SPECIFICATION

Document number：CSPC-S-RD-005

Product name ： Nova-A4

Product model ： 9011213

Version number： A/1

Issue date： 2024.07.23

Date	Formulate	Design	Quality	Approval
2024.07.23	Wenfeng Zhan	Yixiang Yu	Jingjing Zhao	Zhibin Chen

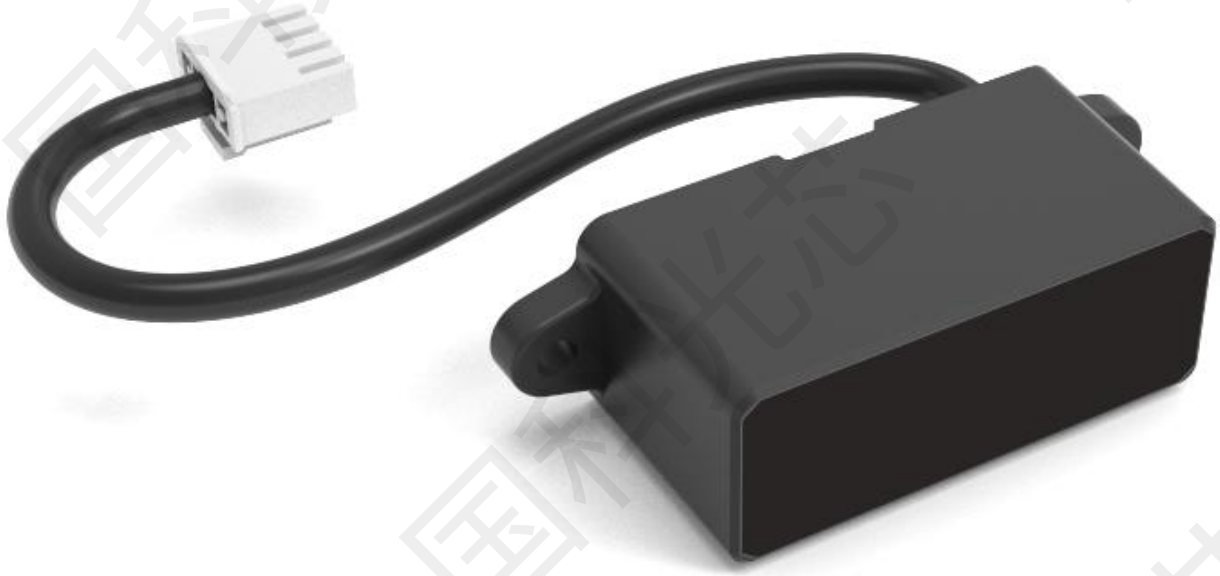
Customer countersignature

Document change record

NO.	Reason for change	Change content	date	Changed by
A/0	/	1. First release	2024/06/05	Wenfeng Zhan
A/1	/	2. Change package type and amount.	2024/07/23	Wenfeng Zhan

Nova-A4

1D Ranging module specification



Version A/1

GuoKeGuangXin(Haining) Technology Co., Ltd

Key features:

- Measurement range: 0.05m~10m@90% reflectivity.
- High measurement accuracy ±10mm @≤2m.
- High ambient light resistance, up to 60000lx.
- No difference in accuracy between difference materials.
- Light weight design, only 20g.
- Direct time of flight (dToF) ranging principle.
- Fully enclosed structure, waterproof and moisture-proof.
- Long service life time more than 5000h.

Nova-A4 Specification

Parameters

Item	Min	Typ	Max	Unit	Remarks
Wavelength	930	940	950	nm	
Laser safety	Class1(IEC-60825)				
Divergence angle		1		°	FOI
Field of view angle		2.2		°	FOV
Measure Range *1	0.05		10	m	90% reflectivity
	0.05		8	m	10% reflectivity
Measurement accuracy *2	±10mm, @0.05m<L≤2m; ±0.5%, @2m<L≤6m; ±1%, @6m<L≤10m.				90% reflectivity; Average value.
	±10mm, @0.05m<L≤2m; ±0.8%, @2m<L≤6m; ±1.2%, @6m<L≤8m.				10% reflectivity; Average value.
Supply voltage	3.2	3.3	3.6	V	
Power consumption		0.33	0.35	W	
Measuring frequency		100		Hz	
Ambient light*3			60000	lx	
Working temperature	-10	25	55	℃	
Storage temperature	-30	25	70	℃	
Baud Rate		230400		bps	
Weight		20		g	
Interface	UART				
Life time	5000			h	

***1** The reflective of White board is about 90%,which 10% on Black board.

***2** Testing condition 1: T= 25ºC±5 ºC; RH=65% ±20%.

***3** The ranging information output is ensured, and the accuracy is not guaranteed.

Communication Interface:

Nova-A4 uses the UART serial port with LVTTL (3.3V) as the communication interface, and the specification information is shown in following table.

Item	Unit	Min	Typical	Max	Comments
Baud Rate	bps	-	230400	-	
Working mode	-	-	8N1	-	-
Output high voltage	V	2.4	3.3	3.6	Logic High
Output low voltage	V	-	-	0.4	Logic Low
Input high voltage	V	2.0	3.3	3.6	Logic High
Input low voltage	V	-0.3	-	0.8	Logic Low

Data format:

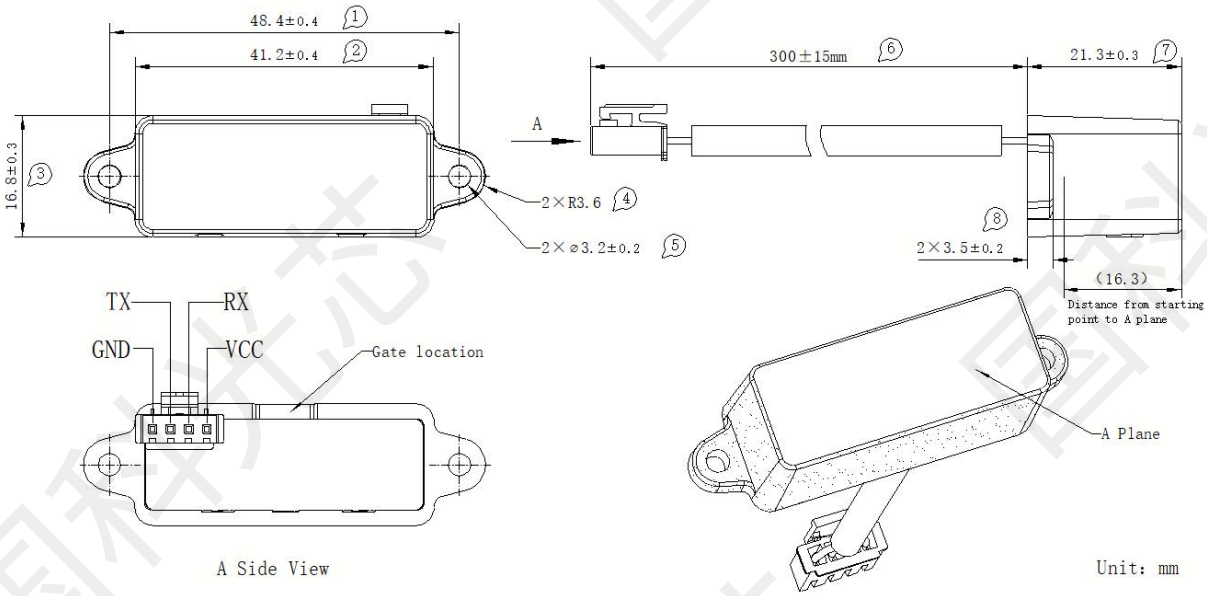
After Nova-A4 is power on, the distance measure data is output through the communication interface automatic, the output date applied small end mode and has a unified message format as follows.

Header	ID	Reserve	Distance	Peak	Check sum
0xA5	0x01	x1y1	x2 y2	x3 y3	z

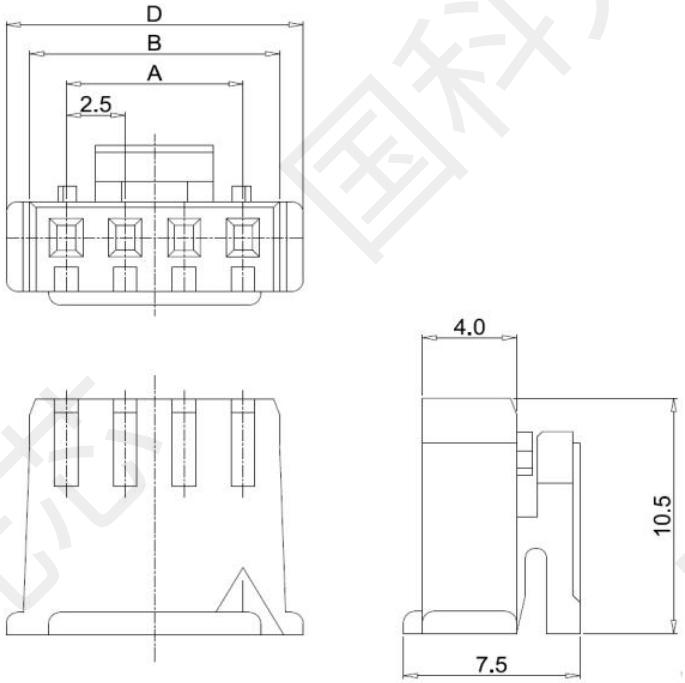
Check sum:

z=0xA5+0x01+x1+y1+x2+ y2+x3+ y3

Appearance dimension (mm):



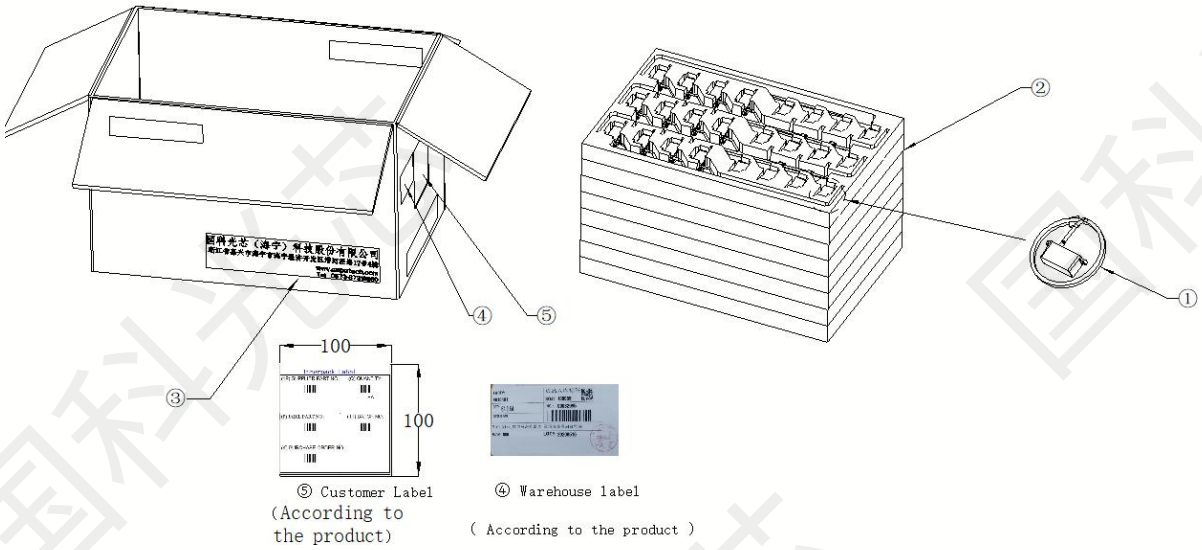
Connector dimension(mm):



Type:SMH250-04

Dimension:A=7.5mm,B=10.8mm,D=12.2mm.

Packing



No	Name	Quantity	Spec
1	Product module	192EA	Nova-A4
2	Pearl Cotton	8EA	Expanded Polyethylene
3	Box	1EA	PAPER, 492*324*310mm (L*W*H)
4	Label	1EA	Paper
5	Label	1EA	Paper

- One bubble bag put into a module.
- A layer can put into 24EA module, there is 8 layers in a box, 192EA product in a box.
- The total gross weight is 5.1kg after packaging.