

The main unit interacts with user tags (LF 125KHz passive RFID tags) to identify users and tool tags (2.4GHz active tags) to identify objects.

The LF 125KHz RFID reader module is mounted on a separate PCB. It was designed to read passive 125KHz RFID tags with protocol EM4100.

This module generates carrier with frequency of 125KHz to power the passive tag using an analog front end IC - EM4095 which also decodes the received signal from the tag.

This analog front end operates in conjunction with CY8C21234 PSoC MCU which decodes the Manchester signal and performs parity check of the received data and validates it.

The MCU decodes the ID and can transfer it to the host controller via standard TTL level UART protocol.