

E682 Addendum, Aug 10, 2012

The E682 is released as an upgrade from the E681. The majority of the documentation pertaining to the E681 will apply to the E682. This document describes the specific differences between the two boards, and is to be regarded as preliminary operating information for the E682.

Layout:

Board dimensions are identical however the E682 has a revised mounting hole pattern that will mate properly with the new style CG-1500 enclosures. Mounting holes are now large enough to accommodate a #6 screw, and clearance between mounting holes and nearby components has been improved.

The E682 uses a new type of Ethernet module. It is smaller than the module used on the E681. The Ethernet module and several ICs are now soldered in place rather than being socketed. There are 4 new ICs on the E682.

The E682 has only 5 LEDs. The +5V power OK LED has been eliminated, also the LEDs for Ethernet receive, transmit, and link. The new Ethernet module does not support these LED outputs. However, some of this functionality is available via LEDs mounted on the Ethernet jack. The Ethernet jack on the E682 is oriented such that the RJ45 tab points up.

The “power select jumpers” are now arranged in a straight line rather than an L shape. They are numbered 1-5. Jumpers are now identified by the 2 numbered pins that they connect, rather than by a letter. For powering the E682 from +5V pixel power jump 2-3. For >5V pixel power jump 1-2 and 3-4. The aux power connector has the same functionality as on the E681. The power connector for clusters 3 and 4 is now correctly identified as J19. It was mislabeled as J17 (duplicate of the aux power connector) on the E681.

The 4 output voltage select jumpers have been eliminated. Signal outputs are always 5 volts. 4 new jumpers have been added near the Ethernet module. These jumpers, when present, select the corresponding cluster for differential output. In other words instead of DATA and CLOCK, the two output pins become DATA+ and DATA-. This allows for the outputting of standard 2-wire DMX, and in the future Renard-compatible outputs. This is only used for DMX-type outputs and possibly for 3-wire pixels, where a 2-wire receiver is placed at the pixel string. It may be necessary to change the output resistors (pluggable resistor pack) when configuring clusters for differential output, to maximize line driving capability. 56 ohms is the recommended value.

Operation:

There are no new configuration commands with the E682. The E682 allows for 5 universes of E1.31 data, so the relevant lines of the configuration screen have been expanded to show the 5th universe, and the relevant configuration commands have been modified to allow the entry of addresses up to 5 universes.

The default “as-shipped” configuration is now for 16 50-pixel strings, with a contiguous DMX address range beginning with slot#1 of the 1st universe.

On the web page the E682 identifies itself as an “E682-5” with the -5 indicating the number of possible E1.31 universes. It is anticipated that this will be increased in future firmware releases since the new Ethernet hardware is capable of up to 8 universes. The web server is now on a dedicated Ethernet “socket” so there is no longer a conflict between the use of the 4th universe and the web browser as there was on the E681.

Note: With the current firmware, updating of the web page will be slow when a test pattern is enabled. It is suggested that test patterns be disabled for greatest response speed when changing the board configuration via the web browser.