

```

1 // C-File -----
2
3 #define F_CPU 1000000UL
4 #include <avr/io.h>
5 #include <util/delay.h>
6
7 void delays(uint16_t millis) {
8     uint16_t loop;
9     while ( millis ) {
10         _delay_ms(1);
11         millis--;
12     }
13 }
14
15 int main(void) {
16     DDRB |= 1<<PB0; /* set PB0 to output */
17     while(1) {
18         PORTB &= ~(1<<PB0); /* LED on */
19         delays(100);
20         PORTB |= 1<<PB0; /* LED off */
21         delays(900);
22     }
23     return 0;
24 }
25
26 // Makefile -----
27
28 CC=avr-gcc
29 CFLAGS=-g -Os -Wall -mcall-prologues -mmcu=atmega8
30 OBJ2HEX=avr-objcopy
31 UISP=avrdude
32 TARGET=blink
33
34 program: $(TARGET).hex
35     $(UISP) -c usbasp -p m8 -U flash:w:$(TARGET).hex:i
36
37 %.obj: %.o
38     $(CC) $(CFLAGS) $< -o $@
39
40 %.hex: %.obj
41     $(OBJ2HEX) -R .eeprom -O ihex $< $@
42
43 clean:
44     rm -f *.hex *.obj *.o
45
46 // dmesg -----
47
48 [ 8380.296084] usb 3-3.1: USB disconnect, device number 28
49 [ 8382.865016] usb 3-3.1: new low-speed USB device number 29 using ohci_hcd
50 [ 8382.975021] usb 3-3.1: New USB device found, idVendor=16c0, idProduct=05d
51 [ 8382.975035] usb 3-3.1: New USB device strings: Mfr=1, Product=2, SerialNu
52 [ 8382.975042] usb 3-3.1: Product: USBasp
53 [ 8382.975048] usb 3-3.1: Manufacturer: www.fischl.de
54
55 // hexfile -----
56
57 :1000000012C019C018C017C016C015C014C013C044
58 :1000100012C011C010C00FC00EC00DC00CC00BC06C
59 :10002000AC009C008C011241FBECFE5D4E0DEBF5E
60 :10003000CDBF0DD016C0E4CF07C0E3ECF9E0319797

```

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61 :10004000F1F700C0000001970097B9F70895B89A3A
62 :10005000C09884E690E0F0DFC09A84E893E0ECDF9B
63 :06006000F7CFF894FFCF7A
64 :00000001FF
65
66 // make aufrufen -----
67
68 root@hpfun:/home/unknown/Downloads/atmel/projekt1# make
69 avrdude -c usbasp -p m8 -U flash:w:blink.hex:i
70
71 avrdude: AVR device initialized and ready to accept instructions
72
73 Reading | ##### | 100% 0.01s
74
75 avrdude: Device signature = 0x1e9307
76 avrdude: NOTE: FLASH memory has been specified, an erase cycle will be performed
77 To disable this feature, specify the -D option.
78 avrdude: erasing chip
79 avrdude: reading input file "blink.hex"
80 avrdude: writing flash (102 bytes):
81
82 Writing | ##### | 100% 0.06s
83
84 avrdude: 102 bytes of flash written
85 avrdude: verifying flash memory against blink.hex:
86 avrdude: load data flash data from input file blink.hex:
87 avrdude: input file blink.hex contains 102 bytes
88 avrdude: reading on-chip flash data:
89
90 Reading | ##### | 100% 0.03s
91
92 avrdude: verifying ...
93 avrdude: 102 bytes of flash verified
94
95 avrdude: safemode: Fuses OK
96
97 avrdude done. Thank you.
98
```