twareLAB

TW100XX Configuration tool

Tool Manual Ver1.0

twareLAB

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1 CONFIGURATION TOOL WINDOW

twareLAB Configuration Tool is a PC application used to configure TW100xx modules. There are two versions, one for Windows and one for Linux, and they are available as Freeware. **Figure 1**shows the initial screen displayed after running the Configuration Tool.

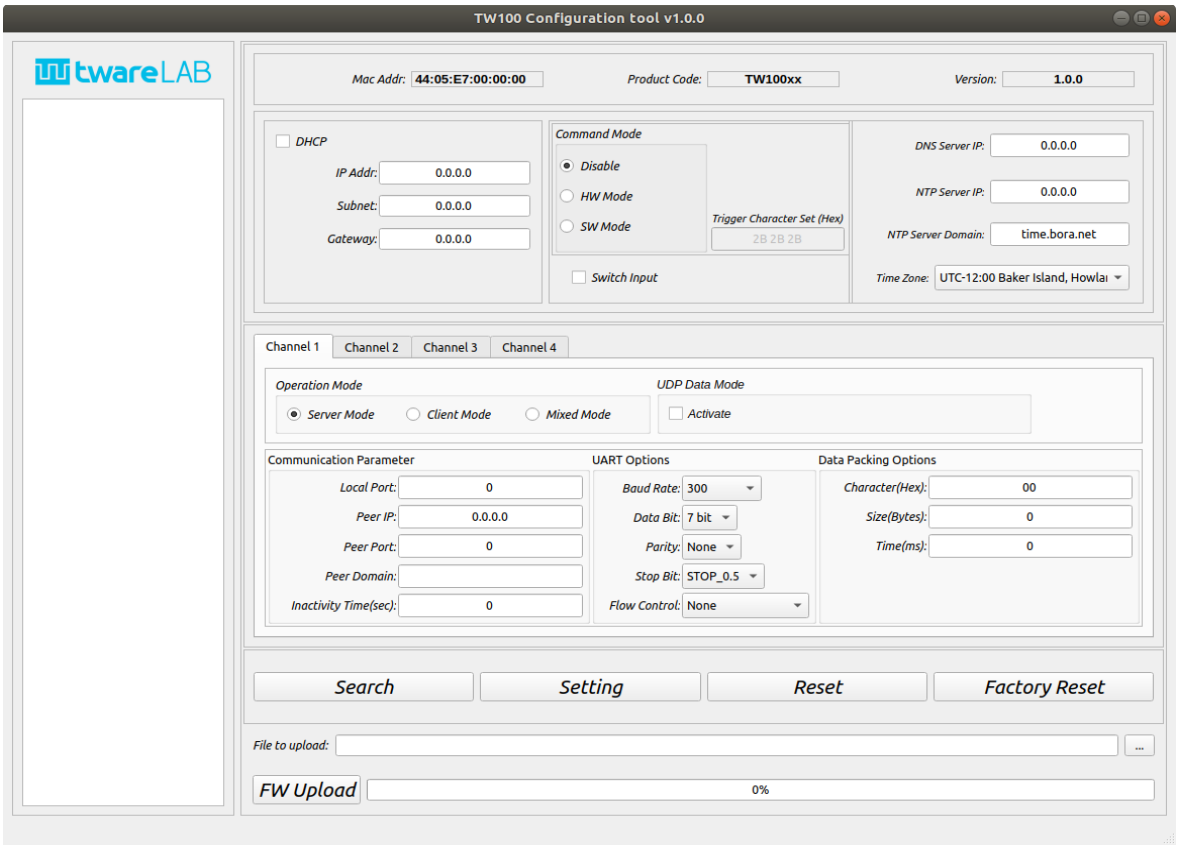

Figure 1 twareLAB Configuration Tool initial screen

The following chapters describe the detailed configuration.

1.1 Device List Section

This is the area where the MAC list of the searched boards appears. Once you select one of the MAC addresses here, the board information is retrieved.

Figure 2 Device List Section

Click the "Search" button, and then boards in the same network appears in the "Device List Section".

1.2 Device Basic Info Section

This part displays basic information of the selected board (Mac Address, Product code, Firmware version). The Product code is converted to a Product Name and displayed.

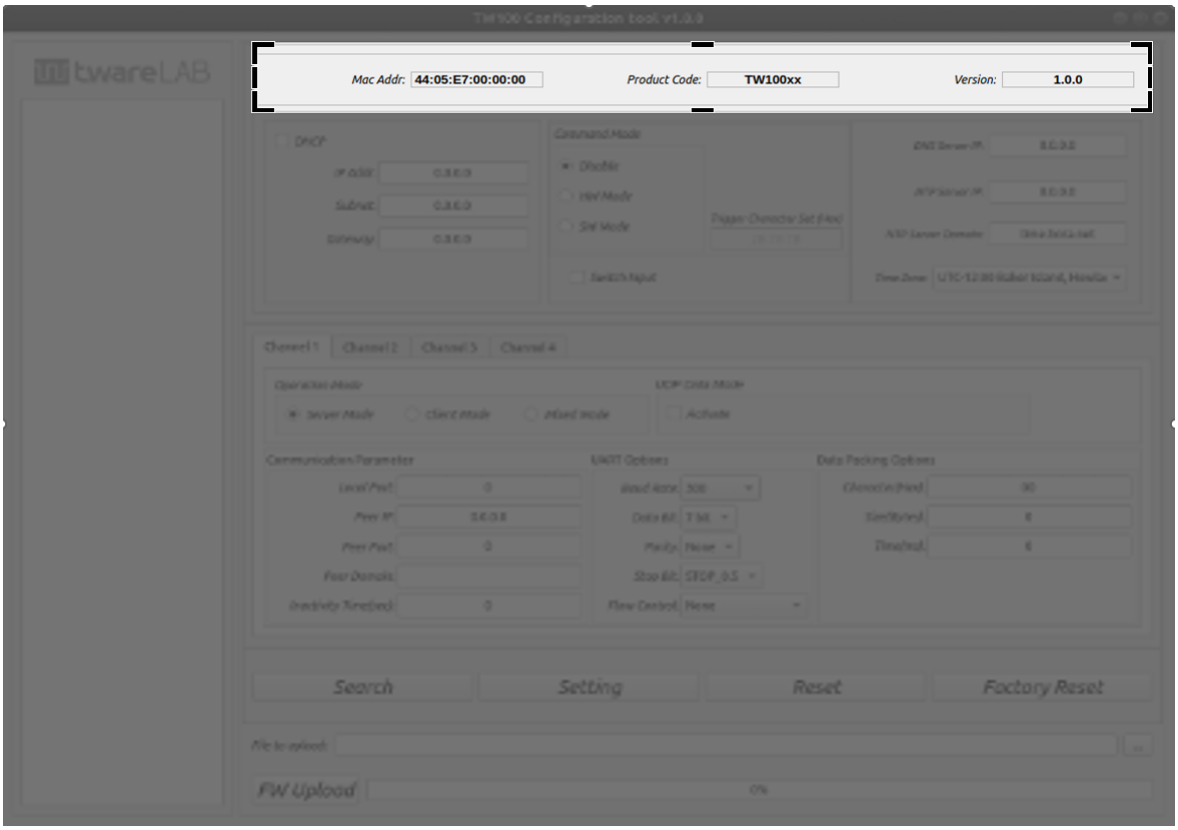

Figure 3 Device Basic Info Section

When you select one of the searched boards, the basic information of the selected board is displayed.

1.3 Device General Info Section

This area shows TCP/IP network information including IP address, command mode, command mode trigger character set, and NTP server information.

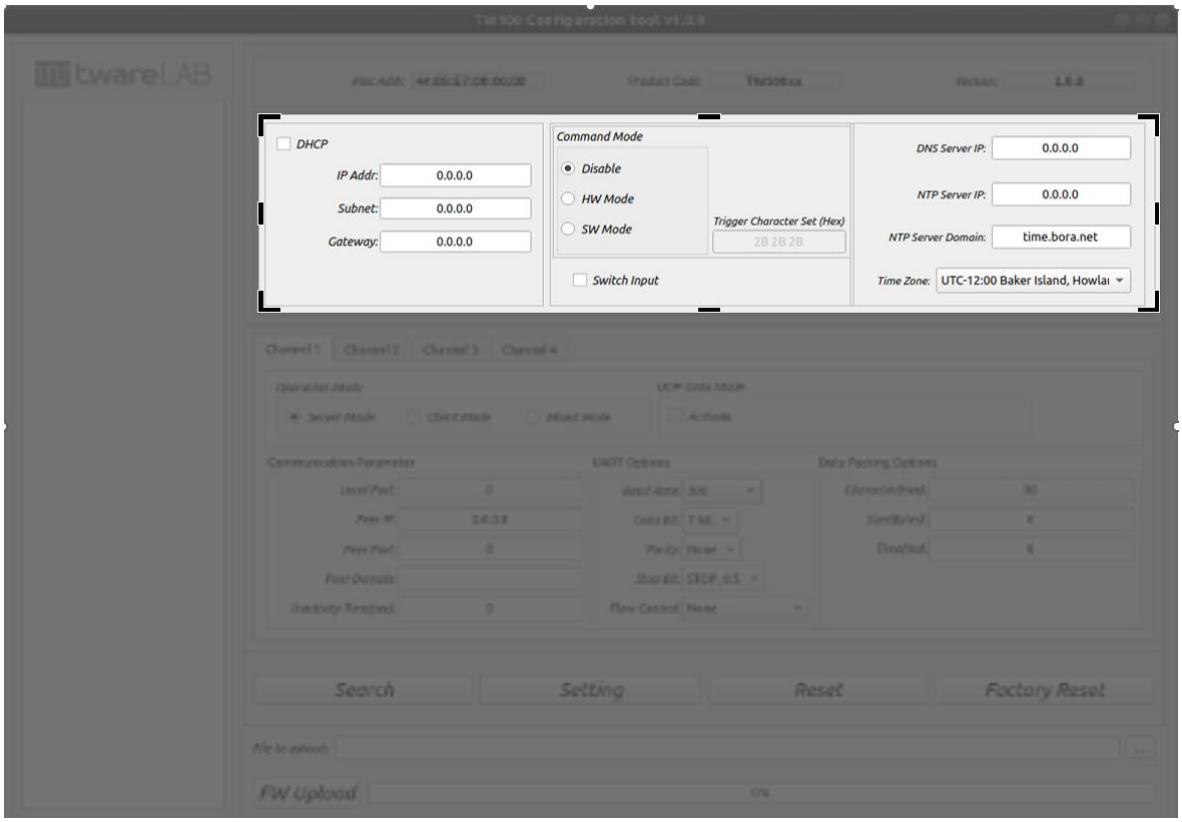

Figure 4 Device General Info Section

It consists of three parts as shown below.

1.3.1 Device Network Info Part

It shows the basic information for TCP/IP communication, such as IP address, subnet, and gateway IP address information. It provides a DHCP option that automatically obtains an IP address instead of a manual configuration.

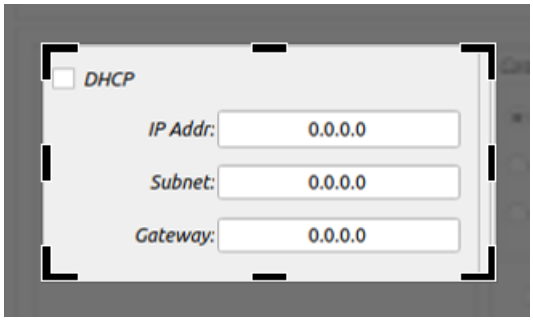

Figure 5 [Device General Info] Network Info Display Part

1.3.2 Serial Command Mode Setting Part

This is an area for the "Serial Command Mode" setting to control the board with a serial terminal.

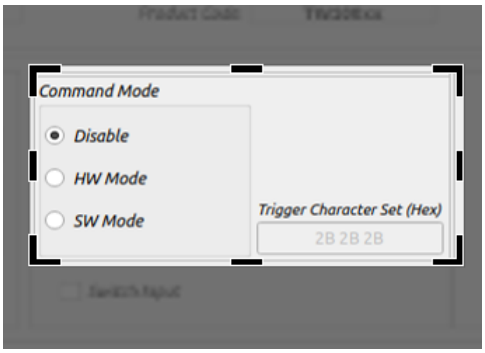

Figure 6 [Device General Info] Display Command Mode Related Information Part

"Command Mode" supports three options:

options	Details
Disable	Option not to use Serial Command Mode.
HW Mode	HW_TRIGGER Option to enable/disable Serial Command Mode according to the status value of the Pin.
SW Mode	Option to enter Serial Command Mode by successively transmitting a pre-promised Character Set to port UART1. *) Firmware version 1.0.0 does not support it.

Table 1 Serial Command Mode Options

1.3.3 Switch Input Setting Part

The TW100xx module provides the ability to perform Software Reset and Factory Reset by external GPIO input, which is called Switch Input.

Figure 7shows a menu that enables/disables this function.

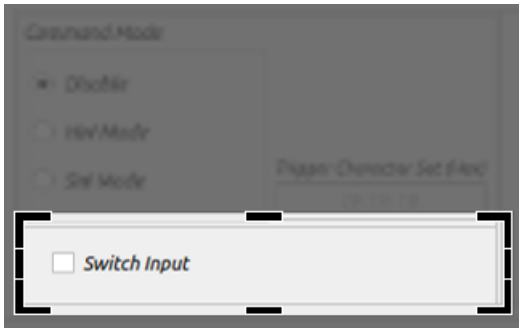

Figure 7 [Device General Info] Switch Input Setting Part

state	meaning	Detailed Description
Checked	Enable	Enable SW_Input pin monitoring
Unchecked	Disable	Disable SW_Input pin monitoring

Table 2 Switch Input Setting Option Descriptions

1.3.4 Option Setting Part

This is an area to set DNS server IP settings for the function that enables access by domain name, and NTP Server information for receiving time information.

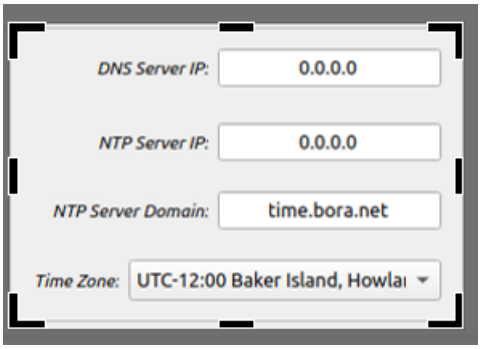

Figure 8 [Device General Info] Displaying Information for Option Function

If you are using NTP, you can set the local time in your area through the Time zone.

1.4 Device Channel Info Section

The TW100XX board supports four serial interfaces. This is an area for setting each serial interface.

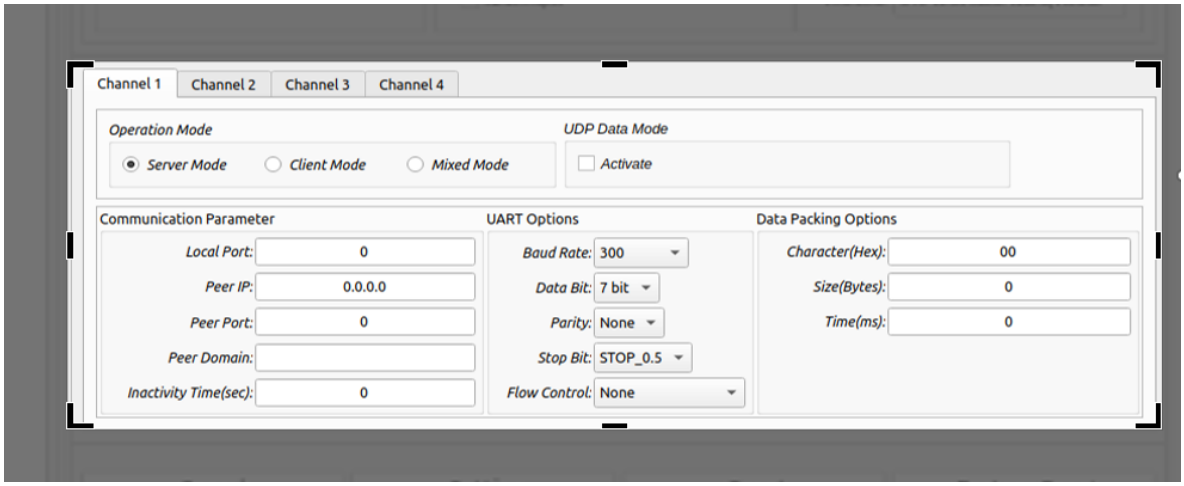

Figure 9 Device Channel Info Section

It is divided into four main areas as follows.

1.4.1 Operation Mode Part

This is an area for setting the communication operation mode. It supports three types of TCP mode are supported: "Server Mode", "Client Mode", and "Mixed Mode" that uses a TCP communication and a UDP mode that uses a connectionless UDP communication.

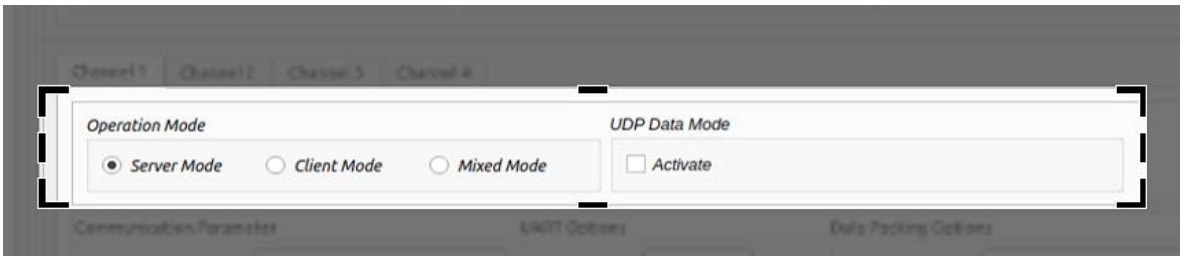

Figure 10 [Device Channel Info] Operation Mode Display Part

For details of "Operation Mode", see "TW100xx User Manual" documents.

1.4.2 Connection Parameter Part

This area manages basic information for TCP/IP data communication used in the "1.4.1 Operation Mode" Part.

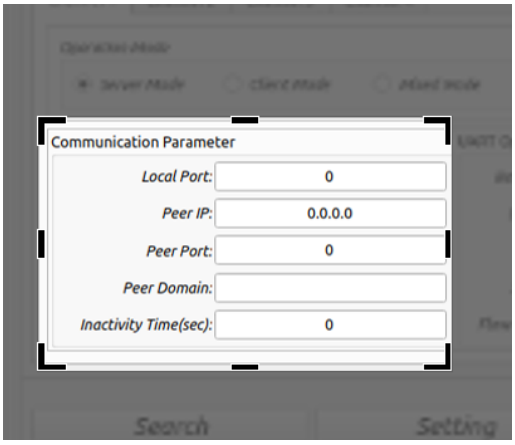

Figure 11 [Device Channel Info] Displaying Connection Information with Peer Devices Part

It can be divided into three main parts as follows.

Field Name	Detailed Description
Local Port	The Local port information of TW100XX is used as the local port of the basic TCP socket. Also, it is used as important information for the Listen Port of "Server Mode".
Peer IP **Peer Port** **Peer Domain**	In the case of "Client Mode" and "Mixed Mode", it is an area that specifies the network information of the server(peer). In the case of "Peer Domain", you can use it if you want to connect with a domain name instead of the IP address of the peer. In this case, **1.3.3. The DNS Server IP value listed in must be set.**
Inactivity Time	If no data exists for a specified time, the TCP Connection is automatically disconnected. It reduces the burden on the network to maintain TCP Connection without data communication for a long time, and helps to detect unexpected network failures in a short time.

Table 3 Connection Parameter Description

1.4.3 UART Setting Info Part

This is an area that sets basic information for serial interface communication.

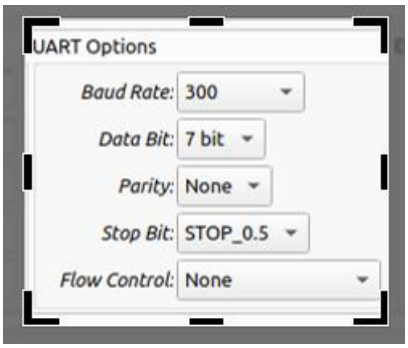

Figure 12 [Device Channel Info] Displaying UART Setting Information Part

Option entry	Detailed Description
Baud Rate	300bps ~ 3Mbps. For details, see "TW100xx User Manual" document.
Data Bit	Supports 8bit only
Parity	None/Odd/Even support
Stop Bit	Support 0.5/1/1.5/2
Flow Control	None, RTS/CTS, Xon/Xoff, RTS Only, Reverse RTS Only. *) Xon/Xoff, Reverse RTS Only is not supported in firmware V1.0.0.

1.4.4 Data Packing Option Part

This area that specifies the Data Packing options that are used as delimiter conditions for transmitting data. For **details on the operation of Data Packing Options**, see "**TW100xx User Manual" documents.**

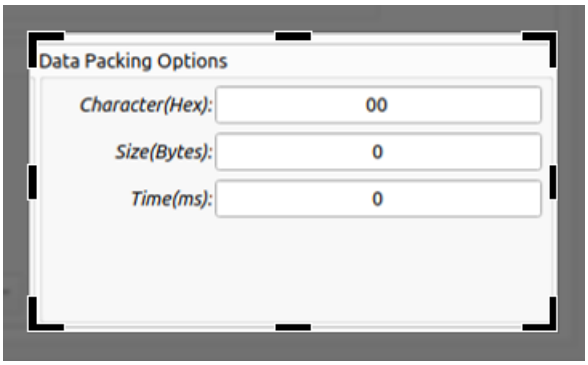

Figure 13 [Device Channel Info] Ethernet Data Packing Option Display Part

The supported conditions are divided into the following three categories. If two or more are specified, data transmission is performed if any one is satisfied.

options	Detailed Description
Character (Hex)	Set the "Hex Code" of the 1Byte character delimiter. To deactivate, enter "**00**".
Size (Bytes)	Set the delimiter size number between 0 ~ 1000. To deactivate, enter "**0**".
Time(ms)	Set the delimiter time(milliseconds) number between 0 ~ 1000. To deactivate, enter "**0**".

Table 4 Data Packing Option Descriptions

1.5 COMMAND BUTTON SECTION

This section runs the function of searching, setting, and resetting the board.

Figure 14 Command Buttons Section

It supports 4 functions as follows.

entry	Detailed Description
Search	Search for TW100xx boards on the same network
Setting	Set the configuration data into the selected board
Reset	Reset selected board
Factory Reset	Command to "factory reset" on selected board

For moreFunctions**2. Functions**.

1.6 FIRMWARE UPLOAD SECTION

This is an area to set information for firmware update.

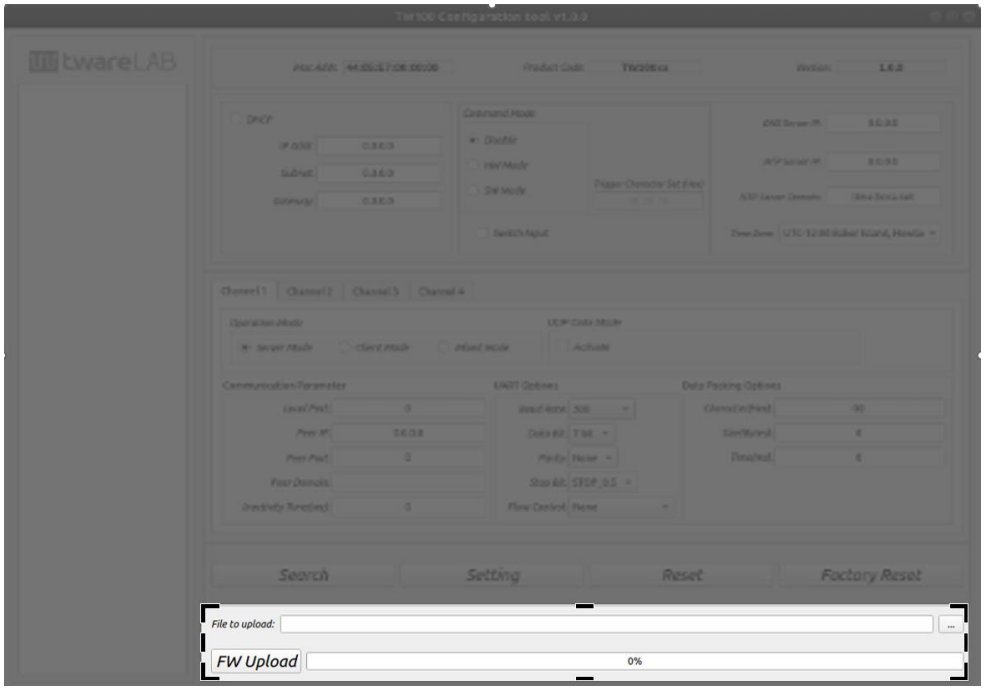

Figure 15 section related to Firmware Up load

It is divided into two parts as follows.

1.6.1 Upload File Section Part

This is the area to select the firmware file to update. ... button to select the firmware file. A folder named "binary" in the executable folder is specified as the initial value.

Figure 16 [Firmware Upload] Part of Selecting Files to Upload

1.6.2 Upload Start and Progress Part

This is the "FW Upload" button and the area to indicate the progress of the update.

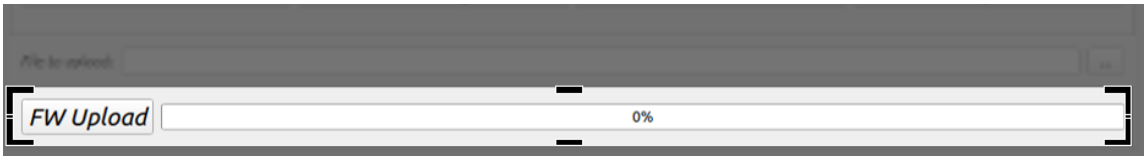

Figure 17 [Firmware Upload] Upload Part of Start and Progress Display

2 FUNCTIONS

Support 4 functions as Device search, setting, reset, and firmware update.

2.1 DEVICE SEARCH

Search TW100XX boards currently running on the network. Click the "Search" button to start the search operation.

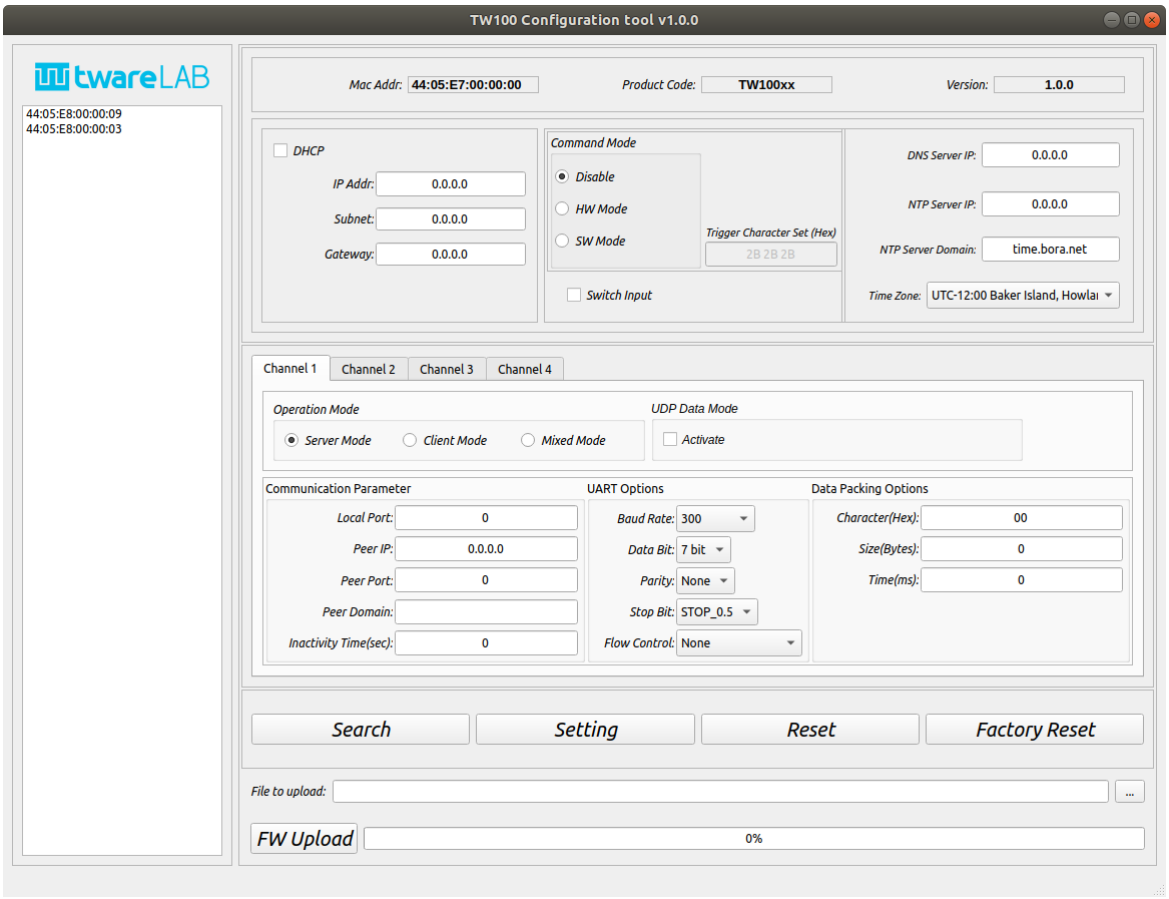

Figure 18 Device Search Results Screen

As shown in the figure above, the MAC addresses of the searched boards are displayed in the "Device List" area. When the MAC address of the displayed board clicks, it takes time to get the information of the board once for the first time. When the information is received, the board information is automatically updated and displayed in the information window.

2.2 DEVICE SETTINGS

This function sets the information of the selected TW100XX board.

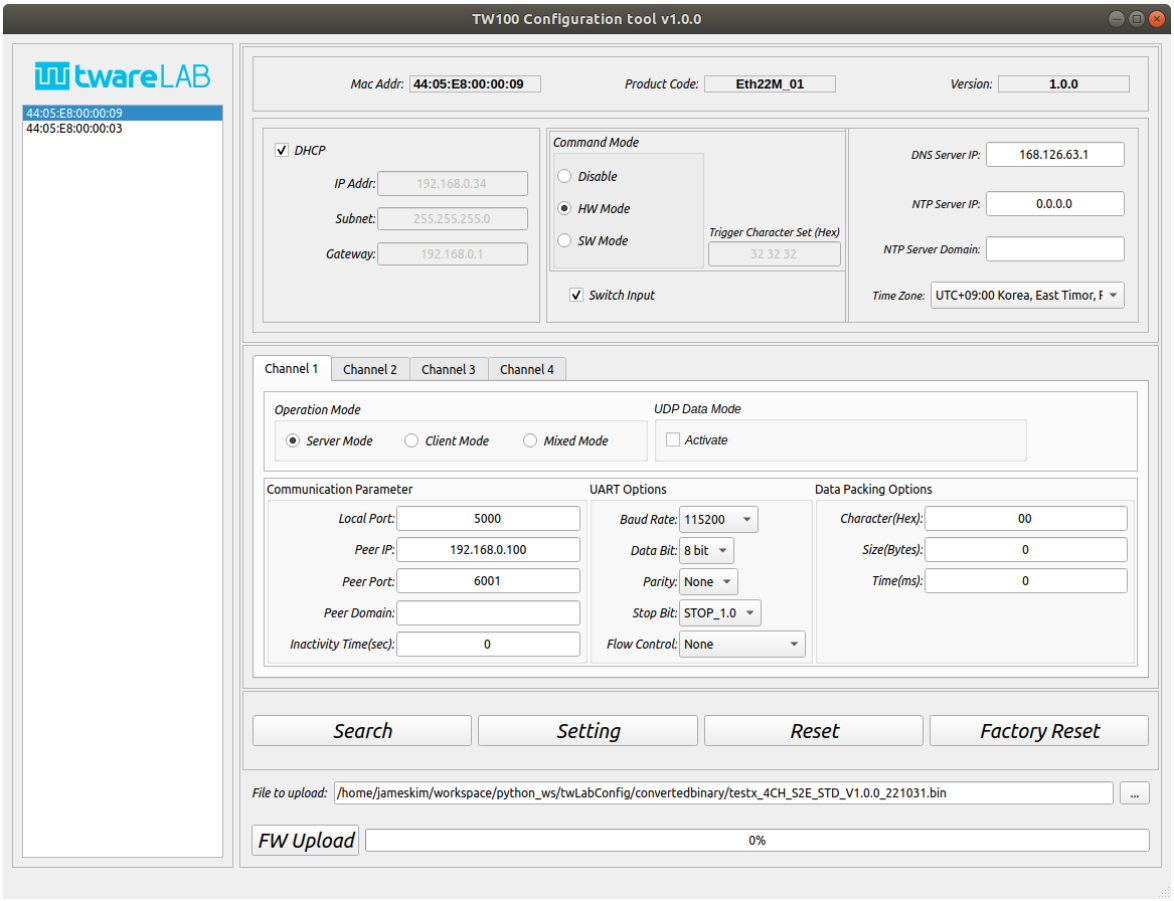

Figure 19 Screen with target device selected from Device List

After modifying the information of the selected board, press the "Setting" button to perform the configuration operation. When the operation completes successfully, the following message window appears.

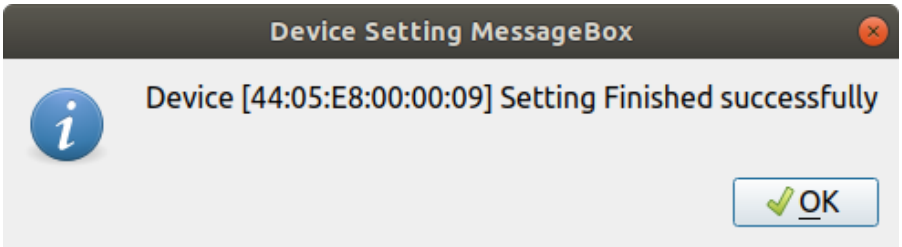

Figure 20 Message Box displayed when Setting is complete

2.3 DEVICE RESET

This is a function that resets the selected board.

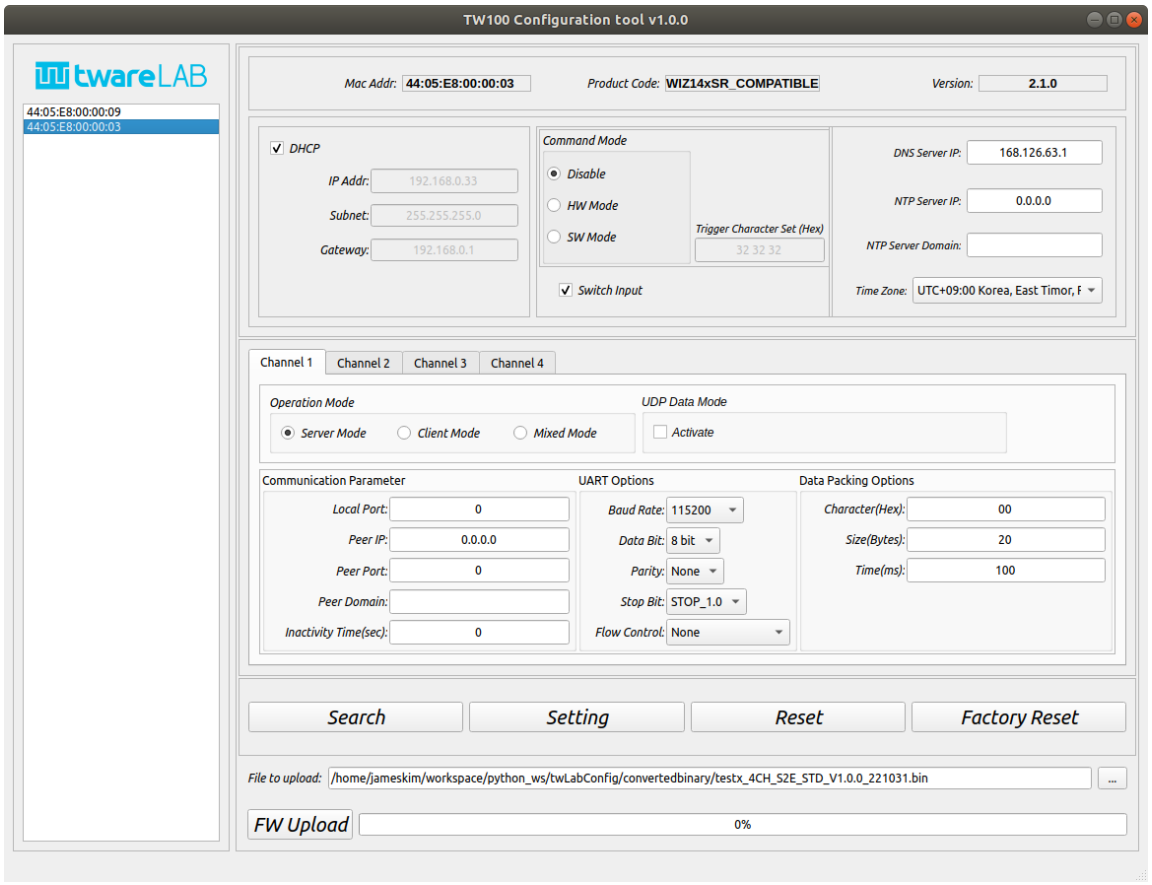

Figure 21 R Screen with selected device to eset

Select the board and click the "Reset" button to perform a forced reset. When the board receives a reset message, the following message window is displayed.

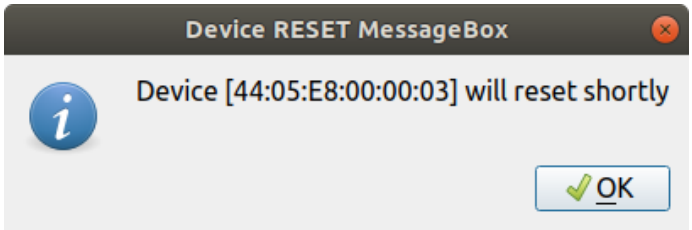

Figure 22 Message Box displayed after the Reset command is passed

2.4 Device Factory Reset

This function allows "Factory reset" of the selected board. If the board behavior is abnormal or the settings are wrong, it returns to the initial state of release.

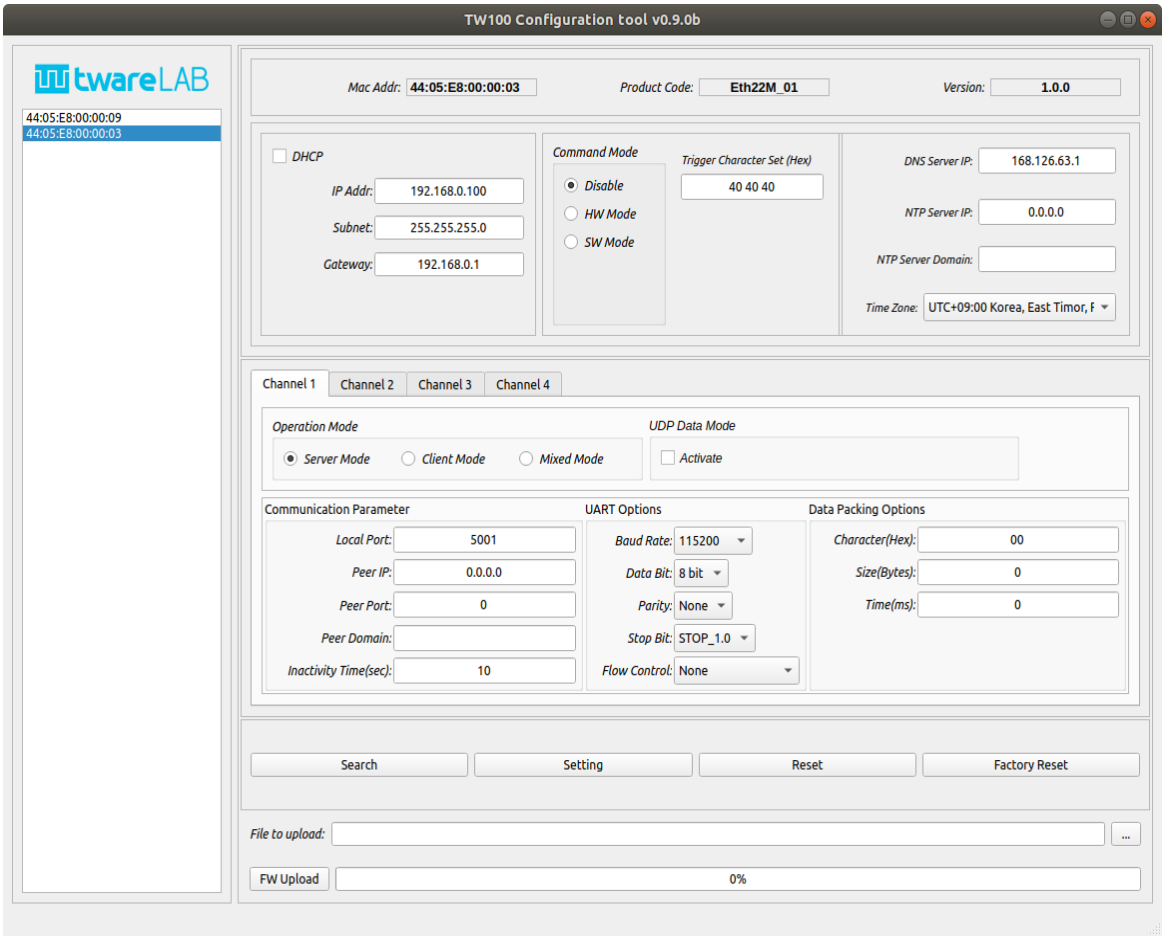

Figure 23 Screen for selecting a device to factory reset

Select a board and click the "Factory reset" button to perform a "Factory Reset" of the board. The previous settings will be lost and will be changed to the initial value of the release, so you should use the function with caution. When the "Factory Reset" message is normally received on the board, the following message window is displayed.

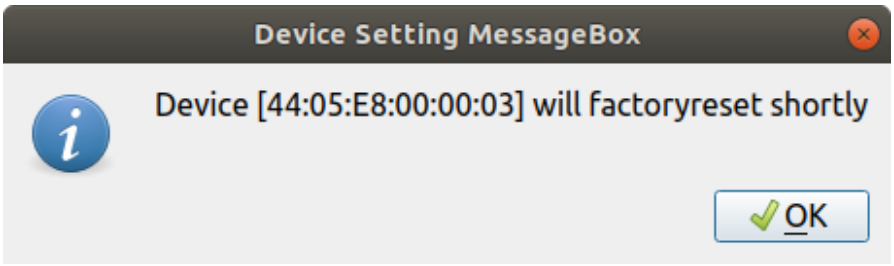

Figure 24Message Box displayed after a factory reset command is delivered

2.5 FIRMWARE UPDATE

This function allows you to update the firmware of the TW100XX board.

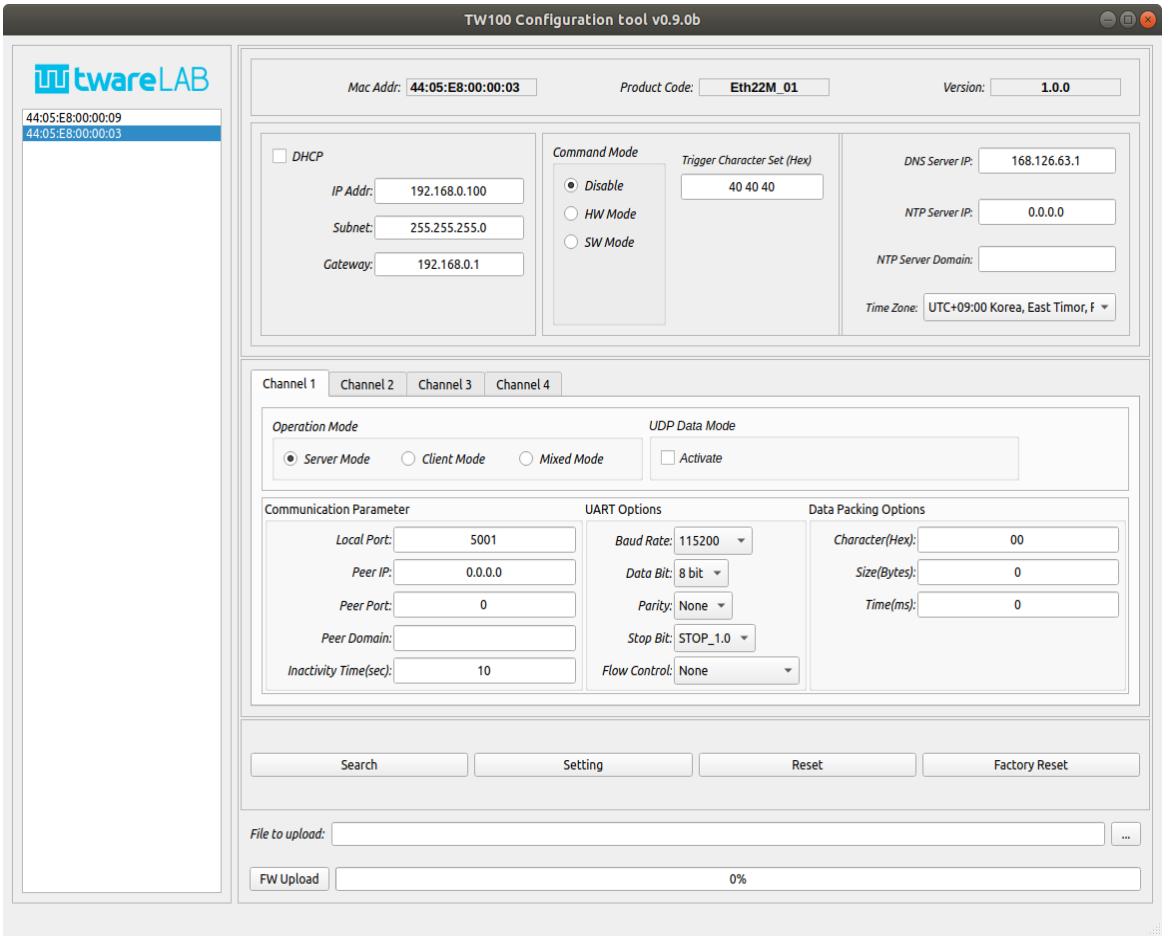

Figure 25for selecting a device to update firmware

Select the board, and select the firmware file.

In the "File to upload" area, "..." When you press the button, the following file selection window appears. Select the firmware file and click the "Open" button.

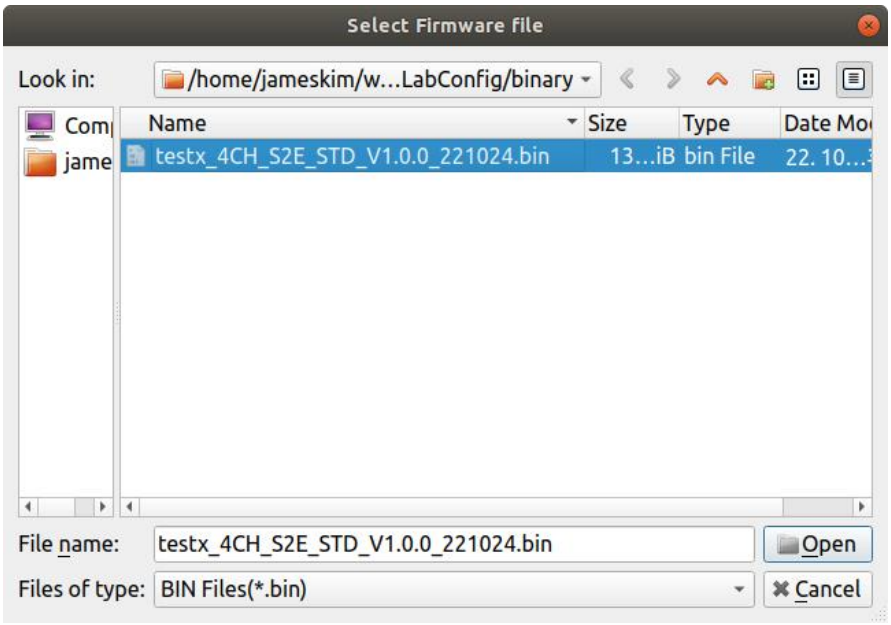

Figure 26File Dialog for Selecting Binaries to Upload

After checking the file name, click the "File Upload" button below to perform the firmware update function immediately.

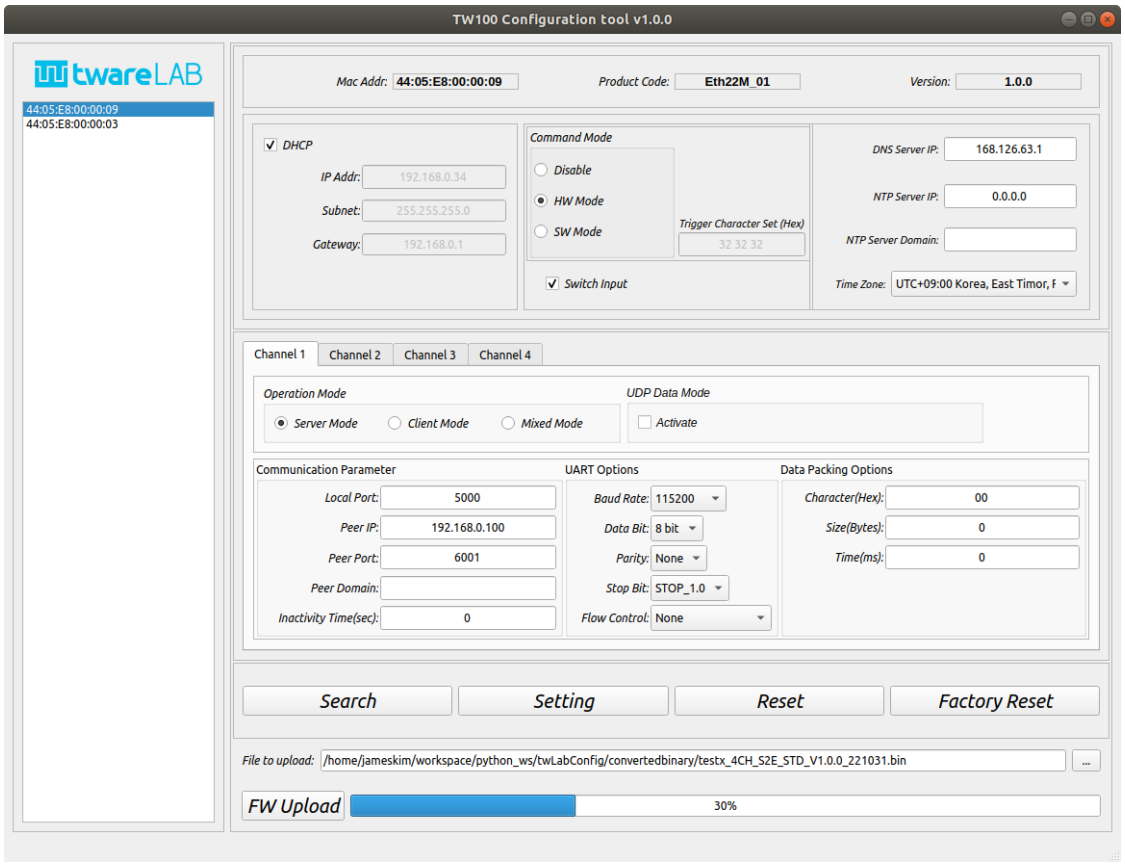

Figure 27under Firmware Upload

The Progress bar shows the progress of the update. When finished, the following message window appears.

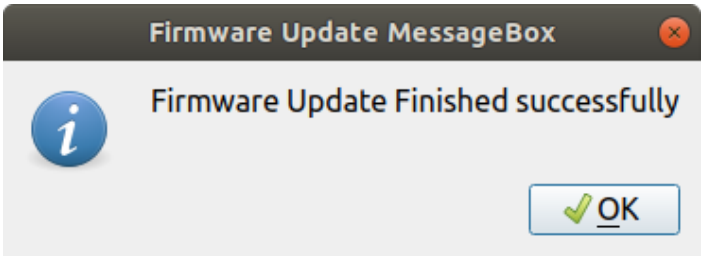

Figure 28Message Box displayed after Firmware Upload is complete

After that, it is recommended to click "Search" button again to check if the changed firmware version has been applied correctly.

3 HISTORY

Date	Description
2022-11-03	V1.0 First Released