C/FM SC FM P1 L10 # I-157 C/FM SC FM P11 L3 Dawe, Piers J G NVIDIA Grow, Robert RMG Consulting Comment Type E Comment Status A (bucket2) Grow, Robert RMG Consulting Missing amendment number	# <u>1-83</u> (bucket2)
Comment Type E Comment Status A Missing amendment number Missing Amendment #. SuggestedRemedy SuggestedRemedy	(bucket2)
Missing amendment number Missing Amendment #. SuggestedRemedy SuggestedRemedy	(bucket2
30 line 3. It would help if the placeholders were in the template. Response Response Status C ACCEPT IN PRINCIPLE. Resolve using the response to comment #83. Response to comment #83. Response The template of	
C/ FM SC FM P11 L17	# I-84
C/ FM SC FM P1 L 34 # I-82 Grow, Robert RMG Consulting	-
Grow, Robert RMG Consulting Comment Type E Comment Status A	(bucket2)
Comment Type E Comment Status A (bucket2) Slight differences from P802.3/D3.0 front matter.	
Don't forget to update copyright year here, next page, and in the footer when producing the next draft SuggestedRemedy	
SuggestedRemedy Update Introduction text to match the most recent P802.3 draft.	
Update framemaker variable and inspect front pages and footer to to assure all use the vairable and if not, update. Response Response Status C ACCEPT IN PRINCIPLE. ACCEPT IN PRINCIPLE.	
Response Response Status C Resolve using the response to comment #123.	
ACCEPT. C/ FM SC FM P13 L3	# I-85
C/ FM SC FM P4 L 32 # I-123 Grow, Robert RMG Consulting	
Healey, Adam Broadcom Inc. Comment Type E Comment Status A	(bucket2
Comment Type E Comment Status A (bucket2) No amendment numbers on descriptions of amendments 3 through 5	i
The "Important Notices and Disclaimers Concerning IEEE Standards Documents" does not SuggestedRemedy	
align with the latest template. Add Amendment number as on Amendment 1 through Amendment 2)
SuggestedRemedy Response Response Status C	
Update the frontmatter to be consistent with the latest template. Note changes to the second paragraph of "Notice and Disclaimer of Liability Concerning the Use of IEEE Standards Documents", two additional paragraphs under "Patents", and other minor changes.	
Response Response Status C	
ACCEPT.	

C/ FM SC FM

C/ FM	SC FM	P 13	L 9	# <u>1-86</u>
Grow, Rok	pert	RMG Consul	lting	
Comment	Туре Е	Comment Status A		(bucket2)
	s the acronym f 3db/D2.1 delete	or Physical Layer Device, not es "(PHY)".	Physical Layer.	The self description in
Suggested	Remedy			
Delete	e "(PHY)"			
Response		Response Status C		
The de		PLE. 2.3db D2.1 appears to have fix to match the description in 80		
C/ FM	SC FM	P 13	L 20	# I-87
Grow, Rob	pert	RMG Consu	lting	
Comment	Туре Е	Comment Status A		(bucket2)
chang submi	ing 2018 to 202 tted on P802.30	copying self descriptions exa ex on Amendment 2 could be of de/D2.1 about the 2018 date of accept). P802.3cs/D3.0 has	done. Multiple c	omments were dard in the self
Suggested	Remedy			
		atest draft, check for updates P802.3de reference to 2018 ir		
Response		Response Status C		
The de Howey ameno	ver, errors in the	PLE. amendment numbers should b ese decriptions should be add ent descriptions to match the o	ressed by comn	nents against each

Update the amendment descriptions to match the desciption in the latest draft for each amendment.

C/FM SC FM	P 30	L 47	# I-158
Dawe, Piers J G	NVIDIA		
Comment Type E	Comment Status A		(bucket2)

As this is an amendment to 802.3dc, P802.3cn and P802.3cu have gone, and new readers need not know of them. Further, the editor's note would be more use to reviewers and editor if it listed the actual amendments that the editor has noted as running in parallel and affecting this draft, not just the concept. Also, it helps to state which amendments running in parallel are believed not to affect the draft, so the reviewer knows they have been considered. Apparently, only P802.3db affects this draft, but others might.

SuggestedRemedy

Change "(e.g., IEEE P802.3cn and IEEE P802.3cu)" to "(IEEE P802.3db; no impact is noted from IEEE P802.3dd, P802.3de, or IEEE P802.3cs)"

Response Response Status C

ACCEPT IN PRINCIPLE.

The list of prior amendments should be updated to list only relevant ones. However, the list of prior amendments is for example only and is not meant to be exhaustive. Change "(e.g., IEEE P802.3cn and IEEE P802.3cu)" to "(e.g., IEEE P802.3db)"

C/ FM	SC FM	P 30	L 48	# I-159
Dawe, Pie	rs J G	NVIDIA		
Comment	Туре Е	Comment Status A		(bucket2)

"the same text and tables" so clashing edits to figures are OK?

SuggestedRemedy

Change to "the same portions of the draft standard".

Response Response Status C

ACCEPT IN PRINCIPLE.

The text in this editor's note is consistent with the amendment template. However, it would be good to correct this statement.

Update the text based on the suggested remedy and guidance from the template author with editorial license.

C/ FM SC FM

CI 0 S	SC O	P 0	L 0	# <u>I-18</u>	C/ 1	SC 1.4		P 32	L 65	# <mark>I-118</mark>
Brown, Matthe	ew	Huawei Tech	nologies Canada		Ghiasi, Ali	i		Ghiasi Quan	tum LLC,Marvell	Semiconductor, Inc.
Comment Typ Keep this 802.3ck.		Comment Status A vith the new revision (802.3do	c) and any amendm	<i>(bucket2)</i> nents that precede		DD operates at		nt Status A	ere is no reason to	/bucket o include SFP-DD
amendme <i>Response</i> ACCEPT	next draft with		w revision (802.3df	[;]) and any preceding	Response ACCE	e remvoe SFP-	Respons PLE.	e Status C 4 with editorial lic	ense.	
· · ·	SC 1.3	P 32	L 12	# 1.27	CI 30	SC 30.5.1.1	.16	P 36	L 39	# I-5
Ran, Adee	30 I. 3	۲ 32 Cisco System		# 1-37	Marris, Ar	thur		Cadence De	sign Systems, In	с.
Comment Typ	ences for QSI	Comment Status A FP-DD and for SFP-DD don't		<i>(bucket2)</i> e end, unlike other	Comment Recor Suggested	ncile the last pa		ont Status A 0.5.1.1.16 with th	e text in the revisi	(bucket2 ion standard.
Add final p Response ACCEPT.		ese two references. Response Status C			to the RS-FE the FE	EC enable bit in EC	the appropri	ate FEC control	register based up	o the FEC enable bit or on the PHY type and
Ran, Adee Comment Typ		P 32 L 51 Cisco Systems, Inc. Comment Status A	ns, Inc.	# [<u>1-38</u> (bucket2)	Response ACCE	0	Respons PLE.	5.2.1.108, and 45 se <i>Status</i> C mment #39	o.2.1.116).;"	
	•	should be formatted in blue a	and underlined.		C/ 30	SC 30.5.1.1	.16	P 36	L 39	# I-122
	,	ur LIPL instances on this pac	10		Healey, A	dam		Broadcom Ir	nc.	
Apply URL format in for Response ACCEPT.	Response Status C		shown	P802.3ck will b	e an amendn agraph of the	"BEHAVIOR DE		<i>(bucket</i> 2) atd 802.3. The changes ion do not correspond		
	-									
	-				Suggested					
					00	dRemedy	relative to the	e text in IEEE P8	02.3 (IEEE 802.3	dc) D3.0.
					00	<i>dRemedy</i> fy the changes		e text in IEEE P8 se Status C	02.3 (IEEE 802.3	dc) D3.0.

Page 3 of 59 2022-02-16 5:32:17 PM

C/ 30	SC 30.5.1.1.1	6 P 36	L 39	# I-39	CI 30	SC	30.5.1.1.1	8	P 37	L 22	# <u>1-227</u>
Ran, Adee	9	Cisco S	Systems, Inc.		Ben-Artsi	, Liav			Marvell Semi	conductor, Inc.	
Comment	Туре Е	Comment Status	N Contraction of the second seco	(bucket2)	Comment	Туре	Е	Comme	nt Status R		(bucket2)
		30.5.1.1.16 has been	0,	J. J		rically sp Sbase-Pl		e stated lov	vest first, this 10/	1Gboa-PRX shou	uld be changed to
				to the FEC enable bit or ased upon the PHY type	Suggeste	dRemea	dy				
		node (see 45.2.10.3, 4			Chan	ge to 1/1	10Gbase-	PRX			
This r	moves the need	or the changes in this	paragraph in the 80	2 2 ck draft	Response	9		Respons	e Status C		
		or the changes in this	paragraph in the ou	2.30K uran.	REJE						
Suggested	-								base standard th		to the P802.3ck e might have side
Remo	ve the fourth para	graph of 30.5.1.1.16.							ge in 45.2.3.43.	aking this change	e might have side
		truction from "Change equent paragraphs as		.1.16 as follows" to	C/ 45		45.2.1.6		P 40	L 12	# 1-228
	-				Ben-Artsi					conductor, Inc.	" 1220
Response		Response Status	;		Comment		TR	Commo	nt Status R	conductor, inc.	(hundred A)
ACCE	PT.								be reserved.		(bucket4)
C/ 30	SC 30.5.1.1.1	7 P 37	L 8	# 1-226		-			be reserved.		
Ben-Artsi,	Liav	Marvell	Semiconductor, Inc.		Suggeste		as reserv	امما			
Comment	Туре Е	Comment Status F	R	(bucket2)		• • • • • •	as reserv				
Histori	cally speeds were	stated lowest first, th	is 10/1Gboa-PRX sh	ould be changed to	Response			Respons	e Status W		
1/10G	base-PRX			-	REJE		ot reserve	d but define	ed to be "400GBA		MD" in the base
Suggested	Remedy				-						ne 802.3ck standard.
chang	e to 1/10Gbase-P	RX						0			
Response		Response Status	;								
projec	omment refers to t and so is out of s	text in the base stand scope for comment. A nilar change in 45.2.3	lso making this chan								

C/ 45 SC 45.2.1.6

C/ 45 SC 45.2.1.21	P 42	L 3	# 1-7	C/ 45	SC 45.2.1.21	P 42	2 L 11	# I-160
Marris, Arthur	Cadence Des	sign Systems, Inc		Dawe, Pie	rs J G	NVIDI	A	
Comment Type E	Comment Status A		(bucket4)	Comment	Гуре Е	Comment Status	Α	(bucket4)
Align 45.2.1.21 with 802.3 appropriate	db draft 2.1 and also 45.2	2.1.24 and any oth	er subclauses as	P802.3 "Reser		d this table, so the nex	t row above is 200GB	ASE-VR2 ability not
SuggestedRemedy				Suggested	Remedy			
Change editing instruction "Change Table 45–23 as f To: "Change Table 45–24 (as rows not shown):" In Table 45-24 show reser 802.3db Change "Insert 45.2.1.21." to:	ollows (some unchanged modified by IEEE 802.3d ved row as crossed out a la and 45.2.1.21.1b after	b-202x) as follows nd change bits to 45.2.1.21.1 as fol	s (some unchanged "1.23:8:7" to match lows:"	and so Chang 1.23.14 to 1.23.9 PMA/F Adjust table (me clashes spo e 4:9x7/x Reserv 200GBASE-V MD is not able t	tted easily. ved Value always 0 /R2 ability 1 = PMA/ to perform 200GBASE at line 3 to mention th	RO PMD is able to perform -VR2 RO he preceding amendme	ontext can be reviewed n 200GBASE-VR2 0 = ent(s) that affect this
"Insert 45.2.1.21.1c and 4 202x) as follows:"		,		ACCE		LE.	C	
Renumber 45.2.1.21.1a a	nd 45.2.1.21.1b to 45.2.	.1.21.1c and 45.2.	1.21.1d	Resolv	e using the resp	bonse to comment #7		
In Table 45-27 show reser 802.3db	ved row as crossed out a	nd change bits to	"1.26:1:0" to match	<i>Cl</i> 45 Ben-Artsi,	SC 45.2.1.2 1 Liav		2 L 18 Il Semiconductor. Inc.	# <mark>I-229</mark>
Response F ACCEPT IN PRINCIPLE.	Response Status C			Comment		Comment Status		(bucket2)
There are some formatting with editorial license.	errors in the suggested	remedy, but these	e can be addressed	<i>Suggested</i> If a typ	<i>Remedy</i> o, erase			
Align with 802.3db per the	suggested remedy with e	editorial license.			PT IN PRINCIPI typo so erase i		W	
				C/ 45	SC 45.2.1.11	16 P 45	5 L 22	# I-161
				Dawe, Pie	rs J G	NVIDI	A	
				<i>Comment</i> Mispla	<i>Type</i> E ced "only"	Comment Status	Α	(bucket4)
				Suggested	Remedy			
						le for PHYs that includ multiple FEC sublayer		vers" to "applicable only
				Response		Response Status	с	
				ACCE	PT.			
YPE: TR/technical required I COMMENT STATUS: D/dispa CORT ORDER: Clause, Subcl	ched A/accepted R/reje			0	U/unsatisfied	Z/withdrawn	C/ 45 SC 45.2.1.116	Page 5 of 59 2022-02-16 5:32:

	00.45.0.4.40		1.00	11 11 100	0/ =0	00 =0 0 (1.0	# <u>1 000</u>
C/ 45	SC 45.2.1.13		L 33	# I-162	CI 73	SC 73.6.4	P 7		L3	# I-230
Dawe, Piers		NVIDIA			Ben-Artsi,				nductor, Inc.	
Comment Ty Table lay		Comment Status A		(bucket2)		51	Comment Status shorten this field? I'd		ve a 24-bit field	<i>(bucket2)</i> d instead. More
SuggestedRe Make the		nn wider and the third, narrow	ver.		Suggested					
Response		Response Status C			Chang	e to 24 bit				
ACCEPT	Г.				Response	~~	Response Status	С		
CI 45	SC 45.2.7.13.	1 P 64	L 48	# I-3	REJE0 The fie		ed to accommodate th	ne extra FE	EC capability bi	t F4
Marris, Arthu	ur	Cadence Des	ign Systems, Inc.		CI 73	SC 73.6.5	P 7	1	L 33	# I-80
Comment Ty	vpe T	Comment Status A		(bucket2)	Lusted, Ke	ent	Intel	Corporatio	n	
Bit 7.49.6	6 needs its owr	n subclause			Comment	Type TR	Comment Status	Α		(bucket2)
this text o	currently in 45.	I5.2.7.13.A RS-FEC-Int nego 2.7.13.1: ation process has completed			100ĠE all 100	BASE-CR1 and 1	types and improved v	th the exce	eption of 100GE	BASE-KP4, these are
defined in Clause 1 negotiate 100GBA	in 161 has been n ed for a	Error Correction codeword-in egotiated. This bit is set only porting negotiation of RS-FE	r if RS-FEC-Int ope	, ,	where Clause Additic	RS-FEC-Int (see e91)." onally, change ite	nce of the last paragr e Clause161) is an al em (e) in the list of Cl	ternative t	o the default R	
Response ACCEPT	г	Response Status C			reques	sted"				
ACCEPT	1.				Response	DT	Response Status	W		
C/ 45	SC 45.2.7.13.	1 P 64	L 49	# I-75	ACCE	PT.				
Slavick, Jeff		Broadcom Inc	c							
Comment Ty	/pe TR	Comment Status A		(bucket2)						
paragrap		egotation of FEC operation a vith "When the Auto-Negotia								
SuggestedRe Revert th		7.13.1 to original baseline te	ĸt.							
Make the	e first paragrap	h of 45.2.7.13.1 its own new	sub-clause							
Response		Response Status W								
	T IN PRINCIPL using the respo	E. onse to comment #3								
COMMENT S	STATUS: D/dis	d ER/editorial required GR/ patched A/accepted R/reje bclause, page, line			0	U/unsatisfied	Z/withdrawn	CI 73 SC 73.6	5.5	Page 6 of 59 2022-02-16 5:32:

C/ 80	SC 80.1.3	P 76	L 41	# <u>I-2</u>	CI 80	SC 80.1	.5	P	0	L 14	# <mark>I</mark> -19
Marris, Art	thur	Cadence Des	ign Systems, Ind	c.	Brown, Ma	atthew		Huav	vei Techr	ologies Canada	a
Comment	Туре Е	Comment Status A		(bucket2)	Comment	Туре Т		Comment Status	Α		(bucket
Add: "Claus	e 167 for 100G	BASE-VR1 and 100GBASE-S	R1"					2M are listed in Tab le sublayer table in (
		e of single lane datapath as ad	ded by 802.3db		Suggested Import		7 and	Table 167-1, adding	100GBA	SE-1 C2C and	C2M.
	Clause 167 for	100GBASE-VR1 and 100GBA rom the text in 802.3db	SE-SR1" on line	42 showing		PT IN PRIN	-				
Response		Response Status C			Resolv	e using the	respo	onse to comment #3	86.		
	PT IN PRINCIP				C/ 80	SC 80.2	.3	Pt	0	L 33	# I-88
	Clause 167 fo BASE-KR1"	or 100GBASE-VR1 and 100GE	BASE-SR1" after	" in Clause163 for	Grow, Rob	pert		RMG	Gonsulti	ng	
10001	-				Comment	Type EF	ł	Comment Status	Α		(bucket
C/ 80	SC 80.1.3	P 76	L 41	# 1-93	Capita	lization of "	forwar	rd error correction" h	nas been	made consister	nt in P802.3/D3.0.
		a a									
Parsons, E	zari	CommScope	, Inc.		Suaaested	lRemedv					
	Туре Т	CommScope Comment Status A R1 and 100GBASE-VR1 from		(bucket2)		ch and repl		ill find 8 places whe lings and text.	re capital	ization needs to	be corrected to lower
Comment Include	<i>Type</i> T e 100GBASE-S	Comment Status A		(bucket2)	A sear	ch and repl				ization needs to	be corrected to lower
Comment Include Suggested	Type T e 100GBASE-S IRemedy	Comment Status A		(bucket2)	A sear case ir	rch and repl n subclause		lings and text.		ization needs to	be corrected to lower
Comment Include Suggested Insert	<i>Type</i> T e 100GBASE-S <i>IRemedy</i> a line below the	Comment Status A R1 and 100GBASE-VR1 from	802.3db.	(bucket2)	A sear case ir <i>Response</i>	rch and repl n subclause		lings and text.	W	ization needs to	be corrected to lower # 1-40
Comment Include Suggested Insert : " Cla	<i>Type</i> T e 100GBASE-S <i>IRemedy</i> a line below the use 167 for 100	Comment Status A R1 and 100GBASE-VR1 from Clause 140 line in item i):	802.3db.	(bucket2)	A sear case ir <i>Response</i> ACCE	rch and repl n subclause PT. SC 91		lings and text. Response Status P t	W	L 5	
Comment Include Suggested Insert " Cla Response ACCE	<i>Type</i> T e 100GBASE-S <i>IRemedy</i> a line below the use 167 for 100 PT IN PRINCIP	Comment Status A R1 and 100GBASE-VR1 from Clause 140 line in item i): GBASE-VR1 and 100GBASE Response Status C LE.	802.3db.	(bucket2)	A sear case ir Response ACCE	PT. SC 91		lings and text. Response Status P t	W 9 5 System	L 5	
Comment Include Suggested Insert " Cla Response ACCE Resolv	<i>Type</i> T e 100GBASE-S <i>IRemedy</i> a line below the use 167 for 100 PT IN PRINCIP ve using the res	Comment Status A R1 and 100GBASE-VR1 from Clause 140 line in item i): GBASE-VR1 and 100GBASE Response Status C LE. ponse to comment #2.	802.3db. -SR1"		A sear case ir Response ACCE C/ 91 Ran, Adee Comment The ar	rch and repl n subclause PT. SC 91 <i>Type</i> E nendment of	head	lings and text. Response Status P t Cisc Comment Status use 91 has subclaus	W 9 5 System A es under	<i>L</i> 5 s, Inc. 91.5 and 91.5.2	# <mark>1-40</mark> <i>(bucket</i> 2 without the full
Comment Include Suggested Insert " Cla Response ACCE Resolv	<i>Type</i> T e 100GBASE-S <i>IRemedy</i> a line below the use 167 for 100 PT IN PRINCIP	Comment Status A R1 and 100GBASE-VR1 from Clause 140 line in item i): GBASE-VR1 and 100GBASE Response Status C LE. ponse to comment #2.	802.3db. -SR1" <i>L</i> 42	(bucket2) # <u>I-81</u>	A sear case ir Response ACCE C/ 91 Ran, Adee Comment The ar hierarc	rch and repl n subclause PT. SC 91 Type E mendment o	head	lings and text. Response Status P t Cisc Comment Status	W 9 5 System A es under	<i>L</i> 5 s, Inc. 91.5 and 91.5.2	# <mark>1-40</mark> <i>(bucket</i> 2 without the full
Comment Include Suggested Insert " Cla Response ACCE	Type T e 100GBASE-S <i>IRemedy</i> a line below the use 167 for 100 PT IN PRINCIP ve using the res SC 80.1.3	Comment Status A R1 and 100GBASE-VR1 from Clause 140 line in item i): GBASE-VR1 and 100GBASE Response Status C LE. ponse to comment #2.	802.3db. -SR1" <i>L</i> 42		A sear case ir Response ACCE C/ 91 Ran, Adee Comment The ar hierarc Suggested	rch and repl n subclause PT. SC 91 Type E nendment o chy. It is cor IRemedy	of clau	lings and text. Response Status P t Cisc Comment Status use 91 has subclaus	W 9 5 System A es under	<i>L</i> 5 s, Inc. 91.5 and 91.5.2	# <mark>1-40</mark> <i>(bucket</i> 2 without the full
Comment Include Suggested Insert : " Cla Response ACCE Resolv C/ 80 Lusted, Ke Comment	Type T e 100GBASE-S <i>IRemedy</i> a line below the use 167 for 100 PT IN PRINCIP /e using the res <i>SC</i> 80.1.3 ent <i>Type</i> E	Comment Status A R1 and 100GBASE-VR1 from Clause 140 line in item i): GBASE-VR1 and 100GBASE Response Status C LE. ponse to comment #2.	802.3db. -SR1" <i>L</i> 42 iion	# [<u>I-81</u> (bucket2)	A sear case ir Response ACCE Cl 91 Ran, Adee Comment The ar hierard Suggested Add he 91.5 F	rch and repl n subclause PT. SC 91 Type E mendment o chy. It is cor IRemedy eadings for:	of clau	lings and text. Response Status P & Cisc Comment Status ise 91 has subclaus to include the full h ne RS-FEC sublayer	W 59 5 System A es under ierarchy c	<i>L</i> 5 s, Inc. 91.5 and 91.5.2	# <mark>1-40</mark> <i>(bucket</i> 2 without the full
Comment Include Suggested Insert " Cla Response ACCE Resolv C/ 80 Lusted, Ke Comment there is	Type T e 100GBASE-S <i>IRemedy</i> a line below the use 167 for 100 PT IN PRINCIP ve using the res SC 80.1.3 ent Type E s an extra "in" a	Comment Status A R1 and 100GBASE-VR1 from Clause 140 line in item i): GBASE-VR1 and 100GBASE Response Status C LE. ponse to comment #2. P76 Intel Corporat Comment Status A	802.3db. -SR1" <i>L</i> 42 iion	# [<u>I-81</u> (bucket2)	A sear case ir Response ACCE Cl 91 Ran, Adee Comment The ar hierard Suggested Add he 91.5 F	rch and repl n subclause PT. SC 91 Type E mendment o chy. It is cor IRemedy eadings for: unctions wi	of clau	lings and text. Response Status P & Cisc Comment Status ise 91 has subclaus to include the full h ne RS-FEC sublayer	W System A es under ierarchy c	<i>L</i> 5 s, Inc. 91.5 and 91.5.2	# [<u>1-40</u> <i>(bucket</i> 2 without the full
Comment Include Suggested Insert " Cla Response ACCE Resolv C/ 80 Lusted, Ke Comment there is Suggested in 80.1 "in Cla	Type T e 100GBASE-S <i>Remedy</i> a line below the use 167 for 100 PT IN PRINCIP ve using the res SC 80.1.3 ent Type E s an extra "in" a <i>Remedy</i> 1.3, list item i) ch use 162 for 100	Comment Status A R1 and 100GBASE-VR1 from Clause 140 line in item i): GBASE-VR1 and 100GBASE Response Status C LE. ponse to comment #2. P76 Intel Corporat Comment Status A t the start of the bullets for Cla	802.3db. -SR1" <i>L</i> 42 tion ause 162 and Cla 2 for 100GBASE	# [<u>I-81</u> <i>(bucket2)</i> ause 163 list items. -CR1" and "in	A sear case ir Response ACCE C/ 91 Ran, Adee Comment The ar hierard Suggested Add he 91.5 F 91.5.2	rch and repl n subclause PT. <i>SC</i> 91 <i>Type</i> E nendment of chy. It is cor <i>IRemedy</i> eadings for: unctions wi Transmit fu	of clau	lings and text. Response Status P & Cisc Comment Status use 91 has subclaus to include the full h the RS-FEC sublayer n	W System A es under ierarchy c	<i>L</i> 5 s, Inc. 91.5 and 91.5.2	# [<u>1-40</u> <i>(bucket</i> 2 without the full
Comment Include Suggested Insert " Clai Response ACCE Resolv Cl 80 Lusted, Ke Comment there is Suggested in 80.1 "in Cla	Type T e 100GBASE-S <i>Remedy</i> a line below the use 167 for 100 PT IN PRINCIP ve using the res <i>SC</i> 80.1.3 ent <i>Type</i> E s an extra "in" a <i>Remedy</i> 1.3, list item i) ch use 162 for 100 e163 for 100GB.	Comment Status A R1 and 100GBASE-VR1 from Clause 140 line in item i): GBASE-VR1 and 100GBASE Response Status C LE. ponse to comment #2. P76 Intel Corporat Comment Status A t the start of the bullets for Clause nange: GBASE-CR1" to " Clause 162	802.3db. -SR1" <i>L</i> 42 tion ause 162 and Cla 2 for 100GBASE	# [<u>I-81</u> <i>(bucket2)</i> ause 163 list items. -CR1" and "in	A sear case ir Response ACCE Cl 91 Ran, Adee Comment The ar hierard Suggested Add he 91.5 F 91.5.2 Response	rch and repl n subclause PT. <i>SC</i> 91 <i>Type</i> E nendment of chy. It is cor <i>IRemedy</i> eadings for: unctions wi Transmit fu	of clau	lings and text. Response Status P & Cisc Comment Status use 91 has subclaus to include the full h the RS-FEC sublayer n	W System A es under ierarchy c	<i>L</i> 5 s, Inc. 91.5 and 91.5.2	# <mark>1-40</mark> <i>(bucket</i> 2 without the full

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 91 SC 91

C/ 91	SC 91.5.3.3	P 89	L 31	# <u>I-41</u>
Ran, Ade	e	Cisco Syste	ms, Inc.	
Commen	t Type ER	Comment Status A		(bucket1)
		this paragraph refers to "This bypass error correction)	option", without	stating what option it
It wou	uld be easier for	readers to understand the rea	quirement if the o	pption is stated explicitly.
Suggeste	edRemedy			
Inclue	de the entire thir	d paragraph from the base do	cument. In 802.3	3dc the text is:
corre option 91.6.3 FEC_	ction to reduce t n is indicated by 8). When the op	lecoder may provide the option he delay contributed by the R the assertion of the FEC_byp tion is provided, it is enabled ion_enable variable (see 91.6	S-FEC sublayer. bass_correction_aby the assertion of	The presence of this ability variable (see of the
Response	е	Response Status W		
ACCI	EPT.			
C/ 91	SC 91.6.7a	P 91	L 5	# <u>I</u> -163
Dawe, Pi	ers J G	NVIDIA		
Comment	t Type T	Comment Status A		RSFEC enable
are ir 1 shc FEC-	series, and 91 w separate scer Int, but no pass-	s to be written as if Clause 9 ⁴ is bypassed when 161 is user narios, one with Clause 91 RS through arrangement.	d. However, Figu	re 161-1 and Figure 91-
00	edRemedy	ublevere es in series, er des	riba tham as alta	ractives
		ublayers as in series, or desc	The mem as alle	anauves.
Response		Response Status C		
Chan	oled, and the RS	² LE. ariable is set to zero, the RS-I FEC sublayer is bypassed, e e of its underlying sublayer."		ting its service interface
to the To: "\ disab (see	When the variab bled, and the 100 Clause 161) to b	le is set to zero, the RS-FEC IG RS-FEC sublayer is not us be used instead." in 161.6.14 100G_RS_FEC_I	ed allowing the F	
to the To: "\ disab (see Make	When the variab bled, and the 100 Clause 161) to b	le is set to zero, the RS-FEC OG RS-FEC sublayer is not us be used instead." in 161.6.14 100G_RS_FEC_I	ed allowing the F	

C/ 91	SC 91.6.7a	P 91	L 5	# I-164
Dawe, Piers	JG	NVIDIA		
Comment Ty	pe T	Comment Status A		RSFEC enable

This says "An MDIO interface or ... shall be provided to access the variable 100G_RS_FEC_Enable for the RS-FEC sublayer. When the 100G_RS_FEC_Enable variable is set to one, the RS-FEC sublayer performs the transmit function ... and the receive function When the variable is set to zero, the ... RS-FEC sublayer is bypassed... .

So all implementations, whether they need this FEC enable/disable function or not, have to have the management variable, and they have to bypass the FEC function when the variable or bit is 0 (default). I think this breaks existing implementations twice over.

SuggestedRemedy

The requirement for this enable/disable switch should be tied to the first sentence "For PHYs supporting RS-FEC-Int operation". Change "An MDIO interface" to "For these PHYs, an MDIO interface". Then the text will agree with the PICS. 0 and 1 should be swapped so that the default is 0, FEC operating, which is what existing implementations do: per 45.2, "If a device supports the MDIO interface it shall respond to all possible register addresses ... The operation of an MMD shall not be affected by writes to reserved and unsupported register bits..."

Response Response Status C

ACCEPT IN PRINCIPLE.

Change "An MDIO interface" to "For these PHYs, an MDIO interface" The 100G_RS_FEC_Enable variable and the control bit 1.200.6 defined in 45.2.1.116 are only applicable to PHYs that offer a choice of Clause 91 or Clause 161 operation so there should be no impact on existing implementations (which will only contain Clause 91 RS-FEC functionality).

This could be made clearer in Table 45-94 by moving the text "(only applicable for PHYs that include multiple FEC sublayers)" from the "Description" column to a footnote on the address.

Add a footnote to "1.200.6" as follows:

"Only applicable for PHYs that include an alternative FEC sublayer, for example RS-FEC-Int defined in Clause 161"

In the Description column of Table 45-94 row 1.200.6 change "1 = Clause 91 RS-FEC is enabled (only applicable for PHYs that include multiple FEC sublayers)" to "1 = Clause 91 RS-FEC is enabled".

Implement with editorial license.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line C/ 91 SC 91.6.7a Page 8 of 59 2022-02-16 5:32:17 PM

C/ 91 SC 91.7.3	P 92	L 41	# I-165	C/ 116	SC 116.1.4	P 98	s L 18	# I <u>-95</u>
Dawe, Piers J G	NVIDIA			Parsons, E	Earl	Comn	Scope, Inc.	
Comment Type T	Comment Status A			Comment	Туре Т	Comment Status	Α	(bucket2)
	ability/option" "RS-FEC-Int is	supported. 161	Used to form complete	200GE	BASE-VR2 and	200GBASE-SR2 shou	d be in this table.	
	00GBASE-KR1 PHY". clause or in 161 to justify this	5.		Suggested	Remedy			
SuggestedRemedy		-				6-4 for 200GBASE-VR		
••	state which PHY types use th	ne RS-FEC-Int				the appropriate colum		en 200GBASE-SR4 and
Response	Response Status C			Response		Response Status		
ACCEPT IN PRINCIP				ACCE	PT.	·		
KR1 PHY", with subcl	that it is named *KP1, with for ause cell blank, and existing			C/ 116	SC 116.1.4	P 99	L 18	# [<u>1-96</u>
comes before the *KP Change "FINT:M" to "	² 4 row. KP1:M" in the status column	of the FF row on	line 44	Parsons, E	Earl	Comn	Scope, Inc.	
	ference from 91.6 to 91.6.7a.			Comment	Туре Т	Comment Status	Α	(bucket2)
C/ 116 SC 116.1.2	P 95	L 24	# I-231	400GE	BASE-VR4 and	400GBASE-SR4 shou	d be in Table 116-5.	
Ben-Artsi. Liav	Marvell Sem	niconductor, Inc.		Suggested	Remedy			
Comment Type E	Comment Status R ems to have a nomanclature		<i>(bucket2)</i> n all others - find one	should		umns for 400GBASE- row. 400GBASE-SR4		-SR4. 400GBASE-VR4 400GBASE-SR8 and
which is more aligned	with all others			Response		Response Status	с	
SuggestedRemedy				ACCE	PT.	,		
Response	Response Status C			C/ 116	SC 116.2.5	P 99) L 42	# 1-97
REJECT.				Parsons, E	arl	Comn	Scope, Inc.	
This nomenclature ref out of scope for 802.3	flects the nomenclature in the lock.	e base standard.	Changes to this text are	Comment Add re	51	Comment Status se 167 to these two se		(bucket2 ₎
C/ 116 SC 116.1.3	P 96	L 34	# 1-94	Suggested	Remedy			
Parsons, Earl	CommScop	e, Inc.			-	IDs and their correspo	nding media are spe	cified in Clause 121,
Comment Type E 802.3db modifies Tab	Comment Status A le 116-2. 400GBASE-VR4 no	ow comes before	<i>(bucket2)</i> 400GBASE-SR16.	Clause	e 122, and e 136 through C BASE-R PMDs a	lause 138, Clause 162 and their	, Clause 163, and C	lause 167. The
SuggestedRemedy Replace the 400GBAS	SE-SR16 row with 400GBAS	E-VR4.		Clause	9 150,	are specified in Clause	122 through Clause	e 124, Clause 138, and
Response	Response Status C			Response		Response Status	c	
ACCEPT.				ACCE		Nesponse Status	•	

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 116 SC 116.2.5 Page 9 of 59 2022-02-16 5:32:17 PM

C/ 116 SC 116.4	P 101	L 17	# <u>I-98</u>	C/ 120F	SC 120F.1	P 237	L 43	# <u>I-91</u>
Parsons, Earl	CommScope,	Inc.		Grow, Robe	rt	RMG Consultir	ng	
Comment Type E 802.3db added 400GE	Comment Status A BASE-VR4 to Table 116-7 abov	ve 400GBASE-	<i>(bucket4)</i> SR16	Comment Ty Similar ı		Comment Status A omprise" have been rewritten us	ina "compos	<i>(bucket4)</i> se" in P802.3/D3.0.
SuggestedRemedy Replace the 400GBAS	E-SR16 row with 400GBASE-	VR4.		SuggestedR	emedy	composed of independent trans		
Response ACCEPT.	Response Status C			Response ACCEP	T IN PRINCIP	Response Status C PLE.		
C/ 116 SC 116.5	P 102	L 13	# I-99	Change	"The C2C int	terface comprises independent	data paths ii	n each direction."
Parsons, Earl	CommScope,	Inc.		To: "The	C2M interfac	e is composed of independent	transmit and	I receive data paths."
Comment Type T	Comment Status A use 167.3.2 to Table 116-8 and	d Table 116-0 a	(bucket2)	C/ 120F	SC 120F.3.1	1 P 239	L 13	# I-106
			13 III D2.1 01 002.30D	Mellitz, Rich	ard	Samtec, Inc.		
SuggestedRemedy Per comment				Comment T		Comment Status A		AC CM noise (bucket4)
Response	Response Status C				r 120F is 1e-{ e to adjust for	5 and DER0 for 163 is 1e-4. The r DER0.	e reference t	to 163.9.2.7 need a
ACCEPT.				SuggestedR	emedy			
C/ 120 SC 120.5.11	.2.a P 110	L 46	# 1-42			MR(min) to compute V_CMPP t 0.999995. (1.e. 1e-5).	to with the d	istribution range to be
Ran, Adee	Cisco System	s, Inc.		Response		Response Status W		
Comment Type E	Comment Status R		(bucket2)	•	IN PRINCIP	,		
and seem to be out of	Figure 120-6a are placed after context. The block could be be after their reference, and are ir	roken to two pa	ragraph so the equation	Resolve	using the res	ponse to comment i-101.		
SuggestedRemedy								
Break the paragraph in figure follow the first p	nto two after "Equation(120–1) aragraph.	", and have the	equation, note, and					
Response	Response Status C							
REJECT. The proposed change text.	s to not improve the accuracy	and do not imp	rove the clarity of the					

C/ 120F SC 120F.3.1

C/ 120F	SC 120F.3.1	P 239	L 13	# I-102	C/ 120F	SC ·	120F.4.2	P 248	L 26	# I-25
Mellitz, Ricl	nard	Samtec, Inc.			Brown, Ma	tthew		Huawei Techne	ologies Cana	ada
Comment T	ype TR	Comment Status A		AC CM noise (bucket4)	Comment 1	Туре	Е	Comment Status A		(bucket2)
mode n test fixt not corr	oise ratio, SCMR ure loss. Since th ect. As demonst	ot be very dependent on a to (min), is related to the Pea e low frequency the loss is rated in mellitz_3k_adhoc_(w frequency sources can be	ak Pulse and very small the 01_120821 no	used to compensate for tp0v compensation is	variable <i>Suggestedi</i> In Equa	e defini <i>Remed</i> ation 12	ition not th <i>ly</i> 20F-2, del			
Suggested					Change insertio			ILdd to "is the channel differe	ential-mode t	o differential-mode
peak to the a lo to the C	peak noise (V_C w pass 4th order M measurement	20F-1 called maximum low MPP) and set to 30 mV. Cro Bessel Thomson filter with Additionally in section 163	eate a new se a 3 dB point o 3.9.2.7 indicat	ection for such indicating of 10 MHz is to be applied e that the a high pass 4th	Response ACCEF			Response Status C		
		Iter with a 3 dB point of 10 M CMR (min) to 10.7 dB. See		applied to the AC CM	C/ 120G		120G.1	P 256	L 11	# I-92
_	ement and set St	. ,	presentation.		Grow, Rob			RMG Consultir	ng	
Response ACCEF	T IN PRINCIPLE	Response Status W			Comment 7 Similar		E es of "com	Comment Status A	ing "compos	<i>(bucket4)</i> e" in P802.3/D3.0.
Resolve	e using the respon	nse to comment i-101.			Suggested		-			
C/ 120F	SC 120F.4.2	P 248	L 20	# 1-24	The C2	2M inte	rface is co	mposed of independent trans	mit and rece	eive data paths.
Brown, Mat	thew	Huawei Techr	nologies Cana		Response			Response Status C		
Comment T		Comment Status A	lologico calle	Channel ILdd (bucket2)	ACCEF	PT IN F	PRINCIPLE	Ξ.		
		insertion loss refers to a ma becify to be of the for used in		, ,	Change	e: "The	e C2M inte	rface comprises independent	data paths ir	n each direction."
Suggested	Remedy				To: "Th	ne C2M	1 interface	is composed of independent	transmit and	receive data paths."
Change	: "The channel di	fferential-mode to differentia	al-mode inser	tion loss should be equal	C/ 120G	SC ·	120G.3.1	P 258	L 13	# I-104
	ss than Equation	(120F–2)." ntial-mode to differential-mo	de insertion l	ass should meet Equation	Mellitz, Ric	hard		Samtec, Inc.		
(120F-2					Comment 7	Туре	TR	Comment Status A		AC CM noise (bucket4)
Response ACCEF	т.	Response Status C			mellitz_ mellitz_	_3k_ad _3ck_a	lhoc_01_1 idhoc_01_	or CM mode noise. See CM 20821, mellitz_3ck_01a_072 121620. Clause 163.9.2.7 de p-peak AC common-mode vol	l, and fines a more	
					Suggested	Remed	ly			
					peak A	C com	mon-mode	node output voltage (max, RM e voltage and set to 213 mV b 999995. (1.e. 1e-5) See pres	ut define the	
					Response			Response Status W		
					ACCEF	PT IN F	PRINCIPLE	Ξ.		
					Resolv	e using	g the respo	onse to comment i-103.		

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn C/ 120G Page 11 of 59 2022-02-16 5:32:17 PM SC 120G.3.1

SORT ORDER: Clause, Subclause, page, line

C/ 120G	SC 120G.3.	1 P 258	L 17	# <u>I-155</u>	C/ 120G	SC	120G.3.1	P 258	L 21	# [-107
Hidaka, Ya	asuo	Credo Semic	conductor		Ghiasi, Ali			Ghiasi Quan	tum LLC,Marvel	II Semicondu	uctor, Inc.
Comment 7	Туре Е	Comment Status A		PICS (bucket2)	Comment 7	Гуре	TR	Comment Status R			HO eye width
PICS e	entry seems mi	ssing for "Steady-state voltage	e, v_f (max)" in 1	Table 120G-1.	ESMW	/EW w	ere remov	ved in draft 1.4 with the intro	oduction of the +	/- 50 mUI re	ectangular
Suggested Add a Response	PICS entry for	"Steady-state voltage" per Tal Response Status C	ble 120G-1 with	a reference to 120G.5.3.	which i window CL120I	n effec for typ E min E	t reduces bical high ESMW=22	/EC limits not passing the ta implicit minimum receiver e loss channel EW can be as 20 mU. The 120 mUI can b	eye opening. Wi i little as 120 mU e further degrad	th current G II, in compar ed for lower	aussian risons 1 loss
ACCE	PT IN PRINCIF	,			is as cr	itical a	s VEC/VE	al reflections/jitter may resu O, without explicit EW spea ant interoperability risk.			
C/ 120G	SC 120G.3.	1 P 258	L 19	# I-184	Suggested	Remed	ly				
Dawe, Pier	rs J G	NVIDIA						5 mUI specifications which			
Comment	Type TR	Comment Status A		HO EH				ve would be to go back to r k as demonstrated in	ectangular mask	(with +/- 50	mul or
Eye he	eight measurem	nents are inaccurate, receivers	s can cope with i	much smaller eye				g/3/ck/public/21_01/dawe_3	3ck_01_0121.pdf	f	
		ey do for CR; VEC is much mo			Response			Response Status U			
		as strong as CR/KR drivers, a So a small EH is acceptable.	and receiver nois	se is already in the	REJEC	т.					
Suggested	IRemedy				There i	s no co	onsensus	to make the proposed chan	iges.		
Reduce	e the eye heigh	nt by 2 dB, from 10 mV to 8 m	V.		E a stat	- 11					
Response		Response Status C			For det	alis, se	e the repo	onse to comment i-211.			
ACCE	PT.										

TYPE: TR/technical required ER/editorial required GR/generation	al required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected	RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line	

C/ 120G SC 120G.3.1

Page 12 of 59 2022-02-16 5:32:17 PM

C/ 120G SC 120G.3.1	.5 P 260	L 19	# 1-26	C/ 120G	SC 120G.3.2	P 261	L 11	# I-188
Brown, Matthew	Huawei Tech	nologies Canada	a	Dawe, Pier	s J G	NVIDIA		
Comment Type T	Comment Status A	-	figuration VNA (bucket5)	Comment 7	ype TR	Comment Status R		MO EH/VEC
Figure 120G-6 include measurements defined SuggestedRemedy Change "VNA or scop Response ACCEPT IN PRINCIPI	" to "Scope". Response Status C	easurement reco	eiver, yet there are nor	depend somew signal i choices multiple signal t	ling on the clean here in the middl s tuned to far ends. This is inconsise host stress test unings, so we ne	height and VEC have to con iness of its signal, a module e, or even somewhere outs d, only, so the host isn't req stent and a serious flaw in t s, nor require the host to re red to make sure that modu	e can be tuned t ide the range. 1 uired to receive the spec. Yet w ceive unnecessa	o either end or The host stressed input those other tuning e would rather not have ary and sub-optimal
Note also that the agr	num V/NA (progumably Vacto	r Notwork Apol	ran) in nover defined	Suggested	-			
(except remotely in An Based on straw poll #1 Figures 120G-6 and 12	3 there is consensus to remo 20G-7. 20G-7 remove the box with "	ve the boxes wi	th "VNA or scope" in	across signific (see ot they ar end VE are 2 d	the industry. Be antly different, in her comments). e optimised signi C is 0.5 dB less	nits for module output so the cause the channel losses in Table 20G-11 use separate To discourage module implificantly beyond the far end, (better) than its correspond orresponding near end EHs Id be.	a short and long gDC limits for s ementers from r in Table 120G-3 ing far end VEC	mode testing are short and long mode mis-tuning modules so 3, ensure that each near , and the far end EHs
Implement with editoria	l license.			Response		Response Status U		
				REJEC	Т.			
Straw poll #13 (decisic I support removing the 120G-10. Yes: 13 No: 9	box with text "VNA" from figu	res 120G-6, 120	0G-7, 120G-9, and			insufficient evidence eviden e interoperability.	ce that the prop	osed changes are
C/ 120G SC 120G.3.2	P 261	L 7	# I-105					
Mellitz, Richard	Samtec, Inc.							
Comment Type TR	Comment Status A		AC CM noise (bucket4)					
mellitz_3k_adhoc_01_ mellitz_3ck_adhoc_01	or CM mode noise. See CM 120821, mellitz_3ck_01a_07 _121620. Clause 163.9.2.7 o o-peak AC common-mode vo	21, and efines a more n	neaningful parameter					
SuggestedRemedy								
peak AC common-mo	mode output voltage (max, R le voltage and set to 213 mV .999995. (1.e. 1e-5). See pro	but define the d						
Response	Response Status W							
ACCEPT IN PRINCIPI	.E.							
Resolve using the resp	onse to comment i-103.							

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 120G SC 120G.3.2 Page 13 of 59 2022-02-16 5:32:17 PM

C/ 120G	SC 120G.3.2	P 261	L 11	# <u>I</u> -187
Dawe, Piers	s J G	NVIDIA		
Comment T	ype TR	Comment Status R		MO EH

On one hand: the eye height measurement method is very inaccurate, host receivers that implement CR can cope with much smaller eye height than this, VEC is much more important. Receiver noise is already in the measurement, C2M drivers are traditionally 900/1200 as strong as CR/KR drivers, and the end-to-end loss is lower by a much larger ratio. So a small EH is acceptable.

On the other hand: if the eye height limit is the same at near end as at far end, there is huge margin at near end and the implementer can optimise beyond far end, only limited by the NE VEC spec, while we want modules to be set up consistently, for the full range from near to far. NE and FE EH naturally differ, and the spec should reflect that. Also, host designers know their own loss and low-loss hosts (NICs) can take advantage of a naturally larger signal that cost the module nothing. This applies to both the short and long modes.

SuggestedRemedy

Change the far end eye height so that it is 2 dB below near end: if near can remain at 15 mV, far becomes 12 mV. Far end remains the one with less margin, that the implementer should tune the module for.

Response

Response Status U

REJECT.

The comment makes reference to the capabilities of a CR SERDES. Annex 120G is specifying C2M recievers and transmitters. Although it is true that the host might have a CR-capable SERDES that may not be universally the case. Note that there are different host channel budgets for CR and C2M.

The comment does not provide sufficient justification for the proposed changes. Analysis is required to demonstrate the need.

There is no consensus to make the proposed changes.

C/ 120G SC	120G.3.2	P 261	L 12	# <u>I-108</u>
Ghiasi, Ali		Ghiasi Quant	tum LLC,Marvell S	emiconductor, Inc.
Comment Type	TR	Comment Status R		MO eye width

ESMW/EW were removed in draft 1.4 with the introduction of the +/- 50 mUI rectangular window with VEO and VEC limits not passing the task force introduced Gaussian window which in effect reduces implicit minimum receiver eye opening. With current Gaussian window for typical high loss channel EW can be as little as 120 mUI, in comparisons CL120E min farend ESMW=200 mU. The 120 mUI can be further degraded for lower loss channel with pathological reflections/jitter may result in EW <100 mUI. Eye width opening is as critical as VEC/VEO, without explicit EW specifications and with current Gaussian window there is significant interoperability risk.

SuggestedRemedy

An explicit ESMW>=150 mUI specifications which is available in the scope might be the simplest, other alternative would be to go back to rectangular mask with +/- 50 mUI or introduce 10 sides mask as demonstrated in https://www.ieee802.org/3/ck/public/21_01/dawe_3ck_01_0121.pdf

Response Response Status U

REJECT.

There is no consensus to make the proposed changes.

For details, see the reponse to comment i-211.

C/ 120G SC 120G.3.2 Page 14 of 59 2022-02-16 5:32:17 PM

C/ 120G	SC 120G.3.2.2	P 26	2 L3	# 1-68
Ran, Adee		Cisco	Systems, Inc.	
Comment Ty	be TR	Comment Status	Α	MO output conditions

Comment Type TR Comment Status A

The test configuration shown in Figure 120G-7 is unclear about the source of the pattern used to drive the module output during the test.

In practice, three possibilities are likely to be considered by a test engineer:

1. The module can be fed an externally-generated compliant signal to its optical receiver. This would represent a real-life use case; but it makes a complicated test setup, and the pattern may contain occasional errors from the optical receiver, which will interfere with sampling scope operation (unless the BER on the optical segment is low enough). 2. The module can be fed a minimally compliant signal to its electrical input (e.g. the stressed input tolerance signal, 120G.3.4.3) its optical output looped back through an optical patch cord. This would approximate a real-life use case, without requiring optical test signal calibration. But this method is ruled out by the requirement to have asynchronous co- and counter-propagating signals.

3. The module can generate the test pattern internally, and be feed asynchronous electrical counter-propagating signals to its input. But this would not represent a real-life use case. since the pattern uses an internal clock likely with very low jitter compared to the clock recovered from an optical signal.

Option 3 is not prohibited anywhere in the text; if it is allowed, modules may pass their tests but have degraded output in the field, due to excessive jitter from using a recovered clock. The host input tolerance requirements are equal to the module output requirement, and do not account for such degradation, so a system with compliant components may fail.

The suggested remedy is to clarify that the requirements hold for any compliant optical signal input to the module, and note that using internally generated test pattern does not create a representative signal; the test engineer will have to sort it out.

Alternatively, we could remove the requirement for asynchronous counter- and copropagating signals, to enable testing with optical loopback, which would be easier to conduct. If that is done, it should be required to use optical loopback (through the PMD) rather than internal electrical loopback (which would still not be representative, since it would involve only one clock regeneration); and in addition, the electrical signal should be a stressed input signal.

SuggestedRemedy

In 120G.3.2, change "The module output shall meet the specifications given in Table 120G-3" to "The module output shall meet the specifications given in Table 120G-3 for any compliant optical input signal".

In 120G.3.2.2, add a NOTE after Figure 120G-7:

NOTE—Driving the module output using an internally generated pattern might not create output signals representative of full-link operation, and may result in false pass results. It is recommended to use feed the module with an optical signal modulated by the test pattern.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

Response Response Status U

ACCEPT IN PRINCIPLE.

It does not make sense to add a caveat that all parameters in Table 120G-3 meet the specifications with any optical input since only EH and VEC might be affected. However, the for EH and VEC a table footnote might be used for that purpose. With such an addition it is not necessary to insert the additional note proposed in the suggested remedy; for instance a module might properly isolate the electrical output from the optical input by design. Also, it is not necessary to test, but rather only to meet the requirements. Finally, the EH/VEC are measured with PRBS13Q whereas a worst case optical signal would be a richer pattern.

Add a note "Driving the module output using an internally generated clock, rather than the recovered clock from the PMD input, might create output signals that are more optimistic than full-link operation."

C/ 120G	SC 120G.3.2.2	P 262	L 27	# I-109
Ghiasi, Ali		Ghiasi Quant	um LLC,Marvell	Semiconductor, Inc.
Comment T	ype TR	Comment Status R		Test configuration
0		ost trivial component in the R, TX/RX optics?	the capacitors,	why not other

SuggestedRemedy

Suggest removing what is inside the module just show a box for module under test

Response Response Status W

REJECT.

The capacitors are intended to show that the module input and output are AC-coupled.

C/ 120G SC 120G.3.2.2 Page 15 of 59 2022-02-16 5:32:17 PM

					_							
C/ 120G	SC 120G.3.2		P 263	L 14	# I-189	C/ 120G	SC 1	120G.3.3	5.1	P 265	L 50	# I-193
Dawe, Pie	rs J G		NVIDIA			Dawe, Pier	s J G			NVIDIA		
Comment	Type TR	Commen	t Status R		MO test channel	Comment 7	Гуре	TR	Comme	nt Status R		HI SIT PG
test, it As the rather	would make set change is to the than rely on ext	nse to include e reference he	e the same allow	ance for far-end r	ost stressed input nodule output specs. t's convenient to do,	zero. V where	Ve wan we can. me poii	nt consist	ent stresse	d signals across t	he industry so we	ge and channel is e should give guidance ut 120G.3.4.3.1 refers
Suggestea	-											
	Increase the two far-end lengths by 2.2 dB (taking 16 dB to 18.2 dB, aligning with 120G.3.4.3.2). In Table 120G-11, increase bbmax(1) from 0.4 to 0.55. Reduce module					SuggestedRemedy Say that in practice, a postcursor may be used to make the PG output like that from a						
	eye height by 2		ncrease bbmax(?	1) from 0.4 to 0.5	5. Reduce module	module	with z	ero posto		nay be used to m lify "The tap coeff		
Response		Response	Status U			excepti	on that	•				
REJE	CT.					Response			Respons	e Status U		
T h					- the second sectors. Here	REJEC	Т.					
and 2.	3 dB for the mo	ule complian		otal of 11.9 dB, w	c transmission line hich matches with the					fficient evidence t le sufficient detail		ed changes. The
					with the maximum	C/ 120G	SC 1	120G.3.3	.5.1	P 265	L 50	# I-192
				used in the freque	ency-dependant	Dawe, Pier	s J G			NVIDIA		
tap rar		.3.2 then sca	lie the eye heigh	r proportionally ar	Id increase the DFE	Comment 7	Гуре	TR	Comme	nt Status R		HI SIT PG
The re provide approp There analys	asoning for maked to show that briate. is some interest	he changes t in increasing ipport the pro	to the DFE tap ra the channel los pposed new value	ange and the eye s as proposed, b	nt analysis has been height value are ut there is insufficient l eye height. Further	optimu make s tuning don't us	m for th tressed challeng se sma me poir	ne *secor d signals ge for rea ller than	d [*] precurso (and real si al modules t 0.02 steps i	or is much smaller gnals) consistent han to try to sque n COM.	, so very weak. across the indus eze out the last o	2 to 0.04, and the It would be better to try and simplify the drop of tuning. We ut 120G.3.4.3.1 refers
analys	is and consensu	is is encoura	ged.			Suggested	Remed	v				
						For the	host st	, tressed ir		generator functior are not specified		e third precursor to on that".
						-			_			

Response Response Status C

REJECT.

Per straw poll #12 there is no consensus to make the proposed changes.

Straw poll #12 I support reducing the pattern generator reference architecture to have 2 precursor taps instead of 3. Yes: 7 No: 21

C/ 120G SC 120G.3.3.5.1 Page 16 of 59 2022-02-16 5:32:17 PM

hiasi, Ali Ghiasi Quantum LLC,Marvell Semiconductor, Inc comment Type TR Comment Status A (buc Not sure why you are referencing Table 120F-3, maybe the intention was Figure 120F-3 uggestedRemedy	Brown, Matthew Huawei Technologies Canada <i>Comment Type</i> T <i>Comment Status</i> A <i>HI SIT B</i> The BUJ generation method is based on that specified in 120E.3.4.1.1. Since the BUJ pattern signaling rate doubles compared to that in 120E.3.4.1.1, the corner frequency
Not sure why you are referencing Table 120F-3, maybe the intention was Figure 120F-3	The BUJ generation method is based on that specified in 120E.3.4.1.1. Since the BUJ
Please change to Figure 120F-3	frequency limits for the BUJ jitter filter should be scaled the same to give the same jitter distribution.
esponse Response Status W	SuggestedRemedy
ACCEPT IN PRINCIPLE. The cross reference should be be pointing to Figure 120F-3 not Table 120F-3. Implement the suggested remedy.	Change: "The low-pass filter has 20 dB/decade rolloff with a –3 dB corner frequency between 150 MHz and 300 MHz." To: "The low-pass filter has 20 dB/decade rolloff with a –3 dB corner frequency between 600 MHz and 1.2 GHz."
120G SC 120G.3.3.5.1 P 265 L 52 # [-113	Response Response Status C
hiasi, Ali Ghiasi Quantum LLC, Marvell Semiconductor, Inc	ACCEPT IN PRINCIPLE.
What is the intention of defining no equalization state, I don't see it being used! aggestedRemedy This sentence is either incomplete or should be remvoed. esponse Response Status W REJECT. The "no equalization" state is requested in 120G.3.3.5.2 step a).	Changing the filter bandwidth may make the jitter driving signal too high in frequency for some test equipment. The problem may alternately be resolved by reducing the signal rate by half. Change "The pattern should be either PRBS7 or PRBS9 (see 83.5.10) with a signaling rat approximately 1/10 of the stressed pattern signaling rate (e.g., 5.3125 GBd)." To "The pattern should be either PRBS7 or PRBS9 (see 83.5.10) with a signaling rate approximately 1/20 of the stressed pattern signaling rate (e.g., 2.656 GBd)."
	Cl 120G SC 120G.3.3.5.1 P 266 L 15 # 1-194
	Dawe, Piers J G NVIDIA
	Comment Type TR Comment Status A HI SIT VEC/
	The host stressed input signal is emulating a module so obviously it must obey the same rules. VEC and eye height must be in spec for both near end and far end. Ensuring this is part of the calibration process. See comment against page 267, line 25.
	SuggestedRemedy
	Change "short or long mode far-end test" to "short or long mode far-end calibration or long mode near-end verification"
	Response Response Status C

ACCEPT IN PRINCIPLE.

Resolve using the response to comment i-198.

C/ 120G SC 120G.3.3.5.1

C/ 120G SC 120G.3.3.5.1	P 266 L 27	# I-114	C/ 120G SC	120G.3.3	.5.2	P 267	L 2	# I-196
Ghiasi, Ali	Ghiasi Quantum LLC,Ma	arvell Semiconductor, Inc.	Dawe, Piers J G		I	VIDIA		
Comment Type TR Comme	ent Status A	Test configuration	Comment Type	т	Comment St	atus R		HI SIT calibratior
Open arrow is defiend to be for m right side of MCB incdicate MCB		dditional open arrow on the		equalizati	ion"), or perfect			ght rise time (transition OK if the loss board is
SuggestedRemedy			SuggestedReme		3.			
You could remvove the open arro			00	,	e host channel n	nav be adius	sted so that comb	ination of the pattern
Response Response Response ACCEPT IN PRINCIPLE.	se Status C		generator ou the effect of	tput transi the ideal s		ep a), the H nere.		ence host channel has
The same concern applies to the	host under test. And this com	ment also applies to Figure	Response		Response Sta	atus C		
120G-6.			, REJECT.					
In Figure 120G-6 and Figure 1200 under test toward the middle rathe arrows remain solid, not dashed.			[Editor's note	e: Changeo	d line from 20 to	2.]		
Cl 120G SC 120G.3.3.5.1 Brown, Matthew Comment Type T Comme Figure 120G-9 includes a VNA (vi generator, yet there are measure SuggestedRemedy Delete the VNA box and the switch	ector network analyzer) at the ments defined that require a V	t configuration VNA (bucket5) output of the pattern					gs of test equipm Ilt. It is not neces	ient on hand by sary to state that for
Response Response Response	se Status C							
Note also that the acronym VNA ((except remotely in Annex 149A).		Analyzer) is never defined						
Based on straw poll #13 there is o 9.	consensus to remove the box	with "VNA" in Figure 120G-						
In Figure 120G-9 remove the box	with "VNA" as well as the ass	sociated line and switch.						
Implement with editorial license.								

C/ 120G SC 120G.3.3.5.2

Cl 120G	SC 1	20G.3.3.5	. 2 P 26	67	L 15	#	I-195
Dawe, Piers	JG		NVIDI	A			
Comment Ty	/pe	TR	Comment Status	Α			HI SIT XTALK

The counter-propagating crosstalk signal amplitude for calibrating the host stressed input signal (which emulates a module) should be calibrated with PRBS13Q. CEI 16.3.10.3.1 is quite clear about this: "The crosstalk signal is calibrated at TP4 or TP1a using a QPRBS13-CEI pattern, then the pattern is changed to QPRBS31-CEI for the test". Here, the value of 750 mV in Table 120G-8 is the same as in Table 120G-1, Host output, which is defined for PRBS13Q (see 120G.5.1 and 120E.3.1.2). As these crosstalk signals are emulating the host, they must match. Also, it is convenient to set up both the peak-to-peak voltage and the transition time of a signal on the same pattern, and PRBS13Q allows both a transition time measurement and a cleaner peak-to-peak voltage measurement.

SuggestedRemedy

Move a few words:

The crosstalk signal transition time is calibrated with a PRBS13Q pattern. The crosstalk pattern is changed to PRBS31Q (see 120.5.11.2.2), scrambled idle (see 82.2.11 and 119.2.4.9), or another valid 100GBASE-R, 200GBASE-R, or 400GBASE-R signal for crosstalk amplitude calibration and stressed signal calibration (see step g).

to:

The crosstalk signal transition time and amplitude are calibrated with a PRBS13Q pattern. [Or, The crosstalk signals are calibrated with a PRBS13Q pattern.] The crosstalk pattern is changed to PRBS31Q (see 120.5.11.2.2), scrambled idle (see 82.2.11 and 119.2.4.9), or another valid 100GBASE-R, 200GBASE-R, or 400GBASE-R signal for stressed signal calibration (see step a).

Similarly in 120G.3.4.3.2 for module stressed input crosstalk signal calibration.

Response Response Status C

ACCEPT IN PRINCIPLE.

Given that the host output peak to peak amplitude is measured using PRBS13Q it makes sense that the crosstalk signal for the host input be measured in the same way. Note that the crosstalk signals in the stressed test may not correspond with crosstalk on a real host output because the pattern generators does not include a channel.

Change:

"The crosstalk signal transition time is calibrated with a PRBS13Q pattern. The crosstalk pattern is changed to PRBS31Q (see 120.5.11.2.2), scrambled idle (see 82.2.11 and 119.2.4.9), or another valid 100GBASE-R, 200GBASE-R, or 400GBASE-R signal for crosstalk amplitude calibration and stressed signal calibration (see step g)." To:

"The crosstalk signal transition time and amplitude are calibrated with a PRBS13Q pattern. The crosstalk pattern is changed to PRBS31Q (see 120.5.11.2.2), scrambled idle (see 82.2.11 and 119.2.4.9), or another valid 100GBASE-R. 200GBASE-R. or 400GBASE-R signal for stressed signal calibration (see step g)."

Implement similarly in 120G.3.4.3.2 for module stressed input crosstalk signal calibration.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

Implement with editorial license.

C/ 120G S	SC 120G.3.	3.5.2 P 267	L 21	# I-197
Dawe, Piers J	G	NVIDIA		
Comment Type	e TR	Comment Status A		HI SIT near-end

The host stressed input signal is emulating a module so obviously it must obey the same rules. VEC and eye height must be in spec for both near end and far end. Ensuring this is part of the calibration process. See comment against line 25. This says "parameters in Table 120G-5 for far-end host channel type and the requested

mode": but in one case, the near end needs a parameter from the table.

SuggestedRemedy

Change "for far-end host channel type and the requested mode" to "for host channel type and the requested module output mode".

Response Response Status C

ACCEPT IN PRINCIPLE.

Resolve using the response to comment i-198.

C/ 120G SC 120G.3.3.5.2 Page 19 of 59 2022-02-16 5:32:17 PM

Cl 120G	SC	120G.3.3.5.	2 P 20	67	L 25	# I-198
Dawe, Piers	JG		NVID	IA		
Comment Ty	pe	TR	Comment Status	Α		HI SIT near-end
<u> </u>						

The signal needs to be verified with the near end channel so that its eye height is at least the target and its VEC is no more than VEC (max) in the table. If it fails at NE, the signal must be adjusted to bring it into compliance. Also, the stressed input signal needs to obey the rules for differential peak-to-peak output voltage.

SuggestedRemedy

Change

... adjusted to minimize VEC, so that the eye height of the smallest eye matches the target value and VEC is within the limits in Table 120G-8.

to

... adjusted to minimize far-end VEC, so that the far-end eye height of the smallest eye matches the target value, far-end VEC is within the limits in Table 120G-8, and differential peak-to-peak output voltage, near-end VEC and eye height are within the limits in Table 120G-3.

Also (see other comments),

Include separate near-end and far-end VEC limits in Table 120G-8. As there will be more than one eye height limit for module output, there will be multiple EH targets here: it may be simpler to refer to Table 120G-3, Module output characteristics at TP4, rather than list them all again here.

Response

Response Status C

ACCEPT IN PRINCIPLE.

In D3.0, the host stressed input test the signal is calibrated for far-end (i.e., with a representative host channel). This would result in appropriate transmitter settings for a host with a fairly high-loss channel. However, for hosts with a lower loss channel this might be a problem if the signal is not within module requirements for near end measurement with these calibrated pattern generator settings.

Implement the modified text on slide 14 in the following presentation with editorial license. https://www.ieee802.org/3/ck/public/22_01/brown_3ck_02b_0122.pdf

C/ 120G SC	2120G.3.3	.5.2 P 267	L 39	# I-115
Ghiasi, Ali		Ghiasi Quant	tum LLC,Marvell S	Semiconductor, Inc.
Comment Type	TR	Comment Status R		HI eve width

ESMW/EW were removed in draft 1.4 with the introduction of the +/- 50 mUI rectangular window with VEO and VEC limits not passing the task force introduced Gaussian window which in effect reduces implicit minimum receiver eye opening. With current Gaussian window for typical high loss channel EW can be as little as 120 mUI, in comparisons CL120E min farend ESMW=200 mU. The 120 mUI can be further degraded for lower loss channel with pathological reflections/jitter may result in EW <100 mUI. Eye width opening is as critical as VEC/VEO, without explicit EW specifications and with current Gaussian window there is significant interoperability risk.

SuggestedRemedy

An explicit ESMW>=150 mUI specifications which is available in the scope might be the simplest, other alternative would be to go back to rectangular mask with +/- 50 mUI or introduce 10 sides mask as demonstrated in https://www.ieee802.org/3/ck/public/21_01/dawe_3ck_01_0121.pdf

Response Response Status U

REJECT.

There is no consensus to make the proposed changes.

For details, see the reponse to comment i-211.

C/ 120G SC 120G.3.3.5.2 Page 20 of 59 2022-02-16 5:32:17 PM

C/ 120G	SC 1	20G.3.3.5.	3 P 268	3 L 10	#	I-199
Dawe, Piers	JG		NVIDIA	A Contraction of the second se		
Comment Ty	/pe	т	Comment Status	4		HI/MI BER

There's a problem with identifying which lanes are relevant. For example, if a host has QSFP-DD ports, there are 8 host lanes (per physical port), but there may be just 1, 2 or 4 lanes in each AUI. "The host electrical output is enabled on all lanes with any of the patterns above" is fine, it includes all the neighbours. While for "The host BER is the average of the BER of each of its lanes", only the lanes in the PMA (AUI) under test are relevant. "Module BER" in 120G.3.4.2.3 is even more open to misinterpretation because we are so clear how many lanes a module has. But, terminology for this has been set up: the term "interface BER" is used 19 times in the base document, and is defined in 86.8.2.1, 86.8.4.7, 86.8.4.8, 95.8.1.1 and 86A.5.3.8.1. 86A is an electrical spec. "host BER" and "module BER" are used just once each.

SuggestedRemedy

Response

Change paragraph to:

The relevant BER is the interface BER, which is the average of the BER of each of the lanes in the AUI under test.

If the test is performed with PRBS31Q, the BER of a PMA lane may be calculated using the bit error counter in the PMA test pattern checker (see 120.5.11.2.2) as the number of bit errors divided by the number of received bits.

If the test is performed with scrambled idle or another valid 100GBASE-R, 200GBASE-R, or 400GBASE-R sequence, the interface BER may be calculated using the host FEC decoder error counters (see 91.6 and 119.3.1), as the number of FEC symbol errors divided by the number of received bits.

Similarly in 120G.3.4.2.3.

Response Status C

ACCEPT IN PRINCIPLE.

Rather than redefine other terms, e.g., "interface BER", "host BER", "module BER", for this purpose, it would be better to avoid such nomenclature altogether by using descriptive terms. Also, for the FEC decoder since it might be a real host or a piece of test equipment remove the word host there.

In 120G.3.3.5.3...

Change "The host BER is the average of the BER of each of its lanes." To "The BER for the AUI under test is the average of the BER of each of its lanes." Change "the host BER may be calculated using the host FEC decoder error counters" To: "the BER for the AUI under test may be calculated using the FEC decoder error counters"

In 120G.3.4.3.3...

Change: "The module BER is the average of the BER of each of its lanes." To: "The BER for the AUI under test is the average of the BER of each of its lanes." Change: "The module BER is calculated using the host FEC decoder error counters" To: "The BER for the AUI under test is calculated using the FEC decoder error counters" Implement with editorial license.

C/ 120G	SC 120G.3.4	P 269	L 12	# 1-29
Brown, Mat	tthew	Huawei Technolo	gies Cana	Ida
0		0		(1 1 (0)

Comment Type E Comment Status A

(bucket2)

Table 120G-9 is titled "Module input characteristics" thus it is obvious that all specifications in this table relate to the module input. To match the other specifications in this table the word "input" should be removed from the parameter "Differential pk-pk input voltage tolerance (min)"

SuggestedRemedy

Change " "Differential pk-pk voltage tolerance (min)" To "Differential pk-pk voltage tolerance (min)"

Response

ACCEPT IN PRINCIPLE.

Change "Differential pk-pk input voltage tolerance (min)" To "Differential pk-pk voltage tolerance (min)"

C/ 120G	SC 120G.3.4	P 269	L 19	# I-116
Ghiasi, Ali		Ghiasi Quante	um LLC,Marvell	Semiconductor, Inc.

Comment Type TR Comment Status R MI eye width

Response Status C

ESMW/EW were removed in draft 1.4 with the introduction of the +/- 50 mUI rectangular window with VEO and VEC limits not passing the task force introduced Gaussian window which in effect reduces implicit minimum receiver eye opening. With current Gaussian window for typical high loss channel EW can be as little as 120 mUI, in comparisons CL120E min ESMW=220 mU. The 120 mUI can be further degraded for lower loss channel with pathological reflections/jitter may result in EW <100 mUI. Eye width opening is as critical as VEC/VEO, without explicit EW specifications and with current Gaussian window there is significant interoperability risk.

SuggestedRemedy

An explicit ESMW>=175 mUI specifications which is available in the scope might be the simplest, other alternative would be to go back to rectangular mask with +/- 50 mUI or introduce 10 sides mask as demonstrated in https://www.ieee802.org/3/ck/public/21 01/dawe 3ck 01 0121.pdf

Response Response Status U

REJECT.

There is no consensus to make the proposed changes.

For details, see the reponse to comment i-211.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 120G SC 120G.3.4 Page 21 of 59 2022-02-16 5:32:17 PM

C/ 120G SC 120G.3.4.3.1	P 270	L 38	# I-117	C/ 120G	SC 120G.3	.4.3.2	P 271	L 4	# I-69
Ghiasi, Ali	Ghiasi Quant	um LLC,Marvell Se	emiconductor, Inc.	Ran, Adee			Cisco Syster	ns, Inc.	
Comment Type TR Comm	nent Status A		Test configuration	Comment T	⁻ уре Т	Comme	nt Status A	I SI7	transition time (bucket2)
Open arrow is defiend to be for right side of MCB incdicate MCB			l open arrow on the						efined with no Tx alibration, 120G.3.3.5.2.
SuggestedRemedy				Suggested	Remedy				
You could remvove the open an	ow on the MCB			Change					
Response Respo	nse Status C								120.5.11.2.1) with or as specified in Table
ACCEPT IN PRINCIPLE.				120G–1 To	•	200.0.1.4) 4		, pattern generat	
This comment also applies to Fi	•			"The pa transitio	on time (see 1	20G.3.1.4) m	easured at the o	utput of the patte	120.5.11.2.1). The ern generator when
In Figure 120G-7 and Figure 12 middle rather than at the end. Li				configu	red to "no equ	ualization" is a	as specified in Ta	ble 120G–10".	
arrows remain solid, not dashed				Response		,	e Status C		
C/ 120G SC 120G.3.4.3.1	P 270	L 44	# 1-30		PT IN PRINCIE e using the rep		ment #200.		
Brown, Matthew	Huawei Tech	nologies Canada		C/ 120G	SC 120G.3	.4.3.2	P 271	L 4	# I-200
	nent Status A	•	uration VNA (bucket5)	Dawe, Piers	s J G		NVIDIA		
Figure 120G-10 includes a VNA there are no measurements def			ent attenuator, but	Comment T	Гуре Т	Comme	nt Status A	I SI7	transition time (bucket2)
SuggestedRemedy		use of a vina.							PRBS13Q pattern (see
Delete the VNA box and the ass	ociated switch								A with the pattern specified in Table 120G-
	nse Status C						tor is set to gene		
ACCEPT IN PRINCIPLE.							see 120G.3.1.4)	at the output of t	he pattern generator as
					ed in Table 12 int about neut		(so it's really rise	time not transiti	on time) applies to
Note also that the acronym VNA (except remotely in Annex 149A		or Network Analyze	r) is never defined	both. D2.2 comment 133. (The terminology problem is in the base document: generally, the parameter Tr is not a "transition time" as defined, but can be called a rise time.)					
Based on straw poll #13 there is	conconcilo to roma	we the hey with "V		Suggested					,
10.			INA III FIGULE 120G-	Change					
L. E'			d Para and an Arab				time (see 120G.3	3.1.4) at the outp	out of the pattern
In Figure 120G-10 remove the b	oox with "VNA" as we	en as the associate	ea line and switch.		tor as specifie 20.5.11.2.1). ⁻			3.1.4) measured	l at the output of the
Implement with editorial license				pattern	generator, wit	th the pattern	generator output		
					ation", is as s	•	ble 120G-10."		
				Response			e Status C		
					PT IN PRINCIE		with editorial lice	nse.	
							as) on page 267		
					·				
							<u> </u>		D
TYPE: TR/technical required ER/ed COMMENT STATUS: D/dispatched		0 1		0	11/unsatisfied	1 7/withdrawr	C/ 12 SC 12	20G 20G.3.4.3.2	Page 22 of 59 2022-02-16 5:32

C/ 120G SC 120G.3.4.3.2 P 271 L 24	# I-70	C/ 120G SC 1	120G.3.4.3.2	P 271	L 25	# I-202
Ran, Adee Cisco Systems, Inc.		Dawe, Piers J G		NVIDIA		
Comment Type TR Comment Status A	MI SIT channel	Comment Type	TR Comr	nent Status A		MI SIT channe
"For the high-loss signal calibration, the frequency-dependent at such that the scattering parameters approximate those for a PCI calculated from Equation (93A–13) and Equation (93A–14) using and the relevant parameter values given in Table 162–20" The intent is that the scattering parameters _from the pattern ge approximate the PCB transmission line (not just the FDA), other would have excessive loss. This is not clear from the current tex SuggestedRemedy	3 transmission line g zp = 464 mm in length nerator output to TP1a_ wise the test channel	dependent atte NOT look like attempted, the wrong way. T dawe_3ck_01a Further, Eq 16	enuator should loc another clean trai loss curve of the his is unrealistic a a_1121.pdf 52B-5 doesn't look 1_0719, slide 4, a	nsmission line with	transmission line no f^2 term becau ent attenuator wou o, L of 464 mm is mpliance boards;	. The two in series will use if that were ald have to bend the wrong. See
Insert "from the pattern generator output to TP1a" after "the scat	tering parameters"	SuggestedRemed	'y			
Response Response Status C ACCEPT IN PRINCIPLE. Resolve using the response to comment #31.	3 F	mated complia 120G-11. Change its title	ance boards, freque e from "Module st	ressed input target	tenuator and the high-loss frequent	combination) in Figure
	# 1.24			ential-mode insertio	on losses"	·
C/ 120G SC 120G.3.4.3.2 P 271 L 25	# I-31		n 464 to 295.6 mn 20G-3 with two eq			
Brown, Matthew Huawei Technologies Car				0.981sqrt(f) + 0.24	63f:	
Comment Type T Comment Status A	MI SIT channel) + 0.2463f + 0.003		
The span over which the scattering parameters is ambiguous, but the pattern generator output to TP1a. Also, the description of ILc the title of Figure 120G-11 are incorrect.		Response ACCEPT IN P	,	nse Status C		
SuggestedRemedy		The following	presentation was	reviewed by the tas	k force	
On page 271 line 25, change "the scattering parameters approxi parameters from the pattern generator output to TP1a approximation		The following presentation was reviewed by the task force: https://www.ieee802.org/3/ck/public/22_01/dawe_3ck_02a_0122.pdf				
For equation 120G-3 change the definition of ILdd(f) to "is the ta mode to differential-mode insertion loss in dB"	get high-loss differential-	A portion of th	is comment is add	dressed by the resp	onse to comment	#31.
Change the title of Figure 120G-11 to "Module stressed input tar mode to differential-mode insertion loss"	get high-loss differential-	Change the Po dawe_3ck_02		nsertion loss to ma	tch the equation p	provided on slide 9 of
Response Response Status C ACCEPT IN PRINCIPLE.				64 mm to 296 mm. of dawe_3ck_02a_0		nsertion loss equation
Implement the suggested remedy with editorial license.		Show both the	FDA and PG-to-	TP1a insertion loss	curves in Figure	120G-11.
		Adjust the wor	rding accordingly.			
		Implement wit	h editorial license			

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 120G SC 120G.3.4.3.2 Page 23 of 59 2022-02-16 5:32:17 PM

C/ 120G	SC 12	20G.3.4.3.2	2 P 271	1	L 25	# I-201
Dawe, Piers J	G		NVIDIA	A		
Comment Typ	e	т	Comment Status	A		MI SIT channel

This formula imposes a delay spec on the frequency-dependent attenuator, which is unnecessary because it and the pattern generator are supposed to have good return loss, and typically there will be coax cables of unspecified length between them (which contribute a small part of the loss). The shape of the loss curve imposes the phase response we want.

SuggestedRemedy

Make it clear that extra or reduced delay is acceptable. One way would be to add "with an additional implementation-dependent frequency-independent delay". Or, change "such that the scattering parameters approximate" to "such that the magnitude of the scattering parameters approximate".

Response

Response Status C

ACCEPT IN PRINCIPLE.

Comment #202 changes the PG to TP1a insertion to be defined by a insertion loss magnitude only, while defining the FDA with both s-parameters and and insertion loss magnitude curve.

With respect to the FDA add text saying that the target may be met with an additional implementation-dependent frequency-independent delay.

C/ 120G	SC 12	0G.3.4.3.2	P 2	71	L 28	# I-32	1
Brown, Matth	new		Huaw	ei Te	chnologies Canada		-
Comment Typ	pe .	г	Comment Status	Α		MI SIT channel	

The explanation for the 18.2 dB is not complete. 16 dB is to account for a worst case host PCB channel. The remaining 2.2 dB accounts for only a portion of the expected package insertion loss. The intent is that the remaining 2.2 dB plus the expected effective insertion loss of the pattern generator would account for the expected package loss.

SuggestedRemedy

Change: "The resulting insertion loss from the output of the pattern generator to TP1a is 18.2 dB at 26.56 GHz, representing 16 dB channel loss with an additional allowance for host transmitter package loss."

To: "The resulting insertion loss from the output of the pattern generator to TP1a is 18.2 dB at 26.56 GHz, representing 16 dB channel loss with an additional 2.2 dB which in addition to the effective insertion loss of the pattern generator output accounts for host transmitter package loss."

Response Response Status C

ACCEPT IN PRINCIPLE.

The new text provided in the suggested remedy implies that the host package insertion loss is fully accounted for, but that may not be the case, dependent on the characteristics of the pattern generator output.

Change: "The resulting insertion loss from the output of the pattern generator to TP1a is 18.2 dB at 26.56 GHz, representing 16 dB channel loss with an additional allowance for host transmitter package loss."

To: "The resulting insertion loss from the output of the pattern generator to TP1a is 18.2 dB at 26.56 GHz, representing 16 dB channel loss with an additional 2.2 dB which provides some allowance for the difference between the effective insertion loss of the pattern generator output and the worst case host transmitter package loss."

C/ 120G SC 120G.3.4.3.2 Page 24 of 59 2022-02-16 5:32:17 PM

C/ 120G	SC 120G.3.4	1.3.2	P 271	L 30	# <u>1-203</u>	C/ 120G	SC 12	20G.3.4.3.2	P 271	L 31	# I-71	
Dawe, Pier	rs J G		NVIDIA			Ran, Adee			Cisco Systen	ns, Inc.		
Comment 7	Туре Т	Commer	nt Status R		HI SIT calibration	Comment 7	Гуре	TR Co	omment Status A		MI SIT calibration	
time wi		tion"), or perf			ght rise time (transition OK if the loss board is	The text in list item g has been changed from D2.2 to D2.3 in a way that makes it pos confusing to readers, as shown in comment #31 against D2.3. The intent is to limit the space of reference receiver configurations to those with						
Suggested	Remedy								ce of reference receiver other configurations are			
the imp togethe	plementations o	f the frequen mbination ha	cy-dependent att as the effect of th	enuator and the	time (see step a) and MCB, may be chosen scribed here.	optimiz other c	ed for V onfigura	EC by setting tions is irreleve	the PG equalizations are vant; analytically, a sign ting will be over-equaliz	nd the VEC that al created by P	t can be achieved with G equalization	
Response		Response	e Status C				t should a in D2.2	•	d to clarify this. The sug	gested remedy	is based on the	
REJEC	CT.					Suggested	,					
Resolv	re using the res	ponse to com	nment #196.			Changu "Eye ho for the gDC + to "Eye ho case, a	e from eight and high-loss gDC2 le eight and n excep	d VEC are me s case that th ss than or eq d VEC are me tion is made	easured at TP1a as des le reference receiver CT ual to –10.5 dB" easured at TP1a as des that the reference recei equal to –10.5 dB".	LE setting that	minimizes VEC has 5.2. For the high-loss	
						Response		Re	sponse Status C			
						ACCEPT IN PRINCIPLE.						
						The following presentation was reviewed by the task force: https://www.ieee802.org/3/ck/public/22_01/ran_3ck_04_0122.pdf						
									wn on slide 16 of the fol <td></td> <td></td>			
						Implem	ent with	editorial lice	nse.			

C/ 120G SC 120G.3.4.3.2

C/ 120G SC 1200	6.3.4.3.2	P 271	L 33	# 1-204	C/ 120G	SC 1200	6.5.2	P 275	L 28	# <u>1-207</u>
Dawe, Piers J G		NVIDIA			Dawe, Piers	JG		NVIDIA		
Comment Type TR	Comment	Status R		HI SIT calibration	Comment Ty	pe TR		Comment Status R		MO gDC value
We have a gDC + gDC2 max limit for the high loss module stressed input case to ensure that the module can equalise a very slow signal. Likewise, there should be max/min limits for gDC + gDC2 for the low loss case to set the contract for faster signals. In Table 120G-11, gDC+gDC2 can be -2 for TP1a and -1 for TP4 near-end. dudek_3ck_01_0921 slide 5 indicates that a range of -3 to -1 dB would be suitable. SuggestedRemedy Add an exception that for the low-loss case, the reference receiver CTLE setting that minimizes VEC has gDC + gDC2 in the range -3 dB to -1 dB. It may be preferable to put the exceptions for both low- and high-loss cases in Table 120G-10. Response Response Status U REJECT. The comment does not provide sufficient justification to make the proposed changes.						The maximum gDC is -2 for TP1a and -1 for TP4 near-end. As the MCB loss and HCB loss are within 0.2 dB of each other, these specs are inconsistent by 0.8 dB. dudek_3ck_01_0921 slide 5 shows that -1 is reasonable for a 12 mm package trace, and shorter traces are possible, e.g. an on-board repeater. Hosts and modules with less loss than the MCB and HCB respectively may have to receive a signal less filtered at the point of use than in the module or host output measurement. ghiasi_3ck_adhoc_01a_042121 slide 9 says that -1 is needed for 5 dB ball to ball, 1.6 dB less than the mated compliance boards' loss. On the other hand, things go bad rapidly with too much emphasis. It would be safer to se both at -2, which would require retuning the short setting in ghiasi_3ck_adhoc_01a_04212 with reduced output emphasis - which should be OK. See other comments that give specific ranges for the stressed signals to ensure that inpu are tested with representative low-loss signals. SuggestedRemedy For TP4 gDC, change -1 to -2.				
Further analysis to	justify the sugge	sted remedy is r	equired.		Response Response Status U					
7 120G SC 1200	3.5.2	P 275	L 27	# 1-206	REJECT					
Dawe, Piers J G		NVIDIA			The corr	ment doe	s not pr	ovide sufficient justification	n for the propose	d changes.
Comment Type TR	Comment	Status R		MO gDC values	Analysis	is require	d to dot	ermine the need and impa	et of the propos	ad change
	is in a module is r obviously, differe settings that repre- ing in a particular n	much less than t ent channels will sent signals out node, should be	he range of loss need different C side what the sp	ec makes a host	, and you	io require				ou onango.
SuggestedRemedy	-	-								
Create separate lin style of TP1a. See			t modes, so 4 se	ts for TP4+, in the						
Deenenee	Response	Status II								
Response	response	Status U								

The comment does not provide sufficient justification for the proposed changes nor does the suggested remedy provide sufficient detail to implement.

C/ 120G SC 120G.5.2

C/ 120G	SC 120G.5.2	P 276	L 21	# I-210
Dawe, Piers	JG	NVIDIA		
Comment Typ	pe T	Comment Status R		EH/VEC method

This says "a minimum of 3 samples per symbol, or equivalent. Collect sufficient samples equivalent to at least 1.2 million PAM4 symbols to allow for construction of a normalized cumulative distribution function (CDF) to a probability of 10^{-5} without extrapolation." With a uniform-weighted histogram/mask, one needs several times 1e5 samples in the 0.1 UI window to get several hits in each tail. If samples are distributed uniformly across time, and using 10 for "several" for simplicity, we need 10 * 1e5 / 0.1 = 10 million samples. The first sentence implies that maybe several times fewer are needed, but still, 1.2 million seems too few for a reference (accurate) measurement.

If Gaussian weighting is used (which it should not be, see another comment) then one needs many more de-weighted hits to get to a false 1e-5 in the tails.

Also, giving a number is like telling the test engineer to use an instrument with a certain precision. That's not the standard's business; we say what the outcome of an accurate, possibly idealised, measurement must be, and the test engineer balances cost, time, margin, accuracy and so on. Including choosing how many samples.

SuggestedRemedy

Change "equivalent to at least 1.2 million PAM4 symbols" into an example, with a higher number, or delete it.

Response Response Status C

REJECT.

There are two concerns being discussed in the comment. The first is whether the equivalent number of symbols suggested is sufficient. The second is whether this number should be provided at all, leaving it to the test engineer to determine an appropriate number.

Change the last two sentences to:

"The signal is captured such that samples, after any post-processing as necessary, are evenly distributed throughout the measurement window and are numerous enough for an accurate normalized cumulative distribution function (CDF) to a probability of 1E-5 without extrapolation."

C/ 120G	SC 120G.5.2	P 277	L 6	# <u>I-211</u>
Dawe, Piers	JG	NVIDIA		
Comment Ty	pe TR	Comment Status R		EH/VEC method mask

This draft has a (de-)weighted rectangular eye mask spec with mask height = max(EHmin, EA/VECmax) and effective mask width ~2x0.03 to 2x0.035 UI, although it is described as a histogram 2x0.05 UI wide. This is too narrow; compare 120E with ESMW of 0.2 or 0.22 UI. It's half as wide as TDECQ with histograms extending to +/-0.07 UI.

This de-weighted histogram might have worked if there had been a guarantee that no host or module would ever produce a fast, highly jittered eye, but we don't have that guarantee. Work needs to be done to repair the hole in the spec.

See healey_3ck_01a_1020 slide 6, orange dots for +/-0.025 UI which is the closest to the current draft. For VEC of 10 dB, EW can be anywhere in the range 160 to 290 mUI: an almost 2:1 range. Driver risetime is not reported; if it is always the COM default slowest-reasonable 7.5 ps, then even worse EW is possible with faster or peaked drivers. This is too much worse than 120E. As the plot shows, a wide range of eye widths are possible, so we don't need to allow the worst ones by an oversight.

De-weighting the sides of the histogram with flat top and bottom, rather than chamfering the corners, means that infringing the corners by a mile is counted the same as infringing by an inch, which is bad.

Most of the weight of samples is in the middle of the eye which is a waste of measurement time; we know the corners will fail first so we should measure them, not the middle Hence the 2-offsets approach of TDEC and healey_3ck_01a_1020.

The effective BER criterion of the (de-)weighted mask seems to be around 1e-4, not 1e-5 as before.

The distribution of repeated measurements is very skewed.

We need an eye mask that's more eye shaped, so that a higher proportion of the samples near the boundary are measured at full weight and contribute properly to the measurement. Eye mask measurement with a 10-sided mask has been pre-programmed into scopes for about 20 years, we should use established tools and methods where they work well.

The 10-sided mask controls the eye on the diagonal more strongly than the rectangular uniform histogram/mask because hits are collected over the time of the chamfer, rather than just in corners. The de-weighted rectangular histogram controls the eye on the diagonal more weakly than the rectangular uniform histogram/mask because hits are collected just in corners, and de-weighted.

SuggestedRemedy

Change from a 4-cornered weighted mask with corners at t = ts+/-0.05, V = y +/-H/2 to a 10-cornered unweighted mask with corners at t = ts+/-1/16, ts+/-0.05, ts+/-3/32, V = y +/-H/2, y +/-H*0.4, y. y is near VCmid, VCupp or VClow (vertically floating, as in D3.0). H is max(EHmin, Eye Amplitude * 10^(-VECmax/20)). Eye Amplitude is AVupp, AVmid or AVlow, as today.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 120G	Page 27 of 59
SC 120G.5.2	2022-02-16 5:32:17 PM

This simple scalable method gives VEC results 0.5 to 1 dB more optimistic than the unweighted rectangular mask. It can remain as the EH and VEC limits are revised in the light of experience.

Response

Response Status U

REJECT.

Straw polls #8 and #9 indicate strong consensus to continue with a weighted window approach. Straw polls #10 and #11 indicate strong consensus to continue with the currently specified weighting function.

There is no consensus to make the proposed changes to the draft.

Straw poll #8 (chicago rules) Straw poll #9 (choose one) I support the following direction of the eye opening specification method: A. weighted window per Draft 3.0 (as is or with some improvements) B. revert to uniform weighted window per D2.1 (D3.0 comment #212) C. 10pt mask per D3.0 comment #211 #8 A: 31 B: 12 C: 6 #9 A: 27 B: 5 C: 1

Note: Straw poll #8 and #9 are the same question and answers except #8 is chicago rules (pick any) and #9 is choose one.

Straw poll #10 (chicago rules) Straw poll #11 (choose one) To address eye width issues expressed, I support the following method to modify the weighted window: A. no change B. "wider" weighting mask (e.g., larger sigma, alternate distribution shape) C. add jitter specification D. add eye width specification (i.e., per D3.0 comments 107, 108, 115, 116) #10 A: 26 B: 15 C: 9 D:9 #11 A: 19 B: 5 C: 3 D: 4

Note: Straw poll #10 and #11 are the same question and answers except #10 is chicago rules (pick any) and #11 is choose one.

C/ 120G	SC	120G.5.2	P 277	L6	# I-212				
Dawe. Pie		1200.0.2	NVIDIA	20	" 1212				
Comment		TR	Comment Status R		EH/VEC method masi				
eyes t histog is me histog TDEC This v eye sl	o pass, ram wid asured a ram - d Q with veightin nape, it	, while failin dth still app at around + lepending c histograms g is equiva weakens th	I has the effect of destroying I less bad slow eyes. It g Ilies. With a weighting star -/-0.035 UI rather than the on eye shape. Compare 12 s extending twice as wide, the lent to relaxing the VEC sp he spec most for the worst in the 1e-5 intended.	ives the false in adard deviation +/-0.05 UI with 20E with ESMW o +/-0.07 UI. wec by 1.5 to 2 d	npression that the of 0.02 UI, the eye height the unweighted / of 0.2 or 0.22 UI, and dB - but it depends on the				
	SuggestedRemedy								
revisio time i	on anyw : deserv	vay) approp	veighting and set the eye h vriately. ghiasi_3ck_01_07 nat the minimum eye heigh	21, which was i	not given the presentation				
Response			Response Status U						
REJE	CT.								
There	is no c	onsensus t	o make the proposed char	iges.					
For de	ataile e	aa tha ranc	onse to comment i-211.	-					
		•		1 10	# <u>1 000</u>				
C/ 121		121.1	P 115	L 19	# 1-233				
Ben-Artsi	Liav		Marvell Serr	iconductor, Inc					

 Comment Type
 E
 Comment Status
 R
 (bucket2)

 120-F and 120G have a different format than the line above - Same applies for table 122-1

120-F and 120G have a different format than the line above - Same applies for table 122-1 on page 116

SuggestedRemedy

aline formats between the three and write: 120F-Chp-to-chip 200GAUI-2 and 120G-Chip-tomodule 200GAUI-2. Fix also table 122-1

Response Response Status C

REJECT.

The newly inserted 200GAUI-2 C2C and C2M are consistent with the nomenclature in the corresponding Annexes and other PMD clauses. The description used for the other AUIs as written in the base standard; addressing these is outside the scope of 802.3ck.

C/ 121 SC 121.1 Page 28 of 59 2022-02-16 5:32:17 PM

IEEE P802.3ck D3.0 100/200/400 Gb/s Electrical Interfaces Task Force Initial Sponsor ballot comments
--

C/ 124	SC 124.1	P 118	L 19	# I-234	C/ 161	SC 161	P	33	L 4	# I-8	
Ben-Artsi, L	Liav	Marvell Semic	conductor, Inc.		Nicholl, Sł	hawn	Xilin	x			
Comment T	Гуре E	Comment Status R		(bucket2)	Comment	Туре Е	Comment Status	Α		(bucket1)	
120-F a	and 120G have	a different format than the line	e above				0 (i.e. 802.3dc) nows	uses low	ercase "forward	error correction",	
Suggested	Remedy						ercase was used.				
		the three and write: 120F-Chp	o-to-chip 200GAU	I-2 and 120G-Chip-to-	SuggestedRemedy For P802.3ck, propose to change the Clause 161 title to lower case.						
_	200GAUI-2.				FOLE	BUZ.3CK, propos	e to change the Claus	se 161 titl	e to lower case.		
Response REJEC	·Τ	Response Status C					ody of Clause 161 pro		hange to lower	case other places	
		0GAUI-2 C2C and C2M are co	onsistent with the	nomenclature in the			Correction" is current				
corresp	onding Annexe	es and other PMD clauses. The	e description used	d for the other AUIs	Response		Response Status	С			
as writt	en in the base	standard; addressing these is	outside the scope	e of 802.3ck.	ACCE	PI.					
C/ 135	SC 135.5.7.2	2 <i>P</i> 123	L 48	# I-235	C/ 161	SC 161.5.2.	6 P 1	34	L 46	# I-76	
Ben-Artsi, L	Liav	Marvell Semic	conductor, Inc.		Slavick, Je	eff	Broa	dcom Inc			
Comment T	Гуре E	Comment Status R		(bucket2)	Comment	Туре Е	Comment Status	Α		(bucket1)	
-		amounts in an increasing orde	er makes more se	ense			of 161.5.2.6 into two s wards which sub-clau			on paragraph could	
SuggestedH	Remeay										
Renlaci		nd 100GALU-2 order on lines /	17 and 51		Suggested	dRemedy					
•	e 100GAUI-1 a	nd 100GAUI-2 order on lines 4	47 and 51		00)" after the word re-in	serted on	line 46		
Response		nd 100GAUI-2 order on lines 4 Response Status C	47 and 51		Add "(see 161.5.2.6.2	,				
Response REJEC It is cor	:т.	Response Status C to list in order of lane rate. The		es do not improve	Add "(Add "(<i>Response</i>	see 161.5.2.6.2)" after the word re-in)" at the end of the fir <i>Response Status</i>	st senten			
Response REJEC It is cor	T. mmon practice	Response Status C to list in order of lane rate. The		es do not improve	Add "(Add "(see 161.5.2.6.2)" at the end of the fir	st senten			
Response REJEC It is cor the acc	T. mmon practice uracy or clarity	Response Status C to list in order of lane rate. The of the draft. P133	e proposed chang		Add "(Add "(<i>Response</i>	see 161.5.2.6.2)" at the end of the fir Response Status	st senten		# [I-238	
Response REJEC It is cor the acc C/ 154 Ran, Adee	T. mmon practice suracy or clarity SC 154.1	Response Status C to list in order of lane rate. The of the draft.	e proposed chang		Add "(Add "(<i>Response</i> ACCE	see 161.5.2.6.2 see 161.6.2.6.1 PT. SC 161.5.2.)" at the end of the fir Response Status 6 P	st senten C	ce of 161.5.2.6	# [<u>1-238</u>	
Response REJEC It is cor the acc C/ 154 Ran, Adee Comment T	T. mmon practice suracy or clarity SC 154.1 <i>Type</i> T	Response Status C to list in order of lane rate. The of the draft. P 133 Cisco System	e proposed chang <i>L</i> 0 Is, Inc.	# [<u>1-35</u> (bucket2)	Add "(Add "(Response ACCE C/ 161	see 161.5.2.6.2 see 161.6.2.6.1 PT. SC 161.5.2. Liav)" at the end of the fir Response Status 6 P	st sentend C 135 vell Semic	<i>L</i> 3		
Response REJEC It is cor the acc C/ 154 Ran, Adee Comment 7 Clause the 100	T. mmon practice suracy or clarity SC 154.1 <i>Type</i> T 154 (recently a	Response Status C to list in order of lane rate. The of the draft. P 133 Cisco System Comment Status A	e proposed chang <i>L</i> 0 Is, Inc. 100GBASE-ZR PI	# <u>I-35</u> <i>(bucket2)</i> HY, which may use	Add "(Add "(Response ACCE Cl 161 Ben-Artsi, Comment In figu	see 161.5.2.6.2 see 161.6.2.6.1 PT. SC 161.5.2. Liav <i>Type</i> TR re 161-2 it seen)" at the end of the fir Response Status 6 P ^ Man Comment Status	st sentend C I35 vell Semic R not supp	L 3 onductor, Inc.	# <u>I-238</u> (bucket1) is desired recommend	
Response REJEC It is cor the acc C/ 154 Ran, Adee Comment 7 Clause the 100	T. mmon practice suracy or clarity SC 154.1 <i>Type</i> T 154 (recently a 0GAUI-1 C2C/C ly listed.	Response Status C to list in order of lane rate. The of the draft. P133 Cisco System Comment Status A added to 802.3dc) defines the	e proposed chang <i>L</i> 0 Is, Inc. 100GBASE-ZR PI	# <u>I-35</u> <i>(bucket2)</i> HY, which may use	Add "(Add "(Response ACCE Cl 161 Ben-Artsi, Comment In figu	see 161.5.2.6.2 see 161.6.2.6.1 PT. SC 161.5.2. Liav <i>Type</i> TR re 161-2 it seen ding in a similar)" at the end of the fir Response Status 6 P ' Man Comment Status	st sentend C I35 vell Semic R not supp	L 3 onductor, Inc.	(bucket1)	
Response REJEC It is cor the acc C/ 154 Ran, Adee Comment 7 Clause the 100 current Suggested	T. mmon practice suracy or clarity SC 154.1 <i>Type</i> T 154 (recently a 0GAUI-1 C2C/C ly listed. Remedy	Response Status C to list in order of lane rate. The of the draft. P133 Cisco System Comment Status A added to 802.3dc) defines the	e proposed chang <i>L</i> 0 Is, Inc. 100GBASE-ZR PI	# <u>I-35</u> <i>(bucket2)</i> HY, which may use	Add "(Add "(<i>Response</i> ACCE <i>Cl</i> 161 Ben-Artsi, <i>Comment</i> In figu ameno <i>Suggested</i>	see 161.5.2.6.2 see 161.6.2.6.1 PT. SC 161.5.2. Liav <i>Type</i> TR re 161-2 it seen ding in a similar <i>Remedy</i>)" at the end of the fir Response Status 6 P ' Man Comment Status	C I35 vell Semic R not supp 1-2 in clau	L 3 onductor, Inc.	(bucket1)	
Response REJEC It is cor the acc Cl 154 Ran, Adee Comment T Clause the 100 current! Suggested Add Cla	T. mmon practice suracy or clarity SC 154.1 <i>Type</i> T 154 (recently a 0GAUI-1 C2C/C ly listed. Remedy ause 154 and 1	Response Status C to list in order of lane rate. The of the draft. P 133 Cisco System Comment Status A added to 802.3dc) defines the 22M interfaces, in addition to th 54.1 to the draft.	e proposed chang <i>L</i> 0 Is, Inc. 100GBASE-ZR Pi ne 100GAUI-2 and	# <u>I-35</u> <i>(bucket2)</i> HY, which may use d other interfaces	Add "(Add "(<i>Response</i> ACCE <i>Cl</i> 161 Ben-Artsi, <i>Comment</i> In figu ameno <i>Suggested</i>	see 161.5.2.6.2 see 161.6.2.6.1 PT. SC 161.5.2. Liav Type TR re 161-2 it seen ding in a similar dRemedy EE support sim)" at the end of the fir <i>Response Status</i> 6 <i>P⁻¹</i> Man <i>Comment Status</i> ns that this FEC does manner as Figure 9 ⁻¹	C C I35 vell Semic R not supp 1-2 in clau clause 91	L 3 onductor, Inc.	(bucket1)	
Response REJEC It is con the acc C/ 154 Ran, Adee Comment 7 Clause the 100 currentl Suggested/ Add Cla Amend	T. mmon practice suracy or clarity SC 154.1 <i>Type</i> T 154 (recently a 0GAUI-1 C2C/C ly listed. Remedy ause 154 and 1	Response Status C to list in order of lane rate. The of the draft. P 133 Cisco System Comment Status A added to 802.3dc) defines the 2M interfaces, in addition to th 54.1 to the draft.	e proposed chang <i>L</i> 0 Is, Inc. 100GBASE-ZR Pi ne 100GAUI-2 and	# <u>I-35</u> <i>(bucket2)</i> HY, which may use d other interfaces	Add "(Add "(Response ACCE Cl 161 Ben-Artsi, Comment In figu ament Suggested Add E Response REJED	see 161.5.2.6.2 see 161.6.2.6.1 PT. SC 161.5.2. Liav Type TR re 161-2 it seen ding in a similar dRemedy EE support simi)" at the end of the fir Response Status 6 P ' 6 P ' 6 P ' 6 Nan Comment Status ns that this FEC does manner as Figure 9' ilar to Figure 91-2 in o Response Status	C C I35 vell Semic R not supp 1-2 in clau clause 91	L 3 onductor, Inc.	(bucket1)	
Response REJEC It is cor the acc Cl 154 Ran, Adee Comment 7 Clause the 100 currentI SuggestedH Add Cla Amend Response	T. mmon practice suracy or clarity SC 154.1 <i>Type</i> T 154 (recently a 0GAUI-1 C2C/C ly listed. Remedy ause 154 and 1	Response Status C to list in order of lane rate. The of the draft. P 133 Cisco System Comment Status A added to 802.3dc) defines the 2M interfaces, in addition to th 54.1 to the draft.	e proposed chang <i>L</i> 0 Is, Inc. 100GBASE-ZR Pi ne 100GAUI-2 and	# <u>I-35</u> <i>(bucket2)</i> HY, which may use d other interfaces	Add "(Add "(Response ACCE C/ 161 Ben-Artsi, Comment In figu ameno Suggested Add E Response REJEC EEE is	see 161.5.2.6.2 see 161.6.2.6.1 PT. SC 161.5.2. Liav Type TR re 161-2 it seen ding in a similar dRemedy EE support simi CT. s not an objectiv)" at the end of the fir Response Status 6 P ' 6 P ' 6 P ' 6 Nan Comment Status ns that this FEC does manner as Figure 9' ilar to Figure 91-2 in o Response Status	C C I 35 vell Semic R not supp 1-2 in clau clause 91 W	<i>L</i> 3 onductor, Inc. ort EEE. If such use 91	(bucket1)	

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

Cl 161 SC 161.5.2.6 Page 29 of 59 2022-02-16 5:32:17 PM

C/ 161 SC 161.	5.2.6.1	P 135	L 50	# 1-77	C/ 161	SC 161.5.2	.6.2	P 137	L 6	# <u>I-166</u>
Slavick, Jeff		Broadcom Ind	c		Dawe, Pie	ers J G		NVIDIA		
Comment Type E	Comn	nent Status D			Comment	Туре Т	Comm	ent Status R		(bucket1
The introduction pa	aragraph and	the first sentence of	f this sub-clause	call this a "function"			let"? In IEE	E standards, we h	ave shall, should,	, may and can. See
SuggestedRemedy					1.1.6.					
Change the sub-cl	ause title to b	e "Alignment marke	r mapping function	on"	Suggested				_	
Proposed Response REJECT. This comment was	,	nse Status Z	er.		tx_scr repres tx_scr	ambled<256:0: sent consecutiv	>" to "In the e values of t > are repres	following, the set o tx_scrambled<256: ented by a set of v	f vectors tx_scrar 0>", or "Consecu	tive values of
		-			Response		Respon	nse Status C		
C/ 161 SC 161.	5.2.6.1	P 136	L 5	# 1-43	REJE	÷ · ·				
Ran, Adee		Cisco System	ns, Inc.					xt in 119.2.4.4.1 in		d from which it is and similar clauses.
Comment Type E	Comn	nent Status A		(bucket1)				ning a variable in a		and similar clauses.
The variable x is in	consistency i	talicized in the text o	of list items a-c.		C/ 161	SC 161.5.2	6.2	P137	L 6	# 1-4
SuggestedRemedy					Marris, Ar		.0.2		sign Systems, Inc	
Make x italic where	ever it denotes	s a lane number.			Comment		Comm	ent Status A	sign Oyetenite, me	 (bucket1
Response	Respo	nse Status C				51		pint to where tx_scr	ambled is defined	(
ACCEPT.					Suggested	dRemedv	0			
C/ 161 SC 161.5 Ran, Adee	5.2.6.2	P 137 Cisco System	L 3 ns, Inc.	# [-44	Chang "Let th	ge:		led_i<256:0> repre	esent consecutive	values of
Comment Type E "x" should not be u	ised as a mult	nent Status A tiplication symbol.		(bucket1)				led_i<256:0> repre :256:0> (see 161.5		e values of the on of the transcoder)."
Also applies in 161	.3.3.3.				Response			nse Status C		,
SuggestedRemedy	lication oumb	ol as in the last new	agraph of 161 5 (2.6.1, in both places.	, ACCE		,	_		
0		•								
Response ACCEPT.	kespo	nse Status C								

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 161 SC 161.5.2.6.2 Page 30 of 59 2022-02-16 5:32:17 PM

C/ 161	SC 161.5.2.6.2	P 137	L 7	# I-167	C/ 161	SC 161.5.2.6.2	P 137	L 36	# I-11
Dawe, Pier	rs J G	NVIDIA			Nicholl, Sh	awn	Xilinx		
Comment	Туре Т	Comment Status A		(bucket1)	Comment	Гуре Е	Comment Status A		(bucket1)
figures		ambled" appears without e it is 257 bits long (but what				bits wide. This caus	led is inserted into an ar ses confusion. The diag		
Suggested	Remedy					-	Figure 119-5 and Figure	a 110-7 are verv s	similar to Figure 161-3
In 161. 257-bit	5.2.5, add a senter	nce saying that the transco 161-3, change "tx_scramb what is intended.			and ar - Ren - Rep	e the basis for the fo nove the arrow from lace "FEC codeword	bllowing proposed chang the diagram d A" with "from FEC cod	es to Figure 161- eword A"	
Response		Response Status C					d B" with "from FEC cod cell/column of the table		portaining to EEC land
Comm referen	cing 91.5.2.5 whicl	reference to 161.5.2.5 wh h makes clear the tx_scrar 161-3 in accordance with tl	mbled is a 257-b	it block.	0-3). 1 - Add - Add - Rep	The shading should superscript text "B superscript text "A lace "tx_scrambled"	be different colour from A" into the newly shaded B" into the newly shaded with "Resumption of 25	the 5-bit pad shac d area for FEC lar d area for FEC lar	ding. nes 1 and 3 nes 2
C/ 161	SC 161.5.2.6.2	P 137	L7	# I-9	_	mbled blocks" Resumption of 257-	bit tx_scrambled blocks	' is chosen, then i	propose to make
Nicholl, Sh	awn	Xilinx			similar	text change to Figu	re 119-5 and Figure 119		
Comment	Туре Е	Comment Status A		(bucket1)	(i.e. 80		dd an "=" (equal symbol	and a rectangle	that is shaded the
Reade	rs of the sub-clause	d<256:0> is mentioned wit e may not realize that the . Including some guiding t	/ariable's detaile	ed definition is found	- Note				(i.e. 802.3dc) Figure 91-
Suggested	Remedy				Response	F	Response Status C		
- "Let		ntence to: tx_scrambled_i<256:0> re mbled<256:0> (see 161.5.			The co	PT IN PRINCIPLE. mmenter has made he 802.3dc revision	a similar comment agai project. Draft 3.1 of the	nst Clause 91 in t revision project is	the ballot against draft s expected to be
Response ACCEI		Response Status C			publish Implen	ed before draft 3.1 nent the suggested		ence and as far as	s possible maintain
C/ 161	SC 161.5.2.6.2	P 137	L 22	# I-10					
Nicholl, Sh		Xilinx							
Comment		Comment Status A		(bucket1)					
The pa	aragraph ending in '	'followed the alignment ma ome other text is meant to		(/					
Suggested	Remedy								
without	t an alignment marl	paragraph to the area prion ker group". This enhances ment group" portions toge	s readability of the						
Response		Response Status C							
ACCEI	PT.								
COMMENT		atched A/accepted R/reje		d T/technical E/editorial G NSE STATUS: O/open W/v		U/unsatisfied Z/wi	C/ 1 thdrawn SC 1	61 61.5.2.6.2	Page 31 of 59 2022-02-16 5:32

C/ 161 SC 161.5.2.6.2 P137 L 44 # [-12	Cl 161 SC 161.5.2.6.2 P 137 L 54 # 1-14
Nicholl, Shawn Xilinx	Nicholl, Shawn Xilinx
Comment Type E Comment Status A (bucket1	Comment Type E Comment Status A (bucket1)
In Figure 161-4 tx_scrambled is mentioned in several places for an area of 35x257-bit and also in an area of 40x257-bit. However, tx_scrambled is 257 bits wide.	In order to enhance readability and help readers to mentally connect together sections that are called by reference, the draft should include some detail about how tx scrambled am<10279:0> is consumed.
SuggestedRemedy	
Propose to make the following change(s) to Figure 161-4: - Replace (in two places) "am_txmapped 5x257-bit blocks" with "am_txmapped (5x257 bits)" - Replace (in two places) "tx_scrambled 35x257-bit blocks" with "35x257-bit tx_scrambled	Propose to add a new final paragraph at the end of 161.5.2.6.2 with the following text: - the contents of tx_scrambled_am<10279:0> are an input to the Pre-FEC distribution (see 161.5.2.7 for the definition of the Pre-FEC distribution)
 blocks" Replace "tx_scrambled 40x257-bit blocks" with "40x257-bit tx_scrambled blocks" Note that this diagram is consistent with latest P802.3/D3.0 (i.e. 802.3dc) Figure 119-6 and Figure 119-8 and ideally will remain consistent with Figure 119-6 and Figure 119-8 	Response Response Status C ACCEPT.
Response Response Status C	C/ 161 SC 161.5.4.2.1 P142 L 46 # [-15
ACCEPT IN PRINCIPLE.	Nicholl, Shawn Xilinx
The commenter has made a similar comment against Clause 119 in the ballot against draft	Comment Type E Comment Status A (bucket1)
3.0 of the 802.3dc revision project. Draft 3.1 of the revision project is expected to be published before draft 3.1 of 802.3ck.	Recently, P802.3/D2.3 (i.e. 802.3dc) introduced fec_lane_mapping <x> to the list of variables in 91.5.4.2.1. It seems appropriate to similarly update CL161.</x>
Implement the suggested remedy with editorial licence and as far as possible maintain consistency with Figure 119-6 in draft 3.1 of the 802.3dc revision project.	SuggestedRemedy
Also rename 161-4 to "Alignment marker insertion period"	Propose to insert fec_lane_mapping <x> after fec_lane.</x>
C/ 161 SC 161.5.2.6.2 P137 L 50 # [-13	For fec_lane_mapping <x> definition propose to use: "Identical to the definition of fec_lane</x>
Nicholl, Shawn Xilinx	in 91.5.4.2.1 except that 161.6.8 defines the FEC lane mapping." - Note that this sub-section number may be changed by a related comment against the
Comment Type ER Comment Status A (bucket1	draft.
Figure 161-4 has the wrong caption.	Response Response Status C
SuggestedRemedy	ACCEPT.
Propose to replace the Figure 161-4 caption with: - Figure 161-4 Alignment marker insertion period	
Response Response Status W	

C/ 161 SC 161.5.4.2.1

Page 32 of 59 2022-02-16 5:32:17 PM

C/ 161 SC 161.5.4.2.2	P 143	L 6	# 1-33	C/ 161	SC 161.6	P 146	L 49	# I-17		
Rannow, R K	IEEE member	r / Self Employed		Nicholl, Shav	vn	Xilinx				
Comment Type T	Comment Status R			Comment Ty	pe ER	Comment Status A		(bucket1)		
ambiguous.	erm "both", and both = and	d. This appears ve	rbose and perhaps	P802.3/		161.6, a number of cross 3dc) are incorrect. There				
Confusing statement:				SuggestedR	emedy					
	csl both found a match and Otherwise, amp_match is		e PCS lane number,	- pg. 14	6, line 49, 16 [,]	changes to P802.3ck CL 1.6.1 FEC_bypass_indica	ation_enable: change			
SuggestedRemedy						ove the existing 161.6.10 bass_indication_enable s				
Review and remove the te	erm "both".			order of	entries in Tab	le 161-1 ; update the FEC	C_degraded_SER_er	nable section to contain		
Suggested modification:				- pg. 14	6, line 50, ma	e definition in 91.6.4, exc ove the existing 161.6.14 ided_SER_enable to reta	100G_RS_FEC_Int_	enable after the new		
If current_pcsI and first_p is set to true. Otherwise, a	csl match and indicate the amp_match is set to false.	same PCS lane n	umber, amp_match	Table 16 - pg. 14	1-1 6, line 50, mo	ove the existing 161.6.11	FEC_degraded_SEF	2_activate_threshold		
Response	Response Status C					ew location of 100G_RS_ rder of entries in Table 16		-clause to retain		
The text is similar to exist	explained why the existing t ing text in the base standar bes not improve upon the a	rd in 119.2.6.2.3.	of the existing text.	FEC_de definitior - pg. 14	graded_SER_ in 91.6.5, exe 6, line 50, mo	activate_threshold section cept the reference become the existing 161.6.12 ew location of FEC_degra	n to contain the text nes 161.5.3.3.2." FEC_degraded_SEF	2_deactivate_threshold		
						aded_SER_deactivate_th				
C/ 161 SC 161.6	P 146	L 19	# I-16			6.6, except the reference				
Nicholl, Shawn	Xilinx					ove the existing 161.6.13 of FEC_degraded_SER_				
Comment Type ER	Comment Status A		(bucket1)			ER_interval section to con				
	.e. 802.3dc) Table 91-3 lists 2802.3ck Table 161-2 to do		Register/bit number"	- pg. 14	6, line 53, 16 ⁻	rence becomes 161.5.3.3 1.6.2 FEC_bypass_indica	ation_ability: change	"91.6.4" to "91.6.9"		
uggestedRemedy						.6.3 hi_ser: change "91.6 re the existing 161.6.20 F		ability sub-clause after		
- move "1.201.3" higher - move "1.201.4" higher	anges to P802.3ck CL161: in the table (i.e. after 1.201 in the table (i.e. after the no higher in the table (i.e. afte	.2) ew location of 1.20)1.3)	161.6.3 l update tl definitior	ni_ser sub-cla ne FEC_degra in 91.6.11, e	use to retain consistency aded_SER_ability section xcept the reference beco re the existing 161.6.21 F	with the order of ent to contain the text " mes 161.5.3.3.2."	ries in Table 161-2 ; Identical to the		
Response	Response Status W			new loca	tion of FEC_c	legraded_SER_ability su	b-clause ; update the	<pre>FEC_degraded_SER</pre>		
ACCEPT.				section to contain the text "Identical to the definition in 91.6.12, except the reference becomes 161.5.3.3.2." - pg. 147, line 7, 161.6.4 amps_lock <x>: change "91.6.7" to "91.6.14" - pg. 147, line 11, 161.6.5 fec_align_status: change "91.6.8" to "91.6.15" - pg. 147, line 15, 161.6.6 FEC_corrected_cw_counter: change "91.6.9" to "91.6.16" - pg. 147, line 18, 161.6.7 FEC_corrected_cw_counter: change "91.6.10" to "91.6.17" - pg. 147, line 23, 161.6.8 FEC_lane_mapping<x>: change "91.6.11" to "91.6.18" - pg. 147, line 24, move the existing 161.6.22 FEC_cw_counter sub-clause after FEC_lane_mapping<x> sub-clause to retain consistency with the order of entries in Table 161-2</x></x></x>						
TYPE: TR/technical required COMMENT STATUS: D/dispa SORT ORDER: Clause, Subc	atched A/accepted R/reject	5 .		0	J/unsatisfied		/ 161 C 161.6	Page 33 of 59 2022-02-16 5:32		

SORT ORDER: Clause, Subclause, page, line

I-6

(bucket1)

- pg. 147, line 27, 161.6.9 FEC_symbol_error_counter_i: change "91.6.12" to "91.6.19" - pg. 147, line 28, move the existing 161.6.23 FEC_codeword_error_bin_i sub-clause after FEC_symbol_error_counter_i sub-clause to retain consistency with the order of entries in Table 161-2

- pg. 148, line 3, 161.6.15 align_status: change "91.6.13" to "91.6.20"

- pg. 148, line 7, 161.6.16 BIP error counter i: change "91.6.14" to "91.6.21"

- pg. 148, line 11, 161.6.17 lane_mapping<x>: change "91.6.15" to "91.6.22"

- pg. 148, line 15, 161.6.18 block lock<x>: change "91.6.16" to "91.6.23"

- pg. 148, line 19, 161.6.19 am lock<x>: change "91.6.17" to "91.6.24" Response Status W

Response

ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial licence

C/ 161	SC 161.6.2	P 146	L 53
Marris, A	rthur	Cadence Desi	gn Systems, Inc.

Comment Type E Comment Status A

Some of the cross references point to the wrong subclauses in Clause 91.

Response Status C

SuggestedRemedy

On page 146 line 49 change 91.6.1 to 91.6.2 On page 146 line 53 change 91.6.4 to 91.6.9 On page 147 line 2 change 91.6.5 to 91.6.10 On page 147 line 7 change 91.6.7 to 91.6.14 On page 147 line 11 change 91.6.8 to 91.6.15 On page 147 line 15 change 91.6.9 to 91.6.16 On page 147 line 20 change 91.6.10 to 91.6.17 On page 147 line 23 change 91.6.11 to 91.6.18 On page 147 line 28 change 91.6.12 to 91.6.19 On page 147 line 32 change 91.6.2b to 91.6.4 On page 147 line 35 change 91.6.2c to 91.6.5 On page 147 line 39 change 91.6.2d to 91.6.6 On page 147 line 43 change 91.6.2e to 91.6.7 On page 148 line 3 change 91.6.13 to 91.6.20 On page 148 line 7 change 91.6.14 to 91.6.21 On page 148 line 11 change 91.6.15 to 91.6.22 On page 148 line 16 change 91.6.16 to 91.6.23 On page 148 line 19 change 91.6.17 to 91.6.24

Response

ACCEPT.

The reference for FEC_degraded_SER_enable is to 91.6.2b. This was the subclaus added in 802.3cd. After integration into 802.3dc, this became 91.6.4. Simlarly in 161.6.11 through 161.6.13, 161.6.20, and 161.6.21. SuggestedRemedy In 161.6.10 change the reference to 91.6.4. In 161.6.11 change the reference to 91.6.5. In 161.6.12 change the reference to 91.6.7. In 161.6.20 change the reference to 91.6.11. In 161.6.20 change the reference to 91.6.12. Response Response Status W ACCEPT. C/ 161 SC 161.7.3 P 150 L 13 # $\boxed{1-46}$ Ran, Adee Cisco Systems, Inc. Comment Type E Comment Status A (The "FEC degraded SER detection" option for this clause is defined in 161.5.3.3.2. SuggestedRemedy Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2.	C/ 161	SC 161.6.10	P 1 4	47	L 30	# I-45
The reference for FEC_degraded_SER_enable is to 91.6.2b. This was the subclaus added in 802.3cd. After integration into 802.3dc, this became 91.6.4. Simlarly in 161.6.11 through 161.6.13, 161.6.20, and 161.6.21. SuggestedRemedy In 161.6.10 change the reference to 91.6.4. In 161.6.11 change the reference to 91.6.5. In 161.6.12 change the reference to 91.6.7. In 161.6.20 change the reference to 91.6.11. In 161.6.20 change the reference to 91.6.12. Response Response Status W ACCEPT. C/ 161 SC 161.7.3 P 150 L 13 # $\boxed{1-46}$ Ran, Adee Cisco Systems, Inc. Comment Type E Comment Status A (The "FEC degraded SER detection" option for this clause is defined in 161.5.3.3.2. SuggestedRemedy Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2.	Ran, Adee		Cisco	System	s, Inc.	
added in 802.3cd. After integration into 802.3dc, this became 91.6.4. Simlarly in 161.6.11 through 161.6.13, 161.6.20, and 161.6.21. SuggestedRemedy In 161.6.10 change the reference to 91.6.4. In 161.6.11 change the reference to 91.6.5. In 161.6.12 change the reference to 91.6.6. In 161.6.20 change the reference to 91.6.7. In 161.6.20 change the reference to 91.6.11. In 161.6.21 change the reference to 91.6.12. Response Response Status W ACCEPT. C/ 161 SC 161.7.3 P150 L 13 # $\boxed{1-46}$ Ran, Adee Cisco Systems, Inc. Comment Type E Comment Status A (The "FEC degraded SER detection" option for this clause is defined in 161.5.3.3.2. SuggestedRemedy Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2. Similarly change item RF12 in 161.7.4.2.	Comment 1	ype ER	Comment Status	Α		(bucket1)
SuggestedRemedy In 161.6.10 change the reference to 91.6.4. In 161.6.11 change the reference to 91.6.5. In 161.6.12 change the reference to 91.6.6. In 161.6.13 change the reference to 91.6.7. In 161.6.20 change the reference to 91.6.11. In 161.6.21 change the reference to 91.6.12. Response Response Status W ACCEPT. C/ 161 SC 161.7.3 P 150 L 13 Ran, Adee Cisco Systems, Inc. Comment Type E Comment Type E Comment Type E Comment Type E Comment Status A (Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2. SuggestedRemedy Change item RF12 in 161.7.4.2.						
In 161.6.10 change the reference to 91.6.4. In 161.6.11 change the reference to 91.6.5. In 161.6.12 change the reference to 91.6.6. In 161.6.20 change the reference to 91.6.11. In 161.6.20 change the reference to 91.6.12. <i>Response Response Status</i> W ACCEPT. <i>Cl</i> 161 SC 161.7.3 <i>P</i> 150 <i>L</i> 13 <i>#</i> <u>I-46</u> Ran, Adee Cisco Systems, Inc. <i>Comment Type</i> E <i>Comment Status</i> A (<i>t</i> The "FEC degraded SER detection" option for this clause is defined in 161.5.3.3.2. <i>SuggestedRemedy</i> Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2. Similarly change item RF12 in 161.7.4.2.	Simlar	y in 161.6.11 thr	ough 161.6.13, 161.6	3.20, and	161.6.21.	
In 161.6.11 change the reference to 91.6.5. In 161.6.12 change the reference to 91.6.6. In 161.6.13 change the reference to 91.6.7. In 161.6.20 change the reference to 91.6.11. In 161.6.21 change the reference to 91.6.12. <i>Response Response Status</i> W ACCEPT. <i>CI</i> 161 SC 161.7.3 <i>P</i> 150 <i>L</i> 13 # <u>I-46</u> Ran, Adee Cisco Systems, Inc. <i>Comment Type</i> E <i>Comment Status</i> A (Comment Type E <i>Comment Status</i> A (Comment Status) <i>Comment Status</i> A (Comment Status) <i>Comment Status Comment Status Comment</i>	Suggested	Remedy				
Cl 161 SC 161.7.3 P 150 L 13 # I-46 Ran, Adee Cisco Systems, Inc. Comment Type E Comment Status A (d) Comment Type E Comment Status A (d) (d) (d) The "FEC degraded SER detection" option for this clause is defined in 161.5.3.3.2. SuggestedRemedy (d) (d) (d) Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2. Similarly change item RF12 in 161.7.4.2. (d) (d)	In 161. In 161. In 161. In 161. <i>Response</i>	6.12 change the 6.13 change the 6.20 change the 6.21 change the	reference to 91.6.6. reference to 91.6.7. reference to 91.6.11 reference to 91.6.12	2.		
Ran, Adee Cisco Systems, Inc. Comment Type E Comment Status A (n) The "FEC degraded SER detection" option for this clause is defined in 161.5.3.3.2. SuggestedRemedy (n) Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2. Similarly change item RF12 in 161.7.4.2. (n)						#
Comment Type E Comment Status A (The "FEC degraded SER detection" option for this clause is defined in 161.5.3.3.2. SuggestedRemedy Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2. Similarly change item RF12 in 161.7.4.2.		SC 161.7.3				# 1-46
The "FEC degraded SER detection" option for this clause is defined in 161.5.3.3.2. <i>SuggestedRemedy</i> Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2. Similarly change item RF12 in 161.7.4.2.	Ran, Adee		Cisco) System	s, Inc.	
SuggestedRemedy Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2. Similarly change item RF12 in 161.7.4.2.	Comment 7	Type E	Comment Status	Α		(bucket1)
Change the reference of item *FDD from 91.5.3.3.1 to 161.5.3.3.2. Similarly change item RF12 in 161.7.4.2.	The "Fl	EC degraded SE	R detection" option f	for this cl	ause is defined	d in 161.5.3.3.2.
Similarly change item RF12 in 161.7.4.2.	Suggested	Remedy				
Response Response Status C				.5.3.3.1 t	to 161.5.3.3.2.	
	Response		Response Status	С		
ACCEPT.	ACCEF	РТ.				

C/ 161 SC 161.7.3

C/ 162	SC 162	P 166	L 6	# I-224	C/ 162	SC	162.6.1		P 158	L 1	# I-126
Zivny, Pavel		Tektronix, Inc	i.		Hidaka, Ya	suo		C	edo Semic	onductor	
Comment Typ	pe T C	Comment Status R		TX measurement	Comment 7	Гуре	Е	Comment Stat	tus R		PICS (bucket2)
The "using a test system with a fourth-order Bessel-Thomson low-pass response with 40 GHz 3 dB bandwidth." allows for large range of result change depending on the end of B-T filter compliance. This can readily be corrected by specifying the roll-off, as has been done in optical standards for years - see e.g. 140.7.5 Transmitter and dispersion eye closure for PAM4 (TDECQ). Reasoning: experiments show that for realistic signals the sensitivity (of measurment results) to roll-off compliance becomes insignificant past about 55 GHz. Presentation available.					54ns. Suggested Add a l referen Response REJEC	Remec PICS e ce to c	<i>ly</i> entry "The clause 16	e Skew at SP3 for 2.6.1. Response Stat	100GBASE us C	-CR1 shall be le	BASE-CR1 less than
SuggestedRe	•										n 162.6 (denoted by and faster PMD clauses.
40 GHz 3	3 dB bandwidth" wi	m with a fourth-order Bes ith "compliant (to the B-T the 58 GHz response the	response) to at l		C/ 162		162.6.1		P 158	L 4	# I-127
Response		esponse Status C			Hidaka, Ya	suo		C	edo Semic	onductor	
, REJECT.					Comment T	Гуре	Е	Comment Stat	tus R		PICS (bucket2)
According	According to straw poll #7 there is no consensus to implement the suggested remedy. Further consensus and analysis is encouraged.					-		sing for "shall" for	the skew a	t SP4 for 100GE	BASE-CR1 less than
Straw poll I support s comment Yes: 11 No: 13	specifying the sco	ope filter response in line	with the suggeste	∋d remedy in	referen <i>Response</i> REJEC	PICS e ice to c T.	entry "The clause 16	2.6.1. Response Stat	us C		ess than 134ns" with a n 162.6 (denoted by
C/ 162	SC 162.5	P 157	L 17	# I <u>-125</u>	shall st	ateme	nts). This	is consistent with	preceding	100G Ethernet	and faster PMD clauses.
0/102											
Hidaka, Yasu	10	Credo Semico	onductor		C/ 162	SC	162.6.1		P 158	L 8	# I-128
Hidaka, Yasu		Credo Semico Comment Status R	onductor	PICS (bucket2)	C/ 162 Hidaka, Ya		162.6.1			-	# I-128
Hidaka, Yasu Comment Typ	pe E C			()		suo	162.6.1 E		edo Semic	-	# I-128 PICS (bucket2)
Hidaka, Yasu Comment Typ PICS entr SuggestedRe	pe E C rry seems missing emedy	Comment Status R	lays listed in Tab	le 162-4.	Hidaka, Ya Comment T	suo Type	E	C Comment Sta	redo Semica tus R	onductor	
Hidaka, Yasu Comment Typ PICS entr SuggestedRe Add a PIC shall be n	pe E C ry seems missing emedy CS entry "The sum no more than the m	Comment Status R for "shall" for the max de	elays listed in Tab receive delay at c	le 162-4.	Hidaka, Ya <i>Comment T</i> PICS e	isuo Type entry se	E eems mis	C Comment Sta	redo Semica tus R	onductor	PICS (bucket2)
Hidaka, Yasu Comment Typ PICS entr SuggestedRe Add a PIC shall be n clause 16	pe E C ry seems missing emedy CS entry "The sum no more than the m 52.5.	Comment Status R for "shall" for the max de n of the transmit and the r	elays listed in Tab receive delay at c	le 162-4.	Hidaka, Ya Comment T PICS e 145ns. Suggested Add a l	isuo Type entry se Remec PICS e	E eems mis	C <i>Comment Sta</i> sing for "shall" for Skew at SP5 for	redo Semic tus R the skew a	onductor t SP5 for 100GE	PICS (bucket2)
Hidaka, Yasu Comment Typ PICS entr SuggestedRe Add a PIC shall be n clause 16 Response REJECT.	pe E C ry seems missing emedy CS entry "The sum no more than the m 62.5. Re	Comment Status R for "shall" for the max de n of the transmit and the maximum delays listed in	elays listed in Tab receive delay at c Table 162-4" with	le 162-4.	Hidaka, Ya Comment T PICS e 145ns. Suggested Add a l	isuo Type entry se Remec PICS e	E eems mis dy entry "The	C <i>Comment Sta</i> sing for "shall" for Skew at SP5 for	redo Semico tus R the skew a 100GBASE	onductor t SP5 for 100GE	PICS (bucket2) BASE-CR1 less than

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

Cl	162	
SC	162.6.1	

Page 35 of 59 2022-02-16 5:32:17 PM

	SC 162.6.2	P 158	L 23	# I-130	C/ 162	SC 162.6.2	P 158	L 26	# <mark>I-132</mark>
Hidaka, Yas	uo	Credo Semic	onductor		Hidaka, Yas	o	Credo Ser	niconductor	
Comment Ty	vpe E C	Comment Status R		PICS (bucket2)	Comment Ty	be E	Comment Status R		PICS (bucket2)
	try seems missing GBASE-CR4 less t	for "shall" for the skew v han 600ps.	ariation at SP3 f	or 200GBASE-CR2			issing for "shall" for the skew less than 3.4ns.	w variation at SP4 f	or 200GBASE-CR2
SuggestedR	emedy				SuggestedR	emedy			
		w Variation at SP3 for 20 ith a reference to clause		and 400GBASE-CR4			ne Skew Variation at SP4 fo ns" with a reference to clau		and 400GBASE-CR4
Response	R	esponse Status C			Response		Response Status C		
	already a PICS en	try "SC" to cover multiple onsistent with preceding				already a PI	CS entry "SC" to cover mult is is consistent with precedi		
C/ 162	SC 162.6.2	P 158	L 23	# I-129	C/ 162	SC 162.6.2	P 158	L 30	# I-134
Hidaka, Yas	uo	Credo Semic	onductor		Hidaka, Yas	o	Credo Ser	niconductor	
Comment Ty	vpe E C	Comment Status R		PICS (bucket2)	Comment Ty	pe E	Comment Status R		PICS (bucket2)
	try seems missing SE-CR4 less than	for "shall" for the skew a 54ns.	t SP3 for 200GB	ASE-CR2 and			issing for "shall" for the skew less than 3.6ns.	w variation at SP5 f	or 200GBASE-CR2
SuggestedR	emedy				SuggestedR	emedy			
		w at SP3 for 200GBASE ence to clause 162.6.2.	-CR2 and 400G	BASE-CR4 shall be			ne Skew Variation at SP5 fo ins" with a reference to clau		and 400GBASE-CR4
Response	R	esponse Status C			Response		Response Status C		
	already a PICS en	try "SC" to cover multiple onsistent with preceding				already a PI	CS entry "SC" to cover mult is is consistent with precedi		
There is shall sta	already a PICS en				There is	already a PI	is is consistent with precedi		
There is shall sta	already a PICS en tements). This is c SC 162.6.2	onsistent with preceding	100G Ethernet a	nd faster PMD clauses.	There is shall sta	already a PI ements). Th SC 162.6.2	is is consistent with precedi P158	ng 100G Ethernet a	and faster PMD clauses.
There is shall sta C/ 162 Hidaka, Yas	already a PICS en tements). This is c SC 162.6.2 uo	P 158	100G Ethernet a	nd faster PMD clauses.	There is shall sta	already a PI ements). Th SC 162.6.2 JO	is is consistent with precedi P158	ng 100G Ethernet a	and faster PMD clauses.
There is shall sta C/ 162 Hidaka, Yas Comment Ty PICS en	already a PICS en tements). This is c SC 162.6.2 uo <i>pe</i> E (P 158 P 158 Credo Semic Comment Status R for "shall" for the skew a	100G Ethernet a <i>L</i> 26 onductor	# [I-131 PICS (bucket2)	There is shall sta C/ 162 Hidaka, Yas Comment Ty PICS en	already a PI ements). Th SC 162.6.2 IO DE E ry seems m	is is consistent with precedi P158 Credo Ser	ng 100G Ethernet a	# [-133 # [-133 PICS (bucket2)
There is shall sta C/ 162 Hidaka, Yas Comment Ty PICS en	already a PICS en tements). This is c SC 162.6.2 uo pe E C try seems missing SE-CR4 less than	P 158 P 158 Credo Semic Comment Status R for "shall" for the skew a	100G Ethernet a <i>L</i> 26 onductor	# [I-131 PICS (bucket2)	There is shall sta C/ 162 Hidaka, Yas Comment Ty PICS en	already a PI ements). Th SC 162.6.2 to be E ry seems m SE-CR4 less	is is consistent with precedi P 158 Credo Ser Comment Status R issing for "shall" for the sker	ng 100G Ethernet a	# [-133 # [-133 PICS (bucket2)
There is shall sta C/ 162 Hidaka, Yas Comment Ty PICS en 400GBA SuggestedR Add a PI	already a PICS en tements). This is c SC 162.6.2 uo vpe E C try seems missing SE-CR4 less than emedy ICS entry "The Ske	P 158 P 158 Credo Semic Comment Status R for "shall" for the skew a	L 26 L 26 Donductor t SP4 for 200GB	# I-131 # I-131 PICS (bucket2) ASE-CR2 and	There is shall sta Cl 162 Hidaka, Yas Comment Ty PICS en 400GBA SuggestedR Add a Pl	already a PI ements). Th SC 162.6.2 to be E ry seems m SE-CR4 less emedy CS entry "Th	is is consistent with precedi P 158 Credo Ser Comment Status R issing for "shall" for the sker	ng 100G Ethernet a <i>L</i> 30 miconductor w at SP5 for 200GE SE-CR2 and 400G	# [<mark>I-133]</mark> # [I-133 <i>PICS (bucket2,</i> BASE-CR2 and
There is shall sta Cl 162 Hidaka, Yas Comment Ty PICS en 400GBA SuggestedR Add a Pl	already a PICS en tements). This is c SC 162.6.2 uo ype E C try seems missing SE-CR4 less than emedy ICS entry "The Ske n 134ns" with a refe	P 158 P 158 Credo Semic Comment Status R for "shall" for the skew a 134ns. w at SP4 for 200GBASE	L 26 L 26 Donductor t SP4 for 200GB	# I-131 # I-131 PICS (bucket2) ASE-CR2 and	There is shall sta Cl 162 Hidaka, Yas Comment Ty PICS en 400GBA SuggestedR Add a Pl	already a PI ements). Th SC 162.6.2 to be E ry seems m SE-CR4 less emedy CS entry "Th	is is consistent with precedi P 158 Credo Ser Comment Status R issing for "shall" for the skew is than 145ns. The Skew at SP5 for 200GBA	ng 100G Ethernet a <i>L</i> 30 miconductor w at SP5 for 200GE SE-CR2 and 400G	# <mark>I-133</mark> # I-133 <i>PICS (bucket2,</i> BASE-CR2 and

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrav SORT ORDER: Clause, Subclause, page, line

	C/ 162	Page 36 of 59
awn	SC 162.6.2	2022-02-16 5:32:17 PM

C/ 162	SC	162.7	P 158	L 37	# <u>I-135</u>	C/ 162
Hidaka, Y	asuo		Credo Semico	onductor		Dawe, Piers
Comment	Туре	Е	Comment Status A		PICS (bucket2)	Comment T
Suggestee	dRemec	ły	sing for "shall" for mapping of IO shall map MDIO variables		Ū	"The ch blocks t circuit b assemb
			through Table 162-7" with a re			2" - but
Response	ļ.		Response Status C			includes
•		PRINCIPL	•			SuggestedF
subcla Includ additio	ause 16 ling spe onal cla	2.7 and V cific refer rity to the	use 162.14.3 contains an entry /alue/Comment entry of "Devi ence to Clause 162.7 in the V requirement.	ce implements /alue/Commer	s Clause 45 MDIO." ht field would provide	Change receiver impedar 162-2."
			ments Clause 45 MDIO" to "D ing in Clause 162.7."	evice impleme	ents Clause 45 MDIO	Response
			-	1 40	# 400	ACCEP
C/ 162		162.8.1	P 161	L 48	# I-168	Change receiver
Dawe, Pie	ers J G		NVIDIA			impeda
Comment	Туре	Е	Comment Status A		ILdd terminology (CC)	162-2."
just "in or cor	nsertion	loss" to i t that use	fferential-mode insertion loss' mean differential-mode to differential signalling, which document doesn't use this ter	erential-mode is made plain	if they know it's a system above. Similarly for	

insertion loss" only twice, in figures 128-4 and 130-4. But it does use "differential insertion loss" and "differential output return loss" many times, and unqualified "insertion loss" very many times.

SuggestedRemedy

Change "differential-mode to differential-mode" when an adjective to "differential-mode" (correct and unambiguous), "differential" (unambiguous, matches base document) or to nothing, throughout the document.

Response Status C

Response

ACCEPT IN PRINCIPLE.

The recently adopted wordy phrases are necessary for clearly identifying the conversion and common-mode insertion losses. "insertion loss" is commonly used in practice for ILdd.

Change all instances of "differential-mode to differential-mode insertion loss" to "insertion loss".

The parameter "ILdd" will not change.

Implement with editorial license.

TYPE: TR/technical required ER/editorial required GR/genera	al required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected	RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line	

C/ 162 SC 162.8.1

Page 37 of 59 2022-02-16 5:32:17 PM

C/ 162	SC 162.8.1	P 161	L 53	# I-169
Dawe, Piers	JG	NVIDIA		
Comment Ty	ире т	Comment Status A		(bucket2)

"The channel (see 162.11) is defined between the transmitter (TP0) and receiver (TP5) blocks to include the transmitter and receiver differential controlled impedance printed circuit board (PCB) differential-mode to differential-mode insertion loss and the cable assembly differential-mode to differential-mode insertion loss, as illustrated in Figure 162-2" - but discussing insertion loss is going off topic, it's not keeping to what the channel includes and we define other things about the channel, principally COM.

ggestedRemedy

Change to "The channel (see 162.11) is defined between the transmitter (TP0) and receiver (TP5) blocks to include the transmitter and receiver differential controlled impedance printed circuit boards (PCBs), and the cable assembly, as illustrated in Figure 162-2."

Response Status C

ACCEPT IN PRINCIPLE.

Change to "The channel (see 162.11) is defined between the transmitter (TP0) and receiver (TP5) blocks to include the transmitter and receiver differential controlled impedance printed circuit boards (PCBs) and the cable assembly, as illustrated in Figure 162-2."

C/ 162	S	C 162.8.2	P 162	L 34	# 1-47	C/ 162	SC	162.8.2	P 162	L 35	# <u>I-79</u>
Ran, Ade	e		Cisco Systen	ns, Inc.		Lusted, Ke	ent		Intel Corpora	ation	
Commen	t Type	т	Comment Status A		TX QUIET mode	Comment	Туре	TR	Comment Status A		TX QUIET mode
chan	ge of tl 02.3dc)	he PMD cor).	perating modes listed are D <i>i</i> htrol state diagram we also n			refere modes	nced in 5, DAT/	the P802 A, TRAINI	vision project made a chang .3ck draft. The PMD transm NG and QUIET. (see IEEE does not specify the QUIET (it function now h P802.3dc D3.0 (has three operating Cl 136.8.2 on p5315,
00		-	nange "The PMD transmit fu	nction has two o	perating modes DATA	Suggested	Reme	dy			
and 7	TRAIN		e PMD transmit function has				ice to "		nce of CI 162.8.11 to include transmit function has three		
"Whe such	en opei that th	rating in QU	graph at the end of 162.8.2: IET mode the PMD transmit or drives a constant level (i.e. peak output voltage (max) w	., no transitions)	and does not exceed	operat	ing mo	de is req	e to the first paragraph in Cl uired and implementations s see 136.8.11.7.1) to TRUE.	hall set the varia	
Respons ACC		I PRINCIPL	Response Status C E.			operat	ing in C	QUIET mo	o the end of Cl 162.8.11 that de the PMD transmit functio constant level (i.e., no trans	n shall turn off th	ne transmitter such that
			is good except the transmitt	er does not nec	essarily "turn off";				k output voltage (max) with		
"disa	ble" is	a better terr	n.			Response			Response Status C		
			nange "The PMD transmit fur e PMD transmit function has			ACCE	PT IN I	PRINCIPL	.E.		
TRAI	INING,	and QUIET	-11			Resolv	e usin	g the resp	onses to comments #47 and	d #48.	
"Whe such	en opei that th	rating in QU	graph at the end of 162.8.2: IET mode the PMD transmit er drives a constant level (i.e. peak output voltage (max) w	., no transitions)	and does not exceed						

C/ 162 SC 162.8.2

	TR	Cisco Sys	toms Inc							
When we de	TR		torno, mo.		Healey, A	dam		Broadcom Ir	IC.	
		Comment Status A		TX QUIET mode	Comment	Туре	т	Comment Status A		TX QUIET mode
is set to TRU 136 removed clauses 162 The suggest	t "This variat UE". Now th ed from 802. 2 and 163. sted remedy	Idition of QUIET state to ble is always set to FALS at this change has been Bck, we lost the requirem is to add this requiremen	E for 50 Gb/s per la implemented in 80 ent to set it to TRL t as another excep	ane PHYs, otherwise it 2.3dc D3.0 and clause IE for the PHYs in tion in 162.8.11.	statem it is se 802.30 variab 162.8.	nent that to TR dc) revi le is im 11, the docume	at "this var RUE." Whe sion project plementat value of u ent and no	, the definition of the variable iable is always set to FALSI in the modifications to 136.8 ct, the statement was modifion dependent." Since there ise_quiet_in_training is impli- t required to be TRUE for 10	E for 50 Gb/s pe were moved to ed to state that is no supersed ementation dep	r lane PHYs, otherwise the IEEE P802.3 (IEEE "the value of this ng statement in endent as defined in the
An alternativ specifically t be done as f	the definition	s to amend the updated of of use_quiet_in_training	36.8.11.7.1 (as of , to be optional on	802.3dc D3.0), ly in 50 Gb/s. This could		ntent is	s require u	se_quiet_in_training to be T : "f) The variable use_quiet		
the QUIET s	state. The va	TRUE if the PMD contro alue of this variable is important of this variable is important of the PHYs"			Response ACCE		PRINCIPL	Response Status C E.		
And amend	the PICS of	clause 136 accordingly.			Resolv	ve usin	g the resp	onse to comment #48.		
SuggestedReme	edy				C/ 162	SC	162.8.11	P 164	L 42	# <u>I-78</u>
		in 162.8.11: et_in_training (see 136.8	.11.7.1) is TRUE.		Slavick, Je <i>Comment</i>		TR	Broadcom Ir Comment Status A	IC	TX QUIET mode
Add a corres	sponding PI	CS item in 163.13.4.2.						n_training variable found in		
Response ACCEPT IN		Response Status W					e current b on depend	aseline draft use_quiet_in_ ent.	training being se	et to TRUE is
Implement th	-				Suggested In the		<i>dy</i> exceptions	add:		
Also, add ne	ew PICS iter	ns in 162.14.4.2 as well.			h) The	e variab	ole use_qui	et_in_training is set to TRU	E (see 136.8.11	.7.1)
Implement w	with editorial	license.			Response ACCE		PRINCIPL	Response Status C E.		
					Resolv	ve usin	g the resp	onse to comment #48.		

C/ 162 SC 162.8.11 Page 39 of 59 2022-02-16 5:32:17 PM

C/ 162	SC 162.9.2	P 165	L 45	# <u>I-89</u>
Grow, Robe	rt	RMG Consulting	J	
Comment Ty	vpe ER	Comment Status A		(bucket4)

Similar misuses of "comprise" have been rewritten using "compose" in P802.3/D3.0. This text also contradicts other text where a path is composed of one or more lanes. In general in 802.3 a data path is composed of a set of signals (e.g., xMII), one or more lanes in other sublayer descriptions , etc. Here, it states that a "path corresponds to one MDI lane"yet on p. 256, I. 12 it says "Each 100GAUI-1, 200GAUI-2, and 400GAUI-4 C2M data path contains one, two, or four differential lanes." This subclause is titled signal path, yet the text uses path without qualifier. In other parts of the document "channel signal path" is used. This in general is confusing!

SuggestedRemedy

162.9.2 MDI connections

The MDI transmit and receive data paths are point-to-point connections. Each MDI data path is composed of one or more MDI lane(s). Each MDI lane is composed of two complementary signals, forming a balanced differential pair.

For 100GBASE-CR1, there is one differential lane in each direction for a total of two pairs, or four

connections. For 200GBASE-CR2, there are two differential lanes in each direction for a total of four pairs, or eight connections. For 400GBASE-CR4, there are four differential lanes in each direction for a total of eight pairs, or sixteen connections.

Response

Response Status W

ACCEPT IN PRINCIPLE.

The text in Clause 162 follows the precedent set in Clause 136, although "composed" is used rather than "comprised" in 802.3dc.

However, the suggested remedy provides a clearer description of the signal paths.

Implement the suggested remedy.

C/ 162 SC	162.9.3	P 166	L 9	# <u>I-49</u>
Ran, Adee		Cisco Systen	ns, Inc.	
Comment Type	TR	Comment Status A		TX measurement

The 50 Ohm termination on each conductor is specified only for DC common mode measurement. I cannot find a requirement that differential signal measurement is also done with similar terminations.

It is important to specify the termination of each conductor separately, to avoid reflections from the test equipment, and to ensure the expected common mode termination (the scope cannot be isolated from signal ground).

SuggestedRemedy

Change "using a test system with a fourth-order Bessel-Thomson low-pass response with 40 GHz 3 dB bandwidth" to "using a test system with 50 Ohm termination on each conductor of the differential pair, and a fourth-order Bessel-Thomson low-pass response with 40 GHz 3 dB bandwidth".

Response Response Status W

ACCEPT IN PRINCIPLE.

Subclause 163.9.1 specifies the terminations expected for differential and common-mode measurements for KR. A similar subclause in Clause 162 would address the concern in this comment.

Insert a new subclause in 162.9 similar to 163.9.1.

Implement the suggested remedy with editorial license.

C/ 162 SC 162.9.3

RMS is poor indicator for CM mode noise. See CM histograms in melitz. 34, noise. 1121820. Clause 183.9.2.7 defines a more meaningful parameter will be pack-to-peak AC common-mode voltage. The d-inf CR is subgrave weeks 3.8 in nearly every case. The relative range of host subgrave the pack-to-peak AC common-mode voltage. Stagested/Remacy Replace 'AC common-mode VMS voltage. v. cmi (max)' with V_CMPP as the peak-to-peak AC common-mode voltage and set to 223 mV. See presentation. The d-inf CR is subgrave to this draft expensive and unattractive for a switch, yet a full range of NC cambra. Marking passive coprese is a symmetric in form factor (a.g. QSFP-DD to 2 x QSFP) and will ge made with a symmetric loss budget, so it would be better for the standard to regularise to the solution. Response Status C ACCEPT IN PRINCIPLE: The reason service week by the task force: https://www.isee802.org/3/ck/pubic22_D1/melitz_3.8k_0_D122.pdf There was consensus to adopt the specification methodology on slide 4 of melling. Sk, 02_D122; except that there is no discrimination based on correlated and uncorrelated DA noise. Suggested/Remacy Accepting to straw polit #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF are 60 nV and 80 mV, respectively. Suggested/Remacy For C2M include text that specificas that V_CMPP_HF: A range of vCM services. Suggested/Remacy Replace Suggested/Remacy Straw polit #4 and #5, the favored values for V_CMPP_LFF: A range of vCM set to shore the value taperation for the basit to according mellitz_3.4k_0_0_1_D122_2 sid a 4_1_0_1_D122_2 sid a 4_1_0_D1_D122_2 sid a 4_1_0_D1_D	7 162	SC 162.9.3	P 166	L 24	# I-103	C/ 162	SC 162.9.3	P 166	L 32	# <u>I-170</u>
RMS is poor indicator for CM mode noise. See CM histograms in melitz 34, adnor. 01 12028, 101 melitz 34, 01272; and melitz 34, adnor. 01 12028, 1150 csmall for system based host isoparticle the peak-to-peak AC common-mode voltage. The draft CF host badget wastes 3.dB in nearly every case. The relative range of host isoparticle the peak-to-peak AC common-mode voltage. Suggested/Remedy Replace 'AC common-mode RMS voltage, v_cmi (max)' with V_CMPP as the peak-to- peak AC common-mode voltage and set to 223 million. The isopart for the host traces puse BA (A toopinit and host connector foxprint). Response Status C ACCEPT IN PRINCIPLE. Response Status C ACCEPT IN PRINCIPLE. There was consensus to adopt the specification methodology on slide 4 of melitz. 3ck, 02.0122, except that there is no disominiation based on constated and uncorrelated DA hosis. Suggested/Remedy As is short and long ports. Acccept IN PRINCIPLE. There was consensus to adopt the specification methodology on slide 4 of melitz. 3ck, 02.0122, except that there is no disominiation based on constated and uncorrelated DA hosis. Suggested/Remedy As is short and long ports. According to straw polit #4 and #5, the favored values for V_CMPP_LF and V_CMPP Her are 60 mV and 80 mV, respectively. Suggested/Remedy Main 124, 01 or for the host loss allocations of A 9.5, 6.875, C 3.75 dB. B is as D2.1. A connecting that specification methodology on slide 4 of melitz. 3ck, 02.0122, scept that there is no disominiation based on constated and uncorrelated DA hosis. According to straw polit #4 add #5, the favored values for V_CMPP_LF and U_CMPP as the satisma conting 163.9.2.7 and measurement of HF and LF cordin dust specification with vadd woll and 00 w	/lellitz, Ri	chard	Samtec, Inc.			Dawe, Pie	ers J G	NVIDIA		
melitz_3k_adhoc_01_12120821, melitz_3k_c01ast 613.9.27 defines a more meaningful parameter MV_CMPP as the peak-to-peak AC common-mode voltage. losses, 6.5752.3 = 31, is too small for switch layout yet not needed for NUSs. Replace 'AC common-mode RMS voltage, v.cm (max' with V_CMPP as the peak-to-peak AC common-mode voltage. Losses, 6.5752.3 = 31, is too small for switch layout yet not needed for NUSs. Response Response Status C C ACCEPT IN PRINCIPLE. The following resentation was reviewed by the task force: https://www.ince802.org/3/ck/public/22_01/melitz_3kc, 02_0122.pdf Same-switch links are asymmetric loss budget, so it would be better for the standard to regularise what will happen anyway with industry-standard registers. There was consenus to adopt the specification methodology on side 4 of melitz_3kc, 02_0122; except that there is no discrimination based on correlated and uncorrelated CM noise. Commet Status C (a volt-switch links. According to straw polis #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF and V_CMPP_HF and V_CMPP_HF and V_CMPP_HF and V_CMPP_HF and V_CMPP_HF is measurement is according melitz_3kc, 01_0122 side 4. Suggester/Removy For C2M include text that specification methodology on wold also the off the status tore is a containing control field to advertise A, B or C to the other end. In Table 1624.1, add columns of the post in as and C with event hand is and S or 1, 64B, and C (a 5-6.875 c 2.356 dB H) in the status to the main field is advertise A, B or C to the other end. For C2M include text that specification methodology on wold also to molt ad a status to the status in the statu	Comment	Type TR	Comment Status A		AC CM noise	Comment	Type TR	Comment Status R		CR loss budge
Replace 'AC common-mode RMS voltage, v_cm (max)' with V_CMPP as the peak-to-peak AC common-mode voltage and set to 223 mV. See presentation was reviewed by 23 mV. See presentation was reviewed by 25 mV. See presentation was reviewed by the task force: The following presentation was reviewed by the task force: There was consensus to adopt the specification methodology on slide 4 of malitz_3ck_02_0122; except which with easies a correlated and uncorrelated CM noise. According to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_FF and W_CMPP_FF and W_CMPP_FF and W_CMPP_FF and W_CMPP_FF and W_CMPP_FF than 1E-4, of the distribution. Specify that V_CMPP general measurement is according to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_FF than 1E-4, of the distribution. Specify that V_CMPP general measurement is according to the distribution. For C2M include text that specifices that V_CMPP here is no assured over all except 1E-5, rather than 1E-4, of the distribution. Straw poll #4 (chicago) I support Here following value for V_CMPP_HF: A 12, B, 10.	mellitz mellitz V_CN	z_3k_adhoc_01_12 z_3ck_adhoc_01_1 IPP as the peak-to	20821, mellitz_3ck_01a_072 I21620. Clause 163.9.2.7 de	1, and efines a more r	neaningful parameter	losses The re 6.875 passiv	s, 6.875/2.3 = 3:1 commendation f dB, compares very e copper to this	, is too small for switch layou or the host traces plus BGA ery poorly with C2M's host in draft expensive and unattrac	ut yet not neede footprint and ho sertion loss up to	d for NICs. st connector footprint, o 11.9 dB, making
Response Response Status C ACCEPT IN PRINCIPLE. The following presentation was reviewed by the task force: https://www.ieee802.org/3/ck/public/22_01/melitz_3ck_01_0122.pdf https://www.ieee802.org/3/ck/public/22_01/melitz_3ck_01_0122.pdf There was consensus to adopt the specification methodology on silde 4 of melitz_3ck_02_0122: except that there is no discrimination based on correlated and uncorrelated CM noise. According to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF are 60 mV and 80 mV, respectively. Specify that V_CMPP general measurement is according 163.9.2.7 and measurement of HF and LF components is according melitz_3ck_01_0122 side 4. For C2M include text that specifices that V_CMPP is measured over all except 1E-5, rather than 1E-5, of the distribution. System polit #4 (chicago) Isupport the following value for V_CMPP_HF A: 80 mV B: 00 mV C: 120 mV A: 12, B: 9, C; 8 Straw polit #6 (direction) B: 10	Repla	ce "AC common-m				C2M a	already has short	and long ports.		2 x OSED) and will get
ACCEPT IN PRINCIPLE. The following presentation was reviewed by the task force: https://www.ieee802.org/3/ck/public/22_01/melitz_3ck, 02_0122.pdf https://www.ieee802.org/3/ck/public/22_01/melitz_3ck, 02_0122.pdf https://www.ieee802.org/3/ck/public/22_01/melitz_3ck, 02_0122.pdf https://www.ieee802.org/3/ck/public/22_01/melitz_3ck, 02_0122.pdf https://www.ieee802.org/3/ck/public/22_01/melitz_3ck, 01_0122.pdf There was consensus to adopt the specification methodology on slide 4 of melitz_3ck, 02_0122_ except that there is no discrimination based on correlated and uncorrelated CM noise. According to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF are 60 mV and 80 mV, respectively. Specify that V_CMPP general measurement is according 163.9.2.7 and measurement of HF and LF components is according 163.9.2.7 and measurement of HF and LF components is according 163.9.2.7 and measurement of HF and LF components is according 163.9.2.7 and measurement of HF and LF components is according 163.9.2.7 and measurement of HF and LF components is according 163.9.2.7 and measurement of HF and LF components is according 163.9.2.7 and measurement of HF and LF components is according 163.9.2.7 and measurement of HF and LF components is according nellitz_3ck_01_0122 side 4. For C2M include text that specifices that V_CMPP_HF values to 60 mV and 80 mV, respectively. Implement with editorial license. Straw poll #4 (chicago) I support the following value for V_CMPP_HF: A: 60 mV B: 100 mV C: 120 mV B: 100 mV C: 12			-	occ presenta						
The following presentation was reviewed by the task force: https://www.ieee802.org/3/ck/public/22_01/mellitz_3ck_02_0122.pdf https://www.ieee802.org/3/ck/public/22_01/mellitz_3ck_01_0122.pdf https://www.ieee802.org/3/ck/public/22_01/mellitz_3ck_01_0122.pdf https://www.ieee802.org/3/ck/public/22_01/mellitz_3ck_01_0122.pdf mellitz_3ck_02_0122; except that there is no discrimination based on correlated and uncorrelated CM noise. According to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF are 60 mV and 80 mV, respectively. Specify that V_CMPP general measurement is according 163.9.2.7 and measurement of HF and LF components is according mellitz_3ck_01_0122 side 4. For C2M include text that specifices that V_CMPP_HF is and LF components is according mellitz_3ck_01_0122 side 4. For C2M include text that specifices that V_CMPP_HF values to 60 mV and 80 mV, respectively. Implement with editorial license. Straw poll #4 (chicago) I support the following value for V_CMPP_LF: A: 60 mV B: 100 mV C: 120 mV A: 13, B: 11 Straw poll #4 (chicago) I support the following value for V_CMPP_LF: A: 60 mV A: 13, B: 11 Straw poll #16 (chicago) I support the following value for V_CMPP_LF: A: 60 mV A: 13, B: 11 Straw poll #4 (decision) - taken on 2022/1/25 Straw poll #14 (decision) - taken on 2022/2/16 Straw poll #14 (decision) - taken on 2022/2/16	•					what w	vill happen anyw	ay with industry-standard reg	jisters.	Ū
The following presentation was reviewed by the task torce: https://www.ieee802.org/3/kdyubilc/22_01/melitz_3ck_02_0122.pdf There was consensus to adopt the specification methodology on slide 4 of melitz_3ck_02_0122; except that there is no discrimination based on correlated and uncorrelated CM noise. According to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF are 60 mV and 80 mV, respectively. Specify that V_CMPP general measurement is according 163.9.2.7 and measurement of HF and LF components is according the straw poll #4 and #3, the favored values for V_CMPP_LF and V_CMPP_LF, and V_CMPP_LF and V_CMP	AUCE									
https://www.ieee802.org/3/ck/public/22_01/melitz_3ck_01_0122.pdf There was consensus to adopt the specification methodology on slide 4 of melitz_3ck_02_0122; except that there is no discrimination based on correlated and uncorrelated CM noise. SuggestedRemedy According to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF are 60 mV and 80 mV, respectively. Specify that V_CMPP general measurement is according 163.9.2.7 and measurement of HF and LF components is according melitz_3ck_01_0122 side 4. SuggestedRemedy For C2M include text that specifices that V_CMPP_HF is measured over all except 1E-5, rather than 1E-4, of the distribution. Set maximum V_CMPP_LF and V_CMPP_HF values to 60 mV and 80 mV, respectively. In Table 162-10, add limits A and C to 1the other end. Implement with editorial license. Straw poll #4 (chicago) Isupport the following value for V_CMPP_HF: A dd MD/O registers to report local and remote host ability to station management, for inventory and diagnostics. A is 0 mV Bit 0 mV Response Response Status W Straw poll #4 (chicago) Straw poll #6 (chicago) Straw poll #6 (chicago) Straw poll #6 (chicago) I support the following value for V_CMPP_LF: A: 03 mV Straw poll #6 (chicago) Straw poll #14 (deicago) Straw poll #6 (chicago) Straw poll #14 (deicago) Straw poll #6 (direction) taken on 2022/1/25 Straw poll #6 (chicago) Straw poll #11 (decision) - taken					lf	used f	or CR switch-sw	itch links.		
There was consensus to adopt the specification methodology on slide 4 of mellitz_3ck_02_0122; except that there is no discrimination based on correlated and uncorrelated CM noise. SuggestedRemedy According to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF are 0 mV and 80 mV, respectively. As in dawe_3ck_01a_0721,pdf: 3 classes of CR ports, host loss allocations of A 9.5, B 6.875, C 3.75 dB. B is as D2.1. A connects to C, B to B or C, C to A, B or C. Specify that V_CMPP general measurement is according 163.9.2.7 and measurement of HF and LF components is according mellitz_3ck_01_0122 slide 4. In Table 162-10, add limits A and C for linear fit pulse peak ratio (min). Change text in 182.9.3.1.2 to refer to the table. For C2M include text that specifices that V_CMPP is measured over all except 1E-5, rather than 1E-4, of the distribution. Set maximum V_CMPP_LF and V_CMPP_HF values to 60 mV and 80 mV, respectively. Implement with editorial license. Straw poll #4 (chicago) In 162.4.1 (Add equations for Test 2 (high loss), A and B and show them in Fig 162A-1 add 2 (lumms A, C in Table 162A-1 (ILChmin and ILMaxHost differ). Adjust figures 162A-3 and 4. A do mV Straw poll #4 (chicago) Response Status W Straw poll #4 (chicago) Response Status W Straw poll #5 (chicago) Support fhe following value for V_CMPP_LF: A: 80 mV Straw poll #6 (direction) taken on 2022/1/25 Straw poll #6 (direction) - taken on 2022/1/25 Straw poll #11 (dicesion) taken on 2022/1/25 <td< td=""><td></td><td></td><td></td><td></td><td></td><td>LOM,</td><td>so it is kept here</td><td>as "B", and the better way (</td><td>A and C) added.</td><td></td></td<>						LOM,	so it is kept here	as "B", and the better way (A and C) added.	
mellitz_3ck_02_0122; except that there is no discrimination based on correlated and uncorrelated CM noise. As in dawe_3ck_01_0721, pdf: According to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF are 60 mV and 80 mV, respectively. As in dawe_3ck_01_0721, pdf: Specify that V_CMPP general measurement is according 163.9.2.7 and measurement of HF and LF components is according mellitz_3ck_01_0122 slide 4. In Table 162-10, add limits A and C for linear fit pulse peak ratio (min). Change text in 162.9.3.1.2 to refer to the table. For C2M include text that specifices that V_CMPP is measured over all except 1E-5, rather than 1E-4, of the distribution. In 162.4.3. add culturns for Test 2 (high loss), A and C, with test channel insertion loss: A: 6.875-3.75 = 3.2625 dB to 27.25 dB). No change needed for Test 1. Implement with editorial license. In 162.4.3. add value columns A, C in Table 162A-1 (ILChmin and ILMarkHost fift). Add value columns A, C in Table 162A-1 (ILChmin and ILMarkHost fift). Add value columns A, C in Table 162A-1 (ILChmin and ILMarkHost fift). Add value columns A, C in Table 162A-1 (ILChmin and ILMarkHost fift). Implement with editorial license. Response Response Status W Straw poll #4 (chicago) Straw poll #6 (chicago) Straw poll #6 (direction) taken on 2022/1/25 I support the following value for V_CMPP_LF: S 60 mV Straw poll #6 (direction) taken on 2022/1/25 Straw poll #5 (chicago) Straw poll #6 (direction) - taken on 2022/1/25 Straw poll #14 (decision) - taken on 2022/2/16	Thoro	was consensus to	adont the specification meth	hodology on sli	ide 4 of			,	,	
uncorrelated CM noise.3 classes of CR ports, host loss allocations of A 9.5, B 6.875, C 3.75 dB. B is as D2.1.According to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF are 60 mV and 80 mV, respectively.3 classes of CR ports, host loss allocations of A 9.5, B 6.875, C 3.75 dB. B is as D2.1.Specify that V_CMPP general measurement is according f63.9.2.7 and measurement of HF and LF components is according mellitz_34c_01_0122 slide 4.3 classes of CR ports, host loss allocations of A 9.5, B 6.875, C 3.75 dB. B is as D2.1.For C2M include text that specifices that V_CMPP is measured over all except 1E-5, rather than 1E-4, of the distribution.3 classes of CR ports, host loss allocations for 1.2 vC fier to the table.Implement with editorial license.Set maximum V_CMPP_LF and V_CMPP_HF values to 60 mV and 80 mV, respectively.In 162A.3, add equations for 1.2 vC fier to report local and remote host ability to station management, for inventory and diagnostics.Straw poll #4 (chicago) I support the following value for V_CMPP_HF: A: 120 mV S: 120 mV A: 12, B: 9, C: 8Straw poll #6 (chicago) I support the following value for V_CMPP_LF: A: 60 mV B: 60 mV A: 13, B:11Straw poll #6 (direction) taken on 2022/1/25 I support P802.3ck specifying multiple CR host types as proposed in comment i-170. A. Yes B: 00 mV C: 130 mV A: 13, B:11Straw poll #14 (decision) taken on 2022/2/16						•••	•)721 ndf [.]		
According to straw polls #4 and #5, the favored values for V_CMPP_LF and V_CMPP_HF are 60 mV and 80 mV, respectively. Specify that V_CMPP general measurement is according 163.9.2.7 and measurement of HF and LF components is according mellitz_3ck_01_0122 slide 4. For C2M include text that specifices that V_CMPP is measured over all except 1E-5, rather than 1E-4, of the distribution. Set maximum V_CMPP_LF and V_CMPP_HF values to 60 mV and 80 mV, respectively. Implement with editorial license. Straw poll #4 (chicago) I support the following value for V_CMPP_HF: A: 80 mV B: 100 mV C: 120 mV A: 12, B: 9, C: 8 Straw poll #5 (chicago) I support the following value for V_CMPP_LF: A: 60 mV B: 65 mV A: 13, B:11 A: 10 A: 13, B:11 A: 60 mV B: 10, minute the following value for V_CMPP_LF: A: 13, B:11 A: 60 mV B: 10, minute following value for V_CMPP_LF: A: 13, B:11 A: 50 mV A: 13, B:11 B: 10 C: 5 B: 10 mV B: 10 m; 12 minute pine pine pine pine pine pine pine pin									5, B 6.875, C 3.7	75 dB. B is as D2.1.
Specify that V_CMPP general measurement is according 163.9.2.7 and measurement of HF and LF components is according mellitz_3ck_01_0122 side 4.For C2M include text that specifices that V_CMPP is measured over all except 1E-5, rather than 1E-4, of the distribution.Set maximum V_CMPP_LF and V_CMPP_HF values to 60 mV and 80 mV, respectively.Implement with editorial license.Straw poll #4 (chicago) I support the following value for V_CMPP_HF: A: 12, B: 9, C: 8Straw poll #5 (chicago) I support the following value for V_CMPP_LF: A: 12, B: 9, C: 8Straw poll #5 (chicago) I support the following value for V_CMPP_LF: A: 13, B:11Straw poll #4 (deiceion) C. 120 mV A: 13, B:11Straw poll #4 (deiceion) C. Abstain Results: A: 11 B: 11 C: 5Straw poll #4 (deiceion) taken on 2022/2/16				es for V_CMPF	P_LF and V_CMPP_HF	Use 2	bits in the trainir	ig control field to advertise A		
For C2M include text that specifices that V_CMPP is measured over all except 1E-5, rather than 1E-4, of the distribution. In 162A.4, add equations for IL_PCBmax and ILHostMax A and B and show them in Fig 162A-1 and 2. In 162A.5, add Value columns A, C in Table 162A-1 (ILChmin and ILMaxHost differ). Adjust figures 162A-3 and 4. Set maximum V_CMPP_LF and V_CMPP_HF values to 60 mV and 80 mV, respectively. Im 162A.4, add equations for IL_PCBmax and ILHostMax A and B and show them in Fig 162A-1 and 2. In 162A.5, add Value columns A, C in Table 162A-1 (ILChmin and ILMaxHost differ). Adjust figures 162A-3 and 4. Add MDIO registers to report local and remote host ability to station management, for inventory and diagnostics. Response Response Status W B: 100 mV REJECT. B: 100 mV Straw poll #5 (chicago) I support the following value for V_CMPP_HF: Straw poll #5 (chicago) I support the following value for V_CMPP_LF: Straw poll #5 (chicago) I support the following value for V_CMPP_LF: C. Abstain A: 10, B:11 Straw poll #14 (decision) taken on 2022/1/25					and measurement of	In Tab loss: A	le 162-14, add c A: 6.875-3.75 = 3	olumns for Test 2 (high loss) .125 dB lower (20.5 dB to 21	.5 dB), and C: 9	
Set maximum V_CMPP_LF and V_CMPP_HF values to 60 mV and 80 mV, respectively. Add MDIO registers to report local and remote host ability to station management, for inventory and diagnostics. Implement with editorial license. Response Response Status W Straw poll #4 (chicago) REJECT. Response to report local and remote host ability to station management, for inventory and diagnostics. Straw poll #4 (chicago) REJECT. Per straw poll #14 there is no consensus to make the proposed change. B: 100 mV Straw poll #5 (chicago) Straw poll #6 (direction) taken on 2022/1/25 I support P802.3ck specifying multiple CR host types as proposed in comment i-170. A: 13, B:11 No Straw poll #14 (decision) taken on 2022/2/16				measured ove	er all except 1E-5, rather	In 162 162A-	A.4, add equatic 1 and 2. In 162	ns for IL_PCBmax and ILHo A.5, add Value columns A, C	stMax A and B a	
Implement with editorial license.ResponseResponse StatusWStraw poll #4 (chicago)REJECT.I support the following value for V_CMPP_HF:Per straw poll # 14 there is no consensus to make the proposed change.B: 100 mVStraw poll # 14 there is no consensus to make the proposed change.C: 120 mVStraw poll # 6 (direction) taken on 2022/1/25A: 12, B: 9, C: 8I support P802.3ck specifying multiple CR host types as proposed in comment i-170.Straw poll #5 (chicago)B. NoI support the following value for V_CMPP_LF:C. AbstainA: 60 mVResults: A: 11 B: 11 C: 5B: 65 mVStraw poll #14 (decision) taken on 2022/2/16	Set m	aximum V_CMPP_	LF and V_CMPP_HF values	s to 60 mV and	d 80 mV, respectively.	Add M	IDIO registers to	report local and remote host	ability to statior	n management, for
Straw poll #4 (chicago) I support the following value for V_CMPP_HF:REJECT.A: 80 mVPer straw poll # 14 there is no consensus to make the proposed change.B: 100 mVStraw poll # 14 there is no consensus to make the proposed change.C: 120 mVStraw poll # 6 (direction) taken on 2022/1/25A: 12, B: 9, C: 8I support P802.3ck specifying multiple CR host types as proposed in comment i-170.A. YesB. NoI support the following value for V_CMPP_LF:C. AbstainA: 60 mVResults: A: 11 B: 11 C: 5B: 65 mVStraw poll #14 (decision) taken on 2022/2/16	Imple	ment with editorial	license.				, 0			
I support the following value for V_CMPP_HF: A: 80 mV B: 100 mV C: 120 mV A: 12, B: 9, C: 8 Straw poll #5 (chicago) I support the following value for V_CMPP_LF: A: 60 mV B: 65 mV A: 13, B:11 Per straw poll # 14 there is no consensus to make the proposed change. Per straw poll # 14 there is no consensus to make the proposed change. Straw poll # 14 there is no consensus to make the proposed change. Straw poll # 6 (direction) taken on 2022/1/25 I support P802.3ck specifying multiple CR host types as proposed in comment i-170. A. Yes B. No C. Abstain Results: A: 11 B: 11 C: 5 Straw poll #14 (decision) taken on 2022/2/16	Strow	poll #4 (chicago)				•				
A: 80 mVPer straw poll # 14 there is no consensus to make the proposed change.B: 100 mVStraw poll # 14 there is no consensus to make the proposed change.C: 120 mVStraw poll #6 (direction) taken on 2022/1/25A: 12, B: 9, C: 8I support P802.3ck specifying multiple CR host types as proposed in comment i-170.A. YesStraw poll #5 (chicago)I support the following value for V_CMPP_LF:B. NoA: 60 mVC. AbstainB: 65 mVResults: A: 11 B: 11 C: 5A: 13, B:11Straw poll #14 (decision) taken on 2022/2/16			alue for V_CMPP_HF:			IXESE!	01.			
C: 120 mVStraw poll #6 (direction) taken on 2022/1/25A: 12, B: 9, C: 8I support P802.3ck specifying multiple CR host types as proposed in comment i-170. A. YesStraw poll #5 (chicago)B. NoI support the following value for V_CMPP_LF:C. AbstainA: 60 mVResults: A: 11 B: 11 C: 5B: 65 mVStraw poll #14 (decision) taken on 2022/2/16						Per st	raw poll # 14 the	re is no consensus to make	the proposed ch	ange.
A: 12, B: 9, C: 8I support P802.3ck specifying multiple CR host types as proposed in comment i-170. A. YesStraw poll #5 (chicago)B. NoI support the following value for V_CMPP_LF:C. AbstainA: 60 mVResults: A: 11 B: 11 C: 5B: 65 mVStraw poll #14 (decision) taken on 2022/2/16						-				
Straw poll #5 (chicago)A. YesI support the following value for V_CMPP_LF:B. NoA: 60 mVC. AbstainB: 65 mVResults: A: 11 B: 11 C: 5A: 13, B:11Straw poll #14 (decision) taken on 2022/2/16									a an proposed i	n commont i 170
Straw poll #5 (chicago)B. NoI support the following value for V_CMPP_LF:C. AbstainA: 60 mVResults: A: 11 B: 11 C: 5B: 65 mVStraw poll #14 (decision) taken on 2022/2/16	A. 12,	0. 9, 0. 0						conying multiple CR nost type	es as proposed i	n comment I-170.
A: 60 mV Results: A: 11 B: 11 C: 5 B: 65 mV Straw poll #14 (decision) taken on 2022/2/16	Straw	poll #5 (chicago)								
B: 65 mV A: 13, B:11 Straw poll #14 (decision) taken on 2022/2/16	l supp	ort the following va	alue for V_CMPP_LF:							
A: 13, B:11 Straw poll #14 (decision) taken on 2022/2/16						Result	ts: A: 11 B: 11 C	: 5		
VEC TR/technical required ER/editorial required CR/general required T/technical E/editorial C/general						Straw	poll #14 (decisio	n) taken on 2022/2/16		
		tooppical required	ED/aditorial required CD/m	ionoral require	d T/toobnical E/aditorial C/	aonoral			60	Page 41 of 59

 TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
 C/ 162

 COMMENT STATUS: D/dispatched A/accepted R/rejected
 RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
 SC 162.9.3

 SORT ORDER: Clause, Subclause, page, line
 SC
 SC
 SC

 C/
 162
 Page 41 of 59

 SC 162.9.3
 2022-02-16 5:32:17 PM

A. Yes	specifying multiple CR host type			C/ 162	SC 162.9.3.	1.2	P 169	L 1	# I-172
B. No				Dawe, Pie	rs J G	I	NVIDIA		
C. Abstain Results: A: 8 B: 31 C	C: 2			Comment	Туре Т	Comment St	atus A		TX Rpeak
C/ 162 SC 162.9.3	3 P 166	L 34	# [-50	"Stead		and linear fit puls			clause whose title is nat "pulse peak ratio"
Ran, Adee	Cisco Syster	ns, inc.	(1	Suggested	lRemedv				
Comment Type E "peak" in Rpeak sho	Comment Status A uld be a subscript.		(bucket2)	Chang	,	teady-state voltag	e and linear	fit pulse peak rat	io". Define linear fit
SuggestedRemedy Format per commen	t.			Response	PT IN PRINCIP	Response Sta	atus C		
Response	Response Status C			AUUL					
, ACCEPT.				Chang	e the title to "St	teady-state voltag	e and linear	fit pulse peak rat	io".
C/ 162 SC 162.9.3	3 <i>P</i> 166	L 45	# 1-237	Other	vise resolve usi	ng the response	o comment	#51.	
Dudek, Michael	Marvell			C/ 162	SC 162.9.3.	1.2	P 169	L 8	# I-136
Comment Type TR	Comment Status A		Residual ISI	Hidaka, Y	asuo	(Credo Semic	conductor	
increase the BER un SuggestedRemedy	r DFE. These pulse distortions hacceptably. rsymbol Interference specificati			text. T Table minim	he text is incons 162-10 implicat	sistent with Table res "greter than or ot allowed in the	162-10, bec equal to". 0	ause the text say .397 is allowed in	escribed in the body rs "greater than" but Table 162-10 as the value in the text and
test procedure in 163	3.9.2.6		-	Suggested	lRemedy				
Response ACCEPT IN PRINCI	Response Status C PLE. ested remedy with editorial lice	nse evcent set th	e limit to -30 dB rather	equali peak r	zer initial condit	t pulse peak ratio ion has been set the requirements ion has been set	to preset 1 (specified in	no equalization)." Table 162-10 afte	to "The linear fit pulse er the transmit
than -31 dB.		nse except set in		Response		Response Sta	atus C		
				ACCE	PT IN PRINCIP	, PLE.			
					qualization is alr ed here.	ready defined in t	ne first paraç	graph of 162.9.3.	1.2 so it need not be
						t pulse peak ratio ion has been set			
					near fit pulse pe	eak ratio shall me	et the requir	ement specified i	n Table 162-10."
				Impler	nent with editor	ial license.			
		, , , ,	T/technical E/editorial G/g				C/ 10		

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

 C/
 162
 Page 42 of 59

 SC
 162.9.3.1.2
 2022-02-16 5:32:17 PM

C/ 162	SC 162.9.3.1	2 P16	69 L 8	# <mark>I-51</mark>	C/ 162	SC	162.9.3.4	Р	170	L 46	# I-225
Ran, Adee)	Cisco	Systems, Inc.		Zivny, Pav	/el		Tek	tronix, Inc		
Comment	Type TR	Comment Status	Α	TX Rpeak	Comment	Туре	т	Comment Statu	s R		TX jitter
param 163.9./ proced calcula	eter. 2.5 has a related lure in 163A.3.2. ation should be u	parameter "Differenc I, where Equation (16	e linear fit pulse peak 63A–9) defines R_pea clause there is only a	ere is no definition of that ratio" calculated using a uk(meas). A similar measured parameter	define suffici is pref uncert Suggested	d in 12 ent" inc erred. I ainty. dRemed	0.5.11.2.a. cludes PRE Reasoning The PRBS dy	. Meeting the ever 3S9Q only as a tes : allowing either of 39Q is not needed	-odd jitter t equipme two differe for equipm	requirement wi nt work-around ent patterns inc ent available in	
Suggested	IRemedy										Q. PRBS9Q is defined
Insert a "The lin of p(k)	a paragraph after near fit pulse pea	tate voltage v_f."		een the maximum value	with "The in 120	test pat .5.11.2 ent; in c	ttern is PR .a. Meetir	BS13Q or alternating the even-odd jitt	، vely PRB er requirer	S9Q (deprecatir nent with only F	ng). PRBS9Q is defined PRBS13Q pattern is ns the PRBS9Q might
Response		Response Status	w		Response			Response Status	G C		
ACCE	PT.				REJE	CT.					
C/ 162	SC 162.9.3.1	5 P 17	70 L 23	# 1-52	[Edito	r's note	: Changed	l clause/subclause	from 166/	166.9.3.4 to 16	2/162.9.3.4]
Ran, Adee	•	Cisco	Systems, Inc.		The co	ommen	it does not	provided sufficient	justificatio	on for the propo	osed changes.
Comment		Comment Status		TX control	C/ 162	SC	162.9.3.4	P	170	L 52	# I-175
		et to zero by asserting)) will be set to 1 this		of "no equalization" for	Dawe, Pie		102.9.3.4		DIA	L JZ	# 1-175
The re	auirements to se	t to zero are only for	c(-3), c(-2), c(-1) and	c(1).	Comment	Туре	Е	Comment Statu	s A		TX jitter
Suggested		, , .									e a course of action ed to)", "may not" means
Chang	e the quoted sen					permitt			u (may eq		a to), may not means
		c(-3), c(-2), c(-1), or c o equalization" for the	c(1) may be set to zer	o by asserting a	Suggested	dReme	dy				
Response	lent request of in	Response Status			Chang	ge "may	y not be co	orrectly observed" t	o "might b	e incorrectly ob	served".
ACCE	PT.	Response Status	C		Response			Response Status	6 C		
					ACCE	PT IN I	PRINCIPL	E.			
					Resolv	ve usin	g the resp	onse to comment #	±174.		

C/ 162 SC 162.9.3.4

	62.9.3.4	P 170	L 52	# I-174	C/ 162	SC 162.	9.3.5	P 172	L 19	# I-177
Dawe, Piers J G		NVIDIA			Dawe, Pier	s J G		NVIDIA		
Comment Type	T Com	ment Status A		TX jitter	Comment	Гуре Т	(Comment Status R		TX ER
signaling rate	divided by an eve	uring instrument is tri en number, the even-	odd jitter may no	t be correctly				r option, a flag with a num ons, and as it is called in 9		think it is a parameter,
too.	ne measurement	sees the wrong EOJ	, the reported J3	u and Jrms will be off,	Suggested	Remedy				
SuggestedRemedy								here and in tables 162-18 and 163-6, 163-7 and 163		
Delete "even-c	odd"				Response		F	Response Status C		
Response ACCEPT IN P	,	onse Status C			REJEC The su		medy do	es not improve the accura	cy or clarity of	the specified method.
	component of J30 vould be differen	u and Jrms so it make t.	es sense that wit	h the wrong pattern		was no con s note: CC		nake the proposed change	es.	
Also to addres	s comment #175	5, change "may" to "m	night".		C/ 162	SC 162.		P 174	L 4	# I-20
Replace the no	ote with the follow	wina:			Brown. Ma		9.4.1		L 4 nologies Canad	
"NOTE—If the	measuring instru	ument is triggered by			Comment			Comment Status A	lologies Carlau	(bucket2
		e even-odd jitter migh s might also be affec		observed. As a result,				e nominal value for the U	This is not pr	1
	62.9.3.5	P 172 NVIDIA	L 13	# I-176	120F fo easily o	or C2C, or i determined	n 120G f by the n	or C2M. It is not necessar ominal signaling rate. To t tence should be removed.	y to specify this be consistent w	s number since it is
,	T Com	ment Status R		TX ERL	Suggested	Remedy				
ERL needs a p	parameter Delta f	for the S-parameter by reference from			Remov 18.823		/ing sent	ence: "This translates to a	a nominal unit i	nterval of approximately
SuggestedRemedy					Response		F	Response Status C		
Add a Delta f	entry to all the EF	RL tables. I suppose a larger value might		the usual 10 MHz,	ACCE	PT.				
	Resn	onse Status C								
Response	ricop.									

C/ 162 SC 162.9.4.1

C/ 162	SC	162.9.4.3	P 174	L 24	# <mark>I</mark> -191	through
Dawe, Pie	ers J G		NVIDIA			In 162.9
Comment	Туре	т	Comment Status A		RITT (CC) (bucket4)	Add the To: "Re
how c	ompliar	nce is achie	earing in mind that 802.3 is ved. At present, the introdu	ctory sentence	e gives the opposite	162.9.4
definit tolera Impro It see	ion/exp nce or ៖ ving co	lanation/de stressed inp nsistency. any of thes	ays something "is measured tail subclauses that aren't re but tolerance don't do this. se would work but there may	ceiver interfer	ence tolerance, jitter	In 120G Change in 120G To "Hos through
meas	uremen uremen dure	t procedure t method				In 1200 Change describ To "Mo
Suggester		dv				through
Use a meas Here a the pr proce Simila In 120 Host a And s For co transr define too, a	format uremen and in 1 ocedure n rrly in 11 GG.3.3.5 stressed stressed imilarly onsister nitter at d by" (t s menti	similar to 1 t method' 162.9.4.4.1, e" to "Rec nethod }" 63 and 1200 5, Host stres d input toler in 120G.3.4 ncy, in 162.9 t TP2 is con there's more oned in 93A	change "Receiver interference every interference tolerance F. ssed input tolerance, change ance is measured according ance is defined by the meas 4.3, Module stressed input te 9.3.5, Transmitter effective r nputed using the procedure. a to it than calculation, an S- A.5.1).	nce tolerance i is defined by t g to the procect surement { pro blerance. eturn loss (ER ", change "is parameter me	is measured according to the measurement { dure reedure method } RL), "ERL of the computed using" to "is easurement is needed	In 162.9 Change To "ERI Impleme <i>Cl</i> 162 Ben-Artsi, L <i>Comment T</i> The terr <i>SuggestedF</i> Sugges would e
			a section is a definition rathe as a test as we do, so no fur			Response
Response		PRINCIPLE	Response Status C			REJEC 1.4 Defi type. Se
		: Changed : CC: 120G	page/line from 265/31 to 174 , 162]	4/24]		containi
			163.9.3.5 and 120F.3.2.4 a changes are required there.		tten in the form proposed	
-			erence tolerance is measure	d according to	the procedure	

Change "Receiver interference tolerance is measured according to the procedure described in 162.9.4.3.1 through 162.9.4.3.5." To: "Receiver interference tolerance is defined by the procedure described in 162.9.4.3.1

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

through 162.9.4.3.5."

In 162.9.4.4...

Add the following sentence:

To: "Receiver jitter tolerance is defined by the procedure described in 162.9.4.4.1 and 162.9.4.4.2."

In 120G.3.3.5

Change "Host stressed input tolerance is measured according to the procedure described in 120G.3.3.5.1 through 120G.3.3.5.3."

To "Host stressed input tolerance is defined by the procedure described in 120G.3.3.5.1 through 120G.3.3.5.3."

In 120G.3.4.3

Change "Module stressed input tolerance is measured according to the procedure described in 120G.3.4.3.1 through 120G.3.4.3.3."

To "Module stressed input tolerance is defined by the procedure described in 120G.3.4.3.1 through 120G.3.4.3.3."

In 162 9 3 5

Change "ERL of the transmitter at TP2 is computed using the procedure in 93A.5" To "ERL of the transmitter at TP2 is defined by the procedure in 93A.5"

Implement with editorial license.

C/ 162	SC 162.11	P 181	L 18	# I-232
Ben-Artsi,	Liav	Marvell Semic	conductor, Inc.	
Comment	Туре Е	Comment Status R		(bucket2)

The term twinaxial cabling os used in multiple places, but never defined.

SuggestedRemedy

Suggest changing twinaxial cable to "twinaxial shielded balanced copper cable", which would explain it a bit better

Response Status C

REJECT.

1.4 Definitions includes twinaxial cable used in clauses characterizing this cable assembly type. See 1.4.480 twinaxial cable: A cable similar to coaxial cable in construction but containing two insulated inner conductors rather than one.

> C/ 162 SC 162.11

Page 45 of 59 2022-02-16 5:32:17 PM

C/ 162	SC 1	62.11	P 181	L 31	# I-180	C/ 162	SC	162.11.2	P 182	L 6	# 1-22
Dawe, Pi	ers J G		NVIDIA			Brown, Ma	atthew		Huawei Te	chnologies Can	
Commen	t Type	TR	Comment Status R		CR loss budget	Comment	Туре	т	Comment Status A	-	Channel ILdd (bucket2)
switc			s makes CR unattractive, whudget going to waste. Enable						says the value "should be 7 is an inequality. Change		equal" to Equation 162- the form used in 120G.4.1.
In the and t	e remedy, he cable's	loss cla	st knows the other host's los ss from its I2C compliance c he long cable class.			assem	ge: "The bly sha	e measure all be grea	d differential-mode to diffe ter than or equal to the mi ertion loss given in Equati	nimum cable as	sembly differential-mode
Suggeste	dRemedy	/				162–7		-mode inse	ertion loss given in Equation	n (162–17) and	i illustrated in Figure
19.75 m). 1 conn In 16	5+2*(6.875 Long cable ect a valid	5-3.75) - (es conne l combina ible assei	th could be called "short" (19 0.5 = 19.75+6.25 - 0.5 = 25.5 ct port types C (see another ation of A, B, C. mbly insertion loss, change to the tool	5 dB max (achie comment) at be	evable cable length 3 oth ends, short cables	(162-1 In Equ Chang	7), whi lation 1 ge the c	ich is illusti 162-17 cha description	ential-mode to differential- rated in Figure 162-7." nge ILddmin to ILdd. of ILddmin (now ILdd) to ertion loss in dB".		
In 16 In Ta	2.11.7.1.1 ble 162A-	, add zp 1, add a	= 30.7 mm for the "short" ca column for the A-short-A sce \-3 and 162A-4.		x is 25.5 dB).		PT IN	PRINCIPL	Response Status C E. onse to comment #56		
Respons	е		Response Status W			C/ 162	SC	162.11.2	P 182	L 12	# I-56
REJE	ECT.					Ran, Adee	e		Cisco Syst	ems, Inc.	
The	suggested	l remedy	is predicated on the adoptio	n of comment i-	170.	Comment	Туре	TR	Comment Status A		Channel ILdd (bucket2)
Resc	lve using	the respo	onse to comment i-170.			text sa has "II	ays the LDD_m	ILDD shal nin(f) >="; t	minimum insertion loss ar I be lower than the limit de his reads as if the limit is a not defined.	fined by the eq	uation, but the equation
						state t	hat ILD) DD "shall m			finition can be changed to in terms of ILDD instead of
						Suggested	Reme	dy			
						In equ	ation 1	62-17, cha	ange ">=" to "=".		
						Response			Response Status W		
						Chang Add	ge ILdd	., .	equation 162-17) to ILdd(f)		
						in dB	is the	measured	cable assembly differenti		rential-mode insertion loss

C/ 162 SC 162.11.2 Page 46 of 59 2022-02-16 5:32:17 PM

C/ 162	SC 162.11.5	5 <i>P</i> 184	L 33	# 1-57	There	is no consensus	to adopt the proposed	d changes at this	s time.
Ran, Adee	e	Cisco System	ns, Inc.		C/ 162	SC 162.11.7	P 18	5 L 46	5
Nyquis sense	ion 162-19 lets t st frequency) an physically, and	Comment Status R the difference between ILcd ar of then linearly lower at higher open the door to poor cables.	frequencies. This The Tx output co	s does not make ommon mode noise	Hidaka, Ya Comment	asuo <i>Type</i> T		Semiconductor A	
Note th	hat COM does r	ed by strong conversion from c not cover the conversion loss t allowing it to be large.		-	Suggested				
than 1	0 dB. Even at h d 10 dB. We sh	e expect low ILdd and high ILco igh frequencies up to 40 GHz, ould not allow less than 10 dB	channels submit	ted to 802.3ck do not	ACCE C/ 162	SC 162.11.7		-	
Based tighten	l on samples of n this specification	submitted channels and some on to be 24 dB at the lowest fr int 10 dB at maximum frequence	equency, linear s		Dawe, Pie Comment Empty Suggested	Type E cells	NVIDI, Comment Status		
		e specification in clause 163 (c ove still hold and the effect on			00	ess, use a long o	dash Response Status	с	
		ne contributed data compared tude be welcome.	to the proposed I	imit is planned. Any	ACCE	PT.			
	dRemedy ge equation 162- 3.56/f *14 0.05 13.56 <=	i <= f <= 13.56							
Chang	ge Figure 162–9	accordingly.							
Response REJEC		Response Status W							
Chang 30 – 81 10 2.5	nenter has reque ge equation 162 f 0.05 = f </=<br 5 = f </= 25<br f-25)/3 25 =</td <td>= 2.5</td> <td>nedy to:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	= 2.5	nedy to:						
posted	d channels on sl	uses is shown plotted along wit lide 28 of the following present org/3/ck/public/22_01/heck_3cl	ation:	t line and responses of					
		gning the limit line with recentl pise. However, a complete prop							
TYPE: TR/	/technical requir	red ER/editorial required GR/	general required	T/technical E/editorial G/g				C/ 162	

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 162 SC 162.11.7 Page 47 of 59 2022-02-16 5:32:17 PM

I-138

I-182

(bucket4)

(bucket2)

C/ 162	SC 162.11.7	P 187	L 31	# I-183	C/ 162	SC	162.11.7.2	2	P 189	L 35	# <u>1-59</u>
Dawe, Piers	JG	NVIDIA			Ran, Adee	•			Cisco Systen	ns, Inc.	
Comment T	/pe TR	Comment Status A		Rx bgmax	Comment	Туре	Е	Commer	nt Status A		(bucket2
are less	than +0.025. 1	nce receiver tap weights ar The tap weight limits are no the envelope pay a price in	t hard cable or cha	nnel limits, but they let	400GE	BASE-C	CR4." seer		sary and out of p		, 200GBASE-CR2, ause title is "Signal and
13 to 40	it is -0.05 (bgr	pefficient minimum limit bb nax 0.05) but the receiver is receiver is not protected so	s protected from ba	ad taps 25-40 by the	makes	more	sense, so		next subclause n unintended left		ecifications, where it
tall NOO	annit. But the	receiver is not protected sc		24.	Suggested		•				
		hannels to be better for ref			Consid	der dele	eting this s	entence.			
		e designed for maximum-lo or maximum-loss performa			Response			Response	e Status C		
weights	than the headl	ne numbers for a very sma lide 5), this remedy leaves	all COM penalty (se	e .			PRINCIPL ntence ref		the comment.		
SuggestedF	Remedy				C/ 162	SC	162.14.3		P 192	L 32	# I-60
		9, change Normalized coe	fficient magnitude I	imit for DFE floating	Ran, Adee	•			Cisco Systen	ns, Inc.	
	max, from 0.05				Comment	Туре	Е	Commer	nt Status A		PICS (bucket2
Response ACCEP	т.	Response Status C			In item Other i	FEC1	00, "RS(54 hat include	44,514)" is l e large text	arger than surrou (different text) are	unding text. e CA2, CA5, CA6	6.
C/ 162	SC 162.11.7	1 P 187	L 43	# I-58	Suggested	Remed	dy				
Ran, Adee		Cisco Syste		<i>"</i> 100	Make t	text size	e match th	ne surround	ing text.		
Comment T	/pe E	Comment Status A	51113, 1110.	(bucket2)	Response			Response	e Status C		
-		eters for a PCB transmission	n line are calculate	()	ACCE	PT.		·			
defined		ing Equation (93A-13), Eq			C/ 162	SC	162.14.4.2	2	P 194	L 17	# I-137
024 4 2	2 (in the base	dooumont) includoo oguoti	ana 024 12 and 02	A 11 as there is no	Hidaka, Ya	asuo			Credo Semic	onductor	
		document) includes equation eferences in addition, with		A-14, so there is no	Comment Item P		E ers to clau	<i>Commer</i> se 136.8.11	nt Status A .4.1.		PICS (bucket2
(If they a	are to be retain	ed, a serial comma should	be inserted after E	quation (93A-14))	Suggested	Remed	lv				
SuggestedF	Remedy				00			of PC6 from	136.8.11.4.1 to	162.9.3.1.3.	
"The sc		ntence to eters for a PCB transmission th the parameter values giv			Response ACCE				e Status C		
Response		Response Status C									
ACCEP	T IN PRINCIPL ent the suggest	E.									

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 162 SC 162.14.4.2

C/ 162 SC 162.14.4.5	P 196	L 8	# I-139	C/ 162A	SC 162A	P 284	L 9	# <mark>I-213</mark>
Hidaka, Yasuo	Credo Semic	onductor		Dawe, Piers	JG	NVIDIA		
Comment Type T C	omment Status A		PICS (bucket4)	Comment T	vpe E	Comment Status A		(bucket2)
The meaning of "all channe SuggestedRemedy Change "all channels" with		nbly" is not clea	r.	with the The title " yet it	subject of this annex contains reco	9.3 was referring to an annex v k is "TP0 and TP5 test point pa ommended transmitter and rec	rameters and cl ceiver character	nannel characteristics istics, which aren't
Response Re ACCEPT IN PRINCIPLE.	esponse Status C			recognis	e "test point	Overview, "This annex provide parameters" as including trans		
				SuggestedF				
The PICS language should Change "all channels" to "a	•	text.		TP0 and 200GBA to Transm 100GBA Change	SE-CR2, and tter, receiver SE-CR1, 200 the first sente	int parameters and channel ch d 400GBASE-CR4 and channel recommendation DGBASE-CR2, and 400GBASE ence from	s at test points ⁻ E-CR4	FP0 and TP5 for
				that mig to This anı associa	ht not be test nex provides i ed with test p	information on parameters ass able in an implemented syster information on transmitter, reco points TP0 and TP5 that might pented system.	n. eiver and chann	
				Response		Response Status C		
				Change TP0 and 200GB/ to Transm 100GB/ Change from This and to This and	SE-CR2, and tter, receiver SE-CR1, 200 the first sente hex provides i ht not be test hex provides i	int parameters and channel ch d 400GBASE-CR4 and channel parameters asso DGBASE-CR2, and 400GBASE	ciated with test E-CR4 ociated with tes n. eiver and chann	points TP0 and TP5 for t points TP0 and TP5 el parameters

C/ 162A SC 162A

C/ 162A S Dawe, Piers J	SC 162A	P 284 NVIDIA	L 15	# <u>I-214</u>	Cl 162B Dawe, Piers	SC 162B.2.1	I P 291 NVIDIA	L 49	# <u>I-217</u>
Comment Type		Comment Status A		(bucket2)	Comment T		Comment Status A		(huckot)
21		ht not be testable": see style	guide	(Duckeiz)	fixtures	уре Е	Comment Status A		(bucket4
SuggestedRer TP0 and T		ight not be testable			SuggestedF fixture	Remedy			
Response ACCEPT.		Response Status C			Response ACCEP	T IN PRINCIP	Response Status C LE.		
C/ 162A S	SC 162A.4	P 285	L 1	# I-215	A simila	r change is ne	cessary on page 290 line 49.		
Dawe, Piers J	G	NVIDIA			Change	"fixtures" to "f	ixture" on page 209 line 49 ar	nd on page 291 l	ine 49.
Comment Type ILPCBmin		Comment Status A		(bucket3)	C/ 162B	SC 162B.4.1	P 293	L 1	# <u>1-218</u>
SuggestedRer					Dawe, Piers	s J G	NVIDIA		
ILddPCBr					Comment T	уре Т	Comment Status A		MTF ILd
0	LPCBmin" to	"ILddPCBmin".	L3	# [1046	frequen The nev	cies). v equation has	a_1121 slide 8, the green line the same loss at Nyquist as	-	
Dawe, Piers J		NVIDIA	23	# I-216		w presentation.			
Comment Type		Comment Status A		(bucket2)	SuggestedF	equation 162E	D E from:		
		or the reader to judge the siz	of these losse	()			(0.471sqrt(f) + 0.1194f + 0.00)2f2)	
		the text, not reference test fix			to			,	
SuggestedRer	nedy						3*sqrt(f) + 0.003405*f^2) , Mated test fixtures differenti	al-mode to differ	ential-mode insertion
		Figure 162B-1, and label the			loss	5			
		eference differential-mode to from 162B.3, delete Figure 1		le insertion losses of	Response		Response Status C		
Response	o , . o. o o	Response Status C			ACCEP	T IN PRINCIP	LE.		
•	N PRINCIPL				Implem	ent the sugges	ted remedy with editorial lice	nse.	
Graph ILd	dcatf on Figu	re 162B-1; delete Figure 162 title to " Test fixtures PCB ref		ial-mode to differential-	·		,		

C/ 162B SC 162B.4.1

C/ 162B SC 162B.5.4	P 300	L 38	# I-119	C/ 162C SC 1	162C.1	P 302	L 3	# [I -1
Ghiasi, Ali	Ghiasi Quant	um LLC,Marvell	Semiconductor, Inc.	Lusted, Kent		Intel Corpora	tion	
Comment Type TR	Comment Status D		PICS	Comment Type		mment Status A	- (MDI tabl
I suggest TF7 under fe	ature add single-lane					 there was contribution ed by the comment rest 		
SuggestedRemedy				https://www.ie	ee802.org/3/ck	/public/21_09/ghiasi_3	ck_01_0921.pdf	One key feedback
Single-lane, SFP112,				point on the co specification.	ontribution from	the CRG was that the	e Ground pins sh	ould remain in the
Proposed Response	Response Status Z							
REJECT.								sest to TX2n and GND GND pin #7 is closest
This comment was WI	THDRAWN by the commenter	er.		to TX4p.	ю ю тар. Л			
						ir, note that GND pin # pin #4 goes with TX4p		X2p and GND pin #4 is 7 goes with TX4n.
				The issue now table.	comes from h	aving both the OSFP a	and QSFP-DD80	00 pins in the same
				connector spe OSFP column above, and the becomes very	c) and GND pi , the physical (e physical GNE messy on sub DSFP case; fo	GND pin next to SL1n () pin next to SL1p (TX2 sequent rows because	n next to SL1p (T TX2n) is pin #4, 2p) is pin #1, not the GND pin nu	X2p). However, in the not pin #1 as shown
				The GND pins	are useful info	ormation, keep them in	the table(s)	
				SuggestedRemed	У			
				Replace Table QSFP/QSFP-I OSFP table SFP/SFP-DD/		hree tables:		
				see accompar	nying presentat	ion.		
				Response	Res	sponse Status C		
				ACCEPT IN P	RINCIPLE.			
						omment is provided in t /public/22_01/lusted_3		

C/ 162C SC 162C.1 Page 51 of 59 2022-02-16 5:32:17 PM

C/ 162C	SC 162C.1	P 303	L 10	# I-120	C/ 163	SC 163.6.1	P 201	L 18	# 1-142
Ghiasi, Ali			-	Semiconductor, Inc.	Hidaka, Yas		Credo Semio		" 172
Comment Typ	oe TR	Comment Status A		MDI table	Comment Ty		Comment Status R		PICS (bucket2)
Table 162		per of error due to lack of pin	alignment betwo				sing for "shall" for the skew a	at SP3 for 100GB	, ,
	ed to be broke	n in to three tables: SFP112 e for OSFP. Plesae see Lus					Skew at SP3 for 100GBAS	E-KR1 shall be le	ss than 54ns" with a
Response		Response Status C			Response		Response Status C		
ACCEPT	IN PRINCIPLE	Ξ.			REJECT				
Resolve u	using the respo	onse to comment #1.			shall sta	tements). This	S entry "SC" to cover multipl is consistent with preceding ilar comments against 162.		(
/ 162C	SC 162C.1	P 303	L 14	# I-219		U	5	1.04	# [
awe, Piers J	JG	NVIDIA			C/ 163	SC 163.6.1	P 201	L 21	# I-143
omment Typ	be E	Comment Status A		(bucket2)	Hidaka, Yas		Credo Semio	conductor	
		ames, according to the hous ntence, cell or similar)	se style they dor	't get capitals (except		•	Comment Status R sing for "shall" for the skew a	at SP4 for 100GB	PICS (bucket2) ASE-KR1 less than
uggestedRei	medy				134ns.				
Change "T	Transmitter Inv	verted Data Input" to "Transn	nitter inverted da	ata input" and so on.	SuggestedR				
Response	IN PRINCIPLE	Response Status C				ICS entry "The e to clause 16	Skew at SP4 for 100GBAS	E-KR1 shall be le	ss than 134ns" with a
	-	tion column fix the capitaliza	tion with editoria	al license.	Response REJECT	-	Response Status C		
7 163 Hidaka, Yasuo	SC 163.5 0	P 199 Credo Semico	L 51 onductor	# 1-141	shall sta	tements). This	S entry "SC" to cover multipl is consistent with preceding ilar comments against 162.		
Comment Typ		Comment Status R		PICS (bucket2)	C/ 163	SC 163.6.1	P 201	L 25	# I-144
PICS entr	ry seems miss	ing for "shall" for the max de	lays listed in Tat	ble 163-4.	Hidaka, Yas		Credo Semio		π [-144
uggestedRei	-				Comment Ty		Credo Serrid	Conductor	PICS (bucket2)
		sum of the transmit and rece ximum delays listed in Table					sing for "shall" for the skew a	at SP5 for 100GB	, ,
esponse		Response Status C			SuggestedR	emedv			
REJECT.	already a PICS				Add a P		Skew at SP5 for 100GBAS	E-KR1 shall be le	ss than 145ns" with a
	-	-			Response		Response Status C		
					REJECT There is	already a PIC	S entry "SC" to cover multipl		(
					clauses.		ilar comments against 162.		ind faster PMD
YPF: TR/tecl	hnical required	ER/editorial required GR/g	neneral required	T/technical F/editorial G/			ilar comments against 162. C/ 1	63	nd faster PMD Page 52 of 59

C/ 163	SC 163.6.2	P 201	L 40	# I-146	C/ 163	SC 163.6.2	P 20	1 <i>L</i> 4	I3 # <u>I-148</u>
Hidaka, Ya	asuo	Credo Semic	onductor		Hidaka, Ya	suo	Credo	Semiconductor	r
Comment	Туре Е	Comment Status R		PICS (bucket2)	Comment 7		Comment Status		PICS (bucket2)
	entry seems mis BASE-KR4 less	sing for "shall" for the skew v than 600ps.	ariation at SP3 f	or 200GBASE-KR2 and		ntry seems mis ASE-KR4 less		skew variation a	at SP4 for 200GBASE-KR2 and
Suggested	Remedy				Suggested	Remedy			
		e Skew Variation at SP3 for 2 ps" with a reference to clause		and 400GBASE-KR4			e Skew Variation at SP ns" with a reference to		E-KR2 and 400GBASE-KR4
Response		Response Status C			Response		Response Status	С	
shall st	is already a PIC tatements). This	S entry "SC" to cover multiple s is consistent with preceding nilar comments against 162.			shall st	s already a PIC atements). This		ceding 100G Et	ments in 163.6.1 (denoted by hernet and faster PMD
C/ 163	SC 163.6.2	P 201	L 40	# I-145	C/ 163	SC 163.6.2	P 20	1 <i>L</i> 4	I6 # I-150
-lidaka, Ya	asuo	Credo Semic	onductor		Hidaka, Ya	suo	Credo	Semiconductor	r
Comment	Туре Е	Comment Status R		PICS (bucket2)	Comment 7	ype E	Comment Status	R	PICS (bucket2)
	entry seems mis BASE-KR4 less	sing for "shall" for the skew a than 54ns.	t SP3 for 200GE	BASE-KR2 and		ntry seems mis ASE-KR4 less		skew variation a	at SP5 for 200GBASE-KR2 and
Suggested	Remedy				Suggestedl	Remedy			
		e Skew at SP3 for 200GBASE reference to clause 163.6.2.	E-KR2 and 400G	BASE-KR4 shall be			e Skew Variation at SP ns" with a reference to		E-KR2 and 400GBASE-KR4
Response		Response Status C			Response		Response Status	с	
shall st	is already a PIC tatements). This	S entry "SC" to cover multiple is consistent with preceding nilar comments against 162.			shall st	s already a PIC atements). This		ceding 100G Et	ments in 163.6.1 (denoted by hernet and faster PMD
C/ 163	SC 163.6.2	P 201	L 43	# I-147	C/ 163	SC 163.6.2	P 20	1 L4	I6 # I-149
lidaka, Ya	asuo	Credo Semic	onductor		Hidaka, Ya	suo	Credo	Semiconductor	r
omment	Туре Е	Comment Status R		PICS (bucket2)	Comment 7	ype E	Comment Status	R	PICS (bucket2)
	entry seems mis BASE-KR4 less t	sing for "shall" for the skew a than 134ns.	at SP4 for 200GE	BASE-KR2 and		ntry seems mis ASE-KR4 less	ssing for "shall" for the than 145ns.	skew at SP5 for	r 200GBASE-KR2 and
Suggested	Remedy				Suggested	Remedy			
		e Skew at SP4 for 200GBASE a reference to clause 163.6.2		BASE-KR4 shall be			e Skew at SP5 for 2000 a reference to clause 1		nd 400GBASE-KR4 shall be
Response		Response Status C			Response		Response Status	С	
shall st	is already a PIC tatements). This	S entry "SC" to cover multiple s is consistent with preceding nilar comments against 162.			shall st	s already a PIC atements). This	CS entry "SC" to cover s is consistent with pre nilar comments agains	ceding 100G Et	ments in 163.6.1 (denoted by hernet and faster PMD
TYPE: TR/ COMMENT	technical require Γ STATUS: D/di	ed ER/editorial required GR/ spatched A/accepted R/reje			/general	-	-	C/ 163 SC 163.6.2	Page 53 of 59 2022-02-16 5:33

SORT ORDER: Clause, Subclause, page, line

C/ 163	SC 163.9.2	P 203	L 43	# <u>I-101</u>
Mellitz, Ri	chard	Samtec, Inc.		
Comment	Type TR	Comment Status A		AC CM noise

Low frequency CM will not be very dependent on a test fixture. Signal to AC commonmode noise ratio, SCMR (min), is related to the Peak Pulse and used to compensate for test fixture loss. Since the low frequency the loss is very small the tp0v compensation is not correct. As demonstrated in mellitz_3k_adhoc_01_120821 noise originating from a power supply or other low frequency sources can be detrimental.

SuggestedRemedy

Add a new line to table 163-5 called maximum low frequency AC common mode max peak to peak noise (V_CMPP) and set to 30 mV. Create a new section for such indicating the a low pass 4th order Bessel Thomson filter with a 3 dB point of 10 MHz is to be applied to the CM measurement. Additionally in section 163.9.2.7 indicate that the a high pass 4th order Bessel Thomson filter with a 3 dB point of 10 MHz is to be applied to the AC CM measurement and set SCMR (min) to 11.8 dB. See presentation.

Response

Response Status C

ACCEPT IN PRINCIPLE.

The following presentations were reviewed by the task force: https://www.ieee802.org/3/ck/public/adhoc/jan12_22/mellitz_3ck_adhoc_01_011222.pdf https://www.ieee802.org/3/ck/public/22_01/mellitz_3ck_01_0122.pdf

According to straw poll #1 there is strong support to adopt the measurement methodology on slides 4 and 5 of mellitz_3ck_01_0122.

According to straw polls #2 and #3, the favored specification values for V_CMPP_LF and SCMR_HF are 60 mV and 15 dB, respectively.

Implement methodology and values summarized above for KR and C2C.

For C2C add text that specifices that V_CMPP is measured over all except 1E-5, rather than 1E-4, of the distribution.

Implement with editorial license.

STRAW POLLS

Straw poll #1 (Direction) For KR and C2C, I support the AC CM voltage test methodology in mellitz_3ck_01_0122 slides 4 and 5. A. Yes B. No C. Abstain Results: A: 20, B: 4 C: 6

Straw poll #2 (Direction)

For KR and C2C, I support V_CMPP_LF value of: A. 30 mV B. 60 mV Results: A: 8, B: 15

Straw poll #3 (Direction) For KR and C2C, I support SCMR_HF value of: A. 16 dB B. 15 dB Results: A: 9, B: 14

C/ 163	SC 163.9.2.6	P 206	L 42	# I-236
Dudek, Mich	nael	Marvell		
Comment Ty	ype TR	Comment Status D		Residual ISI

The value of Np=11 is unnecessarily low for this variant where the receiver equalizer has many more taps. Note however that this section is referenced by the C2C in 120F.3.1 where the number of DFE taps is only 6.

SuggestedRemedy

Change the value of Np from 11 to 24 here. Reference Residual ISI in table 120F-1 to a new section in 120F.3.1. This section to say "Residual Intersymbol Interference is measured with the procedure in 163.9.2.6 with the exception that Np=11

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

C/ 163	SC 163.9.2.	6 P 20)6 L	53	# I-152
Hidaka, Ya	asuo	Credo	Semiconducto	or	
Comment	Туре Е	Comment Status	Α		PICS (bucket2)
Comment	туре с	Comment Status	A		FICS (DUCKEIZ)

PICS entry seems missing for "shall" for the residual intersymbol interference ISI_RES.

Response Status C

SuggestedRemedy

Add a PICS entry for residual intersymbol interference per Table 163-5 with a reference to clause 163.9.2.6.

Response

ACCEPT IN PRINCIPLE.

Add new PICS item with editorial license.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line C/ 163 SC 163.9.2.6 Page 54 of 59 2022-02-16 5:32:17 PM

C/ 163	SC 163.9.2.7	P 207	L 7	# <u>1-62</u>	C/ 163	SC 163.9.2.7	P 207	L 10	# <u>1-63</u>
Ran, Adee	•	Cisco Sy	stems, Inc.		Ran, Adee		Cisco Sy	stems, Inc.	
Comment 7	Type E	Comment Status A		(bucket2)	Comment T	ype TR	Comment Status A		AC CM noise (bucket2)
In "p(k))", p and k shou	ld be italicized, as in line	18 and in 162.9.3	3.1.1.			mon-mode noise measu		
Suggested Apply f	<i>Remedy</i> formatting per c	omment.			betwee convers	n single-ended sion of the diffe		of a UI. This wou I and degradation	
Response ACCE	PT.	Response Status C			CM spe	ecification to co	rrelated and uncorrelated	components.	·
C/ 163	SC 163.9.2.	P 207	L 9	# I-153					even if we had, they would a good device to fail the
Hidaka, Ya			emiconductor				brated test setup. This m		
Comment T PICS e		Comment Status A sing for "shall" for signal	to AC common-r	AC CM noise (bucket2) node noise ratio.	some o	f the problem. I	But we may not want to p	rovide an open ti	between cables, mitigating cket to full deskew of the UT as well as in the test
Suggested	Remedy				system				
	PICS entry for s nce to clause 16	ignal to AC common-mo 3.9.2.7.	de noise ratio pe	Table 163-5 with a					note informing the reader
Response		Response Status C			that goo	od matching of	the test fixture and calibr	ation of the test s	setup is recommended.
	PT IN PRINCIP w PICS item wi	LE. th editorial license.			SCMR		for the uncorrelated com		ated and uncorrelated, and and be preferable if there is
					Suggested	Remedy			
					NOTE- paths ir	–SCMR measu		to mismatches b	between the single-ended alibration of the test system
					Response		Response Status W		
					Add an NOTE– paths ir	–SCMR measu	TE at the end of this sub rement may be sensitive	to mismatches b	between the single-ended alibration of the test system

C/ 163 SC 163.9.2.7

C/ 163 SC 163.9.2.	7 P 207	L 10	# <u>I-154</u>	C/ 163	SC 163.9.2.	7 P 207	L 11	# <u>I-64</u>	
Hidaka, Yasuo	Credo Semico	nductor		Ran, Adee	9	Cisco Syste	ems, Inc.		
Comment Type E Table 163-11 does no	Comment Status A t define SCMR.		(bucket2)	Comment Incorre	51	Comment Status A	t (min) is specifie	AC CM noise (bucket2) d in Table 163–5.	
SuggestedRemedy Change the reference Response	to Table 163-11 with a referen Response Status C	ce to Table 163-5		separa		also referred to by Table 12 m required limit, the "shall" s e in 163.9.2.6.			
ACCEPT.				Suggested	lRemedy				
C/ 163 SC 163.9.2.	7 P 207	L 10	# I-21			signal to AC common-mode ble 163–11", change Table 1		•	
Brown, Matthew	Huawei Techr	ologies Canada		Move	this sentence to	the end of the subclause, a	fter equation 163	-2 and its variable list.	
Comment Type T	Comment Status A		(bucket2)	Response		Response Status C	·		
This table incorrectly p	points to Table 163-11 for the S	SCMR value.		ACCEPT.					
SuggestedRemedy									
Change "Table 163-11	I" to "Table 163-5".			C/ 163	SC 163.10.2		L 16	# I-23	
Response	Response Status C			Brown, Ma	atthew	Huawei Teo	hnologies Canad	la	
ACCEPT.				Comment	51	Comment Status A		(bucket2)	
C/ 163 SC 163.9.2.	7 P 207	L 11	# I-34			ng insertion loss refers to a specify to be of the for use		but the equation is an	
Wu, Mau-Lin	MediaTek Inc.			Suggested	lRemedy				
Comment Type TR The specification for S SuggestedRemedy	Comment Status A CMR (min) is defined in Table	163-5, instead of	<i>(bucket2)</i> Table 163-11.	of the	channel is giver he channel diffe	Im recommended differentia by Equation (163–6)." rential-mode to differential-r			
Change Table 163-11	to Table 163-5. Correct the hy	perlink as well.		Response		Response Status C			
Response ACCEPT.	Response Status W			ACCE	PT.				
AUGEPT.									

C/ 163 SC 163.10.2 Page 56 of 59 2022-02-16 5:32:17 PM

Cisco System <i>Comment Status</i> R f ILdc-ILdd in equation 163-9 and d - ILdd in equation 163-8 and Fi 2–19 and Figure 162–9. ysically and from link budget purp rs. It makes less sense to have of rr. 163-8 and 163-9 with references -8 and figure 163-9 with refer	nd Figure 163–9 i igure 163–8, and poses to have ide duplicated equat s to equation 162 ces to figure 162- and ILcd are from <i>L</i> 37	I also identical to the entical specifications ions and figures. It just 2-19. -9.	Suggested Make t Response ACCER Cl 163A Dawe, Pier Comment annex Suggested annexe Response	Type E rder between TC Remedy he border betwee PT. SC 163A s J G Type E Annex and	Comment Status A 9 and TC10 is thick. en TC9 and TC10 same Response Status C P 316 NVIDIA Comment Status A	miconductor as other rows.	(bucket2) # [<u>I-220</u> (bucket2)
f ILdc-ILdd in equation 163-9 and d - ILdd in equation 163-8 and Fi 2–19 and Figure 162–9. ysically and from link budget purp rs. It makes less sense to have o er. 163-8 and 163-9 with references -8 and figure 163-9 with reference <i>Response Status</i> C s happen to be the same, ILdc a 1 <i>P</i> 218 RMG Consul	igure 163–8, and poses to have ide duplicated equat s to equation 162 ces to figure 162- and ILcd are from <i>L</i> 37	is identical to the also identical to the entical specifications ions and figures. It just 2-19. -9.	The bo Suggested Make t Response ACCER Cl 163A Dawe, Pier Comment annex Suggested annexe	rder between TC Remedy he border betwee PT. SC 163A s J G Sype E Annex and Remedy	9 and TC10 is thick. en TC9 and TC10 same <i>Response Status</i> C <i>P</i> 316 NVIDIA <i>Comment Status</i> A		# 1-220
d - ILdd in equation 163-8 and Fi 2–19 and Figure 162–9. vsically and from link budget purp rs. It makes less sense to have o rr. 163-8 and 163-9 with references -8 and figure 163-9 with reference <i>Response Status</i> C s happen to be the same, ILdc a 1 <i>P</i> 218 RMG Consul	igure 163–8, and poses to have ide duplicated equat s to equation 162 ces to figure 162- and ILcd are from <i>L</i> 37	also identical to the entical specifications ions and figures. It just 2-19. -9.	Suggested Make t Response ACCER Cl 163A Dawe, Pier Comment annex Suggested annexe Response	Remedy he border betwee PT. SC 163A s J G Sype E Annex and Remedy	en TC9 and TC10 same Response Status C P 316 NVIDIA Comment Status A		
rs. It makes less sense to have over. 163-8 and 163-9 with references -8 and figure 163-9 with references <i>Response Status</i> C s happen to be the same, ILdc a 1 <i>P</i> 218 RMG Consul	duplicated equat s to equation 162 ces to figure 162- and ILcd are from <i>L</i> 37	ions and figures. It just 2-19. -9. n two different tests.	ACCER Cl 163A Dawe, Pier Comment annex Suggested annexe Response	SC 163A s J G <i>Type</i> E Annex and Remedy	P 316 NVIDIA Comment Status A	L1	
-8 and figure 163-9 with reference <i>Response Status</i> C s happen to be the same, ILdc a 1 <i>P</i> 218 RMG Consul	and ILcd are from	-9. h two different tests.	Dawe, Pier Comment T annex Suggested annexe Response	s J G Type E Annex and Remedy	NVIDIA Comment Status A	L1	
-8 and figure 163-9 with reference <i>Response Status</i> C s happen to be the same, ILdc a 1 <i>P</i> 218 RMG Consul	and ILcd are from	-9. h two different tests.	Dawe, Pier Comment T annex Suggested annexe Response	<i>Type</i> E Annex and R <i>emedy</i>	Comment Status A		
s happen to be the same, ILdc a 1 P 218 RMG Consul	L 37		annex Suggested annexe Response	Annex and Remedy			(bucket2)
1 P 218 RMG Consul	L 37		Suggested annexe Response	Remedy			
1 P 218 RMG Consul	L 37		annexe Response	,			
RMG Consul	-	# 1-90	•		Response Status C		
	lting			T			
			ACCE	21.			
	using "compose"	, ,	C/ 163A	SC 163A.3.1.	1 P 317	L 49	# I-72
comprise have been rewritten	using compose	111 002.0/00.0.	Ran, Adee		Cisco Sy	stems, Inc.	
eed of "			Comment	Гуре Е	Comment Status A		(bucket2)
Response Status C							I be set in upright font.
			00	-			
	L 49	# I-151	Format Response	per comment, a	Response Status C	ument.	
	conductor	(hugkot2)	ACCE	РТ.			
Comment Status A		(DUCKEIZ)	C/ 163A	SC 163A.3.1.	3 P 319	L 24	# <mark>I-221</mark>
			Dawe, Pier	s J G	NVIDIA		
e linear fit pulse ratio" to "Differer	nce linear fit puls	se peak ratio".	Comment	Гуре E	Comment Status A		(bucket2)
Response Status C			Eq 163	A-5 is part of ste	p b, and Eq 163A-4 is p	art of step d, is after	b.
			Suggested	Remedy			
			Swap e	equations 163A-5	and 4		
			Response ACCE	PT.	Response Status C		
1	psed of" Response Status C 13.4.3 P 222 Credo Semia Comment Status A e linear fit pulse ratio" to "Differe Response Status C quired ER/editorial required GR	<pre>"comprise" have been rewritten using "compose" beed of" Response Status C 13.4.3 P 222 L 49 Credo Semiconductor Comment Status A e linear fit pulse ratio" to "Difference linear fit pulse Response Status C</pre>	<pre>"comprise" have been rewritten using "compose" in P802.3/D3.0. beed of" Response Status C 13.4.3 P 222 L 49 # [-151 Credo Semiconductor Comment Status A (bucket2) e linear fit pulse ratio" to "Difference linear fit pulse peak ratio". Response Status C guired ER/editorial required GR/general required T/technical E/editorial G/g</pre>	"comprise" have been rewritten using "compose" in P802.3/D3.0. C/ 163A psed of" Ran, Adee <i>Response Status</i> C 13.4.3 P 222 L 49 # [-151] Credo Semiconductor Comment Status A Comment Status A (bucket2) e linear fit pulse ratio" to "Difference linear fit pulse peak ratio". Eq 163 <i>Response Status</i> C Eq 163 guired ER/editorial required GR/general required T/technical E/editorial G/general C/ 163A	"comprise" have been rewritten using "compose" in P802.3/D3.0. Desed of" Response Status C 13.4.3 P 222 L 49 # [-151 Credo Semiconductor Comment Status A (bucket2) e linear fit pulse ratio" to "Difference linear fit pulse peak ratio". Response Status C e linear fit pulse ratio" to "Difference linear fit pulse peak ratio". Response Status C guired ER/editorial required GR/general required T/technical E/editorial G/general	"comprise" have been rewritten using "compose" in P802.3/D3.0. Cl 163A SC 163A.3.1.1 P317 psed of" Response Status C 13.4.3 P222 L49 # 1151 Credo Semiconductor Comment Status A Comment Status A (bucket2) e linear fit pulse ratio" to "Difference linear fit pulse peak ratio". Response Status C Response Status C C/ 163A SC 163A.3.1.3 P319 Dawe, Piers J G NVIDIA Comment Type E Comment Status A e linear fit pulse ratio" to "Difference linear fit pulse peak ratio". C/ 163A SC 163A.3.1.3 P319 Dawe, Piers J G NVIDIA Comment Type E Comment Status A Eq 163A-5 is part of step b, and Eq 163A-4 is p SuggestedRemedy Swap equations 163A-5 and 4 Response Response Status C ACCEPT. ACCEPT. quired ER/editorial required GR/general required T/technical E/editorial G/general C/	"comprise" have been rewritten using "compose" in P802.3/D3.0. psed of" Response Status C 13.4.3 P 222 L 49 # [-151] Credo Semiconductor Comment Status A In expressions that include italics, parentheses and numbers should This line includes some instances, and there are many others. SuggestedRemedy Format per comment, apply throughout the document. Response Status C e linear fit pulse ratio" to "Difference linear fit pulse peak ratio". C/ 163A SC 163A.3.1.3 P 319 L 24 Dawe, Piers J G NVIDIA Comment Status C Comment Status A Response Status C C ACCEPT. C/ 163A SC 163A.3.1.3 P 319 L 24 Dawe, Piers J G NVIDIA Comment Type E Comment Status A Eq 163A-5 is part of step b, and Eq 163A-4 is part of step d, is after SuggestedRemedy Swap equations 163A-5 and 4 Response Response Status C ACCEPT. C/ 163A C/ 163A C/ 163A

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 163A SC 163A.3.1.3 Page 57 of 59 2022-02-16 5:32:17 PM

V 163A SC 163A.	3.2.1 <i>P</i> 320	L 9	# I-73	C/ 163B SC 163B.2	P 322	L 21	# I <u>-222</u>
Ran, Adee	Cisco Sy	stems, Inc.		Dawe, Piers J G	NVIDIA		
Comment Type E	Comment Status A		(bucket2)	Comment Type T	Comment Status R		Example ER
Equation 163A–7 is	truncated from the top.			Complete the example			
SuggestedRemedy				SuggestedRemedy			
Fix it.					example, there's another pa	ackage length zp	= 12.
Response ACCEPT.	Response Status C			Delete the sentence "A	to "zp = 12 mm or 31 mm". Although clauses using the T calculated at more than one p		
7 163A SC 163A.	3.2.1 <i>P</i> 320	L 24	# I-74	In table 163B-1, add a	row for package zp. Add a d		
Ran, Adee	Cisco Sy	stems, Inc.		called "Candidate effective return loss, I	ctive return loss" with the two	entries. Straddle	e the entry for
Comment Type E	Comment Status A		(bucket2)	Response	Response Status C		
	d Equation 163A-10 use the are not defined here but in 1			REJECT.			
SuggestedRemedy Add a paragraph at 163A.3.1.1."	the end of this subclause: "	<pre>v_f(ref) and v_peak(</pre>	(ref) are defined in	calculation of the reference	ended only to help the reade ence ERL value, not as a co ackage length is not necessa	mplete specificati	
Response	Response Status C			The suggested remedy	/ does not provide sufficient	detail, e.g., ERL v	value, to implement.
ACCEPT.				C/ 163B SC 163B.2	P 322	L 31	# I-223
				Dawe, Piers J G	NVIDIA		
				Comment Type T Figure 163B-1 doesn't	Comment Status A match Equation 163B-1.		Example TF ILd
				SuggestedRemedy I believe the graph is ri	ght, and the right coefficients	s are 0, 0.235616	s, 0.059147.
				https://www.ieee802.or Figure 163B-1 is plotte presentation suggeste slightly different:	Response Status C .E. ss from an earlier presentatic rg/3/ck/public/20_10/ghiasi_3 d according to the PCB trace d this PCB trace model and p rg/3/ck/public/21_01/ran_3ck	3ck_01a_1020.pd e model in Clause pointed out Equat	e 163B.2. The following

C/ 163B SC 163B.2

C/ 167 SC 167	P 225	L 1	# <u>I</u> -100
Parsons, Earl	CommScope,	, Inc.	
Comment Type T Include modification to	Comment Status A Clause 167 (from 802.3db).		(bucket2)
SuggestedRemedy Show modified Table 1 120G100GAUI1 C2N	167-1 and Table 167-2 with ro 1.	ws for 120F10	0GAUI-1 C2C and
Response	Response Status C		
ACCEPT IN PRINCIPL Resolve using the resp	LE. conse to comment #36.		
C/ 167 SC 167.1	P 225	L 0	# I-36
Ran, Adee	Cisco System	ns, Inc.	
Comment Type T	Comment Status A		(bucket2)
signaling. These PHYs interfaces, in addition t	2.3db) defines six new PHY w s may use the 100GAUI-1, 20 to the interfaces currently liste duled to be published before 8	0GAUI-2, and 4 ed.	00GAUI-4 C2C/C2M
SuggestedRemedy			
Add Clause 167 and 1	67.1 to the draft.		
	67.1 to the draft. o include 100GAUI-1 C2C and	I 100GAUI-1 C2	2M, both optional.
Amend Table 167–1 to			<i>i</i>

ACCEPT.

C/ 167 SC 167.1 Page 59 of 59 2022-02-16 5:32:17 PM