



NFC PAD (DE-632)

Product specification

DUALi Inc.

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We have our development center in South Korea to provide technical support. For any technical assistance can contact our technical support team as below;

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Revision History

- 2014.01.14 (Ver. 1.0) : First release

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1 Introduction

NFC PAD is contactless reader meets high security requirement and the latest contactless standard. It supports Mastercard® Paypass, Visa ® Paywave with contactless EMV complaint. Up to 8SAMs (Secure Access Modules) come standard for payment system.

Also it gives user multiple connectivity such as USB, RS-232 & TCP/IP (option).

It is adopted secure communication comply with Master & Visa.

1.1 Product specification

ITEM	Specification	Note
CPU	STM32F103ZGT6 (ARM Cortex_M3, 144pin)	ST
Program Memory	1MBytes FLASH Up to 32Mbytes external Serial Flash (Default : 1Mbytes)	
Data Memory	96KBytes SRAM Up to 4Mbytes external PSRAM (Default : 96Kbytes)	
DISPLAY	4 Status LED (RED, BLUE, YELLOW, GREEN) 128*96 Graphic LCD (Yellow green)	4 color
Communication	MINI USB 2.0 Full speed RS-232 TCP/IP(option)	
BUZZER	Magnetic Buzzer	
Contactless card	ISO 14443 A/B,	Reading Distance : Maximum 5cm
SAM	Class A,B, T=0,T=1	8 SAM SLOT
Input Voltage	Adapter DC 5V	

1.2 RF PART Specification

ITEM	Specification	Note
Radio frequency	13.56MHz	PN512
Comm. speed	106,212,424 Kbps	EMV certification -106Kbps only
Subcarrier	847 KHz	
Input Power	5V	

1.3 SAM PART Specification

ITEM	Specification	Note
Protocol	T=0,T=1	
Class	class A,B (5V, 3V)	
Quantity	8	

2 Structure

2.1 Components Confirmation

- NFC PAD
- Comm.cable (RS-232 Cable or USB Cable)
- * 5V AC adapter (option)

2.2 Description

- MAIN MCU : STM32F103ZGT6 (ARM Cortex_M3, 144pin), 1Mbytes Flash, 96Kbytes SRAM
- RTC : included in LCD.
- Battery : Provides backup power RTC and secure memory while power is off.
- RF field : Adopt PN512 chip which supports ISO 14443 A/B
- Debug port : USB endpoint0 vendor protocol
- Host interface: USB, RS-232, TCP/IP(option)
- Buzzer : Max 94dBA, magnetic buzzer
- Status LED : 4 status LED comply with EMV.
- Power : Use DC5V adopter of USB(LCD brightness is weaker than adaptor).
- Tamer switch : When case is opened by force, it disconnect backup power for security reason.
- LCD: 128*96 graphic LCD.
- Touch panel: Resistive touch panel
- SAM: 8 x SAM slots(ISO7816) comm. Speed up to 153600bps
- Memory extension: designed to extend program& data memory up to 32Mbytes & 4Mbytes.

3 Exterior

3.1 Product exterior



3.2 Product dimension

125mm*90mm*27mm

4 Power & Interface Specification

4.1 Power Specification

- DC 5V input(recommendable), USB 5V power supply(brightness is little weaker than DC 5V Adaptor)
- Power usage: under 2W

4.2 Current consumption

- Default : 5V, under 200mA
- MAX : 5V, under 400mA (card read/write)

4.3 Communication Specification

- USB 2.0 FULL SPEED (12Mbps)
- RS-232 (115200bps)
- TCP/IP(option)

5 Functions

5.1 Card detection

- Comply with EMV PCD level 1

5.2 Firmware download function

- Downloadable via PC program(DeDownloader)Usage environment

5.3 Operation

- Temperature: -10 ~ 60 °C
- Humidity : 30 ~ 90 % (relative humidity)

5.4 Storage

- Temperature: -20 ~ 80 °C
- Humidity: 30 ~ 90 % (relative humidity)

6 Warning and Notice

- For indoor use only.
- This product is affected by an element like metal or Magnetism. So one has to take precautions.
- This device is not waterproof.
- Recommended to use certified (UL/CE/FCC) adaptor.
- Recommended to use apart from metallic devices to maximize RF reading performance.

EU

This product is CE marked according to the provision of the R&TTE Directive (99/5/EC). Here by DUALi Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

CE 0678

FCC STATEMENT

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

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.

7 Warranty & Service

Warranty and Repair service

- DUALi Inc. warrants to the original consumer or other end user that this product, DE-632, is free from defects in materials and workmanship for a period of 1 year from the date of purchase.

※ **Note** Warranty/non-warranty repair fees do not include any shipping charges.

The damages(defaults) prescribed below are NOT to be covered by warranty.

- User's misuse of part/component.
- Fault by the unqualified user's own intention of repairs.
- Product's inspection requirement.
- Adding certain functions or extension of system.
- Fault by User's misuse against the product's manual.

***Please contact our service team for the technical/ sales supports.**

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