

Details:

E-mail: **enrico-marinoni@libero.it**
Name: **Enrico**
Surname: **Marinoni**
Add:

Project title:

Gardenlr

Request:

Primer2
CircleOS ver.3.7

Abstract:

Gardenlr is an automatic timer that controls five (E1...E5) electro valves for garden irrigation and one relè (E6) for pseudo random On/Off for control lumps.

Normally I'm used E6 to random On the Garden Lumps for simulate that some one is in house.

For every valve there is the possibility to setup two times in a day and for every time it is possible to decide how many time stay ON the electro valve. The relè for random On/Off (E6) is drive in the range from 22 to 06 ours and is it possible decides the time that it stays on.

The relè for random On/Off is put On in the range from 1 to 2 hours in pseudo random mode.

Description:

This SW (GardenIr) is for use Primer2 for control:

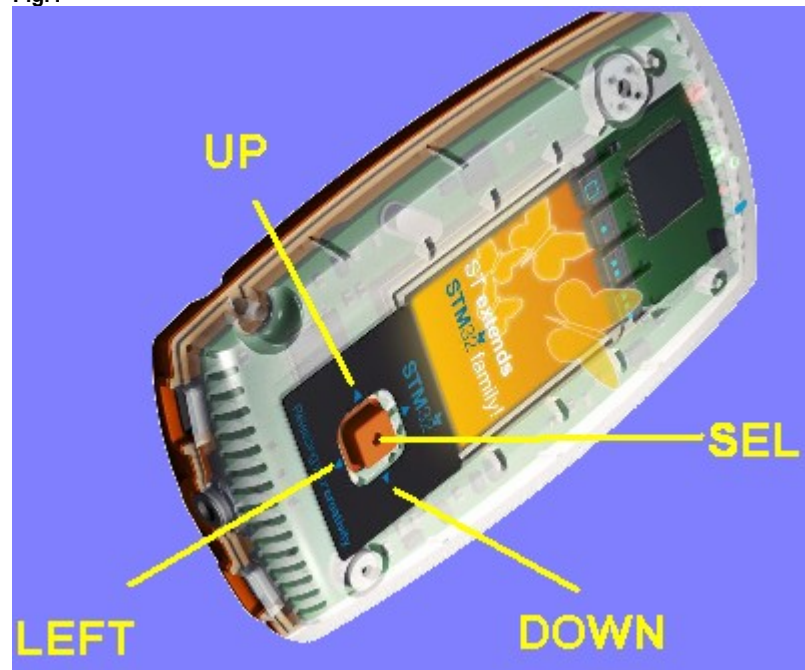
5 relè for drive electro valves for garden irrigation, the relè for electro valves are named **E1...E5**

1 relè for drive lamps in random mode the relè for lamps is named **E6**.

For using this SW the Primer2 must be in the below position this is because I'm not enough flash space for setup the screen orientation.

Also configure the interface input for using MEMS + JOYSTICK.

Fig.1



Relè for Electro Valves E1...E5

For E1...E5 is possible define two ON time and two duration time to stay ON.
Exemple:

E	T1	ton	T2	ton
1	07:10	10	19:00	15

↑ Electro valve n.1 ↑ T1_ **hh** hour ↑ T1_ **mm** minute ↑ T1_ **ton** minute to stay ON

The setup below,

E	T1	ton	T2	ton
1	07:10	10	19:00	15

means:

E1 start to ON at 07:10 and stay ON for 10 minutes and again

E1 start to ON at 19:00 and stay ON for 15 minutes

ATTENTION: if do not set up **ton** the electro valve do not work.

Relè for Lumps E6

For using E6 is necessary define:

E6_T1_hh

E6_T1_mm

E6_T1_ton

E6_T2_ton

the **E6_T2_hh** and **E6_T2_mm** are automatic calculate, see the example below.

E T1 ton T2 ton

.....

.....

.....

6 22 :10 10 xx :xx 15

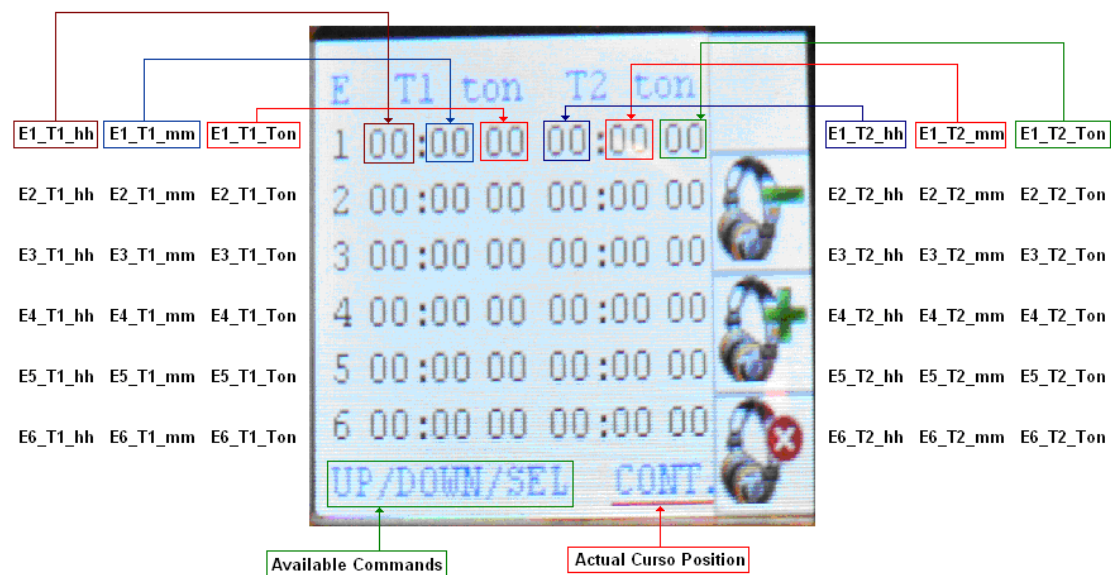
ATTENTION: the range for **E6** is from 22 to 06, see SW Limitation topic n.2 and topic n.1 at the end of this manual.

ATTENTION: the times are showing in the 24 our format.

01 means 01am

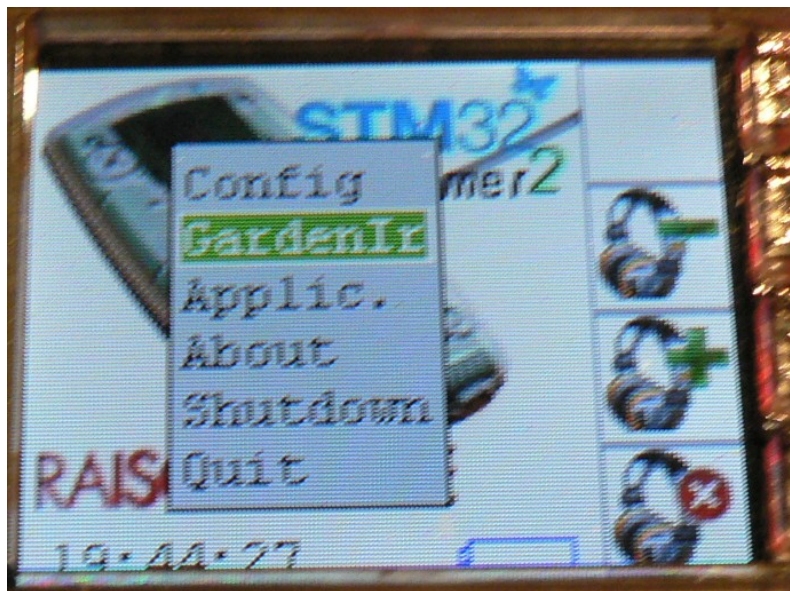
13 means 01pm

The display position regarding E1...E6 and commands are show below.

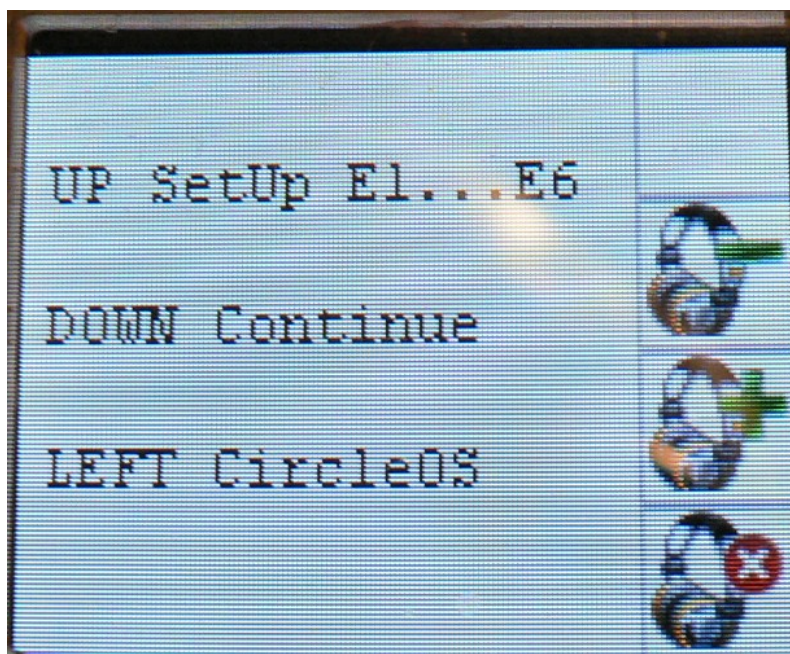


Configure Gardenlr

Select from menu Gardenlr see below.

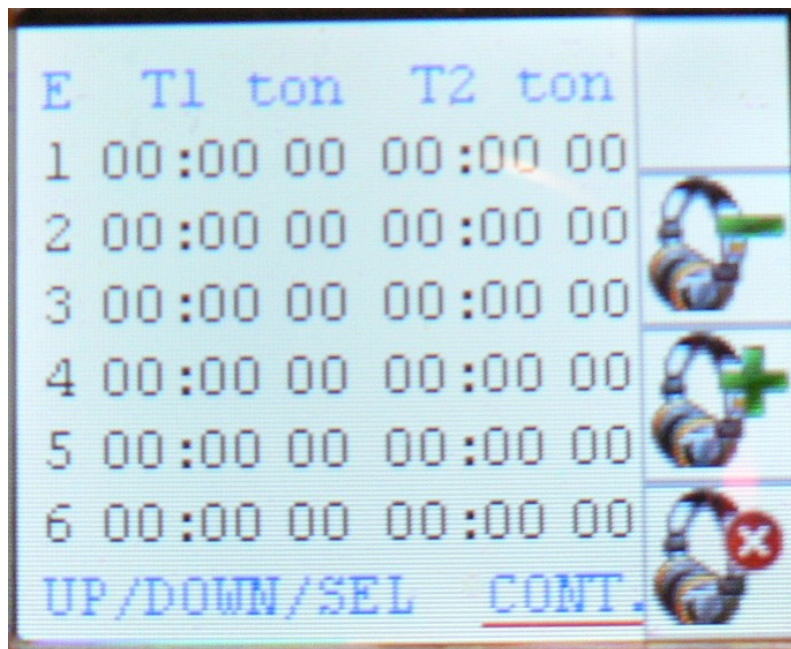


The new menu below appears.



Now you have three possibilities:
JOYSTICK **UP** to enter into the SetUp menu
JOYSTICK **DOWN** to enter in the Gardenlr
JOYSTICK **LEFT** to return to CircleOS

Select JOYSTICK **UP** (see the Fig.1) and the new menu appear, see below.

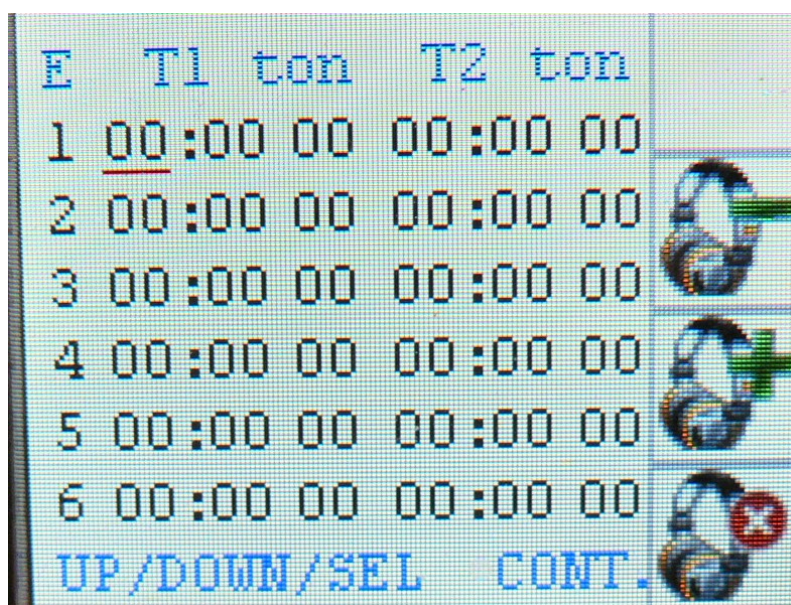


The **REED** line shows the cursor position.

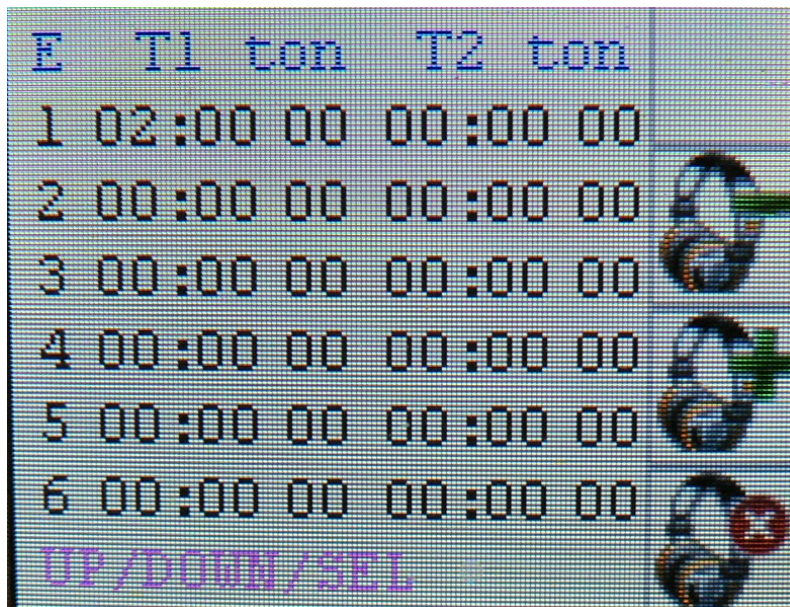
For moving the cursor using JOYSTICK **UP** and **DOWN** and when you are on the topic that you need to change press JOYSTICK **SEL**.

For go to Gardenlr move the cursor to **CONT.** and pres JOYSTICK **SEL**.

Below I'm moved the cursor on **E1_T1_hh**



After pressed JOYSTICK **SEL** I'm used JOYSTICK **UP** to setup the **E1_T1_hh** at **02** and next I'm press again JOYSTICK **SEL** and I'm continued to setup the parameters.



At the end of my setup I have the following configuration:

E1_T1_hh 02
 E1_T1_mm 55
 E1_T1_ton 10


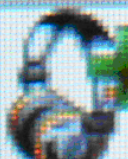
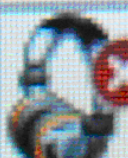
E1_T2_hh 17
 E1_T2_mm 00
 E1_T2_ton 19

E4_T1_hh 19
 E4_T1_mm 54
 E4_T1_ton 03

E6_T1_hh 22
 E6_T1_mm 30
 E6_T1_ton 05

E6_T2_hh 23
 E6_T2_mm 00
 E6_T2_ton 07

See below.

E	T1	ton	T2	ton	
1	02:55	10	17:00	19	
2	00:00	00	00:00	00	
3	00:00	00	00:00	00	
4	19:54	03	00:00	00	
5	00:00	00	00:00	00	
6	22:30	05	23:00	07	
<div>Available Command</div> <div>TIME</div> <div>19:54:53</div> <div>SEL menu</div>					


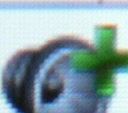

Note that **E4** is **REED** because the **E4_T1_hh** and **E4_T1_mm** match the 19:54, the current time at the bottom of the display.

E4 stay ON for three minutes.





The colour **REED** means that electro valve **E4** is **ON**.

The display below show that the **E6** is **ON** and it stay ON for ONE minute.

The next time that **E6** go **ON** is at 20:42 and it will stay ON for ONE minute

E	T1	ton	T2	ton	
1	00:00	00	00:00	00	
2	00:00	00	00:00	00	
3	00:00	00	00:00	00	
4	00:00	00	00:00	00	
5	00:00	00	00:00	00	
6	19:55	01	20:42	01	
19:55:55 SEL menu					

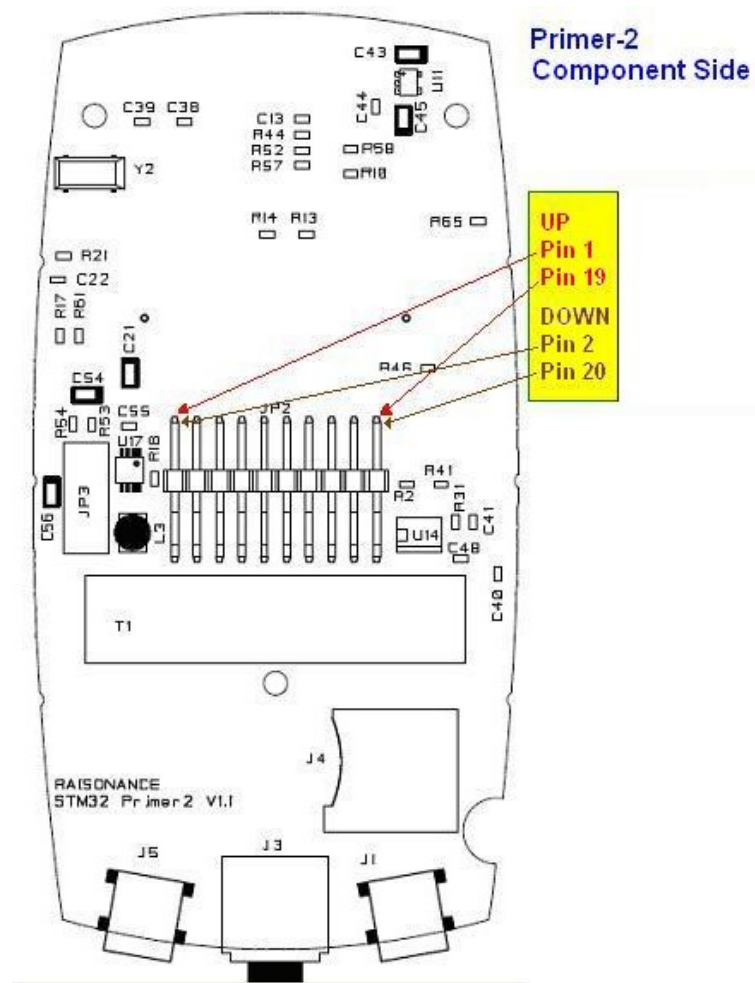
Another example is display below and tells us that the last **E6 ON** was at **01:55** and the next **E6 ON** will be at **02:50**

E	T1	ton	T2	ton	
1	00:00	00	00:00	00	
2	00:00	00	00:00	00	
3	00:00	00	00:00	00	
4	00:00	00	00:00	00	
5	00:00	00	00:00	00	
6	02:50	01	01:55	01	
02:11:37 SEL menu					

The schematic is this.



The position of JP2 is this.



SW Limitation:

Topic n.1) Continuously minute change referring **E6**

During the ON of E6_T1 or during the ON of E6_T2 there are the minutes that change continuously, the minutes are fixed than the E6_T1/T2 go to OFF. This is because I'm not enough flash space to fix it but all work correctly.

Topic n.2) Time range referring **E6**

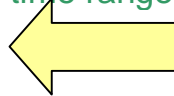
The E6 time range for pseudo random ON/OFF lumps is from 22 to 06 for change this range is necessary change the constant below in source file Application.c

The lines to change are:

// Define for E6 the time range for TOn and TOff for external lamps

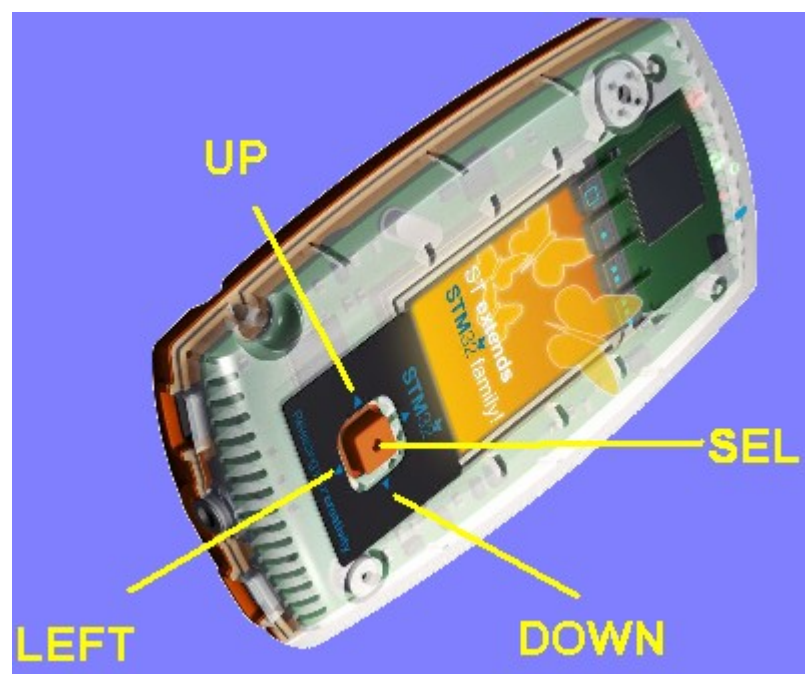
#define TOn 22

#define TOff 06



This is because I'm not enough flash space for add a menu for setup TOn and TOff.

Topic n.3) For using this SW the Primer2 must be in the below position this is because I'm not enough flash space for setup the screen orientation:



Attached project (zipped):

Description, Schematic, Connector and Source Files