



October 4, 2011

Re: FCC ID: **SWX-M5LD**  
Applicant: **Ubiquiti Networks, Inc.**  
Correspondence Reference Number: **40382**  
Form 731 Confirmation Number: **EA878432**  
Date of Original E-mail: 09/26/2011

Dear Andrew Leimer,

Please see our response below:

- 1) Does this device meet the requirements for operation in the 5470 – 5725 MHz band specified in KDB 443999?
  - Yes.
  
- 2) Is this an indoor device, outdoor device, or multi-use device? A multi-use device can operate in both indoor and outdoor configurations; such device will have to meet all the requirements for outdoor device.
  - The LocoM5 is for Outdoor Use and is professionally installed.
  
- 3) Verify that the 5600 – 5650 MHz band is notched. The test report should include 20 dB BW plots for the 5600 and 5650 MHz band edges and an attestation statement that the device does not transmit in the notched band.
  - Please refer to the test report, there are 20 dB bandwidth plots indicating that the signal does not extend into the 5600-5650 Band.
  
- 4) Verify that this application contains a complete User's Manual and/or Professional Installers Manual. If the manual is not complete, upload an updated User's Manual exhibit.
  - Please refer to the QUG and Installation manuals for the application.
  
- 5) Verify that this device meets the uniform channel spreading requirements on the remaining (non-notched) channels once the device is in operation.
  - The LocoM5 is designed to be professionally installed and managed. As such, it is primarily the responsibility of the installer to configure the devices to uniformly load the channels.
  - Ubiquiti provides management software to our installers which makes this feasible across large numbers of devices.
  - In the absence of an installer specified operating frequency, the Loco M5 will make an intelligent channel selection.
    - The Loco M5 will periodically scan the channels in the approved bands.
    - The channel selection is based on the amount of energy and traffic detected in the band during periodic sampling.
    - Lightly loaded channels are naturally preferred over heavily loaded channels and channels with other non-802.11 equipment operating on them.
    - Among lightly loaded channels, due to the narrow sampling window and random intersection of sampling with detected intermittent transmissions, the selection among the lightly loaded channels tends to be unpredictable and in practice, results in uniform loading.



6) Explain how this device meets the Software Configuration Control requirements of KDB 594280 including country code selection – see draft KDB at (<https://fjallfoss.fcc.gov/eas/comments/GetPublishedDocument.html?id=205&tn=511416>). If there is any user permitted configuration control, please explain what controls are provided to the user and if any will take the device out of compliance; also explain what prevents the end user from downloading and operating non-US software.

- Loco M5 products shipped in the United States have a factory locked country code.
- There is no software support for changing the country code.
- Tampering with the country code will render the device inoperable.
- The Loco M5 restricts frequency selection to bands for which the device has been approved.
- There is no mechanism by which the installer can deviate from approved bands.
- When operated in client mode, the Loco M5 qualifies as a client device under the DFS rules and is not required to implement radar detection.

7) Submit a Letter Exhibit identify the specific expertise and the training required by the professional installers for installing these types of devices.

- Refer the professional installation letter exhibit and QSG exhibit.

8) Explain how this device can meet the 30 MHz frequency separation from TDWR (i.e.: Manually blocking frequencies by the professional installer, device notches 5470 -5680 MHz, etc.)

- The US version of Loco M5 does not transmit on any channel for which transmission frequency separation is below the 30 MHz threshold, and can not be configured to do so.

9) Does the manual for the installers and operators contain the information on how to register the device with the voluntary industry data base if operating within 35 km of any TDWR site location?

- No.
- The US version of Loco M5 does not transmit within 5470-5725 MHz band and can not be configured to do so.
- The US version of Loco M5 does not transmit within 5600-5650 MHz band and can not be configured to do so.
- The US version of Loco M5 does not transmit on any channel with a separation (center-to-center) of 30 MHz or less from the closest TDWR frequency, 5647 MHz. Loco M5 exceeds the 30 MHz requirement in all possible configurations.

For any additional information, please let me know.

Regards,

A handwritten signature in blue ink that reads "Jennifer Sanchez".

Jennifer Sanchez  
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