Hi-AT Technology CO.,LTD

This specification applies to all of the company's holding phase laser ranging and industrial control module.

Module assembly includes: host and LCD (industrial control module does not contain LCD).

1.Technical parameters

Measuring accuracy	HI100
Measuring accuracy	+/-2mm*
Typical accuracy （Non reflecting plate）	0.02-100m**
Teste Time	0.3-3 s
Laser Class	II
Votage	2.5-2.8V(>180mA)
Laser type	635nm,<1mw
module	72*40*18mmmm(without screen)
Weight	Approx 70g
use temperature	0 C° ～40 C° ***
Storage temperature	-25 C° ～60 C°

　＊Poor measurement conditions (such as ambient light is too strong, diffuse reflection coefficient is too large or too small), the measurement accuracy will have a greater error: + 3 mm+40PPM.

　＊＊In the case of strong sunlight or target reflection is not good, please use the reflection board.
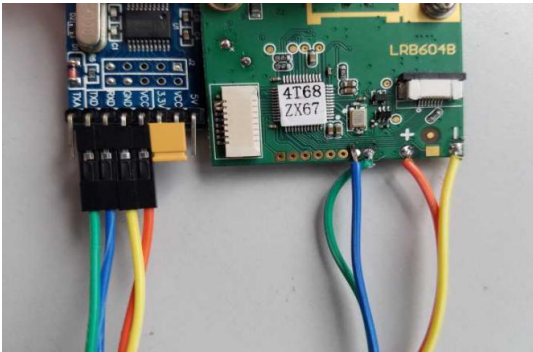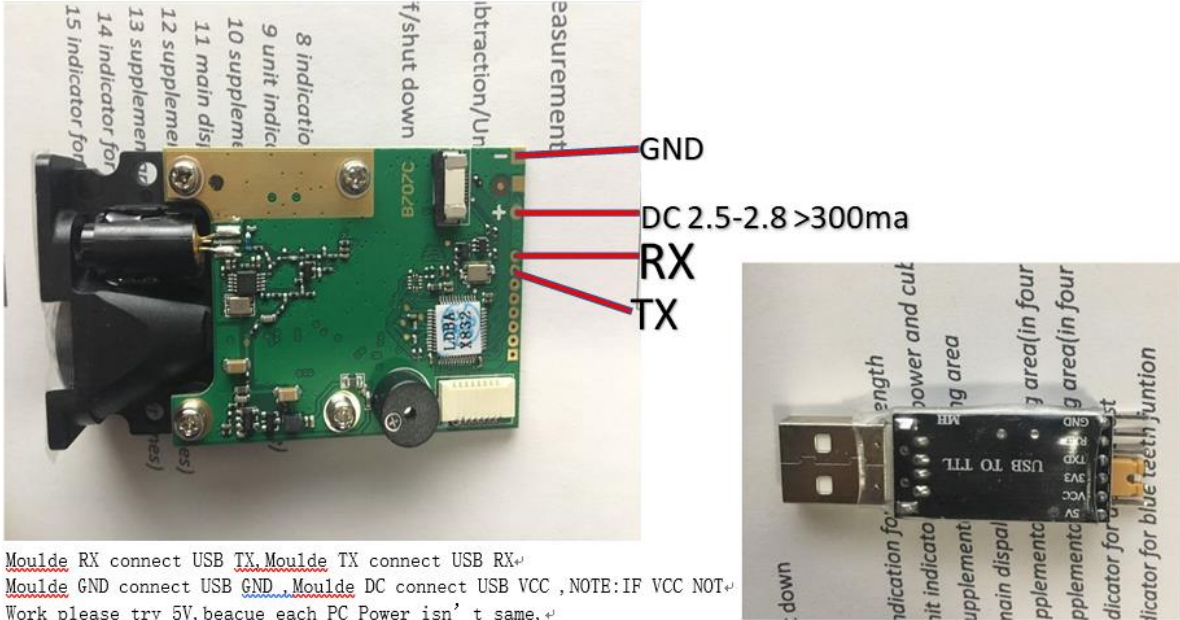
it is back number,(F:98.XXXM) you only need to connect TX RX to your product,or will O D F programming to your Singlechip,adjust correct votage,

2、Communication and control

　　Communication interface: serial communication (TTL), 19.2K, baud rate parity bit: no parity, data bits: 8;

　　Function: send capital letters "O" to open the laser, capital letters "C" to close the laser, capital letters "D" (Slow) or "F" (Speed) for measuring distance, capital letters "S" to view the module temperature and power supply;

Connection mode: IT is Below (referring to the physical), the use of ordinary cables with the main board connection.

GND

DC 2.5-2.8 >300ma

RX

TX

Moulde RX connect USB TX, Moulde TX connect USB RX
Moulde GND connect USB GND , Moulde DC connect USB VCC , NOTE: IF VCC NOT
Work please try 5V, beacue each PC Power isn't same,

Number	command		function
	ASCII code (uppercase)	ASCIICode corresponding Sixteen (HEX)	
1	O	0x4F	Turn on the laser. After the laser opens, the module returns the string:",OK!"
2	C	0x43	Turn off the laser, and the laser closes the module back to the string",OK!"
3	S	0x53	Read the state of the module, and the module returns the status string:"18.0'C, 3.0V", Representing the current temperature and input voltage of the module, respectively

4	D	0x44	The automatic measurement process is initiated, and the module returns a string containing measurement distance and measurement signal quality, such as："12.345m,0079"，The measurement distance is expressed as12.345M，Signal quality79。 NOTE： 1. If the measurement distance is less than 10 meters, then the 10 meter position is occupied by the space character to ensure that the distance of the returned string is unchanged2. The smaller the signal quality, the better the quality of the signal. The larger the value, the worse the reflected signal.3. Automatic measurement will automatically select different measuring speed under the premise of guaranteeing the accuracy of measurement according to the condition of reflector.4. When the ranging is not successful, the command will return the error report string "Er.XX!", where XX represents a different error number. Please check the error number list for the specific error number.
5	M	0x4D	Start the slow measurement process and return the string as the D command. This command has the slowest speed, but the highest accuracy.。
6	F	0x46	Start the slow measurement process and return the string as the D command. This command has the fastest measurement speed, but the measurement accuracy is the lowest. In the case of poor reflector, the wrong measurement results may occur. Usually, this command is used to reflect good measurement conditions.
7	V	0x56	Query module version information, return the string, such as: "170225002929456". Of these, 1702250029 is module serial number and 29456 is software version information.。
8	X	0x58	Close the module, close the module and pull the PWR_ON pin low

Num	Error code	meaning
1	:Er01!	VBAT too low, power voltage should >= 2.0V
2	:Er02!	Internal error, don't care
3	:Er03!	Module temperature is too low(< -20℃)
4	:Er04!	Module temperature is too high(> +40℃)
5	:Er05!	Target out of measure range
6	:Er06!	Invalid measure result
7	:Er07!	Background light is too strong
8	:Er08!	Laser signal is too weak
9	:Er09!	Laser signal is too strong
10	:Er10!	Hardware fault 1
11	:Er11!	Hardware fault 2
12	:Er12!	Hardware fault 3
13	:Er13!	Hardware fault 4
14	:Er14!	Hardware fault 5
15	:Er15!	Laser signal is not stable
16	:Er16!	Hardware fault 6
17	:Er17!	Hardware fault 7