

# www.Kama-Labs.com

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

## SONYA v6

Made my own hands 😊

# Thanks for purchase!!!

### Features:

- \* 6x **IN-4** Russian NIXIE tubes (made in 1982-86)
- \* 4x INS-1 NIXIE separators (show am/pm and on/off of alarm)
  - \* **32bit** ESP32 processor
  - \* Full control of clock via Wi-Fi
  - \* Wi-Fi connection to PC or smartphone
- \* **Motion sensor** (no need burn tubes when nobody near)
  - \* Synchronizing time and date from NTP server
  - \* Over-the-air firmware update
  - \* 12/24 hours mode
  - \* 1 Alarm
- \* Temperature / humidity / pressure sensor
  - \* 8 animations for digits
- \* Off clock at night by schedule
  - \* Fade leading zero
  - \* Smooth PCB routing
  - \* Support remote control
- \* High-precision onboard time chip DS3231
- \* 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)
  - \* Adjustable high-voltage block. **150-190 volts**.
  - \* **IN-4** tubes works in **static mode**
    - \* Correction of temperature
    - \* Accurate to **+/- 1 minute/year**
  - \* Date in format **DD.MM.YY** or **MM.DD.YY** or **YY.DD.MM**
    - \* **Backup battery**. Data is not lost when power off
- \* Power source - DC 12V barrel plug 5.5mm/2.1mm ( "+" inside, "-" outside)
  - \* Consuming current - 600mA
  - \* Noiseless work

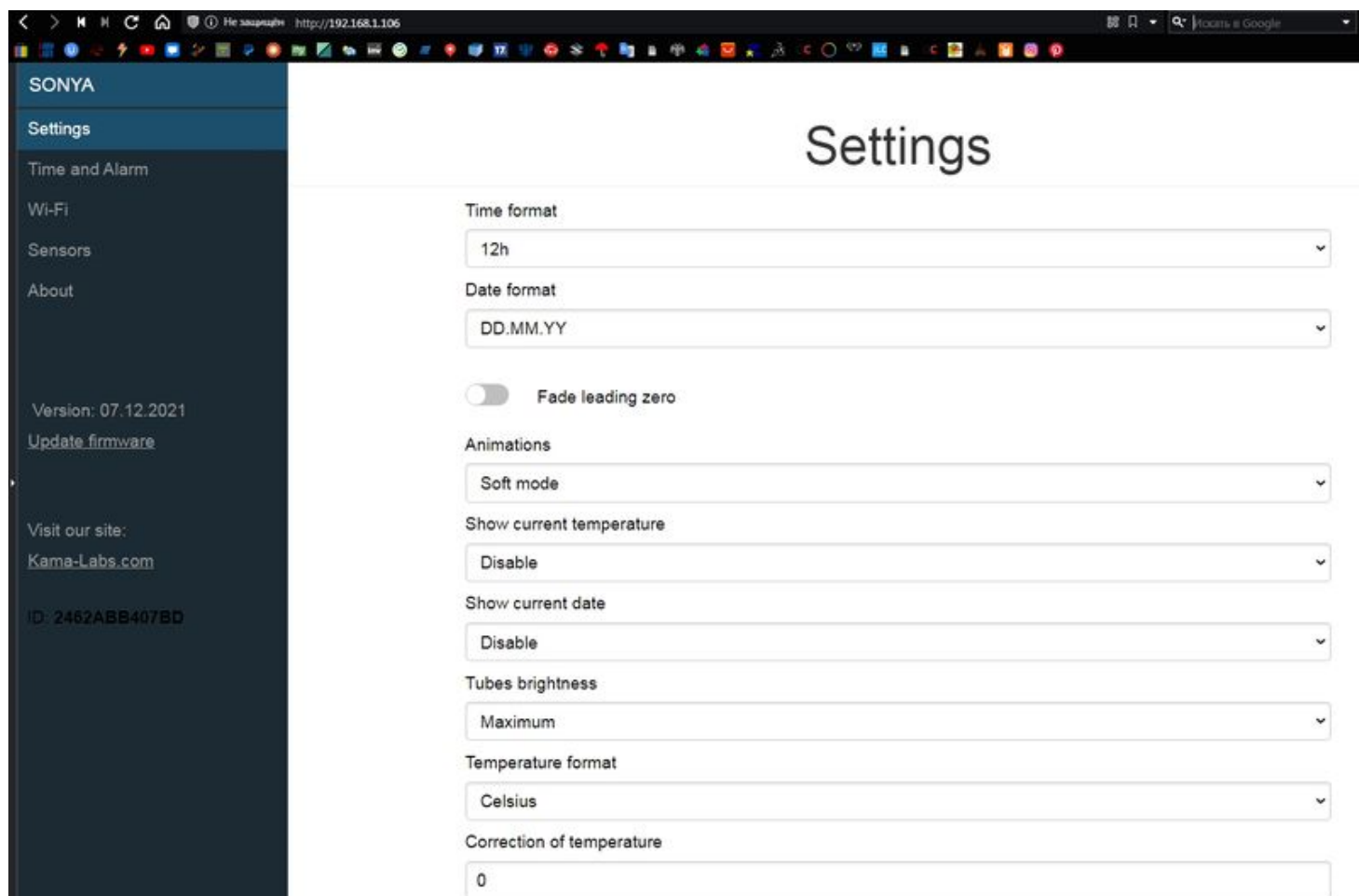
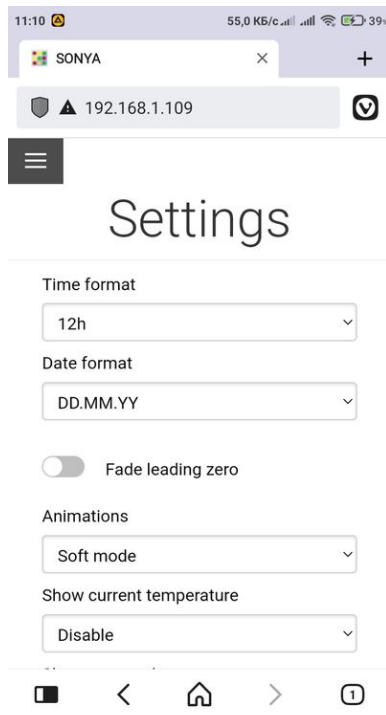
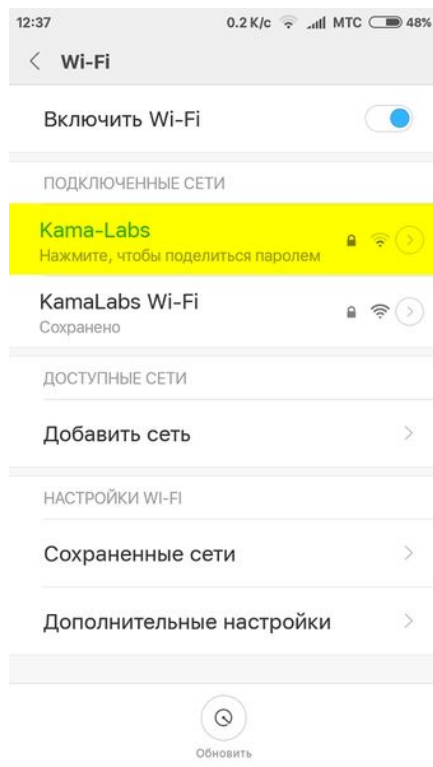
Dimensions of the clock in case - 232mm(W) x 52mm(L) x 53mm(H)

**DANGER! HIGH VOLTAGE! (~165 volts)**

## How connect to Sonya clock via Wi-Fi:

- 1) Turn on the clock.
- 2) Connect to "Kama-Labs" Wi-Fi network via your smartphone or PC. Password: **nixieclock**
- 3) Open browser and go to "sonya.local" or 192.168.4.1 or scan QR-code.
- 4) You will see page with all setting of Sonya clock.



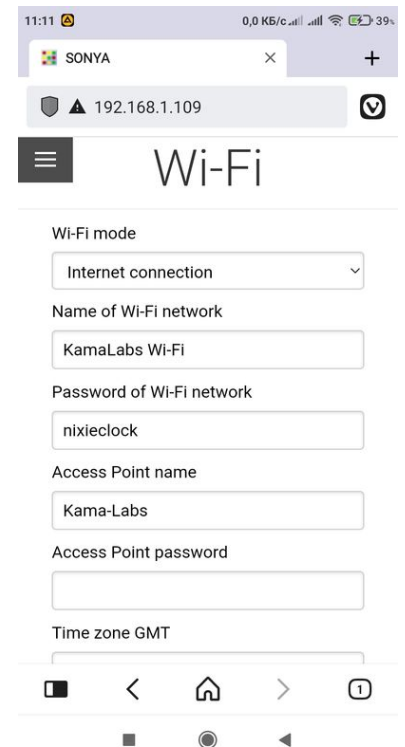


## Connecting to home Wi-Fi network:

Anuta clock can connect to your home Wi-Fi network and synchronize time from NTP server. Also you will have access to clock from any device connected.

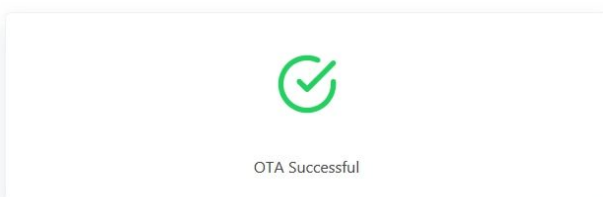
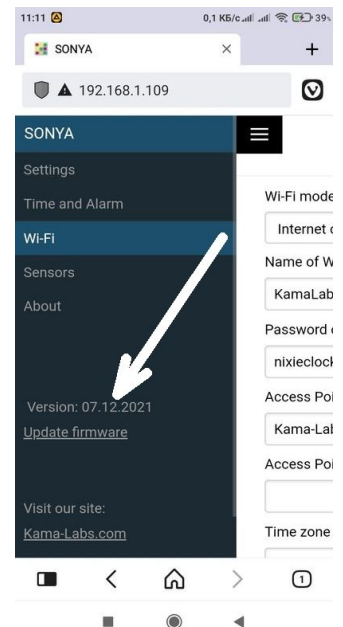
- 1) Go to “Wi-Fi” in menu
- 2) Fill fields “Name of Wi-Fi network” and “Password of Wi-Fi network” of your Wi-Fi network
- 3) In “Wi-Fi mode” choose “Internet connection”

At now clock will connected to your Wi-Fi network. If you will press “0” key on remote control clock will show status and IP-address.







## How to update firmware:

- 1) Go to [https://kama-labs.com/manuals\\_and\\_firmwares](https://kama-labs.com/manuals_and_firmwares) and check for new firmware version. Current version you can see here:
- 2) Click “Update firmware” link
- 3) Choose file with firmware
- 4) Click “Update”. Done!



## How to use remote control:

Button	Action
<b>OK</b>	
 	Next animation of digits
 	Change brightness of tubes
<b>1</b>	
<b>2</b>	Show alarm
<b>3</b>	Show humidity
<b>4</b>	Show temperature
<b>5</b>	Show date
<b>6</b>	On/off alarm
<b>7</b>	Brightness of back LEDs
<b>8</b>	Turn off LEDs and tubes (clock still works)
<b>9</b>	Brightness of back LEDs
<b>0</b>	Show IP address of the clock
<b>*</b>	Change brightness of front LEDs
<b>#</b>	Change color of front LEDs
<b>9 + 1</b>	Set Wi-Fi mode as internet connection
<b>9 + 2</b>	Set Wi-Fi mode as Access point
<b>9 + 3</b>	Reset all settings + set Wi-Fi mode as Access point
<b>9 + 5</b>	Tube test mode

Look at backside of clock and there you will see orange LED. It show Wi-Fi status of clock:

- LED not glow – the clock connected to you home Wi-Fi network;
- LED blink fast – the clock try connect to you home Wi-Fi network;
- LED blink slow – the clock in Access Point mode.



Power plug for 12V  
DC power adapter

Nixie tube drivers

Alarm indicator

Socket for IN-4  
nixie tube

AM/PM indicator

INS-1 separators

DS3231 real-time chip

High voltage  
adjuster



Buzzer

Diagnostic points

Input for motion sensor

Wi-Fi status LED

CR1220 battery

RGB LED

Temperature sensor

ESP32 MCU

Infrared received