MEASUREMENT REPORT

FCC PART 15.247 / ISED RSS-247 WLAN

FCC ID:	H8N-AP6275S
IC:	1353A-AP6275S
Applicant:	Askey Computer Corporation
Application Type:	Certification
Product:	WIFI+BT Combo Module
Model No.:	AP6275S
Brand Name:	ASKEY
FCC Classification:	Unlicensed National Information Infrastructure (NII)
FCC Rule Part(s):	Part15 Subpart E (Section 15.407)
ISED Rule (s):	RSS-247 Issue 2, RSS-GEN Issue 5
Test Procedure(s):	ANSI C63.10-2013, KDB 789033 D02v02r01 KDB 662911 D01v02r01
Test Date:	May 28 ~ June 28, 2021

Reviewed By: Kevin Guo

Approved By: Robin Wu

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 789033 D02v02r01. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2104RSU079-U5	Rev. 01	Initial Report	07-01-2021	Valid

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1. General Information

1.1. Applicant

Askey Computer Corporation

10F, No.119, JIANKANG RD., ZHONGHE DIST., NEW TAIPEI CITY, TAIWAN

1.2. Manufacturer

Askey Computer Corporation

10F, No.119, JIANKANG RD., ZHONGHE DIST., NEW TAIPEI CITY, TAIWAN

1.3. Testing Facility

☒	**Test Site – MRT Suzhou Laboratory**	
	Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China **Laboratory Location (Suzhou - SIP)** 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China	
	Laboratory Accreditations	
	A2LA: 3628.01	CNAS: L10551
	FCC: CN1166	ISED: CN0001
	VCCI: R-20025, G-20034, C-20020, T-20020	
☐	**Test Site – MRT Shenzhen Laboratory**	
	Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China	
	Laboratory Accreditations	
	A2LA: 3628.02	CNAS: L10551
	FCC: CN1284	ISED: CN0105
☐	**Test Site – MRT Taiwan Laboratory**	
	Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)	
	Laboratory Accreditations	
	TAF: L3261-190725	
	FCC: 291082, TW3261	ISED: TW3261

2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	WIFI+BT Combo Module
Model No.	AP6275S
PMN & HVIN	AP6275S
Brand Name	ASKEY
Wi-Fi Specification	802.11a/b/g/n/ac/ax
Bluetooth Specification	V5.0 dual mode
Antenna Information	Refer to section 2.4
Serial No.	Conducted: 41C3S043320 Radiated & AC Conducted Emission: 41C3S043287
Remark: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

2.2. Product Specification Subjective to this Report

Frequency Range	For 802.11a/n-HT20/ac-VHT20/ax-HE20: 5180~5240MHz, 5260~5320MHz, 5500~5720MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40/ax-HE40: 5190~5230MHz, 5270~5310MHz, 5510~5710MHz, 5755~5795MHz For 802.11ac-VHT80/ax-HE80: 5210MHz, 5290MHz, 5530MHz, 5610MHz, 5690MHz, 5775MHz
Type of Modulation	802.11a/n/ac: OFDM 802.11ax: OFDMA
Data Rate	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.6Mbps 802.11ax: up to 1201Mbps

Note: For other features of this EUT, test report will be issued separately.

2.3. Working Frequencies for this report

802.11a/n-HT20/ac-VHT20/ax-HE20

Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz
48	5240 MHz	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	144	5720 MHz	149	5745 MHz
153	5765 MHz	157	5785 MHz	161	5805 MHz
165	5825 MHz	--	--	--	--

802.11n-HT40/ac-VHT40/ax-HE40

Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	54	5270 MHz
62	5310 MHz	102	5510 MHz	110	5550 MHz
118	5590 MHz	126	5630 MHz	134	5670 MHz
142	5710 MHz	151	5755 MHz	159	5795 MHz

802.11ac-VHT80/ax-HE80

Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210 MHz	58	5290 MHz	106	5530 MHz
122	5610 MHz	138	5690 MHz	155	5775 MHz

Note: The frequencies that fall in the 5600MHz to 5650MHz band will not be used in Canada.

2.4. Description of Available Antennas

Antenna Type	Frequency Band (GHz)	T_X Paths	Per Chain Max Antenna Gain (dBi)		Directional Gain (dBi)	
			Ant 0	Ant 1	For Power	For PSD
Wi-Fi Internal Antenna						
PIFA	2412 ~ 2462	2	2.1	1.9	2.1	5.11
	5180 ~ 5240	2	4.2	1.9	4.2	7.21
	5260 ~ 5320	2	3.8	3.0	3.8	6.81
	5500 ~ 5720	2	3.8	2.9	3.8	6.81
	5745 ~ 5825	2	3.4	2.3	3.4	6.41
Bluetooth Internal Antenna						
PIFA	2402 ~ 2480	1	1.9		--	

Note 1:

The EUT supports Cyclic Delay Diversity (CDD) technology, the CDD supports 802.11a/g/n/ac/ax, not include 802.11b (SISO only), and CDD signals are correlated.

For CDD transmissions, directional gain is calculated as follows, N_{ANT} = 2, N_{SS} = 1.

If all antennas have the same gain, G_{ANT}, Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices,
  Array Gain = 10 log (N_{ANT}/ N_{SS}) dB = 3.01;
- For power measurements on IEEE 802.11 devices,
  Array Gain = 0 dB for $N_{ANT} \leq 4$;

If antenna gains are not equal, Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

Note 2: All antenna information is provided by the manufacturer, test laboratory will not be responsible if any error.

2.5. Test Mode

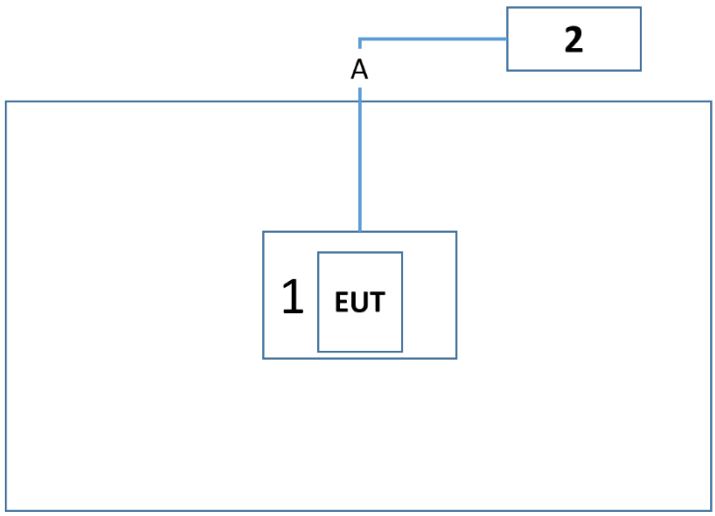
Test Mode	Mode 1: Transmit by 802.11a (6Mbps) (CDD mode)
	Mode 2: Transmit by 802.11n-HT20 (MCS0) (CDD mode)
	Mode 3: Transmit by 802.11n-HT40 (MCS0) (CDD mode)
	Mode 4: Transmit by 802.11ac-VHT20 (MCS0) (CDD mode)
	Mode 5: Transmit by 802.11ac-VHT40 (MCS0) (CDD mode)
	Mode 6: Transmit by 802.11ac-VHT80 (MCS0) (CDD mode)
	Mode 7: Transmit by 802.11ax-HE20 (MCS0) (CDD mode)
	Mode 8: Transmit by 802.11ax-HE40 (MCS0) (CDD mode)
	Mode 9: Transmit by 802.11ax-HE80 (MCS0) (CDD mode)

Note: EUT is as a stand-alone device when the test is processing, but a test fixture will be used as a tool.

2.6. Configuration of Test System

The measurement procedures and appropriate EUT setup described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) and KDB 789033 were used in the measurement.

Connection Diagram



Cable Type		Cable Description
A	Console Cable	Shielded, <1.5m

2.7. Test 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.	Description
1	Test Fixture	ASKEY	N/A	N/A	As a power and signal control board
2	Notebook	DELL	P62G	NA	Non-Shielded, >1.8m

2.8. Description of Test Software

The test utility software used during testing was the command provided by the customer.

Note: Final power setting please refer to operational description.

2.9. Test Environment Condition

Ambient Temperature	15°C~35°C
Relative Humidity	20%RH ~75%RH

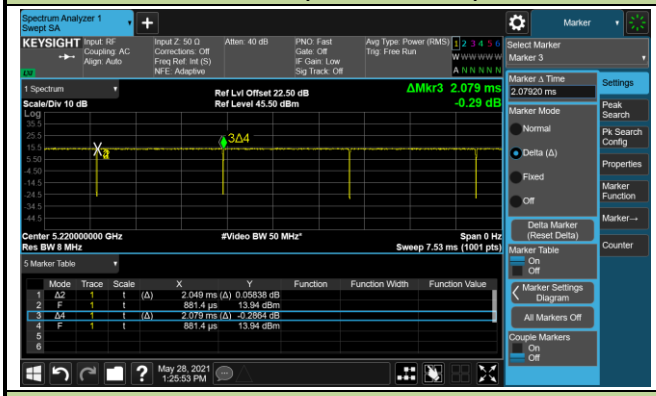
2.10. Duty Cycle

5GHz WLAN operation is possible in 20MHz, 40MHz and 80MHzchannel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

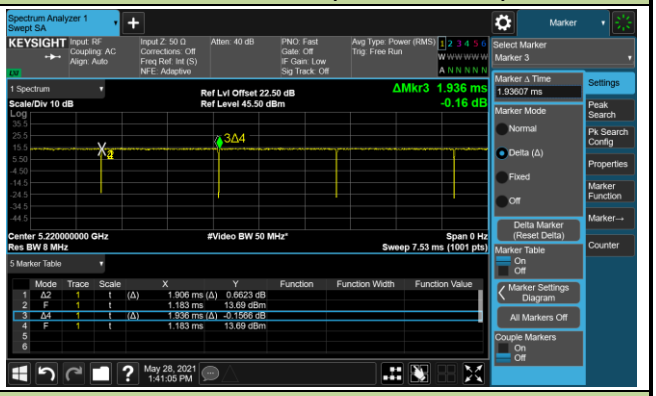
Test Mode	Duty Cycle
802.11a	98.56%
802.11n-HT20	98.45%
802.11n-HT40	96.15%
802.11ac-VHT20	98.46%
802.11ac-VHT40	96.17%
802.11ac-VHT80	98.00%
802.11ax-HE20	97.56%
802.11ax-HE40	98.02%
802.11ax-HE80	98.39%

Duty Cycle (T = Transmission Duration)

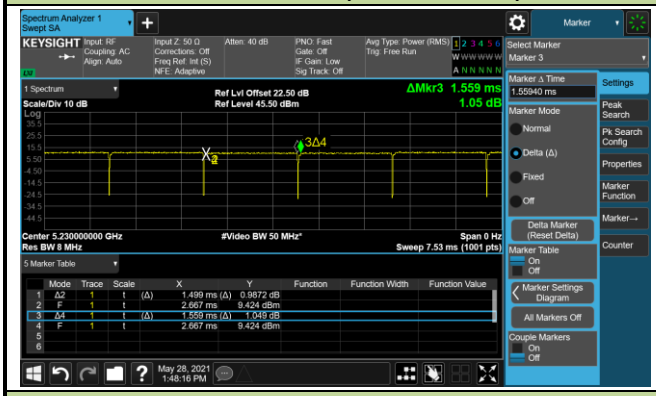
802.11a (T = 2.049ms)



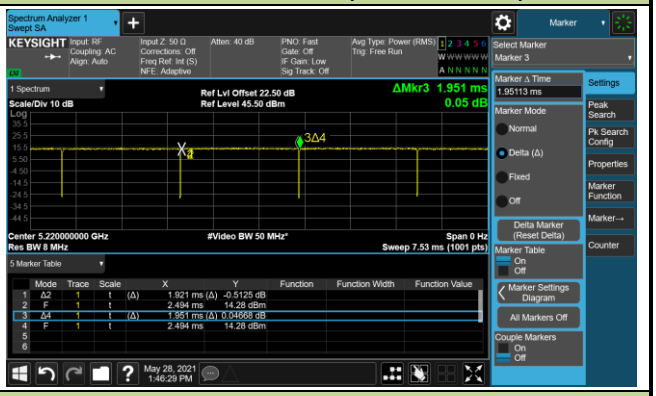
802.11n-HT20 (T = 1.906ms)



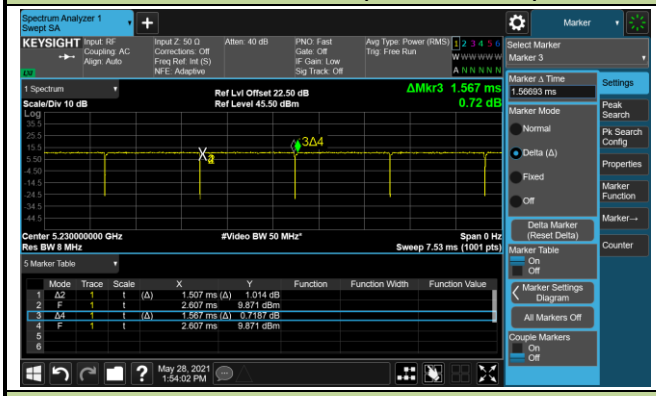
802.11n-HT40 (T = 1.499ms)



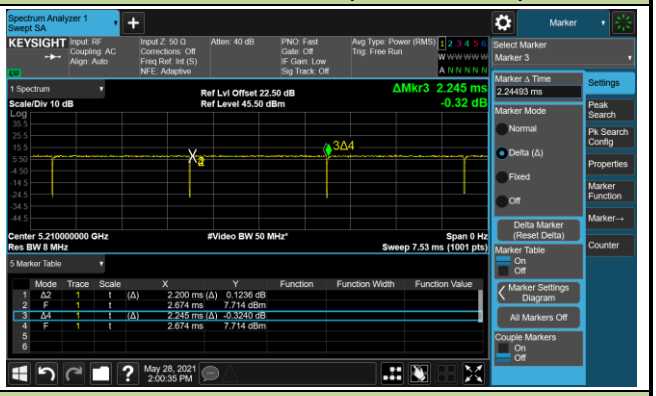
802.11ac-VHT20 (T = 1.921ms)



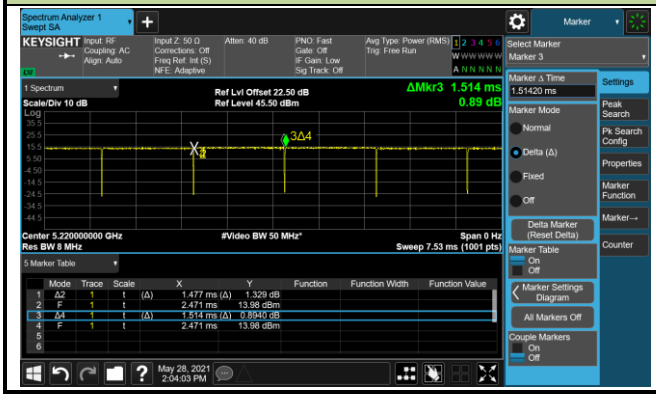
802.11ac-VHT40 (T = 1.507ms)



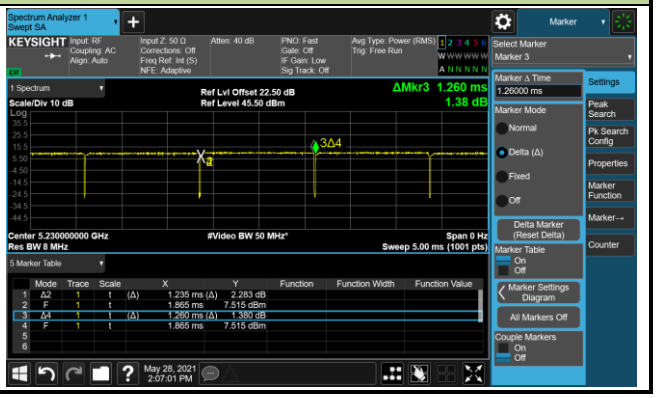
802.11ac-VHT80 (T = 2.200ms)

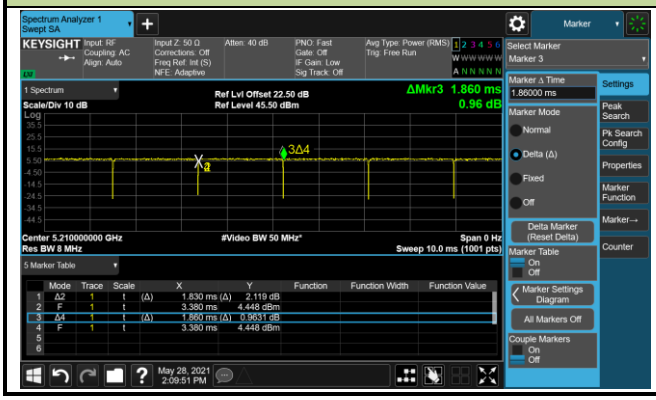


802.11ax-HE20 (T = 1.477ms)



802.11ax-HE40 (T = 1.235ms)



802.11ax-HE80 (T = 1.830ms)	
	

2.11. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.12. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

RSS-Gen Issue 5 Section 4

In addition to complying with the applicable RSSs and RSP-100, each unit of a product model (i.e. of a radio apparatus) shall meet the labelling requirements set out in this section prior to being marketed in Canada or imported into Canada.

For information regarding the labelling option, see Section 4.1, 4.2, 4.3 4.4. The label for the certified product represents the manufacturer's or importer's compliance with Innovation, Science and Economic Development Canada's (ISED) regulatory requirements.

Please see attachment for IC label and label location.

3. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 shall be considered sufficient to comply with the provisions of this section."

Conclusion:

The unit complies with the requirement of §15.203.

4. TEST EQUIPMENT CALIBRATION DATE

Conducted Emission (WZ-SR2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2022/01/12
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2021/09/09
Thermal Hygrometer	testo	608-H1	MRTSUE06404	1 year	2021/07/26
Shielding Room	MIX-BEP	Chamber-SR2	MRTSUE06215	N/A	N/A

Conducted Emission (SIP-SR2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06613	1 year	2021/07/02
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2021/09/09
Thermal Hygrometer	testo	608-H1	MRTSUE06621	1 year	2021/12/03

Radiated Emission (WZ-AC1)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2022/01/04
PXA Signal Analyzer	Keysight	N9030B	MRTSUE06395	1 year	2021/08/30
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2021/11/08
Bilog Period Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2021/08/08
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2021/09/27
Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06597	1 year	2021/12/14
Microwave System Amplifier	Agilent	83017A	MRTSUE06076	1 year	2021/11/14
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2022/06/10
Thermal Hygrometer	testo	608-H1	MRTSUE06403	1 year	2021/07/26
Anechoic Chamber	TDK	Chamber-AC1	MRTSUE06212	1 year	2022/04/29

Radiated Emission (WZ-AC2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
MXE EMI Receiver	Keysight	N9038A	MRTSUE06125	1 year	2021/07/02
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2021/11/08
Bilog Period Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2022/05/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2021/10/25
Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06597	1 year	2021/12/14
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2021/11/14
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2022/06/10
Thermal Hygrometer	Minggao	ETH529	MRTSUE06170	1 year	2021/12/08
Anechoic Chamber	RIKEN	Chamber-AC2	MRTSUE06213	1 year	2022/04/29

Radiated Emission (SIP-AC1)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06612	1 year	2021/07/02
EXA Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2021/07/23
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2021/11/08
Bilog Period Antenna	Schwarzbeck	VULB9168	MRTSUE06645	1 year	2021/08/30
Double Ridged Horn Antenna	R&S	HF907	MRTSUE06610	1 year	2021/08/30
Preamplifier	EMCI	EMC051845SE	MRTSUE06600	1 year	2021/11/12
Thermal Hygrometer	testo	608-H1	MRTSUE06620	1 year	2021/12/03
Anechoic Chamber	RIKEN	SIP-AC1	MRTSUE06554	1 year	2021/12/24

Radiated Emission (SIP-AC2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06613	1 year	2021/07/02
MXA Signal Analyzer	Keysight	N9020B	MRTSUE06604	1 year	2021/09/26
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2021/11/08
Bilog Period Antenna	Schwarzbeck	VULB9168	MRTSUE06646	1 year	2021/08/30
Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06648	1 year	2021/11/26
Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06599	1 year	2021/11/26
Preamplifier	EMCI	EMC051845SE	MRTSUE06644	1 year	2021/11/12
Preamplifier	EMCI	EMC184045SE	MRTSUE06602	1 year	2021/10/13
Thermal Hygrometer	testo	608-H1	MRTSUE06624	1 year	2021/12/03
Anechoic Chamber	RIKEN	SIP-AC2	MRTSUE06781	1 year	2021/12/24

Radiated Emission (SIP-AC3)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06612	1 year	2021/07/02
EXA Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2021/07/23
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2021/11/08
Bilog Period Antenna	Schwarzbeck	VULB9168	MRTSUE06647	1 year	2021/08/08
Double Ridged Horn Antenna	R&S	HF907	MRTSUE06611	1 year	2021/09/13
Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06598	1 year	2021/11/26
Preamplifier	EMCI	EMC012645SE	MRTSUE06642	1 year	2022/01/14
Preamplifier	EMCI	EMC184045SE	MRTSUE06641	1 year	2022/01/14
Thermal Hygrometer	testo	608-H1	MRTSUE06622	1 year	2021/12/03
Anechoic Chamber	RIKEN	SIP-AC3	MRTSUE06782	1 year	2021/12/24

Conducted Test Equipment (WZ-TR3)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2022/04/13
EXA Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2022/01/07
Signal Analyzer	R&S	FSV40	MRTSUE06218	1 year	2022/04/13
Power Meter	Agilent	U2021XA	MRTSUE06030	1 year	2021/10/22
USB wideband power sensor	Keysight	U2021XA	MRTSUE06446	1 year	2021/08/30
USB wideband power sensor	Keysight	U2021XA	MRTSUE06447	1 year	2021/08/08
Bluetooth Test Set	Anritsu	MT8852B-042	MRTSUE06389	1 year	2022/06/08
Audio Analyzer	Agilent	U8903B	MRTSUE06143	1 year	2022/05/19
Modulation Analyzer	HP	HP8901A	MRTSUE06098	1 year	2021/09/26
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2021/10/20
Attenuator	MVE	3dB	MRTSUE06529	1 year	2021/12/12
Attenuator	MVE	6dB	MRTSUE06534	1 year	2021/12/12
Attenuator	MVE	10dB	MRTSUE06540	1 year	2021/12/12
Attenuator	MVE	20dB	MRTSUE06547	1 year	2021/12/12
DC Power Supply	GWINSTEK	DPS-3303C	MRTSUE06064	N/A	N/A
Temperature & Humidity Chamber	BAOYT	BYH-150CL	MRTSUE06051	1 year	2021/10/22
Thermal Hygrometer	testo	608-H1	MRTSUE06401	1 year	2021/07/26

Conducted Test Equipment (SIP-SR5)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Signal Analyzer	R&S	FSV40	MRTSUE06218	1 year	2022/04/13
PXA Signal Analyzer	Keysight	N9030B	MRTSUE06395	1 year	2021/08/30
USB wideband power sensor	Agilent	U2021XA	MRTSUE06595	1 year	2021/09/26
USB wideband power sensor	Agilent	U2021XA	MRTSUE06596	1 year	2021/09/26
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2021/10/20
Bluetooth Test Set	Anritsu	MT8852B-042	MRTSUE06389	1 year	2022/06/08
Attenuator	MVE	3dB	MRTSUE06530	1 year	2021/12/12
Attenuator	MVE	6dB	MRTSUE06535	1 year	2021/12/12
Attenuator	MVE	10dB	MRTSUE06541	1 year	2021/12/12
Attenuator	MVE	20dB	MRTSUE06548	1 year	2021/12/12
Temperature Chamber	BAOYT	BYG-408CS	MRTSUE06847	1 year	2022/02/23
Thermal Hygrometer	testo	622	MRTSUE06629	1 year	2021/11/25

Software	Version	Function
EMI Software	V3	EMI Test Software

5. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Conducted Emission Measurement
Measurement Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 9kHz~150kHz: 3.74dB 150kHz~30MHz: 3.44dB
Radiated Disturbance
Measurement Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): Horizontal: 9KHz~300MHz: 5.04dB 300MHz~1GHz: 4.95dB 1GHz~6GHz: 6.40dB Vertical: 9KHz~300MHz: 5.24dB 300MHz~1GHz: 6.03dB 1GHz~40GHz: 6.40dB
Spurious Emissions, Conducted
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 0.78dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.13dB
Power Spectrum Density
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.15dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 0.28%

6. TEST RESULT

6.1. Summary

FCC Section(s)	ISED Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.407(a)	RSS-247 §6.2	26dB Bandwidth	N/A	Conducted	Pass	Section 6.2
N/A	RSS-Gen [6.7]	99% Bandwidth	N/A		Pass	
15.407(e)	RSS-247 §6.2.4	6dB Bandwidth	≥ 500kHz		Pass	Section 6.3
15.407(a)(1)(iv), (2), (3)	RSS-247 §6.2.1, §6.2.2, §6.2.3, §6.2.4	Maximum Conducted Output Power Maximum E.I.R.P	Refer to Section 6.4		Pass	Section 6.4
15.407(h)(1)	RSS-247 §6.2.2, §6.2.3	Transmit Power Control	≤ 24 dBm		N/A	Section 6.5
15.407(a)(1)(iv), (2), (3)	RSS-247 §6.2.1, §6.2.2, §6.2.3, §6.2.4	Peak Power Spectral Density	Refer to Section 6.6		Pass	Section 6.6
15.407(g)	RSS-Gen [8.11]	Frequency Stability	N/A		Pass	Section 6.7
15.407(b)(1), (2), (3), (4)(i)	RSS-247 §6.2.1, §6.2.2, §6.2.3, §6.2.4	Undesirable Emissions	Refer to Section 6.8 & 6.9	Radiated	Pass	Section 6.8 & 6.9
15.205, 15.209 15.407(b)(7), (8), (9)	RSS-247 §6.2.1, §6.2.2, §6.2.3, §6.2.4	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		Pass	
15.207	RSS-Gen [8.8]	AC Conducted Emissions 150kHz - 30MHz	< FCC 15.207 limits	Line Conducted	Pass	Section 6.10

Notes:

1) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part ofthe system to connect the EUT to the analyzer at all frequencies of interest.
2) All modes of operation and data rates were investigated. For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.
3) Test Items “26dB Bandwidth” & “6dB Bandwidth” showed the worst test data in this report.
4) “N/A” means that this item is not applicable, and the detail information refer to relevant section.
5) EUT supports one configuration only in 802.11ax full RU mode, i.e. 242 tone in 11ax-HE20, 484 tone in 11ax-HE40, 996 tone in 11ax-HE80.

6.2. Occupied Bandwidth Measurement

6.2.1.Test Limit

N/A

6.2.2.Test Procedure used

KDB 789033 D02v02r01- Section C.1 (26dB Bandwidth)

KDB 789033 D02v02r01 - Section D (99% Bandwidth)

6.2.3.Test Setting

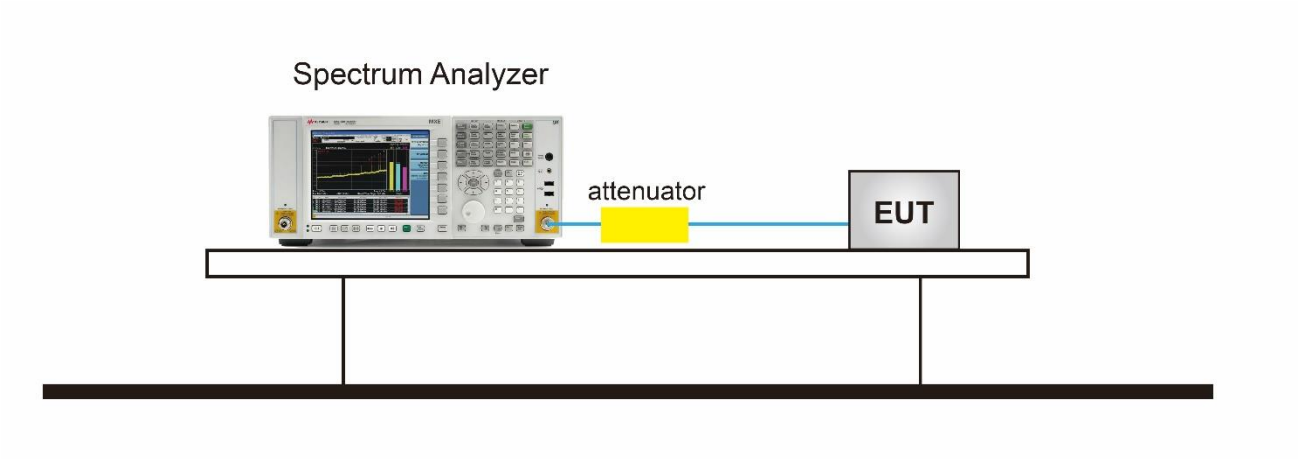
For 26dB Bandwidth

1. The analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 26. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediated power nulls in the fundamental emission.
2. RBW = approximately 1% of the emission bandwidth.
3. VBW ≥ 3×RBW.
4. Detector = Peak.
5. Trace mode = max hold.

For 99% Bandwidth

1. Set center frequency to the nominal EUT channel center frequency.
2. Span = 1.5 times to 5.0 times the OBW.
3. RBW = 1 % to 5 % of the OBW.
4. VBW ≥ 3×RBW.
5. Detector = Peak.
6. Trace mode = max hold.
7. Use the 99 % power bandwidth function of the instrument.

6.2.4.Test Setup



6.2.5.Test Result

Test Site	WZ-TR3	Test Engineer	Luis Yang
Test Date	2021/06/03 ~ 2021/06/12		

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 0 / Ant 0 + 1					
802.11a	6Mbps	36	5180	21.05	16.56
802.11a	6Mbps	44	5220	20.98	16.57
802.11a	6Mbps	48	5240	20.90	16.56
802.11a	6Mbps	52	5260	22.19	16.85
802.11a	6Mbps	60	5300	24.13	17.01
802.11a	6Mbps	64	5320	23.13	17.00
802.11a	6Mbps	100	5500	21.16	16.67
802.11a	6Mbps	116	5580	38.70	20.47
802.11a	6Mbps	140	5700	21.09	16.64
802.11a	6Mbps	144	5720	29.43	17.67
802.11a	6Mbps	149	5745	32.14	17.79
802.11a	6Mbps	157	5785	25.82	17.13
802.11a	6Mbps	165	5825	30.46	17.74
802.11n-HT20	MCS0	36	5180	21.36	17.72
802.11n-HT20	MCS0	44	5220	21.34	17.70
802.11n-HT20	MCS0	48	5240	21.23	17.72
802.11n-HT20	MCS0	52	5260	29.83	18.11
802.11n-HT20	MCS0	60	5300	28.32	18.16
802.11n-HT20	MCS0	64	5320	21.35	17.82
802.11n-HT20	MCS0	100	5500	21.64	17.76
802.11n-HT20	MCS0	116	5580	38.39	18.93
802.11n-HT20	MCS0	140	5700	21.31	17.75
802.11n-HT20	MCS0	144	5720	32.57	18.62
802.11n-HT20	MCS0	149	5745	34.64	18.83
802.11n-HT20	MCS0	157	5785	30.00	18.39
802.11n-HT20	MCS0	165	5825	34.42	18.84

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 0 / Ant 0 + 1					
802.11n-HT40	MCS0	38	5190	39.56	36.17
802.11n-HT40	MCS0	46	5230	40.00	36.23
802.11n-HT40	MCS0	54	5270	53.77	36.58
802.11n-HT40	MCS0	62	5310	39.79	36.26
802.11n-HT40	MCS0	102	5510	39.68	36.24
802.11n-HT40	MCS0	110	5550	72.78	36.44
802.11n-HT40	MCS0	134	5670	39.59	36.20
802.11n-HT40	MCS0	142	5710	67.54	36.56
802.11n-HT40	MCS0	151	5755	77.95	37.58
802.11n-HT40	MCS0	159	5795	78.18	41.14
802.11ac-VHT20	MCS0	36	5180	21.31	17.73
802.11ac-VHT20	MCS0	44	5220	21.27	17.73
802.11ac-VHT20	MCS0	48	5240	21.33	17.74
802.11ac-VHT20	MCS0	52	5260	29.10	18.24
802.11ac-VHT20	MCS0	60	5300	28.31	18.09
802.11ac-VHT20	MCS0	64	5320	21.25	17.75
802.11ac-VHT20	MCS0	100	5500	21.43	17.79
802.11ac-VHT20	MCS0	116	5580	37.67	18.89
802.11ac-VHT20	MCS0	140	5700	21.47	17.77
802.11ac-VHT20	MCS0	144	5720	33.24	18.66
802.11ac-VHT20	MCS0	149	5745	32.85	18.40
802.11ac-VHT20	MCS0	157	5785	28.97	18.18
802.11ac-VHT20	MCS0	165	5825	31.05	18.22

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 0 / Ant 0 + 1					
802.11ac-VHT40	MCS0	38	5190	39.50	36.18
802.11ac-VHT40	MCS0	46	5230	40.00	36.29
802.11ac-VHT40	MCS0	54	5270	61.40	36.47
802.11ac-VHT40	MCS0	62	5310	39.66	36.21
802.11ac-VHT40	MCS0	102	5510	39.61	36.17
802.11ac-VHT40	MCS0	110	5550	62.31	36.40
802.11ac-VHT40	MCS0	134	5670	39.60	36.19
802.11ac-VHT40	MCS0	142	5710	66.33	36.71
802.11ac-VHT40	MCS0	151	5755	61.61	36.75
802.11ac-VHT40	MCS0	159	5795	65.79	36.65
802.11ac-VHT80	MCS0	42	5210	99.00	75.73
802.11ac-VHT80	MCS0	58	5290	81.03	75.55
802.11ac-VHT80	MCS0	106	5530	81.04	75.56
802.11ac-VHT80	MCS0	122	5610	81.81	75.61
802.11ac-VHT80	MCS0	138	5690	99.66	77.28
802.11ac-VHT80	MCS0	155	5775	88.70	75.73
802.11ax-HE20	MCS0	36	5180	21.29	18.89
802.11ax-HE20	MCS0	44	5220	21.13	18.89
802.11ax-HE20	MCS0	48	5240	21.27	18.89
802.11ax-HE20	MCS0	52	5260	25.18	19.02
802.11ax-HE20	MCS0	60	5300	31.35	19.19
802.11ax-HE20	MCS0	64	5320	23.99	18.94
802.11ax-HE20	MCS0	100	5500	20.81	18.87
802.11ax-HE20	MCS0	116	5580	26.82	19.18
802.11ax-HE20	MCS0	140	5700	21.28	18.88
802.11ax-HE20	MCS0	144	5720	25.78	19.07
802.11ax-HE20	MCS0	149	5745	26.33	19.03
802.11ax-HE20	MCS0	157	5785	26.86	19.06
802.11ax-HE20	MCS0	165	5825	28.34	19.04

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 0 / Ant 0 + 1					
802.11ax-HE40	MCS0	38	5190	39.85	37.64
802.11ax-HE40	MCS0	46	5230	40.09	37.63
802.11ax-HE40	MCS0	54	5270	60.61	37.78
802.11ax-HE40	MCS0	62	5310	39.75	37.67
802.11ax-HE40	MCS0	102	5510	39.73	37.61
802.11ax-HE40	MCS0	110	5550	50.05	37.80
802.11ax-HE40	MCS0	134	5670	39.83	37.61
802.11ax-HE40	MCS0	142	5710	53.66	37.75
802.11ax-HE40	MCS0	151	5755	61.68	37.88
802.11ax-HE40	MCS0	159	5795	64.33	37.82
802.11ax-HE80	MCS0	42	5210	100.6	77.30
802.11ax-HE80	MCS0	58	5290	80.88	77.07
802.11ax-HE80	MCS0	106	5530	80.63	77.00
802.11ax-HE80	MCS0	122	5610	80.44	77.13
802.11ax-HE80	MCS0	138	5690	80.74	77.79
802.11ax-HE80	MCS0	155	5775	81.07	77.18

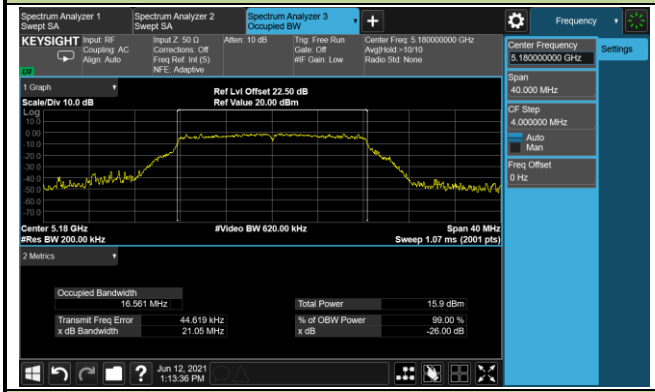
Test Site	WZ-TR3	Test Engineer	Luis Yang
Test Date	2021/06/12 ~ 2021/06/15		

Test Mode	Channel No.	Frequency (MHz)	99% Bandwidth (MHz)	F_H (MHz)	Result
Ant 0 / Ant 0 + 1					
802.11a	48	5240	16.56	5248.4	< 5250
802.11n-HT20	48	5240	17.72	5248.9	< 5250
802.11n-HT40	46	5230	36.23	5248.2	< 5250
802.11ac-VHT20	48	5240	17.74	5248.9	< 5250
802.11ac-VHT40	46	5230	36.29	5248.2	< 5250
802.11ac-VHT80	42	5210	75.73	5248.0	< 5250
802.11ax-HE20	48	5240	18.89	5249.5	< 5250
802.11ax-HE40	46	5230	37.63	5248.9	< 5250
802.11ax-HE80	42	5210	77.30	5248.8	< 5250

Note: F_H is the frequency of the upper marker resulting from the 99% Bandwidth.

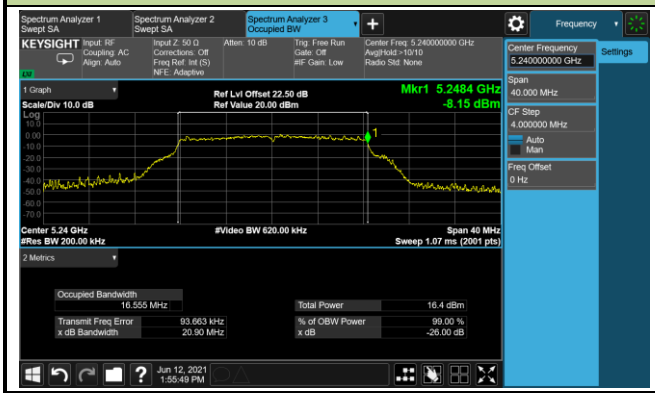
802.11a 26dB Bandwidth - Ant 0 / Ant 0 + 1

Channel 36 (5180MHz)

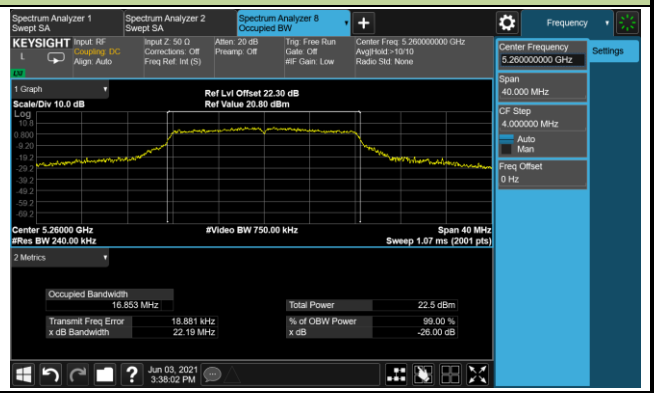


Channel 44 (5220MHz)

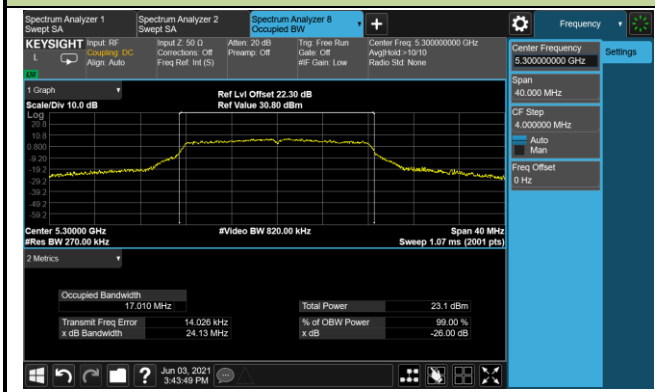
Channel 48 (5240MHz)



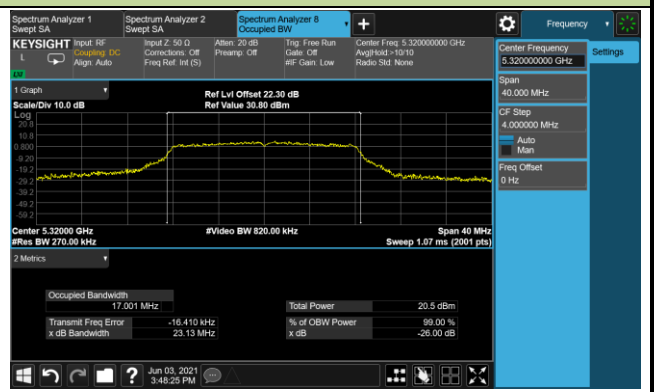
Channel 52 (5260MHz)



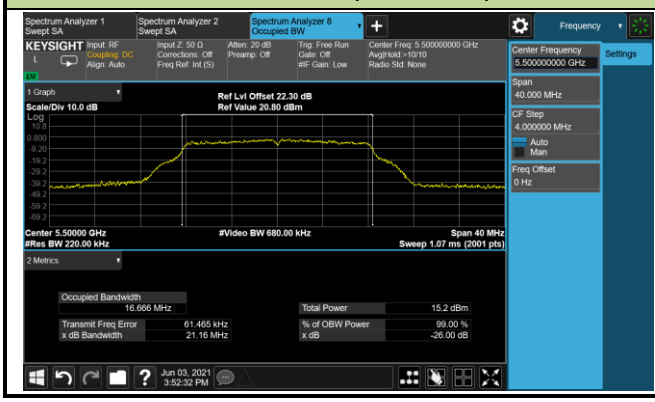
Channel 60 (5300MHz)



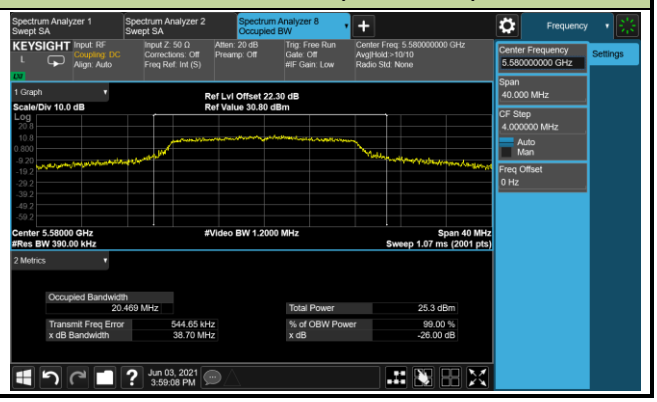
Channel 64 (5320MHz)



Channel 100 (5500MHz)

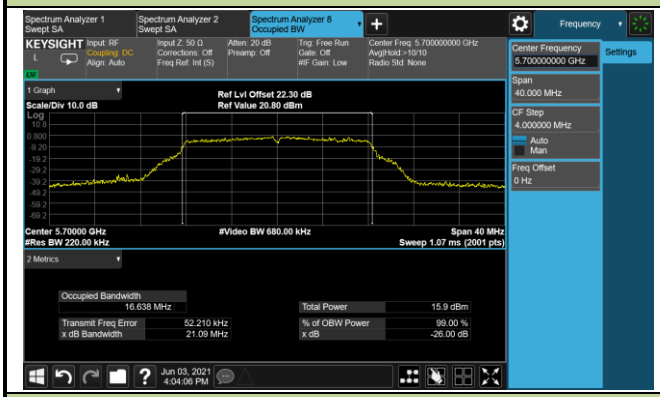


Channel 116 (5580MHz)



802.11a 26dB Bandwidth - Ant 0 / Ant 0 + 1

Channel 140 (5700MHz)

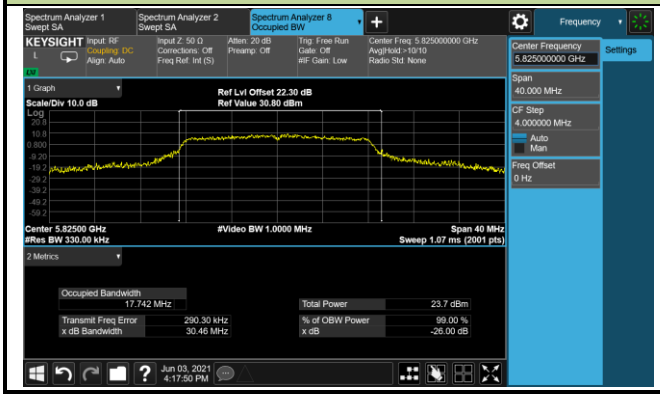


Channel 144 (5720MHz)

Channel 149 (5745MHz)

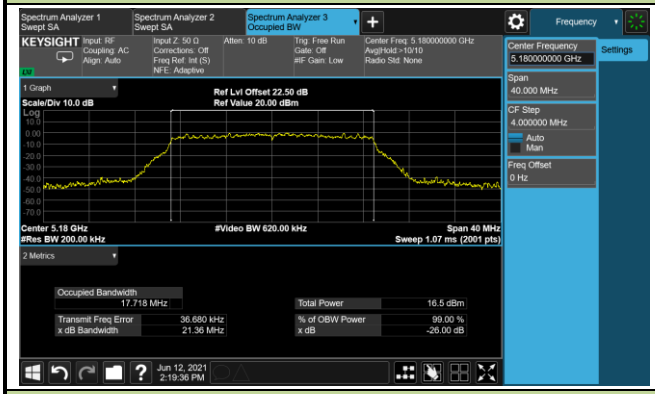
Channel 157 (5785MHz)

Channel 165 (5825MHz)

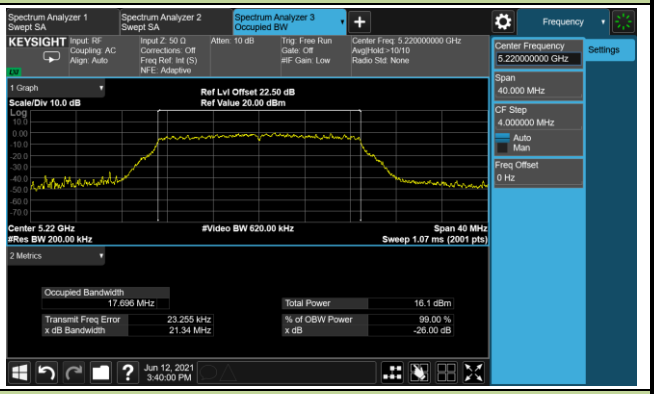


802.11n-HT20 26dB Bandwidth - Ant 0 / Ant 0 + 1

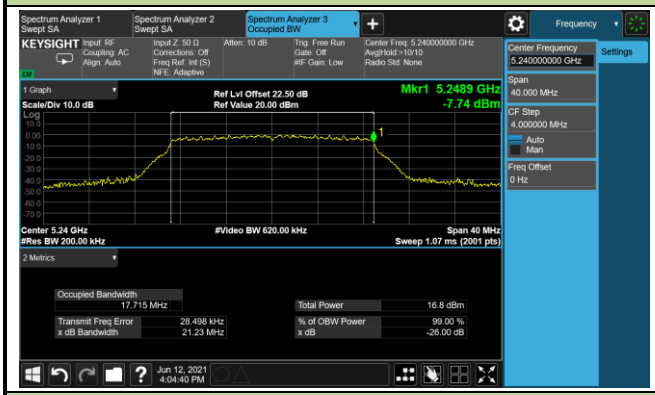
Channel 36 (5180MHz)



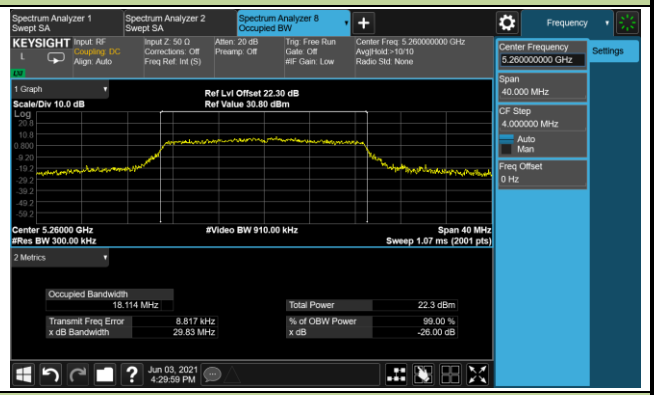
Channel 44 (5220MHz)



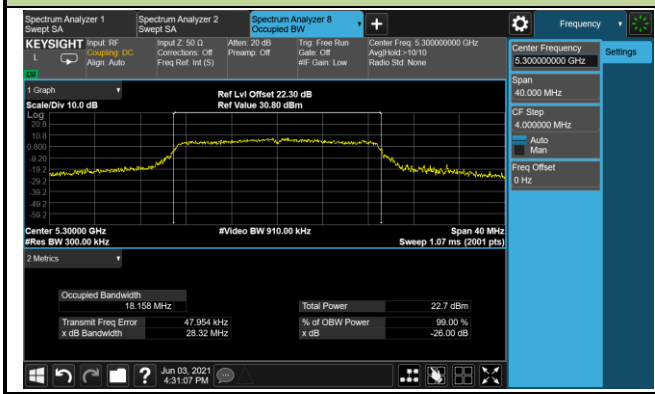
Channel 48 (5240MHz)



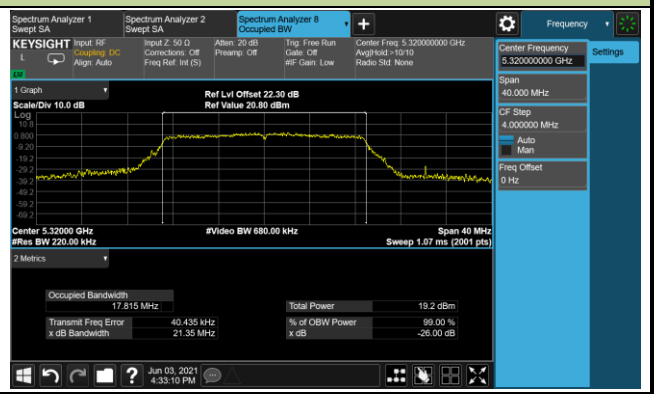
Channel 52 (5260MHz)



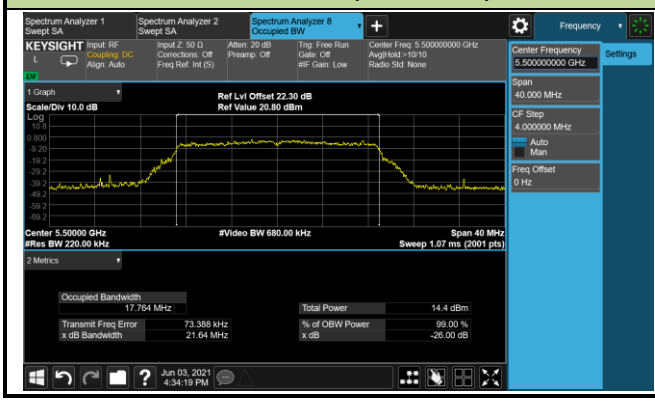
Channel 60 (5300MHz)



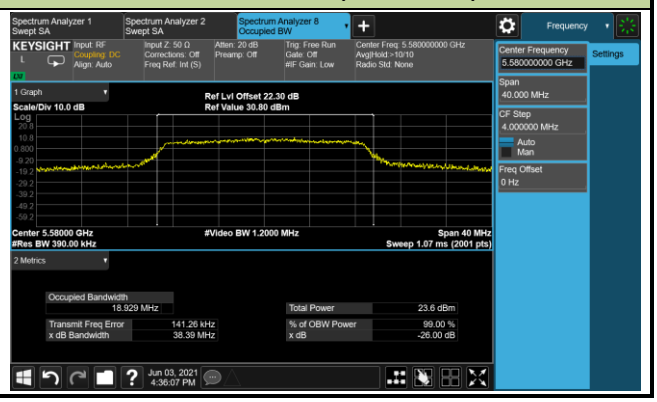
Channel 64 (5320MHz)



Channel 100 (5500MHz)

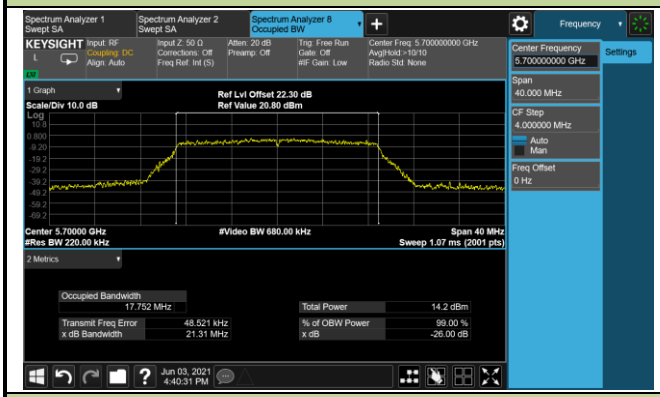


Channel 116 (5580MHz)

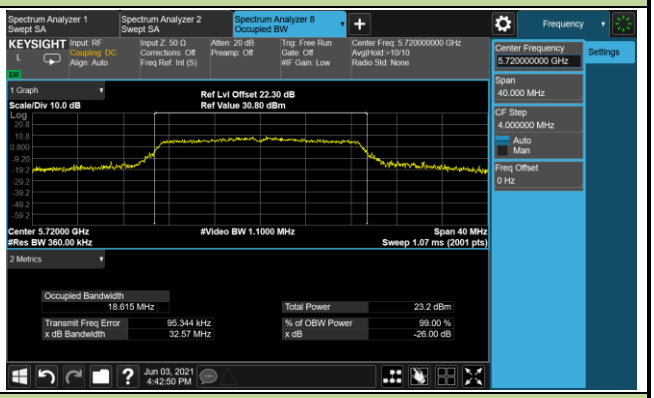


802.11n-HT20 26dB Bandwidth - Ant 0 / Ant 0 + 1

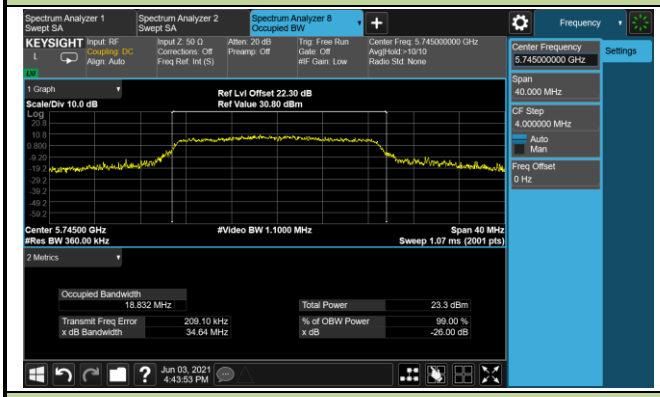
Channel 140 (5700MHz)



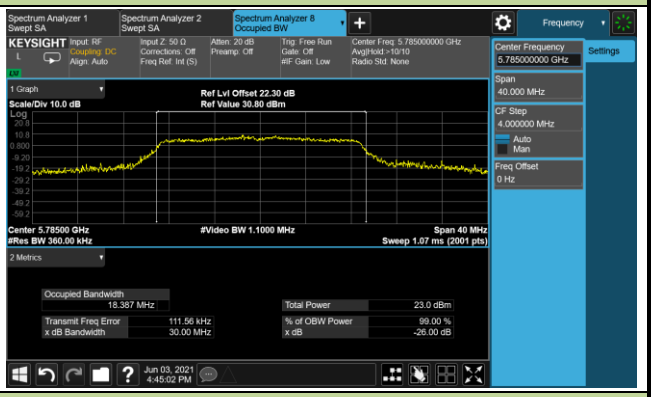
Channel 144 (5720MHz)



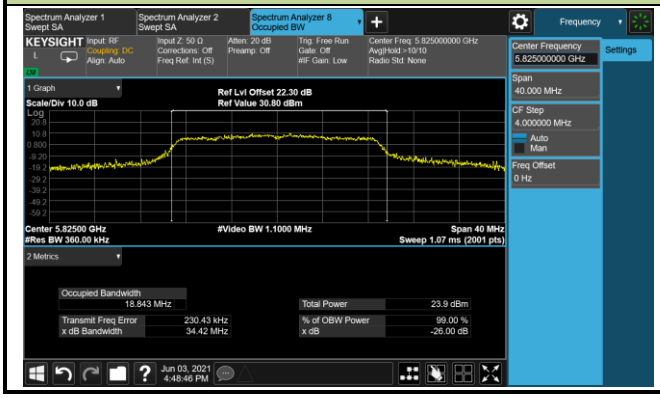
Channel 149 (5745MHz)



Channel 157 (5785MHz)

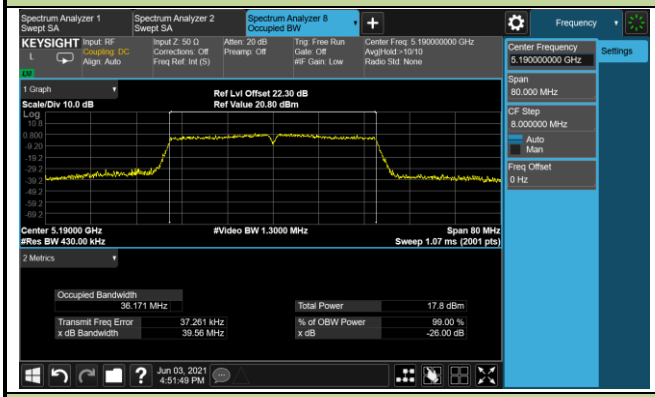


Channel 165 (5825MHz)

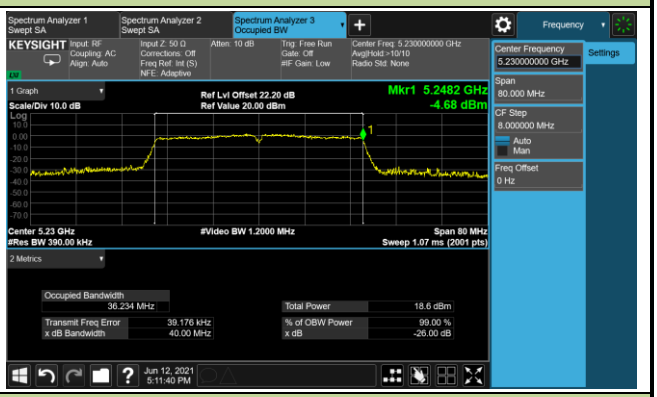


802.11n-HT40 26dB Bandwidth - Ant 0 / Ant 0 + 1

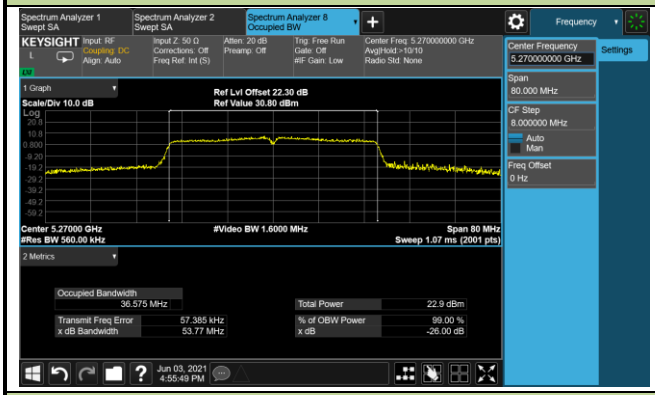
Channel 38 (5190MHz)



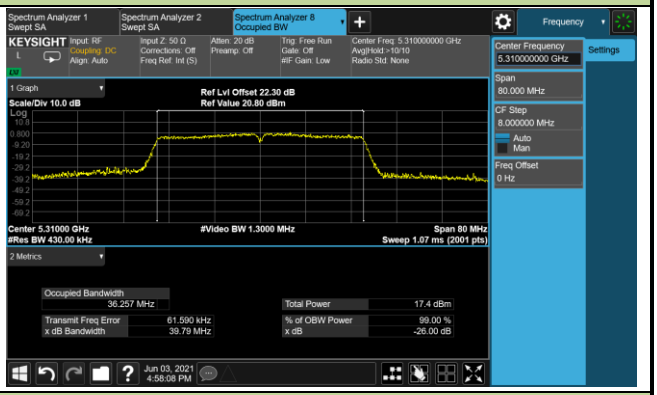
Channel 46 (5230MHz)



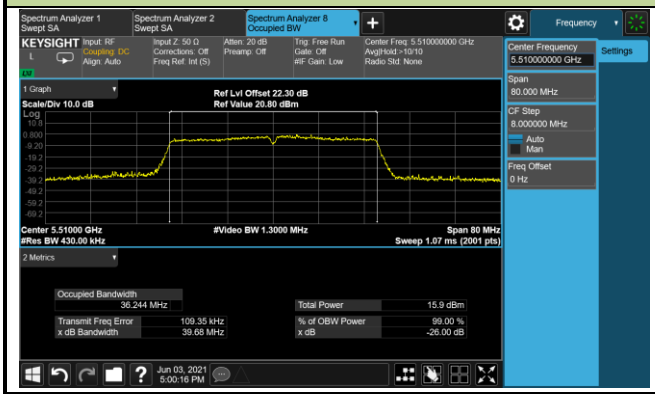
Channel 54 (5270MHz)



Channel 62 (5310MHz)

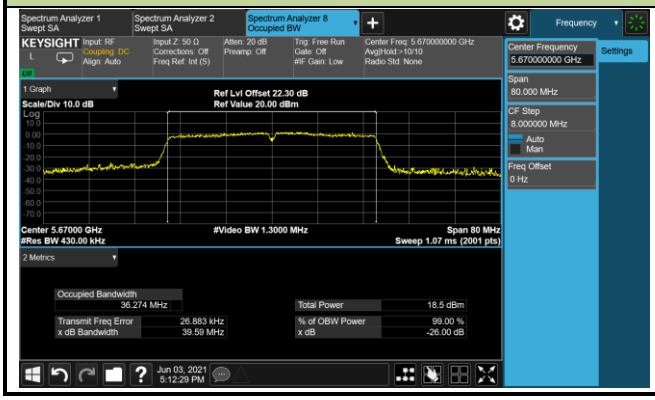


Channel 102 (5510MHz)

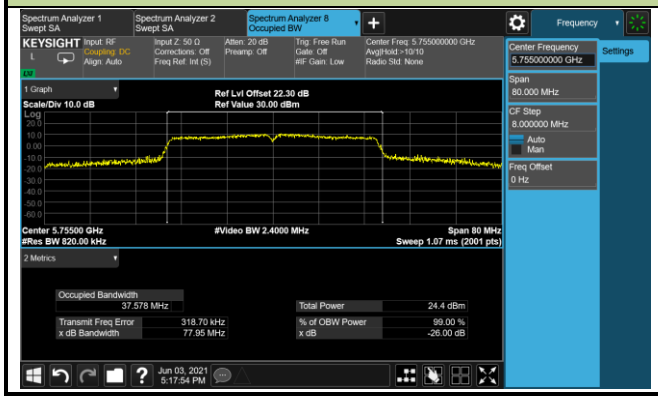
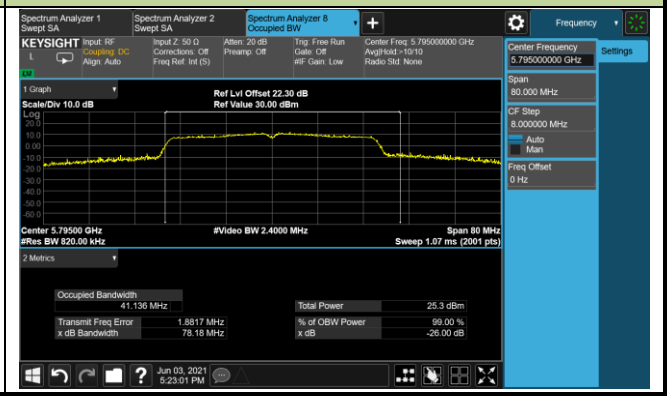


Channel 110 (5550MHz)

Channel 134 (5670MHz)

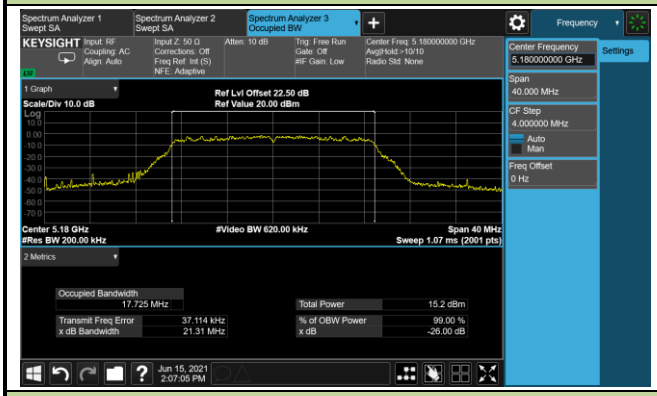


Channel 142 (5710MHz)

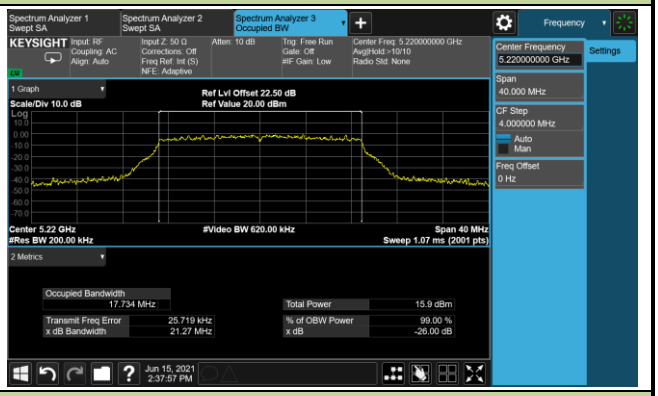
802.11n-HT40 26dB Bandwidth - Ant 0 / Ant 0 + 1	
Channel 151 (5755MHz)	Channel 159 (5795MHz)
	

802.11ac-VHT20 26dB Bandwidth - Ant 0 / Ant 0 + 1

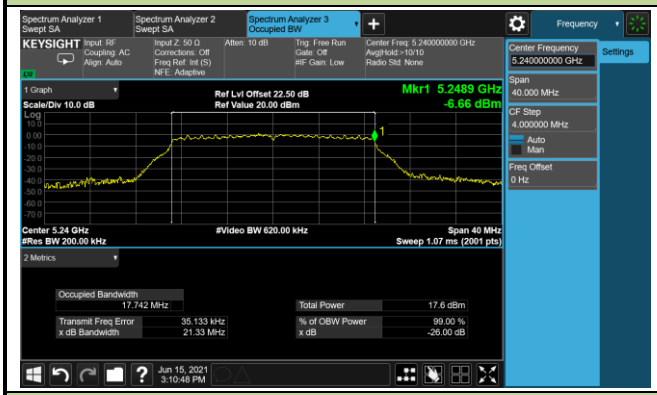
Channel 36 (5180MHz)



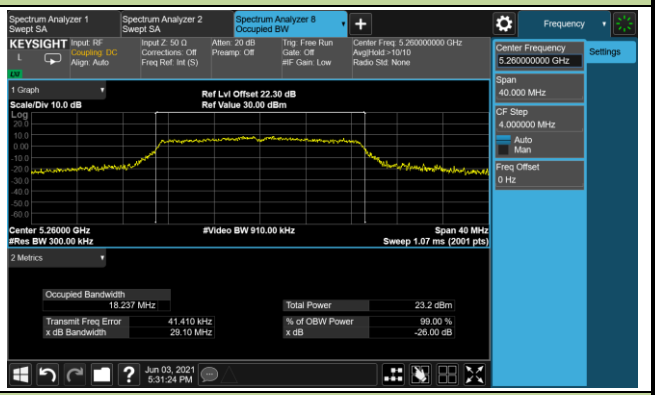
Channel 44 (5220MHz)



Channel 48 (5240MHz)

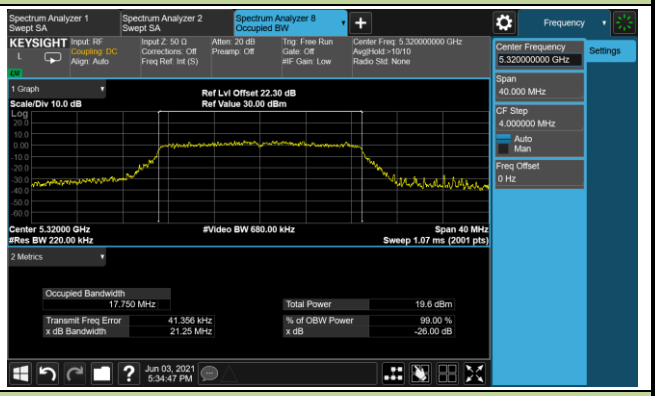


Channel 52 (5260MHz)

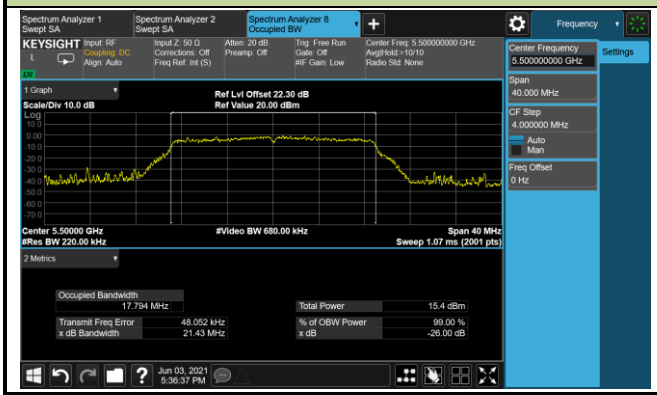


Channel 60 (5300MHz)

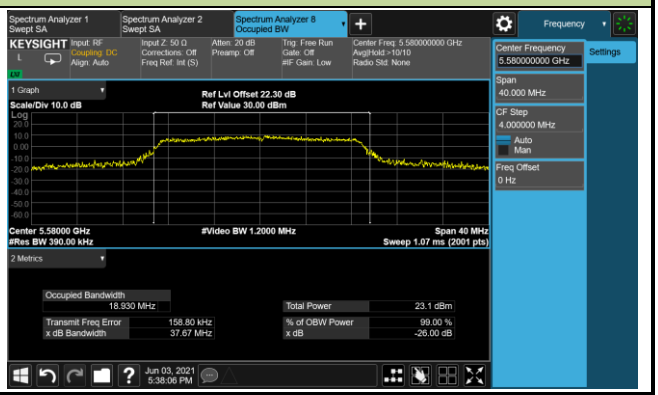
Channel 64 (5320MHz)



Channel 100 (5500MHz)

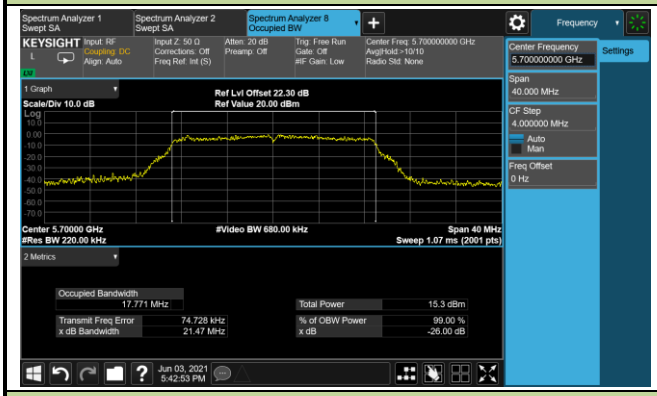


Channel 116 (5580MHz)

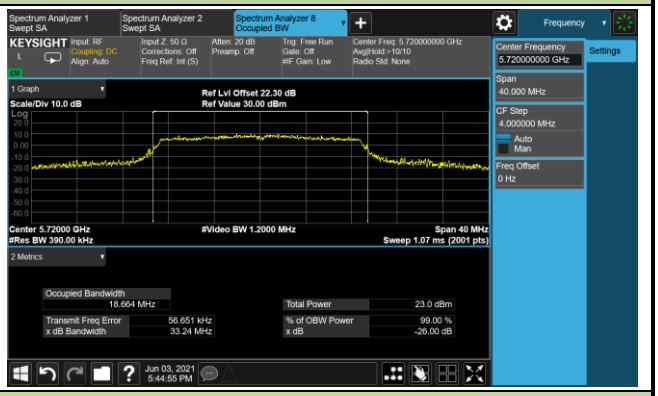


802.11ac-VHT20 26dB Bandwidth - Ant 0 / Ant 0 + 1

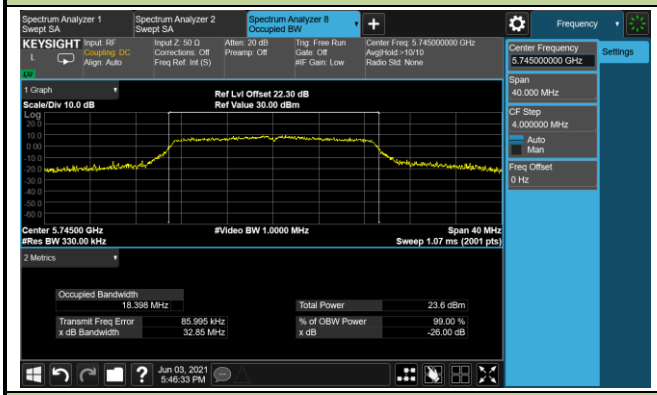
Channel 140 (5700MHz)



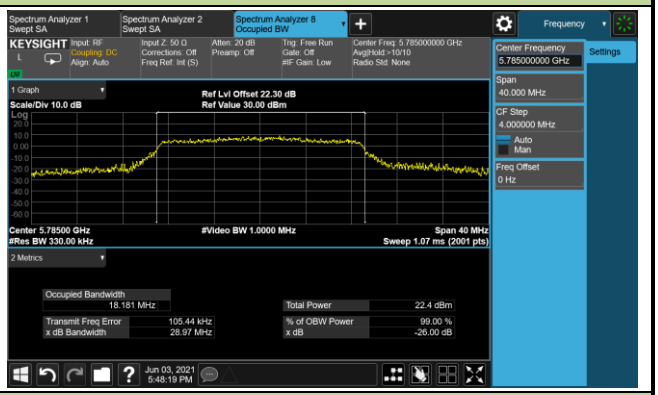
Channel 144 (5720MHz)



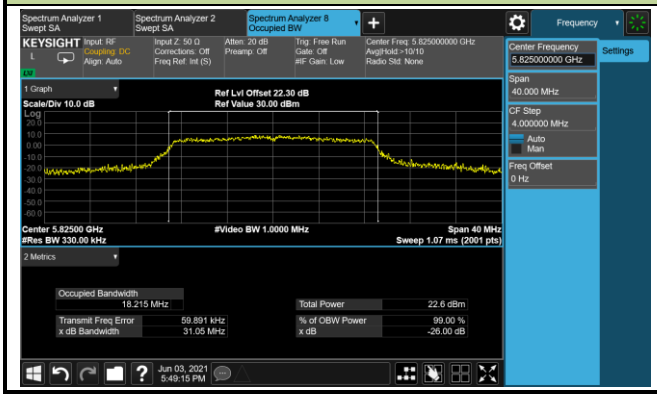
Channel 149 (5745MHz)



Channel 157 (5785MHz)

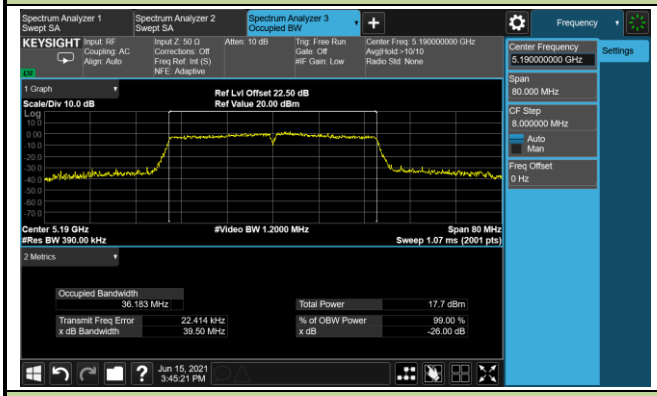


Channel 165 (5825MHz)

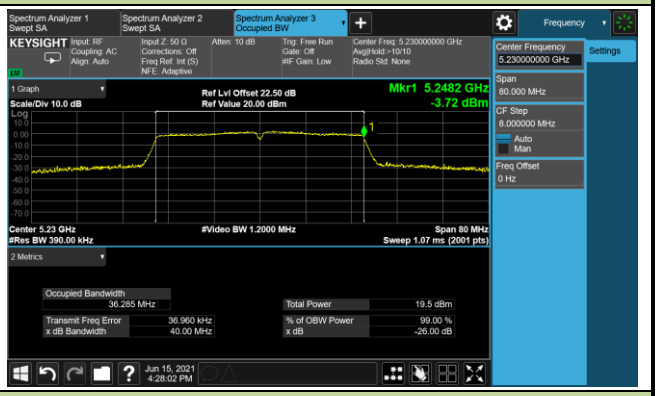


802.11ac-VHT40 26dB Bandwidth - Ant 0 / Ant 0 + 1

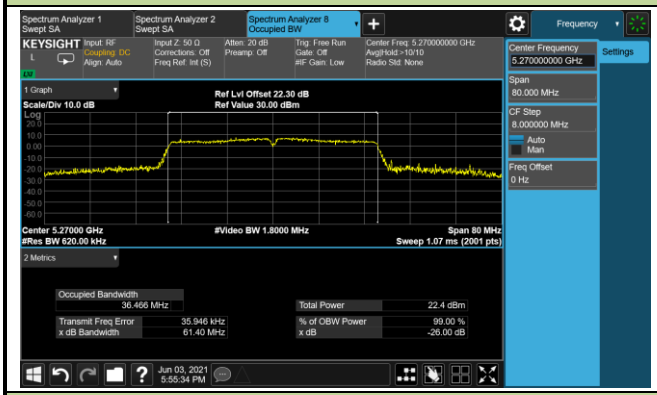
Channel 38 (5190MHz)



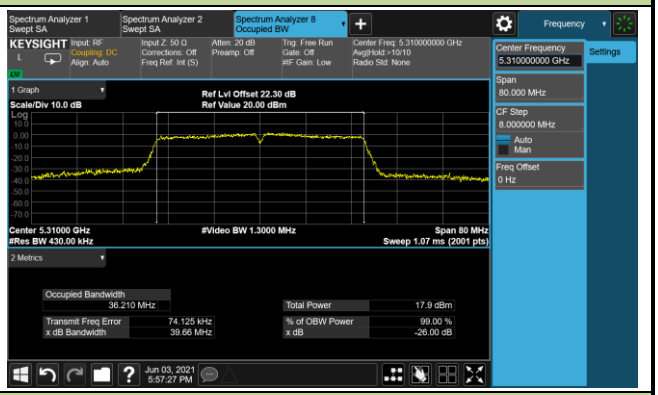
Channel 46 (5230MHz)



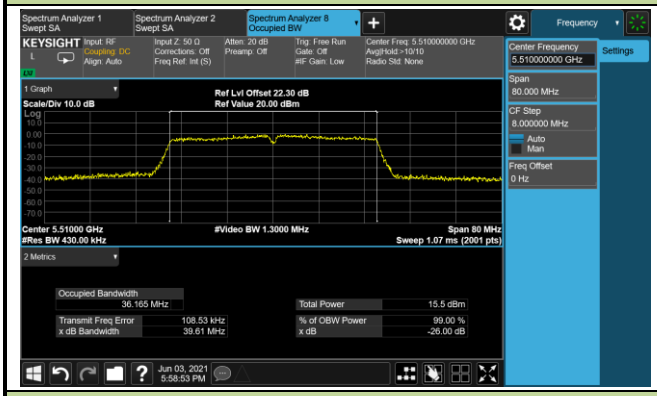
Channel 54 (5270MHz)



Channel 62 (5310MHz)

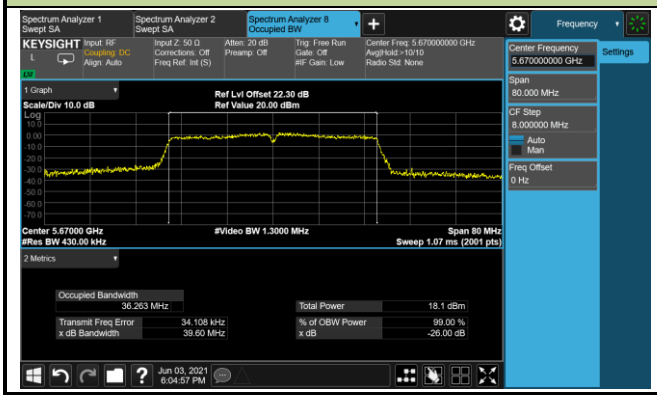


Channel 102 (5510MHz)

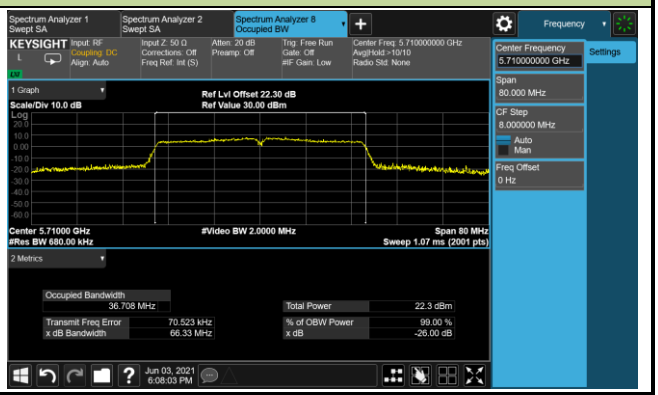


Channel 110 (5550MHz)

Channel 134 (5670MHz)



Channel 142 (5710MHz)



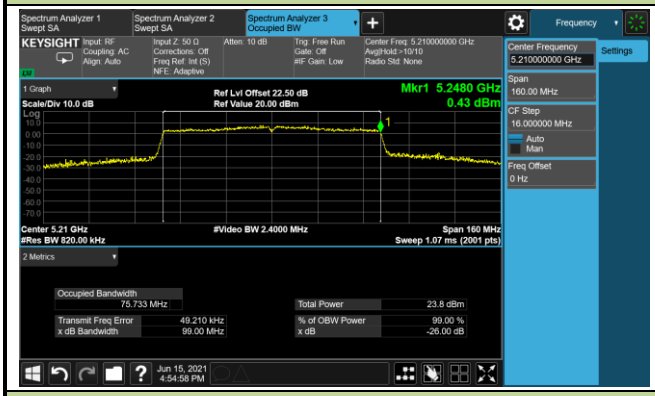
802.11ac-VHT40 26dB Bandwidth - Ant 0 / Ant 0 + 1

Channel 151 (5755MHz)

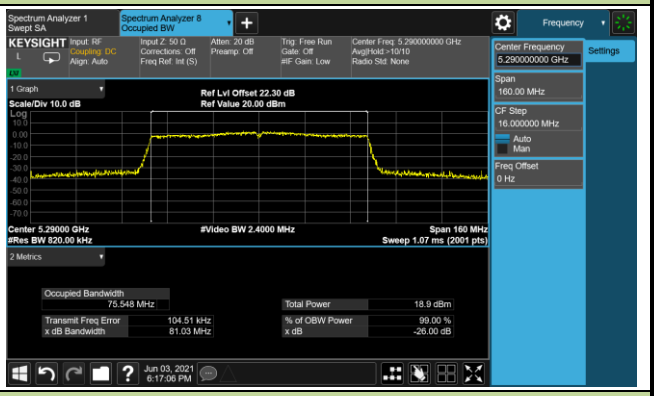
Channel 159 (5795MHz)

802.11ac-VHT80 26dB Bandwidth - Ant 0 / Ant 0 + 1

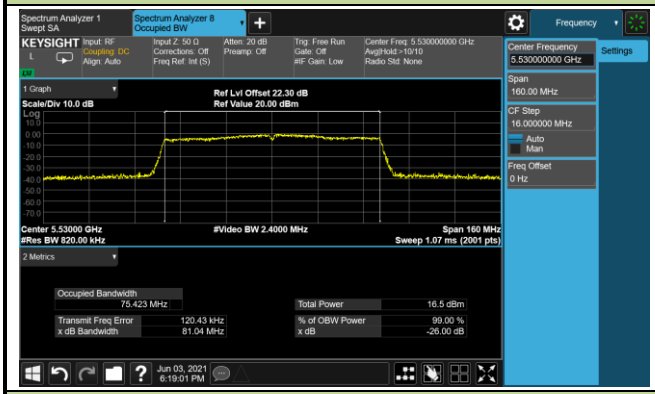
Channel 42 (5210MHz)



Channel 58 (5290MHz)

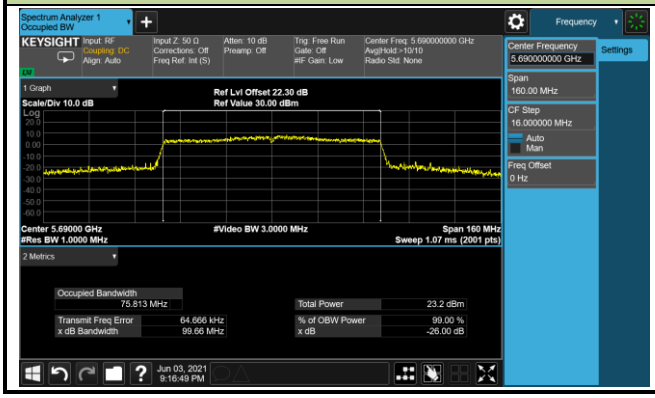
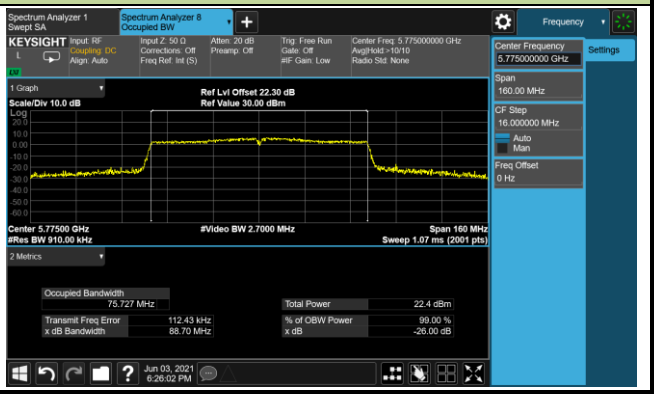


Channel 106 (5530MHz)



Channel 122 (5610MHz)

Channel 138 (5690MHz)



Channel 155 (5775MHz)