



Consumer Product Service
Manager of Tehnical Support
TECH TIP

HCD
number 10

MODEL: 400/800 Computer

DATE: 02/22/83

SUBJECT:

Atari 400/800 System Lock-up

DESCRIPTION:

When the Atari 400/800 computer systems experiences intermittent lock-up, there is no response from the keyboard and control of the computer is gone.

Probable Causes (in order of likelihood)

1. User is editing BASIC programs at time of lock-up
2. User is running user written software that contains errors
3. User is running third party software (non-Atari) that contains errors
4. Hardware failure

Troubleshooting

Ask your customer the following questions, and use the responses given to determine if the problem is hardware or software oriented:

1. Does the unit lockup randomly only when editing statements in your ATARI BASIC programs?

YES - The lockup is caused by an anomaly in the ATARI BASIC cartridge. The lockup condition is cleared by recycling the power switch OFF/ON. This will clear the program from your unit's memory and any editing completed since the last SAVE will be lost. Atari recommends saving programs being edited every 15 minutes to minimize consternation should a lockup occur.

2. Does the unit lockup consistently only when executing certain BASIC programs?

YES - The lockup could be caused by logic errors in the program. The most common error is invalid machine code called from a USR function in BASIC.

3. Does the unit lockup only when loading or executing third party software?

YES - The lockup could be caused by the configuration not meeting minimum requirements for memory or peripherals, or by errors in the third-party software.



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If intermittent lockups occur in a variety of operating situations the unit should be checked for hardware failure in one of three areas.

- o Dirty contacts or corrosion of edge connectors.
- o Heat related failure of components particularly the 6502 MPU.
- o Outright failure of components.

If the problem appears to be user written software, refer your customer to the Product Support Hot Line for programming assistance.

800-672-1404 Inside California
800-538-8543 Outside California

If the problem appears to be third party software oriented, refer your customer to the retail outlet where it was purchased, or to the manufacturer of the software.

If you cannot determine from your customer's answers whether the problem is software or hardware oriented, burn-in the unit for at least 12 hours using continuous RAM Test of the SALT 2.05 Test Cartridge. At the end of the burn-in period, press the SYSTEM RESET control key six times. Watch the screen after each press to see that the POWER-UP screen correctly appears. If the screen does not come up correctly - there is definitely a component failure occurring. Use the disassembly procedures outlined in the Atari 400TM/800TM Computer Field Service Manual (FD100001) to disassemble the unit.

1. Check for frayed and/or broken wires; J114 Motherboard to J202 of the Power Supply Board. Check that connectors are clean and securely attached between the Power Supply and Motherboard, and where the ROM/RAMs and CPU plug into the Motherboard. When checking the above look for cold solder joints.
2. Replace the 6502 (CPU) (Part # C014377) to eliminate this component as possible failure.
3. Insert a Star Raider cartridge, Power-Up the system and continue testing.
4. If no failure occurs and everything checks OK then return computer to customer.

If computer is returned and is still failing, check the following additional ICs

Replace
ANTIC
GTIA
Multiplexers (Vendor & Date Codes must match)
(On 8 and 16K
RAM boards)

Part Number
C012296
C014805
C014345
(Z503 and
Z504)



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If the POWER-UP screen appears correctly after all six SYSTEM RESET control key pressed, return the unit to the customer with NO TROUBLE FOUND.

Trouble Reporting

If you have any questions concerning this Tech Tip, call your Atari Tech Line Specialists:

Inside California
(800) 672-1466

Outside California
(800) 538-2535