



GH1/GH2/GH3 Dual Camera Controller Adapter User's Guide

Thank you for purchasing our controller product. The following information will help you successfully connect this controller board to your cameras and get it running in your application.

Overview.

This controller board allows the user to simultaneously control two Panasonic Lumix GH1/GH2/GH3 cameras. The user can simply press the on-board buttons to control the cameras connected to the board. In addition, the controller contains a time lapse feature to allow unattended recording on a specific time schedule.



Using the Controller in Embedded Applications

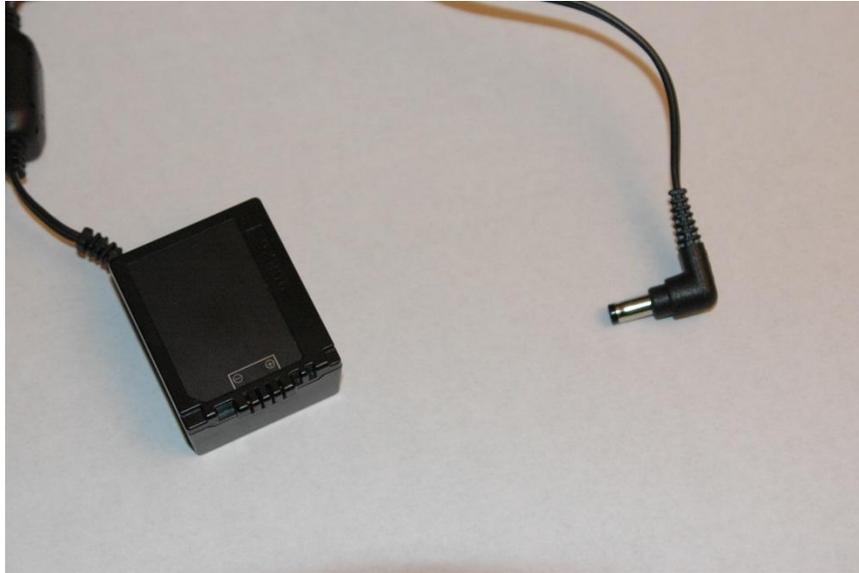
Setting Up

Using the required cables, connect the controller board to the cameras that are to be controlled. The controller requires three separate connections for each camera – Power Control, Remote Control, and Video Input. These connections are described below:



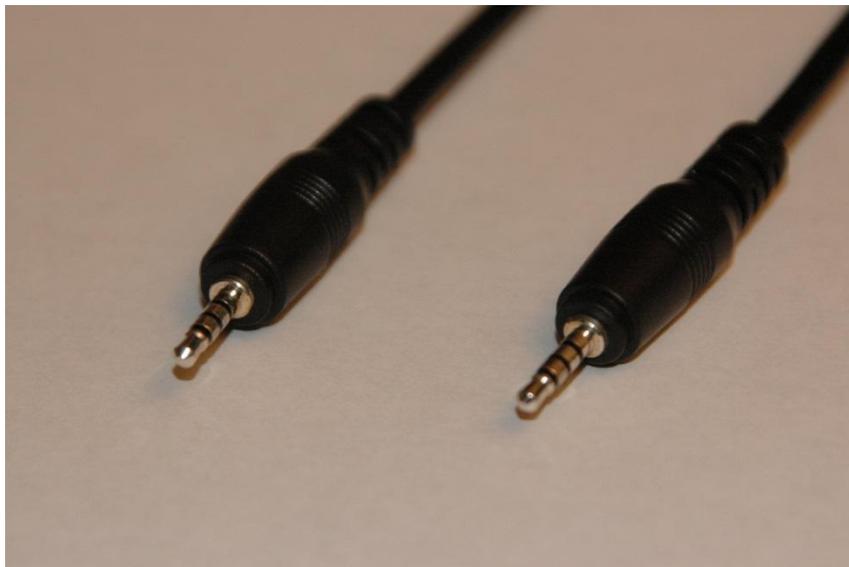
Power Control to Cameras

This jack should be connected to each camera's DC power supply. The controller board simultaneously controls the power to both cameras when the Power Control button is pressed on the controller board. Two separate cables are required to connect both cameras. The "block" end goes into the battery compartment on the GH1 and the "plug" end plugs into the right or left power output jack on the controller board.



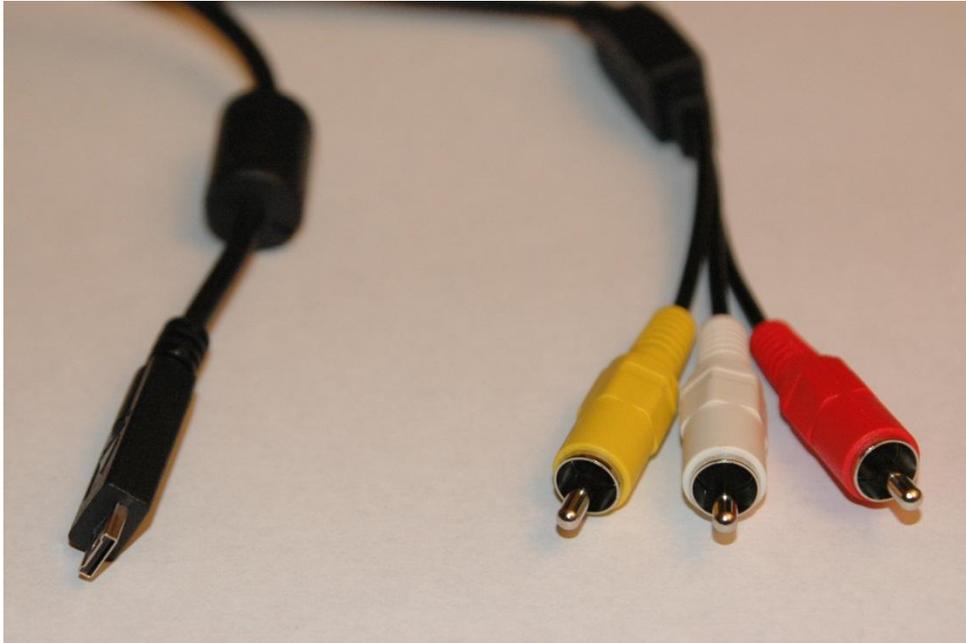
Remote Control to Cameras

This jack should be connected to each camera's remote control jack. This connection is used to simultaneously control the focus and shutter functions in the both cameras connected to the controller. Two cables are required – one for each camera.



Video In from Cameras

The Video In jack is connected to the composite video output on each camera. This allows the controller to monitor and display the difference in the video sync signals between the two cameras connected. The black plug end connects to the camera's composite video out connection. On the other end of the cable, connect the yellow plug to the video in jack on the controller board. Two cables are required for connection of both cameras.



Connecting to External Power

The controller board comes with a power adapter cable that connects to the camera's DC power supply to the controller board. Plug this cable into the camera's power adapter and then into the controller board in the Board Power In.

Optional : Connecting to buttons mounted off the controller board

To facilitate a wide range of board mounting options, we have included a header on the board that can be used to connect remote momentary button switches mounted off the controller board for camera control. This allows the user to optimally position these control buttons (Power, Focus, Shutter) in the product housing, enclosure, or other type of case being configured.

The button header is located in the lower right hand edge of the controller board (see the photo on page 1) and is designated as:

POWER	FOCUS	SHUTTER	GND
Pin 1	Pin 2	Pin 3	Pin 4

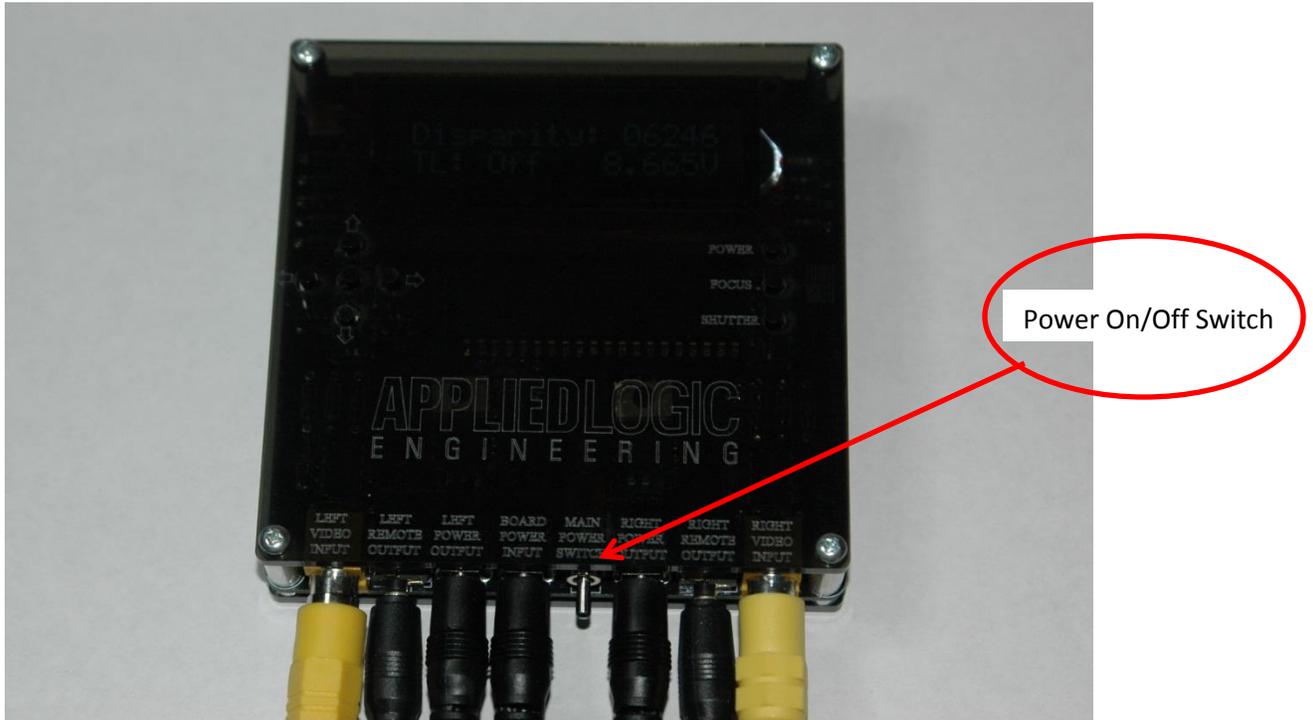
To connect to this header, solder a wire from the function desired (i.e. POWER) to a momentary contact switch. Solder the other side of the switch to the GND pin on the header. Repeat the process for any or all of the function pins.

Pressing the switch will activate the desired function in the same way that the button mounted to the board works.

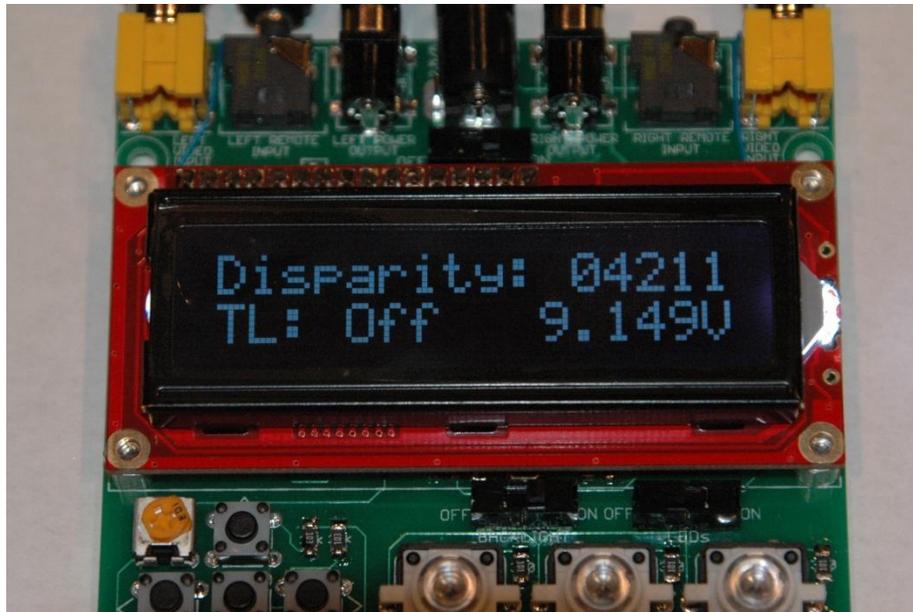
Power On and Initial Display

Before powering the controller board on, make sure that the cameras being controlled are connected via the necessary cables and that the DC power source is also properly connected to the controller board.

Power is applied to the board by sliding the Power switch down (see below):



When power is applied to the controller board, the LCD will display something similar to the following:



On the top line of the LCD, the video sync disparity between the two cameras is displayed. This is the amount of time (in microseconds) between the video sync signals that are being monitored by the controller board. If the LCD is showing **Disparity: -----**, make sure you press the POWER button to turn the cameras on. Also, it may be that one or both of the cameras are not properly configured to output its video sync signal. This can be corrected by pressing and holding the “trashcan” icon button on each camera for >5 seconds, which commands the camera to output the video signal.

On the second line of the LCD, the time lapse function status is shown.

Also on the second line of the display, the current voltage level of the DC input is displayed. This is useful information if you are powering the controller board and cameras from a battery supply.

Operating the Function Buttons

Pressing the function buttons on the controller board will simultaneously send the designated command to the cameras connected to the controller.

The buttons on the board are defined as follows:

Power

When the cameras are properly connected and the board is powered on, pressing the Power button will simultaneously turn power on to both cameras. If the cameras are on when this button is pressed, the controller will simultaneously turn power off to both cameras.

Focus

When the Focus button is pressed, the controller will simultaneously activate the autofocus function on both cameras.

Shutter

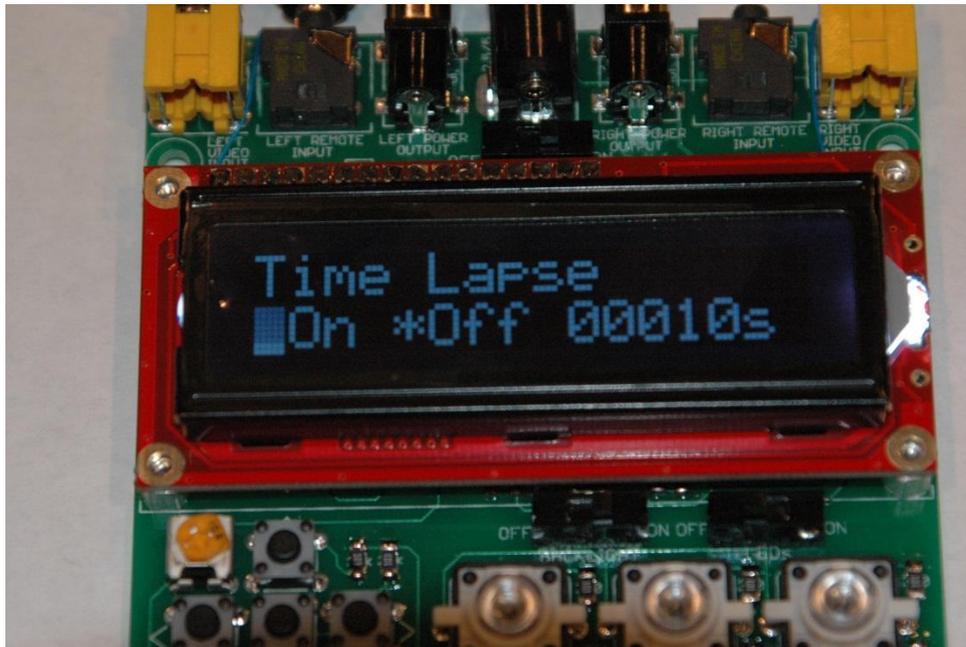
When the Shutter button is pressed, the shutter function is activated on both cameras simultaneously. This will either cause a photo to be taken or for a video to be recorded, depending on the configuration of the camera.

Time Lapse Operation

The GH1 controller board can be used perform time lapse photography in an unattended mode.

Setting the time lapse interval

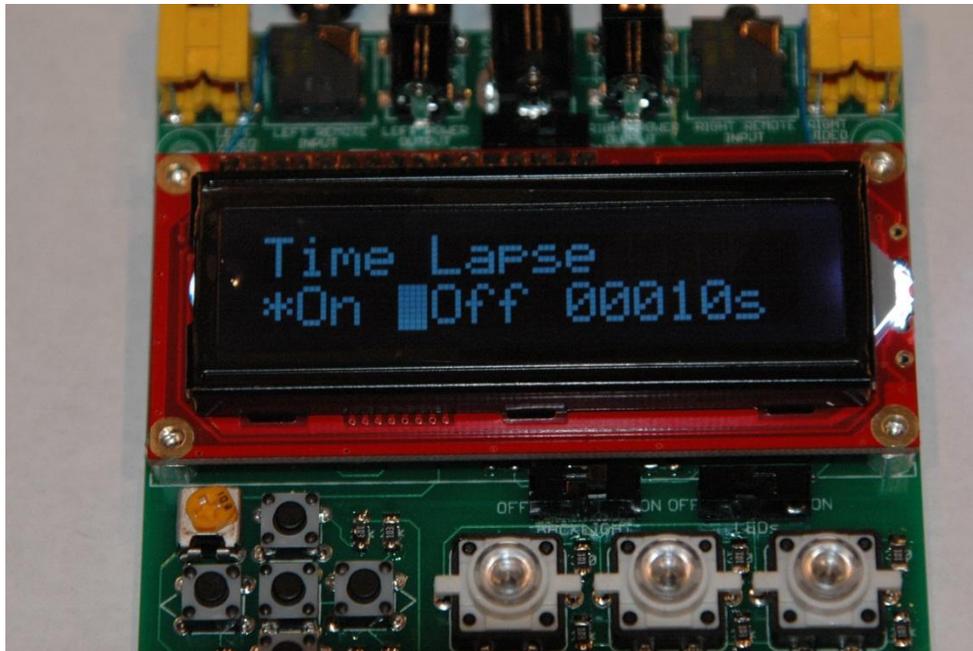
To set the time lapse interval (the amount of time between photos), press the RIGHT cursor control button (on the left side of the controller board). The LCD will then display:



On the bottom line of the LCD, the controller will display the time lapse interval in seconds. Press the RIGHT cursor button until you position the cursor over the time value digits. Each digit can be increased (by pressing the UP cursor button) or decreased (by pressing the DOWN cursor button). For example, the display above shows a 10 second time lapse interval.

Activating the time lapse function

To activate the time lapse function, press the left or right cursor keys to position the cursor to the left of the ON indication on the LCD. Press the ENTER cursor key (the center key) to activate the time lapse function. The LCD will then display an asterisk (*) to the left of the ON indicator.



Monitoring the Time Lapse function

After activating the time lapse function, press the LEFT cursor key to return to the main display on the LCD.

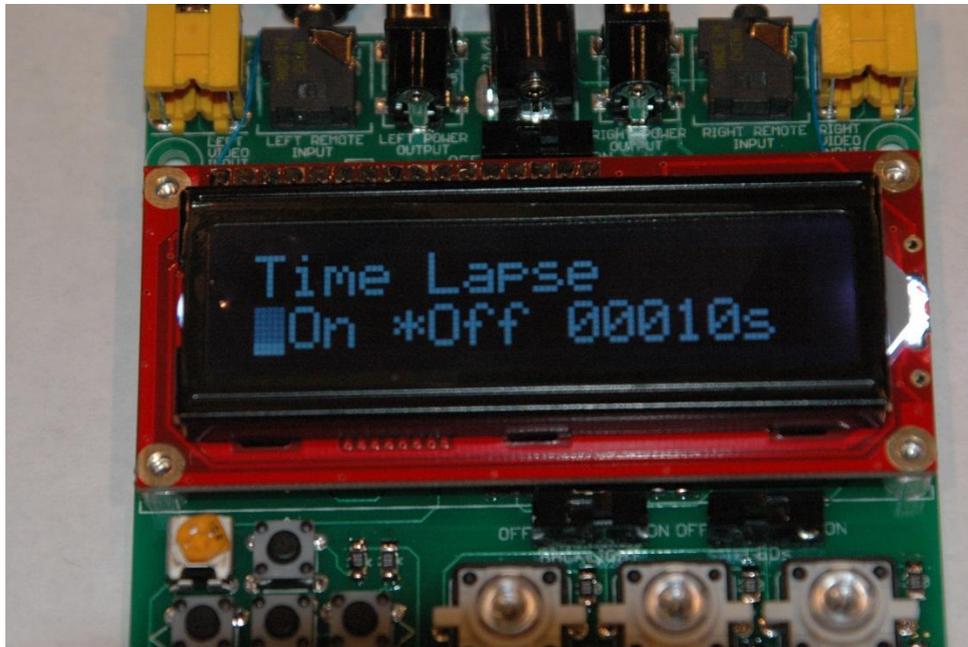
While the time lapse operation is active, the LCD will display the count down time (in seconds) until the shutter will trigger (see below):

[]

When the time counts down to zero, the controller board will trigger the shutter on both cameras. It will also restart the time lapse interval and the process will repeat. This continues until the controller is either powered off or the time lapse function is manually deactivated (see below).

Disabling the Time Lapse function

To disable the time lapse function, press the LEFT cursor key to display the time lapse function. Position the cursor to the left of the OFF indicator and press the ENTER cursor key (see below):



This causes the time lapse function to suspend.

Troubleshooting

- 1) No power to the controller board

Solution: Check to insure that the DC Power supply is properly connected to the board. The power supply must output 9v DC (or slightly greater) with the center pole on the connector being positive (+). Damage can occur to the board if this is improperly wired.

- 2) LCD is difficult to see

Solution: The LCD contrast setting is set by the factory, but you can manually adjust it by turning the potentiometer located near the cursor control buttons. This will adjust the character contrast on the LCD.

- 3) The LCD is showing **Disparity: -----** instead of the disparity time value

Solution: 1) Make sure you press the POWER button on the controller when the cameras are connected. 2) One or both of the cameras is not properly configured to output its video sync signal. This can be corrected by pressing and holding the “trashcan” icon button on each camera for >5 seconds, which commands the camera to output the video signal.