

Technical Description of Operation

Product Overview

The Carina Reader S1 RCM, Model Number CRCM1101B1, is a Reader Control Module (RCM) for RFID readers operating as part of an electronic door lock or access control system.

The B1 hardware configuration supports Bluetooth-LE (BLE), 13.56 MHz NFC, and 125 kHz Low Frequency (LF) RFID wireless communication protocols. BLE uses an integrated trace antenna, but LF and NFC can accept application specific, near-filed antenna coils via unique FPC connectors on the RCM.

The RCM has two primary means of direct user interaction: two LEDs and a piezo-electric buzzer, which provide visual and audio feedback. User input and feedback options can be expanded, however, via the expansion connector, which provides I2C, wake-up, reset, power, and a single channel LED driver to external keypad or another user interface.

Specifications

General Specifications

| Product Information | | Units |
|-----------------------------------|---------------------|-------|
| Generic Name / Designator: | CarinaReader-S1-RCM | |
| Product Model Number (HVIN /PMN): | CRCM1101B1 | |
| Manufacturer: | PassiveBolt Inc. | |
| Country of Origin | USA | |
| Mechanical | | |
| Maximum Length: | 47.40 | mm |
| Maximum Width: | 47.40 | mm |
| Maximum Height: | 9.23 | mm |
| NFC Connector Part Number: | MOLEX, 512810598 | |
| Thermal | | |
| Min Operating Temperature: | -20 | °C |
| Max Operating Temperature: | 65 | °C |
| Supply Voltage | | |
| Rated Input Voltage Min: | 3.5 | V |
| Rated Input Voltage Max: | 6.5 | V |
| Wireless Protocols | Center Band | |
| BLE | 2.45 | GHz |
| NFC | 13.56 | MHz |
| LF | 125.00 | kHz |

2.45 GHz RF Specifications

| Transmission Parameters | | Units |
|-------------------------|--------------------------------|-------|
| TX Minimum Frequency: | 2.402 | GHz |
| TX Maximum Frequency: | 2.480 | GHz |
| Maximum Data Rate: | 2.0 | Mbps |
| Supported Protocols | | |
| | Bluetooth Low Energy (BLE) 4.2 | |
| | Bluetooth Low Energy (BLE) 5.0 | |

13.56 MHz RF Specifications

| Transmission Parameters | | Units |
|-------------------------|--------|-------|
| TX Minimum Frequency: | 13.553 | MHz |
| TX Maximum Frequency: | 13.567 | MHz |
| Maximum Data Rate: | 106 | kbps |
| Supported Protocols | | |
| | NFC A | |

125 kHz RF Specifications

| Transmission Parameters | | Units |
|-------------------------|-------------------|-------|
| TX Minimum Frequency: | 115 | kHz |
| TX Maximum Frequency: | 135 | kHz |
| Maximum Data Rate: | 15.6 | kbps |
| Supported Protocols | | |
| | HID FSK (26 bits) | |
| | EM Manchester | |