



**Federal Communications Commission  
Office of Engineering and Technology  
Laboratory Division**

August 9, 2023

**AFC DUT TEST HARNESS TESTING**

**1. TECHNICAL REQUIREMENTS**

The following Tables 1 and 2 outline key protocol requirements for a Standard Power Access Point or Fixed Client device (from here on referred to as standard AP/fixed client device). Table 1 outlines protocol requirements between a standard AP/fixed client and an AFC that can be demonstrated via a Test Harness (AFC simulator)<sup>1</sup>. This is referred to as the “DUT Test Harness Report” throughout KDB 987594. When using the WiFi Alliance AFC Device (DUT) Compliance Test Plan, the test report for certification must include at a high level the successful Tool Report that is provided from the AFC DUT test harness and the applicable DUT spectrum inquiry request/response logs as appendices. The testing shall be performed by an Accredited and FCC recognized test lab. Table 2 lists the key protocol requirements between a standard AP/fixed client and an AFC that may not be possible to test via a test harness.

**Table 1 – Standard AP or Fixed Client protocol Testing available via a Test Harness**

<b>47 CFR Section</b>	<b>Requirement</b>
15.407(k)(1)	Transmit only as instructed by AFC System
15.407(k)(8)(i)	Register with AFC System prior to initial transmission. Register with AFC System after change of location
15.407(k)(8)(ii)	Provide required registration parameters. Update AFC System upon change of registration parameters
15.407(k)(8)(iii)	Registration either directly or via Network Element/Proxy
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
15.407(k)(8)(v)	Security of connection to AFC
15.407(k)(9)(i)	Report location and uncertainty from power-off condition

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<sup>1</sup> Devices may use the test harness developed by WiFi Alliance to demonstrate compliance with the associated requirements. The test harness is available at <https://www.wi-fi.org/discover-wi-fi/6-ghz-afc-resources> and can be tested using the WiFi Alliance AFC Device (DUT) Compliance Test Plan. Devices that do not use the WiFi Alliance protocol/test harness must identify a specific AFC and demonstrate compliance using that AFC.

**Table 2- Standard AP or Fixed Client protocol Testing that may not be available via a Test Harness\***

<b>47 CFR Section</b>	<b>Requirement</b>
15.407(k)(8)(iv)	A timed test where the device contacts the AFC system daily and grace period - attestation
15.407(k)(9)(i)	Automatic determination of geolocation System–identified in geolocation general description and justification report
15.407(k)(9)(iii)	Security of connection to external geolocation source - attestation
15.407(k)(9)(iv)	Geolocation accuracy and uncertainty determination System–identified in geolocation general description and justification report

\* Separate attestations and test reports are required when testing through a test harness is not available.

## **2. NETWORK ELEMENT/PROXY**

A standard power access point that requires or has the option to be managed with a network element representing multiple standard power access points must demonstrate compliance with the AFC DUT test Harness communicating through the network element.

A detailed description of the network element communication network and protocol used between a standard access point, network element, and AFC shall be provided as an operational description exhibit. This description shall also include a security statement by the grantee that no third party can control, authorize or allow a standard access point to radiate emissions in the 6 GHz band any other way than permitted by an AFC-registered session. Third parties are end-users, professional installers, and authorized distributors. Non-third parties are only the grantee or contactors working on behalf of the grantee. The grantee remains the responsible party.

### **Change Notice:**

**08/07/2023:** 987594 D05 AFC DUT Test Harness Testing v01 is the initial publication.

**08/09/2023:** 987594 D05 AFC DUT Test Harness Testing v01r01 replaces 987594 D05 AFC DUT Test Harness Testing v01r01 corrected error in section 2. NETWORK ELEMENT/PROXY from “emissions in the 6 MHz band” to “emissions in the 6 GHz band”.