

# ZLG600A

## Integrated Circuit Card Reading/Writing Module

DS01010101

V1.00

Date: 2019/03/08

Datasheet

## Revision History

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| Version | Date       | Modifications              |
|---------|------------|----------------------------|
| V0.90   | 2016/07/15 | Created the document.      |
| V1.00   | 2019/03/08 | Modified document template |



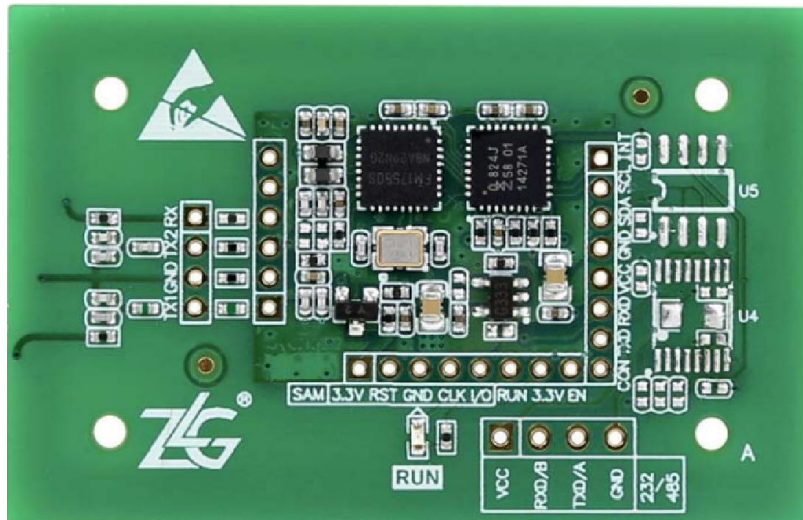
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# Chapter 1: Introduction

The ZLG600A series card reading/writing module is an integrated circuit card reading/writing module developed by ZLG Technology Corp., Ltd... It is versatile, low cost, easy-to-use, reliable, diverse and small, and can be used in various fields such as finance & accounting, software encryption, medical and health care, transportation ticketing, and entertainment management. The ZLG600A series module uses a new MCU controller chip, can completely replace the old ZLG600S series product.



**Figure 1-1: ZLG600A**

*Note: The figure is for reference only and subject to actual sales.*

## 1.1 Features

- Complies with ISO14443A, ISO14443B and ISO7816-3 standard.
- Integrates operation commands of TypeB, MifareUltraLight, Mifare1 S50/S70, PLUS CPU, SAM card.
- Provides half-duplex block transmission protocol interface specified in ISO14443-4, which can easily support CPU card in accordance with ISO14443-4A and TypeB card in accordance with ISO14443-4B.
- Supports serial interface and I<sup>2</sup>C communication interfaces.
- It can actively detect card access, and can generate an interrupt when detecting the card and output data through the serial port and I<sup>2</sup>C.
- The hardware interface and communication protocol are fully compatible with the earlier ZLG522S/ZLG600S series modules.

## 1.2 Technical Specifications

Table 1-1: ZLG600A technical specifications

|                          |                                                                                                                                                                                                |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model Number             | ZLG600A                                                                                                                                                                                        |
| Power consumption        | Average current: 5V DC supply/73mA<br>Peak current: less than 150mA                                                                                                                            |
| Operating frequency      | 13.56MHz                                                                                                                                                                                       |
| Card reading distance    | TypeA card: ≥5cm                                                                                                                                                                               |
| External interface       | I <sup>2</sup> C, UART                                                                                                                                                                         |
| Data transmission speed  | I <sup>2</sup> C: 300K<br>UART: 9600~230400bit/s                                                                                                                                               |
| Supported card type      | Contact: SAM card<br>Contactless: Mifare 1 S50, Mifare 1 S70, MifareUltraLight, MifareDesfire, PLUS CPU card, ISO14443A-compliant logic encryption card and CPU card, ISO14443B-compliant card |
| Physical dimensions      | Dimensions: 54mm*34.5mm*1.6mm, integrated antenna                                                                                                                                              |
| Environmental conditions | Operating temperature: -20~80℃<br>Humidity: 5%~95% relative humidity                                                                                                                           |

## 1.3 Limit Parameters

Table 1-2: Limit parameters

| Symbol | Parameters                         | Min. | Max. | Unit |
|--------|------------------------------------|------|------|------|
| Top    | Operating temperature              | -20  | +80  | ℃    |
| Tstg   | Storage temperature                | -40  | +85  | ℃    |
| Vn1    | Any J1 pin voltage relative to GND | -0.3 | +5.5 | V    |
| Iol1   | J1 I/O low-level input current     | —    | 20   | mA   |

## 1.4 DC Parameters

Table 1-3: DC parameters

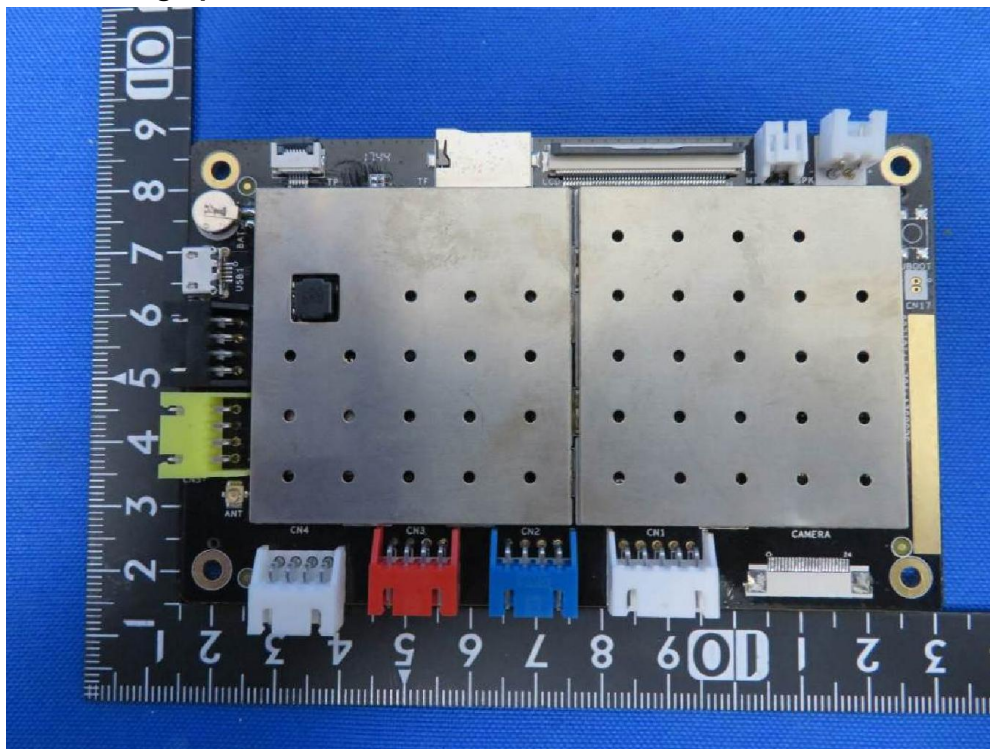
| Symbol | Parameters                            | Conditions                               | Min. | Typ. | Max. | Unit |
|--------|---------------------------------------|------------------------------------------|------|------|------|------|
| Icc51  | Supply current, normal operating mode | Vcc=5V after power on or run config( )   | —    | 73   | 150  | mA   |
| Icc52  | Supply current, sleep mode            | Vcc=5V after run close( )                | —    | 15   | 20   | mA   |
| Icc31  | Supply current, normal operating mode | Vcc=3.3V after power on or run config( ) | —    | 79   | 150  | mA   |
| Icc32  | Supply current, sleep mode            | Vcc=3.3V after run close( )              | —    | 15   | 20   | mA   |
| Vil1   | Input low voltage                     | Only SCL, SDA                            | —    | —    | 1.5  | V    |
| Vil2   | Input low voltage                     | Except for SCL, SDA                      | —    | —    | 0.99 | V    |

| Symbol | Parameters                | Conditions     | Min. | Typ. | Max. | Unit    |
|--------|---------------------------|----------------|------|------|------|---------|
| Vih    | Input high voltage        | —              | 2.31 | —    | 5.5  | V       |
| Vol    | Low-level output voltage  | Iol=20mA       | —    | 0.6  | 1.0  | V       |
|        |                           | Iol=3.2mA      | —    | 0.2  | 0.3  |         |
| Voh    | Hgih-level output voltage | Ioh=20 $\mu$ A | 3    | 3.3  | —    | V       |
| Iil    | Logic 0 input current     | Vin=0.4V       | —    | —    | -80  | $\mu$ A |

## 1.5 Host Information

|               |                                 |
|---------------|---------------------------------|
| Product Name: | Host Device                     |
| Model Name:   | SC3832V                         |
| Manufacturer: | Qingdao Haier Biomedical Co Ltd |

### Host Photograph



**Federal Communications Commission (FCC) Interference Statement**

The limited modular transmitter is only FCC authorized for the specific rule part (FCC Part15.225) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

For additional hosts other than the specific host originally granted with a limited module, a Class II permissive change is required on the module grant to register the additional host as a specific host also approved with the module.

OEM/Host integrator is responsible for complying with the instructions and requirements for each transmitter they choose to integrate into a host product.

**RF exposure warning**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This product may not be collocated or operated in conjunction with any other antenna or transmitter. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter. Additional text needed for the host product manufacturer to provide to end users in their end-product manuals.

**OEM Integration Instructions:**

This device is intended only for OEM integrators under the following conditions:

The module can be used to installation in other host. And the transmitter module may not be co-located with any other transmit or antenna. The module shall be only used with the integral antenna(s) that has been originally tested and certified with this module. This module must not be incorporated into any other device or system without retesting for compliance as a composite system per Part 2.947(f). However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirement with this module installed (for example, digital device emission, PC peripheral requirements, etc.)

**IMPORTANT NOTE:**

In the event that these conditions cannot be met (for example certain laptop configuration 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 and circumstance, the OEM integrator will be responsible for re-evaluating. The end product (including the transmitter) and obtaining a separate FCC authorization. The final end product must be labeled in a visible area with the following:

**“Contains Transmitter Module FCC ID: 2ASR8ZLG600A or**

**Contains FCC ID: 2ASR8ZLG600A”.**