

7800 High Speed Connector Inspection Methodology

October 2023

78-0201-01

Scope

The following slides represent the best methods of inspecting the 7800 series' high speed signal connectors to ensure the highest possibility of avoiding mechanical damage on both the Male and Female connectors.

- Mechanical damage can be contagious.
- It is caused by inadvertent contact of the connector with a hard surface/object.
- If not discovered, this type of damage WILL cause damage to all connectors that it is mated to, which results in connectivity issues and network downtime.

It is highly recommended that before ANY mating sequence of a module into a chassis, that the connectors be screened for mechanical damage using the methods illustrated in this deck.

Lighted, Thorough Inspection Method - Female Connector

The high speed connectors have a very uniform pattern of features. Using bright light, ~300+lumens, illuminates the gold plating.

Any damage is expose as a deviation/void in these patterns

Broken plastics exposes internal shields, which are likely damaged

Broken / bent shield tabs are easy to detect using this method

~45deg viewing of conn from all four sides of the face, **light angle same as viewing angle**

View the face of the connector straight on, looking for any socket windows that appear larger than all others, again seen as a break in the pattern of connectors geometry

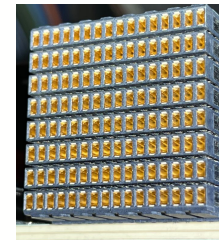
Magnifying glass may be used for further inspection if damage is detected

Left angle, looking to detect any side and shield tab, or left side plastics damage



Top angle, looking for any plastics damage between each row of sockets, this would result in exposed shields

Face normal angle, looking for any larger socket openings



Right angle, looking to detect any side and shield tab, or right side plastics damage

Bottom angle, looking for any plastics damage between each row of sockets, this would result in exposed shields



Lighted, Thorough Inspection Method - Male Connector

The high speed connectors have a very uniform pattern of features. Using bright light, ~300+lumens, illuminates the gold plating on the pin tips.

Any pin damage is exposed as a deviation in these patterns.

Broken / bent pins tips are easy to detect using this method, notice points of light at tips from right and left side views

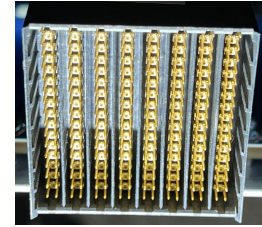
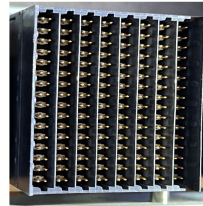
~45deg viewing of conn from all four sides of the face, **light angle opposite viewing angle**

View the face of the connector straight on, looking for any debris that is lodged inside of the connector

Inspect full perimeter of plastic shrouds for chips or missing material, as well as the ribs between each row of pins

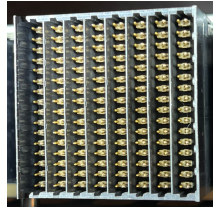
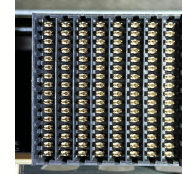
Magnifying glass may be used for further inspection if damage / debris is detected

Left angle, looking to detect any pin tip pattern damage, or left side / rib plastics damage



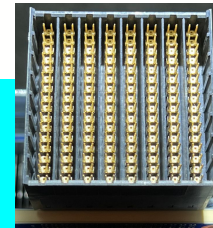
Top angle, looking for pin tip pattern deviations, or top side shroud / rib plastics damage

Face normal angle, looking for any debris or broken plastics inside connector



Right angle, looking to detect any pin tip pattern deviations, or right side / rib plastics damage

Bottom angle, looking for pin tip pattern deviations, or bottom side shroud / rib plastics damage



Recommended Flashlight for use to inspect test systems

No less than 300 lumens in brightness, burst mode greater than that is often helpful



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Features two lighting modes: Constant on and THRO® (Temporarily Heightened Regulated Output) mode for maximum brightness	IPX7; waterproof to 1m; 1m impact resistance tested
300 lumens; 69m beam; runs 3 hours	5.46" (13.87 cm); 3.3 oz. (93.5g)
THRO™: 1,000 lumens; 110m beam; 35 second burst	Limited Lifetime Warranty Visit streamlight.com for full warranty information
Battery level indicator located in switch - turns red when it's time to charge	#88810 - Wedge - Includes USB cord, wrist lanyard - Box - Black #88811 - Wedge - Includes USB cord, wrist lanyard - Box - Coyote
Durable anodized machined aircraft aluminum construction	

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Examples of Connector Damage

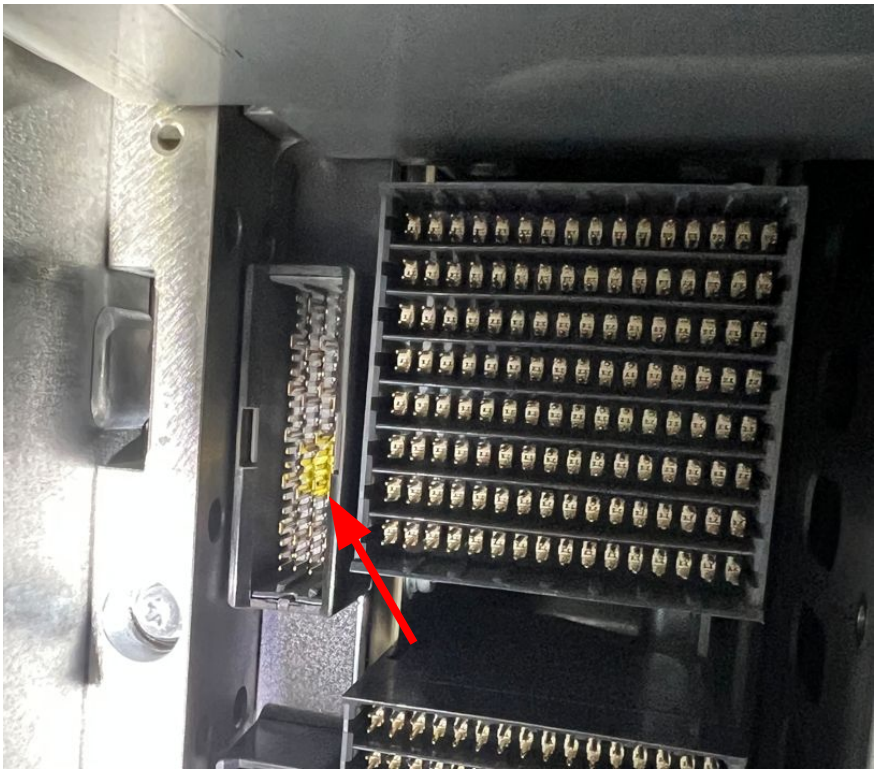
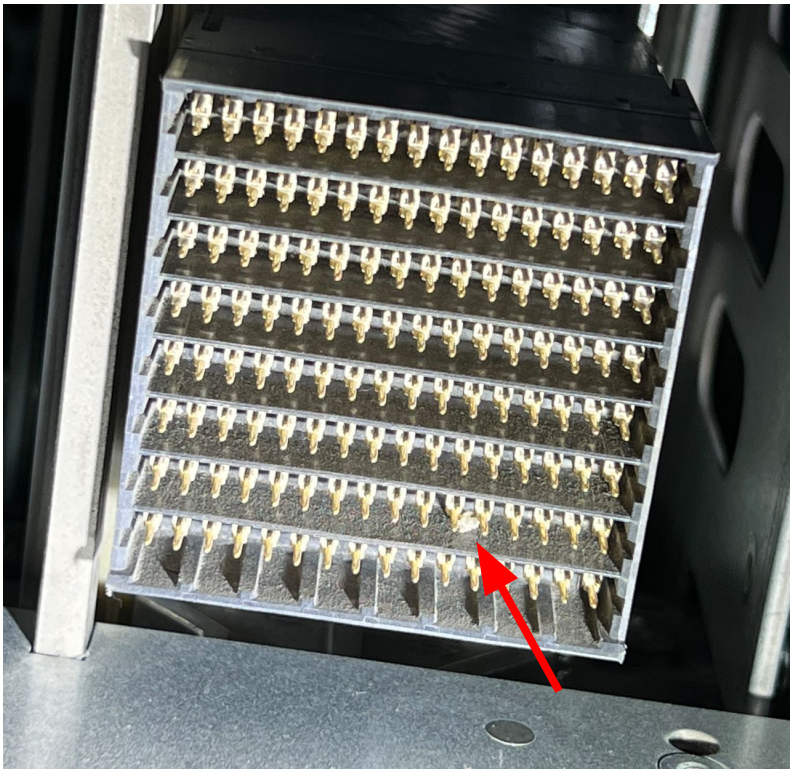
Damage and Debris Evidence - What to look for

The following slides represent a sampling of **Contagious Connector Damage** that will cause damage when mated to another connector

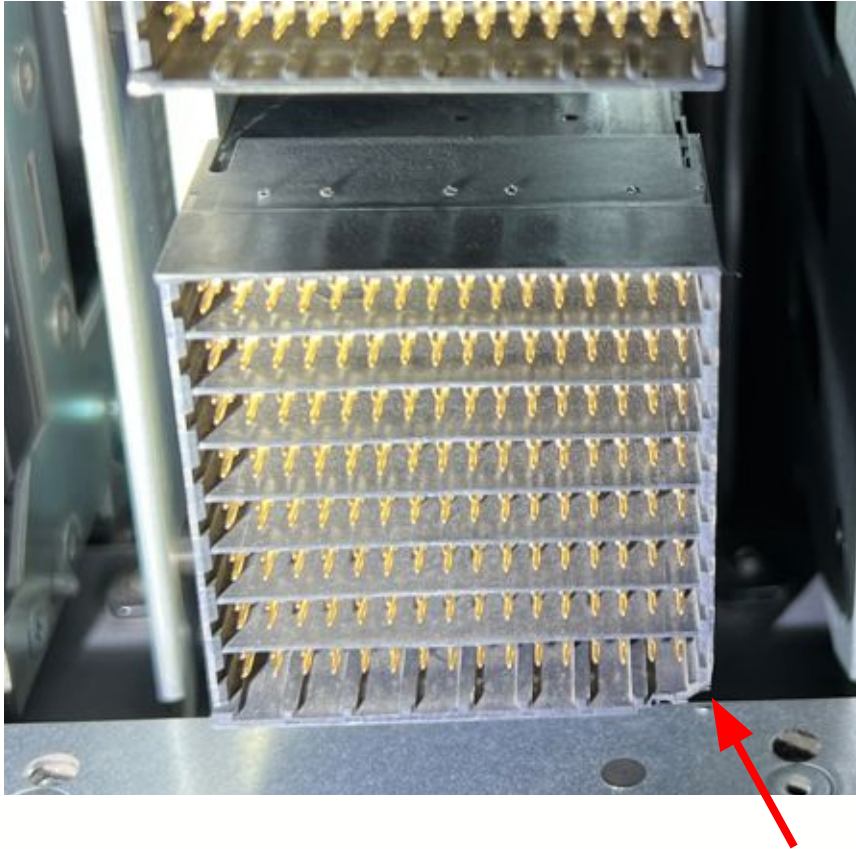
It is imperative that inspections are performed using a bright light from multiple viewing angles as described on previous slides.

EVERY connector should be visually inspected prior to **EVERY** installation into any chassis.

Debris in Male Connectors on Fabric Modules / Chassis



Fabric Module Male Connector Shroud Damage



Bottom right corner of shroud is chipped and material displaced into the connector

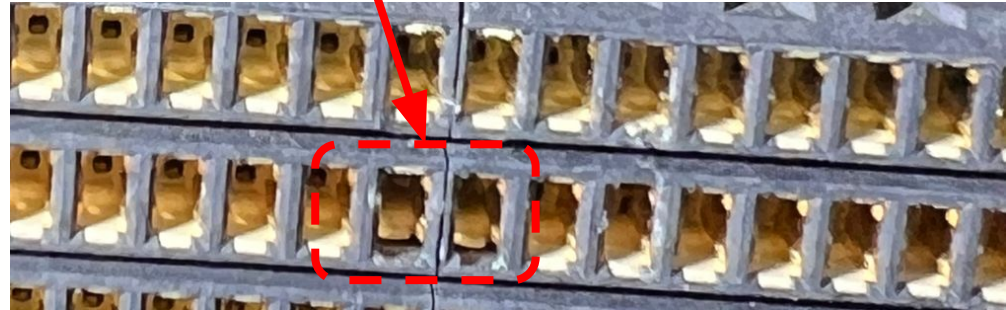
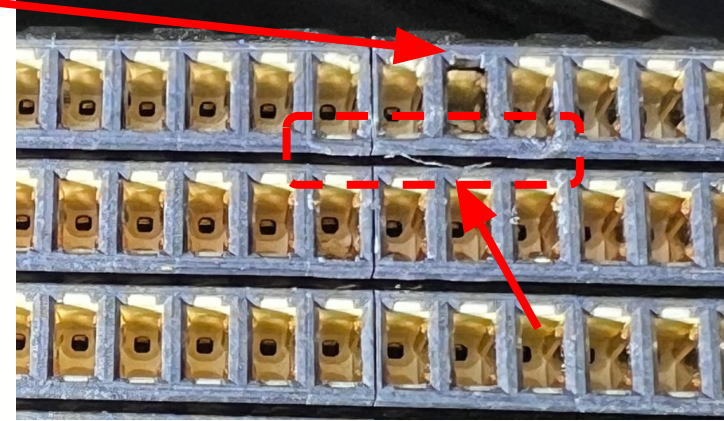
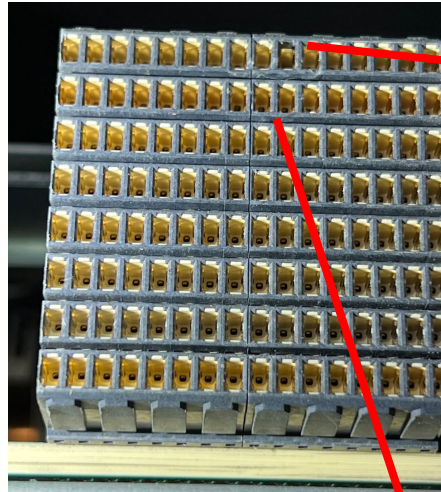
This is considered contagious damage that will affect any connector mated to the damaged unit

Line Card Damaged Female Connector

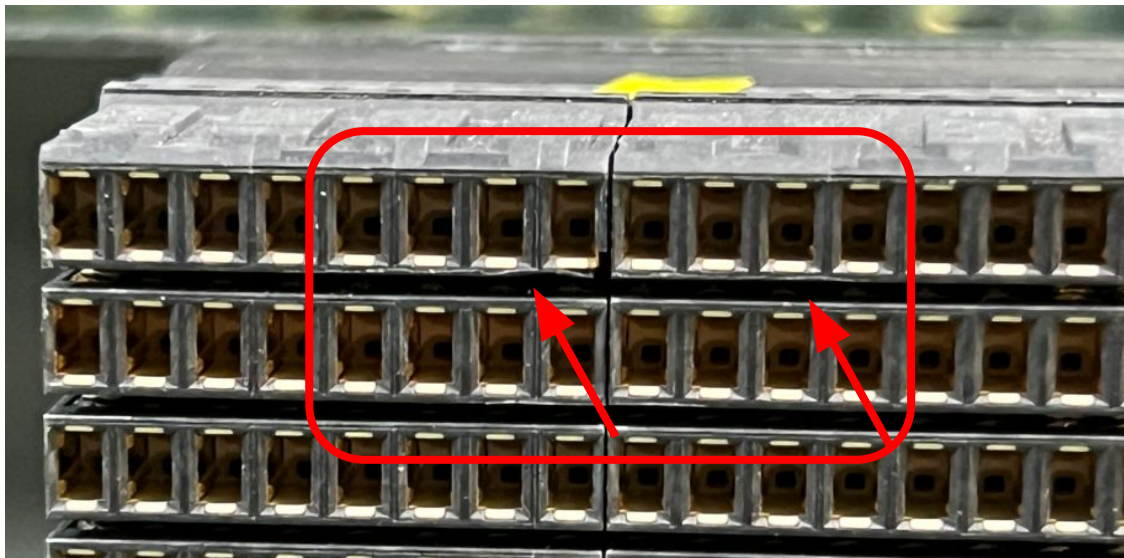
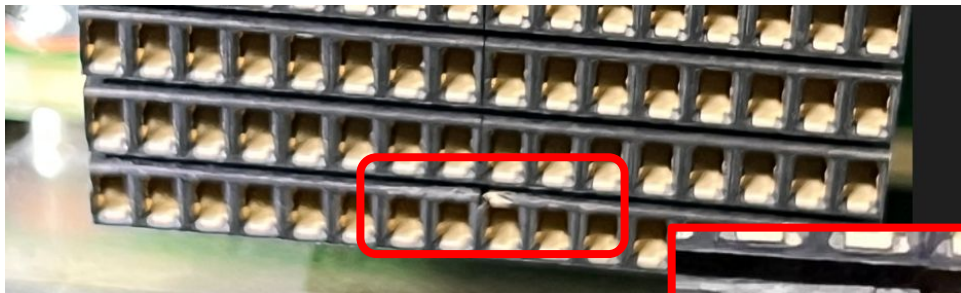
These pictures identify:

- broken shields around conductors
- impression marks of crushing a rib within a Line Card connector

These types of damage will cause further damage to any components they are mated with



Line Card Damaged Female Connector





Thank You

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