ASIC design flow


System Level Review - Time Required (2-3 days)
- Review system schematics, block diagrams and specifications.
- Understand challenges particular to operating environment, such as conducted/radiated noise, RFI, lightning and environmental exposure.
- Understand final product (not just the ASIC) certification requirements such as CE, UL compliance.
- Produce ASIC based board level block diagram clearly identifying each pin and required external component support.
- Identify board level architectural tradeoffs that would lead to most cost effective silicon integration.

Quote - Time Required (1 day)
- NRE
- Unit price
- Completion schedule

Preliminary Design - Time Required (3 to 8 weeks)
- Schematic capture
- Simulation
- Silicon Emulation of external analog interface sections, such as strain gauges, thermocouples, and photodiodes.
- Silicon Emulation of high-risk analog sections.
- Preliminary Test Specification
- Preliminary Design Specification

Preliminary Design Review - Time Required (1 day)
- Review simulation results and data
- Review emulation results and data
- Review and update Preliminary Design Specification
- Review and update Preliminary Test Specification
- Identify ASIC design/board architecture change, if any

Design Integration - Time Required (1 to 4 weeks)
- Transistor level schematic capture
- Test interface design and schematic capture
- Re-simulation of modified or effected sections
- Re-emulation of modified or effected sections
- Critical Design Review Specification

Critical Design Review - Time Required (1 day)
- Review final ASIC schematics
- Review CDR Specification
- Sign-off
Layout - Time Required (3 to 6 weeks)
  Physical Layout
  DRC
  LVS
  Back annotation
  Re-simulation, if needed
  Re-emulation, if needed

Fabrication - Time Required (2 to 3 weeks)
  Mask Fabrication
  Untested Prototype Assembly

Prototype evaluation - Time Required (1 week)
  Prototype evaluation by STA
  Prototype evaluation by customer
  Prototype approval

Production Pilot Run - Time Required (4 weeks)
  Complete production test program
  Deliver tested pilot parts (production packaging)
  Review and sign off Test Program
  Release Design to Production

Production
  Standard Turn – 16 to 20 weeks
  Fast Turn – 8 to 15 weeks