

Gen7 Networking Information

This document is primarily intended for network administrators and users who need to configure specific network settings.

The Gen7 Timer and the control laptops need to sit on the same physical network. They do not necessarily need to all be on Ethernet. The laptops can be hooked up via Wi-Fi as long as the Wi-Fi for the laptops and the Ethernet for the timers share the same network. This is necessary to facilitate the auto-discovery protocol where the software on the laptops automatically finds the timer.

The timer has its Ethernet MAC address printed on a sticker on the bottom of the unit if this is necessary for DHCP registration.

If there is a DHCP server present on the network, the Gen7 timer will receive its IP configuration from that server. If no DHCP server is present, or if no address is returned, the timer will self-assign an Automatic Private IP Address in the 169.254.xxx.yyy range. This range coincides with the Automatic Private IP Address range that Windows uses.

Because both the laptop and the Gen7 Timer default to Automatic Private IP Address, you can plug an Ethernet cable directly between the two.

See below for information on configuring static IP addresses.

Firewall Exceptions

Here are the open TCP/UDP ports for the various services run by the timer:

TCP 22: SSH (used for diagnostics and maintenance)

TCP 7105: Primary Gen7 Control Service (Encrypted with authentication)

UDP 5353: Zeroconf Networking (used for auto-discovery)

These ports need to be unblocked within the subnet but do not need to be routed beyond the subnet.

For security purposes, the SSH service does not allow a remote root login and the password for the user login is randomly assigned at the factory and is not shared by any other Gen7 device.

The Gen7 software installation package automatically enters firewall exceptions for the local Windows firewall.

Gen7 Network Config Utility

Starting with v1.3.0 (June 2019), CTS provides a Network Config Utility to set various network options for the Gen7 Timer. This program is installed when the main Gen7 Swimming installer is run. It requires a USB connection to the timer.

Here are the steps required:

1. Set up Gen7 Timer with nothing but the power cable connected
2. Turn on the timer and let it boot completely (to the pulsing sweep)
3. Connect the laptop and timer via USB connected to the monitor port on the timer (NOT THE MM PORT)



4. Start "Gen7 NetworkConfig" located in the "Gen7 Swimming" folder in the start menu

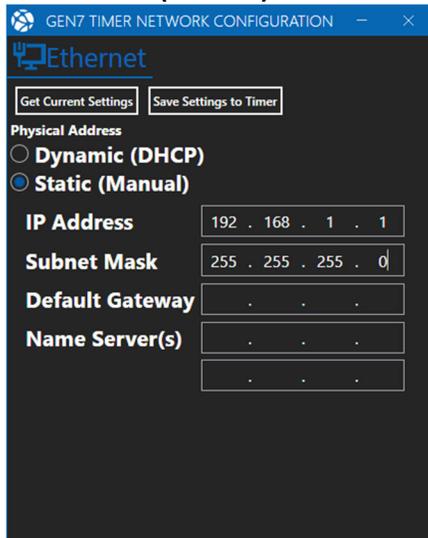
For the latest version of these instructions, and additional user instructions, go to the customer service section of www.coloradotime.com

Email: support@coloradotime.com

Phone: +1 800-287-0653 or +1 970-667-1000

F1066/202201

5. Select **Static (Manual)** and enter the following values:

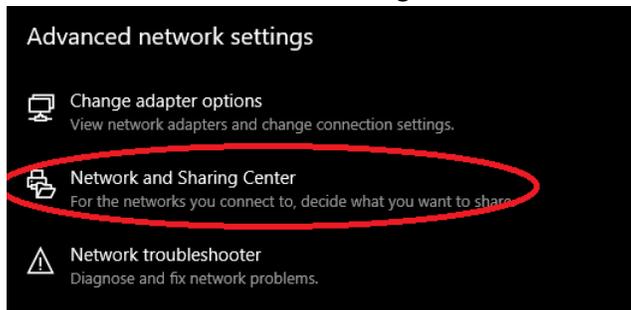


- a. IP Address and Subnet Mask are required. Default Gateway and Name servers are not
6. Click **Save Settings to Timer**
 7. Close the Gen7 Timer Network Configuration utility
 8. Disconnect the USB cable
 9. Connect the timer and laptop via Ethernet
 10. If you need to set a static IP for the laptop, follow the steps outlined below.
 11. If, after starting the Gen7 Swimming software, the timer is not automatically found, select **Manual** and enter the timer's assigned IP address

Below you'll find helpful information for changing Windows IP Settings. Please note, changing your network settings can prevent you from accessing the internet.

Settings Windows to use an Automatic Private IP Address

1. Open the Settings App (click the Gear Icon  in the Start Menu)
2. Select "Network and Internet"
3. Under "Advanced network settings" click **Network and Sharing Center**



4. In the **Network and Sharing Center** window, click the link that says "Ethernet"

Access type: No network access
Connections:  Ethernet

For the latest version of these instructions, and additional user instructions, go to the customer service section of

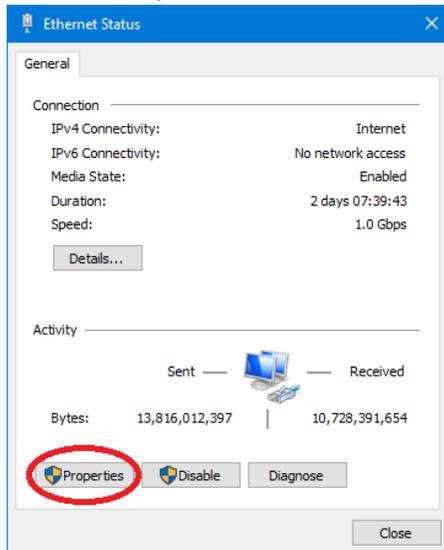
www.coloradotime.com

Email: support@coloradotime.com

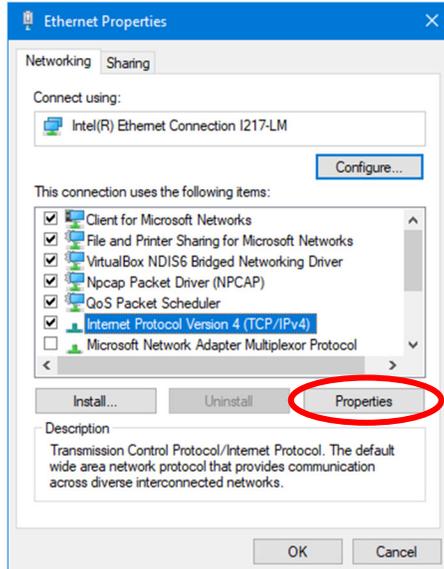
Phone: +1 800-287-0653 or +1 970-667-1000

F1066/202201

5. Click the **Properties** button

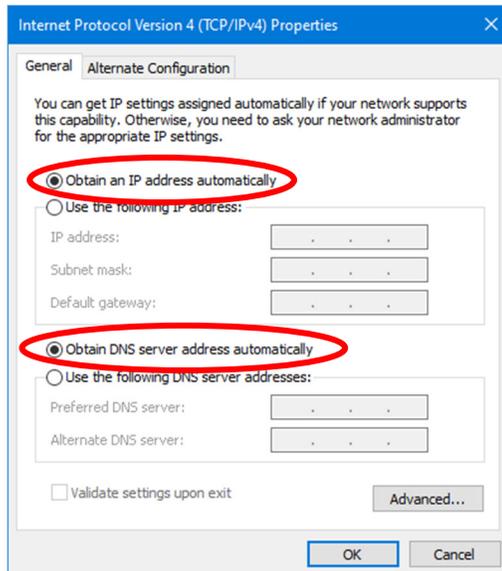


6. Select the item named "Internet Protocol Version 4 (TCP/IPv4)"

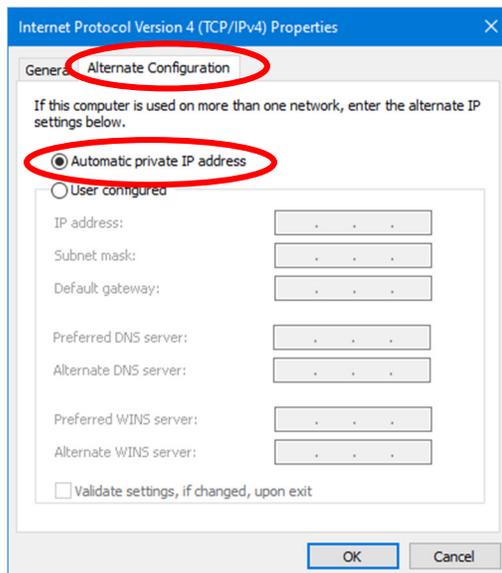


7. Click **Properties**

- Make Sure “Obtain IP address automatically” and “Obtain DNS server address automatically” are both selected.



- In the tab labeled “Alternate Configuration”, make sure “Automatic private IP Address” is selected.



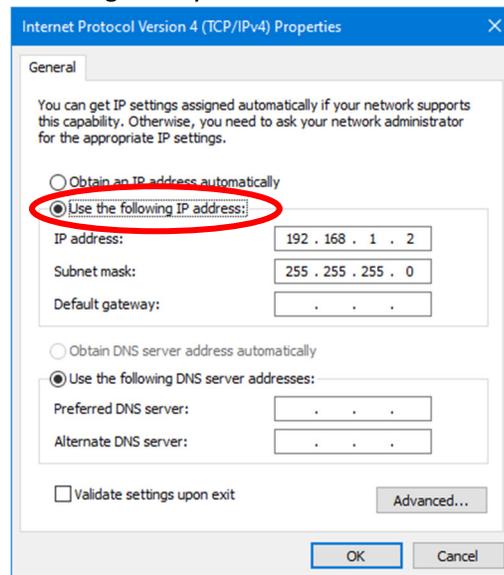
- Click “OK” on all open windows.

Settings Windows to a Static IP

Static IP addresses can help increase the reliability of the network connectivity with your Gen7 Timer. When set to static IP addresses, both the timer and the laptop are immediately ready for connection (as opposed to needed 30+ second for the automatic private assignment to take place).

Generally, your IT department will provide you with IP addresses for both the timer and laptop. If you do not have an IT department, you should proceed with caution. Changing your network settings can prevent you from accessing the internet.

1. Follow steps 1-7 above
2. Make sure “Use the following IP address” is selected
3. Enter the IP address and Subnet mask provided by your IT department
 - a. Default gateway and DNS servers are not required



4. Click “OK” on all open windows.

Recommended Addresses for a standalone Gen7 network

If you want to create a small network just for your Gen7 Timer and laptop, CTS recommends the following IP addresses:

- Gen7 Timer: 192.168.1.101
- Laptop: 192.168.1.102

Set both devices to use a subnet mask of 255.255.255.0.