August 21, 2013

To Whom It May Concern:

Regarding the application for certification of:

FCC ID: VD4Q53R6
IC ID: 7162A-Q53R6

Five **electrically identical** devices will be certified under model numbers Q51, Q52, Q53R6, Q70, and Q71. They differ only in the firmware which provides high-level (application specific) functionality. Software running in the device described in the test report has the structure shown in Figure 1.
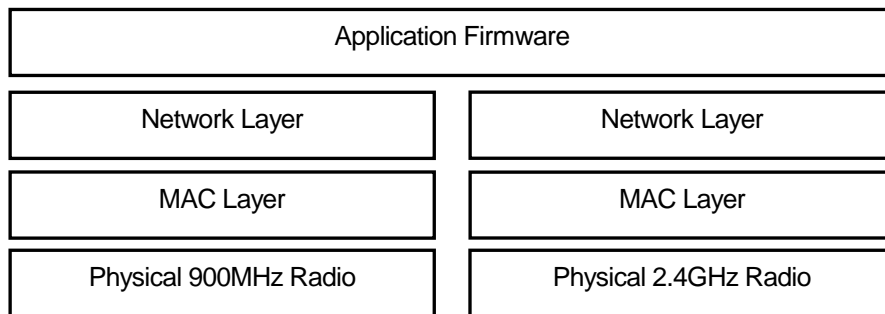
Application Firmware	
Network Layer	Network Layer
MAC Layer	MAC Layer
Physical 900MHz Radio	Physical 2.4GHz Radio

Figure 1: Q52 Architecture

Commonality

All five models have the same MAC Layer (firmware) and Physical Radios (hardware).

Q51

The Q51 has no network layers. The application firmware controls the Media Access Control (MAC) Layer directly and operates the MAC Layer and Physical Radios almost exclusively in receive-only mode, transmitting only under manual control for short bursts.

Q52

Q52 firmware was used to generate test data and fully exercises the functionality of the radios.

Q53R6

The Q53R6 has the same architecture as the Q52, but presents a SOAP and REST based control interface on the Internet interface. The Network, MAC, and physical radios are identical to the Q53R6.

Q70

The Q70 has the same MAC Layers, and the same Physical Radio layers as the Q52. It uses IPv6 instead of the IPv4 used in the Q52. Only its Application Firmware and Network Layers differ from the Q52.

Q71

The Q71 has the same architecture as the Q70, but with some added application level components for a custom application. It also includes one RS-485 interface.

Sincerely,

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