

Barcode Scanner HR100





NLS-HR100

Hand-held 1D Barcode Scanner

手持式一维码扫描器

Quick Start

快速使用指南

V2.0.0

Revisions/版本信息

Version/版本	Description/更新描述	Date/日期
V1.0	Initial release,only 6 pages . 最初版本，仅6页。	20090708
V 2.0.0	Support as from HR100 firmware V1.21.21 and higher. 支持V1.21.21 和更高的固件版本。	20100315



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Getting to Start

Unpacking

Unpack and check the main unit and accessories. In case there is any problem, please contact with your dealer.

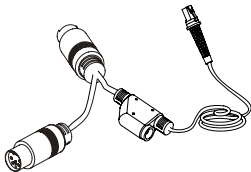
Main Unit

» HR100



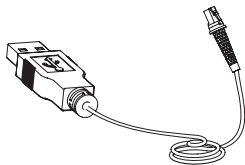
Accessories

» PS/2 Cable

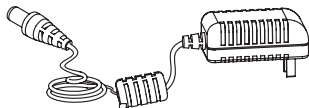
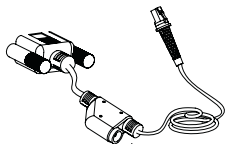




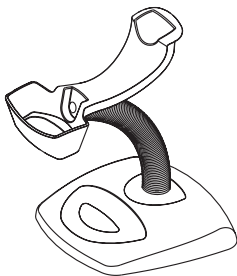
» USB Cable

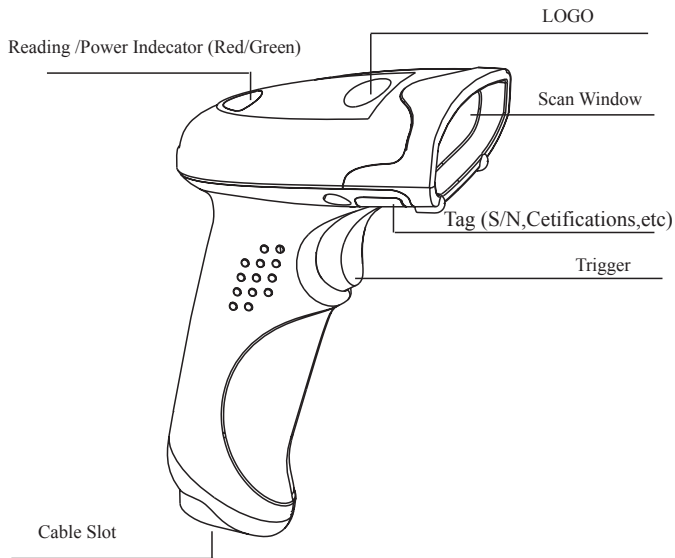


» RS232 Cable + Power Adapter



» Stand







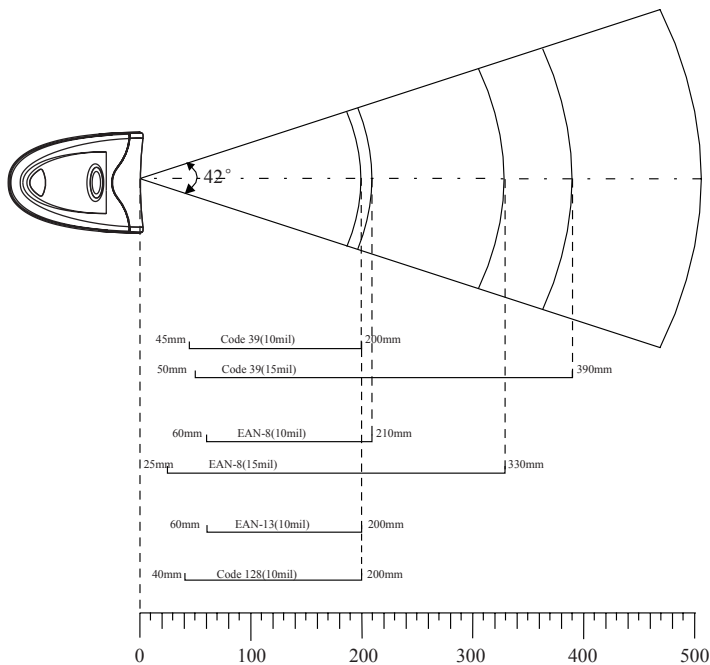
Specification

Performance		
Image Sensor		Linear CCD
Interface		USB-HID, True RS232, TTL level RS232, Keyboard Wedge
Resolving		2500
Decoded Speed		200/s
Symbologies		Code128, EAN-13, EAN-8, Code39, UPC-A, UPC-E, Codabar, GS1 Databar, Interleaved 2 of 5, ISBN/, Code 93, etc.
Precision		$\geq 5\text{mil}$
Light Source		LED 630 nm ± 10 nm
Print Contrast Signal		$\geq 30\%$
Depth of Field		Code 39 (10mil) :25-280; Code 39 (15mil) :20-390; ENA-13 (10mil) :45-230; ENA-13 (15mil) :30-375; Code128 (10mil) :30-300; Code128 (15mil) :25-380;
Sensitivity **	Pitch	$\pm 60^\circ @ 0^\circ$ Roll and 0° Skew
	Roll	$\pm 30^\circ @ 0^\circ$ Pitch and 0° Skew
	Skew	$\pm 75^\circ @ 0^\circ$ Roll and 0° Pitch
Illumination		0 ~ 100,000 LUX
Mechanical/ Electrical		
Power Consumption		0.7W (Max)
Voltage		DC 5.0V
Current	Peak	150mA
	Operat.	120mA
	Idle	45mA
Weight		105g
Environment		
Operate Temperature		$-0^\circ\text{C} \sim +50^\circ\text{C}$
Storage Temperature		$-40^\circ\text{C} \sim +60^\circ\text{C}$
Humidity		5% ~ 95% (non-condensing)
Certifications		FCC Part 15 Class B, CE EMC Class B

**Test Condition:

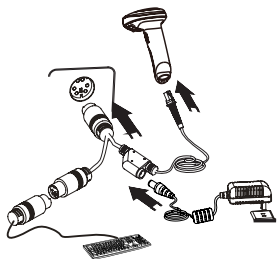
Code39: 3 Bytes ; Resolution = 10mil; W:N = 2.5:1 ; PCS = 0.8 ;

Barcode Height = 11mm; Distance = 120mm; T=23° C; Illumination= 200 LUX



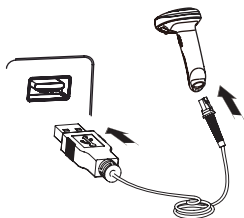
Connect HR100 to the Host

Connecting with PS/2 Cable



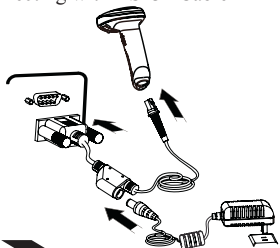
- 1、Insert PS/2 cable (RJ 45 male DIN) into HR100 cable slot;
- 2、Insert PS/2 cable (PS/2 male DIN) into Host PS/2 female slot;
- 3、If necessary, connect PS/2 cable and the power adapter;
- 4、If necessary, keyboard can connect to female slot on the PS/2 cable.

Connecting with USB Cable

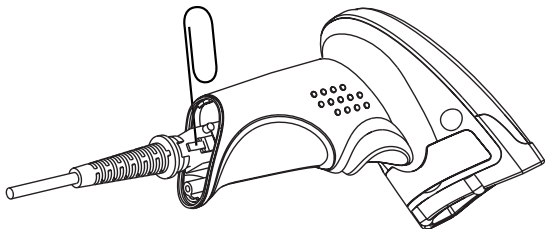


- 1、Insert USB Cable (RJ45 male head) into HR100 cable slot;
- 2、Insert USB Cable (USB male head) into Host's (female) USB connector.

Connecting with RS232 Cable



- 1、Insert RS232 cable (RJ45 male head) into HR100 cable slot;
- 2、Insert RS232 cable (RS232 male head) into Host's (female) RS232 connector;
- 3、Connect RS232 cable and the power adapter.



A Pin that fit the HR100 “Dismount hole” is needed. A paper clip could be ideal. Stretch one end of the paper clip to fit the “Dismount Hole” . Follow the steps:

- 1、 For RS232 and PS/2 connections, unplug the power adaptor.
- 2、 Insert the Pin into “Dismount Hole” and keep some pressure.
- 3、 Pull out the cable gently.
- 4、 Pull out the Pin after the cable is removed.
- 5、 Unplug the connector from the Host.



» Power On

Connect HR100 and Host. One click the "Trigger". HR100 powers on and in "Idle" (ready to use) state (factory default).

» Power Off

There are 4 ways to "Power OFF" :

- 1、 Remove Cable Off HR100;
- 2、 Remove Power Adapter Off RS232 Cable;
- 3、 Remove USB Cable Off the Host;
- 4、 Remove PS/2 cable off the Host or power adaptor off.

» IDLE

When reader is NOT reading, it is in "IDLE mode".

No reading attempt within a timeout, the Imager switch to IDLE mode automatically.

» RESTART

If HR100 halted and does not respond to operations, please "Restart" by "Power OFF", and then "Power ON".





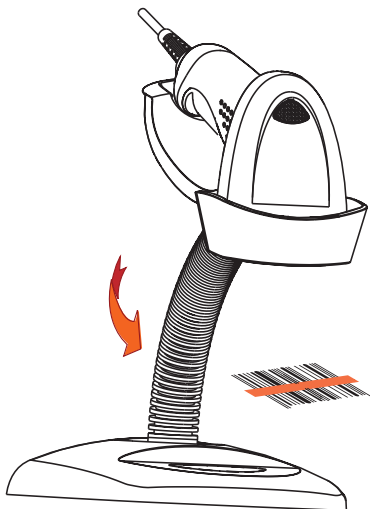
Reading

Hand-held Mode

- 1、Ensure HR100, cables, and the Host are connected, then turn the unit Power ON
- 2、Press & hold Trigger. Illumination LED cast an Illumination Pattern (red light line) ;
- 3、Keep Illumination Pattern in the center of a bar code. Zoom in and zoom out to allocate the Optimum Reading Stance.
- 4、On a successful reading, there' ll be a beep sound, illumination die out. The HR100 then transmits barcode message to the Host.

NOTE: Experiences tell a certain range of distances has higher successful reading rate. This range is the Optimum Reading Stance.





- 1、Select reading mode “sensor mode” or “continuous mode” when working in hands-free mode.
- 2、Adjust the stand height for the optimum reading stance.





Programming Code

Query

After reading interrelated programming barcodes, the engine will feed information needed back to the Host to achieve the purpose of query.

Code Programming ON



Code Programming OFF



Query Product Information



Query Manufacturing Date



Query Hardware Version



Query Product Model



Query Product ID



Code Programming ON



Code Programming OFF



Load All Factory Default

Part of Factory Default

Subject	Factory Default		
Interface	USB-HID, Keyboard Wedge		
	True RS232 TTL level RS232	Baud Rate	9600bit/s
		Parity Check	No Check
		Data / Stop Bit	8 bits/1 bit
Beep	On		
Scan Mode	Hand-held Mode		
1D Symbols (Enable)	Code128, EAN-13, EAN-8, Code39, UPC-A, UPC-E, Codabar, GS1 Databar, Interleaved 2 of 5, ISBN/ISSN, Code 93, etc.		



1、Hand-held Mode: Factory Default, scan engine will begin to scan when triggered. And when it scans successfully or the trigger is released, the engine will stop scanning.

Code Programming ON



2、Sensor Mode: After programming, the engine will start to sense the environment without trigger. After a scan, it will stop and keep sensing to wait another illumination changing. In sensor mode, a trigger also can start a scan. The sensitivity level could be chosen.

Code Programming OFF



3、Auto Mode: First program the engine, then trigger it, the engine will start to scan. After a scan, the engine will not stop but start a new one automatically until another trigger. By default, the engine will not repeat reading a same barcode.



Hand-held Mode
(Factory Default)



Sensor Mode



Auto Mode





Baud Rate

Under RS232 connection, the engine and the Host should set communication baud rate to the same to keep normal communication.

Baud rate is the bits transmitted per second (8 bits per bytes). The engine and the Host must communicate at the same baud rate. The reader supports baud rate as the following:



9600
(Factory Default)



2400



14400



38400



115200

Code Programming ON



Code Programming OFF



1200



4800



19200



57600



Check



No Check
(Factory Default)



Odd Check

Code Programming ON



Code Programming OFF



Even Check

Stop Bit



0.5 Stop Bit



1 Stop Bit
(Factory Default)



1.5 Stop Bit



2 Stop Bit





Data Bit



8 Data Bit
(Factory Default)



7 Data Bit

Code Programming ON



Code Programming OFF



Flow Control



No Flow Control
(Factory Default)



CTS Flow Control



RTS Flow Control



RTS_CTS Flow Control



USB Programming

USB HID-KBW

Code Programming ON



Code Programming OFF



USB HID-KBW

USB COM Port Emulation



USB COM Port Emulation





Keyboard Layout

Scan the appropriate country code below to program the keyboard for your country.



No. 0 Chinese (Factory Default)



No.1 American



No.2 Belgian



No.3 Danish



No.4 Finnish



No.4 French



No.6 Autrichien, German

Code Programming ON



Code Programming OFF



No.7 Italian



No.8 Norwegian



No.9 Spanish



No.10 Swiss



No.11 English



Character Delay

Character delay time is 0 to 150ms.



Chracter Delay

Code Programming ON



Code Programming OFF



Character Conversion



Constant



All Capital



All Small



Reverse





Function Key

Code Programming ON



Code Programming OFF



Caps Lock



Caps Unlock



Nums Lock



Nums Unlock



Scroll Lock



Scroll Unlock





Beeper



No Beeper Output



High Frequency & Loud Volume



High Frequency & Medium Volume



High Frequency & Low Volume



Medium Frequency & Loud Volume



Medium Frequency & Medium Volume



Medium Frequency & Low Volume

Code Programming ON



Code Programming OFF



Low Frequency & Loud Volume



Low Frequency & Medium Volume



Low Frequency & Low Volume



150ms Sound Length



100ms Sound Length



50ms Sound Length



Need to program stop suffix and enable it supports line feed and carriage return.

Code Programming ON



Program Stop Suffix

Code Programming OFF



Program Stop Suffix



Set Stop Suffix as 0x0D,0x0A
and Enable Sending



Set Stop Suffix as 0x0D and Enable Sending

Stop Suffix Enable and Disable



Disable Stop Suffix
(Factory Default)



Enable Stop Suffix





Code 128

Code Programming ON



Code Programming OFF



Enable Code 128
(Factory Default)



Disable Code 128



Min Message Length(default:1)



Max Message Length(default:255)

EAN-8



Enable EAN-8
(Factory Default)



Disable EAN-8





Symbols

Interleaved 2 of 5



Enable Interleaved 2 of 5
(Factory Default)



Disable Interleaved 2 of 5



Min Message Length (default:6)

Code Programming ON



Code Programming OFF



Max Message Length (default:255)

EAN-13



Enable EAN-13
(Factory Default)



Disable EAN-13

UPC-A



Enable UPC-A
(Factory Default)



Disable UPC-A



Symbols

UPC-E



Enable UPC-E
(Factory Default)



Disable UPC-E

Code Programming ON



Code Programming OFF



Code 39



Enable Code 39
(Factory Default)



Min Message Length(default:4)



Disable Code 39



Max Message Length(default:255)

GS1 Databar



Enable GS1 Databar
(Factory Default)



Disable GS1 Databar



Appendix

A. Testing Codes

EAN-8 10mil 8bytes



EAN-8 15mil 8bytes



Code 39 10mil 3bytes



Code 39 15mil 3bytes



Code 128 10mil 5bytes



EAN-13 10mil 13bytes





B. Digit Code and Save

It is must to read save after reading digit code.



0



6



B



1



7



C



2



8



D



3



9



E



4



A



F



5



Save



C. Troubleshooting

Problem	Possible Cause	Possible Solution
Scanner does not turn on	With RS232 communication, adapter not inserted	Insert the adapter
	With RS232 communication, communication interface fails.	Connect communication port in right way
	With USB or PS/2 communication, communication interface fails.	Connect communication port in right way
Scanner does not send data to host computer	Scanner is not connected to the host.	Check all cable to host computer.
Receive garbled with RS232	Scanner and the host baud rate settings are inconsistent	Check scanner and PC-side communication port baud rate settings are the same
Scanner does not read barcodes	Did not enable the barcode	Please enable it
	Scanner can not read the barcode by it's firmware.	Please contact the dealer or us



开始使用

打开包装

开启包装，检查主机和配件，如有任何问题，请与您的经销商或直接与我们联系。

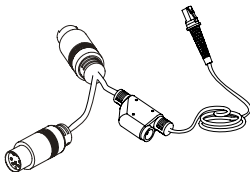
主机

» HR100

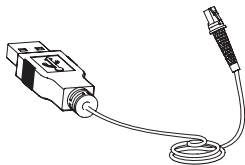


配件

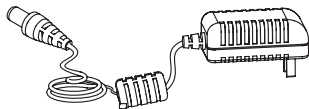
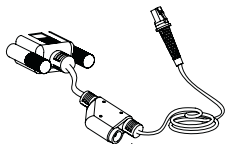
» PS/2 Cable



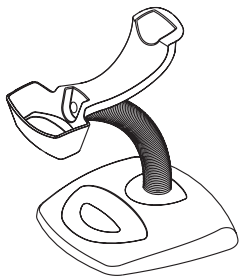
» USB 数据线

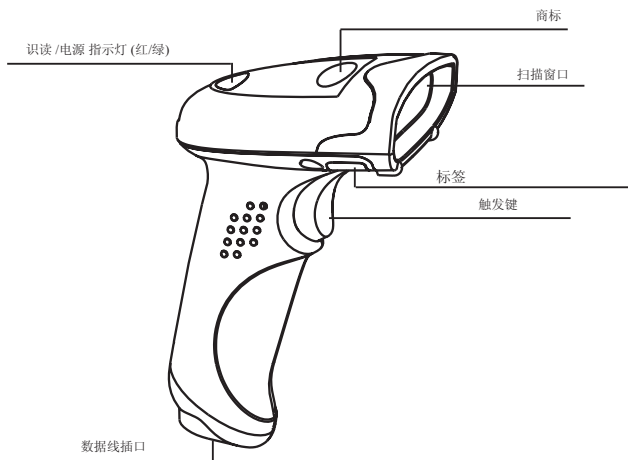


» RS232数据线 + 电源适配器



» 支架





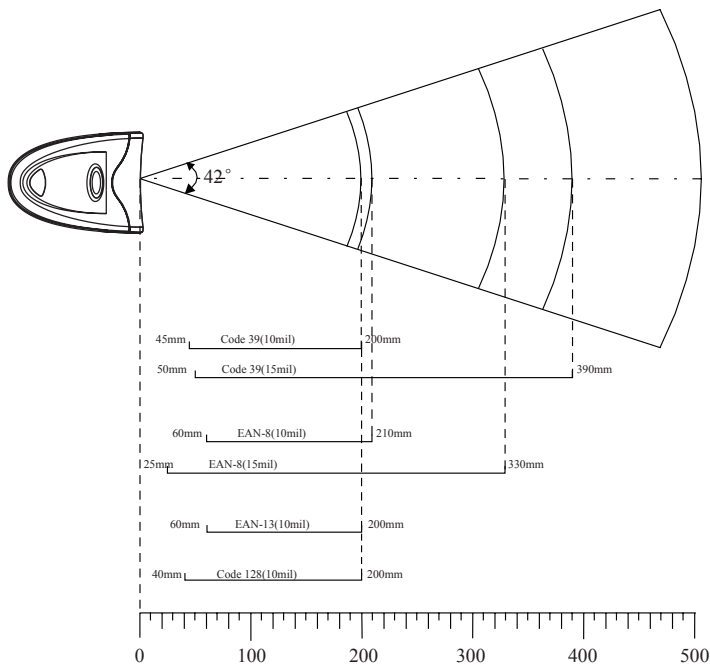


识读性能		
识读模式		Linear CCD
接口		USB-HID, True RS232, TTL level RS232, Keyboard Wedge
分辨率		2500
解码速度		200/s
识读码制		Code128, EAN-13, EAN-8, Code39, UPC-A, UPC-E, Codabar, GS1 Databar, Interleaved 2 of 5, ISBN, Code 93等
识读精度		$\geq 5\text{mil}$
提供光源		LED 630 nm ± 10 nm
打印对比度		$\geq 30\%$
识读景深		Code 39 (10mil) :25-280; Code 39 (15mil) :20-390; ENA-13 (10mil) :45-230; ENA-13 (15mil) :30-375; Code128 (10mil) :30-300; Code128 (15mil) :25-380;
条码灵敏度**	倾斜	$\pm 60^\circ @ 0^\circ$ Roll and 0° Skew
	旋转	$\pm 30^\circ @ 0^\circ$ Pitch and 0° Skew
	偏转	$\pm 75^\circ @ 0^\circ$ Roll and 0° Pitch
环境光光度		0 ~ 100,000 LUX
机械/电气化性能		
功耗		0.7W (Max)
工作电压		DC 5.0V
电流	最大	150mA
	工作	120mA
	待机	45mA
重量		105g
工作环境		
工作温度		$-0^\circ\text{C} \sim +50^\circ\text{C}$
储存温度		$-40^\circ\text{C} \sim +60^\circ\text{C}$
工作湿度		5% ~ 95% (无凝结)
认证		
国际认证		FCC Part 15 Class B, CE EMC Class B

**测试条件如下:

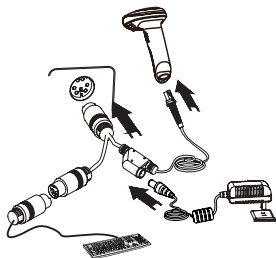
Code39, 3 Bytes; 最小条空宽度 = 10mil; 宽窄比 = 2.5:1; PCS = 0.8; 条码高度 = 11mm;

测试距离 = 120mm; 环境温度 = 23°C; 环境照度 = 200 LUX



如何连接HR100和信息接收主机

用 PS/2 数据线连接



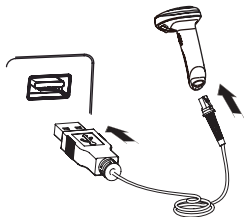
1、将PS/2数据线的设备接口端（RJ 45 接口）与 HR100 相连；

2、将PS/2数据线的主体接口端（PS/2 接口）与主机相连；

3、如有需要，请将PS/2数据线与HR100通过电源适配器相连；

4、如有需要，请将普通键盘与 PS/2 数据线端口相连。

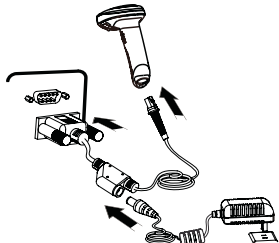
用 USB 数据线连接



1、将USB数据线的设备接口端（RJ 45 接口）与 HR100 相连；

2、将USB数据线的主体接口端（USB 接口）与主机相连。

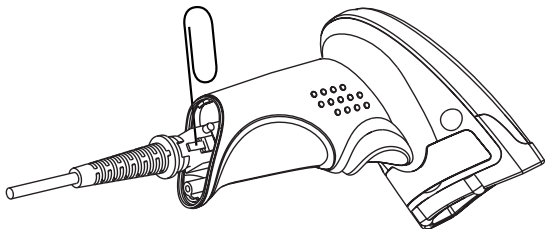
用 RS232 数据线连接



1、将RS232数据线的设备接口端（RJ 45 接口）与 HR100 相连；

2、将RS232数据线的主体接口端（RS232 接口）与主机相连；

3、将适配器电源接口插入 RS232 数据线电源口，并将适配器交流电插头插入电源插座。



需要一根大小适合HR100拆卸孔的针状物，如回形针。如图所示，将回形针的一端弄直变长以便插进拆卸孔。请按下列步骤操作：

- 1、若是用RS232或PS/2数据线连接，先拔下电源适配器。
- 2、将针状物插入拆卸孔并用力压下。
- 3、将数据线轻轻拔出。
- 4、在拔出数据线后，将针状物从孔中拔出。
- 5、将数据线从主机上拔下。



» 开机

将HR100与主机相连，HR100自动开机并处于休眠状态（出厂设置）。

» 关机

有四种方法可以关机：

- 1、将连接HR100的数据线移除；
- 2、将插在RS232数据线上的电源适配器移除；
- 3、将插在主机上的USB数据线移除；
- 4、将插在主机或电源适配器上的PS/2数据线移除。

» 休眠

当扫描器不进行识读时，它就是处于休眠状态。

在一定的时间内没有进行识读动作，扫描器就会自动进入休眠状态。

» 重启

若HR100死机或者无回应，请关机再开机实现重启。



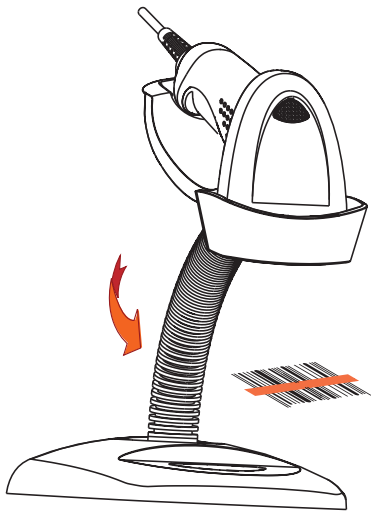
识读条码

手动识读模式

- 1、确保扫描器、数据线、数据接收主机和电源等已正确连接后开机
- 2、按住触发键不放。
- 3、照明灯被激活，出现红色照明线。
- 4、将红色照明线对准条码中心，移动扫描器调整扫描器与条码之间的距离，来找到最佳识读距离。
- 5、听到成功提示音响起，同时红色照明线熄灭，则读码成功，扫描器将解码后的数据传输至主机。

注意：在识读过程中，对同一批次的条码，您会找到一段距离内读码成功率都很高。此距离即为最佳识读距离。





1、扫描器置于支架上读码时无法用手操作触发键，因此识读模式应设为“自动读码”或“演示连续读码”。

2、同样，由于无法手动对焦，因此需要在读码前通过调整支架以取得最好的读码距离。



常用设置码

查询命令

可以采用识读设置码的方式，让设备将需要的信息反馈到信息接收主机，以达到查询的目的。

开启设置码



关闭设置码



查询产品相关全部信息



查询产品出厂日期



查询产品固件版本信息



查询产品名称



查询产品序列号



开启设置码



关闭设置码



设置所有属性恢复出厂默认

部分出厂默认值

项目	默认值		
接口	USB-HID, Keyboard Wedge		
	True RS232 TTL level RS232	Baud Rate	9600bit/s
		Parity Check	No Check
		Data / Stop Bit	8 bits/1 bit
声音	On		
识读模式	Hand-held Mode		
默认开启的一维条码	Code128, EAN-13, EAN-8, Code39, UPC-A, UPC-E, Codabar, GS1 Databar, Interleaved 2 of 5, ISBN/ISSN, Code 93, etc.		



识读模式设置

1、手动识读模式：默认设置，扫描器将在按下触发键后开始读码，在读码成功或松开触发键后停止读码。

2、感应识读模式：设置完毕，无需触发，设备即开始侦测窗口前环境的变化。读码完成后停止并处于监测状态等待下一次环境亮度的改变。此模式下单击触发键也可以启动读码。设备对周围环境感应的灵敏度可以设置。

3、自动识读模式：设置完毕，按下触发按钮，扫描器在一次读码完成后会自动开始下一次读码；直到再次单击触发键，扫描器停止读码。默认状态下，不允许重复识读同一条码。

开启设置码



关闭设置码



手动识读模式
(出厂默认)



感应识读模式



自动识读模式



波特率设置

波特率是串口数据通讯是每秒传输的位数（8位一个字），扫描器和数据接收主机所使用的波特率须保持一致才能保证数据传输的准确。

扫描器支持以下列出的波特率，单位是 bit/s。



9600
(出厂默认)



2400



14400



38400



115200

开启设置码



关闭设置码



1200



4800



19200



57600



RS232通讯设置

校验设置



无检验
(出厂默认)



奇校验



开启设置码



关闭设置码



偶校验

停止位设置



0.5 位



1 位
(出厂默认)



1.5 位



2 位





RS232通讯设置

数据位设置



8 位
(出厂默认)



7 位

开启设置码



关闭设置码



流控设置



无流控
(出厂默认)



CTS 流控



RTS 流控



RTS_CTS 流控





USB 通讯设置

USB HID-KBW

开启设置码



关闭设置码



设置为USB HID-KBW

USB虚拟串口



设置为USB虚拟串口





选择国家/语言键盘制式



No. 0 Chinese(出厂默认)



No.1 American



No.2 Belgian



No.3 Danish



No.4 Finnish



No.4 French



No.6 Autrichien, German

开启设置码



关闭设置码



No.7 Italian



No.8 Norwegian



No.9 Spanish



No.10 Swiss



No.11 English



USB HID-KBW 和 PS/2 KBW 相关设置

设置字符间延迟

字符间延迟时间区间为0-150ms。



字符间延迟设置

开启设置码



关闭设置码



大小写转换设置



不变



全部大写



全部小写



大小写相反



功能键设置



Caps Lock



Caps Unlock



Nums Lock



开启设置码



关闭设置码



Nums Unlock



Scroll Lock



Scroll Unlock





声音设置



关闭解码声音



高频-宏亮



高频-中度



高频-微弱



中频-宏亮



中频-中度



中频-微弱



低频-宏亮

开启设置码



关闭设置码



低频-中度



低频-微弱



150ms声长



100ms声长



50ms声长



回车换行设置

需要设置结束符后缀并使能来实现回车换行

开启设置码



结束符后缀设置

关闭设置码



设置结束符后缀



结束符设为0x0D,0x0A,并使能发送



结束符设为0x0D,并使能发送

结束符后缀使能设置



禁止添加结束符后缀
(出厂默认)



添加结束符后缀



Code 128

开启设置码



关闭设置码



允许识读Code 128
(出厂默认)



禁止识读Code 128



设置最小长度限制（默认值：1）



设置最大长度限制（默认值：255）

EAN-8



允许识读EAN-8
(出厂默认)



禁止识读EAN-8



条码使能设置

Interleaved 2 of 5



允许识读Interleaved 2 of 5
(出厂默认)



禁止识读Interleaved 2 of 5



设置最小长度限制（默认值：6）

开启设置码



关闭设置码



设置最大长度限制（默认值：255）

EAN-13



允许识读EAN-13
(出厂默认)



禁止识读EAN-13

UPC-A



允许识读UPC-A
(出厂默认)



禁止识读UPC-A



条码使能设置

UPC-E



允许识读UPC-E
(出厂默认)



禁止识读UPC-E

开启设置码



关闭设置码



Code 39



允许识读Code 39
(出厂默认)



设置最小长度限制 (默认值: 4)



禁止识读Code 39



设置最大长度限制 (默认值: 255)

GS1 Databar



允许识读GS1 Databar
(出厂默认)



禁止识读GS1 Databar



附件

A. 测试样码

EAN-8 10mil 8bytes



EAN-8 15mil 8bytes



Code 39 10mil 3bytes



Code 39 15mil 3bytes



Code 128 10mil 5bytes



EAN-13 10mil 13bytes





B. 数据码和保存

读完数据码必须识读保存才会生效。



0



6



B



1



7



C



2



8



D



3



9



E



4



A



F



5



保存



C. 常见故障及判处方法

故障	可能原因	排除方法
无数据返回	RS232通讯下没有接上适配器	插入适配器
	RS232通讯下，接口未连好	重新连接
	USB和PS/2通讯下，接口未连好	重新连接
HR100未向主机发送数据	HR100未正确连至主机	检查所有连向主机的线是否连接完毕
RS232通讯时接收到乱码	HR100和主机波特率设置不相符	将波特率设成相同值
HR100不能识读条码	该条码未开启	将该条码设为允许识读
	HR100固件不支持该条码	请联系我们

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