



DE-ABCM6 User 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

- 2012.10.29(Ver. 1.0) : First Release
- 2013.03.13(Ver. 1.1) : Add Flowchart
- 2013.05.07(Ver. 1.2) : Add Minimum current and change other currents

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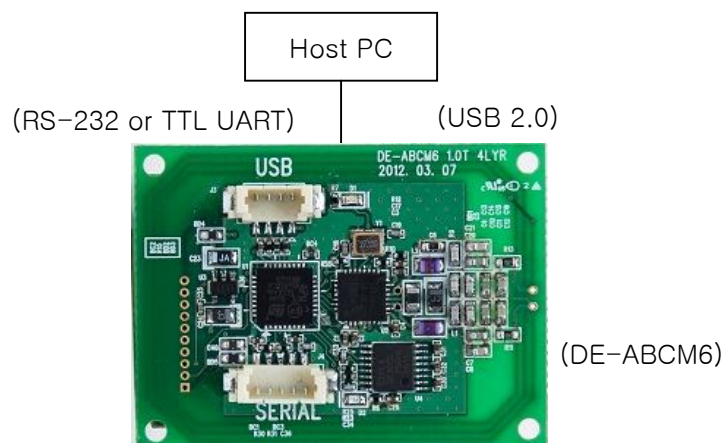
1 Summary

Smart Card Interface	Contactless Smart Card (ISO 14443 A/B), MIFARE, FeliCa, NFC
Host Interface	USB 2.0 Full Speed (12Mbps), also support USB 1.1 RS-232 or TTL UART, 115200bps
Host Communication	PC/SC or Proprietary
CPU	ARM 32-bit Cortex-M3(48MHz), 128Kbytes Flash, 20Kbytes SRAM
Power Voltage	5V, USB Bus powered
Current	MAX 165mA
Connection	4pin * 1.25mm for USB 5pin * 1.25mm for RS-232
Size	43.5(W) * 32(L) * 8(H)mm
Antenna Matching	Direct matching
Certification	CE, Fcc, RoHS compliant
Operating Temperature	-10~60°C

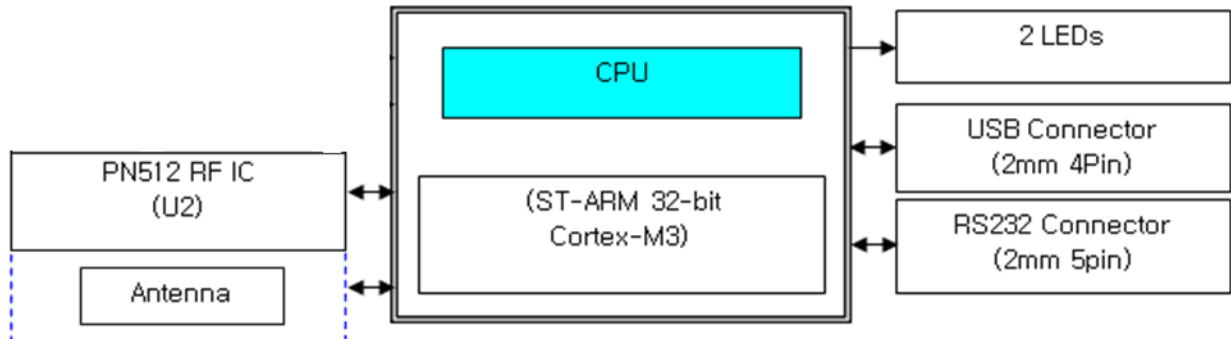
2 Structure

2.1 The Structure of equipment

- DE-ABCM6 (RF module) itself contains all circuits include antenna.



2.2 The block diagram of Module



2.3 Description of main Module

CPU : 32bit RISC CPU, It is stm32f103 which is ARM-based 32-bit MCU with Flash, USB, CAN, seven 16-bit timers. This CPU has 128Kbyte Flash memory, 20Kbyte SRAM, 2 UART, USB 2.0 interface.

- PN512 RF IC : This Philips IC can control RF card like MIFARE card, type A/B card and FeliCa card simultaneously.
- RS-232 Driver : It's a Communication part for RS-232 communication.
- USB Connector : It's a Communication part for USB communication.
- Status LED : It has 2 LEDs to display status of communication and RF card status.

3 Description of Surface

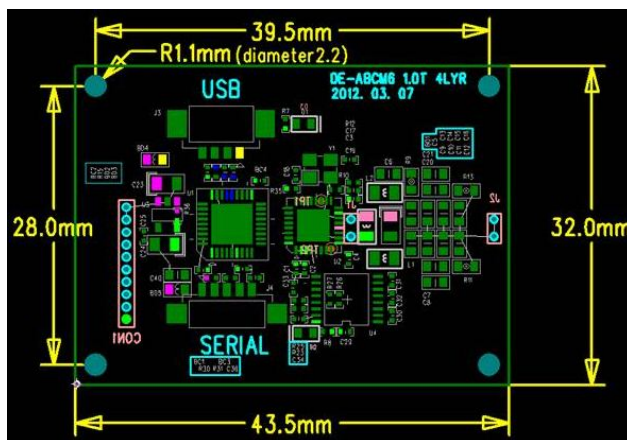
3.1 The picture of device surface

There are no parts at bottom. But there is a space for optional LEDs.



3.2 The size of equipment surface

- DE-ABCM : 43.5(W) * 32(L) * 8(H)mm



4 Connector pin assignment

4.1 USB Connector

[J2] (4Pin 1.25mm) -> PC USB Port

Pin No.	Description
1	VCC(DC5V)
2	USB D-
3	USB D+
4	GND

PART : 12505WS-04 (Opposite PART : 12505HS-04)

VENDER : YEONHO ELECTRONICS

4.2 RS-232 Connector

[J4] (5Pin 1.25mm) -> RS-232 Port of controlling device

Pin No.	Description
1	VCC(DC5V)
2	TxD(RS-232 or TTL)
3	RxD(RS-232 or TTL)
4	GND
5	External I/O

PART : 12505WS-05 (Opposite PART : 12505HS-05)

VENDER : YEONHO ELECTRONICS

Communication between RS-232 or TTL should be decided before make order.

Its default communication methods are RS-232 and USB.

5 Description of electricity

5.1 The Description of power

- Input power : 5V (USB Bus Powered)

5.2 The using electric current

- Normal 5V, 130 mA under
- MAX 5V, 165 mA under
- MIN 5V, 45mA under when RF is off state.

5.3 The Description of USB communication

- USB V2.0 FULL SPEED (12Mbps)

6 Description of Function

6.1 Protocol Specification

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

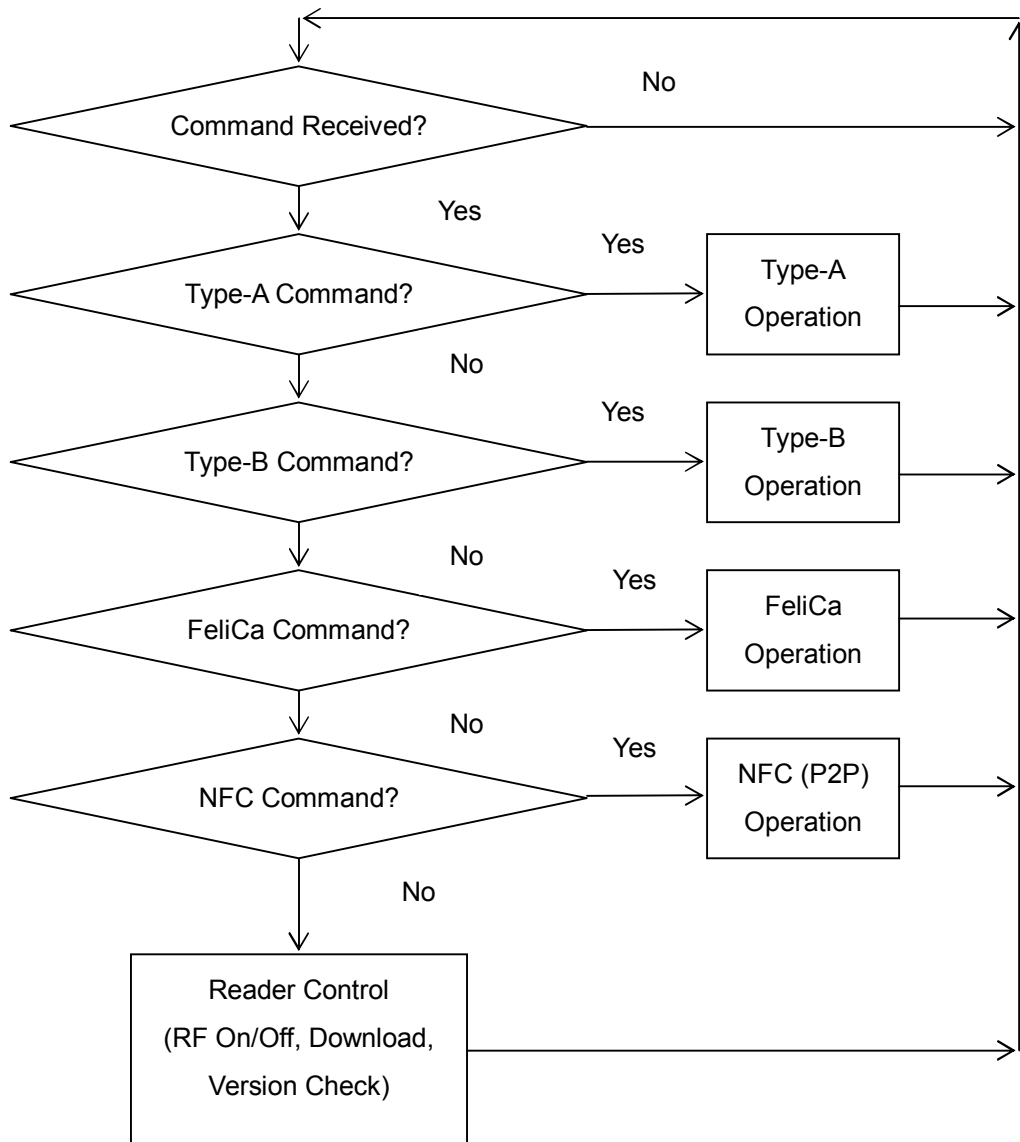
6.2 Control Code Specification

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

6.3 Download

Refer download manual.(provide on request)

7 Flowchart of Function



8 Property

8.1 Environment to use

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

8.2 Environment for storage

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

9 Warning and Notice

- For indoor use only.
- This product is affected by an element like metal or Magnetism. So one has to take precautions. We recommend that install reader 7cm away from metal
- This device is not waterproof.