

Project title: LED Lighting Control



Ciobanu Andrei-Florin

Rotaru Elena-Raluca

Obreja Razvan

ciobanu.andrei22@gmail.com

ralucarotaru15@gmail.com

obrejarazvan@gmail.com

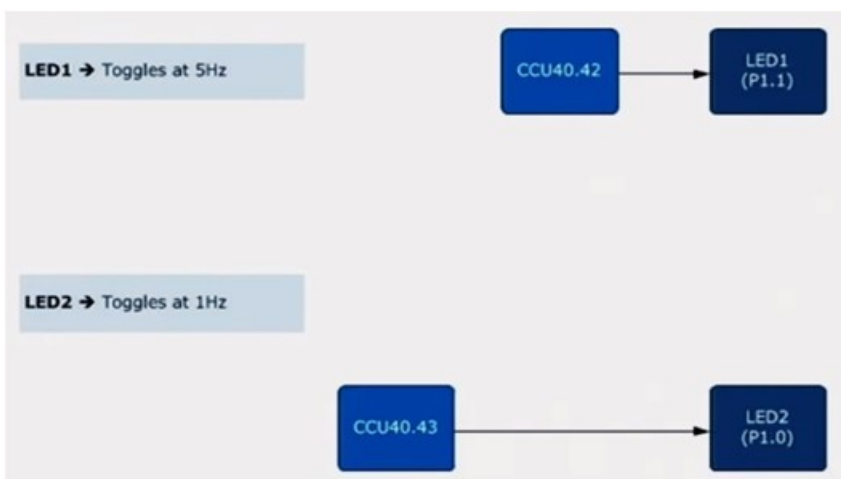
2. Abstract:

Using XMC4500 Relax Kit the application is meant to control the speed of LED toggling using the buttons on the board.

3. Introduction, project aims and objectives:

The XMC4500 Relax Kit-V1 and the XMC4500 Relax Lite Kit-V1 are designed to evaluate the capabilities of the XMC4500 Microcontroller and the powerful, free of charge tool chain DAVE™. The XMC4500 Relax Kit extends the feature set with an Ethernet-enabled communication option, e.g. to run an embedded web server. You can store your own HTML web pages on a microSD Card or control the XMC4500 via the web browser on your PC. The XMC4500 Relax Lite Kit-V1 support the web server application, because the components for the Ethernet are assembled. Both boards are marked with “XMC4500 Relax/Relax Lite Kit-V1”.

In this application we wanted to implement a system which controls the speed of LED toggling using the buttons on the board, writing code on the XMC4500 Relax Kit microcontroller. LED1 toggles at 5 Hz and LED2 toggles at 1 Hz. When BUTTON1 is pressed, LED1 stops toggling. Each time button 2 is pressed, LED2 toggling speed increases by 1 Hz. When toggling speed increases to 10 Hz, LED1 toggling will be restarted.



4. System overview

P1.1 is connected to LED1

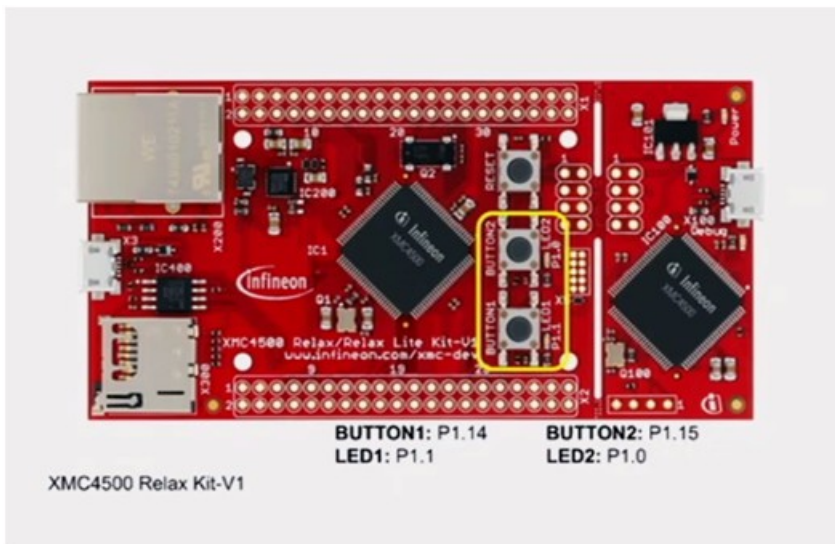
P1.0 is connected to LED2

P1.14 is connected to BUTTON1

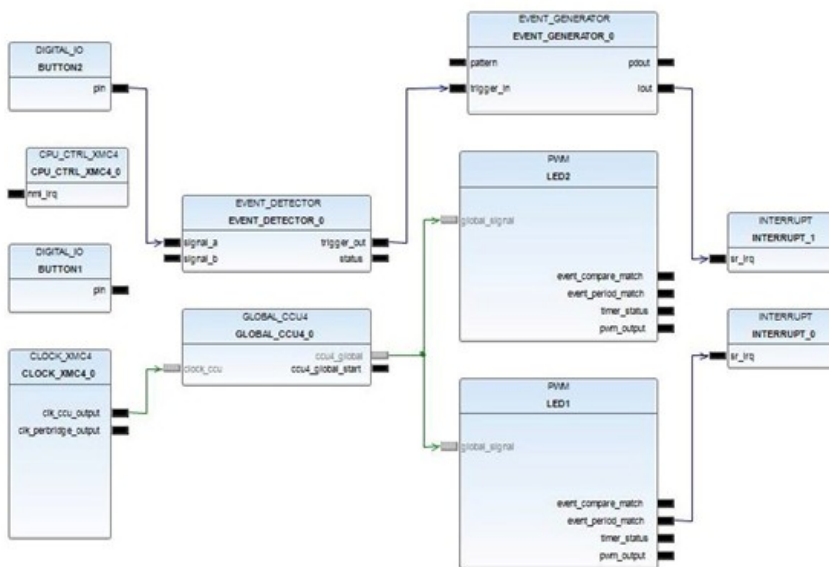
P1.15 is connected to BUTTON 2

DAVE was developed by Infineon Technologies. Therefore, the automatic code generator supports only Infineon microcontrollers. The user also has to get used to the concept of the Eclipse IDE. The generated code can be also used on other (often non free) development environments from Keil, Tasking and so on.

Latest releases of DAVE include all required parts to develop code, compile and debug on the target for free (based on the ARM gcc tool suite). Together with several low-cost development boards one can get involved in microcontroller design very easy. This makes Infineon microcontroller products also more usable to small companies and to home-use / DIY projects - similar to established products of Atmel (AVR, SAM) and Microchip (PIC, PIC32) to name a few.

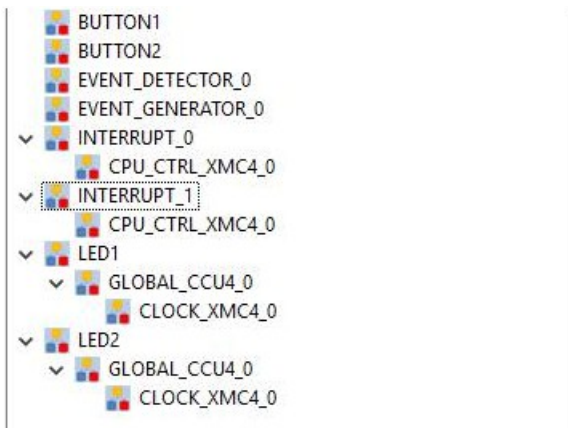


5. Schematics and components:



6. Software

As a software platform, I used DAVE 4. The apps we used are shown below.



7. Project results & applications :

The project we developed works properly and it controls the speed of LED toggling using the buttons on the board.

8. References:

1. www.embedac.ro,
2. www.infineon.com,