

Consumer Guide

ASIC REPAIR CENTER

BASED ON VERSION 1.34

Table of contents

Package	2
Device appearance.....	3
General information.....	5
Initial setup	6
Tester Interface.....	9
Tester web-interface.....	10
Tester working modes.....	17
1.Basic mode	17
2.Basic mode with RESET line testing	17
3.Advanced mode	17
4.Advanced mode with temperature sensors	18
5.EEPROM read	18
6.EEPROM write	18
7.EEPROM editor.....	19
Settings menu	20
Dashboard Explanations (Widgets).....	21

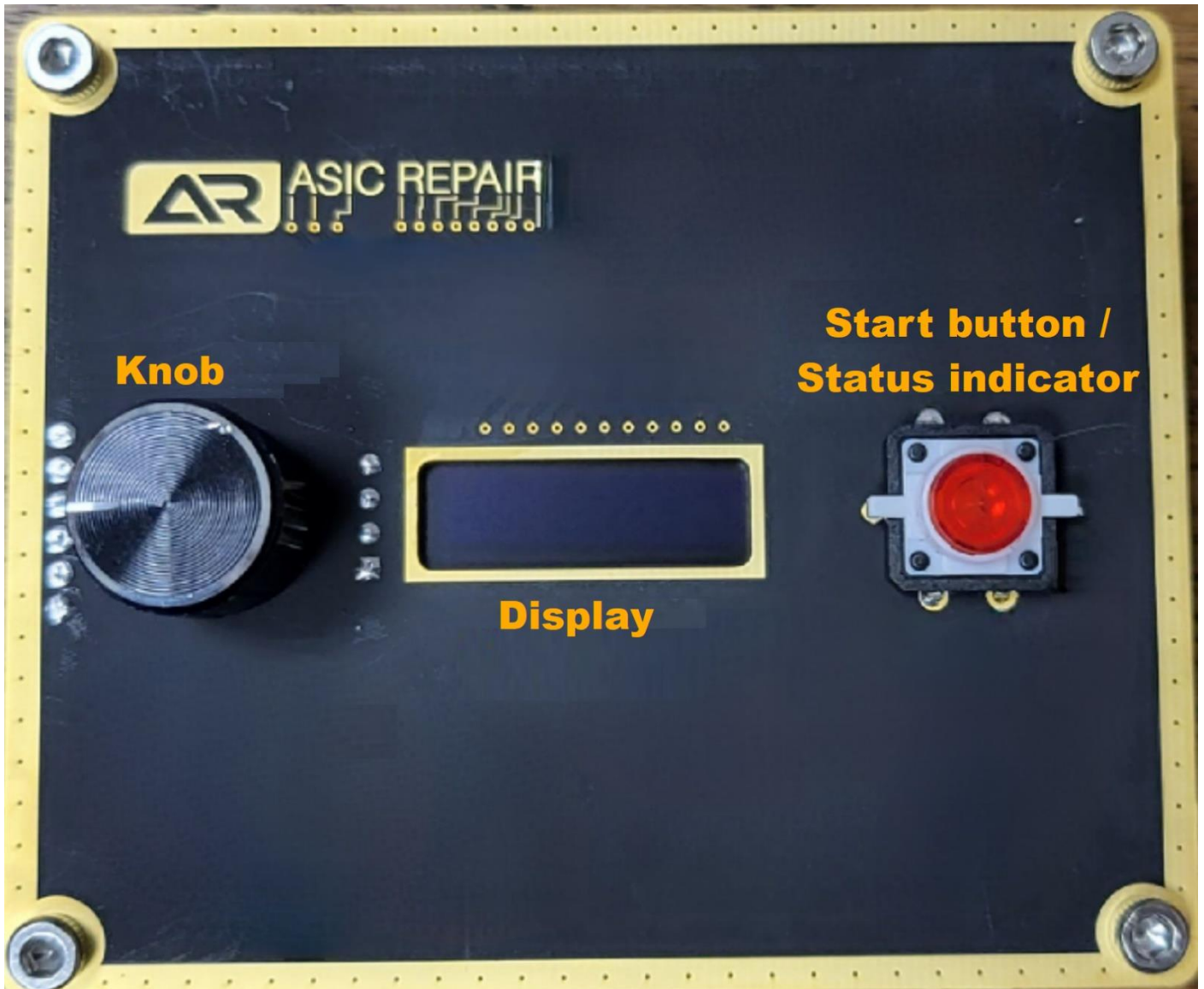
Package



1. ASIC REPAIR CENTER unit
2. Power supply
3. Power cable
4. Cable for hashboard connection

Device appearance

Front side



Upper side



Right side



Bottom side



Back side



General information

The ASIC REPAIR CENTER (ARC) device is designed to repair and diagnose mining hashboards.

The device helps to identify a faulty chip on the board, can restore the EEPROM without removing the device from the shelf, has the ability to edit the EEPROM, automatically detect the board, allows you to write your serial number to the hashboard.

At the moment, the device supports 30 hashboard models, the list of supported boards is growing. The list of available features is gradually expanding, thanks to constant software updates and extensive feedback from our customers.

Attention! In case of problems, we recommend that you refer to the repair manual or contact ARC technical support.

This device is not intended for domestic use and should be used by qualified personnel to test specific equipment.

Any non-professional use or actions, including use for purposes and / or conditions not provided for by the hardware or software complex of the device, leading to a breakdown of the device, entails the Seller's waiver of liability and refusal of warranty service.

Email: hello@asic.repair

Phone: [+7\(495\)924-70-10](tel:+7(495)924-70-10)

Phone: [+7\(985\)924-70-10](tel:+7(985)924-70-10)

Website: www.testers.asic.repair

Telegram chat for Russian speakers: <https://t.me/+kzS5RRN2MhA1N2Vi>

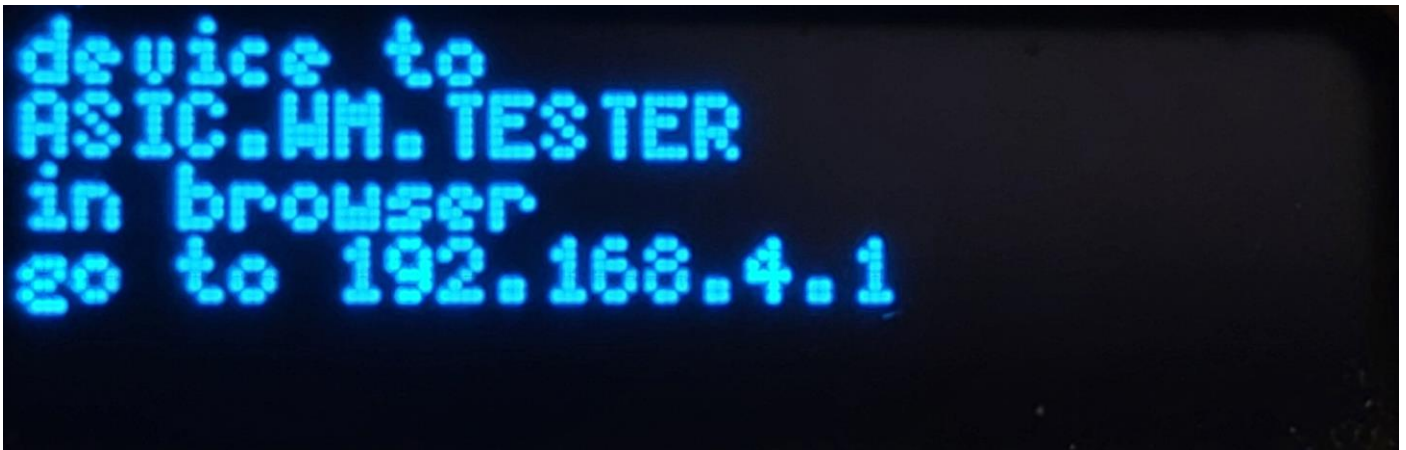
Telegram chat for English speakers: <https://t.me/+P5yhKS-rTU8xYjBi>

Initial setup

The tester requires an Internet Wi-Fi connection (2.4 Ghz).

To setup your Wi-Fi network:

1. Power the ARC on;
2. After about a minute, it will inform you that the tester has been switched to access point mode, which means that any of your devices will see a Wi-Fi network with the name «ASIC.WM.TESTER»;
3. Connect to said network;
4. The Wi-Fi configuration web interface will be available at <http://192.168.4.1/> :



5. By going to the specified address, you will see a list of available Wi-Fi networks:



6. Choose your Wi-Fi network;
7. Enter the password for it;

8. Click «save and reboot» button:



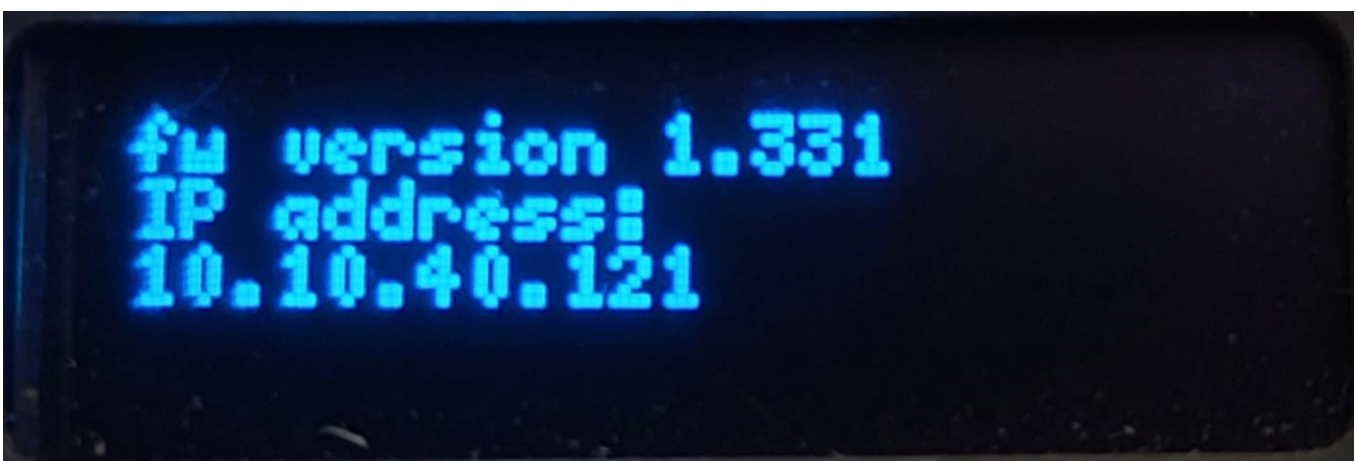
The screenshot shows a dialog box titled "Enter password" with a close button (X) in the top right corner. The text inside reads: "Enter the password for the selected network or enter the login and password manually". Below this text are two input fields: the first contains "AR" and the second contains four dots. At the bottom of the dialog is a blue button labeled "Save and reboot".

9. The device will reboot and connect to your Wi-Fi network:



The screenshot shows a dialog box titled "Success" with a close button (X) in the top right corner. The text inside reads: "Success. Reboot..." and "Now, you may close this page".

10. The IP address where the tester's web interface will be available will be displayed on the device screen:

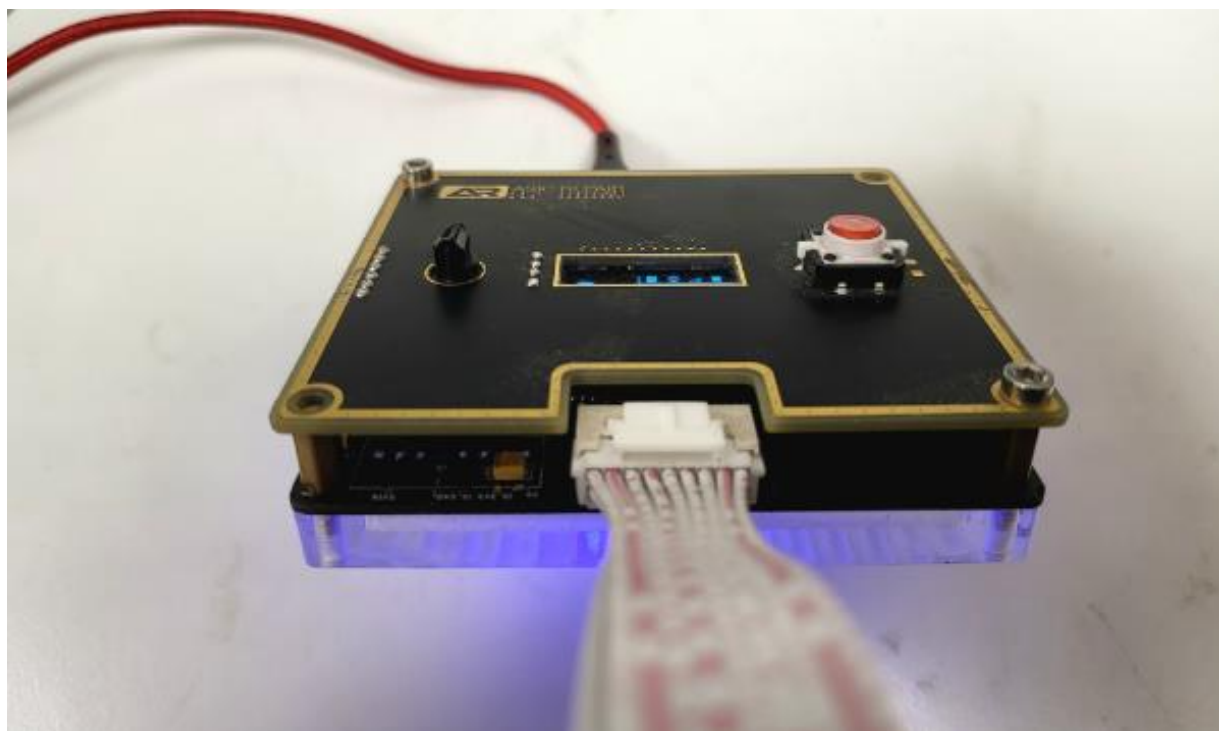


If you want to connect to another network, this can be done in the tester interface, for this you need to hold down the start button and insert the power cable, the button must be held for 5 seconds. If the Wi-Fi network is unavailable, tester will continue from step 2.

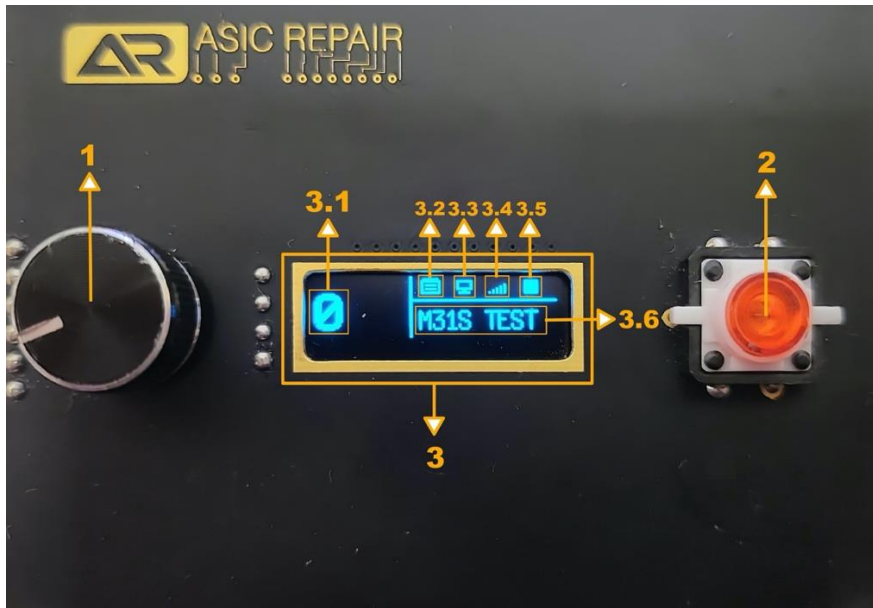
To connect the tester to the hashboard, you need to: connect the power cable to the USB-C port on the top of the tester, the other side to the power supply, and the power supply to the socket.



It is necessary to wait until the tester is fully loaded, then plug the connection cable into the lower part of the tester, and the other side into the corresponding connector on the hashboard. If the connection is successful, the board icon will be displayed (see item 3.2, in the «Tester interface» section).



Tester Interface



1. Knob with button. Has 3 modes:

- a) pressing - the tester screen displays the IP address for accessing the web interface;
- b) turn - board model selection;
- c) press and turn – function selection.

2. Start button. Depending on the selected function, it launches a hashboard test or EEPROM flashing. Pressing again stops the running function. The built-in LED serves as a status indicator. Lights up or flashes - the device is busy and performs a function, when it is not lit - the device is free.

3. Display. Information on the display: a crossed out square, means no connection (i. 3.2, 3.3).

3.1. Number of chips answering correctly;

3.2. Hashboard connection indication. Indicated by the board icon;

3.3 Indication of connection to the web interface. Indicated by the monitor icon;

3.4. Indication of connection to Wi-Fi, and signal strength. More "sticks" mean better signal strength;

3.5. Hashboard testing is indicated by the "Play" icon, and the absence of testing by the "Stop" icon;

3.6. Board model and function.

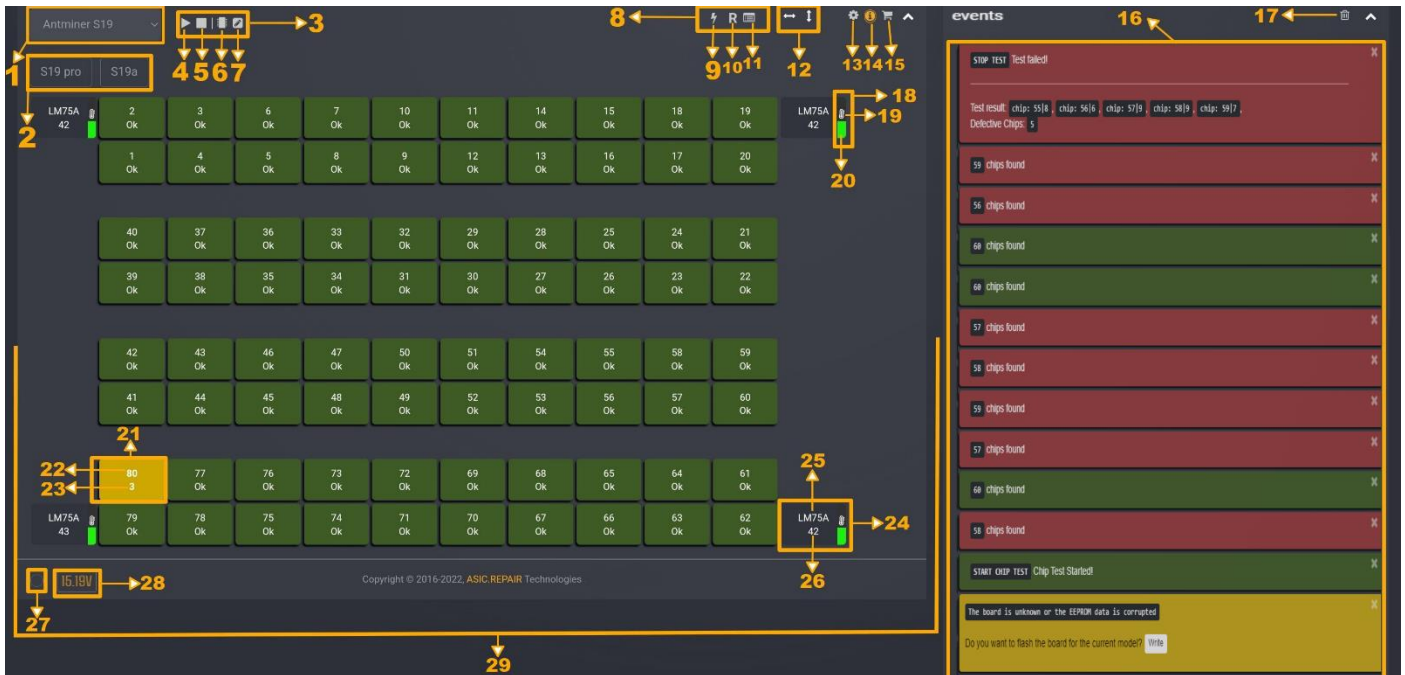
EEPROM flashing function:



Designed for flashing the EEPROM of a specific hashboard model. To switch to this mode, you need to press and turn the knob.

Tester web-interface

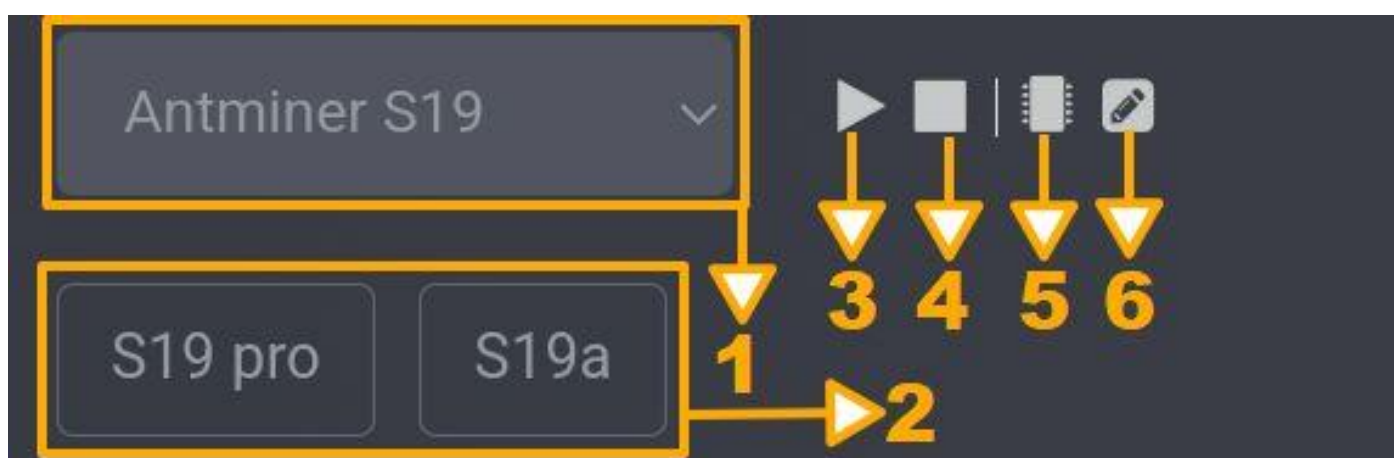
The main menu of the web interface of the tester



1. Hashboard model selection.
2. Quick access panel.
3. Test management section.
4. Run a test with selected test options.
5. Stop running test.
6. Activation of the EEPROM flashing process with a dump of the current model.
7. EEPROM editor.
8. Section for selecting hashboard test configurations.
9. Advanced testing mode. Displays on the map the response of each chip.
10. Resets the RESET line after each polling cycle. Cancels other modes.
11. Polling only selected chips. To activate, you must click on any chip (or several). Press this button to reset.
12. Flip the chip map horizontally and vertically. Made for ease of placement and repair of the board on the workbench.
13. Tester settings, Wi-Fi network connections, language settings, etc.
14. Interactive manual.
15. Shop.
16. Information panel. Displays various events of the tester: testing process, information about the board, the need for software updates, information about temperature sensors, the EEPROM editing process, etc.
17. Button for clearing the history of operations (log).
18. PCB and CHIP temperature sensors.
19. Temperature sensor status. Flashes red if one of the temperature sensors is faulty.
20. Temperature sensor scale. Hovering over with the mouse displays additional information.

21. Board chip. When pressed, the tester will poll only the selected chips.
Color coding: grey – chip information not received; green – correct response received from the chip; yellow/red (flashing) – last responding chip; red – there is no answer or it is incorrect.
22. Chip number.
23. Number of chip responses.
24. Temperature sensor.
25. Temperature sensor type.
26. Temperature value.
27. Indicator of receiving data from the tester. Flashes green, when data from the tester is received. Helps to understand that the test process is not «frozen».
28. Shows the current voltage of the hashboard, if the model supports this function.
29. Chip map. Replicates the chip layout of a real board and displays the state of the chips.

Test management section



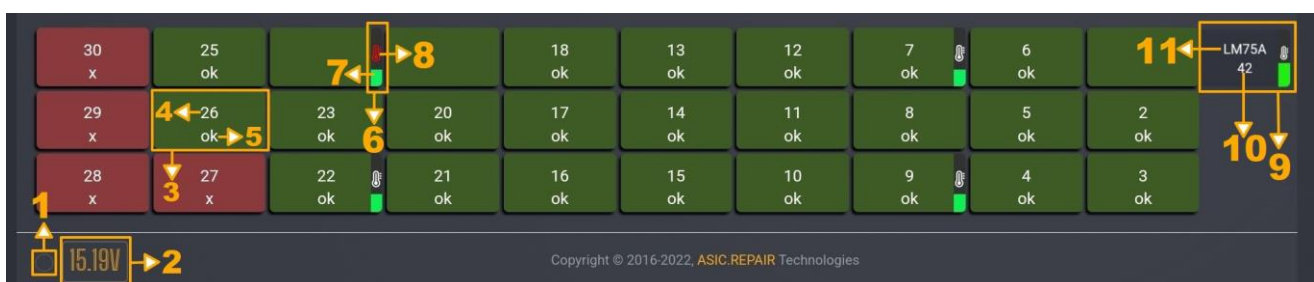
1. Model selection.
2. Quick access panel
3. Run a test with test options selected.
4. Stops test or EEPROM flashing.
5. Activation of the EEPROM flashing process with a dump of the current model.
6. EEPROM editor.

Section for selecting dashboard test configurations



1. Advanced testing mode. Displays on the map the response of each chip.
2. Temperature sensors testing mode.
3. Resets the RESET line after each polling cycle. Cancels other modes.
4. Polling only selected chips. To activate, you must click on any chip (or several). Press this button to reset.
5. Flip the chip map horizontally and vertically. Made for ease of placement and repair of the board on the workbench.
6. Tester settings, Wi-Fi network connections, language settings, etc.
7. Interactive manual.
8. Shop.

Dashboard chip map



Replicates the chip layout of a real board and displays the state of the chips.

1. Indicator of receiving data from the tester. Flashes **green**, when data from the tester is received. Helps to understand that the test process is not «frozen».
2. Shows the current voltage of the hashboard, if the model supports this function.
3. Board chip. When pressed, the tester will poll only the selected chips.
Color coding: **grey** – chip information not received; **green** – correct response received from the chip; **yellow/red** (flashing) – last responding chip; **red** – there is no answer or it is incorrect.
4. Chip number
5. Number of chip responses. «OK» – correct response.
6. PCB and CHIP temperature sensors.
7. Temperature sensor scale. Hovering over with the mouse displays additional information.
8. Temperature sensor status. Flashes red if one of the temperature sensors is faulty.
9. Temperature sensor.
10. Temperature value.
11. Temperature sensor type.

Information panel (Log)

events

1

2

STOP TEST Test failed!

Test result: chip: 55|8, chip: 56|6, chip: 57|9, chip: 58|9, chip: 59|7, Defective Chips: 5

59 chips found

56 chips found

60 chips found

60 chips found

57 chips found

58 chips found

59 chips found

57 chips found

60 chips found

58 chips found

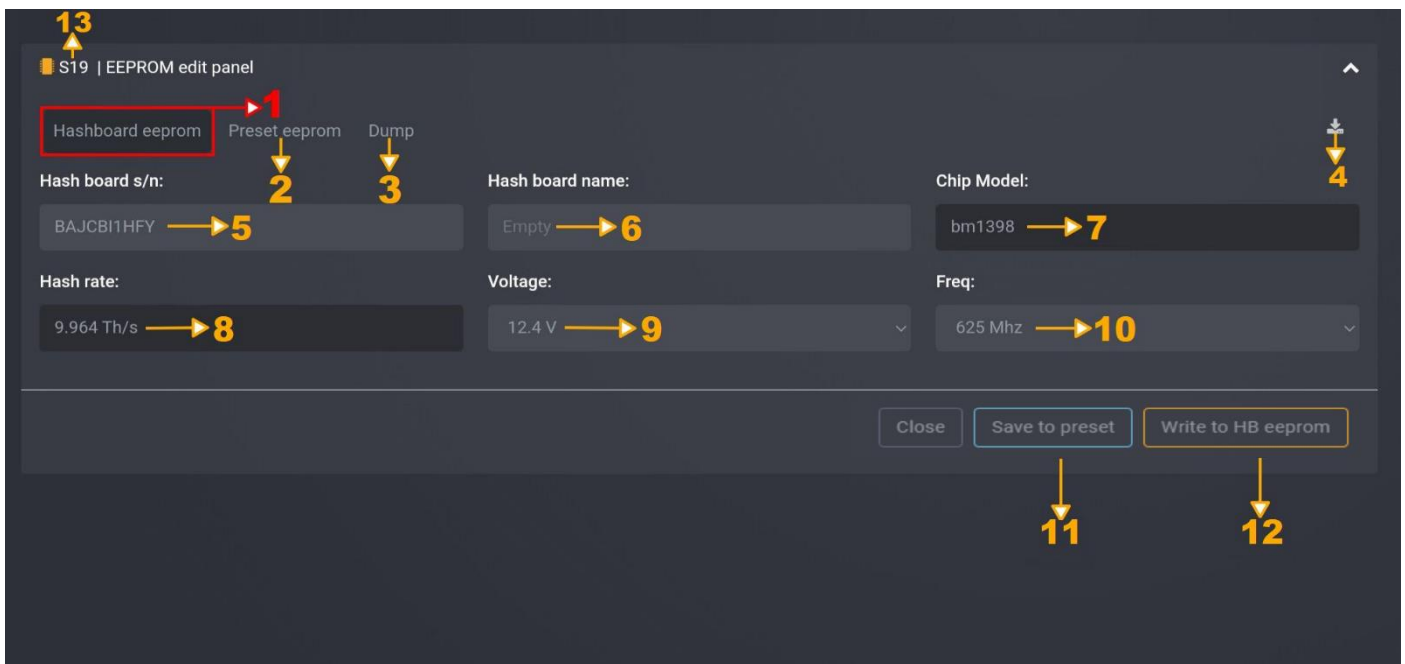
START CHIP TEST Chip Test Started!

The board is unknown or the EEPROM data is corrupted

Do you want to flash the board for the current model? Write

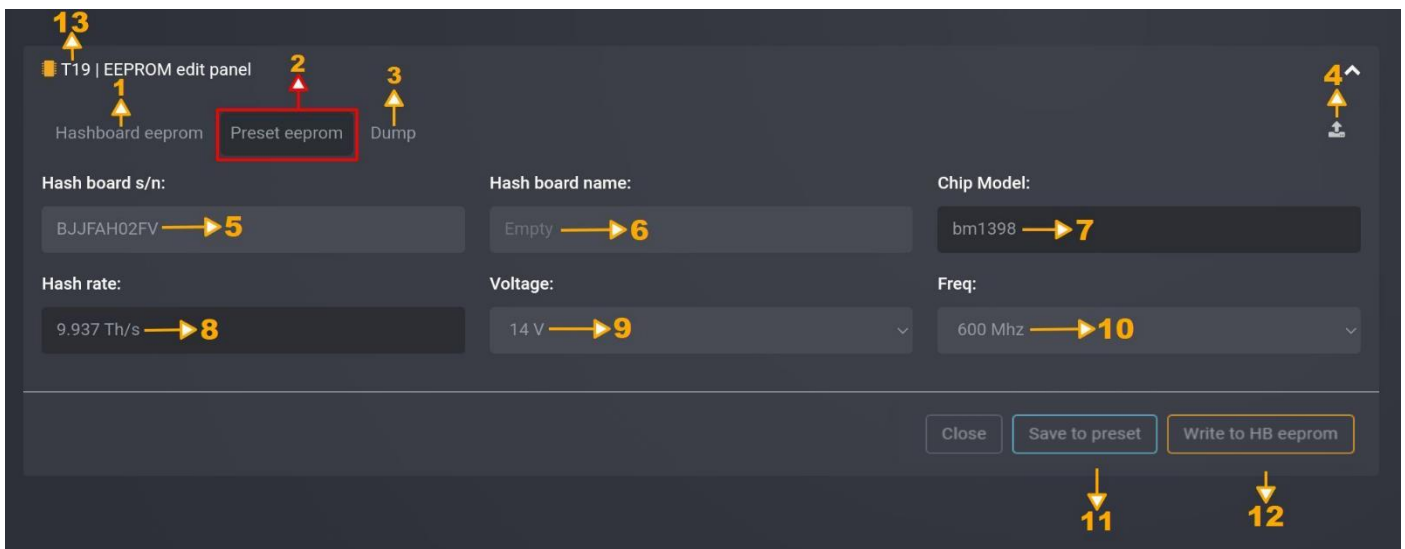
1. Displays various events of the tester: testing process, information about the board, the need for software updates, information about temperature sensors, the EEPROM editing process, etc.
2. Button for clearing the history of operations (log).

Connected hashboard EEPROM (tab 1)



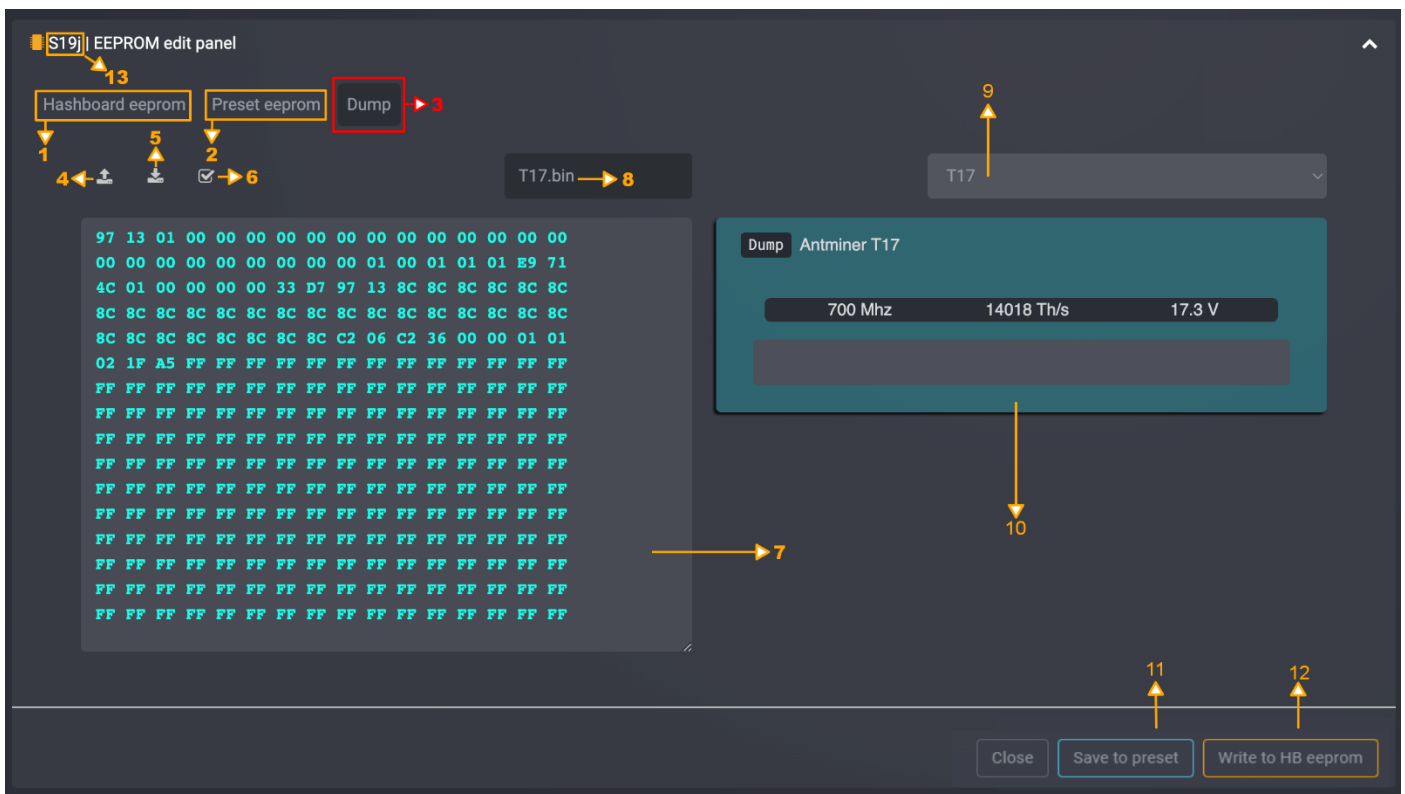
1. Connected hashboard EEPROM tab [**Current tab**].
2. EEPROM dump in the tester memory (for selected model).
3. EEPROM dump editor tab (for external dumps).
4. Saving EEPROM dump from the board to a file.
5. Hashboard serial number.
6. Firmware Type (relevant for the boards of the x19jxx line)
7. Chip model.
8. Hashrate (approximate, depends on selected frequency).
9. Hashboard voltage.
10. Frequency.
11. Saving EEPROM dump from the board to the tester memory.
12. Writing a dump from the tester's memory to the board EEPROM.
13. Selected model.

EEPROM dump in the tester memory (tab 2)



1. Connected hashboard EEPROM tab.
2. EEPROM dump in the tester memory (for selected model) [**Current tab**].
3. EEPROM dump editor tab (for external dumps).
4. Load a preset from a file to the tester memory. EEPROM in the file must match the current model selected in the tester.
5. Hashboard serial number.
6. Firmware Type (relevant for the boards of the x19jxx line).
7. Chip model.
8. Hashrate (approximate, depends on selected frequency).
9. Hashboard voltage.
10. Frequency.
11. Saving EEPROM dump from the board to the tester memory.
12. Writing a dump from the tester's memory to the board EEPROM.
13. Selected model.

EEPROM dump editor tab (tab 3)



On this tab, there is no control over dump model identification. It is useful if the tester does not know the board model in the dump. Allows you to restore EEPROM from a backup file or the history of the device (miner) log.

1. Connected hashbord EEPROM tab.
2. EEPROM dump in the tester memory (for selected model).
3. EEPROM dump editor tab (for external dumps) [**Current tab**].
4. Load the EEPROM dump from a file to the tester memory.
5. Save EEPROM dump from tester memory to a file.
6. Dump verification (**if the model is known to the tester, information about it will be displayed in the information window i.10**).
7. Dump text from the tester log (manual editing available).
8. File name (the file will be written to your drive, the name matches the model after dump identification).
9. EEPROM dump storage on the ARC server. Allows you to select the required dump from the repository.
10. Dump information. When the dump is identified by the tester, information about the model will be displayed here.
11. Saving EEPROM dump to the tester memory (model preset, i.13).
12. Writing a dump from the tester's memory to the board EEPROM.
13. Selected model.

Tester working modes

Before any testing, make sure:

- The tester is on and running (p. 8).
- Hashboard is connected to the tester.
- The board is recognized and its model is displayed on the tester display.
- Hashboard is powered by the correct voltage for the model.

External power is not needed to read/write EEPROM firmware.

After completing all the necessary procedures, do not forget to turn off the power of the hash board to prevent possible overheating.

1. Basic mode

To run a basic test, make sure the tester is in board test mode. (for example, «S17 TEST» is displayed).

Turn on test mode (p. 14 i.2), to do this, press the button on the tester (p. 9 i.2) or «Play» button («Test management section» p. 14 i.2) in web-interface (p. 7 i.10).

The test will be launched, the LED of the “start” button will flash on the tester, signaling a running test, the tester’s screen will display the number of chips found (the number of correct answers) (p.9 i.3.1).

To stop the test, press the button on the tester (p. 9 i.2) or «Stop» button («Test management section» p. 14 i.3) in web-interface (p. 7 i.10).

Detailed test results are reflected in the information panel, in case of using the web interface (p.23-25).

2. Basic mode with RESET line testing

Start a basic test (i.3), wait for the first test cycle to complete. The widget in the information panel will show the number of chips found (p. 23).

Press the «R» button, it will turn green («Section for selecting hashboard test configurations» p. 14 i.2), every test cycle will reset the RESET line. The widget in the information panel will show if the RESET line test mode is enabled or disabled (p. 24).

When the mode is activated, the advanced mode is canceled, as well as thermal sensors and selected chip testing.

Pressing the «R» button again will disable the RESET mode, the button turns grey.

3. Advanced mode

Start a basic test (i.3), click on "lightning" icon («Section for selecting hashboard test configurations» p. 14 i.1), it will turn green. The widget in the information panel will show if the advanced mode is enabled or disabled (p. 23).

In this mode, chips are polled according to their number (address).

When activated, the RESET line test mode is canceled.

Pressing the «lightning» button again ends the address polling, button turns grey, tester will switch to basic test mode. To stop the test, press the button on the tester (p. 9 i.2) or «Stop» button («Test management section» p. 14 i.3) in web-interface (p. 7 i.10).

4. Advanced mode with temperature sensors

If the function of temperature sensors testing is not supported by the tester for the selected model, the “thermometer” icon is not shown in the mode panel. Some models do not require activation of this mode (for example, x19xx) since the temperature sensors are not in the chips and their polling is activated at the start of the test. In that case, the thermometer icon is missing in the mode panel as well.

To start testing start advanced mode (i.5), wait for the first test cycle to complete. The widget in the information panel will show the number of chips found (p. 23).

Click on the "thermometer" button, it will turn green («Section for selecting hashboard test configurations» p. 14 i.2). The search for temperature sensors will be activated. The process takes from 5 seconds to 2 minutes. Wait.

After the search process is completed, the information panel will display the number of sensors found (p. 23) their types (p. 24). The testing process will continue.

Pressing the "thermometer" button again will disable this mode, the button turns grey. The test continues in advanced mode.

5. EEPROM read

Sometimes you need to save an EEPROM dump of the hashboard, for this you can use the corresponding function in the web interface.

Make sure the hashboard is connected to the tester (p. 7 i.10), in web-interface (p. 7 i.10) click on the “EEPROM editor button” (p. 14 i.4) go to the connected hashboard EEPROM (p. 17) and press the «save dump» button (p. 17 i. 4). Dump will be saved to a file on your drive.

You can also use «Save to preset» button (p. 17 i. 4). Dump will be saved to the tester memory. Convenient for copying EEPROM to another hashboard.

Detailed information about the reading process is displayed in the information panel on the right (p. 27).

6. EEPROM write

Sometimes it is required to restore a damaged EEPROM in a hashboard. To do this, you can use the tester presets, do this by reading it from a working hashboard (i.5) and further writing in the faulty one, recovering from file or miner log (i. 7).

To switch to the preset writing mode in the tester, you need to press and turn the knob clockwise, to activate the «EEPROM» functionality. From there you can turn the knob to select the model.

To start writing press the «start» button on the tester (p. 10), wait for the process to finish. Detailed information about the recording process will be displayed in the information panel of the web interface.

To restore EEPROM from a donor board, save a dump from a working hashboard (i.5), open web-interface (p. 7 i.10) and press «EEPROM editor» button (p. 14 i.4). Then you need to select the EEPROM in the tester memory tab (p. 17) and press «Write to hashboard».

Detailed information about the writing process is displayed in the information panel on the right (p. 27).

7. EEPROM editor

The use of this function is only possible if the selected hashboard model has the EEPROM chip and the implementation of the described functionality for this model is present in the tester.

The tester allows you to change the service information contained in the EEPROM of the hashboard, for this purpose, the EEPROM editing function is present in the web interface. With its help, you can read and write hashboard EEPROM, edit the information contained in EEPROM, save and restore EEPROM through files, restore a dump from the miner log.

To edit an EEPROM, open web interface (**p. 7 i.10**). Press the «EEPROM editor» button (**p. 14 i.4**).

Select the needed tab: connected hashboard EEPROM (**p. 14**), tester memory (**p. 15**), external dump editor (**p.16**).

A detailed description of the process of reading and writing EEPROM is described in **i. 5, 6** of this section.

Edit the necessary service information and save it.

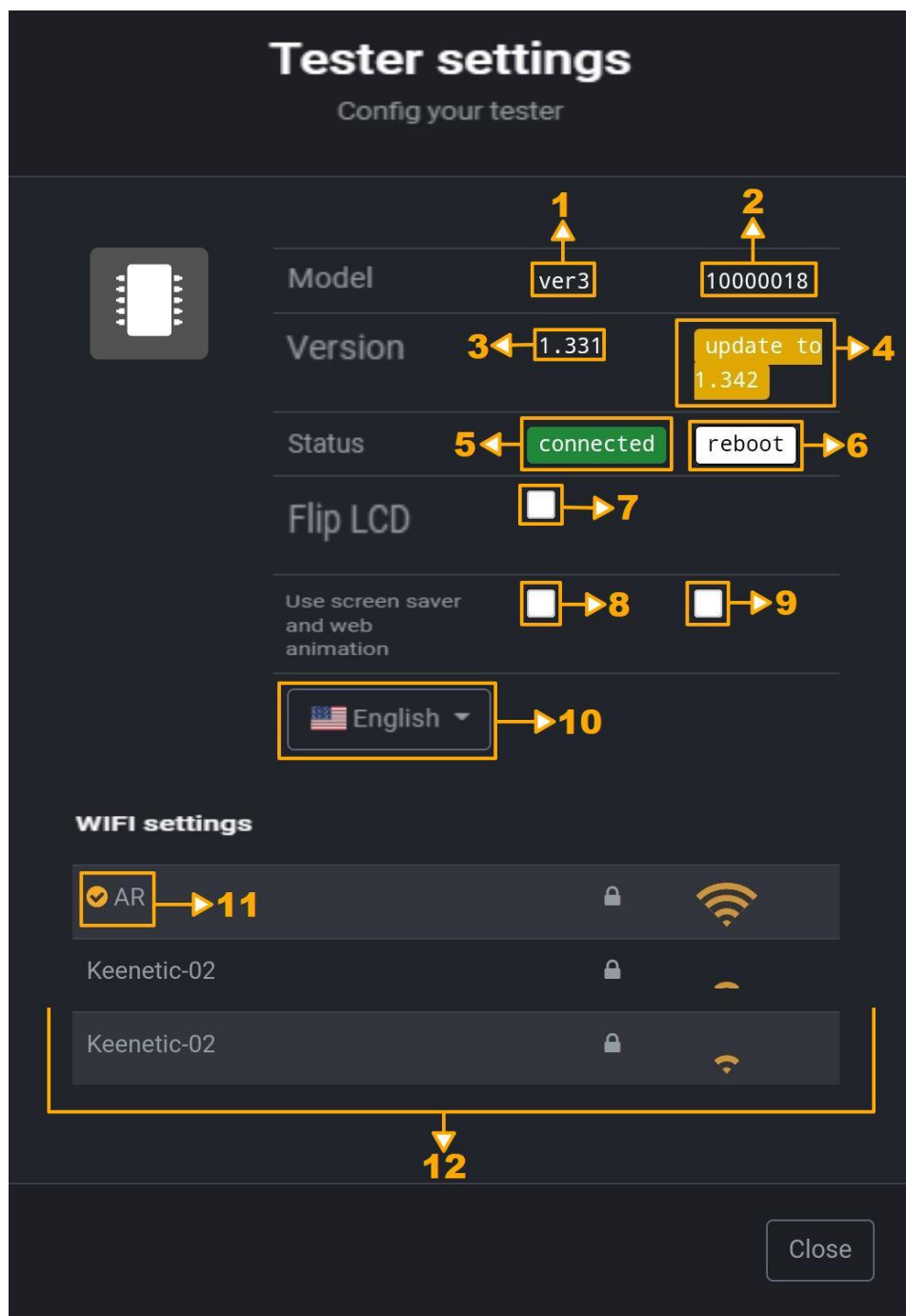
If the EEPROM is damaged or the model is not supported by the tester, but there is a need to restore it, use the external dump editor tab.

This tab works as a «flasher» and does not control the contents of the dump for compliance with the selected model in the tester.

You can load a dump from a file, edit it in the built-in HEX editor (**p. 16 i.7**), paste the contents of the miner log with a dump (for example x19jxx) and save it to the internal memory of the tester (**p. 16 i.11**), hashboard (**p. 16 i.12**) or a file (**p. 16 i.5**).

Detailed information about the editing and recording process will be displayed in the information panel on the right.

Settings menu



1. Model (hardware version).
2. Serial number.
3. Current software version.
4. Latest software version, available for download (p. 28).
5. Tester connection status.
6. Reboot button.
7. Button to flip the image on the LCD.
8. Automatic screen off, to prevent screen burn.
9. Animation effect on the web interface (tester sleep mode indication).
10. Language selection menu.
11. Indicator of connection to your Wi-Fi network.
12. Wi-Fi network list.

Dashboard Explanations (Widgets)

ERROR Board n/c



Hashboard not connected.

In some cases, the tester may malfunction, refer to the repair manual.

ERROR No license for S19j model



A board that is not licensed has been connected. To unlock, you can purchase the required module in the online store.

ERROR Model not supported x19jx



This hashboard is not supported by the EEPROM editor.

The board is unknown or the EEPROM data is corrupted



Do you want to flash the board for the current model?

Hashboard is not recognized or hashboard EEPROM is corrupted.

Offer to flash EEPROM for the selected model in the tester. Before proceeding with the firmware, make sure that the test equipment is working, the problem may be in the cable or tester components, or the stability of the connection to the board. There may also be a problem with the EEPROM on the board, including new EEPROM firmware, or the absence of an EEPROM chip on new board models.

The board is unsupported x19jxx



Do you want backup EEPROM to file?

The tester could not determine the model of the hashboard by the EEPROM firmware due to a corrupted or unknown firmware version. Offer to create a backup copy of an unknown EEPROM.

It is recommended to contact ARC technical support.

EEPROM BACKUP The board's EEPROM is backed up



Backup copy of unknown EEPROM created.
If you wish, you can give a copy to ARC specialists for study.

ERROR Need re-plug board, reboot or to check
board PIC/EEPROM



Tester could not read PIC/EEPROM data.

You need to make sure they work, check board connection. Make sure the tester works. See repair manual.

Board may be S19 or S19pro



The tester was unable to set a valid board model..

Make sure the selected board model matches your board. For convenience, use the quick access panel.

Board connected Antminer S19j



545 Mhz

9.998 Th/s

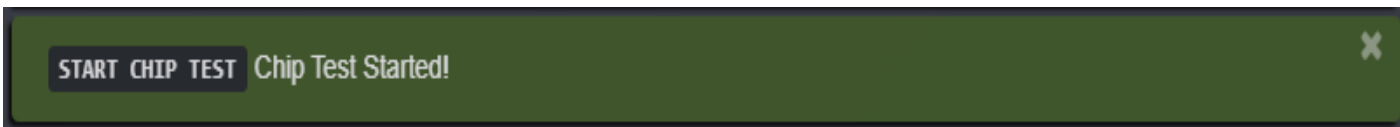
13.8 V

AJGJB1G77

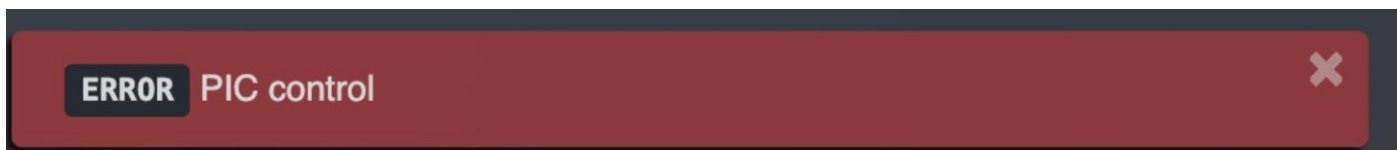
Save

This widget provides brief information about the connected hashboard.

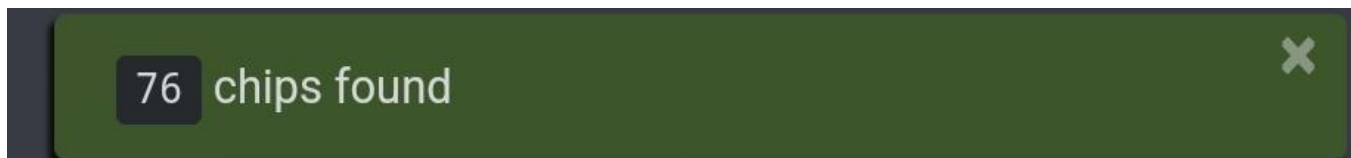
Contains information that the board is connected to the tester; hashboard name,
frequency/hashrate/voltage; serial number of the board.



Test start notification.



PIC controller did not respond to the request.



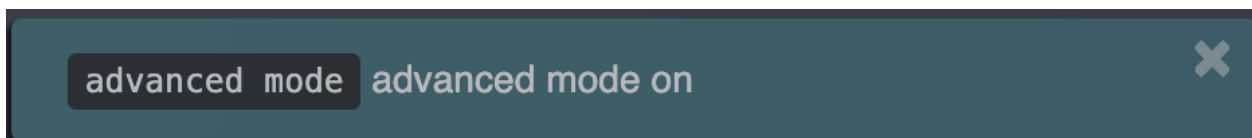
Information about the number of detected chips.

In this case, 76 out of 76 were found, green indication means that all chips on the hash board are detected, red indicates that not all.

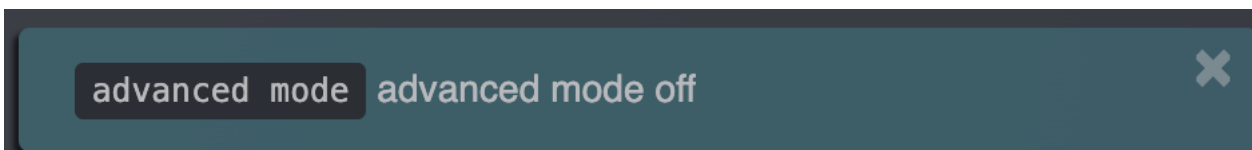


Information about the number of detected chips.

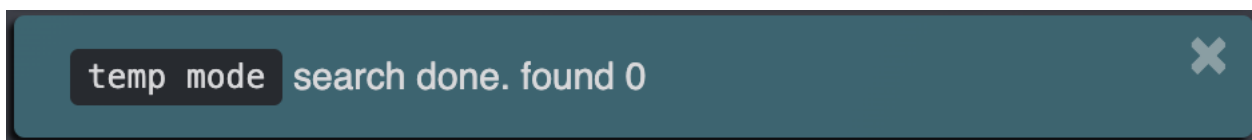
In this case, 72 out of 76 are found, which means that one or more chips are faulty.



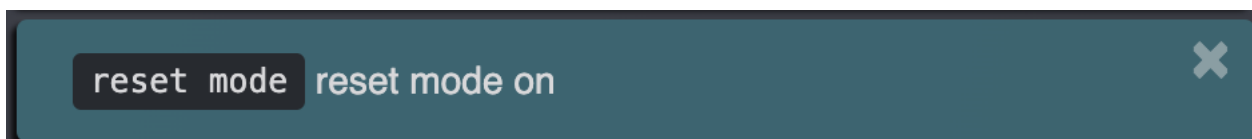
Advanced test mode is turned on.



Advanced test mode is turned off.



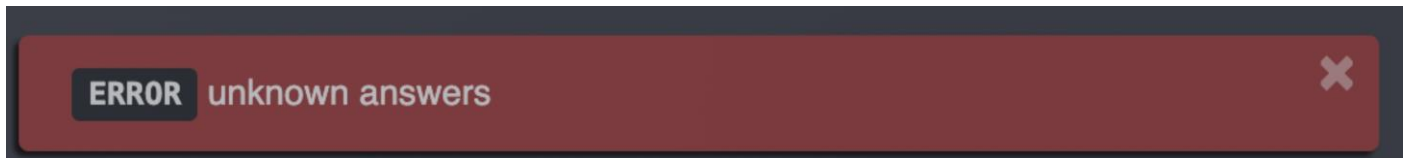
Number of temperature sensors found.



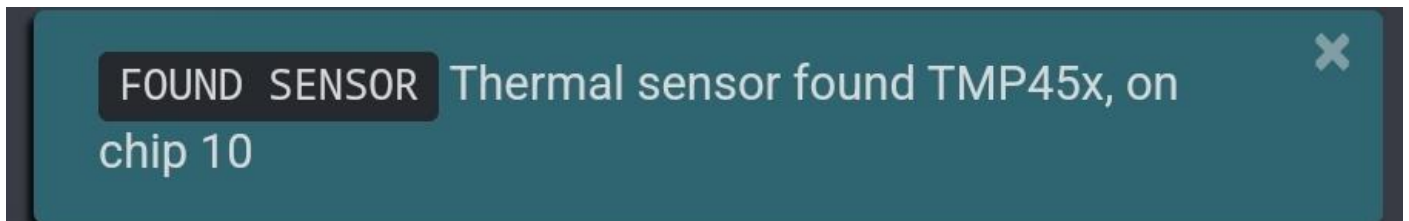
RESET line test mode is turned on.



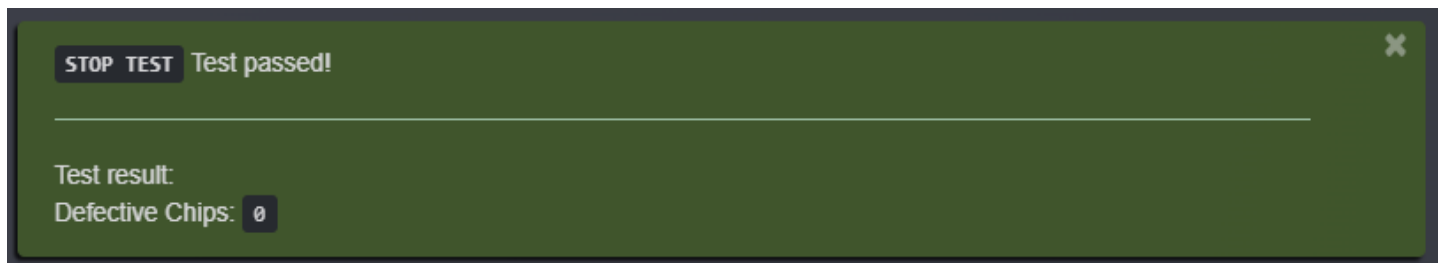
RESET line test mode is turned off.



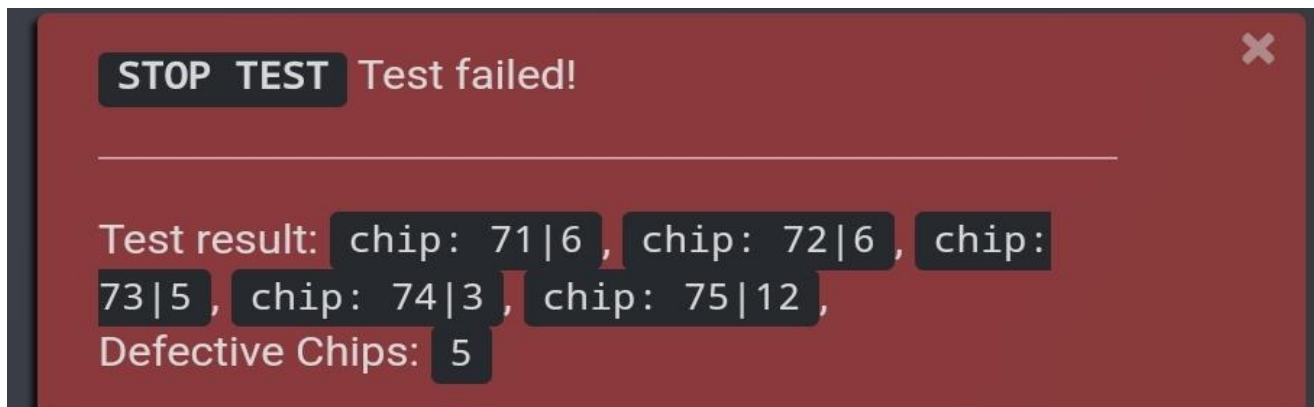
Distorted responses received from board, which cannot be identified.



Informing about the detection of a temperature sensor on a chip.
This widget describes the sensor model and its location on a specific chip.



Test passed successfully.
Means that the number of answered chips corresponds to the number of chips in the selected model.



Reporting a test failure.
The results indicate the chip number and the number of requests to it (for example 71|6 ; 71 is a chip number, 6 – number of requests to the chip.) , and number of defective chips.

EEPROM WRITE EEPROM flashing launched!

Informing about the launch of EEPROM writing.

ERROR WRITING FAIL

Tester could not write EEPROM.

EEPROM EEPROM saved

EEPROM firmware is saved in the tester's memory.

EEPROM WRITE EEPROM flashing completed!

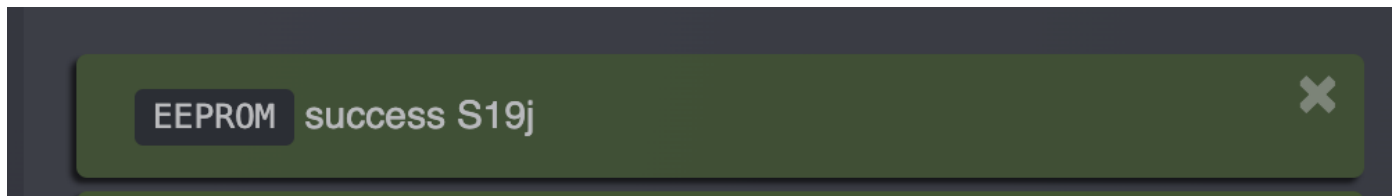
Hashboard EEPROM firmware flashing completed successfully.

EEPROM WRITE EEPROM flash error!

Informing about an error that occurred during the writing of EEPROM.

EEPROM WRITE error

Error writing EEPROM firmware to hashboard memory.



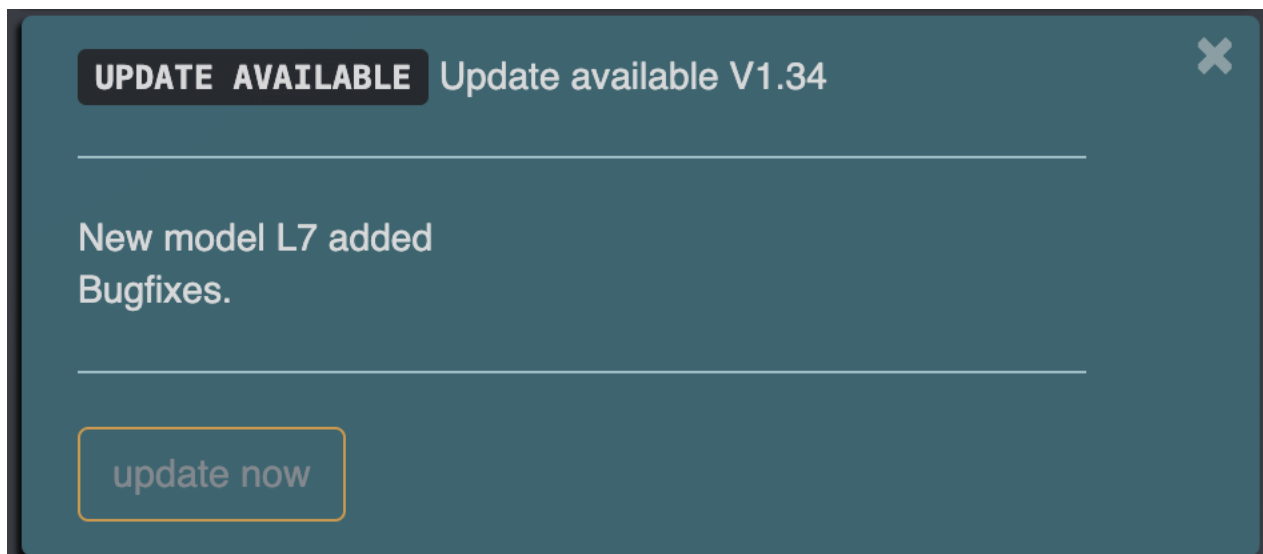
The EEPROM file was successfully uploaded, the dump in the file corresponds to the selected model.



The EEPROM file is corrupt or does not match the model.
If you are sure about the file, use the «external dump editor» tab, and load it from there.

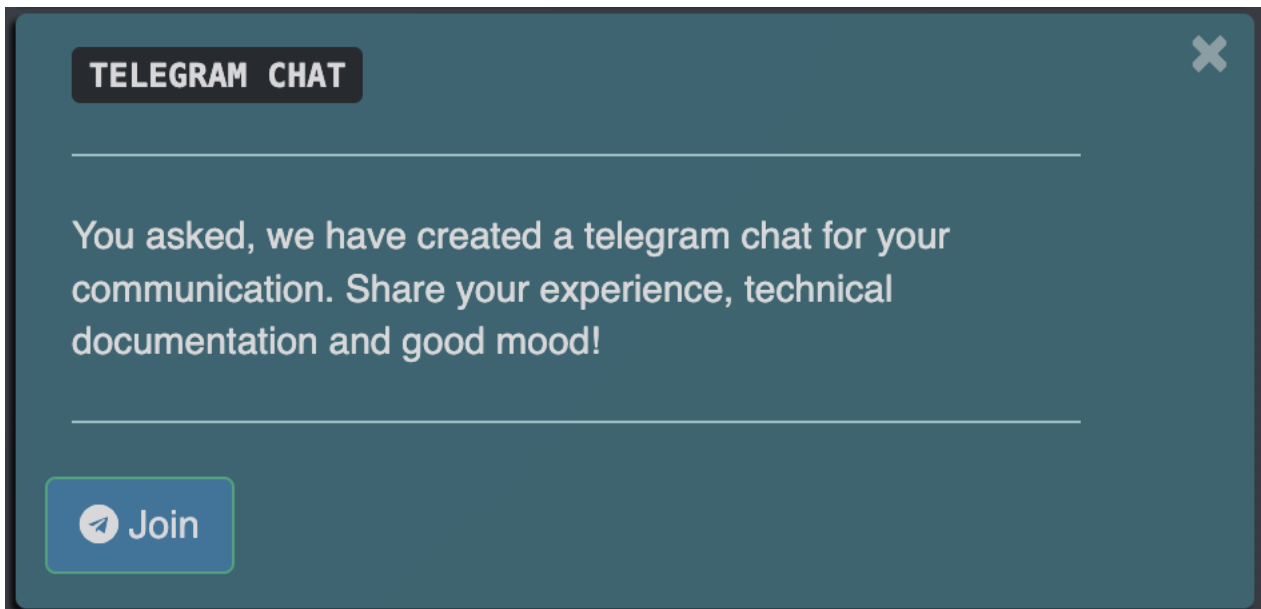


Informing about the disconnection of the hashboard from the tester.



Informing about the availability of new software for update.

Informing about the availability of new software. In this widget, information about the list of changes and new features appears. Update requires a stable internet connection, when updating, do not turn off the power.



Button to go to telegram chat. There you can communicate, ask for support, exchange user experience.