www.Kama-Labs.com

TANYA

(Assembly instructions and latest firmware you can find on my website)

Assembled my own hands ☺

Thanks for purchase!!!

Features:

* 6x **IV-6** Russian VFD tubes (made in 1990-93)
* 2 IV-1 VFD separators (show am/pm and on/off of alarm)
* 32bit STM32F100C8 processor
* 15 parameters
* 20 years lifetime of tubes
* 12/24 hours mode
* 1 Alarm
* 7 bulbs for day of week or effects (optional)
* Control up to 7 external devices (in your own firmware)
* Fade at night (increase lifetime of tubes in twice!)
* Turn off leading zero
* 2 fonts for “6”, “7” and “9” digits
* Smooth PCB routing
* Countdown timer 99days:23hour:59mins:59sec
* Full remote control
* USB connection to PC (for update firmware)
* Double Multicolour led glow (independent random color leds and **RGB** leds under each tube)
* Adjustable brightness of **RGB** and AUTO leds
* **RGB** led (6 colors of backlight or autochange color mode)
* 10 modes of switch digits
* 2 modes of separator tubes

* **IV-6** tubes works in static mode
* Thermometer
* Correction of temperature
* C or F temperature format
* Accurate to +/- 1 minute/year
* Setup of clock accuracy
* Date in format DD.MM.YY or MM.DD.YY or YY.MM.DD
* Backup battery. Data is not lost when power off
* Power source - DC **5V** barrel plug 5.5mm/2.1mm ("+" inside, "-" outside)
* Consuming current - no more 500mA
* Height of pcb with elements only 13 mm
* Noiseless work

Dimensions of the clock - 135mm x 61mm x 60mm.

Dimensions of the clock case - 165mm x 91mm x 67mm.

№	Settings	Value
1	12/24 time format	0 - 12h time format 1 - 24h time format
2	Hi.Hour tube fading	0 - disable fading 1 - enable
3	Show time mode	0 - hard mode 1 - constructor 2 - soft mode №2 3 - random mode №1 4 - random mode №2 5 - wave 6 - shift 7 - fading 8 - run 9 - all effects one by one
4	Backlight mode	0 - all leds off 1..5 - brightness 6 - AUTO brightness 7 - AUTO brightness + turn off leds in the dark
5	Show current temperature	0 - disable 1 - every 2 minutes 2 - every 5 minutes

<table>
<tr><td>6</td><td>Work of separators</td><td>0 - disable
1 - work together
2 - work alternately</td></tr>
<tr><td>7</td><td>Show current date</td><td>0 - off
1 - every 2 minutes
2 - every 5 minutes</td></tr>
<tr><td>8</td><td>Correction of temperature coefficient</td><td>0 .. 9
Current temp. - temp.coeff. = real temperature

<table><tr><th>Temp.coeff</th><th>Current temp.</th></tr><tr><td>0
1
.
.
10
11
.
.
19</td><td>0
-1
.
..
-10
+1
.
.
+10</td></tr></table></td></tr>
<tr><td>9</td><td>Clock accuracy correction</td><td>0 .. 9
Bigger value - slowly clock</td></tr>
<tr><td>10</td><td>Date format</td><td>0 - DD.MM.YY
1 - MM.DD.YY
2 - YY.MM.DD</td></tr>
<tr><td>11</td><td>Temperature format</td><td>0 - Celsius
1 - Fahrenheit</td></tr>
<tr><td>12</td><td>Brightness of BOTTOM backlight</td><td>0 .. 6</td></tr>
<tr><td>13</td><td>Brightness of tubes</td><td>0 .. 3
4 - automatic brightness</td></tr>
<tr><td>14</td><td>Font type for “6”, “7” and “9” digits</td><td>0 - type 0
1 - type 1</td></tr>
<tr><td>15</td><td>Turn off at night</td><td>0 - Off
1 - On</td></tr>
</table>

How to use remote control?

Button	Action
OK	Enter/exit in parameters mode
◄ ►	Next effect of switch digits / next value
▲ ▼	Change value / tube brightness
1	Time setup
2	Alarm setup
3	Date setup
4	Show temperature
5	Show date
6	On/off alarm
7	Countdown timer setup
8	Turn off LEDs and tubes
9	Change brightness of bottom LEDs
*	Change brightness of top LEDs
#	Change color of top LEDs
▲	Change brightness of tubes

- Use ◄ ► for change position in setup modes
- For change value you can use ▲ ▼ or **use any number buttons**

How to set time or alarm?

1) Press 1 key on remote for enter in time setup and 1 key for enter in alarm setup.

** Note: in time setup current time shows in 24h format only*

2) Set hours

3) Press ► key for go to minutes setting

4) Press ► key again for set seconds

6) Seconds will reset to "00" if you will press ▲key

7) Press ► key for exit from setting time mode

How to change settings?

1) Press OK for enter into menu

2) You will see number of parameter (1) and value of parameter (0): 1_ : _ _ : _ 0

3) Press ▲ ▼ for changing value

4) Press ◄ ► for switch parameter

5) Press OK for exit.

How to set current date?

1) Press 3 key

2) You will see date in DD.MM.YY format

3) Use ▲ ▼ for changing value or use any number buttons

4) Press ◄ ► for switch position

How to change color of LEDs and brightness?

Press * key to change brightness of top LEDs and # key to change color. 3 times flashing means that color will change slowly and automatically.

9 key will change brightness of bottom leds. You can't change their color.

How to set countdown timer?

Press 7 key to enter in timer setup. You will see latest value of timer in DD:HH:MM time format. To change time format press ► key. Right indicator (2) will ON when time format DD:HH:MM and OFF when HH:MM:SS.

Indicator (1) show activity of timer. Press OK key to activate timer, (1) indicator will ON.

(1) (2)

To set timer time, press # key and set DD, then HH, MM and SS. Use ► key to go for next value.

When timer active you can press 7 key to exit from timer setup. Timer will continue work.

Remote control in timer mode:

Button	Action
OK	On/off timer
►	DD:HH:MM / HH:MM:SS
◄	Reset to previous timer value
#	Timer setup
7	Exit

How to make HARD RESET if something wrong?

When your clock starts, you will see firmware version. Something like: 11 04 19

If you will press OK key in this moment, clock will reset all your setting. You will hear p-i-i-i-i-i-i-p p-i-p p-i-p. That's mean HARD RESET is done.

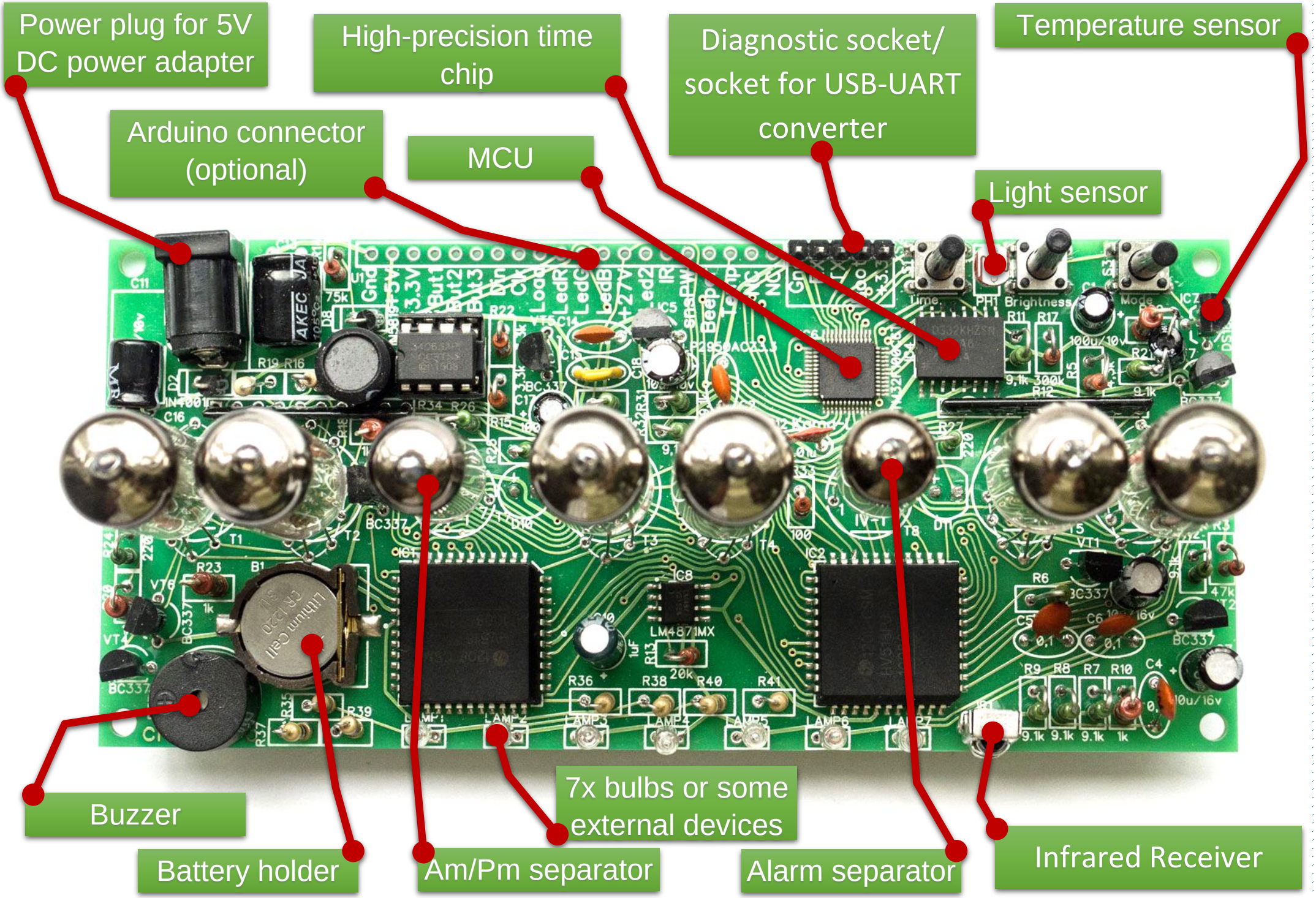
How to set night fading?

Set 15th parameter to 1 and press # key. You will enter into setup. You will hear b-i-i-i-p and will see:

00 : __ : __

Now, you need set time of START and STOP fading.

Example: you go to sleep at 11:10PM and get up 6:30AM. So, you need to set START time as 23:10 and STOP time as 6:30.


Power plug for 5V DC power adapter
High-precision time chip
Diagnostic socket/ socket for USB-UART converter
Temperature sensor
Arduino connector (optional)
MCU
Light sensor
Buzzer
Battery holder
Am/Pm separator
7x bulbs or some external devices
Alarm separator
Infrared Receiver