**EXAMPLE NAME:** LED_LAMP_1RGB_EXAMPLE_XMC12

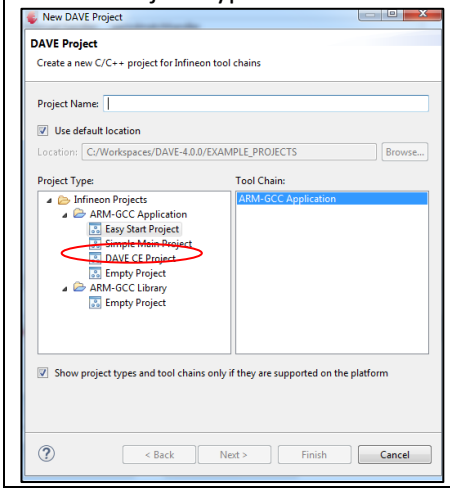
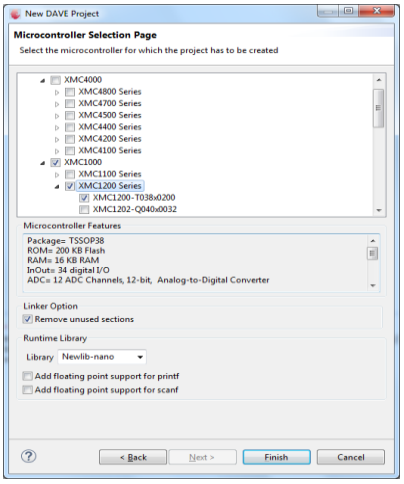
**OVERVIEW:** This example demonstrates how use the LED_LAMP APP to control a 3-channel RGB lamp.

**DESCRIPTION:**
- LED_LAMP APP drives an RGB lamp using 3 PDM_BCCU APP and a DIM_BCCU APP.
- SYSTIMER APP provides a periodic 1s interrupt for changing lamp color and dim level.
- DIGITAL_IO APPs initialize output pins to unused LED channels.

**REQUIREMENTS:**
**Boards Required: XMC1200 CPU Board (Order Nr: KIT_XMC12_BOOT_001), Color LED Card (Part of the LED Lighting Application Kit, Order Nr: KIT_XMC1X_AK_LED_001)**

**HOW TO CREATE THE PROJECT:**

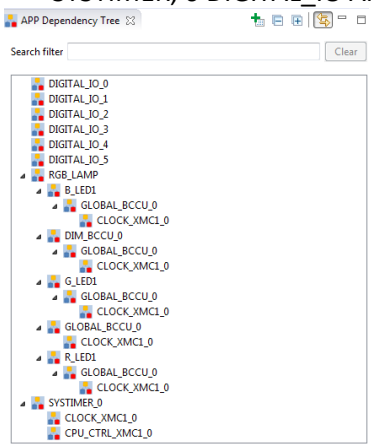
1. Open the DAVE CE and use  "Add IDE New Project Wizard" on the toolbar to add a new DAVE Project.

| Enter Project Name<br>Select "Project Type ➔ DAVE CE Project" | Select Microcontroller<br>➔XMC1200 Series ➔ XMC1200-T038x0200 |
|---|---|
|  |  |

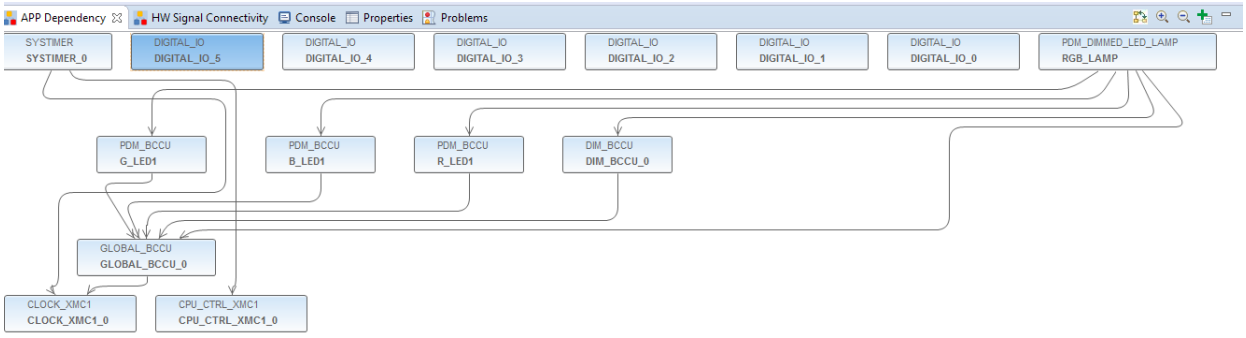




2. Use the  "Add New App" in the toolbar to add 1 instance of PDM_DIMMED_LED_LAMP , SYSTIMER, 6 DIGITAL_IO APPs.

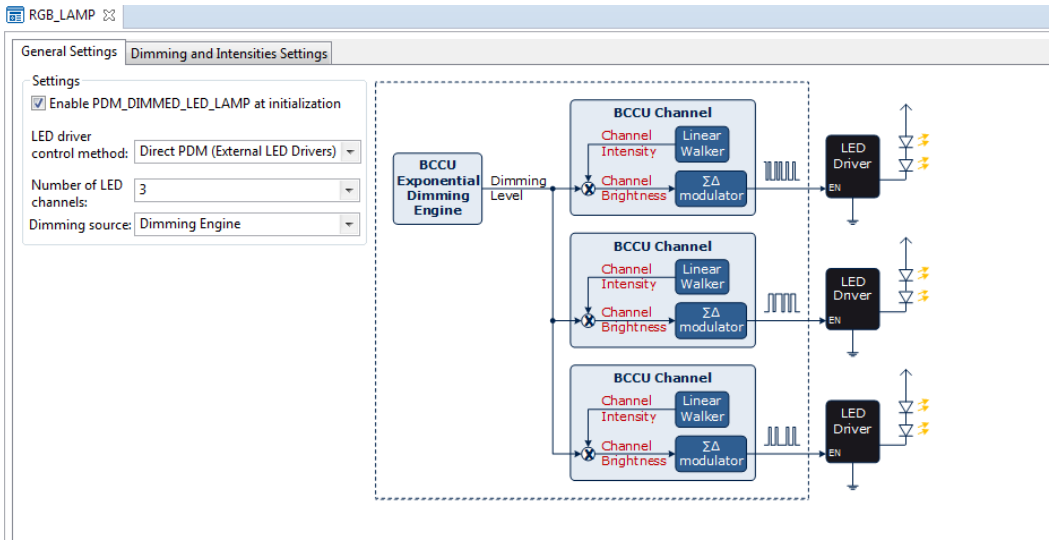


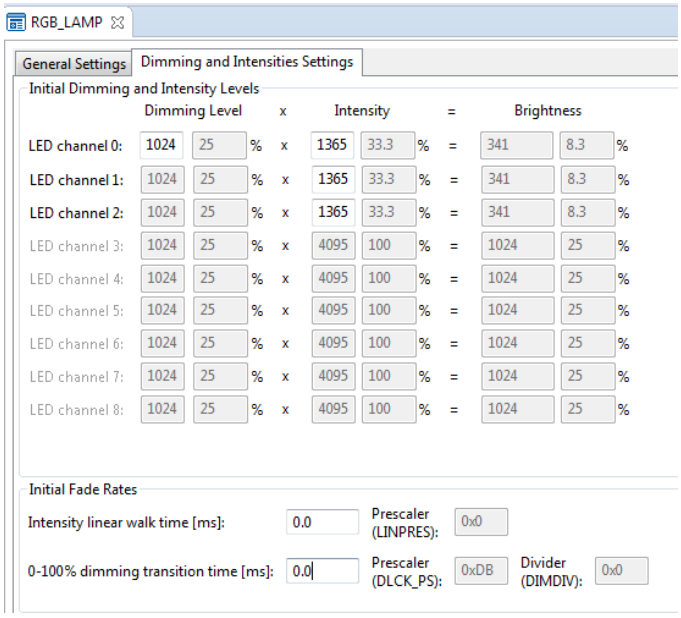

3. Rename the apps as shown in the APP Dependency View:



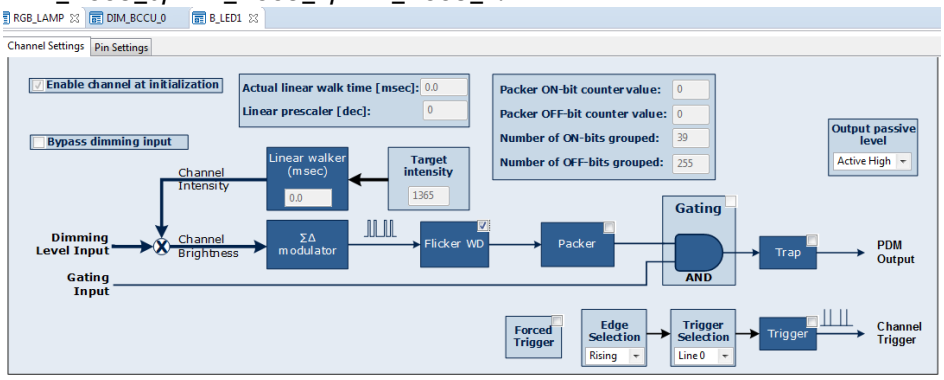

4. Configure the App instances with the following configurations:

PDM_DIMMED_LED_LAMP:

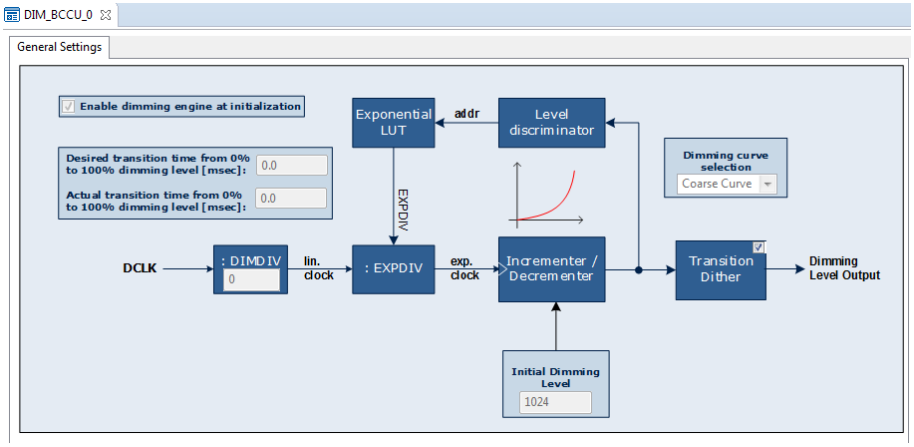


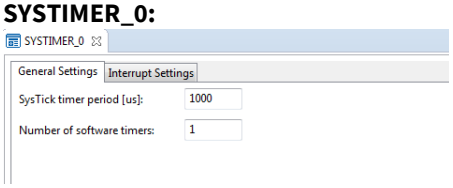
**PDM_BCCU_0/PDM_BCCU_1/PDM_BCCU_2:**



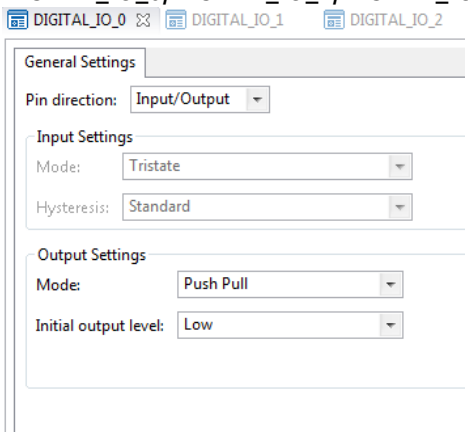

DIMM_BCCU_0:



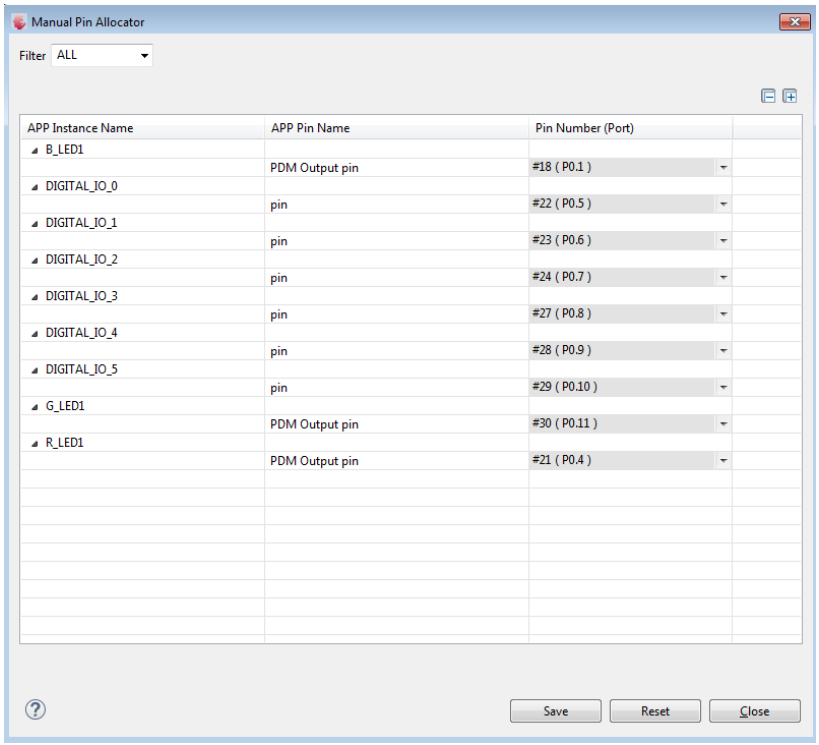

**SYSTIMER_0:**




**DIGITAL_IO_0/DIGITAL_IO_1/DIGITAL_IO_2/DIGITAL_IO_3/DIGITAL_IO_4/DIGITAL_IO_5:**



5. Use the "Manual Pin Allocator"  found in the toolbar, configure the output pins for the channels of the RGB LED and the unused LEDs.




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

**HOW TO TEST:**

Download and run the demo in the uC.

**OBSERVATIONS:**

- Lamp color slowly changes to red
- Lamp color slowly changes to green
- Lamp color slowly changes to blue
- Lamp color slowly changes to white
- Lamp slowly dims down to 0%
- Lamp slowly dims up to 25%
- Sequence repeats itself.