EXAMPLE NAME: MANCHESTER_SW_EXAMPLE_XMC12

OVERVIEW: This example demonstrates how use the MANCHESTER_SW APP to decode an RC-5 signal transmitted by an IR Remote Controller.

DESCRIPTION:

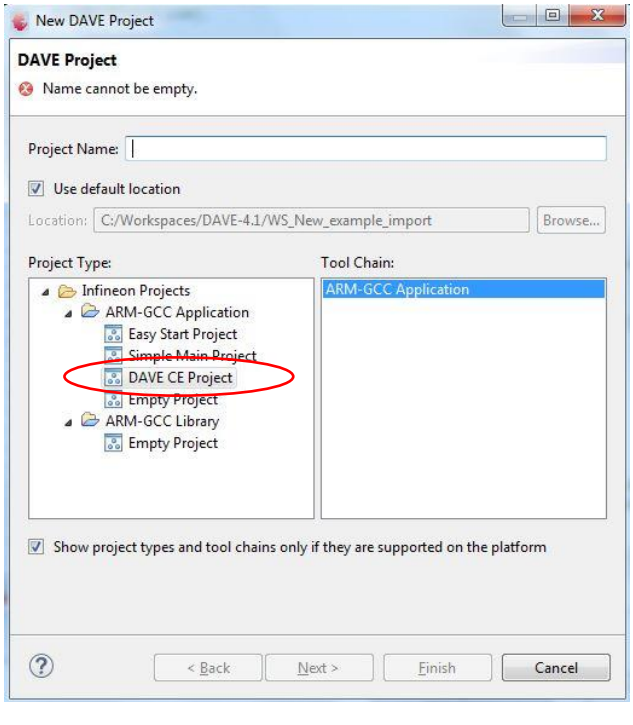
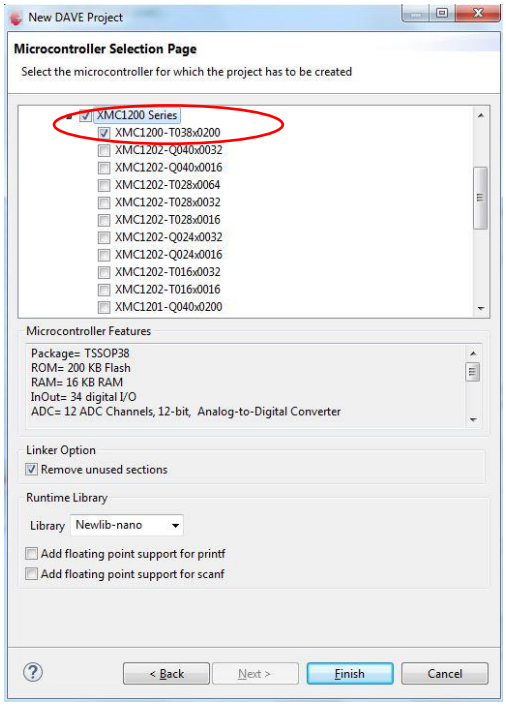
- MANCHESTER_SW APP is configured to decode 14-bits from the incoming RC-5 signal transmitted from an IR Remote Controller and the callback function is defined. The callback function is called upon completion of data decode, where LED_CALIBRATION is toggled during calibration phase, LED_RIGHTBUTTON is turned on when the right button on the remote control is pressed, and LED_LEFTBUTTON is turned on when the left button on the remote control is pressed

REQUIRMENTS:

Boards Required: XMC1200 CPU Board (Order Nr: KIT_XMC12_BOOT_001), HMI OLED Audio Card (Prototype board, please refer to attached schematics "HMI_OLED_AUDIO_v3.pdf" for IR receiver circuit)

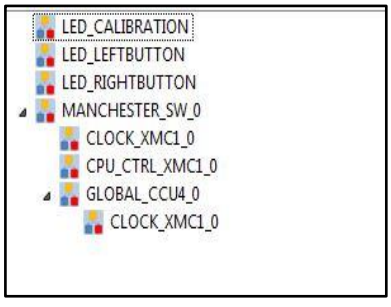
HOW TO CREATE THE PROJECT:

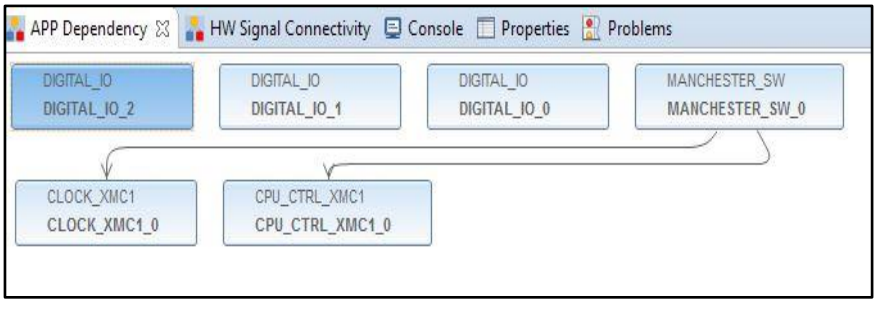
1. Open the DAVE CE and use  "Add IDE New Project Wizard" on the toolbar to add a new DAVE Project.

Enter Project Name Select "Project Type → DAVE CE Project"	Select Microcontroller →XMC1200 Series → XMC1200-T038x0200
	

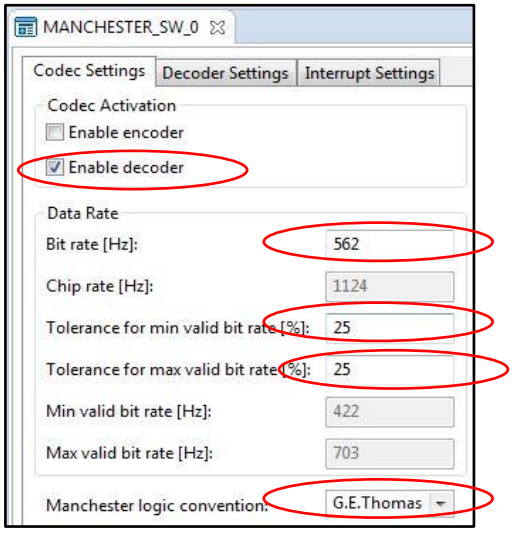
2. Use the  "Add New APP" in the toolbar to add 1 instance of MANCHESTER_SW and 3 instances of DIGITAL_IO APPs. Configure the APP instances with the following configurations.

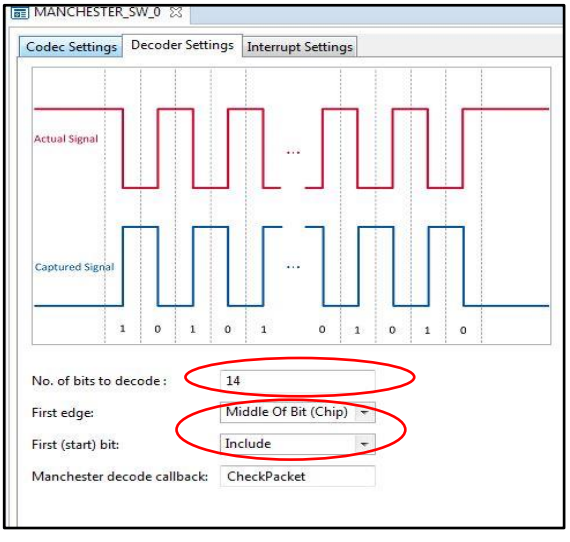
Views: APP Dependency Tree and APP Dependency



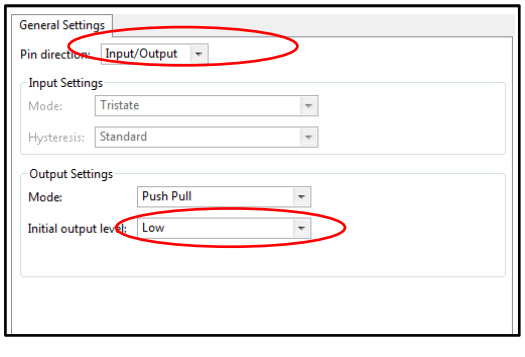


MANCHESTER_SW_0:



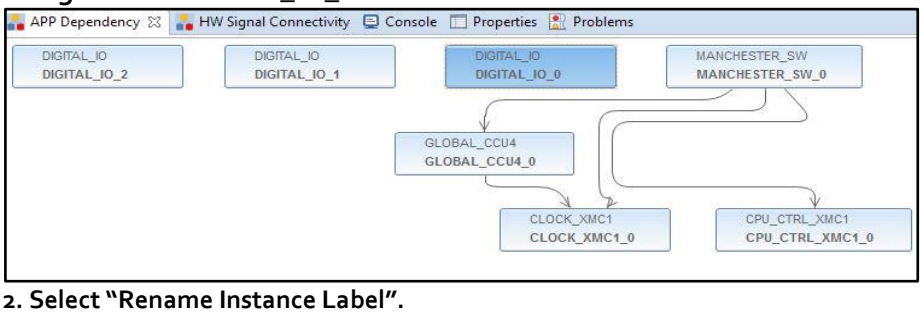


DIGITAL_IO_0/DIGITAL_IO_1/DIGITAL_IO_2:

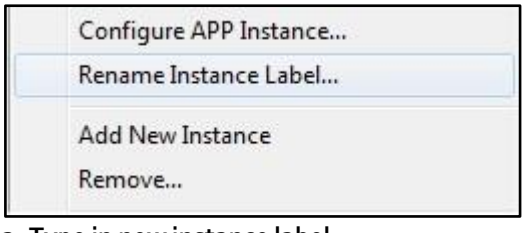


3. Rename the APP instance label: DIGITAL_IO_0 →LED_CALIBRATION.

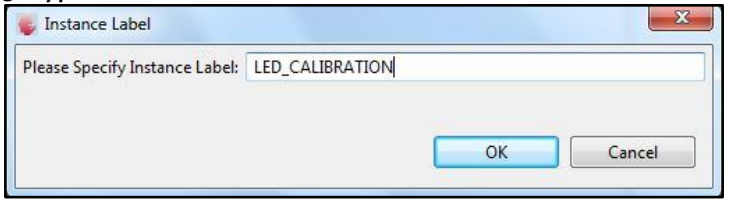
1. Right-click DIGITAL_IO_0.



2. Select "Rename Instance Label".

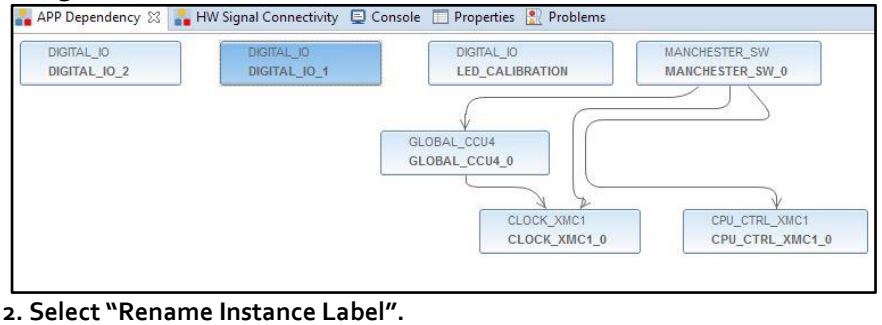


3. Type in new instance label.



4. Rename the APP instance label: DIGITAL_IO_1 →LED_RIGHTBUTTON.

1. Right-click DIGITAL_IO_1.



2. Select "Rename Instance Label".

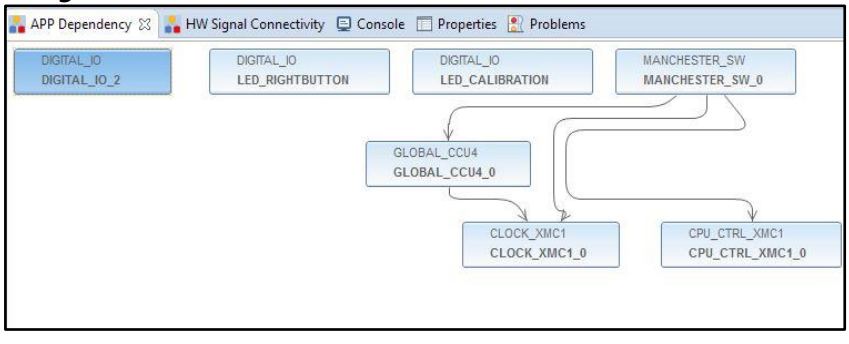


3. Type in new instance label.

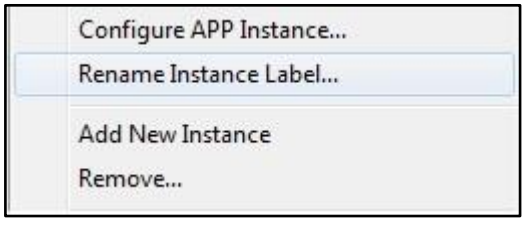


5. Rename the APP instance label: DIGITAL_IO_2 →LED_LEFTBUTTON.

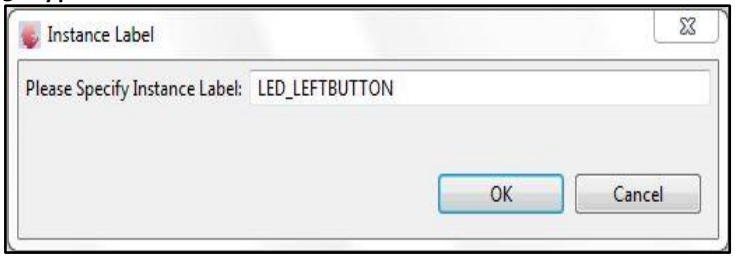
1. Right-click DIGITAL_IO_2.



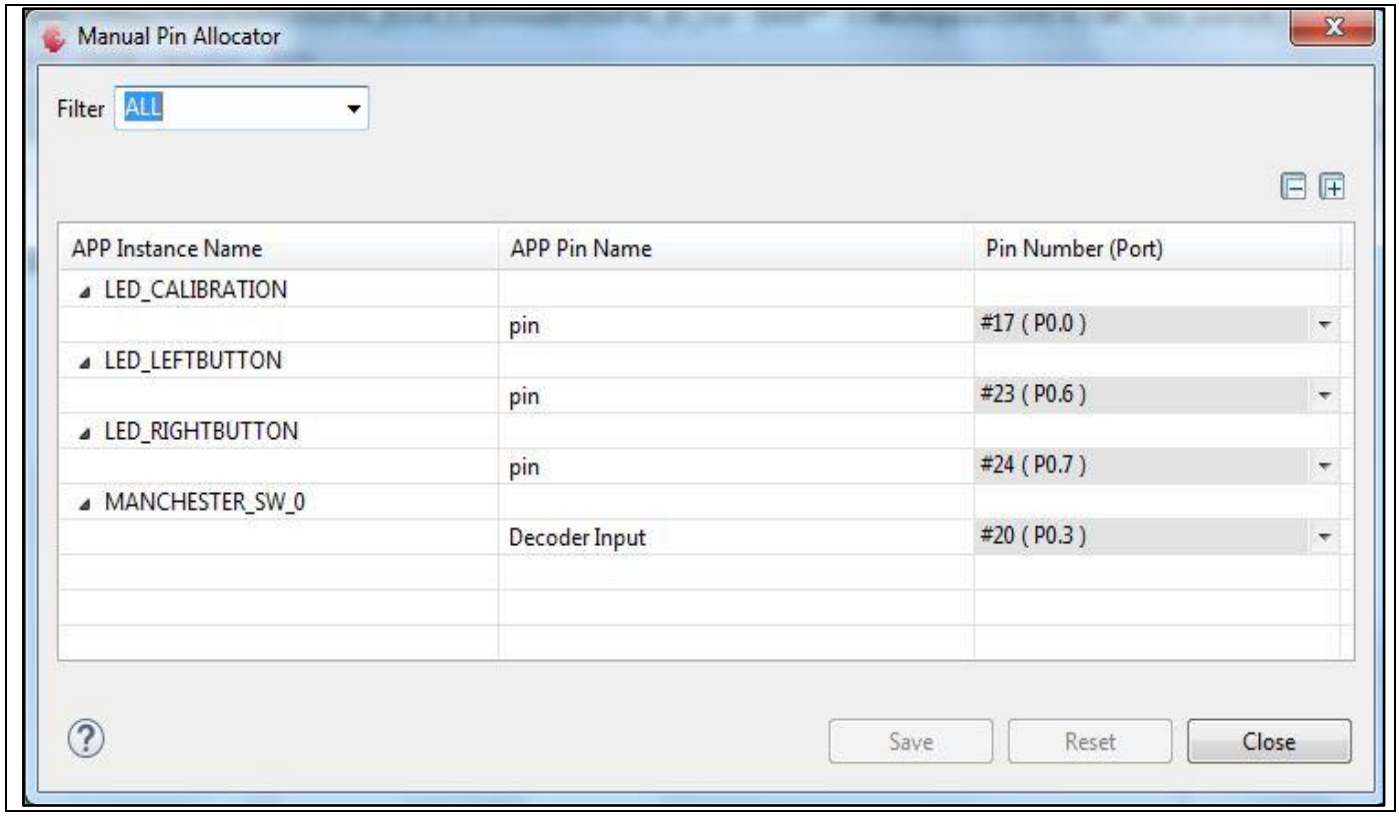
2. Select "Rename Instance Label".



3. Type in new instance label.



6. Use the "Manual Pin Assignment" found in the toolbar, configure the input pin for Manchester decoder and output pins for the LEDs.



7. Generate the code for configurations made using shortcut in the toolbar.
8. Change main.c accordingly.
9. Build and download to the microcontroller using shortcut in the toolbar.

HOW TO TEST:
Download and run the demo in the uC.

OBSERVATIONS:
- Insert the batteries into the IR Remote Controller. Calibration process will begin. LED on P0.0 will blink until calibration is completed.
- When the right button is pressed on the IR Remote Controller, LED on P0.7 will turn on.
- When the left button is pressed on the IR Remote Controller, LED on P0.6 will turn on.

HINTS WHEN MIGRATING EXAMPLE TO OTHER DEVICES IN THE SAME XMC FAMILY: