ETC® Service Note
Sensor CEM DMX Driver Replacement

Overview

This document contains instructions for removing and replacing the DMX chip within your Sensor CEM control processor.

DMX driver chips may fail when subjected to excessively high voltage. This can be caused by a power event such as a lightning strike.

You may need to replace the DMX driver chip if the CEM is not receiving DMX from a known working control source, lights flicker, or if the chip appears burnt or damaged.

If there has been damage, it is best practice to replace both the DMX chip (U27 or U28) and the DMX Opto Chip (U30 or U31) on the CPU board.

Difficulty of Repair Easy

Estimated time to complete 5-10 minutes

Before you begin

Setup a clean, well-lit work area and take appropriate ESD (Electro-Static Discharge) precautions.

Tools Needed

- Dual In-Line (DIL) Chip puller
- DMX Optocoupler Chip, IC 6N137 - ETC Part # Z423-F
- DMX Driver Chip, IC 75176 – ETC Part # Z216-F

Note:	*DMX Driver Chip, IC 75BC182 – ETC Part Number Z1458-F - is an acceptable cross to the Z216-F.*

Safety

Please note the following safety warnings before use:

- Disconnect power from the racks before all maintenance.

Warning:	*Dimmer racks without an accessible power disconnect device cannot be serviced safely. Before removing dimmer or control modules for service, de-energize main feed to dimmer rack and follow appropriate Lockout/Tagout procedures as described in NFPA Standard 70E. It is important to note that electrical equipment such as dimmer racks can present an arc flash safety hazard if improperly serviced. This is due to available large short circuit currents on the feeders of the equipment. Any work on energized equipment must comply with OSHA Electrical Safe Working Practices.*

Procedure

Step 1: **Ensure power is turned off to the dimming rack**.
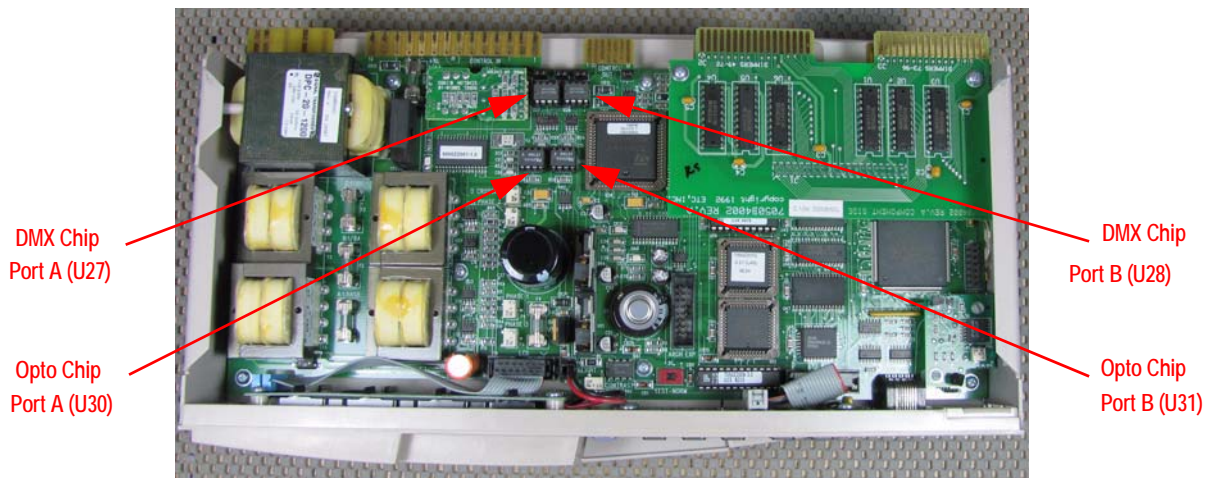Step 2: Open the door and locate the control module.

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Step 3:   Remove CEM control module from the dimming rack by grasping the small handle on the front.

Step 4:   Pull the CEM straight out and place the unit on a clean stable surface.

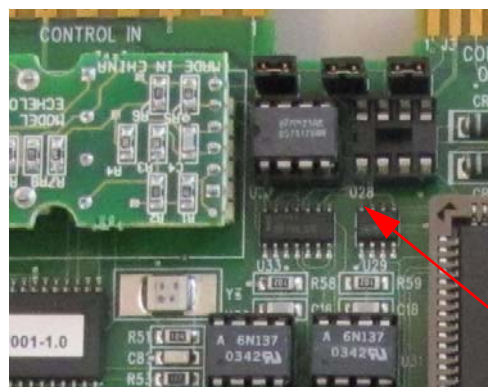Step 5:   With your chip puller, gently remove the DMX chip that needs to be replaced.

DMX Chip Port A (U27)

Opto Chip Port A (U30)

DMX Chip Port B (U28)

Opto Chip Port B (U31)

Step 6:   Insert the replacement chip into the socket so that pin one is in the correct location.

Note: *Pin one is marked with a recessed circle.*

Pin 1 Identifier

Pin 1 in Processor

Step 7:   Replace CEM into the Sensor rack. Press firmly on the unit to ensure it is fully seated in to its connections.

Step 8:   Close and lock the Sensor rack door before restoring power.

Step 9:   Test unit for desired functionality.

Additional Information

If you have any questions regarding this procedure, please contact ETC Technical Services.