Touch Workshop V4.1 Platform User Guide

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Introduction

The Touch Workshop V4.1 platform is a touch development platform, which has improved functions based on version V4.0. Users can freely match software packages, select parameters and select pins in the platform. After the software packages have been matched, users can add or create programs in the "USER PROGRAM". This document will introduce how to use the platform and introduce relevant development processes.

Platform Introduction

Functional Introduction

1. Supports drag, pull, click, select and other graphical operations.
2. Integrated application software package, such as touch, communication and LED driving, etc., which can be directly used.
3. Automatically generates simple circuit diagrams, flowcharts and software structure description.
4. Chart display and data quantification are convenient for signal analysis and parameter adjustment.
5. Provides program examples and simple editing tools for improving user development efficiency.

Tool Requirements

Emulation Development Tools (e-Link hardware & HT-IDE3000 software)

e-Link

HT-IDE3000

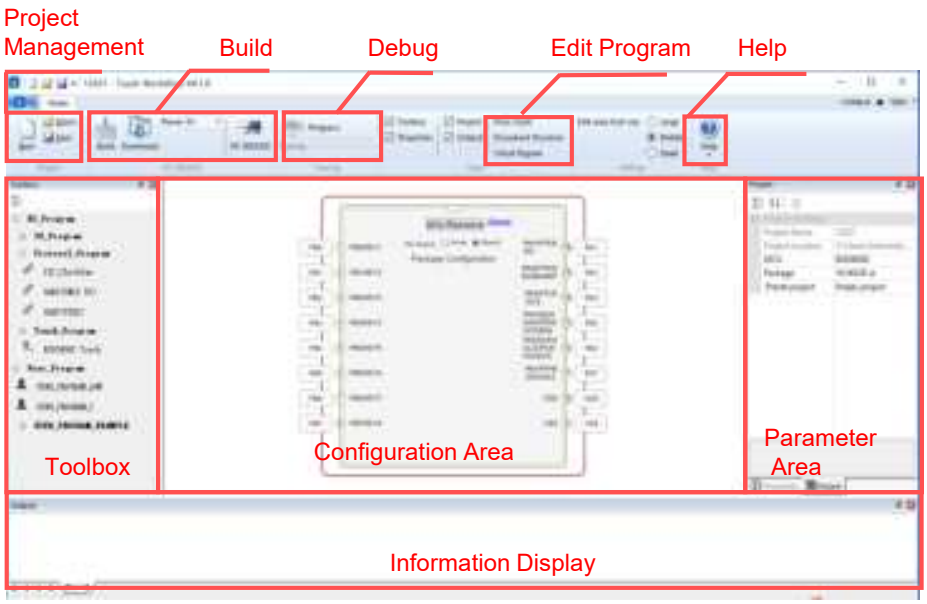
Debug Tools (BS-eBridge hardware & Touch Workshop V4.1)

BS-eBridge

Debug Interface

Operation Interface Description

Main Interface

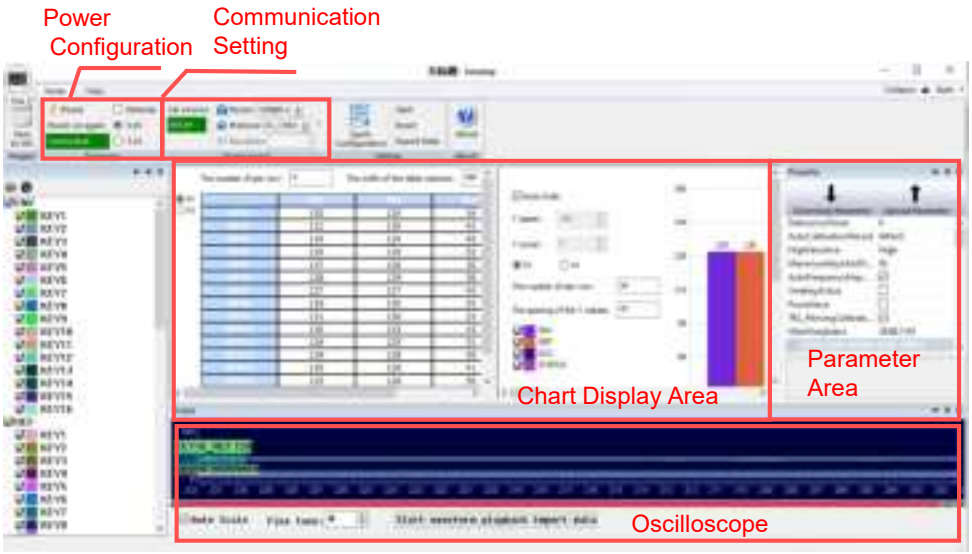


Platform Main Interface

1. Project Management: Provides different series of touch MCUs for selection.
2. Build: The platform can generate a programming file for the project.
3. Debug: Quantified display via an oscilloscope, real-time analysis of touch signals and parameter adjustment.
4. Help: Includes languages, user guide, upgrade firmware and platform version.
5. Toolbox: Application software package list.
6. Configuration Area: MCU emulation diagram for software package configuration and pin function configuration.
7. Parameter Area: Adjusts software package parameters.
8. The usage process of the platform main interface will have detailed introduction in the “Project Creation” section.

Debug Interface

1. Main functional area: Oscilloscope, form and energy bar display area.
2. Subfunctional area: Communication setting, parameter area and upload/download parameter.



Debug Interface

1. Power Configuration: 3V, 5V and external power for selection.
2. Communication Setting: Currently supports three communication protocols, the UART (unidirectional), UART (bidirectional), I^2C , and supports USB TO UART tool for debug. The UART supports 9600, 14400, 19200, 38400, 57600 and 115200 baud rates.
3. Chart Display Area: Supports “Form/EnergyBar” to display touch data.
4. Oscilloscope: Supports oscilloscope to display touch data to analyze signals in real time.
5. Parameter Area: Adjusts the software package parameters. Users can read the product adjustment parameters into the parameter area or write the parameter area data values into the product.
6. The usage process of the debug interface will have detailed introduction in the “Debug Process” section.

Platform Usage Process

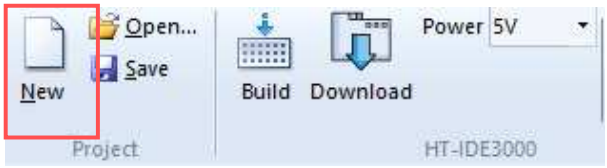
Language Switch

There are English, Simplified Chinese and Traditional Chinese provided by the platform, for switching the platform language.

Language Switch

Project Creation

1. Click on the “New”



Create a New Project

2. Select the MCU type, project location and set the project name

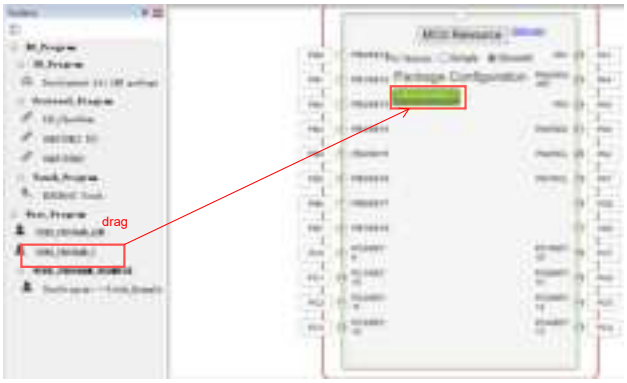
Edit project name, project save location and select MCU series, MCU and package

Left click here to unfold the selection box

Select MCU type

3. Drag the user program software package to the MCU configuration area

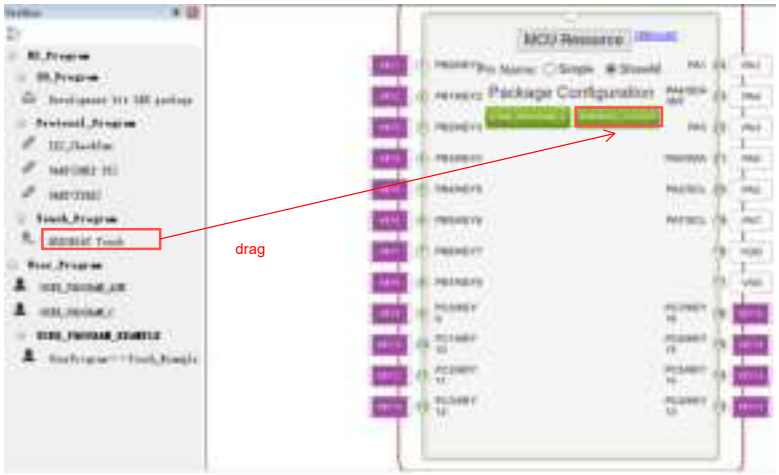
Software package drag method:
Left click on the software package. Hold down the left button and move the mouse cursor to the package configuration area. When a dotted box appears, release the left mouse button to complete the software package configuration.
Users can choose one of the two user program software packages, ASM assembly and C language, to drag in according to the development language.



Drag in User Program

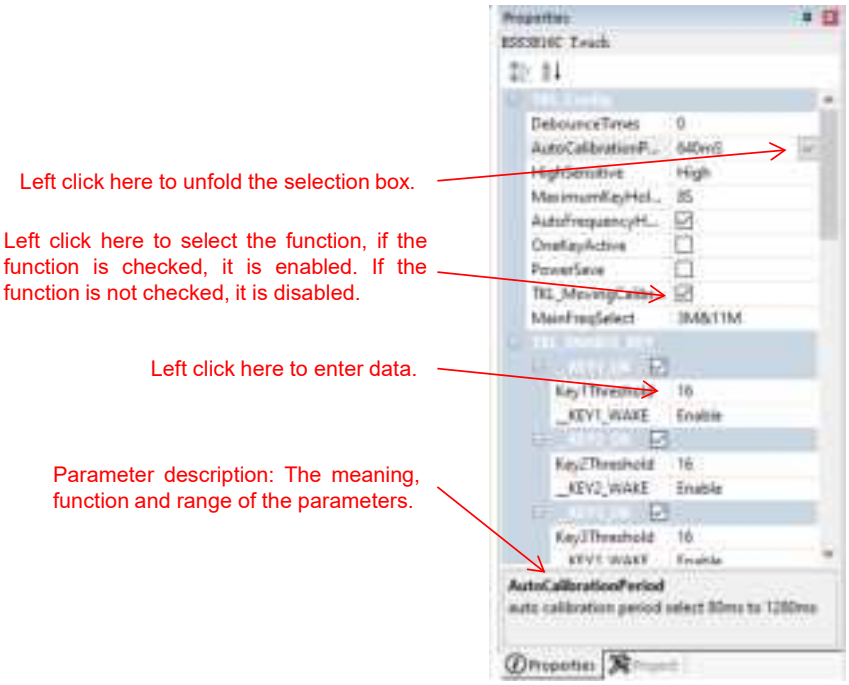
Touch Software Package Configuration Process

1. Drag the touch software package to the MCU configuration area

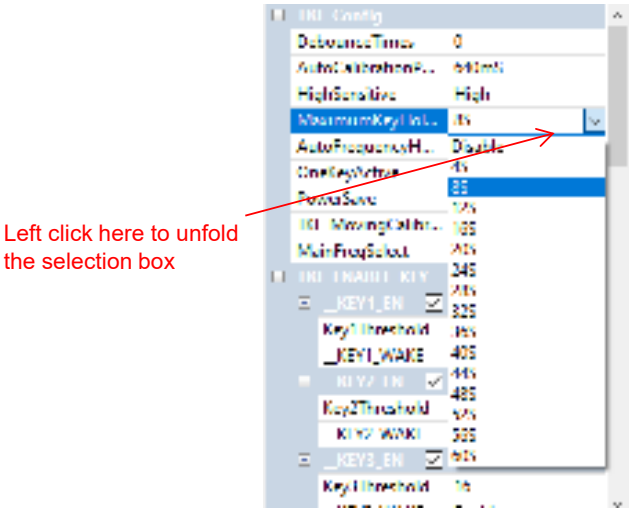


Configure Touch Software Package

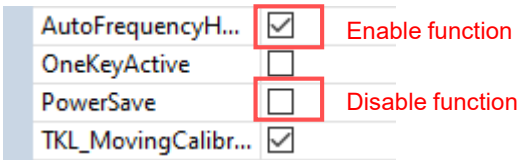
2. Click the parameter fields to adjust the touch package parameters (Enable/disable function, adjust parameter values)



Parameters

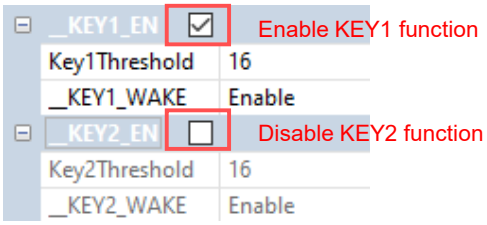


Parameter Modification

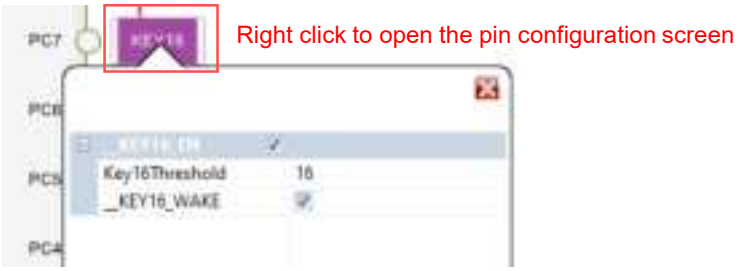


Enable/disable Function

3. Touch pin configuration (touch keys that are not in use can be disabled if necessary)



Configure Touch Pin Function in Parameter Area



Right Click Pin to Configure Pin Function

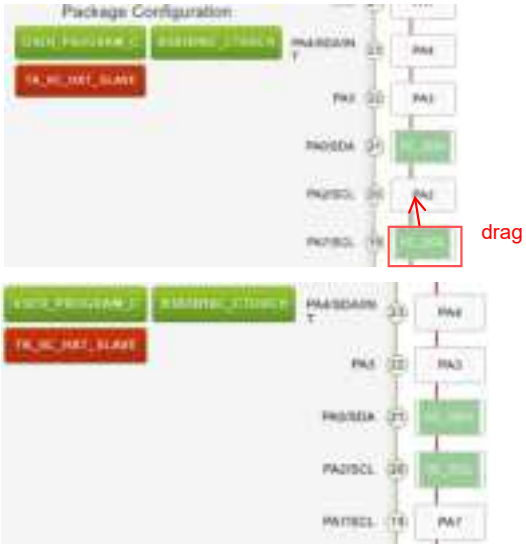
Debug Process

1. Drag the communication package to the MCU configuration area (the touch communication package should be used with the touch package, otherwise an error message will be displayed)

Drag Communication Software package

2. Configure communication pins (the default communication pins may be different from the required pins, the functional box can be dragged to the corresponding pin)

Pin drag method:
Left click on the pin functional box. Hold down and move the mouse cursor to the desired pin location. Release the left mouse button to complete the pin configuration.



Drag and Configure Communication Pins

3. Configure communication package parameters (for example, the baud rate can be configured in the UART package)

Left click here to unfold the selection box

UART Baud Rate Configuration

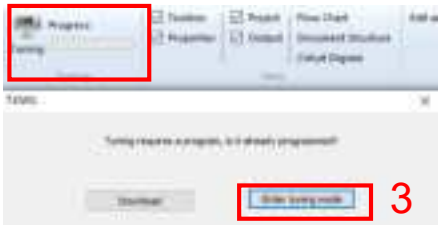
4. Write the program to the MCU (can be programmed directly via the e-Link)

Platform Programming

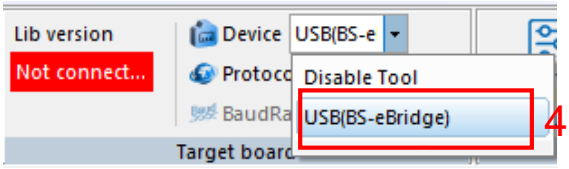
5. Connect the BS-eBridge to the MCU

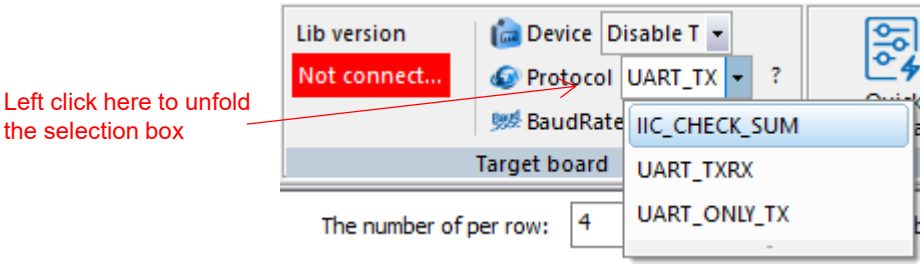
Connect BS-eBridge

6. Enter to the tuning mode



7. Configure the platform communication mode according to the communication package dragged in (the baud rate needs to be configured for the UART)





BS-eBridge Communication Mode Selection

USB TO UART Tool Communication Mode Selection

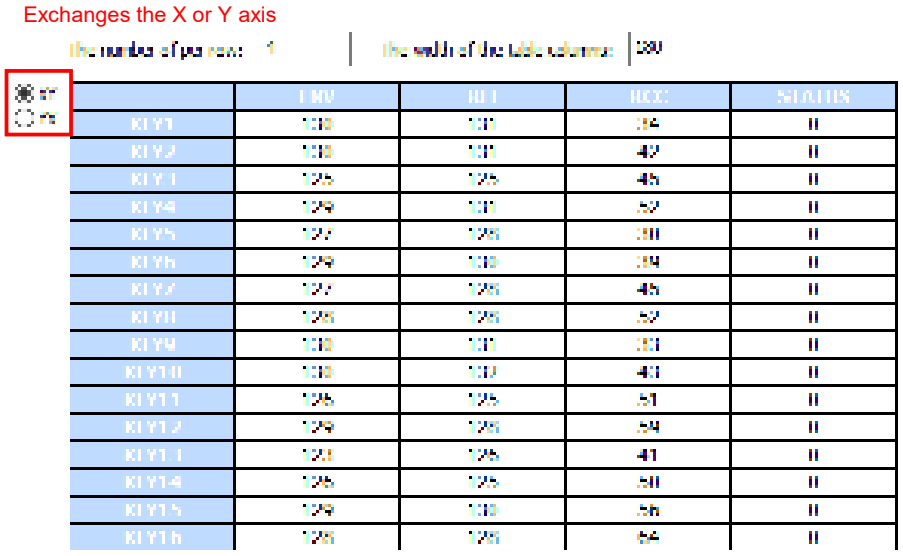
8. Select the BS-eBridge power supply (for the first time using the debug mode, the BS-eBridge firmware needs to be upgraded via clicking on the “Upgrade firmware”)

BS-eBridge Voltage Selection

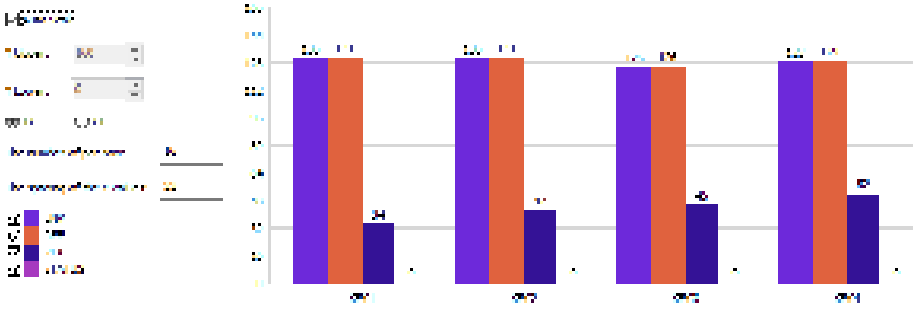
9. Start to debug, communication is successful

Communication Success Interface

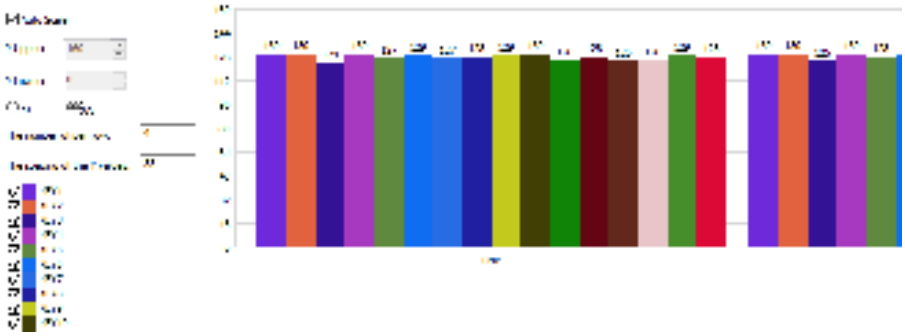
10. Switch the “Form/EnergyBar” according to the requirement and select the X/Y arrangement



Switch Display Mode (Form)

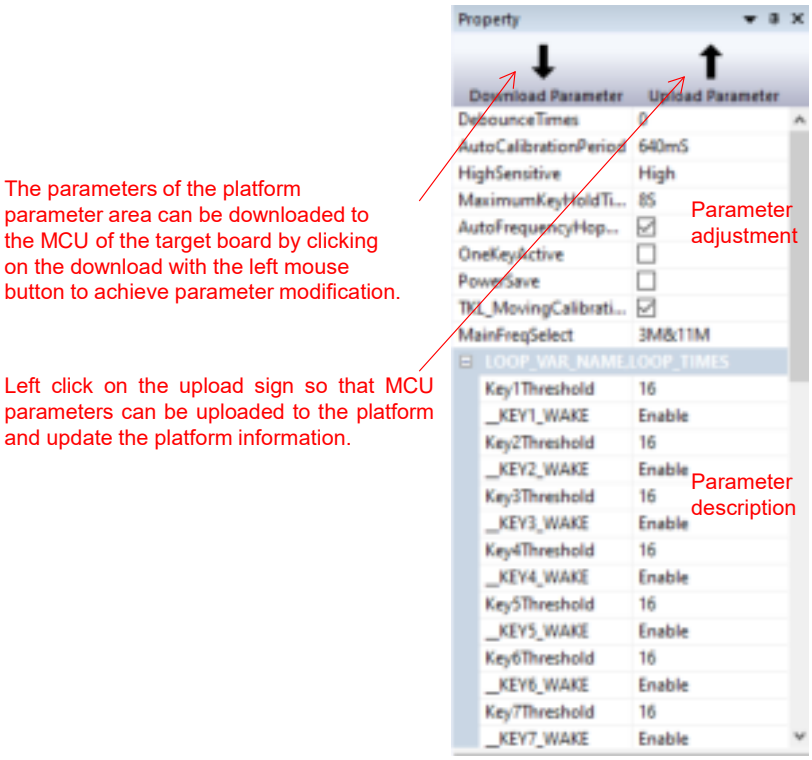


EnergyBar Display (XY)



EnergyBar Display (YX)

11. Analyze the touch waveform, modify the touch parameters and download to the target development board



Parameter Modification Area

Trouble Shooting

- Tool is not connected
  - Check whether the hardware device has been detected
  - Upgrade firmware on the platform
- Tool firmware upgrade is failed
  - Connect the USB line to the computer USB slot directly, while not the USB HUB
- Product failed to connect
  - Confirm whether the platform specific communication program has been load
  - Confirm whether the hardware UART communication pins have been configured correctly
  - If the development board is used, it needs to confirm whether the hardware short circuit pin has been configured correctly

Conclusion

The Touch Workshop V4.1 platform can make it simple and efficient to generate a touch project. It allows users to quickly adjust the touch parameters, efficiently edit the program and also drag in the communication software package for touch debug. In addition, the product touch signals can be digitized to facilitate users to confirm the touch status of the product.