

Technical Description for Special FCC 15.407 Requirement

1. Frequency Stability (15.407(g))

FCC 15.407(g) states: "Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user manual."

The PC50E-8-FC/A device uses 8 channels between 5.18GHz and 5.32GHz. The carrier is 20MHz wide centered at these frequencies, IE: Channel 6 (5.18GHz) would have the fc centered at 5.18GHz with a band width of 20MHz or 5.17 to 5.19GHz. The provides a guard band of 20MHz (5.17GHz – 5.19GHz)

The PC50E-8-FC/A device also required a +/- 20ppm XTAL over temperature and with aging. This is required per the 802.11a specification. Based on the tolerance of the XTAL and the 20MHz guard band between 5.15GHz and 5.35GHz the device will maintain emissions with the UNII 1 and 2 bands under normal operating conditions.

2. Discontinue Transmitting with absence of Data or operational failure (15.407 (c))

FCC 15.407(e) states: "The device shall automatically discontinue transmission in case of either absence of information to transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met."

Data transmission is always initiated by software, which is then passed down through the MAC, through the digital and analog baseband, and finally to the RF chip. Several special packets (ACKs, CTS, PSpoll, etc...)are initiated by the MAC. These are the only ways the digital baseband portion will turn on the RF transmitter, which it then turns off at the end of the packet. Therefore, the transmitter will be on only while one of the aforementioned packets is being transmitted.