Current Capabilities of Serial 10Gb/s Devices

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Start the Study Group?

- 10Gb/s electronics has been shipping for over a year in GaAs HBT. Conventional Bipolar Silicon ready now.
- Serial technology will drive the lowest cost solution
- Optics, fiber, and system design issues should drive coding/scrambling debate

• It is time to start the study group!

Recent Roadmap, OC192 Devices

- Technology
  - GaAs HBT in volume production, moving to Silicon Bipolar now
  - Volume produceable surface mount packaging, no SMA connectors
- Integration
  - 16:1 Mux includes PLL, CML output
  - 1:16 Demux includes CDR, CML input
  - No high speed signals outside the package

Current Developments in SONET chips

- Working in SiGe to achieve 12.5Gb/s for FEC.
- Utilize SiGe to extend to 20Gb/s and faster
- Development of cost effective analog blocks

Other discussion points

- Relative pricing for 10Gb/s should be much less than 4x of 2.5Gb/s at similar volumes
- Scrambling permits lower device cost and power due to 1x line rate vs. 1.25x line rate. ‘Datacom’ quality CDR is not cheaper than ‘Telecom’ quality CDR.
- Market extends beyond networking based applications

Existence Proof

- Silicon Mux with Integrated PLL
- Packaged in QFP, in a socket, on FR4
- Production rev will enhance eye further