C/ 00 SC 7	.3.2	P 7.1	L 1	# 112
Geoff Thompson		Bay Networks	s, Inc.	
Comment Type Restore the clo by P802.3x (Cl:	TR ck spec s 07)	Comment Status D ification for 10 Mb/s that was	inadvertently dele	RESUBMIT
It is recognized nominal scope operation. It is wish to insure th without the corr I will not let this standard. If a c	that this of the ex a very ir hat no fu ection o item be	is a service to humanity and ktension to the exisitng stands nportant piece of the standard ture edition of the merged sta f this error. a critical path item in the app be made that this is a critical	not within the ard to specify Gig d as a whole. I andard is printed roval of this path item I will	gabit
withdraw this co	omment.		patritori i mi	
SuggestedRemedy	/			
Change 7.3.2 p	aragrap	h 1 to read:		
The signaling ra Other signaling	ate spec rates ai	cified here is 10 million bits pe re specified elsewhere in this	er second ± 0.01% standard.	%.
Proposed Respons REJECT.	se	Response Status U		
This change wo	ould be	outside the scope of 802.3z.		
[Editor's note: I important issu- ciculated within APPROVE of of the clause 3 comment.]	Because e, and w the 802 this resp 4 subtas	e the commentor believes this vishes to have this comment v 2.3 community, he has chosen ponse at this time. The remain sk force unanimously rejected	s to be an videly n to not inder I the	
[Additional note to recommend Maintenance # the same time	e: The 8 this cha 5, which frame a	02.3 maintenance committee inge in the recirculation of P& is expected to reach publicat s 802.3z.]	plans 02.3aa, tion in	

CI	04	SC	4.2.2.4	P 4	.4	<i>L</i> 1	#	4	
how	ard fraz	ier		cisco	syste	ems, inc			
Cor	nment ^{**} mea cu In the for D4. part of was ac "Also p of sub and m clause Note th	Type Ilpa, m proces 1, the the re ccepted bick up clause lake it 5 Pas	E ea culpa, r ss of perfor clause ed sponse to d by the su o reference 5.1.2 [of 8 general en scal"	Comment Status mea culpa ming the edits on cla itor (mea) forgot to ini- comment #105 from ubtask force. The par to 802.1-1990 from 302.3-1996], and inse- iough so that it also a f this response is imp	A ause 4 corpc Pat T t om secol ert in 4 pplies ortan	4 brate haler which mitted was: nd paragraph 4.2.2.4, s to [the] t because montant reference			
	Note th subclau is not c	at the use 5.1 urrentl	last part of 1.2 has be y in 802.3.	i this response is imported in the second seco	ortan this ir	t because mportant reference			
Sug	gested	Reme	dy						
	Instanti	ate ch	ange instr	uctions for subclause	4.2.2	2.4 in D4.2, and add	d the text:		
	The La Physica manipu	yer Ma al Laye Ilate m	anagemen er manage anagemer	t facilities provided by ment definitions provi at counters and initiate	the (de th e actio	CSMA/CD MAC and e ability to ons within the layers	d s.		
	The ma as sets accord manag	anageo of attr ance w ement	d objects w ibutes, act vith IEEE \$	ithin this Internationa ions, notifications, an Std 802.1F-1993, and	l Star d beł ISO/	ndard are defined naviors in /IEC International S	Standards	for netwo	rk
Pro	posed I ACCEF	Respo PT.	nse	Response Status	С				

C/ 22 SC 22.1.5 Brad Booth	P 22.3 Jato Technolo	L 1 gies	# 28	C/ 22 SC 22.2.4.1.3 Brad Booth	P22.5 L14 Jato Technologies	# 31
Comment Type E Bad grammar in last s	Comment Status A sentence.			Comment Type E Comm "any invalid attempt" is undefined	ent Status A d and unclear.	
SuggestedRemedy Change to: "MII operation of thes is specified within cla Proposed Response ACCEPT	e signals and clocks is specified use 35." <i>Response Status</i> C	d within clause 2	22, and GMII operation	SuggestedRemedy Change to read: " and any attempt to change the Proposed Response Respon ACCEPT.	bits to an invalid setting shall be igno	ored."
C/ 22 SC 22.2.4 Brad Booth	P 22.3 Jato Technolo	L 16 Igies	# 29			
Comment Type E Sentence refers to th register set refers to refers to refere	Comment Status R e GMII incorporating "an extend registers 2 through 10.	ed basic registe	er set" Extended			
SuggestedRemedy Change "extended" to "All PHYs that provide of"	o "enhanced" so sentence reads e a GMII shall incorporate an en	: hanced basic re	gister set consisting			
Proposed Response REJECT. The recom- line 49).	Response Status C mended fix is incomplete and w	ould create inco	onsistencies (e.g., 22.3			
C/ 22 SC 22.2.4 Brad Booth	P 22.3 Jato Technolo	L 17 gies	# 30			
Comment Type E The sentence: "The status and contr 100 Mb/s and 1000 M is misleading and incu 1000BASE-T and 10	Comment Status R rol functions defined here are co /lb/s PHYs." orrect. Registers 9 and 10 are for 0BASE-T2.	nsidered basic a undamental to t	and fundamental to he operation of			
SuggestedRemedy Remove the sentence	e.					
Proposed Response REJECT. The senter 1000 Mb/'s PHY, and 10 and 0-8,15 respec	Response Status C nce is correct. 100BASE-T2 is a I multiple registers are basic and tively). Not all registers need be	a 100 Mb/s PHY fundamental to basic and func	, and 1000BASE-T is a their operation (i.e., 0- lamental to all PHYs			

for the sentence to be true (e.g., registers 4-8 are not used with 100BASE-FX).

P802.3z Draft 4.1 (Comments
---------------------	----------

C/ 30 SC 30.1 David Law	P 30.2 3Com	L 1 to 3	# 94	C/ 30 David Law	SC 30.1.4	Р 30.4 3Com	<i>L</i> 6 to 16	# <u>95</u>		
Comment Type E This note seems to be in style.	Comment Status A n the incorrect paragraph			Comment T The arro system	by between the environment bloc to the state it w	Comment Status A Manager block and Local ock is now broken. Please as in as publiched in				
SuggestedRemedy See comment				802.3u						
Proposed Response	Response Status C			SuggestedF See cor	<i>Remedy</i> nment					
C/ 30 SC 30.1.1.10	P30.19	L 30	# 102	Proposed R ACCEP	'esponse T.	Response Status C				
David Law	3Com			C/ 30	SC 30.2.1	P30.5	L 5 to 8	# 98		
Comment Type E	Comment Status A			David Law		3Com				
Remove the unnecessa from.	ary comma between slotTime and			Comment T	ype E	Comment Status A				
SuggestedRemedy See comment				The last make se in 30.3,						
Proposed Response ACCEPT.	Response Status C			increment rates specified for 10 Mb/s operation, and are appropriate to 100 Mb/s operation, have ten times the stated maximum increment rate for 100 Mb/s operation unless otherwise indicated. Counters that are appropriate to 1000 Mb/s operation have one hundred times the stated maximum increment rate						
C/ 30 SC 30.1.4 David Law	Р 30.4 3Com	L 18	# 96							
Comment Type E	Comment Status A			indicate	d."	n uniess otherwise				
Suggest the text 'NOTE 'NOTE-This'	-NOTE-This' should read			SuggestedF See cor	Re <i>medy</i> nment					
SuggestedRemedy See comment				Proposed R	esponse	Response Status C				
Proposed Response ACCEPT.	Response Status C			ACCEP	Τ.					
C/ 30 SC 30.1.4 David Law	Р 30.4 3Com	L 18 to 21	# <u>97</u>							
Comment Type E This note seems to be in style.	Comment Status A n the incorrect paragraph									
SuggestedRemedy See comment										
Proposed Response ACCEPT.	Response Status C									

C/ 30 SC 30.2.2. David Law	1 P 30.5 3Com	L 34 & 35	# 99	C/ 30 SC 30 David Law).3.1.1.7	P 30.18 3Com	L 32 & 33	# 101				
Comment Type E There seems to be a between oMACControlFunction delete.	Comment Status A spurious nsEntity and oMACEntity, please			Comment Type This note seems style. The word rest of the beha 30.3.1.1.24 for a	E Comr s to be in the inco Note should be a vior text. See sub an example.	ment Status A prrect paragraph ligned with the pclause						
SuggestedRemedy See comment				SuggestedRemedy See comment								
Proposed Response ACCEPT.	Response Status C			Proposed Response Response Status C ACCEPT.								
Note:- It is believed th Return between oMA	ne comment originally read 'There CControlFunctionsEntity and oMA	seems to be a sp CEntity, please d	ourious Carriage elete.'	C/ 30 SC 30 David Law).3.2.1.2	Р 30.26 3Com	L 43 & 44	# 104				
Note: The commente brackets to represent stripped out. This is w was missing.'	r used open angle brackets, uppe carriage return. Unfortunatly this is hy the comment appears to be mi	rcasel C, upperca s also used within issing what the sta	asel R, close angle the database and atement of what	Comment Type E Comment Status A This note seems to be in the incorrect paragraph style. The word Note should be aligned with the rest of the appropriate syntax text. See subclause								
C/ 30 SC 30.2.2.2 David Law	2 P 30.8 3Com	L 36 & 37	# 100	30.3.1.1.24 for a Remove the uni note. The period	an example. necessary period d is not required a	at the end of this as this is						
Comment Type E The text 'is asserted. marked as new as it is	Comment Status A The FCSError' should not be s not new.			APPROPRIATE spurious after this note. need to be also	E SYNTAX text. A The above chang done to subclaus	Also need to remove t jes se 30.3.2.1.3.	he					
SuggestedRemedy See comment				SuggestedRemedy See comment								
Proposed Response ACCEPT.	Response Status C			Proposed Respons ACCEPT.	e Respo	nse Status C						
C/ 30 SC 30.3.1. David Law	1.26 <i>P</i> 30.23 3Com	L 38	# 103	Note:- It is belie spurious Carria	ved the last part oge Return after th	of the comment origin is note.'	ally read 'Also nee	ed to remove the				
Comment Type E Add a space between Setting.	Comment Status A the words variable. and											
SuggestedRemedy See comment												
Proposed Response ACCEPT.	Response Status C											

CI 30	SC 30.3.2.1.3	P30.27	L 20 & 21	# 105	C/ 30	SC	30.5.1.1.	10 P30.46	L 37	# 2	
David Law		3Com			howard fra	azier		cisco systems, in	C		
Comment	Туре Т	Comment Status A			Commen	t Type	Е	Comment Status A			
Sugges Negotia 28 or cl	st the text or 'If cla ation, is present . lause 37, Auto-No Remedy	ause 28, Auto- ' should read 'If clause egotiation, is present'			Comr "160 with Tom	nent res 000" sh accepte Mathey	olution wa ould be " od respon v.	as entered incorrectly. 1 600 000" to align se to comment #136 from			
See co	mment				Suggeste	dReme	dy				
Proposed P	Pesnonse	Response Status C			chang	ge "160	000" to "1	600 000" on page 30.46, line 37	,		
ACCEF	PT.	Nesponse Status			Proposed	Respo	nse	Response Status C			
Also ne	ed to add after 'le	ocal technology ability' 'or adv	ertised ability of th	e local device'	ACCI	_FI.					
C/ 30 David Law	SC 30.4.3.1.2	0 P30.41	L 46	# 30004							
Comment 7 "ports"	<i>Type</i> E should be "port"	Comment Status A									
also, re	emove extra leadi	ng space on lines 39 and 40									
Suggested see cor	<i>Remedy</i> mment										
Proposed F ACCEF	Response PT.	Response Status C									
C/ 30 David Law	SC 30.4.3.2.1	P 30.42 3Com	L 4	# 106							
Comment T Sugges shall'.	<i>Type</i> E st the text 'it shou	Comment Status R Id' should read 'it									
Suggested See co	<i>Remedy</i> mment										
Proposed F REJEC	Response CT.	Response Status C									

C/ 30 SC 30.5.1.1.10

Paul Woodruff

P30.64 L 35

3

Bay Networks

Comment Status A Comment Type TR

There should either be an obvious relation between the behaviour of this counter at 100M vs 1000M, or a stated indication why there is no obvious relation.

SuggestedRemedy

Make it obvious. Preferred solution (in line with the 100M standard):

APPROPRIATE SYNTAX:

Generalized nonresettable counter. This counter has a maximum increment rate of 160 000 counts per second under maximum network load, and 10 counts per second under zero network load. for 100 Mb/s implementations. This counter has a maximum increment rate of 1 600 000 counts per second under maximum network load, and 100 counts per second under zero network load, for 1000 Mb/s implementations.

BEHAVIOUR DEFINED AS:

A count of the number of false carrier events during IDLE in 100BASE-X and 1000BASE-X links. This counter does not increment at the symbol rate. For 100BASE-X it can increment after a valid carrier completion at a maximum rate of once per 100 ms until the next CarrierEvent. For 1000 BASE-X it can increment after a valid carrier completion at a maximum rate of once per 10 ms until the next CarrierEvent.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

[I believe this comment refers to page 30.46, not 30.64 as stated.]

The different behavior between 100Mb/s and 1000Mb/s was in response to a D3.1 Technical Required Comment (#725) which is included below.

This new comment gives a choice of either undoing this previous Technical Required change or adding a explanation for the difference between 100Mb/s and 1000Mb/s behavior. To avoid undoing the previous Technical Required change, and the risk this would bring of a new disapprove vote, the second option is accepted. A note will be added to this attribute.

This note will read:-

Note:-The increased increment rate for this attribute at 1000Mb/s relative to its increment rate at 100Mb/s has been provided to improve its use as an indication of line quality.

D3.1 Comment #725 Commenter Name: Pat Thaler Commenter Company: HP Clause: 30 Subclause: 30.5.1.1.10 Page: 30.48

Line: 27

CommentType: TR Comment:-

I don't understand why the increment rate on an idle network is so low. It diminishes the usefulness of the object as an indicator of line quality.

Suggested Remedy:-

Replace the last sentence of the behavior with "For 100BASE- X, it can increment after a valid carrier completion at a maximum rate of once per 100 ms until the next carrier eventCarrierEvent. For 1000BASE- X, it can increment after a valid carrier completion at a maximum rate of once per 10 us until the next carrier eventCarrierEvent."

<i>CI</i> 30 David Law	SC 30.5.1.1.2	Р 30.43 3Com	L 29	# 107
Comment Sugges 1000BA note ne mode 1	<i>Type</i> E st that the usual ne ASE-T rather than eds to also apply 000BASE-T.	Comment Status A ote is added here about using a numbered note. The to Half and Full Duplex		
Suggested See co	<i>Remedy</i> mment			
Proposed F ACCEF	Response PT.	Response Status C		
<i>CI</i> 30 David Law	SC 30.5.1.1.2	P 30.43 3Com	L 39	# <u>108</u>
Comment T "Sugge should it did in	Type E est the text 'Auto-N read 'Auto-Negoti 802.3u."	Comment Status A legotiation is operational' ation, is operational' as		
Suggested See co	<i>Remedy</i> mment			
Proposed F ACCEF	Response PT IN PRINCIPLE	Response Status C		

Remove comma between "37" and "Auto-Negotiation".

C/ 30	SC 30.5.1.1.2	P 30.43	L 43	# 109	C/ 30 David Law	SC 30A.7.1	P 30A.27	L 38	# 111				
Comment	Tune F	Comment Status A			Comment		Comment Status A						
Sugge	st the text 'The type rations' as thes	bes' should read 'The e are enumerations, not			The registration arc needs to be completed, it still reads .??.								
types. Suggested	IRemedy				SuggestedRemedy Complete the registration arc.								
See co	omment				Proposed Response Response Status C								
Proposed Response Response Status C ACCEPT.					ACCEPT.								
<i>CI</i> 30 David Law	SC 30.6.1.1.5	Р 30.49 3Com	L 21 & 22	# 110	checked. Taking into account all utilized arcs the next available leaf under the package branch (4) is 18.								
Comment	Туре Е	Comment Status A			The fu	II arc for pBursts	will therefore be {1 2 840 1000	6 30 4 18}.					
Add a :	space after betwe	en the ')' and 'as' on both			C/ 30	SC 30A.7.1	P30A.33	L 20	# 30001				
Suggostoo	Pomody				David Law		3Com						
Suggested See co	omment				Comment	Туре Т	Comment Status A						
Proposed Response Response Status C					The re have a	gistration arc for an arc of {1 2 840	aBursts dupicates the registrati 0 10006 30 7 68}.	ion arc for aM	AUID. Both attributes				
ACCEI	P1.				Suggested	dRemedy							
C/ 30	SC 30A.7.1	P30A.27	L 32	# 30003	Please	e contact the regi	stration authority and obtain the	correct arc fo	r this attribute.				
David Law		3Com			Proposed	Response	Response Status C						
Comment	Type E	Comment Status A			ACCE	PT.							
The tex capabi	xt '100 and 1000 l lity' to match the r	Mb/s Monitor capability' should name of the capability used else	read '100/1000 l ewhere.	Mb/s Monitor	The re checke	gistration authori ed. Taking into ac	ty has been contacted and the a count all utilized arcs the next a	allocated regis available leaf u	stration arcs have been Inder the attribute				
Suggested	lRemedy				branch	n (7) is 100.							
See co	omment.	Destruction Ctature C			The fu	II arc for aBursts	will therefore be {1 2 840 1000	6 30 7 100}					
Proposed I	Response PT	Response Status C			C/ 30	SC 30A.7.2	P30A.29	L 7	# 30002				
AUOLI					David Law		3Com						
					Comment Type E Comment Status A Please delete the spurious text that reads 'Note-' with no other text associated with it.								
					Suggested See co	dRemedy omment							
					Proposed ACCE	<i>Response</i> PT.	Response Status C						

SC 30A.7.2

C/ 34	SC 34.4	P34	4.4	L 22	# 113
Geoff Th	ompson	Bay N			
Commer Revie	<i>nt Type</i> TR	Comment Status	A fo final (outcome of iitter	RESUBMIT
reallo	ocation and link b	udgets			
Suggeste	edRemedy				
Proposed ACC	d Response EPT.	Response Status	с		
The	table will be modi	fied to reflect the outco	me of c	our Feb. 2-3 interim	1.
The other this c	commentor choos comment in future	ses to disapprove of thi rounds of balloting as	s respo needeo	onse, in order to for I pending a final ou	rce recirculation of tcome of clause 38.

New information as of March 11: The optics group has now concluded its work. On 62um fiber, -LX optics will now work to 550 m. Change the table cell for -LX, building backbone cabling, 62um MMF, from "I" to "N". That's the only change.

C/ 35 SC 35.2.1.6 P 35.6 L 36 # 13 Bill Ouackenhush cisco Systems Inc	C/ 35 SC 35.2.2.1 P35.7 L 41-45 # 12							
Comment Type T Comment Status A There is asymmetery between the requirements as to when to signal carrier extend error and when to signal transmit error propagation. I believe	Comment Type E Comment Status A Change the refrences to the undefined "nominal clock" to something more appropriate.							
asserted" to match the requirement for carrier extend error.	SuggestedRemedy Lines 41, 43: change "nominal clock" to "local clock"							
SuggestedRemedy Change "may" to "shall" and add PICS item.	Line 45: change "nominal clock" to "a local clock" in two places Proposed Response Response Status C ACCEPT.							
Proposed Response Response Status C ACCEPT.								
Add PICs PL3a before PL3.	C/ 35 SC 35.2.2.2 P 35.7 L 35-37 # 11 Bill Quackenbush cisco Systems, Inc.							
Yes[[No[]" Modify Feature of PL3 to read: "Propagation of errors in extension".	Comment Type E Comment Status A The term "nominal clock" is not defined and the frequency of RX_CLK when not derived from the received data is not specified.							
C/ 35SC 35.2.2.1P 35.7L 27# 10Bill Quackenbushcisco Systems, Inc.Comment TypeEComment StatusA	SuggestedRemedy Replace the first sentence with "RX_CLK has a nominal frequency of 125 MHZ and may be derived from the received data or from a local clock such as GTX_CLK."							
The frequency and tolerance of GTX_CLK is now specified in Table 35-8 making the "shall" in this subclause redundant.	Proposed Response Response Status C ACCEPT IN PRINCIPLE. Change the paragraph to read:							
SuggestedRemedy Change the sentence to be informative such as "The GTX_CLK frequency is nominally 125 MHz, one-eigth of the nominal transmit data rate." and remove PICS item SF1 on page 35.29	"The PHY may recover the RX_CLK reference from the received data, or it may derive the RX_CLK reference from a local clock (e.g., GTX_CLK). When derived from the received data, RX_CLK shall have a frequency equal to one-eighth of the data rate of the received signal, and when derived from a local clock a nominal frequency of 125 MHz."							
Proposed Response Response Status C ACCEPT IN PRINCIPLE. Change sentence to read: C	Change Value/Comment of SF2 to read "One-eighth of received data rate or nominal 125 MHz."							
"The GTX_CLK frequency is nominally 125 MHz, one-eighth of the transmit data rate." Delete PICS SF1.	C/ 35 SC 35.2.2.2 P 35.8 L 2 # 32 Brad Booth Jato Technologies							
	Comment Type E Comment Status A Extra "." in sentence.							
	SuggestedRemedy Change sentence to read: "See additional information in 35.4."							
	Proposed Response Response Status C ACCEPT.							

C/ 35	SC 35.2.2.3	P 35.8	L 6	# 14		CI 35	SC	35.2.2.4		P35.8	L 40	# 34		
Bill Quacke	nbush	cisco Systems, In	с.			Brad Booth				Jato Technolo	gies			
Comment	Туре Т	Comment Status A				Comment 7	Туре	Е	Comment S	Status A				
The firs	st sentence of the p	paragraph is in conflict with Tabl	e 35-1.			Singula	ar form	n of verb use	ed for TXD<7:	0>. Change to	plural to follow f	form used in 35.2.2.7.		
is asse	rted and TX ER is	deasserted. When both are as	on when TX_EN serted, the data			Suggested	Reme	edy						
on TXE transm) is not for transmis ission of an error	ssion, rather it is signaling a requ	lest to			Change " TXD	e to re 0<7:0>	ad: > are used t	o"					
Suggested	Remedy					Proposed F	Respo	onse	Response S	tatus C				
change when"	change "TX_EN indicates that" to "TX_ER in combination with TX_ER indicates when"						ACCEPT.							
Proposed I	Response	Response Status C				C/ 35	SC	35.2.2.6		P 35.11	L 16	# 35		
ACCER	PT. Change senter	nce to read:				Brad Booth Jato Technologies								
"TX_E		Comment Type E Comment Status A Missing lightning bolt in line of RX_DV in Figure 35-8 and Figure 35-11 (page 35.13).												
C/ 35	SC 35.2.2.4	P35.8	L 36	# 15		Suggested	Reme	edy						
Bill Quacke	nbush	cisco Systems, In	C.			Add ligh	htning) bolt.						
Comment	Туре т		Proposed F	Respo	onse	Response S	tatus C							
The se	cond sentence of t	he paragraph is in conflict with	able 35-1.			ACCEPT.								
is asse	rted and TX ER is	deasserted. When both are as	serted. the data			CL 35	50	35 2 2 8		D35 13	/ 26	# 27		
on TXE) is not for transmis	ssion, rather it is signaling a requ	lest to			Brad Booth	00	55.2.2.0		Jato Technolo	nies	# 31		
transm	ission of an error													
Suggested	Remedy					Comment Type E Comment Status A								
change "For ea	e "For each GTX_C ach GTX_CLK peri	CLK period while TX_EN is also od in which TX_EN is asserted.	asserted," to			Oursester			5 15 COI II USII 19.					
deasse	erted,"				SuggestedRemedy									
Proposed I	Response PT	Response Status C			Change sentence to read: "(e.g., any error that the PHY is capable of detecting that may be undetectable at the MAC sublaver)"						tectable at the MAC			
						Proposed F	Respo	onse	Response S	tatus C				
C/ 35 Brad Booth	SC 35.2.2.4	P 35.8 Jato Technologies	L 37	# <u>33</u>		ACCEP	, PT IN I	PRINCIPLE	. Change to r	ead:				
Comment [*] Plural f	<i>Type</i> E form of verb used.	Comment Status R				"(e.g., a undetec	a codir ctable	ng error or a at the MAC	another error th sublayer)"	nat the PHY is c	capable of detec	ting that may be		
Suggested	Remedy													
Change	e to read:													
" data	a is presented on	II												
Proposed I	Response	Response Status C												
REJEC	CT. Data is plural, "	data are" is correct.												

P802.3z Draft 4.1 Comments C/ 35 SC 35.2.3 P35.15 L 44-50 # 38 C/ 35 SC 35.3 P35.19 L 44-50 # 41 Brad Booth Jato Technologies Brad Booth Jato Technologies Comment Status A Comment Status A Comment Type E Comment Type E Box around Figure 35-15. Combination of interfaces is implementation specific. The two paragraphs are confusing and add no useful information. SuggestedRemedy SuggestedRemedy Remove box or move "Figure 35-15 - GMII data stream" outside of box. Remove 2nd and 3rd paragraphs of 35.3. Proposed Response Response Status C Proposed Response Response Status C ACCEPT. The box was added to please the editor-in-chief. Move the title outside the box. ACCEPT IN PRINCIPLE. The paragraphs should not be deleted. They were added in response to D4.0 comments P35.16 C/ 35 SC 35.2.3.1 / 30 # 39 striking similar information earlier in the clause. Brad Booth Jato Technologies Change line 44 to read: "In an implementation supporting the MII and GMII, some signal Comment Type E Comment Status A pins are not used in both intefaces." Duplicated text "is an" in sentence. Change line 49-50 to read (missing edits for D4.0 comment #235): "Similarly, an SuggestedRemedy implementation supporting both the GMII and TBI interfaces will map TBI data signals onto Change sentence to read: the GMII control signal pins of TX ER. TX EN. RX ER and RX DV." "... or receive path is an interval during ... " Proposed Response Response Status C C/ 35 SC 35.4.2.1 P35.22 L 24 # 5 ACCEPT. **Bill Quackenbush** cisco Systems, Inc. Comment Type E Comment Status A C/ 35 SC 35.2.3.2.2 P35.17 / 21 # 40 The title of Figure 35-17 would be clearer if "receiver" was inserted Brad Booth Jato Technologies before "input". Comment Type E Comment Status A SuggestedRemedv Sentence states that "the relationship between RX_DV assertion and the SFD is not See comment. assured" due to preamble shrinkage. This is not true. RX DV assertion is assured to start no later than the SFD as per 35.2.2.6. Proposed Response Response Status C ACCEPT. SuggestedRemedy Remove sentence. C/ 35 SC 35.4.2.1 P35.23 L13 # 6 Proposed Response Response Status C **Bill Quackenbush** cisco Systems, Inc. ACCEPT. Comment Type E Comment Status A The title of Figure 35-18 would be clearer if "receiver" was inserted C/ 35 SC 35.3 P35.19 L 39 # 16 before "input". **Bill Quackenbush** cisco Systems, Inc. SuggestedRemedy Comment Type E Comment Status A Remove extra word Proposed Response Response Status C SuggestedRemedy ACCEPT. The referenced page/line number is for Figure 35-19, where the change is to be delete "signals" following "GMII, MII and TBI" made. Proposed Response Response Status C ACCEPT.

TYPE: TR/technical required T/technical E/editorial COMMENT STATUS: D/dispatched A/accepted R/rejected SORT ORDER: Clause, Subclause, page, line Page RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn C/ 35

C/ 35	SC 35.4.2.2	P 35 .	23	L 39	# 42	C/ 35	SC 35.4.2.3		P35.25	L 50	# 44	
Brad Booth	h	Jato Te	chnologies			Brad Boot	h		Jato Technolo	gies		
Comment	Type E	Comment Status	4			Comment	t Type TR	Comment S	tatus A			
Use of	f "reactance" is no	t recommended.				The la	ast paragraph of 3	5.4.2.3 is unnec	essary information	ative text. To tel	l designers of	
SuggestedRemedy Change "reactance" to "load" or "capacitance".						components now to perform their jobs is outside the scope of this draft. This issue is being placed squarely on the shoulders of the component designers, when in reality, there are trade-offs between components and board designs. These trade-offs are implementation						
Proposed	Response	Response Status	C			specific; therefore, the trade-offs are also outside the scope of this draft.						
ACCEPT IN PRINCIPLE. Reactance is the imaginary part of impedance (as susceptance is the imaginary part of admittance) and can result from either capacitive reactance (-					Suggesteakemeay Remove paragraph.							
1(/2*pi*f*C)) or inductive reactance (2*pi*f*L). And since the input network of a GMII receiver contains both lead inductance and pin and pad capacitance, the term is appropriate and correct.				e term is	Proposed Response Response Status C ACCEPT IN PRINCIPLE. Change page 35.25 line 50 to read:							
[React	tion of commenter	to proposed response tance and capacitance	e: I agree with	h your form at we don't s	ulas, but reactance	"Desi	gners of GMII con	nponents and sy	stems should	note"		
induct	ance, I'd prefer to	call the 5 pF capacitor	a load, rather	r than a rea	ctance. The only	Chan	ge page 35.26 lin	e 2-4 to read:				
way I v can't b and ca reacta	would leave reacta be called 'input read apacitive reactance ince'."]	ctance' because reacts the without the inducta	what it is, an ance is a sum nce specified,	mput capa nmation of in , we cannot	citive reactance. It nductive reactance call it just 'input	"The (that e	GMII receiver desi nsure the receiver	igner is respons r operates reliab	ible for definin ly for all permis	g the GMII imple ssile input signal	ementation constraints slew rates."	
Action	of the committee	was to change "reacta	ince" to "load	".		Actior accep	n of committee is t ptance of the respo	o strike the last onse from the co	sentence of the ommenter.	e paragraph. W	e have verbal	
C/ 35 Brad Booth	SC 35.4.2.3 h	Р 35 . Jato Te	24 <i>L</i> chnologies	41	# 43	C/ 35 Bill Quack	SC 35.5.3.2 enbush	(P35.29 cisco Systems	<i>L</i> 6-52 , Inc.	# <u>9</u>	
Comment Missin	<i>Type</i> E ng hyphenation.	Comment Status	4			Comment Due to	t Type E o the removal of the	Comment S he previous sub	tatus A clause 35.2.2.1	l, all subclause		
Suggester	dRemedy	o "point-to-point"				35.2.2	2.n-1.	ie in this table, i	.e. 35.2.2.11 Sh	bula be		
Proposed	Response	Response Status	C			Suggeste correc	<i>dRemedy</i> ct subclause refer	rences				
ACCE	PT.					Proposed ACCE	l Response EPT.	Response St	atus C			
						C/ 35 Brad Boot	SC 35.5.3.6 h		P 35.31 Jato Technolo	L 19 gies	# 45	
						Comment 35.5.3	<i>t Type</i> E 3.6 has no title or c	<i>Comment</i> S data associated	<i>tatus</i> A with it.			
						Suggeste Chan	dRemedy ge 35.5.3.7 to 35.9	5.3.6.				
						Proposed ACCE	l Response EPT.	Response St	atus C			

Page 13 of 45 C/ 35 SC 35.5.3.6

C/ 35	SC 35.5.3.7	P35	5.31	L 29	#	7
Bill Quack	enbush	cisco S	Systen	ns, Inc.		
Comment "The " driver	<i>t Type</i> E Value/Comment" f parameters. The	Comment Status ield entry restricts the "shall" on page 35.25	A PICS , lines	item to worst case 46-49 is much bro	ader.	
Suggeste delete	dRemedy e "driver" from the	"Value/Comment" field	d entry	,		
Proposed ACCE	l Response EPT.	Response Status	С			
C/ 35	SC 35.5.3.7	P35	5.31	L 35	#	8
Bill Quack	enbush	cisco S	Systen	ns, Inc.		
Comment The re	<i>t Type</i> E eference to "vendo	Comment Status or" is ambiguous.	Α			
Suggeste Chan	dRemedy ge "vendor" to "GN	All driver implementor	" to ma	atch the "shall"		
Proposea ACCE	l Response EPT.	Response Status	С			
C/ 35 Brad Boot	SC Table 35-	2 P35 Jato T	5 .12 echno	<i>L</i> logies	#	36
Comment Table	<i>t Type</i> E 35-2 is split awkw	Comment Status ardly across two page	A es.			
S <i>uggeste</i> Put ta	dRemedy ble on one page.					
Proposed ACCE pagin	<i>l Response</i> EPT. This will be de ation to change wit	Response Status one prior to final public th each draft.	C cation.	The diff text and	change ta	ables cause

C/ 36	SC 36.1.4.3	P36.5	L 38	# 63	
Brad Boot	th	Jato Technolog	gies		
Comment multi-	<i>t Type</i> E mode should be m	Comment Status R nultimode as in clause 38			
Suggeste	dRemedy				
Chan	ge "multi-mode" to	"multimode" to match clause	38.		
Proposed	l Response	Response Status C			
REJE ISO 1	CT. Leave to publi 1801.	ications editor. Should be alig	ned with		
C/ 36	SC 36.3.3.1	P36.39	L 34	# 1	
howard fra	azier	cisco systems			
Commen	t Type E	Comment Status A			
"GMII is an to M	I TX_CLK" should n MII signal which fl AC) and is not eve	be "GMII GTX_CLK", as the 1 lows in the wrong direction (fro en applicable to the GMII.	FX_CLK signal om PHY		
Suggeste	edRemedy				
Chan Also, TX_0	ge "GMII TX_CLK , please search cla CLK, and make sur	" to "GMII GTX_CLK". use 36 for any other reference re they are all changed to GTX	es to <_CLK.		
Proposed	l Response	Response Status C			
ACCE	EPT. Accepted per	r suggested remedy			

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

C/ 36B	SC		P3	6B.1	L 3	# 64
Brad Booth			Jato 1	Technologies	5	
Comment Ty	<i>rpe</i> sary p	E veriod	Comment Status	Α		
SuggestedRe change "(e <i>med</i> (inforr	'y native)." to	o "(informative)"			
Proposed Re ACCEPT	espon . Acc	se epted per	Response Status suggested remedy	С		

CI 37	SC	P3	7.22	L 16	#	18		
Amrit Kalla		VLSI ⁻	Techn	ology Inc.				
Comment Ty	vpe T	Comment Status	Α					
The tran (toggle_	sition equation rx ^ rx_Config_	out of state NEXT_PA Reg <d11>=1). This m</d11>	AGE_N night lo	NAIT contains ock up the state machin	e.			
SuggestedR Change ((toggle_	?emedy (toggle_rx ^ rx _rx ^ rx_Config	_Config_Reg <d11>=1 _Reg<d11>)=1)</d11></d11>	I) to					
Proposed Re ACCEP	esponse T. Accepted pe	Response Status er suggested remedy	С					
C/ 37	SC	P3	7.22	L 16	#	19		
Amrit Kalla		VLSI ⁻	Techn	ology Inc.				
The tran (toggle_i SuggestedR	sition equation rx ^ rx_Config_ <i>Remedy</i>	out of state NEXT_P/ Reg <d11>=1). This m</d11>	AGE_\ hight lo	WAIT contains ock up the state machin	e.			
((toggle_	_rx ^rx_Config	_Coniig_Reg <d11>=1 _Reg<d11>)=1)</d11></d11>	1) 10					
Proposed Re ACCEP	es <i>ponse</i> Г. Accepted as	Response Status a duplicate of comme	C ent #1	8				
C/ 37	SC 37.1.1	P3	7.2	L 34	#	17		
Amrit Kala		VLSI ⁻	Techn	ology Inc.				
Comment Type E Comment Status A Receipt of three consecutive identical copies of /C/ ordered sets by a local device does not yield a rx_Config_Reg <d15:d0>. See definition of rx_Config_Reg<d15:d0> in 36.25.1.3.</d15:d0></d15:d0>								
SuggestedR Receipt rx_Confi supporte	Remedy of /C/ ordered g_Reg <d15:d ed by the link pa</d15:d 	sets by a local device, 0> value that identifies artner.	yield the c	a perational modes				
Proposed Re ACCEP sentence	esponse T IN PRINCIPI e of the second	Response Status E. Delete the last ser paragraph in 37.2.3.	C ntence	in 37.1.1 and the last				

CI 38	SC 38.	P38.1	L 8	# 114
Geoff Th	nompson	Bay Networks,	, Inc.	
Comme	nt Type T	Comment Status A		RESUBMIT
Refe	erencing the object	IVES:		
11.	Provide a family a link distance of: a. At least 500	of Physical Layer specification m on multimode fiber	ns which suppo	rt
13.	Support media	selected from ISO/IEC 11801		
lt is 19-2 basi unch	not clear from the 10 that these objec s with adequate m naracterized behav	discussion at the MBI meeting i tives are being reliably met on a argins for jitter and allowance fo riour of fiber that is being utilize	in Florida, Jan an interoperable or the d.	e
Suggesi Unc	tedRemedy lear			
Propose ACC	ed Response CEPT IN PRINCIP	Response Status C LE.		
In ta and 62M	able 38-4, add add -12.0 for 62MMF. IMF. Add notes a.	itional line for "stressed receive Add a "stress ISI" line having 2 and b. from conformance test o	er sensitivity", - [,] 2.6 ps for 50 MN document.	13.0 dBm for 50MMF /IF and 2.20 ps for
The	changes to D4.1 t	o incorporate these ranges as	defined by the l	ink model are:
100	DBASE-SX			
In ta	ble 38-2, introduce	bandwidth and link length cells	S.	
In ta and 62N	ble 38-4, add addi -12.0 for 62MMF. IMF. Add notes a.	tional line for "stressed receive Add a "stress ISI" line having 2 and b. from conformance test c	er sensitivity", -1 2.6 ps for 50 MN document.	3.0 dBm for 50MMF /IF and 2.20 ps for
In ta The Intro Moc Cha Cha Cha Cha	ble 38-5: power budget is ir duce a second linu lify the links length nge link lengths to nge "channel inse nge "link power pe nge "unallocated r	ncreased from 7.0 to 7.5 dB. e showing the modal bandwidth s in accordance with the above above table. rtion loss" columns to : 2.33, 2 enalties" column to: 4.30, 4 nargin " column to: 0.88, 0	cases. cells. 2.53, 3.37, and 3 .31, 4.10, and 3 .66, 0.02, and 0	3.56. 3.59. J.34.
100	OBASE-LX			
 In ta	 ble 38-6, introduce	bandwidth and link length cell	S.	
In ta	ble 38-8. add addi	tional line for "stressed receive	er sensitivitv"1	3.9 dBm. Add a

"stress ISI" line having 2.6 ps. Add notes a. and b. from conformance test document.

In table 38-9:

Introduce a second line showing the modal bandwidth cases.Modify the links lengths in accordance with the above cells.Change "channel insertion loss" columns to : 2.35, 2.35, and 2.35.Change "link power penalties" column to:3.50, 5.11, and 3.99.Change "unallocated margin " column to:1.65, 0.04, and 1.16.

In table 38-10, change the jitter budget as indicated in the attached foil.

In table 38-11:

Wavelength85013008501300Add the length cells in a new second line:220, 275, 550, 500, 550, 550550550Change channel attenuation numbers to:2.33, 2.53, 2.32, 3.25, 3.42, 2.32

In table 38-12:

Add new row showing second set of cells for 200/500 and 500/500 bandwidths.

In new subclause 38.6.11, remove table 1 since it has been incorporated into tables 38-4 and 38-8.

CI 38	SC 38.11	P38	3.14	L 51	#	115
Geoff Tho	ompson	Bay N	etworks, In	С.		
Commen	t Type TR	Comment Status	Α			RESUBM
Effect that a any u chara	tive modal bandw re of no use in pu tility in terms of a cterizing the inst	vidth and Differential Mo urchasing fiber on the op ny established industry alled base of multi-mod	ode Delay a pen market standard te e fiber.	are undefined t nor do they est method in	d terms have	
Howe suitab	ever, it seems that bility of particular	t these are critical facto fibers for use with Gigal	rs in establ bit Etherne	lishing the t		
Suggeste	dRemedy					
Provie to cha specif their p P802	de a convincing of aracterize multi-n fications and test performance in la .3z	case for the position tha node fiber for laser laun t methods for multi-mod aser launched systems	t no new pa ched syste le fiber that of the type	arameters are ems or establi t characterize being specifi	e need ish e ied by	
Proposed	Response	Response Status	С			
ACCL	_гтппсра					
In tat and - 62MN	ble 38-4, add add 12.0 for 62MMF. /IF. Add notes a.	ditional line for "stressed Add a "stress ISI" line h and b. from conforman	d receiver s naving 2.6 ce test doc	sensitivity", -1 ps for 50 MN cument.	3.0 dBm IF and 2.3	n for 50MMF 20 ps for
The c	hanges to D4.1	to incorporate these ran	iges as def	ined by the li	nk model	are:
1000	BASE-SX					
In tab	le 38-2, introduce	e bandwidth and link ler	ngth cells.			
In tab and -′ 62MM	le 38-4, add add 12.0 for 62MMF. /IF. Add notes a.	itional line for "stressed Add a "stress ISI" line h and b. from conforman	receiver s naving 2.6 ce test doc	ensitivity", -1 ps for 50 MN cument.	3.0 dBm IF and 2.:	for 50MMF 20 ps for
In tab The p Introd Modif Chan	le 38-5: power budget is i luce a second lin y the links length ge link lengths to ge "channel inse	ncreased from 7.0 to 7. e showing the modal bas is in accordance with the above table. rtion loss" columns to :	5 dB. andwidth ca e above ce 2.33, 2.53	ases. Ills. 3, 3.37, and 3	9.56.	
Chan	ge "link power pe ge "unallocated i	margin " column to:	4.30, 4.31 0.88, 0.66	5, 0.02, and 3	.59. .34.	
1000	BASE-LX					
In tab	le 38-6, introduce	e bandwidth and link ler	ngth cells.			
In tab "stres	le 38-8, add add s ISI" line having	itional line for "stressed 2.6 ps. Add notes a. a	receiver s nd b. from	ensitivity", -1 conformance	3.9 dBm e test doc	. Add a ument.

In	table	38-9:	
----	-------	-------	--

Introduce a second line showing the modal bandwidth cases.Modify the links lengths in accordance with the above cells.Change "channel insertion loss" columns to : 2.35, 2.35, and 2.35.Change "link power penalties" column to:3.50, 5.11, and 3.99.Change "unallocated margin " column to:1.65, 0.04, and 1.16.

In table 38-10, change the jitter budget as indicated in the attached foil.

In table 38-11:

Wavelength85013008501300Add the length cells in a new second line:220, 275, 550, 500, 550, 550550550Change channel attenuation numbers to:2.33, 2.53, 2.32, 3.25, 3.42, 2.32

In table 38-12:

Add new row showing second set of cells for 200/500 and 500/500 bandwidths.

In new subclause 38.6.11, remove table 1 since it has been incorporated into tables 38-4 and 38-8.

CI 38	SC 38.11.2	P38.15	L 31	# 62
Joe Gwinn		Raytheon		
Comment	Туре Е	Comment Status A		
l agree related connec	that using "conn places, as what tors, but think we	ection" is clearer than "conr has the loss being specified don't quite drive the nail ho	nector" here and d is a mated pair of ome.	
Suggested	Remedy			
Add a s consisti and SC	sentence saying ing in all cases o crecepticle.	that the loss is specified for f a mated pair of connector	a connection s, the SC plug	
Proposed F	Response	Response Status C		
ACCEF	PT.			
Add a s consist and SC	sentence at line 3 ing of a mated pa c recepticle.	32 stating: "The insertion los air of connectors including a	ss is specified for a a SC plug	connection
Add a s consist and SC C/ 38 Brad Booth	sentence at line 3 ing of a mated pa recepticle. SC 38.11.2.4	32 stating: "The insertion los air of connectors including a P38.17 lato Techno	ss is specified for a a SC plug <i>L</i> 25-34	connection # 66
Add a s consist and SC CI 38 Brad Booth	sentence at line 3 ing of a mated pa crecepticle. SC 38.11.2.4	32 stating: "The insertion los air of connectors including a P 38.17 Jato Techno	ss is specified for a a SC plug <i>L</i> 25-34 blogies	connection # 66
Add a s consist and SC C/ 38 Brad Booth Comment 7 Table 3	sentence at line 3 ing of a mated pa crecepticle. <i>SC</i> 38.11.2.4 <i>Type</i> E 38-13 missing ver	32 stating: "The insertion los air of connectors including a P 38.17 Jato Techno Comment Status A tical lines on the ends	ss is specified for a a SC plug <i>L</i> 25-34 blogies	connection # <mark>66</mark>
Add a s consist and SC C/ 38 Brad Booth Comment T Table 3 Suggested add the	sentence at line 3 ing of a mated pa crecepticle. SC 38.11.2.4 Type E 38-13 missing ver Remedy e vertical lines on	22 stating: "The insertion los air of connectors including a P38.17 Jato Techno Comment Status A tical lines on the ends the edges of Table 38-13	ss is specified for a a SC plug <i>L</i> 25-34 blogies	connection # <u>66</u>
Add a s consist and SC C/ 38 Brad Booth Comment 7 Table 3 Suggested add the Proposed F ACCEF	Sentence at line 3 ing of a mated pa crecepticle. SC 38.11.2.4 Type E 38-13 missing ver Remedy evertical lines on Response PT.	32 stating: "The insertion los air of connectors including a P38.17 Jato Techno Comment Status A rtical lines on the ends the edges of Table 38-13 Response Status C	ss is specified for a a SC plug <i>L</i> 25-34 blogies	connection # 66
Add a s consist and SC C/ 38 Brad Booth Comment 7 Table 3 Suggested add the Proposed F ACCEF add the	sentence at line 3 ing of a mated pa recepticle. <i>SC</i> 38.11.2.4 <i>Type</i> E 38-13 missing ver <i>Remedy</i> e vertical lines on <i>Response</i> PT. e vertical lines on	32 stating: "The insertion los air of connectors including a P38.17 Jato Techno Comment Status A rtical lines on the ends the edges of Table 38-13 Response Status C the edges of Table 38-13	ss is specified for a a SC plug <i>L</i> 25-34 blogies	connection # 66

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

C/ 38 SC 38.11.2.4

~			1.00	"	<u></u>	00 00 0 00 5			
Jonathan	SC 38.2.4 Thatcher	P38.4 IBM Roches	L 36 ter, MN	# 87	C/ 38 Ray Lin	SC 38.3, 38.5	P Multiple Ascend Commu	L Multiple	# 116
Comment Subje	<i>Type</i> E ct: P(sub:input)Re	Comment Status A eceiver			Comment The re what i	<i>Type</i> TR <i>Comn</i> emedy proposed by the Moo s characterized as the differ	nent Status A dal Bandwidth Task Gr rential mode delay (DN	roup (MBI) to mitigate /ID) addressed in	RESUBMIT e
The v not co	ariable P(sub:inpu inversent in the his	It,) Receiver is not easily unde story of the standard.	rstood for one		each e additio specif	of the P802.3z Draft 3.2 cor onal jitter contribution to ens ied in P802.3z Draft 4 , Tak	nments listed below has ure 1000BASE-SX lin ble 38-2.	as not eliminated the k lengths as	!
Suggeste Perha shoul	dRemedy ps the phrase "Av d be used.	verage receive power" as used	l in table 38-4		P802.	3z Draft 3.2 DMD commen	ts: orks Comment #1	187	
Proposed ACCE	Response PT.	Response Status C			2. Ho 3. Ra 4. Pa	wie Johnson , Signal Con y Lin, Digital Equipme ul Kolesar, Lucent Tech	isulting, Comment #1 ent Corp., Comment # nologies, Comment #	86 #88 #86	
Repla three Repla as use	ace variable "P(su places ce "Receive powe ed in table 38-1 in	b:input,) Receive" with "Input_ er)" with "Average Receive po three places, and in section 3	optical_power" wer" 8.2.4	as used in table 38-1	Based (MBI) the ac suffici (DMD	d on jitter measurements pro by Digital Equipment Corpo Idition of the Coupled Powe ent to mitigate what is chara) problem for 1000BASE-S	esented to the Modal E vration and Hewlett-Par er Ratio (CPR) specific acterized as the differe X links.	Bandwidth Task Grou ckard it is clear that cation has not prover ntial mode delay	ip 1
C/ 38 Joe Gwinr	SC 38.2.4	P 38.4 Raytheon	L 39	# 59	The p transn 9 <cp< td=""><td>resentations show jitter in a nitters that have been selec R<29 dB as specified in P8</td><td>iccess of the 96 ps (TF sted to exhibit a CPR or 02.3z Draft 4, when m</td><td>P2 to TP3) using ver the range of easured with a comr</td><td>non</td></cp<>	resentations show jitter in a nitters that have been selec R<29 dB as specified in P8	iccess of the 96 ps (TF sted to exhibit a CPR or 02.3z Draft 4, when m	P2 to TP3) using ver the range of easured with a comr	non
Comment Note I for AC	<i>Type</i> TR to table 38-1 larg signal detect. He aphic for non-parti	Comment Status A gely answers my previous TR i owever, I fear that the present icipants to understand.	about the need note is too		Suggester Intent	dRemedy 			
Suggeste Add a the ar optica	<i>dRemedy</i> sentence saying nplitude of the 8B/ I flux received, so ing SD=OK for un	that the signal detect function (10B modulation, and not direct that receivers will not be foole modulated light	should depend tly on the avera ed into	on ge	I will b intent intero "The s	oorrow Geoff Thompsons w of the proposed remedy wh perabilty. I quote Geoff here success of 802.3 as a stand	ords extracted from his nich is to address 1000 e. dard is based on the al	s TR to preamble the DBASE-SX bility for customers	3
Acce Add a powe	Presponse PT In Principal. sentence at line 4 ude of the 8B/10E r received".	Response Status C 40, stating: "The SIGNAL DET 3 modulation signal and not re	ECT values sho spond directly to	ould respond to the the average optical	to pur specif a prec replac from a opera links v this le	chase or utilize existing sys ications in the standard and dictable reliable and useful r another manufacturer and re tion. The discussions surror vith laser based transceivers vel of quality and reliability v	tem components that r l plug them together an manner. This includes l an equivalent compliar esume predictable relia unding the operation o s have not assured me with the current set of s	meet the ad have them work in being able to at component able and useful f multi-mode fiber that we will meet specifications.	
					Goeff	s Suggested Rem.			
					Provid	de sufficient data and revision	ons to specifications to	provide reliable	

system elements for multi-mode transceivers and fiber. Revise specifications so that fiber, transceiver and any added launch conditioning devices or methods assure reliable operation under specification worst case operating conditions. Such conditions will be reviewed by 802.3 for their adequacy against the 5 Criteria and the project objectives."

End of quote.

Ray Lin Remedy--

1. Change jitter contribution allocated to TP3 (but recognized as derivative of the fiber, receiver and transmitter) in subclause 38.5, Table 38-10 to values that shall not exceed (ffs) of DJ and (ffs) RJ when measured per the Jitter Characterization Test Method proposed to Fiber Channel.

2. Modify transceivers specifications in subclause 38.3 to guarantee specified jitter at reference test points by including specifications for transmitter Mode Power Distribution (ffs), receiver jitter tolerance (ffs), and mode conditioning patch cords (ffs).

ffs = for further study.

Proposed Response Response Status C

ACCEPT In Principal

In table 38-4, add additional line for "stressed receiver sensitivity", -13.0 dBm for 50MMF and -12.0 for 62MMF. Add a "stress ISI" line having 2.6 ps for 50 MMF and 2.20 ps for 62MMF. Add notes a. and b. from conformance test document.

The changes to D4.1 to incorporate these ranges as defined by the link model are:

1000BASE-SX

In table 38-2, introduce bandwidth and link length cells.

In table 38-4, add additional line for "stressed receiver sensitivity", -13.0 dBm for 50MMF and -12.0 for 62MMF. Add a "stress ISI" line having 2.6 ps for 50 MMF and 2.20 ps for 62MMF. Add notes a. and b. from conformance test document.

In table 38-5:

The power budget is increased from 7.0 to 7.5 dB. Introduce a second line showing the modal bandwidth cases. Modify the links lengths in accordance with the above cells. Change llnk lengths to above table. Change "channel insertion loss" columns to : 2.33, 2.53, 3.37, and 3.56. Change "link power penalties" column to: 4.30, 4.31, 4.10, and 3.59. Change "unallocated margin " column to: 0.88, 0.66, 0.02, and 0.34.

1000BASE-LX

In table 38-6, introduce bandwidth and link length cells.

In table 38-8, add additional line for "stressed receiver sensitivity", -13.9 dBm. Add a "stress ISI" line having 2.6 ps. Add notes a. and b. from conformance test document.

In table 38-9:

Introduce a second line showing the modal bandwidth cases.

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

Modify the links lengths in accordance with the above cells.Change "channel insertion loss" columns to : 2.35, 2.35, and 2.35.Change "link power penalties" column to:3.50, 5.11, and 3.99.Change "unallocated margin " column to:1.65, 0.04, and 1.16.

In table 38-10, change the jitter budget as indicated in the attached foil.

In table 38-11:

 Wavelength
 850
 1300
 850
 1300

 Add the length cells in a new second line:
 220, 275, 550, 500, 550, 550
 Change channel attenuation numbers to:
 2.33, 2.53, 2.32, 3.25, 3.42, 2.32

In table 38-12:

Add new row showing second set of cells for 200/500 and 500/500 bandwidths.

In new subclause 38.6.11, remove table 1 since it has been incorporated into tables 38-4 and 38-8.

CI 38	SC 38.3.1	P38.5	L 25-55	# 117
Mark Now	ell	Hewlett-Packard		
Comment	Type TR	Comment Status A		RESUBMIT

The intention of having a transmitter coupled power ratio (CPR) specification was to mitigate the additional jitter induced by certain laser/fiber combinations. Results presented to the

Modal Bandwidth Investigation task group (MBI), by both Hewlett-Packard and Digital Equipment Corporation, have shown that for 1000BASE-SX a CPR specification is not sufficient to ensure the jitter budget in Table 38-10 is met.

SuggestedRemedy

Modify table 38-3 "1000BASE-SX transmit characteristics" to include another specification which ensures sufficient launch conditioning to mitigate any DMD-induced excess jitter breaking the jitter budget. This may also require adjusting the values in the jitter budget (Table 38-10).

The form of the additional transmitter specification is not clear as there has been no proposal made to the committee. Candidates for this specification are the mode power distribution (MPD) but no results have been presented.

Proposed Response Response Status C ACCEPT In Principal

In table 38-4, add additional line for "stressed receiver sensitivity", -13.0 dBm for 50MMF and -12.0 for 62MMF. Add a "stress ISI" line having 2.6 ps for 50 MMF and 2.20 ps for 62MMF. Add notes a. and b. from conformance test document.

The changes to D4.1 to incorporate these ranges as defined by the link model are:

1000BASE-SX

In table 38-2, introduce bandwidth and link length cells.

In table 38-4, add additional line for "stressed receiver sensitivity", -13.0 dBm for 50MMF and -12.0 for 62MMF. Add a "stress ISI" line having 2.6 ps for 50 MMF and 2.20 ps for 62MMF. Add notes a. and b. from conformance test document.

In table 38-5:

The power budget is increased from 7.0 to 7.5 dB. Introduce a second line showing the modal bandwidth cases. Modify the links lengths in accordance with the above cells. Change llnk lengths to above table. Change "channel insertion loss" columns to : 2.33, 2.53, 3.37, and 3.56. Change "link power penalties" column to: 4.30, 4.31, 4.10, and 3.59. Change "unallocated margin " column to: 0.88, 0.66, 0.02, and 0.34.

1000BASE-LX

In table 38-6, introduce bandwidth and link length cells.

In table 38-8, add additional line for "stressed receiver sensitivity", -13.9 dBm. Add a

4.30, 4.31, 4.10, and 3.59.

"stress ISI" line having 2.6 ps. Add notes a. and b. from conformance test document.

In table 38-9:

Introduce a second line showing the modal bandwidth cases.Modify the links lengths in accordance with the above cells.Change "channel insertion loss" columns to : 2.35, 2.35, and 2.35.Change "link power penalties" column to:3.50, 5.11, and 3.99.Change "unallocated margin " column to:1.65, 0.04, and 1.16.

In table 38-10, change the jitter budget as indicated in the attached foil.

In table 38-11:

Wavelength 850 1300 850 1300 Add the length cells in a new second line: 220, 275, 550, 500, 550, 550 Change channel attenuation numbers to: 2.33, 2.53, 2.32, 3.25, 3.42, 2.32

In table 38-12:

Add new row showing second set of cells for 200/500 and 500/500 bandwidths.

In new subclause 38.6.11, remove table 1 since it has been incorporated into tables 38-4 and 38-8.

CI 38	SC 38.3.1	P 38.5	L 45	# 47
Mike Dudek		Cielo Commun	ications	

Comment Type T Comment Status A

The test procedure for RIN in appendix 38A, calls out measurement with a 12dB return loss and defines this as RIN12. It is not totally clear that this measurement is to be done with a 12dB return loss.

SuggestedRemedy

Change "RIN" on line 45 table 38-3 to "RIN12".

Proposed Response Response Status C ACCEPT in Principal.

Add statement on page 38-11, line 6 which states: "RIN is reffered to as RIN12 in the referenced document."

CI 38 David Cun	SC 38.3.1	P 38.5 Hewlett-Packard	L 46	# 75	CI 38 Thomas Di	SC 38.3.1	P3	1551 M	L 1-15	# 118	
Comment	Type TR	Comment Status A			Comment	Type TR	Comment Status	: A	Cui	RESUBMIT	
In tabl	le 38-3 the CPR v dRemedy	alues are not correct.	0		From use, ar	iser's prospecti Mode condition nd installation sl	ve the subclause fails ned hybrid patch cord". hould be required by th	to provide a su Detailed inform ne standard.	ufficient desc mation on the	ription e identification,	
Proposed ACCE	Response	Response Status C	0.		1) Eac a) "To b) "To	h end of the pa Equipment". Building".	tch cord should be lab	eled as per the	intended co	nnection.	
In tabl and ch	le 38-3, change th hange the descrip	e CPR values to "9" for 62.5 MM tion to "Coupled Power Ratio (C	/IF and for 50 PR) (min)"	MMF,	2) The "802.3	patch cord sho z Gigabit Etheri	uld have an indelible la net Hybrid Patch Cord"	abel attached ic '. Information c	lentifying it a	s an ed application	
C/ 38 Dan Browr	SC 38.3.1	<i>Р</i> 38.5 АМР	L 5 1	# 20	should be provided. A warning should be included that this hybrid patch cord is NOT usable for normal single mode or multimode patch cord applications.						
Comment	Type E	Comment Status A			This produc	labeling should t.	serve to produce a ea	sy to use and i	nstall hybrid	patch cord	
the se signa	ntence "During al l" needs a comr	l conditions when the PMA is po na.	wered the AC		Suggested	IRemedy					
Suggester	dRemedy				At the	top of page 38.	6, subclause 38.3.1 ac	ld the following	J descriptive	text at	
chang	e to "During all co	nditions when the PMA is power	ed, the AC		line 15						
signal. Proposed	" Response	Response Status C			"Mode followii	conditioned hy ng characteristi	brid patch cord assem cs and product labeling	blies shall be n g:	nanufactured	to include the	
ACCE	PT.				1) Eac	h end of the hyl	brid patch cord asseml	bly shall be lab	eled to indic	ate the required	
On pa PMA i	ige 38.5, line 51, a is powered, the A	add comma as indicated: chang C signal"	e to "During al	conditions when the	connec a) "To b) "To	ction: Equipment" lab Building" label a	el attached to the PME attached to the multime) MDI connecto ode cable plan	or. t connector.		
					2) The followin a) "802 b) "Thi laser tr c) "Thi	hybrid patch cong: 2.3z Gigabit Eth s product is inte ansceivers ope s product is not	ord shall include an atta ernet Hybrid Patch Co ended to provide condi rating over multimode usable for normal pato	ached indelible rd." itioned laser la fiber plants." ch cord applice	label specify unch for 100 ations."	∕ing the ⁄0BASE-SX	
					Proposed ACCE	Response PT.	Response Status	С			
					Subcla	use 38.11.2.4 I	has been added to the	clause 38.			
					38.11.2	2.4 Mode cond	litioning patch cord for	MMF operatio	n of 1000BA	.SE-LX	
					This su operati of 38.1 perma emboc offset I	ubclause specif on with MMF c 0. For 1000BA nently coupled liment of a patc aunch mode co	ies an example embod able plant. The MMF of ASE-LX the mode con off-center to a graded h cord is not intended onditioners. However,	diment of a mo cable plant sho ditioner consis- index cable pl. to exclude oth- any implement	de condition uld meet all d sts of a single ant fiber. Thi er physical ir tation of offse	er for 1000BASE-LX of the specifications emode fiber s example nplementations of et launch mode	

conditioner used for 1000BASE-LX shall meet the specifications of Table 38-13. The offset launch must be contained within the patch cord assembly.

Table 38-13 Offset launch mode conditioner specifications

Description	62.5 um MMF	50 um MMF	Unit
Maximum insertion loss	0.5	0.5	dB
Coupled power ratio (CPR) Optical center offset between	28 < CPR < 40	12 < CPR < 20	dB
SMF and MMF	17 < Offset < 23	10 < Offset < 16	um
Angular offset (max)	1	1 d	egree

Note: All patch cord connecting ferrules containing the singlemode-to-multimode offset launch shall have singlemode tolerances (IEC 61754-4 grade 1 ferrule).

Mode conditioners based on different physical mechanisms may be discovered in the future. These new mode conditioners are not excluded from use with 1000BASE-LX. However, the specifications of Table 38-13 are specific to the singlemode fiber offset launch mode conditioner and may not ensure that mode conditioners based on other physical mechanisms will have adequate performance for 1000BASE-LX.

The singlemode fiber used to manufacture the offset launch mode conditioner shall meet the requirements of 38.10. The multimode fiber used in the construction of the offset launch mode conditioner shall be of the same type as the cable plant over which 1000BASE-LX is to be operated. If the cable plant is 62.5 um MMF then the MMF used in the construction of the mode conditioner should be of type 62.5 um MMF. If the cable plant is of type 50 um MMF, then the MMF used in the construction of the mode conditioner should be of type 50 um MMF.

Figure 38-5 shows the preferred embodiment of the offset patch cord. This patch cord consists of duplex fibers represented by a singlemode-to-multimode offset launch fiber connected to the transmitter MDI and a second conventional cable plant graded index fiber connected to the receiver MDI. The preferred configuration is a plug-to-plug patch cord since it maximises the power budget margin of the 1000BASE-LX link. The single mode end of the patch cord shall be labelled "To equipment". The patch cord connected to the conlected bulk is plant. The "strain relief boot" of the singlemode fiber connector plug shall be colored blue. The "strain relief boot" of the singlemode fiber connector plugs shall be colored beige. The patch cord assembly is labelled "Offset Launch Mode Conditioning Patch Cord Assembly". Labelling identifies which size multimode fiber is used in the construction of the patchcord. The polarity of the SC duplex optical plug ensures that the singlemode fiber end is automatically aligned to the transmitter MDI.

C/ 38 Dan Brown	SC	38.3.1	<i>Р</i> 38.6 АМР	L 10	# <u>24</u>
Comment 7 The wo sections	<i>Type</i> rds "m s of th	E node-conc e docume	Comment Status A litioning" are hyphenated h ent such as page 38.17 Lir	nere, however in oth ne 16, no hyphen is	ner used.
Suggested Make a "mode-	Re <i>me</i> globa condit	dy I change t ioner" and	o remove all hyphens from d "mode-conditioning".	n the terms	
Proposed F ACCEF	Respo PT.	nse	Response Status C		
Make a "mode-	globa condit	I change t ioner" and	to remove all hyphens from d "mode-conditioning".	n the terms	
CI 38 Steve Swan	SC Ison	38.3.1	P 38.6 Corning Ir	L 18	# 79
Comment 7 The las	<i>Type</i> t sente	TR ence in the	Comment Status A	ar to still apply to th	e SX case.
Suggested Add the use of e	Reme follov extern	<i>dy</i> ving text: ' al mode c	Some sources may produ	uce CL directly and	thus not require the
Proposed F ACCEF	Respo PT in p	<i>nse</i> rincipal.	Response Status C		
P 38.6, provide	line 5 s"	5 change '	Conditioned launch (CL)	produces" to "The C	CPR specification
Remov	e note	c from ta	ble 38-3, page 38.5, line 4	53	

Page 38.6. lines 10-14. Delete paragraph

C/ 38 SC 38.3.1	P38.8	L 23	# 48	C/ 38 SC 38.3.2	P 38.6 L	37 # 88
Mike Dudek	Cielo Commun	ications		Jonathan Thatcher	IBM Rochester, MN	N
Comment Type T	Comment Status A			Comment Type T	Comment Status R	
The test procedure for and defines this as R 12dB return loss.	or RIN in appendix 38A, calls out i IN12. It is not totally clear that thi	measurement w s measurement	ith a 12dB return loss is to be done with a	Subject: Average rece	ive power (min) 	
SuggestedRemedy Change "RIN" on line	e 23 table 38-7 to "RIN12".			The variable "Average to the calculations use the minimum receiver	e receive power (min)" is misleading. A ed to create the spefications for clause power will never get anywhere near -1	ccording 38, 7 dBm.
Proposed Response	Response Status C			SuggestedRemedy		
ACCEPT in Principal	ne 38-11 line 6 which states:			This should be called Another line, perhaps, power (min)" of -12.5	"Receive sensitivity (min)". should be added with the "Average re dBm.	eceive
"RIN is reffered to as	s RIN12 in the referenced docume	ent."		Same should be done	for longwave.	
C/ 38 SC 38.3.2 Paul Kolesar	P 38.6 Lucent Techno	L 20 logies	# 119	Appropriate correctior currently too restrictive see anything approacl	is should be made for Signal Detect (w e due to the fact that the receiver will ne hing -17 dBm in normal operation.	vhich is ever
Comment Type TR Receiver bandwidth	Comment Status A specification insufficient for intero	perability.	RESUBMIT	Proposed Response	Response Status C	
SuggestedRemedy				REJECT.		
Add a minimum rece MHz as the 3-dB ele	iver bandwidth must be specified ctical bandwidth minimum.	. Suggest using	1000	This comment was ele	evated from "E" to "T" status.	
Proposed Response ACCEPT In Principal	Response Status C					
Now that there is a de the receiver upper cu test, make the followi	efined receiver bandwidth measu utoff range is included in the stres ing change:	rement method a sed receiver ser	and the low end of sitivity conformance			
On page 38.6, line 25 as defined in ??????	5, change "should" to "shall" be le ?.	ss than 1500 Mł	Ηz,			
C/ 38 SC 38.3.2	P 38.6	L 25	# 21			
Dan Brown	AMP					
Comment Type E the phrase "receiver electrical engineering	Comment Status A upper electrical 3dB bandwidth" is g term for what is really being refe	s not a proper red to here.				
SuggestedRemedy						
change to "receiver u	upper 3dB electrical cutoff freque	ncy"				
Proposed Response ACCEPT.	Response Status C					
On page 38.6, line 2	5, change "bandwidth" to "cutoff fi	equencyl"				

			1 002:02 D							
C/ 38 SC 38.3.2=44 117 9222	928 P38.6	L 20	# 120	CI 38 SC 38.3.3	P 38.7	L 1	# 86			
David Cunningham	Hewlett-Packard			Jonathan Thatcher	IBM Roches	ster, MN				
Comment Type TR Comme In sections 38.3.2 and 38.4.2 there	ent Status A is a statement "To limit	t jitter,	RESUBMIT	Comment Type TR Subject: SW Power	Comment Status A Penalties Need Correction					
the receiver upper 3 dB bandwidth The lower 3 dB electrical bandwidth the lower 3 dB low pass cut-off free defined. The optical link model use lower 3 dB electrical, low pass, cut was 1000 MHz.	should be less than 150 h is not defined. To limit quency of the receiver s id by IEEE 802.3z assu -off frequency of the rec	JU MHZ." t jitter hould be med that the ceiver		>From work done by is clear that the calcu- all other standards u power penalty due to dependent upon the fiber; fiber distance;	v the MBI group during the Februa Jlations for power penalties (thos p until this point) have not include o random jitter. The magnitude of amount of DJ at TP2; the bandw and the launch conditions (include	ary time frame it e used by ed a necessary i this penalty is vidth rolloff of the ding rise/fall				
Not specifying both the receiver lov low pass, cut-off frequencies will c inter-operation problems	west and highest 3 dB e ause ISI, jitter and lead	electrical, to		time; wavelength; etc	c). ith all the necessary trade offs w	ill have to be				
				readdressed and co	rrected.					
This issue is made worse because	there is no test to mean	sure the		SuggestedRemedy						
SuggestedRemedy				Reduce the jitter allo OR	cation to the transitter and/or the	fiber.				
As a minimum change the stateme "To limit intersymbol interference a 3 dB electrical, low pass, cut-off fre 1000 MHz and less than 1500 MHz	nt in section 38.3.2 and nd jitter, the receiver lov equency should be grea .".	l 38.4.2 to read, wer ter than		Reduce the link leng OR Increase the effectiv OR	th e bandwidth					
Proposed Response Response	se Status C			Some or all of the ab	oove, as necessary.					
ACCEPT In Principal				If the link lengths are of fiber should be pu	e further reduced, support for mu t back into the standard.	Itiple bandwidths				
Now that there is a defined receive the receiver upper cutoff range is in	r bandwidth measuremencluded in the stressed	ent method and th receiver sensitivi	ne low end of ty conformance	Proposed Response Response Status C						
test, make the following changes:				ACCEPT In Principa	l					
1. on page 38.6, line 25, change "s 2. on page 38.9, line 1, change "sh	hould" to "shall" be less ould" to "shall" be less t	s than 1500 MHz. than 1500 MHz.		In table 38-4, add a and -12.0 for 62MM	dditional line for "stressed receiv Add a "stress ISI" line having 2	er sensitivity", -13.0 2.6 ps for 50 MMF	0 dBm for 50MMF and 2.20 ps for			
Add two PICs items as appropriate	e.			62MMF. Add notes a	a. and b. from conformance test	document.				
				The changes to D4.7	to incorporate these ranges as	defined by the link	model are:			
				1000BASE-SX						
				In table 38-2, introdu	ce bandwidth and link length cell	ls.				
				In table 38-4, add ac and -12.0 for 62MMI 62MMF. Add notes a	Iditional line for "stressed receive Add a "stress ISI" line having 2 a. and b. from conformance test o	er sensitivity", -13.0 2.6 ps for 50 MMF ; document.) dBm for 50MMF and 2.20 ps for			
				In table 38-5: The power budget is Introduce a second l	increased from 7.0 to 7.5 dB.	h cases.				

Modify the links lengths in accordance with the above cells. Change link lengths to above table. Change "channel insertion loss" columns to : 2.33, 2.53, 3.37, and 3.56.

Page 26 of 45 C/ 38 SC 38.3.3

Change "link power penalties" column to:4.30, 4.31, 4.10, and 3.59.Change "unallocated margin " column to:0.88, 0.66, 0.02, and 0.34.	C/ 38 SC 38.4 P 38.7 L 1 # 89 Jonathan Thatcher IBM Rochester, MN					
1000BASE-LX	Comment Type E Comment Status R					
In table 38-6, introduce bandwidth and link length cells.	"Table 38-5 Worst case 1000BASE-SX link power budget and penalties"					
In table 38-8, add additional line for "stressed receiver sensitivity", -13.9 dBm. Add a "stress ISI" line having 2.6 ps. Add notes a. and b. from conformance test document.	SuggestedRemedy Change to: "Table 38.5 Worst case 1000RASE LX link power budget and pepalties"					
In table 38-9:	Table 38-5 Worst case 1000BASE-LX link power budget and penalties					
Modify the links lengths in accordance with the above cells. Change "channel insertion loss" columns to : 2.35, 2.35, and 2.35.	Proposed Response Response Status C REJECT.					
Change "link power penalties" column to: 3.50, 5.11, and 3.99. Change "unallocated margin " column to: 1.65, 0.04, and 1.16.	Descriptive title properly references SX case					
In table 38-10, change the jitter budget as indicated in the attached foil.	C/ 38 SC 38.4 P 38.7 L 11 # 80 Steve Swanson Corning Inc.					
In table 38-11:	Comment Type TR Comment Status R					
Wavelength 850 1300 850 1300 Add the length cells in a new second line: 220, 275, 550, 500, 550, 550 Change channel attenuation numbers to: 2,33,2,53,2,32,5,3,42,2,32	The channel insertion loss for 50 um MMF and the unallocated margin in Table 38-8 appear incorrect.					
	SuggestedRemedy					
In table 38-12: Add new row showing second set of cells for 200/500 and 500/500 bandwidths.	Change the channel insertion loss for 50 um from 3.47 to 3.34 dB					
In now substance 20.6.11, remove table 1 since it has been incorrected into tables 20.4	Change the unallocated margin for 50 um from 0.04 to 0.17 dB					
and 38-8.	Proposed Response Response Status C					
	REJECT.					
Del Hanson Hewlett-Packard Co	The numbers in table 38-5 for 50MMF are correct.					
Comment Type F Comment Status						
In table 38-5, the channel insertion loss and unallocated margin were not recalculated after the 62MMF attenuation was changed from 3.5 dB/km to 3.75/km in table 38-12.						
SuggestedRemedy						
With current 3.75/km in table 38-12, change following parameters in 62MMF column in table 38-5: change 2.47 dB to 2.54 dB, and change unallocated margin in link from 0.12 dB to 0.05 dB.						
Proposed Response Response Status C ACCEPT.						
Change the following parameters in 62MMF column in table 38-5:						
change 2.47 dB to 2.54 dB, and change unallocated margin in link from 0.12 dB to 0.05 dB.						
However, subsequent changes during this meeting superceed making these changes to the document.						

C/ 38 SC 38.4.1	P38.8	L 23	# 49	C/ 38	SC 38.4.1	P38.8	L 30
Mike Dudek	Cielo Commur	nications		Joe Gwinn		Raytheon	
Comment Type TR	Comment Status R			Comment	Type TR	Comment Status R	
With the recent changes margin in the link power b	to output power in single mo oudget. The RIN12 specifica	de fiber there is a tion is much tight	a large unallocated ter than is necessary	Note b should	to table 38-7 fail avoid radial ove	ls to fully drive the nail home on rfilled launches.	why one
	1.			Suggested	lRemedy		
SuggestedRemedy				Add a	sentence saying	that the point is to reduce the f	raction of the
Change the single mode 116".	column specification for RIN	l on line 23 table	38-7 from"-120" to "-	total or centerl	ine defects foun	in mode groups that pass throud in all practical multimode fibe	ugh the r.
Also change page 38.9 to penalties) from "1.20" to line 35 from "3.26" to "3.	10 single mode column on ta "1.30" and the unallocated n 16"	nargin for the sing	LINK power gle mode column on	Proposed REJEC	Response CT.	Response Status U	
Proposed Response REJECT.	Response Status U			Given longer	the use of offset an issue for 100	jumpers, Radial Over-Filled La 0BASE-LX on MMF, thus the n	unches are no lote can be deleted.
 It was established whe meet this specification. 	n the -120 dB/Hz specificatio	on was set that ve	endors could easily	Delete	note b under tab	ole 38-7.	
2. Even if there is more the specification, this change	nan adequate margin in the L would impact the margin for	X SMF link to relation to the MMF cases	ax the RIN where the ISI	[Editor this re	r's note: During t esponse]	he PMD meeting, there were no	o objections to
penalty is critical to the st	ressed receiver conformanc	e test.		[Editor	r's note: By delet	ing the entire note b in table 38	-7, Mr. Gwinn's

[Editor's note: By deleting the entire note b in table 38-7, Mr. Gwinn's comment has been rendered moot. However, a similar note exists in the SX table 38-3 which was not specifically called out in Mr. Gwinn's comment. We are recirculating this comment at this time to ensure that this issue is widely understood. Regarding Mr. Gwinn's proposed changes, it is the policy of 802.3z to be definitive in our standards, but not to make unnecessary tutorial statements. The proposed changes would have been tutorial in nature.]

Motion to adopt this response 9-mar-98 8:28 pm: Y:11 N:3 A:8

60

C/ 38 Dan Brow	SC 38.4.1	Р 38.8 АМР	L 37-47	# 23	C/ 38	SC 38.4.1	P 38.8 IBM Roches	L 38 ter MN	# <u>90</u>		
Comment Line 3	<i>t Type</i> T 37 says "A CL ma	Comment Status A y be produced using". Line 46	says "Some		Comment Subje	<i>t Type</i> TR ect: Inconsistent re	Comment Status A equirements for CL jumper				
Both which mode	tes may produce (nal mode condition of these statemen a says "fulfillmen e conditioning pate	L directly and thus do not requining patch cords" ts are inconsistent with Table 38 t of this standard requires a SMF th cord"	e the use of 3-7 footnote 'a' ⁵ offset-launch		The p patch link be consis for tab	hrase: "A CL may cord inserted at c etween the optical stent with the text ole 38-7 on page	y be produced by using a mode one or both transmit ends of a f I PMD MDI and the cable plant 38.4.1 on page 38.7 or in the f 38.8.	e-conditioning hyb full duplex ," is not footnote "a"	rid		
Suggeste	edRemedy				Suggeste	dRemedy					
Line 3	38 change "A CL ı	may be produced" to "A CL sh	all be produced	"	Repla	ice with:					
Remo with T	ove lines 44-47. T Fable 38-7 footnot	o change them properly would n e 'a'.	nake them redund	dant	"A CL insert	is produced by u ed at both transm	ising mode-conditioning hybrid it ends of a full duplex link betw	patch cords veen the			
Proposed ACCE	<i>l Response</i> EPT In Principal	Response Status C			Proposed	Response	Response Status C				
Repla	ace the sentence i	n line 38 on page 38.8 with:			Repla	ce the sentence i	in line 38 on page 38.8 with:				
"A CL insert optica	"A CL is produced by using mode-conditioning hybrid patch cords inserted at both ends of a full duplex link between the optical PMD MDI and the cable plant."				"A CL is produced by using mode-conditioning hybrid patch cords inserted at both ends of a full duplex link between the ontical PMD MDI and the cable plant "						
Delet	e lines 44-47.				Deleti	e lines 44-47					
Motio	n to adopt this res	sponse, 9-Mar-98 8:52pm: Y: 15	N: 0 A: 13		CI 39	SC 29 / 1	D 29 9	1 46	# 04		
					Jonathan	Thatcher	IBM Roches	ter, MN	# 91		
					Comment Subje	<i>t Type</i> TR ect: Inconsistent re	Comment Status A equirements for CL jumper				
					The p the us consis for tab	hrase: "Some souse of external moor stent with the text ole 38-7 on page	urces may produce CL directly de-condition-ing patch cords." i 38.4.1 on page 38.7 or in the f 38.8.	and thus not requ s not footnote "a"	ire		
					Suggeste Remo	dRemedy ove text					
					Proposed ACCE	l Response EPT.	Response Status C				
					See r	esponse to comm	nent 23.				

SC 38.4.1

CI 38 SC 3 Steve Swanson	38.4.1	P 38.8 Corning Inc.	L 46	# 81	C/ 38 SC 38.4.3 Jonathan Thatcher	P 38.9 IBM Roches	<i>L</i> 23 ter, MN	# <u>85</u>
<i>Comment Type</i> The last senter	TR Comm nce, which may app	ent Status A ly to SX but does no	t apply to LX.		Comment Type TR Subject: LW Power P	Comment Status A enalties Need Correction		
SuggestedRemed	ly t sentence "Some so	ources may produce	CL directly and	thus not require the		me comment as for subclause ?	38 3 3 for SW/ ***	
use of externa	I mode-conditioning	patch cords."		thus not require the	51 Note. 1113 13 36		0.5.5 101 500	
Proposed Respon ACCEPT.	nse Respon	se Status C			>From work done by t is clear that the calcul all other standards up	he MBI group during the Februa ations for power penalties (those until this point) have not include	ry time frame it a used by d a necessary	
As a result of r	resolving comments	23 and 90, this sent	tence is deleted		power penalty due to dependent upon the a	random jitter. The magnitude of mount of DJ at TP2; the bandwi	this penalty is idth rolloff of the	
C/ 38 SC 3 Paul Kolesar	38.4.2	P38.8 Lucent Techno	L 38 logies	# 121	fiber; fiber distance; a time; wavelength; etc)	nd the launch conditions (includi	ng rise/fall	
Comment Type	TR Comm	ent Status A		RESUBMIT	The power budget wit readdressed and corr	n all the necessary trade offs wil ected.	I have to be	
Receiver band	awidth specification	Insumicient for interop	berability.		SuggestedRemedy			
SuggestedRemed Add a minimur MHz as the 3-	<i>ly</i> m receiver bandwid -dB electical bandwi	th must be specified. dth minimum.	Suggest using	1000	Reduce the jitter alloc OR Reduce the link length	ation to the transitter and/or the	iiber.	
Proposed Respon ACCEPT In Pr	nse Respon rincipal	se Status C			OR Increase the effective OR	bandwidth of the link		
Now that there the receiver up test, make the	e is a defined receive oper cutoff range is following change:	er bandwidth measur included in the stress	ement method a sed receiver ser	and the low end of asitivity conformanc	Some or all of the abo If the link lengths are of fiber should be put	ve, as necessary. urther reduced, support for mult back into the standard.	iple bandwidths	
On page 38.9,	line 1, change "sho	uld" to "shall" be less	s than 1500 MH	Ζ.	Proposed Response	Response Status C		
C/ 38 SC 3	38.4.2	P38.9	L1	# 22	ACCEPT In Principal			
Dan Brown Comment Type	E Comm	AMP ent Status A			In table 38-4, add add and -12.0 for 62MMF. 62MMF. Add notes a	ditional line for "stressed receive Add a "stress ISI" line having 2 and b from conformance test d	er sensitivity", -13.0 .6 ps for 50 MMF a) dBm for 50MMF and 2.20 ps for
the phrase "rea electrical engir	ceiver upper electric neering term for what	cal 3dB bandwidth" is at is really being refe	s not a proper red to here.		The changes to D4.1	to incorporate these ranges as o	defined by the link	model are:
SuggestedRemed change to "rec	<i>ly</i> ceiver upper 3dB ele	ectrical cutoff frequer	וכע"		1000BASE-SX			
Proposed Respon	nse Respon	se Status C	,		In table 38-2, introduc	e bandwidth and link length cells	.	
ACCEPT. On page 38.9,	, line 1, change "bar	ndwidth" to "cutoff fre	quency"		In table 38-4, add add and -12.0 for 62MMF. 62MMF. Add notes a.	itional line for "stressed receive Add a "stress ISI" line having 2 and b. from conformance test d	r sensitivity", -13.0 .6 ps for 50 MMF a locument.	dBm for 50MMF and 2.20 ps for
					In table 38-5:			

n table 38-5: The power budget is increased from 7.0 to 7.5 dB. Introduce a second line showing the modal bandwidth cases.

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

Page 30 of 45 C/ 38 SC 38.4.3

Modify the links lengths in accordance with the above cells.Change llnk lengths to above table.Change "channel insertion loss" columns to :2.33, 2.53, 3.37, and 3.56.Change "link power penalties" column to:4.30, 4.31, 4.10, and 3.59.Change "unallocated margin " column to:0.88, 0.66, 0.02, and 0.34.

1000BASE-LX

In table 38-6, introduce bandwidth and link length cells.

In table 38-8, add additional line for "stressed receiver sensitivity", -13.9 dBm. Add a "stress ISI" line having 2.6 ps. Add notes a. and b. from conformance test document.

In table 38-9:

Introduce a second line showing the modal bandwidth cases.Modify the links lengths in accordance with the above cells.Change "channel insertion loss" columns to : 2.35, 2.35, and 2.35.Change "link power penalties" column to:3.50, 5.11, and 3.99.Change "unallocated margin " column to:1.65, 0.04, and 1.16.

In table 38-10, change the jitter budget as indicated in the attached foil.

In table 38-11:

		V	Vavelength	۱	85	50	1300	85	0	1300
Add the	length	cells in a	a new seco	ond line:	220,	275,	550,	500,	550,	550
Change	channe	attenua	ation numb	ers to:	2.33,	2.53,	2.32,	3.25,	3.42,	2.32

In table 38-12:

Add new row showing second set of cells for 200/500 and 500/500 bandwidths.

In new subclause 38.6.11, remove table 1 since it has been incorporated into tables 38-4 and 38-8.

	SC 38.4.3	P 38.9	L 29	#	57
Del Hanson		Hewlett-Packard Co).		
Comment T	Tvpe T	Comment Status A			
The LX be com SMF o to exte	SMF power but apatible with MN ffset launch pat nd the SMF link	dget has been increased from 5.5 d /IF launched power specifications wit ch cord. This increased power budg : length from 3 km to 5 km with adeq	B to 8.0 dB to th an external et can be use uate margins.	o ed	
Suggested	Remedy				
On pag change	e 38.9, in table e 3.54 to 4.57, c	38-9 10 um SMF column: change 3 change 1.20 to 2.43, change 3.26 to	000 to 5000, 1.00.		
On pag	ge 38.15, in tabl	le 38-11 10 um SMF column: chang	e 3.5 to 4.5.		
Proposed F	Response	Response Status C			
ACCEF	РТ.				
Matian	je 38.15, in tabi	le 38-11 10 um SMF column: chang	e 3.5 to 4.5.		
Motion Cl 38	to adopt this res	e 38-11 10 um SMF column: chang sponse 9-Mar-98, 9:07pm Y:21 N:0 . ₽ 38.9	e 3.5 to 4.5. A:5 <i>L</i> 32	#	46
Motion CI 38 Del Hanson	to adopt this read	le 38-11 10 um SMF column: chang sponse 9-Mar-98, 9:07pm Y:21 N:0. <i>P</i> 38.9 Hewlett-Packard Cc	e 3.5 to 4.5. A:5 <i>L</i> 32	#	46
Motion Cl 38 Del Hanson Comment 7	to adopt this res SC 38.4.3	le 38-11 10 um SMF column: chang sponse 9-Mar-98, 9:07pm Y:21 N:0 . P 38.9 Hewlett-Packard Co <i>Comment Status</i> A	e 3.5 to 4.5. A:5 <i>L</i> 32	#	46
Motion Cl 38 Del Hanson Comment 1 In table were ca	to adopt this res SC 38.4.3 <i>Type</i> E 38-8, the link pe alculated in erro	le 38-11 10 um SMF column: chang sponse 9-Mar-98, 9:07pm Y:21 N:0 P38.9 Hewlett-Packard Co <i>Comment Status</i> A ower penalty and unallocated margir r for the 62MMF column in table 38-9	e 3.5 to 4.5. A:5 / 32 o in link 9.	#	46
Cl 38 Cl 38 Del Hanson Comment 7 In table were ca Suggested	to adopt this res SC 38.4.3 Type E 38-8, the link pr alculated in erro Remedy	le 38-11 10 um SMF column: chang sponse 9-Mar-98, 9:07pm Y:21 N:0 <i>P</i> 38.9 Hewlett-Packard Cc <i>Comment Status</i> A ower penalty and unallocated margir r for the 62MMF column in table 38-9	e 3.5 to 4.5. A:5 <i>L</i> 32 h in link 9.	#	46
Motion Cl 38 Del Hanson Comment T In table were ca Suggested In the 6 change	to adopt this res SC 38.4.3 <i>Type</i> E 38-8, the link pr alculated in erro <i>Remedy</i> 2MMF column e unallocated m	Ie 38-11 10 um SMF column: chang sponse 9-Mar-98, 9:07pm Y:21 N:0 <i>P</i> 38.9 Hewlett-Packard Cc <i>Comment Status</i> A ower penalty and unallocated margir r for the 62MMF column in table 38-9 in table 38-9: change 4.02 dB to 5.0; argin in link from 1.43 dB to 0.13 dB	e 3.5 to 4.5. A:5 <i>L</i> 32 h in link 9. 2 dB, and	#	46
Motion Cl 38 Del Hanson Comment T In table were ca Suggested In the 6 change Proposed F	to adopt this res SC 38.4.3 <i>Type</i> E 38-8, the link pe alculated in erro <i>Remedy</i> 2MMF column a unallocated m <i>Response</i>	In table 38-9: change 4.02 dB to 5.02 argin in link from 1.43 dB to 0.13 dB t	e 3.5 to 4.5. A:5 <i>L</i> 32 a in link 9. 2 dB, and	#	46
Motion Cl 38 Del Hanson Comment T In table were ca Suggestedi In the 6 change Proposed F ACCEF	to adopt this res SC 38.4.3 Type E 38-8, the link pe alculated in erro Remedy 2MMF column e unallocated m Response PT.	In table 38-9: change 4.02 dB to 5.00 argin in link from 1.43 dB to 0.13 dB Response Status C	e 3.5 to 4.5. A:5 <i>L</i> 32 h in link 9. 2 dB, and	#	46
Motion Cl 38 Del Hanson Comment T In table were ca Suggested In the 6 change Proposed F ACCEF Based 6 5.02 dB	to adopt this res SC 38.4.3 <i>Type</i> E 38-8, the link pe alculated in erro <i>Remedy</i> 2MMF column is a unallocated m <i>Response</i> 2T. on the commen 8, and change u	In table 38-9: change 4.02 dB to 5.02 argin in link from 1.43 dB to 0.13 dB to 0.13 dB to 0.13 dB to 0.13 dB to 0.13 dB to 0.14 dB to 0.14 dB to 0.13 dB	e 3.5 to 4.5. A:5 <i>L</i> 32 a in link 9. 2 dB, and able 38-9: cha IB to 0.13 dB.	# ange 4.(46 D2 dB to

Page 31 of 45 C/ 38 SC 38.4.3

C/ 38 SC 38.4.3 David Cunningham	P 38.9 Hewlett-Packar	L 37 d	# 77	C/ 38 Steve Sw	SC 38.4.3 ranson	P 38.9 Corning Inc.	L 46	# <u>82</u>
Comment Type TR Co Note (a) on line 37 states that calculations, that they are not However, receiver conforman test signal having "worst case for 1000BASE-LX on 62.5 M and for 50 MMF on a modal b ISI penalties are unrealisticall An enormous amount of expe presented to IEEE 802.3z pro can be achieved with conditio such that jitter will be within the	t link penalties are for link required and are not mea ince tests will include laund " ISI into a receiver under MF was based on a mode andwidth of 375 MHz.km y high. erimental and theoretical oving that the OFL bandwined launch. Also that the ie jitter budget.	budget ant to be tested ching an optica ar test. The ISI al bandwidth of becker becker be vidence has b vidth of the cab bandwidth is	I. I f 325 MHz.km his the veen le	Commer The I Suggeste Char Propose PRO In tab Char	at Type TR ink power penalt edRemedy nge the link powe nge the unallocat d Response POSED ACCEP ple 38-9: nge the link powe	Comment Status A ies and unallocated margin value or penalty for 62.5 from 4.02 to 5 ed margin for 62.5 from 1.43 to Response Status C T.	es for 62.5 um fi .02 dB. 0.13 dB. .02 dB.	iber are incorrect.
The above comments apply t 38.4 and table 38-5.	o the equivalent 1000BA	SE-SX sub-cla	use:	Char	nge the unallocat	ed margin for 62.5 from 1.43 to	0.13 dB.	
SuggestedRemedy Use the OFL bandwidth for 6 for the calculation of ISI powe the reduced power penalty fo table 38-9 on page 38.9 appr	2 MMF (500 MHz.km) and er penalties for 1000BAS r receiver conformance to opriately.	d 50 MMF (400 E-LX and use esting. Modify	MHz.km)	C/ 38 Steve Sw Commen The I	SC 38.4.3 ranson <i>at Type</i> TR ink power penalt	P 38.9 Corning Inc. Comment Status A ies and unallocated margin value	L 46 es for 62.5 um fi	# 83
At the March Plenary the com modal bandwidth to use for 1 38-5, link length and the rece <i>Proposed Response Re</i> PROPOSED ACCEPT. Note that the resolution of this 82. On page 38.9 in table 38-9, In 62MMF column, change 5. In 50MMF column, change 4.	mittee must discuss and 000BASE-SX as the bas iver conformance testing. <i>sponse Status</i> C s comment affects the res .02 (was 4.02) to 2.83, ch	decide what is for table solution of com ange 0.13 to 2 to 0.94	iment 32	Suggeste Char Proposed PRO In tab Char Char	edRemedy nge the link powe nge the unallocat d Response POSED ACCEP ole 38-9: nge the link powe nge the unallocat	er penalty for 62.5 from 4.02 to 5 ed margin for 62.5 from 1.43 to 6 <i>Response Status</i> C T. er penalty for 62.5 from 4.02 to 5 ed margin for 62.5 from 1.43 to 6	.02 dB. 0.13 dB. .02 dB. 0.13 dB.	

C/ 38 SC 38.5 P38.10 L 11-16 # 93

Jonathan Thatcher

IBM -- Rochest

IBM -- Rochester, MN

Comment Type TR Comment Status A Subject: Jitter allocation problems

Subject. Sitter allocation probl

The allocation of 96 ps of DJ from TP2 to TP3 in unreasonably high. While the reduction of DJ from TP3 to TP4 (especially with the new stress tests being created by the MBI group) from 184 to 120 ps is far too severe.

SuggestedRemedy

Allocate 46 ps of DJ to the fiber (TP2 to TP3) and 170 ps to the receiver (TP3 to TP4). Fine tune these numbers as required by the overall table calculations to get self consistency.

Proposed Response Response Status C

ACCEPT In Principal

In table 38-4, add additional line for "stressed receiver sensitivity", -13.0 dBm for 50MMF and -12.0 for 62MMF. Add a "stress ISI" line having 2.6 ps for 50 MMF and 2.20 ps for 62MMF. Add notes a. and b. from conformance test document.

The changes to D4.1 to incorporate these ranges as defined by the link model are:

1000BASE-SX

In table 38-2, introduce bandwidth and link length cells.

In table 38-4, add additional line for "stressed receiver sensitivity", -13.0 dBm for 50MMF and -12.0 for 62MMF. Add a "stress ISI" line having 2.6 ps for 50 MMF and 2.20 ps for 62MMF. Add notes a. and b. from conformance test document.

In table 38-5:

The power budget is increased from 7.0 to 7.5 dB.Introduce a second line showing the modal bandwidth cases.Modify the links lengths in accordance with the above cells.Change llnk lengths to above table.Change "channel insertion loss" columns to : 2.33, 2.53, 3.37, and 3.56.Change "link power penalties" column to:4.30, 4.31, 4.10, and 3.59.Change "unallocated margin " column to:0.88, 0.66, 0.02, and 0.34.

1000BASE-LX

In table 38-6, introduce bandwidth and link length cells.

In table 38-8, add additional line for "stressed receiver sensitivity", -13.9 dBm. Add a "stress ISI" line having 2.6 ps. Add notes a. and b. from conformance test document.

In table 38-9:

Introduce a second line showing the modal bandwidth cases.

Modify the links lengths in accordance with the above cells.Change "channel insertion loss" columns to : 2.35, 2.35, and 2.35.Change "link power penalties" column to:3.50, 5.11, and 3.99.Change "unallocated margin " column to:1.65, 0.04, and 1.16.

In table 38-10, change the jitter budget as indicated in the attached foil.

In table 38-11:

Wavelength85013008501300Add the length cells in a new second line:220, 275, 550, 500, 550, 550550Change channel attenuation numbers to:2.33, 2.53, 2.32, 3.25, 3.42, 2.32

In table 38-12:

Add new row showing second set of cells for 200/500 and 500/500 bandwidths.

In new subclause 38.6.11, remove table 1 since it has been incorporated into tables 38-4 and 38-8.

C/ 38 SC 38.5 P 38.10 L 11-16 # 92 Jonathan Thatcher IBM Rochester, MN	Modify the links lengths in accordance with the above cells. Change "channel insertion loss" columns to : 2.35, 2.35, and 2.35. Change "link power penalties" column to: 3.50, 5.11, and 3.99.
Comment Type TR Comment Status A	Change "unallocated margin " column to: 1.65, 0.04, and 1.16.
Subject: Jitter allocation problems	In table 38-10, change the jitter budget as indicated in the attached foil.
The allocation of 96 ps of DJ from TP2 to TP3 in unreasonably high. While the reduction of DJ from TP3 to TP4 (especially with the new stress tests being created by the MBI group) from 184 to 120 ps is far too severe.	In table 38-11: Wavelength 850 1300 850 1300 Add the length cells in a new second line: 220, 275, 550, 500, 550, 550 Change channel attenuation numbers to: 2.33, 2.53, 2.32, 3.25, 3.42, 2.32
SuggestedRemedy	In table 38-12:
Allocate 46 ps of DJ to the fiber (TP2 to TP3) and 170 ps to the receiver (TP3 to TP4). Fine tune these numbers as required by the overall table calculations to get self consistency.	Add new row snowing second set of cells for 200/500 and 500/500 bandwidths. In new subclause 38.6.11, remove table 1 since it has been incorporated into tables 38-4 and 38-8.
Proposed Response Response Status C	C/ 38 SC 38.5 P38.10 L22 # 78
ACCEPT In Principal	Del Hanson Hewlett-Packard
In table 38-4, add additional line for "stressed receiver sensitivity", -13.0 dBm for 50 and -12.0 for 62MMF. Add a "stress ISI" line having 2.6 ps for 50 MMF and 2.20 ps for 62MMF. Add notes a. and b. from conformance test document.	MMF Comment Type E Comment Status A With the revised proposed jitter budget, the note under table 38-10 is no longer correct.
The changes to D4.1 to incorporate these ranges as defined by the link model are:	SuggestedRemedy
1000BASE-SX	Remove the note on page 38.10, line 22, describing the identical jitter parameters at TP1 and TP4 for the optical PMD and 1000BASE-CX.
In table 38-2, introduce bandwidth and link length cells. In table 38-4, add additional line for "stressed receiver sensitivity", -13.0 dBm for 50M and -12.0 for 62MMF. Add a "stress ISI" line having 2.6 ps for 50 MMF and 2.20 ps for 62MMF. Add notes a. and b. from conformance test document.	Proposed Response Response Status C ACCEPT. ACCEPT. MMF Remove the note on page 38.10, line 22, describing the identical jitter parameters at TP1 and TP4 for the optical PMD and 1000BASE-CX.
In table 38-5: The power budget is increased from 7.0 to 7.5 dB. Introduce a second line showing the modal bandwidth cases. Modify the links lengths in accordance with the above cells. Change link lengths to above table. Change "channel insertion loss" columns to : 2.33, 2.53, 3.37, and 3.56. Change "link power penalties" column to: 4.30, 4.31, 4.10, and 3.59. Change "unallocated margin " column to: 0.88, 0.66, 0.02, and 0.34.	
1000BASE-LX	
In table 38-6, introduce bandwidth and link length cells.	
In table 38-8, add additional line for "stressed receiver sensitivity", -13.9 dBm. Add a "stress ISI" line having 2.6 ps. Add notes a. and b. from conformance test document.	
In table 38-9:	

Introduce a second line showing the modal bandwidth cases.

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

Page 34 of 45 C/ 38 SC 38.5



In table 38-9:

Introduce a second line showing the modal bandwidth cases.

Modify the links lengths in accordance with the above cells. Change "channel insertion loss" columns to: 2.35, 2.35, and 2.35. Change "link power penalties" column to: 3.50, 5.11, and 3.99. Change "unallocated margin " column to: 1.65. 0.04. and 1.16. In table 38-10, change the jitter budget as indicated in the attached foil. In table 38-11: Wavelength 850 1300 850 1300 Add the length cells in a new second line: 220, 275, 550, 500, 550, 550 Change channel attenuation numbers to: 2.33, 2.53, 2.32, 3.25, 3.42, 2.32 In table 38-12: Add new row showing second set of cells for 200/500 and 500/500 bandwidths. In new subclause 38.6.11, remove table 1 since it has been incorporated into tables 38-4 and 38-8. SC 38.6.10 P38.13 L10 # 76 David Cunningham Hewlett-Packard Comment Type E Comment Status A The title of this sub-clause is wrong. SuggestedRemedy Change the title to " Coupled Power Ratio (CPR) measurements". Proposed Response Response Status C ACCEPT. Change the title of subclause 38.6.10 to " Coupled Power Ratio (CPR) measurements". # 25 SC 38.6.3 P38.10 L46 Dan Brown AMP Comment Type E Comment Status A "TIA/EIA-526-4" is an obsolete reference. SuggestedRemedy Replace with "TIA/EIA-526-4A" (published 8/20/97) Proposed Response Response Status C ACCEPT. On page 38.10, line 46, replace"TIA/EIA-526-4" with "TIA/EIA-526-4A" and change corresponding PICs item.

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

Page 35 of 45 C/ 38 SC 38.6.3

					-					
C/ 38	SC 38.6.5	P38.11	L 14	# 65	CI 38	SC 38.6	.6	P38.12	L 10	# <u>61</u>
Brad Booth	h	Jato Technolog	gies		Joe Gwinn	ı		Raytheon		
Comment	Type E	Comment Status A			Comment	Type T R	l	Comment Status R		
extra s	space				What	change was	made	in line 9? There is a change	bar, but no	
Suggestee	dRemedy				evider mv pri	nce of a char for TR saving	ige. It i that i	t looks like the fix made to ans	swer mandated failed	1
Chang	ge to " respectiv	vely."			to mal	ke it into the	text, ir	spite of the WG vote to acce	ept the change.	
Proposed	Response	Response Status C			Suggeste	dRemedy				
ACCE	PT.				In line	10, change	the "sł	hould" to "shall".		
On pa	ge 38.11, line 14	, remove space before the peri	od, change to ".	respectively."	Proposed	Response		Response Status U		
CI 29	SC 29 6 5	D 20 11	1 52	# 26	REJE	CT.				
Dan Browr	30 38.0.3	AMP	L 3Z	# 20	[Edito	r's note: We	have o	checked our records and beli	eve Mr. Gwinn	
Comment		Comment Status			is mist	taken in his ι	Inders	standing of the committee's pr	evious action.	
"CCIT	T G.957" is an in	correct reference.			consid	dered at our	Feb. 2	-3 interim meeting in Seattle,	WA.]	
Suggestee	dRemedy				The p	revious resp	onse t	o this same comment at the F	ebruary	
Repla	ce with "ITU-T G.	957"			interin	n meeting (co	omme	nt D4/#92) was:		
Proposed	Response	Response Status C			PROF	POSED REJI	ECT.			
ACCE	PT.				If the	specified tran	nsmitte	er rise/fall times can be achieved to remove the response-ti	ved using a filter	to meet the transmit
On pa	ge 38.11, line 52	, change "CCITT G.957" to "IT	U-T G.957"		cycin		no no			
					This F minute	PROPOSED es of the PM	REJE D mee	CT response to #92 was acc eting.	epted by acclair	nation, as noted in the
					[Edito	r's note: the	effect	of the previous committee ac	tion was to NOT	
					acce	pt Mr. Gwinn mittee voted	's con	nment. We cannot explain whe	y he believes the	9
					docu	ment as a re	sult of	f his comment. In light of Mr.	Gwinn's new	
					comr	ment D4.1/#6	61 (thi	s comment) the committee to	ok up the issue	once
					cons	ideration, a r	notion	was brought forth to re-affirm	our previous	
					respo	onse to Mr. G	Gwinn.	on woro: V:24 N:0 A:2		
					The	commentor h	as inc	dicated verbally to the PMD ch	nairman that he i	6
					satis	fied with our	respo	nse, however, to ensure that a	any lingering	
					choos	sing to recirc	ulate t	his comment at this time.]	JUU WE dIE	
					[Edito	r's note: In a	nswer	to the commenter's first ques	tion, there was	

[Editor's note: In answer to the commenter's first question, there was no change made in line 9, the change bar at that location is merely an artifact of the FrameMaker DIFF utility used to produce this draft.]

C/ 38 SC 38	.6.7 P3	38.12 L 18		# <u>52</u>	C/ 38	SC 38.6.7	P38.12	L 23	# 53		
The D4 1 docum	ent does not define a recei	S A	ł		Comment The D	4 1 document of	Comment Status A	vity with imposed			
signal which acc	counts for imposed jitter and	I ISI.			jitter a	and ISI.		ny marinpoodd			
SuggestedRemedy					Suggeste	dRemedy					
Add a new sub-c signal at TP3 for format and will b	clause defined by the MBI or receiver Conformance Tes be posted as a PDF file.	ommittee which defin sting. This is in Frame	es the Maker		Add " confoi inserte	The stressed re mance test signed). After correct	ceiver sensitivity shall be measured at TP3, as specified in 38.6. cting for extinction ratio of the sc	ured using the 7 (new subclause purce, the			
Proposed Response ACCEPT.	e Response Status	С			stressed receiver sensitivity shall meet the conditions specified in table 38-4 for 1000BASE-SX and in table 38-8 for 1000BASE-LX.						
Add a new sub-c signal at TP3 for	lause 38.6.11defined by the receiver Conformance Test	e MBI committee whi sting.	ch define	es the	Add n 62.5 ເ	ew bottom line Im MMF; -12.8 a	to table 38-4:"Stressed receiver a,b; dBm.	sensitivity for			
20 yy y bosomoo	28.6.42				Under new s	table 38-4, add ub-clause 38.6	note a. Measured with TP3 tes .7, for BER = 10^12 at eye cent	t signal, defined ir er.	١		
In title of 38.6.12 and other referen	so.o. 12 , "Bandwidth" becomes up nces to "bandwidth" becom	per "cutoff frequency e "upper cutoff freque	", ency".		Under 9 dB e	table 38-4, add	d note b. Measured with transmit If other extinction ratio is used, t	ter signal that has he receiver			
Caption of Figure	e 3 becomts "Test setup for	reciever UCF meas	urement'		sensit Annex	sensitivity is corrected for the extinction ratio penalty, as shown in Annex 38C.					
In line after figure defined in 36A.5	e3.1, "data stream" become which is"	es "data stream consi	sting of t	he characters	Add n 62.5 เ	ew bottom line Im MMF; -14.5 a	to table 38-8:"Stressed receiver a,b; dBm.	sensitivity for			
end of step 4 "fro 3".	om the measured data" cha	nges to "to the meas	ured res	ponse from step	Under new s	table 38-8, add ub-clause 38.6.	d note a. Measured with TP3 tes .7, for BER = 10^12 at eye cent	t signal, defined ir er.	١		
Changes to 38.6 38.x.x becomes	.8 as noted in the FrameMa 38	ker file, with the follo	wing cha	nges:	Under 9 dB e sensit Anne»	table 38-8, add extinction ratio. I ivity is corrected 38C.	d note b. Measured with transmit If other extinction ratio is used, t d for the extinction ratio penalty,	ter signal that has he receiver as shown in			
					Proposed ACCE	<i>Response</i> PT.	Response Status C				
					Add " confo for ex specif	The stressed re mance test sign tinction ratio of t ied in table 38-	ceiver sensitivity shall be measured at TP3, as specified in 38.6. the source, the stressed received 4 for 1000BASE-SX and in table	ured using the 11 (new subclaus r sensitivity shall r e 38-8 for 1000BA	e). After correcting meet the conditions ASE-LX.		
					Add n 62.5 เ	ew bottom line Im MMF; -13.6 a	to table 38-4:"Stressed receiver a,b; dBm.	sensitivity for			
					Under new s	table 38-4, add ub-clause 38.6.	d note a. Measured with TP3 tes .11, for BER = 10∿12 at eye cei	t signal, defined ir nter.	١		

Under table 38-4, add note b. Measured with transmitter signal that has 9 dB extinction ratio. If other extinction ratio is used, the receiver

Page 37 of 45 C/ 38 SC 38.6.7

sensitivity is corrected for the extinction ratio penalty.

Add new bottom line to table 38-8:"Stressed receiver sensitivity for 62.5 um MMF; -13.9; dBm.

Under table 38-8, add note a. Measured with TP3 test signal, defined in new sub-clause 38.6.11 for BER = 10^{-12} at eye center.

Under table 38-8, add note b. Measured with transmitter signal that has 9 dB extinction ratio. If other extinction ratio is used, the receiver sensitivity is corrected for the extinction ratio penalty.

C/ 38 SC 38.6.7

Del Hanson

P**38.12**

L 24

55



Comment Status A

Comment Type T Comment Status A The D4.1 document does not define a test method for measuring the receiver

SuggestedRemedy

Add new subclause 38.6.9: Measurement of the receiver 3 dB electrical bandwidth.

(This is described in MBI reviewed conformance test document as clause 38.y.y)

Proposed Response Response Status C ACCEPT.

Add new subclause 38.6.12 : Measurement of the receiver 3 dB electrical bandwidth.

C/ 38 SC 38.6.8

P38.12 L 26

Del Hanson

Hewlett-Packard Co.

Comment Type TR Comment Status A

The D4.1 document subclause 38.6.8 on total jitter measurements does not include an imposed conformance test signal.

SuggestedRemedy

To subclause 38.6.8 add: Page 38.12, line 26, following the words "Total jitter", add at TP2.

Page 38.12, line 29, place a period after K28.5 and delete remainder of the sentence.

Page 38.12, line 31, insert the following paragraph: "Total jitter at TP4 shall be measured using the conformance test signal at TP3, as specified in (new) sub-clause 38.6.7. The optical power shall be set at -12.5 dBm for 1000BASE-SX and -13.9 dBm for 1000BASE-LX. This power level shall be corrected is the extinction ratio differs from the the specified extinction ratio (min) of 9 dB. The total jitter shall be measured according to the method in ANSI X3.230-1994 FC-PH Annex A, subclause A.4.2, Active output interface eye opening measurement (reproduced here as Annex 38A). Measurements shall be taken directly at TP4 without additional Bessel-Thompson filters.

Proposed Response Response Status C ACCEPT.

To subclause 38.6.8 add: Page 38.12, line 26, following the words "Total jitter", add at TP2.

Page 38.12, line 29, place a period after K28.5 and delete remainder of the sentence.

Page 38.12, line 31, insert the following paragraph: "Total jitter at TP4 shall be measured using the conformance test signal at TP3, as specified in (new) sub-clause 38.6.11. The optical power shall be set per table 38-4 for 1000BASE-SX and table 38-8 for 1000BASE-LX. This power level shall be corrected if the extinction ratio differs from the the specified extinction ratio (min) of 9 dB. The total jitter shall be measured according to the method in ANSI X3.230-1994 FC-PH Annex A, subclause A.4.2, Active output interface eye opening measurement (reproduced here as Annex 38A). Measurements shall be taken directly at TP4 without additional Bessel-Thompson filters.

<u>56</u>

CI 38	SC Table 38-12	P38.16	L 24	# 84	
Steve Swa	anson	Corning Inc.			

Steve Swanson

TR Comment Status A Comment Type

There are currently three commonly specified "standardized" bandwidth cells:

160/500 for 62.5 um fiber (specified in TIA 568A)

200/500 for 62.5 um and 50 um fiber (currently specified in IS 11801)

500/500 for 50 um fiber (specified in Fibre Channel and proposed in TIA 568 and IS 11801)

In addition, the bulk of the embedded base of multimode fiber has been supplied to a 160/500 Mhz.km specification for 62.5 um fiber and 400/600 MHz.km for 50 um fiber, although 160/200 MHz.km and 400/400 MHz.km are also common. Since the installed base is not uniform and specifying only two bandwidth values limits the applicability of the standard, other values should be included.

SuggestedRemedy

Several remedies exist:

1. Add other values and associated link lengths to table 38.12

2. Add other values and associated link lengths as notes to table 38.12

3. Add an informative table or chart showing other bandwidths and link lengths to section or an annex.

4. Add a normative table or chart showing other bandwidths and link lengths to section 38 or an annex

Proposed Response Response Status C

ACCEPT In Principal

In table 38-4, add additional line for "stressed receiver sensitivity", -13.0 dBm for 50MMF and -12.0 for 62MMF. Add a "stress ISI" line having 2.6 ps for 50 MMF and 2.20 ps for 62MMF. Add notes a. and b. from conformance test document.

The changes to D4.1 to incorporate these ranges as defined by the link model are:

1000BASE-SX

In table 38-2, introduce bandwidth and link length cells.

In table 38-4, add additional line for "stressed receiver sensitivity", -13.0 dBm for 50MMF and -12.0 for 62MMF. Add a "stress ISI" line having 2.6 ps for 50 MMF and 2.20 ps for 62MMF. Add notes a, and b, from conformance test document.

In table 38-5:

The power budget is increased from 7.0 to 7.5 dB. Introduce a second line showing the modal bandwidth cases. Modify the links lengths in accordance with the above cells. Change link lengths to above table. Change "channel insertion loss" columns to : 2.33, 2.53, 3.37, and 3.56. Change "link power penalties" column to: Change "unallocated margin " column to:

4.30, 4.31, 4.10, and 3.59. 0.88, 0.66, 0.02, and 0.34.

1000BASE-LX

In table 38-6, introduce bandwidth and link length cells.

In table 38-8, add additional line for "stressed receiver sensitivity", -13.9 dBm. Add a "stress ISI" line having 2.6 ps. Add notes a, and b, from conformance test document.

In table 38-9:

Introduce a second line showing the modal bandwidth cases. Modify the links lengths in accordance with the above cells. Change "channel insertion loss" columns to: 2.35, 2.35, and 2.35. Change "link power penalties" column to: 3.50, 5.11, and 3.99. Change "unallocated margin " column to: 1.65. 0.04. and 1.16.

In table 38-10, change the jitter budget as indicated in the attached foil.

In table 38-11:

Wavelength 850 1300 850 1300 Add the length cells in a new second line: 220, 275, 550, 500, 550, 550 Change channel attenuation numbers to: 2.33, 2.53, 2.32, 3.25, 3.42, 2.32

In table 38-12:

Add new row showing second set of cells for 200/500 and 500/500 bandwidths.

In new subclause 38.6.11, remove table 1 since it has been incorporated into tables 38-4 and 38-8.

CI 38A SC Brad Booth	P 38.26-31 L Jato Technologies	# 67	C/ 38A SC 38A.4 Dan Brown	Р38.29 АМР	L14	# 27
Comment Type E Annex page numberin SuggestedRemedy	Comment Status R g is incorrect.		Comment Type T Co RIN test procedure specifies singlemode fiber. This part of making multimode RIN measu	<i>imment Status</i> A use of a polarization rotat f the procedure is not ap urements.	tor and a propriate for	
Change page 38.26 to to 38A.4; change 38.3	38A.1; change 38.27 to 38A.2; change 380 to 38A.5; and change 380.31 to 38A.5.	8.28 to 38A.3; change38.29	SuggestedRemedy			
Proposed Response REJECT.	Response Status C		Add a note stating "For multi le rotator should be omitted. Th a multimode fiber."	ongitudinal mode lasers, e singlemode fiber shoul	the polarization Id be replaced wi	ith
This issue was review consistent with the do	ed as a comment in the D4 cycle. The curr cument format.	ent numbering is	Proposed Response Res ACCEPT.	sponse Status C		
CI 38A SC 38A Howie Johnson	P38.25 L16 Signal Consulting	# 123	P 38.11, line 6 add the senter	ice:		
Comment Type TR It's not clear to me that	Comment Status A t our standard benefits from the inclusion o	RESUBMIT f this annex.	"For multimode fiber measure 1994 FC-PH should be omitte multimode fiber."	ments, the polarization re- ed, and the singlemode fi	iber should be re	d in ANSI X3.230- placed with a
SuggestedRemedy Let's either: (1) please include in th the information in that (2) delete the annex	e annex a brief note at the beginning of ea section is used in clause 28, or	ch section explaining how				
Proposed Response ACCEPT IN PRINCIP	Response Status C LE.					
Remove Annex 38A a	nd all references to it.					
It has been useful to re standard for ease of re However, it is evident maintenance to make the benefit of having th	etain the Fibre Channel Test Methods listed eference while the MBI conformance tests by several comments against 38A that the it consistent with this 802.3z standard now his reference included beyond this point.	d in Annex 38A in this were being completed. needed revisions and significantly out weighs				

<i>CI</i> 38B Brad Booth	SC	P 38.22 Jato Tech	2-33 L Inologies	# 68
Comment T Annex p	<i>ype</i> E age num	Comment Status R bering is incorrect.		
SuggestedF Change	Remedy page 38	32 to 38B.1, and change 38.33	to 38B.2.	
Proposed R REJEC	esponse T.	Response Status C		
This issu	ue was re ent with th	viewed as a comment in the D4 e document format.	cycle. The current nu	mbering is
C/ 38B	SC 380	; P38.33	3 L 52	# 54
Del Hanson		Hewlett-P	ackard Co.	
Comment T	уре Т	Comment Status R		
The D4. sensitiv	1 docum rity with ir	ent does not define the calculati posed ISI.	ion of stressed receive	er
SuggestedF	Remedy			
Add Anr	nex C: Ca	culation of the required stresse	d receiver sensitivity	
Insert te	ext from I	1BI reviewed PDF file (describe	ed as Appendix X).	
Proposed R REJEC ⁻	esponse T.	Response Status C		
No need	to define	separate annex, handled as no	ote in text	

C/ 39 SC 39.2.3	P39.2	L 11	# <u>58</u>	C/ 39	SC 39.3.1	P39.5	L 22	# 124
Haluk Aytac	Hewlett-Packa	ard		Geoff Tho	mpson	Bay Networks	, Inc.	
Comment Type T Con	nment Status A			Comment	Type TR	Comment Status A		RESUBMIT
The intent here is to have marg sensitivity) and the signal detec coupled noise to 400 mV allow 400 mV.	in between 400 mV (r ct circuit trip point. Add vs the trip point to be t	eceiver min. diff. ling receiver oo close to		TDR r standa Or per	neasurements are ca ardized measuremen rhaps since all of the	alled out without a referenc t technique with standardiz references to TDR are in i	e that I can find to ed test equipment notes the objection	o a nt setup. on is
SuggestedRemedy				that th	ere is no specified m	neasurement procedure.		
remove "plus receiver coupled	noise"			Suggeste	dRemedy			
Proposed Response Resp	onse Status C							
ACCEPT.				Proposed PROF	Response I POSED PARTIAL AC	Response Status C CCEPT.		
Delete the words "plus receive sentence. Also change the refu "receiver minimum differential s table 39-4.	r coupled noise" from erence in the previous ensitivity" to match the	the end of the sentence to e deffiniition in		Since the fol	no international stan lowing text is propos	dards have been located o ed as an addition to clarify	n how to make th the usage of the	ese measurements, se tests.
C/ 39 SC 39.2.3	P 39.2	L 8	# 69	39.6.8	B Differential TDR m	easurement procedure		
Brad Booth	Jato Technolo	ogies		The d	ifferential time-doma	in reflectometry (TDR) test	setup measures	the
Comment Type E Con	nment Status A			reflect is obta	ed waveform returne ained by driving the lo	ed from a load when driven bad under test with a step v	with a step input. vaveform using a	It
First reference of NEXT should	l be defined.			driver	with a specified sour	rce impedance and risetim	e. The reflected	
SuagestedRemedv				wavef	orm is the difference	between (a) the observed	waveform at the	device
Change to read " the PMD du noise, etc."	e to near end cross ta	lk (NEXT), reflec	tions, power supply	that re signal	esults when driving a . From this measured	standard test load with the result we can infer the im	same specified t pedance of the d	est evice
Proposed Response Resp	oonse Status C			under equiva	test. The time-doma alent of S11 paramet	in reflectometry measurem er testing used in carrier-b	ent is the time-do ased systems.	omain
While I do not believe that this present in the IEEE dictionary, in the clause for clarity. Howeve 39.1, it will be added there inste	s specifically necessa it will be expanded at er, since the first occur ead of the recommend	ry, since NEXT i ts first occurance ance is on page led location.	S	For th condit (a) Th source (b) Th	e measurement of 10 ions apply: e driving waveform is e with an 85-ps riseti e test setup is calibra	000BASE-CX jumper cable s sourced from a balanced me (see 39.6.8.1) ated (see 39.6.8.2)	es, the following t , differential 150-	rest ohm
				39.6.8 If the r 75 ohr resisti the ca antipo ohms directl whole driving	8.1 Driving waveform natural differential ou ms, it may be adjuste ve pad. When the dri se with a differential idal, 50-ohm sources and R2=43.3 ohms. y to the test fixture w structure is mounted g signal +(50 ohms) etum	tput impedance of the drivi of to within 75 +/- 5 ohms b iving point resistance is 10 signal source having two ir), a good pad design show All resistors are surface-m ith no intervening leads or t I on a solid ground plane (u)+	ng waveform is n y an attenuating 0 ohms (as would dependant, in below, where f ount packages s iraces, and the used in three place	ot d be R1=173.2 oldered æs):

Page 42 of 45 Cl **39** SC **39.3.1**

				1 002.02 Dia	
ohms differential load	1				
 driving signal(50 ohm returngr	- s)(75 ohms) Id				
If the natural risetime of t measured time-waveforn 85 +/- 10 ps.	he driver is less than 85 ps, the ns must be filtered to reduce th	e resulting ne apparant rise	etime to		
39.6.8.2 Calibration of th Three measurements are The value of the test resi frequency range DC to 6 resistance should be with The differential voltages in these three cases are From these three measu A = (Vopen - Vshort) / 2 B = (Vopen + Vshort) / 2 Z0 = Ztest * (Vopen - VthThe value of Z0 is the ac	e test setup made, with a short, and open stance should be constant to w GHz, and of known value. The in the range 75 +/- 5 ohms. measured across the device-u called Vshort, Vopen, and Vte rements we will compute three we st/(Vtest - Vshort) tual driving point impedance o	, and a known t vithin 1% over t value of the te nder-test termi st, respectively intermediate o f the tester. It	test load. the est inals r. juantities:		
must be within 75 +/- 5 of For any device under tes to impedance is as follow Measured impedance = where V' = (Vmeasured	t, the conversion from measur /s: -D(1 + V)/(1 - V), -B)/A	ed voltage Vm	esaured		
C/ 39 SC 39.6.8.2	P39.13	L 54	# <u>70</u>		
Brad Booth	Jato Technologi	es			
Comment Type E Incorrect spelling of mea	Comment Status A sured.				
SuggestedRemedy Change to read " voltage	ge Vmeasured to impedance	II			
Proposed Response ACCEPT.	Response Status C				
Changed spelling as sug	gested.				

C/ 41	SC	P 4	1.12	L 1	# 72	
Brad Boot	h	Jato ⁻	Technologi	es		
Comment Reaso	<i>Type</i> E on for text "State	Comment Status e diagrams"?	Α			
Suggester Shoul - remo - made	<i>dRemedy</i> d this text be: oved e into a sentenc	e, or				
Proposed ACCE Make (duplie	Response PT. it a section head cate of #73)	Response Status ding.	С			
C/ 41	SC	P 4	1.12	L 1	# 73	
Brad Boot	h	Jato ⁻	Technologi	es		
Comment Reaso	<i>Type</i> E on for text "State	Comment Status e diagrams"?	Α			
Suggester Shoul - remo - mad - mad	<i>dRemedy</i> d this text be: oved, e into a sentenc e into a heading	e, or				
Proposed ACCE Make (duplie	Response PT. it a section head cate of #72)	Response Status ding.	С			
C/ 41 Brad Boot	SC 41.2.2. ′	I.6 P4 Jato	1.11 Technologi	L 9 es	# 71	
Comment Doubl	<i>Type</i> E e period at end	Comment Status of sentence.	Α			
Suggester Remo	<i>dRemedy</i> we extra period.					
Proposed ACCE	Response PT.	Response Status	С			

C/ 42 Koichiro S	SC 42.1.1 eto	P 42. Hitachi	4-5 <i>L</i> Cable	#	50
Comment I see definit includ	<i>Type</i> E a few uses of a ion or mention ing Clause 39.	Comment Status J a word "TW-Style Cable", t ing of this cable in any clau	A out there is no use		
Suggeste	dRemedy				
Do no "1000	t use the word BASE-CX Cat	"TW-Style Cable". Use so ble" instead.	omething like		
Proposed ACCE Use th 1000E 1000E	<i>Response</i> PT. e media type BASE-CX: Shi BASE-T: Cate	Response Status (names used in Clause 34: elded Jumper Cable. gory 5 UTP.	;		
CI 42	SC 42.3.1	.1 P42.	5 <i>L</i> 1	17 #	74
Brad Boot	า	Jato Te	chnologies		
Comment plural	<i>Type</i> E form used whe	Comment Status	A J.		
Suggeste Chan <u>e</u> "Figur	dRemedy ge to read: e 42-5 shows :	a schematic representation	n of a one-repe	ater path."	
Proposed	Response	Response Status	;		