

## SUPPORT

Models supported include tGW-712, tGW-722, tGW-732, tGW-715, tGW-725, tGW-735, tGW-718, tGW-724, tGW-734 and tGW-715i.

## WARRANTY

All products manufactured by ICP DAS are warranted against defective materials for a period of one year from the date of delivery to the original purchaser.

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## CONTACT US

If you have any questions, please feel free to contact us.

We will respond within 2 working days.

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# tGW-700 Series

## Firmware Update via Ethernet

Version: 1.2/ Updated: Nov. 2014

Ch. 1. Setting up the tGW-700

Ch. 2. Firmware Update Procedure

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# 1. Setting up the tGW-700

Before updating the firmware, please ensure that the network settings for both your host computer and any tGW-700 modules are correctly configured, or the update procedures via the Ethernet network may not function correctly.

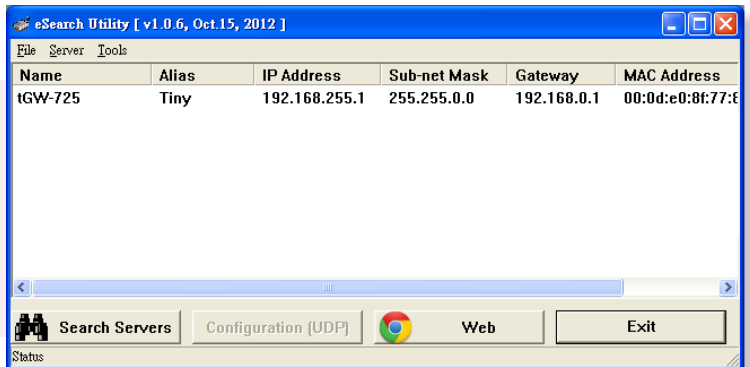
**Step 1: Connect the tGW-700 to the same hub or the same sub-network as your Host PC, and attach a power supply to the tGW-700. Do not connect the tGW-700 to a router or directly to the Internet as this may cause the update process to fail.**

Please refer to “**Chapter 3-Connecting the Power and Host PC**” in the tGW-700 Quick Start Guide for more detailed information.



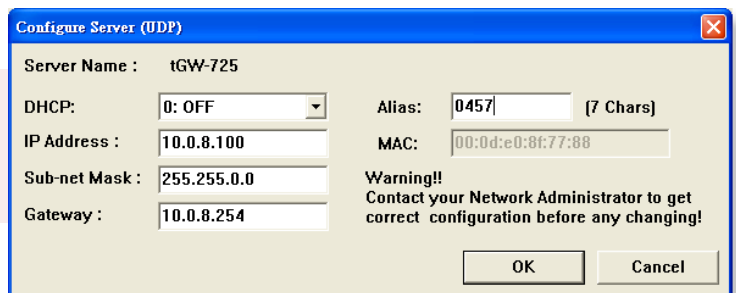
Download the Quick Start Guide.

**Step 2: Install the eSearch Utility on your Host PC, and then run the Utility to search for any tGW-700 modules connected to the network.**



Download the eSearch Utility.

**Step 3: Configure the correct network settings for the required tGW-700 module.**



Please refer to “**Chapter 5-Configuring Ethernet Settings**” in the tGW-700 Quick Start Guide. If the IP address settings do not work correctly, please refer to **note1 (Page 8)**.



Download the Quick Start Guide.

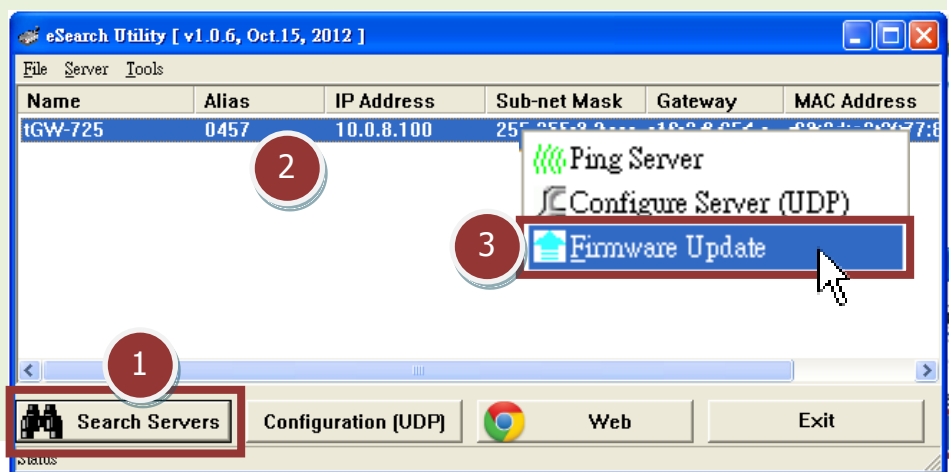
## 2. Firmware Update Procedure

The following Firmware update function is only supported by the firmware version is v1.4.6 [Aug.05, 2014] and later.

**Step 1:** In the eSearch Utility, click the **“Search Servers”** button to search for any tGW-700 modules connected to the network. (The network settings of the tGW-700 module as described in Step 3 on Page 1)

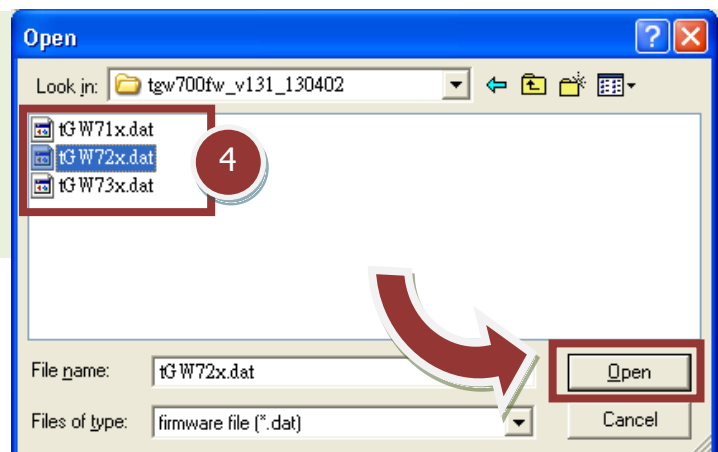
**Step 2:** Right click on the name of the tGW-700 module to be updated.

**Step 3:** Select the **“Firmware Update”** item from the popup menu and the **“Open”** dialog box will be displayed.



**Step 4:** In the **“Open”** dialog box, select the firmware file (**tGW71x/72x/73x.dat**) that will be used to update the module and then click the **“Open”** button.

Firmware File	Supports tGW-700 module
tGW71x.dat	tGW-712, tGW-715, tGW-718
tGW72x.dat	tGW-722, tGW-725, tGW-724
tGW73x.dat	tGW-732, tGW-735, tGW-734



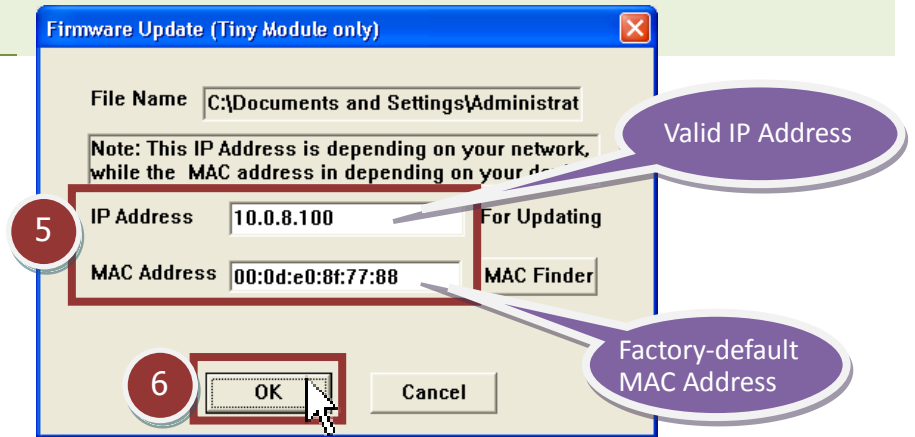
Download the Firmware File.



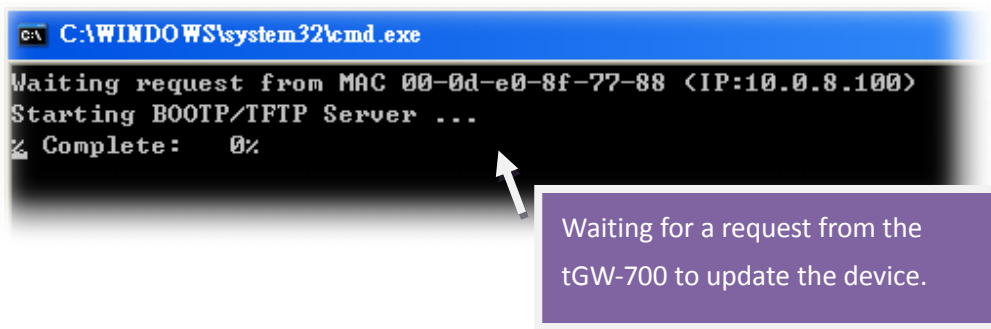
Download the beta version of the firmware file.

**Step 5:** Assign a **valid IP Address** and the **factory-default MAC Address** for the tGW-700 module. If this IP address is invalid (e.g. IP Address: 0.0.0.0) or a user-defined MAC address is assigned. Refer to **note 2 (Page 8)** and **note 3 (Page 9)** for more details.

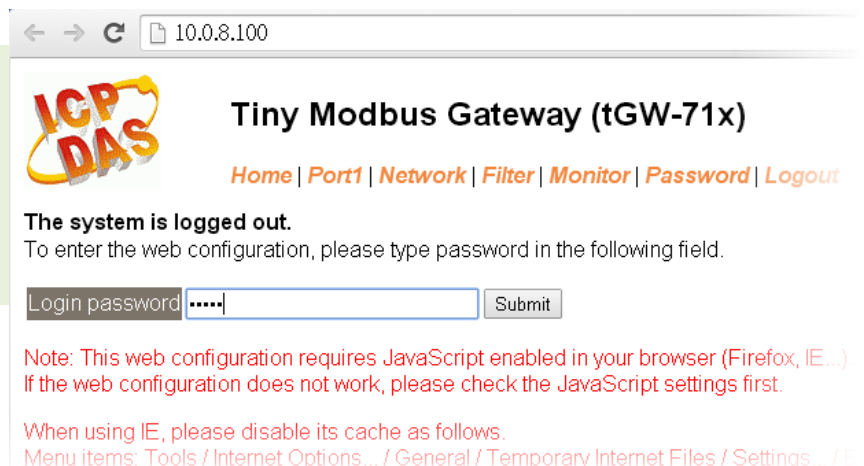
**Step 6:** Click the **“OK”** button.



**Step 7:** You are now ready to update the firmware. A Command Prompt windows will be displayed the progress of the update.



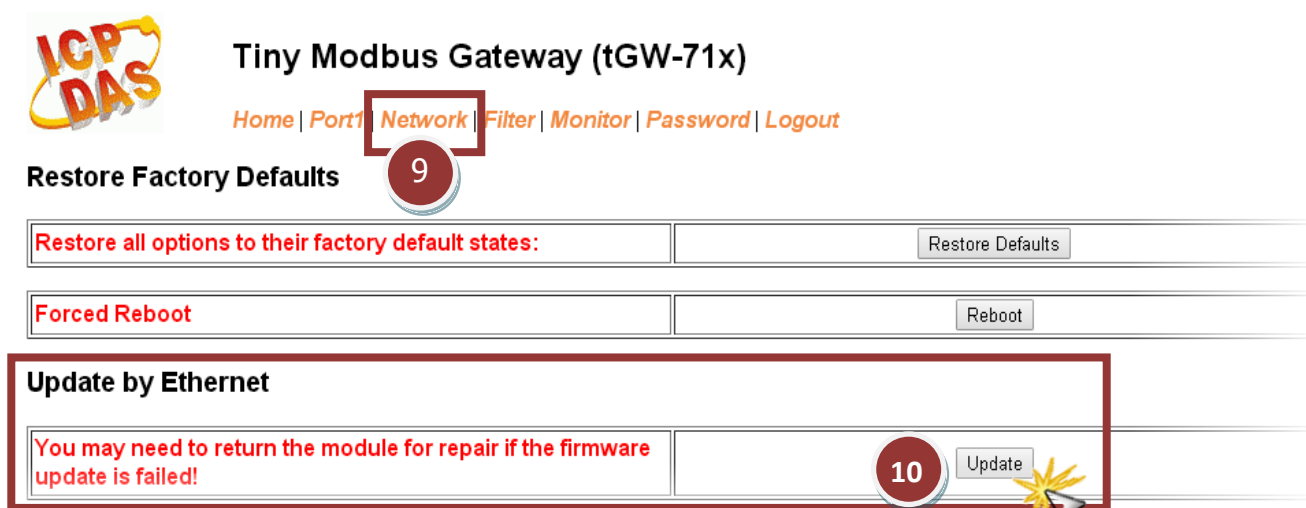
**Step 8:** Enter the URL address of the tGW-700 in the address bar of the browser log in to the Web configuration pages (use the default password **“admin”**).



Step 9: Click the **“Network”** tab to display Network and Miscellaneous Settings the page.

Step 10: Click the **“Update”** button in the Update by Ethernet area to start update.

Note that the this Firmware update function is only supported by the firmware version is v1.4.6 [Aug.05, 2014] or later.



**ICP DAS** Tiny Modbus Gateway (tGW-71x)  
Home | Port1 | **Network** | Filter | Monitor | Password | Logout

Restore Factory Defaults 9

Restore all options to their factory default states:

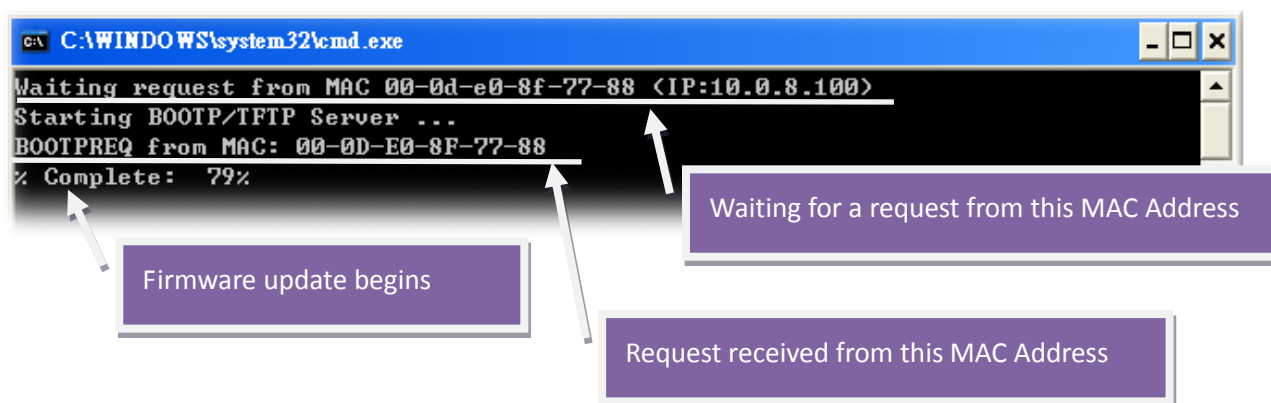
Forced Reboot

**Update by Ethernet**

You may need to return the module for repair if the firmware update is failed! 10

Step 11: Confirm that the two MAC addresses (factory-default): **“Waiting request from MAC x.x.x.x”** and **“BOOTPREQ from MAC: x.x.x.x”** are the same, as indicated below . If these addresses do not match, the update cannot proceed, please refer to *note4 (Page 9)*.

Step 12: Once the update is complete (i.e., when the progress indicator reaches 100%), close this Command Prompt windows.



```
C:\WINDOWS\system32\cmd.exe
Waiting request from MAC 00-0d-e0-8f-77-88 <IP:10.0.8.100>
Starting BOOTP/TFTP Server ...
BOOTPREQ from MAC: 00-0D-E0-8F-77-88
% Complete: 79%
```

Waiting for a request from this MAC Address

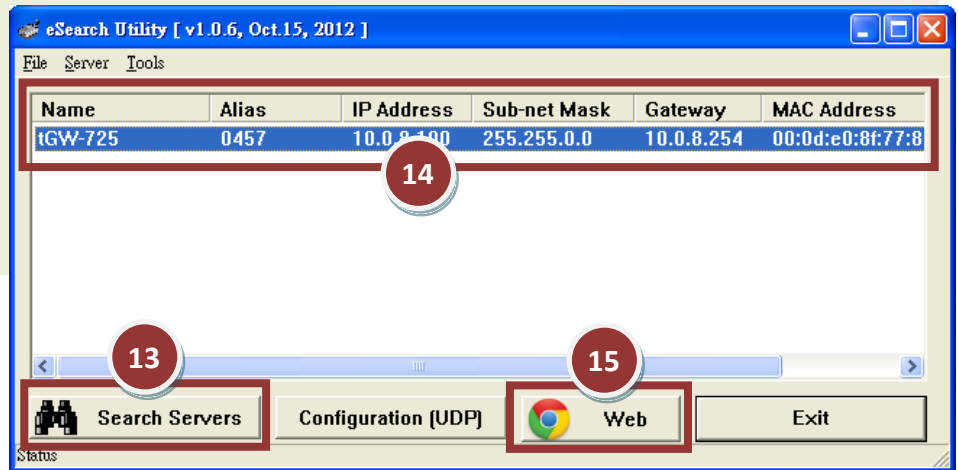
Request received from this MAC Address

Firmware update begins

**Step 13:** Run the eSearch Utility and search for the tGW-700 module again to verify that it is functioning correctly. You may need to reconfigure the network settings for the module after updating the firmware. Refer to Step 3 (Page 1).

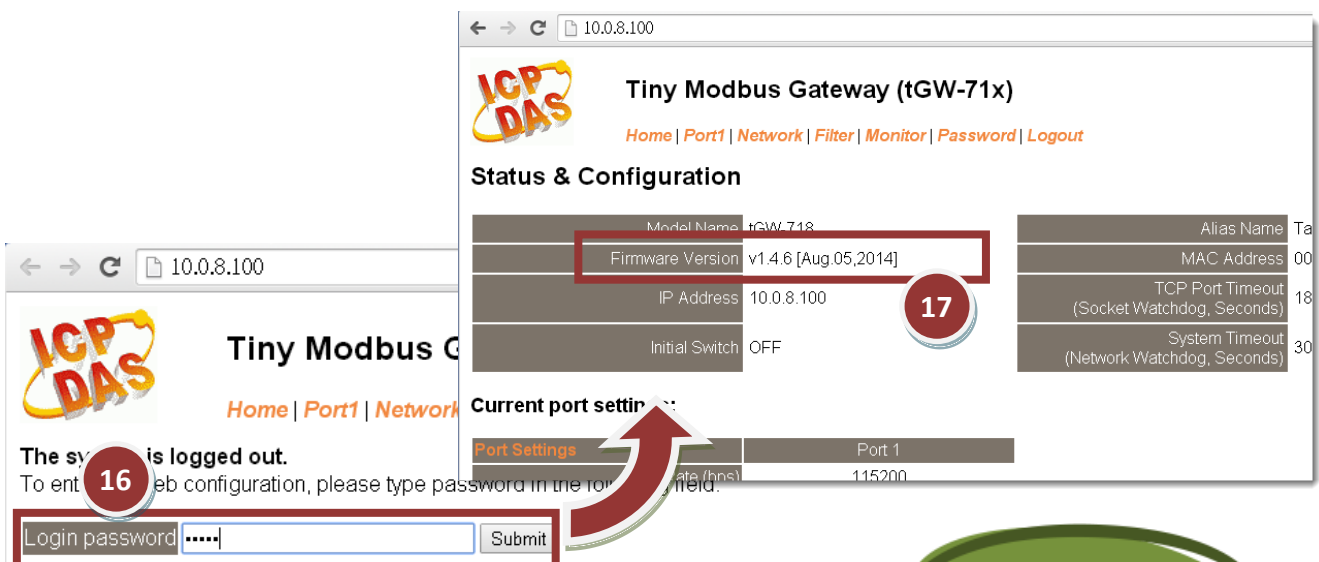
**Step 14:** Click the name of the tGW-700 module.

**Step 15:** Click the "Web" button.



**Step 16:** Log in to the web configuration pages for the tGW-700 (use the default password "admin").

**Step 17:** Verify that the firmware version and date details are correct.



Note: This web configuration requires JavaScript enabled in your browser (Firefox, IE...). If the web configuration does not work, please check the JavaScript settings first.

When using IE, please disable its cache as follows:  
Menu items: Tools / Internet Options... / General / Temporary Internet Files / Settings...

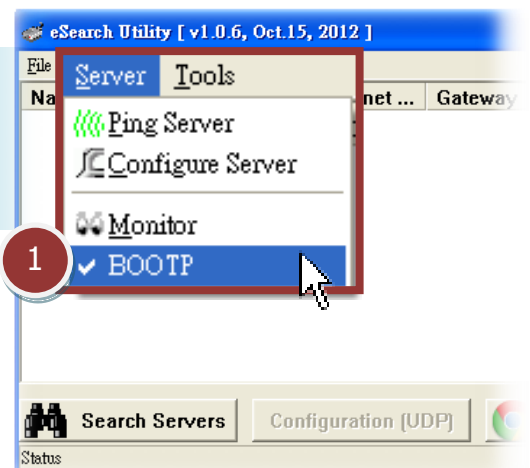


# 3. Troubleshooting

## 3.1 Firmware update in BOOTP mode

If the module is not functioning correctly (e.g. there is no response to the search request, or if the system LED is always displayed as either off or on), please download a new image of the firmware from the ICPDAS web site and then update the firmware for the module using the following procedure.

*Step 1: In the eSearch Utility, select the "BOOTP" item from the "Server" menu. A check mark should be displayed next to the item after it has been selected.*



2



*Step 2: Set the "Init Switch" to the "Init Mode" position.*

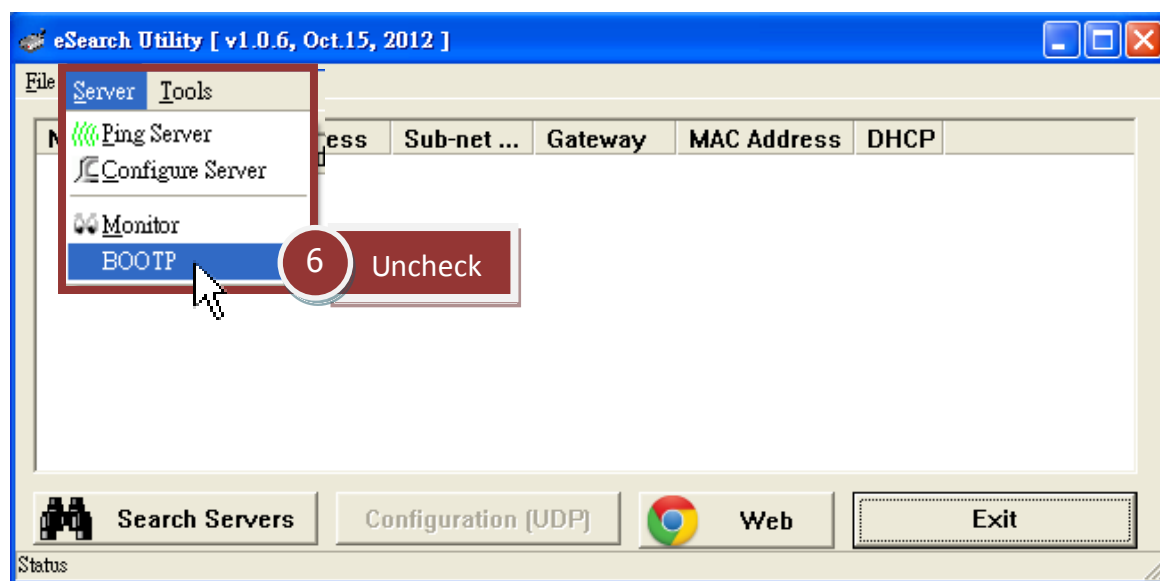
*Step 3: Power-on and reboot the tGW-700 module and then click the "Search Servers" button to search for the tGW-700 at the same time. Note that the tGW-700 module will wait for about 5 seconds for the BOOTP search and firmware update when booting in Init Mode. If this step is not successful, reboot the module and search again.*

Step 4: Right click on the name "BOOTP" and then select the "Firmware Update" item from the popup menu.



Step 5: Refer to Steps 4 to 17 (Pages 2 to 5) in "Chapter 2-Firmware Update Procedure" to complete the update process.

Step 6: After updating the firmware, disable BOOTP mode from the eSearch utility. By selecting "BOOTP" item from the "Server" menu. The check mark next to the item should be removed after it has been disabled. Note that BOOTP mode does not function when searching for a module in Normal mode.






## 4. Additional Information


The code contained in the boot loader, which is used to update the firmware image, is not part of the firmware itself. This means that, the firmware can still be updated even if the built-in firmware has been corrupted or does not exist. If the firmware update fails, simply execute the update procedures again in BOOTP mode, as described in Chapter 3, and the update should be successful.

The tGW-700 series obtains the IP address assigned by the user and retrieves the firmware image through the utility program. Note that when updating the firmware, the tGW-700 series uses the factory-default MAC address rather than any user-defined MAC addresses. The tGW-700 has a built-in flash protection feature that prevents any modification to the firmware stored in the flash memory, before attempting to update the firmware, the “Init Switch” should be set to the “Init” position and then the tGW-700 can be **powered-on and rebooted** to disable the flash protection. Since the flash memory then becomes writable, the firmware can be updated via the Ethernet network.

Mode	Flash Protection	Firmware Update	Configuration
Init	No	Yes	Factory-default
Run	Yes	No	User-defined

### Notes:

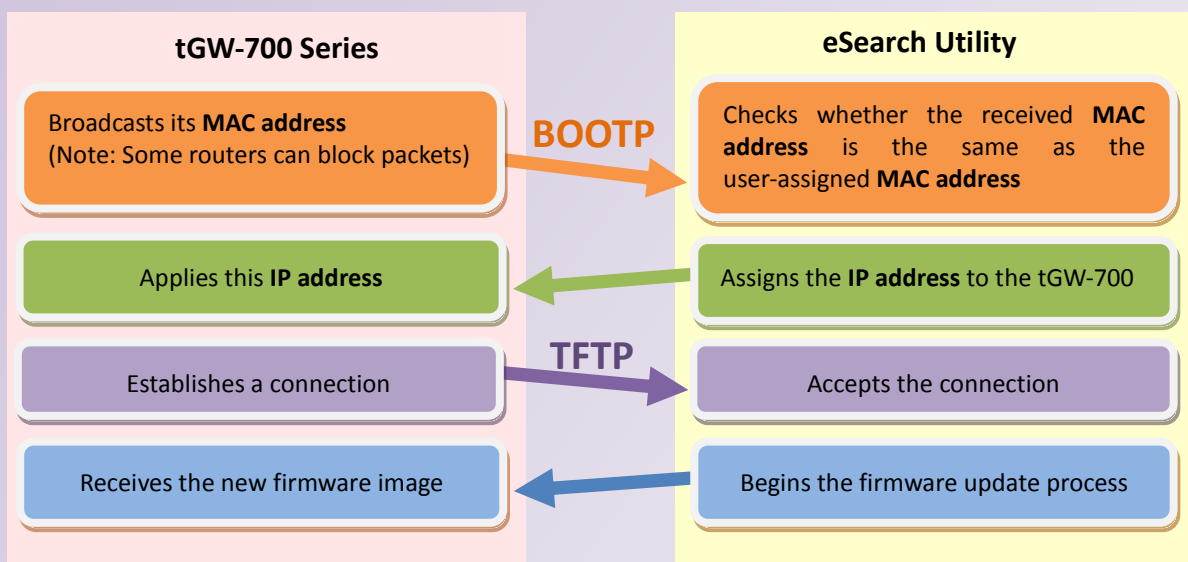
 **Note 1:** If the IP address settings do not work correctly (e.g. there is no response to a ping command), please contact your network administrator to obtain a valid IP address for the tGW-700 module. .... [back](#)

 **Note 2:** If the settings displayed in the IP address field of the firmware update window is incorrect or invalid (e.g. IP address: 0.0.0.0), then a valid IP address must be manually specified for the tGW-700 in order to process the update operation. Please contact your network administrator to obtain a valid IP address before proceeding.  
..... [back](#)

**Note 3:** When updating the firmware, the factory-default MAC address is used rather than the user-defined MAC address. Thus, the MAC address (user-defined) displayed in the firmware update window may not be the one required. If this is the case, the factory-default MAC address should be manually entered into the MAC Address field, or restore the MAC address to the factory-default settings via the web configuration pages.

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**Note 4:** The “BOOTREQ from MAC: xx-xx-xx-xx-xx-xx” message indicates there is a module with the factory-default MAC address “xx-xx...” that is asking for the firmware to be updated. The update process will not begin if you assign a user-defined MAC address in the firmware update window, since the addresses do not match. If this situation occurs, repeat the update procedure and manually enter the factory-default MAC address in the firmware update window, as described in [Step 5 on Page 3](#). The firmware update procedure is illustrated in the figure below.



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**Note 5:** BOOTP (Bootstrap Protocol) is defined in RFC-951 and uses UDP ports 67 and 68.

**Note 6:** TFTP (Trivial File Transfer Protocol) is defined in RFC-1350 and uses UDP port 69.