100G CR Review
Cu Cable Comments

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kocsis_3ck_adhoc_01_011520

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CA MAX, 2.0m DAC

$$IL_{Chmax}(f) = IL_{Camax}(f) + 2IL_{Host}(f) - 2IL_{MatedTF}(f)$$
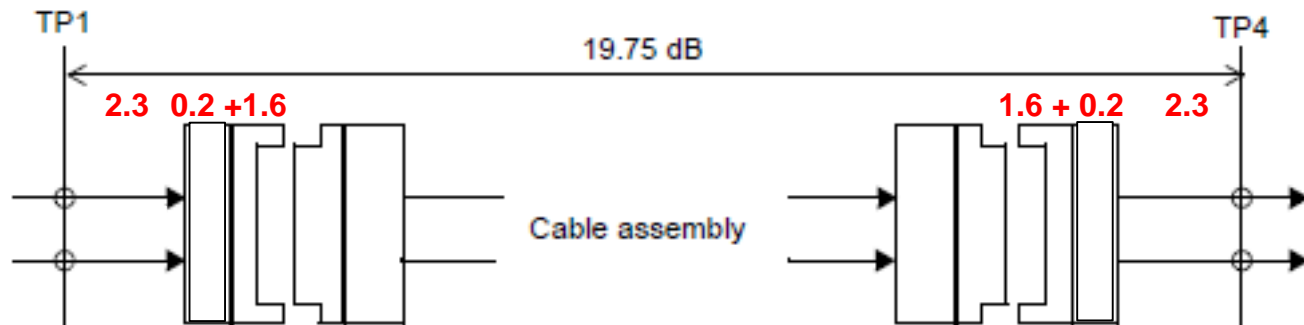
(162A–1)

for $0.05 \leq f \leq 40$

where

$IL_{Chmax}(f)$ is the maximum channel insertion loss in dB between TP0 and TP5

$IL_{Camax}(f)$ is the maximum cable assembly insertion loss in dB (TP1 to TP4)

$IL_{Host}(f)$ is the maximum insertion loss in dB from TP0 to TP2 or TP3 to TP5 using TBD

$IL_{MatedTF}(f)$ is the reference insertion loss in dB of the mated test fixture using Equation (162B–1)

f is the frequency in GHz

TP1   19.75 dB   TP4

2.3   0.2 +1.6   1.6 + 0.2   2.3

Cable assembly

Cable Assembly* = 19.75 – 2*2.3 – 2*(1.6+0.2) = 11.55dB

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CA MIN, 0.5m DAC

$IL_{Ch0.5m}(f)$	is the channel insertion loss in dB between TP0 and TP5 representative of a 0.5 m cable assembly and a maximum host channel
$IL_{Camin}(f)$	is the minimum cable assembly insertion loss in dB (TP1 to TP4) given in TBD and illustrated in TBD
$IL_{Host}(f)$	is the maximum insertion loss in dB from TP0 to TP2 or TP3 to TP5 using TBD
$IL_{MatedTF}(f)$	is the reference insertion loss in dB of the mated test fixture using Equation (162B–1)
f	is the frequency in GHz

Table 162A–1—Insertion loss budget values at 26.56 GHz

Parameter	Value	Units
IL_{Chmax}	28.5	dB
IL_{Camax}	19.75	dB
$IL_{Ch0.5m}$	19.84	dB
IL_{Camin}	11.09	dB
IL_{Host}	10.975	dB
$IL_{MatedTF}$	6.6	dB

- Camax is used to derive Chmax, but Camin is used to derive Ch0.5m
- Current requirement is 0p5m DAC would measure 2.89dB

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Cable Assembly Budget

Example Allocation for 2m DAC

Paddlecard + Wire Termination (dB)	Bulk Wire (dB/m)	Total 2m CA (dB)
0.5	5.28	11.55
1.0	4.78	11.55
1.5	4.28	11.55
2.0	3.78	11.55

Example Allocation for 0.5m DAC

Paddlecard + Wire Termination (dB)	Bulk Wire (dB/m)	Total 0.5m CA (dB)
0.5	5.28	3.64
1.0	4.78	4.39
1.5	4.28	5.14
2.0	3.78	5.89

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Proposed 3ck Changes (162A)

The channel insertion loss associated with the 0.5 m cable assembly and a maximum host channel is determined by Equation (162A–2).

ILchmin

$$IL_{Ch0.5m}(f) = IL_{Camin}(f) + 2IL_{Host}(f) - 2IL_{MatedTF}(f) \qquad (162A-2)$$

for $0.05 \leq f \leq 40$

where

ILchmin

$IL_{Ch0.5m}(f)$	is the channel insertion loss in dB between TP0 and TP5 representative of a 0.5 m cable assembly and a maximum host channel
$IL_{Camin}(f)$	is the minimum cable assembly insertion loss in dB (TP1 to TP4) given in TBD and illustrated in TBD
$IL_{Host}(f)$	is the maximum insertion loss in dB from TP0 to TP2 or TP3 to TP5 using TBD
$IL_{MatedTF}(f)$	is the reference insertion loss in dB of the mated test fixture using Equation (162B–1)
f	is the frequency in GHz

Table 162A–1—Insertion loss budget values at 26.56 GHz

Parameter	Value	Units	
IL_{Chmax}	28.5	dB	
IL_{Camax}	19.75	dB	
ILchmin $IL_{Ch0.5m}$	~~19.84~~	dB	*21.75*
IL_{Camin}	~~11.09~~	dB	*13.0*
IL_{Host}	10.975	dB	
$IL_{MatedTF}$	6.6	dB	

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