gDC Consensus Discussion

Recap of last time… (draft 1.1)

Table 120G–9—Eye opening reference receiver parameter values

Parameter	Symbol	Value	Units
Receiver 3 dB bandwidth	f_r	$0.75 \times f_b$	GHz
Continuous time filter, DC gain Minimum value Maximum value Step size	g_{DC}	 –14 –3 1	 dB dB dB
Continuous time filter, DC gain 2 Minimum value Maximum value Step size	g_{DC2}	 –3 0 1	 dB dB dB
Continuous time filter, zero frequency for $g_{DC} = 0$	f_z	12.58	GHz
Continuous time filter, pole frequencies	f_{p1} f_{p2}	20 28	GHz GHz
Continuous time filter, low-frequency pole/zero	f_{LF}	f_b / 40	GHz

http://www.ieee802.org/3/ck/public/20_03/closedcomments_3ck_02_0320.pdf

- Agreed on TP1a values… although discussion went long and some crafting on the floor occurred (D1.1 comment #101057)
- Agreed to separate TP4 near end and far end… but keep values as TBD (D1.1 comment #114)
- gDC2 Step Size (D1.1 comment #101043)

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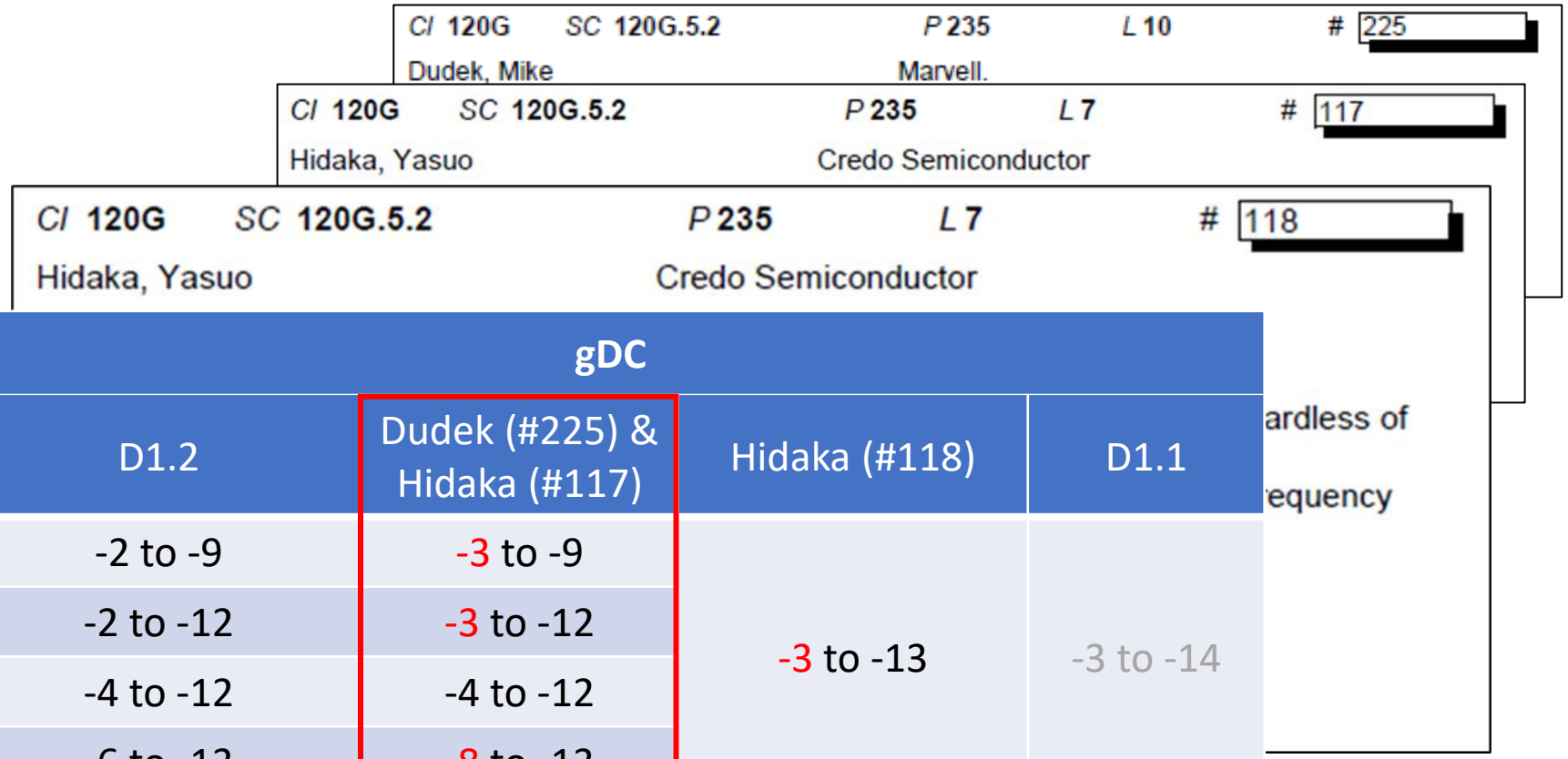
Table 120G–9—Eye opening reference receiver parameter values

Parameter	Symbol	Value	Units
Receiver 3 dB bandwidth	f_r	$0.75 \times f_b$	GHz
Continuous time filter, DC gain for TP1a Range for $g_{DC2} = 0$ Range for $-1 \le g_{DC2} < 0$ Range for $-2 \le g_{DC2} < -1$ Range for $-3 \le g_{DC2} < -2$ Step size	g_{DC}	 –2 to –9 –2 to –12 –4 to –12 –8 to –13 1.0	dB
Continuous time filter, DC gain 2 for TP1a Minimum value Maximum value Step size	g_{DC2}	 –3 0 0.5	dB
Continuous time filter, DC gain for TP4 near-end Minimum value Maximum value Step size	g_{DC}	 TBD TBD 1.0	dB
Continuous time filter, DC gain 2 for TP4 near-end Minimum value Maximum value Step size	g_{DC2}	 TBD TBD 0.5	dB
Continuous time filter, DC gain for TP4 far-end Minimum value Maximum value Step size	g_{DC}	 TBD TBD 1.0	dB
Continuous time filter, DC gain 2 for TP4 far-end Minimum value Maximum value Step size	g_{DC2}	 TBD TBD 0.5	dB
Continuous time filter, zero frequency for $g_{DC} = 0$	f_z	12.58	GHz
Continuous time filter, pole frequencies	f_{p1} f_{p2}	20 28	GHz GHz
Continuous time filter, low-frequency pole/zero	f_{LF}	f_b / 40	GHz
Decision feedback equalizer (DFE) length	N_b	4	UI
Normalized DFE coefficient magnitude limit $n = 1$	$b_{max}(n)$	 0.4	—

TP1a Values



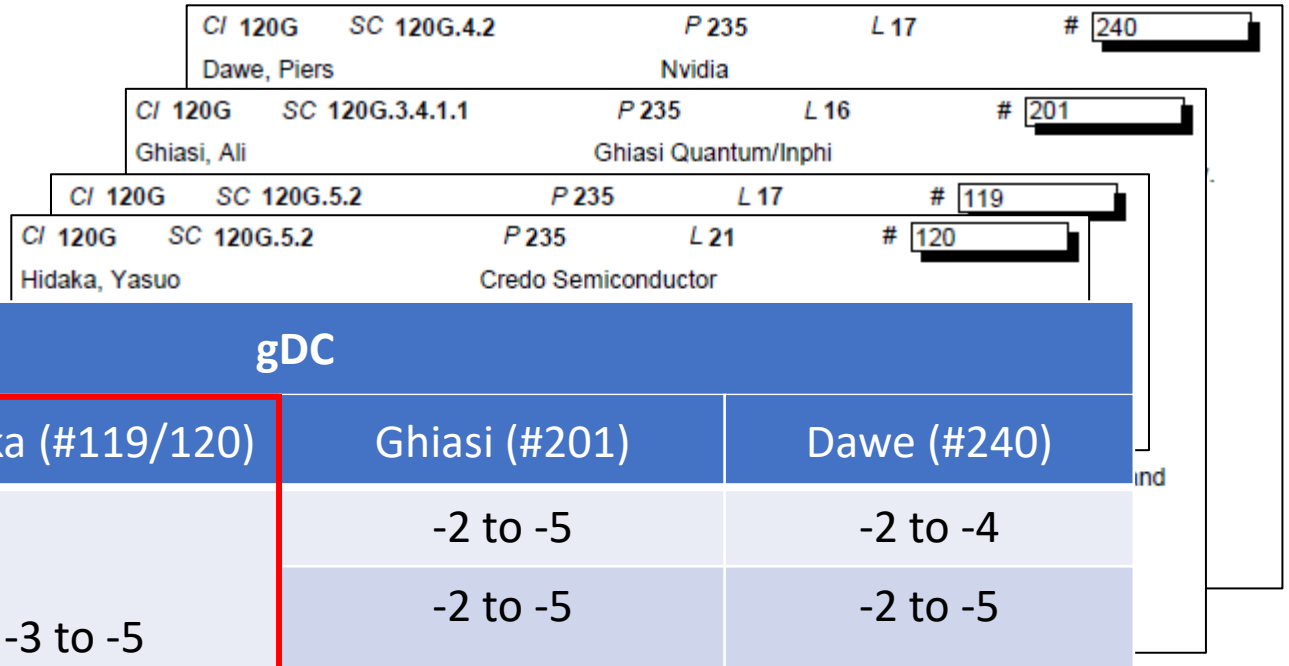
	gDC			
gDC2	D1.2	Dudek (#225) & Hidaka (#117)	Hidaka (#118)	D1.1
0	-2 to -9	-3 to -9	-3 to -13	-3 to -14
-1, [-0.5]	-2 to -12	-3 to -12		
-2, [-1.5]	-4 to -12	-4 to -12		
-3, [-2.5]	-6 to -13	-8 to -13		
gDC2 count	7	7	7	4
	8+22+18+16 = 64	8+22+18+12 = 60	11*7 = 77	12*4 = 48

The spirit of the discussion from D1.1 was:

- Only include what settings seem reasonable
- Keep test case numbers down

Proposed accept the values modifications on previous slide, leave dependence of gDC and gDC2.

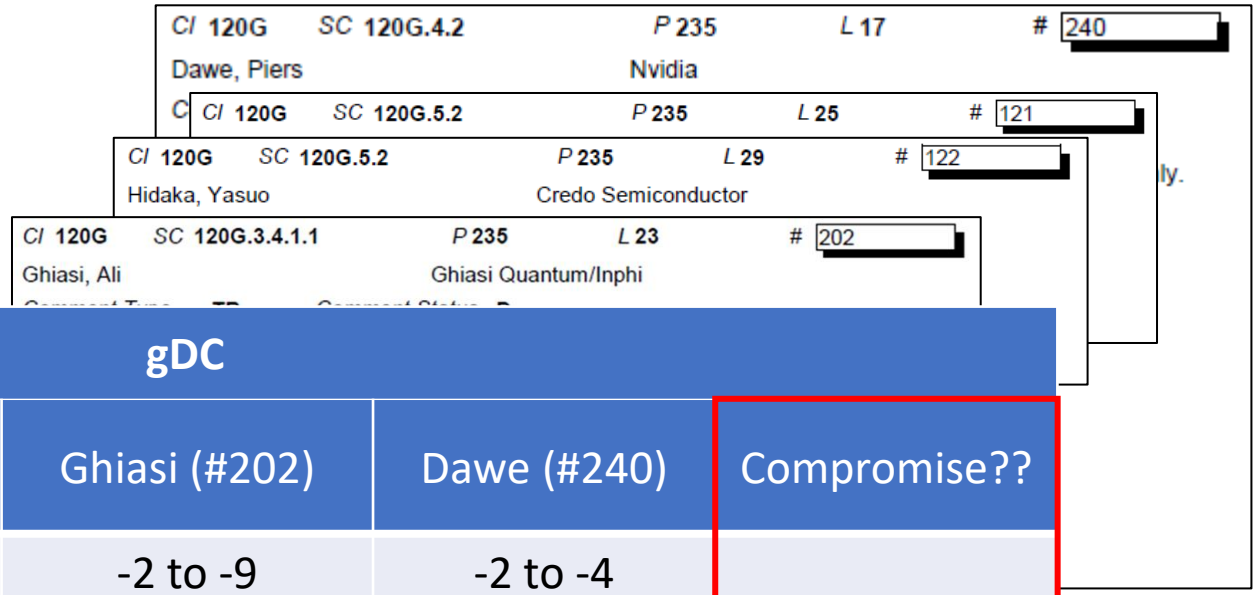
TP4 Near-End



	gDC			
gDC2	D1.2 gDC	Hidaka (#119/120)	Ghiasi (#201)	Dawe (#240)
0	TBD	-3 to -5	-2 to -5	-2 to -4
-1, [-0.5]	TBD		-2 to -5	-2 to -5
-2, [-1.5]	TBD		-4 to -5	-4 to -5
-3, [-2.5]	TBD			
gDC2 count	7	5	5	5
Test count		3*5 = 15	4+4+2= 10	3+4+2 = 9

These proposals all seem similar enough, this is the simplest one.

TP4 Far-End



	gDC				
gDC2	D1.2 gDC	Hidaka (#121/122)	Ghiasi (#202)	Dawe (#240)	Compromise??
0	TBD		-2 to -9	-2 to -4	
-1, [-0.5]	TBD		[0.5] -2 to -9 [1] -2 to -10	-2 to -7	
-2, [-1.5]	TBD	-3 to -9	-4 to -10	-4 to -10	
-3, [-2.5]	TBD		-8 to -10	-8 to -10	
gDC2 count	7	4	7	7	
Test count	8+22+18+16 = 64	7*4 = 28	8+8+9+14+6= 45	3+12+14+6 = 35	

Is there a compromise here??