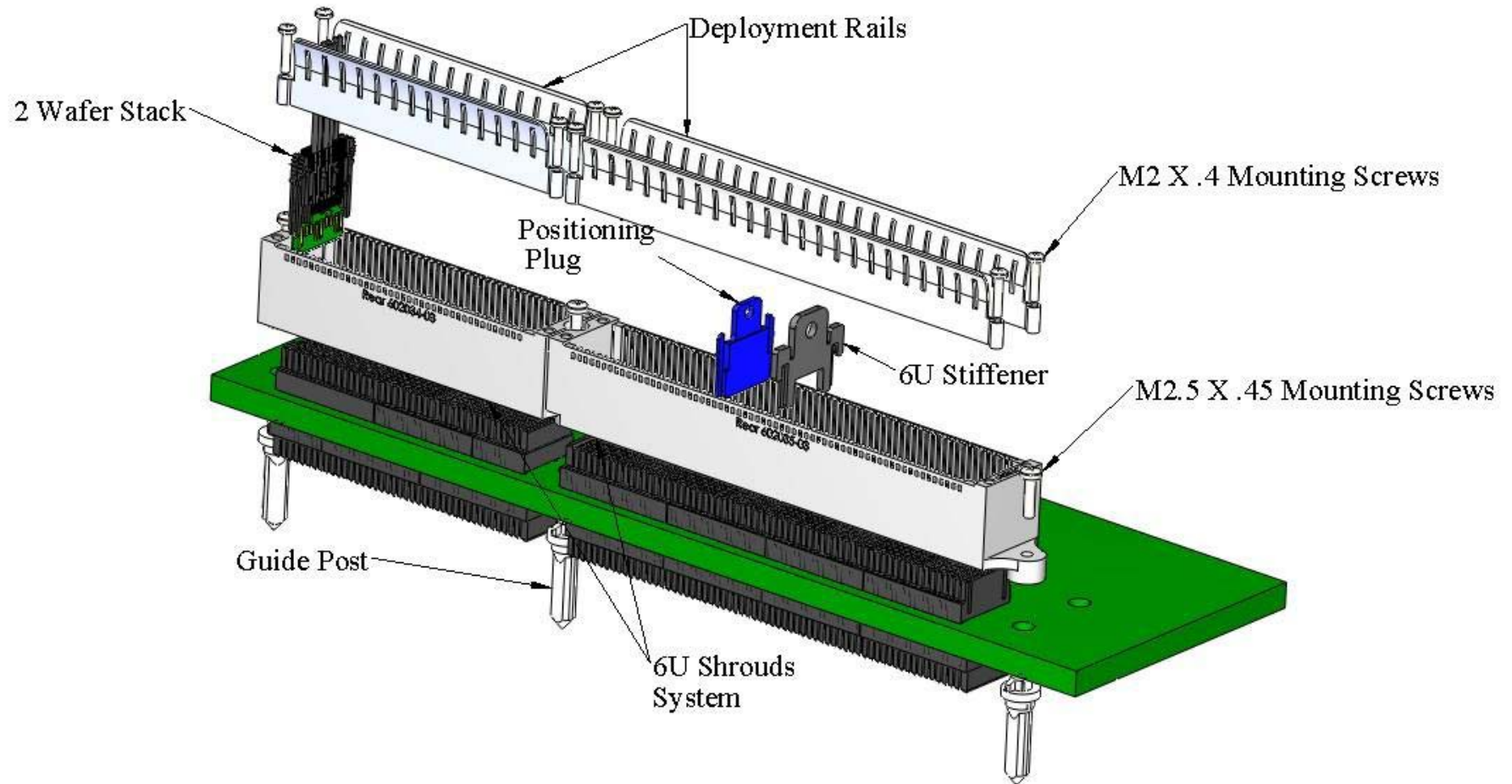
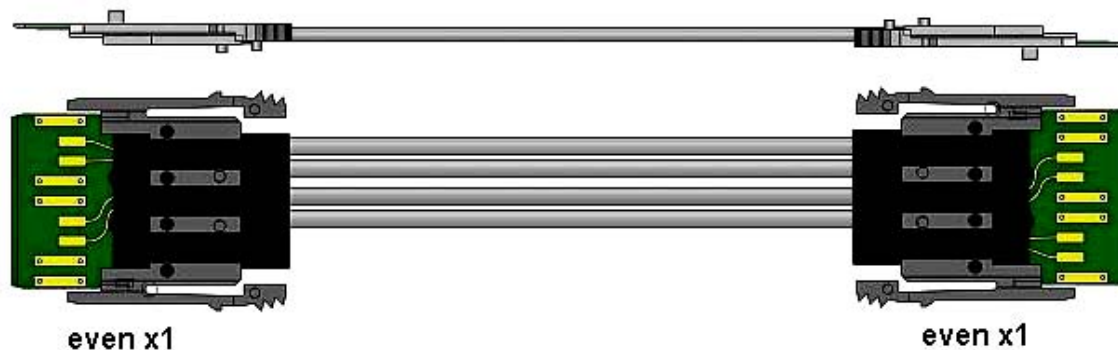




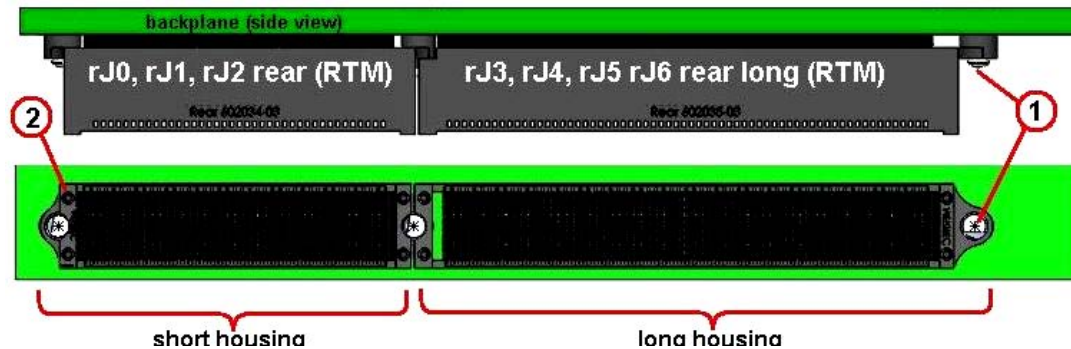
Standard VPX Cable Accessories



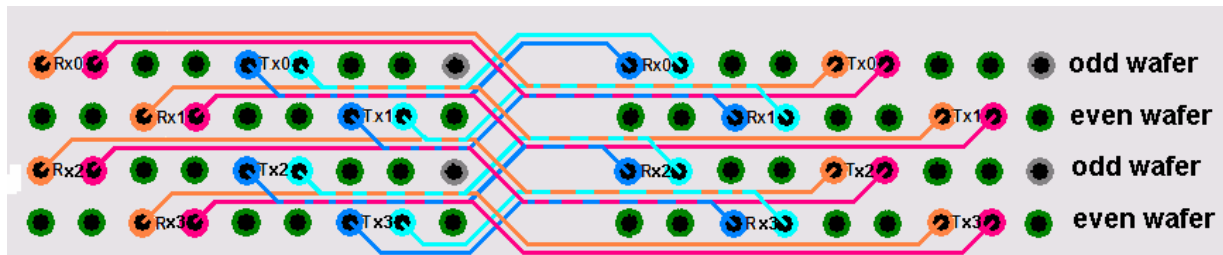
| Elma p/n | Description | Length | Termination |
|-----------------------|--|--------|-------------|
| MG06X1EE04SS01 | Wafer-to-wafer connection, Even row to Even row ultra thin pipe (1 wafer/side) | 6" | wafers |
| MG06X1OE04SS01 | Wafer-to-wafer connection, Odd row to Even row ultra thin pipe (1 wafer/side) | 6" | wafers |
| MG06X1OO04SS01 | Wafer-to-wafer connection, Odd row to Odd row ultra thin pipe (1 wafer/side) | 6" | wafers |
| MG12X1EX04SC02 | Wafer-to-SMA connection, Even row ultra thin pipe (1 wafer) to 4 SMAs | 12" | SMA |
| MG12X1OX04SC02 | Wafer-to-SMA connection, Odd row ultra thin pipe (1 wafer) to 4 SMAs | 12" | SMA |
| MG72X1OO04SS01 | Wafer-to-wafer connection, Odd row to Odd row ultra thin pipe (1 wafer/side) | 72" | wafers |
| MG72X1EE04SS01 | Wafer-to-wafer connection, Even row to Even row ultra thin pipe (1 wafer/side) | 72" | wafers |
| MG72X1OE04SS01 | Wafer-to-wafer connection, Odd row to Even row ultra thin pipe (1 wafer/side) | 72" | wafers |



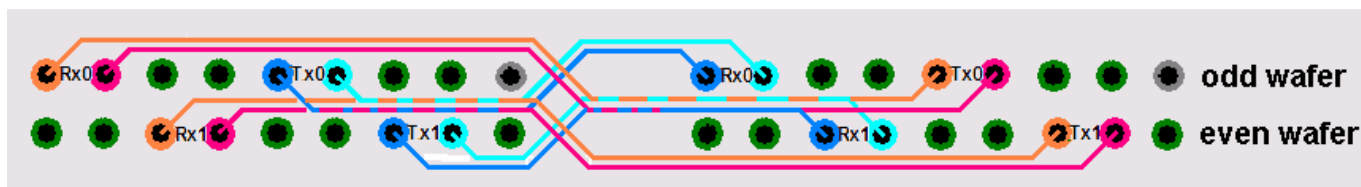
| Elma p/n | Description |
|-------------------------|--|
| Shroud Kit | |
| SK-SMG-23UR | Short Rear: 1 x Shroud, 2 x Guide Posts, 2 x Mtg Screw(10mm), 2 x Mtg Screw(12mm), 2 x Positioning Plug |
| SK-LMG-26UR | Long Rear: 1 x Shroud, 2 x Guide Posts, 2 x Mtg Screw(10mm), 2 x Mtg Screw(12mm), 2 x Positioning Plug, 1 x Stiffener, 1 x Spacer |
| SK-SMG-23UF | Short Front: 1 x Shroud, 2 x Guide Posts, 2 x Mtg Screw(10mm), 2 x Mtg Screw(12mm), 2 x Positioning Plug |
| SK-LMG-26UF | Long Front: 1 x Shroud, 2 x Guide Posts, 2 x Mtg Screw(10mm), 2 x Mtg Screw(12mm), 2 x Positioning Plug, 1 x Stiffener, 1 x Spacer |
| Locking Rail Kit | |
| RK-SMG-23DR | Short Locking Kit: 2 x short rails, 4 x Mtg Screws |
| RK-LMG-26DR | Long Locking Kit: 2 x long rails, 4 x Mtg Screws |
| Guide Post Kit | |
| GP-XMG-24GP | Guide Post Kit: 4 x Guide Pins, 4 x Mtg Screws (12mm), 4 x Mtg Screws (10mm) |
| Accessories | |
| PP-XMG-38PP | Positioning Plug: 4 x Blue, 4 x Putty |
| SK-XMG-36US | Stiffener Kit: 4 x Stiffeners |



Fat Pipe: A channel that is comprised of four links (4 Tx pairs + 4 Rx pairs) is now being referred to as a *fat pipe* or by use of the x4 nomenclature. 10Gbps capable
10GBase-KX4, 10GBase-BX4, 10GBase-T, PCIe-x4, sRIO-x4, Infiniband-x4

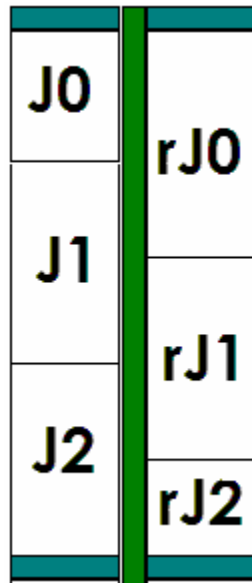


Thin Pipe: A channel that is comprised of two links (2 Tx pairs + 2 Rx pairs) is now being referred to as a *thin pipe* or by use of the x2 nomenclature. 5Gbps capable
10/100/1000Base-T, PCIe-x2, sRIO-x2, Infiniband-x2



Ultra-thin Pipe: A channel that is comprised of one link (1 Tx pair + 1 Rx pair) is now being referred to as an *ultra-thin pipe* or by use of the x1 nomenclature.
10GBase-KR, 1GBase-KX, 1000Base-KX, PCIe-x1, sRIO-x1, Infiniband-x1a

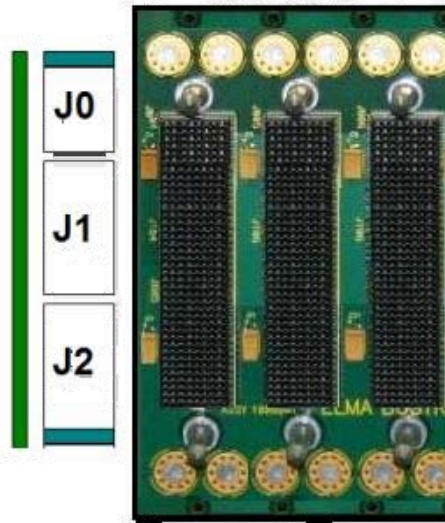




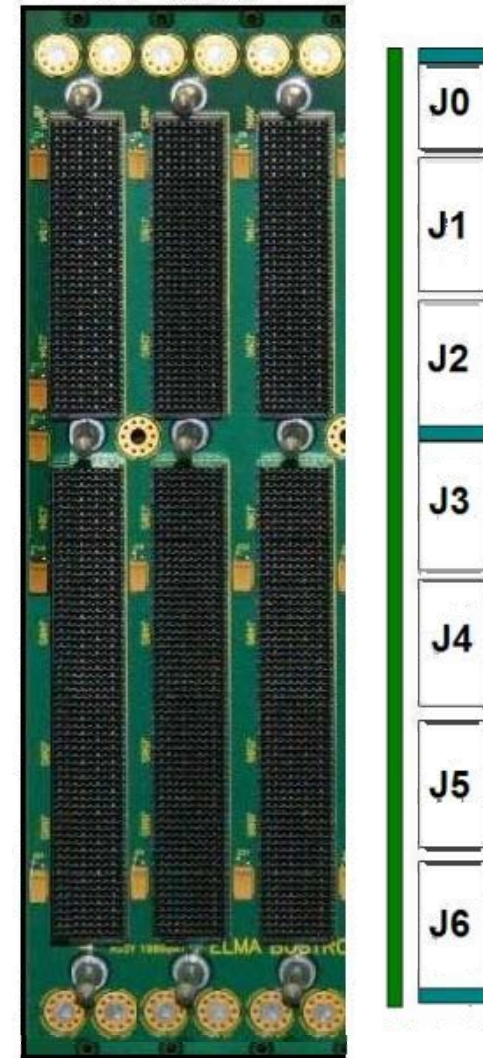
Front Card

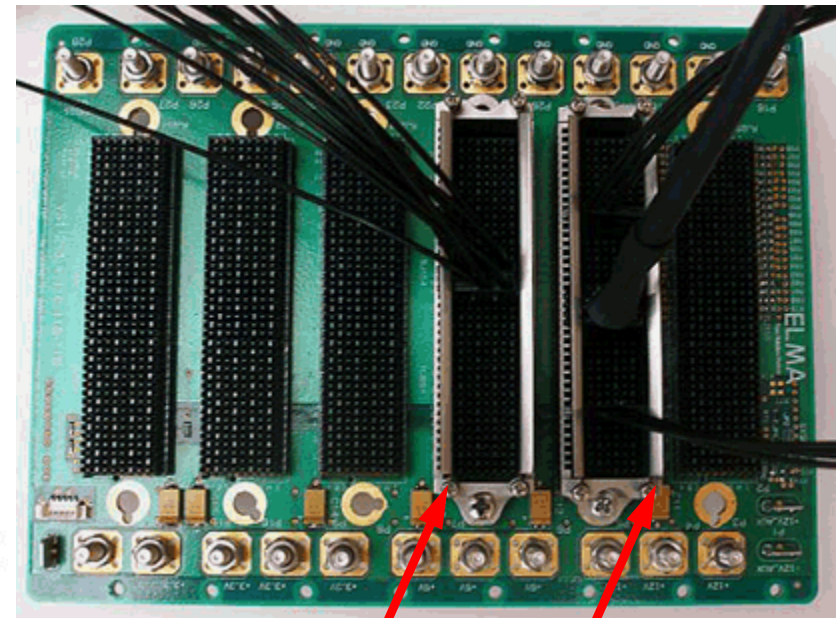
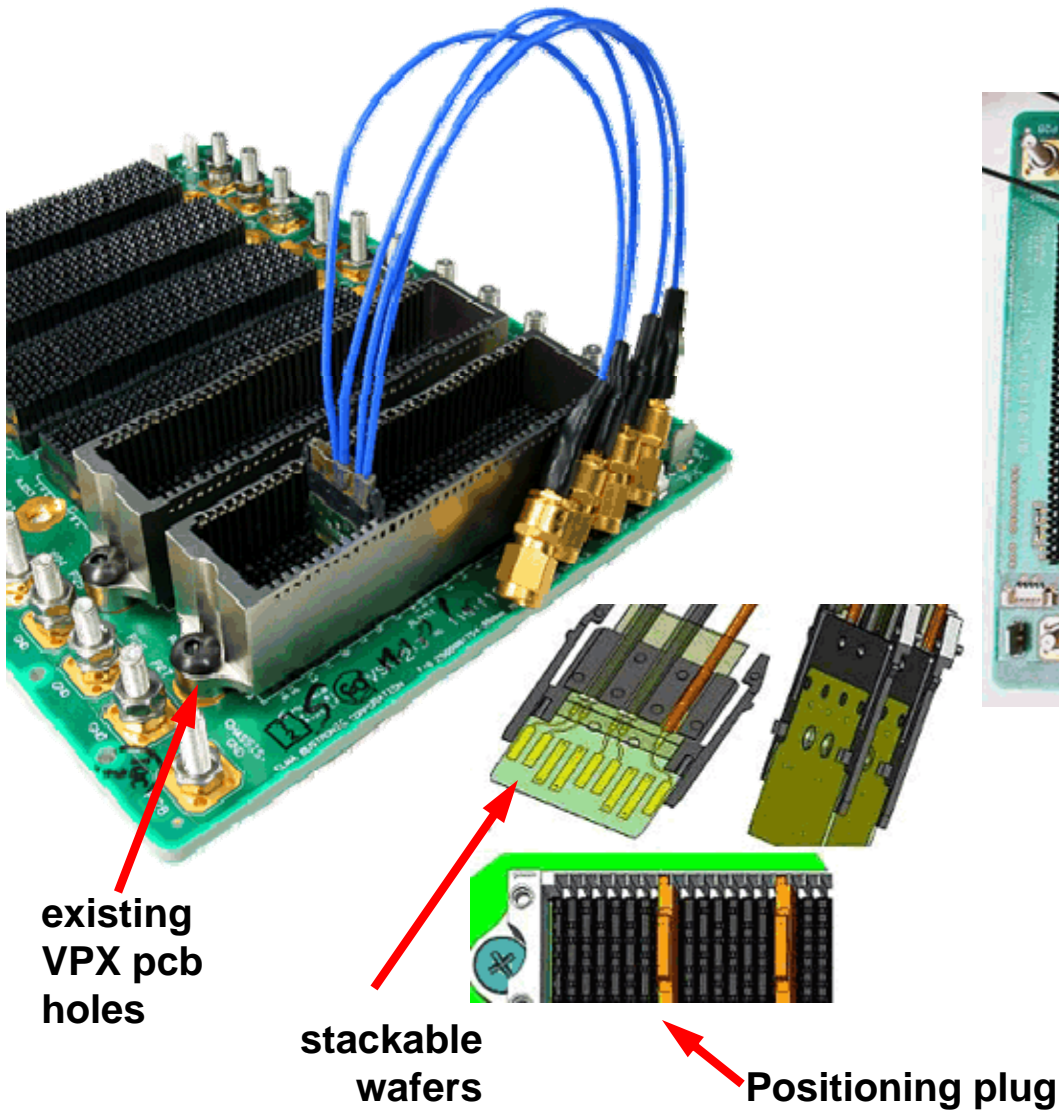
RTM side

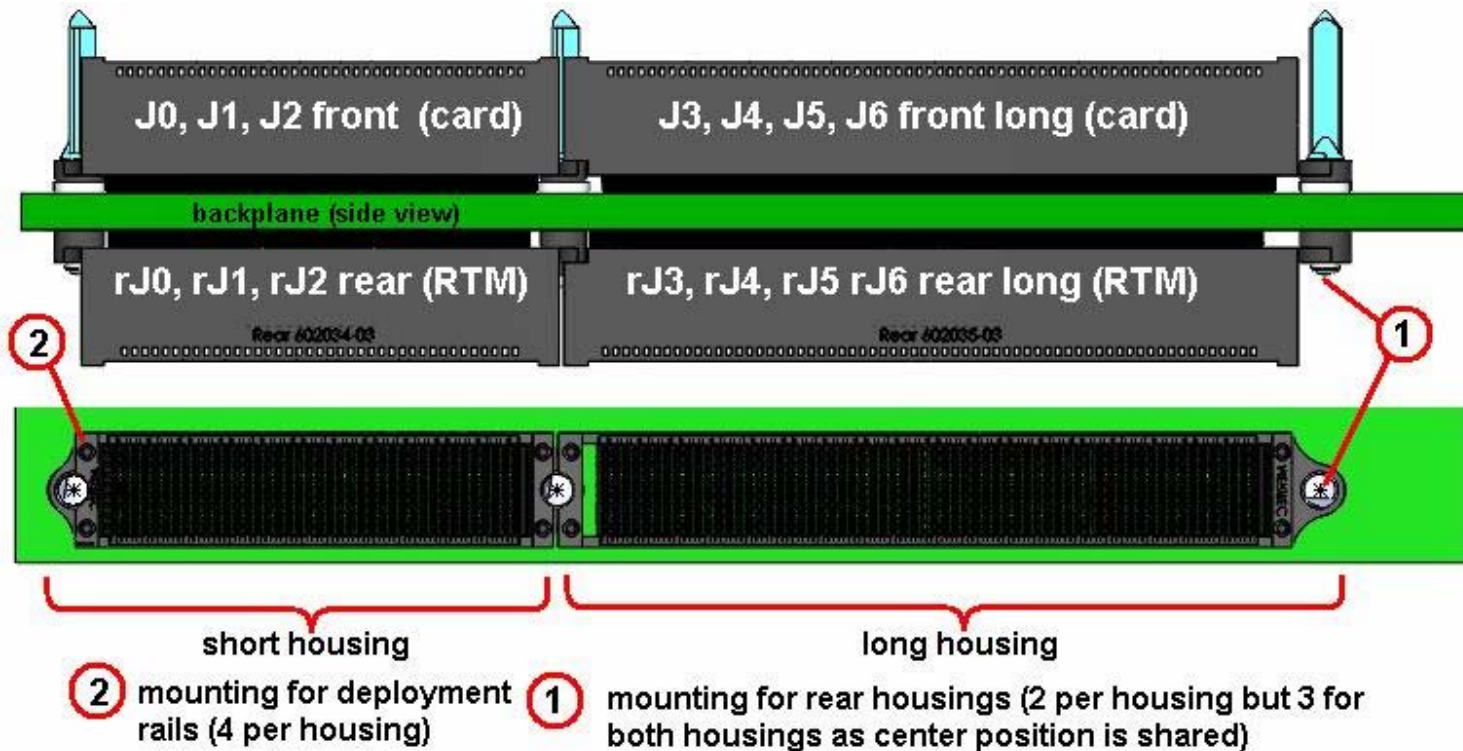
3U VPX



6U VPX







Note: When installing rear cable shrouds over the existing MultiGig RTM connectors, you must replace the front guide pins because the cable shrouds require larger diameter screws to attach them firmly enough to support the weight of cables.

Also: The locking rails which are attached at the four mounting points on each shroud (number 2 above) secure the cable assemblies and provide a smooth surface with slots for ty-wraps. The ty-wraps serve as a strain relief.

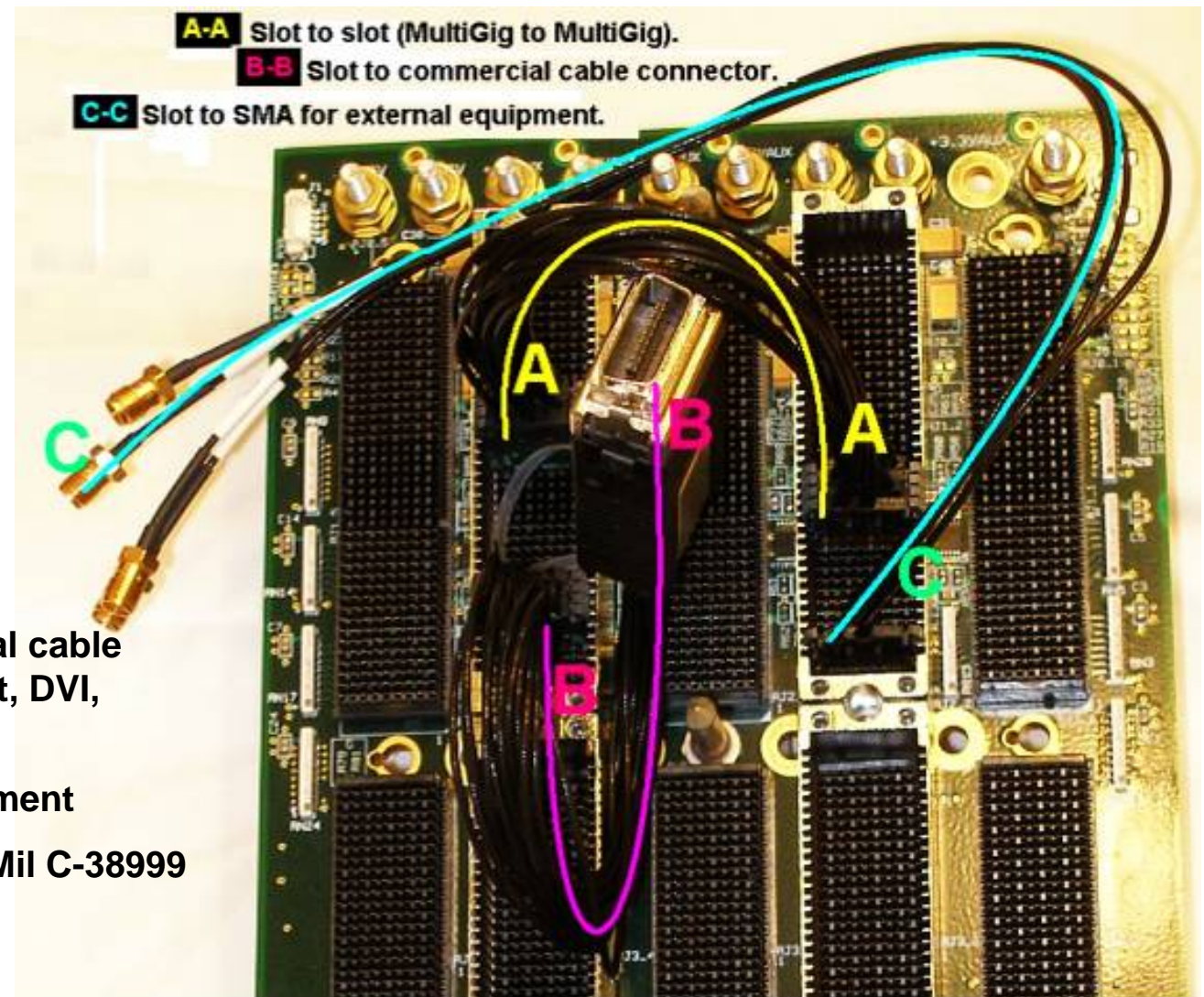
Cables available for:

x1 Ultra-thin Pipes

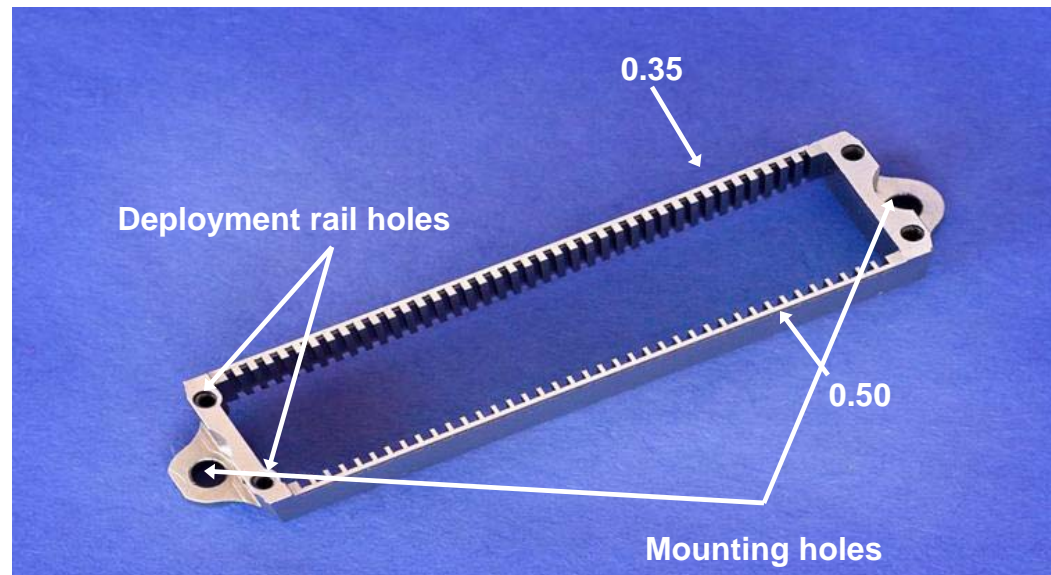
x2 Thin Pipes

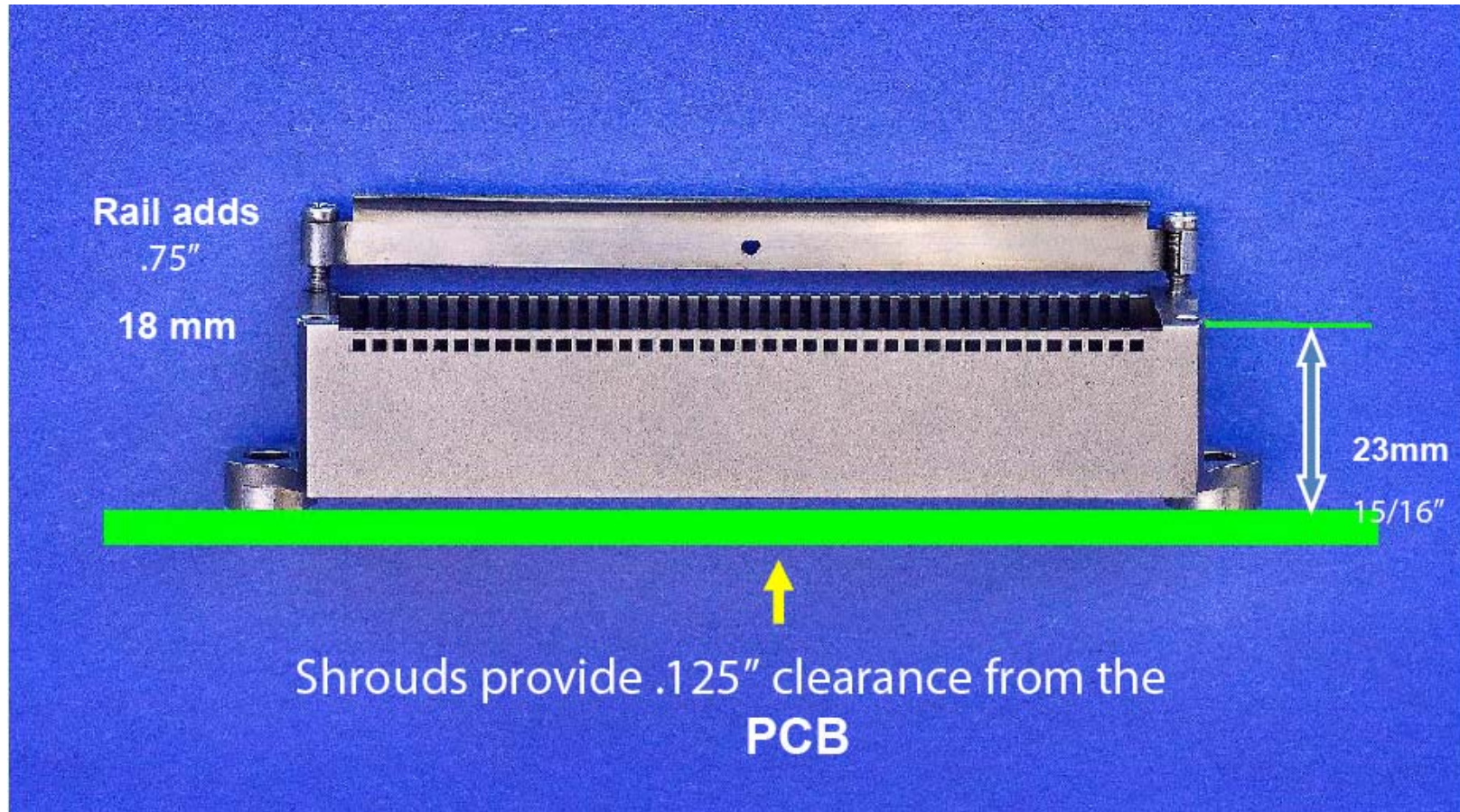
x4 Fat Pipes

- Slot to slot
- Backplane to commercial cable standard (SATA, Ethernet, DVI, Infiniband)
- Backplane to test equipment
- Backplane to bulkhead Mil C-38999

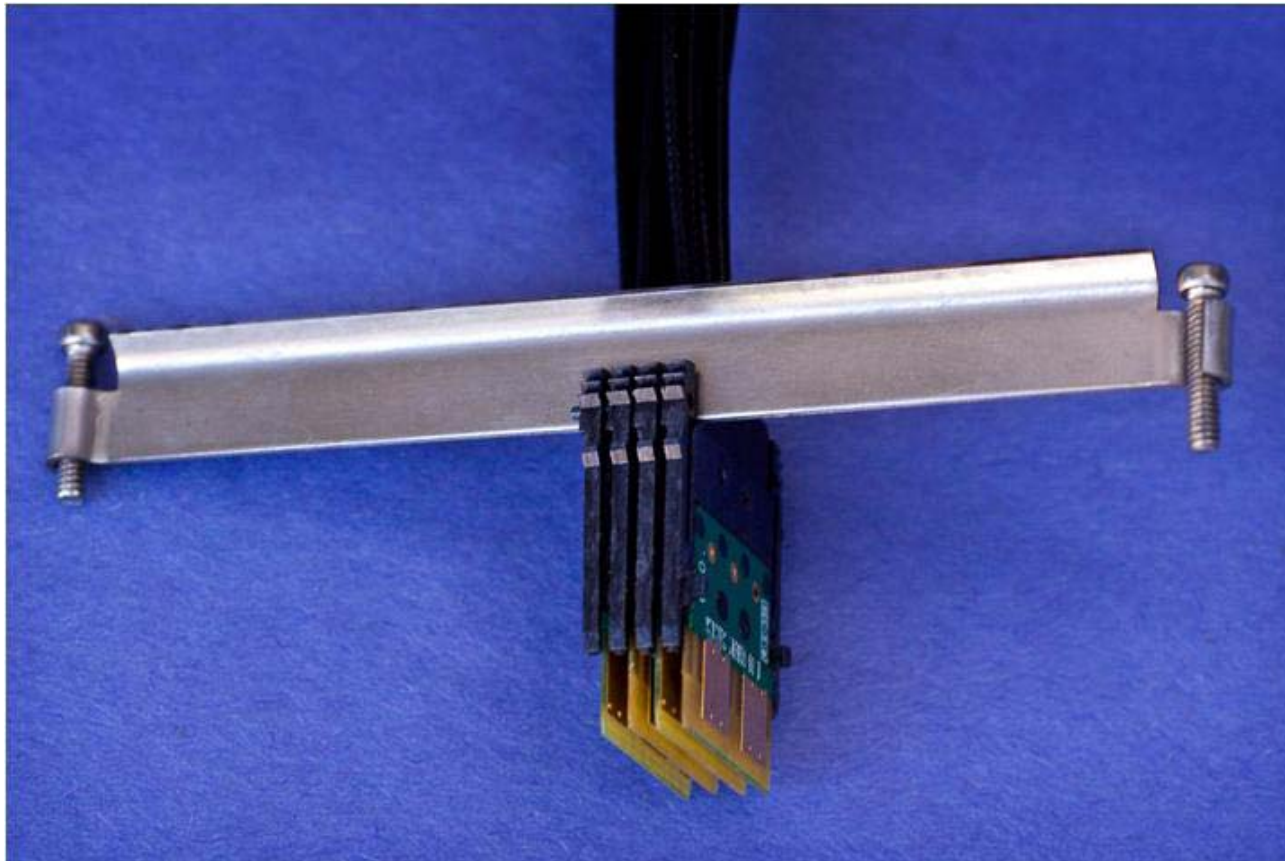


- 3U and 6U shrouds –front and back of backplane
 - Used Independently
- Nickel plated zinc
- Compatible with VITA 46/OpenVPX mechanicals
- Pin 1 locator
- Polarized for wafers
- Threaded for deployment rails
- Designed for .8” configuration

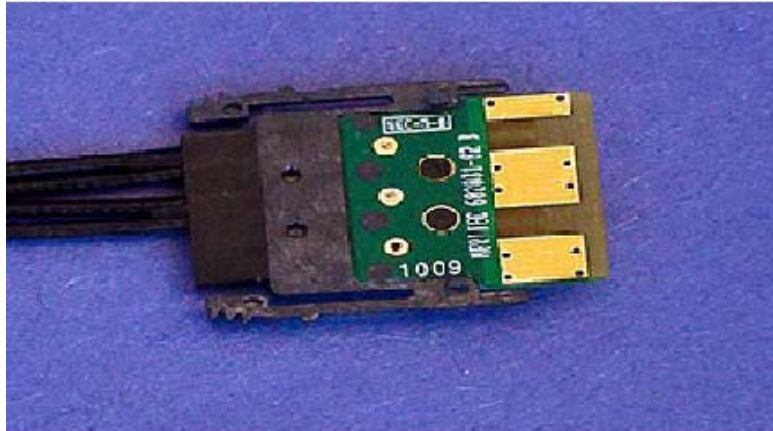




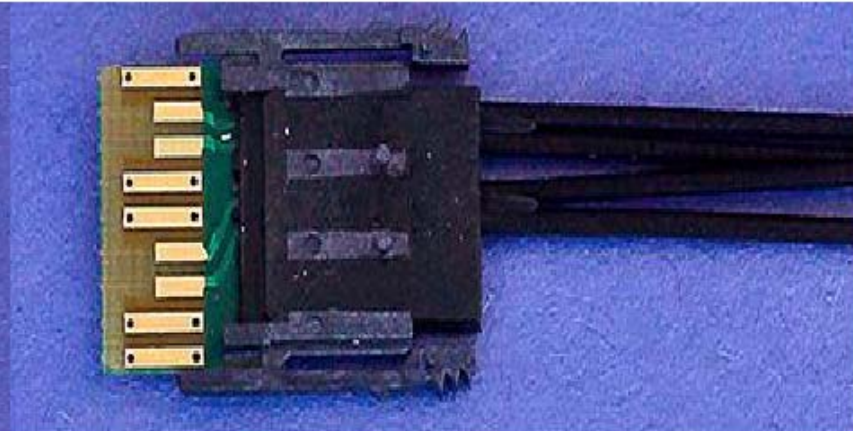
- Prohibits latch operation
- Rail sits on plastic between latch and polyamide over mold
- Enhances wafer ruggedness in high vibration environment



Wafer ground side

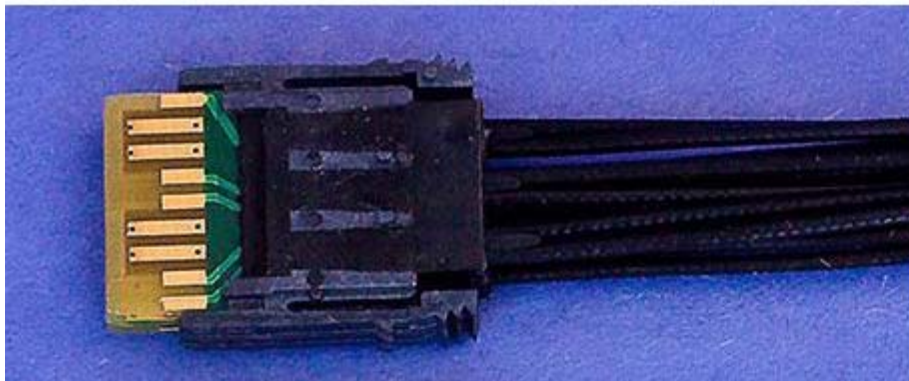


Wafer front side

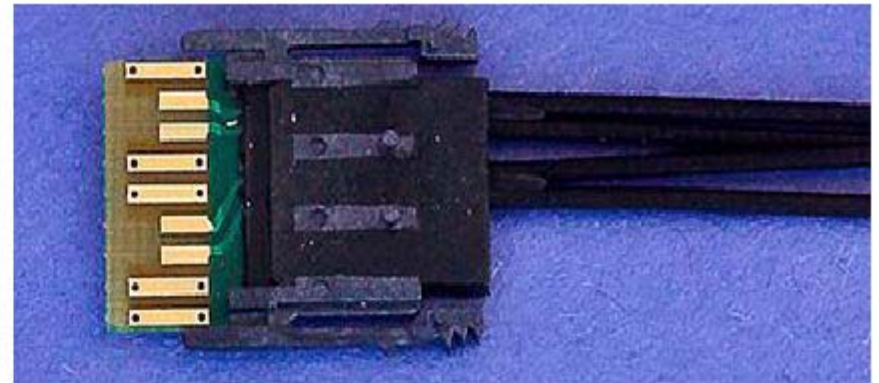


**Custom wafers will be fabricated to meet customer requirements.
Single ended serial wafers are designed on request.**

ODD ROW WAFER



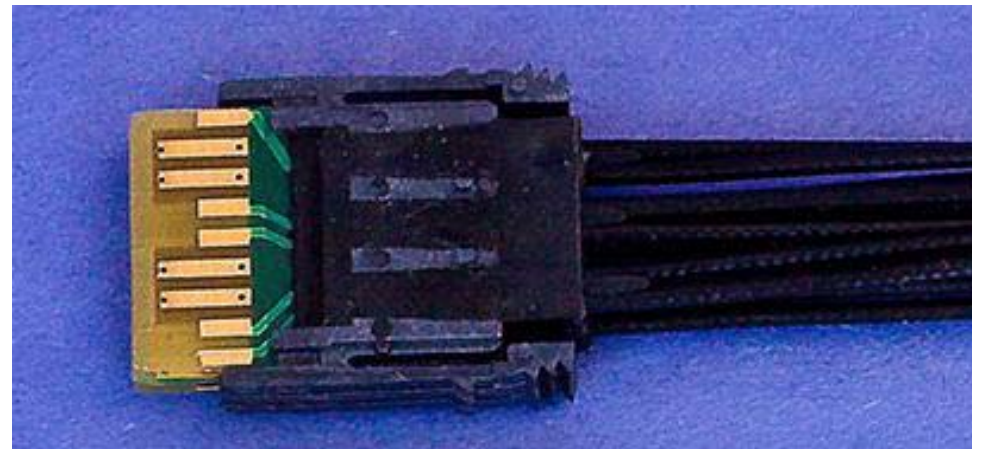
EVEN ROW WAFER



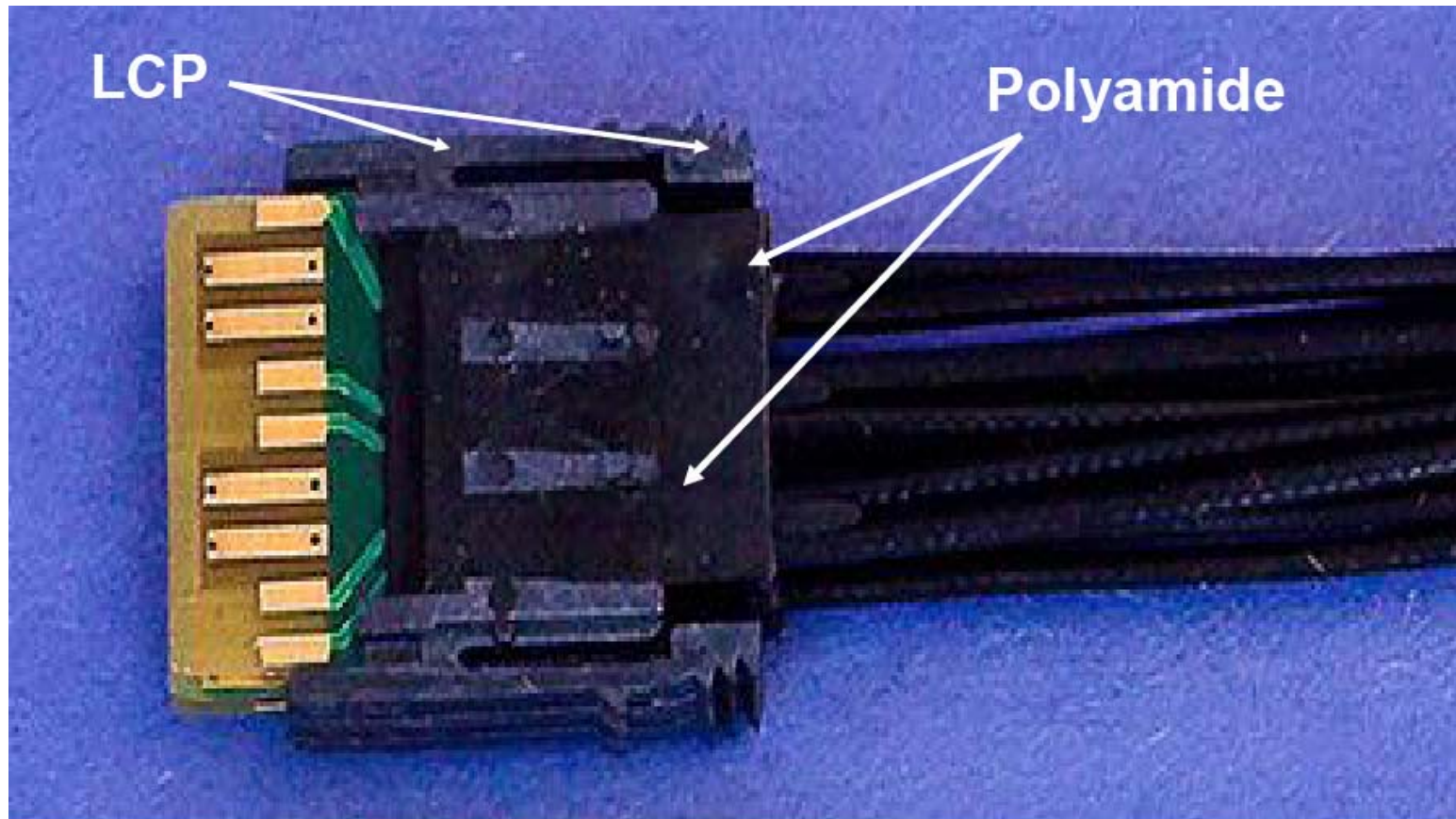
**Custom wafers will be fabricated to meet customer requirements.
PCBs designed for minimum skew.**

The Production Process

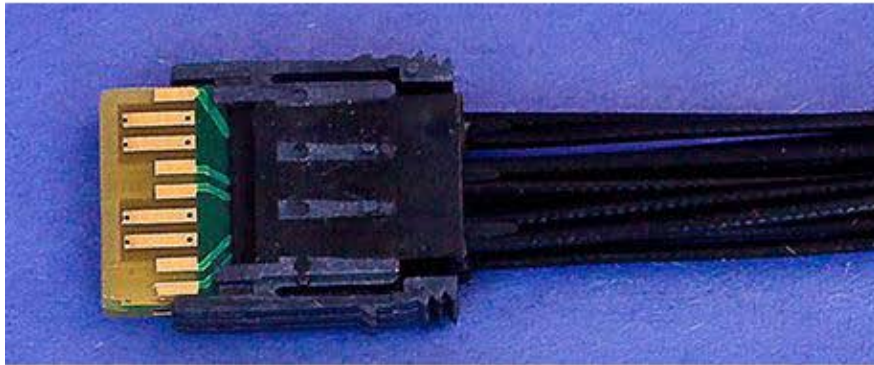
1. PCB
2. PCB is over molded with LCP clip and body
3. Wire attachment
4. Polyamide over mold
5. Test



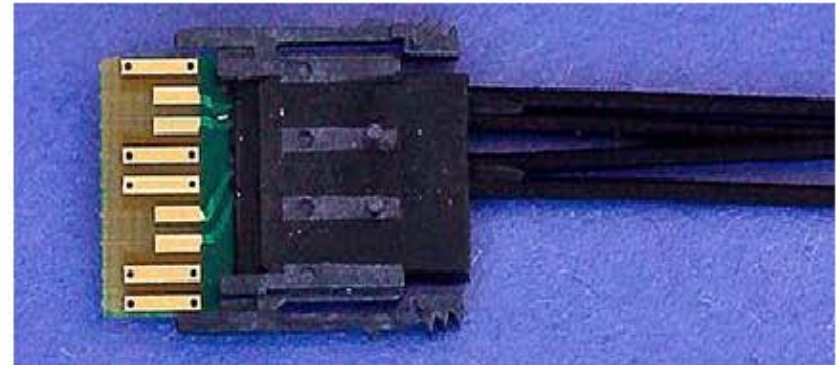
Custom wafers will be fabricated to meet customer requirements.



ODD ROW WAFER



EVEN ROW WAFER



Cable is 30ga stranded coax

SI specifications on 12" Wafer to Wafer

Insertion loss: <2.5dB up to 5GHz

Return loss: <10dB up to 5GHz

Connector impedance: 100 +/-10% at 100 ps rise time (20-80%)

Within differential pair skew: <3ps ft.

Time Domain crosstalk:<4% @ 40ps rise time (-20 +80%) from multiple aggressors

- Standard cable is 30 gauge micro coax
- Differential pair
- Single ended serial

1 wafer to 1 wafer with 2 DP connected = ultra thin pipe

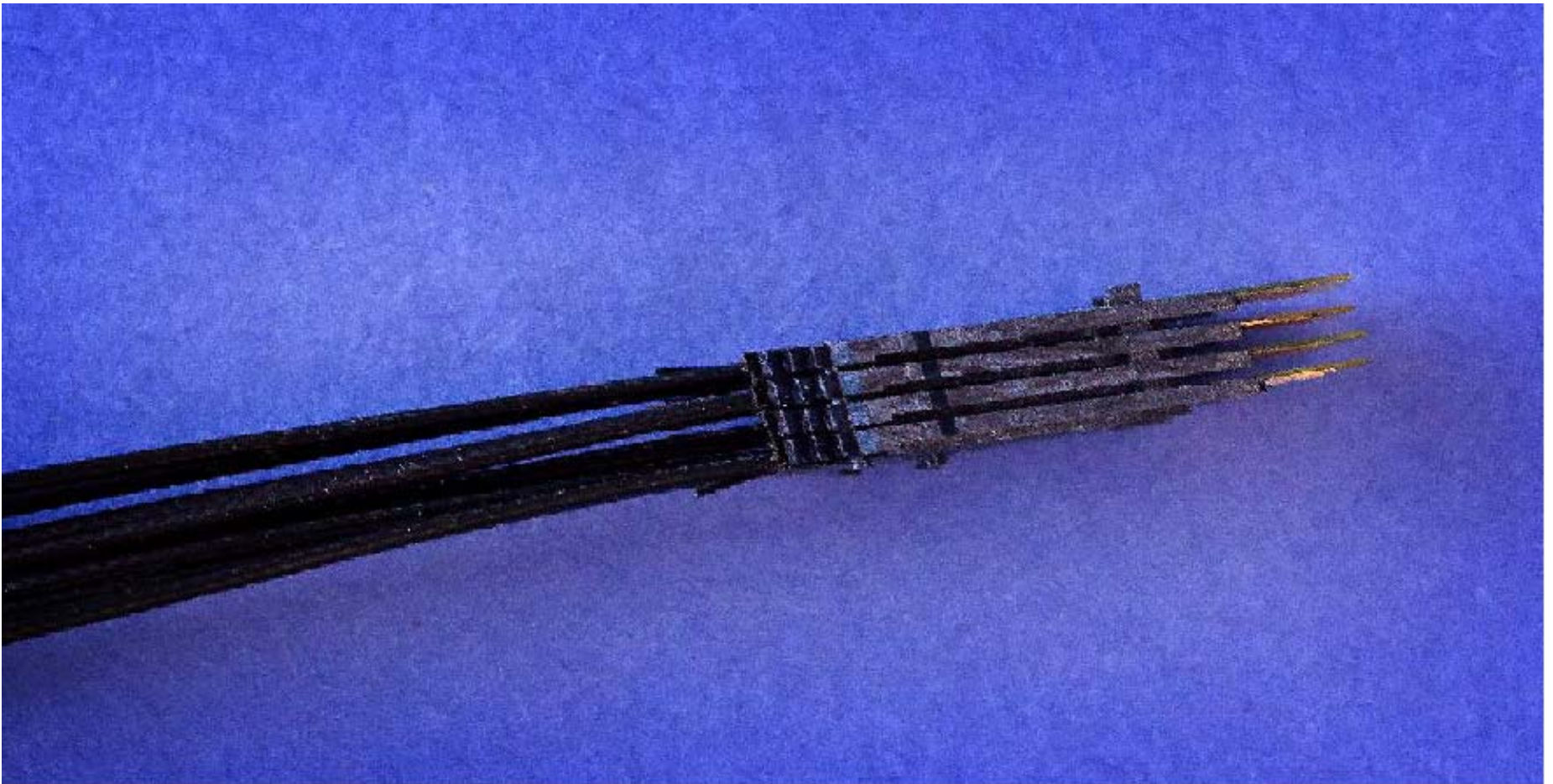
2 wafers to 2 wafers with 4 DP connected = thin pipe

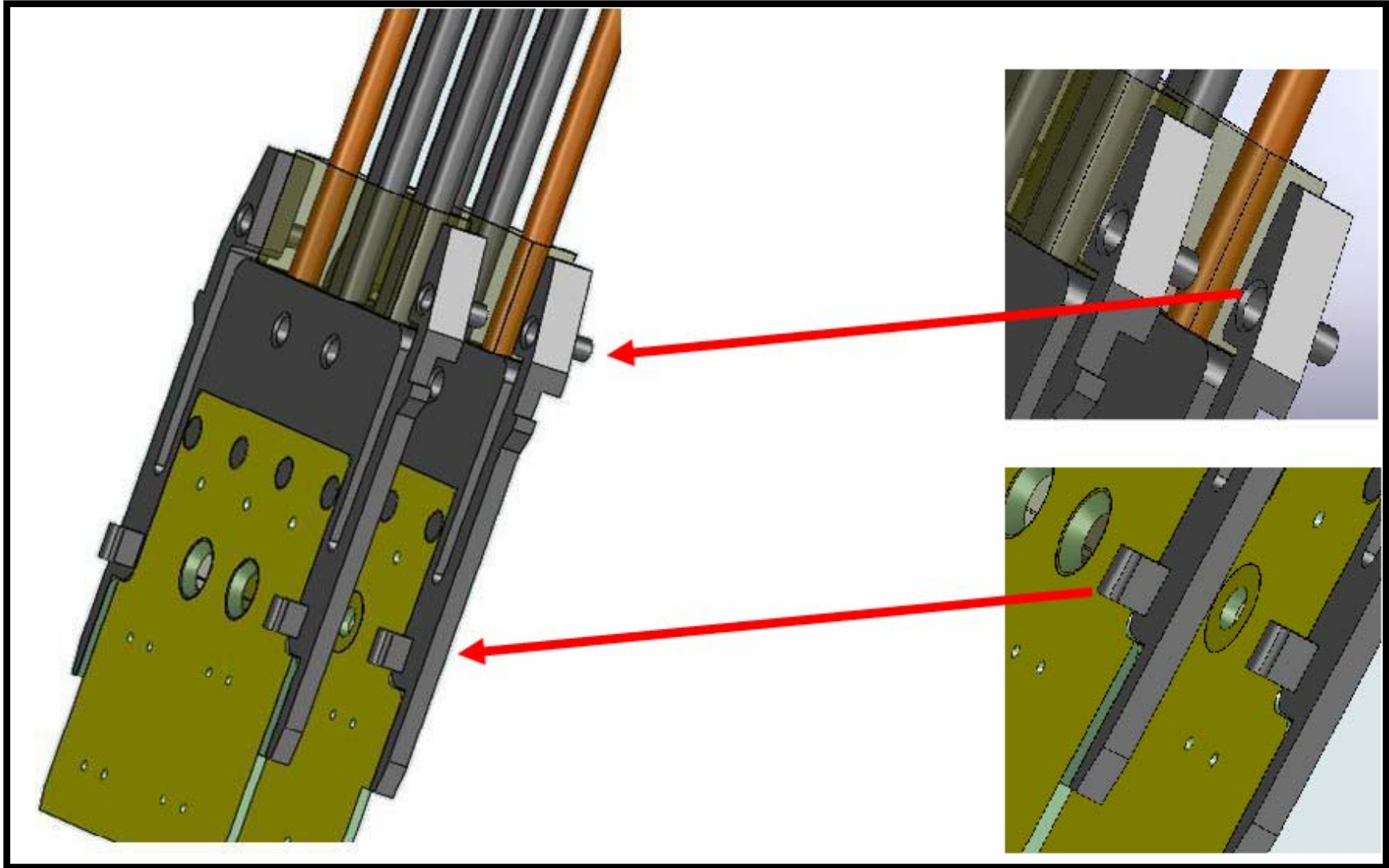
4 wafers to 4 wafers with 8 DP connected = fat pipe



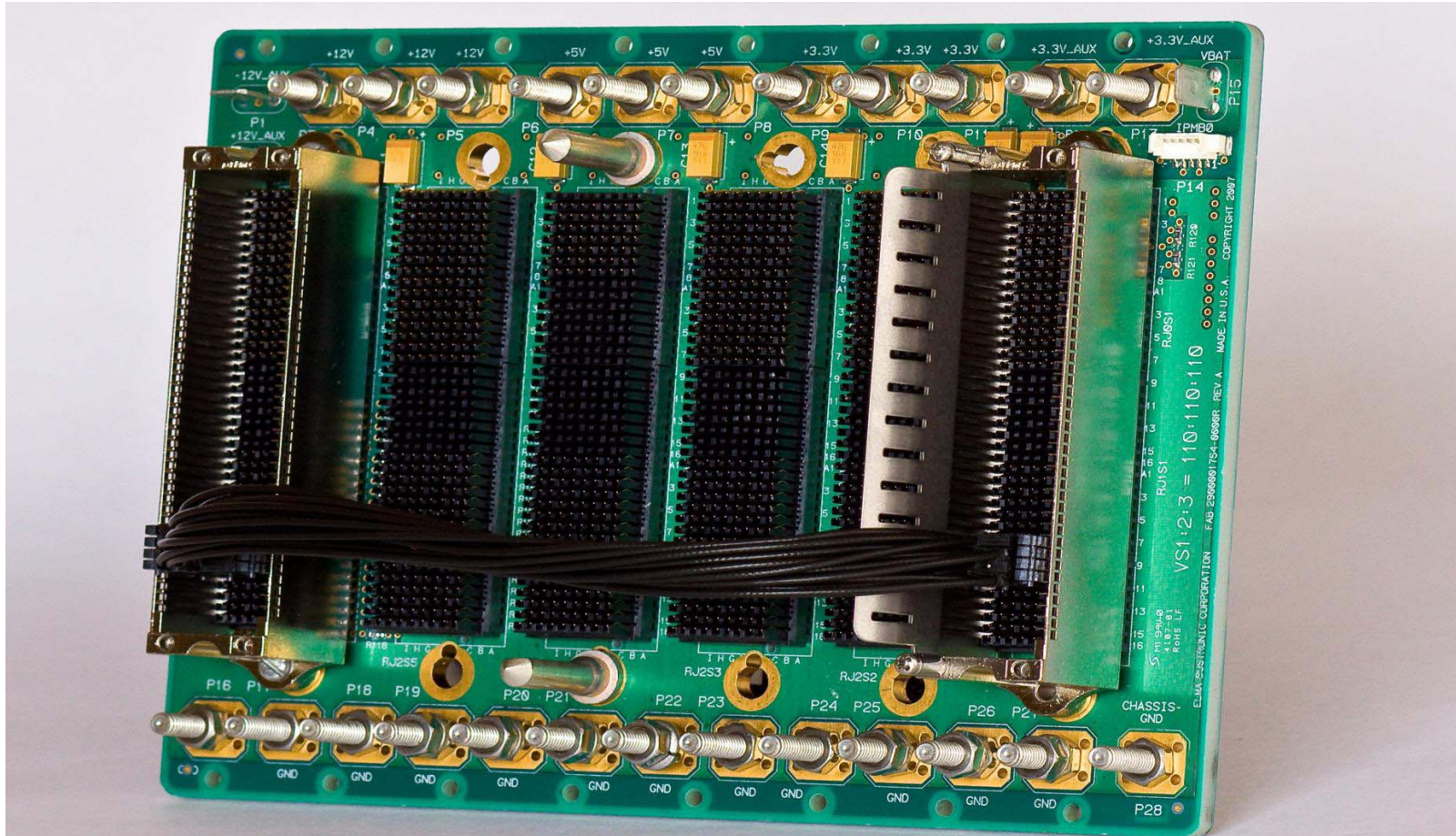
8 wafers to 8 wafers with 16 DP connected = double fat pipe

Fat Pipe Side View

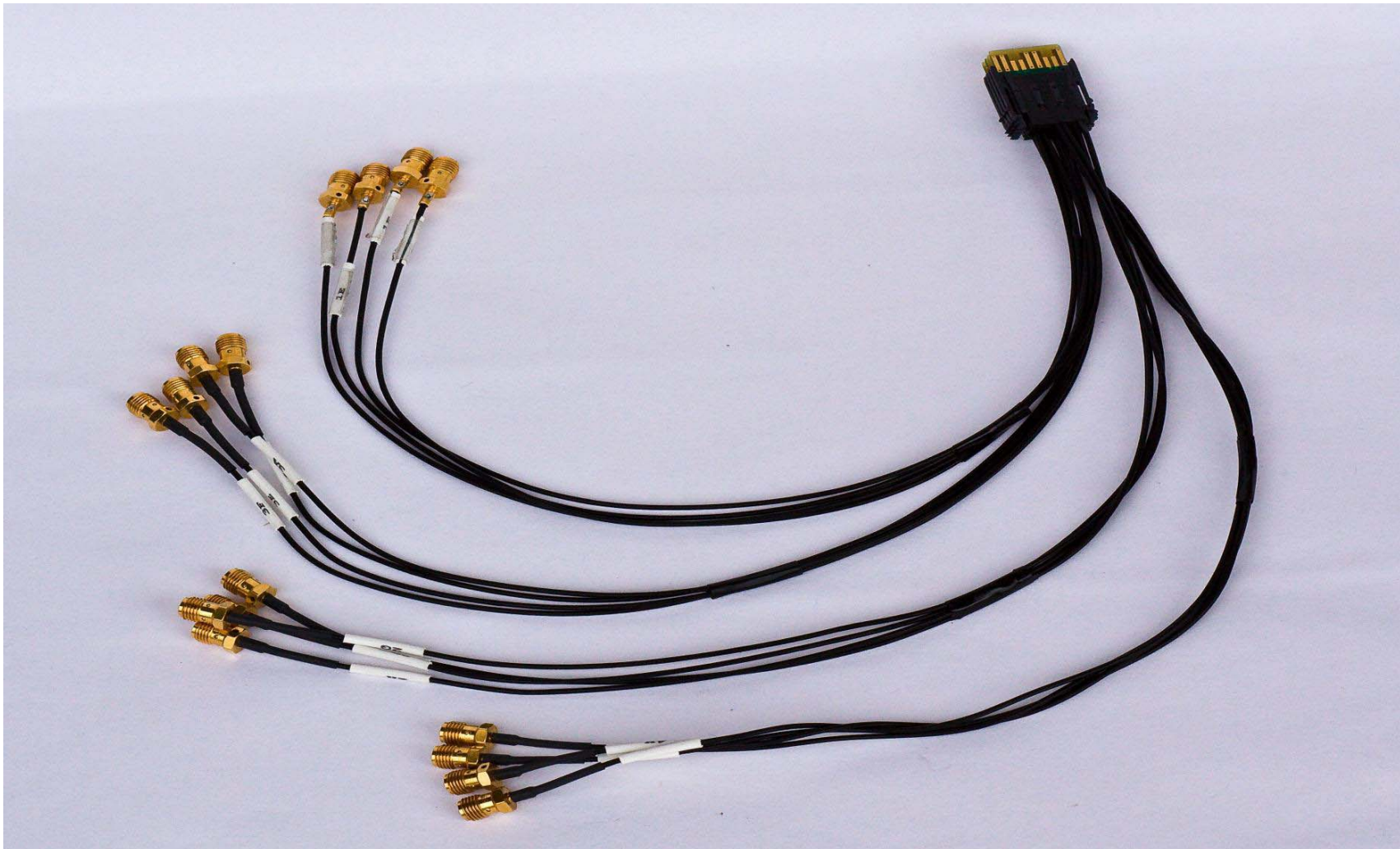




Fat Pipe Rj1 to Rj6



The tool is 4 wafers starting with an odd row wafer to 16 SMA's



Cable Applications

2nd Generation 2-Slot Test Backplane

