

自主研发核心解码 · 高集成度 · 小尺寸

XL-108 条码识读模组

XL-108 Barcode Scan Module

640×480 CMOS

≥ 5 mil

DC 3.3 V

21.6 × 14.7 × 14 mm

TTL-232 / USB

自主研发核心解码

In-House Decoding Core

采用自主研发的条码核心解码技术，可快速识读各类条码。
Proprietary barcode decoding core reads all common symbologies quickly.

01

高集成度小尺寸

High Integration, Small Size

解码板与摄像头一体化设计，21.6 × 14.7 × 14 mm，可方便嵌入各种机种外壳。
Decoder board and camera integrated into a 21.6 × 14.7 × 14 mm module that embeds easily.

02

码制齐全

Full Symbology Coverage

可解市面主流一、二维码，并可定制特殊解码需求。
Reads all mainstream 1D and 2D symbologies, with custom decoding available.

03

心跳监测

Heartbeat Monitoring

随时监测模组工作状态，特别适用于强度高、环境恶劣的工况。
Continuous module health monitoring for high-intensity, harsh working conditions.

04



正面光学窗口 (Optical Window)



解码板与 12Pin 接口 (Decode Board)



顶部安装螺孔 (Mounting Holes)

应用场景 Application Scenarios

作为设备配件，广泛嵌入扫描枪、POS 机等终端设备；小尺寸与高集成度设计，便于各类整机厂家快速集成与二次开发。
As a device accessory, it is widely embedded into barcode scanners, POS terminals and other equipment. Its compact size and high integration make it easy for OEMs to integrate and further develop.

XL-108 条码识读模组 Barcode Scan Module

产品特点 Product Features

- 核心技术：**采用自主研发的条码核心解码技术，可快速识读各类条码
Independently developed core decoding technology for fast reading of all kinds of barcodes
- 码制全：**可解市面主流一、二维码，可定制特殊解码需求
Decodes mainstream 1D and 2D symbologies; custom decoding available
- 清晰的瞄准：**提供清晰的绿色指示条定位
Clear green aiming line for precise positioning
- 高集成度：**解码板和摄像头一体化设计，尺寸小，可方便嵌入各种机种外壳
Integrated decode board and camera in a compact size, easy to embed into various housings
- 快速启动：**启动耗时短，开机即用
Short startup time, ready right after power-on
- 心跳监测：**随时监测模组工作状态，特别适用于强度高、环境恶劣的工况
Real-time heartbeat monitoring of module status, ideal for high-intensity and harsh environments

扫描性能 / SCAN PERFORMANCE

传感器 Image sensor	640 × 480 CMOS
照明 Illumination	白光 LED White LED
对焦 Aiming	绿光 LED Green LED
识读精度 Min. resolution	≥ 5 mil
对比度 Print contrast	≥ 25%
扫描角度 Scan angle	转角 360°，仰角 ±55°，偏角 ±55° Roll 360°, Pitch ±55°, Skew ±55°
视场角 Field of view	水平 34°，垂直 28° Horizontal 34°, Vertical 28°

机械 / 电气参数 / MECHANICAL & ELECTRICAL

外观尺寸 Dimensions	21.6 (W) × 14.7 (D) × 14 (H) mm
通讯接口 Interfaces	TTL-232; USB (HID-KBW、虚拟串口) TTL-232; USB (HID-KBW, Virtual COM)
工作电压 Operating voltage	DC 3.3 V
工作电流 Operating current	200 mA
待机电流 Standby current	70 mA

环境参数 / ENVIRONMENTAL

工作温度 Operating temperature	-20°C ~ +50°C
储存温度 Storage temperature	-40°C ~ +70°C
工作湿度 Operating humidity	5% ~ 95% (无凝结 / non-condensing)
环境光照 Ambient light	0 ~ 100,000 LUX

识读景深 / DEPTH OF FIELD

EAN-13	50 ~ 200 mm (13 mil)
Code 39	40 ~ 90 mm (5 mil / 10 字节 bytes)
QR Code	25 ~ 240 mm (20 mil / 16 字节 bytes)
Data Matrix	50 ~ 90 mm (10 mil / 20 字节 bytes)
PDF417	30 ~ 130 mm (6.67 mil / 7 字节 bytes)

识读码制 / SYMBOLOGIES

二维码 2D codes	QR Code, Micro QR, Data Matrix, PDF417, Micro PDF417, Aztec
一维码 1D codes	EAN, UPC, Code 39, Code 93, Code 128, UCC/EAN 128, Codabar, Interleaved 2 of 5, ITF-6, ITF-14, ISBN, ISSN, MSI-Plessey, GS1 Databar, Code 11, Industrial 25, Standard 25, Plessey, Matrix 2 of 5

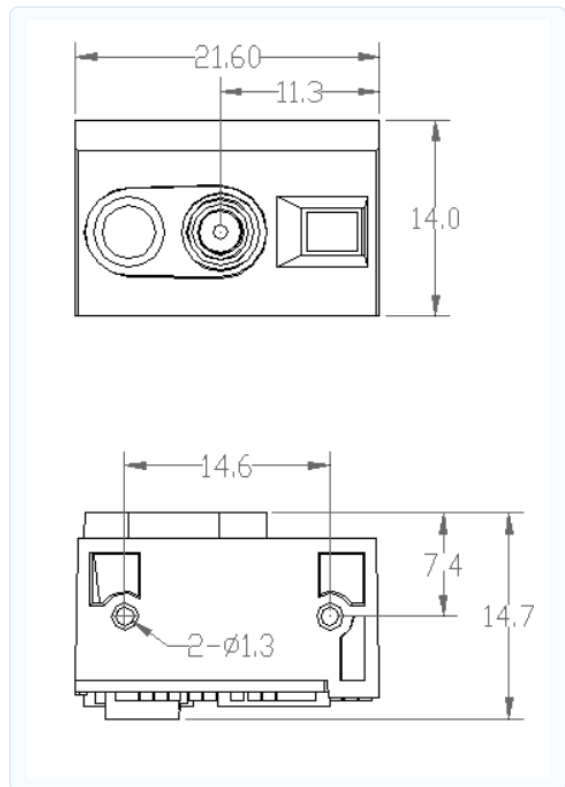
型号说明 / MODEL NOTE

*测试条件：环境温度 = 23°C；环境照度 = 300 LUX 白炽灯；使用定制的测试样码。
 **测试条件：测试距离 = (最小景深 + 最大景深) / 2；环境温度 = 23°C；环境照度 = 300 LUX 白炽灯；2D QR Code, 10 Bytes, 最小条空宽度 15 mil, PCS = 0.8。
 备注：规格如有更改，恕不另行通知。
 Test conditions: 23°C, 300 LUX incandescent light, custom test barcode.
 Specifications subject to change without notice.

接口定义与尺寸 Interface & Dimensions

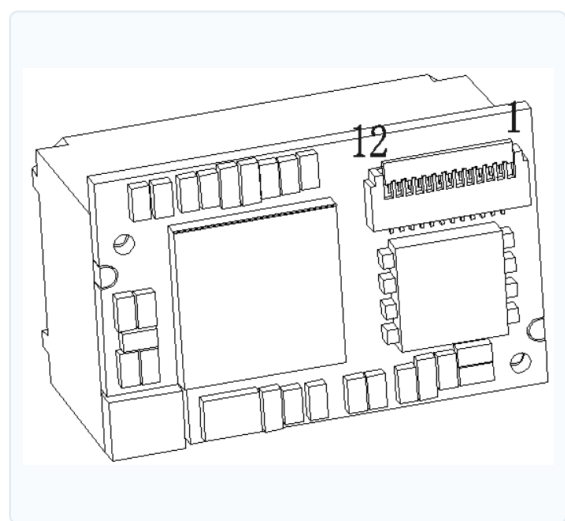
单位 Unit: mm | 连接器 Connector: 12Pin FPC (双面接触 / double-sided contact)

机械尺寸图 Mechanical Dimensions



尺寸: 21.6 (W) × 14.7 (D) × 14 (H) mm; 安装孔 2-φ1.3 mm, 孔中心距 14.6 mm.

12Pin 连接示意 Connector Layout



12Pin 线序定义 12-Pin Pinout Definition

PIN	输入/输出	定义	说明
PIN 1 / 2	电源 Power	VCC	输入 +3.3 V Input +3.3 V
PIN 3	地 Ground	GND	-
PIN 4	输入 Input	RX	串口接收端信号 UART receive
PIN 5	输出 Output	TX	串口发送端信号 UART transmit
PIN 6	输入 Input	D-	USB 口为 D- 信号 USB D-
PIN 7	输出 Output	D+	USB 口为 D+ 信号 USB D+
PIN 8	地 Ground	GND	-
PIN 9	输出 Output	BEEPER	无源蜂鸣器输出信号，空闲低电平 Passive buzzer output, low when idle
PIN 10	输出 Output	DLED	解码成功提示灯，空闲低电平 Decode-success LED, low when idle
PIN 11	-	NC	-
PIN 12	输入 Input	TRIG	弱上拉，低电平触发引擎解码 Weak pull-up, low-level trigger

FPC 连接器为双面接触，具体线序定义见上表；接插件方向以实物丝印为准。

FPC connector uses double-sided contact. Pin order follows the original specification; refer to the silkscreen on the actual part.

接线要点 Wiring Notes

- 供电:** PIN 1 / 2 接 +3.3 V, PIN 3 / 8 接地
Power: +3.3 V on PIN 1/2, GND on PIN 3/8
- 串口:** TX / RX 与主机交叉连接 (模组 TX 接主机 RX)
UART: cross-connect TX/RX with the host
- USB:** D+ / D- 为差分对，建议等长走线
USB: route D+/D- as a matched-length differential pair
- 触发:** TRIG 弱上拉，低电平触发解码
Trigger: TRIG is weak pull-up, low level triggers decoding
- 提示:** BEEPER 驱动无源蜂鸣器、DLED 驱动解码指示灯，空闲均为低电平
Indication: BEEPER drives a passive buzzer and DLED the decode LED; both idle low