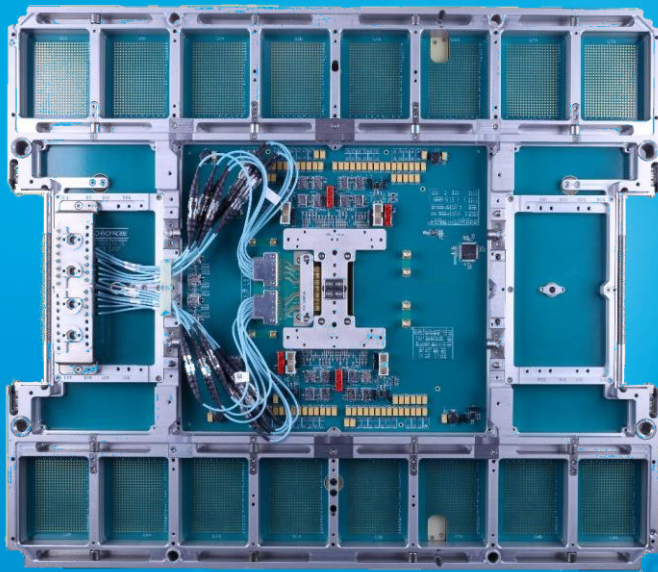multiLane

Innovation for the next generation

AT93000-64150
AT93000-64170

Final Test Loadboard Assembly (64150)
Wafer Test Loadboard Assembly (64170)

Summary

This manual provides information to help with assembling loadboards used with the Multilane high-speed ATE solution and the Advantest V93000 testhead. It will discuss
- Customer device interface board (DIB)
- Loadboard stiffener (wafer sort and final test versions)
- Blindmate Connectors
- Cabling

DIB

For final test loadboard PCB designers, a set of DXF files are available to help with PCB loadboard layout. Information can be found on Advantest TDC website, TDC#345757. Similar information can be found for wafer test loadboard PCB designers.

AT93000-POGO and AT93000-64170

The POGO blindmate connectors can be assembled in any combination. Anywhere from 1 to 4 POGO blindmate connectors can be attached to the loadboard stiffener. For wafer sort loadboard applications, use loadboard stiffener AT93000-64170. For final test loadboard applications, use AT93000-64150.
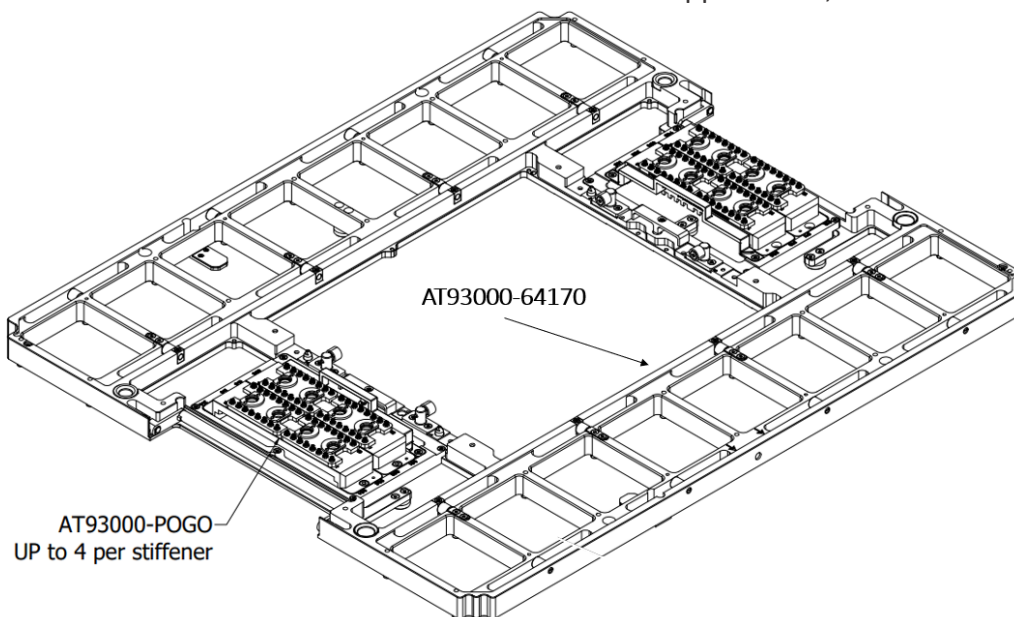

Figure 1: Loadboard stiffener with 4 POGO blindmate connectors
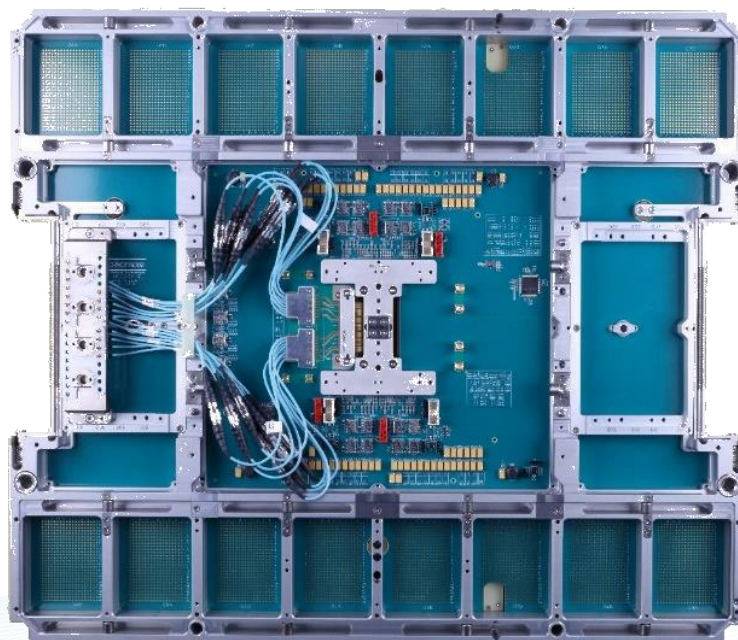

Figure 2: Loadboard stiffener with 1 POGO blindmate connector

Customer Documentation

The loadboard assembler will need to keep record of which POGO blindmate connector locations need to be populated, as well as information on how to properly cable from the DIB to the blindmates. There are arrows on the loadboard stiffener that can be used to orient what is "UP". Also, the cassette locations in the twinning frame are consistently enumerated as Cassette #1, #2, #3, #4 throughout Multilane documentation. The following figures shows the orientation of the loadboard blindmates to the twinning frame's cassette locations when the loadboard is docked to the Multilane twinning frame. C1 refers to Cassette #1, etc.
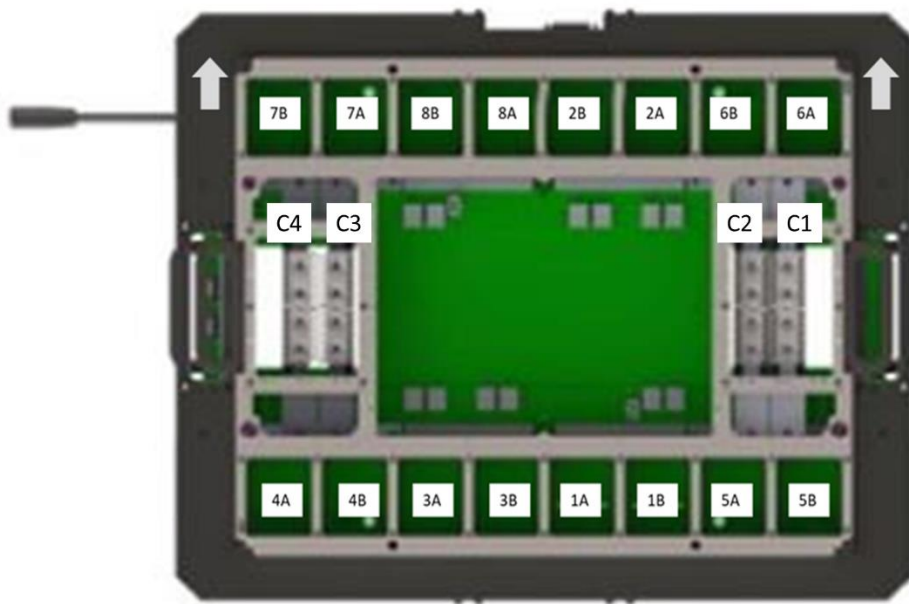

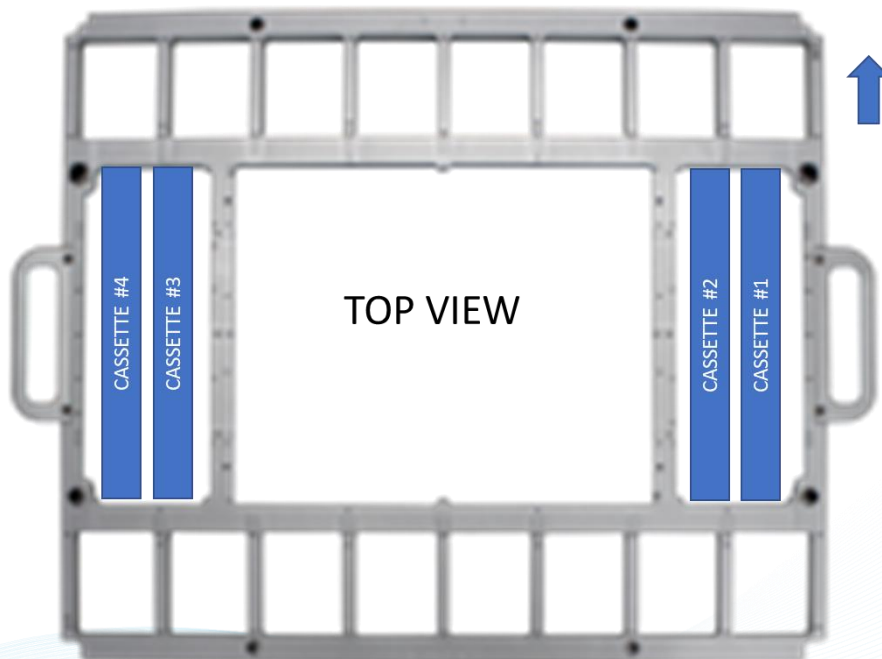**Figure 3: Cassettes 1-4 enumerated inside the twinning frame**

Figure 4: Cassettes 1-4 locations when loadboard is docked to the twinning frame

Orienting the Blindmate Connectors

The AT93000-POGO connectors have pin 1-16 engravings and are keyed. The assembler may choose to use these engravings to help with assembly documentation. The guide pins only allow 1 orientation of the POGO connectors when attached to the loadboard stiffeners.
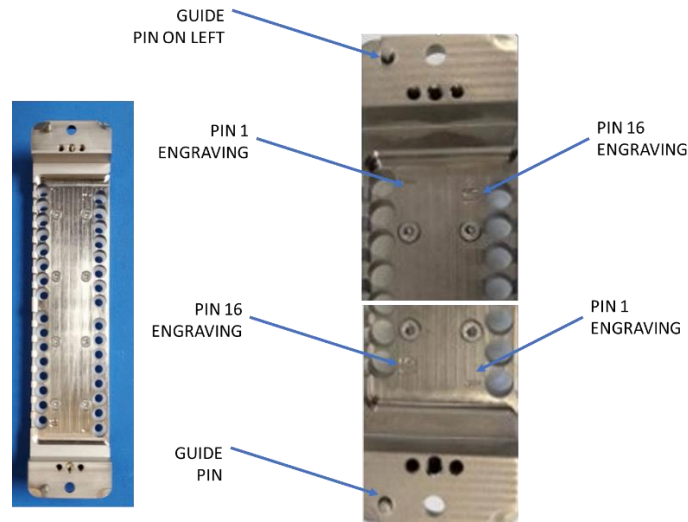

Figure 5: POGO guide pins and engravings

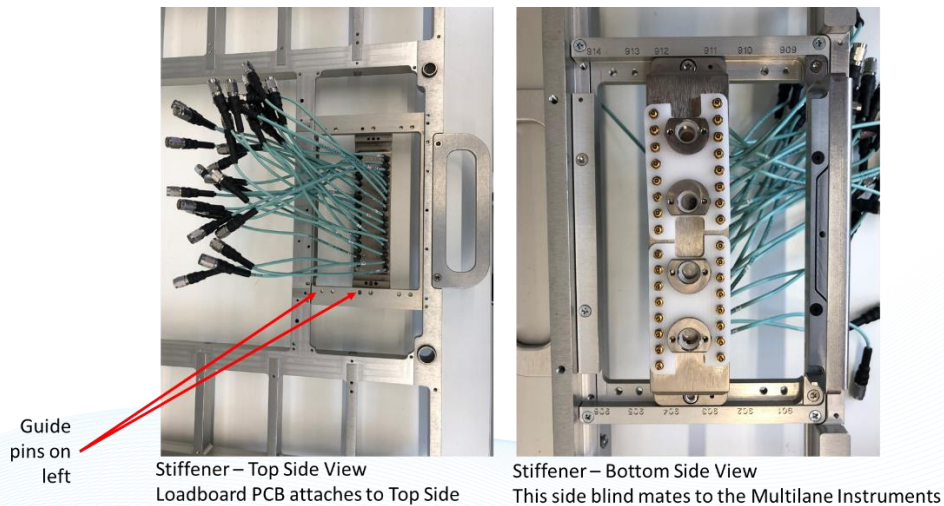**Figure 6: Installing the AT93000-POGO into the loadboard stiffener**

Figure 7: Cable orientation

Wiring to the Blindmate Connectors

The SMPM cable connectors are fastened to the POGO blindmate connectors using 4mm wire nuts and a SMPM socket tool tightener from Multilane, p/n AT93000-SMPM-TOOL

Steps for installing each cable into the POGO:
1. Remove the 4 mm wire nut from the cable before installing the cable into the POGO
2. Install the cable into the hole carefully without touching the pin, it is fragile and easy to break
3. Install the 4 mm wire nut over the cable that is protruding through the POGO
4. Hold the cable from the black heat shrink
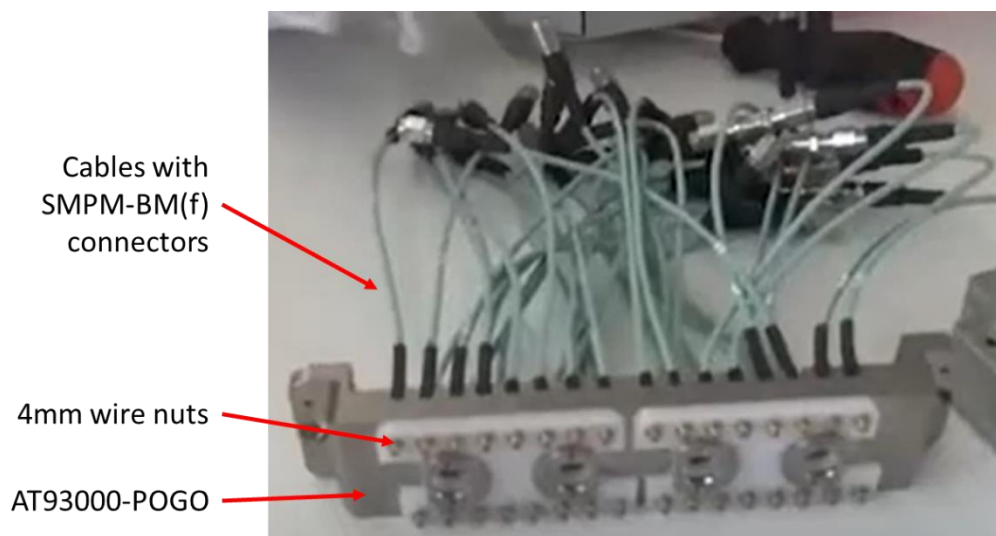5. Tighten the wire nut using the AT93000-SMPM-TOOL. Do not overtighten.

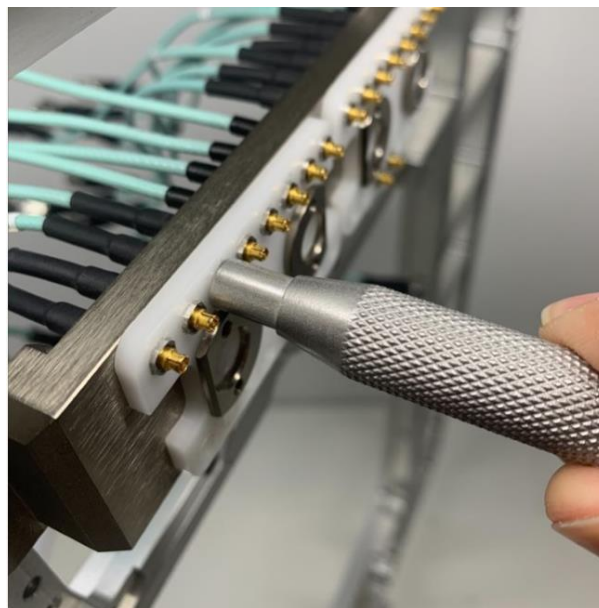**Figure 8: Cables connected to the AT93000-POGO**

Figure 9: AT93000-SMPM-TOOL

Finished Product Example

The finished product includes DIB, stiffener, blindmate connectors, high-speed coax cables
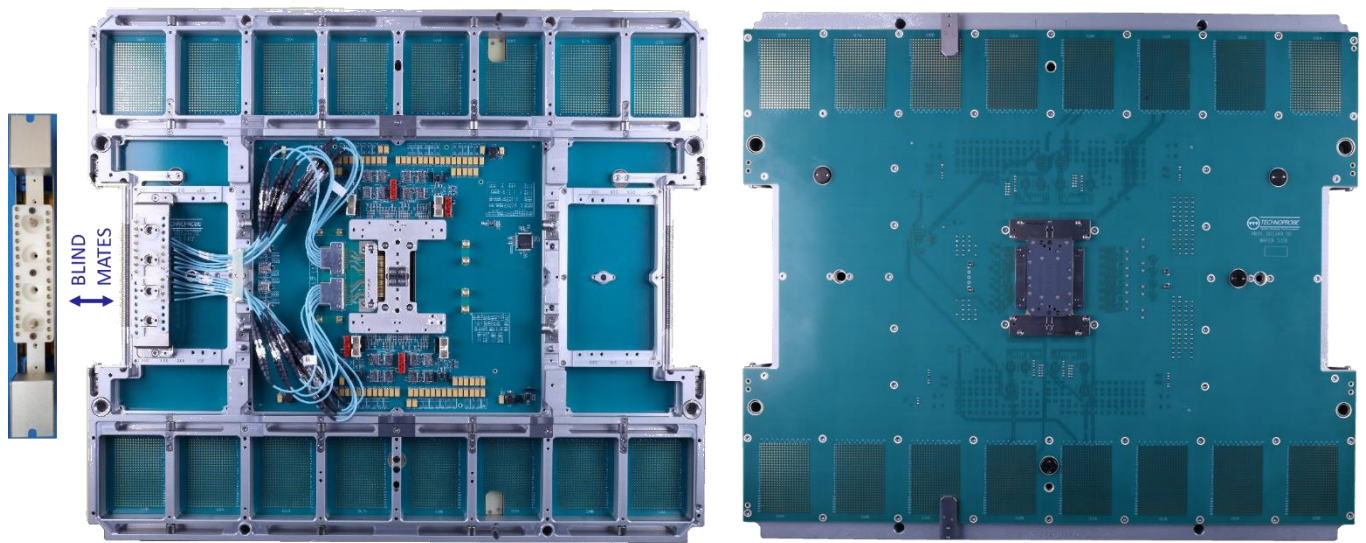

Figure 10: Top and bottom views of an example wafer sort loadboard

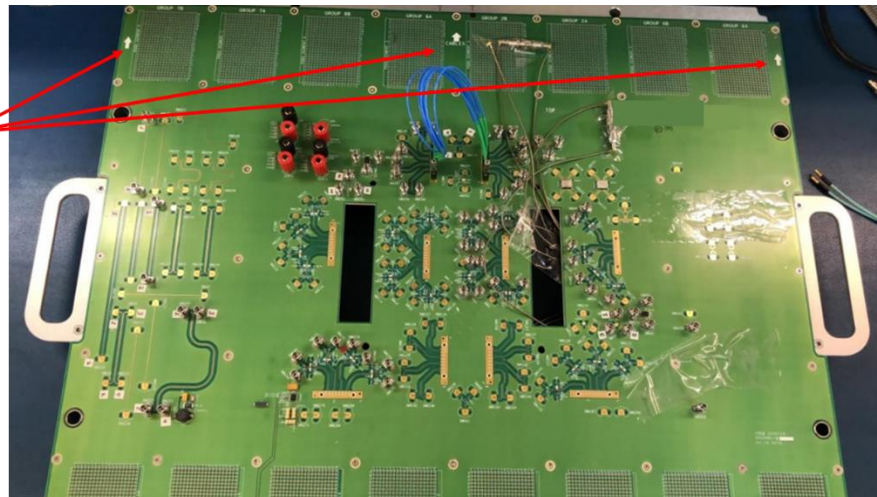It is suggested that the PCB have "UP" arrows, like the Loadboard stiffener and Twinning Frame.

Figure 11: Customer loadboard showing arrows to line up PCB direction with loadboard stiffener arrows

Ordering Information

Option	Description
AT93000-64150	Load board stiffener assembly for package test
AT93000-64170	Load board stiffener assembly for wafer probe test
AT93000-POGO	Custom loadboard bracket for MultiLane blindmate cables. To mount POGO to stiffener, the POGO comes with 2x Socket Head Screws, M4x6mm
AT93000-SMPM-TOOL	SMPM nut tool tightener (for 4mm wire nut tightening)
AT93000-TFRAME	Twinning frame
4mm wire nuts	Ask cable vendor to provide when specifying SMPM female connector

Please contact us at sales@multilaneinc.com