

## BG1 Complete Board - Installation Instructions (Revision 1)

Revised 2/9/05

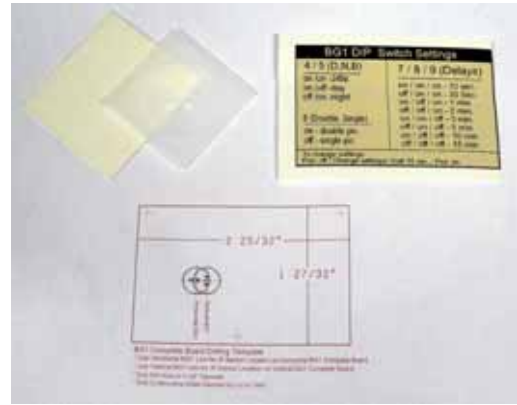
**The BG1 Complete Board** gets its name from the fact that the board contains a state of the art motion detector circuit and a trail camera micro controller all in one complete unit. The trail camera micro controller, or PIC chip, contains programmed code to operate the **8** most popular camera setups used by homemade trail camera enthusiasts. In using the BG1 Complete Board to build your own homemade trail camera or surveillance system, you can rest assured you selected the best trail camera controller available.

- Single PIC micro controller operates 8 different camera setups most commonly used in trail cameras. [628-1 \(BG1\) PIC Chip](#)
- Day / Night / 24 Hour selectable settings.
- Day / Night calibration to fine-tune onboard photocell.
- Single / Double / Movie selectable settings.
- Eight Delay selectable settings.
- Onboard 9 Volt battery holder preinstalled.
- Single turn sensitivity adjust from 30' to 90'.
- 3 minute Automatic Walk Test Mode after warm up.
- Auto reset of Walk Test Mode duration after each test trigger.
- Automatic switch to Normal Operating Mode from Walk Test Mode.
- LED sequenced event counter programmed into PIC chip.
- Alternate LCD counter hookup via onboard terminal block.
- Most power efficient Dipswitch complete board available. (*Idle current measured at 40uA*)
- Power supply control switch.
- Camera connector strain relief hole for servo connectors.
- Includes Lodiff fresnel lens, heavy duty carpet tape square, BG1 DIP switch label, and drilling template.
- **(New Optional)** BG1 Mounting Kit which includes a Sony shutter assembly, micro 3-wire servo connector, for board to camera connection, and all mounting hardware.
- Compact overall finished size utilizing surface mount electronics design.



Finish size: 2 7/8" (L) by 1 7/8" (H)

The BG1 Complete Board comes with Lodiff fresnel lens, heavy duty carpet tape square, BG1 DIP switch label, and drilling template.

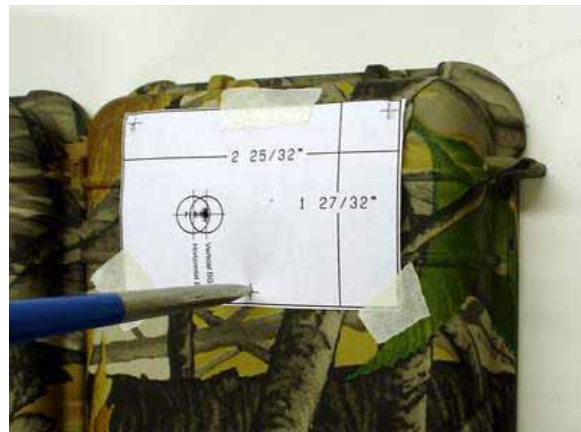
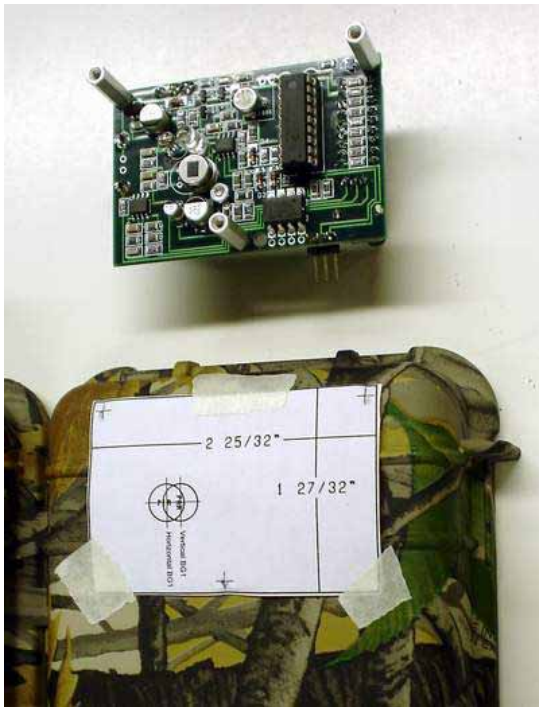


**BG1 Complete Board Install Procedure:** (Items in **Red** are not included with the BG1 Complete Board.)

1. Locate the paper template included with the parts bag.
2. Cut the template out with a **scissors** on the outline of the board.
3. **Tape** the template to the exterior of the enclosure with the printed side of the template up.

\*(This is the side of the enclosure that will be the front of your trail camera and which the IR sensor will face.)

4. **Center punch** the 3 x-marks and the proper fresnel lens center mark, noted on the template.



\*(Double check your IR sensor orientation and use the correct center mark for your IR sensor) (Vertical and horizontal center is marked on the template)

5. **Drill** pilot holes at punch marks and increase the hole sizes to the following.
  - a. (3) Mounting holes finish size = (7/64")
  - b. Fresnel lens hole finish size = (1 1/8")



6. Install the BG1 Complete Board with the optional **BG1 Mounting Kit**. (3) Hex aluminum standoffs, (3) plastic washers and (6) machine screws are used in the three 7/64" holes you drilled. Double check that the IR sensor is centered in the PIR sensor hole and at the proper focal distance from the intended mounting surface of the Lodiff fresnel lens. The stainless machine screws can be used to mount the standoffs to the BG1 Complete Board or to mount the standoffs to the trail camera enclosure. Vice versa for the hex head machine screws. The (3) plastic washers are used to adjust the focal distance to the proper

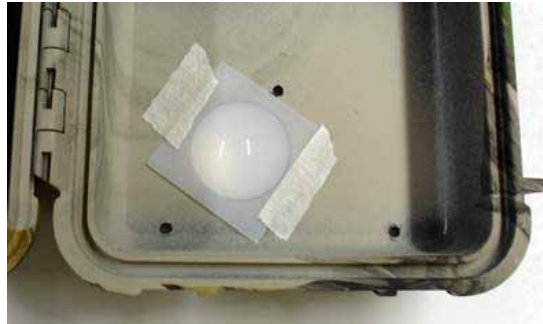


.65" (5/8") distance between the IR sensor 'window' and the mounting surface for the Lodiff fresnel lens. Double-check this focal distance with and without the plastic washers. Some enclosures have concave covers, so the washers are not needed. The proper sequence to install the BG1 Mounting Kit is machine screw thru the mounting hole of the BG1 Complete Board, thru the plastic washer, snugly tightened to the aluminum hex standoff. Take care to not over tighten the screws. The standoffs are aluminum, so the threads are easily stripped.



\*(Be certain the enclosure's interior surfaces around the holes are flat and level with the edge of the holes - grind the surface if needed.)

7. Remove the BG1 Complete Board and locate the .65 FL fresnel lens. Temporarily center and **tape** the fresnel lens in place for testing. Groove side of fresnel lens towards inside of enclosure.



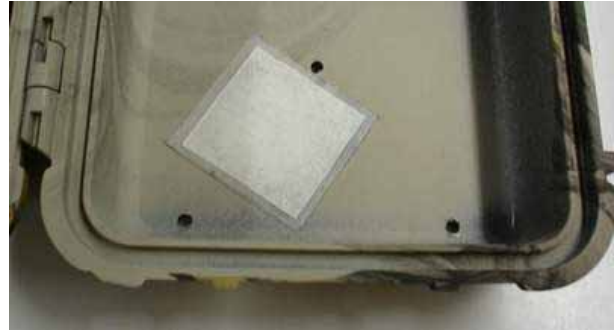
8. Reinstall the BG1 Complete Board behind the fresnel lens.



9. Install a **9 volt battery** in the battery holder and test the board for functionality and sensor alignment to the fresnel lens using the appropriate PIC chip instructions:
  - o [628-1 \(BG1\) PIC Chip](#)
10. Carefully lift the tape and reposition the fresnel lens if the lens focus is in need of adjustment.
11. Once satisfied with the lens placement, remove the corner screws from the BG1 Complete Board and lift the board from the enclosure.
12. Firmly **tape** one edge of the fresnel lens in place and remove all remaining tape around lens.
13. Flip the lens using the taped edge as a hinge and apply the double-sided heavy-duty carpet tape over the 1 1/8" fresnel lens hole from inside the enclosure.
14. Cut the 1 1/8" circle center free of carpet tape using a **single edge razor** or an **Exacto Knife**.



15. Remove the backing from the remaining carpet tape and carefully hinge the fresnel lens into the exposed tape.
16. Remove the "hinge tape" and excess carpet tape by cutting along the edges of the fresnel lens.



17. Cut a square piece of masking tape slightly smaller than the fresnel lens and center it over the lens on the inside of the enclosure. The masking tape protects the lens while sealant is applied.
18. Apply **silicone sealant** along the 4 edges of the lens on the inside of the enclosure.

19. Allow sealant time to dry, remove the masking tape square and reinstall BG1 Complete Board with the machine screws.



\*(Be careful not to drip sealant onto lens's center - work around the lens staying to the outside, not across the lens.)

## BG1 Complete Board - Camera Connections:

Locate the camera connection solder pads on the BG1 Complete Board.

Camera Connection  
Solder Pads

Counter Terminal Block



- Solder pads are marked:
  - **S** = Shutter wire solder pad
  - **C1** = Common wire solder pad
  - **R** = Refresh or Power wire solder pad
  - **C2** = Common wire solder pad.
- Either **C1** or **C2** can be used for the common, users choice.
- The 1/8" hole located next to the lower standoff is a strain relief hole for the common servo wire camera connector. Passing the wires thru the hole and then soldering them to the solder pads will remove the strain on the solder pads and protect the wiring from pulling off or disconnecting from the BG1 Complete Board.
- The Counter Terminal Block is used with the optional HH1 Counter. The BG1 Complete Board is marked:
  - **+** = HH1 Counter VCC+
  - **#** = HH1 Counter Signal
  - **-** = HH1 Counter Ground

Additional Notes: