

Class II Permissive Change to Base Station Antenna

Jonathan Westhues, Perceptive Pixel, Inc.

Mar 6 2012

The base station for the stylus was initially certified as a module, for use with a commercially-available collinear antenna, with gain specified by its manufacturer as +5 dBi. This antenna was designed to mount to an RP-SMA connector; in the test setup, and in the intended end product, the antenna was connected to the module, with a coaxial cable running from the base station module's RP-SMA connector to the antenna's RP-SMA connector.

In this change, we replace that collinear antenna with a slot antenna. This slot antenna was designed internally, and consists of a 1/16" FR-4 printed circuit board. An AMC connector is mounted on one side of this printed circuit board. The signals from that connector are fed through vias to the center of a half-wavelength slot etched in to the copper of the other side of the printed circuit board. This printed circuit board is mounted to cover a hole in the end product's sheet metal enclosure, using electrically conductive adhesive tape to make electrical contact between the copper traces that form the slot antenna on the printed circuit board and the sheet metal enclosure.

The base station module connects to the slot antenna using a coaxial cable, in the same manner as before. Instead of terminating in an RP-SMA connector, to mate with the previous collinear antenna, the cable terminates in an AMC connector, to mate with the slot antenna.

The base station module printed circuit board is unchanged; both its population and its layout of etched copper traces are identical to before.