Introduction

The LUT-DMX unit is connected anywhere on the 4-wire MI link (link 1) of a HomeWorks
Processor. It will convert intensity information generated by the HW Processor and
create a DMX-512 data stream. This data stream can be run to the input of DMX-512 controlled
devices. As the intensities change on the MI link, the corresponding DMX-512 channels will
change.

Each DMX-512 channel is mapped directly (1 to 1) to a zone in HomeWorks. The
maximum number zones allowed per processor (256) limits the number of DMX-512 channels
that can be assigned to a given HW processor. The number of zones that can be used for DMX-
512 channels depends on the number of zones that are currently in use by normal
dimmed/switched zones in the system (Maestros, Vareos, RPMs, WPMs, GRAFIK Eyes).
For instance: If there are 190 zones assigned to a processor before adding the DMX-512 channels,
there would be 66 zones left that could be designated as DMX-512 channels.

The number of channels required per DMX-controlled device varies. Some devices (mainly
fixtures) require 3 channels – one for Red, one for Green and one for Blue. Others (such as fiber
optic fixtures) may only require 2 channels – one for color and one for intensity. In either case,
the channels must be contiguous (they must use consecutive zone numbers). For example, the
Red channel cannot be channel 165 if the Green is channel 193 and the Blue is channel 194.
They must be set up as channels 192, 193 and 194. It is important to consult the documentation
for the particular device to understand how channels are mapped. Most fixtures/devices will have
DIP switches to set the starting channel – so it's implicit that if it requires 3 channels and you set
the DIP switch to 192, that it will also use the next two channels.

Installation

Wiring
From HW Processor to LUT-DMX with an External MI on link 1*
Pins 1,2,3 and 4 on the LUT-DMX are connected to the corresponding pins on the MI link.
Pin 2 on the LUT-DMX must be connected to the external MI's Pin 2.
Pins 5 and 6 on the LUT-DMX are not connected.

Pin 1 = Common   Pin 2 = +V   Pin 3 = Data +   Pin 4 = Data –

From HW Processor to LUT-DMX without an External MI on link 1*
Pins 1,2,3 and 4 on the LUT-DMX are connected to the corresponding pins on the MI link.
Connect Pins 1 and 2 to a 15 VDC external power supply such as Lutron's T120-15DC-9-BL
(120 V), TE240-15DC-9-BL (240 V, Europe), or TU240-15DC-9-BL (240 V,U.K.).
Pins 5 and 6 on the LUT-DMX are not connected.

Pin 1 = Common   Pin 2 = +V   Pin 3 = Data +   Pin 4 = Data –

From LUT-DMX To DMX-512 Devices
1 = DMX-512 Common
2 = DMX System Data –
3 = DMX System Data +

LUT-DMX Unit DIP Switch Settings
The switches on SW1 should be in the following configuration:
1 = OFF
2 = ON
3,4,5 are not used
The switches on SW2 are not used

*** The LUT-DMX receives it's power from the MI link. However, Link 1 on a P5 Processor is unpowered
and as a result the LUT-DMX must be powered from an external source. The LUT-DMX draws the
equivalent of one seeTouch keypad (15 LEDs).**

LUT-DMX LED Status Indicators

STATUS	LED 1	LED 2
No Power	OFF	OFF
Power but no input Data (from HW Processor)	ON	OFF
Normal Operation	OFF	FLASHING

LED1 Indicates that data is **NOT** being received by the LUT-DMX from the HW Processor. If LED is ON, then things are **NOT** working properly.

LED2 Indicates that DMX-512 data is being sent out.
*** Because of the nature of the DMX-512 protocol, LED2 should always be blinking when the unit has power.

Configuration in HW Software

NOTE: Normal lighting zones in the HW software get top priority during zone number assignment. If you have a system with 140 normal lighting zones, the zone numbers that get generated will be 1 to 140. This leaves 141 to 256 open for DMX zones (channels).

Creating the fixtures

In the current HW Software, there is no direct support for DMX-based fixtures. To work around this, we can just insert a generic downlight. Each downlight will represent a single DMX-512 channel. So it's very likely that for each DMX-controlled fixture in the space, you will need more than one fixture to represent it on the floorplan. For this reason, the conventions used when naming the fixtures become important. When the time comes to program your DMX fixtures, it will be difficult to remember what Downlight 1, Downlight 2, etc. really stand for. Naming them Fixture A Red - 192, Fixture A Green -193, Fixture A Blue -194 may be a better choice. Including the DMX channel number in the name is also advised.

Assigning the zones to controls

Because the LUT-DMX lives on the MI link, it understands zone intensities formatted similar to a RPM. So to make all of this work, we assign the fixtures we created on the floorplan to non-existent RPM modules. Simply insert an extra PNL5 or PNL8 into the panel screen (depending on how many zones you have that are DMX). Insert as many RPM-4U modules as you need. Assign your DMX zones to the modules. Which output each zone gets assigned to which module does not matter. Don't forget that these "non-existent" panels and modules will show up on your BOM and wiring reports so you will want to remove them from the printouts manually.

Assigning the DMX channels to the fixtures

The last key piece of information that the HW Processor requires is the channel number used for each DMX load that was inserted on the floorplan. If you only require a couple of channels for DMX, start the numbering at a high number. For example: On a job there will be 10 fixtures controlled via DMX. Each fixture requires 3 channels. There are 140 normal lighting zones in the system. Altogether, we'll need 30 zones for DMX. To make it easier, we'll start DMX zone numbering at 192 (this is an even multiple of 3). This will give us enough room in case we need to add more normal lighting zones.
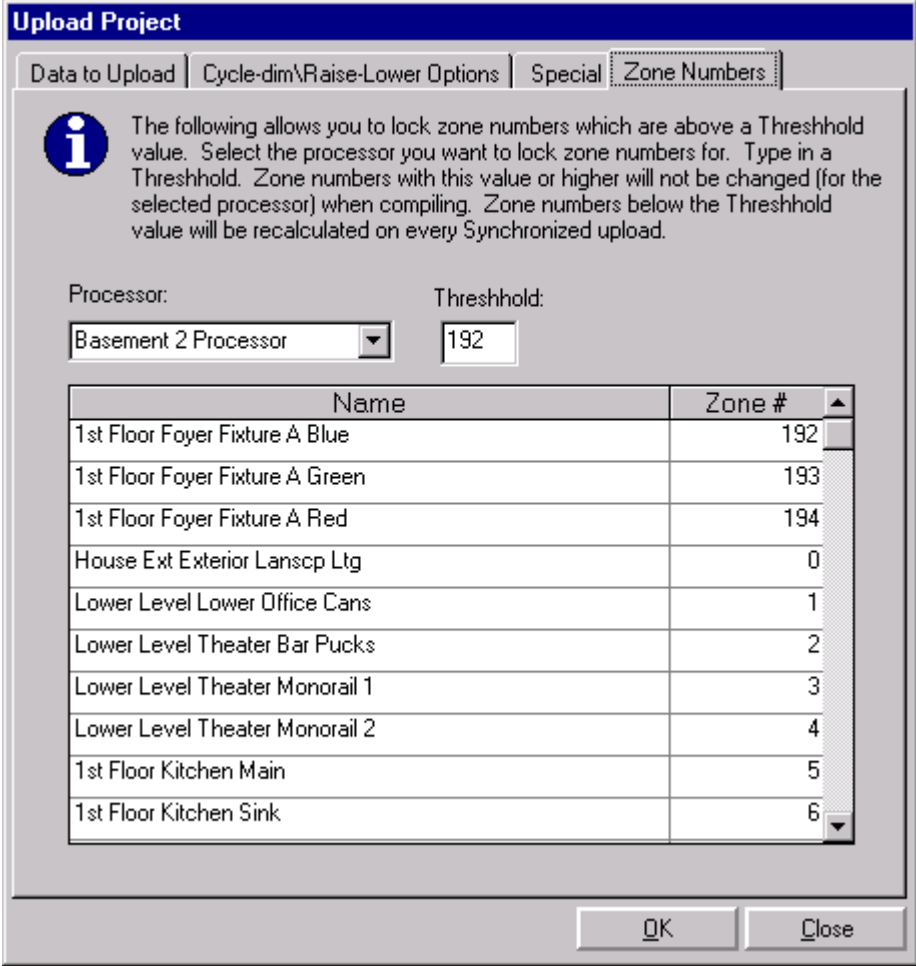
The LUT-DMX is supported in Interactive Version 4.0 and later and all Illumination Software Utilities. DMX channels are assigned to loads on the upload screen. When the upload screen is displayed, press Shift-F5 to get to the Zone Number tab (see picture below). Select the Processor that the LUT-DMX is connected to. Set the Threshold to the number that you want to start the DMX channels at. In the above example, we would use 192. In the grid, navigate to your DMX zones and give them the proper number. This number will be used to address the actual load.

So in the above example, Fixture A Red = 192, Fixture A Green = 193 and Fixture A Blue = 194. We will eventually need to set the DIP switches on the actual fixture to address 192.

Important Notes:
- **If the documentation for the fixture has address #s 0 to 511 then zone #s in the software map to the dipswitch addresses. However if the documentation for the fixture starts at 1 (addresses #1 to 512) then you need to set the fixture address to 1 more than in the software (192 in the software lines up to 193 on the fixture).**

- **Threshhold can not be set to 0 (must be 1 through 255).**

After the zone numbers have been assigned, press the "OK" button to start the upload. Once the upload is complete, it's important to save the database so that the zone numbers are saved and won't have to be entered in each time. It should now be possible to go into the Real Time Edit screen in the software and control all 3 zones (colors) of the fixture.

Programming

Each DMX device/fixture is different, so you will need to reference the instruction manual for the particular product you are using to determine how it gets programmed. Normally, there will be a lookup chart included with the device that will explain what values need to be sent to the device to accomplish specific tasks. If you are using a fixture that has 3 channels (Red, Green, Blue), you would program it as follows to turn on the Red to maximum saturation and leave the Green and Blue off:

Fixture A Red – 100%
Fixture A Green – 0%
Fixture A Blue – 0%

Typically, the "light level" corresponds to the amount of saturation for the color that the channel is assigned to.