



Caliber Interconnect Solutions

Design For Perfection

ATE Design Capabilities



**Load boards : Probe cards : PIB:
Daughter Cards :Evaluation/Bench
Boards: FPCB**

**Caliber Interconnect Solutions (Pvt)Ltd
No 9 B/1 , Poombukar Nagar,
Thudiyalur,
Coimbatore-641034.
Tamil Nadu, India.
www.caliberinterconnect.com**

MISSION & VISION

"Provide dependable solutions to the satisfaction of the customers through intensive R&D and proven quality control procedures using disciplined workforce."

MISSION

"Developing and applying technological solutions to the benefits of the society that will not affect the safety and living standards of our future generations "

VISION

QUALITY
POLICY

"CALIBER INTERCONNECT SOLUTIONS
PRIVATE LIMITED
Is committed to meet and exceed customers expectations through timely delivery of cost effective quality designs through ever improving process and team work."

SERVICES

3

ATE test interface board
design services

MLC / MLO substrate
design services

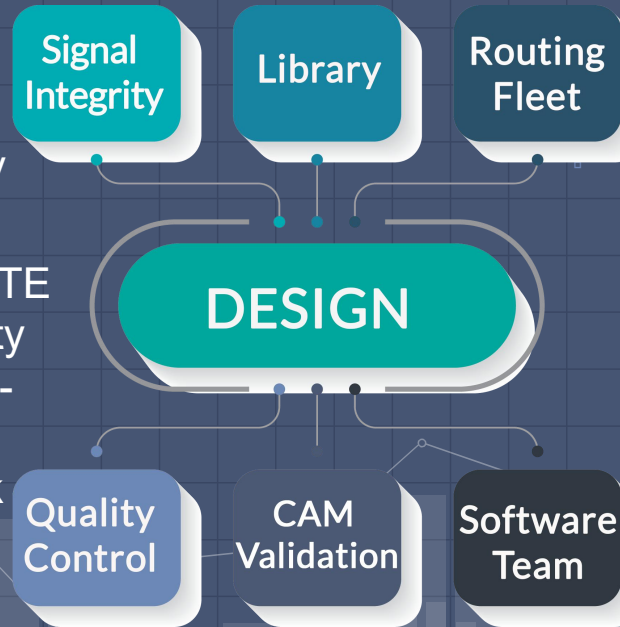
HSD & HDI design services

Signal & Power Integrity
simulation and optimization

Library development and
maintenance

CAM validation and editing

STRUCTURE

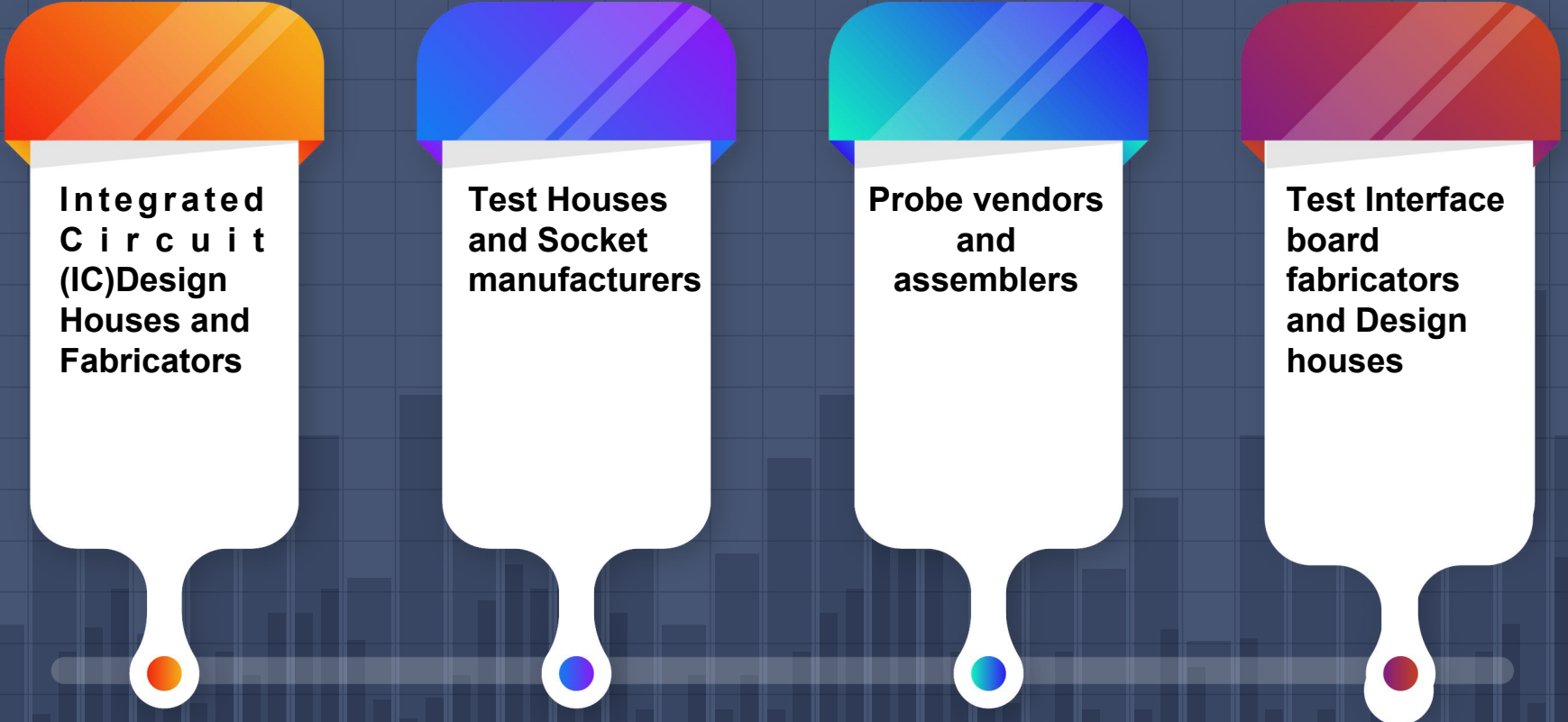


Caliber is known for its Quality and Quick Turn arounds.

Exclusive teams for Library, ATE routing, Signal Integrity, Quality control, CAM validation and in-house software development enables high quality and quick deliveries.

Caliber's Design Process is controlled and certified. It empowers each and every individual in the organization to deliver consistently and effectively.

WE WORK CLOSE WITH



**Integrated
Circuit
(IC) Design
Houses and
Fabricators**

**Test Houses
and Socket
manufacturers**

**Probe vendors
and
assemblers**

**Test Interface
board
fabricators
and Design
houses**

Caliber's ATE Board Design Services

EXPERTISE

Versatile in interface and HSD

- :: DDR :: USB :: PCIe::
- :: SATA :: HDMI :: LVDs ::
- :: SerDes ::
- :: Till 12Gbps is Usual handling ::

Fine/Coarse DFM handling

- :: 0.4mmpitch ::
- :: micro via(blind & buried) ::
- :: Hybrid stack-ups ::
- :: Designed max 52 layers in 6.35mm::
- :: Done 64 layers maximum ::

Design Expertise

Electrical knowledge

- ::Mixed signal::
- ::Mixed impedance design(50/90/100 Ohms)::
- ::Mixed topology (Star ,chain, tree ...)::
- ::Skilful in Shield/Tuning/Force & Sense::

Experience

- ::15 years in ATE interface brd design::
- :: Delivered 7500+ designs::
- :: Multiple EDA tool knowledge::
- :: auto-tools and skills for ATE routing::

ATE BOARD TYPES

01

Loadboards (Final test)



02

Probe Interface Boards
(PIB or WS)



03

Probe cards

Vertical PC
(conventional and direct docking)
Cantilever PC
(conventional and direct docking)



04

Spider cards



05

Daughter cards



06

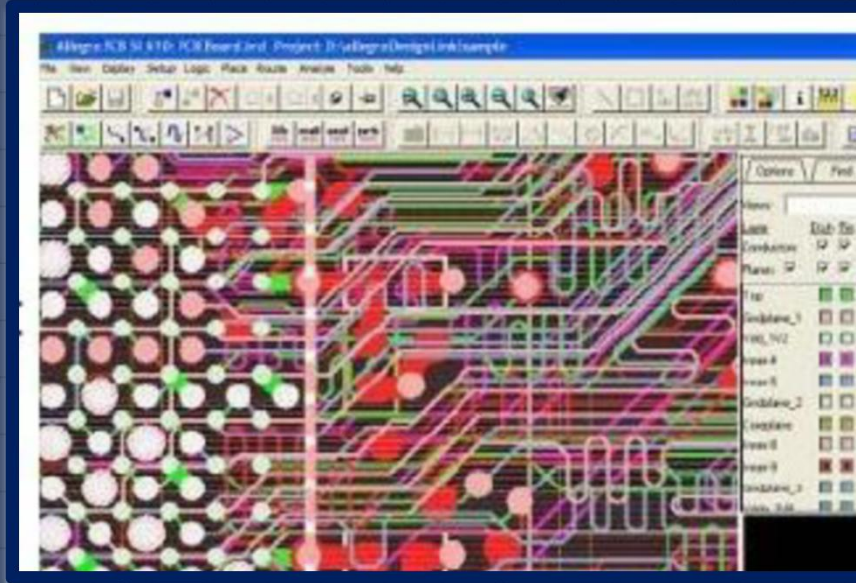
FPCB

(sub boards to enable HSD
in existing PC)



TESTER PLATFORMS

- ETS
- IntegraFlex
- J750 (EX)
- LTX Fusion
- MicroFlex
- Nextest
- Sapphire
- ST6730
- UltraFlex
- VLCT



- 93K
- T6577
- T6575
- T6371/72/73
- T2000
- AL9740
- Catalyst
- D10
- DiamondX

Caliber is expertise in a wide variety of ATE platforms

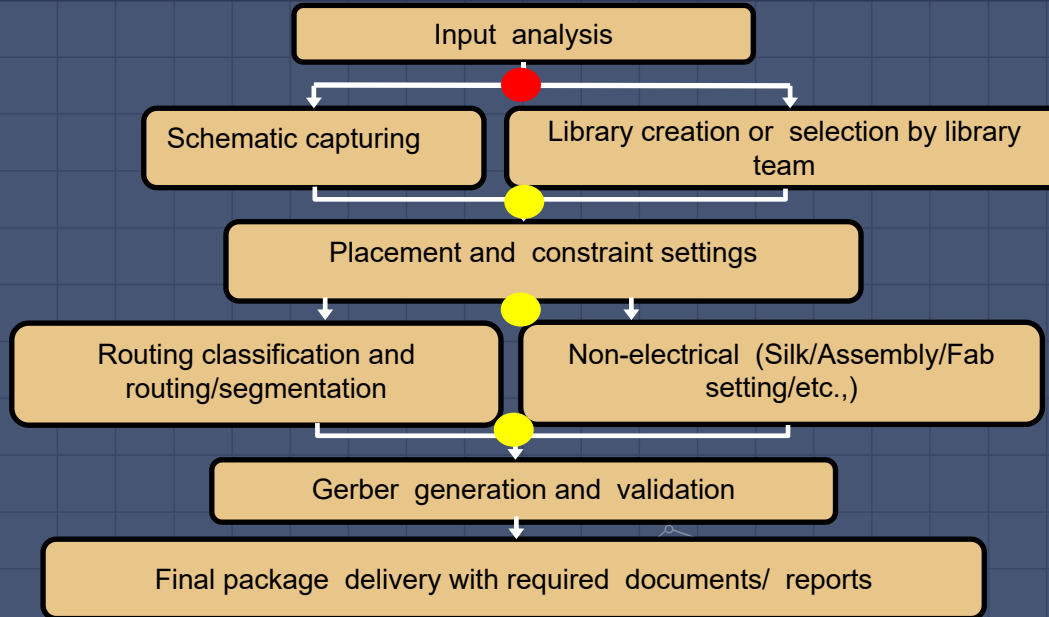
Frequently used Instrument types

....but not limited to

Advantest Platform	Teradyne Platform
PSI600/800/400	UPI600/800
GPDP5	HSD1000
MSDP5	HexVS
UHCSUPPLY	HDVS
9G	DCIO
VI32	US10G
DPS32	DC30
AWG	DC75
HSIF	DC90
RVS	APU
UDC	SPO
LCD IO	CTO

Caliber's Design Flow for ATE

The below is the conventional flow of Caliber for ATE designs. More opt procedures can be adopted and tailored based on customer needs.



1. Stage-wise QA will be done at this points. Also final QA will be done at final stage.
2. After that the files will be sent to customer for review and stage wise approval
3. After initial input analysis, any data insufficiency will be reported at this point
4. Template choosing/creating and approval will be initiated in this stage and will be completed before placement stage

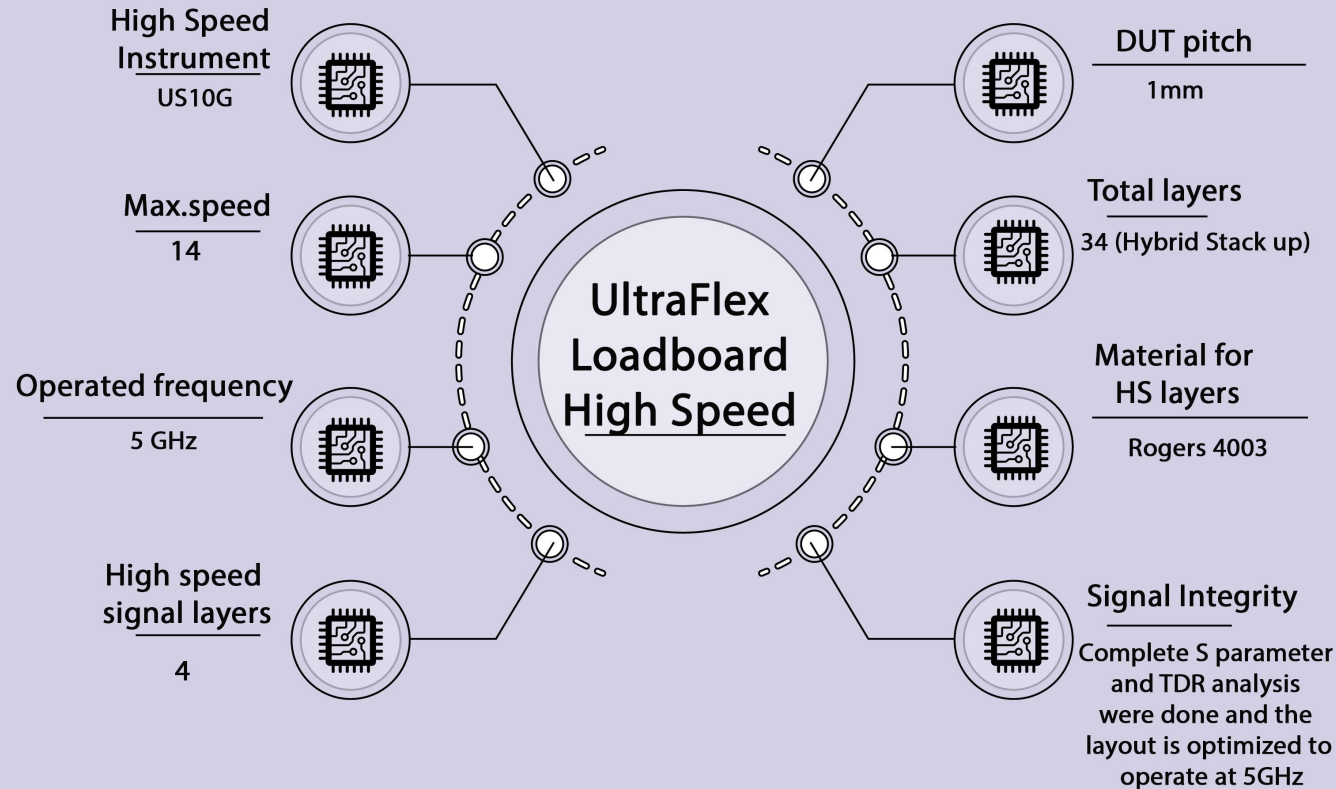
Design with Signal Integrity

Caliber have in-house SI team powered by latest state-of-art simulation tools like Ansys and Sigrity.

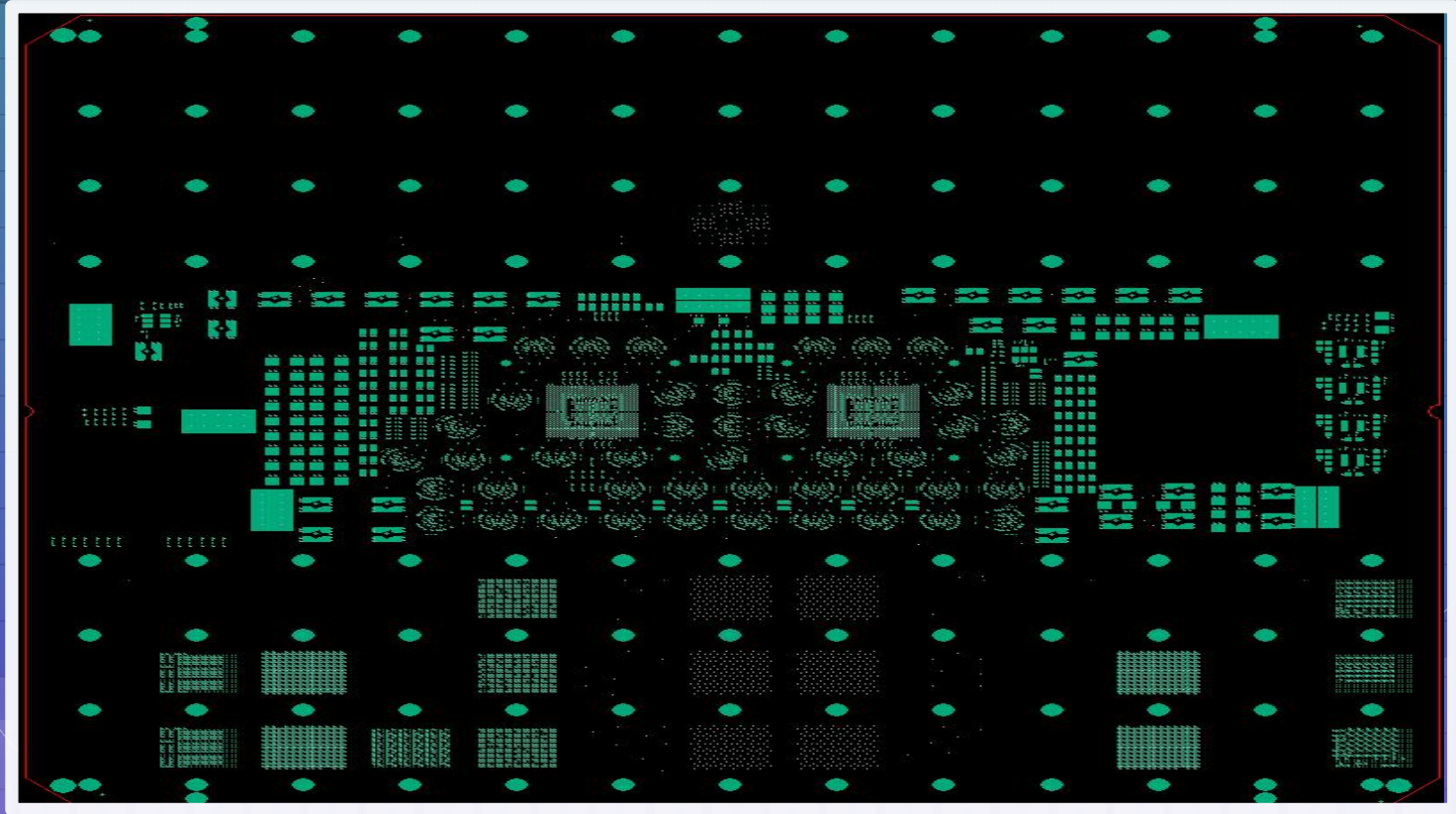
This enables Caliber to implement high speed testing interfaces in the designs more effectively.

The following slides will detail such an example.

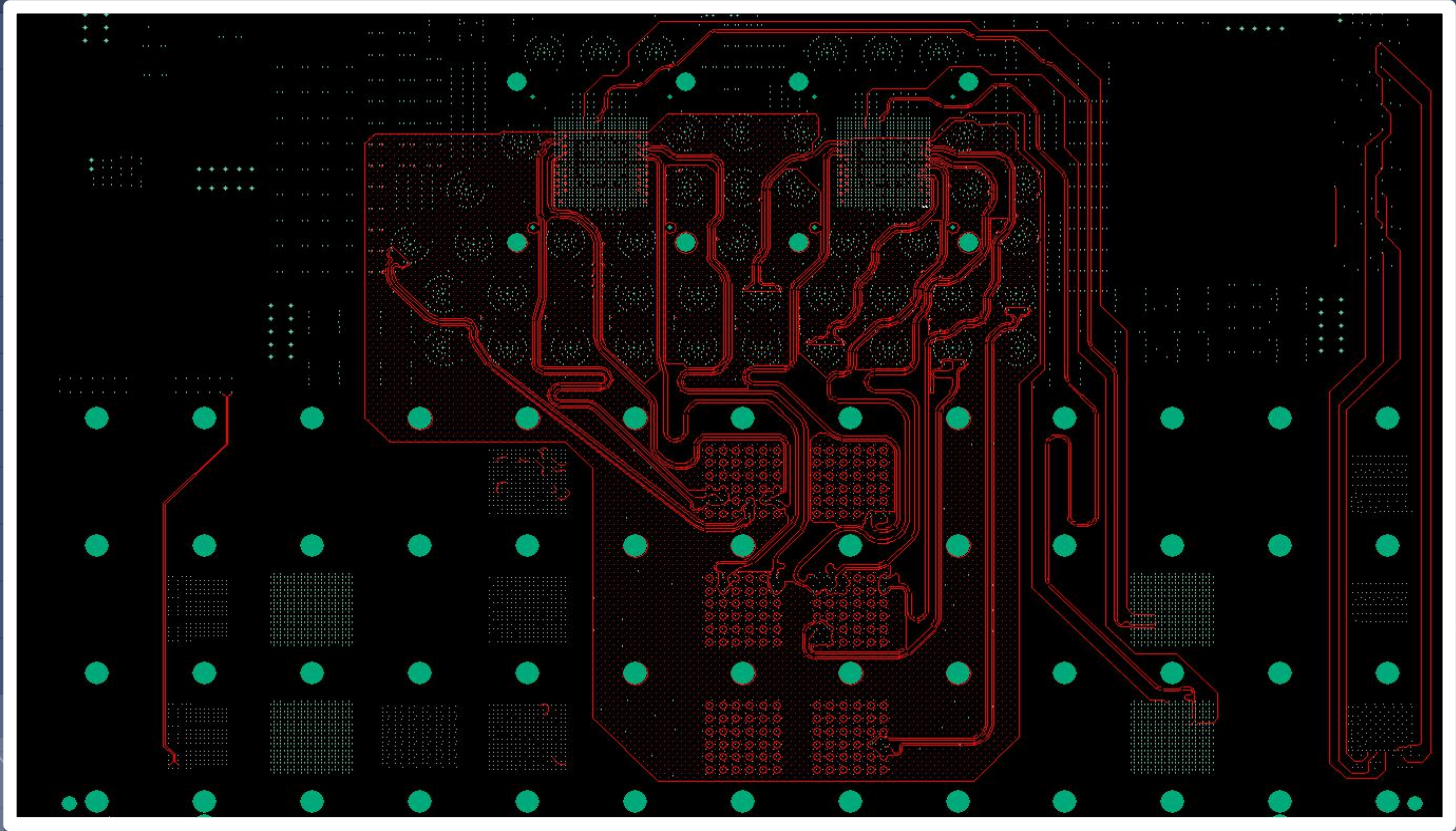
1. UltraFlex Loadboard - High Speed



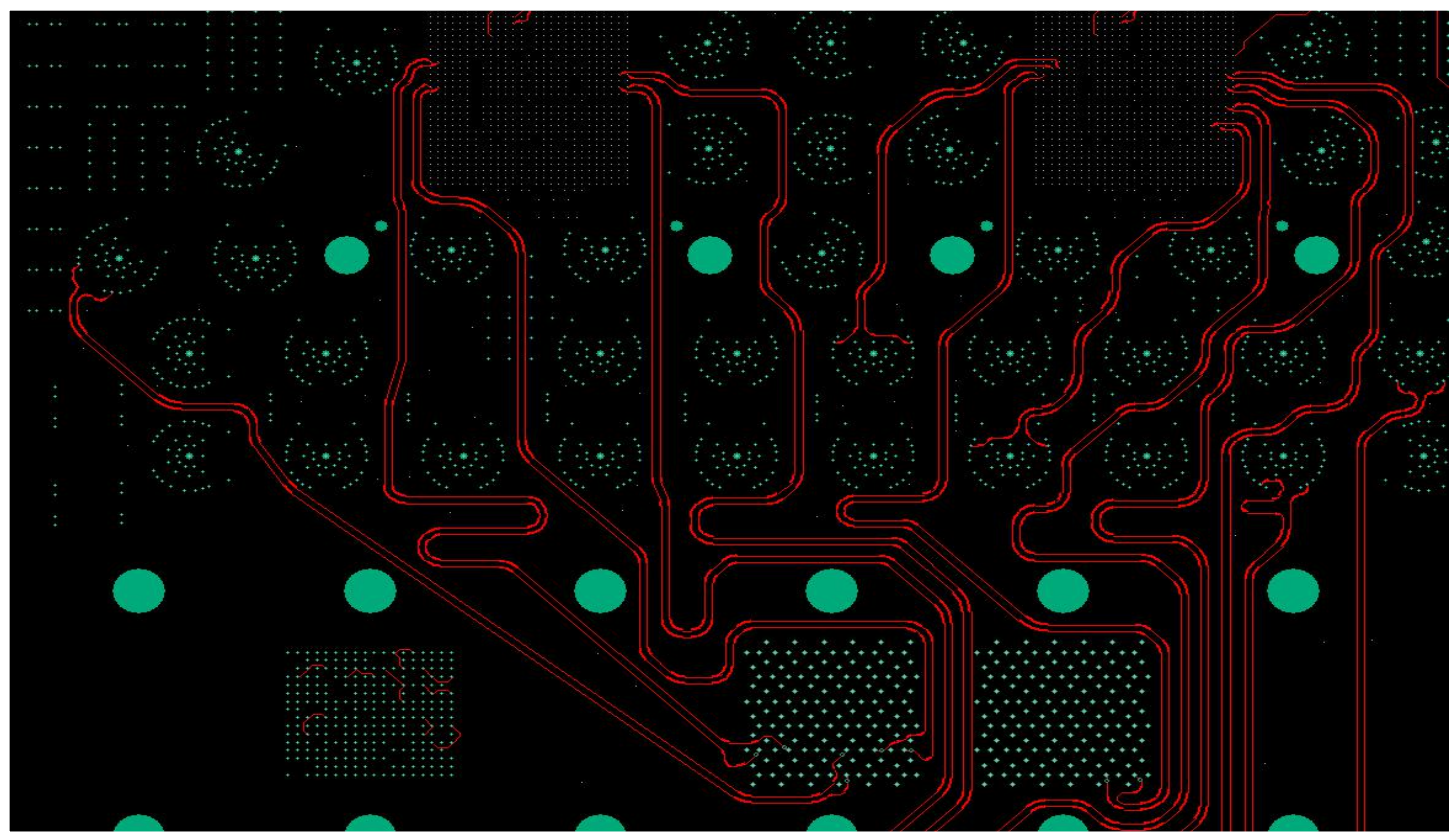
Component placement view



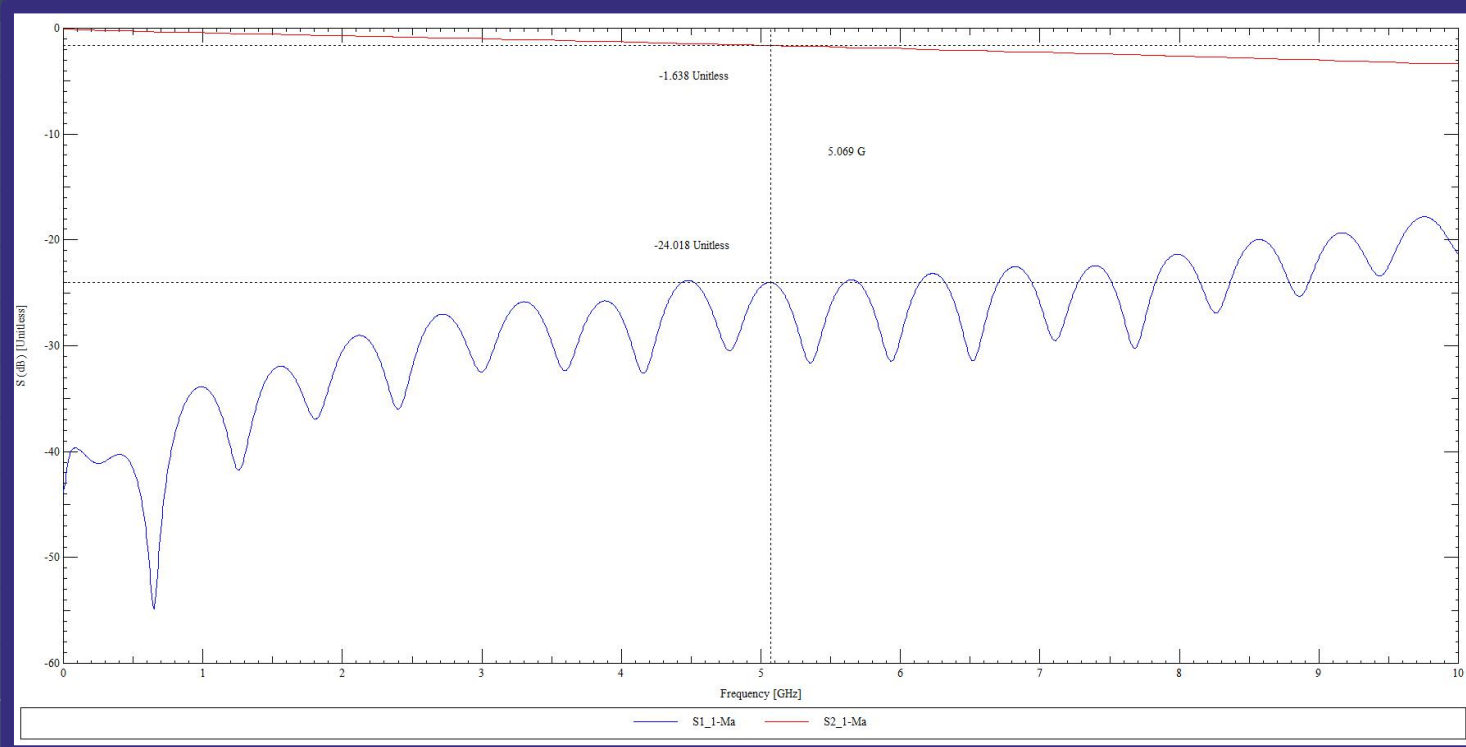
High Speed Signal Layer



Closer look of Routing



S-parameters measurement after optimization



Given for one sample TX channel here, this result is taken after optimizing the layout from Initial SI feedback

Probe card Expertise

Substrate to PIB :

Substrate (MLO/MLC) designs, Probe card designs and Probe Interface Board (PIB/WS) designs under a single roof.

Logic & Memory:

Vast experience in both Logic and Memory devices(wafers).

New Templates & PIB :

On the reception of Mapping & Mechanical, Template creation for new tester platforms or template creation for customized PIB

Probe card Expertise

SPL:

Complex CPC-SPL pattern creation for over 3000 pins in a single day.
Easy to solder reserves of unused IO/Power.

Support boards:

Daughter card and FPCB design to facilitate support/reusage of Universal Probe cards.

Mixed Signal:

Multiple GND designs(mixed signal) for perfect Noise Isolation.

Layer composition:

Stack up proposal along with impedance simulations. Symmetrical and balanced design. Hybrid stack ups with different dielectrics to handle High Speed.

Probe card –Usual cases

Most commonly facing scenarios

CPC,VPC and Direct Docking cases

Power count ranging from 12 to 256

MUX and Relay circuitry

Layers in range of 14 to 48 (impedance controlled boards)

IO count ranging from 512 to 2500

Maximum components:2812 in Direct Docking

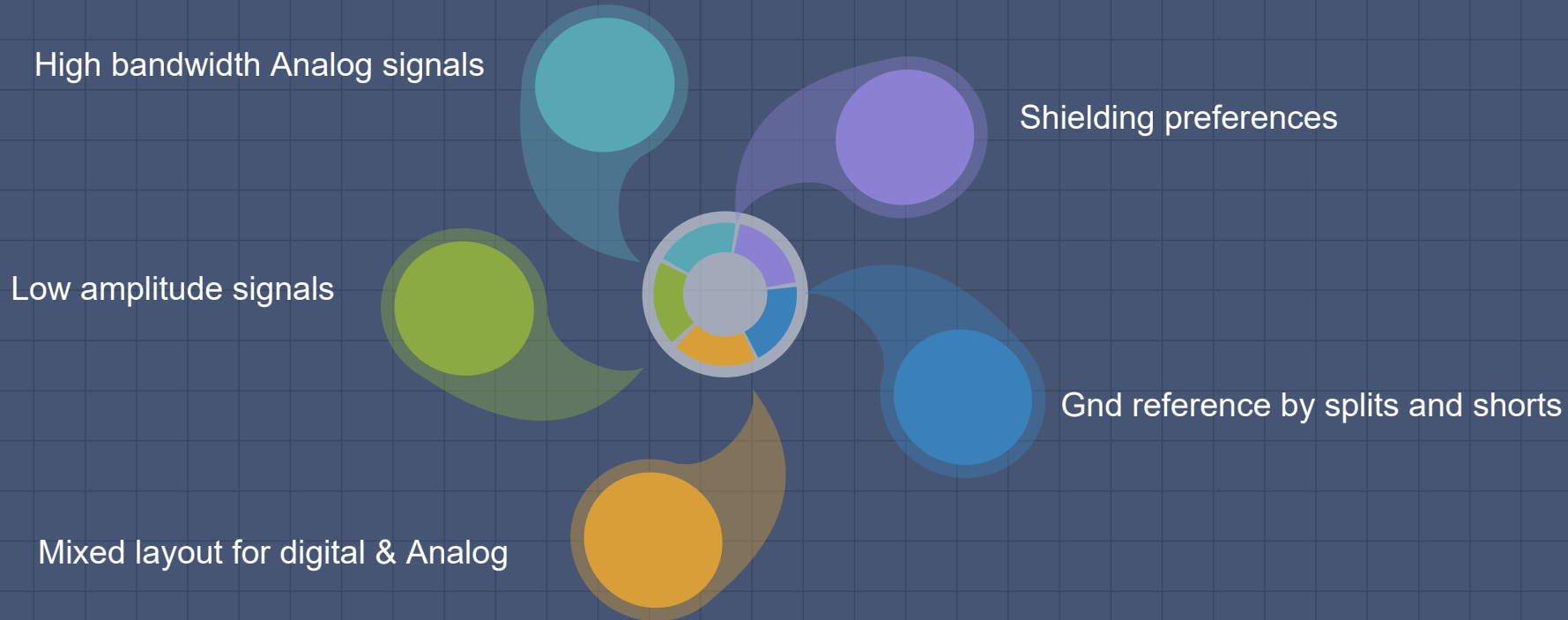
Customized PIB template creation

Maximum of 10256 IO/ Sense lines;1528 power shapes in memory probe cards

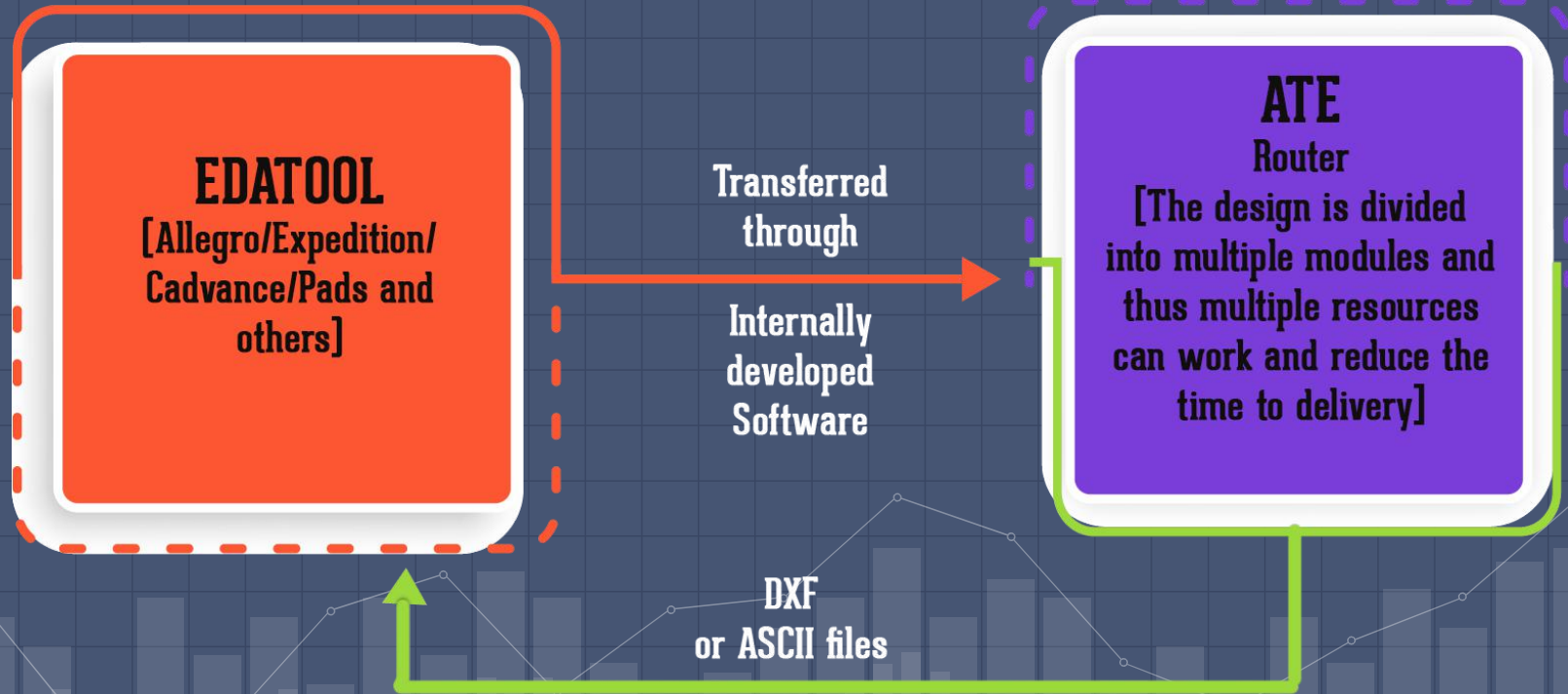
Thickness range of 4.5mm to 6.35mm

Analog signal on ATE

In-depth knowledge in handling Analog Layout

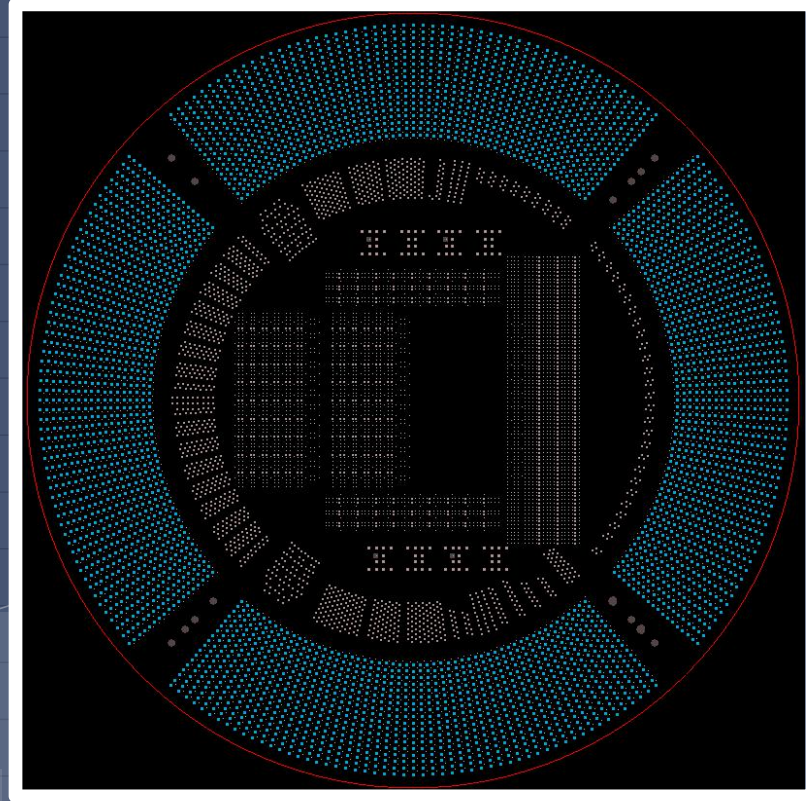


EDA to ATE Router (To Plan and Route)



Following slides will give a closer look
on the recently done
Probecard designs

High pin count SPL/Reserve for CPC



Ultra Flex Probe card (0.4mm pitch :VPC)

1

Net count
1200 [including I/O Power]

2

Connections
Closing to 2000

3

Layers

- 28 in total
- 6 I/O signal layers
- 3 Sense/utility layers
- 6 Power layers

4

Component count
594

5

Device pitch
0.4 mm

6

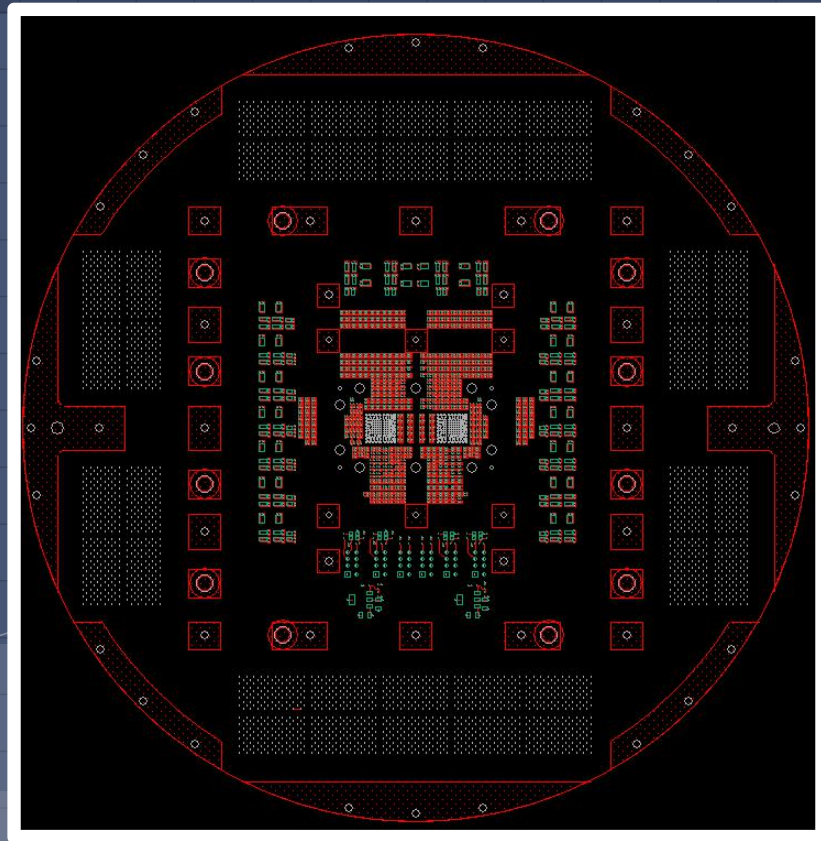
Highlights

- Fine pitch design
- Complete library developed in house
- Validated Gerbers released to FAB

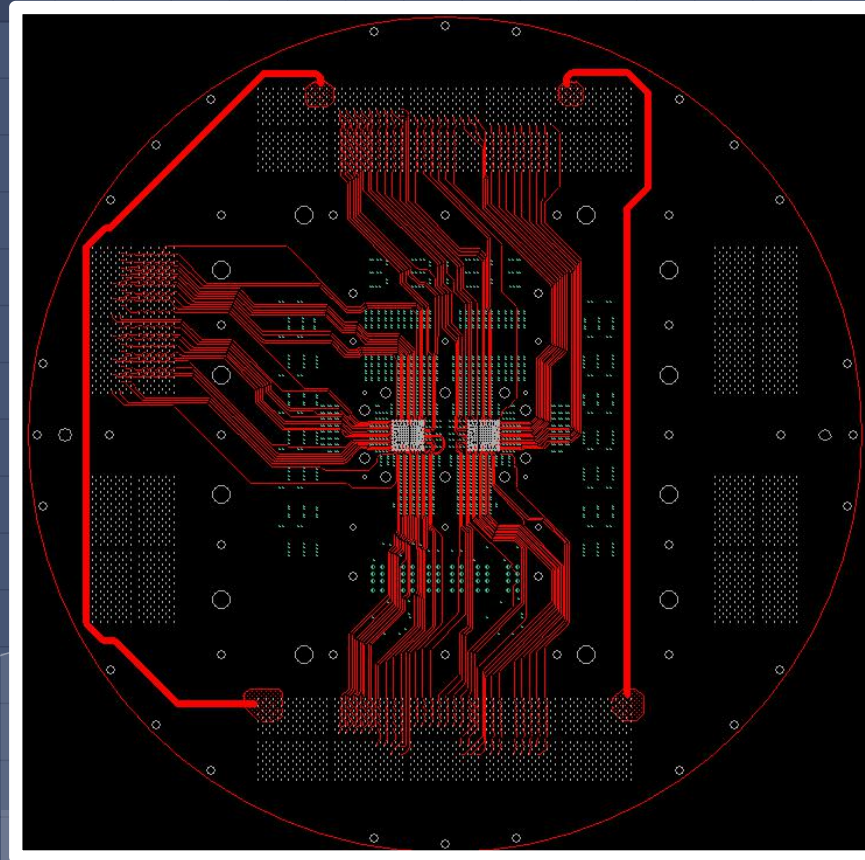
7

Scope
Schematic capture to
Gerbers Caliber

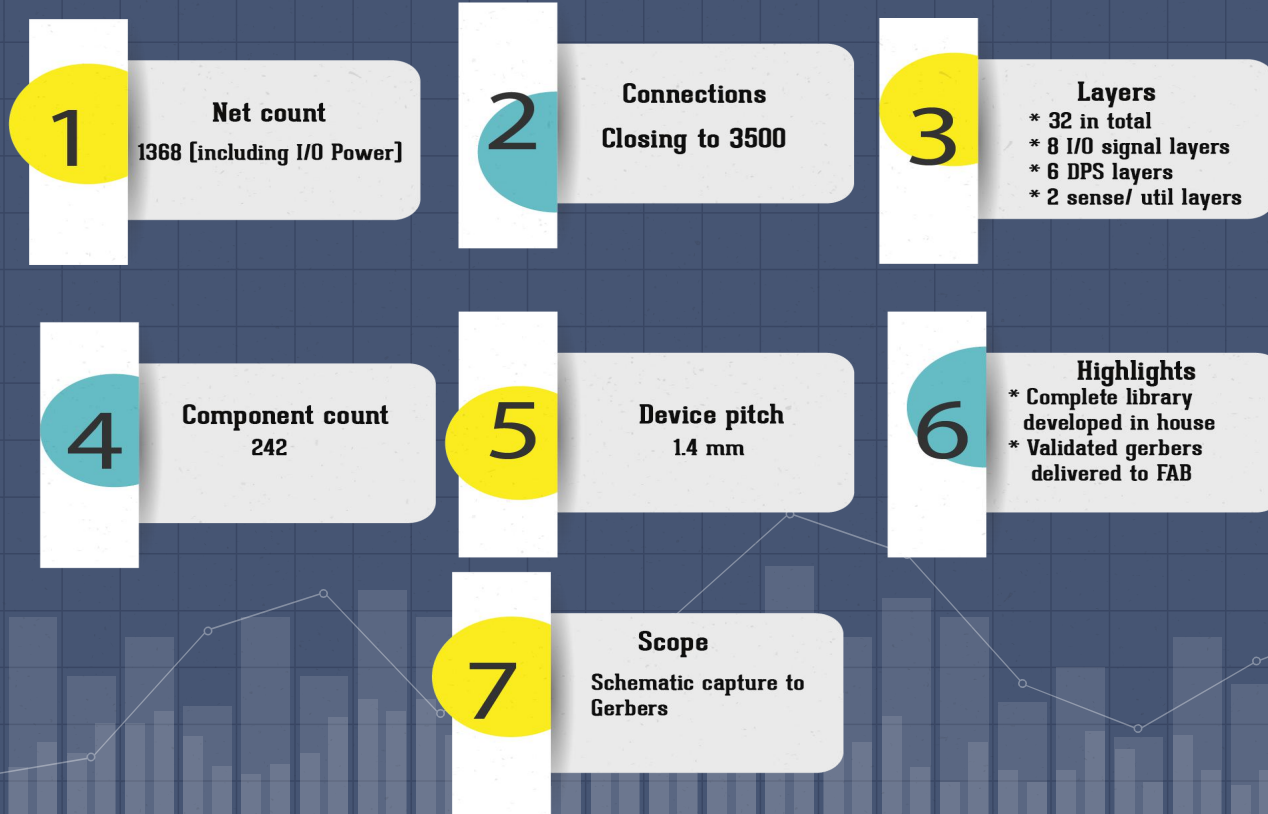
Component placement view



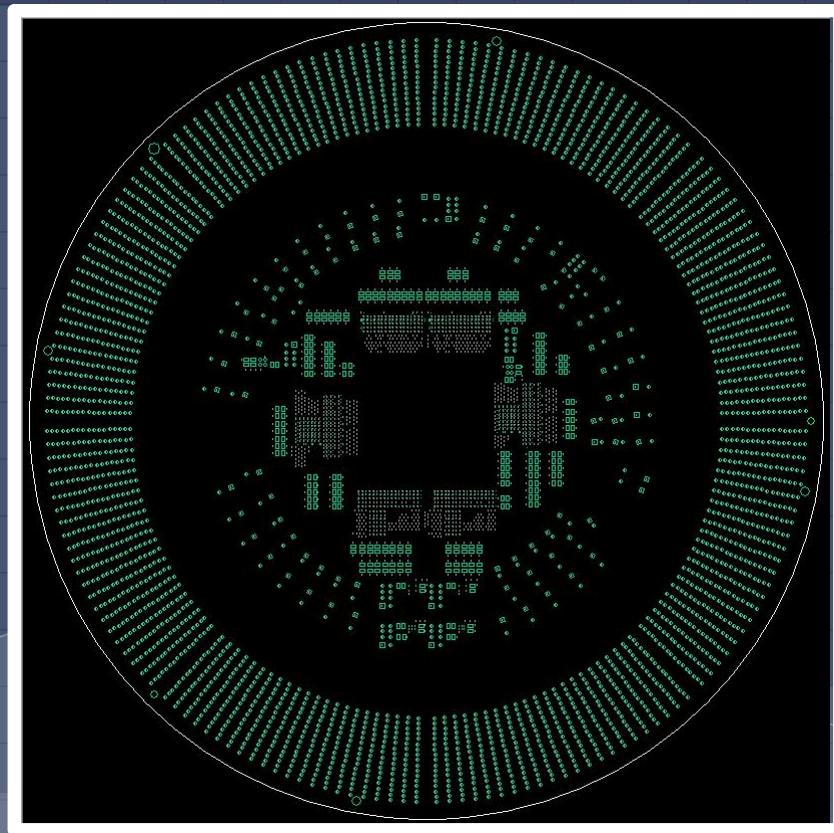
Routing Layer



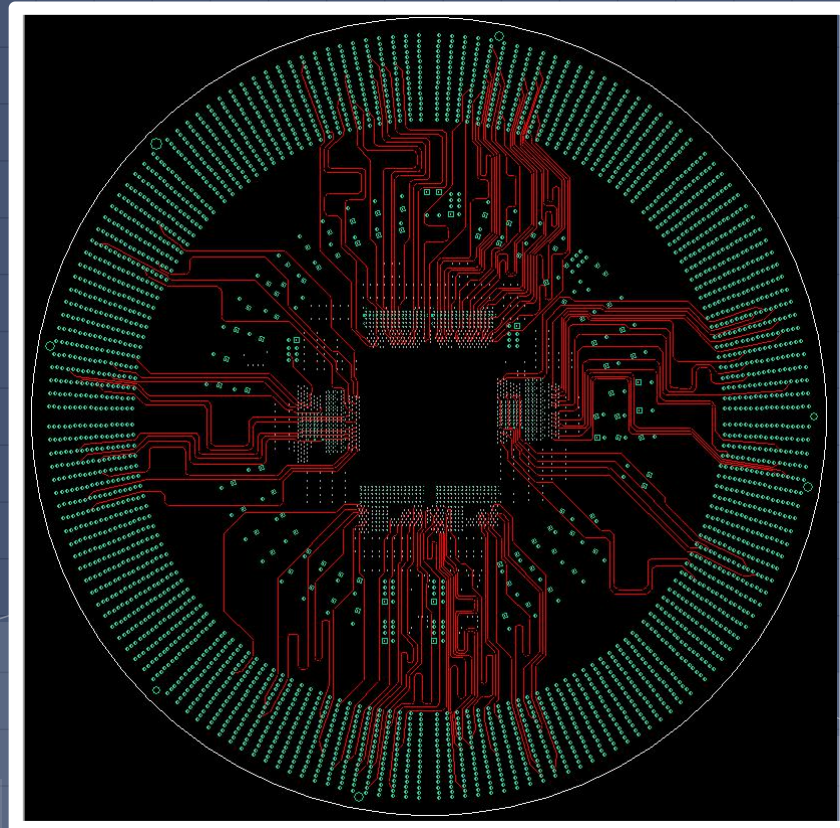
J750 Probe card (CPC)



Component placement view



Inner layer routing image



Following slides will give a
closer look on the recently done
PIB designs



1. Ultra Flex PIB

Net count

1900 [including
I/O Power]

01

Layers

- * 28 in total
- * 6 I/O signal layers
- * 2 Utility layers
- * 6 Power layers

02

Component count

73

03

Highlights

- * Complete library developed in house
- * Validated Gerbers released for FAB
- * Blind vias used at POGO interface area

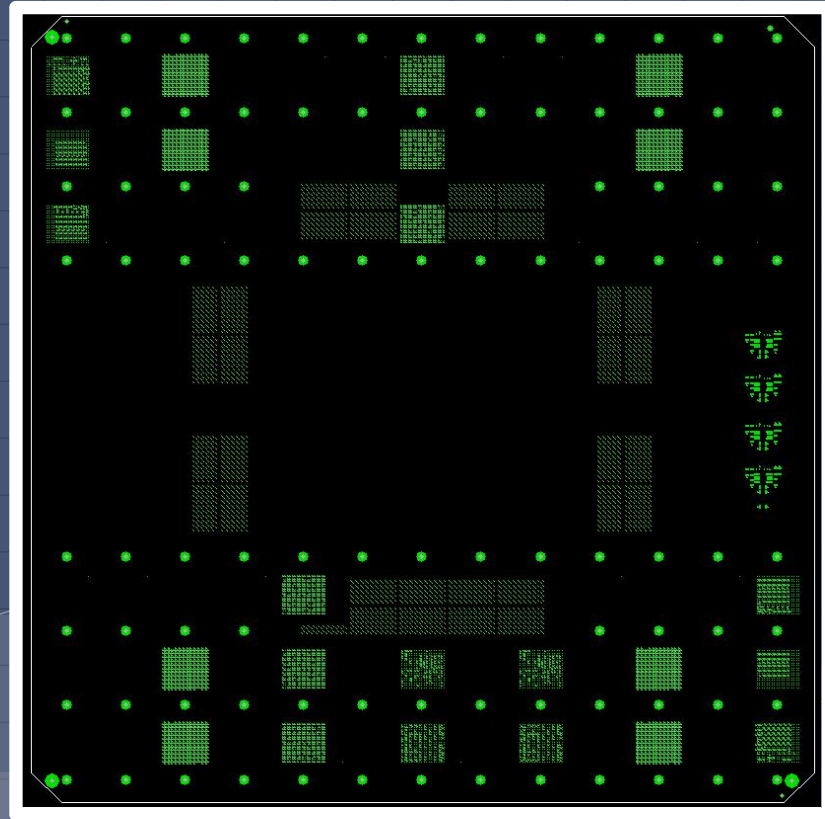
04

Scope

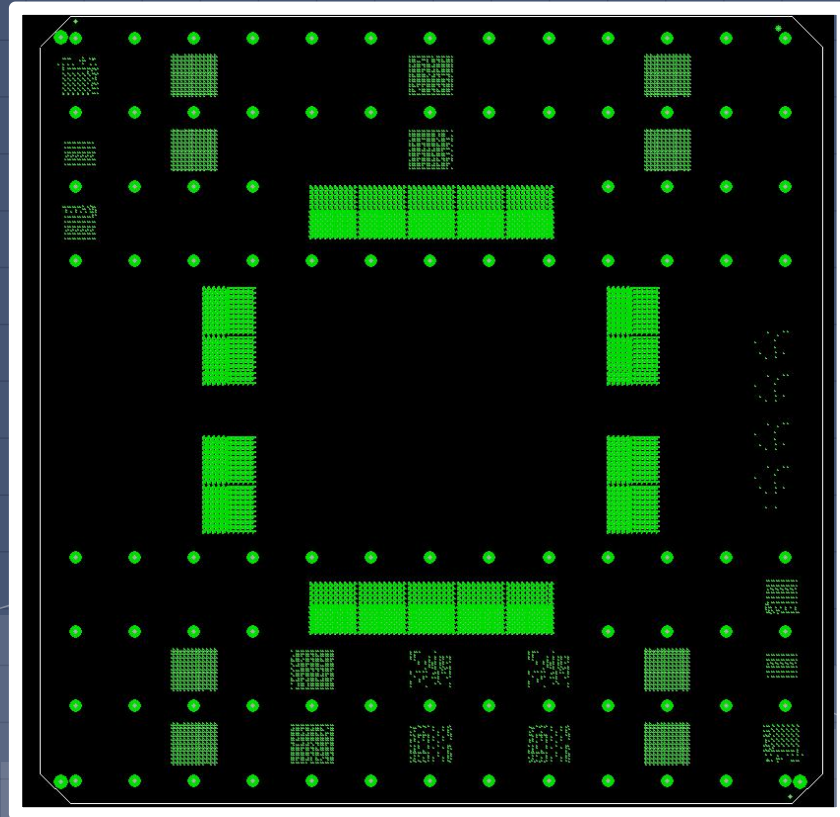
Schematic capture to Gerbers

05

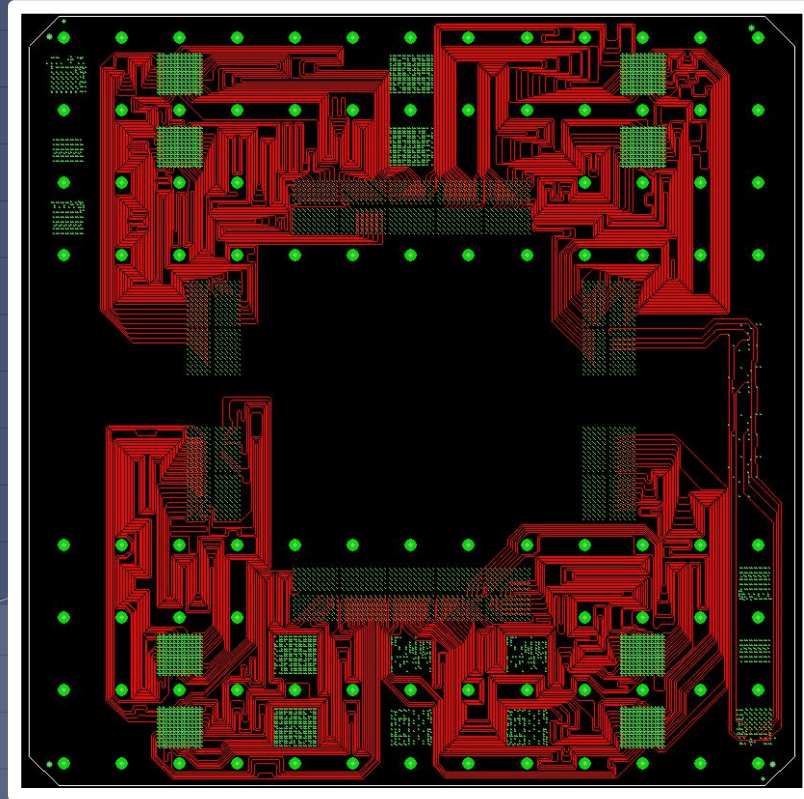
Top view



Bottom view



Signal Layer



2. Integra FLEX PIB

Net count

774 [including
I/O Power]

01

Connections

Closing to 2000

02

Layers

- * 24 in total
- * 12 signal layers (including DCxx)
- * 2 Power layers

03

Component count

228

04

Highlights

- * Complete library developed in house
- * Multiple kelvin routing for DCxx resources

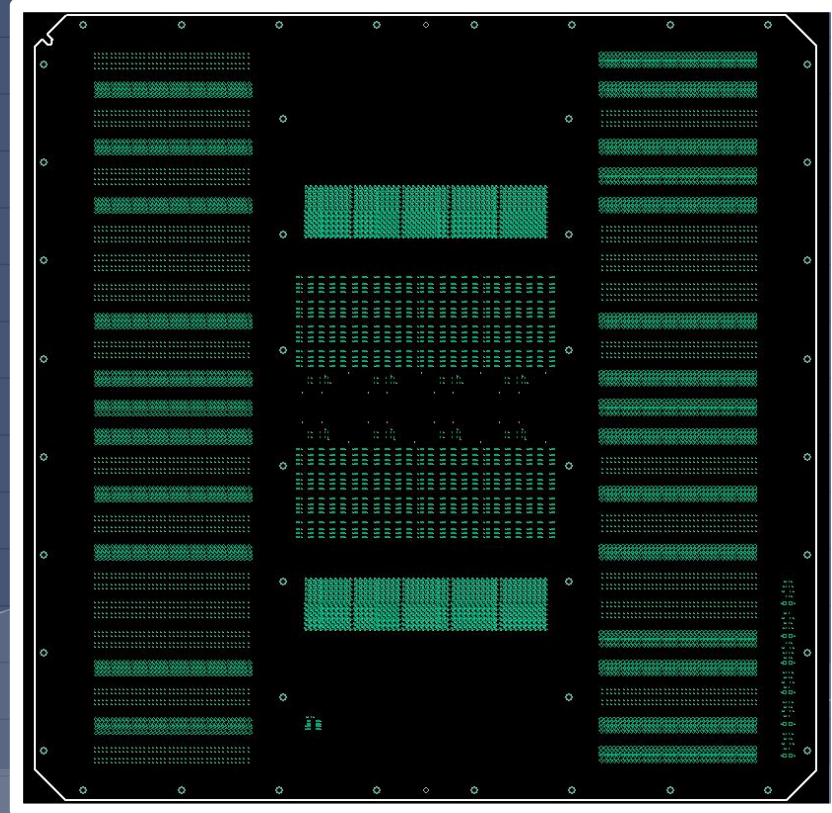
05

Scope

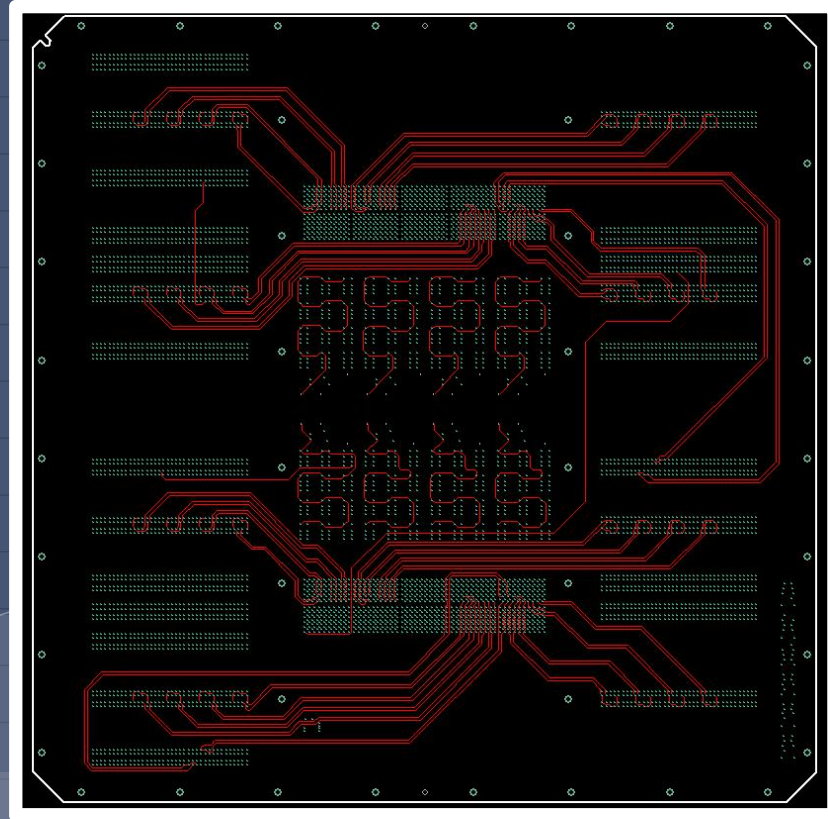
Schematic capture to Completed brd

06

Component Placement View



DC xx Resource Routing



Global Presence

INDIA

Coimbatore

#9B/1, Poombukar Nagar
Thudiyalur,
Coimbatore -641034,
Tamilnadu, India.
Fax: +91 4224978557
Phone :+91 422 4978557

Bengaluru

451, 17th Main,
17th Cross, Sector -4,
HSR Layout,
Bengaluru -560102,
Karnataka, India
Phone :+91 80 49792244

Kolkata

174/1/2 Netaji Subhash Chandra
Bose Road, Kolkata
PO: Regent Park, West Bengal,
India
Phone :+91 8220045100

JAPAN

Mr.Kimiaki Tanaka,
1-12-15 Ogikubo,
Suginamiku,
Tokyo 167-0051, Japan
Phone: +81-3-6321-8051

USA

24230, English Rose PI,
Valencia,CA 91354,
California,
USA
Phone: +1 (510) 378-6927

SINGAPORE

Caliber Interconnects Pte Ltd
89, Short Street ,
#08-06 Golden Wall center,
Singapore 188216
Phone: +65 8661 7282



sales@caliberinterconnect.com

www.caliberinterconnect.com



THANK YOU

Contact us : sales@caliberinterconnect.com

Visit us at www.caliberinterconnect.com

