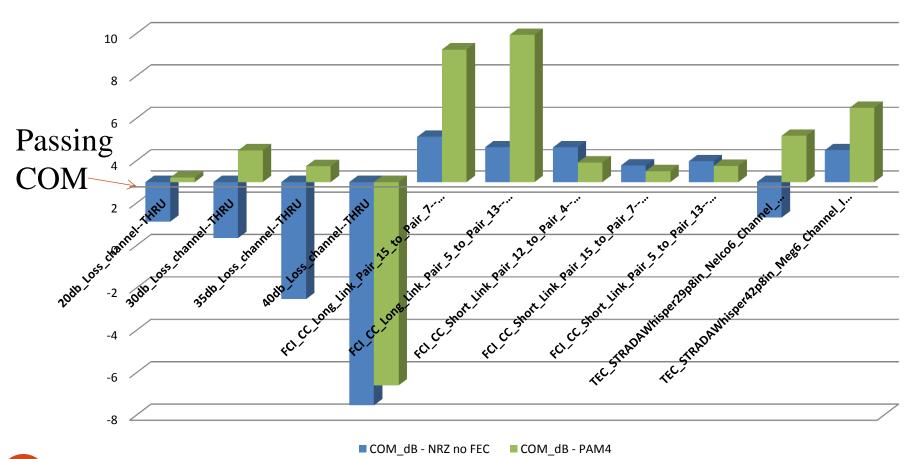
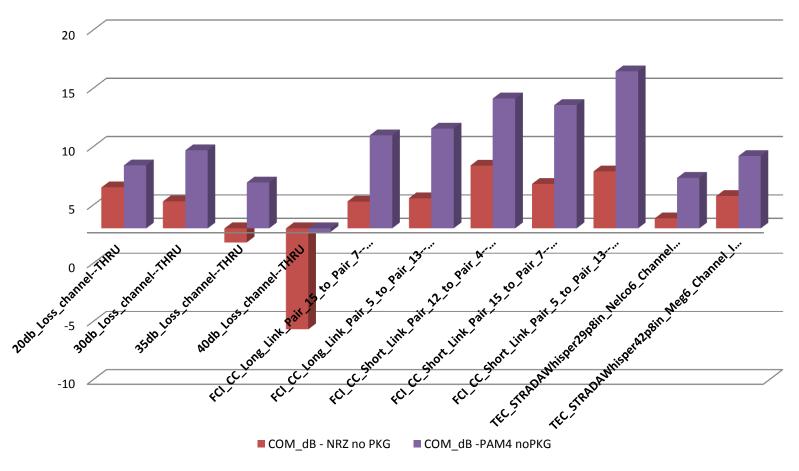
## Channel Operating Margin Brief Channel Comparisons

Richard Mellitz
Intel Corporation
October 24, 2012

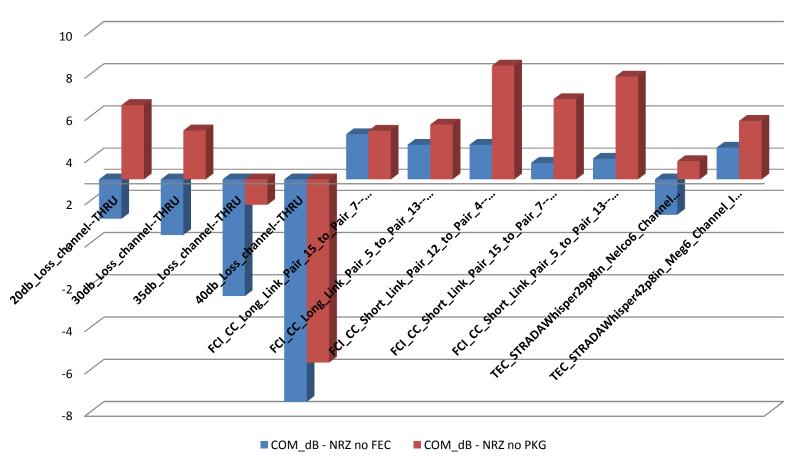
# NRZ(KR4) and PAM4(KP4) COM using draft 1.2



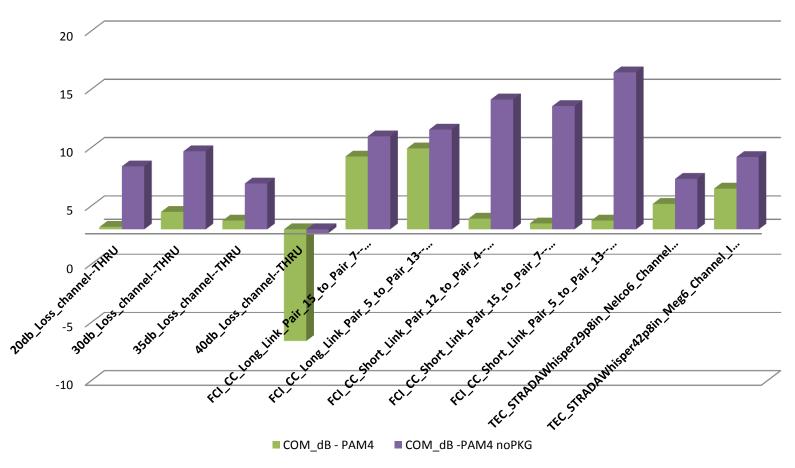
### NRZ(KR4) and PAM4(KP4) COM using draft 1.2 without package



#### NRZ(KR4) COM using draft 1.2 package and without package



### PAM4(KP4) COM using draft 1.2 package and without package



#### **Observations**

- Package always makes COM worse but has a varied effect.
  - 30 dB channel with package does not seem to have passing COM
- Package seems to have biggest effect on short channels
  - Swaps PAM4 vs. NRZ impact
- Other parameters that affecting results

Random jitter, RMS	o <sub>R</sub> y	UI
Dual-Dirac jitter, peak	$A_{DD}$	UI
Receiver additive Gaussian noise, RMS	$\sigma_{y}$	V

Ongoing work by Liav Ben Artsi is to scrub the pacakge model