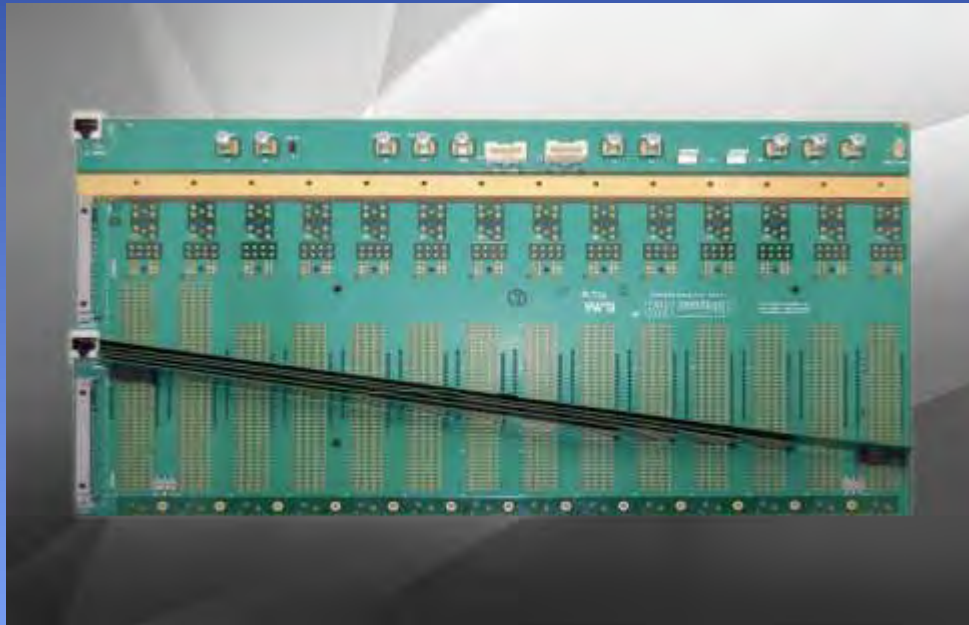




Z-Plane

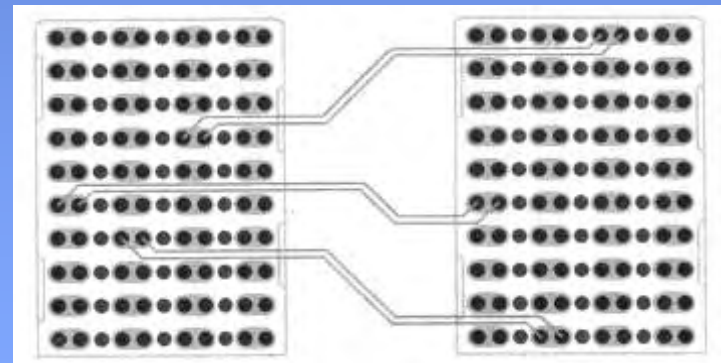


A System's Approach for High Speed Backplanes



Problems with High Speed Backplanes

- Multi-layer PCB source of limitations
 - Narrow Traces Conductive loss
 - FR4 Laminate Dielectric loss
 - Via Stubs Reflections
 - Circuit Interactions Crosstalk



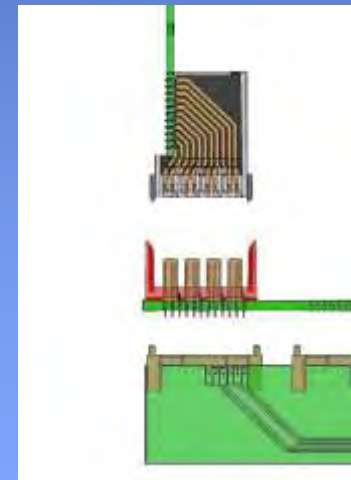
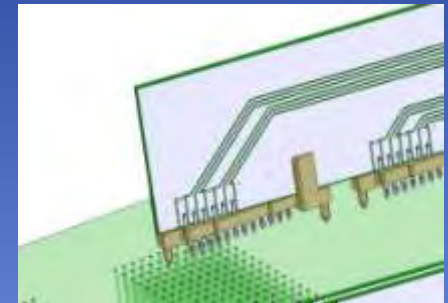
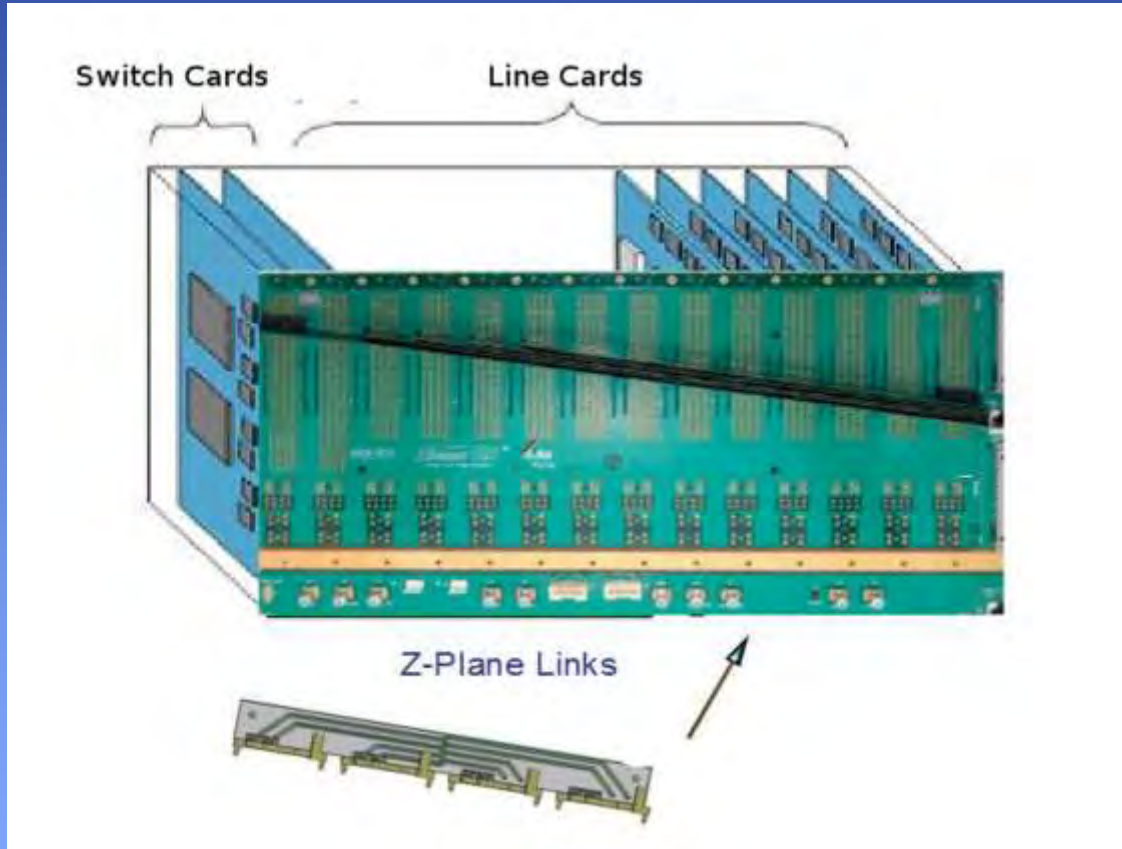


The Electronic Gordian Knot

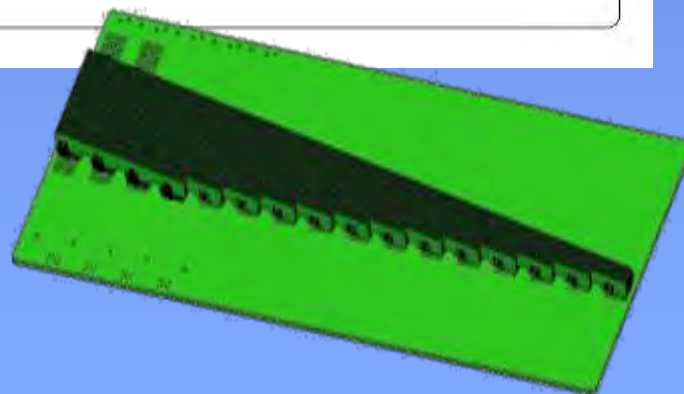
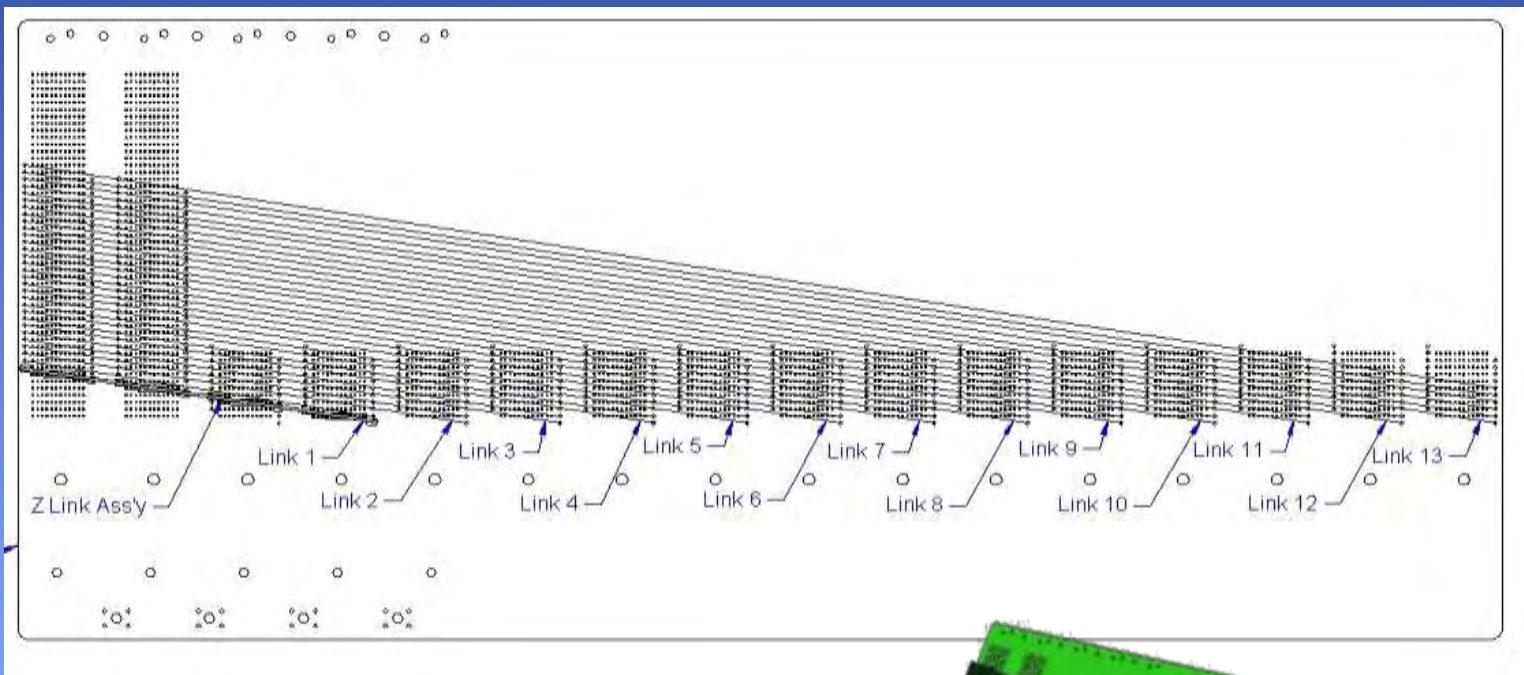
- Increase conductor pitch
Increase circuit length
- Increase density
Increase crosstalk
- Improve dielectric material
Increase cost
- Backdrill stubs
Reduce reliability



Z-Plane Design Concept

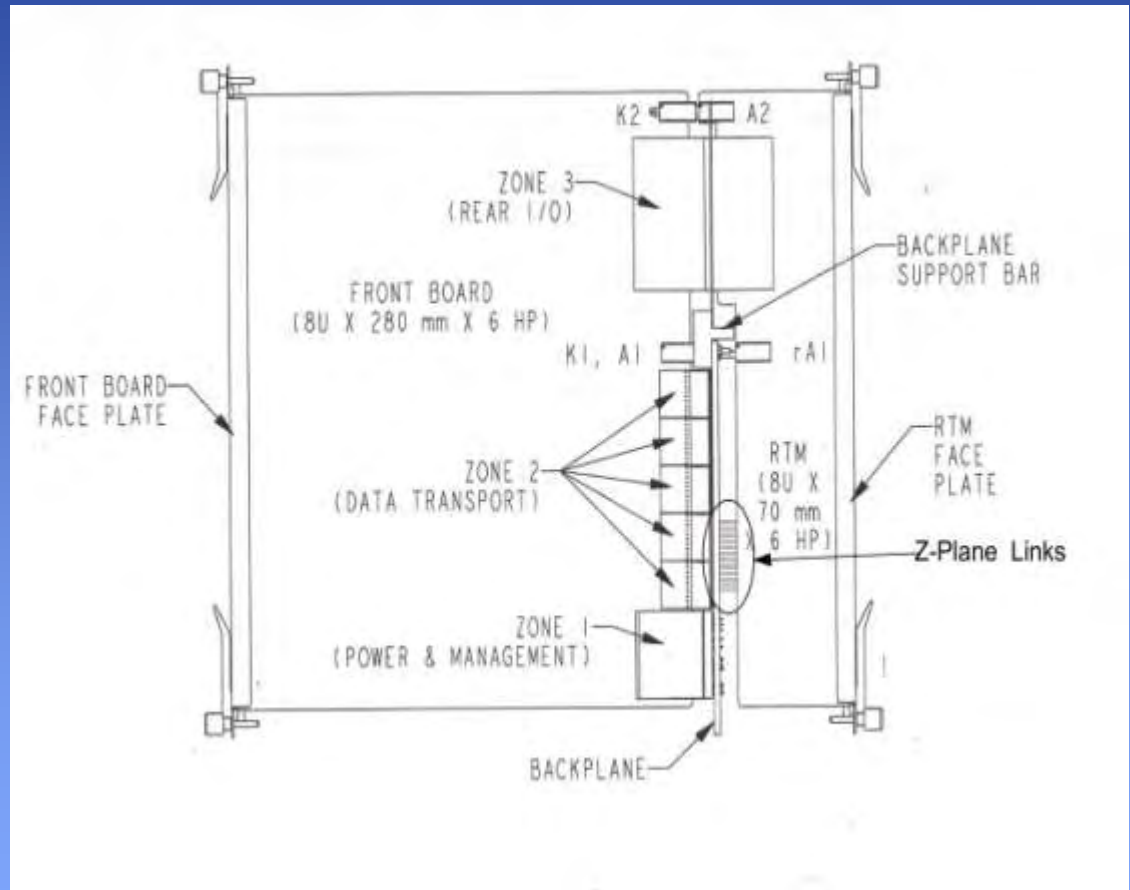


ATCA Layout Dual Star



ATCA Legacy Design

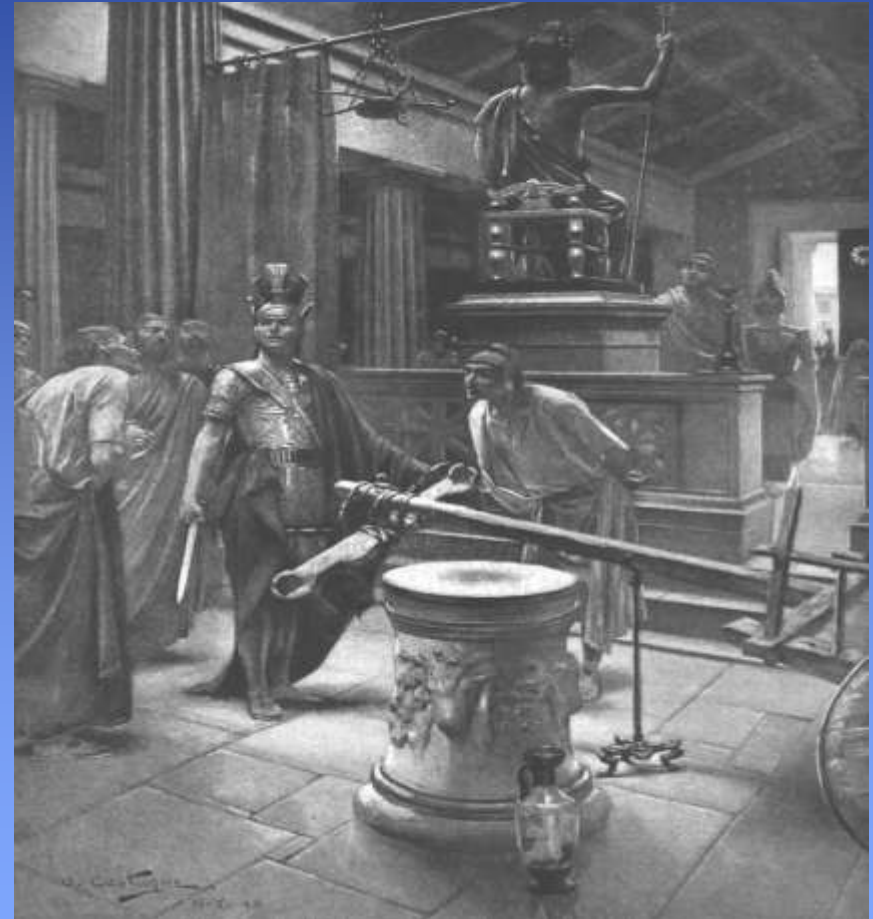
- Dual Star Mesh meets PICMG 3.0 mechanical specification





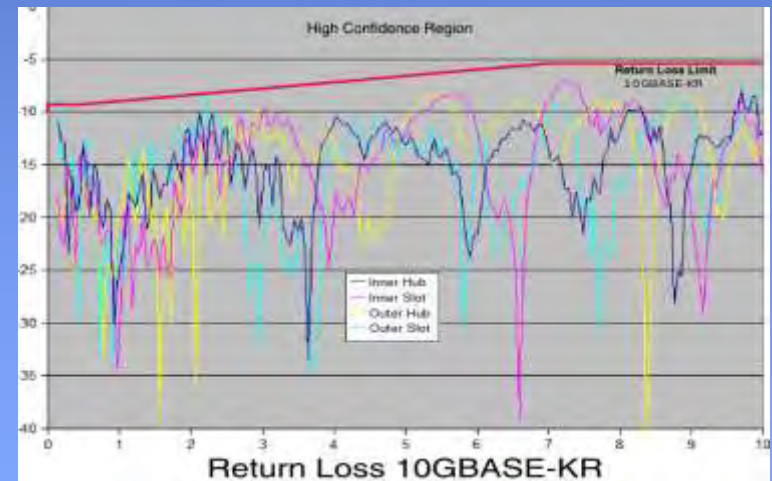
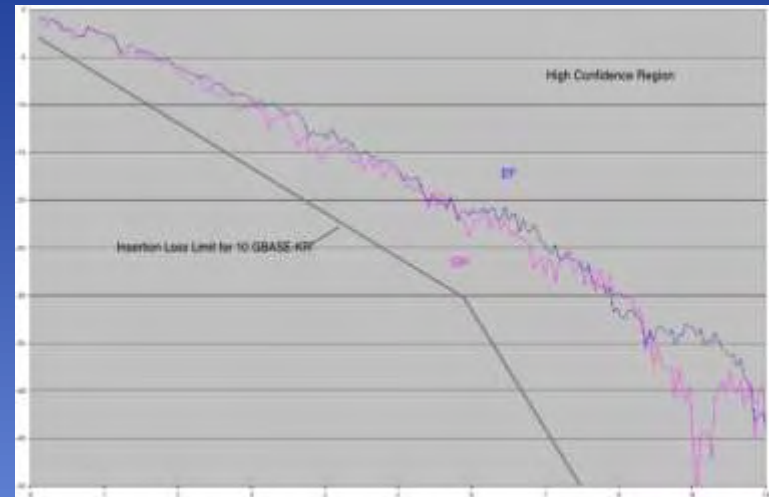
Cut the Knot with Z-Plane

- 3D interconnect
 - Wider Conductors
 - Reduces conductive losses
 - Microstrip circuits
 - Reduces dielectric losses
 - Eliminates Stubs
 - Reduces reflections



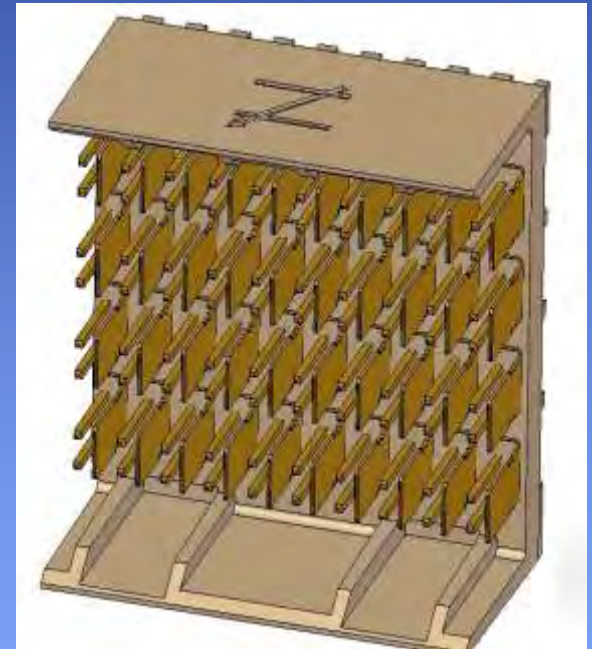
Performance

- 10GB/s/pair (40 GB/s/channel)
 - FR4 links
 - Standard “ADF” Connectors
 - Meets IEEE 802.3ap KR requirements
 - Insertion loss
 - Return loss



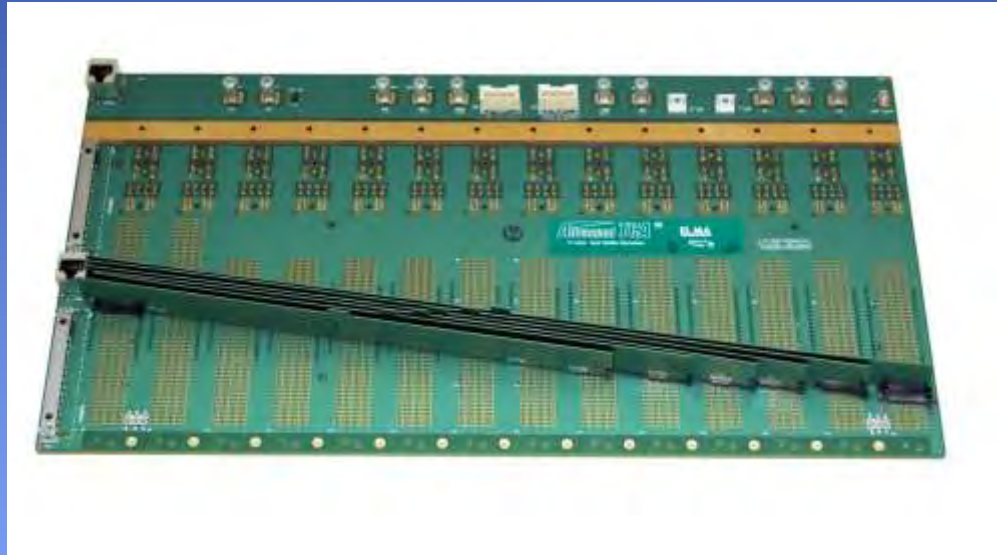
Legacy

- Meets existing ATCA mechanical specification
 - Standard connector footprint and interface
 - Standard system architecture
- Uses standard materials and processes
 - PCB -FR4
 - Link Termination - pressfit



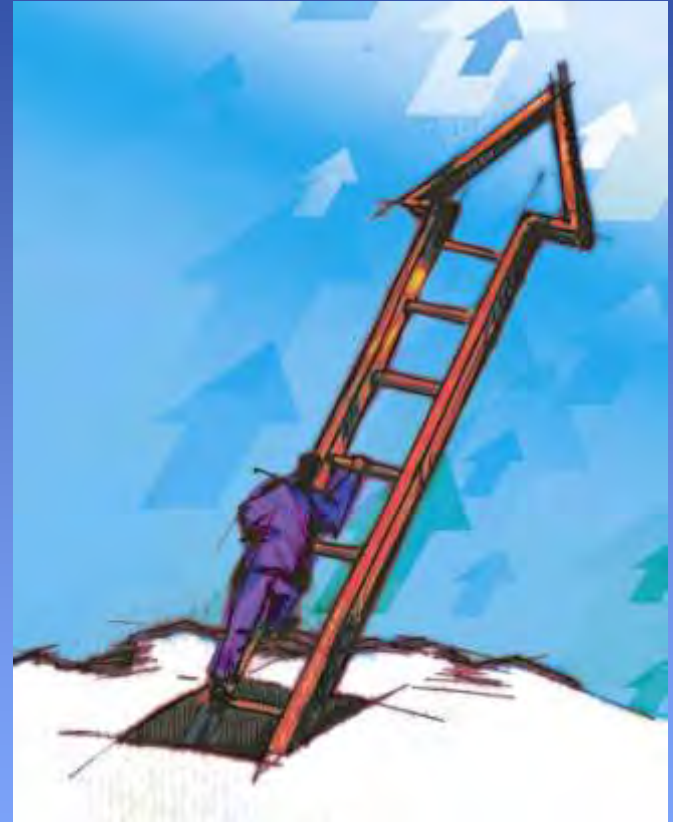
The Solution -Z-Plane

- Performance
 - 40 -100GB/s
- Cost
 - 20% - 30% lower cost
- Legacy
 - “ADF” plug compatible
 - Same architecture



The Future

- 100GB/s/channel
- 85 ohms
- Integrated Active Components
- Full Mesh Implementation





Z-Plane Inc

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