Toshiba Modular Device
Utility Guide

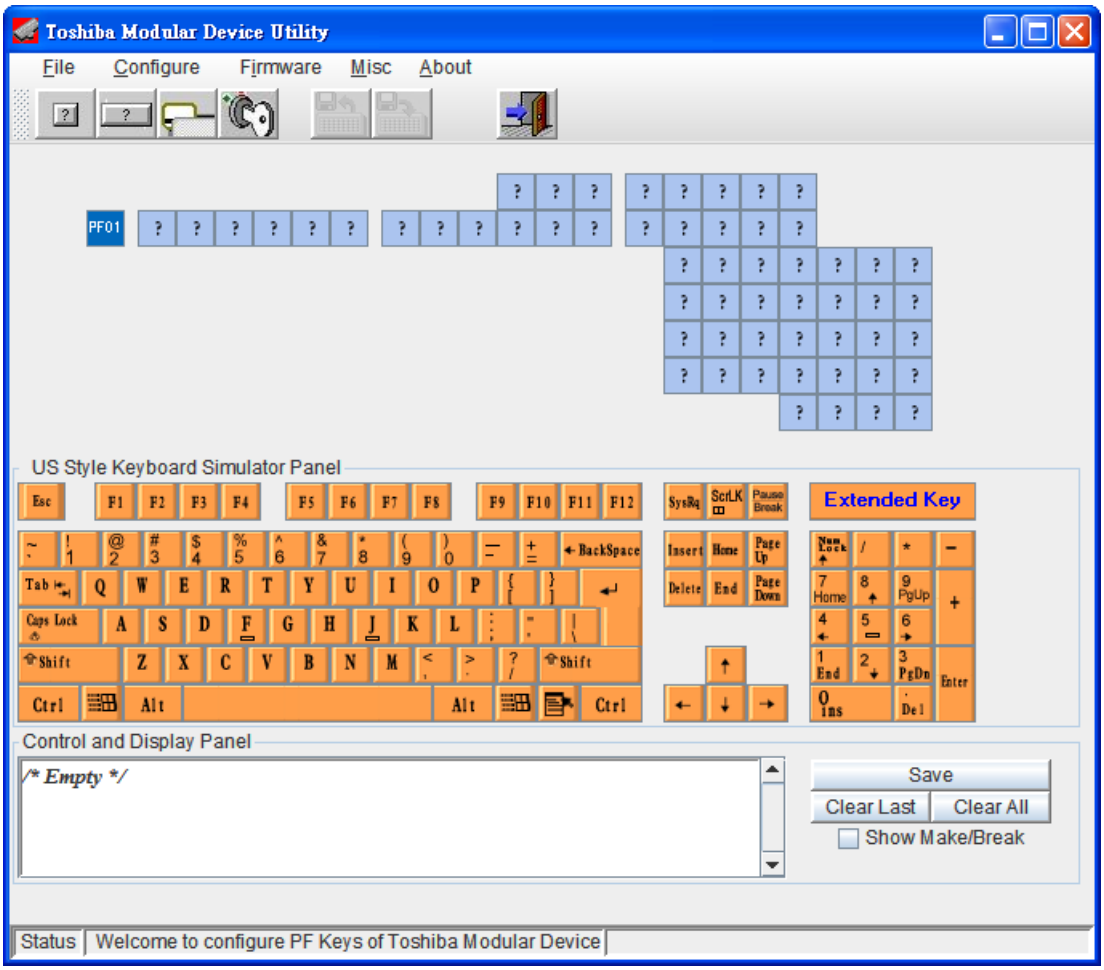
Version 1.4

Revision History

Date	Version	Comment
2020-01-17	V1.0	Initial release version for Modular Device Utility V1.1.10
2020-03-27	V1.1	Update for Modular Device Utility V1.1.11 User guide formatting update on the first three pages.
2020-06-19	V1.2	Update for Modular Device Utility V1.1.12 Update information of supports OS. (Chapter 2)
2021-01-18	V1.3	Update for Modular Device Utility V1.1.14 Update picture (MSR Track Header Defining Panel) at page 21.
2022-03-28	V1.4	Update for Modular Device Utility V1.1.16

1. Overview

This document provides the user with a guide for using the Toshiba Modular Device Windows Utility. This utility is used to configure Toshiba Modular Device - write configuration data to the device, read configuration data from the device and update the device firmware.



PIC_01 Toshiba Modular Device Utility

2. Requirements

- One or more of the following Toshiba Modular Devices should be attached: 67-Key Keyboard, 67-Key with LCD Keyboard, Modular ANPOS (ANPOS II) Keyboard, Modular CANPOS (CANPOS II) Keyboard, 4820 series, and TCx series, please refer to **section 2.1**.
- Toshiba Modular Device Utility should be used with Windows 8.1(64 bit), Windows 10(64 bit) and Windows POSReady 7 (32/64 bit).
- USB or PS/2 interface devices that can be connected to the PC:
  - 67-Key, ANPOS II and Compact ANPOS II can be connected to PC via USB or PS/2 cable.
  - Other devices only can be connected to PC via USB cable.

Note:

1. Please remove UPOS tool before running this Utility.

2. Utility will pop up a "License Agreement" dialog box.

User must agree to this agreement to get utility access permission.

2.1 Device List:

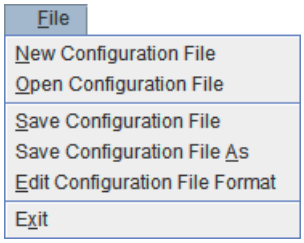
Device Type	Monitor Device	Interface	MSR Type	Device ID	Default File Name
67-Key Keyboard	NA	USB, PS/2	None	4601	AIP46013.cfg
			ISO/JIS-II	4606	AIP46063.cfg
67-Key with LCD Keyboard	NA	USB	None/ISO/JIS-II	4602	AIP46023.cfg
Modular ANPOS (ANPOS II) Keyboard	NA	USB, PS/2	None/ISO/JIS-II	4604	AIP46043.cfg
Modular CANPOS (CANPOS II) Keyboard	NA	USB, PS/2	None/ISO/JIS-II	4609	AIP46093.cfg
4820 MSR/Keylock Module	4820 - 2xx/5xx	USB	ISO	4671	AIP46714.cfg
4820 Keypad/ MSR/Keylock Module	4820 - 2xx/5xx	USB	ISO	4673	AIP46734.cfg
TCxDisplay MSR Module	6149 - 5xx	USB	ISO	467B	AIP467B.cfg
TCxDisplay Keypad w/Keylock	6149 - 5xx	USB		467C	AIP467C.cfg
TCxDisplay Keypad w/iButton Reader	6149 - 5xx	USB		467C	AIP467C.cfg
TCxDisplay Keypad with MSR/Keylock	6149 - BxT/WxT	USB	ISO	467C	AIP467C.cfg
TCx800 MSR Module(TGCS 6200 MSR Feature)	NA	USB	ISO	467D	AIP467d1_1-MSRnnnn.gg.vv.cfg
TCxWave Electronic Keylock(Generation 2)	NA	USB		4502	AIP45022.cfg

Table_01 Device List Table

3. Functions

There are five main menus in this utility: **File, Configure, Firmware, Misc** and **About**.

3.1 File Menu:



This menu is used to process the Configuration File. Device configuration settings (such as Program PF Keys, Edit MSR, and Edit Keylock) can be saved as a Configuration File. User may open a Configuration File to the utility and write the configuration settings of the utility to the device. User may also read configuration settings from the device to the utility and save the configuration settings to a Configuration File. The read/write configuration setting will be introduced in **section 3.3.2** and **section 3.3.3.**

3.1.1 New Configuration File:

Create a new configuration setting for the utility. All PF keys and double keys settings will be cleared (each PF key is a non-grouped PF key and its content is empty). Keylock Position Selection, MSR Header and Trailer settings will be set to the default value. And Keyboard Simulator Panel key will be set to initial status (all keys are in released status). If any configuration setting was changed but was not saved to a configuration file, the current configuration setting will be lost. The utility will display a message box 'Open configuration file will be overwritten' to remind the user.

3.1.2 Open Configuration File:

Open a saved configuration file (xxx.cfg) to the utility. If any configuration setting was changed but was not saved to a configuration file, the current configuration setting will be lost. The utility will display a message box 'Open configuration file will be overwritten' to remind the user. After opening a configuration file, the utility will save the current file path in a preference file. The next time when the utility is launched, it will use this as default file path.

3.1.3 Save Configuration File:

Save utility configuration setting to a specified configuration file. The utility will provide a default configuration file name which is related to the device ID. The user may change the configuration file name as desired. The device ID and naming rule of the default configuration file name can be found in **section 4.3**.

Once user runs Save Configuration File, the configuration file name will be stored by the utility. The next time when user runs the Save Configuration File, the utility will save to the same configuration file name. After saving configuration file, utility will save current operation file path in a preference file. The next time utility will use this as the default file path.

When the user changes the device type (refer to **section 3.2.1**), the MSR reader type (refer to **section 3.2.5**), creates a New Configuration File (refer to **section 3.1.1**) or runs Refresh Connection Status for a different device type (refer to **section 3.3.1**) and then run the Save Configuration, the utility will change the saved configuration file name to a default configuration file name according to the setting. The Save Configuration dialog box will appear to remind the user that the configuration file has been changed.

Note: Please note that the configuration files generated can be used to automatically update POS devices on systems running UPOS - see Configuration file update under Chapter 15 POS keyboard of the UnifiedPOS User's Guide, Keyboards, and Code Pages.

3.1.4 Save Configuration File As:

Save utility configuration setting to a new specified configuration file (xxx.cfg). After saving the configuration file, the utility will save the current operation file path in a preference file. The next time utility will use it as default file path.

3.1.5 Edit Configuration File Format:

Configuration Format (V1 or V2) is used to determine the firmware behavior. Old firmware (V3.26 or earlier) only supports V1. New firmware (V3.27 or later) can support V1 and V2. The user must select one Configuration Format (a device type of 67-Key with LCD Keyboard, 4820 series or TCx series only supports V2). And run 'Write Configuration to the Device' to set the firmware Configuration Format (e.g., if device has old firmware and Configuration Format is set to V2, write configuration will cause an error message to pop up). Previous versions of the windows utility (V1.0.19 and older) only supports V1 and do not need to set Configuration Format (default is V1 already).

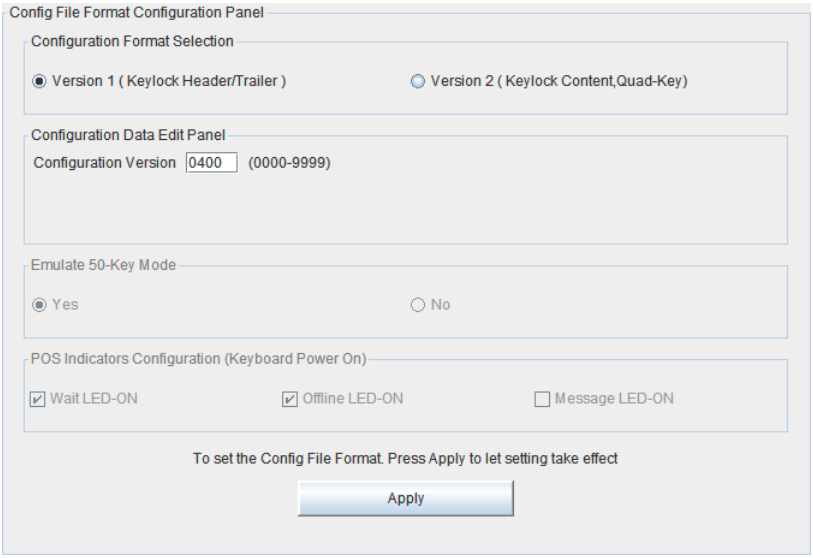
If the firmware Configuration Format is V1, the firmware behavior is as follows: Programmable PF Keys, Set Doubled Keys, Programmable MSR Header/Trailer, and Programmable Keylock Header/Trailer.

If firmware Configuration Format is V2, the firmware behavior is as follows: Emulate 50-Key Mode, POS Indicators setting, Programmable PF Keys, Set Doubled Keys and Quad Keys,

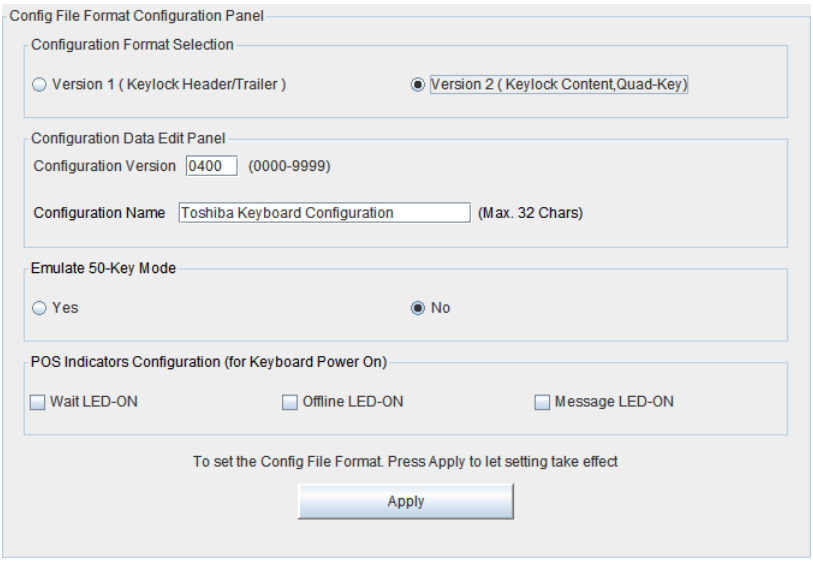
Programmable MSR Header/Trailer, Programmable Keylock Content, Enable/Disable MSR Track, and Disable Keyboard and MSR function in 4-Position Keylock. All configuration items are listed below:

1. Configuration Format Selection: to set Configuration Format to V1 or V2.
2. Configuration Version: to set the Configuration Version of the saved Configuration File.
3. Configuration Name: to set the Configuration Name of the saved Configuration File. This provides additional descriptive information for the saved configuration file. This item is active when Configuration Format is set to V2.
4. Emulate 50-Key Mode: to set the emulate 50-Key function for the *67-Key* or *67-Key/LCD*.
   If YES is selected, *67-Key* or *67-Key with LCD* behavior is 50-Key (extra 17 keys do not work); if NO is selected, *67-Key* or *67-Key with LCD* behavior is 67-Key.
   This item is active when Configuration Format is set to V2 and device type is *67-key* or *67-Key/LCD*.
   If Configuration Format is set to V1, this item cannot be selected, and *67-Key* or *67-Key/LCD* default behavior is 50-Key (YES is selected by default).
5. POS Indicators Configuration (for Device Power On): set the Wait/Offline/Message LED status when device powers on. This item is active when Configuration Format is set to V2 and this function supports *ANPOS II, CANPOS*, *67-Key* and *67-Key/LCD* only. If Configuration Format is set to V1, this item cannot be selected, and default Wait/Offline/Message LED status is On/On/Off.

After all configuration items are set, press 'Apply' button for the setting to take effect.



PIC_02 Config File Format Configuration Panel (Select V1 with 67-Key)

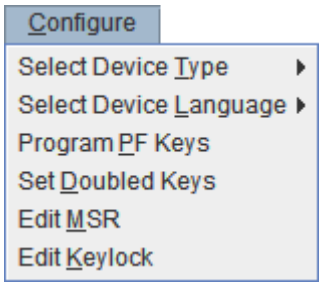


PIC_03 Config File Format Configuration Panel (Select V2 with 67-Key)

3.1.6 Exit:

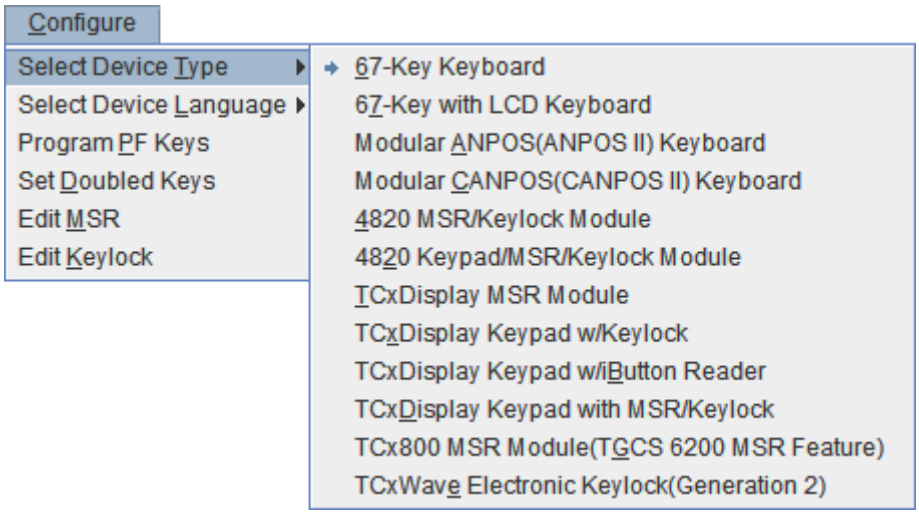
Close the windows utility. User may also run it from the toolbar button.

3.2 Configure Menu:



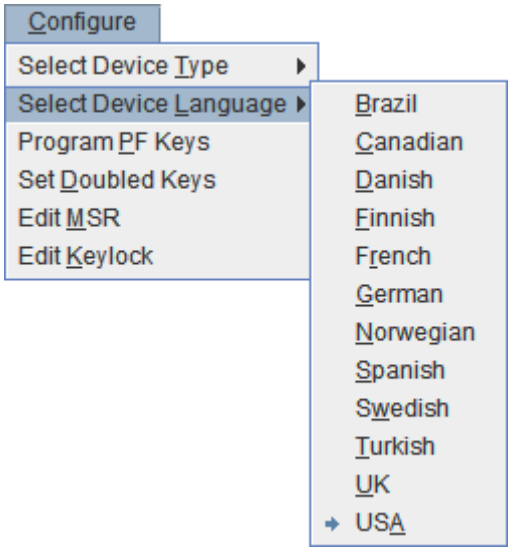
This menu is used to configure all keyboard configuration settings.

3.2.1 Select Device Type:



Select one of the device types. The selected device type will be designated by an arrow.

3.2.2 Select Device Language:



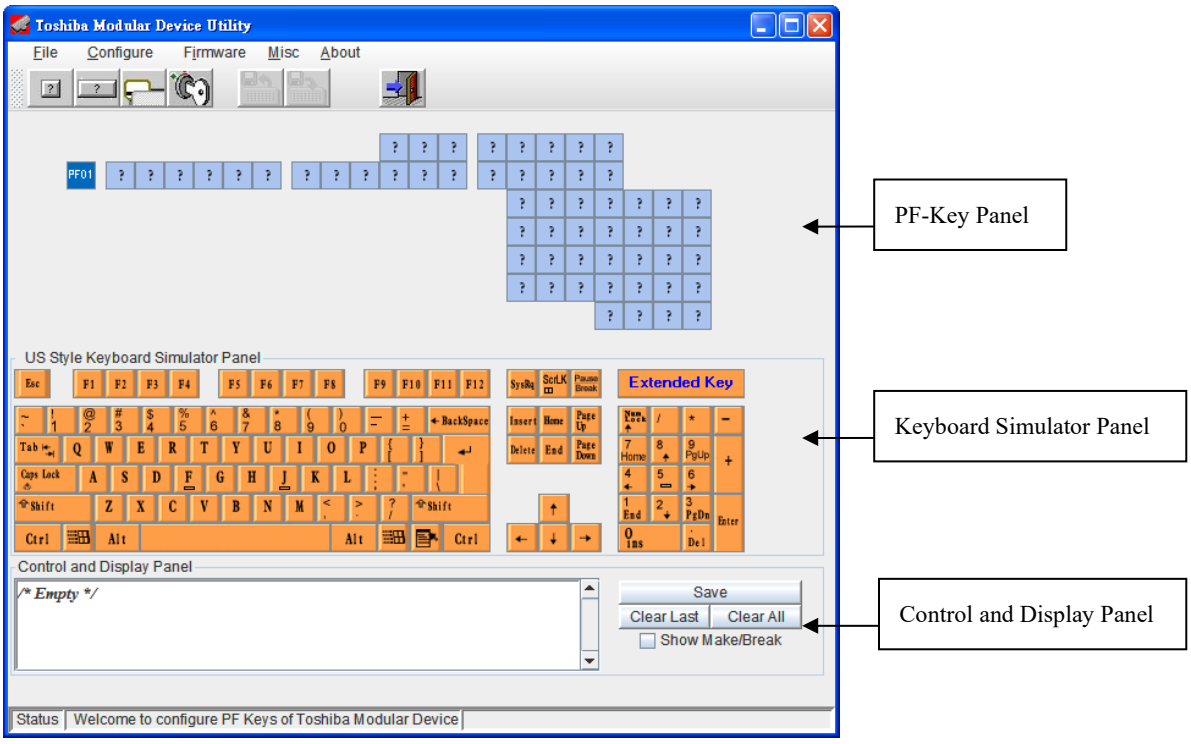
Select one of the device languages (Brazil/Canadian/Danish/Finnish/French/German/ Norwegian/Spanish/Swedish/Turkish/UK/USA). This will change the device language of the Keyboard simulator panel (refer to **section 3.2.3**) and set a specific language for MSR Track Translation (refer to **section 3.2.5 MSR Track Translation**). The selected device language will be designated by an arrow.

When device type is *TCx800 MSR Module (TGCS 6200 MSR Feature)*, the device language lists will be changed to:
(Portuguese/Canadian/Danish/Finnish/French/German/Italian/Spanish/Swedish/Turkish/UK/USA/ Custom).

3.2.3 Program PF Keys:

'Program PF keys' is used to program the Programmable Function Key content. Each PF key can store a maximum of 16 keys. User may also run it from the toolbar button.

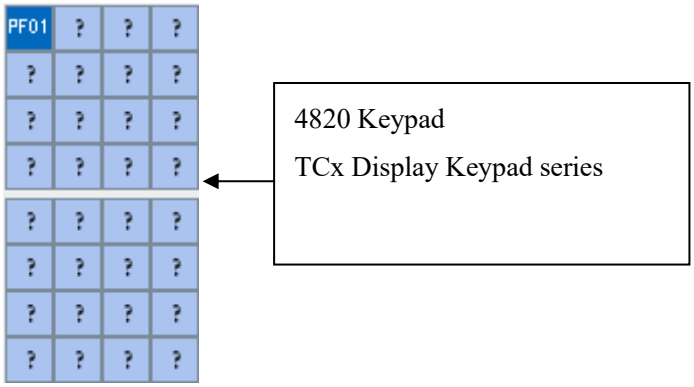
'Program PF keys' is set in Program PF Keys Panel. Program PF Keys Panel contains 3 sub-panels (PF-Key Panel, Keyboard Simulator Panel, and Control and Display Panel). Below is an example of the Program PF Keys Panel.

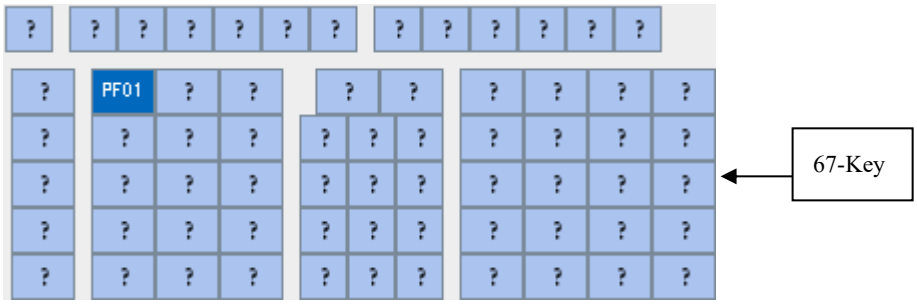


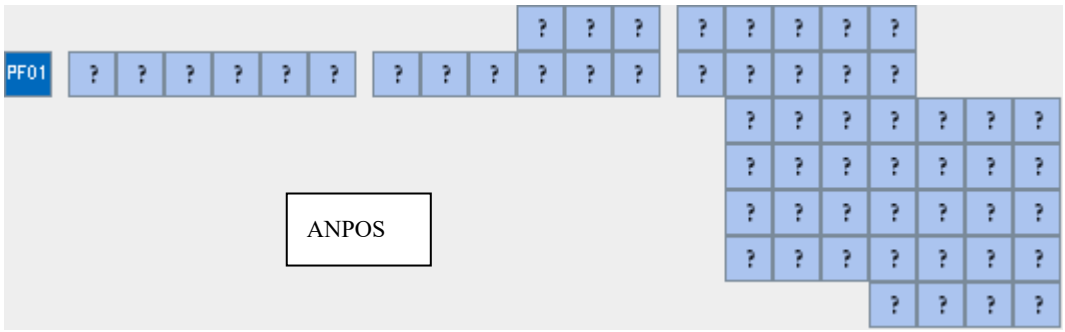
PIC_04 Program PF Keys Panel

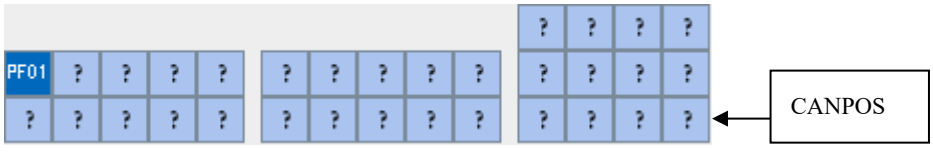
PF-Key Panel:

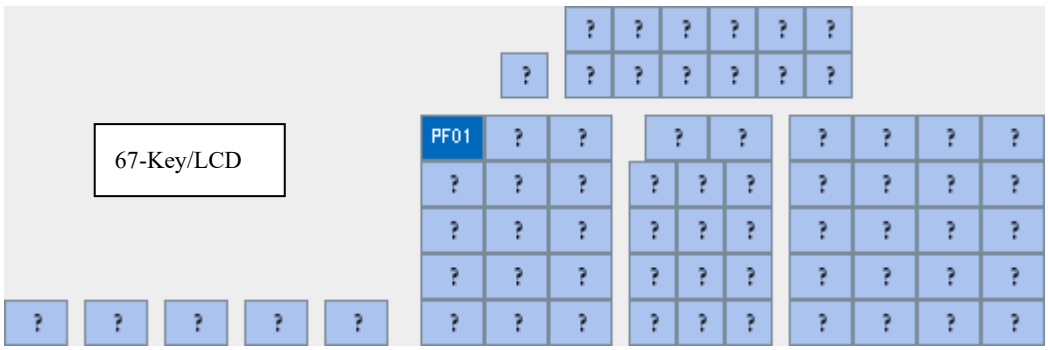
Select the device type from menu ‘Configure→Select Device Type’ and displayed device layout in the PF-Key Panel. Please see picture below:









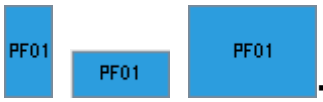


Different icons are used to indicate PF key status. Each PF key uses a PF key number (from PF01 to PFn). PF key number is visible only when PF key is active or the PF key content is defined. If two single PF keys (vertical or horizontal adjacency) are grouped to a single PF key (double key), the left or top PF key number is used to indicate this grouped PF key. If four single PF keys (quaternary adjacency) are grouped to a single PF key, the left-top PF key number is used to indicate this grouped PF key (also known as Quad-Key). Program Quad-Key is active when device type is 67-Key or 67-Key/LCD and Configuration Format is V2. Please see examples below:

➔PF Key content is undefined, and it is a single PF key.

➔ PF Key content is undefined, and it is a grouped PF key.

➔PF-Key content is defined, and it is a single PF key.



➔ PF Key content is defined, and it is a grouped PF key.

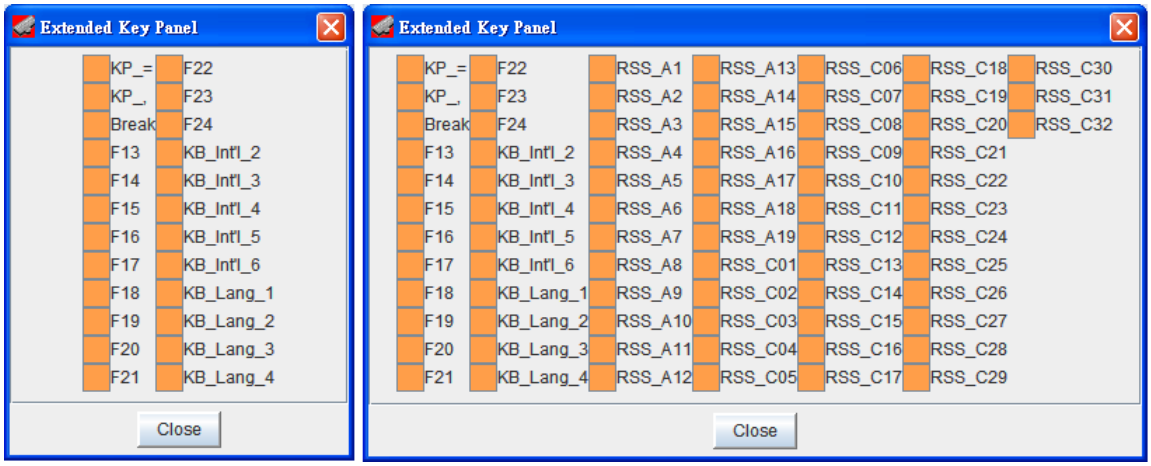
➔PF Key is active. A PF key can be programmed when it is an active PF Key. To activate a key, move the mouse cursor over the key to be programmed and press the left mouse button. The key icon will change from a question mark to PFn.

The doubled keys (grouped key) setup will allow two adjacent PF keys (vertical or horizontal adjacency) or four adjacent PF keys (quaternary adjacency; only works when 67-Key or 67-Key/LCD Keyboard type is selected and Configuration Format is set to V2) to become a grouped PF key. Please refer to **section 3.2.4**.

Keyboard Simulator Panel:

There are 12 language simulator keyboards that can be displayed in the Keyboard Simulator Panel. Select a simulator keyboard from menu 'Configure➔Select Device Language'. User can use this simulator keyboard or an external keyboard to program PF keys.

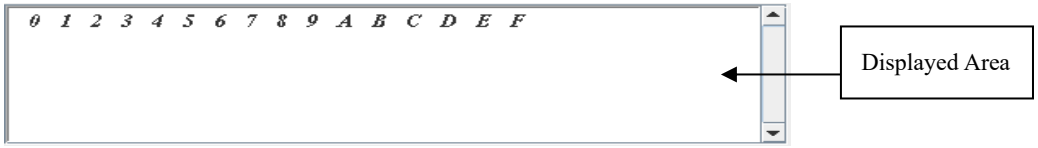
User can use all keys on the simulator keyboard to program PF keys. There is also an 'Extended Key' button on the simulator keyboard. Pressing this button will cause an 'Extended Key Panel' to pop up. In this panel, if Configuration Format is set to V1, there are a total of 24 extended keys that can be used to program the PF key; if Configuration Format is set to V2, there are a total of 75 extended keys that can be used to program the PF key. Below is the 'Extended Key Panel' for Configuration Format which is set to V1 or V2.



PIC_05 Extended Key Panel (Configuration Format is V1 or V2)

Control and Display Panel:

This panel will display the programming data for a PF key. Each PF key can store a maximum of 16 keys. User may input PF key content via the simulated keyboard or an external keyboard. If user is unable to input PF key content using an external keyboard, place the mouse cursor on the PF key to be programmed and press the left mouse button to activate the PF key, or place the mouse cursor on the Displayed Area and press the left mouse button to activate Displayed Area. Utility can link external keyboard input to the Displayed Area only when the Displayed Area is active. Once PF key programming is complete, press the 'Save' button to save programming data to the utility.



Save ➔ Save programming data to utility. If key Make/Break is not balanced (e.g.: if context is *A B A^* , and the key *B^* is not being entered into Control and Display Panel), it will show error message and will not save context data.

Clear Last ➔ Remove last input key in Control and Display Panel. When "Clear Last" is pressed while PF-Key editing, it will remove last key content and change simulator key to the prior state. When the last 2 Make and Break is continuous for a key Depress and Release, press 'Clear Last' button will clear Make and Break for this key (e.g.: ***A A^ B B^*** , press "Clear Last" will become ***A A^***). When the last 2 Make and Break is not continuous for a key Depress and Release, press 'Clear Last' button will only clear last Make or break (e.g.: ***A B A^ B^*** , press "Clear Last" will become ***A B A^***).

Clear All ➔ Remove all input keys in Control and Display Panel. Pressing "Clear All" in PF-Key editing will remove all key content and reset simulator key to initial status.

➔ To show/not show the Make/Break code information in Control and Display Panel. Pressing a key will generate a key Make code. Releasing a key will generate a key Break code. Make/Break code information can be displayed by selecting the check box 'Show Make/Break'. For example, if a PF key is programmed as '*Left Shift Make + A Make + A Break + Left Shift Break*', it will display as '***Left_Shift A ^A ^ Left_Shift*** 'in the Control and Display Panel if the check box is selected.

Working example is as below:

1. Select a device type from menu 'Configure→Select Device Type'.
2. Select a simulator keyboard from menu 'Configure→Select Device Language'.
3. Set doubled keys in the Double-Key Definition Panel (refer to **section 3.2.4**).
4. Toggle to Program PF Keys Panel.
5. Place mouse cursor on a PF key and press the left mouse button. This PF key will become active. Only the active PF Key can be programmed.
6. Input PF key content using the simulator keyboard, extended key panel or from external keyboard. The input content will display in the Control and Display Panel.
7. Press the 'Save' button to save PF key programming data.

3.2.4 Set Doubled Keys:

'Set Doubled Keys' is used to program 2 or 4 adjacent PF keys to a grouped PF key or de-group a grouped PF key. Once PF keys are programmed to a grouped PF key, pressing the PF keys simultaneously will be treated the same as pressing a single PF key. User may also run it from the toolbar button. Grouped 4 PF keys (quaternary adjacency) to a single PF key (called Quad-Key) is active when device type is 67-Key or 67-Key/LCD and Configuration Format is V2.

'Set Doubled Keys' is set in the Double-Key Definition Panel. The Double-Key Definition Panel contains PF-Key Panel and Group Key Setting Button.

PF-Key Panel:

Display one of the Device types (67-Key, ANPOS, CANPOS, 4820 Keypad, 67-Key/LCD, and TCx Display Keypad) in this PF Key Panel. This panel will be used to program the grouped key.

Group Key Setting Button:

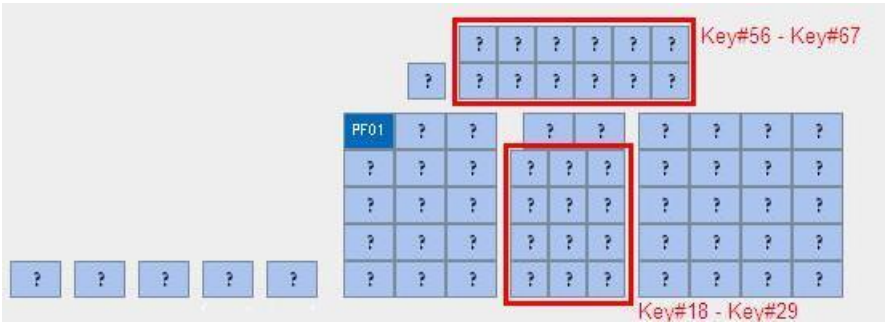
 **:** make horizontal double-key button.  **:** make vertical double-key button.

 **:** make quaternary double-key button.  **:** remove horizontal double-key button.

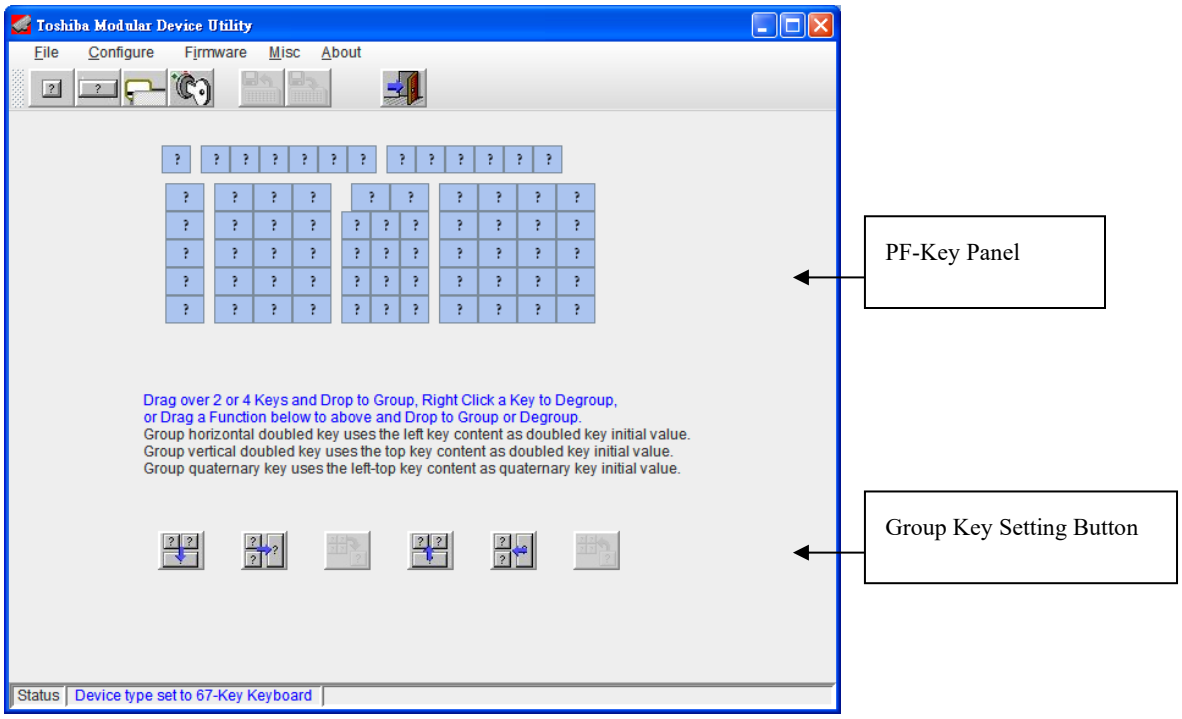
 **:** remove vertical double-key button.  **:** remove quaternary double-key button.

The ‘make quaternary double-key’ and ‘remove quaternary double-key’ buttons are only active when device type is 67-Key or 67-Key/LCD and Configuration Format is set to V2.

Note: When device type is 67-Key/LCD, key#18 to key#29 and key#56 to key#67,it does not support quaternary double-key programming.



Below is an example of the Double-Key Definition Panel.

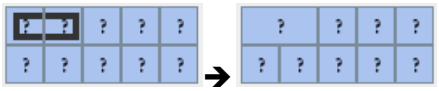


PIC_06 Double-Key Definition Panel

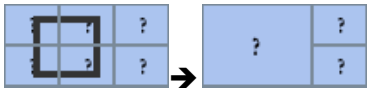
There are two methods to program 2 or 4 adjacent PF keys to a grouped PF key or de-group a grouped PF key to 2 or 4 PF keys. Not all adjacent PF keys can be grouped. Only same size, same block and un-grouped PF keys can be grouped.

Method1: Press a PF key in the PF-Key Panel. Drag over 2 or 4 keys and drop to create a grouped key. Right click mouse button to a grouped key to de-group. Please see examples below.

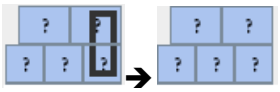
Example 1: (Group 2 PF keys)



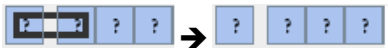
Example 2: (Group 4 PF keys in 67-Key keyboard)



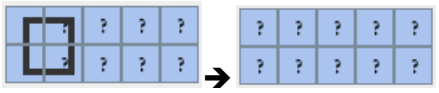
Example 3: (Cannot group 2 PF keys in different size)



Example 4: (Cannot group 2 PF keys in different block)

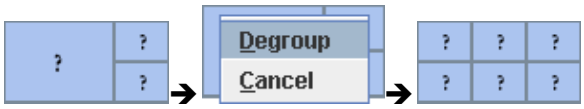


Example 5: (Cannot group 4 PF keys in CANPOS keyboard)



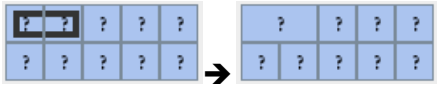
Example 6: (Right click to a grouped PF key to de-group to 2 PF keys)

Example 7: (Right click to a grouped PF key to de-group to 4 PF keys)



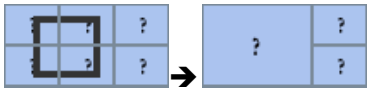
Method2: Press a Group Key Setting Button, drag it to the PF-Key Panel, and drop it on the PF keys required to make a grouped PF key or remove a grouped PF key. Please see below examples.

Example 1: make horizontal grouped PF key ().

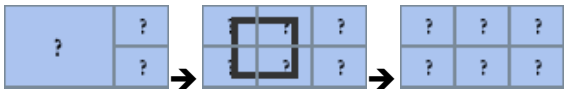


Example 2: remove vertical grouped PF key ().

Example 3: make quaternary grouped PF key ().



Example 4: remove quaternary grouped PF key ().



If 2 PF keys (left/right) are grouped, the grouped key initial value is the left key content. If 2 PF keys (top/bottom) are grouped, the grouped key initial value is the top key content. If 4 PF keys (left-top/right-top/left-bottom/right-bottom) are grouped, the grouped key initial value is the top-left key content. If PF key is un-grouped and its content is empty (undefined), firmware will set a default initial value for this PF key.

Note: If PF key is grouped and its content is empty (undefined), pressing this grouped key will not send out any data. To avoid unexpected result, please make sure you have programmed the content of a grouped key.

Examples below:

If P1 content is '***AA***' and P2 content is '***BB***', the grouped key P1 initial value is '***AA***'. If user writes configuration data to firmware, pressing this grouped key will send out '***AA***'.

If P1 content is '' (undefined) and P2 content is '***BB***', the grouped key P1 initial value is '' (undefined). If user writes configuration to firmware, pressing this grouped key will not send out anything.

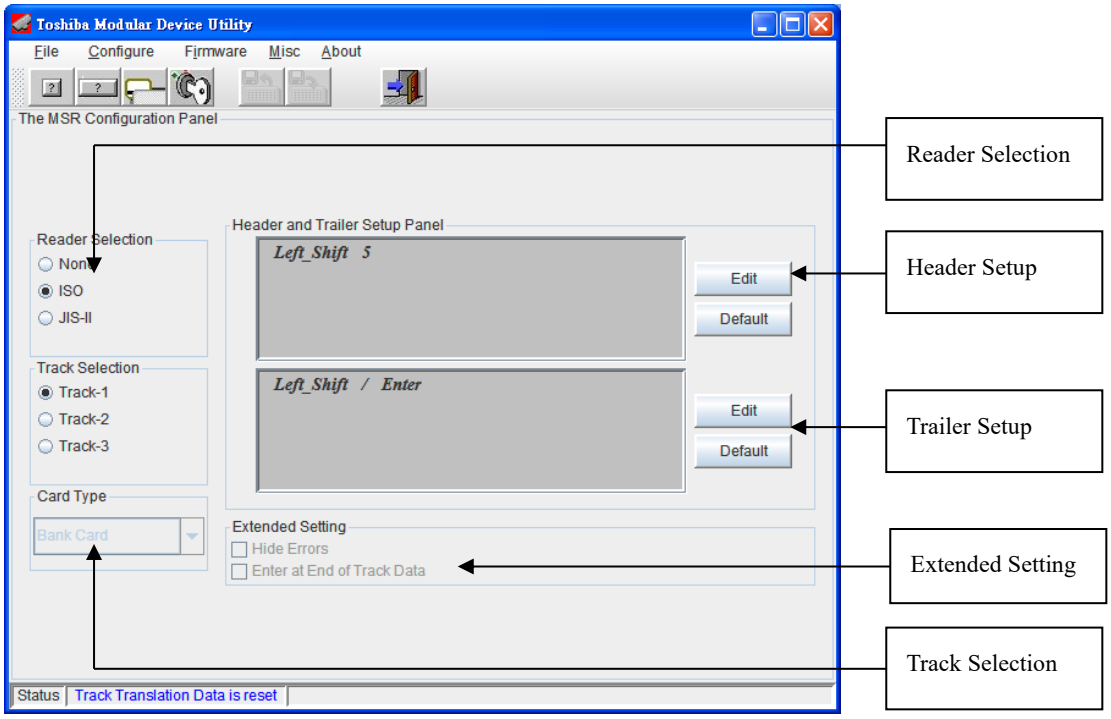
Under the two conditions, P1 is un-grouped and its content is empty (undefined). Once the user writes this configuration data to firmware, pressing P1 will send out a default initial value.

3.2.5 Edit MSR:

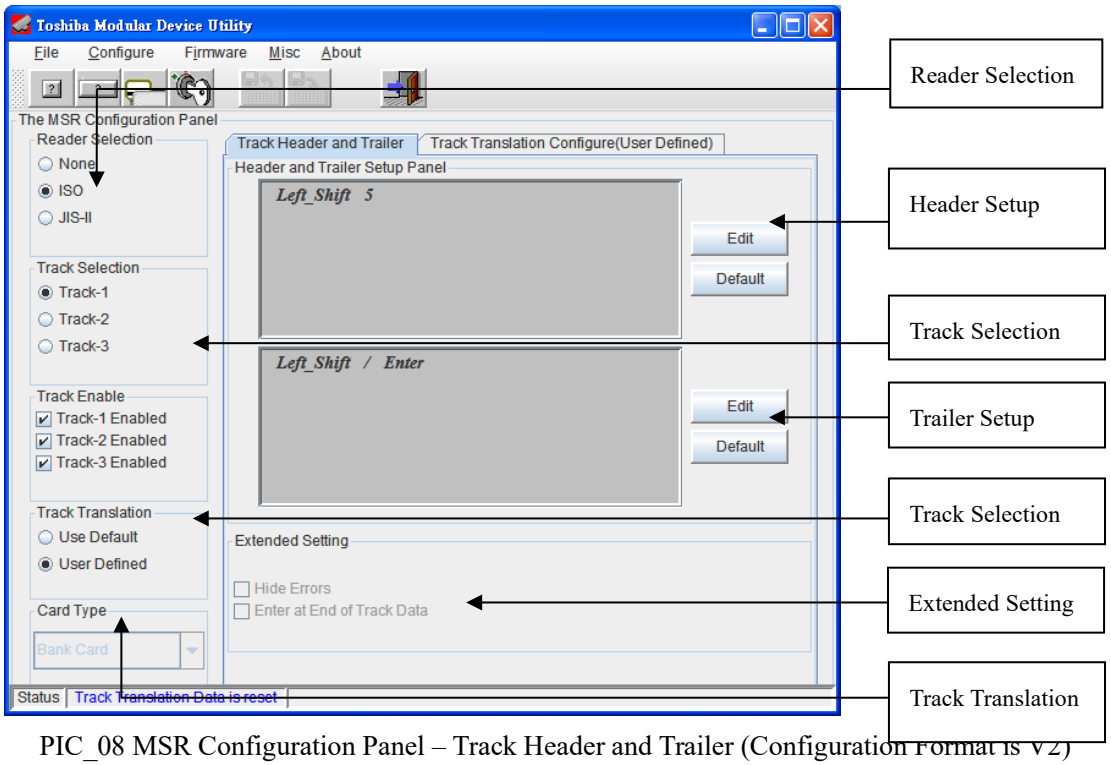
'Edit MSR' is used to edit MSR Track Header and Trailer if Configuration Format is set to V1; or to edit MSR Track Header and Trailer and Enable/Disable MSR Track if Configuration Format is set to V2. Each Track Header and Trailer can store a maximum of 16 keys. User may also run it from the toolbar button.

Edit MSR Header and Trailer:

'Edit MSR' is set in the MSR Configuration Panel. When entering the MSR Configuration Panel, the default reader type is ISO, default selected Track is Track-1, and the Header and Trailer Setup Panel will display default Header (*%*) and Trailer (*? Enter*) for Track-1. If the Configuration Format is set to V2, a Track Enable checkbox appeared, and all Tracks are enabled by default.



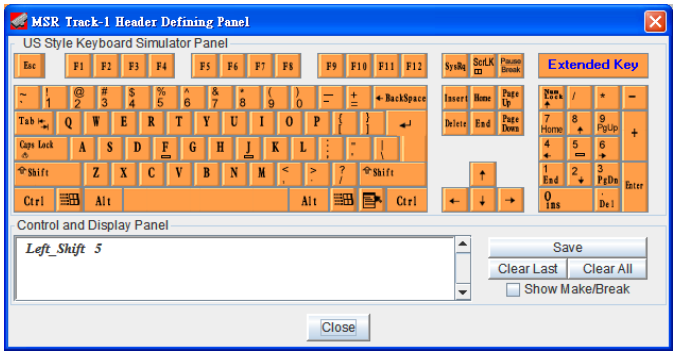
PIC_07 MSR Configuration Panel (Configuration Format is V1)



PIC_08 MSR Configuration Panel – Track Header and Trailer (Configuration Format is V2)

Select an MSR reader type from Reader Selection. Since JIS-II only has two Tracks (Track-1, Track-2), user selects reader type JIS-II and the MSR Track-3 of the Track Selection will become disabled (grayed out). If user selects reader type to 'None', all setting items except Reader Selection will be disabled (grayed out). Once user selects a new reader type, each Track Header/Trailer setting will change to its default Header/Trailer for this reader type. Select a Track from Track Selection. Press the Edit button to enter 'MSR Track-X Header Defining Panel' or 'MSR Track-X Trailer

Defining Panel' to edit Header/Trailer by select visible/invisible key (e.g.:  is a visible key,  is an invisible key) combination for the selected Track. Press the Default button to load default Header/Trailer value for the selected Track. Below is the 'MSR Track-1 Header Defining Panel':

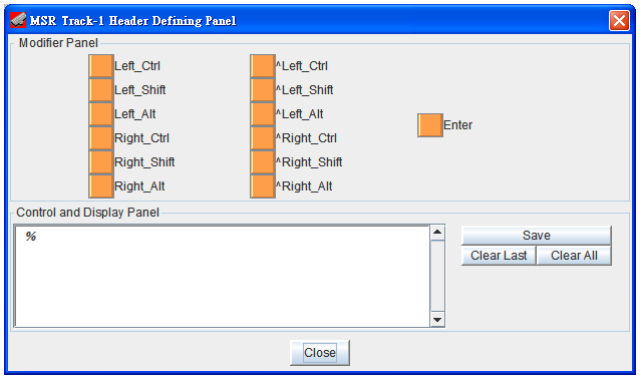


Below are all Track default settings for Header/ Trailer of ISO and JIS-II Reader.

ISO Reader: Track-1 default Header: %
Track-2 default Header: ;
Track-3 default Header: :
Track 1/2/3 default Trailer: ? *Enter*

JIS-II Reader: Track-1 default Header: %
Track-2 default Header: ;
Track 1/2 default Trailer: ? *Enter*

When device type is *TCx800 MSR Module (TGCS 6200 MSR Feature)*, the 'MSR Track-X Header Defining Panel' or 'MSR Track-X Trailer Defining Panel' to edit Header/Trailer by select visible ASCII characters (e.g.: '1' and '!' are different visible ASCII character) and modifier combination for the selected Track. Below is the 'MSR Track-1 Header Defining Panel': (programming result is '!!', *Lift_Shift 1 ^Lift_Shift* will be translated to '!')



Configure MSR Track Enable:

Track Enable function provides each MSR Track's Enable/Disable setting ability. When the Track-x Enabled is checked, it means Track-x is enabled.

This function supports only Configuration Format **V2**.

Hide Errors:

Enable/Disable the display for read MSR track data failed ('E'). When the Hide Errors is checked, the symbol 'E' will not display. (Only for TCx Display MSR Module)

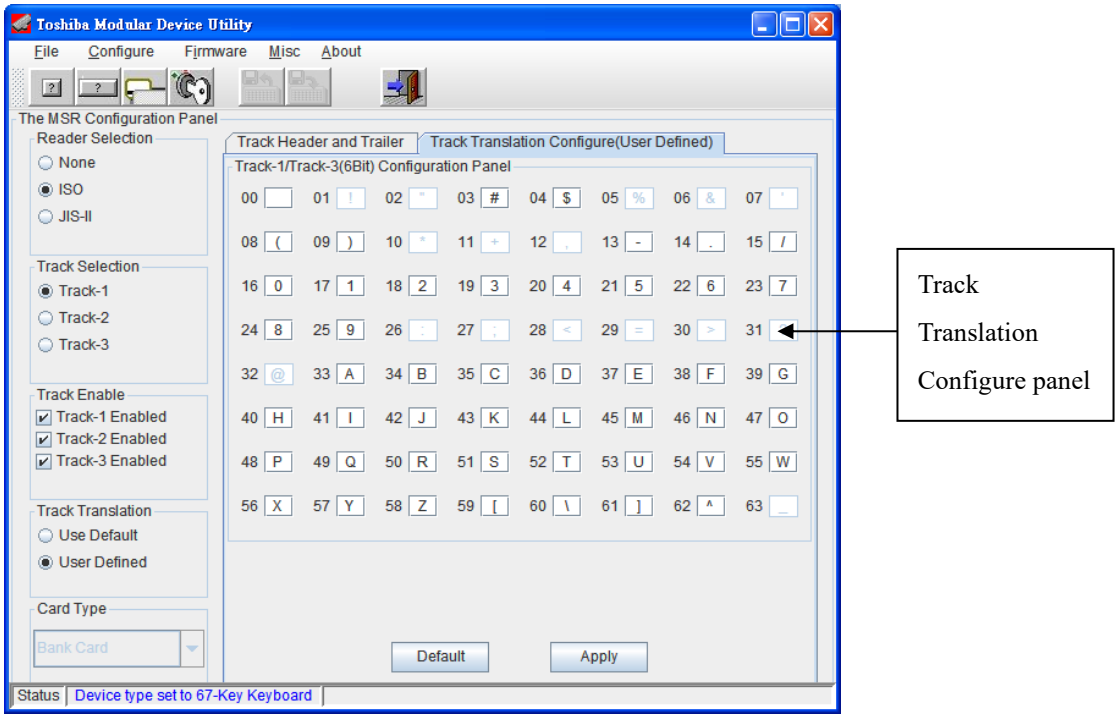
Enter at End of Track Data:

Enable/Disable to add an Enter output after read MSR track data. When the Enter at End of Track Data is checked, it will add an Enter output after read of MSR track data. (Only for TCx Display MSR Module)

MSR Track Translation:

MSR Track Translation allows for configuration of the MSR Translation Table for support of Multi-Language OS. The MSR Translation Table can convert each Track of MSR Raw Data to a sequence of ASCII code. The MSR Track Translation is implemented for Toshiba Modular Device. Use the utility to configure the MSR Translation Table. Each time the user configures the MSR Translation Table. The user must select a specific Language OS. Toshiba Modular Device Utility can support the following OS languages: Brazil, Canadian, Danish, Finnish, French, German, Norwegian, Spanish, Swedish, Turkish, UK and US. Fill out the MSR Translation Table and write the configured results to the Toshiba Modular Device. After that, swap MSR Card will generate a sequence of ASCII code Output according to the MSR Translation Table definition.

The MSR Track Translation only supports Configuration Format **V2**. When the 'Track Translation' is set to '**Use Default**', the device will use a default MSR Translation Table which supports US OS Language. When the 'Track Translation' is set to '**User Defined**', user can program the MSR Translation Table for one of the supported Language OS in Track Translation Configure panel. **If User OS Language is US or there is no special requirement for an alternative language, please select 'Use Default'.**



PIC_09a MSR Configuration Panel - Track Translation Configure (Configuration Format is V2)

In Track Translation Configure Panel, user can program Track-1/Track-2/Track-3 translation table. Track-3 can be configured with Track-1 or Track-2 depending on MSR card data format (6-bit/4-bit). When MSR card data format is 6-bit, Track-3's translation table will refer to Track-1's translation table. If MSR card data format is 4-bit, Track-3's translation table will refer to Track-2's translation table.

Each MSR Card Track consists of a sequence of data called Char-ID (range is 00-63). User can program each Char-ID to a visible ASCII character, but there are some restrictions as follows:

1. Each Char-ID is **1** visible ASCII character.
   ('1' and '!', 'a' and 'A', …, etc. will be treated as different ASCII character)
2. Each Char-ID can program in the visible ASCII code range: **0x20 - 0x7E**.
3. Cannot program Hardware Control Code (Track-1): ***! " & ' * + , : ; < = > _ @***
4. Cannot program Hardware Control Code (Track-2): ***< > :***
5. Cannot program Start/End signal (Track-1/Track-2): ***% ; : ?***

Translation Table will translate each Char-ID to a visible ASCII Value. After configuring the Translation Table and writing it to the device, swapping the MSR card will output each MSR Track data from a sequence of Char-ID to a sequence of ASCII value according to the Translation Table.

Working example is as below:

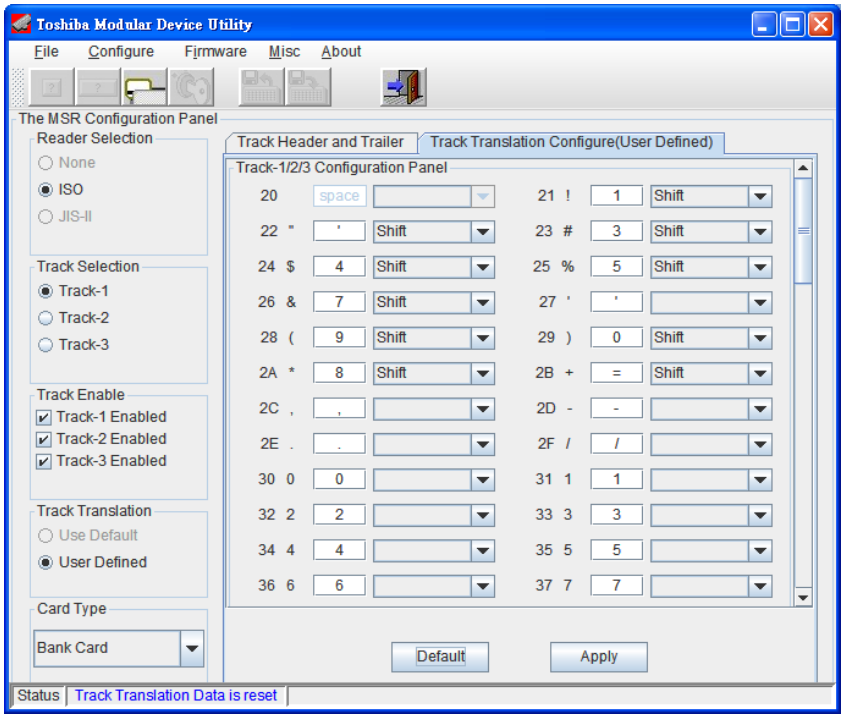
1. Set Configuration Format to **V2**.
2. Enter MSR configuration Panel and select "User Defined" in 'Track Translation'.
3. Select a specific OS Language from menu "Configure→Select Device Language".
4. Select Track-1 and enter 'Track Translation Configuration Panel'; set Char-ID No.16 to 'A' (default is '0') and press 'Apply' to save Track-1 Translation Table.

5. Write Configuration file to Toshiba Modular Device.
6. Swap MSR card and note that the Char-ID No. 16 output will translate to ‘A’.

When device type is *TCx800 MSR Module* (*TGCS 6200 MSR Feature)*, the Track Translation Configuration is different from other device type:

Each MSR Card Track consists of a sequence of data called Char-ID (range is 20-7E). User can program each Char-ID to a visible key and modifier (None, Shift, Alt, Alt Chr, Ctrl, Upper Case, Lower Case) combination, but there are some restrictions as follows:

1. Each Char-ID is **1** visible key and modifier combination.
   (‘1’ and ‘!’, ‘a’ and ‘A’, …, etc. will be treated as same key)
2. Each Char-ID key can program in the visible ASCII code range: **0x20 - 0x7E**.
3. A recommended Char-ID program is edit key without press Shift key and use modifier to adjust the setting result.
   (e.g.: ‘1’+’None’==’1’ and ‘1’+’Shift’==’!’ are recommended;
   ‘!’+’None’==’1’ and ‘!’+’Shift’==’!’ are not recommended)
4. If language selection is not “Custom”, Track Translation will use selected language default setting and Track Translation Configuration setting will not take effect.
5. If language selection is “Custom” and press “Default button, Track Translation setting will use ‘USA’ default setting.
6. User may select a specific language to get this language default setting as basis and change language to “Custom” to do further modification. This may speed up custom translation setting from specific language default setting.



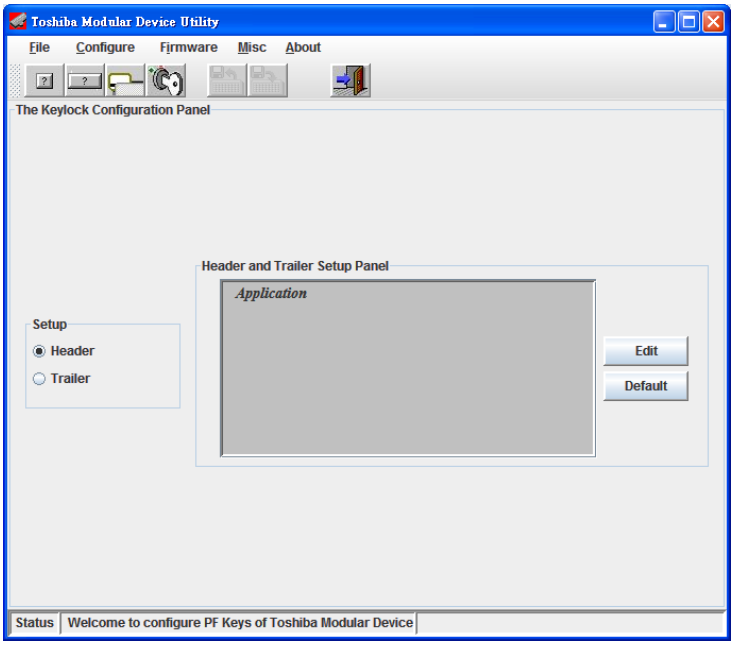
PIC_09b MSR Configuration Panel - Track Translation Configure TCx 800 MSR Module (TGCS 6200 MSR Feature)

3.2.6 Edit Keylock:

'Edit Keylock' is used to edit the Keylock Header and Trailer for V1 Configuration Format or to edit Keylock Content and Disable Keyboard and MSR function in 4-Position Keylock for V2 Configuration Format. The Keylock Header and Trailer or Content can store up to a maximum of 16 keys. The user may also run it from the toolbar button.

Edit Keylock Header and Trailer:

Edit Keylock Header and Trailer in the Keylock Configuration Panel when Configuration Format is set to V1. The default Header is 'Application'. Refer to the picture below:



PIC_10 Keylock Configuration Panel (Configuration Format is V1)

Press Edit button to enter 'Keylock Header Defining Panel' or 'Keylock Trailer Defining Panel' to edit Keylock Header/Trailer. Press Default button to load default Keylock Header/Trailer value. Below is the 'Keylock Header Defining Panel':

Below is the Keylock default Header/ Trailer.

Default Header: ***Application***

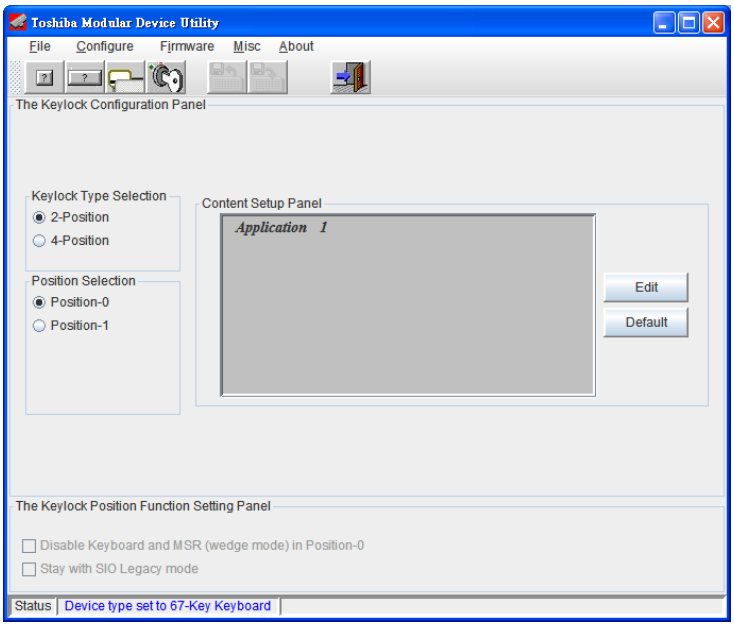
Default Trailer: **/* empty */**

Below is an example of how to edit the Keylock Header/ Trailer:

1. Edit Header to '*A*', Trailer to '*B*' and write configuration to the device.
2. Switch to Keylock Position#X. Keylock will send out '*A*' + Position#X + '*B*'. For example, switch to Pos#1 and Keylock will send out '*A1B*'. Switch to Pos#2 and Keylock will send out '*A2B*'.

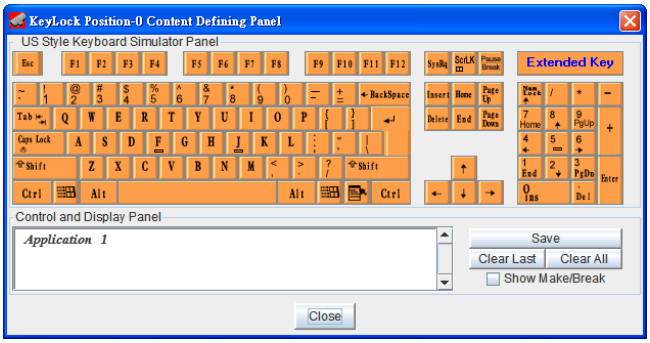
Edit Keylock Content:

Edit Keylock Content in the Keylock Configuration Panel when Configuration Format is set to V2. The default Keylock Type Selection is 2-Position and the default Position Selection is Position-0, and the default Content of Position-0 is '*Application*'+'*1*'. Please see the picture below:



PIC_11 Keylock Configuration Panel (Configuration Format is V2)

Select a Keylock Type from Keylock Type Selection. (Touch Display I/O Module does not support 4-Position Keylock. When device type is 4820 series, Item '4-Position' will be disabled.) Select a Position from Position Selection. Press Edit button to enter 'Keylock Position-X Content Defining Panel' to edit Keylock Content for the selected position. Press Default button to load default Keylock Content from the selected position. Below is the 'Keylock Position-0 Content Defining Panel':



Below is the Keylock default Content of each Position:

Position-0 default Content: ***Application 1***

Position-1 default Content: ***Application 2***

Position-2 default Content: ***Application 3***

Position-3 default Content: ***Application 4***

Below is an example of how to edit the Keylock Content:

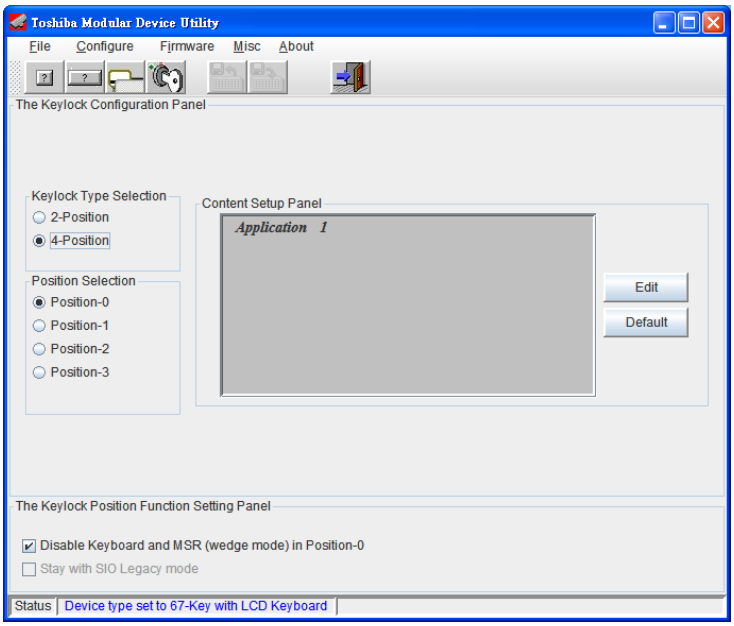
1. Edit Position-0 Content to '*AA*', Position-1 Content to '*BB*', Position-2 Content to '*CC*', Position-3 Content to '*DD*' and write configuration to the device.
2. Switch to Keylock Position#X. Keylock will send out Position#X's Content. For example, switch to Pos#0 and Keylock will send out '*AA*'. Switch to Pos#1 and Keylock will send out '*BB*'. Switch to Pos#2 and Keylock will send out '*CC*'. Switch to Pos#3 and Keylock will send out '*DD*'.

Disable Keyboard and MSR function:

Disable Keyboard and MSR in Position-0 can be programmed in The Keylock Position Function Setting Panel when Configuration Format is set to V2 and Keylock Type is set to 4-Position. For this setting, switching to Keylock Position-0 will deactivate the Keyboard and MSR function, i.e., no output will be generated when the MSR Card is swiped or any key is pressed.

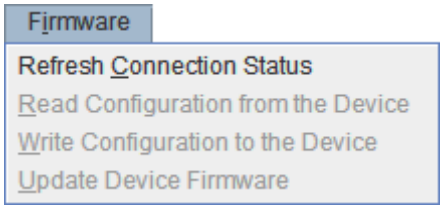
Stay with SIO Legacy mode:

The function only for device type is TCxWave electronic Keylock.



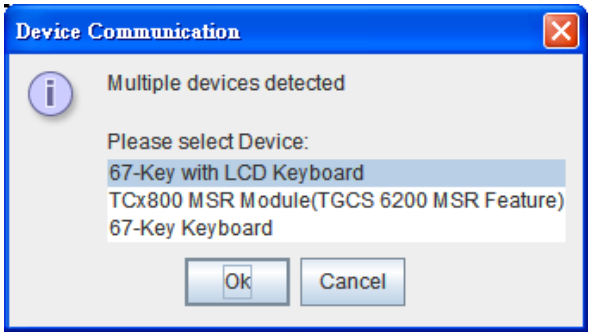
PIC_12 Keylock Configuration Panel (Configuration Format V2 and Keylock Type is 4-Position)

3.3 Firmware Menu:



This menu is used to communicate between Utility and Device.

If two or more devices have been attached, upper Firmware functions will pop-up a device list message box. User should select one device and press OK to continue. Please be noted that two or more same devices to be connected to the module utility is not allowed. The utility will always communicate with first recognized device. We should not configure the same device at the same time (Note that **TCx Display Keypad w/Keylock** and **TCx Display Keypad w/iButton Reader** are treated as the same device).

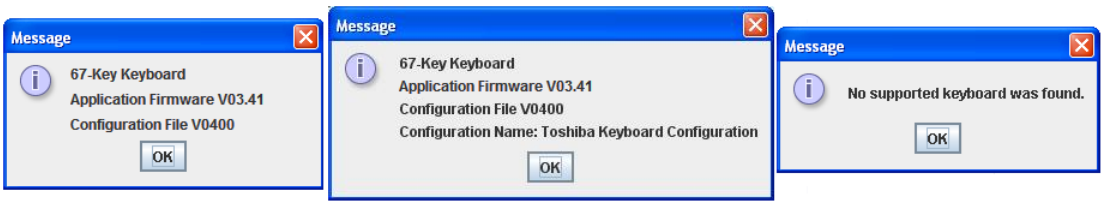


PIC_13a Device List Dialog

PIC_13b Not allowed Connection Type

3.3.1 Refresh Connection Status:

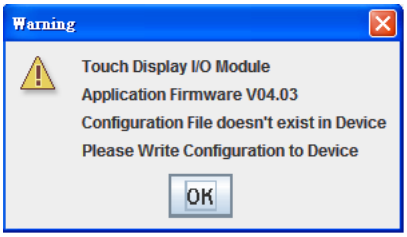
Refresh Connection Status is used to check the Toshiba Modular Device connection status. When running 'Read Configuration from the Device', 'Write Configuration to the Device', and 'Update Device Firmware' functions, make sure the Toshiba Modular Device is connected. When the utility opens, it will automatically run the 'Refresh Connection Status' once, or the user can run it from menu 'Firmware→ Refresh Connection Status'. If the *Refresh Connection Status* detects one or more devices which have been connected, the detection will display an information message to indicate the device type, Application Firmware Version, Configuration File Version, and Configuration Name (it is only be displayed when the Device Configuration Format is V2). The detection will also enable 'Read Configuration from the Device', 'Write Configuration to the Device', and 'Update Device Firmware' menu items. Otherwise, it will show a message box to indicate device was not found and other menu items will remain inactive. Please see the picture below:



PIC_14 Device Connection Detection Message

If the configuration file doesn't initialize in Toshiba Modular Device, it will show a message box to

indicate device was not initialize (refer to PIC_15). In this case, please perform ‘Write Configuration File to Device’.

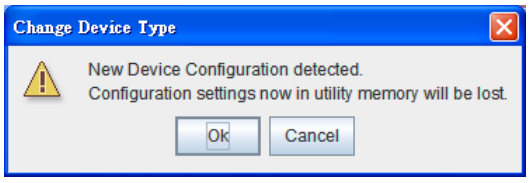


PIC_15 Device Connection Detection Message for doesn't initialize

After running the ‘Refresh Connection Status’, Utility will read Device ID and update related item statuses that include Device type and MSR type. However, there are some status items that will not be updated since there is no information via Device ID and those items will keep the last status. The detailed descriptions are as follows:

1. ANPOS: Device type will set to ANPOS and MSR type will not be updated.
2. CANPOS: Device type will set to CANPOS and MSR type will not be updated.
3. 4820 Keypad + Keylock + MSR: Device type will set to 4820 Keypad + Keylock + MSR. MSR type will set to ISO.
4. 4820 Keylock + MSR: Device type will set to 4820 Keylock + MSR. MSR type will set to ISO.
5. 67-Key without MSR: Device type will set to 67-Key and MSR type will set to None.
6. 67-Key with MSR: Device type will set to 67-Key and MSR type will set to ISO (if selected None).
7. 67-Key/LCD: Device type will set to 67-Key/LCD and MSR type will not be updated.
8. TCx Display MSR Module: Device type will set to TCx Display MSR Module and MSR type will set to ISO.
9. TCx Display Keypad w/Keylock: Device type will set to TCx Display Keypad w/Keylock and MSR function is disabled.
10. TCx Display Keypad w/iButton Reader: Device type will set to TCx Display Keypad w/iButton Reader and MSR and Keylock function are disabled.
11. TCx Display Keypad with MSR/Keylock: Device type will set to TCx Display Keypad with MSR/Keylock and MSR type will set to ISO
12. TCx800 MSR Module (TGCS 6200 MSR Feature): Device type will set to TCx800 MSR Module (TGCS 6200 MSR Feature) and MSR type will set to ISO.
13. TCxWave Electronic Keylock: Device type will set to TCxWave Electronic Keylock and MSR and Keypad function are disabled.

If any configures are changed and not saved to a configuration file, run the ‘Refresh Connection Status’ and then a warring box will be popped up to ask if user wants to update status or not. Please see the picture below:



PIC_16 Update configure status check

3.3.2 Read Configuration from the Device:

Read Configuration from the Device is used to read Toshiba Modular Device configuration setting to the utility. If this item is disabled, please run 'Refresh Connection Status' first. User may also run it from the toolbar button.

To make a slight modification to the Toshiba Modular Device, run 'Read Configuration from the Device', make the slight modification for the configuration setting, and write configuration data to the Toshiba Modular Device.

'Read Configuration from the Device' will get all configuration file settings stored in the device, but those setting may be different from a real device (ex: MSR type of device is ISO, but configuration file's MSR type is JIS-II). User must check module type again to write configuration to the device, **please make sure correct module type is selected**.

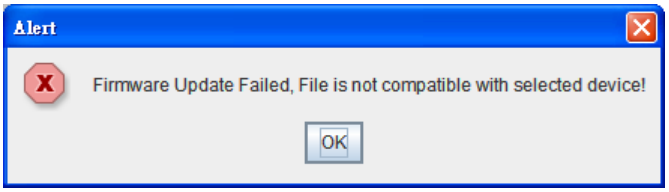
3.3.3 Write Configuration to the Device:

Write Configuration to the Device is used to write utility configuration setting to the Toshiba Modular Device. If this item is disabled, run 'Refresh Connection Status' first. User may also run it from the toolbar button.

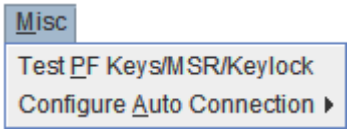
Besides checking all device types, utility will not restrict any settings of configuration file during 'Write Configuration to the Device'. This means that **user has the responsibility to select correct module type for write configuration or improper module setting may result in unexpected behavior.**

3.3.4 Update Device Firmware:

Update Device Firmware is used to renew the Toshiba Modular Device firmware. Only matched firmware file can update the device (ex: CANPOS only can use CANPOS's firmware to update). After device firmware is updated, the utility will save current operation file path to a preference file. The next time the utility will use it as the default file path. If this item is disabled, run 'Refresh Connection Status' first.

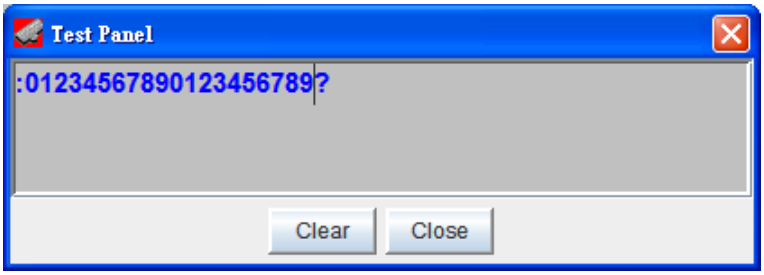


3.4 Misc Menu:



3.4.1 Test PF Keys/MSR/Keylock:

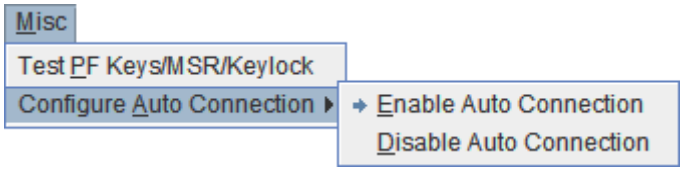
'Test PF Keys/MSR/Keylock' is used to test and verify that programmed PF key, MSR or Keylock content is correct. User can program the PF key, MSR or Keylock (as described earlier) and write programmed data to the Toshiba Modular Device, and then run the 'Test PF Keys/MSR/Keylock'. It will open a Test Panel. By pressing the programmed PF keys of the Toshiba Modular Device in this test panel, user can verify whether the programmed PF key content is correct or not. By Swipe MSR card or rotate the Keylock position, user can verify MSR and Keylock setting is correct or not (PIC_17 below):



PIC_17 PF Keys Definition Test Panel

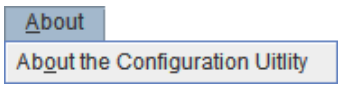
Note: In SLES11, the PF Keys test function first key strike may not appear since system limitation but further key strike will not have this problem and it only happens via PS/2 interface connection. Please ignore it since this is just an auxiliary PF keys test function.

3.4.2 Configure Auto Connection:



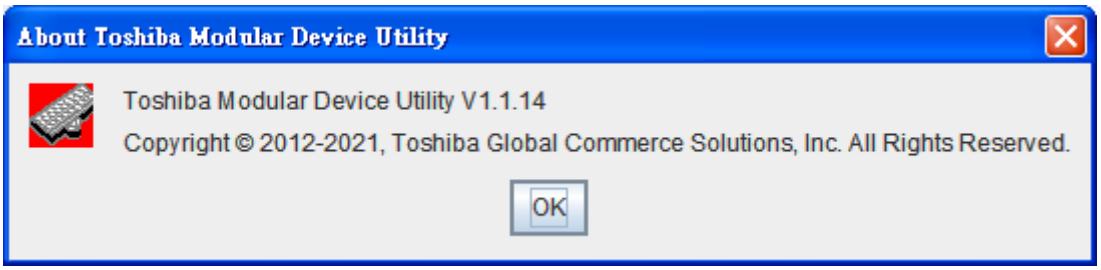
'Configure Auto Connection' is used to enable or disable device auto connection when the utility starts. Once "Enable Auto Connection" is selected, the next time the utility is launched and it will perform an auto connection to the device. Once "Disable Auto Connection" is selected, the next time the utility is launched and it will not perform an auto connection.

3.5 About Menu:



3.5.1 About the Configuration Utility:

'About the Configuration Utility' is used to show the utility version information:



PIC_18 About: Utility Information

4. Miscellaneous

4.1 Preference Setting:

Modular Device Utility has a preference file (kbpref.ini) to save the preference setting information. Preference setting information includes the Device Type, Device Language, Configuration Version, Configuration Name, Configuration Format, Device Auto Connection and Default File Path. The utility will save these settings to the kbpref.ini file when the utility is exited normally. Next time when the utility starts, utility will load the preference settings to the windows utility.

4.2 Modular Device Utility Restriction:

The utility has some restrictions for the Read/Write Configuration. Because the old firmware (V3.26) only supports Configuration Format V1, the conditions below will cause errors to occur:

1. Device Configuration Format is **V2**, but firmware is **v3.26**. Firmware v3.26 doesn't support device configuration format **V2**. When utility reads configuration, it will cause an error message 'Firmware Version and Configuration Format do not match…' to be showed up.
2. Utility configuration format selects **V2**, but device firmware is **v3.26.** Firmware v3.26 doesn't support the configuration format **V2**. Utility **v1.0.20** or later version write configuration will cause an error message 'Firmware Version and Configuration Format do not match…' to be showed up.

The problems can be solved by below methods:

1. Update firmware to newer version (**v3.27** or later). New firmware can support configuration formats V1 and V2.
2. Utility configuration format selects V1. Write configuration format V1 to device. Old firmware can support configuration format V1.

4.3 Device ID and Configuration File Naming Rule

Device Type	MSR Type	Device ID	Default Configuration File Name
Modular ANPOS (ANPOS II) Keyboard	None/ISO/JIS-II	4604	AIP46043.cfg
Modular CANPOS (CANPOS II) Keyboard	None/ISO/JIS-II	4609	AIP46093.cfg
67-Key Keyboard	None	4601	AIP46013.cfg
	ISO/JIS-II	4606	AIP46063.cfg
67-Key with LCD Keyboard	None/ISO/JIS-II	4602	AIP46023.cfg
4820 MSR/Keylock Module	ISO	4671	AIP46714.cfg
4820 Keypad/MSR/Keylock Module	ISO	4673	AIP46734.cfg
TCx Display MSR Module	ISO	467B	AIP467B.cfg
TCxDisplay Keypad w/Keylock		467C	AIP467C.cfg
TCxDisplay Keypad w/iButton Reader		467C	AIP467C.cfg
TCx Display Keypad with MSR/Keylock	ISO	467C	AIP467C.cfg
TCx800 MSR Module(TGCS 6200 MSR Feature)	ISO	467D	AIP467d1_1-MSRnnnn.gg.vv.cfg ※
TCxWave Electronic Keylock(Generation 2)		4502	AIP45022.cfg

Table_02 Configuration File Name Table

※ nnnn: Configuration Name

※ gg. vv: Configuration Number

Different Device Type and Module Type combinations have a specific Device ID (Device ID equals USB PID) for Toshiba Modular Device. The Device ID plus other information can be used to generate the file name for Configuration File. Table_02 shows the default configuration file name. Table_03 shows the configuration file naming rule:

File Type	File Naming convention
Configuration File	AIPXXXX.cfg , AIPXXXX2.cfg ,AIPXXXX3.cfg or AIPXXXX4.cfg where XXXX: Device ID (USB PID) 2: Toshiba generation 2 device 3: Toshiba generation 3 device…etc Note: AIPXXXX.cfg is the configuration file name for generation 1 device

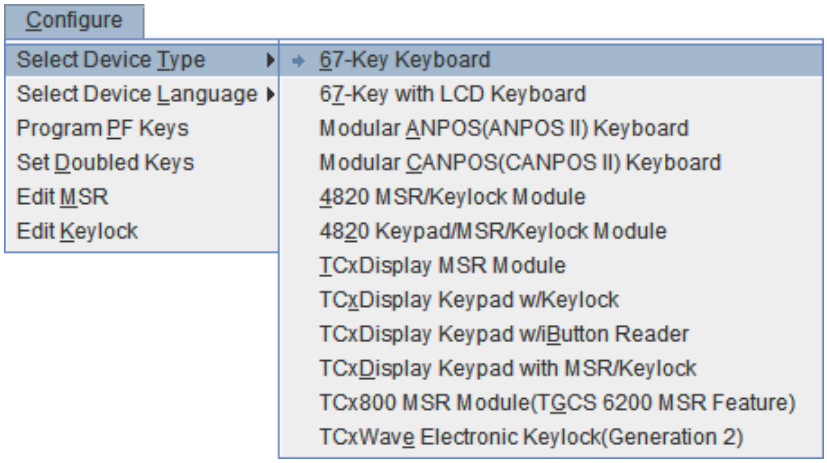
Table_03 Configuration File Naming Rule

By selecting different Device Types and MSR Type (None/ISO/JIS-II), each configuration file name in Table_02 can be generated. Below is an example to create specific configuration file name. Other

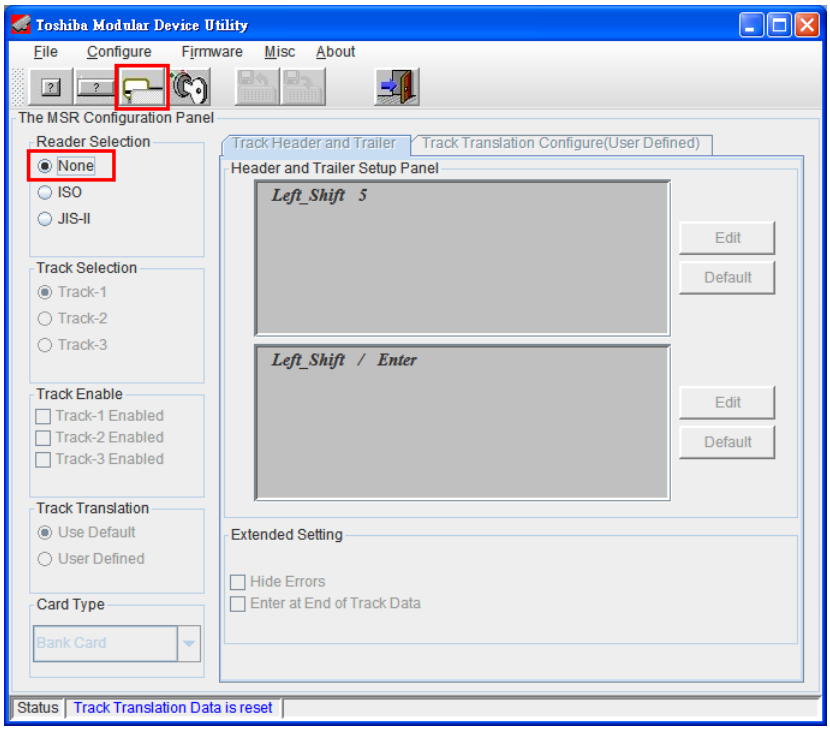
configuration file names can follow the same concept to create.

Example-1 67-Key/MSR Type (None):

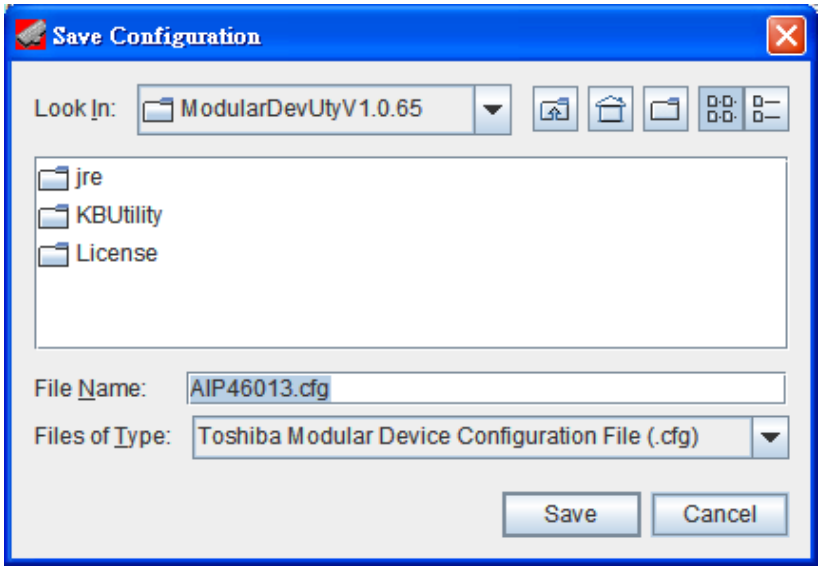
1. Select Device Type to **67-Key**.



2. Set MSR Type to **None** at "*The MSR Configuration Panel*".



3. Save configuration file.

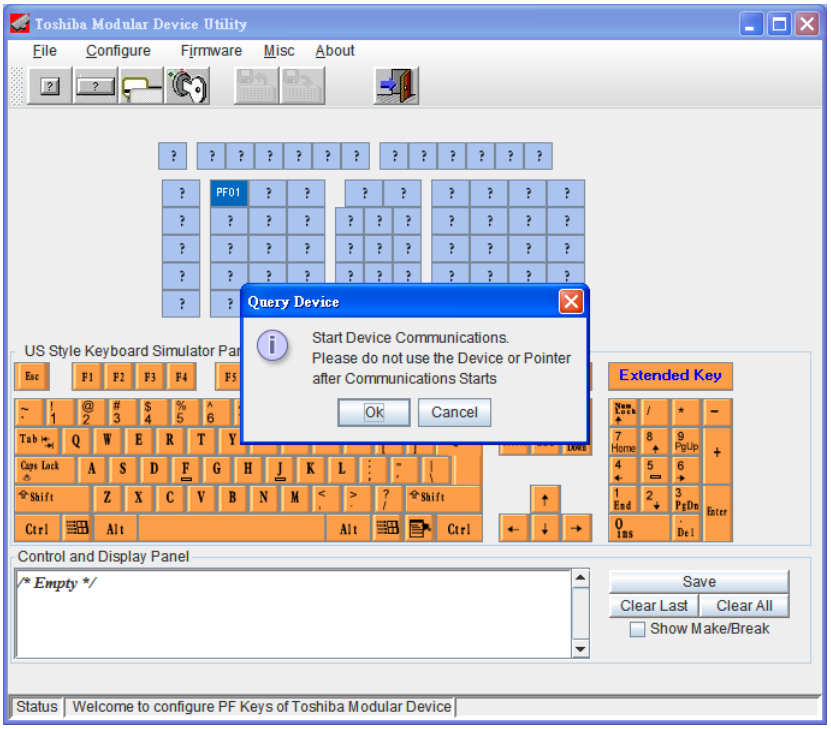


※If setting MSR type to ISO or JIS-II, the configuration file name will be changed to "AIP46063.cfg".

5. Example

5.1 Create a Configuration file (recommended process):

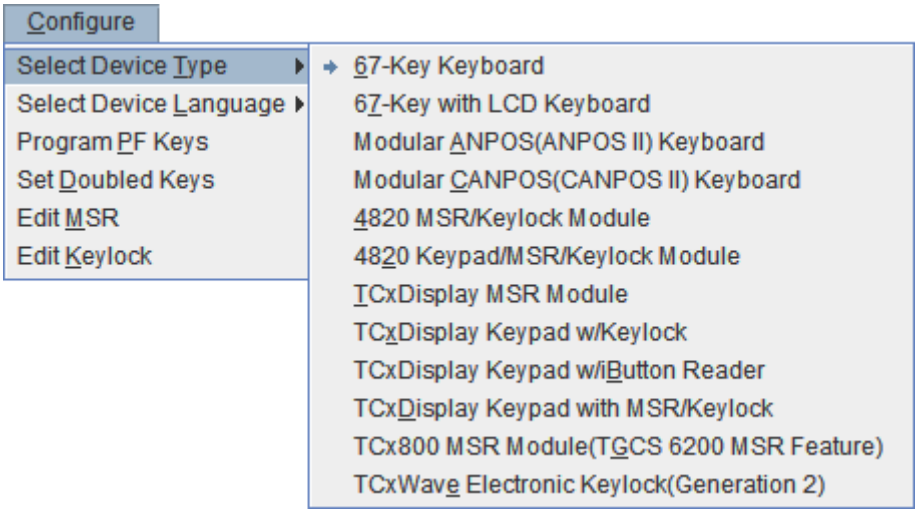
1. Open Toshiba Modular Device Utility.
2. If device is connected, press 'OK' in the message box to refresh status and go to step4.



3. Select proper option :

3.1. Select proper Device Type from menu “Configure→Select Device Type”.

3.2. Select proper Language Type from menu “Configure→Select Device Language”.



4. Edit Configuration Format :

4.1. Switch to Configure File Format Configuration Panel from menu “File→Edit Configuration File Format”.

4.2. Select Configuration Format from “Configuration Format Selection” (recommended use V2).

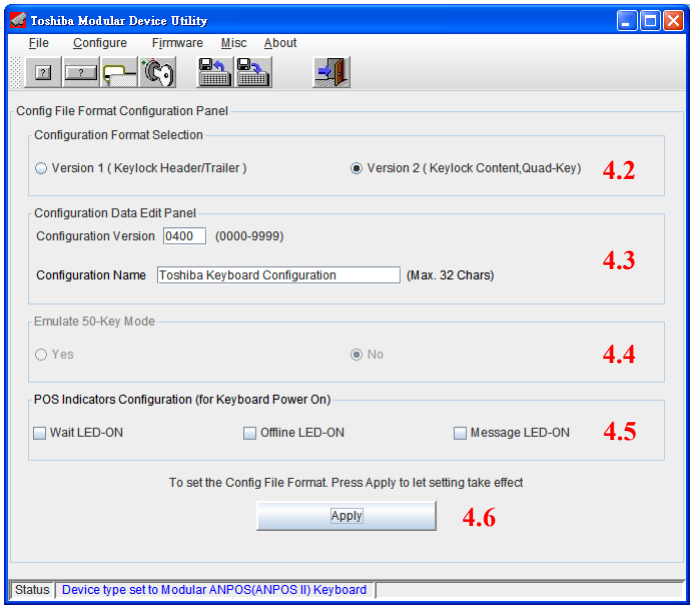
4.3. Edit Configuration Data for Configuration Version and Configuration Name.

4.4. If device type is 67-Key, user can enable emulate 50-Key function from “Emulate 50-Key Mode”.

4.5. If device type is ANPOS/ANPOS/CANPOS, user can program LED indicator status from “POS Indicator Configuration”.

4.6. Press “Apply” to update programming data.

4.7. For detailed contents, please refer to **3.1.5 Edit Configuration File Format**.



5. Program PF-Keys:

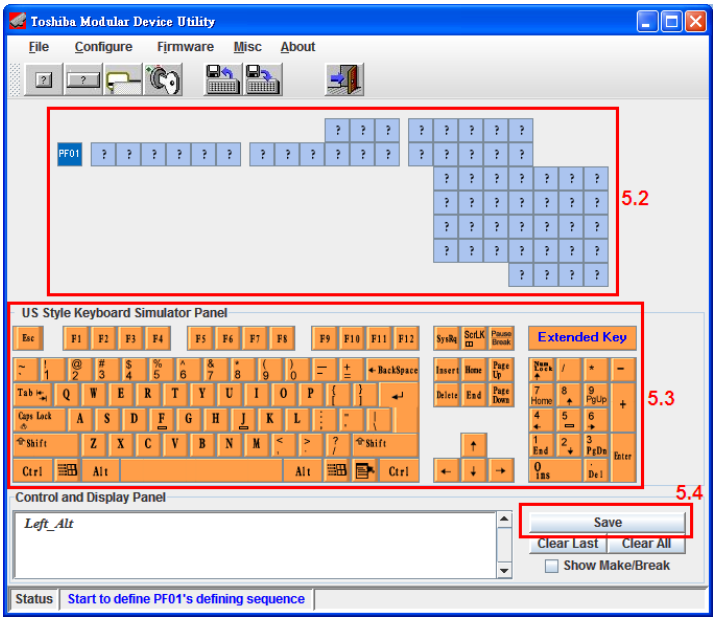
5.1. Switch to Program PF-Keys Panel from menu “Configure→ Program PF Keys”.

5.2. Select PF-Key.

5.3. Edit PF-Key content.

5.4. Press ‘Save’ to save edit content.

5.5. For detailed contents, please refer to **3.2.3 Program PF Keys**.

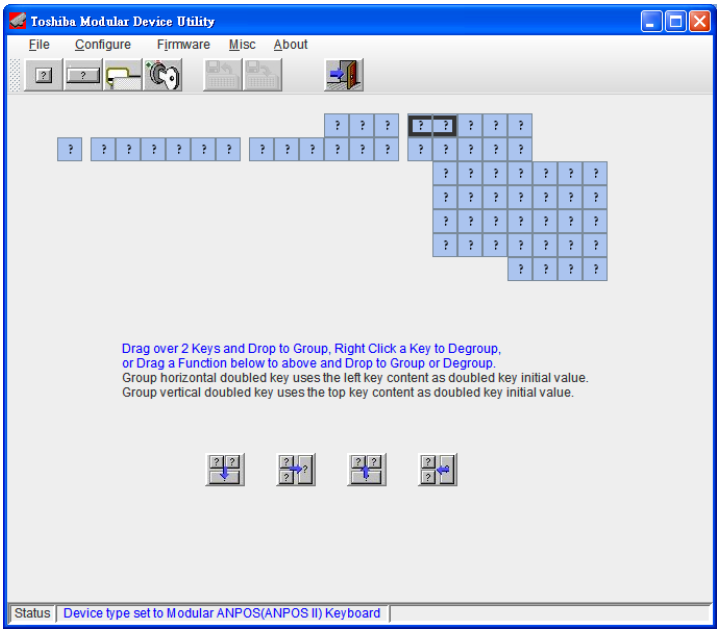


6. Set PF-Key Group:

6.1. Switch to Set PF-Key Group Panel from menu “Configure→ Set Doubled Keys”.

6.2. Set PF-Key group.

6.3. For detailed contents, please refer to **3.2.4 Set Doubled Keys**.



7. Edit MSR Configuration :

7.1. Switch to MSR Configuration Panel from menu “Configure→ Edit MSR”.

7.2. **Please select correct MSR type from "Reader Selection"**.

7.3. Select programming track from 'Track Selection'.

7.4. Enable/Disable each track from 'Track Enable'.

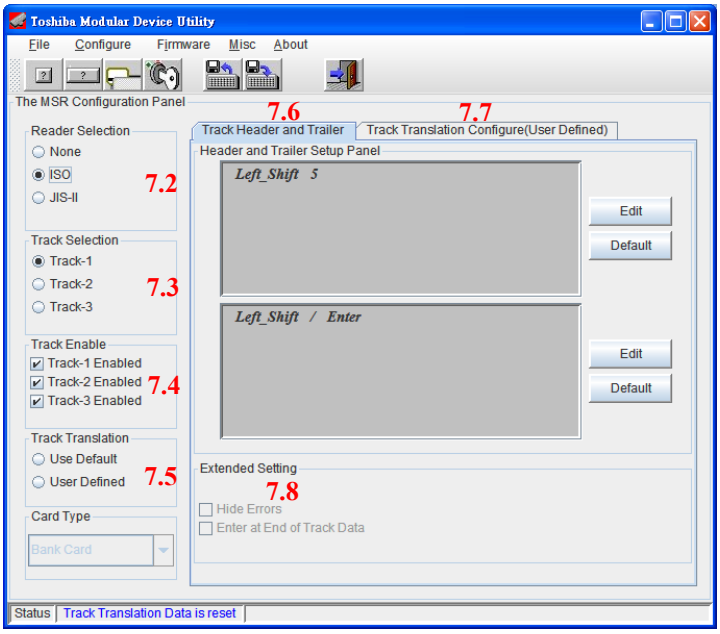
7.5. Enable/Disable MSR Translation.

7.6. Edit track Head/Trailer content (Track select by step-7.3).

7.7. Edit track Translation content (Track select by step-7.3).

7.8. Extended Setting (only for MSR Option Module).

7.9. For detailed contents, please refer to **3.2.5 Edit MSR**.



8. Edit Keylock Configuration :

8.1. Switch to Keylock Configuration Panel from menu "Configure→ Edit Keylock".

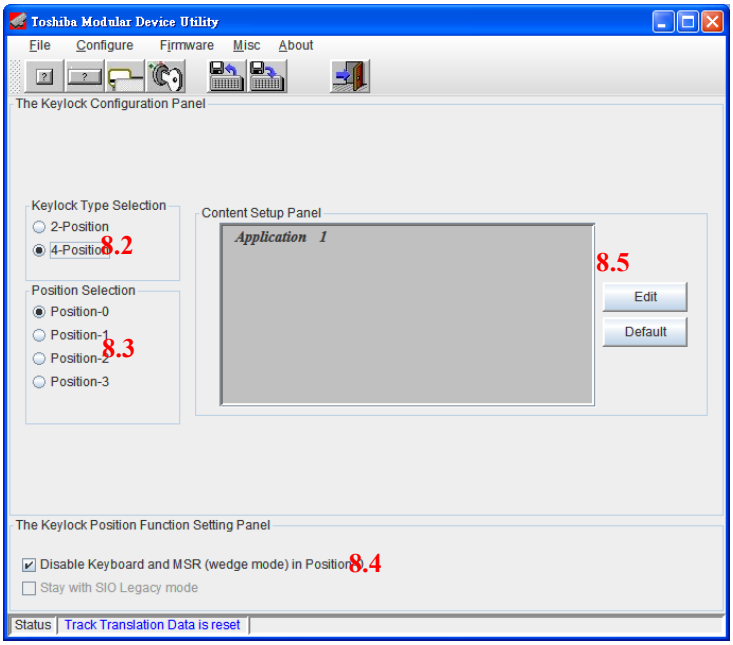
8.2. Select Keylock type from "Keylock Type Selection".

8.3. Select programming position from 'Position Selection'.

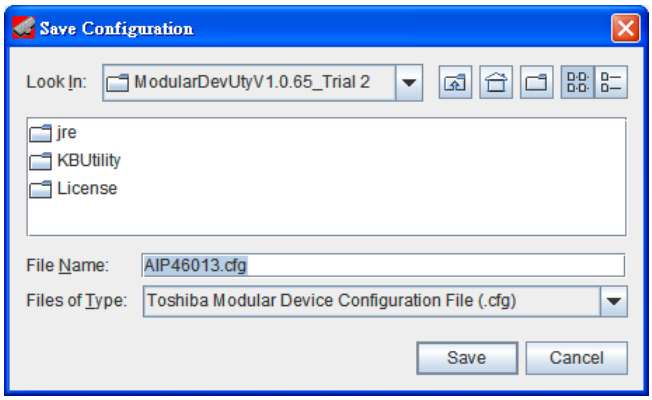
8.4. If Keylock type selects 4-Position, user can set 'Disable keyboard & MSR in Position-0' status.

8.5. Edit position content (Track select by step-8.3).

8.6. For detailed contents, please refer to **3.2.6 Edit Keylock**.



9. Save Configuration File: Select from menu “File→Save Configuration File” and a Save Configuration dialog box will be popped up. The user may press ‘Save’ to save the configuration file.



10. Write current configuration setting to device from menu “Firmware→Write Configuration to the Device”.