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Wi-Fi Channels range selection based on geo-location

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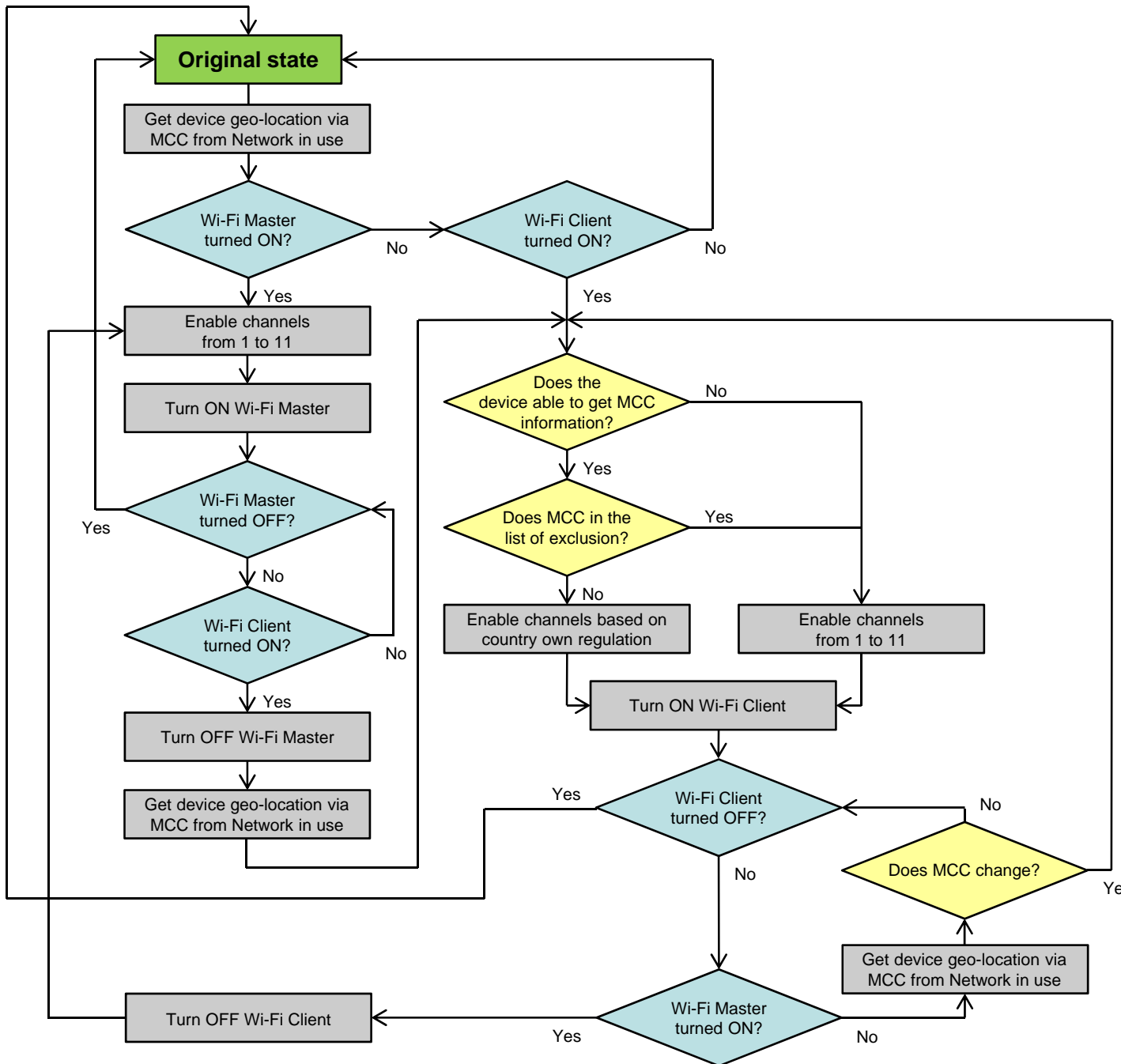
Operational Description





- This device is able to operate on Channels 12 and 13 (in Wi-Fi 2.4 GHz band) under certain circumstances. Therefore, we must ensure that it complies with the out-of-band emission requirements of FCC.
- By default, Channels 12 and 13 are disabled. It's the case when the device is used as Wi-Fi Master Device (Wi-Fi Mobile Hotspot, Wi-Fi Direct, Miracast, etc.).
- But when the device is used as a Wi-Fi Client Device (i.e. under the control of a Wi-Fi Master Device), it has the ability to enable Channels 12 and 13 based on geo-location information.
- Geo-location information is used to determine if the device is operating inside or outside the U.S., and enable different range of channels accordingly.

- The geo-location is based on Mobile Country Code (MCC) provided by Cellular Network and received directly by a receiver inside the device.
- Every times Wi-Fi Client is turned ON, the device will check its location based on MCC information provided by the Network. And as long as the device has Wi-Fi Client turned ON, **it will check the geo-location information by monitoring the MCC of the Network all the time. If the device determines its location inside the U.S. and its territories (+ Mexico due to its terrestrial border with the U.S.), it will use restricted number of channels (from 1 to 11). Otherwise, the device will use channels based on the country own regulation of allowable channels.** And if the device can't determine its location (no Network coverage or Air Plane mode), it will use restricted number of channels (from 1 to 11) to comply with FCC regulation.

- This mechanism is the highest priority in this device, and won't be overridden by any requests of the Master Device (ex: poor RSSI, etc.), and will not be overridden by any other event (ex: low battery, AC-plugged, etc.). There is no software parameters or any 3rd party software that can modify/disable this mechanism.

- The flow chart is illustrated on next page.



-  State where the device is already powered ON, and all Wi-Fi are turned OFF.
-  Action of end user.
-  Action of the device.
-  Verification initiate by the device.

Note: The device cannot receive MCC information from all base stations around it. Therefore, the MCC information from the Network on which the device is connected to is used.

And to avoid selecting the wrong Wi-Fi channels at U.S. border with Mexico, Mexico's MCC (334) was added to the list of exclusion.

List of exclusion: 310, 311, 312, 313, 314, 315, 316, 330, 332 and 334.

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obrigado 谢谢 ٱrazie thank you