Cable Assembly (CR) COM Configuration Spreadsheets: Starting point

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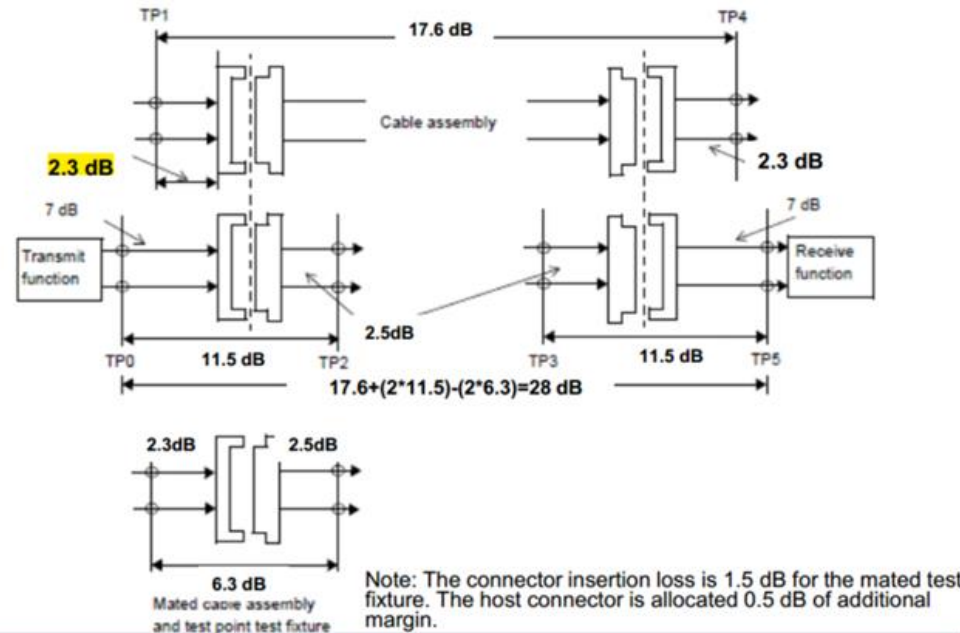
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❑ Added Host Loss Parameters

❑ Package Parameters

❑ CR Parameters

From diminico_3ck_01_1118:
Added COM host loss is 4.7 dB

Cable assembly and Channel IL - Baseline

- Cable assembly IL dB @ 26.56 GHz= 10 (bulk cable) + (2*2.3) (TF) +(2*1.5) (connector) = 17.6 dB
- Channel IL dB @ 26.56 GHz= 17.6 (Cable assembly) +2*11.5 (TP0-TP2)- (2*6.3) MTF = 28 dB
- Channel IL dB @26.56 GHz =10 (bulk cable)+(2*7) Host IL +(2*2) Host connector IL = 28 dB

4.7 dB = 7 dB – 2.3 dB

17.6+(2*11.5)-(2*6.3)=28 dB

Note: The connector insertion loss is 1.5 dB for the mated test fixture. The host connector is allocated 0.5 dB of additional margin.

Adopt Channel and Cable Assembly IL @ 26.56 GHz
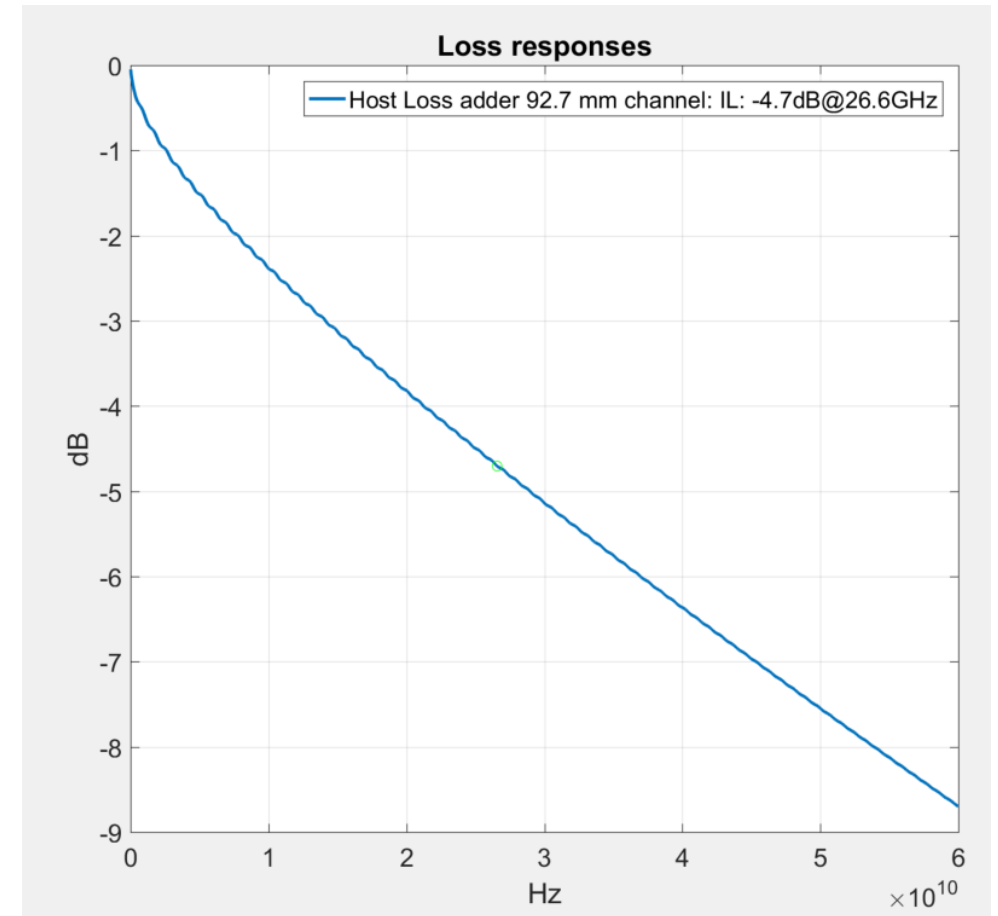– use 5 dB @ 26.56 GHz for cable assembly min IL – generate closed form equation

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COM host adder implemented with a 1.3 dB/inch trace at 26.56 GHz (like Megtron 7)

Table 92–12 parameters		
Parameter	**Setting**	
board_tl_gamma0_a1_a2	*[0 0.000599 0.0001022]*	
board_tl_tau	*6.200E-03*	ns/mm
board_Z_c	90	Ohm
z_bp (TX)	*92.7*	mm
z_bp (NEXT)	*92.7*	mm
z_bp (FEXT)	*92.7*	mm
z_bp (RX)	*92.7*	mm

From: diminico_3ck_01_1118.pdf

4.7 dB is the COM added host loss

Loss responses — Host Loss adder 92.7 mm channel: IL: -4.7dB@26.6GHz

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Package Parameters suggested in January Interim Straw Poll

Table 93A–3 parameters		
Parameter	**Setting**	**Units**
package_tl_gamma0_a1_a2	[0 0.0009909 0.0002772]	
package_tl_tau	6.141E-03	ns/mm
package_Z_c	[87.5 87.5 ; 92.5 92.5]	Ohm

Straw poll #2

I would support using the following reference package model for the development of KR/CR/C2M-hostside COM baseline proposals:

- Slide 8 of benartsi_3ck_01_0119
- with Cd changed to TBD

Yes: 41   No: 0   Abstain: 13

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config_com_ieee8023_93a=100GEL-CR_021319

Table 93A-1 parameters			
Parameter	Setting	Units	Information
f_b	53.125	GBd	
f_min	0.05	GHz	
Delta_f	0.01	GHz	
C_d	[1.3e-4 1.3e-4]	nF	[TX RX]
z_p select	[1 2]		[test cases to run]
z_p (TX)	[12 32; 1.8 1.8]	mm	[test cases]
z_p (NEXT)	[12 32; 1.8 1.8]	mm	[test cases]
z_p (FEXT)	[12 32; 1.8 1.8]	mm	[test cases]
z_p (RX)	[12 32; 1.8 1.8]	mm	[test cases]
C_p	[0.87e-4 0.87e-4]	nF	[TX RX]
R_0	50	Ohm	
R_d	[50 50]	Ohm	[TX RX]
A_v	0.413	V	vp/vf=.694
A_fe	0.413	V	vp/vf=.694
A_ne	0.608	V	
L	4		
M	32		
filter and Eq			
f_r	0.75	*fb	
c(0)	0.54		min
c(-1)	[-0.34:0.02:0]		[min:step:max]
c(-2)	[0:0.02:0.12]		[min:step:max]
c(-3)	[-0.06:0.02:0]		[min:step:max]
c(1)	[-0.1:0.05:0]		[min:step:max]
N_b	24	UI	
b_max(1)	0.85		
b_max(2..N_b)	0.3		
g_DC	[-20:1:0]	dB	[min:step:max]
f_z	21.25	GHz	
f_p1	21.25	GHz	
f_p2	53.125	GHz	
g_DC_HP	[-6:1:0]		[min:step:max]
f_HP_PZ	0.6640625	GHz	

I/O control		
DIAGNOSTICS	1	logical
DISPLAY_WINDOW	1	logical
CSV_REPORT	1	logical
RESULT_DIR	.\results\100GEL_WG_{date}\	
SAVE_FIGURES	0	logical
Port Order	[1 3 2 4]	
RUNTAG	CR_eval_	
COM_CONTRIBUTION	0	logical
Operational		
COM Pass threshold	3	dB
ERL Pass threshold	10.5	dB
DER_0	1.00E-04	
T_r	6.16E-03	ns
FORCE_TR	1	logical
Include PCB	1	logical
TDR and ERL options		
TDR	1	logical
ERL	1	logical
ERL_ONLY	0	logical
TR_TDR	0.01	ns
N	1000	
TDR_Butterworth	1	logical
beta_x	1.70E+09	
rho_x	0.25	
fixture delay time	0	enter sec
Receiver testing		
RX_CALIBRATION	0	logical
Sigma BBN step	5.00E-03	V
Noise, jitter		
sigma_RJ	0.01	UI
A_DD	0.02	UI
eta_0	8.20E-09	V^2/GHz
SNR_TX	33	dB
R_LM	0.95	

4.7 db/side

Table 93A–3 parameters		
Parameter	Setting	Units
package_tl_gamma0_a1_a2	[0 0.0009909 0.0002772]	
package_tl_tau	6.141E-03	ns/mm
package_Z_c	[87.5 87.5 ; 92.5 92.5]	Ohm

Table 92–12 parameters	
Parameter	Setting
board_tl_gamma0_a1_a2	[0 0.000599 0.0001022]
board_tl_tau	6.200E-03
board_Z_c	90
z_bp (TX)	92.7
z_bp (NEXT)	92.7
z_bp (FEXT)	92.7
z_bp (RX)	92.7

(board_tl_tau units: ns/mm; board_Z_c units: Ohm; z_bp units: mm)

Need to resolve C_d, N_b, and b_max

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Thank You!