DE-ABM6 Specification

DUALi Inc.

Document Version: 1.2

Last Revised Date: 3.APR. 2012

DUALi Inc. reserves the right to make changes to its applications or services or to discontinue any application or service at any time without notice. DUALi provides customer assistance in various technical areas, but does not have full access to data concerning the use and applications of customer's products.

Therefore, DUALi assumes no liability and is not responsible for customer applications or software design or performance relating to systems or applications incorporating DUALi products. In addition, DUALi assumes no liability and is not responsible for infringement of patents and/or any other intellectual or industrial property rights of third parties, which may result from assistance provided by DUALi.

Composition of the information in this manual has been done to the best of our knowledge. DUALi does not guarantee the correctness and completeness of the details given in this manual and may not be held liable for damages ensuing from incorrect or incomplete information. Since, despite all our efforts, errors may not be completely avoided, we are always grateful for your useful tips.
We have our development center in South Korea to provide technical support. For any technical assistance can contact our technical support team as below;

Tel: +82 31 213 0074
e-mail : mina@duali.com

Revision History

- 2010.11.22(Ver. 1.0) : First Release
- 2011.05.02(Ver. 1.1) : Product Picture Change, Communication Spec Change
- 2011.07.05(Ver. 1.1) : Add CPU Part Name
- 2012.04.03(Ver. 1.2) : Remove NFC function and add RS-232 communication.

Introduction

This manual describes the major features and specifications of the DE-ABM6 Reader/Writer module.

User applications access the DE-ABM6 via libraries, while API specifications vary according to the module type and usage. Please refer to other documents mentioned as below :

* “DualCard User’s Manual”, “DualCardDLL Specifications”, “DE-620 Developer’s Guide”, “Protocol Specifications”

* In order to use the DE-ABM with a Windows PC, it is necessary to purchase the “SDK for DE-ABM6”.
* When a non-Windows PC is employed, the USB driver and libraries must be ported and installed by the user.
* The DE-ABM6 can be tailored for use in a system built around a Windows PC.

* This version of DE-ABM6 is using only DC 5.0V for operation and supports only TTL-level UART communication.(RS-232 is optional from order time)

Contents

1. Key Functions and Features

The DE-ABM6 writes and reads data to and from contactless IC cards. It doesn't need physical contact with cards. The Reader/Writer is immune to performance deterioration caused by wear and contamination, providing easy maintenance and long-term reliability. The features of DE-ABM6 listed below.

The DE-ABM6 is an inductive read/write communication device which is compliant with FCC, CE.

- The DE-ABM6 is environmentally friendly. It uses lead-free soldering and contains no halogen.
- Even with its built-in antenna, the DE-ABM6 is exceptionally compact.
- The DE-ABM6 supports only proprietary mode.
- The DE-ABM6 supports basically TTL-UART host interface but also supports RS-232 optionally.

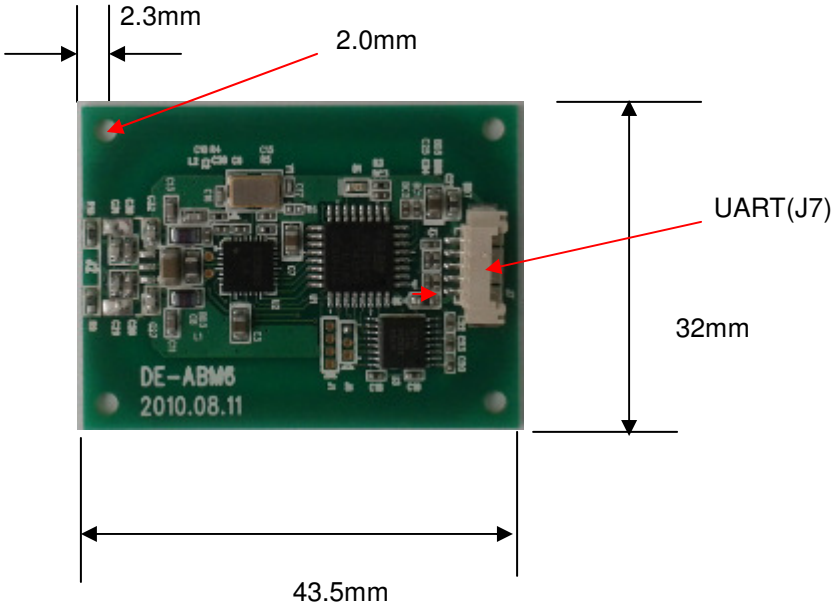
2. Hardware Specifications

2.1 DE-ABM6 Specifications

Card Interface	ISO14443 A/B, MIFARE, ISO15693
Carrier Frequency	13.56MHz
RF Communication Speed	106/212/424/847kbps
RF Communication Distance	Up to 5cm (Depending on the card types and environments)
Host Communication	TTL or RS-232 UART up to 1,500,000bps (default : 115,200bps)
Host Communication Protocol	Proprietary
CPU	ST7 Family, 16Kbytes Flash, 2Kbytes SRAM,16MHz(stm8s105k4)
Power Supply Voltage	5.0VDC
Current Consumption	MAX 200mA
Physical Connection	5pin * 2mm for UART interface
Dimension	43.5(W) * 32(L) * 4.6(H)mm
Antenna Matching	Direct matching
Certification	CE, FCC, RoHS compliance

2.2 External Dimensions

DE-ABM6 itself contains all circuits including antenna and connectors.



2.3 Pin Assignment

The DE-ABM6 employs the connector described below.

-UART interface connector [J7]

5Pin x 1.25mm pitch header(53261-0571 manufactured by Molex)

Opposite side: Connector =51021-I50*(5pin), Terminal = 50058-8000

Pin No.	Pin Name	Description
1	VCC	Power supply connector DC5.0V
2	RxD	UART RxD – to Host TxD
3	TxD	UART TxD – to Host RxD
4	GND	Ground signal
5	GND	Ground signa

* The input power shall be DC 5.0V. If not, components on the board can be damaged.

2.4 Electrical Specifications

- Power supply voltage : DC 5.0V
- Current consumption : Max 200 mA

2.5 Others

- Recommended operating environment

  Temperature : -20 ~ 60 ℃ (under 0℃, the reading distance may be shorten)

  Humidity : 30 ~ 90 % (relative humidity)

- Storage environment

  Temperature to keep : -20 ~ 80 ℃

  Humidity to use : Less than 60 % (relative humidity)

- For indoor use only.
- This product is affected by an element like metal or magnetism.
  So one has to take precautions to install the reader/writer
- This device is not waterproof.

3. Precautions

- The DE-ABM6 is an inductive read/write communication device. The carrier frequency used is 13.56 MHz. Disassembly or modification of the module, removal of the type number and any similar acts are subject to change the characteristics of the module.
- Be sure to use a stable power supply so that the module can be protected from the effect of noise and excessive voltage peaks transmitted through the power supply connector.
- Do not cause any chemical or physical damage to the module.
- Do not subject the module to contaminated air or materials.
- Ground all jigs, machines, workbenches and workers' bodies to prevent static electricity from affecting the module.
- For safety's sake, be sure to wear gloves when handling the module, although its surface is carefully finished.
- Do not expose the module to interference from other wireless machines.
- Do not install the module in an environment where a strong electromagnetic field may exert deleterious effects on communication performance.