EXAMPLE NAME: I2C_SLAVE_EXAMPLE_XMC45

OVERVIEW: This example shows the use of the I2C_SLAVE and I2C_MASTER APPs. In this project two USIC channels of a XMC4500 device are communicating in a Loop-Back, one acting as Master and another as Slave in the same I2C bus. Master sends an array of data to the Slave and then Slave sends the received data back to the Master. The array sent and the final received by the Master are compared, P3.9 LED will glow if the data is not matching.

DESCRIPTION:

- I2C_SLAVE APP Configures one USIC channel as 7 bits address I2C SLAVE in a 100KHz bus.
- I2C_MASTER APP Configures one USIC channel as I2C MASTER in a 100KHz bus.
- DIGITAL_IO APP switch-on the onboard LED connected to P3.9 when the data read in the Mater does not match with the data read in the slave.

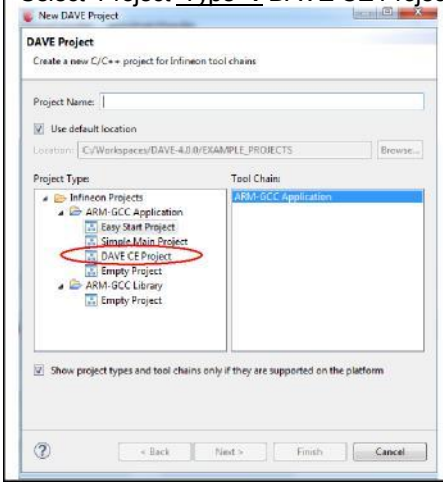
REQUIRMENTS:

Boards Required: XMC4500 CPU_45A-V3 Board

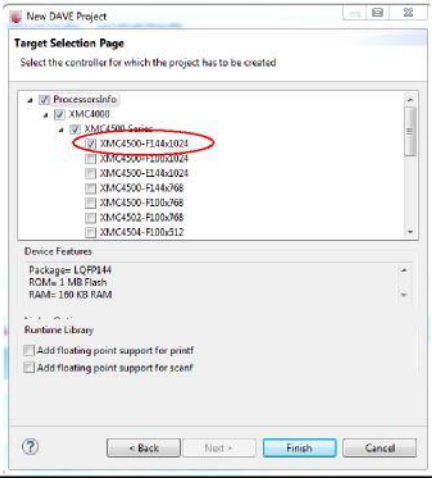
HOW TO CREATE THE PROJECT:

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 4 DAVE CE Project"

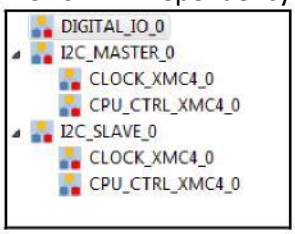


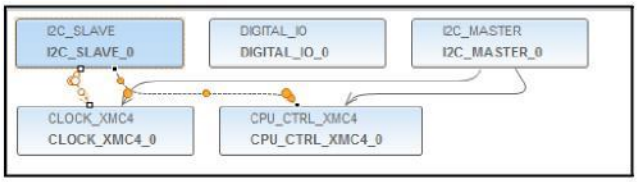
Select Processors Info
4XMC4500 Series 4 XMC4500-F144X1024



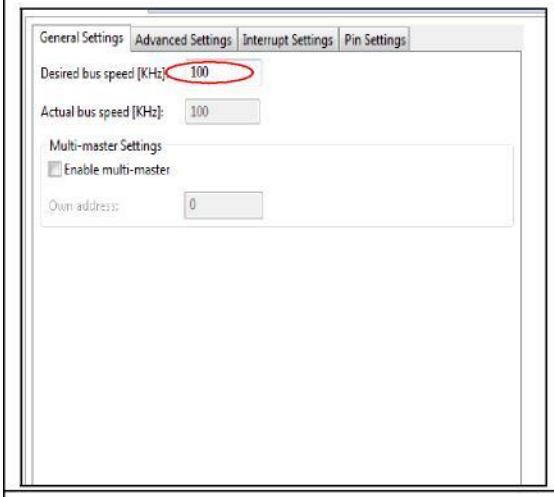
2. Use the "Add New App" in the toolbar to add 1 instance of I2C_MASTER, DIGITAL_IO and I2C_SLAVE APPs. Configure the APP instances with the following configurations.

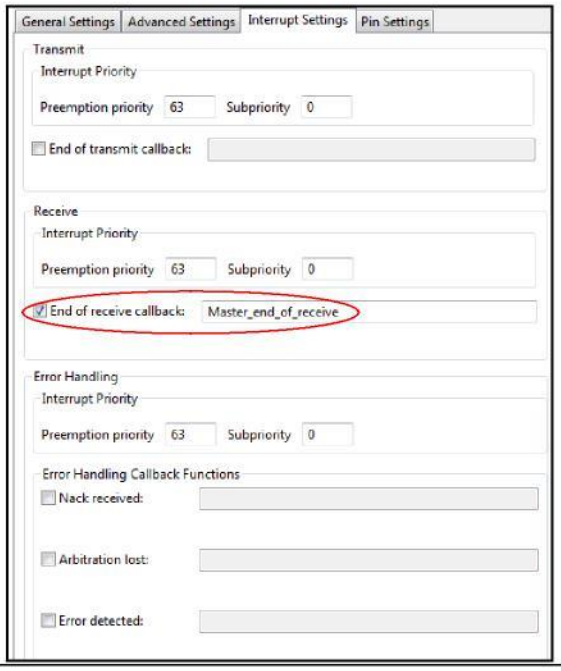
Views: APP Dependency Tree and APP Dependency



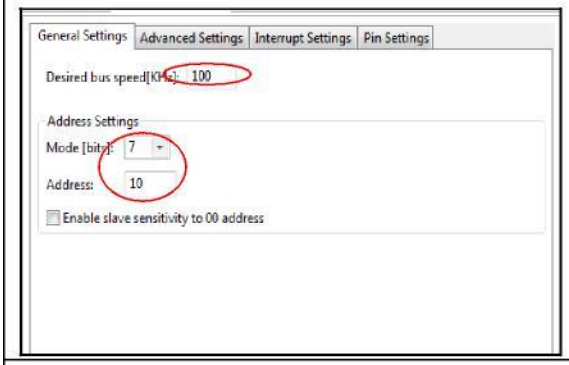


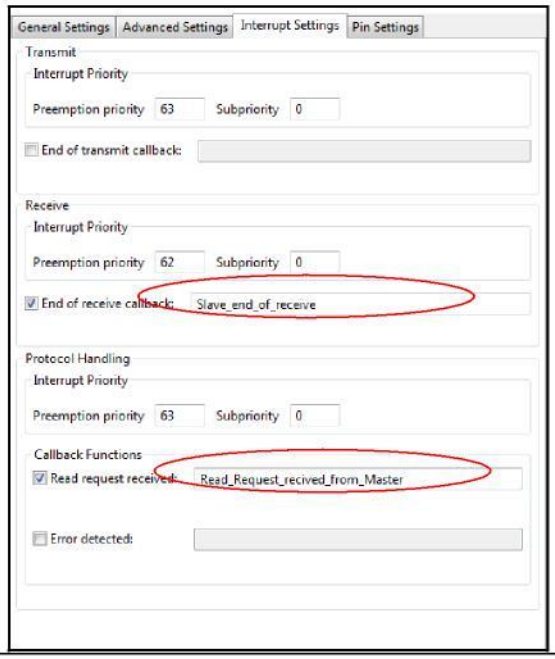
I2C_MASTER:



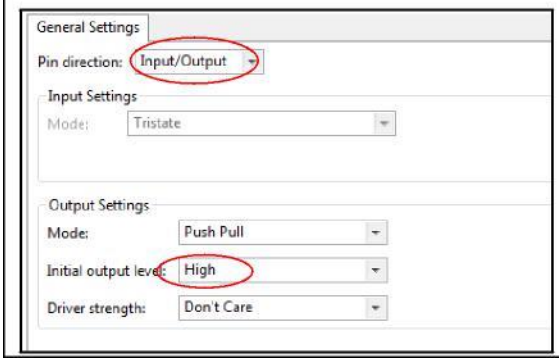


I2C_SLAVE:





DIGITAL_IO:



3. Use the  "Manual Pin Allocator" found in the toolbar, configure the pins for the I2C_MASTER, DIGITAL_IO and I2C_SLAVE.

APP Instance Name	APP Pin Name	Pin Number (Port)
◢ DIGITAL_IO_0		
	pin	#12 (P3.9)
◢ I2C_MASTER_0		
	SCL	#58 (P5.8)
	SDA	#60 (P2.14)
◢ I2C_SLAVE_0		
	SCL	#7 (P3.0)
	SDA	#8 (P3.13)

4. Generate the code for the configurations made and change main.c accordingly.
5. Build and download to the microcontroller.

HOW TO TEST:

Connect the cables to the selected pins. Download and run the demo using the CPU_45A-V3. If Pin P3_9 is not glowing the test is passed successfully.