EPB-1001

Battery Expansion Box

Quick Reference Guide

4th Ed –11 March 2026

Part No. E2017E700A3R

FCC Statement

THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.
THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.
THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTATLLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.
OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

Purposes and Applications

The intended use of EPB-1001 is to provide another option to charge panel PCs in all different circumstances where mobility is a must.

Instructions for the User

EPB-1001 is not intended to be used by patients. Please contact a service technician or your retailer for installation and maintenance.

Safety Instructions

1. Strictly follow these Instructions for Use, please read these safety instructions carefully.
2. Remind to keep this User's Manual for later reference, and any use of the product requires full understanding and strict observation of all portions of these instructions. Observe all WARNINGS and CAUTIONS as rendered throughout this manual and on labels on the equipment.
3. Repair of the device may also only be carried out by MANUFACTURER.
4. If one of the following situations arises, get the equipment checked by MANUFACTURER:
The power cord or plug is damaged.

Liquid has penetrated into equipment.
The equipment has been exposed to moisture.
The equipment does not work well, or you cannot get it to work according to the user's manual.
The equipment has been dropped and damaged.
The equipment has obvious signs of breakage.

5. Do not use liquid or spray detergents for cleaning and keep this equipment away from humidity.

Caution! *To avoid short-circuiting and otherwise damaging the device, do not allow fluids to come in contact with the device. If fluids are accidentally spilled on the equipment, remove the affected unit from service as soon as possible and contact the service personnel to verify that patient safety is not compromised.*

Précaution! *Pour éviter tout court-circuit et autrement endommager l'appareil, ne laissez pas de liquides entrer en contact avec l'appareil. Si du liquide est accidentellement renversé sur l'équipement, retirez l'unité affectée du service dès que possible et contactez le personnel d'entretien pour vérifier que la sécurité du patient n'est pas compromise.*

6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. To prevent overheating, do not place the device in direct sunlight or near radiant heaters.
8. VESA bracket kit installation should be operated by professional technician, please contact the service technician or your retail if you need this service.
9. Environmental protection: follow national requirements to dispose of unit.
10. Make sure the user not to contact SIP/SOPs and the patient at the same time.
11. Maintenance: to properly maintain and clean the surfaces, use only the approved products or clean with a dry applicator.
12. Accessory equipment connected to EPB-1001 must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 62368 for data processing equipment, IEC 60065 for video equipment, IEC 61010-1 for laboratory equipment, and IEC 60601-1 for medical equipment.) Furthermore, all configurations shall comply with the system standard IEC 60601-1-1. Everybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 60601-1-1. The unit is for exclusive interconnection with IEC 60601-1 certified equipment in the patient environment and IEC 60601-1 certified equipment outside of the patient environment. If in doubt, consult the technical services department or your local representative.

Warning! *Do not modify this equipment without authorization of the manufacturer.*

Attention! *Ne modifiez pas cet équipement sans l'autorisation du fabricant.*

Caution! *Do not attempt to disassemble the battery pack. There is danger of excessive temperatures, fire or explosion if the battery is incorrectly replaced. Please contact with MANUFACTURER to replace battery packs.*

Caution! *Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."*
Attention! *Risque d'explosion si la batterie est remplacée par un type incorrect. Jetez les piles usagées selon les instructions*

Disposing of your old product

Within the European Union

EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product, or if applicable, follow any agreements made between yourself. The mark on electrical and electronic products only applies to the current European Union Member States.

Additional Information and Assistance

Contact your distributor, sales representative for technical support if you need additional assistance. Please have the following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem

- The exact wording of any error messages
- This equipment is a source of electromagnetic waves. Before use please, make sure that there are not EMI sensitive devices in its surrounding which may malfunction therefore.

Manufacturer
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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:
www.avalue.com

Content

1. Getting Started

1.1 Packing List

- 1 x EPB-1001 Battery Expansion Box
- 2 x Totex 4S2P Rechargeable Lithium Ion Battery (optional)
- 1 x EDAC EM11011M(18) 24V/5A Screw Type Medical Adapter (optional)

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

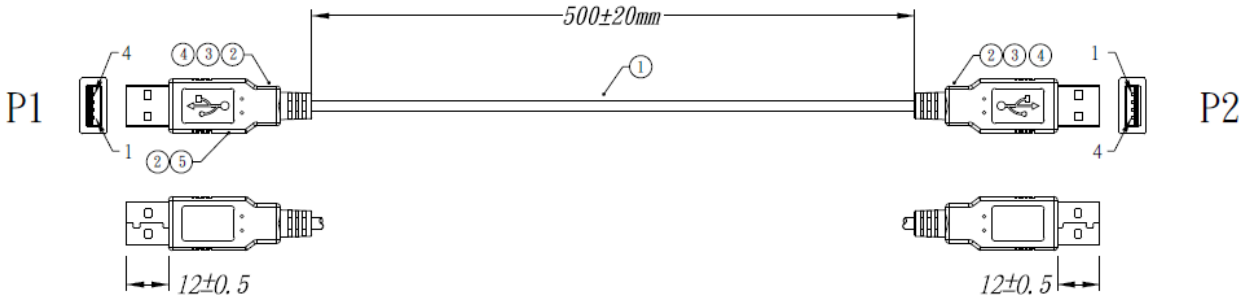
www.avalue.com

1.2 Peripherals

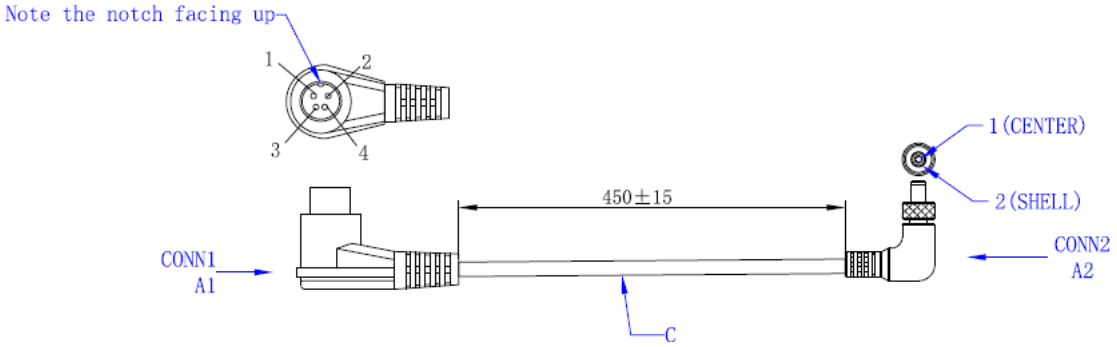
Avalue Part Number	Description	Can pack with EPB-1001 (order separately)	Separately Packing
RCC-EPB-VESA-01R	EPB-1001 VESA Bracket Kit, White		V
RCC-EPB-VESA-02R	EPB-1001 VESA Bracket Kit, Black		V
RCC-HID-BAT-02R	HID-2334 Totex Hot Swappable Battery, Pack of 2		V
RCC-HID-BAT-03R	HID-2334 Totex Hot Swappable Battery, Pack of 4		V
E170U080090R	External USB Cable 500mm	V	
E170P060330R	External Power Output Cable 450mm DC Plug with lock	V	
E170P100110R	External Power Output Y Cable DC Plug/ Power Din	V	
E170P080290R	External Power Output Y Cable DC Plug/ Lockable DC Plug	V	
E170U090350R	USB Cable A-Type(M)-Micro B(M) 100cm	V	
ACC-ADP-120M-02R	AC/DC adapter 24V/5A 120W, Screw Type	V	

1.3 Cable Drawings

External USB Cable (P/N: E170U080090R):

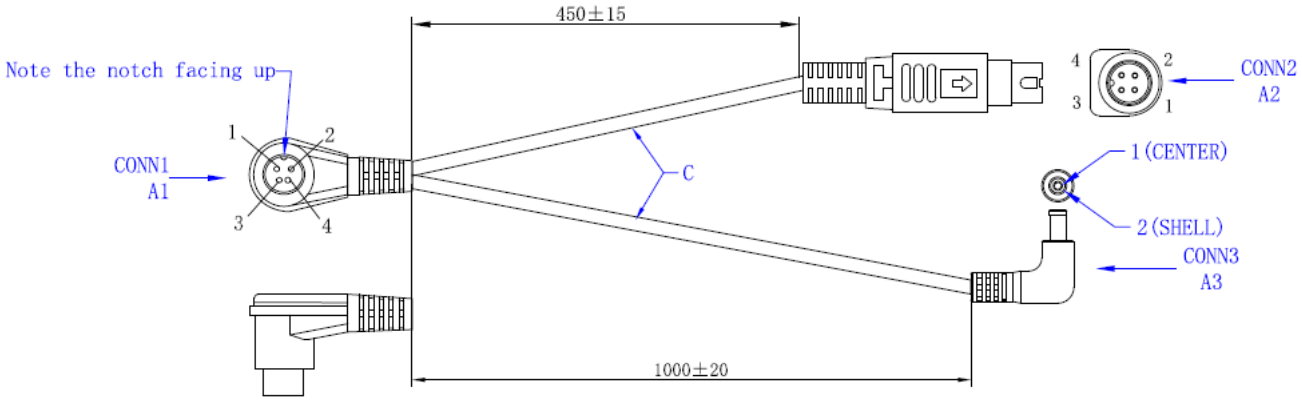


External Power Output Cable 450mm DC Plug with lock (P/N: E170P060330R):



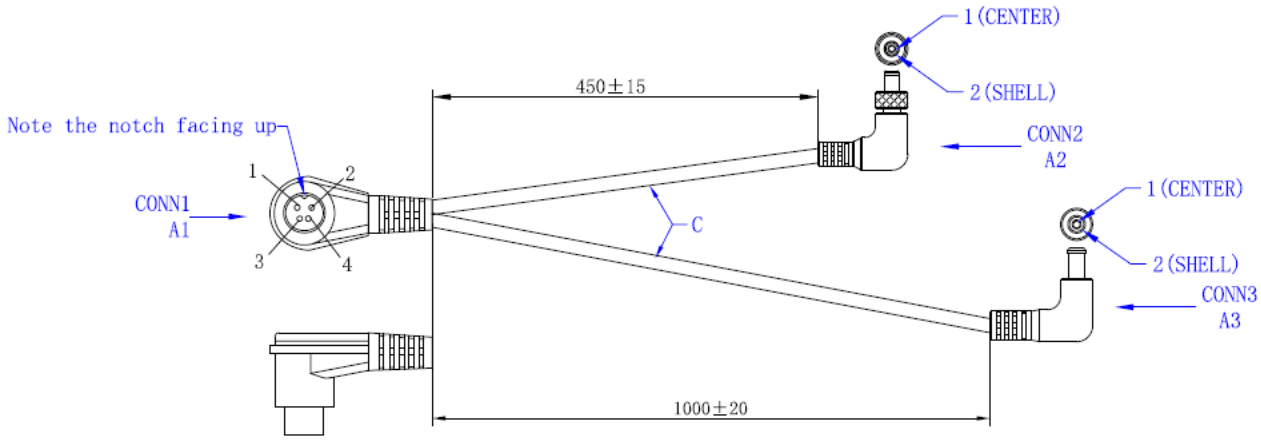
CONN1			CONN2
PIN NO#	FUNCTION	COLOR	PIN NO#
1	VCC+	WHITE	1
2	VCC+	WHITE	–
3. 4. SHELL	GND	DRAIN	2

Optional External Power Output Y Cable DC Plug/ Power Din (P/N: E170P100110R):



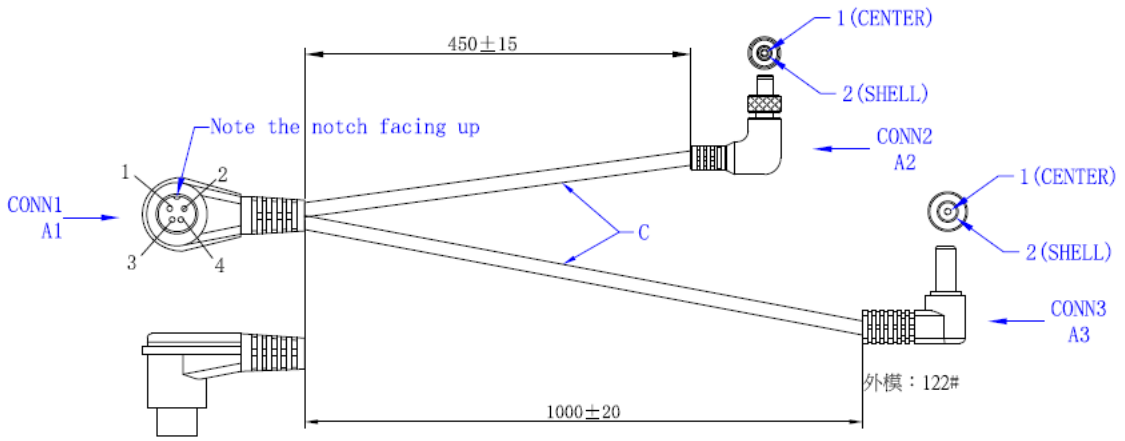
CONN1			CONN2	CONN3
PIN NO#	FUNCTION	COLOR	PIN NO#	PIN NO#
1	VCC+	WHITE	3. 4	–
2	VCC+	WHITE	–	1
3. 4. SHELL	GND	DRAIN/DRAIN	1. 2	2

Optional External Power Output Y Cable (P/N: E170P080290R)
Power DIN 4P-2.5 Lockable DC Plug -1.0 DC Plug
For PTZ Camera



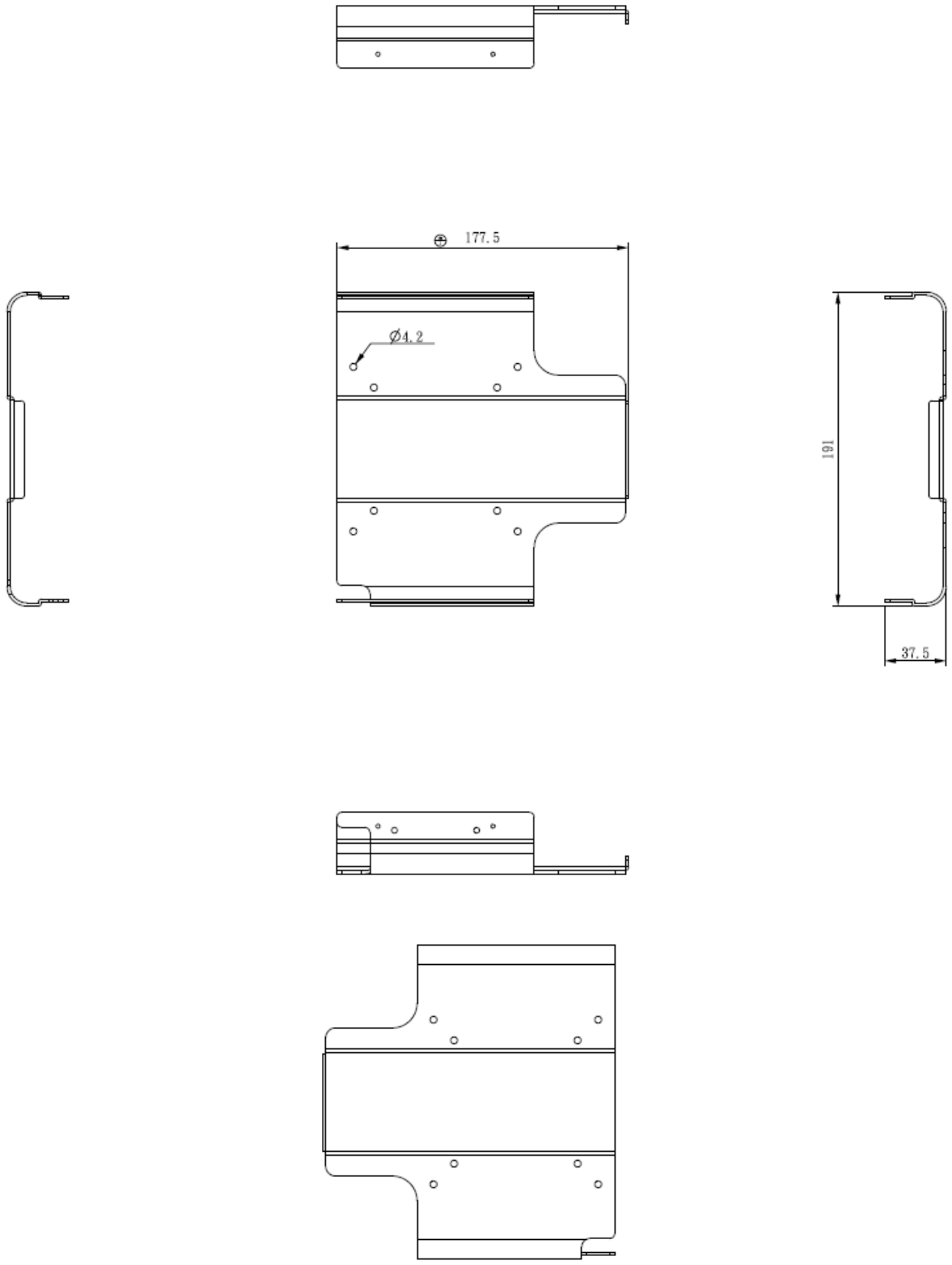
CONN1			CONN2	CONN3
PIN NO#	FUNCTION	COLOR	PIN NO#	PIN NO#
1	VCC+	WHITE	1	–
2	VCC+	WHITE	–	1
3. 4. SHELL	GND	DRAIN/DRAIN	2	2

Optional External Power Output Y Cable DC Plug (P/N: E170P080300R)
Power DIN 4P-2.5 Lockable DC Plug - 2.5 DC Plug

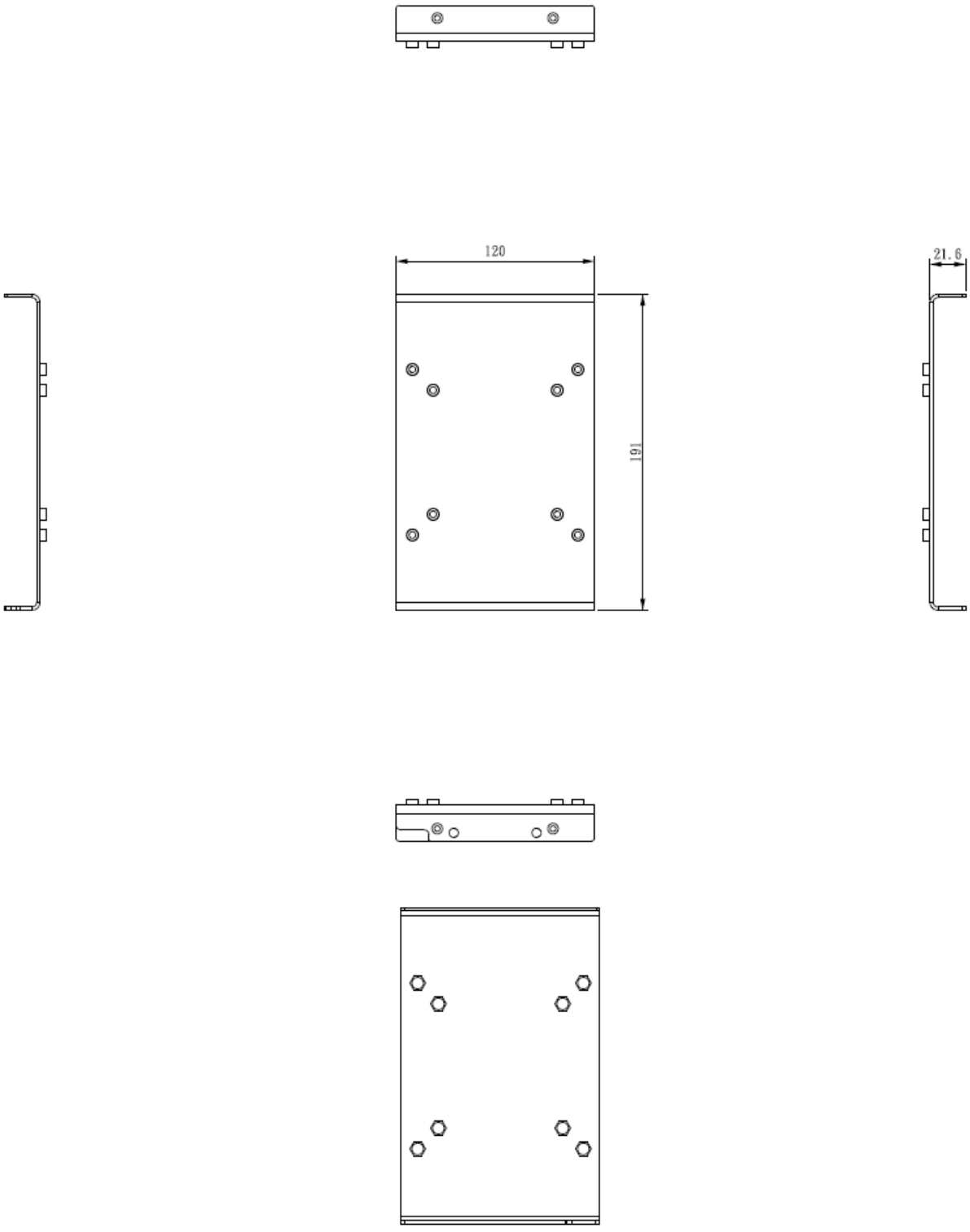


CONN1			CONN2	CONN3
PIN NO#	FUNCTION	COLOR	PIN NO#	PIN NO#
1	VCC+	WHITE	1	–
2	VCC+	WHITE	–	1
3. 4. SHELL	GND	DRAIN/DRAIN	2	2

1.4 VESA Bracket Drawing



(Unit: mm)



(Unit: mm)

1.5 Rechargeable Lithium Ion Battery

Cell Chemistry	NCA Lithium-Ion
Cell Type	Panasonic NCR18650BF
Pack Configuration	4S2P
Nominal Voltage	14.4V
Capacity:	6700mAh
Temperature and Relative Humidity Limits	The battery pack should only be charged between 0°C and 45°C with a relative humidity less than 80%. Forcibly charging this battery outside this temperature range can result in permanent performance degradation and possibly catastrophic failure.
Battery Life	This battery is designed to retain at least 70% of its initial capacity after approximate 300 cycles. Cycle life is based on specific charge and discharge parameters as performed at specific temperatures. Varying from these procedures and conditions may yield different results.
LED Operation	The Pack is equipped with a Check button to activate green LEDs and display the remaining capacity on 5 LEDs in the following manner:

Capacity	LED Indicators					Comments
	1	2	3	4	5	
0-20%	■					LED is lit for 2 seconds
21-40%	■	■				
41-60%	■	■	■			
61-80%	■	■	■	■		
81-100%	■	■	■	■	■	

1.6 System Specifications

System	
Mother Board	EPB-1001 battery board
MCU	IT8911
Smart Charger IC	LTC1760
Power IC	LTC3789 for Vout1
System Fan	Fanless
Connectors Specifications	
AC Present Pin	Yes
Battery connector	BAT Conn. 5x2P 5.0mm 90D(M) STD DIP TE
DC Jack for DC In	DC-J 3P 90D(M) 2.5mm
DC out 4p	PWR DIN 4P 90D
Interface	
SMBUS(Option)	Yes
Firmware Specifications	
Software	System EC
Power Specifications	
DC Input	24V/5A
Input Over Current Protection	Yes
Input Under Voltage Protection	Yes
Input Over Voltage Protection	Yes
Input Reverse Voltage Protection	Yes
Charge Current	4A Max. for 2 batteries
Charge Voltage	16.8V
Charge Duration (Single Battery)	2 hours approximately
Charge Duration (Dual Battery)	4 hours approximately
Output Current Per Battery	6.8A
Output Voltage Per	14.4V

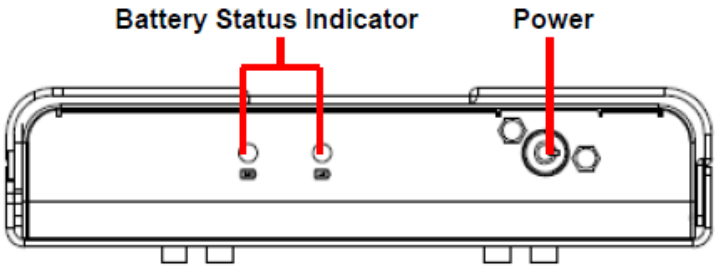
Battery	
Output Power	12/19V DC-out 80W (By Jumper Setting. Default set as 19V) Optional Y-Cable available
Continuous Over Power Protection	Yes (From battery pack)
Transient Over Current Protection	Yes
Short Circuit Protection	Yes (For DC-in)
External I/O	
USB Port	Type A
Indicator Light	Power/ Battery1/ Battery 2
Mechanical	
Power Type	DC in
Power Connector Type	DC jack with lock
Dimension	235 x 182 x 43 mm
Weight	1.2 kg
Color	Black / White
Fanless	Yes
Reliability	
Battery Pack	UN38.3, UL2054, EN 62133-2:2017 (Battery body EN 62368-1)
Safety	EN 60601-1 IEC60601-1 compliance
EMC	EN 60601-1-2 4th (EMI ClassB) FCC class part-15B (ITE) for EPB-1001
Vibration Test	Random Vibration Operation: 1. PSD: 0.03622G²/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 Sine Vibration test (Non-operation) 1 Test Acceleration : 2G 2 Test frequency : 5~500 Hz 3 Sweep：1 Oct/ per one minute. (logarithmic)

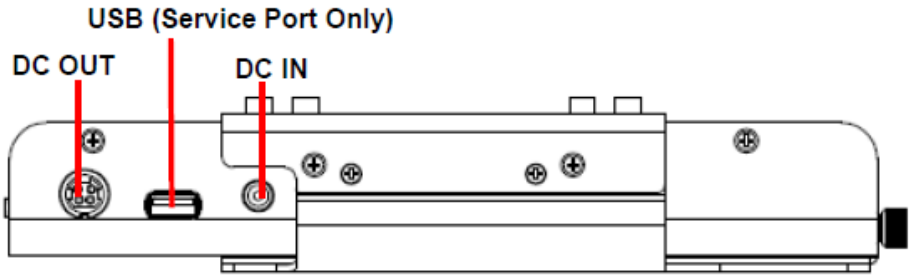
	4 Test Axis : X,Y and Z axis 5 Test time :10 min. each axis 6 System condition : Non-Operating mode 7. Reference IEC 60068-2-6 Testing procedures Package vibration test 1. PSD: 0.026G²/Hz , 2.16 Grms 2. Non-operation mode 3. Test Frequency : 5-500Hz 4. Test Axis : X,Y and Z axis 5. 30 min. per each axis 6. IEC 60068-2-64 Test:Fh
Mechanical Shock Test	1. Wave form：Half Sine wave 2. Acceleration Rate：10g for operation mode 3. Duration Time：11ms 4. No. of Shock：Z axis 300 times 5. Test Axis: Z axis 6. Operation mode 7. Reference IEC 60068-2-29 Testing procedures Test Eb : Bump Test
Drop Test	Package drop test □ 1 One corner , three edges, six faces 2 ISTA 2A, IEC-60068-2-32 Test:Ed
Operating Temperature	0~40°C (32˚F ~ 104˚F), ambient w/ 0.5m/s air flow
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Storage Temperature	-40°C ~ 75°C (-40 ~ 167°F) (without battery pack)
Transportation Condition (in range of °C and % R.H.)	-40°C ~ 75°C, 10% ~95%
Altitude	5000m
Expected Service Life	830453.79 Hrs

Note: Specifications are subject to change without notice.

1.7 System Overview

1.7.1 Front/Side View

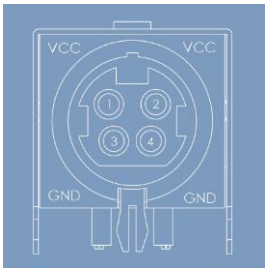




Connectors

Label	Function	Note
Power	System power indicator	
Battery Status Indicator	Battery Status Indicator	
USB	USB Type A connector	Service Port Only
DC IN	DC power-in connector	
DC OUT	DC power-out connector	

DC out connector (Power DIN 4Pin) Pin Definition:



PIN	Signal
1	VCC_OUT
2	VCC_OUT
3	GND
4	GND

1.7.2 Icon/ Button Indication & Behaviour

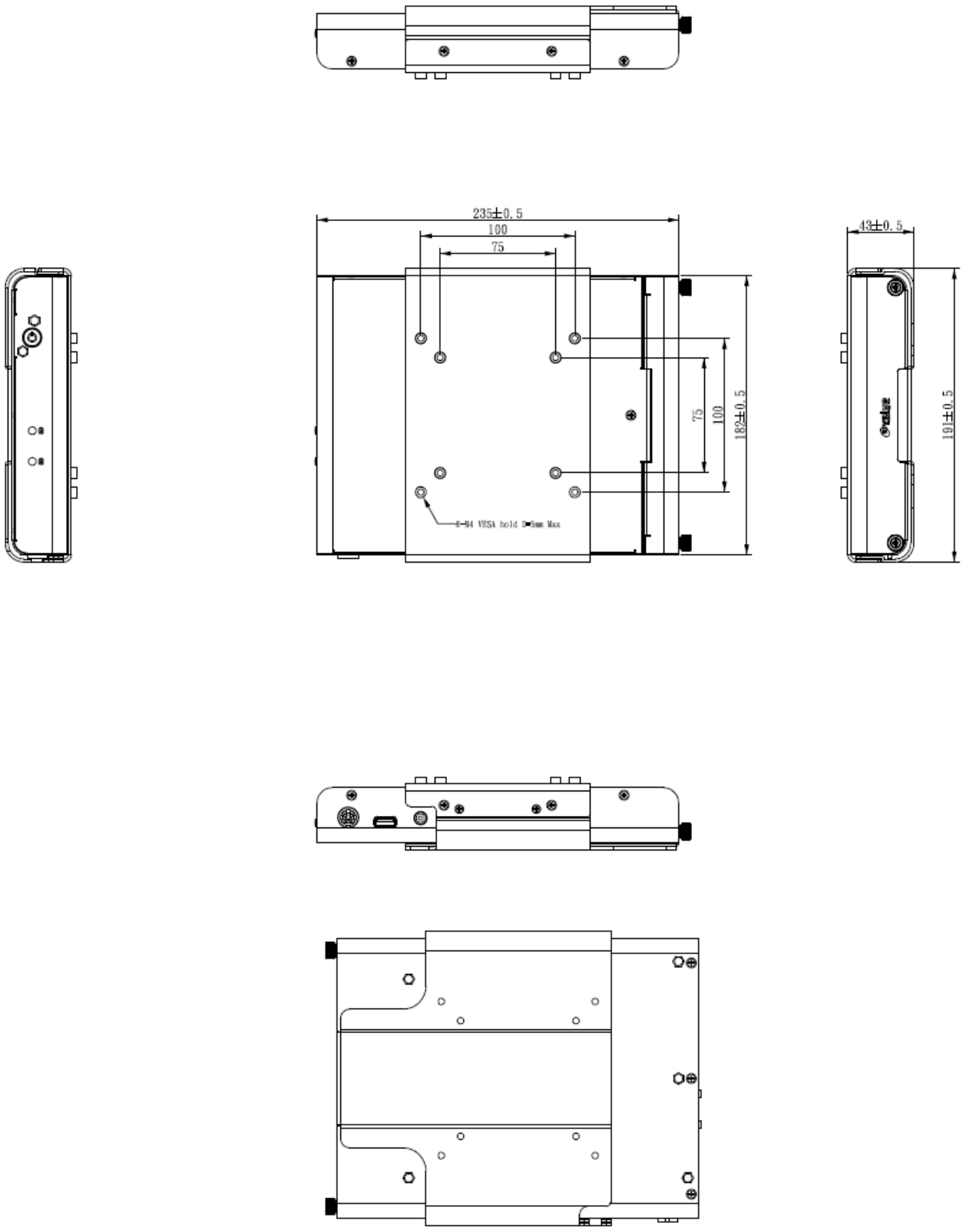
- **Battery Icon**

Behavior	Indication
Battery status icon shows solid blue light	Without adapter, battery power equals or above 20% With adapter, battery power equals or above 95%
Battery status icon shows solid orange light	Battery power below 20%
Battery status icon shows fast blinking orange light (at 0.5 sec interval)	Battery power below 10%
Battery status icon shows slow blinking orange light (at 2.5 sec interval)	Charging when connected to adapter

- **Power Button**

Behavior	Indication
Press	Power on, Power button LED on
Long press 3 seconds	Power off, Power button LED off (Please wait for a few seconds for the LED light to turn off.)
Short press	Show battery status

1.8 System Dimensions



(Unit: mm)

1.9 Before You Start

1.9.1 When you first receive the EPB-1001 Battery Expansion Box, please confirm the following:

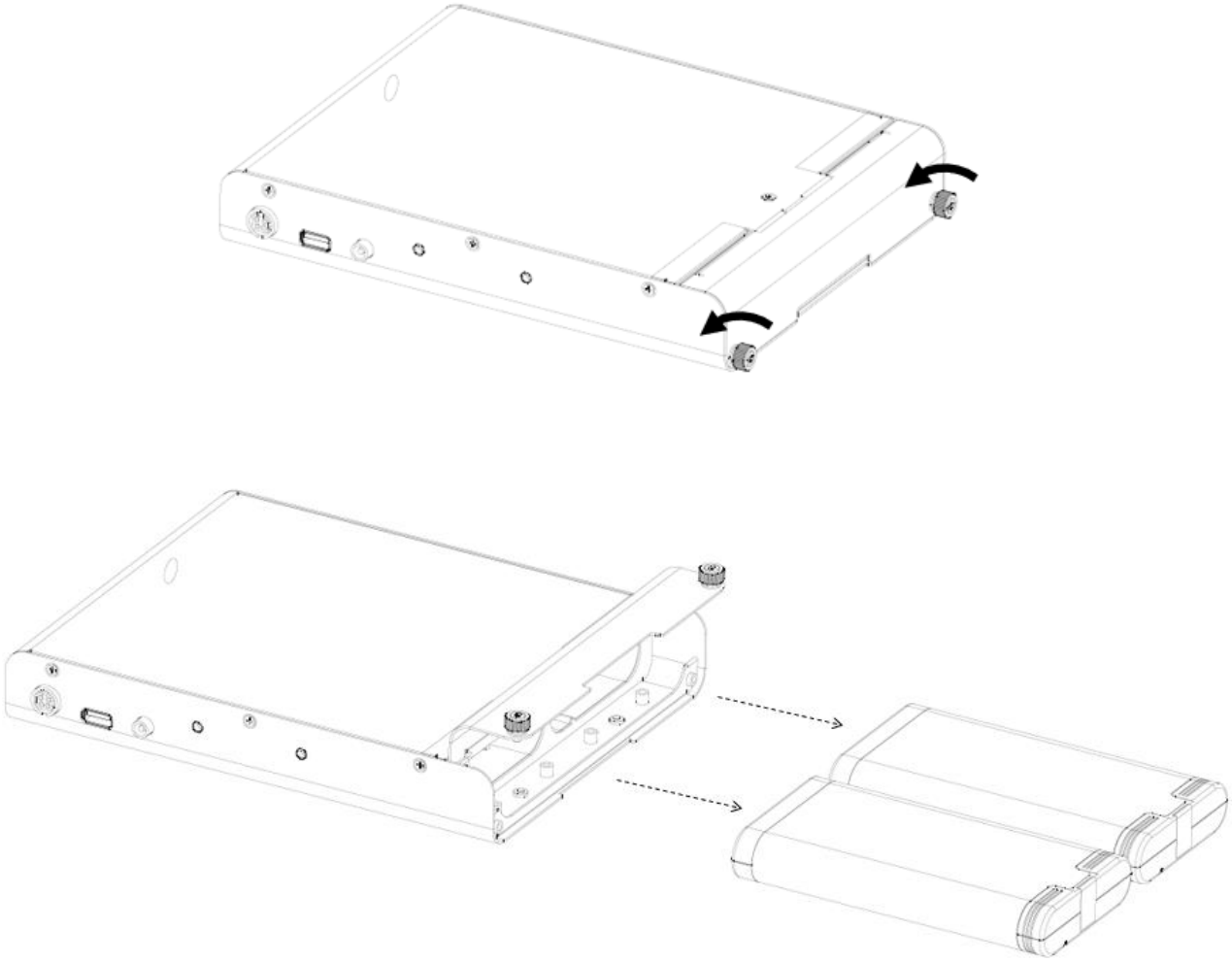
The power output voltage of your EPB-1001.
The power input requirement of your external device.

The output voltage information of EPB-1001 can be found from the outer box label. The default power output setting of a standard EPB-1001 Battery Expansion Box is 19V. If the voltage shows on the outer box label is 19V, however your device requires 12V power input, please follow the instruction below to adjust the power output setting of EPB-1001 from 19V to 12V first. Wrongful usage may cause malfunctioning of EPB-1001 or your device. If you are uncertain, please contact the service personnel to verify.

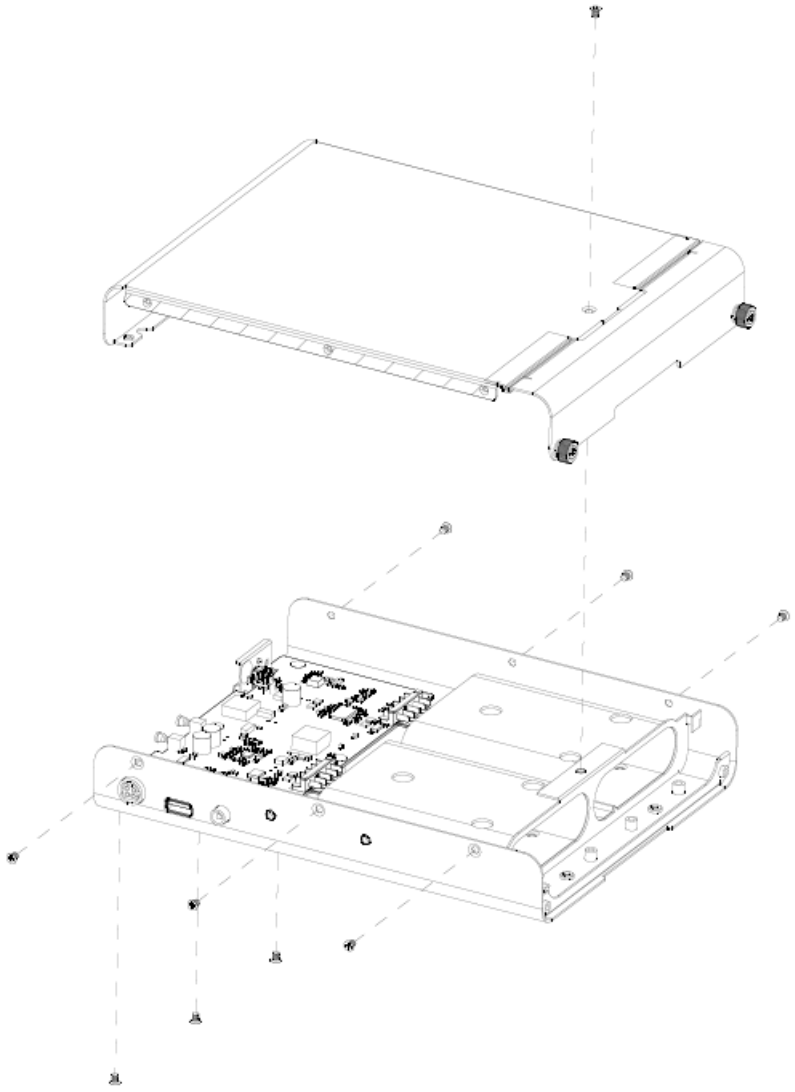
Please note that the DC output of EPB-1001 can only support single voltage setting at a time. If your EPB-1001 is connected to two external devices, please make sure in advance the DC in voltage requirement of the two external devices are the same—either 12V or 19V. In addition, the maximum DC output of EPB-1001 is 80W. To work properly, the power consumption of the external devices should not exceed 80W.

To adjust the power output setting of EPB-1001:

1.9.1.1 Unlock the screws to remove the batteries from EPB-1001.



1.9.1.2 Remove the rear cover of EPB-1001. You may see the board within the system.



1.9.1.3 Follow **2.8.1 Vout SET (JVSET1)** in the manual to configure Vout to 12V.

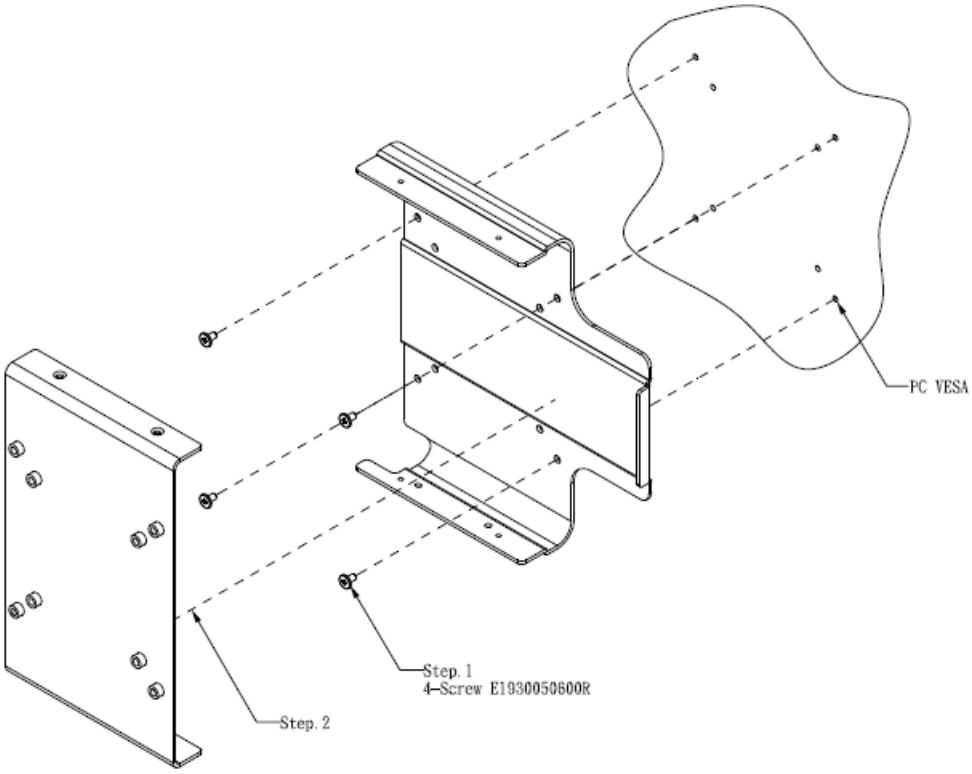
1.9.1.4 Assemble the cover back securely.

1.9.1.5 Install the batteries.

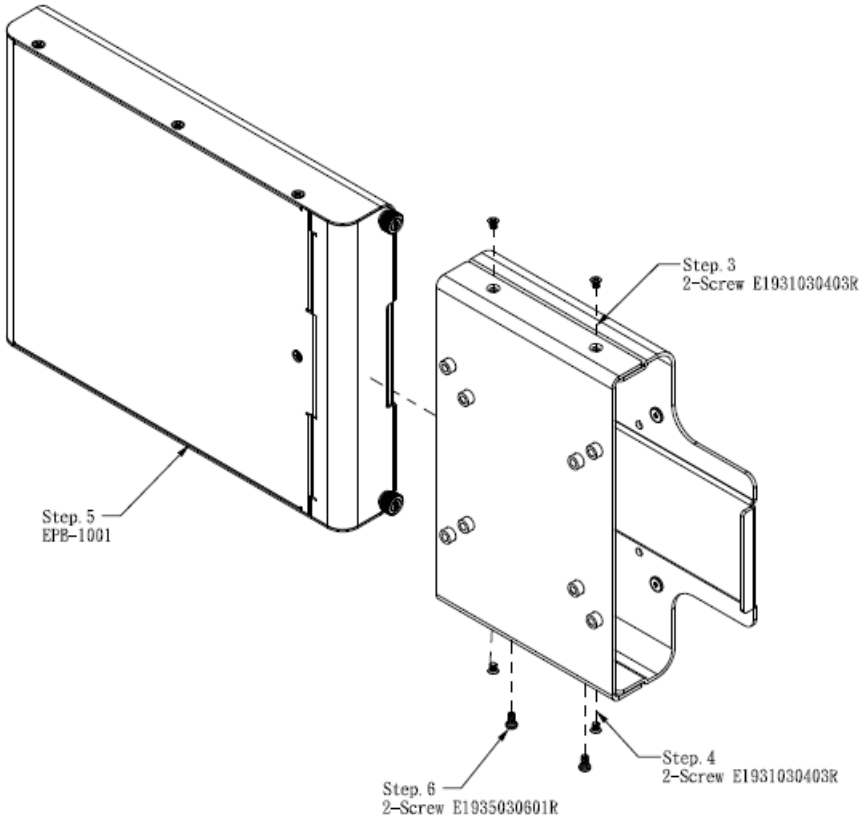
1.9.2 Ensure EPB-1001 is now equipped properly with two batteries. Then charge the EPB-1001 with 24V 120W adapter until the battery LED lights turn solid blue. Please only use 24V 120W adapter to charge the EPB-1001.

1.9.3 VESA Bracket Installation

1. Follow the steps to install VESA brackets.



2. Follow the steps to install EPB-1001 into the VESA brackets.



1.10 Connecting to External Device

Now you may connect EPB-1001 to the external device via the corresponding cable. Please note: For DC output protection, with adapter plugged in, when connecting EPB-1001 to the external device without installing batteries first, EPB-1001 will not be powered on.

1.11 Charging and Discharging

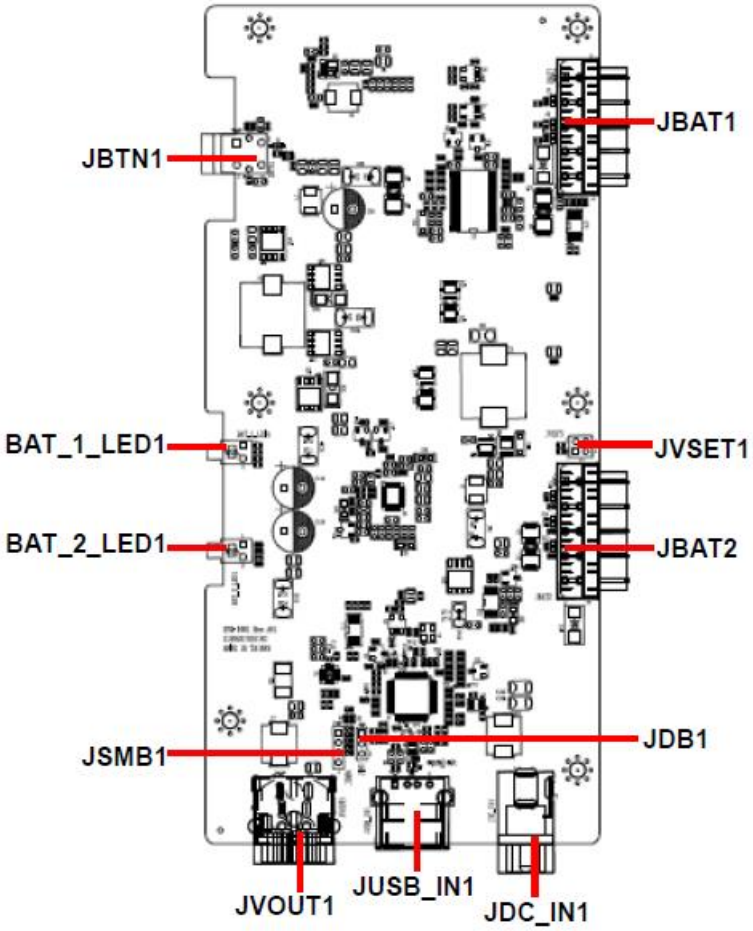
Charging and Discharging Mechanism	Function	Description	Thresholds / Specifications	Response
Charging Mechanism	Manages the process of charging the battery	Regulates the voltage and current to safely charge the battery. Includes protections against over-charging and ensures proper battery health during the charging process.	Charger Current Max:4A Charger Voltage Max:16.8V	Compliant with Smart Battery Charger V1.1 specifications, it provides the necessary charging voltage and current according to the battery's requirements. Charging will not occur if the Charger IC is malfunctioning. *Smart Battery Charger V1.1 Reference: https://sbs-forum.org/specs/sbc110.pdf
Discharging Mechanism	Manages the process of discharging the battery	Regulates the output voltage and current to ensure safe and efficient discharge of the battery. Protects against over-discharging to maintain battery health.	Discharge Voltage: 12V Discharge Current: Inrush and Transient Current 11.5A	The hardware is preset to stop supplying Vout when the battery voltage drops to 11V. The software will turn off Vout when the battery voltage is detected at 12V.
Charge-Discharge Balance Control	Ensures balanced charging and discharging	Manages and balances the charge and discharge processes to ensure even wear and maintain battery health.	-	When charging two batteries simultaneously, a higher charging current will be provided to the battery with the lower voltage until both batteries reach the same voltage, at which point charging will be balanced. When discharging two batteries, the battery with the higher voltage will be discharged first until both batteries reach the same voltage, after which discharging will be balanced.

2 Hardware Configuration

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

www.avalue.com

2.1 EPB-1001 Overviews



2.2 EPB-1001 Jumper & Connector list

Jumpers

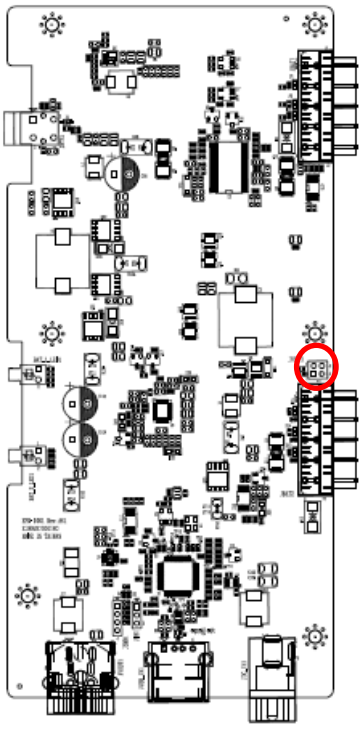
Label	Function	Note
JVSET1	Vout SET	2 x 2 header, pitch 2.00 mm

Connectors

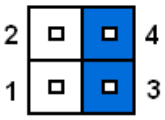
Label	Function	Note
JBAT1	Battery connector 1	5 x 2 wafer, pitch 2.00 mm
JBAT2	Battery connector 2	5 x 2 wafer, pitch 2.00 mm
JDB1	EC Debug connector	3 x 1 header, pitch 2.00 mm
JDC_IN1	DC power-in connector	
JUSB_IN1	USB connector	
JVOUT1	Vout Monitor	
JSMB1	To Main board connector	(Option)
BAT_1_LED1	BAT1 LED Status	
BAT_2_LED1	BAT2 LED Status	
JBTN1	Power button	

2.3 EPB-1001 Jumpers & Connectors settings

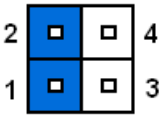
2.3.1 Vout SET (JVSET1)



+19V *

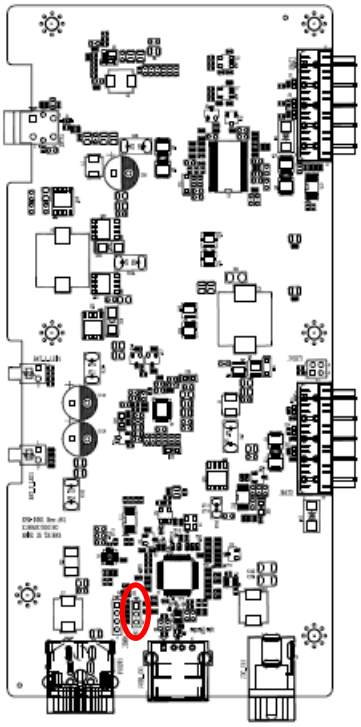


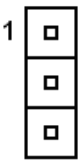
+12V



***Default**

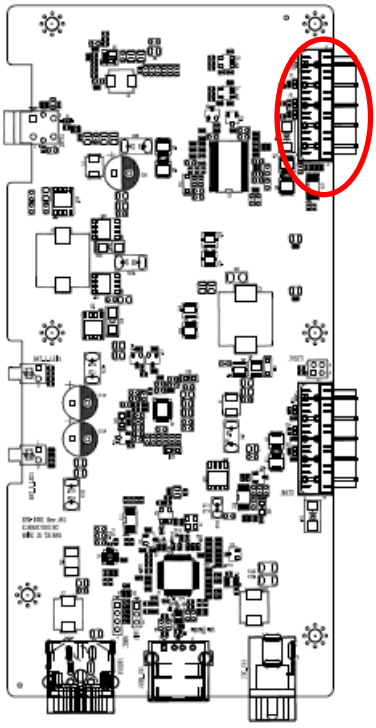
2.3.2 EC Debug connector (JDB1)

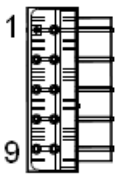




Signal	PIN
EC_DB_SMCLK0	1
EC_DB_SMDAT0	2
GND	3

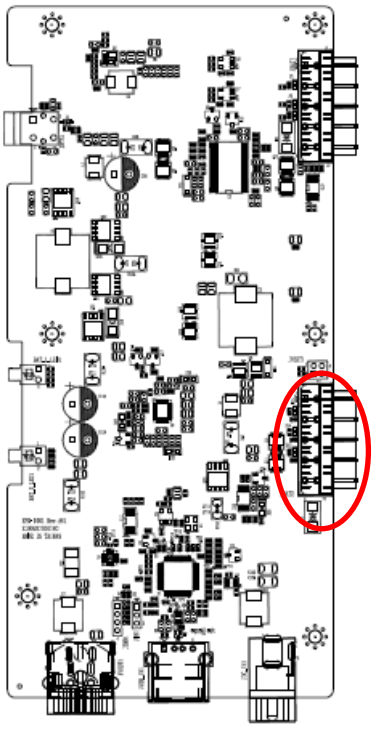
2.3.3 Battery connector 1 (JBAT1)

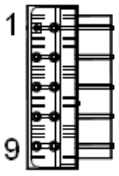




Signal	PIN	PIN	Signal
GND	1	2	GND
TH1_A	3	4	TH1_A
BAT_SMDAT_A	5	6	BAT_SMDAT_A
BAT_SMCLK_A	7	8	BAT_SMCLK_A
+V_CHARGER_1	9	10	+V_CHARGER_1

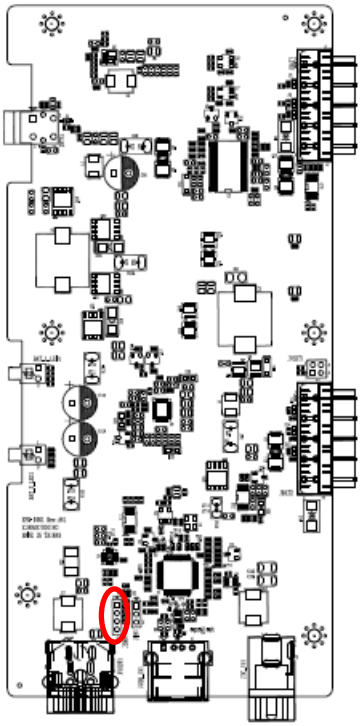
2.3.4 Battery connector 2 (JBAT2)

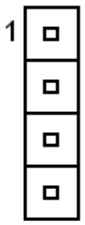




Signal	PIN	PIN	Signal
GND	1	2	GND
TH2_B	3	4	TH2_B
BAT_SMDAT_B	5	6	BAT_SMDAT_B
BAT_SMCLK_B	7	8	BAT_SMCLK_B
+V_CHARGER_2	9	10	+V_CHARGER_2

2.3.5 To Main board connector (JSMB1) (by Option)





Signal	PIN
+3.3VSB	1
JSMB_SMCLK3	2
JSMB_SMDAT3	3
GND	4

3.Battery Management

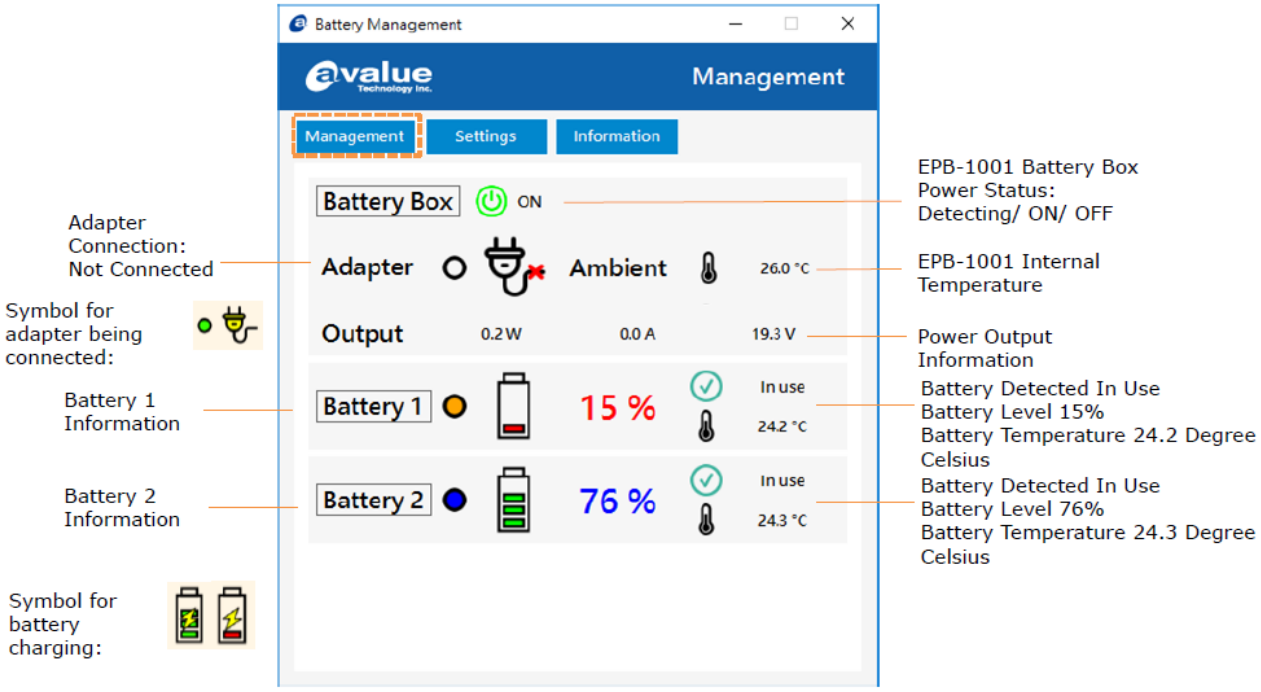
3.1 Information

EPB-1001 Console Battery Management App can be downloaded from the product page on Avalue website.

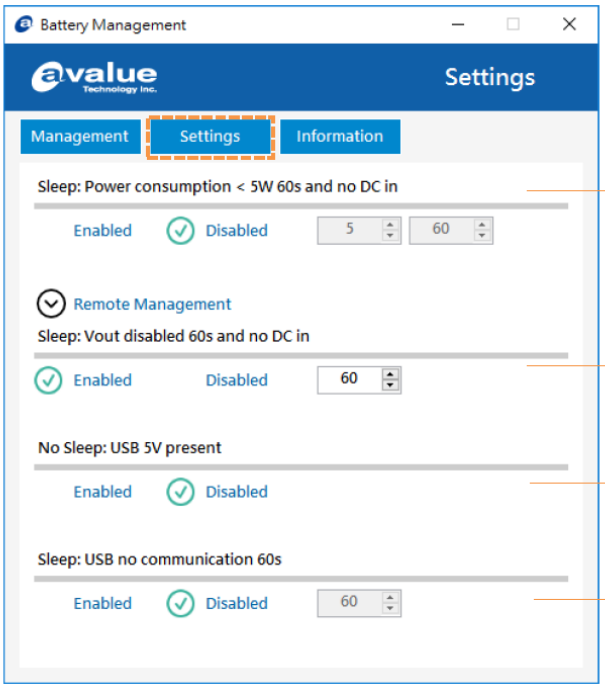
Simply double click to install this App to your PC that is connecting with EPB-1001.

Then you may click on the three tabs on the top of the App— Management Page, Settings Page, and Information Page.

3.2 Management



3.3 Settings



Four Sleeping Mode Settings for Users to Choose From:

1. User may set power consumption and time that best match their needs. For example, user may set as: When adapter is not connected to EPB-1001, the power consumption of the battery box is lower than 5W and the time reaches 60 seconds, EPB-1001 will enter sleep mode.
2. When adapter is not connected to EPB-1001, Power Output disabled for 60 seconds, EPB-1001 will enter sleep mode.
3. Sleep Mode being disabled.
4. When USB port is not connected for 60 seconds, EPB-1001 will enter sleep mode.

4. General Safety Guide

4.1 Cleaning and Disinfecting

During normal use of EPB-1001, the device may become dirty and should be regularly cleaned.

Cleaning Instructions

- Use a 70 percent isopropyl alcohol wipe, 75 percent ethyl alcohol wipe, or Clorox Disinfecting Wipes.
- Use only a soft, lint-free cloth. Avoid abrasive cloths, towels, paper towels, or similar items.
- Avoid excessive wiping, which might cause damage.
- Unplug all external power sources, devices, and cables.
- Keep liquids away from the product, unless otherwise noted for specific products.
- Don't get moisture into any openings.
- Don't use aerosol sprays, bleaches, or abrasives.
- Don't spray cleaners directly onto the item.

4.2 Maintaining the Smart battery pack

If your equipment comes with the optional rechargeable smart battery pack, make sure to follow the instructions below to optimize the service life for your battery

- The battery should be charged/discharged at temperature between 0 ~ 40°C(32~104°F)
- The battery should be stored at temperature between -20~60°C (-4~140°F)
- If the battery level is less than 10%, fully charge the battery to 100% within 24 hours.
- If the battery will not be in use for more than one week, fully charge the battery to 100% before storage, also make sure to charge the battery to 100% once a month during the storage period.
- Set it as shipping mode if need to keep longer storage period
- In case battery leakage or battery is out of function such as, can’t be charge or discharge, do not open and try to change the battery, please contact with MANUFACTURER to replace the defective battery to avoid any dangerous might happen (Ex: fire or explosion).

Note: The EPB-1001 USB port is a USB device only, not a USB host. This USB port does not provide power or support charging; it is recognized by the host as a USB device. The host uses the USB connection to communicate with the EPB-1001's EC to obtain battery status information. Even if this USB port is damaged, it will not pose a risk of abnormal battery status.

4.3 Protection

Protection Feature	Function	Description	Threshold	Response
Over-Voltage Protection (Input)	Prevents damage from excessive voltage	The battery box includes an over-voltage protection circuit that disconnects input power if the voltage exceeds the threshold.	UVP Point : 16.86V. OVP Point : 26V.	When UVP/OVP occurs, disconnect the DC-IN from the system. *UVP stands for Under Voltage Protection, and OVP stands for Over Voltage Protection.
Over-Current Protection (Input)	Protects against excessive current on input	The system shuts down the input circuit if current exceeds the rated limit to prevent damage.	MIN=6.06A TPY=6.875A MAX=7.687A	When over-current protection is triggered, disconnect the DC-IN from the system.
Over-Current Protection (Output)	Protects against excessive current on output	Automatically disconnects the output load if current exceeds the rated limit to avoid overheating or damage.	12V or 19V 80W(TPY),MAX=100W (opction 24V)	When Vout exceeds 100W, the output will be disconnected to stop power supply.
Short Circuit Protection	Prevents damage from direct short circuits	Detects a short circuit and disconnects power supply immediately to avoid damage from excessive current flow.	Current detection & FUSE 10A	When the Vout current exceeds 10A, the fuse will blow and no power output will be available. The unit must be sent for repair.
Over-Charge Protection	Prevents battery overcharging	Monitors battery charge level and stops charging when the battery reaches maximum capacity to prevent overcharging.	Supports Smart Battery Charger V1.1 It communicates with the battery and automatically supplies the required charging voltage/current. Charger Current Max: 4A Charger Voltage Max: 16.8V	If a battery not compatible with the Smart Battery Charger V1.1 specifications is used, it will not charge the battery. *Smart Battery Charger V1.1 Reference: https://sbs-forum.org/specs/sbc110.pdf