





About Gorilla Circuits

- **Company:** Privately held company Headquartered in San Jose California. Founded in 2002 after acquiring Teltec Corporation.
- **Services:** We provide a full turnkey manufacturing solution with **PCB Design, Fabrication, Assembly & Test.** All services are controlled in house by our highly experienced Gorilla Circuits staff.
- **Certifications:** ISO 9001:2008, MIL-PRF-55110, MIL-PRF-31032, ITAR Registered.
- **Future Certifications:** AS9100 , NADCAP, ISO 13485.
- **Fabrication Site:** 80,000 sq/ft, 210 employees, High Tech QTA Prototype and low-vol Production.
- **Assembly Site:** 35,000 sq/ft, 70 employees. [Take our video tour here!](#)
- **Lab:** Full Chemical Analysis Lab (DoD Qualified), IST Testing, Cross Sectioning.



1445 Oakland Road, San Jose CA



Layout & Design Overview

Design Operation

- **USA - San Jose, Dallas:** 3 Application Engineers for project management. Each Engineer has layout experience of 15+ years.
- **India- Bangalore:** Gorilla Circuits owned facility and staff. 25 member team supports Gorilla U.S. design in 2 shifts for maximum output.
- **24/6 Design Cycle:** Day Shift in U.S., 2 shifts in India.

Tools

- Cadence Allegro 16.6
- OrCAD & Concept HDL (Schematic Capture),

Capabilities

- Analog / Mixed Signal / High Speed
- Digital / RF / Microwave
- Schematic Capture with Netlist Generation
- Fine Pitch BGA's
(multi-site .3MM & .4MM pitch BGA)
- Design of Blind and Buried via
- HDI Constructions
- Critical Controlled Impedance
- Signal Integrity / Cross talk analysis
- Component footprint library development and maintenance
- Experience across all major Tester platforms from **Teradyne, Eagle, Advantest, Nextest, Verigy, LTX/Credence**



Fabrication Capabilities Overview

Advanced Capabilities

- I/L trace width .5oz Cu .0025"
- I/L trace to trace space .5oz Cu .002"
- Up to 60 layers
- .325" max thickness
- Maximum board size 22.5" x 28.5"
- 34:1 Aspect Ratio (.006" diameter / .200" thick)
- 75:1 Aspect Ratio using Sintering Technology
- Fine Pitch Back-drilling down to .35mm Pitch
- 2.5mil Minimum Laser Micro Via
- 3mil Minimum Mechanical Drill up to 30 mil thickness
- 0.3 mm Pitch on ATE, Daughter Cards, & Motherboards.
- 3mils per inch warp & twist on balanced constructions
- 5% Impedance Control Tolerance
- Maximum 5 Lamination Cycles
- HDI Build-up to 4+N+4
- Via-in-Pad - Non-Conductive & Copper Fill

**For more detailed capabilities ask for our DFM's*

Approved Materials

Insulectro: FR408HR, 370HR, P95, Zeta Lam, ASTRA MT, Tachyon, Terra Green, I-Terra

Nelco: N4000-13EP, N4000-13EP-SI, N4000-13, N4000-13SI, N4000-6, N4000-11, N4000-29, N4800-20.

Rogers: 4003, 4350, 3003, XT Duroid, RT Duroid, Ultra Lam, Theta.

Arlon: 85N, 25N, CuCLAD 522, Arlon 44N.

Panasonic: Megtron 6, Megtron 4.

Nanya: NP170, NP175.

Hitachi: EMC-370

Farad Flex: MCXX Series

ITEQ: IT180A

Ventec: VT47

Dupont: HK04 1mil Polyimide cores

Omega Ply and Ticer: Buried resistors 25, 50, & 100 ohm.

**Hybrid material constructions available*

**Max Cu Weight 3oz*



Assembly Overview

- State-of-the-art 35k sq/ft facility in San Jose just 1.5 miles from our Fab facilities. [Video Tour](#)
- Quick turn NPI with dedicated team, SMT and PTH lines
- Currently running Day and Swing shifts
- Front end engineering services for DFM review
- Advanced Screen Printer
- Pick and Place with Inline SPI (solder paste inspection), AOI (Automatic Optical Inspection) for SMT operation. [See the FUJI ADVANTAGE!](#)
- BGA/hidden solder joint inspection with real time 3D X-ray and solder joint failure, first article inspection with 2D/3D X-ray
- Process Control Plan implemented through the entire process flow
- Self sufficient Liquid Nitrogen Generators
- Flying Probe Test
- Parametric Bench Test



Cycle Times for Manufacturing

- **Schematic Generation**

Approximately 3-5 days

- **Layout / Design**

Lead times typically vary between 5-15 days

- **Fabrication**

1. Single lamination

- a) Standard: 5-10 days

- b) Expedite: 1-4 days

2. Dual lamination

- a) Standard: 12 days

- b) Expedite: 5-7 days

3. 3+ lamination cycles

- a) Standard: 15-20 days

- b) Expedite: 8-12 days

- **Assembly**

Standard leads times range from 3-5 days. 24 hour expedites are available.



Turnkey Advantages

➤ In-House Design:

- ✓ Our internal design team has a direct line of communication with our Fab Process Engineers who have the best and latest knowledge of our facilities DFM rules.
- ✓ Our Design function plays a key role in making the most challenging technologies manufacturable.
- ✓ Expedites design-to-manufacturing cycle with the focus on internal communication.

➤ Lead Time:

- ✓ Our available 24/6 operations for Fabrication and Assembly supplements our design cycles to support critical lead time requirements.

➤ Cost:

- ✓ The ability to consolidate our services into 1 function allows us to present more aggressive pricing to our customers.
- ✓ Eliminates markups on Design, Fab, Parts, Assembly & Test. We do not broker.

➤ One supplier:

- ✓ No finger pointing between multiple suppliers. If it's not right, we fix it.



For more information please contact:
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Fabrication facility:
1445 Oakland Road
San Jose, CA 95112

Assembly facility:
2060 Ringwood Avenue
San Jose, CA 95131

East Coast office:
99 Pine Hill Road
Nashua, NH 03063