

TB-2253

XCede HD® Family Daughtercard Wafer Removal and Replacement

Revision “C”

Specification Revision Status

Revision	SCR No.	Description	Initial	Date
A	S2168	Initial Release	E. Lukin	11-05-12
B	S4331	Added XCede HD PLUS information	B.Wang	02-18-16
C	S7763	Updated document title, added XCede HD2 Daughtercard information	B.Wang	06-19-19

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1.0 SCOPE

- 1.1 This technical bulletin describes the method for XCede HD , XCede HD PLUS & XCede HD2 daughtercard single wafer replacement. For XCede HD RAM and XCede HD Inverted RAM refer to this documents.⁽¹⁾

Notes1: XCede HD RAM and XCede HD Inverted RAM use the same tool of XCede HD Daughter.

2.0 REFERENCEDOCUMENTS

- 2.1 XCede HD , XCede HD PLUS & XCede HD2 Daughtercard Customer Use Drawings
2.2 TB-2244 XCede HD Family Daughtercard Connector Press-Fit Installation Process

3.0 TOOLING

3.1 XCede HD Daughtercard Stiffener Removal/Installation Tool(s)

2 Pair Module	Tool P/N 600-2503-000
3 Pair Module	Tool P/N 600-2292-000
4 Pair Module	Tool P/N 600-2293-000
6 Pair Module	Tool P/N 600-2328-000

3.2 XCede HD PLUS & XCede HD2 Daughtercard Stiffener Removal/Installation Tool(s)

3 Pair Module	Tool P/N 600-2564-000
4 Pair Module	Tool P/N 600-2516-000
6 Pair Module	Tool P/N 600-2536-000

3.3 XCede HD Daughtercard Module Removal Tool(s)

2 Pair x 4 Position Module	Tool P/N 600-2506-000
2 Pair x 6 Position Module	Tool P/N 600-2507-000
2 Pair x 8 Position Module	Tool P/N 600-2508-000
2 Pair x 10 Position Module	Tool P/N 600-2511-000
3 Pair x 4 Position Module	Tool P/N 600-2336-000
3 Pair x 6 Position Module	Tool P/N 600-2315-000
3 Pair x 8 Position Module	Tool P/N 600-2337-000
4 Pair x 4 Position Module	Tool P/N 600-2338-000
4 Pair x 6 Position Module	Tool P/N 600-2316-000
4 Pair x 8 Position Module	Tool P/N 600-2339-000
6 Pair x 4 Position Module	Tool P/N 600-2340-000
6 Pair x 6 Position Module	Tool P/N 600-2329-000
6 Pair x 8 Position Module	Tool P/N 600-2341-000

3.4 XCede HD PLUS & XCede HD2 Daughtercard Module Removal Tool(s)

3 Pair x 4 Position Module	Tool P/N 600-2561-000
3 Pair x 6 Position Module	Tool P/N 600-2562-000
3 Pair x 8 Position Module	Tool P/N 600-2563-000
4 Pair x 4 Position Module	Tool P/N 600-2517-000
4 Pair x 6 Position Module	Tool P/N 600-2518-000
4 Pair x 8 Position Module	Tool P/N 600-2519-000
6 Pair x 4 Position Module	Tool P/N 600-2533-000
6 Pair x 6 Position Module	Tool P/N 600-2534-000
6 Pair x 8 Position Module	Tool P/N 600-2535-000

3.5 XCede HD Daughtercard 2 Pair Application Tools

694-4767-000 - 2 PAIR DAUGHTERCARD TOOL 1.2" LENGTH
694-4768-000 - 2 PAIR DAUGHTERCARD TOOL 2.0" LENGTH
694-4769-000 - 2 PAIR DAUGHTERCARD TOOL 4.0" LENGTH
694-4770-000 - 2 PAIR DAUGHTERCARD TOOL 6.0" LENGTH
694-4771-000 - 2 PAIR DAUGHTERCARD TOOL 8.0" LENGTH
694-4772-000 - 2 PAIR DAUGHTERCARD TOOL 10.0" LENGTH
694-4773-000 - 2 PAIR DAUGHTERCARD TOOL 12.0" LENGTH

3.6 XCede HD Daughtercard 3 Pair Application Tools

694-4449-000 - 3 PAIR DAUGHTERCARD TOOL 1.2" LENGTH
694-4450-000 - 3 PAIR DAUGHTERCARD TOOL 2.0" LENGTH
694-4451-000 - 3 PAIR DAUGHTERCARD TOOL 4.0" LENGTH
694-4452-000 - 3 PAIR DAUGHTERCARD TOOL 6.0" LENGTH
694-4453-000 - 3 PAIR DAUGHTERCARD TOOL 8.0" LENGTH
694-4454-000 - 3 PAIR DAUGHTERCARD TOOL 10.0" LENGTH
694-4455-000 - 3 PAIR DAUGHTERCARD TOOL 12.0" LENGTH

3.7 XCede HD PLUS & XCede HD2 Daughtercard 3 Pair Application Tools

694-4913-000 - 3 PAIR DAUGHTERCARD TOOL 1.2" LENGTH
694-4914-000 - 3 PAIR DAUGHTERCARD TOOL 2.0" LENGTH
694-4915-000 - 3 PAIR DAUGHTERCARD TOOL 4.0" LENGTH
694-4916-000 - 3 PAIR DAUGHTERCARD TOOL 6.0" LENGTH
694-4917-000 - 3 PAIR DAUGHTERCARD TOOL 8.0" LENGTH
694-4918-000 - 3 PAIR DAUGHTERCARD TOOL 10.0" LENGTH
694-4919-000 - 3 PAIR DAUGHTERCARD TOOL 12.0" LENGTH

3.8 XCede HD Daughtercard 4 Pair Application Tools - Compatible with Hybrid Front-Housing.

694-4456-000 - 4 PAIR DAUGHTERCARD TOOL 1.2" LENGTH
694-4457-000 - 4 PAIR DAUGHTERCARD TOOL 2.0" LENGTH
694-4458-000 - 4 PAIR DAUGHTERCARD TOOL 4.0" LENGTH
694-4459-000 - 4 PAIR DAUGHTERCARD TOOL 6.0" LENGTH
694-4460-000 - 4 PAIR DAUGHTERCARD TOOL 8.0" LENGTH
694-4461-000 - 4 PAIR DAUGHTERCARD TOOL 10.0" LENGTH
694-4462-000 - 4 PAIR DAUGHTERCARD TOOL 12.0" LENGTH

3.9 XCede HD PLUS & XCede HD2 Daughtercard 4 Pair Application Tools

694-4791-000 - 4 PAIR DAUGHTERCARD TOOL 1.2" LENGTH
694-4792-000 - 4 PAIR DAUGHTERCARD TOOL 2.0" LENGTH
694-4793-000 - 4 PAIR DAUGHTERCARD TOOL 4.0" LENGTH
694-4794-000 - 4 PAIR DAUGHTERCARD TOOL 6.0" LENGTH
694-4795-000 - 4 PAIR DAUGHTERCARD TOOL 8.0" LENGTH
694-4796-000 - 4 PAIR DAUGHTERCARD TOOL 10.0" LENGTH
694-4797-000 - 4 PAIR DAUGHTERCARD TOOL 12.0" LENGTH

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- 3.10XCede HD Daughtercard 6 Pair Application Tools - Compatible with Hybrid Front-Housing.
- 694-4505-000 - 6 PAIR DAUGHTERCARD TOOL 1.2" LENGTH
 - 694-4506-000 - 6 PAIR DAUGHTERCARD TOOL 2.0" LENGTH
 - 694-4507-000 - 6 PAIR DAUGHTERCARD TOOL 4.0" LENGTH
 - 694-4508-000 - 6 PAIR DAUGHTERCARD TOOL 6.0" LENGTH
 - 694-4509-000 - 6 PAIR DAUGHTERCARD TOOL 8.0" LENGTH
 - 694-4510-000 - 6 PAIR DAUGHTERCARD TOOL 10.0" LENGTH
 - 694-4511-000 - 6 PAIR DAUGHTERCARD TOOL 12.0" LENGTH
- 3.11XCede HD PLUS & XCede HD2 Daughtercard 6 Pair Application Tools
- 694-4833-000 - 6 PAIR DAUGHTERCARD TOOL 1.2" LENGTH
 - 694-4834-000 - 6 PAIR DAUGHTERCARD TOOL 2.0" LENGTH
 - 694-4835-000 - 6 PAIR DAUGHTERCARD TOOL 4.0" LENGTH
 - 694-4836-000 - 6 PAIR DAUGHTERCARD TOOL 6.0" LENGTH
 - 694-4837-000 - 6 PAIR DAUGHTERCARD TOOL 8.0" LENGTH
 - 694-4838-000 - 6 PAIR DAUGHTERCARD TOOL 10.0" LENGTH
 - 694-4839-000 - 6 PAIR DAUGHTERCARD TOOL 12.0" LENGTH
- 3.12XCede HD Daughtercard No Stiffener Pressing Tools
- 694-4765-000 - 2 PAIR DAUGHTERCARD REWORK TOOL 1.5" LENGTH
 - 694-4463-000 - 3 PAIR DAUGHTERCARD REWORK TOOL 1.5" LENGTH
 - 694-4464-000 - 4 PAIR DAUGHTERCARD REWORK TOOL 1.5" LENGTH
 - 694-4504-000 - 6 PAIR DAUGHTERCARD REWORK TOOL 1.5" LENGTH
- 3.13XCede HD PLUS & XCede HD2 Daughtercard No Stiffener Pressing Tools
- 694-4920-000 - 3 PAIR DAUGHTERCARD REWORK TOOL 1.5" LENGTH
 - 694-4798-000 - 4 PAIR DAUGHTERCARD REWORK TOOL 1.5" LENGTH
 - 694-4840-000 - 6 PAIR DAUGHTERCARD REWORK TOOL 1.5" LENGTH
- 3.14XCede HD Daughtercard Power Rework Tools
- 694-4701-000 - 3 PAIR DAUGHTERCARD POWER REWORK TOOL
 - 694-4702-000 - 4 PAIR DAUGHTERCARD POWER REWORK TOOL
 - 694-4703-000 - 6 PAIR DAUGHTERCARD POWER REWORK TOOL
- 3.15XCede HD PLUS Daughtercard Power Rework Tools
- 694-5100-000 - 4 PAIR DAUGHTERCARD POWER REWORK TOOL
 - 694-5101-000 - 6 PAIR DAUGHTERCARD POWER REWORK TOOL
- 3.16Pallet to support printed circuit board (PCB)
- 3.17Small hand operated press or Amphenol TCS recommends using the Tyco Electronics (ASG) MEP-12T for all XCede HD connector pressing.

4.0 PROCEDURE

4.1 Verify Tool Condition.

Prior to remove stiffener, verify the stiffener removal tool is in proper working order and condition. Ensure all stiffener engagement pins are present and protruding at least 0.030 inches from each opposing face of the pin block. If any pins are missing, bent, or broken, remove and replace them.



Figure 1: Stiffener removal pins protruding out the bottom of the pin block

- Step 1.** Remove the stiffener from the connector using installation/removal tool. Using the side of the tool with the Delrin insert facing up (See Figure 2), place the pins protruding downward into the pilot holes at one of the stiffener and turn the knob counterclockwise until the stiffener starts to move. Repeat this process (See Figure 3) moving the tool gradually from one end of the connector to the other until the stiffener becomes loose and can be easily removed from the assembly.

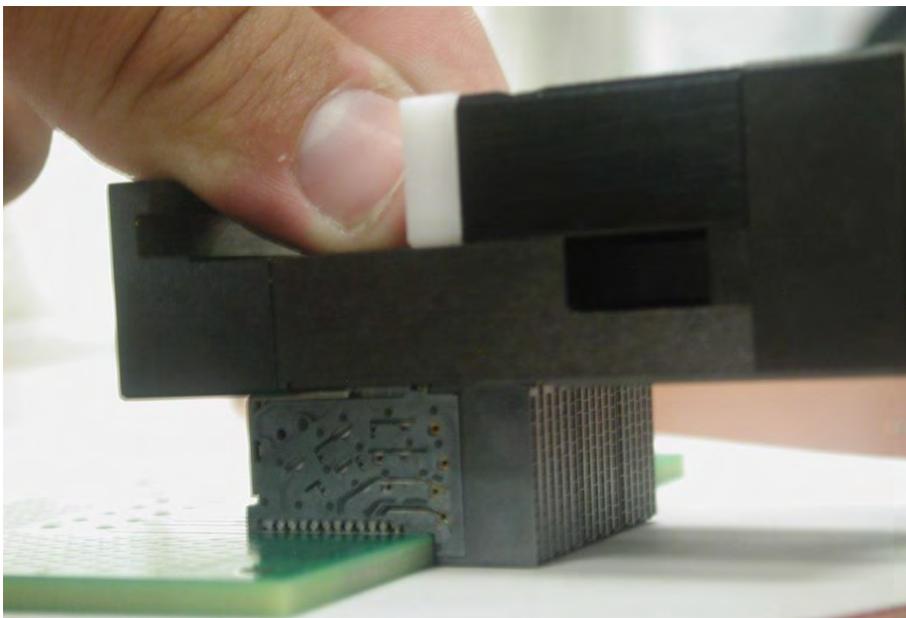


Figure 2: Stiffener Removal Tool is in Place

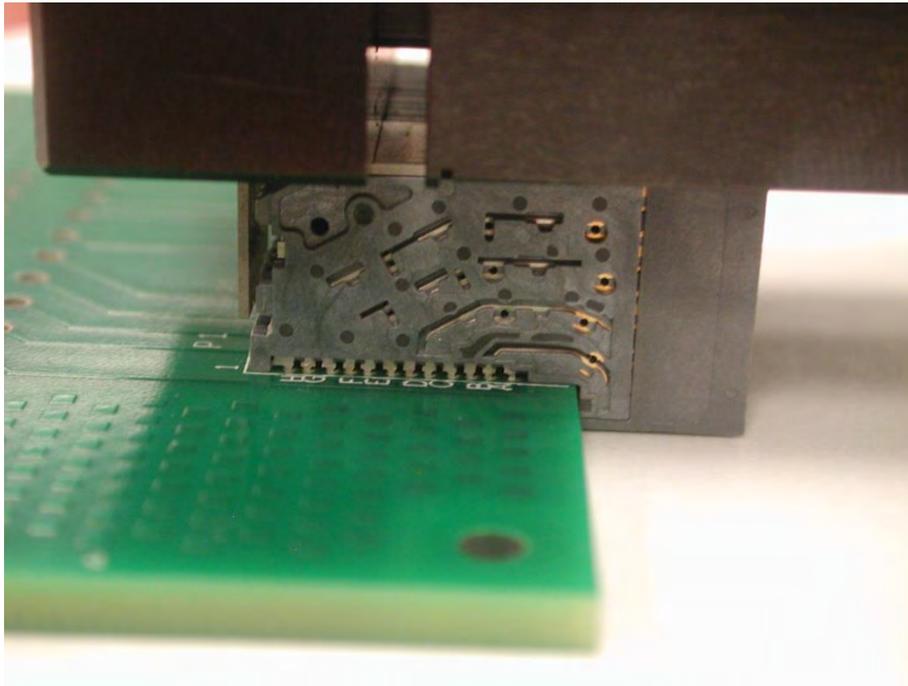


Figure 3: Loosing of the stiffener from the daughtercard wafers

Step 2. Remove the stiffener from the connector assembly, and set aside.

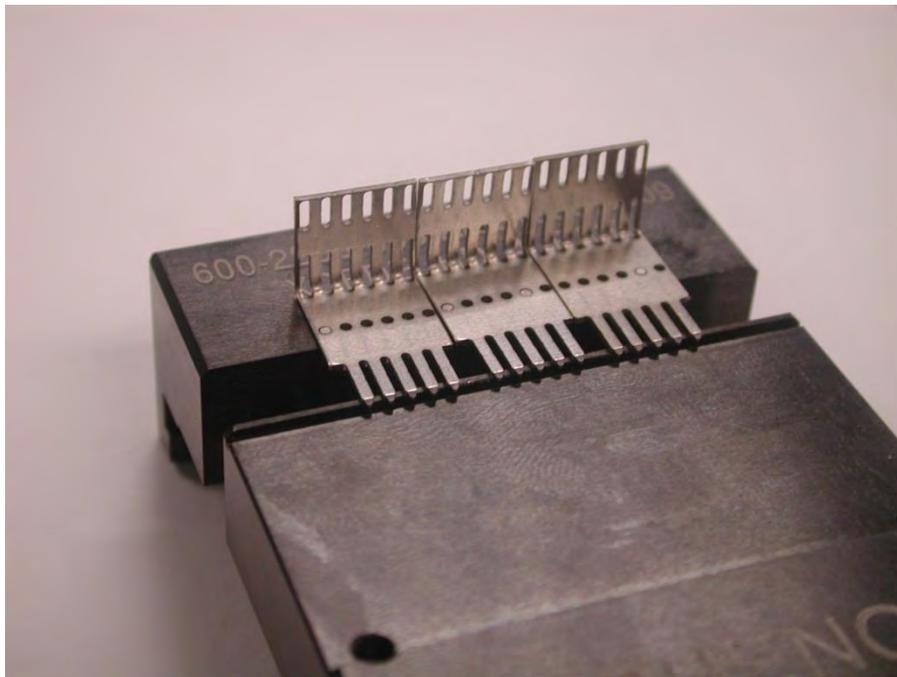


Figure 4: Stiffener removed from daughtercard assembly

Step 3. Remove the damaged module from the PCB using the daughtercard removal tool. Loosen the 'Push Off' of the tool by unscrewing the knob and push the latch to release the position beam (see Figures 5 and 6 for examples of the tool in 'closed' and 'open' position). Fit the daughtercard module to be removed into the outline in the tool and push the position beam back into place until it latches. Be sure the module is entirely centered in the tool and is the only module in the tool. Once the module is fitted, slowly turn the knob clockwise until the module has been removed from the PCB. See figures 7, 8, and 9 for examples of this process.

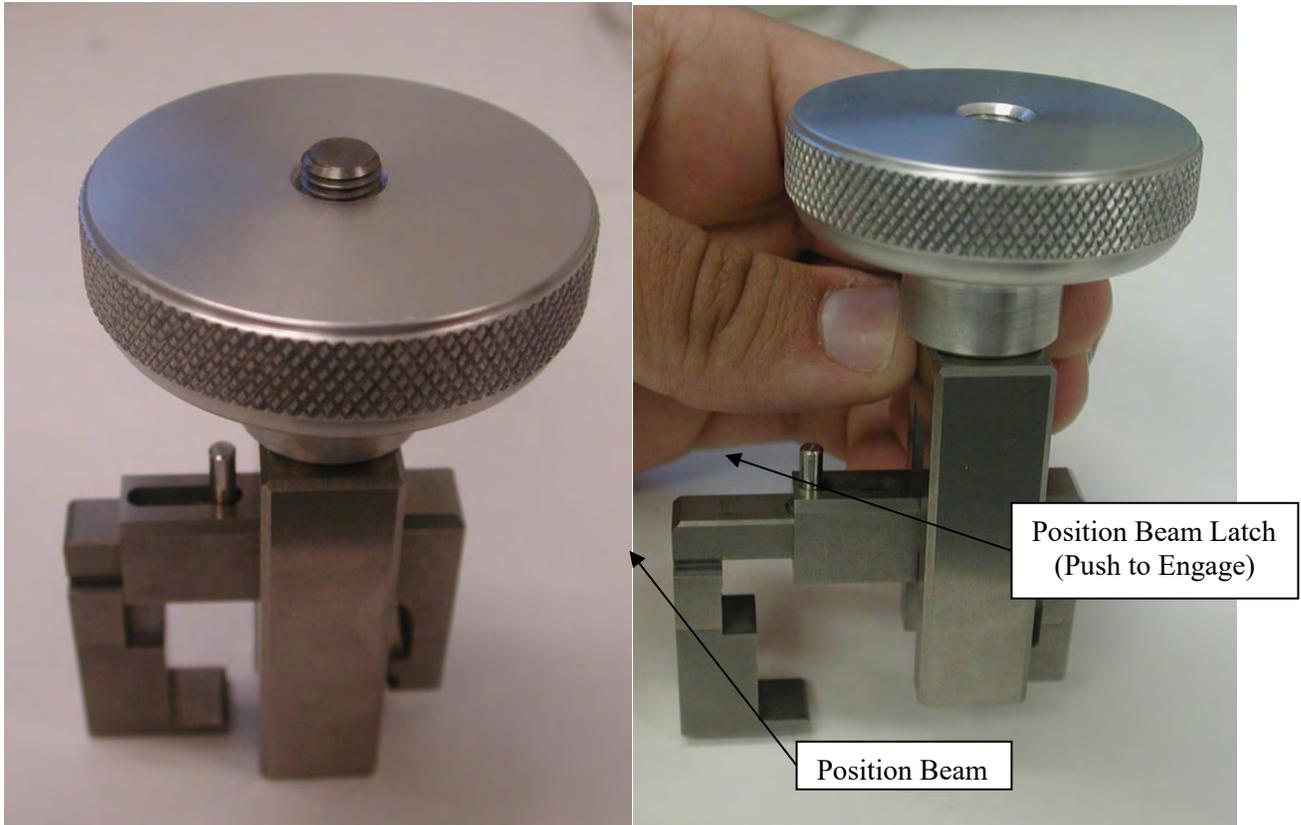


Figure 5/ Figure 6: 'Closed' Daughtercard Removal Tool / 'Open' Daughtercard Removal Tool

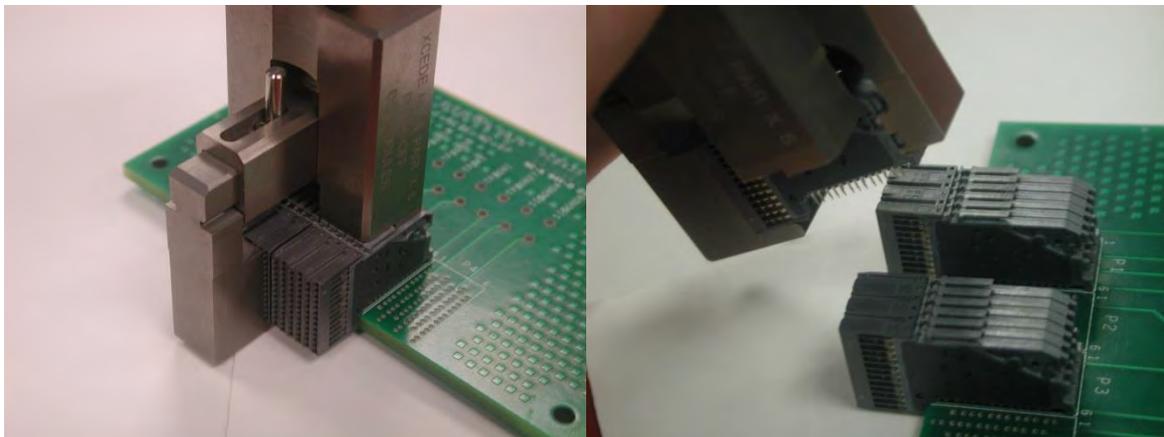


Figure 7: Daughtercard Module Removal Using 'Push Off DC Modules' Configuration

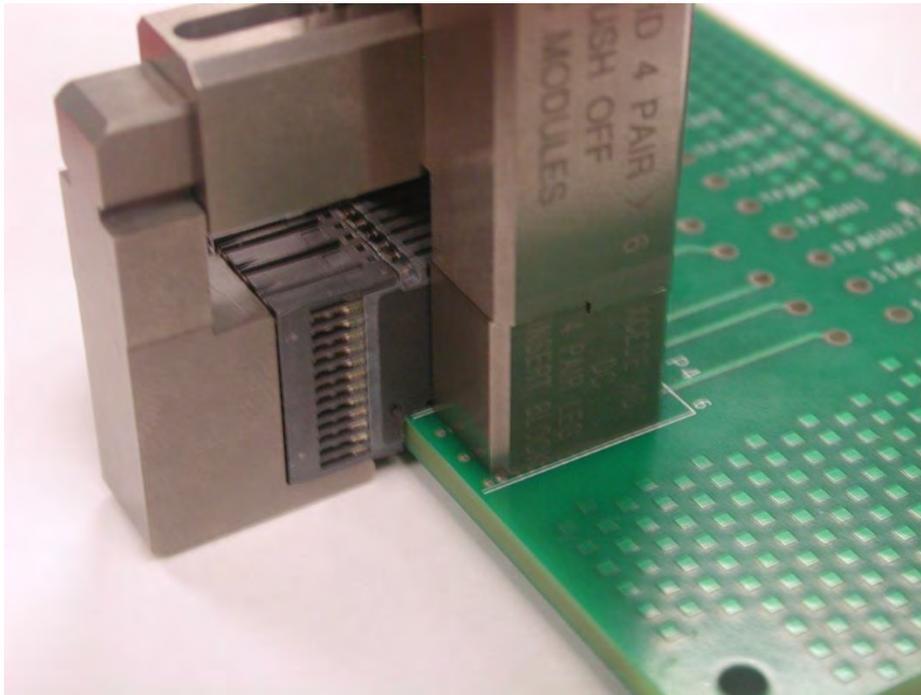


Figure 8: Daughtercard Module Removal Using 'Push Off DC Modules' and 'Leg Insert Block' Configuration

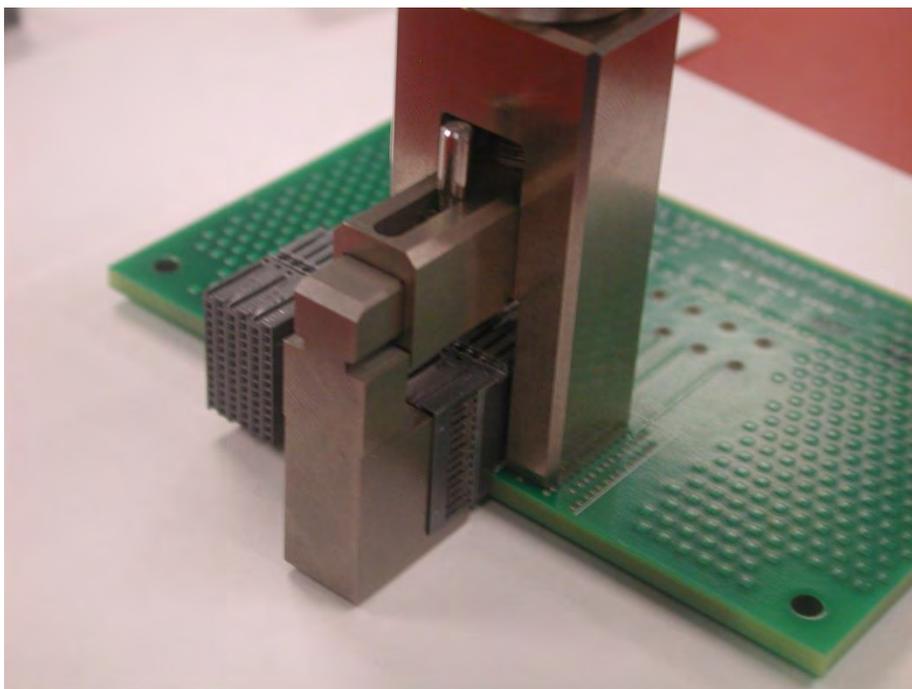


Figure 9: Daughtercard Module Removal Using 'Push Off Board' Configuration

NOTE:

This tool has three configurations to be used with different arrangements of modules on the board. One configuration, using the 'Push Off Board' part, is designed to remove a single daughtercard module with no modules adjacent to it (see Figure 7). The second configuration, using the 'Push Off DC Modules' part, is designed to remove a single daughtercard module with other modules to either side of it (see Figure 8). The third configuration, using the 'Push Off DC Modules' and 'Leg Insert Block' parts, is designed to remove a single daughtercard module with another daughtercard module to only one side of it (see Figure 9). The 'Push Off DC Modules' and 'Push Off Board' parts can be interchanged by unscrewing the tool knob entirely and pulling off the part to be replaced. When utilizing the 'Push Off DC Modules', be sure to orient the part on the removal tool so that the lip in the part will not crush the daughtercard module shoulder (see Figure 10).

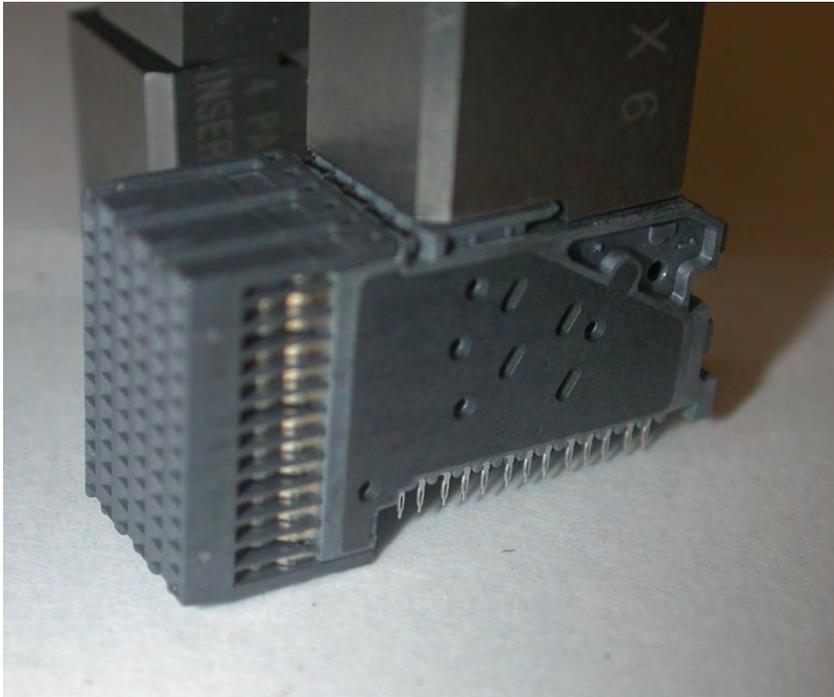


Figure 10: Tool Assembled so that Module Shoulder Fits

- Step 4.** Inspect the new daughtercard module(s) for bent or misaligned compliant pins, damaged plastic, etc.
- Step 5.** Pre-seat all new wafers into the plated through holes on the PCB (see Figure 11).

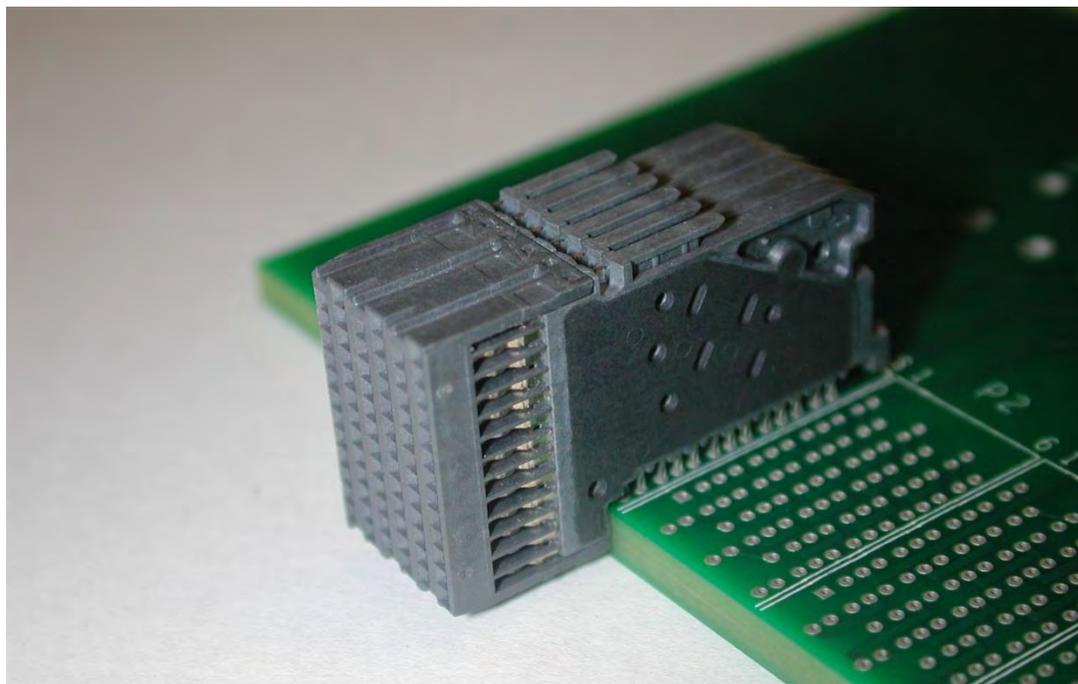


Figure 11: Daughtercard module pre-seated (manually placed)

Step 6. Support the PCB for pressing.

Step 7. Press wafers with recommended seating head. See TB-2198 “XCede HD , XCede HD PLUS & XCede HD2 Connector Installation Process” for press recommendations.

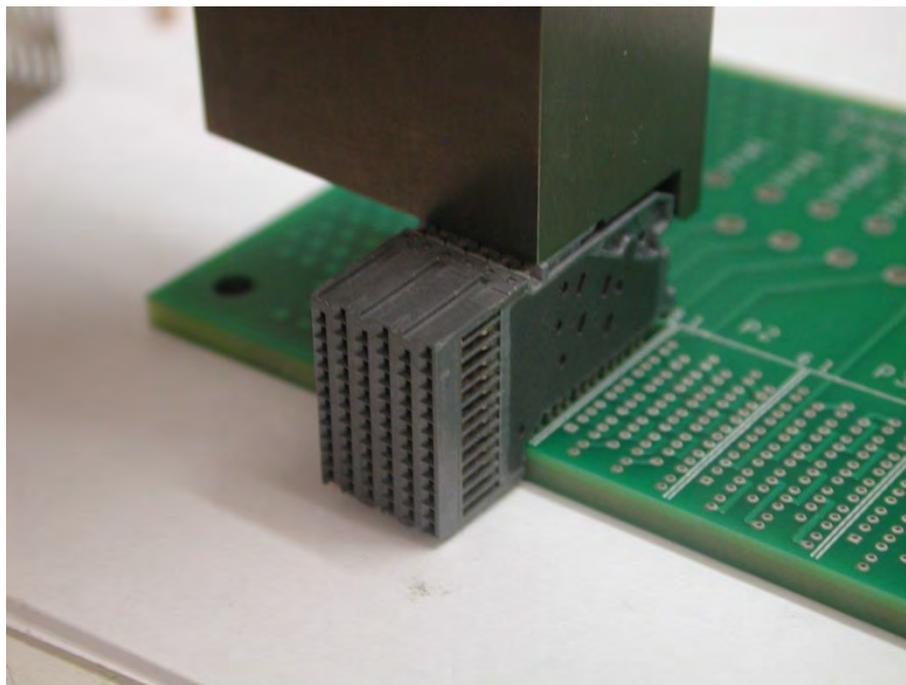


Figure 12: Seating head positioned upon daughtercard module

- Step 8.** Place the stiffener onto the connector, and align slots with tabs on wafers, ensuring stiffener position is in agreement with the connector drawing.

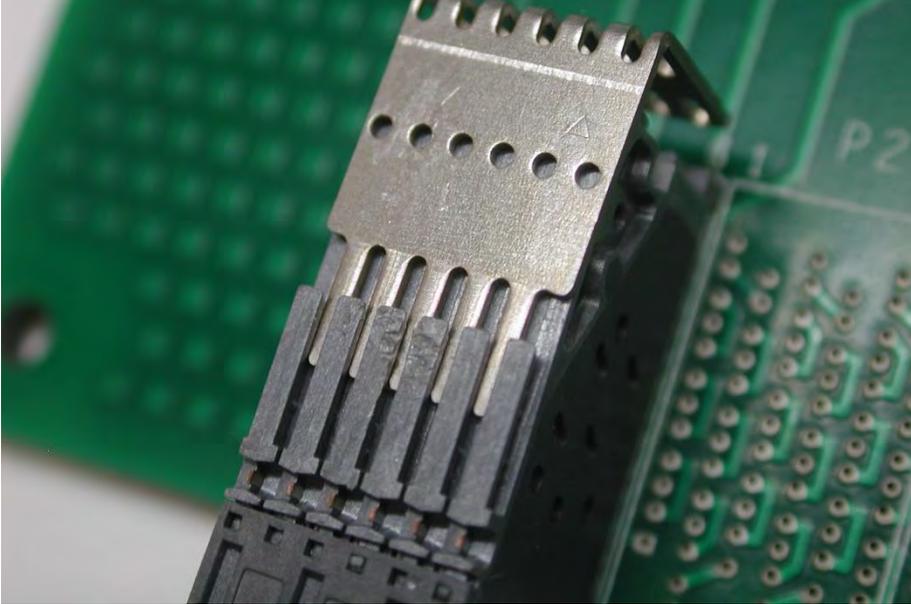


Figure 13: Stiffener positioned on daughtercard module(s)

- Step 9.** Reinstall stiffener onto connector using installation/removal tool. The tool is installed onto the stiffener 180° from the position used during the removal steps (Delrin insert facing down). Open the stiffener removal tool so that the daughtercard fits into the open jaws of the tool and turn the knob clockwise until the stiffener begins to move. Move the tool along the length of the connector and repeat this process until the stiffener is fully seated, see Figure 13.

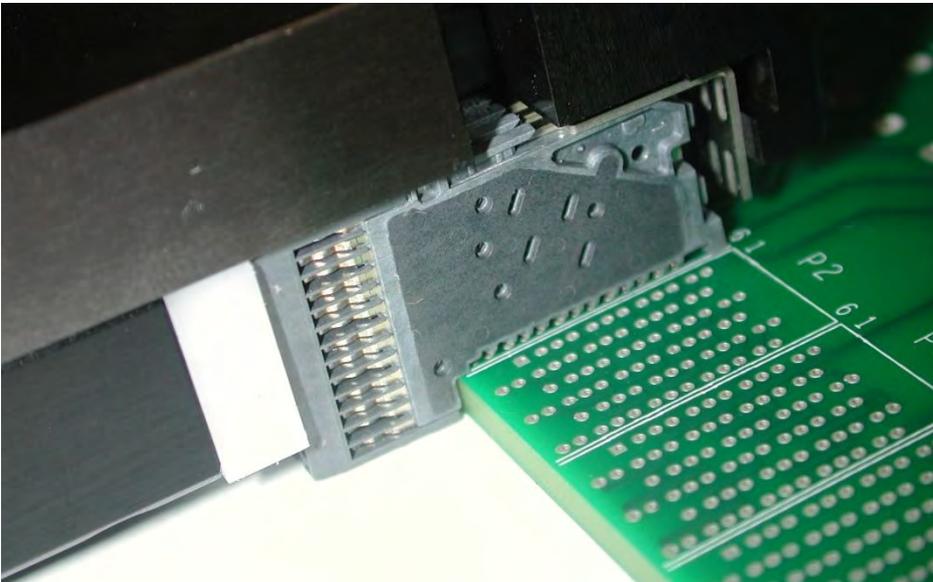


Figure 14: Installation tool with partially reinstalled stiffener

NOTE: Use caution when reworking connectors with power connectors. The daughtercard power connectors extend beyond the mating face of the signal wafers and using powers for support, be sure the tool is centered across the points of contact, and the tool is not over tightened.

When working with powers, the best method of reinstallation depending on you specific connector configuration is to:

- A. Push the stiffener onto the connector as far as possible by hand
- B. Work the tool down the entire length of the connector, applying only enough force to pre-seat the stiffener
- C. Completely seat the stiffener in the signal wafer areas only
- D. Completely seat the stiffener onto the power connectors by returning the tool to the areas with power, and applying the minimum amount of force

Step 10. Ensure the stiffener is in the seated position by verifying the alignment tabs on the back of the wafers protrude out the rear of the stiffener, see Figure 14.

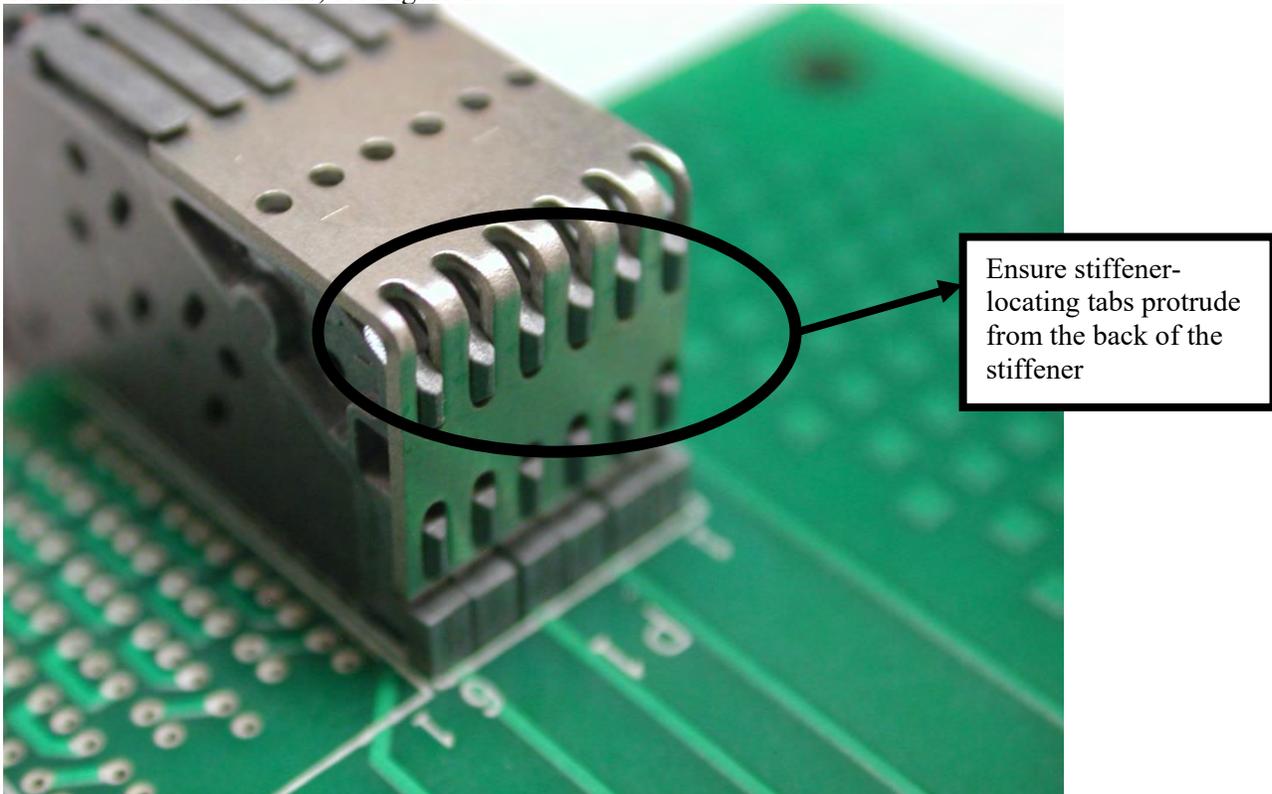


Figure 15: Wafer stiffener locating feature protrudes from the back of a fully seated stiffener

Step 11. Replace any end-caps and guide modules without posts, and inspect entire connector looking for unseated wafers onto the PCB, unseated wafers into the stiffener, damaged wafer hats, etc.

5.0 KEEP OUT ZONES

5.1 Repairability and Rework

The typical keep out zones for the XCede HD , XCede HD PLUS & XCede HD2 Daughtercard is shown in Customer use drawing. Detailed dimension please refer to customer use drawings.

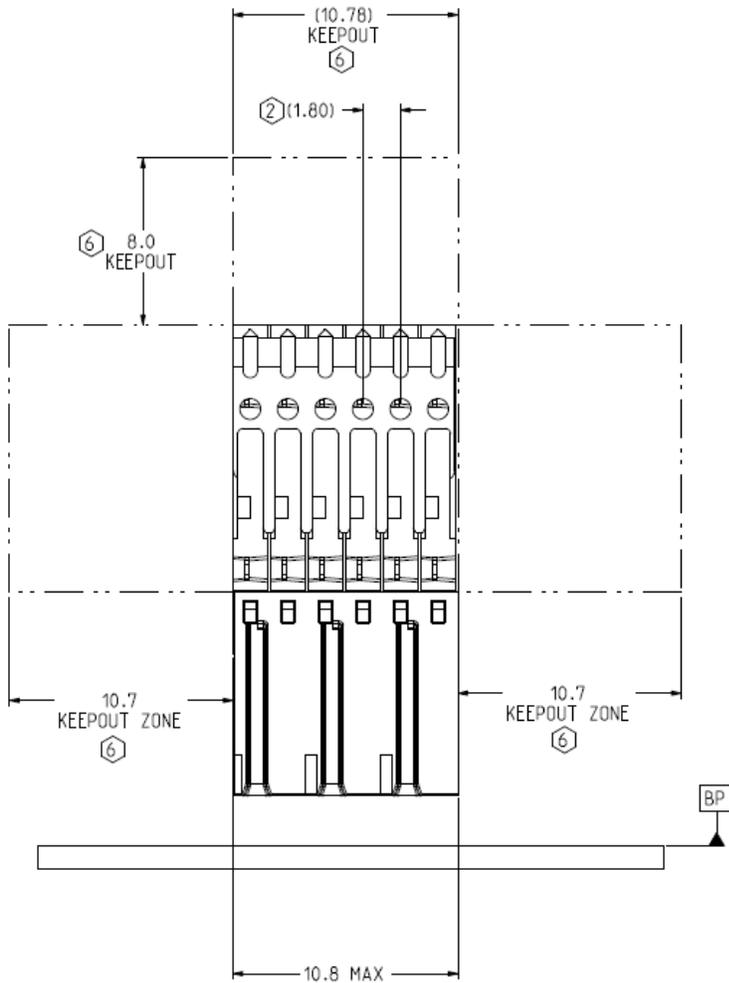


Figure 16: keep out zone for reference