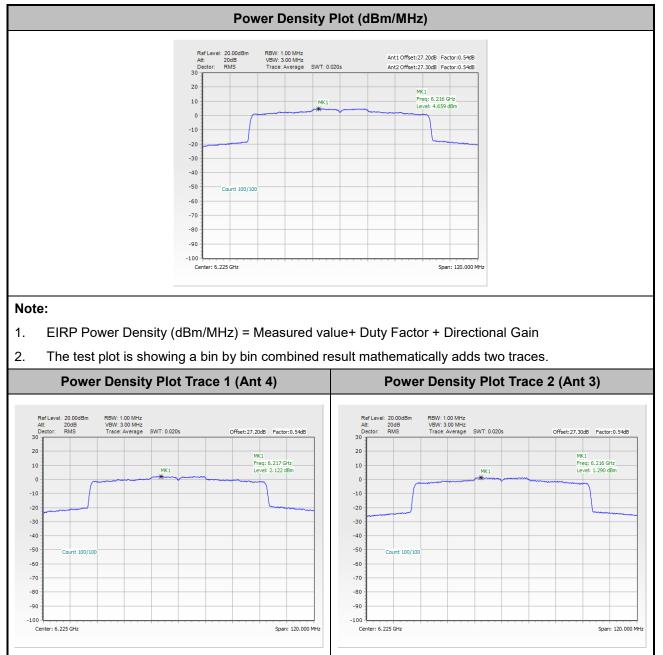


<802.11ax HE40 Full RU>





<802.11ax HE80 Full RU>





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.

3.4.2 Measuring Instruments

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



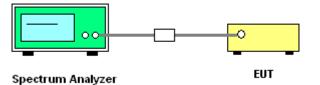
3.4.3 Test Procedures

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

Section J) In-Band Emissions.

- 1. Take nominal bandwidth as reference channel bandwidth provided that 26 dB emission bandwidth is always larger than nominal bandwidth
- 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 \geq [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.
- 7. 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



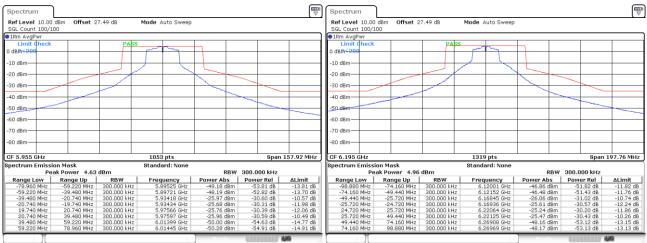


3.4.5 Test Result

MIMO <Ant. 4+3(4)>

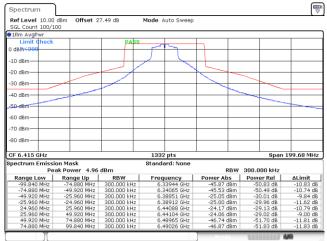
EUT Mode : 802.11a

Plot on Channel 5955 MHz



Date: 14.AUG.2023 14:35:15

Plot on Channel 6415 MHz

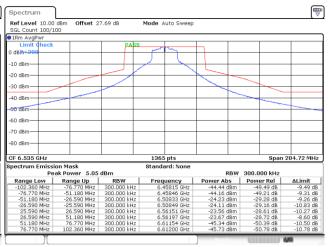


Date: 14.AUG.2023 15:53:43

Plot on Channel 6195 MHz

Plot on Channel 6535 MHz

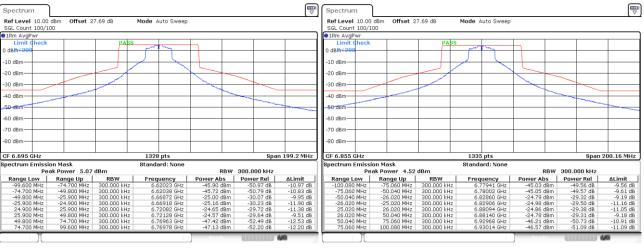
Date: 14.AUG.2023 14:51:13



Date: 14.AUG.2023 16:15:29



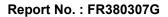
Plot on Channel 6695 MHz



Date: 14.AUG.2023 16:40:49

Date: 14.AUG.2023 17:05:45

Plot on Channel 6855 MHz

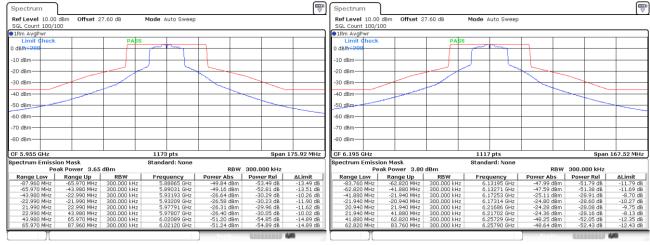




802.11ax HE20 Full RU

Plot on Channel 5955 MHz

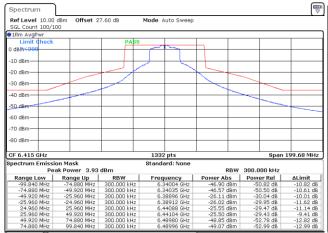




Date: 15.AUG.2023 10:07:48

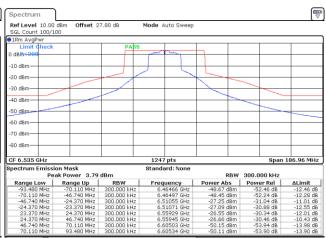
Date: 15.AUG.2023 12:02:50

Plot on Channel 6415 MHz



Date: 15.AUG.2023 14:46:11

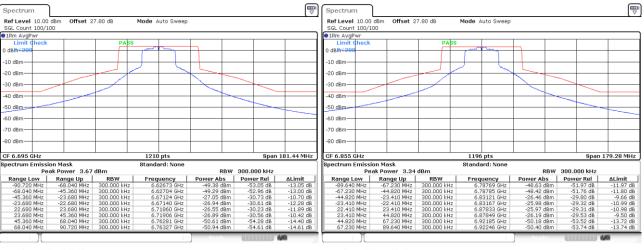
Plot on Channel 6535 MHz



Date: 16.AUG.2023 16:56:49



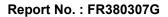
Plot on Channel 6695 MHz



Date: 16.AUG.2023 18:01:25

Date: 17.AUG.2023 11:55:28

Plot on Channel 6855 MHz



Span 181.44 MHz

-24.85 dB -25.26 dB -36.62 dB -44.49 dB -44.41 dB -37.16 dB -25.70 dB -25.21 dB

RBW 300.000 kHz

Power Rel

-65.14 dB -64.53 dB -62.82 dB -62.75 dB -65.02 dB -65.51 dB -65.21 dB

Power Abs

-60.48 dBm -60.78 dBm -58.46 dBm -58.38 dBm -60.66 dBm -61.14 dBm -60.85 dBm

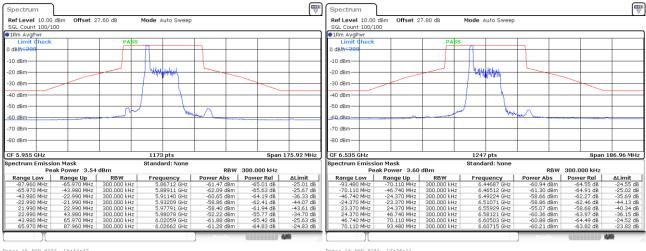


EUT Mode :

802.11ax HE20 26RU0



Plot on Channel 6535 MHz



Date: 15.AUG.2023 10:43:37

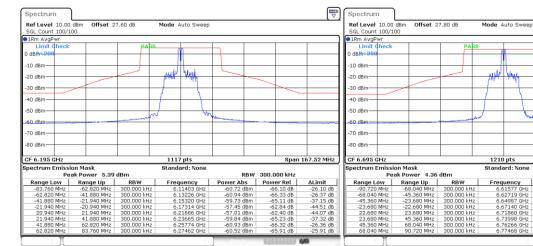
Date: 16.AUG.2023 17:26:11

EUT Mode :

802.11ax HE20 26RU4

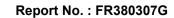
Plot on Channel 6195 MHz

Plot on Channel 6695 MHz



Date: 15.AUG.2023 14:09:10

Date: 17.AUG.2023 10:32:32



▽

Span 186.96 MHz

-24.19 dB -24.19 dB -34.65 dB -41.41 dB -37.38 dB -34.87 dB -23.77 dB

RBW 300.000 kHz

Power Rel

15 dB 16 dB 74 dB 71 dB 84 dB 73 dB

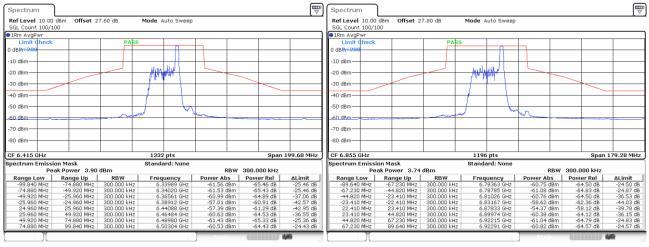


EUT Mode :

802.11ax HE20 26RU8

Plot on Channel 6415 MHz

Plot on Channel 6855 MHz

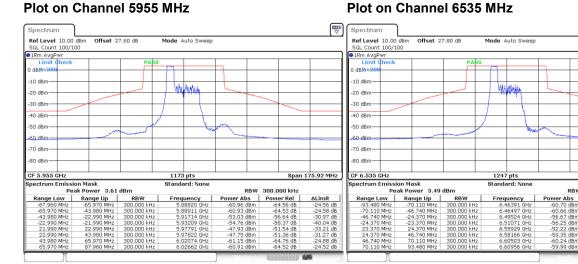


Date: 15.AUG.2023 15:58:50

Date: 17.AUG.2023 12:06:11

EUT Mode :

802.11ax HE20 52RU37



Date: 15.AUG.2023 10:56:46

Date: 16.AUG.2023 17:45:55

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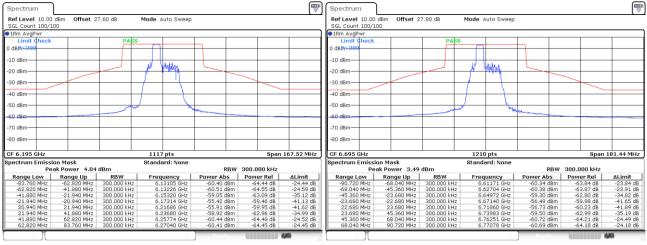




802.11ax HE20 52RU38

Plot on Channel 6195 MHz

Plot on Channel 6695 MHz



Date: 15.AUG.2023 14:23:15

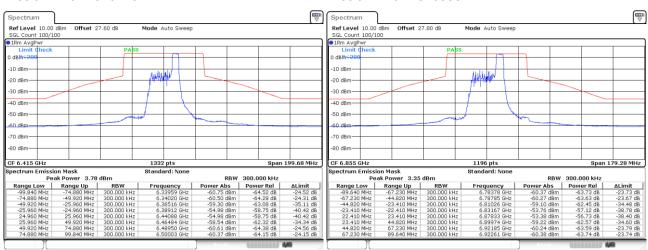
EUT Mode :

Date: 17.AUG.2023 10:55:02

802.11be EHT20 52RU40

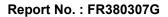
Plot on Channel 6415 MHz

Plot on Channel 6855 MHz



Date: 15.AUG.2023 16:11:41

Date: 17.AUG.2023 14:06:54

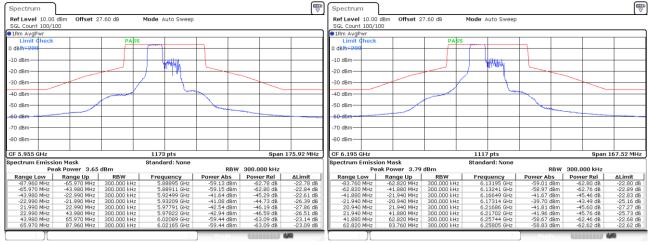




802.11ax HE20 106RU53

Plot on Channel 5955 MHz

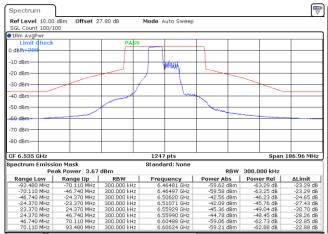




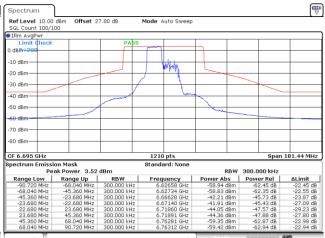
Date: 15.AUG.2023 11:50:13

Date: 15.AUG.2023 14:37:00

Plot on Channel 6535 MHz



Plot on Channel 6695 MHz



Date: 16.AUG.2023 17:56:03

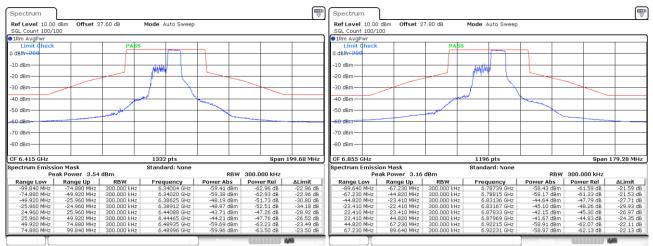
Date: 17.AUG.2023 11:15:27



802.11ax HE20 106RU54

Plot on Channel 6415 MHz

Plot on Channel 6855 MHz



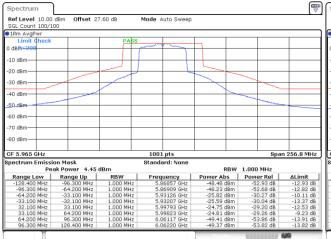
Date: 15.AUG.2023 16:39:49

Date: 17.AUG.2023 14:21:18

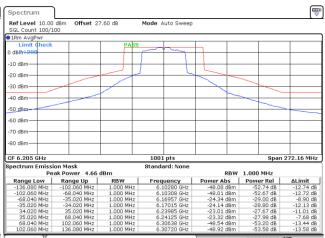


802.11ax HE40 Full RU

Plot on Channel 5965 MHz



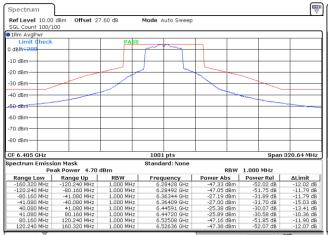
Plot on Channel 6205 MHz



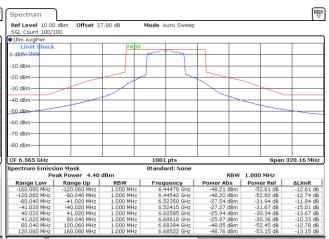
Date: 17.AUG.2023 14:40:10

Date: 17.AUG.2023 14:55:03

Plot on Channel 6405 MHz



Plot on Channel 6565 MHz

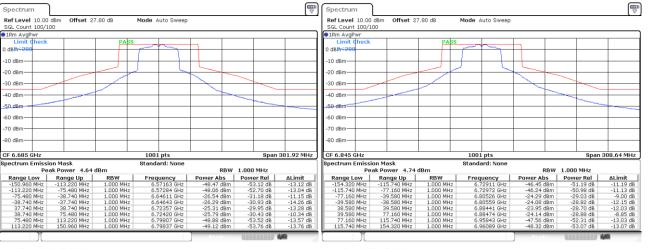


Date: 17.AUG.2023 15:02:32

Date: 17.AUG.2023 16:53:48



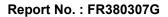
Plot on Channel 6685 MHz



Date: 17.AUG.2023 17:06:02

Date: 17.AUG.2023 17:26:34

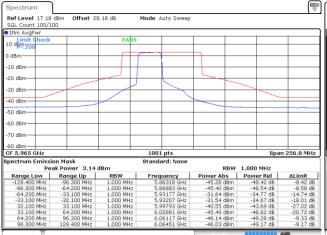
Plot on Channel 6845 MHz



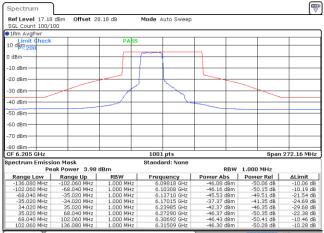


802.11ax HE40 242RU61

Plot on Channel 5965 MHz



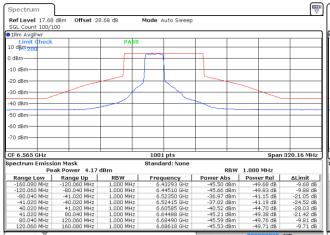
Plot on Channel 6205 MHz



Date: 28.SEP.2023 10:30:25

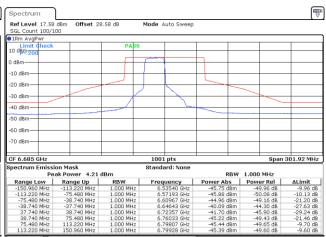
Date: 28.SEP.2023 10:47:34

Plot on Channel 6565 MHz



Date: 28.SEP.2023 11:09:45

Plot on Channel 6685 MHz



Date: 28.SEP.2023 11:17:15

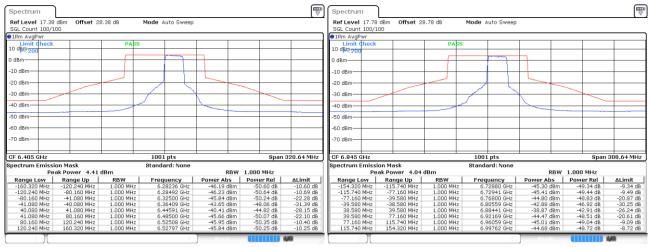




802.11ax HE40 242RU62

Plot on Channel 6405 MHz

Plot on Channel 6845 MHz



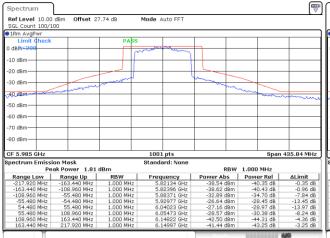
Date: 28.SEP.2023 10:59:26

Date: 28.SEP.2023 11:44:43



802.11ax HE80 Full RU

Plot on Channel 5985 MHz

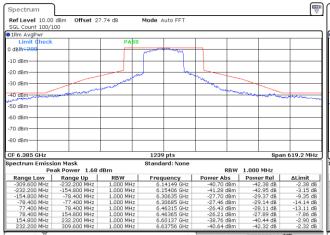


Spectrum Ref Level 10.00 dBm Offset 27.74 dB Mode Auto FFT Count 100/100 IRm AvgPwr PAS) dBM< -10 dBm--20 dBm -30 dBm -40 dBm--50 dBm-60 dBm -70 dBm-80 dBm-Span 571.2 MHz CF 6.225 GHz 1143 pts ectrum Emission Mask Peak Power 2.00 dBm RBW 1.000 MHz Range Low -285.600 MHz -214.200 MHz -142.800 MHz -72.400 MHz 72.400 MHz 142.800 MHz 142.800 MHz 214.200 MHz Rower 2.00 c Range Up -214.200 MHz -142.800 MHz -142.800 MHz -72.400 MHz -71.400 MHz 72.400 MHz 142.800 MHz 214.200 MHz 214.200 MHz 214.200 MHz 214.200 MHz RBW 1.000 MH2 Power Abs Power Rel -40.65 dBm -42.65 dB -40.94 dBm -42.93 dB -26.16 dBm -28.16 dB -25.26 dBm -27.26 dB -25.26 dBm -27.26 dB -41.55 dBm +3.54 dB -41.45 dBm +3.54 dB RBW 1.000 MHz Frequency 5.97435 GHz 5.01105 GHz 5.15134 GHz 5.15285 GHz 5.29715 GHz 5.29815 GHz 5.43794 GHz 5.45755 GHz 65 dB 97 dB 02 dB 18 dB 26 dB 99 dB 75 dB 45 dB

Date: 17.AUG.2023 17:51:25

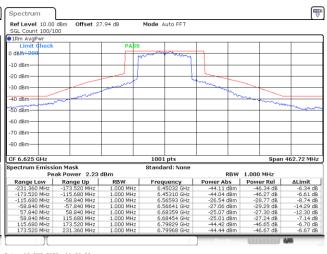
Date: 17.AUG.2023 17:57:31

Plot on Channel 6385 MHz



Plot on Channel 6625 MHz

Plot on Channel 6225 MHz

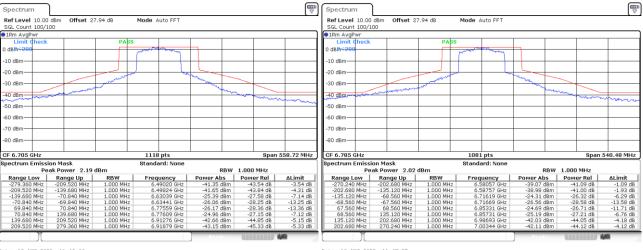


Date: 18.AUG.2023 10:29:02

Date: 18.AUG.2023 11:30:33



Plot on Channel 6705 MHz



Date: 18.AUG.2023 11:43:06

Date: 18.AUG.2023 11:47:27

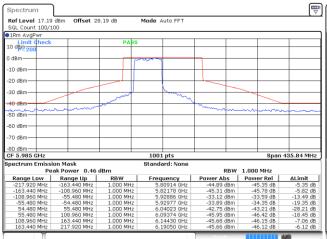
Plot on Channel 6785 MHz



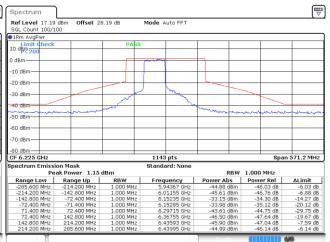
EUT Mode

802.11ax HE80 484RU65





Plot on Channel 6225 MHz

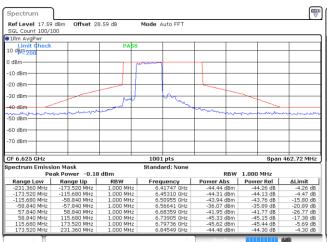


Date: 28.SEP.2023 11:54:47

Date: 28.SEP.2023 13:47:56

Plot on Channel 6705 MHz

Plot on Channel 6625 MHz



Spectrum dBm Offset 28.59 dB Ref Level 17.59 Mode Auto FFT SGL Count 100/100 IRm AvgPwr Limit Check PAS 10 dBm 2) dBm--10 dBm -20 dBm -30 dBm-40 dBm--50 dBm -60 dBm--70 dBm-CF 6.705 GHz Span 558.72 MHz 1118 pts ectrum Emission Mask 1.03 dBm RBW 1.000 MHz Peak Power Range Low Range Up Power Abs Power Rel Frequency ∆Limi -5.54 dB -6.53 dB -17.02 dB -22.14 dB -27.26 dB -18.80 dB -6.47 dB -209.520 MHz -139.680 MHz -70.840 MHz -69.840 MHz 70.840 MHz 139.680 MHz 209.520 MHz 279.360 MHz -44.50 dBm -45.28 dBm -36.25 dBm -36.11 dBm -41.22 dBm -45.09 dBm -45.39 dBm -44.17 dBm -279.360 MHz -209.520 MHz -139.680 MHz -70.840 MHz 69.840 MHz 70.840 MHz 139.680 MHz 209.520 MHz 6.48669 GHz 6.49674 GHz 6.63190 GHz 6.63441 GHz 6.77559 GHz 6.83890 GHz 6.91427 GHz 6.9205 GHz -45.54 dB -46.32 dB -37.29 dB -37.14 dB) MH2) MH2) MH2) MH2 .000 -37.14 dB -42.26 dB -46.12 dB -46.42 dB -45.20 dB MH2 MH2 MH2

Date: 28.SEP.2023 14:19:28

Date: 28.SEP.2023 14:33:34



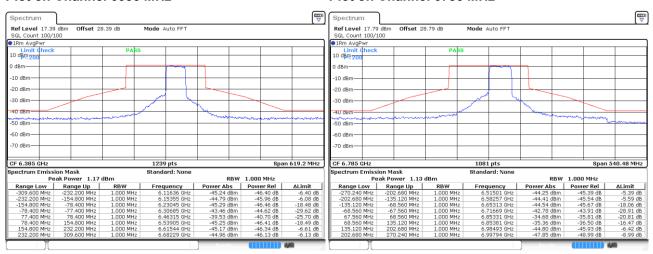


EUT Mode

802.11ax HE80 484RU66

Plot on Channel 6385 MHz

Plot on Channel 6785 MHz



Date: 28.SEP.2023 14:07:50

Date: 28.SEP.2023 14:42:48

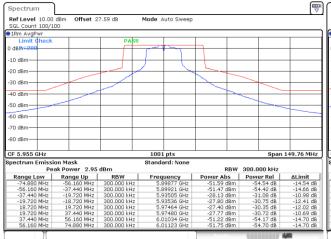


MIMO <Ant. 4+3(3)>

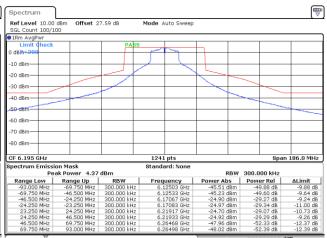
EUT Mode :

802.11a

Plot on Channel 5955 MHz



Plot on Channel 6195 MHz

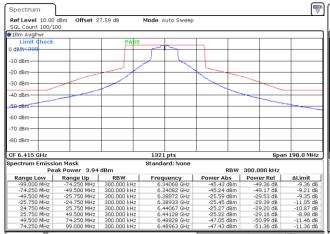


Date: 14.AUG.2023 14:37:18

Date: 14.AUG.2023 15:10:10

Plot on Channel 6535 MHz

Plot on Channel 6415 MHz



Spectrum Ref Level 10.00 dBm Offset 27.79 dB SGL Count 100/100 PIRm AvgPwr PIRM A Mode Auto Sweep dB -10 dBm -20 dBm 30 dBm 40 dBm 50. d8m -60 dBm-70 dBm 80 dBm-CF 6.535 GHz 1317 pts Span 197.52 MHz 7± 6.535 GHz Dest Power 3.50 dBx Petrum Emission Mask Petrum Emission RBW 300.000 kHz W 300.000 kHz Power Rel n -50.80 dB n -50.60 dB n -30.36 dB n -30.36 dB n -30.36 dB n -30.36 dB n -39.85 dB n -29.96 dB n -51.87 dB n -52.38 dB BBW RBW 300.000 kHz Frequency 6.46085 GHz 6.46101 GHz 6.50848 GHz 6.50939 GHz 6.56061 GHz 6.56107 GHz 6.60824 GHz 6.61005 GHz KBW Power Abs -47.30 dBm -47.10 dBm -26.86 dBm -26.63 dBm -26.46 dBm -26.46 dBm -48.37 dBm -48.88 dBm ALimit -10.80 dB -10.64 dB -10.08 dB -11.80 dB -11.52 dB -9.84 dB -12.27 dB -12.38 dB

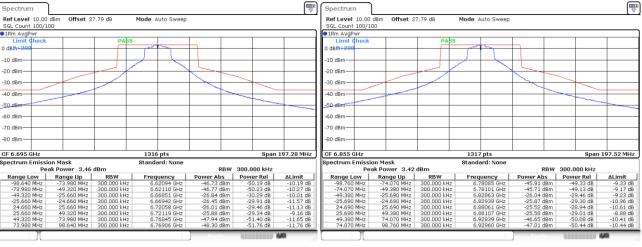
Date: 14.AUG.2023 15:55:39

Date: 14.AUG.2023 16:33:28

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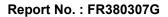
Plot on Channel 6695 MHz



Date: 14.AUG.2023 16:43:58

Date: 14.AUG.2023 17:09:33

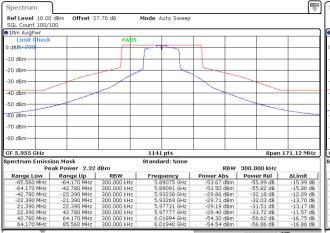
Plot on Channel 6855 MHz



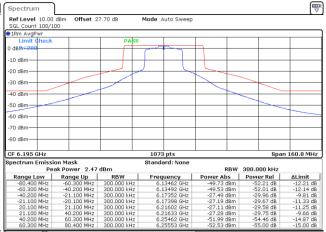


802.11ax HE20 Full RU

Plot on Channel 5955 MHz



Plot on Channel 6195 MHz

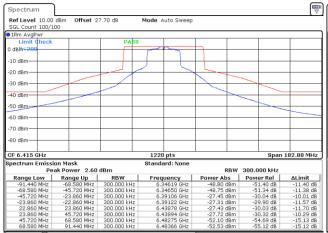


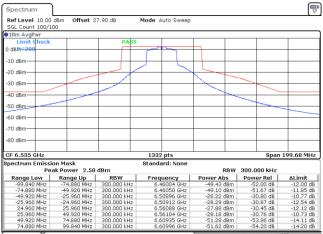
Date: 15.AUG.2023 10:09:32

Date: 15.AUG.2023 12:06:45

Plot on Channel 6535 MHz

Plot on Channel 6415 MHz





Date: 15.AUG.2023 14:50:09

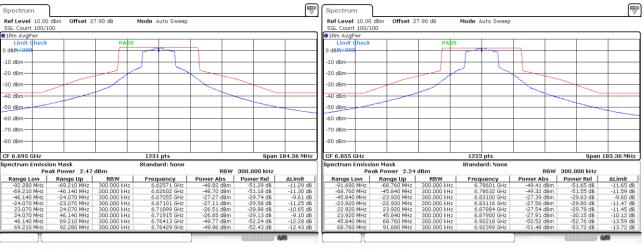
Date: 16.AUG.2023 17:01:57

TEL: 886-3-327-0868
FAX: 886-3-327-0855
Report Template No.: BU5-FR15EWL AC MA Version 2.4

Page Number: 46 of 70Issue Date: Dec. 12, 2023Report Version: 01



Plot on Channel 6695 MHz



Date: 16.AUG.2023 18:03:03

Date: 17.AUG.2023 11:57:21

Plot on Channel 6855 MHz