

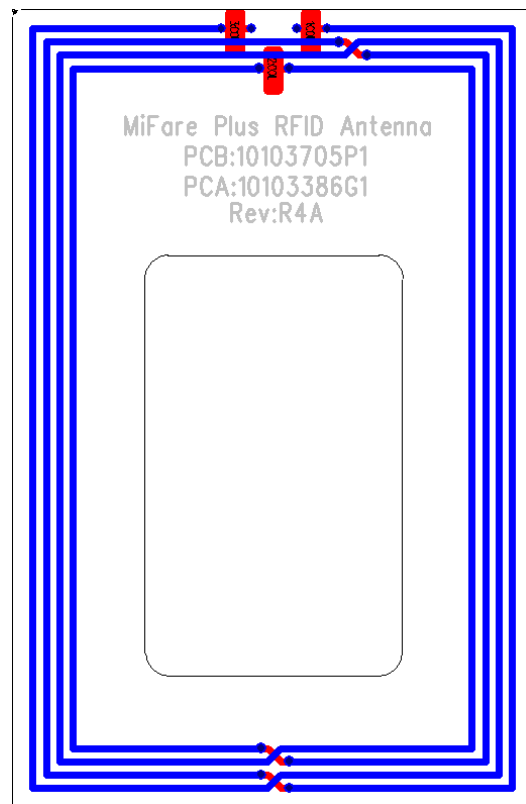
Antenna Information

The RFID antenna used in the MIFARE Plus RFID reader portion of the safe is an inductive loop antenna formed on a PCB that is soldered to a separate PCB containing the RFID drive circuitry. This antenna is an integral part of the RFID drive circuitry.

The antenna consists of 4 interwoven loops of copper trace along the edges of the top layer of a 0.032" thick PCB. The trace length sums to a full length of 24.3 inches (61.7cm). The outer dimensions of the antenna traces are 2.025 inches by 1.285 inches (5.14cm by 3.26cm). A hole through the center of the PCB allows for potting ingress and does not affect the functionality of the antenna.



Figure 1. Left – Image of Antenna



Right – PCB Layout of Antenna

In product assembly, the antenna PCB is soldered to the RFID reader PCB using a fixture to maintain proper spacing between boards. The connection between boards is made with a through-hole header that is SMT soldered to the antenna board, and thru-hole soldered to the reader board. (See Figures 2 and 3)



Figure 2. RFID Reader electrical assembly (with antenna), with standard RFID card

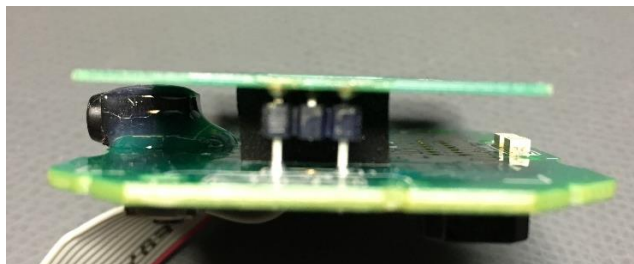


Figure 3. Connection between RFID antenna PCB and RFID reader PCB