

TP2 J3u value

Contribution to support comment # 86 .3ck D2.2 Review Cycle

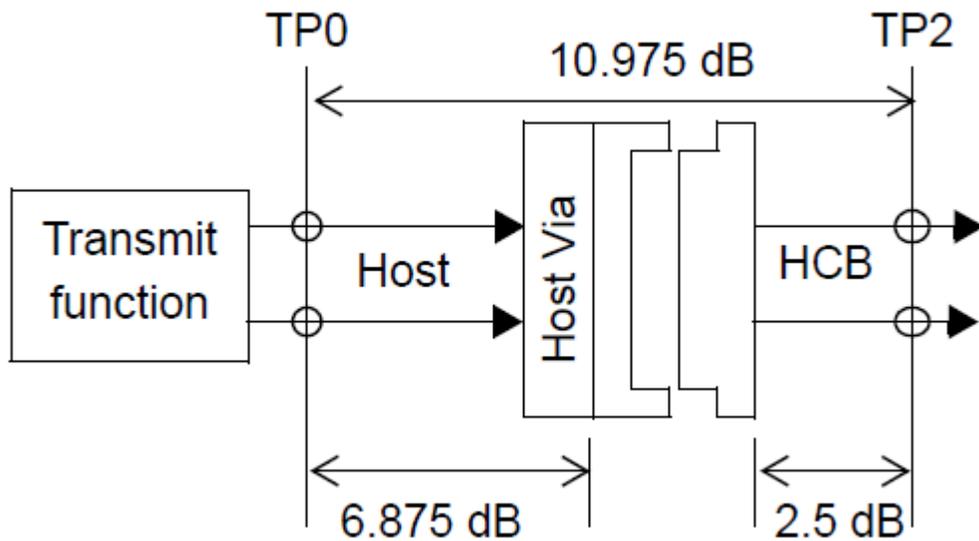
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TP2 measurement use-case is important



From the standpoint of being able to confirm electrical interoperability of a CR Transmitter Port by inserting an HCB and evaluating the signal properties, TP2 is kind of important. The Jitter values at TP2 are currently based on an unlikely set of minimum values (0dB package loss and 4.1dB MTF loss). Under these conditions 10.975dB net loss, the current J3u value of 110mUI is nominally attainable.

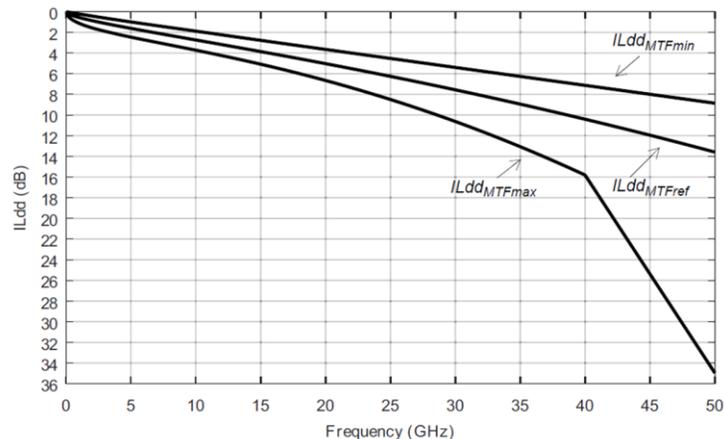


Figure 162B-3—Mated test fixtures differential-mode to differential-mode insertion loss

Bert output Total Path Loss (dB)	Bert FIR	J3U (mUI)	JRMS (mUI)
8	0/ 0.03/ -0.15/ 0.7/-0.08	75	10
15	-0.01/0.05/ -0.18/ 0.55/ -0.21	120	16

TP2 Problem statement

THE PUBLISHED J3u SPEC (115MUI) CAN'T BE REACHED DUE TO CHANNEL LOSS INDUCED NOISE CONTENT IN THE SIGNAL AT TP2.

TP0v jitter specs (output of the transmitter)

Residual intersymbol interference, <i>ISI_RES</i> (max)	163.9.2.6	-31	dB
Output jitter			
J_{RMS} (max)	120F.3.1.3	0.023	UI
J_{4u} (max)	120F.3.1.3	0.118	UI
Even-odd jitter (max)	120F.3.1.3	0.025	UI

³For a PMA in the same package as the PCS sublayer. In other cases, the signaling rate is derived from the signaling rate presented to the input lanes (see Figure 135-3 and Figure 120-3) by the adjacent PMD, PMA, or FEC sublayers.

Output jitter (max)			
J_{RMS}	162.9.3.4	0.023	UI
J3u	162.9.3.4	0.115	UI
Even-odd jitter, pk-pk	162.9.3.4	0.025	UI

Worst case loss at TP0-TP2 is 6.875dB (host) + 8.5dB (fixture max) = 15.37dB
 Package loss ~4dB. Net loss from Tx to TP2 is ~19.37dB

Proposed Solution:

.3ck (162.9.3) should permit edge compensation (equalization) at TP2 to allow better focus on measuring uncorrelated jitter, rather than the effects of slew rate limits and noise.

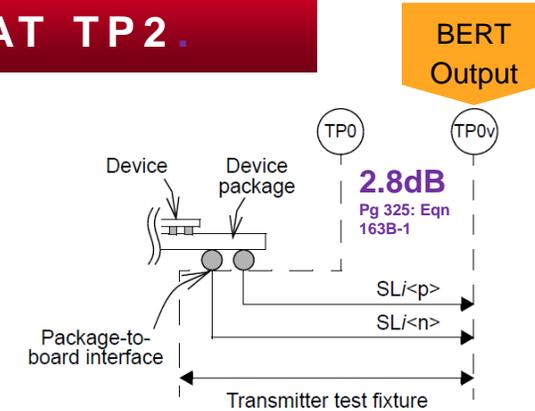
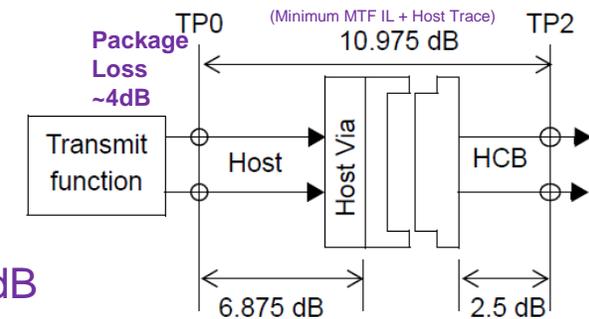


Figure 163-3—Transmitter test fixture and test points



Proposed Change

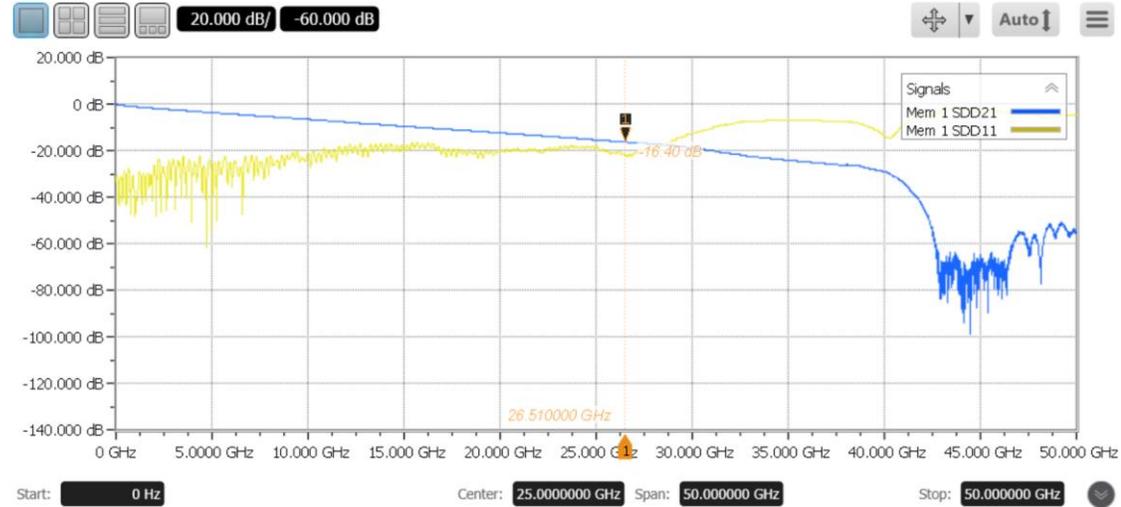
Output jitter (max)			
J_{RMS}	162.9.3.4	0.023	UI
J_{3u}^C	162.9.3.4	0.115	UI
Even-odd jitter, pk-pk	162.9.3.4	0.025	UI

^aFor a PMD in the same package as the PCS sublayer. In other cases, the signaling rate is derived from the input to the PMD transmit function provided by the adjacent PMA sublayer.

^bMeasurement uses the method described in 93.8.1.3 with the exception that the PRBS13Q test pattern is used.

^cNoise compensation methods or equalization are allowed to correct for slew rate limiting effects encountered at TP2.

Experimental Setup



Output Jitter

Src: D1A Rate: 53.124940 GBd Pat. Length: 8191
Intrinsic RN Removed: 865 μ V

Measurement	To L0	To L1	To L2	To L3
⊖ J3u (All)	120 mUI			
From L3	70 mUI	90 mUI	120 mUI	---
From L2	80 mUI	140 mUI	---	130 mUI
From L1	110 mUI	---	120 mUI	85 mUI
From L0	---	140 mUI	95 mUI	68 mUI
⊕ Jrms (All)	16 mUI			
⊕ EOJ (All)	22.0 mUI			

TP2 J3u value : 802.3ck D2.2 Comments

Mated Test Fixture ILdd

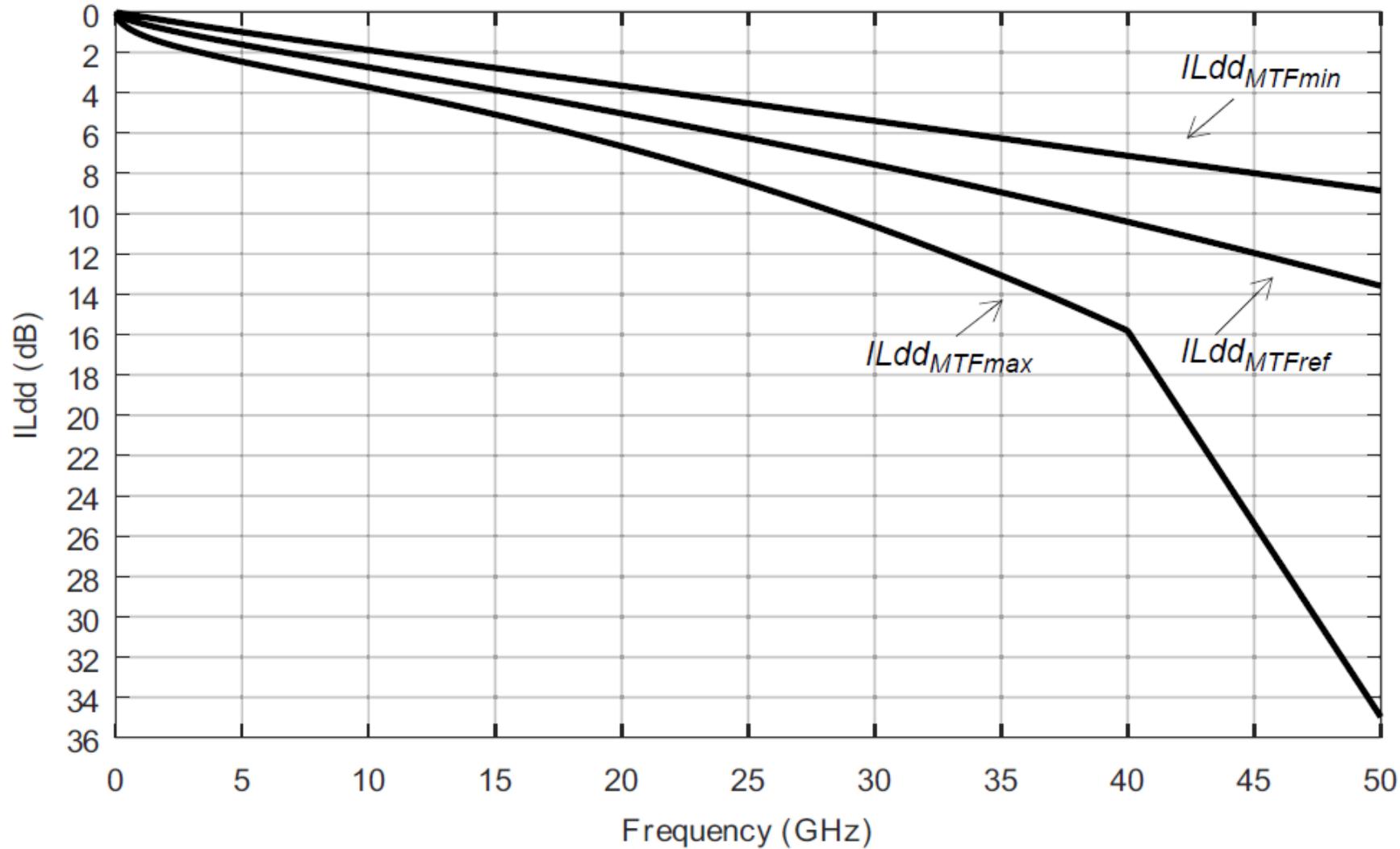


Figure 162B-3—Mated test fixtures differential-mode to differential-mode insertion loss