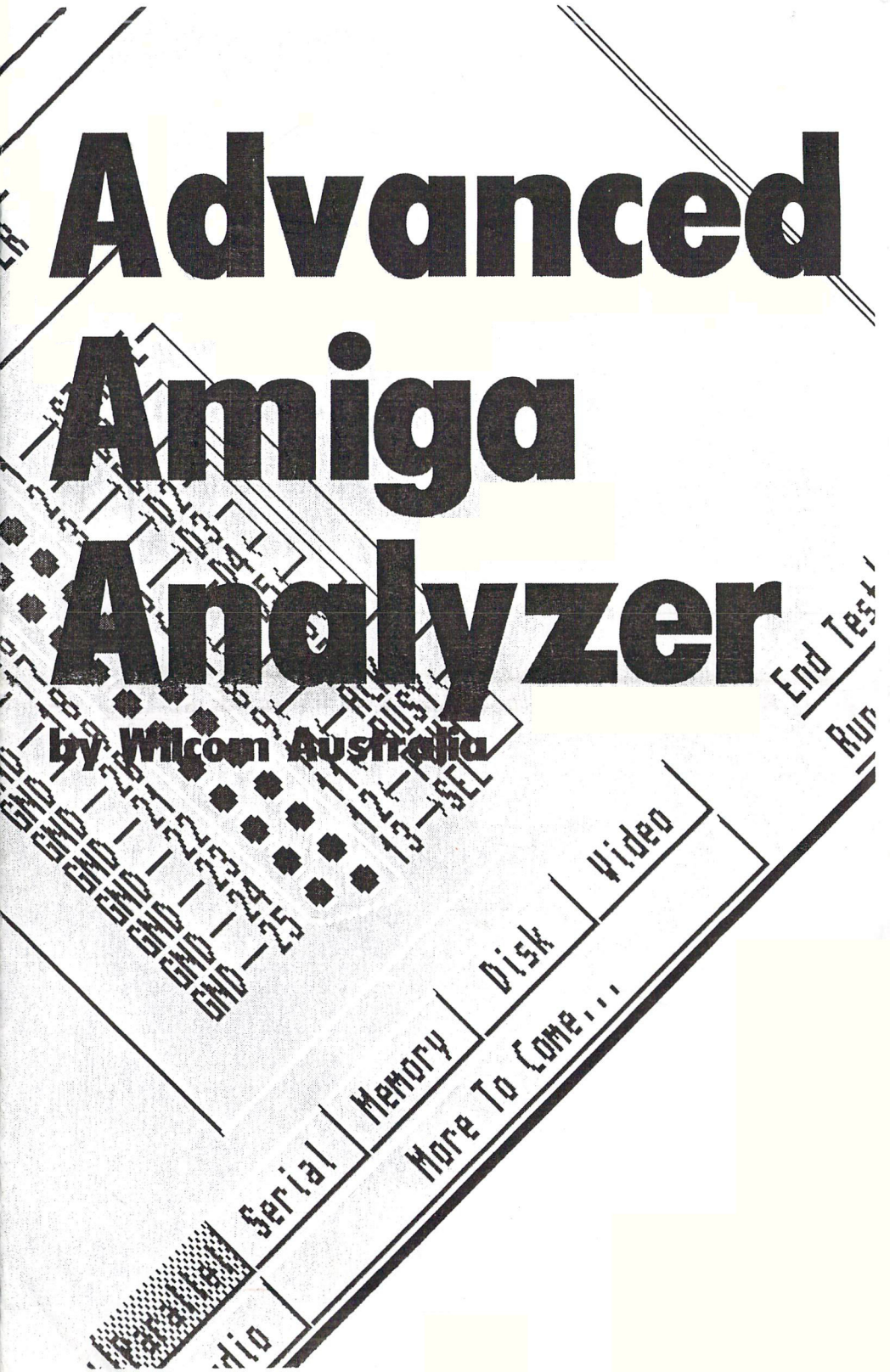


Advanced Amiga Analyzer

by Wilcom Australia



End Test
Run
More To Come...
Serial Memory Disk Video

1. Introduction

Adv. Amiga Analyzer is a combination hardware / software diagnostic utility for the Amiga. It helps you narrow down the problem to specific pieces of hardware, and most importantly lets you know when things are functioning properly. Specific tests it can run include: Game Port function and power Parallel Port function and power Serial Port function and power Disk drive function Memory function Video Port power Audio hardware function In addition, the Analyzer can tell you what hardware is installed in a system without having to open up the computer. You can find out what OS ROM is installed, what CPU is in there, what FPU exists, which Amiga chips are present (regular or Fat Agnus?), memory installed, and expansion boards. All of these test are run from a point-and-click interface. In addition, the parallel and serial port testers require that the provided hardware dongles are plugged into the appropriate data port (Amiga 1000 tests will require gender changers). Additional dongles are provided that check the power on the game and video ports. To run the program, make sure the power on the computer to test is turned off. Plug in all the hardware dongles. Power the computer on. If any of the provided LEDs do not light, there is a power problem with that port. If they do all light, power back down, remove the Game and Video Port Dongles, plug the monitor and mouse back in, and power back up. Boot with a copy of the Analyzer disk. Each of the following sections describes how to run the individual tests.

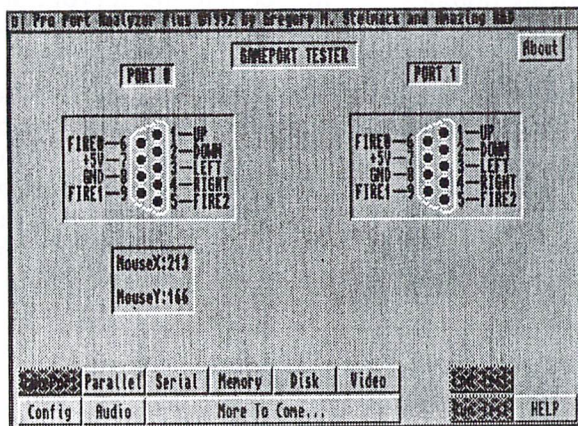
2. General Interface

All tests have a very similar user interface. At the bottom left of the screen are two rows of buttons. Each of these represents one of the tests. To leave the current test and run a different one, simply click on the appropriate button with the left mouse button. If one of these buttons is ghosted out, it means that the Analyzer could not allocate the hardware required for that test from the system. This often happens if a terminal program was run before the Analyzer, and did not properly release the serial port. At the bottom right are some testing control buttons. Clicking on the HELP button will bring up a small on-line help screen for the current test. There are also RUN TEST and END TEST buttons, used for starting and stopping tests respectively. All current tests will run until the END TEST button is selected, allowing overnight testing to track down an intermittent problem. At the top right is an

ABOUT button. This will give you information on us, as well as the version number of the copy of Analyzer you are using. At the top left is the Window Close gadget. Clicking on this exits the program and returns you to the environment from which you started the Analyzer. Any test that shows a pin diagram of the port being tested will let you click on the pin in the diagram to show what hardware on the motherboard that pin is connected to. If a problem is found, a similar screen will also appear to let you know what hardware to check. It should be noted that this information comes from the schematics for an Amiga 2000 -- other Amiga models will vary slightly (although the actual chips should be the same). There are too many Amiga motherboard revisions as well as machines for all of the individual differences to fit on one screen.

3. Game Port Tester

This will be the initial screen that appears when the program is started. This will allow you to find out exactly what pins on the mouse port are giving problems if the mouse is not functioning properly. As a device is manipulated in the



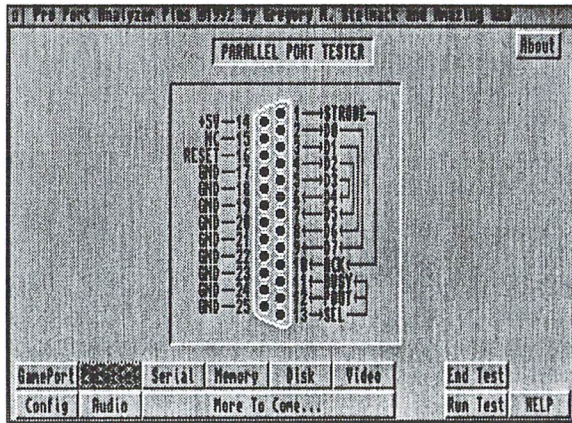
port, the various lines on the diagram will fire. If any pin does not act properly, you may click on it with the left mouse button to get a description of the pin and what hardware it is connected to. Game Port 0 also shows the current mouse position. The reason for this is that the game ports are wired differently for mice / analog joysticks than they are for joysticks. A port may work perfectly fine for a joystick, but not a mouse, or vice-versa. To do a thorough game port test, you should run it once with a mouse, then once with a joystick. If it passes both tests, you may be confident that the port is working OK. It should be noted that the mouse position indicator may be clicked on with the left mouse button to show the hardware that needs to be checked if the mouse position is not working

properly.

4. Parallel Port Tester

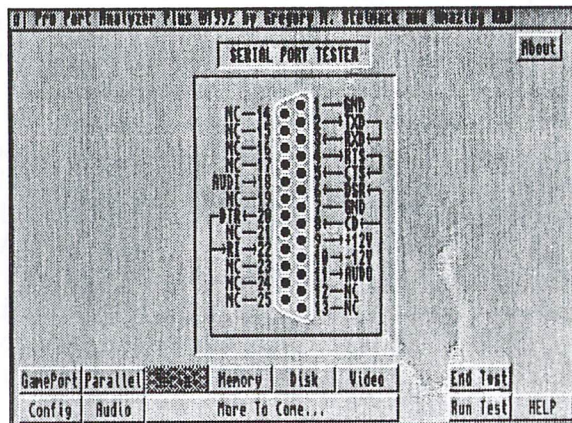
Proper functioning of this test requires that the Parallel Port Dongle be connected to the parallel port on the computer. In the center of the screen you will see a diagram of the parallel port. As with the game port tester, you may click on any pin in the diagram and get

an information window telling you about that pin. To run the test, simply select the RUN TEST button. The parallel port will be checked out, and any pins that do not respond properly will be reported to you, along with what hardware needs to be checked. The test will run until the END TEST button is selected.



5. Serial Port Tester

Proper functioning of this test requires that the Serial Port Dongle be connected to the serial port on the computer. In the center of the screen you will see a diagram of the serial port. As with the game port tester, you may click on any pin in the diagram and get

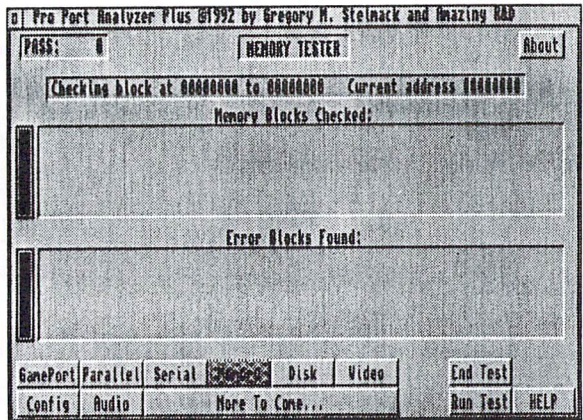


an information window telling you about that pin. To run the test, simply select the RUN TEST button. The serial port will be checked out, and any pins that do not respond properly will be reported to you, along with what hardware needs to be checked. The test will run until the END TEST button is selected.

6. Memory Tester

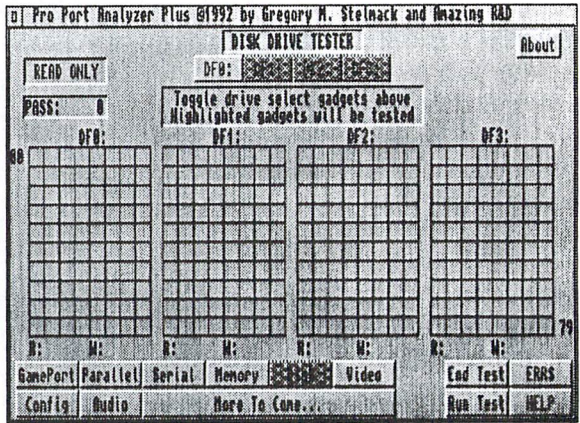
This test will attempt to allocate all free memory in the system, and then write and read patterns to that memory to check that it is working properly. It will report all 256K blocks of memory that had problems. 256K blocks were chosen as all memory chips work

in at least 256K blocks, and this should help you track down which chip is at fault. Note that this test cannot currently check memory that has been already allocated by the system; it is for this reason that we recommend you run this test after booting with the Analyzer disk to give you the most free memory possible. When RUN TEST is selected, the middle window (labelled "Memory Blocks Checked") will show all the memory blocks that the test was able to allocate. The test will then write and read its patterns to and from memory, checking as it goes. It will first do a write pass, then a read test. A total of four patterns are used, so eight passes are made through each block. The current block being checked and the address within that block are displayed in the top window. Any errors found are reported in the bottom window (labelled "Error Blocks Found"). Both the Memory Blocks and Error Blocks windows may be scrolled while the test is running. The test will run until END TEST is selected, allowing a good overnight test. A Pass counter is maintained in the upper left-hand corner to let you know how many times the memory has been checked.



7. Disk Drive Tester

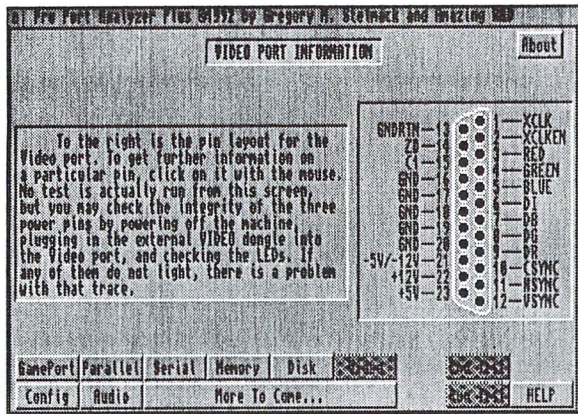
This test is used to check all internal and external 3.5" 880K floppy drives (now that Commodore has released the high density, 1.76M floppy drives, we are working on supporting them). It can perform both READ ONLY and READ / WRITE



tests on these drives -- different problems require different approaches. To check a drive, select which test to perform by clicking the button in the upper left-hand corner. This button starts at READ ONLY, but will cycle each time it is clicked. Next, highlight each drive button that you wish to check. Any drives not connected to the system will be ghosted. Finally, place a blank, formatted disk in each drive you chose to test, and click RUN TEST. The drives will be tested in order until the END TEST button is selected. Any errors found will be reported in the box for the track that had the error. The ERRS gadget may be used to get an explanation of the error numbers. There are two methods for performing a drive test, and both should be run on a drive before you can be confident that the drive is OK. The simplest is to just perform a READ / WRITE test on the drive in question. Let it run for a while, and if no errors are found the drive is reading / writing data OK. To check for drive alignment problems, run a READ / WRITE test on a known good drive, then take that disk to the suspect drive and run a READ ONLY test. If errors are found here, but not in the READ / WRITE test, the drive is likely out of alignment. Of course, make sure the disk itself is a good disk...

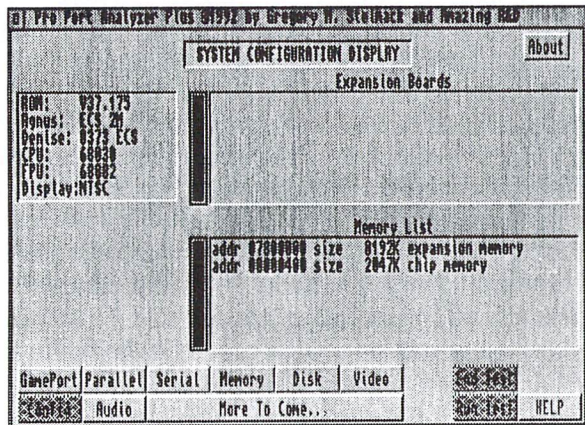
8. Video Port

The only real video port test we can do is to check the power coming out of the port. To do this, disconnect the computer completely, hook up the Video Port Dongle to the computer's RGB port, and turn the computer's power back on. If any of the LEDs does not light up, there is a problem with the power. Check the fuses, capacitors, and filters connected to that pin. We have also found problems related to the resistors connected to other pins. If the display is fuzzy, that often means one of the resistors is bad (usually blown by the connector being removed / inserted while the power is on). As usual, you may select any pin in the diagram to get an explanation of the hardware connected to that pin.



9. Configuration Screen

This screen will show you some information about the system being tested. At the upper left are the ROM version, custom chip versions, and CPU types installed in the system. At the upper right are all the expansion boards, and at the lower right are all the memory blocks in the system. This screen should help you determine what

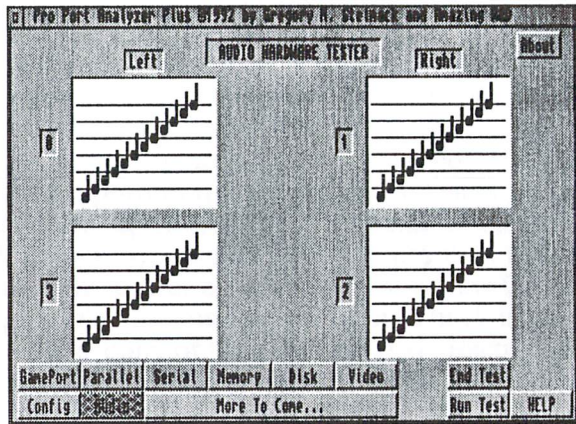


hardware is installed in the system before opening the cover. Note that there are many expansion boards that won't show up on this list. Many video slot boards do not have ROMs for the system to find, nor do boards that go in the PC slots. Also, as we do not have access to all Amiga expansion boards, some that are found will not be identified -- hexadecimal characters will appear in either the manufacturer or board name positions. If you know what board those characters apply to, please let us know so we can add it to a future release. The numbers to the right of the manufacturer and board name show the ROM address and size.

10. Audio Tester

This test is to help you determine whether or not the audio hardware is working properly. I personally have missed sounds from a game and wondered whether the computer was going bad, or if the game has a bug -- this will let you know. Simply hook up speakers to the

computer (a mono monitor is fine -- just make sure you know the speaker(s) and cable(s) are good!) and click RUN TEST. A musical scale will be played on each audio channel in turn, with the currently playing note highlighted. If you fail to hear any note, then there is a problem with the audio hardware of the computer (clicking the HELP gadget will let you know what hardware to check). If all of the notes play, then it is a software problem somewhere. As with the other tests, this one will run until END TEST is selected.



11. A Note From the Author

I hope this product will prove of service in tracking down Amiga hardware problems. If it doesn't, or if you feel it could be

improved, please let me know. Some of the improvements in this release were suggested by customers, and there are some others planned for future releases (such as batch running of the tests -- selecting multiple tests to run overnight, and report all errors later). As we have not run into even a slight fraction of possible computer problems, we need your help to make this the best possible hardware testing suite for the Amiga.

NOTES:

Advanced Amiga Analyzer is licensed by Wilcom Australia.
All technical support must relate to Advanced Amiga Analyzer
exclusively and not the repair of the Amiga itself. Feel free to send
any comments or suggestions to the address listed below.

Pro Port Analyzer Plus ©1992

PARALLEL PORT TESTER

+5V - 14
NC - 15
RESET - 16
GND - 17
GND - 18