

white bream

E3 I I Mini-ITX Car power supply - Quick install guide

1 Introduction

Congratulations with your purchase of this E3 I I Mini-ITX Car power supply. This power supply is among the smallest, safest and easiest devices available to power your car computer.



Please read the contents of this document before proceeding with the installation of the power supply. The precautions are very important for the continued safety of you and your car.

Success with installing your new power supply and much pleasure with the resulting computer system!

2 Specifications

- Startup input voltage range 10-22V,
- Operating input voltage range 8-22V,
- Output power 50 watt, 80 watt peak,
- Dimensions 92 x 40 x 16 mm,
- Auto power switch control,
- Low battery protection voltage 10.5V,
- 3V, 5V, 12V & 5V standby outputs.

For full specifications refer to the product datasheet, available from www.whitebream.com/script/download.pl?id=e3 I I

3 Package contents

Please verify that the package that you received contains the following items. These are required for safe and fully functional operation of the power supply:

- E3 I I Mini-ITX Car power supply,
- Power cable 2.5m,
- ATX Jumper cable,
- This install guide.



4 Installation

Install the power supply in a location where the airflow from a system fan or from the processor fan passes the heatsink of the power supply. This is especially important in systems that contain a Via Epia M10000 or comparable mainboard. Connect the 20-pole power connector to the mainboard power connection and the 4-pole power connectors to the harddisk.

The ATX power button jumper cable shall be plugged into the designated socket on the power supply. As this connection is fragile, this must be done with care. Connect the other end of the jumper cable to the power button header on the mainboard. If desired, the original power button can be looped to the spare header by using the dual male jumper that is included. The mainboard header is polarized, but matches both

positions without mechanical or electrical damage. If the system cannot be started after assembly try reversing the header.



The kit is supplied with a 2.5 meters long power cable to connect the power supply to the electrical system of the car.

Pin	Name	Color	Description
1	Vin	Red	Power, connect this to permanent 12V
2	Gnd	Black	Ground, connect this to the car chassis
3	Vsw	White	Switch, connect this to the ignition line

The black wire must be connected to a good grounding point. Usually some bold on the car chassis is most suitable for this.

The red wire must be connected to a permanent 12 volts supply. Make sure that the power source that you choose is protected by a fuse rated at no more than 18 amperes or add your own in-line fuse of this rating.

The white wire controls the startup and shutdown control of the power supply. A typical connection point for this is the ignition wire from the engine. Again you must make sure that a fuse of less than or equal to 18 amperes is in line with this voltage source to prevent overheating or even burning wires in case of a shortcut.

5 Jumpers

Jumper 1 [JP1] is located on the board between the power input connector and the mounting hole. This jumper controls the watchdog shutdown of the computer when the computer does not shutdown in a timely matter. Remove this jumper to disable this watchdog.



Jumper 2 [JP2] is hidden at the corner of the heatsink. This jumper selects the default shutdown delay. When placed, the shutdown signal will be issued about 15 seconds after the switch line is deactivated. When removed, this shutdown signal is delayed by approximately 15 minutes.

6 Delaying shutdown

The time to shutdown can not only be delayed with JP2 but also by toggling the switch line. After deactivating this line, reenable is for a second. This will postpone the delay with 15 minutes. Additional pulses will extend the time by 30 minutes, 1, 2, 4, 8 and 12 hours. If the switch line is turned back on during the shutdown delay period, the programmed delay is canceled and normal operation continues.

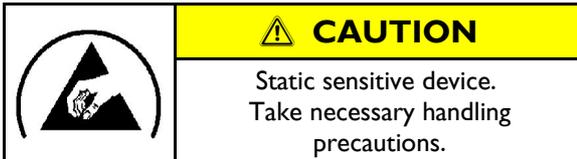
White Bream	Terborchdreef 26	3262 NB	Oud-Beijerland	The Netherlands	www.whitebream.com
Description:	Short datasheet and install recommendations			E3 I I DS004 - Quick install guide.sxw	
Project:	E3 I I	Revision: 0.1			
Status:	Draft	Pages: 2			

7 Known problems

If the computer does not start within a fraction of a second after the switch line is powered, then the most likely problem is that the ATX jumper cable is reversed. Solve this by reversing the connector on the mainboard and try again.

If the computer suddenly shuts down after a while of normal operation, then check the airflow. Excessive temperature of the heatsink will cause the thermal protection to be activated, which results in an instant shutdown.

8 Precautions



The inputs of the power supply are protected against electrostatic discharges, but the bare power supply has only limited protection. Follow common precautions against ESD to prevent damage. At least make sure that you touch the surrounding of the power supply (workbench, system case) before touching the power supply itself.

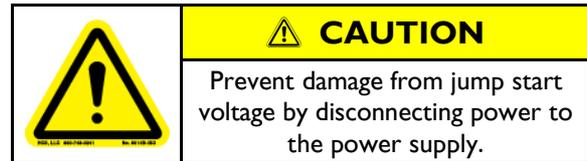


The power cable that is included with the power supply is rated for currents up to 18 amperes. To protect against melting or burning wire harnesses, it is required to make sure that all non-ground wires are protected by properly dimensioned (i.e. less than or equal to 18A) fuses. When power is taken from the car radio power connection, this protection should already be taken care of by the car manufacturer. Please note that it is not possible to prevent shortcuts by clever wire routing nor by additional wire harness. In case of an accident the metal of the car can shear straight through everything and the last thing you'd want then is a fire...

Some severe power problems can occur in a car power environment. The worst of these problems are the so-called load dump pulse and jump start. Depending on circumstances, these power problems can destroy the power supply and the computer attached.



Load dump occurs when the car battery is disconnected while the engine of the car is still running. This can lead to voltage pulses as high as 70 volts, about six times the nominal battery voltage. This can be prevented by keeping your car in good condition. Especially the battery terminals need annual inspection and maintenance against corrosion.



Jump start is sometimes applied in garages to stimulate an unwilling starter motor. Usually this is done by applying 24 volts instead of 12 volts. Although the power supply will typically survive this kind of mishap, it is safer to unplug the power cable when jump start might be applied to the car.



9 Support

In case of installation problems or unexpected operating problems, first check the website www.whitebream.com for updated documentation. If no such update is available, please don't hesitate to get help at support@whitebream.nl

10 Warranty

Your investment is protected with a two-year warranty. Warranty is void when voltages beyond 22 volts are applied to the power supply or when unauthorized modifications are made or when the power supply is damaged by external events such as open fire, water, chemicals or mechanical impact.

