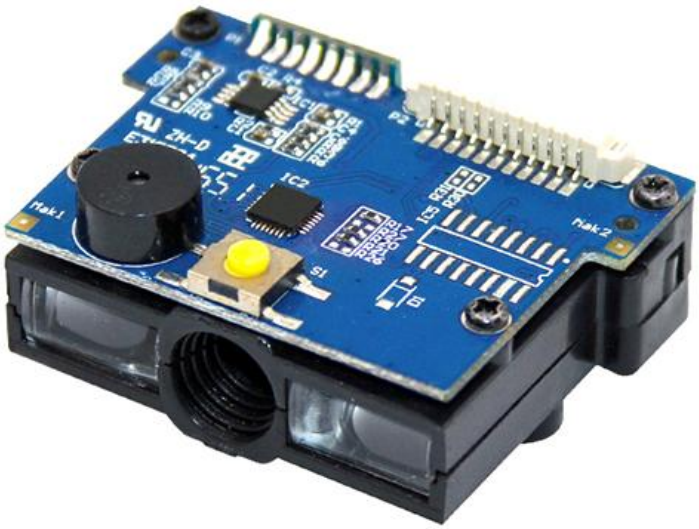
YidaScan



ES12

1D ENGIN

user's manual

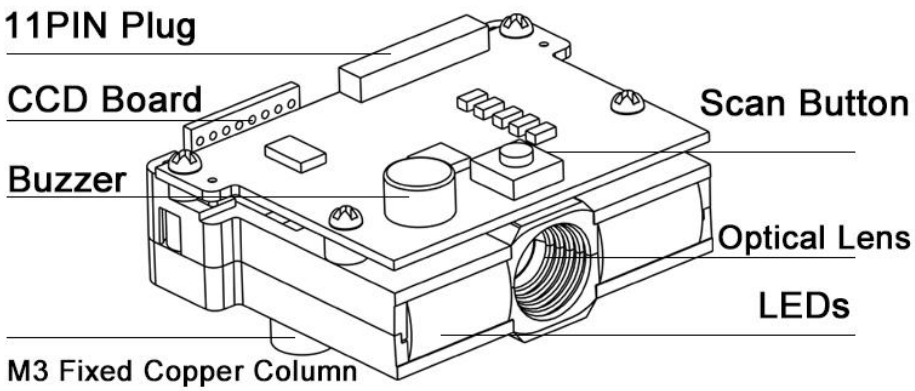
catalogue

Introduction

ES12 is a 1D barcode scanner module, using advanced CCD image recognition technology, intelligent image recognition system.With excellent reading performance, you can easily read the bar code on paper, goods, screen and other media.Integrated compact design can be easily embedded into all kinds of devices.It can be widely used in all kinds of self-service machines, price checking machines, lockers and other scenarios.

Surface

The following figure is the appearance diagram of ES12, with electronic components on the upper surface, such as trigger button and MCU.The front azimuth scanning window is used to scan the bar code, and the rear azimuth wire interface with two M3 screw holes at the bottom to secure the ES12 to other devices.



[ES12 Appearance Drawing]

Pay Attention To:

> To keep the scanner read, keep the product clean;

> Please clean the window with a soft cloth, to do not spray any liquid on the window.

product features

> Small size, with fixed copper nuts for easy integration into other equipment;

> A wide variety of optional interfaces {USB (KBW, COM, HID), TTL, RS232, PS2} for different application scenarios;

> Original imported CCD, high-precision barcode reading (3MIL), to easily identify all the mainstream one-dimensional barcodes in the market;

> Support a variety of working modes (manual, long bright, flashing, induction, command control), can meet the different reading requirements;

> Modes can be directly connected to the wire material, do not need to add an additional development board, convenient to use;

> Support for online upgrades, custom development, and secondary development.

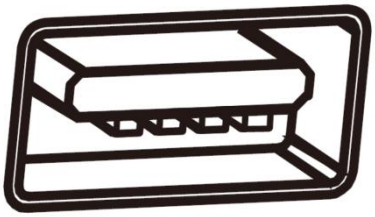
application area

This high-performance 1-dimensional red light module specially provides customers with OEM product applications, which can be easily embedded in various devices as barcode reading components applications, such as queuing machine, self-service inquiry machine, ticket checking machine, vending machines, supermarket lockers, manufacturing, etc.

communication interface

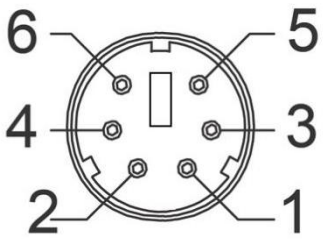
The ES12 scanner must be connected to a host that can be a PC host, POS machine, MCU, Android host, or any other smart terminal device with any USB, TTL, or RS232 interface.

1. Host USB interface [USB master header]



2. Host RS232 Interface [DB9 header]

3. Host PS 2 interface [host keyboard port header]

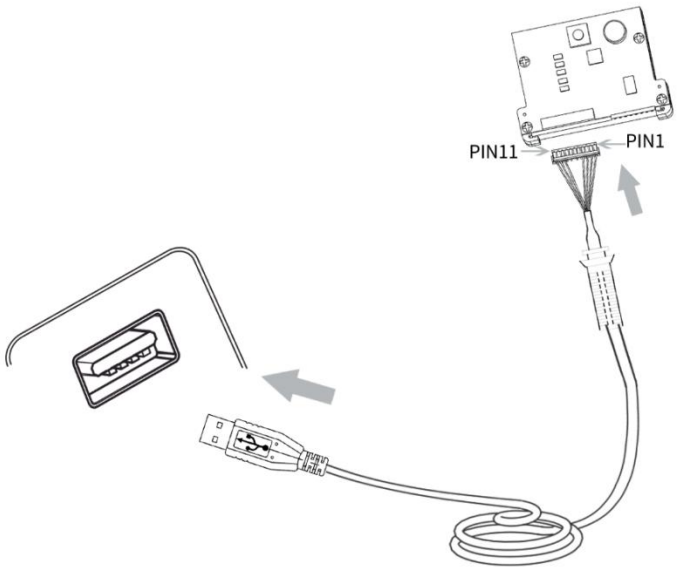


pay attention to:

> Check what ports on your host to buy the right product type;

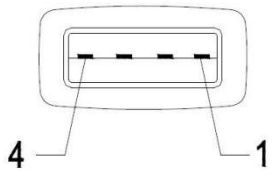
> Contact the manufacturer to customize the type of interface you need if necessary.

Connect to the host with a USB



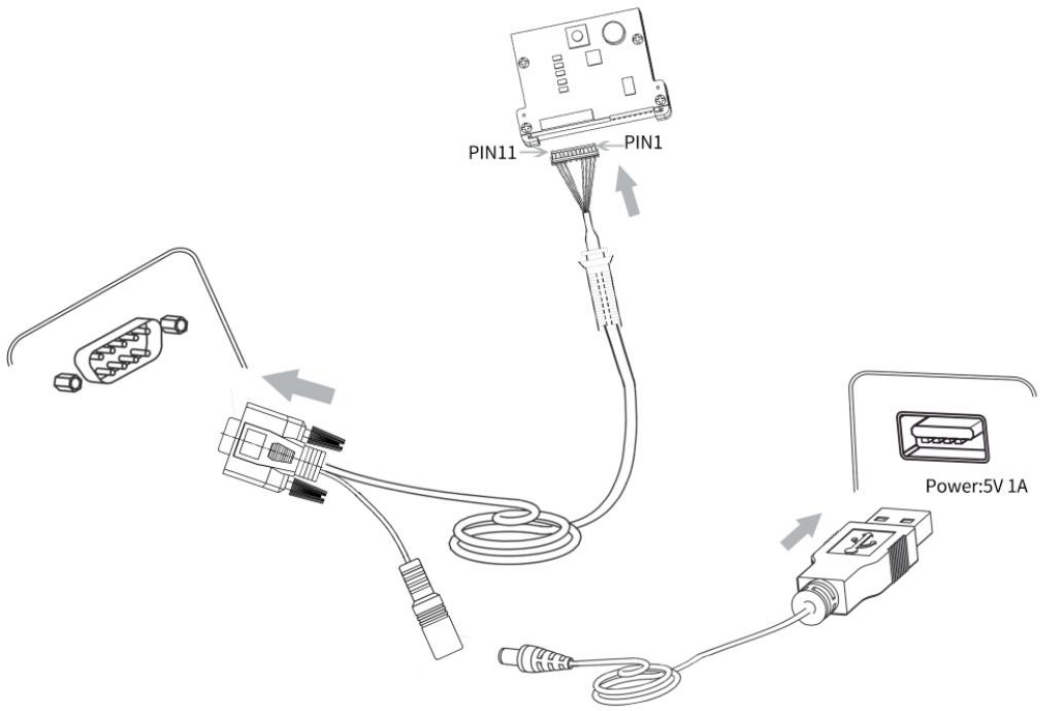
USB wire interface definition

Pin No.	Function
1	Vcc
2	D-
3	D+
4	GND



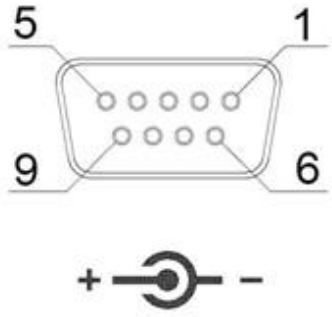
1. Connect the wire 11PIN into the scanner 11PIN base seat;
2. Then insert the wire USB male head into the computer USB master head to connect successfully;
3. Open the host USB receiving tool, and scan the barcode to receive the data.

Connect the host with the RS232 serial port



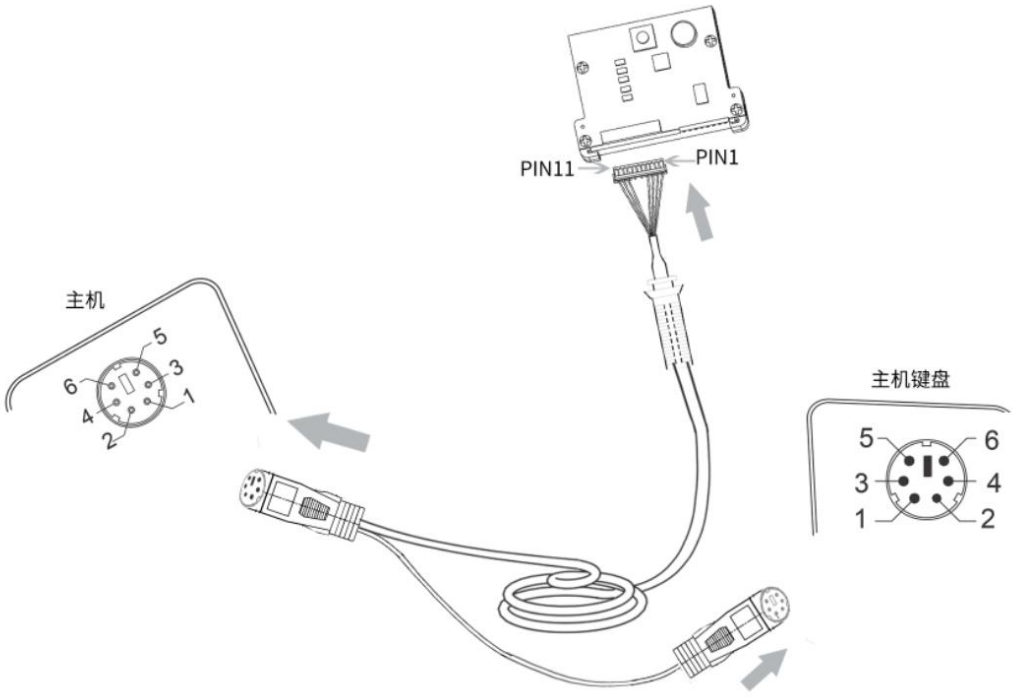
RS232 wire interface definition

Pin No.	Function
2	TXD
3	RXD
5	GND
9	Vcc/+5V
Power Lead	Vcc/+5V



1. Connect the wire 11PIN into the scanner 11PIN base seat;
2. Then connect the DB9 master head of the wire (RS232 interface) to the DB9 male head of the host;
3. Then the DC power supply head of the scanner is connected to the DC power supply head of the power supply line;
4. Finally, the USB head of the electrical supply device is inserted into the USB master head of the host for power supply and start the scanner;
5. Open the host terminal serial port receiving tool, select the corresponding port number and open it, and scan the bar code to receive the data.

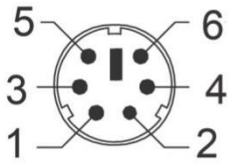
Connect the host with the PS 2 keyboard port



Keyboard port wire interface definition

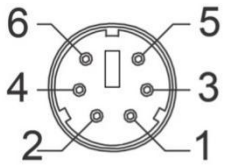
Mini DIN HOST MALE

Pin No.	Function
1	HOST DATA
3	GND
4	Vcc(+5V)
5	HOST CLK



Mini DIN KB FEMALE

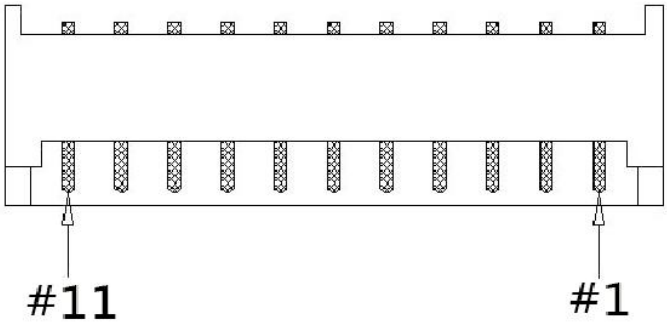
Pin No.	Function
1	KB DATA
3	GND
4	Vcc(+5V)
5	KB CLK



1. Connect the wire 11PIN into the scanner 11PIN base seat;
2. Then connect the 6-pin head of the wire to the 6-pin head of the keyboard port;
3. The 6-pin head of the last wire is connected to the host 6-pin male;
4. Open the host data receiving tool (notepad), and scan the bar code to receive the data.

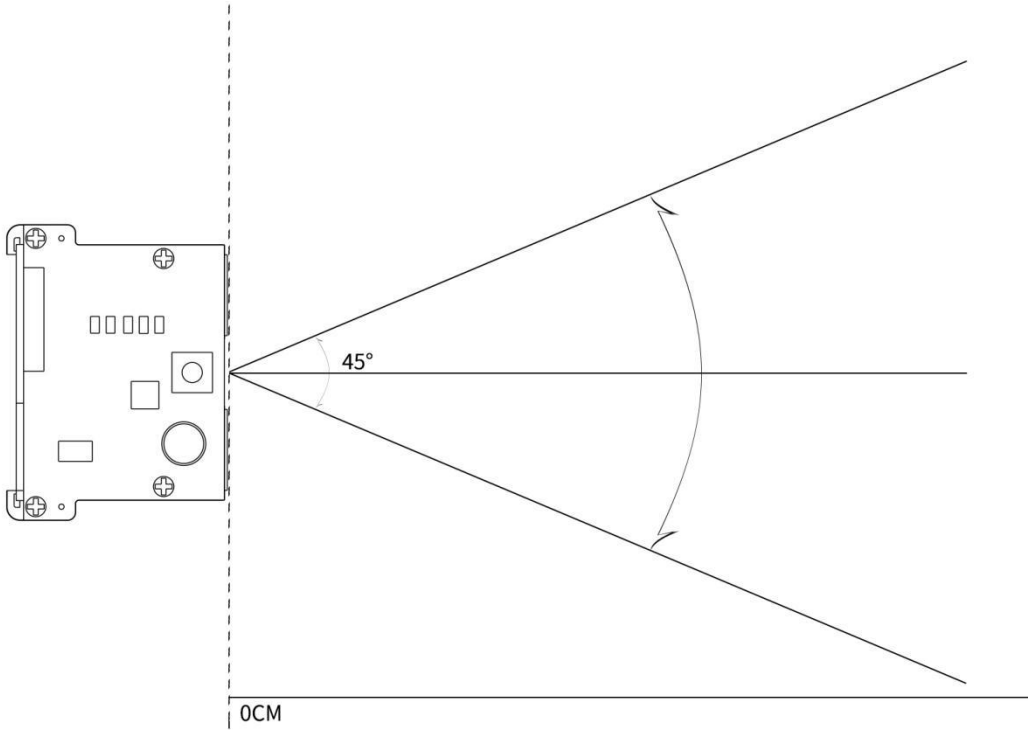
The 11 PIN interface definition

The ES12 uses the 11pin pitch 1.25 data interface and lists the names and signal instructions of each PIN foot of the 11PIN connector in the following table



PIN#	signal	type	definition
1	GND	P	Power to
2	VCC	P	The DC 5V power supply input
3	TX/D+	output	TTL Send to / USB_D +
4	RX/ D-	import	TTL Receiving / USB_D-
5	HOST DATA	Input /	PS2_HOST DATA
6	HOST CLK	Input /	PS2_HOST CLK
7	KB DATA	Input /	PS2_KB DATA
8	KB CLK	Input /	PS2_KB CLK
9	D+	output	USB_D+
10	D-	import	USB_D-
11	SHIELD	-	shield

Reading the perspective and depth of field

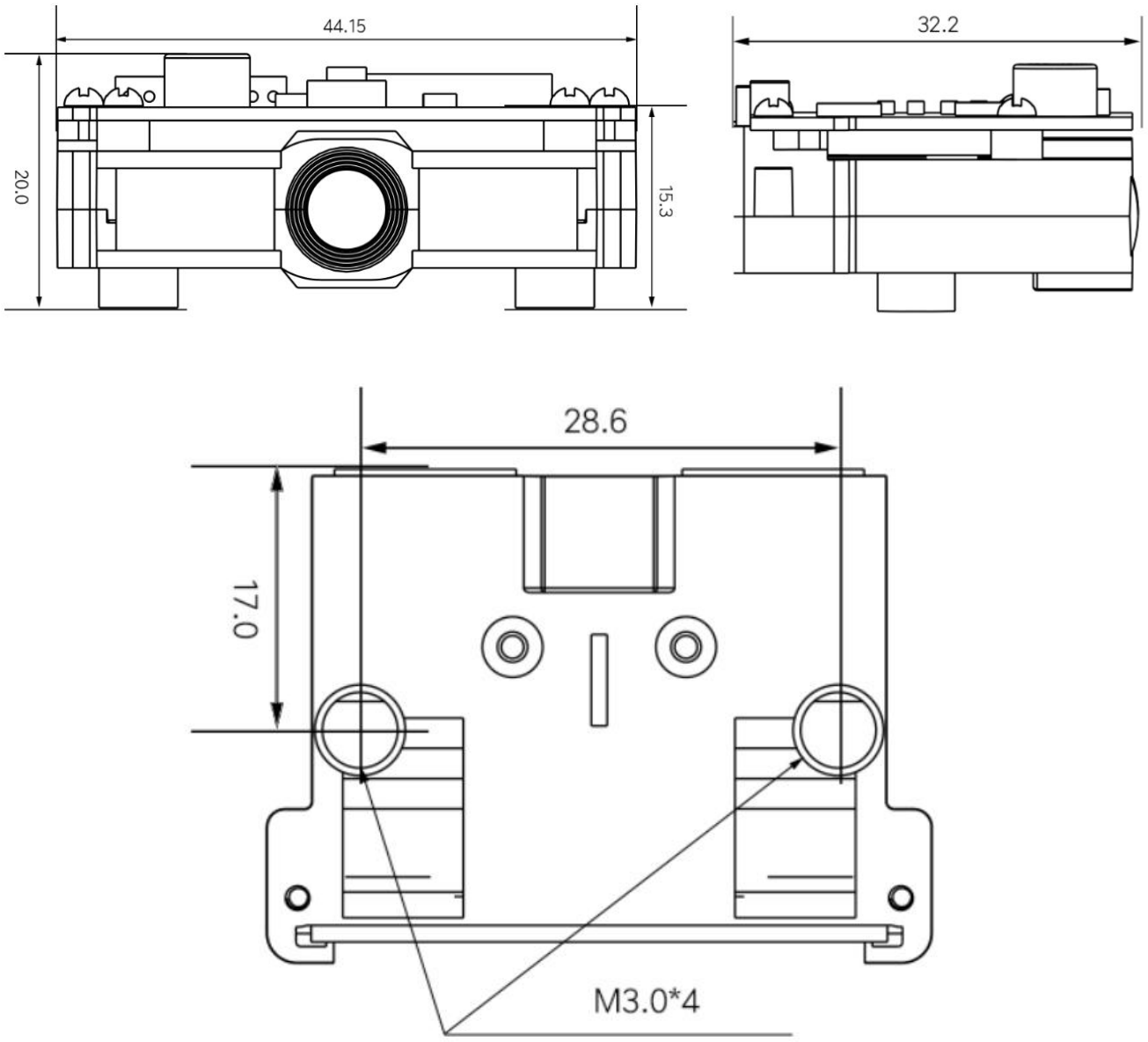


Barcode type	Barcode density	recently	farthest
Code 39	0.076(3mil)	80mm	120mm
Code 39	0.1mm(4mil)	70mm	140mm
Code 39	0.127mm(5.0mil)	60mm	150mm
Code 39	0.5mm(20mil)	30mm	450mm
Code 39	1.0mm(40mil)	130mm	700mm
EAN-13	0.33mm(13.0mil)	30mm	320mm

Test conditions: room temperature of 25℃, ambient illumination of 200LUX, PCS=0.9

structure size

The ES12 1D red light module uses the integrated design to the following physical size specifications.Unit :mm



Note: use 3.0mm tooth screws at the bottom, with a maximum depth of 4mm.

performance parameter

Communication mode	USB(USB-KBW, USB-COM, USB-HID), TTL, RS232, PS2
Optical system	Linear CCD Sensor
Resolution ratio	2500
Resolution	≥3mil/0.076mm（PCS90%,CODE 39）
Knowledge of deep reading	30mm~700mm
Decoding speed	300 Time / sec
Reading mode	Manual reading, often bright reading, induction reading, flicker reading, instruction control
Prompting mode	buzzer
Read the angle	*Test Conditions：CODE39,10mil/0.25mm,PCS90%*
	Rotate Roll: ± 30°, tilt Pitch: ± 60°, offset Skew: ± 60°
Print contrast	≥20%
Ambient light	Dark environment, indoor natural light,
Symbologies	UPC-A，UPC-E，EAN-8，EAN-13，ISSN，ISBN，Code 128，GS1-128，ISBT 128，Code 39，Code 93，Code 11，Interleaved 2 of 5，Matrix 2 of 5，Industrial 2 of 5，Standard 2 of 5（IATA），Codabar（NW-7），Plessey，MSI Plessey，RSS，China Post，etc.

Mechanical / electrification performance

Body weight	16g (excluding cable)
Appearance size	44.15mm(L)*32.2mm(W)*20.0mm(H)
Linear length	1.5m (optional)
Interface type	11PIN Pitch 1.25
Working voltage	DC 5V
Current	100mA (work), 30mA (standby)

work environment

Working	-20℃ to 50℃
Storage	-40℃ to 60℃
Working	5% to 95% (no condensation)
Transport	10H@125RPM

List of accessories

Cable material (optional)	USB Cable: for connection to scanner and host and for USB communication; RS232 Cable: with DC power supply header for connection to scanner and host and for serial communication;
Power adapter	Output: DC5V 1A, input: AC100~240V 50~60Hz, which can be used for serial