Atari 8 Bit Diagnostics

Best used with test dongles for a more complete diagnostic

Diagnostic error codes:

When testing the device using the test cartridge, error codes may occur (error code XX is written on a light background). In some cases, usually with damage to the RAM area of the screen memory, the inscriptions may be incorrect or reversed, etc. The meaning of the error codes is described below.

System errors:
01 Horizontal or vertical synchronization error ANTIC.
02 Vertical blanking interrupt error ANTIC
03 DISPLAY LIST interrupt error ANTIC
04 Error writing or reading page 0 or 1 RAM
05 Data line error. Possible damage to the RAM memory.
06 Address line error or address decoding error (RAM failure)
07 Error writing byte 00
08 Error writing byte FF
10 Error writing status register error. RAM damage
11 Error during the POKEY timer test
12 POKEY interrupt error

PORT ERRORS:
34 Serial communication error. Damage to the data line (Data IN, Data OUT, or damaged POKEY circuit.
35 Serial control communication error. Incorrect PROCEED, INTERRUPT or COMMAND command. Damaged PIA or POKEY circuit.
36 Serial control communication error. In case of error 35, error 36 may also occur. When error 35 is not displayed - damaged POKEY or IRQ access on the processor or the processor itself.
37 Joystick port error. The socket is damaged, the leads connecting it to and from the PIA.
38 Damage to the inputs with potentiometers (paddle). Damaged connector or connecting leads, or POKEY.
39 FIRE button failure. Bad connector, or damaged leads to the GTIA, or directly damaged GTIA.

Note:
Errors in the range **34-39** - here errors can occur due to bad contact (loop-back loops) or also due to damage connections, so I'd rather warn you about it in advance, over 30 year old contacts can be quite oxidized - don't forget that!

A lot of information can be obtained from **the Self Test** on your computer (as long as it works). A typical example can be memory damage, which is indicated by red squares. But other symptoms, such as a "strange" test sound, if there is a significant acceleration (then the processor is damaged, but it is not usually the POKEY circuit), and finally the appearance of squares around the RAM memory test screen (here the MMU may be damaged) can give a lot of ideas for thinking about where the problem might be.

It often happens that the computer is "dead", but something still appears on the screen here and there. Usually this happens when one of the RAM blocks fails. The screen will show, for example, error code 06. Here you need to try replacing the individual RAMs one by one until the image appears again.

Sometimes it helps to turn off the computer (wait at least 10 seconds) and turn it on again (unfortunately, this does not always help).