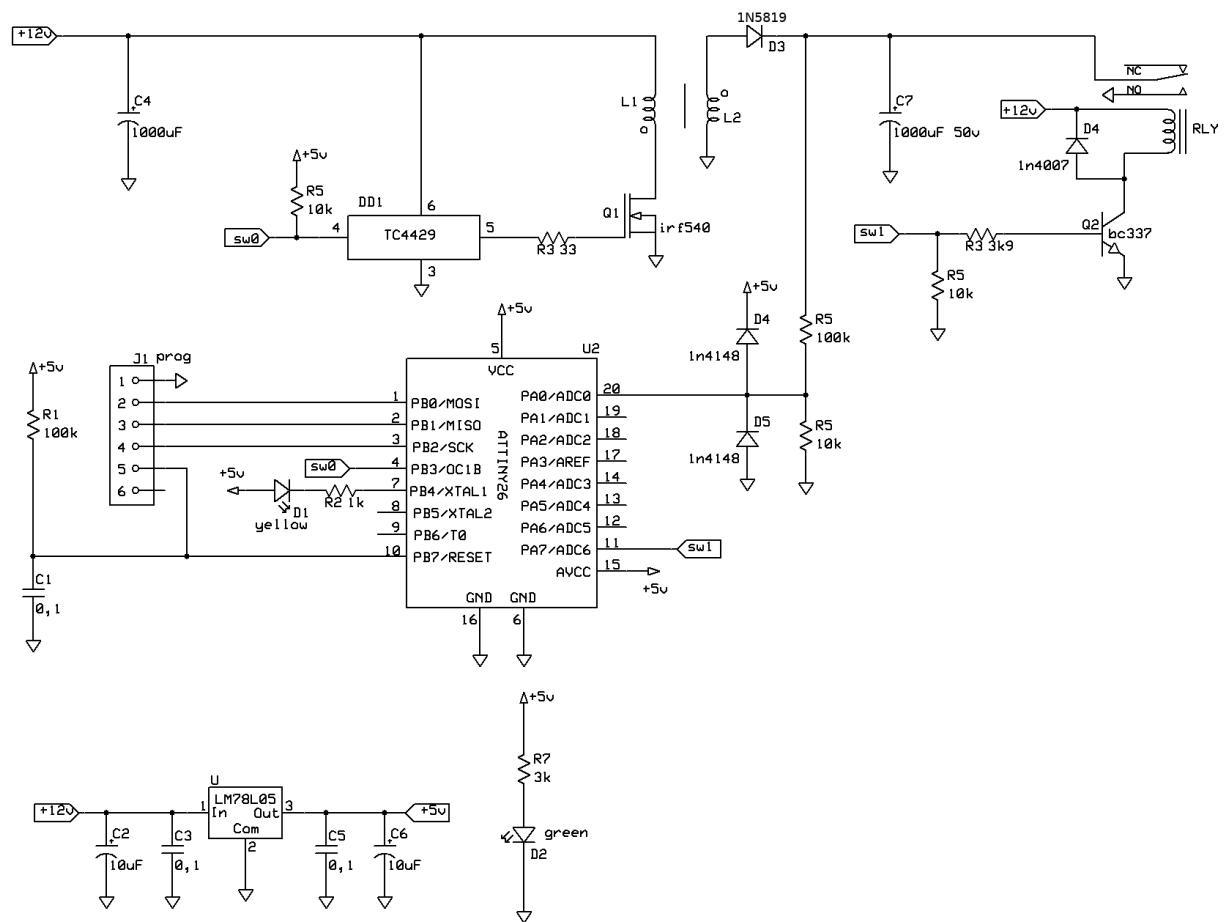
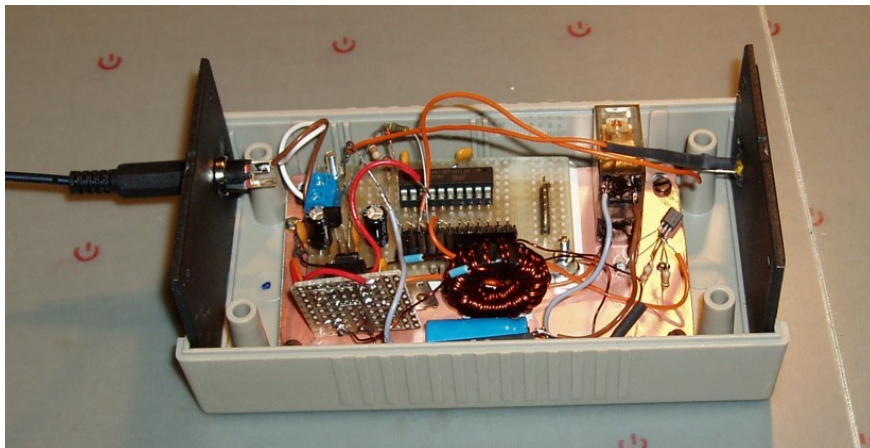


A grey box



pic. Grey box schematic



pic. Grey box construction

```

#define F_CPU 1000000UL

#include <inttypes.h>
#include <avr/io.h>
#include <avr/interrupt.h>
#include <avr/sleep.h>
#include <avr/eeprom.h>
#include <stdint.h>
#include <compat/ina90.h>
#include <compat/deprecated.h>
#include <util/delay.h>

#define LED 4 //pb4
#define LED0 sbi(PORTB,LED)
#define LED1 cbi(PORTB,LED)

#define PWM 3 //pb3
#define RELAY 7 //pa7

uint16_t seed;

void rand_delay()
{
    uint16_t w;
    seed = (seed * 31415 + 12345) % 1000;
    for(w=0; w < seed; w++) {
        _delay_ms(10);
    }
}

int main(void)
{
    DDRA = (1 << RELAY);
    PORTA = 0;

    DDRB = (1 << PWM) | (1 << LED);
    PORTB = (1 << PWM) | (1 << LED);

    ACSR = 0x44; //ACME,ACBG 1.18v
    ADCSR = 0;
    ADMUX = 0; //ADC0
    for(;;) {
        while((ACSR & (1<<ACO)) != 0) {
            cbi(PORTB,PWM);
            _delay_us(3);
            sbi(PORTB,PWM);
            _delay_us(200);
        }

        LED1;
        sbi(PORTA,RELAY);
        _delay_ms(100);
        cbi(PORTA,RELAY);
        _delay_ms(100);
        LED0;

        rand_delay();
    }
    return 0;
}

```

Grey box firmware, can be found here also: <https://github.com/vasik041/openlab/tree/master/tools/csgen>