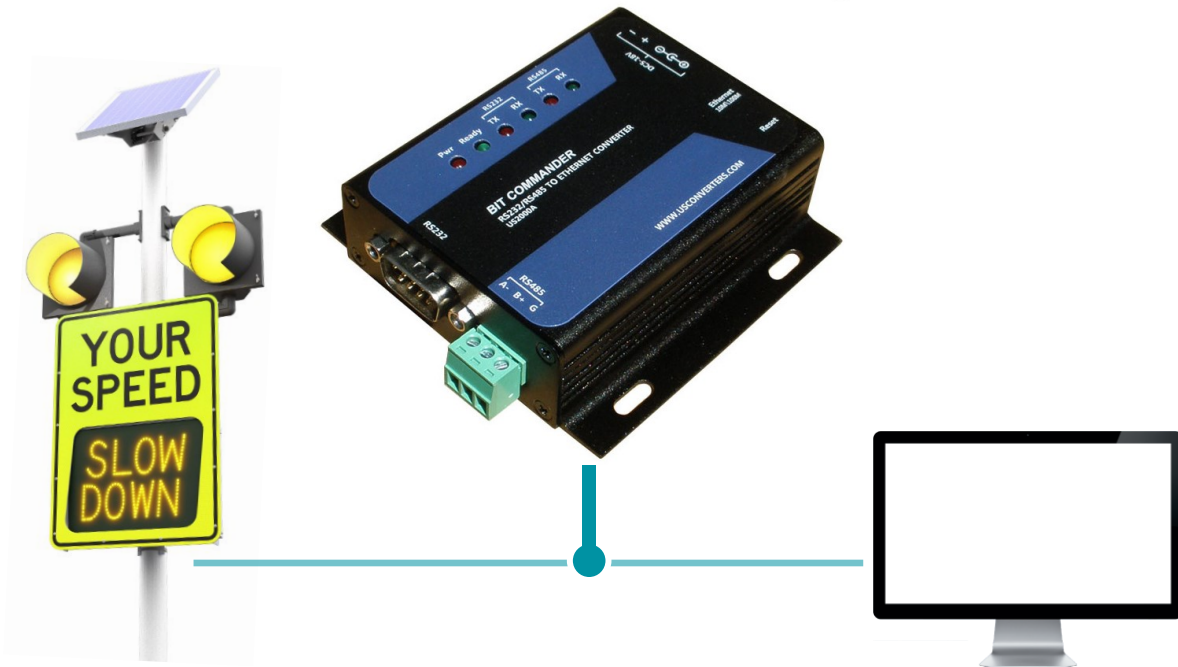


For the SPEEDCHECK-15/18



87883_INSTALL-GUIDE_SPEEDCHECK-15-18-Serial-to-Ethernet_RevG

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1.0 Warnings and Precautions

The following symbols indicate important safety warnings and precautions throughout this guide:



WARNING indicates that serious bodily harm or death may result from failure to adhere to the precautions.



CAUTION indicates that damage to equipment may result if the instructions are not followed.



NOTE suggests optimal conditions and provides additional information.

1.1 Warranty Disclaimer

This guide will familiarize you with the installation of Carmanah's SpeedCheck Serial to Ethernet Converter for SPEEDCHECK-15/18. Failure to comply with the use, storage, maintenance, installation or placement instructions detailed in this guide could void the warranty.

1.2 Standards

Perform all installation, wiring, grounding and maintenance in conformance with local building and electrical codes. Adherence to the National Electrical Code (NEC) is mandatory to comply with any certification markings. Non-adherence to code may void the warranty.

1.3 Safety and Usage Precautions



Use extreme caution when handling the batteries as they can generate hazardous short-circuit currents. Remove all jewelry (bracelets, metal-strap watches, etc.) before handling the batteries.



Solar panels produce DC electricity when exposed to light and can therefore produce an electrical shock or burn. To render solar panels inoperative, remove them from sunlight or fully cover their front surface with an opaque material.



Before lifting any heavy or bulky equipment, ensure the load is secured so moving parts do not shift, and that it can be lifted as far as needed without back strain or loss of grip. Installation may require more than one person.



Ensure the equipment is not powered during installation and wiring of the system.



Recheck all completed wiring for proper polarity prior to energizing the system.



Changes or modifications to Carmanah equipment not expressly approved by Carmanah could void both the user's authority to operate the equipment and the warranty.



This install guide is specific to the SpeedCheck Serial to Ethernet Converter and is not a replacement for the complete SPEEDCHECK-15/18 product user manual.

Visit support.carmanah.com to download the complete product user manual.

2.0 Overview

The SPEEDCHECK-15/18 Serial to Ethernet Converter kit allows for remote configuration over an established network using Carmanah's SpeedCheck Manager software. When this converter is ordered with a SPEEDCHECK-15/18 sign, the converter comes pre-installed in the sign. A standard Ethernet cable (not included) is required to connect the converter to your network and to a PC during configuration.

The converter requires specific configuration to function on your network. See [Section 4](#) for more details.

3.0 Installation

Before starting this procedure, refer to the SPEEDCHECK-15/18 product user manual as needed at support.carmanah.com.

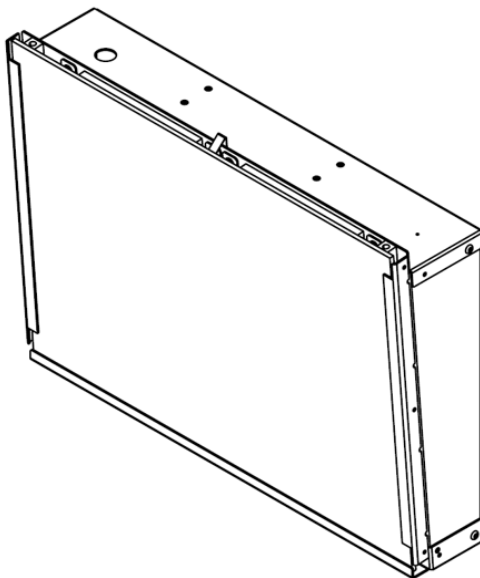
The images in this guide may differ from your SpeedCheck radar speed sign. They are for illustrative purposes only.



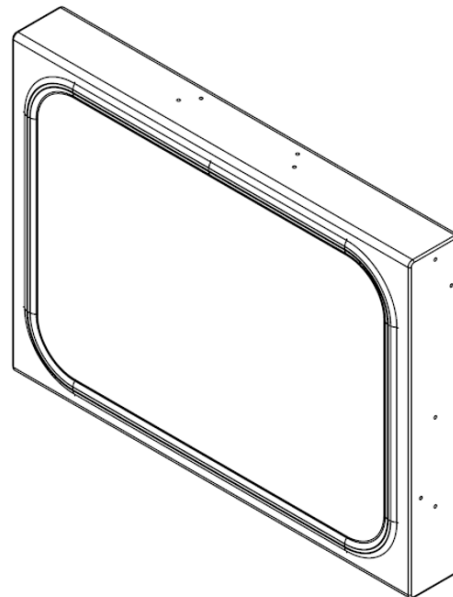
ENSURE DEVICE IS COMPLETELY POWERED OFF SO THERE IS NO DANGER OF ELECTRICAL SHOCK OR RISK OF DAMAGING EQUIPMENT.



This section assumes your system has been fully assembled and installed already. If this is not the case, certain steps may be skipped that are not necessary.



SPEEDCHECK-15



SPEEDCHECK-18

3.1 SPEEDCHECK-15 Installation

1. Disconnect power to the SPEEDCHECK-15 sign by turning off the breaker or removing the fuse(s) in the associated power cabinet.
2. Remove the two hex head screws, one on each side, holding the sign face to the display enclosure.
3. Tilt the sign to the rear and lift to remove.
4. Lift window retainer clip and tilt window forward. Lift and remove window.



Take note of sign retention bolts,
one on each side



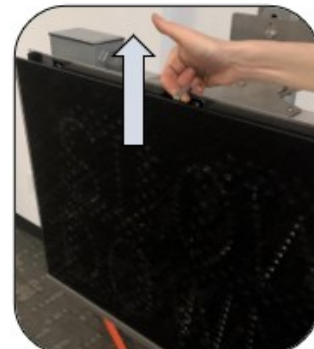
Remove the two fasteners



Tilt sign to rear



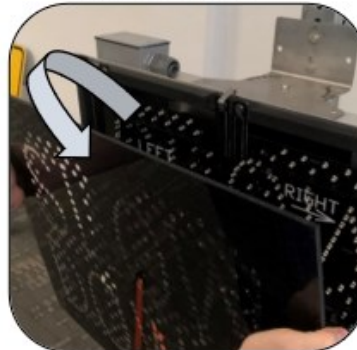
Lift up to remove



Lift window retainer clip



Optional: If present, disconnect
strobe connectors.



Tilt the window forward and lift to
remove

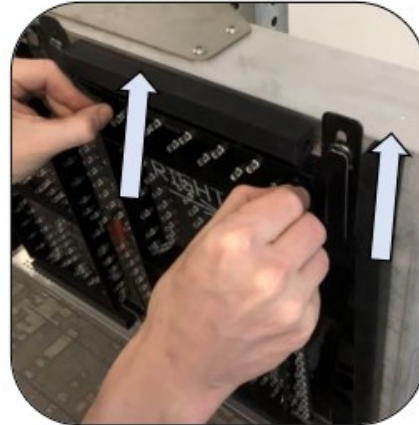


Take note of window alignment
stud for re-installation

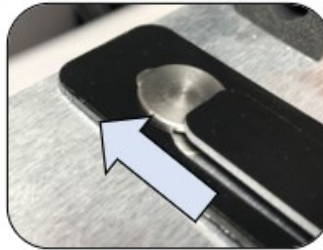
- Remove the right LED board by pulling it towards you about 1/4". Pull up by grasping the LED board stiffeners only. When the retainer tabs clear the top hanger pins slide the LED board upwards and then pull down to clear the bottom hanger pins.



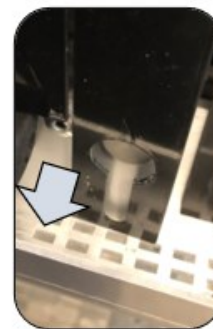
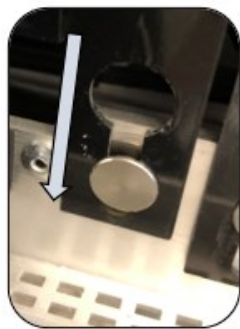
Being very careful not to touch the LED lamps, grasp the circuit board stiffeners at the top.



Pull the circuit board toward you about 1/4". When the retainer tabs clear the hanger pins, slide the circuit board upwards.



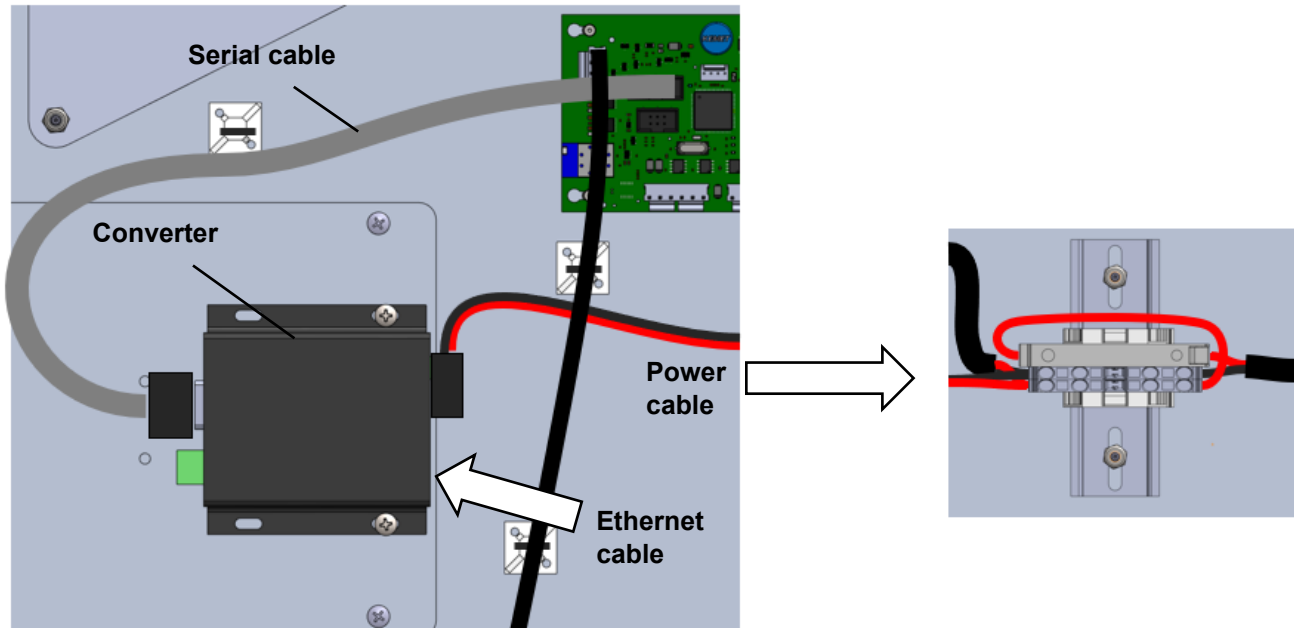
Pull on LED boards to raise tabs



When the top part of the circuit board releases from the upper hanger pins, lower the board to where the cut-outs slip off the lower hanger pins.

- Open the DIN rail fuse block(s) as a precaution to ensure no power will feed the controller during this procedure.
- Disconnect the LED wiring on the back and carefully set aside the right and left LED boards. Do not bend the LEDs in this process.

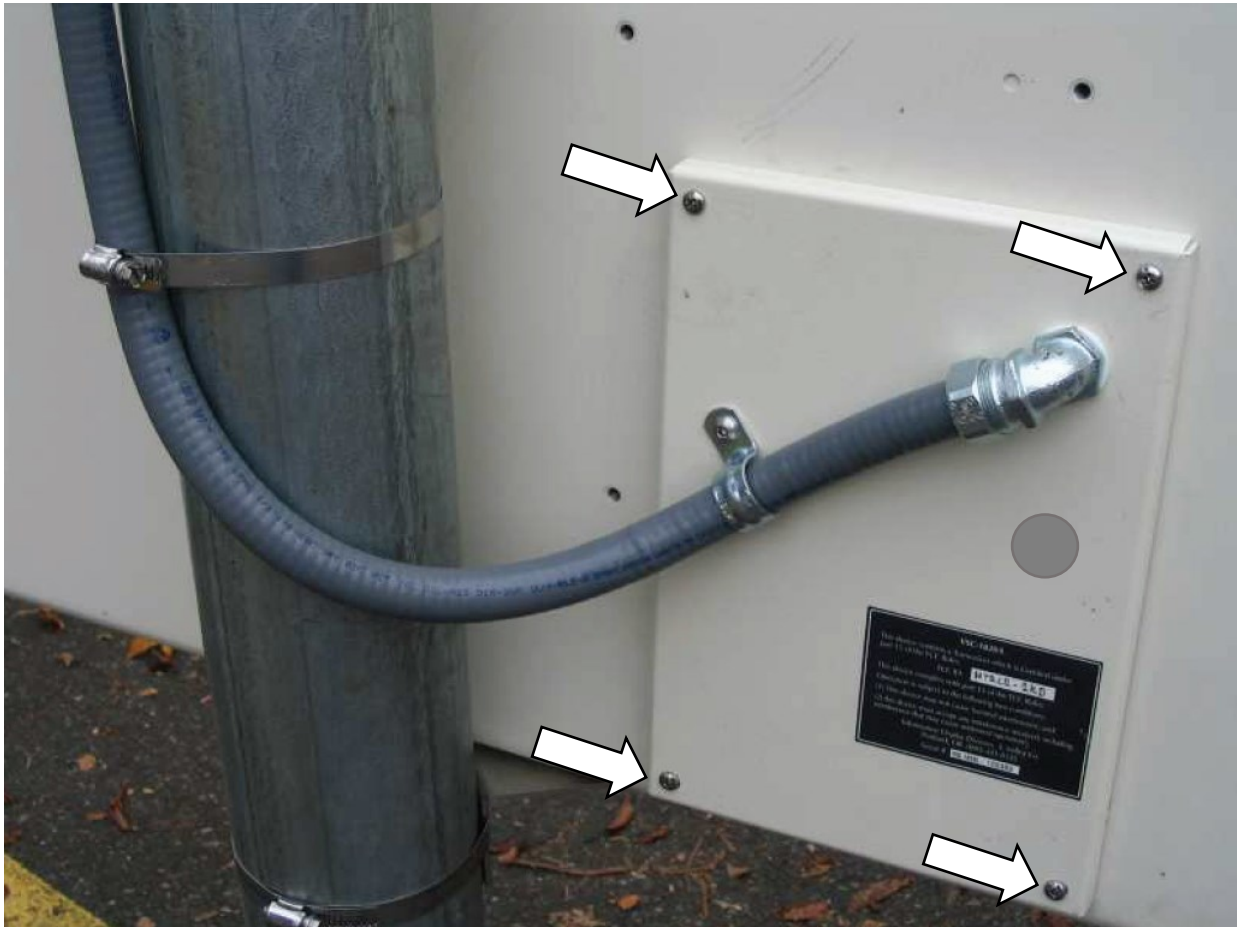
8. Fish an Ethernet cable (not included) into the junction box on top of the sign and down into the sign, plugging it into the right side of the converter. Install cable ties for strain relief. Connect the other end to your laptop. This cable will eventually be connected to your network switch.



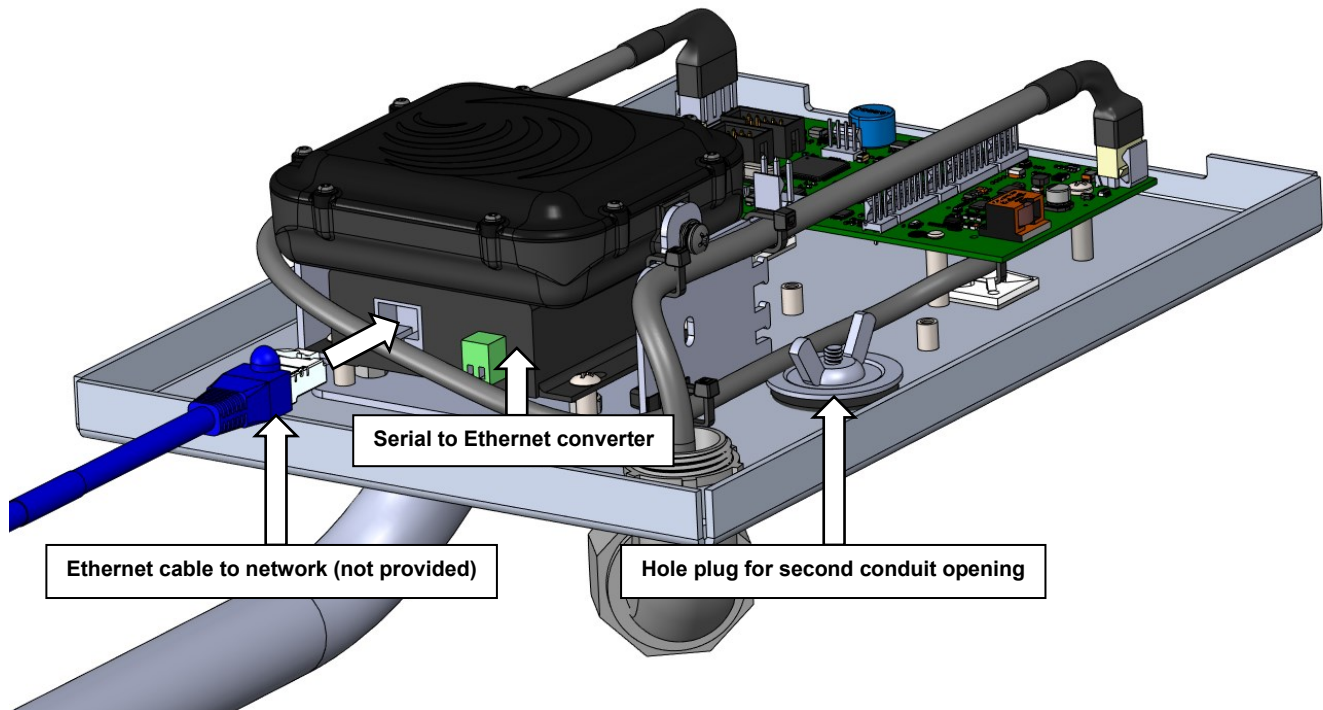
9. Reconnect the LED wiring to the left and right LED display boards and install the left LED first back onto the sign enclosure with the bottom retaining tabs going in first.
10. Close the DIN rail fuse block(s) in the radar sign and install the right LED board back onto the display enclosure in the same manner as step 9. Reinstall the fuse(s) or close the breaker in the power cabinet to apply power to the radar sign. Wait up to 60 seconds and confirm all display LED segments are operational during the start-up procedure.
11. Wait for vehicle traffic to activate the system to ensure the radar is working properly.
12. See [Section 4](#) to configure the converter. Once the configuration is completed, disconnect the Ethernet cable from your laptop and connect it to your network switch.
13. Install the polycarbonate window back onto the display enclosure and ensure it is secured with the window tab. The glossy side faces towards traffic.
14. Reinstall the sign and secure to the display enclosure using the two hex screws.
15. See [Section 5](#) if the sign requires programming via SpeedCheck Manager.
 - a. SpeedCheck Manager can be downloaded at support.carmanah.com.

3.2 SPEEDCHECK-18 Installation

1. Disconnect power from the SPEEDCHECK-18 sign by turning off the breaker or removing the fuse(s) in the associated power cabinet.
2. Remove the four screws holding the back panel assembly to the back of the SPEEDCHECK-18 sign.



3. Fish the Ethernet cable (not included) into the back panel assembly and plug it into the converter.
Connect the other end to your laptop. If necessary, use the second 3/4" conduit opening to route the Ethernet cable to the converter. This cable will eventually be connected to your network switch.
4. Reinstall the back panel assembly to the SPEEDCHECK-18 sign. Ensure nothing gets pinched in the gasket. Tighten the four screws firmly.
5. Turn on the breaker or reinstall the fuse in the power cabinet.
6. Wait for vehicle traffic to activate the system to ensure the radar is working properly.
7. See [Section 4](#) to configure the converter. Once configuration is completed, disconnect the Ethernet cable from your laptop and connect it to your network switch.
8. See [Section 5](#) if the sign requires programming via SpeedCheck Manager.
 - a. SpeedCheck Manager can be downloaded at support.carmanah.com.



4.0 Converter Configuration

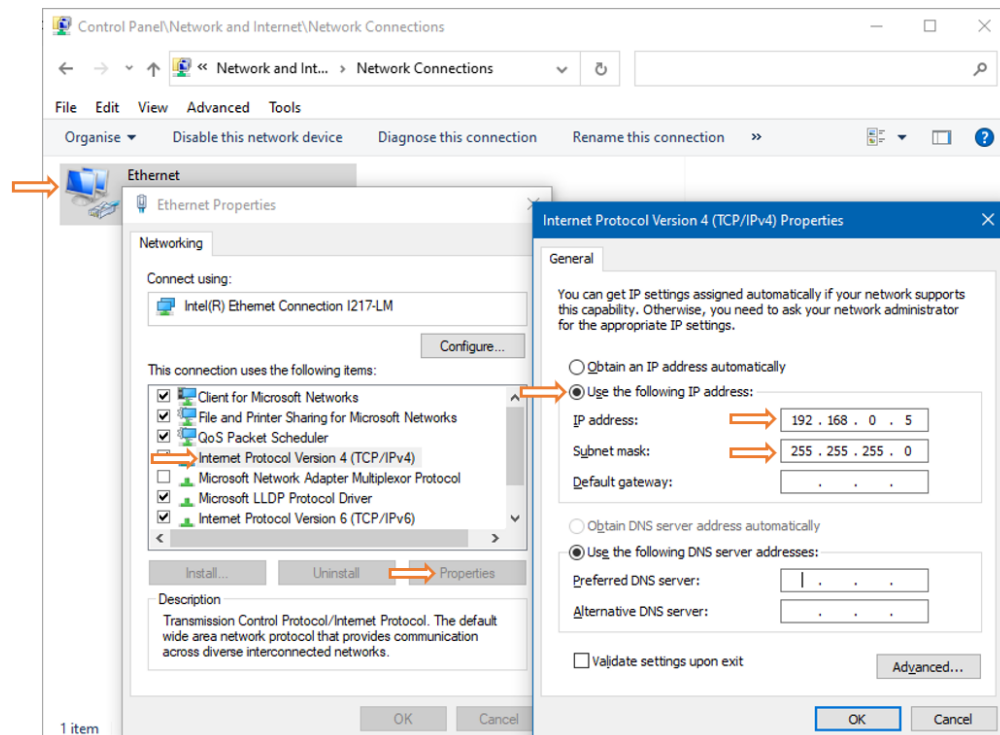
There are two options for configuring the serial to Ethernet converter:

- Static IP address
- Dynamic IP address

NOTE

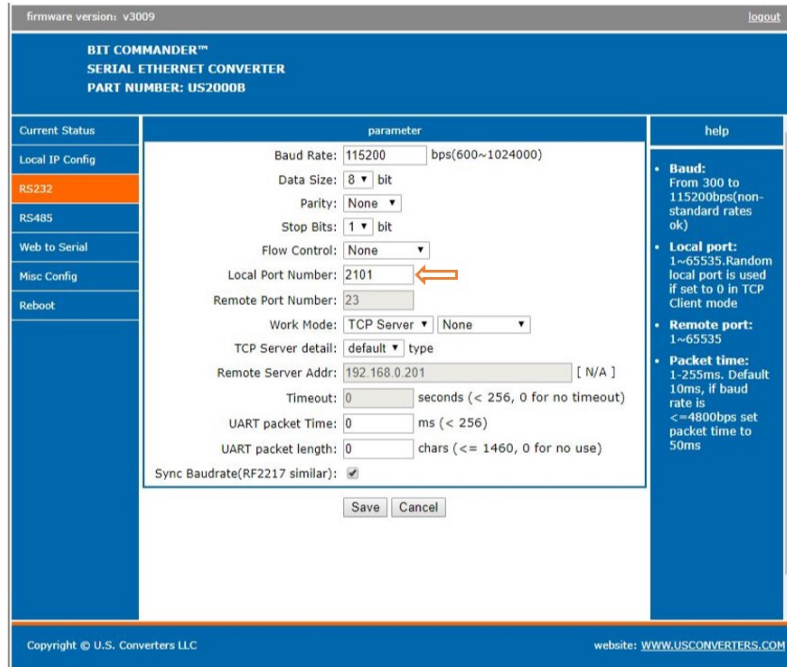
The following steps are common to both options and need to be completed first. The steps below assume a Windows-based laptop.

1. Ensure your laptop is connected to the serial to Ethernet converter via the Ethernet cable connected in [Section 3](#).
2. Press the Windows key, type **View Network Connections** and press Enter. Right click on the Ethernet device and select Properties.
3. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.
4. Select **Use the following IP address** and enter the following:
 - a. IP Address: 192.168.0.5
 - b. Subnet mask: 255.255.255.0



5. Open a web browser and type **192.168.0.7** in the address bar. In the window that opens, enter **admin** for both username and password and click OK. You should now be connected to the USConverters web interface.

6. Navigate to **RS232** and update “**Local Port Number:**” to **2101** and click Save.
7. All other default settings should match the following image.



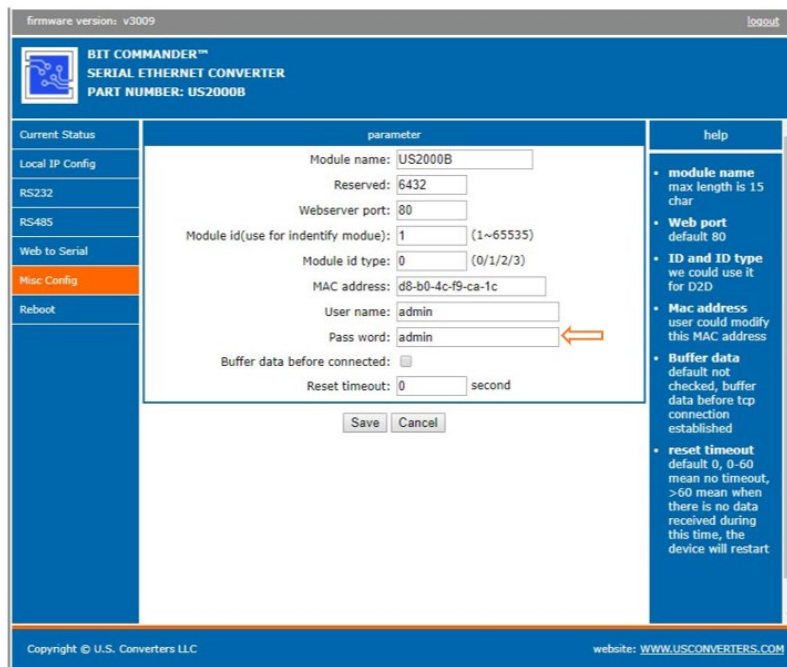
firmware version: v3009 logout

**BIT COMMANDER™
SERIAL ETHERNET CONVERTER
PART NUMBER: US2000B**

| Current Status | parameter | help |
|-----------------|--|---|
| Local IP Config | Baud Rate: 115200 bps(600~1024000) | <ul style="list-style-type: none"> • Baud: From 300 to 115200bps(non-standard rates ok) • Local port: 1~65535: Random local port is used if set to 0 in TCP Client mode • Remote port: 1~65535 • Packet time: 1~255ms. Default 10ms, if baud rate is <=4800bps set packet time to 50ms |
| RS232 | Data Size: 8 bit | |
| RS485 | Parity: None | |
| Web to Serial | Stop Bits: 1 bit | |
| Misc Config | Flow Control: None | |
| Reboot | Local Port Number: 2101 | |
| | Remote Port Number: 23 | |
| | Work Mode: TCP Server None | |
| | TCP Server detail: default type | |
| | Remote Server Addr: 192.168.0.201 [N/A] | |
| | Timeout: 0 seconds (< 256, 0 for no timeout) | |
| | UART packet Time: 0 ms (< 256) | |
| | UART packet length: 0 chars (<= 1460, 0 for no use) | |
| | Sync Baudrate(RF2217 similar): <input checked="" type="checkbox"/> | |
| | Save Cancel | |

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8. Update password under **Misc Config** as required (recommended) and click Save.



firmware version: v3009 logout

**BIT COMMANDER™
SERIAL ETHERNET CONVERTER
PART NUMBER: US2000B**

| Current Status | parameter | help |
|--------------------|--|---|
| Local IP Config | Module name: US2000B | <ul style="list-style-type: none"> • module name max length is 15 char • Web port default 80 • ID and ID type we could use it for D2D • Mac address user could modify this MAC address • Buffer data default not checked, buffer data before tcp connection established • reset timeout default 0, 0-60 mean no timeout, >60 mean when there is no data received during this time, the device will restart |
| RS232 | Reserved: 6432 | |
| RS485 | Webserver port: 80 | |
| Web to Serial | Module id(use for indentify module): 1 (1~65535) | |
| Misc Config | Module id type: 0 (0/1/2/3) | |
| Reboot | MAC address: d8-b0-4c-f9-ca-1c | |
| | User name: admin | |
| | Pass word: admin | |
| | Buffer data before connected: <input type="checkbox"/> | |
| | Reset timeout: 0 second | |
| | Save Cancel | |

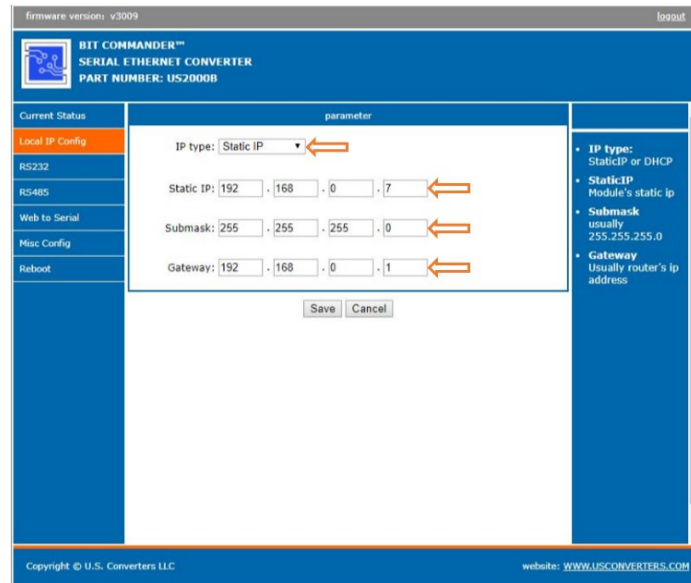
Copyright © U.S. Converters LLC website: WWW.USCONVERTERS.COM

NOTE

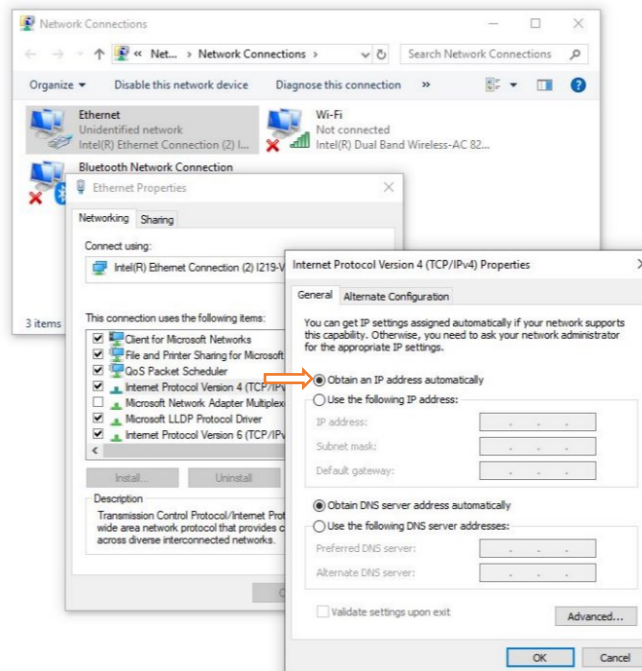
Additional information can be found here: <http://www.usconverters.com/serial-etherent-converter-us2000a>.

4.1 Static IP Address Option

1. Under **Local IP Config**, change “**IP type:**” to **Static IP**.
2. Set the following static network parameters as per your network (IP, Submask, Gateway).



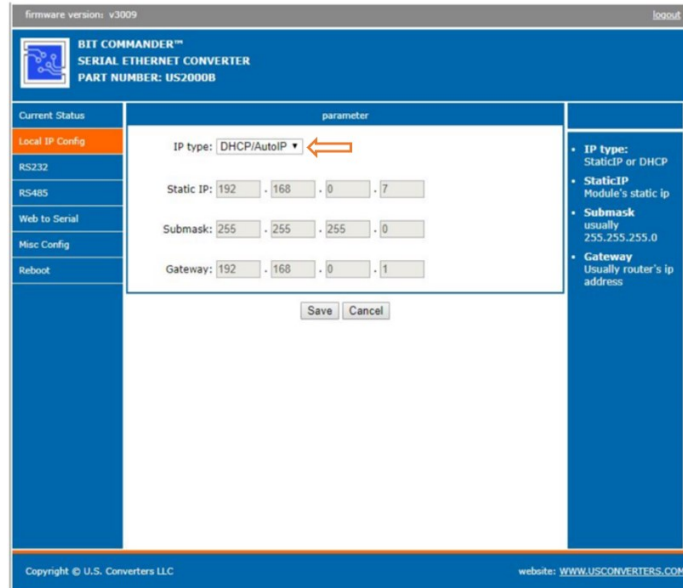
3. Click the “Save” then the “Reboot” buttons on the user interface.
4. Restore your laptop settings to **Obtain IP/DNS address automatically**.



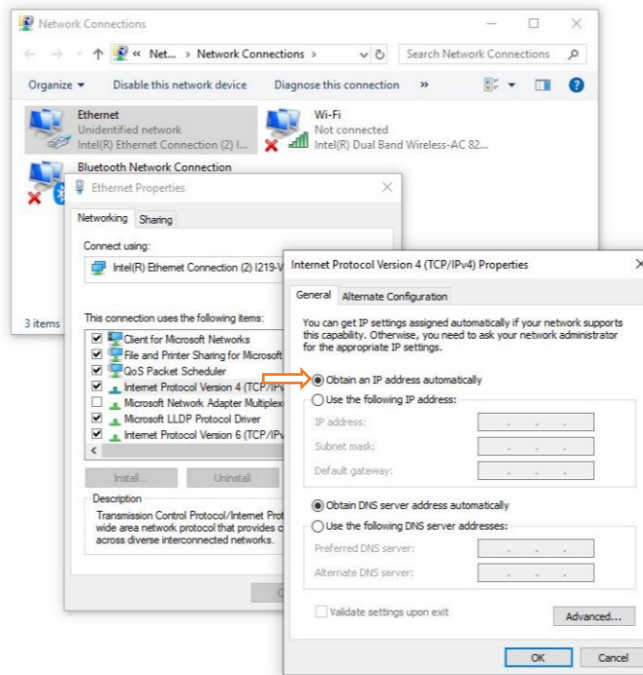
5. Disconnect the Ethernet cable from the laptop and connect it to your network switch.

4.2 Dynamic IP Address Option

1. Under Local IP Config, change “IP type:” to DHCP/AutoIP.



2. Click the “Save” then the “Reboot” buttons on the user interface.
3. Restore laptop settings to obtain IP/DNS address automatically.



4. Disconnect the Ethernet cable from the laptop and connect it to your network switch.

4.3 Factory Reset

The reset button is used to reboot the converter by pressing on the button momentarily while power is applied to the converter.

In addition to rebooting the converter you can also perform a factory reset:

1. Remove power to the converter.
2. Press and hold the reset button.
3. Apply power to the converter.
4. Continue to hold the reset button for five seconds and then release.

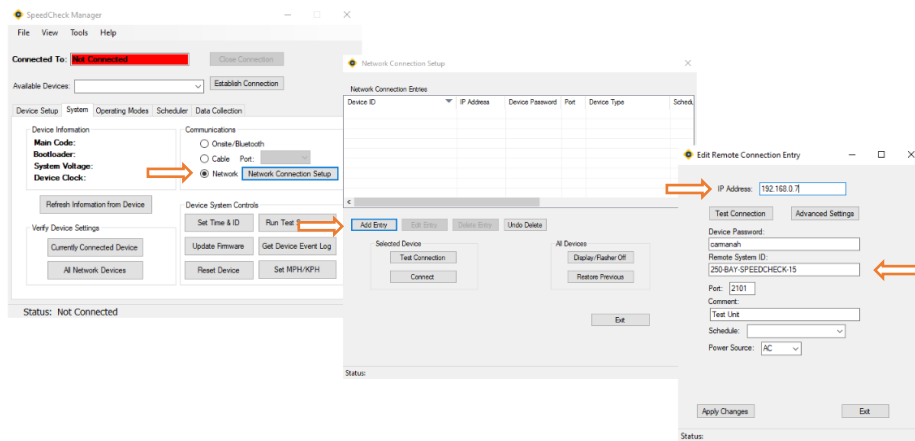


The factory reset is useful in instances where you need to reset the converter to its original settings.

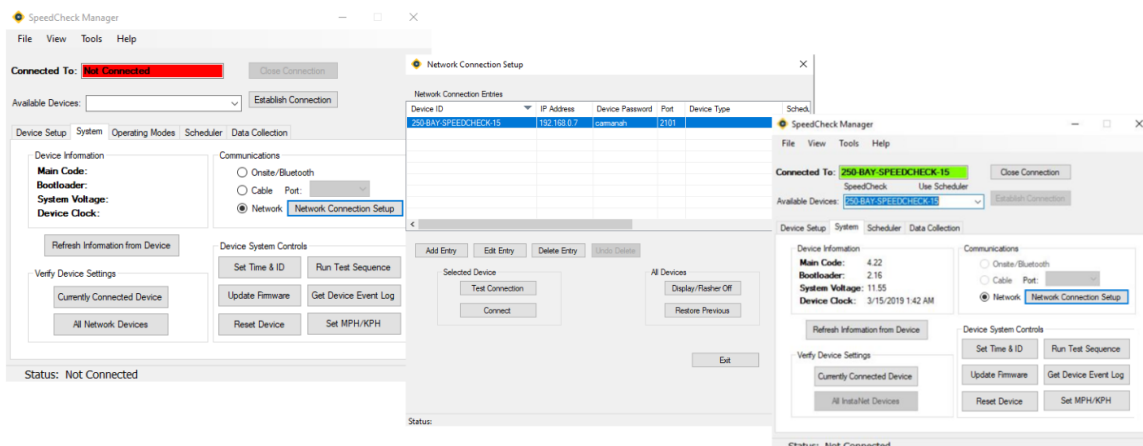
5.0 SpeedCheck Manager Configuration

The steps below explain how to communicate with the system remotely via the SpeedCheck Manager software. This assumes the system has been installed and is functioning normally. Visit support.carmanah.com to download the latest version of the SpeedCheck Manager software.

1. Open the SpeedCheck Manager software.
2. Select **Network** → **Network Connection Setup** → **Add Entry** → **Enter IP Address** and particulars for **your SpeedCheck sign**. The example below is for illustrative purposes only.
3. Enter the password under Device Password if the SpeedCheck sign has a password set. This is manually assigned under the Device Setup tab. Add an appropriate description of the device, and select power source and schedule (if applicable).
4. Click **Apply Changes** and then click **Test Connection** and confirm successful communication.



5. Click on **Connect** to establish a connection. Ensure you now have a green bar under the **Connected To** status to signify a successful connection has now been made.
6. Adjust the settings to the system as needed. Refer to the full SpeedCheck Manager manual under the **Help** menu for more information.





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