

# **Micro Control Systems**

APPLICATION NOTE

APP-013-A

## **Removal of Two Ferrite Beads on MCS-8 & MCS-I/O Rev 1.50 Boards**

### **Revision History**

Date	Author	Description
1/1/99	M Singer	Removing ferrite beads connecting the grounds.

## Theory

The ferrite beads were implemented to prevent external noise signals from crossing between the analog and digital ground planes of the MCS-8 and MCS-I/O boards. However, with the ferrite beads in place, the MCS-8/MCS-I/O boards were experiencing a ground plane problem. The digital and analog ground planes were allowed to become independent of each other, which would cause different potentials across the board thus causing unpredictable results. These ferrite beads must be removed. This application note deals with Revision 1.50 MCS-8 and MCS-I/Os. This change was implemented on all Revision 1.51 and above boards.

## Purpose

The purpose of this application note is to fix the problem of the ground planes having different voltage potentials by the removal of two ferrite beads. Refer to the diagram below when reading the procedure's steps.

### Tools Needed:

- \*Standard or magnetic tip lineman pliers
- \*Diagonal wire cutter
- \*1" paint brush
- \*Vacuum cleaner w/small nozzle tip attachment

### Procedure

- 1.) Turn power off to the unit and remove the board.
- 2.) To crush the first ferrite bead, use lineman's pliers to grip entire width of the inductor and crush the ceramic dark gray material. This gray material is very brittle and will easily break away from the metal wire passing through it. Be careful not to break the wire passing through the bead.
- 3.) Brush away all of the loose gray material from the board, making sure there is no loose gray material around the other components.
- 4.) Using the wire cutters, clip the metal wire above and below the ceramic gray material on the second ferrite bead. Then remove and discard the entire inductor. Make sure to trim the metal wire as close to the board as possible.
- 5.) Finish by vacuuming on and around all of the components that are in the area of the inductor that was crushed.

