

Back to Reality
(Additional Info)

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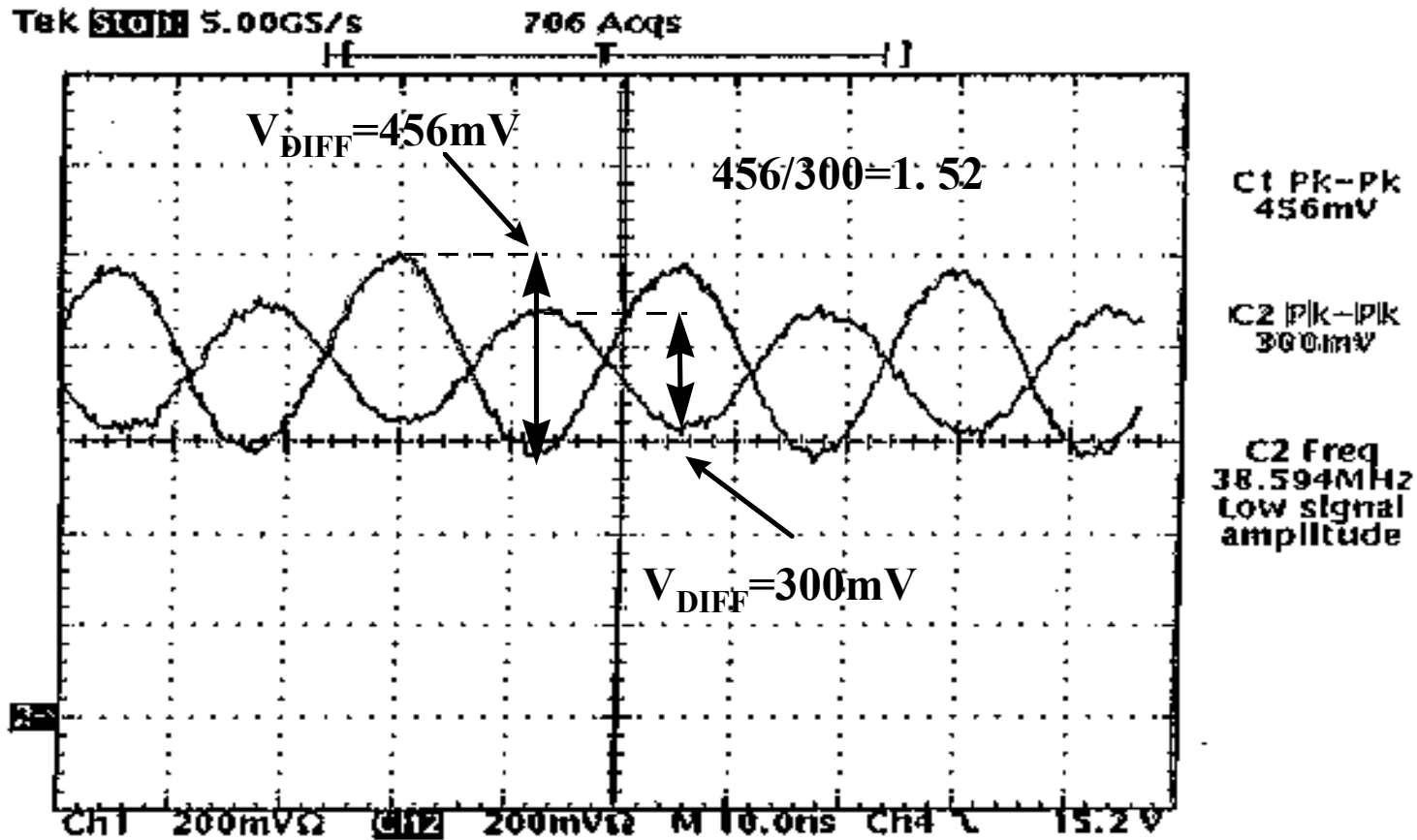
SPI-2 Working Group
4/18/97



Fast-40 Transfer

Adaptec Measured Data

LVD Signals 40 MHz, 8 Meter Cable, Asymmetrical Driver



Simulation of Adaptec's Data

Assumptions:

Asymmetric Current Drivers

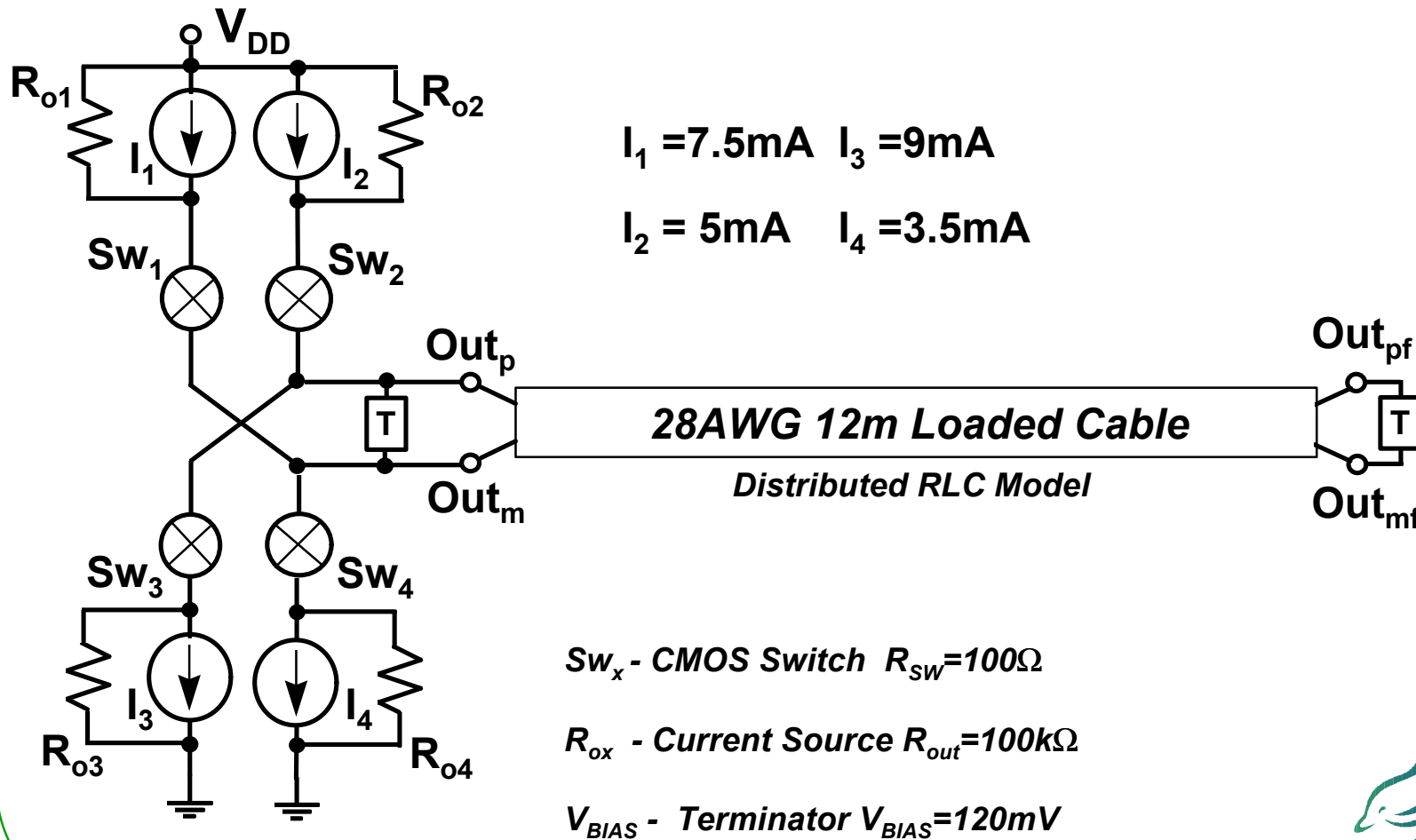
Terminator $V_{BIAS}=120mV$

$R_{TERM}=120 \Omega$

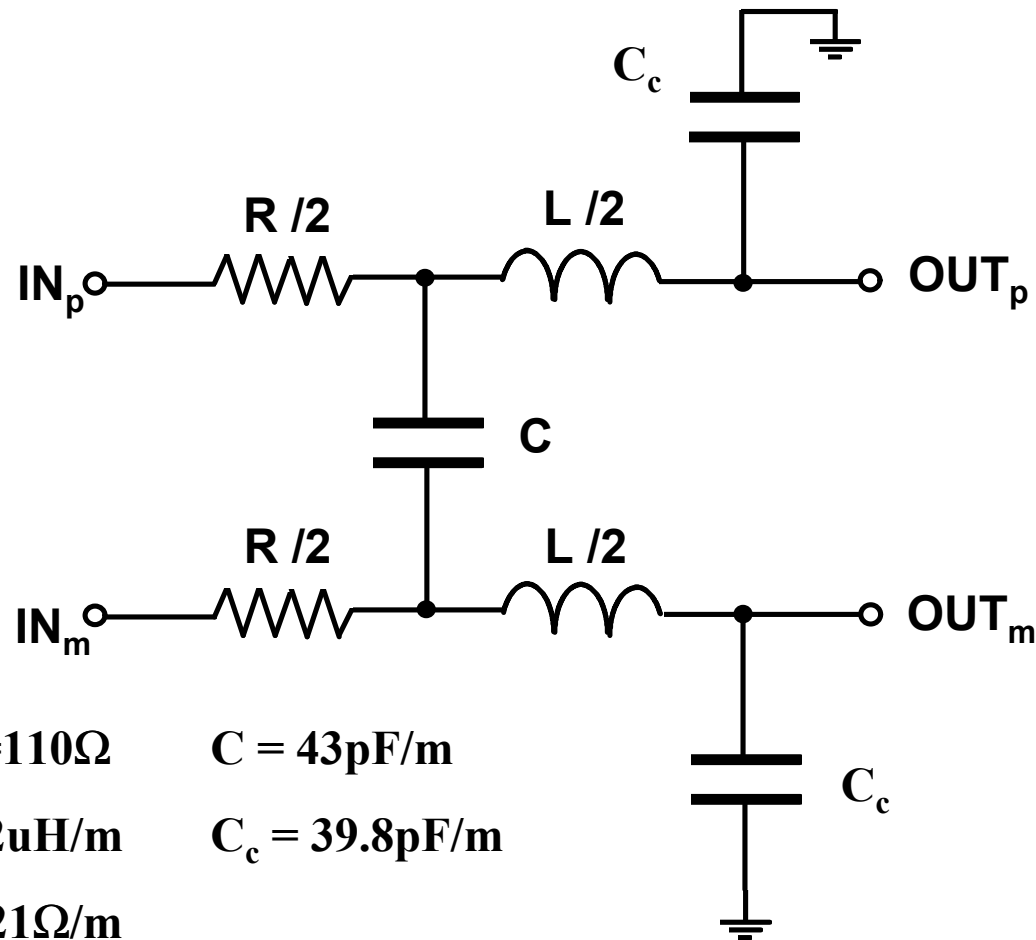
8m 28AWG Cable



Current Setting



28AWG Cable Model



$$Z_{O\ DIFF} = 110\Omega$$

$$L = 0.52\mu\text{H}/\text{m}$$

$$R = 0.221\Omega/\text{m}$$

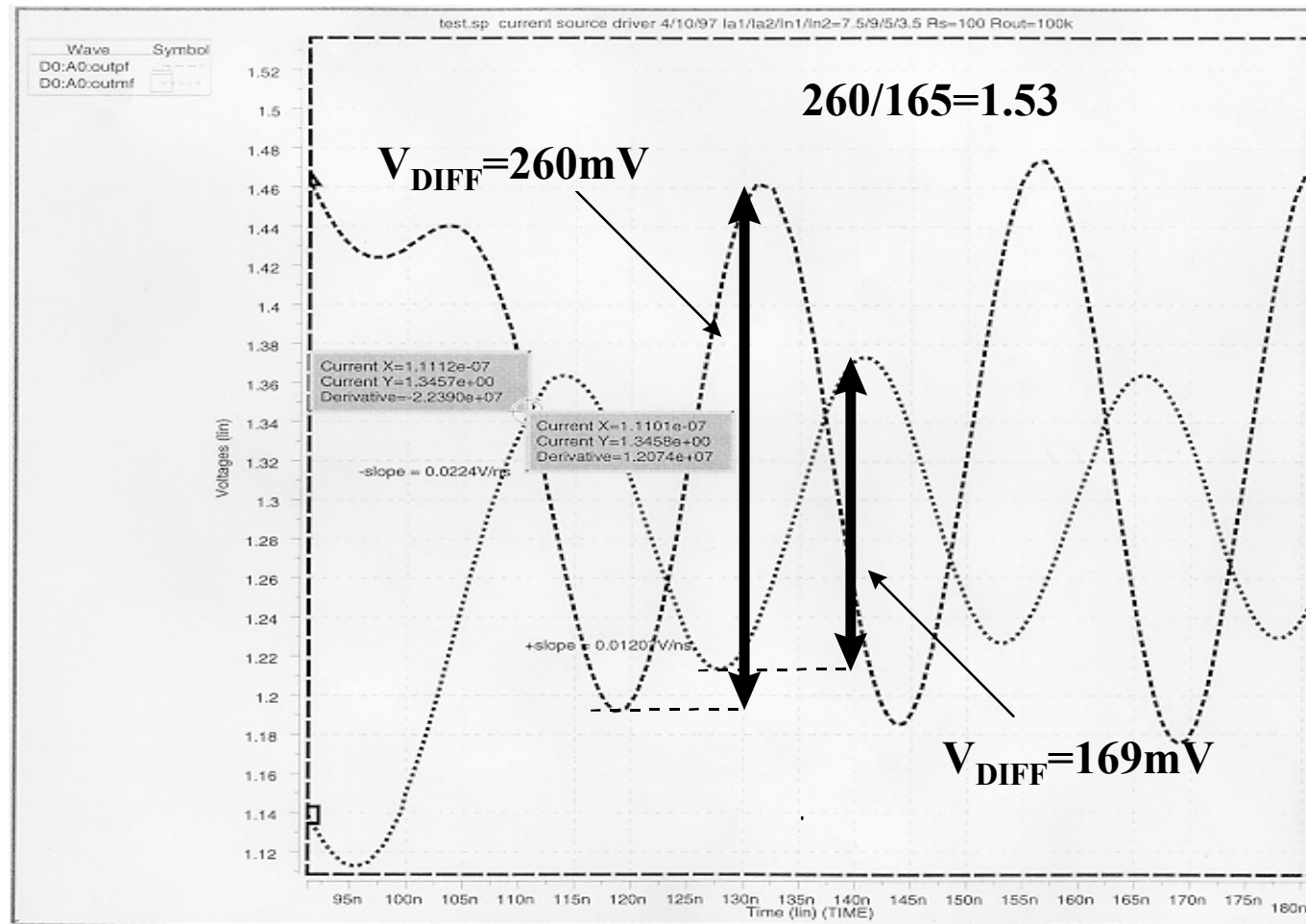
$$C = 43\text{pF}/\text{m}$$

$$C_c = 39.8\text{pF}/\text{m}$$



Fast-40 Transfer

Simulation Results 12m Cable



Summary

Asymmetric Signals @ Fast-40 Transfer

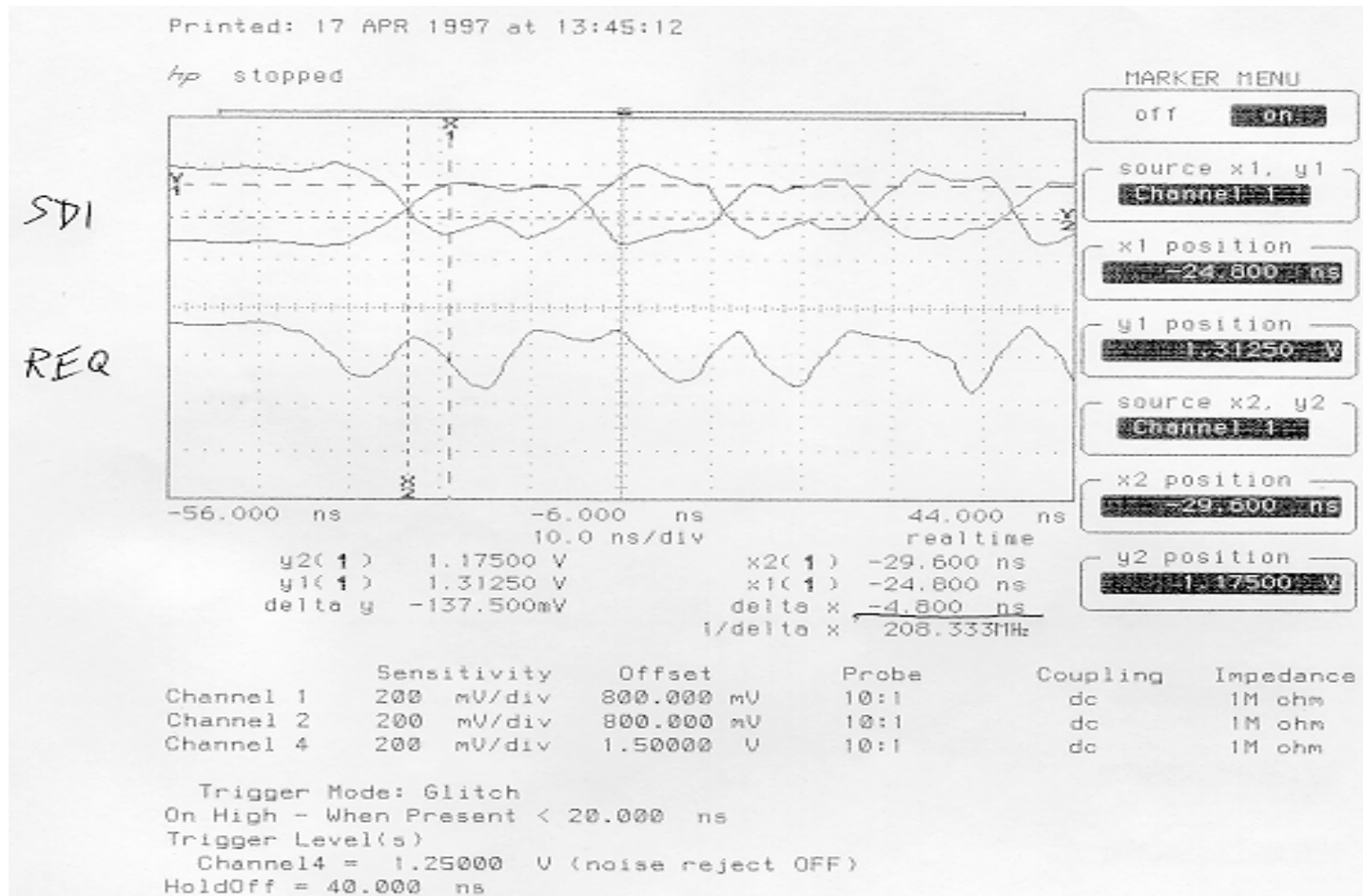
What Causes it?

- 1) **Current I_P vs. I_N Mismatch**
- 2) **I_1/I_2 and I_3/I_4 Current Ratio**
- 3) **R_{out} of Current Sources**



Fast-80 Transfer

Setup Time



Fast-80 Transfer

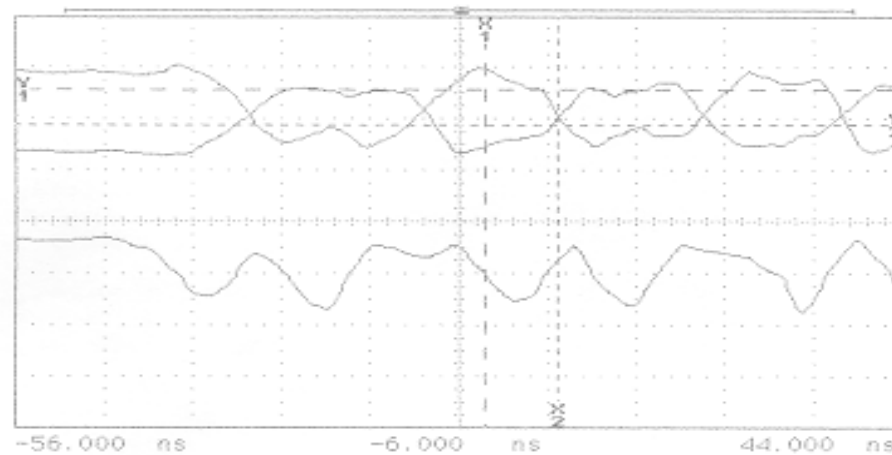
Hold Time

Printed: 17 APR 1997 at 13:46:27

Asp stopped

SDI

REQ



MARKER MENU

off on

source x1, y1

Channel 1

x1 position

-3.200 ns

y1 position

1.31250 V

source x2, y2

Channel 1

x2 position

5.200 ns

y2 position

1.17500 V

realtime
 y2(1) 1.17500 V x2(1) 5.200 ns
 y1(1) 1.31250 V x1(1) -3.200 ns
 delta y -137.500mV delta x 8.400 ns
 1/delta x 119.048MHz

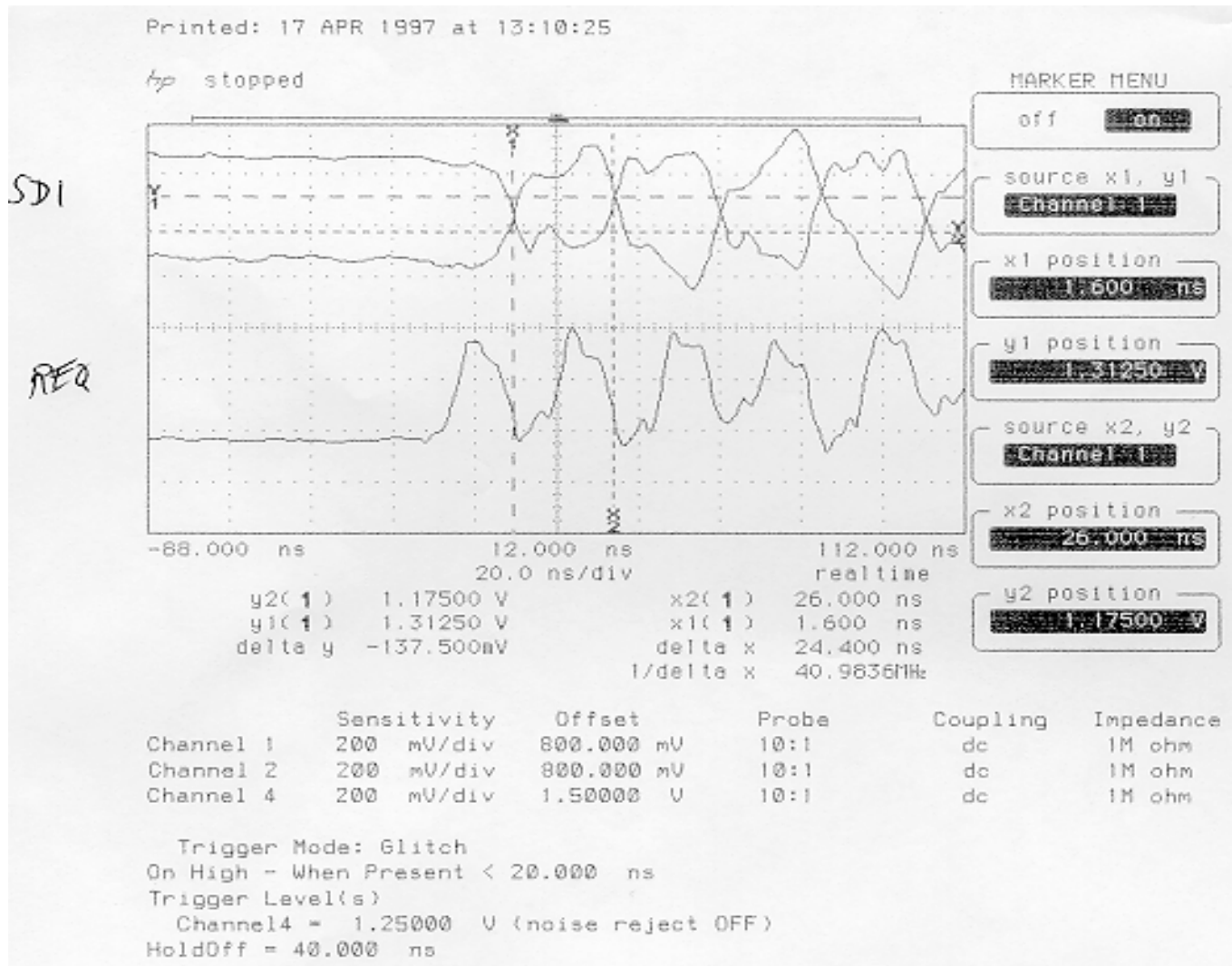
	Sensitivity	Offset	Probe	Coupling	Impedance
Channel 1	200 mV/div	800.000 mV	10:1	dc	1M ohm
Channel 2	200 mV/div	800.000 mV	10:1	dc	1M ohm
Channel 4	200 mV/div	1.50000 V	10:1	dc	1M ohm

Trigger Mode: Glitch
 On High - When Present < 20.000 ns
 Trigger Level(s)
 Channel4 = 1.25000 V (noise reject OFF)
 HoldOff = 40.000 ns



SYMBIOS
L O G I C

Fast-40 Transfer



SYMBIOS
L O G I C