```
/****************************** C HEADER FILE *******************************
**
**  Project:    UART1 Driver for CL2bm1 (UART1A)
**  Filename:   Uart1_dr1.h
**  Date:       21.02.2018
**
**  Modified    R.Oliva  - Include interrupt routines in C separate file (test)
**              UART1A with selectable BaudRate INIT
**
*******************************************************************************
**
**
*******************************************************************************
**
**  VERSION HISTORY:
**  ----------------
**  initial Version:    1.0
**  Date:       21.02.2018
**  Revised by: R.Oliva
**  Description:
**      -
**      - Newer versions see top.
**
**
**
*******************************************************************************/

#ifndef UART1_INCLUDED
#define UART1_INCLUDED

/*******************************************************************************
**
**    MODULES USED
**
*******************************************************************************/
#include <stdio.h>

/*******************************************************************************
**
**    DEFINITIONS AND MACROS
**
*******************************************************************************/

#ifndef RXB8
#define RXB8 1
#endif

#ifndef TXB8
#define TXB8 0
#endif

#ifndef UPE
#define UPE 2
#endif

#ifndef DOR
#define DOR 3
#endif

#ifndef FE
#define FE 4
#endif

#ifndef UDRE
#define UDRE 5
#endif

#ifndef RXC
#define RXC 7
#endif

#ifndef FRAMING_ERROR
#define FRAMING_ERROR (1<<FE)
#endif

#ifndef PARITY_ERROR
#define PARITY_ERROR (1<<UPE)
```

```
78    #endif
79
80    #ifndef DATA_OVERRUN
81    #define DATA_OVERRUN (1<<DOR)
82    #endif
83
84    #ifndef DATA_REGISTER_EMPTY
85    #define DATA_REGISTER_EMPTY (1<<UDRE)
86    #endif
87
88    #ifndef RX_COMPLETE
89    #define RX_COMPLETE (1<<RXC)
90    #endif
91
92    // USART1 Receiver buffer
93    // New Value 22.3.2012 - works at 38400baud
94    // #define RX_BUFFER_SIZE1 8
95    #define RX_BUFFER_SIZE1 96
96
97    // USART1 Transmitter buffer
98    // 22.3.2012 New Value
99    // #define TX_BUFFER_SIZE1 8
100   #define TX_BUFFER_SIZE1 24
101
102   // UART1A - Init Baud Rate param 21.2.2018
103   #define PBAUD_9600  0
104   #define PBAUD_19200 1
105   #define PBAUD_38400 2
106
107
108
109   /*****************************************************************************
110   **
111   **    EXPORTED VARIABLES
112   **    declared here, but defined in .c file for global access.. 30.01.2018
113   **
114   *****************************************************************************/
115
116   extern char rx_buffer1[RX_BUFFER_SIZE1];
117
118
119   #if RX_BUFFER_SIZE1 <= 256
120   extern unsigned char rx_wr_index1,rx_rd_index1,rx_counter1;
121   #else
122   extern unsigned int rx_wr_index1,rx_rd_index1,rx_counter1;
123   #endif
124
125   // This flag is set on USART1 Receiver buffer overflow
126   extern bit rx_buffer_overflow1;
127
128   extern char tx_buffer1[TX_BUFFER_SIZE1];
129
130   #if TX_BUFFER_SIZE1 <= 256
131   extern unsigned char tx_wr_index1,tx_rd_index1,tx_counter1;
132   #else
133   extern unsigned int tx_wr_index1,tx_rd_index1,tx_counter1;
134   #endif
135
136   /*****************************************************************************
137   **
138   **    EXPORTED FUNCTIONS
139   **    functions public to rest of program 30.01.2018
140   **
141   *****************************************************************************/
142
143   // Interrupt routines
144   interrupt [USART1_RXC] void usart1_rx_isr(void);
145   interrupt [USART1_TXC] void usart1_tx_isr(void);
146
147   // Alternate getchar1() defined with ISR Rx support
148   char getchar1(void);
149
150   // Alternate putchar1() defined with ISR Tx support
151   void putchar1(char c);
152
153   // USART1_Init modified (UART1A) for pbaud parameter 21.2.18
154   void USART1_Init(unsigned char pbaud);
```

File: C:\cvavr328\Work3\CL2\CL2_Drivers\UART1A\TST_MENU_PRJ\inc\Uart1

```
155
156   #endif
157   /*****************************************************************************
158   **
159   **    EOF
160   **
161   *****************************************************************************/
162
```