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Apple Multiple Scan 15: Tilted or Distorted Raster (10/95)

Article Created: 16 August 1995

Article Reviewed/Updated: 9 October 1995

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TOPIC -----

A small percentage of the Apple Multiple Scan 15 Displays manufactured during the first half of 1995 may have distorted or tilted raster problems. The following article describes the steps required to determine the severity of the problem.

DISCUSSION -----

Some U.S. customers are reporting that the screen image on their Apple Multiple Scan 15 Display (M3089LL/A) is tilted or rotated. Geometry distortions also may make the image look as if it is rotated clockwise, the top or bottom of the image may have a downward slope.

The problem is related to test criteria and measurements in the manufacturing process for this display. Tighter criteria and CRT acceptance standards in manufacturing have been put into place by Apple quality and design engineers.

Changes in manufacturing should be in place as of August 1, 1995. Since there is a delay in the time that manufactured product finally gets to Apple customers (approx. 2 months?); Austin may continue to get calls for this tilt/ rotation problem. Care should be taken to find out if the customer really does have a problem. More than 50% to 70% of the captured displays were found to be within specifications and visually acceptable. Only a small percentage of displays are actually reported to have the problem.

How to determine if the tilt problem is related to environmental effects?

Care should be taken to differentiate between a display with the manufacturing defect and one being influenced by environmental factors. Some customers can also be very particular about the smallest imperfection in their display (no display will be perfect). Under the latter, exchanging the monitor will usually make little or no difference.

There are several articles covering environmental magnetic field effects on tilt and rotation in the Technical Information Library for other displays. Any

distortion in the display image may be accentuated when there are magnetic fields present in the vicinity of the display. When examining a display for tilt, the image size should be set up with approximately 3/8th's to 1/2 inch of black around the active raster or image.

Verify that environmental interference is not the cause of distortion. Have the customer try the following:

- * Change the location and/or rotate the display (look for improvements and changes).
- * Remove metal objects from the area (look for improvements and changes).
- * Look for other environmental influences (power lines, generators, refrigerators, air conditioners - look for improvements and changes).
- * Fluorescent lighting fixtures and transformers are also common sources of interference.

If there is no environmental factor effecting the display geometry or tilt, the display may have a tilt problem. Verify that the customer is being realistic about the degree of the problem.

Measure the amount of tilt. He can do this at the top of the screen by measuring the distance from the active video portion of the raster to the top plastic bezel. Measure at both the top left and top right and then subtract the two values. If the delta is within 2.5 mm, the display is in specification.

Identifying the display.

The number of calls for the tilt problem on the Multiple Scan 15 Display should now be diminishing as a result of the corrective actions put into place in manufacturing.

IMPORTANT:

If there are units that have been manufactured AFTER serial numbers CJ530XXXXXX that have a tilt problem, please notify WWPTS through Austin's Technical Operations group (if you are a service provider), or escalate through your technical lead.

For additional information on tilted rasters, see "Apple Monitors: Titled Raster Due To External Sources," "Display Monitors and Geometric Distortion," "Monitors: Magnetized Sheetmetal and Raster Distortion," and "FAQ: Questions & Answers for Apple Displays."

Article Change History:

09 Oct 1995 - Clarified what monitors WWPTS wants to know about.

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Keywords: hts

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19960215 11:05:19.00

Tech Info Library Article Number: 18394