User manual for NFCMCU

Model number NFCMCU.

Contents

1. Introduction

This document is the user manual for the Mitech Integrated Systems RFID module – NFCMCU

This module is used for Mitech Integrated Systems product, which is Machine Cart Unit (MCU)

This module reads RFTAG and provide this reading to MCU

2. System Overview

This module reads data from the user RFID cards. And provides its reading to MCU. The MCUs can be installed in different commercial places, when RFID cards are used. Based on the received data from the NFC MCU module, the MCU will activate its corresponding output control, which is depending in what environment the MCUs are installed.

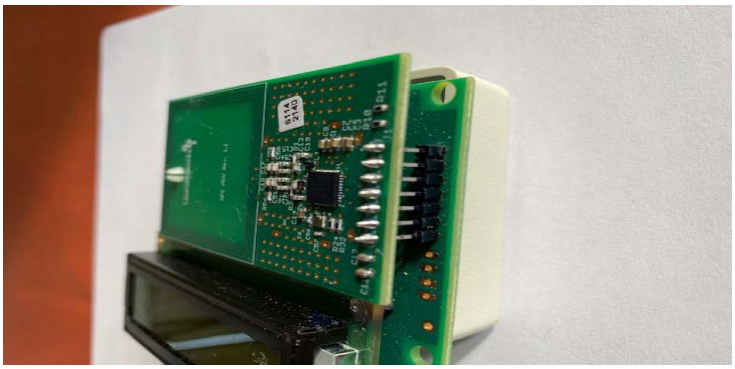
The module is conformal coated, which prevents any corrosion of its components in moisture environment

The module is connected to the MCU main board via direct connection, by using 7pin connector

3. Installation

The NFCMCU is installed following these steps:

- Obtain the module from the assemble line
- Put the module on top side of the 7pin connector, which is already soldered into MCU
- Solder 7pin connector by using 7 soldering pads of the module



After installing the module follow the test procedure of the MCU device

4. Operation

After installation of the module on the MCU device is finished, the MCU device is installed into plastic enclosure. Then such MCU structure is installed on commercial machines. It may be different payment systems, commercial laundry machines and etc. The MCU will be equipped with special mounting hardware to be mount on specific commercial machine. The power supply source for MCU can come from two sources: individual step down separated power supply, like desk top power adapter or low power (12V..24V) can be taken from the commercial machine, if the machine has provision for such connection. After installing MCU with its NFCMCU module, power can be switched ON and NFCMCU is ready to read RFID cards and transmit data to MCU.

5. Compliance Statement

The NFCMCU has been tested to FCC 15.225, IC RSS-210 & FCC15B, ICES-003 (Class B). Also it was tested for Class B AC/DC powerline conducted emissions and for Class B radiated emission.

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

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.

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

This device contained a 13.56 MHz Transmitter and a certified 2.4G Zigbee Module (FCC ID 2AOE2REX3B, IC: 22670-REX3B). This equipment complies with radio frequency exposure limits set forth by FCC for an uncontrolled environment. This equipment must be installed and operated with a minimum distance of **20 cm** between the device and the user or bystanders. This device must not be co-located or operating in conjunction with any other antenna or transmitter. This module is FCC Part 15.225/ ISED RSS-210 limited module. The module is limited to be used by the grantee in its own products, not intended for sale to third parties. The host device with this integrated limit modular approval shall ensure the radiated emissions and spurious emission comply with FCC part 15.225. The modular transmitter is only FCC authorized for the specific rule parts (i.e., FCC transmitter rules) listed on the grant, and the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. When the host is changed, additional test and certification may be required. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

Host Product Labelling

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 must also display a label referring to the enclosed module. This exterior label can use wording such as the following:

Mitech Integrated Systems Inc. Model: MCU
Contains FCC ID: WSSNFCMCU IC: 7992A-NFCMCU
Contains FCC ID: 2AOE2REX3B IC: 22670-REX3B
This device complies with Part 15 of the FCC rules. Operating 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.

6. Technical Specification

Mechanical dimensions: RFID module typical dimensions: 70mm (L), 41mm (W), 3mm (H)

Material: Antenna and PCB are plated copper PCB

Electrical: Cable – direct connection 7pinconnector, voltage 3.3V, current – 70mA

RFID: operating frequency – 13.56Mhz, tag type – RFID ISO 14443A, ISO 14443B, MIFARE

Temperature rating: 0C – 70C