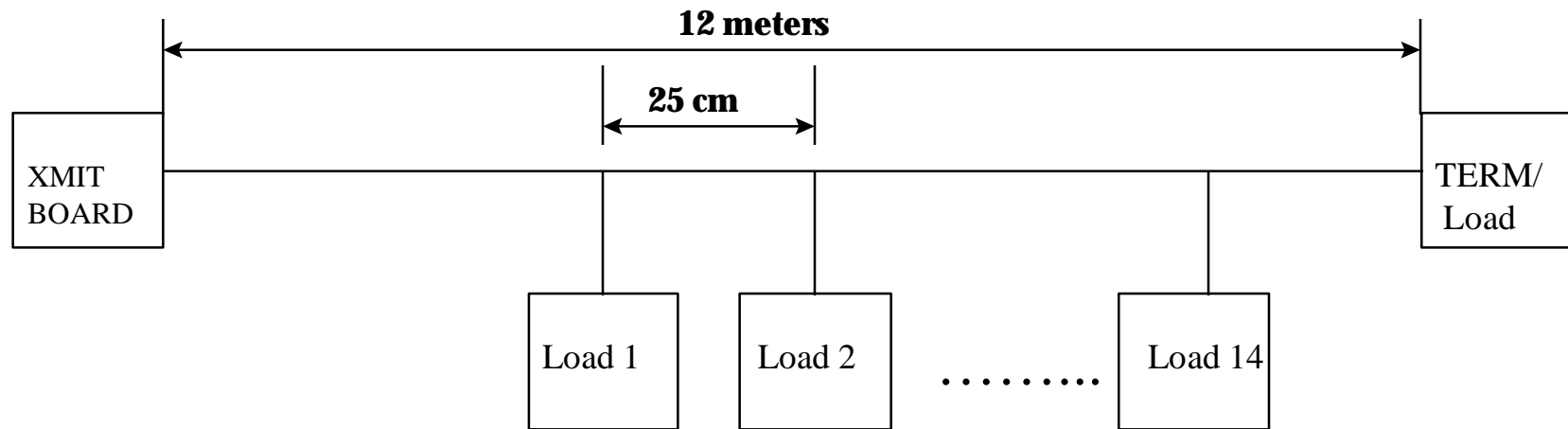


TEST CONFIGURATION



- XMIT board sends Pseudo Random Pattern (run length of 7).
- Capacitive boards with different values on data lines.
- Capacitance values of 12 pf, 15 pf, 18 pf used.
- Also did mismatched values of 18/15 pf, 15/12 pf
- Cable used is Hitachi Twisted Flat Series 23915



HITACHI CABLE #23915

Conductor	30 AVG 7/38 Tinned
Insulation	PVC
Conductor Resistance	0.344 ohms/meter
Capacitance	48.3 pf/meter
Impedance	102 ohms
Propagation Delay	5.07 ns/meter
Skew (max)	0.146 ns/meter



Tests run with drive level of 1 volt pkpk

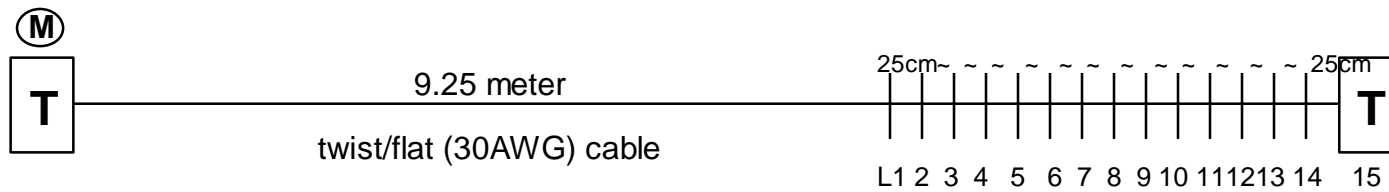
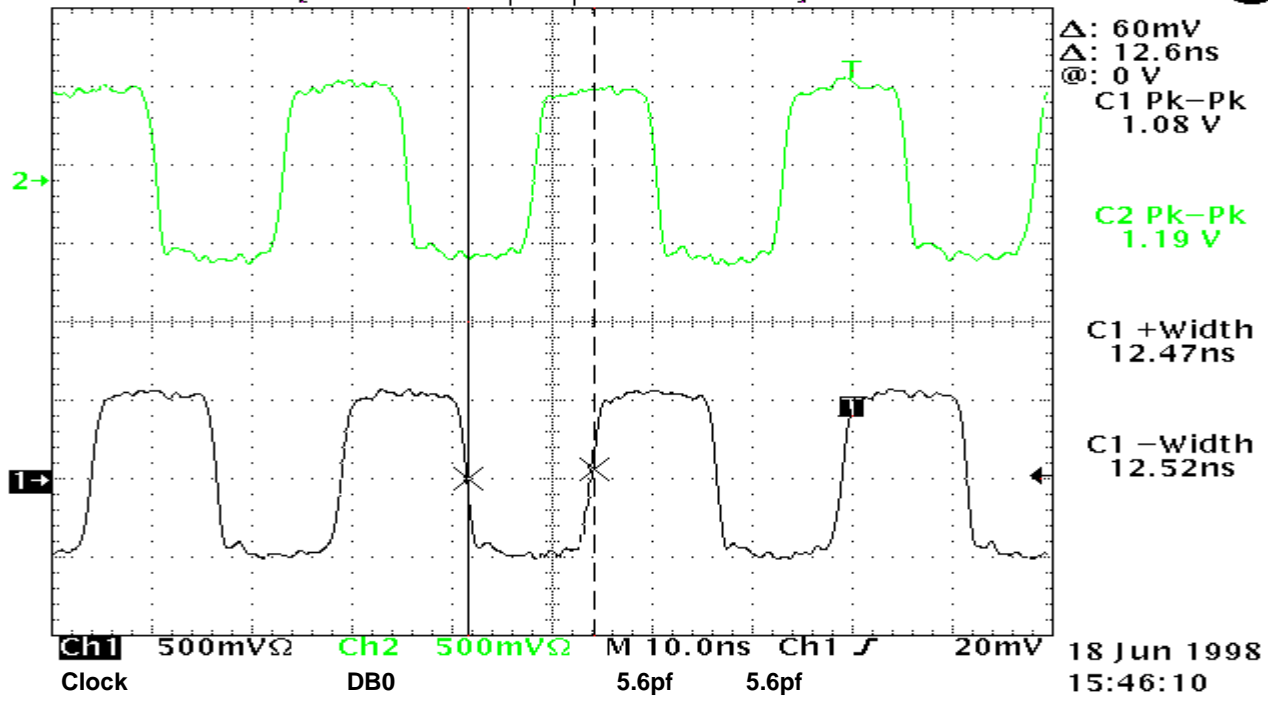
**Measured eye pattern at various load points on different data leads
different capacitance.**

Trigger point varied plus/minus 60 mv.

Also measured loss on different data leads that had different capacitance values.

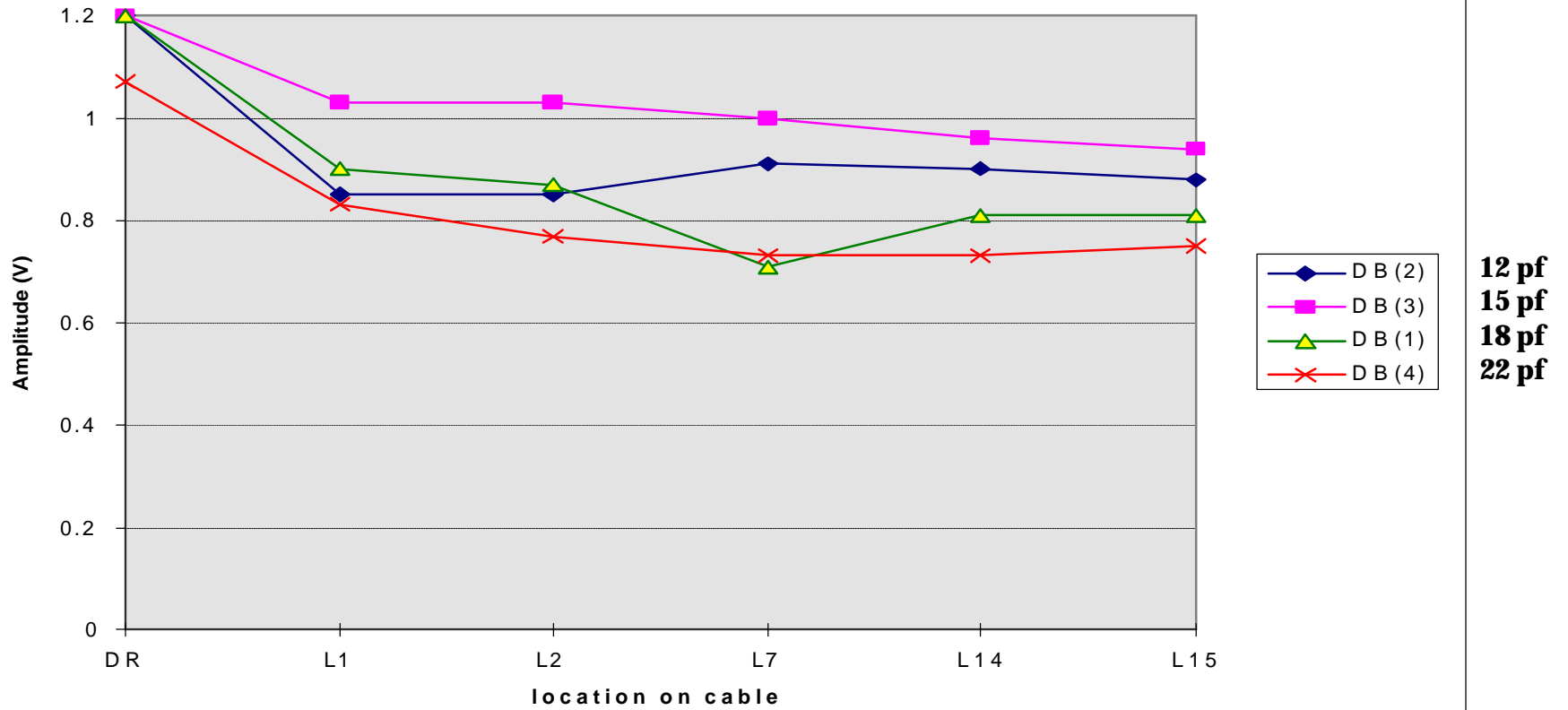
Tek Stop: 2.00GS/s

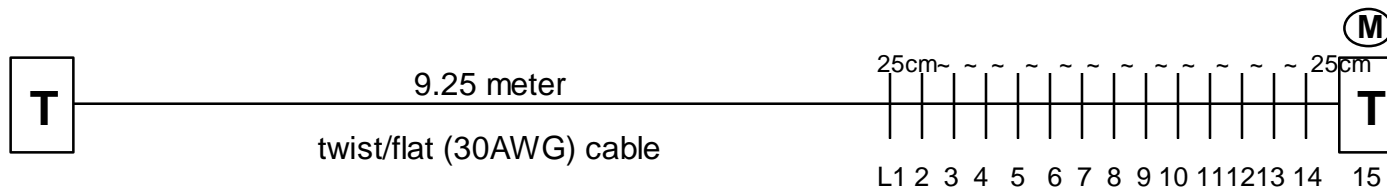
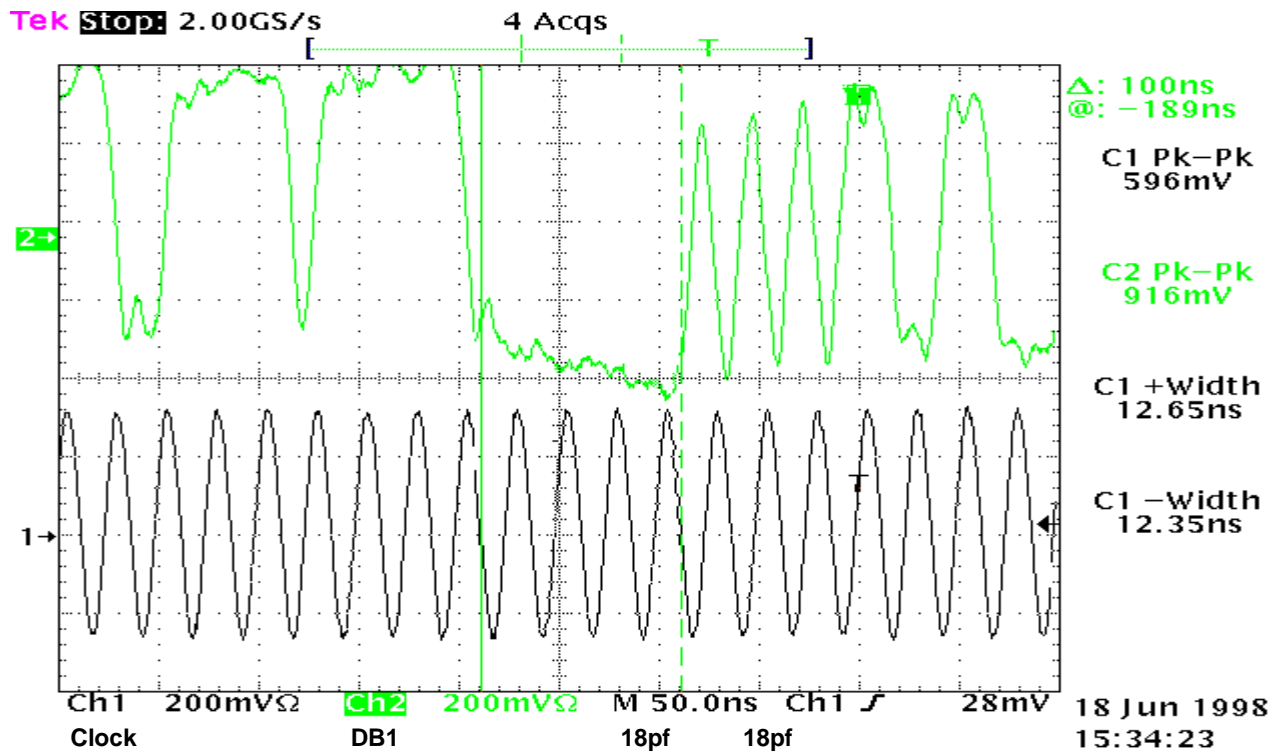
839 Acqs



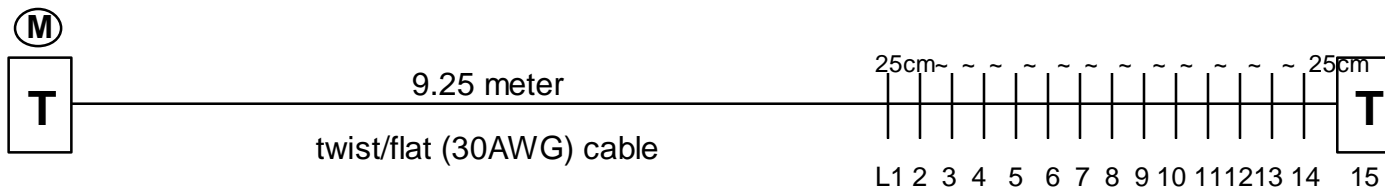
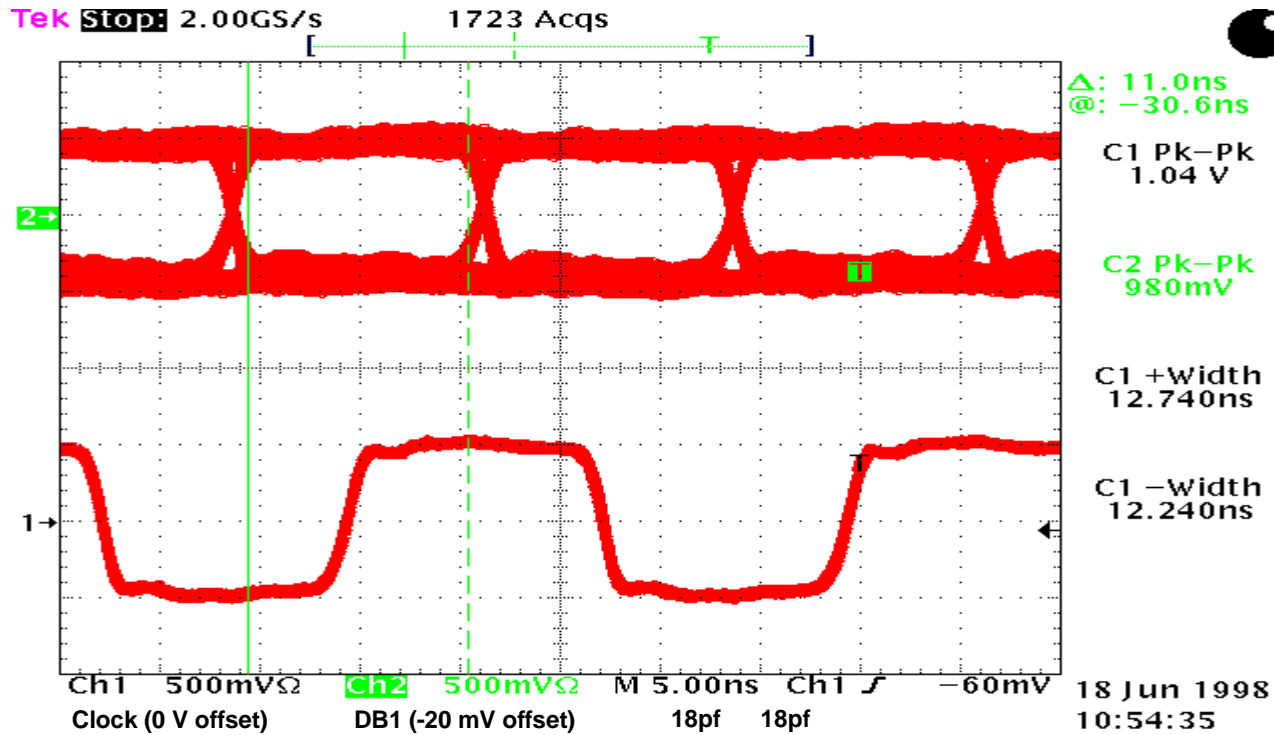
DRIVE LEVEL TESTING

Amplitude of different data bit signals with different capacitance and at different locations

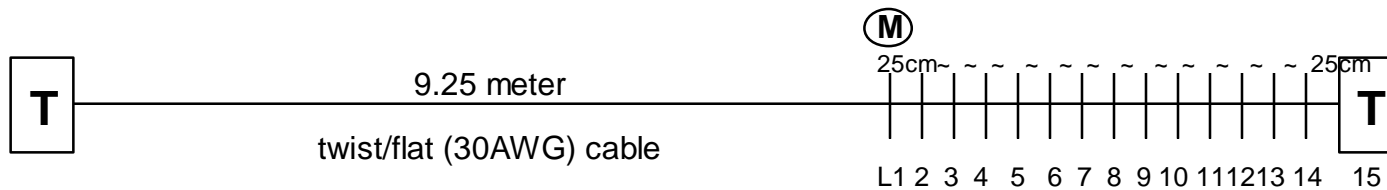
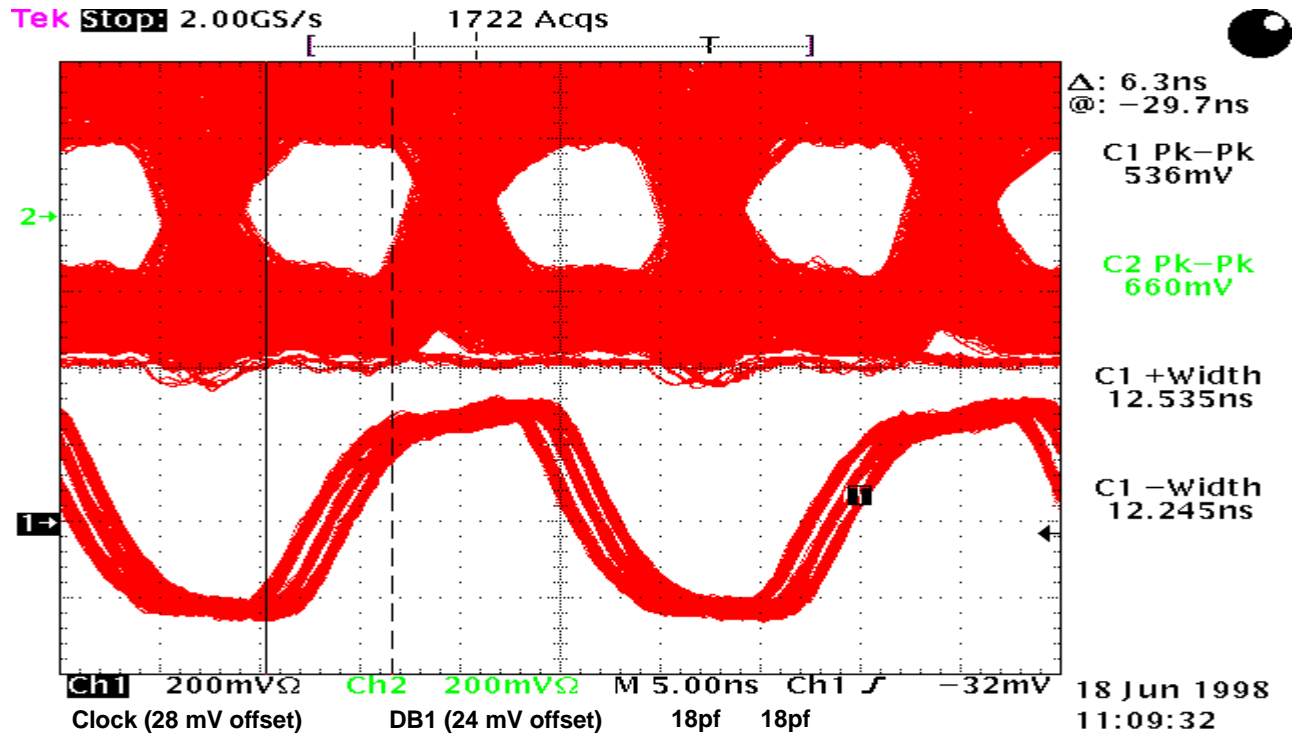




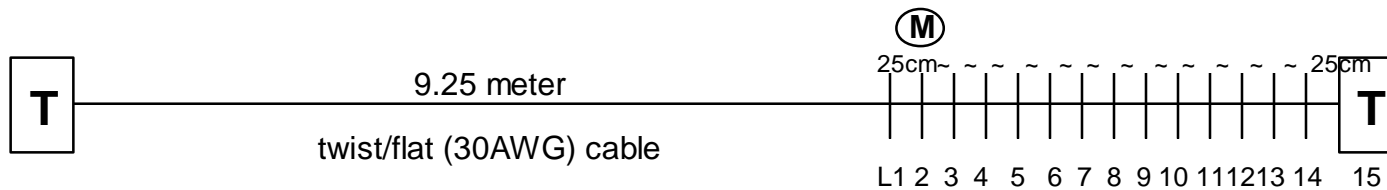
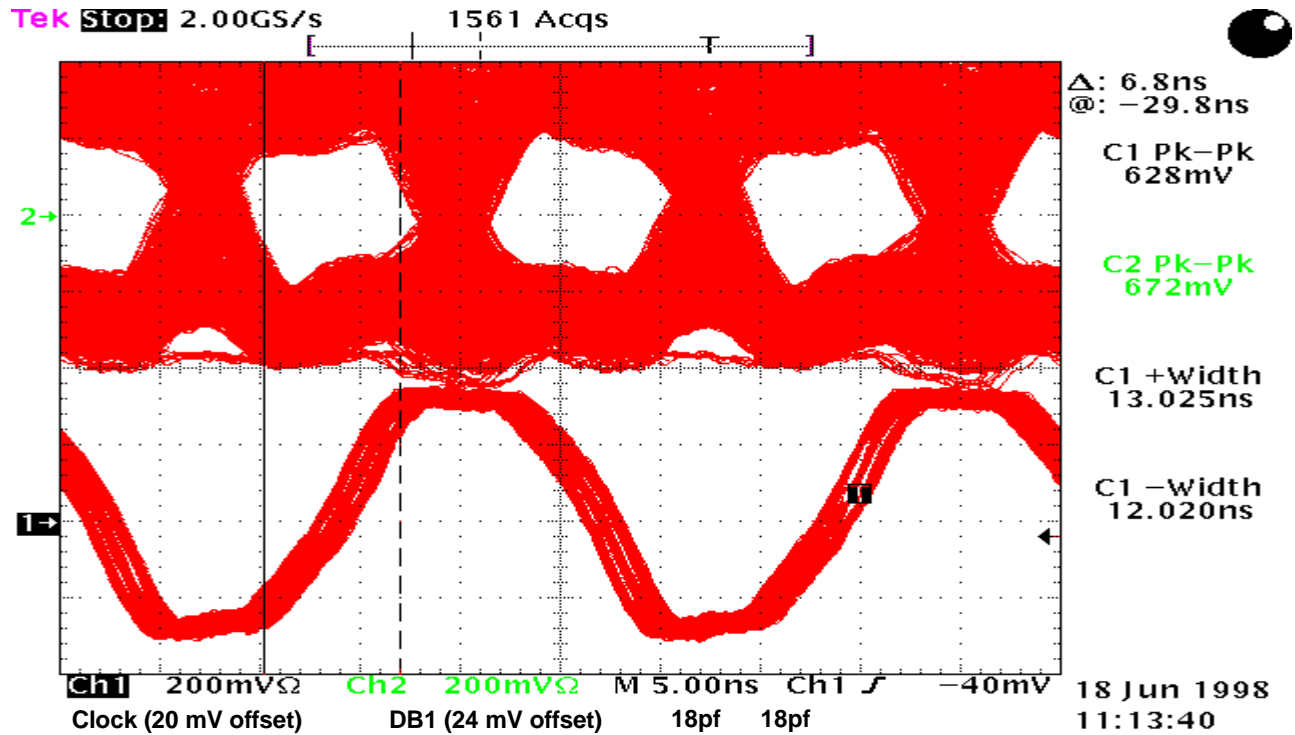
“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger at center of clock)



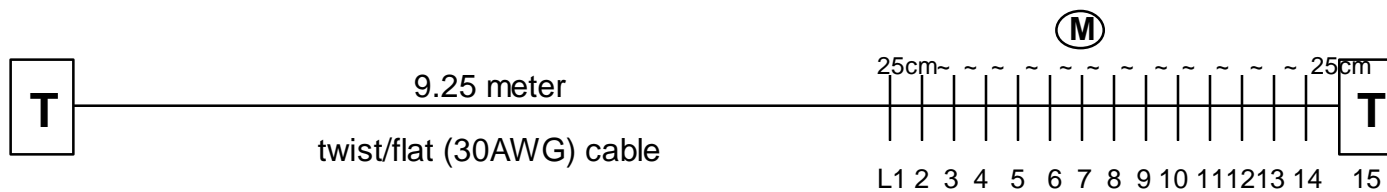
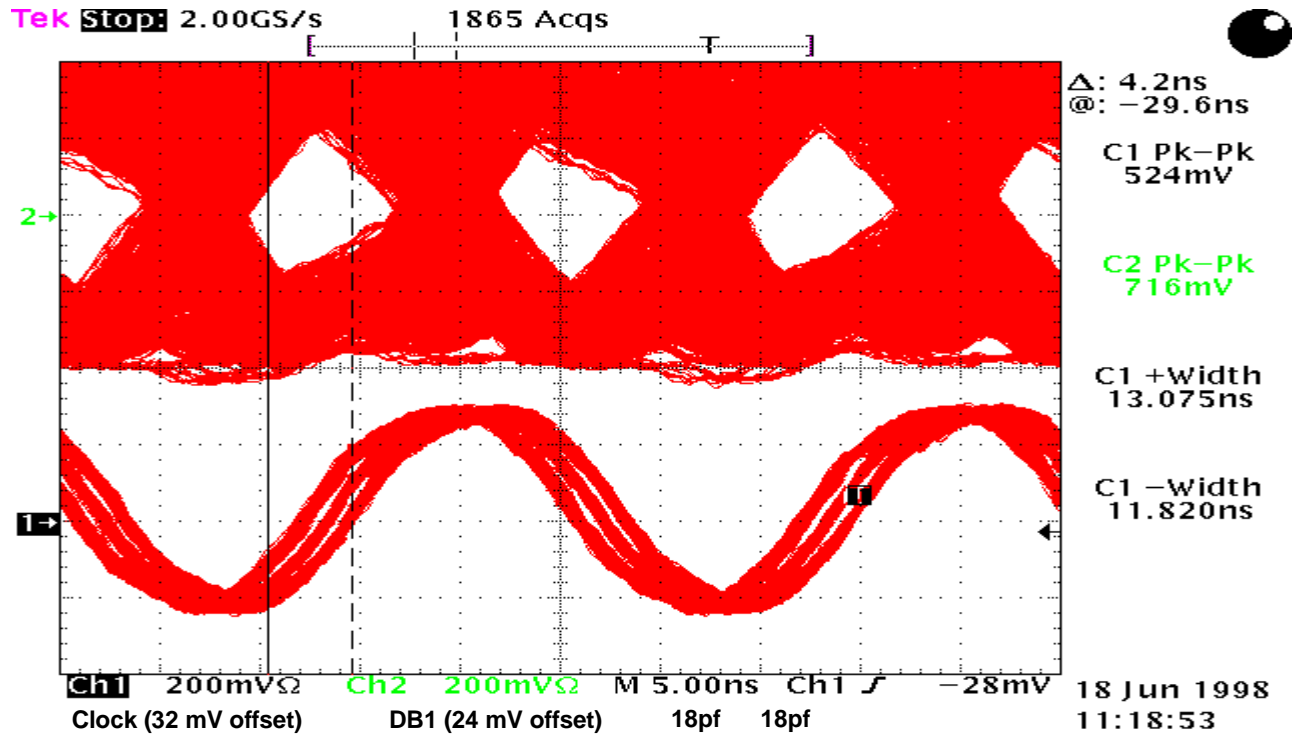
“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)



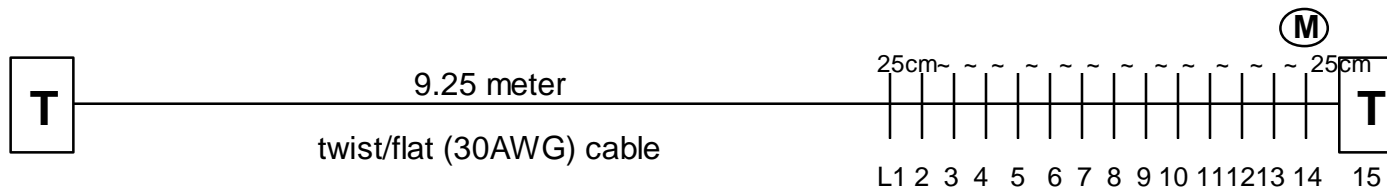
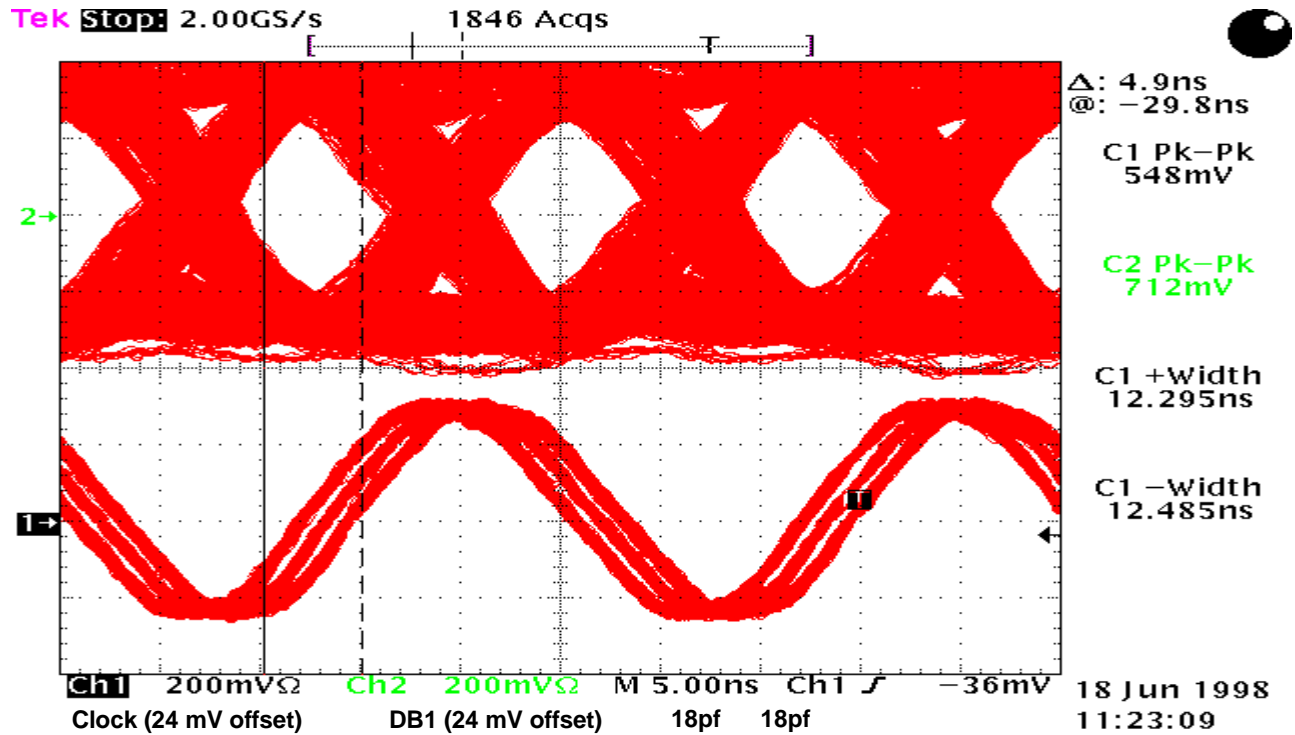
“Eye pattern for 12 meter twist/flat cable and 15 loads”
(trigger +/- 60 mV from center of clock)



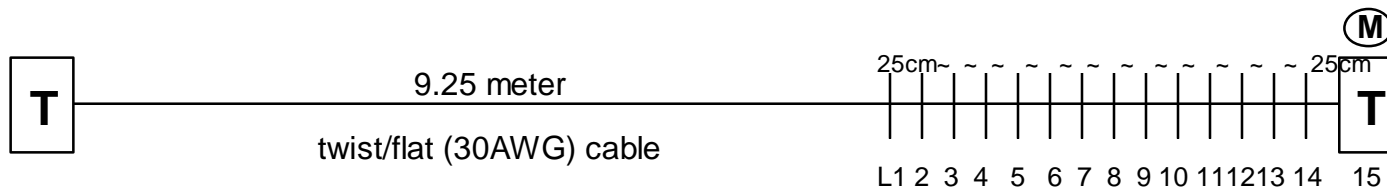
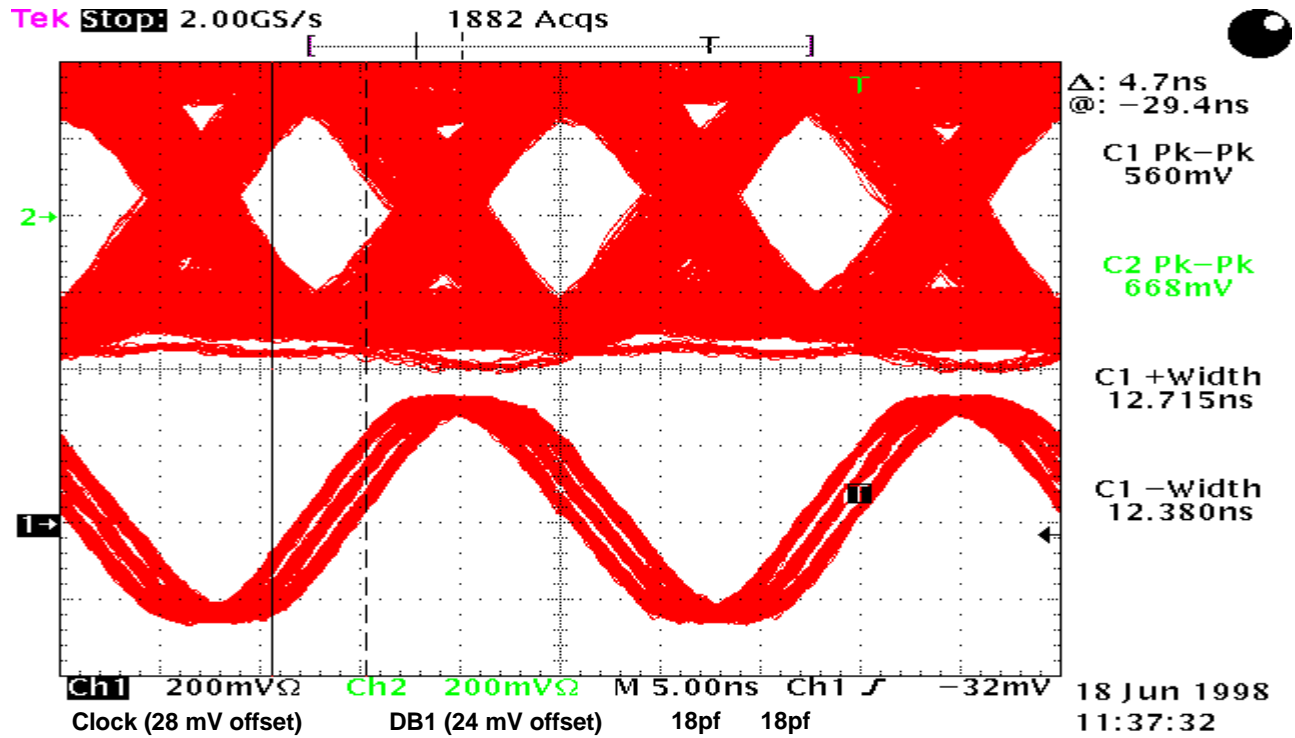
“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)



“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)

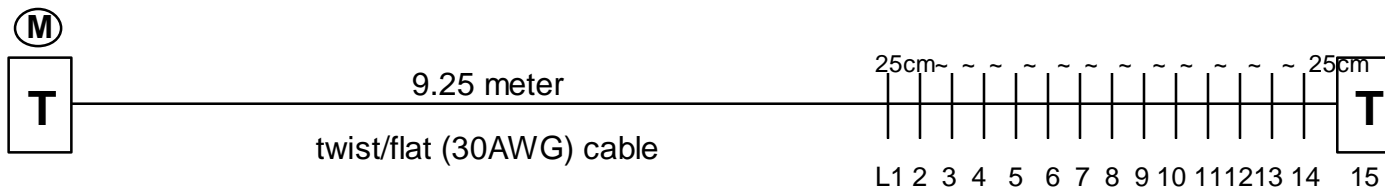
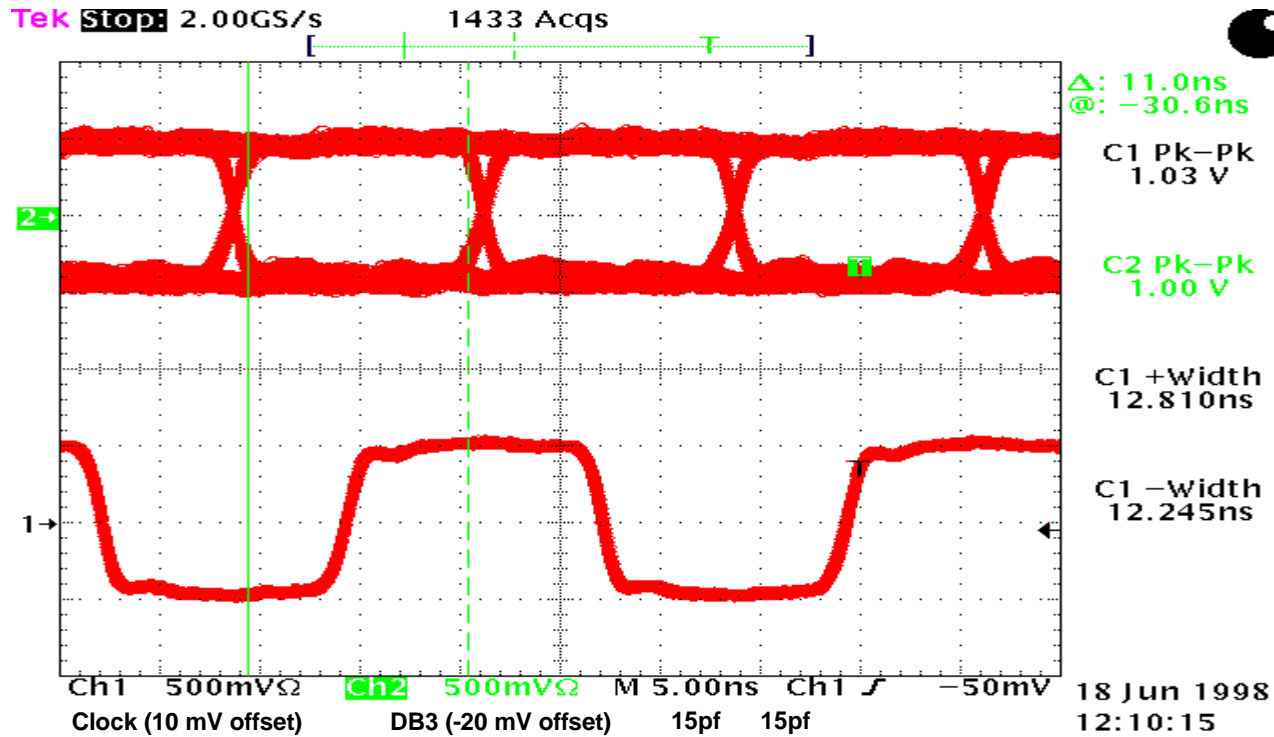


“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)

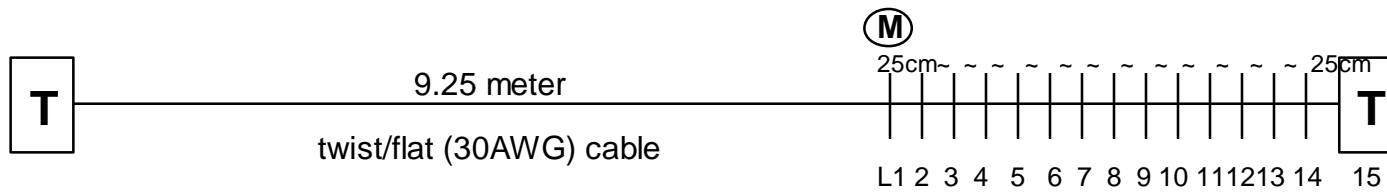
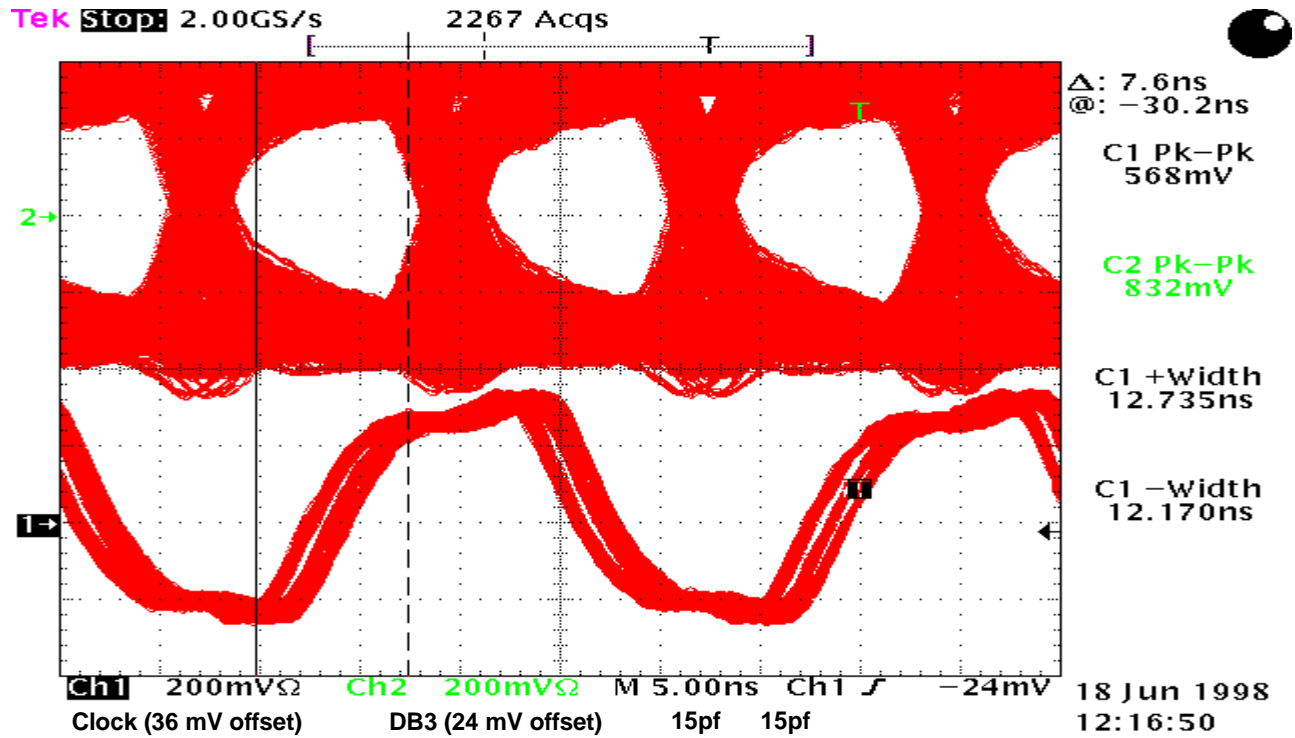


“Eye pattern for 12 meter twist/flat cable and 15 loads”

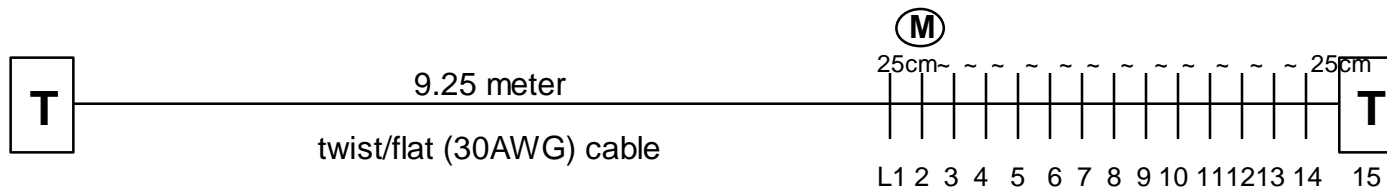
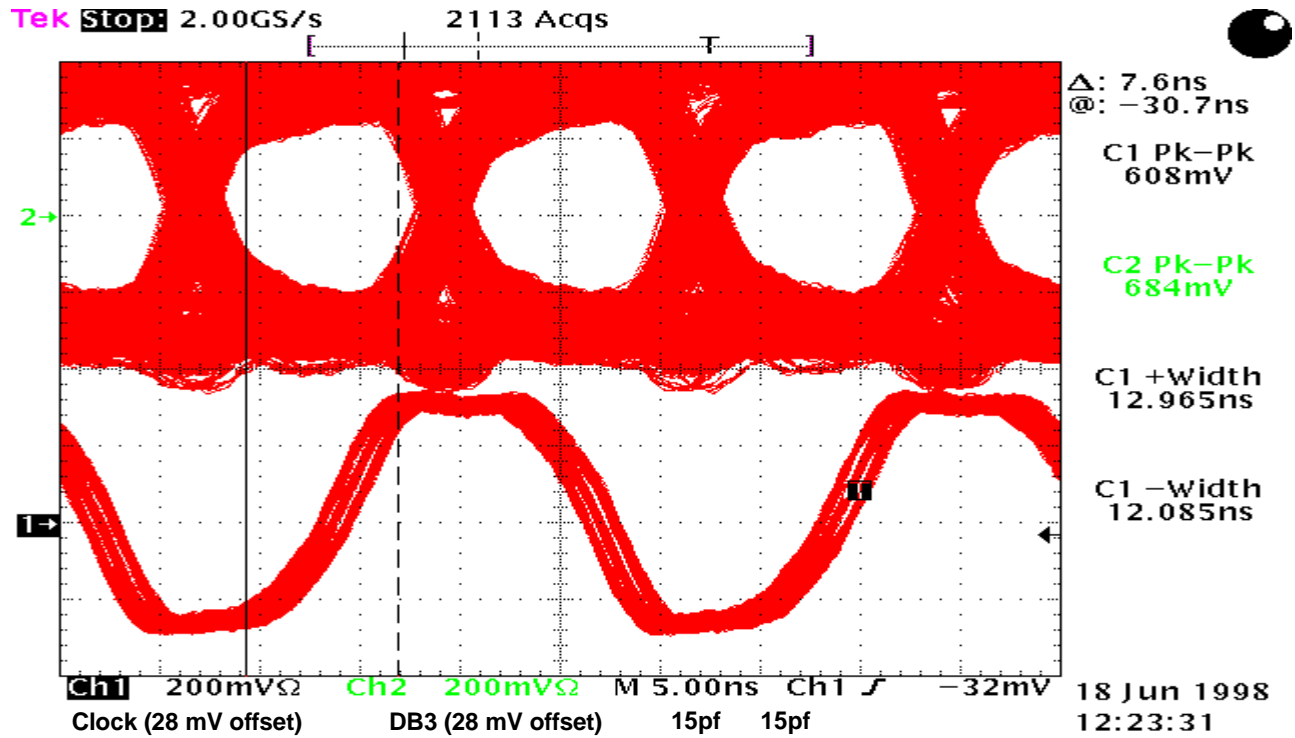
(trigger +/- 60 mV from center of clock)



“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)

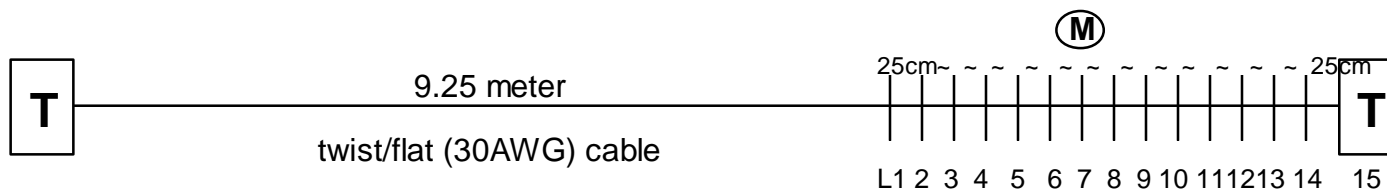
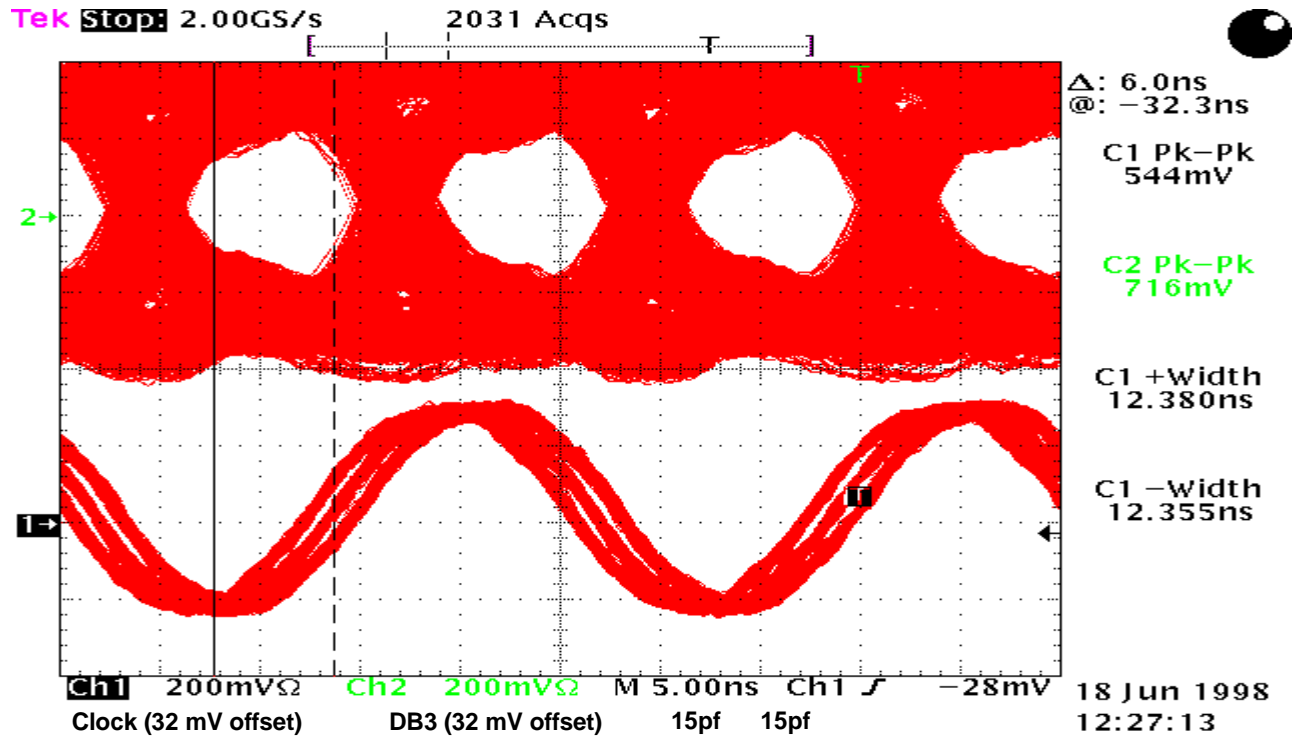


“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)

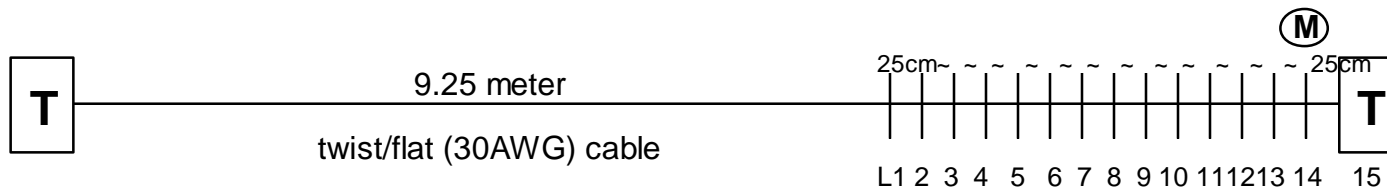
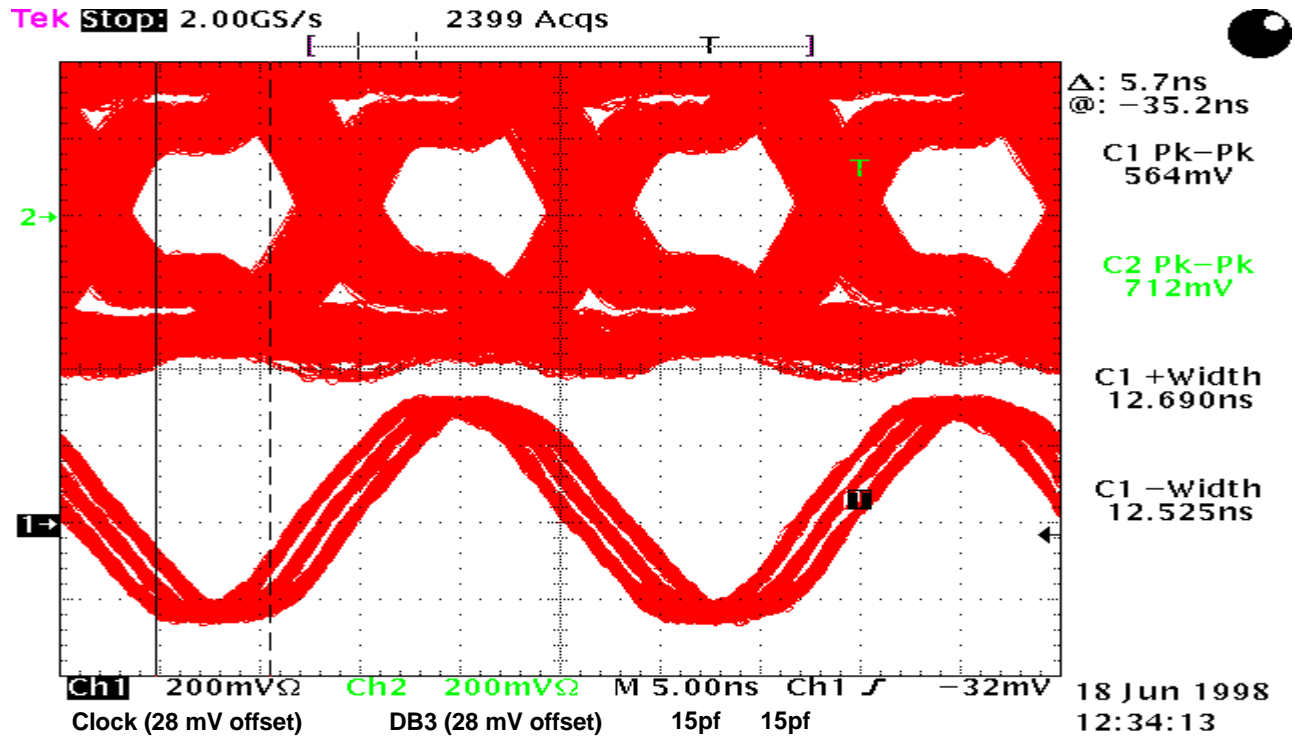


“Eye pattern for 12 meter twist/flat cable and 15 loads”

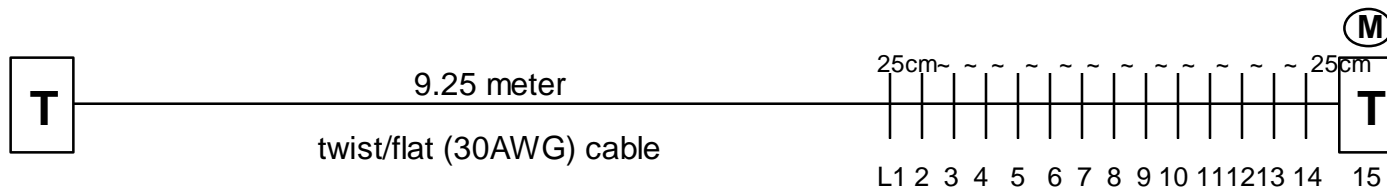
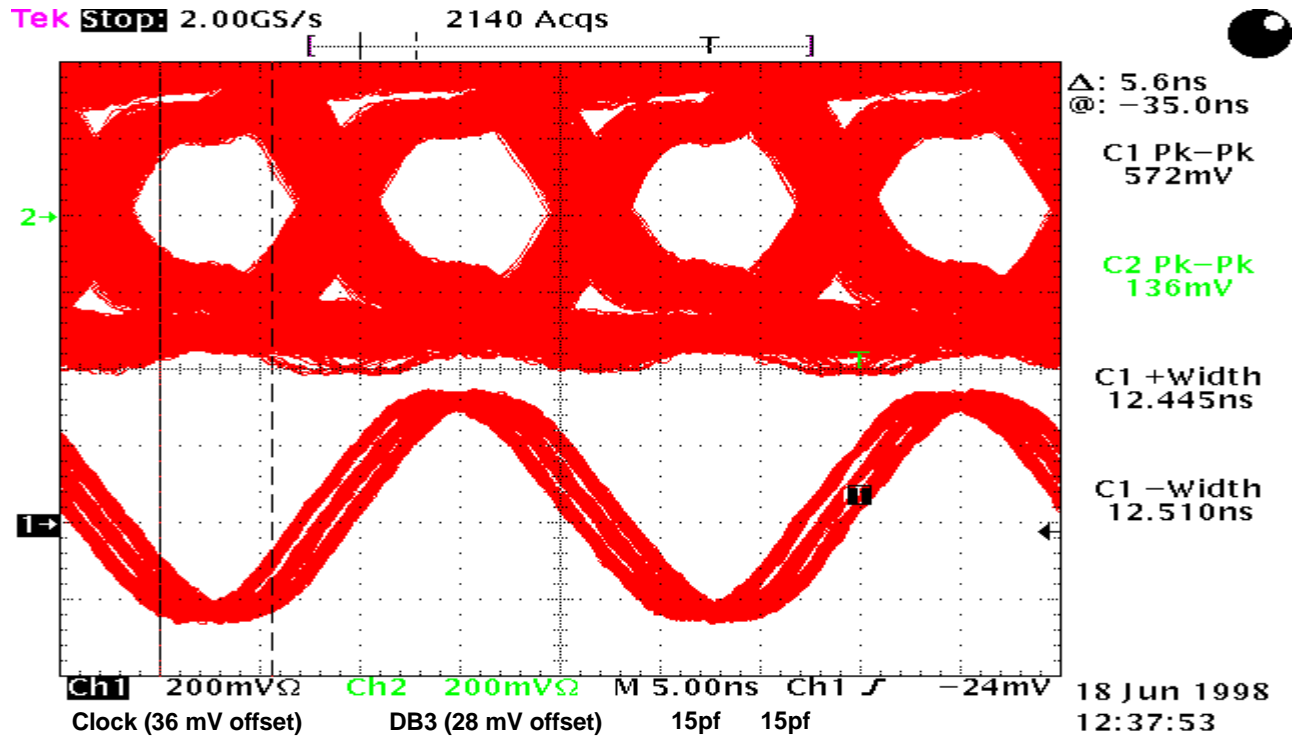
(trigger +/- 60 mV from center of clock)



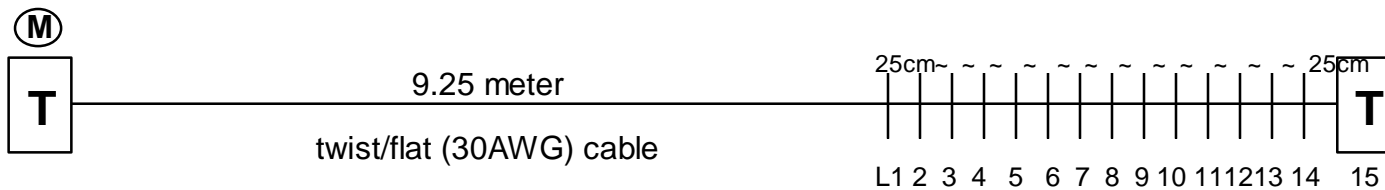
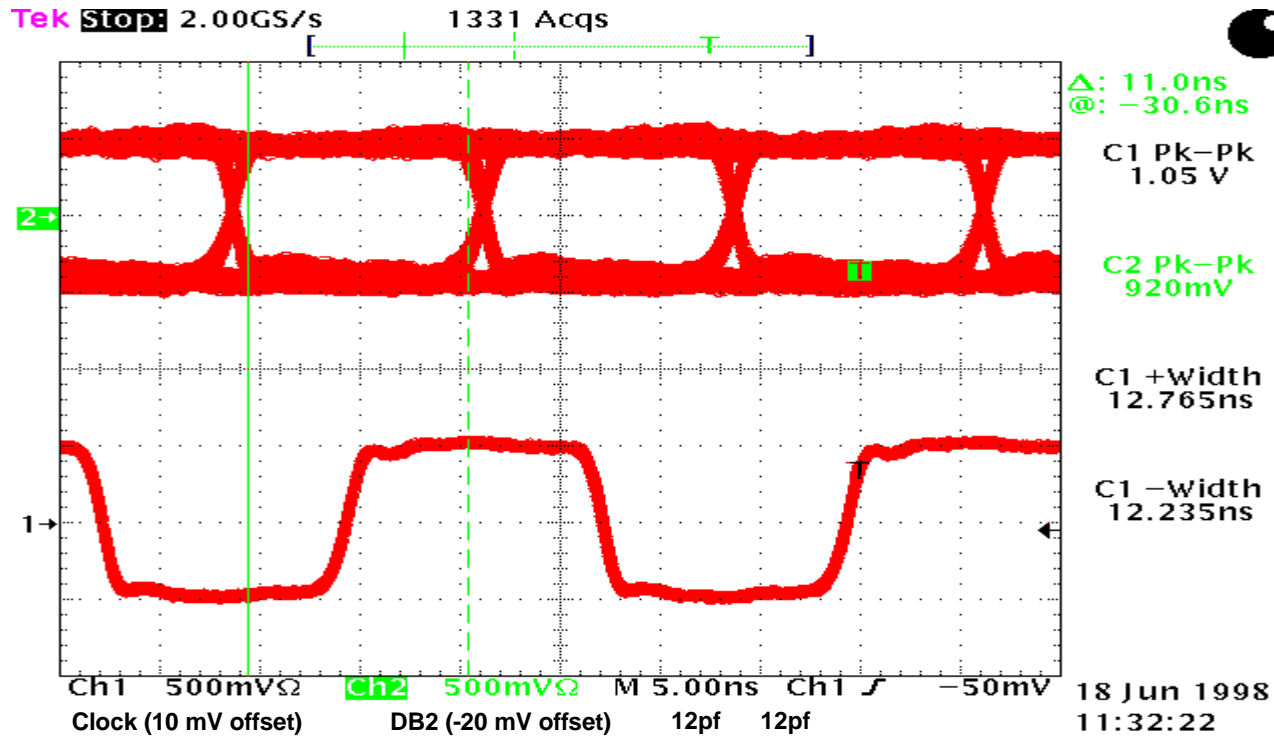
“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)



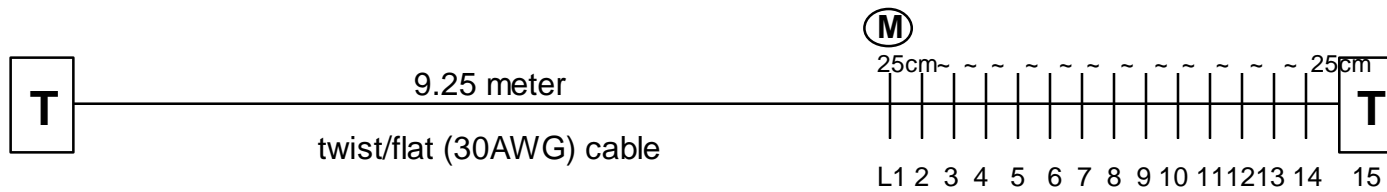
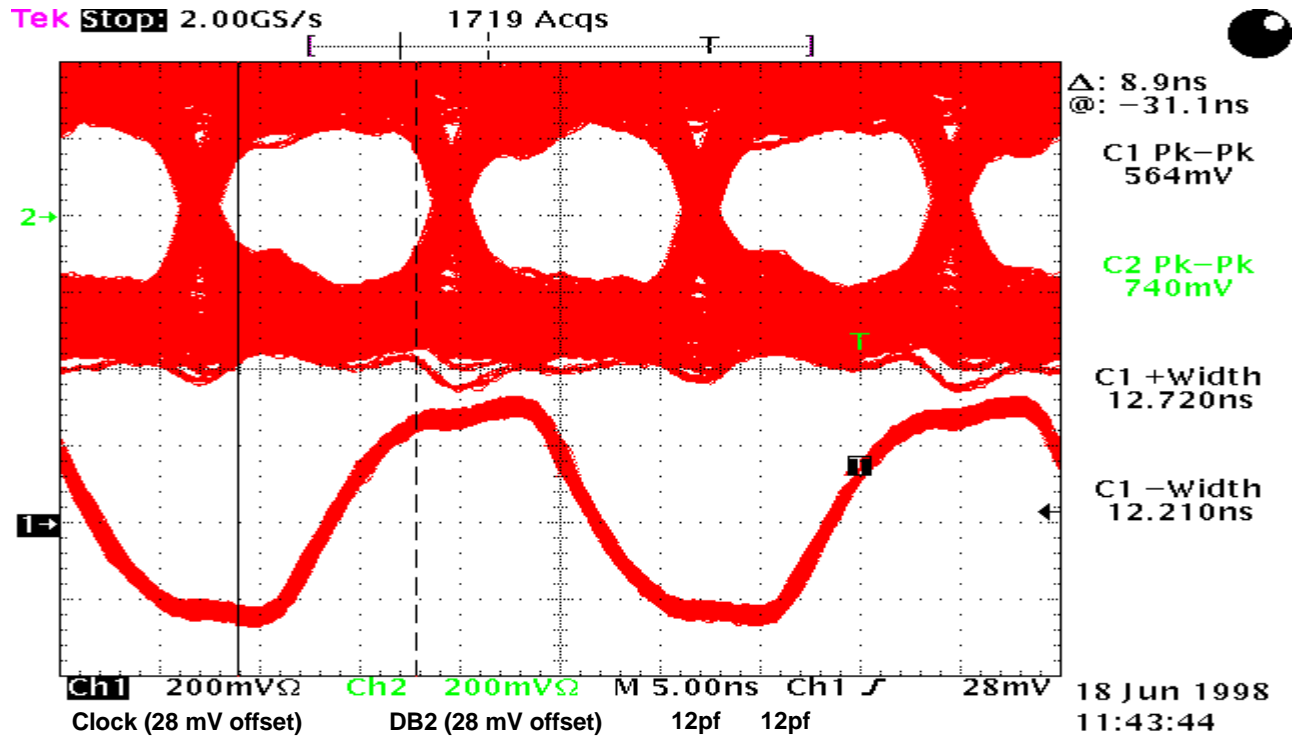
“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)



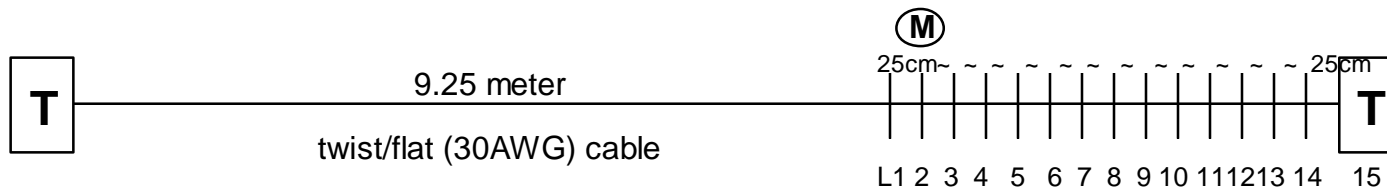
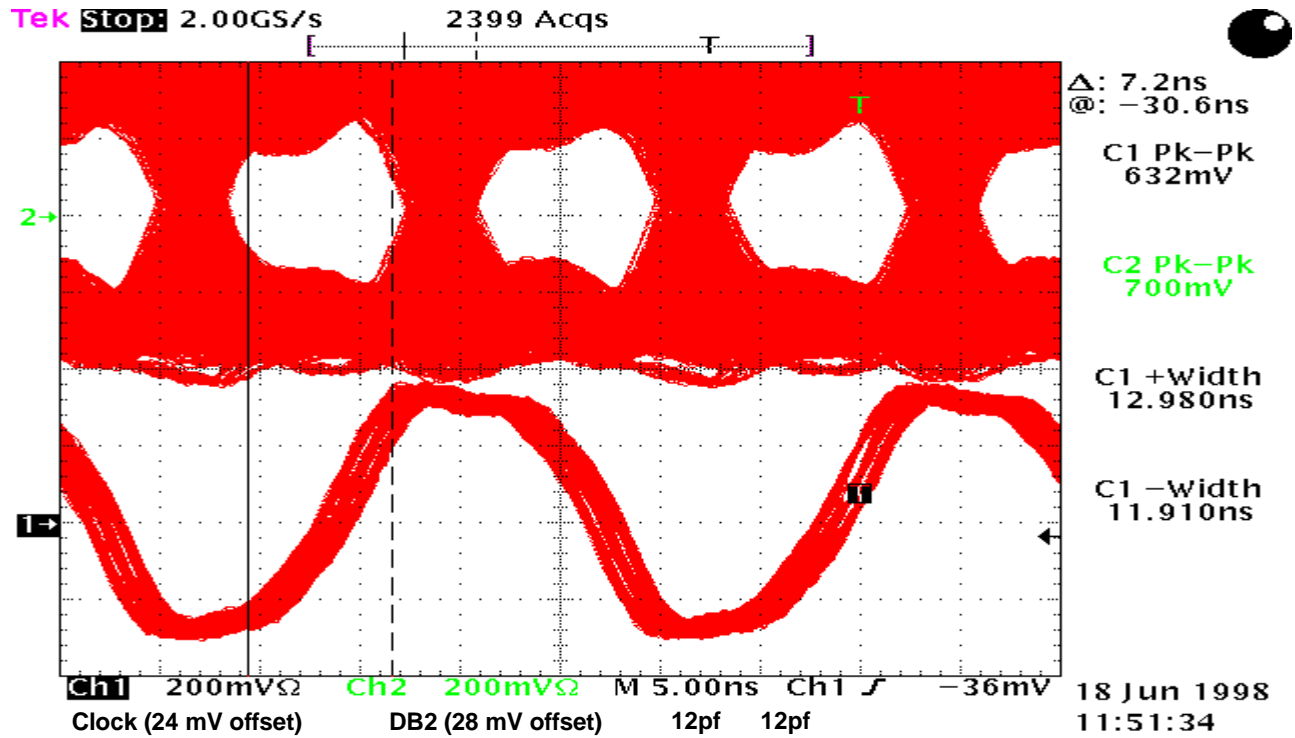
“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)



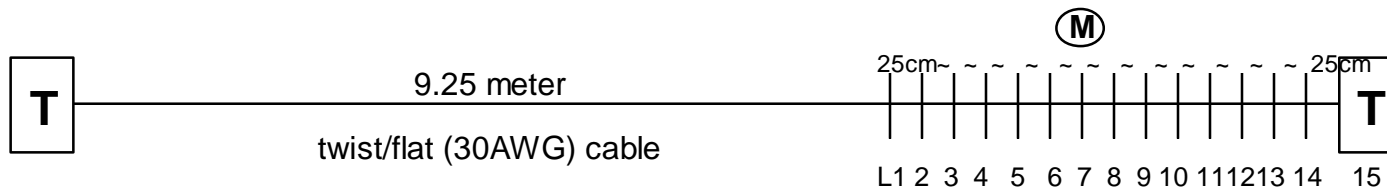
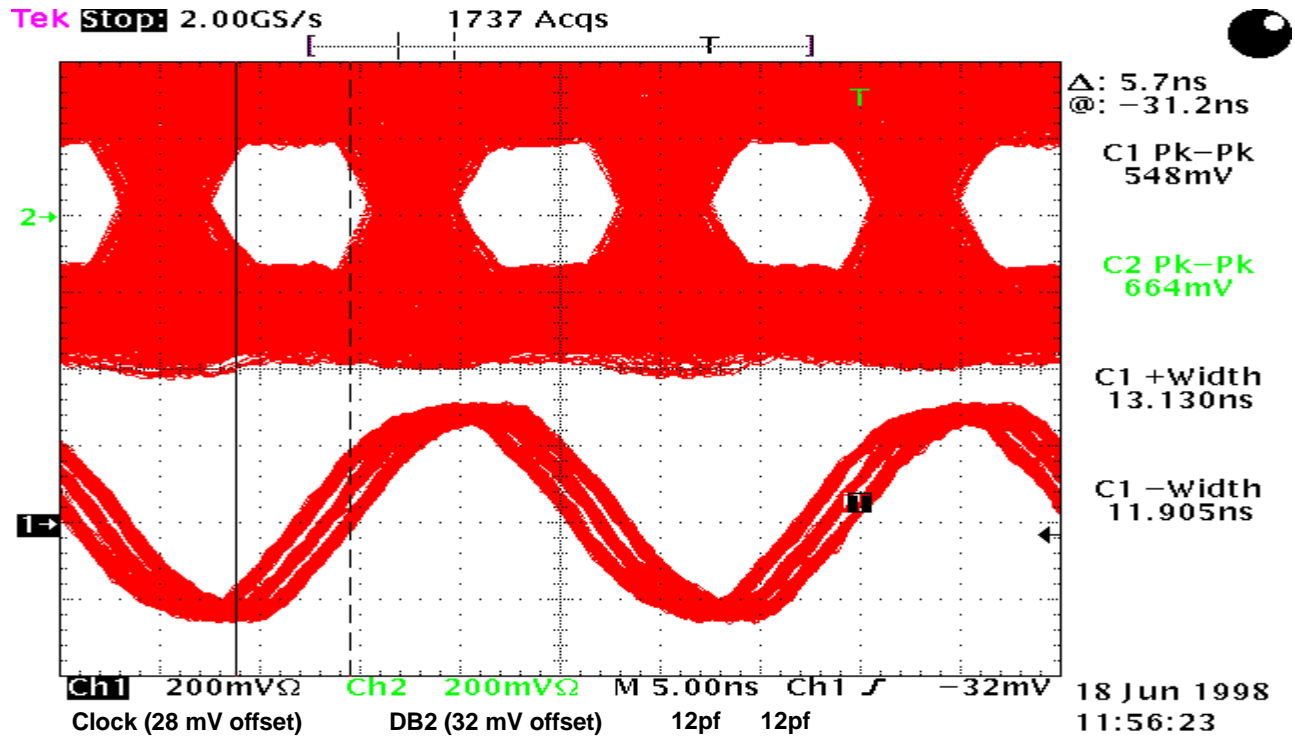
“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)



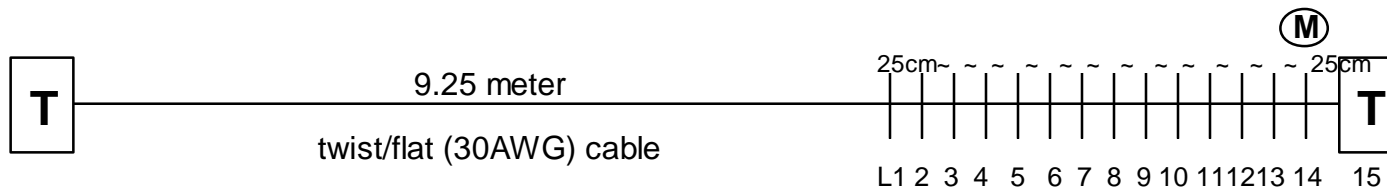
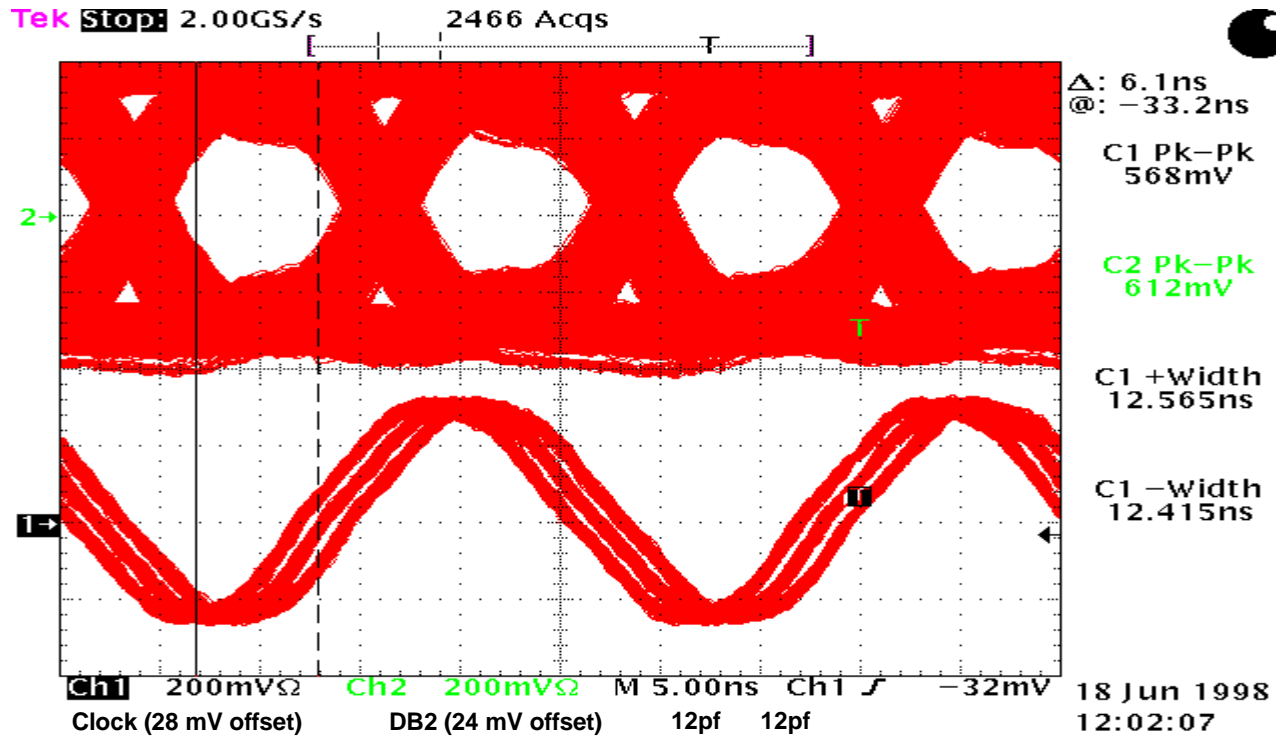
“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger at center of clock)



“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)

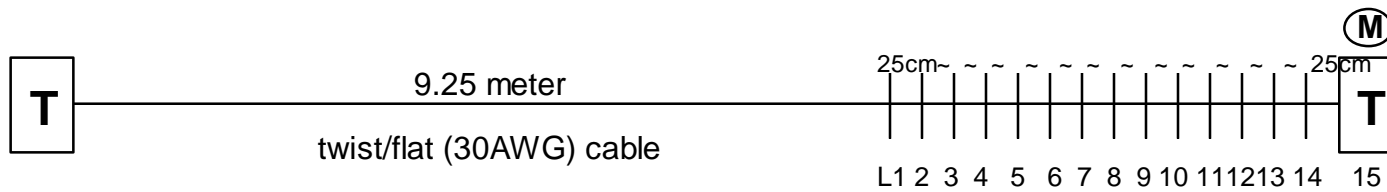
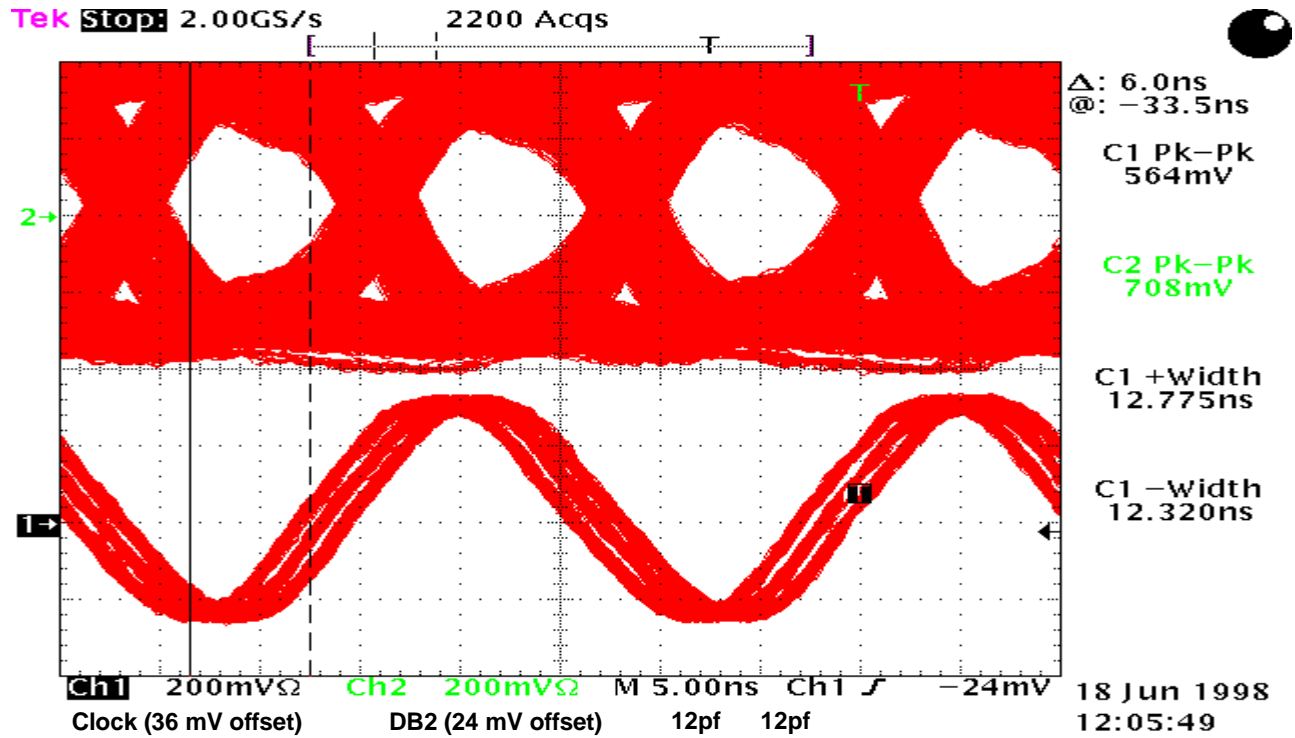


“Eye pattern for 12 meter twist/flat cable and 15 loads”
 (trigger +/- 60 mV from center of clock)



“Eye pattern for 12 meter twist/flat cable and 15 loads”

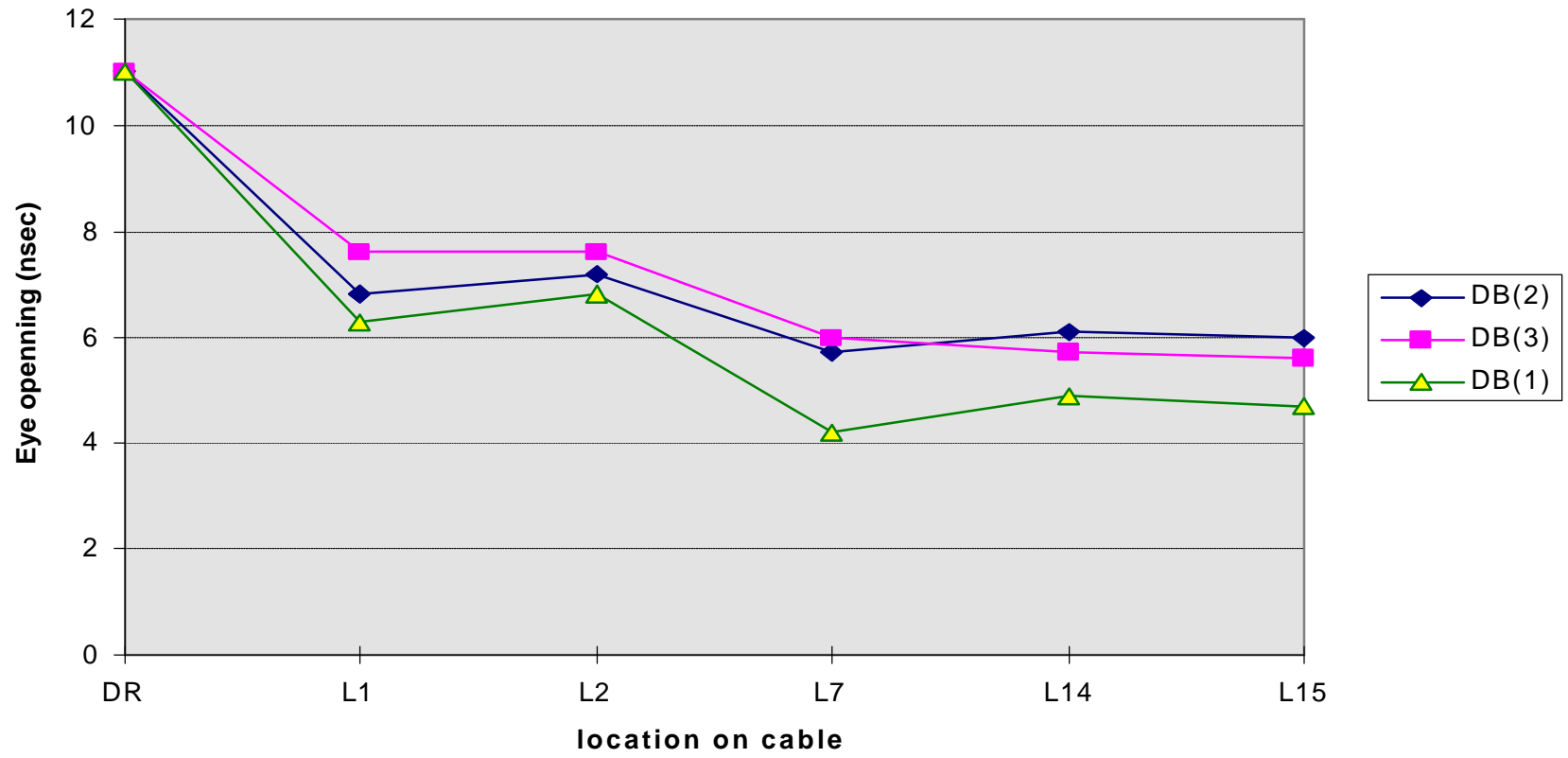
(trigger +/- 60 mV from center of clock)



“Eye pattern for 12 meter twist/flat cable and 15 loads”

(trigger +/- 60 mV from center of clock)

Eye opening of different data bit signals with different capacitance and at different locations



12 pf
15 pf
18 pf



SUMMARY

- Lower Capacitance improves eye opening by 20% (18 pf to 15 pf).
- Lower Capacitance improves loss characteristics by 30% (22 pf to 15pf).
- Different loads on clock and data causes large skew end of fully loaded bus.