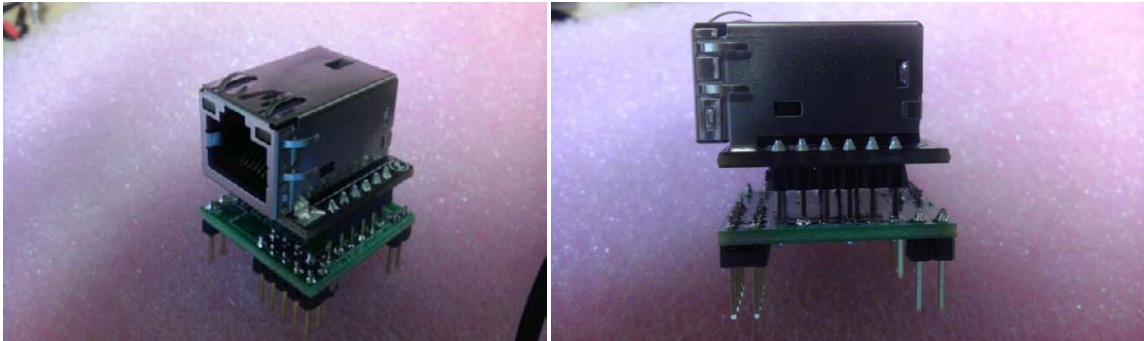


SanDevices Ethernet Upgrade Module UPG1 10/18/2012

Please Consult this document before using the UPG1.



The UPG1 will replace the existing WIZ812 Ethernet module of a SanDevices E680 or E681 pixel controller in order to increase the board's capacity from 4 to 6 universes of SACN/E1.31. This allows for a maximum pixel count of 1020 pixels per controller. Future firmware releases may increase the capacity to 8 universes. In addition, the modified controller will have a dedicated Ethernet 'socket' for use by the web server, eliminating the contention between web server and the 4th universe that occurs now with the E680/E681.

This upgrade is primarily intended for use with E680s and E681s that have the existing Ethernet module plugged into sockets, rather than being soldered directly to the PC board. While modification of non-socketed boards is possible, there is a substantial risk of damage to the board unless proper de-soldering equipment is available.

The installation of the UPG1 consists of 2 steps: installation of new firmware, and the replacement of the old WIZ812 ethernet module with the UPG1 module.

UPG1 Assembly from a kit:

If the UPG1 is provided in kit form, it should be assembled as follows:

The parts consist of the PC board, some header pins, and the WIZ820IO Ethernet module. Header pins may be supplied as 4 separate pin sets (two 2x5 and two 1x2), or as a single long row of pins that can be snapped to the required lengths.

Solder four sets of header pins to the **BOTTOM** side of the UPG1 PC board. **(Insert the header pins from the bottom side of the board and solder them on the top side)**. Install two 2x5 pin headers at J1 and J2, and two 2x1 pin headers at J3 and J4. Note that if you only have single row headers available, you may use two 1x5 pin single-row headers side-by-side in place of a 2x5 pin header.

Finally solder the WIZ820IO module to the top side of the PC board. **Caution: Be sure to orient the WIZ820IO so that the RJ-45 ethernet jack is located near J2 and J4, as indicated on the silkscreen. It is recommended that the WIZ820IO module be raised about ¼" above the surface of the PC board as shown in the pictures.** This will allow additional clearance between the top sides of the previously installed header pins and the components on the bottom side of the WIZ820IO. It will also provide additional clearance for routing the Ethernet cable. If you prefer to mount the WIZ820IO flush, please first trim the previously installed header pins and insure that there is no contact between header pins and WIZ820IO components.

If desired, the WIZ820IO can be socketed using two 1x6 SIP sockets (not supplied).

Upgrade Procedure:

Caution: The upgrade can be done 2 ways depending on whether or not you have a Parallax Prop Plug programmer.

If you do not have a prop plug programmer, the upgrade can still be done, but it has to be done in exactly the right sequence. If you have more than 1 E681 to upgrade, and you are not able to upgrade the first one successfully, please contact me (jim@sandevices.com) so that we can figure out the issue.

Also, please contact me if you are upgrading an E680.

Select the proper procedure depending on whether or not you have a Parallax Prop Plug programming tool.

Upgrade Procedure if you have a Parallax Prop Plug Programmer:

Download the latest Firmware file, either E680-6 firmware, or E681-6 firmware, depending on which controller you are upgrading. The current version is E681-6v2.044-01.

Open the Parallax Propeller Tool software, attach the prop plug programmer, and power the controller on.

From the propeller tool software, select FILE then OPEN. Set "Files of Type" to "Propeller Applications". Navigate to the downloaded E681-6v2.044-01.eeprom file and open it.

Click "Load EEPROM". The file should load in about 10 seconds. After the eeprom load is complete, power down the E680/E681, and unplug the prop plug programmer. At this point your controller will not work until you complete the final step of exchanging the old Ethernet module for the UPG1.

Proceed to "TESTING"

Upgrade Procedure if you do not have a Parallax Prop Plug Programmer:

Please email jim@sandevices.com for update instructions. This will insure that you have the most recent documentation.

Testing:

Insert the UPG1 in place of the original WIZ812 module. **IMPORTANT: THE ETHERNET JACK ON THE UPG1 MUST FACE DOWN (toward the string connectors) INSTEAD OF TO THE LEFT. See Photo. Make sure that the pins on the UPG1 mate properly with the pins on the WIZ812 connectors.**



Attach the Ethernet cable (note that the 'tab' will be on the top). You will probably find it easier to route the Ethernet cable clear of the pixel string connectors if you cut off the plastic 'boot' from the Ethernet cable. See the photo above for suggested Ethernet cable routing.

Power up the controller, and after the normal startup delay (5-10 seconds) you should be able to access the controller's web page. The controller should now identify itself as an E681-6 or E680-6, indicating 6 available SACN/E1.31 universes.

You should now see 6 lines of Ethernet socket information in the upper part of the status page. Commands for setting DMX addresses will now accept socket values from 1 through 6.

After verifying proper operation you may want to secure the UPG1 in place by applying a bead of hot-melt glue on the top and bottom edges where the header pins meet the connectors.

Notes: the LAN Rcv, LAN Send, and LAN Link LEDs will no longer be operational. The new Ethernet module does not support the use of those LEDs.