

Federal Communications Commission  
Office of Engineering and Technology  
Laboratory Division Public Draft Review

## **Draft Laboratory Division Publication**

**Title:** Software Configuration Control

**Short Title:** Software configuration control

**Reason:** Revision of a current publication

**Publication:** 594280

**Keyword/Subject:** Section 15.202; Country Code Selection; Part 15C, Professional Installers; software configuration control

**First Category:** Radio Service Rules

**Second Category:** Part 15 Intentional Radiators

**Third Category:**

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**Question:** Can a Part 15 transmitter such as an 802.11b/g, or a UNII device, allow users or professional installers to set the country code, or permit other configuration controls to ensure compliance; and is it sufficient to provide in the user's manual a statement similar to: "WARNING: Select only the country in which you are using the device. Any other selection will make the operation of this device illegal."?

**Answer:** Section 15.202 of the rules requires that master devices marketed within the United States must be limited to operation on permissible Part 15 frequencies, and such devices **cannot** have the ability to be configured by end users or professional installers to operate outside the authorized bands.

Further, selecting country codes or setting other configuration options for different regulatory domains is not permitted if the transmitter can be configured, or has the ability, to operate with technical parameters outside the FCC regulations in any bands; or if the transmitter has not been approved by FCC certification for such configurations.

It is permissible to allow the selection of different regulatory domains, if the regulatory domain(s) selected configures the transmitter to operate only in bands, with technical requirements permitted by the rules, and in compliance with the certification as granted.

If the device certification requires professional installation, installers may be allowed access to certain configuration parameters when on-site (remote access is not permitted); and then only the specific configuration parameters identified in the equipment authorization may be configured on-site. On-site adjustments to the transmitter's frequency selection parameters or certain other technical parameters like Dynamic Frequency Selection (DFS) using country codes is not permitted.

Any device meeting the definition of a client as specified in Section 15.202 may have the ability to operate on other regulatory domain frequencies if it is under control of (*i.e.*, automatically associated with) a certified master device.<sup>1</sup> If a device is approved as a master in certain bands and as a client in other bands, the grantee must ensure that there are no software updates or capabilities that will allow the device to operate outside its authorized capabilities in the U.S. for each approved band.

Many devices referred to by the Wi-Fi industry as "client devices" may not meet the definition of a Section 15.202 client, and must be approved as master devices on U.S. authorized frequencies, and in accordance with the grant conditions. To qualify as a Section 15.202 client, a device cannot initiate, or be configured to initiate, any transmission including probes, beacons, and ad-hoc mode transmissions. If a device supports such network initiating functions, it has to be approved as a master device for that particular band.<sup>2</sup> For devices approved under Section 15.407 subject to the Dynamic Frequency Selection (DFS) requirements, "client devices" capable of initiating such network probes or ad-hoc mode transmissions must have radar detection functionality and must be approved with that capability.

If a transmitter is approved as a non-SDR (Software Defined Radio) master or client module, the grantee must make sure that the Other Equipment Manufacturer (OEM), or any third party software provider, does not have the ability through software to allow for country code settings or other configuration controls that permit the device to operate outside the conditions of its grant. (See Section 2.944 and KDB 442812).

All applications for equipment authorization for transmitters that can have radio parameters, or other technical parameters, reported to the Commission set by software must have an attestation indicating that no third party will have software, or configuration control, to program the device out of compliance of the technical rules under which it has been certified.

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<sup>1</sup> A client device is defined in Section 15.202 as "a device operating in a mode in which the transmissions of the device are under control of the master. A device in client mode is not able to initiate a network."

<sup>2</sup> Such devices may still be referred to as "Wi-Fi" clients.