



RF MEASUREMENT REPORT

FCC ID: Q9DAPIN0654

Applicant: Hewlett Packard Enterprise Company

Product: ACCESS POINT

Model No.: APIN0654

Trademark:  , 

FCC Classification: 15E 6GHz Standard Power Access Point (6SD)

FCC Rule Part(s): Part 15 Subpart E (Section 15.407)

Result: Complies

Received Date: 2023-07-19

Test Date: 2024-05-24 ~ 2024-07-10

Reviewed By:

Jame Yuan

Approved By:

Robin Wu



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 KDB789033. 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
2307RSU045-U8	V01	Initial Report	2024-07-16	Valid

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1. General Information

1.1. Applicant

Hewlett Packard Enterprise Company
6280 America Center Drive, San Jose CA 95002, United States

1.2. Manufacturer

Hewlett Packard Enterprise Company
6280 America Center Drive, San Jose CA 95002, United States

1.3. Testing Facility

<input checked="" type="checkbox"/>	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 FCC: CN1166 VCCI: <input type="checkbox"/> R-20025 <input type="checkbox"/> G-20034 <input type="checkbox"/> C-20020 <input type="checkbox"/> T-20020 <input type="checkbox"/> R-20141 <input type="checkbox"/> G-20134 <input type="checkbox"/> C-20103 <input type="checkbox"/> T-20104 CNAS: L10551 ISED: CN0001
<input type="checkbox"/>	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 FCC: CN1284 CNAS: L10551 ISED: CN0105
<input type="checkbox"/>	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: 3261 FCC: 291082, TW3261 ISED: TW3261

1.4. Product Information

Product Name	ACCESS POINT
Model No.	APIN0654
Serial No.	CNQNLZ303J
Software Version	8.12.0.2
Proxy Software Version	24.07.0-devel.2-57 24.07.0-devel.4-85 24.07.0-devel.2-120 24.07.0-devel.1-59
DUT Type	<input checked="" type="checkbox"/> Standard Power Access Point <input type="checkbox"/> Fixed Client
Proxy	<input checked="" type="checkbox"/> With Proxy <input type="checkbox"/> Without Proxy
Wi-Fi Specification	802.11a/b/g/n/ac/ax
Bluetooth Specification	v5.0 single mode, BLE only
Zigbee Specification	802.15.4
Antenna Information	Refer to section 1.7
Working Voltage	AC/DC Adapter or PoE Injector input
Operating Temperature	0 ~ 50 °C
Operating Environment	Indoor Use
Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification under Test

Frequency Range	For 802.11ax-HE20: 5955 ~ 6415MHz, 6535 ~ 6855MHz For 802.11ax-HE40: 5965 ~ 6405MHz, 6565 ~ 6845MHz For 802.11ax-HE80: 5985 ~ 6385MHz, 6625 ~ 6785MHz For 802.11ax-HE160: 6025 ~ 6345MHz, 6665MHz	
Type of Modulation	802.11ax: OFDMA	
Data Rate	802.11ax: up to 4804Mbps	
Channel Puncturing Function	<input type="checkbox"/> Supported	<input checked="" type="checkbox"/> Unsupported
Support RU	<input checked="" type="checkbox"/> Full RU	<input type="checkbox"/> Partial RU

1.6. Working Frequencies

802.11ax-HE20

Channel	Frequency	Channel	Frequency	Channel	Frequency
1	5955 MHz	5	5975 MHz	9	5995 MHz
13	6015 MHz	17	6035 MHz	21	6055 MHz
25	6075 MHz	29	6095 MHz	33	6115 MHz
37	6135 MHz	41	6155 MHz	45	6175 MHz
49	6195 MHz	53	6215 MHz	57	6235 MHz
61	6255 MHz	65	6275 MHz	69	6295 MHz
73	6315 MHz	77	6335 MHz	81	6355 MHz
85	6375 MHz	89	6395 MHz	93	6415 MHz
117	6535 MHz	121	6555 MHz	125	6575 MHz
129	6595 MHz	133	6615 MHz	137	6635 MHz
141	6655 MHz	145	6675 MHz	149	6695 MHz
153	6715 MHz	157	6735 MHz	161	6755 MHz
165	6775 MHz	169	6795 MHz	173	6815 MHz
177	6835 MHz	181	6855 MHz	--	--

802.11ax-HE40

Channel	Frequency	Channel	Frequency	Channel	Frequency
3	5965 MHz	11	6005 MHz	19	6045 MHz
27	6085 MHz	35	6125 MHz	43	6165 MHz
51	6205 MHz	59	6245 MHz	67	6285 MHz
75	6325 MHz	83	6365 MHz	91	6405 MHz
123	6565 MHz	131	6605 MHz	139	6645 MHz
147	6685 MHz	155	6725 MHz	163	6765 MHz
171	6805 MHz	179	6845 MHz	--	--

802.11ax-HE80

Channel	Frequency	Channel	Frequency	Channel	Frequency
7	5985 MHz	23	6065 MHz	39	6145 MHz
55	6225 MHz	71	6305 MHz	87	6385 MHz
135	6625 MHz	151	6705 MHz	167	6785 MHz

802.11ax-HE160

Channel	Frequency	Channel	Frequency	Channel	Frequency
15	6025 MHz	47	6185 MHz	79	6345 MHz
143	6665 MHz	--	--	--	--

1.7. Antenna Details

Polarization	Antenna Name	Frequency	Max Peak	CDD Dir Gain		BF Dir Gain (dBi)
		Band	Gain	(dBi)		
		(GHz)	(dBi)	For Power	For PSD	
Wi-Fi External Antenna List (4*4 MIMO)						
Omni	AP-ANT-311	2.4 ~ 2.5	3.0	3.0	9.02	9.02
		5.15 ~ 5.9	6.0	6.0	12.02	12.02
		5.9 ~ 7.2	6.0	6.0	12.02	12.02
Omni	AP-ANT-312	2.4 ~ 2.5	3.3	3.3	9.32	9.32
		5.15 ~ 5.9	3.3	3.3	9.32	9.32
		5.9 ~ 7.2	4.1	4.1	10.12	10.12
Omni	AP-ANT-313	2.4 ~ 2.5	3.0	3.0	9.02	9.02
		5.15 ~ 5.9	6.0	6.0	12.02	12.02
		5.9 ~ 7.2	6.0	6.0	12.02	12.02
Omni	AP-ANT-320 AP-ANT-340	2.4 ~ 2.5	4.0	4.0	10.02	10.02
		5.15 ~ 5.9	5.0	5.0	11.02	11.02
		5.9 ~ 7.2	5.0	5.0	11.02	11.02
Directional (Note 4, 5)	AP-ANT-325 AP-ANT-345	2.4 ~ 2.5	6.1	6.1	9.11	9.11
		5.15 ~ 5.9	6.1	6.1	9.11	9.11
		5.9 ~ 7.2	5.4	5.4	8.41	8.41
Directional (Note 4, 5)	AP-ANT-328 AP-ANT-348	2.4 ~ 2.5	7.5	7.5	10.51	10.51
		5.15 ~ 5.9	8.0	8.0	11.01	11.01
		5.9 ~ 7.2	8.0	8.0	11.01	11.01

Note:

1, The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.

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 = 6.02;
- For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for $N_{ANT} \leq 4$;

2, The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac/ax, not include 802.11a/b/g.

3, The antenna specification is provided by the applicant.

4, These antennas are cross polarized design and the detail refers to antenna specification.

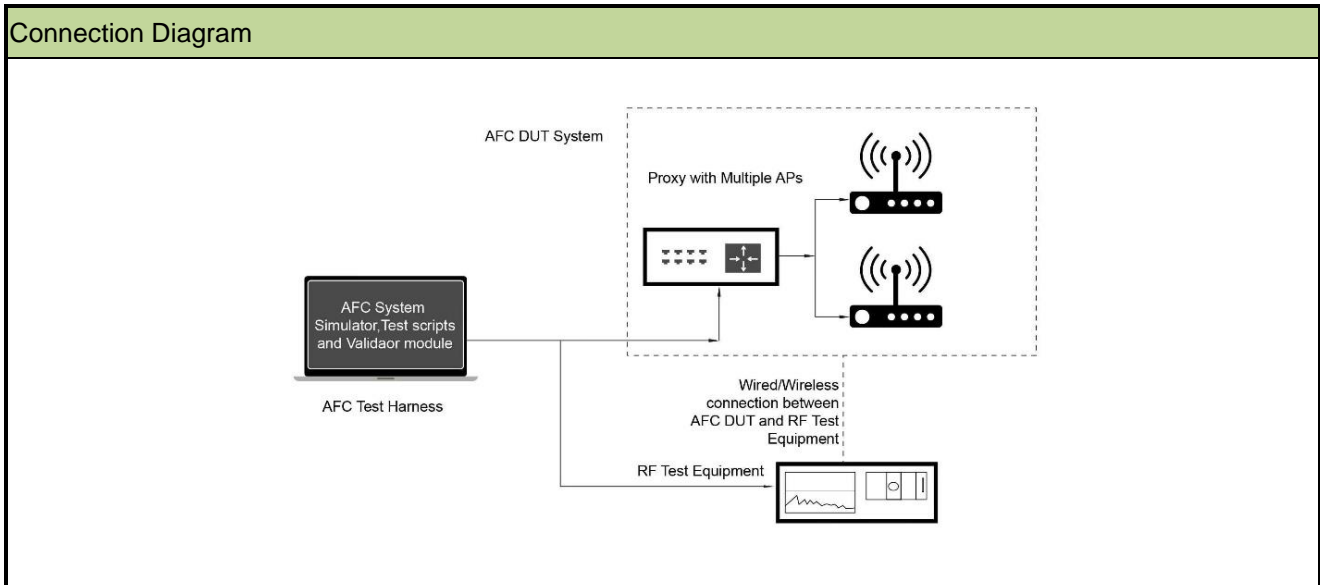
6. For AFC Testing, Low gain antenna (AP-ANT-312) and High gain antenna (AP-ANT-348) were selected to perform testing.

1.8. AFCD General Capabilities Declaration

Item	Question	Vendor response
1	AFC DUT Type	Proxy
2	Does the AFC DUT supports sending an Available Spectrum Inquiry Request based on the inquired Frequency Range field?	Yes
3	Does the AFC DUT supports sending an Available Spectrum Inquiry Request based on the inquired Channels fields?	Yes
4	If the Answer to Items 2 and 3 is "Yes", what is AFC DUT's default inquiry type?	Both
5	Does the AFC DUT need to be supplied with BSS configuration parameters?	No
6	Does the AFC DUT manufacturer attest to AFC DUT compliance with rules for LPI operation?	No
7	Does the AFC DUT need to be supplied with mandatory registration information to formulate an Available Spectrum Inquiry Request	Yes
8	If the Answer to Item 7 is "Yes". What is the geographic Supported by the AFC DUT?	Ellipse
9	Does the AFC DUT support 160 MHz channel width operation?	Yes
10	Which method does AFC DUT acting as a Fixed Client uses for sending an Available Spectrum Inquiry Request?	N/A
Note: The information of EUT was provided by the manufacturer.		

2. Test Configuration

2.1. Test System Connection Diagram



2.2. Applied Standards

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

- FCC KDB 987594 D05v01r01
- FCC KDB 987594 D01v02r02
- 47 CFR FCC Part 15.407
- ANSI C63.10 - 2013
- The test guidance is the “AFC Device (AFC DUT) Compliance Test Plan”, and the version was 1.5.

2.3. Test Environment Condition

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

3. Measuring Equipment

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
Signal Analyzer	Keysight	N9010B	MRTSUE07027	1 year	2024-10-23	WZ-SR5

Software	Version	Manufacturer	Function
AFC Test Harness	V 2.0.65.162	Wi-Fi Alliance	AFC Test Software

Client Information

Instrument	Manufacturer	Type No.	Certification Number
Wi-Fi Module	Intel	AX210 160MHz	FCC ID: PD9AX210NG

4. Decision Rules and Measurement Uncertainty

4.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.
(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.2. 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 $k = 2$.

Output Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 1.4dB
Power Spectrum Density
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 2.2dB

5. Test Result

5.1. Summary

FCC Section(s)	Requirement	Verdict
15.407(k)(1)	Transmit only as instructed by AFC System	Pass
15.407(k)(8)(i)	Register with AFC System prior to initial transmission. Register with AFC System after change of location	Pass
15.407(k)(8)(ii)	Provide required registration parameters. Update AFC System upon change of registration parameters	Pass
15.407(k)(8)(iii)	Registration either directly or via Network Element/Proxy	Pass
15.407(k)(8)(iv)	The device can adjust accordingly to subsequent 'daily' AFC responses with the latest list of available frequencies and the maximum permissible power	Pass
15.407(k)(8)(v)	Security of connection to AFC	Pass
15.407(k)(9)(i)	Report location and uncertainty from power-off condition	Pass

Ref Std. Clause	Test Case Name	Result
AFC capability – Inquired Frequency & Channel		
3.1.4	CT_AFC_SP_AP_AFCDRSA31_FrequencyChannel_20MHz_10625_1	Pass
3.1.4	CT_AFC_SP_AP_AFCDRSA31_FrequencyChannel_40MHz_10626_1	Pass
3.1.4	CT_AFC_SP_AP_AFCDRSA31_FrequencyChannel_80MHz_10627_1	Pass
3.1.4	CT_AFC_SP_AP_AFCDRSA31_FrequencyChannel_160MHz_10628_1	Pass
3.2.4	CT_AFC_SP_AP_AFCDUSA32_FrequencyChannel_10629_1	Pass
3.3.4	CT_AFC_SP_AP_AFCDSAU33_FrequencyChannel_10630_1	Pass
3.4.4	CT_AFC_SP_AP_AFCDUAU34_FrequencyChannel_10631_1	Pass
AFC capability - Server Validation – Mandatory		
3.5.4	CT_AFC_ServerValidation_AP_AFCDUSV35_NonMatchSAN_10632_1	Pass
3.5.4	CT_AFC_ServerValidation_AP_AFCDUSV35_DifferentRootCA_10633_1	Pass
3.5.4	CT_AFC_ServerValidation_AP_AFCDUSV35_MatchSuffixSAN_10634_1	Pass
3.5.4	CT_AFC_ServerValidation_AP_AFCDUSV35_ServerCertRevoked_10635_1	Pass
3.5.4	CT_AFC_ServerValidation_AP_AFCDUSV35_OCSPStaplingDisabled_10636_1	Pass
3.5.4	CT_AFC_ServerValidation_AP_AFCDUSV35_StapledOCSPRespExpired_10637_1	Pass
3.5.4	CT_AFC_ServerValidation_AP_AFCDUSV35_TLSCipherSuiteENULL_10638_1	Pass
3.5.4	CT_AFC_ServerValidation_AP_AFCDUSV35_NoRootCA_10639_1	Pass

Test Description	Test Case Identifier	FCC Requirement	Short Description
Successful Registration and Spectrum Access Request	AFCD.RSA	15.407(k)(1)	Transmit only as instructed by AFC System
		15.407(k)(8)(i)	Register with AFC System prior to initial transmission
		15.407(k)(8)(ii)	Provide required registration parameters
		15.407(k)(8)(iii)	Registration either directly or via proxy
		15.407(l)(ii)	Determination of appropriate channel configuration implied by AFC System response
		15.407(k)(8)(iv)	Must contact an AFC system at least once per day to obtain the latest list of available frequencies and the maximum permissible power
Unsuccessful Spectrum Access Request	AFCD.USA	15.407(k)(1)	Transmit only as instructed by AFC System
		15.407(k)(8)(i)	Register with AFC System prior to initial transmission
		15.407(k)(8)(ii)	Provide required registration parameters
		15.407(k)(8)(iii)	Registration either directly or via proxy
Successful Spectrum Access Update	AFCD.SAU	15.407(k)(8)(i)	Transmit only as instructed by AFC System
		15.407(k)(8)(ii)	Register with AFC System prior to initial transmission
		15.407(k)(9)(i)	Report location and uncertainty from power-off condition
Unsuccessful Spectrum Access Update	AFCD.UAU	15.407(k)(8)(i)	Transmit only as instructed by AFC System
		15.407(k)(8)(ii)	Register with AFC System prior to initial transmission
		15.407(k)(9)(i)	Report location and uncertainty from power-off condition
Unsuccessful Server Validation	AFCD.USV	15.407(k)(8)(v)	Incorporate adequate security measurements to prevent it from accessing AFC systems not approved by the FCC

5.2. Successful Registration and Spectrum Access Request

5.2.1. Test Compliance Requirement

FCC Section(s)	Requirement
15.407(k)(1)	Transmit only as instructed by AFC System
15.407(k)(8)(i)	Register with AFC System prior to initial transmission.
15.407(k)(8)(ii)	Provide required registration parameters.
15.407(k)(8)(iii)	Registration either directly or via proxy
15.407(l)(ii)	Determination of appropriate channel configuration implied by AFC System response
15.407(k)(8)(iv)	Must contact an AFC system at least once per day to obtain the latest list of available frequencies and the maximum permissible power

5.2.2. Test Procedure

Step	Description
1	If the AFC DUT is Standard Power Access Point, go to Step 2, else go to Step 12
2	<p>AFC DUT set to Initial Pre-test State.</p> <p>If needed (see Table 5 declaration), configure the AFC DUT with BSS parameters per Table 9 and a temporary test regulatory identifier (e.g., FCC ID), geographic coordinates, antenna height, and uncertainty parameters.</p> <p>Configure the AFC DUT with AFC System URL and server root certificate.</p> <p>Trigger the AFC DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request</p>
3	AFC DUT sends a valid Available Spectrum Inquiry Request containing the inquired Frequency Range and/or the inquired Channels fields
4	AFC DUT Test Harness validates the presence of mandatory registration information
5	AFC DUT Test Harness sends an Available Spectrum Inquiry Response containing a list of available frequency ranges and/or channels and the maximum permissible transmit power in the available Frequency Info and/or available Channel Info fields.

Step	Description
6	<p>Throughout Step 1 to Step 4, RF Test Equipment monitors the output of the AFC DUT to confirm that the AFC DUT does not transmit:</p> <ul style="list-style-type: none"> • In the band if the AFC DUT supports only SP operation <p>Or</p> <ul style="list-style-type: none"> • Above LPI limits for AFC DUT whose manufacturer attests to its compliance with rules for LPI operation <p>Wait for 60 seconds</p> <p>RF Test Equipment monitors any transmission by the AFC DUT conforms to the following:</p> <ul style="list-style-type: none"> • For SP only operation, AFC DUT conforms to the conditions contained in the Available Spectrum Inquiry Response and does not exceed emissions limits in adjacent frequencies. • For AFC DUT whose manufacturer attests to its compliance with rules for LPI operation, AFC DUT transmit power in the band is less than CEILING [LPI limits, SP limits contained in the Available Spectrum Inquiry Response] and does not exceed emissions limits in adjacent frequencies.
7	Trigger the AFC DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request.
8	AFC DUT sends a valid Available Spectrum Inquiry Request containing the inquired Frequency Range and/or the inquired Channels fields.
9	AFC DUT Test Harness validates the presence of mandatory registration information
10	AFC DUT Test Harness sends an Available Spectrum Inquiry Response containing a list of available frequency ranges and/or channels and the maximum permissible transmit power in the available Frequency Info and/or available Channel Info fields which are significantly different from Step 5.
11	<p>Wait for 5 minutes (configurable)</p> <p>RF Test Equipment monitors any transmission by the AFC DUT conforms to the following:</p> <ul style="list-style-type: none"> • For SP only operation, AFC DUT conforms to the conditions contained in the Available Spectrum Inquiry Response and does not exceed emissions limits in adjacent frequencies. • For AFC DUT whose manufacturer attests to its compliance with rules for LPI operation, AFC DUT transmit power in the band is less than CEILING [LPI limits, SP limits contained in the Available Spectrum Inquiry Response] and does not exceed emissions limits in adjacent frequencies.
12	If the AFC DUT is Fixed Client, go to Step 13 else Stop the test
13	The AFC DUT set to Initial Pre-test State.
14	<p>If needed (see Table 5 declaration), configure the AFC DUT with a temporary test regulatory identifier (e.g., FCC ID), geographic coordinates, antenna height, and uncertainty parameters.</p> <p>Configure the AFC DUT with AFC System URL and server root certificate.</p> <p>Trigger the AFC DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request using either In-band or out of band methods</p>

Step	Description
15	AFC DUT sends a valid Available Spectrum Inquiry Request containing the inquired Frequency Range and/or the inquired Channels fields
16	AFC DUT Test Harness validates the presence of mandatory registration information
17	AFC DUT Test Harness sends an Available Spectrum Inquiry Response containing a list of available frequency ranges and/or channels and the maximum permissible transmit power in the available Frequency Info and/or available Channel Info fields
18	If AFC DUT used Out-of-band method, initiate connection procedure between AFC DUT and SP Access Point by following instructions provided by the AFC DUT Vendor
19	Wait for 60 seconds RF Test Equipment monitors any transmission by the AFC DUT conforms to the conditions contained in the Available Spectrum Inquiry Response and does not exceed emissions limits in adjacent frequencies
20	Trigger the AFC DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request using either In-band or out of band methods
21	AFC DUT sends a valid Available Spectrum Inquiry Request containing the inquired Frequency Range and/or the inquired Channels fields
22	AFC DUT Test Harness validates the presence of mandatory registration information
23	AFC DUT Test Harness sends an Available Spectrum Inquiry Response containing a list of available frequency ranges and/or channels and the maximum permissible transmit power in the available Frequency Info and/or available Channel Info fields which are significantly different from Step 17
24	If AFC DUT used Out-of-band method, initiate connection procedure between AFC DUT and SP Access Point by following instructions provided by the AFC DUT Vendor
25	Wait for 60 seconds (configurable) RF Test Equipment monitors any transmission by the AFC DUT conforms to the conditions contained in the latest Available Spectrum Inquiry Response and does not exceed emissions limits in adjacent frequencies

5.2.3. Test Result

Refer to Appendix A.1.

5.3. Unsuccessful Spectrum Access Request

5.3.1. Test Compliance Requirement

FCC Section(s)	Requirement
15.407(k)(1)	Transmit only as instructed by AFC System
15.407(k)(8)(i)	Register with AFC System prior to initial transmission.
15.407(k)(8)(ii)	Provide required registration parameters.
15.407(k)(8)(iii)	Registration either directly or via proxy

5.3.2. Test Procedure

Step	Description
1	If the AFC DUT is Standard Power Access Point, go to Step 2, else go to Step 7
2	AFC DUT set to Initial Pre-test State. If needed (see Table 5 declaration), configure the AFC DUT with BSS parameters per Table 9 and a temporary test regulatory identifier (e.g., FCC ID), geographic coordinates, antenna height, and uncertainty parameters. Configure the AFC DUT with AFC System URL and server root certificate. Trigger the AFC DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request
3	AFC DUT sends a valid Available Spectrum Inquiry Request containing the inquired Frequency Range and/or the inquired Channels fields
4	AFC DUT Test Harness validates mandatory registration information
5	AFC DUT Test Harness sends an Available Spectrum Inquiry Response indicating that no frequency ranges and/or channels are available
6	Throughout Step 2 to Step 5 and subsequent to Step 5, RF Test Equipment monitors the output of the AFC DUT to confirm the following <ul style="list-style-type: none"> • For SP only operation, AFC DUT does not transmit in the band • For AFC DUT whose manufacturer attests to its compliance with rules for LPI operation, the AFC DUT does not transmit above LPI limits
7	If the AFC DUT is Fixed Client, go to Step 8 else Stop the test
8	The AFC DUT set to Initial Pre-test State.
9	If needed (see Table 5 declaration), configure the AFC DUT with a temporary test regulatory identifier (e.g., FCC ID), geographic coordinates, antenna height, and uncertainty parameters. Configure the AFC DUT with AFC System URL and server root certificate. Trigger the AFC DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request
10	AFC DUT sends a valid Available Spectrum Inquiry Request containing the inquired Frequency Range and/or the inquired Channels fields
11	AFC DUT Test Harness validates mandatory registration information

Step	Description
12	AFC DUT Test Harness sends an Available Spectrum Inquiry Response indicating that no frequency ranges and/or channels are available using either In-band or Out-of-band methods.
13	If AFC DUT used Out-of-band method, initiate connection procedure between Fixed Client and SP Access Point by following instructions provided by the AFC DUT Vendor
13	Wait for 60 seconds RF Test Equipment monitors that the AFC DUT does not transmit above maximum transmit power limits advertised by the Standard Power Access Point for Standard Client Devices in the channel.

5.3.3. Test Result

Refer to Appendix A.2.

5.4. Successful Spectrum Access Update

5.4.1. Test Compliance Requirement

FCC Section(s)	Requirement
15.407(k)(8)(i)	Register with AFC System after change of location
15.407(k)(8)(ii)	Provide required registration parameters.
15.407(k)(9)(i)	Report location and uncertainty from power-off condition

5.4.2. Test Procedure

Step	Description
1	If the AFC DUT is Standard Power Access Point, go to Step 2, else go to Step 12
2	<p>AFC DUT set to Initial Pre-test State.</p> <p>If needed (see Table 5 declaration), configure DUT with BSS parameters per Table 9 and a temporary test regulatory identifier (e.g., FCC ID), geographic coordinates, antenna height, and uncertainty parameters.</p> <p>Configure the AFC DUT with AFC System URL and server root certificate.</p> <p>Trigger the AFC DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request</p>
3	AFC DUT sends a valid Available Spectrum Inquiry Request containing the inquired Frequency Range and/or the inquired Channels fields
4	AFC DUT Harness validates mandatory registration information
5	AFC DUT Test Harness sends an Available Spectrum Inquiry Response containing a list of available frequency ranges and/or channels and the maximum permissible transmit power in the available Frequency Info and/or available Channel Info fields.
6	<p>Throughout the preceding steps, RF Test Equipment monitors the output of the AFC DUT to confirm that the AFC DUT does not transmit:</p> <ul style="list-style-type: none"> • In the band if the AFC DUT supports only SP operation <p>Or</p> <ul style="list-style-type: none"> • Above LPI limits for AFC DUT whose manufacturer attests to its compliance with rules for LPI operation <p>Wait for 60 seconds</p> <p>RF Test Equipment monitors any transmission by the AFC DUT conforms to the following:</p> <ul style="list-style-type: none"> • For SP only operation, AFC DUT conforms to the conditions contained in the Available Spectrum Inquiry Response and does not exceed emissions limits in adjacent frequencies. • For AFC DUT whose manufacturer attests to its compliance with rules for LPI operation, AFC DUT transmit power in the band is less than CEILING [LPI limits, SP limits contained in the Available Spectrum Inquiry Response] and does not exceed emissions limits in adjacent frequencies.

Step	Description
7	<p>AFC DUT is power cycled.</p> <p>If needed (see Table 5 declaration), configure the AFC DUT with a temporary test regulatory identifier (e.g., FCC ID), new geographic coordinates, antenna height, and uncertainty parameters</p> <p>Configure the AFC DUT with AFC System URL and server root certificate.</p>
8	<p>Wait for 60 seconds</p> <p>If the AFC DUT does not send an Available Spectrum Inquiry Request, RF Test Equipment monitors the output of the AFC DUT to verify the following and STOP the test</p> <ul style="list-style-type: none"> • For SP only operation, AFC DUT does not transmit in the band. • For AFC DUT whose manufacturer attests to its compliance with rules for LPI operation, the AFC DUT does not transmit above LPI limits. <p>If the AFC DUT sends an Available Spectrum Inquiry Request, then CONTINUE with Step 9</p>
9	AFC DUT Test Harness evaluates validity of mandatory registration information
10	<p>AFC DUT Test Harness waits for 60 seconds before sending an Available Spectrum Inquiry Response containing a list of available frequency ranges and/or channels and the maximum permissible transmit power in the available Frequency Info and/or available Channel Info fields which are significantly different from Step 5.</p> <ul style="list-style-type: none"> • During the 60 seconds wait time: ▪ For AFC DUT whose manufacturer attests to its compliance with rules for LPI operation, RF Test Equipment monitors the output of the AFC DUT to confirm that AFC DUT does not transmit above LPI threshold limits ▪ For SP only operation, RF Test Equipment monitors the output of the AFC DUT to confirm that AFC DUT doesn't transmit in the band
11	<p>Wait for 60 seconds</p> <p>RF Test Equipment monitors any transmission by the AFC DUT conforms to the following:</p> <ul style="list-style-type: none"> • For SP only operation, AFC DUT conforms to the conditions contained in the Available Spectrum Inquiry Response and does not exceed emissions limits in adjacent frequencies. • For AFC DUT whose manufacturer attests to its compliance with rules for LPI operation, AFC DUT transmit power in the band is less than CEILING [LPI limits, SP limits contained in the Available Spectrum Inquiry Response] and does not exceed emissions limits in adjacent frequencies.
12	If the AFC DUT is Fixed Client, go to Step 13 else Stop the test
13	The AFC DUT set to Initial Pre-test State.
14	<p>If needed (see Table 5 declaration), configure the AFC DUT with a temporary test regulatory identifier (e.g., FCC ID), geographic coordinates, antenna height, and uncertainty parameters.</p> <p>Configure the AFC DUT with AFC System URL and server root certificate.</p> <p>Trigger the AFC DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request using either In-band or Out-of band methods</p>

Step	Description
15	AFC DUT sends a valid Available Spectrum Inquiry Request containing the inquired Frequency Range and/or the inquired Channels fields
16	AFC DUT Test Harness validates the presence of mandatory registration information
17	AFC DUT Test Harness sends an Available Spectrum Inquiry Response containing a list of available frequency ranges and/or channels and the maximum permissible transmit power in the available Frequency Info and/or available Channel Info fields
18	If AFC DUT used Out-of-band method, initiate connection procedure between AFC DUT and SP Access Point by following instructions provided by the AFC DUT Vendor
19	Wait for 60 seconds RF Test Equipment monitors any transmission by the AFC DUT conforms to the conditions contained in the Available Spectrum Inquiry Response and does not exceed emissions limits in adjacent frequencies
20	AFC DUT is power cycled If needed (see Table 5 declaration), configure the AFC DUT with a temporary test regulatory identifier (e.g., FCC ID), new geographic coordinates, antenna height, and uncertainty parameters. Configure the AFC DUT with AFC System URL and server root certificate.
21	Wait for 60 seconds If the AFC DUT does not send an Available Spectrum Inquiry Request, RF Test Equipment monitors the output of the AFC DUT to verify the AFC DUT does not transmit above maximum transmit power limits advertised by the Standard Power Access Point for Standard Client Devices in the channel and STOP the test. If the AFC DUT sends an Available Spectrum Inquiry Request, then CONTINUE with Step 21
22	AFC DUT Test Harness evaluates validity of mandatory registration information
23	AFC DUT Test Harness waits for 60 seconds before sending an Available Spectrum Inquiry Response containing a list of available frequency ranges and/or channels and the maximum permissible transmit power in the available Frequency Info and/or available Channel Info fields which are significantly different from step 17. During the 60 seconds wait time, RF Test Equipment monitors the output of the AFC DUT to confirm that the AFC DUT does not transmit above maximum transmit power limits advertised by the Standard Power Access Point for Standard Client Devices in the channel
24	If AFC DUT used Out-of-band method, initiate connection procedure between AFC DUT and SP Access Point by following instructions provided by the AFC DUT Vendor
25	Wait for 60 seconds RF Test Equipment monitors any transmission by the AFC DUT conforms to the conditions contained in the latest Available Spectrum Inquiry Response and does not exceed emissions limits in adjacent frequencies

5.4.3. Test Result

Refer to Appendix A.3.

5.5. Unsuccessful Spectrum Access Update

5.5.1. Test Compliance Requirement

FCC Section(s)	Requirement
15.407(k)(8)(i)	Register with AFC System after change of location
15.407(k)(8)(ii)	Update AFC System upon change of registration parameters
15.407(k)(9)(i)	Report location and uncertainty from power-off condition

5.5.2. Test Procedure

Step	Description
1	If the AFC DUT is Standard Power Access Point, go to Step 2, else go to Step 12
2	<p>AFC DUT set to Initial Pre-test State.</p> <p>If needed (see Table 5 declaration), configure the AFC DUT with BSS parameters per Table 9 and a temporary test regulatory identifier (e.g., FCC ID), geographic coordinates, antenna height, and uncertainty parameters.</p> <p>Configure the DUT with AFC System URL and server root certificate.</p> <p>Trigger the DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request using either In-band or Out-of-band methods.</p>
3	AFC DUT sends a valid Available Spectrum Inquiry Request containing the inquired Frequency Range and/or the inquired Channels fields
4	AFC DUT Test Harness validates mandatory registration information
5	AFC DUT Test Harness sends an Available Spectrum Inquiry Response containing a list of available frequency ranges and/or channels and the maximum permissible transmit power in the available Frequency Info and/or available Channel Info fields.
6	<p>Throughout the Step 2 to 5, RF Test Equipment monitors the output of the AFC DUT to confirm that the AFC DUT does not transmit:</p> <ul style="list-style-type: none"> • In the band if the AFC DUT supports only SP operation <p>Or</p> <ul style="list-style-type: none"> • Above LPI limits for AFC DUT whose manufacturer attests to its compliance with rules for LPI operation <p>Wait for 60 seconds</p> <p>RF Test Equipment monitors any transmission by the AFC DUT conforms to the following:</p> <ul style="list-style-type: none"> • For SP only operation, AFC DUT conforms to the conditions contained in the Available Spectrum Inquiry Response and does not exceed emissions limits in adjacent frequencies. <p>For AFC DUT whose manufacturer attests to its compliance with rules for LPI operation, AFC DUT transmit power in the band is less than CEILING [LPI limits, SP limits contained in the Available Spectrum Inquiry Response] and does not exceed emissions limits in adjacent frequencies.</p>

Step	Description
7	<p>AFC DUT is power cycled.</p> <p>If needed (see Table 5 declaration), configure the AFC DUT with a temporary test regulatory identifier (e.g., FCC ID), new geographic coordinates, antenna height, and uncertainty parameters</p> <p>Configure the AFC DUT with AFC System URL and server root certificate.</p>
8	<p>Wait for 60 seconds</p> <ul style="list-style-type: none"> • If the AFC DUT does not send an Available Spectrum Inquiry Request, RF Test Equipment monitors the output of the DUT to verify the following and STOP the test <ul style="list-style-type: none"> • For SP only operation, AFC DUT does not transmit in the band. • For AFC DUT whose manufacturer attests to its compliance with rules for LPI operation, the AFC DUT does not transmit above LPI limits. • If the AFC DUT sends an Available Spectrum Inquiry Request, then CONTINUE with Step 8
9	AFC DUT Test Harness evaluates validity of mandatory registration information
10	AFC DUT Test Harness sends an Available Spectrum Inquiry Response indicating that no frequency ranges and/or channels are available.
11	<p>Throughout Step 7 to 10 and sub sequent to Step 10 Test Equipment monitors the output of the AFC DUT to confirm that: For SP only operation, AFC DUT does not transmit in the band.</p> <p>For AFC DUT whose manufacturer attests to its compliance with rules for LPI operation, the AFC DUT does not transmit above LPI limits</p>
12	If the AFC DUT is Fixed Client, go to Step 13 else Stop the test
13	The AFC DUT set to Initial Pre-test State
14	<p>If needed (see Table 5 declaration), configure the DUT with a temporary test regulatory identifier (e.g., FCC ID), geographic coordinates, antenna height, and uncertainty parameters.</p> <p>Configure the AFC DUT with AFC System URL and server root certificate.</p> <p>Trigger the AFC DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request using either In-band or Out of band methods</p>
15	AFC DUT sends a valid Available Spectrum Inquiry Request containing the inquired Frequency Range and/or the inquired Channels fields
16	AFC DUT Test Harness validates the presence of mandatory registration information
17	AFC DUT Test Harness sends an Available Spectrum Inquiry Response containing a list of available frequency ranges and/or channels and the maximum permissible transmit power in the available Frequency Info and/or available Channel Info fields
18	If AFC DUT used Out-of-band method, initiate connection procedure between AFC DUT and SP Access Point by following instructions provided by the AFC DUT Vendor
19	<p>Wait for 60 seconds</p> <p>RF Test Equipment monitors any transmission by the AFC DUT conforms to the conditions contained in the Available Spectrum Inquiry Response and does not exceed emissions limits in adjacent frequencies</p>

Step	Description
20	AFC DUT is power cycled If needed (see Table 5 declaration), configure the AFC DUT with a temporary test regulatory identifier (e.g., FCC ID), new geographic coordinates, antenna height, and uncertainty parameters. Configure the AFC DUT with AFC System URL and server root certificate.
21	Wait for 60 seconds If the AFC DUT does not send an Available Spectrum Inquiry Request, RF Test Equipment monitors that the AFC DUT does not transmit above maximum transmit power limits advertised by the Standard Power Access Point for Standard Client Devices in the channel If the AFC DUT sends an Available Spectrum Inquiry Request, then CONTINUE with Step 22 else STOP the test
22	AFC DUT Test Harness validity of mandatory registration information
23	AFC DUT Test Harness sends an Available Spectrum Inquiry Response indicating that no frequency ranges and/or channels are available.
24	If AFC DUT used Out-of-band method, initiate connection procedure between AFC DUT and SP Access Point by following instructions provided by the AFC DUT Vendor
25	Wait for 60 seconds RF Test Equipment monitors that the AFC DUT does not transmit above maximum transmit power limits advertised by the Standard Power Access Point for Standard Client Devices in the channel

5.5.3. Test Result

Refer to Appendix A.4.

5.6. Unsuccessful Server Validation

5.6.1. Test Compliance Requirement

FCC Section(s)	Requirement
15.407(k)(8)(v)	Incorporate adequate security measurements to prevent it from accessing AFC systems not approved by the FCC

5.6.2. Test Procedure

Step	Description
1	<p>The AFC DUT set to Initial Pre-test State.</p> <p>If needed (see Table 5 declaration), configure the AFC DUT with BSS parameters per Table 9 and a temporary test regulatory identifier (e.g., FCC ID), geographic coordinates, antenna height, and uncertainty parameters.</p> <p>Configure the AFC DUT Test Harness with TLS configuration that is the same as the default configuration defined in Section 2.3.1 except for the following:</p> <p>Run 1: A different server certificate (and private key) with SAN domain name entry "badafc.com" (i.e. that does not match AFC system URL's domain name); signed by the same root certificate as per Section 2.3.1</p> <p>Run 2: A different server certificate (and private key) where all attributes other than Public Key are the same as the server certificate per Section 2.3.1, but the certificate is signed by a different root certificate</p> <p>Run 3: A different server certificate (and private key) with SAN domain name entry "wfatestorg.org" only (i.e. SAN domain name only matches suffix of AFC server's hostname); signed by the same root certificate as per Section 2.3.1</p> <p>Run 4: A different server certificate (and private key) where all attributes other than Public Key are the same as the server certificate per Section 2.3.1 signed by the same root certificate as per Section 2.3.1, but the server certificate is revoked as indicated in stapled OCSP response</p> <p>Run 5: Same configuration as per Section 2.3.1, except OCSP stapling is disabled and CRL/OCSP servers are not available</p> <p>Run 6: Same configuration as per Section 2.3.1, except stapled OCSP response has expired and CRL/OCSP servers are not available</p> <p>Run 7: Same configuration as per Section 2.3.1, except only the TLS cipher suite "eNULL" (no encryption) is enabled</p> <p>Run 8: N/A (same configuration as per Section 2.3.1)</p> <p>Configure the AFC DUT with the AFC System URL and the following root certificate:</p> <p>Runs 1-7: Root certificate as per Section 2.3.1</p> <p>Run 8: No root certificate</p> <p>Trigger the AFC DUT to send to the AFC DUT Test Harness an Available Spectrum Inquiry Request using either In-band or Out of band methods.</p>

Step	Description
2	AFC DUT Test Harness waits 10 seconds, and verifies no Available Spectrum Inquiry Request is sent to it.
3	Steps 1 and 2 are repeated for each of the remaining Runs

5.6.3. Test Result

Refer to Appendix A.5.

Appendix A – Test Result

A.1 Successful Registration and Spectrum Access Request

Test Site	WZ-SR5	Test Engineer	Dandy Li
Test Date	2024-07-04 ~ 2024-07-09		
Test Antenna	Low Gain Antenna (AP-ANT-312)		

AFC DUT Compliance Test Report

DUT Information

AFC DUT System	Standard Power AP with Proxy
DUT Vendor Name	Hewlett Packard Enterprise
DUT Product Model	API0654

Test Result

FCC Requirements	TestCaseName	Test Result
15.407(k)(1), 15.407(k)(B)(i), 15.407(k)(B)(ii), 15.407(k)(B)(iii), 15.407(l)(ii), 15.407(k)(B)(iv)	CT_AFC_SP_AP_AFCDSA31_FrequencyChannel_20MHz_10625_1 (Successful registration and spectrum access request)	PASS

Test Measurements

TestCaseName: CT_AFC_SP_AP_AFCDSA31_FrequencyChannel_20MHz_10625_1 (Successful registration and spectrum access request)
TestResult: PASS
Band: 6GHz

Measurements Name	Description	Value	Validation Result
AFC_DUT_SP_OPERATION	AFC DUT transmit with standard power in the band before the Spectrum Inquiry Response	false	PASS
AFC_DUT_SEND_SPECTRUM_INQUIRYREQUEST_1	AFC DUT sends an Available Spectrum Inquiry Request	true	PASS
AFC_DUT_SPECTRUM_INQUIRYREQUEST_VALID_1	Valid mandatory registration information	true	PASS
AFC_DUT_CONFORM_SPECTRUM_INQUIRYRESPONSE_1	AFC DUT conforms to the conditions in Spectrum Response (12.9 dBm/MHz PSD, 25.9 dBm EIRP) on channel 5 bandwidth 20.	true	PASS
AFC_DUT_CONFORM_ADJACENT_FREQUENCIES_EMISSIONS_LIMITS_1	AFC DUT conforms to not exceed emissions limits in adjacent frequencies	true	PASS
AFC_DUT_SEND_SPECTRUM_INQUIRYREQUEST_2	AFC DUT sends an Available Spectrum Inquiry Request	true	PASS
AFC_DUT_SPECTRUM_INQUIRYREQUEST_VALID_2	Valid mandatory registration information	true	PASS
AFC_DUT_CONFORM_SPECTRUM_INQUIRYRESPONSE_2	AFC DUT conforms to the conditions in Spectrum Response (19.1 dBm/MHz PSD, 32.1 dBm EIRP) on channel 53 bandwidth 20.	true	PASS
AFC_DUT_CONFORM_ADJACENT_FREQUENCIES_EMISSIONS_LIMITS_2	AFC DUT conforms to not exceed emissions limits in adjacent frequencies	true	PASS

Test Result

FCC Requirements	TestCaseName	Test Result
15.407(k)(1), 15.407(k)(B)(i), 15.407(k)(B)(ii), 15.407(k)(B)(iii), 15.407(l)(ii), 15.407(k)(B)(iv)	CT_AFC_SP_AP_AFCDSA31_FrequencyChannel_40MHz_10626_1 (Successful registration and spectrum access request)	PASS

Test Measurements

TestCaseName: CT_AFC_SP_AP_AFCDSA31_FrequencyChannel_40MHz_10626_1 (Successful registration and spectrum access request)
TestResult: PASS
Band: 6GHz

Measurements Name	Description	Value	Validation Result
AFC_DUT_SP_OPERATION	AFC DUT transmit with standard power in the band before the Spectrum Inquiry Response	false	PASS
AFC_DUT_SEND_SPECTRUM_INQUIRYREQUEST_1	AFC DUT sends an Available Spectrum Inquiry Request	true	PASS
AFC_DUT_SPECTRUM_INQUIRYREQUEST_VALID_1	Valid mandatory registration information	true	PASS
AFC_DUT_CONFORM_SPECTRUM_INQUIRYRESPONSE_1	AFC DUT conforms to the conditions in Spectrum Response (10.2 dBm/MHz PSD, 26.2 dBm EIRP) on channel center frequency index 147 bandwidth 40.	true	PASS
AFC_DUT_CONFORM_ADJACENT_FREQUENCIES_EMISSIONS_LIMITS_1	AFC DUT conforms to not exceed emissions limits in adjacent frequencies	true	PASS
AFC_DUT_SEND_SPECTRUM_INQUIRYREQUEST_2	AFC DUT sends an Available Spectrum Inquiry Request	true	PASS
AFC_DUT_SPECTRUM_INQUIRYREQUEST_VALID_2	Valid mandatory registration information	true	PASS
AFC_DUT_CONFORM_SPECTRUM_INQUIRYRESPONSE_2	AFC DUT conforms to the conditions in Spectrum Response (16.4 dBm/MHz PSD, 32.4 dBm EIRP) on channel center frequency index 83 bandwidth 40.	true	PASS
AFC_DUT_CONFORM_ADJACENT_FREQUENCIES_EMISSIONS_LIMITS_2	AFC DUT conforms to not exceed emissions limits in adjacent frequencies	true	PASS

Test Result

FCC Requirements	TestCaseName	Test Result
15.407(k)(1), 15.407(k)(B)(i), 15.407(k)(B)(ii), 15.407(k)(B)(iii), 15.407(i)(ii), 15.407(k)(B)(iv)	CT_AFC_SP_AP_AFCDRSA31_FrequencyChannel_80MHz_10627_1(Successful registration and spectrum access request)	PASS

Test Measurements

TestCaseName: CT_AFC_SP_AP_AFCDRSA31_FrequencyChannel_80MHz_10627_1 (Successful registration and spectrum access request)

TestResult:PASS

Band:6GHz

Measurements Name	Description	Value	Validation Result
AFC_DUT_SP_OPERATION	AFC DUT transmit with standard power in the band before the Spectrum Inquiry Response	false	PASS
AFC_DUT_SEND_SPECTRUM_INQUIRYREQUEST_1	AFC DUT sends an Available Spectrum Inquiry Request	true	PASS
AFC_DUT_SPECTRUM_INQUIRYREQUEST_VALID_1	Valid mandatory registration information	true	PASS
AFC_DUT_CONFORM_SPECTRUM_INQUIRYRESPONSE_1	AFC DUT conforms to the conditions in Spectrum Response (9.8 dBm/MHz PSD, 28.8 dBm EIRP) on channel center frequency index 87 bandwidth 80.	true	PASS
AFC_DUT_CONFORM_ADJACENT_FREQUENCIES_EMISSIONS_LIMITS_1	AFC DUT conforms to not exceed emissions limits in adjacent frequencies	true	PASS
AFC_DUT_SEND_SPECTRUM_INQUIRYREQUEST_2	AFC DUT sends an Available Spectrum Inquiry Request	true	PASS
AFC_DUT_SPECTRUM_INQUIRYREQUEST_VALID_2	Valid mandatory registration information	true	PASS
AFC_DUT_CONFORM_SPECTRUM_INQUIRYRESPONSE_2	AFC DUT conforms to the conditions in Spectrum Response (8.8 dBm/MHz PSD, 27.8 dBm EIRP) on channel center frequency index 151 bandwidth 80.	true	PASS
AFC_DUT_CONFORM_ADJACENT_FREQUENCIES_EMISSIONS_LIMITS_2	AFC DUT conforms to not exceed emissions limits in adjacent frequencies	true	PASS

Test Result

FCC Requirements	TestCaseName	Test Result
15.407(k)(1), 15.407(k)(B)(i), 15.407(k)(B)(ii), 15.407(k)(B)(iii), 15.407(i)(ii), 15.407(k)(B)(iv)	CT_AFC_SP_AP_AFCDRSA31_FrequencyChannel_160MHz_10628_1(Successful registration and spectrum access request)	PASS

Test Measurements

TestCaseName: CT_AFC_SP_AP_AFCDRSA31_FrequencyChannel_160MHz_10628_1 (Successful registration and spectrum access request)

TestResult:PASS

Band:6GHz

Measurements Name	Description	Value	Validation Result
AFC_DUT_SP_OPERATION	AFC DUT transmit with standard power in the band before the Spectrum Inquiry Response	false	PASS
AFC_DUT_SEND_SPECTRUM_INQUIRYREQUEST_1	AFC DUT sends an Available Spectrum Inquiry Request	true	PASS
AFC_DUT_SPECTRUM_INQUIRYREQUEST_VALID_1	Valid mandatory registration information	true	PASS
AFC_DUT_CONFORM_SPECTRUM_INQUIRYRESPONSE_1	AFC DUT conforms to the conditions in Spectrum Response (11.0 dBm/MHz PSD, 33.0 dBm EIRP) on channel center frequency index 47 bandwidth 160.	true	PASS
AFC_DUT_CONFORM_ADJACENT_FREQUENCIES_EMISSIONS_LIMITS_1	AFC DUT conforms to not exceed emissions limits in adjacent frequencies	true	PASS
AFC_DUT_SEND_SPECTRUM_INQUIRYREQUEST_2	AFC DUT sends an Available Spectrum Inquiry Request	true	PASS
AFC_DUT_SPECTRUM_INQUIRYREQUEST_VALID_2	Valid mandatory registration information	true	PASS
AFC_DUT_CONFORM_SPECTRUM_INQUIRYRESPONSE_2	AFC DUT conforms to the conditions in Spectrum Response (8.7 dBm/MHz PSD, 30.7 dBm EIRP) on channel center frequency index 143 bandwidth 160.	true	PASS
AFC_DUT_CONFORM_ADJACENT_FREQUENCIES_EMISSIONS_LIMITS_2	AFC DUT conforms to not exceed emissions limits in adjacent frequencies	true	PASS

Test Mode	Channel No.	Freq. (MHz)	Average Power (dBm)				Duty Cycle (%)	EIRP (dBm)	AFC Response Limit (dBm)
			Ant 0	Ant 1	Ant 2	Ant 3			
802.11ax-HE20	5	5975	6.91	7.42	7.27	6.91	92.31	17.60	25.90
802.11ax-HE20	53	6215	4.98	5.08	5.32	5.50	92.31	15.69	32.10
802.11ax-HE40	147	6685	7.75	8.25	7.56	7.56	91.99	18.27	26.20
802.11ax-HE40	83	6365	7.47	8.40	7.02	7.75	91.99	18.17	32.40
802.11ax-HE80	87	6385	7.88	8.54	7.92	7.44	90.41	18.52	28.80
802.11ax-HE80	151	6705	8.02	7.98	7.62	7.26	90.41	18.29	27.80
802.11ax-HE160	47	6185	6.67	6.65	6.66	6.45	85.31	17.42	33.00
802.11ax-HE160	143	6665	7.46	7.61	7.14	7.29	85.31	18.19	30.70

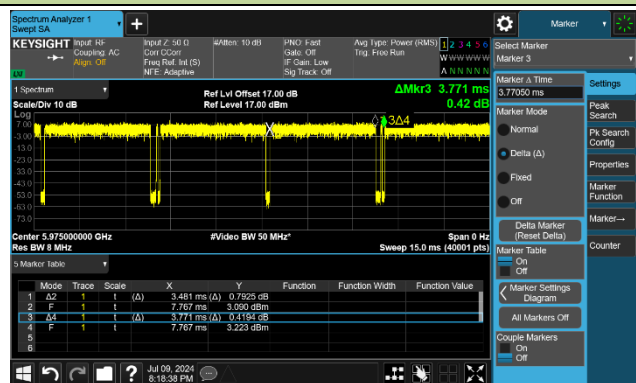
Note 1: EIRP (dBm) = $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)}\} + \text{Directional Gain for Power (dBi)} + 10 \cdot \log (1/\text{Duty Cycle})$.

Test Mode	Channel No.	Freq. (MHz)	PSD (dBm/MHz)				Duty Cycle (%)	EIRP PSD (dBm/MHz)	AFC Response Limit (dBm/MHz)
			Ant 0	Ant 1	Ant 2	Ant 3			
802.11ax-HE20	5	5975	-4.499	-3.897	-4.223	-4.582	92.31	12.197	12.900
802.11ax-HE20	53	6215	-6.750	-6.525	-6.555	-6.026	92.31	10.033	19.100
802.11ax-HE40	147	6685	-6.343	-5.913	-6.916	-6.827	91.99	10.023	10.200
802.11ax-HE40	83	6365	-6.340	-6.026	-6.704	-6.524	91.99	10.113	16.400
802.11ax-HE80	87	6385	-9.528	-9.232	-9.588	-9.785	90.41	7.050	9.800
802.11ax-HE80	151	6705	-9.209	-9.477	-9.845	-9.890	90.41	6.983	8.800
802.11ax-HE160	47	6185	-13.127	-12.963	-12.897	-13.164	85.31	3.795	11.000
802.11ax-HE160	143	6665	-12.424	-13.461	-13.093	-13.001	85.31	3.853	8.700

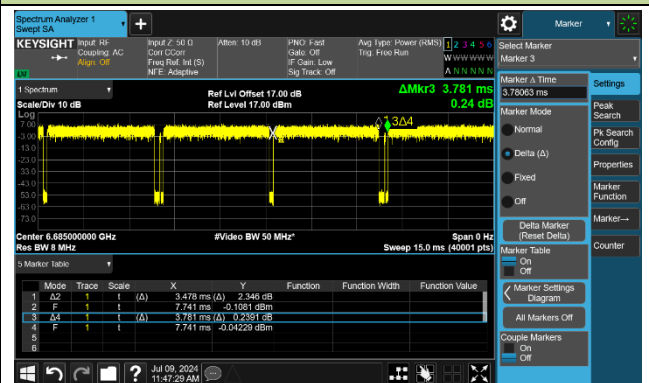
Note: EIRP PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD} / 10)} + 10^{(\text{Ant 1 PSD} / 10)} + 10^{(\text{Ant 2 PSD} / 10)} + 10^{(\text{Ant 3 PSD} / 10)}\} + 10 \cdot \log (1/\text{Duty Cycle}) + \text{Directional Gain for PSD (dBi)}$.

Duty Cycle

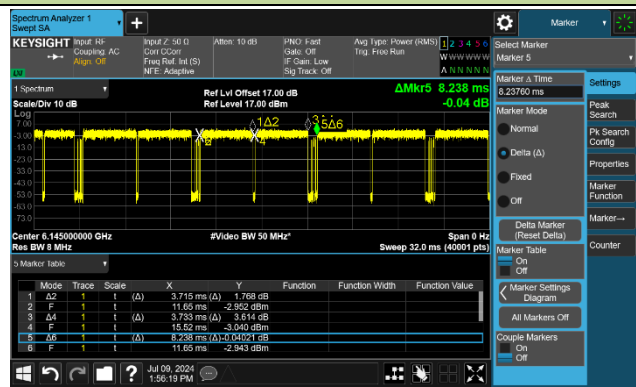
802.11ax-HE20



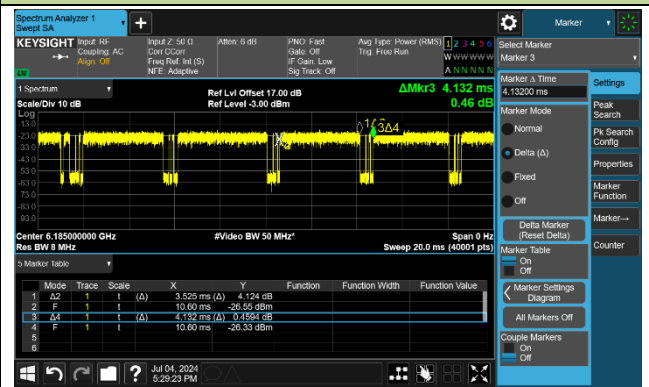
802.11ax-HE40



802.11ax-HE80

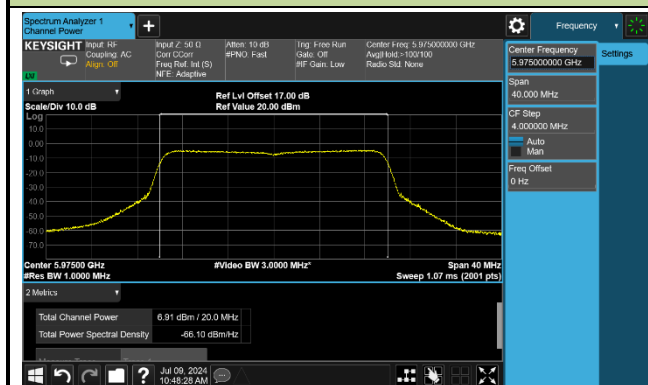


802.11ax-HE160

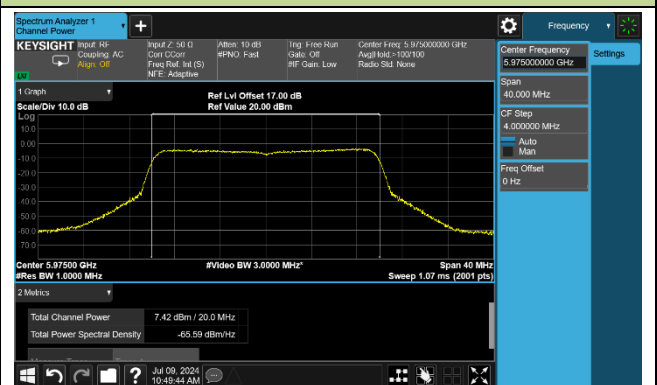


802.11ax-HE20 – Channel 5 (5975MHz) Average Power

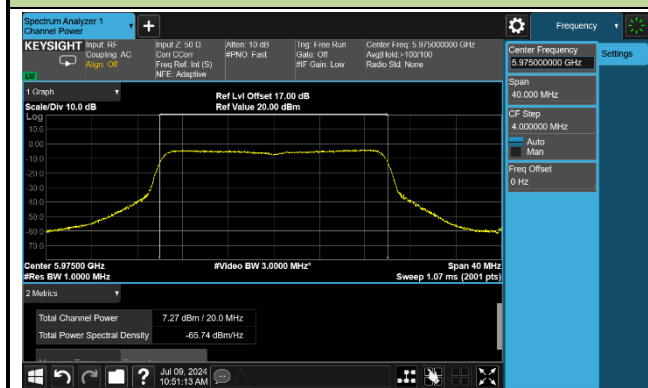
Ant 0



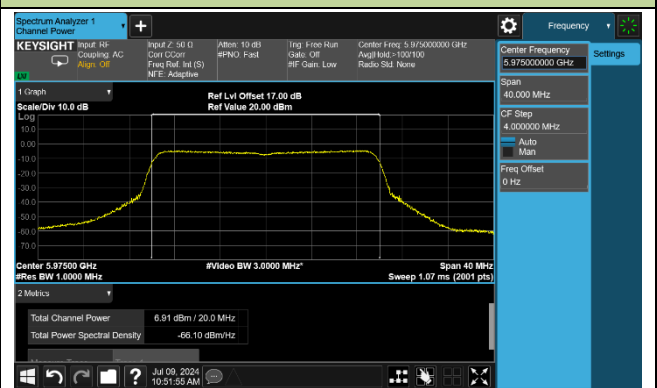
Ant 1



Ant 2

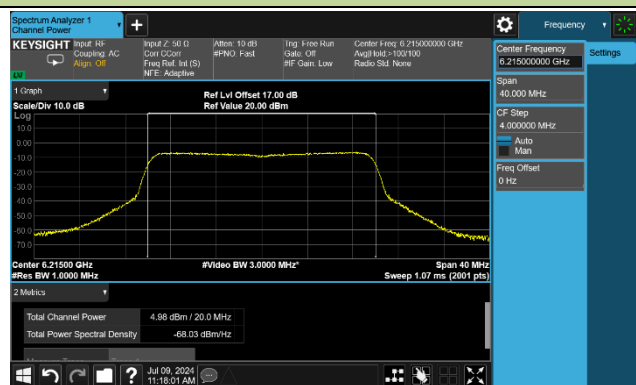


Ant 3

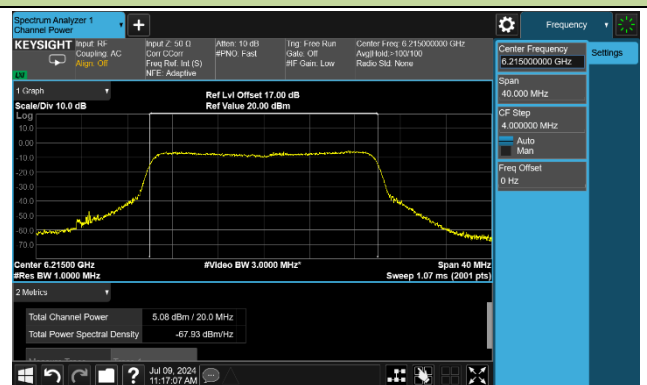


802.11ax-HE20 – Channel 53 (6215MHz) Average Power

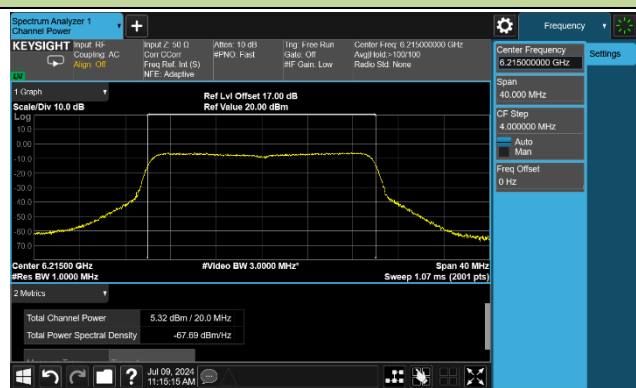
Ant 0



Ant 1



Ant 2

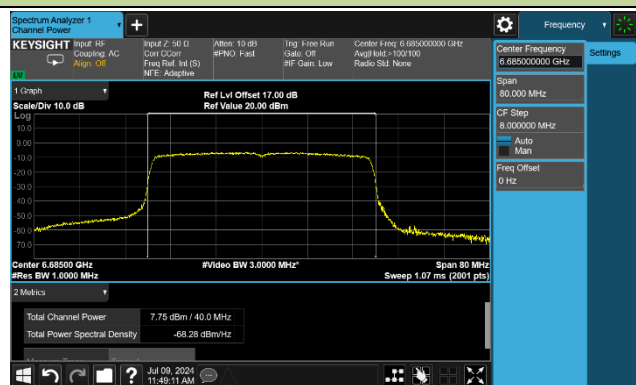


Ant 3



802.11ax-HE40 – Channel 147 (6685MHz) Average Power

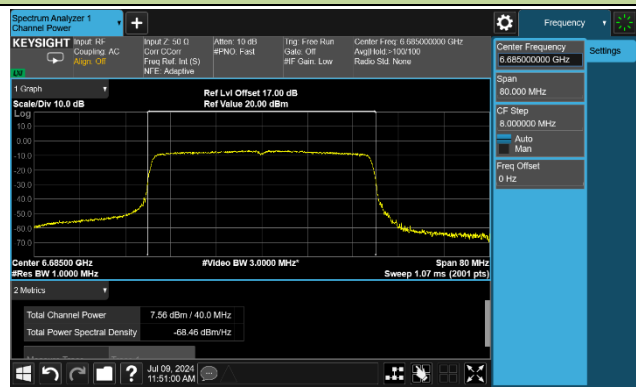
Ant 0



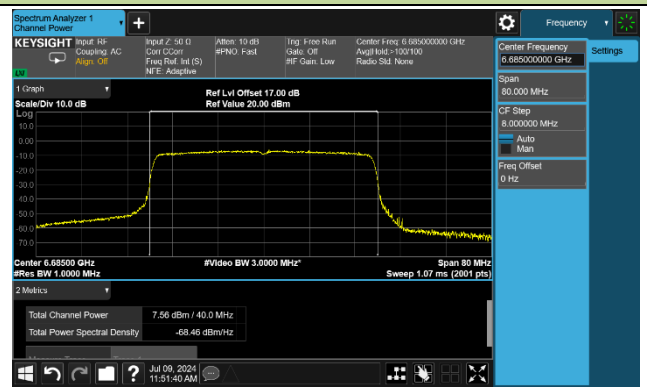
Ant 1



Ant 2

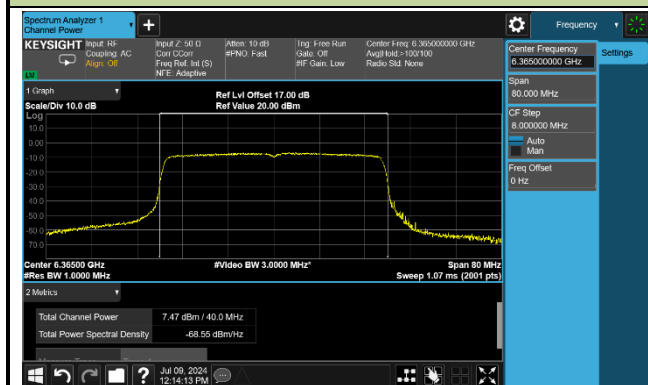


Ant 3

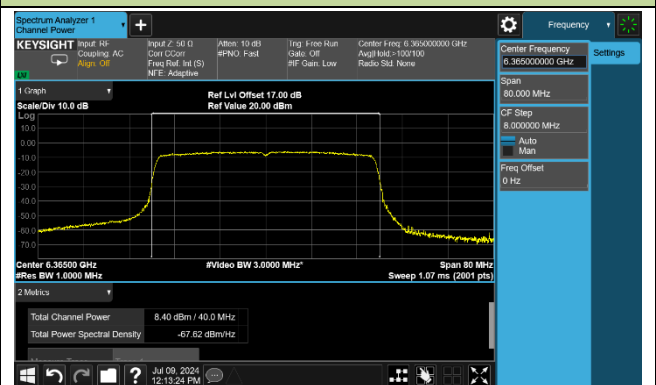


802.11ax-HE40 – Channel 83 (6365MHz) Average Power

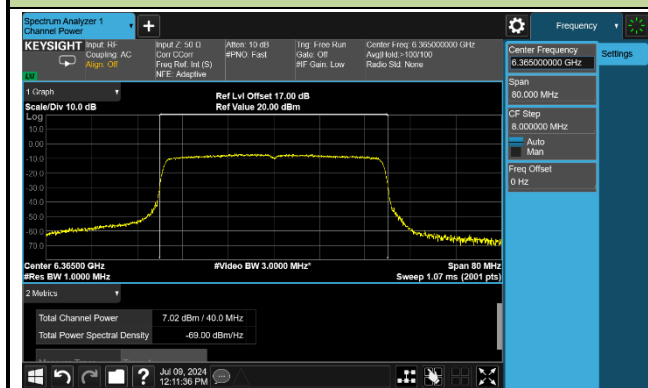
Ant 0



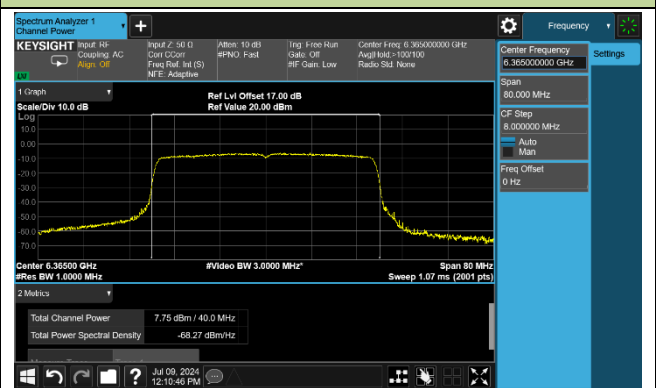
Ant 1



Ant 2

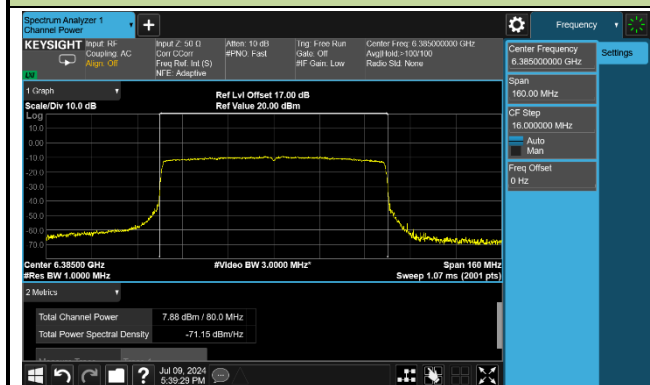


Ant 3

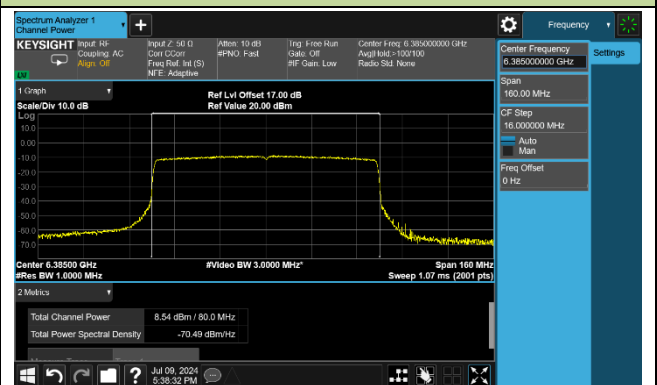


802.11ax-HE80 – Channel 87 (6385MHz) Average Power

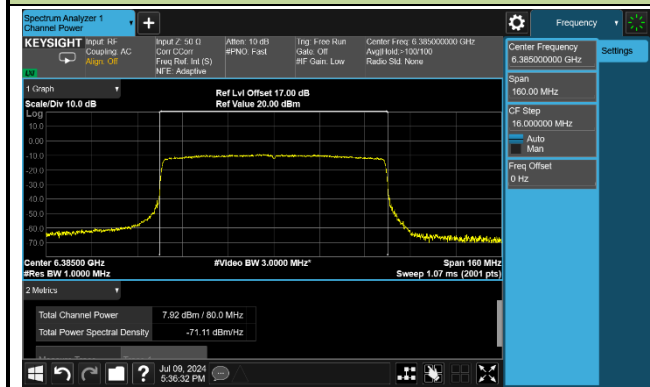
Ant 0



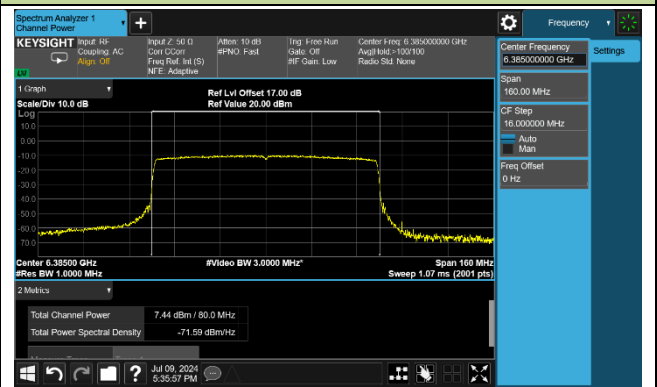
Ant 1



Ant 2

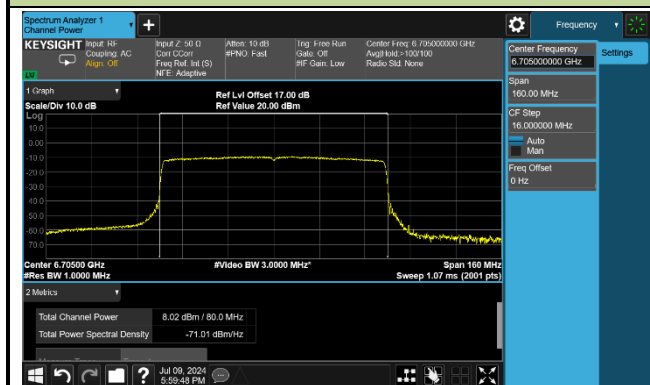


Ant 3

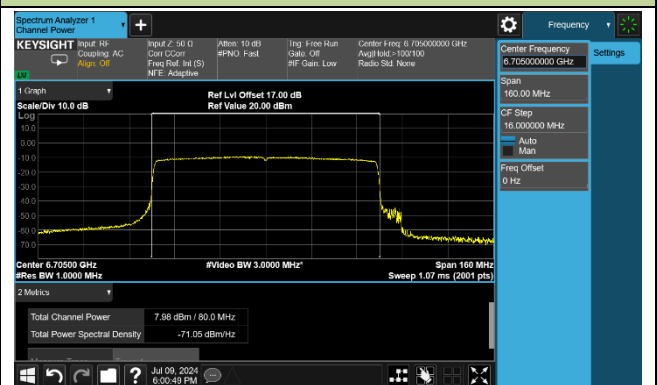


802.11ax-HE80 – Channel151 (6705MHz) Average Power

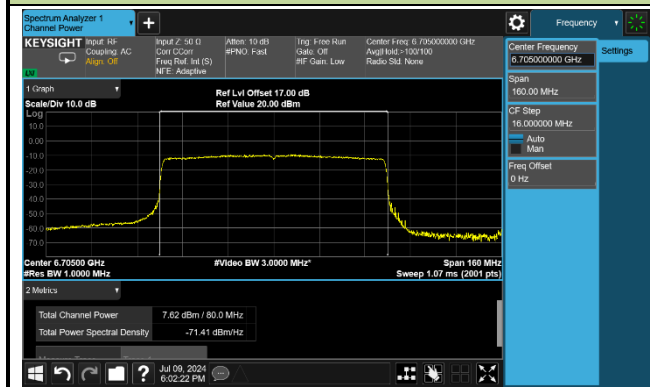
Ant 0



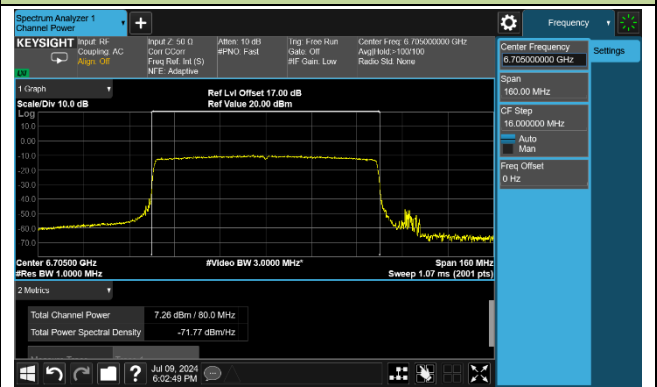
Ant 1



Ant 2

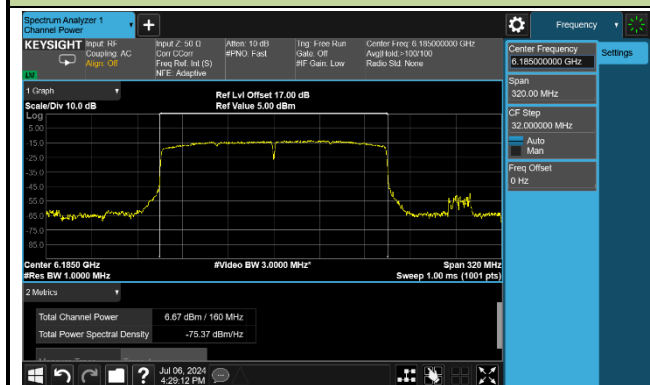


Ant 3

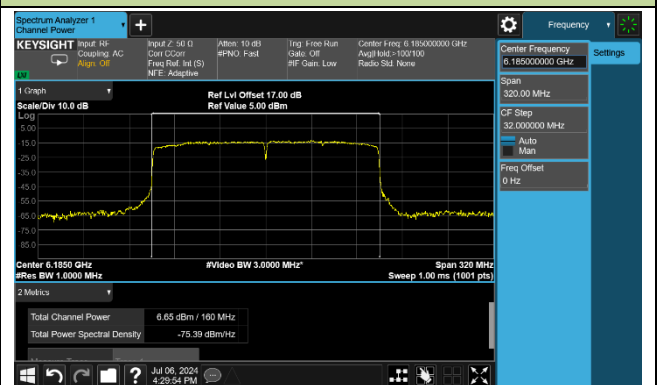


802.11ax-HE160 – Channel 47 (6185MHz) Average Power

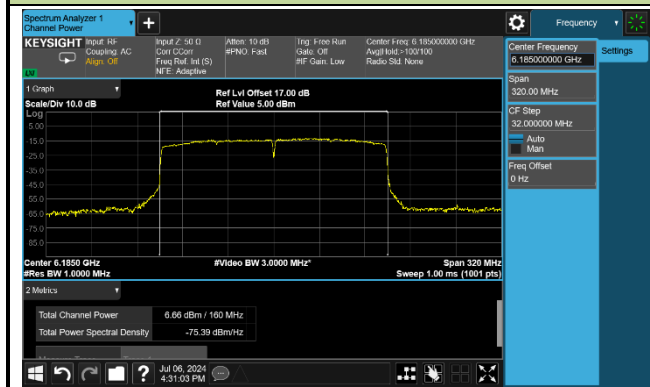
Ant 0



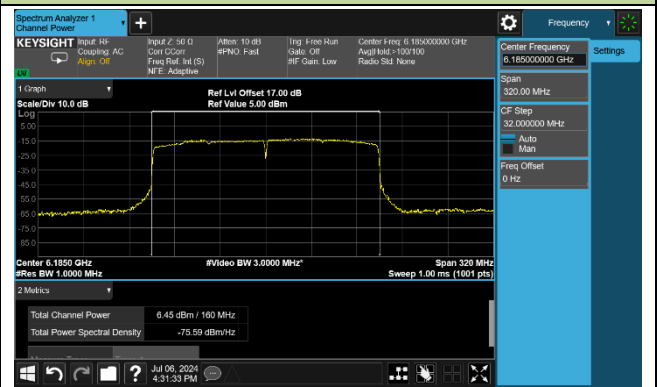
Ant 1



Ant 2

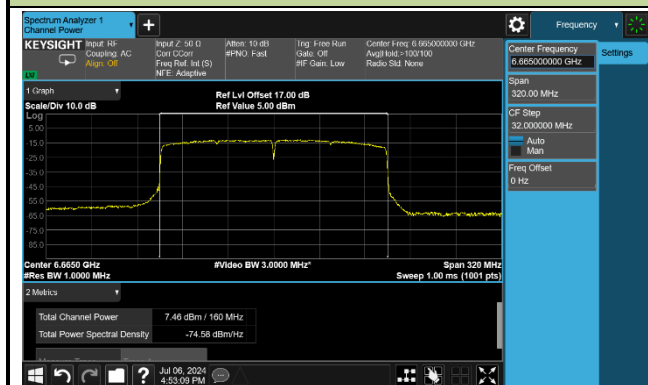


Ant 3

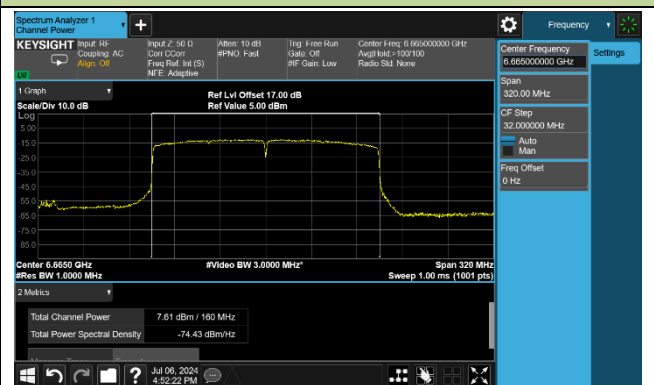


802.11ax-HE160 – Channel 143 (6665MHz) Average Power

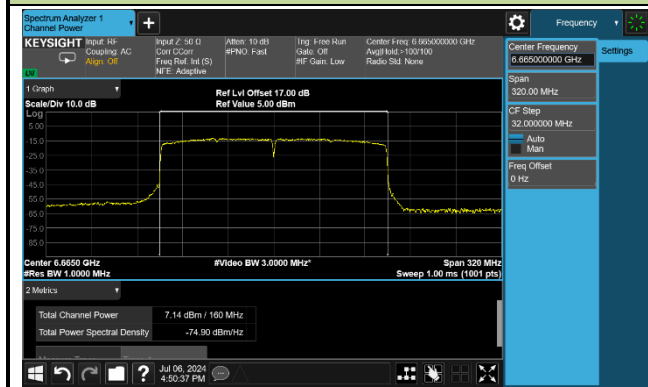
Ant 0



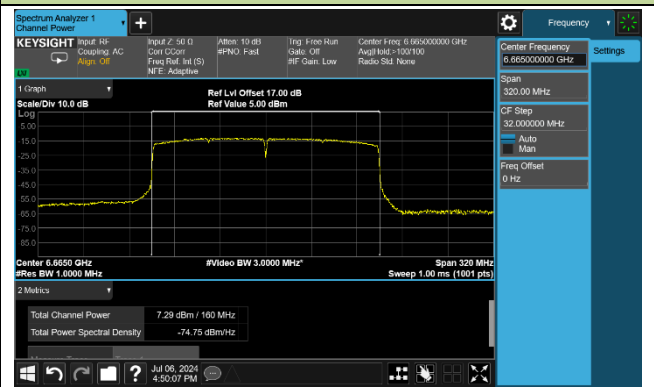
Ant 1



Ant 2

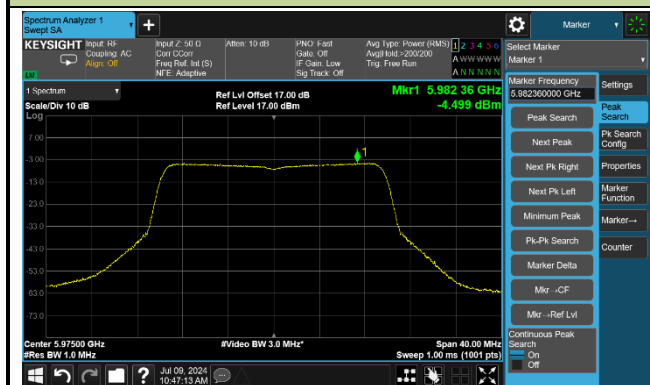


Ant 3

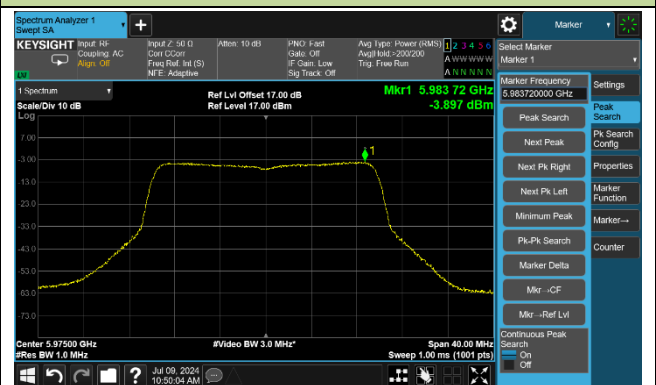


802.11ax-HE20 – Channel 5 (5975MHz) Power Spectral Density

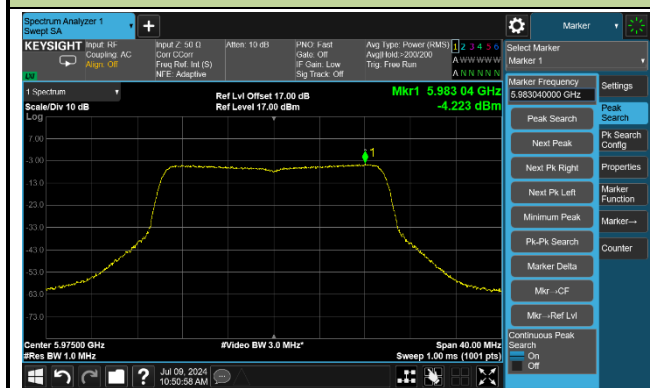
Ant 0



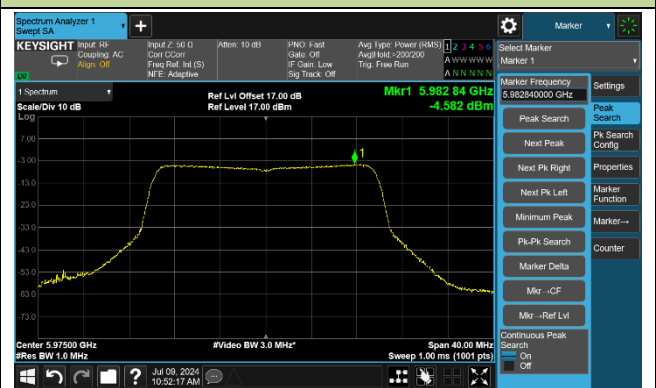
Ant 1



Ant 2



Ant 3

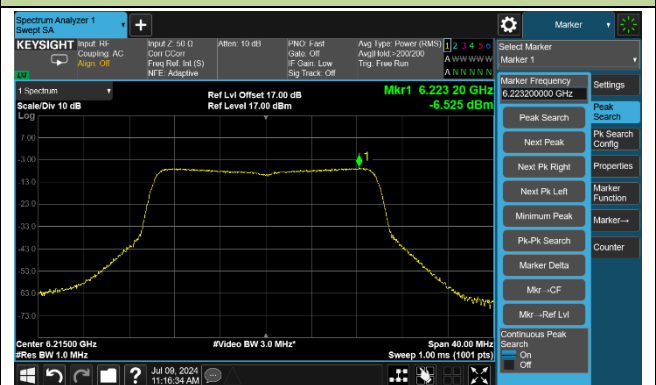


802.11ax-HE20 – Channel 53 (6215MHz) Power Spectral Density

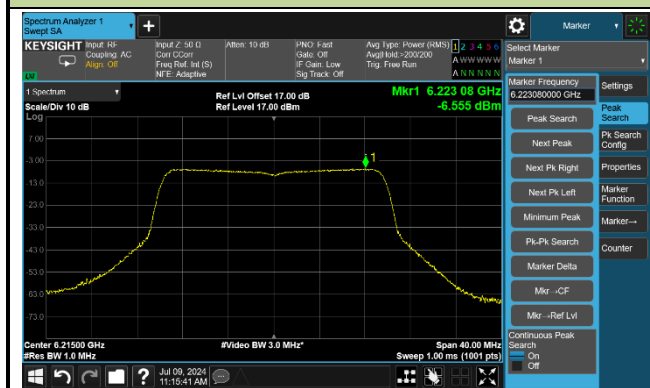
Ant 0



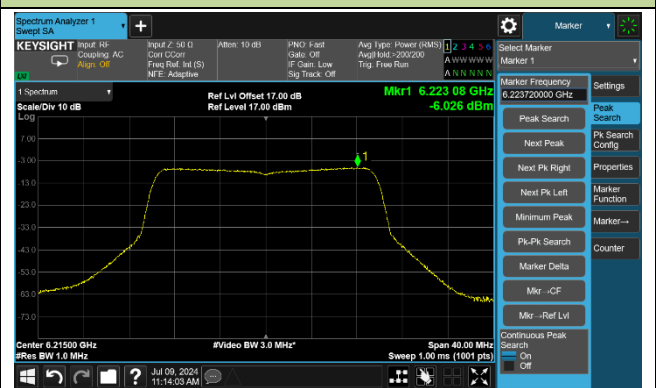
Ant 1



Ant 2

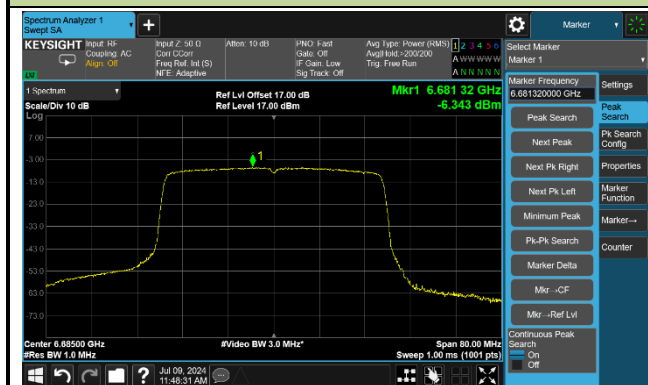


Ant 3

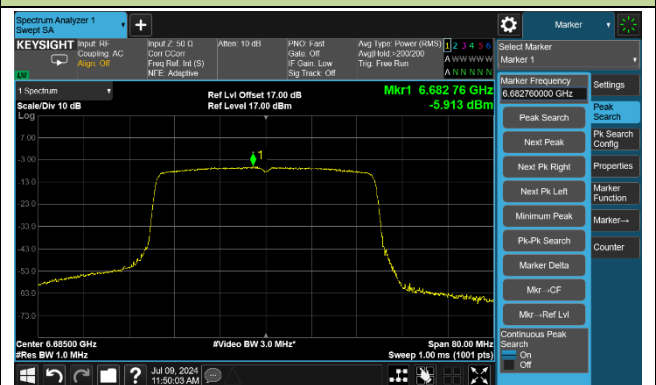


802.11ax-HE40 – Channel 147 (6685MHz) Power Spectral Density

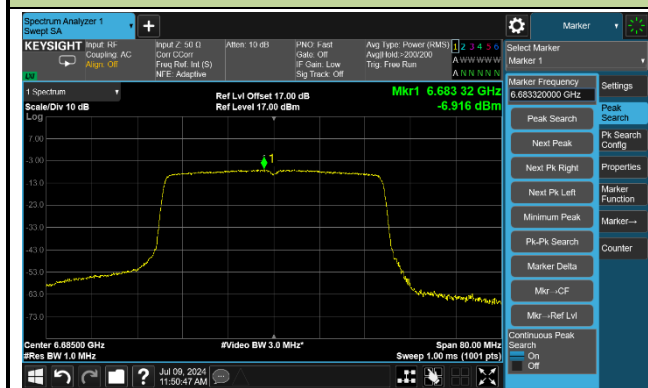
Ant 0



Ant 1



Ant 2

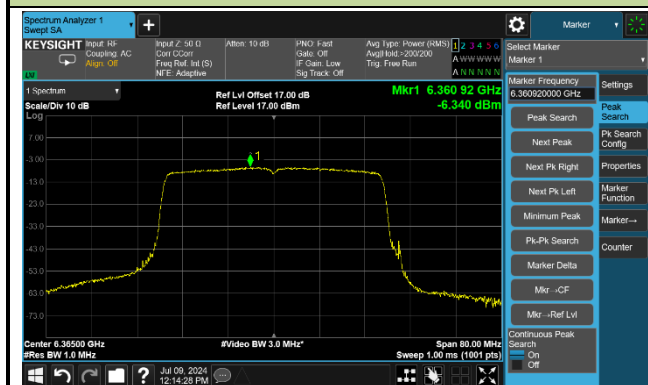


Ant 3



802.11ax-HE40 – Channel 83 (6365MHz) Power Spectral Density

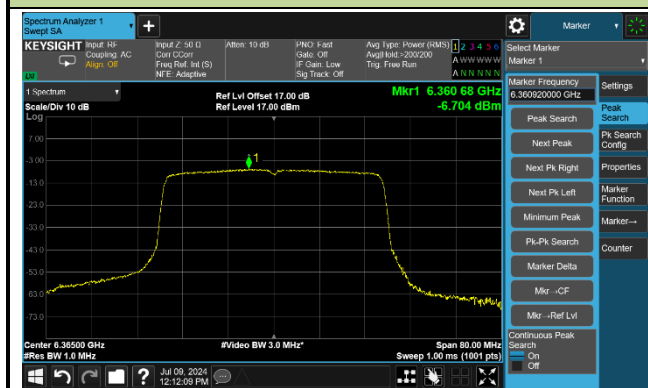
Ant 0



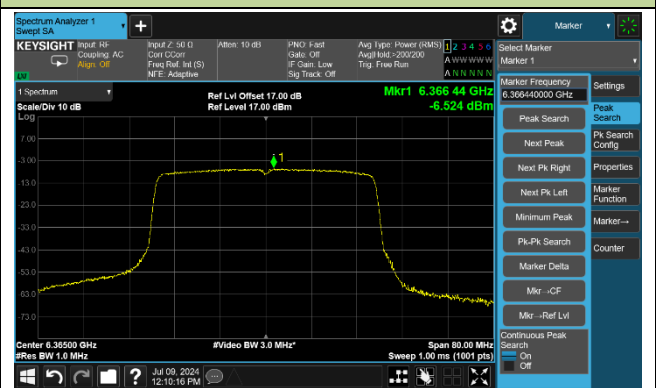
Ant 1



Ant 2



Ant 3



802.11ax-HE80 – Channel 87 (6385MHz) Power Spectral Density

Ant 0



Ant 1



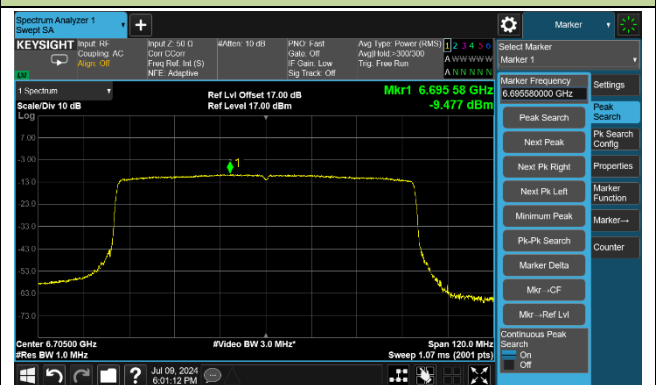
Ant 2



Ant 3



Ant 1



Ant 3

