P802.3ch D3.1

Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Automotive Electrical 1st S

	~ EM	D4	1 20	# P16	CI AE	SC 45 34 403 5	D 20	1 20	# 010	
Vionekowski N		F 1 Conoral Mata		# KI-0	U 43	30 43.2.1.193.5	Broadcom	L 39	# KI-9	
Comment Turce			ors company	E7	Tu, IVIIKe				lata	
IEEE Std 80	2.3cm was appro	wed by the IEEE-SA S	itandards Board o	n 30 JAN 2020.	The P	'HY Capability Bits (including PrecodeSel and	d interleave reque	est bits) are specified in	
Suggested	edu				149.4	.2.4.5.				
Change 802	-0y 2 3cm-20xx to 802	3cm-2020 Also mak	e this change on	P13 13	Suggestee	dRemedy				
Change 802.3cm-20xx to 802.3cm-2020. Also make this change on P13 L13. <i>Response Response Status</i> C ACCEPT IN PRINCIPLE.					Make changes to the following: 1. Page 39, 45.2.1.193.5, line 39, from "(see 149.4.2.4.4)" to "(see 149.4.2.4.5)". 2. Page 40, 45.2.1.194.1, line 51, from "149.4.2.4.4" to "149.4.2.4.5". 3. Page 41, 45.2.1.194.2, line 8, from "149.4.2.4.4" to "149.4.2.4.5". 4. Page 41, 45.2.1.194.4, line 19, from "149.4.2.4.4" to "149.4.2.4.5". 5. Page 41,					
This comme	ent does not apply 802 3cb/D3 1 or ti	to the substantive change in the unsatisfied negative	anges between IE	EE P802.3ch/D3.0	45.2.1	1.195.1, line 47, from	149.4.2.4.1" to "149.4.2	2.4.5".		
Hence it is i	not within the scop	be of the recirculation l	pallot. However, t	he change suggested	Response		Response Status C			
is a non-sul	ostantive change t	hat improves the clarit	y of the draft.		ACCE	PT IN PRINCIPLE.				
Implement	the Proposed Cha	nge.			This c and IE	comment does not a EEE P802.3ch/D3.1	pply to the substantive ch or the unsatisfied negativ	nanges between I /e comments fron	EEE P802.3ch/D3.0 n the previous ballot.	
C/FM SC	C FM	P 1	L 29	# R1-5	Hence	e it is not within the s	scope of the recirculation	ballot. However,	the change suggested	
Vienckowski, N	latalie	General Moto	ors Company		correc	cts an error in the dra	aft.			
Comment Type	E Co	mment Status A		EZ	Imple	ment the Proposed	Change.			
IEEE Std 80	02.3cq was approv	ved by the IEEE-SA St	andards Board or	n 30 JAN 2020.	CI 45	SC 45 2 1 194 5	P41	/ 27	# R1_3	
SuggestedRem	edy				Wienckov	vski Natalie	General Mot		# 1(1-5	
Change 802	2.3cq-20xx to 802.	3cq-2020. Also make	this change on P	13 L8.	Comment	$T_{VDP} = T$	Comment Status A	ors company	registers	
Response	Res	ponse Status C			Corre	ct the implementation	on of comment i-56 to add	text to 45.2.1.19	15.1.	
ACCEPT IN	I PRINCIPLE.				Suggester	d Peredy				
This commo and IEEE P Hence it is i is a non-sul	ent does not apply 802.3ch/D3.1 or tl not within the scor ostantive change t the Proposed Cha	to the substantive chance in the substantive chance is the unsatisfied negative of the recirculation hat improves the clarit nge.	anges between IE e comments from pallot. However, t y of the draft.	EE P802.3ch/D3.0 the previous ballot. he change suggested	Remo stating value value reque the lo	we the text accident g, "The values of L = of L = 4 is not define is received from the sted interleaver dep cal PHY."	ally added to 45.2.1.194. 2 and L = 4 are not defined for 5GBASE-T1 PHYs link partner, but if the un th is out of scope of this s	5. Add a new par ned for 2.5GBASI . Bits 1.2312.12: ² Idefined values a standard and may	ragraph to 45.2.1.195.1 E-T1 PHYs, and the I1 will indicate whatever re received, the y not be supported by	
		D	1	# 017	Response	,	Response Status C			
				# KI-/	ACCE	PT.				
<i>comment Type</i>	ne G Col neets all editorial re	Editorial Cool mment Status A equirements	rdination	EZ						
SuggestedRem	edy									
Response ACCEPT.	Res	ponse Status C								

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

C/ 45 SC 45.2.1.194.5 Page 1 of 4 2/26/2020 11:19:54 AM P802.3ch D3.1

Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Automotive Electrical 1st S

C/ 45	SC 45.2.1.194.5	6 P41	L 27	# R1-10	CI 45	SC	45.2.1.196.3	P 4	3	L 49	# R1-11
Tu, Mike		Broadcom			Tu, Mike			Broad	dcom		
Comment This p	t <i>Type</i> E paragraph belongs to	Comment Status A 9 45.2.1.195.1.		late	Comment 7 "During the val	<i>Type</i> 9 norm ue of F	T al operation, PrecodeSel re	<i>Comment Status</i> bit 1.2313.11 is s ceived from the l	A et to zero	, and the preco r. and bits 1.23	<i>late</i> der is set according to 313.10:9 are ignored."
SuggestedRemedy Move this paragraph (line 27 to 30) to line 48 of the same page. Response Response Status C					Is this a rquirement to set bit 1.2313.11 to 0 in normal operation? However, the description in 45.2.1.196.2 implies 1.2313.11 may be set to either 0 or 1, even in normal operations. From previous discussions with George, I recall the intention was to allow bit 1.2313.11=1						
ACCE	CCEPT IN PRINCIPLE.					even in normal operation in order to test the PHY transmitter.					
Implement the solution to R1-3, copied below.					SuggestedRemedy Delete the last two sentences in this paragraph, from line 47 to line 50. "For testing purposes, the precoder, and bits 1.2313.10:9 are ignored."						
Remo stating value value reque the lo	ove the text accident g, "The values of L = of L = 4 is not defin- is received from the ested interleaver dep ocal PHY."	ally added to 45.2.1.194.5. 2 and L = 4 are not define ed for 5GBASE-T1 PHYs. E link partner, but if the under th is out of scope of this sta	Add a new para d for 2.5GBASE Bits 1.2312.12:1 fined values ar indard and may	agraph to 45.2.1.195.1 -T1 PHYs, and the 1 will indicate whatever e received, the not be supported by	Response ACCEI This co and IE Hence	PT IN I ommer EE P8	F PRINCIPLE. nt does not ap 02.3ch/D3.1 (ot within the s	Response Status	C ntive char negative	nges between II comments from	EEE P802.3ch/D3.0 n the previous ballot.
C/ 45	SC 45.2.1.195	P 42	L 8	# R1-4	 Hence it is not within the scope of the recirculation ballot. However, the change suggested improves reader understanding of the draft. The complete text to be deleted is shown below for clarity. 					the change suggested	
Vienckov	wski, Natalie	General Motor	s Company								
Comr 155d Suggester Chang 1.231	ment i-56 metioned t but the "Proposed C <i>dRemedy</i> ge "Reserved" to "ur 2.12:11 in Table 45-	hat "Reserved" should be c hange" neglected to includ ndefined" for the values 01 155d.	hanged to "unde e this. and 10 in the de	efined" in Table 45- scription of bits	45.2.1. bits, ar enablir precod bits 1.2	nd the ng test er is s 2313.1	specified test mode 3. Duri et according t 0:9 are ignore	can be carried or ng normal operat o the value of Pre	purposes ut by using ion, bit 1.2 ecodeSel	s, the precoder g these bits, bit 2313.11 is set t received from t	can be set using these t 1.2313.11, and to zero, and the the link partner, and
Response	9	Response Status C			C/ 45	SC	45.2.1.196.4	P4	4	L 6	# <u>R1-12</u>
ACCEPT.					Tu, Mike Broadcom Comment Type T Comment Status A Test mode 2 is described in 149.5.2.3.1 and 149.5.2.3.2.					late	
					<i>Suggested</i> Chang	R <i>emec</i> e "149	<i>dy</i> .5.2.3" to "149	9.5.2.3.1 and 149	.5.2.3.2".		
					Response ACCE	PT IN I	F PRINCIPLE.	Response Status	С		
					This co and IE Hence correct	ommer EE P8 it is no s an e	nt does not ap 02.3ch/D3.1 c ot within the s rror in the dra	pply to the substa or the unsatisfied cope of the recirc ft.	ntive char negative ulation ba	nges between II comments from Illot. However,	EEE P802.3ch/D3.0 n the previous ballot. the change suggested
					Implem	nent th	e Proposed C	change.			
TYPE: TR COMMEN SORT OR	R/technical required IT STATUS: D/dispa RDER: Clause, Subc	ER/editorial required GR/g tched A/accepted R/rejec lause, page, line	eneral required ted RESPON	T/technical E/editorial G/ SE STATUS: O/open W/w	/general vritten C/closed	U/un:	satisfied Z/wi	thdrawn	C/ 45 SC 45.2	2.1.196.4	Page 2 of 4 2/26/2020 11:20:0 [,]

P802.3ch D3.1

C/ 149	SC	149.3.2.2.22	P 109	L 22	# R1-13	
Zimmerman	, Geo	orge	ADI, APL	Group, Aquantia,	BMW, Cisco, CommScop	
Comment Ty	фe	т	Comment Status A		late	
"Following this event, the PMA transmits the sleep signal starting at the beginning of the next superframe to indicate to the link partner that it is transitioning to the LPI transmit mode." - the transmission isn't necessarily aligned to the next superframe.						

SuggestedRemedy

delete "starting at the beginning of the next superframe"

Response

Response Status C

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch/D3.0 and IEEE P802.3ch/D3.1 or the unsatisfied negative comments from the previous ballot. Hence it is not within the scope of the recirculation ballot. However, the change suggested improves reader understanding of the draft.

The following shows the complete before and after text per the proposal.

Change: Following this event, the PMA transmits the sleep signal starting at the beginning of the next superframe to indicate to the link partner that it is transitioning to the LPI transmit mode.

To: Following this event, the PMA transmits the sleep signal to indicate to the link partner that it is transitioning to the LPI transmit mode.

C/ 149	SC 149.3.7.2.2	2 P 119	L 54	# R1-8	I
Zimmerman,	George	ADI, APL	Group, Aquantia	, BMW, Cisco, CommScop	
Comment Ty	pe T	Comment Status A		EEE	

(I realize that this comment may be out of scope)

There seems to be a problem in the EEE transmit state diagram with regards to the transition from SEND SLEEP to SEND ALERT. tx lpi reg is generated by the PCS 64B/65B Transmit state machine at any symbol boundary when it receives the LPI request. In Figure 149-20, tx lpi reg is further gualified with rs fec frame done in the EEE transmit state machine so that transition from TX NORMAL to SEND SLEEP occurs on any RS-FEC frame boundary. During the 8 RS-FEC frames that the EEE transmit state machine stays in the SEND SLEEP state, tx lpi reg could go false. While this tx lpi reg transition is aligned to tx alert start next, the EEE transmit state machine may have only completed four RS-FEC frames of SEND SLEEP, so the transition to SEND ALERT will be delayed for an additional four RS-FEC frames. This delay would cause SEND ALERT to transmit ALERT outside of the specified ALERT window.

149.3.2.2.22 that states "PMA transmits the sleep signals starting at the beginning of the next superframe", but this doesn't address the problem as the size of the superframe changes based on the interleave, and as shown in the example above even though the SEND SLEEP did start on a 4 RS-FEC superframe boundary, ALERT was still transmitted incorrectly.

To prevent this potential misalignment, the transition to SEND SLEEP needs to be aligned to the start of ALERT, which according to 149.3.6.1 "shall start at the beginning of any eight PHY frame boundary starting at the beginning of the frame following a refresh PHY frame". Aligning the transition to SEND SLEEP would ensure that the lpi sleep timer completes and the EEE state machine transitions to SEND ALERT that the ALERT transmission is properly aligned.

SuggestedRemedy

Add the following variable to 149.3.7.2.2, in alphanumeric order: (page 119 line 54)

tx sleep start next

A Boolean value. This variable is set TRUE during the seventh RS-FEC frame in every group of eight RS-FEC frames, where the group of eight RS-FEC frames start with the RS-FEC frame after refresh.

In Figure 149-20 (page 129 line 9) Change the transition from TX NORMAL to SEND SLEEP to the following: tx lpi req * rs fec frame done * tx sleep start next

Response Status C

Response

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch/D3.0 and IEEE P802.3ch/D3.1 or the unsatisfied negative comments from the previous ballot. Hence it is not within the scope of the recirculation ballot. However, the change suggested

TYPE: TR/technical required ER/editorial required GR/genera	al required T/technical E/editorial G/general	C/ 149	Page 3 of 4
COMMENT STATUS: D/dispatched A/accepted R/rejected	RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn	SC 149.3.7.2.2	2/26/2020 11:20:06 AM
SORT ORDER: Clause, Subclause, page, line			

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corrects an error in the draft.

Implement the Proposed Change.

mpici	none and i ropoo	eu onunge.			
C/ 149	SC 149.9.1		P 179	L 8	# R1-1
Wienckow	/ski, Natalie		General Mo	tors Company	
Comment	Туре Е	Comment S	tatus A		EZ
The e starte chang	ditor's note rega d WG ballot and es.	ding the mainte the text current	nance task f y in this sec	orce is no longer i tion does not need	needed. P802.3cr has I any additional
Suggested	Remedy				
Delete consic align v	e Editor's Note: leration for revis vith the output o	The equivalent t ion by the maint f that effort.	ext in other enance task	clauses of IEEE S force. This clause	td 802.3 is under ∋ should be revised to
Response		Response S	tatus C		
ACCE	PT IN PRINCIP	LE.			
Implei	e it is not within t on-substantive c ment the Propos	he scope of the nange that impro	recirculation	ballot. However, ity of the draft.	the change suggested
C/ 149B	SC 149B.3.2		P205	<i>L</i> 10	# R1-2
Wienckow	/ski, Natalie		General Mo	tors Company	
Comment Remo not re	<i>Type</i> E ve the word "ens quired.	Comment S sure" added by c	tatus A comment i-7	The reason for	EZ the recommendation is
Suggested	Remedy				
Chanç ensur status on P2	ge: It is recomm e reception by th is set for a mini 05 L20 (149B.3.	ended that this a e link partner m mum of 100 mill 3), P205 L29 (14	status is set anagement iseconds. T 19B.3.4), an	for a minimum of entity. To: It is re his same change d P205 L40 (149B	100 milliseconds to commended that this should also be made .3.5).
Response		Response S	tatus C		
ACCE	PT.				

C/ **149B** SC **149B.3.2** Page 4 of 4 2/26/2020 11:20:06 AM