

# SID-21WR2

21.5" Panel PC with Rockchip RK3568

## Quick Reference Guide

1<sup>st</sup> Ed –31 January 2023

### Copyright Notice

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## Federal Communication Commission Interference Statement

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Notice:**

- (1) A Unshielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used.
- (2) Use only shielded cables to connect I/O devices to this equipment.
- (3) Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **FCC RF Radiation Exposure Statement**

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65 and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices. The radiated output power of this Wireless LAN device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized. When nearby persons has to be kept to ensure RF exposure compliance, in order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm.

### **WARNING**

“CAUTION – Use suitable mounting apparatus to avoid risk of injury.”

“CAUTION - Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your particular country.”

“WARNING – To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.”

### **Notice**

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into body, or (b) support or sustain life and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

### **A Message to the Customer**

#### ***Avalue Customer Services***

Each and every Avalue's product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new Avalue device is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation for which the name Avalue has come to be known.

Your satisfaction is our primary concern. Here is a guide to Avalue's customer services. To ensure you get the full benefit of our services, please follow the instructions below carefully.

#### ***Technical Support***

We want you to get the maximum performance from your products. So if you run into technical difficulties, we are here to help. For the most frequently asked questions, you can easily find answers in your product documentation. These answers are normally a lot more detailed than the ones we can give over the phone. So please consult the user's manual first.

To receive the latest version of the user's manual; please visit our Web site at:

<http://www.avalue.com.tw/>

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# 1. Getting Started

## 1.1 Safety Precautions

### Warning!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

### Caution!



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

## 1.2 Packing List

- 1 x SID-21WR2 Panel PC
- 1 x AC 60W Adapter
- 1 x Power cord
- 2 x WiFi Antenna
- 4 x Screw-Flat M4\* 4mm



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If any of the above items is damaged or missing, contact your retailer.

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## 1.3 System Specifications

Component	
Mother Board	ACP-RK3568
CPU	RK3568_Quad-core Cortex-A55 up to 2.0GHz_ Mali-G52 GPU
Memory	2GB DDR4 on board
Power Supply	DC in
Adapter	FSP AC/DC adapter 12V/5A 90 Screw Type
Wireless LAN	AW-CM276NF_ac/a/b/g/n_2x2
Bluetooth	5.0
Speaker	4ohm / 2W (Optional) speaker:E175X203700R*2 cable:E170X080050R*1
Out-Of-Band Service Enabler	1x OOB Module (Optional)
Operating System	Android 11, Debian 10
Storage	
Other Storage Device	32GB eMMC
Panel	
LCD Panel	M215HJJ-L30 (LVDS)
Resolution	1920 x 1080
Touch Screen	21.5" Sense ST-215C16D-N-AD
Touch Controller	EETI 84H5680
External I/O	
DC in Power jack	JDCIN1: Power Jack_90D Pwr-in 12V~24V
HDMI Port	JHDMI1: HDMI Port_90D
USB Port	JUSB1: USB Type A Host (3.0)_90D JUSB2: USB Type A Host (3.0)_90D
Lan Port	JLAN1: 10/100/1000 Lan port_90D
Audio Port	JHP1: Headphone Jack_90D
Reset button	Reset button_90D
COM Port	1 x DB9 for RS-232 1 x DB9 for RS-485
Mechanical	
Power Type	12V~24V wide voltage DC input
Power Connector	DC jack

## SID-21WR2

<b>Type</b>	
<b>Dimension</b>	535.34x329.31x48.1 mm
<b>Weight</b>	9.2 kg
<b>Color</b>	Metallic
<b>Fanless</b>	Yes
<b>OS Support</b>	Androd 11 / Debian 10
<b>Reliability</b>	
<b>EMI Test</b>	CE FCC class B RED
<b>Safety</b>	2014/35/EU EN 62368-1: 2014+A11: 2017 (Second Edition) Low Voltage Directive
<b>Dust and Rain Test</b>	1. PSD: 0.00454G <sup>2</sup> /Hz , 1.5 Grms 2. Operation mode 3. Test Frequency : 5-500Hz 4. Test Axis : X,Y and Z axis 5. 30 minutes per each axis 6. IEC 60068-2-64 Test:Fh 7. Storage : CF or SSD
<b>Random Vibration Test</b>	Test Standard: Reference IEC60068-2-64 Testing procedures 1. System condition: Operation mode 2. PSD: 0.00454G <sup>2</sup> /Hz , 1.5 Grms 3. Test Frequency : 5-500Hz 4. Test Axis : X,Y and Z axis 5. Test time: 30 minutes per each axis Storage : eMMC
<b>Sine Vibration Test (Non-operation)</b>	1. Test Standard: Reference IEC60068-2-6 Testing procedures 2. System condition : Non-Operating mode 3. Test Acceleration : 2G 4. Test frequency : 5~500 Hz 5. Sweep : 1 Oct/ per one minute. (logarithmic) 6. Test Axis : X,Y and Z axis Test time :30 min. each axis
<b>Package vibration test</b>	1. PSD: 0.026G <sup>2</sup> /Hz , 2.16 Grms 2. Non-operation mode 3. Test Frequency : 5-500Hz 4. Test Axis : X,Y and Z axis 5. 30 min. per each axis 6. IEC 60068-2-64 Test:Fh
<b>Mechanical Shock</b>	1. PSD: 0.026G <sup>2</sup> /Hz , 2.16 Grms



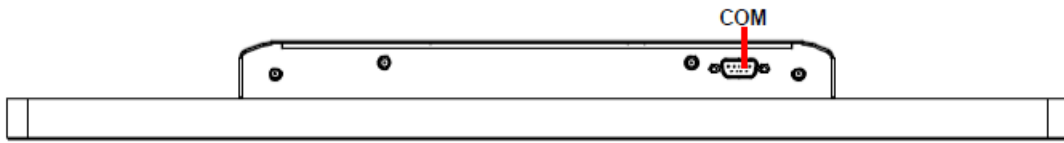
<b>Test</b>	<ol style="list-style-type: none"> <li>2. Non-operation mode</li> <li>3. Test Frequency : 5-500Hz</li> <li>4. Test Axis : X,Y and Z axis</li> <li>5. 30 min. per each axis</li> <li>6. IEC 60068-2-64 Test:Fh</li> </ol>
<b>Drop Test</b>	<ol style="list-style-type: none"> <li>1. Wave form : Half Sine wave</li> <li>2. Acceleration Rate : 10g for operation mode</li> <li>3. Duration Time : 11ms</li> <li>4. No. of Shock : Z axis 300 times</li> <li>5. Test Axis: Z axis</li> <li>6. Operation mode</li> <li>7. Reference IEC 60068-2-29 Testing procedures Test Eb : Bump Test</li> </ol>
<b>Operating Temperature</b>	0°C ~ 40°C (32°F ~ 104°F)
<b>Storage Temperature</b>	-20°C ~ 60°C (-4°F ~ 140°F)
<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing



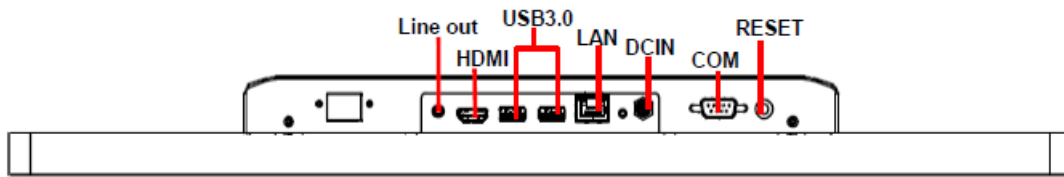
**Note:** Specifications are subject to change without notice.

## 1.4 System Overview

### 1.4.1 Front View



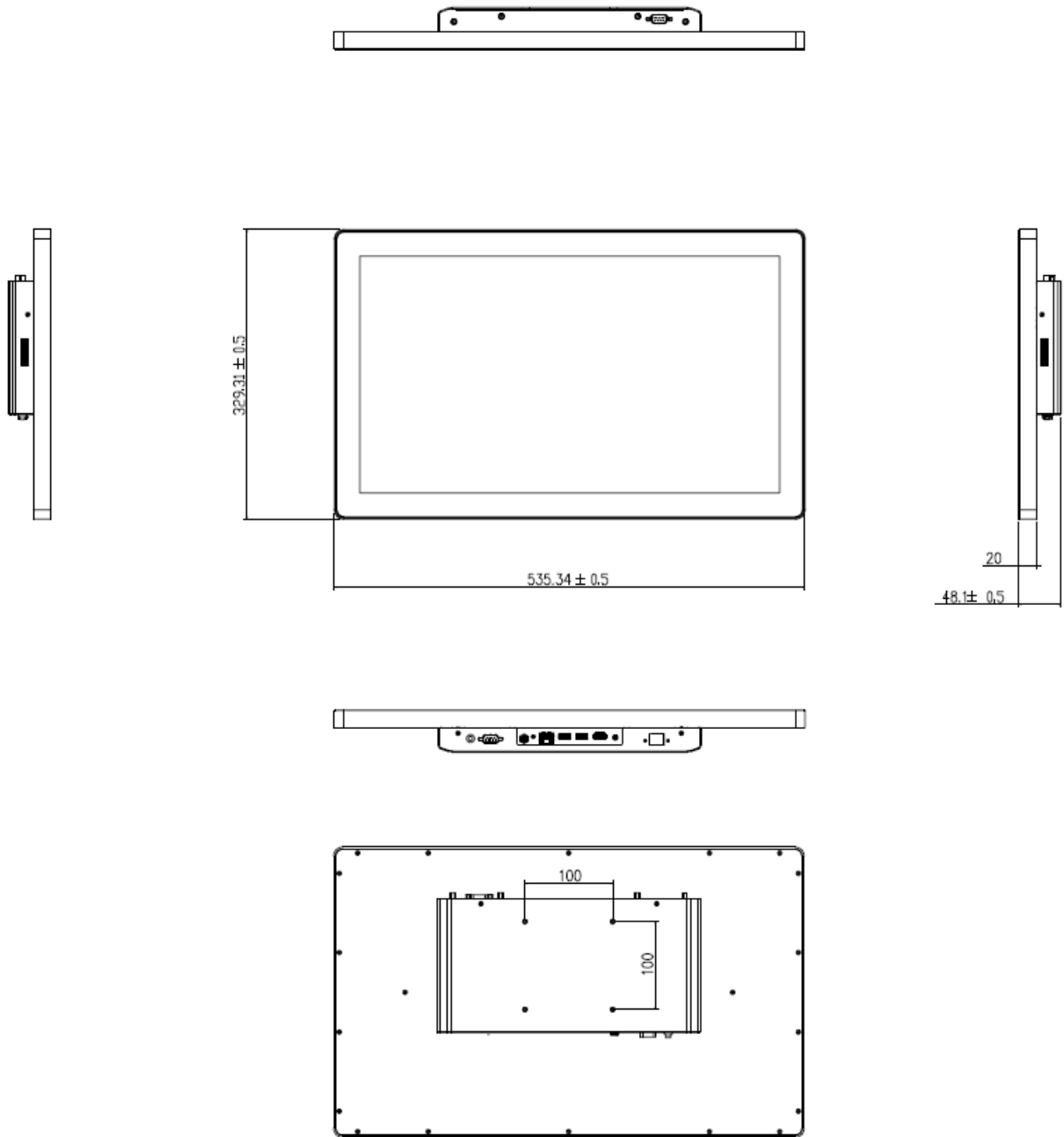
### 1.4.2 Rear View



### Connectors

Label	Function	Note
Line out	Audio line-out connector	Head phone jack
HDMI	HDMI connector	
USB3.0	2 x USB3.0 connector	USB type A
DCIN	DC power-in connector	DC jack
LAN	RJ-45 Ethernet connector	
COM	2 x Serial port connector	1 x DB9 for RS-232 1 x DB9 for RS-485
RESET	Reset button	

## 1.5 System Dimensions



(Unit: mm)

# 2. Hardware Configuration

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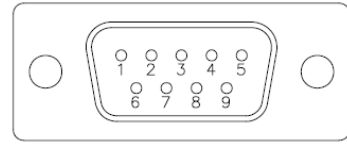
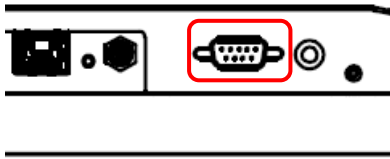


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## 2.1 SID-21WR2 connector mapping

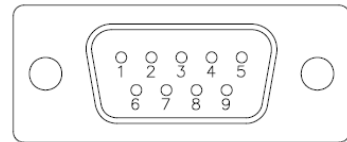
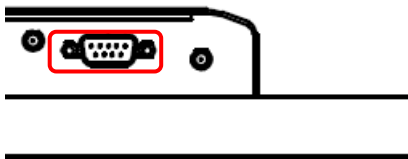
### 2.1.1 Serial port connector (COM)



**RS-232**

Signal	PIN	PIN	Signal
NC	1	6	NC
RX	2	7	RTS
TX	3	8	CTS
NC	4	9	NC
GND	5		

### 2.1.2 Serial port connector (COM)

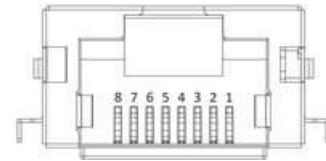


**RS-485**

Signal	PIN	PIN	Signal
DATA-	1	6	NC
DATA+	2	7	NC
NC	3	8	NC
NC	4	9	NC
GND	5		

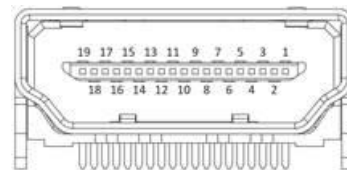
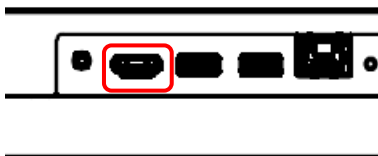
## SID-21WR2

### 2.1.3 RJ-45 Ethernet connector (LAN)



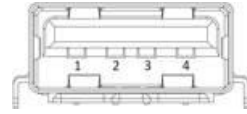
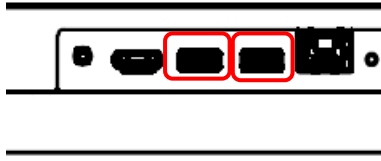
Signal	PIN
LAN_MDIO+	1
LAN_MDIO-	2
LAN_MDII+	3
LAN_MDI2+	4
LAN_MDI2-	5
LAN_MDI1-	6
LAN_MDI3+	7
LAN_MDI3-	8

### 2.1.4 HDMI connector (HDMI)



Signal	PIN	PIN	Signal
HDMI_P2	1	2	GND
HDMI_N2	3	4	HDMI_P1
GND	5	6	HDMI_N1
HDMI_P0	7	8	GND
HDMI_N0	9	10	HDMI_CLKP
GND	11	12	HDMI_CLKN
NC	13	14	NC
HDMI_CTRL_CLK	15	16	HDMI_CTRL_DAT
GND	17	18	5V
HPD	19		

2.1.5 USB3.0 connector (USB3.0)



Signal	PIN
VCC	1
Data-	2
Data+	3
GND	4

