FCC Test Report

Product Name	：	Consumer Home Router
Trade Name	：	Verizon
Model No.	：	CR1000A
FCC ID	：	NKR-LVSK-R2

Applicant	：	Wistron NeWeb Corporation
Address	：	20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan

Date of Receipt	：	Oct. 21, 2020
Issued Date	：	Jun. 08, 2021
Report No.	：	20A0549R-E3032110126-A
Report Version	：	V1.0

Testing Laboratory
3024

The test results relate only to the samples tested.
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Test Report Certification

Issued Date : Jun. 08, 2021
Report No. : 20A0549R-E3032110126-A

Product Name	:	Consumer Home Router
Applicant	:	Wistron NeWeb Corporation
Address	:	20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan
Manufacturer	:	Wistron NeWeb Corporation
Address	:	20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan
Trade Name	:	Verizon
Model No.	:	CR1000A
FCC ID	:	NKR-LVSK-R2
EUT Rated Voltage	:	AC 100-120V, 50-60Hz
Test Voltage	:	AC 120V/60Hz
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2019 ANSI C63.10: 2013
Laboratory Name	:	Hsin Chu Laboratory
Address	:	No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan, R.O.C. TEL: +886-3-582-8001 / FAX: +886-3-582-8958
Test Result	:	Complied

Documented By : Carol Tsai

(Carol Tsai / Senior Engineering Adm. Specialist)

Tested By : Elwin Lin

(Elwin Lin / Engineer)

Approved By : Louis Hsu

(Louis Hsu / Deputy Manager)

Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Jun. 08, 2021

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1. General Information

1.1. EUT Description

Product Name	Consumer Home Router	
Trade Name	Verizon	
Model No.	CR1000A	
Frequency Range/ Channel Number	IEEE 802.11a/n/ac/ax (20MHz)	5260~5320MHz / 4 Channels 5500~5700MHz / 11 Channels
	IEEE 802.11n/ac/ax (40MHz)	5270~5310MHz / 2 Channels 5510~5670MHz / 5 Channels
	IEEE 802.11ac/ax (80MHz)	5290~5290MHz / 1 Channel 5530~5610MHz / 2 Channel
Type of Modulation	IEEE 802.11a/n/ac/ax	Orthogonal Frequency Division Multiplexing
Data Speed	IEEE 802.11a	6, 9, 18, 24, 36, 48, 54Mbps
	IEEE 802.11n	Support a subset of the combination of GI, MCS 0~MCS 32 and bandwidth defined in 802.11n
	IEEE 802.11ac	Support a subset of the combination of GI, MCS 0~MCS 9 and bandwidth defined in 802.11ac Proprietary MCS 10-MCS 11 (1024QAM)
	IEEE 802.11ax	Support a subset of the combination of GI, MCS 0~MCS 11 and bandwidth defined in 802.11ax

Accessories Information	
LAN Cable	Non-Shielded, 3m
Power Adapter	MFR: LUCENT TRANS; M/N: 1A98-1250 I/P: 100-120V~1.6A, 50-60Hz, O/P: DC 12.0V ⎓5.0A, 60W Cable Out: Non-Shielded, 1.8m

Ant. No.	Manufacturer	PN	Ant. Type	Directional Gain
0	WNC	Dual Ant1	Dipole Antenna	5.25 dBi for 5260~5350 MHz 5.91 dBi for 5500~5700 MHz
1		Dual Ant2		
2		Dual Ant3		
3		Dual Ant4		

ANT-TX / RX & Bandwidth

ANT-TX / RX	TX			RX		
Mode/ Channel Bandwidth	20MHz	40MHz	80MHz	20MHz	40MHz	80MHz
IEEE802.11a	✓			✓		
IEEE802.11n	✓	✓		✓	✓	
IEEE802.11ac/ax	✓	✓	✓	✓	✓	✓

IEEE 802.11a & IEEE 802.11n/ac/ax (20MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
52	5260 MHz	56	5280 MHz	60	5300 MHz	64	5320 MHz
100	5500 MHz	104	5520 MHz	108	5540 MHz	112	5560 MHz
116	5580 MHz	120	5600 MHz	124	5620 MHz	128	5640 MHz
132	5660 MHz	136	5680 MHz	140	5700 MHz		

IEEE 802.11n/ac/ax (40MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
62	5310 MHz	102	5510 MHz	110	5550 MHz	118	5590MHz
126	5630 MHz	134	5670 MHz				

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
54	5270MHz	62	5310 MHz	102	5510 MHz	110	5550 MHz
118	5590MHz	126	5630 MHz	134	5670 MHz		

IEEE 802.11ac/ax (80MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
106	5530 MHz	122	5610 MHz				

Note:

1. This device is a Consumer Home Router including 2.4GHz b/g/n/ax and 5GHz a/n/ac/ax and BLE transmitting and receiving functions.
2. Regards to the frequency band operation; the lowest、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
3. The EUT description is from the customer declaration.

1.2. Report History

Report No.	Version	Description	Issued Date
20A0549R-E3032110126	V1.0	Initial issue of report	Mar. 19, 2021
20A0549R-E3032110126-A	V1.0	Add 5G Band 2/Band 3 Evaluate 26dB/99%/DTS Bandwidth, Maximum conducted output power, Maximum power spectral density, Radiated Emission and Band Edge tests.	Jun. 08, 2021

1.3. Test Mode

DEKRA has verified the construction and function in typical operation. The preliminary tests were performed in different data rate, and to find the worst condition, which was shown in this test report. The following table is the final test mode.

Test Mode	Mode 1: Transmit CDD Mode Mode 2: Transmit RU Mode Mode 3: Transmit Beamforming Mode

Test Items	Modulation	Channel	Antenna	Result
Conducted Emission	11a/ax(40MHz)	54/116	0+1+2+3	Complies
26dB & 99% & DTS Bandwidth	a	52/60/64/100/116/140	0/1/2/3	Complies
	11ax(20MHz)	52/60/64/100/116/140	0/1/2/3	Complies
	11ax(40MHz)	54/62/102/110/134	0/1/2/3	Complies
	11ax(80MHz)	58/106/122	0/1/2/3	Complies
Maximum conducted output power	a	52/60/64/100/116/140	0+1+2+3	Complies
	11ax(20MHz)	52/60/64/100/116/140	0+1+2+3	Complies
	11ax(40MHz)	54/62/102/110/134	0+1+2+3	Complies
	11ax(80MHz)	58/106/122	0+1+2+3	Complies
Maximum power spectral density	a	52/60/64/100/116/140	0+1+2+3	Complies
	11ax(20MHz)	52/60/64/100/116/140	0+1+2+3	Complies
	11ax(40MHz)	54/62/102/110/134	0+1+2+3	Complies
	11ax(80MHz)	58/106/122	0+1+2+3	Complies
Radiated Emission	a	52/60/64/100/116/140	0+1+2+3	Complies
	11ax(20MHz)	52/60/64/100/116/140	0+1+2+3	Complies
	11ax(40MHz)	54/62/102/110/134	0+1+2+3	Complies
	11ax(80MHz)	58/106/122	0+1+2+3	Complies
Band Edge	a	52/60/64/100/116/140	0+1+2+3	Complies
	11ax(20MHz)	52/60/64/100/116/140	0+1+2+3	Complies
	11ax(40MHz)	54/62/102/110/134	0+1+2+3	Complies
	11ax(80MHz)	58/106/122	0+1+2+3	Complies

Note 1: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Note 2: Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

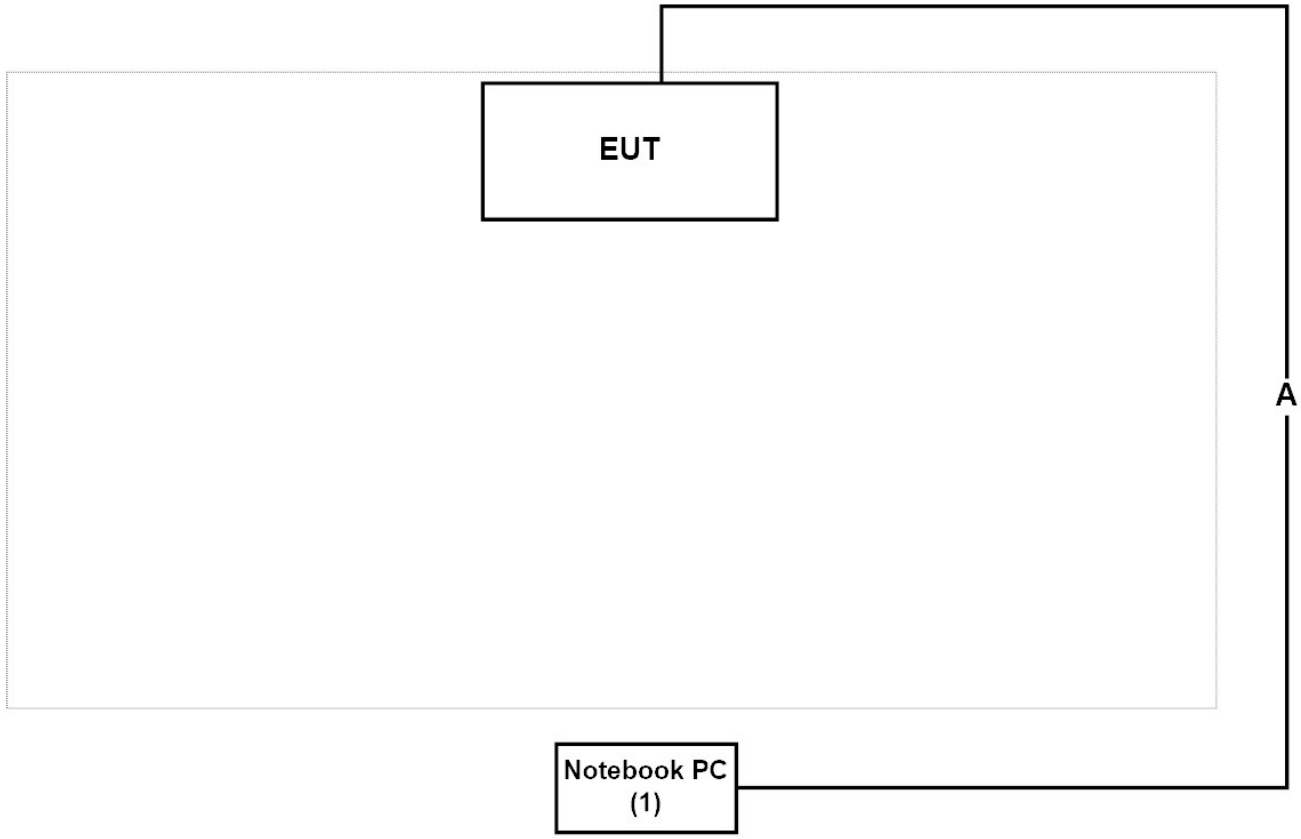
1.4. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Notebook PC	Dell	Latitude E6320	8611271467	DoC	Non-Shielded, 1.8m

1.5. Configuration of tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	Ethernet Cable	Non-Shielded, 10m

1.6. EUT Exercise Software

1	Set the EUT as shown in Section 1.4.
2	Open the control software QSPR.
3	Configure test mode, test channel and data rate.
4	Let the EUT start transmitting signal continuously.
5	Verify that device is working properly.

1.7. Comments and Remarks

The product specification and testing instructions for the EUT declared in the report are provided by the manufacturer who will take all responsibilities for the accuracy.

1.8. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required	Test Site
Temperature (°C)	FCC PART 15E 15.407	15 - 35	2
Humidity (%RH)	Conducted Emission	25 - 75	
Temperature (°C)	FCC PART 15E 15.407	15 - 35	1
Humidity (%RH)	26dB & 99% & DTS Bandwidth	25 - 75	
Temperature (°C)	FCC PART 15E 15.407	15 - 35	1
Humidity (%RH)	Maximum conducted output power	25 - 75	
Temperature (°C)	FCC PART 15E 15.407	15 - 35	1
Humidity (%RH)	Maximum power spectral density	25 - 75	
Temperature (°C)	FCC PART 15E 15.407	15 - 35	1
Humidity (%RH)	Radiated Emission	25 - 75	
Temperature (°C)	FCC PART 15E 15.407	15 - 35	1
Humidity (%RH)	Band Edge	25 - 75	

Note: Test site information refers to Laboratory Information.

Laboratory Information

USA	**:**	**FCC Registration Number: TW3024**
Canada	**:**	**IC Registration Number: 22397-1 / 22397-2 / 22397-3**

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw

If you have any comments, please don't hesitate to contact us. Our test sites as below:

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
Address	1. No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. 2. No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
Phone number	1. +886-3-582-8001 2. +886-3-582-8001
Fax number	1. +886-3-582-8958 2. +886-3-582-8958
Email address	info.tw@dekra.com
Website	http://www.dekra.com.tw

1.9. List of Test Equipment

Conducted Emission / SR2-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Artificial Mains Network	R&S	ENV4200	848411/010	2020/12/24	2021/12/23
Test Receiver	R&S	ESCS 30	836858/022	2021/02/22	2022/02/21
LISN	R&S	ENV216	100092	2020/06/22	2021/06/21

Occupied Bandwidth / SR12-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Keysight	N9030B	MY57140404	2020/06/03	2021/06/02
Spectrum Analyzer	Keysight	N9010B	MY57110159	2021/03/29	2022/03/28
Spectrum Analyzer	Agilent	N9010A	US47140172	2020/06/18	2021/06/17
Signal & Spectrum Analyzer	R&S	FSV40	101049	2021/03/31	2022/03/30

Maximum conducted output power / SR12-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
High Speed Peak Power Meter Dual Input	Anritsu	ML2496A	1602004	2020/11/30	2021/11/29
Pulse Power Sensor	Anritsu	MA2411B	1531043	2020/11/30	2021/11/29
Pulse Power Sensor	Anritsu	MA2411B	1531044	2020/11/30	2021/11/29
Power Meter	Keysight	8990B	MY51000248	2020/05/20	2021/05/19
Power Sensor	Keysight	N1923A	MY57240005	2020/05/20	2021/05/19

Maximum power spectral density / SR12-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Keysight	N9030B	MY57140404	2020/06/03	2021/06/02
Spectrum Analyzer	Keysight	N9010B	MY57110159	2021/03/29	2022/03/28
Spectrum Analyzer	Agilent	N9010A	US47140172	2020/06/18	2021/06/17
Signal & Spectrum Analyzer	R&S	FSV40	101049	2021/03/31	2022/03/30

Radiated Emission / CB4-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2020/10/12	2021/10/11
Signal & Spectrum Analyzer	R&S	FSV40	101049	2021/03/31	2022/03/30
Signal Analyzer	R&S	FSVA40	101435	2020/06/24	2021/06/23
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2021/01/25	2022/01/24
Bilog Antenna	Teseq	CBL6112D	23191	2021/02/26	2022/02/25
Horn Antenna	Schwarzbeck	BBHA 9120D	01640	2020/09/17	2021/09/16
Horn Antenna	Schwarzbeck	BBHA 9170	203	2021/03/11	2022/03/10
Pre-Amplifier	EMCI	EMC01820I	980364	2020/09/14	2021/09/13
Pre-Amplifier	EMCI	EMC0031835	980233	2020/12/07	2021/12/06
Pre-Amplifier	DEKRA	AP-400C	201801231	2020/11/16	2021/11/15
Band Reject Filter	Micro-Tronics	BRM50702	G192	2021/03/04	2022/03/03
Band Reject Filter	Micro-Tronics	BRM50716	G089	2021/03/11	2022/03/10
Wideband Radio Communication Tester	R&S	CMW500	106071	2021/01/27	2022/01/26
Wireless Conn. Tseter	R&S	CMW500	157118	2020/07/23	2021/07/22
Coaxial Cable(10m)	Suhner	SF102_SF104	CB4-H	2020/04/25	2021/04/24
DEKRA Testing System	DEKRA	Version 1.2	CB4-H	NA	NA

Band Edge / CB4-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2020/10/12	2021/10/11
Signal & Spectrum Analyzer	R&S	FSV40	101049	2021/03/31	2022/03/30
Signal Analyzer	R&S	FSVA40	101435	2020/06/24	2021/06/23
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2021/01/25	2022/01/24
Bilog Antenna	Teseq	CBL6112D	23191	2021/02/26	2022/02/25
Horn Antenna	Schwarzbeck	BBHA 9120D	01640	2020/09/17	2021/09/16
Horn Antenna	Schwarzbeck	BBHA 9170	203	2021/03/11	2022/03/10
Pre-Amplifier	EMCI	EMC01820I	980364	2020/09/14	2021/09/13
Pre-Amplifier	EMCI	EMC0031835	980233	2020/12/07	2021/12/06
Pre-Amplifier	DEKRA	AP-400C	201801231	2020/11/16	2021/11/15
Band Reject Filter	Micro-Tronics	BRM50702	G192	2021/03/04	2022/03/03
Band Reject Filter	Micro-Tronics	BRM50716	G089	2021/03/11	2022/03/10
Wideband Radio Communication Tester	R&S	CMW500	106071	2021/01/27	2022/01/26
Wireless Conn. Tseter	R&S	CMW500	157118	2020/07/23	2021/07/22
Coaxial Cable(10m)	Suhner	SF102_SF104	CB4-H	2020/04/25	2021/04/24
DEKRA Testing System	DEKRA	Version 1.2	CB4-H	NA	NA

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

1.10. Duty Cycle

Mode		On Time(ms)	On+Off Time(ms)	Duty Cycle (%)	Duty Factor(dB) linear voltage	Duty Factor(dB) Power	1/T Minimum VBW (kHz)
CDD	a	0.199	0.379	52.53%	5.591580	2.80	5.020
	X HE20	5.360	6.000	89.33%	0.979729	0.49	0.187
	X HE40	5.355	6.158	86.97%	1.212899	0.61	0.187
	X HE80	4.529	5.495	82.42%	1.679476	0.84	0.221
RU	AX HE20_edge	3.139	3.931	79.85%	1.954513	0.98	0.319
	AX HE40_edge	3.308	3.947	83.81%	1.534245	0.77	0.302
	AX HE80_edge	0.482	0.932	51.77%	5.718308	2.86	2.073
	AX HE20_Full	4.956	5.837	84.91%	1.420424	0.71	0.202
	AX HE40_Full	4.491	5.483	81.92%	1.732712	0.87	0.223
	AX HE80_Full	0.702	0.909	77.29%	2.237957	1.12	1.424
BF	X HE20	1.198	1.334	89.81%	0.933108	0.47	0.835
	X HE40	1.739	1.897	91.68%	0.754522	0.38	0.575
	X HE80	1.931	2.124	90.93%	0.826259	0.41	0.518

Note:

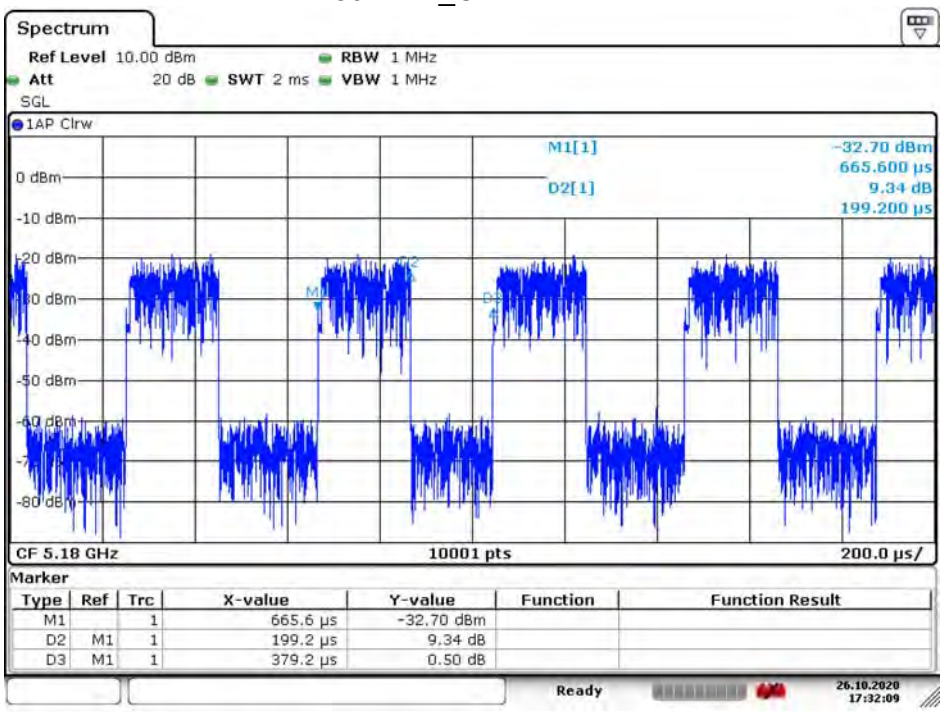
Offset = 20 log(1/duty cycle)

Accotding to KDB 789033

If power averaging (rms) mode was used in step (iv) above, the correction factor is 10 log (1/x), where x is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB must be added to the measured emission levels.

If linear voltage averaging mode was used in step (iv) above, the correction factor is 20 log (1/x), where x is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB must be added to the measured emission levels.

802.11a_CDD Mode



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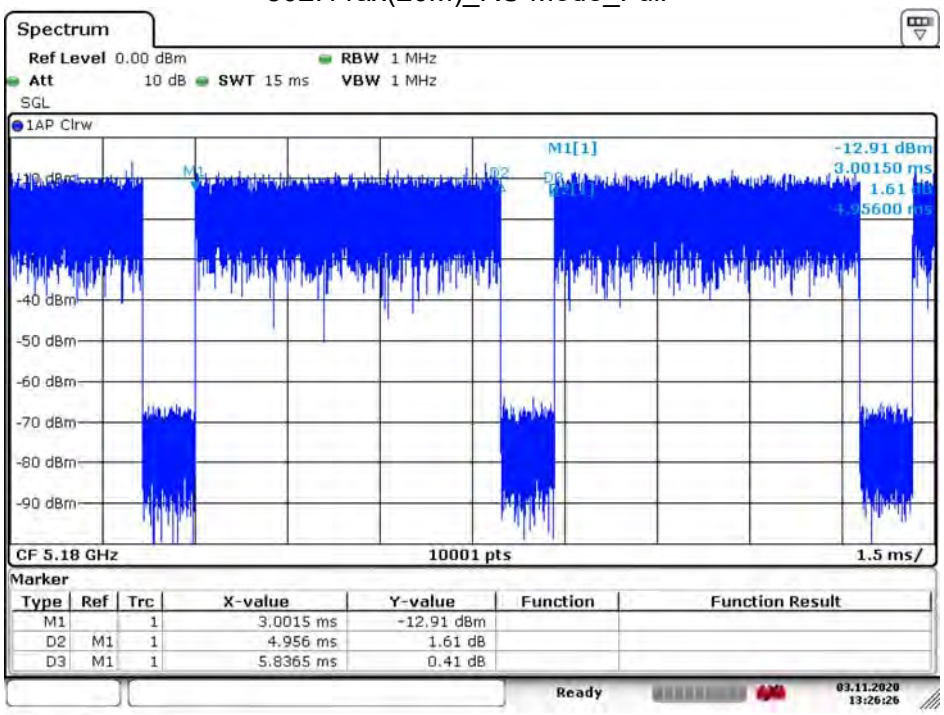
802.11ax(20M)_RU Mode_Full



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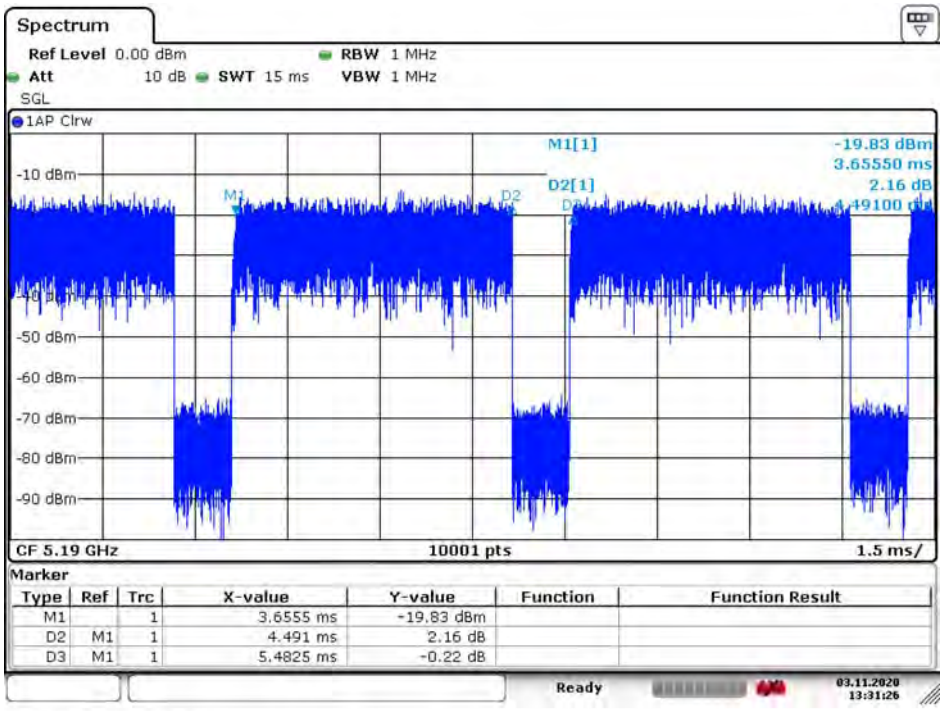
802.11ax(40M)_RU Mode_Full



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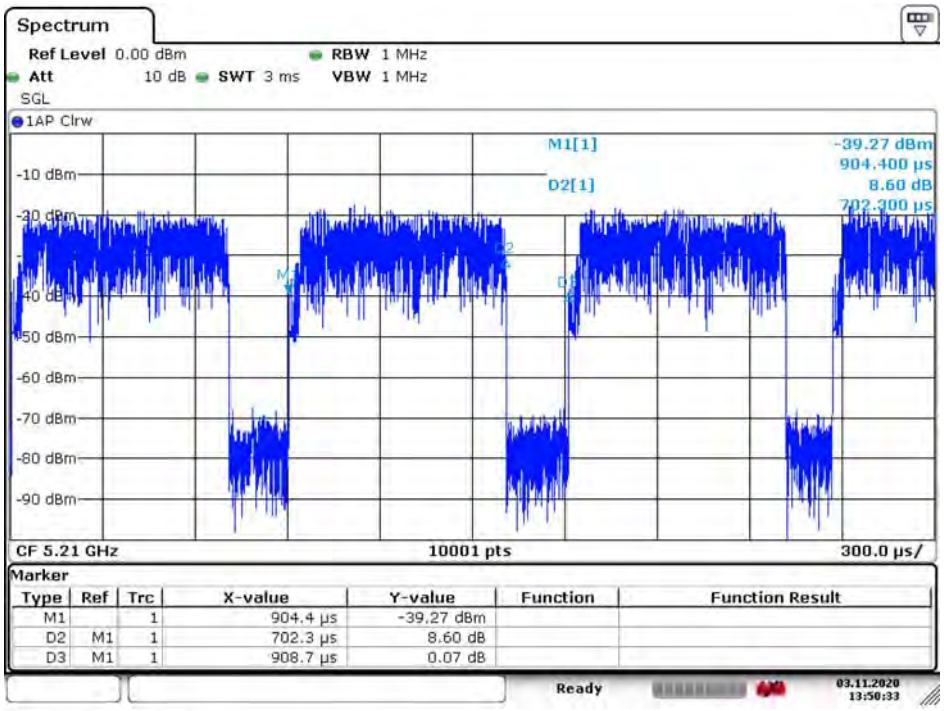
802.11ax(80M)_RU Mode_Full



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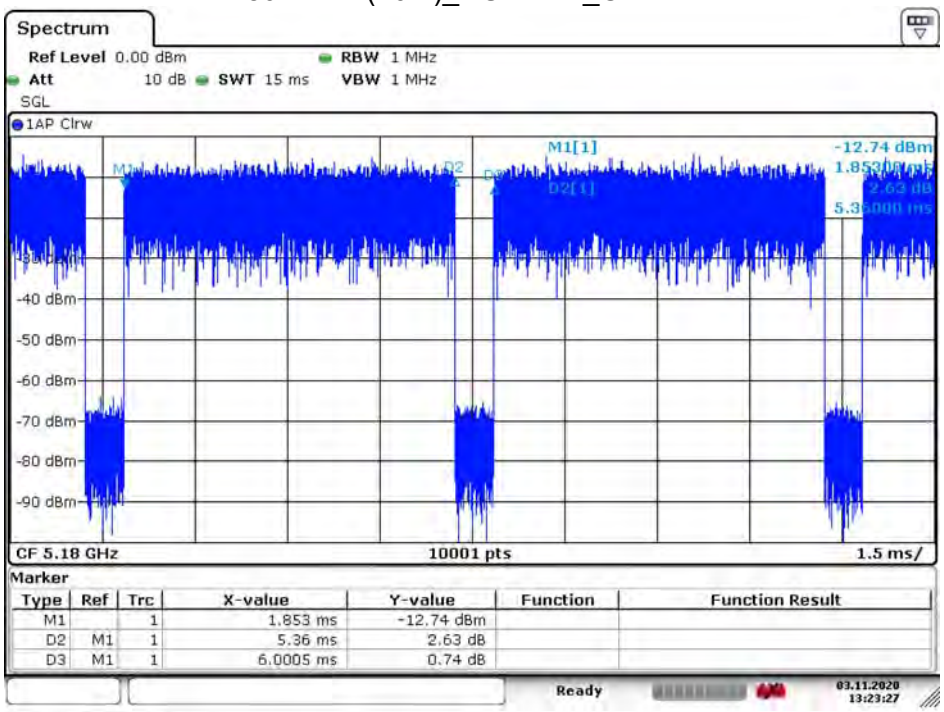

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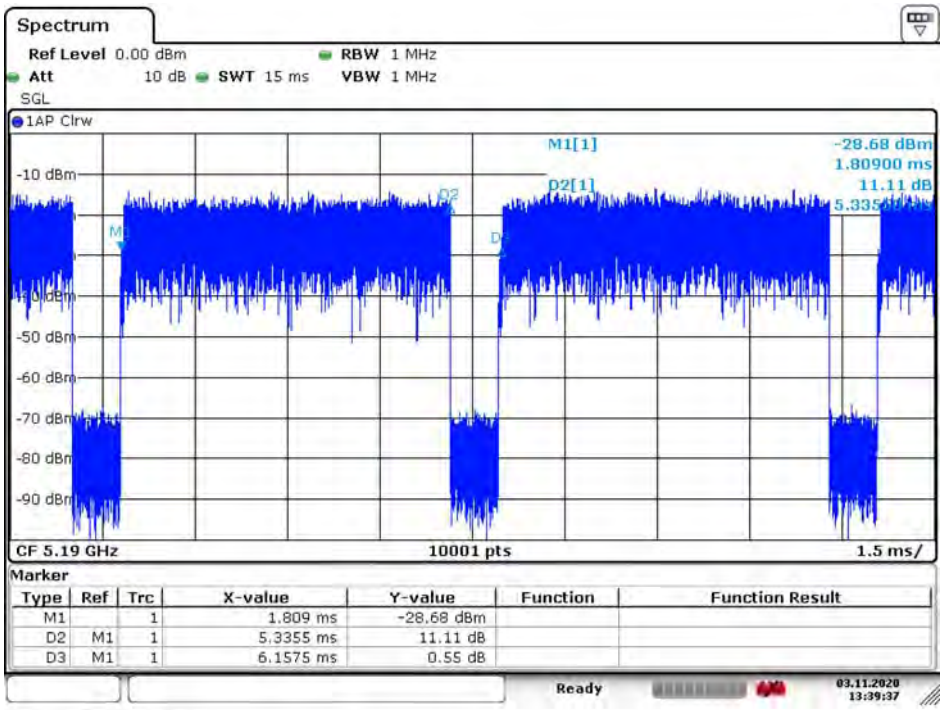
802.11ax(40M)_RU Mode_Center



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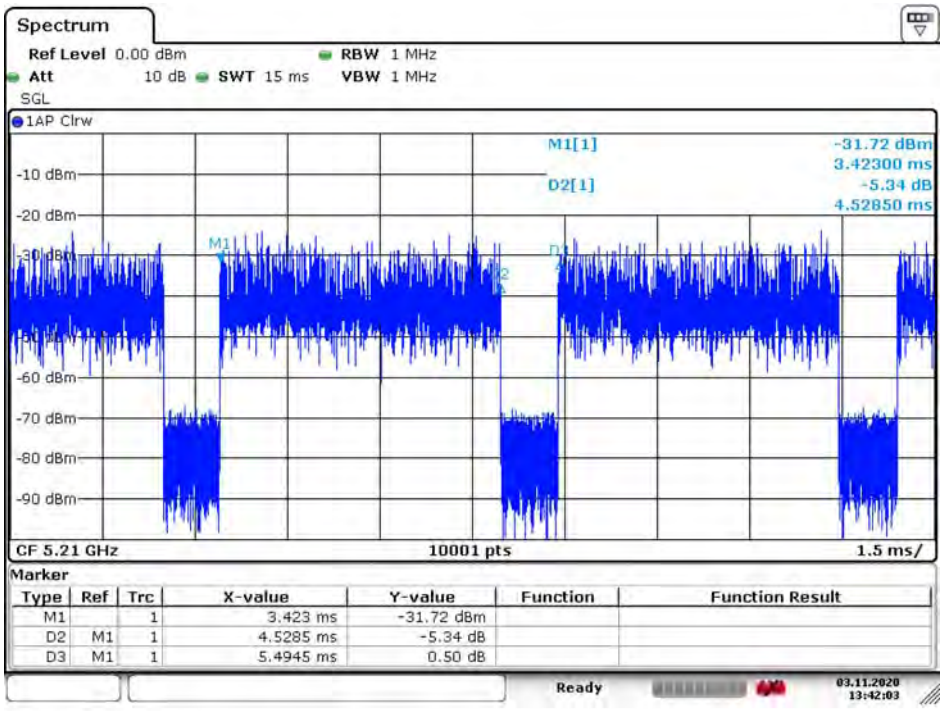
802.11ax(80M)_RU Mode_Center



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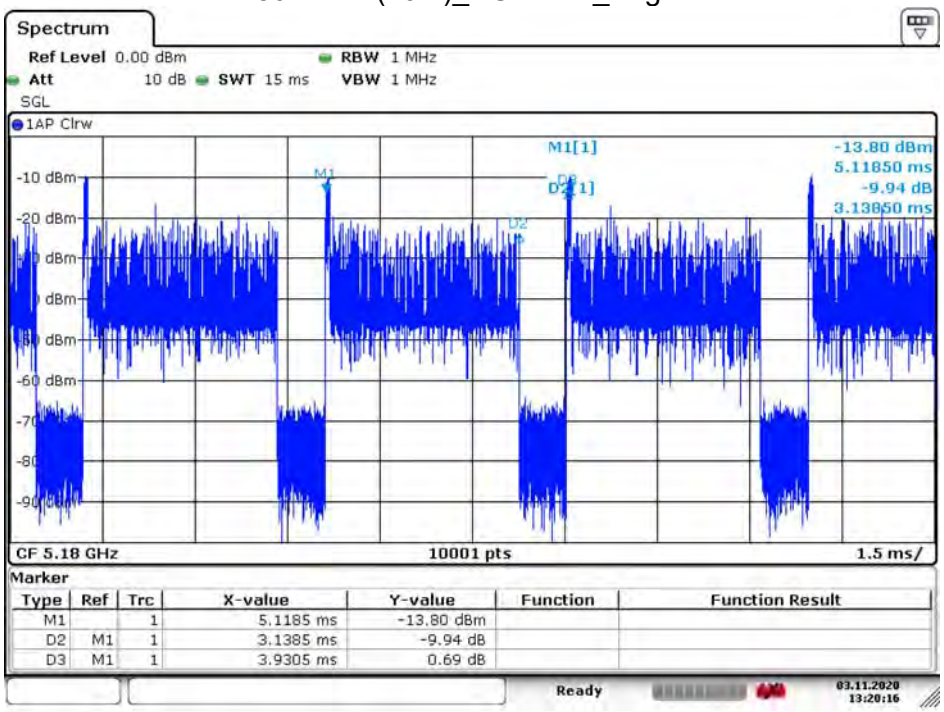
802.11ax(20M)_RU Mode_Edge



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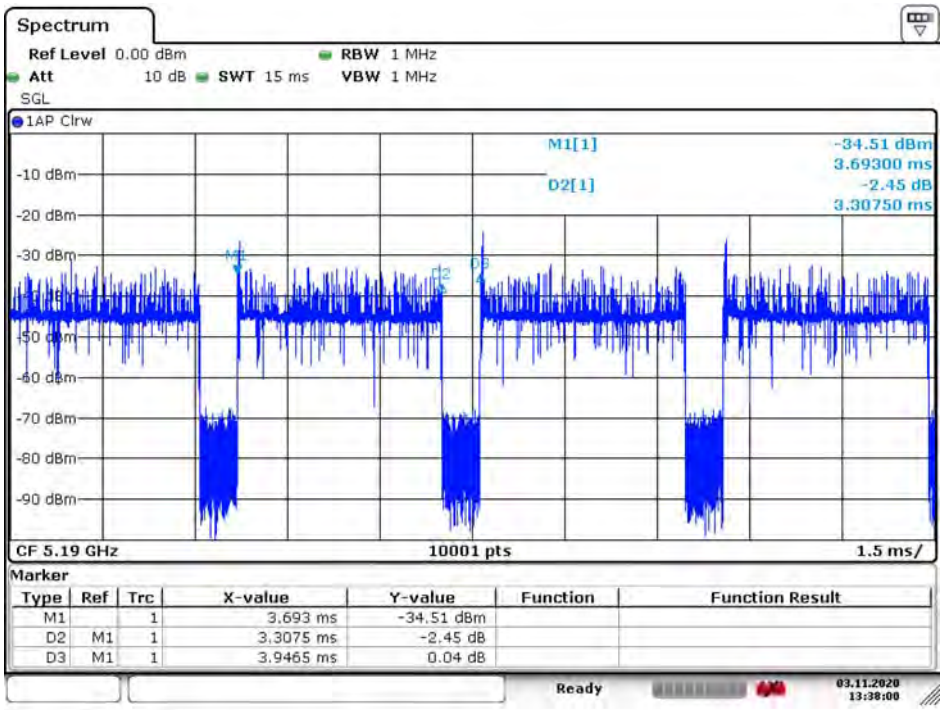
802.11ax(40M)_RU Mode_Edge



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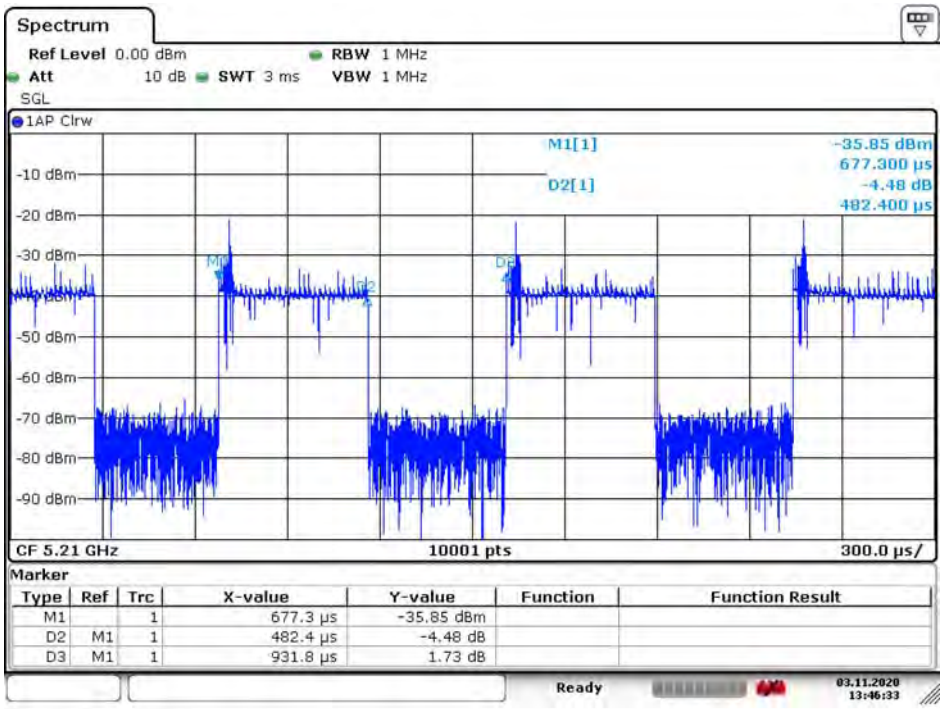
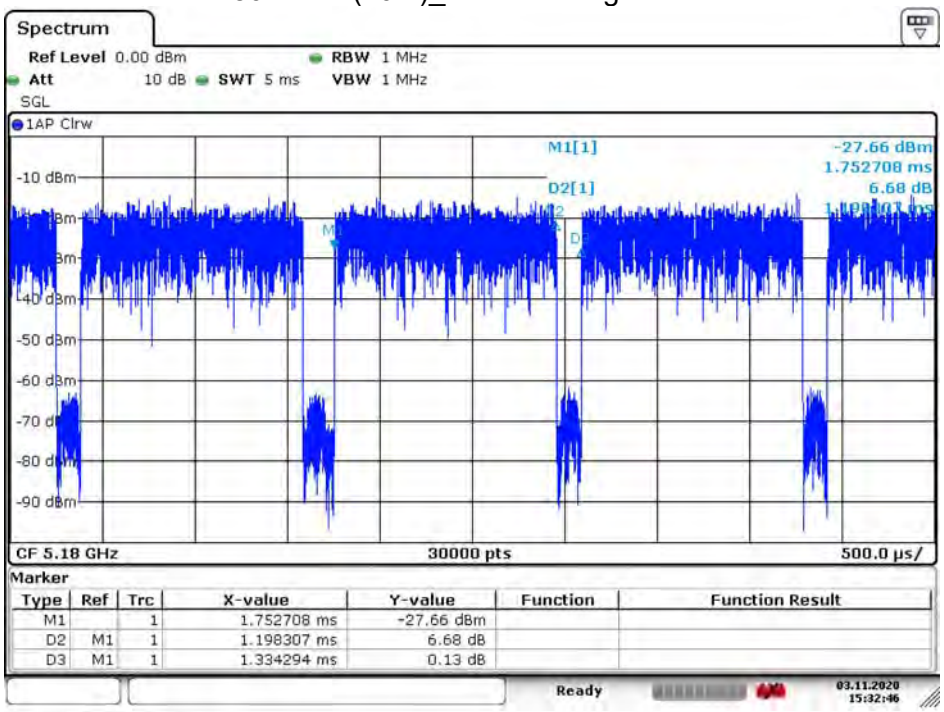
802.11ax(80M)_RU Mode_Edge



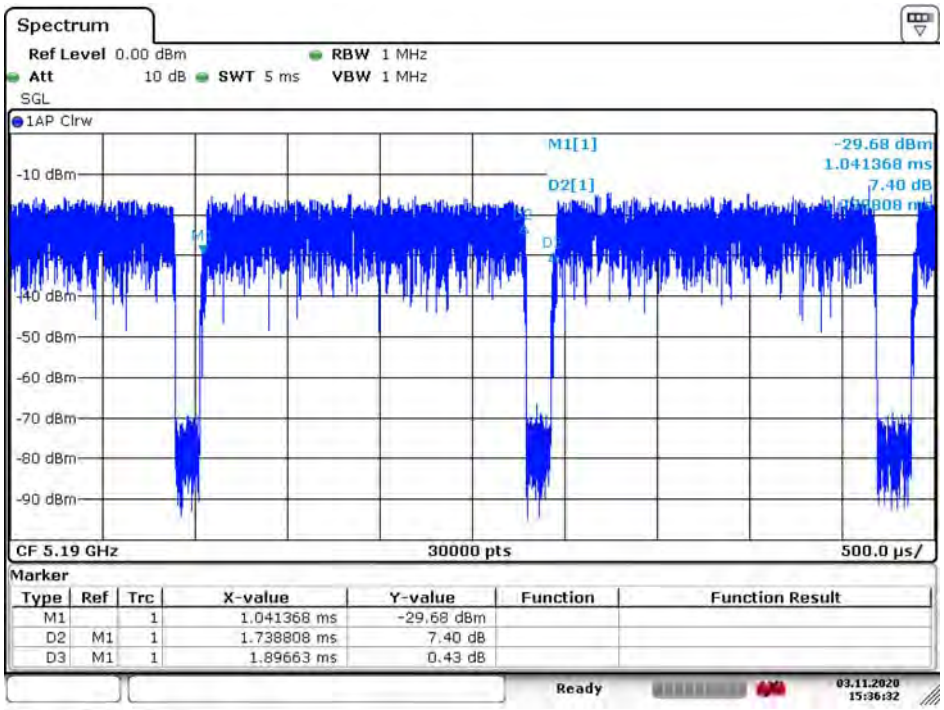
Date: 3.NOV.2020 13:46:33

802.11ax(20M)_Beamforming Mode



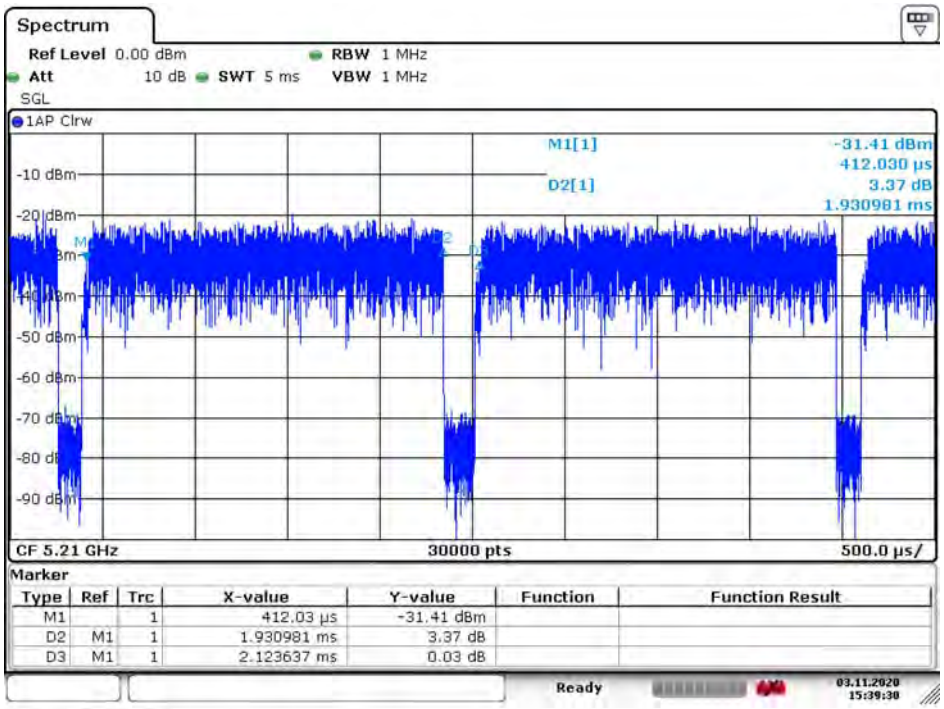
Date: 3 NOV 2020 15:32:47

802.11ax(40M)_Beamforming Mode



Date: 3 NOV 2020 15:36:33

802.11ax(80M)_Beamforming Mode



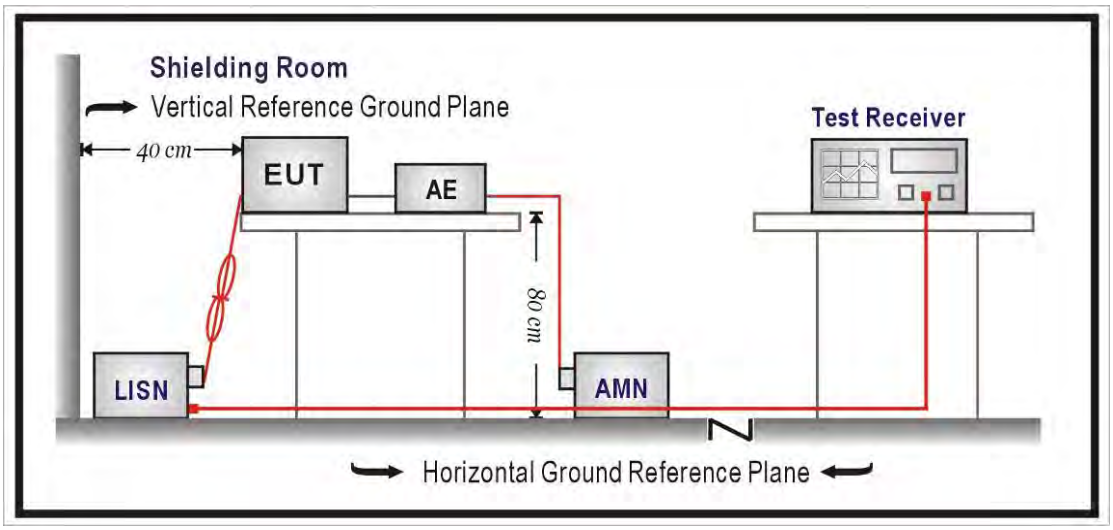
Date: 3 NOV 2020 15:39:31

1.11. Uncertainty

Test item	Uncertainty
Conducted Emission	± 2.26 dB
26dB & 99% & DTS Bandwidth	± 50 Hz
Maximum conducted output power	± 1.27 dB
Maximum power spectral density	± 1.27 dB
Radiated Emission	30MHz~1GHz as ± 3.43 dB 1GHz~26.5GHz as ± 3.65 dB
Band Edge	± 3.65 dB

2. Conducted Emission

2.1. Test Setup



2.2. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency MHz	QP	AV
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remark: In the above table, the tighter limit applies at the band edges.

2.3. Test Procedure

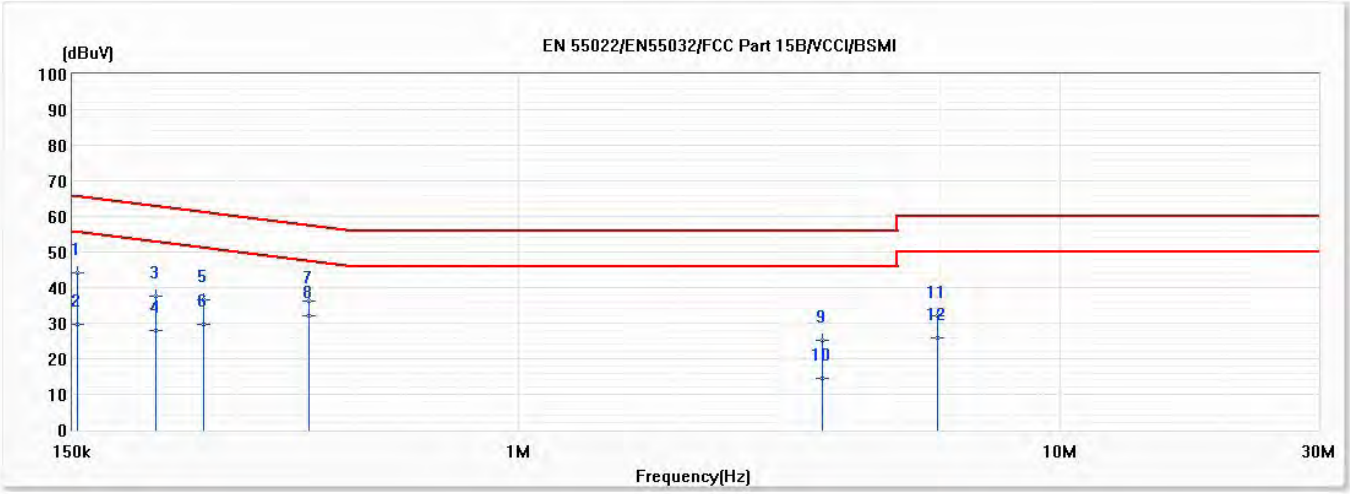
The EUT was setup according to ANSI C63.10: 2013. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)
Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

2.4. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.407: 2019.

2.5. Test Result

Model No	CR1000A	Site	SR2-H
Test Voltage	AC 120V/60Hz	Test Date	2021/2/8
Test Mode	Mode 1: Transmit CDD Mode	Engineer	Elwin Lin
Phase	L	Temperature (℃)	21
Test Condition	802.11ax,Ch54,5.27G,BW40M	Humidity (%RH)	59

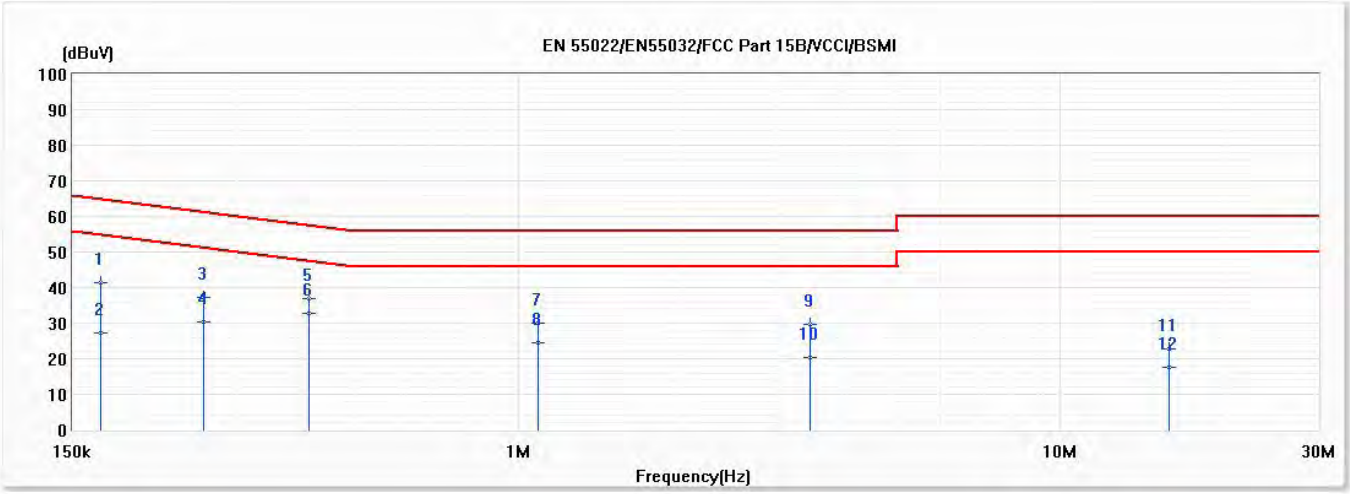


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.153	44.11	65.81	-21.69	34.47	9.65	QP
2	0.153	29.58	55.81	-26.23	19.93	9.65	AV
3	0.213	37.54	63.08	-25.54	27.89	9.65	QP
4	0.213	27.77	53.08	-25.30	18.13	9.65	AV
5	0.263	36.59	61.35	-24.76	26.94	9.65	QP
6	0.263	29.74	51.35	-21.61	20.08	9.65	AV
7	0.409	36.15	57.66	-21.51	26.47	9.68	QP
*8	0.409	32.02	47.66	-15.64	22.34	9.68	AV
9	3.634	25.08	56.00	-30.92	15.21	9.88	QP
10	3.634	14.38	46.00	-31.62	4.51	9.88	AV
11	5.934	32.19	60.00	-27.81	22.21	9.97	QP
12	5.934	25.75	50.00	-24.25	15.78	9.97	AV

Remark:

1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

Model No	CR1000A	Site	SR2-H
Test Voltage	AC 120V/60Hz	Test Date	2021/2/8
Test Mode	Mode 1: Transmit CDD Mode	Engineer	Elwin Lin
Phase	N	Temperature (℃)	21
Test Condition	802.11ax,Ch54,5.27G,BW40M	Humidity (%RH)	59

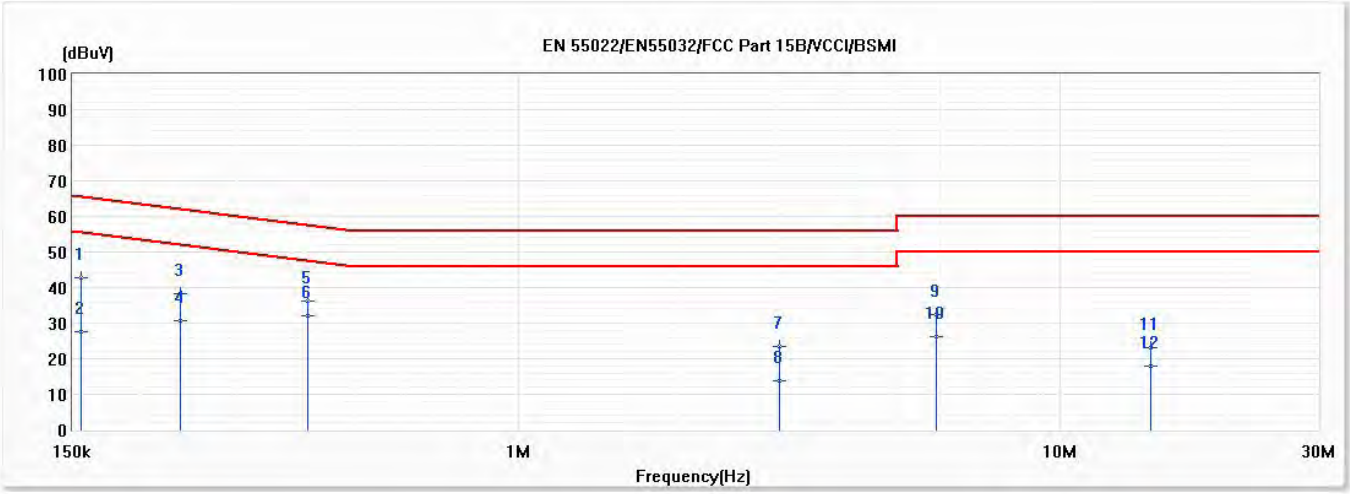


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.169	41.37	65.00	-23.62	31.73	9.64	QP
2	0.169	27.08	55.00	-27.92	17.44	9.64	AV
3	0.262	37.14	61.37	-24.22	27.50	9.64	QP
4	0.262	30.35	51.37	-21.02	20.70	9.64	AV
5	0.411	37.02	57.63	-20.61	27.35	9.67	QP
*6	0.411	32.67	47.63	-14.96	23.00	9.67	AV
7	1.087	29.88	56.00	-26.12	20.15	9.72	QP
8	1.087	24.43	46.00	-21.57	14.71	9.72	AV
9	3.446	29.66	56.00	-26.34	19.80	9.85	QP
10	3.446	20.23	46.00	-25.77	10.38	9.85	AV
11	15.856	22.65	60.00	-37.35	12.27	10.37	QP
12	15.856	17.48	50.00	-32.52	7.10	10.37	AV

Remark:

1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

Model No	CR1000A	Site	SR2-H
Test Voltage	AC 120V/60Hz	Test Date	2021/2/8
Test Mode	Mode 1: Transmit CDD Mode	Engineer	Elwin Lin
Phase	L	Temperature (℃)	21
Test Condition	802.11a,Ch116,5.58G,BW20M	Humidity (%RH)	59

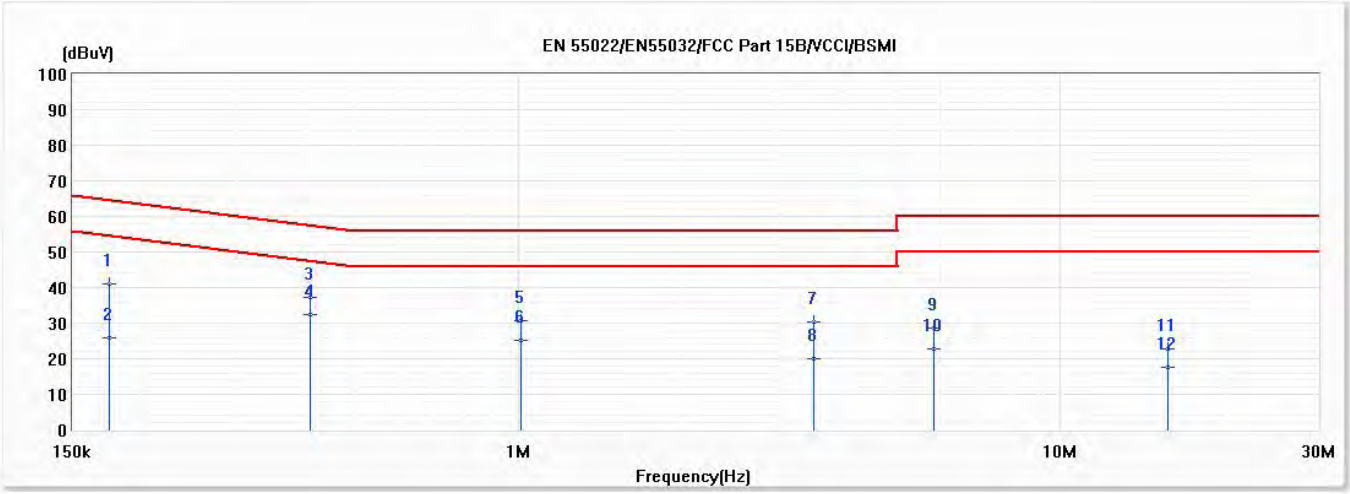


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.156	42.70	65.68	-22.98	33.05	9.65	QP
2	0.156	27.68	55.68	-28.00	18.04	9.65	AV
3	0.237	38.20	62.19	-23.99	28.54	9.65	QP
4	0.237	30.60	52.19	-21.59	20.95	9.65	AV
5	0.408	36.36	57.69	-21.33	26.68	9.68	QP
*6	0.408	32.01	47.69	-15.67	22.33	9.68	AV
7	3.030	23.49	56.00	-32.51	13.65	9.84	QP
8	3.030	13.83	46.00	-32.17	3.99	9.84	AV
9	5.897	32.52	60.00	-27.48	22.55	9.97	QP
10	5.897	26.14	50.00	-23.86	16.16	9.97	AV
11	14.669	23.19	60.00	-36.81	12.94	10.25	QP
12	14.669	18.00	50.00	-32.00	7.74	10.25	AV

Remark:

1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

Model No	CR1000A	Site	SR2-H
Test Voltage	AC 120V/60Hz	Test Date	2021/2/8
Test Mode	Mode 1: Transmit CDD Mode	Engineer	Elwin Lin
Phase	N	Temperature (℃)	21
Test Condition	802.11a,Ch116,5.58G,BW20M	Humidity (%RH)	59



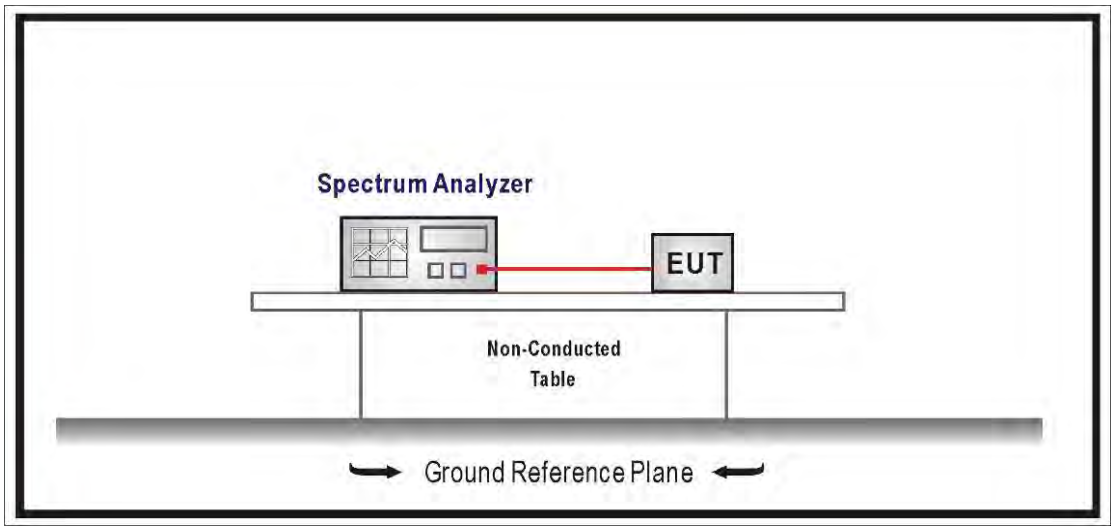
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.175	40.95	64.70	-23.75	31.32	9.63	QP
2	0.175	25.70	54.70	-29.01	16.06	9.63	AV
3	0.412	37.33	57.60	-20.28	27.66	9.67	QP
*4	0.412	32.53	47.60	-15.07	22.86	9.67	AV
5	1.011	30.82	56.00	-25.18	21.10	9.72	QP
6	1.011	25.21	46.00	-20.79	15.49	9.72	AV
7	3.505	30.45	56.00	-25.55	20.60	9.86	QP
8	3.505	20.12	46.00	-25.88	10.26	9.86	AV
9	5.839	28.56	60.00	-31.44	18.59	9.97	QP
10	5.839	22.64	50.00	-27.36	12.67	9.97	AV
11	15.836	22.61	60.00	-37.39	12.23	10.37	QP
12	15.836	17.52	50.00	-32.48	7.15	10.37	AV

Remark:

1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

3. 26dB & 99% & DTS Bandwidth

3.1. Test Setup



3.2. Limits

99% & 26dB Bandwidth : No Required

6dB Bandwidth ≧ 500KHz

3.3. Test Procedure

99% & 26dB Bandwidth :
The EUT was tested according to U-NII test procedure of KDB 789033 D02 v02r01
Set RBW 1% of the emission bandwidth, VBW equal to 3 times the RBW.
DTS Bandwidth :

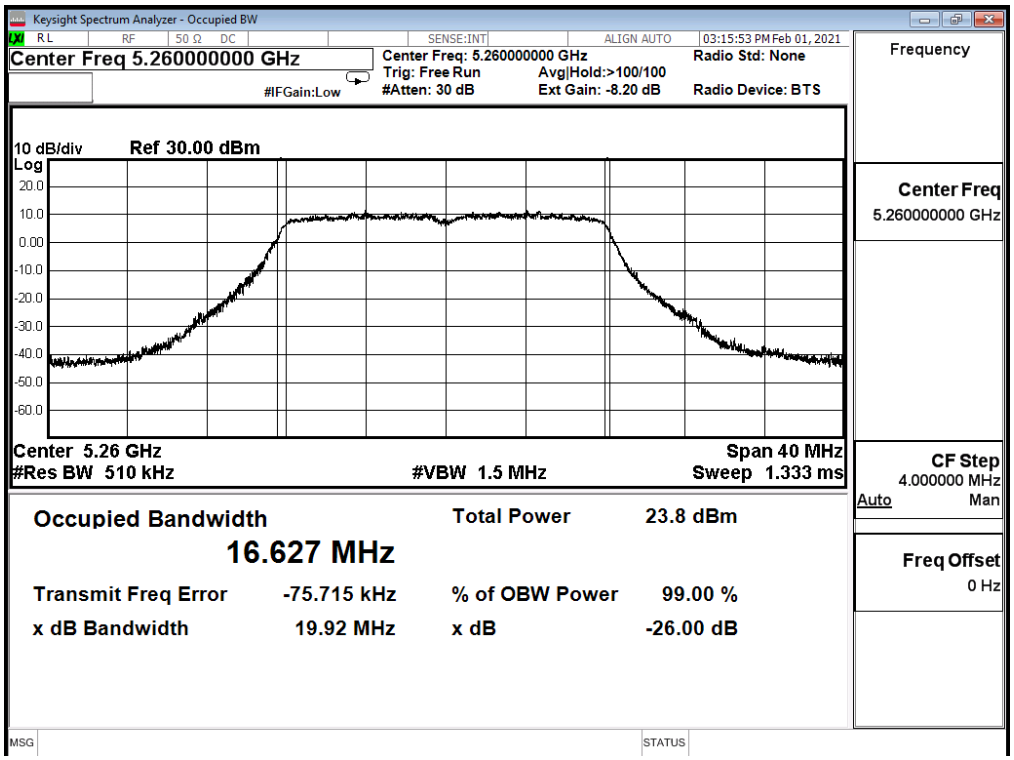
Set RBW = 100KHz, VBW≧3xRBW, Sweep time=Auto, Set Peak detector.

3.4. Test Result

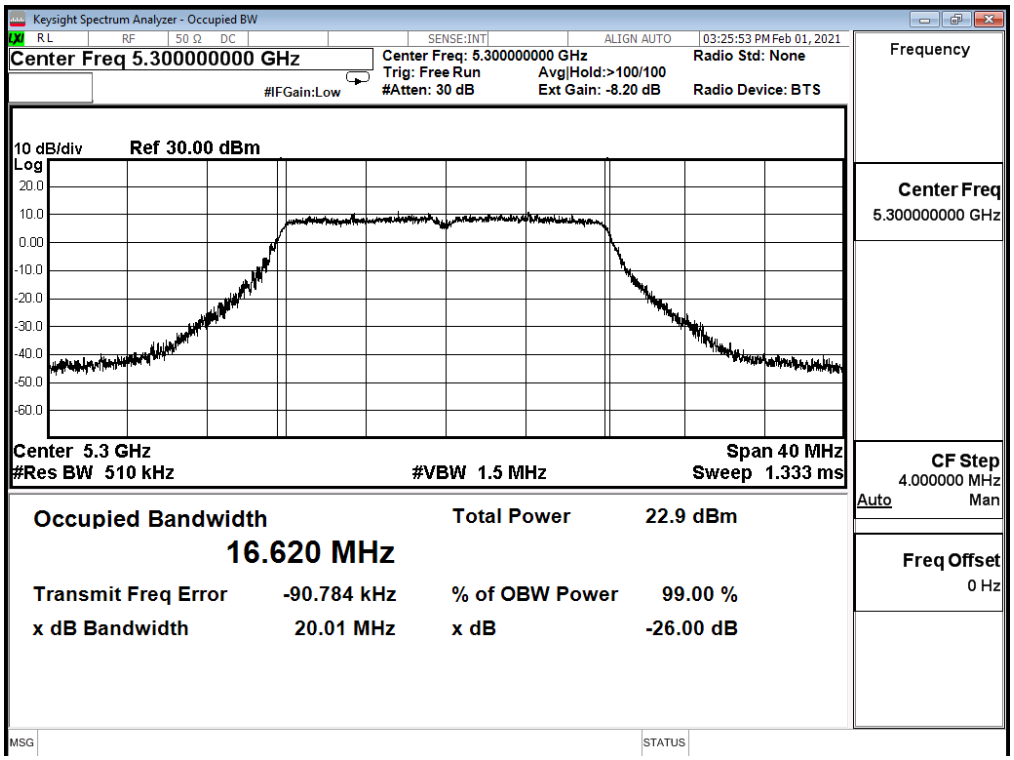
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 1: Transmit CDD Mode		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11a (ANT 0)					
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)	Result
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)		
52	5260	16.627	19.920	--	Pass
60	5300	16.620	20.010	--	Pass
64	5320	16.656	20.290	--	Pass
100	5500	16.659	20.210	--	Pass
116	5580	16.746	20.250	--	Pass
140	5700	16.577	20.300	--	Pass

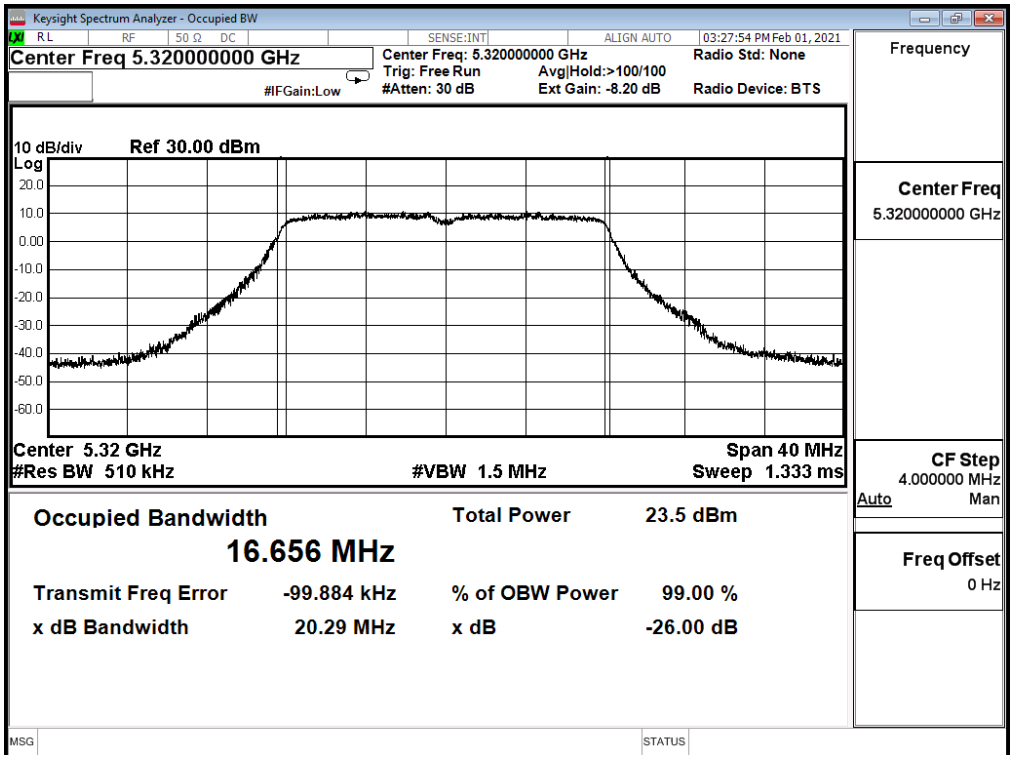
Channel 52 (5260MHz)



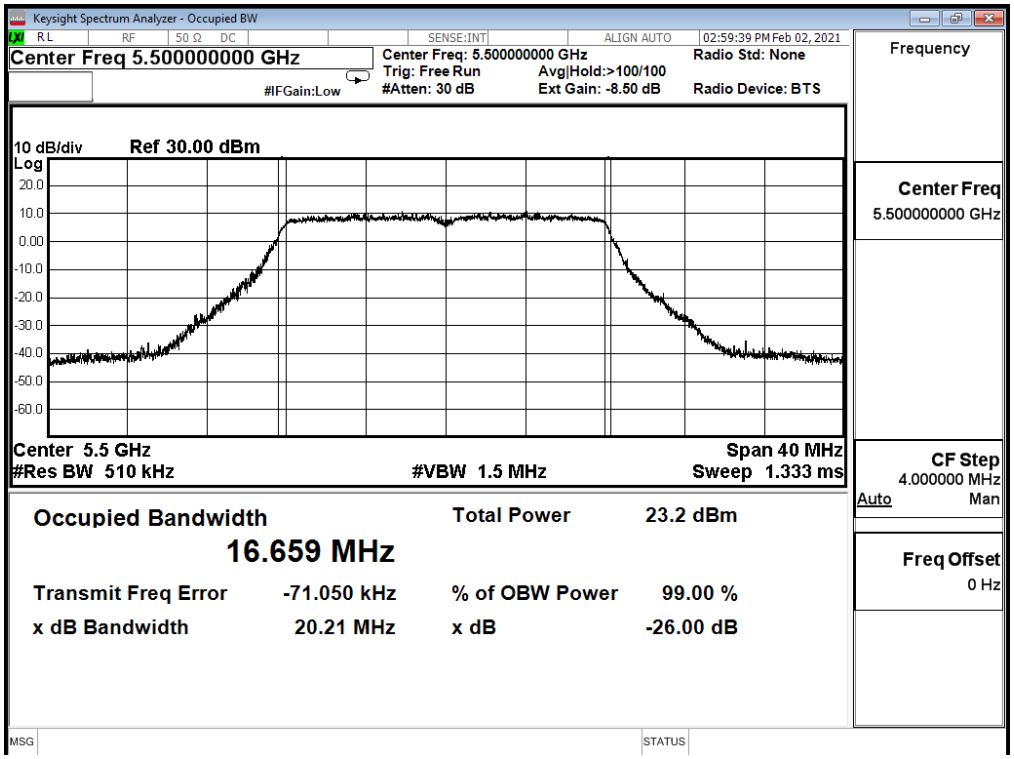
Channel 60 (5300MHz)



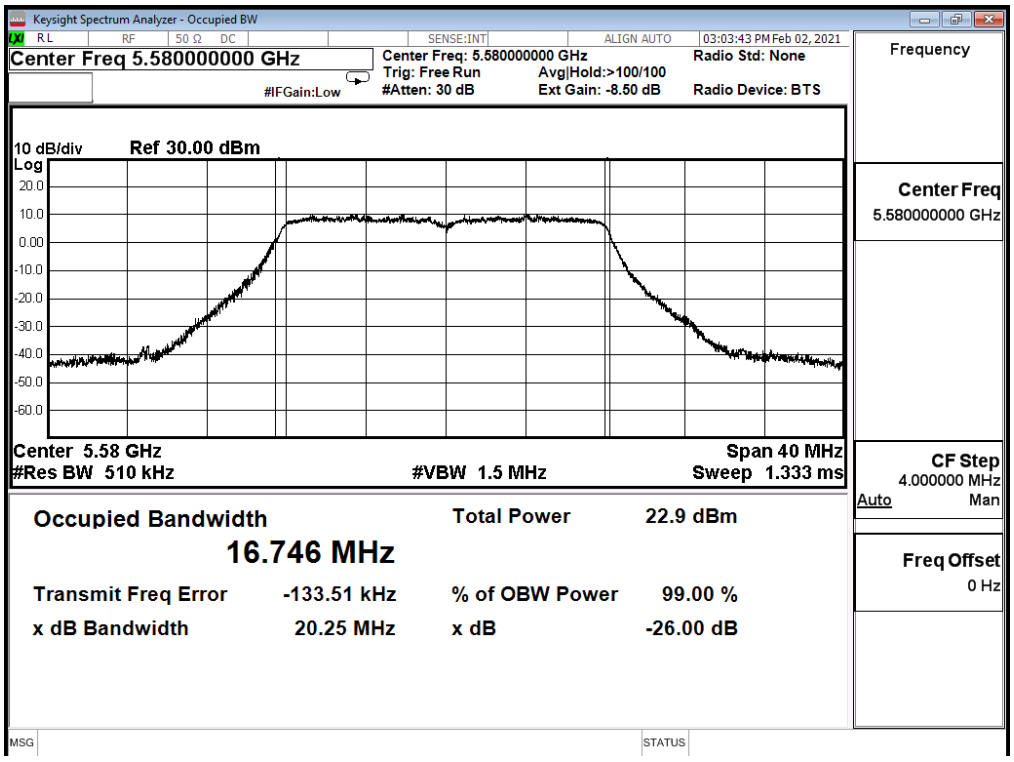
Channel 64 (5320MHz)



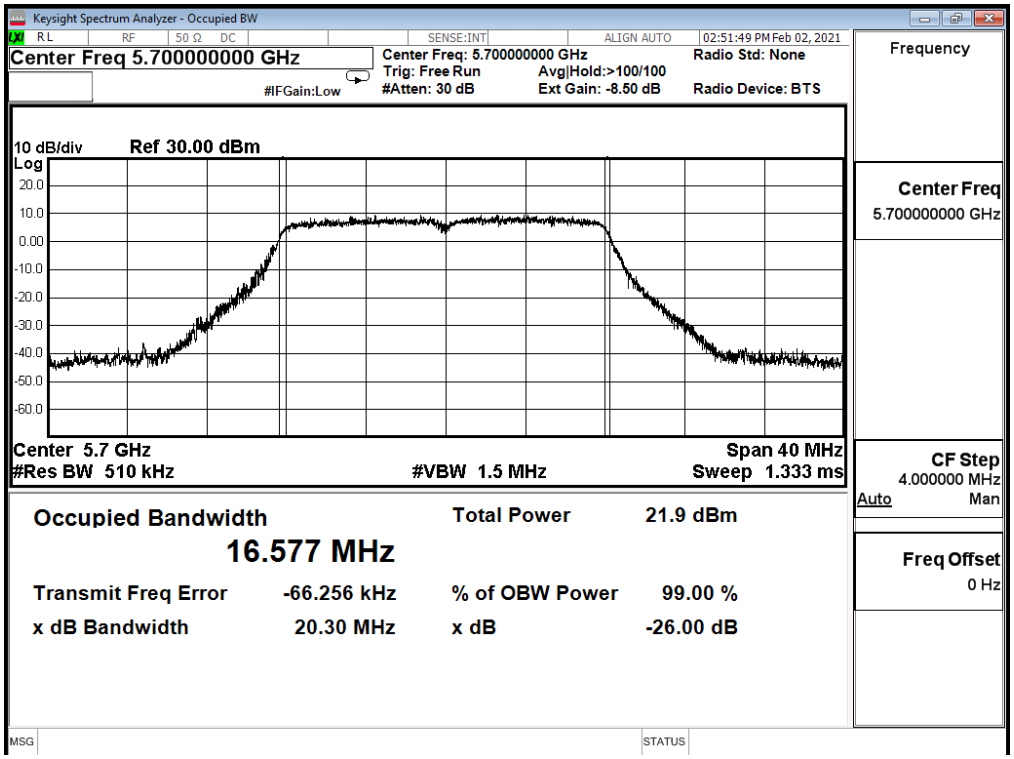
Channel 100 (5500MHz)



Channel 116 (5580MHz)



Channel 140 (5700MHz)

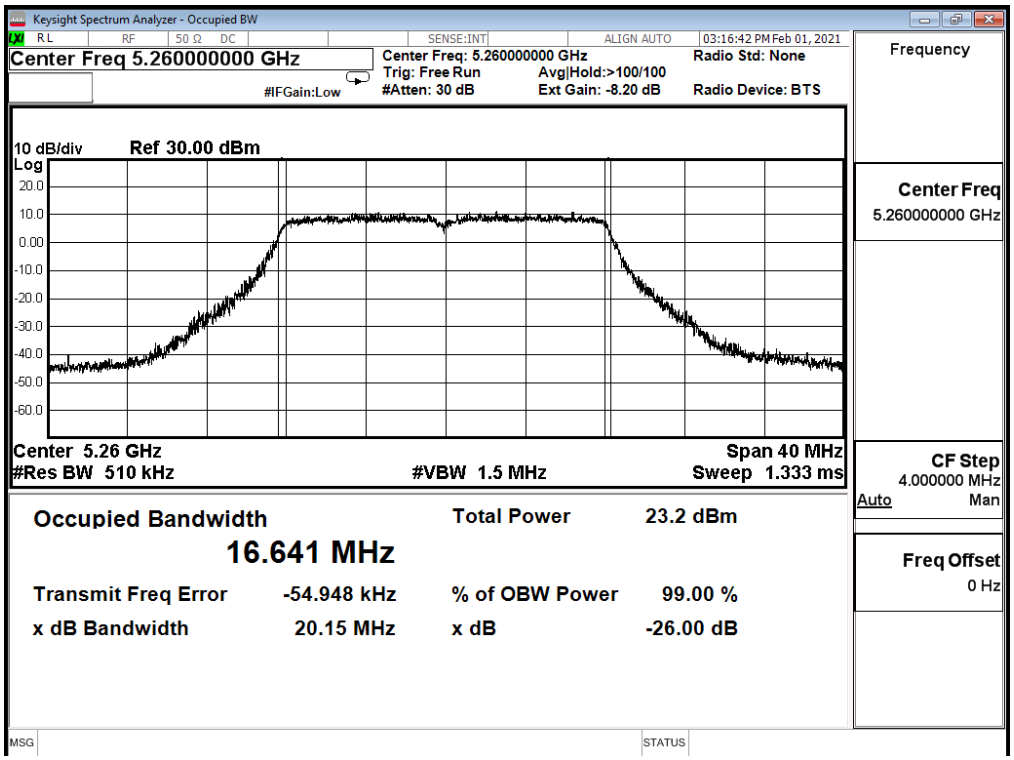


Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 1: Transmit CDD Mode		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

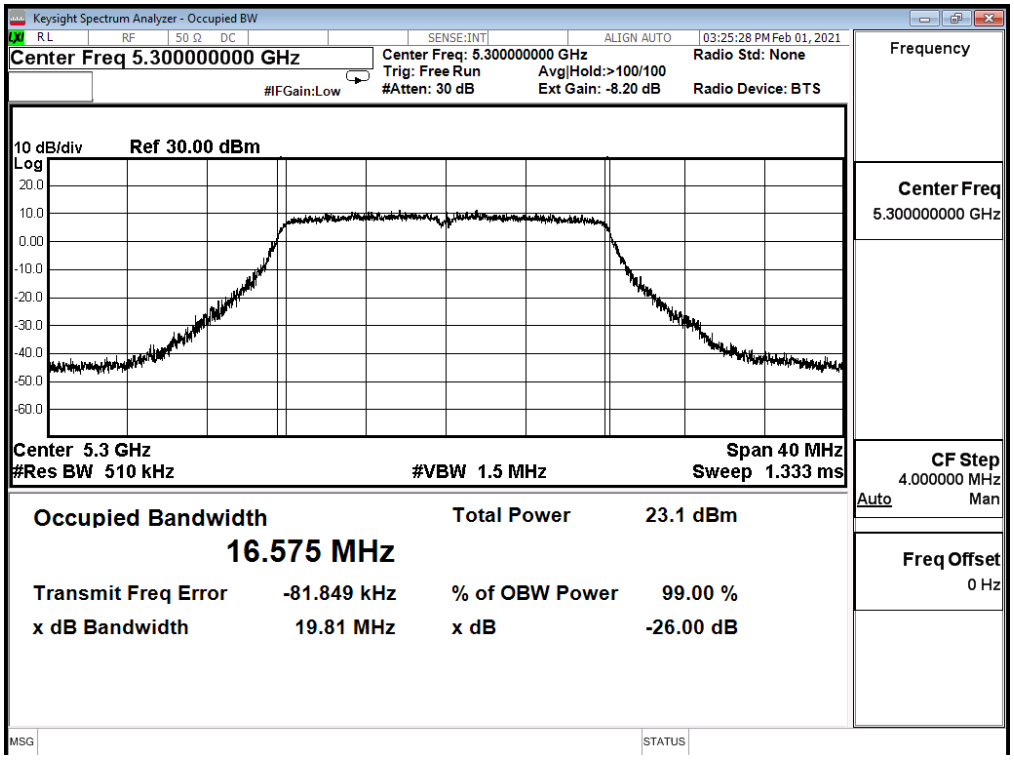
IEEE 802.11a (ANT 1)

Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
52	5260	16.641	20.150	--
60	5300	16.575	19.810	--
64	5320	16.556	19.900	--
100	5500	16.628	20.130	--
116	5580	16.683	20.080	--
140	5700	16.609	20.110	--

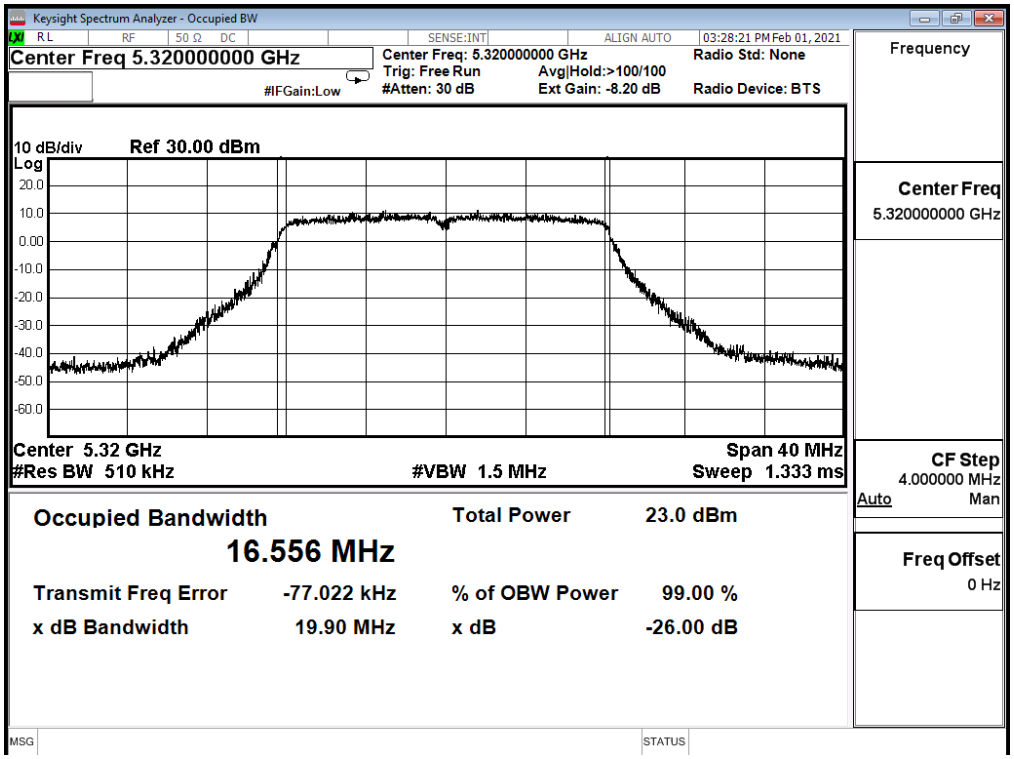
Channel 52 (5260MHz)



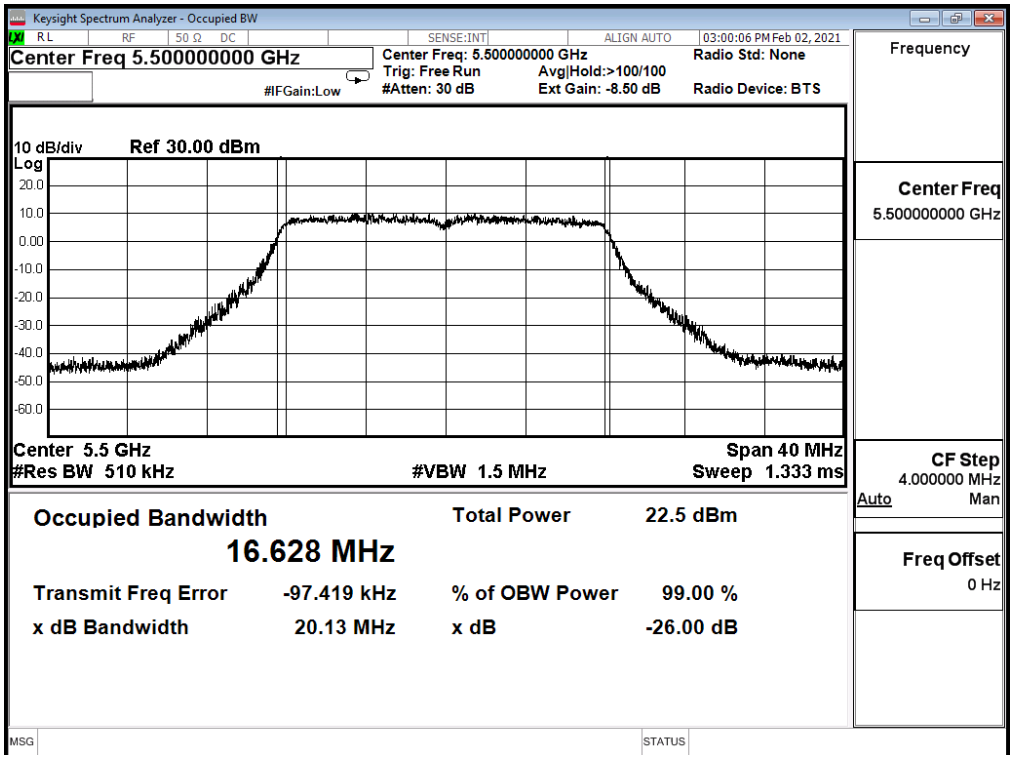
Channel 60 (5300MHz)



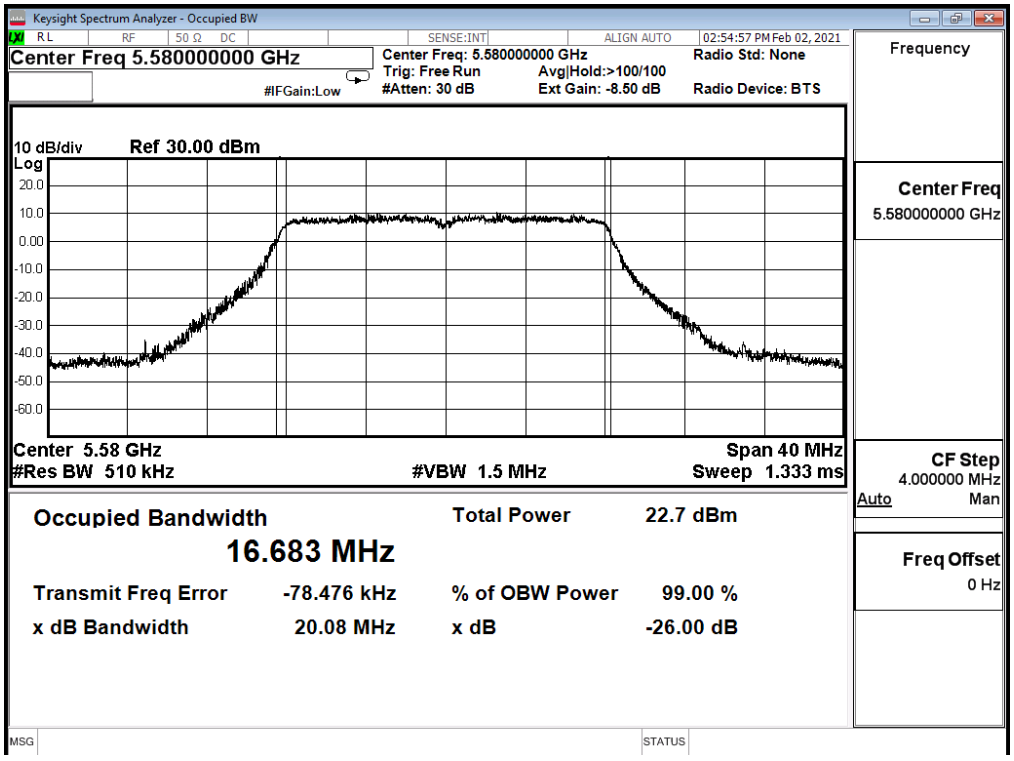
Channel 64 (5320MHz)



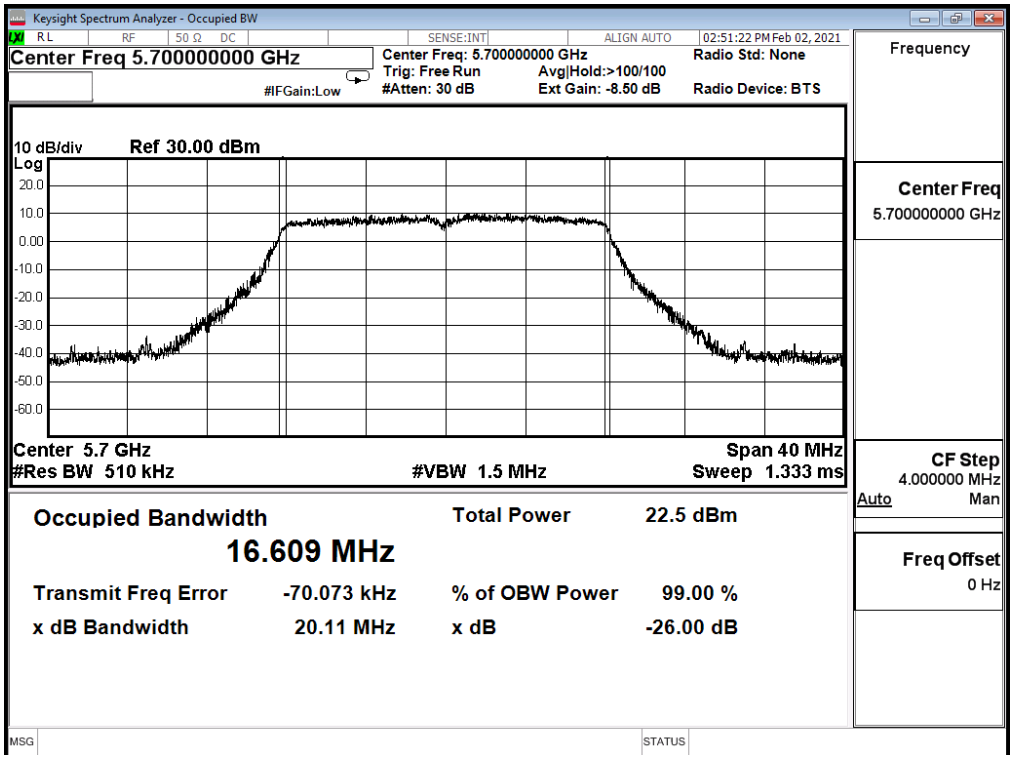
Channel 100 (5500MHz)



Channel 116 (5580MHz)



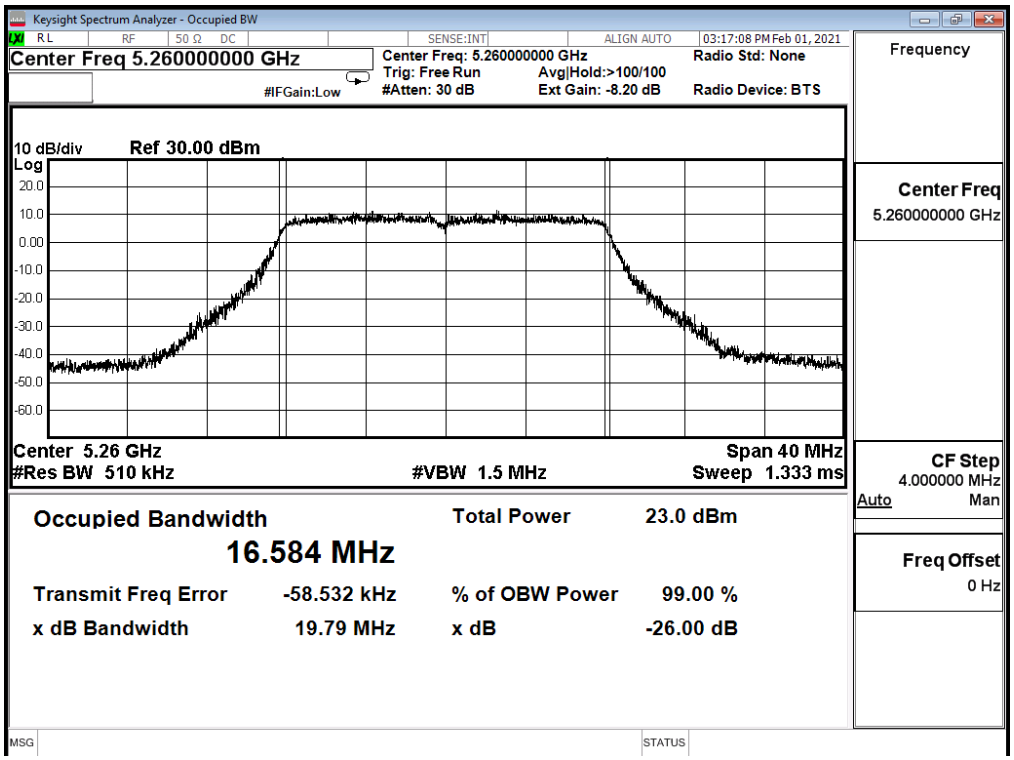
Channel 140 (5700MHz)



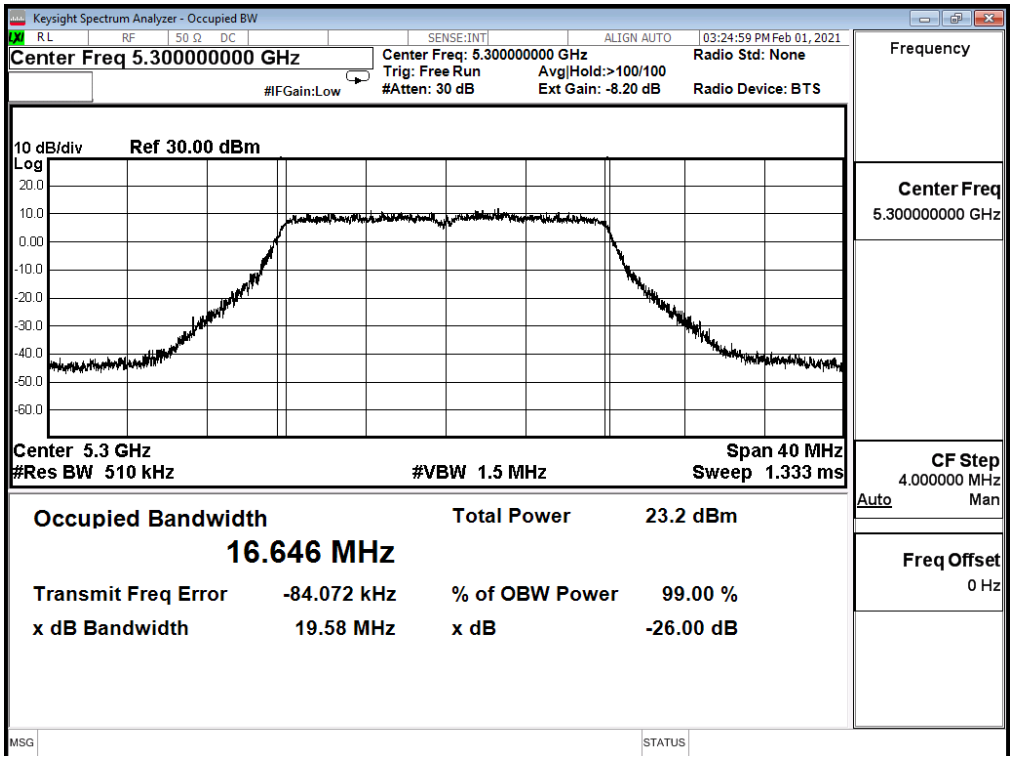
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 1: Transmit CDD Mode		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11a (ANT 2)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
52	5260	16.584	19.790	--
60	5300	16.646	19.580	--
64	5320	16.613	20.050	--
100	5500	16.599	19.650	--
116	5580	16.660	19.860	--
140	5700	16.589	19.520	--

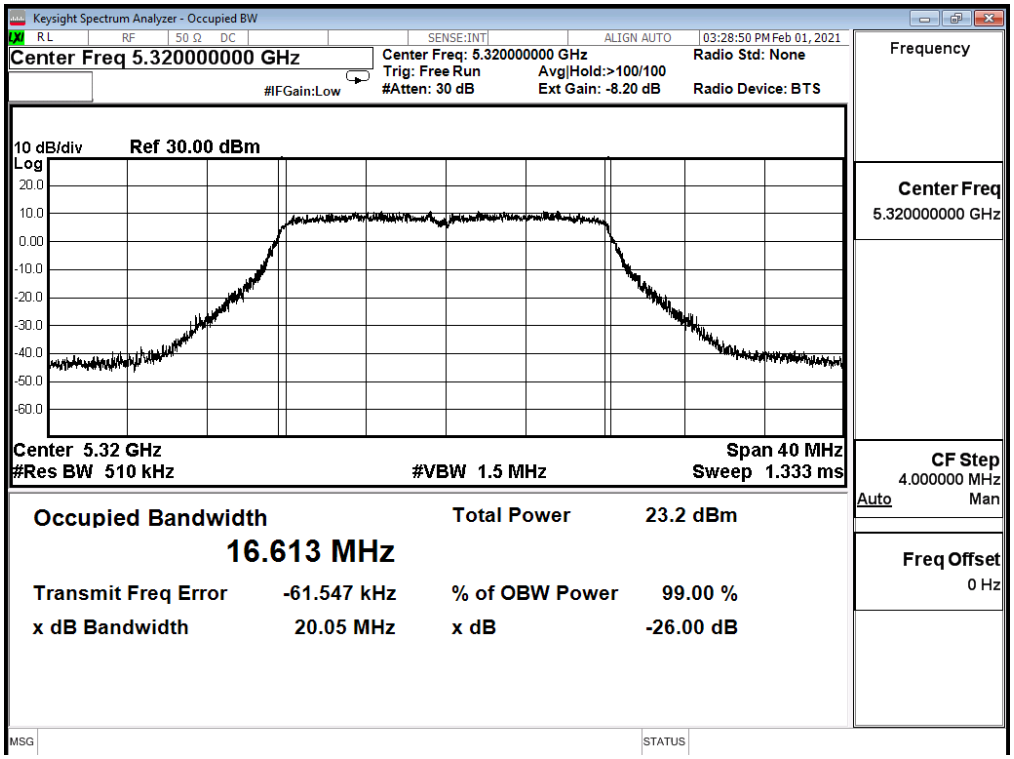
Channel 52 (5260MHz)



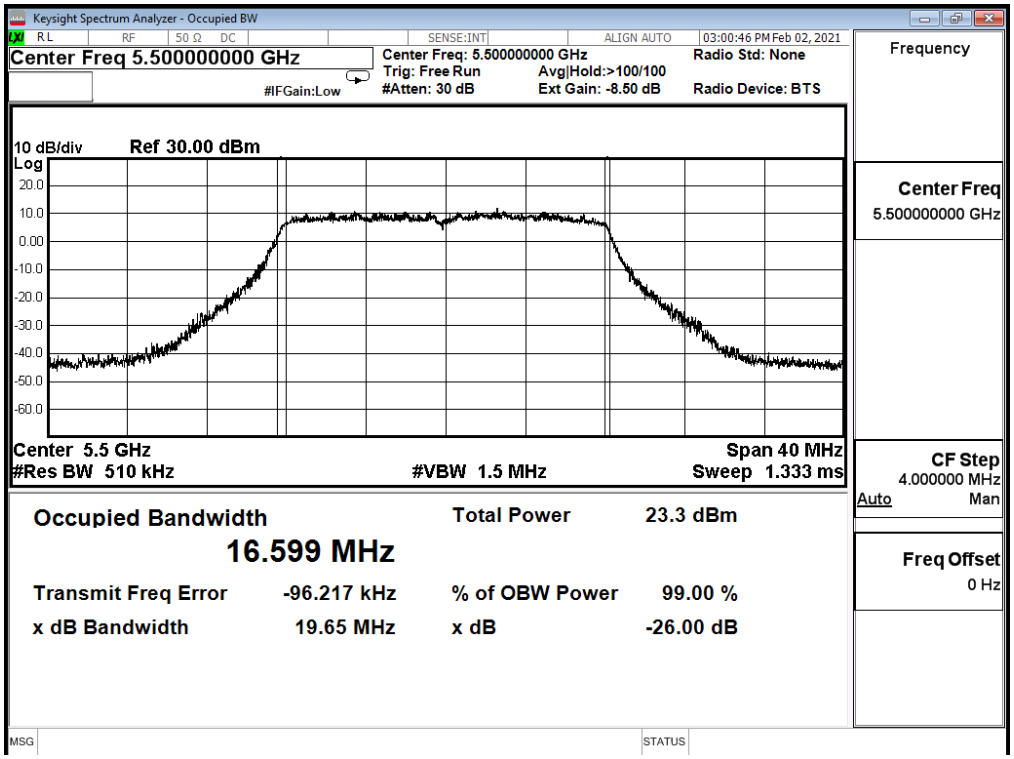
Channel 60 (5300MHz)



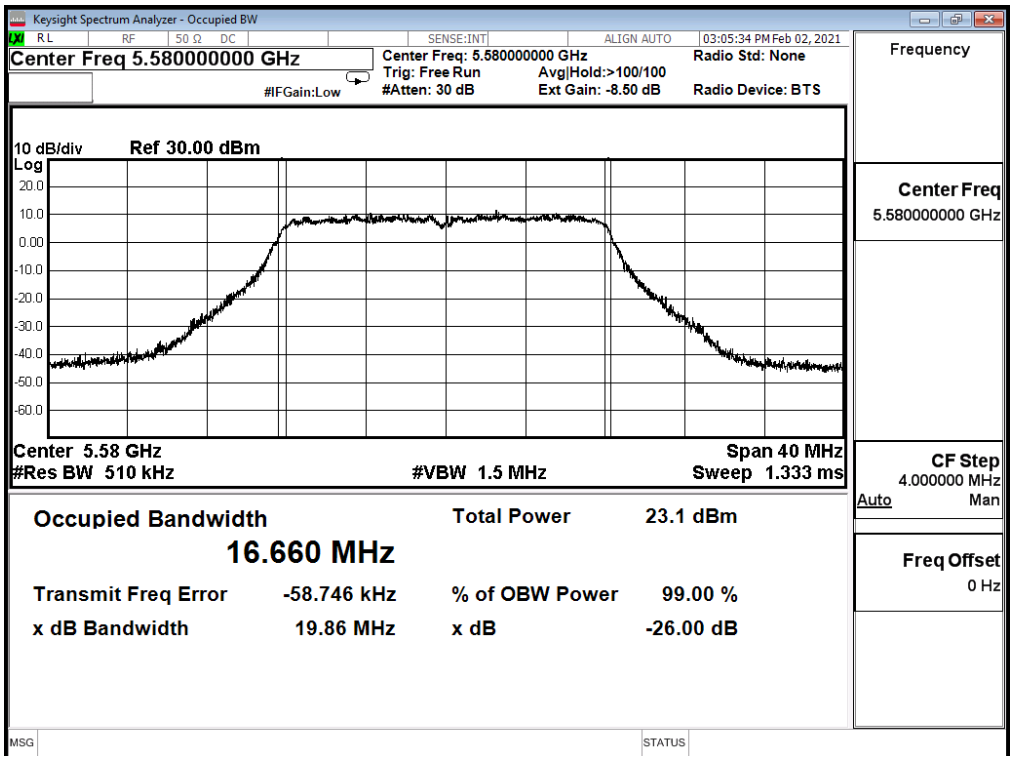
Channel 64 (5320MHz)



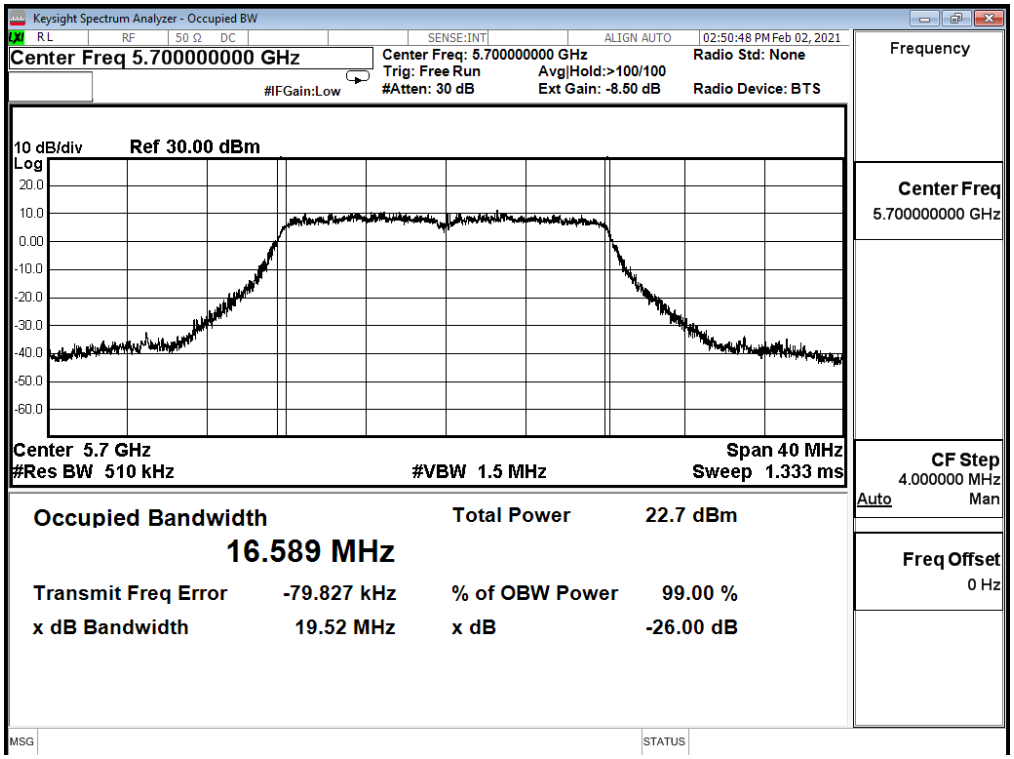
Channel 100 (5500MHz)



Channel 116 (5580MHz)



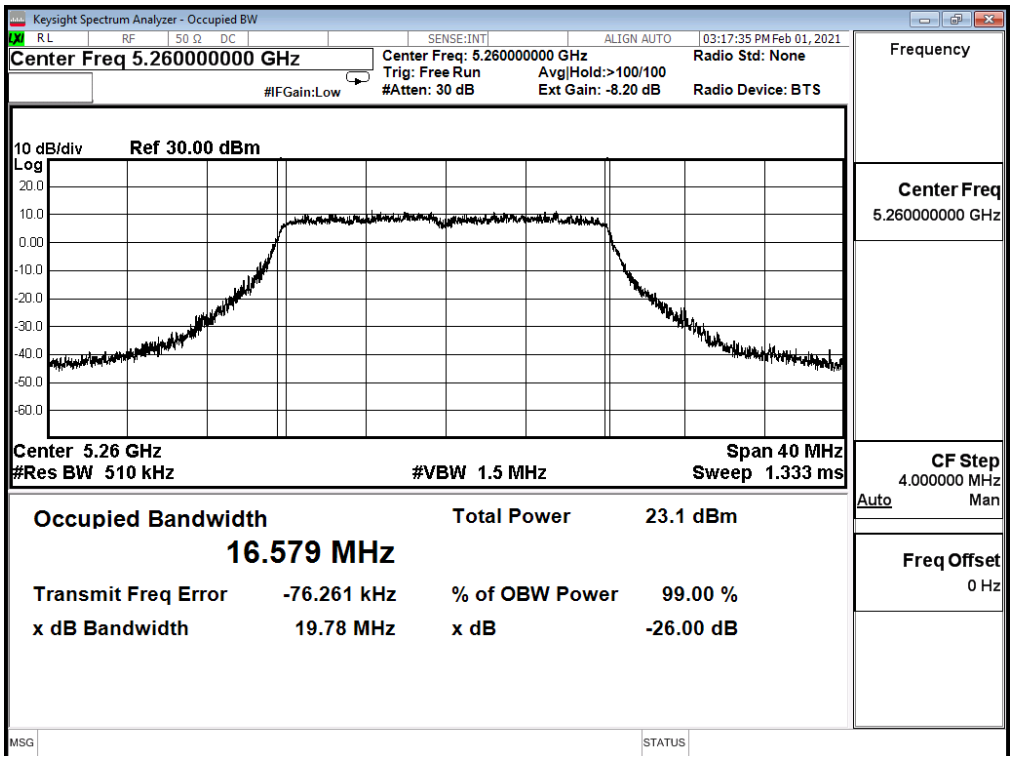
Channel 140 (5700MHz)



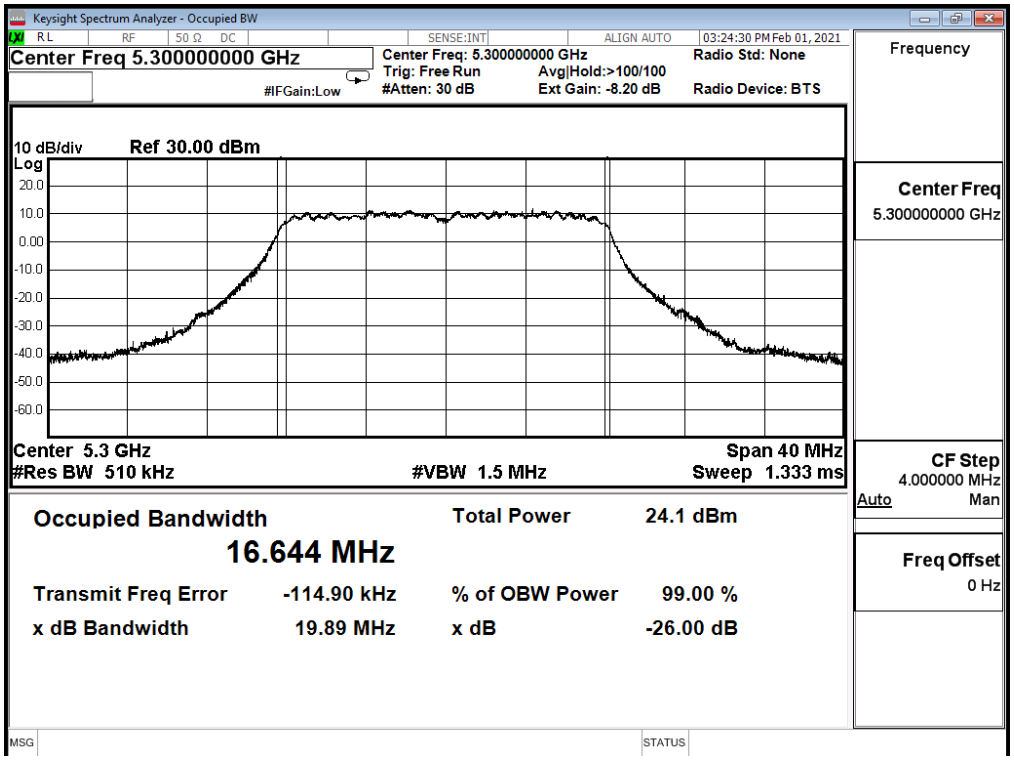
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 1: Transmit CDD Mode		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11a (ANT 3)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
52	5260	16.579	19.780	--
60	5300	16.644	19.890	--
64	5320	16.566	19.660	--
100	5500	16.603	20.070	--
116	5580	16.588	19.980	--
140	5700	16.572	19.760	--

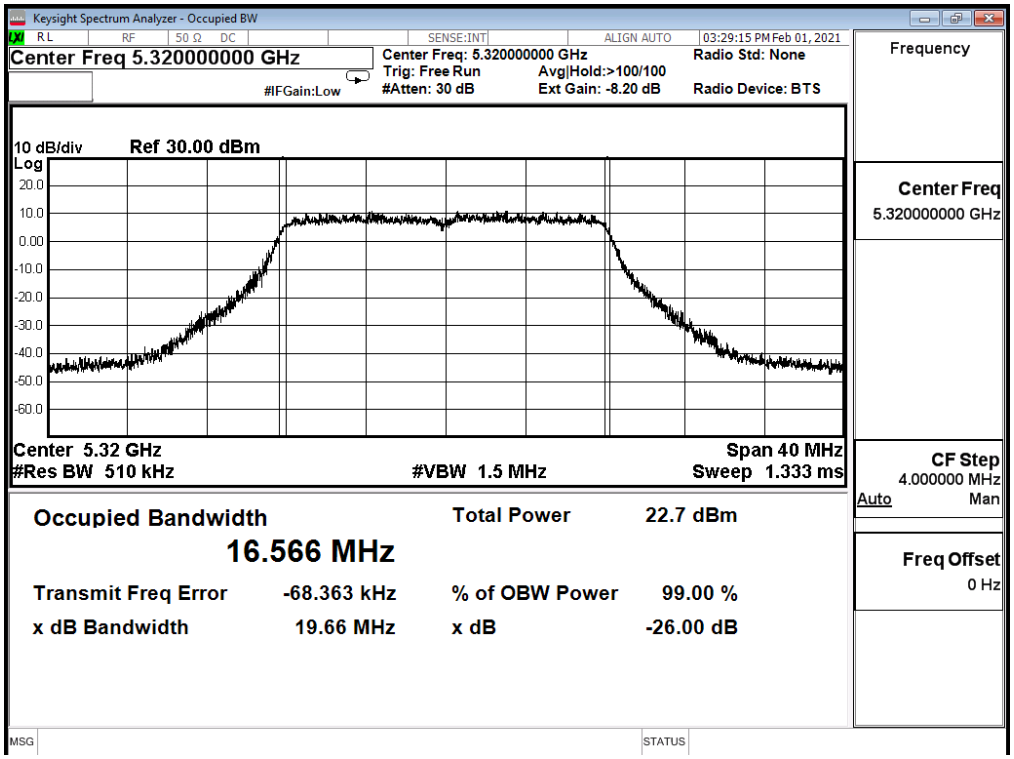
Channel 52 (5260MHz)



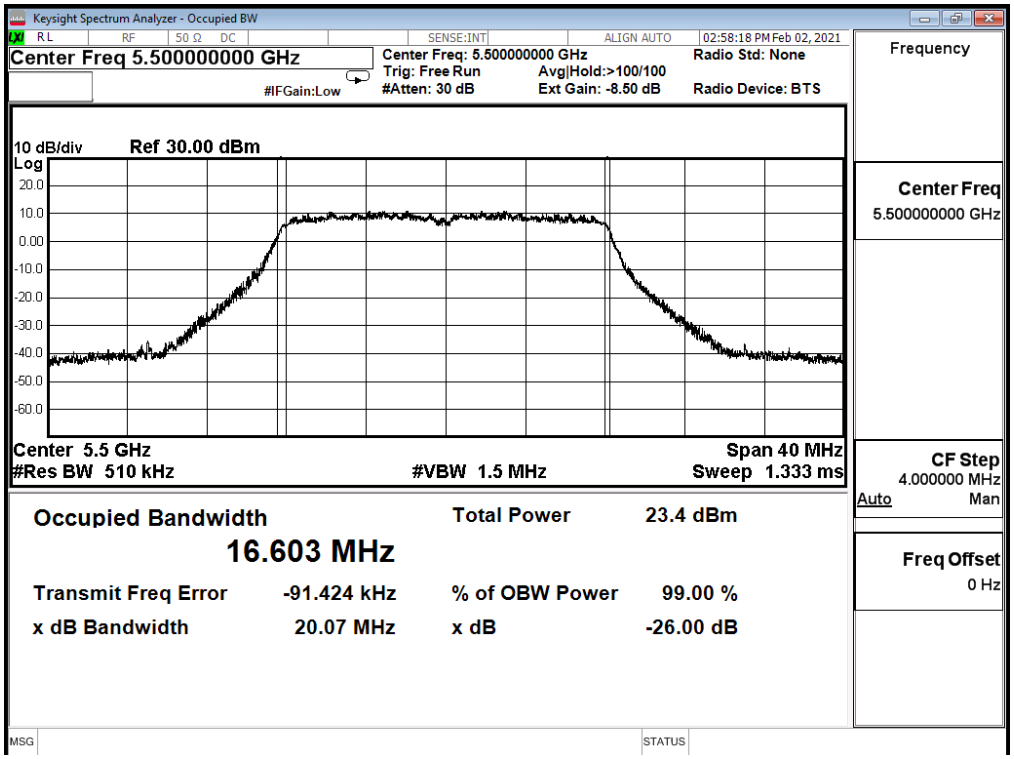
Channel 60 (5300MHz)



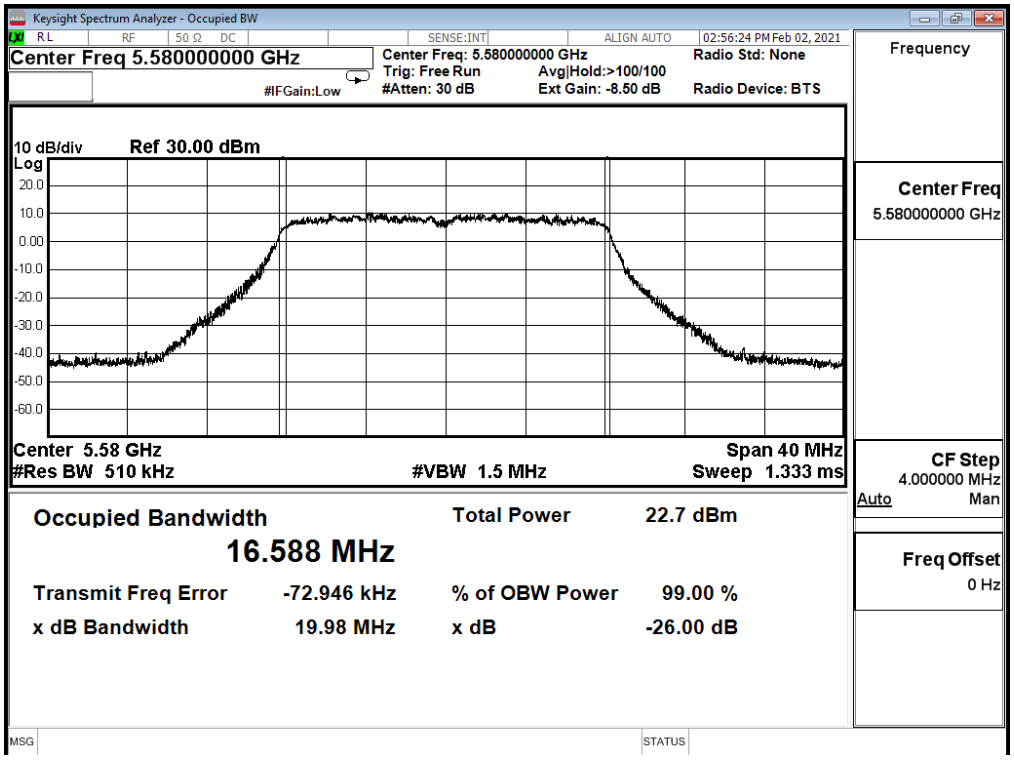
Channel 64 (5320MHz)



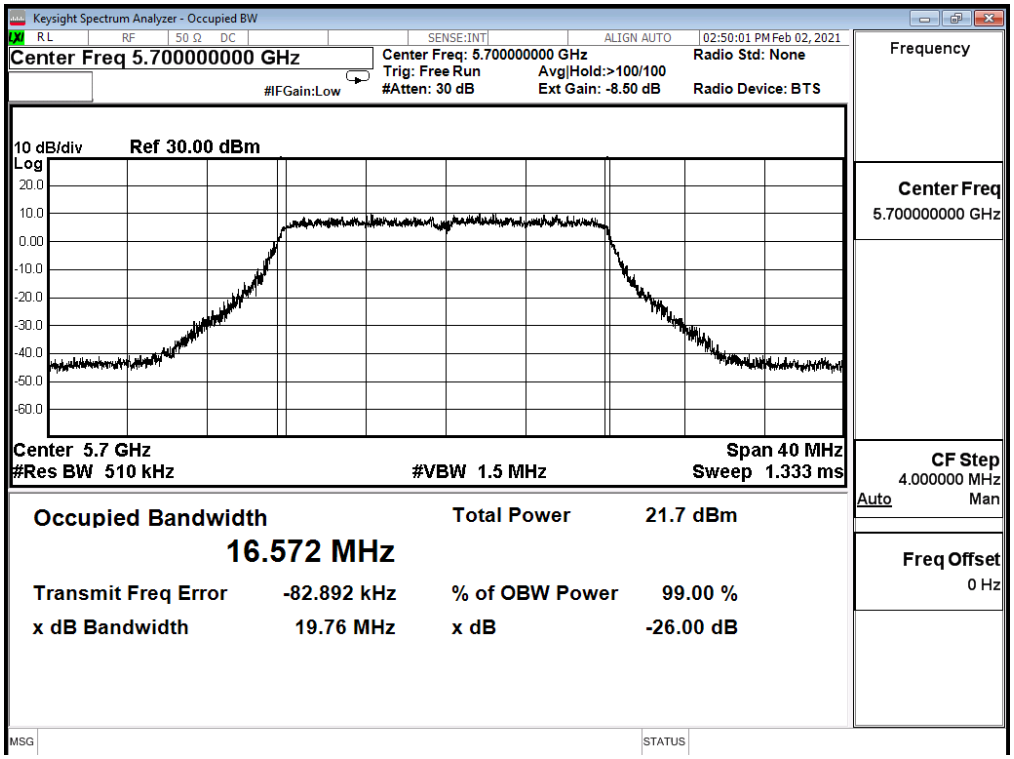
Channel 100 (5500MHz)



Channel 116 (5580MHz)



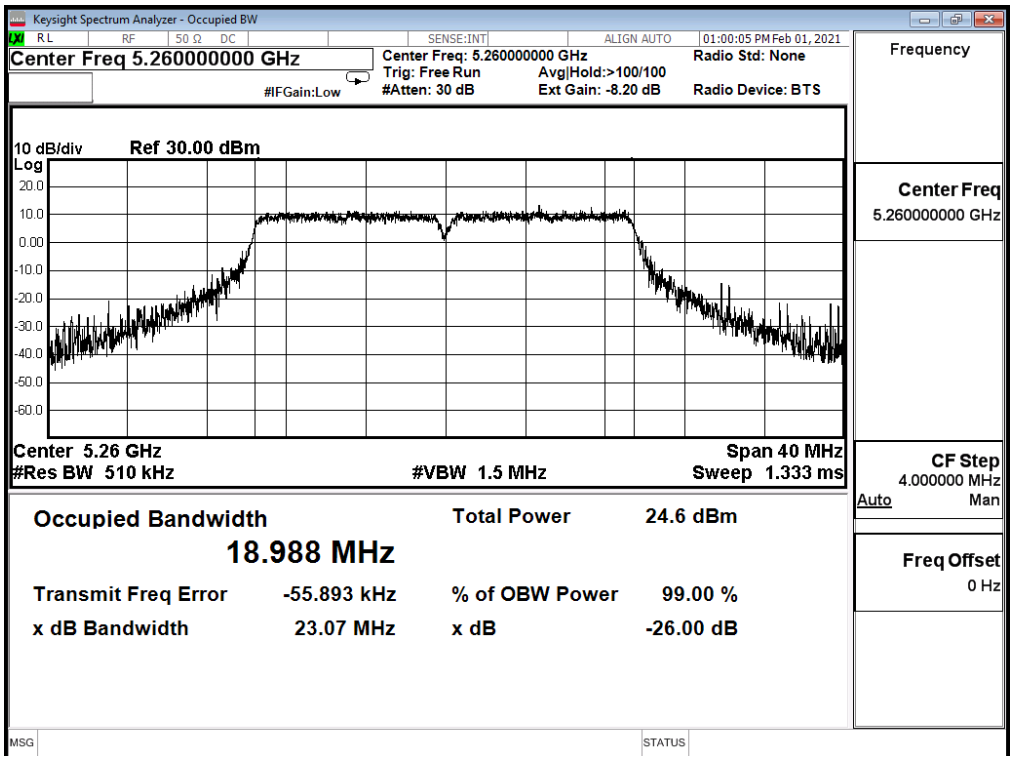
Channel 140 (5700MHz)



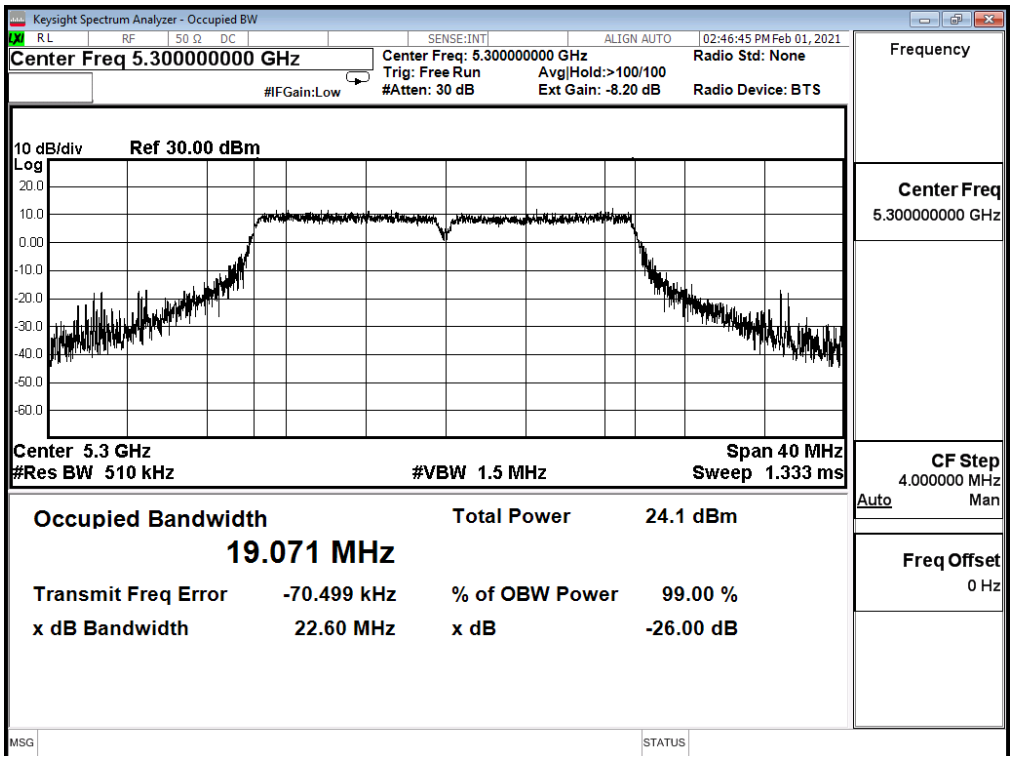
roduct	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_20M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
52	5260	18.988	23.070	--
60	5300	19.071	22.600	--
64	5320	19.046	22.940	--
100	5500	19.071	23.920	--
116	5580	19.102	22.780	--
140	5700	19.071	23.100	--

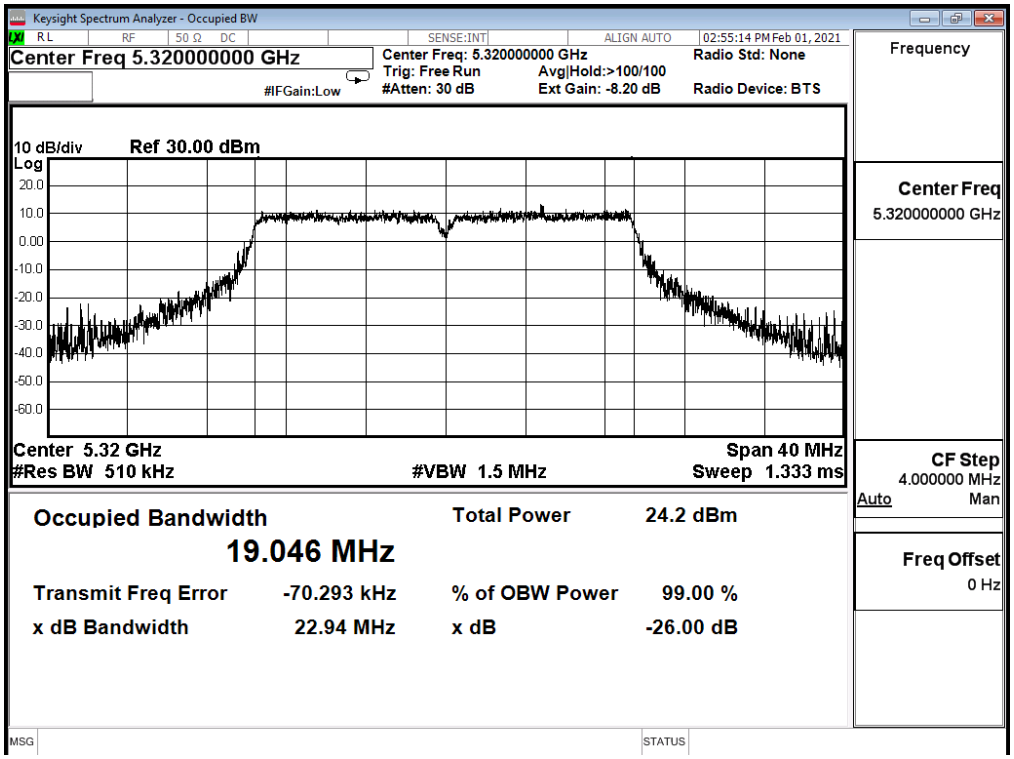
Channel 52 (5260MHz)



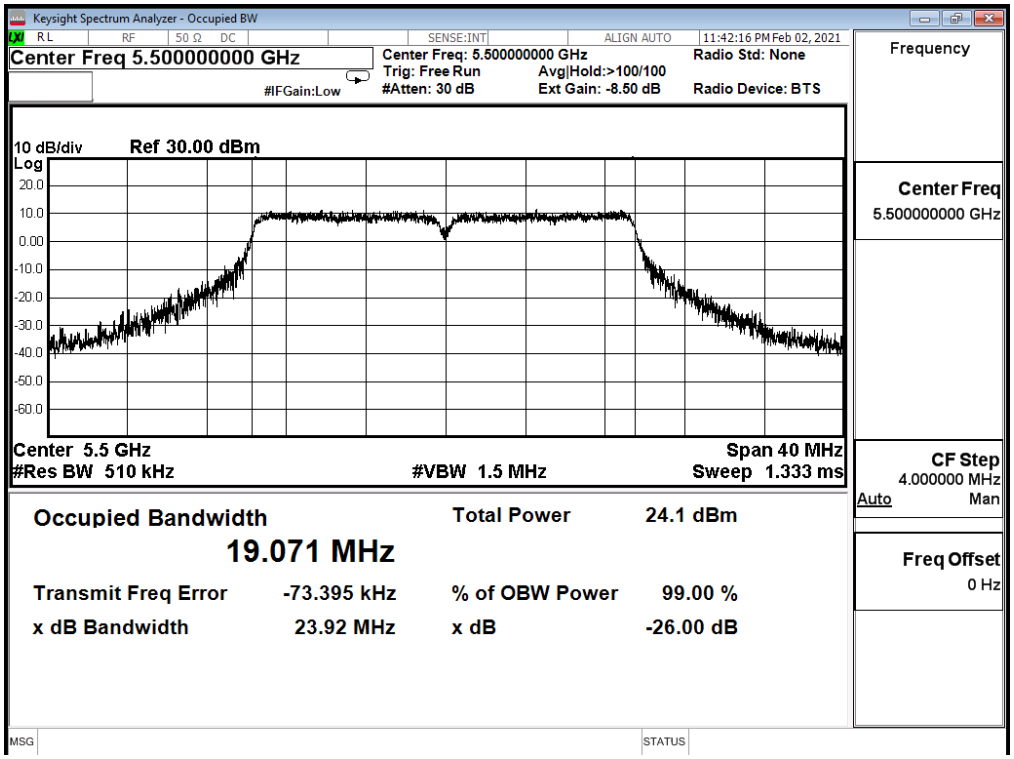
Channel 60 (5300MHz)



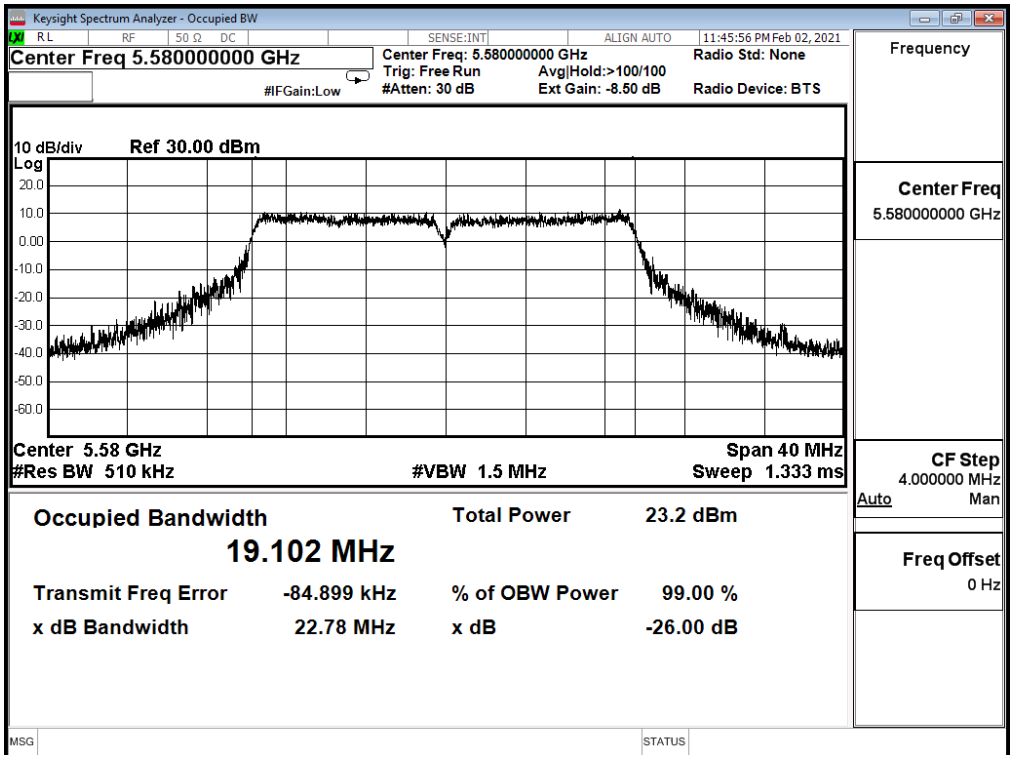
Channel 64 (5320MHz)



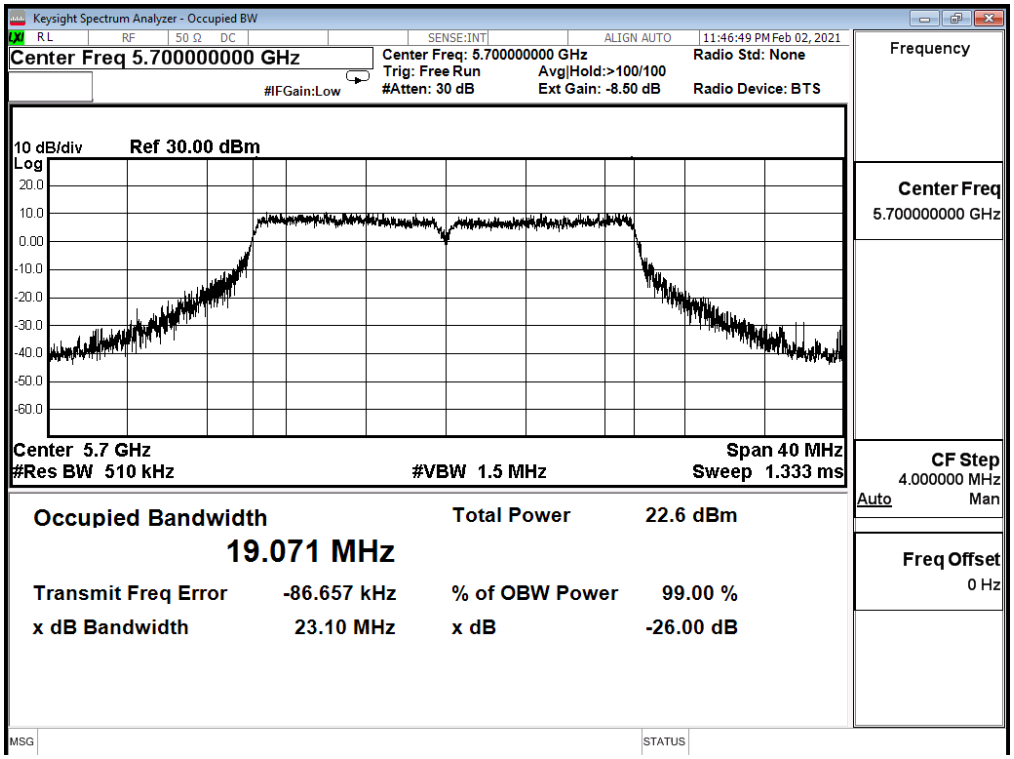
Channel 100 (5500MHz)



Channel 116 (5580MHz)



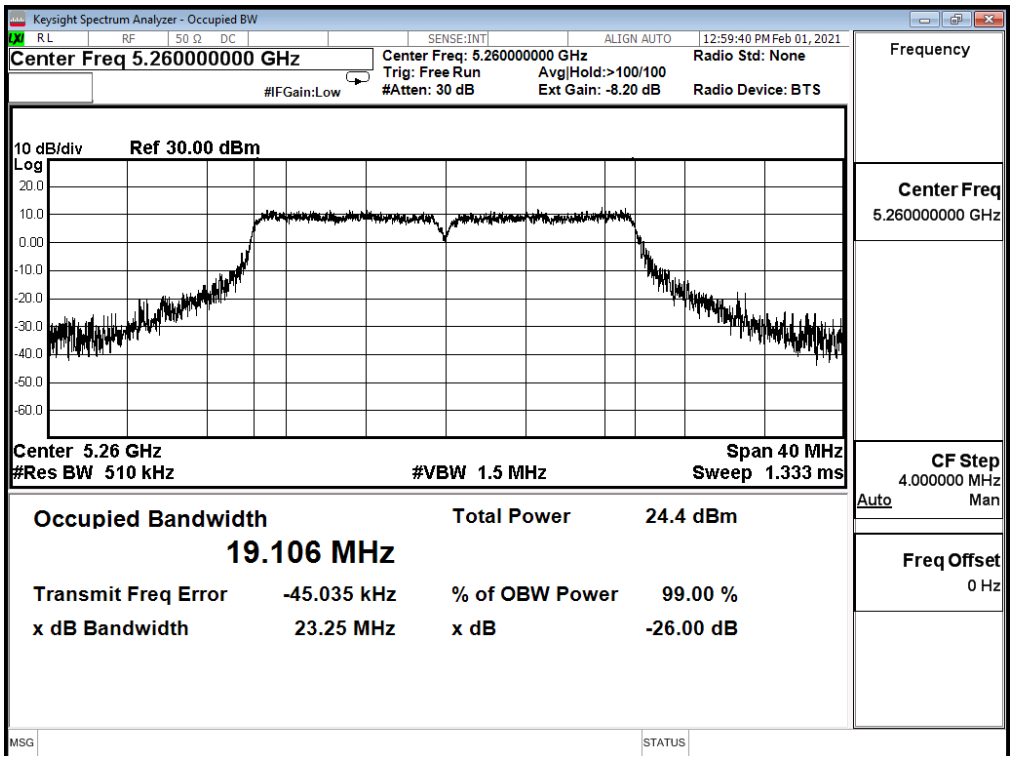
Channel 140 (5700MHz)



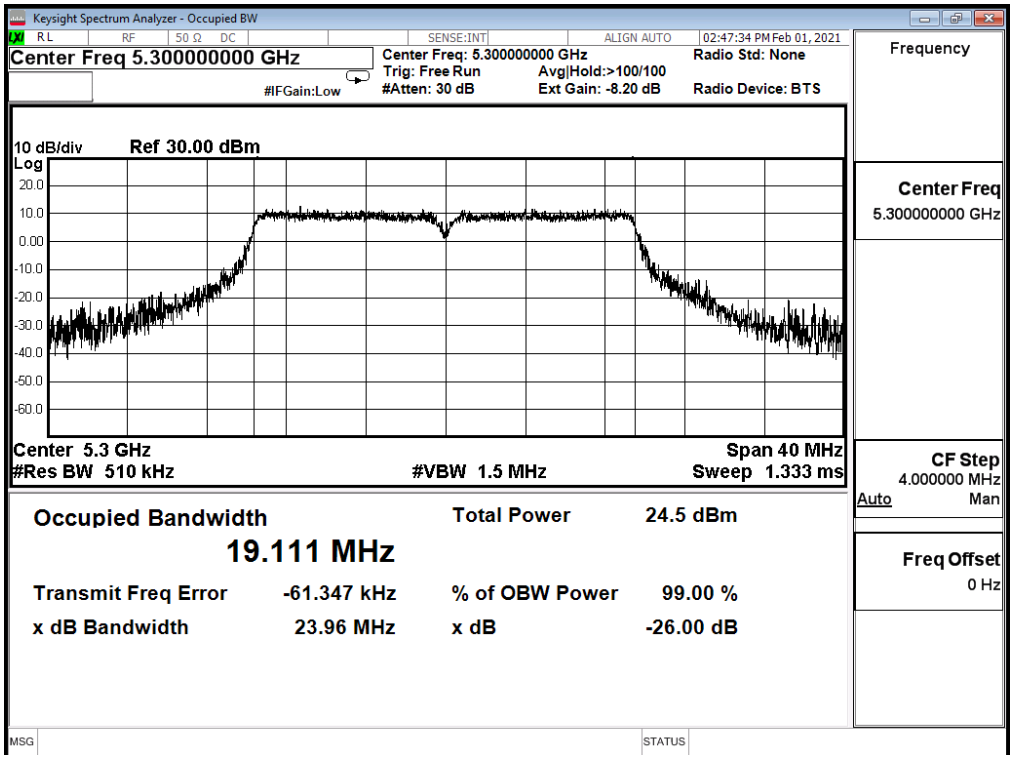
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_20M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
52	5260	19.106	23.250	--
60	5300	19.111	23.960	--
64	5320	19.139	24.010	--
100	5500	19.063	23.040	--
116	5580	19.013	26.070	--
140	5700	19.069	23.620	--

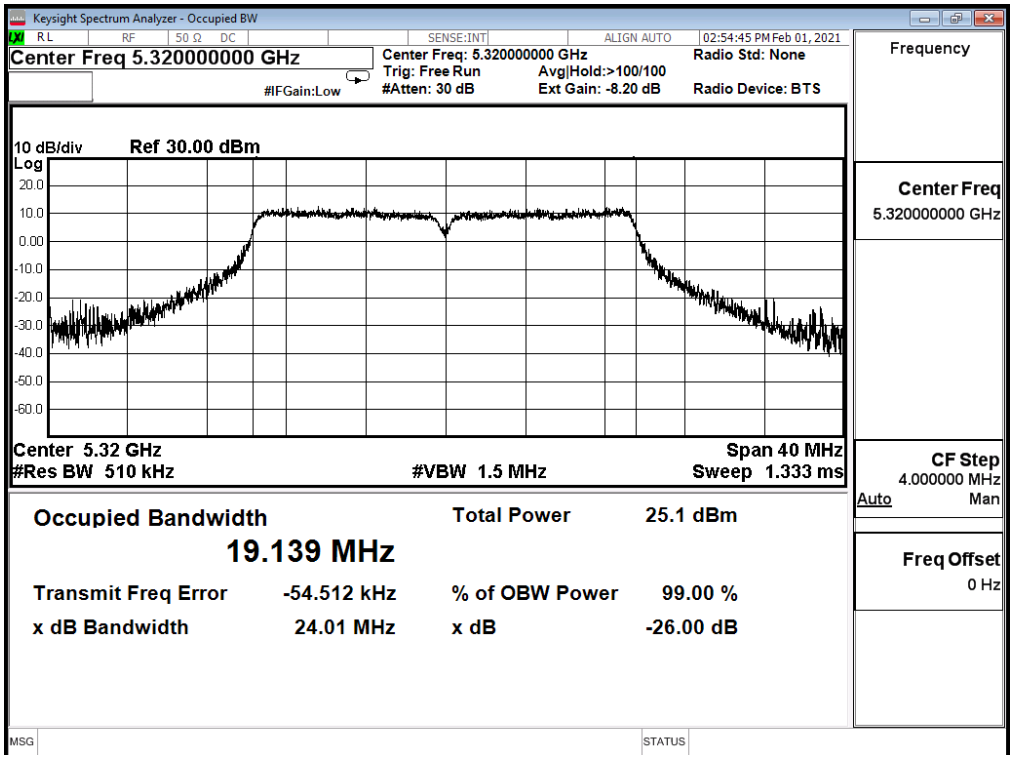
Channel 52 (5260MHz)



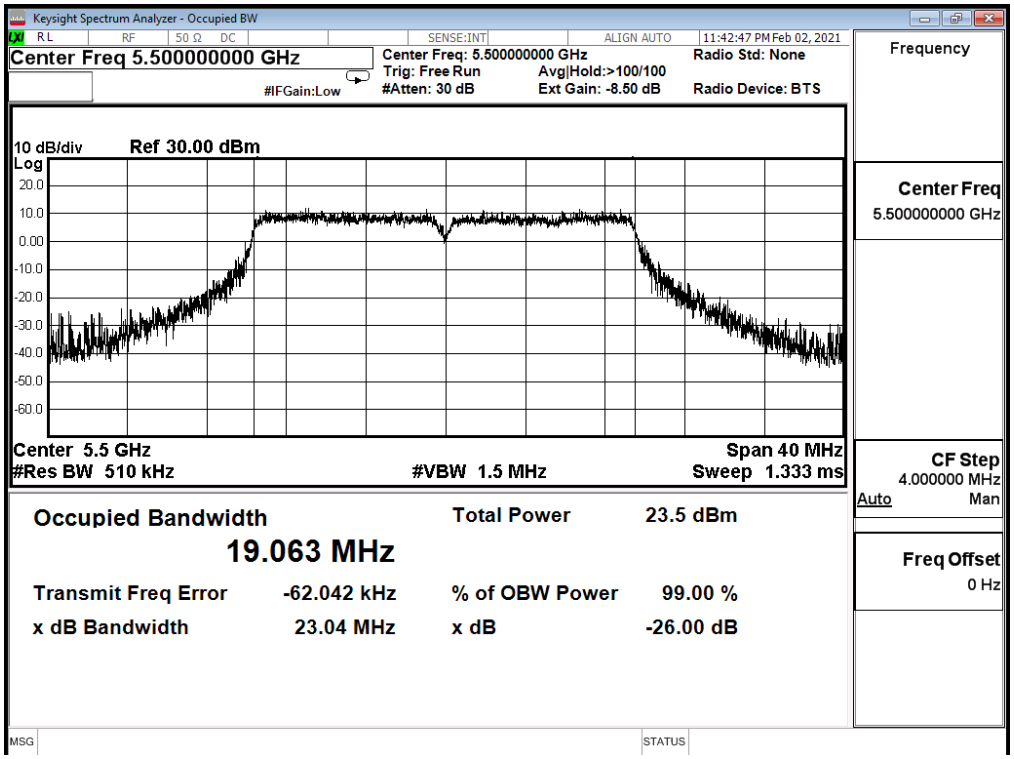
Channel 60 (5300MHz)



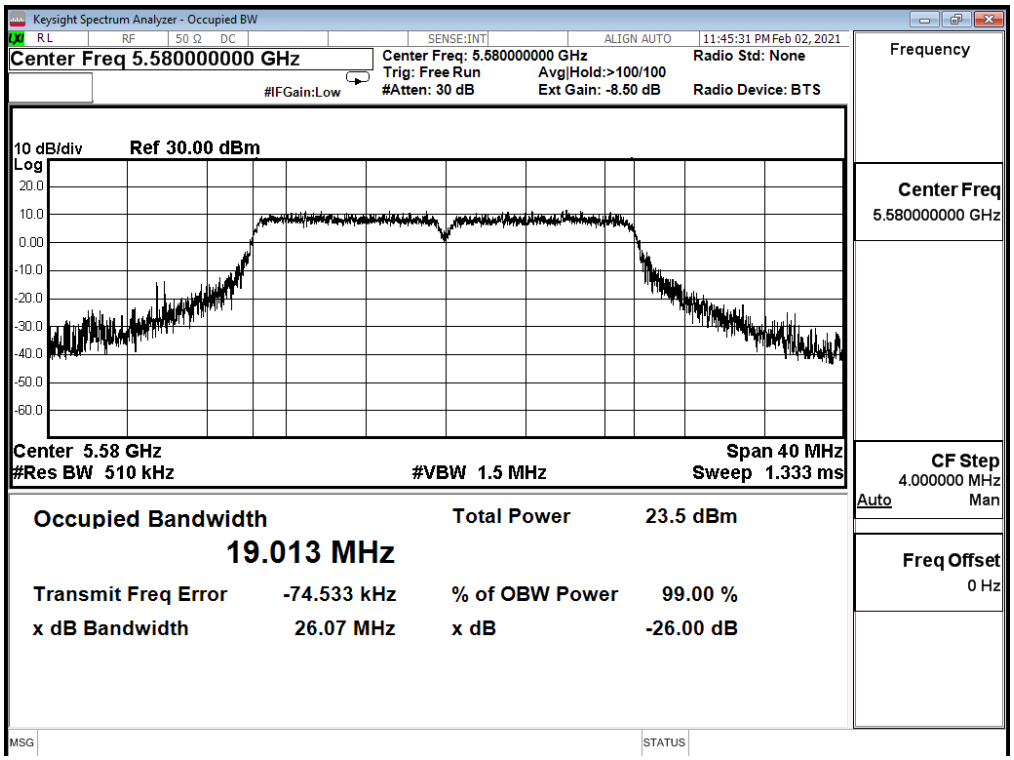
Channel 64 (5320MHz)



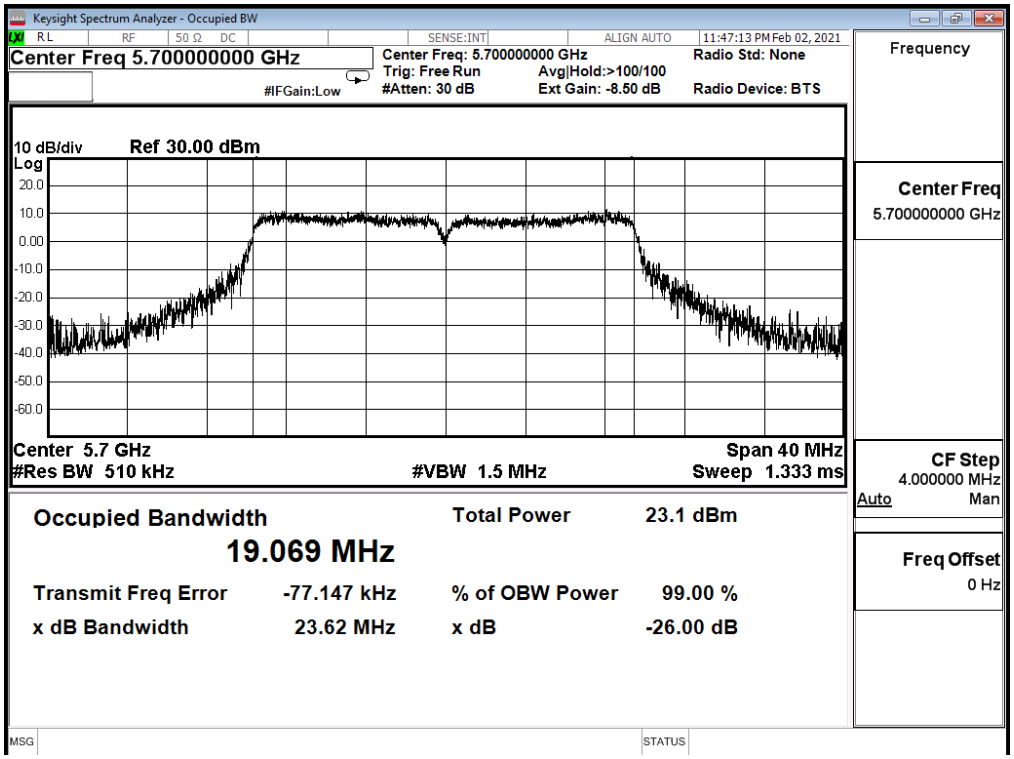
Channel 100 (5500MHz)



Channel 116 (5580MHz)



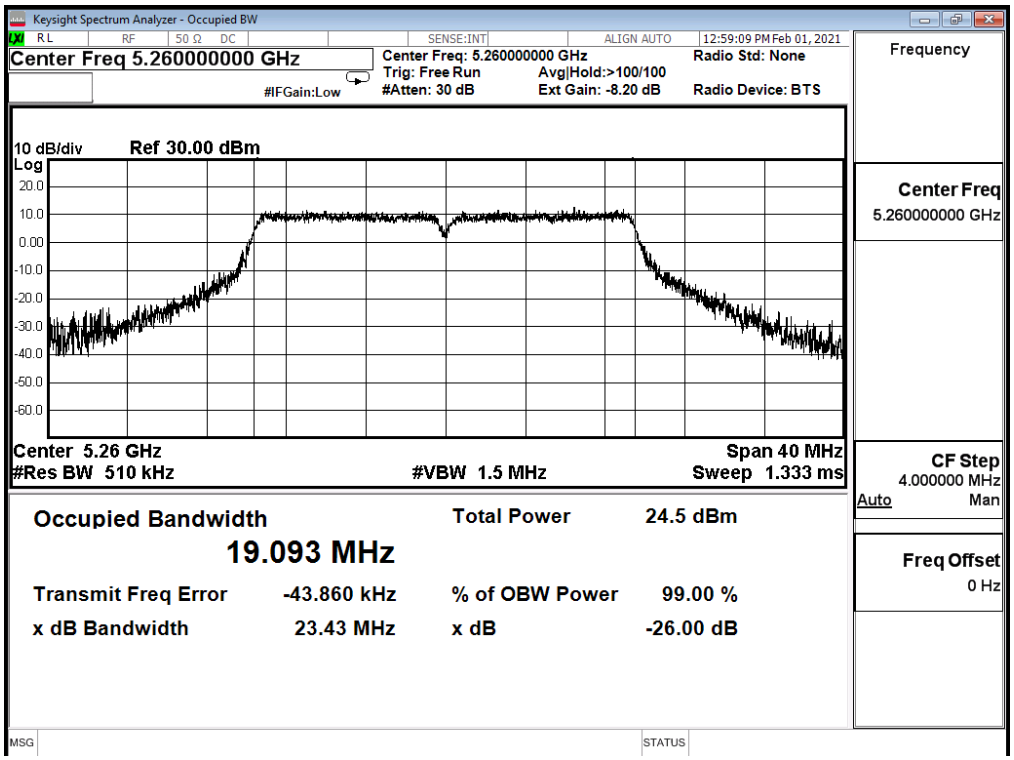
Channel 140 (5700MHz)



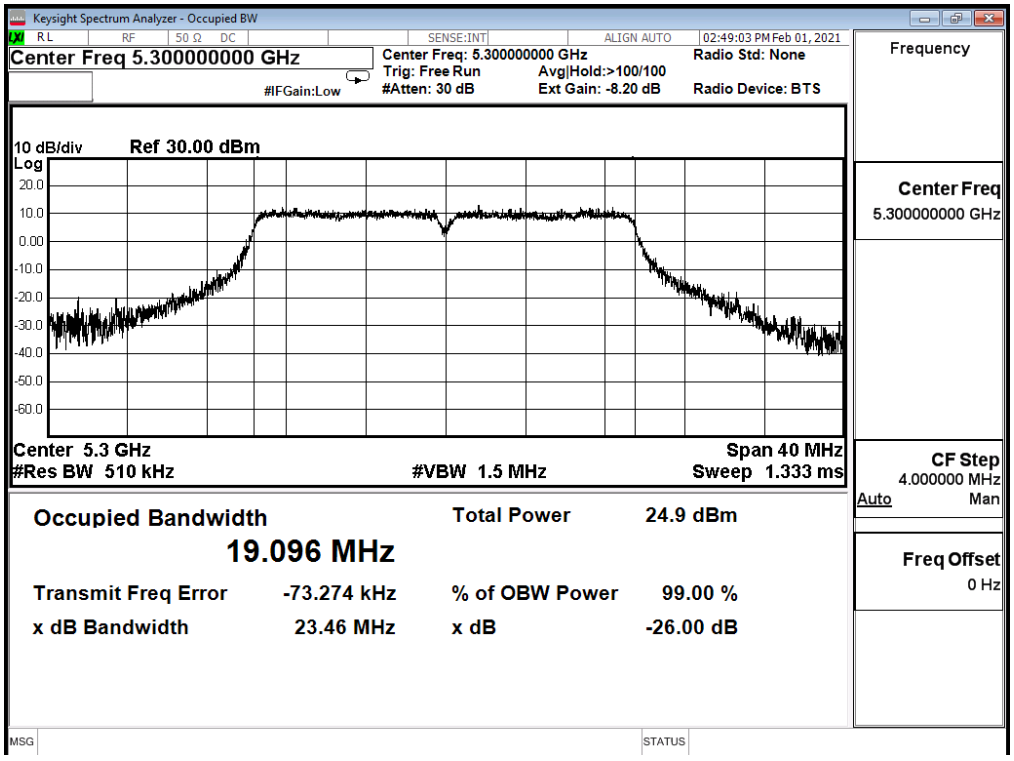
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_20M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
52	5260	19.093	23.443	--
60	5300	19.096	23.460	--
64	5320	19.096	23.740	--
100	5500	19.085	23.820	--
116	5580	19.032	23.600	--
140	5700	19.087	23.720	--

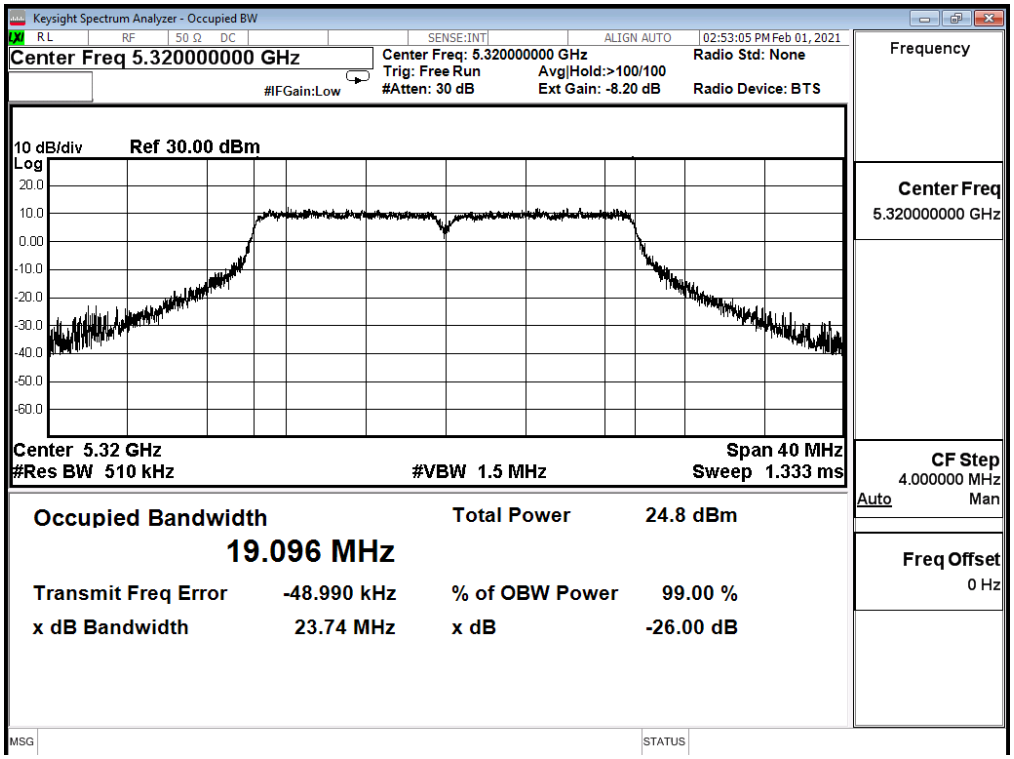
Channel 52 (5260MHz)



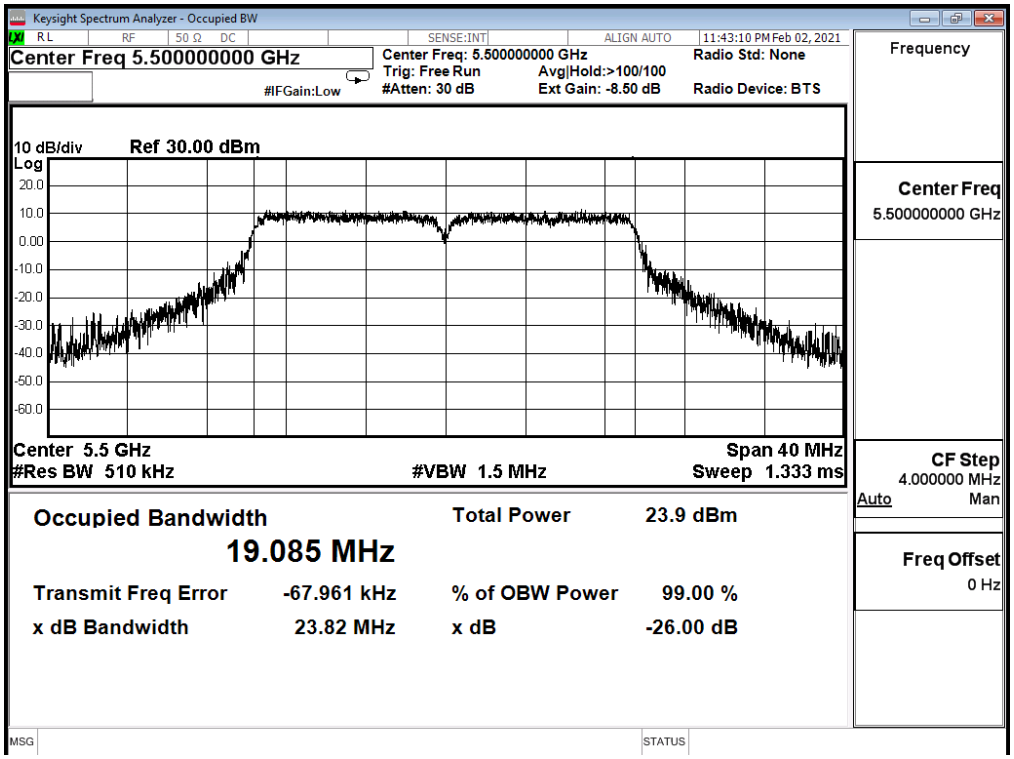
Channel 60 (5300MHz)



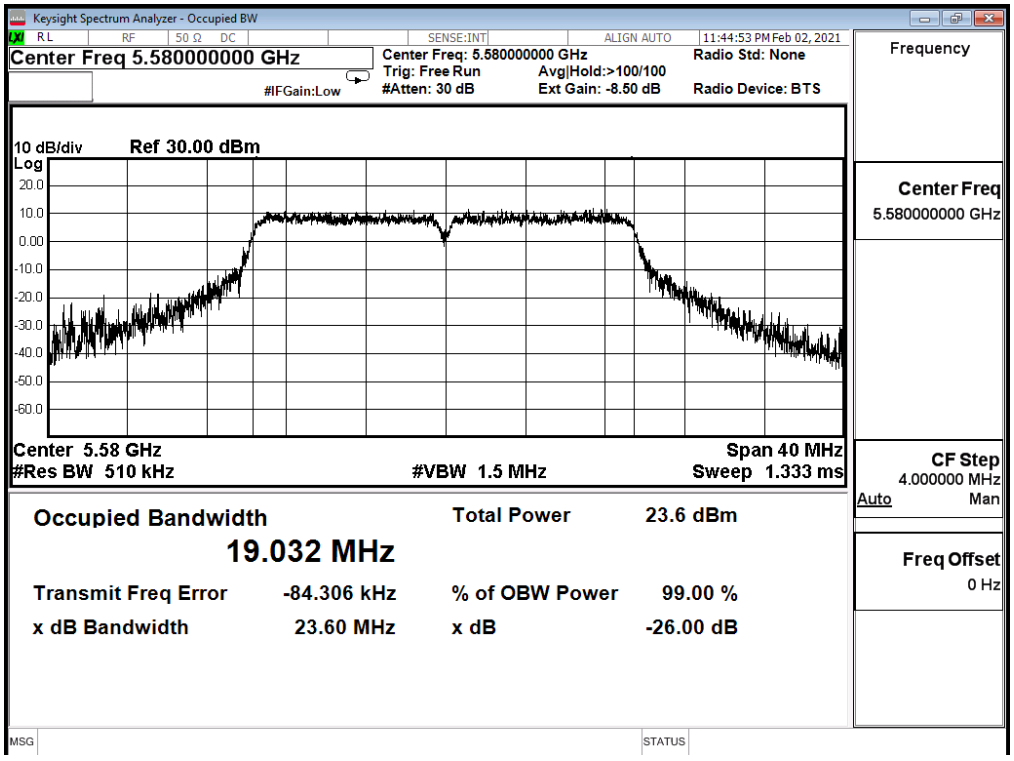
Channel 64 (5320MHz)



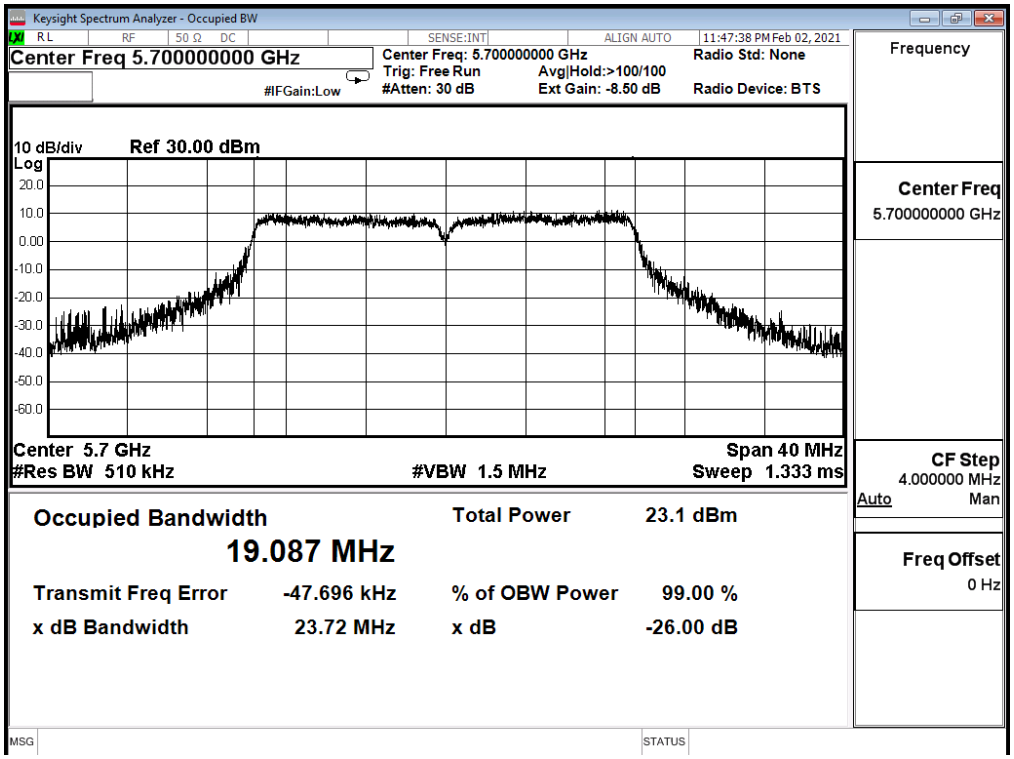
Channel 100 (5500MHz)



Channel 116 (5580MHz)



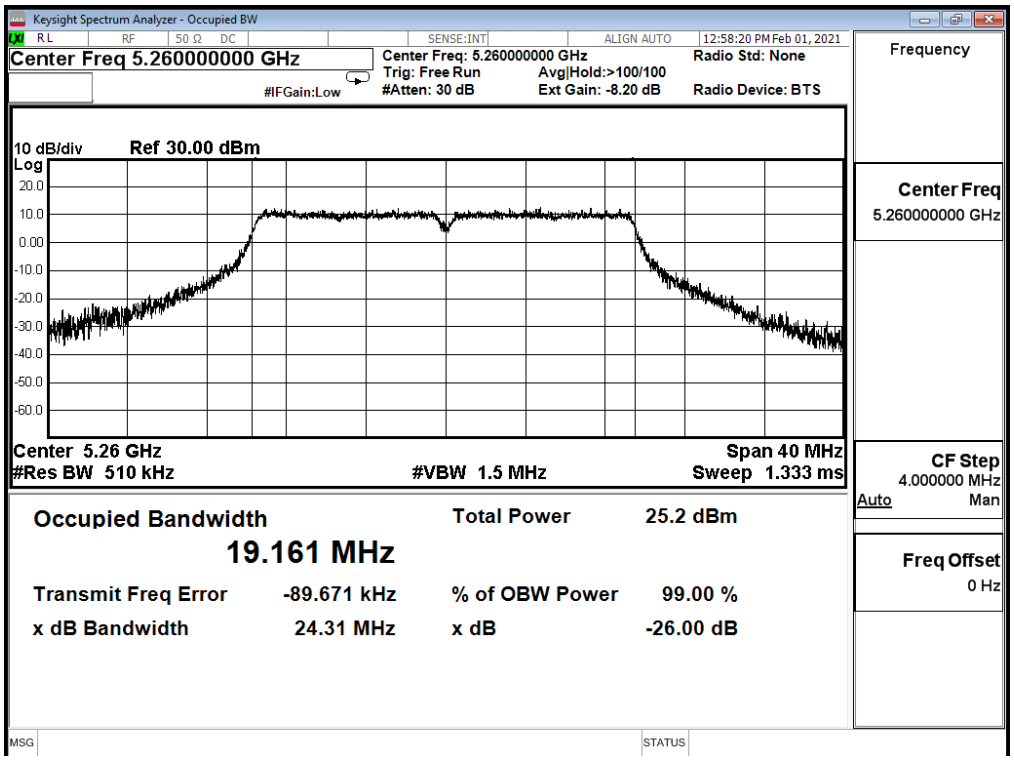
Channel 140 (5700MHz)



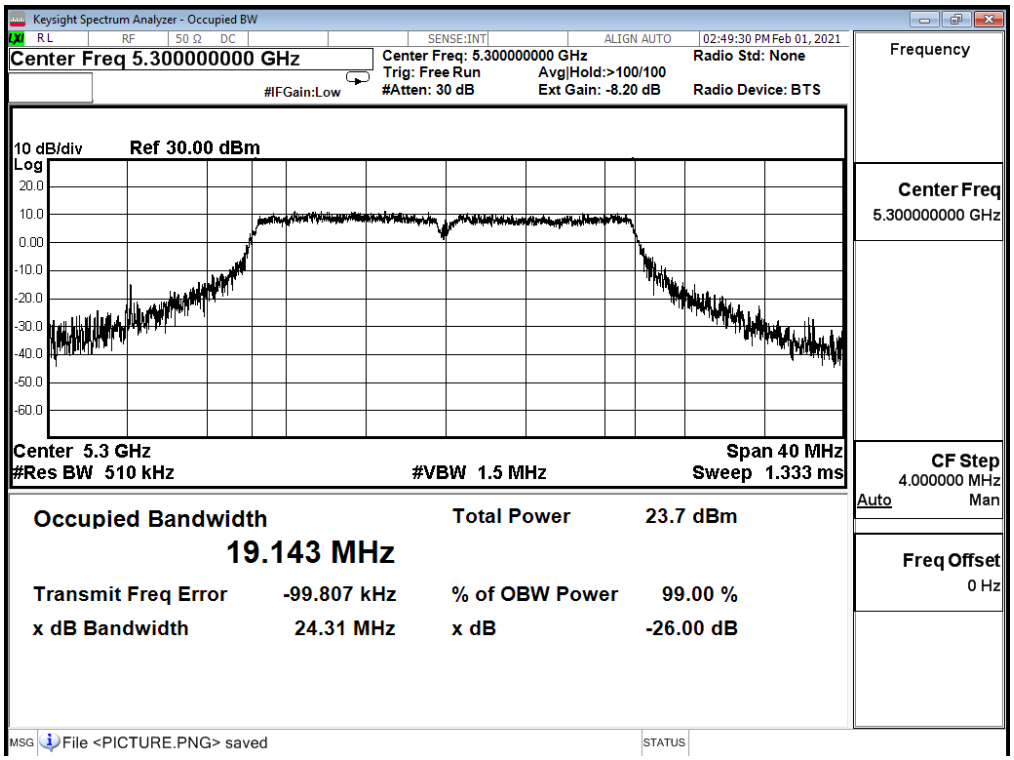
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_20M(ANT 3)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
52	5260	19.161	24.310	--
60	5300	19.143	24.310	--
64	5320	19.135	23.860	--
100	5500	19.022	24.020	--
116	5580	19.103	24.390	--
140	5700	19.093	24.080	--

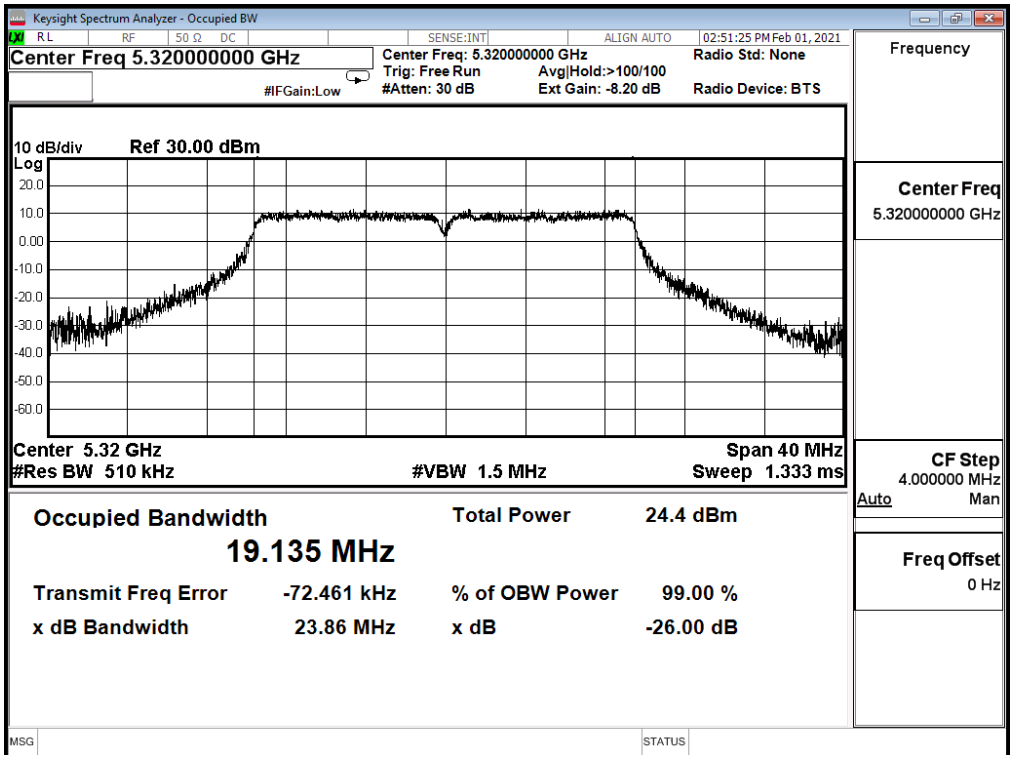
Channel 52 (5260MHz)



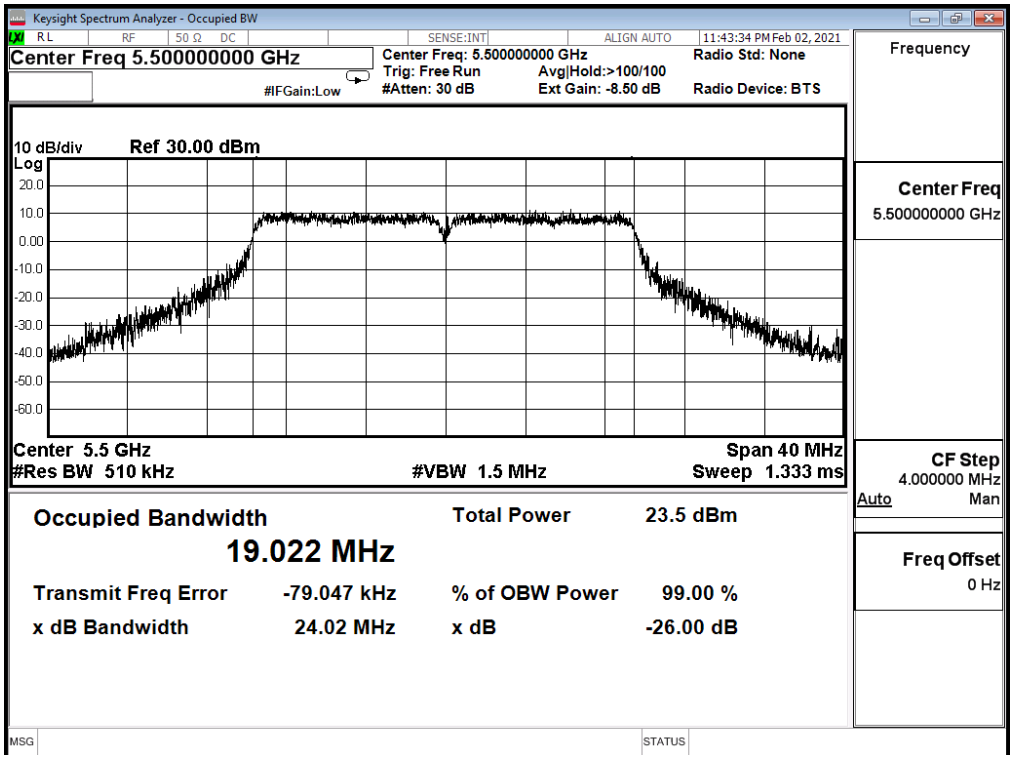
Channel 60 (5300MHz)



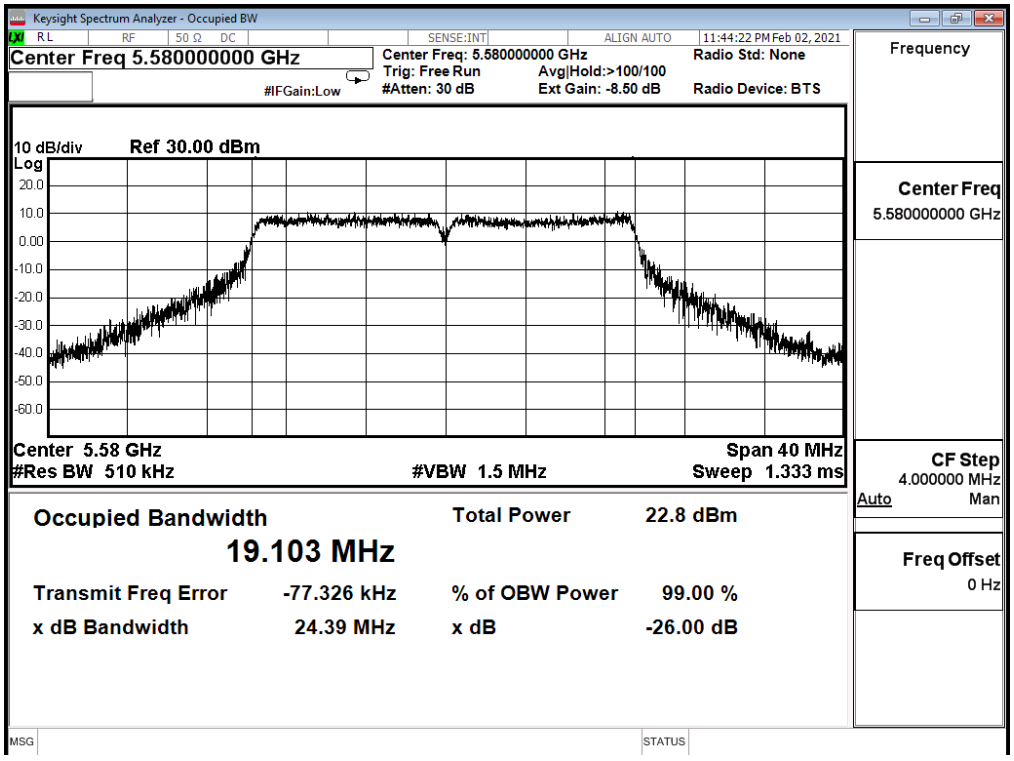
Channel 64 (5320MHz)



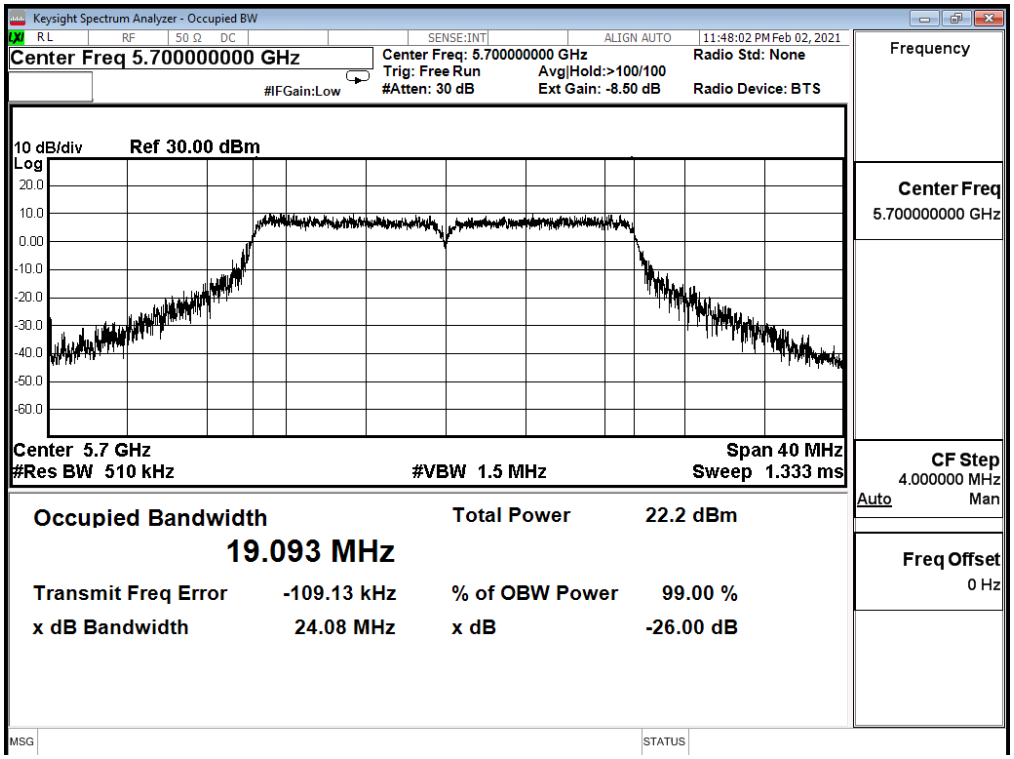
Channel 100 (5500MHz)



Channel 116 (5580MHz)



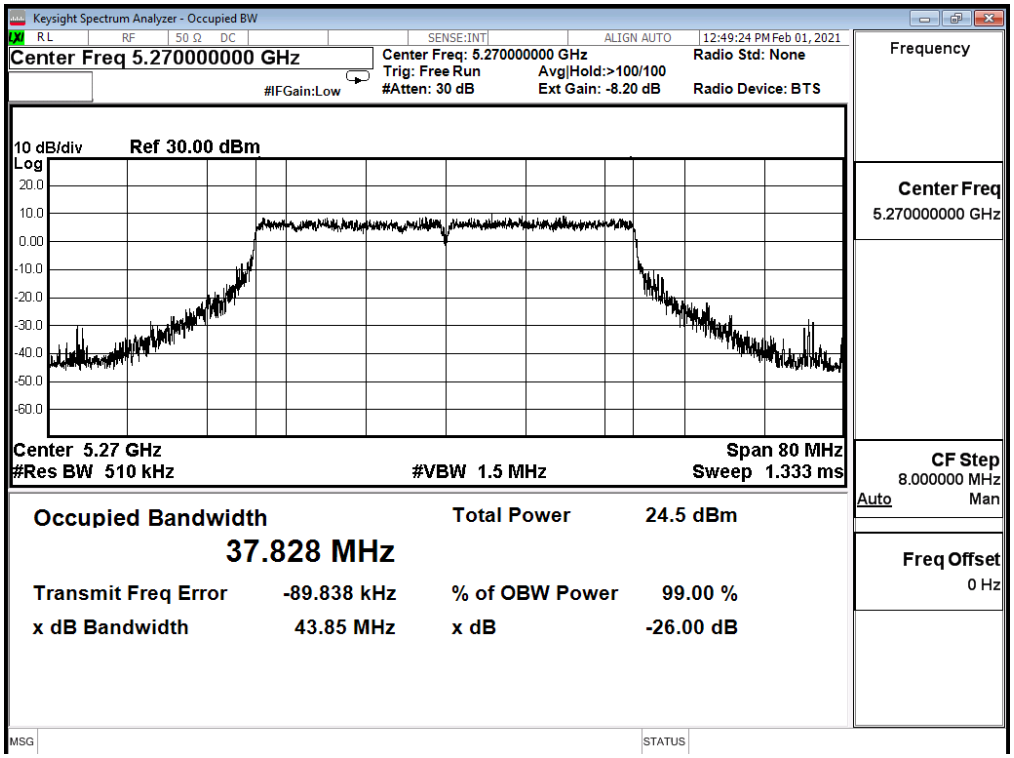
Channel 140 (5700MHz)



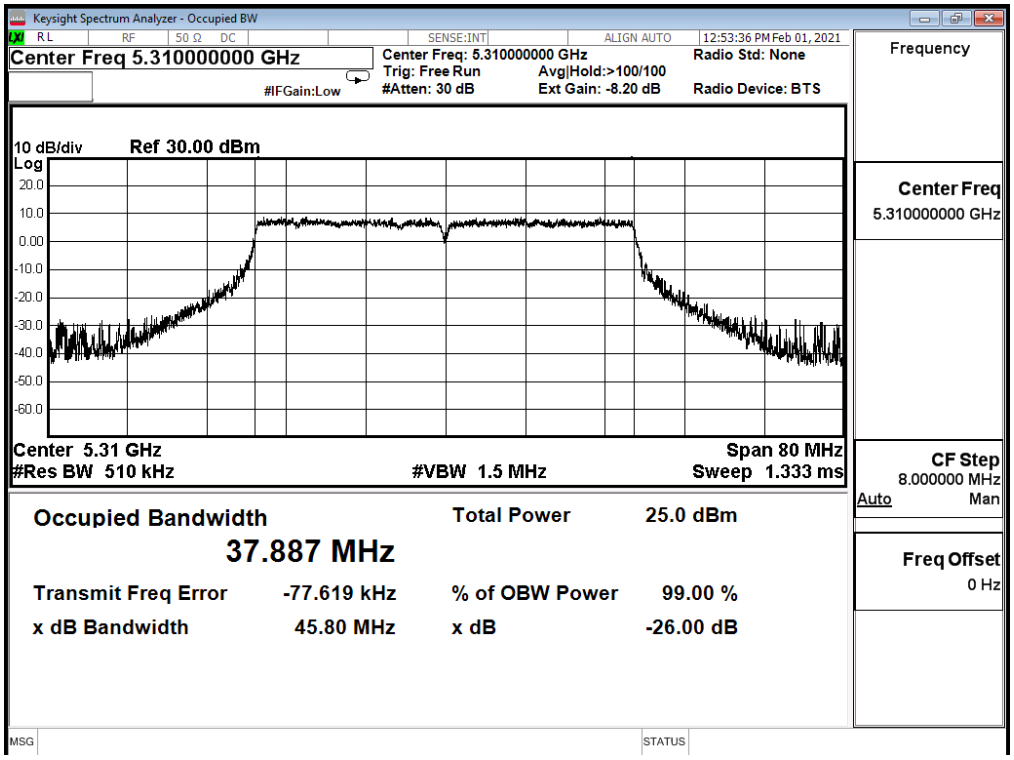
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_40M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
54	5270	37.828	43.850	--
62	5310	37.887	45.800	--
102	5510	37.872	44.130	--
110	5550	37.800	42.800	--
134	5670	37.860	43.190	--

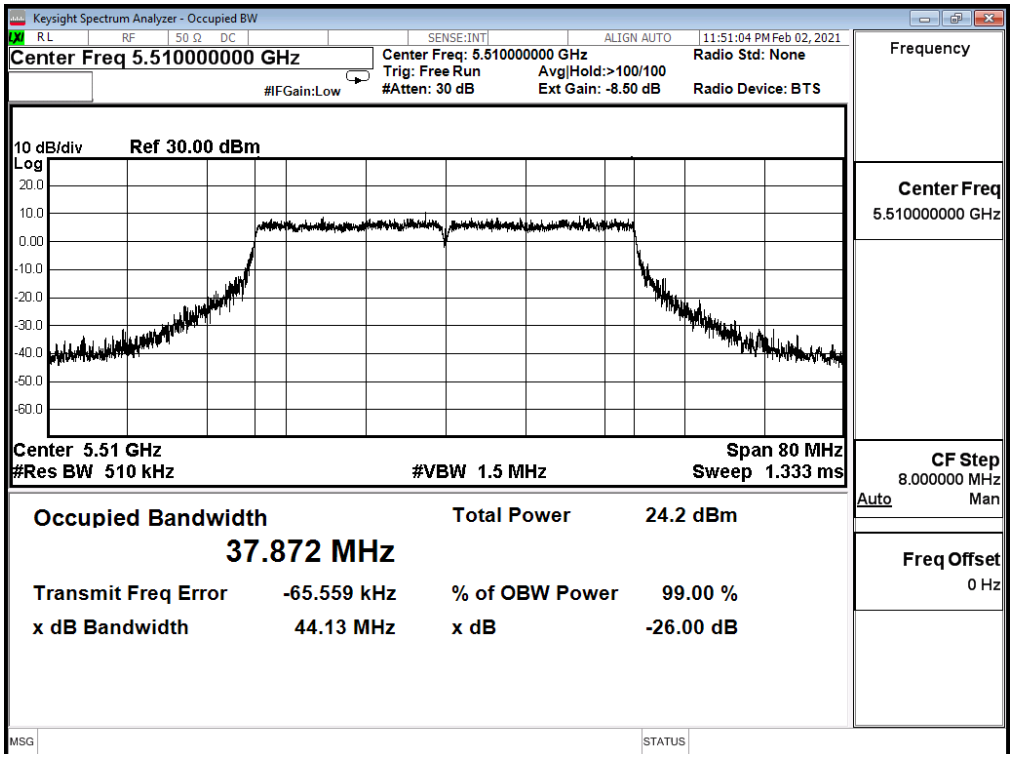
Channel 54 (5270MHz)



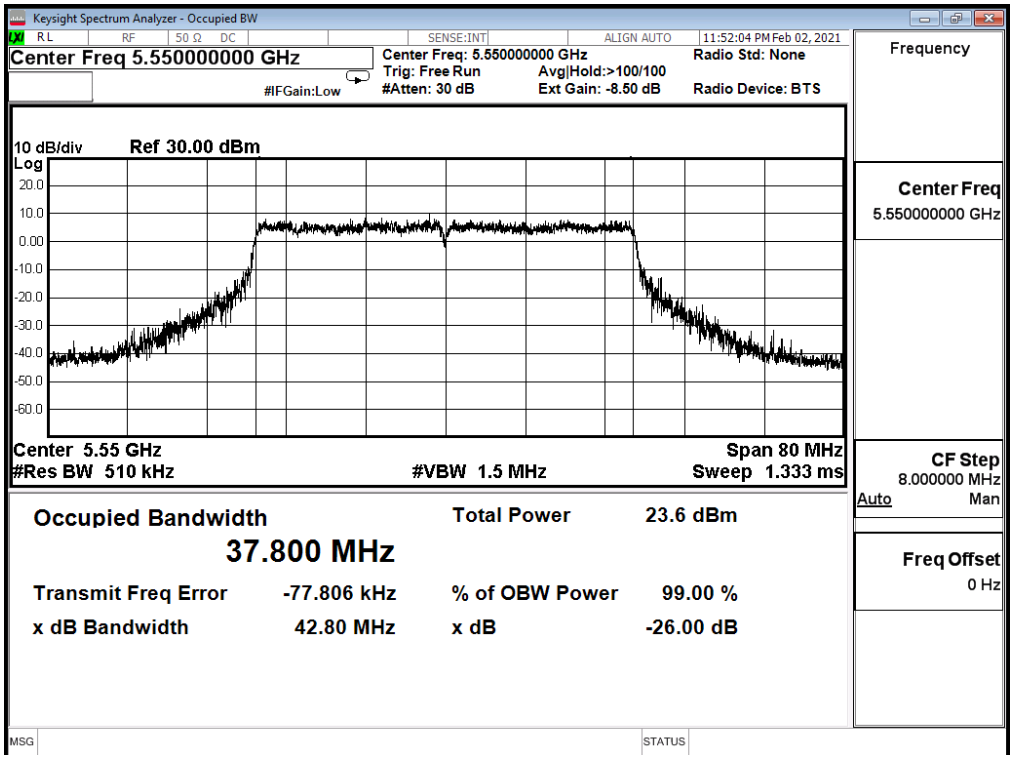
Channel 62 (5310MHz)



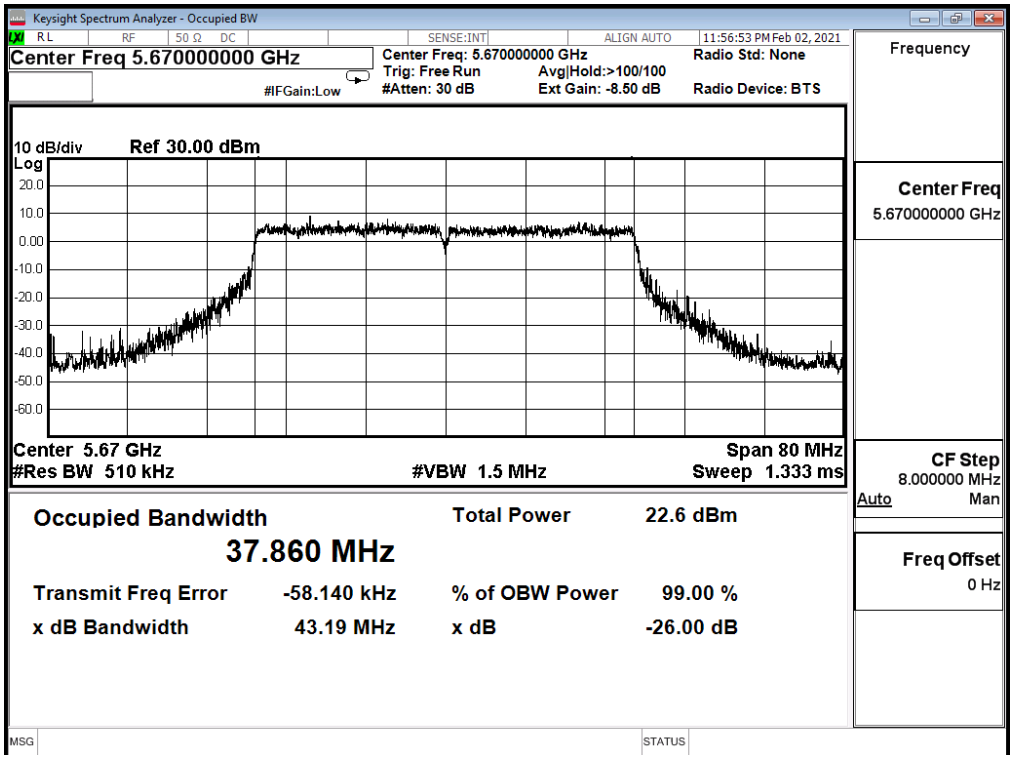
Channel 102 (5510MHz)



Channel 110 (5550MHz)



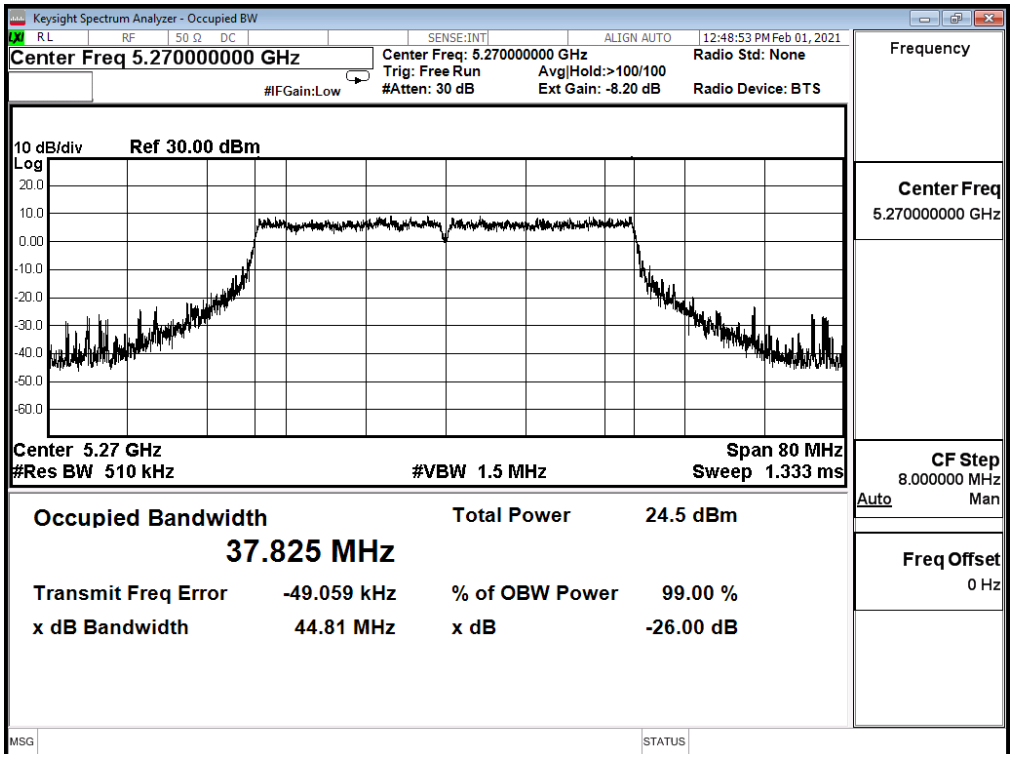
Channel 134 (5670MHz)



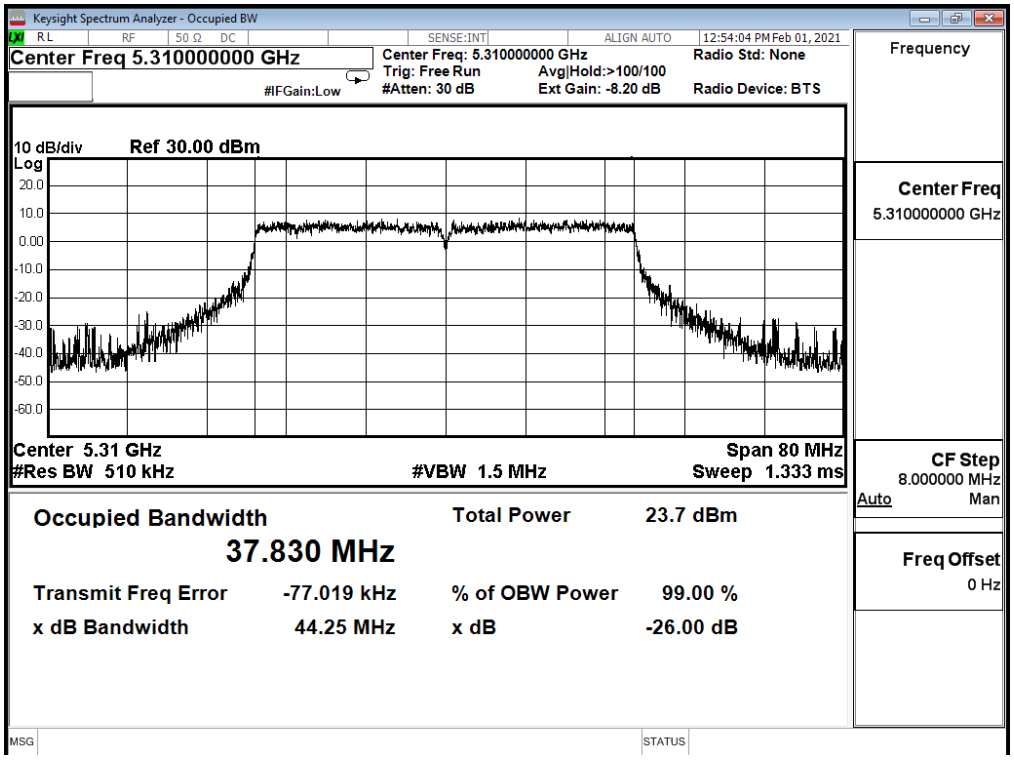
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_40M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
54	5270	37.825	44.810	--
62	5310	37.830	44.250	--
102	5510	37.802	43.780	--
110	5550	37.805	43.850	--
134	5670	37.857	44.580	--

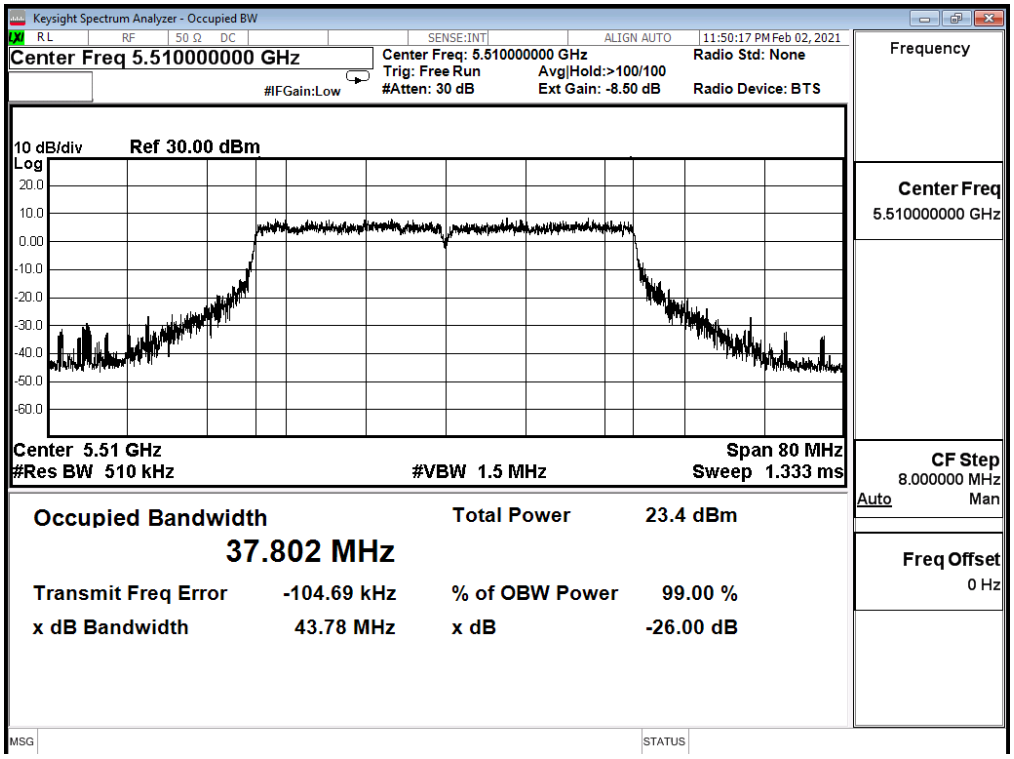
Channel 54 (5270MHz)



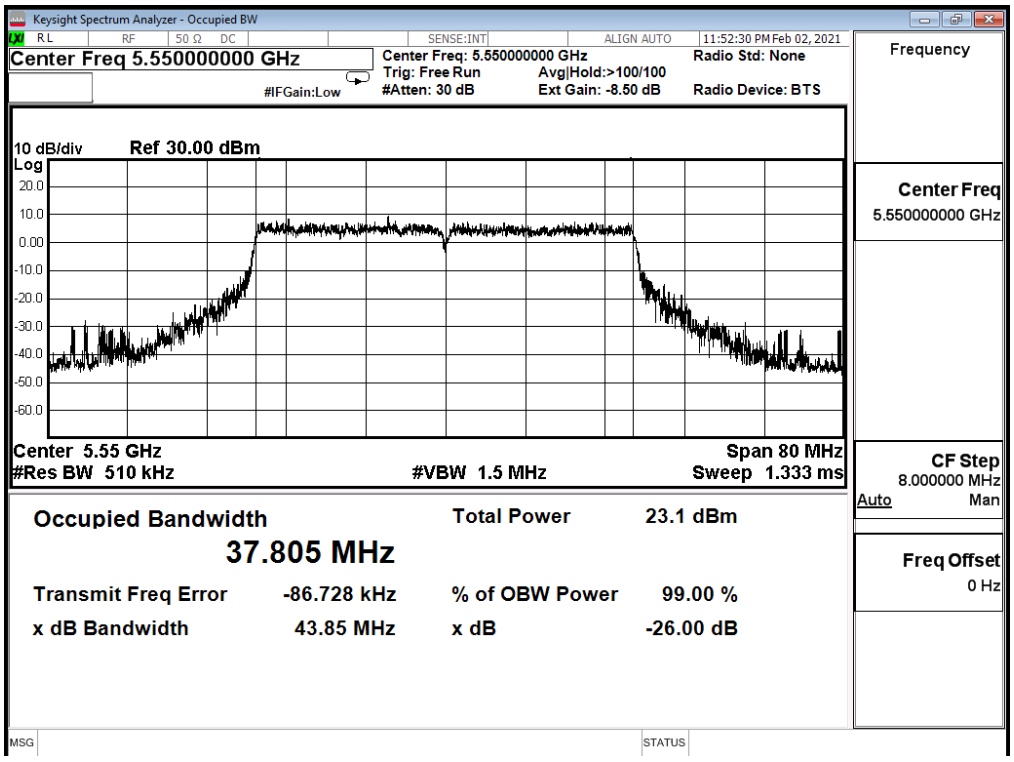
Channel 62 (5310MHz)



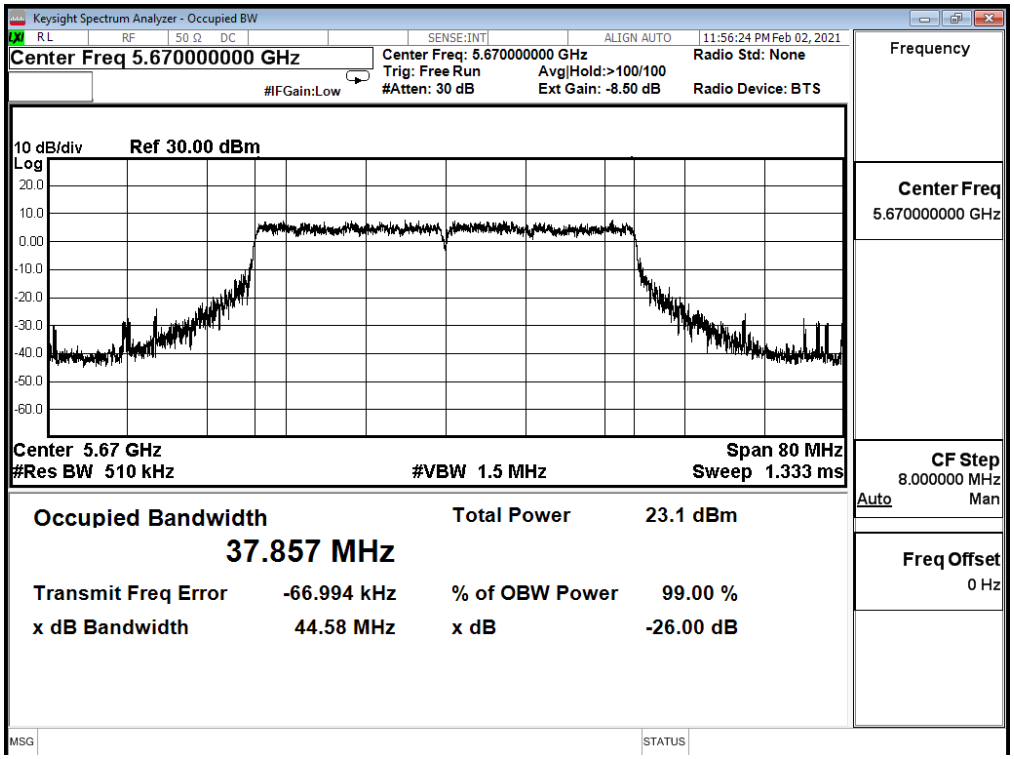
Channel 102 (5510MHz)



Channel 110 (5550MHz)



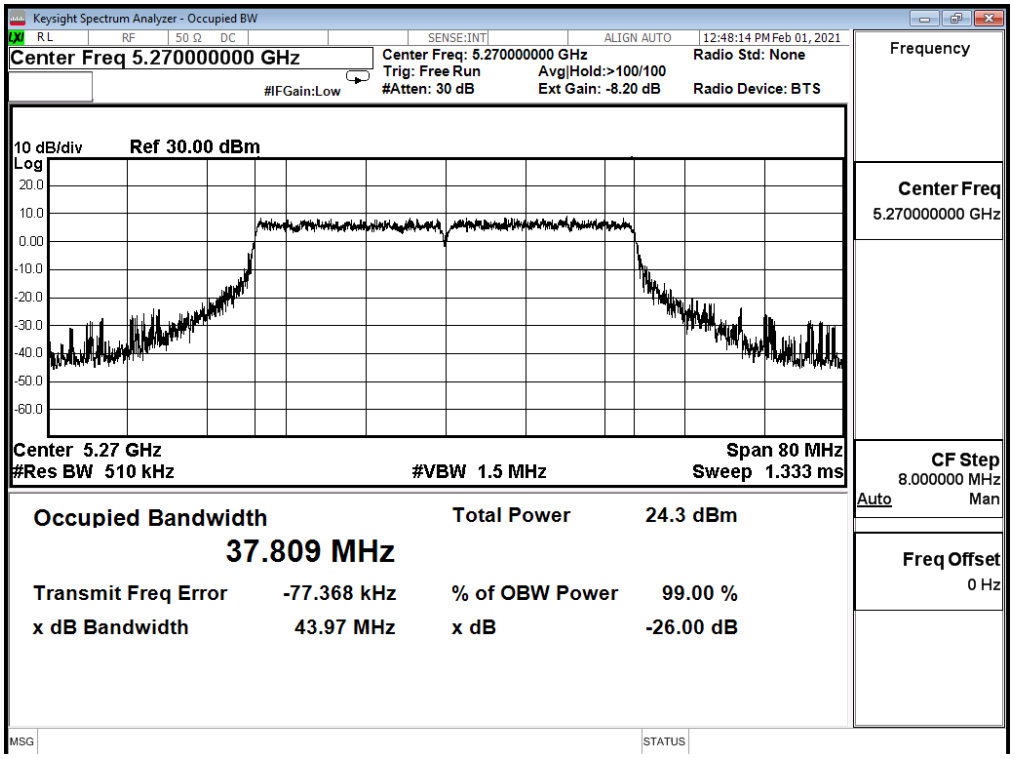
Channel 134 (5670MHz)



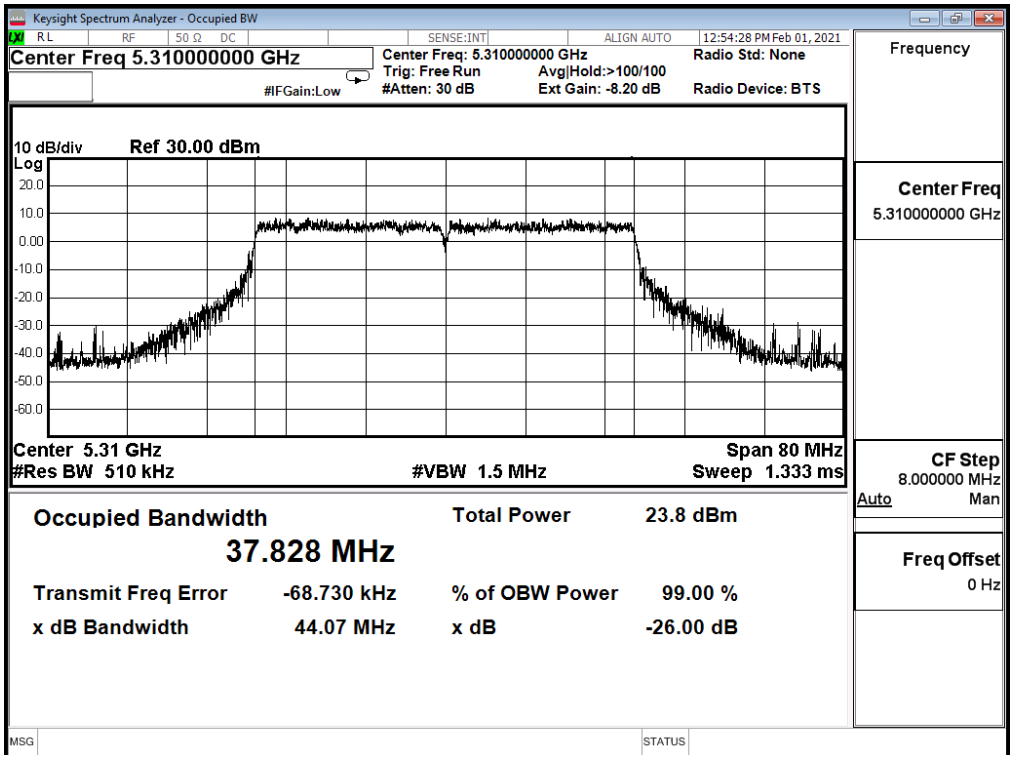
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_40M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
54	5270	37.809	43.970	--
62	5310	37.828	44.070	--
102	5510	37.875	43.410	--
110	5550	37.800	44.020	--
134	5670	37.802	43.250	--

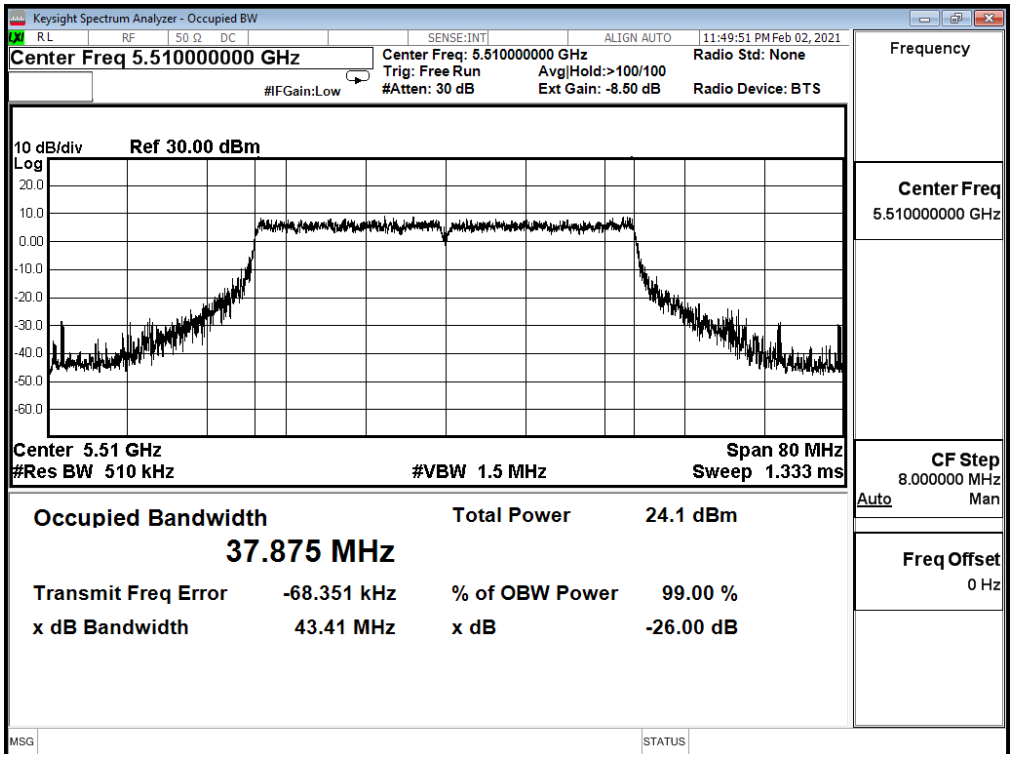
Channel 54 (5270MHz)



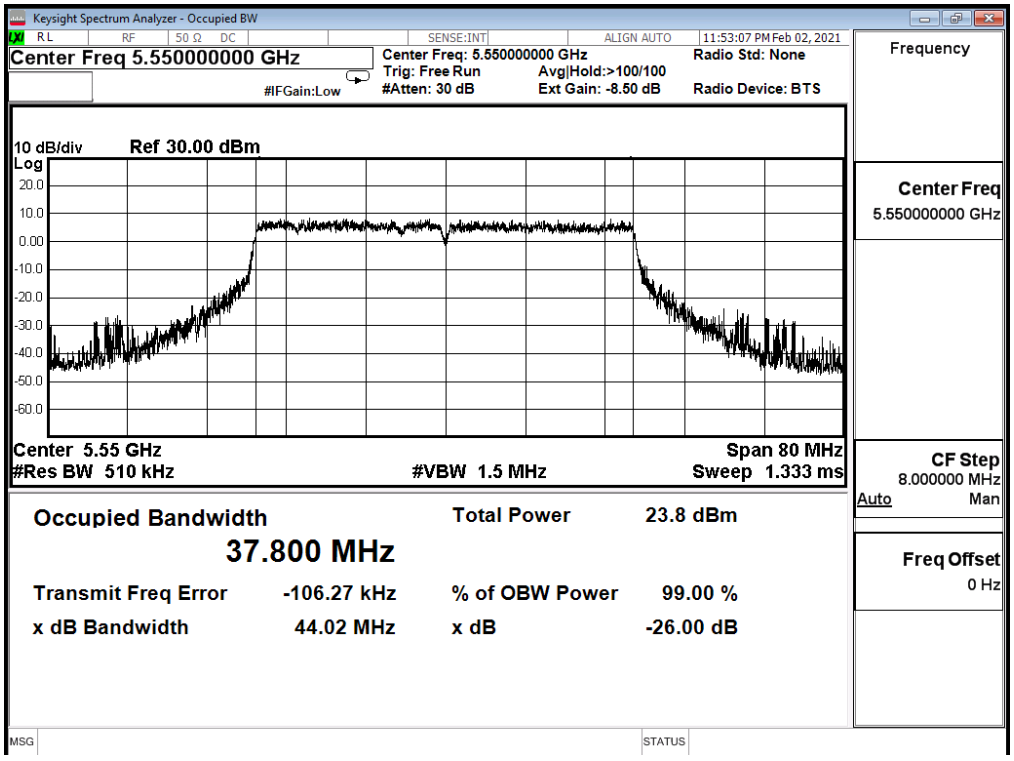
Channel 62 (5310MHz)



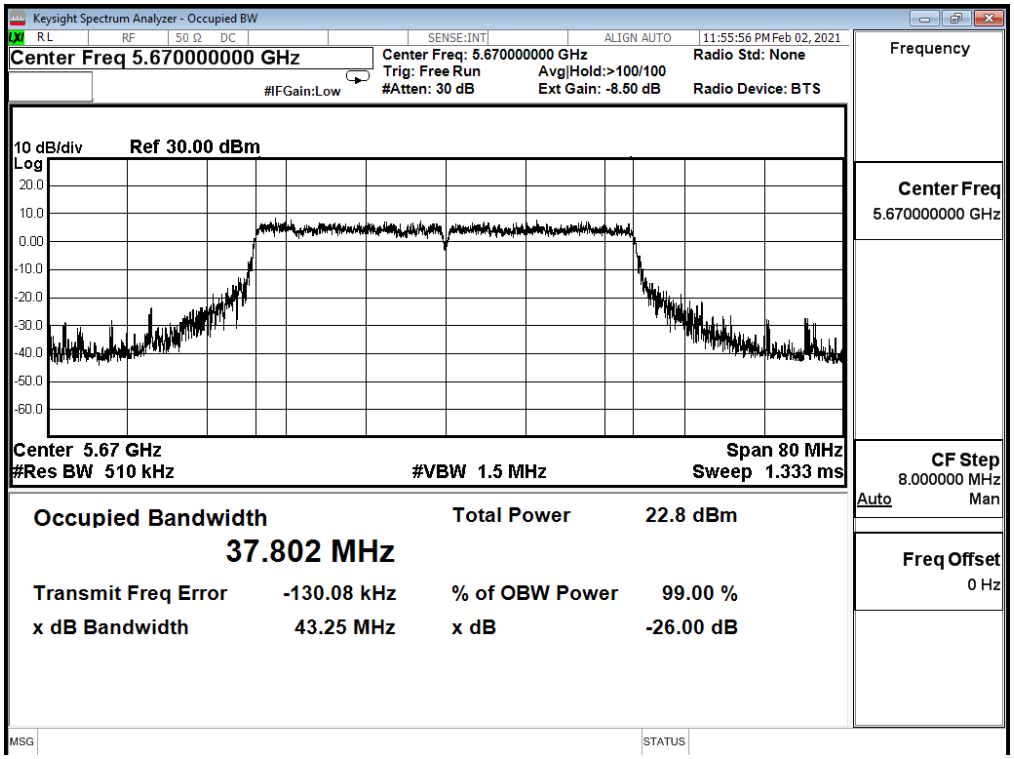
Channel 102 (5510MHz)



Channel 110 (5550MHz)



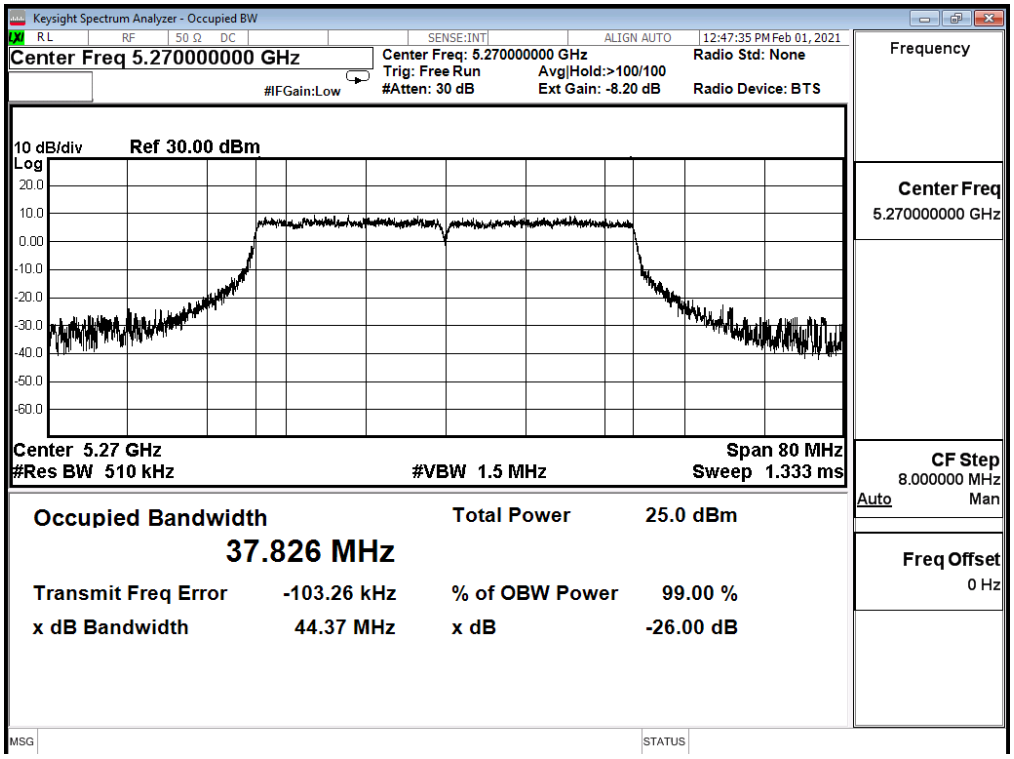
Channel 134 (5670MHz)



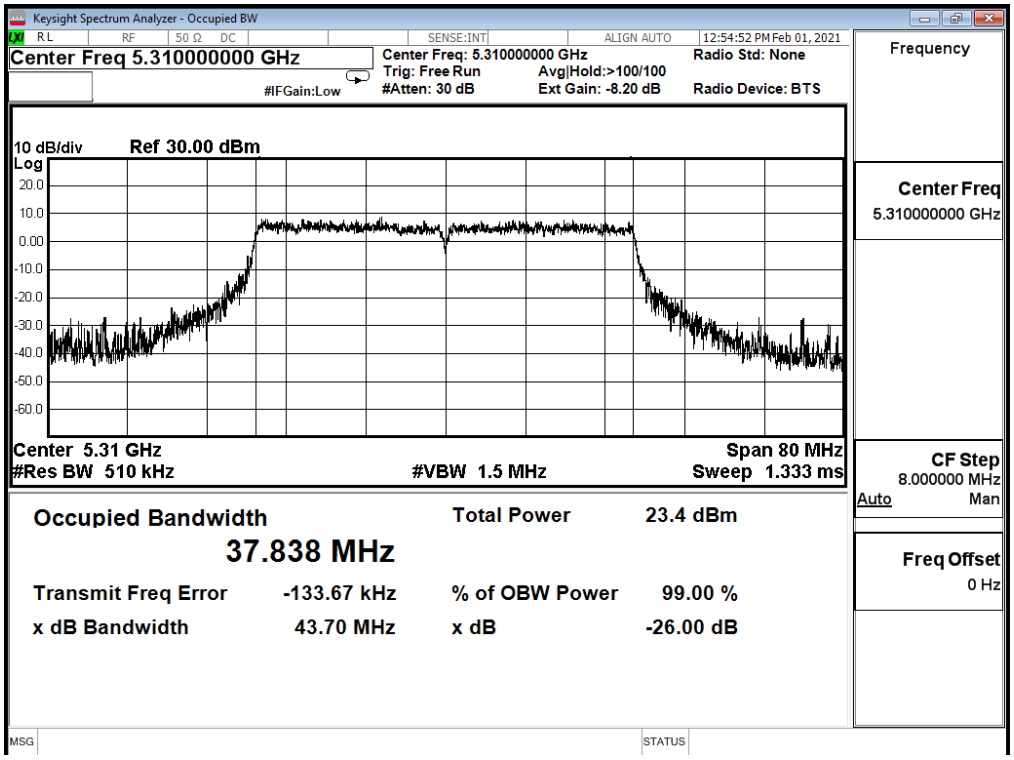
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_40M(ANT 3)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
54	5270	37.826	44.370	--
62	5310	37.838	43.700	--
102	5510	37.788	44.310	--
110	5550	37.772	43.980	--
134	5670	37.796	43.970	--

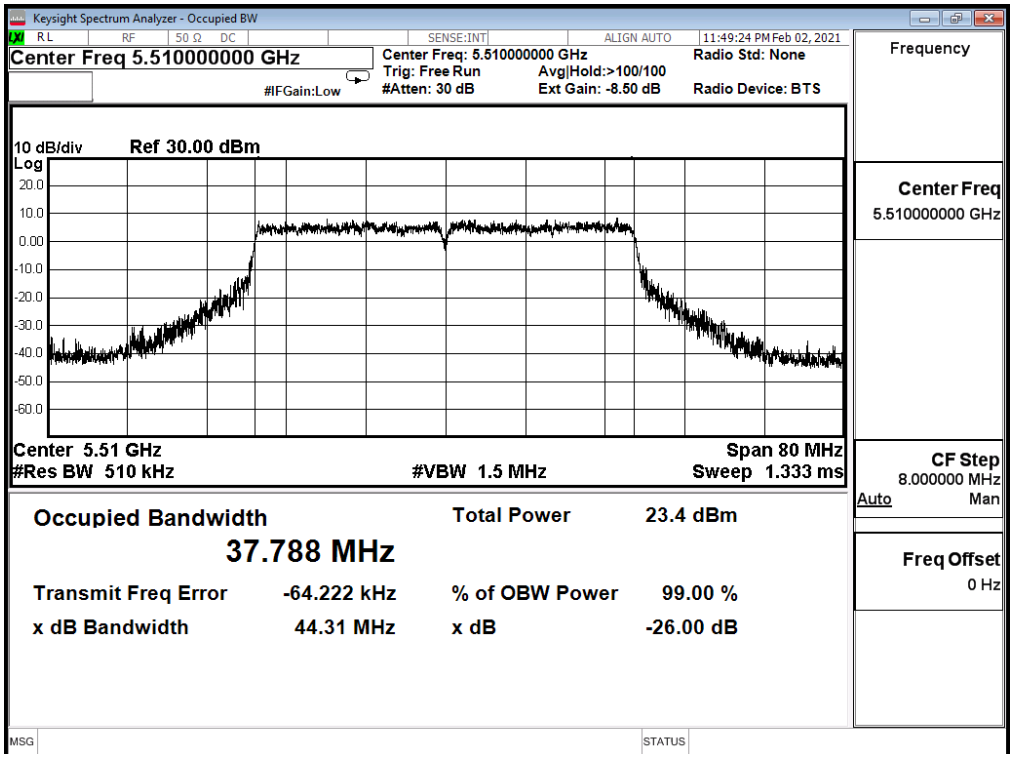
Channel 54 (5270MHz)



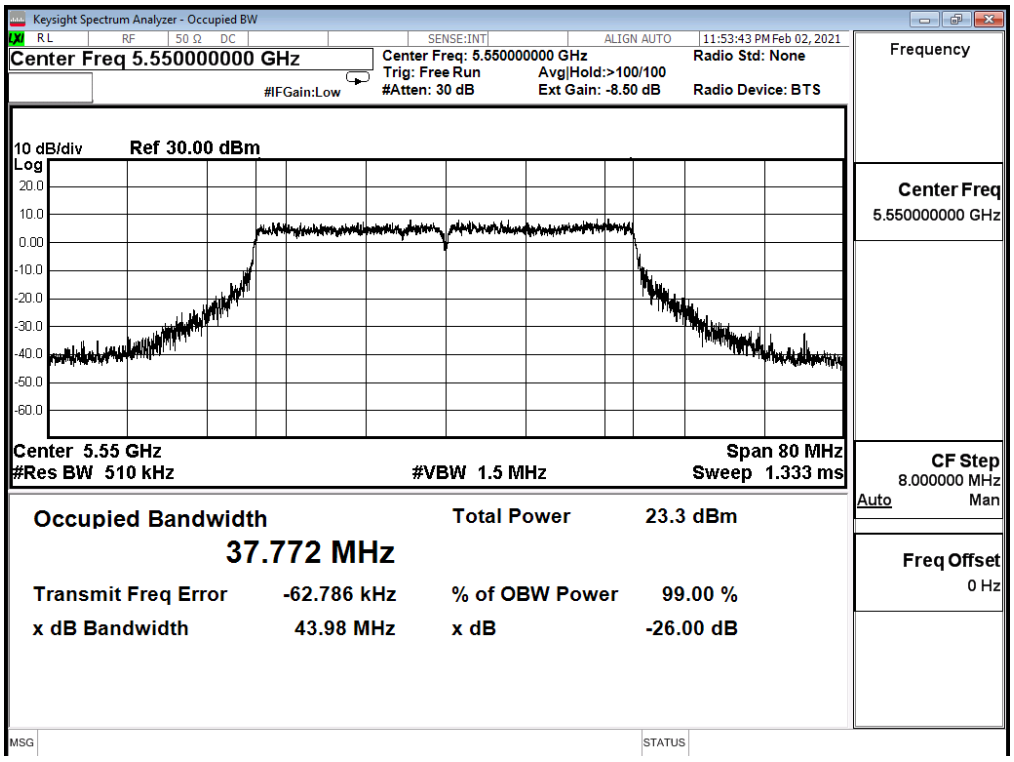
Channel 62 (5310MHz)



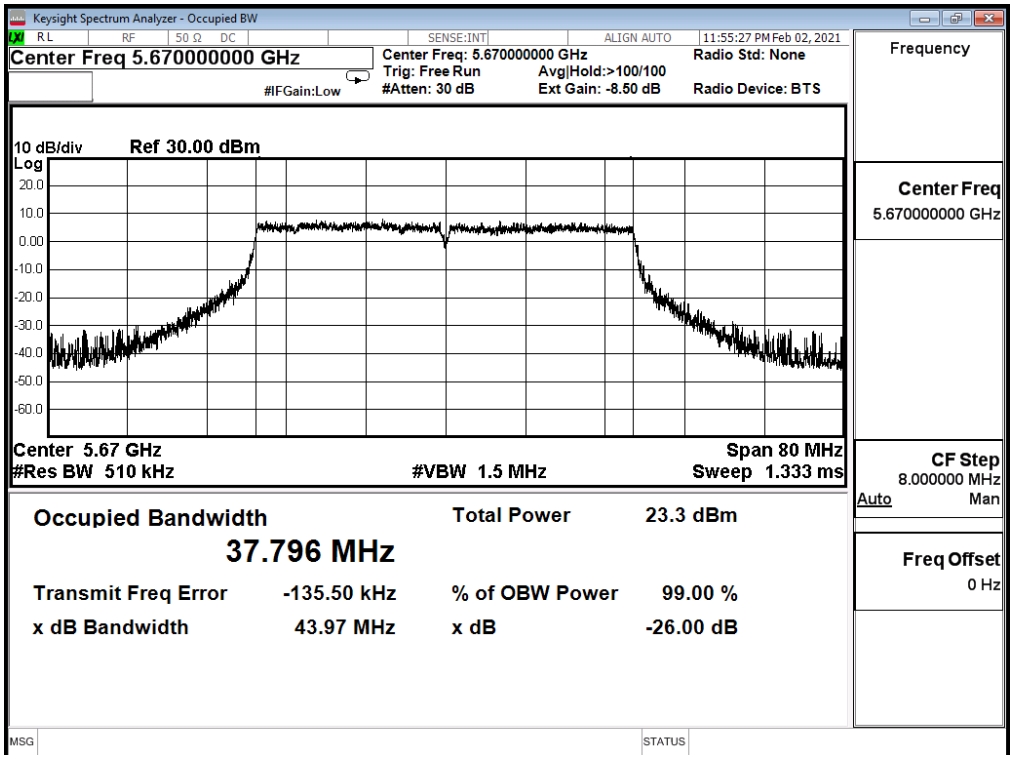
Channel 102 (5510MHz)



Channel 110 (5550MHz)



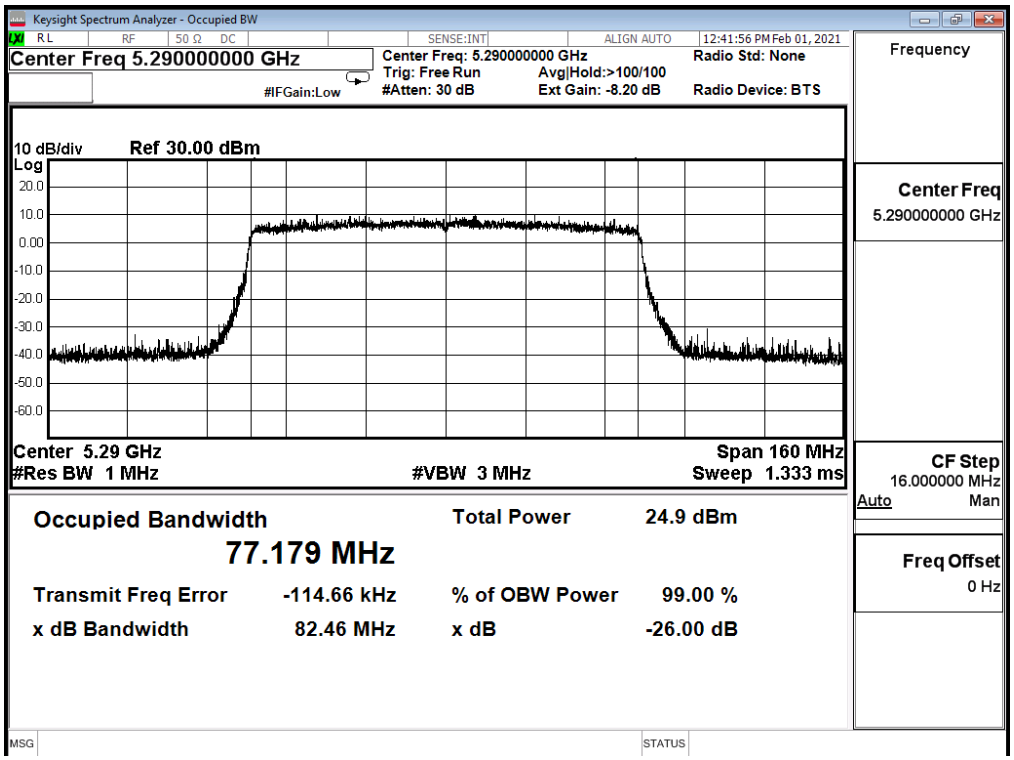
Channel 134 (5670MHz)



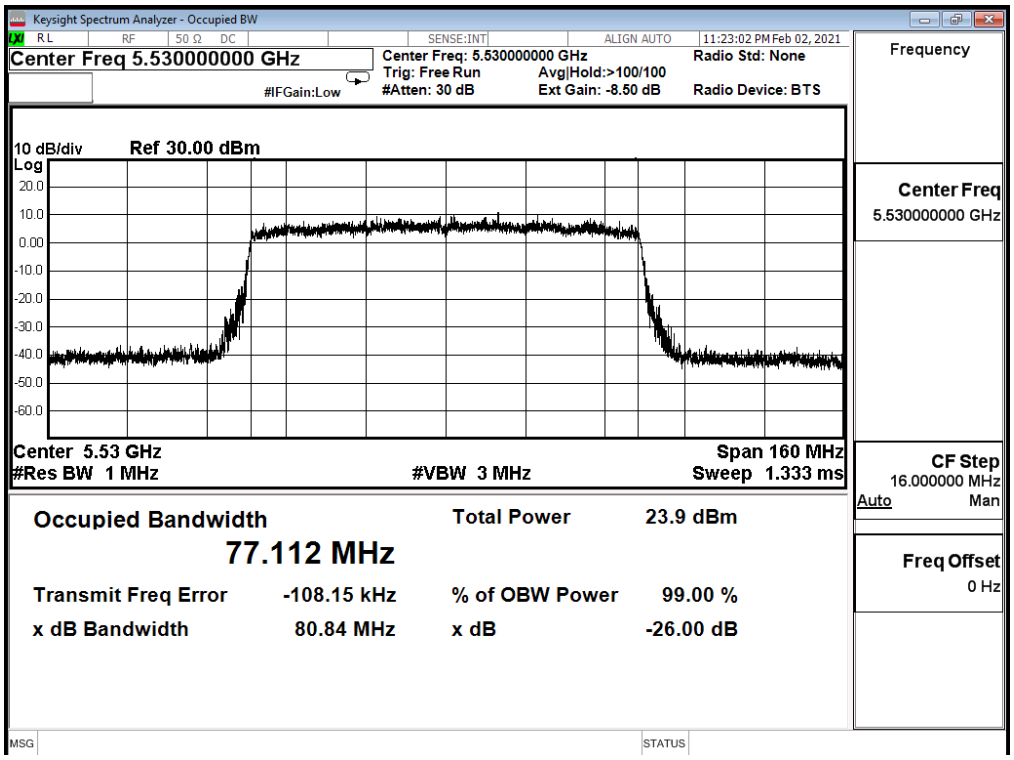
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_80M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
58	5290	77.179	82.460	--
106	5530	77.112	80.840	--
122	5610	77.121	81.680	--

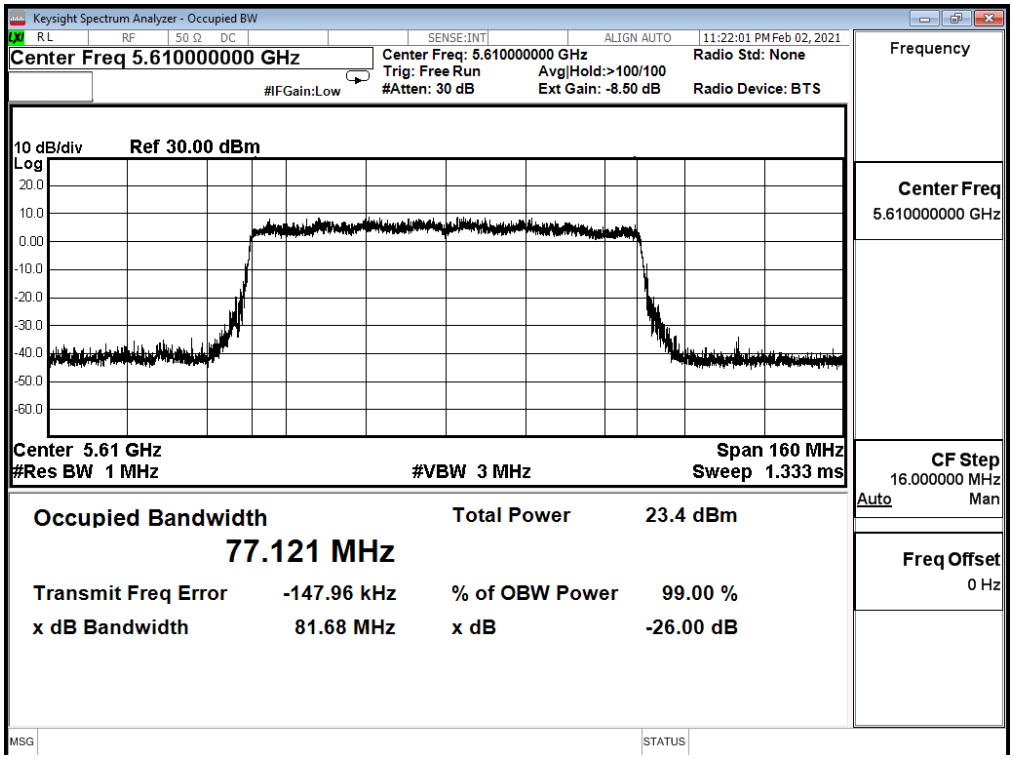
Channel 58 (5290MHz)



Channel 106 (5530MHz)



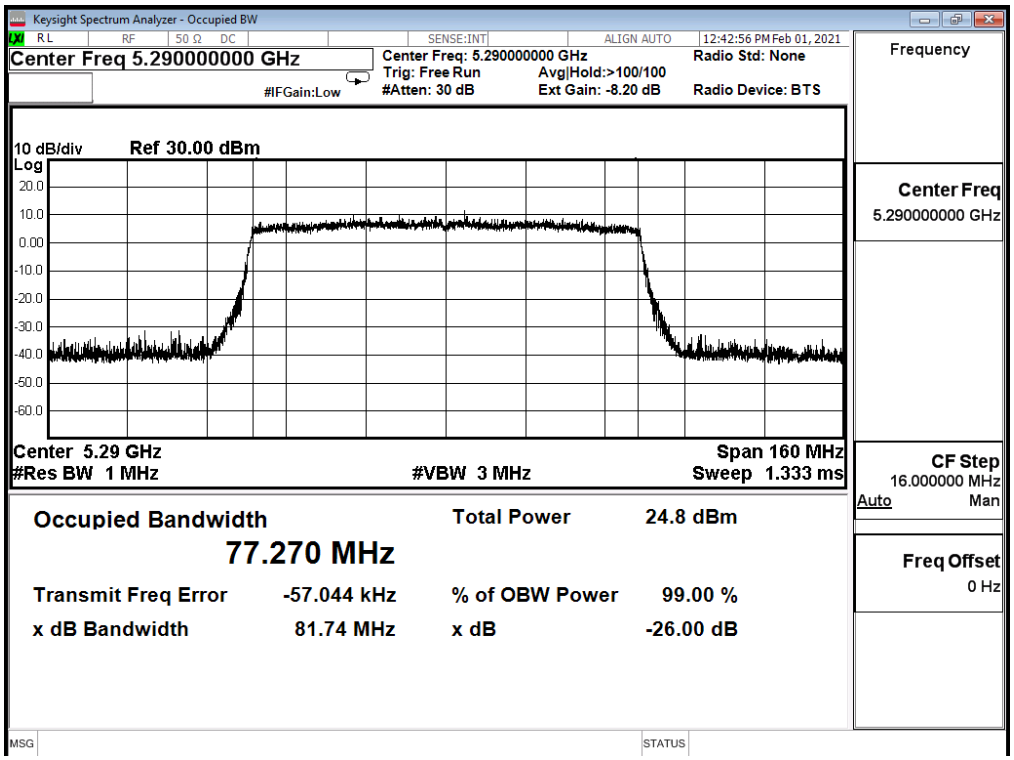
Channel 122 (5610MHz)



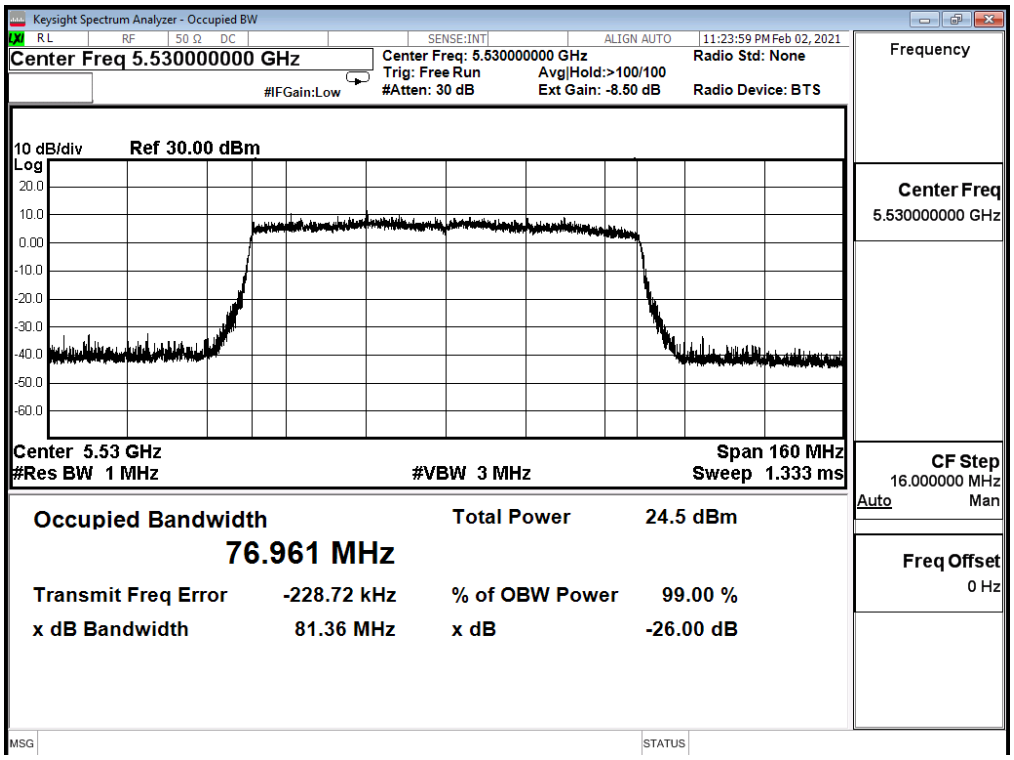
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_80M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
58	5290	77.270	81.740	--
106	5530	76.961	81.360	--
122	5610	77.191	81.960	--

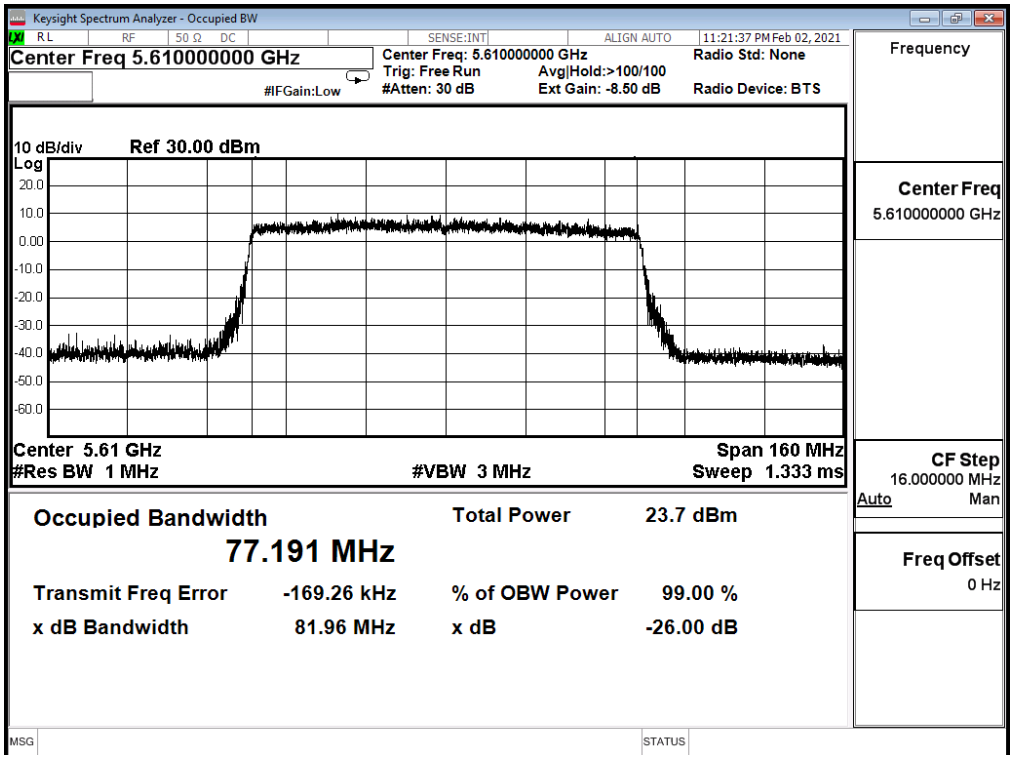
Channel 58 (5290MHz)



Channel 106 (5530MHz)



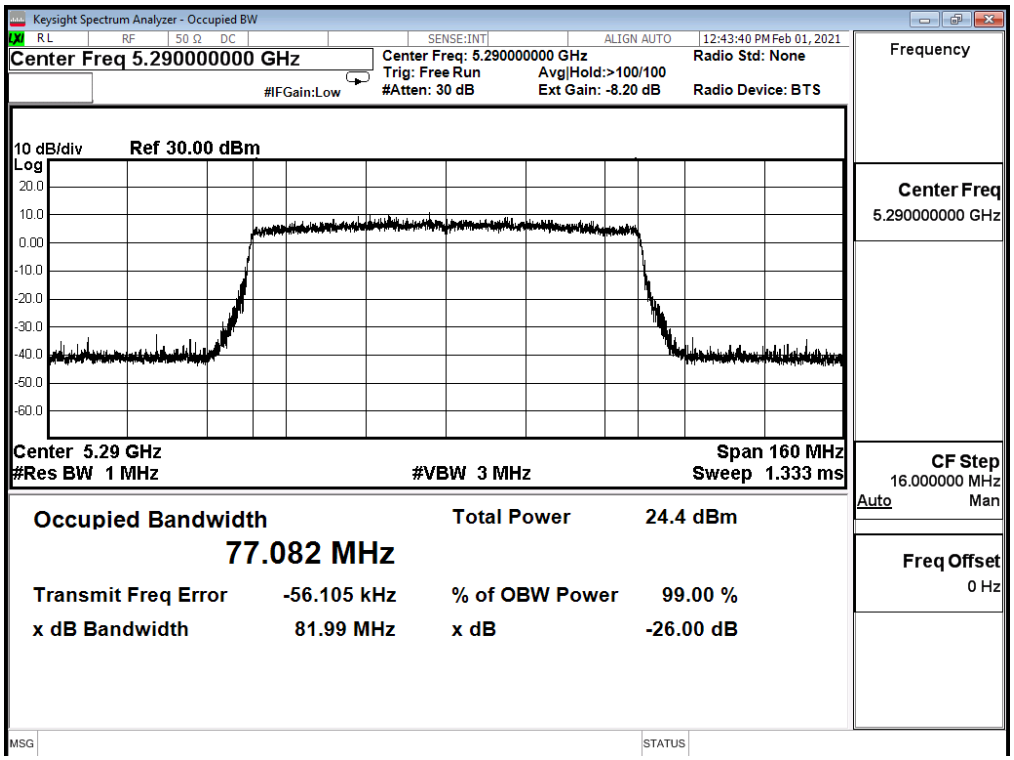
Channel 122 (5610MHz)



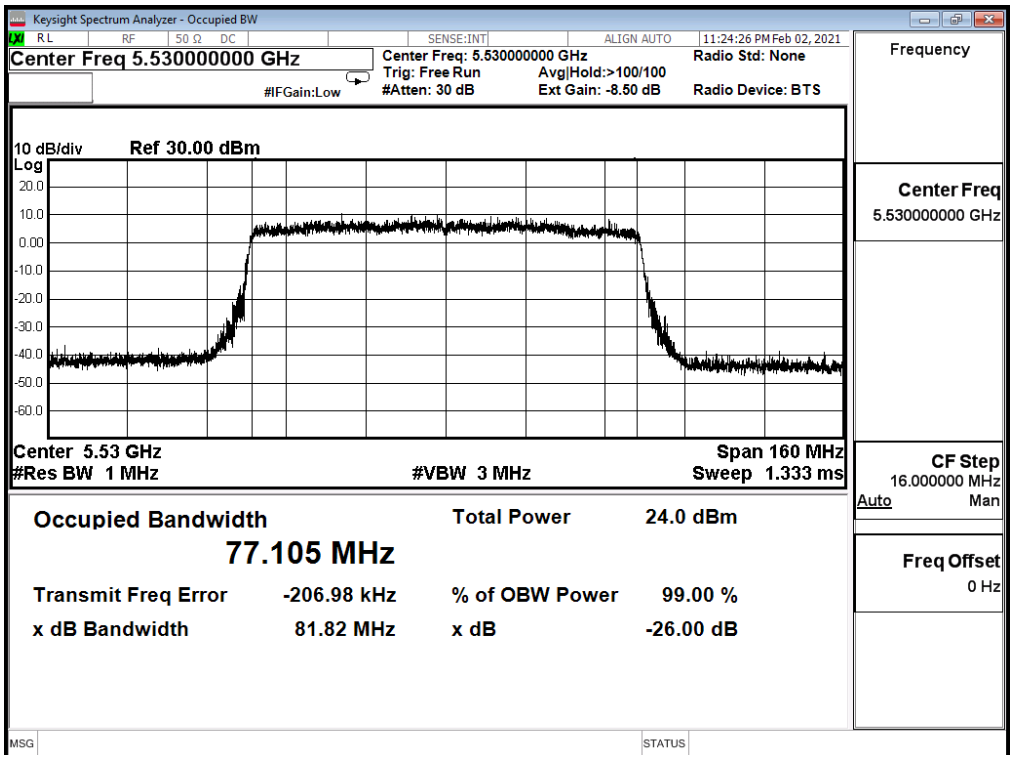
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_80M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
58	5290	77.082	81.990	--
106	5530	77.105	81.820	--
122	5610	77.035	81.280	--

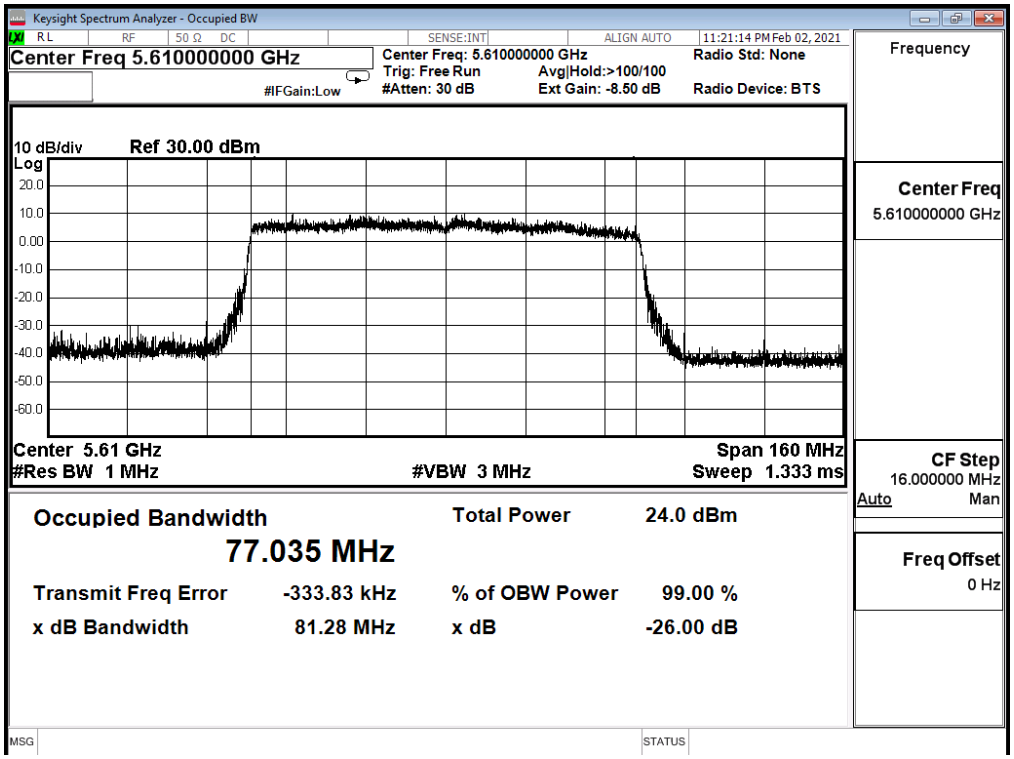
Channel 58 (5290MHz)



Channel 106 (5530MHz)



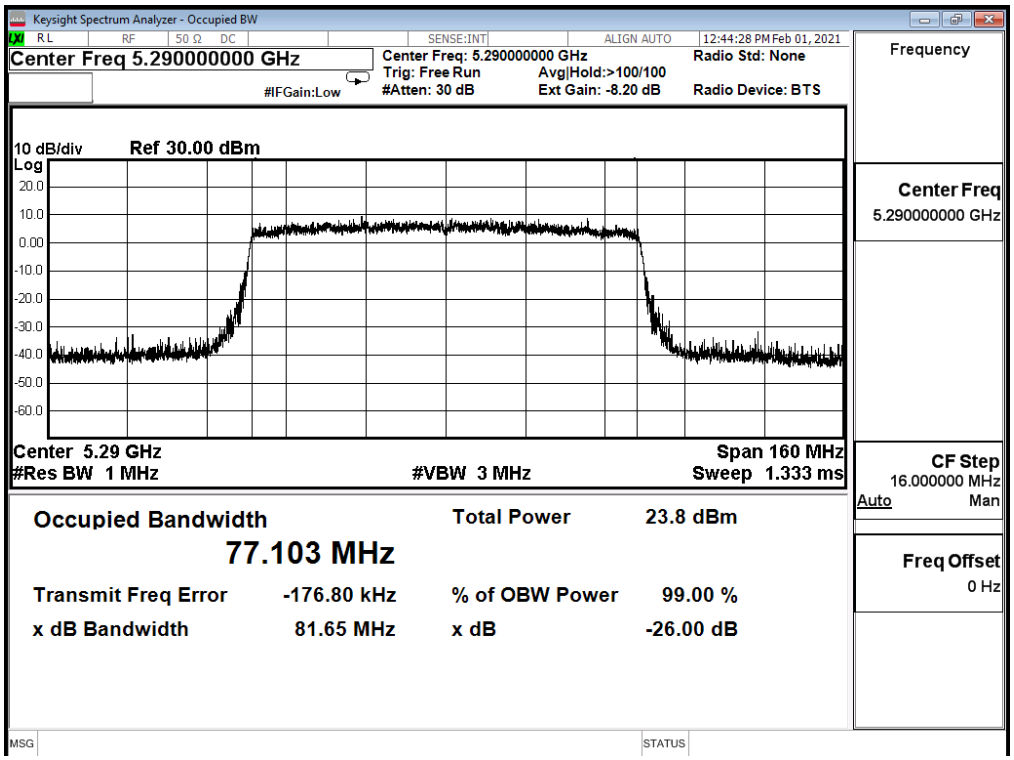
Channel 122 (5610MHz)



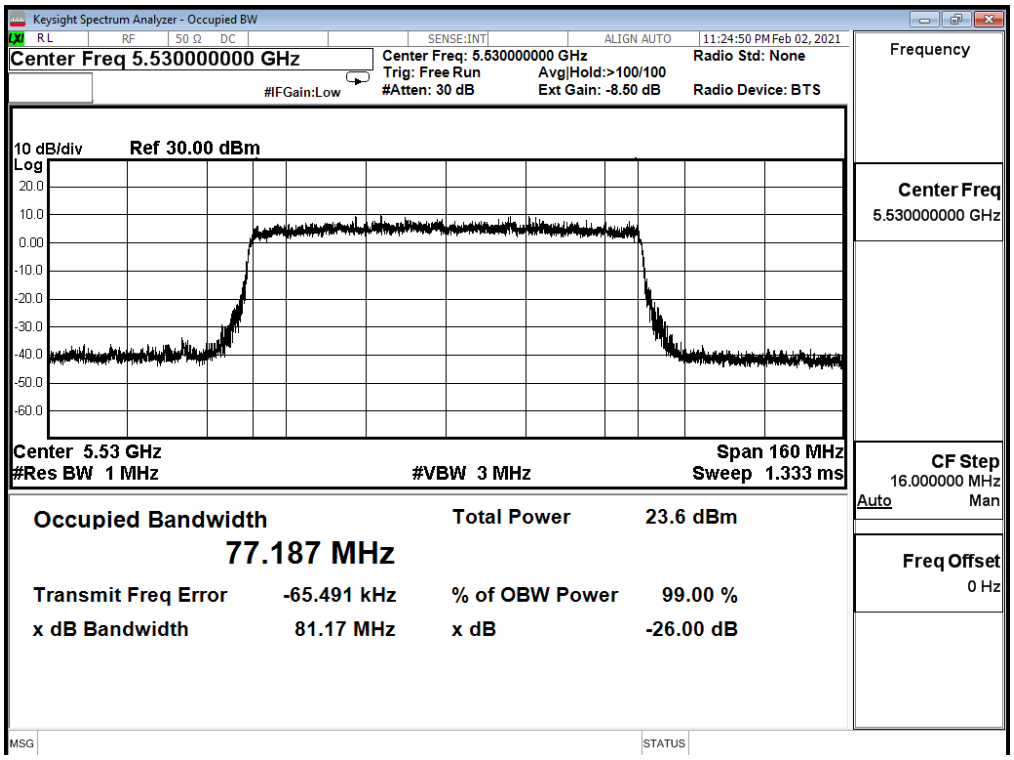
Product	Consumer Home Router		
Test Item	26dB & 99% Bandwidth		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	61.0%

IEEE 802.11ax_80M(ANT 3)				
Channel No.	Frequency (MHz)	Measure Value		Limit (MHz)
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	
58	5290	77.103	81.650	--
106	5530	77.187	81.170	--
122	5610	77.133	81.790	--

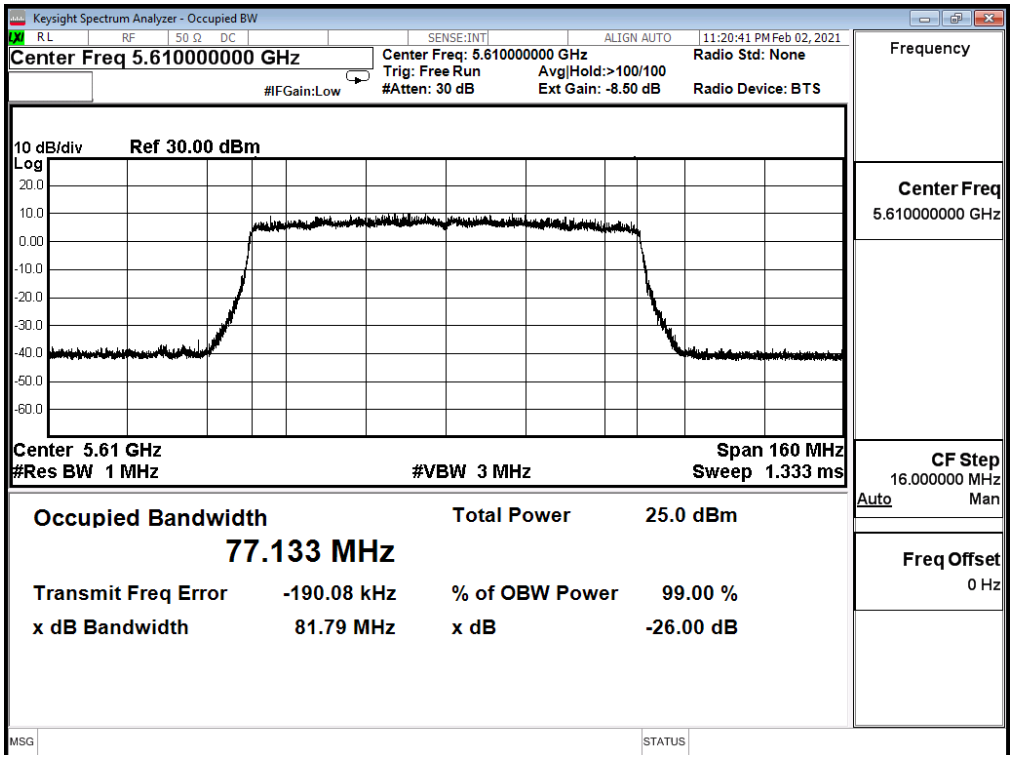
Channel 58 (5290MHz)



Channel 106 (5530MHz)

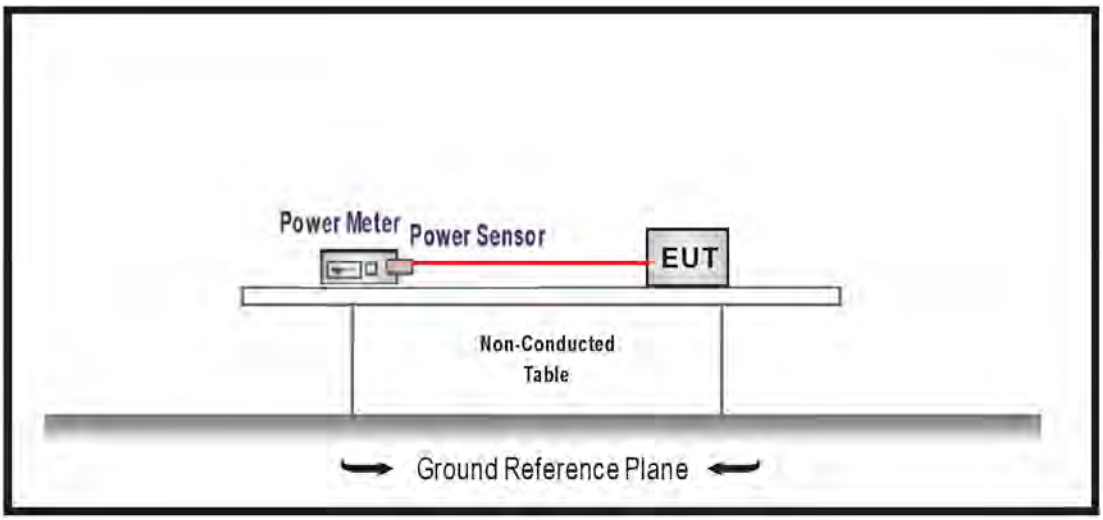


Channel 122 (5610MHz)



4. Maximum conducted output power

4.1. Test Setup



4.2. Limits

1. For the band 5.15-5.25 GHz, the Maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1W. If transmitting antenna of directional gain greater than 6 dBi are used, the Maximum conducted output power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

2. For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. The maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3. For the band 5.25-5.35 GHz, the Maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW. If transmitting antenna of directional gain greater than 6 dBi are used, the Maximum conducted output power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

4. For the band 5.725-5.850 GHz, the Maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1W. If transmitting antenna of directional gain greater than 6 dBi are used, the Maximum conducted output power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

4.3. Test Procedure

The EUT was setup to ANSI C63.10: 2013; tested to U-NII test procedure of KDB 789033 D02 v02r01 for compliance to FCC 47CFR Subpart E requirements. The Method PM-G of the Maximum conducted output power was used.

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

4.4. Test Result

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 1: Transmit CDD Mode		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11a

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
52	5260	17.210	17.100	16.880	16.890	23.043	≦23.962
60	5300	17.260	17.280	17.030	16.800	23.117	≦23.918
64	5320	17.160	17.170	17.070	16.840	23.083	≦23.936

The worst emission of data rate is 6 Mbps.

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
100	5500	16.090	15.920	16.200	16.020	22.079	≦23.934
116	5580	16.690	16.440	16.590	16.360	22.542	≦23.980
140	5700	16.920	17.300	17.430	16.340	23.038	≦23.905

The worst emission of data rate is 6 Mbps.

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (20MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
52	5260	17.690	17.660	17.380	17.410	23.558	≦24.000
60	5300	17.660	17.700	17.610	17.260	23.582	≦24.000
64	5320	17.640	17.630	17.570	17.160	23.525	≦24.000

The worst emission of data rate is MCS 0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
100	5500	16.980	16.750	17.110	16.880	22.953	≦24.000
116	5580	17.580	17.390	17.500	16.980	23.389	≦24.000
140	5700	15.820	16.120	16.360	15.180	21.913	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (40MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
54	5270	17.860	17.870	17.720	17.470	23.754	≦24.000
62	5310	17.410	17.310	17.330	16.950	23.274	≦24.000

The worst emission of data rate is MCS0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
102	5510	15.590	15.670	15.840	15.620	21.702	≦24.000
110	5550	18.130	17.720	18.110	17.700	23.940	≦24.000
134	5670	15.190	15.540	15.500	14.930	21.318	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (80MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
58	5290	18.000	17.910	17.750	17.620	23.843	≦24.000

The worst emission of data rate is MCS0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
106	5530	18.010	17.880	17.960	17.770	23.927	≦24.000
122	5610	17.530	17.800	17.820	17.110	23.595	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 2: Transmit RU Mode_Center		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (20MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
52	5260	15.470	15.620	15.350	15.530	21.514	≦24.000
60	5300	15.830	15.770	15.370	15.460	21.633	≦24.000
64	5320	15.670	15.480	15.460	15.220	21.481	≦24.000

The worst emission of data rate is MCS 0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
100	5500	14.830	14.960	15.100	14.540	20.883	≦24.000
116	5580	15.930	15.390	15.700	14.980	21.535	≦24.000
140	5700	15.050	14.730	14.780	14.650	20.826	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 2: Transmit RU Mode_Center		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (40MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
54	5270	17.850	17.930	17.680	17.490	23.761	≦24.000
62	5310	17.270	17.420	17.220	17.000	23.251	≦24.000

The worst emission of data rate is MCS0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
102	5510	15.130	14.920	15.370	15.080	21.149	≦24.000
110	5550	17.730	17.900	18.080	17.390	23.803	≦24.000
134	5670	15.800	16.440	16.210	15.960	22.130	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 2: Transmit RU Mode_Center		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (80MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
58	5290	14.930	15.130	14.960	14.720	20.958	≦24.000

The worst emission of data rate is MCS0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
106	5530	14.970	15.090	15.050	14.510	20.932	≦24.000
122	5610	16.840	17.010	17.220	16.600	22.944	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 2: Transmit RU Mode_Edge		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (20MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
52	5260	15.850	16.160	15.750	15.390	21.817	≦24.000
60	5300	15.960	16.020	15.940	15.400	21.858	≦24.000
64	5320	15.780	16.080	15.720	15.480	21.791	≦24.000

The worst emission of data rate is MCS 0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
100	5500	15.080	14.940	15.440	15.070	21.157	≦24.000
116	5580	16.030	15.920	16.040	15.480	21.894	≦24.000
140	5700	14.950	15.350	15.200	14.930	21.132	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 2: Transmit RU Mode_Edge		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (40MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
54	5270	17.870	17.800	17.710	17.440	23.729	≦24.000
62	5310	17.340	17.520	17.170	17.010	23.285	≦24.000

The worst emission of data rate is MCS0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
102	5510	14.940	14.920	15.440	15.120	21.131	≦24.000
110	5550	17.860	17.450	18.080	17.420	23.732	≦24.000
134	5670	15.880	16.060	16.130	15.550	21.931	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 2: Transmit RU Mode_Edge		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (80MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
58	5290	14.640	14.720	14.650	14.360	20.615	≦24.000

The worst emission of data rate is MCS0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
106	5530	14.940	15.050	15.010	14.880	20.991	≦24.000
122	5610	17.160	16.910	17.270	16.430	22.975	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 3: Transmit Beamforming Mode		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (20MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
52	5260	16.800	16.650	16.480	16.410	22.608	≦24.000
60	5300	16.780	16.700	16.710	16.380	22.666	≦24.000
64	5320	16.770	16.780	16.680	16.330	22.664	≦24.000

The worst emission of data rate is MCS 0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
100	5500	16.680	16.480	16.650	16.620	22.629	≦24.000
116	5580	17.110	17.020	16.960	16.550	22.936	≦24.000
140	5700	17.450	17.820	17.940	16.880	23.562	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 3: Transmit Beamforming Mode		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (40MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
54	5270	17.880	17.860	17.750	17.570	23.787	≦24.000
62	5310	17.750	17.730	17.720	17.370	23.666	≦24.000

The worst emission of data rate is MCS0

5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
102	5510	17.720	17.350	17.800	17.360	23.583	≦24.000
110	5550	18.100	17.640	18.100	17.710	23.913	≦24.000
134	5670	17.540	17.950	17.920	17.220	23.688	≦24.000

The worst emission of data rate is MCS0

Product	Consumer Home Router		
Test Item	Maximum conducted output power		
Test Mode	Mode 3: Transmit Beamforming Mode		
Date of Test	2021/02/03	Test Site	SR12-H
Test Temperature	23.8℃	Test Humidity	51.0%

IEEE 802.11ax (80MHz)

5GHz UNII 2A:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
58	5290	17.950	17.870	17.710	17.490	23.779	≦24.000

The worst emission of data rate is MCS0

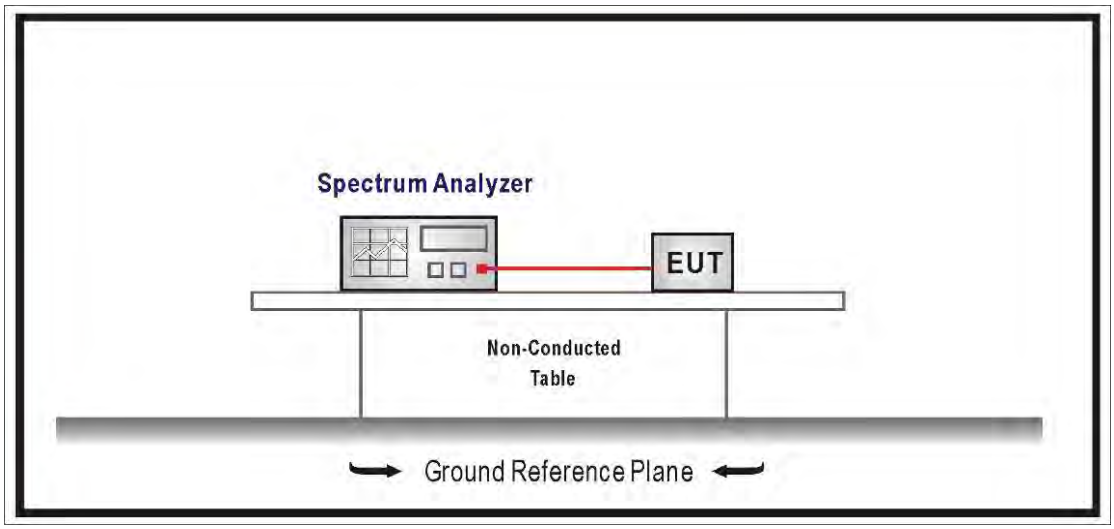
5GHz UNII 2C:

Channel No.	Frequency (MHz)	Max. Conducted Output Power (dBm)					Limit (dBm)
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Total	
106	5530	18.100	17.950	17.970	17.760	23.967	≦24.000
122	5610	17.640	17.810	17.760	17.090	23.605	≦24.000

The worst emission of data rate is MCS0

5. Maximum power spectral density

5.1. Test Setup



5.2. Limits

1. For the band 5.15-5.25 GHz, the Maximum power spectral density shall not exceed 17 dBm in any 1MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the Maximum power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
2. For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi
3. For the band 5.25-5.35 GHz, the Maximum power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the Maximum power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
4. For the band 5.725-5.850 GHz, the Maximum power spectral density shall not exceed 30 dBm in any 500KHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the Maximum power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi..

5.3. Test Procedure

The EUT was setup to ANSI C63.10: 2013; tested to U-NII test procedure of KDB 789033 D02 v02r01 for compliance to FCC 47CFR Subpart E requirements.

For Band1 : Set RBW=1MHz, VBW=3MHz with RMS detector. The PPSD is the highest level found across the emission in any 1-MHz band after 100 sweeps of averaging.

For Band4 : Set RBW=500KHz, VBW=1.5MHz with RMS detector. The PPSD is the highest level found across the emission in any 500KHz band after 100 sweeps of averaging.

5.4. Test Result

Product	Consumer Home Router		
Test Item	Maximum power spectral density		
Test Mode	Mode 1: Transmit CDD Mode		
Date of Test	2021/01/30~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	66.0%

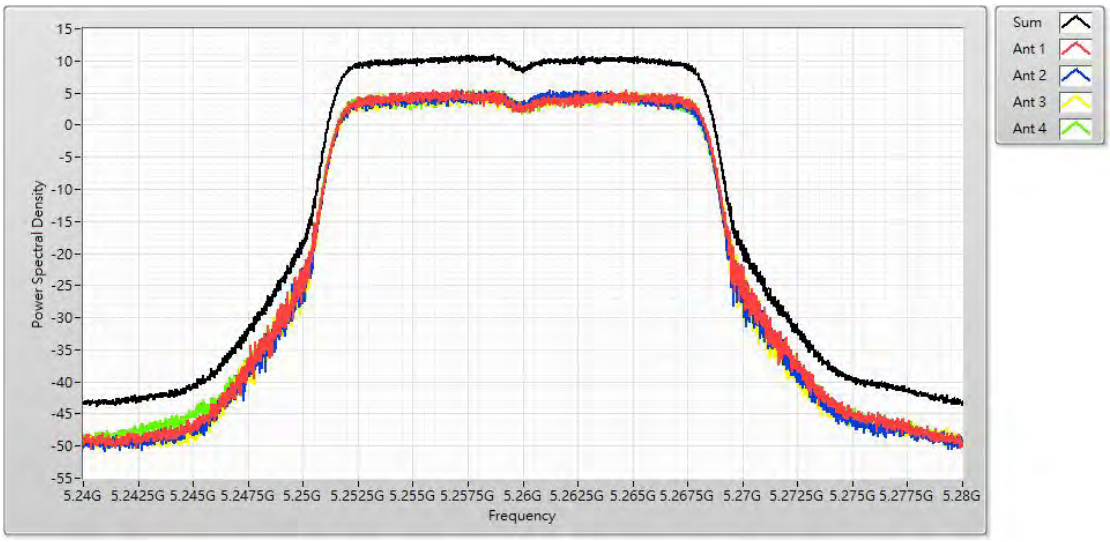
5GHz UNII 2A:

IEEE 802.11a (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
52	5260	10.890	≦11	Pass
60	5300	10.870	≦11	Pass
64	5320	10.960	≦11	Pass

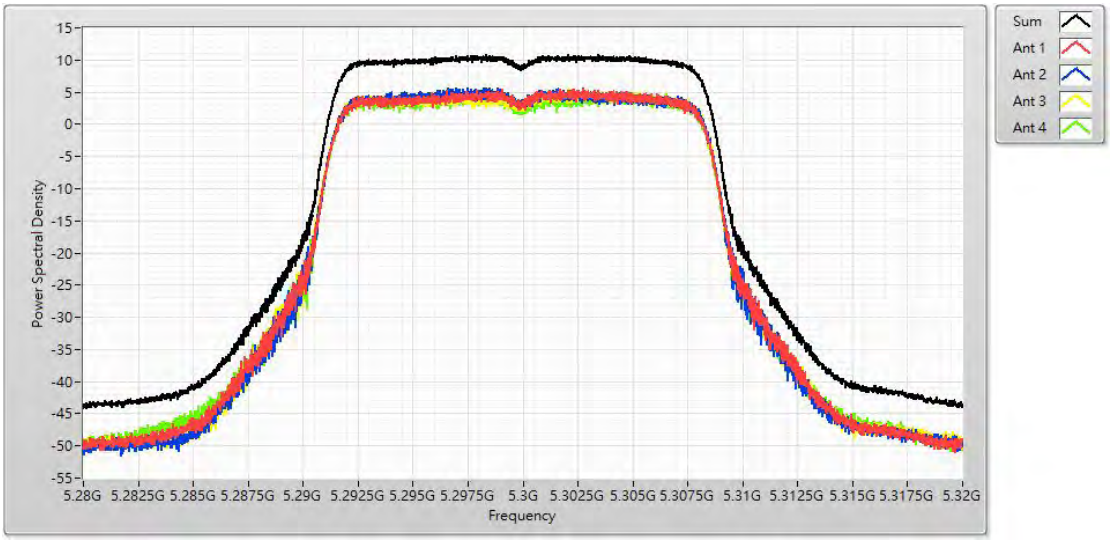
5GHz UNII 2C:

IEEE 802.11a (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
100	5500	10.680	≦11	Pass
116	5580	10.630	≦11	Pass
140	5700	10.880	≦11	Pass

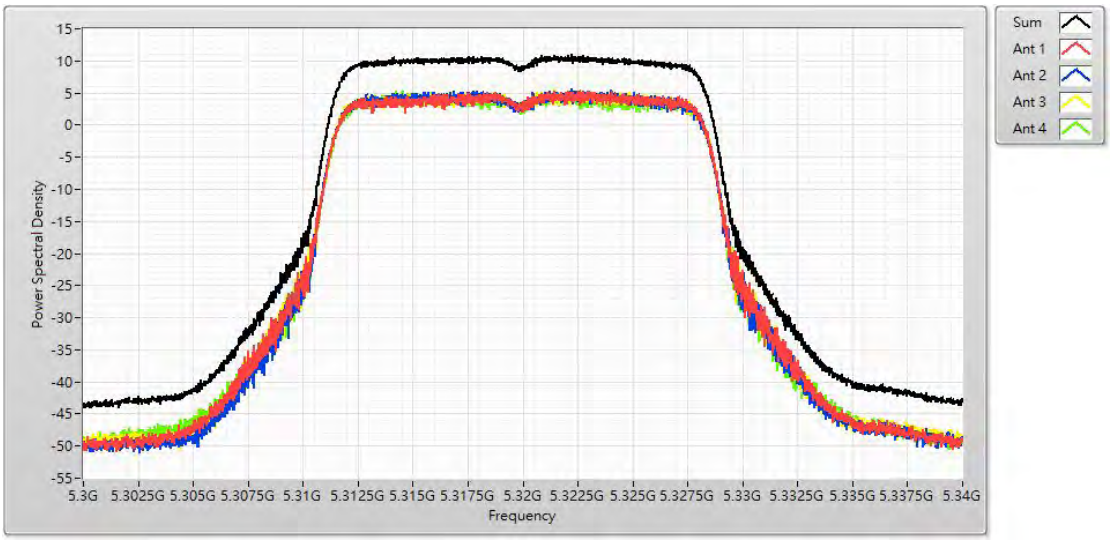
Channel 52 (5260MHz)



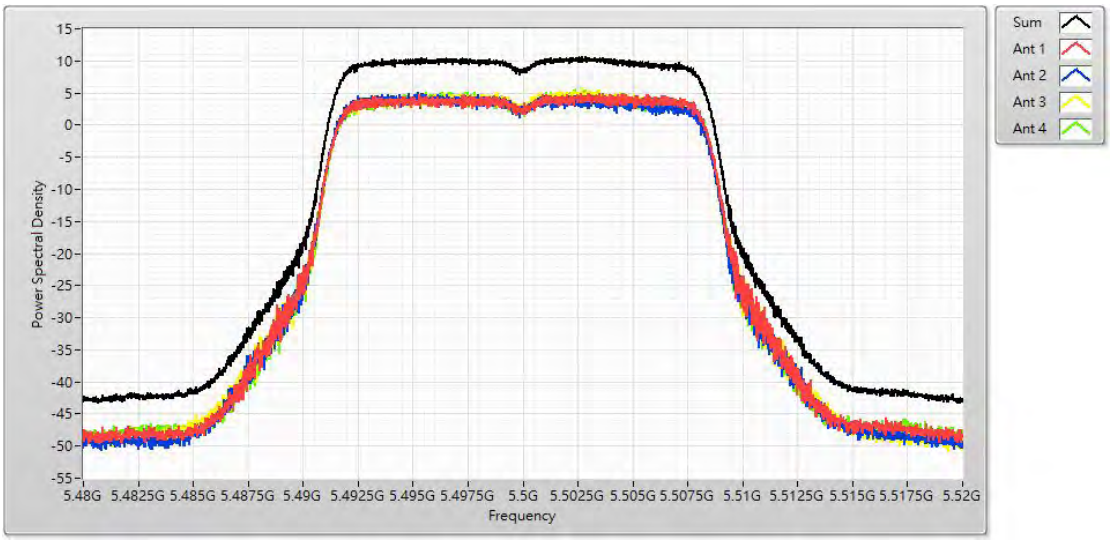
Channel 60 (5300MHz)



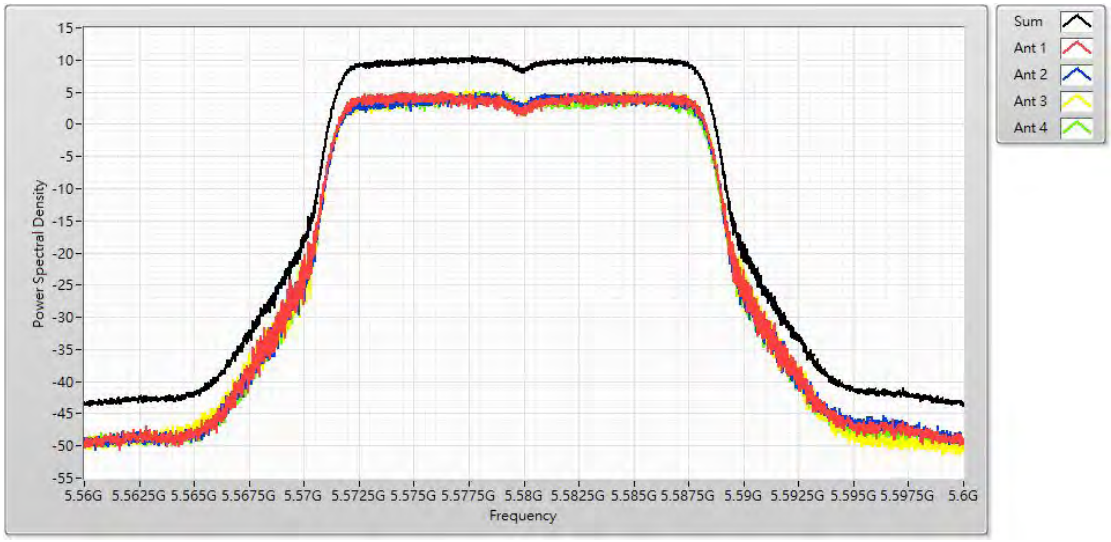
Channel 64 (5320MHz)



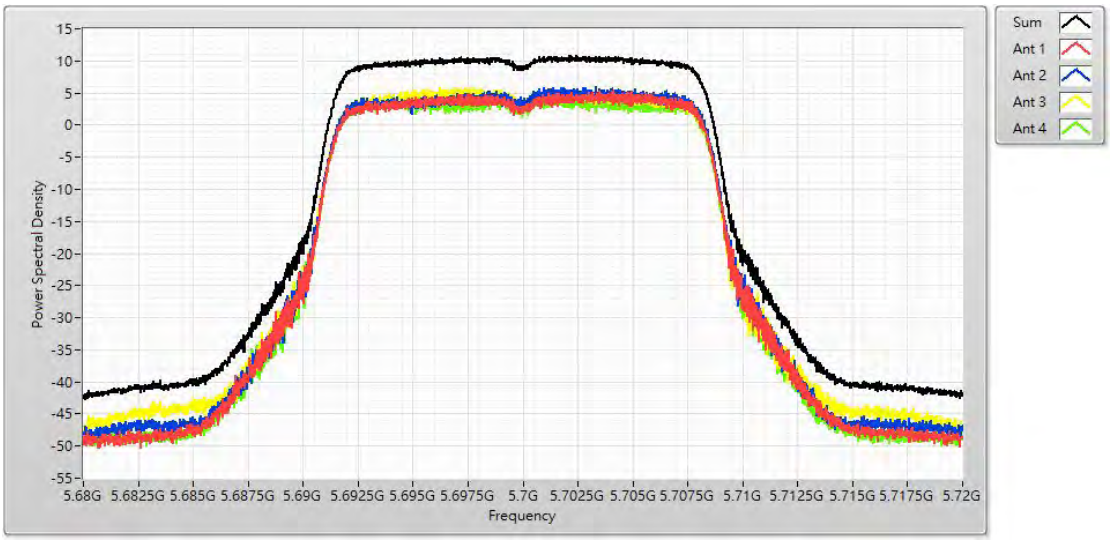
Channel 100 (5500MHz)



Channel 116 (5580MHz)



Channel 140 (5700MHz)



Product	Consumer Home Router		
Test Item	Maximum power spectral density		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	68.0%

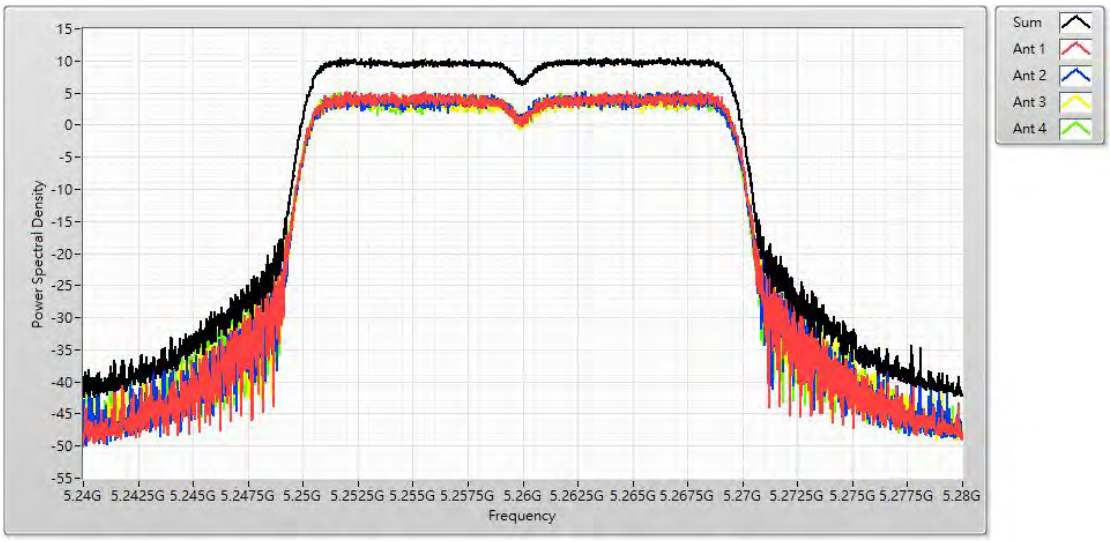
5GHz UNII 2A:

IEEE 802.11ax (20MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
52	5260	10.590	≦11	Pass
60	5300	10.440	≦11	Pass
64	5320	10.290	≦11	Pass

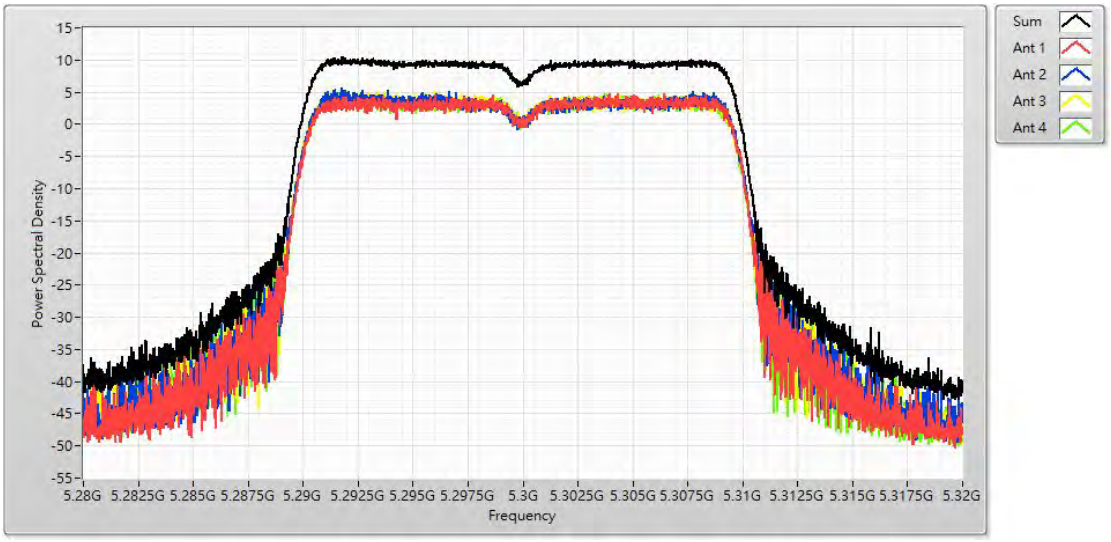
5GHz UNII 2C:

IEEE 802.11ax (20MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
100	5500	10.740	≦11	Pass
116	5580	10.540	≦11	Pass
140	5700	8.610	≦11	Pass

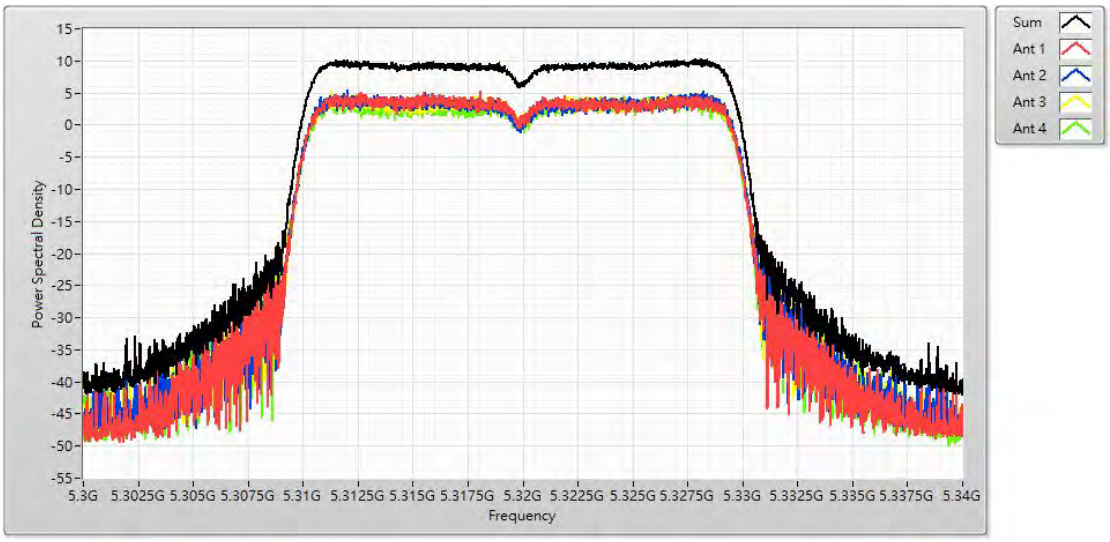
Channel 52 (5260MHz)



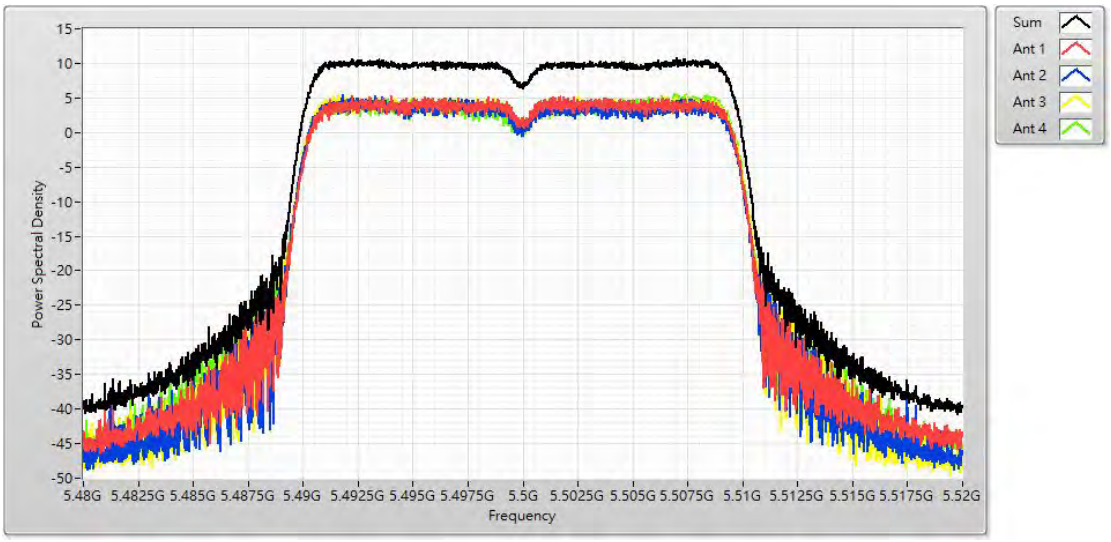
Channel 60 (5300MHz)



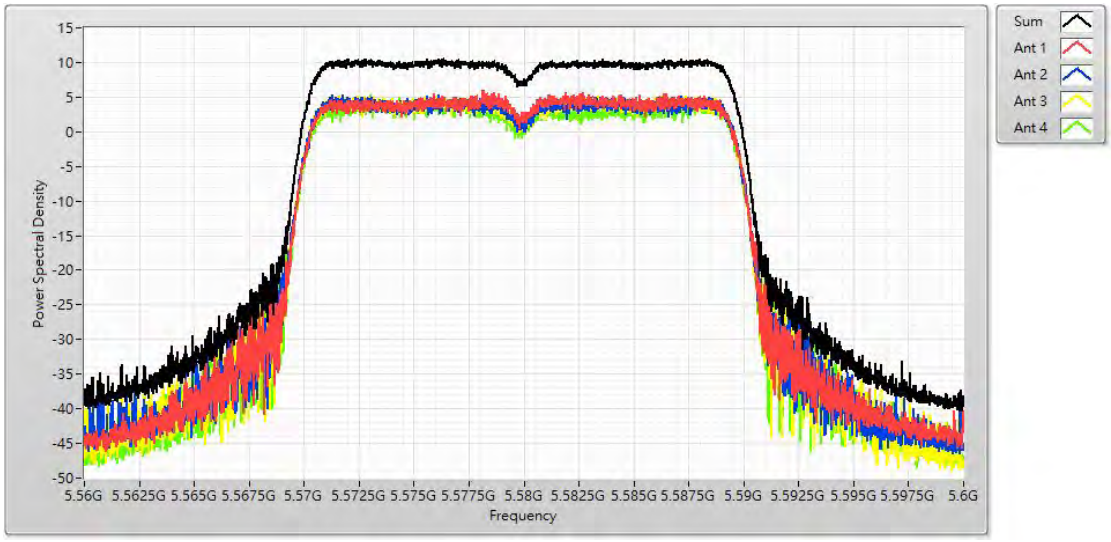
Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 116 (5580MHz)



Channel 140 (5700MHz)

Product	Consumer Home Router		
Test Item	Maximum power spectral density		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	68.0%

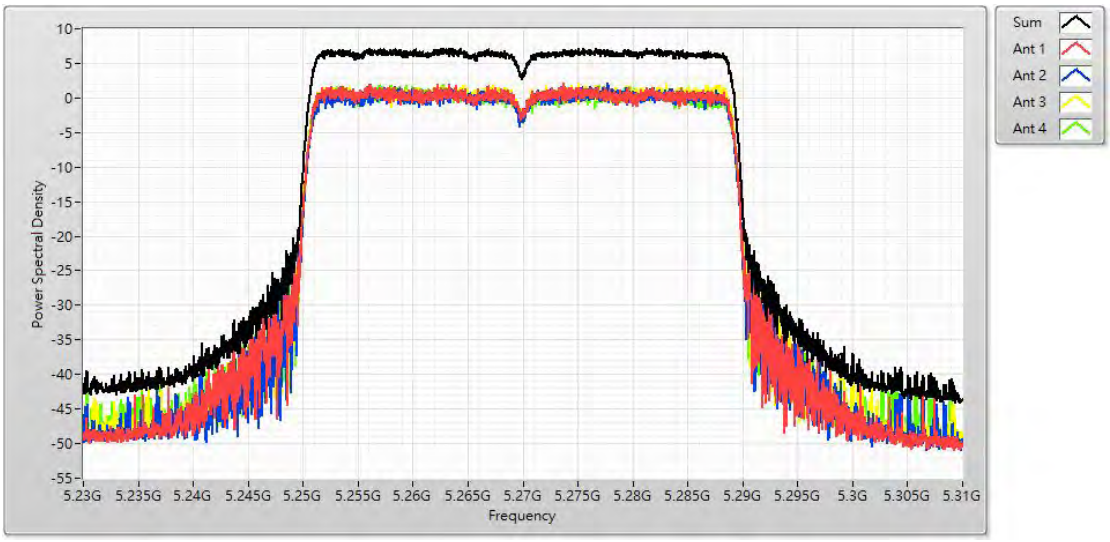
5GHz UNII 2A:

IEEE 802.11ax (40MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
54	5270	7.170	≦11	Pass
62	5310	6.440	≦11	Pass

5GHz UNII 2C:

IEEE 802.11ax (20MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
102	5510	5.830	≦11	Pass
110	5550	8.180	≦11	Pass
134	5670	5.080	≦11	Pass

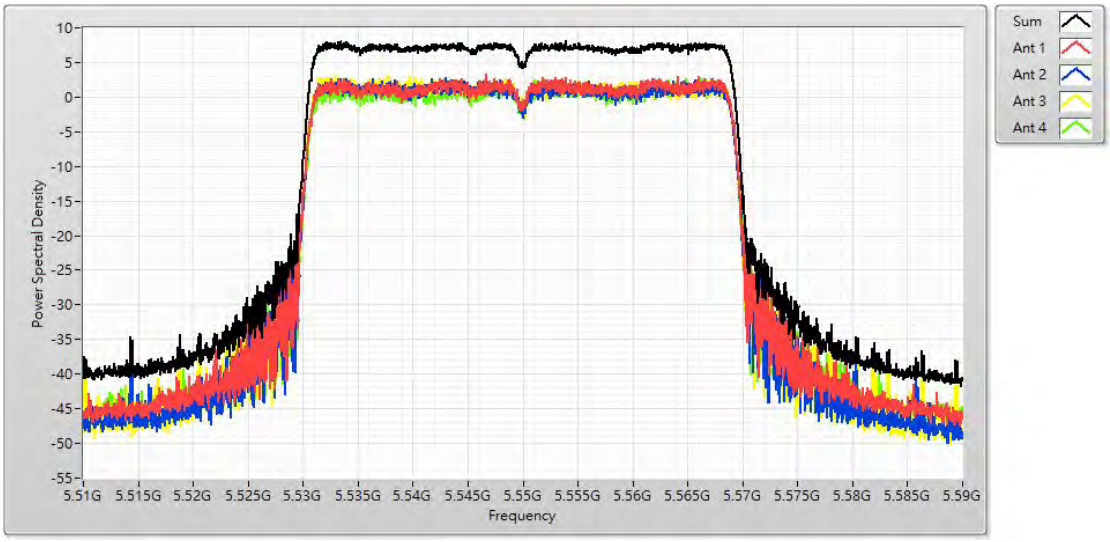
Channel 54 (5270MHz)



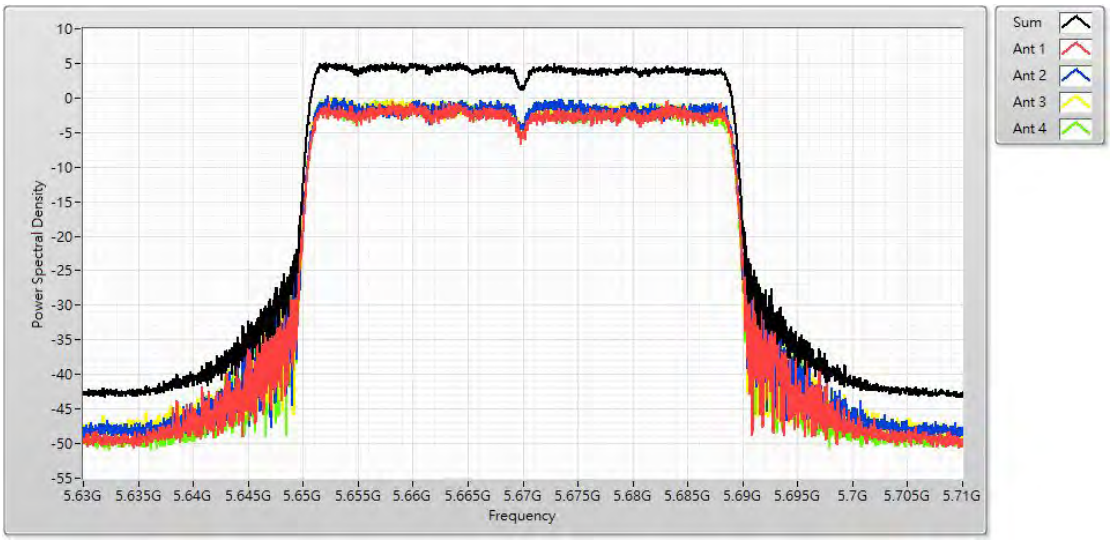
Channel 62 (5310MHz)

Channel 102 (5510MHz)

Channel 110 (5550MHz)



Channel 134 (5670MHz)



Product	Consumer Home Router		
Test Item	Maximum power spectral density		
Test Mode	Mode 2: Transmit RU Mode_Full		
Date of Test	2021/02/01~2021/02/02	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	68.0%

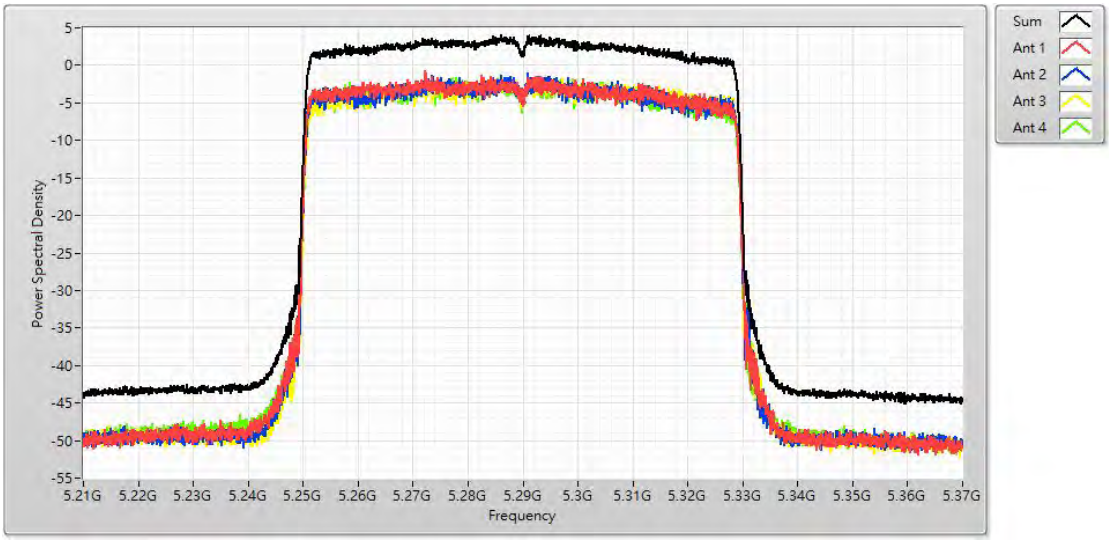
5GHz UNII 2A:

IEEE 802.11ax (80MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
58	5290	4.020	≦11	Pass

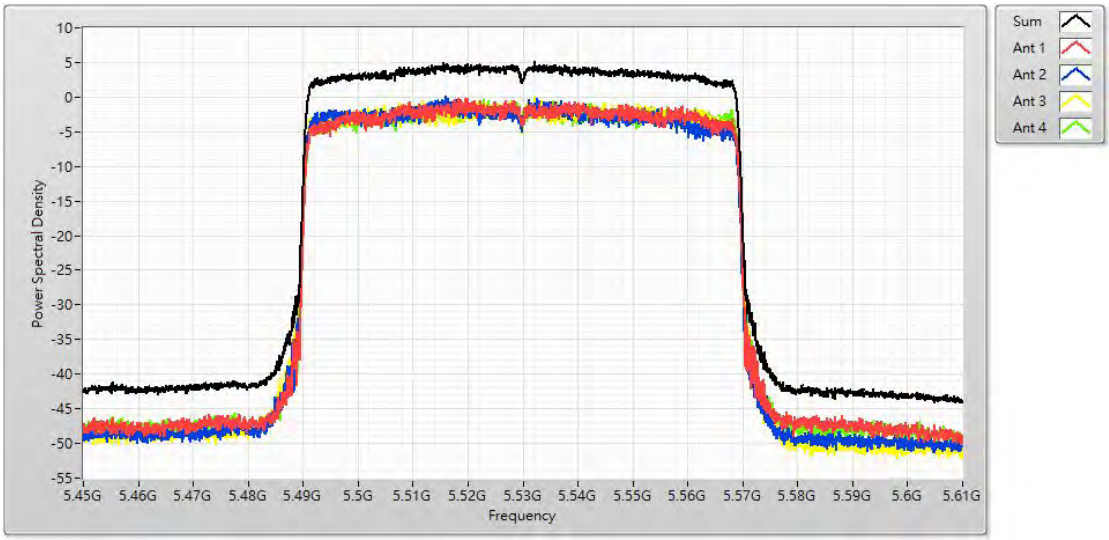
5GHz UNII 2C:

IEEE 802.11ax (80MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
106	5530	5.190	≦11	Pass
122	5610	4.140	≦11	Pass

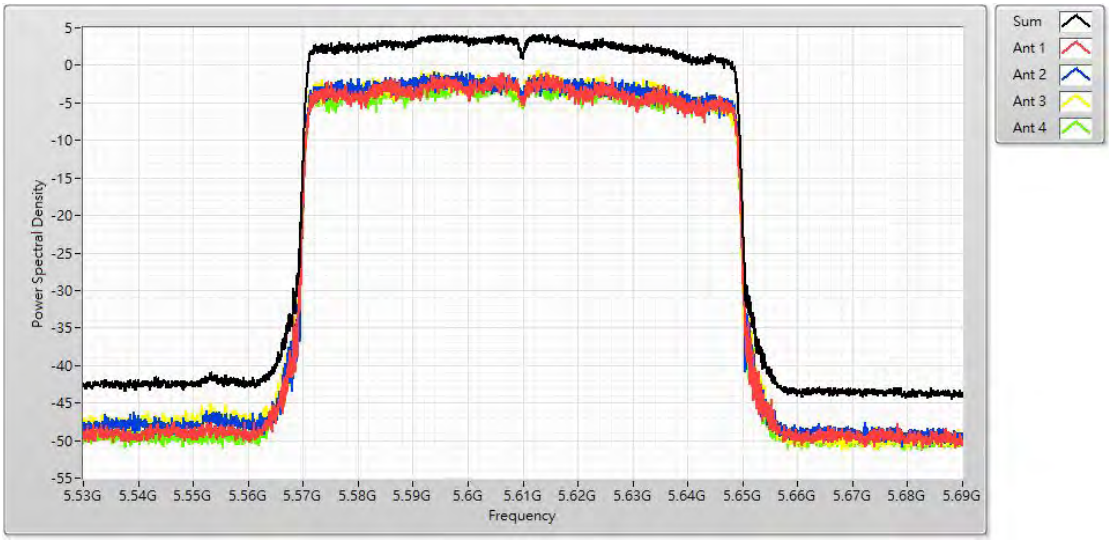
Channel 58 (5290MHz)



Channel 106 (5530MHz)



Channel 122 (5610MHz)



Product	Consumer Home Router		
Test Item	Maximum power spectral density		
Test Mode	Mode 2: Transmit RU Mode_Center		
Date of Test	2021/02/01~2021/02/03	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	68.0%

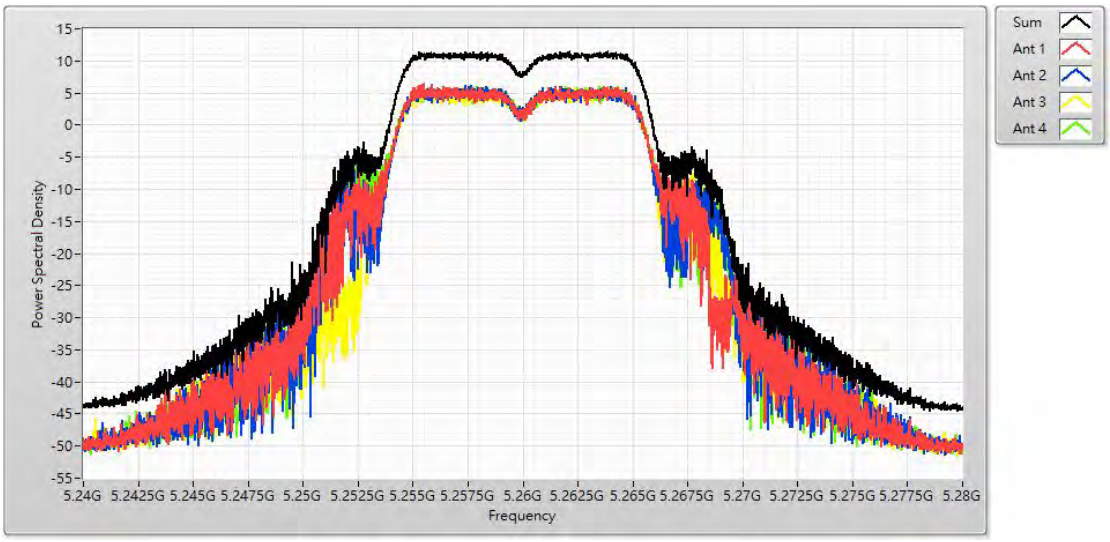
5GHz UNII 2A:

IEEE 802.11ax (20MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
52	5260	10.460	≦11	Pass
60	5300	10.520	≦11	Pass
64	5320	10.360	≦11	Pass

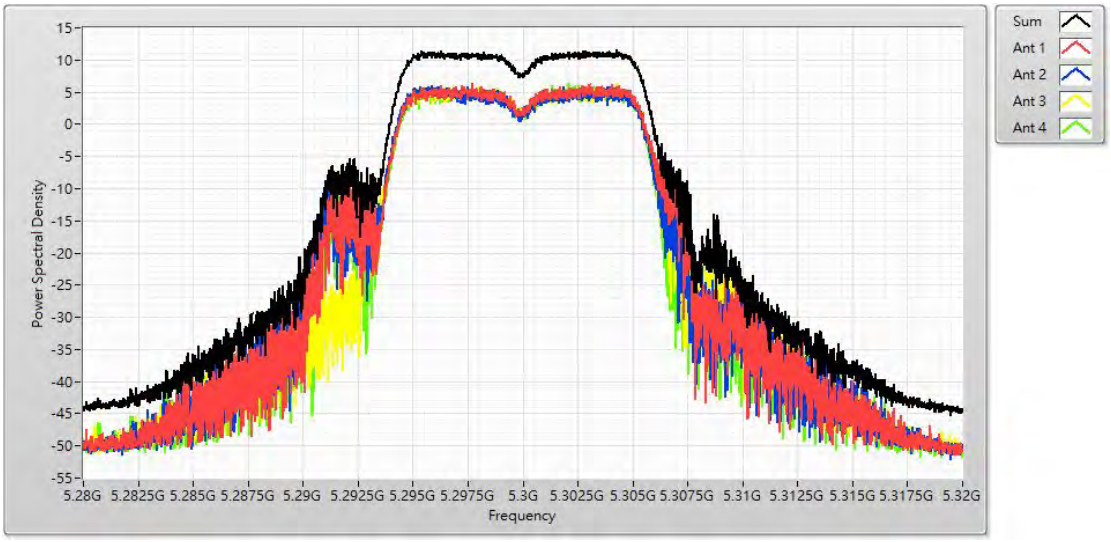
5GHz UNII 2C:

IEEE 802.11ax (20MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
100	5500	10.930	≦11	Pass
116	5580	10.360	≦11	Pass
140	5700	10.420	≦11	Pass

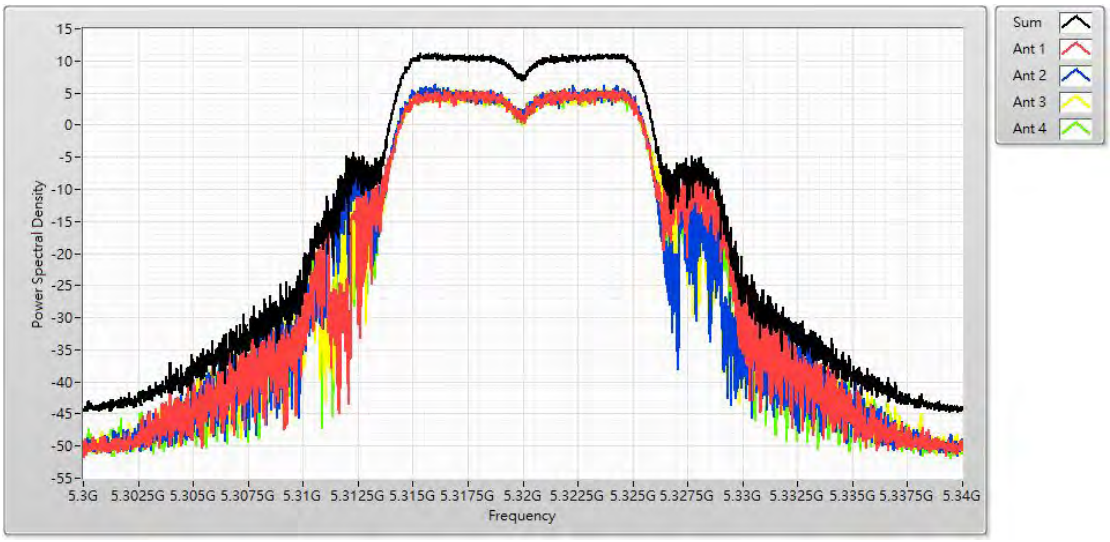
Channel 52 (5260MHz)



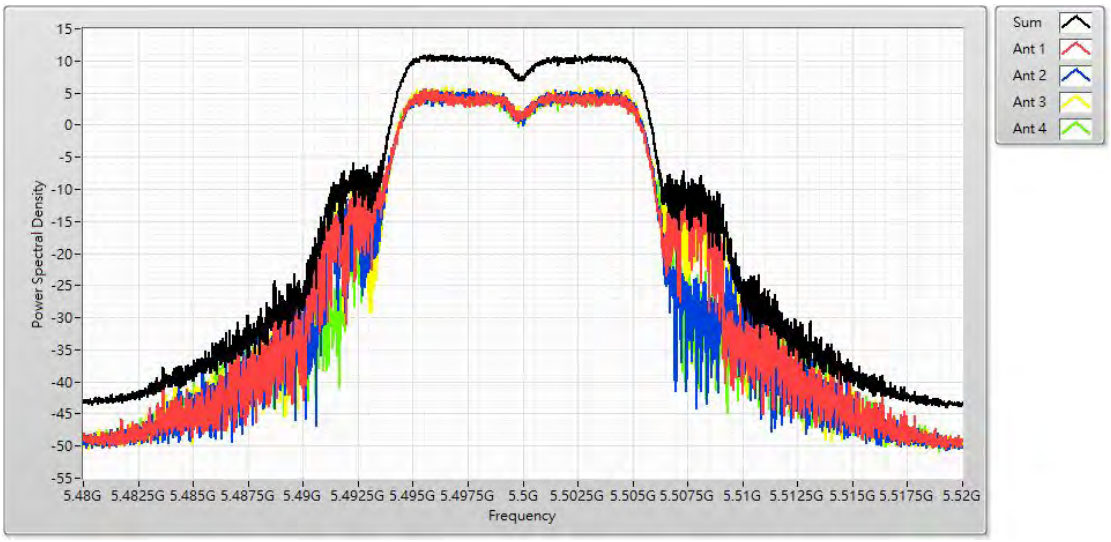
Channel 60 (5300MHz)



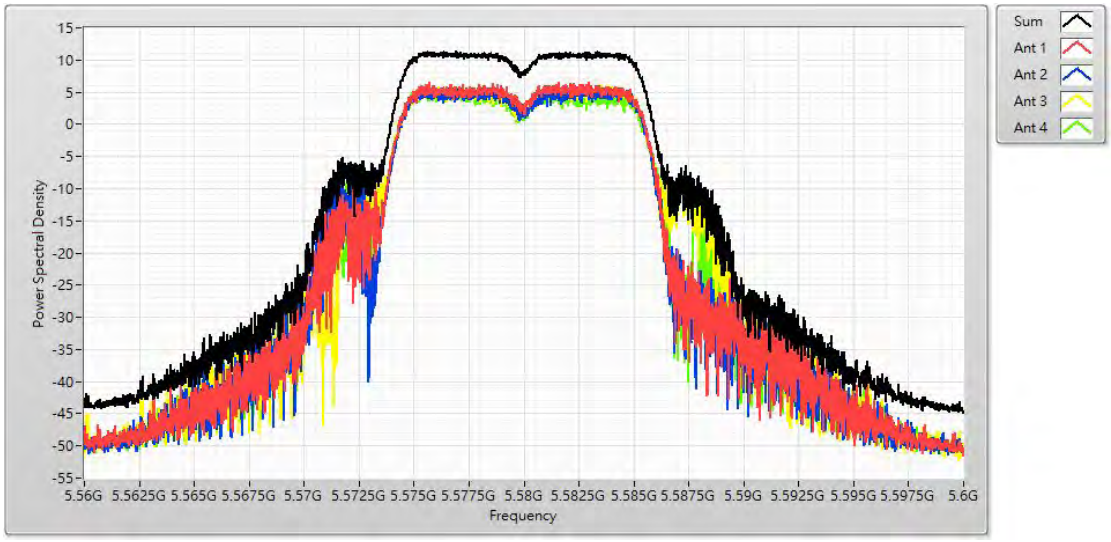
Channel 64 (5320MHz)



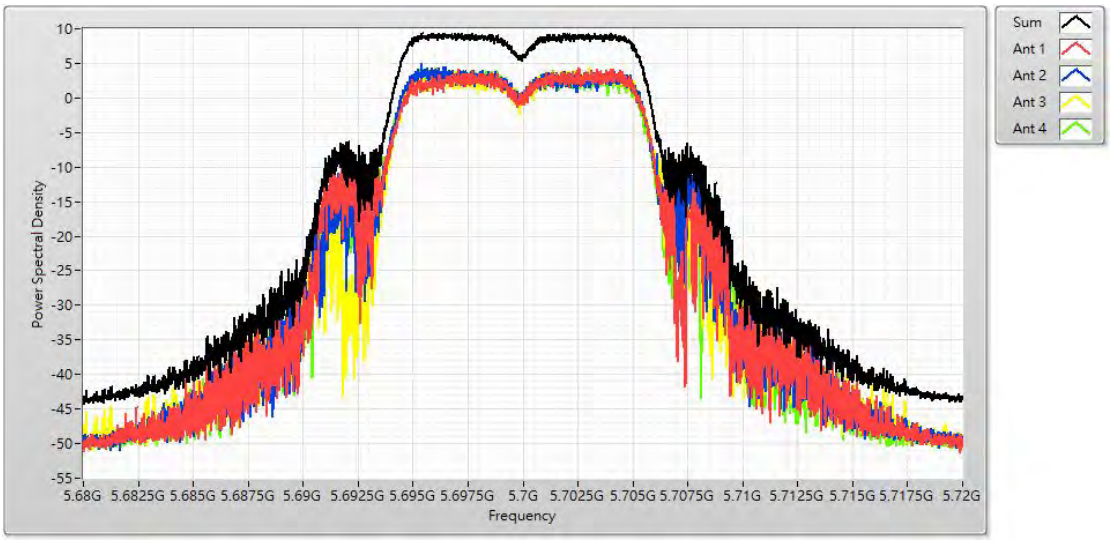
Channel 100 (5500MHz)



Channel 116 (5580MHz)



Channel 140 (5700MHz)



Product	Consumer Home Router		
Test Item	Maximum power spectral density		
Test Mode	Mode 2: Transmit RU Mode_Center		
Date of Test	2021/02/01~2021/02/03	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	68.0%

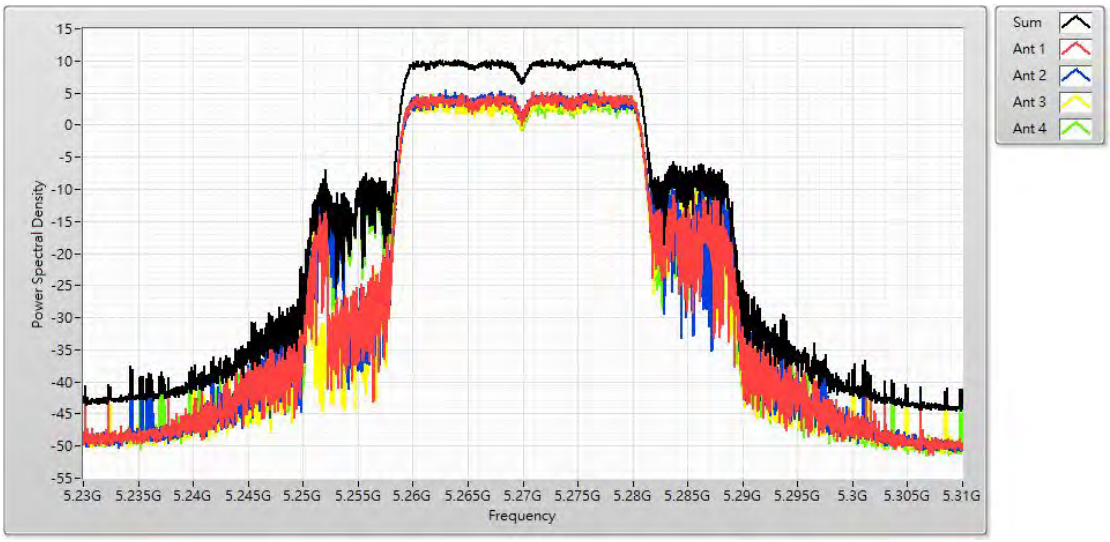
5GHz UNII 2A:

IEEE 802.11ax (40MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
54	5270	10.250	≦11	Pass
62	5310	9.320	≦11	Pass

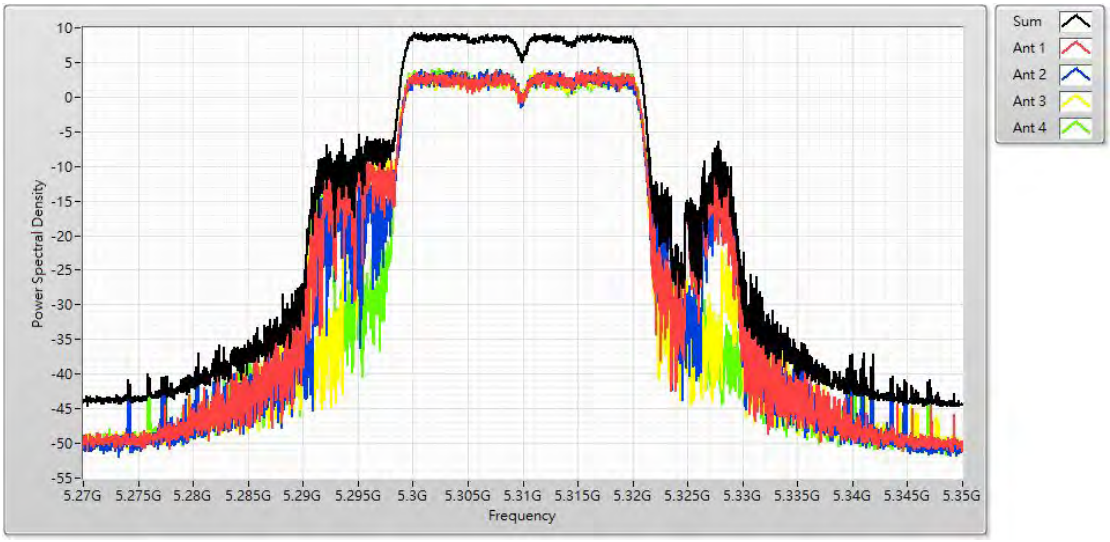
5GHz UNII 2C:

IEEE 802.11ax (20MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
102	5510	8.030	≦11	Pass
110	5550	10.640	≦11	Pass
134	5670	8.330	≦11	Pass

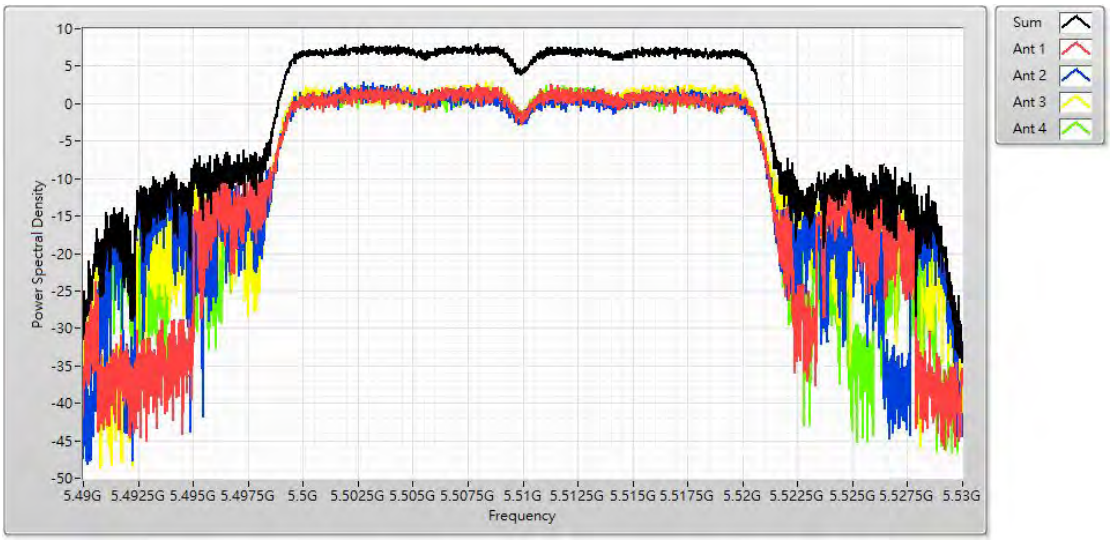
Channel 54 (5270MHz)



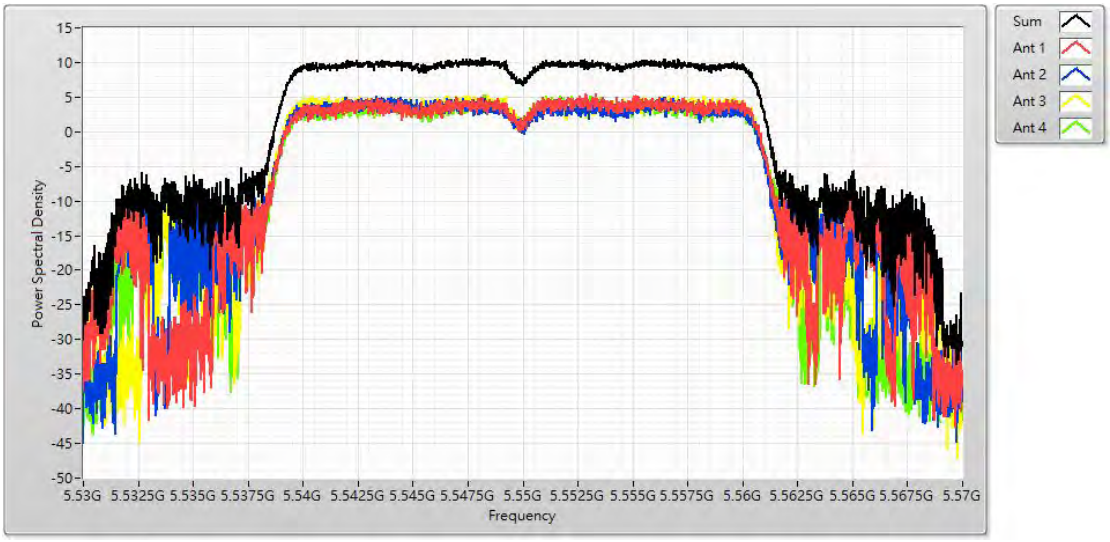
Channel 62 (5310MHz)



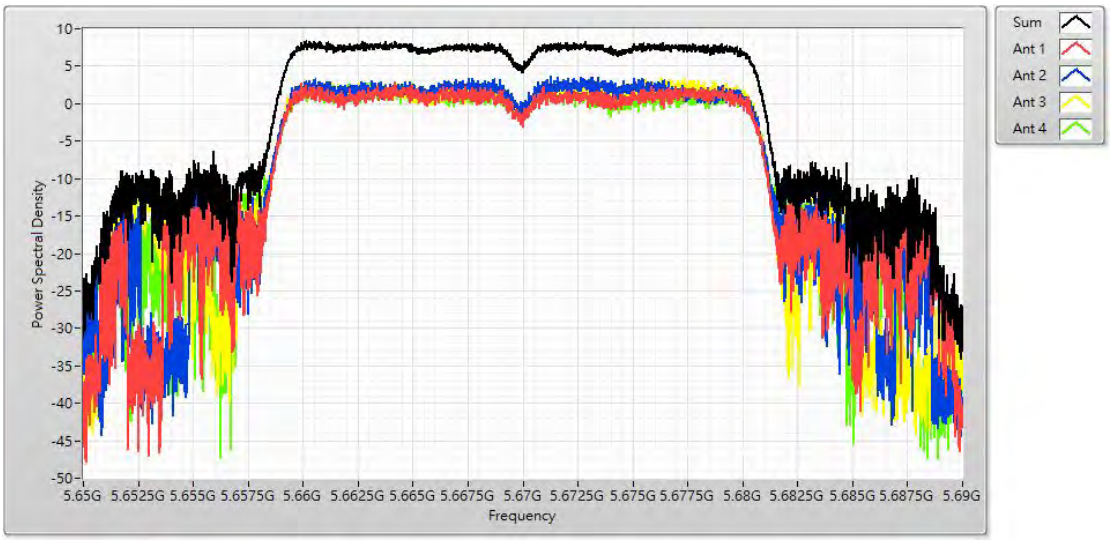
Channel 102 (5510MHz)



Channel 110 (5550MHz)



Channel 134 (5670MHz)



Product	Consumer Home Router		
Test Item	Maximum power spectral density		
Test Mode	Mode 2: Transmit RU Mode_Center		
Date of Test	2021/02/01~2021/02/03	Test Site	SR12-H
Test Temperature	22.0℃	Test Humidity	68.0%

5GHz UNII 2A:

IEEE 802.11ax (80MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
58	5290	3.370	≦11	Pass

5GHz UNII 2C:

IEEE 802.11ax (80MHz) (ANT 0+1+2+3)				
Channel No.	Frequency (MHz)	Measure Value (dBm)	Limit (dBm)	Result
106	5530	3.180	≦11	Pass
122	5610	5.230	≦11	Pass