	D17	/ 16	# 1	CLAF	SC 15 2 1 7	A P20	/ 51	# 2
Wienekowski Netelia	7 17 Conorol Motor	210	π	Vienekowski	Notalia	+ / ZU	201	# 3
wienckowski, Natalie	General Moto	15		wienckowski,	Natalie	General Motors	i	
Comment Type E	Comment Status D		bucket	Comment Typ	be E	Comment Status D		bucket
The "important Notice'	' is no longer required accordi	ng to IEEE.		Because in the nev	you are show v row should l	ing a new row in the same tabl be underlined to clearly show th	e you are cha hat this is nev	anging a row in, the text v.
SuggestedRemedy				Suggested	mody	2		
Delete lines 16 througl intended to ensure saf	h 26: IMPORTANT NOTICE: ety, health, or environmental	IEEE Standard protection, or er	s documents are not nsure against	Underline	all text in the	last row of the table, including	the cross-rel	ference.
interference with or fro	m other devices or networks.	Implementers of	of IEEE Standards	Proposed Res	sponse	Response Status W		
documents are respon safety, security, enviro	normental, health, and interfere	nce protection	ppropriate practices and all	PROPOS	ED ACCEPT			
regulations.				C/ 45	SC 45.2.1.7.	5 P21	L15	# 4
This IEEE document is	s made available for use subje	ect to important	notices and legal	Wienckowski,	Natalie	General Motors	;	
notices and disclaimer	s appear in all publications co	ntaining this do	ocument and may be	Comment Tvp	be E	Comment Status D		bucket
found under the heading "Important No	tice" or "Important Notices an	d Disclaimers C	Concerning IEEE	Because in the new	you are show v row should l	ing a new row in the same tabl be underlined to clearly show th	e you are cha hat this is nev	anging a row in, the text v.
Documents." They can also be obta	ined on request from IEEE or	viewed at		SuggestedRe	medy			
http://standards.ieee.o	rg/IPR/disclaimers.html			Underline	all text in the	last row of the table, including	the cross-ref	ference.
Proposed Response	Response Status 🛛 🛛 🛛 🛛 🛛 🖉			Proposed Res	sponse	Response Status W		
PROPOSED ACCEPT	- -			PROPOS	ED ACCEPT			
C/FM SC FM	P12	L1	# 2	C/ 45	SC 45.2.1.8	P 21	L 34	# 5
Wienckowski, Natalie	General Motor	rs		Wienckowski,	Natalie	General Motors	;	
Comment Type E	Comment Status D		bucket	Comment Typ	e E	Comment Status D		bucket
802.3cg was approved	l in 2019			Because	you are show	ing a new row in the same tabl	e you are cha	anging a row in, the text
SuggestedRemedy				in the new	v row should l	be underlined to clearly show the	hat this is nev	v.
Change 20xx to 2019				SuggestedRe	medy			
				Underline	all text in the	last row of the table, including	the cross-ref	ference.
Proposea Response	Response Status W			Pronosed Rev	snonse	Response Status W		
PROPOSED ACCEPT				PROPOS	ED ACCEPT			

C/ 116	SC 116.1.4	P33	L28	# 6	C/ 151	SC 151.8.12	P73	L 45	# 9
Wienckov	wski, Natalie	General Motors	S		Wienckow	ski, Natalie	General Moto	rs	
Comment All M as the	t Type E 's and O's in the 4 ese are added text	Comment Status D 00GBASE-FR4 and 400GBAS	SE-LR4-6 rows	<i>bucket</i> should be underlined	Comment There	<i>Type</i> TR should not be a	Comment Status D note that text is needed in a \	WG draft.	Tx overshoot
Suggeste Add ι	<i>dRemedy</i> underlined as defir	ied in the comment.			Remo	ve the note: Edit	or's Note: We need some te	xt to describe th	e test method.
Proposed PROI	l Response POSED ACCEPT.	Response Status W			Proposed PROP	Response OSED ACCEPT	IN PRINCIPLE.		
C/ 116	SC 116.1.4	P33	L10	# 7	See co	omment #47			
Wienckov Comment	vski, Natalie t <i>Type</i> E	General Motors Comment Status D	s	bucket	C/ 00 Lewis, Jon Comment	SC 0	P12 Dell EMC Comment Status D	L1	# 10
Strad done	for 122 as well.)	e 151 labels to be in a single o	cell as is done t	for 117. (This should be	IEEE	Std 802.3cg-20x	should be 2019.		Sucher
S <i>uggeste</i> Make	dRemedy the change define	ed in the comment.			Suggested Chang	<i>IRemedy</i> Je 20xx to 2019			
Proposed PROI	l Response POSED ACCEPT.	Response Status W			Proposed PROP	Response OSED ACCEPT	Response Status W		
C/ 140	SC 140.7.11	P 46	L36	# 8	C/ 140	SC 140.6.2	P 42	L11	# 11
Wienckov	vski, Natalie	General Motors	S		Lewis, Jon	I	Dell EMC		
Comment	t Type TR	Comment Status D		Tx overshoot	Comment	Туре Е	Comment Status D		Bucket
There Suggeste	e should not be a r dRemedy	note that text is needed in a W	/G draft.		"define Table mome	ed in Table 140-7 number and the nt to realize that	' per the definitions in 140.7." subsequent clause are the sa the definitions weren't in the	' This just reads ame (140-7 and Table but in the	oddly given that the 140.7). It took me a clause 140.7.
Remo	ove the note: Edit	or's Note: We need some text	t to describe th	e test method.	Suggested	IRemedy			
Proposed PROI	<i>Response</i> POSED ACCEPT	Response Status W IN PRINCIPLE.			Chang the de	e "defined in Tal finitions in clause	ble 140-7 per the definitions in 140.7."	n 140.7." to "del	fined in Table 140-7 per
See o	comment #47				Proposed PROP	Response OSED ACCEPT	Response Status W IN PRINCIPLE.		
					Chang "define to "in Tal	le ed in Table 140-7 ble 140-7 per the	/ per the definitions in 140.7." definitions in clause 140.7."		

C/ 151	SC 151.9.1	P73	L 52	# 12	C/ 151	SC	151.13.4.6	P83	L 6	# 15
Lewis, Jon		Dell EMC			Carlson, S	Steven		HSD/Bosch/E	thernovia	
Comment	Туре Т	Comment Status D		Bucket	Comment	Туре	TR	Comment Status D		Bucket
P802.3	Bcr has centralized	the general safety reference	es in Annex J.	P802.3cr is in a	lf Ann	ex J is i	nserted in	151.9.1 then the PICs requi	re updating.	
recircu	lation WG ballot a	and is likely to complete prior	to P802.3cu.	TF Chairs should	Suggested	dRemed	ly			
in P80	2.3cu or P802.3cr			s change should happen	Chang	ge "Cont	forms to IE	C 60950-1" to "Conforms to	o J.2"	
Suggested	Remedy				Proposed	Respon	ise	Response Status W		
Chang	e "All equipment s	subject to this clause shall co	onform to IEC 6	0950-1." to "All	PROF	POSED	ACCEPT.			
equipn	nent subject to thi	s clause shall conform to the	general safety	requirements as						
change	ed in 5.2 . Add E es to P802.3cr.	uitor s Note to be removed pr	IUI IU SA Daliu		C/ 140	SC	140.7.11	P 46	L 36	# 16
Proposed I	Response	Response Status W			Carlson, S	Steven		HSD/Bosch/E	thernovia	
PROP	OSED ACCEPT.				Comment	Туре	TR	Comment Status D		Tx overshoot
					I here have l	should	not be a no esent in D2	ote that technical text is nee	eded in a WG d	raft. This text should
C/ 151	SC 151.13.4.6	P83	L 6	# 13	Suggester	dRemed				
Lewis, Jon		Dell EMC			Remo	ve: Edi	itor's Note:	We need some text to desc	ribe the test m	ethod.
Comment	Туре Т	Comment Status D		Bucket	Proposed	Respon	190	Response Status W		
If Anne	ex J is inserted in	151.9.1 then the PICs needs	to be updated	also.	PROF	POSED	ACCEPT II			
Suggested	Remedy					OOLD /				
Chang	e "Conforms to IE	C 60950-1" to "Conforms to	J.2"		See c	omment	t #47			
Proposed I	Response	Response Status W			C/ 151	SC	151.8.12	P 73	L 45	# 17
PROP	OSED ACCEPT.				Carlson, S	Steven		HSD/Bosch/E	thernovia	
C/ 151	SC 151.9.1	P73	L 52	# 14	Comment	Туре	TR	Comment Status D		Tx overshoot
Carlson St	teven	HSD/Bosch/Etl	hernovia		There	should	not be a no	ote that technical text is nee	eded in a WG d	raft. This text should
Comment	Type TR	Comment Status D		Bucket	have l	been pre	esent in D2	.0.		
P802.3	Bcr is harmonizing	general safety references ad	cross all of IEE	E 802.3 in Annex J.	Suggested	dRemed	ly			
P802.3	Bcr is in the 1st W	G ballot recirculation and is li	kely to comple	te the ballot cycle prior	Remo	ve: Edi	tor's Note:	We need some text to desc	ribe the test m	ethod.
to P80 keep ti	2.3cu. Coordinati his material in svn	on between TFs and the P80	2.3cr project s	hould be maintained to	Proposed	Respon	ise	Response Status W		
Suggested	Remedy				PROF	POSED	ACCEPT II	N PRINCIPLE.		
Chang	e "All equipments	subject to this clause shall co	onform to IFC 6	0950-1 " to "All	See c	omment	t #47			
equipn	nent subject to thi	s clause shall conform to the	general safety	requirements as						
specifi		ditor's Note to be removed pr	ior to SA ballo	to alian taxt with						
change	ed in J.2". Add E	allor's Note to be removed pr								
change Proposed A	ed in J.2". Add E es to P802.3cr. Response									
change Proposed I	ed in J.2". Add Ei es to P802.3cr. Response	Response Status W								

C/ 151	SC 151.5.4	P 59	L53	# 18	C/ 151	SC 151.	7.2	P64	L3	# 20
Brown, M	att	Huawei Tech	nologies Canada	<u>⊢_</u>	Brown, Ma	att		Huawei Techn	ologies Canad	a
Comment	t Type TR	Comment Status D	0	Bucket	Comment	Туре Т		Comment Status D	0	Bucket
The r defau	eference should be alt architecture, 151.2	to 151.2 rather than 116.3 2 points to 116.3 and prov	 It is correct that rides additional in 	116.3 provides the formation for mapping	The space of the s	pecifications fined within	are not subclau	t defined in Table 151-8, th use 151.8.	ey are listed th	ere; the specifications
SIGN	IAL_DETECT.				Suggested	dRemedy				
Suggeste	dRemedy	1404 01 to 1454 01			Delete	e "defined" tv	vice.			
Chan		101.3 10 151.2 .			Proposed	Response		Response Status 🛛 🛛 🛛 🛛 🛛 🖉		
Proposed PROI	Response POSED ACCEPT IN	Response Status W			PROF	POSED ACC	EPT.			
Chan	ao roforonco from "	116 3" to "151 2"			C/ 151	SC 151.	7.2	P 64	L 42	# 21
Chan	ge reference from	110.5 10 151.2 .			Brown, Ma	att		Huawei Techn	ologies Canad	la
C/ 151	SC 151.7.1	P63	L 47	# 19	Comment	Type TR		Comment Status D	R	x avg receive power (min)
Brown, M	att	Huawei Tech	nologies Canada	1	The in	tent of footn	ote b is	unclear. The referencing r	ow is average	receive power minimum,
Comment	t Type TR	Comment Status D		Tx OMA	each i footno	ane, wnerea ote should be	is the to moved	down a row Even then its	not clear Doe	DMA_outer). Pernaps the es it then mean that the
For for shoul	ootnote "b", what is t ld? I suspect that the	he significance of "even if e intention is that the OMA	"? Are there othe _outer is suppos	r cases where it ed to be met over a	values	s in the row a nce equation	above m ns (whic	nust be met for SECQ less ch also defined RS) are use	than 1.4 dB, b d?	but then the values the
range	e of ER and TDECQ.				Suggested	dRemedy				
Suggeste	dRemedy				Move	the location	of the f	ootnote reference if it make	es sense. Rew	ord footnote to provide a
Expla	ain more completely	what the intent for meeting	g OMA_outer is.		bit mo	ore clarity for	the who	ole specification of RS.		
Proposed	l Response	Response Status W			Proposed	Response		Response Status Z		
PRO	POSED ACCEPT IN	I PRINCIPLE.			PROF	POSED REJ	ECT.			
This I OMA	language has been u	used in other PMD clauses each lane (min) for all va	s. Transmitters r alues of TDFCQ f	nust comply with from 0 to the max (3.4	This c	comment was	s WITH	DRAWN by the commente	r.	
dB).	The intent of OMAo	uter (min) is to put a floor	on how low OMA	can be, even for	C/ 151	SC 151.	8.5.1	P67	L 50	# 22
transi	mitters with very low	values of TDECQ.			Brown, Ma	att		Huawei Techn	ologies Canad	a
In Ta each	ble 151-7 reference lane (min) and from	footnote b from Outer Opt Launch power in OMAout	tical Modulation A ter minus TDECO	Amplitude (OMAouter), Ջ, each lane (min).	Comment The a	<i>Type</i> E cronym RIN	has not	<i>Comment Status</i> D t been defined in the Claus	e.	Bucket
In ore	tor to improve the el	arity of footpoto h in Tabla	151 7.		Suggester	, Remedy				
more			; 131-7.		Chan	ne "RIN" to "	relative	intensity noise (RIN)"		
Chan	ige:				Bronosed	Pesnonse	loiativo	Response Status W		
"Ever extino	t the TDECQ < 1.4 ction ratio of < 4.5 dl	dB for an extinction ratio 3, the OMAouter (min) mu	of \geq 4.5 dB or 11 ist exceed this va	DECQ < 1.3 dB for an ilue."	PROF	POSED ACC	EPT.	Response Status w		
to: "Trar lane (extino (min)	nsmitters are require (min) by adjusting O ction ratio. In all cas ."	ed to comply with Launch p MAouter depending on the ses, OMAouter must excee	power in OMAout e measured value ed the value for C	er minus TDECQ, each es of TDECQ and MAouter, each lane						
TYPE: TF COMMEN SORT OF	R/technical required NT STATUS: D/dispa RDER: Comment ID	ER/editorial required GR atched A/accepted R/reje	/general required ected RESPON	I T/technical E/editorial G/ NSE STATUS: O/open W/w	general rritten C/closed	d U/unsatisf	ied Z/w	<i>Comme</i> vithdrawn	nt ID 22	Page 4 of 30 3/12/2020 4:09

23 PM

C/ 151	SC 151.8.5.1	P 69	L 7	# 23	C/ 116	SC 116.	1.4	P33	L28	# 26
Brown, Ma	itt	Huawei Techno	ologies Canada		Brown, M	/latt		Huawei Tech	hnologies Canada	
<i>Comment</i> The ac	<i>Type</i> E cronym DGD has	<i>Comment Status</i> D not been defined in the Claus	e.	Bucket	<i>Commer</i> The	nt Type E "O" and "M" fe	Co. or new rows	mment Status D must be underline.		bucke
Suggested Chang	<i>IRemedy</i> je "DGD" to "diffei	rential group delay (DGD)".			Suggest Und	edRemedy erline all text i	n new rows	for 400GBASE-FR4	and 400GBASE-LF	₹4-6.
Proposed PROP	Response OSED ACCEPT.	Response Status W			Propose PRC	d Response POSED ACC	Res EPT.	ponse Status W		
C/ 151	SC 151.8.5.4	P68	L 28	# 24	C/ 140	SC 140		P36	L7	# 27
Brown, Ma	itt	Huawei Techno	ologies Canada		Brown, M	/latt		Huawei Tecł	hnologies Canada	
Comment	Туре Е	Comment Status D		Bucket	Comme	nt Type E	Co	mment Status D		Bucke
In figu	re 151-4, Inscons	istent font type and size.			This instr	is not an editi uction.	ing instructi	on, but this informatio	on is normally part	of an editing
Suggested	Remedy				Suaaest	edRemedv				
Proposed PROP	Response	Response Status W N PRINCIPLE.			Dele Cha Std	ete "Clause 14 nge instructior 802.3cd-2018	0 was adde n at top of p) as follows'	d to IEEE Std 802.3- age to: "Change the '.	2018 by IEEE Std title of Clause 140	803.3cd-2018". (as inserted by IEEE
All tex	t except "Polariza	tion rotator" is already Arial 8	ot.		Propose	d Response	Res	ponse Status 🛛 🛛 🛛 🛛 🛛 🖉		
C/ 151	SC 151.8.5.4	P 72	L 28	# 25	PRO	POSED ACC	EPT.			
Brown, Ma	itt	Huawei Techno	ologies Canada		C/ 140	SC 140.	1	P36	L15	# 28
Comment	Туре Е	Comment Status D		Bucket	Brown M	/latt		Huawei Tech	hnologies Canada	
In figu	re 151-7, insconsi	stent font type and size.			Commei	ntType E	Co	mment Status D	g	Bucke
Suggested Chang	<i>IRemedy</i> je all to Arial 8pt.				The	word "three" h ls that might h	nere is not r nave to be r	ecessary. For future evised in the future.	amendments, let's	avoid unecessary
Proposed	Response	Response Status W			Suggest	edRemedy				
PROP	OSED ACCEPT I	N PRINCIPLE.			Dele	ete "three".				
Most c condit	of the font in figure ioning), and anoth	e 151-7 is Arial 9pt. One text er is Arial 8pt (Pattern trigger	block is Arial 10pt). Propose to cha	t (Stress ange all to Arial 9pt.	Propose PRC	d Response POSED ACC	Res EPT.	ponse Status 🛛 🛛 🛛 🛛 🛛 🗤		

C/ 140	SC 140.7.9.	P 45	L 51	# 29	C/ 151	SC 1	51.1	P 55	L 30	# 31
Brown, Ma	att	Huawei Techn	ologies Canada		Brown, Ma	tt		Huawei Techn	ologies Canad	a
Comment	Type TR	Comment Status D	•	Rx sensitivity	Comment	Туре	Е	Comment Status D	-	Bucket
This p	aragraph says th	at for FR1/LR1 that RS and S	RS are normati	ve. Yet the statements	Use pr	oper ter	minology	. See Annexes 120B, 120C, 1	20D, 120E.	
above	use the word "sh raph at line 51 pr	ould" which is associated wit ovides no value and should h	h an informative he deleted 1 ike	e specification. The everywhere else in	Suggested	Remedy	/			
802.3 vs "sh amon mentio neces	, the difference be ould" or "may". Fi g several possibili pning or excluding sarily required (sh	etween normative and informat rom the standards style manu ities, one is recommended as g others; or that a certain cou hould equals is recommended	ative is clear from ual: "The word s particularly suit rse of action is p d that)."	n the wording, "shall" hould indicates that table without preferred but not	Chang "Chip-t "Chip-t "Chip-t "Chip-t	e as foll to-chip 4 to-modu to-chip 4 to-modu	ows. 00GAUI- 1e 400GA 00GAUI- 1e 400GA	16" to "400GAUI-16 C2C" \UI-16" "400GAUI-16 C2M" .8" to "400GAUI-8 C2C" \UI-8" to "400GAUI-8 C2M"		
Suggested	Remedy				Proposed I	Respons	se	Response Status 🛛 🛛 🛛 🛛 🛛 🖉		
Delete	e the paragraph o	n page 45 line 51.	41	- b b	PROP	OSED A	CCEPT.			
("shall	") statements.	lion is intended, then change	the statements	above to normative	C/ 151	SC 1	51.7	P 62	L23	# 32
Proposed	Response	Response Status 🛛 🛛 🛛 🛛 🛛 🖉			Lusted, Ke	nt		Intel		
PROF	POSED ACCEPT	IN PRINCIPLE.			Comment	Туре	TR	Comment Status D		Bucket
A norr Chang	native specificatio ge "should" to "sh	on is intended. all" on page 45, lines 37 and	42.		The re base s a newe specifi	ferences tandard er versio cations	s to G.65 because n of ITU- that may	2.B and G652.D are assumed no other version is reference T G.652 published 2016 mak be relevant to this draft.	to be ITU-T 0 d in this draft s es numerous o	3.652, 2009 from the specification. However, changes to the SMF
Note, consis	100GBASE-DR is stency.	s out of scope for this project	and therefore ca	annot be changed for	S <i>uggested</i> Update	<i>Remedy</i> e the No	/ rmative F	Reference in Clause 1.3 from	the base spec	fication (IEEE 802.3-
C/ 140	SC 140.9	P48	L10	# 30	2018)	with the	updated	ITU-T G.652 document.		
Brown, Ma	att	Huawei Techn	ologies Canada		Proposed I	Respons	se	Response Status W		
Comment	Туре Т	Comment Status D	0	Reach	PROP	OSED A	CCEPT	IN PRINCIPLE.		
Wasn	't the reach for LF	R1 reduced to 6 km?			Import	subclau	ise 1.3 fr	om 802.3-2018 and:		
Suggested Chang	d <i>Remedy</i> ge "10 000" to "6 (000".			Replac ITU-T	ce Recomr	nendatio	n G.652, 2009		
Proposed PROF	<i>Response</i> POSED REJECT.	Response Status Z			with ITU-T	Recomr	nendatio	n G.652, 2016		
This c	omment was WIT	THDRAWN by the commente	r.							

C/ 151	SC 151.7	P62	L 23	# 33	C/ 140	SC 140.7.11	P46	L 36	# 36
Lusted, Ke	ent	Intel			Trowbridge	e, Steve	Nokia		
Comment	Type TR	Comment Status D		Bucket	Comment	Type TR	Comment Status D		Tx overshoot
The re base s a news	ferences to G.65 standard because er version of ITU-	7.A1 and G657.A2 are assu no other version is reference. T G.657 published 2016 ma	med to be ITU-T ed in this draft sp kes numerous ch	G.657, 2009 from the becification. However, hanges to the SMF	The ec compl Suggested	ditor's note is effe eteness for movir <i>IRemedy</i>	ctively a TBD that should h ng to WG ballot	ave been conside	ered lack of technical
Specili		be relevant to this drait.			Provid	e the test method	d for Tx over/under-shoot		
Suggested Update 2018)	Remedy e the Normative I with the updated	Reference in Clause 1.3 fron ITU-T G.657 document.	n the base specfi	cation (IEEE 802.3-	Proposed PROF	Response OSED ACCEPT	Response Status W IN PRINCIPLE.		
Proposed I PROP	<i>Response</i> OSED ACCEPT	Response Status W IN PRINCIPLE.			See c	omment #47			
	autolouse 4.0 fm	am 000 0 0010 and			C/ 140	SC 140.10b	P 51	L14	# 37
Import	subclause 1.3 fr	om 802.3-2018 and:			Trowbridge	e, Steve	Nokia		
Replac ITU-T with	ce Recommendation	n G.657, 2009			<i>Comment</i> Is it th min/m	<i>Type</i> T e case that 100G ax loss specified?	Comment Status D BASE-FR1 can interoperate?	e with 100GBASE	<i>Interop</i> E-DR with no extra
110-1	Recommendation	1 9.057, 2010			Suggested	Remedy			
C/ 151 Effenberge	SC 151.8.12 er, Frank	P 73 Futurewei Te	L 44 chnologies	# 34	If FR1 perha the ap	/DR can interope os worth adding a propriate min/ma	rate up to DR reach without clause 140.10c with a sing x loss table.	needing any ext le sentence to sa	ra min/max loss limits, ay this. Otherwise, add
Comment The te	<i>Type</i> TR st method for ove	Comment Status D ershoot is missing		Tx overshoot	Proposed PROF	Response	Response Status WIIN PRINCIPLE.		
Suggested	IRemedy				See re	esponse to comm	ent #67.		
Replac	ce the editor's no -	te with the material found in	the associated s	upplementary file	C/ 151	SC 151.8.5	P 67	L 29	# 38
Proposed I	Response	Response Status W			Trowbridge	e, Steve	Nokia		
See co	omment #47	IN PRINCIPLE.			Comment TDEC	<i>Type</i> TR Q-10log10(Ceq) i	<i>Comment Status</i> D s not a parameter for any F	MD defined in th	<i>Tx 10logCeq</i> is clause.
C/ 140 Trowbridge	SC 140.6.2	P 43 Nokia	L 12	# 35	Suggested Delete	IRemedy e ", TDECQ-10log	10(Ceq)," from the first sen	tence of 151.8.5	
Comment Since	<i>Type</i> ER this is a single-la	Comment Status D ne interface, there is only on	e wavelength	Bucket	Proposed PROF	Response OSED ACCEPT	Response Status WIN PRINCIPLE.		
<i>Suggested</i> Chang	<i>IRemedy</i> je "Wavelengths	(range) to "Wavelength (rang	ge)"		See c	omment #56			
Proposed I PROP	Response OSED ACCEPT.	Response Status W							

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: Comment ID

C/ 151	SC 151.8.12	P73	L 44	# 39	C/ 80	SC 80.1.14	P 25	L14	# 42
Trowbridge	e, Steve	Nokia			Trowbridg	je, Steve	Nokia		
Comment	Type TR	Comment Status D		Tx overshoot	Comment	Type ER	Comment Status D		
The ec comple	ditor's note is effect eteness for moving	ctively a TBD that should ha g to WG ballot	ve been conside	ered lack of technical	Two p sectio addeo	paragraphs in 80 on 6 of IEEE Std d by P802 3cd ar	.1.4 from P802.3ba and P802 802.3-2018) are confusing w ad P802.3cu	2.3bj (beginning o hen read in the co	n line 4, page 84, ontext of new PMDs
Suggested	Remedy	for Torrestory for the start			Suggester	dRemedy	141 002.004		
Provid	e the test method	for TX over/under-shoot			Bring	into the draft and	d change the title of Table 80	-4 to Nomenclatu	re and clause
Proposed PROP	Response OSED ACCEPT II	Response Status W N PRINCIPLE.			correl of the	ation (100GBAS text in the base	E-R optical). In this way, the standard from clause 8.1.4.	two table titles ma	atch the classification
See co	omment #47				Proposed	Response	Response Status W		
					PROF	POSED ACCEPT	T IN PRINCIPLE.		
C/ 151	SC 151.13.4.5	P82	L 44	# 40	The s	ub-clause classi	fication 80.1.14 does not evi	st Presume the c	commenter meant sub-
Trowbridge	e, Steve	Nokia			clause	e 80.1.4 (as refe	renced in the comment itself)).	
Comment	Type TR	Comment Status D		bucket	lucula				
If the clause	over/undershoot m 151 8 12 had bee	easurement mechanism me	entioned in a rel	ated comment on t to it	Imple	ment the sugges	sted remedy.		
Suggester	IPemedy				C/ FM	SC FM	P1	L 30	# 43
Add a	n OM10 PICS item	to this table pointing to the	over/undersho	ot measurement method	Marris, Ar	thur	Cadence Des	sign Systems	
to be a	added to 151.8.12.				Comment	Туре Е	Comment Status D		bucket
Proposed	Response	Response Status W			IEEE	Std 802.3cm-20	20 and 802.3cq-2002 have no	ow been approve	d
PROP	OSED ACCEPT I	N PRINCIPLE.			Suggeste	dRemedy			
See co	omment #98.				Chang the dr	ge 802.3cm-20X raft	X to 802.3cm-2020 and 802.3	3cq-20XX to 802.	3cq-2020 throughout
C/ 140	SC 140.11.4.4	P 54	L 25	# 41	Proposed	Response	Response Status 🛛 🛛 🛛 🛛 🛛 🖉		
Trowbridae	e. Steve	Nokia			PROF	POSED ACCEPT	Г.		
Comment	Type TR	Comment Status D		bucket	C/ FM	SC FM	P12	/ 1	# 44
This ta	able hasn't been in	corporated into the P802.3	cu draft, howeve	r once the missing	Marris Ar	thur	Cadence De	sian Systems	
measu bo bro	rement method in	140.7.11 for over/undersho	pot is provided, t	his clause/table should	Comment	Type F	Comment Status D	olgh Oyotomo	hucket
		and an OWITO FICS Item SI			IFFF	Std 802 3cg-201	19 has been approved		DUCKEL
Suggested	Remeay	0.2 ad alauraa 140 11 4 4 int	a tha draft and a	dd an OM10 DICS itom	Ourrests				
to poir	nt to 140.7.11.	12.300 clause 140.11.4.4 int	o the drait and a	add an OWIO PICS liem	Chan	ge 802.3cg-20XX	K to 802.3cg-2019 throughout	t the draft	
Proposed	Response	Response Status W			Proposed	Response	Response Status W		
PROP	OSED ACCEPT I	N PRINCIPLE.			PROF	POSED ACCEPT	Г.		
See co	omment #91.								

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: Comment ID

C/ 116 SC 116.1.4	P33	L28	# 45	C/ 151	SC 151.8.12	P 73	L 45	# 48
Marris, Arthur	Cadence Des	ign Systems		Slavick, Je	eff	Broadcom		
Comment Type E	Comment Status D		bucket	Comment	Type TR	Comment Status D		Tx overshoot
There needs to be m	nore underlining in Table 116-4			Editor	s note states a tes	st method is missing to for	checking that a d	evice complies to the
SuggestedRemedy				over/u	nder shoot require	ements.		
Underline the table e	entries for the new PMDs in Tab	le 116-4		Suggested	lRemedy			
Proposed Response	Response Status W			Add a	teset method			
				Proposed	Response	Response Status W		
	1.			PROP	OSED ACCEPT	IN PRINCIPLE.		
C/ 140 SC 140.10	.2.2 P49	L 45	# 46	See co	omment #47			
Comment Type E	Comment Status D		Bucket	C/ 00	SC 0	P12	L1	# 49
Editors direction for	modiying the sub-clause is not	proper font		Maguire, V	/alerie	The Siemon	Company	
SuggestedRemedy				Comment	Туре Е	Comment Status D		bucket
Change to proper for	nt for providing directions to the	editorial team		802.30	cg has published.			
Proposed Response	Response Status W			Suggested	Remedy			
PROPOSED ACCER				Repla	ce, "802.3cg-20xx	" with, "802.3cg-2019"		
	••			Proposed	Response	Response Status W		
C/ 140 SC 140.7.1	11 P46	L 36	# 47	PROP	OSED ACCEPT			
Slavick, Jeff	Broadcom							
Comment Type TR	Comment Status D		Tx overshoot	C/ 151	SC 151.5.1	P 58	L 45	# 50
Editors note states a	test method is missing to for c	hecking that a de	evice complies to the	Maguire, V	/alerie	The Siemon	Company	
over/under shoot rec	luirements.			Comment	Туре Е	Comment Status D		Bucket
SuggestedRemedy				Extra	spaces between p	oaragraphs.		
Add a teset method				Sugaested	lRemedv			
Proposed Response	Response Status 🛛 🛛 🛛 🛛 🛛 🖉			Remo	ve carriage return	s on lines 45 and 46.		
PROPOSED ACCER	PT IN PRINCIPLE.			Proposed	Response	Response Status W		
A total of 20 comme for:	nts were received on the topic o	of "Tx Overshoot	', including proposals	PROP	OSED ACCEPT.			
 removing the parar changing the spec modifying the parar providing a descrip 	neter from the spec completely from normative to informative neter values in the specificatior tion of the test methodology	1						

Pending presentations and Task Force discussion.

C/ 151	SC 151.11.1	P 76	L7	# 51	C/ 151	SC	151.7.2	P 64	L35	# 53
Maguire, V	/alerie	The Siemon C	Company		Bhatt, Vip	ul		II-VI Incorpora	ted	
Comment	Type E	Comment Status D		Bucket	Comment	Туре	т	Comment Status D		Rx 10logCeq
Extra Suggester Remo Proposed PROF	spaces between p dRemedy ove carriage return Response POSED ACCEPT.	oaragraphs. s on lines 7 and 8. <i>Response Status</i> W			As ou discus http:// in http 10.log fails tr impai	tlined in ssed in www.ie o://www g(Ceq)" o accur rments.	n http://ww Dawe and ee802.org ieee802.o is an indire ately indica . Similarly '	w.ieee802.org/3/cd/public/Jul Echeverri-Chac?n cited on /3/cu/public/Jan20/cole_3cu_ rg/3/cu/public/Jan20/cole_3c ect and inaccurate indicator c ate how hard the EQ has to w 'SECQ - 10log10/Ceg)" has t	y18/king_3cd_ 01b_0120.pdf# u_01b_0120.pd f transmitter in /ork, or its likely he same short	02a_0718.pdf, page=10, and expanded df, "TDECQ- pairments. Therefore, it / resilience to receiver comings and is not an
					appro	priate c	condition fo	or defining limits for Stressed	Receiver Sens	itivity and should be
C/ 140	SC 140.6.2	P 43	L 29	# 52	remo	/ed. Th	is will align	the Recever specifications v	vith Transmitte	specifications.
Bhatt, Vip	ul	II-VI Incorpora	ited		Suggester	dReme	dy "OF OO			
Comment	Type T	Comment Status D	1.10/king 2nd	Rx 10logCeq	100G	e row to BASE-I	LR4-6 in Ta	able 151-8.	est (max)" for 4	UUGBASE-FR4 and
As ou discus http:// in http 10.log fails tu impair appro	tlined in http://www ssed in Dawe and www.ieee802.org/ p://www.ieee802.o g(Ceq)" is an indire o accurately indica rments. Similarly " priate condition fo yed. This will align	w.leee802.org/3/cd/public/Jul Echeverri-Chac?n cited on 3/cu/public/Jan20/cole_3cu_ rg/3/cu/public/Jan20/cole_3c_ ect and inaccurate indicator of ate how hard the EQ has to w SECQ - 10log10(Ceq)" has to r defining limits for Stressed the Recever specifications w	y18/king_3cd 01b_0120.pd u_01b_0120.i of transmitter i vork, or its like he same shoi Receiver Ser vith Transmitt	_02a_0/18.pdf, #page=10, and expanded odf, "TDECQ- mpairments. Therefore, it ly resilience to receiver tcomings and is not an sitivity and should be er specifications	Delete Proposed PROF See c	e "SEC Respo POSED ommer	Q - 10log1 nse ACCEPT nt #56	0(Ceq) (max), lane under tes Response Status W IN PRINCIPLE.	t" in the last bu	llet item in 151.8.11.2.
Suggester	dRemedy				C/ 140	SC	140.6	P 4 1	L18	# 54
Delete	e entry for "SECQ	- 10log10(Ceg)f (max)" for 1	00GBASE-FF	and 100GBASE-LR in	Maniloff, E	Eric	-	Ciena		T
Table	140-7.	0 (), ()				i ype verade	l Jaunch no	Comment Status D	is calculated f	IX avg power
Proposed PROF	Response POSED ACCEPT	Response Status W IN PRINCIPLE.			~14 d 400G	B. This BASE-I	is inconsis LR4-6, whi	stent with 100GBSE-LR1 as ch all use an infinite extinction	well as with 400 n ratio in this ca)GBASE-FR4 and alculation.
500.0	ommont #E6				Suggestee	dReme	dy			
366.0	omment #50				Use a FR1.	n infinit Replac	te extinctio e the value	n ratio to calculate the Avera of -2.9 dBm in Table 140-6	ge launch powe with -3.2 dBm	er max for 100GBASE-
					Proposed	Respo	nse	Response Status W		
					PROF	POSED	REJECT.			
					We pi maxin	resume num. If	the comm f implemen	nenter intends to modify Avera nted this change would affect	age launch pov Average receiv	ver (min), not the ve power (min) for -FR1.
					Additi chanr	onally t iel. Max	he change kimum loss	would limit interop between s in the -FR1 to -DR direction	-FR1 and -DR t would become	o less than the 3dB -DR 2.7 dB.
					For ta	sk forc	e discussio	on and decision.		
TYPE: TR	t/technical required	d ER/editorial required GR/g patched A/accepted R/reject	general requir tted RESP(ed T/technical E/editorial G/ DNSE STATUS: O/open W/w	′general rritten C/close	d U/un	satisfied Z	Comme Z/withdrawn	ent ID 54	Page 10 of 30 3/12/2020 4:09:

SORT ORDER: Comment ID

23 PM

C/ 140	SC 140.6.3	P 4	4 <i>L</i> 16	# 55	C/ 140	SC 14	0.6.2	P 43	L 28	# 56
Maniloff, Eri	с	Ciena			Stassar, Pe	ter		Huawei		
Comment T	ype E	Comment Status	D	Bucket	Comment T	уре Т	TR	Comment Status D		Rx 10logCeq
Channe for this loss for	Insertion loss fo is in 140.9. Note 100GBASE-DR.	or 100GBASE-DR is that 802.3ct had the	s referencing the incorre e correct sub-clause re	ect sub-clause. The loss ferenced for the channel	At the J "TDECO As outli summa	lanuary 2 Q - 10log ned in hti rized in h	2020 me g10(Ceq ttp://www attp://www	eting in Geneva the cu Ta) (max)" in Table 140-6 fo v.ieee802.org/3/cd/public, w ieee802 org/3/cu/public	ask Force agreed r 100GBASE-FR (July18/king_3cd c/Jan20/cole_3cd	I to delete the entries for & LR. _02a_0718.pdf, as
SuggestedF	Remedy				10.log(0	Ceq)" is n	not a go	od indicator of how hard t	he EQ has to wo	rk, nor of it's likely
Change	reference for 10	OGBASE-DR chanr	nel insertion loss to 140	0.9	resilien	ce to rece	eiver im	pairments. a10(Cea)" is not an appro	priate condition	for defining limits for
Proposed R PROPC	esponse SED ACCEPT.	Response Status	W		Stresse	d Receiv	ver Sens ECQ-10.	sitivity and should be remo log(Ceq)" as a metric for	ved, maintainin transmitter qualit	j consistency with the y.
					SuggestedF	Remedy				
					Delete t LR in Ta	the entrie able 140-	es for "S -7.	ECQ - 10log10(Ceq)f (ma	x)" for 100GBAS	E-FR and 100GBASE-
					Additior sentenc 140-6 This ne DR.	nally copy ce "The T " to "TDE eds to be	y subcla IDECQ ECQ sha e edited	use 140.7.5 in from IEEE and TDECQ - 10log10(Ce all be within the limits give in a way that the original	Std 802.3cdT-2 q) shall be withir n in Table 140-6 sentence is mair	018, and modify the first 1 the limits given in Table i". ntained for 100GBASE-
					Also co bullet to	py subcla	ause 14	0.7.10 in from IEEE Std 8	02.3cdT-2018, a	nd modify the before last
					"The re eye clos This ne DR.	quired va sure for F eds to be	alues of PAM4 (S e edited	the "Stressed receiver se SECQ)" are as given in Ta in a way that the original	nsitivity (OMAou ble 140-7." sentence is mair	ter) (max)" and "Stressed
					Proposed R	esponse	;	Response Status W		
					PROPC	SED AC	CCEPT I	N PRINCIPLE.		
					At the J parame	lanuary 2 ter "TDE	2020 me ECQ - 10	eting in Geneva the 3cu ⁻ llog10(Ceq) (max) based	ask Force agree on the following	ed to remove the straw poll.
					Straw F I would 400GB/ Yes: 13 No: 11	Poll #2: support r ASE-FR4	removin 4 and 40	g TDECQ-10Log(Ceq) fo 0GBASE-LR4-6 as propo	[·] 100GBASE-FR ised in cole_01b	1,100GBASE-LR1, _0120.
					Therefo Stresse the rem remova draft an	ore "SECC ed Receiv loval of "T I of sever ed this als	Q - 10lo ver Sens TDECQ ral refer so need	g10(Ceq)" is not an appro itivity and should also be -10log10(Ceq)" as a metr ences to "TDECQ-10log1 s to be corrected.	priate condition removed, mainta c for transmitter 0(Ceq)" were mi	for defining limits for aining consistency with quality. In addition the ssed in the 802.3cu D2.0

A number of similar comments were received on this topic and it is proposed that they all be addressed by implementing the changes captured in presentation nicholl_3cu_04_0320.

For task force discussion.

C/ 151	SC 151.7.2	P64	L35	# 57
Stassar, Pete	er	Huawei		
Comment Ty	pe TR	Comment Status D		Rx 10logCeq

At the January 2020 meeting in Geneva the cu Task Force agreed to delete the entries for "TDECQ - 10log10(Ceq) (max)" in Table 151-7 for 400GBASE-FR4 & LR4-6. As outlined in http://www.ieee802.org/3/cd/public/July18/king_3cd_02a_0718.pdf, as summarized in http://www.ieee802.org/3/cu/public/Jan20/cole_3cu_01b_0120.pdf, "TDECQ-10.log(Ceq)" is not a good indicator of how hard the EQ has to work, nor of it's likely resilience to receiver impairments.

Therefore "SECQ - 10log10(Ceq)" is not an appropriate condition for defining limits for Stressed Receiver Sensitivity and should be removed, maintaining consistency with the removal of "TDECQ-10.log(Ceq)" as a metric for transmitter quality.

SuggestedRemedy

Delete row for "SECQ - 10log10(Ceq)f, lane under test (max)" for 400GBASE-FR4 and 100GBASE-LR4-6 in Table 151-8.

Additionally delete "SECQ - 10log10(Ceq) (max), lane under test" in the last bullet item in 151.8.11.2.

Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.

See comment #56

C/ 151	SC 151.8.5.4	P 69	L18	# 58
Dawe, Piers		Mellanox		
Comment Tv	vpe TR	Comment Status D		Tx overshoot

The 12% overshoot limit means that the largest magnitude tap coefficient minimum of 0.8 specified in 121.8.5.4 is too low. No signal with less than about 0.9 can pass this overshoot spec. Note that 140.7.5.1 is in IEEE Std 802.3cd. If we change this to 0.85, the overshoot limit (if applied at TP3) would bite first. It would be better to tighten this to 0.9 (higher for a better signal).

If in future the overshoot limit is propagated to other PAM4 PMDs in maintenance, the two limits in the proposed sentence could be consolidated again.

SuggestedRemedy

In 151.8.5.4 and 140.7.5.1 (in 802.3cd), change:

Tap 1, tap 2, or tap 3 has the largest magnitude tap coefficient, which is constrained to be at least 0.8. to:

Tap 1, tap 2, or tap 3 has the largest magnitude tap coefficient. For 100GBASE-DR, this is constrained to be at least 0.8, and for 100GBASE-FR1 and 100GBASE-LR1, it is constrained to be at least 0.85.

Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.

See comment #47

C/ 151	SC 151.7.1	P63	L 29	# 59
Dawe, Piers		Mellanox		
Comment Tv	pe TR	Comment Status D		Tx 10loaCea

The limit for TDECQ - 10log10(Ceq) (also known as K) has been deleted from this table, but it is still needed to protect the receiver from the bad signals that are not caught by the TDECQ limit or the overshoot limit. All other optical PAM4 transmitter specs have such a limit, which was introduced a long time ago, in July 2018 (P802.3cd/D3.4), and its continued presence is needed to protect equalizers, receivers and receiver designs that were/are designed relying on it. Particularly 400GBASE-LR4-6 where the TDECQ limit is higher than for any existing SMF PMD.

To summarize the situation, we need different limits to exclude different kinds of bad signal: K protects receiver back end, TDECQ protects receiver front end and optical budget, overshoot spec against over-emphasised signals not caught by the other specs, and so on. We need them all, but K and TDECQ come off the same measurement, so not an extra cost.

SuggestedRemedy

Restore the limits for TDECQ - 10log10(Ceq) as before (3.4 dB for 400GBASE-FR4 and 3.5 dB for 400GBASE-LR4-6, same as the TDECQ limits).

Proposed Response I	Response Status	W
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PROPOSED REJECT.

See comment #87

C/ 140	SC 140.6.1	P 41	L34	# 60
Dawe, Piers		Mellanox		
Comment Typ	be T	Comment Status D		Tx TECQ

IEEE Standards Style Manual, 12. Homogeneity:

"The same term should be used throughout each standard or series of standards to designate a given concept. The use of an alternative term (synonym) for a concept already defined should be avoided."

We have established that TECQ and SECQ are the same thing. While "TECQ" (transmitter) is a nice name for a signal measured at TP2, "SECQ" (stressed or signal) works for a signal measured at TP3 also, so it seems that's the one we must choose.

SuggestedRemedy

Change "TECQ" to "SECQ" throughout the document. In Table 140-6, "TECQ (max)" could be changed to "SECQ at TP2 (max)", although 140.5.1 and 140.7 make clear that it's at TP2.

In tables 140-10 and 151-11, change "Stressed receiver conformance test signal calibration" to "SECQ".

Proposed Response Response Status W

PROPOSED REJECT.

The task force adopted the terminology TECQ as a transmit characteristic in order to distinguish it from SECQ. It is a measured characteristic of a transmitter.

SECQ is a measurement taken on the signal used for testing stressed receiver sensitivity. It is a measured characteristic of a particular source.

C/ 151	SC 151.8.6	P 69	L 39	# 61
Dawe, Piers		Mellanox		
Comment Ty	vpe T	Comment Status D		Tx TECQ
There is for Claus	a subclause 151 se 140.	1.8.6 Transmitter eye closure	e for PAM4 (TE	CQ) but no equivalent

SuggestedRemedy

Move this subclause to 140.7.5a (after TDECQ). Refer to it from 151.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Insert a new subclause 140.7.5a with a title of "Transmitter eye closure for PAM4 (TECQ)" after subclause 140.7.5 with the following text:

"The TECQ of each lane shall be within the limits given in Table 140-6 for 100GBASE-FR1 and 100GBASE-LR1 if measured using a test pattern specified for TECQ in Table 140-10. The TECQ of each lane shall be measured using the methods specified for TDECQ in 140.7.5, except that the test fiber is not used."

02 3cu D2 0 100 Gb/c and 400 Gb/c over SME at 100 Gb/c or Wayalangth Initial Working Gr un hallat

C/ 151	SC 151.7.1	P63	L31	# 62	C/ 151	SC 151.7.1	P63	L37	# 64
Dawe, Pie	ers	Mellanox			Dawe, Piers		Mellanox		
Comment	Type TR	Comment Status D		Tx 10logCeq	Comment Ty	be T	Comment Status D		Tx transition time
When	n limiting TECQ is	needed, K(TP2) = TDECQ -	10log10(Ceq) m	nust be limited too.	The trans	smitter transiti	on time, max 17 ps at TP2, is	probably so slo	w as to be barely
Suggested	dRemedy				effective 3 4 dB T	for a low-disp Ɗ)FCQ limits	ersion PMD type: it's not far o If a transmitter is that slow	ff the slowest th and significant o	at can be made for a
Under the sa	r the row for TEC0 ame limits as for T	Q in Table 140-6, insert a row ECQ. Also in Table 151-7.	for TECQ - 10I	og10(Ceq) (max), with	particula slower th	ly in 400GBA an any 400GE	SE-LR4-6, makes the signal a BASE-DR4 or 100GBASE-DR	it the receiver even signal could be	, yet still pass the
Proposed	Response	Response Status 🛛 🛛 🛛 🛛 🛛 🖉			higher 3. We don't	5 dB TDECQ	limit. Any PMD (polarisation n	node dispersion) will make this worse.
PROF	POSED REJECT.				they will	be the same a	s for all 100G/lane, so we sho	ould not present	them with a new and
The s	uggested remedy	proposes to add a new trans	mitter paramete	er "TECO -10log10(Ceg)	unneces	sary challenge	e. I doubt that real transmitter	s are that slow.	
(max))"		inition paramote		If we war	nted to contair	the problem more precisely,	we could introd	uce a maximum cursor
This n	oronosal would an	near to be counter to the dec	ision made at th	e January 2020	tap limit	part of both T	ECQ at TP2 and TDECQ at T	P3, and could b	e applied consistently
meeti	ing of the 3cu Tas	k Force in Geneva, to remo	ve a similar para	ameter "TDECQ -	across P	MDs).			
10log	10(Ceq) (max) .				See http:	//ieee802.org/	3/cn/public/tf_interim/19_082	0/dawe_3cn_01	_190820.pdf for an
The c	commenter has pro	ovided no evidence to demor	strate that the a	addition of such a	earlier re	port on this is	sue; halve all the times for 10	0G/s lanes.	
param	neter is necessary	'.			SuggestedRe	emedy			
0.454	SC 151 9 6	P 69	L39	# 63	Reduce f limit. The	he transition t limit (ps or c	ime limit, to 15 or 16 ps TBD, ursor) should be checked with	or introduce a r a commercial s	naximum cursor tap simulator.
C/ 151	30 131.0.0								
Dawe, Pie	ers	Mellanox			Proposed Re	sponse	Response Status W		
C/ 151 Dawe, Pie <i>Comment</i>	ers <i>Type</i> T	Mellanox Comment Status D		Editorial	Proposed Re PROPOS	sponse SED REJECT	Response Status W		
C/ 151 Dawe, Pie Comment There 121.8	ers <i>Type</i> T e is probably too m d, wasting a carefu	Mellanox <i>Comment Status</i> D nuch material in 151.8 that du I reader's time. Transmitter	plicates 140.7 a ransition time is	<i>Editorial</i> and possibly 124.8 or a prime example.	Proposed Re PROPOS A similar presenta	sponse SED REJECT comment #i-3	Response Status W 7, against D3.0 of 802.3cn wa	as rejected base	ed on a review of the
C/ 151 Dawe, Pie Comment There 121.8 Suggested	ers <i>Type</i> T is probably too m b, wasting a carefu <i>dRemedy</i>	Mellanox <i>Comment Status</i> D nuch material in 151.8 that du I reader's time. Transmitter t	plicates 140.7 a ransition time is	<i>Editorial</i> and possibly 124.8 or a prime example.	Proposed Re PROPOS A similar presenta	<i>sponse</i> SED REJECT comment #i-3 tion linked in t	Response Status W 7, against D3.0 of 802.3cn w his comment. The same tech	as rejected base nical objections	ed on a review of the apply in this case:
C/ 151 Dawe, Pie Comment There 121.8 Suggested Try to	<i>Type</i> T is probably too m wasting a carefu <i>dRemedy</i> consolidate the d	Mellanox Comment Status D nuch material in 151.8 that du I reader's time. Transmitter f	plicates 140.7 a ransition time is	<i>Editorial</i> and possibly 124.8 or a prime example.	Proposed Re PROPOS A similar presenta The trans	sponse SED REJECT comment #i-3 tion linked in t smitter transiti	Response Status W 7, against D3.0 of 802.3cn was his comment. The same tech con time limit was introduced to	as rejected base nical objections o limit how slow	ed on a review of the apply in this case: the transmitter could
Cr 151 Dawe, Pie Comment There 121.8 Suggested Try to Proposed	ers <i>Type</i> T e is probably too m wasting a carefu <i>dRemedy</i> o consolidate the d	Mellanox Comment Status D nuch material in 151.8 that du I reader's time. Transmitter f lefinitions as appropriate. Response Status W	plicates 140.7 a ransition time is	<i>Editorial</i> and possibly 124.8 or a prime example.	Proposed Re PROPOS A similar presenta The trans be. The I 100G/lar	sponse SED REJECT comment #i-3 tion linked in t smitter transiti imit for 400GE e PMDs. Con	Response Status W 7, against D3.0 of 802.3cn was his comment. The same tech on time limit was introduced to ASE-LR4-6 and 400GBASE- sequently, this issue could on	as rejected base nical objections o limit how slow FR4 is the same ly arise for a red	ed on a review of the apply in this case: the transmitter could a s for the other eviver that was
Cr 151 Dawe, Pie Comment There 121.8 Suggested Try to Proposed PROF	<i>Type</i> T is probably too m wasting a carefu <i>dRemedy</i> consolidate the d <i>Response</i> POSED REJECT.	Mellanox Comment Status D nuch material in 151.8 that du I reader's time. Transmitter f efinitions as appropriate. Response Status W	plicates 140.7 a ransition time is	<i>Editorial</i> and possibly 124.8 or a prime example.	Proposed Re PROPOS A similar presenta The trans be. The I 100G/lar designed	sponse SED REJECT comment #i-3 tion linked in t smitter transiti imit for 400GE e PMDs. Con to rely on the	Response Status W 7, against D3.0 of 802.3cn was his comment. The same tech on time limit was introduced to ASE-LR4-6 and 400GBASE- sequently, this issue could on dispersion penalty for the 50	as rejected base nical objections o limit how slow FR4 is the same ly arise for a reo 0 m or 2 km tran	ed on a review of the apply in this case: the transmitter could a as for the other seiver that was semitters preventing
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COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID

channel requirements defined in 140.10a are met.

The 100GBASE-LR1 PMD interoperates with the 100GBASE-FR1 PMD provided that the channel requirements defined in 140.10b are met.

Change 140.10a and 140.10b as follows:

140.10a Requirements for interoperation between 100GBASE-DR. 100GBASE-FR1, and 100GBASE-LR1

The 100GBASE-DR. 100GBASE-FR1, and 100GBASE-LR1 PMDs can interoperate with each other as described here

140.10a.1 Requirements for interoperation between 100GBASE-FR1 and 100GBASE-DR The 100GBASE-FR1 and 100GBASE-DR PMDs can interoperate with each other provided that the fiber optic cabling (channel) characteristics for 100GBASE-DR (see Table 140-12 and subclause 140.10) are met.

Renumber existing 140.10a to 140.10a.2 add "(see 140.10)" after 100GBASE-DR on 2nd line

Renumber existing 140.10b to 140.10a.3 add "(see 140.10)" after 100GBASE-FR1 on 2nd line

C/ 140 SC 140.6.1	P41	L 34	# 68
Dawe, Piers	Mellanox		
Comment Type TR	Comment Status D		Tx 10logCeq
Comment Type TR	Comment Status D	10/0	Tx 10logC

When limiting TECQ is needed, K(TP2) = TDECQ - 10log10(Ceg) must be limited too.

SuggestedRemedy

Under the row for TECQ in Table 140-6, insert a row for TECQ - 10log10(Ceg) (max), with the same limits as for TECQ. Also in Table 151-7.

Proposed Response Response Status W

PROPOSED REJECT.

The suggested remedy proposes to add a new transmitter parameter "TECQ -10log10(Ceg) (max)"

This proposal would appear to be counter to the decision made at the January 2020 meeting of the 3cu Task Force in Geneva, to remove a similar parameter "TDECQ -10log10(Ceq) (max).

The commenter has provided no evidence to demonstrate that the addition of such a parameter is necessary.

C/ 140	SC 140.6.1	P 41	L32	# 69
Dawe, Piers		Mellanox		
Comment Tv	vpe TR	Comment Status D		Tx 10loaCea

Comment Status **D**

The limit for TDECQ - 10log10(Ceg) (also known as K) is missing from two columns here, but it is still needed to protect the receiver from the bad signals that are not caught by the TDECQ limit or the overshoot limit. All other optical PAM4 transmitter specs have such a limit, which was introduced a long time ago, in July 2018 (P802.3cd/D3.4), and its continued presence is needed to protect equalizers, receivers and receiver designs that were/are designed relying on it.

To summarize the situation, we need different limits to exclude different kinds of bad signal: K protects receiver back end, TDECQ protects receiver front end and optical budget, overshoot spec against over-emphasised signals not caught by the other specs, and so on. We need them all, but K and TDECQ come off the same measurement, so not an extra cost.

SuggestedRemedy

Restore the limit for TDECQ - 10log10(Ceg) for 100GBASE-FR1 100GBASE-LR1, as before (3.4 dB, same as the TDECQ limit).

Proposed Response Response Status W PROPOSED REJECT.

See comment #87

C/ 140	SC 140.7.11	P46	L33	# 70
Dawe, Piers		Mellanox		
Comment Tv	pe TR	Comment Status D		Tx overshoot

We need to agree a measurement method for overshoot, and agree a limit. We should have an idea of what the threat is to design a useful defence, but here is a measurement proposal that at least should give consistent results.

First, notice that limiting overshoot at TP2 is pointless if chromatic dispersion can make it higher at TP3.

Also notice that a measurement on a square wave measures the worst of pre-emphasis and post-emphasis, but a real signal's overshoot can be determined by the sum of these. This is a bad choice of pattern anyway because PMAs may fail to lock on it and forward the signal correctly to the PMD.

Also notice that traditional peak measurements are distorted by scope noise, particularly for optical scopes at such high bandwidths.

SuggestedRemedy

Apply the spec to the same cases as TECQ and TDECQ: TP2, TP3 with most positive chromatic dispersion, and TP3 with most positive chromatic dispersion.

Use the same pattern and observation bandwidth as for T(D)ECQ so that determining the overshoot is another free by-product of measuring for T(D)ECQ, with a much simpler, noniterative, calculation; in tables 140-10 and 151-11, remove the row for "Transmitter over/under-shoot", and here and in, delete "test pattern specified for transmitter over/undershoot in Table 140-10".

Find the scope noise.

Create a vertical histogram from the measured waveform (not the equalized one). Convolve the histogram with the noise that could be added to it at maximum T(D)ECQ. RSS-reduced by the scope noise.

Find the two points where the CDFs come to a number such as 5e-5.

Either find the distance from the "three" level to the upper point, and from the lower point to the "zero" (these are the overshoot and undershoot before normalisation), or find the distance from the average level to the upper point, and from the lower point to the average (these are the peak excursions).

Normalise by either OMA or standard deviation of the waveform. The former is more familiar, the latter avoids the pattern dependency of the OMA definition.

Limit upper and lower separately because excursions on just one side could overload a receiver.

Adjust the limits according to information I haven't seen at time of writing, or insert an editor's note for tables 140-6 and 151-7: "The limit for transmitter over/under-shoot needs confirmation before Standards Association ballot". Delete most of 151.8.12 but refer to 140.7.11.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE

See comment #47

C/ 151	SC 151.8.5	P67	L 29	# 71
Stassar, Pete	er	Huawei		
Comment Ty	pe TR	Comment Status D		Tx 10logCeq

Since the agreement at the January 2020 meeting in Geneva to remove the row for "TDECQ - 10log10(Ceg) (max)" in Table 151-7, the inclusion of "TDECQ - 10log10(Ceg)" in the text of subclause 151.8.5 should be removed as well.

SugaestedRemedv

Delete "TDECQ - 10log10(Ceq)," in the first sentence of 151.8.5.

Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.

See comment #56

C/ 140	SC 140.6.1	P41	L 42	# 72
Ingham, Jonathan		Broadcom		
Comment	Type TR	Comment Status D		Tx overshoot

The material reviewed by the Task Force in order to justify the introduction of a Tx over/under-shoot limit is merely anecdotal and ultimately unconvincing.

In particular, I refer to cole_3cu_01b_0120, where Tx waveforms at 26.6 GBd (clearly of questionable relevance to this Task Force) are shown to lead to Rx LOL for 13.5% and 19% overshoot. The introduction of a new specification and the associated limit value of 12% on the basis of these isolated examples is the wrong conclusion. The observed LOL can be attributed to the performance of the particular Rx used for the measurements. Some implementers may have an Rx that performs poorly with 5% overshoot in the input waveform, whilst others may have an Rx that performs well with 30% overshoot. To set the limit based on the examples provided in cole_3cu_01b_0120 is inappropriate. In addition, it is not clear how overshoot is defined in this study, again rendering it difficult to justify the setting of a limit based on the results.

Constraining the Tx performance by introducing an additional specification potentially reduces yield and increases cost. Since there is no evidence that a new constraint is required for the PMD specifications under development by this Task Force, the over/under-shoot specification should be removed. 50 GBd PAM4 SMF PMDs have already undergone rigorous qualification and interoperability studies by end users, without the need being identified for any Tx over/under-shoot constraint other than the existing constraint on the largest magnitude tap coefficient in the reference equalizer.

Finally, with the continuing transition to optical interfaces that are reliant on Rx equalization, the interpretation of constraints on features of the TP2 waveform, especially if measured without the reference equalizer, is increasingly uncertain. This applies not only to traditional mask constraints but also to the constraint introduced in this draft. This is why the existing constraint on the largest magnitude tap coefficient in the reference equalizer is a superior method to control over/under-shoot.

SuggestedRemedy

In Table 140-6, delete the line with description "Transmitter over/under-shoot (max)". In Table 140-10, delete the line with parameter "Transmitter over/under-shoot". Delete subclause 140.7.11.

Proposed Response	Response Status	W
PROPOSED REJECT.		

See comment #47

C/ 151	SC 151.7.1	P63	L 38	# 73
Ingham, Joi	nathan	Broadcom		
Comment T	ype TR	Comment Status D		Tx overshoot

The material reviewed by the Task Force in order to justify the introduction of a Tx over/under-shoot limit is merely anecdotal and ultimately unconvincing.

In particular, I refer to cole_3cu_01b_0120, where Tx waveforms at 26.6 GBd (clearly of questionable relevance to this Task Force) are shown to lead to Rx LOL for 13.5% and 19% overshoot. The introduction of a new specification and the associated limit value of 12% on the basis of these isolated examples is the wrong conclusion. The observed LOL can be attributed to the performance of the particular Rx used for the measurements. Some implementers may have an Rx that performs poorly with 5% overshoot in the input waveform, whilst others may have an Rx that performs well with 30% overshoot. To set the limit based on the examples provided in cole_3cu_01b_0120 is inappropriate. In addition, it is not clear how overshoot is defined in this study, again rendering it difficult to justify the setting of a limit based on the results.

Constraining the Tx performance by introducing an additional specification potentially reduces yield and increases cost. Since there is no evidence that a new constraint is required for the PMD specifications under development by this Task Force, the over/under-shoot specification should be removed. 50 GBd PAM4 SMF PMDs have already undergone rigorous qualification and interoperability studies by end users, without the need being identified for any Tx over/under-shoot constraint other than the existing constraint on the largest magnitude tap coefficient in the reference equalizer.

Finally, with the continuing transition to optical interfaces that are reliant on Rx equalization, the interpretation of constraints on features of the TP2 waveform, especially if measured without the reference equalizer, is increasingly uncertain. This applies not only to traditional mask constraints but also to the constraint introduced in this draft. This is why the existing constraint on the largest magnitude tap coefficient in the reference equalizer is a superior method to control over/under-shoot.

SuggestedRemedy

In Table 151-7, delete the line with description "Transmitter over/under-shoot (max)". In Table 151-11, delete the line with parameter "Transmitter over/under-shoot". Delete subclause 151.8.12.

Proposed Response Response Status W PROPOSED REJECT.

See comment #47

C/ 140	SC 140.7.5	P 45	L 25	# 74	C/ 151	SC 151.7.2	P 64	L 29	# 77		
Lewis, Da	vid	Lumentum			Lewis, Dav	id	Lumentum				
Comment	Туре Т	Comment Status D		Tx Ref equalizer	Comment	Гуре Т	Comment Status D		Rx sensitivity		
This s 100G Suggestee	subclause in 802 BASE-FR1 and d <i>Remedy</i>	3cd needs to be copied into t 100GBASE-LR1.	he draft and mo	dified to include	In Table 151-8 the values for Receiver sensitivity (max) only apply for values of SECQ 1.4 dB, but receivers need to work with SECQ up to 3.4 dB. The footnote pointing to the relevant equations is convoluted. It would be clearer to revert back to having the equations are to table and eimplifying the footnote.						
Сору	over subclause	140.7.5 from 802.3cd into the	draft. Modify th	e first sentence from	referen	ces in the table	e and simplifying the footnot	e.			
"The i	reference equaliz '	er for 100GBASE-DR is a 5 t	ap" to "The ret	ference equalizer is a 5	Suggested	Remedy	(or consitivity (OMA outor) (r	aav) raplaas the	values of 4.6 and 4.7		
Dranaaad	Boononco	Deserves Otative M			with Ec	uation (151-1)	and Equation (151-2) respe	tively.	values of -4.0 and -4.7		
		Response Status W			01	· · · · · · · · · · · · · · · · · · ·		- 	for a difference to a second data a		
FROF		•			with a v	e footnote c to: /alue of SECQ	up to 3.4 dB.	outer) (max) is de	fined for a transmitter		
C/ 140	SC 140.7.1	P 45	L 2	# 75	Proposed I	Response	Response Status W				
Lewis, Da	vid	Lumentum			PROP	OSED ACCEP	T IN PRINCIPLE.				
Comment Need	<i>Type</i> T to add TECQ an	Comment Status D d Receiver sensitivity to Table	e 140-10.	Test patterns	The su meetin	ggested remec g in Geneva.	ly would undo a change tha	was made at the	e Jan 20 Task Force		
Suggestee Add a	<i>dRemedy</i> a row: Transmitte	er eye closure for PAM4 (TEC	Q), pattern 6, sı	ubclause 140.7.12.	Straw I	Poll #5:					
Add a	row [.] Receiver	sensitivity (OMAouter) (max)	pattern 3 or 5 s	ubclause 140 7 9	l would	support remov	ving the equation reference	entry for RS in Ta	able 140-7 for		
Proposed	Response	Response Status W			100GB	ASE-FR1 and	100GBASE-LR1, and in Tal	ble 151-8 for 400	GBASE-FR4 and		
PROF	POSED ACCEPT				propos	ed in cole 01b			ssociated loothole as		
					V 0	_	_				
C/ 140	SC 140.7.12	P 46	L 38	# 76	Yes: 2. No: 0	5					
Lewis, Da	vid	Lumentum									
Comment	Туре Т	Comment Status D		Tx TECQ	For Ta	sk Force discu	ssion.				
Descr	ription of TECQ t	est is missing.			C/ 151	SC 151.8.10	D P70	L35	# 78		
Suggeste	dRemedy				Lewis, Dav	id	Lumentum				
Add a	a new subclause	140.7.12 Transmitter eye clos	ure for PAM4 (1	ECQ)	Comment	Гуре Т	Comment Status D		Rx sensitivity		
The T	ECQ of each lar	e shall be within the limits giv	en in Table 140	-6 for 100GBASE-FR1	Since r	eceiver sensiti	vity is normative, the word "	should" needs to	be replaced by "shall".		
and 1	00GBASE-LR1 i	f measured using the test pat	ern for TECQ in	Table 140-10. TECQ	Suggested	Remedy					
shall I fiber i	be measured usi	ng the methods specified for	TDECQ in 140.7	7.5, except that the test	Replac	e "Receiver se	nsitivity should meet Equati	on (1151-1)" with	"Receiver sensitivity		
Pronosed	Resnonse	Pesnansa Status M			shall m	eet Equation (151-1)" on line 35.				
					Replac meet F	e "Receiver se quation (151-2	nsitivity should meet Equati ?)" on line 38	on (151-2)" with '	Receiver sensitivity shall		
1 NOF					Pronosed 4	Response	Response Status M				
See c	comment #61						T				
					FROP	JUED AUGEP	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: Comment ID

C/ 151	SC 151.8.10	P70	L 47	# 79	C/ 151	SC 151	P55	L1	# 82
Lewis, Dav	vid	Lumentum			Lewis, Dav	id	Lumentum		
Comment	Туре Т	Comment Status D		Rx sensitivity	Comment	Type TR	Comment Status D		Reach
The d	escription of RS	s not complete.			Additio	nal test data is	now available and we shou	ld revisit the limit	ation of 400GBASE-LR4-
Suggested	Remedy				01001	km reach. A si	upporting presentation will b	e made.	
Repla	ce "is the receive 7.	er sensitivity" with "is the recei	ver sensitivity (OMAouter) (max)", on	Chang	Remedy e 400GBASE-I	LR4-6 to 400GBASE-LR4 th	roughout.	
Proposed PROF	Response POSED ACCEPT	Response Status W			Chang 13, at In Tab dispers	e 6 km to 10 ki 1.4.107a, 30.5. le 151-12 chan sion of 400GB4	m in Table 151-6, Table 151 1.1.2, Table 116-2, Figure 1 ge the coefficient from 0.138	-9, footnote a of 51-1. 3 to 0.23 for minir	Table 151-12, Table 151- num and maximum
C/ 151	SC 151.8.6	P 69	L 41	# 80	Proposed I	Response	Response Status W		
Lewis, Da	vid	Lumentum			PROP	OSED ACCEP	T IN PRINCIPLE.		
Comment	Туре Т	Comment Status D		Tx TECQ			- 		
For un	iformity with the	other subclauses in 151.8, we	e should referer	ice the limits and the	A pres	entation is plar	nned in support of this comm	ient.	
					Pendir	g presentation	and Task Force discussion		
Add a the lin using <i>Proposed</i> PROF	sentence at the hits given in Table a test pattern spe <i>Response</i> POSED ACCEPT	beginning of the paragraph: " e 151-7 for 400GBASE-FR4 a ecified for TECQ in Table 151 <i>Response Status</i> W	Γhe TECQ of ea nd 400GBASE -11.	ach lane shall be within -LR4-6 if measured					
C/ 151	SC 151.8.1	P66	L17	# 81					
Lewis. Da	vid	Lumentum							
Comment Need	<i>Type</i> T entries in Table ²	Comment Status D 151-11 for TECQ and Receive	r sensitivity.	Test patterns					
Suggested	Remedy								
Add a	row: Transmitte	r eye closure for PAM4 (TEC	ຊ), pattern 6, sເ	ıbclause 151.8.6.					
Add a	row: Receiver s	ensitivity (OMAouter) (max), p	attern 3 or 5, s	ubclause 151.8.10.					
<i>Proposed</i> PROF	<i>Response</i> POSED ACCEPT	Response Status W							

C/ 140	SC 140.6.2	P 43	L 21	# 83	C/ 140	SC ·	140.7.9	P 45	L37	# 84
Lewis, Day	<i>v</i> id	Lumentum			Lewis, Dav	٧id		Lumentum		
Comment	Туре Т	Comment Status D		Rx sensitivity	Comment	Туре	т	Comment Status D		Rx sensitivity
In Tab 100GB	le 140-7 the valu BASE-LR1 only a	ues for Receiver sensitivity (m apply for values of SECQ up t	ax) for 100GBA o 1.4 dB, but re	SE-FR1 and ceivers need to work	Since "should	receive d" need	r sensitivit s to be re	y is normative for 100GBASI placed by "shall".	E-FR1 and 100	GBASE-LR1, the word
with S would simplit	ECQ up to 3.4 d be clearer to rev ying the footnote	B. The footnote pointing to the rect back to having the equation of the equ	e relevant equa on references in	tions is convoluted. It the table and	Suggested Replac	Remed	y eiver sens	sitivity should meet Equation	(140-2)" with "	Receiver sensitivity shall
Suggested	lRemedy				Replac	ce "Rec	eiver sens	sitivity should meet Equation	(140-3)" with "	Receiver sensitivity shall
In Tab	le 140-7 Receive	er sensitivity (OMAouter) (max	x), replace the v	alues of -4.5 and -6.1	meet E	Equation	ו (140-3)"	on line 42.	,	
with E	quation (140-2)a	nd Equation (140-3) respectiv	vely.		Proposed I	Respon	se	Response Status 🛛 🛛 🛛 🖉		
Chang	e footnote c to: ative and for 100	Receiver sensitivity (OMAout	er) (max) for 10 -I R1 is normal	0GBASE-DR is ive _It is defined for a	PROP	OSED /	ACCEPT.			
transn	nitter with a value	e of SECQ up to 3.4 dB.			C/ 140	SC '	140.7.9	P 45	L 47	# 85
Proposed	Response	Response Status W			Lewis, Dav	٧id		Lumentum		
PROP	OSED ACCEPT	IN PRINCIPLE.			Comment	Туре	т	Comment Status D		Rx sensitivity
The s	indested remedy	would undo a change that w	as made at the	lan 20 Task Force	The de	escriptic	on of RS is	s not complete.		
meetir	ig in Geneva.	would undo a change that w	as made at the	Jan 20 Task Torce	Suggested	Remed	V			
Straw	Poll #5:				Replac line 47	ce "is th	e receiver	sensitivity" with "is the recei	ver sensitivity	(OMAouter) (max)", on
l would	d support removi	ing the equation reference en	try for RS in Tal	ble 140-7 for	Proposed I	Respon	se	Response Status 🛛 🛛 🛛 🛛 🛛 🖉		
100GE 400GE	BASE-FR1 and 1 BASE-LR4-6,an	00GBASE-LR1, and in Table ad replacing it with the minimu	151-8 for 400G m value and as	BASE-FR4 and sociated footnote as	PROP	OSED /	ACCEPT.			
propos	sed in cole_01b_	0120.			C/ 140	SC '	140.7.9	P 45	L 50	# 86
Yes: 2	3				Lewis, Dav	vid		Lumentum		
No: 0					Comment	Туре	ER	Comment Status D		Bucket
For Ta	isk Force discus	sion.			There 802.3c	is unde :d.	rlining req	uired in the paragraph at line	e 50 for change	es from the original text in
					Suggested	Remed	У			
					Underl second	ine "the d senter	e 100GBA nce.	SE-DR " and add a strikeout	"s" after receiv	ver. Underline all of the
					Proposed I	Respon	se	Response Status W		
					PROP	OSED /	ACCEPT.			

Comment ID 86

C/ 140	SC 140.6.1	P41	L32	# 87	C/ 140	SC 14	40.6.1	P 41	L 42	# 89	
Nicholl, G	ary	Cisco System	s		Nicholl, G	ary		Cisco System	s		
Comment TDEC Table	<i>Type</i> TR CQ-10log10(Ceq)(140-6	Comment Status D Max) was removed for 100GF	BASE-FR1 and	<i>Tx 10logCeq</i> 100GBASE-LR1 in	Comment Type TR Comment Status D Tx over Transmitter over/under-shoot (max) specifications for 100GBASE-FR1 and 100GBASE LR1 currently indicated as normative.						
Suggeste	dRemedy				Suaaeste	dRemedv					
Reins value Atlant	state TDECQ-10lo s from 802.3cu D´ ta.	g10(Ceq)(Max) for 100GBAS 1.1. A supporting presentatio	E-FR1 and 100 on will be provide	GBASE-LR1 using the ed for the TF meeting in	Trans for a footne	mitter ove different P ote for bot	er/under- AM4 PM h 100BA	shoot (max) specifications and ID. Change the specification SE-FR1 and 100GBASE-LR	re known to be is to informativ 1.	used by one customer, e with an appropriate	
Proposed	Response	Response Status W			Proposed	Respons	е	Response Status W			
PROF	POSED REJECT.				PRO	POSED R	EJECT.				
At the	January 2020 m	eeting in Geneva the 3cu Tas	k Force agreed	to remove the	See o	omment #	# 47				
paran	neter "IDECQ - 1	Ulog10(Ceq) (max) based on	the following sti	raw poll.	C/ 140	SC 14	40.7.11	P 46	L35	# 90	
Straw	/ Poll #2:				Nicholl, G	ary		Cisco System:	S		
400G Yes:	BASE-FR4 and 4	00GBASE-LR4-6 as propose	d in cole_01b_0	1006BASE-LR1, 120.	Comment Trans	<i>Type</i> mitter ove	TR er/under-	Comment Status D shoot measurement method	lacking many o	<i>Tx overshoot</i> definitions	
No: 1	1				Suaaeste	dRemedv					
The s	uggested remedy	would reverse this decision.			Repla	ce the ed	itors not	e with the following text:			
Pendi	ing presentation a	nd Task Force discussion.			Trans	mitter ove	er/under-	shoot is measured by applyir	ng a noise func	ction to an overshoot	
C/ 140	SC 140.6.1	P41	L 42	# 88	level scalir	(the convo g the sign	plution of na of the	f the oscilloscope noise and a e noise until the cumulative di	an ideal gaussi istribution func	an distribution) and tion (CDF) of the	
Nicholl, G	ary	Cisco System	s		overs	hoot level	meets t	he CDF of the signal at the S	ER of the PME	D type, and is measured	
Comment	Type TR	Comment Status D		Tx overshoot	The c	ver/under	-shoot te	est passes if the CDF reache	s the prescribe	ed SER below the	
Trans LR1 a	mitter over/under- are too stringent.	-shoot (max) specifications fo	or 100GBASE-F	R1 and 100GBASE-	over/ the O	inder-sho /E conver	ot level i ter and c	n both of the measurement v oscilloscope has a 3 dB band	vindows. The c width of approx	ombined response of ximately 26.5625 GHz	
Suggeste	dRemedy				with a above	fourth-or 1 3 x 53	der Bess 125 GH:	sel-Thompson response to at z the response should not ex	: least 1.3 x 53. ceed -20 dB_C	.125 GHz. At frequencies	
Chan	ge Transmitter ov	er/under-shoot (max) specific	ations for 100G	BASE-FR1 and	made	for any d	eviation	from an ideal fourth-order Be	essel-Thompso	n response.	
100G	BASE-LR1 from 1	12% to 30%			Proposed	Respons	е	Response Status 🛛 🛛 🛛 🛛 🛛 🖉			
roposed	Response				PRO	POSED A	CCEPT	IN PRINCIPLE.			
FNU	USED AUGEPT	INTININGIELE.			See o	omment #	# 47				

See comment #47

C/ 140	SC 140.11.4.	6 P 54	L28	# 91		C/ 151	SC 151.7.1	P	63	L15	# 92
Nicholl, Ga	ary	Cisco System	ıs			Nicholl, Ga	iry	Cisc	o Systems		
Comment	Туре Т	Comment Status D		bu	cket	Comment	Туре Т	Comment Statu	s D		Tx avg power
Missin	g PICS items for	Overshoot, TECQ and Rece	eiver Sensitivity t	ests		Table	151-7. The relati	ionship between Ave	gPwr(max) a	and OMAoute	er(max) for 400GBASE-
Suggested	lRemedy					LR4-6 FR1 a	is inconsistent nd 100BASE-I R	with that used for 4	00GBASE-F	-R4, 100GBA	ASE-DR, 100GBASE-
Insert	Section 140.11.4	.4 from 802.3cd before Sect	ion 140.11.4.6, a	and amend to include							
new P manda	ICS itens for Ove atory for 100GBA	ershoot, TECQ and Receiver SE-FR1 and 100GBASE-LR	Sensitivity. Mak 1 only.	e this PICS items		In the max, b	case of 400GBA out for the other l	SE-LF4-6 the avera PMDs the average p	age power m power max i	nax is 1.2 dBi s 0.2dB lowe	n higher than the OMA r than the PMA max.
Proposed	Response	Response Status W				Suggestea	Remedy				
PROP	OSED ACCEPT.					Make	the following cha	anges in Table 151-7	7:		
						Chang 4 2 dB	e the Average la m	aunch power, each l	ane (max) fo	or 400GBASI	E-LR4-6 from 5.6 dBm to
						Chang 10.2 d	e the Total aver Bm.	age launch power (r	max) for 40	0GBASE-LR4	4-6 from 11.6 dBm to
						Make	the following cha	anges in Table 151-8	8:		
						Chang to 4 20	e the Average r IBm	receive power, each	lane (max)	for 400GBAS	SE-LR4-6 from 5.6 dBm
						Chang	e the Damage t	thresholda, each lan	ne for 400GE	BASE-LR4-6	from 6.6 dBm to 5.2dBm.
						Make	the following cha	anges to Table 151-	16 in Sectio	n 151.12:	
						Chang dB to (e the 400GBAS).7dB.	E-LR4-6 transmitter	to 400GBA	SE-FR4 rece	iver Min loss from 2.1
						Proposed	Response	Response Status	s W		
						PROP	OSED ACCEPT	IN PRINCIPLE.			
						The su lane (r 400GE and 10	iggested remedy nax)" and "Outer BASE-LR4-6 into 00GBASE-LR1.	y would bring the rel r Optical Modulation alignment with 400	ationship be Amplitude OGBASE-FF	etween "Aver (OMAouter), R4, 100GBAS	age launch power, each each lane (max)" for ¡E-DR, 100GBASE-FR1
						The su 400GE	uggested remedy BASE-LR4-6.	y would be a signific	ant change	to the adopte	ed baseline for
						For Ta	sk Force discus	sion.			

C/ 151	SC 151.7	1 P63	L28	# 93	C/ 151	SC 15	1.8.10	P70) L 32	# 96
Nicholl, G	ary	Cisco Systems	5		Nicholl, Gar	гy		Cisco	Systems	
Comment	Type TR	Comment Status D		Tx 10logCeq	Comment T	ype 1	Г	Comment Status	D	Rx sensitivity
TDEC	CQ-10log10(C	eq)(Max) was removed from Tabl	e 151-7.		This pa word "s	ragraph : hould" w	says tha hich is a	at both RS and SRS a associated with an in	are normative. Yet th formative specificatio	e statements use the
Suggester Reins 151-7 A sup	dRemedy state TDECQ- , and using th oporting prese	0log10(Ceq)(Max) for 400GBAS e values from 802.3cu D1.1 ntation will be provided for the TF	E-FR4 and 400	GBASE-LR4-6 in Table	Like even from the should suitable proferre	erywhere e wording indicates without	e else in g, "shall that an mentior	802.3, the difference " vs "should" or "may nong several possibil ning or excluding othe	between normative ". From the standard ities, one is recomm ers; or that a certain d councie is recomme	and informative is clear Is style manual: "The word ended as particularly course of action is preded thet)."
Proposed	Response	Response Status W			preiene Ouerere etc all	50 DUL 110	I HECES	saniy required (shou		nueu mat).
PROF	POSED REJE	CT.			Suggestear	Remeay	nonfinati	ion is intended then	obanga tha atatama	nto chovo to normativo
See c	comment #87				("shall")) stateme	ents.	ion is intended, then	change the stateme	his above to normative
C/ 151	SC 151.7	1 P63	L 38	# 94	Proposed R PROPC	Response DSED AC	e CCEPT I	Response Status	w	
Nicholl, G	ary	Cisco Systems	5		Change	e "should	" to "sha	all" in two places - lin	e 35 and line 38.	
Comment Trans	<i>Type</i> TR mitter over/un	Comment Status D der-shoot (max) specifications fo	r 400GBASE-F	<i>Tx overshoot</i> R4 and 400GBASE-	C/ 151	SC 15	1.8.12	P73	3 L 4 4	# 97
LR4-6	6 are too string	jent			Nicholl, Gar	у		Cisco	Systems	
Suggester Chan	dRemedy ge Transmitte	r over/under-shoot (max) specific	ations for 400	GBASE-FR4 and	<i>Comment T</i> Transm	<i>ype</i>	TR r/under-	Comment Status shoot measurement	D method lacking man	<i>Tx overshoot</i> y definitions
400G	BASE-LR4-61	rom 12% to 30%			SuggestedF	Remedy				
Proposed PROF	Response POSED ACCE	PT IN PRINCIPLE.			Replace	e the edit	tors note	e with the following te	ext:	
See c	comment #47				Transm level (th	itter over ne convol	r/under- lution of	shoot is measured by the oscilloscope noi	y applying a noise fu se and an ideal gaus	nction to an overshoot sian distribution) and
C/ 151	SC 151.7	1 P63	L 38	# 95	scaling oversho	the sigm	na of the meets tl	e noise until the cumu he CDF of the signal	Ilative distribution fur at the SER of the PI	iction (CDF) of the /ID type, and is measured
Nicholl, G	ary	Cisco Systems	3		at two v	vindows	nominal	lly centered at 0.45 L	II and 0.55 UI (with a	window width of 0.04 UI).
Comment	Type TR	Comment Status D		Tx overshoot	over/un	der-shoc	ot level i	n both of the measur	ement windows. The	combined response of
Trans LR4-6	mitter over/un currently indi	der-shoot (max) specifications fo cated as normative.	r 400GBASE-F	R4 and 400GBASE-	the O/E with a f	converte	er and c ler Bess	oscilloscope has a 3 osel-Thompson respor	dB bandwidth of app use to at least 1.3 x 5	oximately 26.5625 GHz 3.125 GHz. At frequencies
Suggeste	dRemedy				above 1 made fo	1.3 x 53.1 or anv de	125 GHz	z the response should from an ideal fourth-o	d not exceed -20 dB. order Bessel-Thomp	Compensation may be
Trans for a c	mitter over/un different PAM	der-shoot (max) specifications ar PMD.Change the specifications	e known to be to informative	used by one customer, with an appropriate	Proposed R	Response			W	
Proposed	Response		+-0.		FNUFU	JUED AC				
PROF	POSED REJE	CT.			See co	mment #	47			
See c	comment #47									
TYPE: TR COMMEN SORT OR	R/technical req IT STATUS: D RDER: Comme	uired ER/editorial required GR/g //dispatched A/accepted R/rejec	eneral require ted RESPO	d T/technical E/editorial G/e NSE STATUS: O/open W/w	general ritten C/closed	U/unsat	isfied Z	/withdrawn	Comment ID 97	Page 24 of 30 3/12/2020 4:09:2

C/ 151	SC 151.13.4.5	P82	L 24	# 98		C/ 140	SC 140.7.5	.1 P45	L25	# 101
Nicholl, G	ary	Cisco System	S			Dudek, Mik	ke	Marvell.		
Comment	Туре Т	Comment Status D			bucket	Comment	Туре Т	Comment Status D		Tx Ref equalizer
Missir	g PICS items for 0	Overshoot, TECQ and Rece	iver Sensitivity t	ests		The re	ference equaliz	zer for 100GBASE-FR1 and ²	100GBASE-LR1 r	needs to be defined.
Suggested	lRemedy					Suggested	Remedy			
Add n	ew PICS items for	Overshoot, TECQ and Red	ceiver Sensitivity	tests		Bring 1	140.7.5.1 into t	he draft and change "100GB/	ASE-DR" to "1000	GBASE-DR, 100GBASE-
Proposed	Response	Response Status 🛛 🛛 🛛 🛛 🛛 🖉				FRIat	nd 100GBASE			
PROF	OSED ACCEPT.					Proposed I	Response			
C/ FM	SC FM	P12	/ 13	# 99		See re	esponse to com	ment #74		
Dudek, Mi	ke	Marvell.	210			C/ 140	SC 140 7 9	P45	/ 50	# 102
Comment	Type E	Comment Status D			bucket	Dudek Mik	(A	A 40	200	# 102
802.3	cm project is comp	blete				Comment	Type T	Comment Status D		Rx sensitivity
Suggestee	Remedy					This se	ection is ambig	uous as to whether sensitivit	y is normative or i	not for FR1 and LR1. It
Chang	ge 20xx to the appi	ropriate date.				is prett	ty clear that it is	s normative on line 50, but "s	hould" is used no	t "shall" on lines 37 and
Proposed	Response	Response Status W				42.				
PROF	OSED ACCEPT.					Suggested	Remedy	t" to "aball most" on lines 27	and 10	
CL 00	50.0	DAA	/ 19	# 100		Bronocod			anu 42.	
	30 U	P 44	L 10	# 100			NESPONSE	Response Status W		
Dudek, Mi	Ke Turno F				bucket	FNOF	USED ACCEP	1.		
Incorr	<i>type</i> E ect reference in tal	ble 140-8			DUCKEL	C/ 140	SC 140.10a	n P51	L11	# 103
Suggester	Remedy					Dudek, Mik	ke	Marvell.		
Chan	ne the maximum di	iscrete reflectance from "se	e 140 10 3" to "s	ee 140 10 2 2		Comment	Туре Т	Comment Status D		Interop
Proposed	Response	Response Status W				The 10	0GBASE-LR1	receiver has 2.2dB better str	essed sensitivity	than DR at the same
PROF	OSED ACCEPT.					(2.6dB	in table 140-1	2) as the channels are the sa	me except for att	enuation.
						Suggested	Remedy			
						Chang	e the maximum	n loss from 4.5dB to 4.8dB.		
						Proposed I	Response	Response Status 🛛 🛛 🛛 🛛 🛛 🖉		
						PROP	OSED REJEC	T.		
						OMA (min) for the 10	0GBASE-DR transmitter is -(0GBASE-LR1 receiver is -5.3).8 dBm. dBm. derived by	subtracting 100GBASE
						LR1 ch	nannel insertior	loss (max) of 6.3 dB from 1	00GBASE-LR1 O	MA (min) of 1 dBm.
						The di	fference betwe	en the minimum -DR transmi	tter OMA and the	minimum -LR1 receiver
						LR1 re	s 4.5 up. Incre eceiver input.	asing the loss to 4.0 dB Wou	iu produce a non-	compliant signal at the -

C/ 140	SC 140.10a	P51	L10	# 104	C/ 140	SC 140.10b	P51	L33	# 106
Dudek, Mil	(e	Marvell.			Dudek, Mi	ke	Marvell.		
Comment The 10 (when than th except	<i>Type</i> T 00GBASE-LR1 tr extinction ratio is ne max DR chann for attenuation.	Comment Status D ransmitter has a minimum Ol s between 4.5 and 5dB). The nel attenuation (2.6dB in tabl	MA-TDECQ incr e max attenuatio e 140-12) as the	Intero ease of 1.5 dB over DR in should be 1.5dB more e channels are the same	p Comment The 1 attenu chann	Type T DOGBASE-LR1 to lation should be els are the same	Comment Status D ransmitter has an OMA-TDE 1.2dB more than the max FR except for attenuation.	ECQ increase of 1 R1 channel attent	Interop .2 over FR1. The max uation (4dB) as the
Suggested	Remedy				Chan	the maximum	loss from 4.9 dB to 5.2dB.		
Chang	e the maximum	loss from 3.9dB to 4.1dB.			Proposed	, Response	Response Status W		
Proposed PROP Averag Avera Increa 100GE	Response OSED REJECT. ge receive power ge launch power sing the maximu BASE-DR receive	Response Status W (min) for 100GBASE-DR is (min) for 100GBASE-LR1 is m loss to 4.1 dB would reduce the below the requirement.	-5.9 dBm. -2 dBm. ce the minimum	power into the	PROF The m transn maxin dBm).	POSED REJECT naximum loss of mitter (1 dBm), ar num -FR1 channe	4.9 dB is the difference betw nd the OMA (min) at the -FR el insertion loss (4 dB) and t	veen the OMA (m 1 receiver (-4.2 d he minimum -FR	in) of the -LR1 Bm), derived from the 1 transmitter OMA (-0.2
C/ 140	SC 140.10b	P51	L32	# 105				inpliant signal at	
Dudek, Mil	(e	Marvell.			C/ 140	SC 140.11.4	.6 P 54	L 40	# 107
The 10 SECQ (4dB) Suggested Chang	00GBASE-LR1 re . The max atten as the channels : <i>Remedy</i> e the maximum	eceiver has 1.6dB better stre uation should be 1.6dB more are the same except for atter loss from 5.1dB to 5.6dB.	ssed sensitivity than the max F nuation.	than FR1 at the same R channel attenuation	Comment The re LR1/F Suggested Chang	equirements for the R1 which are given and the R1 which are given are given are given as the PICs to make th	the maximum discrete reflect ren in Table 140-14	tance in table 140)-12 don't apply to
Proposed PROP OMA (Response OSED REJECT. min) for the 100	Response Status W).2 dBm.		Proposed PROF	Response POSED ACCEPT	Response Status W		
OMA (min) at the 1000	BASE-LR1 receiver is -5.3 c	Bm, derived by	subtracting 100GBASE	Chang	ge Value/Comme	ent for OC2 to "Meets require	ements specified	in 140.10.2.2".
The di	fference betweer	n the minimum -FR1 transmi	tter OMA and the	e minimum -LR1	C/ 151	SC 151.5.4	P60	L12	# 108
receive signal	er OMA is 5.1 dE at the -LR1 rece	 Increasing the loss to 5.6 iver input. 	dB would produc	ce a non-compliant	Dudek, Mi	ke	Marvell.		
0.9.14					Comment The co launch cause	<i>Type</i> T ondition for signation power of OFF t signal detect to	Comment Status D Il detect fail is Average Optio ransmitter is -16dBm in table negate.	cal power <=-30d e 151-7. i.e. an C	<i>Bucket</i> Bm. The Average DFF transmitter will not
					Suggested Chang	- <i>IRemedy</i> ge -30dBm to -16	dBm		
					Proposed PROF	Response POSED ACCEPT	Response Status W		

				<u> </u>					
C/ 151	SC 151.7.1	P 63	L14	# 109	C/ 151	SC 151.8.11	P71	L38	# 112
Dudek, Mi	ke	Marvell.			Dudek, Mi	ke	Marvell.		
Comment	Туре Т	Comment Status D		Tx avg power	Comment	Туре Е	Comment Status D		Bucket
The A (2.1dE TDEC ER wo have t	verage launch p 3 lower) whereas Q) is only 0.5dB ould be 3.5dB ho to be >5.1dB	ower each lane (max) seems the OMA outer max is only higher. For LR4-6 this max wever which is the min ER.	very low for FR4).7dB higher. (averageoutput v For FR4 at the n	compared to LR4-6. and OMA outer - vith the max OMA the nax OMA the ER would	There Suggestec Chang Proposed	are only two diffe IRemedy Je "any" to "eithei Response	erent patterns allowed " <i>Response Status</i> W		
Suggested	dRemedy				PROP	OSED ACCEPT.			
Consid power OMA i	der why there is [.] and requiring hi is high. Adjust th	such a difference in philosopl gh overload and damage poir ne specifications as appropria	ny between allov nts versus requiri nte.	ving a high average ng higher ER when the					
Proposed PROP See re	Response POSED ACCEPT esponse to comm	Response Status W IN PRINCIPLE. nent #92.							
C/ 151	SC 151.8.2	P66	L 42	# 110					
Dudek, Mi	ke	Marvell.							
Comment Table	<i>Type</i> T 151-5 does not s	Comment Status D specify SMSR		Bucket					
Suggested Chang	dRemedy ge the table refer	rence to 151-7							
Proposed PROP	Response POSED ACCEPT	Response Status W							
C/ 151	SC 151.8.10	P70	L35	# 111					
Dudek, Mi	ke	Marvell.							
Comment	Туре Т	Comment Status D		Rx sensitivity					
I his s and Lf "shall"	ection is somew R1. It is pretty cl ' on lines 35 and	hat ambiguous as to whether lear that it is normative on pa 38.	sensitivity is nor ge 71 line 28 but	mative or not for FR1 "should" is used not					
Suggested	dRemedy								
Chang	ge "should meet"	to "shall meet" on lines 35 a	nd 38.						
Proposed	Response	Response Status W							

PROPOSED ACCEPT.

C/ 151 SC 151.8.11.2	P73	L12	# 113	C/ 151	SC 151.11.2.	1 P76	L13	# 114
Dudek, Mike	Marvell.			Dudek, Mi	ke	Marvell.		
Comment Type E Cor	nment Status D		Tx RINxx.x	Comment	Туре Т	Comment Status D		Connector loss
RINxx.x is not defined in this c SuggestedRemedy Define what it is here.	lause (or the glossary	y)		It seer 6 has somet as wri	ns strange to allo unallocated marg hing we haven't t iten cable plant w	w only 2dB connection loss in which is included for ext hought of which true unallo ith more than 5dB loss is c	s for LR4-6 while l ra connectors (no cated margin is fo out of spec, althou	FR4 has 3dB when LR4- t to be extra margin for or.) Based on the spec gh Table 151-13 does
Proposed Response Resp	oonse Status 🛛 🛛 🛛 🛛 🛛 🖤			seem	to allocate this ur	nallocated margin.		-
PROPOSED ACCEPT IN PRI	NCIPLE.			Suggested	Remedy			
In subclause 151.8.11.2				For LF Chanr in this	84-6 Change the lel Insertion loss paragraph.	connection loss from 2dB to 6.3dB and unallocated m	to 3.3dB. In tab nargin to 0dB. D	le 151-9 change elete the 2nd sentence
Change "With the Gaussian noise gen turned off, the RINxx.xOMA of specified in Table 151-7 for40	erator on and the sinu the SRS test source 0GBASE-FR4 and 40	usoidal jitter and shall be no grea 00GBASE-LR4-6	sinusoidal interferer ter than the value ."	Proposed PROF	Response OSED REJECT.	Response Status W	how the "Addition	al incertion loss
to				allowe	d" of 1.3 dB in Ta	able 151-9 could be used.	now the Addition	ar insertion loss
"With the Gaussian noise gen turned off, the RINxx.xOMA of	erator on and the sinu the SRS test source	usoidal jitter and (where xx.x is th	sinusoidal interferer e value for optical	C/ 151	SC 151.12	P73	L 52	# 115
return loss tolerance from Tab	le 151-7) shall be no	greater than the	value specified in Table	Dudek, Mi	ke	Marvell.		
Need to make the same chan	ge in clause 140.			Comment The 4 SECC (4dB)	<i>Type</i> T DOGBASE-LR4-6 The max atten as the channels a	Comment Status D receiver has 2.1dB better s uation should be 2.1dB mo are the same except for atte	stressed sensitivit re than the max F enuation.	<i>Interop</i> y than FR4 at the same R channel attenuation
Import subclause 140.7.10 fro	m 802.3cd-2018 and	make the follow	ng change.	Suggested	IRemedy			
Change				Chang	e the maximum l	oss from 4dB to 6.1dB.		
"With the Gaussian noise gen turned off, the RIN15.5OMA o specified in Table 140-6." to	erator on and the sinu f the SRS test source	usoidal jitter and should be no gi	sinusoidal interferer eater than the value	<i>Proposed</i> PROF The lin transm	Response OSED ACCEPT nit should be 5.8 nitter (-3.3 dBm) a	Response Status W IN PRINCIPLE. dB which is the difference and the -LR4-6 receiver (-9	between average .1 dBm).	power min of the -FR4
"With the Gaussian noise gen- turned off, the RINxx.xOMA o return loss tolerance from Tab Table 140-6 for 100GBASE-D	erator on and the sinu f the SRS test source ile 140-6) should be n R, 100GBASE-FR1 a	usoidal jitter and e (where xx.x is t no greater than th nd 100GBASE-L	sinusoidal interferer ne value for optical ne value specified in R1."	Chanç LR4-6	e the value in Ta receiver, from 4	ble 151-16 for max loss, 4(to 5.8 dB.	00GBASE-FR4 tra	insmitter to 400GBASE-
TYPE: TR/technical required ER/e	editorial required GR	/general required	l T/technical E/editorial G/o	general		Comi	ment ID 115	Page 28 of 30

C/ 151	SC 151.12	P77	L 50	# 116	C/ 151	SC 1	151.7.2	P64	L35	# 119				
Dudek, M	ike	Marvell.			Chang, Frar	ık		Source						
Comment	Туре Т	Comment Status D		Interop	Comment T	/pe	т	Comment Status D		Rx 10logCe				
The 4 max a chanr	00GBASE-LR4-6 attenuation should nels are the same	transmitter has an OMA-TDE be 0.5dB more than the max except for attenuation.	CQ increase o FR1 channel a	f 0.5dB over FR4. The attenuation (4dB) as the	For FR4 not capa results f	and L able to or this	.R4-6, the prevent e	usefulness of 10Log(Ceq excess peaking and ensur) is questionable, " e interop, we will p	SECQ-10Log(Ceq)" is resent some test				
Suggeste	dRemedy				SuggestedF	emed	/							
Chan	ge the maximum l	oss from 4 dB to 4.5dB.			Take "S	ECQ-′	10Log(Ce	q)" out of specs for FR4 a	nd LR4-6 in Table	151-8				
Proposed PROF	Response POSED ACCEPT	Response Status W IN PRINCIPLE.	-1:		Proposed R PROPC	espon SED A	se ACCEPT I	Response Status W N PRINCIPLE.						
Howe	The current 4 dB value is set by the maximum channel insertion loss of the FR channel. However, in clause 140 we removed such constraints, so we can do the same here.						See comment #56							
The li	The limit of 4.5 dB is arrived at by the difference between average power (min) of the LR4-6 transmitter (-2.8 dBm), and the average power (min) at the FR4 receiver (-7.3 dBm).						151.8.5	P67	L 29	# 120				
transr								Source						
In Tal 400G	In Table 151-16, change the maximum loss for 400GBASE-LR4-6 transmitter to 400GBASE-FR4 receiver from 4 to 4.5 dB.					/pe Q -10lo	E g(Ceq)" s	Comment Status D hould not be there anymo	re	Tx 10logCe				
C/ 140	SC 140.1	P37	L1	# 117	SuggestedR	emed	/							
Zimmerm	an, George	CME Cons./AI	I, Cisco, Com	mscope, Marvell, SenTe	Delete "	TDEC	Q -10log(Ceq)"						
Comment If it is	<i>Type</i> E only the title and	Comment Status D header of Table 140-1, say th	at and don't sh	<i>Bucket</i> low all the rows. (usual	Proposed R PROPC	espon SED A	se ACCEPT I	Response Status W N PRINCIPLE.						
is un	d Romody	snown)			See cor	nment	#56							
Chang showi	ge editing instruct n (unchanged row	ion to "Change Title and seco s not shown)"	nd column hea	ader of Table 140-1 as	C/ 151 Chang, Frar	SC 1	151.8.11.2	P73 Source	L17	# 121				
Delete	e unchanged rows	s beginning at first body row.			Comment T	vpe	Е	Comment Status D		Rx 10loaCe				
Proposed	Proposed Response Response Status W						"SECQ - 10log10(Ceg) (max), lane under test" seems not needed any more.							
C/ 151	SC 151	P55	L1	# 118	SuggestedRemedy Delete "SECQ - 10log10(Ceg) (max), lane under test"									
Zimmerm	an, George	CME Cons./AI	I, Cisco, Com	mscope, Marvell, SenTe	Proposed R	espon	se	Response Status W						
Comment Insert	Comment Type E Comment Status D Bucket Insert instruction for clause 151 is missing						PROPOSED ACCEPT IN PRINCIPLE.							
Suggester Add r nume	<i>dRemedy</i> lew editing instruc ric order as follow	tion before header to clause 's"	51 - "Insert ne	w clause 151 in	See cor	nment	#56							
Proposed PROF	Response POSED ACCEPT.	Response Status W												
	/technical require	d FR/editorial required GR/c	eneral require	d T/technical E/editorial G/o	peneral			Com	ment ID 121	Page 29 of 30				

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID

Rx 10logCeq

Tx 10logCeq

Rx 10logCeq

C/ 151	SC 151.7.1	P6:	3	L38	#	122				
Zivny, Pavel		Tektro	onix							
Comment Ty	/pe T	Comment Status	D			Tx oversho	ot			
Table 151.7, entry "Transmitter over/under-shoot (max)", value "12%" (both reaches). In the presentation "zivny_3cu_01_0320" we show that the transmitter overshoot degrades the link performance more significantly in cases of absolute overshoot (rather than relative overhoot). We further show that the peaking impact starts at the level of about 4.5 dBm. (with margin, 4.3 dBm is desirable)										
SuggestedRemedy										
 remove the 12% overshoot value (same table) in its place insert this overshoot specification: "Transmitter overshoot (max)", value "4.3 dBm" follow illustration in the presentation (see aobve) for the definition of "overshoot" 										
Proposed Re PROPO	esponse SED ACCEPT I	Response Status N PRINCIPLE.	w							

See comment #47