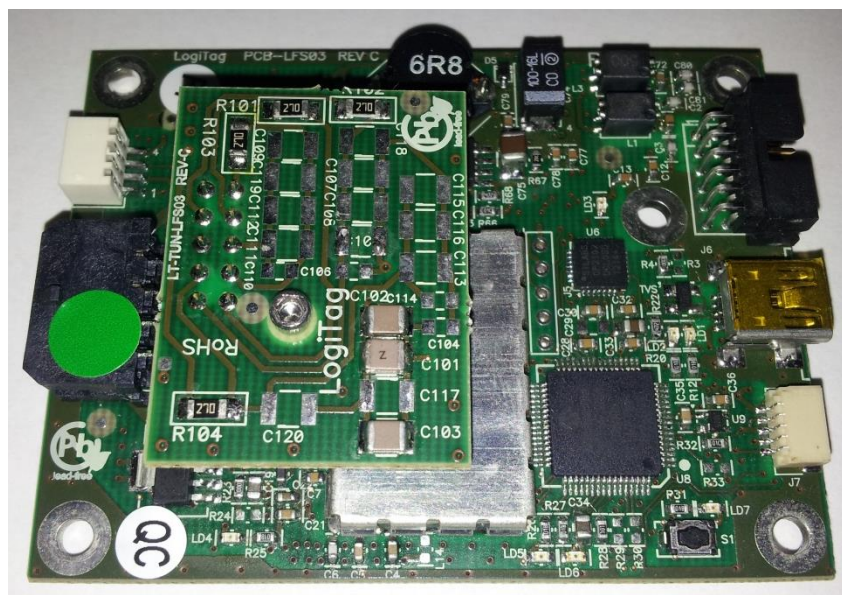# 4 Channel RFID reader
LF 125KHz
with CAN bus
LT-LFS03
USER MANUAL

Product name	4 Channel RFID reader LF 125KHz with CAN bus LT-LFS03 User manual		
p/n		Product rev.	C01
Document p/n	LT-D-131	Document rev.	01
date	27/08/2013	Author name	Tomer I.

Documents changes and version			
Date	Name	Change description	version
27/08/2013	Tomer I	Document release	01

1. Safety Instructions / Warning - Read before start-up !

- The device may only be used for the purpose intended by the manufacturer.

- The operation manual should be kept readily available at all times for each user.

- Unauthorized changes and the use of spare parts and additional devices which have not been sold or recommended by the manufacturer may cause fire, electric shocks or injuries. Such unauthorized measures shall exclude the manufacturer from any liability.

- The liability-prescriptions of the manufacturer in the issue valid at the time of purchase are valid for the device. The manufacturer shall not be held legally responsible for inaccuracies, errors, or omissions in the manual or automatically set parameters for a device or for an incorrect application of a device.

- Repairs may only be undertaken by the manufacturer.

- Installation, operation, and maintenance procedures should only be carried out by qualified personnel.

- Use of the device and its installation must be in accordance with national legal requirements and local electrical codes.

- When working on devices the valid safety regulations must be observed.

- Do not connect both voltage harness and USB cable, this will defect the circuit!

2. System description

This reader supports up to 4 RFID 125 KHz antennas.
Support transponder HITAG 1/2/S protocols.
The reader can work in two forms:

- Communication and power supply via USB.
- Communication interface RS232/CAN BUS and external power supply 10-24VDC using voltage harness
- The reader supports up to four antennas.

Antenna connector

J1: RS232, CAN bus, voltage supply

J6: USB

2.1 Communication interfaces:

- USB using mini USB cable at connector J6.
- RS232
  - baud rate = 9600 bps
  - data bits = 8
  - parity = none
  - stop bit = 1
  - flow control = none
  - Cable pin-out
    - Pin 2-Rx
    - Pin 4-Tx
    - Pin 3–GND
- CANBUS-RS232
  - Synchronization Segment   = 1 TQ
  - Propagation Segment   = 3 TQ
  - Phase Segment 1   = 4 TQ
  - Phase Segment 2   = 2 TQ
  - Synchronization Jump Width   = 2 TQ
  - Time Quantum = 250 ns
  - Baud Rate = 400 Kbps
  - Cable pin-out
    - Pin 5-CAN_L
    - Pin 7-CAN_H
    - Pin 8-CAN_Shiled
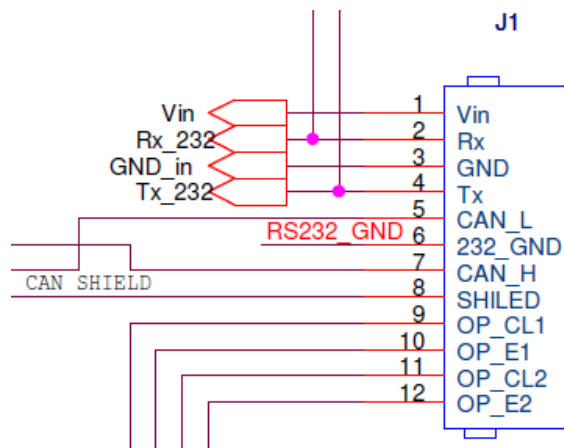
2.2 Power Supply Connection:

- Allowed supply voltage: 10 - 24V or 5V via USB (connector J6).
- Use of higher supply voltage can damage the system!!
- Connector pin-out for voltage harness (regular supply)
  - Pin 1-Vin
  - Pin 3-GND_in
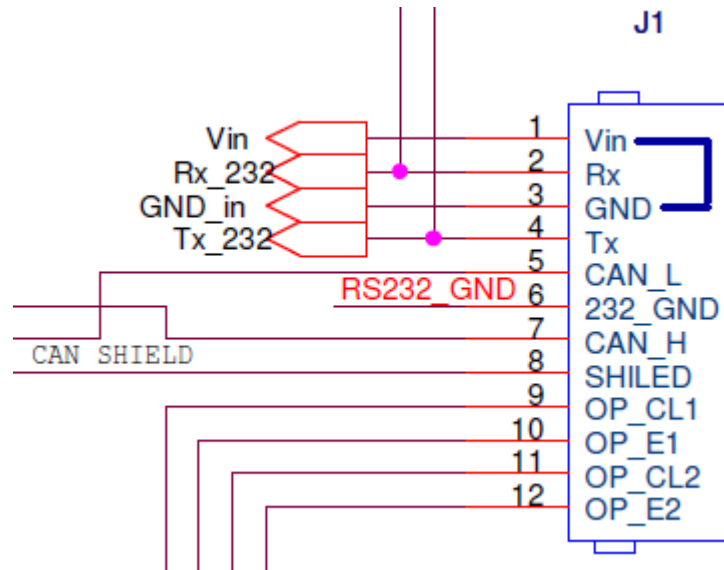
2.3 System operation:

- If using regular power supply connect the voltage harness to J1 to host device.
- If using USB interface, connect mini USB B cable to J6 and connect to host device.
- Warning: do not connect both voltage harness and USB cable, this will defect the circuit!

- Connect to antenna connector antenna (support up to 4 antennas).
- Run software at host.
- Place transponders over antenna location, check if host identify transponders.

2.4 RFID Protocols:

- HITAG 1/2/S

3. Radio approvals:

3.1 USA FCC:

Product name: 4 Channel RFID Reader 125KHz

FCC ID: Z97-1149466

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

Warning:
Changes or modifications to this equipment not expressly approved by the party responsible for compliance (LogiTag Systems Ltd.) could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) **This device may not cause harmful interference, and**
(2) **this device must accept any interference received, including interference that may cause undesired operation.**

FCC labeling requirements:

If the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed a label referring to the enclosed module shall be with the wording "Contains FCC ID:Z97-1149466" .

FCC label:

> 4 Channel RFID LF Reader
>
> FCC ID: Z97-1149466
>
> Manufacturer:
> LogiTag Systems Ltd.

4. Board specifications:

- Reader transceiver frequency 125KHz

- Working voltage: 10-24V

- Current consumption 70mA@24V

- Operating temperature -20C to + 65C

- Storage temperature 40C to +85C

- Dimensions 5.5*7.2*1.8 cm