

Chapter 12

Development Tools for Microcontroller Applications

Lesson 03

Debugger and Simulator

Debugger

- Traces through the codes and find the bug (error) causing code (s) in the source file(s)
- Direct examination of stack, IO ports, Registers and RAM, step by step or from one breakpoint to next

Debugger Commands

Start/Stop debugging

Enable/Disable Trace

Performance Analyser

Memory Map

Show next

Code coverage

Debug functions editor

Go

Breakpoints

Step and step-over

Step-out

ESC

Next breakpoint

Next step

Performance Analyser

```
graph TD; A[Performance Analyser] --> B[Code already traced by distinct color]; A --> C[Find execution intervals of a code block or address range]; A --> D[Display the intervals in performance window];
```

Code already traced by distinct color

Find execution intervals of a code block or address range

Display the intervals in performance window

Debugger/Simulator

```
graph TD; A[Debugger/Simulator] --> B[High Speed Emulation of MCU CPU and devices]; A --> C[Target Debugger]; A --> D[Target monitor debugger]; C --- E[Emulator];
```

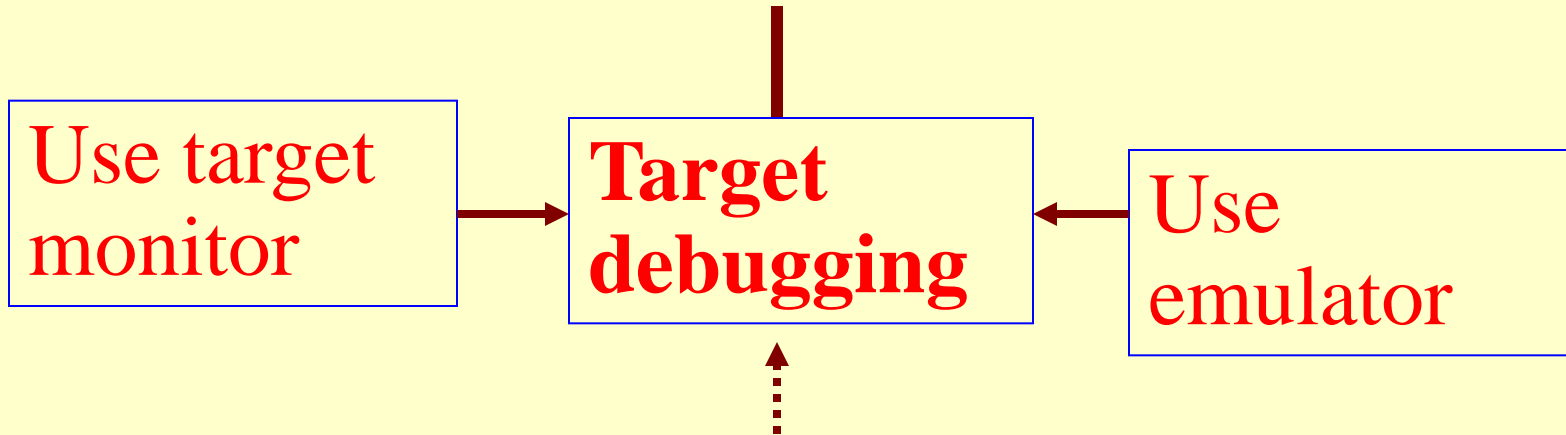
High Speed
Emulation
of MCU
CPU and
devices

Target
Debugger

Emulator

Target
monitor
debugger

Simulation



Code tested for the MCU/ system by simulating it on host computer used for code development

Summary

We learnt

Debugger and Simulator

- Tracing errors source
- Performance Analysis
- Simulating functions
- Simulating performance

End of Lesson 03 on

Debugger and Simulator