

# **CDAUI-8 COM Reference Package Proposal**

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# Clause 93a package model 30mm

- Clause 93a package model

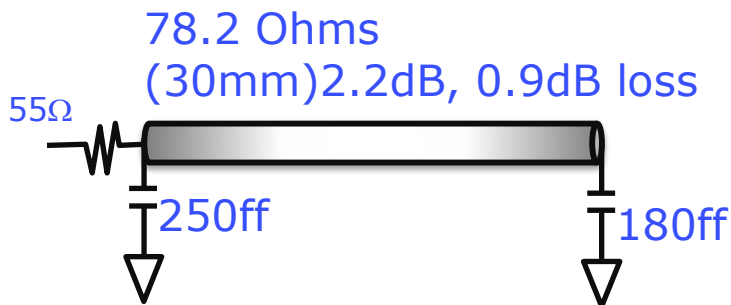
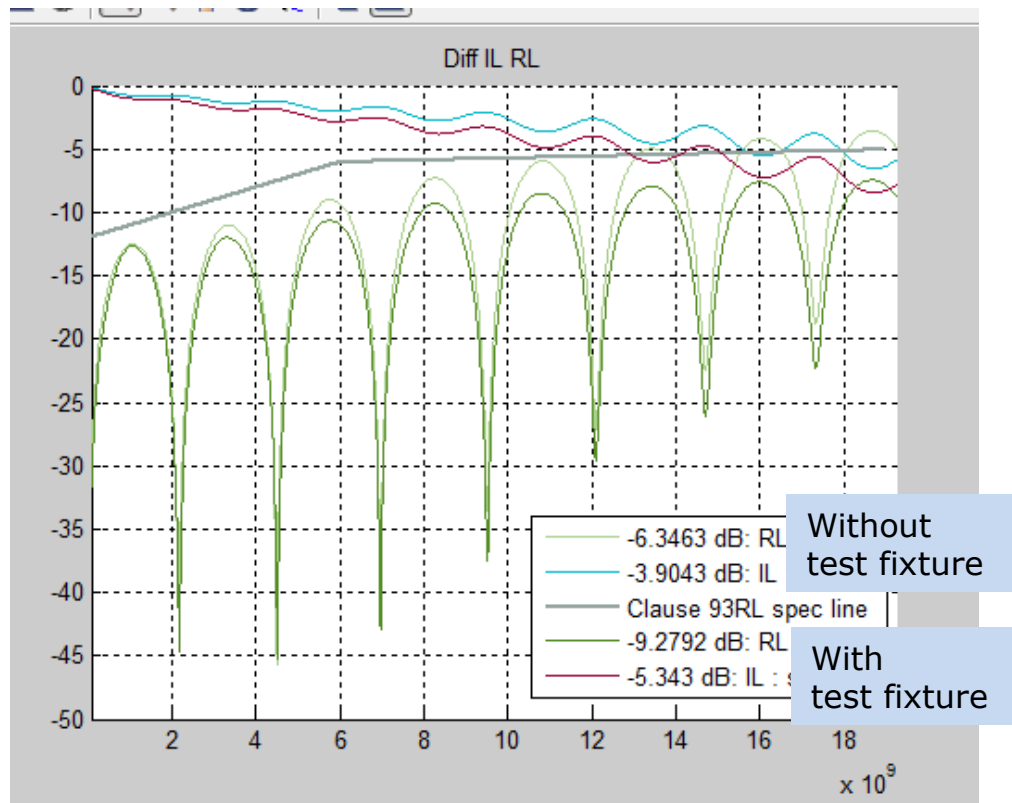


Table 93A-3 parameters		
Parameter	Setting	Units
package_tl_gamma0_a1_a2	[0 1.734e-3 1.455e-4]	
package_tl_tau	6.141E-03	ns/mm
package_Z_c	78.2	Ohm



# Clause 93a package model 12mm

- Clause 93a package model

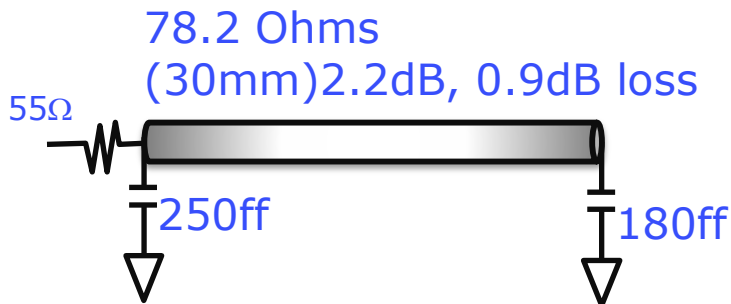
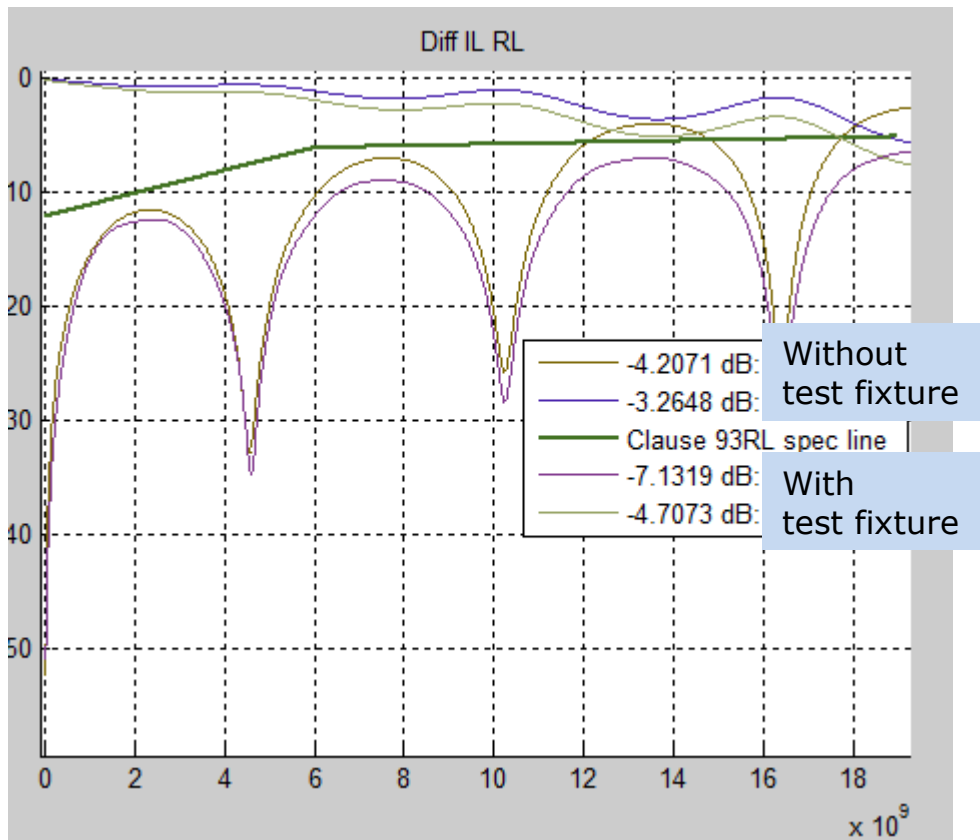


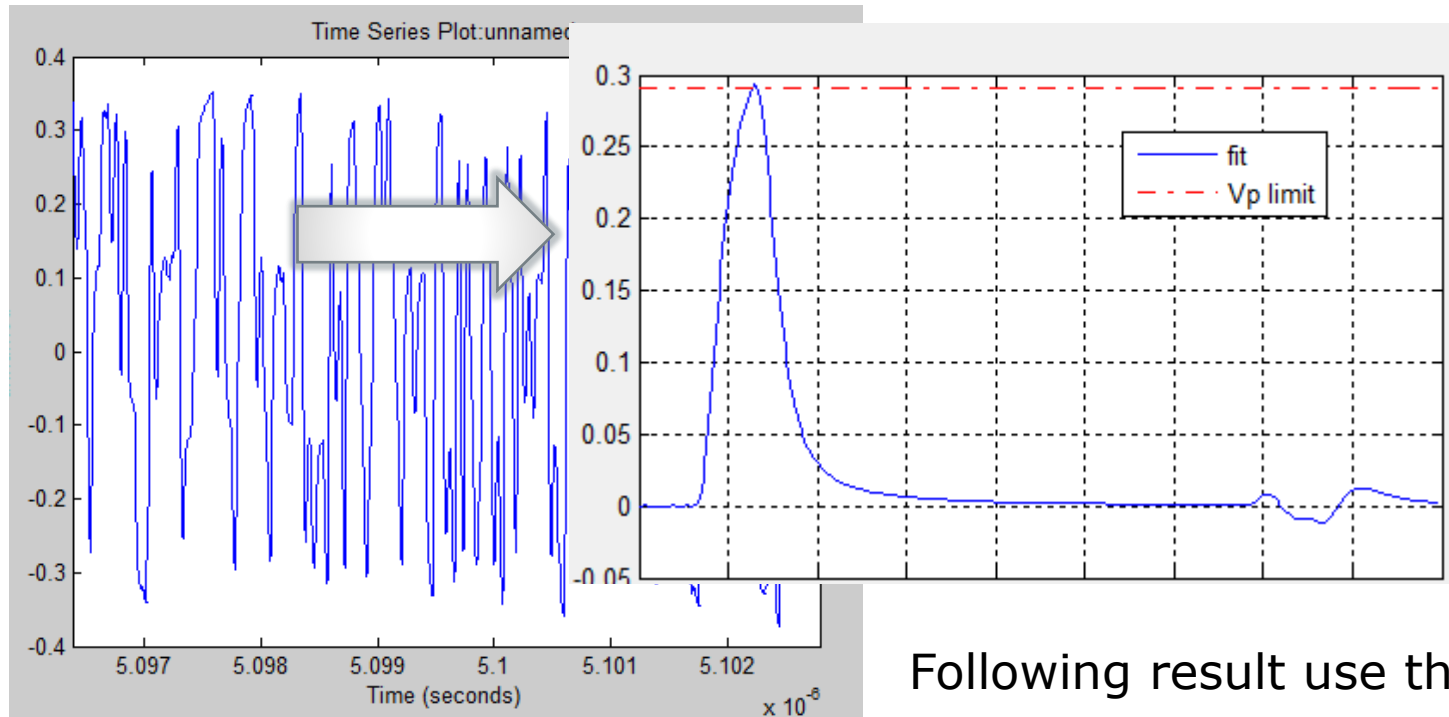
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# Review some data from previous presentations

- COM package reflection is addressed in healey\_3bs\_01\_0315
  - Reflections at due length or 6.14 ps/mm delay are very have a tremendous negative impact on COM.
  - It was suggest that many design do not have this type of effect
- The COM package also need to pass as addressed in mellitz\_040815\_25GE\_adhoc
  - Steady state voltage  $V_f(\text{min}) > 0.4V$
  - Linear fit pulse peak (min)  $> 0.8V_f$

# Tx test uses clause 85 fitting to find pulse specification are for the fit



Following result use this method

# Finding a new package model

- Clause 93a
  - Vf min is 357mv 😞
  - SNDR just using  $\sigma_e$  is 33dB! 😞
- Obviously we need to something
- Lets try using a high density package with a trace width of 22microns
  - i.e.  $a_2=4*1.455e-4$
  - 18mm of high density trace equates to about the same loss as 30mm of clause 93a trace.

# Insertion loss can be close with some adjustments

- Proposed

78.2Ω (18mm) 2.2dB,  
(7mm) 0.9dB loss

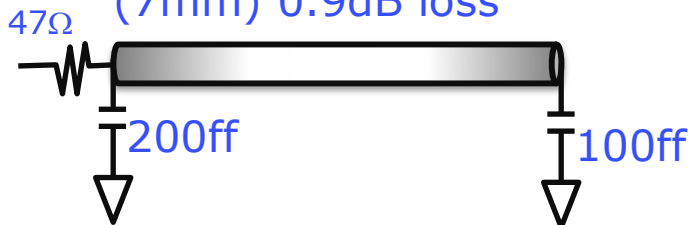
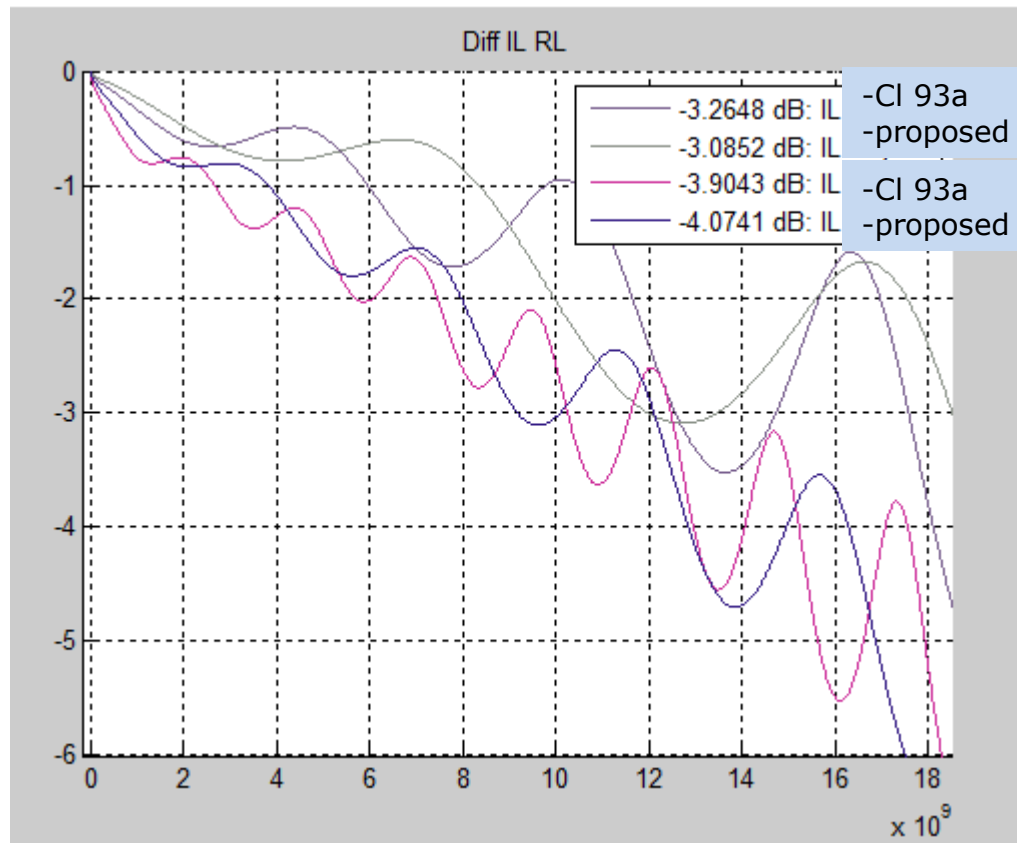
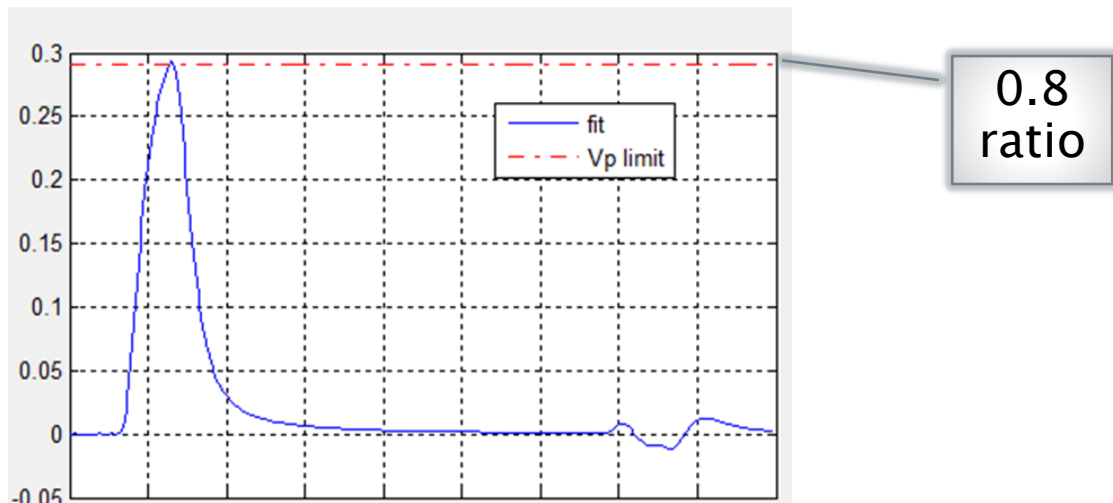


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# Fit pulse is ok using:

- To achieve  $V_f=400\text{mV}$  also set
  - $C_d=200\text{ff}, C_p=100\text{ff}, R_d=47\text{ ohms},$  and  $N_b=10$  ( $N_d=12$ )



Linear fit pulse peak (min)  $> 0.8V_f$  😊

Almost 50db SNR using  $\sigma_e$  and peak pulse 😊



# Summary

- Consider using proposed package and parameters for 50Gb/s CDAUI-8 COM computations