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**NADIA**

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

Assembled my own hands 😊

**Thanks for purchase!!!**

### Features:

- \* 6x IV-22 Russian VFD tubes (made in 1980-84)
  - \* Tubes in sockets
  - \* 2 LED separators
- \* 32bit STM32F100C8 processor
  - \* 15 parameters
  - \* 20 years lifetime of tubes
    - \* 12h/24h time format
    - \* 1 Alarm
  - \* 2 fonts for “6”, “7” and “9” digits
- \* Turn off at night by timer (increase lifetime of tubes in twice!)
  - \* Turn off leading zero
- \* Brightness of tubes and LEDs change automatically by light-sensor
  - \* Smooth PCB routing
- \* Date in format DD.MM.YY or MM.DD.YY or YY.MM.DD
  - \* 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 switching digits
- \* 2 modes of work separator LEDs
- \* **IV-22** tubes works in **static mode**
  - \* **Thermometer**
    - \* Correction of temperature
    - \* C or F temperature format
  - \* Accurate to **+/- 1 minute/year**
    - \* Setup of clock accuracy
- \* **Backup battery**. Data is not lost when power off
- \* Power source - DC **5V** barrel plug 5.5mm/2.1mm ( "+" inside, "-" outside) or **Micro-USB**
  - \* Consuming current - no more 500mA
    - \* **Noiseless work**

Dimensions of the clock in case - 28mm(L) x 195mm(W) x 85mm(H)

№	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 - simple mode 1 - constructor 2 - constructor №2 3 - smooth mode 4 - smooth + random mode 5 - smooth + random mode №2 6 - wave 7 - fading 8 - shift 9 - run 10 - up-down 11 - up-down №2 12 - binary clock 13 - 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																				
6	Work of separators	0 - disable 1 - work together 2 - work alternately																				
7	Show current date	0 - off 1 - every 2 minutes 2 - every 5 minutes																				
8	Correction of temperature coefficient	0 .. 9 Current temp. - temp.coeff. = real temperature <table border="1" data-bbox="746 618 1497 1115"> <thead> <tr> <th>Temp.coeff</th> <th>Current temp.</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>-1</td></tr> <tr><td>.</td><td>.</td></tr> <tr><td>.</td><td>..</td></tr> <tr><td>10</td><td>-10</td></tr> <tr><td>11</td><td>+1</td></tr> <tr><td>.</td><td>.</td></tr> <tr><td>.</td><td>.</td></tr> <tr><td>19</td><td>+10</td></tr> </tbody> </table>	Temp.coeff	Current temp.	0	0	1	-1	.	.	.	..	10	-10	11	+1	.	.	.	.	19	+10
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.	.																					
.	.																					
19	+10																					
9	Clock accuracy correction	0 .. 9 Bigger value - slowly clock																				
10	Date format	0 - DD.MM.YY 1 - MM.DD.YY 2 - YY.MM.DD																				
11	Temperature format	0 - Celsius 1 - Fahrenheit																				
12	Brightness of BOTTOM backlight	0 .. 6																				
13	Brightness of tubes	0 .. 3 4 - automatic brightness																				
14	Font type for "6", "7" and "9" digits	0 - type 0 1 - type 1																				
15	Turn off at night	0 - Off 1 - On																				
16	Work of separators in Night mode	0 - disable 1 - work together 2 - work alternately																				

## 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.

**88 : 88 : 88**  
(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
<b>OK</b>	On/off timer
<b>▶</b>	DD:HH:MM / HH:MM:SS
<b>◀</b>	Reset to previous timer value
<b>#</b>	Timer setup
<b>7</b>	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-p p-i-p p-i-p. That's mean HARD RESET is done.

## How to set night fading?

Set 15<sup>th</sup> 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.

