XHSC 小华半导体 XIAOHUA SEMICONDUCTOR

XHSC_XHCode

User Manual

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Introduction

XHSC XHCode is a software tool that helps users configure and generate XHSC MCU basic code.

It mainly has the following functions:

- Pin and module initialization configuration: Select the pin configuration tab, and users can configure the functions of each configurable pin of the MCU in the pin view or module tree. The tool will ensure the uniformity of the pin view and module tree configuration. Users can select any module in the module tree to perform initialization configuration of the corresponding module.
- Clock configuration: Select the clock configuration tab, and users can configure the system clock and peripheral clock of the corresponding MCU model.
- Project configuration: Select the project configuration tab, and users can configure the name of the generated project, IDE (supports Keil, IAR and Eclipse), and the location where the project is saved. At the same time, users need to configure the driver library (DDL) location of the corresponding MCU model in this interface.

User can quickly configure the basic code of the XHSC MCU through this tool, speed up the familiarity with the functions of each IP module of the XHSC MCU, and greatly improve the efficiency of software development.

About this manual

This manual mainly introduces the operation items and usage methods of XHSC XHCode.

1 Operating Environment

The XHSC XHCode operating environment is shown in Table 1-1.

Table 1-1 XHSC XHCode operating environment

Operating system	Framework version
Windows 10	Framework 4.0 and above

To run the software, you need to have Microsoft.NET Framework v4.0 or above installed on your computer. Please confirm whether Framework 4.0 exists in the computer system path "C:\Windows\Microsoft.NET\Framework(64)", as shown in Figure 1-1:

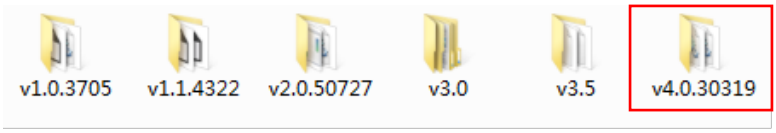

Figure 1-1 Framework

If the operating system is not installed, please go to the Microsoft official website and select the corresponding version to download.

2 Interface Introduction

2.1 Pin Configuration Interface

Open "XHSC XHCode.exe" and select the "Pin Configuration" tab. The interface is shown in Figure 2-1:

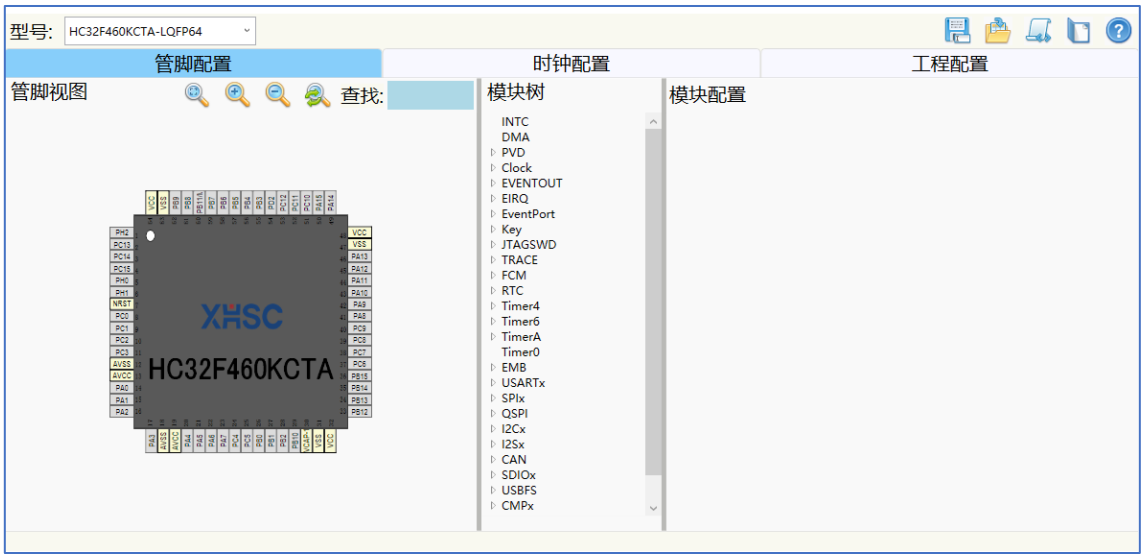

Figure 2-1 Pin Configuration Interface

2.2 Clock Configuration Interface

Select the "Clock Configuration" tab. The interface is shown in Figure 2-2:

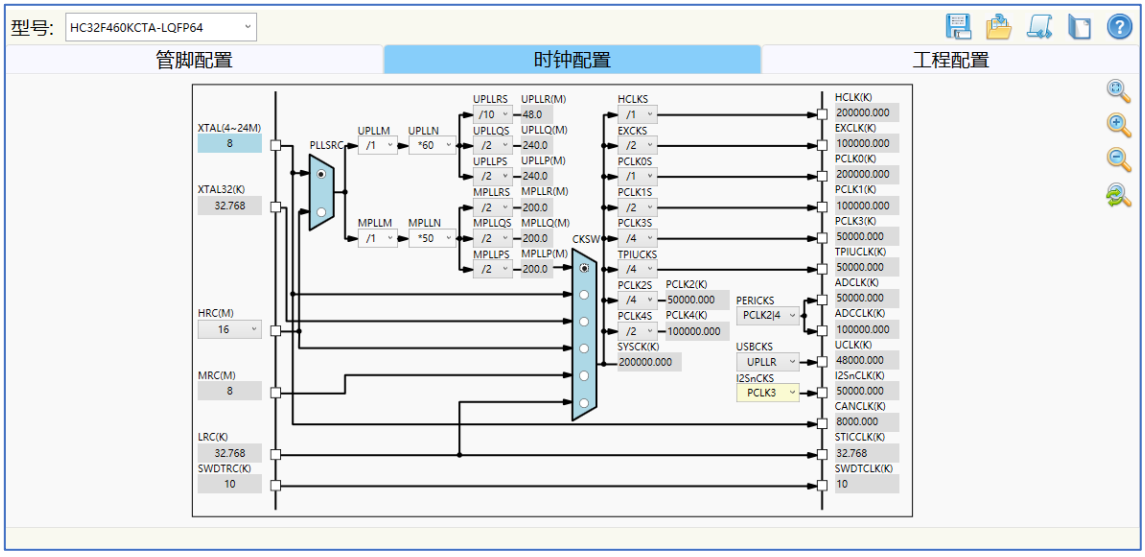

Figure 2-2 Clock Configuration Interface

2.3 Project Configuration Interface

Select the "Project Configuration" tab. The interface is shown in Figure 2-3:

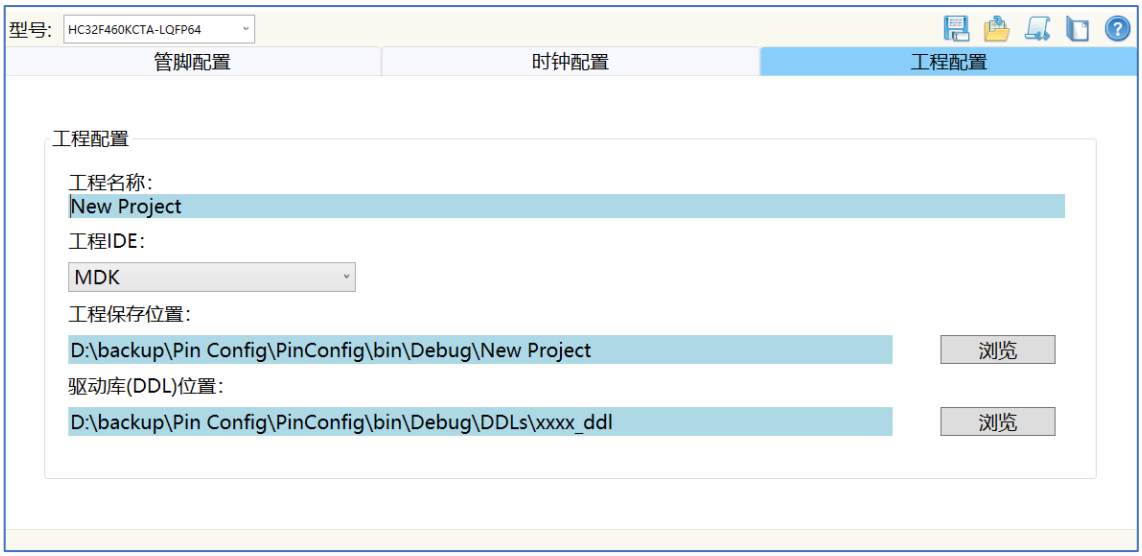

Figure 2-3 Project Configuration Interface

3 Operation Description

3.1 MCU Model Selection

The combo box behind "Model:" in the upper left corner of the tool provides the supported XHSC MCU models. Users can also enter the keywords of the required model in the text box of the combo box to filter the model matching, as shown in Figure 3-1:

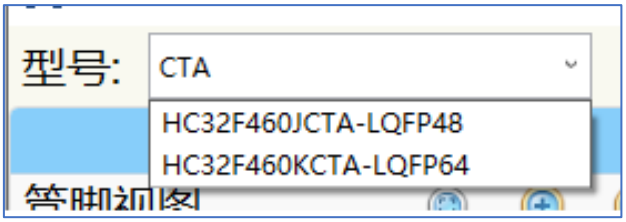

Figure 3-1 Model Filter

3.2 Main button operations

The main buttons of this tool are shown in Figure 3-2 and Figure 3-3:

Figure 3-2 Main Toolbar Buttons

Figure 3-3 View Buttons

 ：Save configuration (Ctrl + S), save all information about the user's pin configuration, clock configuration and project configuration for the selected chip.
Supports two saving formats: xml and Excel.

 : Import configuration (Ctrl + I), import the xml configuration file saved by the user.

 : Generate code (Ctrl + G), generate corresponding engineering code according to the user's configuration.

 : Open code (Ctrl + O), open the directory where the user-generated project code is located.

 : Help (Ctrl+H) opens the tool's user manual.

 : Restore (F1), restore the size of the pin view or clock view.

 : Zoom in (F2), enlarge the size of the pin view or clock view, and support mouse wheel operation.

 : Zoom out (F3), reduce the size of the pin view or clock view, support mouse wheel operation.

 : Reset (F4), resets the pin configuration or clock configuration to the system default value.

3.3 Pin View Operation

In the pin configuration interface, click on the configurable pin of the chip in the pin view, and select the function to be configured in the pop-up context menu. The configuration operation performed by the user here will be synchronously reflected in the module tree, as shown in Figure 3-4:

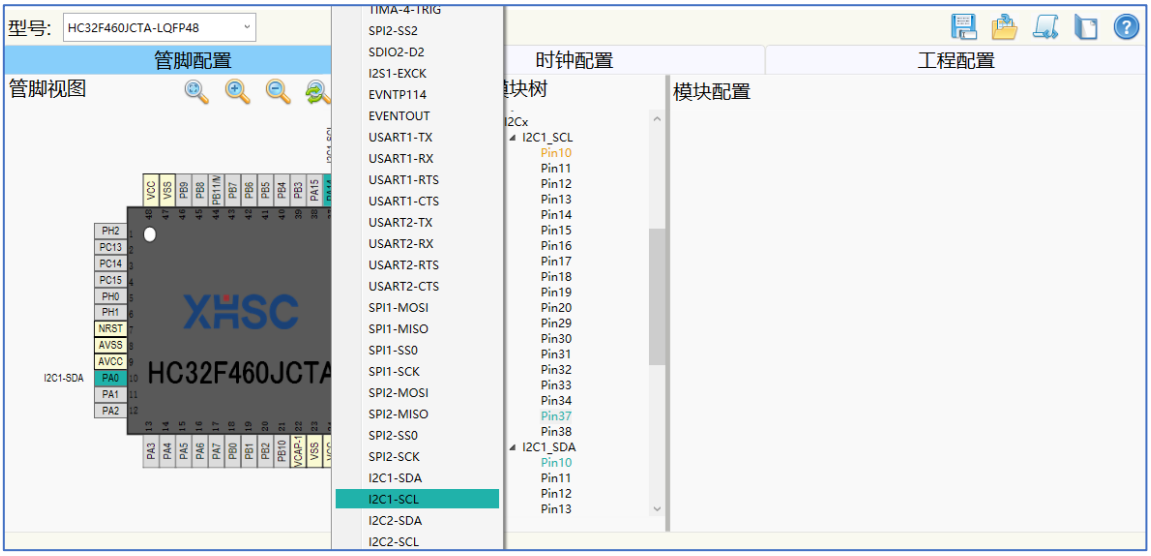

Figure 3-4 Pin function configuration

In the search text box, enter the pin number you want to search for (supports keyword search), and the tool will flash and highlight the search results, as shown in Figure 3-5:

Figure 3-5 Pin Search

The meaning of different background colors of pins:

VSS : The pin function cannot be reused.

PA10 : The pin function is multiplexed and not configured.

PA12 : The pin function is reusable and configured

PA8 : When you press Ctrl + click on a configured pin, the pin with this background color indicates that the pin can replace the configured pin. At this time, the user can drag the mouse (the mouse is displayed as a pen) to the pin, and the tool will automatically replace the pin function.

PC15 : The pin matches the content that the user is looking for;

Tips: In the area outside the pin, hold down the left mouse button to drag the view.

3.4 Module Tree Operations

Expand the module in the module tree to the bottom layer, double-click the corresponding pin, and you can set or cancel the configuration of the corresponding pin. The user's configuration operation here will also be synchronously reflected in the pin view, as shown in Figure 3-6:

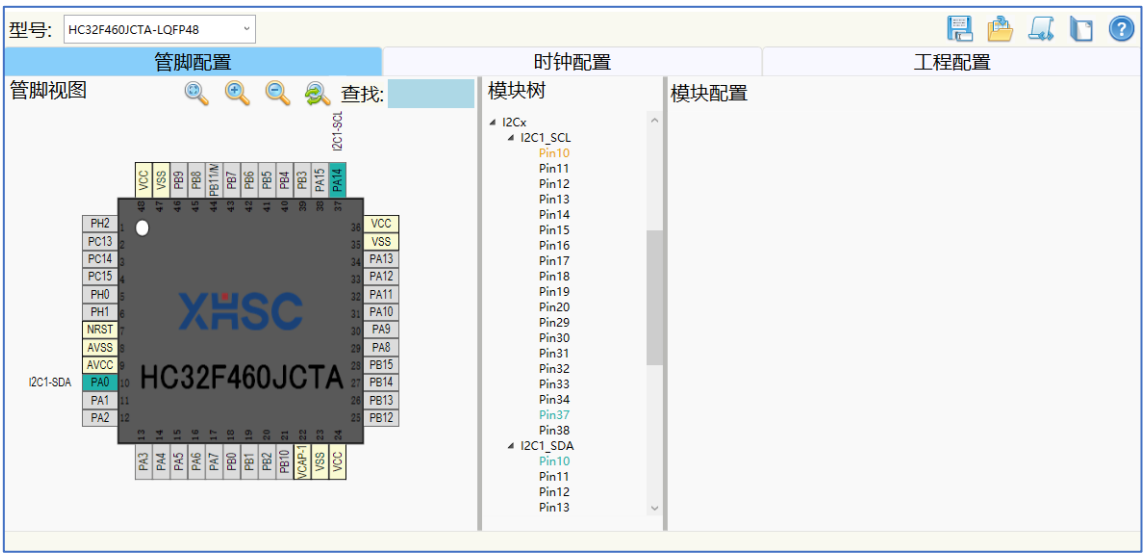

Figure 3-6 Module Tree Operation

The meaning of different font colors of pins:

Pin12 : The pin is not configured.

Pin37 : The pin has been configured to the function shown by its parent node.

Pin10 : The pin has been configured to other multiplexed functions.

3.5 Module Configuration Operation

Click and select the corresponding module in the module tree, and then you can initialize the corresponding module in the module configuration section, as shown in Figure 3-7:

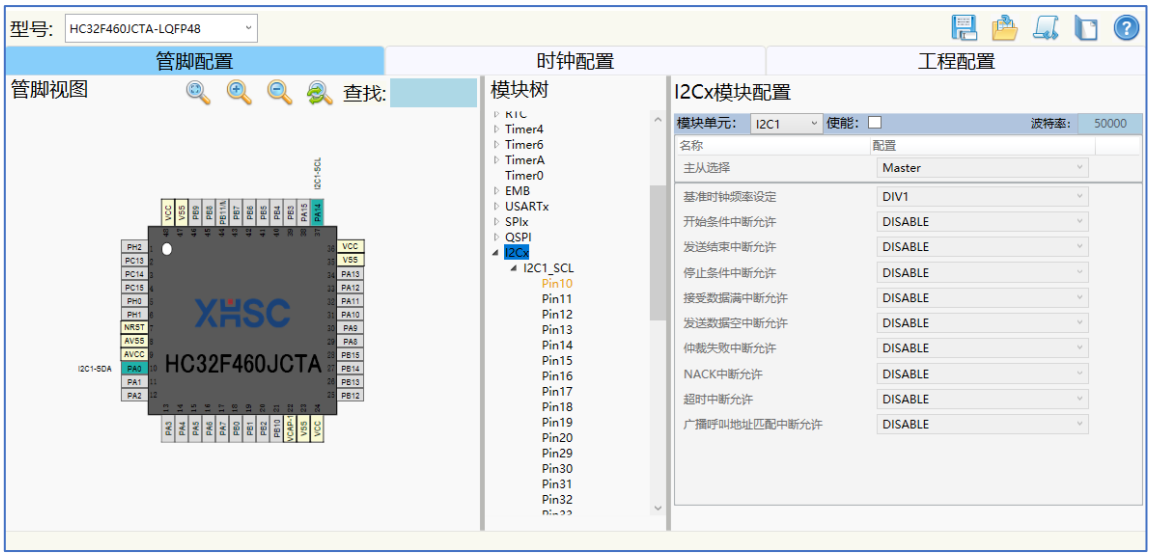

Figure 3-7 Module Configuration Operation

Note: The module configuration area only lists some key parameters for the module initialization configuration. Users may also need to complete the module pin configuration in combination with the pin view or module tree, and complete the module clock configuration in combination with the clock configuration, so as to generate the complete initialization code for the module.

3.6 Clock Configuration Operation

In the clock configuration interface, users can flexibly and intuitively configure the required system clock and each peripheral clock by selecting different clock sources, as shown in Figure 3-8:

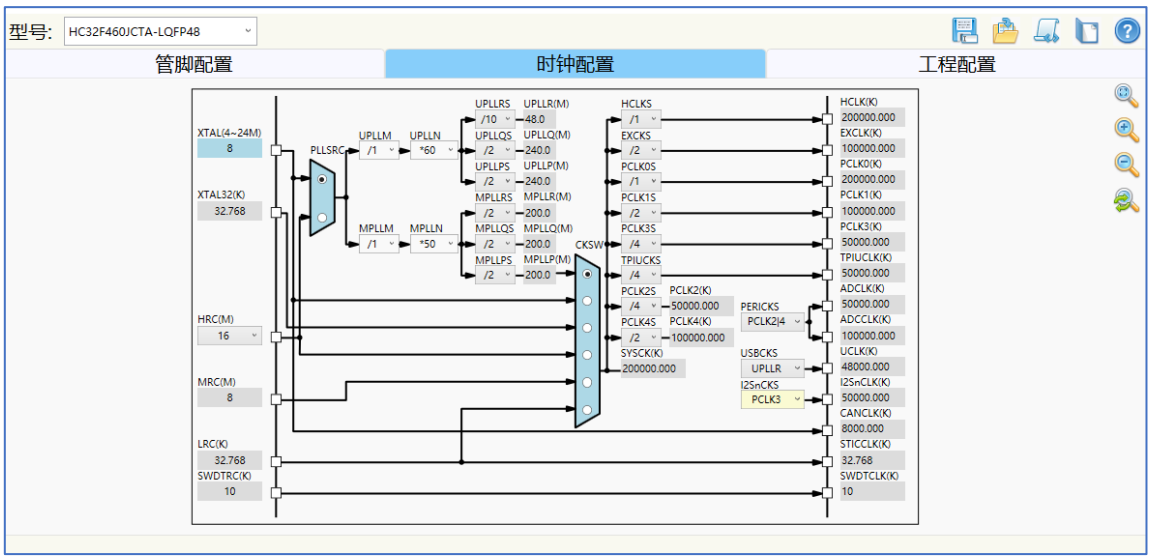

Figure 3-8 Clock configuration operation

Note: Some initial configurations of XTAL, XTAL32 and MCO can be configured by clicking the "Clock" module in the module tree.

3.7 Project Configuration Operations

In the project configuration interface, user can configure the generated project name, project IDE (supports Keil, IAR V8 and Eclipse), project save location and the driver library (DDL) location of the selected chip model. See Figure 3-9.

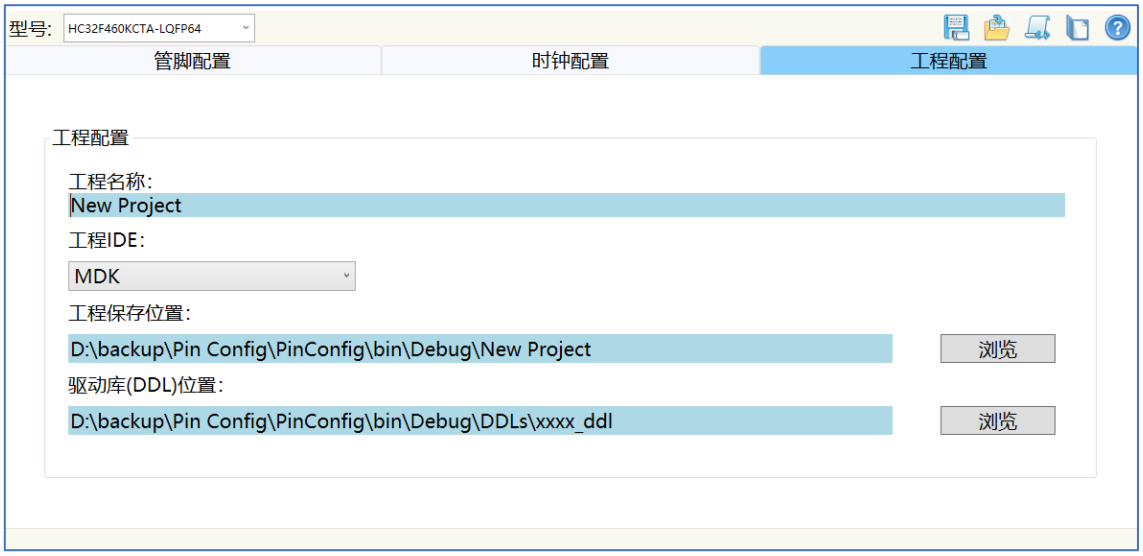

Figure 3-9 Project configuration operation

Note: The chip driver library must be selected correctly, usually a folder ending with "ddl", otherwise the generated project may have compilation errors! The latest driver library can be downloaded from the official website (http://www.xhsc.com.cn).

Version Revision History

Version	Revision Date	Revision Content
Beta1.0	2022/09/15	Initial version released.

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