RHEA-I420A/I512A

Supercapacitor backup board

Uninterruptible power backup solution based on IEI intelligent supercapacitors

- Four 3.0V/200F (I420A) supercapacitors
- Five 3.0V/120F (I512A) supercapacitors
- 12-28V DC Input / 12V DC Output
- Maximum 60W load 2.5V@30°C lasting 20 sec (I420A)
- Maximum 45W load 2.5V@30°C lasting 25 sec (I512A)
- -40°C to 60°C wide temperature environment
- 500,000 charge-discharge life cycles
- Long supercapacitor lifetime, up to 10 years
- Intuitive power management software for easier management
- Provide power-off shutdown service through software/hardware

iEi® www.ieiworld.com

RHEA-I420A/I512A

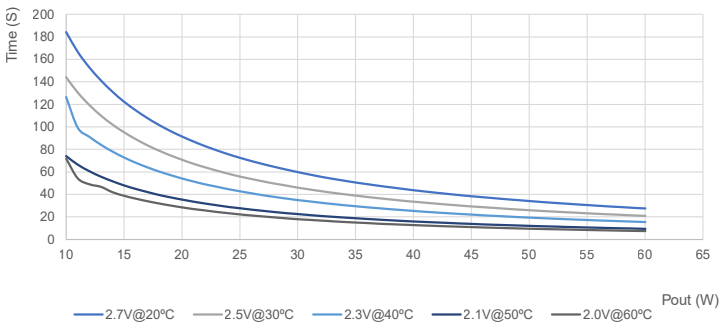
It can be equipped with Four of 3.0V/200F or Five of 3.0V/120F supercapacitors, combined under the power of 60W/45W, with different backup time and different size solutions to meet the different needs of customers in different application scenarios.

Long Life Supercapacitors
Maintenance- free energy storage

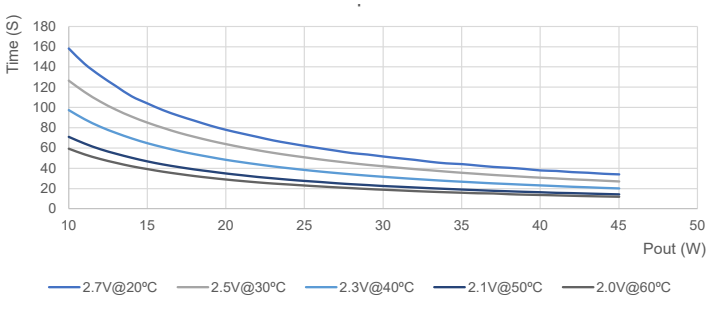
Four of 3.0V/200F and Five of 3.0V/120F capacitors in series design (customized services for various series and parallel connections with different capacities can be provided), It can be used as a maximum load of 60W/45W at a normal temperature of 30 degrees, providing 20-25 seconds of operation and safe shutdown time after the system is powered off.

Maintenance-free long-life supercapacitors serve as efficient and long-lasting energy storage devices, providing uninterrupted power in short transition times and up to 500,000 charge and discharge cycles. Different from bypassing batteries that store energy through chemical reactions, supercapacitors are based on electrophysical principles and can be fully charged for use in a very short time. The service life of supercapacitors is ten times longerdisplay interface than that of traditional lead-acid batteries, and energy storage systems equipped with supercapacitors usually have high current carrying capacity, power density and reliability.

Backup time (I420A)

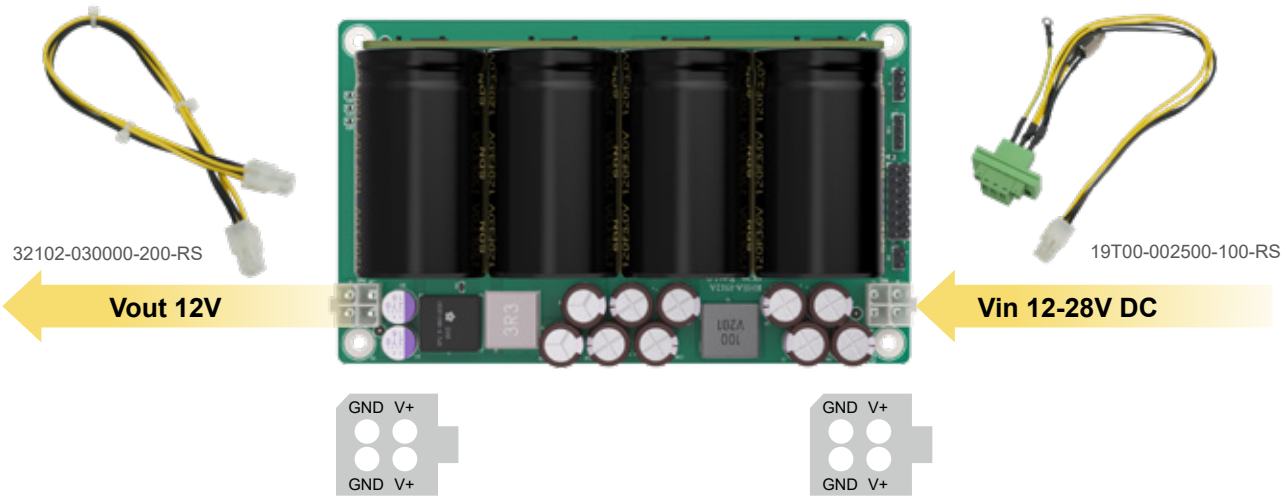


Backup time (I512A)

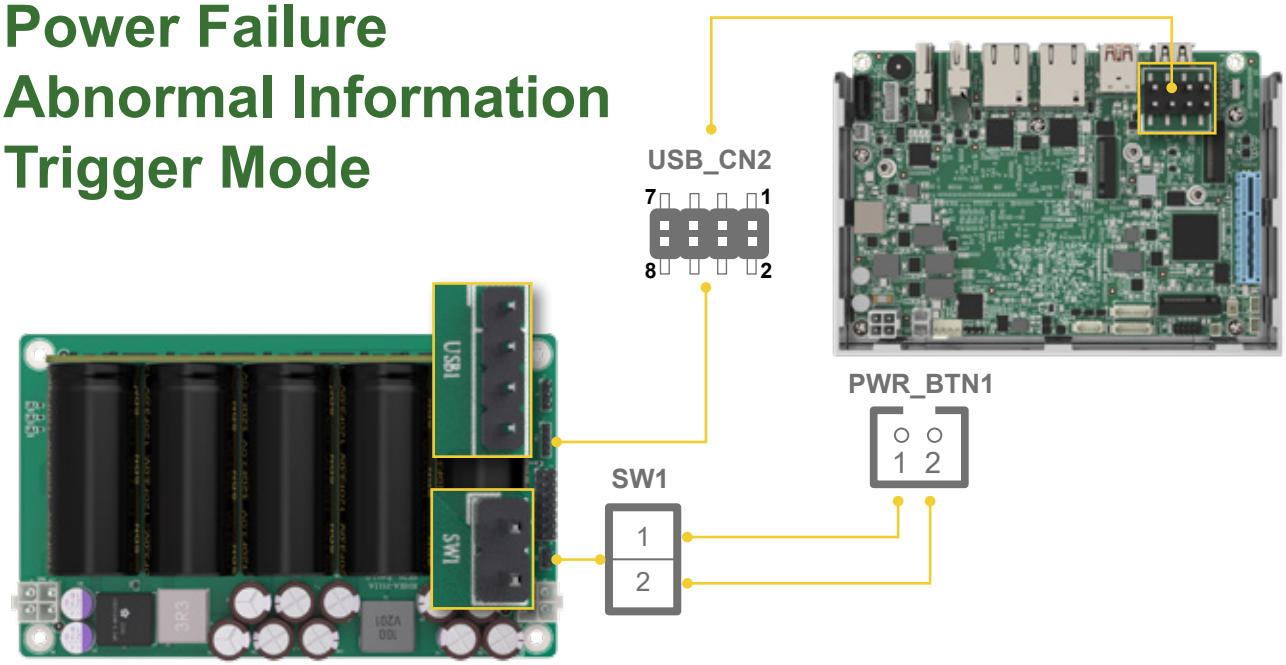


Standard input and output interface

The supercapacitor backup board is designed as a built-in board, providing a square-shaped input and output interface, and users can configure the input and output wires by themselves



Power Failure Abnormal Information Trigger Mode



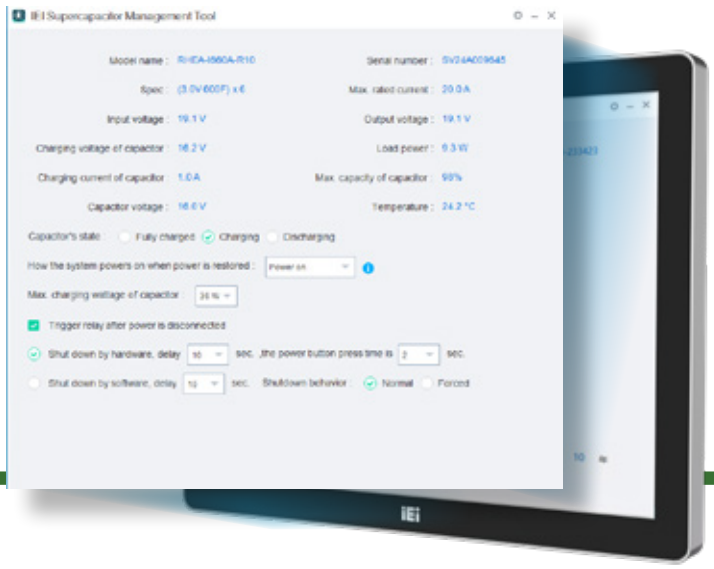
Through Software

Connect to the Windows computer via USB, and start the shutdown command through the IEI supercapacitor management tool software after receiving the abnormal notification (after 10 seconds by default).

Through Hardware

Through one sets of hardware POWER BUTTON switches. Switch button that can be directly connected to the main unit button pin, send a shutdown signal after power failure (10 seconds by default).

IEI Supercapacitor Management Tool



Intuitive user interface and information

The "IEI Supercapacitor Management Tool" software allows the connected device to obtain the basic information of the supercapacitor backup board through the USB cable, including model, serial number, specification, voltage, load power, working mode, current and other intuitive information.

Ensuring safe shutdown of IPC systems

In the case of "Power Input Disconnection", the supercapacitor backup board sends "Power Input Failure" to the PC motherboard system, thereby starting the shutdown command of the planned system and saving valuable data.

In the absence of software management, there will be one sets of Power Button control signals (response time can be set by software), and users can set the Power button by themselves.

The Button signal is linked to the host or other control devices to realize the hardware-controlled shutdown function.

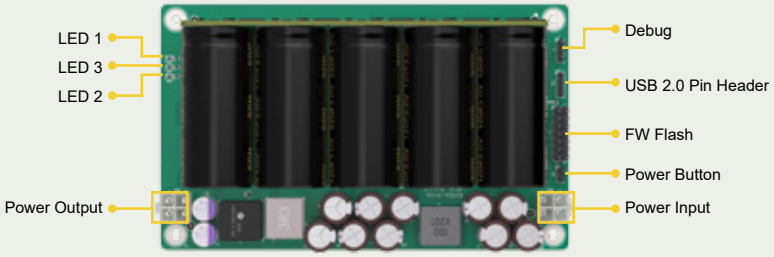
Temperature control

The entire service life of supercapacitors will be affected by changes in ambient temperature and operating voltage.

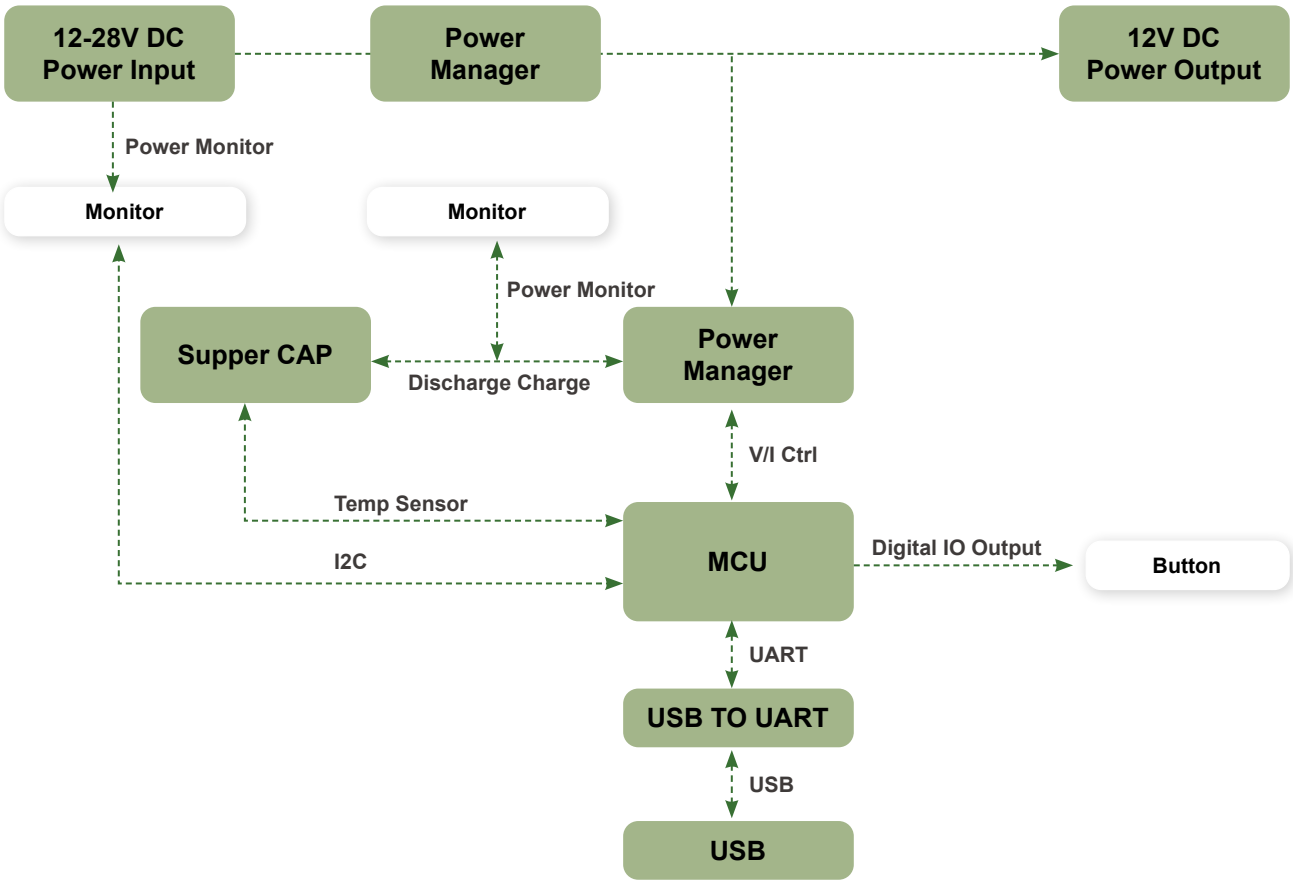
The capacitor of "IEI Supercapacitor Management Tool" is set to have a life of 10 years (under an ambient temperature of 35 degrees or below). When the temperature rises, the working voltage of the capacitor will automatically adjust to a voltage that meets the service life of 7-10 years, and the time of power supply to the load will be reduced (refer to the user manual for details).

RHEA-I420A
Integrated I/O

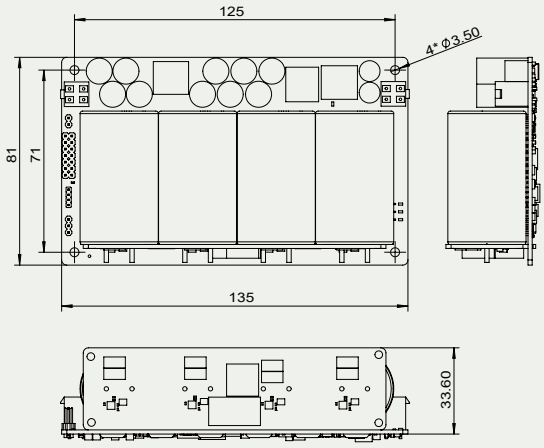
RHEA-I512A
Integrated I/O



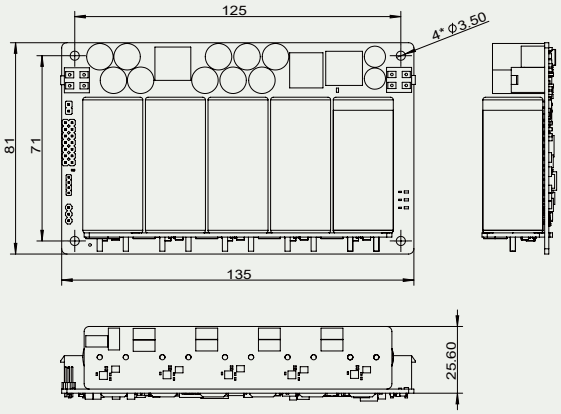
Block Diagram



RHEA-I420A Dimensions(Unit: mm)



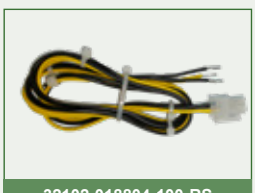
RHEA-I512A Dimensions(Unit: mm)



Optional Accessories


19T00-002500-100-RS


32102-030000-200-RS


32102-018804-100-RS

Specifications

Model Name	RHEA-I420A	RHEA-I512A
Battery type	Super Capacitor	
Capacitance	4 x 200F@3V	5 x 120F@3V
Service life	>10 years (when the capacitor works at 2.7V and 20 temperature)	
lifecycle	500000 charge and discharge cycles	
Input Voltage	12-28V DC	
Output Voltage	12V DC	
Output Power	60W	45W
LED indication	RED/YELLOW	
Backup time	20 sec. (under 60W load at 2.5V@30°C)	25 sec. (under 45W load at 2.5V@30°C)
I/O connector	1 x DC in (2x2 Pin) 1 x DC out (2x2 Pin) 1 x USB2.0 (1x4 Pin) 1 x Debug (1x3 Pin) 1 x FW flash (2x7 Pin) 1 x Power button (1x2 Pin)	1 x DC in (2x2 Pin) 1 x DC out (2x2 Pin) 1 x USB2.0 (1x4 Pin) 1 x Debug (1x3 Pin) 1 x FW flash (2x7 Pin) 1 x Power button (1x2 Pin)
Protect	Reverse protection Overload protection Overvoltage protection	
Dimensions (mm)	81 x 135 mm	81 x 135 mm
Weight	0.25kg	0.22kg
Operating Temperature	-40ºC ~ 60ºC	
Storage Temperature	-40ºC ~ 70ºC	

Packing List

1 x USB Cable (1*4Pin 2.0 to 1*4Pin 2.0, 300mm, P/N: 32001-034000-100-RS)
1 x USB Cable (1*4Pin 2.0 to 1*4Pin 2.54, 300mm, P/N: 32001-034100-100-RS)

Ordering Informaiton

RHEA-I420A-R10	60W DC/DC Supercapacitor backup board, 12-28V Input, 12V Output, 4x 200F@3V Supercapacitor, Internal
RHEA-I512A-R10	45W DC/DC Supercapacitor backup board, 12-28V Input, 12V Output, 5x 120F@3V Supercapacitor, Internal

Optional Accessories

19T00-002500-100-RS	Power input cable, Terminal block module; 60mm/70mm/280mm; 20AWG (A) DC jack 5.5*2.5mm (B) MOLEX 5557-0400 P=4.2 (C) Ring Terminal-3.2mm (D) Terminal block 3P P=5.08 male (E) Terminal block 3P P=5.08 female
32102-030000-200-RS	Power output cable, DC power cable; 150mm; 1 (A) MOLEX 5557-0400 P=4.2 *2
32102-018804-100-RS	Power cable, 500mm (A) MOLEX 5557-0400 P=4.2; Wire color: 1,2 black; 3,4 yellow