7800 Line Card Installation Guide

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78-0401–01

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Purpose

The purpose of this guide is to significantly reduce the possibility of damage to 7800 Series Line Cards and Chassis.

Improper inspection and installation can result in damage to 7800 chassis connectors, Line Card (LC) connectors, and Line Card cosmetic surfaces and cause damage to other components such as Fabric Modules.

This document illustrates the following:

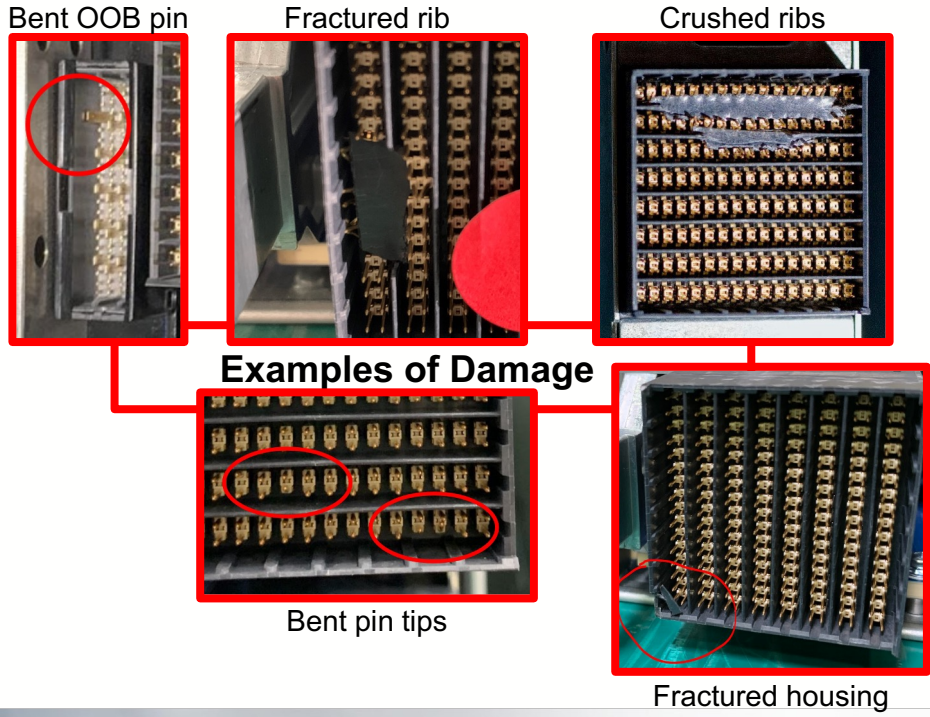
- Inspecting for connector damage on Chassis and LCs before insertion
- Identifying key features to be aware of on the Chassis and LC
- Recommended installation process for LCs

NOTE: This guidance should be strictly followed.

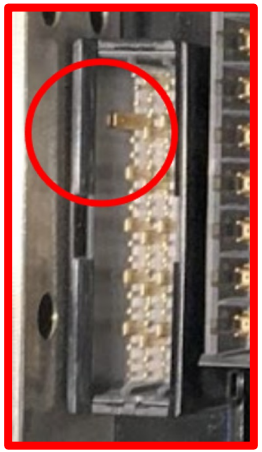
Damaged connector are contagious and will damage another connector

Existing Fabric Module Connector Inspection

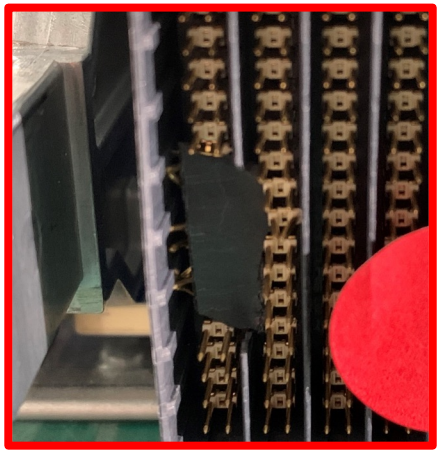
Always inspect the fabric connectors inside the chassis prior to every LC installation. Using a flashlight, illuminate **each** connector in the slots you are installing a LC, inspecting for any damage to the connector plastics and pins. **Do not proceed if any damage is visible.**



Fabric Module Connector Inspection (Large Version)

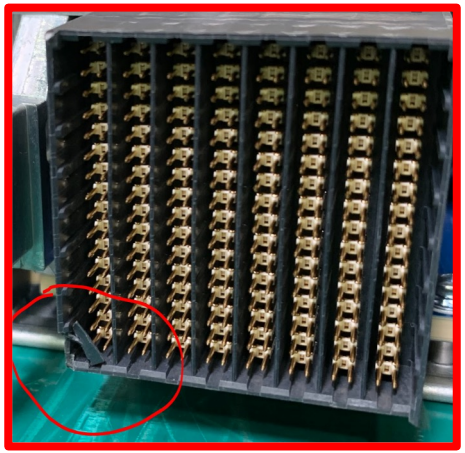


Bent OOB pin



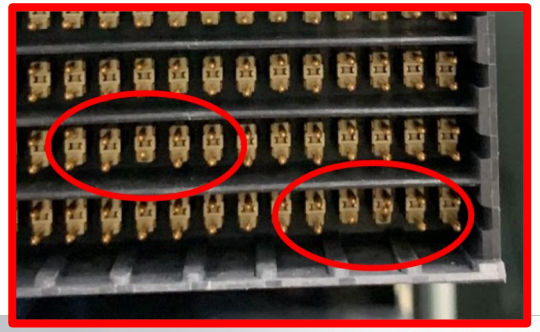
Fractured rib

Crushed ribs



Fractured housing

Bent pin tips



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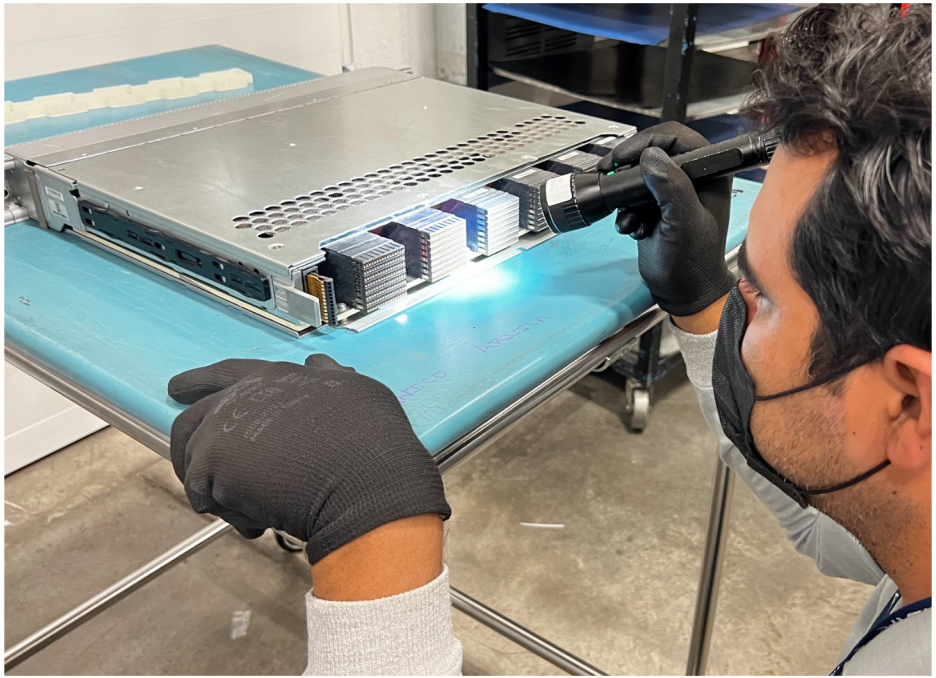
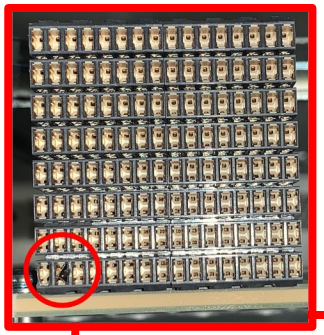
Line Card Connector Inspection

Inspect the LC connectors. Place the LC on a flat and stable surface. Using a flashlight, look at each connector. Look for damage such as chipped corners, dented contacts, or dented connector receptacles. If no visible damage, proceed to key features and installation



Damaged Shield

Damaged plastics



Examples of Damage

Damaged Shield

Damaged plastics

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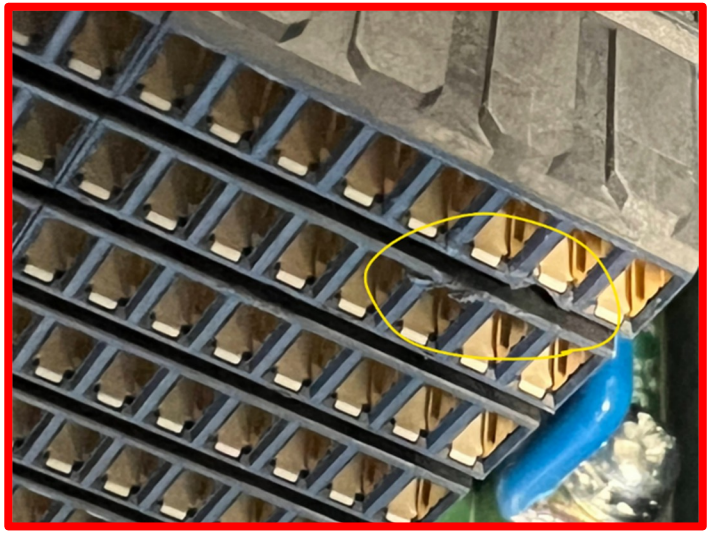
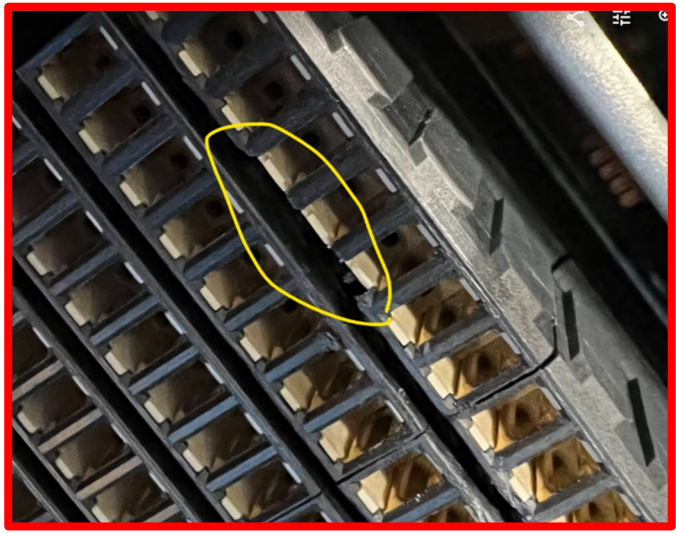
Line Card Connector Inspection - Large Version

Damaged Shield

Damaged plastics



Damaged plastics

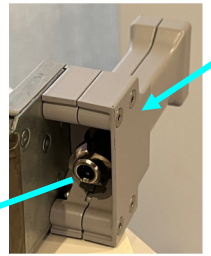


Damaged Shield

Chassis and Ejector Key Features

Here are all key features of the injector/ejector system to be aware of when inserting and injecting Line Cards into the front of any 7800 Series Chassis

Ejector nuts
2x/Slot L&R

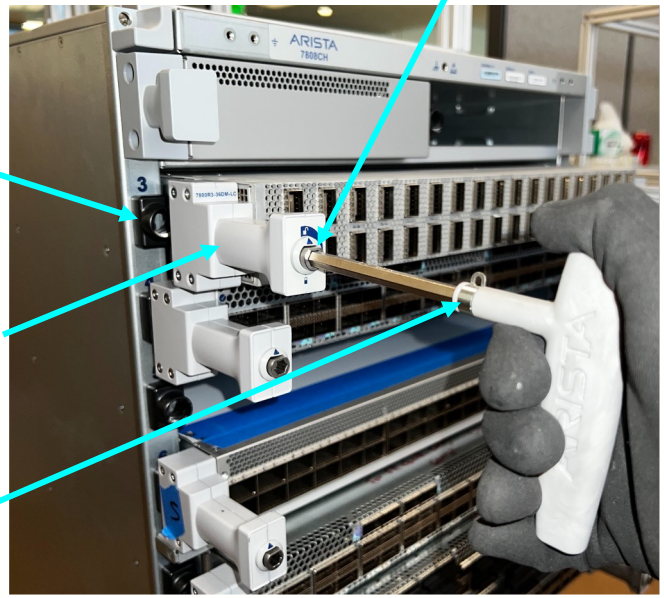


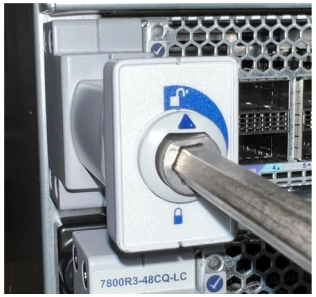
Ejector handles
2x L&R ends of
LC faceplate

Ejector tools
provided with
each chassis

Ejector screws
1x per ejector

Ejector receptacles
1x per Ejector





Ejector unlocked

Ejector locked
when fully injected

All of these features are on the left and right side of each line card/chassis slot

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LC Installation Procedure

LC installation steps

1. **Inspect:** Prior to inserting a LC into any slot of the chassis, inspect the connectors of chassis slot and LC for any damage. (see pages 3 & 4 for picture examples of damage)
2. **Insert:** Align and insert the LC into the slot, sliding it into the chassis with minimal force until it comes to a stop. The connectors and ejector screws should be pre-aligned at this position.
3. **Inject:** Insert the ejector wrenches into each ejector, the left ejector handle oriented upwards, the right ejector oriented downwards, towards the “unlocked” position labeled on front face of ejector.
4. **If the ejector screw is not engaged into the nut it will rotate freely without injecting the LC**, remove ejector wrenches, hold the ejector handles and wiggle them up and down while pushing gently into the slot.
5. **If the ejector screw is not rotating,** then hold the ejector handle and **wiggle them left and right** while pushing gently into the slot.
6. Reinsert the ejector wrenches into each ejector, Turn both ejector wrenches in unison CW 60 degrees (⅓ of total travel). If ejector wrench feels like it will bounce back, then stop, take out the card, inspect the slot and LC connectors. If no damage, reinsert and repeat the process. Note: if at the initial rotation of ejector wrenches there is no bounce back, then proceed and finish the rotation to 180 degrees til the ejectors “click” to complete the injection of the LC.

FAQ / Mating Sequence

Q - How can one feel if a connector is misaligned?

A - One can "feel" the misaligned connector through the ejectors by two means.

- First, the LC looks as if it is ready for injection but the ejector won't engage the nut, it will rotate freely and won't inject the LC. If the ejector is rotating freely then the ejector screw is not engaging the ejector nut, and the connectors are not likely aligned properly.
- Second, resistance during inserting and mating the LC can be felt through rotating the ejectors 60 degrees, checking for any bounce back in the ejector wrench when released.
- If either of these scenarios occur, proceed to wiggle the card up and down, then left and right to pushing lightly to engage the LC slightly further into the system, overcoming any misalignment in the mating connectors and ejector screw/nut.

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The Mating Sequence of a LC as it is slid into a LC slot is as follows:

1. Male guide modules on left and right of LC will engage the chassis frame to pre-align the LC and FM connectors
2. Male and Female Connector alignment lead in engage (chamfers on each half of the connectors) engage and gather the mating half
3. Ejector screw and nut are engaged to begin injection of LC into the slot.
    a. If ejectors rotate freely, hold ejectors, push down and use moderate force to push the LC a small amount more into slot.
4. Ejectors are rotated 180 degrees to mate the LC's connectors to the FM connectors.
    a. If the installer experiences connector stubbing, it can be felt as resistance through the rotation of the ejector wrenches (the purpose of recommending a 60 degree rotation / bounceback check)
    b. If ejector is hard to engage, the connectors are binding. Holding the ejectors, proceed to wiggle left to right as in the procedure, the binding should release, the ejectors nuts properly aligned/engaged with the ejector nuts
    c. Reactuate the ejectors to fully engage and seat the connectors.

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