

**Manufacturing
Procedure**

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MFG007 Rev. B

Date:

08/05/15

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Hand Load Procedure

<u>Revision</u>	<u>Description of Change</u>	<u>Date Effective</u>	<u>Author</u>
A	Initial Release	05/28/99	Dior Wu
B	Modified 9.8	08/05/15	Kiet Pham

N/A

Originator



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Hand Load Procedure**1.0 Purpose**

- 1.1 The purpose of this document is to provide a uniform guideline for manual loading.

2.0 Scope

- 2.1 This procedure includes not only the hand load process but also the coordination between other related processes, such as prepping and masking.

3.0 References

- 3.1 IPC-A-610 Acceptability of Electronic Assemblies
3.2 SOP22 ESD Control Procedure
3.3 SOP11 First Article Procedure

4.0 Definitions

- 4.1 Prepping: Any component pre-forming or pre-cutting prior to the assembly process including wire pre-cutting, piggy back part pre-form, etc.
4.2 PCA: Printed Circuit Assembly
4.3 Lead Protrusion: The lead length measured from bottom of PCB to end of the lead.
4.4 Lineboard: Paper plate with conductive foam attached.
4.5 Carrying Cart: Transporting carts for lineboards.
4.6 Slide Line: Dynapace slide line.

5.0 Responsibilities

- 5.1 It is everybody's responsibility to follow the ESD and safety rules.
5.2 Operators are responsible for following the documentation to ensure quality product.
5.3 Leads are responsible for setting up the line, supplying parts, coordinating prepping, following SOP11 First Article Procedure and assisting operators.
5.4 It is the operator's responsibility to handle hand loaded PCAs with care.

6.0 Equipment

- 6.1 Lineboards

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- 6.2 Carrying Carts
- 6.3 Setup Bin Boxes
- 6.4 Tweezers
- 6.5 Long Nose Pliers

7.0 Materials

- 7.1 Components with correct lead length and forming.
- 7.2 PCAs
- 7.3 Visual aids and/or customer documentation.

8.0 Records

- 8.1 N/A

9.0 Procedure

- 9.1 Safety
 - 9.1.1 Handle the lineboards one at a time.
 - 9.1.2 Use proper position to lift the lineboard from the bottom of the cart.
 - 9.1.3 Push carts slowly to prevent injury.
 - 9.1.4 Be careful of the steel frame protruding from the rails.
 - 9.1.5 Keep hands off sharp edges and report to supervisors or managers any sharp edge found or plastic caps that are missing.
- 9.2 Load PCAs on Lineboards properly, unless PCAs are pre-loaded by the previous station after masking material has cured.
- 9.3 If applicable, leads shall determine MPI visual aid revision and will set-up slide line per visual aids and/or customer documentation. Dispense the parts into bin boxes.
- 9.4 Assign operator to the proper station if multiple stations are used.
- 9.5 Operators shall check the supplied materials with visual aids, bin labels, assembly drawings, BOM, or other customer documentation to ensure proper set-up.
- 9.6 Load the components onto the board per customer documentation and/or visual aid.

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- 9.7 Verify the component identification, orientation and location.
- 9.8 **Handle 1 part number at a time**, make sure don't mix up different kinds of parts when handle parts or put extra parts back to the bin box.
- 9.9 After loading is completed place the PCA back on Carrying carts for wave soldering. Push carts slowly to prevent injury or parts bouncing off boards.
- 9.10 If any plugged holes are found, bring the board(s) to 2nd OP for solder removal.
- 9.11 After loading is completed, collect the extra parts in separate ESD bags or tubes and send back to stockroom.