

SID-21V

21.5" Open Frame Tablet with Cover/Stand/Smart Card
Reader/Battery

Quick Reference Guide

1st Ed –26 February 2018

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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.

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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-21V 21.5" Panel PC with Cover/Stand/Smart Card Reader/Battery
- 1 x ACC-BAT-3SP1-01R
- 1 x Power Cord



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

1.3 System Specifications

Component	
CPU	Intel Atom Z3735F
Memory	2GB DDR3L
Adapter	+19V DC (65W)
Operating System	Android 4.4
Storage	
Other Storage Device	32GB eMMC
Panel	
LCD Panel Size	21.5"
Resolution	1920 x 1080
Luminance	250 nits
Touch Type	PCAP
Viewing Angle	89°(U)/ 89°(U)/ 89°(L)/ 89°(R)
External I/O	
USB Port	4 x USB 2.0
Video Port	1 x HDMI
Audio Port	1 x Headphone Jack
LAN Port	1 x 10/100 Ethernet
Peripheral Devices	1 x Smart Card Reader
Expansion Slots	1 x Micro SD slot
Mechanical Specifications	
Power Type	19V DC input
Power Connector Type	DC jack Li-ion Battery (Optional)
Unit Dimension	304.8 x 565.3 x 208.1
Unit Weight	9.91kg (Including Battery)
Shipping Dimension	23 x 14 x 11"
Shipping Weight	11.05kg (Including Battery)
Color	Black
Reliability	
EMI Test	CE, FCC class B
Operating Temperature	0°C ~ 40°C
Operating Humidity	0% ~ 90% relative humidity, non-condensing
Storage Temperature	-20°C ~ 60°C

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Note: Specifications are subject to change without notice.

1.4 System Overview

1.4.1 Top View

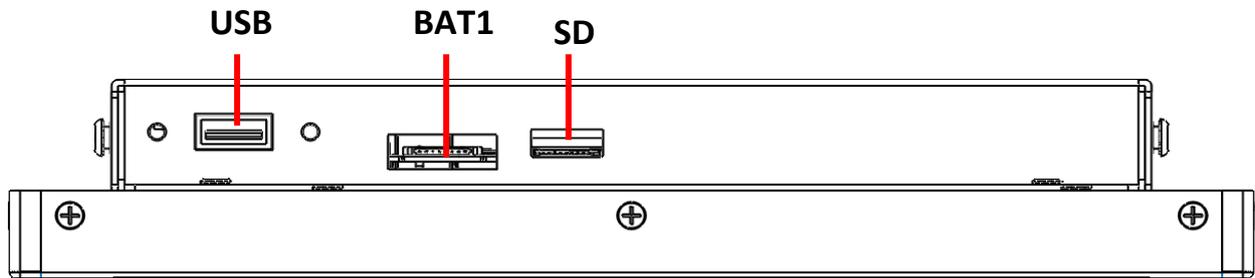


FIG. 2A: SYSTEM TOP VIEW, NO COVER

1.4.2 Bottom View

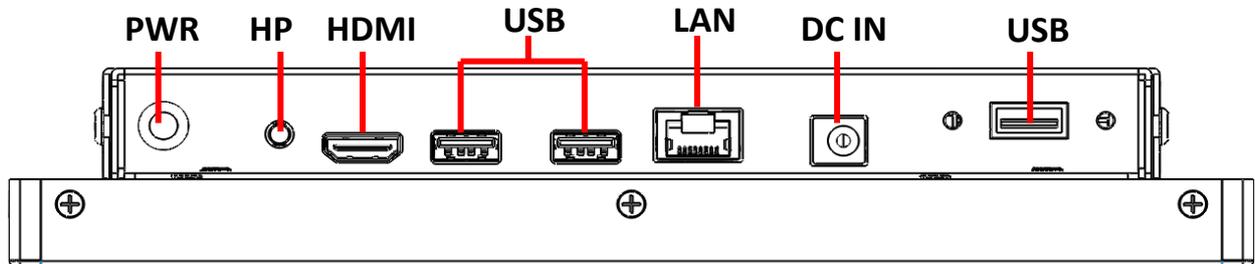
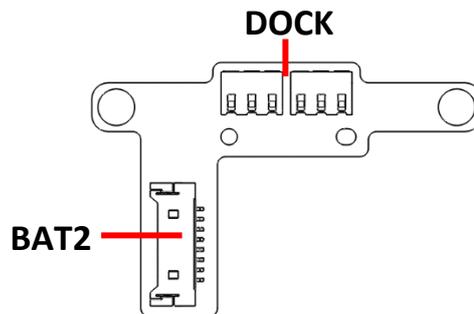


FIG. 2B: SYSTEM BOTTOM VIEW, NO COVER

1.4.3 Battery Connectors



Connectors

Label	Function	Note
PWR	Power Button	
HP	Audio line-out connector	
HDMI	HDMI connector	
USB	4 x USB 2.0 connector	
LAN	RJ-45 Ethernet	
DC IN	DC Power-In connector	

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SD	Micro SD Card Slow
BAT1	Motherboard Battery connector
BAT2	Auxiliary Battery Board Battery connector
DOCK	Optional Battery Docking connector

1.5 Battery Specifications (Optional)

1.5.1 General Specifications

General	
Battery Model Number	ACC-BAT-3S1P-01R
Battery Cell Type	Li-Ion Rechargeable Cell
Nominal Voltage	AVG. 10.8V
Charging Voltage	MAX. 12.6V
Typical Capacity	2400 mAh 25°C±2°C
Minimum Capacity	2215 mAh at 25°C, by 0.2C 443 mA discharge
Standard Charging	12.6 V / CC: 0.5C, 1106 mA at 25°C ± 2°C Terminal charge condition: <117 mA
Maximum Charging	12.6 V / CC: 0.9C, 2000 mA at 25°C ± 2°C Terminal charge condition: <117 mA Charge rates >0.86 C are NOT recommended.
Pre-Charge Current	128 mA (When cell voltage under 3.0V or temperature under 10 °C)
Standard Continuous Discharge Current	0.2 C 443 mA Continuous discharging to 8.25 V
Maximum Continuous Discharge Current	1.355 C 3000 mA Continuous discharging to 8.25 V
Charge Termination Condition	When the pack voltage is 12.6 V, and the charge current is less than or equal to 117 mA the charging should be terminated. Relative State Of Charge = 100 % When the Relative State Of Charge is under 95%, the pack can re-start charging.
Discharge Termination Condition	When pack voltage is less than or equal to 8.25 V, the discharging should be terminated.
Operating Temperature	Charge: 0 °C~ 45 °C, 85%RH Max Discharge -10 °C~ 60 °C, 85%RH Max
Storage Temperature	If the battery packs are subject to storage for such a long term, it is recommended to recharge the battery pack periodically, every two-months. 1 Month -20~60 °C, 85 %RH Max 3 Months -20~45 °C, 85 %RH Max 1 Year -20~20 °C, 85 %RH Max

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Thermistor	NTC 10K B=3435 @25°C
FCC Range	1993.5 mAh to 2784 mAh for 0.2C Charge and Discharge at 25 °C
Electrical	
Life Cycle	Discharge capacity (500) Cycle is greater than or equal to 80 % 1772 mAh Ambiance Temp: 25±3°C. A battery unit shall be repeated 500 charge/discharge cycles, charged at CC-CV 1108 mA - 12.6 V. cut-off 117 mAh discharged at 1108 mA. Continuously down to 8.25 V. cut-off voltage. Remark: Rest 20 min after charge Rest 20 min after discharge
ESD Requirement	Contact discharge ±4KV, Air discharge ±8KV
Dynamic Test	High level: 3000 mA Low level: 300 mA Discharged continuously down to 8.25 V Cut-off Voltage No rupture, fire, smoke, explosion, leakage and protection.

1.5.2 Battery Handling

To ensure safety and maximum life of your product please follow the precautions outlined below:

- Avoid shorting the battery
- Do not immerse in water.
- Do not disassemble or deform the battery
- Do not expose to, or dispose of the battery in fire.
- Avoid excessive physical shock or vibration.
- Keep out of the reach of children.
- Never use a battery that appears to have suffered abuse.
- Store in a cool, dry, and well-ventilated area.
- Dispose of in accordance with local regulations. Regulations vary for different countries.

2. Hardware Configuration



Note: If you need more information, please visit our website:

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

2.1 Battery Installation (Optional)

2.1.1 Preparing the System

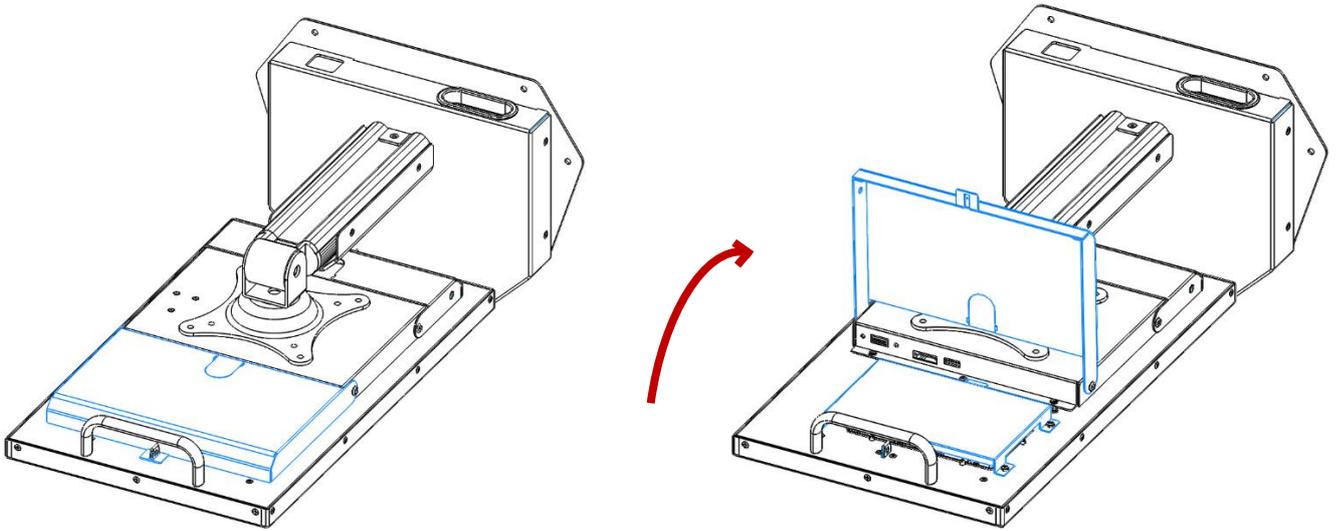


FIG. 3A: SYSTEM ISOMETRIC BACK VIEW, OPENING THE TOP COVER

- Please make sure the unit is unplugged and powered off.
- Lay the unit flat, screen side down, on a smooth surface.
- Locate and open the hinged Top Cover (highlighted in blue).
- Once opened, locate the battery bracket.

2.1.2 Removing the Battery Bracket

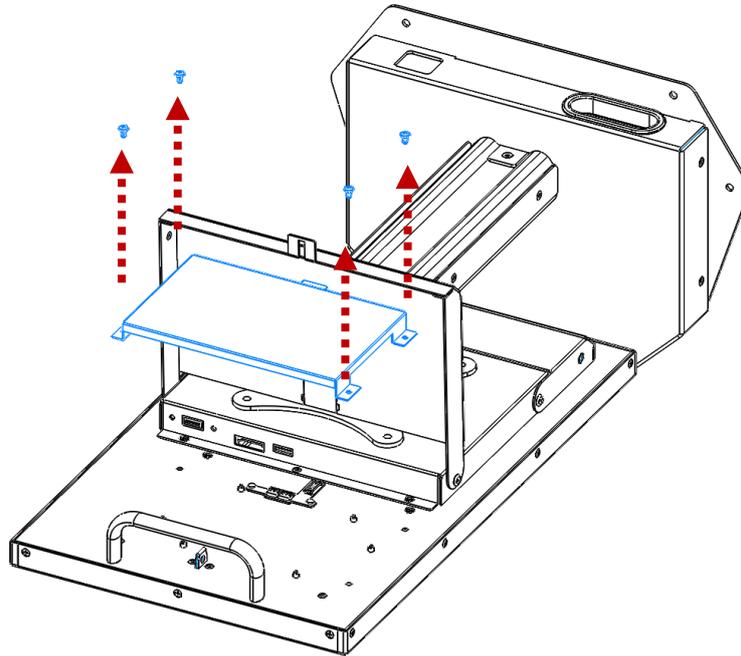


FIG. 3B: BATTERY BRACKET REMOVAL

- Remove the 4 screws (M3x5) that secure the battery bracket to the system.
- Remove the bracket from the system.
- Locate the battery connection board under the bracket.

2.1.3 Integrating the Battery

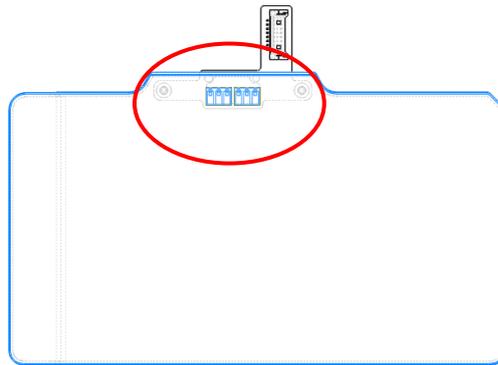


FIG. 3C: BATTERY MOUNTED ON BOARD

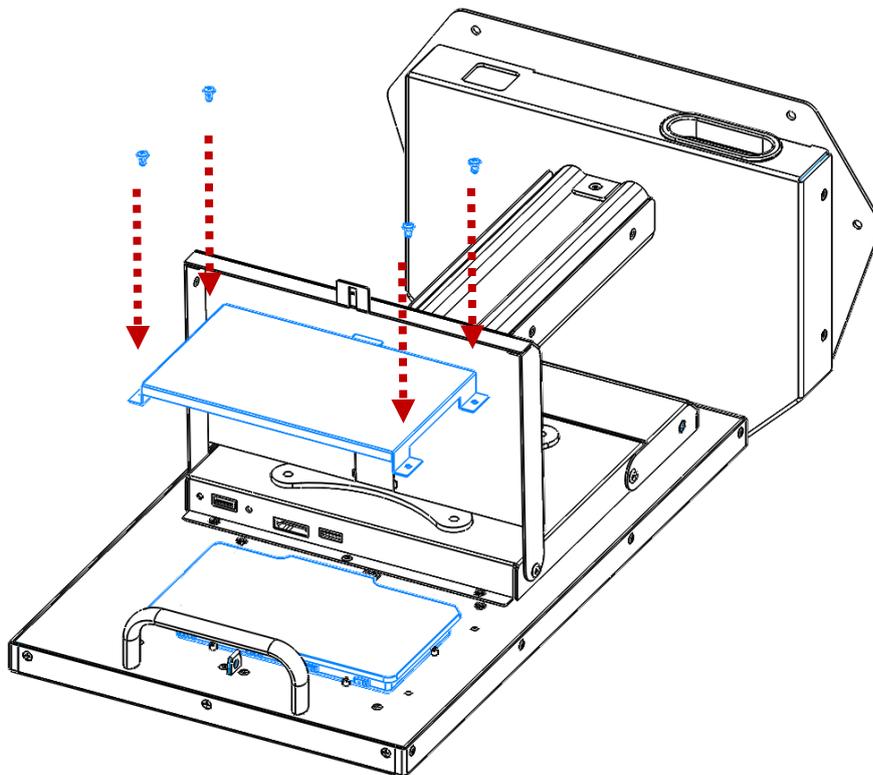


FIG. 3D: BATTERY AND BATTERY BRACKET INSTALLATION

- Place the battery on the DOCK connection on the system with the smooth side up and the tab facing the center of the system. Please make sure that the contacts from the battery to the board are lined up properly (refer to Fig. 3C for visual reference).
 - Mount the battery bracket to the system using the 4 screws we previously removed.
- NOTE: It may be easier to integrate the battery into the battery bracket first, then mount the bracket on the system.

2.1.4 Completing the Installation

- Once complete, close the top cover. The top cover will secure itself to the system through a magnetic connection.
- The system can now be placed upright on a flat, stable surface.
- Plug in the power cord and turn the system on. Verify the battery is being recognized by the system and is charging in Settings>Battery.

2.2 Cable Management

2.2.1 Removing Cable Cover

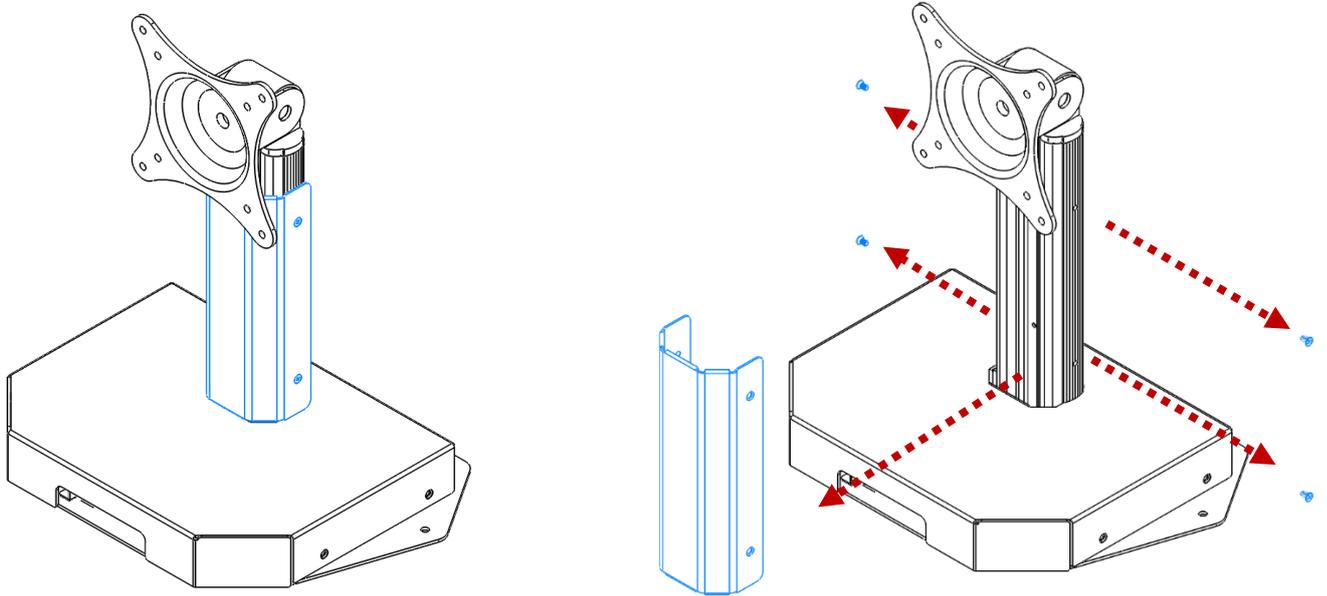


FIG. 4A: STAND ISOMETRIC FRONT VIEW, REMOVING CABLE COVER

- Locate the Cable Cover on the Base Stand (highlighted in blue)
- Remove the 4 screws that keep the cover in place and pull the cover off of the Arm.

2.2.2 Removing the Base from the Arm

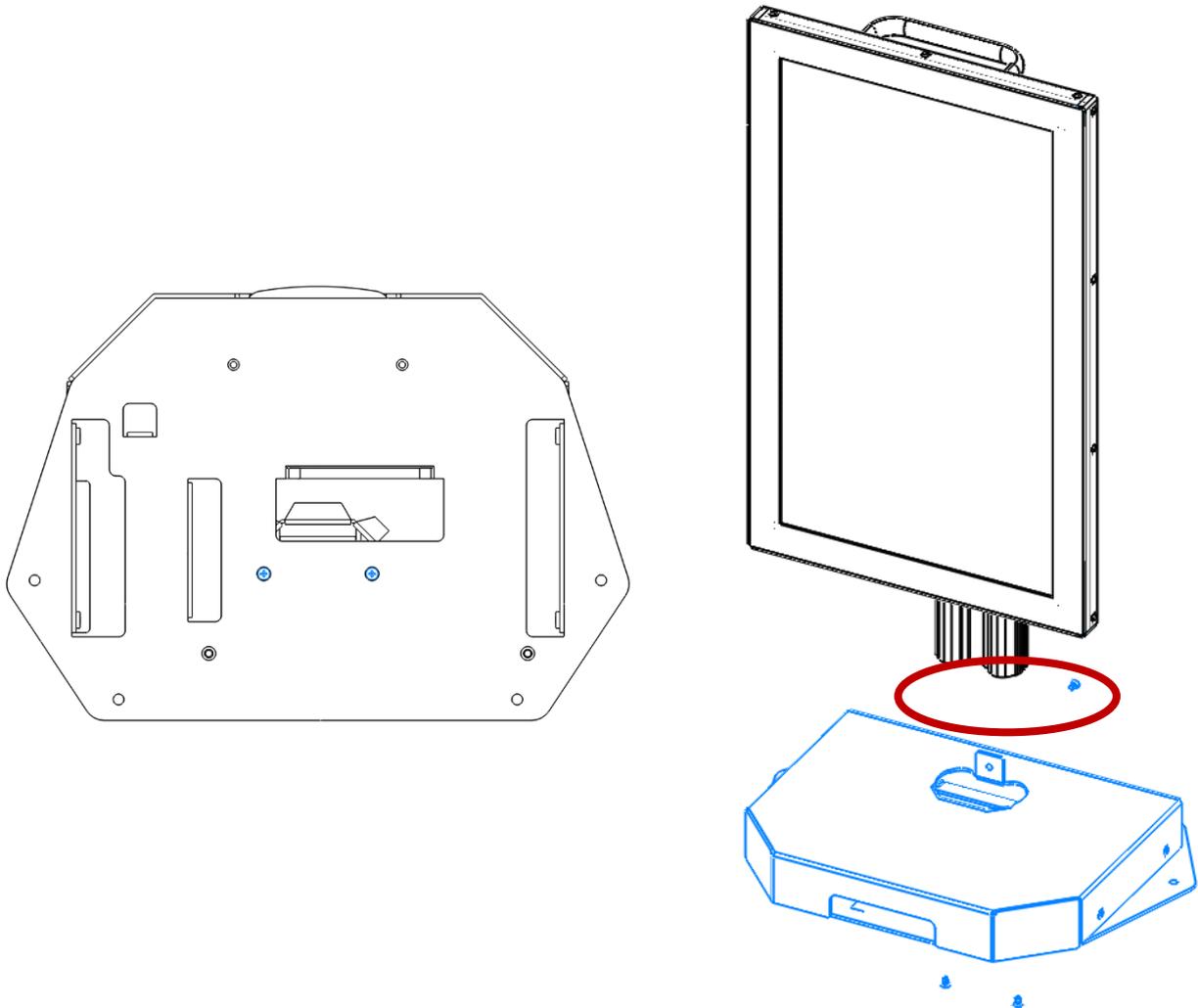


FIG. 4B: BOTTOM AND ISOMETRIC FRONT VIEW, REMOVING BASE FROM ARM

- Locate the 3 screws that hold the Arm to the Base. There are 2 underneath the unit, and 1 along the backside of the arm.
- The arm should slide out of the hole in the base

NOTE: Please use caution while other cables may be routed through this hole.

2.2.3 Routing the Cables through the Base

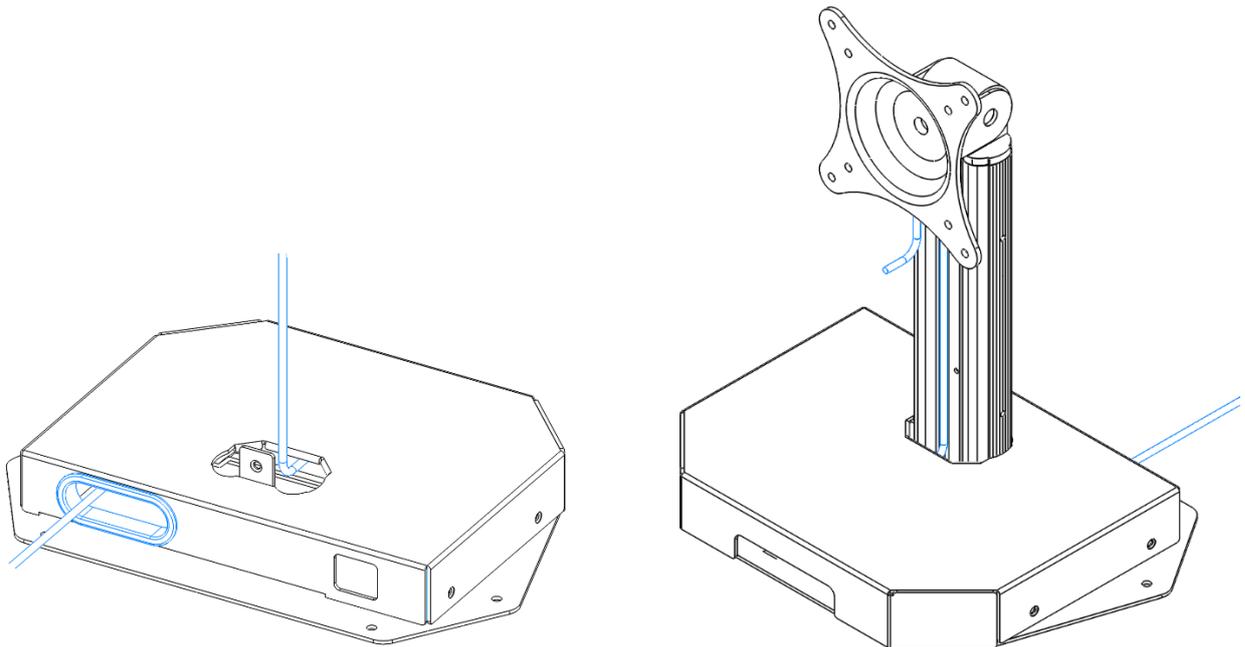


FIG. 4C: CABLE ROUTING THROUGH STAND PASS-THROUGH

- Route the cables through the pass-through hole along the backside of the unit and up through the center hole that the Arm was taken out of.
NOTE: This pass-through hole should be lined with a plastic cable bushing to prevent cable wear.
- Gather the cables to the front of the hole, and insert the Arm back into the hole. **Please use caution when doing this and make sure that no cables will be pinched between the bottom of the Arm and the bottom base plate. The cables should run through the pass-through along the back and hug around the arm up the top of the Bases hole opening.**
- Mount the Arm back onto the Base using the 3 screws that were removed earlier.

2.2.4 Cable Routing on Bottom Cover

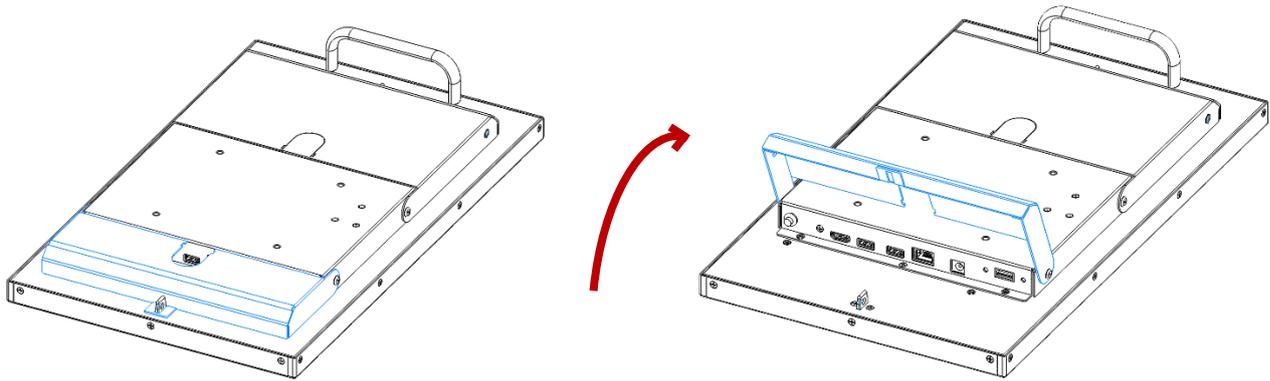


FIG.4D: SYSTEM ISOMETRIC BACK VIEW, OPENING THE BOTTOM COVER

- Locate and open the hinged Bottom Cover (highlighted in blue)

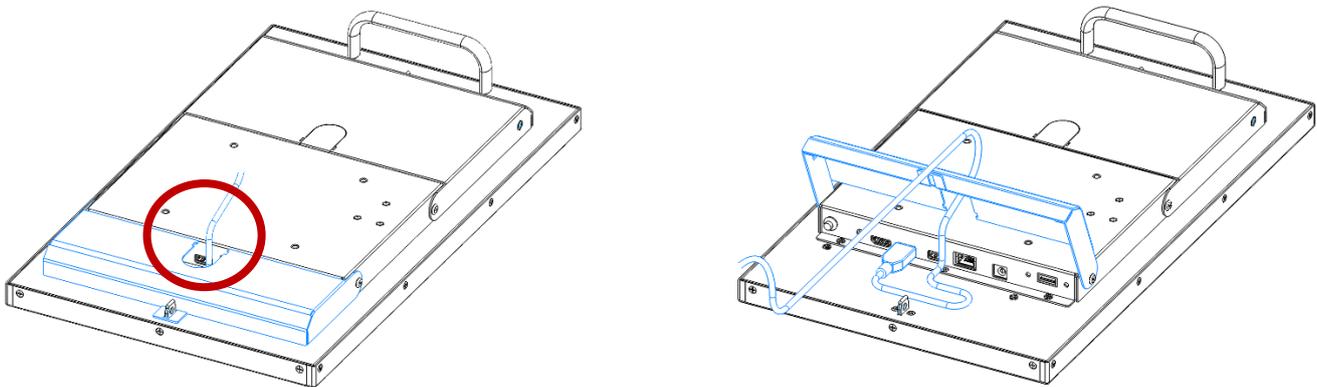


FIG. 4E: SYSTEM ISOMETRIC BACK VIEW, CABLE ROUTING THROUGH BOTTOM COVER

- Route the cables through the cable pass-through hole on the cover and attach the cables to the system's I/O.

NOTE: This hole should be lined with a plastic cable bushing to prevent wear on the cable. If there is not bushing on the unit, one is available inside the accessory box.

- Close the Bottom Cover. As illustrated in **Fig. 4E**, leave several inches of extra cable slack in the door. This will prevent any strain on the cable if the display was tilted on the mount.

2.2.5 Completing the Installation

- Once complete, close and lock the Bottom Cover.
- Reinstall the Cable Cover on the Arm. Make sure that all of the cables are not visible and hidden properly behind the Cover.

2.3 Updating the BIOS

After installing your SID-15V-Z37-A1R assembly, please make sure all of your cables are installed properly. After powering on the unit and verifying the operating system loads, it may be recommended to update the BIOS before initial functional use.

2.3.1 Preparing the USB Key

To install the most recent BIOS update on the system, please have a USB key at hand, formatted with a FAT32 file system. The most recent BIOS update folder must be downloaded and decompressed on the USB's root folder in order for the system to function properly.

2.3.2 Booting to the USB Key

Plug the USB key into a USB port of SID-15V and power on the system. Please press "**F12**" repeatedly while the system is turning on to get into the boot manager of the BIOS. Here, please choose the USB Device as the boot device. This will load the EFI shell on the USB key.

2.3.3 Applying the BIOS Update

Once at the EFI shell, please type in "**fs1:**" to gain access to the USB key. To change directories to the appropriate folder "**EFIBOOT**", please use the following commands:

```
>cd EFI  
>cd boot
```

To Flash the BIOS for Android or Linux, please run command "**BCX11x64.nsh**".
NOTE: Please do not remove power from the system while the BIOS is flashing.

2.3.4 Loading Optimized Defaults

Once the BIOS has completed updating, the system will reboot automatically. After the system reboots, please press "**F2**" to get into the BIOS Setup Menu. Here, highlight to the following:

```
">Exit>Load Optimized Defaults>Yes> Exit Saving Changes"
```

The system will now reboot again to the main Operating System with the correct BIOS revision.

2.4 Updating the Firmware

After installing your SID-15V-Z37-A1R assembly, please make sure all of your cables are installed properly. After powering on the unit and verifying the operating system loads, it may be recommended to update the Android firmware before initial functional use.

2.4.1 Preparing the USB Key

To install the most recent Android Firmware on the system, please have a USB key at hand, formatted with a FAT32 file system. The most recent OTA Update file must be downloaded and the compressed folder must be on the USB's root folder in order for the system to function properly.

2.4.2 Rebooting to Recovery Mode

Power on the SID-15V-Z37-A1R System and load into the Android OS. Navigate to the "Settings" page. Scrolling down to the bottom of the page, click on the "About Tablet" page. Here, you will find the "Software Update" option to click on. Please press the "Reboot into recovery mode" button to get into Android recovery mode.

2.4.3 Applying the Update

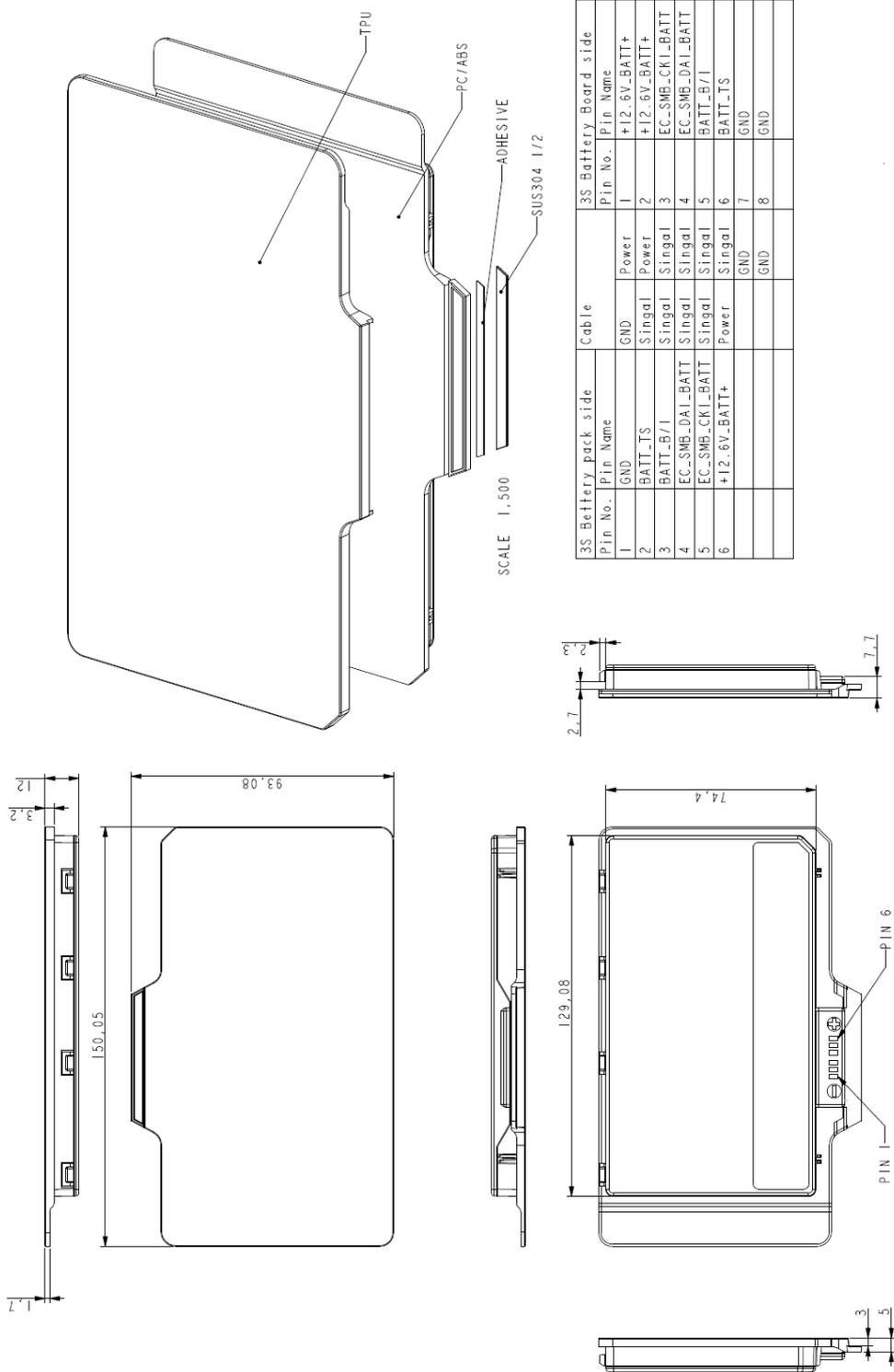
Select the "Apply update from USB" option while in the Android system recovery menu. Next, select the most recent OTA image file that was previously copied on USB drive.

2.4.4 Completing the Update

After completing the update, the system will return to the Android system recovery menu. Please select "Reboot system now" to reboot the system and get into the newly updated Android OS. Please note you may need to unplug USB disk before you reboot the system.

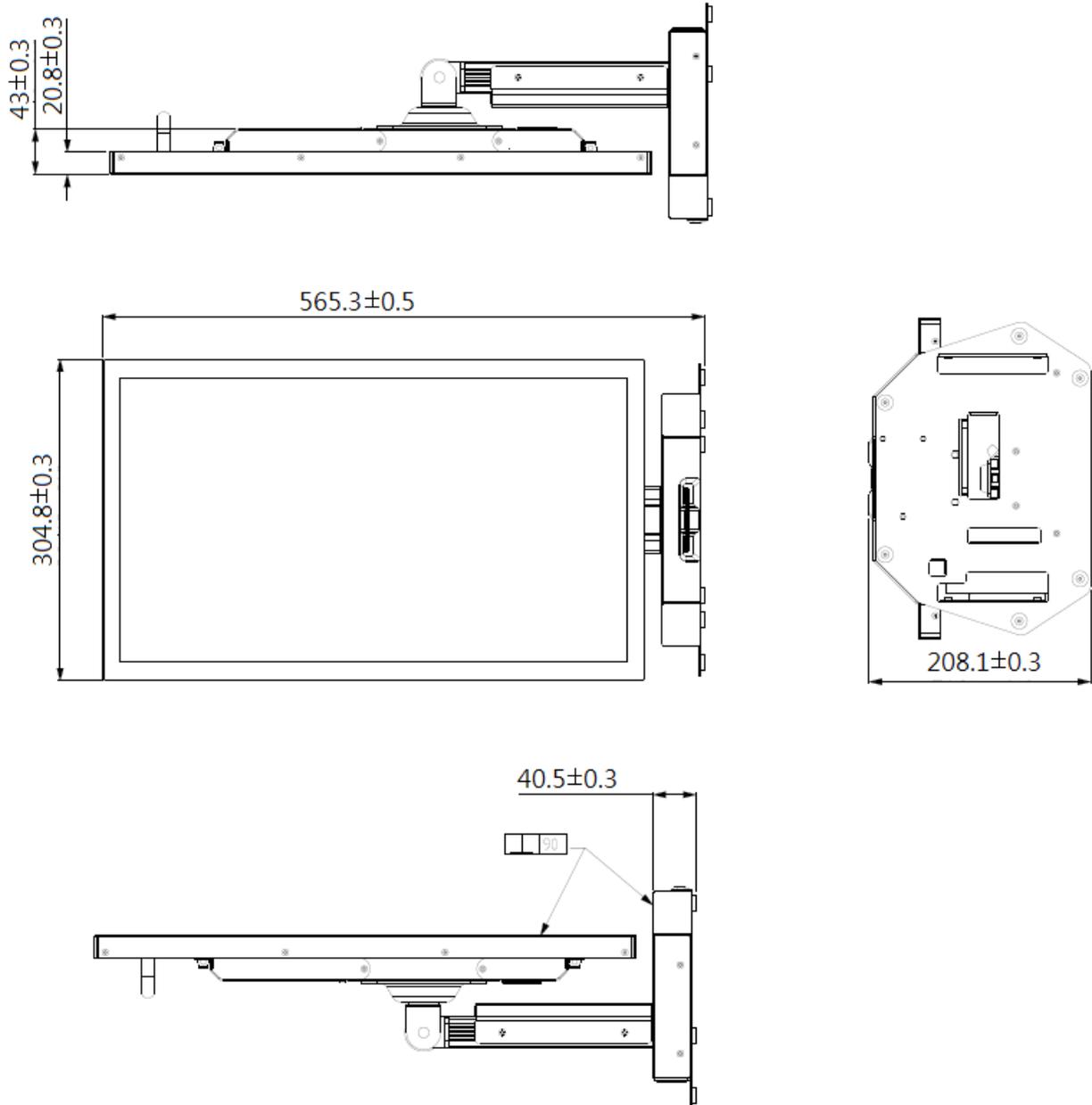
2.5 Mechanical Drawings

2.5.1 Battery Drawing



(Unit: mm)

2.5.2 System Drawing



(Unit: mm)

