FARAD

power supplies

SuperATX Owner's manual



Important Safety Information

WARNING: There are no user serviceable parts inside. Refer all servicing to qualified service personnel.

WARNING: To reduce the risk of fire or electric shock, be sure that the apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed near or on the apparatus.

Do not allow foreign objects to get into the enclosure. If the unit is exposed to moisture, or a foreign object gets into the enclosure, immediately disconnect the power cord from the wall. Take the unit to a qualified service person for inspection and necessary repairs.

Read all the instructions before connecting or operating the component. Keep this manual so you can refer to these safety instructions. Heed all warnings and safety information in these instructions and on the product itself. Follow all operating instructions.

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

Do not place the unit on a bed, sofa, rug, or similar surface that could block the heatsink airflow. If the component is placed in a bookcase or cabinet, there must be ventilation of the cabinet to allow proper cooling. Keep the component away from radiators, heat registers, stoves, or any other appliance that produces heat.



The unit must be connected to an ac power source only of the type and voltage specified on the rear panel of the unit as described in the chapter AC power input on page 6. Connect the power supply to the power outlet only with an earthed IEC power supply cable or an exact equivalent in a mains socket with protected earthing connection.

The primary method of isolating the device from the mains supply is to disconnect the mains plug. Ensure that the mains plug remains accessible at all times. Unplug the AC power cord from the AC outlet if the unit will not be used for longer time.

Do not attempt to defeat grounding and/or polarization provisions. Do not use extension cords. Do not route the power cord where it will be crushed, pinched, bent at severe angles, exposed to heat, or damaged in any way. Pay particular attention to the power cord at the plug and where it exits the back of the unit.

The Farad Super3 is designed for consumer audio only and for use with DC cables with a maximum length of 100cm. The power supply should never be used in heights above 2000 meters.

Immediately unplug and stop using the component and have it inspected and/or serviced by a qualified service agency if:

- The power supply cord or plugs have been damaged.
- Objects have fallen or liquid has been spilled into the unit.
- The unit has been exposed to rain.
- The unit shows signs of improper operation.
- The unit has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance. This indicates a need for service.

When replacement parts are required outside the guarantee period, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards. Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.

Farad power supplies products are designed and build to comply with international directives on the Restriction of Hazardous Substances (RoHS) in electrical and electronic equipment and the disposal of Waste Electrical and Electronic Equipment (WEEE). The products must be appropriately recycled or processed in accordance with these directives.





IMPORTANT NOTE: Always switch off and mute devices when connecting or disconnecting the Farad power supply.

When you have any questions about our power supplies, please contact us at info@Faradpowersupplies.com with serial number stated at the back (see figure 1, position 8) of the power supply. We will reply to you as soon as possible.

Warranty

Scope and duration of warranty
Subject to the terms and conditions stated below, Farad power supplies warrants to the original owner that this product shall be free from defects in workmanship or materials for a term of 24 months from the date when it was purchased from an Authorized Farad power supplies Dealer or directly from Farad power supplies. Moveable property and parts used in moveable property which have not been produced/fabricated by the seller himself but are produced/fabricated by a third party have the warranty provided by the third party.

Limitations on Persons and Products Covered by this warranty
This warranty and all rights provided here under are limited to the original owner. In the event that the original owner transfers ownership of the Product prior to expiration of the 24 months term, this warranty shall terminate in its entirety upon the date of such transfer. In addition, Farad power supplies does not warrant in any way products which are purchased from anyone who is not an Authorized Farad power supplies dealer or which have not been

purchased directly from Farad power supplies. Therefore this warranty is void and inapplicable if this product has been purchased from someone other than an authorized Farad power supplies dealer or not directly from Farad power supplies.

Proof of purchase in the form of a bill of sale or receipted invoice, which is evidence that this product is within the warranty period, must be presented to obtain warranty service. This warranty is void and inapplicable if the factory applied Serial Number has been altered or defaced from this product;

What the Consumer must do
To obtain warranty service, please contact the Farad power supplies authorised dealer from which you purchased this product. If your dealer is not equipped or you purchased directly from Farad power supplies, it can be returned by you or the dealer to Farad power supplies or an authorised Farad power supplies service agent. Please pack the product very carefully, preferable in the original packing, to be sure no damage can be done during shipment.

Limitations on Third Party Services and Data Sources
Certain Farad power supplies products include an interface that enables access to services (including data) that are provided by third parties unrelated to Farad power supplies. Some of these services require separate customer subscriptions and some do not; and some may be supported by and compatible with the Farad power supplies product while others may not. Merely providing the capability to access such services is not to be construed as making Farad power supplies the provider of, or responsible for, the services or for continuing to support or make such access available; and Farad power supplies expressly disclaims such responsibility. Because Farad power supplies cannot control the providers of such services or the services themselves, and similarly cannot control the communication systems and networks that connect the products interfaces to the services, Farad power supplies cannot and does not warrant against and shall have no liability of any kind for, any of the following that are related to third party services, the providers of those services, or the systems or networks by which the Farad power supplies product communicates with the services: (i) unavailability, lack of compatibility or functionality, interruption, discontinuance, or loss of service, or other unsatisfactory performance, act, or omission; (ii) loss or unauthorized use or disclosure of, or damage to, personal information, recordings, or other data; (iii) reduced functionality of the Farad power supplies product; or (iv) any other loss or damage of any kind. Farad power supplies likewise does not warrant against, and shall have no liability for any failure of its products to satisfactorily process any externally sourced data where such failure is attributable in whole or in part to the makeup of the data itself or to a non-Farad power supplies product, system, or service that is the source of the data or that provides access to the data.

What Farad power supplies will do under the warranty
In the event of any defect covered by this warranty, Farad power supplies shall without charge provide all parts, material and labour necessary to restore the Product to its original specifications. After repair, Farad power supplies, shall return the product. Farad power supplies handles a “carry in” warranty, so all costs for shipping hence and forth will have to be paid by customer. In the alternative, Farad power supplies may at its sole option either replace the product without charge, or if replacement is not commercially practicable or repair or replacement cannot be accomplished within a reasonable time, Farad power supplies may refund the purchase price of the product, subject where appropriate to reasonable depreciation for actual use in accordance with applicable laws, in full satisfaction of its warranty obligations. Farad power supplies or its authorized Farad power supplies dealer will undertake to complete the repair and return of the product as soon as circumstances permit, unless prevented by causes beyond their reasonable control.

What does this warranty not cover
This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, commercial use, or modification of, or to any part of, the product. It also does not cover damage due to customer negligence, this includes using an inappropriate sized power supply or connector in the application. This warranty does not cover damage due to improper operation, maintenance or installation, or attempted repair by anyone other than Farad power supplies or an authorized Farad power supplies dealer or authorised service agent which is authorised to do Farad power supplies warranty work.

This warranty does not cover products sold as is or with all faults. Repairs or replacements as provided under this warranty are the exclusive remedy of the consumer. Farad power supplies shall not be liable for any incidental in this product. Except to the extent prohibited by law. This warranty is exclusive and in lieu of all other express and implied warranties whatsoever including, but not limited to. The warranty of merchantability and fitness for a practical purpose.

Dutch law is applicable in all disputes relating to this contract, unless another national law is applicable on grounds of mandatory rules. Some countries and US states do not allow the exclusion or limitation of incidental or consequential damages or implied warranties so the above exclusions may not apply to you. This warranty gives you specific legal rights and you may have other statutory rights, which vary from state to state or country to country. For any service, in or out of warranty, please contact your dealer.

Getting started

The Farad SuperATX power supply is a full ATX output double regulated super capacitor linear power supply for processors with TDP max of 70W. The SuperATX, together with the right motherboard and the right software enables you to make an absolute top level audio streamer.

A few precautions

Please read this manual carefully. In addition to the installation and operating instructions it gives more information about how to use this power supply optimally in your (audio) system. Please contact your Farad power supplies dealer, or Farad power supplies directly at info@Faradpowersupplies.com if you have any questions or comments about our products.

Be sure to keep the original sales receipt of your power supply. It is your best record of the date of purchase, which you will need in the event warranty service is ever required. When you have any problems with our equipment, please always let us know the serial number which can be found on the backside of the power supply (see figure 1, position 8).

Placement

Some parts of this power supply can get hot. The heatsink and enclosure of the power supply are designed to dissipate this heat. Any obstruction of this dissipation can result in shorter life time, direct damage, or damage to devices near or connected to the power supply. There should be at least 10 cm or 4 inches of clearance around the power supply. Do not place any flammable material, like wood, plastic, cloth or anything else, directly above the power supply. Take care there is enough space for air to freely flow around the power supply. Make Sure the shelf or cabinet the power supply is placed on or in is stable and capable of supporting its weight.

Breaking in

Like all devices in audio, the Farad power supply and cables will show break in behavior the first 500 hours on AC voltage. The character and quality of this supply will show immediately, after this the sound quality will drop, getting flat and dull, but it will improve again after 250-300 hours to an even a better result. but will improve during this period. Sound will become more tight, more at ease and fluent. Always keep this in mind when evaluating the power supply during this period.

AC Power input

The Farad SuperATX has a Furutech Rhodium plated IEC C13/C14 power input. Be sure to only use power cables with the same connectors. There can be a large difference in sound between power cables, tuning them definitely will change and improve the power supplies performance. Farad supplies a range of power cables for even better performance of the SuperATX. Please see our website for more information about this.

The transformers of the SuperATX have been checked for polarity, and are connected such that with the phase connected to the (L) IEC connector pin the residual transformer leakage voltage is minimum. This can be very important when installing high-end equipment. If all devices are tuned for the lowest residual leakage voltage, normally sound will get more open and detailed, giving a wider stage.

The SuperATX is configured for a certain AC outlet voltage and frequency when it is manufactured. This is 100Vac (100 at the back), 127Vac (127 at the back), or 110-120Vac/50-60Hz (115 at the back, figure 1, position 6) or 220-230Vac/50Hz (230 at the back, figure 1, position 6). Do not use the power supply unless you are sure the stated voltage and frequency matches with the AC voltage and frequency coming from you AC outlets.

Should you move your power supply to a country with other voltages or frequencies, it is possible to reconfigure the power supply to these voltages. Do not attempt this change of configuration yourself, unless you are fully qualified. Inside the SuperATX are lethal high voltages, which only must be handled by fully qualified personnel.

Farad power supplies are always active when the AC is plugged in. This means there is voltage on most circuits internally, and voltages are present and standby.

If you do not use the supply for a long time it is a sensible precaution to turn the power supply totally off by unplugging the AC cable.

First use

Take care earth connection is set properly. Connect the ATX cables to the SuperATX and motherboard and if necessary peripherals. Plug in the power cord in the IEC connector (figure 1, position 3) and the other end in an appropriate AC outlet. The led will be solid blue and flashing red, it is charging the supercapacitors. This will take normally about 15-30 seconds. After this the LED will turn solid blue and red (purple) when the supercapacitors are fully charged and the supply waits for the power on request of the motherboard..

If the LED does not light up at start up, or behaves strangely press the RES button at the back.

If the LED flashes red after or during charging, the device is in “error mode”, please see chapter Errors to find out what might be the problem.

Output Voltages

The SuperATX supercap module and transformer are made for moderate power ATX motherboards as should be used for high-end audio streaming. Larger gaming motherboards and processors can ask too high current and this can lead to errors of the supply and instability during playback. For best and stable playback always take care the motherboard stays within the max ratings of the Farad SuperATX.

If you are not sure, you can always try out with a Farad power supply, it is fully protected, so nothing will be damaged if too much current will be drawn. If it works it is ok. If you don't feel safe about it, please ask your dealer, or directly at Farad, we are there to help you!

Output Cable

The SuperATX is standardly delivered with a cable set containing a 24 pin ATX cable, a 8 pin to 4+4 microprocessor cable and two peripheral cables with on each a Sata power and Molex disk 4 pin connector, all around 100cm length. For better sound we also provide a L1 cable set and a L2-C cable set. For the peripheral cables we can provide 6 pin DC cables in all levels with any connector of choice, so you also can connect cards, switches, your router and converters or clocks to this supply making it the center of your high-end streaming solution. Please refer to our website in the section cables suitable for the SuperATX, or contact us directly.

Changing the output cables during operation

When comparing DC output cables, use the reset button at the back side. When the reset button is pushed, the Farad SuperATX enters the start-up sequence (flashing red led and sold blue led) and during this time the outputs are all de-activated, so no voltage is present anymore. In this time take out the 24 pin connector at either the supply or the motherboard. This prevents the supply of starting up again. Now disconnect the other cables and connect the new cables to both the supply and the load. Connect the 24 pin cable at last at one side. Push the reset button and plug in the 24 pin ATX cable during the start-up sequence. Wait for the motherboard to start up again and push the motherboard or computer power button.

Off course you also can unplug the AC power cable and wait for the supply led to go flashing (error of too low voltage somewhere), the supply has been shut down, disconnect and reconnect the cables and plug in the AC power cable again.

Stand-alone continuous operation

The SuperATX can also be used as a multi supply with many different 5 and 12V outputs. For this modus, unplug the AC power cable, open the top plate of the supply, and find the little dip switch marked "SA" near the AC inlet on the main PCB. Put this switch in the "ON" position and the supply will start up automatically when the supercaps are charged. Please note, the supply will be always on and does not react anymore on the PS_ON command of the motherboard.

Replacing the fuses

It is possible to replace the fuses for a high-end version. This will improve detail and precision. For replacing the fuses you need to remove the upper half of the cover of the power supply. For removing the cover you need to unscrew the upper 6 screws of the top plate.

The SuperATX uses three 2A slow blow 5x20 mm fuses for 230Vac and three 4A slow blow fuses for the 115Vac, 100Vac and 127Vac versions. It is also possible to install three TMCB's instead of regular fuses, please ask us about this.

Please only do this if you know what you are doing, otherwise we strongly recommend to let it do by a qualified technician. Our dealers or Farad power supplies technicians are always willing to help you with the replacing free of charge when the supply is taken to their or our workshop.

WARNING: Please be absolutely sure the power cord is removed from the power supply before unscrewing and lifting the cover

WARNING: Super capacitors contain a lot of charge and will keep this charge long after the device is powered off. Making any shorts inside the device can result in injury and serious damage to you and the device. So always take care not to touch anything except the fuse itself.

WARNING: When the fuse is blown out, please take the power supply to a qualified technician, a Farad power supplies dealer, or Farad power supplies directly. It probably indicates a failure and the need for service. Replacing the fuse for a new one and starting the device up again might result in even worse damage, dangerous voltages in the device or even fire.

Identification of controls

Indicator LED. The front indicator LED has several modes:

- Solid blue and flashing red: Power supply is starting up and charging the supercaps.
- Solid blue and solid red (purple): Power supply is standby, waiting for motherboard to ask for power (PS_ON).
- Solid blue only: Power supply is active, all voltages present at output.
- Flashing Red: Power supply error. Number of flashes indicates error code.
- No LED. Power supply is disabled or in reset, no power cable connected or on of the TMCB (if installed) has tripped.

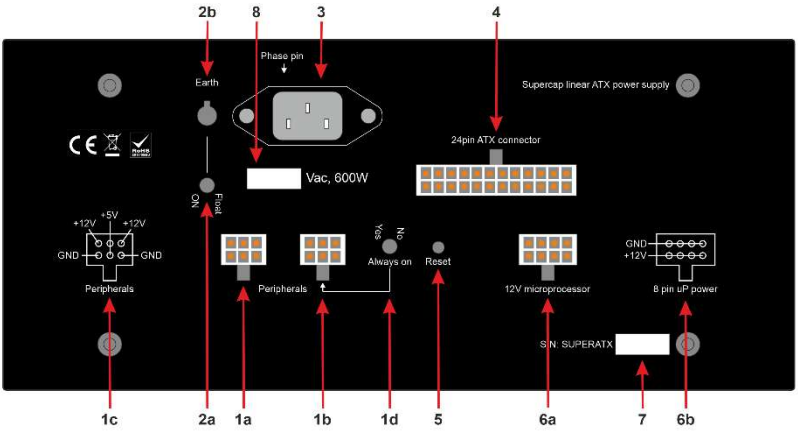


FIGURE 1: Back of the SuperATX power supply, controls and connections

1) **Peripheral outputs**. These two 6 pin connectors both hold separated +5 and +12 peripheral voltages:
   - **a)** Output 1: switches with power supply.
   - **b)** Output 2: switches with power supply, or always stays on (for switches, clocks, etc) depending on position of switch 1d.
   - **c)** Voltage pinout of the peripheral outputs.
   - **d)** Switches output 2 of the peripherals (1b) to be always on (YES), or switch on and off with the motherboard (NO).

2) **Earth connection**. External earthing of the SuperATX.
   2a) Float switch: The earth connector can be connected to the output GND by a 10R resistor parallel to a choke (ON), or disconnected to make a floating power supply (FLOAT). For safety line earth is always connected to the SuperATX housing.
   2b) Earth binding post: You can connect an extern earth or earth box here, the binding post takes a bare wire, small 6mm spade and banana. This connector is connected to the line earth and housing of the SuperATX.

3) **Mains IEC connector.** Insert mains power cord in this connector. The power supply is optimized such that lowest leakage current will be present when AC phase is applied to the (L / phase pin) pin of the connector
4) **24 Pin ATX output connector**. Connect to motherboard 24 pin ATX Connector.
5) **Reset switch**. This switch resets the power supply microprocessors. After a reset the supply will start a new startup sequence. It can be used to reset the supplied device, or when changing between different devices and cables. Also when an error has occurred and the supply needs a restart.
6) **8 pin microprocessor power output.** This output (6a) supplies 12V/8A (70W TDP max) for the motherboard microprocessor. The pinout is standard ATX, and can be found at 6b.
7) **Serial number**. Always refer to this number in any communication with your dealer or Farad power supplies directly.
8) **Mains voltage indication.** When noted “115”, the power supply is configured for 110-120Vac, 50-60Hz voltage range. If noted “230”, the power supply is configured for 220-240Vac / 50-60Hz mains voltage range. “100” and “127” are configured for 100Vac and 127Vac input 50-60Hz.

IMPORTANT NOTE: Always switch off and mute devices when connecting or disconnecting the Farad power supply.

When you have any questions about our power supplies, please contact us at info@Faradpowersupplies.com with serial number stated at the back (see figure 1, position 8) of the power supply. We will reply to you as soon as possible.

Trouble Shooting

Most problems in audio systems are the result of poor or wrong connections or cabling. Always check if the mains power connector and the ATX cables are plugged in tight and correctly. Also check if the cables are functioning properly, and there are no loose wires. When not sure, try a different cable, and see if this solves the problem.

Below are some common failures. If you encounter another problem, or the below solutions do not solve the problems, please contact your dealer, or contact us directly at info@Faradpowersupplies.com.

Front LED does not light up (in any color), or strange vague signaling

Microprocessor needs reset. Press reset switch at position 3 for two seconds.

If this does not help, there is no AC mains power on the power supply. Check if mains cables and power cables are plugged in tight and correctly, and if AC voltage is present at the wall outlet. If this is the case and led still does not light up, please go to your Farad dealer or contact Farad power supplies directly.

Front LED flashes red

Error detected. LED flashes a number of times and then is off for 3 seconds, then flashes again. The number of flashes (1 to 12 times, see table 1) indicates the error. If an error occurs disconnect all cables and reset (position 3) the supply, to be sure it is not a cable or motherboard problem. If the error re-occurs without anything attached, contact your dealer, or Farad directly at info@Faradpowersupplies.com.

If the error is solved without anything connected, please check the cables and motherboard, probably there is a problem there.

During the red flash, the blue led can be on or off. If the Blue led is on, a too low voltage has been detected and probably the supply got an overload (more than 3 seconds) or short somewhere. If the blue led is off (red flashing led only) a too high or other critical error has been found.

Table 1: Error codes (number of flashes red led)

1	Error in 3.3V ATX voltage
2	Error in 5V ATX voltage
3	Error in 12V ATX voltage
4	Error in 5VSB ATX voltage
5	Error in 12V voltage for microprocessor
6	Error in one of the peripheral voltages
7	Error in 3.3 or 5VSB ATX supercap circuitry
8	Error in 12V ATX supercap circuitry
9	Error in 5V ATX supercap circuitry
10	Error in 12V microprocessor or peripheral supercap circuitry
11	Too long start up time in supercap charging circuitry
12	Too long start up time after power on from motherboard

Specifications

Power input:	Factory configured 100Vac, 127Vac, 110-120Vac / 50-60Hz (115Vac version) or 220-240Vac / 50-60Hz (230Vac version)
Dimensions:	260 (10.2”) x 310 (12.2“) x 125 (5“) mm (W x D x H)
Net weight:	11.0 kg (24 lbs)

The SuperATX is a three transformer, five rail LPS with outputs:

- Transformer 1: 12V/8A for a microprocessor with TDP up to 70W.
- Transformer 2: 24 pin ATX connector with 5VSB / 5A, 3.3V / 5A, 5V / 8A and 12V/5A.
- Transformer 3: Two times separately low noise regulated 12V+5V peripheral output for SSD, cards, clocks, etc. The 5V output is 3A per output, with a maximum of 5A total, 12V is 3A per output with a max of 5A total. One of these outputs can be set as always on to keep clocks heated or switches active.

Max power consumption is around 600W.

All specifications are an indication and valid at the time of printing of this manual. Farad power supplies reserves the right to make any changes at any time without prior notice.

www.faradpowersupplies.com

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