

Target – Simulator
Setup

Target (Default) Setup (1..)

C:\Trainings\Trainings_Managed\Embedded_SW_Entwicklung\OOP-EC++_FOR\04_Uebungen\Clock_Observer_Extended_Keil_MCBSTM32_C++11\Solution\Clock_Observer\Clock_Observer

File Edit View Project Flash Debug Peripherals Tools SVCS Window Help

evMeasure

MCBSTM32

Project: Clock_Observer

- MCBSTM32
 - Clock_System
 - Clock
 - Clock_Source
 - Hardware_BSP_MCBSTM32
 - Hardware_CPP-Drivers_STM32F103R
 - Common
 - CMSIS
 - Compiler
 - Device

Options for Target 'MCBSTM32'

Device Target Output Listing User C/C++ (AC6) Asm Linker **Debug** Utilities

☐ Use Simulator [with restrictions](#) Settings ☒ Use: ULINK2/ME Cortex Debugger Settings

☐ Limit Speed to Real-Time

☒ Load Application at Startup ☒ Run to main() Initialization File: ... Edit...

Restore Debug Session Settings

- ☒ Breakpoints ☒ Toolbox
- ☒ Watch Windows & Performance Analyzer
- ☒ Memory Display ☒ System Viewer

CPU DLL: SARMCM3.DLL Parameter: Dialog DLL: DARMSTM.DLL Parameter: -pSTM32F103RB

☐ Warn if outdated Executable is loaded

Driver DLL: SARMCM3.DLL Parameter: Dialog DLL: TARMSTM.DLL Parameter: -pSTM32F103RB

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Manage Component Viewer Description Files ...

OK Cancel Defaults Help

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 - MCBSTM32.h
 - MCBSTM32.c
 - KS0066U_LCD.h
 - KS0066U_LCD.c
 - Support.hpp**
 - Support.cpp
 - Serial.c
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Support.hpp

```

1  #ifndef __SUPPORT_HPP__
2  #define __SUPPORT_HPP__
3
4  #include "TypeDefs.h"
5
6  #define TARGET 1 //0 == Simulator, 1 == MCBSTM32 Evaluation Board
7
8  namespace pkgHardware
9  {
10     void initHardware(void);
11
12     void showValue(const sint8_t *t, sint8_t n);
13     void showValue(const sint8_t *t, sint32_t n);
14     void showValue(const sint8_t *t, uint32_t n);
15     void showValue(const sint8_t *t, sint64_t n);
16     void showValue(const sint8_t *t, float64_t n);
17     void showValue(const sint8_t *t, bool n);
18     void showValue(const sint8_t *t);
19     void showValue(const sint8_t *t1, const sint8_t *t2);
20
21     sint8_t getCommand(void);
22 }
23
24 #endif
25

```

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OK Cancel Defaults Help

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Support.hpp

```

1  #ifndef __SUPPORT_HPP__
2  #define __SUPPORT_HPP__
3
4  #include "TypeDefs.h"
5
6  #define TARGET 0 //0 == Simulator, 1 == MCBSTM32 Evaluation Board
7
8  namespace pkgHardware
9  {
10     void initHardware(void);
11
12     void showValue(const sint8_t *t, sint8_t n);
13     void showValue(const sint8_t *t, sint32_t n);
14     void showValue(const sint8_t *t, uint32_t n);
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18     void showValue(const sint8_t *t);
19     void showValue(const sint8_t *t1, const sint8_t *t2);
20
21     sint8_t getCommand(void);
22 }
23
24 #endif
25
    
```

The screenshot shows the Keil uVision IDE interface. The 'View' menu is open, highlighting the 'Serial Windows' option. The main window displays assembly code for a project named 'Clock_Observer'. The UART #1 serial window is also open, showing the output of the simulation.

Assembly Code:

```

080026AC B108 CBZ    r0,0x080026B2
080026AE 2000 MOVS   r0,#0x00
080026B0 BD1C POP    {r2-r4,pc}
080026B2 4620 MOV    r0,r4
080026B4 BD1C POP    {r2-r4,pc}
080026B6 4770 BX     lr
080026B8 4675 MOV    r5,lr
080026BA F7FEFC5 BL.W   _user_libspace (0x08001088)
080026BE 46AE MOV    lr,r5
080026C0 0005 MOVS   r5,r0
  
```

UART #1 Output:

```

Clock Observer
A: Update and show objClock
B: Reset and show objClock
C: Update and show objAnalogClock
D: Update and show objDigitalClock
E: Update and show objAnalogDigitalClock
F: Exception limit exceeded
G: Exception bad alloc
H: Attach clocks to Clock_Array
I: Detach clocks from Clock_Array
J: Notify clocks of Clock_Array
K: Attach clocks to Clock_Container
L: Detach clocks from Clock_Container
M: Notify clocks of Clock_Container
N: Tick clocks of Clock_Array and Container_Array
O: Tick 1s timer on / off
::>
  
```