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.
**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.

### 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

### Tools

- Cadence Allegro 16.6
- OrCAD & Concept HDL (Schematic Capture),
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
- **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:
info@gorillacircuits.com

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