

YJD600 Scan Engine

installation manual

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Disclaimer

Please read all the contents of the manual carefully before using the product described in this manual to ensure the safe and effective use of the product. It is recommended to keep this manual properly for future use and inquiry.

Warning

Do not disassemble the product or tear up the seal on the product, otherwise we will not be responsible for the warranty or replacement of the product.

The pictures in this manual are for reference only. If there is any discrepancy between individual pictures and the actual product, please refer to the actual product. For product improvements and updates, we reserves the right to modify the document at any time without notice.

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The company reserves the right of final interpretation of this manual.

Serve Information

If you need more technical support, please contact us, we are happy to serve you.

Version Record

| Version | Description | Launch Day |
|---------|-----------------|------------|
| V1.0 | initial version | 2021.2.26 |

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1 Product Introduction

1.1 Product description

YJD600 scan code module is the perfect integration of our company's own chip and advanced image recognition algorithm. The product is loaded with a global exposure camera module, which can read all kinds of mainstream one-dimensional and two-dimensional barcodes. It simplifies the design difficulty of barcode reading products and is a high-performance scanning solution.

1.2 Auxiliary lighting and aiming

YJD600 uses a high-brightness LED to provide exposure auxiliary lighting, even in complete darkness, you can quickly read barcodes. The lighting function can be turned on or off by setting.

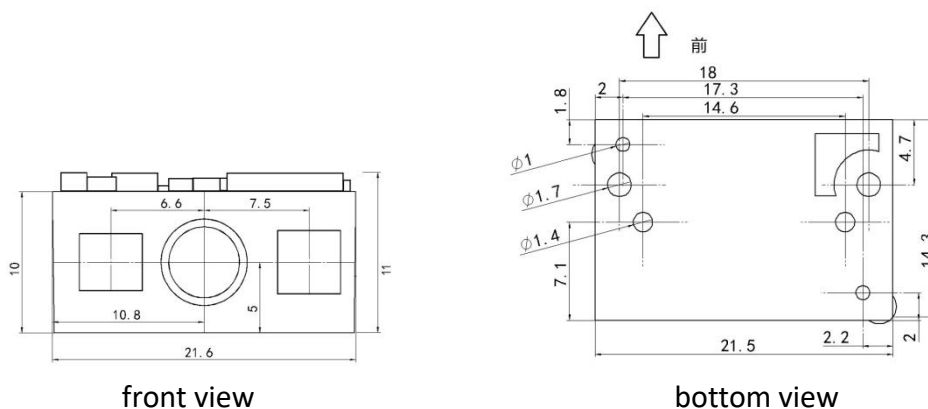
YJD600 provides aiming instructions to assist users in aiming at the target, facilitating barcode reading and improving reading efficiency. Through setting, you can turn on or turn off the aiming function.

2 Installation

2.1 Dimensions

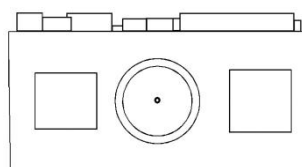
When integrating YJD600, please refer to the following physical size specifications. Please note other components can not oppress YJD600 devices when design structure.

Note: The screw installation depth does not exceed 2.5mm. (Unit: mm)



2.2 Direction of installation

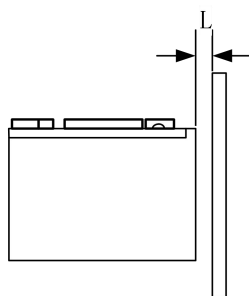
There are 6 screw holes at the bottom of YJD600 for optional installation. When the screw installation holes “s” are facing downwards, the following figure shows the appearance when correctly placed or installed.



2.3 Window position

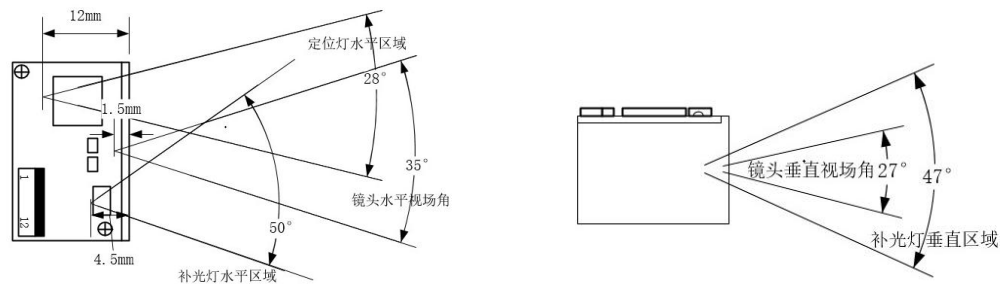
The window is a transparent medium installed in front of YJD600. The window should be placed as far as possible so that the illuminating beam and aiming beam are emitted, and to prevent reflections from entering the field of view of the lens. If the illumination beam is reflected into the field of view of the lens, the reading performance of the module will be reduced.

The installation of the window should be as close to the front of YJD600 as possible and parallel to the front plane of YJD600. In order to obtain good reading performance, the thickness of the window material should also be reduced as much as possible. As shown in the figure below, the vertical distance between the near end of the window and the front end of YJD600 does not exceed $L=0.5\text{mm}$. The thickness of the window lens should not exceed 1mm.



2.4 Window size

The basic requirement of designing the window size is to ensure that the lens and the field of view area of the positioning lamp are not blocked, and on this basis, not blocked the lighting area as much as possible. The size design of the window can refer to the following diagrams of the optical areas.



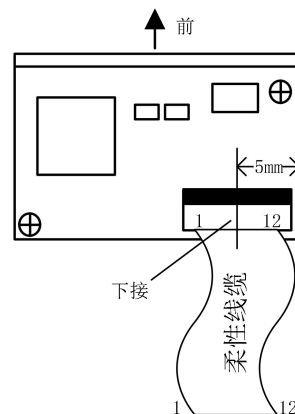
2.5 Thermal considerations

YJD600 will emit heat during work. In the case of long-term continuous work, the accumulation of heat will increase the temperature of YJD600. In a high temperature environment, it will increase image noise, reduce image quality, and reduce reading performance. Avoid wrapping YJD600 with heat-insulating materials such as rubber.

3 Interface

3.1 Interface description

The following figure and table show the connection description of the 12-pin connector of YJD600.



| PIN | Definition | I/O | Description |
|-----|------------|-----|---|
| 1 | NC | — | Hung in the air |
| 2 | VCC | - | 3.3Vpower input |
| 3 | GND | - | ground |
| 4 | RX | I | TTL receive |
| 5 | TX | O | TTL transmit |
| 6 | D- | I/O | USB D-signal |
| 7 | D+ | I/O | USB D+signal |
| 8 | NC | — | — |
| 9 | BUZZER | O | Passive buzzer output signal, idle output low electric level |
| 10 | LED | O | Indicator output signal, idle output low electric level |
| 11 | RESET | I | Reset signal input, active low. Keep the low electric level above 100us to reset the device |
| 12 | nTRIG | I | Trigger key input signal, keep the low electric level for more than 5ms to trigger code reading |

3.2 Flexible cable

The 12-pin, 0.5mm-pitch flexible cable used in the connector can be designed as a same-side or different-side cable according to the application. In order to ensure the reliability and working stability of the connection, reinforcing materials can be used at the connection end of the cable.

3.3 Interface of control

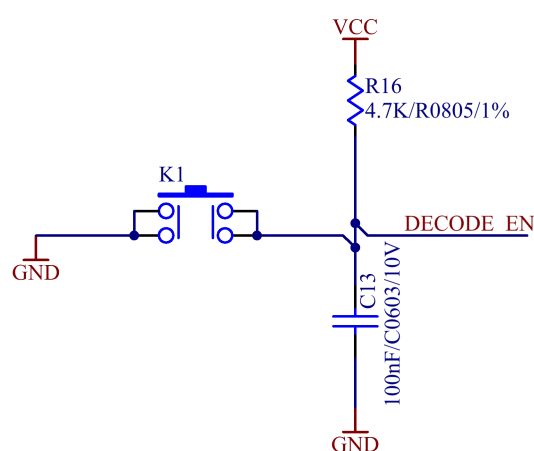
Reset

When the YJD600 RESET pin (PIN 11) remains at a low level for at least 100us and then returns to a high level or a floating state, the YJD600 will be restarted.

Control of trigger

The nTRIG pin (PIN 12) means triggering in low electric level input, and when high level, it means triggering stop (or release). The scanning module starts to read after receiving the trigger, and will output the decoded information after the reading is successful, and then wait for the trigger signal to stop (or release). During the trigger process, the trigger signal stops (or releases) and the reading process is terminated. It is recommended that the interval between the two trigger signals is not less than 50ms.

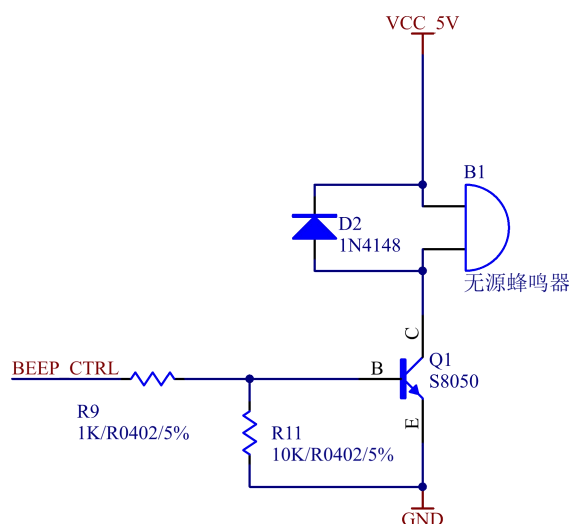
Can refer to the following trigger circuit design::



Control of buzzer

BUZZER pin (PIN 9) uses PWM to provide signal output. When the module is started, the reading is successful, etc., the PWM signal will be output at the PIN 9 pin according to the setting. This signal output can drive the buzzer to sound a reminder through an external supporting circuit. PIN 9 has limited load capacity and cannot directly drive the buzzer to sound.

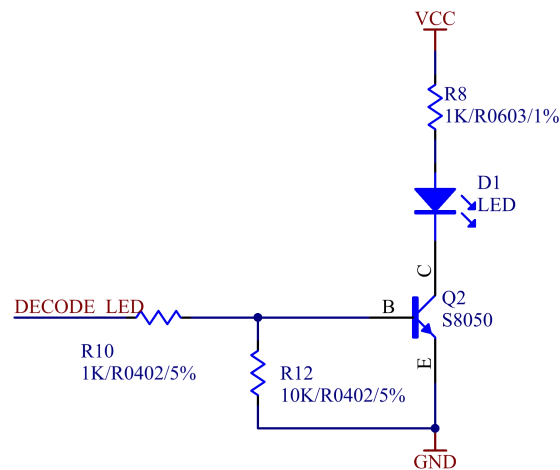
Refer to the buzzer drive circuit as shown in the figure below::



Control of decoding LED

The LED pin (PIN 10) sends out an electric level prompt signal when the decoding is successful, and is usually used as an input control signal for the external decoding LED prompt. When the decoding is successful, the pin will output a high-level pulse. The load capacity of the LED pin is limited, and the light-emitting diode cannot be directly driven, and a supporting light-emitting diode drive circuit is required.

Refer to the following figure for the supporting LED prompt driving circuit used::



4 Electrical characteristics

Working voltage

Ta=25°C

| symbol | Name | Min | Typical | Max | Unit |
|--------|-------------------------------|---------|---------|-----|------|
| VDD | main power supply of system | 3.0 | 3.3 | 3.6 | V |
| VIL | IO input low electric level | - | - | 0.8 | |
| VIH | IO input high electric level | 2 | - | - | |
| VOL | IO output low electric level | - | - | 0.4 | |
| VOH | IO output high electric level | VDD-0.4 | - | - | |

Working current

Ta=25℃, VDD=3.3V

| Name | Max Value | Unit |
|----------------------------|-----------|------|
| Current of standby | 70 | mA |
| Working current of reading | 170 | |