



CMUcam4

Testing Guide v1.02

For CMUcam4 v1.02 Firmware

Getting Started

1. You will need the following two items to test the CMUcam4
 - A **4V to 9V DC** external power supply capable of delivering at least **250 mA**
 - This can be from an **Arduino**, **FTDI Breakout Board**, **FTDI Cable**, or **Wall Wart**
 - An **NTSC TV** and an **RCA Cable**
2. Please follow the steps below to setup to test the CMUcam4
 - Connect the **NTSC TV** to the CMUcam4's **RCA Coaxial Jack** using the **RCA Cable**
 - Connect the external power supply to the CMUcam4's **DC Barrel Jack** (or other power ports)

The **green power LED** should illuminate once you connect the external power supply to the CMUcam4. After about **2 seconds**, the **red auxiliary LED** should illuminate to indicate the CMUcam4 is ready for action. If the **green power LED** does not illuminate please double check the external power supply connection. If the **red auxiliary LED** does not illuminate please go to [the CMUcam4 forums](#) for help.

Testing Procedure

1. Press and hold the **reset button** on the CMUcam4
2. Press and hold the **user button** on the CMUcam4
3. Release the **reset button** (do not release the **user button**)
4. Wait until the **red auxiliary LED** turns on (**2 seconds**)
5. Wait until the **red auxiliary LED** starts blinking at **10 Hz** and then release the **user button**
 - The TV should turn on (you should see a splash screen displayed on the TV)
6. The CMUcam4 will now adjust to the lighting conditions for the next **5 seconds**
 - Do not place the object you want to track in front of the CMUcam4 for the next **5 seconds**
7. Wait until the **red auxiliary LED** stops blinking at **10 Hz**
 - The CMUcam4 is now done adjusting to lighting conditions
 - The pan and tilt servo pins should output **1500 μ s** pulses at **50 Hz**
8. Place the object you want to track in front of the CMUcam4 and press the **user button**
 - If the **red auxiliary LED** begins blinking at **10 Hz** examine the **OV9665** camera module connection
 - The **OV9665** camera module may be damaged and most likely needs to be replaced
9. You should now see the tracked object (or similar) displayed on the TV – otherwise ask for [help](#)
 - The pan and tilt servos, if connected, will also try to drive the camera towards the tracked object
10. Please try this procedure with different objects in different environments to see what works the best