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Attn: Roland Gubisch, ITS

Re: AirMax 580/5800, FCC ID: QGQ-AM581 and rationale for compliance to 15.407

Dear Roland:

There are several product features that inherently support the intent of 15.407 (c).

The controller, on which resides our software, is responsible for managing, classifying and scheduling the formation of data packets, which are sent to the radio. The radio is a slave to our AirMax software and all transmissions, i.e. management and user data, is controlled by AirMax. If there is no data to be transmitted, no stimulus to the radio is available and no transmission occurs. There is no known or speculatively derived failure mode that will create "false data" that might stimulate the transmitter. Additionally, there are hardware and software watchdogs employed, that in the event of a unit not being able to communicate or operating erroneously, shuts down the radio and reboots the system.

The Cisco radio transmitter data is created completely digitally. A DAC is fundamentally responsible for creation of the modulated carrier. If no data is presented to the radio, no carrier is created (unlike some analog transmitters). Cisco, like many other manufacturers, utilize the Intersil Prism chipset, for which information describing the architecture is available on Intersil's website. There is no known failure mode by which a carrier will be generated unless there is data presented to the radio from the controller. Another inherent feature that prevents operation in the transmission mode is controlled by Cisco's MAC. The transmitter is directed by Cisco's MAC to be biased OFF and T/R switches are directed to be in the receive mode when no data is available to be transmitted.

The up/down converter is inherently incapable of producing a carrier on its own. Dominant failure conditions relevant to the regulation are PA failure or and to a lesser degree, PLLVCO lost-lock condition. PA failures result in low gain or loss in the transmitter chain, incapacitating the transmitter. PLLVCO failure incapacitates the transmitter. Additionally, as for the Cisco radio, the converter's PA and T/R switches are under system (MAC) control and forced to the receive mode (transmitter biased OFF) when no data is available to transmit.

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