TB-2210

XCede and XCede Plus Backplane Removal and Reinsertion Process

Revision “B“

Specification Revision Status

Revision	SCR No.	Description	Initial	Date
“-“	S1021	Initial Release	A. Astbury	11-24-08
“A”	S2400	Addition of XCede plus & tooling PN	E. Lukin	07-31-13
“B”	S2468	Addition of XCede duel signal removal tool	E. Lukin	09-24-13

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1.0 SCOPE

This document describes the methods, process and tooling required to remove and replace signal pairs in XCede and XCede plus Backplane modules or the entire module assembly that is already mounted to a circuit board.

2.0 REFERENCE DOCUMENTS

2.1 XCede 2 Pair Backplane Customer Use Drawings

C-951-200J-500 2 Pair, 4 Column Differential Backplane Module

C-951-200C-500 2 Pair, 6 Column Differential Backplane Module

C-951-200E-500 2 Pair, 8 Column Differential Backplane Module

C-951-200Q-500 2 Pair, 14 Column Differential Backplane Module

C-951-200N-500 2 Pair, 24 Column Differential Backplane Module

2.2 XCede 3 Pair Backplane Customer Use Drawings

C-951-300J-500 3 Pair, 4 Column Differential Backplane Module

C-951-300C-500 3 Pair, 6 Column Differential Backplane Module

C-951-300E-500 3 Pair, 8 Column Differential Backplane Module

C-951-300Q-500 3 Pair, 14 Column Differential Backplane Module

C-951-300N-500 3 Pair, 24 Column Differential Backplane Module

2.3 XCede 4 Pair Backplane Customer Use Drawings (Also used for XCede Plus No Extra Ground Backplanes)

C-951-400J-500 4 Pair, 4 Column Differential Backplane Module

C-951-400C-500 4 Pair, 6 Column Differential Backplane Module

C-951-400E-500 4 Pair, 8 Column Differential Backplane Module

C-951-400Q-500 4 Pair, 14 Column Differential Backplane Module

C-951-400N-500 4 Pair, 24 Column Differential Backplane Module

2.4 XCede 5 Pair Backplane Customer Use Drawings (Also used for XCede Plus No Extra Ground Backplanes)

C-951-500J-500 5 Pair, 4 Column Differential Backplane Module

C-951-500C-500 5 Pair, 6 Column Differential Backplane Module

C-951-500E-500 5 Pair, 8 Column Differential Backplane Module

C-951-500Q-500 5 Pair, 14 Column Differential Backplane Module

C-951-500N-500 5 Pair, 24 column Differential Backplane Module

2.5 XCede 6 Pair Backplane Customer Use Drawings (Also used for XCede Plus No Extra Ground Backplanes)

C-951-600J-500 6 Pair, 4 Column Differential Backplane Module

C-951-600C-500 6 Pair, 6 Column Differential Backplane Module

C-951-600E-500 6 Pair, 8 Column Differential Backplane Module

C-951-600Q-500 6 Pair, 14 Column Differential Backplane Module

C-951-600N-500 6 Pair, 24 Colum Differential Backplane Module

2.6 XCede Plus 4 Pair Backplane Customer Use Drawings

C-940-400B-500 4 Pair, 6 Column Extra Ground Differential Backplane Module

C-940-400C-500 4 Pair, 8 Column Extra Ground Differential Backplane Module

2.7 XCede Plus 6 Pair Backplane Customer Use Drawings

C-940-600A-500 6 Pair, 4 Column Extra Ground Differential Backplane Module

C-940-600B-500 6 Pair, 6 Column Extra Ground Differential Backplane Module

C-940-600C-500 6 Pair, 8 Column Extra Ground Differential Backplane Module

2.8 XCede Plus 8 Pair Backplane Customer Use Drawings

C-940-800B-500 8 Pair, 6 Column Extra Ground Differential Backplane Module

C-940-800C-500 8 Pair, 8 Column Extra Ground Differential Backplane Module

2.9 XCede Assembly Process Specification

TB-2197 XCede and XCede Pluse Backplane Connector Press-Fit Installation Process

3.0 TOOLING

3.1 Removal tools

- Dual signal pin hand insertion tool

  Part Number: 600-2495-000

- Module Removal Tools (see Tables 1 and 2)

Table 1: XCede Module Removal Tools

Pair	Position	Removal tool Part Number
2 Pair XCede	4 Position	600-2262-000
	6 & 8 Position	600-2226-000
	14 position	600-2252-000
	24 Position	600-2257-000
3 Pair XCede	4 Position	600-2263-000
	6 & 8 Position	600-2227-000
	14 position	600-2253-000
	24 Position	600-2258-000

4 Pair XCede	4 Position	600-2264-000
	6 & 8 Position	600-2228-000
	14 position	600-2254-000
	24 Position	600-2259-000
5 Pair XCede	4 Position	600-2265-000
	6 & 8 Position	600-2229-000
	14 position	600-2255-000
	24 Position	600-2260-000
6 Pair XCede	4 Position	600-2266-000
	6 & 8 Position	600-2230-000
	14 position	600-2256-000
	24 Position	600-2261-000

Table 2. XCede Plus Module Removal Tools

Pair	Position	Removal tool Part Number
4 Pair XCede Plus	4,6 & 8 Position	600-2487-000
5 Pair XCede Plus	4,6 & 8 Position	600-2498-000
6 Pair XCede Plus	4,6 & 8 Position	600-2488-000
8 Pair XCede Plus	4,6 & 8 Position	600-2484-000

3.2 Insertion Tools

- Dual signal pin hand insertion tool

  Part Number: 600-2238-000

- Backplane Module Loading Head (see Tables 3 and 4)

Table 3: Xcede Backplane Module Loading Heads

Pair	Position	Loading Head Part Number

2 Pair XCede	4	694-4381-000
	6	694-4145-000
	8	694-4153-000
	14	694-4386-000
	24	694-4364-000
3 Pair XCede	4	694-4382-000
	6	694-4349-000
	8	694-4350-000
	14	694-4387-000
	24	694-4351-000
4 Pair XCede	4	694-4383-000
	6	694-4073-000
	8	694-4162-000
	12	694-4144-000
	14	694-4369-000
	24	694-4365-000
5 Pair XCede	4	694-4384-000
	6	694-4081-000
	8	694-4371-000
	14	694-4370-000
	24	684-4372-000
6 Pair XCede	4	694-4385-000
	6	694-4076-000
	8	694-4165-000

	14	694-4388-000
	24	694-4366-000

Table 4: XCede Plus Backplane Module Loading Heads

Pair	Position	Loading Head Part Number
4 Pair XCede Plus	4	694-4695-000
	6	694-4696-000
	8	694-4697-000
5 Pair XCede Plus	4	694-4757-000
	6	694-4758-000
	8	694-4759-000
6 Pair XCede Plus	4	694-4698-000
	6	694-4699-000
	8	694-4700-000
8 Pair XCede Plus	4	694-4775-000
	6	694-4682-000
	8	694-4683-000

4.0 METHODS

4.1 The XCede and XCede Plus press-fit connector platform is designed with partial modular reparability. Signals are front (top) loaded and may be removed/replaced without removing module from circuit board. All grounds, both large and small, are bottom loaded into module and cannot be individually removed from modules that are board mounted. See Figures 1 and 2 for XCede and XCede Plus signals, small grounds and large ground locations.

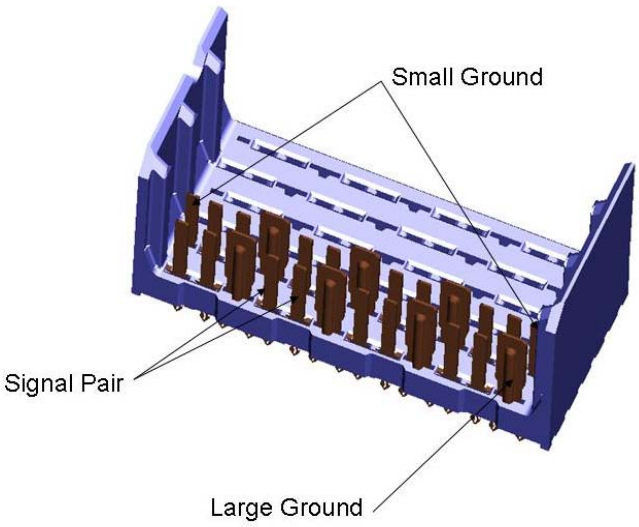

Figure 1. XCede press-fit connector platform

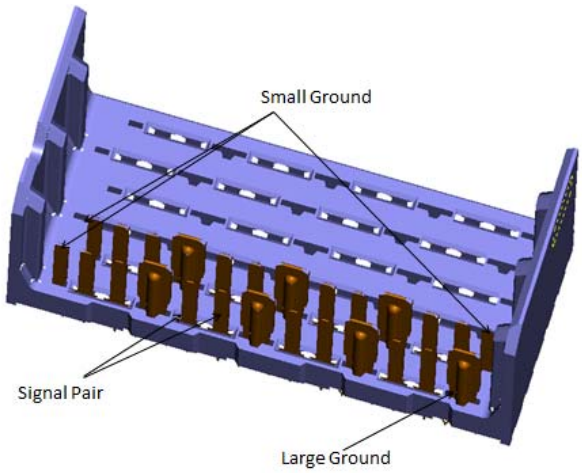

Figure 2. XCede Plus press-fit connector platform

4.1.1 Backplane Signals

- Signal blades may be individually removed using miniature needle nose pliers. Serrated “gripping” features on the end of the pliers provide a significant advantage.
- Typical reasons for repair include bent blades, exposed base metal on contact or damage to top end of blade from mis-mating.

NOTE: UNDER NO CIRCUMSTANCES MAY A BACKPLANE SIGNAL BLADE BE USED AGAIN ONCE IT IS REMOVED.

4.1.2 Backplane Grounds

Damaged grounds, both large and small, cannot be replaced individually on board mounted modules. A module removal tool will be needed to remove the module and contacts from the board. Removed modules, including all contacts, cannot be used again.

5.0 PROCEDURE

5.1 Backplane Signal Removal/Reinsertion (same for board mounted and free-standing assemblies)

5.1.1 Locate damaged signal blades within module. Signals are removed/inserted as pairs.

5.1.2 Remove defective signal pair by using dual signal pair removal tool (600-2495-000). Note contact orientation with gold side (mating side) of contact and presence of “L” and “R” symbols stamped onto mating side of contact.

5.1.3 Make sure dual signal removal tool is in the open position as shown below in Figure 3.

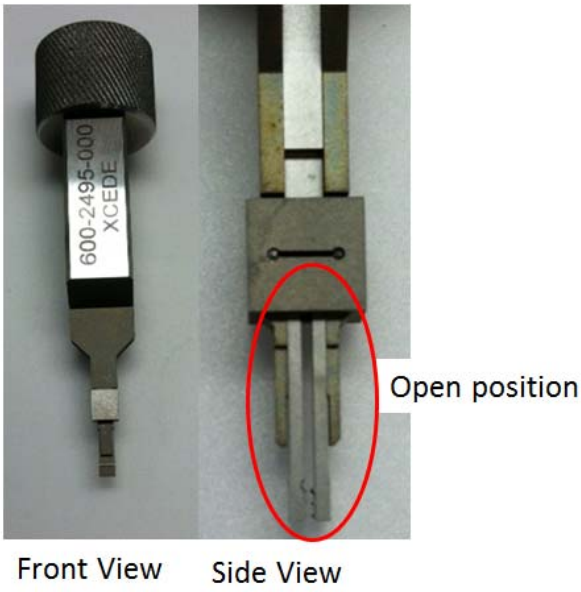

Figure 3. Dual Signal Removal tool in “Open” Position

5.1.4 Line the bottom of the tool up with the dual damaged signal pins. Then slide the tool over the damaged signal pairs, until the bottom of the tool is touching the bottom of the BMA. See Figure 4 for proper procedure.

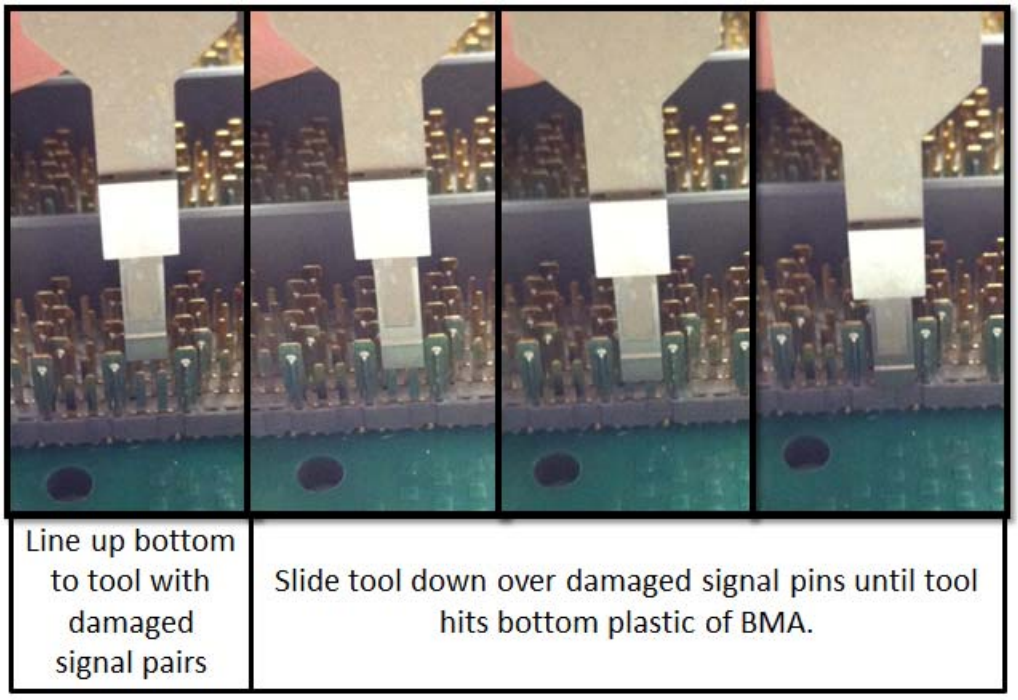

Figure 4. Proper loading steps for the dual signal removal tool

5.1.5 Once the dual signal removal tool is properly loaded onto the damaged signal pins, turn the knob clock wise to remove the signals out of the BMA and PCB, as shown in Figure 5. As the knob is turned clockwise the tip of the dual signal removal tool will slowly lift up. Once the signals are free from the PCB and BAM plastic lift the tool straight up. The removed signal blades in the tool should resemble Figure 6.

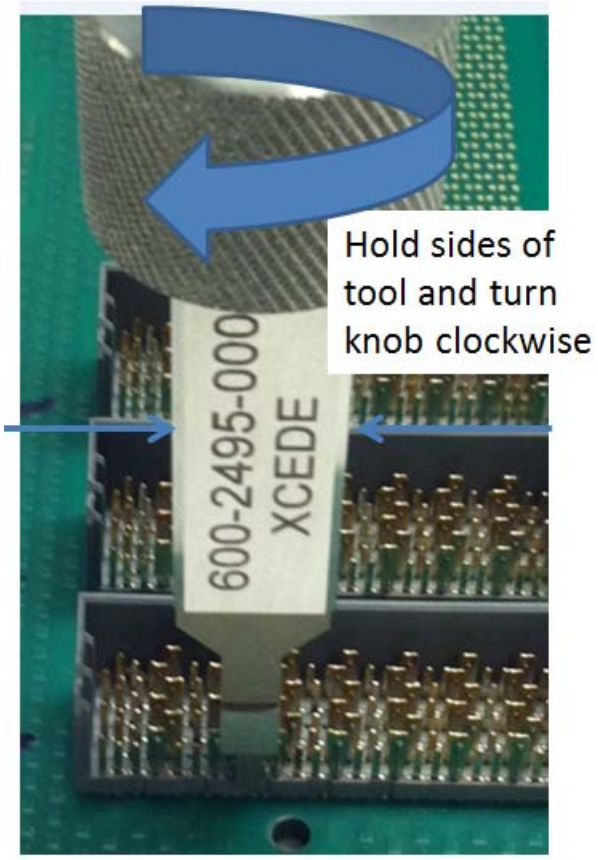

Figure 5. Proper dual signal pair removal

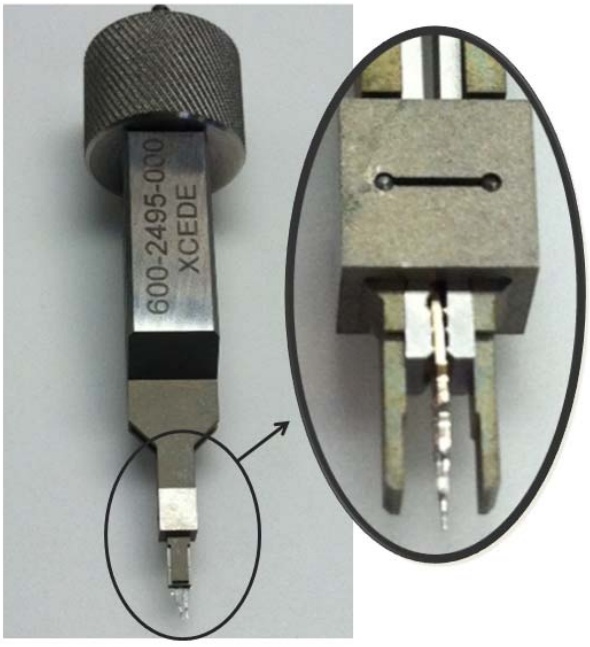

Figure 6. Removed signal pair in tool

5.1.6 Verify that no damage is done to neighboring contacts during this process.

NOTE: UNDER NO CIRCUMSTANCES MAY A BACKPLANE SIGNAL BLADE BE USED AGAIN ONCE IT IS REMOVED FROM A MODULE OR BOARD.

5.1.7 Load loose pieced signals from repair kit into signal pair inserter as shown in Figure 7. Note: location of “L” and “R” and mating side of contact must match orientation of contacts in module.

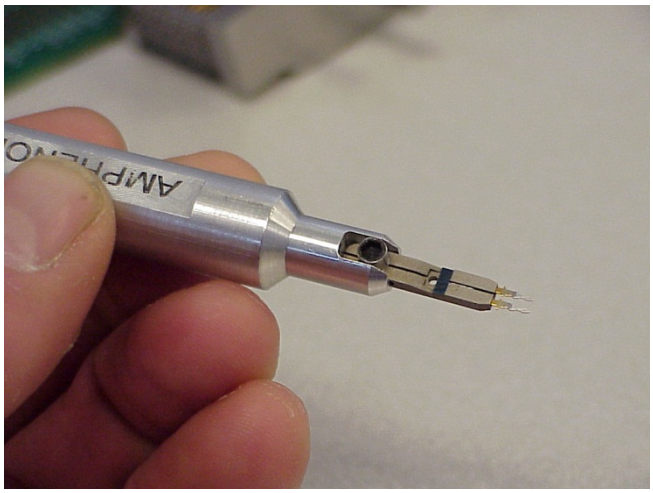

Figure 7. Signals Loaded in Signal Pair Inserter

5.1.8 Align pair to empty coring in module and apply pressure downward as shown in Figure 8. While holding tool vertical to module/board, tap tool with a small hammer to seat contacts into module/board. Fully seated signals can be seen in Figures 9.

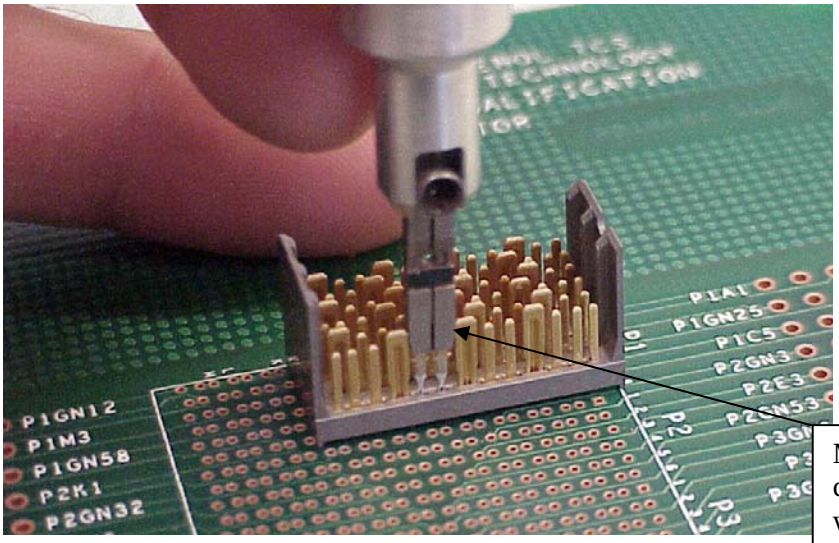

Figure 7. Signal Pair Aligned in empty coring

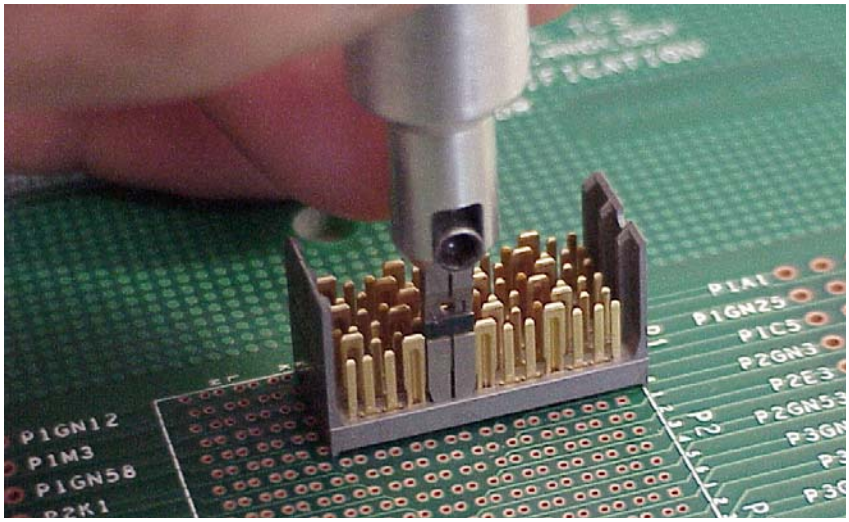

Figure 8. Fully Seated Signal Pair

5.1.1 Inspect module/board under microscope for proper orientation of signal blades and proper seating height. Maximum shoulder height is 0.10mm above module surface shown in Figure 9.

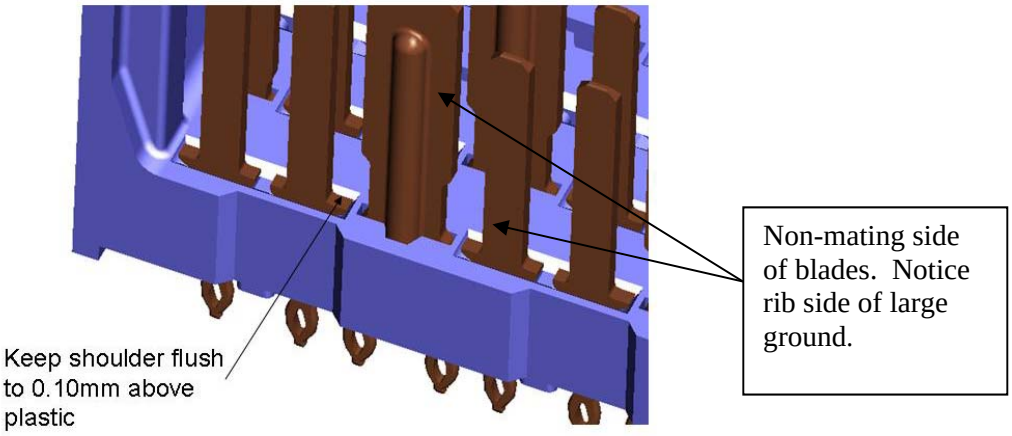

Figure 9. Maximum Shoulder Height

5.2 Module Removal

The Module Removal Tool fits into the pin field. The clamping plate is then lowered, which captures the large grounds, using the concave side of the large ground stiffening rib. The knob is then turned in a clockwise direction which will start lifting the module off the board. Loosening the knob will remove the pressure from the grounds, so the tool can be retracted to free the module.

Step 1. Locate the Module Removal Tool for the proper family size (2pair, 4pair, etc.. from tables 1 and 2). A 6 column removal tool will also work for an 8 column module. There are also simplified tools for 24 column modules. Be sure there is enough room on either side of the board-mounted module sidewalls for the exterior standoffs. See Figure 10 for an example of a Module Removal Tool.

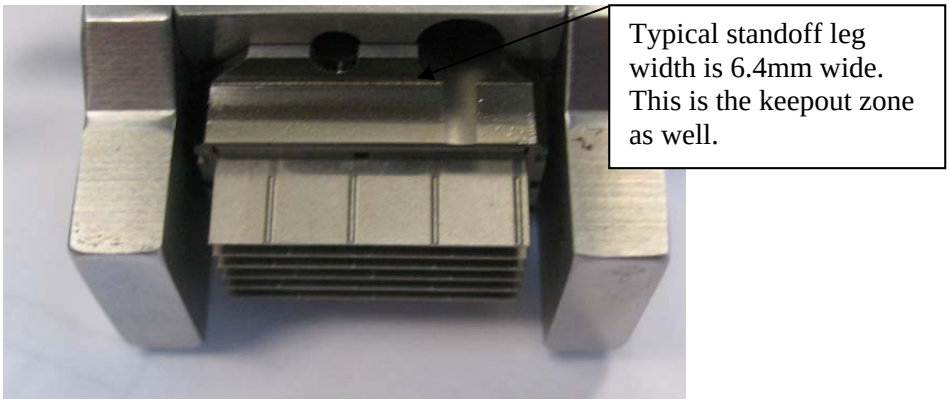

Figure 10. Module Removal Tool

Step 2. Any bent contacts will either have to be manually bent back to their required original position or removed from module with needle nose pliers in order to insert removal tool into pin field.

Step 3. Be sure that the tool is set to the ready position by loosening the knob while pushing knob toward C-frame shown in Figures 11 and 12.

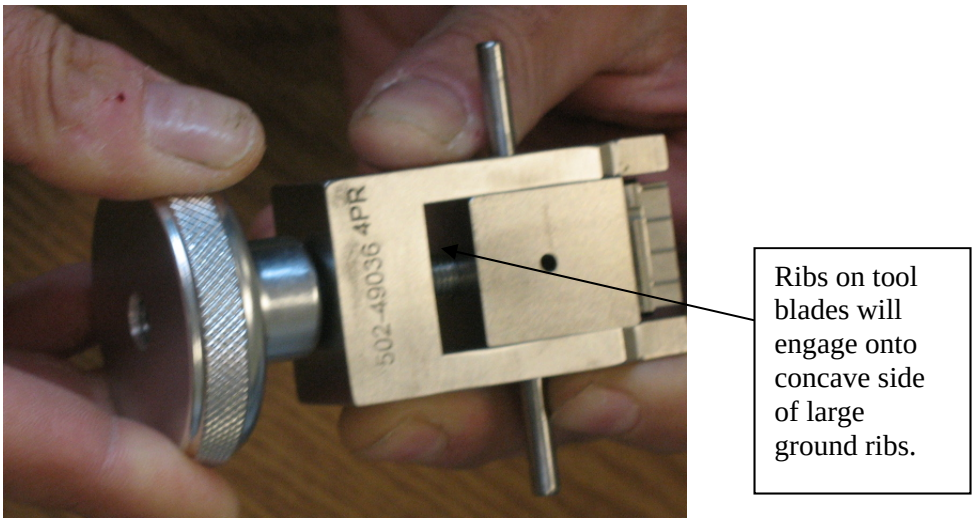

Figure 11. Loosening the Knob while Pushing Knob Toward C-frame

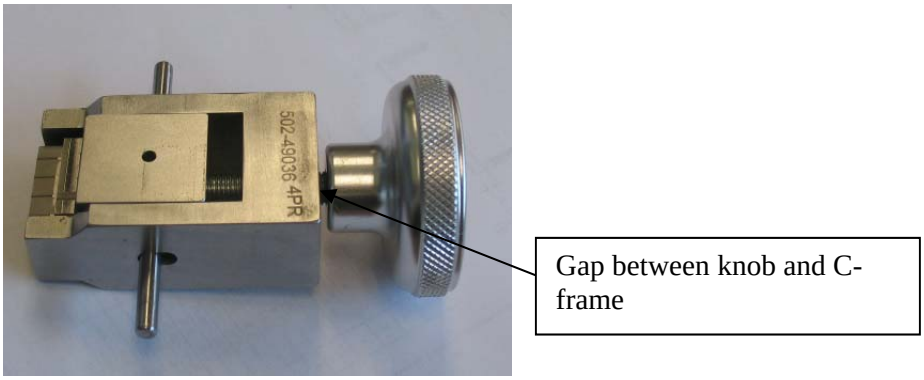

Figure 12.Tool in Ready Position

Step 4. Insert tool into module so ribs on tool blades line up with the concave side of the stiffening rib of the large ground. Ensure that the tool is loaded and in.

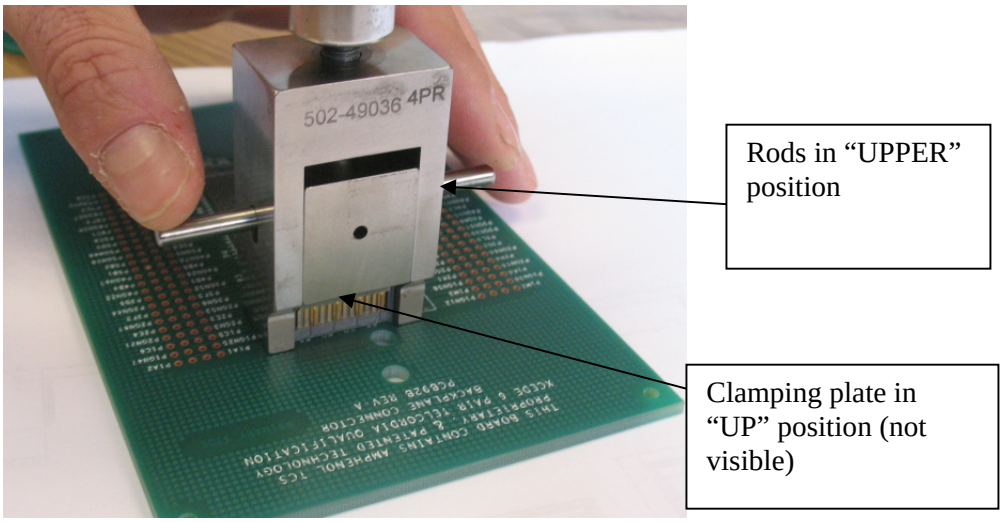

Figure 13. Backplane Removal Tool Inserted into Module

Step 5. Slide side rods down so clamping plates partially cover blades as seen in Figures 14.

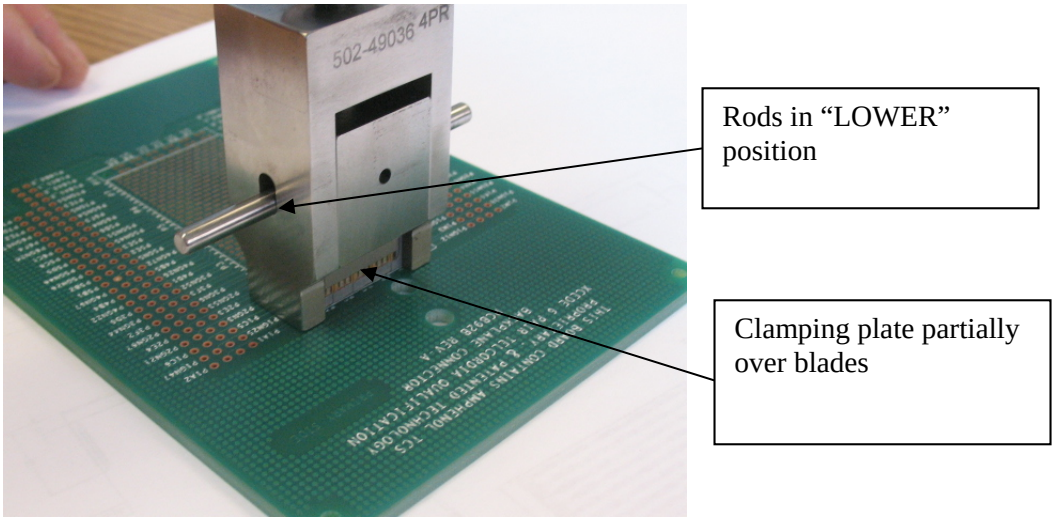

Figure 14. Blades Clamped into Tool

Step 6. The module is now clamped in the tool. Start turning knob clockwise as shown in Figure 15.

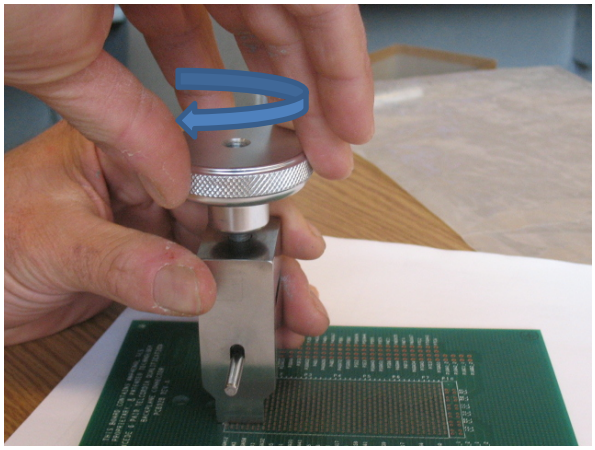

Figure 15. Removing of BMA

Step 7. Keep turning knob till the module is lifted from the board shown in Figure 16.

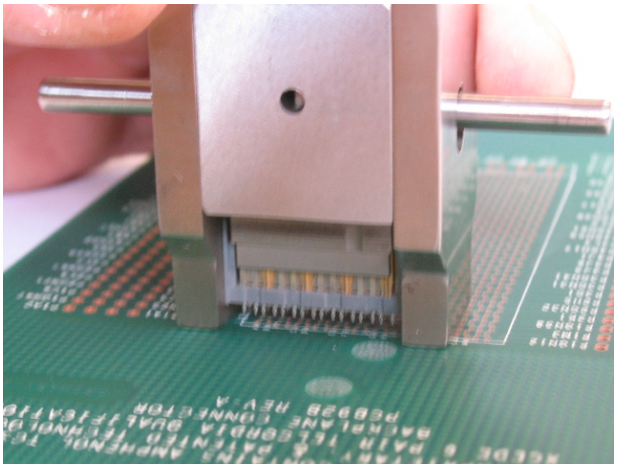

Figure 16. Backplane Module removed from Board

Step 8. Start loosening knob and pull clamping plates back off large grounds (rods in the up position as shown in Figure 16). Remove module by pulling off by hand as shown in Figure 17. Inspect module to be sure that all components have been removed from board with their respective compliant pins. If any blades are left in the board, remove them individually with needle nose pliers, being sure that no compliant pins are broken off and left in board.

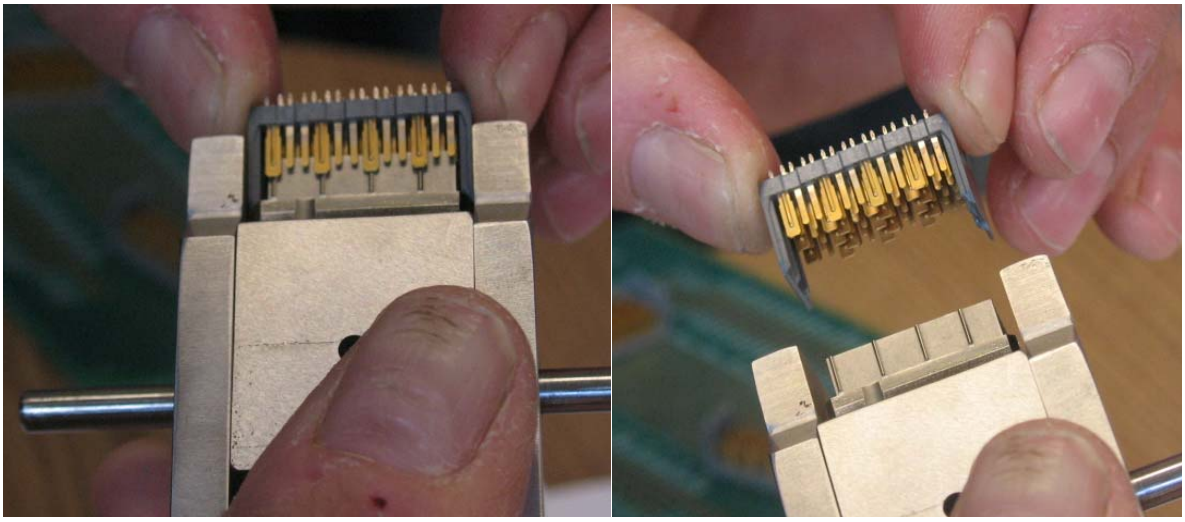

Figure 17. Module Removed From Tool

NOTE: UNDER NO CIRCUMSTANCES MAY A BACKPLANE MODULE OR IT’S COMPONENTS BE USED AGAIN ONCE IT IS REMOVED FROM A MODULE OR BOARD.

5.3 Module Reinsertion Into Board

5.3.1 Place new module onto board, orientate module as see in Figure 18.

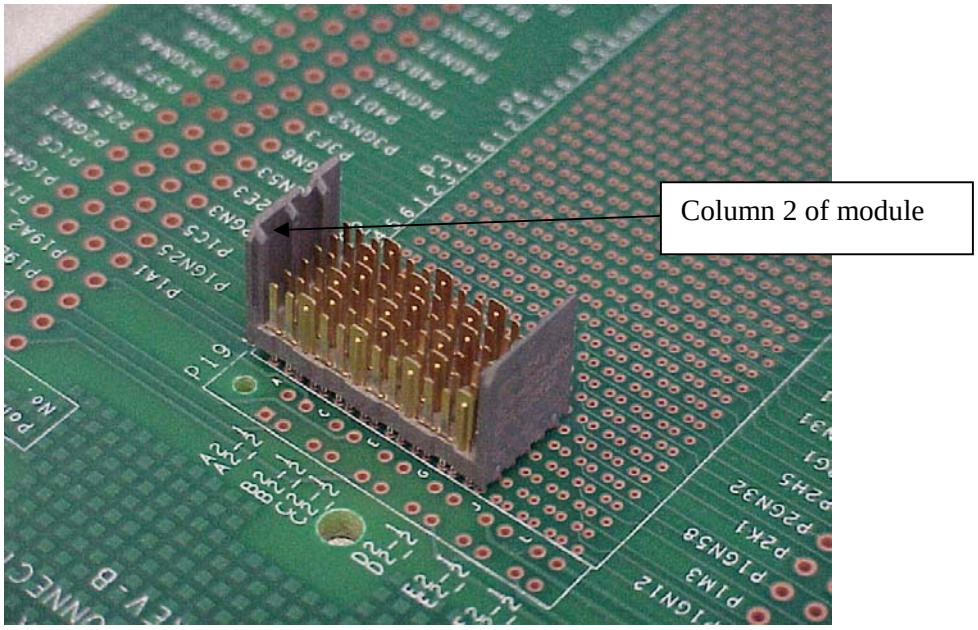

Figure 18. New Module Orientated on Board

5.3.2 Obtain correct loading head part number from tables 3 and 4. Insert loading head into pin field, aligning rib of tool to column “2” of module per Figure 19.

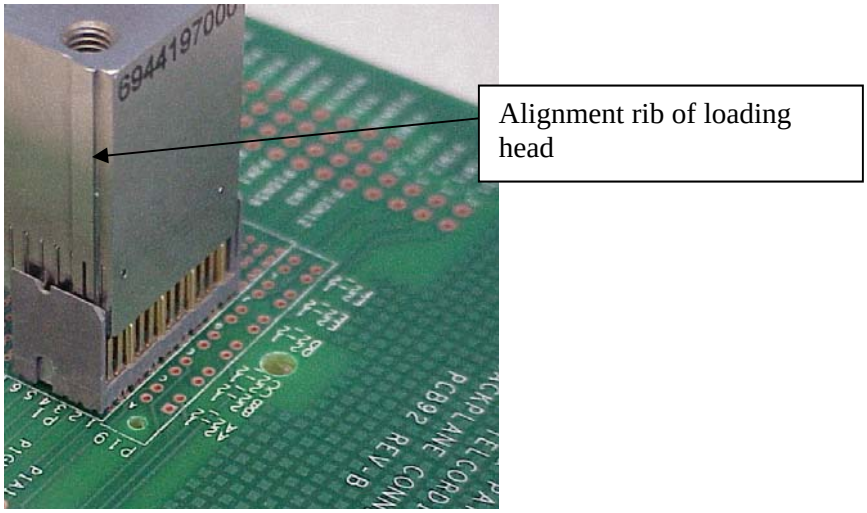

Figure 19. Loading Head Inserted into Backplane Module

5.3.3 Seat module into board per TB-2197 guidelines.

5.3.4 Verify all components are present without defects.