
Technical Bulletin

Re: Vertical Deflection Module Modifications for Improved Performance

Applies to: Marquee 8000/9000/8110/8500/8500LC/9500LC projectors manufactured from June 1995 to September 1995.

Symptoms/Cause: This bulletin covers modifications suggested to correct four subtle problems. These problems are a by-product of changes to the Horizontal Deflection Module (HDM) associated with recent modifications made to increase the image width. The recently modified HDM may introduce more electrical “noise” into the projector’s systems when the image is very wide (HSIZE greater than 85 as set by the HSIZE control) and the horizontal scan frequency is high (greater than 50 kHz). The four problems can be described as follows.

- 1) When VSIZE is increased a horizontal line begins to appear at the bottom of the image roughly up to 1/4 of the image height from the bottom. The image becomes increasingly “noisy” as well. This symptom will disappear if the VSIZE or HSIZE is reduced.
- 2) The image may disappear or flicker for a split second. There may also rarely be a vertical scan failure, resulting in the Red VFAIL LED briefly coming on and the temporary shutdown of the high voltage module (a distinct crackling noise can be heard when this occurs). This symptom will also disappear if HSIZE is reduced.
- 3) The entire image may appear to rapidly shake or bounce up and down (by about 1/4 inch on a 6 foot diagonal image). This symptom is observed on very high scan rate sources only (greater than 70kHz). This symptom will also disappear if HSIZE is reduced.
- 4) When adjusting the VSIZE control the KEYSTONE setting may appear to change suddenly even though no adjustment to the KEYSTONE control has been made and the KEYSTONE control sidebar reports no change. If the KEYSTONE control is then adjusted, the KEYSTONE setting will appear to “snap” back into place. Interaction of this nature may be observed between any of the following controls; SKEW, VSIZE, KEYSTONE, SIDE_PIN, RED_VSIZE and BLUE_VSIZE. The last two are adjustments accessible though the service menu only.

Action: Qualified service personnel are welcome to perform the following modifications to the Vertical Deflection Module (VDM). **These modifications and above symptoms apply only to printed circuit boards labeled 50-2330-02P.** The VDM is located within and at the rear of the projector on the large pivoting heatsink. The

Technical Bulletin

module can be removed from the heatsink by tipping the heatsink back and sliding the module out sideways once the transistor clips have been removed. **Do not forget to replace the transistor clips when reassembling the unit!**

For symptom 1 (above):

- a) Remove R704, R804 and R904 (36 kohm resistors) and replace each with a 30 kohm resistor (Electrohome part no. 80-130025-11P).
- b) Remove R715, R815 and R915 (1.5 ohm resistors) and replace each with a 1 ohm resistor (Electrohome part no. 80-110085-11P).
- c) Remove C703, C803 and C903 (470nF capacitors) and replace each with a 1uF, 50V, mylar capacitor (Electrohome part no. 85-103108-04P).
- d) Solder a 1 ohm resistor (Electrohome part no. 80-110085-11P) in parallel with R721 (i.e. across R721). Repeat for R821 and R921. These parts are to remain elevated since they serve as fusible safety resistors for the module.

For symptom 2 (above):

- a) Solder a 100pF capacitor (Electrohome part no. 85-130710-01P) in parallel with D28 (i.e. across D28).

For symptom 3 (above):

- a) Remove R46 and R64 (4.75 kohm, 1% resistors) and replace each with a 75.0 kohm, 1% resistor (Electrohome part no. 82-375021-29P).
- b) Solder a 1uF, 50V, mylar capacitor (Electrohome part no. 85-103108-04P) in parallel with R46 (i.e. across R46).
- c) Check to see whether the Blue Horizontal Yoke leads (seven wire bundle with red, blue, white w/blue stripe, white w/red stripe, yellow, orange and white wires) run directly past the vertical deflection board. If this is the case, route the leads around the front of the HDM enclosure not the back.

For symptom 4 (above):

Technical Bulletin

- a) Solder a 470pF capacitor (Electrohome part no. 85-131210-01P) in parallel with D13 (i.e. across D13). Repeat for D14.

Although only one of the above symptoms may be observed, it is recommended that all of the above modifications be performed. Check to see which modifications may already have been done at the factory before proceeding.

Note: **The above modifications require delicate soldering work on electronic components and should be performed by qualified service personnel only.** Please use proper Electrostatic Discharge (ESD) procedures. If you are uncomfortable with performing these modifications, they can be done for you at an authorized Electrohome service depot.