



## Upgrade Procedure:

### TTM 01-E, TTM 01-G, PTP Translator

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#### Current Release

The Universal Upgrade Tool will upgrade your NTS 02-E, NTS 03-E, NTS 02-G or NTS 03-G to the following revisions:

<b>NTS Firmware Revision</b>	<b>3.22r</b>
<b>Ethernet Module Firmware Revision</b>	<b>3.22r</b>
<b>Loader Firmware Revision</b>	<b>1.07r</b>

This Upgrade Procedure applies to all clock firmware revisions.

#### Requirements

- **Operating System:** Microsoft Windows XP, Vista, 7, 8 or 10
- **Software:** Universal Upgrade Tool and the current Tekron Configuration Tool (4.6.1.0). The Configuration Tool is available for download on the same web page that this upgrade package was downloaded from.
- **Microsoft .NET:** Microsoft .Net version 4 or higher

#### Notes

- **Static IP:** Clocks must be configured with a valid static IP Address that is accessible by your PC.
- **PRP Settings:** NTS -G series clocks using PRP must have PRP disabled before performing the firmware upgrade.
- **Firewalls:** Exceptions should be added for the items below. Please consult your IT team before changing any firewall settings.
  - The Tekron Configuration Tool and the Universal Upgrade Tool
  - The broadcast address 255.255.255.255 and default address 0.0.0.0
  - UDP packets on ports 9990, 9992, 9997, 9999
  - For complex Ethernet networks please check with your network administrator to ensure that managed network devices do not block the network packets required for the upgrade process.

## Ethernet Upgrade Procedure

1. **Check for Static IP Address:** Use the latest Tekron Configuration Tool to check that the clock to be upgraded has a static IP address. To check for a static IP address, go to the Basic Network Tab and check that 'Static' is selected and that a valid IP Address and Netmask have been entered (Figure 1).

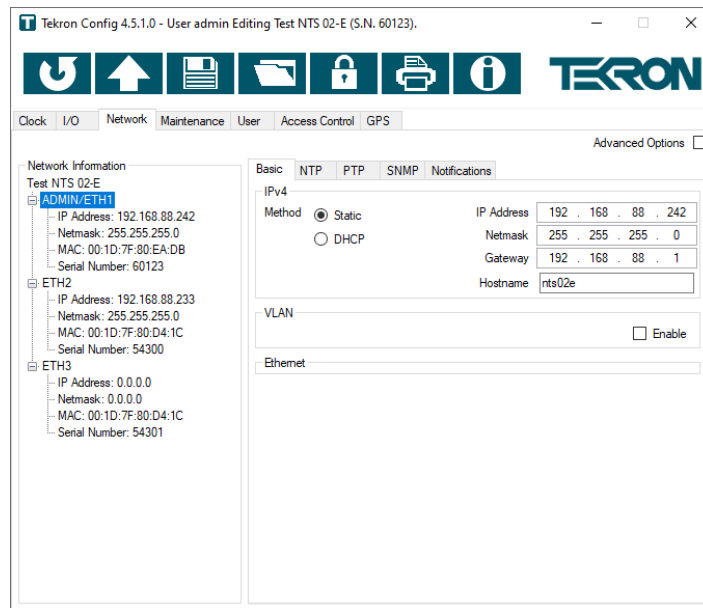


Figure 1. Setting a Static IP Address

2. **Check that PRP is Disabled:** Use the latest Tekron Configuration Tool to check that the clock to be upgraded has PRP disabled. To check the PRP settings, go to the Basic Network Tab and select the Advanced options. Check that the PRP Link checkbox is not selected for ETH2 and for ETH5 if present (Figure 2).

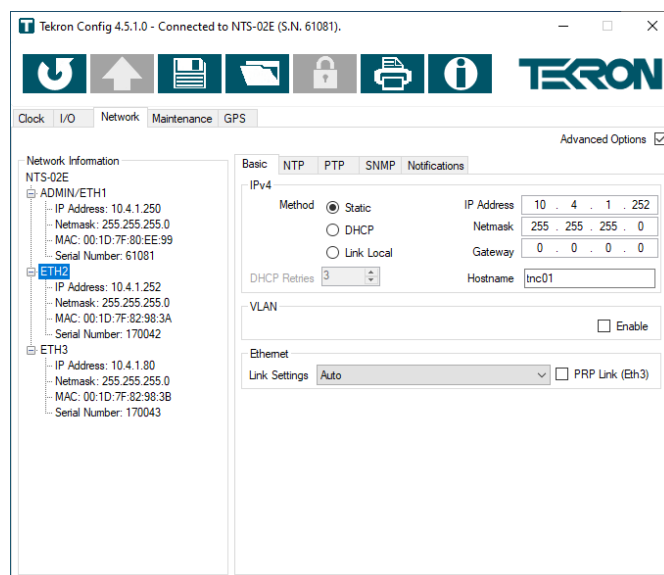


Figure 2. Disabling PRP

3. **Find Clocks:** Open the Universal Upgrade Tool and press Discover to list all clocks present on the local subnet. To add a clock on a remote subnet, click on 'add...' and enter the IP address of the clock you wish to upgrade.
4. **Begin Upgrade:** Select all the clocks that you wish to upgrade, and press **Upgrade** to begin the upgrade procedure.

**NOTE: It is critical you only select clock port ADMIN/ETH1 when upgrading. If you don't do this, then only the connected Ethernet port will be upgraded and not the main clock board or any other Ethernet ports.**

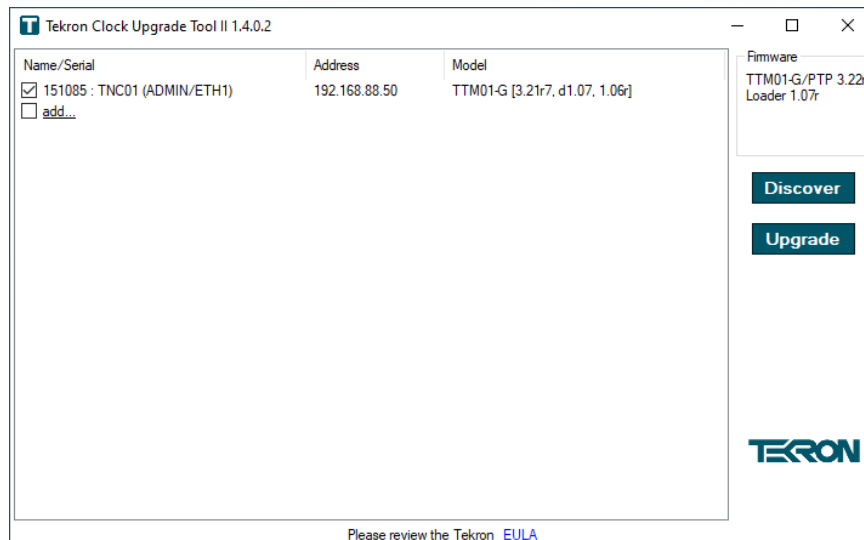


Figure 3. Selecting a clock to upgrade

5. **Security:** If security is enabled on the clock, the user will be prompted for login details. You will need to enter the credentials of a user who has administrative privileges before the upgrade process will begin (Figure 4).

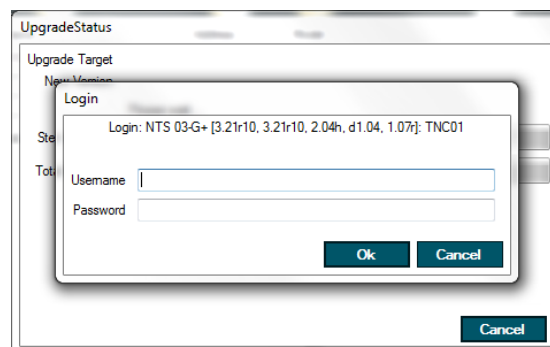


Figure 4. Login window

6. **Upgrading:** The Universal Upgrade Tool will show a progress bar indicating the upgrade status. If multiple clocks are being upgraded, a results window will show the status of each clock (Figure 5).

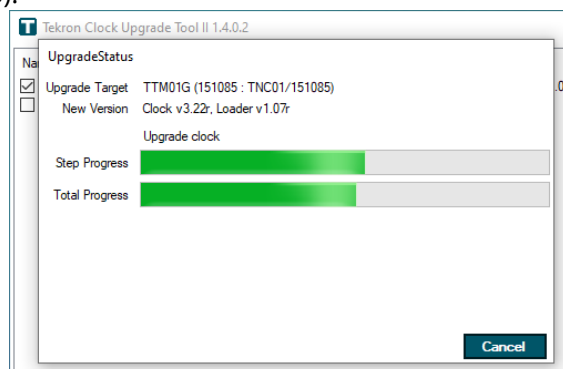
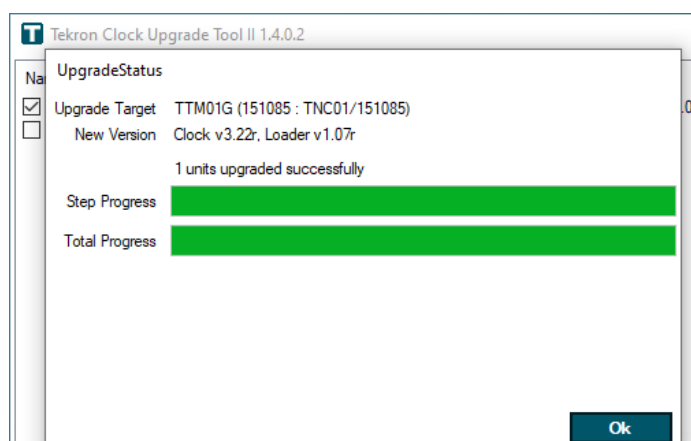


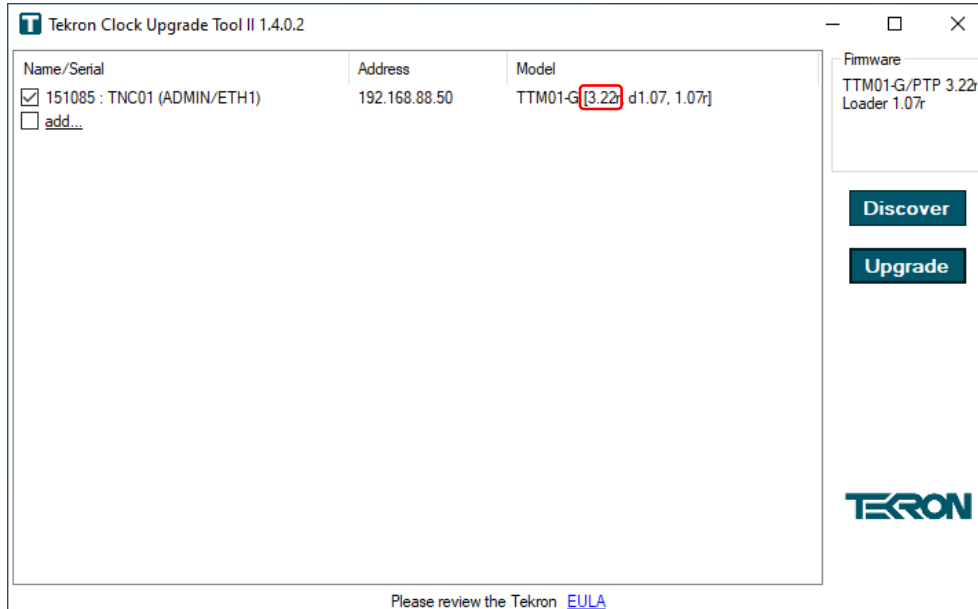
Figure 5. Upgrade Progress (Single Clock Upgrade)

7. **Success:** Once the clock has upgraded, an upgrade successful message is displayed



8. **Check the Upgrades:** Restart the unit by disconnecting and reconnecting power.

Check the upgrade was applied successfully to all clock Ethernet ports. To do this, connect the Config tool to each Ethernet port of the clock in turn other than the ADMIN/ETH1 port. On the upgrade tool's Discovery screen, click the **Discover** button. You should see the clock listed as below.



Make sure that firmware revisions on the clock show **3.22r**. When connected to the clock via an Ethernet port other than the ADMIN/ETH1 port, the versions displayed are for the Clock Board then the Ethernet Port you are connected to.

## Troubleshooting

### 1. Failed to Discover Clock

- 1.1. **Retry Discover:** If the clock is connected to the local subnet then try the **Discover** button again. Any clocks that were not found during the first discovery attempt will be added to the list.
- 1.2. **Clock Add:** If the clock is connected to a remote subnet then double click on 'add...' and enter the clocks IP address.
- 1.3. **Check Network Settings:** If the clock is on the same subnet as your PC you will need to check that the clock and PC have the same netmask (subnet mask) and appropriate IP addresses. For example, if your PC has IP address 192.168.1.1 and netmask 255.255.255.0 then the clock should be given an IP address in the range 192.168.1.2 to 192.168.1.254 and the netmask 255.255.255.0.
- 1.4. **Check Firewall Settings:** Your PC firewall or security software may be blocking the upgrade. To allow the upgrade to continue all firewalls will need to be configured with the exceptions listed under the Notes section on page one. Alternatively, your firewall can be disabled for the duration of the upgrade (Please consult your IT team before changing any firewall settings).
- 1.5. **Direct Connect to the Clock:** Some network devices will block the UDP ports sent by the upgrade tool. To avoid the need to reconfigure your network devices you can connect the clock directly to your PC with a crossover Ethernet cable. Remember to check that the clock is configured with a static IP address on the same subnet as your PC.

### 2. Upgrade Failed to complete

It is important to note when a clock upgrade fails, that you need to retry the upgrade to ensure that the clock is fully upgraded.

- 2.1. **Retry the Upgrade:** Follow the Upgrade Procedure above to retry the upgrade.
- 2.2. **Cycle the power:** If the clock cannot be successfully upgraded a power cycle may be necessary to reinitialise the clock.
- 2.3. **Press Discover:** An upgrade fault may cause the clock IP address to default to a link local address (169.254.xxx.xxx). Press **Discover** to find the new IP address. See the Troubleshooting section 'Clock IP Address has Changed' for more assistance.

### 3. Clock Name has Changed

If an error occurs during the upgrade the clock will be listed in the Universal Upgrade tool with its MAC address as its name. The upgrade should be run again following the Upgrade Procedure above. Once the unit has successfully upgraded the clock name will be restored.



#### 4. Clock IP Address has Changed

If an error occurs during the upgrade the clock may default to a link local address (169.254.xxx.xxxx).

- 4.1. **Retry the Upgrade:** Follow the Upgrade Procedure above to retry the upgrade. Note that the original IP address will be recovered and may cause the upgrade to fail. If this happens, press **Discover** to find the new IP address and retry the upgrade.
- 4.2. **Connect to the Clock Directly:** Connect the clock to you PC directly using a crossover Ethernet cable.
- 4.3. **Change Network Adapter Settings:** If the IP address has changed to be a link local address (169.254.xxx.xxxx) you may need to change your PC IP address to a link local address and the netmask 255.255.0.0. Note that the original IP address will be recovered and may cause the upgrade to fail. If this happens, press **Discover** and then retry the upgrade. You may also need to change you IP address and netmask to match the original network configuration.

#### 5. Front LCD Display is Blank

If the upgrade aborts part way through the upgrade the LCD may be blank.

- 5.1. **Retry the Upgrade:** Cycle the power to the clock and then follow the Upgrade Procedure above to retry the upgrade.
- 5.2. **Contact Tekron:** If the lights on the back of the clock are also blank, and you cannot discover the clock using the Universal Upgrade Tool, contact Tekron using the details at the end of this document.

## Contact Details

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