



MPLAB Harmony Help Template

MPLAB Harmony Integrated Software Framework

Touch Library Help

This help documentation provides brief overview of Touch library and details about different touch applications available in Harmony 3.

Introduction

This topic describes brief overview of Touch library and the associated contents.

Description

MPLAB Harmony 3 is an extension of the MPLAB® ecosystem for creating embedded firmware solutions for Microchip 32-bit SAM and PIC microcontroller and microprocessor devices. It helps the user to select and configure software components for Microchip MCUs. The touch component includes a Touch Configurator to simplify the touch application development.

Touch Library

Touch Library is a royalty-free software library for developing touch applications on 32-bit microcontrollers with Peripheral Touch Controller peripheral. Developers can use it to integrate touch-sensing capability into their applications. The library supports both self-capacitance and mutual-capacitance acquisition methods.

Touch Configurator

Touch Configurator offers innovative, intuitive and a graphical configuration to help designing your touch application. The user can add sensors and configure QTouch parameters represented in graphical ways to create touch project.

Data Visualizer

Data Visualizer is a program that processes and visualizes data. It allows the designer to plot touch signals in real time to help tune and monitor power consumption, as an example. The touch library parameters are also displayed in the [data visualizer software](#) when the hardware kit is connected through edbg/medbg virtual com port.

Related Documents

Refer to the following link for more information on how to create QTouch projects using the MPLAB Harmony 3.

<https://microchipdeveloper.com/touch:set-up-the-environment>

Refer to the following link for more details on how to open and execute touch example projects.

<https://microchipdeveloper.com/touch:open-and-execute-touch-example-projects>

Please refer the QTouch Modular Library Userguide available in the link below for further information.

<https://www.microchip.com/mymicrochip/filehandler.aspx?ddocname=en590454>

Applications Help

This topic provides help for the touch applications available in MPLAB Harmony 3.

Description

The following applications are provided to demonstrate touch sensing

qt1_selfcap

SelfCap Example with QT1 Extension board

Description

This example demonstrates the basic touch application where the touch sensors are measured and the touch status is indicated using LED on the QT1 extension board. The touch library parameters are also displayed in the data visualizer software when the hardware kit is connected through edbg/medbg virtual com port.

Building The Application

This section provides information on how to build an application using the MPLAB X IDE.

Description

The parent folder for all the MPLAB X projects for this application is given below:

Application Path	touch/apps/button_only_touch_support/qt1_selfcap/firmware
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To build the application, refer the following table and open the appropriate project file in the MPLAB X IDE.

Project Name	Description
sam_c21_xpro.X	SAMC21 Xplainedpro kit

MPLAB Harmony Configurations

This section provides information on the MHC configurations.

Description

Refer to the MHC project graph for the components used and the respective configuration options.

Hardware Setup

This section describes how to configure the supported hardware.

Description

1. Project sam_c21_xpro.X.

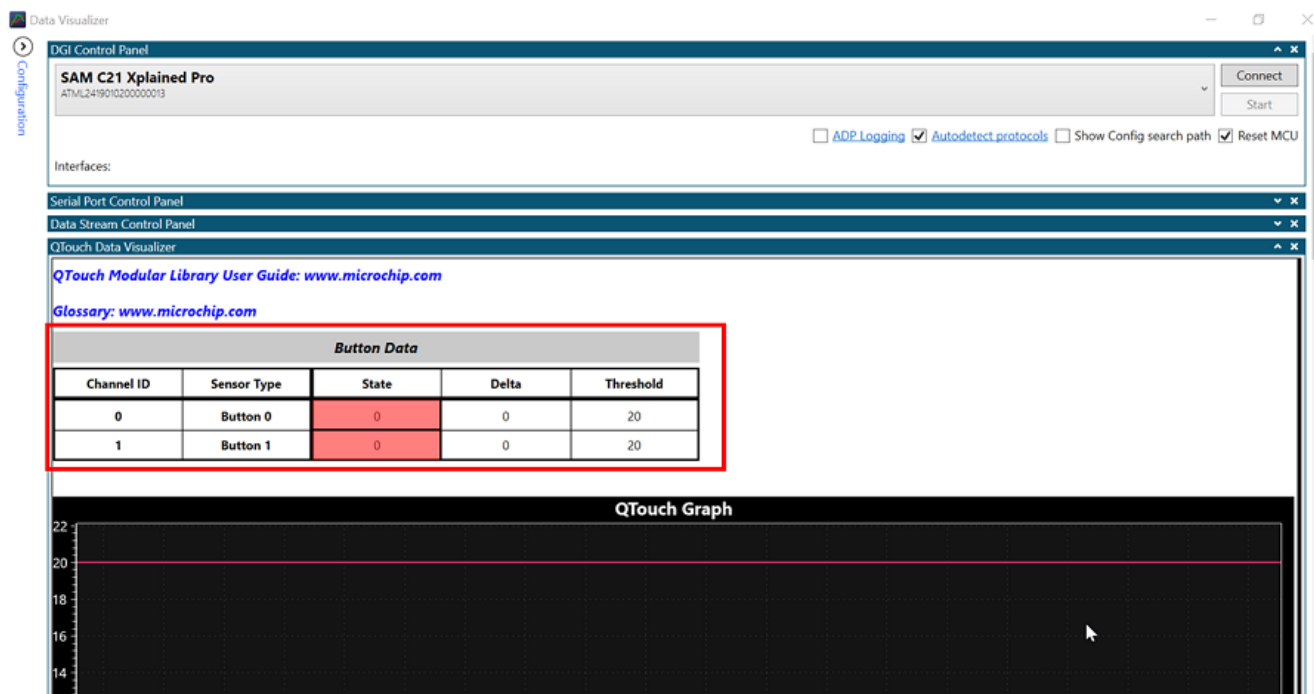
- **Hardware Used**
 - [SAMC21 Xplained Pro Evaluation kit](#)
 - [QT1 Xplained Pro Extension kit](#)
- **Hardware Setup**
 - Connect QT1 Xplained Pro to SAM C21 Xplained Pro Kit
 - Connect the Debug USB port on the board to the computer using a micro USB cable

Running The Application

This section provides information on how to run an application using the MPLAB X IDE.

Description

1. Build and Program the application using the MPLAB X IDE.
2. The Button LEDs turns ON when touch made on the respective buttons
3. Open Atmel Data Visualizer software and set the config path to folder that contains the datastreamer scripts
 - **Scripts Folder:**
[\touch\apps\button_only_touch_support\qt1_mutualcap\firmware\src\config\sam_c21_xpro\touch\datastreamer](#)
4. Open serial port connection and connect to the target. Verify the connection is made successfully and the buttons touch status are displayed on the dashboard.
 - For more information, see the [microchip developer page](#).



qt1_mutualcap

MutualCap Example with QT1 Extension board

Description

This example demonstrates the basic touch application where the touch sensors are measured and the touch status is indicated using LED on the QT1 extension board. The touch library parameters are also displayed in the data visualizer software when the hardware kit is connected through edbg/medbg virtual com port.

Building The Application

This section provides information on how to build an application using the MPLAB X IDE.

Description

The parent folder for all the MPLAB X projects for this application is given below:

Application Path	touch/apps/button_only_touch_support/qt1_mutualcap/firmware
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To build the application, refer the following table and open the appropriate project file in the MPLAB X IDE.

Project Name	Description
sam_c21_xpro.X	SAMC21 Xplainedpro kit

MPLAB Harmony Configurations

This section provides information on the MHC configurations.

Description

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Description

1. Project sam_c21_xpro.X.

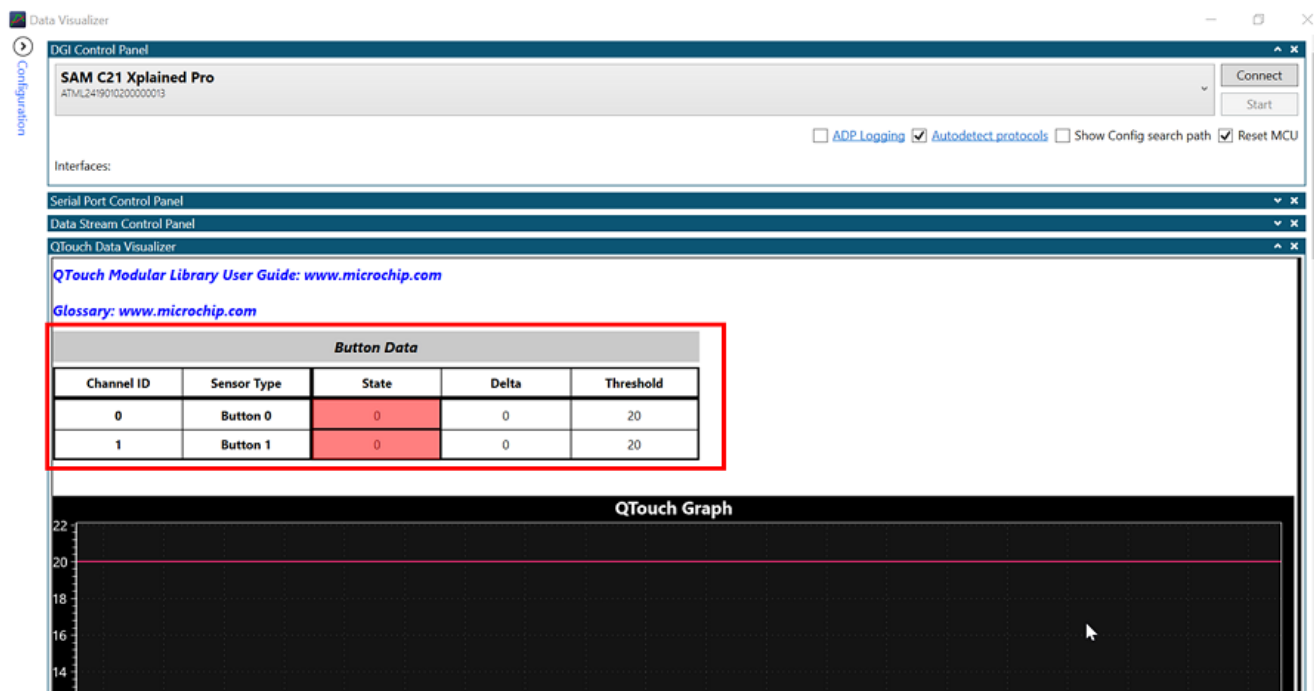
- **Hardware Used**
 - [SAMC21 Xplained Pro Evaluation kit](#)
 - [QT1 Xplained Pro Extension kit](#)
- **Hardware Setup**
 - Connect QT1 Xplained Pro to SAM C21 Xplained Pro Kit
 - Connect the Debug USB port on the board to the computer using a micro USB cable

Running The Application

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[\touch\apps\button_only_touch_support\qt1_mutualcap\firmware\src\config\sam_c21_xpro\touch\datastreamer](#)
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 - For more information, see the [microchip developer page](#).



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