

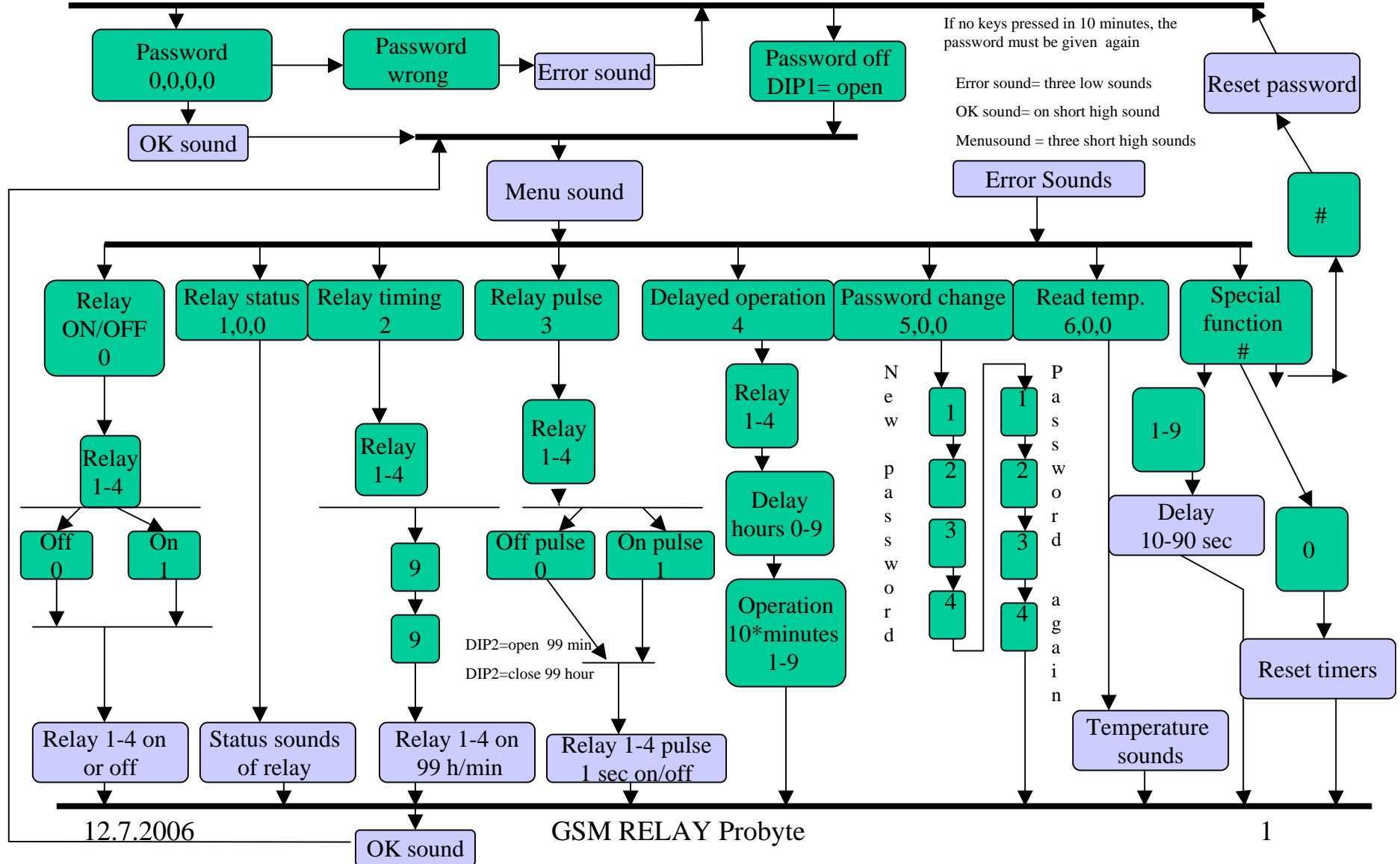


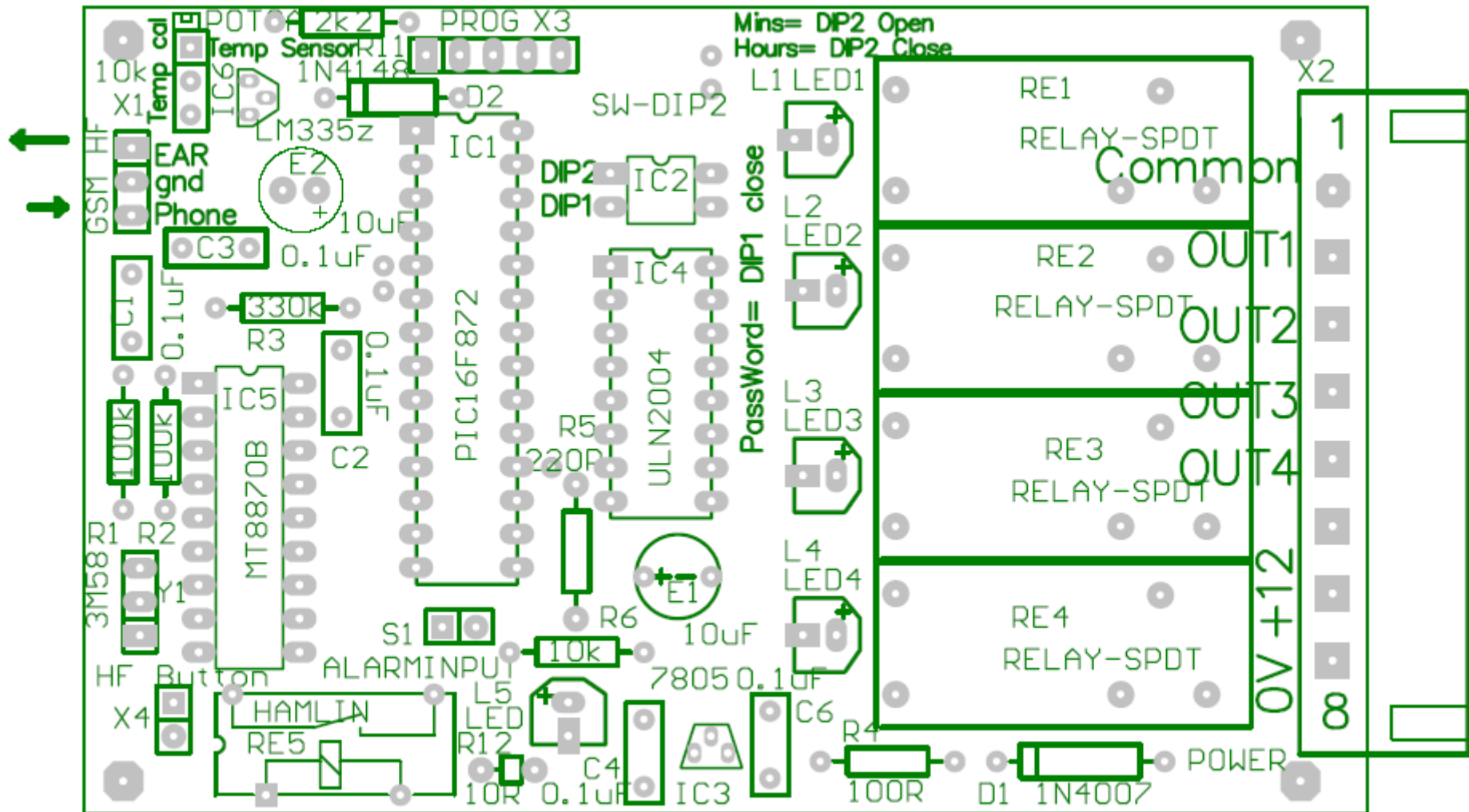
Numbers= phone keys

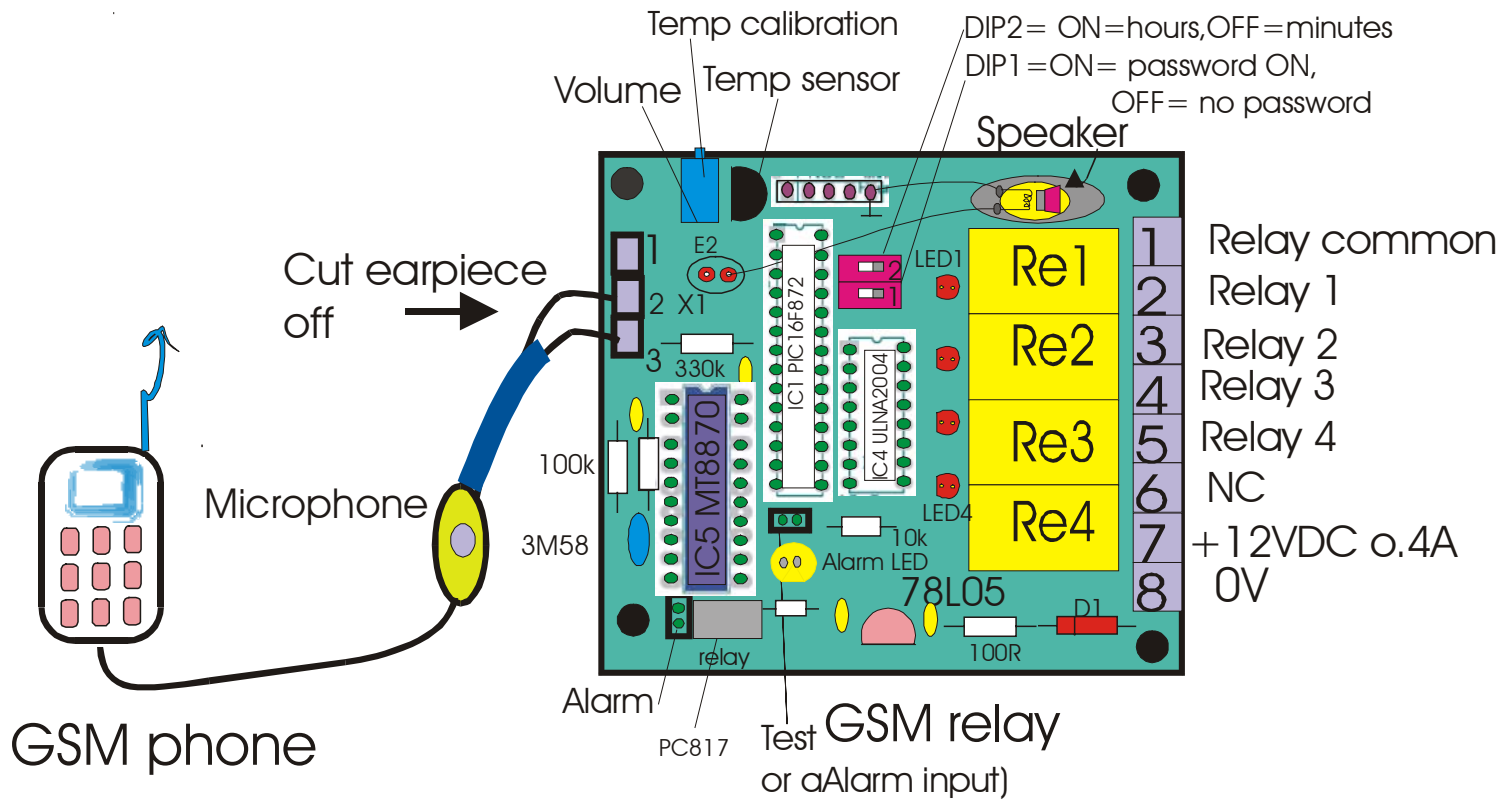
PROBYTE GSMRELAY FUNCTIONS

GSM

POWER ON







	GSM Relay/ALARM v11	Documents		http://www.probyte.de
	Bill of materials			26.5.2006
	Item	Value	Info	Quan ID
1	Kond. Metal film	0.1uF 10% 63VM05		5 C1, C2, C4, C6
2	Kond. elektro Radial	10uF / 22uF 16VM05		2 E1,E2
3	Resistor Axial	100R 0.6W 1%		1 R4
4	-			
5	Resistor Axial	2k2 0.6W 1%		1 R6
6	Resistor Axial	10k 0.6W 1%		2 R5, R6
7	Resistor Axial	100k 0.6W 1%		2 R1, R2
8	Resistor Axial	330k 0.6W 1%		1 R3
9	PIC16F872-I/P CPU	DIP28	GSMRELAYv11	1 IC1
10	SW-DIP2	Pass word-Min/Hour selection		1 IC2
11	LM78L05 5 V reg TO-92	5V Regulator		1 IC3
12	ULN2004	7*Relaydriver		1 IC4
13	MT8870B DIP16	DTMF transceiver		1 IC5
14	LM335Z TO-92	temp.sensor	Nat. Semiconductor	1 IC6
15	28-pin socket		DIP28	1 IC1
16	Diode 1N4001			1 D1
17	Relay 12 Vcoil SPDT	10A 250VAC		4 RE1, RE2, RE3,
18	Connector 2,3 pin		Test, HF-cable	1 S1,S2
19	-			
20	Screw connector 8* 5.08mm	Power		1 X2
21	LED 5mm			4 L1-4
22	Diode 1N4148	(or a resistor 1ohm -10k)		1 D2
23	Trimmer 10k-50k	Temp. Calibration	2.93V = 20C	1 Rt2
24	Crystal or Reson. (2 or 3pin)	3M58MHz	HC49	1 Y1
25	PCB-board GSMRELAY			1
	GSM ALARM option			
9	PIC16F873A-I/P CPU	GSMRELEAY V.11	GSMALARM V11	1 IC1
27	Relay 5V	Hamlin HE751A121	5V	1 RE5
28	Jumper 2pin			1 X4
29	Resistor Axial	220R 0.6W 1%		1 R5
30	LED 5mm			1 L5

12.7.2006

GSM RELAY Probyte

Construction of GSM-relay

1. Check three parts according the parts list.

Note location of the LEDs (long wire is +), electrolytic capacitors, diodes, regulator, sensor and microcircuits

2 Connect first lower parts: diodes, resistors, microcircuits, socket and small capacitors

3. Then place the connectors, DIP-switch (note the direction), LM78L05 regulator and temperature sensor, trimmer, LEDs and electrolytic capacitors. Last solder the relays, ULN2003 and MT8870.

4. Cut wire from microphone to the earpiece to equal parts of the HF-set. Separate two colors wires from each other and burn the insulation off with hot solder (400 C) or gas lighter. Add solder to wires. This part needs carefully work. Connect both copper color wires to connector X1/2(middle pin is ground). Connect other wire from earphone to pin 1. Connect the wire from phone side to pin 3.

5. Connect an adjustable, current limiting power supply to terminal X2/7(+) and X2/8(-).

Adjust voltage first to 5 volt and limit the current to 100mA.

6. Measure voltage at test pins (S1). The voltage must be about 5 V when you increase the voltage 5->12V and the current about 10mA without relays. The relays remember their status after power failure. The current is 130 mA when all the relays are on.

7. Put the CPU to the socket and set the volume to maximum (P1 CCW)

8. Open DIP switches (DIP1 open = no password, DIP2 open = minute time)

9. Connect test pins at power up. All the relays switch on and off in one second interval. Sound is heard from speaker or earpiece. Sound remains until you open short circuit the test pins.

10. Switch HF-cable to your GSM phone, set keyboard sound to maximum and automatic answer on

11. Test the function 0, press 0,1,1 or connect relay1 on. Try 0,1,0 and 0,2,1 and all the other relays.

12. Test temperature reading 6,0,0. Adjust right temperature with POT3A.

13. Set a new password 1234 with 5,0,0,1,2,3,4,1,2,3,4. Set DIP1 on, press #,# (rest password timer). Test the password function. Test no delay #1 for ten second,. Test timer function 2120 (relay 1 on for 20 minutes).

14. Test pulse function 3,1,1 etc. Test delayed timer function four 4,2,1,2 i.e. relay 2 waits 1 hour then 3*10 minutes on. Switch DIP2 on and test hour timer to relay three: 2,3,0,1,0