

NXP MCUXWQS MCUXpresso Config Tools User Guide

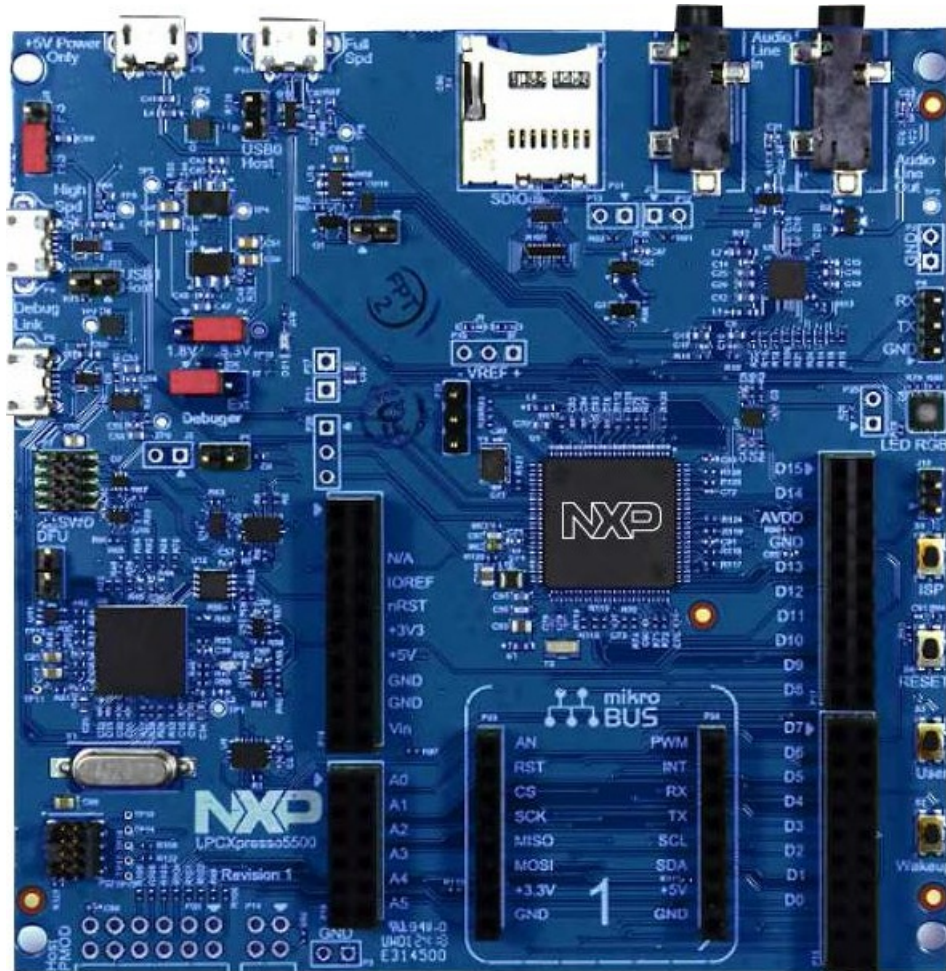
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MCUXWQS

NXP MCUXWQS MCUXpresso Config Tools



Introduction

MCUXpresso Config Tools is a set of tools for the configuration of NXP Cortex-M processors. In order to showcase some of its abilities, a simplified version of its Pins and Clocks tools is available online, at <http://mcuxpresso.nxp.com>

- Pins tool allows you to configure pins routing and electrical properties,
- Clocks tool allows you to configure system clocks.

You can use the tools to evaluate chip features and capabilities and generate initialization code.

Minimum System Requirements

The following lists the minimum system requirements to run the software:

- Internet connection for dynamic download from processor database
- Java Script enabled web browser
- Web Browser versions: Chrome 38
- Display with resolution 1024 x 768

2 Start MCUXpresso Config Tools

You can inspect device configuration in the online version of Pins and Clocks tools once you have selected a

device, board, or a kit.

- Visit mcuxpresso.nxp.com
- Select Select Development Board and log in.
- Select the device of your choice from the Select a Device, Board, or Kit dropdown list or filter by name in the Search by Name field.
- Once device is selected, select the Explore selection with Pins tool to open the device configuration in Pins tool, or Explore selection with Clocks tool to open it in the Clocks tool

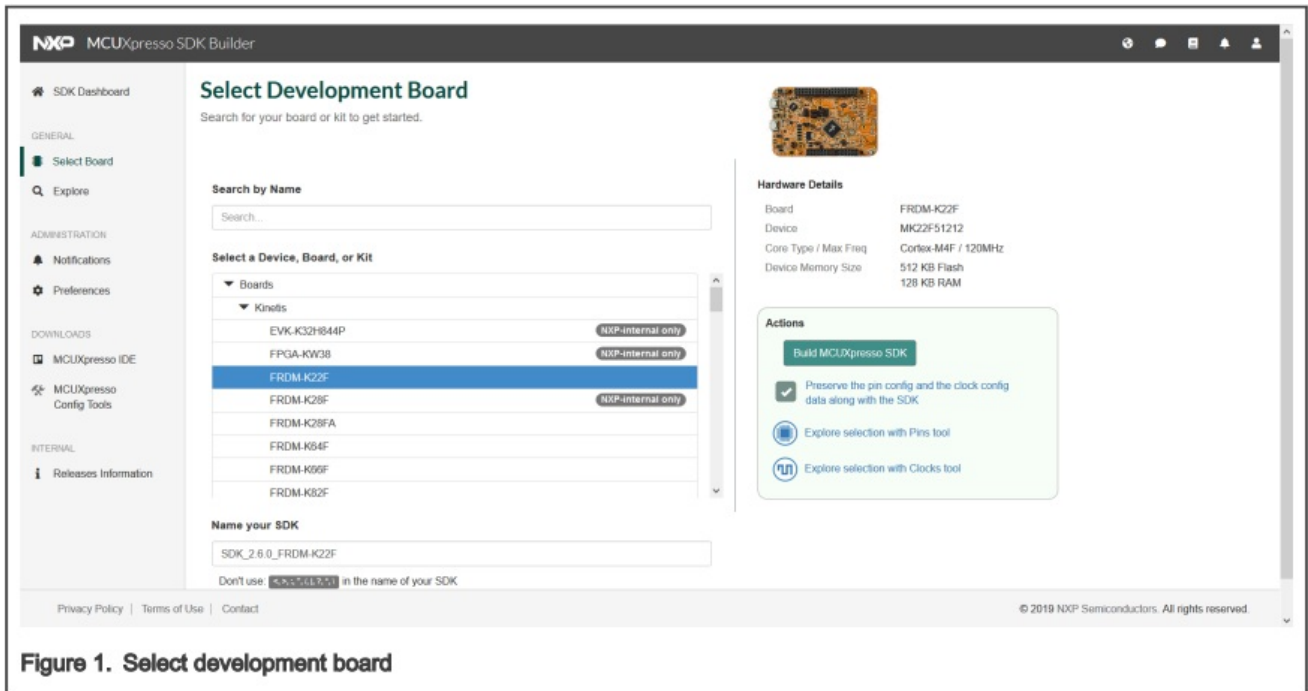
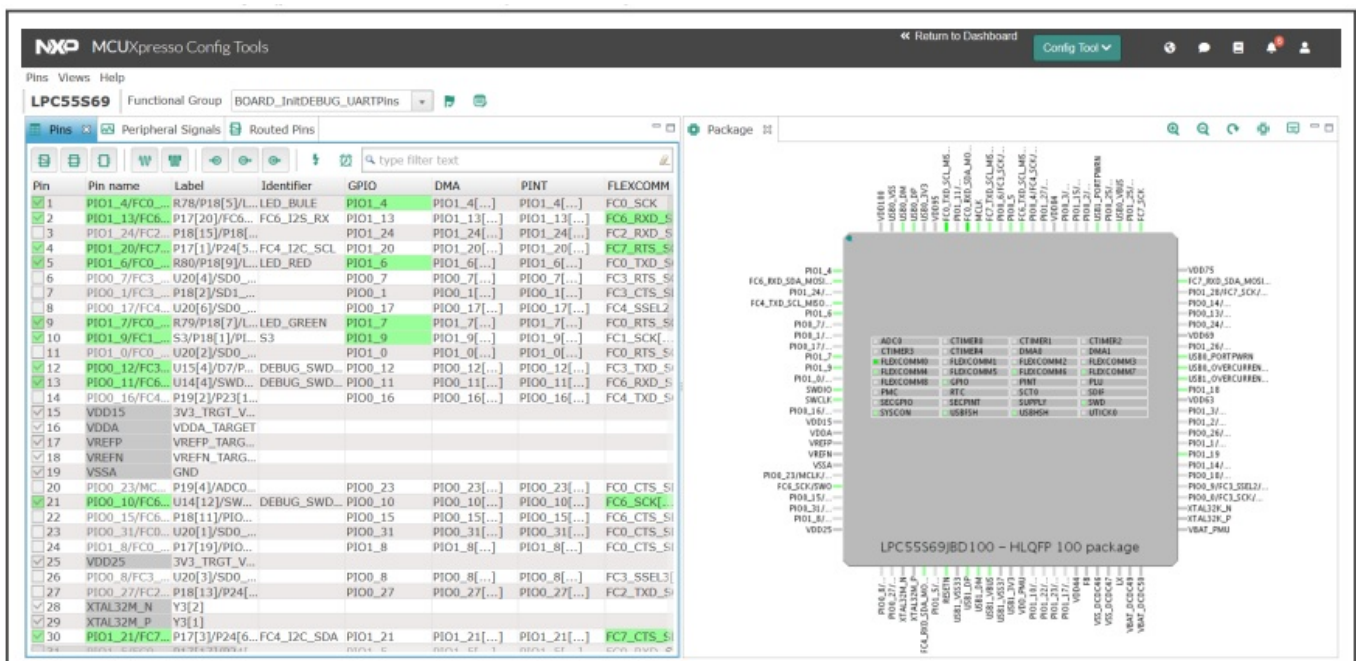


Figure 1. Select development board

Select development board

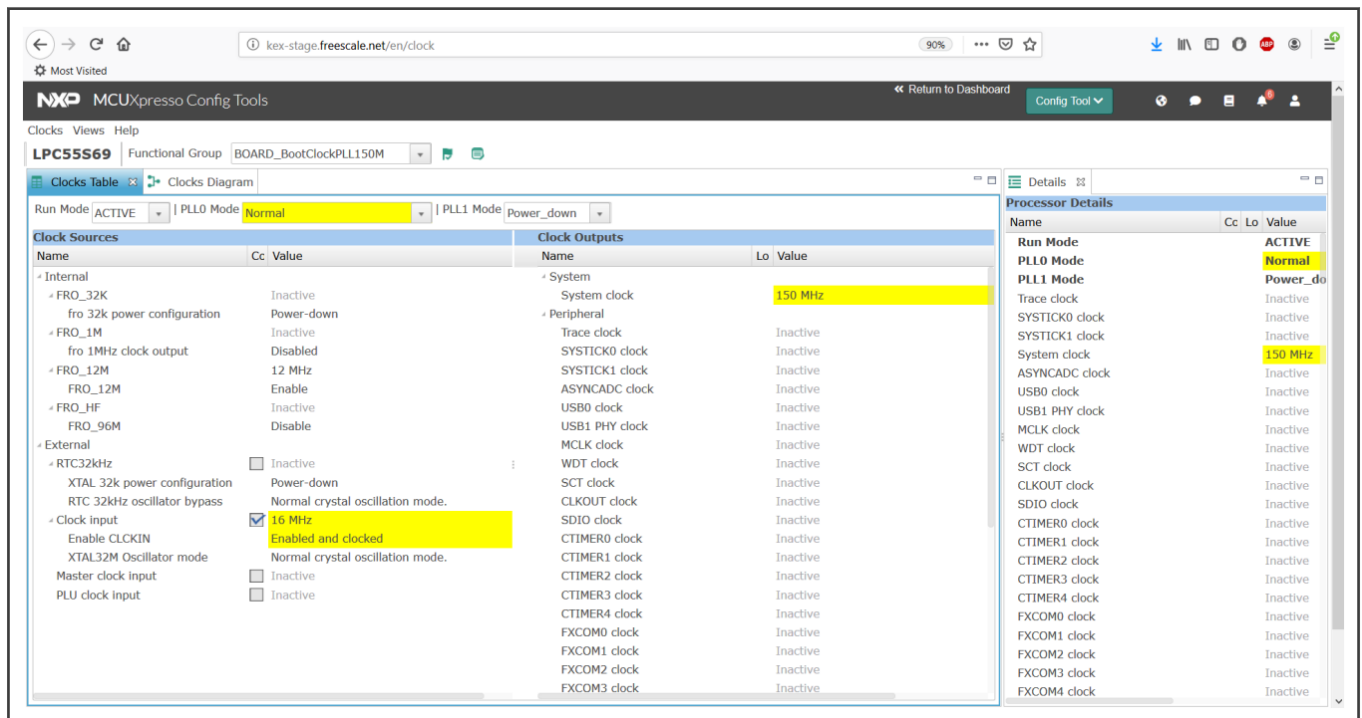
Pins Tool

In the Pins tool, you can display and configure the pins of the processor. Basic configuration can be done in Pins, Peripheral Signals, or Package views. More advanced settings (pin electrical features) can be adjusted in the Routed Pins view



Clocks Tool

In the Clocks tool, you can display and modify clock sources and outputs settings in the Clocks Table view. Advanced settings can be adjusted in the Clocks Diagram and Details views. Global settings of the clocking environment such as run modes, MCG modes and SCG modes can be modified in Clocks Table, Clocks Diagram, and Details views.



The screenshot displays the NXP MCUXpresso Config Tools interface for the LPC55569 device. The main workspace shows the 'Clocks Table' view, which is divided into 'Clock Sources' and 'Clock Outputs' sections. The 'Run Mode' is set to 'ACTIVE', 'PLL0 Mode' is 'Normal', and 'PLL1 Mode' is 'Power_down'. The 'Clock Sources' table lists various internal and external clock sources, with 'FRO_16M' selected and highlighted. The 'Clock Outputs' table lists various system and peripheral clock outputs, with 'System clock' highlighted at 150 MHz. The 'Processor Details' pane on the right shows a list of processor components and their current states, including 'Run Mode' (ACTIVE), 'PLL0 Mode' (Normal), and 'PLL1 Mode' (Power_down).

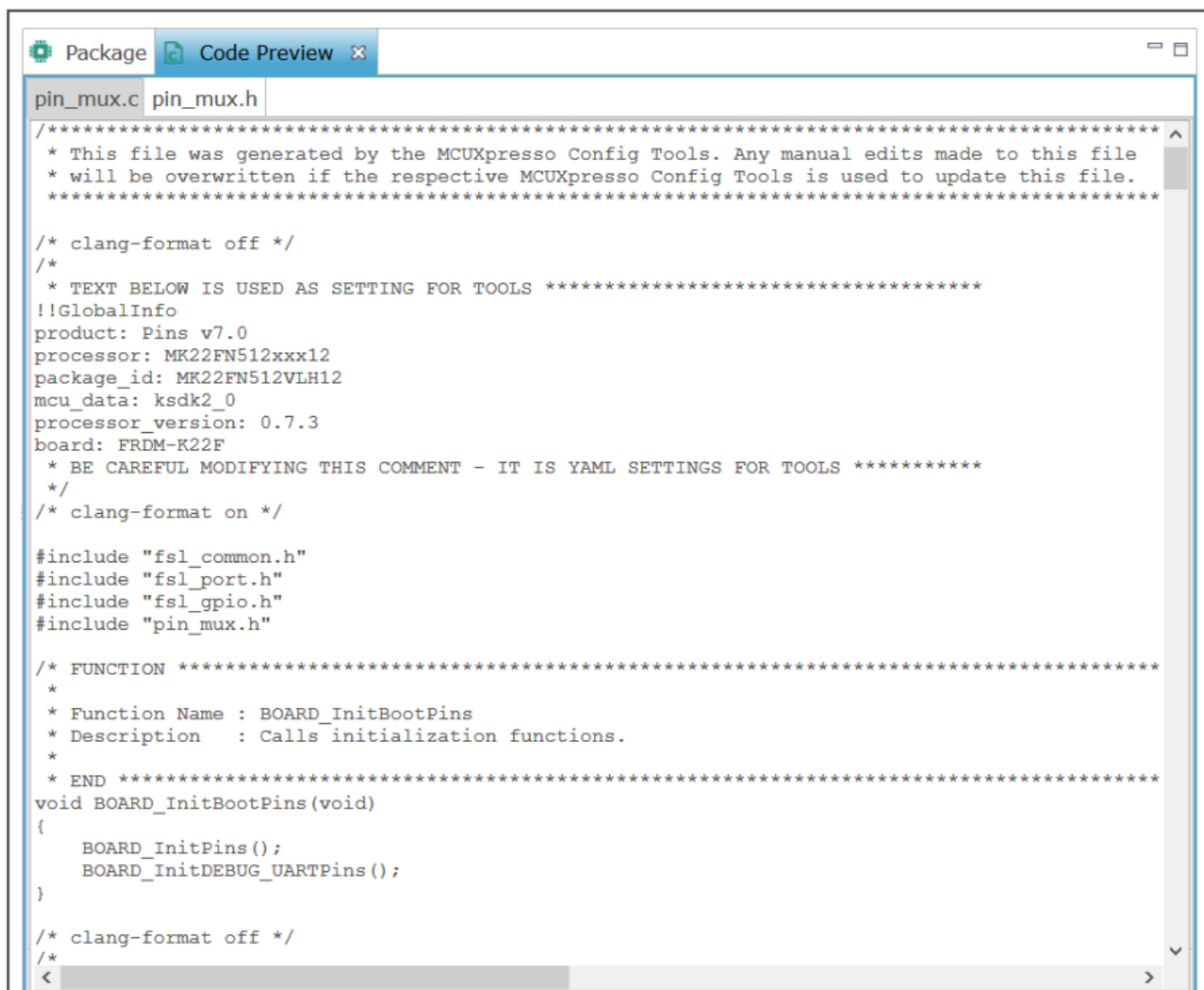
Name	Cc	Value
Internal		
FRO_32K	Inactive	
fro 32k power configuration	Power-down	
FRO_1M	Inactive	
fro 1MHz clock output	Disabled	
FRO_12M	12 MHz	
FRO_12M	Enable	
FRO_HF	Inactive	
FRO_96M	Disable	
External		
RTC32kHz	<input type="checkbox"/> Inactive	
XTAL 32k power configuration	Power-down	
RTC 32kHz oscillator bypass	Normal crystal oscillation mode.	
Clock input	<input checked="" type="checkbox"/> 16 MHz	Enabled and clocked
Enable CLCKIN	<input checked="" type="checkbox"/> 16 MHz	Enabled and clocked
XTAL32M Oscillator mode	Normal crystal oscillation mode.	
Master clock input	<input type="checkbox"/> Inactive	
PLU clock input	<input type="checkbox"/> Inactive	

Name	Lo	Value
System		
System clock	150 MHz	
Peripheral		
Trace clock	Inactive	
SYSTICK0 clock	Inactive	
SYSTICK1 clock	Inactive	
ASYNCADC clock	Inactive	
USB0 clock	Inactive	
USB1 PHY clock	Inactive	
MCLK clock	Inactive	
WDT clock	Inactive	
SCT clock	Inactive	
CLKOUT clock	Inactive	
SDIO clock	Inactive	
CTIMER0 clock	Inactive	
CTIMER1 clock	Inactive	
CTIMER2 clock	Inactive	
CTIMER3 clock	Inactive	
CTIMER4 clock	Inactive	
FXCOM0 clock	Inactive	
FXCOM1 clock	Inactive	
FXCOM2 clock	Inactive	
FXCOM3 clock	Inactive	

Name	Cc	Lo	Value
Run Mode			ACTIVE
PLL0 Mode			Normal
PLL1 Mode			Power_down
Trace clock			Inactive
SYSTICK0 clock			Inactive
SYSTICK1 clock			Inactive
System clock			150 MHz
ASYNCADC clock			Inactive
USB0 clock			Inactive
USB1 PHY clock			Inactive
MCLK clock			Inactive
WDT clock			Inactive
SCT clock			Inactive
CLKOUT clock			Inactive
SDIO clock			Inactive
CTIMER0 clock			Inactive
CTIMER1 clock			Inactive
CTIMER2 clock			Inactive
CTIMER3 clock			Inactive
CTIMER4 clock			Inactive
FXCOM0 clock			Inactive
FXCOM1 clock			Inactive
FXCOM2 clock			Inactive
FXCOM3 clock			Inactive
FXCOM4 clock			Inactive

Generate code

To see generated code, open Code Preview view by selecting Views > Code Preview from the Main Menu. The source code is updated automatically after every change. You can copy-paste the generated code or download a ZIP file by selecting Pins > Export from the Main Menu.



```
pin_mux.c pin_mux.h
/*****
 * This file was generated by the MCUXpresso Config Tools. Any manual edits made to this file
 * will be overwritten if the respective MCUXpresso Config Tools is used to update this file.
 *****/

/* clang-format off */
/*
 * TEXT BELOW IS USED AS SETTING FOR TOOLS *****/
!!GlobalInfo
product: Pins v7.0
processor: MK22FN512xxx12
package_id: MK22FN512VLH12
mcu_data: ksdk2_0
processor_version: 0.7.3
board: FRDM-K22F
 * BE CAREFUL MODIFYING THIS COMMENT - IT IS YAML SETTINGS FOR TOOLS *****
 */
/* clang-format on */

#include "fsl_common.h"
#include "fsl_port.h"
#include "fsl_gpio.h"
#include "pin_mux.h"

/* FUNCTION *****/
 *
 * Function Name : BOARD_InitBootPins
 * Description   : Calls initialization functions.
 *
 * END *****/
void BOARD_InitBootPins(void)
{
    BOARD_InitPins();
    BOARD_InitDEBUG_UARTPins();
}

/* clang-format off */
/*
```

Code Preview

The generated code uses MCUXpresso SDK for peripheral initialization, so it is necessary to download device specific SDK package to build it. Supported toolchains are:

- MCUXpresso IDE
- IAR Embedded Workbench
- Keil μ Vision
- Arm GCC
- Kinetis Design Studio

Revision history

Revision number	Date	Substantive changes
0	23 June 2021	Initial release
1	22 December 2021	Minor changes

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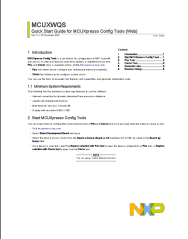
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References

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