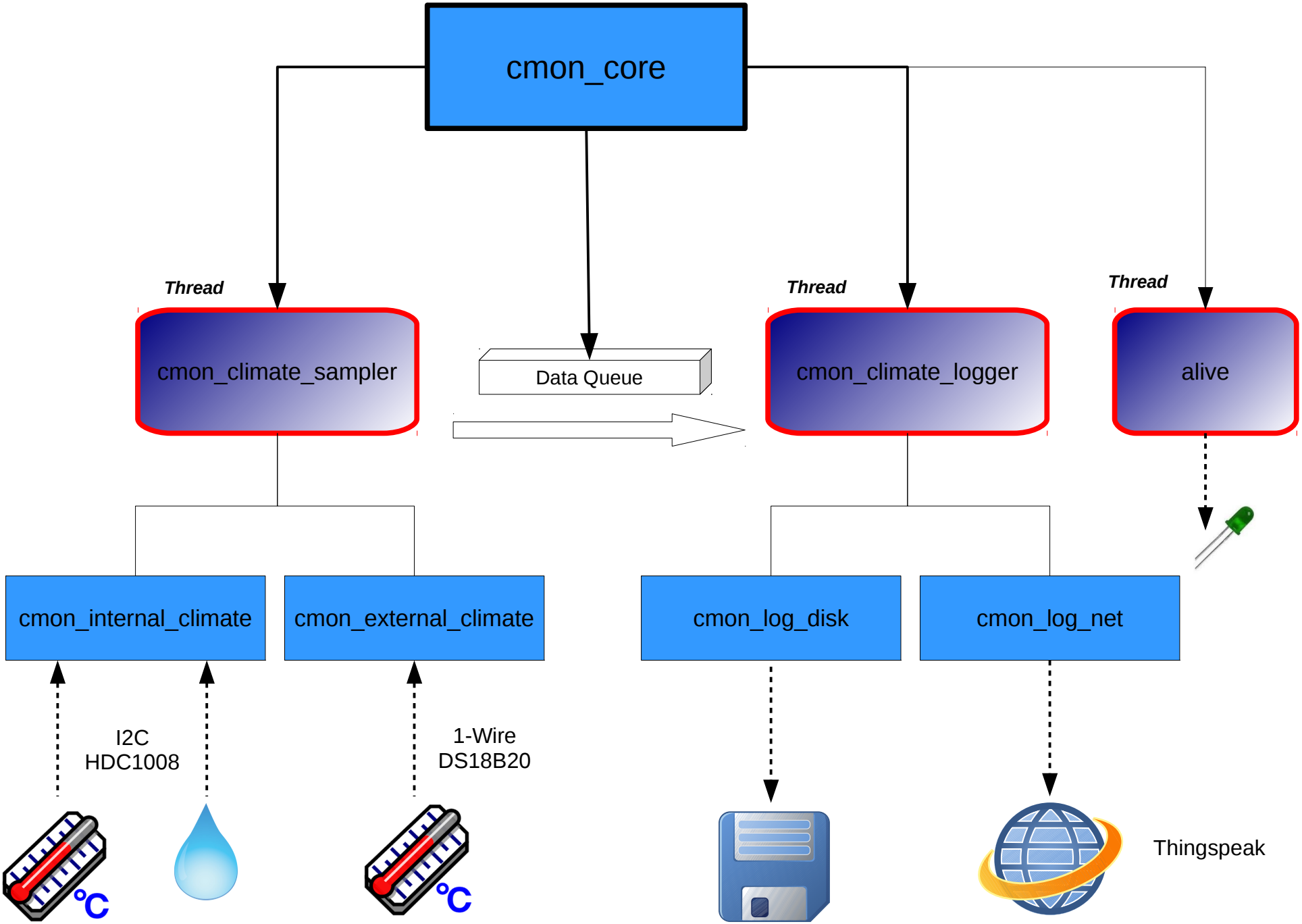
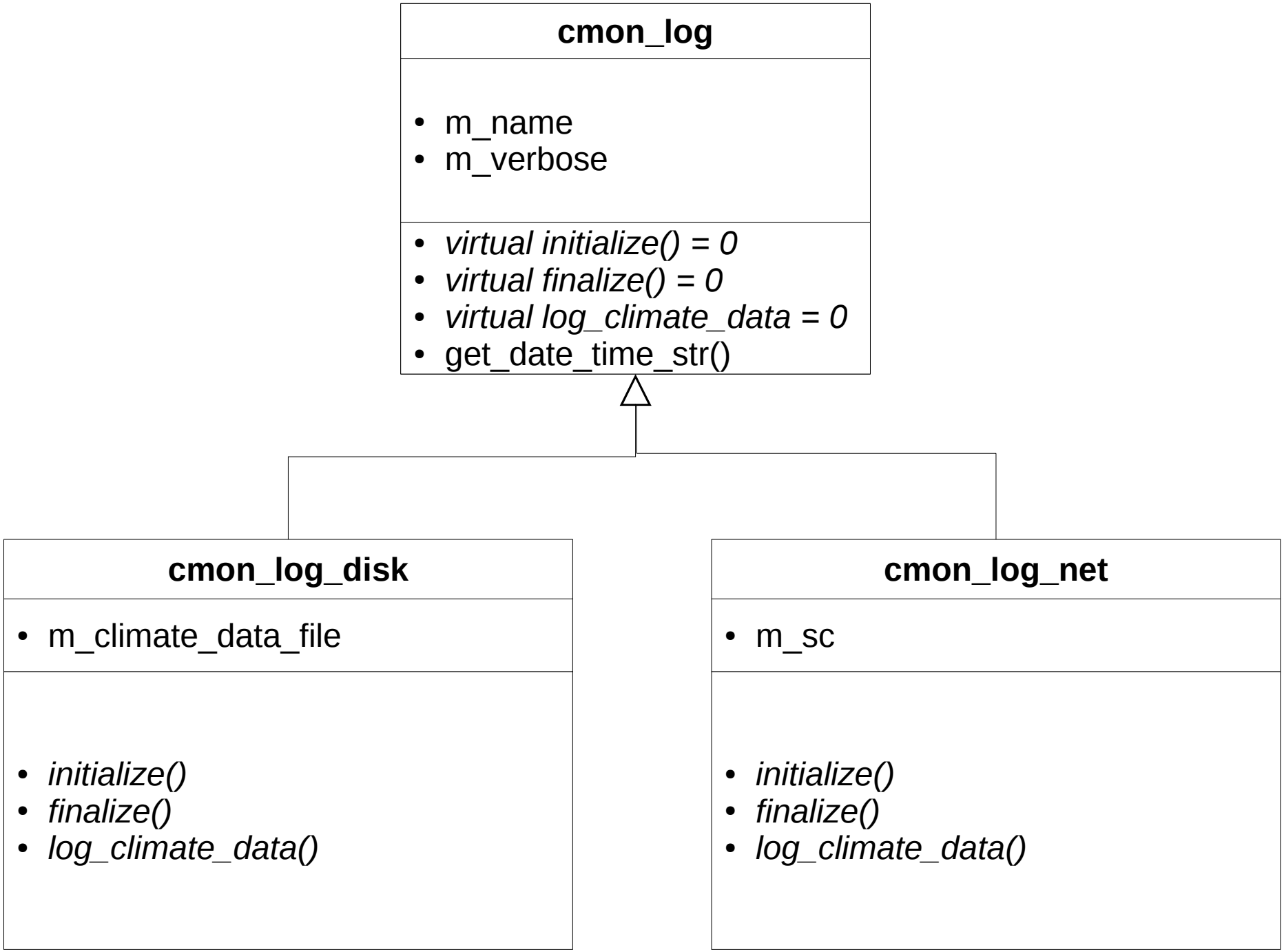

cmon_core
Thread
cmon_climate_sampler
Data Queue
Thread
cmon_climate_logger
Thread
alive
cmon_internal_climate
cmon_external_climate
cmon_log_disk
cmon_log_net
I2C
HDC1008
1-Wire
DS18B20
°C
°C
Thingspeak


cmon_log
m_name
m_verbose
virtual initialize() = 0
virtual finalize() = 0
virtual log_climate_data = 0
get_date_time_str()
cmon_log_disk
m_climate_data_file
initialize()
finalize()
log_climate_data()
cmon_log_net
m_sc
initialize()
finalize()
log_climate_data()

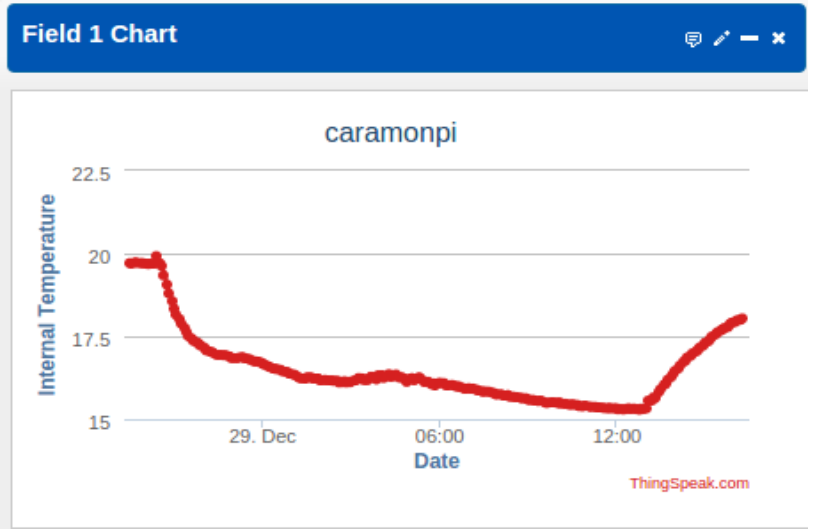
Thingspeak

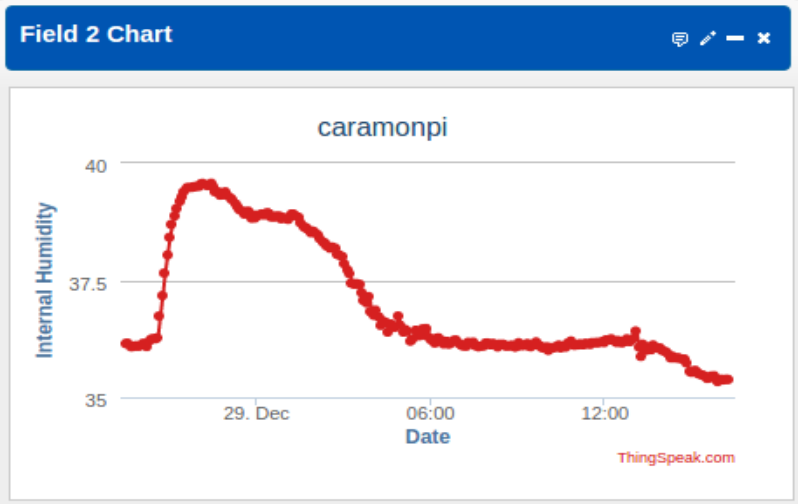
Channel info:

- Channel name: caramonpi
- Channel id: 75139
- Address: https://thingspeak.com/channels/75139/

- Write API Key: xxxxxxxx
- Read API Key: yyyyyyyy

- Field 1: Internal Temperature
- Field 2: Internal Humidity
- Field 3: External Temperature

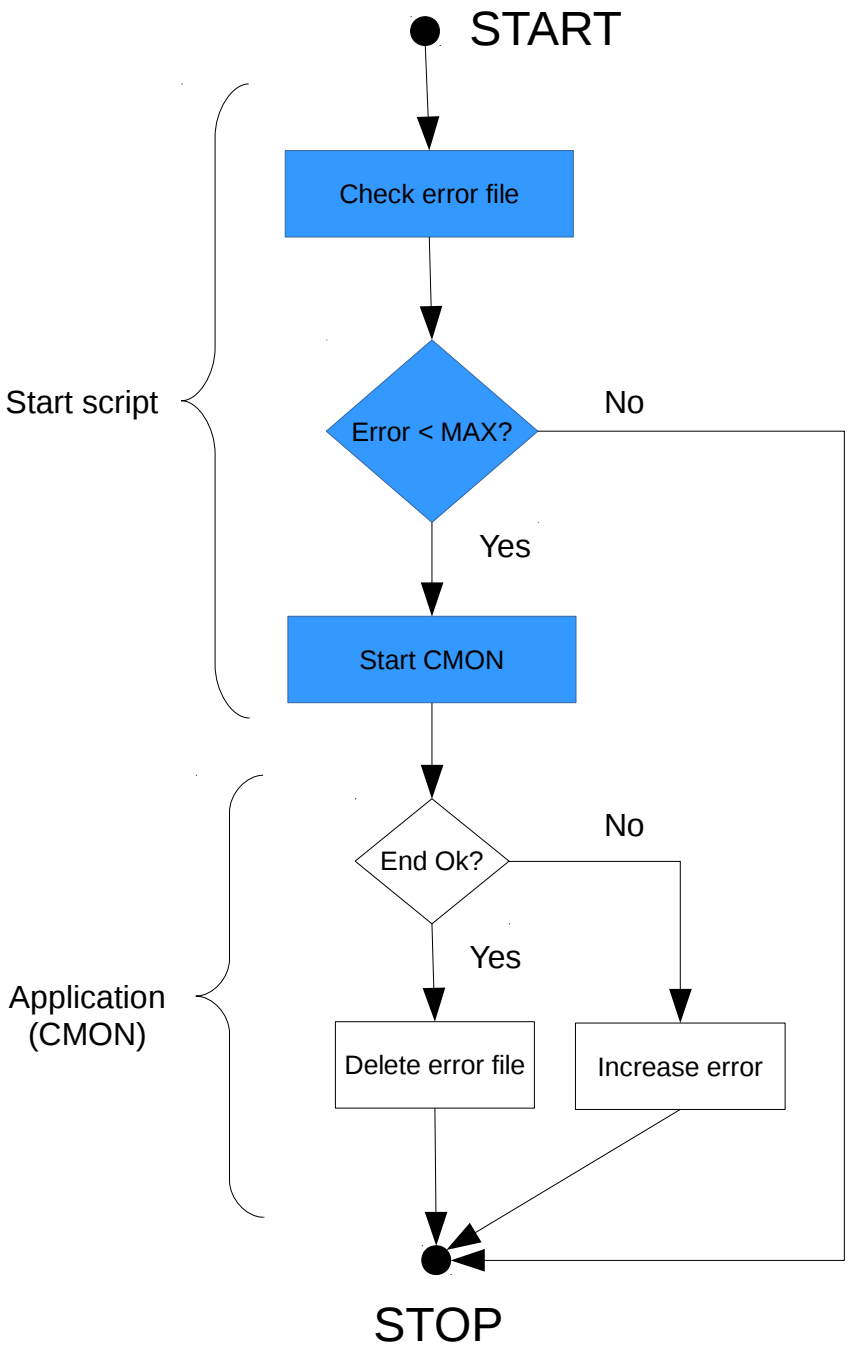


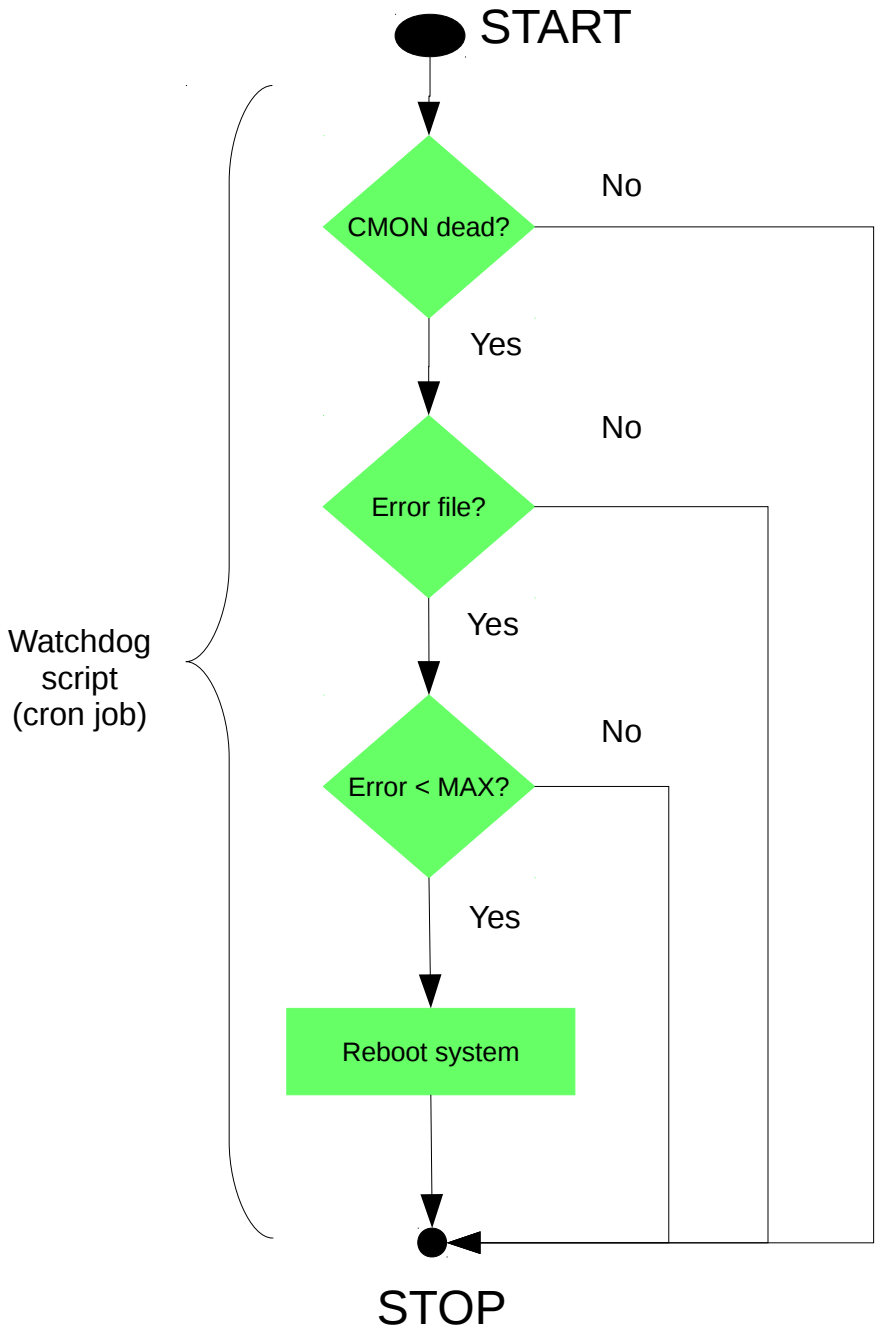


Update channel:

```
curl --fail --silent --data \
     "key=<WRITEKEY>&field1=<VAL1>&field2=<VAL2>&field3=<VAL3>" https://api.thingspeak.com/update
```

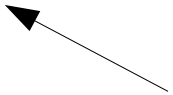
Check return code: `echo $?`


START
Check error file
Error < MAX?
No
Yes
Start CMON
End Ok?
No
Yes
Delete error file
Increase error
STOP
Start script
Application
(CMON)


START
CMON dead?
No
Yes
Error file?
No
Yes
Error < MAX?
No
Yes
Reboot system
STOP
Watchdog
script
(cron job)

List active cron jobs

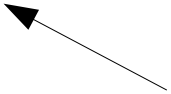
```
crontab -l

@reboot /usr/bin/weavedstart.sh
*/5 * * * * /caramon/cmon_watchdog.sh
```



Script executed every 5 minutes

Disable cron job

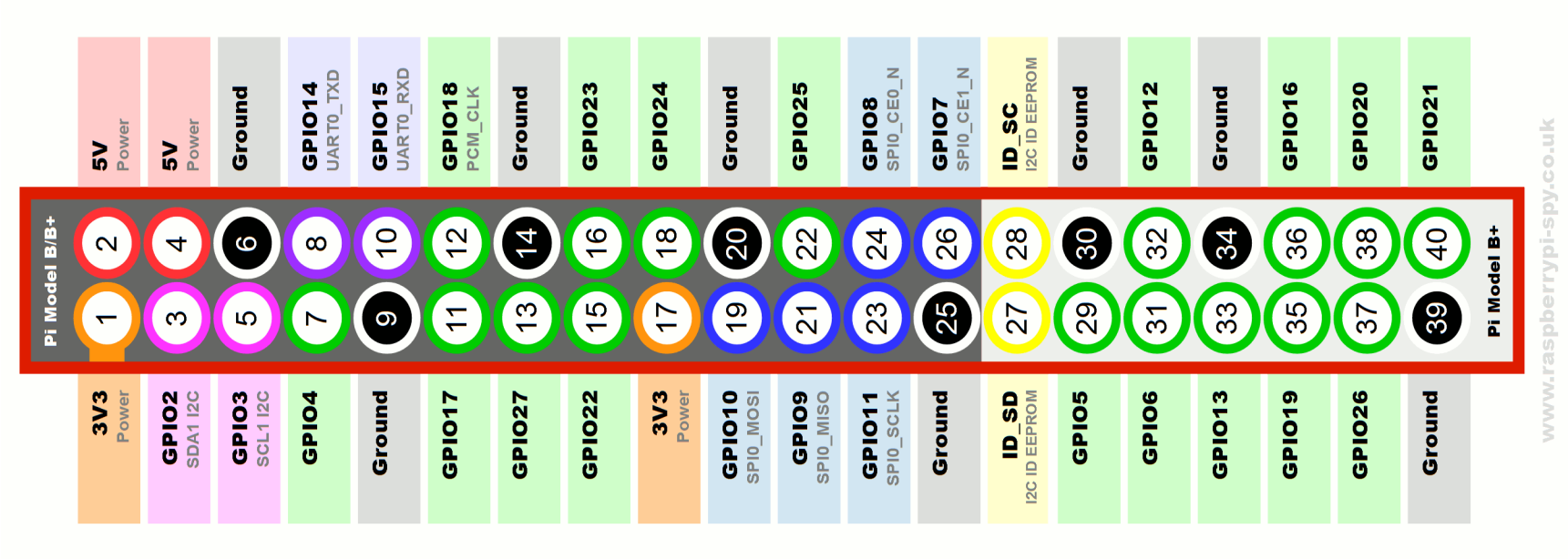
```
crontab -e

#*/5 * * * * /caramon/cmon_watchdog.sh
```



Commented out, script disabled

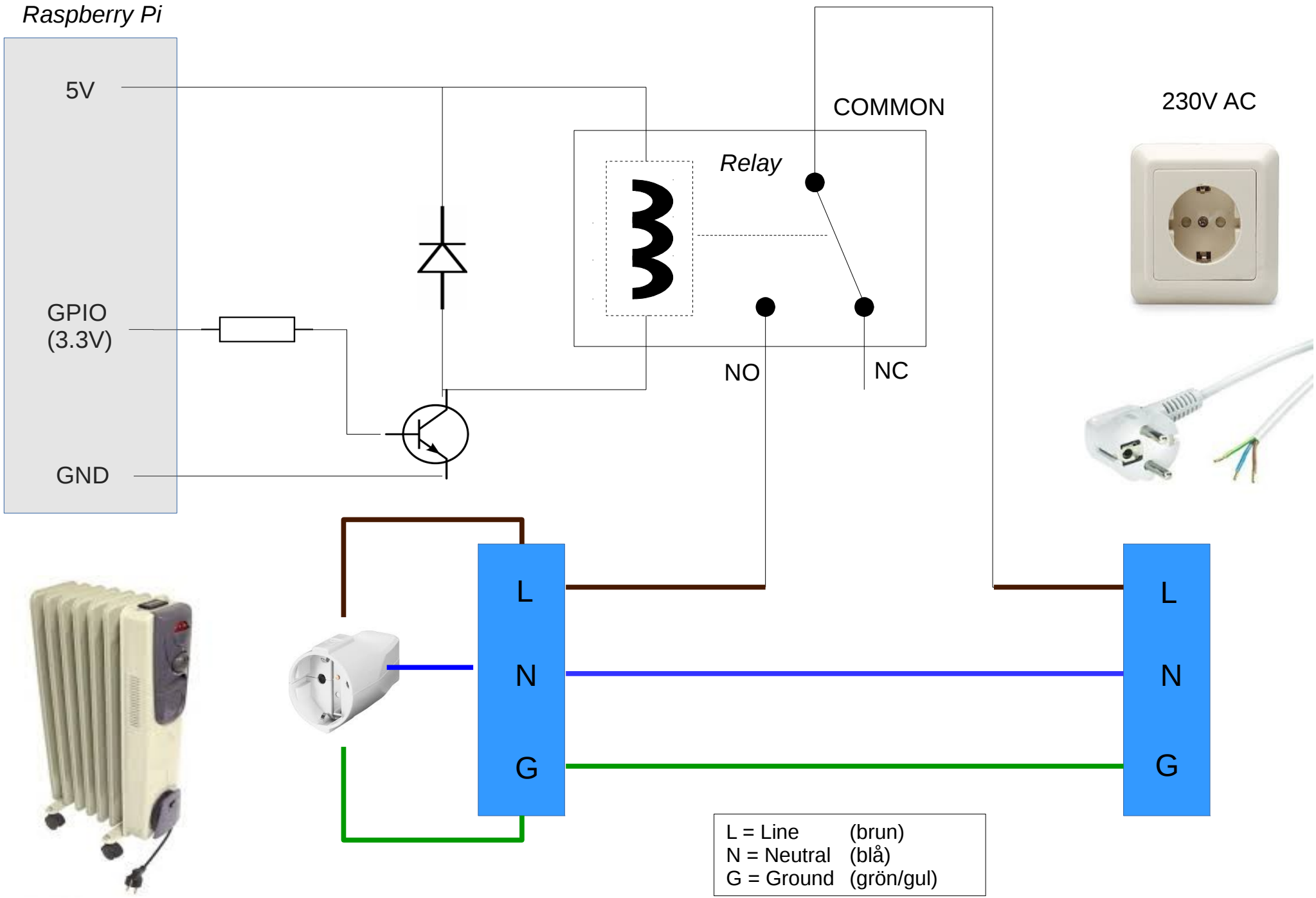
```
/etc/init.d/cron restart
/etc/init.d/cron status
```

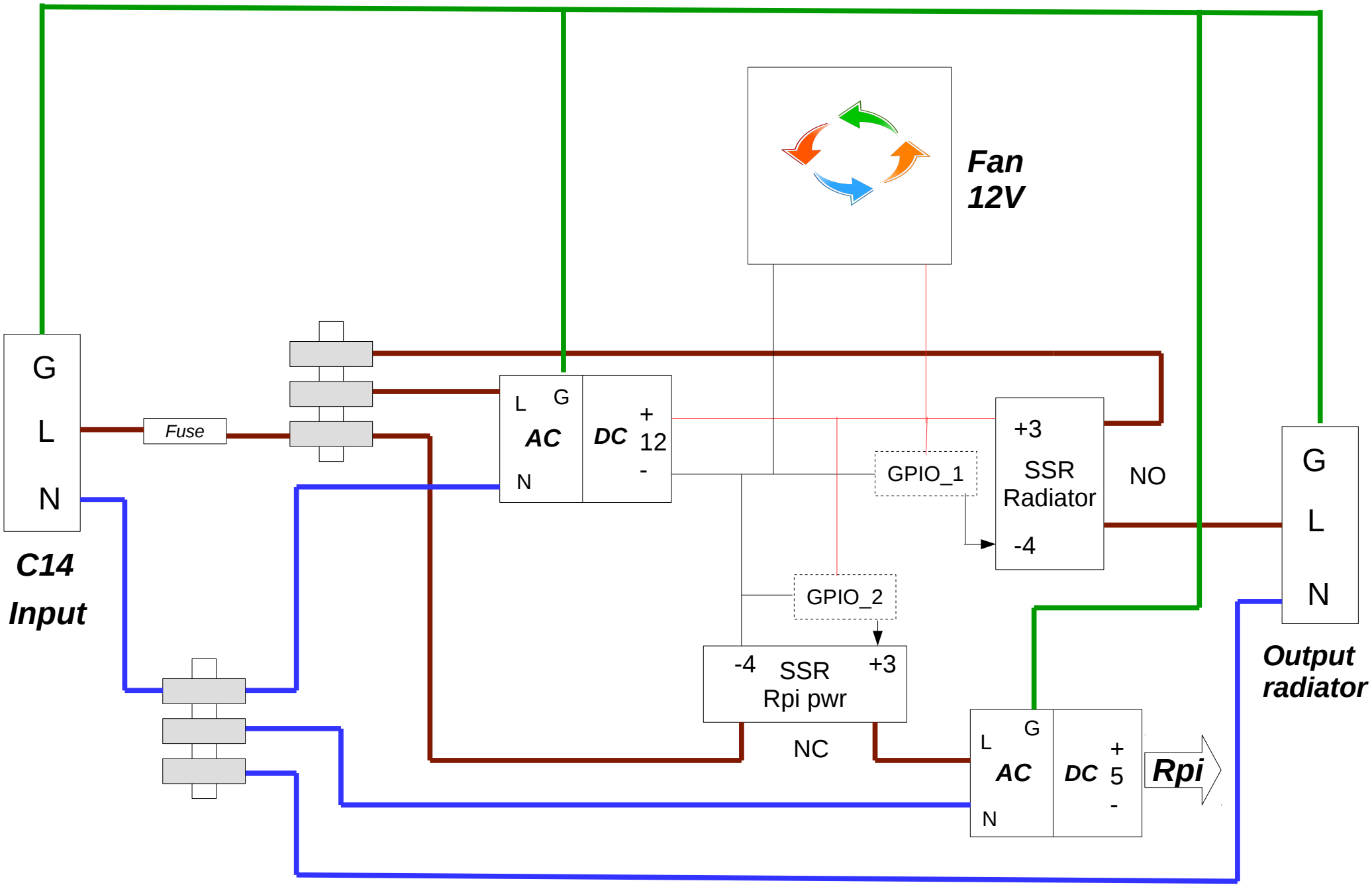
Raspberry Pi2 , Connector P1



CMON, GPIO

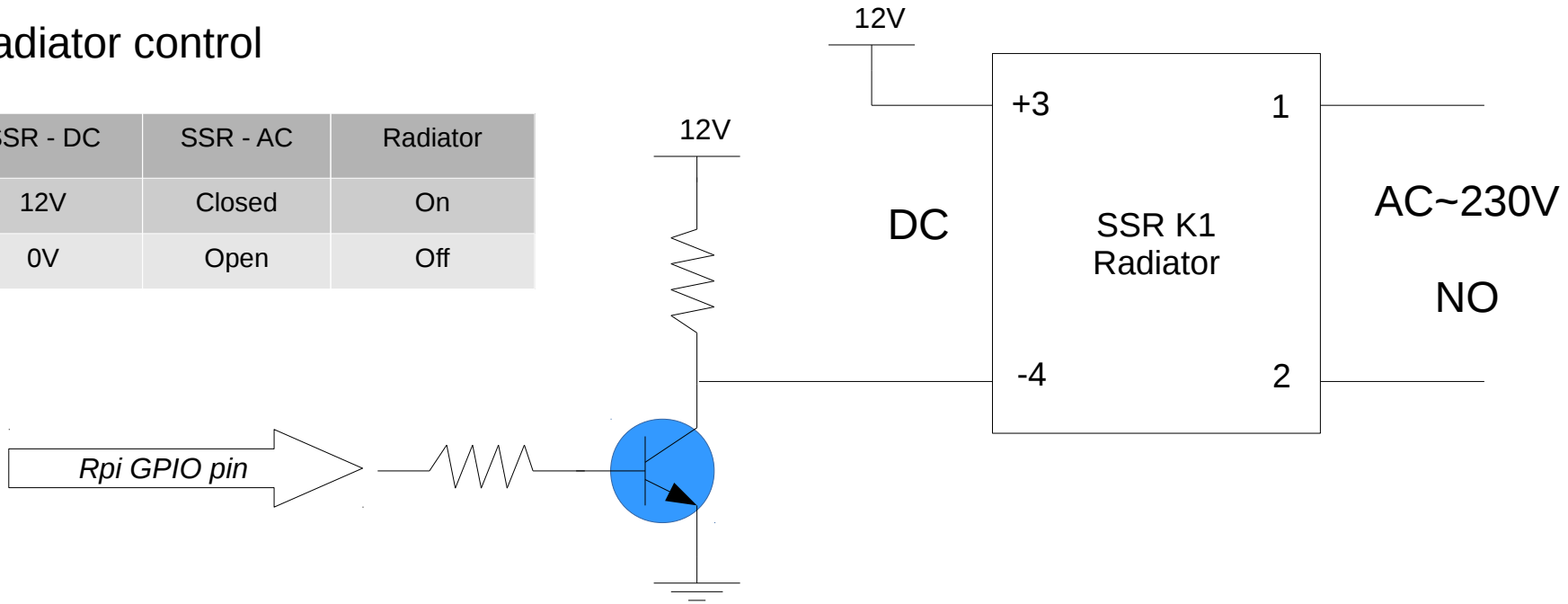
Pin (P1)	GPIO (BCM)	Direction	Description
03	2	-	I2C - SDA
05	3	-	I2C - SCL
08	14	-	RS232 - Tx
10	15	-	RS232 - Rx
11	17	OUT	LED (green) - Alive
12	18	OUT	LED (red) - Sysfail
13	27	IN	Normal (0), Inhibit (1)
15	22	OUT	Radiator control, SSR K1
16	23	OUT	5V Power control, SSR K2
18	24	-	Not used
22	25	IN	1-Wire


Raspberry Pi
5V
GPIO
(3.3V)
GND
COMMON
Relay
NO
NC
230V AC
L
N
G
L
N
G
L = Line (brun)
N = Neutral (blå)
G = Ground (grön/gul)


G
L
N
C14
Input
Fuse
L
G
AC
N
DC
+
12
-
Fan
12V
GPIO_1
+3
SSR
Radiator
-4
NO
G
L
N
Output
radiator
GPIO_2
-4
SSR
Rpi pwr
+3
NC
L
G
AC
N
DC
+
5
-
Rpi

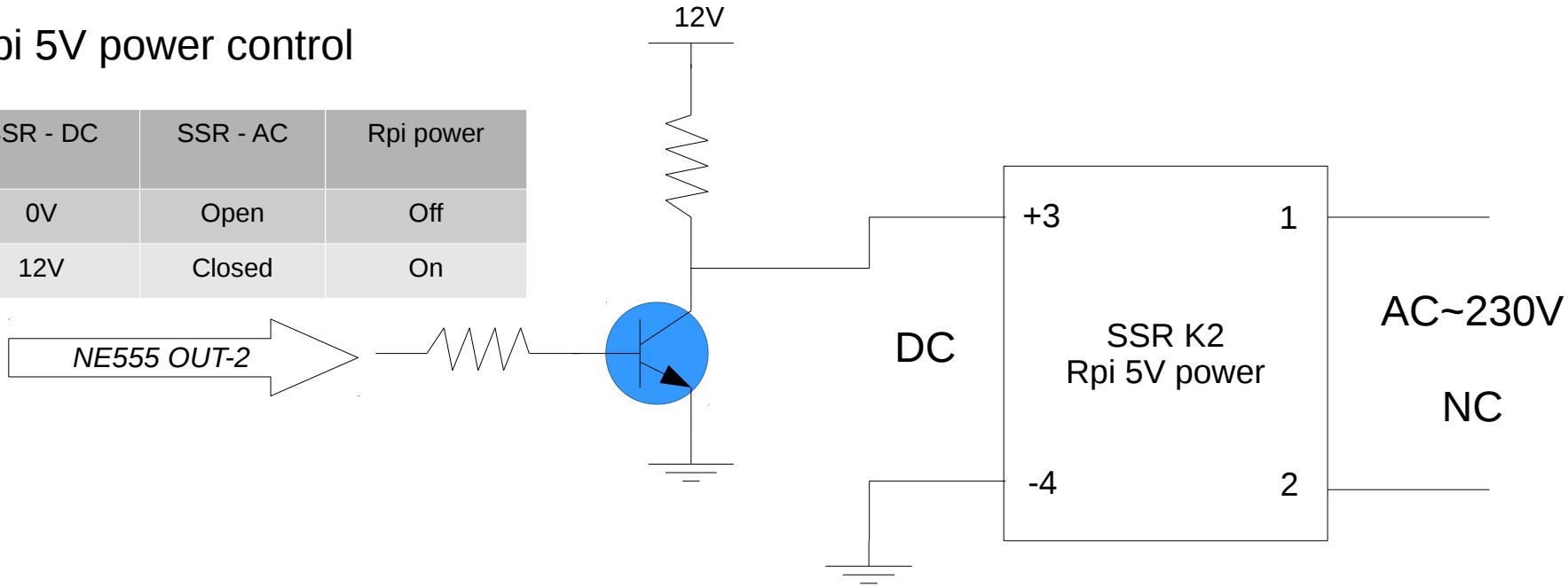
GPIO_1 : Radiator control

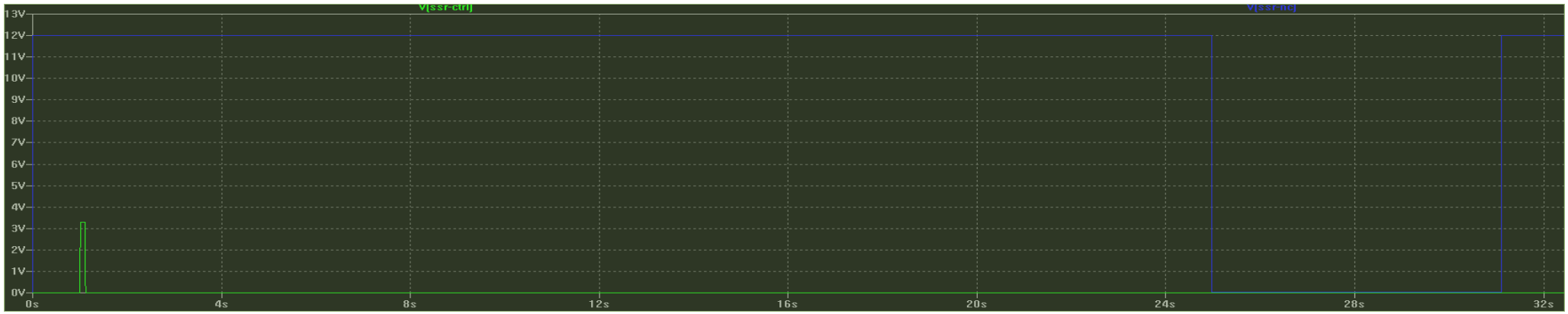
Rpi - pin	SSR - DC	SSR - AC	Radiator
High - 3.3V	12V	Closed	On
Low - 0V	0V	Open	Off

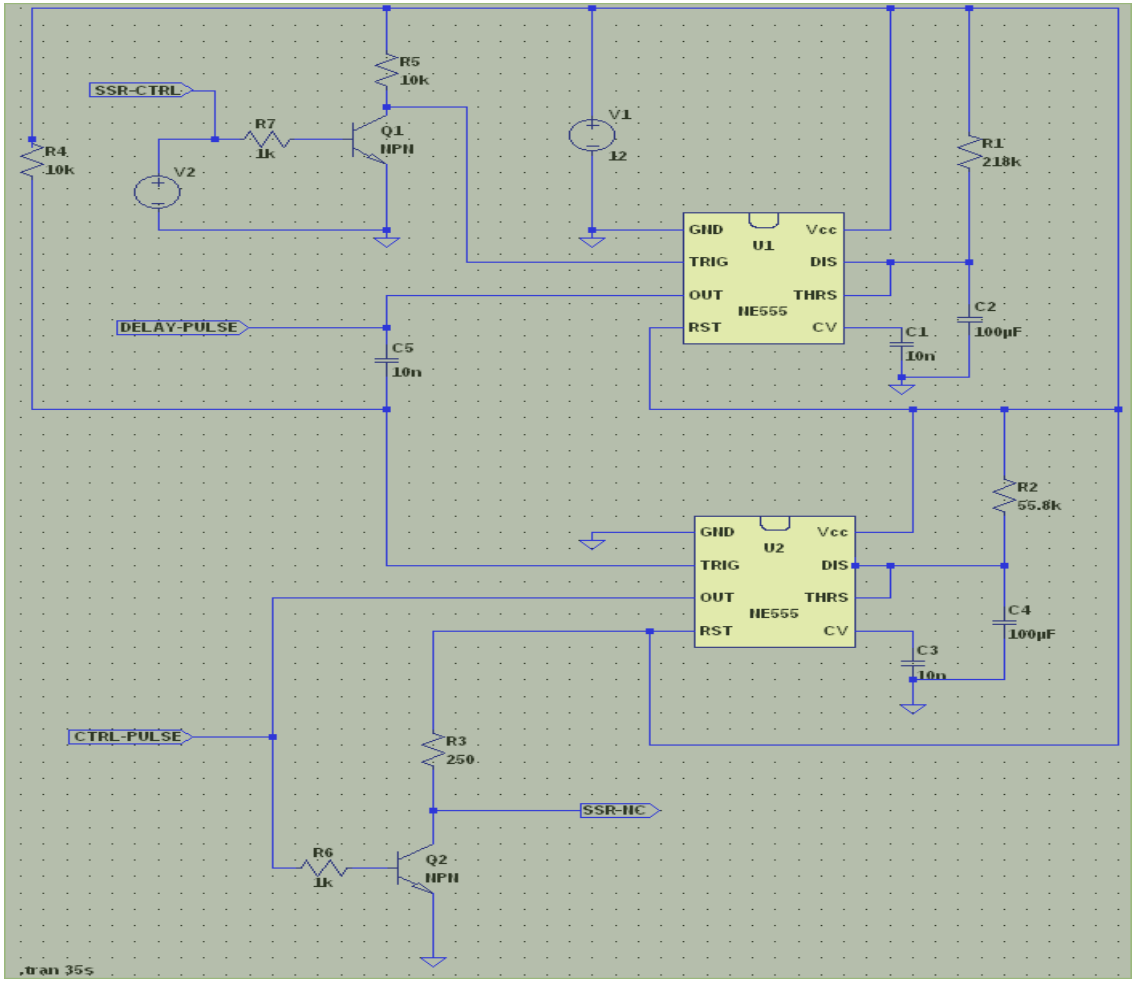


GPIO_2 : Rpi 5V power control

NE555 OUT-2	SSR - DC	SSR - AC	Rpi power
High	0V	Open	Off
Low	12V	Closed	On







555 Timer IC
Mono-stable mode

T = 1.1 x R x C

Delay pulse (OUT-1):
T = 1.1 x 218K x 100u = 23.98s

Control pulse (OUT-2):
T = 1.1 x 55.8K x 100u = 6.138s