EXAMPLE NAME: E_EEPROM_XMC1_EXAMPLE_XMC13

OVERVIEW: This example uses the E_EEPROM_XMC1 APP to emulate an EEPROM on XMC1000 devices. The code explores the 2 user defined data block defined in this APP and how the data switches from 1 bank to another bank when the blocks are written.

DESCRIPTION:

- E_EEPROM_XMC1 APP is used to reserve the flash space (256 bytes) for EEPROM emulation. 2 user blocks of 12 (USER_BLOCK1) and 32 bytes (USER_BLOCK2) each are defined.
- DIGITAL_IO APP is used to display the LED status ("toggling" when successful; "not on" when failed).
- SYSTIMER APP is used to generate a period SW timer of 0.5 seconds interval. It toggles the LED if write and read is successful else LED is turned off.
- DIGITAL_IO APP is used for LED toggling.
- Main program erases the emulated flash space at initialisation (this could be done once). Multiple writes to USER_BLOCKs are performed until the current data is required to be written to the next flash bank (i.e. garbage collection).

REQUIRMENTS:

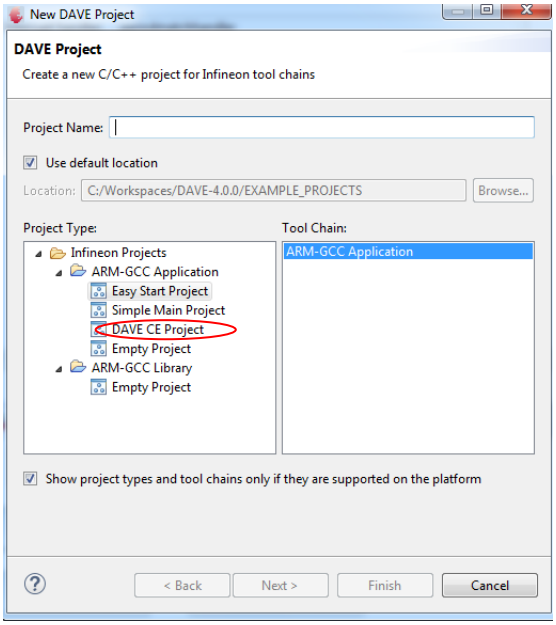
Boards Required: XMC1300 Boot Kit (Order Nr: KIT_XMC13_BOOT_001)

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.

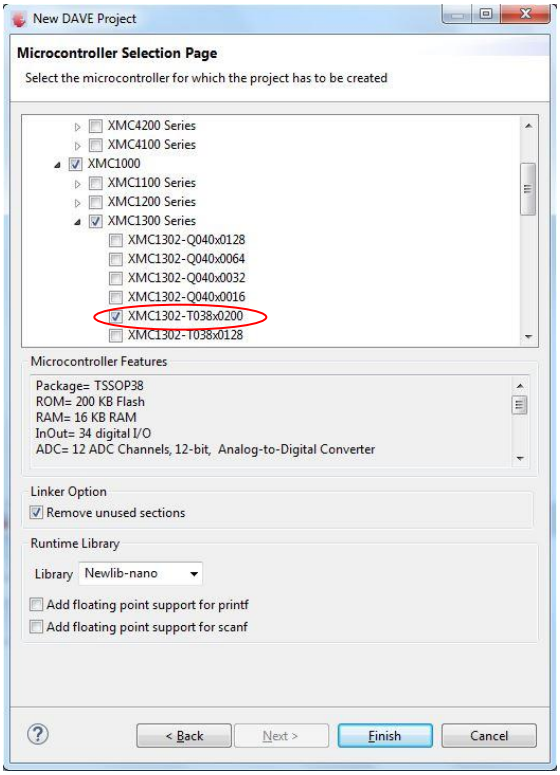
Enter Project Name

Select "Project Type ➔ DAVE CE Project"



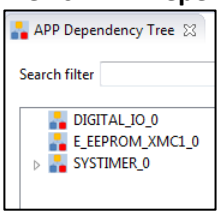
Select Microcontroller

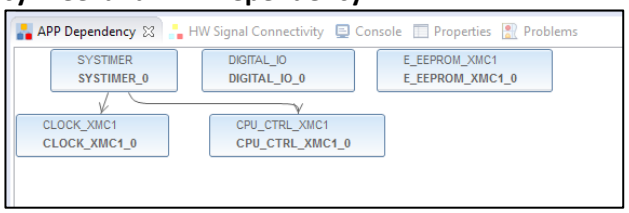
➔XMC1300 Series ➔ XMC1302-T038X0200



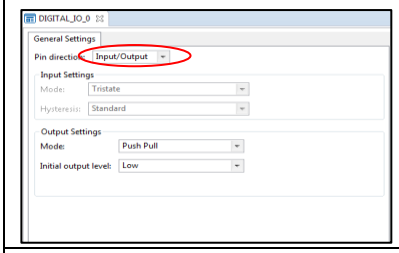
2. Use the  "Add New APP" in the toolbar to add APPs listed. Configure the APP instances with the following configurations.

Views: APP Dependency Tree and APP Dependency



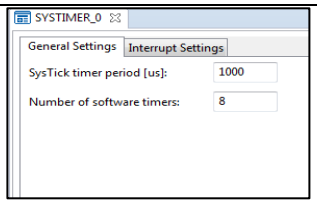


DIGITAL_IO_0:

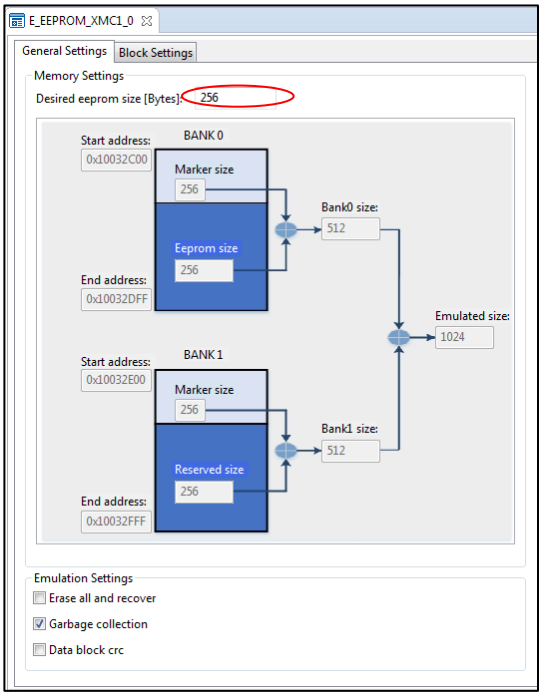


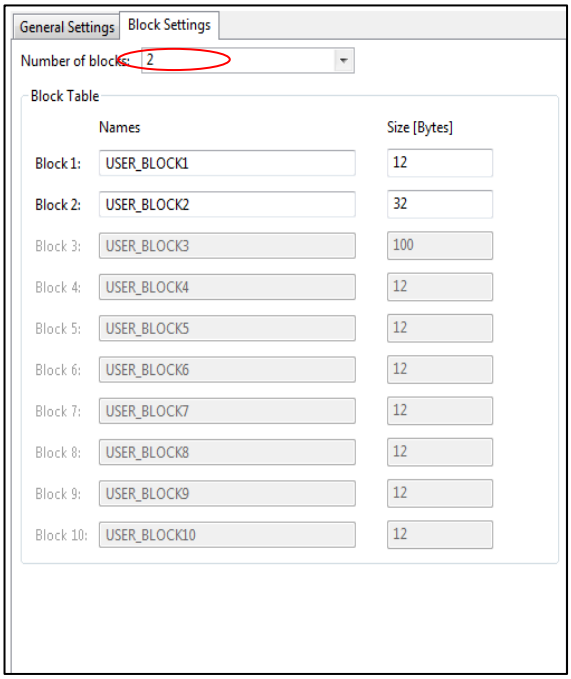
SYSTIMER_0:

⇨ No change to tab; Default settings taken.



E_EEPROM_XMC1_0:





3. Use the  "Manual Pin Allocator" found in the toolbar, configure the output pin for the LED.

App Instance Name	Resource	Port-Pin	Pin Number
◢ DIGITAL_IO_0			
	pin	(P0.0)	#17

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

HOW TO TEST:

Download and run the demo in the uC.

OBSERVATIONS:

- LED toggles only on successful completion write, read verification process.
- Analysis can be done by putting breakpoints at different locations in "main.c". For example (Breakpoints after Write / Read API Calls)

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

Select the devices with same flash size while migrating to XMC1200 / XMC1100