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How to use USART on the Atmel AT90USBKEY / AT90USB1287

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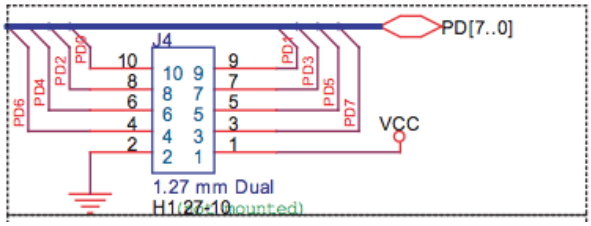
When programming the Atmel AT90USB1287 it is very helpful to have a UART connection for debugging purposes. To avoid reinventing the wheel, I will use Peter Fleury's uartlibrary. Additional documentation an sample code can be found here.

First, we will wire some standard jumpercables to the AT90USBKEY. According to the datasheet of the AT90USB1287 and the datasheet of the AT90USBKEY the pins are available at the connector J4, more specifically:

USART1 Transmit Pin = PD3 = AT90USBKEY -> J4 Pin 7 -> White
USART1 Receive Pin = PD2 = AT90USBKEY -> J4 Pin 8 -> Green
Ground = AT90USBKEY -> J4 Pin 2 -> Black



My UART to USB Cable has the following wiring:

RX -> Green
TX -> White
GND -> Black
VCC -> Red

Now its time for a little sample program:

```
#include &lt;avr/io.h&gt;
#include &lt;avr/interrupt.h&gt;
#include &lt;avr/pgmspace.h&gt;
#include &quot;uart.h&quot;
```

```
#ifndef F_CPU
   #define F_CPU 8000000UL
#endif

#define UART_BAUD_RATE 57600

int main(void)
{

   CLKPR = (1&amp;lt;&amp;lt;CLKPCE); // set CLKPR bit to change clock prescaler
   CLKPR = 0; // no clock prescaler

   uart_init( UART_BAUD_SELECT(UART_BAUD_RATE,F_CPU) );
   sei(); // enable interrupts for uart library

   uart_puts_P(&amp;quot;Hello World\r\n&amp;quot;);

   while(1);
```

Build it and flash it to your AT90USBKEY. Remember that you must bring your AT90USBKEY into DFU mode for programming with FLIP.

Now you can start a terminal:

```
screen /dev/tty.usbserial 57600
```

Now you can press the RST button to actually run the program on the microcontroller and should see a nice Hello World greeting.

Dieser Eintrag wurde veröffentlicht in **AVR** und verschlagwortet mit **AT90USB**, **AVR**, **UART** von **Julian Tatsch**. **Permanenter Link zum Eintrag [http://www.tatsch.it/at90usb-usart/]** .