

## TEST REPORT

**Applicant:** CTOUCH Europe B.V.

**Address of Applicant:** Achtseweg Zuid 153R, 5651 GW Eindhoven, Nederlands

**Manufacturer/Factory:** CTOUCH Europe B.V.

**Address of Manufacturer/Factory:** Achtseweg Zuid 153R, 5651 GW Eindhoven, Nederlands

**Equipment Under Test (EUT)**

Product Name: WIFI6 MODULE

Model No.: 6252M-PUB

Trade Mark: CTOUCH

**FCC ID:** 2APQQ-6252M-PUB

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart E Section 15.407

**Date of sample receipt:** December 6, 2022

**Date of Test:** December 17~27, 2022

**Date of report issued:** December 27, 2022

**Test Result :** PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Luo

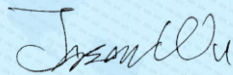
**Laboratory Manager**

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

## 2 Version

Version No.	Date	Description
00	2022-12-27	Original

Prepared By:

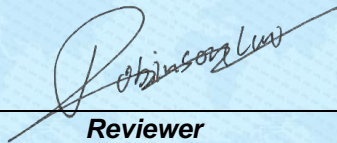


Date:

2022-12-27

Project Engineer

Check By:



Reviewer

Date:

2022-12-27

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## 4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Not Applicable
Conducted Average Output Power	15.407(a)(3)	Pass
-6dB Bandwidth & Channel Bandwidth	15.407(e)	Pass
Power Spectral Density	15.407(a)(3)	Pass
Band Edge	15.407(b)(4)	Pass
Spurious Emission	15.205/15.209/15.407(b)(4)	Pass
Frequency Stability	15.407(g)	Pass

*Remarks:*

1. Pass: The EUT complies with the essential requirements in the standard.
2. Test according to ANSI C63.10:2013.

### 4.1 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	1 x 10 <sup>-7</sup>
2	Duty cycle	0.37%
3	Occupied Bandwidth	3%
4	RF conducted power	0.75dB
5	RF power density	3dB
6	Conducted Spurious emissions	2.58dB
7	AC Power Line Conducted Emission	3.44dB (0.15MHz ~ 30MHz)
8	Radiated Spurious emission test	3.1dB (9kHz-30MHz)
		3.8039dB (30MHz-200MHz)
		3.9679dB (200MHz-1GHz)
		4.29dB (1GHz-18GHz)
		3.30dB (18GHz-40GHz)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

## 5 General Information

### 5.1 General Description of EUT

Product Name:	WIFI6 MODULE
Model No.:	6252M-PUB
Serial No.:	6252M-PUB-1
Hardware Version:	V1.0
Software Version:	V1.0
Test sample(s) ID:	GTSL202212000236-1
Sample(s) Status:	Engineer sample
Operation Frequency:	802.11a/802.11n(HT20)/802.11n(HT40) /802.11ac(VHT20) /802.11ac(VHT40) /802.11ac(VHT80) /802.11ax(HE20) /802.11ax(HE40) /802.11ax(HE80): 5745MHz ~ 5825MHz
Channel numbers:	802.11a/802.11n(HT20)/802.11ac(VHT20)/802.11ax(HE20): 5 802.11n(HT40) /802.11ac(VHT40) /802.11ax(HE40):2 802.11ac(VHT80) /802.11ax(HE80):1
Channel bandwidth:	802.11a/802.11n(HT20)/802.11ac(VHT20)/802.11ax(HE20) : 20MHz 802.11n(HT40) /802.11ac(VHT40) /802.11ax(HE40):40MHz 802.11ac(VHT80) /802.11ax(HE80): 80MHz
Modulation technology:	802.11a/n/ac/: OFDM; 802.11ax: OFDMA CDD: 802.11a/n/ac/ax (802.11ax mode only support Full RU)
Antenna Type:	External Antenna
Antenna gain:	ANT1:2.55dBi ANT2:2.55dBi (PSD directional gain=5.56dBi, Power directional gain=5.56dBi)
Power supply:	DC 3.3V

Operation Frequency each of channel					
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	151	5755MHz	153	5765MHz
155	5775MHz	157	5785MHz	159	5795MHz
161	5805MHz	165	5825MHz	/	/

**Note:**

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency (MHz)								
	802.11 a	802.11 n(HT20)	802.11 n(HT40)	802.11 ac(VHT20)	802.11 ac(VHT40)	802.11 ac(VHT80)	802.11 ax(HE20)	802.11 ax(HE 40)	802.11 ax(HE80)
Lowest	5745	5745	5755	5745	5755	5775	5745	5755	5775
Middle	5785	5785	/	5785	/	/	5785	/	/
Highest	5825	5825	5795	5825	5795	/	5825	5795	/

## 5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
<i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i>	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate
802.11a-CDD	6Mbps
n(HT20) -CDD	MCS0
n(HT40-CDD	MCS0
ac(VHT20)-CDD	MCS0
ac(VHT40)-CDD	MCS0
ac(VHT80)-CDD	MCS0
ax(HE20)-CDD	MCS0
ax(HE40)-CDD	MCS0
ax(HE80)-CDD	MCS0

## 5.3 Description of Support Units

Computer Mode Number: TPC-F123-MT / Displayer Mode Number: KG223Q  
 Mouse Mode Number: KM10 / keyboard Mode Number: MK11

## 5.4 Deviation from Standards

None.

## 5.5 Abnormalities from Standard Conditions

None.

## 5.6 Additional Instructions

Test Software	MP_AX
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Output power setting table:

Test Mode	Set Tx Output Power
802.11a-CDD	16
n(HT20) -CDD	16
n(HT40-CDD	16
ac(VHT20)-CDD	18
ac(VHT40)-CDD	18
ac(VHT80)-CDD	16
ax(HE20)-CDD	14
ax(HE40)-CDD	14
ax(HE80)-CDD	8

## 5.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC—Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

- **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

## 5.8 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone,

Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960



## 6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July 02, 2020	July 01, 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	April 22, 2022	April 21, 2023
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 21, 2022	March 20, 2023
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June 12, 2022	June 11, 2023
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 23, 2022	June 22, 2023
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	April 22, 2022	April 21, 2023
9	Coaxial Cable	GTS	N/A	GTS211	April 22, 2022	April 21, 2023
10	Coaxial cable	GTS	N/A	GTS210	April 22, 2022	April 21, 2023
11	Coaxial Cable	GTS	N/A	GTS212	April 22, 2022	April 21, 2023
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	April 22, 2022	April 21, 2023
13	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 23, 2022	June 22, 2023
14	Band filter	Amindeon	82346	GTS219	June 23, 2022	June 22, 2023
15	Power Meter	Anritsu	ML2495A	GTS540	June 23, 2022	June 22, 2023
16	Power Sensor	Anritsu	MA2411B	GTS541	June 23, 2022	June 22, 2023
17	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 22, 2022	April 21, 2023
18	Splitter	Agilent	11636B	GTS237	June 23, 2022	June 22, 2023
19	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 30, 2021	Nov. 29, 2022
20	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 22, 2022	April 21, 2023
21	Breitband hornantenna	SCHWARZBECK	BBHA 9170	GTS579	Oct. 16, 2022	Oct. 15, 2023
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 16, 2022	Oct. 15, 2023
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 16, 2022	Oct. 15, 2023
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June 23, 2022	June 22, 2023
25	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 22, 2022	April 21, 2023

<b>RF Conducted Test:</b>						
<b>Item</b>	<b>Test Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Cal.Date (mm-dd-yy)</b>	<b>Cal.Due date (mm-dd-yy)</b>
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	April 22, 2022	April 21, 2023
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 22, 2022	April 21, 2023
3	Spectrum Analyzer	Agilent	E4440A	GTS536	April 22, 2022	April 21, 2023
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 22, 2022	April 21, 2023
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 22, 2022	April 21, 2023
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 22, 2022	April 21, 2023
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 22, 2022	April 21, 2023
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 22, 2022	April 21, 2023

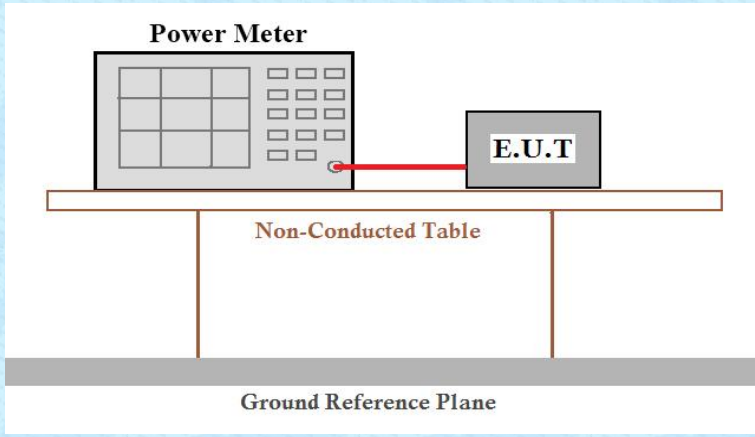
<b>General used equipment:</b>						
<b>Item</b>	<b>Test Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Inventory No.</b>	<b>Cal.Date (mm-dd-yy)</b>	<b>Cal.Due date (mm-dd-yy)</b>
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	April 25, 2022	April 24, 2023
2	Barometer	KUMAO	SF132	GTS647	July 26, 2022	July 25, 2023

## 7 Test results and Measurement Data

### 7.1 Antenna requirement

<b>Standard requirement:</b>	FCC Part15 C Section 15.203
<i>15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</i>	
<b>E.U.T Antenna:</b>	
<i>The antennas are external antenna, the best case gain of the antennas are 2.55dBi, reference to the appendix II for details</i>	

## 7.2 Conducted Average Output Power

Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	30dBm
Test setup:	 <p>The diagram illustrates the test setup. A Power Meter is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

**Measurement Data**

Modulation	Frequency (MHz)	Duty cycle		Duty Factor	
		Antenna1	Antenna2	Antenna1	Antenna2
802.11a	5745	35.64	35.64	4.48	4.48
	5785	35.62	35.62	4.48	4.48
	5825	35.68	35.68	4.48	4.48
802.11n(HT20)	5745	31.32	31.32	5.04	5.04
	5785	31.32	31.32	5.04	5.04
	5825	32.43	32.43	4.89	4.89
802.11n(HT40)	5755	18.67	18.67	7.29	7.29
	5795	18.64	18.64	7.3	7.3
802.11ac(VHT20)	5745	31.69	31.69	4.99	4.99
	5785	31.8	31.8	4.98	4.98
	5825	31.92	31.92	4.96	4.96
802.11ac(VHT40)	5755	18.83	18.83	7.25	7.25
	5795	19.31	19.31	7.14	7.14
802.11ac(VHT80)	5775	10.5	10.5	9.79	9.79
802.11ax(HE20)	5745	28.3	28.3	5.48	5.48
	5785	27.99	27.99	5.53	5.53
	5825	28.76	28.76	5.41	5.41
802.11ax(HE40)	5755	17.58	17.58	7.55	7.55
	5795	17.49	17.49	7.57	7.57
802.11ax(HE80)	5775	10.47	10.47	9.8	9.8

802.11a mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT1	ANT2	ANT 1+2		ANT1	ANT2	ANT 1+2		
149	5745	10.554	9.457	13.05	4.48	15.034	13.937	17.53	30	Pass
157	5785	9.708	8.964	12.362	4.48	14.188	13.444	16.842		
165	5825	10.112	9.818	12.978	4.48	14.592	14.298	17.458		
802.11n(HT20) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT1	ANT2	ANT 1+2		ANT1	ANT2	ANT 1+2		
149	5745	10.571	9.537	13.095	5.04	15.611	14.577	18.135	30	Pass
157	5785	11.046	9.688	13.43	5.04	16.086	14.728	18.47		
165	5825	9.335	9.195	12.276	4.89	14.225	14.085	17.166		
802.11n(HT40) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT1	ANT2	ANT 1+2		ANT1	ANT2	ANT 1+2		
151	5755	7.638	7.206	10.438	7.29	14.928	14.496	17.728	30	Pass
159	5795	7.783	6.664	10.27	7.3	15.083	13.964	17.57		

802.11ac(VHT20) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT1	ANT2	ANT 1+2		ANT1	ANT2	ANT 1+2		
149	5745	8.225	9.889	12.147	4.99	13.215	14.879	17.137	30	Pass
157	5785	8.912	9.007	11.97	4.98	13.892	13.987	16.95		
165	5825	8.418	8.438	11.438	4.96	13.378	13.398	16.398		
802.11ac(VHT40) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT1	ANT2	ANT 1+2		ANT1	ANT2	ANT 1+2		
151	5755	6.091	7.096	9.633	7.25	13.341	14.346	16.883	30	Pass
159	5795	6.48	5.396	8.982	7.14	13.62	12.536	16.122		
802.11ac(VHT80) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT1	ANT2	ANT 1+2		ANT1	ANT2	ANT 1+2		
155	5775	4.341	2.156	6.395	9.79	14.131	11.946	16.185	30	Pass

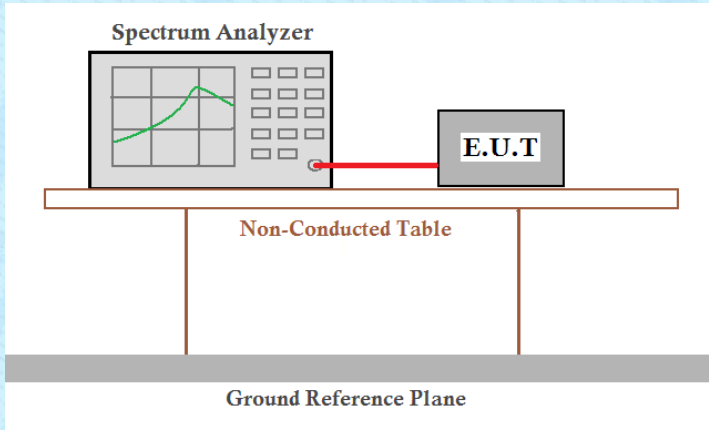
802.11ax(HE20) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT1	ANT2	ANT 1+2		ANT1	ANT2	ANT 1+2		
149	5745	9.486	7.438	11.592	5.48	14.966	12.918	17.072	30	Pass
157	5785	10.411	7.122	12.081	5.53	15.941	12.652	17.611		
165	5825	8.832	6.009	10.656	5.41	14.242	11.419	16.066		
802.11ax(HE40) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT1	ANT2	ANT 1+2		ANT1	ANT2	ANT 1+2		
151	5755	6.927	5.722	9.376	7.55	14.477	13.272	16.926	30	Pass
159	5795	8.256	4.133	9.677	7.57	15.826	11.703	17.247		
802.11ax(HE80) mode										
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result
		ANT1	ANT2	ANT 1+2		ANT1	ANT2	ANT 1+2		
155	5775	6.264	2.838	7.891	9.8	16.064	12.638	17.691	30	Pass

Note: Output Power = Measured Power + Duty Factor

Duty Factor =  $10 \log (1/\text{Duty Cycle})$



## 7.3 Channel Bandwidth

Test Requirement:	FCC Part15 E Section 15.407(e)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	>500KHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which sits on a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

## Measurement Data

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11a	
		ANT1	ANT2
149	5745	16.332	16.328
157	5785	16.336	16.373
165	5825	16.355	16.336

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11n(HT20)	
		ANT1	ANT2
149	5745	17.532	17.546
157	5785	17.537	17.533
165	5825	17.559	17.51

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11n(HT40)	
		ANT1	ANT2
151	5755	36.183	36.153
159	5795	36.241	36.169

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11ac(VHT20)	
		ANT1	ANT2
149	5745	17.548	17.523
157	5785	17.534	17.537
165	5825	17.522	17.512

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11ac(VHT40)	
		ANT1	ANT2
151	5755	36.286	36.275
159	5795	36.317	36.325

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11ac(VHT80)	
		ANT1	ANT2
155	5775	76.131	75.773

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11ax(HE20)	
		ANT1	ANT2
149	5745	18.888	18.886
157	5785	18.914	18.907
165	5825	18.862	18.882

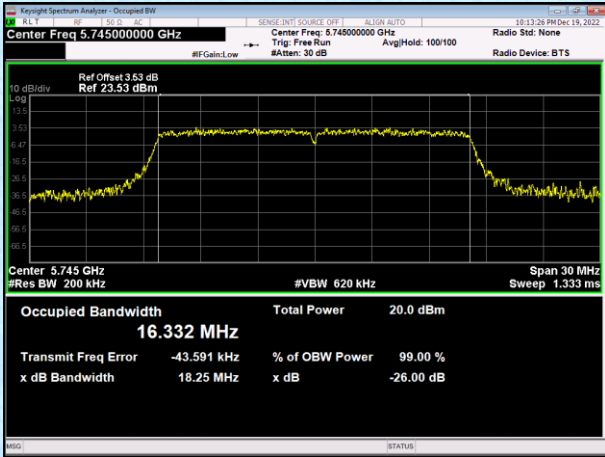
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11 ax(HE40)	
		ANT1	ANT2
151	5755	37.728	37.709
159	5795	37.785	37.748

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11 ax(HE80)	
		ANT1	ANT2
155	5775	77.475	77.217

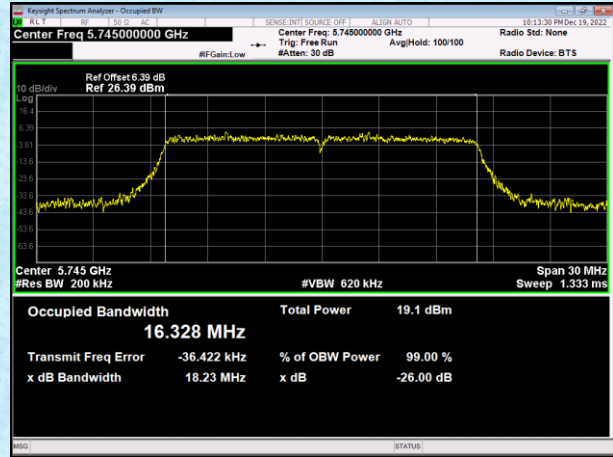
Test plot as follows: Test mode: 802.11a

### Lowest channel 5745MHz

Antenna1

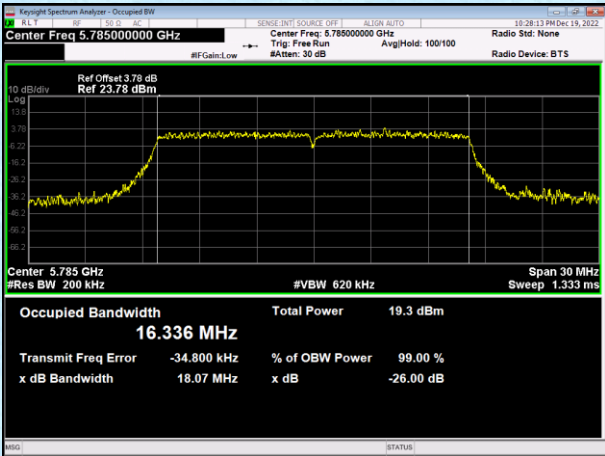


Antenna2

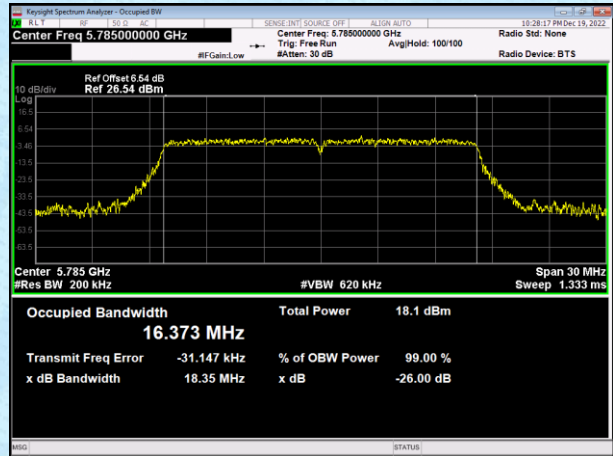


### Middle channel 5785MHz

Antenna1

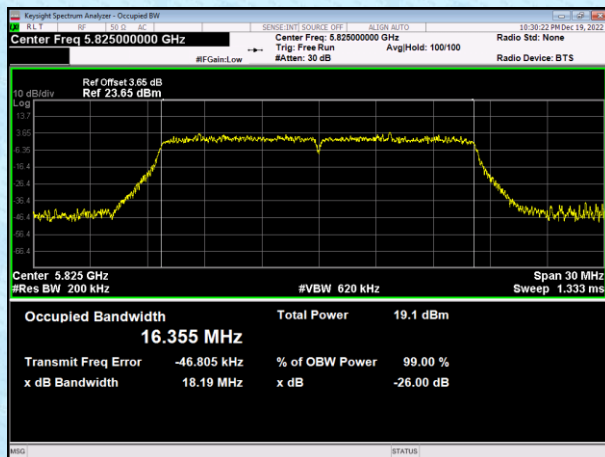


Antenna2

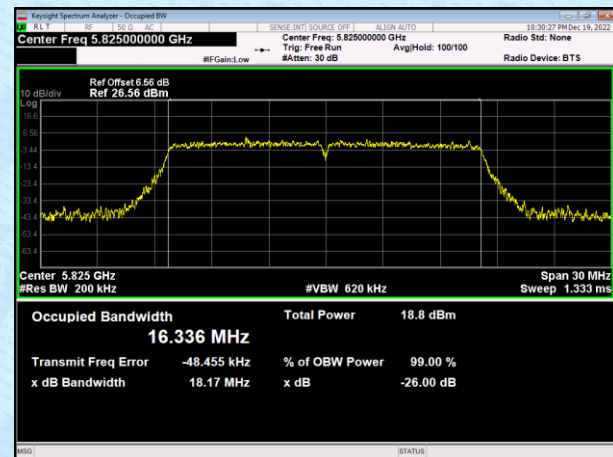


### Highest channel 5825MHz

Antenna1



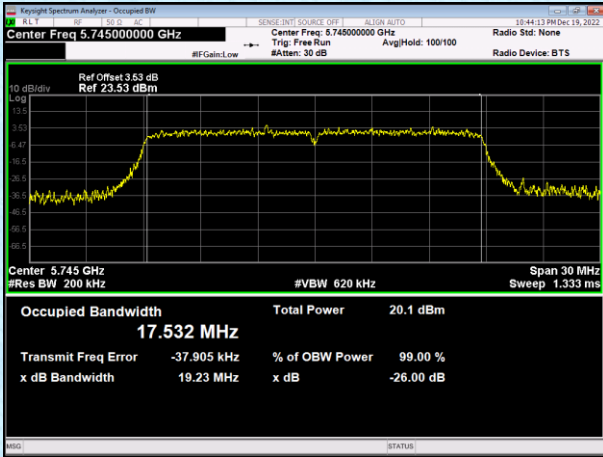
Antenna2



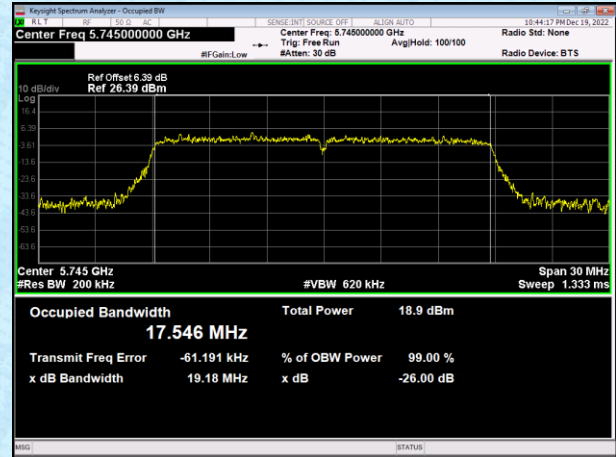
Test mode: 802.11 n(HT20)

### Lowest channel 5745MHz

Antenna1

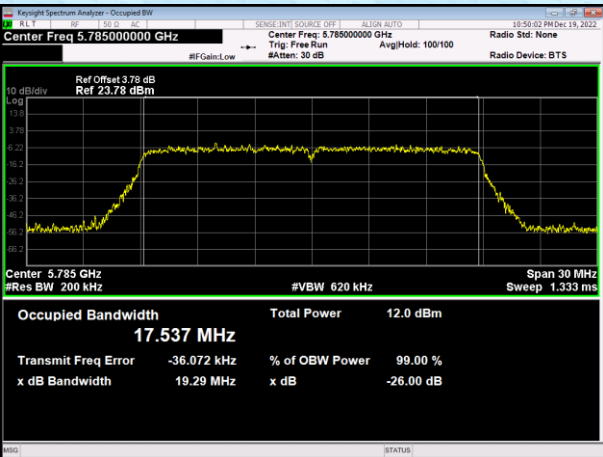


Antenna2

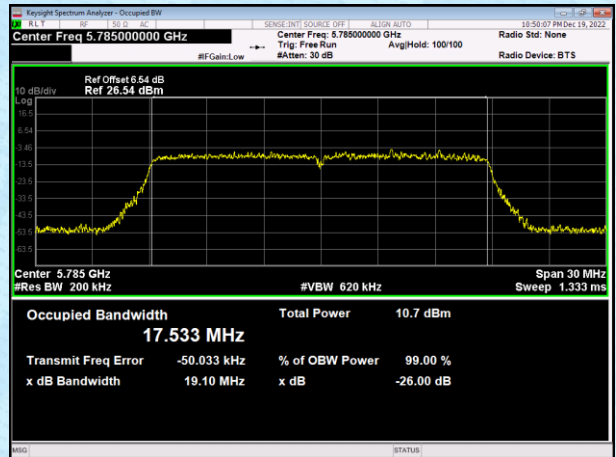


### Middle channel 5785MHz

Antenna1

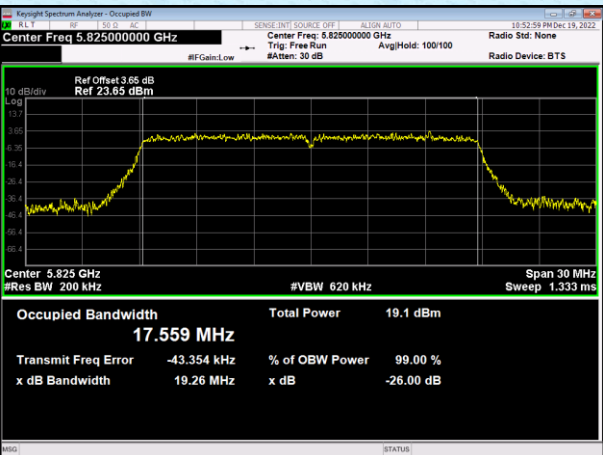


Antenna2

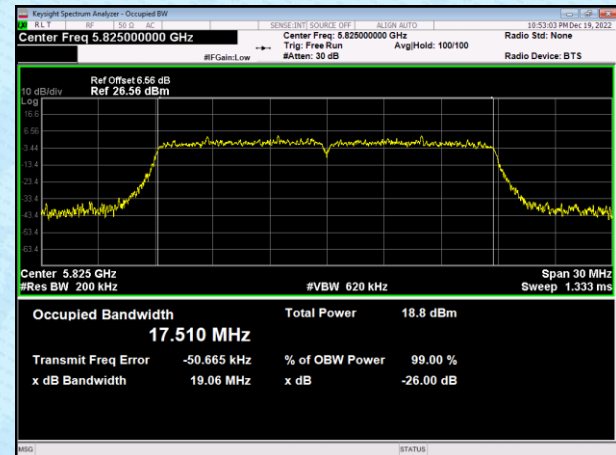


### Highest channel 5825MHz

Antenna1



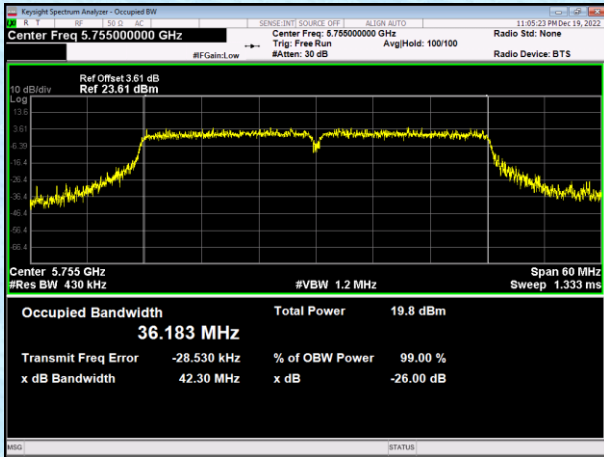
Antenna2



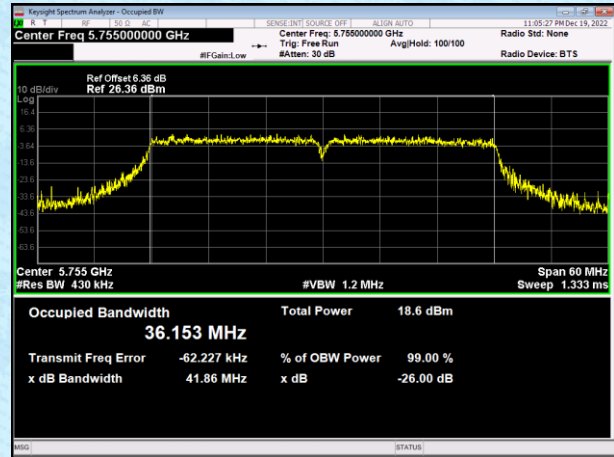
Test mode: 802.11 n(HT40)

### Lowest channel 5755MHz

Antenna1

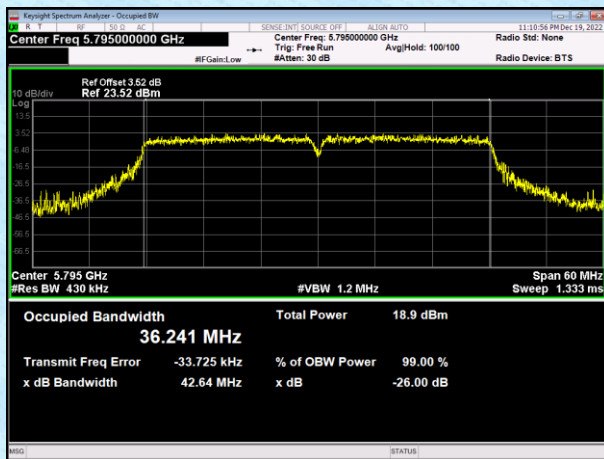


Antenna2

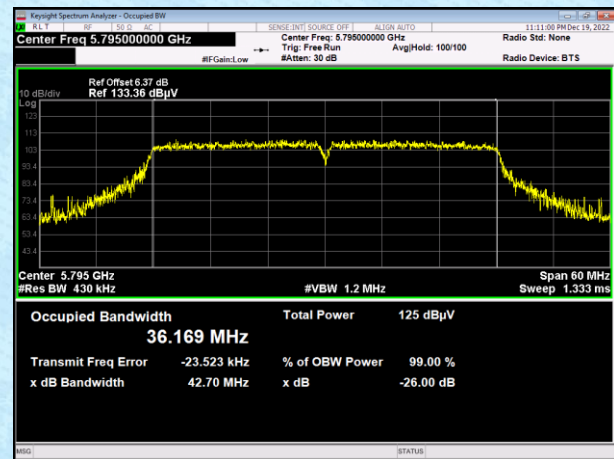


### Highest channel 5795MHz

Antenna1



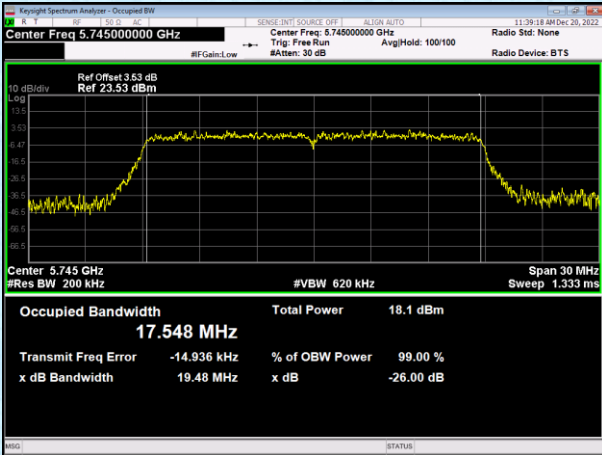
Antenna2



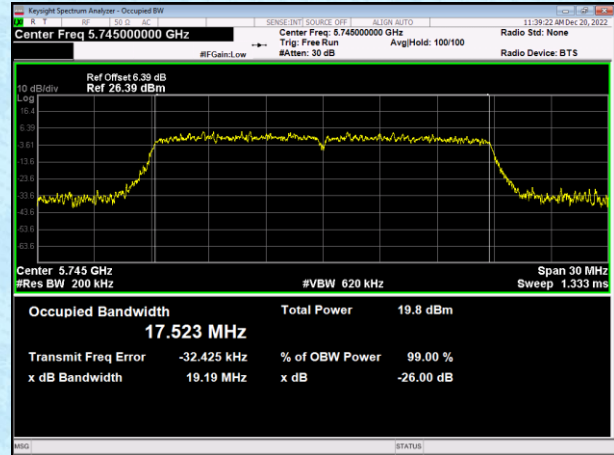
Test mode: 802.11ac(VHT20)

### Lowest channel 5745MHz

Antenna1

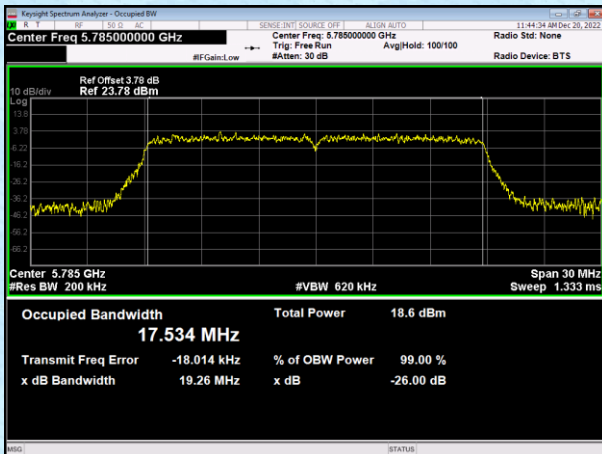


Antenna2

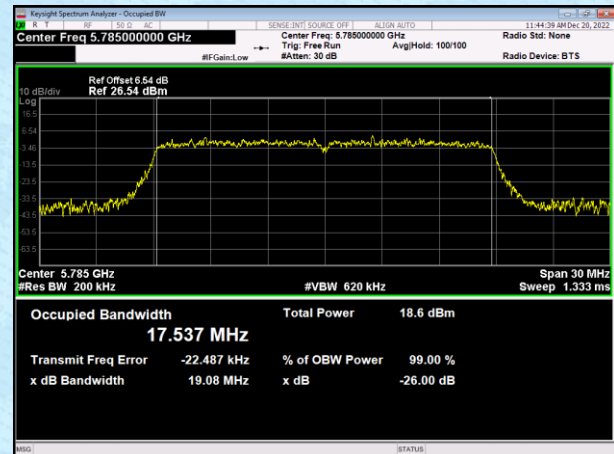


### Middle channel 5785MHz

Antenna1

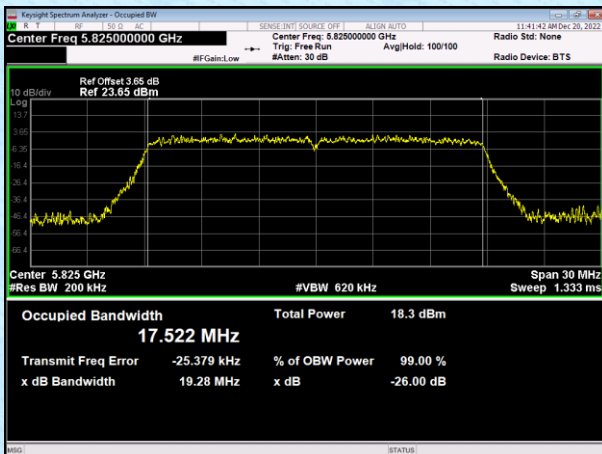


Antenna2

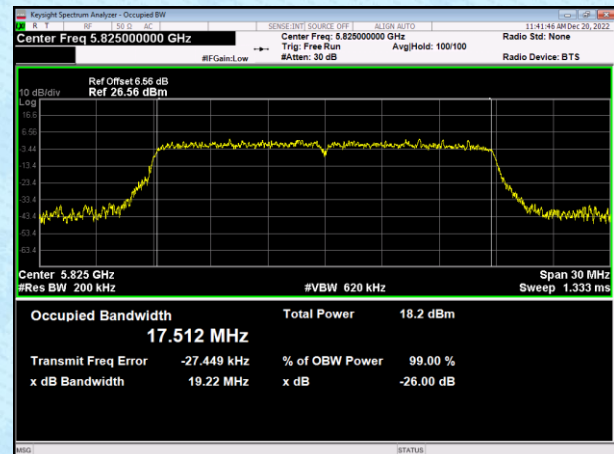


### Highest channel 5825MHz

Antenna1



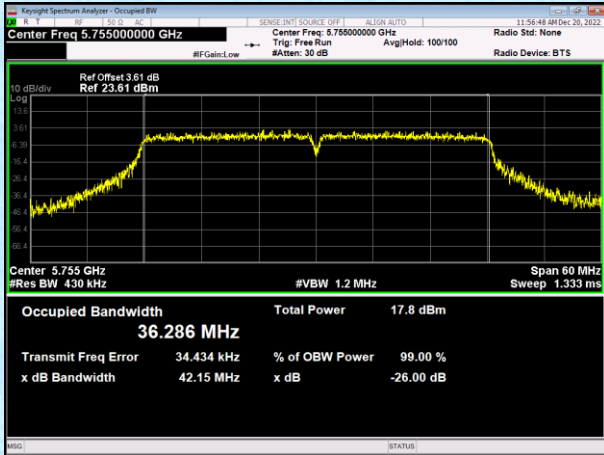
Antenna2



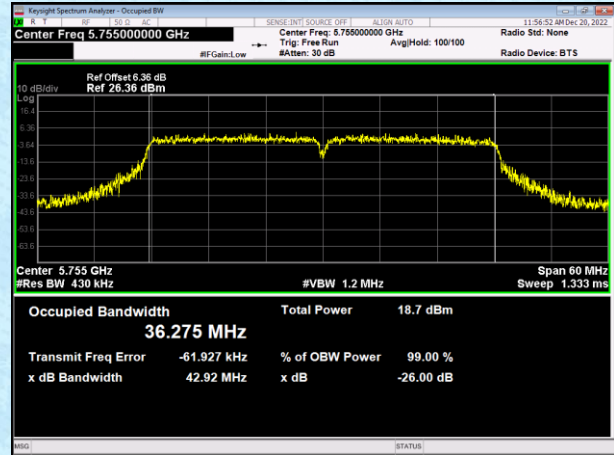
Test mode: 802.11 ac(VHT40)

### Lowest channel 5755MHz

Antenna1

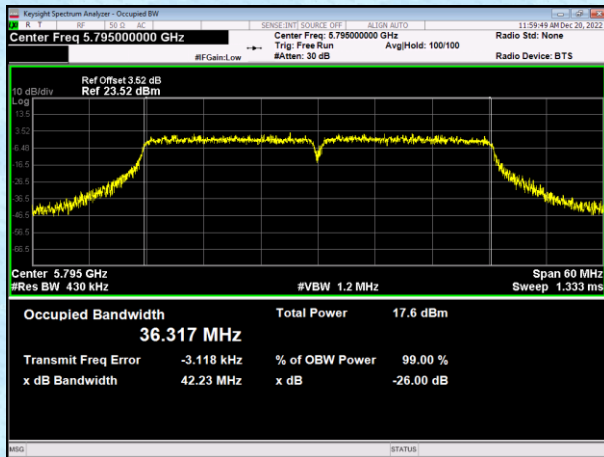


Antenna2

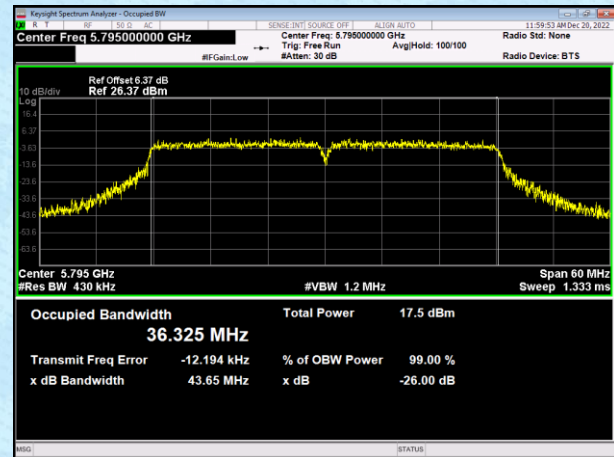


### Highest channel 5795MHz

Antenna1



Antenna2

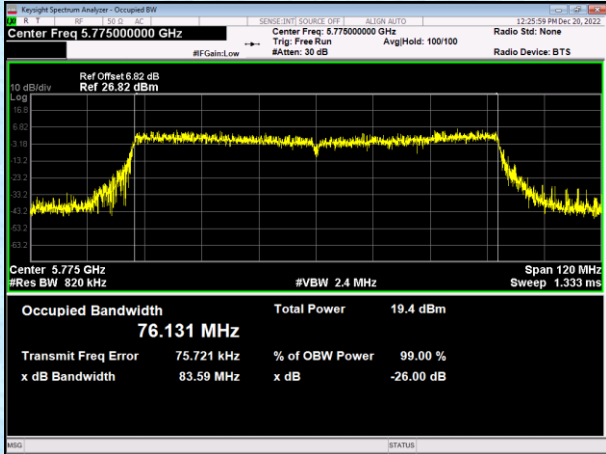




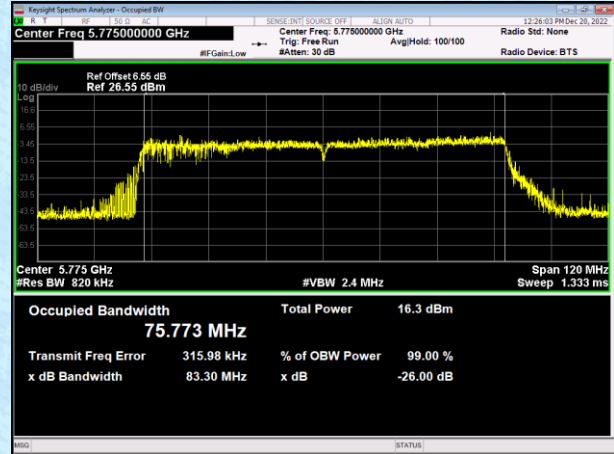
Test mode: 802.11 ac(VHT80)

Lowest channel 5775MHz

Antenna1



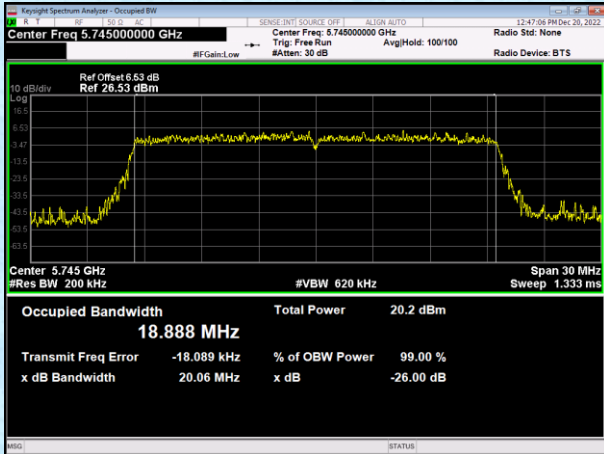
Antenna2



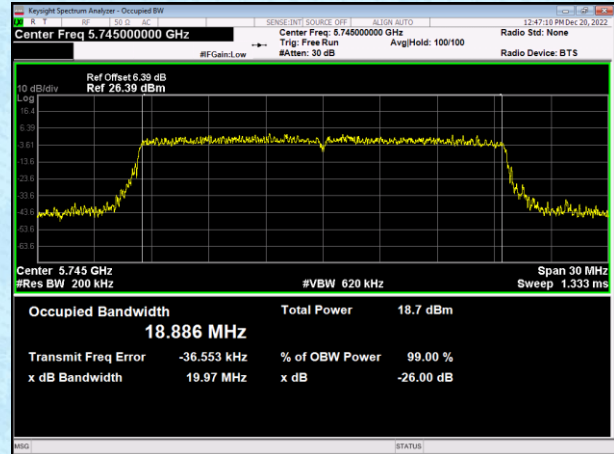
Test mode: 802.11ax(HE20)

### Lowest channel 5745MHz

Antenna1

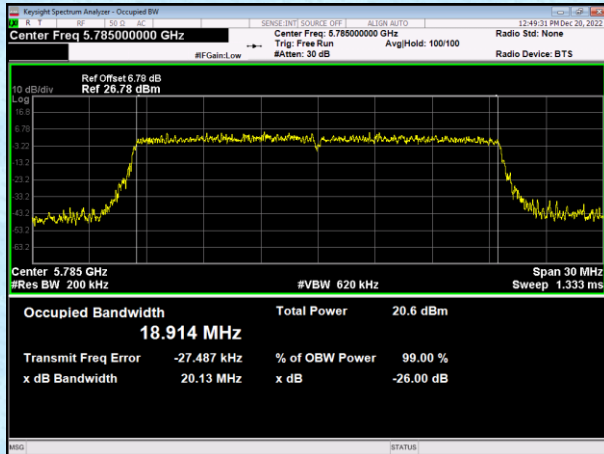


Antenna2

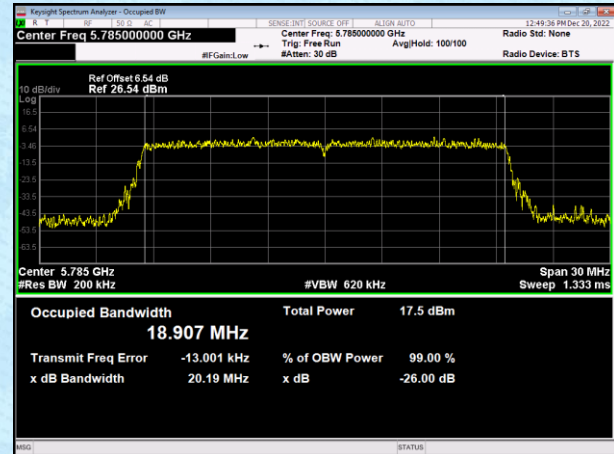


### Middle channel 5785MHz

Antenna1

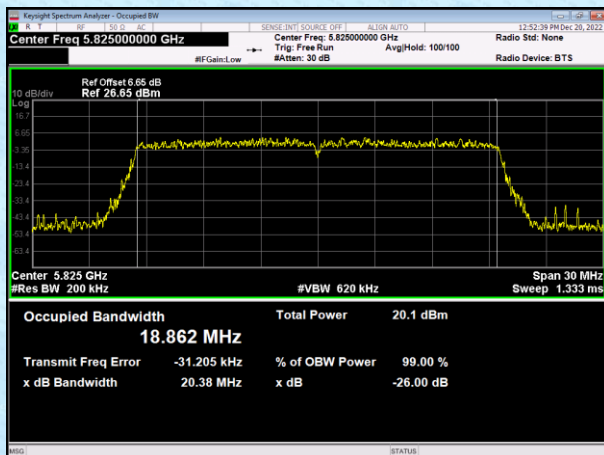


Antenna2

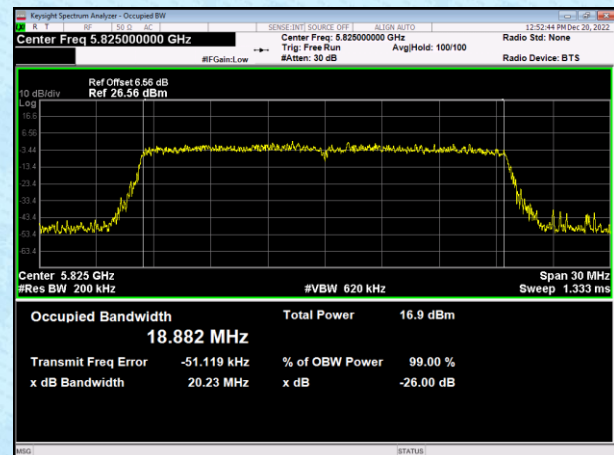


### Highest channel 5825MHz

Antenna1



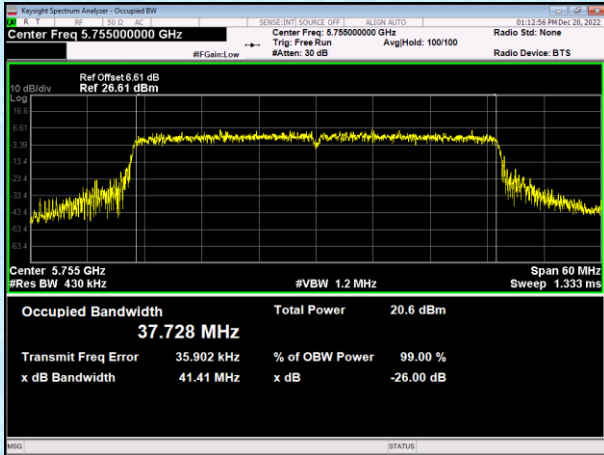
Antenna2



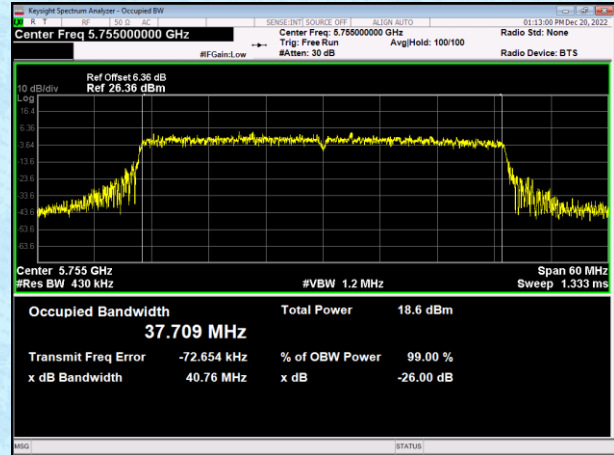
Test mode: 802.11 ax(HE40)

### Lowest channel 5755MHz

Antenna1

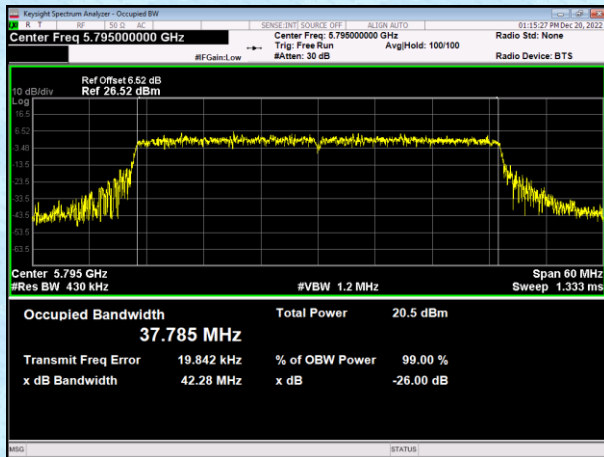


Antenna2

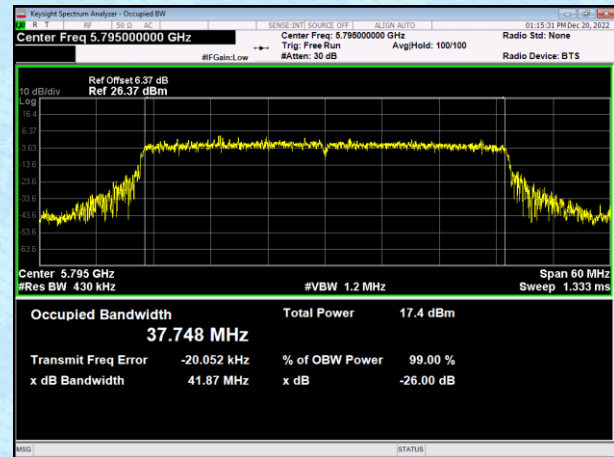


### Highest channel 5795MHz

Antenna1



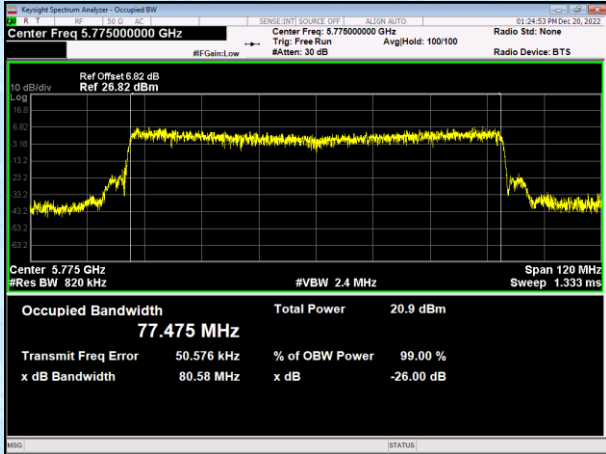
Antenna2



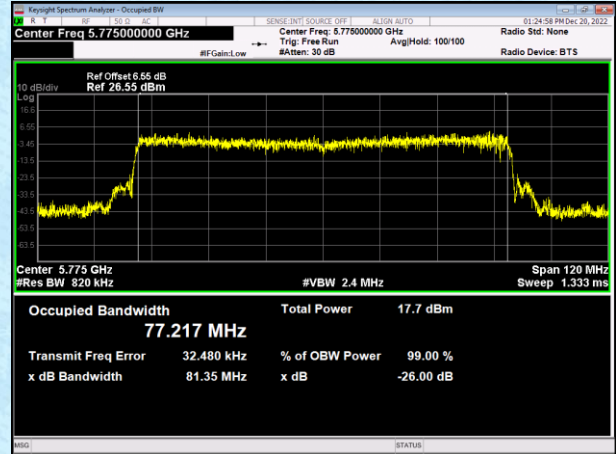
Test mode: 802.11 ax(HE80)

Lowest channel 5775MHz

Antenna1



Antenna2



CH. No.	Frequency (MHz)	6dB Occupied Bandwidth (MHz)	
		802.11a	
		ANT1	ANT2
149	5745	16.28	15.26
157	5785	16.32	16.33
165	5825	16.04	15.64

CH. No.	Frequency (MHz)	6dB Occupied Bandwidth (MHz)	
		802.11n(HT20)	
		ANT1	ANT2
149	5745	17.53	16.84
157	5785	17.41	16.46
165	5825	16.84	16.68

CH. No.	Frequency (MHz)	6dB Occupied Bandwidth (MHz)	
		802.11n(HT40)	
		ANT1	ANT2
151	5755	35.39	35.45
159	5795	35.25	35.86

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11ac(VHT20)	
		ANT1	ANT2
149	5745	16.1	17.54
157	5785	17.26	16.73
165	5825	16.68	17.58

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11ac(VHT40)	
		ANT1	ANT2
151	5755	35.37	35.05
159	5795	36.13	34.99

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11ac(VHT80)	
		ANT1	ANT2
155	5775	75.82	75.62

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11ax(HE20)	
		ANT1	ANT2
149	5745	17.58	18.52
157	5785	18.38	18.57
165	5825	17.5	17.04

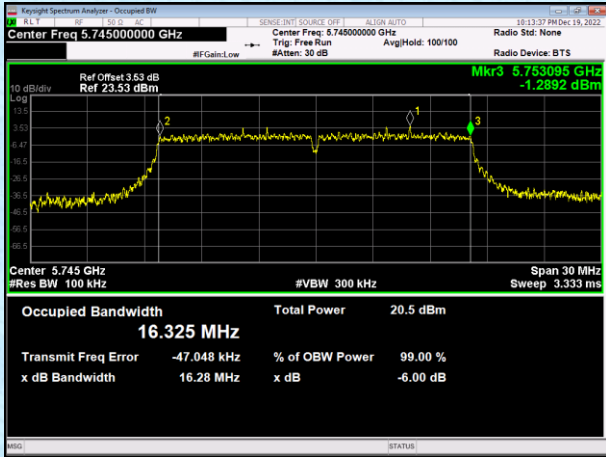
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11ax(HE40)	
		ANT1	ANT2
151	5755	37.6	33.91
159	5795	36.56	37.14

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		802.11ax(HE80)	
		ANT1	ANT2
155	5775	77.61	76.86

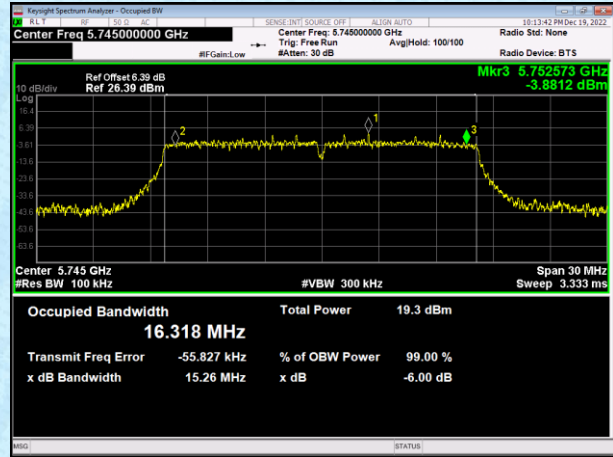
Test plot as follows: Test mode: 802.11a

### Lowest channel 5745MHz

Antenna1

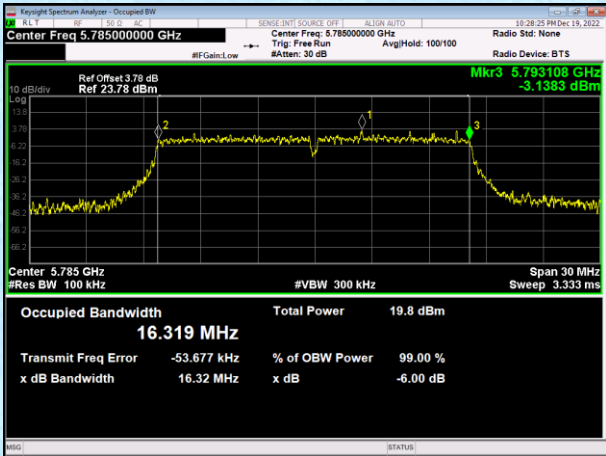


Antenna2

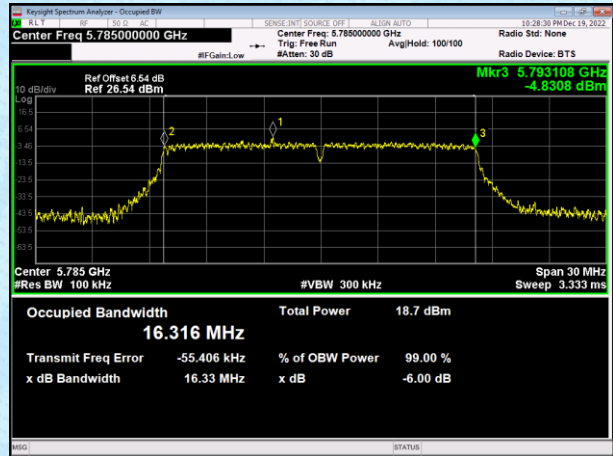


### Middle channel 5785MHz

Antenna1

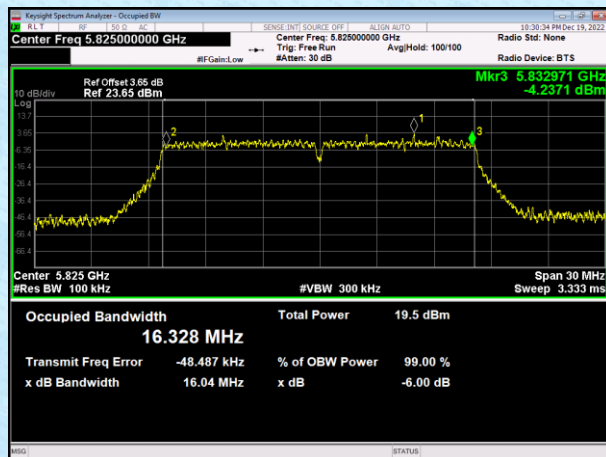


Antenna2

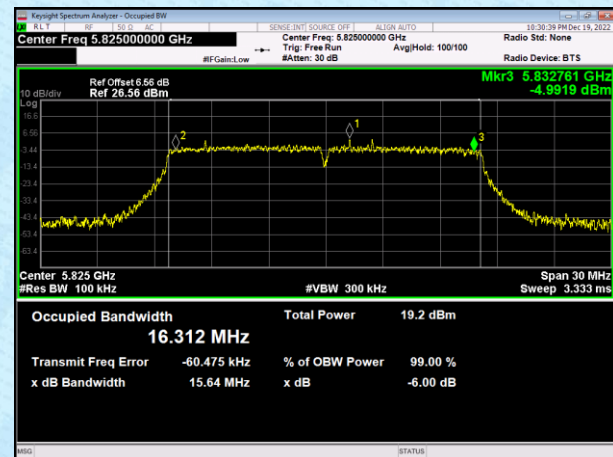


### Highest channel 5825MHz

Antenna1



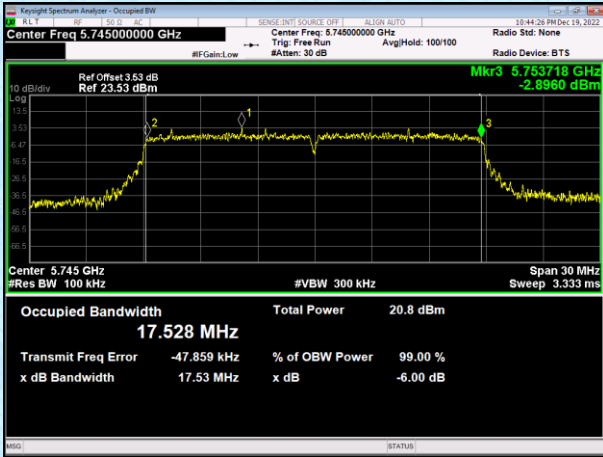
Antenna2



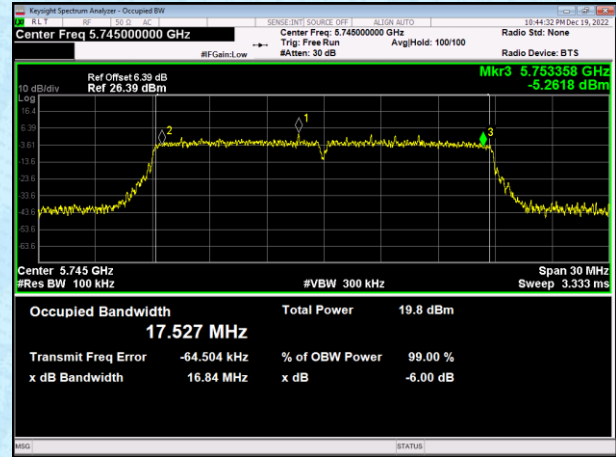
Test mode: 802.11 n(HT20)

### Lowest channel 5745MHz

Antenna1

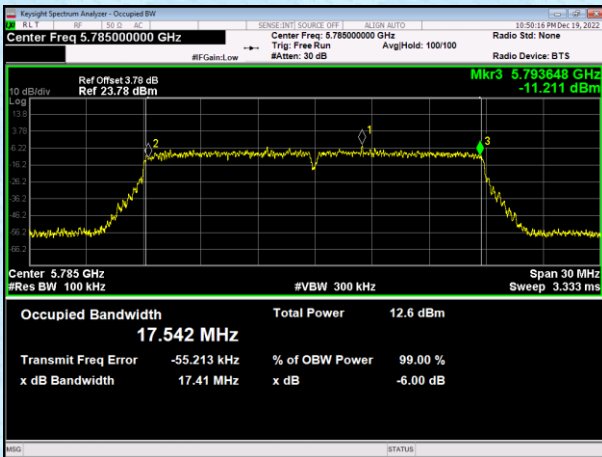


Antenna2

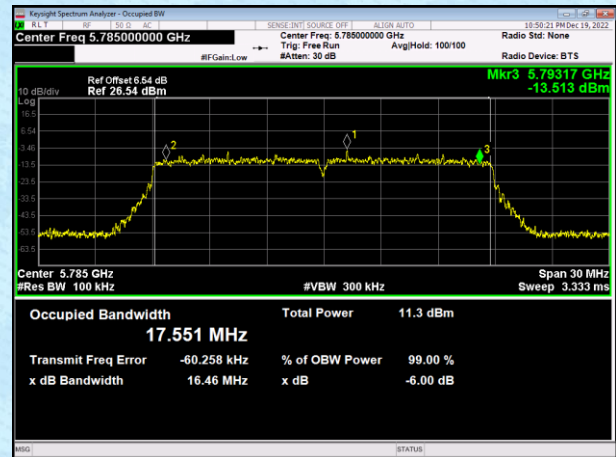


### Middle channel 5785MHz

Antenna1

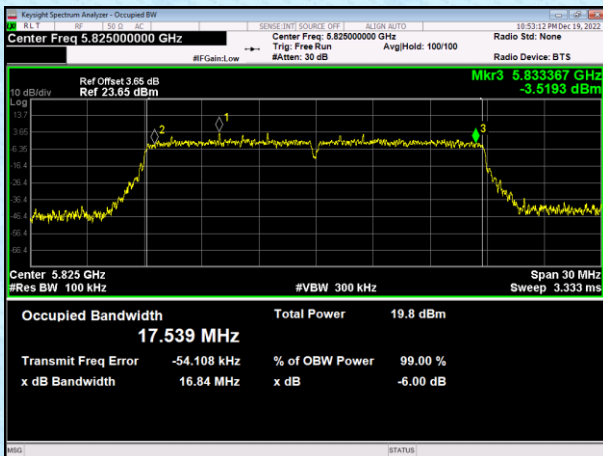


Antenna2

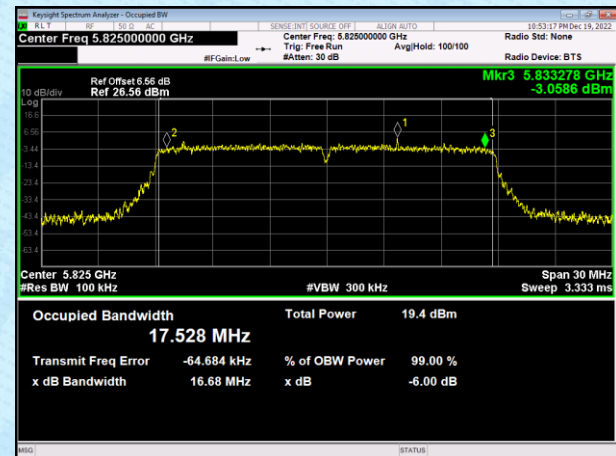


### Highest channel 5825MHz

Antenna1



Antenna2

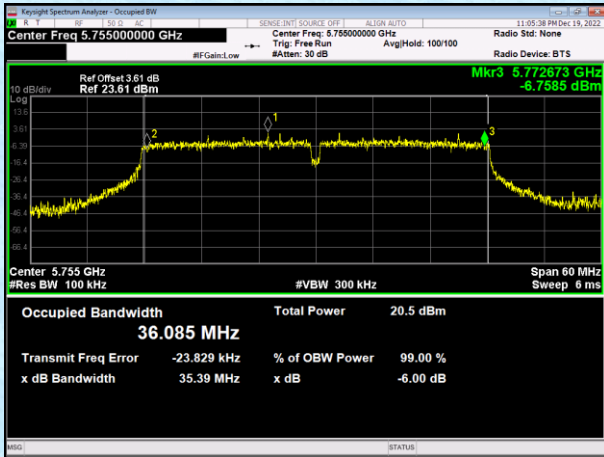




Test mode: 802.11 n(HT40)

### Lowest channel 5755MHz

Antenna1

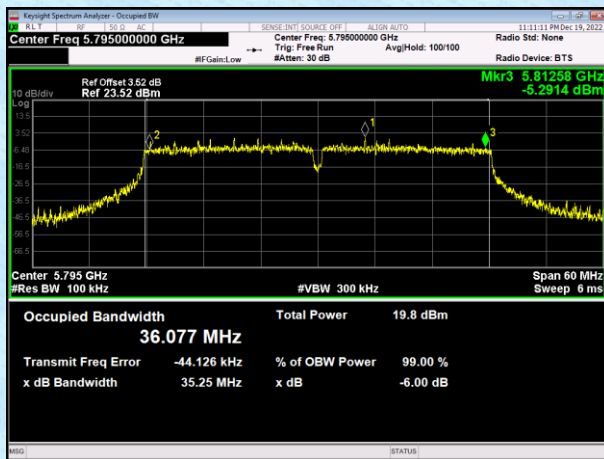


Antenna2

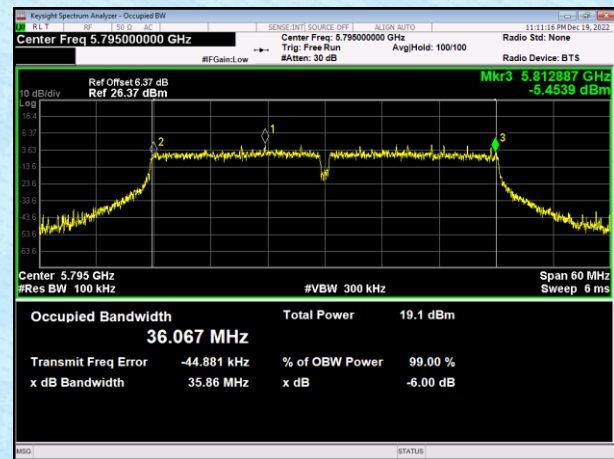


### Highest channel 5795MHz

Antenna1



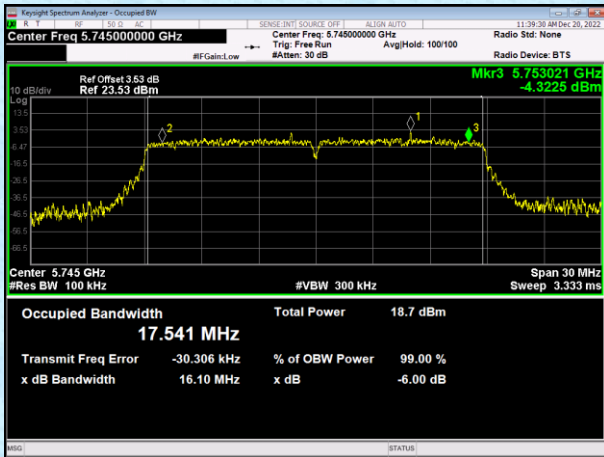
Antenna2



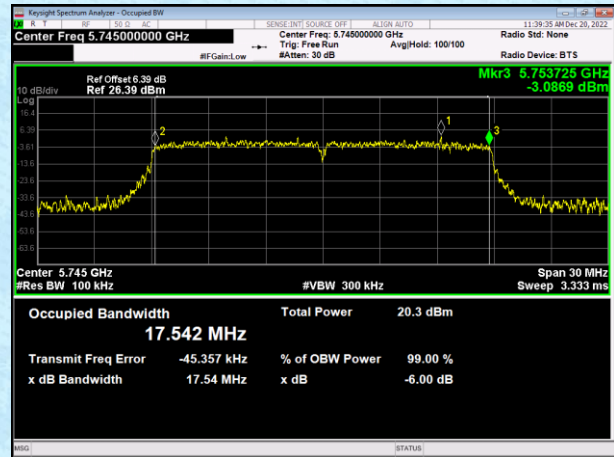
Test mode: 802.11ac(VHT20)

### Lowest channel 5745MHz

Antenna1

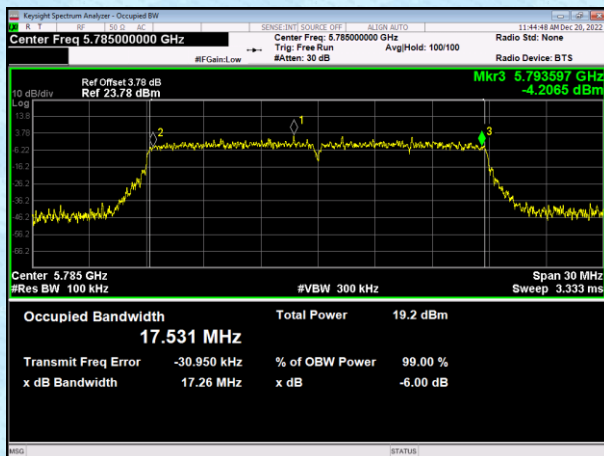


Antenna2

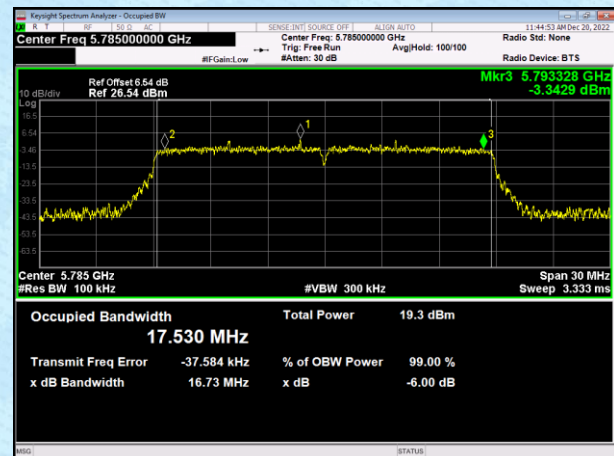


### Middle channel 5785MHz

Antenna1

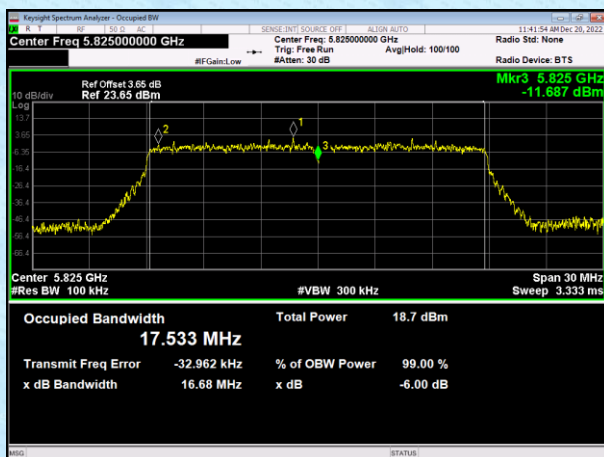


Antenna2

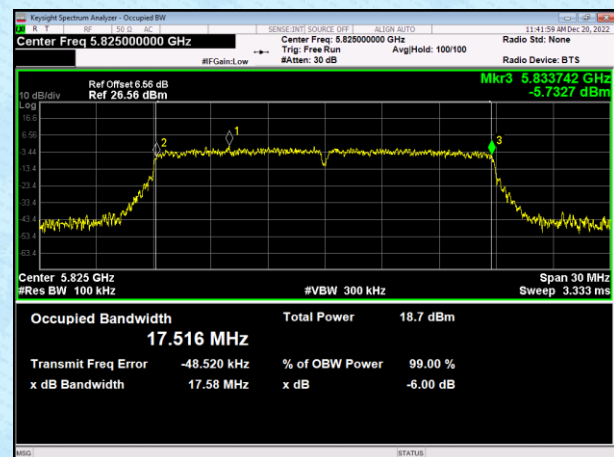


### Highest channel 5825MHz

Antenna1



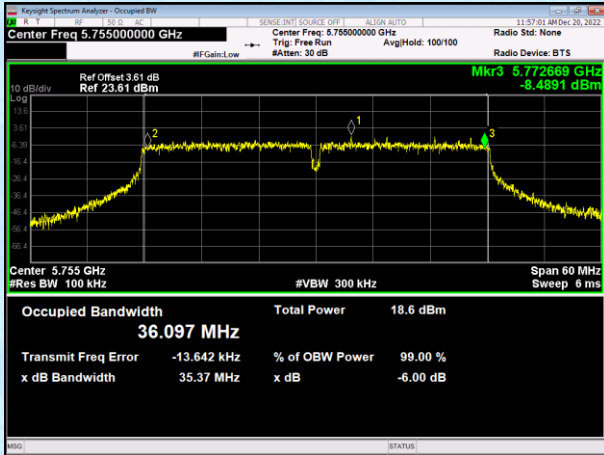
Antenna2



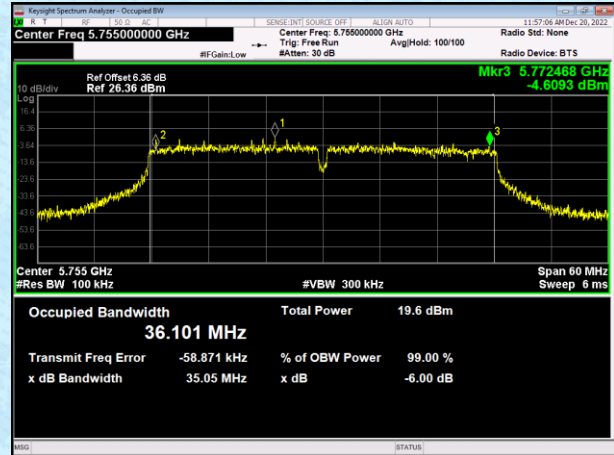
Test mode: 802.11 ac(VHT40)

### Lowest channel 5755MHz

Antenna1

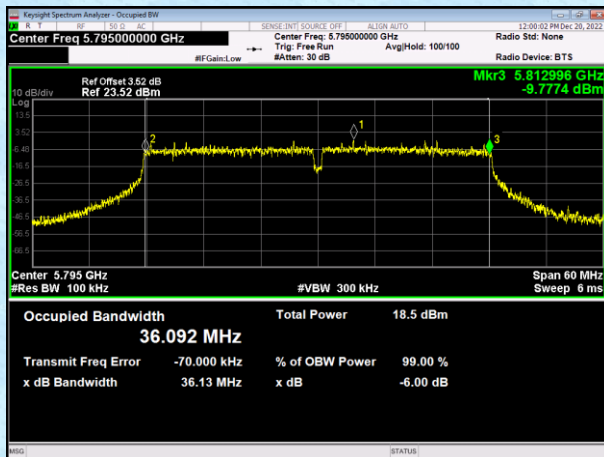


Antenna2



### Highest channel 5795MHz

Antenna1



Antenna2

