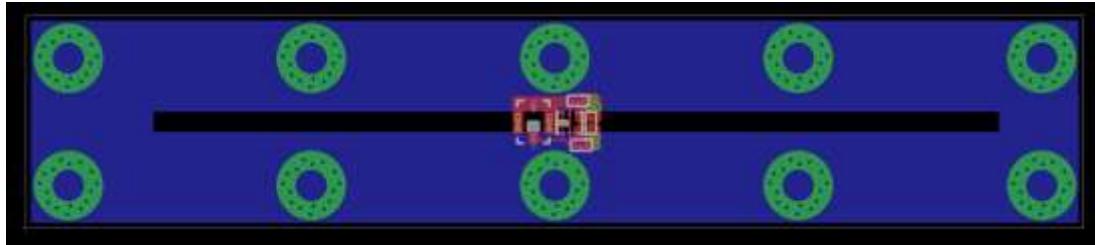


Slot Antenna Specifications

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The slot antenna consists of a 1/16" FR-4 printed circuit board, with copper geometry as pictured below:



An AMC connector is mounted to the lands on the top (red) side of the board. The copper on the bottom (blue) side is etched to form a slot. Lands are present for a matching network, but this is not used; the signals from the AMC connector are connected directly to the center of the slot, through zero-ohm resistors to the vias on either side of that slot.

This printed circuit board is mounted in such a way as to cover a hole in the end product's sheet metal enclosure. The printed circuit board makes contact to the sheet metal enclosure using electrically conductive adhesive tape. The geometry of the sheet metal parts is determined by the mechanical and cosmetic needs of the product, and the length of the slot is tuned in such a way as to achieve the desired center frequency given that geometry.

The gain and directivity of this antenna are not readily calculated theoretically. Numerical simulation in a field solver would be possible, but somewhat complex, due to the large number of nearby conductive parts with complex geometry, and has not been performed. This antenna is similar to an ideal slot antenna, with directivity around 2 dBi. The nearby sheet metal causes the pattern of this antenna to differ from that of an ideal slot antenna, but it's reasonable to expect a maximum directivity of less than 5 dBi. It's reasonable to expect maximum gain at least a few dB less than the directivity, due to losses in the FR-4 and in the electrically conductive adhesive tape attaching the printed circuit board to the sheet metal. To determine the exact pattern and gain of the antenna, it would be necessary to make radiated measurements on an actual prototype; beyond those measurements made during this compliance testing, no such measurements have been made.