

M2TECH EVO SUPPLY

LOW NOISE BATTERY POWER SUPPLY/CHARGER

USER MANUAL



REV. PRD – 8/2012

Warning!

Changes or modifications not authorized by the manufacturer can invalidate the compliance to CE regulations and cause the unit to be no more suitable to use. The manufacturer refuses every responsibility regarding damages to people or things due to the use of a unit which has been subject to unauthorized modifications or to misuse or to malfunction of a unit which has been subject to unauthorized modifications.

Warning!

This unit includes a Li-Ion battery. Do not expose the unit to heat of fire! Do not open unit nor replace the battery. Refer to qualified personnel for servicing.



This unit is compliant with the following CE regulations: CEI EN 55022:2009 Class B (Radiated Emissions), CEI EN 55024:1999, CEI EN 55024:A2/2003, CEI EN 55024:IS1/2008 (Radio Frequency Electromagnetic Fields, 50Hz Magnetic Field Immunity Test and Electrostatic Discharges – ESD).

Recycling



The label above, printed on the product case, indicates that the product, when no more usable, can't be treated as generic garbage, but must be disposed of at a collection point for recycling of electrical and electronic equipment, in compliance with the WEEE regulation (Waste of Electrical and Electronic Equipment).

By making sure that this unit is correctly recycled, you will help preventing potential damages to environment and human health, which could be caused by a wrong treatment of this product as generic garbage. Materials recycling helps saving natural resources. For more in-depth information about recycling this product, please contact M2Tech Srl.

Dear customer,

thank you for purchasing Evo SUPPLY. What you have is a first-rate dedicated power supply with many unique features conceived to obtain the best audio performance out of the hiFace Evo and other 9V-operated M2Tech products.

Evo SUPPLY features a Li-Ion battery with capacity sufficient to many hours of continuous listening with the hiFace Evo, an integrated battery charger and a low noise regulator which is used to give power to the outputs while the battery is being charged. This allows for uninterrupted operation and certain full charge time.

Evo SUPPLY has two outputs to power two M2Tech 9V devices, like the hiFace Evo and the Evo CLOCK. They can be switched off when the powered devices are not used to save battery charge.

An external universal voltage wall adaptor is provided for battery charging and supply of the devices while the battery is being charged. The adaptor may be disconnected when using the battery to minimize the interferences from the mains.

We feel that your expectations will be fulfilled by Evo SUPPLY: you'll hear your music files in a way like never before, prepare for a whole new experience!

Nadia Marino, CEO

Please annotate here your Evo SUPPLY serial number for future reference:

S/N: _____

Date of purchase: _____

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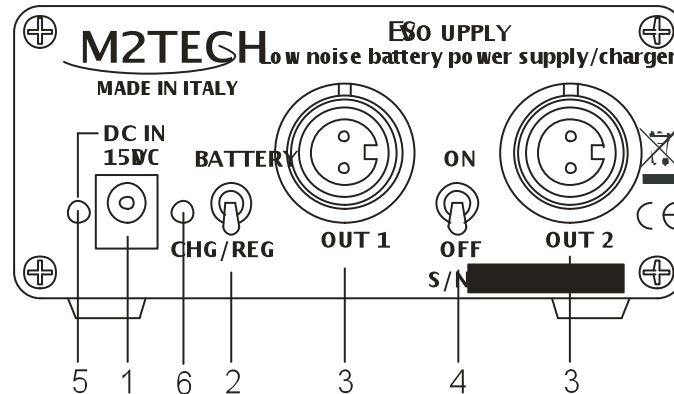
1. Unpacking

The Evo SUPPLY box contains the following items:

- Evo Supply
- 1 supply cable terminated with 5.5/2.1mm plug on one end and with Bulgin heavy duty plug on the other end
- 15V/2A wall adaptor or 15V/2A adaptor with detachable power cord

Should any item be missing, please contact your dealer for a warranty claim. Please note the supply cable may be obtained as a separate item if needed.

2. Front Panel



1) Supply input. Apply $15V_{DC}$ from the wall adaptor provided in the package. Another power supply may be used if necessary, but user must be aware that in this case the warranty is void. Tip is positive, ring is negative. A maximum current of 2A is necessary. This input is protected against polarity inversion.

2) Charge mode switch. Allows for selection of two operation modes for the battery charger included.
Select "BATTERY" to use the battery charge up to the complete depletion. The outputs will be automatically switched off when the low voltage threshold is reached, to avoid an excessive depletion which would damage the battery. Selecting this mode will avoid using the internal low-noise regulator to power the devices for best performance, but operation will not be uninterrupted.
Select "CHG/REG" to ensure uninterrupted operation. The battery will be used as primary power source up to complete depletion. When reaching the low voltage threshold, the battery charger will automatically enabled, the battery will be disconnected from the load and the low noise regulator will provide power to the devices. The switchover is transparent to the user. At the end of the charge process, the outputs will revert to the battery. The low noise regulator has been designed to ensure very low noise, so the user should hear very little differences between the battery and the regulator.

3) Outputs. Connect the supply cables provided in the package. Positive is the upper hole, negative is the lower hole.

4) Output switch. Switches outputs on and off. It is advisable to switch outputs off when the devices attached to the Evo SUPPLY are not in use, to avoid charge cycles which shorten the battery life.

5) Power indicator. Turns on when the wall adaptor is connected to the Evo SUPPLY and to a mains socket.

6) Charge indicator. Turns on when charge is in progress.

3. Connections

Connect the plug of the wall adaptor to the supply connector (Page 6, no.1) of Evo SUPPLY.

Connect the Bulgin plug of each supply cable to one of the Evo SUPPLY output connectors (Page 6, no.3).

Connect the 5.5/2.1mm plug of each supply cable to a 9V-operated M2Tech device. Of course, one cable may be used when one device only needs supply; the other output will be unused.

4. Operation modes

4.1. Charge Inhibit

This operation mode is selected when the charge mode switch (Page 6, no.2) is set on "BATTERY". This mode allows for operation from battery only, even with the wall adaptor disconnected, to ensure the least disturbance from the mains.

In this operation mode, the battery charge is inhibited and the attached devices are powered by the battery until the voltage goes down to the low voltage threshold. At that point, the Evo SUPPLY battery protection circuit for depletion engages and the battery is isolated from the load to prevent further depletion.

To restore the operation and start the charge, it is necessary to switch to automatic charge start mode and to connect the wall adaptors if it's been previously disconnected.

4.2. Automatic Charge Start

This operation mode is selected when the charge mode switch (Page 6, no.2) is set on "CHG/REG". When this mode is selected, the battery remains the main power source, that is, it is used to power the attached devices. When the low voltage threshold is reached, however, the battery charge is automatically engaged, the battery is disconnected from the outputs and a low noise regulator is connected in its place to ensure continuity of the output supply. Thanks to a reservoir capacitor, the switchover is transparent to the devices.

Charge lasts around three hours, during which the output current is provided by the 9V internal low noise regulator. This allows for uninterrupted operation of the attached devices, with a slight supply quality reduction. The charge-in-progress is indicated by the charge indicator LED (Page 6, no.6).

At the end of the charge time, the outputs automatically revert to the battery.

The automatic charge start mode must be selected to manually enable the battery charge after the unit has automatically switched outputs off following to battery depletion in charge inhibit mode.

5. Notes on Battery Usage

The Evo SUPPLY includes a Lithium-Ion battery. It's a high performance battery with high power density and low internal resistance, capable of very high surge currents and very clean supply. The battery has a built-in protection circuit that protects it from overcurrent and short circuits, overcharge and excessive depletion. The protection circuit should be sufficient to protect the battery against wrong operation or usage. Moreover, the Evo SUPPLY circuit also includes a depletion protection circuit which engages at a voltage slightly higher than the low voltage threshold as set in the built-in protection circuit. This allows for battery's long life.

Despite the aforementioned protection circuits, a Li-Ion battery is a delicate device which needs to be properly used to avoid damages. Particularly, do not expose the Evo SUPPLY to excessive heat or cold or fire, nor drop liquids on it. Do not short-circuit the outputs. Should the Evo SUPPLY be exposed to temperature beyond the allowed range, put the unit in a normal environment and allow for at least one hour before operating it. Too cold or too hot a battery would result in an explosion when operated. Please refer to the specifications section (Page 10) for temperature limits.

6. Technical Specifications

Supply voltage:	15V _{DC}
Power consumption:	2A peak (charge in progress, 1A peak out)
Output voltage:	9.5 to 11.5V _{DC} (battery) 9V _{DC} (low noise regulator)
Output current:	500mA (continuous, both outputs) 1A (peak, both outputs)
Output noise:.....	TBD (battery) TBD (low noise regulator)
Output regulation:	TBD (battery, 0 to 500mA output current) TBD (low noise regulator, 0 to 500mA output current)
Battery duration:	min. 7 hours (@ 240mA output current)
Battery charge time.....	3 hours +/- 30 minutes
Battery charge cycles	1000
Operative temperature range:.....	0°C to 40°C
Size:	105x50x104mm (cabinet) 105x50x150mm (with connectors)
Weight:.....	400g