

TOSHIBA

TOSHIBA TEC SINGAPORE PTE.

*Confidential****Specification For :*** Toshiba TEC Pos Printer Utility

Launcher

(Software / ~~Product~~)

Model : TRST-P1N, TRST-P2N

4th Revision : (06-Aug-2020)

Customer :	Originator : TSE		
	QM	Engineering	
Approved By	Approved By	Approved By	Drafted By
			A Fareza

TOSHIBA TEC SINGAPORE PTE. LTD.

The content of this document is “ Toshiba TEC Singapore’s Intellectual Property”. It is strictly confidential and is not to be disclosed, reproduced, or used without the written agreement from Toshiba TEC Singapore Pte Ltd

CHANGE RECORD				
REV	DATE	Page	DESCRIPTION OF CHANGE	APPR OVAL
00	23/Aug/19		Initial version	
01	13/Sep/19	28, 29, 34	Added Console mode download information	
02	18/Sep/19	32,33,34	Added Enable/Disable Watermark option for Image Download tool	
	18/Sep/19	6	Added limitation if VCOM driver is installed	
	24/Sep/19	32, 33	Added information for image download feature for over size image	
	24/Sep/19	32	Added image maximum size and width information for each printer	
03	31/03/2020	7-16	Change the Smart Maintenance GUI and explanation	
		26-44, 55	Change the Flash Utility GUI and explanation	
04	06/08/2020	5, 16, 26, 29-30, 37-37, 40-44	Added Console Line Interface (CLI) Features and the related informations	
		5, 37-39. 56	Added Peripheral Test Utility (Support cash drawer test)	
		6, 47-49	Added VCOM and Windows Printer Driver explanation	

Table of Contents

1.	Overview	4
2.	Specification	5
3.	GUI Mode	6
3.1	Toshiba TEC Pos Printer Smart Maintenance Utility	6
3.1.1	Sub Applications	7
3.1.2	Creating CLI Parameter as XML File	15
3.2	Toshiba TEC Pos Printer Configuration Utility	15
3.2.1	Sub Applications	16
3.2.2	Creating CLI Parameter as XML File	24
3.3	Toshiba TEC Pos Printer Flash Utility	25
3.3.1	FW Download	26
3.3.2	Image Download	29
3.4	Toshiba TEC Pos Printer Peripheral Test	36
3.4.1	Cash Drawer Test	36
4.	CLI Mode (Console Line Interface)	38
4.1	Overview	38
4.2	Supported Features	40
4.2.1	Retrieve Smart Maintenance Information	40
4.2.2	Retrieve Printer Setting	41
4.2.3	Load Printer Setting	42
4.2.4	Flash Firmware Files	42
4.2.5	Download Image as Logo	42

5.	Interface Area (GUI)	43
5.1	Add or Edit Serial Printer	44
5.2	Add or Edit Ethernet Printer	44
5.3	Add USB Printer	45
5.4	Add or Edit Windows Driver's Printer	47
6.	Start Application (GUI)	48
6.1	Smart Maintenance Utility	48
6.1.1	Communicate and Retrieve Data from the Printer	49
6.2	Configuration Utility	49
6.2.1	Communicate and Retrieve Data from the Printer	50
6.2.2	Send Data to the Printer	51
6.2.3	Import and Export XML File	51
6.2.4	Set to Default	52
6.3	Flash utility	52
6.3.1	Start to Download FW (FW Download)	53
6.3.2	Start to Download and Set Image (Image Download)	53
6.4	Peripheral Test Utility	54
6.4.1	Cash Drawer Test	54

1. Overview

The following instructions provide information on how to use the Launcher application for the following printers:

- TRST-P1N-1B-QQ-SS
- TRST-P2N-1B-QQ-SS

These instructions cover the utilities provided with GUI Files that comprise the utilities:

Smart Maintenance Utility	Perform an analyzation for the printer condition.
Configuration Utility	Configure the printer settings
Flash Utility	Update the printer FW or download logo to printer
Peripheral Test Utility	Perform various printer test

Table 1 Utilities of Launcher

The Utility features are separated into 2 sections as below:

1. GUI Mode

If application is run directly by double clicking the mouse right button or open normally, it will run in GUI mode. Similarly, it will run in GUI mode if the application is run from command line without any parameter.

2. Console Mode

If application is run from command line with at least one parameter, it will run in Console mode.

2. Specification

Below components are required for this utility to run:

1. Operating System is Windows 7 (32/64 bit) or Windows 10 (32/64 bit)
2. Microsoft .NET Framework V4.5.2 or higher

Limitation:

1. Multiple printer connection is not supported
2. If SNMP setting is disabled, Ethernet communication will not work
3. If VCOM driver is installed, USB connection will not work unless it is assigned to a VCOM com port.

3. GUI Mode

Following information are provided in the launcher application menu for each utilities:

1. Title : The Utility title
2. Product Version : The utility current version information
3. Description : The detailed description for each utility

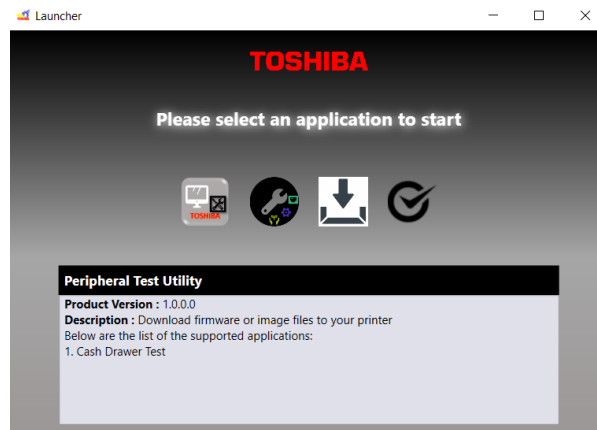


Figure 1 Launcher application menu (GUI mode)

3.1 Toshiba TEC Pos Printer Smart Maintenance Utility

Smart Maintenance utility is intended for user to analyze the printer condition and it is consisted with 4 applications. Each Utility is provided with below 2 main buttons:

1. Back Button

Return back the to the Smart Maintenance utility's Main Menu

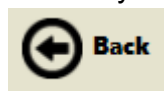


Figure 2 Back Button

2. Menu Button

Menu button will show all the option features which are supported by the sub application, such as Reload, Import, and Export.

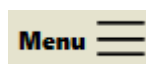


Figure 3 Menu Button

These instructions cover all the support applications which are supported by the Smart Maintenance Utility as below:

Printer Information	Show the information from printer including printer configuration, tally setting, and sensor calibration value
Printer Health Analysis	Analyze and Predict the printer life based on printer usage rate
Printer Historical Log	Show all the log information of error occurrences in the printer
Thermal Head Analyzer	Analyze all dot value from the printer thermal head

Table 2 List of Smart Maintenance Utility's Support Applications

Smart Maintenance Utility UI is separated into 2 sections. The interface area and the sub application area.

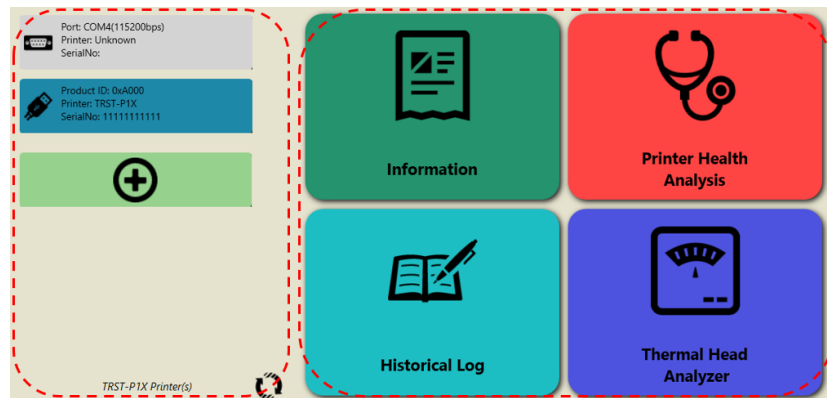


Figure 4 Windows Smart Maintenance utility's Main Menu

(Left side: Interface Area. Right Side: Sub Application Area)

3.1.1 Sub Applications

3.1.1.1 Printer Information

Printer Information have 2 sub information, Printer configuration and Tally Information. These sections contain the information acquired from the printer (Maintenance Information).

Below information are retrieved by the application and shown:

1. FW Revisions
2. Printer Configuration
3. Tally Information
4. Sensor Configuration value
5. Current Sensor Value

6. Cut Cycle Time

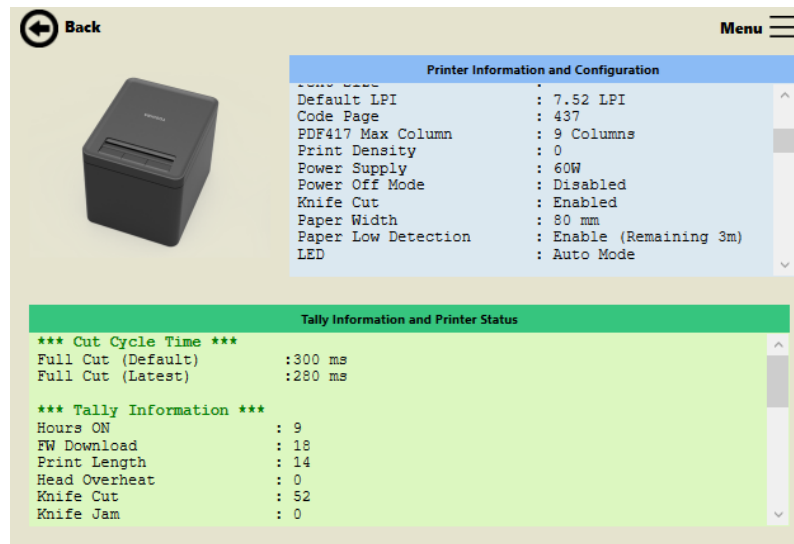


Figure 5 Printer Information section

Printer Configuration:

This section contains printer information such as model and serial numbers, firmware versions and current printer setting.

Tally Information:

This section shows the latest statistics of relevant printer operations/events such as receipt and present length, flash cycles, hours on, cut and jam count, etc. It also contains sensor and cutter information.

Menu button is consisted with below 4 options:

1. Reload

Recommunicate with the printer to retrieve the printer information.

2. Import Binary File

Import the binary (.bin extension) file which is created by the application "Export as Binary File" feature then convert and show it as printer information.

3. Export as Binary File

Export the printer information as binary (.bin extension) file.

4. Export as Text File

Export the printer information as readable text (.txt extension) file.

5. Create CLI Parameter as XML

Create a CLI parameter list which will be save in .xml file format. The file is used in console mode.

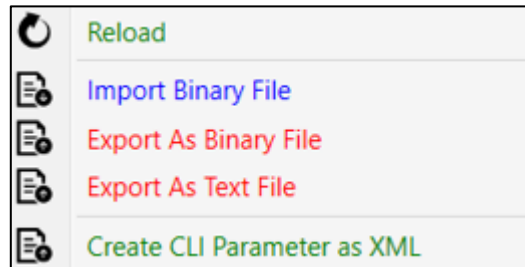


Figure 6 Menu selection (Printer Information)

3.1.1.2 Printer Health Prediction

Printer Health Prediction will show any abnormal condition in the printer based on its usage rate. The application consists health prediction selection options and health prediction information detailed area.

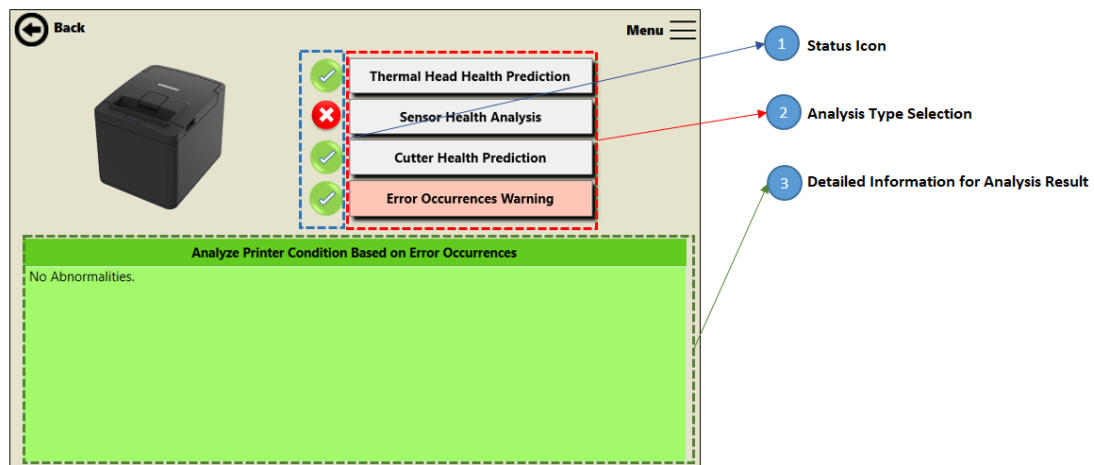


Figure 7 Printer Health Prediction section

Status Icon:

This icon shows the current status of each the analysis type option. Below are the information for each icon:

Icon priority depend on the current printer status



Figure 8 Printer health analysis's icon priorities

Analysis Type Selection Option:

This selection consists of:

1. Thermal Head Health Prediction

Check and predict the printer thermal head life based on the thermal head dots resistance and the number of print lines which have been fed by the printer.

2. Sensor Health Analysis

Analysis the current sensor status based on the latest sensor ON and OFF value and the Calibration value.

3. Cutter Health Prediction

Check and predict the printer cutter life.

4. Error Occurrences Warning

Check the abnormality of error occurrences which have occurred in the printer. The prediction is affected by the operating hours per day from the printer.

Detailed information for the Analysis Result:

This section shows the detailed health analysis and prediction information of relevant printer based on the Health prediction selection option.

Menu Button:

Menu button is consisted with below 5 options:

1. Reload

Recommunicate with the printer to retrieve the printer health check prediction information.

2. Import Binary File

Import the binary (.bin extension) file which is created by the application "Export as Binary File" feature then convert and show it as printer health check prediction information.

3. Export as Binary File

Export the printer health check prediction information as binary (.bin extension) file.

4. Export as Text File

Export the printer health check prediction information as readable text (.txt extension) file.

5. Setting

Open the Operating Hours setting window.

6. Create CLI Parameter as XML

Create a CLI parameter list which will be save in .xml file format. The file is used in console mode.

Operating Hours Setting Window:

Set the operating hours per day which will be used by application to predict any abnormality from the number of specific error occurrences in the printer. The default value is 8 hours.

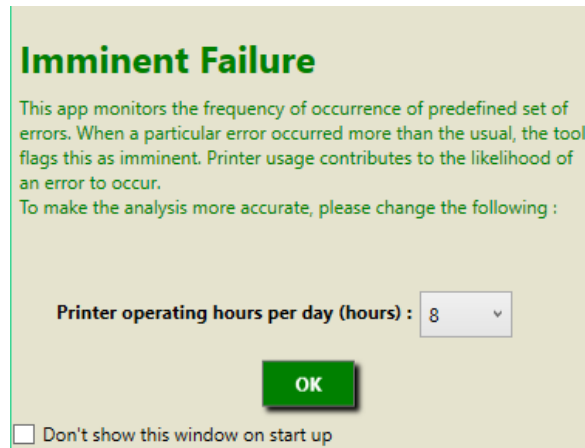


Figure 9 Operating Hours Setting Window

This window will always show up at the beginning of opening the Printer Health Prediction application. To disabled it, user need to check the related checkbox option.

3.1.1.3 Printer Historical Log

Printer Historical Log application display is separated into 2 area, Error list selection and Error Information.

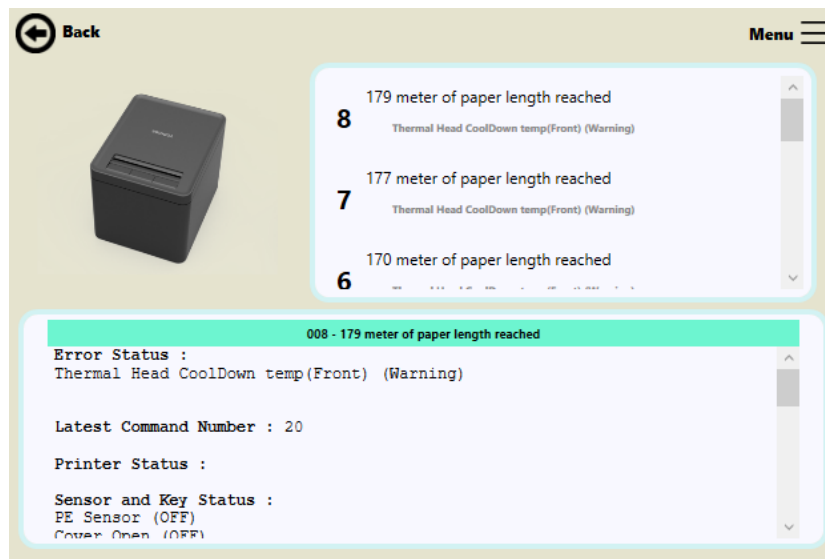


Figure 10 Printer Historical Log section

Error List Selection:

Error List Selection area provides the list of error which has occurred in the printer and will be listed in descendent order based on error ID. The selected error information will be shown in the Error Information area.

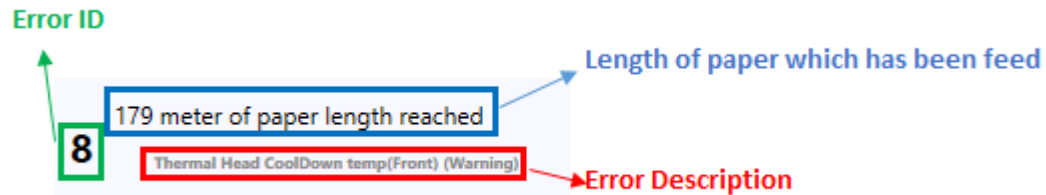


Fig. 9 Error Selection explanation

Error Information:

Show the selected error detailed information. This information contains the latest command number, printer and sensor status, sensor value, time after power ON, tally information, and cut cycle time when the error occurred.

Menu button is consisted with below 5 options:

1. **Reload**

Recommunicate with the printer to retrieve the historical error log information.

2. **Import Binary File**

Import the binary (.bin extension) file which is created by the application "Export as Binary File" feature then convert and show it as historical error log information.

3. **Export as Binary File**

Export the historical error log information as binary (.bin extension) file.

4. **Export as Text File**

Export the historical error log information as readable text (.txt extension) file.

5. **Filter**

Open the filter window.

6. **Analyze**

Open the graph window.

7. **Create CLI Parameter as XML**

Create a CLI parameter list which will be save in .xml file format. The file is used in console mode.

Filter Window:

The Historical Error Log application supports the Filter feature. The feature will filter the list of error log based on the error description. If there is no data yet which has been retrieved from the printer, this feature will be disabled.

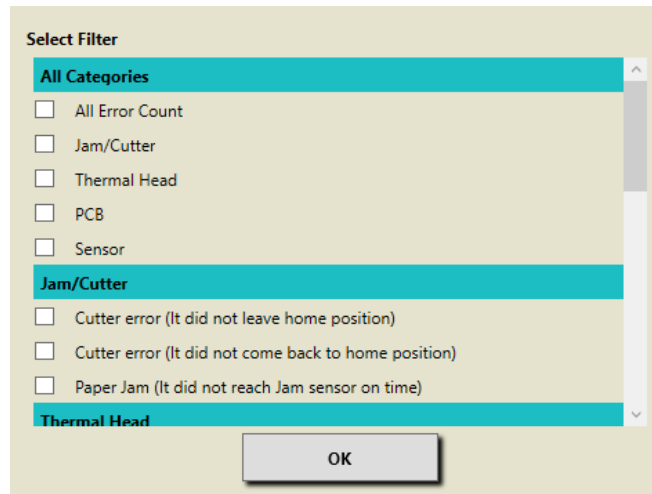


Figure 11 Filter Window

Graph:

The application also supports the graph feature. The graph will represent the number of errors which is changed over the length of paper feed by the printer.

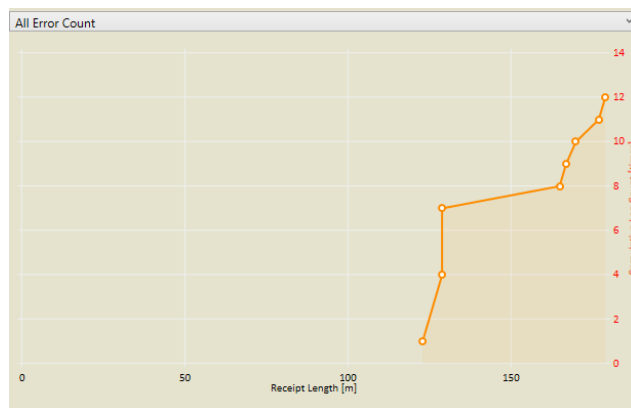


Figure 12 Graph Window

3.1.1.4 Thermal Head Analyzer

This application will analyze each dots resistance value in the printer. The analyzed value will be shown as graph.

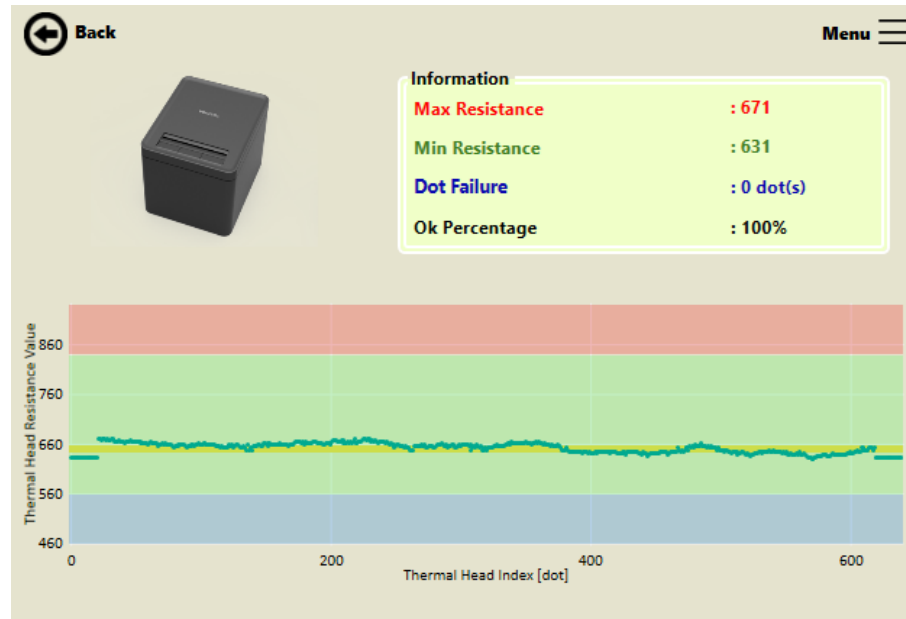


Figure 13 Thermal Head Analyzer section

The information section contains 4 categories as below:

1. **Max Resistance**
The maximum dot resistance value in the graph.
2. **Min Resistance**
The minimum dot resistance value in the graph.
3. **Dot failure**
Number of dot failure.
4. **Ok Percentage**
Percentage of in spec dots compared to failure dots.

Menu button is consisted with below 4 options:

1. **Reload**
Recommunicate with the printer to retrieve the thermal dots data.
2. **Import Binary File**
Import the binary (.bin extension) file which is created by the application "Export as Binary File" feature then convert and show it as thermal dots data.
3. **Export as Binary File**
Export the thermal dots data as binary (.bin extension) file.
4. **Export as CSV File**
Export the thermal dots data as csv (.csv extension) file.
5. **Create CLI Parameter as XML**
Create a CLI parameter list which will be save in .xml file format. The file is used in console mode.

3.1.2 Creating CLI Parameter as XML File

The smart maintenance utility main feature is to retrieve information from the printer. In console mode, the application will use the created XML file by this feature to determine the file format to export the retrieved information from the printer. Please select this option from the menu button from the each sub application.

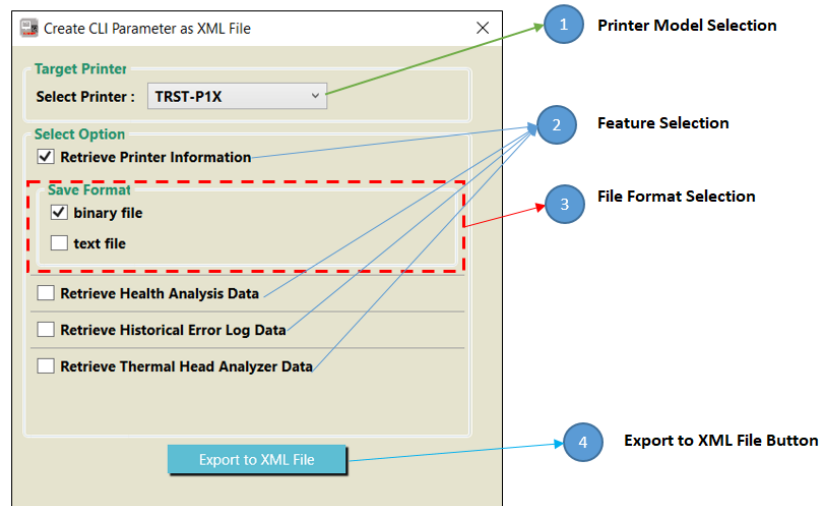


Figure 14 Create CLI Parameter as XML Window (Smart Maintenance)

1. Printer Model Selection

Select the printer model. It will determine the data conversion and communication. Selecting the wrong model may cause unexpected behavior during retrieving data.

2. Feature Selection

Select the information you would like to retrieve from the printer. If this feature is checked, the save format selection will be available.

3. File Format Selection

Select the file format to save the retrieved information from the printer.

4. Export to XML File Button

Export to CLI parameters as XML file based on the selected options.

3.2 Toshiba TEC Pos Printer Configuration Utility

Configuration Utility is intended for user to setting the printer features and it is consisted with 4 sub applications. Each sub application is provided with below 2 main buttons:

1. Back Button

Return back the to the configuration utility's Main Menu



Figure 15 Back Button

2. Menu Button

Menu button will show all the option features which are supported by the sub application, such as Reload, Import, and Export.

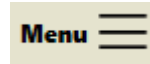


Figure 16. Menu Button

3.2.1 Sub Applications

3.2.1.1 Printer Configuration

Printer Configuration sub application is used to set or get printer setting.

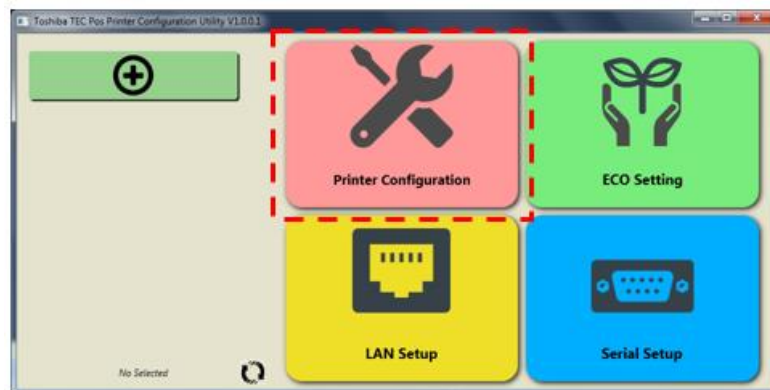


Figure 17. Printer Configuration Selection

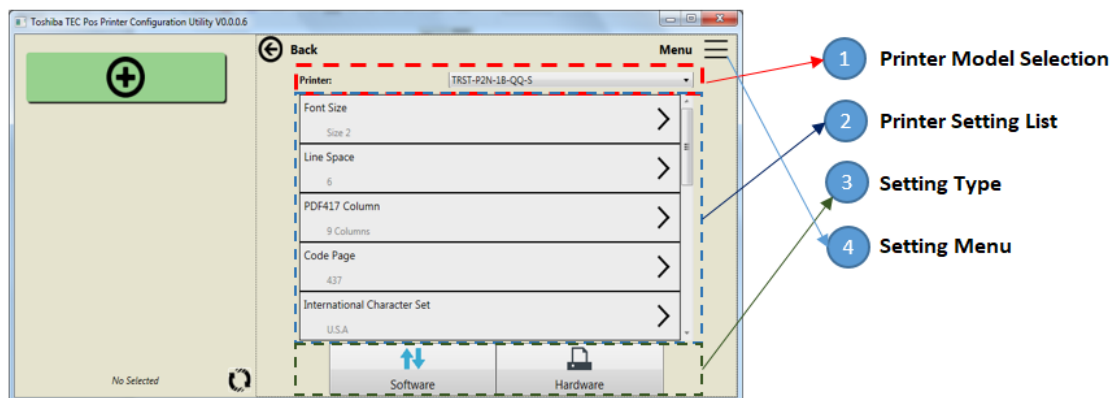


Figure 18. Printer Configuration Section

Here is the explanation of the printer configuration user interface:

- **Printer Model Selection**

User can choose which model to see the printer setting list (this is only if no printer connection). If the application is connected with printer, this element will be disabled.

- **Printer Setting List**

User can see all settings item through this list and do modification. Setting window will appear after user clicking the setting item in the printer setting.

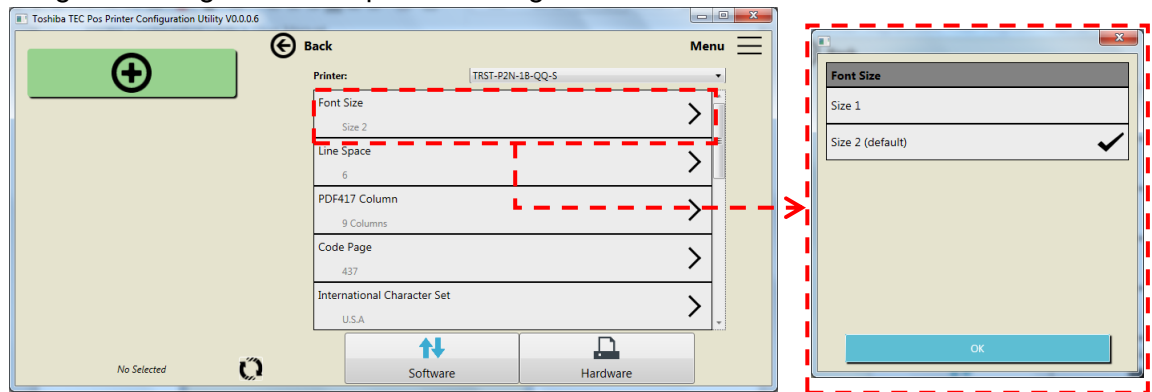


Figure 19. Printer setting list and setting window

- **Setting Type**

There are two setting types: Software and Hardware.

- **Setting Menu**

User can do some actions by clicking on the setting menu area.

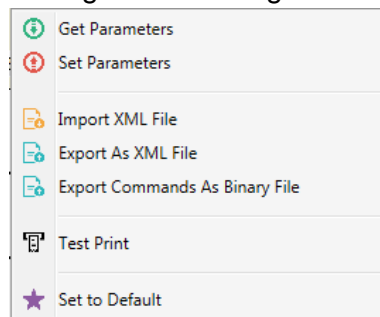


Figure 20 Setting Menu

- **Get Parameters**

User can get the settings by clicking this menu, the result can be seen in the UI setting list.

- **Set Parameters**

User can send the settings to printer by clicking this menu

- **Import XML File**

User can configure the settings by clicking this menu (import XML file)

- **Export as XML File**

User can store the settings by clicking this menu (export XML file)

- **Export Commands As Binary File**

User can store the printer commands by clicking this menu.

- **Test Print**

User can do printing test by clicking this menu

- **Set to Default**

User can set the UI to the default setting (this not affect to the printer setting)

- **Create CLI Parameter as XML File**

Create a CLI parameter list which will be save in .xml file format. The file is used in console mode.

3.2.1.2 Eco Setting

Eco setting sub application is used to set or get eco settings.

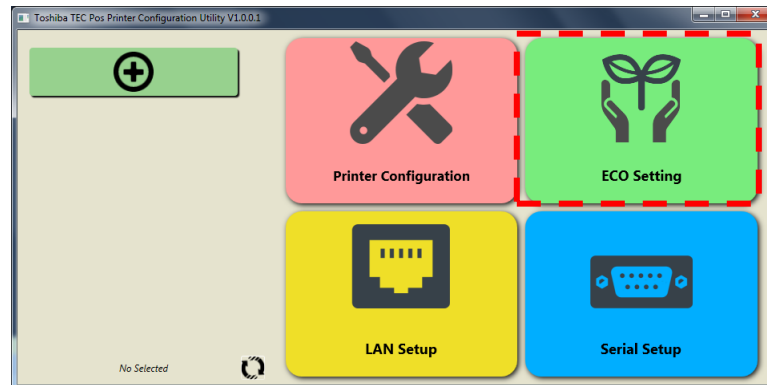


Figure 21. Eco Setting Selection

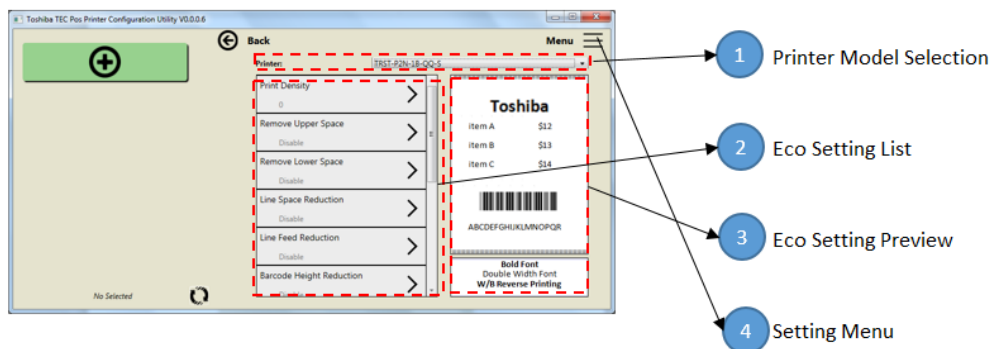


Figure 22. Eco Setting Section

Here is the explanation of the eco setting on user interface:

- **Printer Model Selection**

User can choose which model to see the printer settings (this is only if no printer connection). If the application is connected with printer, this element will be disabled.

- **Eco Setting List**

User can see all eco settings item through this list and do modification. Setting window will appear after user clicking the setting item in the printer setting.

- **Eco Setting Preview**

User can see the effect of the eco settings by seeing the setting preview. There are two areas in the preview image:

- Paper Reduction (upper image)

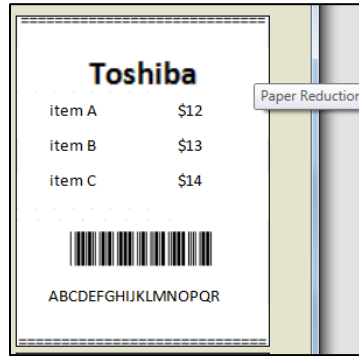


Figure 23. Paper Reduction Preview

- Power Reduction (lower image)

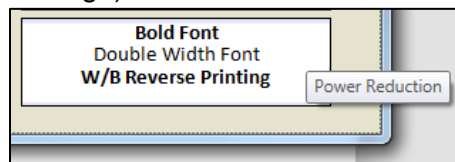


Figure 24. Power Reduction Preview

- **Setting Menu**

User can do some actions by clicking on the menu area.

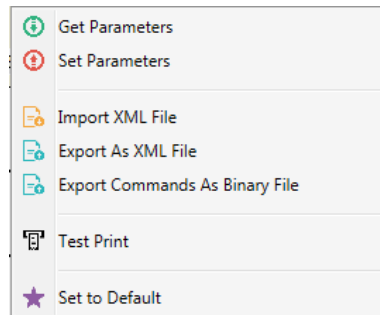


Figure 25. Setting Menu

- **Get Parameter**

User can get the printer settings by clicking this menu, the result can be seen in the UI setting list.

- **Set Parameter**

User can send the settings to printer by clicking this menu

- **Import XML File**

User can configure the settings by clicking this menu (import XML file)

- **Export as XML File**
User can store the settings by clicking this menu (export XML file)
- **Export Commands As Binary File**
User can store the printer commands by clicking this menu.
- **Test Print**
User can do printing test by clicking this menu
- **Set to Default**
User can set the UI to the default setting (this not affect to the printer setting)
- **Create CLI Parameter as XML File**
Create a CLI parameter list which will be save in .xml file format. The file is used in console mode.

3.2.1.3 Lan Setup

LAN setup sub application is used to set or get LAN interface parameters.

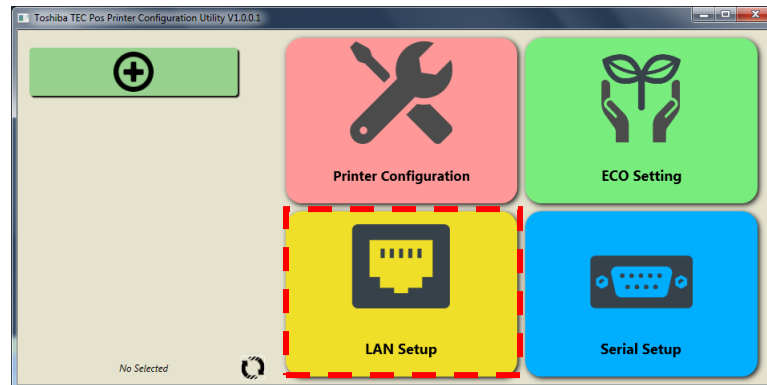


Figure 26. LAN Setup Selection

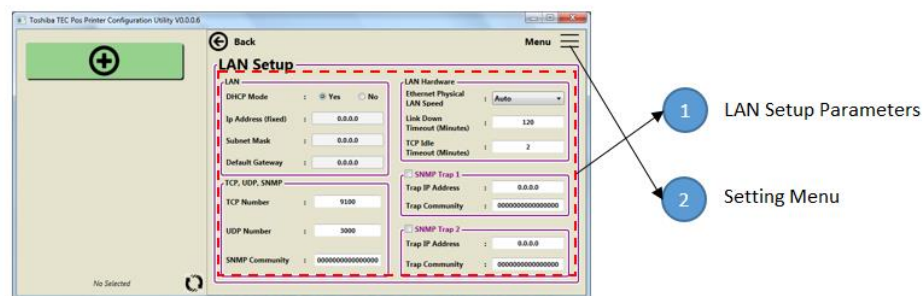


Figure 27. LAN Setup Section

Here is the explanation of the LAN setup on user interface:

- **LAN Setup Parameters**
User can fill the setting values in this area
- **Setting Menu**
User can do some actions by clicking on the menu area.

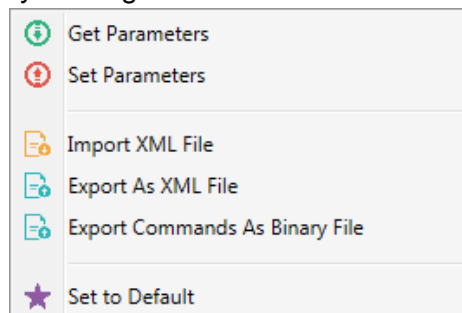


Figure 28. Setting Menu

- **Get Parameter**
User can get the settings by clicking this menu, the result can be seen in the UI setting list.

- **Set Parameter**
User can send the settings to printer by clicking this menu
- **Import XML File**
User can configure the settings by clicking this menu (import XML file)
- **Export as XML File**
User can store the settings by clicking this menu (export XML file)
- **Export Commands As Binary File**
User can store the printer commands by clicking this menu.
- **Set to Default**
User can set the UI to the default setting (this not affect to the printer setting)
- **Create CLI Parameter as XML File**
Create a CLI parameter list which will be save in .xml file format. The file is used in console mode.

3.2.1.4 Serial Setup

Serial setup sub application is used to set or get serial interface parameters.

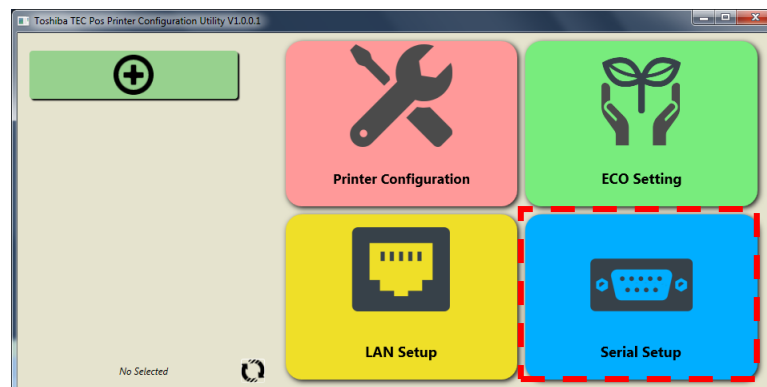


Figure 29. Serial Setup Selection

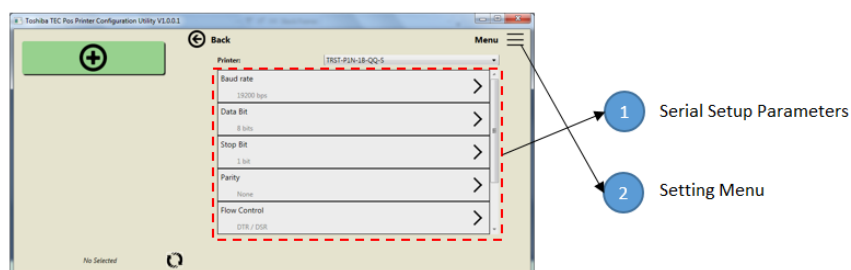


Figure 30. Serial Setup Section

Here is the explanation of the serial setup on user interface:

- **Serial Setup Parameters**

User can set the setting values in this area

- **Setting Menu**

User can do some actions by clicking on the menu area.

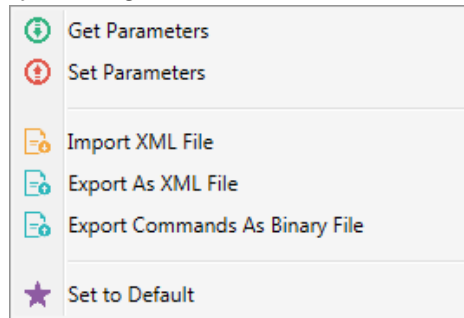


Figure 31. Setting Menu

- **Get Parameter**

User can get the settings by clicking this menu, the result can be seen in the UI setting list.

- **Set Parameter**

User can send the settings to printer by clicking this menu

- **Import XML File**

User can configure the settings by clicking this menu (import XML file)

- **Export as XML File**

User can store the settings by clicking this menu (export XML file)

- **Export Commands As Binary File**

User can store the printer commands by clicking this menu.

- **Set to Default**

User can set the UI to the default setting (this not affect to the printer setting)

- **Create CLI Parameter as XML File**

Create a CLI parameter list which will be save in .xml file format. The file is used in console mode.

3.2.2 Creating CLI Parameter as XML File

The configuration utility main feature is to retrieve and set settings from/to the printer. In console mode, the application will use the created XML file by this feature to determine whether to retrieve the printer

setting or to set the printer setting. Please select this option from the menu button from the each sub application.

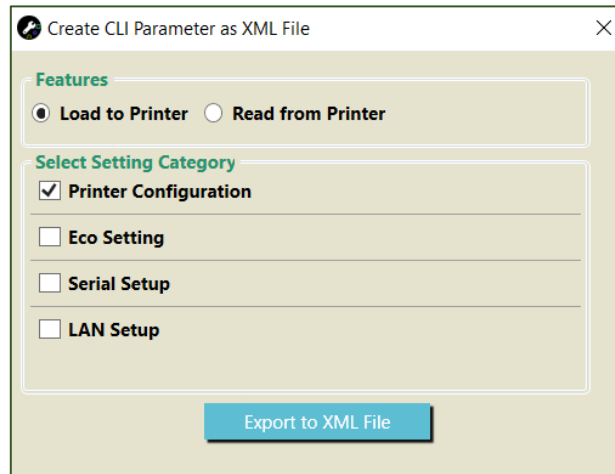


Figure 32 Create CLI Parameter as XML File Page (Configuration Utility)

Below are the available options:

- **Select Feature**
Select whether to load the setting to printer or read the printer setting. If “Read from Printer” is chosen, the application will save the retrieved setting to a xml file. This file will be able to be opened by the utility “Import XML File” feature.
- **Select Setting Category**
Select the setting category which will be loaded or read. The setting values will depend on the current modified settings.

3.3 Toshiba TEC Pos Printer Flash Utility

Flash Utility is intended for user to analyze the printer condition and it is consisted with 2 applications. Each Utility is provided with below 2 main buttons:

1. Back Button

Return back the to the Smart Maintenance utility's Main Menu



Figure 33 Back Button

2. Menu Button

Menu button will show all the option features which are supported by the sub application, such as Reload, Import, and Export.

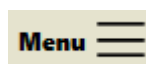


Figure 34 Menu Button

These instructions cover all the support applications which are supported by the Smart Maintenance Utility as below:

FW Download	Download the printer FW files
Image Download	Download and print Bit Image or Logo to printer

Table 3 List of Flash Utility's Support Applications

The User Interface area is separated into 2 sections. The interface area and the sub application area.

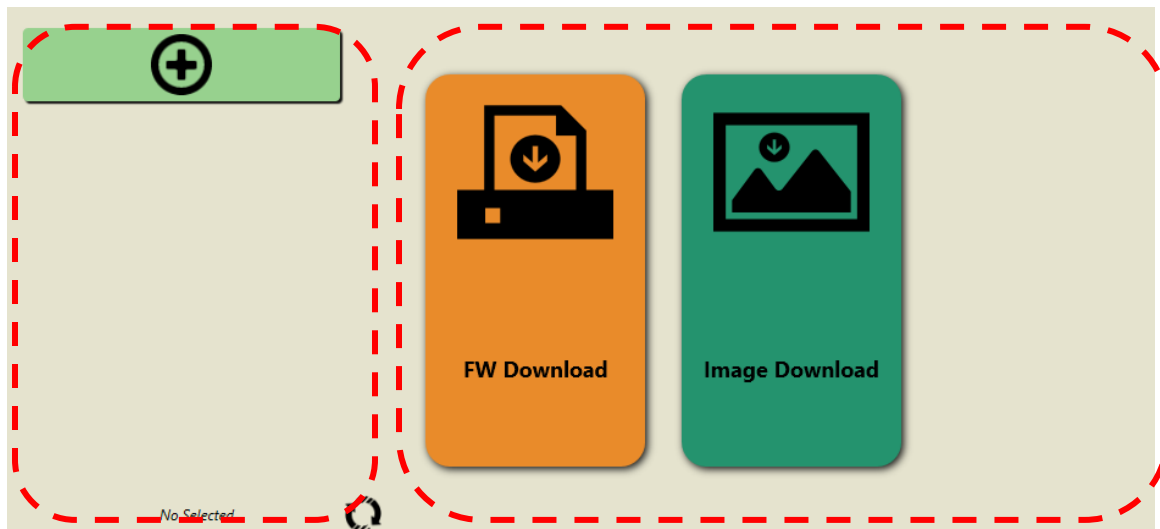


Figure 35 Windows Flash utility's Main Menu

(Left side: Interface Area. Right Side: Sub Application Area)

Below are the sub applications detailed explanation:

3.3.1 FW Download

FW Download sub application is used to upgrade/downgrade the FW version. The application supports two kinds of download, Online Download and IPL Download. There are two methods available to perform FW download, from GUI Application and Console Application.



Figure 36 FW Download section using GUI Application

There are several different kinds of firmware files that can be sent to the printer:

1. Boot Firmware / IPL Firmware
2. Main Firmware
3. SBCS Font
4. DBCS Font
5. TABLE
6. Printer Configuration Table

Download Protection:

The download feature have a protection in case of FW files is not match with the connected printer. In case of incorrect FW files is attempted to be sent to printer by user, the utility will not proceed to download process and will show error message.

The utility relies on below information in FW files to protect the FW download.

Printer	First byte in FW files
Clara	'C'
Amy	'A'

Table 4 FW file information on each printer

3.3.1.1 Adding FW Files (GUI Application)

There are two ways to add the FW files, the first method is by using the Browse button. The second method, user can drag the file from their respective folder then drop it in the application's list box. The last method

however, is not supported if the application is run in administrator privilege. Multiple files can be added, however the files must have different names.

3.3.1.2 Download (Online)

Online download file is performed when the printer is running in main firmware (online mode). The download time is much faster than IPL download mode. In case the printer's main firmware is corrupted, online download mode may not be available.

3.3.1.3 Download (In IPL Mode)

IPL download should be performed only if the printer unable to boot up properly to enter online mode. The download will be performed automatically when the printer is running in IPL mode. If the printer is in main firmware mode, the utility will perform download in Online Mode. This download method only supported for USB interface.

3.3.1.4 Creating CLI Parameter as XML File

This feature will be available by right clicking the Menu Button then selecting the "Create CLI Parameter as XML File" option. In console mode, the application will use the created XML file by this feature to determine the downloading process behavior. Selecting this option will open the setting page.

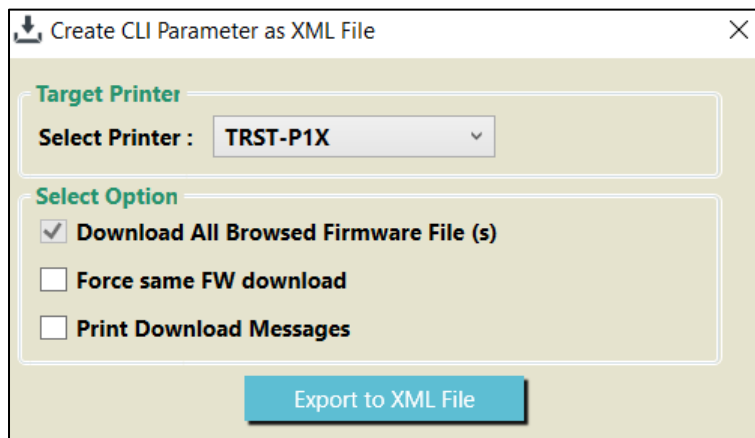


Figure 37 Create CLI Parameter as XML File Page

As shown in Figure 37, below options are available:

- **Select Printer**
Select the printer model. It will determine the data conversion and communication. Selecting the wrong model may cause unexpected behavior during retrieving data.
- **Download All Browsed Firmware File(s)**
This option is fixed. If there is no Firmware files added, the "Create CLI Parameter as XML File" will not be available and this window will not be opened.
- **Force same FW download**

Enable to forcing firmware download even if the firmware version in the printer is same or newer than the firmware files.

- **Print Download Messages**

Enable the printer to print download status messages during downloading.

3.3.2 Image Download

The image download have several main features as below:

1. Download an Image
2. Print the downloaded images
3. Direct print images without downloading
4. Set the downloaded image as Watermark
5. Set the downloaded image as Top/Bottom logo
6. Retrieve the downloaded images information

In the first time the tool is opened, it will retrieve the downloaded images information and show them as a list in table. There are several image file formats which are supported, .bmp, .jpg, .jpeg, .tif, .tiff, and .png.

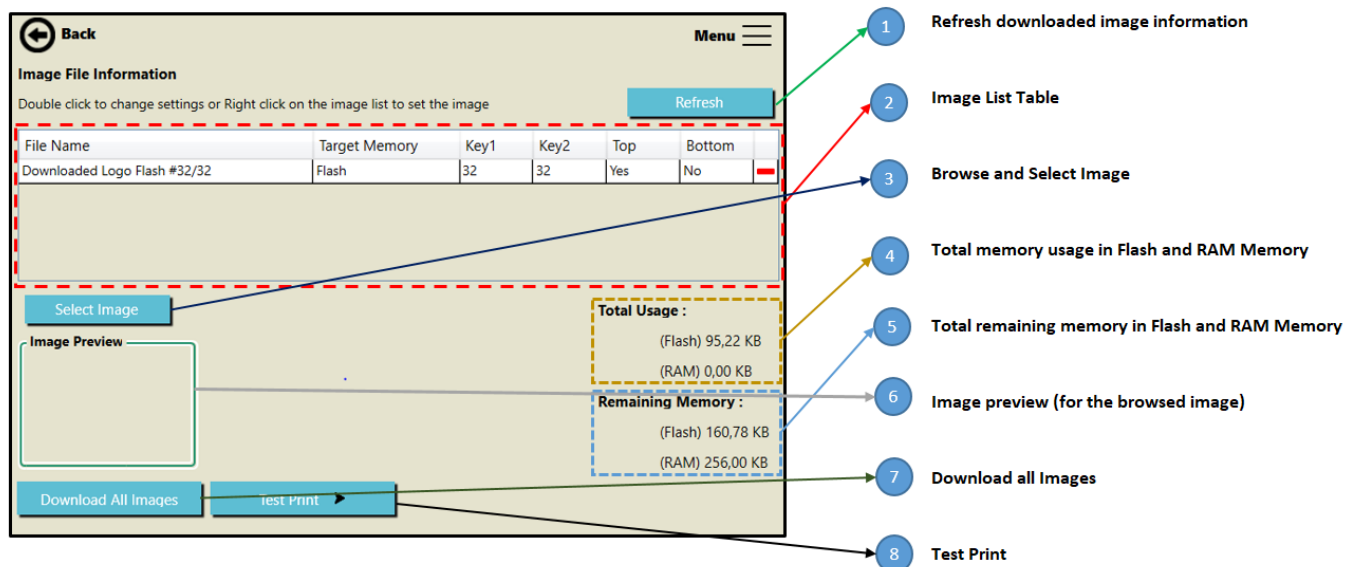


Figure 38 Image Download section

Below are the explanation for each area:

1. Refresh downloaded images information

Communicate to the printer then retrieve the downloaded images information. Below information will be retrieved from the printer.

- Memory (RAM/Flash)
- Key Code 1 and Key Code 2
- If the image is set as Top/Bottom Logo
- Current memory usage size
- Remaining memory size

2. Image List Table

It will list down all the browsed images and the downloaded images. The browsed image name format will be the file name, however please note that the retrieved downloaded images name format will be :

Format: Downloaded Logo *[Memory] #[KeyCode1]/#[KeyCode2]*

In case the browsed image file has been downloaded but the “Refresh” operation is not performed yet, the file name will be in below format instead:

Format: Downloaded Logo *[FileName]*

Once the browsed image has been added by “Select Image” button, it is possible to change the image setting by opening the setting window (as shown in Figure 44) by double clicking the browsed image. However, please note that double clicking the downloaded image will not do anything.

Some options are available to be used by right clicking one of the image in the Image List Table. The option may differ depend on the image current state.

If the image is a browsed image, below option will be available:

- **Change Logo Setting**
Open the setting page to change the logo setting.
- **Print**
Print the image.
- **Cancel Watermark**
Disable the watermark from printer. Enable watermark is only available by right clicking the downloaded image.
- **Remove**
Remove image from the list.
- **Download**
Download this image.

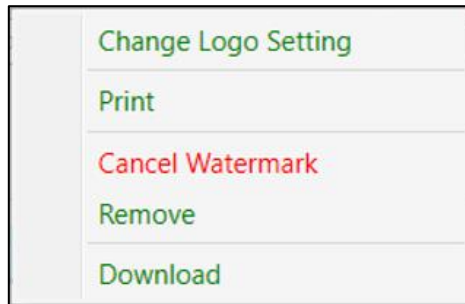


Figure 39 Right click menu for the browsed image

If the image is a downloaded image, below option will be available instead:

- **Print**
Print the downloaded image
- **Set as Watermark**
Set the downloaded image as watermark. Selecting this option will pop out the watermark setting window. These options will be available:
 - Alignment : Select the watermark alignment.
 - Offset : Set offset between each watermark (dots).
 - Double Width/Height : Enable double width or height for the watermark image.

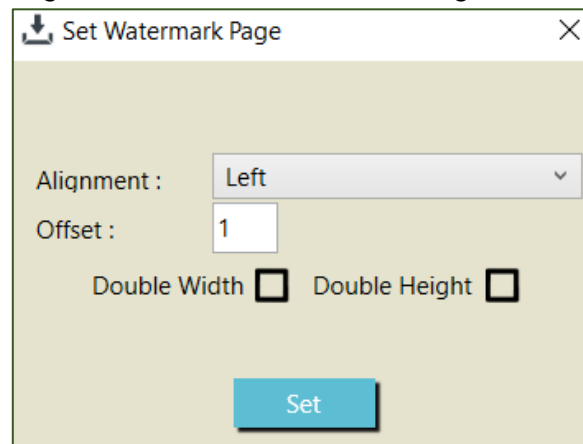


Figure 40 Set Watermark Page

- **Cancel Watermark**
Disable the watermark from printer.
- **Set as Top Logo / Cancel Top Logo**
If there is no logo set as top logo, this menu item text will be “Set as Top Logo”. If there is a set logo, the option will be “Cancel Top Logo” which will disable and cancel any top logo settings.

Set as Top Logo option will set this logo as the Top Logo and open the Top Logo Setting page. These options will be available:

1. Alignment : Set the top logo alignment.
2. Removed lines : Set number of lines to be removed after top logo is printed.
3. Enable at Clear Buffer : Enable prints the top logo while clearing the buffer to recover from a recoverable error.

4. Enable at Paper Feed : Enable prints top logo when paper is being feed to cut position.
5. Enable at Cover Closing : Enable prints the top logo when cover is closed.
6. Enable at Feed Button Pressed : Enable prints the top logo when the feed button are pressed.
7. Enable at Power ON : Enable prints the top logo at power on.

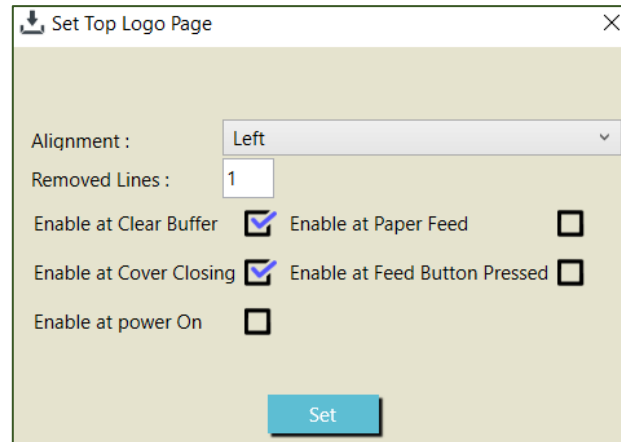


Figure 41 Set Top Logo Page

- **Set as Bottom Logo / Cancel Bottom Logo**

If there is no logo set as bottom logo, this menu item text will be "Set as Bottom Logo". If there is a set logo, the option will be "Cancel Bottom Logo" which will disable and cancel any top logo settings.

Set as Bottom Logo option will set this logo as the Bottom Logo and open the Bottom Logo Setting page. These options will be available:

8. Alignment : Set the bottom logo alignment.

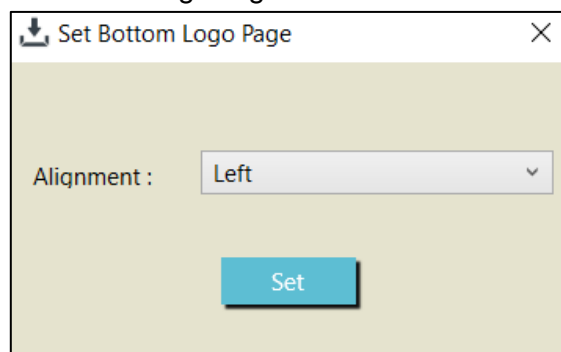


Figure 42 Set Bottom Logo Page

- **Delete**

Delete this downloaded logo from printer.

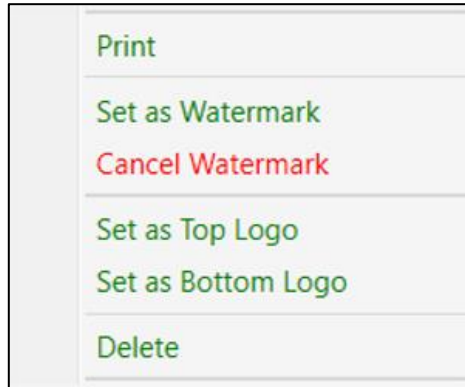


Figure 43 Right click menu for the downloaded image

3. Browse and Select Image

Select and browse image file. Once the image is loaded, the user is able to change below options:

- **Destination** : Destination memory to download the image
- **Key1/Key2** : Key code 1 and key code 2
- **Conversion** : The default image conversion is Grayscale. However, the application also support Monochrome conversion. The monochrome conversion have four sub conversions which are Dispersed Ordered Dither, Clustered Ordered Dither, Error Diffusion, and Threshold. In case of Threshold conversion is selected, the threshold value can be adjusted using slider bar.

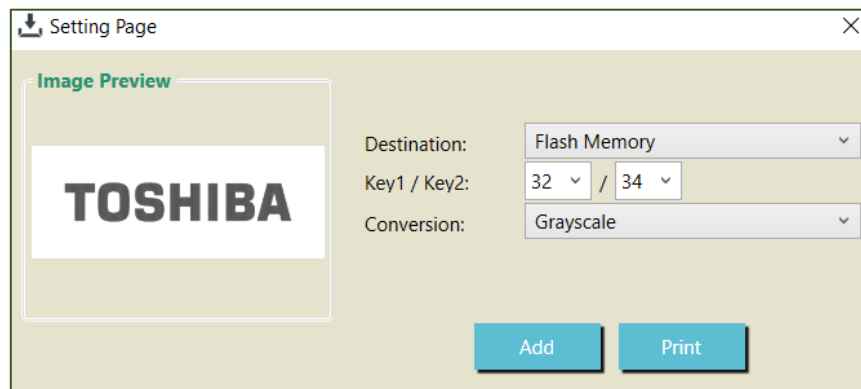


Figure 44 Browse and Select Image Window

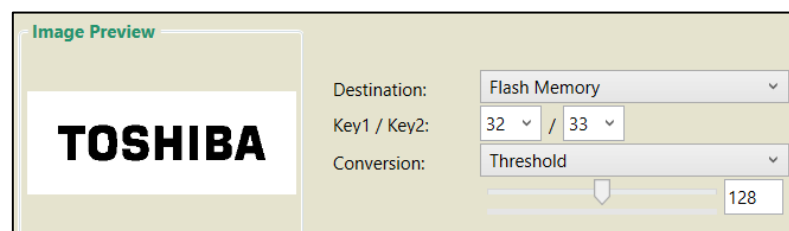


Figure 45 Threshold value slider bar will be available if Threshold conversion is selected

If the image size is out of specification, the application will automatically rescale the image. Image download will be supported for TRST-P1N and TRST-P2N printer. Each printer have different specification which will affect the Image Download tool rescaling feature as below table:

Printer	Maximum Image Width	Maximum Image Size	Condition to Rescale the Image
TRST-P1N	512 px	262144 bytes	Width > 576 px Or Size > Max
TRST-P2N	576 px	262144 bytes	Width > Max Or Size > Max

Table 5 Each printer image's specification

4. Total memory usage

It will show the usage memory (Flash/RAM) size for the image memory area in the printer.

5. Total remaining memory

It will show the remaining memory size for the image memory area in the printer. If the remaining memory is not enough for next image download, the image download will be terminated unless the user deleted some of the downloaded logo to increase the memory space. Please note that in case the image is downloaded in Flash memory, the printer need to be rebooted to make sure the remaining memory information is updated.

6. Image Preview

If an image has been browsed and it is highlighted in the Image Table List. The image picture will be shown in the Image Preview area. Please note that the shown picture is the converted image and not the original image.

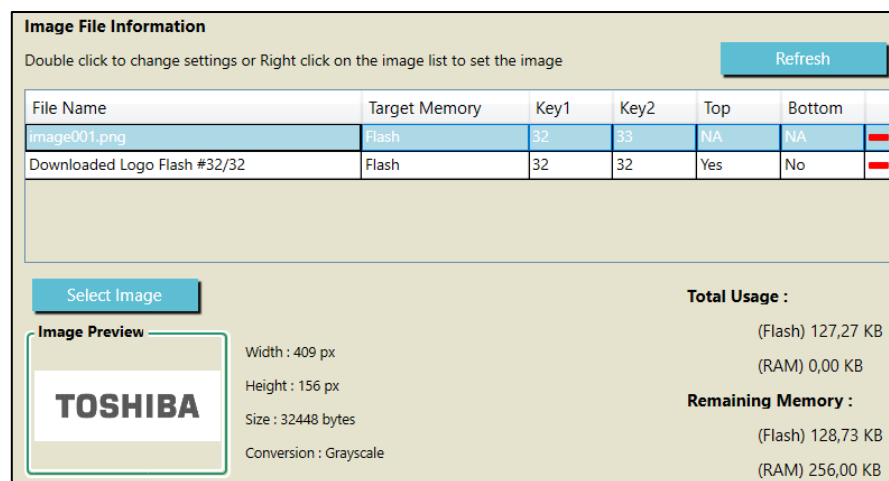


Figure 46 The browsed image is highlighted and shown in image preview

7. Download All Image Button

Download all the listed browsed images in the Image List Table to the printer. If there is not any browsed image, a warning message will be shown.

8. Test Print

Send a print data to printer to test the image download tool feature. When this button is clicked below menu will be available:

- **Print all the image**
It will ask printer to print all the images in the Image List Table. This including the browsed images and the downloaded images.
- **Print test receipt**
It will ask printer to print a sample receipt. This feature is used to test the Watermark and Top/Bottom logo features.

3.3.2.1 Creating CLI Parameter as XML File

This feature will be available by right clicking the Menu Button then selecting the “Create CLI Parameter as XML File” option. In console mode, the application will use the created XML file by this feature to determine the image downloading process behavior. Selecting this option will open the setting page.

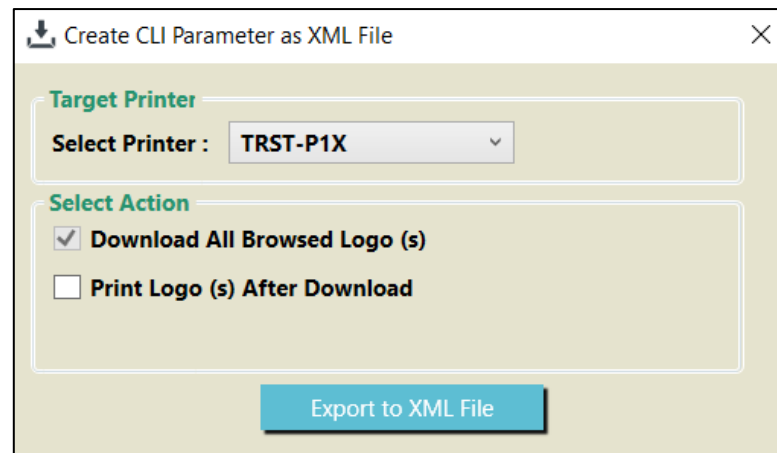


Figure 47 Create CLI Parameter as XML File Page (Image Download)

As shown in Figure 47Figure 37, below options are available:

- **Select Printer**
Select the printer model. It will determine the data conversion and communication. Selecting the wrong model may cause unexpected behavior during image downloading.
- **Download All Browsed Logo(s)**
This option is fixed. If there is no Image files added, the “Create CLI Parameter as XML File” will not be available and this window will not be opened.
- **Print Logo (s) After Download**
Enable the printer to print the downloaded logo after the downloading process is completed.

3.4 Toshiba TEC Pos Printer Peripheral Test

Peripheral Test Utility is intended test the printer peripherals and it is currently consisted only with 1 application. The application is provided with below menu button:

- **Back Button**

Return back the to the Smart Maintenance utility's Main Menu.



Figure 48 Back button

These instructions cover all the support applications which are supported by the Peripheral Test Utility as below:

Cash Drawer Test	Perform cash drawer test
(TBA)	(TBA)

Table 6 List of Peripheral Test Utility's Supported Applications

The User Interface area is separated into 2 sections. The interface area and the sub application area.

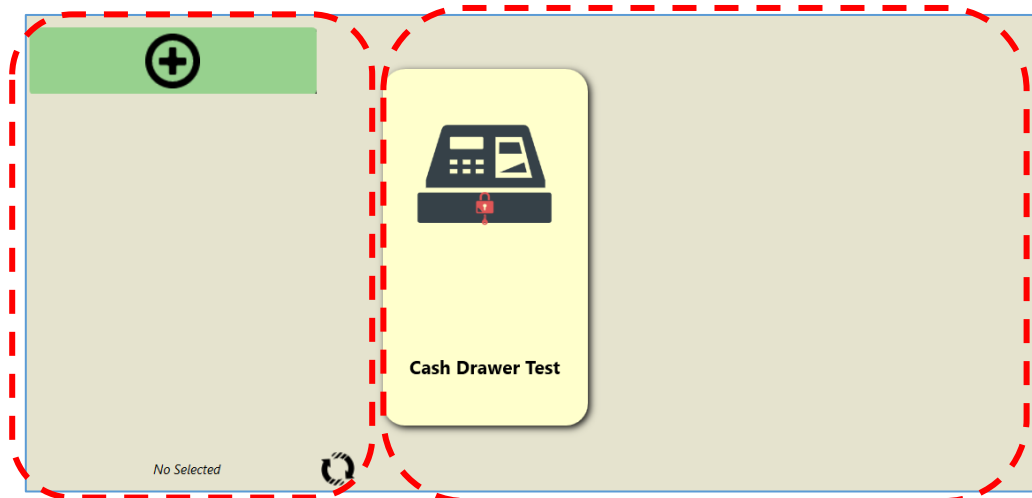


Figure 49 Windows Peripheral Test utility's Main Menu

(Left side: Interface Area. Right Side: Sub Application Area)

3.4.1 Cash Drawer Test

Cash Drawer Test application is used to test the cash drawer connected to the printer. It will attempt to kick the cash drawer and check the current status if it is opened or closed.

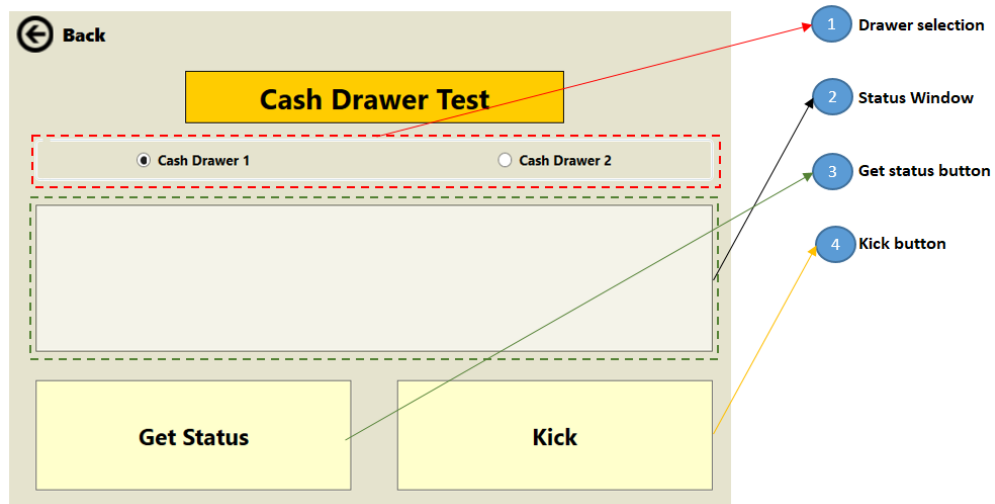


Figure 50 Cash drawer test application

- 1. Drawer Selection**
Select the cash drawer to test.
- 2. Status window**
Show if cash drawer is opened or closed. If cash drawer is not connected to printer, the status will be closed.
- 3. Get Status Button**
Get cash drawer status. Cash drawer status also will be checked after kick button is clicked.
- 4. Kick Button**
Open cash drawer then check the cash drawer status.

4. CLI Mode (Console Line Interface)

4.1 Overview

The utility are able to run from command line or using batch file by writing specific instruction and parameter with the defined format. The command line format is:

Format: *ToshibaTECPosLauncher.exe [options] <xmlconfigfile>*

- **ToshibaTECPosLauncher.exe**

It is the launcher application name. In case the application is ran from different location by using command line or batch file, this parameter is the application name including the full path. The application completed path is:

Path : "C:\Program Files

(x86)\TOSHIBA\ToshibaTECPosPrinterLauncher\ToshibaToshibaTECPosPrinterLauncher.exe"

- **Options**

The options parameter are separated into command options and additional options. The command option must be specified as it defines the instruction for the printer. The additional option is an additional parameter and it can be omitted.

Below are the available command options parameter:

1. **-h or -?**

Show the help information.

```
Usage: ToshibaTECPosLauncher.exe [options] <xmlconfigfile>
Commands:
-h or -?           : Show help information
-c                 : Show Error Codes information
-v                 : Show Application Version and Copyright
-U SerialNumber(Optional) : Execute using USB interface
Parameters:
SerialNumber       = 11 Digits Printer serial number (Optional)
                   Please follow the argument sequence:
                   eg: -U 000000000000

-S COMx:BaudRate,DataBit,Parity,Stopbit,Flowcontrol : Execute using Serial interface
Parameters:
COMx               = COM1-COM255
BaudRate           = 9600, 19200, 38400, 57600, 115200
DataBit            = 7, 8
Parity             = None, Odd, Even
Stopbit            = 1,2
FlowControl        = None, XonXoff, DtrDsr
                   Please follow the argument sequence:
                   eg: -S COM1:115200,8,None,1,None

-L IPAddress:TCPPort:TCPPort(Optional):UDPPort(Optional) : Execute using Ethernet interface
Parameters:
IPAddress          = xxx.xxx.xxx.xxx. With xxx = 1-255
TCPPort            = 4-16 digits alphanumerical characters
TCPPort            = 1-65535. (Optional, default is 9100)
UDPPort            = 1-65535. (Optional, default is 3000)
                   Please follow the argument sequence:
                   eg1: -L 192.168.1.2:admin
                   eg2: -L 192.168.1.2:admin:9100:3000

Options:
-s                 : Enable silent mode without any message
-o FolderName      : Output folder for the applications get data feature.
                   Default folder name is current folder.
                   eg: -U -o C:\TestFolder
-t FolderName (Optional) : Enable trace or logging option. Default folder name is current folder.
                   eg1: -U -t
                   eg2: -U -t C:\TestFolder
```

Figure 51 Help information

2. -c

Show error codes information.

```
Supported Error Codes :
Error Code 0 : Success
Error Code 1 : Invalid Parameter or Operation
Error Code 2 : Internal Error
Error Code 4 : USB Communication disabled due to VCOM Driver is installed
Error Code 5 : Communication Error
```

Figure 52 Error codes information

3. -v

Show application version and copyright.

```
Application Information:
ToshibaTECPosPrinterLauncher 1.0.0.4
(c) Toshiba TEC Corporation. All rights reserved.

- Smart Maintenance Utility 1.0.0.4
- Configuration Utility 1.0.0.6
- Flash Utility 1.0.0.6
- Peripheral Test Utility 1.0.0.0
```

Figure 53 Application information

4. -U SerialNumber(Optional)

The application will run in CLI mode using USB Interface. The serial number parameter can be omitted. If it is specified, the application will search all the USB printer by serial number. The serial number must consists of 11 digits of characters.

5. -S COMx:BaudRate,DataBit,Parity,Stopbit,Flowcontrol

Execute using Serial interface. All the parameters are case insensitive. Below are the parameters explanation:

- COMx = COM1-COM255
- BaudRate = 9600, 19200, 38400, 57600, 115200
- DataBit = 7, 8
- Parity = None, Odd, Even
- Stopbit = 1,2
- FlowControl = None, XonXoff, DtrDsr

6. -L IPAddress:TCPAuthPassword:TCPPort(Optional):UDPPort(Optional)

Execute using Ethernet interface. The TCPPort and UDPPort parameter can be omitted. Below are the parameters explanation:

- IPAddress = xxx.xxx.xxx.xxx. With xxx : 1-255
- TCPAuthPassword = 4-16 digits alphanumerical characters. It defines the TCP authentication password.
- TCPPort = 1-65535. (Optional, default is 9100)
- UDPPort = 1-65535. (Optional, default is 3000)

Below are the supported additional options:

1. **-s**
Enable silent mode without any message
2. **-o FolderName**
Define the output folder for the applications get data feature. When the smart maintenance and configuration utility get data features are run in CLI mode, the retrieved data will be save in specific files and names and will be stored in the specified output folder. If this additional parameter is omitted, the output folder will be the current folder.
3. **-t FolderName(Optional)**
Enable tracing or logging feature. The folder name can be omitted and the default trace files will be stored in the current folder. The trace file format is:
Format: *ToshibaTECPosPrinterLauncher_DD MM YYYY.txt*

4.2 Supported Features

4.2.1 Retrieve Smart Maintenance Information

This feature is the smart maintenance utility feature. It will retrieve the printer information, the health analysis information, the historical error log, and the thermal head dots information from the printer. The feature selection will depend on the CLI parameter in the xmlconfigfile. Please refer to section 3.1.2 Creating CLI Parameter as XML File to for the detailed information of how to create the xmlconfigfile.

```
Parameters: -U TestSM.xml

Target Printer : TRST-P1X
=====
Connection      : USB
PID             : A000
Serial Number   :
Start Smart Maintenance Utility: Console Mode
Start Sub Application Feature: Information
Export File Format: .bin
```

Figure 54 Retrieve smart maintenance information in CLI mode

The retrieved information will be saved in a different format depends on the feature selected. Below are the supported file format defined by the selected feature:

1. Printer Information
 - Binary file
Stored the raw printer maintenance data.
 - Text file
Stored the printer information retrieved from the converted maintenance data.
2. Printer Health Analysis
 - Binary file
Stored the raw printer maintenance data.
 - Text file
Stored the printer health analysis retrieved from the converted maintenance data.

3. Historical Error Log

- Binary file
Stored the raw historical error log data
- Text file
Stored the converted historical error log information.
- CSV file
Stored the historical error log information in csv format.

4. Thermal Head Analyzer

- Binary file
Stored the raw thermal head dots resistance data
- CSV file
Stored all the value of thermal head dots resistance.

Please note that the file saved location will be defined the output folder “-o” parameter. Please refer to section “4.1 Overview” for more detailed information. The file name format is:

Format: [PrinterSerialNumber]_[Feature]_As[FileFormat]_[YYYYMMDD]_[hhmmss].[FileExtension]

Example : 12345678901_ Information_AsBinary_20200325_195412.bin

4.2.2 Retrieve Printer Setting

This feature is the configuration utility feature. It will retrieve the printer settings and save them to xml file. The xml file is able to be opened by the Configuration Utility's Import XML File feature in GUI mode. The feature selection will depend on the CLI parameter in the xmlconfigfile. Please refer to section “3.2.2 Creating CLI Parameter as XML File” to for the detailed information of how to create the xmlconfigfile.

```
Parameters: -U TestConfig.xml

Target Printer : TRST-P1X
=====
Connection      : USB
PID             : A000
Serial Number   :
Start Configuration Utility: Console Mode
Progress 8% [TopLogoPrint]
```

Figure 55 Printer setting load/retrieve in console mode

Please note that the file saved location will be defined the output folder “-o” parameter. Please refer to section “4.1 Overview” for more detailed information. The file name format is:

Format: [PrinterSerialNumber]_[PrinterModel]_Configuration_[YYYYMMDD]_[hhmmss].xml

Example : 12345678901_ TRST-P1X_Configuration_20200325_195412.xml

4.2.3 Load Printer Setting

This feature is the configuration utility feature. It will load the printer settings specified by parameter stored in xml config file. Please refer to section “3.2.2 Creating CLI Parameter as XML File” to for the detailed information of how to create the xml config file.

4.2.4 Flash Firmware Files

This feature is the flash utility feature. It will download the firmware files specified by parameter stored in xml config file. Please refer to section “3.3.1.4 Creating CLI Parameter as XML File” to for the detailed information of how to create the xml config file. When the xml config file is created it stored the firmware files location inside. The firmware file must be exist in the same location when the firmware download is performed.

```
Parameters: -U TestFlash.xml
Target Printer : TRST-P1X
=====
Connection      : USB
PID             : A000
Serial Number   :
FW Download Start
IPL FW File : V00.04 Download Completed
MAIN FW File : V00.17 Download Start
Progress 99%
```

Figure 56 Firmware download process in CLI mode

4.2.5 Download Image as Logo

This feature is the flash utility feature. It will download the image files specified by parameter stored in xml config file. Please refer to section “3.3.1.4 Creating CLI Parameter as XML File” to for the detailed information of how to create the xml config file. When the xml config file is created it stored the image data, thus it is not required for the image files to exist when the image download is performed.

```
Parameters: -U TestImageDownload.xml
Target Printer : TRST-P1X
=====
Connection      : USB
PID             : A000
Serial Number   :
Logo Action Start: DownloadLogo
Logo Action Start: PrintLogo
Logo Action Success
```

Figure 57 Downloading logo in CLI mode

5. Interface Area (GUI)

The interface area is used to add and connect to the printer. The list of printer in the interface area will not disappear once the tool is closed.

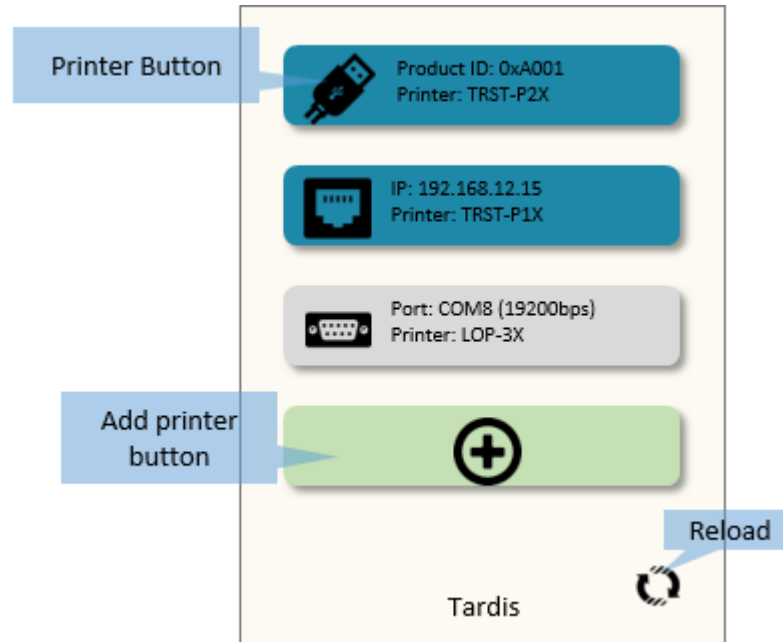


Figure 58 Interface Area

The window is consisted with below button:

1. Add Printer Button

When clicking on the Add Button, pop-up the menu, Add serial or ethernet printer. For USB Printer, it will be auto detect. In case of serial printer, serial parameter such as serial port number, baud rate, and other parameter need to be specified. For Ethernet printer, the ip address, TCP port number, and UDP port number need to be specified.

2. Reload Button

When clicking on the Reload Image Button, application communicates with all items to get the Serial Number if printer type is not unknown.

3. Printer Button

Left clicking on this button will connect or disconnect the printer connection. Once the printer is connected, the button color will change to blue. It will change to white color once the button is clicked once more and the connection is close.

Right clicking on this button will pop out below menu depending on the printer interface.

<i>Menu</i>	USB	Serial	Ethernet	Explanation
<i>Print Configuration Sheet</i>	O	O	O	Perform configuration printout
<i>Edit Interface</i>	X	O	O	Open the edit interface parameter window
<i>Delete Interface</i>	X	O	O	Delete the printer

Table 7 Printer Button's right click menu

5.1 Add or Edit Serial Printer

Select any serial parameter option then click Add/Edit the Printer button to add or edit serial interface printer.

Figure 59 Add/Edit Serial Printer window

The com port number selection will be auto generate by the utility. Which mean only available COM port will be listed.

5.2 Add or Edit Ethernet Printer

Ethernet Printer Adding Window has a scan system. When opening this window, the program auto-scan the TTEC Ethernet Printers using the directed broadcast address. If user uses many Network, it will check all directed broadcast address.

IP Address	Device Description
192.168.11.4	TOSHIBATEC GENT Ethernet
192.168.11.6	TOSHIBA TEC BA400T

Figure 60 Add/Edit Ethernet Printer window

To speed up the scanning time and to remove unneeded listed printers, the Add/Edit Ethernet Printer window also support ip address filtering based on the address range. To use this feature, simply insert the IP address range in the “From” and “To” text box then click the scan button. Listed printer will displayed on the right side of the window.

Clicking on each listed printer will automatically change the “IP Address” text box.

Figure 61 Selected printer IP address is copied automatically

5.3 Add USB Printer

Once the USB cable which is connected to the printer is plugged in to the PC, the USB printer will automatically shown.

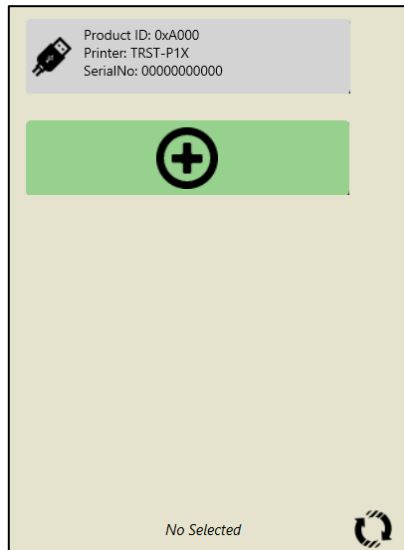


Figure 62 Usb Printer shown automatically on interface area

As it is added automatically, the USB printer cannot be deleted. It will be removed by unplugging the USB cable.

If VCOM Driver is installed, the USB communication will not work. To communicate with USB interface, it is needed to assign the USB printer to a VCOM comport. Once the VCOM comport is assigned, the tool will automatically shows the VCOM port assigned Printer. If the printer is not shown, please click the refresh button for the application to search the printer.

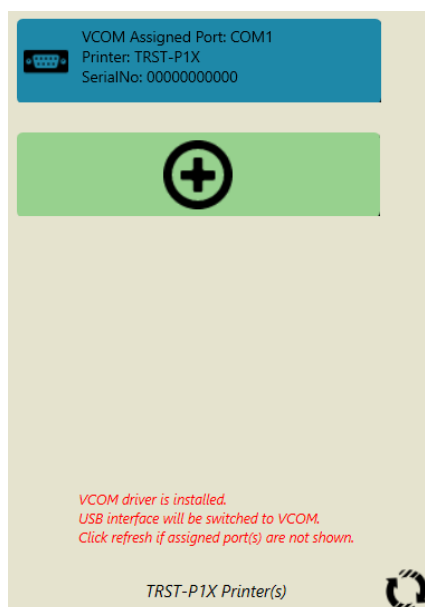


Figure 63 VCOM printer is shown

5.4 Add or Edit Windows Driver's Printer

If windows printer driver is installed, the utility are able to communicate through the windows printer driver. Select the Add or Edit Windows Driver's Printer to open the setting window to add the printer. If the windows printer driver for the respective printer is installed, the printer selection should be available.

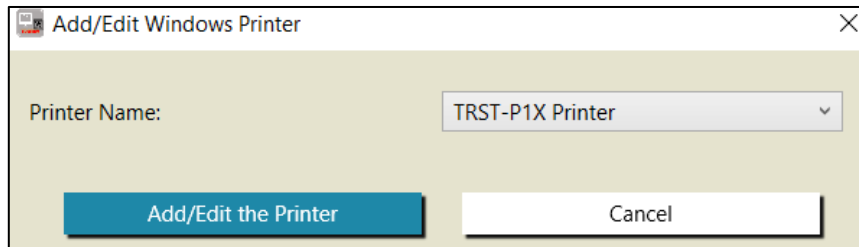


Figure 64 Add or Edit Windows Printer



Figure 65 Windows Driver's Printer

6. Start Application (GUI)

Below sections contain the information of how to start the application.

6.1 Smart Maintenance Utility

Below are the steps to start the Smart Maintenance Utility application:

1. Open the application

Double click the ToshibaTECPosPrinterSmartMaintenance.exe file to open the application.

2. Add and Connect to the printer

On the Interface Area, add and select the printer which we would like to communicate, then left click the printer button until it is colored to blue to connect to the printer.

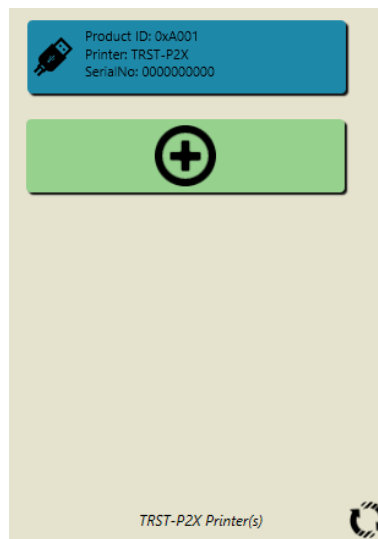


Figure 66 Blue color means the tool is connected to printer

3. Select any sub application to start

Selecting any of the sub application button will open the sub application window. Each sub application have different functionality and features.



Figure 67 Click any of these buttons to open sub application

6.1.1 Communicate and Retrieve Data from the Printer

For each sub application, the utility provides several options to retrieve information from the printer

1. Communicate when opened

First method is the sub application will automatically communicates and retrieves data from the printer if there is any registered printer which is selected. Depend on the sub application which is opened, it will show the printer specific information.

2. Click Reload button

If reload button is clicked, the sub application will re-communicate with the printer.

3. Click the Printer Button and Connect to the Printer.

In case the sub application have been opened, if there is a condition which the Printer state is change from Disconnected to Connected, the sub application will automatically attempt to communicate with the printer and retrieve the specific printer information.

6.2 Configuration Utility

1. Open the application

Double click the ToshibaTECPosPrinterConfigurationUtility.exe file to open the application.

2. Add and Connect to the printer

On the Interface Area, add and select the printer which we would like to communicate, then left click the printer button until it is colored to blue to connect to the printer.

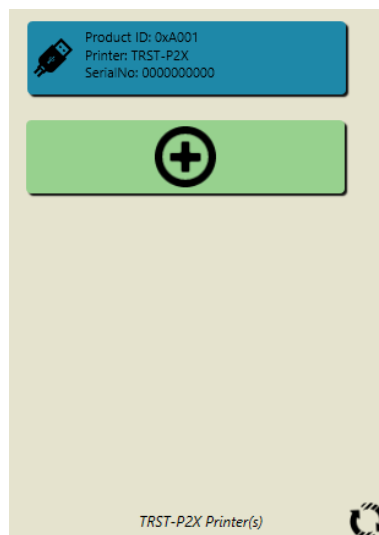


Figure 68. Blue color means the tool is connected to printer

3. Select any sub application to start

Selecting any of the sub application button will open the sub application window. Each sub application have different functionality and features.

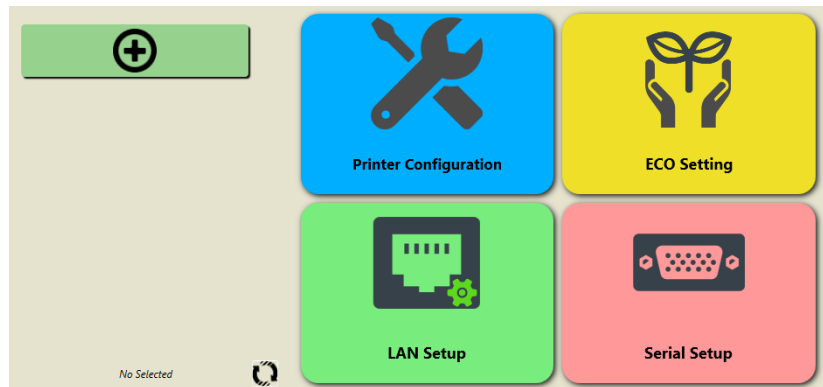


Figure 69. Click any of these buttons to open sub application

6.2.1 Communicate and Retrieve Data from the Printer

For each sub application, the utility provides several options to retrieve information from the printer

1. Communicate when opened

First method is the sub application will automatically communicates and retrieves data from the printer if there is any registered printer which is selected. Depend on the sub application which is opened, it will show the printer specific information.

2. Click Get Parameter in the Setting Menu

If Get Parameter is clicked, the sub application will re-communicate with the printer.

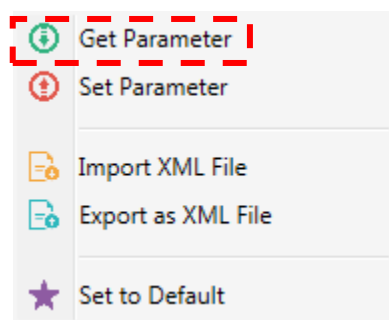


Figure 70. Get Parameter

3. Click the Printer Button and Connect to the Printer

In case the sub application have been opened, if there is a condition which the Printer state is change from Disconnected to Connected, the sub application will automatically attempt to communicate with the printer and retrieve the specific printer information.

6.2.2 Send Data to the Printer

For each sub application, the utility provides several options to retrieve information from the printer. User can send the setting data to the printer by clicking the Set Parameter in the setting menu, after configuring the setting list (make sure the printer is selected).

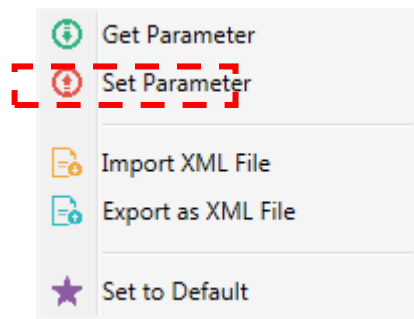


Figure 71. Set Parameter

6.2.3 Import and Export XML File

Application have capability to load and store the settings through XML file. To use this feature, user can pick the Import and Export from the setting menu.

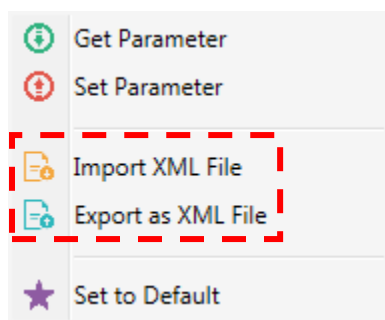


Figure 72. Import and Export

Import and Export feature can be used although the application is not connected to the printer.

6.2.4 Set to Default

Set to Default is used to set all the items in the setting list to be default value. This feature is not affected to the connected printer.

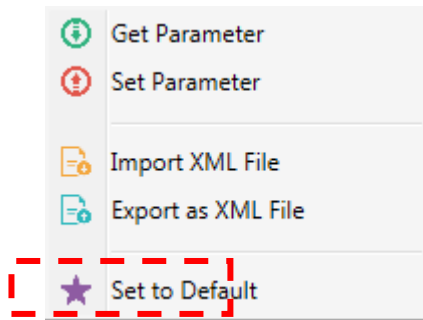


Figure 73. Set Default

6.3 Flash utility

1. Open the application

Double click the ToshibaTECPosPrinterLauncher.exe file to open the launcher application, then select the Flash Utility application.

2. Add and Connect to the printer

On the Interface Area, add and select the printer which we would like to communicate, then left click the printer button until it is colored to blue to connect to the printer.

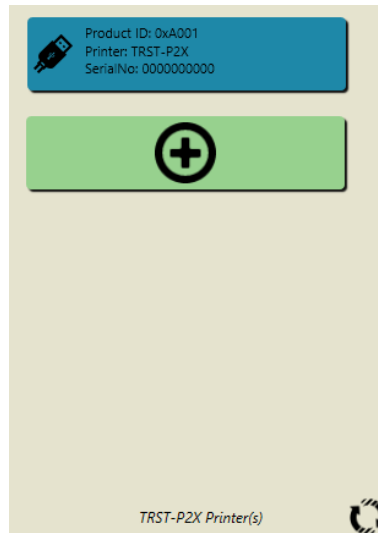


Figure 74 Blue color means the tool is connected to printer

3. Select any sub application to start

Selecting any of the sub application button will open the sub application window. Each sub application have different functionality and features.

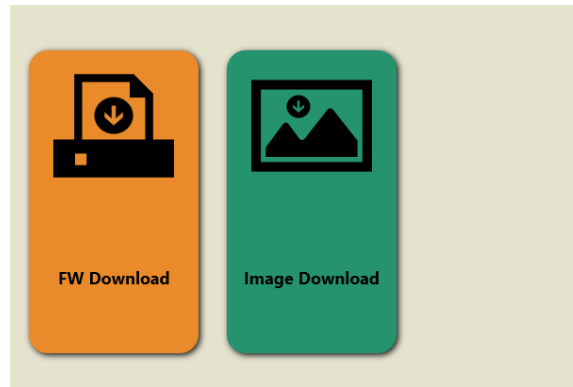


Figure 75 Click any of these buttons to open sub application

6.3.1 Start to Download FW (FW Download)

To upgrade/downgrade the printer FW version, need to perform the following:

1. Browse or Drag the FW files to the List Box

FW File Information (Drag and Drop to Add FW files)

File Name	Version	Date	Target	Type	Sector	
Tardis_MAIN_V00.05A.mfw	V00.05	07/08/2019	TRST-P2X	MAIN	21	■
Tardis_TABLE_T00.01.tbl	V00.01	07/01/2019	TRST-P2X	Table	2	■
Tardis_IPL_I00.01.ipl	V00.01	17/05/2019	TRST-P2X	IPL	2	■

Figure 76 The dragged FW files information will be displayed

2. Click either Online or IPL Download button

6.3.2 Start to Download and Set Image (Image Download)

To download and set an image, please refer to below steps:

1. Click the Select Image button to browse the image files
2. Select the image setting as shown in Figure 44 Browse and Select Image Window.
3. To download all images, click the Download All button. To download only one image, right click on the image then select Download.
4. Right click on the downloaded image to set the image as watermark or top/bottom logo.

6.4 Peripheral Test Utility

1. Open the application

Double click the ToshibaTECPosPrinterSmartMaintenanceFlash.exe file to open the application.

2. Add and Connect to the printer

On the Interface Area, add and select the printer which we would like to communicate, then left click the printer button until it is colored to blue to connect to the printer.

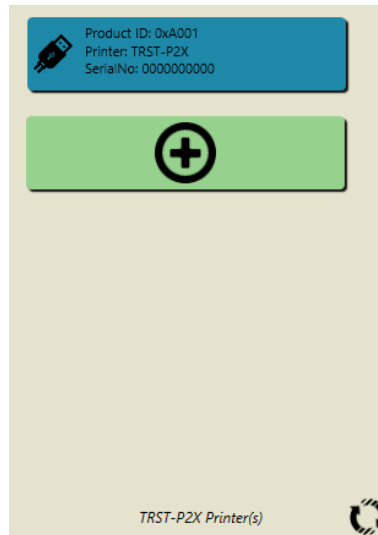


Figure 77 Blue color means the tool is connected to printer

3. Select any sub application to start

Selecting any of the sub application button will open the sub application window. Each sub application have different functionality and features.

6.4.1 Cash Drawer Test

To test the cash drawer functionality, open the cash drawer test from the Peripheral Test Utility main menu, then please perform the following:

1. Make sure cash drawer is connected to the printer
2. Select whether to test the Cash Drawer 1 or Cash Drawer 2.
3. Click the Kick button to open the cash drawer and check the cash drawer status.