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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If you have any questions, please feel free to contact us.
Email: service@icpdas.com

Firmware Update Manual

(Applicable to tDS-700 / tGW-700 / tSH-700 / DS-2200 / GW-2200 Series)

Version: 1.0/ Updated: Jul. 2025

Ch. 0. How to identify your tXX-700_RevB type

Ch. 1 Preparations Before Firmware Update

Ch. 2. Firmware Update Procedure

Ch. 3. Troubleshooting

Ch. 4. Additional Information



ICP DAS CO., LTD.
Website: http://www.icpdas.com

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SUPPORT

Confirm the module model and download the corresponding version of the firmware file.

Models	Module Appearance	Firmware File	Quick Start Guide
tDS-700 Series tDS-712(i)、tDS-722(i)、tDS-732(i)、tDS-715(i)、tDS-725(i)、tDS-735(i)、tDS-718(i)、tDS-724(i)、tDS-734(i)、tDSM-712、tDS-718i-D、tDS-715(i)-T、tDS-718(i)-T		Download the Firmware File.	Download the Quick Start Guide.
tGW-700 Series tGW-712(i)、tGW-722(i)、tGW-732(i)、tGW-715(i)、tGW-725(i)、tGW-735(i)、tGW-718(i)、tGW-724(i)、tGW-734(i)、tGW-715(i)-T tGW-718(i)-T、tGW-718i-D		Download the Firmware File.	Download the Quick Start Guide.
tSH-700 Series tSH-722(i)、tSH-724 (i)、tSH-725(i)、tSH-732(i)、tSH-734(i)、tSH-735(i)		Download the Firmware File.	Download the Quick Start Guide.
DS-2200 Series DS-2212i、DS-2222i、DS-2232i、DS-2215i、DS-2225i、DS-2235i		Download the Firmware File.	Download the Quick Start Guide.
GW-2200 Series GW-2212i、GW-2222i、GW-2232i、GW-2215i、GW-2225i、GW-2235i		Download the Firmware File.	Download the Quick Start Guide.

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0. How to identify your tXX-700 RevB / RevB2 module

Note:

1. The tDS-700, tGW-700, and tSH-700 series are divided into two model types: with or without markings (“RevB” or “RevB2”). Comparatively, the DS-2200 and GW-2200 series do not have such differentiation.

2. In the following content, the tDS-700 series will be used as the firmware update operation example, with tDS-700_RevB representing both the tDS-700 RevB and tDS-700 RevB2 modules. Ensure the module's front panel is labeled **“RevB”** or **“RevB2”**—the following applies only to these versions, as shown below:



Module Name: **tDS-700**
Not applicable to this Firmware update manual.

Module Name: **tDS-700** RevB / RevB2
Firmware file: **tDS700_RevBxxx_xxxxxx.zip**



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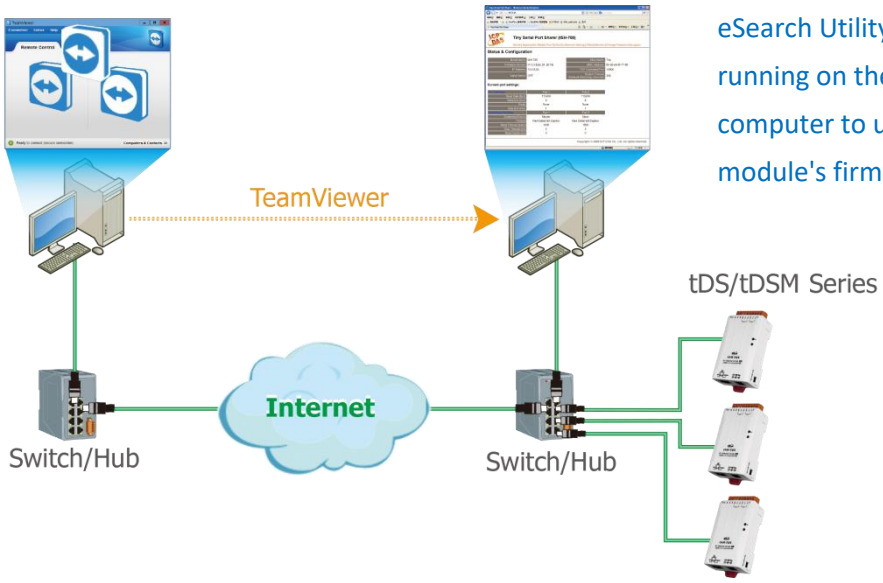
1. Preparations Before Firmware Update

Note:

1. Before updating the firmware, please configure the network settings of both your computer and the tDS-700_RevB module. Otherwise, the network-based update process may not function properly.

2. In order to perform a Remote Firmware Update, use an application that allows an external system to be remotely controlled, such as TeamViewer, to create a connection between the local and the remote system. **Note that all firmware update procedures need to be carried out on the remote system.**

User is there remotely controlling the firmware update procedures.



eSearch Utility is running on the computer to update module's firmware.

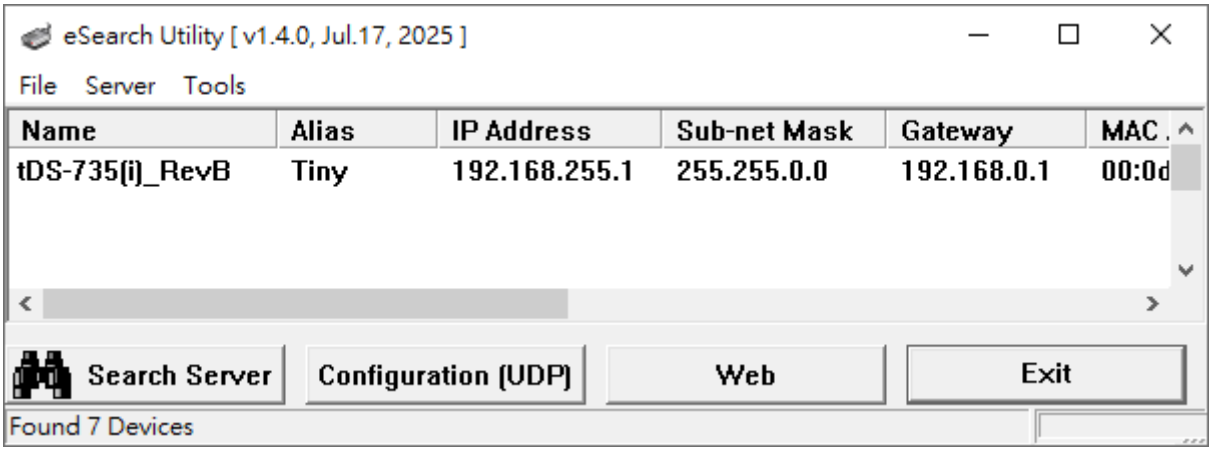
Step 1: Connect the tDS-700 _RevB to the same hub or the same sub-network as your Host PC, and attach a power supply to the tDS-700_RevB. Do not connect the tDS-700_RevB to a router or directly to the Internet as this may cause the update process to fail.

Please refer to "**Chapter 3-Connecting the Power and Host PC"** in the tDS-700_RevB Quick Start Guide for more detailed information. For quick start guides of different models, please refer to the download links on Page 2.

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

Note: The update method described in this manual applies only to eSearch Utility version 1.4.0 or later. Please download and install the latest version of eSearch Utility.



Download the eSearch Utility.

Step 3: Configure the correct network settings for the required tDS-700 _RevB module.

Please refer to **"Chapter 4-Configuring Ethernet Settings"** in the tDS-700_RevB Quick Start Guide. For quick start guides of different models, please refer to the download links on Page 2. If the IP address settings do not work correctly, please refer to **note1 (Page 31)**.



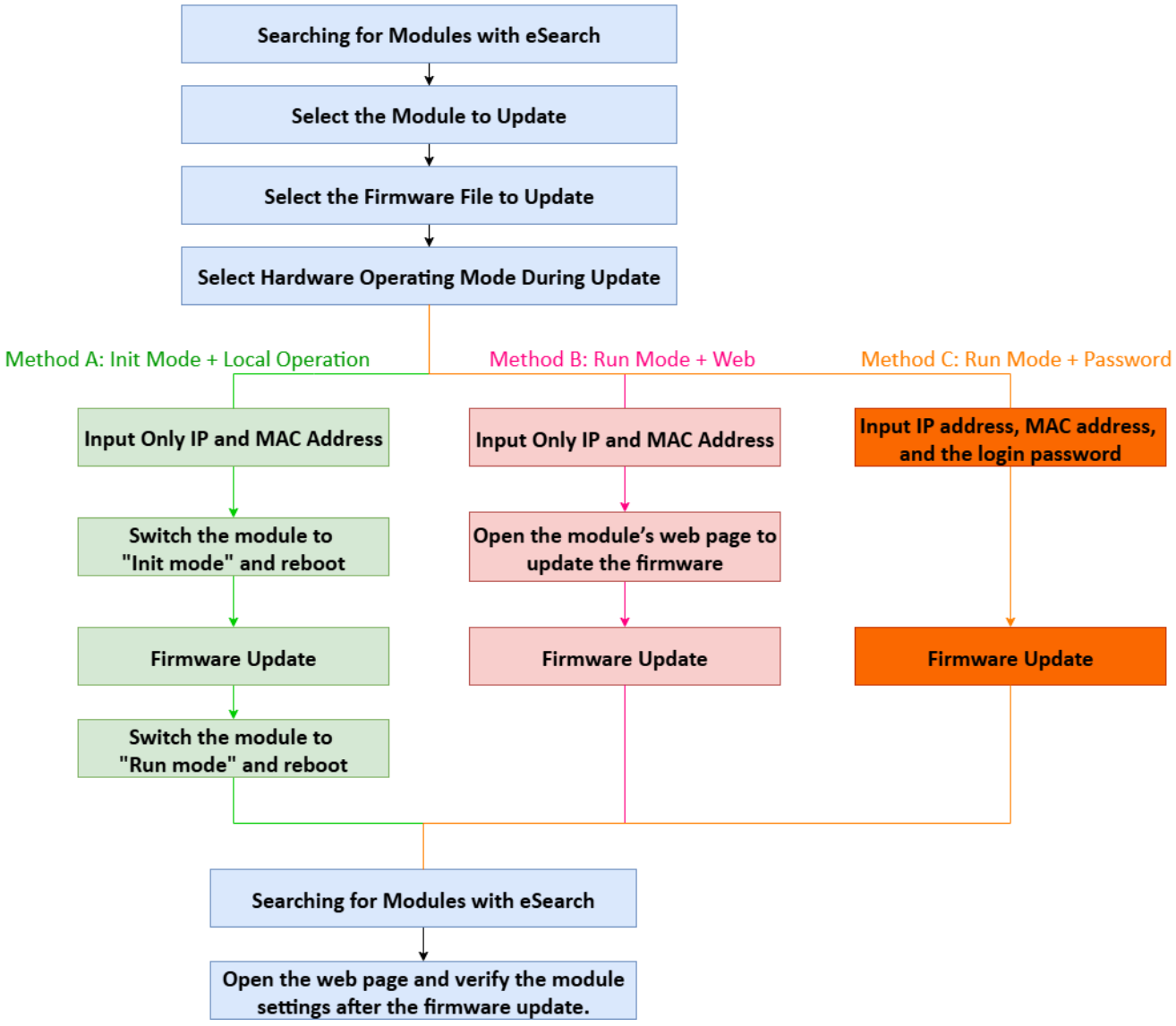
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2.Firmware Update Procedure

Please temporarily disable your firewall and antivirus software to prevent firmware update failures.

There are three methods to update firmware using eSearch, primarily distinguished by the hardware operating mode during the update and whether the update is performed via the module's web interface. The following sections provide detailed explanations of each method.

➢ Below is the flowchart for updating firmware using eSearch.



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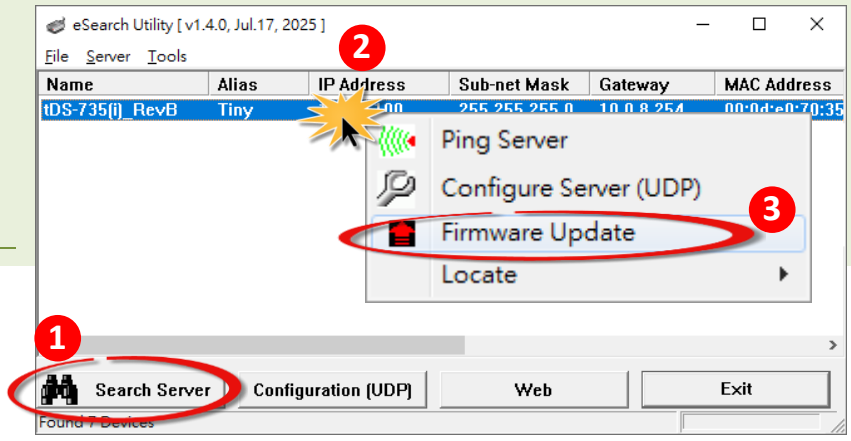
2.1 Device Search and Firmware File Selection

Please use the eSearch Utility to search for the device you want to update, and select the correct update file.

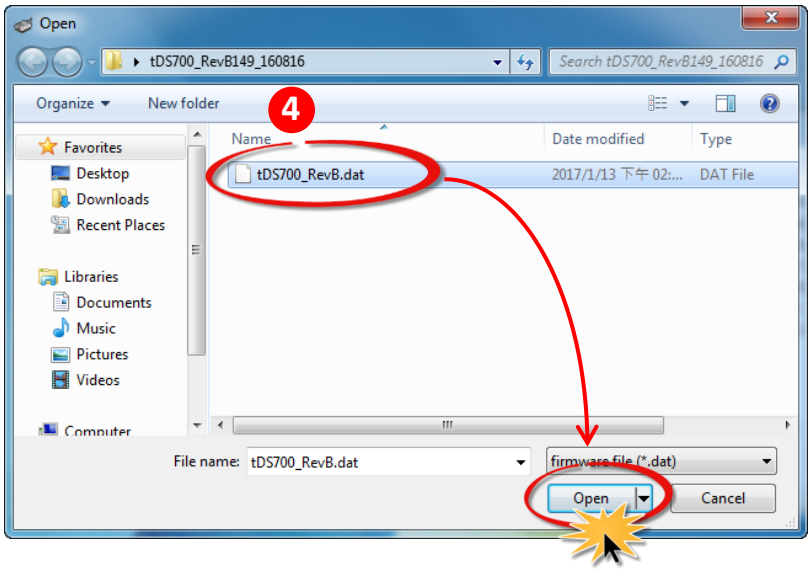
Step 1: In the eSearch Utility, click the "Search Servers" button to search for any tDS-700_RevB modules connected to the network .

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

Step 3: Select the "Firmware Update" item.



Step 4: In the "Open" dialog box, select the firmware file (tDS700_RevB.dat) that will be used to update the module and then click the "Open" button. For firmware download links corresponding to different models, please refer to Page 2.



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2.2 Choose the Best Update Procedure According to Your Operating Environment

When updating the firmware, different update methods apply depending on the module's status and installation location. Users should select the best update procedure according to their operating environment.

Update Process	**Traditional Update**	**Web Update**	**Password Update**
Operation Mode	Init Mode	Run Mode	
Operating Environments	Only supports local operation	Supports Local or Remote Operation	Supports Local or Remote Operation
Interaction with the Physical Module	Yes	No	No
The login password has been set	No impact	Yes	Yes
Manual reboot of the module	Yes	No	No
Complexity of Update Procedure	High	Medium	Low
Operating Instructions	Method A(Page 9)	Method B(Page 12)	Method C(Page 16)

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Method A: Traditional Firmware Update Procedure

Note:

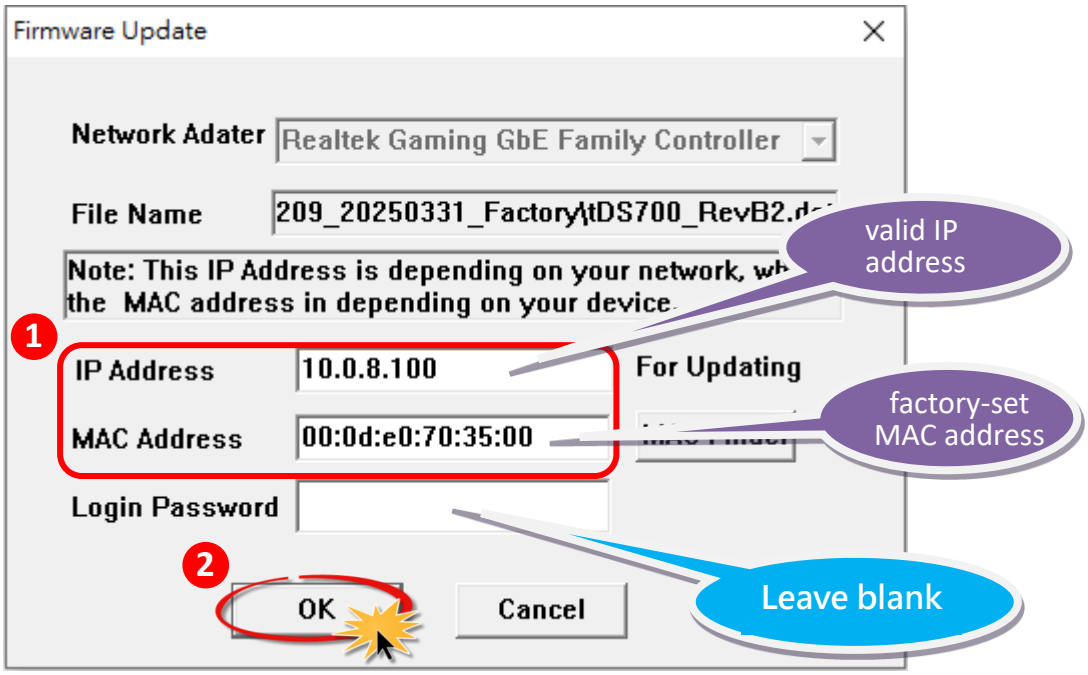
1. This method supports local operation only.

2. This method requires manually switching the module to Init mode and power cycling the module to initiate the firmware update.

The operation steps are as follows:

Step 1: Assign a valid IP address (not limited to the current IP used by the module) and the factory-set MAC address to the tDS-700_RevB module.

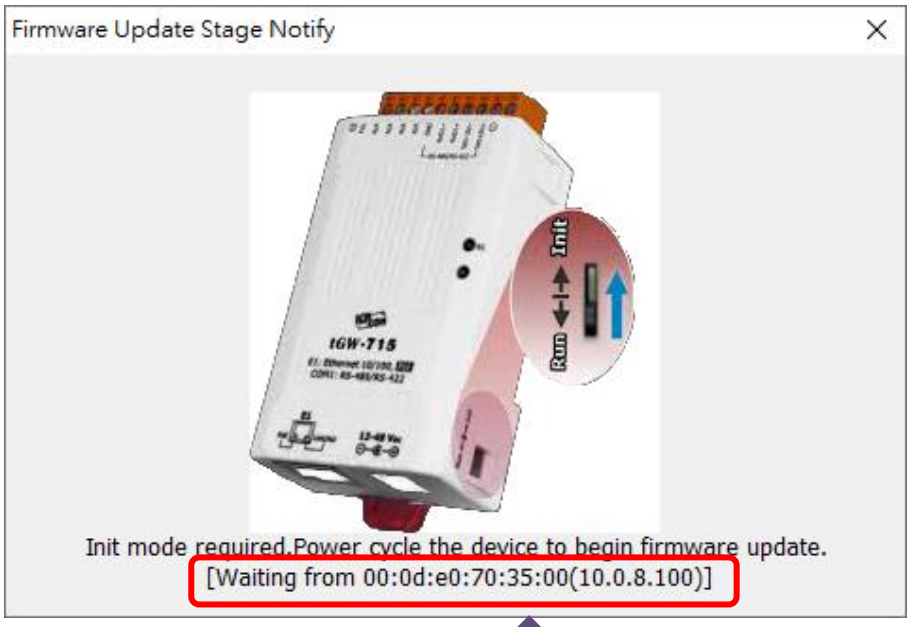
Step 2: Click the "OK" button .



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Step 3: The system will automatically display a Firmware Update Stage Notify window.

Note: Do not close this window.



[Waiting for Update Request from Device MAC Address (IP)]

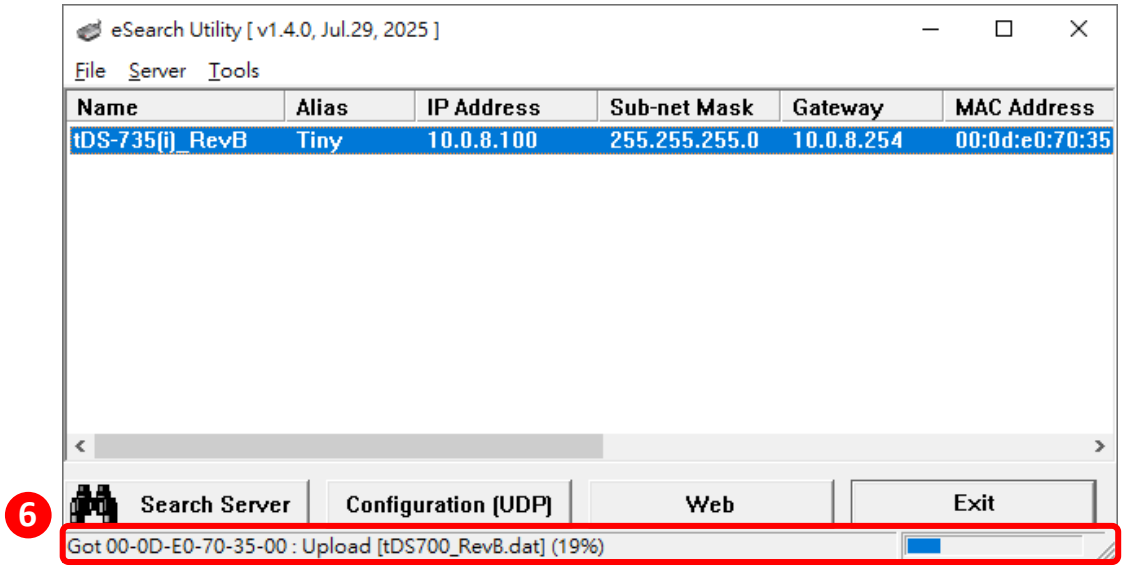
Step 4: Set the tDS-700_RevB module to "Init Mode".



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Step 5: In "Init mode" power cycle the tDS-700_RevB. The firmware update will start automatically after the module reboot.

Step 6: When the update begins, the Firmware Update Stage Notify window will close automatically. The MAC address of the module and the current update progress will be displayed at the bottom of the eSearch Utility.

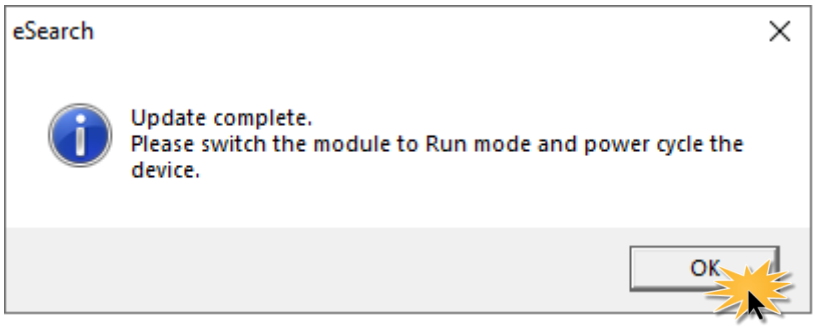


Step 7: Upon completion of the update, the system will automatically display an update completion message window. Click "OK" button to close the window, and then set the module back to "Run mode".

Step 8: Power-on reset the tDS-700_RevB module.

Step 9: Refer to Section 2.3 "Verification of Module Settings After Update."





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Method B: Web Update Operation Steps

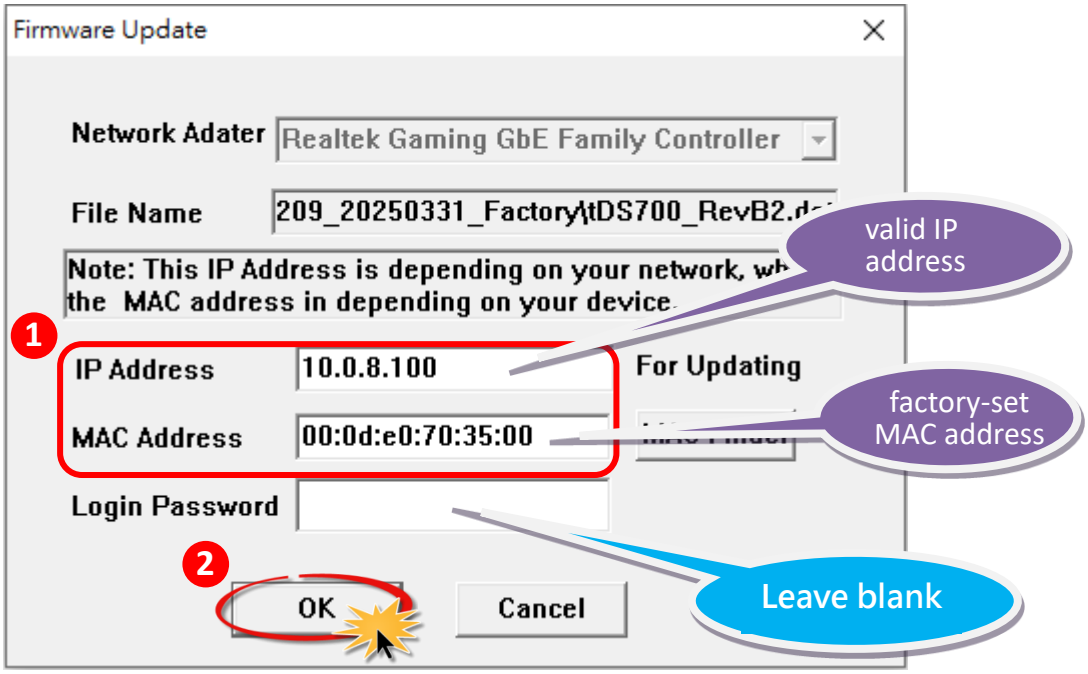
Note:

Before updating the firmware, ensure that the user has set a login password and that the module is operating normally in Run mode.

The operation steps are as follows:

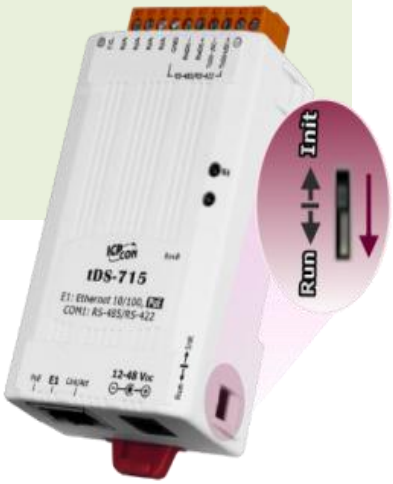
Step 1: Assign a valid IP address (not limited to the current IP used by the module) and the factory-set MAC address to the tDS-700_RevB module.

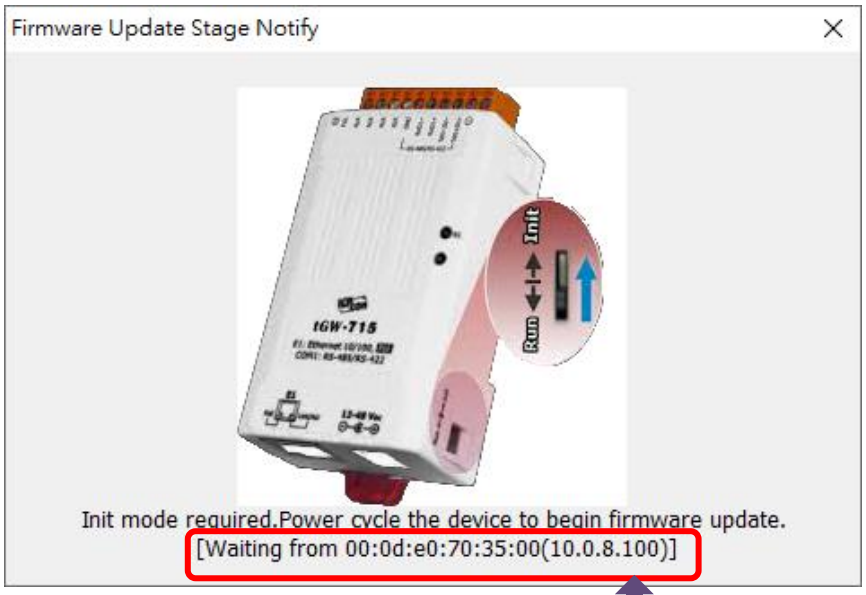
Step 2: Click the "OK" button .



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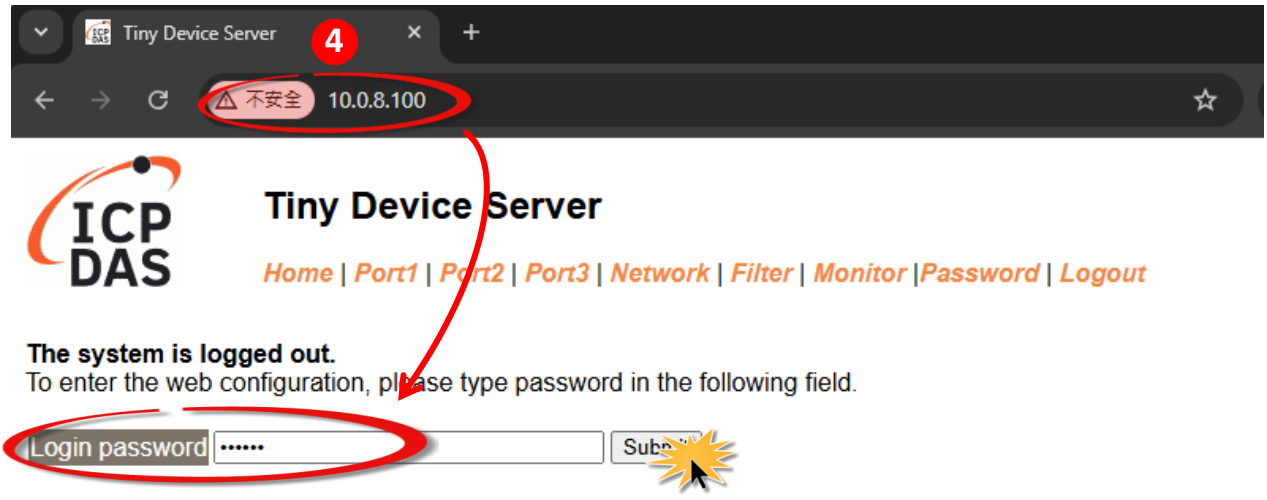
Step 3: The system will automatically display the Firmware Update Stage Notify window. Please keep the tDS-700_RevB module in "Run mode" during this time. Note: Do not close the window or switch the module to "Init mode."





[Waiting for Update Request from Device MAC Address (IP)]

Step 4: Open a web browser and enter the IP for the tDS-700_RevB in the address bar of the browser and log in to the web configuration pages.

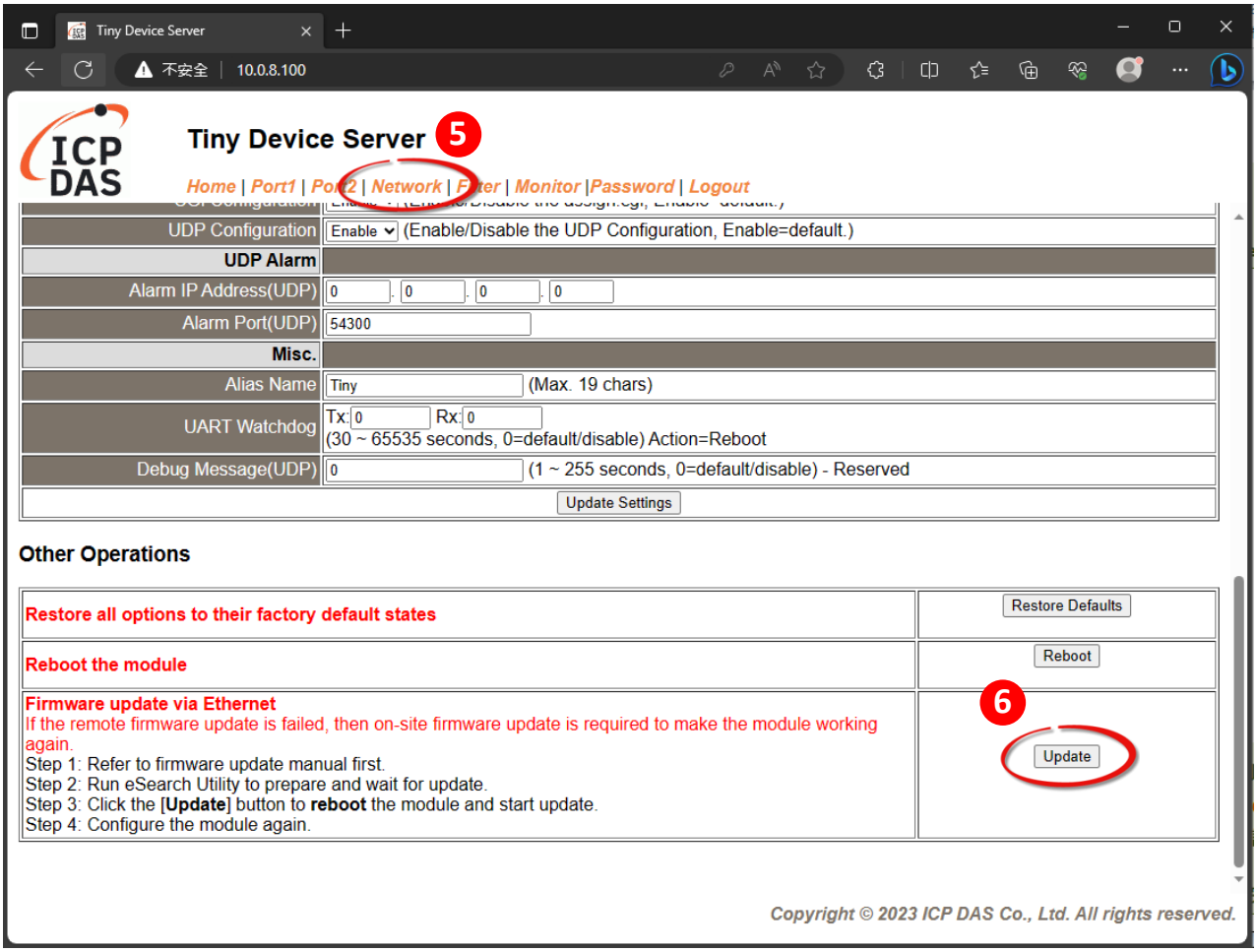


When using IE, please disable its cache as follows.
Menu items: Tools / Internet Options... / General / Temporary Internet Files / Settings... / Every visit to the page

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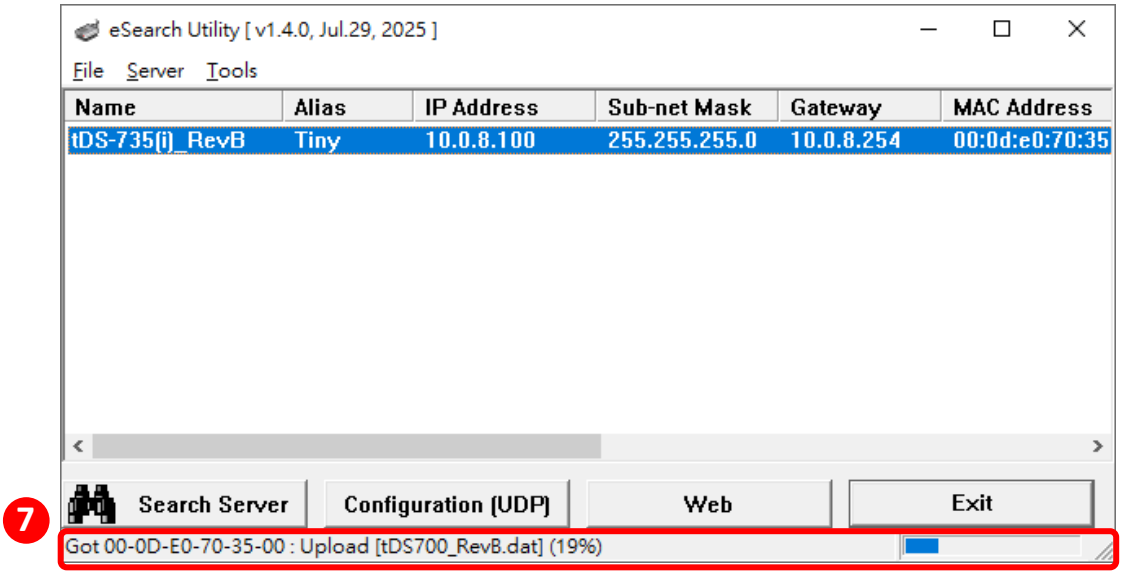
Step 5: Click the “Network” tab to display the Network Settings page.

Step 6: Click the “Update” button in the “Firmware update via Ethernet” section to start the update.



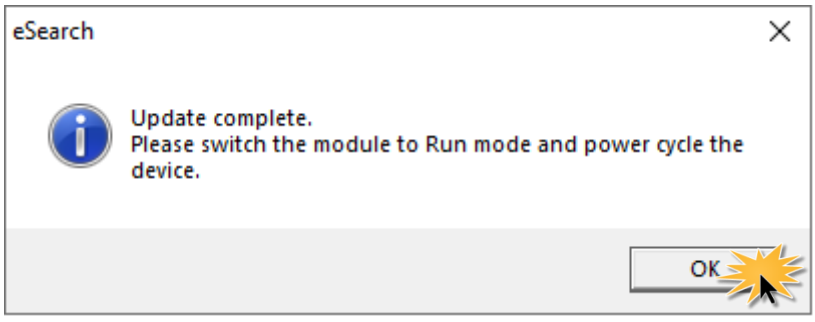
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Step 7: When the update begins, the Firmware Update Stage Notify window will close automatically. The MAC address of the module and the current update progress will be displayed at the bottom of the eSearch Utility.



Step 8: Upon completion of the update, the system will automatically display an update completion message window. Click "OK" button to close the window.

Step 9: Refer to Section 2.3 "Verification of Module Settings After Update."



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Method C: Login Password Update Procedure

Note:

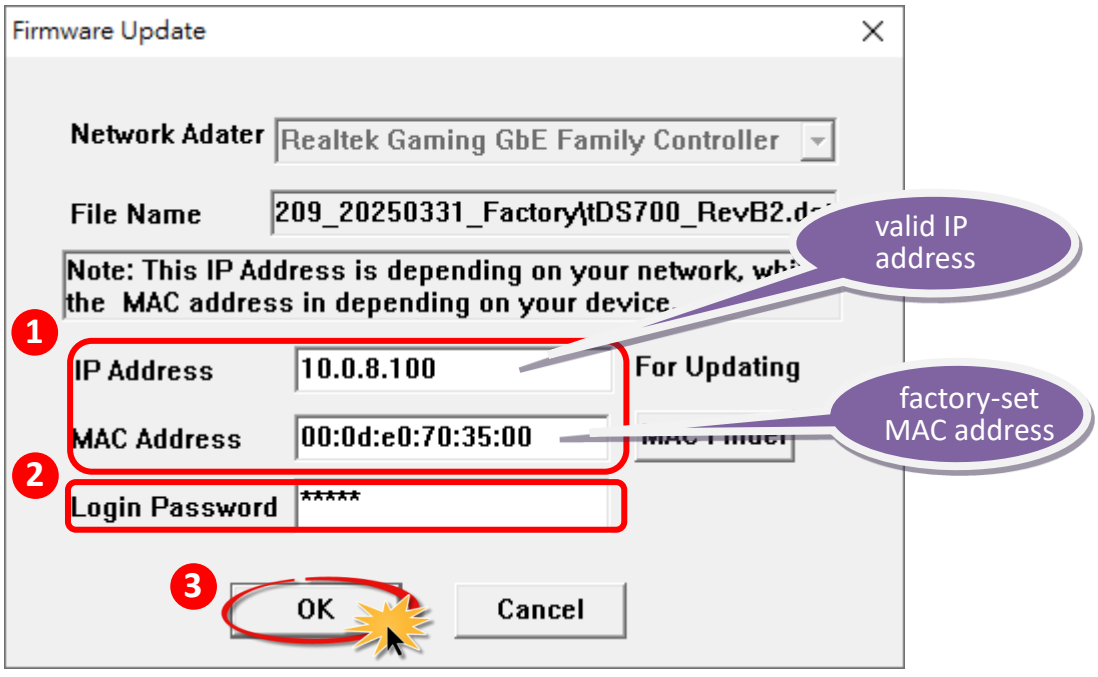
Before updating the firmware, ensure that the user has set a login password and that the module is operating normally in Run mode.

The operation steps are as follows:

Step 1: Assign a valid IP address (not limited to the current IP used by the module) and the factory-set MAC address to the tDS-700_RevB module.

Step 2: Enter the login password.

Step 3: Click the "OK" button .

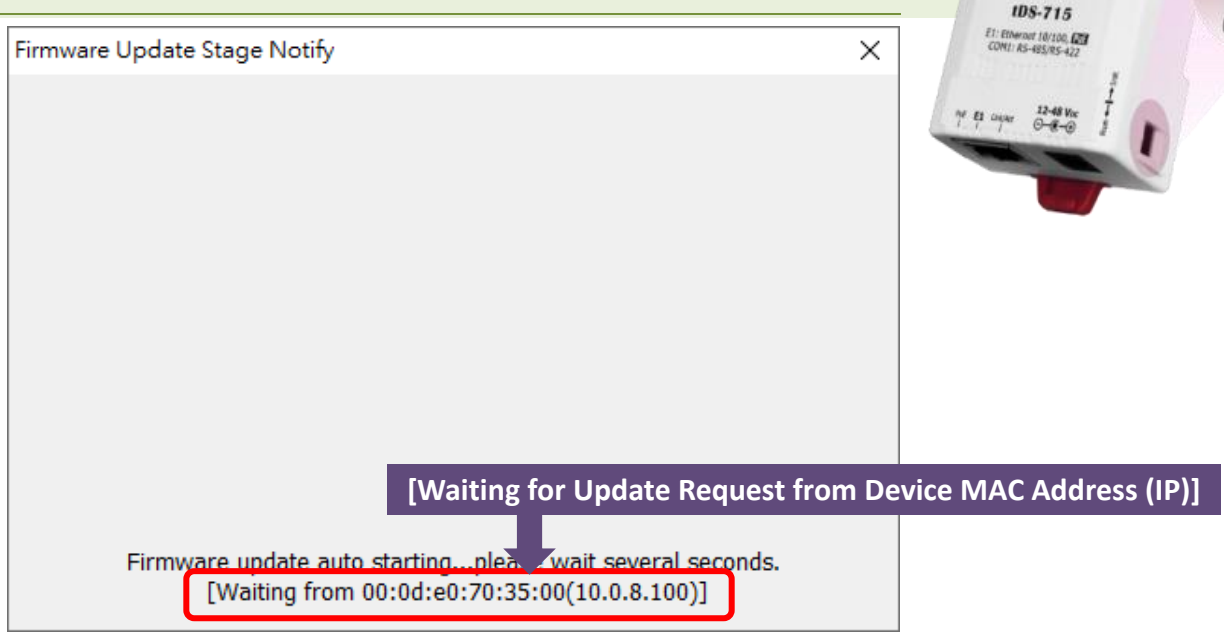


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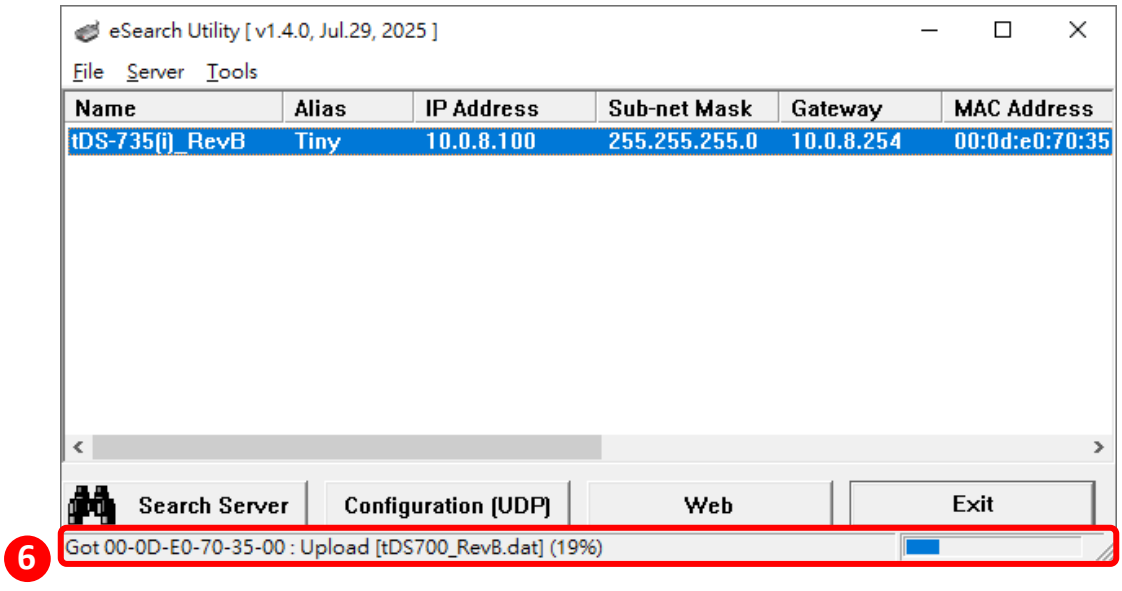
Step 4: The system will automatically display the Firmware Update Stage Notify window. Note: Do not close the window

Step 5: Please keep the tDS-700_RevB module in "Run mode" during this time.





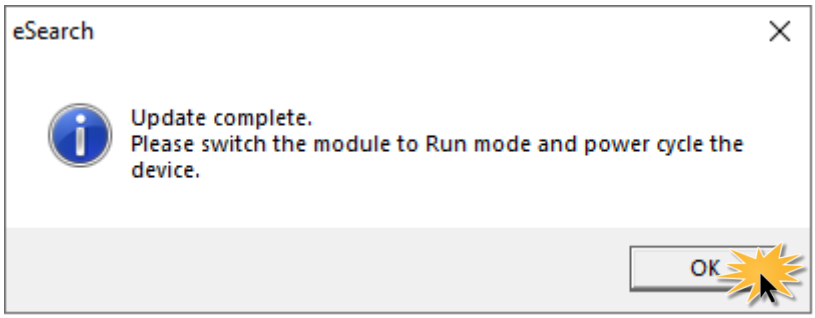
Step 6: When the update begins, the Firmware Update Stage Notify window will close automatically. The MAC address of the module and the current update progress will be displayed at the bottom of the eSearch Utility.



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Step 7: Upon completion of the update, the system will automatically display an update completion message window. Click "OK" button to close the window.

Step 8: Refer to Section 2.3 "Verification of Module Settings After Update."



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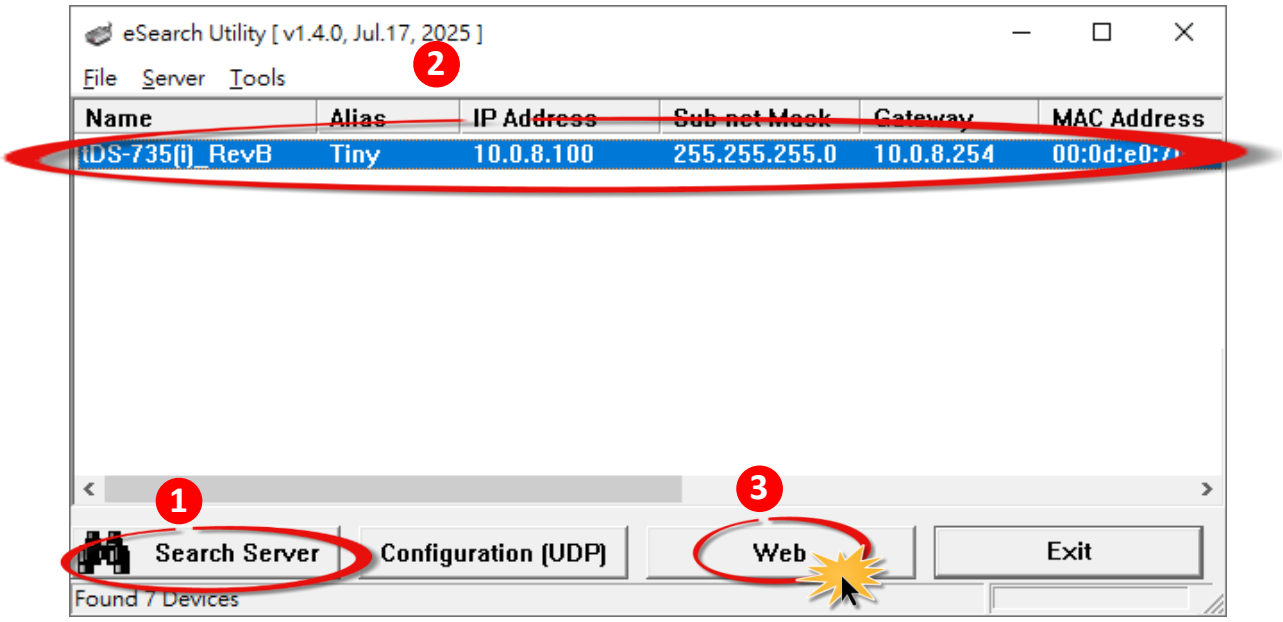
2.3 Verification of Module Settings After Update.

After updating the firmware, it is recommended to re-verify the module's network settings and other related parameters to ensure proper operation.

Step 1: Click the "Search Server" button to search for the tDS-700_RevB.

Step 2: Click the name of the tDS-700_RevB module.

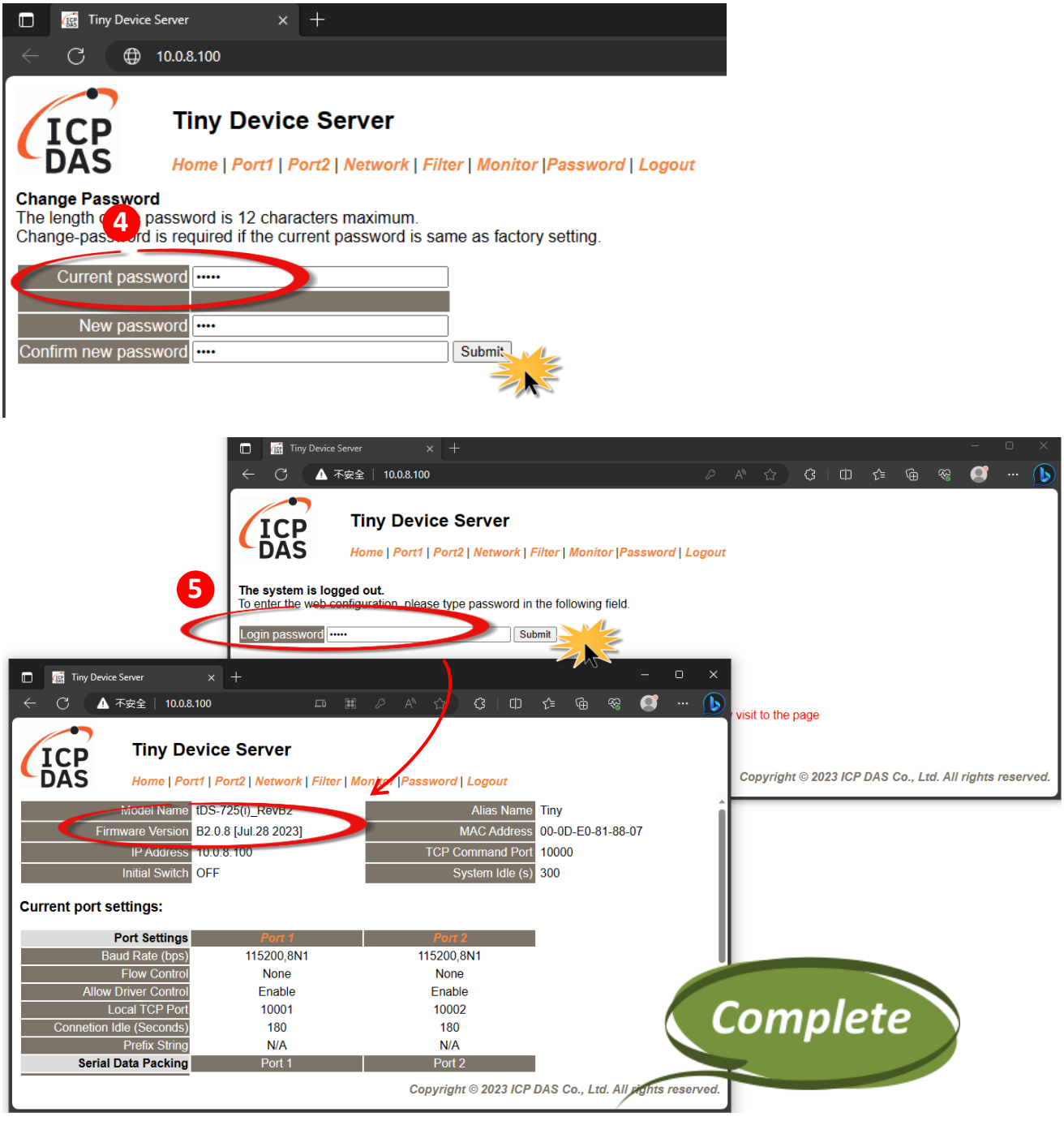
Step 3: Click the "Web" button and the default web browser will be opened.



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Step 4: After updating the firmware, you may need to reset the password. Enter the default password "admin" in the Current password field, and input the new password in the New password and Confirm new password fields.

Step 5: Enter the user-set login password and click the "Submit" button. Verify that the updated firmware version and date are correct, and check other related parameters to ensure the module is functioning properly.



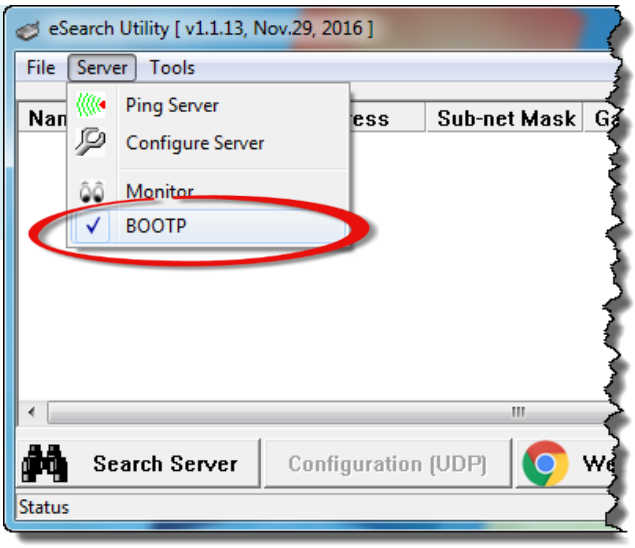
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3. Troubleshooting

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 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.



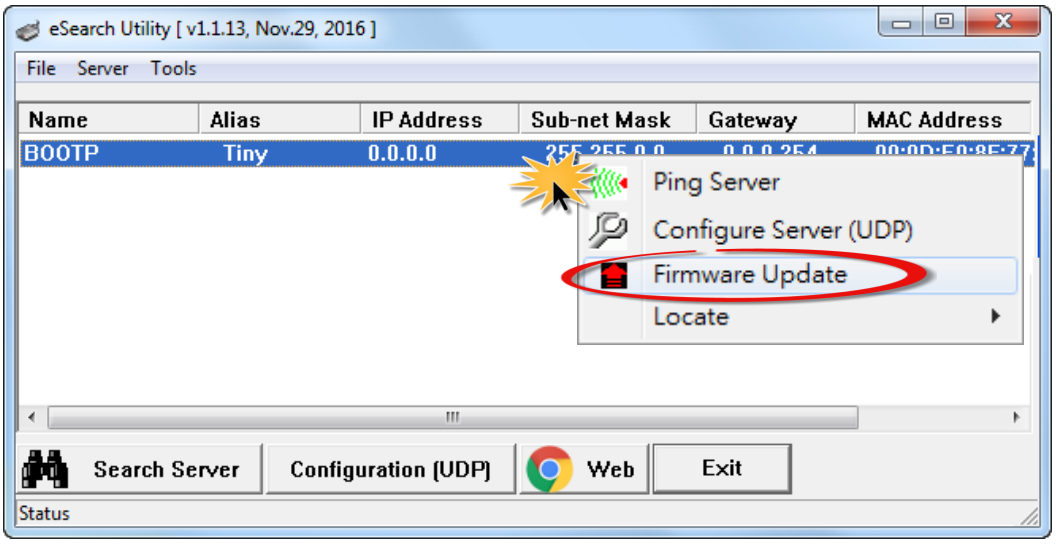


Step 2: Set to "Init Mode".

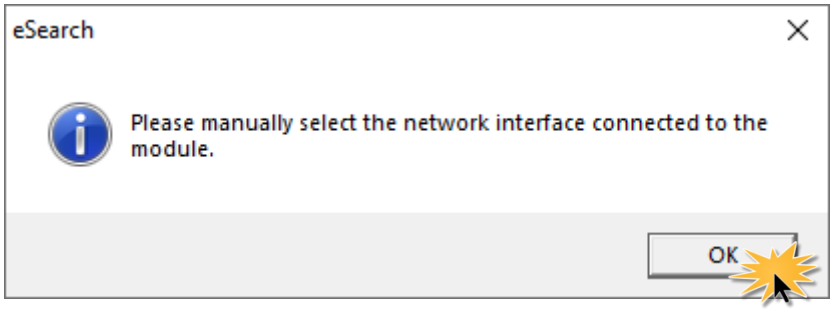
Step 3: Power-on and reboot the tDS-700 _RevB module and then click the "Search Servers" button to search for the tDS-700_RevB module at the same time. Note, the module sends BOOTP messages about 5 seconds when booting in Init Mode. If this step is not successful, reboot the module and execute the search again.

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

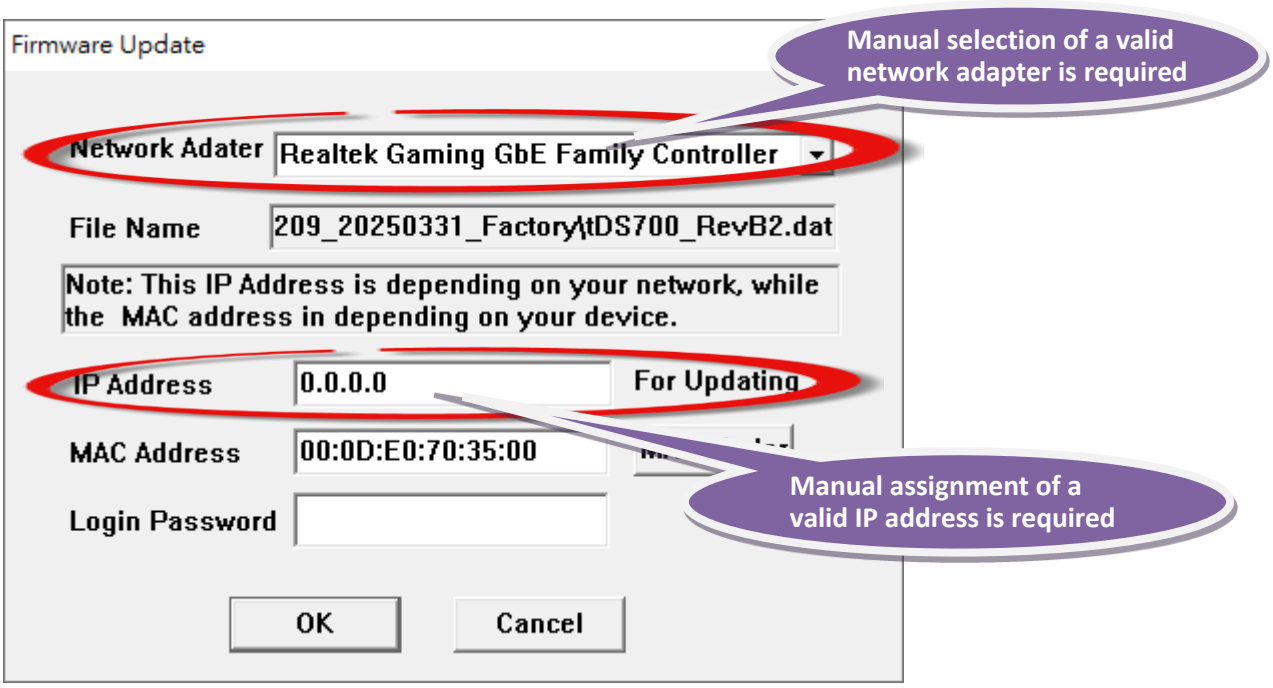


Step 5: *The system will automatically display a prompt message. Click the "OK" button to close the message window.*

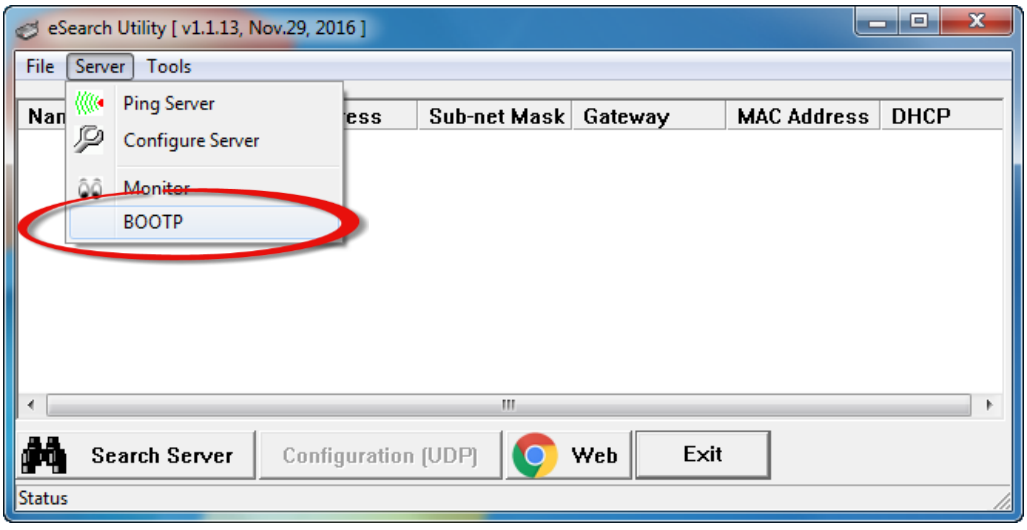


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Step 6: Please refer to "Chapter 2: Firmware Update Procedure" to complete the firmware update (the subsequent update steps are the same). Note: At this stage, the module's response does not include network card or IP information. Users need to manually specify a network interface for updating the module and assign a valid IP address to the module.



Step 7: After completing the firmware update in BOOTP mode, please disable "BOOTP mode". Note: If BOOTP mode is not disabled, incorrect module names may be detected during the search.



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3.2 How to update Firmware when IP addresses of tDS-700_RevB and host PC are on different network segments?

The IP address of tDS-700_RevB module and Host PC, and the network access point (without passing through a router/gateway) must be in the same subnet for firmware update.

- If the network environment supports DHCP, you can refer to Method 1 to set the IP for the module.
- Alternatively, you can contact the network administrator to obtain a set of valid static IP addresses, referring to Method 2 to set the IP for the module.

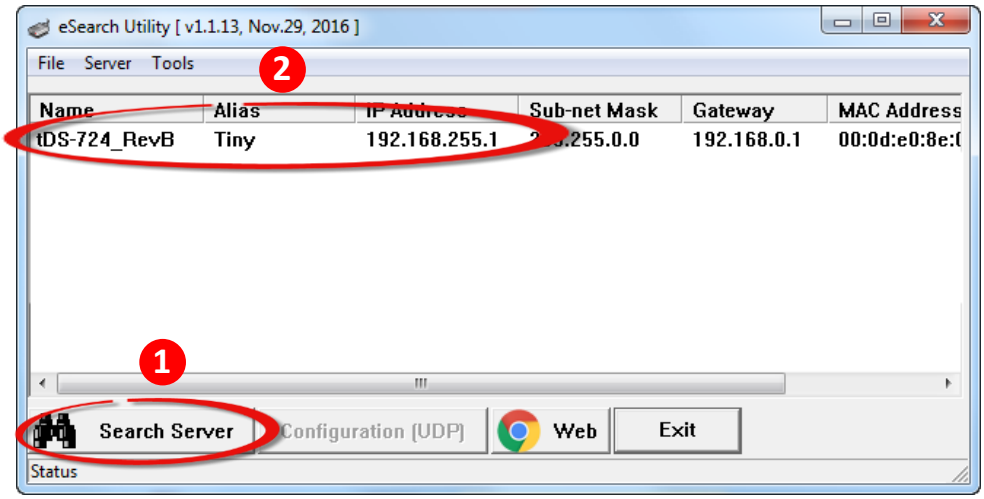
Once the module's IP address is correctly configured, you can proceed with the firmware update.

Method 1: Using **"DHCP"** to automatically assigns an IP address to tDS-700_RevB module. Follow the procedure described below:

Note: Please consult your network administrator as this feature requires the presence of a DHCP server in the network environment.

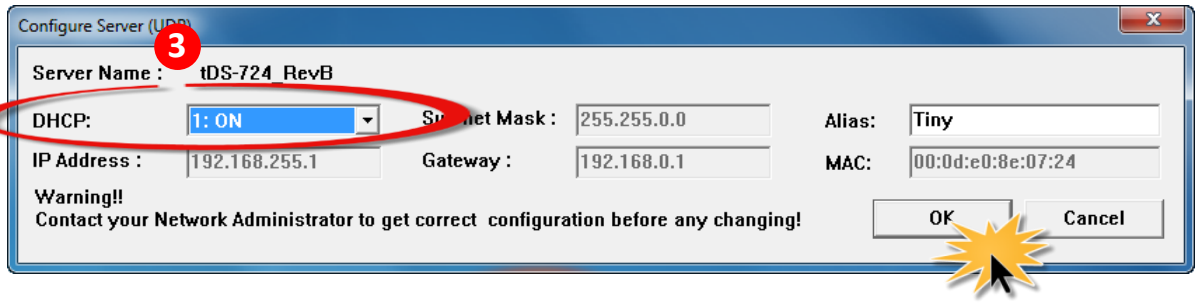
Step 1: Run the eSearch Utility to search for tDS-700_RevB modules

Step 2: Double click the name of tDS-700_RevB to open the "Configure Server (UDP)" dialog box.

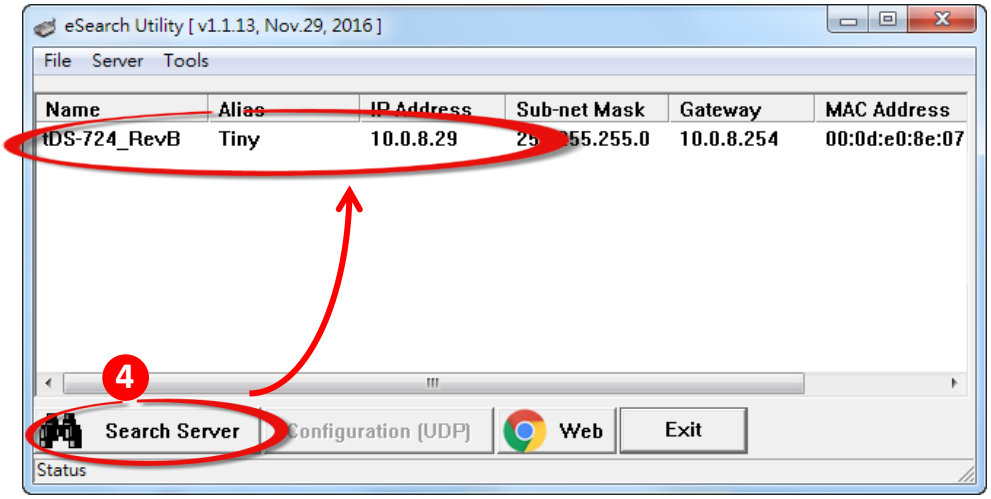


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Step 3: Select the "1: ON" option from the "DHCP:" drop-down menu and click the "OK" button.



Step 4: Wait 2 seconds and then click the "Search Servers" button again to ensure the tDS-700_RevB is working well with new configuration.



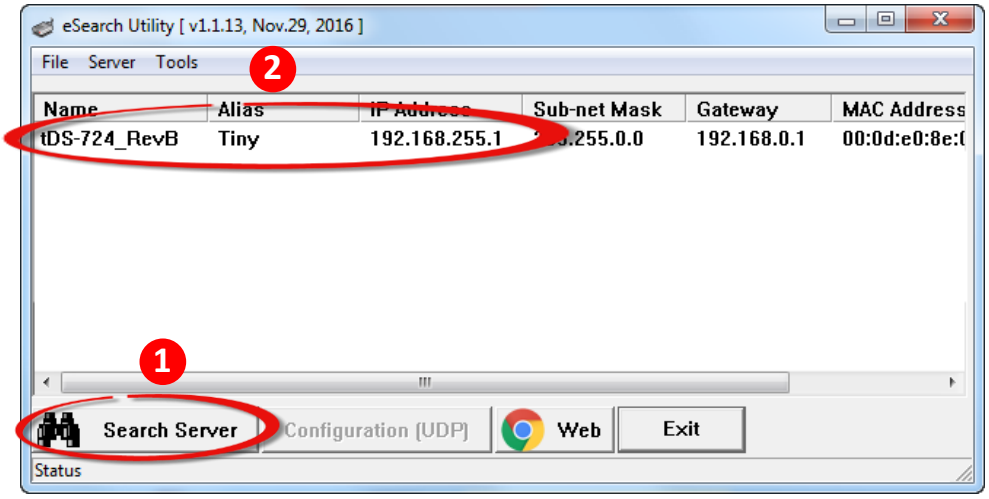
Step 5: Refer to "Chapter 2-Firmware Update Procedure" for details of how to complete the update process.

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Method 2: Using **"Manual configuration"** to assigns an IP address to tDS-700_RevB series module. Follow the procedure described below:

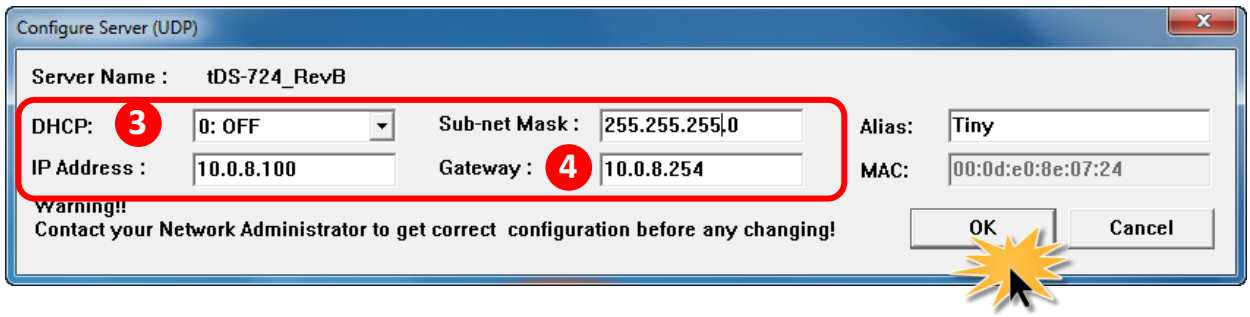
Step 1: Run the eSearch Utility to search for tDS-700_RevB modules

Step 2: Double click the name of tDS-700_RevB to open the "Configure Server (UDP)" dialog box.



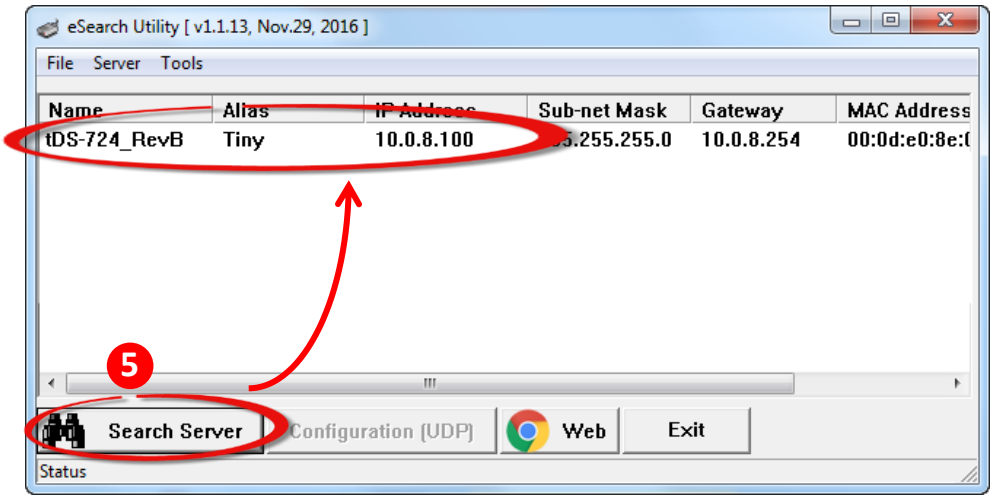
Step 3: Select the "0: OFF" option from the "DHCP:" drop-down menu.

Step 4: Contact your Network Administrator to obtain a correct network configuration (such as IP Address/Sub-net Mask/Gateway). Enter the network settings and click the "OK" button.



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Step 5: Wait 2 seconds and then click the "Search Servers" button again to ensure the tDS-700_RevB is working well with new configuration.

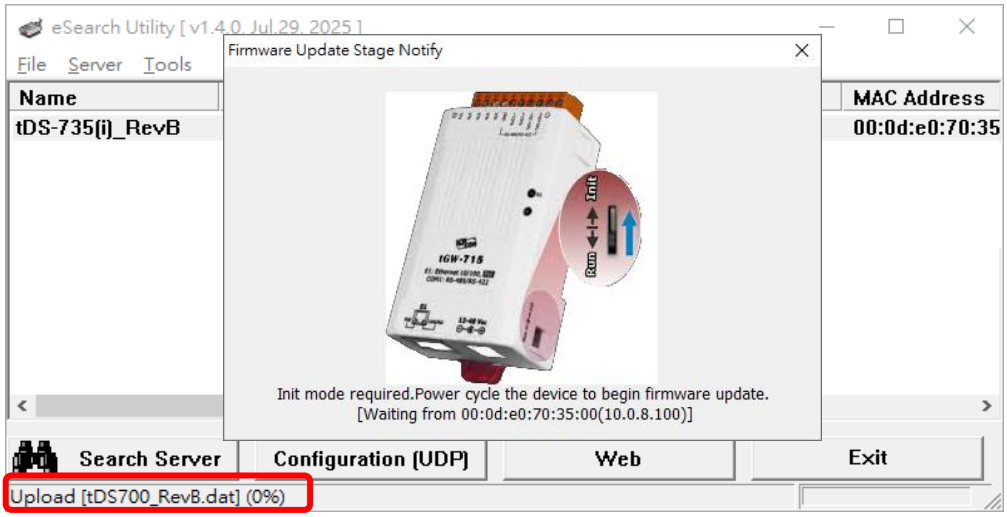


Step 6: Refer to "Chapter 2-Firmware Update Procedure" for details of how to complete the update process.

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3.3 How to solve issues encountered during Firmware update

Issue 1: If the update progress is stuck at 0% with no response.



Solution: After completing the following steps, please Power-on reset the module.

Step 1: Please make sure that the Init/Run Switch of the module is in the "Init" position.

Step 2: Turn off the firewall and antivirus software.

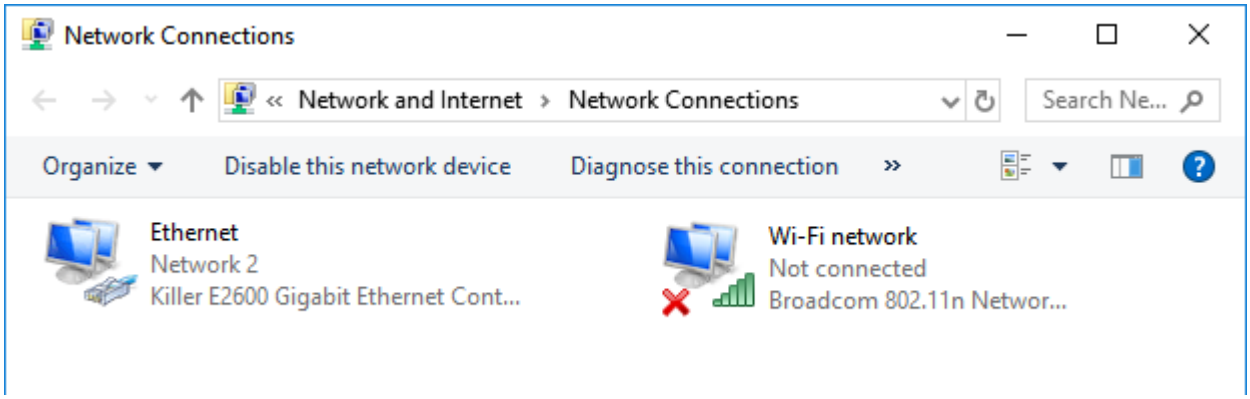
If you encounter the aforementioned issues and all solutions fail, please refer to the following steps: Connect the module directly to the PC and perform the Firmware update without an external network connection.

Before starting the operation, please switch to a relatively clean computer environment. Users need to manually set an IP address to communicate with the tDS-700_RevB module connected to the same subnet.

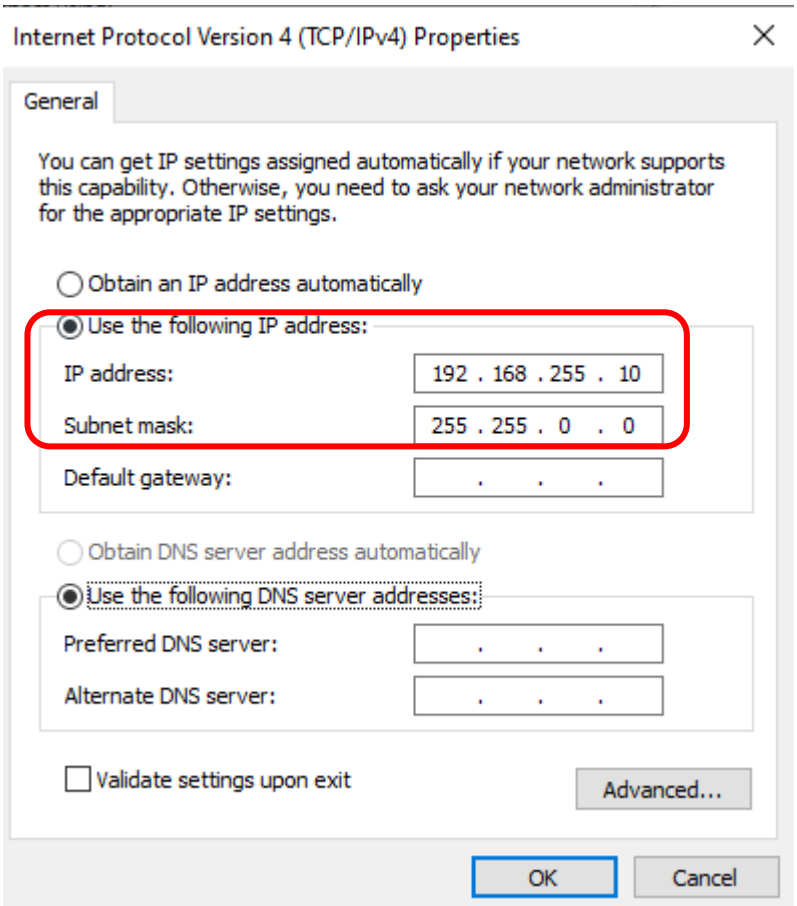
Please refer to the instructions on how to set up the computer's IP: [How to Set a Static IP Address (trendnet.com)]

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Steps 1: Disable all network connections except for the one used to connect to the tDS-700_RevB module. In the example below, it is evident that Wi-Fi is not connected at this time.



Steps 2: The module's default IP address is 192.168.255.1. Set your computer's IP address to something other than the module's setting, for example, 192.168.255.10.



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Steps 3: Please disable the firewall and antivirus software, and unplug all other network cables, leaving only the network cable connection between the tDS-700_RevB module and the computer.
Note: If the tDS-700_RevB module is powered via PoE, the PoE switch should not be connected to the external network. If the tDS-700_RevB module is powered via DC, simply connect one network cable to both the computer and the module

Subsequent steps, please refer to *"Chapter 2 - Firmware Update Procedure"*, section *[Method A: Traditional Firmware Update Procedure]* to complete the firmware update (subsequent update procedure steps are the same).
Note: In Step 1 on page 9, users can directly use the default IP 192.168.255.1 without making any changes.

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4. Additional Information

The code contained in the boot loader, which is used to update the firmware image, is not part of the firmware it-self. 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 tDS-700_RevB 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 tDS-700_RevB series uses the factory-default MAC address rather than any user-defined MAC addresses.*** The tDS-700_RevB series 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/Run Switch should be set to the "**Init**" position and then the tDS-700_RevB series 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 tDS-700_RevB series module. ..... back

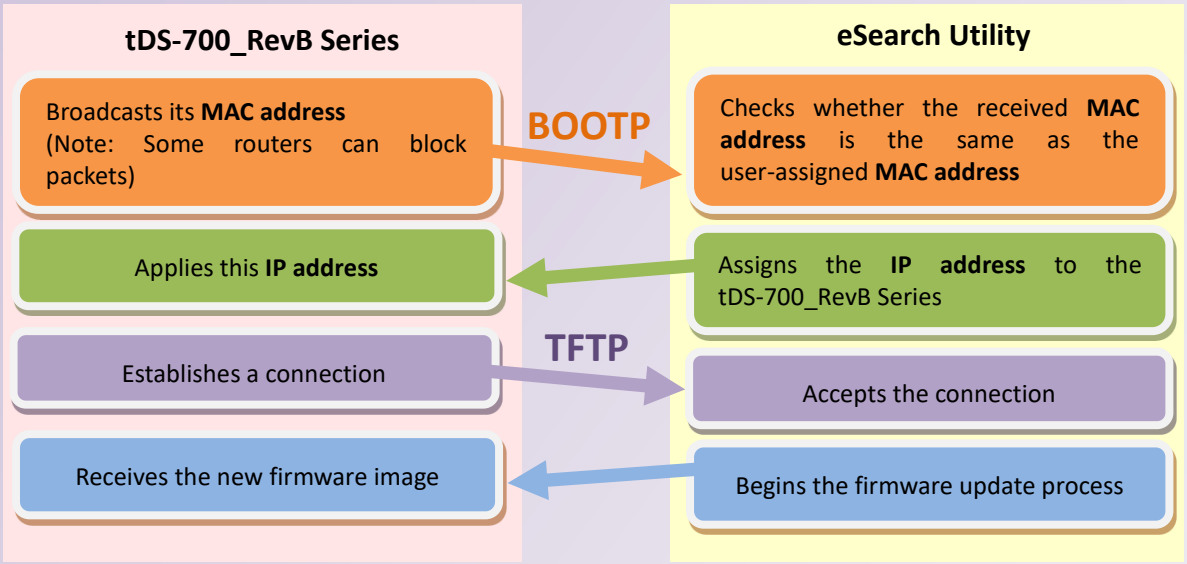
Note 2: If the settings displayed in the IP address field of the firmware update window is incorrect or invalid (e.g. IP address: 0.0.0.0), then a valid IP address which in the same subnet must be manually specified for the tDS-700_RevB series in order to process the update operation. Please contact your network administrator to obtain a valid IP address before proceeding.
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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 **"BOOTPREQ 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 4. 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.

Note6: TFTP (Trivial File Transfer Protocol) is defined in RFC-1350 and uses UDP port 69.

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