



CK Application Notes

Controlling iW Fixtures with DMX or Ethernet-based Controllers

About Controlling iW Fixtures with DMX or Ethernet-based Controllers:.....	1
Why use DMX or Ethernet-based Controllers to Control iW Fixtures:.....	5

Since the introduction of the iW line of CK products, the Application Engineering Group has fielded numerous questions relating to the control of iW fixtures using DMX or Ethernet-based CK controllers. While the iW Scene Controller remains the standard means of iW control, many installations have utilized DMX or Ethernet-based controllers instead. This document describes the requirements and techniques for operating iW fixtures with non-iW controllers.

About Controlling iW Fixtures with DMX or Ethernet-based Controllers:

Q1) Can iW fixtures be controlled with a DMX controller (i.e., ColorDial or iPlayer2) or Ethernet controller (Light System Manager or Video System Manager)?

A1) Yes, provided that the data interface device (a PDS or Data Enabler) is an RGB unit, not an iW unit. The RGB interface can be either a DMX or Ethernet based.

Q2) What about using DMX/Ethernet controllers with an iW PDS or Data Enabler?

A2) A standard iW configuration involves a Scene Controller, an iW PDS or iW Data Enabler, and iW fixtures. iW interfaces only accept a proprietary protocol generated by the iW Scene Controller. Therefore, as a general rule, neither iW PDS units or iW Data Enablers can be used with DMX/Ethernet controllers.

The exception: Zone 0

When set to Zone 0, an iW PDS-150 will accept Zapi or Serial Addressing Software (SAS) commands. This functionality was implemented so that lights connected to a single iW PDS-150 could be given unique zone numbers (much like RGB light addresses). The firmware responsible for interpreting these commands will allow, in some cases, Zone 0 to be used for control of iW fixtures with DMX. Control devices with high frame rates, like the ColorDial, tend to work very well on Zone 0. The iPlayer2, on the other hand, cannot be used with Zone 0. Currently, the iW PDS-150 is the only iW interface with this capability.

Q3) How does DMX control iW fixtures?

A3) iW fixtures, like the RGB variety, incorporate Chromacore-based circuitry that enables the fixture to retain a light address which corresponds to 3 sequential DMX channels. RGB fixtures use all three channels – Red LEDs are controlled by the first channel, Green by the second, and Blue by the third. iW fixtures, on the other hand, use only two channels.

The **warm** LEDs are controlled by the first channel
The **cool** LEDs are controlled by the second channel
The third channel is not used

Note that for some older iW fixtures, the first channel controls half of the warm LEDs and the third channel controls the other half. Therefore, it is standard practice to send both the first and third channels the same value.

Q4) How would one use software like ColorPlay (designed for RGB lights) to control iW fixtures?

A4) An association between iW and RGB channel control can be made with regard to RGB show authoring software.

- The **warm** LEDs correspond to **red** values
- The **cool** LEDs correspond to **green** values

By adjusting the discrete saturation values of the **red** and/or **green** channels, one can vary the intensity of the **warm** and/or **cool** LEDs.

For example:

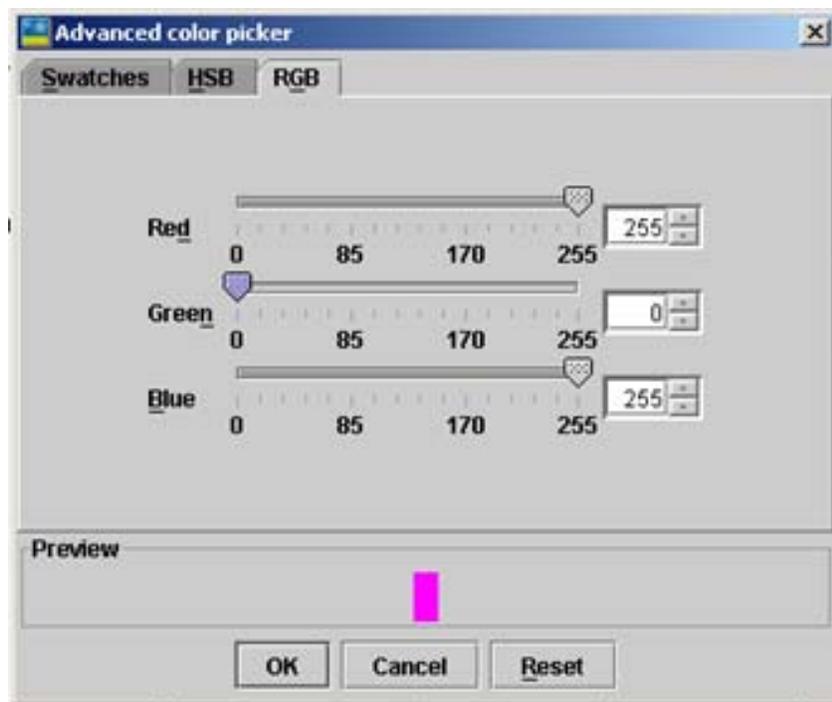


Figure 1: ColorPlay Advanced Color Picker

Using the Advanced Color Picker, the following values would result in the **warm** LEDs being at full intensity.

Red: 255 (full on Red)

Green: 0

Blue: 255 (repeat Red channel just in case the channel is used)

Likewise, if the Red, Green, and Blue channels are set at 255, **both warm and cool** LEDs will be on full. Typically the Fixed Color and Cross Fade effects are the most useful for writing shows in ColorPlay for iW fixtures.

Q5) What about authoring a show for iW fixtures using Light System Composer?

A5) Light System Composer, version 1.8 or greater, incorporates iW effects. In addition, RGB effects can be used as described for ColorPlay above.

Q6) The Scene Controller has 7 discrete Color Temperature (CT) levels. What DMX values correspond to each level?

A6) Below are the DMX values for the 7 Scene Controller CT levels. The values relate to the Scene Controller's maximum intensity setting and can be scaled down linearly for the lower brightness levels.

	Red Channel	Green Channel
Warm	255	0
	255	85
	255	171
Full	255	255
	171	255
	85	255
Cool	0	255

Note that Scene Controller values are stored on the iW interface (iW PDS-150 or iW Data Enabler). The Scene Controller sends the desired level (1 – 7) and the power supply decides the correct corresponding DMX values to use.

Why use DMX or Ethernet-based Controllers to Control iW Fixtures:

Below are some of the advantages afforded by DMX or Ethernet-based controllers when used with iW fixtures.¹

Integrated RGB and iW:

Probably the most significant advantage afforded by the DMX and Ethernet-based controllers is their ability to control RGB fixtures at the same time as iW fixtures. The integration of white and colored light fixtures is an innovative and increasingly popular method of creating dynamic lighting. By using CK DMX or Ethernet-based controllers, one can achieve an impressive range of colors and saturations.

Special triggering of light levels or color temperatures:

With a Light System Manager or iPlayer2, light levels and color temperatures changes can be programmed to coincide with a known event or a specified timeline using Color Kinetics' show authoring software.

More than 4 independently controllable zones:

An iW Scene Controller can only control four (4) discrete zones. By using a DMX or Ethernet controller and by creating shows for groups of iW fixtures, however, practically any number of "zones" can be triggered either simultaneously or separately using an Ethernet Keypad (LSM only) or a 3rd party RS-232 triggering device.

Triggering with contact closures:

The iPlayer2 (DMX) can be triggered with RS-232 commands or by dry contact closures (when used in conjunction with the CK Interface Relay Board).²

¹ The ColorDial, Synchronizer, and MultiSynchronizer are pre-programmed controllers. The advantage of these controllers when compared to the Scene Controller is ease of operation.

² The LSE can be triggered only by a Serial (RS-232) interface (unless a CK Ethernet Keypad is used). Using the iW Translator (<http://colorkinetics.com/support/datasheets/iwTranslator.pdf>), triggering of discrete Scene Controller brightness and color temperature levels can be achieved.