TRS-302M

2D Fixed Mount Barcode Scanner

1.Introduction

CMOS 2D barcode reading module with high performance characteristics of fast reading speed, high resolution, small size and long depth of field, which can be easily embedded into various devices as barcode reading components.

Including a series of comprehensive technologies such as: shape structure, optical imaging system, photoelectric conversion system, waveform digital processing, graphics processing algorithm, decoding algorithm, embedded system, etc. Therefore, this product can be modified and customized according to the special needs of different customers. TRS-302M can read a variety of 1D barcodes. It has the following features:

◆ Support serial port mode, support command control function.

◆ Support USB virtual serial port function, compatible with a variety of software.

◆ Standard wiring function, compatible with most products in the market.

Support upgrade function for later maintenance and function expansion.

Multi-language support, support a variety of national keyboard languages.

2.Working Parameters

Interface Support

◆ UART-TTL: TTLlevel serial communication interface.

Used in all kinds of embedded operating environments, to provide high performance barcode reading, especially for all kinds of POS, cash register, PDA, embedded applications.

◆ USB-HID: keyboard simulation device based on usb-hid protocol can be directly connected with USB ports of PC, no need to install the driver.

Connect various USB devices, HID output data. Suitable for various systems such as WinCE, WINDOWS, LINUX, etc.

◆ USB-VCP: serial communication simulation device based on USB can be directly connected with USB ports of PC, need to install the driver. Support virtual serial connection, high speed and stable transmission.

Operating Environment

Operatingvoltage	5V
Operatingcurrent	70mA
Maximumcurrent	100mA
Operatingtemperature	-20°Cto60°C
Workinghumidity	5%to90%
Ambientillumination	0-100,000lx

Storage Environment

Storagetemperature	-40°Cto85°C
Storagehumidity	5%to90%

Depth of Field

* for barcodes exceeding 13mil. Blind spots mainly depend on perspective coverage.

3.Performance Characteristics

Read mode	CMOS
Light source	LED (6000K) 900lux @100mm
Mark light	No
Light source intensity	265 LUX (130 mm)
Scan angle	Omnidirectional decoding
Scan speed	30 times/second
Resolution	640*480 pixel
Reading accuracy	4mil
Print contrast	≥20%
Support codes	1D SUPPORT: Industrial 25, standard, matrix 25, code 11, codabar, MSI/Plessey, code39(standard 39 & fullASCII code39), code 32, code 93, code128, UPCA, UPCE, EAN13, EAN8, UPC/EAN, add-on 2/5, ISBN, ISSN, GS1(RSS) Rss-14, LIMITED, EXPENDED, include GS1 STACK 2D SUPPORT: PDF417, DATA Matrix,QR code.ect.

4. Electrical Characteristics

Dimensions

Overall size	65.1*61.6*33mm
Location hole	Φ3.4mm * 4mm
Weight	45g±1g(15gglasscover included)

Interface Definition

This module supports USB connection and serial port connection (TTL-232).
The interface sequence is defined as follow: 1.Adopt Standard micro USB interface. 2.Adopt SH1.05PIN TTL-232 serial port.
* the other end is connected to the serial interface of the device. If the ninth pin of the serial interface does not provide power, a 5V (positive inside and negative outside) power supply should be added to the cable.

TTL-232 PIN

Pin	Name	Type	Instruction
1	GND	Grand	Grand
2	RXD	IO	TTL level
3	TXD	IO	TTL level
4	VCC	Power	DC 5V
5	GND	Grand	Grand

USB PIN

PIN	NAME	TYPE	NOTE
1	GND	Grand	Grand
2	D+	IO	USB DP
3	D	IO	USB DM
4	VCC	Power	DC 5V

5	GND	GRAND	GRAND

5.Installation

Optical Requirements

Window Placement

When install this module, a transparent medium window can be installed in front of the module in order to separate the inside and outside of the product. The size of the window can make the illuminating beam completely emitted and prevent light reflection from entering the module. If illuminating light reflects into the module, it will affect the reading performance. In order to ensure good reading performance, the distance between the far end of the window to the front end of the module is not more than 3mm, and the distance between the near end of the window to the front end of the module is not more than 2mm. If the window is designed by tilt, vertical installation is required.

Material and Color of Window

When selecting material and color of the window, there are the main points of the main consideration: high transmittance of light (red light), high definition and the uniform refractive index. Optical glass or PMMA is usually used. At the same time, should consider the design of anti fouling and scratch prevention, because scratching and fouling will affect the performance of reading. Wear resistant materials or coatings can be selected on the window material.

Window Size

The size of the window is based on the premise that it does not block the field of view and the lighting area as much as possible. The optical region of this module is shown in the figure below.

Optical vertical region diagram, horizontal scanning angle: 44°.

Optical vertical region diagram, vertical scanning angle: 34°.

Ambient Light

This module has its own light, which can be used normally in the absence of ambient light, and it can be well adapted to 50Hz~60Hz common ac fluorescence lighting.

Using Safety

The light used in this module is LED light, and the wavelength range of light generated is safe. Try to avoid looking directly at the light and cause discomfort when using.

Installation

Please refer to the following dimensions when integrating this module into applications.

Front View (unit: mm)

Bottom View (unit**:** mm**) Stereogram**