C/ 45 SC 45.2.7.14	P 25	L 32	# 1	CI 78 SC 78	P 37 Ciena	L 1	# 4
Comment Type E Typo 10G instead of 10	Comment Status D 00G in Table 45-191		bucket	Comment Type E The title of clause 78 is	Comment Status D	EEE)"	bucket
SuggestedRemedy Change 10G to 100G i	n 8 instances.			SuggestedRemedy Add the " (EEE)" to the	title of Clause 78		
Proposed Response PROPOSED ACCEPT	Response Status W			Proposed Response PROPOSED ACCEPT.	Response Status W		
C/ 69 SC 69.1.3 Anslow, Pete	Р 28 Сіепа	L 51	# 2	C/ 78 SC 78.2 Anslow, Pete	Р 38 Ciena	L 37	# 5
Comment Type E The editing instruction Figure 69-1 does not s SuggestedRemedy Change the editing ins	Comment Status D says "Change Figure 69-1 ar how any changes, it is a repla truction to:	d insert Figure 6 acement figure.	9-1a as shown:" but	Comment Type E In 78.2 the only change need to show the sente Tr) for supported PHYs SuggestedRemedy	Comment Status D is to Table 78-2 (as reflectence "Table 78-2 summarizes".	ed by the editing i s three key EEE dified	<i>bucket</i> instruction) so there is no parameters (Ts, Tq, and
Proposed Response PROPOSED ACCEPT	Response Status W	5.001.		Proposed Response PROPOSED ACCEPT.	Response Status W	anca.	
C/ 69 SC 69.2.4 Anslow, Pete	Р 32 Ciena	L 6	# 3				
Comment Type E The cell borders for Ta 93 and 94	Comment Status D ble 69-1a in the Nomenclatur	e row are not co	nsistent for clauses 91,				
SuggestedRemedy Change the left and rig thin"	ht borders in the Nomenclatu	re row for clause	es 91 and 93 to be "very				
Proposed Response PROPOSED ACCEPT	Response Status W						

C/ 80	SC 80.1.2	P 42	L17	# 6	C/ 80	SC 80.1.4	P 44	L15	# 8
Ansiow, P	'ete	Clena			Ansiow, P	ete	Clena		
Comment	t Type E	Comment Status D		eee deeuweeet "	Comment	Type E	Comment Status D		bucket
Firstly	y, all editing instruction	ctions in this amendment rel	ate to the base d	ocument, this does not	the ur	nit.	IG 350B Should have a h	on-breaking space	e between the number and
need Wher	to be stated. applied to the ba	se document, this will have t	the effect of renu	mbering 80.1.3 through	Suggester Chan	dRemedy ge "33dB" and "35	5dB" to "33 dB" and "35 dE	5" using non-break	ing spaces (Ctrl space)
The n chang	nodifications to wh ge.	nat were formerly 80.1.3 thro	ugh 80.1.5 just b	elow should reflect this	Proposed PROF	Response POSED ACCEPT.	Response Status W	J	
Note,	the same issue for	or 60.1.2 is the subject of a s	eparate commer	nt.	<u> </u>	CC 00 4 5	D.44	1.07	# 0
Suggeste	dRemedy				CI 80	SC 80.1.5	P44 Ciona	L27	# 9
Chan	ge the editing inst	ruction to "Delete 80.1.2 and	I renumber subse	equent clauses	Ansiow, F				h set a t
accor For 8	aingly." 0.1.3 through 80.1	1.5, move the editing instruct	ions above the ti	tles, renumber to 80.1.2	Comment A Rer	<i>Type</i> E	comment Status D	enlaced object in a	DUCKEt
throug	gh 80.1.4 and ame	end the editing instruction to	refer to:						Sinceoul
	.x (now renumbere				Suggester	uremedy	of Table 80-2 and change	a the editing instru	ction to match those used
Proposed	POSED ACCEPT	IN PRINCIPLE.			previo "Repla	ously: ace Table 80-2 ar	nd insert Table 80-2a as sh	nown:"	
The r	esolution to #432	neatly avoids this issue by re	etaining a vestigia	al subclause.	Proposed PROF		Response Status W		
lf #43	2 is rejected, ther	e are two options:				OOLD AOOLI 1.			
a) Lea subcl	ave a vestigial pla ause has been de	leted.	g) with the note tr	hat the content of this	CI 80	SC 80.1.5	P 45	L 8	# 10
b) De	lete the subclause	e and include editing instruct	ions to renumber	accordingly.	Ansiow, P				
The e	editor recommend	option a) if comment #432 is	s rejected.		Comment The c	<i>Type</i> E ell borders for Tab	Comment Status D ole 80-2 and Table 80-2a i	n the Nomenclatu	bucket re row are not consistent
C/ 80	SC 80.1.3	P 42	L 43	# 7	for cl	auses 78, 91, 93,	93 and 94		
Anslow, P	Pete	Ciena			Suggeste	dRemedy			
Comment The e	t Type E editing instructions	Comment Status D		bucket	Chang right b 2a	ge the right borde porders in the Nor	r in the Nomenclature row nenclature row for clauses	for clause 89 in Ta 91, 92 and 93 to I	able 80-2 and the left and be "very thin" in Table 80-
"Add	note j) as shown."				Proposed	Response	Response Status W		
refer	to "notes" but thes	se are items not notes			PROF	POSED ACCEPT.			
Suggeste	dRemedy								
Chan "Char "Add	ge the editing inst nge item h) as sho item j) as shown."	ructions to: own." and							
Proposed	l Response	Response Status W							
PROF	POSED ACCEPT.								
			(Com	mant ID 10	Da

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 Z/withdrawn SORT ORDER: Comment ID

C/ 81 SC 81.3a Anslow, Pete	P 59 Ciena	L 35	# 11	Cl 82 SC 82.6 Anslow, Pete	P 72 Ciena	L 48	# 14
Comment Type E The formatting of the te	Comment Status D xt below Figure 81-9a is not	usual (the left ma	<i>bucket</i> argin is indented)	Comment Type E The editing instruction now have the "(per Ma	Comment Status D "Change 82.6 to add new PH rris 01 0312 pdf)" removed	IY types (per Mai	<i>bucket</i> rris_01_0312.pdf)" can
SuggestedRemedy Correct the formatting	5			SuggestedRemedy Remove "(per Marris_0	01_0312.pdf)"		
Proposed Response PROPOSED ACCEPT.	Response Status W			Proposed Response PROPOSED ACCEPT	Response Status W		
C/ 82 SC 82.2.18.2. Anslow, Pete	.3 P 69 Ciena	L 18	# 12				
Comment Type E This says "a block type using upper case letters	Comment Status D field of 0x1e" but the rest of s	this subclause fo	<i>bucket</i> rmats Hex characters				
SuggestedRemedy Change to "a block type	e field of 0x1E"						
Proposed Response PROPOSED ACCEPT.	Response Status W						
C/ 82 SC 82.2.18.3. Anslow, Pete	.1 <i>P</i> 71 Ciena	L 28	# 13				
Comment Type E The references "TABLE 5b"	Comment Status D 82-5a" and "TABLE 82-5b"	should be "Table	<i>bucket</i> 82-5a" and "Table 82-				
SuggestedRemedy Change "TABLE" to "Ta	able" in two places						
Proposed Response PROPOSED ACCEPT.	Response Status W						

C/ 91	SC 91.5.2.5	P 95	L12	# 15	C/ 92	SC 92.8	.3.3	P 122	L 43	# 16
Anslow, F	Pete	Ciena			Anslow, F	Pete		Ciena		
Comment	t Type E	Comment Status D			Comment	t Type E	C	omment Status D		
This s The u	says "such that tx_ usual arrangement	_coded_c<1:0>=01."	them with the firs	t bit transmitted on the le	In "th "1000	e requiremen GBASE-KR4"	nts for 1000	BASE-KR specified in	93.8.1.6", "1000	GBASE-KR" should be
(i.e. fo Cons	or control, sync = 7 equently, it would	10). be clearer to show each bit	separately.		Suggeste Chan	dRemedy ige "100GBA	SE-KR" to	"100GBASE-KR4"		
Also,	it would keep the	sync bits in the usual order	if the <0> index w	as shown first.	Proposed	Response	Re	sponse Status W		
Simila	ar issues in 91.5.3	.5 and 91.5.3.7			PRO	POSED ACC	EPT.			
Suggeste	dRemedy				Uses	suggested rer	medy.			
On lir "tx_co "tx_co	ne 1, change: oded_j<1>=1 and oded_j<0>=0 and	tx_coded_j<0>=0," to: tx_coded_j<1>=1,"			<i>Cl</i> 93 Anslow, F	SC 93.9	.2	Р 165 Ciena	L 27	# 17
On line 7 change: "tx_coded_j<1>=0 and tx_coded_j<0>=1," to: "tx_coded_j<0>=1 and tx_coded_j<1>=0," On line 12 change: "such that tx_coded_c<1:0>=01 " to:					Comment In Ta post- As sta "0"	<i>t Type</i> E ble 93-8, the cursor coeffic ated in 1.2.6,	Co "Transmitt cient", Max the trailing	omment Status D er equalizer, pre-cursor mum values are given g zeros have no signific	coefficient" and as "0.00" ance, so this sh	d "Transmitter equalizer, ould be shown as simply
"such "such	n that tx_coded_c< n that tx_coded_c<	:1:0>=01." to: :0>=1 and tx_coded_c<1>=()		Suggeste	dRemedy				
On pa "rx_c	age 101, line 30 cł oded_j<1> = 1 and	hange: d rx_coded_j<0> = 0" to:			Chan Make	ge "0.00" to " the same ch	'0" in two p nange in tw	laces in Table 93-8 o places in Table 94-8		
"rx_c	$oded_j < 0 > = 0$ and	d rx_coded_j<1> = 1"			Proposed PROI	l Response POSED ACC	Re FPT	sponse Status W		
"rx_c "rx_c	oded_j<1> = 0 and oded_j<0> = 1 and	d rx_coded_j<0> = 1" to: d rx_coded_j<0> = 0"			C/ 83C	SC 83C		P 205	L8	# 18
On pa	→ age 101, line 36 cł	hange:			Anslow, F	Pete		Ciena		
"rx_c "rx_c	oded_j<1> = 1 and oded_j<0> = 0 and	d rx_coded_j<0> = 0" to: d rx_coded_j<1> = 1"			Comment The t guide	<i>t Type</i> E ext "The follo elines and MM	Co wing subcl ID number	omment Status D auses provide various ing conventions are de	partitioning exar scribed in 83.1.4	bucket mples. Partitioning 4." is not being modified
On pa "Fina	age 102, line 32 cf llv. am_x<1:0> = 0	nange:)1" to:			so it s	should not be	shown.			
"Fina	lly, am_x<0> = 1 a	and am_x<1> = 0"			Suggeste	dRemedy				
Proposed	l Response	Response Status W			Remo	ove the sente	ence.			
PRO	POSED ACCEPT.				Proposed PROI	l Response POSED ACC	Re EPT.	sponse Status W		

C/ 92A SC 92A.7	P 211	L 20	# 19	C/ 78	SC 78.1	.4	P38	L 5	# 21
Anslow, Pete	Ciena			Anslow, F	ete		Ciena		
Comment Type E	Comment Status D			Comment	Туре Т		Comment Status D		bucket
The text "from 0.05 GH frequency.	Hz to 18.75 Gw3qw0-Hz" seer	ms to use unusua	al units for the upper	The ti "Clau	itle of Table ses associat	78-1 h ed wit	nas been modified to: th each PHY type"		
SuggestedRemedy				but ">	(GXS (XAUI)	" and	"XLAUI/CAUI" are not PHY ty	pes	
Change to ""from 0.05	GHz to 18.75 GHz"			Note:	a related co	mmer	nt proposes to make similar ch	anges to Tat	oles 78-2 and 78-4
Proposed Response	Response Status W			Suggeste	dRemedy			-	
PROPOSED ACCEPT	-			Chan	ge the title o	f Tabl	e 78-1 to:		
Use suggested remed	у.			Chan "PHY	ge the left ha	and co type"	blumn heading to:		
C/ 69 SC 69.5	P 32	L 47	# 20	Proposed	Response		Response Status W		
Anslow, Pete	Ciena			, PROI	, POSED ACC	EPT.			
Comment Type T	Comment Status D								
The text:				C/ 78	SC 78.2		P 39	L 1	# 22
"The supplier of a prot 802 3 Clause 70 throu	ocol implementation that is cla up Clause 74, demonstrates	aimed to conform	n to any part of IEEE Std	Anslow, F	Pete		Ciena		
implementation confor	mance statement (PICS) profe	orma." has been	changed to:	Comment	туре т		Comment Status D		bucket
"The supplier of a prot 802.3 demonstrates or statement (PICS) profe But this is not a true st accompanying PICS n	ocol implementation that is cla ompliance by completing a pro orma." iatement. There are many cla informa	aimed to conform otocol implement auses in 802.3 the	n to any part of IEEE Std ation conformance at do not have an	The ti title o Also, Howe	itle of Table f Table 78-4 the left hance ever, both tab	78-2 is is Sui colur iles co	s "Summary of the key EEE pa mmary of the LPI timing param mn heading in both tables is no ontain rows that are not PHYs	arameters for neters for sup ow "PHY type - "XGXS (XA	supported PHY" and the pported PHYs" e" WI)" and "CAUI"
Same issue for 80.7				Note:	a related co	mmer	nt proposes to make similar ch	anges to Tab	ole 78-1
SuggestedRemedy				Suggeste	dRemedy				
Remove the deletion of of ", Clause 45, Clause 89, and related annexe Augment these two sta	of ", Clause 70 through Clause e 73, Clause 74, Clause 81 th es" from 80.7. atements as required to reflec	e 74," in 69.5 and rough Clause t the new clause	also remove the deletior s added by the	Chan "Sum of Tal "Sum	ge the title o mary of the l ble 78-4 to: mary of the l	f Tabl key El _PI tin	e 78-2 to: EE parameters for supported F ning parameters for supported	PHYs or inter PHYs or inte	faces" and change the title
Bronoood Boononoo	Deserves Status M			Also.	change the	eft ha	and column heading in both tab	les to "PHY	or interface type"
	- Response Status W			Proposed	Response		Response Status W		
				PRO		EPT.	,		

C/ 80	SC 80.1.4	P 43	L 52	# 23	C/ 91	SC 91.5.3.1	P 99	L 32	# 26
Anslow, P	Pete	Ciena			Anslow, P	ete	Ciena		
Comment	t <i>Туре</i> Т	Comment Status D			Comment	Туре Т	Comment Status D		
ا The d ا level Since	lefinition of 100GB pulse amplitude m multi-level include	ASE-P only distinguishes its odulation (PAM)" to "multi-le es 2, this seems inadequate.	elf from 100GBA	ASE-R by changing "2- ude modulation (PAM)".	This s lanes	ays "The FEC re and a maximum	eceive function shall support Skew Variation of 3.4 ns."	rt a maximum Skev	v of 134 ns between FE
Suaaeste	dRemedv	•			These	are the skew a	nd skew variation requirem	ents at SP4 which i	s the input of the PMD
Chan	ge 100GBASE-P t	o match the definition of 100	GBASE-KP4 in	1.4:	sublay	er, but they sho	uld be the values at SP5 w	hich is at the outpu	t of the PMD sublayer
"4-lev	el pulse amplitude	e modulation (PAM)"			Suggester	dRemedy	04		
Proposed	l Response	Response Status W			Chan	ne to:			
PROF	POSED ACCEPT I	IN PRINCIPLE.			"The l	EC receive fund imum Skew Var	ction shall support a maxim iation of 3.6 ns."	um Skew of 145 ns	between FEC lanes a
See a	also #343 & #449				Proposed	Response	Response Status W		
The n	nore generic wordi	ng may be useful in the futu	re. Change "mul	ti-level" to "multi-level	, PROF	, POSED ACCEPT	IN PRINCIPLE.		
(>2)"	and also include th	ne wording changes capture	d in #343.						
C/ 81	SC 81 1 7	P55	/ 39	# 24	See h	ealey_02_0912.	pdf.		
Anslow, P	Pete	Ciena	200	" 27					
Comment	tType T	Comment Status D		bucket					
This s	says "as described	l in 22.6a", but 22.6a does n	ot exist						
Suggeste Corre	dRemedy ect the reference								
Proposed PROF	l Response POSED ACCEPT I	Response Status W							
Chan	ge to 22.7								
CI 83	SC 83.1.1	P83	L 32	# 25					
Anslow, P	Pete	Ciena							
Comment	tType T	Comment Status D		bucket					
This s Table PMD.	says "The 40GBAS 80-2, except 1000 It appears that th	SE-R PMA(s) can support ar GBASE-KP4 (Clause 94)." b is exception should be appli	y of the 40 Gb/s ut 100GBASE-K ed to the end of	PMDs in P4 is not a 40 Gb/s the next sentence.					
Suggeste	dRemedy								
Move	, except 100GBA	SE-KP4 (Clause 94)" to imr	nediately after "T	able 80-2a"					
Proposed	Response	Response Status W	-						
PROF	POSED ACCEPT.								

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 Z/withdrawn SORT ORDER: Comment ID

Cl 92 Anslow Pe	SC 92.8.3	P 120 Ciena	L 32	# 27	Cl 93A Anslow Pi	SC	93A.1.6	P 217 Ciena	L 39	# 28		
Comment		Comment Status D			Comment	Type	т	Comment Status D				
The Va "2 Equ "1Equa	alue column for "I ation (92-2)" ation (92-3)"	Far-end transmit output noise	e (max)" contains	S:	This says "where SER0 is the target uncorrected symbol error rate." However, 802.3 is consistent (16 instances) in its use of the term "symbol error ratio" rath than "symbol error rate"							
The "2	e and "1" at the t	peginning seem spurious.			Suggested	lReme	edy	Q is the target upcorrected our	abal arrar rati	· · ·		
Suggested	lRemedy				Chang					0.		
Chang "See E "See E	e to: Equation (92-2)" Equation (92-3)"				Proposed PROP	Respo OSED	DACCEPT.	Response Status W				
Proposed	Response	Response Status W			C/ 99	SC	;	P 5	L11	# 29		
, PROP	OSED ACCEPT	IN PRINCIPLE.			Anslow, Po	ete		Ciena				
		110 7 0			Comment	Туре	Е	Comment Status D				
resolution Chang From: "2 See "1 See To: "See E "See E From C RMSId RMSh	Pe with commenta- pe Table 92-5-Far e Equation (92-2)' e Equation (92-3)' Equation (92-3)" Equation (92-3)" comment#273 dev = sqrt(sl^2+1)' dev = sqrt(sl^2+1)	 2/3 -end transmit output noise (r - -<td>nax) value:</td><td></td><td>It is us after ti This is For ex IEEE This a Claus new P electri This p such a</td><td>sual for the text ample Std 802 mendr e 74 ar hysica cal bac aragra as 802.</td><td>r amendme t that descri ing from this EEE Std & 2.3ap-2007 ment includ nd Annex 6 al Layers that ckplanes at aph will ther .3bk</td><td>ents to 802.3 to include a short ibes the sections of IEEE Std 8 s draft. 802.3ap-2007 contained: 7 les changes to IEEE Std 802.3 89A, Annex 69B, Annex 73A ar at support the exchange of IEE t 1 Gb/s and 10 Gb/s. n also appear in the frontmatter</td><td>summary of f 302.3. -2005 and ac Id Annex 74 E Std 802.3 r of other am</td><td>their content immediately dds Clause 69 through A. This amendment adds format frames over endments being developed</td>	nax) value:		It is us after ti This is For ex IEEE This a Claus new P electri This p such a	sual for the text ample Std 802 mendr e 74 ar hysica cal bac aragra as 802.	r amendme t that descri ing from this EEE Std & 2.3ap-2007 ment includ nd Annex 6 al Layers that ckplanes at aph will ther .3bk	ents to 802.3 to include a short ibes the sections of IEEE Std 8 s draft. 802.3ap-2007 contained: 7 les changes to IEEE Std 802.3 89A, Annex 69B, Annex 73A ar at support the exchange of IEE t 1 Gb/s and 10 Gb/s. n also appear in the frontmatter	summary of f 302.3. -2005 and ac Id Annex 74 E Std 802.3 r of other am	their content immediately dds Clause 69 through A. This amendment adds format frames over endments being developed		
For the mV. The	e low-loss cable a he measured RM	assembly, the maximum RMS	5 deviation from ssembly ICN due	the cable assembly is 2	Suggested	IReme	edy manih alagani	: : : : : : : : : : : : : : : : : : :				
transm	nitter output noise	shall meet the values deter	mined using Equ	lation (92-2).	Add a	parag	raph descri					
For the mV. The transm	e high-loss cable he measured RM hitter output noise	assembly, the maximum RM S deviation from the cable a shall meet the values deter	IS deviation from ssembly ICN due mined using	n the cable assembly is 1 e to the far-end	Proposed PROP	Respo OSED	ACCEPT	Response Status W IN PRINCIPLE.				
Equati	on (92-3).				The fr	ontmat	tter will be u	updated under the guidance of	the Working	Group chair.		
Add ur Where RMSId RMSh sI is fa Sh is fa	nder equations (9 e dev is the maximu dev is the maxim r-end ICN for the ar-end ICN for the	2-2) and (92-3). Im RMS deviation from the lo um RMS deviation from the low-loss cable assembly. e high-loss cable assembly.	ow-loss cable as nigh-loss cable a	sembly assembly								

C/ 45	SC 45.2.7.13.	1a P 24	L 41	# 30	CI 69	SC	69.1.2	P 28	L 29	# 31	
Anslow, Pe	ete	Ciena			Anslow, P	ete		Ciena			
Comment Comm The (a "Insert	Type E lent #35 against E loccepted) Suggesi 45.2.7.13.a throu	Comment Status D 0 1.0 has been incorrectly in ted remedy changed the edi igh 45.2.7.13.d before 45.2.	plemented. ting instruction to 7.13.1 as follows	bucket : ."	Comment Type E Comment Status D The editing instruction says "Delete 69.1.2." When applied to the base document, this will have the effect of renumbering 69.1.3 to the 69.1.2. The medification to what was formative 60.1.3 just below should reflect this shappen						
The ag "Insert "It has subcla inserte labelle For ex 43.2.a and 43 43.2.3	Ver, the editing ins 45.2.7.13.1a through greed format for n been agreed with use it is labelled [ed after an existing d [subclause num ample to insert tw and 43.2.b. Two 3.2.1b. Two subcla and 43.2.4."	struction is now: ough 45.2.7.13.1f before 45. a staff that where a subclaus existing subclause - one lev g subclause - assuming it is aber][a through z]. ro subclauses before 43.2.1 subclauses between 43.2.1 auses added after the last s	2.7.13.1 as follow e is inserted price el].[a through z]. not the last - the the subclauses v and 43.2.2 would ubclause 43.2.2 v	rs:" r to the existing first Where a subclause is new subclause it is vould be numbered be numbered 43.2.1a would be numbered	Note, the same issue for 80.1.2 is the subject of a separate comment. SuggestedRemedy Change the editing instruction to "Delete 69.1.2 and renumber 69.1.3 to 69.1.2 accordingly For 69.1.3, move the editing instruction above the title, renumber to 69.1.2 and amend the editing instructon to be: "Change the first paragraph of 69.1.3 (now renumbered to 69.1.2) as shown:" Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. This subclause will be bondled in a manager consistent with the tractment of 80.1.2 (one					ect this change. ent. 1.3 to 69.1.2 accordingly." o 69.1.2 and amend the as shown:"	
Chang "Insert "Insert and ch	e: 45.2.7.13.1a thro 45.2.7.13.a throu hange the number	ough 45.2.7.13.1f before 45. Igh 45.2.7.13.d before 45.2. Ing of the text to be inserted	2.7.13.1 as follow 7.13.1 as follows accordingly.	/s:" to: "	comment #6). C/ 93A SC 93A.1 P 214 L 3 # 32 Moore Charles Avago Technologies						
Proposed I PROP		Comment Type E Comment Status D All the parameters in Table 93A-1 got lost between my advanced copy and D1.1 SuggestedRemedy Restore 2 missing columns.					opy and D1.1				
					Proposed PROF They : the Pr The "r 94.4.1	Respon POSED are not hysical missing). Table	nse REJECT. lost. 93A. Layer spe " columns e 93A-1 is	Response Status W 1 states that "The values ass cification that invokes the me are included in the correspo essentially a table of nomen	igned to these thod." nding PMD clar clature.	parameters are defined by use (see 93.9.1 and	

											<u> </u>	
C/ 93A	SC 1	P 214	L 40	# 33		C/ 93A	SC 1.6.	I	P 218	L 30	# 34	
Moore, Cha	arles	Avago Tecl	hnologies			Moore, Cha	rles		Avago Techno	logies		
Comment	Туре Т	Comment Status D				Comment T	ype T		Comment Status D			
In Tabl Later ir	le 93A-1 the pain n sub-clause 93	rameter "W" is called "Victin 3A1.5, item d) "the exception	n single bit respon window [is] define	se exception windo	w". b]". l	Equatio	n 93A-20 i	eprese	ents a really painful way of co	omputing sigma	a^2_m. Much simpler is	
think th	nat the terms "V	ictim single bit response ex	ception window" a	nd "the exception w	vindow		sigm	a^2_m	n = sum(n=0->N-1) (H_m(n)^	2)		
are inte	edned to mean	the same thing but they do	not.			SuggestedF	Remedy					
Suggested	Remedy					Delete e	equation 9	3A-20.	Insert			
In table In 93A	e 93A-1, call W .1.5 item d) and	"Width of single bit respons I in equation 93A-12, replac	e exception windo e "WT_b" with "W"	w".			sigm	a^2_m	n = sum(n=0->N-1) (H_m(n)^	2)		
Proposed I	Response	Response Status W				prior to	oquation 0	24 17	Move verbage associated	with oquation (12A 20 boying to do with	
PROP	OSED ACCEPT	IN PRINCIPLE.				selectin	q value of	m givi	ng maximum sigma m up to	the new equat	ion. Add statement that	
The units of W are defined to be UI in Table 93A-1. The multiplication of W by Tb in 93A.					A.1.5	equation maximu	n 93A-17, Im sigma_	93Ă-18 m	8, and 93A-19 need only be a	applied for the	value of m giving	
item d)	converts norm	alized time (UI) to absolute	time (s).			Proposed R	esponse		Response Status W			
Howev the wir	ver, it more prec ndow itself is rel	ise to call W the "victim sing ative to the chosen samplin	gle bit response ex a phase ts.	ception window len	gth" a:	PROPOSED ACCEPT IN PRINCIPLE.						
Chang	e the Paramete	r name in Table 93A-1 to ".	exception window	length".		The proposed equation is proportional, but not equivalent to, the variance of the interference amplitude for phase index m. The equivalent expression is:					riance of the interference	
						(sigma_	_m)^2 = su	m(n=0) to N-1)(h_m(n)^2)*sigma_x⁄	^2/N		
						Note the Howeve the sam	at sigma_x er, sigma_x ne result. T	:^2 is ti ‹^2/N i hus th	he signal power which is a fu is not a function of m so max ere are two options.	inction of the n imizing the pro	umber of signal levels L. posed expression yields	
						1. Defin 2. Use t amplitue	e (sigma_ the propos de and not	m)^2 c ed exp equiv	correctly. oression but do not refer to it alent.	as only propor	tional to the interference	
						Note the single b	at is comm	ent #2 e samp	233 is accepted, the version of pled a baud intervals should	of this equation be substituted	that corresponds to the in the response.	

Does the Task Force have a preference? The remainder of the suggested remedy can be implemented as proposed.

C/ 93A SC P213 L3 # 35	C/ 92 SC 92.11 P145 L12 # 37
Comment Type T Comment Status D Annex 93A is described as normative but contains no "shall" statement or equivalent.	Cone, Chris Finisar Comment Type T Comment Status D Add 2nd MDI specification, as justified in cole_01_0712 and supported in mcsorley_01_0712
SuggestedRemedy End the first paragraph in 93A.1 with:	SuggestedRemedy Incorporate text as per cole_02_0712
"COM shall have a non-negative value." Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.	Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. For committee discussion, use cole_02_0712.pdf.
The premise of comment #246 is that it is simpler to specify that COM be greater than or equal to some limit plus COM0, or equivalently, some larger limit. This specification would be stated in the corresponding PMD clause. Add the appropriate normative requirement for Annex 93A, that is, COM shall be computed using the procedure described therein.	CI 94 SC 94.3.10 P 186 L 31 # 38 Lusted, Kent Intel Intel TX training Comment Type TR Comment Status D TX training PMD control function for 100GBASE-KP4 needs a baseline proposal. TX training
Cl 93A SC 1.3 P 215 L 46 # 36 Moore, Charles Avago Technologies Comment Type TR Comment Status D The parameter "At" is used in equation 93A-6 but not defined anywhere in sub-clause 93A.1.5	SuggestedRemedy See presentation to be submitted at a future date Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. One or more presentations are expected to address this topic.
"At" is defined in sub-clause 93A.1.4 and re-used equation 93A-10. Assuming that this is the same parameter it will result in amplitude squared being used where amplitude is appropriate SuggestedRemedy	C/ 94 SC 94.2.3 P176 L24 # 39 Lusted, Kent Intel
In equation 93A-6, replace "At" with "1" Proposed Response Response Status W PROPOSED ACCEPT. Note that comment #130 suggests to remove H_t(f) and Equation 93A-6. If that comment is accepted, this becomes overtaken by events. See also #247.	Comment Type TR Comment Status D TX EEE encoding 100GBASE-KP4 needs a ALERT signal SuggestedRemedy Use variation of proposed 100GBASE-KP4 training frame as the ALERT signal. See presentation to be submitted in the future. Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. One or more presentations are expected to address this comment.

C/ 45	SC 45.2.1.80	P 21	L1	# 40	C/ 45	SC 45.2.1.83	P 21	L1	# 43
Lusted, Ke	ent	Intel			Lusted, Ke	nt	Intel		
Comment	Type TR	Comment Status D		bucket	Comment	Type TR	Comment Status D		bucket
The co and C	urrent text for the lause 93 PMDs.	BASE-R PMD status registe	r does not refer	ence the new Clause 92	The cu 92 and	rrent text for the l I Clause 93 PMDs	BASE-R LP coef update re	egister does not re	eference the new Clause
Suggested	dRemedy				Suggested	Remedy			
Updat other or Cla	te the text to read PHY types using t tuse 93."	"The BASE-R PMD status re he PMDs described in Claus	egister is used f se 72, Clause 8	or 10GBASE-KR and 4, Clause 85, Clause 92,	Update 10GB/ Clause	e the text to read ASE-KR and othe 85, Clause 92, c	'The BASE-R LD coefficie r PHY types using the PM r Clause 93."	ent update, lane 0 IDs described in C	register is used for lause 72, Clause 84,
Proposed PROP	Response POSED ACCEPT.	Response Status W			Proposed PROP	Response OSED ACCEPT.	Response Status W		
C/ 45 Lusted, Ke	SC 45.2.1.81	P 21 Intel	L 1	# 41	C/ 45 Lusted, Ke	SC 45.2.1.84 nt	P 21 Intel	L1	# 44
Comment	Type TR	Comment Status D		bucket	Comment	Type TR	Comment Status D		bucket
The co Clause	urrent text for the e 92 and Clause 9	BASE-R LP coefficient upda 93 PMDs.	te register does	not reference the new	The cu Clause	rrent text for the l 93 PMDs.	BASE-R LD status registe	er does not referen	ce the new Clause 92 and
Suggested	dRemedy				Suggested	Remedy			
Updat 10GB/ Claus	te the text to read ASE-KR and othe e 85, Clause 92, c	"The BASE-R LP coefficient r PHY types using the PMDs or Clause 93."	update, lane 0 s described in C	register is used for lause 72, Clause 84,	Update KR an Clause	e the text to read d other PHY types e 92, or Clause 93	'The BASE-R LD status re s using the PMDs describ s."	eport, lane 0 regis ed in Clause 72, C	ter is used for 10GBASE- Clause 84, Clause 85,
Proposed	Response	Response Status W			Proposed	Response	Response Status W		
PROF	POSED ACCEPT.				PROP	OSED ACCEPT.			
C/ 45	SC 45.2.1.82	P 21	L1	# 42	C/ 45	SC Table 45-	105 P21	L1	# 45
Lusted, Ke	ent	Intel			Lusted, Ke	nt	Intel		
Comment	Type TR	Comment Status D		bucket	Comment	Type TR	Comment Status D		bucket
The co 92 and	urrent text for the d Clause 93 PMD	BASE-R LP status report reç s.	gister does not i	reference the new Clause	EEE c 100GE	apability register b ASE-KP4, 40GB	bit definitions table does n ASE-KR4, 40GBASE-CR4	ot list 100GBASE	-CR4, 100GBASE-KR4, -CR10.
Suggested	dRemedy				Suggested	Remedy			
Updat KR an Claus	te the text to read ad other PHY type e 92, or Clause 93	"The BASE-R LP status report s using the PMDs described 3."	ort, lane 0 regis in Clause 72, 0	ter is used for 10GBASE- Clause 84, Clause 85,	Add ei 40GB/	ntries for 100GBA ASE-CR4 and 100	SE-CR4, 100GBASE-KR₄)GBASE-CR10.	4, 100GBASE-KP4	4, 40GBASE-KR4,
Proposed	Response	Response Status W			Add a	propriate subclau	uses for each entry in 45.2	2.3.9.x	
PROF	POSED ACCEPT.				Proposed	Response	Response Status W		
					PROP	OSED ACCEPT.			

C/ 45	SC 45.2.3.9	P 21	L 1	# 46	C/ 91 S	SC 91.5.3.1	P99	L 31	# 49
Lusted, Ken	t	Intel			Szczepanek, A	Andre	Inphi		
Comment T	ype TR	Comment Status D		bucket	Comment Typ	e ER	Comment Status D		
EEE ca KR4, 10	pability register b 0GBASE-KP4, 4	vit definitions subclauses do n 10GBASE-KR4, 40GBASE-CI	ot list 100GBA R4 and 100GB	SE-CR4, 100GBASE- ASE-CR10.	"FEC Des do with de	kew state dia skew (despite	gram" is a misnomer. The SI e inheriting the functions of F	M shown in Figu ⁻ igure 82-12), ins	re 91-9 has very little to stead it is all about
SuggestedF	Remedy				verifying F	EC block Loo	CK.		
Add app 40GBA	oropriate subclau SE-KR4, 40GBA	ises for 100GBASE-CR4, 100 SE-CR4 and 100GBASE-CR ²	GBASE-KR4, 10 in 45.2.3.9.:	100GBASE-KP4, <	The function and will be	ons of FEC la	ane deskew and testing for F d at quite different positions i	EC block lock ar	e functionaly independen and possibly in different
Proposed R	esponse	Response Status 🛛 🛛 🛛 🛛 🛛 🖉			clock regir	nes.			
PROPC	SED ACCEPT.				l see no re	al need to co	ombine these two functions in	nto one SM Why	v not just re-use Figure 82
	00 -	- 544	1.00		12 as is fo	r FEC lane d	eskew, and provide a sepera	ate FEC block Lo	ock SM.
C/ 91	SC Figure 91-	5 798	L 39	# 47	SuggestedRer	nedy			
Comment T	ype ER	Comment Status D		bucket	Replace F Edit existir	igure 91-1 wi ng Figure 91-	th a copy of Figure 82-12. 1 to use the "align_status" or	utput from the de	eskew lock SM.
Why do The res So "w" i	we refer to w-bit t of this clause has s not a variable.	symbols rather than 10bit synastic synastic synastic synastic synastics of the synastic syna Synastic synastic syna	mbols. of 10bit symbo	ls,	Proposed Res PROPOSI	<i>ponse</i> ED ACCEPT	Response Status WIIN PRINCIPLE.		
SuggestedF	Remedy				[Added Cl	ause (91) to S	Sbcl field for consistent sortir	ng.]	
Replace with "sy	e "symbol delay e mbol delay elem	element, holds 1 w-bit symbol ent, holds 1 10-bit symbol"	n		It is true th	at the actual	"deskew" operation is a sma	all portion of the	state diagram and the
Proposed R	esponse	Response Status W			majority of being rece	the functionation the function	ality pertains to monitoring w	hether or not pro	oper FEC codewords are
See cor	mment #48.				A stand-al FEC deco	one FEC des de blocks, clo	kew state diagram would be ock domains, etc. are implem	trivial. Relative nentation-specifi	placement of deskew and c considerations that
C/ 91	SC 91.5.2.7	P 97	L33	# 48	should hav	ve little bearir	ng on this generalized descri	ption of the requ	ired behavior.
Szczepanek	, Andre	Inphi			From a be	havioral poin	t of view, defining operations	for each FEC la	ane (Figure 91-8) and
Comment T	vpe FR	Comment Status D			operations way to par	tor the aggre	egate (deskew or "lane aligni blem. Both aspects are requi	ment", error mor ired to establish	nitoring) is a reasonable
Why do The res So "w" i	we refer to w-bit t of this clause has not a variable	symbols rather than 10bit syn as been written on the basis of	mbols. of 10bit symbo	ls,	codeword To avoid g	lock. jiving undue v	weight to the deskew operati	on, rename Figu	re 91-9 to be the "FEC
Suggested	Remedy				alignment	state diagran	n".		
Replace with "GI	e "GF(2^w) where F(2^10) where th	e w=10 is the symbol size in t e symbol size is 10 bits"	oits"						
Proposed R	esponse	Response Status W							
PROPC	SED ACCEPT.								
[Added	Clause (91) to S	bcl field for consistent sorting	.]						
Substitu	ite the value 10 f	or all instances of w in Clause	e 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 Z/withdrawn SORT ORDER: Comment ID

Comment ID 49

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C/ 91 SC 91.5.3.;	2 P99	L 43	# 50	C/ 91	SC 91.5.	3.5	P 101	L 39	# 52
Szczepanek, Andre				Szczepanek,	Anare	~			
Where is the FEC lar sequence of alignme SuggestedRemedy Explicitly state that F	EC lane number zero is the l	"The FEC lane nu FEC lane" only tell ane that caries AN	mber is defined by the s half the story. I_0, lane 1 AM_1, lane 2	The func dificult to possible In order why not	pe ER tion for re understa bit muxes to underst do it for th	-insertion of the nd what is requ and what is goi em.	ent Status D e first codeword "s lired. As c only has	" nibble is uneces s 4 possible value have to calculate	esarily terse and makes it as, why not just state all 4 these four bit muxes - sc
Proposed Response PROPOSED ACCEF	Response Status W			SuggestedR Replace	emedy :				
[Commenter submitte Clause to Sbcl field for The other half of the	ed the comment against Clau or consistent sorting.] story is in 91.5.2.6 and Figur	use 99. Changed to e 91-4.	OClause 91. Added	d)let rx_ using the rx_paylo rx_paylo rx_paylo rx_paylo	bayloads t e following ads<(64c- ads<(64c- ads<255:(be a vectorrepro- expressions: +3):0> = rx_xcc +7):(64c+4)> = 64c+8)> = rx_>	esenting the paylo oded<(64c+8):5> 0000 (an arbitrary ccoded<256:(64c+	ads of the four 66 value that is later 9)>	b-bit blocks. It is derived r replaced, see step j)
In 91.5.3.2, add a cro paragraph. In 91.5.2.6, state that 16 correspond to FE 13, and 17 correspor	oss-reference to 91.5.2.6 at t t alignment marker payloads C lane 0, alignment marker p id to FEC lane 1, and so on s	he end of the last s corresponding to F ayloads correspon see Figure 91-4).	entence of the first PCS lanes 0, 4, 8, 12, anc ding to PCS lanes 1, 5, 9	With : d)let rx_payloads be a vectorrepresenting the payloads of the four 66-bit blocks. It is derived using the following expressions: if (c==0) rx_payloads <255:0> = rx_xcoded<256:9> :: 4'b000 :: rx_xcoded <8:5> if (c==1) rx_payloads <255:0> = rx_xcoded<256:73> :: 4'b000 :: rx_xcoded <72:5> if (c==2) rx_payloads <255:0> = rx_xcoded<256:137> :: 4'b000 :: rx_xcoded <136:5> if (c==2) rx_payloads <255:0> = rx_xcoded<256:137> :: 4'b000 :: rx_xcoded <136:5>					
C/ 91 SC 91.5.3.4	4 <i>P</i> 101	L17	# 51	if (c==3) where 4'	rx_payloa b000 is ar	ids <255:0> = r n arbitrary value	x_xcoded<256:20 e that will be replace	1> :: 4'b000 :: rx_ ced later in step j	_xcoded <200:5>
Szczepanek, Andre	Inphi			Proposed Re	esponse	Respor	se Status W		
Comment Type ER	Comment Status D		bucket	PROPO	SED REJE	ECT.			
Descrambling no long SuggestedRemedy Remove "descrambli Proposed Response	ger forms part of the receive ng and" <i>Response Status</i> W	datapath.		[Comme 91.5.3.5 The text reader u	nter subm Page 10 ⁻ is correct nderstand	itted this comm I, Line 39.] as written. Illus the process.	nent against Claus trations have beer	e 00. Changed to n added (see Figu	Clause 91, Subcl ure 91-3) to help the
[Added Clause (91) t	o Sbcl field for consistent so	rting.]		The suge vectors 4 require r	gested rer Ib'xxxx, th lew array	nedy includes r at is not used e concatenation r	notation for array o elsewhere in IEEE notation.	concatenation "::" 802.3. The existin	and definition of binary ng definition does not
				While the computa calculation	e mathem tions to ur ons involv	atical description aderstand the conditional terms of term	on is precise, it requestion of the end of t	uires the user to codeword. It is no ous than the other	do a number of index ot clear why the s.
				If comme	ent #52 is	accepted (in pr	inciple), this respo	onse should be m	odified to be consistent.
TYPE: TR/technical requi COMMENT STATUS: D/ SORT ORDER: Commer	ired ER/editorial required G dispatched A/accepted R/re t ID	R/general required jected RESPON	T/technical E/editorial G/g ISE STATUS: O/open W/wri	general itten C/closed Z	/withdrawr	ı	Comm	nent ID 52	Page 13 of 130 9/24/2012 2:42:0

C/ 91 SC 91.5.2.5	P 95	L 1	# 53	C/ 91	SC 91.5.3.3	P 101	L 6	# 55
Szczepanek, Andre	Inphi			Szczepan	ek, Andre	Inphi		
Comment Type TR	Comment Status D			Comment	Type TR	Comment Status D		
The output of the tranco If for any j=0 to 3, tx_co	oder for invalid sync header oded_j<1> == tx_coded_j<0	s is not defined. > what is tx_xcoc	led ?	"If the What	decoder determi is the definition o	nes that a codeword is uncor f uncorrectable ?	rectable, it shal	I"
SuggestedRemedy				This is Witho	s important as it h ut a definition of '	has a "shall" tied to it. 'uncorrectable" how can we c	determine comp	liance
for any j=0 to 3, tx_code then the transcoded out	ed_j<1> == tx_coded_j<0>	the transcode of	four Local fault input	Suggested	dRemedy			
words			·····	Add th	ne following defin	ition of an uncorrectable 802	.3bj codeword.	
Proposed Response	Response Status W			An un	correctable code	word is a codeword whose er	ror locator poly	nomial has a degree
PROPOSED ACCEPT	IN PRINCIPLE.			greate deterr	nined (The key e	nere the error locator or error quation cannot be solved).	evaluator polyr	nomials cannot be
[Added Clause (91) to S	Sbcl field for consistent sort	ing.]		This d	lefinition provides	a definitive minimum require	ement for codev	vord marking.
See healey_02_0912.p	df.			Proposed	Response	Response Status W		
	Doc	1.40	# []	PROF	OSED ACCEPT	IN PRINCIPLE.		
Szczepanek, Andre	P 95 Inphi	L 40	# 54	[Adde	d Clause (91) to	Sbcl field for consistent sortir	ng.]	
Comment Type TR The upper limit of the ra The range of j should be	Comment Status D ange of variable "j" is wrong e 0 to 4 concistent with the	5 AMs per row sł	<i>bucket</i> nown in Figure 91-4	The cundefi undefi This is	ommenter define ined terms ("error s not an equitable	s the term "uncorrectable coor r locator polynomial", "error e e trade.	deword" while ir valuator polyno	troducing three new mial", and "key equation").
SuggestedRemedy Replace "j=0 to 5" with	"j=0 to 4"			See c	omment #443.			
Proposed Response	Response Status W							
PROPOSED ACCEPT.								
[Added Clause (91) to S	Sbcl field for consistent sort	ing.]						
See comment #472.								

C/ 91 SC 91.5.2.5 Szczepanek, Andre	Р 95 Inphi	L 15	# 56	C/ 91 Szczepan	SC 91.5.2.6 .ek, Andre		P 95 Inphi	L 45	# 57	
Comment Type ER The function for omission dificult to understand wha possible bit muxes.	Comment Status D of the first codeword "s" r t is required. As c only ha	nibble is unecess as 4 possible valu	arily terse and makes it es, why not just state all 4	Comment This r A map A diag	<i>Type</i> ER napping process pping equation to gram was provid	Comment is really needs nough succinct ed in gustlin_0	Status D a diagram to s is not descript 1_0312, why no	how what is going ive. ot use it.	g on.	
SuggestedRemedy				Suggeste	dRemedy			04 0040		
e)Omit tx_coded_c<9:6>, block type field for tx_cod tx_xcoded<(64c+8):5> = t tx_xcoded<256:(64c+9)>	which is the second nibb ed_c, from tx_xcoded per x_payloads<(64c+3):0> = tx_payloads<255:(64c+	le (based on trans r the following exp -8)>	smission order) of the ressions.	Add n Proposed PROF [Adde	Papping diagram <i>Response</i> POSED ACCEP ⁻ ed Clause (91) tc	α based on slide Response Γ IN PRINCIPL Sbcl field for c	e 15 of gustlin_ <i>Status</i> W E. consistent sortii	01_0312. ng.]		
With : e)Omit tx_coded_c<9:6>, which is the second nibble (based on transmission order) of the block type field for tx_coded_c, from tx_xcoded per the following : if (c==0) tx_coded <256:5> = tx_payloads<255:8> :: tx_payloads<3:0> if (c==1) tx_coded <256:5> = tx_payloads<255:72> :: tx_payloads<67:0> if (c==2) tx_coded <256:5> = tx_payloads<255:136> :: tx_payloads<67:0> if (c==3) tx_coded <256:5> = tx_payloads<255:136> :: tx_payloads<131:0> if (c==3) tx_coded <256:5> = tx_payloads<255:200> :: tx_payloads<195:0>					Figure 91-4 was included for this purpose. See comment #150. C/ 91 SC Figure 91-4 P97 L4 Szczepanek, Andre Inphi					
Proposed Response PROPOSED REJECT.	Response Status W			<i>Comment</i> This f headi	<i>Type</i> ER igure describes ng description "F	<i>Comment</i> the mapping pr Reed Solomon	Status D ocess specified Symbol Index,	d on line 43 page k" does not relate	95, but the column e to this mapping process	
[Added Clause (91) to Sb	cl field for consistent sorti	ing.]		Suggeste	dRemedy					
The text is correct as writt reader understand the pro The suggested remedy in elsewhere in IEEE 802.3. notation.	en. Illustrations have bee cess. cludes notation for array o The existing definition do	en added (see Fig concatenation "::" ses not require ne	ure 91-3) to help the that is not used w array concatenation	The c to 319 <i>Proposed</i> PROF See c	olumns should b). Better still witi <i>Response</i> POSED ACCEP ⁻ comment #150	e labelled eithe h both as it ma <i>Response</i> Γ IN PRINCIPL	er by alignment kes the mappir <i>Status W</i> E.	marker column in Ig easire to under	ndex "j" or by column (0 rstand.	
While the mathematical de	escription is precise, it rea	quires the user to codeword. It is n	do a number of index ot clear that the	Figure	e 91-4 illustrates 95, lines 45 to 4	the am_payloa 8.	ads matrix and	"k" does indeed r	elate to the mapping per	

calculations involving the variable c are more onerous than the others.

See also comment #52.

C/ 91 SC 91.5.2.7 Szczepanek, Andre	P 98 Inphi	L 47	# 59	<i>Cl</i> 80 Barrass, Hu	SC 80.3.2 gh	P 49 Cisco	L 28	# 61
Comment Type ER Co Why are the generator polyn	omment Status D omial coefficients releg	ated to a (presun	nably informative) annex	<i>Comment T</i> For cha	ype T nge of LPI Rx t	Comment Status D		LPI Rx
Although they can be derived requires a good bit of maths. all, there is no discretion in th	from field polynomial So why not state them heir values.	and number of ch here. The coeffic	eck symbols this cients are normative after	Fig 80-3 SuggestedF	a - fix LPI inte Remedy	face between PMA & PMD		
SuggestedRemedy Add list of generator polynon with Figure 91-5.	nial coefficients for the	two FEC codes, i	n a format concistent	Change Proposed R	direction FEC	IS_RX_MODE.request		
Proposed Response Re PROPOSED ACCEPT.	sponse Status W			PROPC	SED ACCEPT			
[Added Clause (91) to Sbcl fi	eld for consistent sortir	ng.]		<i>Cl</i> 80 Barrass, Hu	SC 80.3.3.6 gh	P 49 Cisco	L 53	# 62
See comment #234.	P141	122	# 60	<i>Comment T</i> For cha	ype T nge of LPI Rx t	Comment Status D		LPI Rx
Sommers, Scott	Molex			Need d	efinitions for rx	_lpi_active		
Comment Type ER Co	omment Status D			SuggestedF	Remedy			
Spec references "The test fix state illustrated in Figure 92- Often, this clause is misinter <i>SuggestedRemedy</i> "The test fixtures of Figure 92- Figure 92-13, to enable com section are not MDI specifica <i>Proposed Response Re</i> PROPOSED ACCEPT. Use suggested remedy.	tures of Figure 92-5 an 13". preted and applied as a 2-5 and Figure 92-12 a ections to measurement tions for an implement <i>sponse Status</i> W	ad Figure 92-12 a a MDI specificatio re specified in a r nt equipment. The ed design."	re specified in a mated n. nated state, illustrated in a requirements in this	Add suf 80.3.3.6 The IS_ receive effect. 80.3.3.6 IS_RX_ The par 80.3.3.6 This pri 80.3.3.6 The spe primitive reestab Proposed R PROPC	Aclause 80.3.3. IS_RX_LPI_A RX_LPI_ACTI function is action in Semantics of LPI_ACTIVE.ref ameter rx_lpi_ 2.2 When general when general is Effect of ref is In general, which FEC operations esponse SED ACCEPT	6 CTIVE.request VE.request primitive communive. Without EEE capability, the of the service primitive equest(rx_lpi_active) active is boolean. rated ated by the PCS LPI receive for the rx_lpi_active is true the F tion following a period of quies <i>Response Status</i> W	icates to the FEC e primitive is ne unction. ed by the FEC s EC sublayer use scence.	C that the PCS LPI ver invoked and has no sublayer that receives this es rapid block lock to

C/ 80	SC 80.3.3.7	P49	L 54	# 63	C/ 82	SC 82.2.18.2	2.2 P68	L1	# 65			
Barrass, H	ugh	Cisco			Barrass, I	lugh	Cisco					
Comment T For cha	<i>Type</i> T ange of LPI Rx fu	Comment Status D		LPI Rx	Comment rx_blo	<i>Type</i> T ock_lock is define	Comment Status D d for each lane.		bucket			
Need o	definitions for ene	ergy_detect			Suggeste Chan	dRemedy ge ry block lock	to ry block lock-ys					
Suggested	Remedy				Onan	ge IX_block_lock						
Add su	bclause 80.3.3.7				Add "for each lane" at the end of the first sentence.							
80.3.3. The IS detecte	7 IS_ENERGY_I _ENERGY_DET ed the return of e	DETECT.indicate ECT.indicate primitive is use nergy on the interface followi	d to communicat	e that the PMD has uiescence Without EEE	Proposed Response Response Status W PROPOSED ACCEPT.							
capabi	lity, the primitive	is never invoked and has no	effect.		C/ 85 Barrass, I	SC 85.13.3 Huah	P 90 Cisco	L13	# 66			
80.3.3. IS_EN	7.1 Semantics of ERGY_DETECT	f the service primitive .indicate(energy_detect)			Comment	Туре т	Comment Status D		EEE option			
The pa	rameter energy_	detect is boolean.			If the	new optional beh	avior is accepted then PMD	only needs to su	pport the option.			
80.3.3. This pr receive 80.3.3	7.2 When genera imitive is genera ed from the PMD 7.3 Effect of rece	ated ted by the PMA, reflecting the	e state of the sig	nal_detect parameter	Suggeste After Proposea PROI	dRemedy "Implementation of <i>Response</i> POSED ACCEPT	of LPI" insert "with the norma Response Status W	al wake mode opt	ion"			
The sp primitiv followir	ecific effect of re ve. This parameter ng a period of qu	ceipt of this primitive is define or is used to indicate that acti iescence.	ed by the PCS s vity has returned	ublayer that receives this d on the interface	C/ 83A Barrass, F	SC 83A.3.2a Hugh	Р 202 Cisco	L 28	# 67			
Proposed I PROP	Response OSED ACCEPT.	Response Status W			Comment If the	<i>Type</i> T new optional beh	Comment Status D avior is accepted then XLAU	JI/CAUI only need	EEE option ds to support the option.			
C/ 82 Barrass, Hi	SC 82.1.5 ugh	Р 65 Сіsco	L 33	# 64	Suggeste After optior	<i>dRemedy</i> "optional Energy າ"	Efficient Ethernet (EEE) cap	ability" insert "wit	h the normal wake mode			
Comment 7 For cha	<i>Type</i> T ange of LPI Rx fu	Comment Status D		LPI Rx	Proposed PROI	Response POSED ACCEPT	Response Status W					
Need t	o fix block diag											
Suggested	Remedy											
Chang Add ins Add ins	e direction inst:IS st:IS_ENERGY_I st:IS_RX_LPI_A	S_RX_MODE.request DETECT.indicate CTIVE.request										
Proposed I PROP	Response OSED ACCEPT.	Response Status W										

CI 74	SC 74.7.4.4	P 37	L 1	# 68	CI 80	SC 80.3.1	P 46	L 44	# 70
Barrass, Hu	ıgh	Cisco			Barrass, Hu	gh	Cisco		
Comment 7	<i>уре</i> Т	Comment Status D		EEE FEC	Comment Ty	vpe T	Comment Status D		LPI Rx
Clause	74 needs to be c	hanged so that compatibility	y with .3ba PHY	s can be maintained.	The beh	avior of the LP	receive function needs to be	e redefined. A la	rge number of specific
The FE block lo	C block needs to ock.	be aligned so that RAMs a	re at the start of	a block to allow rapid	changes This cor rejected	or modified.	d to achieve this in the manr used as a reference should t	the proposed in t the proposed me	the submitted presentation ethod be accepted,
Suggested	Remedy				ry mod	needs to char	an direction also energy de	etect and ry Ini	active need to be added
Add the	e following at the	end of clause 74.7.4.4			SuggostodE	amadu	ige direction, also energy_de	etect and tx_ipi_	active field to be added.
Eor DH	Vs operating at 4	0 Ch/c and above that inclu	do the optional	Enorgy Efficient Ethernet	Suggesteur	emedy			
(EEE) (capability with the	e normal wake mode option	(see Clause 78	, 78.3), the FEC encoder	Change				
shall fo	rce the start of a	new FEC block following the	e transition of tx	_mode from QUIET to	IS_RX_	MODE.indicatio	n		
anothe Marker	r state. The FEC	blocks following this transit	ion shall start w	ith a Rapid Alignment	To				
Droposod E			by 4 (300 02.2.0	Jaj.	10.				
		Response Status VV			IS_RX_	MODE.request	the alternation of		
	SED ACCELL.				IS_ENE	PI ACTIVE.re	auest		
Cl 74	SC 74.7.4.8	P37	L 1	# 69	Proposed R	esponse	Response Status W		
Barrass, Hu	ıgh	Cisco			PROPO	SED ACCEPT.			
Comment 7	<i>уре</i> т	Comment Status D		EEE FEC					
Clause	74 needs to be c	hanged so that compatibility	y with .3ba PHY	's can be maintained.	C/ 80	SC 80.3.1	P 46	L 48	# 71
The ror	id block look nor	da ta taka inta aggunt RAN	10 for 10/1000		Barrass, Hu	gh	Cisco		
			VIS 101 40/100G		Comment Ty	vpe T	Comment Status D		LPI Rx
Suggestear	Remedy				For cha	nge of LPI Rx fu	unction		
to "If th	e the first part of s	apability is supported for PH	Ne optional EEt IYs operating at	= capability is supported	Fix the c	lescriptions of t	he primitives		
					SuggostodE	omodu			
Add a r	new paragraph at	the end of the subclause:			Suggesteur	enieuy	o of paragraph, roplace with		
If the o	ptional EEE capa	bility is supported for PHYs	operating at or	above 40Gb/s a similar	Delete t	le zhu sentend	e of paragraph, replace with		
FEC ra	pid block lock is r	equired. When transitioning	out of the slee	o state, the remote FEC	The IS_	RX_MODE.req	uest primitive is used to com	municate the sta	ate of the PCS LPI receive
encode	r starts FEC bloc	ks with Rapid Alignment Ma	arkers incluing a	down_count divisible by 4	function	to other sublay	ers. The IS_RX_LPI_ACTIV	E.request primit	ive is used to
Proposed F	Response	Response Status W			IS_ENE	RGY_DETECT	indication primitive is used t	to communicate	that the PMD has
PROPO	DSED ACCEPT.				detected	I the return of e	nergy on the interface follow	ving a period of c	luiescence.
					Proposed R	esponse	Response Status W		
					PROPO	SED ACCEPT.			

C/ 80 SC 80.3.3.5	P 47	L 36	# 72	C/ 80 SC 80.3.3.5.2 P47 L5'	1 # 75
Barrass, Hugh	Cisco			Barrass, Hugh Cisco	
<i>Comment Type</i> T For change of LPI Rx fu	Comment Status D		LPI Rx	Comment Type T Comment Status D For change of LPI Rx function	LPI Rx
Change rx_mode defini	ition			Change origin of rx_mode	
SuggestedRemedy				SuggestedRemedy	
Change title - IS_RX_N	10DE.request			Change "received signal" to "PCS LPI receive function"	
Delete 1st sentence. A The IS_RX_MODE.req PCS LPI receive function	dd: uest primitive communicates on to other sublayers.	the rx_mode par	rameter generated by the	Proposed Response Response Status W PROPOSED ACCEPT.	
Proposed Response	Response Status W			C/ 80 SC 80.3.2 P48 L13 Barrass Hugh Cisco Cisco	3 # 76
PROPOSED ACCEPT.					
C/ 80 SC 80.3.3.5.1 Barrass. Hugh	I P47 Cisco	L 44	# 73	For change of LPI Rx function	LPIRX
Comment Type T	Comment Status D		l PI Rx	Fig 80-3 - fix LPI interface between PCS & FEC	
For change of LPI Rx fu	unction		Link	SuggestedRemedy	
	1			Between PCS & FEC:	
Change rx_mode direct SuggestedRemedy Change indicate to requ	uest			Change direction FEC:IS_RX_MODE.request Add FEC:IS_ENERGY_DETECT.indicate Add FEC:IS_RX_LPI_ACTIVE.request	
Proposed Response PROPOSED ACCEPT.	Response Status W			Proposed Response Response Status W PROPOSED ACCEPT.	
C/ 80 SC 80.3.3.5.1	P47	L 47	# 74	CI 80 SC 80.3.2 P48 L2	1 # 77
Barrass, Hugh	Cisco			Barrass, Hugh Cisco	
<i>Comment Type</i> T For change of LPI Rx fu	Comment Status D		LPI Rx	Comment Type T Comment Status D For change of LPI Rx function	LPI Rx
No ALERT for rx_mode)			Fig 80-3 - fix LPI interface between FEC & PMA	
SuggestedRemedy				SuggestedRemedy	
Delete ALERT.				Between FEC & PMA:	
Proposed Response PROPOSED ACCEPT.	Response Status W			Change direction FEC:IS_RX_MODE.request Add FEC:IS_ENERGY_DETECT.indicate	
				Proposed Response Response Status W	
				PROPOSED ACCEPT.	

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 Z/withdrawn SORT ORDER: Comment ID

C/ 80 SC 80.3.2 Barrass, Hugh	P 48 Cisco	L 28	# 78	C/ 80 SC 80.3.2 Barrass, Hugh	Р 49 Cisco	L13	# 80				
Comment Type T For change of LPI Rx fe	Comment Status D unction		LPI Rx	Comment Type T For change of LPI Rx func	י Comment Status D ו א function ויייס א לעמיד אין א לעמיד אי						
Fig 80-3 - fix LPI interfa	ace between PMA(20:10) & P	MA(10:n)		Fig 80-3a - fix LPI interface	e between PCS & FEC						
SuggestedRemedy				SuggestedRemedy							
Between PMA(20:10) 8	& PMA(10:n):			Between PCS & FEC:							
Change direction FEC: Add FEC:IS_ENERGY Proposed Response PROPOSED ACCEPT	IS_RX_MODE.request _DETECT.indicate <i>Response Status</i> W			Change direction FEC:IS_ Add FEC:IS_ENERGY_DE Add FEC:IS_RX_LPI_ACT Proposed Response	RX_MODE.request ETECT.indicate TVE.request Response Status W						
C/ 80 SC 80.3.2	P 48	L 36	# 79								
Barrass, Hugh	Cisco			C/ 82 SC 82.2.18.2.2	P68	L12	# 81				
Comment Type T For change of LPI Rx for	Comment Status D unction		LPI Rx	Barrass, Hugh <i>Comment Type</i> T For change of LPI Rx funct	Cisco Comment Status D tion		LPI Rx				
Fig 80-3 - fix LPI interfa	ace between PMA & PMD			Need to add definition for e	enerav detect						
SuggestedRemedy				SuggestedRemedy	shougy_dotoot						
Between PMA & PMD:				Add energy detect:							
Change direction FEC:	IS_RX_MODE.request										
Proposed Response PROPOSED ACCEPT.	Response Status W			A parameter generated by In the PMD this has the sa without modification by the	the PMA/PMD sublayer to ame definition as paramete PMA (and FEC).	o reflect the state er signal_detect	e of the received signal and is passed through				
				Proposed Response PROPOSED ACCEPT.	Response Status W						

C/ 82 SC 82.2.18.2 Barrass, Hugh	.2 P 68 Cisco	L 30	# 82	C/ 82 SC 82.2.18.3.1 P 80 L 25 Barrass, Hugh Cisco	# 85
Comment Type T For change of LPI Rx fu	Comment Status D		LPI Rx	Comment Type T Comment Status D For change of LPI Rx function	LPI Rx
Need to change definiti SuggestedRemedy Change definition to: A variable reflecting the diagram (Fig 82-17). Th Proposed Response	on for rx_mode e state of the LPI receive fund he parameter has one of two <i>Response Status</i> W	tion as described values DATA and	by the LPI receive state QUIET.	Need to add rx_mode assignments in Rx LPI state diagram - Fig 82-17. SuggestedRemedy In state RX_QUIET, assign rx_mode = QUIET Proposed Response Response Status W PROPOSED ACCEPT.	# 100
PROPOSED ACCEPT.				Barrass, Hugh Cisco	# 00
C/ 82 SC 82.2.18.3 Barrass, Hugh	.1 P72 Cisco	L 5	# 83	Comment Type T Comment Status D For change of LPI Rx function	LPI Rx
Comment Type T For change of LPI Rx fu	Comment Status D unction		LPI Rx	Need to add rx_mode assignments in Rx LPI state diagram - Fig 82-17. SuggestedRemedy	
SuggestedRemedy Change "rx_mode to be	e set to ALERT or DATA" to '	energy_detect to	be set to true"	Proposed Response Response Status W PROPOSED ACCEPT.	
Proposed Response PROPOSED ACCEPT.	Response Status W				
C/ 82 SC 82.2.18.3 Barrass, Hugh	.1 <i>P</i> 80 Cisco	L	# 84		
Comment Type T For change of LPI Rx fu	Comment Status D unction		LPI Rx		
Need to add rx_mode a	assignments in Rx LPI state of	liagram - Fig 82-1	7.		
SuggestedRemedy In state RX_ACTIVE, a	ssign rx_mode = DATA				
Proposed Response PROPOSED ACCEPT.	Response Status W				

<i>Cl</i> 82 Barrass, Hu	SC 82.2.18.3.1 ah	P 80 Cisco	L16	# 87	C/ 83 Barrass, H	SC Hugh	83.3	P 83 Cisco	L 48	# 89
Comment Ty For chai	ype T nge of LPI Rx fur	Comment Status D		LPI Rx	Comment For cl	<i>Type</i> nange o	T If LPI Rx 1	Comment Status D		LPI Rx
Need to	change state tra	nsition conditions in Rx LP	l state diagram -	Fig 82-17.	Fix th	e descri	iptions of	the primitives.		
SuggestedR	Remedy				Suggeste	dReme	dy			
Transitio	ons:				Delete	e 2nd se	entence.			
RX_SLE rx_align RX_SLE RX_QU RX_QU RX_QU RX_WA rx_align RX_WT rx_align	EP > RX_SLEE _status EP > RX_QUIE ⁻ IET > RX_LINK_ IET > RX_WAKE KE > RX_TIMER _status F > RX_TIMER; _status	P; RX_SLEEP > RX_ACTI F - replace rx_mode = QUII FAIL - replace rx_mode = (- replace rx_mode != QUII ; RX_WAKE > RX_ACTIVI RX_WTF > RX_ACTIVE - 1	VE - replace rx_r ET with !rx_align_ QUIET with !ener ET with energy_c E - replace rx_mode replace rx_mode	node = DATA with _status gy_detect letect ode = DATA with = DATA with	Add: The IS functi comm period Proposed PROF	S_RX_N on to oth nunicate d of quie <i>Respor</i> POSED	MODE.red her subla that the escence. nse ACCEPT	quest primitive is used to co yers. The IS_ENERGY_DE PMD has detected the return <i>Response Status</i> W	mmunicate the sta TECT.indication n of energy on the	ate of the PCS LPI receive primitive is used to e interface following a
Proposed R	esponse	Response Status W			C/ 84	SC	84	P86	L 20	# 90
PROPO	SED ACCEPT.				Barrass, F	ugn T	-			100
C/ 83	SC 83.3	P83	L 44	# 88	Follow	<i>i ype</i> ving the	l decision	to include all 40/100 PHYs		40G
Barrass, Hug	gh	Cisco			Suggeste	dRemed	dy			
Comment Ty	ype T	Comment Status D		LPI Rx	Make	all the	changes t	to 84 that match the equival	ent changes in Cl	ause 85
For cha	nge of LPI Rx fur	nction			Proposed	Respor	nse	Response Status W		
rx_mode	e needs to chang	e direction, also energy_de	etect needs to be	added.	PROF	POSED	ACCEPT			
SuggestedR	Remedy									
Change	:									
IS_RX_	MODE.indication									
To:										
IS_RX_I IS_ENE	MODE.request RGY_DETECT.ii	ndication								
Proposed Re PROPO	esponse ISED ACCEPT.	Response Status W								

C/ 85 SC 85.2 Barrass, Hugh	Р 87 Сіsco	L 46	# 91	C/ 85 SC 85.2 Barrass, Hugh	P 87 Cisco	L 50	# 93
Comment Type T For change of LPI Rx fu	Comment Status D		LPI Rx	Comment Type T For compatibility with le	Comment Status D egacy FEC		EEE FEC
rx_mode needs to chan	ge direction			Add note regarding tx_	mode passed through FEC.		
SuggestedRemedy				SuggestedRemedy			
Change:				Add note to the end of	the paragraph:		
IS_RX_MODE.indication	n			Note: if Clause 74 FEC through the FEC to the	is in use, only the values DATA PMD.	v, QUIET and ALE	ERT may be passed
To:				Proposed Response	Response Status W		
IS_RX_MODE.request				PROPOSED ACCEPT	•		
Proposed Response PROPOSED ACCEPT.	Response Status W						
C/ 85 SC 85.2 Barrass, Hugh	P 87 Cisco	L 52	# 92				
Comment Type T For change of LPI Rx fu	Comment Status D		LPI Rx				
Fix the descriptions of the	ne primitives.						
SuggestedRemedy							
Replace the 2 sentence	s with:						
The RX_MODE parame and takes the value QU	ter is used to communicate t IET or DATA.	the state of the PCS	S LPI receive function				
Proposed Response PROPOSED ACCEPT.	Response Status W						

C/ 85 SC 85 Barrass, Hugh	.7.4	P 88 Cisco	L14	# 94		C/ 91 Barrass, H	SC luah	91.2	P 92 Cisco	L 33	# 95
Comment Type	r Com PI Rx function	ment Status D			LPI Rx	Comment For ch	<i>Type</i> hange o	T f LPI Rx fu	Comment Status D		
Add function for	global signal de	etect.				rx_mo	de nee	ds to chan	ge direction, also energy_de	tect and rx_lpi_s	active need to be added.
SuggestedRemedy						Suggested	dRemec	dy			
Delete editor's n	ote. Add the fol	llowing:				Chang	ge:				
At the end of the When the PHY s	e first paragraph supports the opt	n add: tional EEE capability	, PMD SIGNAL	indication is als	o used to	IS_RX	(_MODI	E.indicatior	n		
indicate when th or a wake.	e ALERT signa	I is detected, which	corresponds to the	ne beginning of	a refresh	To:					
At the beginning When the PHY o	of the second a does not suppor	and third paragraphs rt the EEE capability	s add: or if the PHY su	pports the EEE	capability	IS_RX IS_EN IS_RX	(_MODI IERGY_ (_LPI_A	E.request _DETECT.i \CTIVE	indication		
and rx_mode is	set to DATA					Proposed	Respor	nse	Response Status W		
At the end of the	e third paragrap	h add:				PROP	POSED	ACCEPT.			
When the PHY s	supports the EE	E capability, SIGNA	L_DETECT is se	et to FAIL followi	ng a	C/ 45	SC	45.2.7.13	P 23	L 9	# 96
from rx mode =	DATA to rx mo	ode = QUIFT. When	rx mode = QUIF	T. SIGNAL DE	TECT	Barrass, H	lugh		Cisco		
shall be set to				.,		Comment	Туре	т	Comment Status D		EEE option
OK within 500 n a channel that s test channels de unit intervals and	s following the a atisfies the requ fined in 72.7.2. d peak-to-peak	application of a signa uirements of all the p 1 when driven by a s differential output ar	al at the receiver parameters of bot square wave patt nplitude of 720 n	input that is the th interference to ern with a perior nV. While rx_mo	output of olerance d of 16 ode =	Comm option chang	nent #12 al. Thei e. How	28 on D1.0 re was insu ever, since	proposed that the two wake ufficient discussion at the time that time some convincing a	e modes for EEE le to conince the arguments have	should be made BRC to make the been made:
QUIET, SIGNAL applied to the ch Proposed Response	DETECT char nannel. Respo	nges from FAIL to O onse Status W	K only after a val	lid ALERT signa	ll is	Requii energy EEE c	ring sim y than v could su	nple module vould be sa ipport Fast	es (PMA/PMD only) to support aved during LPI. Furthermore Wake but not normal wake.	ort line quiescer e, modules built	ice could consume more before the definition of
PROPOSED AC	CEPT.					Becau PMA/F norma suppo	ise Fasi PMD/FE Il wake irt this o	t Wake is ti EC) it make being an o peration, ti	he simplistic implementation is sense for Fast Wake to be ptional extra mode. Change ne resolution of this commer	of EEE (that re the default beh s will be require at should serve	quires no changes to the avior for EEE PHYs, with d in multiple places to as a reference.
						Sugaested	Remed	dv			
						Add a	row an	d adjust the	e reserved row accordingly:		
						7.60.1 Do no	4 - Fas t advert	t Wake onl	y - 1 = Advertise that the PH PHY supports only Fast W	IY supports only ake mode	⁷ Fast Wake mode : 0 -

Proposed Response Response Status W

PROPOSED ACCEPT.

C/ 45 SC 45.2.7.13.1a	P 24	L 41	# 97	C/ 91 SC 91.5.	1 P94	L 40	# 100
Barrass, Hugh	Cisco			Barrass, Hugh	Cisco		
Comment Type T If the new optional behavior	Comment Status D or is accepted there need	s to be a descript	EEE option	Comment Type T For change of LPI	Comment Status D Rx function		
SuggestedRemedy Insert an extra new subcla 45.2.7.13.1a Fast Wake or Support for Fast Wake onl one. This bit is not set for I	use 45.2.7.13.1a before hly (7.60.14) y, as defined in 82.2.18.2 PHYs less than 40 Gb/s a	the existing one a 2.2, shall be adver and for PHYs that	nd renumber the rest. rtised if this bit is set to support both wake	Fix the block diagr SuggestedRemedy Change the directi Add FEC:IS_ENEF Proposed Response	am in Fig 91-2 on FEC:IS_RX_MODE.request RGY_DETECT.indication Response Status W		
mode. Note that this bit de Proposed Response PROPOSED ACCEPT.	faults set for PHYs grea Response Status W	iter than or equal	to 40 Gb/s.	Change the directi PMA:IS_ENERGY	on of PMA:IS_RX_MODE.reques _DETECT.indication	and add	
C/ 45 SC 45.2.7.13.1a Barrass, Hugh	P 24 Cisco	L 45	# 98	C/ 92 SC 92.2 Barrass, Hugh	P 113 Cisco	L11	# 101
Comment Type E Although the spelling of "a style permeating the rest of SuggestedRemedy Change "advertized" to "ad Proposed Response P PROPOSED ACCEPT.	Comment Status D dvertized" is aesthetically f the document. dvertised" in 6 locations. Response Status W	v pleasing, it does	bucket	Comment Type T For change of LPI rx_mode needs to SuggestedRemedy Change: IS_RX_MODE.indi	Comment Status D Rx function change direction cation		
Cl 91 SC 91.5.1 Barrass, Hugh Comment Type T For change of LPI Rx func	P 94 Cisco <i>Comment Status</i> D tion	L 4	# 99	Io: IS_RX_MODE.req Proposed Response PROPOSED ACCI	uest Response Status W EPT.		
Fix the block diagram in Fi SuggestedRemedy Change the direction FEC: Add FEC:IS_ENERGY_DE Add FEC:IS_RX_LPI_ACT Proposed Response	g 91-2 IS_RX_MODE.request TECT.indication IVE.request Response Status W			Use suggested rer	nedy.		

C/ 93 SC 93.2 P15' Barrass, Hugh Cisco	1 <i>L</i> 11	# 102	C/ 94 SC 94.3.1 Barrass, Hugh	P 180 Cisco	L 2	# 104
Comment Type T Comment Status I For change of LPI Rx function	D		Comment Type T For change of LPI Rx fi	Comment Status D		PMD service layer
rx_mode needs to change direction			rx_mode needs to char	nge direction		
SuggestedRemedy			SuggestedRemedy			
Change:			Change:			
IS_RX_MODE.indication			IS_RX_MODE.indication	on		
То:			To:			
IS_RX_MODE.request			IS_RX_MODE.request			
Proposed Response Response Status N PROPOSED ACCEPT.	N		Proposed Response PROPOSED ACCEPT.	Response Status W		
Cl 94 SC 94.2 P17 Barrass, Hugh Cisco	1 <i>L</i> 19	# 103	<i>Cl</i> 45 <i>SC</i> 45.2.7.14 Barrass, Hugh	P 25 Cisco	L 29	# 105
Comment Type T Comment Status I For change of LPI Rx function	D	PMA service layer	Comment Type T If the new optional beha	Comment Status D avior is accepted there need	s to be a new regis	EEE option ster bit.
rx_mode needs to change direction SuggestedRemedy			SuggestedRemedy Add a row and adjust th	ne reserved row accordingly:		
Change:			7.61.14 - Fast Wake or Wake mode : 0 - Link	nly - 1 = Link partner is adve	ertising that the PH	Y supports only Fast
IS_RX_MODE.indication			Proposed Response	Response Status W		
То:			PROPOSED ACCEPT.			
IS_RX_MODE.request			C/ 69 SC 69.1.2	P28	L32	# 106
Proposed Response Response Status	N		Barrass, Hugh	Cisco		
PROPOSED ACCEPT IN PRINCIPLE.			Comment Type E	Comment Status D		
[non-controversial]			For consistency - and a text.	also so that commenters can	see what is chang	ging - show the deleted
The primitive name is already as requested or	n page 171, line 19.		SuggestedRemedy			
			Show the deleted text.			
			Proposed Response PROPOSED ACCEPT	Response Status W IN PRINCIPLE.		
			See comment #31.			
TYPE: TR/technical required ER/editorial required COMMENT STATUS: D/dispatched A/accepted	d GR/general required R/rejected RESPON	T/technical E/editorial G/g ISE STATUS: O/open W/wr	jeneral itten C/closed Z/withdrawn	Comn	nent ID 106	Page 26 of 130 9/24/2012 2:42:04

SORT ORDER: Comment ID

						-					
<i>CI</i> 78 Barrass, Hug	SC 78.1 gh	P 37 Cisco	L 32	# 107		<i>Cl</i> 78 Barrass, ⊦	SC [·] lugh	78.5	P 38 Cisco	L 48	# 111
Comment Ty Following	<i>pe</i> T g the decision to	Comment Status D o include all 40/100 PHYs			40G	Comment	<i>Type</i> new opti	T ional beha	Comment Status D avior is accepted then there n	eeds to be a de	EEE option scription.
SuggestedRo Change	<i>emedy</i> "100GBASE-CF	R10" to "40GBASE-CR4 PHY,	the 100GBAS	E-CR10 PHY"		Suggested Add a	dRemed sentend	ly ce at the e	end of the paragraph:		
Proposed Re PROPOS	esponse SED ACCEPT.	Response Status W				Fast v Proposed	vake is r <i>Respon</i>	mandatory se	r for PHYs that implement EE Response Status W	E; normal wake	is an additional option.
C/ 78 Barrass, Huc	SC 78.1	P 37 Cisco	L 34	# 108		PROF	POSED	ACCEPT.			
Comment Ty Following	pe T	Comment Status D			40G	<i>CI</i> 78 Barrass, ⊦	SC ' lugh	78.5	Р 39 Cisco	L 31	# 112
SuggestedRe	emedy					Comment Follov	<i>Type</i> ving the	T decision t	Comment Status D o include all 40/100 PHYs		40G
PHY," Proposed Re PROPOS	esponse SED ACCEPT.	Response Status W	-\\\\4 F 1	e TUUGDASE-KK4		Suggested In Tat Proposed PROF	dRemed ble 78-4 Respon	ly add two r se ACCEPT	ows for 40GBASE-CR4 and 4 Response Status W	40GBASE-KR4	
Cl 78 Barrass Huc	SC 78.5	P 38 Cisco	L 44	# 109		C/ 78	SC 1	78.5.2	P 39	L 46	# 113
Comment Ty Following	pe T g the decision to	Comment Status D o include all 40/100 PHYs			40G	Barrass, ⊢ <i>Comment</i> Follov	lugh <i>Type</i> ving the	T decision t	Cisco <i>Comment Status</i> D o include all 40/100 PHYs		
Change	100 Gb/s to 40	Gb/s and 100 Gb/s				Suggester	dRemed	ly the of subc	lause to:		
Proposed Re PROPOS	esponse SED ACCEPT.	Response Status W				40 Gb	/s and 1	00 Gb/s F	PHY extension using XLAUI a	and CAUI	
<i>Cl</i> 78 Barrass, Hug	SC 78.5 gh	Р 38 Cisco	L 44	# 110		Proposed PROF	Respon POSED /	se ACCEPT.	Response Status W		
Comment Ty If the new	<i>rpe</i> T w optional beha	Comment Status D	" should be us	EEE o	option						
SuggestedRo Change	<i>emedy</i> "are supported"	' to "may be supported"									
Proposed Re	esponse SED ACCEPT.	Response Status W									
TYPE: TR/te	chnical required	ER/editorial required GR/ge	neral required	T/technical E/edite	orial G/g	eneral	Z/withc	trawn	Comme	ent ID 113	Page 27 of 130

IYPE: IR/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 Z/withdrawn SORT ORDER: Comment ID

Cl 78 SC 78.5.2 Barrass, Hugh	P 39 Cisco	L 48	# 114		C/ 81 SC 81.3a.3.1 P 61 L 31 # 117 Barrass, Hugh Cisco Ci
Comment Type T Following the decision t	Comment Status D to include all 40/100 PHYs			40G	Comment TypeTComment StatusD400Following the decision to include all 40/100 PHYs
SuggestedRemedy Change the first part of	the sentence from				SuggestedRemedy Change CGMII to XLGMII and CGMII - 2 locations.
"100 Gb/s PHYs may b	e extended using CAUI"				Proposed Response Response Status W PROPOSED ACCEPT.
"40 Gb/s and 100 Gb/s Proposed Response PROPOSED ACCEPT.	PHYs may be extended using Response Status W	XLAUI and CAUI"			C/ 81 SC 81.3a.3.1 P 61 L # 118 Barrass, Hugh Cisco Cisco 400 Comment Type T Comment Status D 400 Following the decision to include all 40/100 PHYs 400
Cl 80 SC 80.3.2 Barrass, Hugh Comment Type T Following the decision t	P 47 Cisco <i>Comment Status</i> D to include all 40/100 PHYs	L5	# 115	40G	SuggestedRemedy Change CAUI to XLAUI and CAUI - 2 locations. Proposed Response Response Status W PROPOSED ACCEPT.
SuggestedRemedy Change Fig 80-2 in the Proposed Response PROPOSED ACCEPT.	same way as 80-3. Response Status W				C/ 82 SC 82.2.18.2.2 P 68 L 15 # 119 Barrass, Hugh Cisco Cisco EEE option Comment Type T Comment Status D EEE option If the new optional behavior is accepted then LPI_FW variable will capture the behavior.
Cl 81 SC 81.1 Barrass, Hugh Comment Type T Following the decision to SugaestedRemedy	P 55 Cisco Comment Status D to include all 40/100 PHYs	L 28	# <u>116</u>	40G	SuggestedRemedy Change "and false otherwise" to "and false when the transmitter is to use the optional normal wake mechanism" Add a second sentence "This variable defaults true and may only be set to false if the optional normal wake mode is supported. "
Change CGMII to XLGI Proposed Response PROPOSED ACCEPT.	MII and CGMII Response Status W				Proposed Response Response Status W PROPOSED ACCEPT.

C/ 82 SC 82.7.6.6	P 82	L 6	# 120	C/83 SC 83	P83	L 51	# 123
Comment Type T	Comment Status D	CS must reflect t	EEE option	Comment Type T	Comment Status D	only needs to sur	EEE option
SuggestedRemedy Add row (1st in table):				SuggestedRemedy After "optional Energ	y Efficient Ethernet (EEE) cap	ability" insert "with	the normal wake mode
LP-01 : Support for both LPI:O	n wake modes : 82.2.18.2.2 :	Variable LPI_F	N may be true or false :	Proposed Response PROPOSED ACCEP	Response Status W		
PROPOSED ACCEPT.	Response Status W			C/ 83 SC 83.7.3	P85	L12	# 124
C/ 82 SC 82.7.6.6 Barrass, Hugh	P 82 Cisco	L11	# 121	Comment Type T	Cisco Comment Status D		EEE option
Comment Type T The numbering of the ta	Comment Status D able items is unusual.		bucket	It the new optional be SuggestedRemedy After "Implementation	n of LPI" insert "with the norma	only needs to sup al wake mode opti	port the option. on"
SuggestedRemedy Number the items in a s	simple sequence, starting wit	h LPI-01.		Proposed Response	Response Status W	·	
Proposed Response PROPOSED ACCEPT.	Response Status W			C/ 85 SC 85.1	P87	L33	# 125
C/ 83 SC 83.3 Barrass, Hugh	P83 Cisco	L 40	# 122	Barrass, Hugh Comment Type T	Cisco Comment Status D		EEE option
Comment Type T If the new optional beha	Comment Status D avior is accepted then PMA c	only needs to sup	EEE option	If the new optional be SuggestedRemedy	enavior is accepted then PMD	only needs to sup	port the option.
SuggestedRemedy	fficient Ethernet (EEE) capa	bility" insert "with	the normal wake mode	After "optional Energy option"	y Efficient Ethernet (EEE) capa	ability" insert "with	the normal wake mode
Proposed Response	Response Status W	ionty moort with		Proposed Response PROPOSED ACCEP	Response Status W T.		

C/ 85 SC 85.2 Barrass, Hugh	P 87 Cisco	L	# 126	C/ 80 SC Barrass, Hugh	80.3.2	Р 49 Cisco	L 21	# 129
Comment Type T If the new optional beh	Comment Status D navior is accepted then PMD of	nly needs to su	EEE option	<i>Comment Type</i> For change	T of LPI Rx fu	Comment Status D Inction		LPI Rx
SuggestedRemedy After "optional Energy option" Proposed Response PROPOSED ACCEPT	Efficient Ethernet (EEE) capa Response Status W	bility" insert "witl	n the normal wake mode	Fig 80-3a - f SuggestedReme Between FE Change dire	ix LPI interf edy C & PMA: ection FEC:I	ace between FEC & PMA S_RX_MODE.request		
C/ 85 SC 85.7.2 Barrass, Hugh	P 88 Cisco	L 5	# 127	Proposed Respo	DACCEPT.	Response Status W		
Comment Type T If the new optional beh	Comment Status D navior is accepted then PMD c	nly needs to su	EEE option oport the option.	C/ 93a SC Mellitz, Richard	93A.1.3	P 215 Intel Corporation	L 46	# 130
After "optional Energy option" Proposed Response PROPOSED ACCEPT	Efficient Ethernet (EEE) capa <i>Response Status</i> W IN PRINCIPLE.	bility" insert "witl	n the normal wake mode	Comment Type The transmi However va application o double coun	TR tter filter wa lues to be p of equation at risetime fi	Comment Status D is intended to represent the rise resented by Liav Ben-Artsi tenc 93A-3 and 93A-5. Use of both ri Itering.	and fall time to limit rise se time filter	s of the transmitter. time significantly by and Gamma seems to
Change paragraph as	suggested in #458			SuggestedReme	edy	-		
C/ 85 SC 85.7.6 Barrass, Hugh	P 88 Cisco	L 33	# 128	remove equ change line The voltage H_r(f) to yiel	ation 93A-6 38ff to transfer fur ld H_tf^k(f).	nction for each signal path h_21	^(k)(f)(see 93	A.1.2) is multiplied by
If the new optional beh	navior is accepted then PMD c	nly needs to su	oport the option.	ref: Table 93 remove f_v, Remove res	BA-1-Summ f_f, and f_r pective ent	ary of parameters 1 ries in table 93-8 and 94-8		
After "mandatory if EE	E" insert "with the normal wak	e mode option"		Proposed Respo	onse	Response Status W		
Proposed Response	Response Status W			PROPOSED	D REJECT.			
PROPOSED ACCEPT				The parame impact on the	ters GAMM	A1 and GAMMA2, included by ler rise and fall times. Therefore,	Equation (93) there is no d	A-5), have no discernable louble-counting.

$ \begin{array}{c} \text{memory, Notation} & \text{metro-Coposed} \\ \text{Comment Status D} \\ \text{Voltage threshold sensitivity is missing from equation 33A-23} \\ \text{The } p_2 and p_2 dare proportional to signal amplitude and represent a tie into the jitter specifications. \\ \text{Suggested/Remedy} \\ \text{Change Sta-21} \\ p_vrs():=1/(N_{v}-ms^{2}rs(2+p))^{2}\exp(-1/2^{2}(y(N_{v}-rms)^{2})) \\ \text{Add entry in table 33-3 and table 94-8 N_{v}-rms(-1) \\ \text{Add entry in table 33-6 and table 94-8 N_{v}-rms(-1) \\ \text{Add entry in table 33-8 and table 94-8 N_{v}-rms(-1) \\ Add parameter sommating into a submeter 1 \\ \text{Add parameter som$	C/ 93A	SC 93A.1.6.2	P 219	L1	# 131	C/ 93A	SC 9	3A.1.5	P 217	L1	# 133
Comment Type TR Comment Status D Voltage threshold sensitivity is missing from equation 93A-23 The p_g and p_d are proportional to signal amplitude and represent a tie into the jitter specifications. SuggestedRemedy Change 93A-32 The p_g(Y)*p_d(Y)*p_vs(Y) add equation like 93A-21 p_vs(Y)=f1(N_mrs*qr(2*p))*exp(-1/2*(V/N_mrsY2)) add measurement able 94-94 NA_mrs=001 Proposed Response Response Status W Proposed Response Response Status W Proposed Response to comment #146 for a discussion of the use of p_G and p_DD to model amplitude interference due to jitter. The balance of the response is pending the consideration of this noise source by the Task Force. Cl 93A SC 93A.1.5 Cl 94 SC 93A.1.1 P 2017 L21 # 132 SuggestedRemedy in equation 93a-14; change denominator to maxistigma_w?2A, A_92?Sigma_G?2.1N, rms*2) Response Status W PROPOSED ACCEPT IN PRINCIPLE. See comment #131. See comment #131.											
Clarge 93a-32 to p_n(Y) = p_d(y)' p_v(d(y)' p_v(y) addSuggestedRemedySuggestedRemedyAdd entry in table 93-8 and table 94-8 NA_rms=.001Add parameter something like 'maximum exclusion region excursion' as 'wtx' table 93 add entry in table 93-8 and table 94-8 NA_rms=.001Add parameter something like 'maximum exclusion region excursion' as 'wtx' table 93 add entry in table 93-8 and table 94-8 NA_rms=.001Proposed ResponseResponse Status W PROPOSED ACCEPT IN PRINCIPLE.Proposed Response Status W PROPOSED ACCEPT IN PRINCIPLE.See the proposed response to comment #146 for a discussion of the use of p_G and p_DD tr model amplitude interference due to jift. The balance of the response is pending the consideration of this noise source by the Task Force.If the response to 2233 is approved, the proposed modification would need to be applie h(n), which is the single bit response sampled every unit interval around the sample tim h_w(n) = h(n) esign(h(n)) *min(abs(h(n)), wt x)C/ 13ASC 93A.1.5P217L21# 132Mellitz, RichardIntel CorporationThis would like the magnitude of the corrections to wtx or whatever the parameter nam should be.C/ 13ASC 93A.1.5P217L21# 132Mellitz, RichardIntel CorporationThis would like the magnitude of the corrections to wtx or whatever the parameter ram should be.C/ 13ASC 93A.1.5P217L21# 132Mellitz, RichardIntel CorporationCod test fixtures are required to accurately represent performance at tp0 with massignma_w2+A_5x2*gima_G^2,NA_rms^2)Proposed ResponseResponse Status W PROPOSED ACCEPT IN PRINCIPLE.D <td< td=""><td>Comment Voltag The p_ specifi</td><td>rype IR e threshold sensit _g and p_dd are p cations. IRemedy</td><td>ivity is missing from equation roportional to signal amplitud</td><td>n 93A-23 de and represe</td><td>ent a tie into the jitter</td><td>Comment There 14, a Limit and fr</td><td>is need region is the maxir ame erro</td><td>to limit cha define betv mum of h_(prs.</td><td>nnels that might promote er ween t_z and t_z+WT_b $0)(t)$ between t_z + 2*UI to t</td><td>ror propaga :_z+WT_b w</td><td>tion. In equation 93a-12 line vill limit error propagation</td></td<>	Comment Voltag The p_ specifi	rype IR e threshold sensit _g and p_dd are p cations. IRemedy	ivity is missing from equation roportional to signal amplitud	n 93A-23 de and represe	ent a tie into the jitter	Comment There 14, a Limit and fr	is need region is the maxir ame erro	to limit cha define betv mum of h_(prs.	nnels that might promote er ween t_z and t_z+WT_b $0)(t)$ between t_z + 2*UI to t	ror propaga :_z+WT_b w	tion. In equation 93a-12 line vill limit error propagation
Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. See the proposed response to comment #146 for a discussion of the use of p_G and p_DD to model amplitude interference due to jitter. The balance of the response is pending the consideration of this noise source by the Task Force. CI 93A SC 93A.1.5 P217 L21 # 132 Mellitz, Richard Intel Corporation This would like the magnitude of the corrections to wtx or whatever the parameter nam should be. Comment Type TR Comment Status D This would like the magnitude of the corrections to wtx or whatever the parameter nam should be. SuggestedRemedy In tel Corporation C/ 94 SC 94.3.11.11 P118 L25 # 134 SuggestedRemedy In equation 93a-14; change denominator to max(sigma_w*2+A_s^2*sigma_G^2,NA_rms^2) Proposed Response Response Status W D TX test PROPOSED ACCEPT IN PRINCIPLE. SuggestedRemedy In section loss limit of 1.4 dB to 1.6 dB at fb/2 Max RL < -12 dB or appropiate graph and equalation	Chang to p_n add equation p_vs(y Add er	ive://icdy (y)= p_g(y)* p_ddi on like 93a-21 r)=1/(NA_rms*sqrt htry in table 93-8 a	y)* p_vs(y) (2*pi))*exp(-1/2*(y/NA_rms)^ ind table 94-8 NA_rms=.001	2))		Suggester Add p add e consid 2*Ul t	dRemedy arameter ntry to lis dered wh o t_z+W ⁻ Response	/ r something t on page 2 en the amp Γ_b" does r se	g like "maximum exclusion r 217 somewhere after line 4 blitude, normalized to signal not exceed wtx.	egion excurs indicating th amplitude, a	sion" as "wtx" table 93a-1 at only the FOM are anywhere between "_z +
See the proposed response to comment #146 for a discussion of the use of p_G and p_DD to model amplitude interference due to jitter. The balance of the response is pending the consideration of this noise source by the Task Force. CI 93A SC 93A.1.5 P217 L21 # 132 Mellitz, Richard Intel Corporation Comment Type TR Comment Status D If "Voltage threshold sensitivity" is adopted, use that value to limit the "procedure that is used to determine the values of these variables that will be used to calculate COM." in equation 93 14 SuggestedRemedy in equation 93a-14; change denominator to max(sigma_w^2+A_s^2'sigma_G^2,NA_rms^2) Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. See comment #131.	Proposed PROP	Response OSED ACCEPT I	Response Status W N PRINCIPLE.			PROF	POSED A		PRINCIPLE.		
Comment Type TR Comment Status D If "Voltage threshold sensitivity" is adopted, use that value to limit the "procedure that is used to determine the values of these variables that will be used to calculate COM." in equation 93 14 Intel Corporation SuggestedRemedy In equation 93a-14; change denominator to max(sigma_w^2+A_s^2*sigma_G^2,NA_rms^2) TR Comment Status D TX test Proposed Response Response Status W Add Insel to 1.6 dB at fb/2 Max ILD < +/- 0.1 dB	See th model The ba Force. <i>Cl</i> 93A Mellitz, Ric	e proposed respo amplitude interfer alance of the respo SC 93A.1.5 chard	nse to comment #146 for a d ence due to jitter. onse is pending the consider P 217 Intel Corporatio	liscussion of th ation of this no L 21 on	the use of p_G and p_DD to bise source by the Task # 132	h (n), v h_w(r For n This v shoul	which is t $h) = h(n) + \frac{1}{2}$ is the inc vould like d be.	he single b sign(h(n)) lex to the fi the magni	*min(abs(h(n)), wtx) rst W post-cursor samples h tude of the corrections to wi	n_w(n) = h(r x or whatev	around the sample time ts.) otherwise). er the parameter name
14 Comment Type TR Comment Status D TX test SuggestedRemedy in equation 93a-14; change denominator to max(sigma_w^2+A_s^2*sigma_G^2,NA_rms^2) Good test fixtures are required to accurately represent performance at tp0 with measurement at tp0a. SuggestedRemedy Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. Add insertion loss limit of 1.4 dB to 1.6 dB at fb/2 See comment #131. Proposed Response Response Status	Comment If "Volt	<i>Type</i> TR age threshold ser	Comment Status D sitivity" is adopted, use that	value to limit t	he "procedure that is used	<i>Cl</i> 94 Mellitz, Ri	SC 9 chard	4.3.11.1.1	P118 Intel Corporation	L 25 on	# 134
PROPOSED ACCEPT IN PRINCIPLE. One or more presentations are expected to address this topic.	14 Suggestea in equa max(si Proposed I PROP See co	IRemedy ation 93a-14; char igma_w^2+A_s^2 Response OSED ACCEPT I omment #131.	nge denominator to 'sigma_G^2,NA_rms^2) <i>Response Status</i> W N PRINCIPLE.			Comment Good meas Suggeste Add insert Max I Max F Proposed PROF One c	Type test fixtu urement dRemedy ion loss I LD < +/- RL < -12 Respons POSED A or more p	TR res are req at tp0a. / imit of 1.4 c 0.1 dB dB or appro se ACCEPT IN resentation	Comment Status D Juired to accurately represe dB to 1.6 dB at fb/2 opiate graph and equalation <i>Response Status</i> W I PRINCIPLE. as are expected to address to	nt performa	<i>TX test fixture</i> ance at tp0 with

C/ 94 Mollitz Bi	SC 94.3.12.1.	1 P194	L 53	# 135	C/ 94 Mollitz Bi	SC 94 .	4.2	P197	L 3	# 138
Comment Good	<i>Type</i> TR test fixtures are re	Comment Status D quired to accurately represent	performanc	<i>TX test fixture</i> e at tp5 with	Comment If wtx	<i>Type</i> T is accepted	'R d, add ei	Comment Status D http://www.comment.com/comment/status/		channel COM
Suggested Add inserti Max II Max R	dRemedy ion loss limit of 1.4 LD < +/- 0.1 dB RL < -12 dB or app	dB to 1.6 dB at fb/2			Suggester wtx = Proposed PROF	dRemedy 0.1 Response POSED AC	CEPT.	Response Status W		
Proposed PROF	Response POSED ACCEPT II	Response Status W N PRINCIPLE.			<i>Cl</i> 94 Mellitz, Ri	SC 94. chard	4.2	P 197 Intel Corporation	L 41	# 139
One o	or more presentatio	ons are expected to address topi	с.		Comment table	<i>Туре</i> Т 94-8	R	Comment Status D		channel COM
C/ 94 Mellitz, Rid	SC 94.4.1 chard	P 196 Intel Corporation	L 30	# 136	Exclu PAM4	sion region I work	not defi	ned. Needs to be large enough	to insure c	channels suggested for
Comment COM	<i>Type</i> TR criteria needs a va	Comment Status D lue. If zero, adjustment can be r	nade to CO	channel COM M0	Suggestee Table set W	dRemedy 94-8 =16				
Suggested Chang Table	dRemedy ge TBD to zero 94-8 0 = 3 dB which ar	norovimates the SNR impact to b	e hudaeter	to the Ry chin	Proposed PROF	Response POSED AC	CEPT.	Response Status W		
Proposed		Response Status W			<i>Cl</i> 93 Mellitz, Ri	SC 93. chard	8.2.2	P162 Intel Corporation	L 4 7	# 140
<i>Cl</i> 94 Mellitz, Rid	SC 94.4.2	P197 Intel Corporation	L 10	# 137	Comment Good meas Suggestee	<i>Type</i> T test fixture urement at dRemedy	R s are reo tp0a.	Comment Status D quired to accurately represent	performan	ce at tp0 with
Comment Tx and	<i>Type</i> TR d Rx package mus	Comment Status D at be defined		channel COM	Add insert	ion loss lim	it of 1.4	dB to 1.6 dB at fb/2		
Suggested	dRemedy				Max I Max F	LD < +/- 0. RL < -12 dB	.1 dB 3 or appr	opiate graph and equalation		
In Tab gamm f1=f2=	ble 94-8, change ha_1=gamma_2=0 =0.77*fb	.28			Proposed PROF	Response POSED AC		Response Status W NPRINCIPLE.		
Proposed PROF	Response POSED ACCEPT.	Response Status W			[Assu	me the con	nmenter	is referring to TP5/TP5a and 93	3.8.2.1.]	
					See c	omment #3	349.			

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 Z/withdrawn SORT ORDER: Comment ID

<i>Cl</i> 93 Mellitz, Rich	SC 93.8.1.4	P 158 Intel Corporatio	L 21	# 141	<i>Cl</i> 93 Mellitz, Ric	SC 93.9.2	P 165 Intel Corporation	L10	# 143
Comment T	ype TR C est fixtures are require	omment Status D ed to accurately represen	t performance	e at tp5 with	Comment Tx and	<i>Type</i> TR I Rx package m	Comment Status D		channel COM
measure SuggestedR Add insertion Max ILD Max RL Proposed R PROPO	ement at tp5a. Remedy D < +/- 0.1 dB . < -12 dB or appropria Response Re DSED ACCEPT IN PF ing the commenter is	to 1.6 dB at fb/2 ate graph and equalation <i>esponse Status</i> W RINCIPLE. s referring to TP0/TP0a an	d 93.8.1.1.]		Suggested In Tab gamm f1=f2= Proposed I PROP [Claus See co	Remedy le 93-8, change a_1=gamma_2 0.77*fb. Response OSED ACCEP e from 94 to 93 omment #168 a	e =0.28 <i>Response Status</i> ₩ T. and Subcl from 93.9.2 to 93.9.1.] nd #169.	I	
See cor	mment #166.				C/ 93	SC 93.9.2	P165	L 40	# 144
Cl 93 Mellitz, Rich Comment TJ COM cr SuggestedR Change Table 9 COM_0 Proposed R	SC 93.9.1 hard type TR C iteria needs a value. Remedy TBD to zero 03-8 0 = 3 dB which approx Response Re	P165 Intel Corporatio omment Status D If zero, adjustment can be kimates the SNR impact to esponse Status W	L 46 n e made to COI o be budgeted	# 142 M0 to the Rx chip.	Comment Exclus Suggested Table set W= Proposed I PROP See co	Type TR ion region not o <i>Remedy</i> 93-8 =12 <i>Response</i> OSED ACCEP [*] omment #254.	Comment Status D defined. Need to be large enough Response Status W T IN PRINCIPLE.	to insure cha	annels suggested work
[Change See cor	e Subcl to 93.9.1.] mment #246. Specify	that COM shall be greate	r than equal to	o 3 dB. Delete COM0	C/ 93 Mellitz, Ric Comment	SC 93.9.2 shard <i>Type</i> TR	P 165 Intel Corporation Comment Status D	L 3	# 145
					If wtx i Suggested wtx = (Proposed i PROP As poin See co	s accepted, add Remedy D.1 Response OSED ACCEP [*] nted out by the pmment #133.	a entry in table 93-8 <i>Response Status</i> W T IN PRINCIPLE. commenter, this change is contin	gent on mod	lifications to Annex 93A.

CI 93	SC 93.9.2	P165	L 43	# 146	CI 78	SC	78.1.4	P38	L 1	# 148
Mellitz, Rie	chard	Intel Corporation			Ran, Adee			Intel		
Comment	Type TR	Comment Status D			Comment T	ype	Е	Comment Status D		bucket
Sigma COM. deterr	a_G and A_dd are Low jitter will be r	indented to be a bound or an es required for 25Gb/s to operate. A	timate for the dd would su	impact of jitter on ggest and amount of	Accordi of this s	ng to t ubcla	the change use should	s in 78.1, PHYs may support reflect that.	ort EEE, not the	other way around. The title
Suggester	dRemedv				SuggestedF	Remea	ly · ournorted		which may aver	
Tablle	93-8				Change		supported	Philippes to Philippes	which may sup	
Chang Add =	ge .025				Proposed R PROPC	espor SED	nse ACCEPT.	Response Status W		
Proposed	Response	Response Status W			CI 92	50	02 2 40 2 2	D CO	/ 10	# 140
PROF	POSED ACCEPT	IN PRINCIPLE.			Ran, Adee	30	02.2.10.2.3	Intel	L 10	# 149
The co peak o	ommenter states t dual-Dirac noise (/	hat the intent of the normalized FA_dd) parameters is to estimate	RMS Gaussia the impact of	n noise (sigma_G) and jitter.	Comment T Capitali	<i>ype</i> zation	E of hexade	Comment Status D cimals should be consisten	t with previous i	bucket
Howe slope is a cr	ver, to the first orc of the signal arou ude estimate of th	ler, the relationship between pha nd the sampling times. A fixed co ne impairment.	ise noise and onstant scaled	amplitude noise is the by the signal amplitude	SuggestedF Change	Remea • "0x1e	<i>ly</i> e" to "0x1E'	".		
lt is su select	uggested that the ed in the context of	phase-to-amplitude noise model of the improved model.	be refined an	d new parameter	Proposed R PROPC	espor SED	nse ACCEPT.	Response Status W		
C/ 94	SC 94.4.2	P 197	L 42	# 147	C/ 91	SC	91.5.2.6	P 95	L 50	# 150
Mellitz, Rie	chard	Intel Corporation			Ran, Adee			Intel		
Comment	Type TR	Comment Status D		channel COM	Comment T	ype	Е	Comment Status D		
Sigma COM	a_G and A_dd are	indented to be a bound or an es	timate for the	impact of jitter on	The 5-b blocks s	it pad structu	should bet ire.	ter be depicted in figure 91	-4 or elsewhere	to show the five 257-bit
would	suggest and amo	ount jitter that might inhibit operat	tion for PAM4		SuggestedF	Remea	ly			
Suggested	dRemedy				Prefera	bly, up	odate figure	91-4.		
Tablle	93-8				Proposed R	espor	nse	Response Status W		
Chang Sigma	ge a_g = .005				PROPC	SED	ACCEPT II	N PRINCIPLE.		
Auu =	.023				Augmei	nt Figu	ure 91-4 to	show the inclusion of the 5	-bit pad.	
Proposed		Response Status W			Also cla	rify th	e assignme	ent of pad bits.		
FROF	OSED ACCEPT.					,	0			
[Chan	ged page from 19	6 to 197.]								

C/ 91 SC 91.5.2.8 Ran, Adee	Р 99 Intel	L13	# 151	<i>Cl</i> 92 Ran, Adee	SC 9	2.8.3.3	P 122 Intel	L 42	# 153
Comment Type E Con A cross-reference to the relevant	<i>mment Status</i> D ant place in clause 94	could be useful.	bucket	Comment 7 The tex	<i>ype</i> t in this	E paragrap	Comment Status D h originates from clause 85	where it explain	s the differences of the
SuggestedRemedy After "When used to form a 10	00GBASE-KP4 PHY"	add " (refer to 94.	2.1.1.1)".	measu clause	rement r 72 into o	nethod co clause 93	ompared to clause 72. The re	ecent edit chan	ged the reference from
Proposed Response Res PROPOSED ACCEPT IN PRI	ponse Status W NCIPLE.			Since o describ	lause 93 ed here	3 also ref), the res	ers to the measurement met of this paragraph (starting f	hod in 85.8.3.3 rom "However")	(for the same reasons makes little sense.
Add "(refer to 94.2.1.1)" to the	end of the first sente	nce.		Suggested Either r paragra	<i>Remedy</i> evert to aph eniti	the previ ely.	ous version (refer to 10GBA	SE-KR and clau	use 72) or delete this
In 91.5.3.1, add "(refer to 94.2	.1.2)" to the end of th	e last sentence of	the last paragraph.	Proposed F	Respons	e CCEPT I	Response Status W		
Ran, Adee	Intel	L 42	# 152	See co	mment#	365.			
Comment Type E Con If lane reordering is mandatory error. For some media this ma	<i>mment Status</i> D / then physical lane s ay happen intentionall	wapping should n y and consistently	ot be considered an	CI 83 Ran, Adee	SC 8	3.1.1	P83 Intel	L 31	# 154
Compare to 82.2.13 where the between lanes and multiplexir	e reason for possible ng by the PMA". No "e	re-ordering is stat error" is mentioned	ed as "due to Skew d.	Comment 7 Followi	<i>ype</i> ng the s	ER plit of tab	Comment Status D le 80-2 into two tables, it no	longer lists 100	bucket Gb/s PMDs.
SuggestedRemedy Change "due to connection er	rors in the underlying	medium" to "due	to possible swapping in	100GB refer to	ASE-KP table 80	94 is a 10 0-2a.	0 Gb/s rather than 40 Gb/s F	MD and the co	mment excluding it should
the underlying medium". Proposed Response Res	ponse Status W			Suggestedl Move "	Remedy except	100GBA	SE-KP4 (Clause 94)" one se	ntence ahead (line 32).
PROPOSED ACCEPT IN PRI	NCIPLE.			Proposed F PROPO	Respons DSED A	e CCEPT.	Response Status W		

C/ 91	SC 9	1.5.2.5	P 95	L 20	# 155	In Fig	ure 91-	6, replace	tx_xcoded with tx_scrambl	ed.	
Ran, Adee			Intel			C/ 91	SC	91 5 2 6	P95	/ 26	# 156
Comment	Туре	ER	Comment Status D			Ran. Adee	;	01.0.2.0	Intel	- 20	100
It is no one 66	t absolu S-bit bloc	tely clear k is a con	from the text whether the XC	R occurs only fo	or the case where at leas	Comment	Type	FR	Comment Status D		
is corre	ect, but i	it is prefer	able to avoid possible confus	sion.		This s are re	ubclau -inserte	se describ	es the mapping operation to normal stream, paired with	out it is unclear how their removal in c	w the mapped markers lause 91.5.2.4.
The ex assign	amples ment.	in figure 9	91-3 fail to depict this operation	on - bits 4:0 are	shown as in the original	Suggested	dReme	dy	·····, -····		
Also: th	he seco	nd senten	ice in this paragraph should b	oe in a separate	paragraph.	A figu not un	re shov Idersta	wing the in nd the pro	put and output of these two posed procedure enough to	o operations is requip provide it.	uired. Unfortunately I do
Suggested	Remedy	/				Proposed	Respo	nse	Response Status W		
Use a that oc	tempora cur befo	ary variabl pre this pa	e tx_xcoded_header<4:0> fo aragraph.	r all the assignm	ents to tx_xcoded<4:0>	PROF	POSED	ACCEPT	IN PRINCIPLE.		
Update	e figure s	91-3 to inc	clude both tx_xcoded_heade	r<4:0> and tx_x	coded<4:0>. (May	Figure	e 91-4 v	was intend	ed to be the requested illus	tration.	
require	e restruc	turing the	figure).			See c	ommer	nt #150.			
Chang "	e the pa	aragraph i	n lines 20-22 to the following								
Set tx_ tx_xco	_coded< ded<12:	4:0> to th :8>.	e result of the bit-wise exclus	sive-OR of tx_xco	oded_header<4:0>" and						
Severa "	al examp	oles that il	lustrate the transcoding proc	ess are shown ir	n Figure 91-3.						
Proposed I	Respons	se	Response Status W								
PROP	OSED A	CCEPT I	N PRINCIPLE.								
In the f tx_scra	first para ambled<	agraph of :256:0>.	91.5.2.5, change reference to	o tx_xcoded<256	6:0> to						
Replac	ce the la	st paragra	aph of 91.5.2.5 with following	definition of tx_s	scrambled.						
"Sever	al exam	ples of the	e construction of tx_xcoded<	256:0> are show	n in Figure 91-3.						
Finally a) Set and tx_ b) Set	, scramb tx_scrar _xcoded tx_scrar	ole tx_xco nbled<4:0 l<12:8>. nbled<25	ded<256:0> to yield tx_scrar)> to the result of the bit-wise 6:5> to tx_xcoded<256:5>."	nbed<256:0> as exclusive-OR o	follows. f the tx_xcoded<4:0>						
Re-nar	me Figu	re 91-3 to	be "Examples of the constru	ction of tx_xcode	ed".						
Chang transco approp am_txr	e 91.5.2 oded blo oriate) su mapped	2.7, page 9 ocks tx_sc uch that bi <0>)."	98, line 8 to "The message sy rambled (including a mapped it 0 of the first transcoded blo	ymbols are comp d group of alignn ck in the messa	bosed of the bits of the nent markers when ge (or						
TYPE: TR/ COMMENT SORT ORE	technica F STATU DER: Co	al required JS: D/disp omment IE	ER/editorial required GR/g batched A/accepted R/rejec	eneral required ted RESPONS	T/technical E/editorial G/ SE STATUS: O/open W/w	general ritten C/closed	Z/with	ndrawn	Com	ment ID 156	Page 36 of 130 9/24/2012 2:42
C/ 91 SC 91.4	5.3.5 <i>P</i> 101	L 25	# 157	C/ 92	SC 92.8.3.7	P128	L 8	# 158			
---	--	-------------------------------------	-------------------------------------	--	-------------------------------------	--	---	---	--	--	--
Comment Type	Inter			Comment 7							
Assuming rx_rxcc can be confusing	oded<4:0> in this line is a typo, the	en rx_xcoded<4:0	> is assigned twice. This	What is the meaning of the sentence "The reference test fixture printed circuit board insert loss is given in Equation (92-15) and shall be used"?							
It would be prefer comment on sub	red to define another variable rx_> clause 91.5.2.5.	coded_header a	nd use it as in my	The equation requires equality to TBD. One cannot manufacture or use a test fixture with exactly TBD IL (whatever TBD stands for).							
SuggestedRemedy Change this para "Set rx_xcoded_h	graph to: eader<4:0> to the result of the bit	-wise exclusive-C	DR of rx_xcoded<4:0> an	Editoria loss giv	ally this should ven in Equation	probably be "The reference to (92-15) shall be used" but it s	est fixture printer still doesn't clarif	d circuit board insertion fy what is required.			
rx_xcoded<12:8>				Should	the insertion lo	ss be specified as being with	in a range?				
Use rx_xcoded_h rx_xcoded <j+1> i</j+1>	eader<0> instead of rx_xcoded<0 n the following steps.	>, and rx_xcoded	d_header <j+1> instead of</j+1>	<i>Suggestedl</i> Please	Remedy clarify!						
Proposed Response	Response Status W			Proposed F	Response	Response Status W					
PROPOSED ACC	CEPT IN PRINCIPLE.			PROPOSED ACCEPT IN PRINCIPLE.							
Add the following	sentence to the end of the first pa	aragraph of 91.5.3	3.3.	Change: The reference test fixture printed circuit board insertion loss is given in							
"The message sy	mbols correspond to 20 transcode	ed blocks rx_scra	mbled."	Equation	on (92-15) and	shall be used.					
In the first paragr	aph of 91.5.3.5, change reference 6:0>.	to rx_xcoded<25	i6:0> to	Change: The test fixture printed circuit board insertion loss values determined using Equation (92-3) shall be used as the reference test fixture insertion loss.							
Replace the seco	nd paragraph of 91.5.2.5 with follo	owing.		Please note following sentence in paragraph is to clarify differences between reference insertion loss and an actual test fixture: The effects of differences between the insertion loss o							
"First, descramble a) Set rx_xcoded and rx_scramble b) Set rx_xcoded	e rx_scrambled<256:0> to yield rx <4:0> to the result of the bit-wise e <1<12:8>. <256:5> to rx_scrambled<256:5>.	_xcoded<256:0> exclusive-OR of t	as follows. ne rx_scrambled<4:0>	measurements.							

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 Z/withdrawn SORT ORDER: Comment ID

In Figure 91-6, replace rx_xcoded with rx_scrambled.

-										
C/ 92	SC 92.8.4	P 130	L12	# 159	C/ 81	SC	81.3a	P 59	L 10	# 160
Ran, Adee		Intel			Ran, Adee			Intel		
Comment 7	Туре Т	Comment Status D			Comment	Туре	TR	Comment Status D		40G
Table 9 charact	92-7 is titled "at teristics are suit	TP3" which is at the cable sid table, but bit error ratio canno	le of the MDI cor t be defined at th	nector. Electrical is test point.	With th referer	ne addi nces to	tion of 400 CGMII ar	GBASE-KR4 and 40GBASE- nd CAUI in this subclause sho	CR4 optional su ould also refer to	ipport for EEE, o XLGMII and XLAUI
Alao th) is defined (per the project of	ningtive) "at the N	MC/DLS convice	Suggested	Remed	dy			
interfac 1e-12 c This wo	ce" which mean or better (92.8.4 ould be a sever	s after the RS-FEC sublayer. .3) anywhere else, especially e over-stress.	There is no need at the "Electrica	d to specify and test for characteristics" section.	Chang Page 5 Page 6	e "CGN 59 lines 51 lines	MII" to "XL s 10,12 s 32,33	.GMII/CGMII" in:		
Bit erro FEC su	or ratio should b ublayers. The ac	e specified as 1e-12 and test ctual test should involve RS-F	ed between two EC block error ra	points that span the RS- ate and thus performed	Chang Page 6 Page 6	e "CAL 60 line 61 lines	JI" to "XLA 43 3 37.38	AUI/CAUI" in:		
transm	itter in order to	include the RS-FEC encoding	; adding jitter red	quirements as in table 92	Proposed	Resnor	nse	Response Status W		
8 may i	not be feasible.				PROP	OSED	ACCEPT			
Per-lan with jitt	ne BER can be s er stress, e.g. ir	specified in addition at the PM o order to verify CDR tracking	IA with (substant capability.	ially higher BER target)	Instead	d of XL	GMII/CGN	MII, use XLGMII and CGMII		
Suggestedl	Remedy				Instead	d of XL	AUI/CAUI	, use XLAUI and CAUI		
Remov	ve the "Bit error	ratio" parameter from this tab	le and from table	92-8.						
-					C/ 91	SC	91.3	P 92	L 44	# 161
Remov	e table 92-8 an	d subclause 92.8.4.3.			Ran, Adee			Intel		
Insteac clause current	d, add a BER te 91, with setup/s draft, placehold	st which includes the RS-FEC stress settings defined separa ders/editorial comments would	Sublayer; proce ately for clauses s d suffice).	dure to be defined in 92, 93, and 94. (For the	Comment RS-FE upstrea	<i>Type</i> C is de am lan	TR efined only es is 20.	Comment Status D to be a client of the 100GBA	SE-R PCS whe	<i>bucket</i> ere the number of
Proposed F	Response	Response Status W			A I a a d				h 'n ook storen	
PROPO	OSED REJECT				AISO: ti manne	ne term er. and	ns p and q are not us	only appear in one paragrap and or officially defined anywh	n in subciause here else. It wou	83.1.4 In a descriptive
Changi	ing BER require	ment is not sufficiently addre	ssed in remedy t	o implement in draft. For	the mc 83.7.3	ore unic Perha	que terms ips a mair	LANES_UPSTREAM and LA Intenance change in 83.1.4 is	NES_DOWNS ⁻ also due.	TREAM that appear in
commit	ttee discussion.	resolve with comment#390.			Suggested	Remed	dv			
					Chang Chang LANES	e "four e "PM/ S_UPS	upstream A service i TREAM a	a lanes" to "20 upstream lane interface width, p, is set to 4" and LANES_DOWNSTREAM	s". to "PMA servic are set to 20 ar	e interface widths nd 4 respectively".
					Proposed	Respor	nse	Response Status Z		
					PROP	OSED	REJECT.			
					This co	ommen	nt was WI⊺	THDRAWN by the commente	r.	

C/ 91	SC 91.5.2.5	P 95	L 7	# 162	C/ 91	SC 91.5.2	2.6	P 95	L 40	# 163		
Ran, Adee	•	Intel			Ran, Adee)		Intel				
Comment	Type TR	Comment Status D			Comment	Type TR	Comment	Status D		bucket		
The tra values	anscoding procee 00 and 11 are ir	dure does not handle all pos ndeed invalid, but can still or	sible values of tx cur (e.g. due to e	_coded_j<1:0>. The errors in reception from	x should takes PCS lane values (019), but if j=05 and i=03, x=i+4j can take values from to 23. Seems that j should be only within 04.							
upper	layers). This is li	kely to happen more often th	ian once in MTTI	PA.	Suggested	dRemedy						
Since	the header must	be compressed, the reason	able behavior in	such cases would be to	Chang	ge "j=0 to 5" to	o "j=0 to 4".					
mark t they a	the 66-bit block ir re discarded by t	n question as a control block he receiving PCS.	with /E/ on trans	mission, to make sure	Proposed PROF		Response	Status W				
Suggested	Remedy				T KOI							
Chang	ge the condition in	n line 7 to:		a status a C	[Comr	ment was ente	ered against Subc	d 91.5.2.5, bu	t is actually again	st 91.5.2.6.]		
tx_coc	all j=0 to 3, tx_co ded_j<1>=0 and t	ded_j<1>!=tx_coded_j<0>, 8 tx_coded_j<0>=1"	and for at least of	ne value of J,	See c	omment #472						
Add te	ext based on the	following paragraph after line	e 19 (expand the	text inside braces to be	C/ 91	SC 91.5.3	5.5	P 101	L 45	# 164		
techni	cally accurate ac	cording to comment):			Ran, Adee)		Intel				
"					Comment	Type TR	Comment	Status D				
If for a follows	iny j=0 to 3, tx_co s:	oded_j<1>=tx_coded_j<0>, t	x_xcoded<256:0	> shall be constructed as	Accor scram counte	ding to accept bling following erpart in the o	ted change in trar g transcoding. Un riginal 64B/66B to	nscoding (gus scrambling de 256B/257B t	tlin_02_0712) the escribed in step g transcoding proce	re is no additional does not seem to have a dure in 91.5.2.5.		
a) tx_c	coded<0>=0	woodod kuto fork Oto 2 a	woont for k		Suggested	Remedy	5		01			
[c) an blocks	d on: specify that containing /E/]	t any blocks where invalid he	eader was found	be replaced by control	Delete Make	e steps f and g sure this clau)? se describes exa	ctly the invers	e operation of 91.	5.2.5.		
"					Proposed	Response	Response	Status W				
					PROF	OSED REJE	CT.					
Add a	suitable example	e to figure 91-3.			The 6	4B/66B to 256	B/257B transcod	er (see 91.5.2	2.5) removes 4 sc	rambled bits from the		
Proposed	Response	Response Status W			input 6	66-bit blocks (if any of the block	s are control	blocks). The 256	B/257B to 64B/66B		
PROP	OSED ACCEPT	IN PRINCIPLE.			transc	oder must res	store these bits, s d 66B blocks	crambled in a	manner consiste	nt with the surrounding		
See co	omment #53.				5115, 10							
					To res what t the lea	store the bits, he second nik arned scramb	the decoder must oble should be (st ler state (step g).	t first descram ep f). It must t	ble the first nibble then scrambe the	in order to determine second nibble based on		
					The st comm	teps are integ ent #70. They	ral to the process will not be delete	ing defined in ed.	gustlin_02_0712	and adopted via Draft 1.0		

<i>Cl</i> 92 Ben-Artsi, I	SC 92.8.4.2 ∟iav	P 131 Marvell	L19	# 165	<i>Cl</i> 93 Ben-Artsi,	SC S Liav	3.9	P 165 Marvell	L10	# 168
Comment T Applied	<i>Type</i> E d DCD should be	Comment Status D changed according to the new	convention (eve	n-odd jitter)	<i>Comment</i> Transi	<i>Type</i> mitter re	TR flection of	Comment Status D		
Suggested change	<i>Remedy</i> e DCD to even-od	ld jitter			Suggested Sugge	dRemedy est using	/ : Gamm	a = 0.28 ; F = 0.77Fb Or	Gamma = 0.315 ; I	F = 0.8Fb
Proposed F PROP	Response OSED ACCEPT.	Response Status W			Proposed PROP	Responsed A	se SCCEPT	Response Status N	i	
Use su	ggested remedy.				The co	omment	is again	st Table 93-8. Response	e is pending conside	eration of the cited
Cl 93 Bon-Artsi I	SC 93.8.1.1	P156	L 51	# 166	preser	ntation.	-			
Comment	Type T	Comment Status D			<i>CI</i> 93 Ben-Artsi,	SC 9 Liav	3.9	P 165 Marvell	L13	# 169
Measu measu	ring through an in rement.	nterconnect as defined in 93.8.	1.1 can obfuscat	e real chip return loss	Comment	Type	TR stion cor	Comment Status D		
Suggested	Remedy				Currenter		,	enicients are missing		
Redefii 1. Bette 2. Defii	ne fixture definitio er return loss (-15 ning fixture ILD (on to improve the fixture quality 5dB up to 13GHz) ILD <1dB)	by defining:		Suggesiec Sugge Will su	est using	/ Gamma resenta	a = 0.28 ; F = 0.77Fb Or tion and final recommen	Gamma = 0.315 ; F dation	⁻ = 0.8Fb
3. Fixtu It is tak require	ure IL up to 1.6dB ten into account the d that the actual fight	hat fixture may not be feasible fixture be "de-embedding worth re will be de-embedded and th	in multi lane dev ny".	ice. In this case it is	Proposed PROP	Respon POSED A	se ACCEPT	Response Status N IN PRINCIPLE.	I	
(Prese	ntation to be supp	plied)		embedded.	The co	omment	is again	st Table 93-8. Response	e is pending conside	ration of the cited
Proposed I	Response	Response Status W			preser	ntation.				
PROP	OSED ACCEPT I	N PRINCIPLE.			C/ 93 Ben-Artsi.	SC S Liav	3.9	P 165 Marvell	L15	# 170
Respo	nse pending cons	sideration of the cited presentat	tion.		Comment	Type	TR	Comment Status		
C/ 93	SC 93.8.2.2	P162	L 52	# 167	Table	93-8 do	es not in	clude package insertion	loss model equatio	n
Ben-Artsi, I		Marveil			Suggested	dRemedy	/			
Comment	<i>Type</i> TR	Comment Status D			Add p	ackage i	nsertion	loss model equation ac	cording to presentat	lion
Dillele					Proposed	Respon	se	Response Status N	/	
Suggested	Remedy	ding to equation 024.2 with no	romotoro occord	ing to the procentation	PROP	POSED A	CCEPT	IN PRINCIPLE.		
Dropood			rameters accord	ing to the presentation	Respo	onse is p	ending o	consideration of the cited	presentation.	
	NESPONSE				Номо	vor occi	umina th	a model is a function of	somo (small) numb	or of parameters, the
Respo	nse pending cons	sideration of the cited presentat	tion.		param in Ann	eters an ex 93A.	d values	s would be included in Ta	able 93-8 while the	equations would be include
TYPE: TR/I COMMENT SORT ORE	technical required STATUS: D/disp DER: Comment IE	d ER/editorial required GR/gen batched A/accepted R/rejecte	neral required T d RESPONSE	/technical E/editorial G/g STATUS: O/open W/wr	eneral tten C/closed	Z/withd	rawn	С	comment ID 170	Page 40 of 130 9/24/2012 2:42:04 AM

C/ 93 SC 93.8.1.4 Ben-Artsi, Liav	P 158 Marvell	L 37	# 171	C/ 80 SC Anslow, Pete	80.1.5	P 45 Ciena	L 8	# 173
Comment Type TR Differential return loss in SuggestedRemedy Define return loss accor Proposed Response PROPOSED ACCEPT I Refer to cited presentat Note that comment #49 return loss requirements	Comment Status D n equation 93-1 is TBD rding to equation 93A-3 with Response Status W IN PRINCIPLE. ion. 1 proposes the addition of trass.	parameters acc	cording to the presentation	Comment Type Table 80-2 i order. Now that it H Also, the PH SuggestedReme Change the Change the clause orde KR4, KP4, Q	E n IEEE Sto has been sp HYs were p edy order of th order of th r): CR4, CR10	Comment Status D 802.3-2012 was structured w olit into Tables 80-2 and 80-24 reviously arranged in reach or e columns in Tables 80-2 and e rows in Table 80-2a to press , SR10, LR4, ER4	vith the clauses a, clause 78 ha rder I 80-2a to put 7 erve reach ord	s along the top in clause as been added out of order 78 between 74 and 81 ler (for KR4 and KP4 use
C/ 00 SC 0 Anslow, Pete	<i>P</i> Ciena	L	# 172	Proposed Respo PROPOSEI	onse D ACCEPT	Response Status W		
Comment Type E Now that IEEE Std 802. reflect 2012 and remove SuggestedRemedy Update all 802.3 referent reference to "Draft 3.1"	Comment Status D 3-2012 has been approved, e the reference to "Draft 3.1" nces in the draft to be "IEEE in the frontmatter.	update all refer in the frontmat Std 802.3-2012	ences in the draft to er. " and remove the	C/ 80 SC Anslow, Pete Comment Type The editing be added.	E instruction This will ma	P44 Ciena <i>Comment Status</i> D says to add three rows, but de ake life difficult for subsequent	L3 oes not say wh t amendments	# 174 bucket here in the table they shouk
Proposed Response PROPOSED ACCEPT. The frontmatter will be un In addition, replace all re	Response Status W updated under the guidance eferences to the base docum	of the Working	Group chair. Std 802.3-2012.	Currently th CR10, SR10 SuggestedReme Make the in clause orde KR4, KP4, 0	e 40G PHY D, LR4, ER edy sertion poir r): CR4, CR10	's come first and the 100G PH 4 nts explicit and such to preser , SR10, LR4, ER4	IYs are listed in ve reach order	n reach order: r (for KR4 and KP4 use
				Proposed Respo PROPOSEI	onse D ACCEPT	Response Status W		

<i>Cl</i> 80 Anslow, Pe	SC 80.1.5 te	Р 45 Ciena	L 35	# 175	<i>Cl</i> 80 Anslow, P	SC 80.4	Р 50 Ciena	L 3	# 178
Comment T In Tabl "RS-FE	<i>Type</i> E e 80-2a under Cla EC"	Comment Status D uuse 91 it says "BASE-R RS	S FEC" but Claus	<i>bucket</i> e 91 refers to it as just	<i>Comment</i> The e be ad	<i>Type</i> E diting instruction ded. This will i	Comment Status D on says to add four rows, but o make life difficult for subseque	does not say whe ent amendments.	re in the table they should
Suggested Change	<i>Remedy</i> e "BASE-R RS FE	C" to "RS-FEC"			Curre CR10	ntly the 40G la , SR10, LR4, E	yers come first and the 100G R4	layers are listed s	tack, then in reach order:
Proposed F PROPO	Response DSED ACCEPT.	Response Status W			Suggester Make	dRemedy the insertion p	oints explicit and such to pres	serve existing orde	er (for KR4 and KP4 use
Cl 80 Anslow, Pe	SC 80.1.5 te	Р 44 Ciena	L 22	# 176	MAC8 ER4	&RS&MC, PCS	, BASE-R FEC, RS-FEC, PM	IA, KR4, KP4, CR	4, CR10, SR10, LR4,
Comment 7 Now th	<i>Type</i> E at Table 80-2 has	Comment Status D been split into two tables, t	he reference in 8	<i>bucket</i> 0.1.5 to this table needs	Proposed PROF	Response POSED ACCEF	Response Status W		
to be m Suggested	Remedy				<i>Cl</i> 80 Anslow, P	SC 80.4	P 50 Ciena	L 20	# 179
Add tex "Table "Table	xt to change: 80-2 specifies the 80-2 and Table 80	correlation between nome D-2a specify the correlation	nclature and clau between nomen	ses." to: clature and clauses."	Comment Table	<i>Type</i> E 80-3 Footnote	Comment Status D s a and b were modified by co	omment resolutior	<i>bucket</i> n on D3.1 of the revision
Proposed F PROP	Response OSED ACCEPT.	Response Status W			projec Suggeste	ct. In both case dRemedy	es, "Note that" was removed f	rom the footnotes	
C/ 83	SC 83.1.1	P83	L23	# 177	Modif Std 8	y the base vers 02.3-2012 by re	sion of Table 80-3 footnotes a emoving "Note that"	and b to match th	ne recently approved IEEE
Anslow, Pe	te Type E	Ciena Comment Status D		bucket	Proposed PROF	Response POSED ACCE	Response Status W		
The ed that is l	iting instruction sabeling modified.	ays: "Change the first parag	raph of 83.3 as f	ollows:" but it is 83.1.1	C/ 00 Anslow, P	SC 0	P Ciena	L	# 180
Change	Remedy e the editing instru	iction to: "Change the first r	paragraph of 83	1 as follows:"	Comment	Туре Т	Comment Status D		
Proposed F	Response	Response Status W	and graph of oo.		The c 45, C	ontent of the P lause 30 Annex	802.3bj draft seems to be suf x 91A and the various PICS p	ficiently stable tha roforma should no	at the content of Clause ow be populated.
					Suggeste	dRemedy			
					Comp	plete the conter	nt of Clause 45, Clause 30 An	nex 91A and the	various PICS proforma.
					Proposed PROF	Response	Response Status W		

CI 80 Anslow F	SC 80.7	P 54 Ciena	L1	# 181	C/ 82 Slavick J	SC 82.2.18.2.	2 P6	8 L31	# 184
Comment The ti show 80, In Claus updat Suggeste Corre	t Type T itle of 80.7 is "Prot in in D1.1: "Protoco introduction to 40 G se 80 does not hav ted when the conte adRemedy ect the title of 80.7	Comment Status D ocol implementation conformation of implementation conformation b/s and 100 Gb/s networks" we a PICS proforma so the e ent of this clause stabilizes."	nance statement (F nce statement (PIC ditor's note: "The P is inappropriate right release footno	bucket PICS) proforma" not as S) proforma for Clause ICS proforma will be ote.	Comment Text s Suggeste Chan Proposed PROF	<i>Type</i> E states rx_mode is o <i>dRemedy</i> ge the word four to <i>Response</i> POSED ACCEPT I hanges definition t	Comment Status one of four values, b three. Response Status N PRINCIPLE. o only two modes.	D but only 3 are listed.	LPI Rx
Remo Proposed PROI	ove the editor's no I Response POSED ACCEPT.	te. Response Status W			<i>Cl</i> 82 Slavick, J	SC 18.2.18.2.	3 P 6 Avago	9 L 44 o Technologies	# 185
Slavick, J Comment Figure Suggeste Chan Proposed PROI	sc 91.5.2.6 leff t Type E e 91-3. Header bit edRemedy lige the 1 in the 0 b t Response POSED ACCEPT.	Avago Techn Comment Status D for a All Control blocks TC b it location of tx_xcoded to a Response Status W	L 48 ologies block is 0, not 1. 0 for example 4.	# [<u>182</u> bucket	/LI/ sł Suggeste Chan a) Eig Proposed PROł	nould just be includ dRemedy ge a) to be ht valid control cha Response POSED ACCEPT.	led in the list of cont aracters other than / <i>Response Status</i>	rol characters that don O/,/S/,/T/,/LI/, and /E/; W	't map to a C vector.
C/ 91 Slavick, J	SC 91.5.2.8	P 99 Avago Techn	L 9 ologies	# 183					
Comment We n Suggeste Remo Sente Remo Proposed PROI	t Type E o longer are scran odRemedy ove the words "scr ence of 91.5.2.8 ove the words "des d Response POSED ACCEPT	Comment Status D nbling the data within the RS ambled and" along with the scrabmling and" from the las <i>Response Status</i> W IN PRINCIPI F	-FEC comma after encoc t sentence in 91.5.3	<i>bucket</i> led. In the first 3.4					
Chan "Once	ige to: e the data has bee	n Reed-Solomon encoded,	it shall"						

		•	•	· · ·					
C/ 91 SC 91.5	.3.3 P101	L11	# 186	CI 82	SC 82.2.18.	2.3.1	P 71	L 36	# 188
Slavick, Jeff	Avago Te	echnologies		Slavick, J	eff		Avago Techn	ologies	
Comment Type T	Comment Status D			Comment	Туре Т	Commer	nt Status D		
Ability to bypass t	ne FEC correction function is	not defined.		In Tal	ble 82-5a tx_mod	de is set to SL	EEP in the sleep	o state.	
SuggestedRemedy				Suggeste	dRemedy				
Add the following When fec_bypass match the receive uncorrectable coc	text to 91.5.3.3 correction is set true and the d parity the decoder shall corr leword was received.	e incoming parity of t rupt the codeword in	he codeword does not the same manner as if an	Chan Local and Local	ge the Tsl descri Sleep Time whe Sleep Time whe	iptions to be: en entering the	e TX_SLEEP sta e TX_SLEEP sta	ite and LPI_FW=I ite and LPI_FW= ⁻	FALSE
Added an MDIO r	egister bit to control fec. bypa	ss correction		Proposed	Response	Response	e Status 🛛 🛛 🛛 🖉		
Proposed Response	Response Status W			PROF	POSED REJECT	Г.			
PROPOSED REJ	ECT.			The p correc	arameter descrip ct in those terms	ption is couch	ed in terms of th	e time from <eve< td=""><td>nt> to <event> - and is</event></td></eve<>	nt> to <event> - and is</event>
While gustlin_01a disable error corre proposed that imp management vari	_0/12 discusses the possibilit action to reduce latency when elementations are required to a able.	ity that an implement the operating condit do so or to expose th	ation may choose to ions allow it, it was not iis feature via a	C/ 78 Slavick, Je	SC 78.5.2		P 39 Avago Techn	L 53 ologies	# 189
Therefore, the res	ponse is proposed to be REJ to add (and implicity require) t	ECT pending discust	sion and a measurement	Comment Defint Howe	<i>Type</i> T tions for how PE ever the MDIO bit	<i>Commer</i> ASE and PIA ts don't in Cla	nt Status D SE (CAUI shutdo use 45	own control bits) a	affect EEE timing exist.
C/ 82 SC 82.2		L5	# 187	Suggeste	dRemedy				
Slavick, Jeff	Avago Te	echnologies		Creat Also d	e MDIO register create bits for inc	bits for PEAS	E and PIASE.	SE and PIASE	
Comment Type T	Comment Status D			Proposed	Response	Response	e Status W		
The first bit of dat since both FEC m	a sent after the ALERT state is odules need to align the RAM	is exited should be a I as the first chunk o	RAM. This is desired f data in the FEC frame.	PROF	POSED ACCEPT	T IN PRINCIP	LE.		
SuggestedRemedy				Creat	e register bits fo	r LPI_FW; PE	ASE, PIASE; PE	EASA; PIASA - se	e 83.6 - in PMA/PMD
Add text to 82.2.8 states. Remove	a stating that no alignment ma count_down assignments in F	arkers are sent durin Figure 82-16 for those	g the QUIET and ALERT estates. Add text to	regist	er space				
82.2.8a stating the state is exited.	at a RAM shall be the first bloc	ck sent on each PCS	ane when the ALERT	1.181 1.181	0 - EEE Control 1 - EEE Status F	Register Register			
Proposed Response	Response Status W	,							
PROPOSED REJ	ECT.								
Sending count_do detached FEC/PM	wn assignments correspondir IA/PMD device that could use	ng to QUIET and AL e those values to infe	ERT is useful for a r the state of tx_mode.						

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 Z/withdrawn SORT ORDER: Comment ID

The PCS does not cease sending RAMs (or scrambled LPI blocks) during QUIET and ALERT. Comment #68 enforces the alignment of RAMs with FEC blocks.

C/ 91 Slavick. Jeff	SC 91.4	P 92 Avago Techn	L 53 nologies	# 190	C/ 82 Slavick. Je	SC 82. eff	.2.18.3.1	P 79 Avago Techi	L 40 nologies	# 191			
Comment Type	e T	Comment Status D			Comment	Туре Т	-	Comment Status D					
Need to re was set to	eplace TBDs ~3x FEC fran	with values for maximum del ne size.	lay contributed b	y the RS-FEC. Clause 74	Time	spent in TX	K_WAKE	does not allow for all RAI	Is to be sent for	all data rates.			
SuggestedRen Change Tf	<i>medy</i> BDs to be 40	96 BT, 158.3ns, 8 pause_qu	anta		Twl w 100G transr send	hen LPI_F -KR4 insert nit. This m 3 RAMs	W = TRU ts 1 RAN leans the	JE is 240ns minimum 1 every other FEC frame a 9 minimum time for Twl ne	nd each FEC frai eds to be 312ns f	me takes 52ns to to guarantee you can			
That's~3.0	01 RS-FEC fr	ames for KP4 and 3.1 for KR	R4/CR4		100G	-CR10 and	40G-CR	4 send 36 66b blocks in 2	40ns, but 100G-0	CR10 has to share a PMC			
Proposed Resp PROPOSE	<i>ponse</i> ED ACCEPT	Response Status W IN PRINCIPLE.			lane o blocks	over two PC s to insert 3	CS lanes, 3 RAMs v	, so that means 18 66b blo which is 307.2ns	ocks. So 100G-C	R10 requires 24 66b			
The proposition should be	osed value of discussed.	8 pause_quanta exceeds the	e informal latenc	y target of 100 ns and	Twl w For 10 100G 40G-0	hen LPI_F\ 00G-KR4 th -CR4 it's 9 CR4 it's 19	W = FAL nat's 75 F FEC frar FEC frar	SE is 3.9us minimum FEC frames, so a maximu nes, so a maximum of 36 nes, so a maximum of 76	m of 37 RAMs				
latency. If	error marking	g is made optional (similar to	Clause 74), sho	of error marking on FEC	Suggeste	dRemedy							
indicate its	latency. If error marking is made optional (similar to Clause 74), should text be added to indicate its impact?					Change the value in Table 82-5a for Twl when LPI_FW = TRUE to be 312ns minimum, 332r maximum maximum Change down_count value used when LPI_FW = FALSE in TX_WAKE state(s) to be 36							
					Proposed	Response		Response Status W					
					PROF	POSED AC	CEPT.						
					Note t altern the W	that this wil ative appro /AKE state	l increas bach migl (causing	e the fast wake time from ht be to force the PCS to s the LP PCS to require a	the value propos end a RAM imm small resynchroni	ed in the baseline. An ediately after entry into ization).			
					C/ 82	SC 82		P65	L 34	# 192			
					Slavick, Je	eff		Avago Tech	nologies				
					Comment Figure	<i>Type</i> 1 e 82-2 is m	• issing ind	Comment Status D dication that the tx_mode	and rx_mode are	bucket			
					Suggester Adder	<i>dRemedy</i> d an indicat	tion in Fig	gure 82-2 that inst.*_MOD	E.* are only requ	ired if EEE is supported			
					Proposed	Response		Response Status W					

<i>CI</i> 82 Slavick, J	SC 82.2.8a eff	P 66 Avago Techn	L 8 ologies	# 193		<i>Cl</i> 82 Slavick, Je	SC 82.2.8a ff		P 66 Avago Techr	L 11 nologies	# 195	
Comment 40G r by a 4 to be mach	t Type T runs the PCS lanes a 40G PCS for a given sent for the entire du ines (FEC & PCS) to	Comment Status D to twice the frequency as 1 time duration is twice that irration of the TX_WAKE s both see RAMs we need	00G. So the nu of the 100G PC tate to allow for to compensate	mber of RAMs inser CS. Since we want F cascaded alignment for this.	40G ted RAMs	Comment No def Suggestea Add a	<i>Type</i> T inition for how to <i>Remedy</i> sentance that st	Comment o transition from ates the follow	Status D n normal AM to ing to 82.2.8a	o RAM.		
Suggeste Chan PCS "The to "The 66-bit	dRemedy ge the frequency at v by changing the follo RAMs shall be insert RAMs shall be insert t block on each 40G l	which RAMs are inserted I wing sentence: ed after every 7 66-bit blo ed after every 7 66-bit blo PCS lane."	by a 40G PCS to cks on each PC cks on each 100	o match that of the 10 S lane." OG PCS lane and eve	00G ery 1१	"After i RAM is and th <i>Proposed I</i> PROP	the LPI transmit s inserted into a e low two bits of <i>Response</i> OSED ACCEPT	state machine continuous str am_counter e <i>Response</i> IN PRINCIPLI	transitions fro eam of LPI blo qual 3" Status W E.	m TX_ACTIVE to	TX_SLEEP the first has sent an LPI block	
Proposed Response Response Status W PROPOSED ACCEPT.						to coincide with the start of an FEC, the distance between the last normal AM and the f RAM must be a multiple of 4.						
Slavick, J Comment Figur down is set down	eff t <i>Type</i> T e 82-9a. count is decrement t true when the count count = 1.	Avago Techn Comment Status D ed each time you send a l reaches 0. Therefore the	RAM and the do last RAM trans	# [<u>194</u> wn_count_done varia mitted is sent with a	able	"After RAM s distant	the LPI Transmit shall be insertion ce between the f er of 4 66-bit bloc	state diagram after one bloc irst RAM and p cks."	transitions fro k of /LI/ has be preceding norn	m TX_ACTIVE to een transmitted o nal alignment ma	o TX_SLEEP, the first n PCS lane 0. The rker shall be an integer	
Suggeste	dRemedy											
Chan Figur	ge down_count = 1 a e 82-9a.	and down_count = 0 to do	wn_count = 2 ar	nd down_count = 1 in	ו							
lf a pa chang RAM value	ath from TX_SLEEP ge listed above is not and last RAM since of 255 when going fi	to TX_ACTIVE is added in correct. The change wor the last RAM you send in rom TX_SLEEP to TX_AC	n the LPI transm uld then be to ch TX_SLEEP wou CTIVE.	it state machine, the ange the references Id have a down_cou	en the s to int							
Proposed	Response	Response Status 🛛 🛛 🛛 🛛 🛛 🖉										

PROPOSED ACCEPT IN PRINCIPLE.

Change the down_count as suggested. A path from TX_SLEEP to TX_ACTIVE should not be added as the link partner will always require the wake sequence in order to re-align its PCS function.

C/ 91 SC	91	P104	LO	# 196	C/ 91	SC 91.5.2.5	;	P 95	L 20	# 198
Slavick, Jeff		Avago Technolo	ogies		Slavick, Jeff			Avago Techno	logies	
Comment Type	T Comment	Status D			Comment T	vpe T	Comment S	Status D		
No definition	is for counter to track the	following have be	een added to the	RS-FEC.	Figure 9	1-3 doesn't in	corporate the X0	OR function in i	t's illustration of	f the transcoding process
Corrected_b Uncorrected_ Symbol_erro Symbol_erro Symbol_erro Symbol_erro SuggestedReme Add a new si counters and	lock_count _block_count or_count_0 or_count_1 or_count_2 or_count_3 edy section named RS-FEC E d create MDIO access m	rror monitoring ca	apability which do as well.	efines the following	SuggestedF Change "Severa to "Severa Proposed R PROPC See cor	emedy examples the examples the esponse SED ACCEP [*] nment #155.	at illustrate the tr at illustrate the tr <i>Response</i> S T IN PRINCIPLE	anscoding proc anscoding proc Status W	cess are shown cess steps a-e a	in Figure 91-3." are shown in Figure 91-3.
Corrected_b corrected wh	lock_count - 32b counter	which increment	s each time a co	deword is successfully	C/ 91 Slavick, Jeff	SC 91.5.4.2	2.1	P 107 Avago Techno	L 3 logies	# 199
Uncorrected uncorrectabl parity's don't Symbol_erro a symbol for	_block_count - 32b coun le when fec_bypass_corr t match when fec_bypass or_count_03 - 32b coun the given lane is correct	ter which increme ection is false and correction is tru ter, one for each l ed when fec. byp	ents each time a d when the local e. PMD lane, which ass_correction is	codeword is parity and received increments each time	Comment T Figure S SuggestedF Add a d	vpe T 1-8. The varia emedy efinition for re	Comment S able restart_lock start_lock to 91.	Status D is not defined i 5.4.2.1	n the State Var	iables section.
Proposed Respo	DACCEPT IN PRINCIPL	Status W E.			Proposed R PROPC	esponse SED ACCEP ⁻	Response S T IN PRINCIPLE	Status W		
See healey_	_02_0912.pdf.				See cor	nment #209.				
C/ 91 SC Slavick, Jeff Comment Type Replace TBE	T Comment	P93 Avago Technolo Status D	L 46 ogies	# <u>197</u>	Cl 82 Slavick, Jeff Comment T The las	SC 82.2.8a <i>pe</i> T RAM sent in	Comment S the WAKE state	P 67 Avago Techno Status D is sent with a d	L 2 logies lown_count val	# 200
SuggestedReme		iter register triat a	ileauy exist ill ivi	DIO.	Values I	sted are incol	rrect.			
Change TBD) with 3.200 to 3.219				Change	emedy				
Proposed Respo PROPOSED 3.200 and 3. new counters	ACCEPT IN PRINCIPL ACCEPT IN PRINCIPL 129 are PCS bits/registe s should be defined in M	Status W E. Irs. As the BIP ch MD 1 (Clause 74	eck is done by th FEC register spa	e RS-FEC sublayer, ace resides in this	(therefo 0xC1; fo To (therefo values: 0x9F, 0	re the last 5 R r PCS lane 1 re the last 5 R 0xC4, 0xC5, 0 (9C).	AMs on PCS lar these would be: AMs sent by a 1 0xC2, 0xC3, 0xC	ne 0 would have 0x99, 0x9E, 0x 00GBASE-R P 0; for PCS lane	e CD3 values: 0 9F, 0x9C, 0x9E CS on PCS lan 1 these would	0xC5, 0xC2, 0xC3, 0xC0, D). e 0 would have CD3 be: 0x98, 0x99, 0x9E,
MMD, so it is	s proposed that the Clau	se 91 register spa	ace also reside h	ere).	Proposed R	esponse	Response S	status W		
See commer	nt #196.				PROPC	SED ACCEP	Т.			
TYPE: TR/techni COMMENT STA SORT ORDER: (ical required ER/editoria TUS: D/dispatched A/ac Comment ID	I required GR/ge ccepted R/rejecte	neral required T d RESPONSE	/technical E/editorial G/ge STATUS: O/open W/writ	eneral ten C/closed 2	/withdrawn		Comme	nt ID 200	Page 47 of 130 9/24/2012 2:42:0

04 AM

C/ 92 SC 92.7.12 P 119 L 14 # 201 Slavick, Jeff Avago Technologies Avago Technologies </td <td>C/ 82 P 80 L 8 # 203 Slavick, Jeff Avago Technologies</td>	C/ 82 P 80 L 8 # 203 Slavick, Jeff Avago Technologies
Comment Type T Comment Status D The clause 72 PMD training sequence has a timeout value of 500ms. We're going 2.5 times faster with more loss then 802.3ap. The channel is going to be more difficult and thus will likely require more time to optimize the link. SuggestedRemedy Add statements changing the PMD training timeout time for clause 92, 93, and 94 to be 1.5s.	Comment Type T Comment Status D Figure 82-17 LPI Receive state diagram. The transiton from RX_ACTIVE -> RX_TIMER requires that block_lock * rx_block_lock * R_TYPE(rx_coded) = LI. The transition from RX_ACTIVE -> RX_ACTIVE occurs when block_lock != rx_block_lock and align_status != rx_align_status. rx_align_status has to wait for all PCS lanes to achieve rx_block_lock before it can deskew and be set to true. I believe we want remain in RX_ACTIVE until we're aligned and receiving LI blocks.
Proposed Response Response Status W PROPOSED REJECT. Given the increase in rate, training frames will also be exchanged 2.5 times more quickly, implying 2.5 times the updates within a fixed time window of approximately 500 ms.	SuggestedRemedy Change the transition from RX_ACTIVE -> RX_TIMER to be: align_status * rx_block_lock * R_TYPE(rx_coded) = LI Proposed Response Response Status W
CI 82 SC 82 P 80 L 10 # 202 Slavick, Jeff Avago Technologies P 80 L 10 # 202 Comment Type T Comment Status D Figure 82-17 LPI Receive state diagram. There is no need to have a RX_TIMER state since	Since rx_align_status takes into account the block_lock for all PCS lanes, it is more efficient t make the transition: align_status * rx_align_status * R_TYPE(rx_coded) = LI
the self loop from RX_SLEEP -> RX_SLEEP changes nothing. SuggestedRemedy Remove the RX_TIMER state and move the actions of RX_TIMER into RX_SLEEP. Remove the loop from RX_SLEEP -> RX_SLEEP. In clause 49 there is a self loop of RX_SLEEP -> RX_SLEEP which causes the rx_tq_timer tc restart continously until you begin to see data leave. So leaving the RX_SLEEP -> RX_SLEEP loop in place is an option.	Cl 91 SC 91.5.4.2.3 P 106 L 3 # 204 Slavick, Jeff Avago Technologies # 204 Comment Type T Comment Status D The term first_amp is used but the variable name is first_pscl SuggestedRemedy Change all first_amp references to first_pscl in the amp_counter definition.
Proposed Response Response Status W PROPOSED REJECT. The extra state was added to avoid the continual restarting of the timer (which would make it	Proposed Response Response Status W PROPOSED ACCEPT.

Stevick, Jeff Avago Technologies Stevick, Jeff Avago Technologies Stevick, Jeff Comment Status D Comment Type T Comment Status D Figure 91-91. The transition out of TEST_CW should be gated by a new codeword being gated. Stronge the following state transitions to be: Suggested/Remedy Comment Status D Proposed Responses Response Status W PROPOSED ACCEPT IN PRINCIPLE. PROPOSED ACCEPT IN PRINCIPLE. Proposed Responses Status W PROPOSED ACCEPT IN PRINCIPLE. (Added Subci 91.5.4.3 for consistent sorting.] The Suggested Remedy would cause the first codeword received after ALIGN_REQUIRED to not be consistent sorting.] Attensiting control and data blocks can appear when errors are enforced during packet transmission. Refer to the possible transition between TX_D and TX_E states in Figure 92. Interacting and proposed modifications. There is no obvious advantage to the suggested Remedy would cause the first codeword received after ALIGN_REQUIRED to not be consistent sorting.] The course of consistent make is the informed Type 91.4. # 207 Itest_am problem with existing state diagram and proposed modifications. D In the receive path should merge the asquing FEC block lock and deskew block with the Lane reord block. alignment lock, deskew and lane reorder' to replace the 2 blocks in the receive path hold merge the asquing FEC block lock. Record and beassigned the value	C/91 SC 91 5 4 3 P108 / 37 # 205	C/ 91 SC 91 5 2 6 P113 / 38 # 206							
Comment Type T Comment Status D Figure 91-9. The transition out of TEST_CVV should be gated by a new codeword being available insets of gating the set from a cw_bad_count adjustment state being gated. Comment Type E Comment Type Comment Status D StagestedRemedy Comment Count of TEST_CVV should be gated by a new codeword being gated. StagestedRemedy Memove or modify the example1 Type N and TX_E states in Figure 92 In the considered in which stain Figure 92 StagestedRemedy StagestedRemedy StagestedRemedy StagestedRemedy In the course of considering this comment, two errors were found. In Figure 91-9, test, or should be assigned the value FALSE in the ALGM_ACQUIRED state. Add the assignmentst to the corresponding state diagram. In the corec	Slavick, Jeff Avago Technologies	Zhong, Qiwen Huawei							
Change the following state transitions to be: Suggested Remedy TEST_CW-> CW_2MOD: test_cw & kow, bad CW_GOD_STEST_CV: UTC Response Status W PROPOSED RESPONSE Response Status W PROPOSED REACCEPT IN PRINCIPLE. Remove or modify the example! [Added Subcl 91.5.4.3 for consistent sorting.] The Suggested Remedy would cause the first codeword received after ALIGN. REQUIRED to not be considered in ow, bad count. Otherwise, there is no difference between the existing state diagram in not made clear. There is no obvious advantage to the suggested remedy. Attending out and blocks can appear when errors are enforced during packet transmission. Refer to the possible transition between TX_D and TX_E states in Figure 82. If overver, the editor is open to using a different example if there consensus is to do so.] If overver, the editor is open to using a different example if there consensus is to do so.] Comment Type T Comment Type T Comment Type T Response Status D In the receive path should merge the alignment lock, and deskew block with the Lane reord block and the support of transmitter and the support of the consessent with Figure 91-7. Suggested Remedy T Comment Type T Comment Type T However, in the course of considered the value FALSE in the LOCK JNNT state. In Figure 91-9. Suggested Remedy Suggested Remedy Suggested Remedy	Comment Type T Comment Status D Figure 91-9. The transition out of TEST_CW should be gated by a new codeword being available instead of gating the exit from a cw_bad_count adjustment state being gated. SuggestedRemedy	Comment Type E Comment Status D "Figure 91 - 64B/66B to 256B/257B transcoding example" Especially "Example 3: Alternatin data and control blocks" might misguide readers as the Ethernet Packet with min length of 6 bytes and 8 bytes Preamble+SFD, and with min 12 bytes Interframe GAPs. It means that the							
PROPOSE DRESPONS Response Status W PROPOSED ACCEPT IN PRINCIPLE. [Added Subcl 91.5.4.3 for consistent sorting.] The Suggested Remedy would cause the first codeword received after ALIGN_REQUIRED to not be considered in cw_bad_count. Otherwise, there is no difference between the existing state diagram and proposed modifications. However, the editor is open to using a different example if there consensus is to do so.] If y is C 91-2 P94 L # 207 State diagram and proposed modifications. Mellanox Technologies Sela, Oran Mellanox Technologies However, in the course of considering this comment, two errors were found. In Figure 91-8, test_amp should be assigned the value FALSE in the ALIGN_ACQUIRED state. Add the assignments to the corresponding state diagrams. To comment Type T Comment Type 1-7 Suggested Remedy Use signments to the corresponding state diagrams. Figure 91-7 Suggested Remedy Suggested Remedy Suggested Remedy W Note corresponding state diagrams. Figure 91-7 Suggested Remedy Suggested Remedy Suggested Remedy N Note corresponding state diagrams. Figure 91-7 Suggested Remedy N RCPOSED REJECT. Note corresponding state diagrams. Figure 91-8 Figure 91-7 Suggested Remedy N Note corresponding sta	Change the following state transitions to be: TEST_CW -> CW_GOOD: test_cw & !cw_bad TEST_CW -> CW_BAD: test_cw & cw_bad CW_GOOD -> TEST_CW: UCT	SuggestedRemedy Remove or modify the example! Proposed Response Response Status							
Atternating control and data blocks can appear when errors are enforced during packet transmission. Refer to the possible transition between TX_D and TX_E states in Figure 82. [Added Subcl 91.5.4.3 for consistent sorting.] The Suggested Remedy would cause the first codeword received after ALIGN_REQUIRED to not be considered in cw.bad.count. Otherwise, there is no obvious advantage to the suggested remedy. The problem with existing state diagram is not made clear. There is no obvious advantage to the suggested remedy. However, in the course of considering this comment, two errors were found. In Figure 91-9, test_cw should be assigned the value FALSE in the LOCK_INIT state. In Figure 91-9, test_cw should be assigned the value FALSE in the LOCK_INIT state. Add the assignments to the corresponding state diagrams. However, in the course of considering this comment, two errors were found. In Figure 91-9, test_cw should be assigned the value FALSE in the LOCK_INIT state. In Figure 91-9, test_cw should be assigned the value FALSE in the LOCK_INIT state. Add the assignments to the corresponding state diagrams. <i>Comment Type</i> T <i>Comment Status</i> D In the receive path should merge the alignment lock and deskew block with the Lane reorder block - all 3 action are done be acquiring FEC block lock based on the alignment markers. Also this will make is consistent with Figure 91-7 <i>SuggestedRemedy</i> Create one block "alignment lock, deskew and lane reorder" to replace the 2 blocks in the receive path in figure 91-2. Figure 91-7 is intended to describe bit order and for that purpose there was no advantage to showing "ane reorder" as a separate block. Figure 91-2 is partitioned to correspond with the organization of subclauses. Lane reordering is not needed to cothin alignment lock. Lane reordering is needed to verify that valid codewords are being received after alignment lock. Lane reordering is needed to verify that valid codewords are being received after alignment lock with requires information for the Reed-So	Civ_BAD -> TEST_Civ. cw_bad_count < 3 Pronosed Response Response Status M	PROPOSED REJECT.							
If is Suggested Remedy would cause the inits codeword received after ALLON_RECURED to not be considered in ow bad_could in the receive path and proposed modifications. If is SC 91-2 P94 L # [207 C/ 91 SC 91-2 P94 L # [207 Sela, Oren Mellanox Technologies C/ 91 SC 91-2 P94 L # [207 Sela, Oren Mellanox Technologies C/ 91 SC 91-2 P94 L # [207 Sela, Oren Mellanox Technologies C/ 91 SC 91-2 P94 L # [207 Sela, Oren Mellanox Technologies C/ 91 SC 91-2 P94 L # [207 Sela, Oren Mellanox Technologies Mellanox Technologies C/ 91 SC 91-2 P94 L # [207 Sela, Oren Mellanox Technologies Mellanox Technologies C/ 91 SC 91-2 P94 L # [207 Sela, Oren Mellanox Technologies Mellanox Technologies Mellanox Technologies C/ 91 Sc 91-2 P94 L # [207 Sela, Oren Mellanox T	PROPOSED ACCEPT IN PRINCIPLE. [Added Subcl 91.5.4.3 for consistent sorting.]	Alternating control and data blocks can appear when errors are enforced during packet transmission. Refer to the possible transition between TX_D and TX_E states in Figure 82 [However, the editor is open to using a different example if there consensus is to do so.]							
The problem with existing state diagram is not made clear. There is no obvious advantage to the suggested remedy. However, in the course of considering this comment, two errors were found. In Figure 91-8, test_amp should be assigned the value FALSE in the ALIGN_ACQUIRED state. Add the assignments to the corresponding state diagrams. Comment Type T Comment Status D In the receive path should merge the alignment lock and deskew block with the Lane reord block - all 3 action are done be acquiring FEC block lock based on the alignment markers. Also this will make is consistent with Figure 91-7 Suggested/Remedy Create one block "alignment lock, deskew and lane reorder" to replace the 2 blocks in the receive path in figure 91-2 Proposed Response Response Response Status W PROPOSED REJECT. Figure 91-7 is intended to describe bit order and for that purpose there was no advantage to showing "lane reorder" as a separate block. Figure 91-2 is partitioned to correspond with the organization of subclauses. Lane reordering is not needed to obtain alignment lock which requires information fro the Reed-Solomon decoder. Therefore, even with the proposed consolidation, the function: are still not self-contained. For these reasons the partition will remain as is.	to not be considered in cw_bad_count. Otherwise, there is no difference between the existing state diagram and proposed modifications.	C/ 91 SC 91-2 P 94 L # 207 Sela, Oren Mellanox Technologies <							
	The problem with existing state diagram is not made clear. There is no obvious advantage to the suggested remedy. However, in the course of considering this comment, two errors were found. In Figure 91-8, test_amp should be assigned the value FALSE in the LOCK_INIT state. In Figure 91-9, test_cw should be assigned the value FALSE in the ALIGN_ACQUIRED state. Add the assignments to the corresponding state diagrams.	 Comment Type T Comment Status D In the receive path should merge the alignment lock and deskew block with the Lane reord block - all 3 action are done be acquiring FEC block lock based on the alignment markers. Also this will make is consistent with Figure 91-7 SuggestedRemedy Create one block "alignment lock, deskew and lane reorder" to replace the 2 blocks in the receive path in figure 91-2 Proposed Response Response Status W PROPOSED REJECT. Figure 91-7 is intended to describe bit order and for that purpose there was no advantage showing "lane reorder" as a separate block. Figure 91-2 is partitioned to correspond with the organization of subclauses. Lane reordering is not needed to obtain alignment lock. Lane reordering is needed to verifi that valid codewords are being received after alignment lock which requires information from the Reed-Solomon decoder. Therefore, even with the proposed consolidation, the function are still not self-contained. For these reasons the partition will remain as is. 							

C/ 91 SC 91.5.4.2	2.1 <i>P</i> 105	L 54	# 208	C/ 91	SC 91.5.4.2	.1 <i>P</i> 104	L	# 209		
Sela, Oren	Mellanox Le	chnologies		Sela, Oren Mellanox Technologies						
Comment Type T	Comment Status D			Comment	Туре Т	Comment Status D				
Also for the optional E	EEE capability, if first_amp co	rresponds to PCS	lane 16, 17, 18, or 19,	restart_lock varible is not defined in the varabile section						
location of the next alignment marker payload corresponding to PCS lanes 0, 1, 2, or 3					Remedy					
	ignition marker payload cont			add restart_lock definition						
This means that for w	aking in up from EEE the 409	6 FEC block time	is longer than the	Proposed I	Response	Response Status W				
RAMs - meaning that	it will also take longer for the	PCS to lock		PROP	OSED ACCEP	T IN PRINCIPLE.				
SuggestedRemedy										
Option 1 - Change amp, valid to	look for lanes 0.1.2 or 3 only	in FIND 1ST stat	e for both EEE and	Define	restart_lock as	follows (do not include text	: in <>):			
normal mode, and to	look for 16, 17,18 or 19 in CC	MP_2ND sate for	EEE.	Boolean variable that is set by the FEC alignment <see #49="" comment=""> process to reset the</see>						
Option 2-					synchronization process on all FEC lanes. It is set to true after 3 consecutive uncorrectable codewords are received (3_BAD state) and set to false upon entry into the					
!= data.				C/ 91	SC 91-8	P 107	L	# 210		
If option 1 is chosen t	hen the AMP COMPARE sh	ould be changed s	o that for EEE	Sela, Oren		Mellanox T	echnologies			
amp_match should be	e set to true if current_pcsl = t	first_pcsl+16 only		Comment Type T Comment Status D						
If option 2 is chosen t	hen AMP_COMPARE should	change so that - i	f current_pcsl equals	The FEC synchronization state diagram doesn't take into account the fast lock needed for EEE wakeup from LPI QUITE - need to specify that amp_count should count 4096 FEC						
first_pcsl, amp_match	is set to true - is applicable	for both EEE and	normal mode							
Proposed Response	Response Status W			codew	ord when rx_m	ode is DATA and 8 FEC co	deword when rx_n	node is not DATA.		
PROPOSED ACCEP	T IN PRINCIPLE.			Suggested	Remedy					
The definition of amp	counter is incorrect. During I	ow power idle, if fi	rst amp corresponds to	per co	mment					
PCS lanes 16, 17, 18, or 19, amp_counter should count 2 FEC codewords minus 256 bits to the end of the expected location of the next alignment marker payload corresponding to PCS lanes 0, 1, 2, or 3				Proposed Response Response Status W						
				PROPOSED ACCEPT IN PRINCIPLE.						
				See co	mment #243					
The behavior of Claus comment #243. This (including the definition	se 91 for the optional EEE ca comment will be used to sum on of amp_counter).	pability is propose marize all changes	d to be modified per s related to EEE							

C/ 91 SC 91.5.4.2	1 P104	L	# 211	C/ 91	SC 91.5	.4.2.1	P104	L 26	# 213
Sela, Oren	Mellanox Teo	chnologies		Sela, Oren	I		Mellanox Te	chnologies	
Comment Type E	Comment Status D			Comment	Type ER	2	Comment Status D		
There are many varia	bles that have the same name	in CL82 and ma	y cause unnecessary	typo -	am_lock <x></x>	shoul	d be amps_lock <x></x>		
confusion.				Suggested	IRemedy				
SuggestedRemedy				Chang	le:				
Change the naming: align_status> RS_F alignment_valid> R	EC_align_status S_FEC_alignment_valid			"A Boo when a "	olean variab am_lock <x></x>	le that is fals	is set to true when amps_ e for any x.	lock <x> is true fo</x>	r all x and is set to false
all_locked> amps_a enable_deskew> R	all_locked S_FEC_enable_deskew			To: "A Boo	olean variab	le that	is set to true when amps_	_lock <x> is true fo</x>	r all x and is set to false
Proposed Response	Response Status W			wnen	amps_lock<	x> is ta	alse for any x."		
PROPOSED ACCEP	T IN PRINCIPLE.			Proposed	Response		Response Status W		
Some variable names	s clash with those incorporated	d by reference (se	ee 91.5.2.1 and 91.5.2.2).	PROP	OSED ACC	EPI.			
Change the following variable names: align_status to fec_align_status					SC 82.2	.8a	P 66 Mellanox Te	L 10 echnologies	# 214
alignment_valid to fec_alignment_valid enable_deskew to fec_enable_deskew				Comment Type T Comment Status D The use of count down to communicate the tx_mode should be an optional extension					
all_locked is not a var	riable name in Clause 82 and	does not require	change.	Suggested	lRemedy				
C/ 91 SC 91-9 Sela, Oren	P 108 Mellanox Teo	L chnologies	# 212	Chang The co some	e: ount down fie of the states	eld is a of the	also used to communicate e tx_mode when it is not b	eing used to coord	dinate the transition
Comment Type E Comment Status D The name: "FEC deskew" is not the right name for that diagram. This diagram doesn't only				To: The count down field may also be used to communicate some of the states of the tx_mode when it is not being used to coordinate the transition					
	w but also monitors the FEC t	IOCK IOCK		Proposed	Response		Response Status W		
SuggestedRemedy		state d'a succest a		PROP	OSED REJI	ECT.			
Change the name of the Figure to: "FEC block lock state diagram" or "FEC block lock and deskew state diagram"					The link partner uses the count down field in received RAMs to derive received tx mode				
Proposed Response	Response Status W								
PROPOSED ACCEP	T IN PRINCIPLE.								
See comment #49.									

				-					
C/ 82 SC 82.2.8a	P 67	L 8	# 215	CI 82	SC 82-16	P 79	L	# 217	
Sela, Oren	Mellanox Teo	hnologies		Sela, Oren		Mellanox T	echnologies		
Comment Type T	Comment Status D			Comment	Туре Т	Comment Status D		EEE FEC	
It is not clear if BIP sh the first BIP be calcula	ould be calculated from the la ated from the first "normal" AN	st RAM to the fir I to the second r	st normal AM or should normal AM?	The 10 enable	00GBASE-CR10 ed. Since for the), 40GBASE-CR4 and 40GI CL74 doesn't have any rec	BASE-KR4 PHYs quirement on the p	may have CL74 FEC position of the alignment	
SuggestedRemedy				marke	rs with respect to	o the FEC block the RAMs	are not sufficient	to acquire fast FEC lock	
Add the following text The BIP statistics will second received norm	- be first update when transition al AM	ning from RAMs	to normal AMs on the	During be ser	the scrambler by this can be do	pypass state the RAMs sho one by setting down_count_	uld be disable to a _done to TRUE in	allow for only LPI or Idles to the scrambler bypass state	
Proposed Response PROPOSED ACCEPT	Response Status W			TX_AC	CTIVE or TX_SC	CR_BYPASS and down_co	unt_done = FALS	E	
	D.0-		"	The ch	nange should on	ly be applicable for non FW	V mode		
C/ 78 SC 78.1	P37 Melleney Tec		# 216	Suggested	Remedy				
Comment Type T Need to add the 40GE	Comment Status D BASE-CR4 and 40GBASE-KR	4 PHYs t othe or	40G	Add a new Boolean variables - scr_baypass_enable and scr_bypass. Should use the same description as in 802.3az. After TX wake add 2 more states - TX_CRS_BYPASS, TX_DESKEW					
SuggestedRemedy				The tra	ansition to TX_C	RS_BYPASS should be: L	.PI_FW = FALSE	* tx_tw_timer_done *	
Change: "PHY. For operation CR10 and the 100GB/ To: "PHY. For operation CR4_100CRASE_CR1	over twinax cable, EEE supp ASE-CR4 PHY over twinax cable, EEE supp	orts may be sup orts may be sup	ported by the 100GBASE	The tra For the (!scr_t There to TX_	ansition from TX 2 arcs from TX ypass_enable + should be 2 arcs SLEEP. 2) one_	_CRS_BYPASS to TX_DE (_WAKE to TX_ACTIVE an - LPI_FW = TRUE)" s from TX_DESKEW: 1) on _us_timer_done*T_TYPE(t)	SKEW should be d TX_SLEEP sho ne_us_timer_done x_raw) != LI - go ti	- one_us_timer_done ould add "* ?*T_TYPE(tx_raw) = LI - go o TX_ACTIVE	
Change:				TX_SC	CR_BYPASS sh	ould have the following con	ntent:		
"For operation over ele	ectrical backplanes, EEE may	be supported by	y the 1000BASE-KX	scram Stort o	bler_bypass <= `	true			
100GBASE-KP4 PHY	A4 PHT, INE TUGDASE-KK P		ASE-KR4 PH1, and the	timerd	own count ena	ble <= FALSE			
To:				down_	count <= 20				
"For operation over ele	ectrical backplanes, EEE may	be supported by	y the 1000BASE-KX	down_	count_done = T	RUE			
100GBASE-KR4 PHY	A4 PHY, the TUGBASE-KR P	HY, the 40GBA:	SE-KR4 PHY, the	TX DI	ESKEW should I	have the following content:			
Proposed Pesponse				scram	bler_bypass <=	true			
				Start o	ne_us_timer				
PROPOSED ACCEPT	I IN PRINCIPLE.			timera	own_count_ena	DIE <= TRUE			
See #107, 108				down_	_count_done = F	ALSE			
				Also ta KR4 2	able 78-4 will nee cases for the tir	ed to add for the 100GBAS ning in the Normal wake m	E-CR10, 40GBAS	SE-CR4 and 40GBASE-	
				Need	o add new TX_I	MODE - SCR_BAYPASS a	IND TX_DESKEW	:80.3.3.4.1 page 47, 85.2	

page 87

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 Z/withdrawn SORT ORDER: Comment ID

Comment ID 217

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Proposed Response PROPOSED ACCEPT I	Response Status W N PRINCIPLE.			<i>CI</i> 83 Marris, Ari	SC 83.1.1 thur	P 83 Cadence	L31	# 221
An alternate solution to	this problem is offered by co	mments #68, #6	69	Comment	Туре Т	Comment Status D		bucket
C/ 85 SC 85-1 Sela, Oren	P 87 Mellanox Tecł	L 28 nnologies	# 218	"The 4 100G	40GBASE-R PM/ BASE-KP4 (Clau	A(s) can support any of the 4 use 94)" is a truism.	0 Gb/s PMDs in ⁻	Table 80-2, except
Comment Type T change "Not Applicable"	Comment Status D ' to "Optional" for 40GBASE-	-CR4	40G	Suggested Perha "The ⁷ 100G	dRemedy aps: 100GBASE-R PM BASE-KP4 (Clau	//A(s) can support any of the se 94)"	100 Gb/s PMDs i	in Table 80-2a, except
per comment				Proposed	Response	Response Status W		
Proposed Response PROPOSED ACCEPT.	Response Status W			PROF Move	POSED ACCEPT	"IN PRINCIPLE. ASE-KP4 (Clause 94)" to the	following senter	nce so that it reads as in
C/ 85 SC 85.1	P 87	L33	# 219		iggesteu terneuy.			
Sela, Oren	Mellanox Tech	nnologies		C/ 91	SC 91.5.2.2	P93	L 27	# 222
Comment Type T 40GBASE-CR4 can also	Comment Status D o enter low power idle		40G	Comment	туре т	Comment Status D		
SuggestedRemedy				The s senta	kew variation of (nce, similar to ho	0.2ns is discussed, but it wou w it is refrenced in 83.5.3.3.	ld be good to als	o refer to SP1 in this
Proposed Response	Response Status W		A3E-0K4 FN15	Suggested Per th	dRemedy ne comment.			
PROPOSED ACCEPT.				Proposed	Response	Response Status W		
C/ 45 SC 45.2.7.12	P22 Cadence	L 9	# 220	PROF	POSED ACCEPT	IN PRINCIPLE.		
Comment Type T	Comment Status D					D05	1 40	# 000
The order that the 100G priorities.	port types is listed is differe	nt from Table 7	3-5 which lists the port's	Gustlin, M	lark	Zilinx	L 48	# 223
SuggestedRemedy				Comment	Туре Т	Comment Status D		40G
Swap KP4 and KR4 in T 100GBASE-KR4.	Table Table 45-189 so that bi	it 9 is for 100GE	BASE-KP4 and bit 10 for	Since "wher	the assumed sco LPI control char	ope is 40GE also, change: racters are received from the	CGMII."	
Do similar change in Ta	ble 45-190 and Table 45-191	I for consistanc	V.	to "wher	n LPI control char	acters are received from the	CGMII or XLGM	11."
Proposed Response	Response Status W		, ,	Suggestee	dRemedy			
PROPOSED ACCEPT.				Per co	omment.			
				Proposed PROF	Response POSED ACCEPT	Response Status W		

C/ 82	SC 82.2.8a	P 66	L15	# 224	C/ 82	SC 82.2.8a	P66	L 43	# 227			
Gustlin, M	lark	Xilinx			Gustlin, N	lark	Xilinx					
Comment	Туре Т	Comment Status D			Commen	t Type T	Comment Status D		40G			
Figure block RAMs the co	e 82.9a is meant to being the sync he s to normal AMs is buntdown being re	b show the blocks being tran ader (sync header is sent fir: backwards, the normal AMs versed.	smitted form righ st). But in this co s should be to the	It to left, with the small ntext, the transition from a left of the RAMs with	In this paragraph table 82-2 is talked about for 100GE, but since we are also assuming for now that 40GE is also in scope for EEE, please add in references to table 82-3 for 40GE encoding of AMs.							
Suggested	dRemedy				Per t	ne comment.						
Fix the norma	e figure to be cons al AMs being after	sistent with the sync header RAMs.	being transmitted	first and the transition to	Proposed	l Response	Response Status W					
Proposed	Response	Response Status W			PRO	POSED ACCEPT.						
PROF	POSED ACCEPT.				C/ 82	SC 82.2.8a	P67	L 7	# 228			
Norma	al AM left-most; 16	3383 blocks; then down_cou	unt = 0; etc.		Gustlin, N	lark	Xilinx					
CI 01	SC 01 E 4 2 4	D104	1 46	# 225	Comment Type T Comment Status D							
Gustlin, M	lark	Xilinx	L 40	# 225	I think it would be good to clarify this statement:							
Comment	Type T	Comment Status D			It only the L	y applies to when E PI state machine?	EE is being supported, and	here the recevie	er means the rx_mode of			
i nis e suffici	ently robust for KF	e removed, ∠nongteng vvano 24 also.	g has looked at t	his and the current SIVI is	Suggeste	dRemedy						
Suggester	dRemedy				Per ti Add i	ne comment, add a n that it applies onl	dditional text to clarify this s y when EEE is supported ar	tatement. nd it refers to the	LPI RX SM.			
Dropood	Boononoo	Deserves Status M			Proposed	l Response	Response Status W					
PROF	POSED ACCEPT I	N PRINCIPLE.			PRO	POSED ACCEPT II	N PRINCIPLE.					
Is the	re a presentation of	of the analysis to confirm the	commenter's as	sertion?	Comment #345 addresses the reference to LPI Rx s/m.							
C/ 91	SC 91.5.4.3	P107	L 3	# 226	Add "If the EEE capability is supported," at the beginning of the sentence.							
Gustlin, M	lark	Xilinx										
<i>Comment</i> The si	<i>Type</i> T ignal restart_lock i	Comment Status D s not a defined variable. Add	d it to the list of v	ariables.								
Suggested Per th	dRemedy ne comment.											
Proposed PROF	Response POSED ACCEPT I	Response Status W N PRINCIPLE.										
See c	comment #209.											

C/ 93A SC	P 213	L 24	# 229	C/ 92A	SC 92	2A.4	P 208	L 29	# 230
Vareljian, Albert	Independent			Moore, Ch	arles		Avago Techr	ologies	
Comment Type TR	Comment Status D			Comment	Туре	т	Comment Status D		
To guarantee technic compute "COM" base is fundamental for the the standard.	ally objective and repeatable re ad on Salz SNR bound framewore baseband modulation type system	esults for the cha ork instead. The stems, including	annel figure of merit Salz SNR methodology PAM2 and PAM4 used ir	Annex TP0-T one lir correc and co	92A.4 re P2 and fr k the Tx a t each pa onfusing.	fers to 9 om TP3- and Rx r rt must b Also the	2.8.3.4 which separately sp TP5 but then talks priamari nay come from different sou e specified and specifying reference to the loss of a r	ecifies the loss f ly about the sun irces, to get the the sum is un-ne nated pair seem	rom n. In any sum ecessary s like
See provided materia	l for details			a non-	sequitur.				
				Suggested	lRemedy				
Proposed Response PROPOSED ACCEP	Response Status W			Chang	le:				
Response pending Ta	ask Force discussion of cited m	aterials.		With tl 92.8.3	ne insertio .4	on loss T	P0 to TP2 or TP3 to TP5 gi	ven in	
The response to this this Annex.	comment potentially overtakes	the remainder o	of the comments against	and ar 1.69 d contro of the MDI h Equat (92Aâ . The r differe dB at GHz. differe maxim	a assume B, the ma lled impe- sum of th ost recept on ?"1) maximum ntial cont 12.9806 The maxin ntial cont sum inser	d mated aximum i dance pr e insertio tacle) are insertion rolled im mum inse rolled im tion loss	connector loss of nsertion loss allocation for t inted circuit boards for each on losses from TP0 to the M e determined using I loss allocation for the tran pedance printed circuit boa ertion loss for the transmitte pedance printed circuit boa IL_PCBmax(f)"	he transmitter a h differential land IDI host recepta smitter and rece rds is 13.62 er or the receiver rd is one half of	nd receiver differential e (i.e., the maximum value cle and from TP5 to the viver the
				to:					
				"With portion or from This g	the inserti n of the lo n the MDI ives a ma	ion loss ss allowe host rec iximum F	TP0 to TP2 or TP3 to TP5 g ed for the loss for TP0 to th peptacle to TP5 is determine PC board loss at 12.9806 G	iven in 92.8.3.4 e MDI host rece ed using Equatic Hz of 6.81 dB."	, the otacle nn (92A-1).
				Chang	e the firs	t part of	Equation 92A-1 to:		
				IL_	PCB(f) <=	= IL_PCE	Bmax(f) = 0.0347 + 0.2124 s	sqrt(f) + 0.4661 t	f (dB)
				Repla	ce:				
				"The r	ninimum i	nsertion	loss allocation for the trans	mitter and recei	ver differential controlled

"The minimum insertion loss allocation for the transmitter and receiver differential controlled impedance printed circuit boards for each differential lane (i.e., the minimum value of the sum of the insertion losses from TP0 to MDI receptacle and TP5 to MDI receptacle) are determined using Equation

(92Aâ?"2) . The	C/ 93A SC 93A.1.5 P217 L6 # 232				
minimum insertion loss for the transmitter or the receiver differential controlled impedance	Healey, Adam LSI Corporation				
printed circuit board is one half of the minimum insertion loss IL_PCBmin(f)."	Comment Type T Comment Status D				
With:	In item b), the "zero crossing" of the rising edge of the single bit response does not appear to be a stable reference point unless sufficient pre-shoot is added, via c(-1), to cause an explici zero crossing.				
"The minimum loss for TP0 to the MDI host receptacle or from the MDI host receptacle to TP5 is determined using Equation (92A-2)."	Ambiguity in the tz value may disqualify otherwise valid solutions for small c(-1) magnitudes.				
Observe the first part of any stice 0.04 0 to	SuggestedRemedy				
Change the first part of equation 92A-2 to	 Define tz in a manner that is robust for all values of c(-1), c(1), and gDC. Some examples ar given. 1. Define tz to be the time where the single bit response crosses a positive, but non-zero, threshold. If there are multiple such crossings, the latest crossing time that precedes the pear of the single bit response is selected. 				
IL_PCB(f) >= IL_PCBmin(f) = 0.184*(0.0347 + 0.2124 sqrt(f) + 0.4661 f) (dB)					
Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.					
See comment#486.					
C/ 93A SC 93A.1.5 P216 L49 # 231	 Define ts to be the time that maximizes the quantity h(ts)-[h(ts-1b)] and no independent definition of tz is needed. 				
Healey, Adam LSI Corporation	3. Define ts to be the value that satisfies the equation (again tz does not need to be defined):				
Comment Type T Comment Status D	h(ts-Tb/2)=h(ts+Tb/2)-h(ts+Tb)/2				
Editor's note implies that the procedure is only an example. It appears to be a suitable procedure for 100GBASE-KR4.	Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.				
There is similar editor's note in 93A.1.6.3. SuggestedRemedy	The intent of the original proposal was option #1. Update the definition of tz and ts according				

Remove the editor's notes. If 100GBASE-KP4 requires a different procedure, then include this procedure as a subclause for 100GBASE-KR4 and define the procedure for 100GBASE-KP4 in a separate subclause.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #253.

CI 93A	SC 93A.1.5	P 217	L 8	# 233
Healey, Ada	m	LSI Corporation		

Comment Type T Comment Status D

Residual inter-symbol interference should be a function of the chosen sampling phase ts. Instead, the parameter optimization procedure defined in 93A.1.5 considers the error across all sampling phases and the interference amplitude distribution computed per 93A.1.6.3 takes a worst-case phase independent of ts. This also implies the value used to optimize c(-1), c(1) and gDC is not the same value that is used to noise amplitude and consequently the COM value.

Instead, the single bit response should be sampled at baud intervals around ts and the RMS value computed based on those sampled values. The interference distribution should also be computed from the sampled values. In this scenario, the exception window W would be used to force the first W sampled values after ts to be zero. This is more in-line with the operation of a decision feedback equalizer.

SuggestedRemedy

Modify the treatment of inter-symbol interference per the comment.

rioposed Response Response Status W	Proposed Response	Response Status	W
-------------------------------------	-------------------	-----------------	---

PROPOSED ACCEPT.

C/ 91	SC 91.5.2.7	P 99	L 1	# 234
Healev.	Adam	LSI Corporation		

Comment Type T Comment Status D

The RS-FEC encoding is sufficiently stable to define the generator polynomial coefficients and example codewords to assist users of the standard.

SuggestedRemedy

Add Annex 91A with FEC codeword examples in the style of Annex 74A. Include coefficients of the generator polynomial, gi, in Clause 91 or in the proposed annex.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Remove the editor's note. Add a table to the end of 91.5.2.7 that defines the coefficients of the generator polynomials for 100GBASE-KR4 and 100GBASE-KP4.

Add Annex 91A which includes an example of an FEC codeword (input, transcoded output, FEC encoded output).

CI 93	SC 93.5	P 152	L 8	# 235
Healey, A	Adam	LSI Corporation		

Comment Type T Comment Status D

There is no physical instantiation of the Clause 93 PMD service interface and it does not mak sense to define Skew and Skew Variation at SP2 and SP5.

The Skew and Skew Variation allowed at SP3 and SP4 can be taken from Table 80-4 and Table 80-5 respectively.

SuggestedRemedy

Strike this paragraph as well as the paragraph at starting at line 17. Populate TBD Skew and Skew variation limits from Table 80-4 and Table 80-5.

Proposed Response	Response Status	w
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PROPOSED ACCEPT.

CI 93	SC	93.4	P151	L 49	# 236
Healey, A	dam		LSI Corporation		
Comment	Туре	т	Comment Status D		
Delay	constra	ints for t	he 100GBASE-KR4 PMD are TBE	D.	
Suggestee	dRemea	ly			

Consider 84.4 (40GBASE-KR4 delay constraints) and assume the PMD/AN delay is fixed in bit times (2048, 2 pause_quanta, 20.48 ns) and the medium delay is fixed in time (8 ns, 800 bit times).

Proposed Response	Response Status	w
PROPOSED ACCEPT.		

CI 93	SC 93.8.1.5	P 158	L 48	# 237
Healey, A	dam	LSI Corporation		

Comment Type T Comment Status D

The editor's note implies that the transition time definition is copied from 86A.5.3.3. This seems to be an unnecessary duplication of text.

SuggestedRemedy

Incorporate the procedure in 86A.5.3.3 by reference and only include material specific to 100GBASE-KR4 in this subclause.

Proposed Response Response Status W PROPOSED ACCEPT.

C/ 93	SC 93.8.3	P 164	L 4	# 238	C/ 91	SC 91.5.3.3	P 101	L 6	# 241
Healey, Ac	dam	LSI Corporation			Healey, Adam		LSI Corpora	ation	
Comment	Туре Т	Comment Status D			Comment Typ	e T	Comment Status D		
The sp should	becification of the moved to 93.9 C	AC coupling 3 dB cutoff freque Channel characteristics.	ency is a chan	nel specification and	Clause 74 latency in	l error markir	ng is optional presumably du rror marking specified in thi	ue to its impact or s subclause?	h latency. What is the
Suggested	Remedy				If the incr	aaso is signif	icant, consider ontional erro	r marking for Cla	use 01
Add a	subclause 93.9 c	on the topic of AC coupling and	move the cut	off frequency specificatior		ease is signin	icani, consider optional end		use 91.
to that	subclause.				Suggesteare	meay	orror morting on latency or	d datarmina wha	ther ar not the facture
Proposed	Response	Response Status W			should be	optional.	error marking on latency ar	id determine whe	ther of not the leature
FROF	OSED ACCEPT	IN FRINCIPLE.			Proposed Res	sponse	Response Status W		
See co	omment #488.				PROPOS	ED ACCEPT	IN PRINCIPLE.		
C/ 91 Healey Ar	SC 91.2	P92	L 21	# 239	It should I	be noted that	deactivating error marking	would have an ad	lverse impact on MTTFPA
Comment	Туре т	Comment Status D			As stated which is c	in the comm iscussed in t	ent, the other consideration he context of comment #19	for error marking 0.	is any added latency
Now the second sec	hat the FEC sync	hronization state diagram has t	een included	in the draft, the		00 04 5 0 4	D404	1.40	# [242
assigr	ment of the SIGN	NAL_OK parameter of the FEC:	IS_UNITDAT	A.indication primitive can		50 91.5.3.4		L 18	# 242
								alion	
Suggested	ikemedy				Comment Typ	e T	Comment Status D		
alion	status=FALSE, A	lso define the value of the rx b	it parameter f	or the	This subc	lause does n	ot address the case where	rapid alignment m	harkers are being received
FEC:I	S_UNITDATA_i.ir	ndication primitives when SIGN	AL_OK=FAIL		SuggestedRe	medy			
Proposed	Response	Response Status W			Modify the	e subclause t	o address both normal and	rapid alignment n	narkers.
PROP		IN PRINCIPLE.			Proposed Res	sponse	Response Status W		
					PROPOS	ED ACCEPT	IN PRINCIPLE.		
Define	e SIGNAL_OK pe	r the comment.							
For the	e definition of the	rx_bit values when SIGNAL_C	K=FAIL, see	healey_02_0912.	Grant edit	d by other co	to craft to text to be consist mments.	ent with changes	to EEE functionality
C/ 91	SC 91.5.2.5	P95	L12	# 240					
Healey, Ad	dam	LSI Corporation							
Comment Clarify	<i>Type</i> T the assignment	Comment Status D of tx_coded_c<1:0>.							
Suggester	Remedy								
Chang	ge to tx_coded_c<	<1:0>=01 to tx_coded_c<1>=0	and tx_coded	_c<0>=1.					
Proposed PROP	Response POSED ACCEPT.	Response Status W							
See co	omment #15.								
TYPE: TR/ COMMEN SORT OR	/technical require T STATUS: D/dis DER: Comment I	d ER/editorial required GR/ge patched A/accepted R/rejecte D	neral required d RESPON	I T/technical E/editorial G/g ISE STATUS: O/open W/wri	eneral tten C/closed Z/v	vithdrawn	Com	ment ID 242	Page 58 of 130 9/24/2012 2:42:

9/24/2012 2:42:05 AM

C/ 91	SC 91.5.4.2.1	P104	L 39	# 243	C/ 91	SC 91.4	P 92	L 52	# 245	
Healey, Ac	lam	LSI Corporati	on		Healey, Ad	dam	LSI Corporation			
Comment	Туре т С	omment Status D			Comment	Туре Т	Comment Status D			
How d capab	oes the RS-FEC subla ility? The intent of this	yer discriminate betwee statement is to specify	en normal operat that the state dia	ion and the optional EEE gram behaves one way	The C provid	lause 91 archite led.	ecture has stabilized to the point v	where a delay	y constraint can be	
alignm	normal alignment mark	ters are expected but b	ehaves a differer	it way when rapid	Suggested	dRemedy				
ungrin					Specif	fy the maximum	delay contributed by the RS-FEC	C sublayer.		
The R detern	S-FEC sublayer should nine if normal or rapid	d use the EEE service i alignment markers are	nterface primitive expected.	es defined in 91.2 to	Proposed PROF	Response	Response Status W			
Suggested	IRemedy				T KOI	COLD / COLL				
Tie the	e behavior of the state	diagram to the EEE se	vice interface pr	mitives defined in 91.2.	See c	omment #190.				
Proposed PROP	Response Re OSED ACCEPT IN PF	sponse Status W RINCIPLE.			C/ 93A Healey, Ad	SC 93A.1 dam	P213 LSI Corporation	L 24	# 246	
See he	ealey_02_0912.pdf.				Comment	Туре Т	Comment Status D			
C/ 91	SC 91.6	P108	L 52	# 244	Equat bound	ion 93A-1 implie I on the quantity	es that COM+COM0=20*log(As/A (COM+COM0), which may still b	n) and it is si e called CON	mpler to define a lower //.	
Healey, Ac	lam	LSI Corporati	n		Suggested	dRemedy				
Comment	Туре т С	omment Status D			Delete	e COM0 term.				
The R can be	S-FEC architecture ha e defined.	s stabilized to the point	where MDIO sta	tus and control variables	Proposed PROF	Response	Response Status W			
Suggested	IRemedy									
Includ	e tables defining RS-F lingly.	EC status and control v	ariables and am	end Clause 45	C/ 93A Healey, Ad	SC 93A.1.3 dam	P 215 LSI Corporation	L 46	# 247	
Proposed	Response Re	sponse Status 🛛 🛛 🛛 🛛 🛛 🖉			Comment	Type T	Comment Status D			
PROP	OSED ACCEPT IN PF	RINCIPLE.			The variable At is included in Equation (93A-10) and should not be in the numerator of Equation (93A-6).					
Kelei	to comment #190.				Suggested	dRemedy				
					Chang	ge the numerato	r of Equation (93A-6) to 1.			
					Proposed	Response	Response Status W			
					PROF	POSED ACCEP	Г.			
					Note t accep	that comment #1	30 suggests to remove H_t(f) an es overtaken by events.	d Equation 9	3A-6. If that comment is	
					See a	lso comment #3	6.			

				•	•					
<i>Cl</i> 93 Ran, Ad	SC ee	93.8.1.1	P 156 Intel	L 47	# 248	C/ 93A Ran, Adee	SC 93A.1.6.1	I P216 Intel	L17	# 249
Commen It is test wav For Suggest Cha "Unl outp for a Cha "Unl to a	nt Type not abso fixture. C eform or symmetr edReme nge the ess othe ut of a te II measu nge the ess othe test fixtu	E blutely clear One could th a another. y, apply als dy text of the fi erwise noted est fixture as urements". text of the fi erwise noted ire as show	Comment Status D that the requirements of tabl heoretically meet return loss in o for TP5a in subclause 93.8 rst paragraph in 93.8.1.1 to r d, measurements of the trans is shown in Figure 93-3; the s rst paragraph in 93.8.2.1 to r d, measurements of the recein in Figure 93-6; the same te	e 93-4 should a requirements in 3.2.1. ead: mitter are made ame test point a read: ver are made at st point and fixt	Il be met using the same one test fixture and outpo e at TP0a, which is the and fixture shall be used t TP5a, which is the input ure shall be used for all	Comment Convo Suggested Either Proposed PROP The "* to defi Add th "In this	Type E Ilution is also der IRemedy refer to all equat Response OSED ACCEPT " notation is user ne this notation i e following parages s Annex, "*" deno	Comment Status D noted by "*" in other equation tions or just change "In equa <i>Response Status</i> W IN PRINCIPLE. d in 93A.1.6.1, 93A.1.6.2, and n 93A.1.6. graph to the end of 93A.1.6 a otes convolution which is defi	s 23, 24 and 25. tion (93A-18)" to d 93A.1.6.3. The nd move Equation ned by Equation	"Where". refore, it would be better on (93A-19) accordingly. (93A-XX)."
Propose PRC The mad Sinc mus inter	d Respo POSED phrase ' e at TPC e the ins t be set i operabil	nse REJECT. 'the same te)a/TP5a. sertion loss in order to e ity would be	Response Status W est point" is redundant with th of the test fixture is allowed t ensure interoperability in spite enhanced by enforcing the	ne statement tha o vary within a i e of this variabili same test fixture	at all measurements are range, the specifications ity. It is not clear that e be used for all					

measurements.

							-						
Cl 92	SC	92.1	P 11 1	l <i>L</i> 19	# 250		C/ 93	SC 93.8.1		P156	L18	# 251	
Ran, Ade	е		Intel				Ran, Adee			Intel			
Comment	Туре	ER	Comment Status	כ			Comment	Туре Т	Comment S	Status D			
RS is and s	connec hould re	ted to PCS ad "PCS"	S through CGMII, not to	o RS-FEC through C	AUI. "RS" is likely a	i typo	Why is What v paralle	there a minim vould go wron I requirement	num requirement f g with a faster rise for the CR4 trans	for transition e time in a ba mitter?	time for a testpoin ackplane system?	nt near the transmitter? Why is there no	
Figure	e 92-1 a	oes not sr	low the optional CAUI.	ii it was shown, the	lext would be cleare	er.	Values	near the sug	aested minimum r	niaht he diffi	cult to measure w	ith a sampling scope -	
Same	Same comment applies to 93.1 and 94.1.						which	is otherwise a	good choice.				
Additi can b PMD	Additional alarification may be required: according to clause 83.1.4 and annex 83A.1 CAUI can be implemented between two PMAs, to separate the PCS (or the optional FEC) from the PMD. With mandatory RS-FEC instead of optional FEC, CAUI can only be used to separate the RS-FEC from the PCS over 10 lanes (top CAUI at right half of figure 83-2), since output of RS-FEC encoder is 4 physical lanes, over which CAUI is not defined. Since such separation would require 10 lanes, it seems to have mainly theoretical value.					CAUI om the	Also, this requirement may prevent some legitimate solutions for meeting the stringent retur loss requirements.					eeting the stringent return	
the R of RS separ						output	The minimum-only-requirement concept seems to be taken from annex 86A which is releven for nPPI. Perhaps it makes sense there, but this is a very different system - the trace lengen on backplane will incerase the rise time.						
Suggeste	dRemec	ły					Suggested	Remedy					
Chan	ge "betv	ween the I	RS and the RS-FEC" to	o "between the PCS	and the RS-FEC".		Remove this parameter from table 93-4 and delete clause 93.8.1.5.						
Optio 83C.1	nally, ad Ia.2.	ld CAUI in	figure 92-1 to clarify th	ne meaning of this se	entence, or refer to	annex	Proposed PROP	Response OSED REJEC	Response S CT.	tatus W			
Apply	same c	hanges in	clauses 93.1 and 94.	1, figures 93-1 and 9	4-1.		The (n fall tim	ear-end) cross	stalk amplitude pro	esent at the	receiver is related	to the aggressor rise and	
Consi	ider clar	ifying that	separating PCS and R	S-FEC through CAL	Il requires 10 lanes		(crossi	alk is no less	of a concern here	than it has b	been for other sta	ndards).	
Proposed	Respor	nse	Response Status	N			This is also reflected in the COM calculation where the transmitter filter bandwidth (invers proportional to rise time) is larger for near-end aggressors. This bandwidth should be rela						
PROF	POSED	ACCEPT	IN PRINCIPLE.										
The te	ext cited	in this co	mment is modified by a	comment #489.			to this minimum rise time specification.						

C/ 93	SC 93.8.1.6	P160	L10	# 252	C/ 93	SC	93.9.1	P	165	L 40	# 254
Ran, Adee		Intel			Ran, Adee			Inte	I		
Comment 7	<i>уре</i> т	Comment Status D			Comment 7	Туре	т	Comment Statu	is D		
Current limitatic in UI sh Delays	t values in Table ons, and a factor hould scale simili	93-5 are taken from clause of 2.5 in signaling frequency arly.	85. Assuming si v, the lengths of	milar test fixture the channel and equalizer	Most of backpla healey_ for an a	f the p ane ch _01_0 assum	presentatio nannels we 911.xls, Jo ned minimu	ns that demonstrate ere assuming 14 DF by et al. #20.3 at IS um capability.	ed technic E taps or SCC 201	cal feasibility of N more. (ref: meg 1, ran_01_0112)	IRZ over sample helli_01a_0911,). This is a logical choice
the line	ar fit pulse.	o applies to clause 92.8.3.3, t	able 92-6, wher	e the values are currently	For a re with 14 makein	eceive I DFE i ng W=′	er with no I taps, the e 16.	DFE, the ISI effects exception window s	s starts 1 hould be	UI after the samp 1+14=15 UI after	oling point. Therefore, the sampling point,
IBD.	_ /				Suggestedl	Reme	dy				
Suggested	Remedy				In table	e 93-8,	, change th	he value of W from	"TBD" to	16.	
Change	e NP and NVV to	20; change DP and DVV to 4			Proposed F	Respoi	nse	Response Statu	s W		
Proposed F	Response	Response Status W		PROPOSED ACCEPT IN PRINCIPLE.							
PROPO	DSED ACCEPT	IN PRINCIPLE.		TBD to	be rei	placed wit	h a value reflecting	the conse	ensus of the Tas	k Force.	
The tra	The transmitter output waveform measurement in Clause 85 is made at the output of a host										
channe	l and test fixture	with up to 6.5 dB of loss at the test fixture defined in 93.8.1	he fundamental	frequency. Compare this	C/ 94	SC	94.3.11	P	187	L35	# 255
	.0 00 1033 11 116				Ran, Adee			Inte	I		
While the second	he Np/Dp and N	w/Dw value may need adjust	ment, the value	s proposed in the	Comment 7	Туре	Т	Comment Statu	is D		TX signal
Sugges	sted Remedy ma	ly not be the correct ones.			Transm	nitter o ed pro	output jitter	r and noise should l ad new parameter d	pe replace	ed by requirement are described in	nts suitable for PAM4. A
CI 93A	SC 93A.1.5	P 216	L 48	# 253	presen	tation.					an accompanying
Ran, Adee		Intel			Suggestedl	Reme	dy				
Comment 7 Based	<i>Type</i> T on consensus by	Comment Status D uilding and having to alternat	ive procedures,	the presented procedure	Delete Add ne	the las	st two rows s instead f	s of table 94-4. for the parameters	which app	pear in the accon	npanying presentation.
Same o	comment applies	s to clause 93A.1.6.3 (combin	nation of interfer	ence and noise	Replac in the a	e clau	ises 94.3.1 panying pr	11.8 and 94.3.11.9 resentation.	with text v	which specifies th	ne procedures described
distribu	tions).	Υ.			Proposed F	Respoi	nse	Response Statu	s W		
Suggested	Remedy				PROPO	OSED	ACCEPT	IN PRINCIPLE.			
Remov	Remove editor's notes in both clauses.									4h in	
Proposed F	Response	Response Status W			One or	more	presentati	ions are expected t	o address	this comment.	
PROPO	DSED ACCEPT.	-									

C/ 94	SC 94 4 1	P197	/ 40	# 256	C/ 93
Ran, Ade	e	Intel			Ran, A
Commen	t Type T	Comment Status D		channel COM	Comm
Base curso degra	d on preliminary ar or is about enough aded results, while	nalysis in ran_01_0712, assu to get good equalization for higher lengths provided dim	uming equalization ISI-limited chanr inishing returns.	on of up to 16 UI after the els. Length lower than 16	Tł wl be se
This archit	capability is consid tectures.	lered feasible by the consen	sus group which	examined several receiv	Bi Fl
The e	exclusion window le	ength W should accordingly	be set to 16+2=1	8.	0\
Suaaeste	dRemedv				tra
Chan	ge the value of W	in table 94-8 from "TBD" to	18.		7
Proposed	- I Response	Response Status W			Pe
PRO	POSED ACCEPT				3
					Sugge
CI 93	SC 93.8.1.1	P157	L28	# 257	Re
Ran, Ade	e	Intel			Δ.
Commen	t Type TR	Comment Status D			wi
Trans	smitter characterist	tics measured on TP0a need	l not include nois	e measured on the far	pla
end c	of any channel. The	e far end of a channel is TP5	, or possibly TP	a. A 100GBASE-KR4	Propo
chan inclue	nel is not detachab de a cable channel	ble, and for a 100GBASE-KR l, which is only relevant for 1	4 transmitter, the 00GBASE-CR4.	e test fixture need not	PI

Transmitter output noise can be measured using the same method as in clause 85.8.3.2 except for the test point, which should be TP0a. Since there is no 6 dB loss as in clause 85, the limit value should be scaled from 2 mV to 4 mV.

SuggestedRemedy

Change the parameter name from "Far-end output noise" to "Output noise". Specify only at one point, TP0a. Change value to 4 mV.

Rewrite clause 93.8.1.7 accordingly.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The near-/far-end specifications recognize that the channel will attenuate the noise (to varying degrees based on its spectral content). A near-end measurement of 4 mV may say little about what the actual noise would be at the output of a lossy channel. If it is acceptable to budget based on the near-end value, the suggested remedy would be sufficient. However, given that the budget is tight, it may be worthwhile to make this distinction.

The response is pending a discussion of these trade-offs.

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 Z/withdrawn SORT ORDER: Comment ID

C/ 93	SC 93.8.2.3	P163	L 23	# 258
Ran, Adee		Intel		

Comment Type TR Comment Status D

The required BER is defined (per the project objective) "at the MAC/PLS service interface" which means after the RS-FEC sublayer. There is no need to specify and test for 1e-12 or better anywhere else, especially at the "Electrical characteristics" section. This would be a severe over-stress.

Bit error ratio should be specified as 1e-12 and tested between two points that span the RS-FEC sublayers. The actual test should involve RS-FEC block error rate and thus performed over the full 4-lane link. It is more likely that a test procedure would require a full compliant transmitter in order to include the RS-FEC encoding; adding jitter requirements as in table 93-7 may not be feasible.

Per-lane BER can be specified in addition at the PMA with BER target of e.g. 2e-5 (as in tests 3 and 4) with jitter stress, e.g. in order to verify CDR tracking capability.

SuggestedRemedy

Remove columns for tests 1 and 2 from the table.

Add a BER test which includes the RS-FEC sublayer; procedure to be defined in clause 91, with setup/stress settings defined separately for clauses 92, 93, and 94. (For the current draft placeholders/editorial comments would suffice).

Proposed Response	Response Status	W
PROPOSED ACCEPT	IN PRINCIPLE.	

Pending discussion by the Task Force.

It should be noted that there is value in providing specifications that can be applied to the subsystems that may be brought together to form a complete PHY. It is expected that a suitable pre-correction BER limit can be derived for the purpose of PMA/PMD testing. While the proposal may be suitable for verifying the BER objective will be met at the MAC/PLS, it should not be the sole means for verifying compliance of the PMD.

Comment ID 258

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		_					_			
CI 93A SC	C 93A.1.5	P 217	L 8	# 259	C/ 94	SC 94.3.12.3	6 P 195	L37	# 261	
Ran, Adee		Intel			Ran, Adee		Intel			
Comment Type	TR	Comment Status D			Comment T	Type TR	Comment Status D		RX performance metric	
The except create a pre precursor, t	ion window s e-shoot of the he uncancel	hould start at tz-1b to preclu e single bit response) from c ed ISI should be measured f	ude the pre-curse counting as ISI. A from the second	or equalization (which After canceling the first precursor and back.	The ree which r better a	quired BER is de means after the anywhere else, e	efined (per the project object RS-FEC sublayer. There is r especially at the "Electrical cl	ive) "at the MAC no need to speci haracteristics" se	fy and test for 1e-12 or ection. This would be a	
SuggestedRem	edy				severe	over-stress.				
Change "[tz	z, tz+WTb]" te	o "[tz-Tb, tz+WTb]".			Bit erro	or ratio should be	e specified as 1e-12 and test	ed between two	points that span the RS-	
Apply also i	in 93A.1.6.3	(line 13).			FEC su	ublayers. The ac	tual test should involve RS-F	EC block error	rate and thus performed	
Proposed Resp	onse	Response Status W			transm	itter in order to i	nclude the RS-FEC encoding	g; adding jitter re	equirements as in table 94-	
PROPOSE	D ACCEPT I	N PRINCIPLE.			7 may	not be feasible.				
Assuming t	he response	to comment #233 is approv	ed, the exceptio	n window would no longer	Per-lar first rov	w of table 94-7)	pecified in addition at the PM with jitter stress, e.g. in order	A with BER tar	get of e.g. 3e-4 (as in the racking capability.	
		impled single bit response a		i is overlaken by evenis.	Suggested	Remedy				
Cl 93A So Ran. Adee	C 93A-1.6.3	P 219 Intel	L 14	# 260	Remov	e the second ro	w from table 94-7.			
Comment Type The proced	TR lure defined i	Comment Status D n 93A.1.6.1 needs a sample	ed version h_w(n) instead of h_w(t).	Add a l with se placeh	BER test which i tup/stress settin olders/editorial c	includes the RS-FEC sublaye gs defined separately for cla comments would suffice).	er; procedure to uses 92, 93, and	be defined in clause 91, d 94. (For the current draft	
SuagestedRem	edv				Proposed I	Response	Response Status W			
Define h_w	(n) as h_w(t_	_n), where			PROP	OSED ACCEPT	IN PRINCIPLE.			
t_n= t_z+(n	-4)*T_b, n=0	floor(3*T_prop/T_b)+8			One or more presentations are expected to address this comment.					
and T_prop	is the propa	gation delay through the ch	annel.		C/ 92	SC Table 92	-1 P134	L1	# 262	
Use h_w(n)	for the proc	edure defined in 93A.1.6.1.			Lusieu, Kei					
Proposed Resp	onse	Response Status W			Comment	Type TR	Comment Status D			
PROPOSE	D ACCEPT I	N PRINCIPLE.			Draft 1 should	.1 renumbers the be 92-1.	e tables in Clause 92 but the	first table in the	e section starts with 92-2.	
See comme	ent #233.				Suggested	Remedy				
					Fix Tab	ole numbers				
					Proposed I	Response	Response Status W			
					PROP	OSED REJECT.				
					Page 1 PMD. Page 1	11 - Line 24 - Ta 44 - Line 31 - Ta	able 92-1-Physical Layer cla able 92-2	uses associated	I with the 100GBASE-CR4	

C/ 92	SC Table 92-2	P 134	L9	# 263	C/ 93	SC Table 93-1	P 175	L9	# 2
Lusted, Ker	nt	Intel			Lusted, Ke	ent	Intel		

Comment Type TR Comment Status D

This project's Broad Market Potential response to the 5 criteria states that "Internet, cloud, and higher performance computing applications, are driving the need for higher bandwidth blade and rack server connections." These high performance computing applications are par of the justification for the project and demand low-latency communication. The 5nsec RS-FEC and transcoding latency guoted in gustlin 01 0712 is not realizable in a IEEE 802.3 layered architecture device and was not shown to be technically feasible (unless error detection is not performed at all). Vendors implementing a MAC device connected through a 802.3 standards-compliant CAUI interface to a PHY device that has such low latency, will not be able to detect or correct errors in packets that were already transferred to the MAC. The 5nsec number assumes a vendor-specific implementation choice on how to minimize latency using non-spec compliant techniques and thus precludes the choice of using 802.3 standard PHY and MAC from the different vendors.

Furthermore, the 50nsec latency for RS-FEC detection adds a significant penalty to lowlatency switching architectures that target high-performance computing. Current 10GbE/40GbE Ethernet switch systems have <300nsec switching latency and the additional 50nsec for RS-FEC detection handicaps Ethernet when compared to competing HPC interconnect technologies. The 50ns link latency translates to per hop latency of 2x50=100ns So this adds 25 to 33% additional latency penalty for low latency Ethernet switches for higher performance computing market.

64B/66B encoding is sufficient to address the higher performance market and provide adequate MTTFPA.

SuggestedRemedy

Make FEC optional: Remove the mandatory FEC encoding and transcoding requirement from the clause and enable using 64/66 encoding.

Proposed Response Response Status W

PROPOSED REJECT.

This topic was discussed at the July 2012 Task Force meeting and a decision was made per Motion #3.

Motion #3 (July 2012): Clause 91 FEC transmitter encoding for 100GBASE-KR4 and 100GBASE-CR4 is mandatory. M: M. Dudek, S: P. Patel, Y: 39, N: 4, A: 13

Therefore, the proposed response is REJECT pending discussion by the Task Force (and a motion demonstrating consensus to modify the decision).

CI 93	SC Table 93-1	P 175	L 9	# 264
Lusted, Kent		Intel		

Comment Type **TR** Comment Status D

This project's Broad Market Potential response to the 5 criteria states that "Internet, cloud, and higher performance computing applications, are driving the need for higher bandwidth blade and rack server connections." These high performance computing applications are par of the justification for the project and demand low-latency communication. The 5nsec RS-FEC and transcoding latency quoted in gustlin 01 0712 is not realizable in a IEEE 802.3 layered architecture device and was not shown to be technically feasible (unless error detection is not performed at all). Vendors implementing a MAC device connected through a 802.3 standards-compliant CAUI interface to a PHY device that has such low latency, will not be able to detect or correct errors in packets that were already transferred to the MAC. The 5nsec number assumes a vendor-specific implementation choice on how to minimize latency using non-spec compliant techniques and thus precludes the choice of using 802.3 standard PHY and MAC from the different vendors.

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64B/66B encoding is sufficient to address the higher performance market and provide adequate MTTFPA.

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Make FEC optional: Remove the mandatory FEC encoding and transcoding requirement from the clause and enable using 64/66 encoding.

Proposed Response Response Status W

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Motion #3 (July 2012): Clause 91 FEC transmitter encoding for 100GBASE-KR4 and 100GBASE-CR4 is mandatory. M: M. Dudek, S: P. Patel, Y: 39, N: 4, A: 13

Therefore, the proposed response is REJECT pending discussion by the Task Force (and a motion demonstrating consensus to modify the decision).

See also #263 for 100GBASE-CR4.

C/ 93 Lusted, Ke	SC 93.7.12 ent	P 184 Intel	L 3	# 265	C/ 45 Lusted. Ke	SC Table 4	5-7	P 21 Intel	L1	# 267
Comment	Type TR	Comment Status D			Comment	Type TR	Comm	ent Status D		bucket
The d KR. H	Iraft says that eac	h lane of this PMD shall use d rate is different and Clause	the same contro 72.6.10 has ma	I function as 10GBASE- ny explicit references to	Table 802.3	45-7 "PMA/PM bj project.	D Control 2	register bit definit	ions" does not lis	t the new PMDs in the
1066	ASE-KR UI.				Suggeste	dRemedy				
Suggester	dRemedy				Remo	ve entry 10110) = reserved	for future use		
use th sure h	ne same control fu now to document i	inction logic but change to the transmission of transmission of the transmission of the transmission of the transmission of	ie 25Gbaud sign e:	aling rate. I'm not entirely	Add the following entries:					
Option 100G	n 1: copy 72.6.10 BASE-KR4 baud	PMD control function into dr rates and UI.	aft and modify re	ferences to state	10110 10110 10111	00 = 100GBASE 01 = 100GBASE 0 = 100GBASE	-CR4 PMA/I -KR4 PMA/I -KP4 PMA/I	PMD PMD PMD		
Option KR4 a	n 2: bring 72.6.10) PMD control function into d	raft and add clar	(R4 are listed)	10111	1 = reserved to	r future use			
1114 6				(14 die listed)	Proposed	Response	Respon	se Status W		
Option variat	n 3: bring 72.6.10 bles for each PMD) PMD control function into d) type. See presentation to b	raft and make ge be submitted.	eneric references to new	PROF	POSED ACCEP	T IN PRINCI	IPLE.		
Proposed	Response	Response Status W			Repla	ce 1011xx = res	served for fu	ture use		
PROF	POSED ACCEPT	IN PRINCIPLE.			With					
See c	comment #10175.				10110	00 = 100GBASE	-KR4 PMA/	PMD		
C/ 92	SC 92.7.12	P143	L 22	# 266	- 101101 = 100GBASE-KP4 PMA/PMD 101110 = 100GBASE-CR4 PMA/PMD					
Lusted, Ke	ent	Intel			10111	1 = reserved for	r future use			
Comment	Type TR	Comment Status D			C/ 45	SC Table 4	5-9	P 21	L 1	# 268
The d	lraft says that eac	h lane of this PMD shall use	the same contro	I function as 10GBASE-	Lusted, Ke	ent		Intel		
KR. H	However, the bau	d rate is different and Clause	e 72.6.10 has ma	ny explicit references to	Comment	Type TR	Comm	ent Status D		bucket
1000					Trans	mit fault descrip	tion location	table does not lis	st the new PHY ty	vpes in 802.3bi project.
Suggester	dRemedy				Suggester	Pomody				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
use tr sure h	ne same control fu	inction logic but change to tr it. Some possible options ar	e: Option 1: cop	y 72.6.10 PMD control	Add th	ne following ent	ries to the er	nd of the table:		
functio	on into draft and r	nodify references to state 10	0GBASE-CR4 b	aud rates and UI. Option						
each i	instance (so that I	100GBASE-CR4 92.7.10 100GBASE-KR4 93.7.10								
72.6.1	10 PMD control fu	100GBASE-KP4 94.3.8								
each PMD type. See presentation to be submitted.						Response	Respon	se Status W		
Proposed	Response	Response Status W			PROF	OSED ACCEP	T.			

PROPOSED ACCEPT IN PRINCIPLE.

See comments #10175 (and #265).

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 Z/withdrawn SORT ORDER: Comment ID

C/ 45 SC	Table 45-1	0 P21	L1	# 269	C/ 45	SC 45.2.1.12	P 21	L1	# 272	
Lusted, Kent		Intel			Lusted, Ker	nt	Intel			
Comment Type	TR	Comment Status D		bucket	Comment T	Type TR	Comment Status D		bucket	
receive fault	description I	ocation table does not list	the new PHY ty	bes in 802.3bj project.	40G/10 for the i	0G PMA/PMD e new 802.3bj PH	extended ability register big Y types.	definitions subcla	auses do not have entries	
SuggestedReme	edy				Suggested	Remedv				
Add the follo	owing entries	to the end of the table:			Add en	tries for 100GBA	SE-CR4 100GBASE-KR4	1 and 100GBASE	-KP4 hetween	
100GBASE-	CR4 92.7.1	1			45.2.1.	12.1 and 45.2.1.	12.2.			
100GBASE-	KR4 93.7.1	1			Proposed R	Response	Response Status W			
100GBASE-	KP4 94.3.9				, PROPO	, DSED ACCEPT.	•••			
Proposed Respo	onse	Response Status W								
PROPOSED	ACCEPT.				C/ 92	SC 92.8.3	P 120	L	# 273	
0.45		Det		"	DiMinico, C	hristopher	MC Commu	unications		
C/ 45 SC	\$ 45.2.1.8	P 21 Intel	L1	# 270	Comment T	Type TR	Comment Status D			
Comment Type	TR	Comment Status D		bucket	Resolution to D1.0 comment 273 to Populate Table 92-5 with the values in dimined 01,0712 pdf slide 4 with the following					
PMD transm	nit disable reg	gister paragraph in P802.3	bh draft 3.1 doe	s not list the new 802.3bj	excepti a) Valu	ons.	citly defined by other com	nents.		
					b) DC c	common-mode v	oltage (max.) is set to 1.9.			
Suggesteakerne	eay	<i>r</i> , ,			<u> </u>					
Append to th	he end of the	first paragraph:			Should	have indicated	to use diminico_01_0712.p	odf slide 4 Equatio	ons 92-1, 92-2 and 92-3.	
"The transm	it disable fun	ction for 100GBASE-CR4	is described in 9	2.7.6. The transmit	Suggested	Remedy				
disable funct 100GBASE-	tion for 100G KP4 is descr	BASE-KR4 is described in ibed in 94.3.6.6."	n 93.7.6. The tra	nsmit disable function for	Use din 2 and 9	minico_01_0712 92-3.	pdf slide 4 Equations 92-1.	, 92-2 and 92-3 fo	or D1.1 Equations 92-1, 92	
Proposed Respo	onse	Response Status W			Proposed F	Response	Response Status W			
PROPOSED	ACCEPT.				PROPO	OSED ACCEPT.				
C/ 45 SC	Table 45-1	5 P21	L1	# 271	Use su	ggested remedy				
Lusted, Kent		Intel			C/ 92	SC 92.10.2	P135	L17	# 274	
Comment Type	TR	Comment Status D		bucket	DiMinico, C	hristopher	MC Commu	unications		
40G/100G P the 802.3bi F	MA/PMD ex PHY types.	tended ability register big	definitions table	does not have entries for	Comment T	Type TR	Comment Status D			
SuggestedReme	edy				In Table insertio	e 92-10-Maximu on loss coefficien	m cable assembly insertion ts a1, a2, and a4 are TBD	n loss characteris 's	tics the maximum fitted	
Add entries 1 1.13.14:12.	for 100GBAS	SE-CR4, 100GBASE-KR4,	and 100GBASE	-KP4 in place of	Suggested	Remedy				
Proposed Respo	onse	Response Status W			Replace	e TBD's with a1:	=4.28, a2=0.326, and a4=0	0.0185		
					Proposed Response Response Status W					
TROF USED					PROPOSED ACCEPT.					
					Use su	ggested remedy				

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 Z/withdrawn SORT ORDER: Comment ID

C/ 92 SC 92.8.4.2	P131 L7	# 275	C/ 92	SC 92.8.3.7	P128	L12	# 277			
DiMinico, Christopher	MC Communications		DiMinico, (Christopher	MC Communi	cations				
Comment Type TR Comment S Table 92-8-100GBASE-CR4 interferen and TBD equation references.	tatus D ce tolerance parameters inclu	des TBD parameters	Comment 92.8.3	<i>Type</i> TR .7 Test fixture refe	Comment Status D rence insertion loss 92-15 is	s TBD.				
SuggestedRemedy			Suggestea	Remedy	loo the test first and references	incontina las-	aution 02.15			
diminico_0912.pdf provides parameter	s for Table 92-8-100GBASE-0	CR4 interference	diminico_0912.pdf provides the test fixture reference insertion loss equation 92-15.							
tolerance TBD and related parameters			Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.							
Per remedy D1.0 comment#275 The d	esired test cases are, at least		Comm equation	ittee discussion of on 92-15.	diminico_0912.pdf for the t	est fixture refere	ence insertion loss			
Test 1: Test channel (host TX plus cat	le assembly) with the maximu	m insertion loss that is	CI 92	SC 92 10 9 1	P141	1 44	# 278			
Test 2: Test channel with maximum inst	sertion loss allowed for the hose	st TX plus cable assmebl	DiMinico, 0	Christopher	MC Communi	cations	π 276			
with the maximum noise (ICN) at that I	DSS.		Comment	Type TR	Comment Status D					
PROPOSED ACCEPT IN PRINCIPLE	atus w		92.10.9.1 Mated test fixtures insertion loss Equations (92-34) and (92-35 and illustration in Figure 92-14 are TBD's.							
Committee discussion of diminico_091	2.pdf for Table 92-8-100GBAS	SE-CR4 interference	Suggestea	IRemedy						
tolerance TBD and related parameters			diminio	co_0912.pdf provid	des the 92.10.9.1 Mated tes	t fixtures insertio	on loss Equations (92-			
C/ 92A SC 92A.8	P 211 L 41	# 276	34) an	d (92-35) and lilus	tration in Figure 92-14.					
DiMinico, Christopher	MC Communications		Proposed	Response	Response Status W					
Comment Type TR Comment S	tatus D		PROP	USED ACCEPT II	N PRINCIPLE.					
The total integrated crosstalk RMS noi illustration in Figure 92A-3 are TBD's.	se voltage of the channel in E	quation (92A-6) and	Comm Equati	ittee review of dim ons (92-34) and (9	inico_0912.pdf for the 92.10 92-35) and illustration in Figu	0.9.1 Mated test ure 92-14.	fixtures insertion loss			
SuggestedRemedy			C/ 92	SC 92.10.9.2	P 142	L35	# 279			
diminico_0912.pdf provides the total in in Equation (92A-6).	tegrated crosstalk RMS noise	voltage of the channel	DiMinico, C	Christopher	MC Communi	cations				
Proposed Response Response S	atus W		Comment	Type TR	Comment Status D					
PROPOSED ACCEPT IN PRINCIPLE			92.10. TBD's.	9.2 Mated test fixto	ures return loss Equation (9	2-36) an illustrat	tion in Figure 92-15 are			
Committee discusion of diminico_0912	.pdf for the total integrated cro	osstalk RMS noise	Suggestea	lRemedy						
voltage of the channel in Equation (92)	A-6).	diminico_0912.pdf provides 92.10.9.2 Mated test fixtures return loss Equation (92-36) an illustration in Figure 92-15.								
			Proposed	Response	Response Status W					
			PROP	OSED ACCEPT IN	N PRINCIPLE.					
			Comm Equati	ittee review of dim on (92-36) an illus	inico_0912.pdf for the 92.10 tration in Figure 92-15.	0.9.2 Mated test	fixtures return loss			

C/ 92 SC 92.10.9 P143 L24 # 280	Cl 92 SC 92.10.9.4 P144 L35 # 282						
DiMinico, Christopher MC Communications	DiMinico, Christopher MC Communications						
Comment Type TR Comment Status D	Comment Type TR Comment Status D						
Mated test fixtures common-mode return loss specification not included in the draft.	92.10.9.4 Mated test fixtures integrated crosstalk noise parameter values in Table 92-12						
SuggestedRemedy	are TBD's.						
Add Mated test fixtures common-mode return loss subclause 92.10.9.3 and Equation (92-xx)	SuggestedRemedy						
and illustration in Figure 92-xx. diminico_0912.pdf provides the 92.10.9.3 Mated test fixtures common-mode return loss	diminico_0912.pdf provides the 92.10.9.4 Mated test fixtures integrated crosstalk noise parameter values in Table 92-12.						
Equation (92-xx) an illustration in Figure 92-xx.	Proposed Response Response Status W						
Proposed Response Response Status W	PROPOSED ACCEPT IN PRINCIPLE.						
PROPOSED ACCEPT IN PRINCIPLE.	Operative and interfalls interpreted and for the Netherland for the second dependent of the						
Committee review of diminico_0912.pdf for the 92.10.9.3 Mated test fixtures common-mode	parameter values in Table 92-12.						
	C/ 92 SC 92.8.3.3 P123 L17 # 283						
Cl 92 SC 92.10.9.3 P143 L25 # 281	DiMinico, Christopher MC Communications						
DiMinico, Christopher MC Communications	Comment Type TR Comment Status D						
Comment Type TR Comment Status D	The parameters for the pulse fit and the equalizing filter given in						
92.10.9.3 Mated test fixtures common-mode conversion loss Equation (92-37) an illustration in Figure 92-16 are TBD's	Table 92-6 are TBD's						
indistration in Figure 32-10 are FBD S.	SuggestedRemedy						
diminico, 0.012 pdf provides the 02.10.0.3 Mated test fixtures common-mode conversion	diminico_0912.pdf provides values for TBD parameters for the pulse fit and the equalizing filter given in Table 92-6						
loss Equation (92-37) an illustration in Figure 92-16.							
Proposed Response Response Status W	PROPOSED ACCEPT IN PRINCIPLE.						
PROPOSED ACCEPT IN PRINCIPLE.	Committee discussion of diminico_0912.pdf for TBD parameters of pulse fit and the						
Committee review of diminica, 0912 pdf for the 92 10 9 3 Mated test fixtures common-mode							
conversion loss Equation (92-37) an illustration in Figure 92-16.							
	C/ 92 SC 92.8.3.4 P126 L21 # 284						
	DiMinico, Christopher MC Communications						
	Comment Type TR Comment Status D						
	Insertion loss TP0 to TP2 or TP3 to TP5 equation 92-14 and Figure 92-4 are TBD's						
	SuggestedRemedy						
	diminico_0912.pdf provides equation for 92-14 and figure for 92-4.						
	Proposed Response Response Status W						
	PROPOSED ACCEPT IN PRINCIPLE.						

C/ 92 SC	92.10.7	P 139	L38	# 285	C/ 92	SC 92.8.4.5	P133	L 30	# 287			
	oner Oa		lications		Divinico,			cations				
The total integ 92-11 are TBI	grated crosstalk D's.	RMS noise voltage de	etermined by Equ	ation (92-32) and Figure	The lo dB cu	by frequency 3 toff of the AC cou	upling is TBD.					
SuggestedRemed	dy				Suggeste	dRemedy						
diminico_091 and Figure 92	2.pdf provides th 2-11.	ne total integrated cros	sstalk RMS noise	e voltage Equation (92-32)	The low frequency 3 dB cutoff of the AC coupling shall be less than 50 kHz							
PROPOSED ACCEPT IN PRINCIPLE.						Response POSED ACCEPT	Response Status W					
Committee re Equation (92-	view of diminico 32) and Figure 9	_0912.pdf for the total 92-11.	l integrated cross	stalk RMS noise voltage	Use s	uggested remedy	у.					
Cl 92 SC DiMinico, Christor	92.8.3.2 oher	P 121 MC Commun	L 10 lications	# 286	C/ 92 DiMinico,	SC 92.10.8 Christopher	P 140 MC Communi	L 34 cations	# 288			
Comment Type	TR Co	mment Status D			Comment	Type TR	Comment Status D					
Values are provided for TBD's for two reference channels; a "low-loss" cable assembly with insertion loss on the reference pair of TBD dB ± TBD dB at 12.8906 GHz and a "high-loss" cable assembly with insertion loss on the reference pair of						The reference test fixture printed circuit board insertion loss is given in Equation (92-33).						
SuggestedRemen	D UD at 12.0900	GHZ.			SuggestedRemedy diminico_0912.pdf provides Equation (9-33).							
diminico_091	2.pdf provides th	ne values for TBD's of	the two referenc	e channels.								
Proposed Respon	nse Res	sponse Status W			Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.							
Committee re	view of diminico	_0912.pdf for TBD val	lues of the two re	ference channels.	Committee review of diminico_0912.pdf for the reference test fixture printed circuit board insertion loss is given in Equation (92-33).							
					C/ 92A	SC 92A-5	P 210	L34	# 289			
					DiMinico,	Christopher	MC Communi	cations				
					Comment	Type TR	Comment Status D					
					Equat m cat	ion (92A-4) for the line of th	e channel insertion loss betwo a maximum host channel is T	een TP0 and TI TBD.	² 5 representative of a 0.5			
					Suggestee dimini	dRemedy ico_0912.pdf prov	vides Equation (92A-4).					
					Proposed PROF	Response POSED ACCEPT	Response Status W					
					Comn	nittee discussion	of diminico_0912.pdf for Equa	ation (92A-4).				

Cl 92	SC 92.8.3.3	P 123	L10	# 290	C/ 92 DiMinico	SC 92.8.3.3.2	2	P 124	L7	# 292	
Comment Tvr			inications		Comment		Comments		lications		
Provide v from step TBD V. T TBD×Ste	values fot TBD's o 3) divided by N The peak of the I eady state voltag	. The Steady state voltag I from step 3), shall be gr inear fit pulse response f le.	e, the sum of linea eater than TBD V rom step 3) shall b	r fit pulse response, p(k), and less than or equal to e greater than	The c "incre c(i)co	hange in the norr ment" that coeffic rresponding to a	nalized amplitud cient is TBD. Th request to "decr	de of coefficie e change in the rement" that c	ent c(i) correspon he normalized a coefficient is TBI	nding to a request to mplitude of coefficient D.	
SuggestedRe	emedy				Suggeste	ico 0912 pdf prov	vides TBD's				
Use value TP0a.	es for these para	ameters in Table 93-4-Su	mmary of transmit	ter characteristics at	Proposed Response Response Status W						
Proposed Rea PROPOS Use sugg Cl 92	esponse SED ACCEPT. gested remedy. SC 92.8.3.3.1	Response Status W	L 54	# 291	PROF Comr Also, post o These precu	POSED ACCEPT nittee discussion Table 92-5-incluc cursor fullscale ra e parameter value rsor fullscale rand	IN PRINCIPLE of diminico_091 les values for m nge= 4 es are TBD in re ae TBD with 1.5	2.pdf for TBD inimum precu ference 92.8. 4 and minimu	D values. ursor fullscale ra .3.3.3. In 92.8.3. um post cursor fi	inge= 1.54 and minimum 3.3 replace minimum ullscale range TBD with 4.	
DiMinico, Chr	ristopher	MC Commu	inications				-			"	
Comment Typ	pe TR	Comment Status D	109/		C/ 92 DiMinico,	SC 92.8.3.3. Christopher	3	P124 MC Commun	L 21 hications	# 293	
SuggestedRe diminico_	emedy _0912.pdf provid	les ratio TBD.	10%		Comment The ra The ra	<i>Type</i> TR atio (c(0) - c(1))/(atio (c(0) - c(-1))/(Comment S c(0) + c(1)) is TE c(0) + c(-1)) is	Status D BD. FBD.			
Proposed Res PROPOS	esponse SED ACCEPT IN	Response Status W PRINCIPLE.			<i>Suggeste</i> dimin	dRemedy ico_0912.pdf prov	vides TBD's.				
[Changed	d "," to "." in Sub	cl field for more consiste	nt sorting.]		Proposed PROF	Response POSED ACCEPT	Response S	tatus W			
Committe ±10%.	ee review of dim	inico_0912.pdf for the rat	io (c(0)+c(1)-c(-1))	/(c(0)+c(1)+c(-1)) TBD	Comr	nittee discussion	of diminico_091	2.pdf for TBD	D values.		
					C/ 92 DiMinico,	SC 92.8.3.3.4 Christopher	4	P 124 MC Commun	L 35 nications	# 294	
					<i>Comment</i> The v	<i>Type</i> TR alue of M is TBD	Comment S	tatus D			
					Suggeste dimin	dRemedy ico_0912.pdf prov	vides TBD.				
					Proposed PROF	Response	Response S	tatus W			
					Comr	nittee discussion	of diminico_091	2.pdf for TBD	D value.		

CL 92 SC 92 8 4 2 4	4 P132	/ 44	# 295	C/ 89	SC 1	P30	/ 10	# 298
DiMinico, Christopher	MC Communie	cations		Ghiasi, Ali		Broadcom		
Comment Type TR The pattern generator of The rise and fall times (92-17) is TBD.	Comment Status D output amplitude is TBD. of the pattern generator, as de	əfined in 72.7.1.	7, are TBD ps. Equation	Comment 7 A more the san Suggested	<i>Type</i> TR e deatial discla ne level of inte <i>Remedy</i>	Comment Status D imar need to be added inclduing roperability or BER objecctive	g the fact VSR2	<i>bucket</i> 000-3R2 does not have
SuggestedRemedy diminico_0912.pdf prov Proposed Response	vides TBD's. Response Status W			The sp used in level of	ecifications in ITU-T G.693 interoperabili	this clause therefore use a simi [Bx1] and not recomended for r y or BER other 40GBASE-R PI	ilar methodolog euse as it does MDs provide.	y to that not provide the same
PROPOSED ACCEPT Committee discussion and Equation (92-17).	IN PRINCIPLE.	se and fall time	s of the pattern generator	Proposed F PROPO This co P802.3	Response DSED REJEC omment appea	Response Status W T. rs to have been submitted in er	ror. Clause 89 i	s beyond the scope of
Cl 92A SC 92A.4 Ghiasi, Ali	P 209 Broadcom	L 12	# 296	C/ 89 Chiasi Ali	SC 5.1	P34	L 33	# 299
Comment Type ER 0.184(xyz) euqation no SuggestedRemedy 0.184x(xyz)	Comment Status D ot clear			Comment 7 PMD so Suggestedi Remov	<i>Type</i> TR ervice interfac Remedy re TP1 and TP	Comment Status D e TP1 and TP4 are not applicat	ble as they are r	<i>bucket</i> not currenlty defined
Proposed Response PROPOSED REJECT.	Response Status W			Add XL Proposed F	AUI interface Response	to the PMA Response Status W		
Cl 92A SC 92A.4 Ghiasi, Ali Comment Type TR	P 209 Broadcom Comment Status D	<i>L</i> 12	a and used in 802.3bj. # 297	This co P802.3	omment appea bj.	rs to have been submitted in er	ror. Clause 89 i	s beyond the scope of
Min loss equation stop SuggestedRemedy range should be 0.01 to Proposed Response PROPOSED REJECT.	at 18.75 GHz o 18.75 GHz Response Status W							
Line 12 reads - for 0.01	GHz = f = 18.75 GHz.							
	D 27	1.26	# 200	01.90	SC 0	DA	1 47	# 202
---	---	-------------------------------------	--	----------------------------	------------------------------	--	---------------------	------------------------------------
Ghiasi, Ali	Broadcom	230	# 300	Ghiasi, Ali	30 9	F 4 Broadcom	L 17	# 303
Comment Type TR With the transmitter control to require FR receiver	Comment Status D enter wavelength at 1550 nm c	ompatible with V	<i>bucket</i> /SR3, there is not need 0 nm band for some	Comment Typ Definition	be TR and test met	Comment Status D nod for dispersion is missing		bucket
future 1310 nm target SONET VSR methodo	ed for lower power and cost bu ology is not recommended for r	t we already de euse for not hav	clared at the beginning ving same level of	SuggestedRe Add defir	emedy hition and test	method		
SuggestedRemedy				Proposed Re PROPOS	sponse SED REJECT.	Response Status W		
Remove the 1310 nm	window							
Proposed Response	Response Status W			This com P802.3bj	ment appears	to have been submitted in e	error. Clause 89 is	s beyond the scope of
This comment appear	rs to have been submitted in en	ror. Clause 89 is	s beyond the scope of	Cl 89 Ghiasi Ali	SC 9	P 4 Broadcom	L 19	# 304
P802.3bj.				Commont Tr		Commont Status D		h t t
C/ 89 SC 6.3	P37	L 46	# 301	Test met	hod for DGD is	s missing		DUCKET
Ghiasi, Ali	Broadcom			SuggestedRe	emedy			
Comment Type TR	Comment Status D		bucket	Add test	method			
	ce test method missing			Proposed Re	sponse	Response Status W		
Add receiver jitter tole	arance			PROPOS	SED REJECT.			
Proposed Response	Response Status W			This com P802.3bj	ment appears	to have been submitted in e	error. Clause 89 is	s beyond the scope of
PROPOSED REJECT	l.			CI 92	SC 02 7 1	P116	/ 52	# 205
This comment appear P802.3bj.	rs to have been submitted in en	ror. Clause 89 is	s beyond the scope of	Ghiasi, Ali	50 52 .7.1	Broadcom	L 33	# 303
CL 90 SC 740	D 40	1.4	# 200	Comment Ty	be TR	Comment Status D		
Ghiasi, Ali	F 42 Broadcom	L 4	# 302	Cable ou	tput test point	is TP4 and not TP3		
Comment Type TP	Comment Status D		hucket	SuggestedRe	emedy			
The receiver litter tole	ance here is unstress which is	different than 8	02.3 and note should be	Repalce	TP3 with TP4	in table 92-4		
added to clarify				Proposed Re	sponse	Response Status W		
SuggestedRemedy				PROPOS	SED REJECT.			
Add note receiver jitte	er tolerance is unstress			Line 53 T	P3 is for rece	iver measurements.		
Proposed Response	Response Status W							
PROPOSED REJECT	Г.							
This comment appear P802.3bj.	rs to have been submitted in en	ror. Clause 89 is	s beyond the scope of					
TYPE: TR/technical requir COMMENT STATUS: D/d SORT ORDER: Comment	red ER/editorial required GR/g lispatched A/accepted R/rejec t ID	eneral required ted RESPON	T/technical E/editorial G/g ISE STATUS: O/open W/wri	eneral tten C/closed Z/	withdrawn	Comn	nent ID 305	Page 73 of 130 9/24/2012 2:42:(

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			·	-	· · ·					
<i>Cl</i> 92 Ghiasi, Ali	SC 92.8.3	P 120 Broadcom	L 36	# 306	<i>Cl</i> 92 Ghiasi, Ali	SC 9	92.8.3.4	P 126 Broadcom	L 22	# 309
Comment 1	Type TR	Comment Status D			Comment -	Tvne	TR	Comment Status D		
It has n	not been shown th	nant allowing DJ to max out a	t 0.28 it will not l	nave severe impact on	Maxim	um inse	ertion loss	mask is TBD		
					Suggested	Remed	'y			
Add lin	e with max deter	ministic jitter =0.15 UI			Max in IL(f)=-0	sertion).3144 ·	loss is def + 1.531*f+	ined as 0.085*sqrt(f)+0.0173*f^2		
Proposed F	Response	Response Status W			also gr	aph the	e above for	figure 92-4		
TROP					Proposed I	Respon	se	Response Status W		
The co impact	mmenter did not on the link.	provide sufficient data that de	emonstrates that	0.28 will have severe	PROP	OSED /	ACCEPT I	N PRINCIPLE.		
CI 00		D400	1.00	# 007	See co	mment	#284.			
Chippi Ali	SC 92.8.3	P120 Proodeem	L 36	# 307	C/ 92	SC	92.8.3.8	P129	L7	# 310
Griidsi, Ali		Bioaucoili			Ghiasi, Ali			Broadcom	-	
Comment I	ype TR	Comment Status D			Comment	Tvne	TR	Comment Status D		
Why ar iitter	e we introducing	effective random jitter instead	d of classical de	finition of the random	Effectiv	/e rand	om iitter is	introduced in this standard b	ased on dual-c	lirc method, depending or
Suggested	Remedy				the am	ount of	DJ RJ car	n varry.		
Replac	e efective randor	n iitter with random iitter			Suggested	Remed	'y			
Proposed F PROPO	Response DSED REJECT.	Response Status W			If the ir squre p jitter.	ntentior battern Sugges	n is to limit or on PN9 ted value i	random noise / unbonunded , where the RMS noise is the s 0.01 UI (RMS)	jitter why not ju average of the	est use 1 sigma RMS on rising and falling edge
S					Proposed I	Respon	se	Response Status W		
See co	mment#322.				PROP	OSED I	REJECT.			
<i>Cl</i> 92 Ghiasi, Ali	SC 92.8.3.1	P 120 Broadcom	L 52	# 308	The Su unbour	iggeste nded jitt	ed Remedy ter.	would limit uncorrelated jitte	r but not neces	sarily random or
Comment 7 Transm	<i>Type</i> TR hitter RL is TBD	Comment Status D			The cu amplitu	rve fit p ide dist	procedure i	is based on the assumption the assumption the assumption the assumption the asset to	hat the effective	e RJ has a Gaussian ios of interest). The
Suggestedl	Remedy				propos	ed tech	nnique doe	s not make this distinction.		,
RL= 12 = 5.67	2 - 0.5*f for 0.05 to 7 - 9.71*log10(f/1	o 8 GHz 4e9) 8 GHz to 25.78 GHz			While i	t is und	lerstood th	at this methodology is not pe	rfect, and may	not give a precise
Proposed F	Response	Response Status W			measu	to cont	trol jitter or	n high-speed serial links.	iseu successiu	iny for many years as a
PROPO	OSED ACCEPT I	N PRINCIPLE.					,	U - I		
See co	mment#273.				The co compre any on	mmitte ehensiv e part o	e should c ve jitter me of the curre	onsider this, but it is suggeste asurement methodology as it etn method.	ed that it should is not an apple	d be made part of more es-apples substitution for

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 Z/withdrawn SORT ORDER: Comment ID

Comment ID 310

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C/ 92 SC 92.8.4.1 P130	L 33	# 311	CI 92	SC 92.8.4.5	P133	L 29	# 313
Ghiasi, Ali Broadcom			Ghiasi, Ali		Broadcom		
Comment Type TR Comment Status D			Comment	Type TR	Comment Status D		
There is jump in the return loss and high freq portion ca response of the device when cascaded with mated boa	n be better sp rd	pecified to match the	By rec is no r	comending capac reason to specify	itor value in the case of plug a the 3 dB cutoff.	nd leaving it to	the reciver function there
SuggestedRemedy			Suggested	dRemedy			
To remove the jump the 10.31 to 25 GHz equtation nee	d to be 6.4 -1	3 *log(f/13.75)	Remo	ve 3 dB cutoff			
Better definition would be 12 - 0.5*f/1E9 0.05 to 8 GHz 5.67 - 9.71*log(f/14e9) 8 to 25.78 GHz			Proposed PROP	Response POSED REJECT.	Response Status W		P
Proposed Response Response Status W				w frequency 3 de	s frequency cutoff is to charact	erize AC coup	ling.
PROPOSED ACCEPT IN PRINCIPLE.			C/ 92	SC 92.10	P134	L14	# 314
Change: 12-1.24*SQRT(f)			Ghiasi, Ali		Broadcom		
To:12-1.25*SQRT(f)			Comment	Type TR	Comment Status D		
C/ 92 SC 92 8 4 5 P133	/ 28	# 212	It is no	ot helpfull to spec	ify just a point for RL in the tak	ole 92-9	
Ghiasi Ali Broadcom	20	<i>π</i> 312	Suggested	Remedy			
Comment Type TB Comment Status D			Repla	ce single point wi	th reference to 92.10.4 and ec	juation 92.24 a	ind remove the "at 12.89
The 100 nE capacitor is only required when AC coupling	n is part of se	perable interface	GHz"	_	_		
otherwise the receiver should just meet BER			Proposed	Response	Response Status W		
SuggestedRemedy			PROP	OSED ACCEPT	IN PRINCIPLE.		
Replace last para with "It is recomended that the value	of AC couplng	when implemented par	In Tab	ole 92-9 change r	eturn loss cross- reference for	m 92.10.4 to 92	2.10.5.
of plug to be 100 nF but when the AC coupling is part o target BER"	f the receive f	unction the receiver mus	CI 92	SC 92 10 4	P137	13	# 315
Proposed Response Response Status W			Ghiasi, Ali	32.10.4	Broadcom	23	# <u>010</u>
PROPOSED ACCEPT IN PRINCIPLE.			Comment		Comment Status D		
			There	is jump in the RI	equation		
Delete sentence in line 26 "AC coupling shall be part of 100GBASE-CR4 connectors " Replace sentence in line	the receive fu	Inction for Style-2	Suggostor	No jamp in the re-	oquation		
receive lanes are AC coupled; the coupling capacitors	shall be within	the plug connectors.	Chanc	ne to 10 5-13/001	0(f/5 5) from 4 1 to 25 GHz		
			Dropopod	Poppongo			
				Nesponse			
			FRUF	OSED ACCEPT	IN FRINCIPLE.		
			Chang	ge 16.2-2sqrt(f) 0	.05=f<4.1		
			Chanc	.ə-∠sqrt(t) 0.05=t∙ ae 10.5-13loa10(t	<4.1 /5.5) 4.1=f=25		
			To 10.	.8-13log10(f/5.5)	4.1=f=25		

Cl 92 SC	92.10.8	P 140 Broadcom	L 34	# 316	<i>Cl</i> 92 Ghiasi, Ali	SC 92.10.9.2	2	P 142 Broadcom	L 34	# 319
Comment Type ILcat(f) is miss	TR Commer sing	nt Status D			Comment T Mated	<i>Гуре</i> TR board RL value	Comment S TBD	Status D		
SuggestedRemed ILcat(f) = 1.25 which has los Proposed Respon PROPOSED	<i>by</i> 5 * (-0.001+0.096*sqrti s of 1.25 dB at 14 GH ase <i>Response</i> ACCEPT IN PRINCIP	(f)+0.046*f^2) z ∌ <i>Status</i> ₩ LE.			Suggested Presen RL= 20 = 18 - = 11.2 Proposed I	Remedy Ittion will show th) -f for 0.01 to 4 0.5* f for 4 GHz 2 - 20.5*log10(f/ Response	he graph but the GHz z to 16 GHz 14e9) for 16 to 2 <i>Response S</i>	e propsoed limi 25.78 GHz tatus W	its are	
	20 40 0	Data	1.04	# 047	PROP					
Ghiasi, Ali	92.10.8	P 140 Broadcom	L 34	# 317	Resolv		t#279.	_		
Comment Type	TR Commer	nt Status D			C/ 92 Ghiasi, Ali	SC 92.10.9.3	3	P 143 Broadcom	L 35	# 320
SuggestedRemed					Comment	Гуре TR	Comment S	status D		
Add section lil ILcat(f) = 1.75 which has los	w ke 10.8 for HCB then 5 * (-0.001+0.096*sqrt s of 1.75 dB at 14 GH	add following (f)+0.046*f^2) z			Covers Suggested SCDxx	ion loss is TBD <i>Remedy</i> := -35+1.07*f for	r 0.01 to 14 GHz	:		
Proposed Respon	nse Response	e Status W			= -2	:0 dB for 14 to 2	5.78 GHz	(-(
PROPOSED	ACCEPT IN PRINCIP	LE.			Proposed P PROP	Response	Response S	tatus W		
TP2 or TP3 te In Annex 92A GHz.	est fixture insertion los , the insertion loss of t	s specified in 92.8 the test fixture prin	.3.7 equation 92- ted circuit board	15. is 1.25 dB at 12.8906	Resolv	e with comment	t #281.			
See comment	t#277 for equation 92-	15.			Cl 93	SC 93.8.1		P 157 Broodcom	L 33	# 321
C/ 92 SC	92.10.9.1	P141	L 50	# 318	Comment	Τνρο ΤΡ	Comment S			
Ghiasi, Ali	0	Broadcom			There i	is insufficent prc	of that DJ can b	be remove with	out some penalt	y due to the case when
Comment Type Mated test fixt	TR Commer	are missing			DJ =0.1	28 and RJ effect	tive = 0!			
SuggestedRemed	lv	are meenig			Suggested	Remedy	rminsitic iitter –	0 15 1 11		
ILMTFmin=(0. ILMTFmax=(- = 4.5 - 0.	.08*sqrt(f)+0.2*f) for 0 0.114 + 0.45*sqrt(f)+0 .66*f for 14 to 25.78 G	.01 to 25.78 GHz).21*f) for 0.01 to 1 iHz	4 GH		Proposed PROP	Response OSED ACCEPT	Response S	tatus W		
Proposed Respon	ase Response ACCEPT IN PRINCIP	e Status W LE.			[Chang Table §	jed Subcl from 8 93-4).]	3.1.1 to 93.8.1 fc	or more consis	tent sorting (the	comment is against
Resolve with	comment #278.				Respo	nse pending Ta	sk Force discuss	sion.		
TYPE: TR/technic	al required ER/editor	ial required GR/ge	eneral required T	/technical E/editorial G/g	eneral			Comme	ent ID 321	Page 76 of 130

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

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<i>CI</i> 92 Ghiasi, Ali	SC 92.8.1.1	P 157 Broadcom	L 32	# 322	<i>Cl</i> 93 Ghiasi, Ali	SC 93.8.3	<i>H</i> Bro	P 164 badcom	L 4	# 323
Comment T	vpe TR	Comment Status D			Comment Ty	ne TR	Comment Stat	us D		
Why are SuggestedF	e we introduci Remedy	ng new jitter term "Effectve random	n jitter"		Why do frequence	we specify ha	ard limit for the AC c of the receiver. Why	oupling to be y is it for 10.1	50 KHz? AC 25 Gbd the c	coupling cut off utoff freq was 100 KHz
Replace	e effective ran	dom jitter with "random jitter"			Suggested	omody	AC coupling 3 dB is	s getting smal	ner instead of	i larger!
Proposed R	esponse	Response Status W			Replace	" I ow freque	ncv 3 dB cutoff of th	ne AC coupline	a shall be les	s than 50 KHz" with "I ow
PROPC	SED REJEC	г.			frequence be low e	by 3 dB cutoff nough so the	of the AC coupling baseline wander do	is implementations not induce	ation depende BER penalt	ent the 3 dB cutoff should y".
The terr assump	m "effective" v ption that the ji	vas added in recognition that the m tter distribution is Gaussian but in t	fact says noth	s based on the ing about its randomnes	Proposed Re PROPO	esponse SED REJECT	Response Statu r.	us W		
It is not the dete	necessarily the rest of the second seco	e true random jitter on the link (in , derived from the same method, a	much the sam as "effective D	e way 48B.1.3 refers to J").	[Change	d Subcl from	8.3 to 93.8.3 for mo	ore consistent	sorting.]	
					In respo be part o (Channe 40GBAS	nse to comme of the channel I characterist E-CR4, 1000	ents against Draft 1. I. Per comment #48 ics). The value of 50 GBASE-CR10, and 1	.0, the AC cou 8, this specific) kHz was tak 100GBASE-C	upling capacit cation will be cen from a cou R4 cable ass	tor has been designated to moved under 93.9 mparable specification on semblies.
					10GBAS capacito frequenc compara requeste While th	E-KR (and 40 rs be limited t y would be al ble value wor d.	0GBASE-KR4) reco to 100 nF. Assuming bout 15.9 kHz. Accc uld be about 40 kHz	mmend that t g 50 Ohm sou bunting for the z. In fact the A	he maximum urce and load 2.5X increase C coupling 3 on dependent	value of the AC-coupling impedances, the cut-off se in signaling rate, a dB is getting larger as
					must be will need	specified in o to tolerate in	order to be able to p a link.	redict the amo	ount of a base	eline wander the receiver
					C/ 94 Ghiasi, Ali	SC 94.3.11	l Bro	P 187 badcom	L 24	# 324
					Comment Ty Different	pe TR ial and comm	Comment Stat	us D		TX return loss
					SuggestedR Please u	e <i>medy</i> ise the same	limits as in table 93-	-4 (equation 9)3-1 and 93-2	2)
					Proposed Re PROPO	esponse SED ACCEP ⁻	Response Statu T IN PRINCIPLE.	us W		
					[Change	d sub-clause	from 3.11 to 94.3.1	1.]		
					One or r	nore presenta	ations are expected	to address thi	is comment.	
TYPE: TR/te	echnical requi	red ER/editorial required GR/gend	eral required	T/technical E/editorial G/ge	neral			Comment	t ID 324	Page 77 of 130

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

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			"	01.00		D / 0		"
C/ 92A SC 92A.4 Ghiasi, Ali	P208 Broadcom	L 48	# 325	C/ 80 Estes, Dav	SC 80.1.2 e	2 42 UNH - IOL	L17	# 328
Comment Type TR Max loss equation stop a	Comment Status D t 18.75 GHz			Comment In the p	<i>Type</i> E bast the object	Comment Status D trives were updated not deleted.		
SuggestedRemedy range should be 0.01 to	18.75 GHz			Suggested Update	Remedy the objective	es to include the new PHY types	and the support	t for EEE and RS-FEC.
Proposed Response PROPOSED REJECT.	Response Status W			Proposed I PROP	Response DSED REJEC	Response Status W		
Line 48 - for 0.01 GHz =	f = 18.75 GHz.		<u>.</u>	The TF for proj	expressed s ects in 802.3	upport for this approach with the	e intent that it sh	ould start a new tradition
C/ 94 SC 94.3.13 Ghiasi, Ali	P 196 Broadcom	L 23	# 326	C/ 81	SC 81.1	P 55	L 22	# 329
				Estes, Dav	Э	UNH - IOL		
Why do we specify hard frequency is function of the but for 25.78 GBd the AC	limit for the AC coupling to b he receiver. Why is it for 10 coupling 3 dB is getting sn	be 50 KHz? AC .125 Gbd the cu	AC coupling coupling cut off toff freq was 100 KHz larger!	Comment Figure	Гуре Е 81-1	Comment Status D		
SuagestedRemedv			-	NOTE	1 will now be	the same as NOTE 2		
Replace " Low frequency frequency 3 dB cutoff of t	3 dB cutoff of the AC coupl	ing shall be less	than 50 KHz" with "Low nt the 3 dB cutoff should	Suggested Delete	R <i>emedy</i> NOTE 2 and	change all references to be NO	TE 1	
be low enough so the ba	seline wander does not indu	ice BER penalty	".	Proposed I	Resnonse	Pesnonse Status W		
Proposed Response	Response Status W			PROP	OSED REJEC	CT.		
[Changed sub-clause from	m 3.13 to 94.3.13.]			Althoug achiev	gh the comme ed during the	ent is correct, the consolidation or revision.	of the 2 notes ma	ay be more easily
In 94.3.13, AC coupling is	s specified as part of the ch	annel.		C/ 81	SC 81.1.5	P55	L 28	# 330
C/ 78 SC 78.1.4	P 38	L 5	# 327	Estes, Dav	9	UNH - IOL		
stes, Dave	UNH - IOL			Comment	Гуре Е	Comment Status D		400
Comment Type E	Comment Status D		bucket	Bullet p	oint g) does	not include XLGMII		
Table 78-1				Suggested Chang	R <i>emedy</i> e "The CGMII	may" to "The XLGMII/CGMII m	ay"	
Most PHY types list the F is not listed for XGXS or	PCS and PMA/PMD clauses 1000BASE-KX.	that they are as	sociated with. The PCS	Proposed I	Response	Response Status W		
SuggestedRemedy				PROP	JSED ACCEI	PT IN PRINCIPLE.		
For XGXS list "47, 48" ar	nd for 1000BASE-KX list "70	, 36" instead of	"70, 35"	Chang	e to "The XLO	GMII and CGMII may" - see com	ment #116	
Proposed Response PROPOSED ACCEPT.	Response Status W							
TYPE: TR/technical required COMMENT STATUS: D/disp SORT ORDER: Comment ID	ER/editorial required GR/g atched A/accepted R/rejec	eneral required ted RESPON	T/technical E/editorial G/g SE STATUS: O/open W/wri	general itten C/closed	Z/withdrawn	Comm	ent ID 330	Page 78 of 130 9/24/2012 2:42

	IEEE P802.3	Bbj D1.1 100	Gb/s Backpla	ne and C	opper Cab	le 2nd Task F	Force review comme	nts	
C/ 78 SC 78.1 Estes, Dave	Р 37 UNH - IOL	L 30	# 331		<i>C</i> / 81 Estes, Da	SC 81.3.4	Р 58 UNH - IO	L 33	# 333
Comment Type E Comment Status D 40G The paragraph does not mention 10BASE-Te, 40GBASE-CR4, or 40GBASE-KR4 SuggestedRemedy Add these PHYs in their respoective positions in the paragraph Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. See #107, 108 CI 78 SC 78.5 P 38 L 44 # 332 Estes, Dave UNH - IOL 40G Is 40G excluded from Fast wake? 40G					Comment Prior faults Suggeste Chan LPI," or Idle Chan opera mess Proposed PROF	t Type E to transmitting L the device could <i>dRemedy</i> ge "When this L to "When this L e," ge "When the R ation, sending M ages, it returns to <i>Response</i> POSED REJECT	Comment Status D F, the RS could be sendin d go back to sending MAC ocal Fault status reaches a S no longer receives fault AC data or LPI." to "When o normal operation, sendii <i>Response Status</i> W F.	g MAC data, LPI, or data, LPI, or Idle. an RS, the RS stops in RS, the RS stops status messages, it the RS no longer re- ng MAC data, LPI, o	Idle. After receiving sending MAC data or sending MAC data, LPI, returns to normal ceives fault status r Idle."
SuggestedRemedy If Fast wake should b	e supported for EEE then add 4	40 Gb/s to this p	aragraph.		being "may"	sent from the M be truncated.	IAC - payload data, IFG, e	tc. That is why it stat	tes that a MAC frame
Proposed Response PROPOSED ACCEP	Response Status W T IN PRINCIPLE.				<i>Cl</i> 81 Estes, Da	SC 81.3a.2.	.1 <i>P</i> 60 UNH - IO	L 43 L	# 334
See #109					Comment tw_tir	t Type E mer only reference dPomody	Comment Status D ces the CAUI.		40G
					Suggeste Add Σ	KLAUI to the defi	nition		
					Proposed	l Response	Response Status W		

PROPOSED ACCEPT IN PRINCIPLE.

Change CAUI to XLAUI and CAUI

C/ 81 SC 81.3a.3.1 Estes, Dave	Р 61 UNH - IOL	L 29	# 335	C/ 82 SC 82 Estes, Dave	.2.18.2.2	<i>Р</i> 68 UNH - IOL	L 29	# 338
Comment Type E This subclause only ref	Comment Status D ferences the CGMII and the C	AUI		Comment Type	E Com	ment Status D for rx_mode		LPI Rx
SuggestedRemedy Add references to the X	KLGMII and the XLAUI			SuggestedRemedy Change "four va	lues" to "three v	alues"		
Proposed Response PROPOSED ACCEPT	Response Status WIIN PRINCIPLE.			Proposed Response PROPOSED AC	e Respo CCEPT IN PRIN	onse Status W CIPLE.		
Resolved by #117 & #1	18			Comment #82 re	educes this to tv	vo values.		
C/ 81 SC 81.3a-2 Estes, Dave	Р 61 UNH - IOL	L 8	# 336	C/ 82 SC 82 Estes, Dave	.2.18.2.2	Р 68 UNH - IOL	L 41	# 339
Comment Type E Figure 81-10a	Comment Status D		bucket	Comment Type	E Com	ment Status D y correct		bucket
There is a period after SuggestedRemedy Remove the period Proposed Response PROPOSED ACCEPT.	"LPI_REQUEST=ASSERT" th Response Status W	at should not be	e there	SuggestedRemedy Change "When tx_mode is set t Proposed Response PROPOSED AC	tx_mode is set t o QUIET the sul e Respo CCEPT.	o QUIET sublayer m blayer may go into a onse Status W	ay go into a low low power state"	power state" to "When
C/ 82 SC 82.1.3	P63	L 27	# 337	C/ 82 SC 82 Estes, Dave	.2.18.2.3	<i>P</i> 69 UNH - IOL	L 27	# 340
Estes, Dave Comment Type E Figure 82-1	UNH - IOL Comment Status D			Comment Type	E Com	ment Status D y correct		bucket
NOTE 1 will now be the	e same as NOTE 2			Remove the cor classifies vector	nma to make the	e sentence "Note: A e or more /Ll/ control	PCS that does n I characters as ty	ot support EEE /pe E."
Delete NOTE 2 and ch	ange all references to be NOT	Έ 1		Proposed Response	e Respo	onse Status W		
Proposed Response PROPOSED REJECT.	Response Status W			PROPOSED AC	CEPT.			
Although the comment	is correct, the consolidation o	f the 2 notes ma	ay be more easily					

achieved during the revision.

CL 00	SC 00 0 40 0 0	070		# 044		SC 00 4 4	D 42	1 47	# 040
Estes, Dav	30 82.2.18.2.3 /e	UNH - IOL	L 3	# 341	Estes, Da	Ve	9 43 UNH - IOL	L 4 7	# 343
Comment	Type E	Comment Status D		bucke	t Comment	Туре Т	Comment Status D		
The se	entence is not gram	natically correct			The v PAM	vording is incorre	ct because it implies that the	PCS lanes are 2 multi-level PAM	2-level PAM or multi-level
Suggested	Remedy				Suggeste	dRemedy			
Remo	ve the comma to m	hake the sentence "Note: A ning one or more /I I/ contro	PCS that does n	iot support EEE /pe F	Chan	ae lines 47-53 to:			
Proposed	Response	Response Status W		po =:	10.05				
PROF	OSED ACCEPT.				40GE codin	GASE-R or 100GE	Gb/s or 100 Gb/s operation	of Physical Layer	devices using a physical S lanes based on
CL 92	SC 02 2 40 2 5	D 70	/ 22	# 242	_ 64B/€	6B block encodir	ng (see Clause 82) and a PM	1D implementing	2-level pulse amplitude
Estes Day	30 02.2.10.2.3	UNH - IOI	L 32	# 342	mode				
Comment		Comment Status D		buck	100G	BASE-P represer	nts Physical Layer devices u	sing a physical co	oding sublayer for 100
All tim	ers in this sublause	e reference a variable calle	d [timer name] d	one, however the	and a	PMD implement	ing multi-level pulse amplitud	de modulation (P	AM).
refere	nce to this variable	is gramatically incorrect.		,	Proposed	Response	Response Status W		
Suggested	Remedy				PRO	POSED ACCEPT	IN PRINCIPLE.		
remov one_u	e the "the" prior to s_timer_done=true	[timer name]_done. For ex	ample, line 38 sł	nould end with "it will se	See a	also #449 & #23 fe	or justification for other chan	ges.	
Proposed	Response	Response Status W			Chan	ge lines 47-53 to:			
					40GE 82 Pr Claus 100G 100G Subla imple Physi	ASE-R or 100GE hysical Coding Su the 82) and a PMD BASE-R Physica BASE-P represen hyer for 100 Gb/s menting multi-lev cal Layer devices	BASE-R represents a family of blayer for 40 Gb/s or 100 Gb implementing 2-level pulse I Layer devices also use the nts Physical Layer devices u operation over multiple PCS el (>2) pulse amplitude mod s also use the transcoding ar	of Physical Layer b/s operation ove amplitude modul transcoding and sing the Clause & lanes (see Clause ulation (PAM). So ad FEC of Clause	devices using the Clause r multiple PCS lanes (see ation (PAM). Some FEC of Clause 91. 32 Physical Coding se 82) and a PMD ome 100GBASE-R 9 91.
					C/ 78	SC 78.5.2	P 39	L 46	# 344
					Estes, Da	ve	UNH - IOL		
					Comment This s	<i>Type</i> T section should als	Comment Status D to include the XLAUI		40G
					<i>Suggeste</i> Chan	dRemedy ae all references	of CAUI to XLAUI/CAUI		
					Proposed PROI	Response	Response Status W		
					See #	±113, 114			
	tooppical required	EP/aditorial required CP/	apporal required	T/toobaical E/aditorial	Classoral		Com	nont ID 311	Dogo 91 of 420

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 Z/withdrawn SORT ORDER: Comment ID

C/ 82 SC 82.2.8a Estes, Dave	Р 67 UNH - IOL	L7	# 345	C/ 78 SC 78-5 P 39 L 25 # 348 Estes, Dave UNH - IOL
Comment Type T The Data state does not ex Receive State Diagram	Comment Status D ist in the Figure 82-15 Re	eceive State Dia	<i>bucket</i> gram or Figure 82-17 LPI	Comment TypeTRComment StatusD400Table 78-4 does not include any LPI timing parameters for 40G
SuggestedRemedy Change this to the RX_AC ⁻ Proposed Response F PROPOSED ACCEPT.	TIVE state and reference Response Status W	Figure 82-17		SuggestedRemedy Add 40G timing parameters to table 78-4 Proposed Response Response Status W PROPOSED ACCEPT. See #112
C/ 82 SC 82.2.18.2.2 Estes, Dave	P68 UNH - IOL	L16	# 346	C/ 93 SC 93.8.2.1 P162 L 26 # 349 Ben-Artsi, Liav Marvell
The possible values for rec	eived_tx_mode are not d	efined		Comment Type TR Comment Status D
SuggestedRemedy Define the possible values Proposed Response R PROPOSED ACCEPT IN F Define the possible values The value of this variable is	for received_tx_mode Response Status W PRINCIPLE. to be the same as for tx_i	mode - i.e.	the incoming data stream	SuggestedRemedy Redefine fixture return loss according to presentation Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. Response pending consideration of the cited presentation.
and may take the values de	efined for tx_mode.			C/ 94 SC 94.3.11.1.1 P 188 L 20 # 350 Ben-Artsi, Liav Marvell
C/ 78 SC 78.2 Estes, Dave	<i>P</i> 39 UNH - IOL	L1	# 347	Comment TypeTRComment StatusDTX test fixtur100GBase-KP4 test fixture definition is TBD
Table 78-2 doesn't include	EEE parameters for XLA	UI/CAUI		SuggestedRemedy Define test fixture equations according to presentation (IL_ILD and return loss)
SuggestedRemedy Add XLAUI/CAUI parameter Proposed Response F	ers to table 78-2 Response Status W			Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.
Add 1 row for XLAUI/CAUI	all parameters TBD.			

C/ 92 SC 92.8.1 Kochuparambil, Beth	P 119 Cisco System	L 22 s	# 351	C/ 93 Kochupar	SC 93.8.1.1 ambil, Beth	P 157 Cisco Systems	L 26	# 354	
Comment Type E Does low-swing differ	Comment Status D rential signaling really make you	u immune to noi	se?	Comment For so curso	<i>Type</i> E omeone looking a r fullscale range"	Comment Status D t the document for the first time may be confusing since the des	, the labels "m	ninimum precursor/post a ratio.	
SuggestedRemedy Use editorial license	to avoid stating immunity.			Suggeste Chan	dRemedy ge labels to phras	sing similar to "minimum precurs	sor ratio" with	editorial license to adjust	
Proposed Response PROPOSED ACCEP	Response Status W T IN PRINCIPLE.			termir	nology in section s	93.8.1.6.5			
See comment#382.				PROF	POSED REJECT.	Response Status W			
C/ 92 SC 92.8.3	P120	L16	# 352	See o	comment #355.				
Comment Type E	Cisco System Comment Status D	S		C/ 94 Kochupar	SC 94.3.11 ambil, Beth	P 187 Cisco Systems	L 32	# 355	
The label "Common-r	mode voltage limits" does not w	vell define what	the value represents.	Comment	туре Е	Comment Status D		TX signal	
SuggestedRemedy Change label to "Con	nmon-mode voltage (max)" for	better descriptic	n and achieve	For someone looking at the document for the first time, the labels "minimum precursor/post cursor fullscale range" may be confusing since the description is of a ratio.					
commonality with oth	er table items.			Suggeste	dRemedy				
Proposed Response PROPOSED ACCEP	Response Status W			Chan termir	ge labels to phras	sing similar to "minimum precurs 94.3.11.7.5	sor ratio" with	editorial license to adjust	
See comment #384.				Proposed PROF	<i>Response</i> POSED REJECT.	Response Status W			
C/ 92 SC 92.8.3 Kochuparambil. Beth	P 120 Cisco Svstem	L 29 s	# 353	The p	pre-cursor and pos	st-cursor taps are adjustable fro	m zero to son	ne "full-scale" value. The	
Comment Type E	Comment Status D			minim the param	num value for that arameter.	full-scale setting. The terminology	ogy in Table 9	4-4 accurately describes	
For someone looking	at the document for the first tin	ne, the labels "n	ninimum precursor/post						
SuggestedRemedy				C/ 92	SC 92.8.3.2	P 122	L 43	# 356	
Change labels to phraterminology in section	asing similar to "minimum preci n 92.8.3.3.3	ursor ratio" with	editorial license to adjust	Comment	<i>Type</i> E	Comment Status D			
Proposed Response	Response Status W			This p KR wi	paragraph referen ithout a section.	ces 100GBASE-KR with a secti Perhaps one of these reference	ion number thes is in error.	en references 10GBASE-	
PROPOSED ACCEP	T IN PRINCIPLE.			Suggeste	dRemedy				
Use suggested reme	dy.			Use e	editorial license to	correct to the intended reference	ce.		
				Proposed PROF	Response POSED ACCEPT	Response Status W IN PRINCIPLE.			
				See c	comment#365.				

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 Z/withdrawn SORT ORDER: Comment ID

Cl 92	SC 92.8.3.4	P126	L15	# 357	C/ 93	SC 93.8.1.1	P157	7 L8	# 360
Common		Commont Status			Commont		Comment Status		
Section	on refers to TP0-T	P2 and TP3-TP5, vet the parag	raph starts w	ith "Transmitter	The c	ιγρ α urrent "differenti	al peak-to-peak output v	uoltage" are most	appropriate for TP0, but table
meas	surements."				93-4 r	epresents chara	acteristics at TP0a.	enage are most	
Suggeste	dRemedy				Suggestee	dRemedy			
Chan	ge opening senter	nce to include the receiver acco	rdingly.		Chang	ge value for Tra	nsmitter disabled to 24.9	5mV and Transr	nitter enabled to 998.12mV.
Proposed	l Response	Response Status W			Editor 1200r	nV at TP0, but v	ld be used while adding values given assume a 1	a note to the effe .6dB test fixture.	ect of "Maximums are 30 and
PRO	POSED ACCEPT	IN PRINCIPLE.			Proposed	Response	Response Status	N	
Chan using	ge: Transmitter m the test fixture of	easurements and tests defined Figure 92-5, or its equivalent.	in Table 92-5	are made at TP2 or TP3	PROF	POSED ACCEP	T IN PRINCIPLE.		
To: T Figur	ransmitter and rec e 92-5, or its equiv	eiver measurements are made valent .	at TP2 or TP	3 using the test fixture of	For a appro	101010 test p ximately a facto	attern, the amplitude will r of 0.83.	l be reduced by 1	10^(-1.6/20) which is
C/ 92	SC 92.8.3.3.2	P124	L7	# 358	Howe to a m	ver, the respons nixed frequency	se to comment #10143 c test pattern (PRBS9). Th	hanges the test present the longer run len	pattern from 101010 pattern gths in the proposed test
Kochupar	ambil, Beth	Cisco Systems			patter	n will be attenua	ated to a much lesser de	gree. Therefore,	the specification should not be
Comment	t Type E	Comment Status D			reduc	ed to the propos	sed extent.		
Step makir differe	size limits are alreng the draft longer ent?	ady listed in Table 92-5, numbe . Will Increment step size and c	ers are not ne lecrement ste	eded in two places only op size limitations really be	If the maint	proposed respo ained until the c	nse to comment #10143 orrection factor for PRBS	is adopted, the o S9 (if any) is deri	current values will be ved.
Suaaeste	dRemedv				C/ 94	SC 94.3.11	P187	7 L14	# 361
Remo	ove first paragraph	of this section (92.8.3.3.2). Us	e editorial lic	ense to remove duplicity	Kochupara	ambil, Beth	Cisco S	Systems	
betwe	een paragraph and	table in similar sections.			Comment	Type T	Comment Status	D	TX signal
Proposed	l Response	Response Status W			1he c 94-4 r	urrent "differenti epresents chara	al peak-to-peak output v acteristics at TP0a.	oltage" are most	appropriate for TPU, but table
PRO	POSED REJECT.				Suggester	' dRemedy			
Table Table	e 92-5 provides su e provides details d	mmary of transmitter characteris of parameter usage.	stics at TP2.	Subclause referenced in	Chang licens TP0, I	ge value for Trai e should be use but values given	nsmitter disabled to TBD d while adding a note to assume a TBDdB test f	and Transmitter the effect of "Ma ixture." Fill in TE	r enabled to TBD. Editorial aximums are 30 and 1200mV at 3D if test fixture max loss is
C/ 94	SC 94.3.6.1	P184	L10	# 359	knowr	٦.			
Kochupar	ambil, Beth	Cisco Systems			Proposed	Response	Response Status	N	
Comment	t Type E	Comment Status D		link diagram	PROF	POSED ACCEP	T IN PRINCIPLE.		
Link d	diagrams should b	e consistent amongst clauses 9	3 and 94.		[comn	non with 92 and	93]		
Suggeste	dRemedy		((0.0))		See 2	lso comments 1	0143 367 and 360		
Chan 93 (e:	ge figures 94-4 (p x: figures 93-2 and	g 184), 94-5 (pg 188), and 94-9 193-3).	(pg 194) to n	natch the style of clause	See a		0143, 307, and 300.		
Proposed PRO	l Response POSED ACCEPT.	Response Status W							
TYPE: TR	R/technical require	d ER/editorial required GR/ger patched A/accepted R/rejecter	neral required	I T/technical E/editorial G/ge ISE STATUS: O/open W/writ	eneral ten C/closed	Z/withdrawn	(Comment ID 361	Page 84 of 130 9/24/2012 2:42:

SORT ORDER: Comment ID

9/24/2012 2:42:06 AM

C/ 93 SC 93.9	P164	L 7	# 362	C/ 92	SC	92.8.3.2	P 30	L 43	# 365
Kochuparambil, Beth	Cisco Systems			Dudek, Mil	ke		QLogic		
Comment Type T Channel characteristics	Comment Status D s are incomplete.			Comment Stating	<i>Type</i> g that th	T ne test met	Comment Status D shodology of 10GBASE-KR is	s not a good me	thodology for this
SuggestedRemedy See kochuparambil 01	0912.			Suggested	Remec	ly ly	y and not neipiul.		
Proposed Response PROPOSED ACCEPT	Response Status W IN PRINCIPLE.			Delete introdu difficul specifi	the se uces fre t to acc ied for 1	ntence "Ho quency-de urately cha I0GBASE-	owever, the signal path from ependent loss and phase shi aracterize equalizer performa KR."	the transmit fun ft that distorts th ance at TP2 usin	ction to TP2 e signal and makes it ng the methodology
Response pending con	sideration of the cited presentat	ion.		Proposed	Respor	ise	Response Status W		
C/ 94 SC 94.4 Kochuparambil, Beth	P 196 Cisco Systems	L 26	# 363	PROP	OSED	ACCEPT.			
Comment Type T Channel characteristics	Comment Status D s are incomplete.		channel parameters	C/ 92	SC	92.8.3.8	P129	L13	# 366
SuggestedRemedy				Dudek, Mil	ke T	_			
See kochuparambil_01	_0912.			Comment	<i>Type</i>	T hot orror ro	Comment Status D	ual Diraa aytrop	olotion will load to
Proposed Response	Response Status W			signific	cant va	riation in th	ne measurements.	ual Dirac extrap	Diation will lead to
PROPOSED ACCEPT.				Suggested	Remec	ly			
Other comments are pr	roposing specific values for char	nnel operatin	g margin and related	Define	J0 as	10^-5 and	J1 as 10^-9.		
parameters.				Proposed	Respor	ise	Response Status W		
C/ 92A SC 92A.7	P 211	L 21	# 364	PROP	OSED	ACCEPT I	N PRINCIPLE.		
Comment Type ER Weird characters.	Comment Status D			Chang where e.g. 10 To:Me and J1	je:Meas BER0)-9and asure t I with B	sure two va is less thai 10-5. wo values; ER greate	alues J0 and J1 n BER1 ; J0 with BER greater than c r than or equal to 10-5 (BER	r equal to 10-9	(BER0)
Change to GHz.									
Proposed Response PROPOSED ACCEPT	Response Status W IN PRINCIPLE.								
See comment#19.									

CI 94	SC 94.3.11.3	P 188	L 40	# 367
Dudek, Mi	ke	QLogic		
Comment	Туре Т	Comment Status D		TX signal
The p referre	icture in Figure 94- ed to in the diagran	6 only has 2 levels not 4. It n.	is not obvious v	which levels are being
Suggestee	dRemedy			
outpu setting "For a peak-	t voltage shall be le g." to square wave test to-peak differential	pattern transitioning from the	 / regardless of t +1 to -1 levels than or equal to 	with a 2 UI period, the
the tra	ansmit equalizer se	tting.		
Proposed PROF	Response POSED ACCEPT.	Response Status W		
CI 94	SC 94.3.11.5	P 189	L 38	# 368
Dudek, Mi	ke	QLogic		
Comment	Туре Т	Comment Status D		TX signal
This t	ransition time proce	edure is only really valid for t	wo level signals	3.
Suggeste	dRemedy			
Chan	ge "If the test patte	rn is PRBS9, the transitions	within sequence	es of five zeros and four

"If the test pattern is PRBS9 transitioning between +1 and -1 levels, the transitions within sequences of five zeros and four ones, and nine ones and five zeros, respectively,...."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

A two-level PRBS9 pattern is not expected to be supported for PAM4. The transition time procedure using PRBS9 should be deleted for 100GBASE-KP4.

One or more presentations are expected to address this comment.

C/ 94	SC 94.3.11.6	P 190	L 5	# 369	
Dudek, Mike		QLogic			
Comment Typ	be T	Comment Status D		TX signal	

The sentence is unclear (and gramatically wrong)

ggestedRemedy

Change "The normalized distortion factor for of the four levels shall be less than 0.06" to "The normalized distortion factor for each of the four levels shall be less than 0.06"

posed Response Response Status W

PROPOSED ACCEPT.

The comment may be taken over by events.

One or more presentations are expected that provide an alternative and more complete methodology.

C/ 94 S	SC 94.3.11.7.2	P 192	L18	# 370
Dudek, Mike		QLogic		
Comment Type	ə T	Comment Status D		TX signal

This test procedure is not appropriate for a PAM4 signal. There are no instructions as to how to apply the PRBS9 signal to this multi-level specification. The specification should include th exercising of all the levels.

ggestedRemedy

Add an Editors note box.

"This procedure needs to be amended to be appropriate for a PAM4 signal including the definition of a suitable test pattern (other than PRBS9) that exercises all the levels of the PAM4 signal."

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3bj D1	.1 100 G	Sb/s Backplar	ne and Coppe	Cable 2nd	Task Force	review comments

C/ 94 SC 94.3.11.1 Dudek, Mike	P 188 QLogic	L 28	# 371	C/ 93 Matthew, Br	SC 93.7.1 own	P 154 Applied Micro	L 5	# 373			
Comment Type TR The loss of the test fixtur	Comment Status D re is also important		TX test fixture	Comment T wording each lar	ype T	Comment Status D	as four lanes				
SuggestedRemedy Add a section "94.3.11.1	.1 Test fixture insertion loss	S.		SuggestedR Change	Remedy "one direction	n from one lane" to "one lane fror	m one directio	on"			
The differential loss of th dB".	e test fixture at the Nyquist	rate shall be bet	ween TBD dB and TBD	Proposed R PROPC	esponse SED REJECT	Response Status W					
Make the same changes Proposed Response	s in section 94.3.12.1 Response Status W			[Comme	enter did not s	pecify CommentType. Set to T.]					
One or more presentatic	Principle.	this topic.	# 372	1.4.233 point int control i	defines a lane erconnect. A l	to be "A bundle of signals that of ane contains enough signals to of tween the two endpoints."	constitutes a l communicate	logical subset of a point-to a quantum of data and/or			
Cr 94 SC 94.5.12.3 P 195 L 28 # 372 Dudek, Mike QLogic Comment Type TR Comment Status D RX interference tolerance FEC is always used for PAM4 and there are only 2 tests					The definition states communication "between" endpoints and not from one endpoint to another. If each lane constituted only one direction, should a 4-lane PHY actually be referred to as an 8-lane PHY as the PHY does support full-duplex operation?						
SuggestedRemedy Change "FEC is not incl "FEC is included for both	uded for tests 1 and 2. FEC	is included for te	sts 3 and 4." to	C/ 92 Matthew, Br	SC 92.8.3.3 own	.3 P124 Applied Micro	L 19	# 374			
Proposed Response PROPOSED ACCEPT II	"FEC is included for both tests 1 and 2." Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.					Comment Type E Comment Status D Unecessary capital.					
FEC is mandatory for 100GBASE-KP4.					minimum Ste	eady" to "minimum steady".					
Delete "FEC is not inclue	ded for tests 1 and 2. FEC is	included for tes	ts 3 and 4."	Proposed R PROPC	esponse SED ACCEP	Response Status W					
				Use sug	gested remed	ly.					

C/ 92 SC 92.8.3.5	P127 Applied Micro	L 25	# 375	C/ 92 Matthew F	SC 92.10.9.4	P 144 Applied Micro	L 27	# 378
Comment Type E The TP2/TP3 test fixture transmitter section. Furth some tests are made in c cleaner to consolidate the	Comment Status D is used by both the transmitte ermore, there are reference to onjunction with the cable asso tests fixtures into one sub-cl	r and receiver s the cable asse embly test fixture ause, independe	o shouldn't be in the mbly test fixture. Also, e. It would be a lot ent of RX and TX.	Comment missin Suggested Chang	<i>Type</i> E g word <i>IRemedy</i> ge "disturber near-	Comment Status D	crosstalk for	.n .
SuggestedRemedy Create a new sub-clause newly created 92.11.	92.11 and change "MDI" to 9.	2.12. Move 92.8	3.3.5 and 92.10.8 to the	Proposed PROP Chanc	Response OSED ACCEPT I ne "disturber near-	Response Status W N PRINCIPLE. end" to "disturber near-end cro	osstalk loss".	
PROPOSED ACCEPT IN Use editorial license to in	PRINCIPLE.			C/ 92 Matthew, E	SC 92.7.10 Brown	P 156 Applied Micro	L11	# 379
Cl 92 SC 92.8.4 Matthew, Brown Comment Type E Common naming with oth measurement point is with SuggestedRemedy Change title of 92.8.4 to b	P130 Applied Micro Comment Status D her clauses. It is not necessary hin the title.	L1 y to specify the e	# 376	pmd_t Suggested delete Proposed PROP Use si	ransmit_fault is sp IRemedy " (optional)" Response OSED ACCEPT. uggested remedy.	Response Status W	us paragraph	1
Proposed Response PROPOSED ACCEPT. Use suggested remedy.	Response Status W			C/ 94 Matthew, E Comment	SC 94.3.8 Brown <i>Type</i> T	P 186 Applied Micro Comment Status D	L15	# 380
Cl 92 SC 92.10.8 Matthew, Brown Comment Type E In Figure 92-12, since the	P141 Applied Micro Comment Status D block for the cable assembly	L 8 test fixture excl	# 377	What function it mus Suggested Chang	is meant by "but s on"? First, I assum t mean not to cons <i>IRemedy</i> ge "but should not	hould not include the assertion e must be referring to the varia sider the variable being set as include the assertion of the G	n of the Globa able, not the f a fault. obal PMD_tra	al_PMD_transmit_disable function. Second, I assume ansmit_disable function" tc
SuggestedRemedy In Figure 92-12, add labe Proposed Response PROPOSED ACCEPT.	Is for the receptacle and plug.			"but si transn Proposed PROP [Comr accord	nould not consider hitter fault". <i>Response</i> OSED ACCEPT I nent was submitte lindly.]	Assertion of the Global_PMD Response Status W N PRINCIPLE. ed against Clause 93 but is act	_transmit_dis ually against	Clause 94. Updated
Use suggested remedy. Note:MDI is labeled.				See co	omment #421.			

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 Z/withdrawn SORT ORDER: Comment ID

Comment ID 380

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C/92 SC 92.7.12 P119 L6 # 381	C/ 92 SC 92.8.3 P120 L3 # 383
Matthew, Brown Applied Micro	Matthew, Brown Applied Micro
Comment Type T Comment Status D	Comment Type T Comment Status D
It says the seed must be different on lanes, but says nothing about the relative phase specified it would be okay to use "different" seeds on each lane, but such that the phatern between the lanes was close and thus would defeat the purpose of the raseed. Specify that the pattern must not be persistently close between any two lanes.	As The sentence referring to Table 92-5 uses the "s" word. Table 92-5 is a summary table. Most se of of the parameters are defined normatively in respective sections. The unit interval specification is informative since it does not give any bounds. Similar sections in other clause to not make this normative referral to the summary table.
SuggestedRemedy	SuggestedRemedy
Append the first sentence with "and the pattern on each of the lanes shall not be per close in phase with any other lane".	stently Change sentence to "Transmitter characteristics are summarized in Table 92-5. Measurements are at TP2 unless otherwise noted."
Update 93.7.12 similarly.	Proposed Response Response Status W
Proposed Response Response Status W	PROPOSED ACCEPT IN PRINCIPLE.
PROPOSED ACCEPT IN PRINCIPLE.	Change:Transmitter characteristics shall meet specifications summarized in Table 92-5 at TP2 unless otherwise
The relative "phases" of the test patterns are dictated in large part by the seed value smaller extent the skew between lanes. The suggested requirement is likely to be unclear to the reader in terms of how to im or verify. The desired effect is to minimize the correlation between the test patterns of	and to a noted. To: Transmitter characteristics are summarized in Table 92-5. Unless specified otherwise, all transmitter measurements defined in ement Table 92-5 are made at TP2 utilizing the test fixture specified in 92.8.3.5.
different lanes so perhaps a specification this is terms of correlation is the better app	ach.
C/ 92 SC 92.8.1 P119 L22 # 382	C/ 92 SC 92.8.3 P 120 L 15 # <u>384</u> Matthew, Brown Applied Micro
Matthew, Brown Applied Micro	Comment Type T Comment Status D
Comment Type T Comment Status D	Table 92-5 "Common-mode voltage limits", only one limit specified.
In the last sentence How does a "low-swing" improve "noise immunity"? The impro FMI is compared to what? This statement is outdated and should be removed.	ement in SuggestedRemedy
SuaaestedRemedy	On line 16, change "limits" to "(max)".
Delete last sentence in paragraph.	Proposed Response Response Status W
Proposed Response Response Status W	PROPOSED ACCEPT.
PROPOSED ACCEPT.	Use suggested remedy.
Use suggested remendy.	
To resolve commenter's question on meaning of text, need to add "compared to what delete.not sure it's of value to provide more text on the benefits of differential signaling terms of the second structure is a signal of the second structure is a sindependent structure is a signal o	or

C/ 92 Matthew, F	SC 92.8.3	P120 Applied Micro	L 19	# 385	C/ 92 Matthew, I	SC 92.8.3 Brown	.8	P128 Applied Micro	L 30	# 388
Comment Table Suggested	Type T 92-5. No referenc IRemedy	Comment Status D e for Common-mode AC output	voltage (ma	ax., RMS).	Comment Why c togglir 100Gl	<i>Type</i> T to we define Eng test pattern BASE-KR4 PN	Con O test with . The toggl ID (93.8.1.	nment Status D a complex test patter ing pattern is required 3).	n? It is trivial t for measurem	o define and implement a nent of output levels on a
On line Proposed	e 120, add referer <i>Response</i>	ce to defining sub-clause. <i>Response Status</i> W			Suggested Repla	dRemedy ce first paragr	aph with "E	ven-odd jitter shall be	measured wit	th a toggling test pattern
PROP Option discus	OSED ACCEPT I ns: Add reference - sion.	N PRINCIPLE. to 94.3.11.3 or add defining sub	oclause in 9	2. For committee	with a <i>Proposed</i> PROF	period of 2 U <i>Response</i> POSED REJE	I." <i>Resp</i> CT.	oonse Status W		
C/ 92 Matthew, E	SC 92.8.3 Brown	P 120 Applied Micro	L15	# 386	Of the a simi	set of test pa lar comment a	tterns defin about its us	ed in the PMA, a 1010 e to measure different	0 sequence ial output volta	is not an option. There waલ age (see #10143).
<i>Comment</i> In Tab	<i>Type</i> T le 92-5, no referei	Comment Status D nce for Differential peak-to-peal	< output volt	age (max) with Tx disabled	Also, output that of	while it trivial t t waveform, D	o do, there DJ, etc.) sc	are number of measu	rements base yous to get yet	d on PRBS9 (transmitter t another parameter out of
Suggested On line Proposed I PROP	IRemedy e 15, add referenc Response OSED REJECT.	e to 92.7.7. Response Status W			Finally of alte refere EOJ. set).	/, it says that e rnating polarit nce pattern at Use your 1010	even-odd jit y." Further, a particula) sequen	tter is measured from ' it offers that "If PRBS r offset. This is not a r ce if you want (but it is	fa sequence o 9 is the test p equirement to s not part of th	of no fewer than 8 symbols attern", you can find the use PRBS9 to measure e "standard" test pattern
For co lane tr	mmittee discussic ansmit disable fur	n. Not really opposed to this bu action not Differential peak-to-pe	it 92.7.7 des eak output v	scribes the PMD lane-by- roltage (max).	C/ 92 Matthew. I	SC 92.8.3 Brown	.8	P 128 Applied Micro	L 53	# 389
Cl 92 Matthew, E Comment 92.8.3 Suggested Chang Proposed PROP Use su	SC 92.8.3.6 Brown <i>Type</i> T .6 is specifically re <i>Remedy</i> ge tite of 92.8.3.6 t <i>Response</i> OSED ACCEPT. uggested remedy.	P128 Applied Micro Comment Status D eturn loss. o "Test fixture return loss". Response Status W	L1	# <u>387</u>	Comment Is "Th the tra Table Suggestee Repla "Total less th Proposed PROF	Type T e difference b ansmit equaliz 92-5. If so, us dRemedy ce sentence a jitter excludin han or equal to Response POSED ACCE	Con etween TJ ation settin e common s follows: g data depro 0.28 UI re <i>Resp</i> PT.	nment Status D and DDJ shall be less g." the same as "Total terms between this pa endent jitter is the diffe gardless of the transm ponse Status W	than or equal jitter excludin aragraph and ⁻ erence betwee nit equalization	to 0.28 UI regardless of g data dependent jitter" in Table 92-5. en TJ and DDJ and shall be n setting."
					Use s	uggestea rem	eay.			

C/ 92 SC 92.8.3.8 P 129 L 23 # 390 Matthew, Brown Applied Micro Applied Micro # 390 Image: Compare the second	C/ 92 SC 92.8.4 P 130 L 12 # 392 Matthew, Brown Applied Micro Applied Micro # 392 Applied Micro Applied Micro <td< th=""></td<>
Comment Type T Comment Status D The BER reference points should be explicit specified, otherwise there is good possibility of discrepancy in measurements by different people. Specify BER0 as 1E-9 and BER1 as 1E-5. SuggestedRemedy Change last sentence in (a) to "Measure two values J0 and J1 at BER0 and BER1, respectively, where BER0 is near 1E-9 and BER1 is near to 1E-5." Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.	Comment Type T Comment Status D Bit error ratio of 1E-12 as measured at the PMD is not possible when FEC is in use. Furthermore, burst errors of duration similar to a MAC frame size are no worse that a pair of isolate bit errors. Since FEC is mandatory the error rate should be specified as MAC frame error rate as measured after the FEC and PCS decoding. Change the BER requirement to a MAC frame error rate requirement. Using MAC frames of length 800 octets, a BER of 1E-12 with isolated bit errors would result in a MAC frame error ratio of 6.4E-9.
See comment #366. Cl 92 SC 92.8.4 P 130 L 3 # 391 Matthew, Brown Applied Micro Comment Type T Comment Status D The sentence referring to Table 92-7 uses the "s" word. Table 92-7 is a summary table. Most	Replace the BER requirement with a MAC frame error requirement. For MAC frames of 800 octet length, frame error ratio shall be less than 6.4E-9. Update 92.8.4.3, 93.8.2.3, and 94.3.12.3 similarly. Proposed Response Response Status W PROPOSED REJECT.
The sentence referring to Table 92-7 uses the "s" word. Table 92-7 is a summary table. Mo of the parameters are defined normatively in respective sections. The unit interval specification is informative since it does not give any bounds. Similar sections in other clause do not make this normative referral to the summary table.	Changing BER requirement is not sufficiently addressed in remedy to implement in draft. For committee discussion.
SuggestedRemedy Change sentence to "Receiver characteristics are summarized in Table 92-7. Measurements are at TP3 unless otherwise noted."	C/ 92 SC 92.8.4.2.3 P 132 L 8 # 393 Matthew, Brown Applied Micro
Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. Remove unit interval from Table 92-7. Please note: Not really opposed to suggested remedy but the PICS will need to reflect each parameter "shall". In 80.2ba the table was noted e.g., RS7 Meets specifications at TP3 85.8.4 Unless otherwise noted per Table 85-7.	Comment Type T Comment Status D Reference should be to Figure 92-7 not Figure 92-6. SuggestedRemedy Change "Figure 92-7" to "Figure 92-6". Proposed Response Response Status W PROPOSED ACCEPT. Use suggested remedy.

C/ 92 Matthew, I	SC 92.8.4.2.4 Brown	P 132 Applied Micro	L 53	# 394	C/ 92 Matthew, I	SC 92.8.4.5 Brown	P 133 Applied Micro	L 32	# 397
Comment	Type T	Comment Status D			Comment	Type T	Comment Status D		
"meet idea is	the jitter specifica s to be as close to	tion" is not the goal. In fact, th the jitter specification as poss	e jitter should ible.	be slightly worse. The	Since requir	the HPF cutoff i ed it is not neces	s specified in the previous para ssary or relevant to specify the	agraph and an e capacitor value	explicit capacitor is not e here. Also, the capacitor
Suggestee	dRemedy				Currente			uration.	
Chang	ge "meet the jitter :	specification" with "match the	jitter specificat	tion".	Suggested	the percerced	starting "It is recommended the	→ + "	
Proposed	Response	Response Status W			Delete			al	
PROF	POSED ACCEPT I	N PRINCIPLE.			Proposed	Response	Response Status W		
The p	attern generator sl	hall be set to match the jitter s	pecification in	Table 92-8.	PROF	OSED ACCEPT			
C/ 92	SC 92.8.4.2.5	P133	L 9	# 395	It is re the ini	commended that rush currents an	at the value of the coupling cap d baseline wander.	acitors be 100	nF. The capacitor will limi
iviallinew, i					CI 92	SC 92.10	P134	L10	# 398
Comment	Type T	Comment Status D		004#*	Matthew, I	Brown	Applied Micro		
this co	s the term "test pa ontext? Also, why i	is the scrambled idle pattern n	ot relevant?	531" is used elsewhere in	Comment	Туре Т	Comment Status D		
Suggested	dRemedy				In Tab This is	ble 92-9, there is a not defined in a	no sub-clause reference for "Nany of the sub-clauses.	Minimum inserti	on loss at 12.8906 GHz".
Chang	ge "test pattern 3 a	as defined in 86.8.2" to "either	PRBS31 or so	cramble idle pattern".	Suggester				
Also	on line 11 change	"scrambled idle characters" to	scrambled in	lle".	Add s	pecification for n	ninimum II of 4 dB in 92.10.2.		
Proposed	Response	Response Status W			On lin	e 10 in Table 92	-9 add reference to 92.10.2.		
PROF	POSED ACCEPT I	N PRINCIPLE.			Proposed	Response	Response Status W		
Chan	ge "test pattern 3 a	as defined in 86.8.2" to PRBS3	31.		PROF				
On lin	e 11 change "scra	mbled idle characters" to "scra	ambled idle".		(92A-4 Speci	4) is the channel fication for IL of	0.5 m should align with cable a	assembly minim	um IL. Add specification
CI 92	SC 92.8.4.5	P133	L 30	# 396	for cal On lin	e 10 in Table 92	P-9 add reference to 92.10.2.	4) IN 92.10.2.	
Matthew,	Brown	Applied Micro							
Comment	Туре Т	Comment Status D							
10GB kHz. F kHz. S	ASE-KR requests For a similar baseli Should be okay to	a 100 nF capacitor which resume ine wander penalty, the cutoff specify 50 kHz as specified in	ults in a high p can be scaled 93.8.3.	ass pole of around 15.9 by 2.5 to around 39.8					
Suggested Chang	dRemedy ge "TBD kHz" to "5	50 kHz".							
Proposed PROF	Response POSED ACCEPT.	Response Status W							
Use s	uggested remedy.								
TYPE: TR	/technical required	ER/editorial required GR/ge	eneral required	I T/technical E/editorial G/ge	eneral		Comme	ent ID 398	Page 92 of 13(

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

C/ 92 Matthew B	SC 92.10.8	P 140 Applied Micro	L 29	# 399	C/ 94 Matthew	SC 94 Brown	.3.6.1	P184	L15	# 402
Commont J		Commont Statue D			Commont		-	Commont Status		link diagram
There i The ref	is a reference to i ference should be	return loss specification in 92.8. e directly to the section containi	3.6 which in a ng the details	turn refers to 92.10.9.2.	In Fig link.	<i>туре</i> ure 94-4, r	eplace v	with updated figure from Figure 9)3-2 showi	ng physical components of
Suggested	Remedy				Suggeste	dRemedy				
Change	e "92.8.3.6" to "92	2.10.9.2".			Repla	ce Figure	94-4 wit	h Figure 93-2.		
Proposed F PROPO	Response OSED ACCEPT I	Response Status W N PRINCIPLE.			Proposed PROF	Response POSED AC	e CCEPT.	Response Status W		
There i "the tes "the ca	is a reference to s st fixture return lo ble assembly tes	92.10.9.2 return loss in 92.8.3.6 ss is equivalent to the test fixtu t fixture return loss is equivalen	that is intend re return loss t to the test fi	ded. Change text: from specified in 92.8.3.6" To: xture return loss in	C/ 93 Matthew,	SC 93 Brown	3.7.8	P 155 Applied Micro	L 51	# 403
92.8.3.	6".				Comment	Туре -	т	Comment Status D		
C/ 92	SC 92.10.9.2	P142	L31	# 400	Canne	ot have "sh	nall" stat	ement against another clause>		
Matthew, B	srown	Applied Micro	-••		Suggeste	dRemedy				
Comment 7	Tvpe T	Comment Status D			Resta	te "Local l	oopback	is provided by the adjacent PM	A"	
The se disgres	ntence implies th ssion. I assume th	at I need to measure only one s hat the intent is to measure both	side of the tes	st fixture at my e specifications on both.	Proposed PROF	Response POSED AC) CCEPT.	Response Status W		
Suggested	Remedy					00.00		D450		# [101
Change	e "either test fixtu	ire interface" to "each test fixtur	e interface".		C/ 93 Motthow	36 93 Brown	.8.1.1	P156	L 52	# 404
Proposed F	Response	Response Status W					-			
PROP	OSED ACCEPT.				Comment	<i>Type</i> n loss choi	l uld bo a	Comment Status D		
Use su	agested remedy.				Currente		ulu be y			
					Suggester	arkemedy no "shall b	a lace th	oon" to "shall be greater than"		
C/ 92	SC 92.10.9.4	P145	L16	# 401	Dranaaad	Deenenar	e 1633 li	Decreases Status M		
Mattnew, B	rown -	Applied Micro								
Comment 1	Туре Т	Comment Status D			T KOI	OOLD AC				
The co	nnector is specifi	cally the 28 Gbps version. Also	, the SFF doo	cument is SFF-8665.	Chan	ge to "shal	ll be grea	ater than or equal to".		
Suggested	Remedy									
Change Change	e "the quad small e "SFF-TBD" to "	" to "the 28 Gbps quad small". SFF-8665".								
Proposed F	Response	Response Status W								
PROP	OSED ACCEPT.									
The MI mecha	DI connector shal nical mating inter	ll be the QSFP+ 28 Gb/s 4X Plu face defined in SFF-8665 and i	iggable (QSF Ilustrated in F	P28) receptacle with the igure 92-18.						

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 Z/withdrawn SORT ORDER: Comment ID

Comment ID 404

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C/ 93 SC 93.8.2.1 Matthew. Brown	P 162 Applied Micro	L 30	# 405	C/ 94 Matthew	SC 94.3.13 Brown	P 196 Applied Micro	L 23	# 408
Comment Type T Return loss should be	Comment Status D greater than limit.			Comment AC cc	<i>Type</i> T pupling frequency	<i>Comment Status</i> D <i>y</i> is a channel parameter.		AC coupling
SuggestedRemedy Change "shall be less	than" to "shall be greater than".			Suggestee Move	dRemedy AC coupling free	quency specification to 94.4.		
Proposed Response PROPOSED ACCEP	Response Status W			Proposed PROF	Response POSED ACCEPT	Response Status W		
Change to: "shall be greater tha	in or equal to"			[comn	non with 92 and	93]		
C/ 93 SC 93 8 1 5	P159	/ 5	# 406	See a	lso comments 48	38 and 407.		
Matthew, Brown	Applied Micro	-•	100	The w	hole sub-clause	refers to the AC coupling of the	chanel. Move	e the entire sub-clause to
Comment Type T	Comment Status D			94.4.				
It is trivial to implemer	nt the 8 ones 8 zeros patterns. W	/hy do we spe	cify a complex method	CI 82	SC 82.2.12	P67	L 26	# 409
using PRBS9?				Matthew,	Brown	Applied Micro		
SuggestedRemedy				Comment	Туре Т	Comment Status D		
Delete the paragraph	describing the PRBS9 method.			In 802	2.3bh, sub-clause	e 82-2.12, the tolerable skew for	the 100GBA	SE-R PCS is specified to
Proposed Response PROPOSED REJECT	Response Status W			be 18 requir The re	0 ns (~1856 bits) ed to account for equired skew tole). Since the FEC re-aligns the PC r potentially one or two CAUI inte erance is therefore around 150 L	CS lanes, the erfaces betwe JI. The incum	e only skew tolerance is een the FEC and the PCS. abent requirement for 1856
If comment #237 is ac	ccepted, this is overtaken by eve	nts.		ULIS C Suggester	overkill by a facto	or of 10.		
If comment #237 is no pattern, a method to a	ot accepted, since other paramet Ilso verify rise and fall times usin	ers are measu g the same pa	ured from a PRBS9 test attern may be useful. The	Add a 100G	new specificatio BASE-KP4 PHY	on for a PCS operating in 100GB specifying a skew tolerance of 1	ASE-CR4, 10 50 UI.	00GBASEKR4, or a
standard does not req	uire you to measure rise and fal	l times this wa if you wish	ly and the text allows you	Proposed	Response	Response Status W		
		ni you wish.		PROF	POSED ACCEPT	IN PRINCIPLE.		
Cl 93 SC 93.8.3 Matthew, Brown	P 164 Applied Micro	L 4	# 407	This a	is addressed in	comment #26. It requires change	es to fig 80-5	a as well as 82.2.12.
Comment Type T AC coupling frequenc	Comment Status D y is a channel parameter.							
SuggestedRemedy Move AC coupling fre	quency specification to 93.9.							
Proposed Response PROPOSED ACCEP	Response Status W							
See comment #488.								

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 Z/withdrawn SORT ORDER: Comment ID

C/ 92 SC 92.2 P113 L1 # 410	C/ 92 SC 92.7.1 P114 L52 # 412
Matthew, Brown Applied Micro	Matthew, Brown Applied Micro
Comment Type T Comment Status D This section defines service primitives. PMD:IS_UNITDATA(SIGNAL_OK) is precisely defined in 80.3.3.3.1. This section only needs to specify that SIGNAL_OK takes its value from SIGNAL_DETECT in 92.7.4.	Comment Type T Comment Status D What is the difference between a test and measurement? SuggestedRemedy
SuggestedRemedy	Change measurements and tests to tests or measurements .
Replace paragraph with "The SIGNAL_OK parameter in PMD:IS_UNITDATA(SIGNAL_OK) indicates the value of SIGNAL_DETECT specified in 92.7.4".	Change in various other places in Clause 92. Proposed Response Response Status W
Proposed Response Response Status W PROPOSED REJECT.	PROPOSED ACCEPT IN PRINCIPLE.
I agree with the comment but the paragraph provides useful information on the SIGNAL_DETECT values which are basis for the PMD:IS_UNITDATA_i.indication parameters.	Delete "tests". Change: Unless specified otherwise, all transmitter measurements and tests defined in Table 92-5 are made at TP2 utilizing the test fixture specified in 92.8.3.5 To: Unless specified otherwise, all transmitter measurements defined in Table 92-5 are made
C/ 92 SC 92.7.1 P 114 L 52 # 411 Matthew, Brown Applied Micro Applied Micro	at TP2 utilizing the test fixture specified in 92.8.3.5.
Comment Type T Comment Status D	C/ 92 SC 92.7.1 P116 L29 # 413
Table 92-5 is a summary list of parameters not measurements and tests. Refer to section 92.8.3 instead.	Matthew, Brown Applied Micro
SuggestedRemedy	Comment Type T Comment Status D
Change "Table 92-5" to "92.8.3".	SLn and SLn <n> should be SLi and SLi<n>, respectively. Also, reference to lane n at end of paragraph should be lane i.</n></n>
Make similar changes throughout Clause 92.	SuggestedRemedy
Proposed Response Response Status W	Replace "SLn and SLn <n>" with "SLi and SLi<n>". Replace "lane n (n = 0,1,2,3)" with "lane i (i = 0,1,2,3)".</n></n>
	Proposed Response Response Status W
Change "Table 92-5" to "92.8.3" page 114 L52	PROPOSED ACCEPT.
Please note: 92.8.3 is Transmitter characteristics and Table 92-5 is "Transmitter characteristics" at TP2 summary	Use suggested remedy.

C/ 92 SC 92.2 Matthew, Brown	P113 Applied Micro	L1	# 414	<i>CI</i> 92 Matthew, I	SC 92.7.4 Brown	P 117 Applied Micro	L 24	# 416
Comment Type T This section defines ser in 80.3.3.3.1. This section SIGNAL_DETECT in 93 SuggestedRemedy Replace paragraph with indicates the value of SI	Comment Status D vice primitives. PMD:IS_UNITE on only needs to specify that SI 3.7.4. "The SIGNAL_OK parameter IGNAL_DETECT specified in 9	DATA(SIGNA GNAL_OK ta n PMD:IS_U 3.7.4".	L_OK) is precisely defined ikes its value from NITDATA(SIGNAL_OK)	Comment Shoul Suggested Chang Proposed PROF	Type T d be more specif dRemedy ge "training state Response POSED ACCEPT	Comment Status D fic which state diagram is being diagram" to "training state diag <i>Response Status</i> W	referred to. ram in Figure	72-5".
PROPOSED REJECT. [Changed Subcl from 93	3.2 to 92.2].			Use s <i>Cl</i> 92 Matthew, I	uggested remed SC 92.7.9 Brown	y. P 118 Applied Micro	L 31	# [417
Based on the page/line comment and suggester comment to Clause 93, applied to Clauses 92 a See comment#410.	number, it is assumed that the d remedy. However, if the com the response comment #410 s nd 93.	commenter is menter did in uggests any	s referring to 92.7.4 in the deed mean to apply this changes be consistently	Comment PMD_ Suggested Delete Add a	Type T fault must be de dRemedy e "If the MDIO is new sentence, '	Comment Status D fined whether or not MDIO is im implemented, ".	plemented. 1D_fault shall	be mapped to the fault bit
Cl 92 SC 92.7.4 Matthew, Brown Comment Type T PMD service layer is sp	P 117 Applied Micro Comment Status D ecified in 92.2. Specify SIGNAI	L 18 DETECT h	# 415	as spe Proposed PROF See c	ecified in 45.2.1. <i>Response</i> POSED REJECT omment #419.	2.1." Response Status W		
SuggestedRemedy Delete first paragraph. Append last sentence o Proposed Response PROPOSED REJECT. Line 17 - 92.7.4 is the G Global PMD signal dete Commenters reference	f first paragraph with "see 92.2 <i>Response Status</i> W dobal PMD signal detect function ct function shall." does not seem to align with tex	'. onFirst para	agraph begins with "The	C/ 92 Matthew, I Comment What function it mus Suggested Chang "but s transm Proposed PROF See c	SC 92.7.10 Brown Type T is meant by "but on"? First, I assu t mean not to co dRemedy ge "but should not hould not consid nitter fault". Response POSED ACCEPT omment #421.	P118 Applied Micro Comment Status D should not include the assertion me must be referring to the vari nsider the variable being set as ot include the assertion of the G er assertion of the Global_PMD Response Status W IN PRINCIPLE.	L 37 n of the Globa able, not the f a fault. obal PMD_tra _transmit_dis	# 418

C/ 93 SC 93.7.9 Matthew, Brown	P156 Applied Micro	L 3	# 419	C/ 93 Matthew, I	SC 93.7.10 Brown	P 156 Applied Micro	L 8	# 421
Comment Type T	Comment Status D			Comment	Туре Т	Comment Status D		
PMD_fault must be de	fined whether or not MDIO is im	plemented.		What	is meant by "but	should not include the assertion	on of the Glob	al_PMD_transmit_disable
SuggestedRemedy				functio it mus	on"? First, I assui t mean not to coi	me must be referring to the van nsider the variable being set a	riable, not the is a fault.	function. Second, I assume
Add a new sentence.	Implemented, ". If the MDIO is implemented, PM	ID fault shall	be mapped to the fault bit	Suggested	lRemedy			
as specified in 45.2.1.2	2.1."			Chang	ge "but should no	t include the assertion of the (Global PMD_tr	ransmit_disable function" to
Proposed Response	Response Status W			transn	nould not conside nitter fault".	er assertion of the Global_PM	J_transmit_di	sadie variable as a
				Proposed	Response	Response Status W		
C/ 94 SC 94.3.7	P186	L 9	# 420	PROP	POSED ACCEPT	IN PRINCIPLE.		
Comment Type T PMD_fault must be de	Comment Status D fined whether or not MDIO is im	plemented.	PMD variables	The he "PMD the he	eading of 93.7.6 lane-by-lane tran ading, and the co	is "Global PMD transmit disab nsmit disable function". It sugg orresponding variables include	le function" ar jests the funct e the undersco	nd the heading of 93.7.7 is ion names are a given by ore.
SuggestedRemedy Delete "If the MDIO is Add a new sentence, " as specified in 45.2.1.2	implemented, ". If the MDIO is implemented, PN 2.1."	ID_fault shall	be mapped to the fault bit	Chang "The C Chang	ge the first senter Global PMD trans ge the first senter	nce of 93.7.6 to: smit disable function is optionance of 93.7.7 to:	al."	
Proposed Response	Response Status W			" I he F transn	nitter in each lane	e transmit disable function is o e"	ptional and all	lows the electrical
PROPOSED ACCEPT [non-controversial]				In 93.7 "Wher to 3) is	7.7, change item n a PMD_transmi s set to one"	a) to: it_disable_i variable (where i r	epresents the	lane number in the range (
				In 93.7 "but	7.10, change the the assertion of	first sentence to: Global_PMD_transmit_disable	e is not consid	ered a transmit fault."
				<i>Cl</i> 93A Li, Mike	SC 93A.1.2	P 215 Altera	L 10	# 422
				Comment	Type TR	Comment Status D		
				The m mellitz	odel and equation of the second se	ons for package return-loss an	d insertion-los	s were left out in
				Suggested	dRemedy			
				A pres	sentation will be p	provided to fill-in the missing in	nformation	
				Proposed PROP	Response POSED ACCEPT	Response Status W IN PRINCIPLE.		
				Respo	onse pending Tas	sk Force discussion of cited m	aterials.	

Cl 69 Dawe, Piers	SC 69.1.3	P 29 IPtronics	L 16	# 423	Cl 93 Dawe, Piers	SC 93.1	P 149 IPtronic	L 7	# 426
Comment T	ype E	Comment Status D			Comment Typ	e E	Comment Status)	
For con	nsistency with Fi	ig 80-1,			If the clau beginning	se has an a , as Clause	ssociated annex, that sh 92 does.	ould be pointed out	to the reader right at the
Suggestear	Remeay	RASE KR and ADCRASE KR	4 (Fig 60 1a) as	ontional	SuggestedRe	medy			
Proposed F PROPC	Response DSED ACCEPT	Response Status W	4 (Fig 09-14), as		This claus associate and Anne	se specifies d annexes. x 93B provi	the 100GBASE-KR4 PM Annex 93A provides a m des an electrical backpla	D and baseband me ethod for calculating ne reference model	edium. There are two channel Operating Margin with additional test points.
Also ch	ange FEC to R	S-FEC for 100GBASE-KR4 a	nd 100GBASE-k	(P4 (Figure 69-1a),	Proposed Res	sponse	Response Status	v	
-					PROPOS	ED ACCEP	T IN PRINCIPLE.		
Cl 73 Dawe, Piers	SC 73.10.7	P 35 IPtronics	L12	# 424	Add the fo	ollowing afte	r the first sentence of the	e first paragraph of 9	93.1.
Comment 7 Make th	<i>ype</i> E ne document ea	Comment Status D sier to use with consistent or	dering.		"There are backplane informativ	e two assoc es and Anne e test points	iated annexes. Annex 93 ex 93B extends the electr s."	A defines character ical backplane refer	istics of electrical ence model with additional
Suggested Put the for sing	Remedy PMAs and PMI le_link_ready.	Ds in the reverse order to Tab	ble 73-5 Priority I	Resolution. Also the list	Cl 80 Dawe, Piers	SC 80.1.5	P 45 IPtronic	L 47 s	# 427
Proposed F PROPC	Response DSED ACCEPT	Response Status W			Comment Typ Make the	e E document e	Comment Status asier to use with consist) ent ordering.	
C/ 78 Dawe, Piers	SC 78.1.4	P 38 IPtronics	L 21	# 425	SuggestedRe Order Tal	<i>medy</i> ble 80-2a in	the opposeite order to 78	3-5 priority resolutior	n then short to long.
Comment 7 Make th	<i>ype</i> E ne document ea	Comment Status D sier to use with consistent or	dering.		Proposed Res PROPOS	sponse ED ACCEP	Response Status V	V	
Suaaested	Remedv		0		Comment	: #173 justifi	es a different order		
Order T	able 78-1 in the	e reverse order to Table 73-5	Priority Resolution	on.		·	Data	1.45	# 400
Proposed F	Response	Response Status W			Dawe, Piers	SC 92.7.1	P 116 IPtronic	s L 45	# 428
PROPU	JSED ACCEPT				Comment Typ Table laye	pe E out.	Comment Status)	
					SuggestedRe	medy			
					Please m better.	ake the righ	t hand column wider, so	TP4 is not on a line	by iteslf and the table looks
					Proposed Res	sponse	Response Status V	v	
					PROPOS	ED ACCEP	T IN PRINCIPLE.		
					Will do if	oossible.			
TYPE: TR/t	echnical require	ed ER/editorial required GR/	general required	T/technical E/editorial G/g	general	withdrown	C	Comment ID 428	Page 98 of 130

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

9/24/2012 2:42:06 AM

C/ 92 Dawe, Piers	SC 92.8.3.4	P 126 IPtronics	L 17	# 429	C/ 80 SC 80.2.3 Dawe, Piers	P 46 IPtronics	L11	# 431
Comment T Format I think it	ype E for informative N 's actually eq 92	Comment Status D IOTE -14, not Annex 92A. Also	, it is useful inform	ation in the longer term.	Comment Type ER 10PASS-TS, 1000BA 10/1GBASE-PRX-D Reed-Solomon FEC"	Comment Status D SE-PX10, 1000BASE-PX20, already use Reed-Solomon FE or "Reed-Solomon Forward E	10GBASE-PR-D EC, so we can't c Frror Correction (9, 10GBASE-PR-U and call this fourth kind "The RS-FEC) sublayer". We
On its o of the pa Proposed R PROPC	wn line, beginnir age is correct. Response DSED ACCEPT I	Ig NOTE See style guide Response Status W N PRINCIPLE.	, or I think the one	in 73.10.7 at the bottom	need something disti SuggestedRemedy Change its name to 2 Proposed Response PROPOSED REJEC	nctive. Also, we recognise RS 256B/257B FEC, or Clause 91 <i>Response Status</i> W T.	S as Reconciliatio	on Sublayer.
D1.1 co Change dB at 12	ntains the note in 2.Note that in An 2.8906 GHz	ו D1 changed to enduring nex 92A, the insertion los	note. s from TP0 to TP2	or from TP3 to TP5 is 10	The naming used in instance would introc unambiguous.	Clause 91 was agreed by the ⁻ uce confusion. Within this cor	TF. Using differe ntext the use of R	nt terminology in this Reed-Solomon FEC is
To: Note Note: N	e that the insertion ote style used th	on loss from TP0 to TP2 o roughout clause	r from TP3 to TP5	is 10 dB at 12.8906 GHz	C/ 80 SC 80.1.2 Dawe, Piers	P42 IPtronics	L 25	# 432
Cl 80 Dawe, Piers Comment T	SC 80.3.3.4.1	P 47 IPtronics Comment Status D	L 23	# 430 bucket	Comment Type ER Deleting the objective rated at 10^-12 BER. a poor quality link to not meet the 10^-12	Comment Status D es doesn't avoid all work. We Some clauses specifically re provide sufficient light for a SI BER objective."	need to tell the r fer to the objectiv GNAL_DETECT	reader that 40/100G is ves, e.g. "It is possible fo = OK indication and still
The tx_i SuggestedR Change Proposed R PROPC	mode parameter Remedy e "one of eight va Response DSED ACCEPT.	doesn't need eight values lues" to "one of up to eigh <i>Response Status</i> W	s at most interface nt values".	S.	SuggestedRemedy If we want to go with subclause: 80.1.2 BER objective It is an objective of 4 better than or equal t	out the long list and don't want e D Gigabit and 100 Gigabit Ethe o 10^-12 at the MAC/PLS serv	to open three m ernet to provide a vice interface.	nore clauses, have a sho a bit error ratio (BER)
					Proposed Response	Response Status W		

C/ 92 SC 92.8.3.8 Dawe, Piers	P128 IPtronics	L 30	# 433	<i>CI</i> 93 Dawe, P	SC 93.8 ers	IF	P 156 Ptronics	L 40	# 434		
Comment Type ER Several editorials, includ should reference the trar SuggestedRemedy	Comment Status D ing that this section needs s ismitter specs in the table n	subheadings for lot repeat them.	each jitter type, and	Commer "93.' 93.8 This	<i>at Type</i> ER 3 100GBASE-I 1 Transmitter sounds like a	Comment Sta KR4 electrical charac characteristics" datasheet. Please w	atus D teristics rite in norm	ative standards la	anguage! Follow the		
See email. Proposed Response PROPOSED REJECT. Request that the e-mail in Force.	<i>Response Status</i> W n question be submitted as	a contribution fo	or review by the Task	86.7 86.7 52.5 52.5 38.3 38.3 38.3 and	 86.7 PMD to MDI specifications for 40GBASE-SR4 or 100GBASE-SR10 86.7.1 Transmitter optical specifications 52.5 PMD to MDI optical specifications for 10GBASE-S 52.5.1 10GBASE-S transmitter optical specifications 38.3 PMD to MDI optical specifications for 1000BASE-SX 38.3.1 Transmitter optical specifications and plenty more. 						
				Suggest Cha 93.8 93.8 or 93.8 93.8 Simi	edRemedy nge to 100GBASE-K 1 Transmitter 100GBASE-K 1 Transmitter larly for receiv	R4 electrical specific electrical specificatio R4 electrical specific specifications er and the other PME	ations ns ations) clauses.				
				Propose PRC The lang The insta Sect It cle norm (cha 8."	d Response POSED REJE e is no basis f uage but a "ch word "characte nces in Sectio ion 3, and so o ar that in man native requiren nnel)" which si	Response Sta ECT. or the assertion that a paracteristic" does not eristics" appears in IE on 6, 241 instances in on. y of these instances, nents. See for examp tates that "The fiber of	a "specificat EE Std 802 Section 5, the use of t le 68.9 "Cha ptic cabling	ion" corresponds 2.3-2012 numerou 131 instances in he word "charact aracteristics of th shall meet the re	to normative standards us times. There are 133 Section 4, 88 instrances i eristics" is in relation to e fiber optic cabling equirements of Table 68-		

C/ 80 SC 80).4	P 50 IPtronics	L 20	# 435	CI 73 Si Dawe Piers	C 73.7.2	P 34 IPtronics	L 30	# 437
Comment Type E Bringing this dra	ER aft in line w	Comment Status D ith 802.3bh/D3.2 (soon to	be 802.3-2012).	bucket	Comment Type Wordsmithi " the Rec	T ng: eive Switch	Comment Status D	I to and to	the receive path of the
Delete "Note tha Update "an ame to IEEE Std 802 Proposed Response PROPOSED AC	at" twice. endment of 2.3-2012 wh e / CCEPT.	IEEE Std 802.3-201X. Dr. nen available. Response Status W	aft D3.1" on pag	e 1 line 32 to D3.2, then	1000BASE SuggestedRem " the Rec PMD that is Proposed Resp PROPOSE	-KX and edy eive Switch present a onse D ACCEP ⁻	I 100GBASE-CR4 if the PHY is h function shall connect the MD ind has Auto-Negotiation enable <i>Response Status</i> W T IN PRINCIPLE	present." I to and to ed."	the receive path of each
Cl 69 SC 69 Dawe, Piers Comment Type T Not so fast! It's As the channel of may be convenie	7 still the casor medium or medium	P30 IPtronics Comment Status D se that a 2-lane 10GBASE isn't normative for older B ch this requirement to the	L 45 E-KX4 wouldn't b PE, and MDI is MDI.	# 436 be compliant, and so on. shown in other places, it	Considering Transmit/Ro Negotation This is reinf to the MDI	g 73.6.10 a eceive swit has compl forced by th during Auto	and 73.7.2 from the base docum tch functions connect the HCD leted. he requirement in 73.6.10 that o o-Negotiation.	nent, it appea PHY to the m only "DME pa	rs that the redium once Auto- ge generator" is connected
SuggestedRemedy Reinstate item f MDIs for types A have four. No n f) The MDI for 10 each direction y	but chang A, B, C hav need for cla 000BASE- while 10GE	e "as specified in" to "of". re one pair/differential elec use numbers: KX and 10GBASE-KR use ASE-KX4_40GBASE-KR use	Add the new Pl strical path in ea es one pair of el 4 and baye fo	ID types. Rework to say ch direction while X, Y, Z ectrical connections for ur pairs	To be cons page receiv support par 73.6.10 Tra	istent with ver and the allel detec	73.6.10, 73.7.2 should state that a receive path of the 1000BASE tion. tch function	at, during Aut -KX and 10G	o-Negotiation, the DME BASE-KX4 (if present) to
Proposed Response PROPOSED AC		Response Status W PRINCIPLE.			The Transn dependent Auto-Negot	nit Switch f PHY to the iation has	function shall enable the transme MDI once a highest common of completed.	it path from a denominator o	a single technology- choice has been made and
During considera 40GBASE-KR4.	ation of thi	s comment, it was observe	ed that XLAUI is	not included in the list fo	During Auto generator c	o-Negotiati ontrolled b	on, the Transmit Switch function by the Transmit State Diagram to	n shall conne o the MDI.	ct only the DME page
Replace item f): "f) The PMA ser Attachment Unit specified in Ann	rvice interfa t Interface) nex 83A or	ace, which, when physicall at an observable intercon Annex 83B."	y implemented a nection port, us	as XLAUI (40 Gigabit es a 4 Iane data path as	When a PH MDI shall c 73.7.2 Rece	IY is conne onform to a eive Switch	ected to the MDI through the Tra all of the PHY's specifications. n function	ansmit Switch	n function, the signals at the
Add item g): "g) The MDI for 10GBASE-KX4, data path "	1000BASE , 40GBASE	E-KX and 10GBASE-KR u E-KR4, 100GBASE-CR4, a	se a serial data and 100GBASE-	path while the MDI for KP4 use a four lane	The Receiv dependent Negotiation	e Switch fu PHY once has comp	unction shall enable the receive a highest common denominato leted.	path from the r choice has	e MDI to a single technolog been made and Auto-
					[Change the During Auto the MDI. Fo the receive Negotiation	e last para o-Negotiation or the Para path of the when thos	graph as shown below.] on, the Receive Switch functior Ilel Detection function, the Rece e 1000BASE-KX and 10GBASE se PHYs are present.	shall connective Switch fu F-KX4 PHY to	ct the DME page receiver to unction shall also connect the MDI during Auto-

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 Z/withdrawn SORT ORDER: Comment ID

Comment ID 437

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C/ 80	SC 80.1.4	P43	L 48	# 438	C/ 80	SC 80.3.2	P 49	L16	# 441
Dawe, Pie	rs	IPtronics			Dawe, Pie	rs	IPtronics		
Comment	Туре Т	Comment Status D			Comment	Туре Т	Comment Status D		
Seein 94, it v	g as we don't defi would be better no	ne pulse amplitude modulation to use the term.	on (PAM) and d	on't need it outside Clause	The 2 for no	56b/257b PCS/F te 1 (compare Fi	EC sublayer is mandatory for igure 80-5a).	100GBASE-CR	4/KR4/KP4 so no need
Suggested	dRemedy				Suggeste	dRemedy			
Chang	ge 2/4-level pulse	amplitude modulation or 4-le	evel PAM to just	2/4-level modulation,	Delete	e note 1. Also in	Figure 91-1.		
each t	time (only 8 instar	ices).			Proposed	Response	Response Status W		
Proposed PROF	Response	Response Status W			PROF	POSED ACCEPT	Г.		
PAMi	s a defined abbre	viation in Clause 1.5			Note	hat comment #2	e3 might make FEC optional	- nullifying this c	omment.
					C/ 81	SC 81.3a.1	P 60	L 2	# 442
C/ 92	SC 92.8.4.2.3	P132	L 40	# 439	Dawe, Pie	rs	IPtronics		
Dawe, Pie	rs Type T	IPtronics			Comment	Туре Т	Comment Status D		bucket
The co	ommon mode sho	uld be terminated too Also	some terminatio	ns are not shown e d	Wrong	g AN clause!			
output	t on left in Figure	92-6, Interference tolerance	est setup.	no alo not ono in o.g.	Suggeste	dRemedy			
Suggested	dRemedy				Chan	ge 28.2.6.1.1 to t	the correct reference.		
Chang missir	ge "terminated in - ng output and term	100 ohm differentially." to "te ninations to figures.	rminated with 50) ohm loads.". Add	Proposed PROF	Response POSED ACCEP1	Response Status W		
Proposed PROP	Response POSED ACCEPT	Response Status W			Chan	ge to 73.9.1.1			
In figu lanes	ire 92-6 add box a are terminated in	nd arrow indicating 4 Rx. Th 50 Ohm to provide 100 Ohm	e cable assemb differential tern	ly single ended receive nination.					
C/ 80	SC 80.3.3.5	P 47	L 39	# 440					
Dawe, Pie	rs	IPtronics							
Comment	Туре Т	Comment Status D							
Shoul IS_RX	d this be simplified	d by combining IS_RX_MOD n) and IS_SIGNAL.indicatior	E.indicate (shoung)	ıld be					
Suggested	dRemedy								
?	2								
Proposed	Response	Response Status W							
PROF	POSED REJECT.								
The cl combi	hanges proposed ination impossible	in comment #70 redefine the	e operation of R	K_MODE making such a					

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 Z/withdrawn SORT ORDER: Comment ID

C/ 91	SC 91.5.2.7	P 97	L 41	# 443	CI 78	SC 78.5	P 38	L 44	# 444
Dawe, Piers		IPtronics			Dawe, Pie	rs	IPtronics		

Comment Type т Comment Status D

As well us telling us the error correction capability, please tell us the error detection capability of these codes. Also, while a code may be capable of something, the spec needs to say what an implementation must do.

SuggestedRemedy

Add text giving the error detection capability of these codes, and the expected/required error correction and detection capability of implementations.

Proposed Response	Response Status	w
r roposcu ricsponsc	Nesponse Status	

PROPOSED ACCEPT IN PRINCIPLE.

The error detection capability of a bounded distance decoder is $(n-k) = 2^{*}t$ symbols. For (nk+1) or more symbol errors, there is a chance that the decoder will incorrectly recognize the input as a different codeword. In these cases, it is only possible to bound the probability that errors will be detected (see [1]).

The statement of error correcting capability was intended to establish the relevance of the parameter t. Since 91.5.2.7 specifies the operation of the encoder, decoder requirements should not be added here.

Therefore, the question is whether or not decoder error detection/correction capability needs to be specified in 91.5.3.3. 76.3.3.3 states the following:

"Implementations shall be capable of correcting up to 16 symbols in a codeword and detecting uncorrectable codewords."

Using this as a model, add the following paragraph after the first paragraph of 91.5.3.3.

"When used to form a 100GBASE-CR4 or 100GBASE-KR4 PHY, the RS-FEC sublaver shall be capable of correcting any combination of up to t=7 symbol errors in a codeword. When used to form a 100GBASE-KP4 PHY, the RS-FEC sublayer shall be capable of correcting any combination of up to t=15 symbol errors in a codeword. The RS-FEC sublayer shall also be capable of detecting that a codeword is uncorrectable when there are between t+1 and 2t symbol errors in the codeword. The ability of the decoder to detect more than 2t symbols in a codeword cannot be guaranteed."

In 91.5.2.7, remove "This code has the capability to correct any combination of t=? symbols errors in a codeword." These two sentences are redundant with the information proposed to be added to 91.5.3.3.

[1] R. J. McEliece and L. Swanson, "On the decoder error probability for Reed-Solomon codes," IEEE Trans. Inform. Theory, vol. 32, pp. 701-703, Sep. 1986.

CI 78	SC 78.5	P 38	L 44	# 444
Dawe, Piers		IPtronics		
Comment Typ	be TR	Comment Status D		EEE option

This says "For PHYs with an operating speed of 100Gb/s (that implement EEE) two modes of LPI operation are supported." So it's both or nothing.

Implementing traditional EEE in a PHY divided by a CAUI involves extra pattern-recognition circuitry that would consume extra power. Gaining lock with the FEC-encoded lanes takes time even with rapid algnment markers. Turning transmitters and receivers with EQ on and off rapidly adds to the signal integrity challenge. The energy/bit in 100G PHYs is vastly less than 10/100/1000 Meg PHYs but there is still energy to be saved above the MAC. In a highspeed core network that never really goes guiet, energy would have to be saved in very short time slots. For other networks that do go truly quiet at night, the link can be powered down by traditional means whether EEE is present or not.

SuggestedRemedy

Have three ability choices: no EEE, fast EEE only or capable of both EEE modes. Adjust Table 45-190. EEE advertisement register, and Table 45-191. EEE link partner ability. to manage this.

Consider quantitatively (million tons of CO2) whether the slow EEE mode is worththile, particularly for existing PHY types where fast EEE will be added and the link can be shut down above the MAC for long guiet periods anyway.

Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.

See #96 (& many others) for resolution.

CI 78	SC 78.5	P 38	L 44	# 445
Dawe, Pi	iers	IPtronics		
Commer	nt Type TR	Comment Status D		EEE option

Change

For PHYs with an operating speed of 100 Gb/s (that implement EEE) two modes of LPI operation are supported.

SuggestedRemedy

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То
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PHYs with an operating speed of 100 Gb/s that implement EEE support the "fast wake" mode of LPI operation and may additionally support the "normal wake" mode. The two modes are not used simultaneously.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See #96 (& many others) for resolution.

C/ 92	SC 92.8.3	P120	L19	# 446	C/ 78	SC	78.5.2	P 39	L 53	# 448
Dawe, Plei	rs	IPtronics			Dawe, Ple	ers		IPtronics		
Comment	Type TR	Comment Status D			Comment	Туре	TR	Comment Status D		
Need s	specs for com on to different	mon-mode output return loss a ial).	nd output mode c	conversion loss (from	Mana So th	gement e PMA	t is optiona Egress AU	al, and if there is managemer II Stop Enable (PEASE) bit (it, the Clause 45 1.n.n) may not e	method is itself optional. xist even if the associated
Suggested	Remedy				PMA	control	variable do	Des exist.		
Add sp	pecs for comm	non-mode output return loss and	d output mode co	nversion loss (from	Suggeste	dReme	dy			
commo For ex	on to different ample, use th	ial). e InfiniBand FDR specs, scaled	I for signalling rat	e.	Write	the spe ding to	ec in terms the mappi	of the variables being true on ng tables. Applies to 81.3a.2	r false. The MD 2.1 and 83.3 also	ווס bits follow along ס.
Proposed	Response	Response Status W			Proposed	Respo	nse	Response Status W		
PROP	OSED REJEC	CT.			PRO	POSED	ACCEPT	IN PRINCIPLE.		
Sugge draft.	ested remedy p	proposal lacking sufficient recor	mmended change	es to implement in the	These to ref	e are all lect that	defined in	terms of PMA control variab	oles but this clau	se needs to be reworded
CI 92	SC 92.8.3	P120	L16	# 447	Chan	ge "the	PMA Egre	ess AUI Stop Enable (PEASE	E) bit (1.n.n)" to "	PMA Egress AUI Stop
Dawe, Pier	rs	IPtronics			Enab	le (PEA	SE, see 83	3.3; MDIO register bit 1.n.n)"		
Comment	Type TR	Comment Status D			Change "the PMA Ingress AUI Stop Enable (PIASE) bit (1.n.n)" to "PMA Ingress AUI Stop					
The common-mode voltage limit for a CR4 transmitter needs to be chosen appropriately. Simply copying KR4 would be capricious and irrational because the circumstances are different. There are real DC blocking capacitors in the cable so any voltage that doesn't cause them to hold too much charge or break down is OK - the receive silicon doesn't have tc work with this voltage, it chooses its own. But it makes more sense to define the range of single-ended voltages, as done in nPPI which has the same QSFP connector, and XLAUI, and a typical silicon implemementation will support two or three of these. The single-ended voltage allows for a range of bias voltages and an allowance for signal swing. Compare Table 83A-1 and Table 86A-1.					Enab		s⊏, see 83	.3; MDIO register bit (1.n.n)		
Suggested	Remedy									
Chang Comm to Single	ge non-mode volta	age limits 72.7.1.4 1.9 V voltage min -0.3. max 4 V								
Proposed	Response	Response Status W								
PROP	OSED REJEC	CT.								
Comm increas discus	ion-mode volta sing limit beyc	age limits were incorporated in and 1.9 V not supported. Also, s	Table 92-5 after o see 93-4 and 94-4	debate including 4. For committee						

C/ 80	SC 80.1.4	P43	L 49	# 449
Dawe, Piers		IPtronics		

Comment Type TR Comment Status D

Although they may use a small part of Clause 82, it is not the case that 100GBASE-CR4 or 100GBASE-KR4 use 64B/66B block encoding: this is removed (transcoded) before the PMD so is never present on the line (unlike with KR FEC which is optional). They use 256b/257b block encoding.

It would be better to use language more like the definitions section:

1.4.51 100GBASE-R: An IEEE 802.3 family of Physical Layer devices using the physical coding sublayer defined in Clause 82 for 100 Gb/s operation. (See IEEE Std 802.3, Clause 82.)

SuggestedRemedy

Change to:

40GBASE-R or 100GBASE-R represents a family of Physical Layer devices using the Clause 82 Physical Coding Sublayer for 40 Gb/s or 100 Gb/s operation over multiple PCS lanes based on 2-level pulse amplitude modulation (PAM) and low-overhead block encoding. Some 100GBASE-R Physical Layer devices also use the transcoding and FEC of Clause 91.

Also change to:

1.4.51 100GBASE-R: An IEEE 802.3 family of Physical Layer devices using the physical coding sublayer defined in Clause 82, and in some cases the transcoding and FEC of Clause 91, for 100 Gb/s operation. (See IEEE Std 802.3, Clause 82 and Clause 82.)

Or we could revisit the PHY names, but it seems OK to have the three coding schemes with the same 3.125% overhead (64B/66B, KR FEC, 256b/257b) all use the same letter R.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See also #343 & #23

The point regarding 64B/66B is well made, but the changes to Clause 1.4.51 are not justifiable. Re-opening the PHY naming discussions may not be popular with the Task Force.

See #343 for the detailed wording.

CI 92	SC 92.8.3.8	P 129	L8	# 450
Dawe, Pier	S	IPtronics		

Comment Type TR Comment Status D

In the dual-Dirac model, RJrms is expected to be the slope of the tails and RJ a multiple of that. We also expect that RJ+DJ=TJ. These things are compatible with each other and this text if DJ is extrapolated from the specification BER.

SuggestedRemedy

Say that for definition purposes, BERn are either side of and close to the specification BER, but in practice values as suggested are often used.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See	comment#366.
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C/ 92	SC 92.8.3.4	P 126	L17	# 451
Dawe, Piers	i	IPtronics		

Comment Type **TR** Comment Status **D**

An equation such as Eq 92-14 doesn't determine the loss between two points, it limits it. But how is it determined? If you can't measure it you can't specify it, and you can't talk about its maximum - because you can't tell if someone is exceeding that. I think this has to be a recommendation only, unless we extract the loss from the de-embedding procedure.

SuggestedRemedy

Change	
The maximum insertion loss	
to	
The maximum recommended insertion loss	

Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.

Change: The maximum insertion loss from TP0 to TP2 or TP3 to TP5 including the test fixture is determined using Equation (92-14). To: The maximum insertion loss values from TP0 to TP2 or TP3 to TP5 including the test fixture are determined using Equation (92-14).

Cl 92 SC 92.10. Dawe, Piers	9.3 P143 IPtronics	L 27	# 452	C/ 82 Dawe, Piers	SC 82.2.8a	P 67 IPtronics	L 5	# 455
Comment Type TR Is "common-mode c	Comment Status D onversion loss" a through loss?			Comment Typ "The CD f	e TR ield may a	Comment Status D lso be used by a detached tra	ansmit PMA sub	layer to infer the state
SuggestedRemedy If so, add "common-	mode conversion return loss" spe	c.		the PCS." Not! If a PMA o	could do unde	erstand RAMs, it would be a l	PCS. Far too co	omplicated.
Proposed Response PROPOSED ACCE	Response Status W PT IN PRINCIPLE.			SuggestedRei I don't kno need to kr	nedy w if there is a now.	a remedy apart from use fast	EEE, not slow I	EEE, so this PMA doe
		1.40	# 450	Proposed Res	ponse	Response Status W		
Comment Type TR The medium is allow SuggestedRemedy Delete "due to conn Proposed Response PROPOSED ACCE	Comment Status D wed to mix the lanes up, that's no o ection errors in the underlying me <i>Response Status</i> W PT.	error. See 86. dium".	6 Lane assignments	rhere is n producers is made c support E from the F easily be a Change "r PCS."	o requirement of modules of ear that PMA EE. The mos tAMs would be able to decoor may also be u	Tor a PMA to understand R. or silicon may wish to use. W A implementations do not nec t likely case where a detache be the case of a detached FE le RAMs. used by a detached transmit I	Aivis, nowever i ith the modifical essarily need to d sublayer migh C/PMA/PMD - v PMA sublayer to	t is a possibility that tions to EEE optionali o modify their behavio nt wish to infer tx_mod where the FEC would o infer the state of the
C/ 80 SC 80.3.2 Dawe, Piers	P 48 IPtronics	L15	# 454	To "may a the PCS."	lso be used l	by a device with a detached F	PMA or FEC sul	player to infer the stat
Comment Type TR KR FEC for 100GB/	Comment Status D ASE-CR10 remains optional.							
SuggestedRemedy Change NOTE 1-CONDITIO to NOTE 1-CONDITIO Same in Figure 80-4 In figures 81-1 and 3 NOTE 3-CONDITIO Proposed Response	NAL BASED ON PHY TYPE NAL, OPTIONAL OR OMITTED E and Figure 80-5. 32-1, leave note 1 as base spec fo NAL, OPTIONAL OR OMITTED E <i>Response Status</i> W	DEPENDING C or 40G, create DEPENDING C	IN PHY TYPE note 3 for 100G FEC: IN PHY TYPE					
PROPOSED REJEC	CT.							

			_										
Cl 82 Dawe, Pier	SC s	82.3.1.	P72 IPtron	2 L 25 ics		# 456	C/ 85 Dawe, Pier	SC rs	85.7.2		P88 IPtronics	L 5	# 458
Comment 7	Гуре	TR	Comment Status	D		EEE option	Comment	Туре	TR	Comm	nent Status D		EEE option
1. Nee 2. For allow s	ed to be 40G/1 low EE	e able to s 00G, fast v EE mode.	witch EEE on or off. wake should be the fi	rst kind of EEE. So	, need sec	ond variable to	A PME the ad What a) can't jacent l alert pa	generate a PMA, which attern do w	a pattern. ch might g ve use for	It doesn't even h et it from the Cla EEE fast mode?	nave a clock. use 91 PCS/I	Any pattern must come from FEC.
Suggested	Remed	dy					Suggestea	Remed	dy				
Replac "electri	e this cal idle	variable ar e" mode, a	nd bit with two, one to nd a second to enabl	enable EEE (which e the "fast" mode.	will enabl	e the "slow" or	Chang If the c	je optional	l Energy E	Efficient Et	hernet (EEE) cap	bability is sup	ported (see Clause 78) then
Proposed F	Respor	nse	Response Status	w			when t	tx_mod ດ	le is set to	o ALERT, t	he PMD will tran	smit a repeat	ing 16-bit pattern, hexadecimal
PROP	OSED	ACCEPT	N PRINCIPLE.				to	0.					
1) Ther and the	re is no en con	o need to " trolled fron	switch EEE on or off' n the RS. If EEE supp	' in the PHY. For all port is not negotiated	speeds, E d then the	EE is negotiated RS is prohibited	If the c 78) the hexade	optional en whei ecimal	l Energy E n the adja 0xFF00, t	Efficient Et Icent PMA to the PMD	hernet (EEE) slo sets tx_mode to), which the PMD	w mode capa ALERT, it se) transmits.	ability is supported (see Clause ands a repeating 16-bit pattern,
from as	ssertin	g LPI.					Proposed	Respor	nse	Respor	nse Status W		
2) If the	e optio	nal behavi	or proposed in comm	ent #96 is accepted	then LPI_	FW selects	PROP	OSED	ACCEPT	IN PRINC	IPLE.		
betwee	en norr	nal and fas	st wake operation. Th	e default for LPI_FV	V is true.		See al	sn #12	7				
C/ 85	SC	85.1	P87	۲ L 33		# 457	000 4	00 // 12					
Dawe, Pier	s		IPtron	ics			Chang	je to					
Comment 7	Гуре	TR	Comment Status	D		EEE option	If the c	optional	l Energy E	Efficient Et	hernet (EEE) cap	bability with th	ne normal wake mode option is
1. This Clause	s is the 80.	PMD clau	se. If you want desc	riptive text about PH	IYs as a w	hole, look at	suppor repeat	rted (se ing 16-	ee Clause bit pattern	78) then with the main the second sec	when tx_mode is imal 0xFF00, to	set to ALER the PMD, whi	Γ, the adjacent PMA sends a ich the PMD transmits.
2. If a	PHY h	as fast mo	de EEE, it doesn't co	ncern the PMD. Or	nly the slov	v mode does.	C/ 85	SC	85.7.4		P88	L21	# 459
Words	mithing	g attempt b	elow: there may be b	etter official names	for fast an	d slow modes.	Dawe, Pier	rs			IPtronics		
Suggested	Remed	dy					Comment	Type	TR	Comm	nent Status D		LPI Rx
Change A 100GBASE-CR10 PHY with the optional Energy Efficient Ethernet (EEE) capability may optionally enter the Low Power Idle (LPI) mode to conserve energy during periods of low link utilization (see Clause 78). to A 100GBASE-CR10 PMD with the Energy Efficient Ethernet (EEE) slow mode optional						re "rx_ receive param square amplite This is	mode s er input eters o wave ude of only a	shall be set t that is the f both inte pattern wi 720 mV.": PMD, not	et to QUIE e output o erference t ith a period t a test lab	T and shal remai f a channel that s olerance test cha d of 16 unit interv !	in in that state satisfies the re annels define vals and peak	e until a signal is detected at th equirements of all the d in 72.7.2.1 when driven by a s-to-peak differential output	
periods	s of lov	v link utiliza	ation (see 78.x).			erve energy durin(Suggestea	Remed	dy				
Proposed F	Respor	ise	Response Status	w			See e. truth ta	.g. Tabl able.	le 86-5, Sl	IGNAL_DE	ETECT value def	inition, for an	example of a signal detect
PROPO	JSED	ACCEPT	IN PRINCIPLE.				Proposed	Respor	nse	Respor	nse Status W		
The rer	medy t	o #125 acl	nieves the same.				PROP	OSED	ACCEPT	IN PRINC	IPLE.		

This section is deleted and replaced by comment #94

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 Z/withdrawn SORT ORDER: Comment ID

Comment ID 459

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C/ 92 SC 92.10 Dawe, Piers	P134 IPtronics	L15	# 460	C/ 85 Dawe, Pier	SC 85.7.4 s	P88 IPtronics	L 20	# 462			
Comment Type TR Missing spec items.	Comment Status D			Comment T re "Foll	<i>Type</i> TR owing the rece	Comment Status D	ning RAMs with t	LPI Rx he code indicating			
SuggestedRemedy	modo roturn loss, modo conv	orgion rofloction	loss Integrated	tx_moo This is	le = SLEEP, rx only a PMD. If	c_mode shall be set to QUIET' t deosn't even have a clock, le	": et alone the abilit	y to parse RAMs.			
Common-mode Conve	ersion Noise. ILD. Consider a	ddina ILDrms.	ioss, integrated	Suggested	Remedy						
Proposed Response	Response Status W	5		lt would passes	d have to be the a (another) pri	e Clause 91 PCS/FEC or Clau imitive down the stack to the F	use 82 PCS that PMD Rx.	parses the RAMs and			
PROPOSED REJECT				Proposed F	Response	Response Status W					
Proposal lacking suffic	cient recommended changes to	o implement in th	ne draft.	PROP	OSED ACCEP	T IN PRINCIPLE.					
C/ 85 SC 85.7.2	P88	L 6	# 461	This se	ection is deleted	d and replaced by comment #	94				
Dawe, Piers	IPtronics			C/ 91	SC 91.5.2.6	P95	L51	# 463			
Comment Type TR	Comment Status D			Cidecivan.	Rov	IBM	_0.				
Changing tap weights	quickly and repeatedly and tur	rning up the volu	me is not good for	Comment 1	Type T	Comment Status D					
complexity, signal inte is necessary or worthe	egrity or power consumption. I while.	have not seen a	ny analysis showing if thi	am_txr	napped<1284:	1280> contains 5 bits whereas	s 0x05 and 0x1A	contain 8 bits. Therefore,			
SuggestedRemedy				the not		y clear.					
Do the analysis.				Suggested	Remedy						
Delete "When tx_mod	e is ALERT, the transmitter eq	ualizer taps are	set to the preset state	Replac	e 0x05 by 0010	01 and 0x1A by 11010					
				Proposed F	Response	Response Status W					
Proposed Response	Response Status W			PROP	OSED ACCEP	T IN PRINCIPLE.					
PROPOSED REJECT			ree meet requiremente	[Comm	enter did not s	pecify CommentType. Set to	Т.]				
and functionality with a commenter to demons	40GBASE-CR4 and 100GBAS strate that the change in tap we	E-CR10. The or eights is not requ	us should be on a ured for ALERT function.	Given p	orevious comm variable x <i:j>,</i:j>	nents on the ambiguity of assig the assignment needs to be f	gnment of eleme urther clarified.	nts of binary array to a			
				See co	mment #150.						
<i>Cl</i> 91 Cideciyan	SC 91.5.2.6 , Roy	Р IBM	L	# 464	C/ 91 SC 91.5.2.7 Cideciyan, Roy	Р 98 IBM	L 23	# 467			
--	--	--	--	---	---	---	----------------------	-----------------------	--	--	--
<i>Comment</i> Title c "Align	<i>Type</i> ER of subclause is "Ali ment marker map	Comment Status D gnment mapping and insert ping and insertion"	ion" whereas title	<i>bucket</i> of subclause 91.5.3.7 is	Comment Type ER Comment Status D Missing blank						
Suggested Both s "Align more	dRemedy subclauses should ment marker map descriptive title "Al	have the same title, i.e., eil ping and insertion". My prefi lignment marker mapping a	ther "Alignment n erence is that bo nd insertion".	napping and insertion" or th subclauses have the	SuggestedRemedy Insert blank between " is transmitted last." and "The first bit" Proposed Response Response Status W PROPOSED ACCEPT						
Proposed PROF	Response POSED ACCEPT I	Response Status W N PRINCIPLE.			C/ 91 SC 91.5.3.3 Cideciyan, Roy	Р 101 IBM	L10	# 468			
Cl 91 Cideciyan	SC 91.5.2.7 , Roy	P98 IBM	L 1	# [465	Comment Type ER 64-bytes should not b SuggestedRemedy	Comment Status D e one word. It is not used as a	an adjective in this	bucket s sentence.			
Comment Typog Suggestee Repla	<i>Type</i> ER graphical error <i>dRemedy</i> ce "polynominal" b	Comment Status D		bucket	Proposed Response PROPOSED ACCEP See comment #475.	Response Status W					
Proposed PROF	Response POSED ACCEPT.	Response Status W			C/ 91 SC 91.5.4.2 Cideciyan, Roy	.1 <i>P</i> 105 IBM	L3	# 469			
<i>Cl</i> 91 Cideciyan	SC 91.5.2.7 , Roy	Р 98 ІВМ	L12	# 466	Comment Type ER typographical error	Comment Status D		bucket			
Comment Typoç	<i>Type</i> ER graphical error	Comment Status D		bucket	SuggestedRemedy Replace "maker" by "r	marker"					
Suggested Repla	dRemedy ce "whose the coe	fficients" by "whose coeffici	ents"		Proposed Response PROPOSED ACCEP	Response Status W T.					
Proposed PROF	Response POSED ACCEPT.	Response Status W									

Cideciyan, F	Roy	IBM		# 470	Cideciyan	, Roy	51.5.2.5	IBM		# 475
Comment T RS enc	ype TR oding is mandato	Comment Status D ory, i.e., not conditional base	d on PHY type.		Comment Heade	<i>Type</i> er bit (firs	TR st bit) of tr	Comment Status D anscoded block that contains	4 control blocl	bucker
SuggestedF Delete ' sublaye	Remedy NOTE 1-CONDI Irs RS-FEC and /	TIONAL BASED ON PHY T' AN.	PE" and omit su	perscript "1" in	Suggested Repla	dRemed ce head	y er bit (first	bit) of transcoded block by 0	ŀ.	
Proposed R	esponse	Response Status W			PROF	POSED /	ACCEPT.	Response Status W		
PROPC)SED REJECT.)GBASE-R family	y is not limited to 100GBASE	-CR4, 100GBAS	SE-KR4, and	Comm	nent is a	gainst Fig	ure 91-3.		
100GBA FEC su type."	ASE-KP4. For ex blayer. Therefore	ample, 100GBASE-LR4 and e, inclusion of the RS-FEC so	100GBASE-ER ublayer is "condit	4 do not include the RS- ional based on PHY	C/ 91 Cideciyan,	SC 9 Roy	91.5.2.8	Р 99 ІВМ	L 9	# 474
C/ 91	SC 91.5.2.5	P 95	L 21	# 471	<i>Comment</i> There	<i>Type</i> is no sc	TR rambler a	Comment Status D t Tx of RS-FEC.		bucke
Cideciyan, F	Roy	IBM			Suggested	Remed	y			
Comment T	ype TR 91-3 does not she be transcoder de	Comment Status D ow the final change of tx_xco	oded<4:0> by usi	ng bitwise XOR which is	Repla encod	ce "Onc ed,"	e the data	is scrambled and encoded, .	" by "Once the	e data is transcoded and
SuggestedE	Remedy				Proposed	Respon	se	Response Status W		
Replace that illus shown i	e sentence "Seve strate the transco n Figure 91-3."	eral examples that illustrate . Inding process without the fina	in Figure 91-3. al modification of	" by "Several examples tx_xcoded<4:0> are	See c	omment	#183.	N PRINCIPLE.		
Proposed R	esponse	Response Status W			C/ 91	SC 9	91.5.3.3	P101	L 10	# 475
PROPC	SED ACCEPT II	N PRINCIPLE.			Cideciyan,	, Roy		IBM		
See cor	nment #155.				Comment	Туре	TR	Comment Status D		All a land a land
	00.04.5.0.0		1.40	# 470	sugge size is	stion to 64 byte	s. Minimu	m packet size, I believe, is 6	4+8=72 bytes.	ve form. Minimum frame
Cidecivan	SC 91.5.2.6	P 95 IBM	L 40	# 472	Suggested	Remed	y			
Comment T	ype TR	Comment Status D		bucket	"This within	will caus the unc	e the PCS orrectable	to discard all frames 64 byte codeword."	es and larger th	hat are fully or partially
j should	run from 0 to 4				Proposed	Respon	se	Response Status W		
SuggestedF	Remedy				PROF	POSED	ACCEPT.			
Given I=	=0, j=0 10 4, and 1	x=i+4j,								
PROPC	SED ACCEPT.	Response Status W								

C/ 91 Cideciyan	SC 91.5.3.4 , Roy	Р 101 IBM	L17	# 476	C/ 91 Cideciyar	SC 91.5.3.7 n, Roy	Р 102 ІВМ	L 27	# 479	
Comment	<i>Type</i> TR is not descramble	Comment Status D d prior to transcoding at Rx.		bucke	t Commen j runs	<i>t Type</i> TR s from 0 to 4	Comment Status D		bucket	
Suggester Repla	dRemedy ace " prior to des	crambling and transcoding." b	y " prior to tr	anscoding."	Suggeste Giver	edRemedy n i=0 to 3, j=0 to 4	4, and x=i+4j, the			
Proposed PROF	Response POSED ACCEPT.	Response Status W			Proposed PRO	l Response POSED ACCEPT	Response Status W			
See c	comment #51.				C/ 91	SC 91.5.3.7	P 102	L16	# 480	
C/ 91	SC 91.5.3.5	P101	L 25	# 477	Cideciyar	n, Roy	IBM			
Cideciyan Comment	, Roy <i>Type</i> TR	IBM Comment Status D		bucke	t Commen t There 91.5.	e may be errors a 2.6 does not hav	at the RS decoder output. The e to be the same as am_x an	erefore, am_x and d am_payloads in	d am_payloads in Section n Section 91.5.3.7	
Suggester	dRemedy ace "rx_rxcoded<4	:0>" by "rx_xcoded<4:0>".			<i>Suggeste</i> In Se In Se	dRemedy ction 91.5.2.6 rep ction 91.5.3.7 rep	place am_x and am_payloads	s by am_tx and a s by am_rx and a	m_txpayloads m_rxpayloads	
Proposed PROF	Response POSED ACCEPT.	Response Status W			Proposed PRO	Response	Response Status W			
Cl 91 Cideciyan	SC 91.5.3.6 , Roy	Р 102 IBM	L9	# 478	In 91	.5.2.6, change ar	n_x to am_tx_x and am_payl	oads to am_txpa	yloads.	
Comment Encod	<i>Type</i> TR ding and scramblir	Comment Status D ng is not performed at Rx.		bucke	t The r varia	notation is change ble "x" (PCS lane	ed from the suggested remed number).	ly to clearly sepa	rate "tx" and "rx" from the	
Suggestee Repla and tr	dRemedy ace "Once the data anscoded, it shall	a is encoded and scrambled, it	shall" by "C	once the data is decoded	C/ 93B Cideciyar	SC 93B n, Roy	Р 220 IBM	L 35	# 481	
Proposed PROF	Response POSED ACCEPT	Response Status W IN PRINCIPLE.			Commen Incor	<i>t Type</i> TR rect test point in ⁻	Comment Status D Table 93B-1			
Chan	ge to:				Suggeste Repla	edRemedy ace "TP1 to TP1"	by "TP0 to TP1"			
"After block	the data has been at a time"	n transcoded, it shall be distrik	outed to multipl	e PCS lanes, one 66-bit	Proposed PRO	Proposed Response Response Status W PROPOSED ACCEPT.				
					[Note to An	e, the commenter Inex 93B.]	specified this comment to be	against Clause	93. It has been changed	

C/ 93 Dawe, Pier	SC 93.9	P 164 IPtronics	L 6	# 482	C/ 9 Daw	3 So e. Piers	C 93.8.2.1	P 162	L 29	# 485
Comment This tir	<i>Type</i> E me, the channel i	Comment Status D is normative.		la	te Corr	<i>ment Type</i> The transm receiver ha	T hitter test fixtu	Comment Status D re and receiver test fixture and with its outputs running, and	re not separate d they have to	<i>late</i> e items, because an IC's be terminated. Crosstalk
Suggested Chang	<i>Remedy</i> e "Channel chara	acteristics" to "Channel specifi	cations"			n the test f This is the l	ixture should kind of reasor	be controlled, and we probat why a "Definitions of electric od idea, so this stuff can be	bly need a spe ical parameters	c for it. s and measurement
Proposed I PROP	Response OSED REJECT.	Response Status W			Sug	gestedRem	edy	r transmitter test fixture and	rocoivor tost fi	vturo
See co	omment #434.				Pror					klure.
C/ 92A	SC 92A.4	P208	L 41	# 483		PROPOSE	D REJECT.	Response Status W		
Dawe, Pier	·s Type E	IPtronics Comment Status D		la	te	The transm dentical (a	iitter and rece nd often will r	iver test fixtures are separat ot be in practical test fixture	e items as the implementatio	y are not required to be ns).
This eo 86A.6	ditor's note is rea Recommended e	Ily useful information; by popu electrical channel, which also p	lar demand the	ere is something similar hits.	in	The comme	ent on crossta	Ik applies equally to the tran	smitter (FEXT) and receiver (NEXT)
Suggested Please Please	Remedy e turn it into endu e add a figure illu:	ring regular text or informative strating the limits of equations	NOTE. 92A-1 and 92/	\-2 .		n this area	, no specific r	ecommendations are made.	le the commer	iter nints at requirements
Proposed	Response	Response Status W								
PROP	OSED ACCEPT	IN PRINCIPLE.								
See co	omment#230 for	note.								
Also, a	dd figures illustra	ating the limits of equations 92	A-1 and 92A-2							
C/ 92A Dawe, Pier	SC 92A.8	P211 IPtronics	L 37	# 484						
Comment "MDNE specifi	<i>Type</i> E EXT_loss(f), is sp ed using the indir	Comment Status D becified using the individual NE vidual NEXT losses, it's derive	EXT losses": w d/calculated/d	<i>la</i> rong word. It's not etermined from them.	te					
Suggested Chang	Remedy e "specified usin	g" to "derived from", twice.								
Proposed I PROP	Response OSED ACCEPT	Response Status W IN PRINCIPLE.								
Chang	e "specified usin	g" to "derived from", twice. P1	18 L7, P211 L2	27,L31						

C/ 92A Dawe, Pie	SC 92A.4	P	208 Dnics	L 35	# 486		C/ 93B Dawe, Pier	SC 93B		P 220	L 10	# 487	
Comment	Туре Т	Comment Statu	s D			late	Comment	Гуре Т	Comme	nt Status D			late
This c	an be simplifi	ed, because ILPCBmax	k is never u	sed except whe	n it is halved.		This di	don't know if peop t. or both ways	le will				
Suggested Redef is one to is one Chang for the to of the four tin Take t	IRemedy ine ILPCBma half of the ma half of the ma transmitter a transmitter or nes. he x 0.5 out c	x to be half what it is. (aximum insertion loss aximum insertion loss nd receiver PCB receiver PCB	Change				Suggested Add "T precise a defin Proposed I PROPO This di test po	Remedy his annex do ly at the inte ed electrical Response DSED REJE agram was t nts. As a res	bound motification perface between t path in a compl <i>Respons</i> CT. pased on goerge sult, Table 93B-	ie whether the te the connector and liance board met e Status W en_02a_0712 wh 1 explicitly define	est points TP1, TF d the printed circu hodology." ich was explicit a es the position of	22, TP3 and TP4 a uit board, or are of bout the position of the various test po	fset by of the oints
Proposed	Response	Response Status	s W				(conne	ctor/board ir	nterface) and the	erefore the propo	sed text is in con	flict with the table.	
PROP	OSED ACCE	PT IN PRINCIPLE.					[Presu methdo	mably a set o logy.]	of TPXa test poi	nts could be defi	ned for a complia	ince-board based	
The m differe Equati	aximum inser ntial controlle ion (92A-1). N	tion loss allocation for d impedance printed ci lote that the maximum	the transmi rcuit boards insertion los	tter or receiver s is determined ss allocation for uit boards is 6.8	using the transmitter of 1 dB at 12 9806	or GHz	<i>Cl</i> 93 Dawe, Pier	SC 93.8. :	3	P163 IPtronics	L 47	# 488	
The m imped TP5 g 92.8.3 Editor	aximum inser ance printed iven in .4 and an ass license to ap	tion loss allocation for circuit boards is consist umed mated connecto bly new definition of Ilp	the transmittent with the r loss of 1.6 cbmax.	tter or receiver e insertion loss 6 69 dB.	differential contro TP0 to TP2 or TF	olled 23 to	Comment T This sa betwee Suggested Move t 92.10 (are AC	Type T ys that spect n TP0 and T Remedy the subclaus Cable assemt coupled." to	Comme cifications are de TP5. That's in th e to within 93.9 hbly characterist o e.g. "The cable	nt Status D Ifined as if the Due channel, not the Channel charact ics. In 92.8.4.5, e assembly conta	C-blocking capac he receiver. eristics. Similarly change "The 100 ains AC coupling of	itor is implemented of for 92.8.4.5, to wight GBASE-CR4 rece capacitors on all 1	<i>late</i> d ithin ivers 6 signa
							line." Proposed F PROPO	Response DSED ACCE	Respons EPT IN PRINCIF	e Status W PLE.			

Move 93.8.3 to a subclause under 93.9.

However, the proposed change to 92.8.4.5 does not appear to be an improvement over the current text when considered in the context of the complete paragraph.

However, as it is not a receiver specification, it should be moved to 92.10 as suggested (or perhaps 92.11 would be better).

CI 93	SC 93.1	P149	L12	# 489		C/ 93	SC 9	3.8.1		P156	L 44	# 490
Dawe, Pie	rs	IPtronics				Dawe, Pier	S			IPtronics		
Comment	Type TR	Comment Status D			late	Comment	Гуре	TR	Comment S	tatus D		late
Out-of	-scope false request	uirements.	AA or CALII			Make t	he main	Tx and	Rx tables norma	ative, as is no	ormal for a PMD	clause.
A CAL	JI above the Clau	ise 91 PCS/FEC is quite out	of sight of the Pl	MD.		Suggested	Remedy	/				
The ta	ble says that the	Clause 91 PCS/FEC is requ	red.	a 10 Jana DMA bat		Chang	e aitter ch	aractorie	tice measured a	at TPO are su	mmarized in Tal	ble 03-1
this P	MD and the Claus	se 91 PCS/FEC.			ween	to		aracteris				bic 55 4.
lf you	want something i	normative about PMAs, go to	Clause 83.			Transn	hitter cha	aracteris	tics shall meet	specifications	s summarized in	Table 93-4 at TP0.
Suggestee	lRemedy					Similar	19 101 KX	(, 93.6.2.				
Delete	these three "sha	all"s.				Proposed i	respons		Response Si	tatus w		
Simpli	fv: replace lines '	it's irrelevant.				FROF	JSED K	EJECT.				
NOTE	While 4-lane Pl	MA(s) may be used to conne	ct the PMD to th	e RS-FEC, a 10-lar	ne	There	s no bas	sis for the	e assertion that	it is normal f	or a PMD clause	e to specify such tables as
PMA s	should not be use	ed below the RS-FEC.	issue			norma	ive. Plea	ase refer	r to Clauses 54,	70, 71, 72, 8	34, and 85 where	e this is not the case.
Proposed	Response	Response Status W				The tal	oles sur	nmarize t	the requirement	s as an aid to	o the reader. The	e specific requirements,
PROF	OSED ACCEPT	IN PRINCIPLE.				subcla	nay exte use refe	end beyd rences.	ond numerical li	mits presente	ed in the table, a	re detailed in the
In the	course of review	ing this comment, it was disc	overed that the	recommendations i	in	C/ 93	SC 9	3.8.1		P157	L17	# 491
damb	rosia_02_0712 (a	dopted via Draft 1.0 commer	nts #294 and #2	96) were not		Dawe, Pier	s		l	IPtronics		
Implei	nemed in Drait 1					Comment	Гуре	TR	Comment S	tatus D		late
Claus	e 83, implement s	slide 7 of dambrosia_02_071	2.			Need s	pecs for	r commo	n-mode output	return loss ai	nd output mode	conversion loss (from
The n	ormative requirer	nents that are beyond the sco	ope of Clause 9 [,]	1 should be remove	ed, but	commo	on to diff	erential)				
the inf	ormation could re	emain as a service to the rea	der (being a res	tatement of items in	1	Suggested	Remedy	/				
Claus	es 83 and 91). Tr RS-FFC require	his could be embodied by a n s a 4-lane PMA and hence C	ote to Table 93-	1, associated with a instantiated betwee	83A- en the	Add sp	ecs for a	common	-mode output re	eturn loss and	d output mode c	onversion loss (from
PCS a	and RS-FEC.					For exa TP2 sp	ample, u ecs to T	se the Ir	nfiniBand FDR s cs.	specs, scaled	I for signalling ra	te and converted from
Make	comparable adju	stments of Clause 92 and Clause	ause 94.			Proposed I	Respons	se	Response Si	tatus W		
						PROP	OSED A	CCEPT	IN PRINCIPLE.			
						See co	mment	#171 wh	ich addresses o	lifferential an	d common-mod	e return loss.
						The ac	dition of ent.	commo	n-mode to differ	rential return	loss is discusse	d in the context of that

C/ 93 SC 93.8.1.8 P161	L 38 # 493
Cr 93 SC 93.8.1.8 P161 Dawe, Piers IPtronics Comment Type TR Comment Status D Use clearer standards-like language. Parameter definitions should reference the transmitter sp SuggestedRemedy Change Even-odd jitter is characterized using the procedure definitions be less than or equal to 0.035 UI regardless of the transmition Even-odd jitter is defined by the procedure in 92.8.3.8. E equal to the limit given in Table 93-4 / the appropriate transmitie equalization setting. and so on. Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. For brevity, delete "characterized using the procedure" i.e. Regarding whether the table or text should be normative; C////Regarding whether the table or text should be normative; C/ 83A SC 83A.3.4.7 P 203 Dawe, Piers IPtronics Comment Type TR Comment Status D "The global energy detect function is mandatory for EEE then only if this CAUI supports slow EEE ("for" is ambiguing it possible for a CAUI that doesn't support slow-mode lines it? SuggestedRemedy Change to The global energy detect function is mandatory for a PM slow-mode EEE capability. Proposed Response Response Status W <td><i>L</i> 38 # [493 <i>late</i> pecs in the table not repeat them. ned in 92.8.3.8. Even-odd jitter shall mit equalization setting. Even-odd jitter shall be less than or ansmitter table regardless of the e. "Even-odd jitter is defined in" a, refer to #490. <i>L</i> 32 # [494 <i>late EEE option</i> <i>late EEE option</i> <i>late EEE option</i> <i>late Composed</i> <i>late Sec option</i> <i>late Composed</i> <i>late Sec option</i> <i>late Composed</i> <i>late Sec option</i> <i>late Composed</i> <i>late Sec option</i> <i>late Sec option</i> <i>late Composed</i> <i>late Sec option</i> <i>late Sec optio</i></td>	<i>L</i> 38 # [493 <i>late</i> pecs in the table not repeat them. ned in 92.8.3.8. Even-odd jitter shall mit equalization setting. Even-odd jitter shall be less than or ansmitter table regardless of the e. "Even-odd jitter is defined in" a, refer to #490. <i>L</i> 32 # [494 <i>late EEE option</i> <i>late EEE option</i> <i>late EEE option</i> <i>late Composed</i> <i>late Sec option</i> <i>late Composed</i> <i>late Sec option</i> <i>late Composed</i> <i>late Sec option</i> <i>late Composed</i> <i>late Sec option</i> <i>late Sec option</i> <i>late Composed</i> <i>late Sec option</i> <i>late Sec optio</i>
	Cl 93 SC 93.8.1.8 P161 Dawe, Piers IPtronics Comment Type TR Comment Status D Use clearer standards-like language. Parameter definitions should reference the transmitter sp SuggestedRemedy Change Even-odd jitter is characterized using the procedure defi be less than or equal to 0.035 UI regardless of the trans to be less than or equal to 0.035 UI regardless of the trans to be less than or equal to 0.035 UI regardless of the trans to be less than or equal to 0.035 UI regardless of the trans to be less than or equal to 0.035 UI regardless of the trans to be less than or equal to 0.035 UI regardless of the trans to be less than or equal to 0.035 UI regardless of the trans to be less than or equal to 0.035 UI regardless of the trans to be less than or equal to 0.035 UI regardless of the trans and so on. Even-odd jitter is defined by the procedure in 92.8.3.8. E equal to the limit given in Table 93-4 / the appropriate trastransmit equalization setting. and so on. Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. For brevity, delete "characterized using the procedure" in Regarding whether the table or text should be normative C/ 83A SC 83A.3.4.7 P203 Dawe, Piers <td< td=""></td<>

Cl 91 SC 91.5.4.2.1 P 104 L 16 # 495 Dawe, Piers IPtronics	C/ 81 SC 81.3a.2 P 60 L 10 # 497 Dawe, Piers IPtronics
Comment Type E Comment Status D late I can't see the difference between align_status (true when all lanes are synchronized and aligned) and alignment_valid. I think they can be the same.	Comment Type E Comment Status D late bucket Should this be CARRIER_SENSE.indication or PLS_CARRIER.indication or what?
SuggestedRemedy Combine them into one variable, or if not, add text to explain why there are two/what the difference is. Proposed Response Response Status W PROPOSED REJECT.	SuggestedRemedy ? Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. PLS_CARRIER_indication(CARRIER_STATUS)
This portion of the state diagram (and corresponding variables) is similar to what is used in th PCS deskew state diagram (refer to 82-12). There is no clear incentive to deviate from this familiar form.	Cl 91 SC 91.5.2.8 P 99 L 9 # 498 Dawe, Piers IPtronics
Cl 92 SC 92.8.4.2.4 P 132 L 46 # 496 Dawe, Piers IPtronics Comment Type E Comment Status D Iate "The rise and fall times of the pattern generator, as defined in 72.7.1.7": don't make unecessary reference to 72 when there is a suitable reference in a clause in this project. On a quick review, it looks like the two definitions are equivalent, although 93.8.1.5 should have an observation bandwidth (to be discussed in a pending comment).	This says "Once the data is scrambled and encoded" yet I can't see any mention of scrambling on the Tx side, nor de-scrambling the 58-bit scrambler in Clause 82. On the receive side, I can see that three bits in 257 are sometimes descrambled and three are scrambled. Also that the received first nibble is scrambled (where were they scrambled?). In 91.5.3.6 receive block distribution, "Once the data is encoded and scrambled" - I wouldn't say the data is scrambled. First, I would not call it data because it should consist of data blocks and also control blocks. Second, if only three block type bits in 66? are scrambled, it would be misleading to imply the whole stream is scrambled.
SuggestedRemedy Change to "The transition times of the pattern generator with no equalization, as defined in 93.8.1.5". Also change "rise and fall times" in next sentence to "transition times". Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.	SuggestedRemedy Does the Tx process scramble or not? Make the next draft clearer. Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.
Change: The rise and fall times of the pattern generator, as defined in 72.7.1.7 To: The transition times of the pattern generator, as defined in 72.7.1.7 Change:If the rise and fall times of the pattern generator, To: If the transition times of the pattern generator,	Scrambling/descrambling was removed from the RS-FEC sublayer. The paragraph must be updated to reflect this. See comment #183.
Committee review to consider changing reference from 72.7.1.7 to 93.8.1.5.	

C/ 81	SC	81.3.4	P 58	L32	# 499		C/ 94	SC	94.2.2		P 146	L18	# 10048
Dawe, Piers	6		IPtronics				Anslow, Pet	Э		Ci	ena		
Comment T	ype	т	Comment Status D			late	Comment T	/pe	Е	Comment Sta	tus D		TX encoding
If when come o transmi Or will s I looked disconr made c	a cab ut of L tting F some I d in the nected lear?	le is disconr PI, consum RF (pun inter PHY types g base spec or the far tr	nected, a PHY sublayer inc e more power, and blast o nded), "continuously". For jive up after a while and go but could not see if a norm ansmitter is shut down cou	licates Local Fa ut EMI (if a copp ever? b back to AN DM hal loss of signa ints as "local fac	uult, this forces the PH per PHY) while ME? Il event because a cat ult" or not. Where is th	Y to ble is his	In Claus these an In draft T() for T G() for C P() for F are all e	e 94 rays i D1.0: ermin Grey-c recoc asy to	there are is to choose nation bloc coded sym ded symbo o rememb	several arrays of se a letter that ma cks hbols ols er.	objects der ikes it easy	noted by single I y to remember w	etters. A useful feature of hich array is which.
Suggested	Remed	dy					C() for F	EC fr	ame bits				
It looks	like w	e may want	coding for "low power rem	ote fault".			F() for o	verhe	ad frame	bits			
Proposed R PROPC	Respor	nse REJECT.	Response Status W		Q() for PAM4 symbols are not very memorable - F() in particular would much more naturally stand for FEC frame For the overhead frame. Q would be a possibility, but this could be confused with a zero.								
The loc	al and	l remote faul	It behavior is unchanged fr	om the current	standard. Since this sl	hould	SuggestedF	emec	dy				
be an u RF) cor conditio	nusua nsciou on and	al circumstar s system im I minimize w	nce it is not useful to optim plementer might take notic asted energy (or RF pollut	ize EEE behavi e of internal ala ion) accordingly	or for this. An energy (Irms following an error	(or	Change F() for F V() for c M() for f	the le EC fr Verhe PAM4	etters to: ame bits ead frame	bits			
Cl 80 Lusted, Ker	SC nt	80.2.2	P 46 Intel	L 1	# 10022		Proposed R	espor	ise	Response Stat	tus W		
Comment T	ype	т	Comment Status D		bu	ıcket	FROFC	SLD	ACCEPT.				
Spec re	feren	ces Clause 8	33 as the only PMA for a 1	00GBASE-R de	vice.		[non-co	ntrove	ersial]				
see P80	02.3bł	n D3.1, secte	6, page 62, line 53				[Draft 1.	1, 94.	.2.2, page	173, line 10]			
SuggestedF	Remed	dy					C/ 94	SC	94.3.11.4		P162	L 22	# 10057
Change	e endir	ng of first se	ntence of first paragraph fi	om "and the PN	A specification define	ed in	Mellitz, Rich	ard		Int	tel Corpora	ition	
Clause	83." to	o be "and the	e PMA specification define	d in Clause 83	or Clause 94."		Comment T	/pe	TR	Comment Sta	tus D		TX return loss
Proposed R	lespor	ACCEPT IN	Response Status W				Resolve	Retu	ırn loss TE	3D			
PROPU	JSED	ACCEPTIN	PRINCIPLE.				SuggestedF	emec	dy				
Change	e to "a	nd the PMA	specifications defined in C	lause 83 and C	lause 94"		Tie retu	n los	s to chanr	nel specification p	roposal pre	esentation by Me	ellitz, Moore, Dudek, Li, et
Change	e page	e & line refer	ences for D1.1				al suppo by Moor At time	e, Ra of this	with a pres in, Mellitz, s commen	sentation for why et al. ts file names and	requestor	have not been fi	better and how it works, nalized.
							Proposed R	espor	nse	Response Stat	tus W		
							PROPC	SED	ACCEPT	IN PRINCIPLE.			
							[Draft 1.	1, 94.	.3.11.4, pa	age 189, line 22]			
									presentati	ions are expected	to address	s this comment.	

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 Z/withdrawn SORT ORDER: Comment ID

Comment ID 10057

Page 117 of 130 9/24/2012 2:42:07 AM

Comment Type TR Comment Status D Since FEC changes the minimum BER applied broad band noise should be constrained with an appropriate crest factor SuggestedRemedy Add entry in table after Applied RMS noise for "Applied Crest factor" are the like. Suggested Remedy Add entry in table after Applied RMS noise for "Applied Crest factor" are the like. Suggested Remedy Add entry in table after Applied RMS noise for "Applied Crest factor" are the like. Suggested Remedy Add entry in table after Applied RMS noise for "Applied Crest factor" are the like. Suggested Remedy Add entry in table after Applied RMS noise for "Applied Crest factor" are the like. Suggested value for is erfcinv(2*minimum BER)*sert(2). This could go into Annex 69A. Proposed Response Response D this comment assumes that the basis of the interference tolerance test is changed to Annex 69A (see comment #68). The crest factor of the broadband noise is specification is inappropriate. The crest factor of the broadband noise is specification is inappropriate. Second Response Creation Second Response Patter Create Se	C/ 93 SC 93.8.2.2 P137 L19 # 10061 Mellitz, Richard Intel Corporation	C/ 94 SC 94.3.12.3 P 168 L 43 # 10062 Mellitz, Richard Intel Corporation Intel Corporation Intel Corporation Intel Corporation							
Since FEC Changes the minimum BER applied broad band noise should be constrained with an appropriate crest factor Suggested/Renedy Add enry in table after Applied RMS noise for "Applied Crest factor" are the like. Suggested/ value for is etrion/2 minimum BER'sqt(2). This could go into Annex 69A. Proposed Response Response Status W PROPOSED REJECT. The reset factor of the broadband noise is specified in 69A.2.3 to be no less than 5. The commenter does not make it clear why the existing crest factor specification is inappropriate. In Table 94-7. Changes HM MS noise for "Applied Crest factor" are the like. Suggested/ value for is etrion/2 minimum BER'sqt(2). This could go into Annex 69A. Proposed Response Response Status W Response Status W <t< td=""><td>Comment Type TR Comment Status D</td><td>Comment Type TR Comment Status D RX interference tolerance</td></t<>	Comment Type TR Comment Status D	Comment Type TR Comment Status D RX interference tolerance							
SuggestedRemedy Add entry in table after Applied RMS noise for "Applied Crest factor" are the like. Suggested restroited reinforminum EER/sqrt(2). This could go into Annex 69A. SuggestedRemedy Proposed Response Response Status W PROPOSED REJECT. The rest factor of the broadband noise is specified in 69A.2.3 to be no less than 5. Response to this comment assumes that the basis of the interference tolerance test is inappropriate. SuggestedRemedy The crest factor of the broadband noise is specification is inappropriate. The rest factor of the broadband noise is specification is inappropriate. SuggestedRemedy V Response Status W PROPOSED ACCEPT IN PRINCIPLE. [Draft 1.1, 94.3.12.3, page 195, line 51] Similar to Clause 93 comment #10061. In Table 94-7. Chause 93 comment #10061. In Table 94-7. Chause Status W PROPOSED ACCEPT IN PRINCIPLE. [Draft 1.1, 94.3.12.3, page 195, line 51] Similar to Clause 93 comment #10061. In table 94-7. Chause 93 comment #10061. In Table 94-7. Chause 50 comment #10061. In Table 94-7. Chause Status W Response Casses Cass	Since FEC changes the minimum BER applied broad band noise should be constrained with an appropriate crest factor	Since FEC changes the minimum BER applied broad band noise should be constrained with an appropriate crest factor							
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Proposed Response Response Status W PROPOSED REJECT. The response to this comment assumes that the basis of the interference tolerance test is changed to Annex 694, (see comment #80). The crest factor of the broadband noise is specified in 69A.2.3 to be no less than 5. The commenter does not make it clear why the existing crest factor specification is inappropriate. Image last row as follows: In parameter cell replace with the following three lines: Applied RMS broadband noise Crest factor The commenter does not make it clear why the existing crest factor specification is inappropriate. View View Clear With the following three lines: Applied RMS broadband. TBD/TBD/TMV	Add entry in table after Applied RMS noise for "Applied Crest factor" are the like. Suggested value for is erfcinv(2*minimum BER)*sqrt(2). This could go into Annex 69A.	Add entry in table after Applied RMS noise for "Applied Crest factor" are the like. Suggested value for is erfcinv(2*minimum BER)*sqrt(2). This could go into Annex 69A.							
PROPOSED REJECT. PROPOSED ACCEPT IN PRINCIPLE. The response to this comment assumes that the basis of the interference tolerance test is changed to Annex 69A (see comment #88). [Draft 1.1, 94.3.12.3, page 195, line 51] The crest factor of the broadband noise is specified in 69A.2.3 to be no less than 5. In Table 94-7. The commenter does not make it clear why the existing crest factor specification is inappropriate. In Table 94-7. Change last row as follows: In praheet cell replace with the following three lines: Applied RMS broadband noise level. If the comment replace with the following three lines:	Proposed Response Response Status W	Proposed Response Response Status W							
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The commenter does not make it clear why the existing crest factor specification is inappropriate. The commenter cell replace with the following three lines: Applied RMS broadband noise level crest factor In the Test 1/Test 2/Units columns replace with the following three lines: Applied AMS broadband noise level crest factor In the Test 1/Test 2/Units columns replace with the following three lines: Applied AMS broadband noise level crest factor In the Test 1/Test 2/Units columns replace with the following three lines: Applied AMS broadbanks- TBD/TBD/mV TBD/TBD/MV TBD/TBD/Ablanks- CI 93 SC 93.8.2.1 P136 L22 # [10063] Mellitz, Richard Intel Corporation Comment Type TR Comment Status D Resolve Return loss TBD SuggestedRemedy Tie return loss to channel specification proposal presentation by Mellitz, Moore, Dudek, Li, et al supported with a presentation for why the time domain method is better and how it works, by Moore, Ran, Mellitz, et al. At time of this comments file names and requestor have not been finalized. Proposed Response Status W PROPOSED ACCEPT IN PRINCIPLE. [93.8.2.2, Page 162, Line 52 in Draft 1.1.] Refer to comment #86.	The crest factor of the broadband noise is specified in 69A.2.3 to be no less than 5.	In Table 04.7							
Cl 93 SC 93.8.2.1 P136 L 22 # 10063 Mellitz, Richard Intel Corporation Comment Type TR Comment Status D Resolve Return loss TBD SuggestedRemedy Tie return loss to channel specification proposal presentation by Mellitz, Moore, Dudek, Li, et al supported with a presentation for why the time domain method is better and how it works, by Moore, Ran, Mellitz, et al. At time of this comments file names and requestor have not been finalized. Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. [93.8.2.2, Page 162, Line 52 in Draft 1.1.] Refer to comment #86. Refer to comment #86.	The commenter does not make it clear why the existing crest factor specification is inappropriate.	Change last row as follows: In parameter cell replace with the following three lines: Applied RMS broadband noise level crest factor In the Test 1/Test 2/Units columns replace with the following three lines: <blank>/<blank> TBD/TBD/mV TBD/TBD/<blank></blank></blank></blank>							
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Comment Type TR Comment Status D Resolve Return loss TBD Resolve Return loss TBD SuggestedRemedy Tie return loss to channel specification proposal presentation by Mellitz, Moore, Dudek, Li, et al supported with a presentation for why the time domain method is better and how it works, by Moore, Ran, Mellitz, et al. At time of this comments file names and requestor have not been finalized. Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. [93.8.2.2, Page 162, Line 52 in Draft 1.1.] Refer to comment #86.		Mellitz, Richard Intel Corporation							
Resolve Return loss TBD SuggestedRemedy Tie return loss to channel specification proposal presentation by Mellitz, Moore, Dudek, Li, et al supported with a presentation for why the time domain method is better and how it works, by Moore, Ran, Mellitz, et al. At time of this comments file names and requestor have not been finalized. Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. [93.8.2.2, Page 162, Line 52 in Draft 1.1.] Refer to comment #86.		Comment Type TR Comment Status D							
SuggestedRemedy Tie return loss to channel specification proposal presentation by Mellitz, Moore, Dudek, Li, et al supported with a presentation for why the time domain method is better and how it works, by Moore, Ran, Mellitz, et al. At time of this comments file names and requestor have not been finalized. Proposed Response Response Status PROPOSED ACCEPT IN PRINCIPLE. [93.8.2.2, Page 162, Line 52 in Draft 1.1.] Refer to comment #86.		Resolve Return loss TBD							
Tie return loss to channel specification proposal presentation by Mellitz, Moore, Dudek, Li, et al supported with a presentation for why the time domain method is better and how it works, by Moore, Ran, Mellitz, et al. At time of this comments file names and requestor have not been finalized. <i>Proposed Response</i> Response Status W PROPOSED ACCEPT IN PRINCIPLE. [93.8.2.2, Page 162, Line 52 in Draft 1.1.] Refer to comment #86.		SuggestedRemedy							
Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. [93.8.2.2, Page 162, Line 52 in Draft 1.1.] Refer to comment #86.		Tie return loss to channel specification proposal presentation by Mellitz, Moore, Dudek, Li, al supported with a presentation for why the time domain method is better and how it works by Moore, Ran, Mellitz, et al. At time of this comments file names and requestor have not been finalized.							
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[93.8.2.2, Page 162, Line 52 in Draft 1.1.] Refer to comment #86.		PROPOSED ACCEPT IN PRINCIPLE. [93.8.2.2, Page 162, Line 52 in Draft 1.1.]							
Refer to comment #86.									
		Refer to comment #86.							

C/ 94 Mollitz Di	SC 94.3.12.2	P167	L 52	# 10064	C/ 93	SC 93.8.2.2	P 137	L 3	# 10078		
			on		Noore, Cr			lologies			
Resol	<i>ve</i> Return loss TBD	Comment Status D		RX return loss	table	93-7 is technicall	v imcomplete: full of TBD's				
Suggester Tie re al sup by Mo At tim Proposed PROF	dRemedy turn loss to channel ported with a prese ore, Ran, Mellitz, et e of this comments Response POSED ACCEPT IN 1.1, 94.3.12.2, page	specification proposal pres ntation for why the time dor al. file names and requestor ha <i>Response Status</i> W PRINCIPLE. e 195, line 8]	eentation by Mel nain method is t ave not been fin	litz, Moore, Dudek, Li, et better and how it works, alized.	SuggestedRemedy replace TBD's with values from moore_02A_0312.pdf page 30. If we wish to use a_n value in the same way as 92.10.2 the numbers from moore_02A_0312.pdf page 30 which are expressed in Napier and Hz will have to be converted to dB and GHz. Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. Pending discussion by the Task Force and a measurement of the consensus to make the proposed change.						
One o	r more presentation	s are expected to address	topic.		May b	e overtaken by #	258.				
CI 93	SC 93.8.1.3	P132	L 22	# 10065	C/ 94	SC 94.2.2.4	P147	L 40	# 10080		
Mellitz, Ri	chard	Intel Corporati	on		Moore, Cl	narles	Avago Techn	ologies			
Comment	Type TR	Comment Status D			Comment	Туре Т	Comment Status D		TX encoding		
Resol Suggester Tie re al sup	ve Return loss TBD dRemedy turn loss to channel ported with a prese	specification proposal pres	entation by Mel nain method is t	litz, Moore, Dudek, Li, et better and how it works,	real benefit in return. If a ML receiver is used it will allow us to correct a single bit error in a 4 bit block. Such errors are not likely to be what gets past FEC. Most likely multibit errors, which the termination block is less likely to correct, will be what cause FEC failures. Also if the receiver does not use ML, there is no value to the termination bits.						
by Mo At tim	ore, Ran, Mellitz, et e of this comments	al. file names and requestor h	ave not been fin	alized	Suggeste	dRemedy					
Proposed	Response	Response Status W			Remo line ra	ove termination bi ate.	ts and either use the reduced	d overhead to st	rengthen FEC or reduce		
PROF	POSED ACCEPT IN	PRINCIPLE.			Proposed	Response	Response Status W				
[Subc	l 93.1.4, Page 158,	Line 37 in Draft 1.0.]			PROF	POSED REJECT.					
See c	omment #171.				[Draft	1.1, 94.2.2.4, pa	ge 174, line 40]				
					The te brown to out dabiri not lir bits e	ermination bits ha 01_0312 and b weigh the benefit _01_0911, partha nited to MLSD as nable a wide rang	we been included in this draf rown_01_0512. The benefits of increasing the FEC steng asarthy_01_0911, and dabiri_ explained in brown_01_031 ge of efficient implementation	t as a result of th of the terminatic th or reducing th _01_1111. The u 2 and dabiri_01b s of enhanced p	he consensus presentation on bits have been shown he line rate in utility of termination bits is p_0112. The termination performance receivers.		
					One	or more new pres	entations are expected to add	dress this comm	nent.		

C/ 93 SC 93.8.1.3	B P132	L21	# 10085	C/ 93	SC 93.8.2.2	P13	6 L 42	# 10088		
Moore, Charles	Avago Techn	ologies		Moore, Charles Avago Technologies						
Comment Type TR	Comment Status D			Comment T	Type TR	Comment Status	D			
Tx output return loss	is TBD, we need values for eq	uations (93-1) a	nd (93-2)	Receiv	er used in clau	se 93 is a package PH	Y, where clause 85 rec	eiver is defined at a		
SuggestedRemedy				bulkhea	ad connector.	Using procedure define	d in 85.8.4.2 in not app	propriate, use annex 69A		
DifferentialReturnLos	s(f) =			Suggested	Remedy					
10 x log10((0.026 +	(f/32)^2) / (1 + f/32)^2)) dB, 0.0	95 <f<20 (93-1)<="" td=""><td></td><td>change "Receiv</td><td>e: ver interference</td><td>e tolerance is characteri</td><td>ized using the procedu</td><td>re defined in 85.8.4.2"</td></f<20>		change "Receiv	e: ver interference	e tolerance is characteri	ized using the procedu	re defined in 85.8.4.2"		
CommonModeReturr 6 dB, 0.05 <f<20 (93-<="" td=""><td>nLoss(f) = 2)</td><td></td><td></td><td>to: "Receiv Change</td><td>ver interference</td><td>e tolerance is characteri</td><td>ized using the procedu</td><td>re defined in Annex 69A."</td></f<20>	nLoss(f) = 2)			to: "Receiv Change	ver interference	e tolerance is characteri	ized using the procedu	re defined in Annex 69A."		
f in GHz				~mTC	and bTC or a0,	, a1, a2, and a4.				
Proposed Response	Response Status W			Delete	reference to ch	nannel noise which is no	ot defined.			
PROPOSED ACCEP	T IN PRINCIPLE.			Proposed F	Response	Response Status	w			
				PROPO	OSED ACCEPT	T IN PRINCIPLE.				
[Subcl 93.1.4, Page 1	58, Line 37 in Draft 1.0.]			This co	omment may be	e overtaken by #258.				
See comment #171.					,,					
C/ 93 SC 93.8.2.	P136	L 21	# 10086	The pa Annex	rameters listed 69A or 85.8.4.2	I in the table are not an 2. However, Annex 69A	exact fit to the test pro	cedure described in either ser fit.		
Moore, Charles	Avago Techn	ologies		-						
Comment Type TR	Comment Status D	Ū		Change	e the reference	e to Annex 69A as propo	osed in the suggested	remedy and implement the		
Rx output return loss	is TBD, we need values for eq	uations (93-3) a	nd (93-4)	10110 Wil	ig onunges.					
SuggestedRemedy				1. Neith from Ta	her "Channel n able 93-7 as su	oise" nor "TX-RX re-ref Iggested.	ection noise are define	ed terms so delete this row		
use: DifferentialReturnLos 10 x log10((0.026 +	s(f) = (f/32)^2) / (1 + (f/32)^2)) dB, 0.	05 <f<20 (93-3)<="" td=""><td></td><td>2. Use in 69A. an exc</td><td>the test channe .2.2. This may b eption in 93.8.2</td><td>el calibration methodolo be accomplished by ado 2.2 (favoring the latter).</td><td>bgy from 85.8.4.2.3 in p ding a new subclause f</td><td>blace of what is described to Annex 69A or defining</td></f<20>		2. Use in 69A. an exc	the test channe .2.2. This may b eption in 93.8.2	el calibration methodolo be accomplished by ado 2.2 (favoring the latter).	bgy from 85.8.4.2.3 in p ding a new subclause f	blace of what is described to Annex 69A or defining		
CommonModeReturr 6 dB, 0.05 <f<20 (93-<="" td=""><td>nLoss(f) = 4)</td><td></td><td></td><td>3. The defined</td><td>"channel insert d or the parame</td><td>tion loss at 12.89 GHz" eter should be deleted.</td><td>is not used in 85.8.4.2</td><td>.3 and thus its role must b</td></f<20>	nLoss(f) = 4)			3. The defined	"channel insert d or the parame	tion loss at 12.89 GHz" eter should be deleted.	is not used in 85.8.4.2	.3 and thus its role must b		
f in GHz										
Proposed Response	Response Status W									
PROPOSED ACCEP	T IN PRINCIPLE.									
[93.8.2.2, Page 162,	Line 52 in Draft 1.1.]									
See comment #86.										

C/ 93 SC 93.7.12 P130 L33	# 10097	C/ 94	SC 94.4		P169	L1	# 10105
Slavick, Jeff Avago Technologies		Moore, Ch	narles		Avago Techn	ologies	
Comment Type TR Comment Status D		Comment	Туре Т	Commer	nt Status D		channel parameters
Clause 72 allows for multiple tap coefficient change requests to oc update for each tap is done independent of each other. There are	cur at the same time. The variables that combine the	The s usable	pecifications give	en are probab	bly insuficient to	give high confide	ence that a cahnnel will be
current overall setting of the transmitter and are used by each TAP	when evaluating if it's	Suggeste	dRemedy				
transmitter to go beyond it's operating range, there is no clear defir done. You can for example service one or two of the requests bec	hition of what should be ause it doesn't cause you	use m define	nethod defined is ed in moore_01_0	presentation 0311.pdf and	which will be ma moore_01_0312	ade at July meet 2.pdf	ting. Or use method
to go out of bounds, or you can deny all.		Proposed	Response	Response	e Status W		
SuggestedRemedy		PROF	POSED ACCEPT	IN PRINCIP	LE.		
Add the following text to 93.7.12 and 92.7.12 to the end of the first	paragraph.	[Draft	1.1, 94.4, page	196, line 26]			
Each lane shall only request an adjustment to one Coefficient at a receiving a response for that request before sending another reque	time and shall wait until est.	In Dra	aft 1.1, the chann	el is specified	d the channel op	erating margin (COM) specified in 94.4.1.
Proposed Response Response Status W		C/ 94	SC 94.3.1 T	able 94-4	P160	L 8	# 10107
PROPOSED REJECT.		Moore, Ch	narles		Avago Techn	ologies	
[Changed Subcl from 7.12 to 93.7.12 for more consistent sorting. F 1.1.]	age 156, Line 25 in Draft	<i>Comment</i> Table	<i>Type</i> TR 94-4 contains m	<i>Commer</i> any TBDs ma	nt Status D aking it technical	ly incomplete.	TX signal
It is agreed that Clause 72 is unclear on how the status report field parallel coefficient update results in a violation of the peak or stead	s should be set when a ly state voltage constraints	Suggestee Use v	dRemedy alues from moor	e_02a_0312.	pdf page 18.		
That said, while Clause 72 allows parallel coefficient update reques	sts, it does not require it.	Proposed PROF	Response	Response	∋ <i>Status</i> ₩ LE.		
The implication is that an adaptation algorithm that cannot deal wit corresponding to constraint violations with parallel coefficient upda coefficient updates serially.	h ambiguity in status report tes may send individual	[Draft	1.1, 94.3.1, page	e 187, line 24	-41]		
		One c	or more presenta	tions are expe	ected to address	this comment.	
Conversely, an adaptation algorithm that is insensitive to this ambi updates in parallel if it wishes.	guity may send coefficient	C/ 94	SC 94.3.11.4	4	P162	L 22	# 10108
Therefore, the initiator of coefficient updates has the ability to choo	use whether to send	Moore, Ch	narles		Avago Techn	ologies	
coefficient updates serially or in parallel and therefore there is no a standard. It is an implementation consideration.	mbiguity imposed by the	<i>Comment</i> equat	<i>Type</i> TR ion 94-3 is TBD,	Comment this is technic	nt Status D cally incomplete		TX return loss
The commenter does not provide justification constrain the implem proposed in the suggested remedy.	entation in the manner	Suggestee use e	<i>dRemedy</i> quation given in	moore_02a_()312.pdf page 20)	
		Proposed PROF	Response	Response	e Status W LE.		
		[Draft	1.1, 94.3.11.4, p	age 189, line	22]		
		One c	or more presenta	tions are expe	ected to address	this comment.	

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 Z/withdrawn SORT ORDER: Comment ID

Comment ID 10108

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C/ 94 SC 94.3.12.2 Moore, Charles	P 167 Avago Techn	L 52 ologies	# 10109	C/ 92 SC Dawe, Piers	92.8	P 94 IPtronics	L1	# 10140
Comment Type TR Equation 94-14 is TBD,	Comment Status D that is technically incomplet	e.	RX return loss	<i>Comment Type</i> The layout of hand, and m	ER f these cla easureme	Comment Status D auses makes them hard to use ant and definition detail on the	e, with PMD spe other, muddled	ecifications on the one I together.
Use equation from moo loss but the same equation	re_02a_0312.pdf page 20. I tion can be used for Rx	Page 20 gives i	t a Tx differential return	SuggestedReme Follow the us	dy sual layou	t of a PMD clause, with subcla	ause for transm	itter and receiver then a
Proposed Response PROPOSED ACCEPT	Response Status W N PRINCIPLE.			Proposed Respo PROPOSED	nse REJECT	Response Status W		
[Draft 1.1, 94.3.12.2, pa One or more presentatio	ge 195, line 8] ons are expected to address	this comment.		Clause 92 (F for link segm recommende	PMD) strue lient paran ed change	cture follows Clause 85 provid neters etcProposal insuffice to implemet in the draft.	ling Tx and Rx s ntly supported a	subclauses and subclause and lacking sufficient
C/ 94 SC 94.3.12.3 Moore, Charles	table 94-7 P 168 Avago Techn	L 26 ologies	# 10110	CI 92 SC	92.7.1	P89	L 41	# 10141
Comment Type TR Technically incomplete:	Comment Status D most values are TBD.	-	RX interference tolerance	Dawe, Piers Comment Type	ER	IPtronics Comment Status D		
SuggestedRemedy use values from moore_ 1 and values given for "	_02a_0312.pdf page 31, usir Test 4" for test 2.	ng the valuse lis	ted under "Test 3" for test	e.g. at the be	pecification This text i eginning c	s going too far into the electric f the "Definitions of parameter	c level) specifica cal detail which rs and measure	is better placed elsewhere ment methods" subclause
Proposed Response PROPOSED ACCEPT.	Response Status W			Try to move included" and measuremer	some of t d p90 line nt method	he material between line 41 lir 2 "Annex 92A." into the chan s" subclause.	ne "A mated cor nel or "Definitio	nector pair has been ns of parameters and
[Draft 1.1, 94.3.12.3, Ta One or more presentation	ble 94-7, page 195]	this comment.		Proposed Respo PROPOSED	nse REJECT	Response Status W		
				92.7.1 text de Table 92-4 1	escribes t 00GBASI	he link block diagram and sup E-CR4.	oports the define	ed test point definitions in

CI 93	SC 93.8.1	2 <i>P</i> 131	L 50	# 10143	C/ 93	SC 93.8.	1 <i>P</i> 131	L	# 10145
Dawe, Pie	ers	IPtronics			Dawe, Pie	ers	IPtronics		
Comment	Type TR	Comment Status D			Comment	Туре Т	Comment Status D		
A pat 52.9. A pat	tern with a 2 U 1.2 Square way tern consisting	period is not a "square wave" re pattern definition of four to eleven consecutive	: ones followed by	an equal run of zeros ma	For ro mV) s weigh	bustness, it v to that the Tx t changes.	would help if there were somet would never set the signal to	ning like a minim nvert if the Rx as	um VMA spec (say 0 to 50 ked for one too many tap
be us	ed as a square	Wave.			Suggeste	dRemedy			
Squa And t	re wave (8 one his is a bad cho	s, 8 zeros) bice: the true peak-to-peak vol	ltage could be sig	nificantly larger. We reall	Consi all its	der adding a the taps to ze	minimum VMA spec, or simila ero when still technically transi	r, so that Tx can nitting.	never invert the signal or se
want	to contain the V	/MA or steady-state voltage be	ecause more of th	hat passes though a lossy	Proposed	Response	Response Status W		
chanı	nel.				PROF	POSED ACCE	EPT IN PRINCIPLE.		
Suggeste	dRemedy								
Use a	a mixed frequer	ncy pattern: PRBS31 or scram	bled idle, possibly	y PRBS9.	[Page	157, Line 9 i	in Draft 1.1].		
Proposed	Response	Response Status W			The F	MD control fu	unction gives the receiver com	plete control of th	ne transmit equalizer or,
PRO	POSED ACCEI	PT IN PRINCIPLE.			stated	another way	, several lengths of enough ro	pe with which to	hang itself.
[93.8.	1.2, page 158,	line 11 in Draft 1.1.]			While stead	the comment y state voltag	ter points out the extreme cas le to zero, or even opposite the	e where receiver e symbol polarity,	forces that transmitter for a given channel there
The to test p	est patterns that attern with a pe	t may be provided by the PMA priod of 16 UI. It would be ben	A are PRBS9, PR eficial to base the	BS31, and a square wave requirements on one of	likely comm	exists other s nunicate.	settings that yield the same eff	ect which is the ir	nability to effectively
these	patterns or sc	ambled idle.			Wher	this happens	s. the receiver is given multiple	escape routes s	such as sending preset or
While	there is no tes	t pattern that is entirely alterna	ating 1 and 0 sym	bols, this pattern can be	initiali	ze to the tran	smitter in order to return to a	nown state.	
found it is u	l in either the P sed to test tran	RBS9 or PRBS31 test pattern smit equalizer compliance.	. PRBS9 is a con	venient test pattern since	So, w solve	hile a minimu the problem (Im VMA specification could eli	minate one problet the transmitter in	ematic case, it does not nto a bad state. Given this, it
Also i or AC	note that no test common-mod	t pattern is defined for DC or <i>i</i> e output voltage requirements	AC common-mod should apply reg	le output voltage and DC pardless of the transmit	may b comm	pe preferrable nent #97, can	to not impose such a constra be problematic for some algo	nt since these co rithms.	onstraints, as pointed out by
equal	izer setting.				The n	nerits of the n	proposed specification should b	e discussed by t	he Task Force
Chan "The regar be les	ge the second peak-to-peak d dless of the tra ss than or equa	and third paragraph of 93.8.1. ifferential output voltage shall nsmit equalizer setting. The pe I to 30 mV when the transmitte	2 to: be less than or e eak-to-peak differ er is disabled (ref	qual to 1200 mV rential output voltage shall fer to 93.7.6 and 93.7.7)."					

"The DC common-mode output voltage shall be between 0 V and TBD V with respect to signal ground. The AC common-mode output voltage shall be less than or equal to 12 mV RMS with respect to signal ground. Common-mode output voltage requirements shall be met regardless of the transmit equalizer setting."

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 Z/withdrawn

Add the following paragraph to end of 93.8.1.2: "Differential and common-mode signal levels are measured with a PRBS9 test pattern."

SORT ORDER: Comment ID

C/ 93 SC 93 8 1 2	P131	/ 51	# 10146	C/ 93	SC 93 8 1 5	1 P134	/ 19	# 10147
Dawe, Piers	IPtronics	-01		Dawe, Pie	rs	IPtronics		
Comment Type TR At present, this and other s bandwidth. At these rates	Comment Status D signal parameters are spe , that's just too expensive	ecified as if obser . And noisy.	ved in an infinite	Comment This is thing o	<i>Type</i> TR sn't a test spec. comply - it might	Comment Status D No "shall be verified" or "sha be established by design or	ll be tested" allov batch testing. Th	ved! All we ask is that the ne wording in 93.8.1.4
SuggestedRemedy				Iransi	tion time is nice			
Define output voltage, tran	sition time, DCD, TJ, AC	common-mode c	output voltage and more	Suggested	Remedy			
as observed through a 33 (Someone with a much fas would give great accuracy.	GHz fourth-order Bessel- ster scope can use a softv .)	Thomson respon ware filter for mos	se. st parameters, which	Chang transn voltag	ge "The steady s hit equalizer coe e and linear fit p	tate voltage and linear fit pul- fficients have been set to the ulse peak values shall compl	se peak values s "preset" values. ly with the specifi	hall be verified after the " to "The steady state cations in Table 93-4 whe
Proposed Response	Response Status W						the preset value	165.
PROPOSED ACCEPT IN	PRINCIPLE.			Proposed	Response	Response Status W		
	4 1 Des (1 4 4)			PROP	OSED ACCEPT	IN PRINCIPLE.		
[93.8.1.3, Page 158, line 1	T IN Draft 1.1]			[03.8 ·	1 6 1 Page 160	l ine 24 in Draft 1 1]		
The lack of a recommenda is prescribed to be infinite, that matter) is made.	ation on measurement bai only that no recommenda	ndwidth does not ation on the banc	imply that the bandwidth lwidth (or filter shape for	The su parage	uggested remed	y adds normative requirement he text of 93.8.1.6.1 with the	nts that are redur following.	dant with subsequent
It is agreed that if such a fi	Iter were to be defined, it	should be comm	on to all measurements.	"The s	steady state volta	age vf is defined to be the sur	m of the linear fit	pulse p(k) divided by M
Task Force should discuss GHz Bessel-Thompson filt	whether or not such a fil er the correct filter.	ter needs to be d	efined, and if so, if a 33	less th "prese	an or equal to 0 et" values.	.6 V after the transmit equaliz	zer coefficients h	ave been set to the
				The po have b	eak value of p(k) been set to the "	shall be greater than 0.8 × v preset" values."	/f after the transm	nit equalizer coefficients
				CI 92	SC 92.8.4.5	P106	L 49	# 10153
				Dawe, Pie	rs	IPtronics		

Comment Type T Comment Status D

"The low frequency 3 dB cutoff of the AC coupling shall be less than TBD kHz." On the one hand, the signalling rate is 2.5x higher. On the other, the signal integrity challenge is much higher. Anyway, one would expect backwards compatibility of a passive cable.

SuggestedRemedy

50 kHz, or perhaps lower.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment#396.

C/ 92	SC 9	2.8.3.8	P102	L33	# 10154	C/ 92	SC	92.7.1	P 90	L7	# 10161
Dawe, Pier	rs		IPtronics			Dawe, Pie	rs		IPtronics		
Comment	Туре	TR	Comment Status D			Comment	Туре	т	Comment Status D		
This sa to be p bandw think it	ays "the precise a vidth. W	measurer and not bia e give the	nent bandwidth should be ased: we can't say whethe reader the hint in the nex ference as long as it's a r	e at least TBD GH: or more bandwidth t sentence that it i easonable linear-r	z". But a definition needs is "better", or less may not be critical. (I don'	Figure on. T trace	92-2 s nis is a oss, TI	shows TP t odds wit P0 and TF	0 just by the PMD transmit fun h the text: TP1-4 are offset fro P5 are not offset.	nction, TP1 just om the connect	by the connector and so or by the HCB or MCB
Suggostos	Bornodi	,				Suggestee	Reme	dy			
Chang	ge "For D) DJ meas	urements, the measureme	ent bandwidth sho	uld be at least TBD GHz."	Make TP1-4	the arr furthe	ow for TP r from the	0 and TP5 point exactly at the connectors. Thanks!	end of the fun	ction, move the arrows for
to "The bandw	e wavefo vidth of 3	orm is obs 3 GHz."	erved through a fourth-ord	der Bessel-Thoms	on response with a	Proposed	Respo	nse	Response Status W		
Proposed	Respons	se	Response Status W			PROF	OSED	ACCEPT	IN PRINCIPLE.		
PROP [Comn been a	OSED A nent was against C	CCEPT II s submitte Clause 92,	N PRINCIPLE. d against Clause 93, Pag Page 102, line 33 and ha	e 153, Line 48. Ho as been updated a	owever, it should have	In Fig includ	ure 92- es cabl	2 move T le assemi	P0 and TP5 as close to end o oly text fixture loss; move TP1	f Tx/Rx functior and TP4 furthe	is as possible. TP1 to TF ir back from MDI.
See co	omment	#146.	0	·	0,1						
<i>Cl</i> 93 Dawe. Pier	SC g	3.8.1.2	P132 IPtronics	L 2	# 10155						
Comment	Type	TR	Comment Status D								
Need t (lower	to define cost) if i	the meas t is the sa	surement filter for AC com me as for DDJ and so on.	mon-mode output	voltage. It is convenien						
Suggested	Remedy	/									
"The s 33 GH	ignal is o lz."	observed	through a fourth-order Be	ssel-Thomson res	ponse with a bandwidth of						
Proposed PROP	Respons OSED A	se CCEPT II	Response Status W N PRINCIPLE.								
See co	omment	#146.									

C/ 92 SC 9	2.7.8	P 92 IPtropics	L16	# 10165	C/ 92	SC	92.8.3	P	94	L 13	# 10169
Commont Typo	тр				Commont	Tuno	ED	Commont Statu			
This (a PMD cl 83.5.8) as a tes PMA what to d "Device" is not Why is this loo	lause) says "Lo st function to t lo. a standards w	ocal loopback mode sh he device." That's imp vord (too vague).	all be provided b ossible: only the	y the adjacent PMA (see PMA clause can tell the	Trying usual Suggester Delete	to defi most F dRemed	PMD claus MD claus MD claus	ninal unit interval is es including 93 and Table 92-7. In 92.8	not nece 94 don' .3.9 and	essary, very diffic t. 92.8.4.4. change	ult to do precisely, and r
SuggestedRemedy	,	•			"appro	oximate	ly" or dele	te the sentences.		, , , , , , , , , , , , , , , , , , , ,	
83.5.8 PMA In	/ Joal loonback r	mode save "PMA local	loonback shall be	e provided by the PMA	Proposed	Respor	nse	Response Status	W		
adjacent to the	PMD for 40G	BASE-KR4, 40GBASE	CR4, and 100BA	SE-CR10 PMDs."	PROF	POSED	ACCEPT	IN PRINCIPLE.			
If it's really nec 83.5.8, and her loopback mode	cessary, explai re in 92.7.8, ch e (see 83.5.8)	n in the comment response nange to "The PMA adj as a test function."	onse, and add 10 acent to the PMD	0BASE-CR4 to the list in 0 provides PMA local	Unit L e.g., S	JI used 92.8.3.3	extensivel Transmitt	y throughout clause er output waveform	. In addi	tion, subclauses	include percentage of U
Otherwise, chn loopback mode Similarly for 93	nage to "The P e (see 83.5.8) 8 7 8 and 94 2	MA adjacent to the PM as a test function." 9	D may optionally	provide PMA local	ln 92.	8.3.9 c	hange "no	minally" to "approxi	mately".	In 92.8.4.4 delet	e nominal.
Proposed Respons		snonse Status M			CI 92	SC	92.8.3	P	94	L 1	# 10170
					Dawe, Pie	ers		IPtro	nics		
The commente sets the preced Change the firs	er correctly poi dent that loopb st sentence of	nts out the normative ro back is required for 40 (83.5.8 as follows.	equirement is alre Gb/s and 100 Gb/	eady stated in 83.5.8. It /s copper PHYs.	Comment "92.8. stand Also f	<i>Type</i> 3 Trans ards lar ollow th	ER mitter cha iguage! e house s	Comment Status aracteristics" sounds tyle of 100GE unles	s D i like a d s improv	atasheet. Please /ing on it.	e write in normative
					Suggeste	dRemed	dy a T			0.0 .	
40GBASE-CR	4, 100GBASE	CR10, 100GBASE-KR	adjacent to the P 4, and 100GBAS	MD for 40GBASE-KR4, E-CR4 PMDs."	Chang Simila	ge "92.8 arly for r	8.3 Transn eceiver ar	nitter characteristics nd the other PMD cl	" to "92. auses.	8.3 Transmitter e	lectrical specifications".
Change the firs	st sentence of	92 7 8 and 93 7 8 to			Proposed	Respor	nse	Response Status	W		
"Local loopbac	k mode is prov	vided by the adjacent F	MA (see 83.5.8)	as a test function."	PROF	POSED	REJECT.				
					See c	ommen	t #434.				

C/ 92 SC 92.8 Dawe, Piers	.4.5 P1	106 L 49) 7	# 10171	CI 93 Dawe, Pier	SC 93.7.12	P130 IPtronics	L 31	# 10175
Comment Type T "The 100GBASE- function for Style- connectors, the re connectors." But, isn't there onl not needed in the SuggestedRemedy Delete the first two Proposed Response PROPOSED ACC Use suggested re	Comment Status CR4 receivers are AC could 2 100GBASE-CR4 connect ceeve lanes are AC couple by one connector type at p receiver? to sentences and "Style-1" <i>Response Status</i> CEPT. medy.	D upled. AC coupling ctors. For Style-1 1 ed; the coupling ca resent, with the AC W	shall be part of 00GBASE-CR ipacitors shall coupling in th	of the receive 4 plug be within the pluç ne cable, therefor	Comment This sa 10GBA using of 10GBA and ea every of Do you faster) Suggested Please Proposed I PROPO [Page The tin accour Add the "The tr defined symbo factor of	Type T ays "Each lane of ASE-KR, as defin differential Manch ASE-KR signaling the transition pose eight 10GBASE-H a mean use the si or DME at rate s Remedy make this clear. Response OSED ACCEPT 1 156, Line 25 in D ning parameters i the for the reduction e following sente aining frame strut d in 72.6.10 with the Is and 100GBAS of 0.4."	Comment Status D the 100GBASE-KR4 PMD s ed in 72.6.10." and 72.6.10 s nester encoding (DME) at a s rate. Since each DME symb ition is four 10GBASE-KR UI (R UI. ame training frames run 2.5 t tated above but PRBS 2.5x f Response Status W IN PRINCIPLE. raft 1.1.] in 72.6.10 should be scaled b n in the unit interval. nce the end of the first parag cture used by the 100GBASE the exception that 25.78125 o E-KR4 UI replace 10GBASE	hall use the sai ays "The contro ignaling rate ec ol contains two , one control ch imes faster (ind aster? by a factor of 0. raph of 93.7.12 E-KR4 PMD co GBd symbols re -KR UI, i.e. all t	me control function as ol channel is signaled qual to one quarter of the o DME transition positions nannel bit is transmitted cluding DME 2.5 times 4 for 100GBASE-KR4 to 2. ntrol function shall be as eplace 10.3125 GBd times are multiplied by a

C/ 92 SC 92-1	P85	L	# 10187	C/ 93	SC 93.	B.1	P 131	L34	# 10203
Sela, Oren	Mellanox Tecl	nnologies		Hidaka, Ya	ISUO		Fujitsu Laborat	ories of	
Comment Type T Need to add CL72 to the referenced to CL72	Comment Status D the table due to startup protoco	ol and the PMD	control which is	<i>Comment</i> Table Total ji	<i>Type</i> T 93-4. tter exclud	ing DE	Comment Status D DJ is defined as 0.28UI.		
SuggestedRemedy Add to table 92-1: 72-PMD control req	uired			It was It was OIF de	defined as defined as fine it as 0	0.25U 0.28U .28UI	Il excluding DDJ in clause 85. Il including DDJ in clause 72. including DDJ.		
Proposed Response	Response Status 🛛 🛛 🛛 🛛 🛛 🖉			We sh	ould chang	je it to	0.25UI as it excludes DDJ.		
PROPOSED REJECT	-			Suggestea	Remedy				
The 10GBASE-KR PM	ID sublaver is not required to t	orm a complet		Chang	e 0.28UI w	ith 0.2	25UI.		
Physical Layer. Instea function that is functio	nally equivalent, but not identitied to a	sublayer incorp cal, to the funct	orates a PMD control ion described in 72.6.10.	Proposed PROP	Response OSED RE	JECT.	Response Status W		
C/ 93 SC 93-1 Sela. Oren	P 123 Mellanox Tecl	<i>L</i> nnologies	# 10188	[Subcl	changed f	rom 8.	1 to 93.8.1 for more consisten	t sorting.]	
Comment Type T Need to add CL72 to	Comment Status D table 93-1 due to startup proto	col and referen	ce to PMD control	Pendir propos	ng discussi ed change	on by	the Task Force and a measure	ement of the co	onsensus to make the
SugaestedRemedv				C/ 92	SC 92.	7.1	P90	L 48	# 10212
Add to table 93-1:				Dudek, Mil	(e		QLogic		
72 - PMD control re	quired			Comment	Туре Т		Comment Status D		
Proposed Response	Response Status W			In table are no	e 92-4 The mated cor	Test p necto	points TP0 to TP1 and TP4 to r pairs between eg TP0 and T	TP5 don't mate P1	ch the description. There
[Comment is against	· Fable 93-1, Page 149, Line 23	in Draft 1.1.]		<i>Suggested</i> Chang	<i>Remedy</i> e the test p	points	on this row from TP1 to TP2 a	nd from TP4 to	o TP3
The 10GBASE-KR PM Physical Layer. Instea function that is functio	/ID sublayer is not required to f id, the 100GBASE-KR4 PMD s nally equivalent, but not identii	form a complet sublayer incorp	e 100GBASE-KR4 orates a PMD control ion described in 72.6.10.	Proposed PROP	Response OSED ACC	CEPT.	Response Status W		
				Chang to TP5	e Table 92 ".	-4 row	3 from "TP0 to TP1" to "TP0	to TP2" and fro	om "TP4 to TP5" to "TP3

IEEE P802.3bj D1.1 100	Gb/s Backplane and Copper Cat	ble 2nd Task Force review comments
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C/ 92 SC 92.8.4.	5 <i>P</i> 106	L 49	# 10219	C/ 94	SC 94.2.5	P150	L 29	# 10234
	QLogic			Matthew,	Brown			
The Style 2 connectors.	comment Status D or isn't to be used for 100G-CR	4 and we haven	t defined different Style	For El quickl	<i>Type</i> TR EE operation, a s y lock to the PMA	ignal structure and framing med A frame signal.	chanism for all	owing the receiver to
SuggestedRemedy				Suggestee	dRemedy			
Delete the sentence	"AC coupling shall be part of the	ne receive function	on for Style-2 100GBASE-	A prop	oosal will be prov	ided at the July meeting.		
CR4 connectors." ar	nd delete "style 1" in the next se	entence.		Proposed	Response	Response Status W		
Proposed Response PROPOSED ACCER	Response Status W PT IN PRINCIPLE.			PROF	OSED ACCEPT	IN PRINCIPLE.		
See response comm	nent #171.			[Draft	1.1, 94.2.5, page	e 177, line 26]		
C/ 94 SC 94 4 1	P169	L8	# 10233	One c	r more presentat	ions are expected to address th	is comment.	
Matthew, Brown	Applied Micro	- -		C/ 94 Matthew	SC 94.2.5 Brown	P 150 Applied Micro	L 29	# 10235
Comment Type TR	Comment Status D		channel parameters	Common!				
SuggestedRemedy	equired separately for this Clause	se. Consolidate t	o a single equation set.	For El remai	EE operation, a s	ignal structure and framing med ing the fast wake.	chanism for all	owing the PMA/PMD to
Change the top equa a0+a1*sqrt(f)+a2*f+a	ation in 94-17 to: a3*f^2+a4*f^3			Suggester A proj	<i>Remedy</i> bosal will be prov	ided at the July meeting.		
Change the bottom e a5+a6*(f-f2);	equation in 94-17 to:			Proposed PROF	Response POSED REJECT.	Response Status Z		
Delete line~17 starti	ng with "Amax".			This c	omment was WI	THDRAWN by the commenter.		
Delete lines 23 to 32	2.			[Draft	1.1, 94.2.5, page	e 177, line 26]		
Add the following: a0 = 0.8 a1 = 1.7372e-4 a2 = 1.1554e-9 a3 = 2.7795e-19 a4 = -1.0423e-29 a5 = 33.467 a6 = 1e-8				[non-c	controversial, with	ndrawn]		
Proposed Response	Response Status W							
PROPOSED ACCER	PT.							
[Draft 1.1, 94.4.2, pa	ige 196, line 29]							

C/ 94 Matthew, B	SC rown	94.2.4	P 5 Applie	0 ed Micro	L 24	#	10236
Comment 7 Detaile	<i>Type</i> d deso	TR criptions of t	Comment Status he PMA decoding p	D process are re	equired.		RX decoding
<i>Suggestedl</i> Write a	Remea de-co	<i>dy</i> oding sectior	n to complement se	ctions 94.2.2	.1 to 94.2.2.8.		
Proposed F PROPO	Respoi DSED	nse ACCEPT IN	Response Status I PRINCIPLE.	w			
[Draft 1	.1, 94	.2.4, page 1	76, line 31]				

Give the editor license to write the new sub-clauses as necessary.