Technical Specifications

Smart2000 AI side station

catalog

1. Product Overview

Smart2000 AI side station is an edge computing intelligent terminal product independently developed and launched by Hongdian. Its design fully considers the versatility and stability. It is based on the open software architecture design of the Internet of Things, equipped with the OSDT operating system independently developed by Hongdian, and adopts domestic high-performance AI intelligent processing chips. At the same time, it is embedded with the national security SM2/SM4 hardware encryption chip; Rich and diversified interfaces, real-time data analysis and intelligent processing, to meet the data of intelligent terminal equipment Collection and intelligent control, with strong device access capability, edge computing capability, security protection capability, etc; The product supports multiple ordinary cameras, Based on the mature algorithm of deep learning, real-time video can be intelligently analyzed, and intelligent results can be displayed after the AI intelligent side station strong "intelligent brain" processing, such as face recognition, brand recognition, helmet recognition, clothing recognition, smoking recognition, behavior analysis, perimeter prevention, etc; It has supported hundreds of protocols and tens of thousands of customer combination applications to meet the docking of most industrial equipment in the market, and can realize collection configuration and data Reporting, alarm function, equipment management, data transmission, etc; Support the Docker container function to meet the requirements of key deployment on the item; Industrial standard design, wide temperature range, IP43 protection level, strong electromagnetic interference resistance; It is a powerful and stable edge computing intelligent terminal product.

2. Product specification

Processor system	CPU	RK3399
Memory	Technical architecture	4GB DDR4
Storage	EMMC	EMMC supports 32GB
	SATA	Expandable hard disk
Arithmetical force	3T Computing power	Expandable 6T Computing power
Network	WIFI	Customizable
	Positioning function	Customizable
	Internet port	LAN: 5 x 10/100/1000Mbps adaptive (supporting 6 channels of video stream AI identification+4 channels POE power supply, conforming to IEEE 802.3AF-2003 and 802.3AT-2009 standard protocols) WAN/LAN: 1x 10/100/1000Mbps adaptive optical port: 2 SFP optical interfaces
	Network format	3G/4G/5G all network communication can be realized according to different modem

		2 Self-popping SIM card slot (1.8V/3.0V)	
Hardware monitoring	Watchdog timer	0~255 seconds, providing watchdog routine	
Input/Output	Onboard interface	Serial data terminal	4×RS-485（Rate can be configured, default is 115200bps） 2×RS-232（Rate can be configured, default is 115200bps）
		USB interface	2×USB2.0（Maximum 1A@5V DC） 1×USB3.0（Maximum 1A@5V DC）
		TF card	2×TF card interfaces
		IO interface	Support 18×IO interfaces (16 inputs, 2 outputs)
		Button	1 Upgrade 1 Reset
		Antenna interface	5G: 4 x SMA-K female 4G: 1 x SMA-K female 4G/GPS: 1 x SMA-K female WIFI: 1x SMA-K female LORA: 1x SMA-K female
Display	HDMI	1 HDMI, 2K@30Hz , supporting audio output	
source	Power supply type	100~240VAC 50/60Hz 1.6A	
Operating power consumption	Idle state	About 200mA/48V (no data receiving and transmitting on the network)	
	Typical value	About 300mA/48V (networked data receiving and transmitting)	
	Maximum power consumption	About 600mA/48V (all interfaces work)	
Work environment	working temperature	-10 ° C~75 ° C Note 2	
	Storage temperature	-40 ° C~80 ° C	
	Operating humidity	0%~90% relative humidity, no condensation	
	Storage humidity	0%~90% relative humidity, no condensation	
Appearance dimension	Size	483.0 * 273.6 * 43.5mm	
Other	Weight	About 3300g	

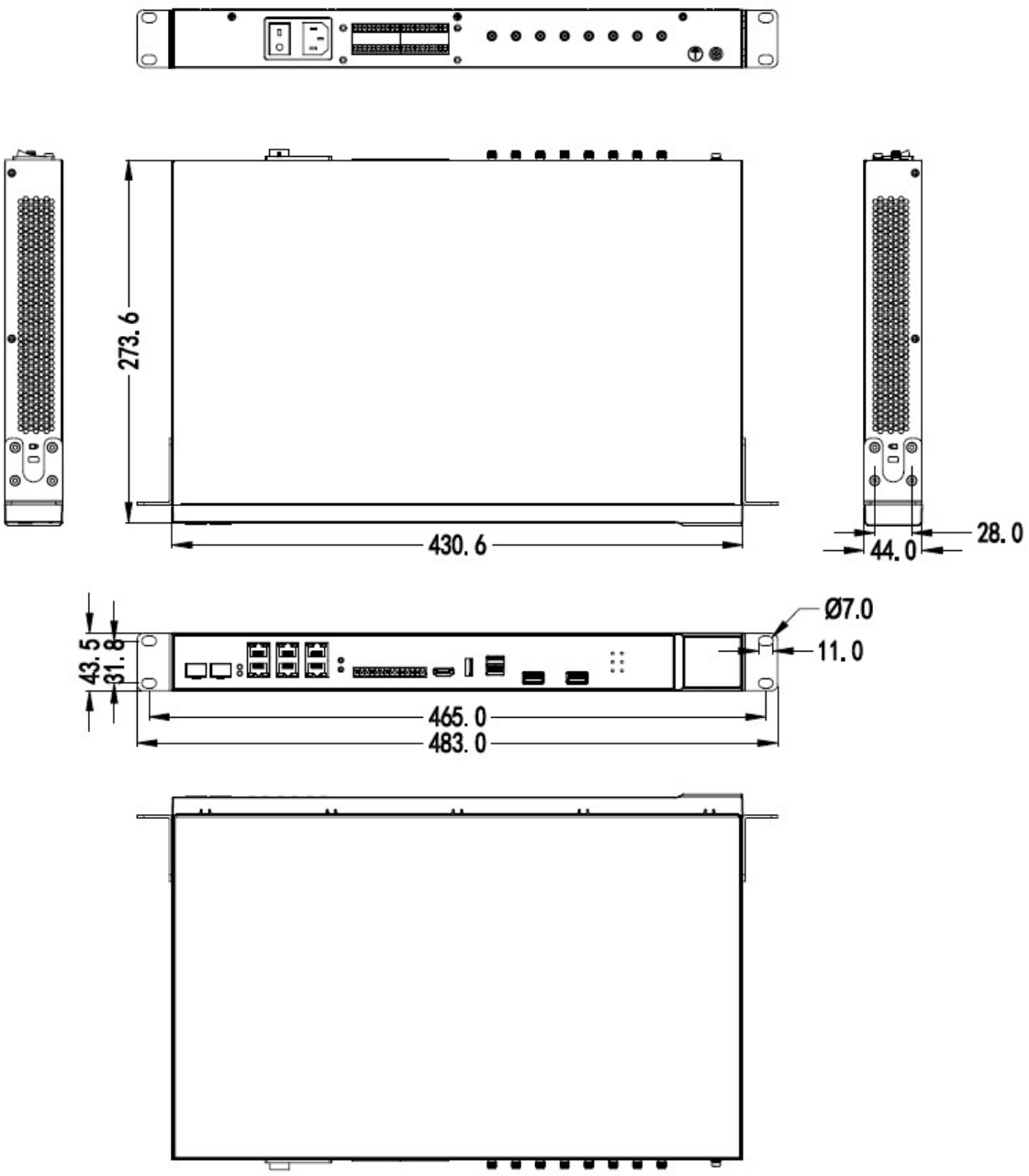
Note 1: Test without external electric equipment.

Note 2: The working temperature under full load is recommended to be below 65 ° C.

3. Structure dimension view and interface definition

3.1 Structural dimension view

The structural dimensions are shown in Fig. 3-1-1. The unit of the physical dimension of the corresponding equipment is mm.



3-1-1 Panel dimension drawing

3.2 Panel interface diagram

The panel interface diagram is shown in Fig. 3-2-1.

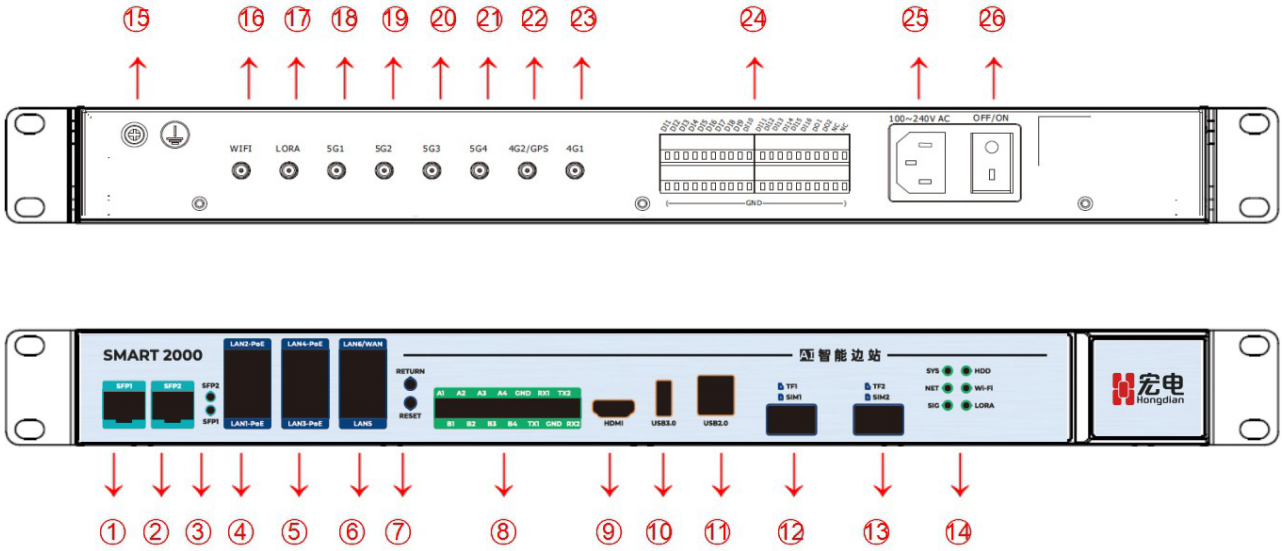


Fig. 3-2-1 Panel interface diagram

Table 3-2-1 Panel Data Interface Table

Silk screen	Function	Silk screen	Function	Silk screen	Function
1	Optical fiber network port SFP1	10	Vertical USB3.0 interface	19	5G2 antenna interface (optional)
2	Optical fiber network port SFP2	11	Double layer USB2.0 interface	20	5G3 antenna interface (optional)
3	Upper: SFP2 network interface indicator Below: SFP1 network interface indicator	12	Upper: TF card 1 Bottom: SIM card 1	21	5G4 antenna interface (optional)
4	Upper: LAN2 Gigabit Ethernet interface (POE) Below: LAN1 Gigabit Ethernet interface (POE)	13	Upper: TF card 2 Bottom: SIM card 2	22	4G2/GPS antenna interface (optional)
5	Upper: LAN4 Gigabit Ethernet interface (POE) Bottom: LAN3 Gigabit Ethernet interface (POE)	14	Signal status indicator	23	4G1 antenna interface
6	Upper: WAN/LAN6 Gigabit Ethernet port Bottom: LAN5 Gigabit Ethernet port	15	Grounding screw	24	IO user interface terminal
7	Upper: Upgrade button Lower: RESET key	16	WiFi antenna interface (optional)	25	220V power input
8	Serial data terminal	17	LORA antenna interface (optional)	26	Power switch control button

9	HDMI interface	18	5G1 antenna interface (optional)		

Table 3-2-1

3.2.1 Serial Data Interface

The serial data port of Smart2000 AI intelligent side station is a 14Pin plug-in terminal block with a spacing of 3.81mm. The definition of interface pins is shown in Figure 3-2-1. When using 14~24AWG cable, please make sure to wire according to the following instructions.

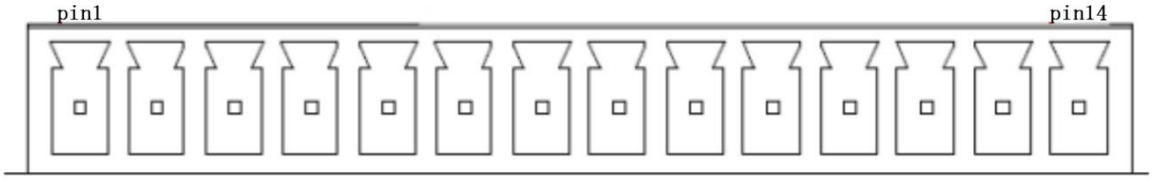


Fig. 3-2-1 Serial Data Interface Diagram

Table 3-2-1 Serial Data Interface

Pin No	Pin definition	explain	Remarks
PIN 1	RS-485_ A1	RS-485 interface A	RS-485 level
PIN 2	RS-485_ B1	RS-485 interface B	
PIN 3	RS-485_ A2	RS-485 interface A	
PIN 4	RS-485_ B2	RS-485 interface B	
PIN 5	RS-485_ A3	RS-485 interface A	
PIN 6	RS-485_ B3	RS-485 interface B	
PIN 7	RS-485_ A4	RS-485 interface A	
PIN 8	RS-485_ B4	RS-485 interface B	
PIN 9	GND	Signal ground	
PIN10	RS-232_ TX1	RS-232 transmitter	RS-232 level
PIN11	RS-232_ RX1	RS-232 receiver	
PIN12	GND	Signal ground	
PIN13	RS-232_ TX2	RS-232 transmitter	RS-232 level
PIN14	RS-232_ RX2	RS-232 receiver	

Table 3-2-1

Note: RS232 level definition: high level+3 ～+15V, low level - 3 ～ - 15V;

RS485 level definition: logic "1" level+2V~+6V; Logic "0" level - 2V ～ - 6V;

3.2.2 IO interface

The IO interface of Smart2000 AI intelligent side station is a 40Pin socket with a spacing of 3.5mm. The definition of interface pins is shown in Figure 3-2-2. apply

When connecting 14~24AWG cables, be sure to connect them according to the following instructions.

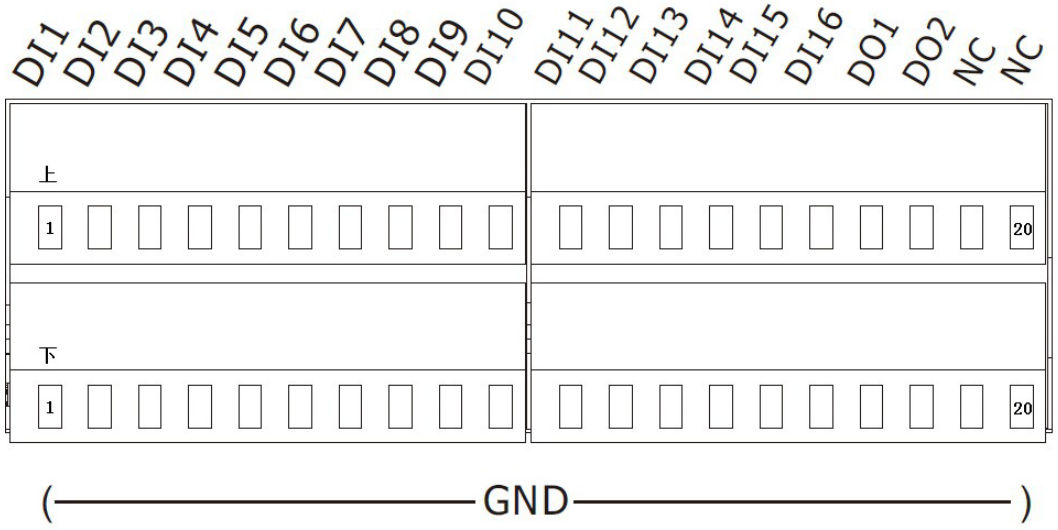


Fig. 3-2-220Pin Socket Interface

Table 3-2-212Pin socket interface pin function definition table

Pin No. (upper)	Pin definition	Explain
PIN 1	DI1 (input)	Input high=2.8~3.3V Input low=0~0.4V
PIN2	DI2 (input)	
PIN 3	DI3 (input)	
PIN 4	DI4 (input)	
PIN 5	DI5 (input)	
PIN 6	DI6 (input)	
PIN 7	DI7 (input)	
PIN 8	DI8 (input)	
PIN 9	DI9 (input)	
PIN 10	DI10 (input)	
PIN 11	DI11 (input)	
PIN 12	DI12 (input)	

PIN 13	DI13 (input)	
PIN 14	DI14 (input)	
PIN 15	DI15 (input)	
PIN 16	DI16 (input)	
PIN 17	DO1 (output)	Output high=12~13V
PIN 18	DO2 (output)	Output low=0~0.4V
PIN19	NC	N/A
PIN20	NC	N/A
Pin No. (bottom)	**Pin definition**	**Explain**
PIN 1~PIN 20	GND	Signal ground

Table 3-2-2

Note: TTL level definition: high level 3.3V, low level 0V

3.2.3 Accessories installation instructions

The size of the support is in mm, as shown in 3-2-3:

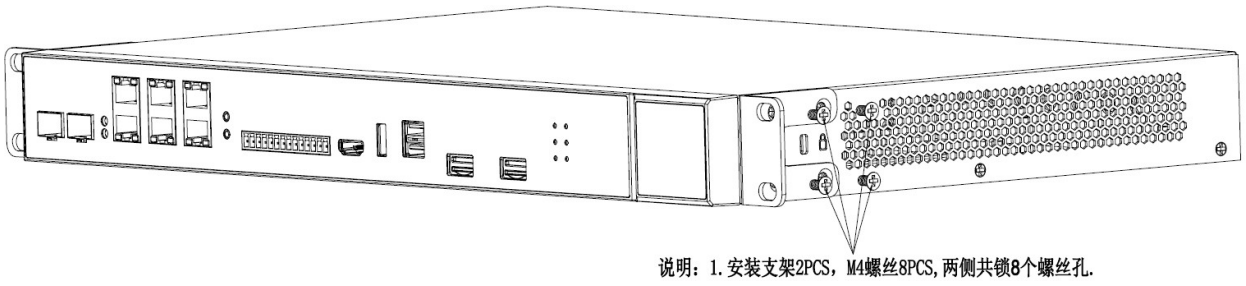


Fig. 3-2-3 Support Dimension

Bracket installation instructions: install two brackets on both sides of the housing respectively, and fix the bracket on the housing with eight M4 screws.

4. Indicator status

On the front panel of the Smart2000 AI intelligent side station, there are 2 optical port indicators, 12 LED network port indicators, and 6 system status indicators to indicate the working status display of the Smart2000 AI intelligent side station. The indicator status is described in Table 4-1-1.

Indicator light	Indicator name	Status description
SFP1~2	Light port indicator (green)	Always on: the connection between the network port and other equipment through the network cable is normal Off: The network cable is not inserted or the connection with other devices through the network cable is abnormal
LAN1～6	Network status indicator	Always on: the network port is connected with other devices through the network cable and flashes normally: the network port has data receiving and sending Off: The network cable is not inserted or the connection with other devices through the network cable is abnormal
SYS	System status indicator (green)	Always on: indicates that the system flashes normally; indicates that initialization is in progress Off: system abnormality
WiFi	Wireless indicator (green)	Always on: turn on 2.4GHz WiFi Off: 2.4GHz Wi Fi is not enabled
NET	Network connection indicator (green)	Chang Liang: Dial successfully and access 4G/5G network Slow flash (2S flash): dial successfully, access 2G/2.5G/2.75G/3G network flash (0.5S flash): dialing in progress Off: Unable to communicate normally (module not found or dialing disabled)
SIG	Signal strength indicator (green)	Always on: strong signal (CSQ>20) flashing: weak signal (0<CSQ ≤ 20) Off: no signal (CSQ=0)
HDD	Hard disk indicator (green)	Always on: hard disk flickers: data transmission Off: No hard disk
LORA	LORA indicator (green)	Always on: signal transmission off: no signal transmission

Table 4-1-1