

Technogym®

Mifare 3v3 Reader
0wq00485AA

User/Integration manual

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1 General overview

Mifare Reader with Technogym code 0wq00485AA is an accessory of Technogym Equipments that let them to identify, read and write an RFID transponder, named Technogym Wellness System Keys, in a contactless way.

Technogym Wellness System Keys are Mifare transponders customized with a private password to access data inside it.

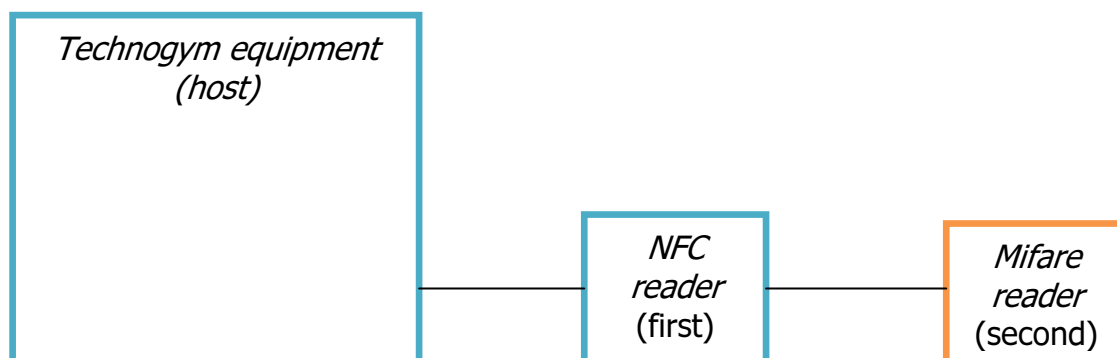
By means of the system made by "TGS Mifare Reader" + "Technogym Wellness System Keys" each equipment may identify the user, propose its specific training and save a log of the training executed on the equipment.

2 Description

Mifare Reader is made by a board inside a plastic housing that may change depending of the Technogym equipment where the device must be mounted on.

Technogym equipment can be enabled to read and write RFID devices connecting first a Technogym NFC reader 0WQ00484AB (adding NFC read/write data exchange capabilities) and second this Mifare reader 0WQ00485AA (adding Mifare Classic read/write data exchange capabilities).

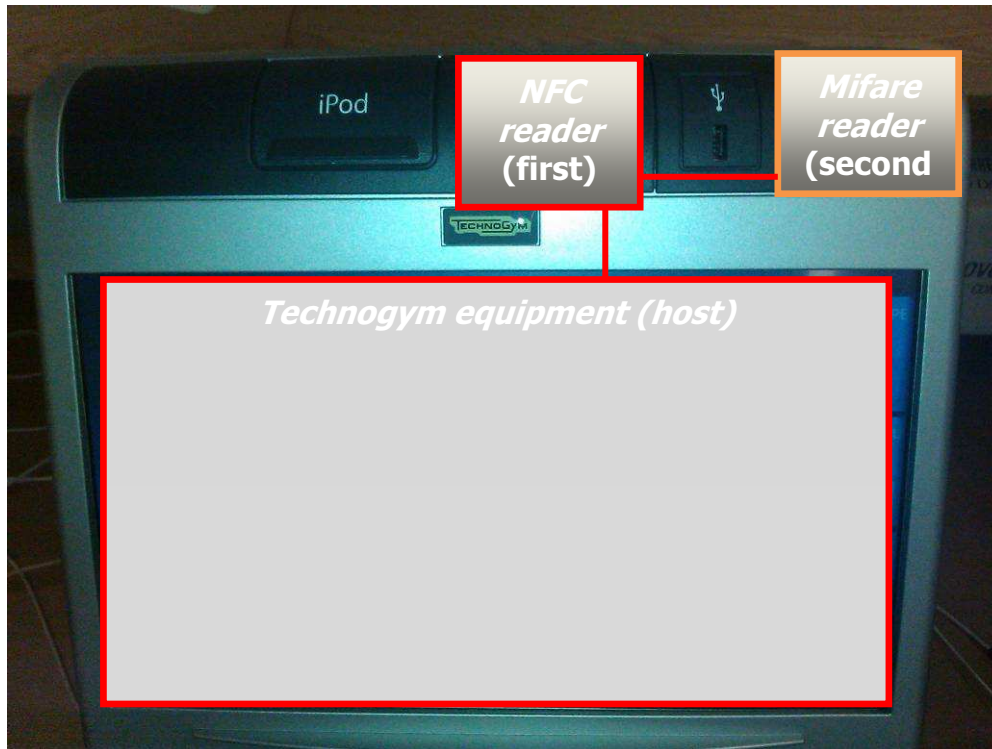
This connection must be "in chain" mode, as follow:



Picture 1 – System block diagram

NFC reader and Mifare reader never work at the same time.

This block diagram can be better understood in the next picture, overlaid with the real equipment:



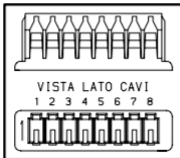
The connection to the host is made by means of a cable that allows:

- Device powering;
- Data communication (the host SW manage a serial port switch to enable once the NFC reader and once the Mifare reader, working in time slots).

The module antenna is embedded on the board.

3 Communication and connector

Connector of Mifare Reader has the following signals and pinout:

Picoblade Molex on the device (on board)	Description
	
1	+3.3Vdc
2	TX out
3	RX in
4	N.C.

5	N.C.
6	N.C.
7	N.C.
8	GND

Data communication is standard RS232 with next parameters:

- Baud rate: 115200 bps;
- Data bits: 8;
- Parity: None;
- Stop Bit: 1;

Over this serial communication Technogym has developed a proprietary communication protocol implemented on every host that may be connected to this device.

The SW driver for the Mifare Reader is developed by Technogym and integrated into the Operating System of the host.

4 Operating mode

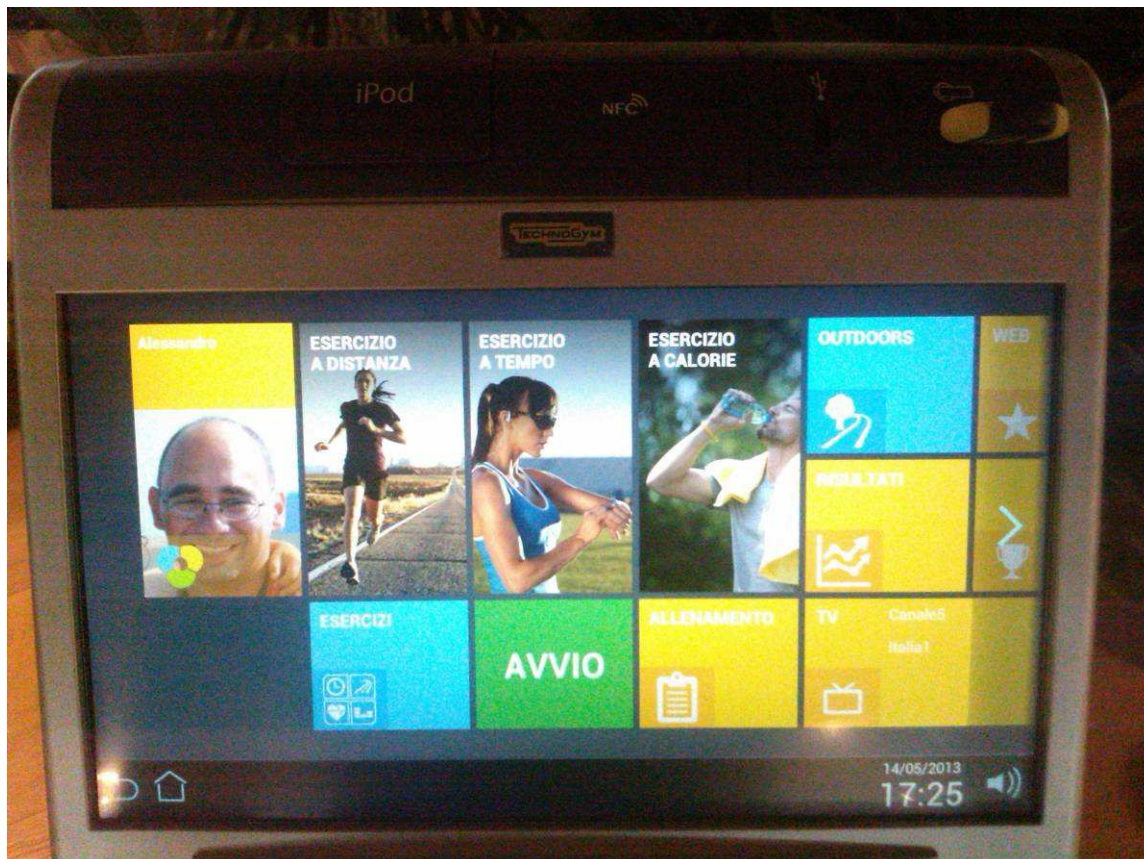
The Technogym equipment host switches continuously between NFC and Mifare reader, looking for a compatible device present in the RF field.



Mifare reader will recognize only the Technogym Wellness System Keys with a Mifare Classic chip inside:



After the Technogym Wellness System Keys is read and the end user recognized, the access to the unit is granted:



5 Installation

Each equipment has a specific upgrade kit to upgrade it with TGS Mifare Reader 0wq00485, please refer to the specific equipment service manual to get the right part number with the right housing and the right installation procedure.

6 FCC Statements

FCC § 15.19 Labelling requirements

This device complies with part 15 of the FCC Rules 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.

When integrating the module into end products, the end product label shall be marked in the following way:

Contains FCC ID: ZQWGIT000003

FCC § 15.21 Information to user

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.