Operational Description of the Validator 3

The Validator 3 is a product for transit operators to collect payment for fares on public transport. The customer (user) interacts with the product though various forms of contactless media. It processes open loop contactless payment media and closed loop proximity smart cards. A barcode reader is also integrated into the validator to provide barcode processing capability in addition to the contactless media processing.

Upon a successful read, all authentication and local validation actions are performed automatically by the validator. The media is authenticated at the validator and an on-line authentication request may also be issued to the Back End for additional validation. Simultaneously, the media is also checked against action lists stored locally (i.e. Risk List). If the result is received from the Back Office in time, the customer is provided with an indication of payment acceptance or denial.

The product uses the RF Module with FCC ID: VPYLBEE5HY1MW for Wi-Fi and Bluetooth (BT Classic and BLE) communications. This module is connected to a Dual Band Antenna (P/N: W3006) with a peak gain of 1.8dBi / 4.5dBi for 2.4-2.5Ghz / 5.15-5.85GHz respectfully. This antenna is used for both Bluetooth and Wi-Fi communication. Wi-Fi and Bluetooth can be used by together as the module is able to use the single antenna for Wi-Fi and Bluetooth coexistence. Connectivity from the device may also occur though the product's Ethernet port (10/100/1000 Base-T).

The Validator 3 contains the TR4 Module (LVCTR4) which provides the NFC contactless reading functionality. The TR4 module is a secure device validated by Underwriters Laboratories (UL) for PCI 5.0 compliance.

The product may also be fitted with an optional LTE modem (FCC ID: RI7LE910CXNF) which is connected to 2 Internal cellular/LTE antenna from 2J, Main and diversity antenna with part numbers 2JF14 24Pa/2JF14 24P with a peak gain of 4.1 dBi. These antenna are used for cellular connection.

A GPS receiver module is also present in the device. This is connected via a UART connection and can allow the application board to know the location at which a user interacted with the product.

A LCD screen is provided and controlled to display images and feedback to the user.

Note in all the above actions undertaken by the product the user has no control over any of the operations that happen on the device. All operations are automated, the user can only present media for validation and a display of the outcome is provided to the user.