POWERBOARD
ATX/E-ATX UNIVERSAL
MANUAL

V0.3

Introduction

The PowerBoard Universal is the first PowerBoard which was not designed specifically for one case, instead it is designed to fit as many ATX and EATX cases as possible. The PowerBoard Universal has the 24pin integrated and it has 4x 8pin EPS connections in different locations for different motherboard layouts. It has a 6pin PCIE extra power connection for motherboards which require it. It has 3x 8pin PCIE connections and a 12V2X6 connection. The EPS can be used as 4pin or 8pin and the PCIE can be used as 6pin or 8pin with different cables. It has an inbuilt PWM hub with x8 output connections and an ARGB hub with x5 output connections. It also has x2 direct mount SATA 2.5" connections and 4 ARGB LEDs built in to light up the rear laser etched acrylic cover.

Note: We have a compatibility list for the PowerBoard Universal. These are only the cases we have looked at or tested so far. Please contact us below with your requests for case compatibility and we can check and get back to you.
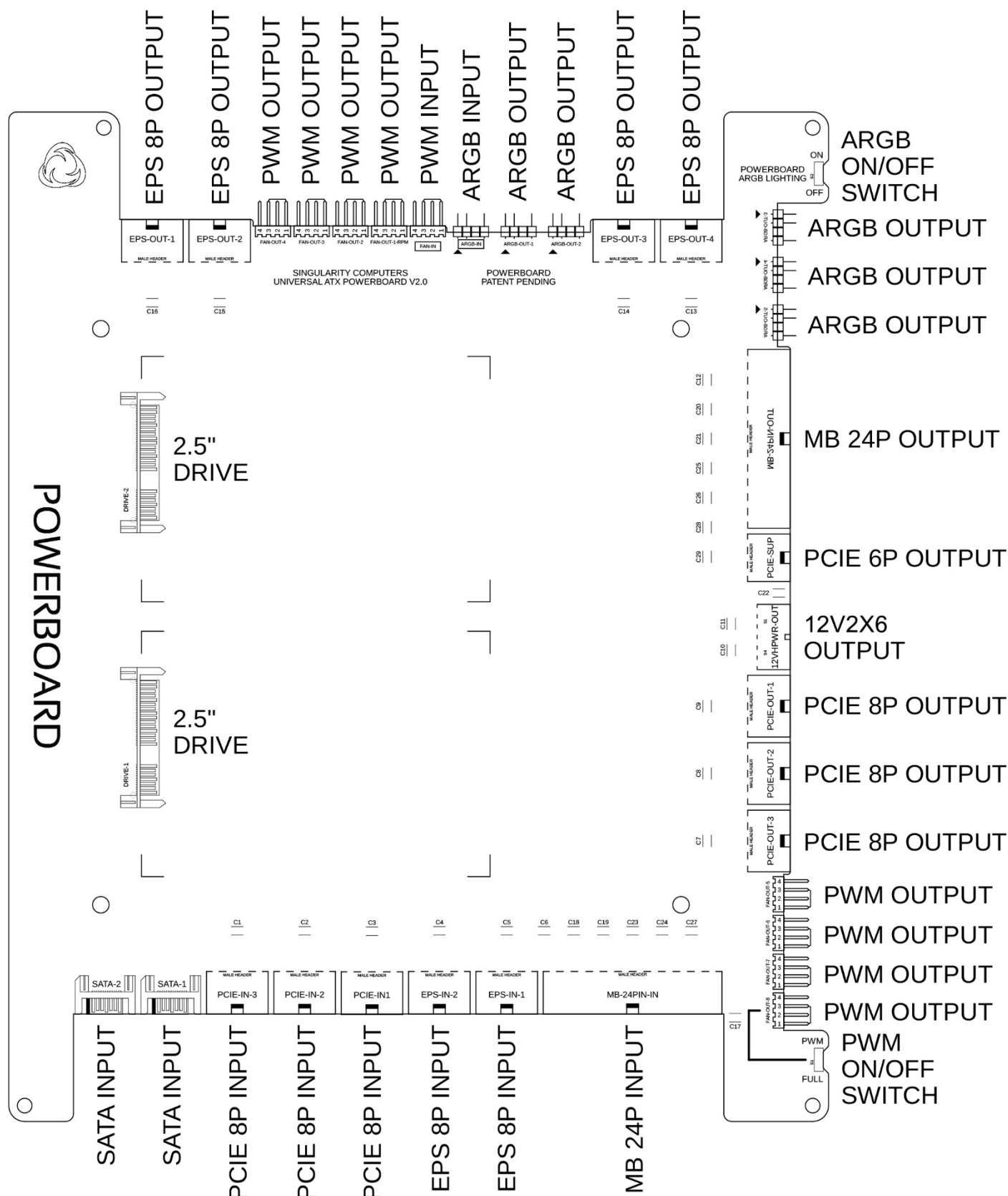
Features

The PowerBoard is a PCB integrating 24pin, EPS, 12V2X6, PCIE, PWM and ARGB Hubs, SATA, and Power and Reset Buttons. The PowerBoard has x4 ARGB LEDs positioned around the external perimeter to optimally light up the distribution plate and the build, the LEDs can be switched on or off. Essentially the PowerBoard is a distribution plate for cables also integrating other features and functions. It is a new method for cables allowing standardization of cable lengths and making cable management almost unnecessary. The PowerBoard Universal also comes included with a standard set of black sleeved linking cables including 24pin x1, 8pin EPS x2, 8pin PCIE x3 and unsleeved 50cm ARGB and PWM cables.

Specifications

Included Items	PowerBoard ATX/E-ATX Universal
Cables	PowerBoard Linking Cables: 18AWG wire black sleeved: 24pin x1. 8pin EPS x2. 8pin PCIE x3. PWM Fan Extension Cable Black Sleeved 50cm. RGB Extension Cable Black 50cm.
Electronics Integration	Inputs: 24pin x1. 8pin EPS x2. 8pin PCIE x3. PWM x1. ARGB x1. SATA x2. Outputs: 24pin x1. 8pin EPS x4. 8pin PCIE x3. 12V2X6 x1. SATA Direct Mount x2. PWM x8. ARGB x5. ARGB built in LEDs x4 and on/off switch. Power and Reset Buttons.
Package Dimensions	H: 395mm x W: 391.5mm x Thickness: 25mm.
Package Weight	1 kg.
Product Dimensions	W: 395mm x L: 430mm x H: 50mm.
Product Weight	1 kg.
Materials	PCB. Clear Cast Acrylic.
Manufacturing Process	PCB. Laser.
Fasteners	Stainless Steel.

PowerBoard ATX/E-ATX Universal

⚠ *All PowerBoards need PowerBoard Linking Cables.*

PowerBoard PSU Cables:

The stock cables that come with every power supply can be used, plug in as many cables as input connectors are available. Do not use components that have more connectors than Your power supply has cables for. For example, if Your power supply comes with a single 8pin EPS (4+4) plug and Your motherboard has 2X 8pin EPS connectors, than a better power supply needs to be used. Singularity Computers offers custom sleeved and shorter PSU cable kits that are a better fit in the PSU shroud area than stock cables.

PowerBoard Linking Cables:

The Universal ATX PowerBoard comes with a standard kit of PowerBoard Linking Cables which includes 24pin MB x1, 8pin EPS x2 and 8pin PCIE x3. The pinout of these Linking cables is mirrored and the lengths are custom to achieve an arch. The connectors are also female on both sides (refers to the pin and not to the connector housing). PWM and ARGB linking cables are also included to connect from your motherboard or controller to the PowerBoard PWM and ARGB inputs. Use our Cable setup guide if making custom Linking cables.

Power Connectors:

The input and output connectors are not wired directly together but they are shared, so if EPS-1-IN is plugged in then any of the EPS outputs can be used, it is not limited to EPS-1-OUT. The same applies to the PCIE inputs, they can be mixed and matched. The 12V2X6 output draws power from the PCIE inputs and is set to provide 600W of power, so even if the power supply doesn't have a 12V2X6 output a GPU with that connector can still be used as the PowerBoard does the conversion. There is a PCIE 6P connector located next to the MB 24P connector for motherboards that have a supplementary PCIE 6P connector for additional power.

ARGB Connectors:

The PowerBoard has built-in ARGB lighting and acts as an ARGB hub. An ARGB source, like a motherboard ARGB header, must be connected to the ARGB-IN header on the PowerBoard. The input header is marked with a white rectangle around it for easier identification. The PowerBoard uses this ARGB signal to light up the built-in LEDs and splits this signal to all ARGB outputs. What signal goes into the input will be displayed on the built-in LEDs and all LED strips attached to the ARGB outputs, in parallel. The PowerBoard does not show up as an individual component in ARGB controlling software, but it can be controlled by controlling the motherboard ARGB header, which will show up in software. The PowerBoard LEDs and headers are powered by the power supply 24pin connection, so they will only light up when the system is turned on, but not when the system is turned off or in stand-by mode. The ARGB headers are conveniently located where they are expected to be used, next to radiator mounts, GPU, and CPU waterblocks. Do not plug a 4pin/12V RGB device into the PowerBoard, only 3pin/5V ARGB/DRGB (addressable/digital RGB) devices are compatible.

ARGB On/Off Switch:

This switch connects/disconnects the ARGB control signal from the built-in LEDs on the PowerBoard. When turned ON, the LEDs will immediately light up. When turned OFF, the LEDs will not light up from the next time the system is turned ON from a cold boot. After turning the switch OFF, turn off the system, wait 5 seconds and turn the system ON again. This switch does not control ARGB headers, only the built-in LEDs on the PowerBoard.

PWM/Fan Connectors:

The PowerBoard acts as a powered PWM/Fan hub. A PWM source, like a motherboard CPU Fan header, must be connected to the FAN-IN header on the PowerBoard. The PowerBoard shares this PWM signal to all PWM outputs. What signal goes into the input will be the same control signal sent to every fan connected to the PowerBoard. The PowerBoard does not show up as an individual component in fan controlling software, but it can be controlled by controlling the motherboard CPU Fan header, which will show up in software/BIOS. The PowerBoard PWM headers are powered by the power supply, so there is less strain on the motherboard. Only FAN-1-OUT-RPM monitors the speed of a connected fan which is reported back to the motherboard. If no fan is connected to this header, the motherboard will see zero RPM even if all other headers have fans connected to them, so populate FAN-1-OUT-RPM first with a fan that You would like to monitor the RPM of. The PWM headers are conveniently located where they are expected to be used, close to radiator mounts. FAN-OUT-8 has an optional switch located next to it which toggles between motherboard PWM control and full speed, this header is aimed for pumps where full speed operation is often desired.

SATA Connectors:

Connect the SATA inputs into the SATA outputs on the motherboard and install 2.5" drives into the PowerBoard. There is no need to connect a SATA power cable to the 2.5" drive, it is powered directly from the PowerBoard. The 2.5" drives attach to the PowerBoard with 4x M3 4mm fasteners.

Installation of the Universal ATX PowerBoard:

* First, install the 2.5" SATA drives if there are any with 4x M3 4mm SCR fastener per drive.
* The PowerBoard attaches to the back side of the 4 outermost motherboard standoffs, but the stock standoffs often are too short, so replace them with 4x #6-32 6mm SO-M (male standoff) or M3-to-M4 6mm SO-M (male standoff) depending on the case.
* Now on the back side the protruding threads should be long enough to attach 4x #6-32 10mm SO-F (female standoff) or 4x M4 10mm SO-F (female standoff). Try to fit the PowerBoard onto these standoffs and see if there is enough clearance between the board and the motherboard tray. Keep in mind that the latches for the ATX power connectors need some space.
* If more distance is needed, add another 4x #6-32 6mm SO-M or 4x M4 6mm SO-M which adds another 6mm to the height, making it 16mm. Another option is to use the 10mm versions of

these standoffs to make the height 20mm. Mix and match these standoffs to get the ideal height while also making sure that the back panel of the case can be closed.

- Secure the PowerBoard in place using 4x #6-32 0.25" SCR or 4x M4 6mm SCR, depending on the case. Most cases use the #6-32 imperial standard, but some Phanteks cases use M3-to-M4 metric standard.
- Do not remove the 3mm clear acrylic cover from the PowerBoard as it prevents the case back panel from shorting the pins on the board.

Due to the limited amount of space behind the motherboard tray it might not be possible to release the latch on the ATX power connectors as the latch is between the motherboard tray and the PowerBoard. In such cases it is easier to remove the 4 fasteners holding the PowerBoard in place, lift up the whole assembly and then the latches become reachable.

ATX MOTHERBOARD
BACK SIDE

UNIVERSAL POWERBOARD
MOUNTING LOCATIONS
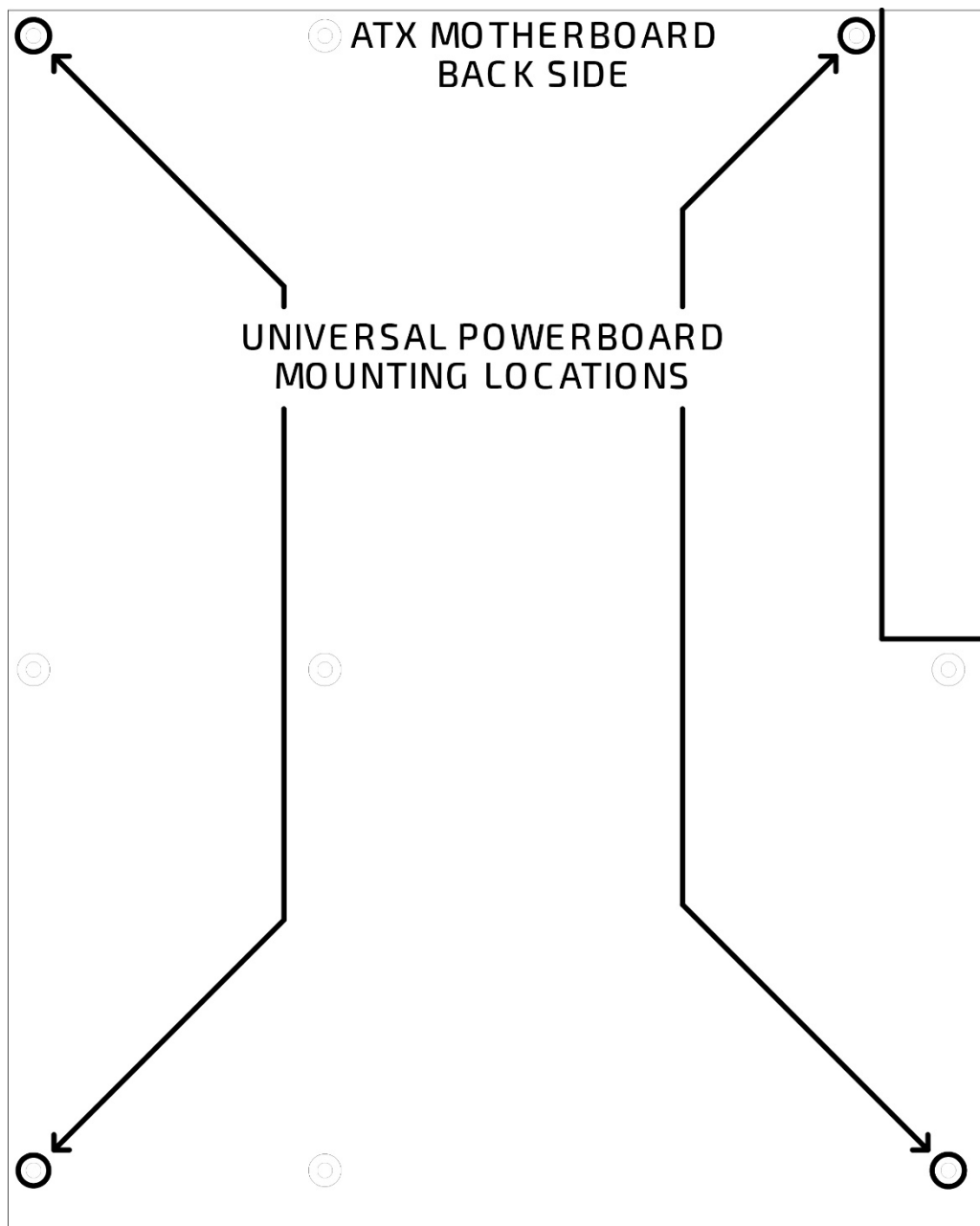
Dimensions

ⓘ *Dimensions are in millimetres(mm), unless otherwise specified.*