DFTOUCH General Theory of Operation

This device is a time keeping system for the recording of employee work hours.

The device is a microprocessor system that runs the Android operating system and a custom application that takes care of the employee interaction through a Graphical User Interface. As the person enters the information as to their attendance, this information is sent to a local server or a Cloud server. The device is connected to the aforementioned server via either a wired Ethernet connection or wireless.

Device power may come from one of three sources.

1) AC Adapter,
2) PoE power from Ethernet cable,
3) On board Battery (which is trickle charged from either source #1 or #2).

Additionally, the device can use for user authentication, fingerprint recognition, facial recognition through a camera, RFID badge reader, and barcode/magswipe badge reader.

Powering up the unit takes approximately 30s. After power up, an individual may approach the unit, enter in whether they are starting their work day or ending it, and then offer some sort of authentication as described above. Once the information has been validated, it is sent to the server.

Description of RFID

The 125 kHz antenna transmits detection bursts every 250ms for 50ms.

Once detecting a valid 125 kHz RFID card, it sends out a steady carrier of 125 kHz to read back the card data via PSK.

This is repeated every second until the card is removed and then it goes back to detection mode.

Concurrent to the 125 kHz detection mode, the 13.56 MHz section transmits a detection carrier.

Once a card is detected, it sends a series of encoded PSK data to the card and reads back the card data.

Both transmitters transmit at the same time, however only one card type can be present at any time.