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Signal Integrity in High Speed Designs

Basic Parameters: Signal amplitudes and speeds, di/dt, dv/dt. R, L and C of typical structures, noise.
Basic signal integrity issues: Resistance, ground loops and differential signaling, capacitive coupling and shielding, inductive coupling and cancellation, RFI.
Impact on high-speed digital circuits: propagation speeds, transmission lines, matching and measurements, power rail decoupling, board layout, line drivers/receivers, ground bounce, crosstalk.
Synchronization issues: Clock distribution & clock skew, clock recovery, phase-locked loops.

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