MIR6

Embedded 2D Barcode Scanning Module

Specification V1

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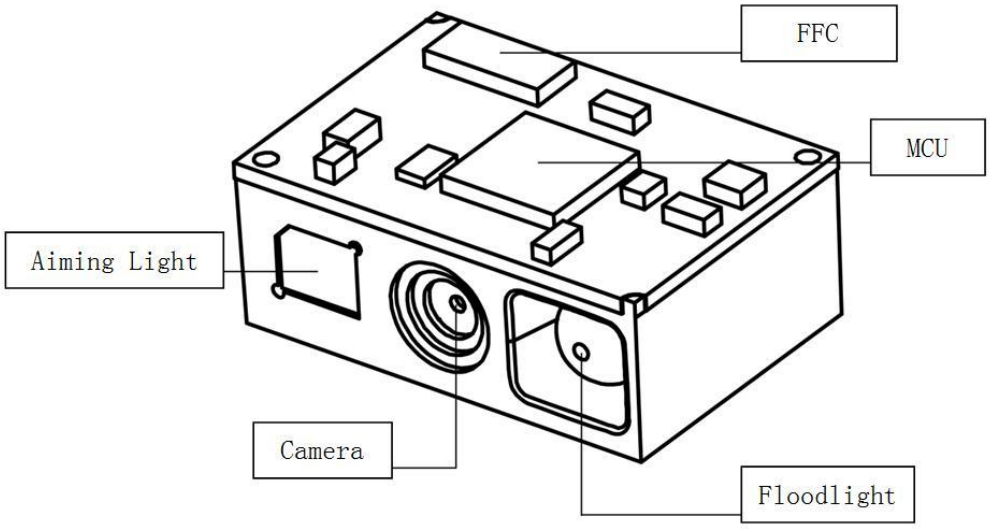
Introduce

MIR6 module is a high performance, cost-effective embedded 2D image barcode module. It delivers the same high-quality when your products need to capture 1D, 2D bar codes and Passport OCR number recognition.

It has good capability to read bar codes that are printed on paper labels or displayed on the screen of a mobile phone or computer; and the rapid scanning speed that protects worker productivity and the customer experience. With MIR6, you can create products that will make a difference for your customers — and their customers. It is designed for various built-in and OEM solutions, such as self-service kiosks, POS (Point-of-Sales) terminals, ATM, price checkers, healthcare and mobile device solutions etc.

Appearance

The picture below shows the appearance of MIR6, with electronic components such as MCU and FPC on the upper surface. The front scanning window is used to scan barcodes. There are two M1.6 screw holes at the bottom for fixing MIR6 to other devices.



【MIR6 Appearance】

Attention:

> In order to maintain the excellent reading performance of the scanner, please keep the product clean.

> Please use soft cloth to clean the window. Do not spray any liquid on the window.

Features

- Excellent reading performance for barcodes on screen and paper.
- It supports passport OCR-B number recognition function.
- It is easy to integrate into other equipment with small size and multiple fixing holes.
- Optional multiple interfaces such as USB-KBW, USB-COM and TTL.-UART.
- It can read 3mil barcodes with 1 million global shuttle camera.
- It supports multiple working modes (manual, continuous, induction) to meet different reading requirements.
- It supports customized requirements.

Application

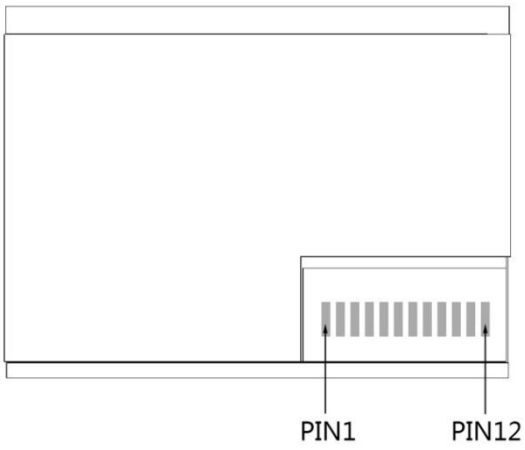
This high-performance embedded 2D image module is specially designed to provide customers with OEM product applications. It can be easily embedded in various devices as barcode reading component applications, such as queuing machine, self-checking machine, ticket checking machine, automatic Vending machines, supermarket lockers, manufacturing, etc.



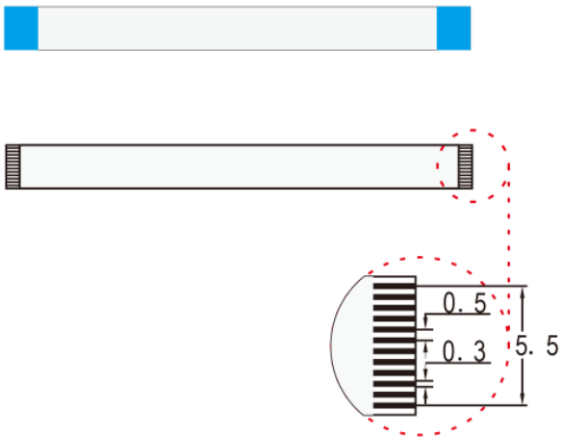



Data Cable

The MIR6 physical interface is a 12PIN FPC interface, which can be multiplexed into two communication forms: TTL-232 communication and USB communication. The figure below is a schematic diagram of connecting the cable to the data interface.

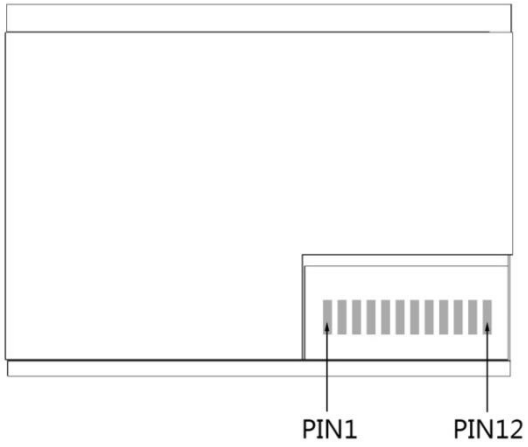


FPC Sketch



Interface Definition

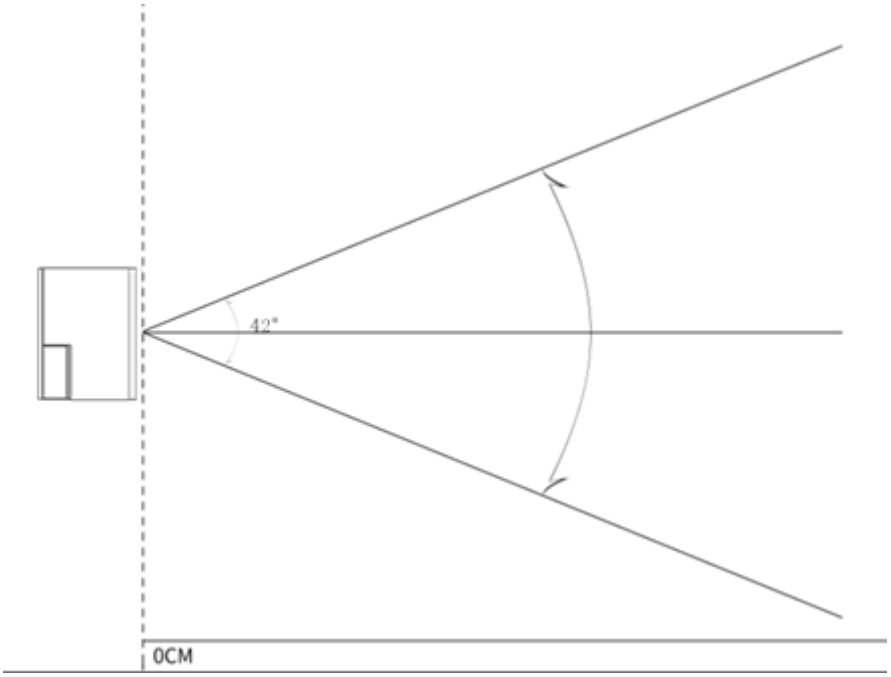
MIR6 uses 12pin pitch 0.5 data interface. The following table lists the names and signal descriptions of each PIN of the 12PIN-connector.

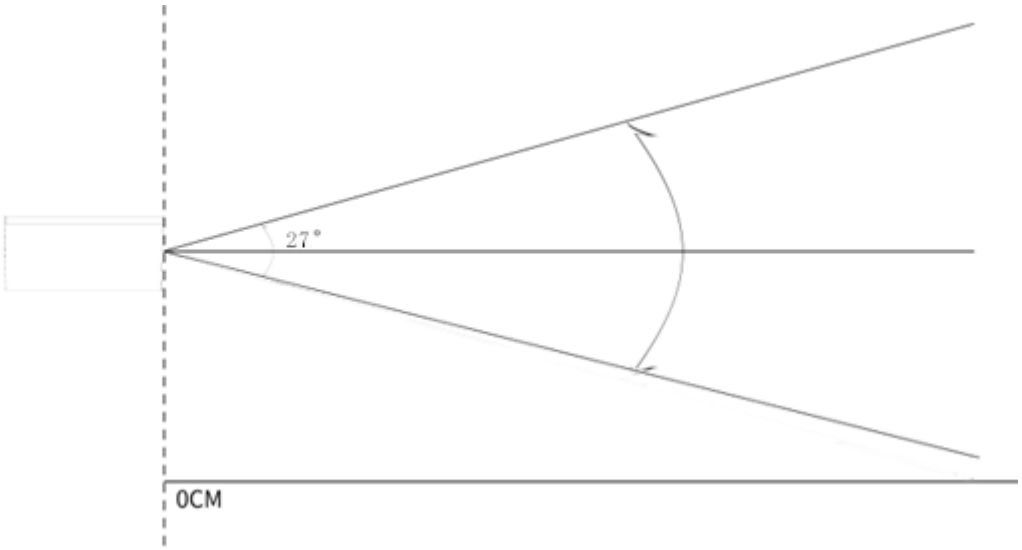


PIN#	Signal	Type	Definition
1	NC	-	NC
2	VIN	P	3.3V±5% Power Input
3	GND	P	Ground
4	UART_RX	Input	TTL-RS232 Receive，3.3VElevtrical Level
5	UART_TX	Output	TTL-RS232Send，3.3VElectrical Level
6	USB_DM/D-	Input/Output	USB_D- Signal
7	USB_DP/D+	Input/Output	USB_D+ Signal
8	NC	-	NC
9	BEEP	Output	Passive buzzer output signal, idle low level
10	LED	Output	Decoding successful prompt output signal, idle low level
11	NC	-	NC

12	TRIG	Input	Low level trigger, keep low level for more than 20ms to trigger code reading (external pull-up resistor is required)

Reading Perspective





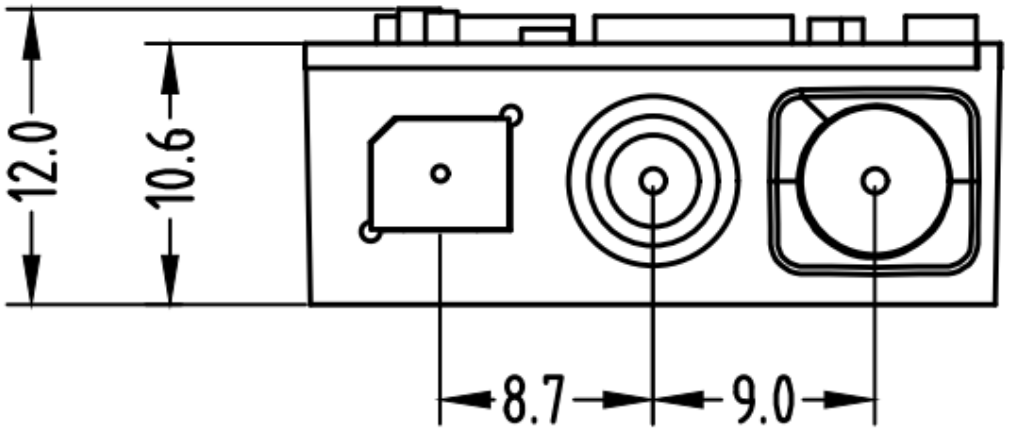
Depth of Field

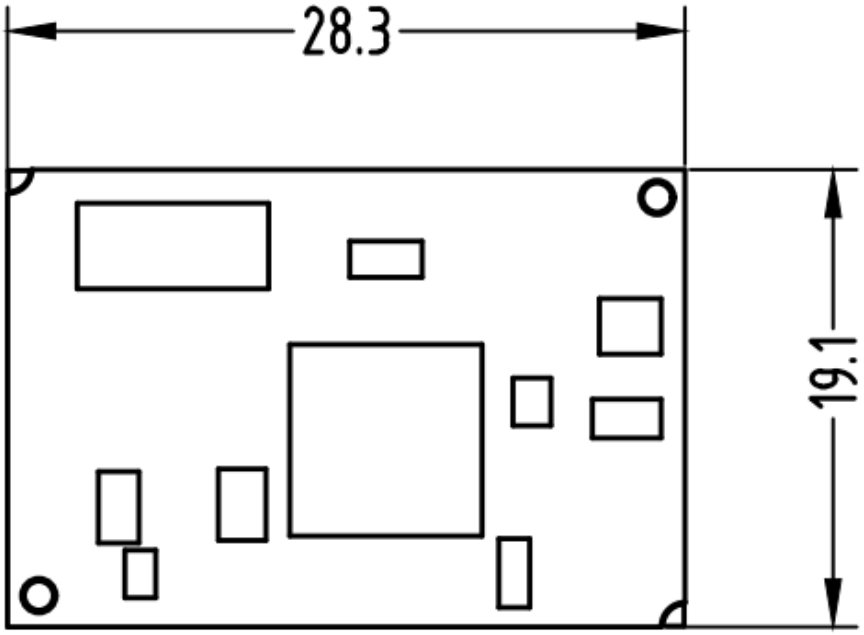
Barcode Type	Barcode Density	Minimim	Maximum
Code 39	0.075mm(3mil)	80mm	190mm
Code 39	0.25mm(10mil)	80mm	420mm
UPC/EAN	0.33mm(13mil)	70mm	550mm
WeChat Payment Code	6 inches Screen	70mm	650mm
Alipay Payment Code	6 inches Screen	70mm	750mm

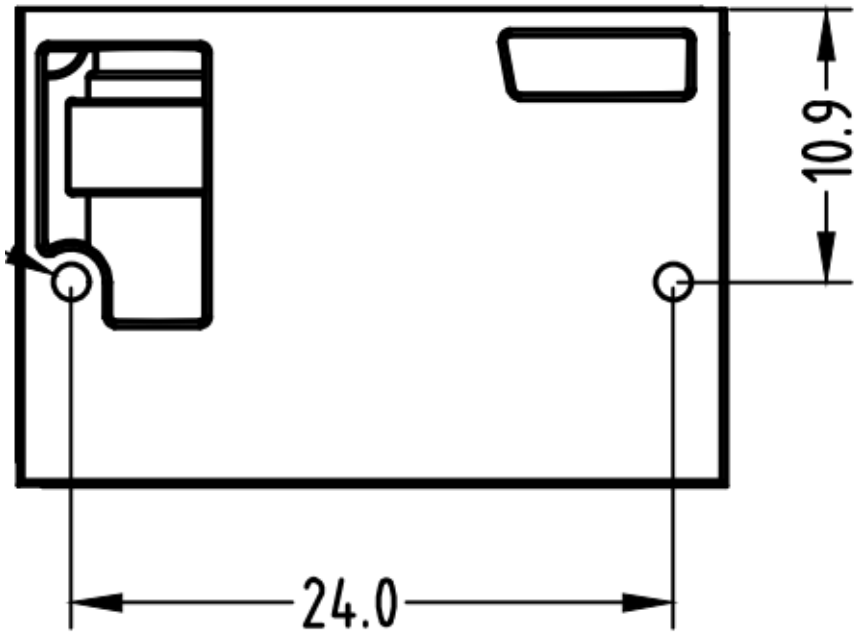
Physical Dimension

The MIR6 embedded 2D image module adopts an integrated design. When using MIR6 for integrated applications, you can refer to the following physical size specifications.

Unit：mm







Performance

Communication Mode	USB（USB-HID KBW，USB-COM），TTL-UART
Sensor	CMOS，Global shutter
Pixel	1 million
Light	(Aimer) Red color LED; (Illumination) White color LED
Reading Precision	≥3mil/0.076mm（PCS90%,CODE 39, ≥8mil/0.2mm@PCS90% QRCode
Depth of Field	70mm~750mm
Decoding Speed	65cm/s

Reading Mode	Manual, Induction, Continuous, Command Control
Prompt Mode	LED, Buzzer（External Circuit）
Reading Perspective	42° Horizontal, 27° Vertical，D49°
Reading Angle	Roll: ±360°，Pitch:±60°，Skew: ±55° CODE39, 10mil/0.25mm, PCS90% (Test Conditions)
Print Contrast	≥15%
Ambient Illumination	0~ 100,000 Lux, Dark Environment, Indoor Natural Light
Code System	1D：UPC-A，UPC-E，EAN-8，EAN-13，Code 128， GS1-128， Code 39，Code 32, Code 93，Code 11，Interleaved 2 of 5，Matrix 2 of 5，Industrial 2 of 5(Straight 2 of 5)，Standard 2 of 5（IATA 2 of 5）,Codabar（NW-7），MSI，GS1 Databar(Omnidirectional, Limited, Expanded)，China Post, Telepen, Febraban，GS1 Composite etc. 2D: QR Code， Micro QR Code, Data Matrix，PDF417, Micro PDF 417，MaxiCode, Aztec，HanXin Code, etc.

Mechanical / Electrical Parameters

Weight	5.5g
Dimension	28.3mm L* 19.1mm W * 12.0mm H
FFC Length	5cm（Single Side）
Interface Mode	FPC 12PIN Pitch 0.5
Working Voltage	DC 3.3V
Current	220mA（Average Work），120mA(Standby)，40mA(Sleep)

Note:

MIR6 uses a global shuttle exposure camera, the lighting brightness will automatically adjust the brightness according to the reading distance, and the working current will change dynamically.

Working Environment

Working Temperature	-20℃ to 50℃
Storage Temperature	-40℃ to 70℃
Working Humidity	5% to 95% (Non-Condensing)
Transportation Vibration Test	10H@125RPM

Spare Part List

FFC	12Pin Pitch 0.5 (Same Side) 5cm.
Development (Optional)	Used to connect modules and wires, with output functions of different interfaces, and scan prompt function.
Cable (Optional)	Used to connect the development board and the communication host, optional different interface wires.
Power adapter (Optional)	Output: DC5V 1A, input: AC100~240V 50~60Hz, can be used for serial port power supply.

Control Interface

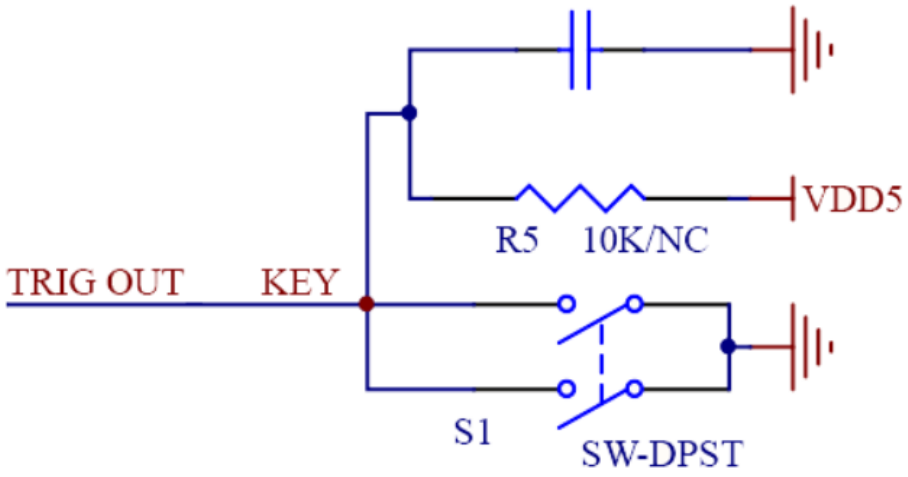
Trigger Control Interface

TRIF pin (PIN 12) means triggering when low level is input, and it means triggering stop (or release) when high level is input. MIR6 will start to read after receiving the trigger, and will output decoded information after successful reading, and then wait for the trigger signal to stop (or release). During the triggering process, the reading process will be terminated when the trigger signal stops (or releases).

A new reading process needs to regenerate the trigger signal.

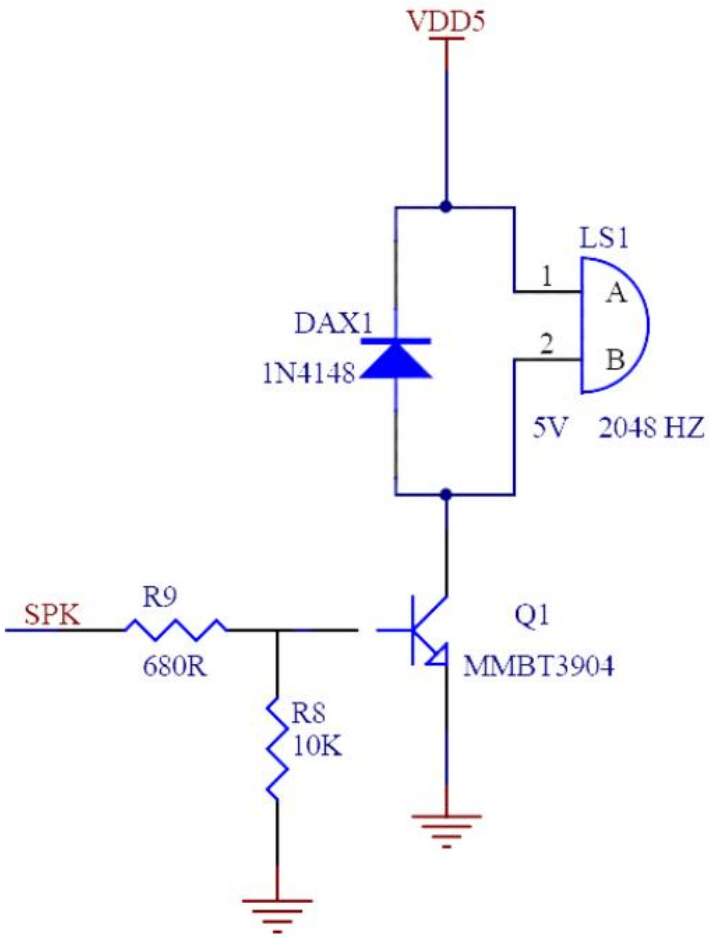
The reading process needs to go through the steps of image acquisition, barcode recognition and interpretation. It is recommended that the interval between the two trigger signals should not be less than 50ms.

Refer to the following trigger circuit design:



Buzzer signal

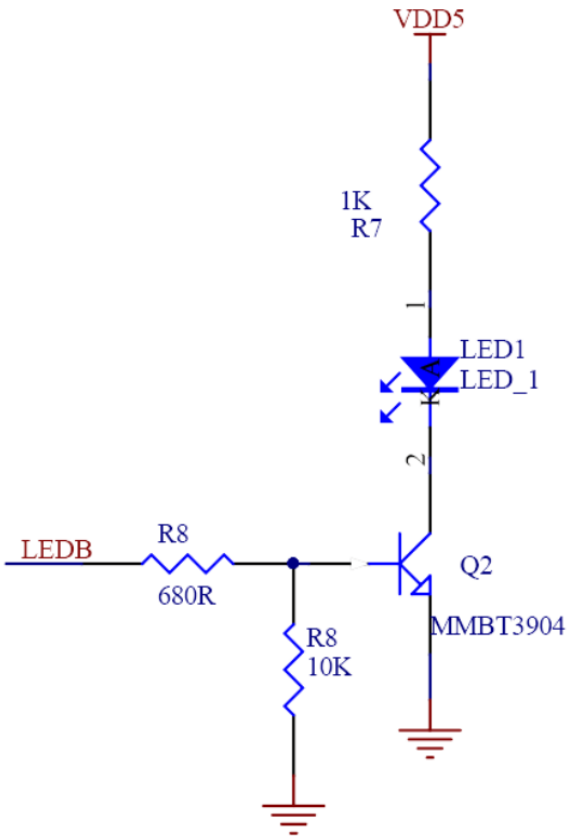
In MIR6, the BEEP pin (PIN 9) uses PWM mode to provide Beeper signal output. In the case of starting MIR6 and successful reading, the PWM signal will be output on the BEEP pin according to the setting, and the signal output can drive the buzzer to emit a warning sound through an external supporting circuit. The load capacity of the BEEP pin is limited. It is not allowed to directly drive the buzzer to sound, so as not to damage the chip on the MIR6. Refer to the buzzer drive circuit as shown in the figure below:



Decode LED signal

The LED pin (PIN 10) of MIR6 can provide a level prompt signal when decoding is successful, and is usually used as an input control signal for external decoding LED prompt. When the decoding is successful, the LED pin will output a high-level pulse and eventually return to low-level.

The load capacity of the LED signal output pin is limited, and it is impossible to drive the light-emitting diode directly, and a supporting light-emitting diode drive circuit is required. Refer to the supporting LED prompt driving circuit as shown in the figure below:



Testing Conditions: Environment Temperature = 24℃, Ambient Light Illumination = 300LUX; Testing Barcodes Will Be Provided By Our Company

Notice: There will be no announcement if changing parameters

Our company has the final right to interpret this parameter