Cambium Networks™

Station Scanning LEDs, Preferred AP List, and DFS Alternative Frequency Configuration

Introduction

This document provides high level description for the following:

- STA frequency scanning LED indication
- STA AP preferred list configuration
- AP DFS alternative frequency configuration

STA Frequency Scanning LED Indication

During the STA scan process, the STA will control LEDs to indicate the scanning process is in progress. When the STA is in scanning mode, the STA should first set RF LED3-> on, RF LED2-> off, RF LED1-> off for 0.5 seconds, then set RF LED3-> off, RF LED2-> on, RF LED1-> off for 0.5 seconds, then RF LED3-> off, RF LED2-> off, RF LED1-> on for 0.5 seconds. This procedure should continue until STA is connected to the AP and then RF LEDS will display the received RSSI signal strength from AP.
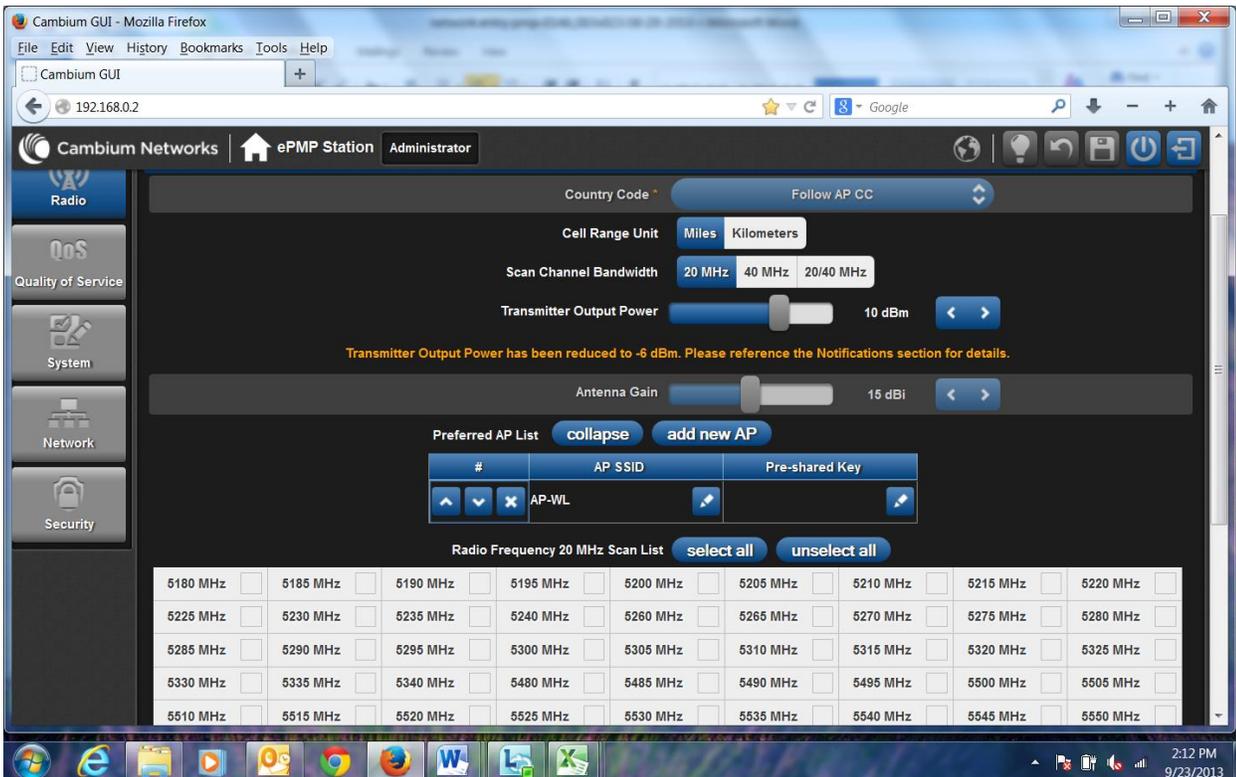
STA Preferred AP List Configuration

STA can be configured to only allow to connecting to specific AP. This is to simplify the network planning and load balancing. At the STA GUI "Configure" -> "Radio" menu the STA "Preferred AP List" can be configured.

User can add the Preferred AP identification (SSID) and its associated Pre-shared Key if the AP is in WPA2 mode. If the preferred AP is in "Open" mode, the Pre-shared Key should be blank. If the AP preferred list is configured and STA does not detect any preferred AP, the STA shall continue the scanning process until a preferred AP is detected. If more than one preferred AP is detected, then the STA must select the AP from the list of detected preferred APs based on the RSSI and CINR criteria specified in the network entry criteria. The maximum number of AP preferred list is 16.

The following figure depicts that there is no preferred AP configured.
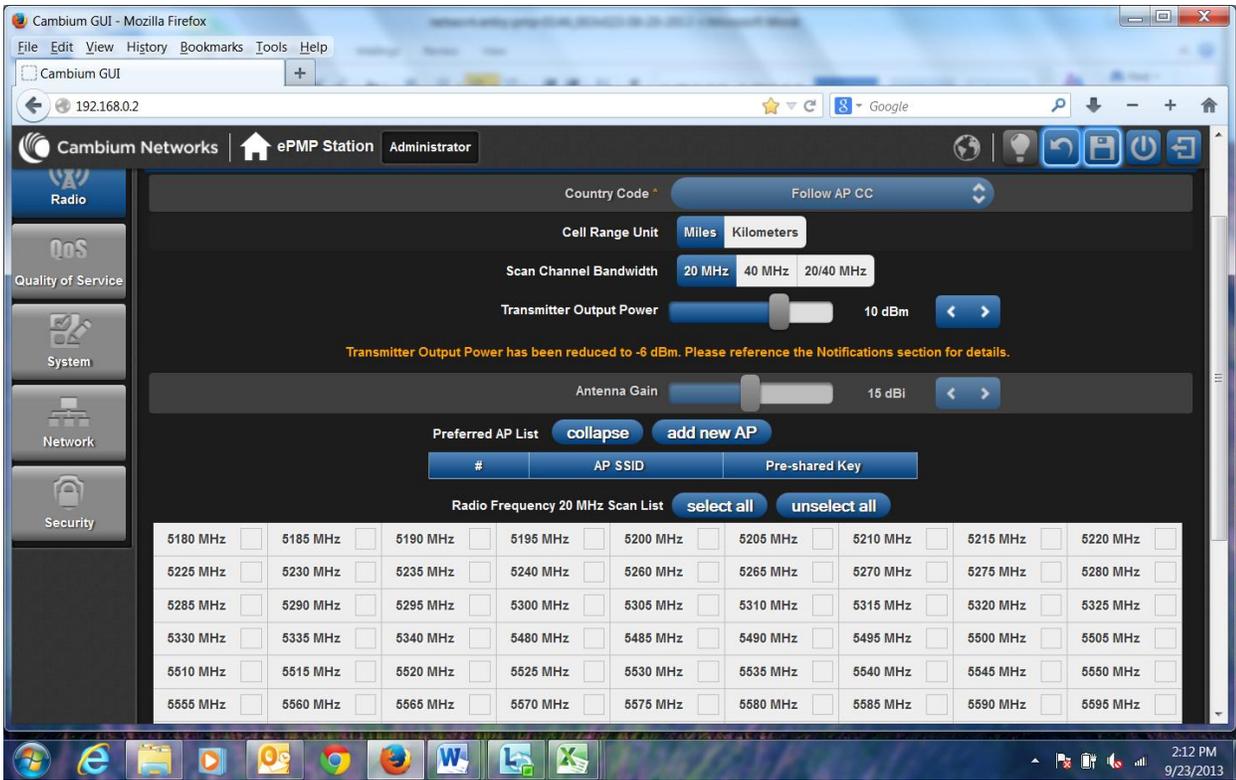
The following picture shows that there is one preferred AP (SSID "AP-WL" and Pre-shared Key is blank (no encryption)) is configured.

The following picture shows that there are two preferred AP (AP 1 -> SSID "AP-WL" with Pre-shared Key is blank(no encryption). AP 2-> SSID "AP-TEST" with Pre-Shared Key configured (encryption is on).) are configured.
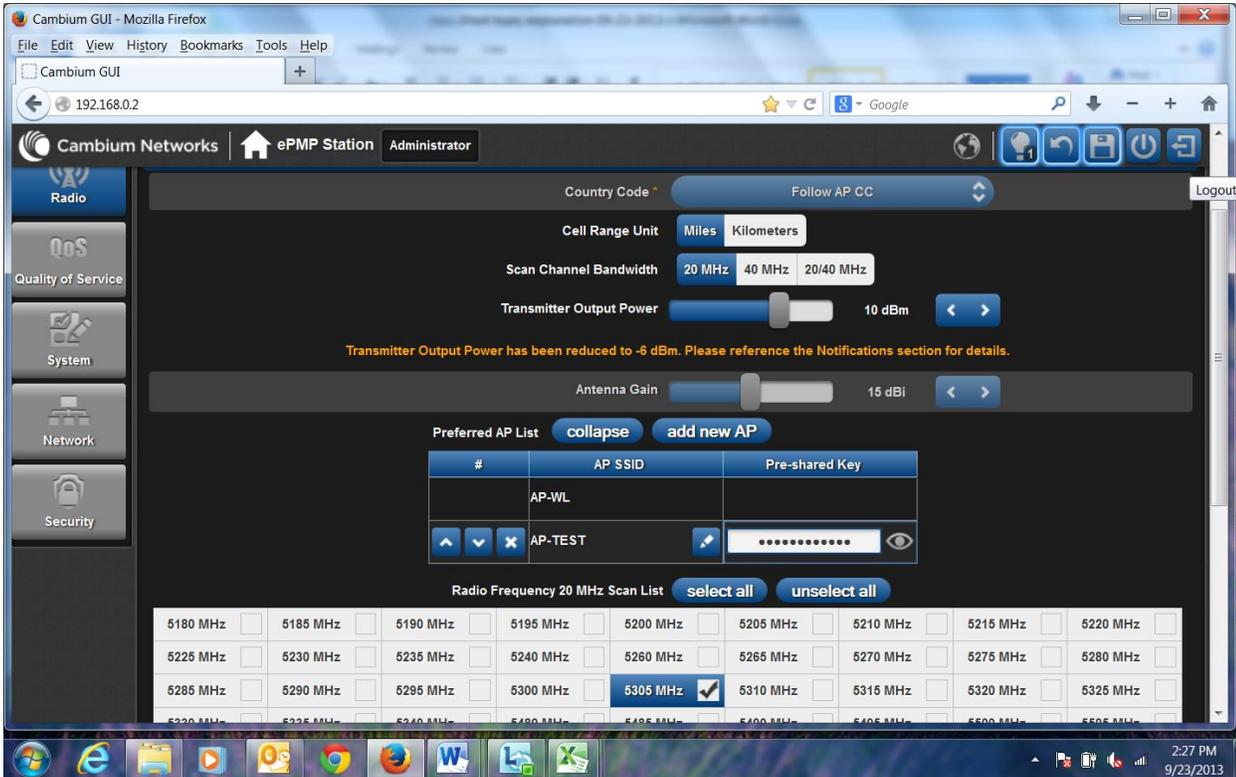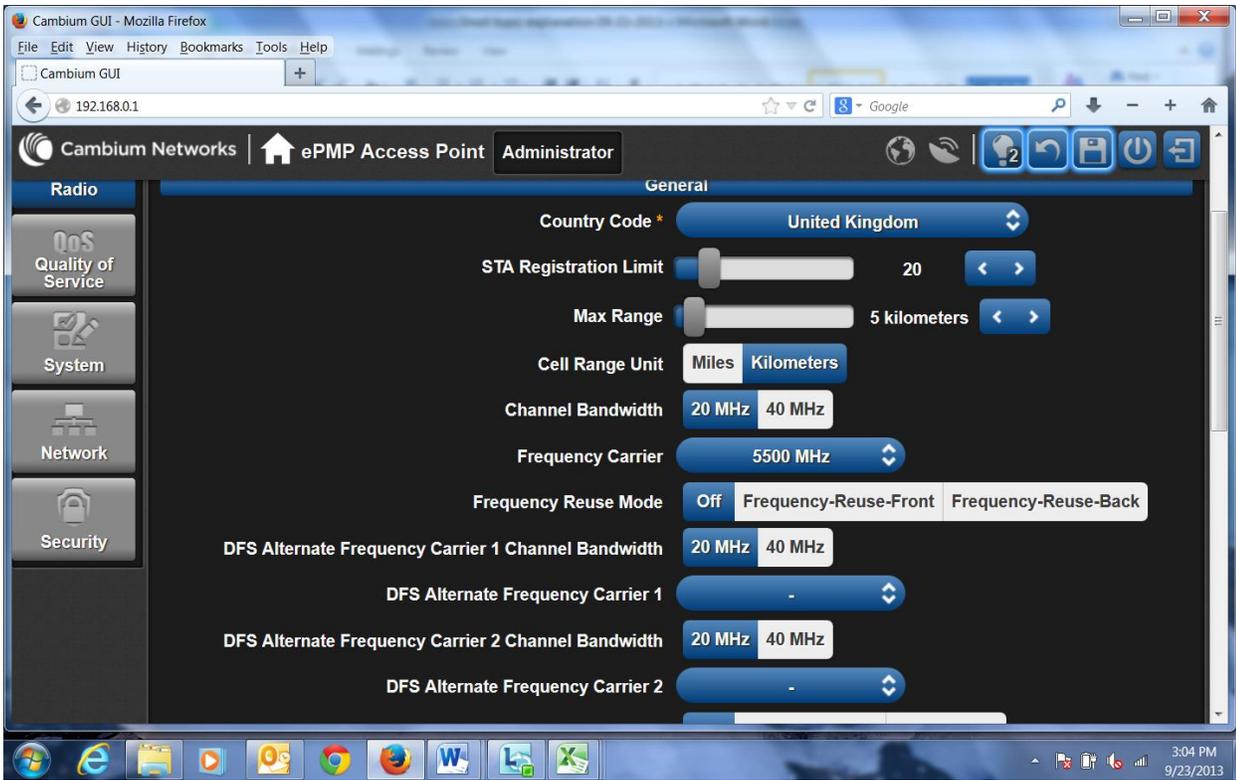

AP DFS Alternative Frequency Configuration

DFS (Dynamic Frequency Selection) is required for FCC 5.4GHz and 5.2GHz band, ETSI 5.4GHz and 5.7GHz and other countries that require DFS detection.

When the radar signal is detected at the primary channel ("Frequency Carrier" in GUI display), user has the option to move the device operating frequency to an alternative frequency channel. The ePMP supports 2 different alternative frequencies. When the primary channel detects DFS, the operating frequency can be moved to alternative frequency 1 if the alternative frequency 1 is configured. When the alternative frequency 1 channel detects DFS, the operating frequency can be moved to alternative frequency 2 if the alternative frequency 2 is configured. User can also select the different bandwidth for each alternative frequency.

The following figure depicts the GUI menu for DFS alternative frequency configuration (No alternative frequency is configured). Note that alternative frequency is marked as "-".

The following figure shows the GUI menu for DFS alternative frequency configuration (Alternative frequency 1 and Alternative frequency 2 are configured).