

# DE-ABCM5

## Specification

**DUALi Inc.**

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## Revision History

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## 01. Introduction

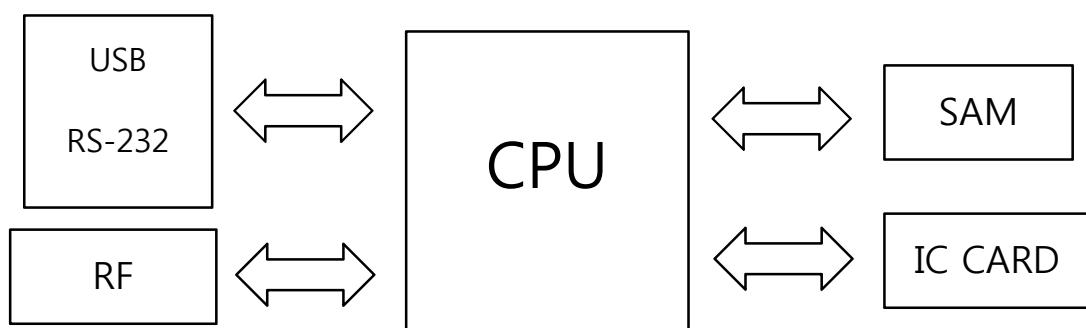
DE-ABCM5 is a contactless card reader. It supports RS-232 serial communication and USB communication via HOST.

DE-ABCM5 support all NFC forum standard and ISO-7816 contact SIM/SAM.

## 02. Hardware Specification

CPU	STM32F411CCU6 ARM Corcex-M4, 100MHz, 32bit RISC	
Program Memory	512Kbyte FLASH	
Data Memory	128Kbyte SRAM	
Communication	USB	
SAM	1 SAM slots supported	
IC CARD	ISO 7816 Smart Card Interface IC	TDA8035
RF	13.56MHz, ISO-14443 A/B, MIFARE, NFC	PN5180
INPUT POWER	EXTERNAL ADAPTOR (DC 5V)	

## 03. BLOCK DIAGRAM



## 04. Components

- DE-ABCM5 Module
- USB Cable(Option)

## 05. Cable Specification

### 05.1 USB Connector - USB(D+ and D- are switchable)

PIN NAME	COLOR	PIN NUMBER
VDD 5.0V	RED	1
USB D-	GREEN	2
USB D+	WHITE	3
GND	BLACK	4

PIN NAME	COLOR	PIN NUMBER
VDD 5.0V	RED	1
USB D+	WHITE	2
USB D-	GREEN	3
GND	BLACK	4

### 05.2 Serial

PIN NAME	COLOR	PIN NUMBER
VDD 5.0V	RED	1
RS232-TXD2	WHITE	2
RS232-RXD2	GREEN	3
GND	BLACK	4
Ex_GPIO	YELLOW	5

## 06. Certifications

### 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.

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

## FCC MODULAR APPROVAL INFORMATION EXAMPLES for Manual

This device complies with Part 15 of the FCC Rules. Operation 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.

**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.

## FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

## OEM INTEGRATION INSTRUCTIONS:

This device is intended only for OEM integrators under the following conditions: The module must be installed in the host equipment such that 20 cm is maintained between the antenna and users, and the transmitter module may not be co-located with any other transmitter or antenna. The module shall be only used with the internal on-board antenna that has been originally tested and certified with this module. External antennas are not supported. As long as these 3 conditions above are met, further transmitter test will not be required.

However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.). The end-product may need Verification testing, Declaration of Conformity testing, a Permissive Class II Change or new Certification. Please involve a FCC certification specialist in order to determine

what will be exactly applicable for the end-product.

### **Validity of using the module certification:**

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization. In such cases, please involve a FCC certification specialist in order to determine if a Permissive Class II Change or new Certification is required.

### **Upgrade Firmware:**

The software provided for firmware upgrade will not be capable to affect any RF parameters as certified for the FCC for this module, in order to prevent compliance issues.

### **End product labeling:**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: SWUDEABCM5" .

### **Information that must be placed in the end user manual:**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

## 07. Warranty & Service

### Warranty and Repair service

– DUALi Inc. warrants to the original consumer or other end user that this product, **DE-ABCM5**, 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 shipping charges.

- › The damages(defaults) prescribed below are NOT to be covered by warranty.
- User's misuse of part/component against the provided manual.
- Fault by the unqualified user's own intention of repairs.
- Adding certain functions or extension of system.

### PRECAUTIONS

- Do not drop the device.
- Do not modify, repair, or disassemble.
- Do not expose directly to water, alcohol, benzene, etc for cleaning.
- Do not expose directly to flammables.
- Do not place or keep the device near flammables.
- Keep the device away from excessive humidity and dust.
- Do not place heavy objects on the device.
- Changes or modifications not expressly approved by the party responsible

for compliance could void the user's authority to operate the equipment.

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

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