Open issues with Clause 93

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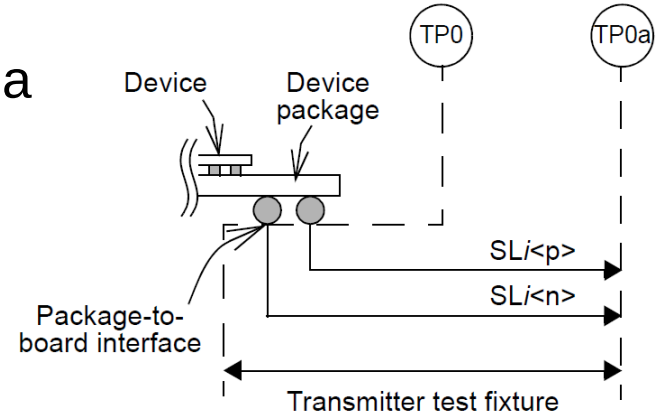
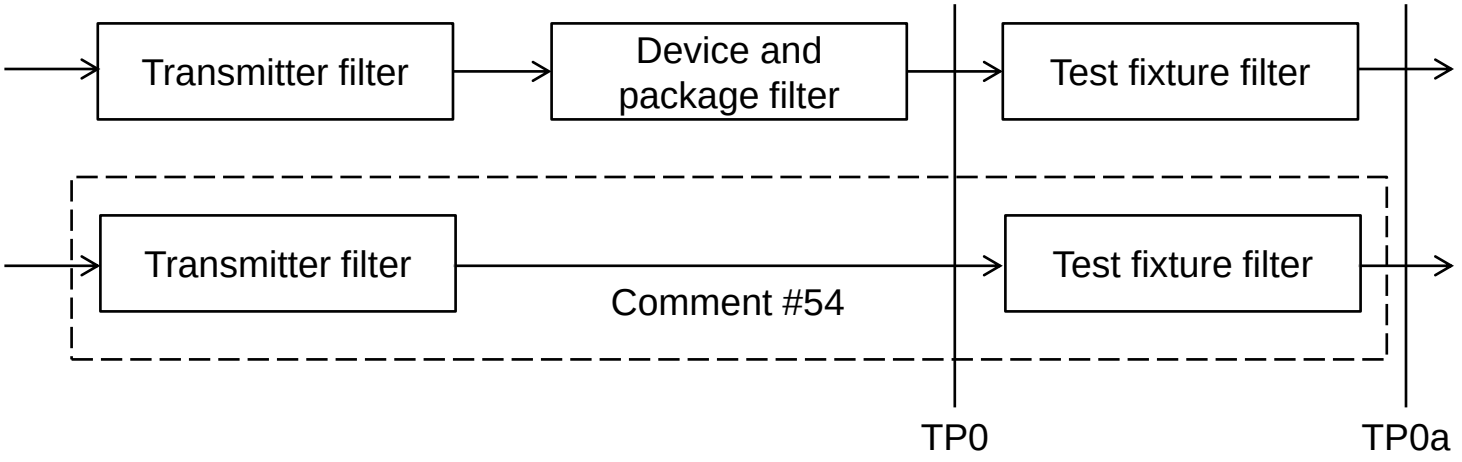
Table 93–8, transmitter output voltage and bandwidth

- 0.4 V < v_f < 0.6 V, peak value of $p(k) \geq 0.8 * v_f$ (see 93.8.1.6.1)
- Measured at TP0a



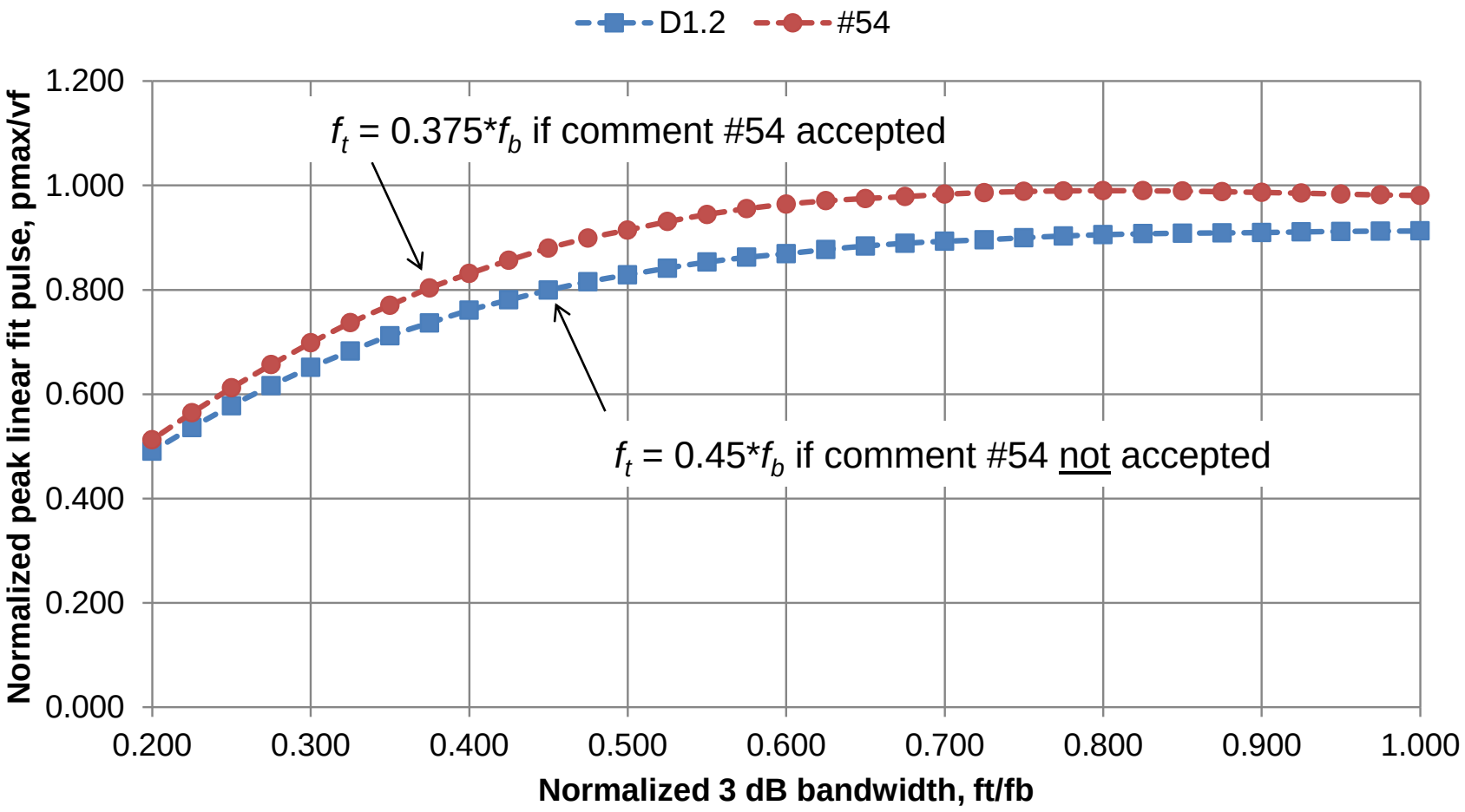
- Emulate in COM framework



Test fixture filter

- Transmission line with 1.2 dB insertion loss at 12.89 GHz
  - 100 Ohm differential impedance
- Terminate fixture with reference load, Γ_2 is 0
- $H_{21}(f)$ reduces to transmission line $s_{21}(f)$, Γ_1 irrelevant

Achieving peak value of $p(k) \geq 0.8*v_f$



Achieving v_f = 0.4 V

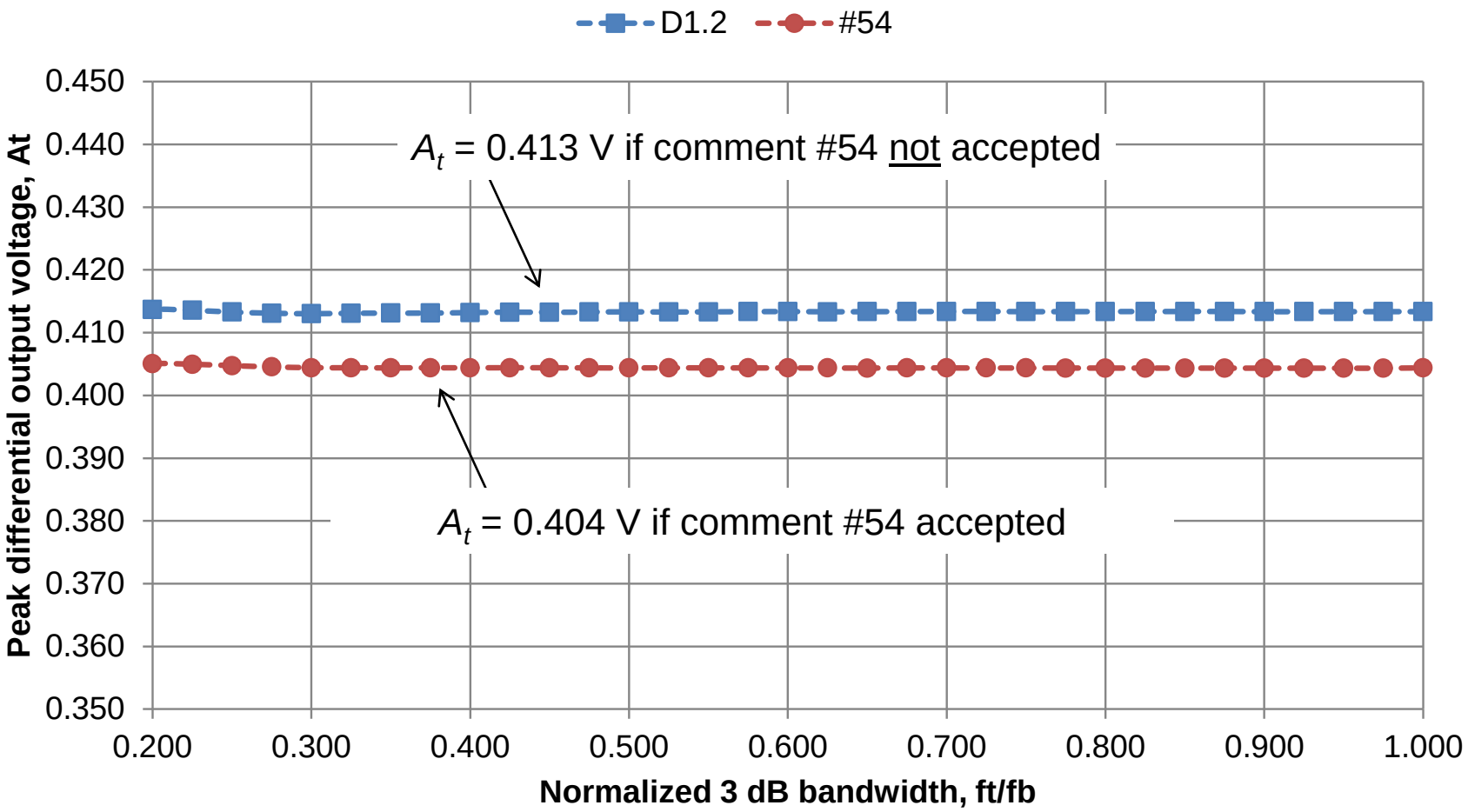


Table 93–8, transmitter equalizer

- Set $c(-1)$ and $c(1)$ step size to 0.05 (see 93.8.1.6.4)

- Coefficient range (see 93.8.1.6.5)
  - $(c(0)-c(1))/(c(0)+c(1))$ shall be greater than or equal to 4, $c(-1) = 0$
  - $(c(0)-c(-1))/(c(0)+c(-1))$ shall be greater than or equal to 1.54, $c(1) = 0$
  - $c(0)-c(-1)-c(1) = 1$ for $c(-1) \leq 0$, $c(1) \leq 0$ (see 93A.1.3.4)

- Set minimum $c(1)$ to $-0.4 = -8*0.05$
  - $c(1) = (1-R_{pst})/(2*R_{pst}) = -3/8$

- Set minimum $c(-1)$ to $-0.2 = -4*0.05$
  - $c(-1) = (1-R_{pre})/(2*R_{pre}) = -0.54/3.08$

Conclusions

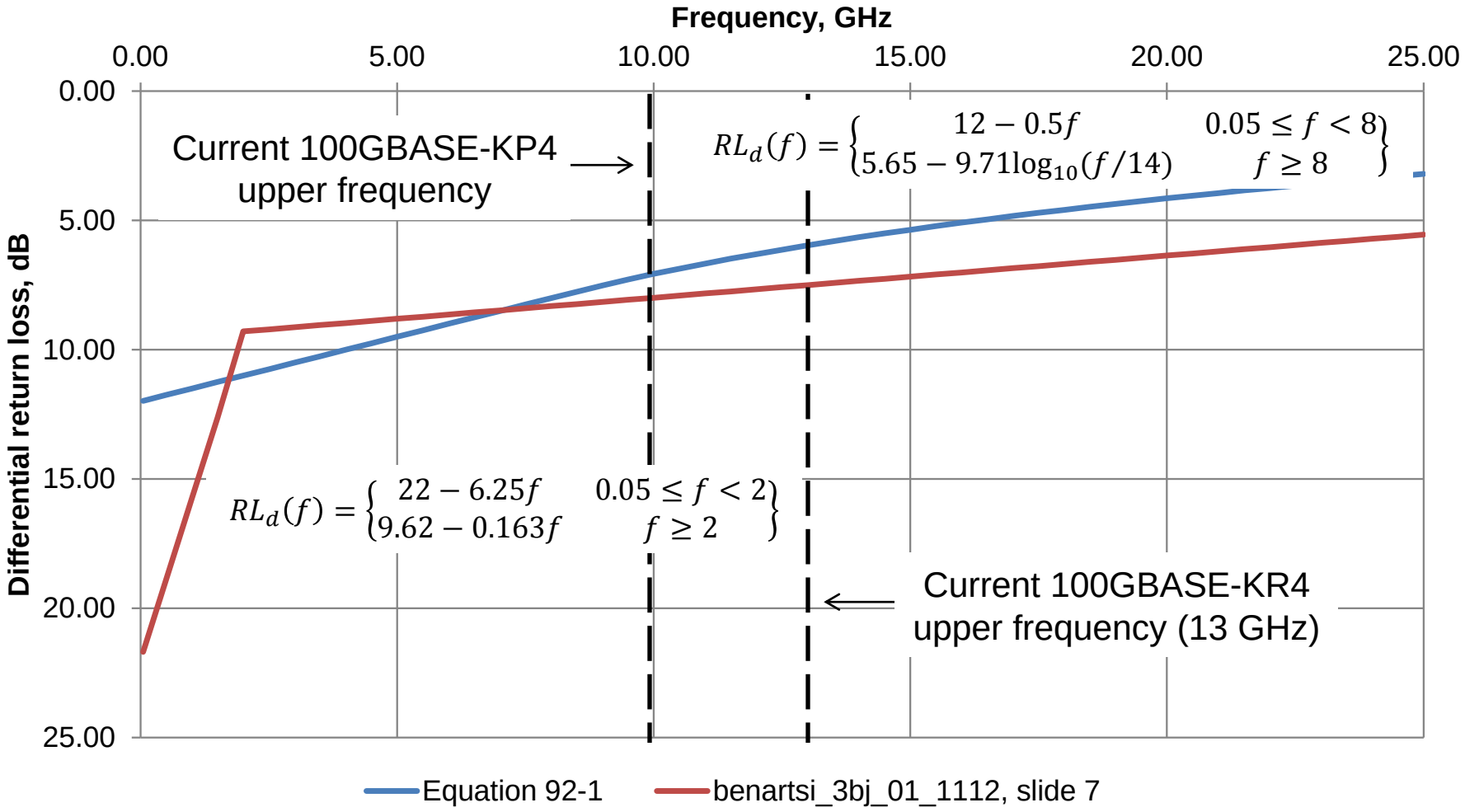
- If comment #54 is accepted, in Table 93–8…
- …set $f_v = f_f = 0.375*f_b$

- If comment #54 is not accepted, in Table 93–8…
- …set $A_v = A_f = 0.41$ V and…
- …set $f_v = f_f = 0.45*f_b$

- In Table 93–8, update transmitter equalizer pre- and post-cursor coefficient minimum value and step size

Additional materials

Differential return loss



Differential to common-mode return loss