# Operation Manual
## 0565A03A-003 /EQT Medusa LegicADVANTRS422/EPA
REVISION 1.0, 2008-02-26

The 0565A03A-003 is a RFID Read-/Write-Device (short: reader) which is compatible to all Legic Prime cards. The reader also supports ISO14443A and ISO15693 and all cards compliant to these standards. It provides a serial interface RS422 to output or exchange data with a host computer (typically an Equitrac Page Counter Unit, a printer or a copy machine) and a 13.56MHz inductive interface to supply power to and exchange data with the Mifare/ISO compliant card (or other available form-factors such as tags, key-fobs). The host computer can control a bi-colour LED and a beeper to interface with the user.

## Mounting and Connection

The reader generates a magnetic field with the frequency of 13.56MHz which is influenced by any electrically conductive material in close proximity to the device. When mounting the unit, a distance to any such material of minimum 10 cm is required to ensure that there will be no significant degradation of the performance in terms of read range and reliability. Mounting the unit directly to metal would result in a severe reduction of read range down to zero functionality. Care should be taken when testing the device after mounting at a problematic environment: Read ranges and performance vary from card to card and very much from card to tag or key-fob.

When mounting multiple readers, the distance between readers should be minimum 0.5 m in order to avoid degradation of performance due to interference.

To connect the device to an Equitrac PageCounter, printer or copy machine, please make sure the host system provides an 14-pin Mini-DIN socket intended for connection of the reader.

## Operation

Whenever the device is connected to a proper power supply, it will switch on the internal antenna and periodically scan for a card. Once a card has been detected, the card number is read, the data converted and sent to the host system through the serial interface. To enable the device to read cards, tags and key-fobs successfully, they should be placed centred above the reader.

## Technical Data

### *DC Electrical Characteristics*

| Symbol | Parameter | Condition | Min | Typ | Max | Units |
|--------|-----------|-----------|-----|-----|-----|-------|
| Vdd | Supply Voltage | | 4.75 | 5 | 5.5 | VDC |
| Idd | Supply current | | | | 400 | mA |
| Idd1 | Peak Supply | Inrush | | | 450 | mA |

|  | current |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|

Additional requirements for the supply voltage: Vripple = 50mVpp max.

## RF Characteristics

Operating frequency: 13.56 MHz
Data transmission modulation reader to card: AM
Data transmission modulation card to reader: AM/load modulation

## Pinout RS422-Interface MDR 14-Pole connector plug and Signal Descriptions

| Pin | Name | Type | Description |
|---|---|---|---|
| 1 | GND | Power | Signal and Power Ground |
| 2 | -TX RS422 | Output | Inverted RS422-data from reader |
| 3 | +TX RS422 | Output | RS422-data from reader |
| 4 | - | - | Not connected |
| 5 | -RX RS422 | Input | Inverted RS422-data to reader |
| 6 | +RX RS422 | Input | RS422-data to reader |
| 7 | - | - | Not connected |
| 8 | +5V Power | Power | Signal and Power Ground |
| 9 | - | - | Not connected |
| 10 | +5V Return | Power | Power Ground |
| 11 | - | - | Not connected |
| 12 |  |  | Connected |
| 13 | - | - | Not connected |
| 14 | - | - | Not connected |

## Serial Interface

The TXD/RXD signals are compatible with RS-422 level signals.

## Temperature

Operating temperature range: 0…45°C
Storage temperature range: -20…+60°C
Thermal shock: 30°C/min maximum dT/dt

## Humidity

Operating: 20% to 80% relative humidity; non condensing
Non-operating: 10% to 90% relative humidity; non condensing

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