

Technical Specification

H9380F V20A Intelligent Embedded
Computer



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1. Product Overview

H9380F Android IPC is a mid to high-end solution with an integrated 4-core arm architecture A55 processor and Mali G52 2EE graphics processor, supporting 4K decoding and 1080P encoding. Built-in independent NPU for lightweight artificial intelligence applications. Provide Android 11 system, mainly used in smart containers, smart vending machines, smart express cabinets, smart power exchange cabinets and other kinds of intelligent self-service terminals.

2. Product Specifications

Device items	Specification
CPU	Quad-core A55, up to 2GHz
GPU	G52 2EE, OpenGL ES1.1/2.0/3.0/3.1/3.2, Vulkan 1.1, OpenCL 2.0
NPU	0.8TOPS Computing Power Embedded neural network hardware gas pedal, supporting INT8, INT16, FP16 efficient computing NPU hardware natively supports pre-processing merging, channel quantization, and zero-hopping Support lossless compression of INT8, INT16, FP16 neural network parameters One-click conversion support for Caffe/ TensorFlow/ TF-Lite/ ONNX/ PyTorch/ Keras/ Darknet mainstream architecture models
Memory	2GB
Built-in storage	eMMC 8GB
External Storage	Support TF card external storage, maximum support 64GB storage

Device items	Specification
Network standard	4G full network access according to different modules, expandable 5G network
Operating System	Android 11
Image Video Processing	2D/3D Accelerator
	Video encoding. Support 1080p 60fps H.264 and H.265 format encoding Support dynamic bit rate, frame rate and resolution adjustment
	Video decoding. Support 4KP60 H.264/H.265/VP9 and other formats of HD decoding Support simultaneous decoding of multiple video sources Support HDR10, color, dynamic range with excellent performance Support image post-processing, de-interleaving, denoising, color enhancement, super resolution
Power supply	+12V DC power supply
Operating power consumption	Average power consumption in idle state is about 600mA@+12V DC Average power consumption under normal operation (working under WiFi or 4G network connection) 800mA@+12V DC
Operating temperature	-20°C~+70°C
Storage temperature	-40°C~ +85°C
Housing	Solid shell, drop-proof design; size (including fixed bracket): 210×130×44.6mm

Device items	Specification
Standard Interface	• 1 LAN interface (100/1000Mbps adaptive) • Default standard 2 DB9 type male socket serial port, COM1/2 RS-232; 2 COM3/4 optional support, default does not open function • 1*+12V DC2.0 power standard connector (5.5*2.1mm) • 1*RS485 interface (3 Pin terminal) • 2*3G/4G antenna ports (4G primary and 4G secondary antennas) • 1*WiFi antenna interface (WIFI option) • 1*GPS antenna interface (WIFI option) • 3*dual-layer USB 2.0 ports • 1*CAN interface • 1*Micro USB port • 1*HDMI • 1*PH2.0-4P speaker interface • 1*MIC interface • 1*TF card interface • 1*SIM card interface • 1*RETURN button • 1*RESET button • 1*grounding stud • 1*backlight interface (default does not open the function, need optional) • 1*LVDS interface (default does not open the function, need optional)
WiFi	WiFi and Bluetooth 4.0 2-in-1, 802.11b/g/n 150Mbps

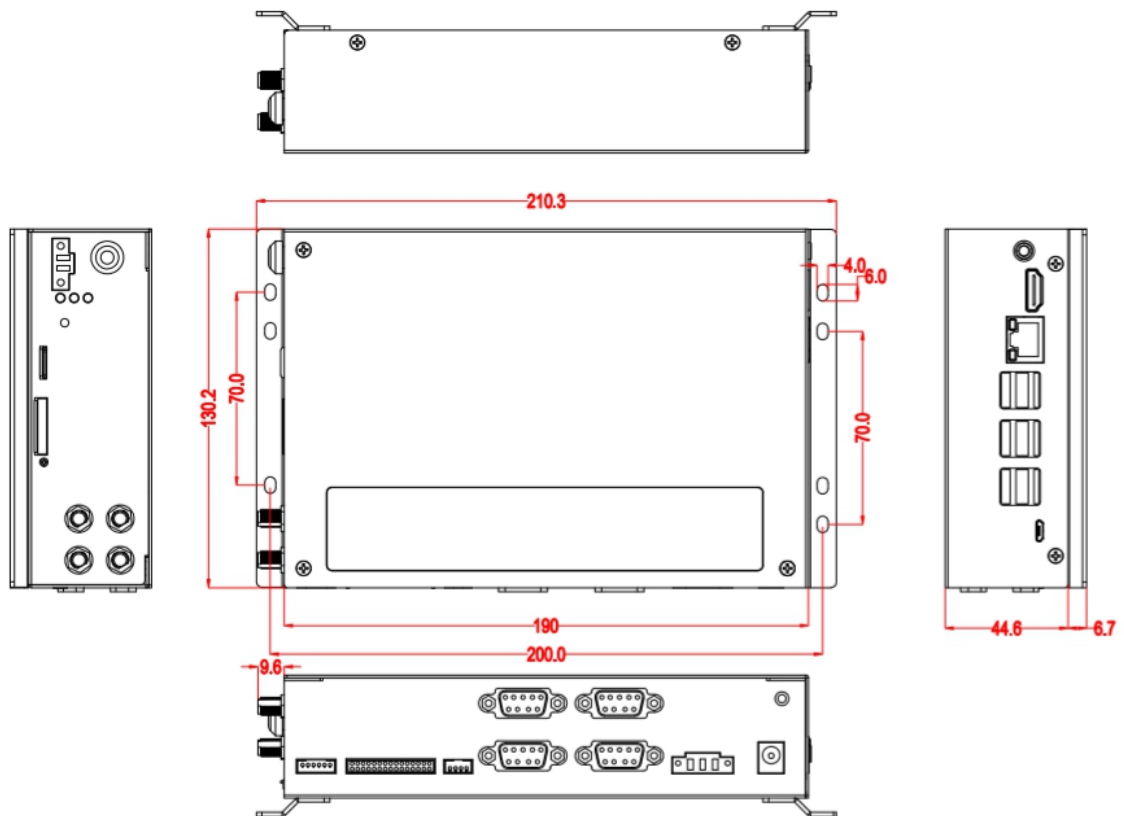
Device items	Specification
Cloud Management Platform	Support
Other	Support NTP/RTC clock synchronization

Note: The size of the product communication power consumption is affected by the network signal strength and the module network standard.

3. Structure size and interface definition

3.1 Structural dimensional drawings

The dimensions of the structure are shown in Figure 3-1. The unit for the dimensions corresponding to the physical device is millimeter.



3-1 Panel Dimension Drawing

3.2 Panel Interface Diagram

The panel interface diagrams are shown in Figures 3-2-1, 3-2-2, and 3-2-3.

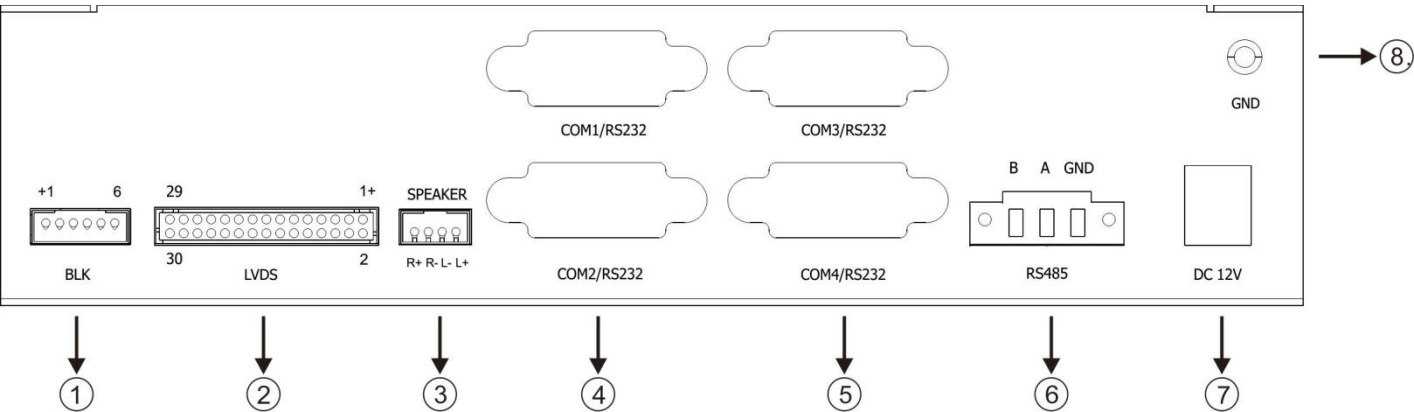


Figure 3-2-1 Front panel interface diagram

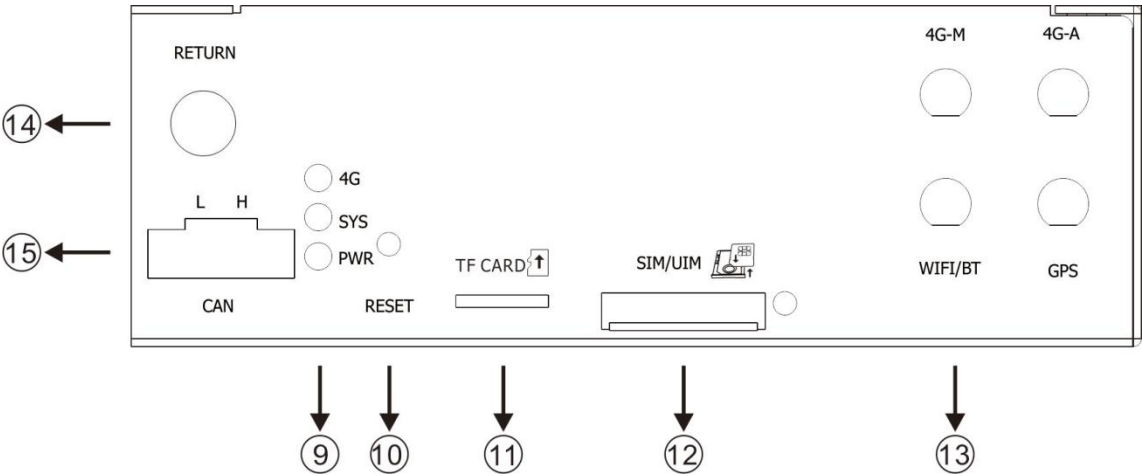


Figure 3-2-2 Left side panel interface diagram

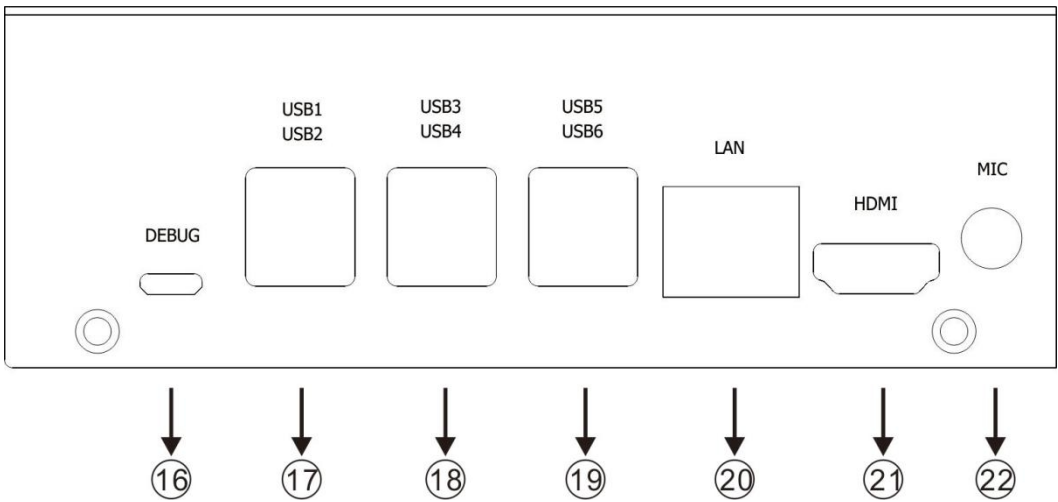


Figure 3-2-3 Right side panel interface diagram

Table 3-2-1 Panel Interface Table

Serial number	Description	Serial number	Description
①	Backlight holders (PH2.0-6P)	⑫	Drawer type SIM card holder
②	LVDS interface ((function not enabled by default, optional))	⑬	Antenna interface (top left: 4G main antenna, bottom left: WIFI antenna, top right: 4G auxiliary antenna. (Lower right: GPS antenna)
③	Speaker interface (PH2.0-4P, 4R,5W)	⑭	RETURN button
④	RS232 interface	⑮	CAN port
⑤	RS232/RS-485 interface ((default does not open function, optional))	⑯	USB OTG
⑥	RS485 interface	⑰	USB 2.0 ports (3 double layer, 6 total)
⑦	DC2.0 power standard interface (5.5*2.1mm)	⑱	USB 2.0 ports (3 double layer, 6 total)
⑧	Grounding screw	⑲	USB 2.0 ports (3 double layer, 6 total)
⑨	Signal indicators (4G, SYS, POWER)	⑳	LAN interface (100/1000Mbps adaptive)
⑩	RESET button	㉑	HDMI
⑪	TF Card	㉒	MIC interface

3.3 Interface Definition

3.3.1 DB9 interface diagram

The RS-232/RS-485 connector interface of H9380F Android IPC is a 9Pin interface terminal, and the interface pins are shown in Figure 3-3-1.

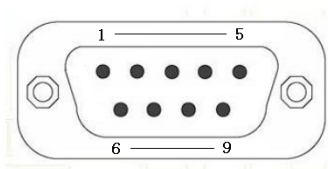


Figure 3-3-1 RS-232/RS-485 interface diagram

Table 3-3-1 RS-232 Pinout Table

Pin Serial Number	Pin Definition	Description
PIN 1	--	--
PIN 2	RS232_RX	RS232 level
PIN 3	RS232_TX	RS232 level
PIN 4	--	--
PIN 5	GND	Signal Ground
PIN 6	--	--
PIN 7	--	--
PIN 8	--	--
PIN 9	--	--

Table 3-3-2 RS-485 pinout table

Pin Serial Number	Pin Definition	Description
PIN 1	--	--
PIN 2	RS485_B	RS485 interface B

PIN 3	RS485_A	RS485 interface A
PIN 4	--	--
PIN 5	GND	Signal Ground
PIN 6	--	--
PIN 7	--	--
PIN 8	--	--
PIN 9	--	--

3.3.2 Terminal block interface diagram

The RS485 connector interface of H9380F Android IPC is a 3Pin interface terminal with a 3.81mm pitch, and the interface pins are shown in Figure 3-3-2.

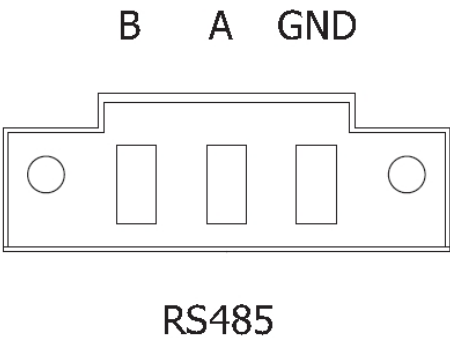


Figure 3-3-2 RS-485 interface diagram

Table 3-3-2 RS-485 pinout table

Pin Serial Number	Pin Definition	Description
PIN 1	RS485_B	RS485 interface B
PIN 2	RS485_A	RS485 interface A
PIN3	GND	Signal Ground

3.3.3 LVDS Signal Interface

The LVDS plug-in interface of H9380F Android IPC is a 2*15Pin bull's-eye socket with 2.0mm pitch, and the interface pins are shown at Figure 3-3-3. When using a 14 to 24AWG cable, be sure to wire it according to the instructions below.

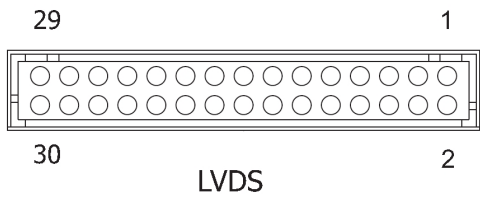


Figure 3-3-3 LVDS signal interface diagram

Table 3-3-3 LVDS Pinout Table

Pin Serial Number	Pin Definition	Description
PIN 1, PIN 2, PIN 3	VCC	Positive pin for 5V power supply
PIN 4, PIN 5, PIN 6	GND	Grounding Pins
PIN 7	P0_TX0_N	
PIN 8	P0_TX0_P	
PIN 9	P0_TX1_N	
PIN 10	P0_TX1_P	
PIN 11	P0_TX2_N	
PIN 12	P0_TX2_P	
PIN 13, PIN 14	GND	Grounding Pins
PIN 15	P0_CLK_N	
PIN 16	P0_CLK_P	
PIN17	P0_TX3_N	
PIN18	P0_TX3_P	
PIN19	P1_TX0_N	
PIN20	P1_TX0_P	
PIN21	P1_TX1_N	

PIN22	P1_TX1_P	
PIN23	P1_TX2_N	
PIN24	P1_TX2_P	
PIN25, PIN26	GND	Grounding Pins
PIN27	P1_CLK_N	
PIN28	P1_CLK_P	
PIN29	P1_TX3_N	
PIN30	P1_TX3_P	

3.3.4 LVDS backlight interface

The backlight connector interface of H9380F Android IPC is a 6Pin interface terminal with 2.0mm pitch, and the interface pins are shown in Figure 3-3-4. When using 14 to 24AWG cables, be sure to wire them according to the instructions below.

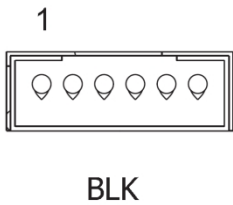


Figure 3-3-4 LVDS backlight interface diagram

Table 3-3-4 LVDS backlight interface pinout table

Pin Serial Number	Pin Definition	Description
PIN 1	12V	Backlight supply voltage
PIN 2	12V	Backlight supply voltage
PIN 3	EN	Backlight enable side
PIN 4	PWM	Backlight brightness control terminal
PIN 5	GND	Grounding
PIN 6	GND	Grounding

3.3.5 Speaker Interface

The speaker plug-in interface of H9380F Android IPC is a 4Pin interface terminal with a pitch of 2.0mm, and the interface pins are shown in Figure 3-3-5.

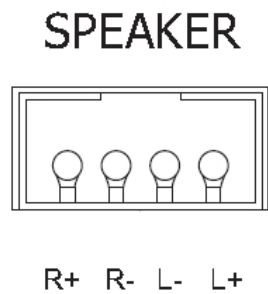


Figure 3-3-5 Speaker Interface Figure

Table 3-3-5 Speaker Interface Pinout Table

Pin Serial Number	Pin Definition	Description
PIN 1	R+	Right channel positive
PIN 2	R-	Right channel negative
PIN 3	L-	Left channel negative
PIN 4	L+	Left channel positive pole

4. Product Features

Functionality	Functional subcategories	Function Description
Android	Application Installation	Support Android Market application installation at and self-developed application installation
	Back Office Services	Support background service way to monitor applications
	Auto Start	Support full-screen auto-open and abnormal auto-resume for specified applications
3G/4G	Smart Dialing	Support 3G/4G auto-dial Support APN Adaptive Dialing Support 3G/4G network link self-detection and self-maintenance mechanism, fast automatic recovery from abnormalities Support independent dial-up process guarding and dial-up optimization to ensure real-time 3G/4G communication
Positioning function	GPS positioning	Support GPS positioning Positioning error less than 60m radius in open area
Status Statistics	Status Statistics	Support each interface module diagnostic information record (to meet the basic requirements of trimorphism) Support each serial port, network, audio and video interface whether the communication status record Peripheral hardware detection support Support APP traffic usage record Support APP operation monitoring (meet the basic requirements of trimorphism)
Graphics Processing	Image Recognition	Multi-camera working simultaneously; support 5-way 1280x960, 720P resolution USB cameras to display and take pictures simultaneously
Clock synchronization	Clock synchronization	NTP clock synchronization and remote management platform clock synchronization, time zone can be set
Security Management	Security Management	LAN-side security access control Support firewall function
Remote Management	Upgrade Updates	Support remote upgrade system and application components, support remote APP upgrade and rollback

	Status Management	Support remote statistical analysis of equipment reported operating status on cloud platform Support cloud platform equipment fault management
Timed switch on/off	Timed switch on/off	Support the user external for the overall shutdown control, to achieve full protection of power down
Audio and video output	Audio Output	Analog dual-channel, with its own Class D amplifier, adapted to 4 Ohm 5W speakers
	Touch screen interface	Support HDMI, LVDS interface video output
	Touch Screen Compatible	Support capacitive, infrared touch screen (need to add driver or add PID / VID)

5. Panel indicator status

The H9380F Android IPC has 3 LEDs. Indicates the operating status and network status of the H9380F Android IPC. The indicator status descriptions are shown in the table below.

Indicator light	Always bright	extinguish	Status
POWER Light	System power supply is normal	Abnormal system power supply	None
SYS light	None	System anomaly	Flash (0.2S): The system starts normally
Network Light 4G	4G dialing success	No number dialed/module not found	<i>Successful dialing, always on.</i> <i>Dialing failure, extinguished</i>