Equalizers for 2.5Gb/s over copper
HSSG - Copper Ad Hoc

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Communication
through innovation

Copper ad hoc
IEEE 802.3 HSSG

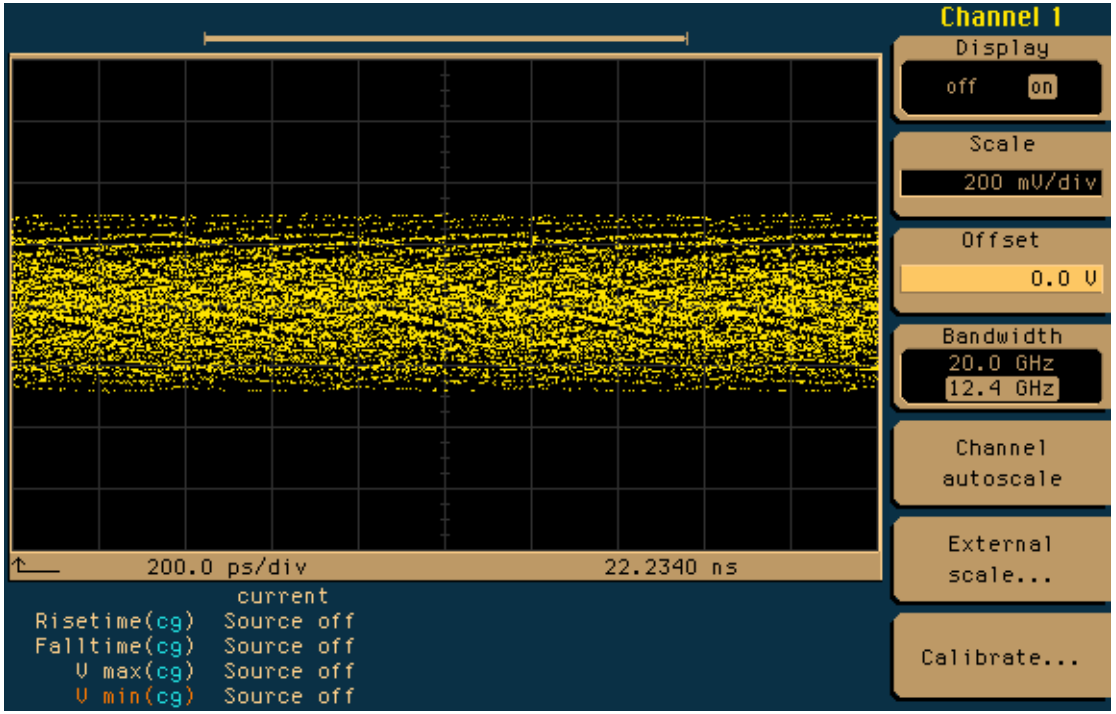
- Objective: Demonstrate Technical Feasibility of 100m over copper: objective b., 2.5Gb/s over 100m
- Existence Proof
  - GD16510 2.5Gb/s Adaptive Cable Equalizer

- Background
  - An existing market employs 75 ohm cable at 100m to 150m lengths.
  - Technology developed for the Digital Video market (1.485Gb/s) has been adapted to the SONET market (2.488Gb/s)
  - Cat 6 has similar 1/root hz characteristic

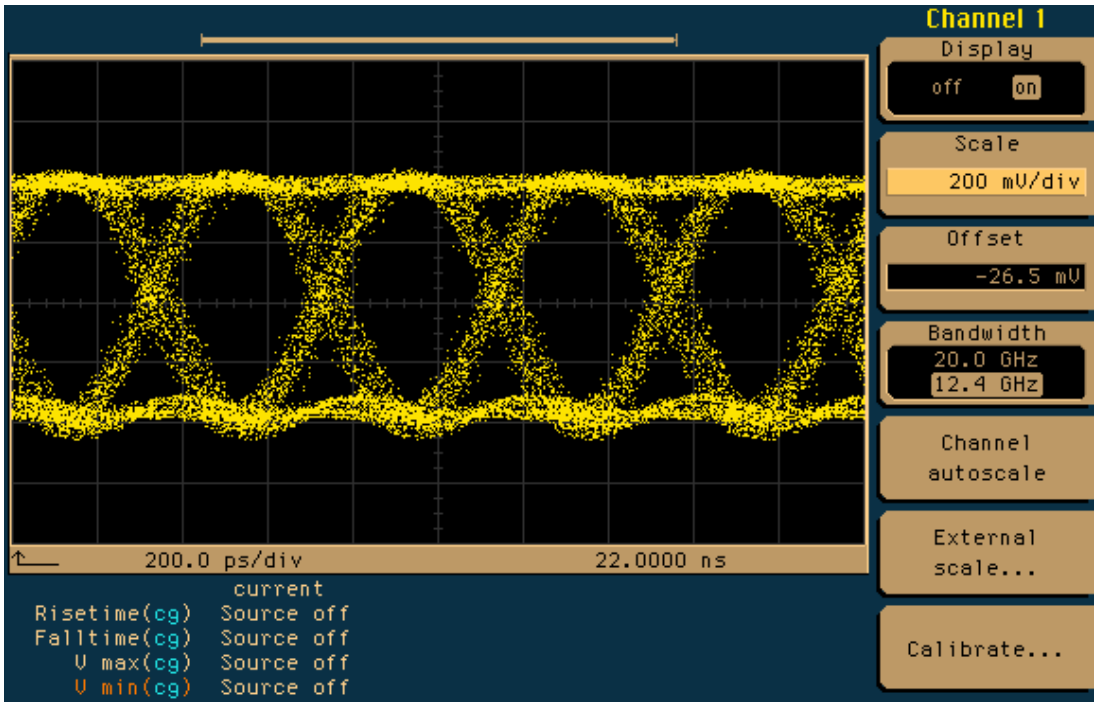
GD16510 2.5Gb/s Cable Equalizer Background

- GD16510 compensates for more than 20dB loss at 1250MHz
- Follow on device scheduled for 4Q99 Sampling
  - Provides 30db of gain
  - Up to 150m of cable
  - 16 pin SOIC package
- Equalization for 10Gb/s more difficult
  - Loss dominates equation
  - Critical issues in design
    - High gain at high frequencies
    - Impedance mismatches become more critical

Unequalized output after 70m



Output of equalizer with 70m of cable



Equalizer Applicability

- Technology existence proof provided for Coax, Cat 6 experiments being performed
- 4ch at 2.5Gb/s introduces issue of crosstalk
  - Impact of crosstalk may be severe on analog equalization
  - No echo cancellation

- Data sheets and test reports will be provided upon request. Email me a woodruff@giga-na.com