

# Introduction

## ❖ Topic

- Development of SerDes IP based on 018nm CMOS

## ❖ Team member

- Team member: D.H Kim and W.S Kim
  - Ser/PE (Pre-emphasis) part: D.H Kim
  - Equalizer part: W.S Kim

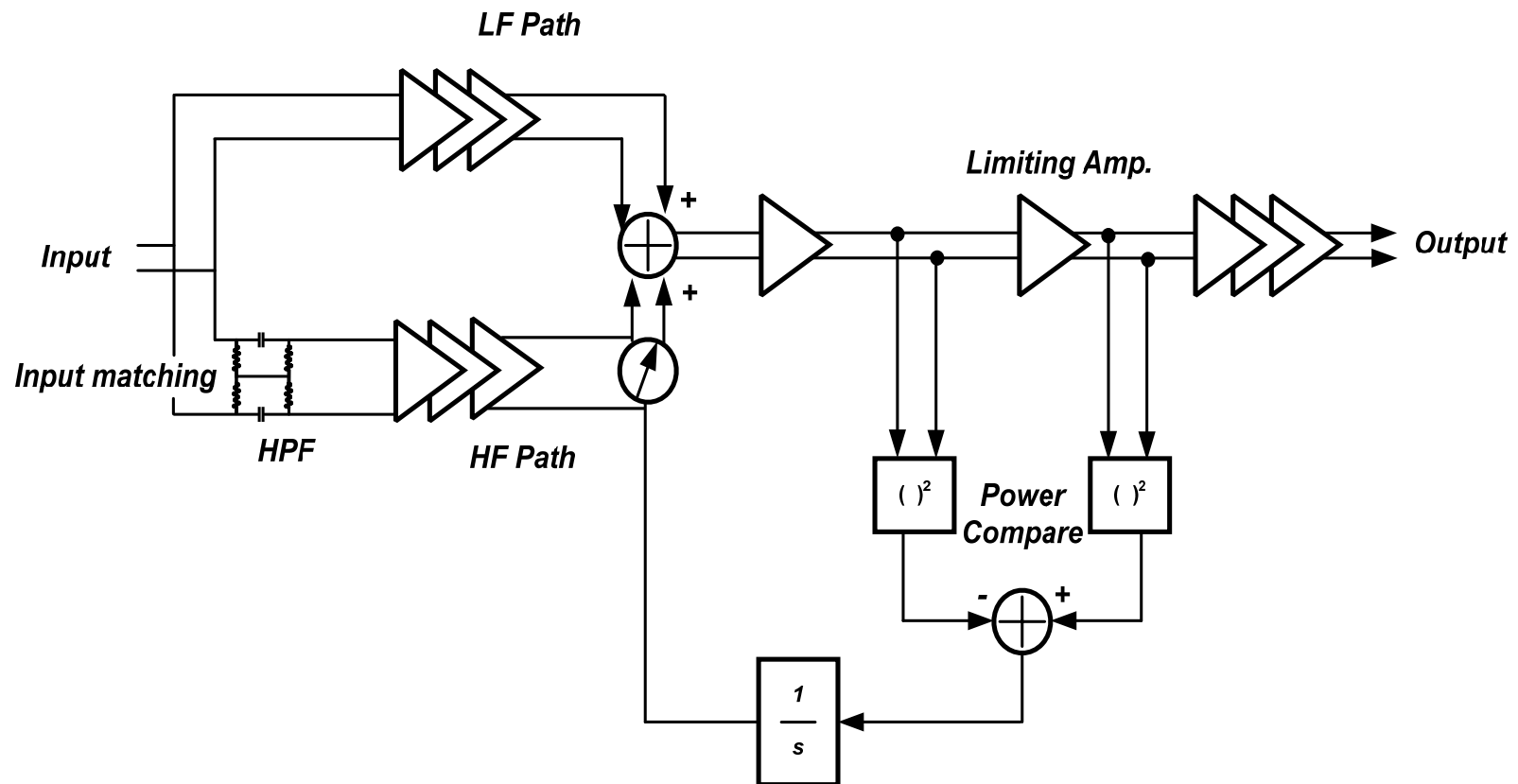
## ❖ Sponsor

- System2010

# A 2.7 Gb/s Adaptive Equalizer in 0.18um CMOS technology

## ❖ 2.7Gb/s Adaptive Feed forward Equalizer

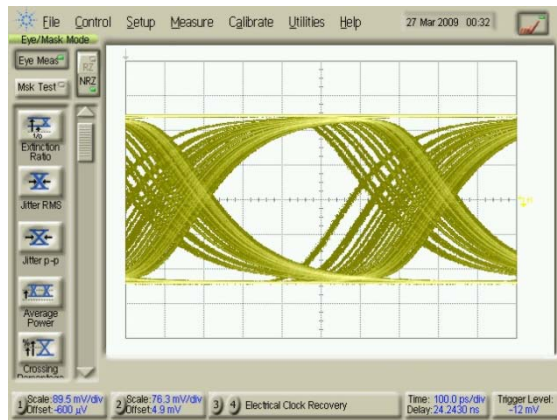
- Adaptive Line Equalizer Using Power Comparison



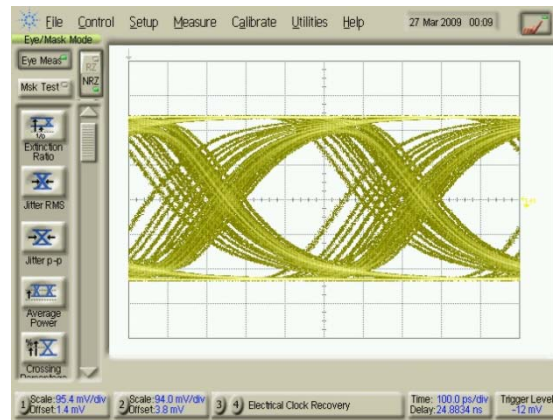
# Adaptive Line Equalizer Using Power Comparison

❖ PRBS 7 with 15m display port cable

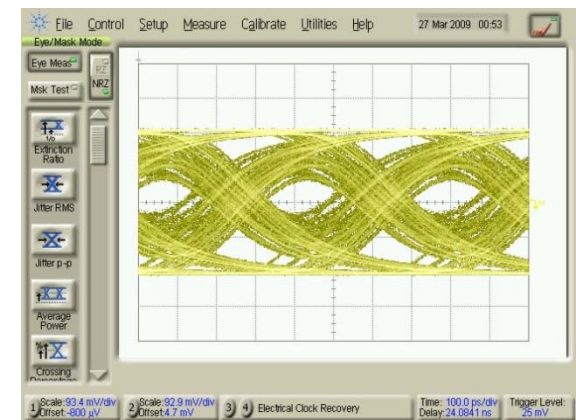
- EYE-diagram



1.6Gbps



2Gbps



2.7Gbps

## A 2.7 Gb/s Adaptive Equalizer in 0.13um CMOS technology

### ❖ Next Plan

- Equalizer filter: Capacitive degeneration amplifier (Cherry-Hooper amplifier)
- Power Detector: Current steering rectifier to increase the output magnitude
- V/I Converter:  $f_T$  doubler tunable V/I converter

