A1200 Bifrost

First of all; Greetings and thank you for supporting this product! You are now the owner of a Bifrost, a fully customizable Amiga 1200 keyboard LED replacement board. I sincerely hope you will enjoy using it as much as I enjoyed developing it!

Disclaimer

The Bifrost board is not endorsed by or associated with the Commodore or Amiga company or brands nor its owners in any way. It is a stand-alone third party aftermarket product. Using and/or installing this product or making any modifications to your computer may result in irreversible damage to either or both. Use this product at your own risk.

Now with all of that out of the way lets dive into it!

Overview

The board has three LEDs, each one indicating an activity. They are in order from top to bottom: Harddrive Activity, Floppy Drive Activity and Power On. The light from these LEDs are channeled through a small plastic top that fits between the Bifrost board and your A1200 chassis, making it look very similar to the original LEDs. The plastic top also serves as buttons so you can customize your Bifrost LEDs after your choosing without having to disassemble your computer ever again. All you have to do is to press down the right side of a LED! This can be done with the help of a paperclip, a flat screwdriver or any other similar tool that is dull. Do not use any sharp edges as this will eventually wear out the plastic or in worst case break it. Because of the small production run of this product the plastic top is partially 3D-printed, which makes it a little more brittle than a fully molded one. Use care!

A word on Power LED dimming

Because of certain restrictions to design and components some functionality had to be negotiated: The Bifrost does not respond perfectly to Filter On/Off scenarios or Guru codes that would normally dim the Power LED. The Bifrost is only designed to indicate normal restarts, but this should suffice for most of normal Amiga usage. For sessions where LEDs are needed for advanced troubleshooting I recommend to switch back to the original LED board for accuracy.

Installing

The Bifrost is a direct replacement board of the LED board that comes with the Amiga 1200. All you need to do is open up your computer, unplug the old LED board from the motherboard and unscrew it from the upper chassis. Then screw the Bifrost into its place using the same screws, making sure that positioning is correct. You should be able to use the Bifrost settings buttons by clicking on the right side of the LEDs looking at it from the top/front. Then plug the Bifrost into the same connector as the old board was connected to, making sure the connector aligns with the 3+1 pins.

Resetting the Bifrost to Default colours

The Bifrost is per default set with Power LED to Green and HDD and FDD LEDs to Orange. Brightness is set to 2. This should be fairly close to how the stock LEDs look. You can at any time reset the Bifrost to these defaults by pressing and holding the Brightness button for 3 seconds while not in "Edit Mode".

Power LED / Select button

The bottom button (Power LED) is the Select button. Pressing it once makes you enter the "Edit Mode" and selects the top LED. All LEDs light up when you are in "Edit Mode", and the selected LED will blink. You can select the middle LED by clicking Select again, and then again for the bottom LED. If you have already selected the bottom LED pressing Select again will take you back into "Operating Mode" and the LEDs will only light up as your Amiga tells them to. Pressing and holding Select for more than 3 seconds will Save all your custom settings to memory, and all your LEDs will flash 4 times to indicate this. Bifrost will automatically enter normal "Operating Mode" when done.

Floppy LED / Colour button

The middle button (Floppy LED) is the Colour button. Pressing it will iterate to the next Colour for the LED you have selected. You need to be in "Edit Mode" for this to work (see Select button above). Bifrost comes pre-programmed with 26 different solid colours you can choose from as well as two "Cycling Colour" Modes (one slow and one fast) and two "Random Colour Pick" Modes (one slow and one fast). Normal Red colour is the first of all solid colours, and warm white is the last of the solid colours. After warm white the two "Cycling Colour" Modes will be selected and then the two "Random Colour Pick" Modes will be selected before returning to Red again. Please see the following table for the sequence of available colour settings:

Clr#	Colour Description	Clr#	Colour Description	Clr#	Colour Description
1	Red	11	Sea Green	21	Magenta
2	Fiery Red	12	Turquoise	22	Pink
3	Orange	13	Cyan	23	Hot Pink
4	Pale Orange	14	Sea Blue	24	Neon Pink
5	Yellow	15	Light Blue	25	Cold White
6	Pale Yellow	16	Pastel Blue	26	Warm White
7	Lime	17	Blue	27	Slow Colour Cycle
8	Pale Green	18	Violet	28	Fast Colour Cycle
9	Green	19	Purple	29	Slow Random Color Pick
10	Aqua Green	20	Pastel Pink	30	Fast Random Color Pick

Harddrive LED / Brightness button

The top button (Harddrive LED) is the Brightness button. Pressing it will iterate to the next Brightness level for the LED you have selected. You need to be in "Edit Mode" for this to work (see Select button above). Bifrost comes preprogrammed with 4 different solid Brightness levels and 2 "Pulsating" levels, one slow and one fast. The dimmest level is the first and the brightest level is the fourth. After the brightest level the two "Pulsating" levels will be selected before returning to the lowest brightness level again. Please see the following table for the sequence of available brightness levels:

Bri#	Brightness Description	Bri#	Brightness Description	Bri#	Brightness Description
1	Dim	3	Bright	5	Slow Pulsating Brightness
2	Moderate (Original)	4	Very Bright	6	Fast Pulsating Brightness

All different colour and brightness settings are fine to mix. For example, you might want to customize your Power LED to have a Colour Cycle with a Pulsating brightness. Thats perfectly fine! All in all the Bifrost board can be customized in 3x30x6 different ways for a total of 540 unique custom combinations!

Synchronization of Changing Modes

All non-solid colour modes and non-fixed brightness modes are synchronized. This means that if more than one LED is programmed with the same setting they will always be synchronized. For example, if two LEDs have the "Fast Random Color Pick" they will always show the same colour as one another. If they have the "Slow Pulsating Brightness" they will pulse in synchronization.

Voltage Calibration for Gurus/Restarts (v1.3.2 and up only)

The built-in detection of Gurus/Restarts that normally dim the Power LED works adequately out of the box, but not perfect. Sometimes a freshly power-cycled machine may sporadically dim the LED before the first soft reset has been performed. However, as from software version 1.3.2 you can now calibrate this for your own unique machine. This is achieved by pressing and holding the Color Button until a rain effect occurs on the LEDs. A Green LED rain means it has activated Calibration mode with your values, and a Red LED rain means it has reverted back to default operations. For calibration purposes I recommend a clean power-up followed by three non-interrupted reboots before activating it. This is to ensure that Bifrost learns your specific Voltage Thresholds accurately before they are saved into memory and used.

Thats it really! Now I bid you a fond farewell, the best of good luck and tons of fun with the modding! :-)

Conny "Amiga 'Fuzzie' Fuzzler" Larsson, Creator of the Bifrost