



DE-630 Hardware User's Manual

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

- 2010.11.30(Ver. 1.0) : First Release
- 2011.04.07(Ver. 1.1) : RJ-48 Pin Configuration Change

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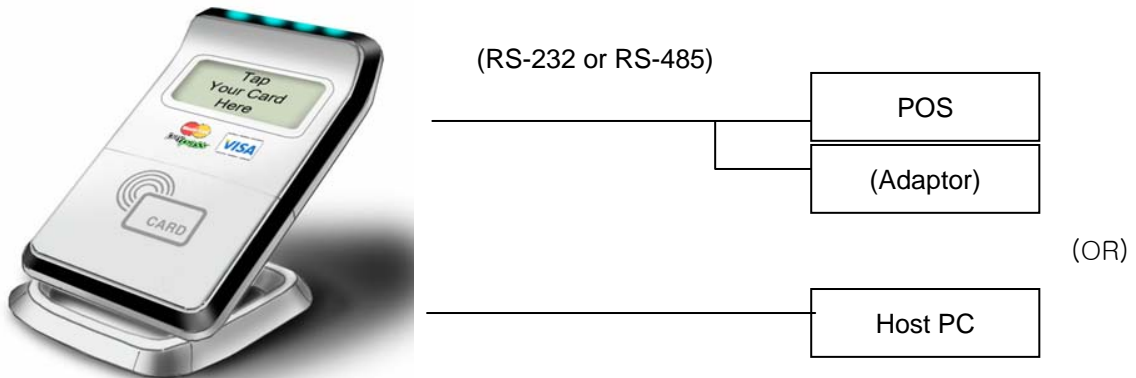
1 Summary

ITEM	사양	비고
CPU	STM32F103ZCT6 (ARM Cortex_M3, 144pin)	ST
Program Memory	256KBytes FLASH (default) Up to 8Mbytes external Flash	On chip Option (1M,2M,4M,8M)
Data Memory	48KBytes SRAM (default) Up to 8Mbytes external PSRAM	On chip Option (1M,2M,4M,8M)
DISPLAY	4 Status LED 128*64 Graphic LCD (Yellow green)	4 color
Communication	RS-232 - default RS-485 - optional	Decide when order
BUZZER	Magnetic Buzzer	
RF CARD	Frequency : 13.56MHz Speed : 106,212,424,848Kbps ISO-14443 A/B ,MIFARE	
SAM	4 SAM slots Class A and B, T=0 and T=1	
Input Power	Adapter DC 12V (RS-232, RS-485)	

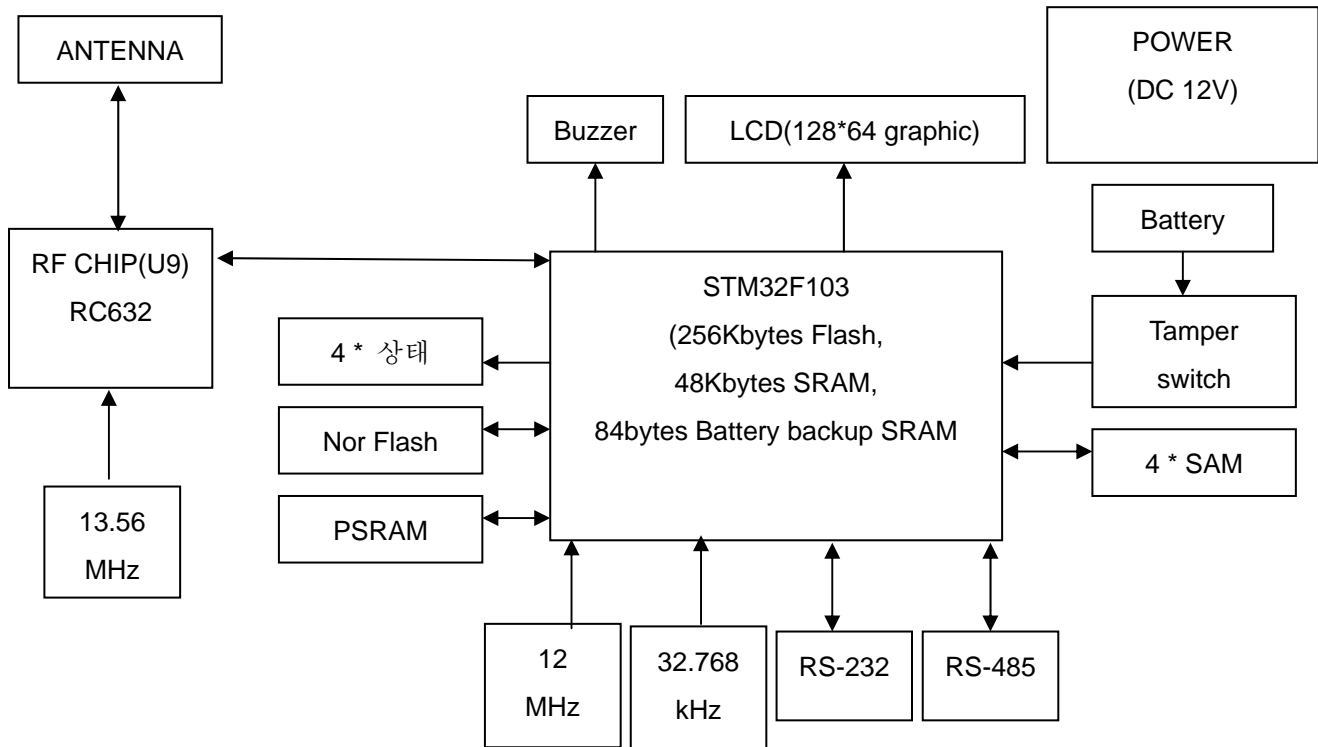
2 Structure

2.1 The Structure of equipment

- DE-630 itself contains all circuits include antenna, 4 SAM connectors.
- User can order RS-232 version or RS-485 version.(Communication Cable is different)



2.2 The block diagram of DE-630



2.3 Description of main Module

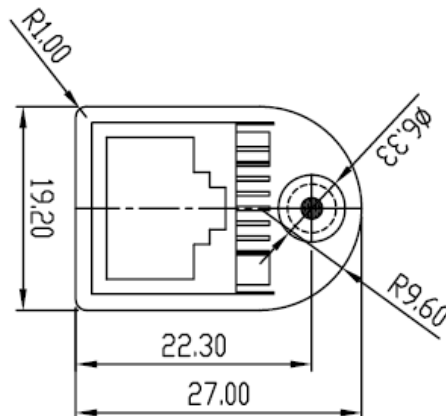
- CPU: 32bit RISC ARM core CPU, It is stm32f103 which is ARM-based 32-bit MCU with Flash. This CPU has 256Kbyte Flash memory, 48Kbyte SRAM.
- MFRC531 RF IC: This RF IC can control RF card like MIFARE card, type A/B card simultaneously.
- RS-232 Driver: It's a Communication part for RS-232 communication.
- RS-285 Driver: It's a Communication part for RS-485 communication.
- SAM part: It can control 4 SAMs. And each slot can be operated independently.
- LED: It has 4 LEDs to display status of communication and card process.
- LCD : DE-630 has 128*64 graphic LCD Module
- Battery: It maintains RTC and battery backup SRAM while power is not supplied.
- Tamper switch: Erase security memory when case is opened.
- Nor Flash: optional flash memory for non-volatile data.
- PSRAM: optional SRAM for user memory.

3 Description of Surface

3.1 The picture of device surface



3.2 Communication Cable(RS-232 and RS-485)



(Connector for RS-232 and RS-485 version)

- Default: RS-232 version
- Option1: RS-485 version
- Cable assembly from this connector to POS is optional.

3.3 The size of terminal

- DE-630 :95(W) * 138(L) * 20(H)mm

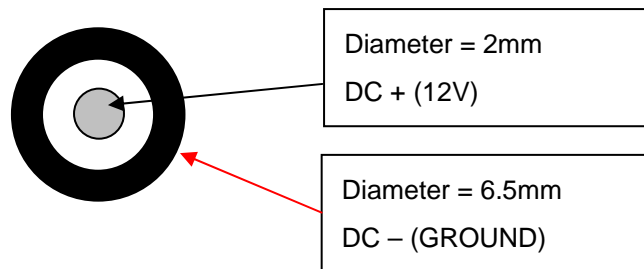
4 Connector Pin Assignment

4.1 RS-232 Connector and Cable

RJ-48

Pin No.	Description	
1	DC POWER(DC 12V)	To DC Jack
2	DC POWER(DC 5V)	
3	TxD(to Host Rx)	
4	NC	
5	RxD(to Host Tx)	
6	NC	
7	GND	To DC Jack
8	NC	

DC JACK



4.2 RS-485 Connector and Cable

RJ-48

Pin No.	Description	
1	DC POWER(DC12V)	To DC Jack
2	DC POWER(DC 5V)	
3	NC	
4	Data+	
5	NC	
6	Data-	
7	GND	To DC Jack
8	NC	

- Communication type between RS-232 and RS-485 should be decided before making

order.

- Its default communication method is RS-232.
- DC jack's connection is same with RS-232 version.

5 Description of Electricity

5.1 The Description of power

- Input power1 : 12V Adaptor (higher than 300mA)

5.2 The using electric current

- Normal 12V, 130mA under
- MAX 12V, 200mA under

5.3 The Description of RS-232 communication

- 115200bps, 8 data, no parity, 1 stop bit

6 Description of Function

6.1 Protocol Specification

Refer to protocol specification for detail function. (provide on request)

6.2 Firmware Download

Refer download manual. (provide on request)

7 Property

7.1 Environment to use

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

7.2 Environment to keep

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

8 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.

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 1177

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.