Support

Models supported include tM-7521 and tM-7522.

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.

Warning

ICP DAS assumes no liability for damages consequent to the use of this product. ICP DAS reserves the right to change this manual at any time without notice. The information furnished by ICP DAS is believed to be accurate and reliable. However, no responsibility is assumed by ICP DAS for its use, nor for any infringements of patents or other rights of third parties resulting from its use.

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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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tM-752N Series

Firmware Update via Ethernet

Version: 1.1/ Updated: Jun. 2013

Ch. 1. Setting up the tM-752N
Ch. 2. Firmware Update Procedure
Ch. 3. Troubleshooting
Ch. 4. Additional Information



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1. Setting up the tM-752N

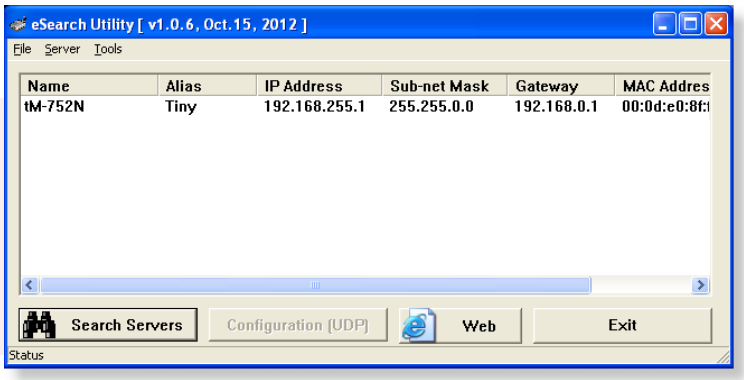
Before updating the firmware, please ensure that the network settings for both your host computer and any tM-752N series modules are correctly configured, or the update procedures via the Ethernet network may not function correctly.

Step 1: Connect the tM-752N to the same hub or the same sub-network as your Host PC, and attach a power supply to the tM-752N. Do not connect the tM-752N to a router or directly to the Internet as this may cause the update process to fail.

Please refer to "**Chapter 2-Connecting the Power and Host PC"** in the tM-752N Quick Start Guide for more detailed information.

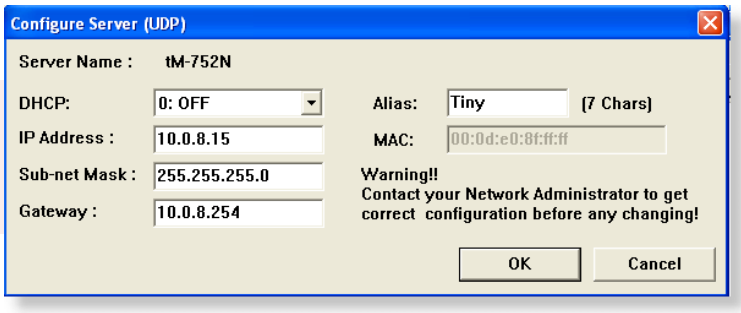
Download the Quick Start Guide.

Step 2: Install the eSearch Utility on your Host PC, and then run the Utility to search for any tM-752N modules connected to the network.



Download the eSearch Utility.

Step 3: Configure the correct network settings for the required tM-752N module.



Please refer to **"Chapter 3-Configuring Ethernet Settings"** in the tM-752N Quick Start Guide. If the IP address settings do not work correctly, please refer to **note1 (Page 8)**.

Download the Quick Start Guide.

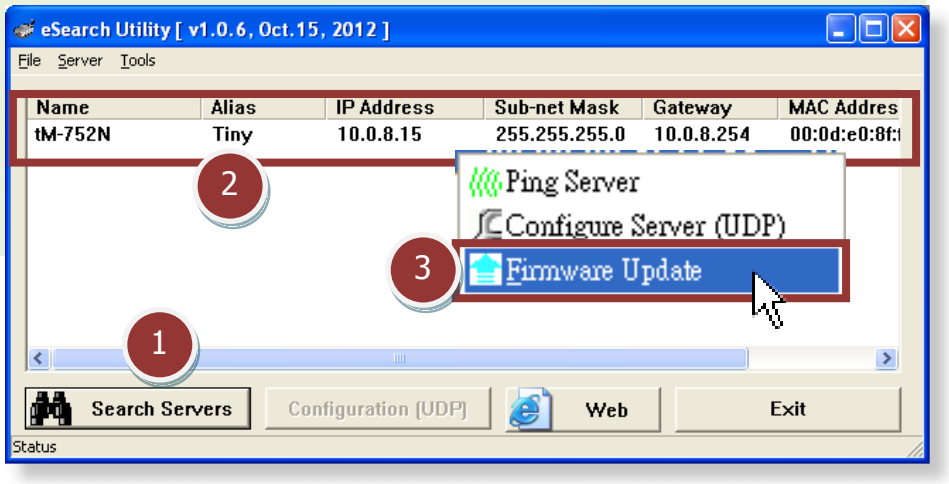
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2. Firmware Update Procedure

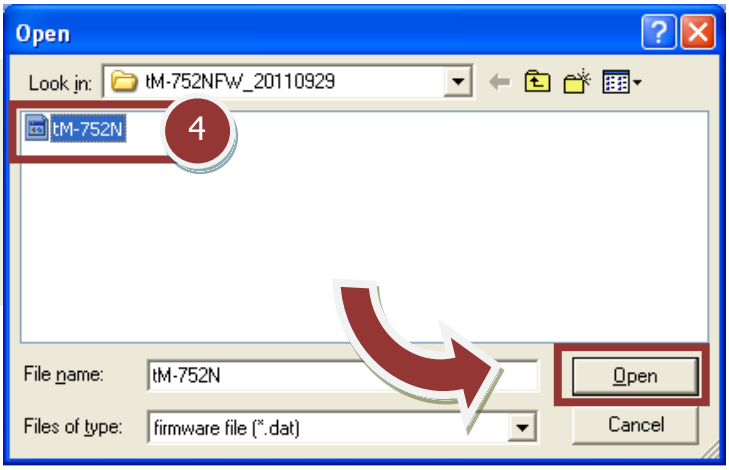
Step 1: In the eSearch Utility, click the "Search Servers" button to search the for any tM-752N modules connected to the network . (The network settings of the tM-752N module as described in Step 3 on Page 1)

Step 2: Right click on the name of the tM-752N 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 (tM752N.dat) that will be used to update the module and then click the "Open" button.

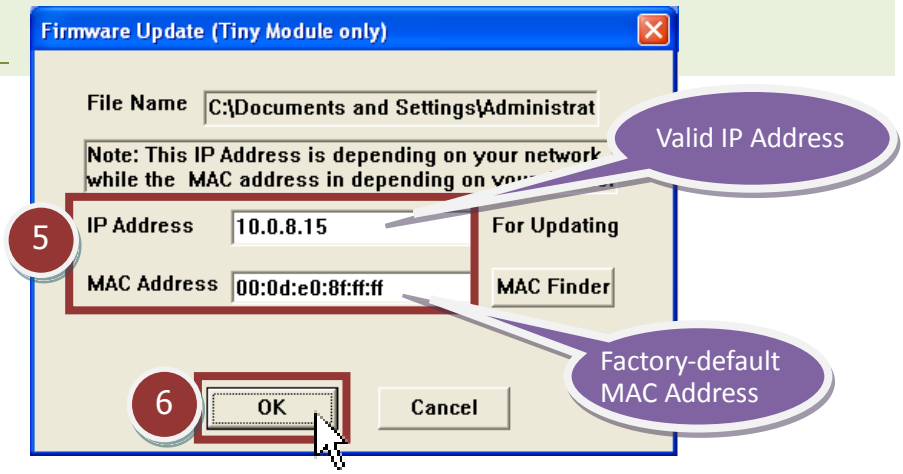


Download the Firmware File.

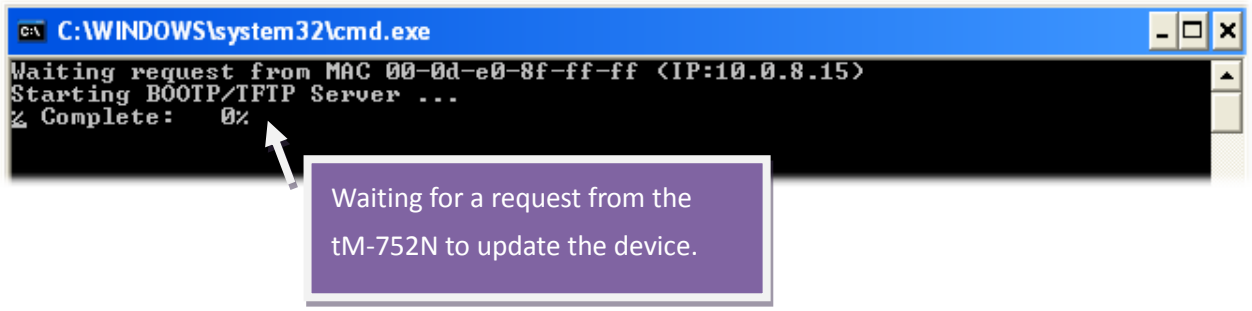
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Step 5: Assign a valid IP Address and the factory-default MAC Address for the tM-752N module. If this IP address is invalid (e.g. IP Address: 0.0.0.0) or a user-defined MAC address is assigned. Refer to note 2 (Page 8) and note 3 (Page 9) for more 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.



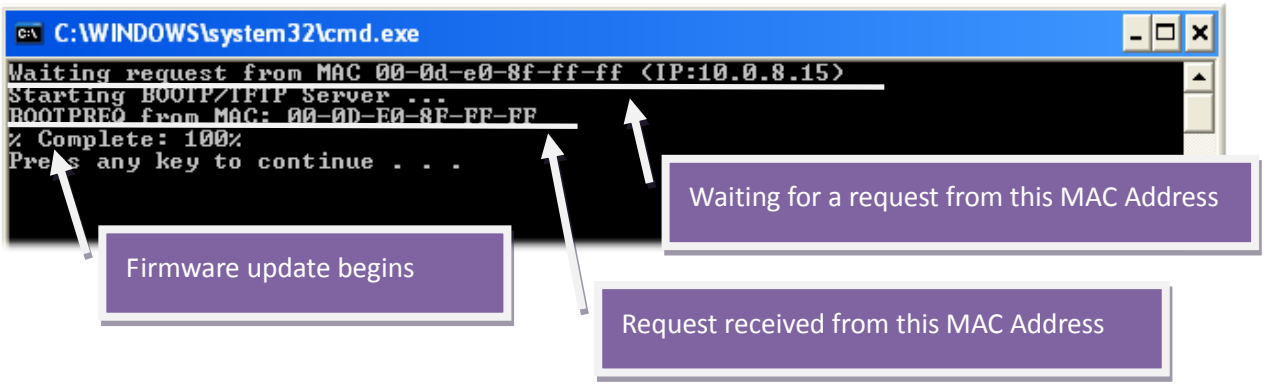
Step 8: Set the "Init Switch" on the tM-752N moduel to the in "Init Mode" position.



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Step 9: Power-on and reboot the tM-752N module in "Init Mode" to initiate the update.

Step 10: 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 11: Once the update is complete (i.e., when the progess indicator reaches 100%), set the "Init Switch" in "Run Mode" position.

Step 12: Power-on and reboot the tM-752N module in "Run Mode" to operate the module.

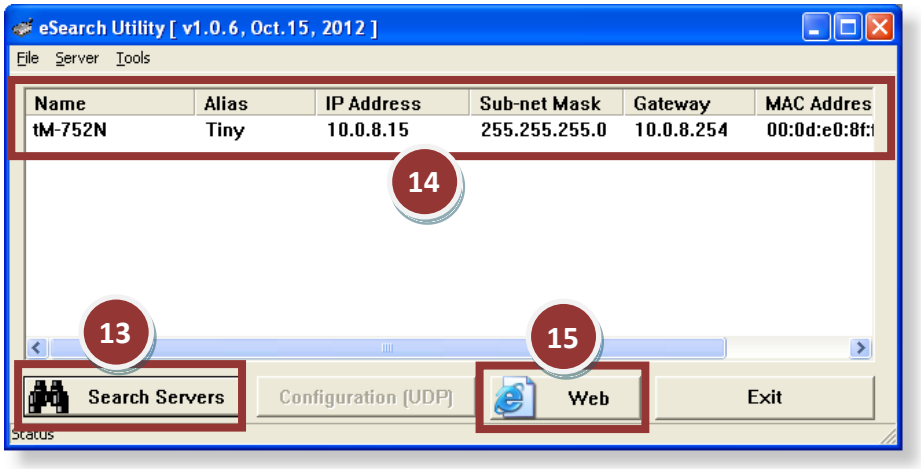


Step 13: Run the eSearch Utility and search for the tM-752N module again to verify that it is functioning correctly. You may need to reconfigure the network settings for the module after updating the firmware. Refer to Step 3 (Page 1).

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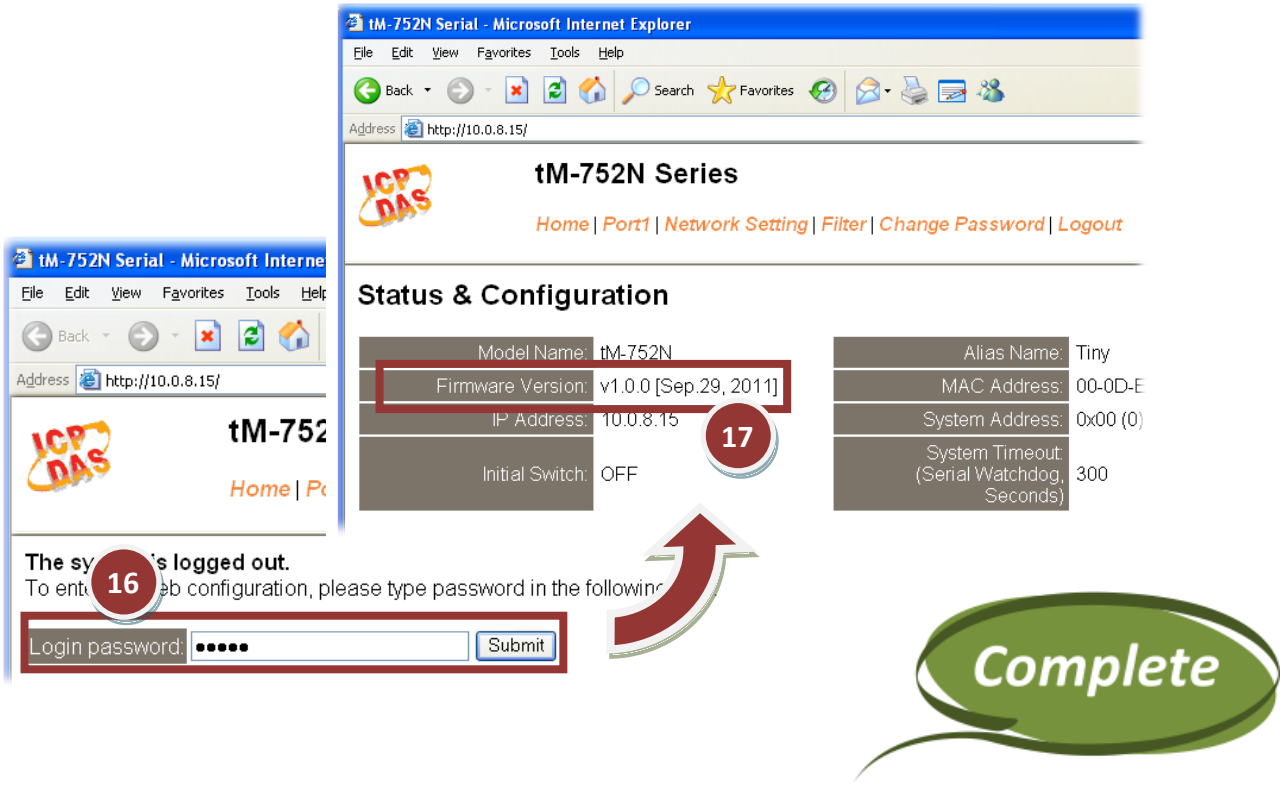
Step 14: Click the name of the tM-752N module.

Step 15: Click the "Web" button.



Step 16: Log in to the web configuration pages for the tM-752N (use the default password "admin").

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



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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 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.



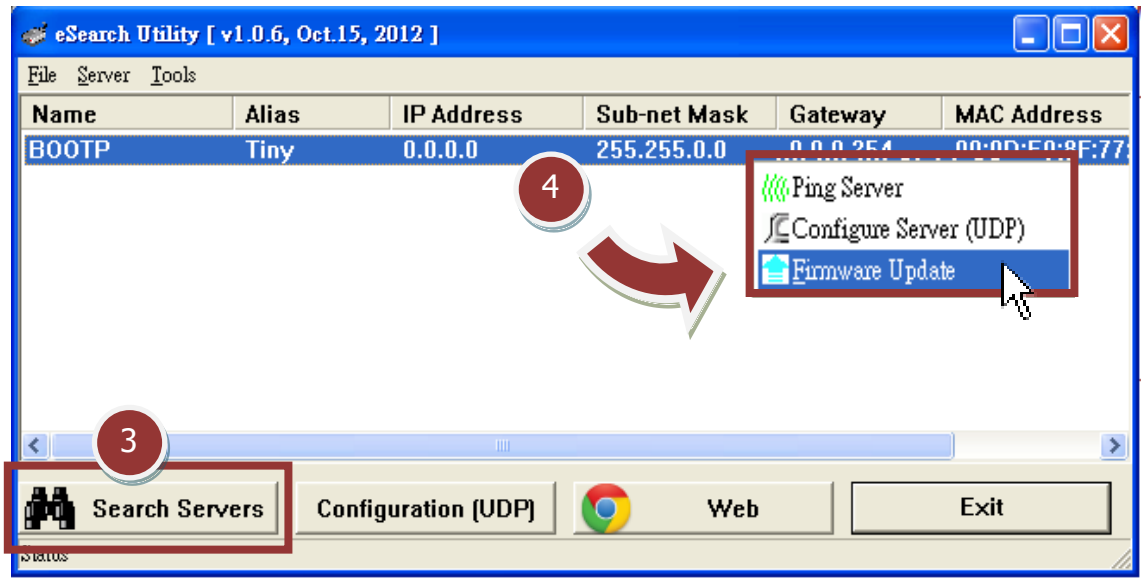


Step 2: Set the "Init Switch" to the "Init Mode" position.

Step 3: Power-on and reboot the tM-752N module and then click the "Search Servers" button to search for the tM-752N at the same time. Note that the tM-752N 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.

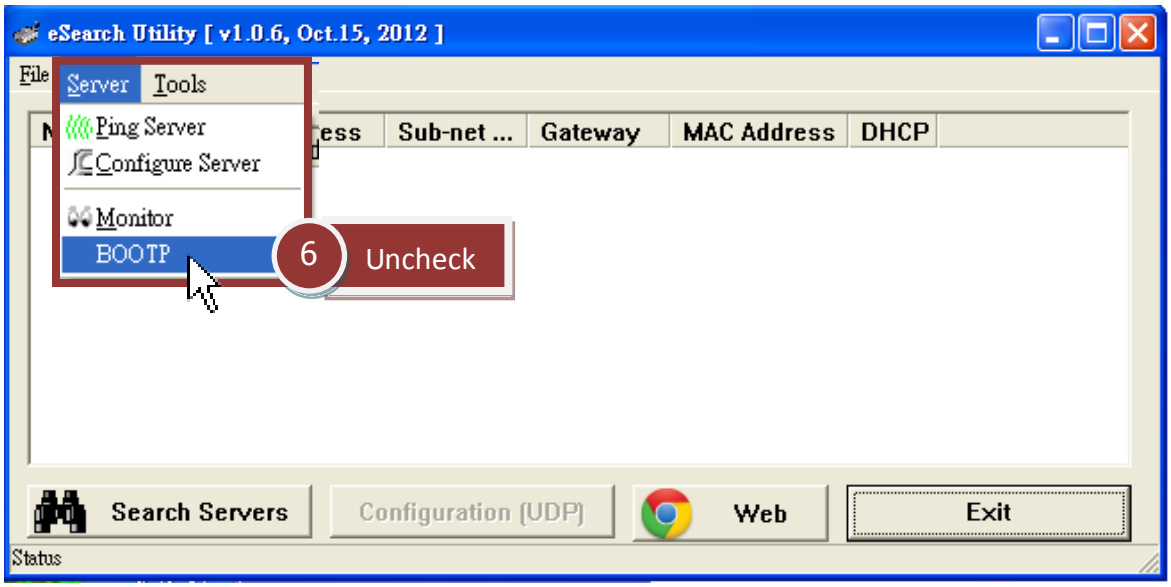
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Step 4: Right click on the name "BOOTP" and then select the "Firmware Update" item from the popup menu.



Step 5: 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.



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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 tM-752N 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 tM-752N series uses the factory-default MAC address rather than any user-defined MAC addresses.*** The tM-752N 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 tM-752N 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 tM-752N 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 tM-752N in order to process the update operation. Please contact your network administrator to obtain a valid IP address before proceeding.

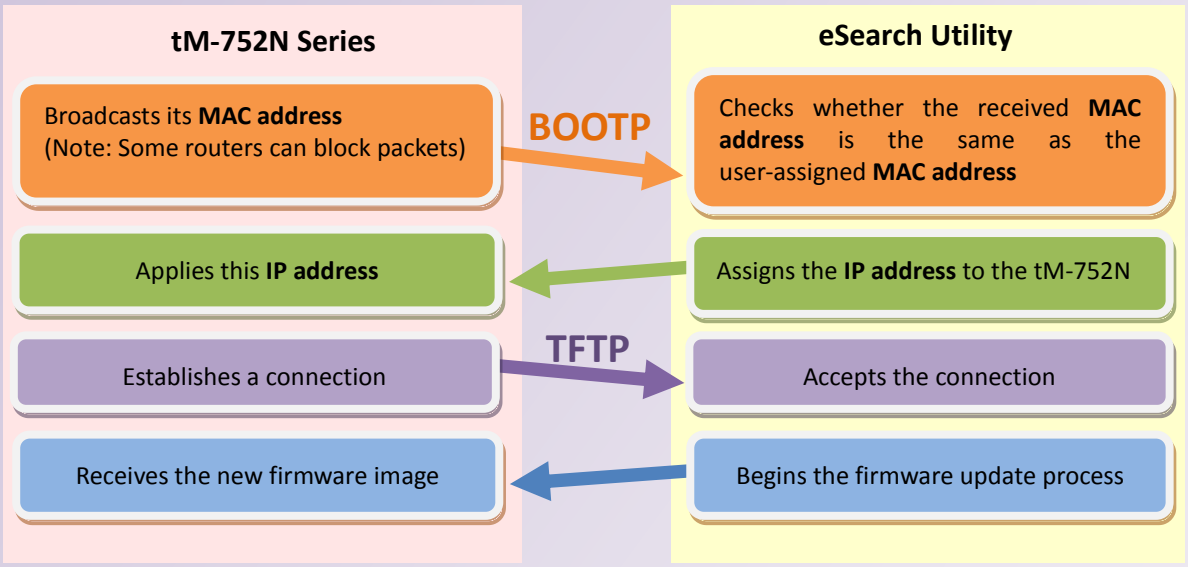
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Note 3: When updating the firmware, the factory-default MAC address is used rather than the user-defined MAC address. Thus, the MAC address (user-defined) displayed in the firmware update window may not be the one required. If this is the case, the 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.

..... back

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 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.

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

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