# Upgrade Procedure:

# TCG 01-G, TCG 02-G

## Current Release

The Universal Upgrade Tool will upgrade your TCG 02-G to the following revisions:

| | |
|---|---|
| **TCG Firmware Revision:** | **F2.30r** |
| **Ethernet Module Firmware Revision:** | **3.22r** |
| **Loader Firmware Revision** | **1.07r** |
| **Oscillator Module Firmware Revision** | **2.04j** |

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 Ethernet Configuration Tool (4.6.1.0)
- ➢ **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.
- ➢ **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).
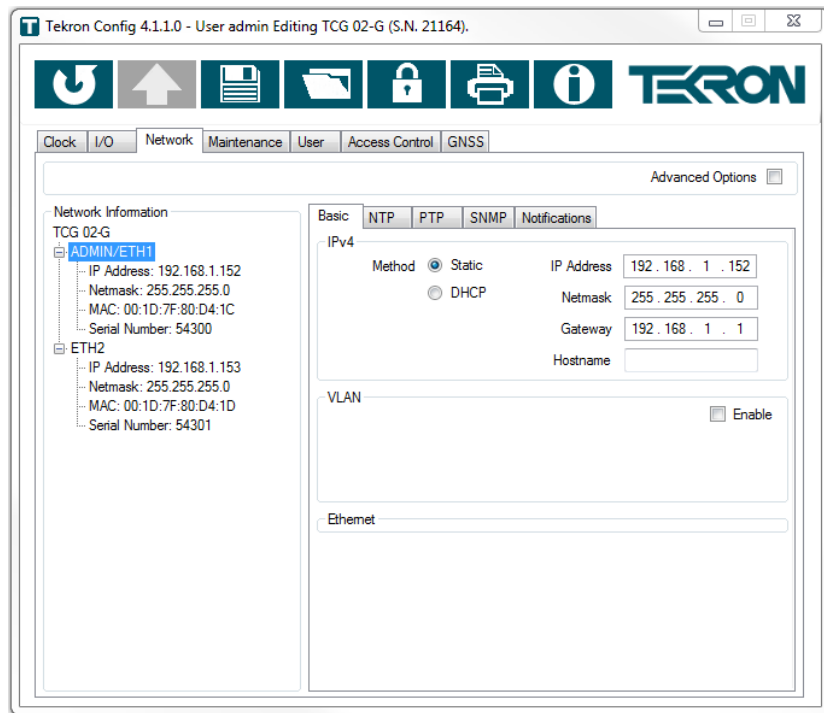


**Figure 1. Setting a Static IP Address**

2. **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.

3. **Begin Upgrade:** Select all the clocks that you wish to upgrade, and press **Upgrade** to begin the upgrade procedure.

   **NOTE:** If the clock you wish to upgrade is equipped with more than one Ethernet port, port ETH1 must be used to perform the upgrade.

   **NOTE:** If prompted for login details, you will need to enter the credentials of a user who has administrative privileges before the upgrade process will begin.
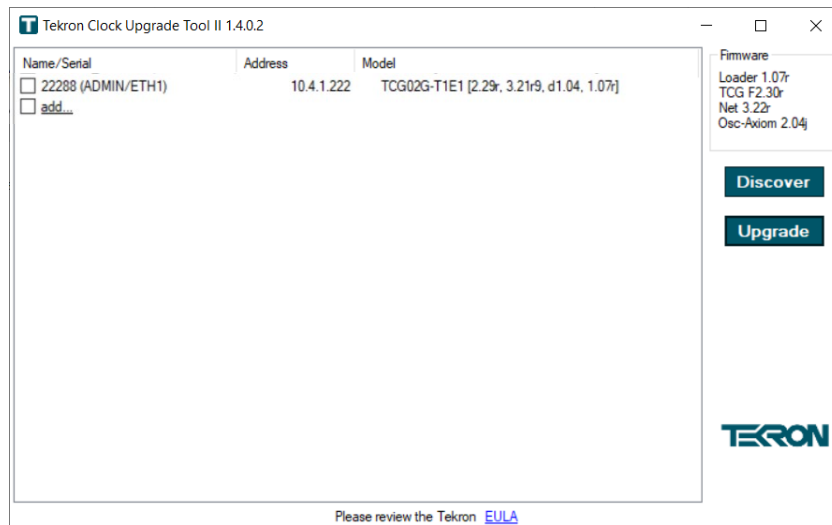
**Figure 2. Selecting a clock to upgrade**

4. ***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 3).
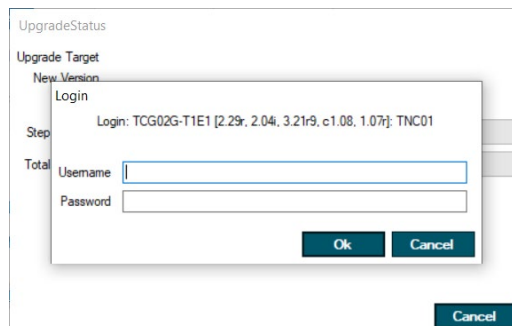


**Figure 3. Login window**

5. ***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 4).
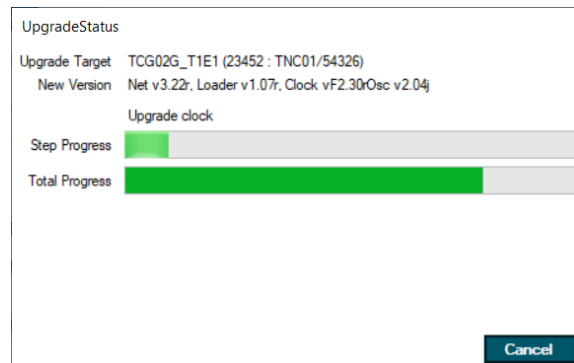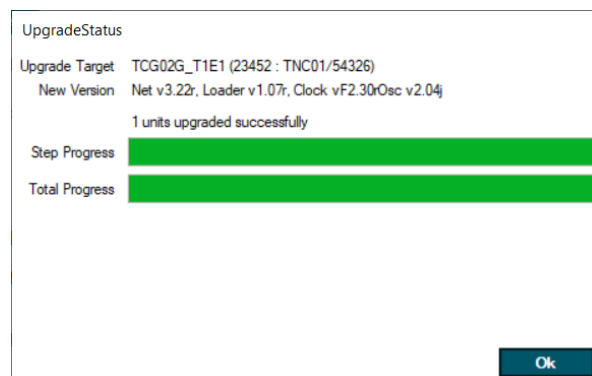
*Figure 4. Upgrade Progress (Single Clock Upgrade)*

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

## 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.xxxx). Press **Discover** to find the new IP address. See the Trouble Shooting section 'Clock IP Address has Changed' for more assistance.

2.4. **Check for Multiple IP Addresses:** The presence of multiple IPv4 addresses on the network adapter of the PC has been found to cause upgrade failures. Remove all IPv4 addresses except one, then retry the upgrade.

### 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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