ARM Development Primer

Learning to Drive the ATSAME54P20A

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DesignNews

Presented by:

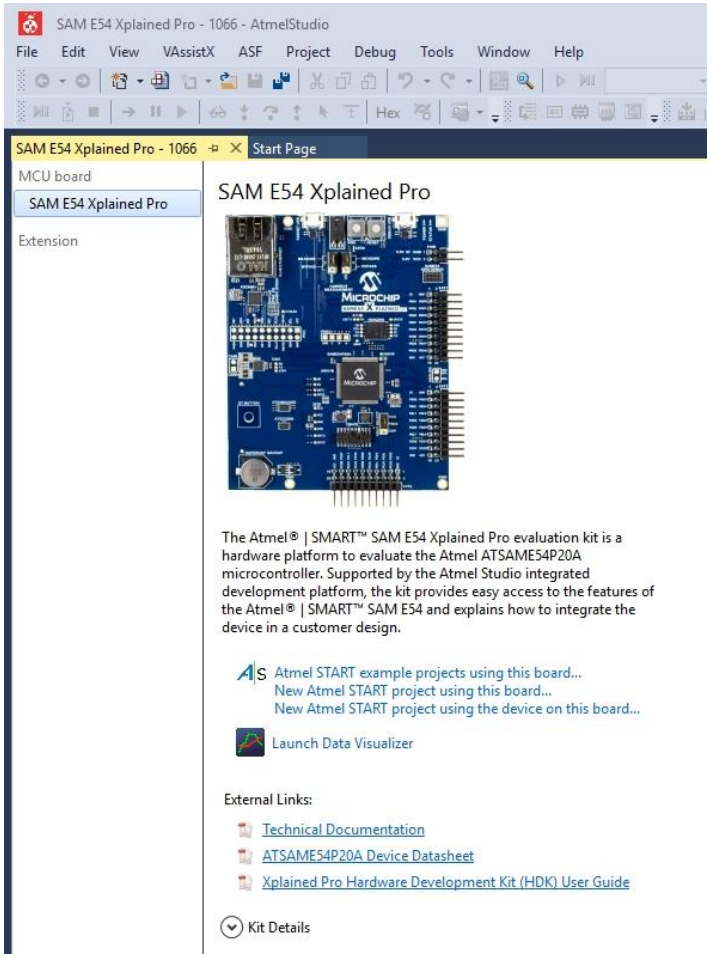
CEC CONTINUING EDUCATION CENTER

Digi-Key ELECTRONICS

ARM Development Primer

AGENDA

- Crawling Before We Walk
- USART the ATMEL START Way
- Day 4's Done



ARM Development Primer

Crawling Before We Walk – First Program

Getting started

To get started you can either create a new project from scratch or open an existing example. In both cases you can configure your software components and device settings such as clocks and pin layout. When you are done, you can export your project and open it using your favourite IDE for further development.

For more information on how to use Atmel START, read the Getting Started guide or watch our video tutorials .

ARM Development Primer

Crawling Before We Walk – First Program

Atmel | START

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CREATE NEW PROJECT

Select device or board before creating a new project. You can filter devices and boards by what software you need and also with hardware requirements such as memory sizes.

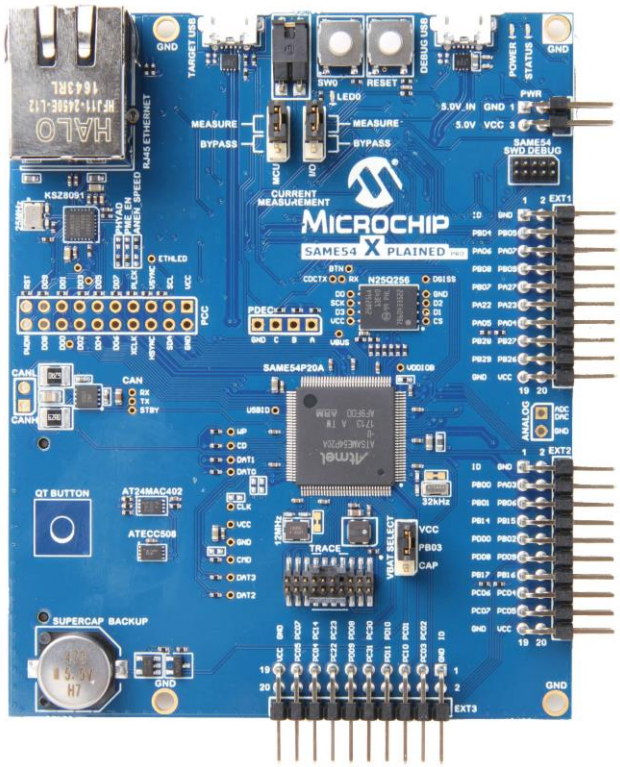
FILTERS

HARDWARE

SEARCH FOR SOFTWARE

Find software...

MIDDLEWARE



RESULTS

Filter on device... | Show all | Show only boards | Show only devices

Name	Architecture	Package	Pins	Flash	SRAM
ATtiny817 Xplained Mini					
XMEGA A1U Xplained Pro[1]					
SAM B11 Xplained Pro					
SAMC21 interface with ATSAMBLDCHV-STK					
SAM C21 Xplained Pro					
SAM C21N Xplained Pro					
SAM D10 Xplained Mini					
SAM D11 Xplained Pro					
SAM D20 Xplained Pro					
SAMD21E16L interface with ATSAMBLDCHV-STK					
SAM W25 Xplained Pro					
SAMD21J18A interface with ATSAMBLDCHV-STK					
SAM D21 Xplained Pro					
SAM DA1 Xplained Pro					
SAM L21 Xplained Pro					
SAM L22 Xplained Pro					
SAM R21 Xplained Pro					
SAM R30 Xplained Pro					
SAM E54 Xplained Pro					
SAM G53 Xplained Pro					
SAM G55 Xplained Pro					
SAM E70 Xplained					
SAM V71 Xplained Ultra					

27 of 875 boards and devices

[1] Driver code in Beta

CREATE NEW PROJECT

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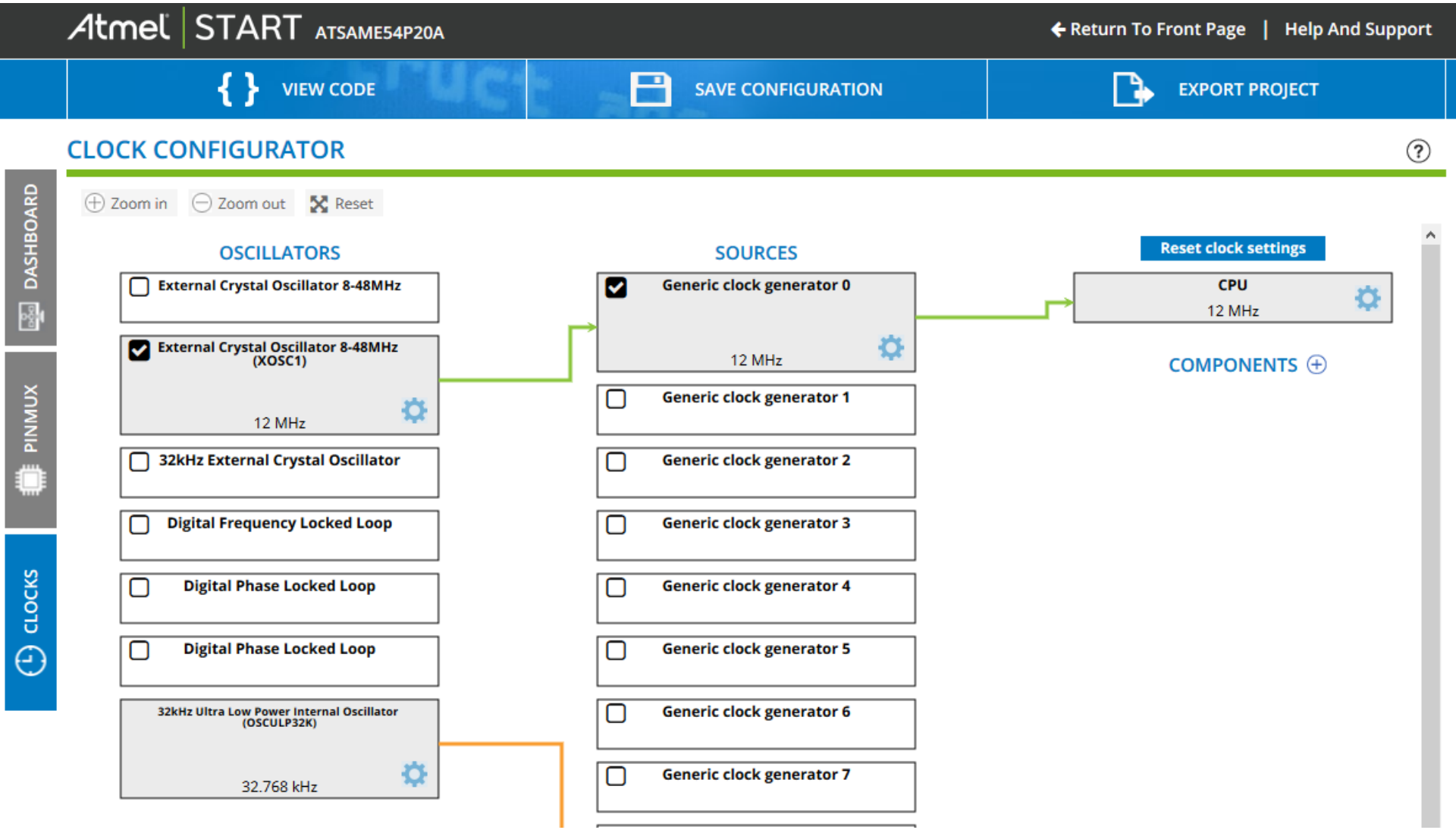

Crawling Before We Walk – First Program

5.3.3 LED

There is one yellow LED available on the SAM E54 Xplained Pro board that can be turned ON and OFF. The LED can be activated by driving the connected I/O line to GND.

Table 5-15. LED Connection

SAM E54 pin	Function	Shared functionality
PC18	Yellow LED0	PDEC and EDBG GPIO2

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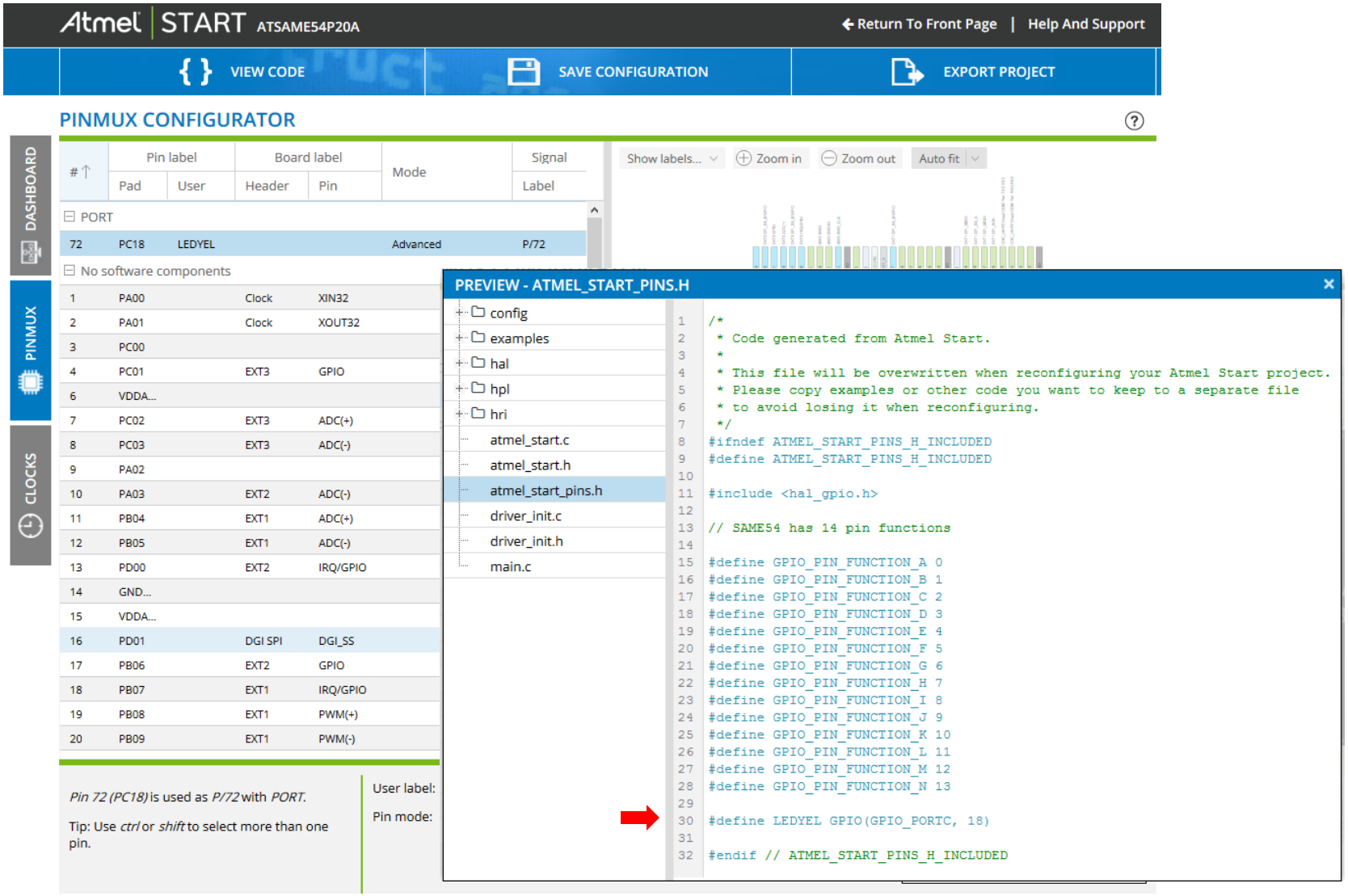

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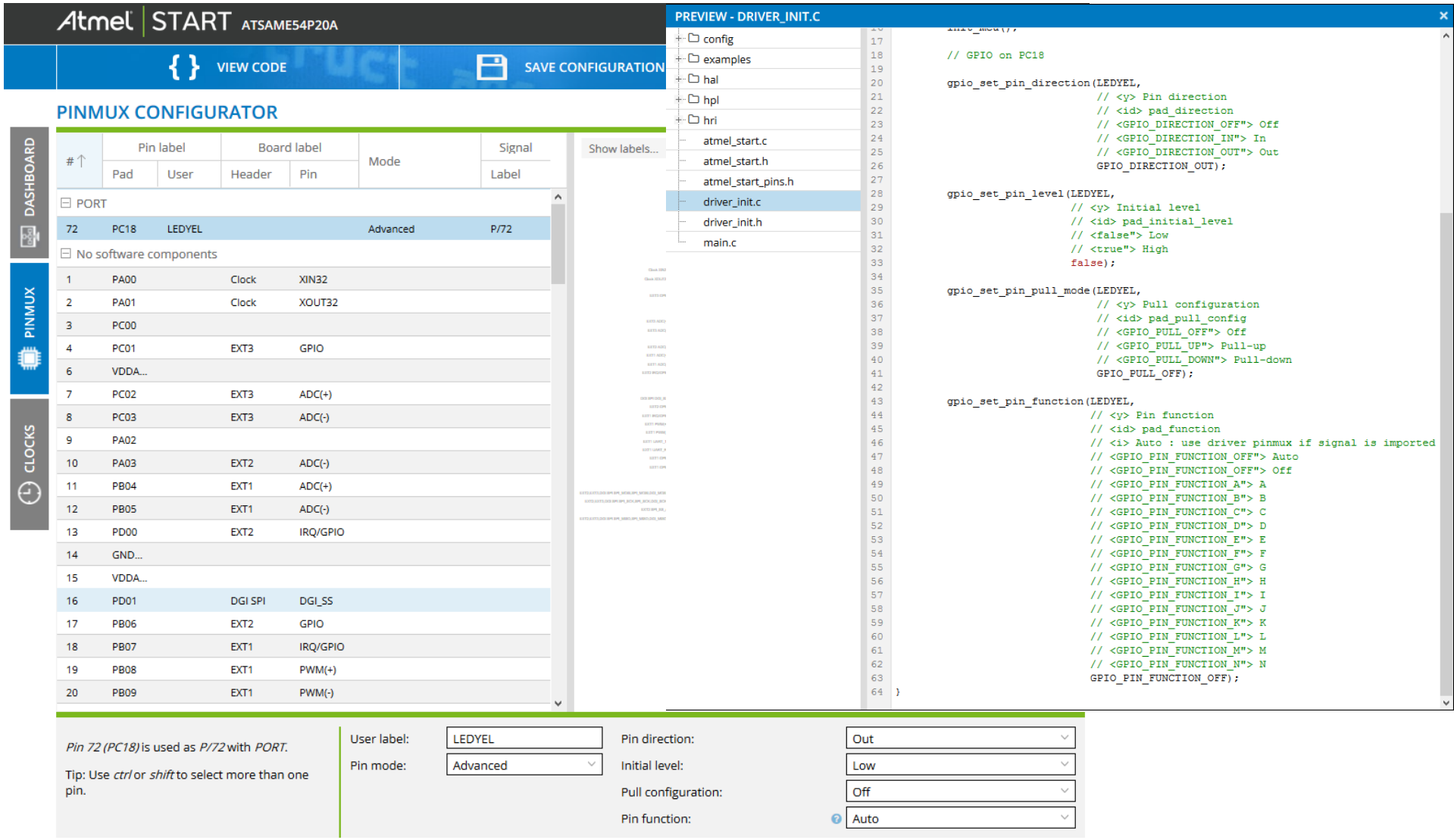

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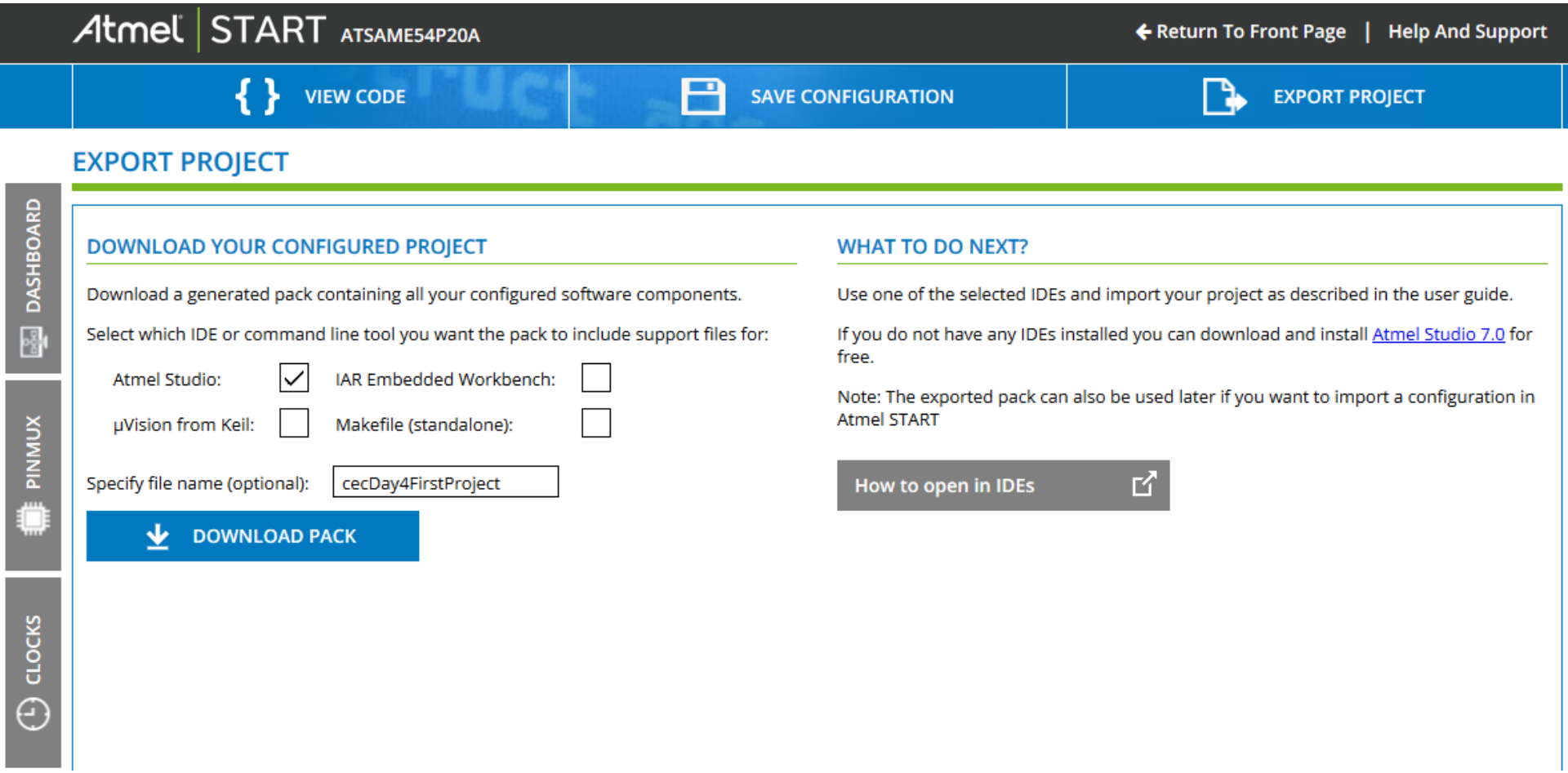

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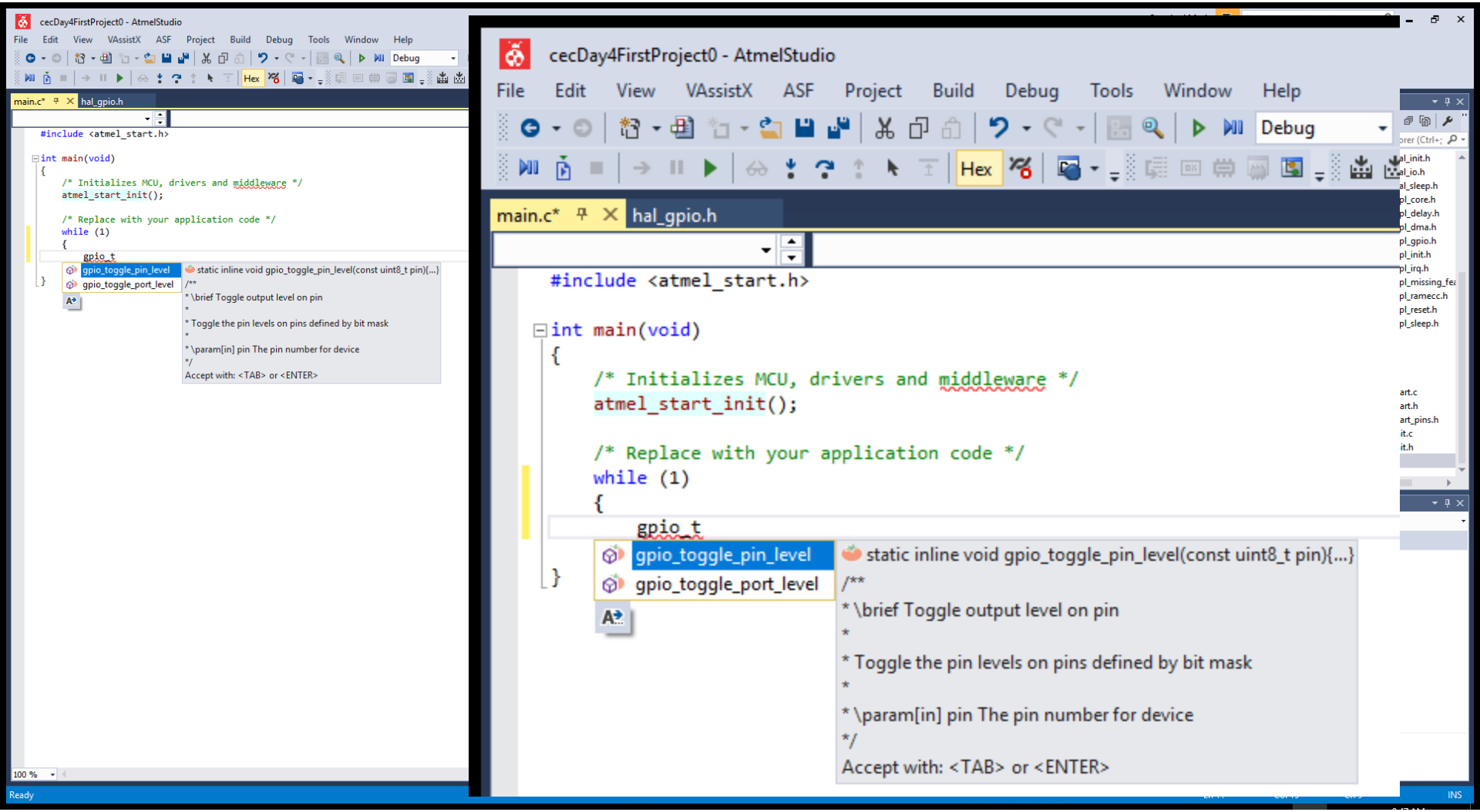

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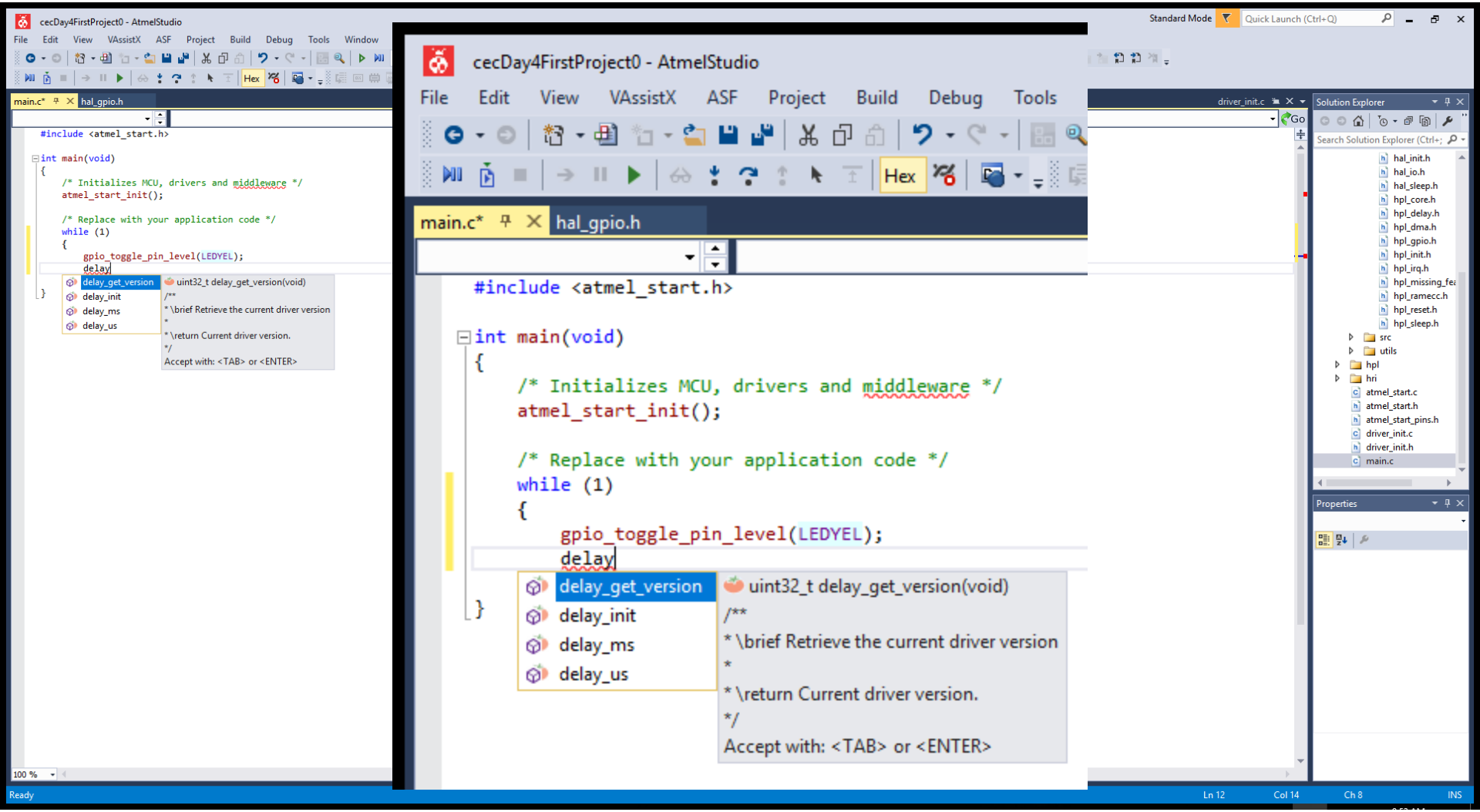

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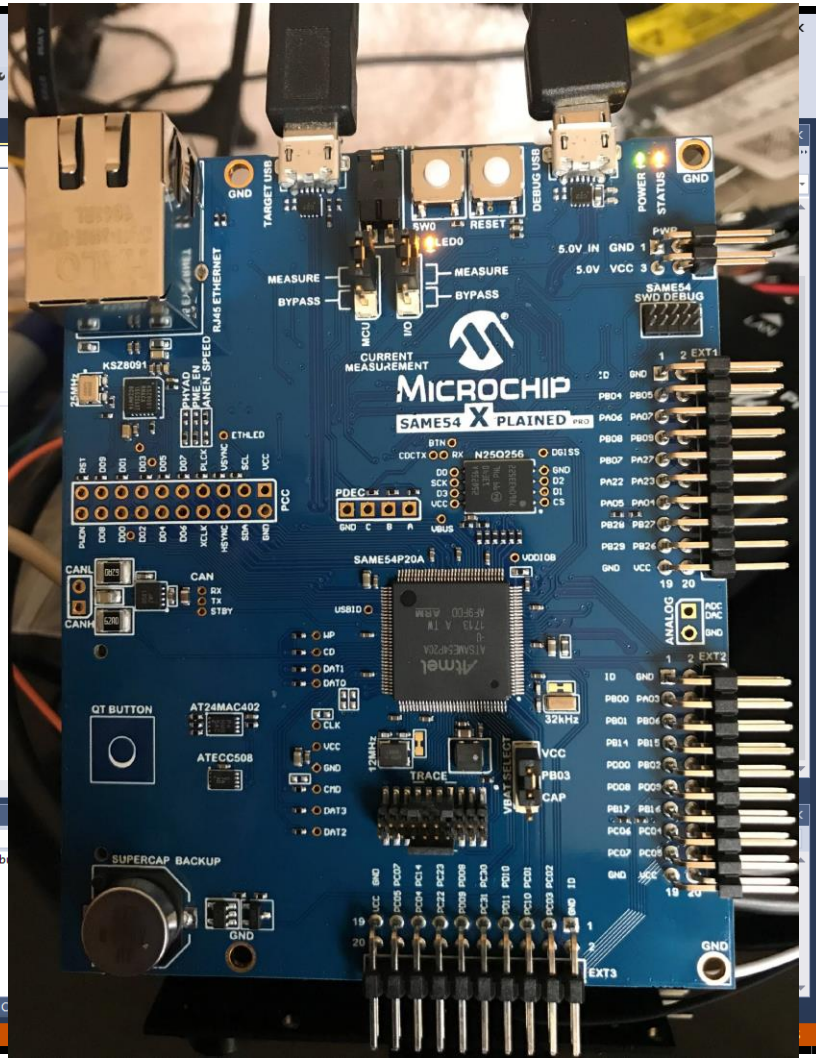
Crawling Before We Walk – First Program

```
#include <atmel_start.h>

int main(void)
{
    /* Initializes MCU, drivers and middleware */
    atmel_start_init();

    /* Replace with your application code */
    while (1)
    {
        gpio_toggle_pin_level(LEDYEL);
        delay_ms(100);
    }
}
```



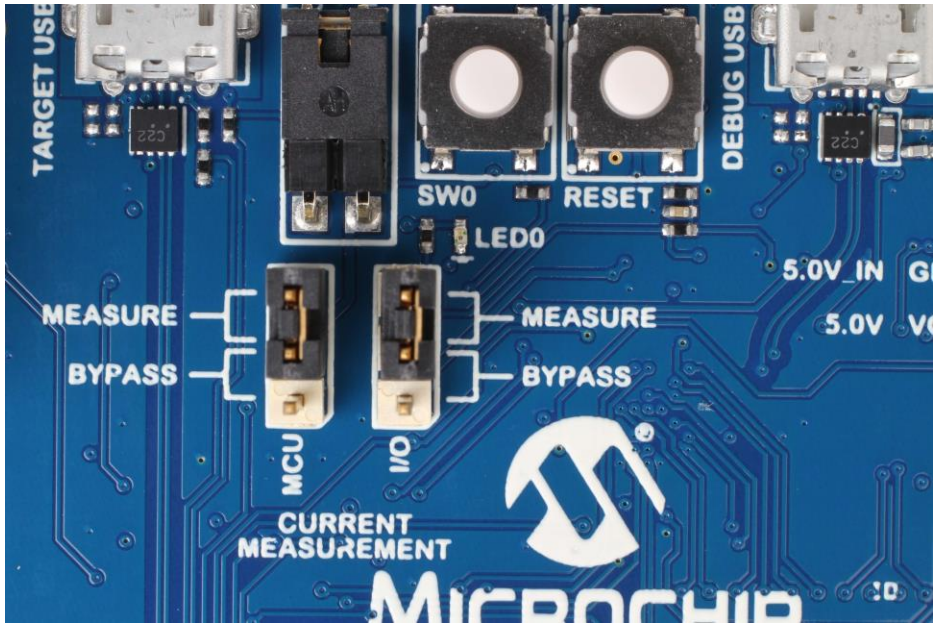
USART the ATMEL START Way

5.4.2 Virtual COM Port

The Embedded Debugger acts as a Virtual Com Port gateway by using one of the ATSAME54P20A UARTs. For further information on how to use the Virtual COM port, see Embedded Debugger.

Table 5-25. Virtual COM Port Connections

SAM E54 pin	Function	Shared functionality
PB24	SERCOM2 PAD[1] UART RXD (SAM E54 RX line)	-
PB25	SERCOM2 PAD[0] UART TXD (SAM E54 TX line)	-



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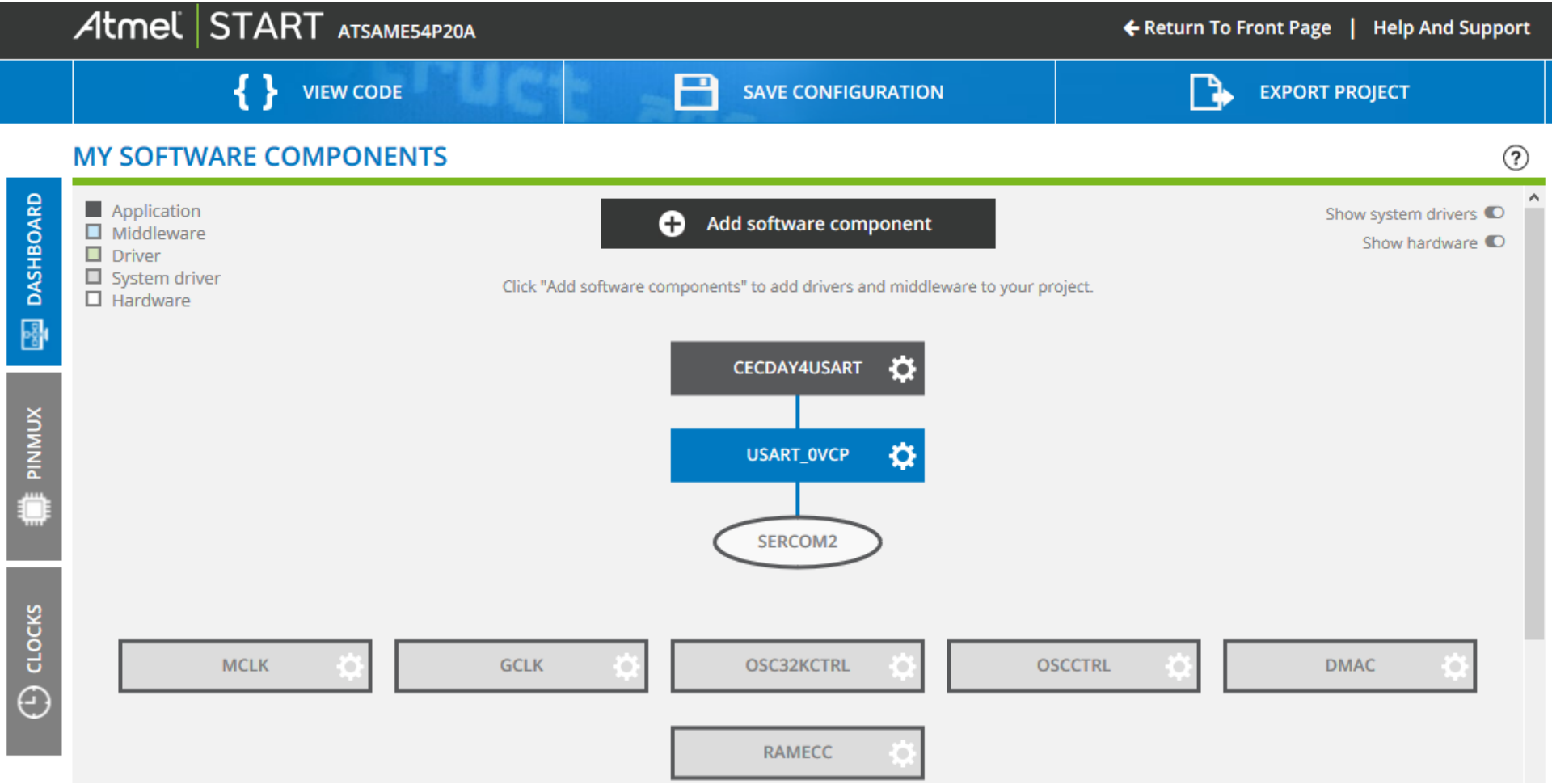

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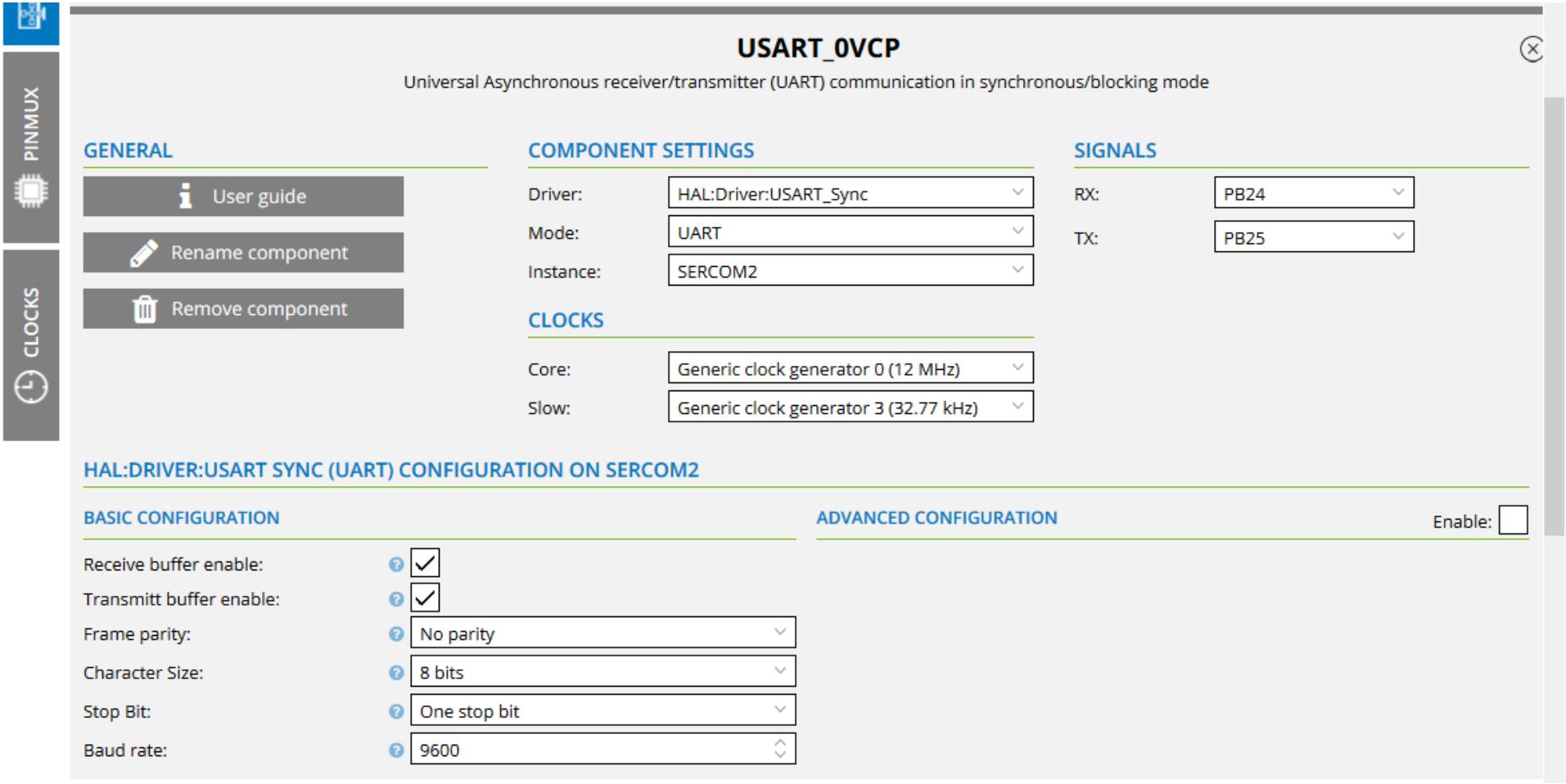

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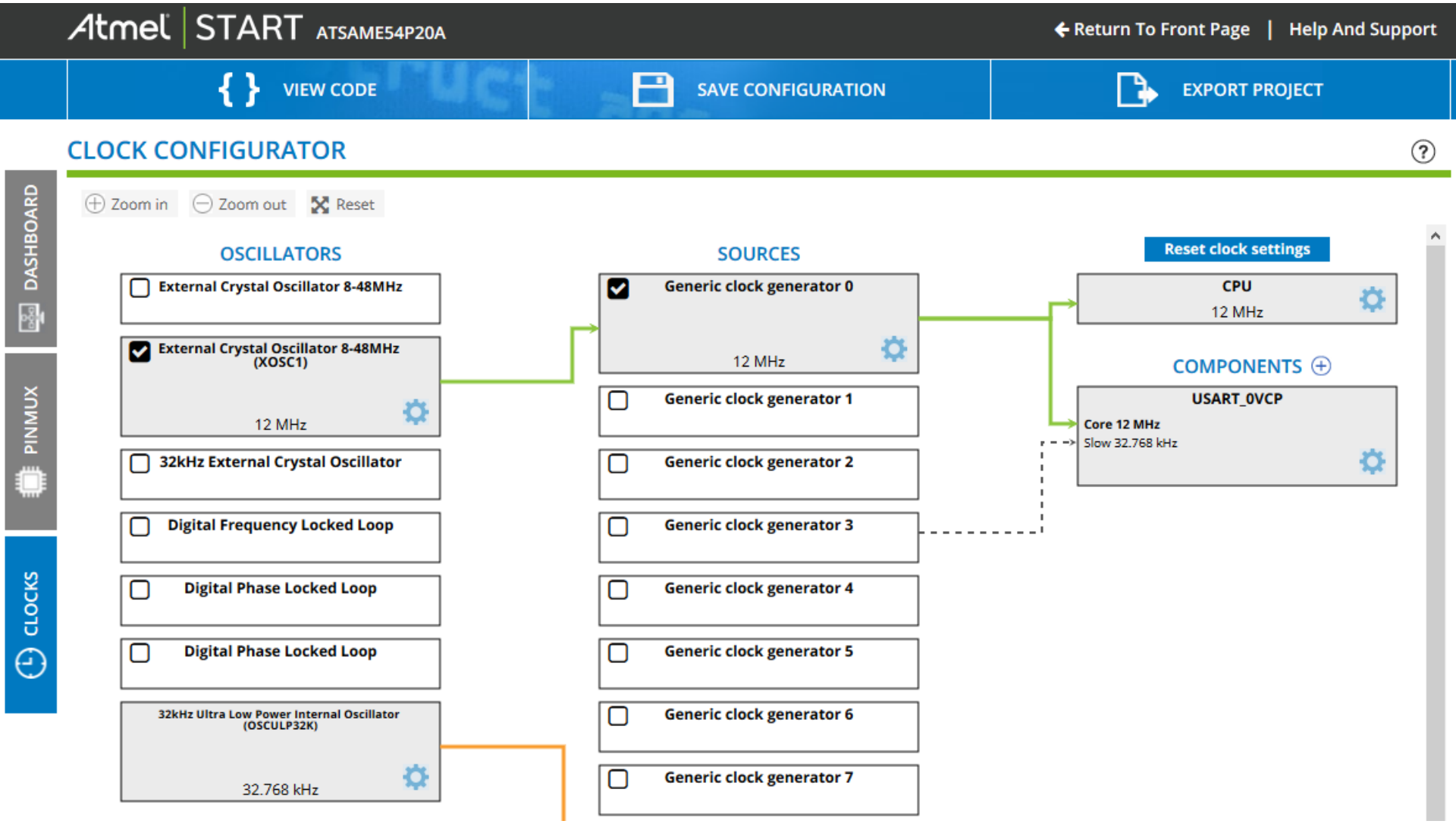

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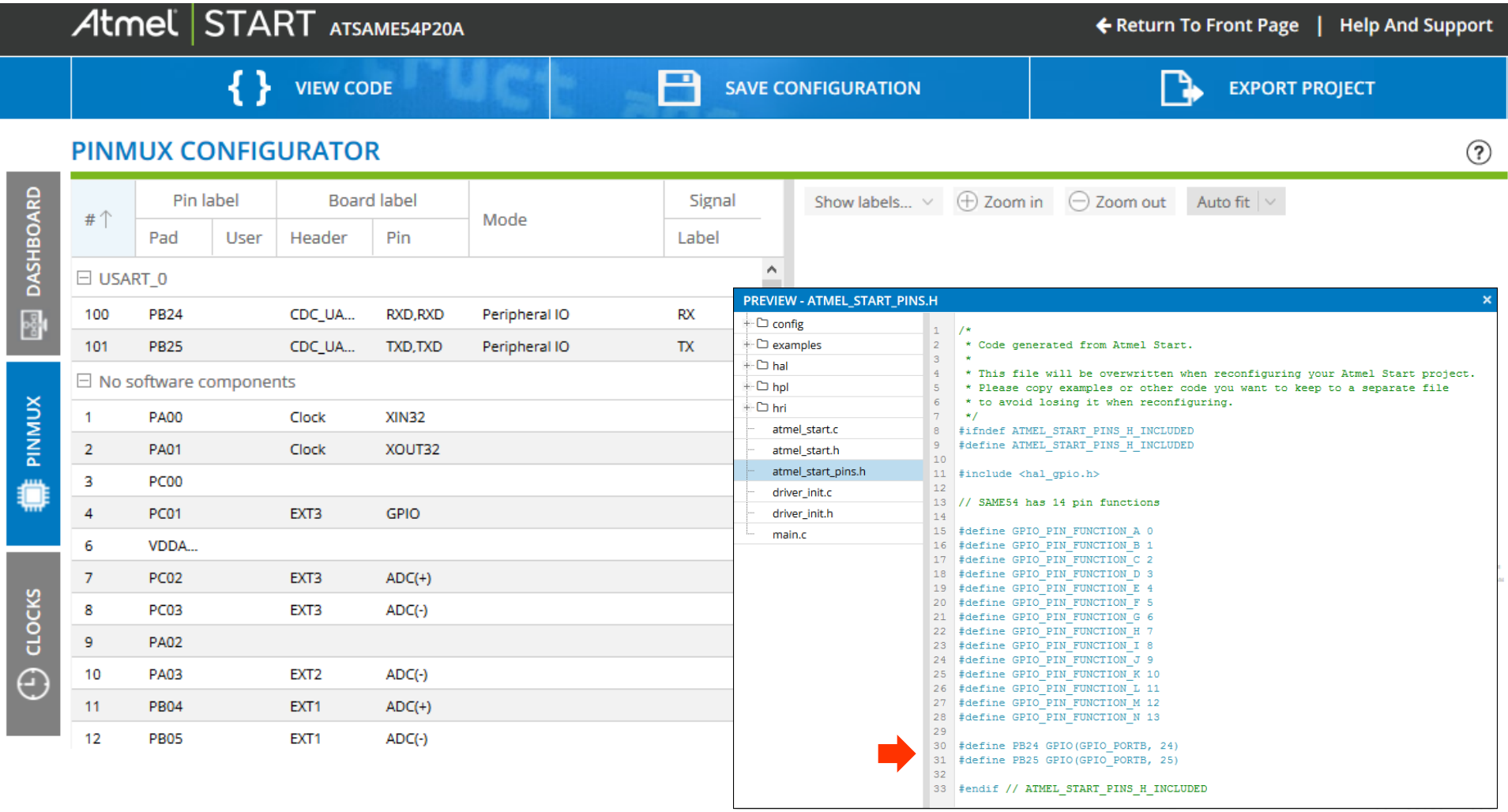

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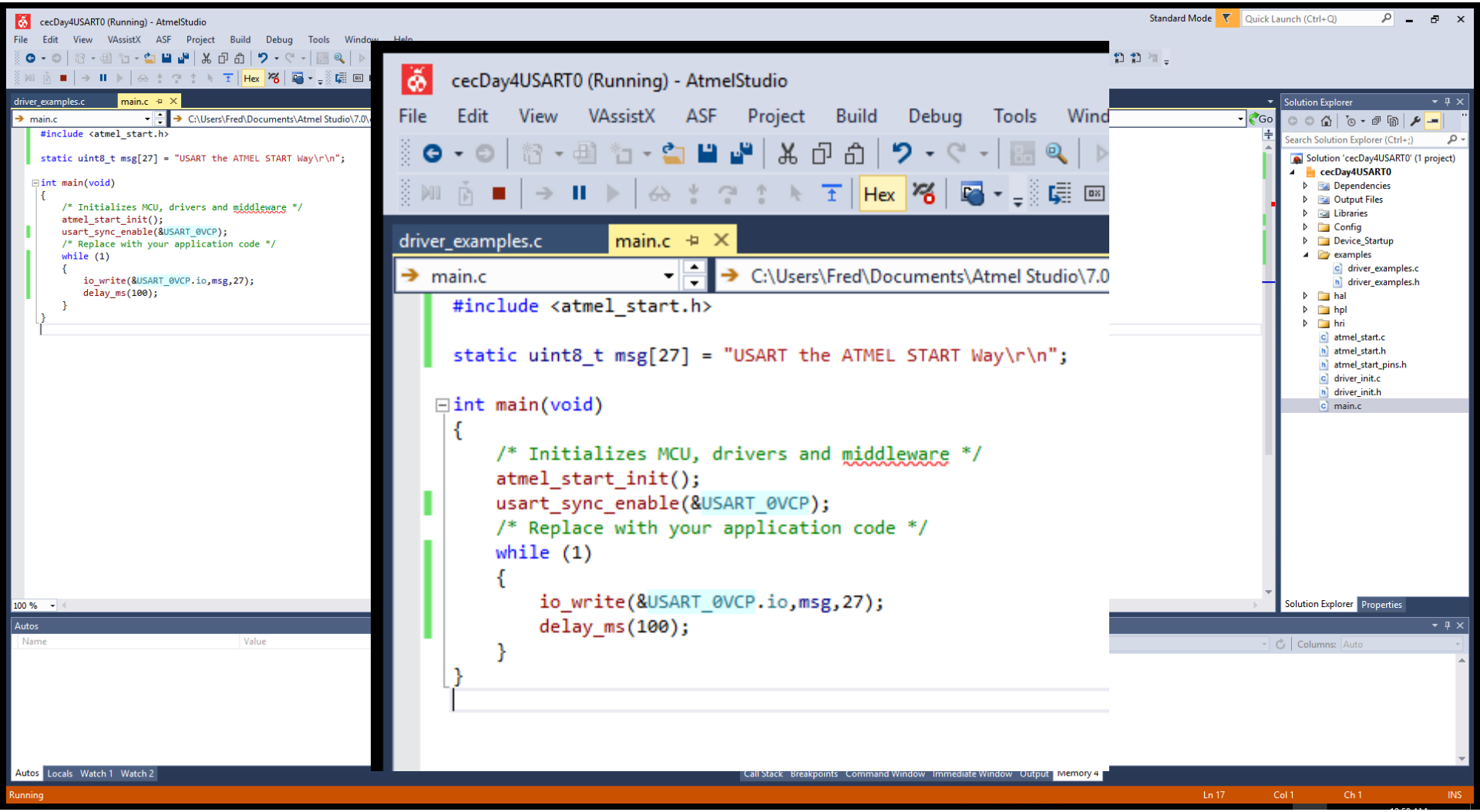

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Day 4's Done