

Operational Description

This wireless electronic door lock contains the following radio components.

BLE/THREAD – Silicon Labs MGM12P32F1024GA (PRE-CERTIFIED MODULE - MAIN PCB)

The BLE radio is the peripheral and is normally in advertising mode. The user can make a connection to the BLE radio with a third-party device, such as a mobile phone. While connected the user can access the lock functionality. In most use cases the BLE radio is used to commission the lock to WiFi network. The user also has the option to use BLE only mode where the lock functionality is accessed via a BLE connection. THREAD protocol is used when the lock is commissioned to a THREAD boarder router, such as Apple's Homepod Mini.

The BLE/THREAD radio uses 1- Mbps 2GFSK modulation and 40 channels from 2400 MHz to 2483.5 MHz spaced every 2 MHz.

WiFi - TI CC3120 (CHIP-DOWN RADTION MODULE WITH TRACE ANTENNA - MAIN PCB)

The WiFi radio is a client that normally will be connected to a home network router. If the user selects to use the WiFi in a persistent connection mode they will have real time access to the lock functionality via an internet connection. The user can also use the WiFi in Eco Mode where a network connection is only established when there is activity at the lock, and periodically when the lock will connect to the network and check the cloud for commands.

The WiFi radio supports 802.11 b/g/n SISO in the following modes

802.11b (1 Mbps up to 11 Mbps), Channels 1 through 11 (USA+CAN)

802.11g (6 Mbps up to 54 Mbps), Channels 1 through 11 (USA+CAN)

802.11n (MCS0 through MCS7), Channels 1 through 11 (USA+CAN)

NFC Reader – NXP CLRC66303 (CHIP DOWN WITH COIL ANTENNA ON KEYPAD PCB)

The NFC reader is located on the outside touchpad of the lock and transmits at 13.56MHz. It operates as a near field multi-protocol NFC front-end device and is able to communicate with ISO/IEC 14443A and MIFARE cards and transponders. If enabled on the lock, users may present their NFC-enabled devices or cards to the face of the touchpad and gain entry.