

Chroma Systems Solutions, Inc.

Instructions for Paralleling 63110A Loads in LED Mode

63110A & 63113A LED Load Modules

Keywords: 6310A series loads, LED, Parallel Load, 63110A, 63113A

Title:

Instructions for Paralleling 63110A Loads in LED Mode

Product Family: 6312A, 6314A, 63110A, 63113A

Scope

The purpose of this Application Note is to explain how to set up 2 or more LED load modules in parallel when using the LED Mode function on the loads. This is required when an LED Driver Maximum power exceeds the maximum power rating of the 63110A or 63113A load modules.

Definition

LED Mode is a load function found only on the Chroma 63110A and 63113A Load Modules. It simulates the turn on and operating load conditions of a typical LED Array when powered from a Constant Current type LED Driver. Parameters include V_o = LED Array's optimum operating voltage

I_o = LED Array's optimum operating current

V_f = The LED Array's forward voltage level where the diodes begin to conduct current

R_d = The Resistance based on the delta voltage between $V_o - V_f$ and the I_o calculated as $R_d = (V_o - V_f) / (I_o \text{ max} - I_o \text{ min})$

$R_d \text{ coeff.}$ = calculated by $R_d \text{ coeff} = (V_o - V_f) / V_o$

Setting two units in parallel requires some additional considerations in the parameters as described in the instruction below.

Example

The 63110A Load module has 2 independent Load Channels in 1 module. Each Channel has a maximum power rating of 100Watts. Many LED Drivers on the market are rated under 100 Watts and will only require 1 Load Channel to operate. There are several LED Drivers also in the 150W to 200Watt Range.

If the customer has a 63110A load he can parallel the 2 Channels to increase the power from 100 Watts to 200 Watts. The following instructions show the step by step settings to achieve this. If the Customer has a 63113A Load module it has a Single Channel rated for 300 Watts. If the LED Driver exceeds the 300Watts rating you can also parallel 2 of the 63113A Load Modules to achieve 600Watts maximum.

Below is an example of a 150Watt LED Driver with the following ratings and how to set the 63110A load channels in parallel.

1. LED Driver Sample is a Philips PN LED-INTA-0530C-280-DO Output is a Constant Current 0.53Amps with a Output Voltage Range of 120-280Vdc.
2. The load and mainframe we are using is a Chroma 6312A Mainframe with 63110A Load Modules as shown below.

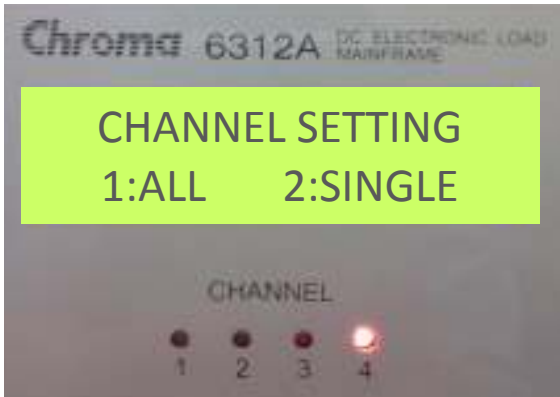
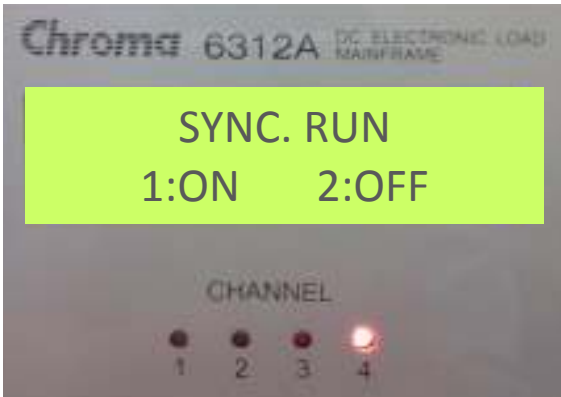




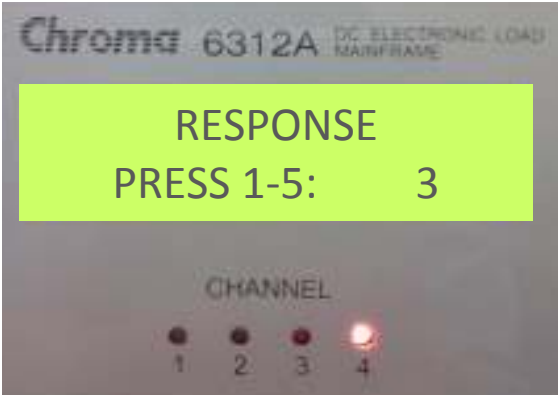
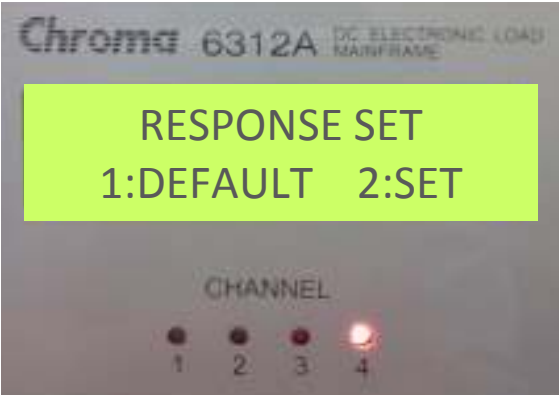
3. Prior to using the 63110A or 63113A LED Load in parallel you need to set the configuration properly.

Press the CONF button and using the arrow keys scroll through the setting until you find “SYNC RUN” and select ON and press enter.

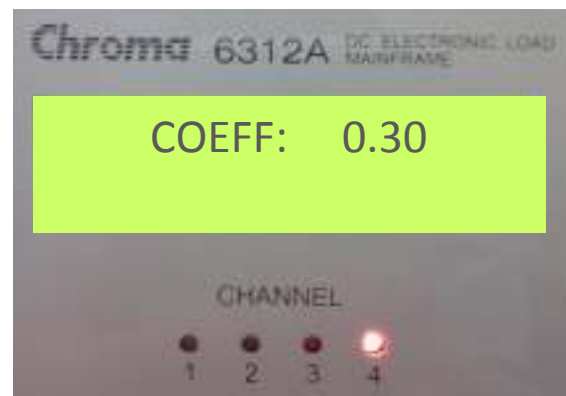
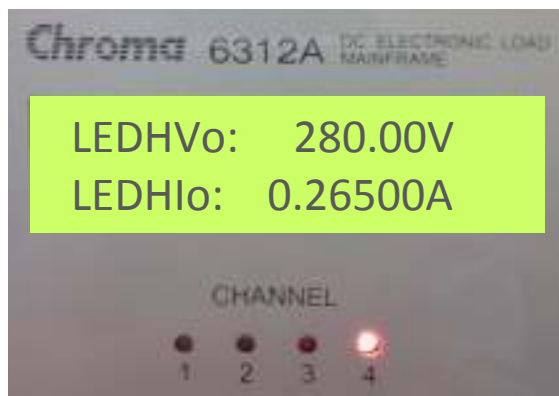
Then continue scrolling through the CONF and find “CHANNEL SETTING” and select ALL. See the Screen examples below



- 4. The Response setting may need to be set to insure the LED driver and LED Load does not oscillate. Chroma offers 5 settings for the Load response time ranging from 3kHz to 30kHz. The default setting is 3, or you can select the SET option and set the response from 1-5. With 1 being 3kHz and 5 being 30kHz bandwidth.



5. The current rating of the LED driver must be divided by the number of loads in parallel and then set as the LEDHlo or LEDLlo on the 6312A or 6314A controller. In this example the Io rating of the LED Driver is 0.53 amps so the Io setting would be divided by 2 and the Io setting on the 2 loads would be 0.265. Using the Rd coeff setting the Vo can be set to the minimum or maximum Voltage defined in the LED Driver Vo range, or any value in between
6. Set the Rd or Coeff or Vf the same on both loads.



7. The other configuration setting pertaining to LED mode can be set as defined in the 6310A User Manual.

8. After all the parameters are set you can turn the load output ON and then turn on the LED Driver. Using the L/R selection button on the front of the load module you can select both the R and L channel measurements if both the R and L led are lit then the display will show both measurements. Using the MEAS button on the front of the Load module you can select Voltage, Current , or Power reading to be displayed. Below shows both the L and R load channels displaying Voltages on each.

