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6 Ways The HA2500 Horizontal Analyzer Makes You Money!

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Is your business in a position to take full advantage of the opportunities offered by CRT video display repair? Millions of CRT Video Displays with horizontal stages including direct TV, projection TV, computers, video games, and industry monitors are in use today. The future holds great potential for servicers, with ever-increasing sales of these items plus HDTVs hitting the market. All CRT video displays in use today are destined to fail at some point, offering you unlimited servicing opportunities.

Of the total CRT failures, over half will trace back to problems with horizontal related stages that are tough to identify such as dead monitor, startup, shutdown, and burnt parts symptoms. Quick and accurate methods of isolating these symptoms and analyzing horizontal stages and components could dramatically increase your efficiency and would also prevent the unnecessary installation of expensive components like the integrated flyback and yoke.

Sencore developed the HA2500 Horizontal Analyzer to help you increase your profitability in repairing CRT Video Displays. Read on to learn how you can repair more units in less time and with less effort, by using the following six tips to add to your bottom line.

1. Manage Repairs & Troubleshooting Time For More Profit

In theory, you would like to spend all your troubleshooting time on profitable repairs. However, some troubleshooting time is needed to determine which repairs are feasible and which are not.

Managing your initial analysis time by utilizing accurate diagnostics will ensure accurate identification of money-making opportunities and quick red-flagging of money-losing cases.

How can you do this? Consider the expensive integrated flyback transformer, yoke and CRT, common to all video displays. Analyzing methods can test the CRT and horizontal output stage for serious defects before any component replacement or troubleshooting time is spent. In minutes, you can accurately tell if major defects exist in these components and rule them viable or not feasible.

The Sencore CR7000 Beam-Rite™ CRT Analyzer fully tests the CRT's electron gun to identify defects. (See page 14 of this *Sencore News* issue). The Load



HA2500
Universal
Horizontal
Analyzer

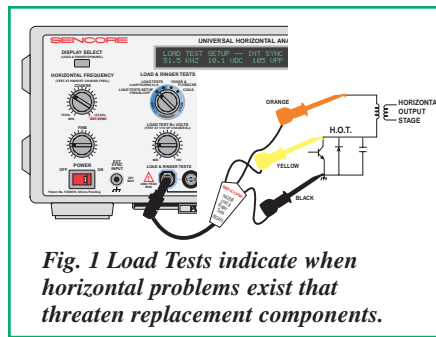
Test of the HA2500 Universal Horizontal Analyzer simulates the normal operating conditions of the horizontal output stage and analyzes it for major defects with the chassis "Off". The Ringer Test analyzes the integrated flyback or yoke to confirm internal defects caused by shorted turns between windings.

If you currently replace components in the power supply or other circuits to make the display active before discovering remaining horizontal output stage or CRT defects, you are losing too much valuable servicing time. Manage your way to higher profits by shifting this lost time to valuable service time. Consider the added profit to your business if just one hour is shifted to profitable repairs each week.

2. Reduce Replacement Parts To Save Money

Many repair centers install multiple components routinely as parts kits or upgrades. Sometimes the symptom is unrelated to the parts replaced and results in no improvement. If you occasionally burn out a horizontal output transistor, regulator and/or power supply components because of remaining chassis defects when troubleshooting, you might as well burn \$5 or \$10 bills. The added component costs and extra labor robs you of profits.

Maximize your repair profits by performing analyzing tests of the horizontal output stage before AC power is applied. The HA2500's Load Test indicates when horizontal problems threaten replacement components. The Load Test and Ringer Test further isolate and correct the horizontal output stage defect. If the Load Test indicates normal operation, there is no need to replace components.



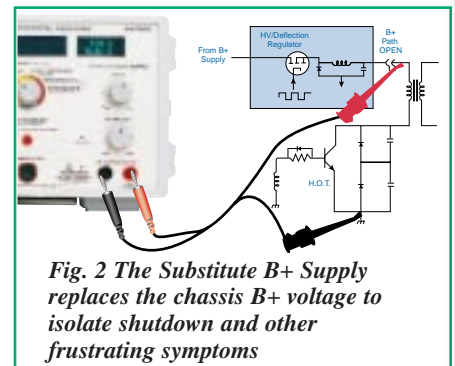
Consider the savings if you could avoid the cost and installation time of one or two horizontal output transistors, high voltage regulation transistors, fusible resistors and other components damaged weekly. How many of those \$5 or \$10 bills could you keep in your pocket in a week?

3. Eliminate Frustrating Service Guesswork - Analyze With Measurements

Many problem symptoms of CRT video displays are frustrating because normal troubleshooting methods cannot be used. Switch Mode Power Supply, startup, shutdown protection and high voltage regulator defects commonly cause brief voltages or waveforms that cannot be measured with a DVM or scope. You can't tell which stage to suspect, leaving you little choice but to randomly replace components as you guess at the cause.

To isolate a shutdown symptom, use the HA2500's Substitute B+ Sub Supply and slowly increase the B+ voltage to the horizontal output stage to just below shutdown. Measure voltages and waveforms in the horizontal output, X-ray shutdown and high voltage/deflection regulator stages to isolate the problem.

If you are spending time replacing components randomly to solve start-up or shutdown symptoms, you are wasting time and enduring needless frustration. You can troubleshoot these symptoms in an orderly manner. Consider your sanity and the savings to your business if you were able to troubleshoot each of these symptoms just 30 minutes faster. Remember the added parts and time spent installing them. How much time and money would you save each month?



4. Find Unresolved Defects With HA2500 Tests

Horizontal stages of CRT video displays interact with other stages resulting in unusual symptoms. Because the stages interact, many voltages and waveforms are affected making it difficult to determine which stage is at fault.

If you occasionally abandon a video display repair because of an unfamiliar or unusual horizontal symptom, use the HA2500 to save the opportunity for a completed repair, satisfy your customer and keep his referrals. The HA2500's patent-pending tests offer you exclusive analyzing capabilities to successfully repair many of these displays. And, nine out of ten times, these tests can be performed and interpreted without a schematic. Imagine how much more money

could you make each month if you were able to fix several of the video displays that were scrapped or abandoned because of a high repair estimate.

5. Boost Repair Quality - Reduce Burn-In Failures & Customer Returns

Nothing can be more harmful to your business and profits than failures after the repair is complete. Re-work time takes productive time away from other repairs and you risk losing a customer along with your business reputation.

The HA2500's patent pending Horizontal Driver Test accurately identifies the weak drive current as the cause of output transistor heating. The test simulates a transistor junction load and measures the drive current output from the horizontal driver stage. The mA measurement can be used to identify horizontal driver stage defects and intermittents, common causes of repeat horizontal output transistor failures. Consider the savings to your business each week if just one or two returns are eliminated.

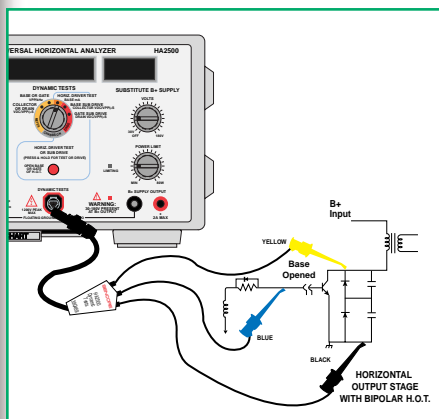


Fig. 3 The Horiz Driver Test accurately identifies weak drive as the cause of horizontal output transistor heating failures.

6. Save Time - Analyzing The Horizontal Output Stage

Many technicians and managers feel that measurement time is justified, no matter how long it takes. Wrong! Slow, time-consuming, and inaccurate measurement methods and instruments waste time and lead to errors.

A key test point in analyzing horizontal defects is the collector of the horizontal output transistor. A DC volt measurement indicates the B+ supply voltage, and the flyback pulse peak-to-peak and time measurements reflect the operation of the horizontal output stage. Yet, many instruments cannot be connected to this test point because the voltages exceed the instrument's protection. Instruments with the needed protection require multiple testing steps to measure these three parameters.

Is there any way to measure faster? Yes, new methods of measuring key horizontal test points can cut measurement time **by 75% or more**. The HA2500's Dynamic Test Meter simultaneously measures and displays these three collector measurements automatically through test lead connections to the horizontal output transistor. You can save several minutes each time you analyze this test point and others with the HA2500. How many minutes could you save daily or weekly?

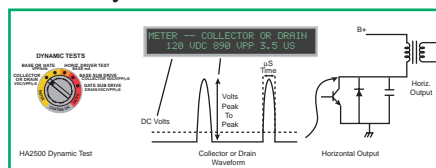


Fig. 4 The Dynamic Test Meter measures and displays 3 collector measurements automatically through test lead connections to the horizontal output transistor.

Add It Up For Yourself And See

The HA2500 Universal Horizontal analyzer equips you to take full advantage of the CRT video display servicing opportunities. You can save hours of frustrating guesswork and be more profitable using the HA2500 Universal Horizontal Analyzer. Review each of the six tips in this article and estimate the cost savings and added revenue potential using the worksheet below. You'll be surprised on how fast the HA2500 pays for itself and adds profits to your business! Call 1-800-SENOCORE (736-2673) if you have questions or would like to learn more about the HA2500.

Universal Horizontal Analyzer Savings/Added Revenue Worksheet

Savings/Added Revenue Category	ESTIMATED \$
1. Manage Repairs & Troubleshooting Time for More Profit	_____
2. Reduce Replacement Parts To Save Money	_____
3. Eliminate Frustrating Service Guesswork - Analyze With Measurements	_____
4. Find Unresolved Defects With HA2500 Tests	_____
5. Boost Repair Quality - Reduce Burn-In Failures & Customer Returns	_____
6. Save Time - Analyzing The Horizontal Output Stage	_____
Total Savings & Added Revenue (Add lines 1 through 6)	TOTAL
_____	_____

Tired Of Burying The Tough Dogs & Your Profits?

Are you tired of investing long hours into tough dog service jobs only to have the units end up on the 'no fix' rack – the burial plot for your business profits?

Sencore delivers troubleshooting solutions proven to bring life back to your service center profits.

Sencore's TV, VCR, Camcorder and Computer Monitor Analyzers help you quickly isolate defects and turn tough dog service jobs into cash. Sencore Training Programs improve your servicing efficiency, helping you increase profits. Plus, the 'Pay as You Grow' Investment Plan lets you put Sencore service solutions to work immediately, helping you grow your business profits.

**Don't let tough dogs
bury your business profits.
Call Sencore today!**



The HA2500 Universal Horizontal Analyzer, which is just one of our great analyzers... lets you localize any computer monitor horizontal or B+ problem without a schematic in less than three minutes – **WITH THE POWER OFF!**

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