

COMPACT LINEAR POWER CHIP WITH TEMPERATURE CONTROL AND CHANGEABLE RESISTANCE COEFFICIENT

Starplat is the linear power regulated digital converter chip for personal vaporizers. The board includes rising and lowering module, reverse battery polarity protection, reheating protection, temperature control with floating coefficient of TC witch can be manually tuned, huge energy efficiency, simple and intuitive control multi-language interface, the ability to update the firmware and very small size.

Specifications:

Output voltage	0-9 Volts
Output Power	0-40 Watts 50 Watts in new firmware
Atomizer Resistance	0.1- 5 Ohm
Dimensions	Height 23.5 mm. Width 20.5 mm. Thickness 13.5 mm.
Screen size	0.66'' OLED
Charger module	10x13mm micro 1A Li-ion Battery Charging Board
Interface language	English, Spanish, French, Russian
Reverse battery polarity protection	+
Control	Gyroscopic and button control is available
Board temperature control	+
Step-Up / Step-Down	Linear
Ability to self-update software	+
Coil temperature control	Nickel / Titan / User changeable coefficient
Saving settings after changing batteries	+

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Main screen

Screen language can be changed in “Settings mode”.
The amount of new languages gradually increases.



The main screen shows:

- Power
- Output voltage
- Resistance
- Battery charge level
- Real temperature (if TC mod enabled)

The “Up” и “Down” buttons directly change the wattage on the main screen.

Releasing the button, the screen lights at reduced brightness for 5 seconds, then it goes into standby mode. This brightness is adjustable in “Settings mode”.

Control

3 fast clicks- Gyroscopic control mode.



5 fast clicks- Settings mode.



7 fast clicks- On/Off.



When in “Settings mode” gyroscopic and button control is available.

“Fire” = ENTER, pushing main button will confirm action.

“UP” and “DOWN” buttons repeat your gyroscopic actions.

Temperature control

General information

When the new coil is installed the chip automatically fixes the resistance of the “cold” coil and uses it for temperature control calculation methods.

WARNING: important to cool down the coil before use when new build installed.

Wattage in temperature control mod

TC in wattage mode

Setting wattage in TC power mode only affects the rate of heating spiral. The higher wattage the faster coil would be heated up (boost heating mod). As soon as the coil heated up to the desired temperature the chip instantly decrease the power just to to maintain the desired temperature.

TC settings

To set TC settings, enter the “T.Control mode” in “Settings mode”.

Pre-resistance values for titanium and nickel are available. Also the chip supports TC mod with stainless steel coils and other materials with manually setting the drag coefficient.



Standard rates for the most popular metals ($10^{-3} (1 / K)$):

Nikel	6.0 - 6.5
Titan	3.5
Steel	1.0 - 1.1

Error messages

Low Battery



Short circuit



Non high drain battery or poor contact between the battery and board



No atomizer



Board overheat. Needs to cool down.



Firmware update

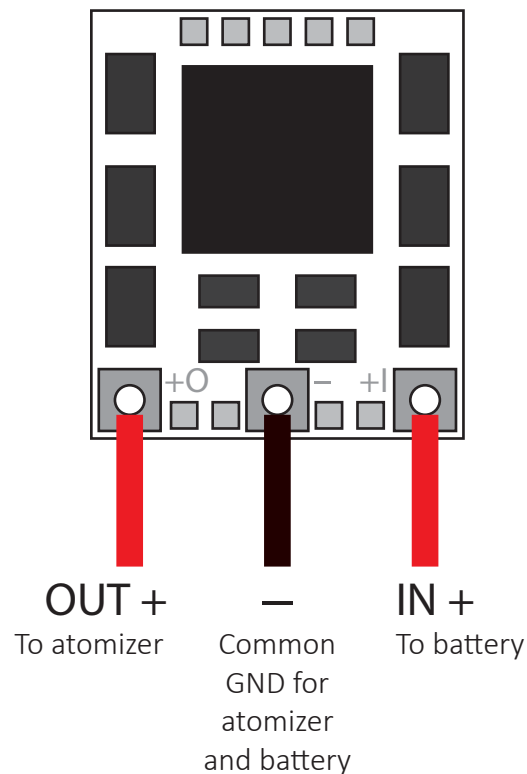
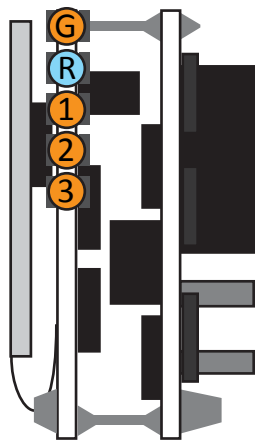
Bootloader and new firmware you can find following the link

<http://demo.proverkamaketov.ru/firmwares/>

Firmware update process

- 1) Load HIDBootloader (Windows).exe
- 2) Disconnect the battery.
- 3) Hold "FIRE" button and plud the chip to your PC. ("DOWN" button in previous release)
- 4) Wait till the chip will be ready for operations.
- 5) When "4" ready release the "DOWN" button
- 6) Choose the update file "*.hex"
- 7) Click "program"
- 8) Wait till update is ready (the check procedure will fail- it is OK)
- 9) Disconnect the chip or click "reset"

Pinout



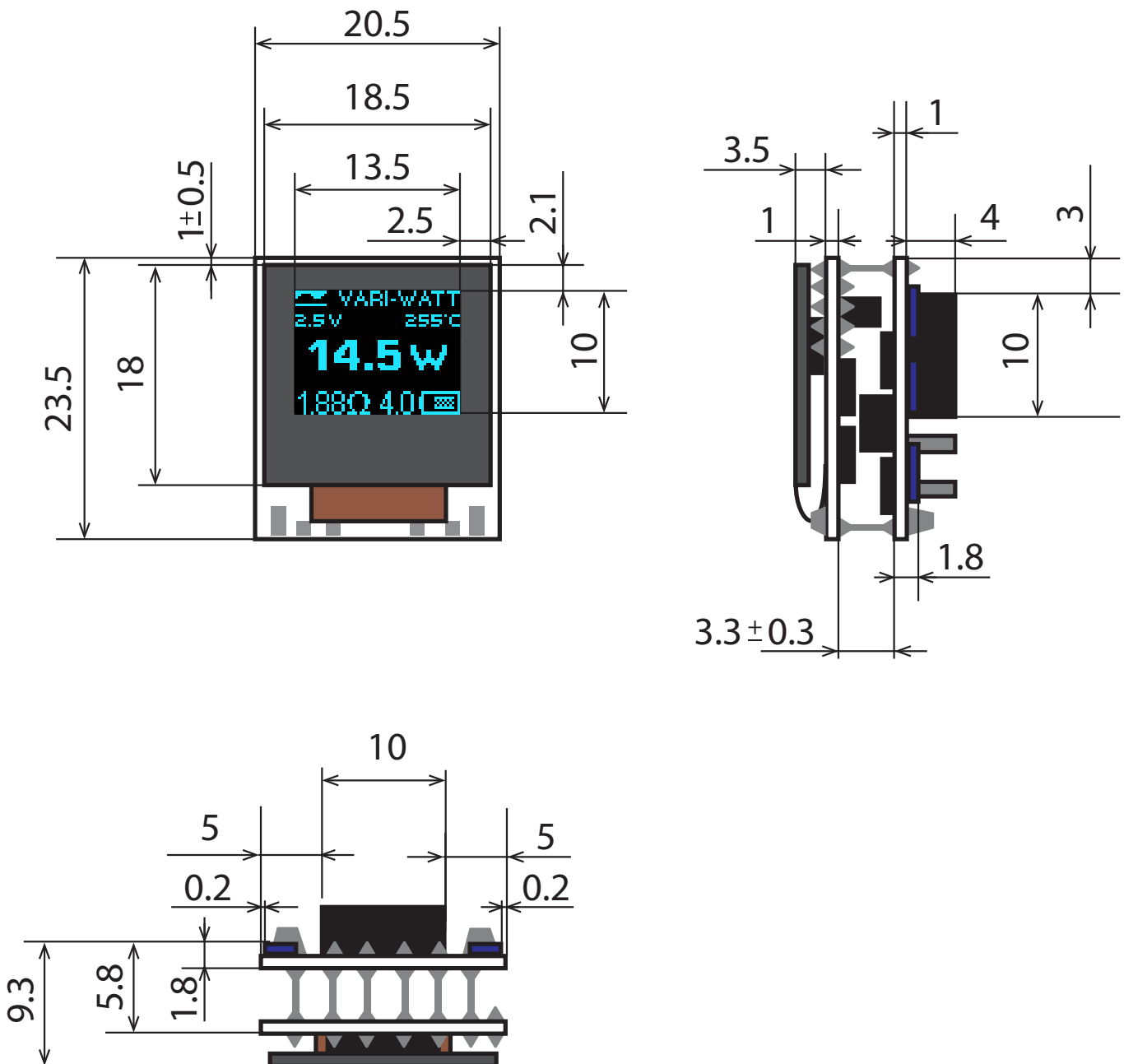
- ⓐ Buttons-
- ⓑ Reset Button. Not wired. Used only for update firmware when not able to disconnect battery.
- ⓒ Fire Button +
- ⓓ Button Up +
- ⓔ Button Down +

Safety information

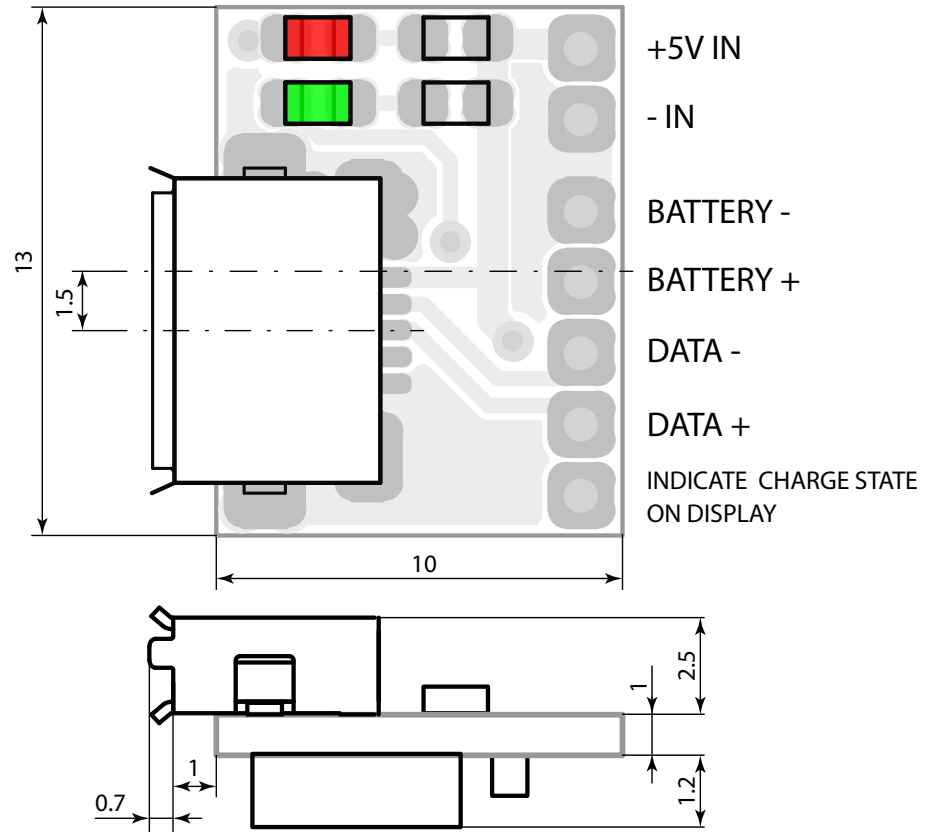
Very important!

- Do not heat a display above 60° C (140° F) ever for short time.
Do not use hot glue gun or soldering iron near display.
Overheating will cause a loss of display luminosity. All oled display fear of high temperature.
- Be careful with display wire.
- Do not spill liquids on board.

Mechanical Dimensions



Charging board dimensions and pinout



Charging board wiring diagram

