C/ 120F	SC 120F.3.1	P 205	L 14	# 10	C/ 120F	SC 120F.3.1.	1 P <b>205</b>	L 53	# 15		
Wu, Mau-I	_in	Mediatek			Wu, Mau-I	_in	Mediatek				
Comment ERL v	<i>Type</i> <b>T</b> alue is TBD in Ta	Comment Status D ble 120F-1		bucket5 ERL	Comment Type       T       Comment Status       D       bucket5 ERL         The value of N_bx in Table 120F-2 is TBD.       In order to reflect the capability referenced receiver of C2C, N_bx shall align with the N_b       value in Table 120F-6, which is 6.						
Suggested Chang	<i>IRemedy</i> le ERL value from	n TBD to 11									
Proposed	Response	Response Status W			Suggested Chang	Remedy e TBD to 6					
There	is no consensus	to make the proposed chan	ge. See the respons	se to comment #45.	Proposed PROP	Response OSED ACCEPT	Response Status W IN PRINCIPLE.				
C/ 120F	SC 120F.3.1.1	P 205	L <b>47</b>	# 14	Resolv	e using the resp	onse to comment #45.				
Wu, Mau-I	_in	Mediatek			C/ 120F	SC 120F.3.2	P <b>207</b>	L <b>44</b>	# 16		
Comment	Type <b>T</b>	Comment Status D		bucket5 ERL	Wu, Mau-I	in	Mediatek				
	alue of I_rin Tabl	ie 120F-2 is TBD.			Comment	Туре Т	Comment Status D	bucket5 ERL			
Chano	Remedy TBD to 0.01				The va	llue of ERL is TB	D in Table 120F-3				
Proposed	Response	Response Status W			Suggested	Remedy					
PROP	OSED ACCEPT I	N PRINCIPLE.			Chang	e IBD to 11					
Pocol	o using the resp	anso to commont #45			Proposed PROP	Response	Response Status W				
C/ 120F	SC 120F.3.1.1	P 205	L 52	# 48	There	is no consensus	to make the proposed char	nae. See the resp	onse to comment #45.		
Mellitz, Rid	chard	Samtec			C/ 120F	SC 120F 4 3	P 213	/ 42	# 49		
Comment	Type <b>TR</b>	Comment Status D		bucket5 ERL	Mellitz, Ric	chard	Samtec	- <b>T</b>	" 13		
Assigr	N_bx to recomm	endation in mellitz_3ck_ad	hoc_01_061020		Comment	Type TR	Comment Status D		bucket5 ERL		
Suggested	lRemedy				Assigr	N_bx to recomn	nendation in mellitz_3ck_ac	hoc_01_061020			
Chang	e TBD for N_bx to	0 6			Suggestea	Remedy					
Proposed	Response	Response Status W			Chang	e TBD for N_bx t	to 6				
PROP	OSED ACCEPT I	N PRINCIPLE.			Proposed	Response	Response Status W				
Resolv	ve using the respo	onse to comment #45.			PROP	OSED ACCEPT	IN PRINCIPLE.				
					The re http://v	ferenced present vww.ieee802.org	ation is here: /3/ck/public/adhoc/jun10_20	D/mellitz_3ck_adh	noc_01a_061020.pdf		
					Resolv	e using the resp	onse to comment #45.				

C/ 120F SC 120F.4.3

C/ 120G SC 120G.3.1	P <b>221</b>	L 23	# 18	C/ 162	SC 162.11	P 157	L <b>24</b>	# 181			
Wu, Mau-Lin	Mediatek			DiMinico,	Christopher	MC Comm	unications				
Comment Type <b>T</b> The value of ERL (min)	Comment Status <b>D</b> ) in Table 120G-1 is TBD		bucket5 ERL	Comment Type         TR         Comment Status         D         bucket5 CA           Proposals for 162.11 cable assembly specification TBDs							
SuggestedRemedy Change TBD to 9.5				Suggested 162.11	<i>lRemedy</i> 1.2 Cable assen	nbly insertion loss					
Proposed Response PROPOSED REJECT.	Response Status W			The m minim assem	easured insertion um cable ably insertion los	on loss of a cable assembly	shall be greater ed in TBD.	than or equal to the			
There is no consensus	to make the proposed chan	ge. See the resp	onse to comment #45.	162.11 Transi	tion time associ	ated with a pulse Tr TBD					
Cl 120G SC 120G.3.3 Wu, Mau-Lin Comment Type T	P 227 Mediatek Comment Status D	L 15	# 23 bucket5 ERL	Cable assembly ERL at TP1 and at TP4 shall be greater than or equal to TBD dB for cable assemblies that have a COM less than 4 dB. 162.11.4 Differential to common-mode return loss TBD 162.11.5 Differential to common-mode conversion loss TBD 162.11.6 Common-mode to common-mode return loss TBD 162.11.7 Cable assembly Channel Operating Margin Tr is TBD ps Transmitter signal-to-noise ratio SNRTX TBD							
The value of ERL (min) SuggestedRemedy Change TBD to 9.5	) in Table 120G-4 is TBD										
Proposed Response PROPOSED REJECT.	Response Status W			See di <i>Proposed</i> PROP	iminico_3ck_01_ <i>Response</i> POSED ACCEPT	_0720.pdf Response Status W Γ IN PRINCIPLE.					
There is no consensus	to make the proposed chan	ge. See the resp	onse to comment #45.	Impler http://v	ment the CA ins www.ieee802.or	ertion loss proposed on slid g/3/ck/public/20_07/diminico	e 4 of the followir _3ck_02d_0720	ng presentation .pdf.			
				Resolv using	ve for cable asset the responses to	embly ERL, RL_CD, IL_CD comments 71, 148, 73, 14	, RL_CC, COM 1 9, 37, and 45.	Γ_r, and COM SNR_TX			
				C/ 162	SC 162.11.3	P 158	L <b>48</b>	# 44			
				Comment Align	cnard <i>Type</i> <b>TR</b> Tr with Host T_r	Comment Status D in table 11.33		bucket5 ERL			
				Suggested set T_	<i>Remedy</i> r to 0.01 ns in ta	able 162.15					
				Proposed PROP	Response OSED ACCEP	Response Status W					
				Resolv	ve using the res	ponse to comment #45.					
					_						

C/ 162 SC 162.11.3

C/ 162	SC 162.11.3	P 159	L <b>1</b>	# 68	C/ 162	SC 162.11.4	P 159	L 6	# 147		
Champior	n, Bruce	TE Connectiv	vity		Ran, Adee		Intel				
Comment Cable	<i>Type</i> <b>T</b> Assembly ERL lis	Comment Status D sted as TBD		bucket5 ERL	Comment Type <b>T</b> Comment Status <b>D</b> bucket5 CA Addressing D-C return loss of the cable assembly, which is TBD.						
Suggestee TBD t Proposed PROF	dRemedy o be changed to 8 Response POSED REJECT.	dB. See presentation Response Status W			In clause 92 the D-C return loss was specified for PMD Tx (92.8.3.3), Rx (92.8.4. the cable assembly (92.10.4) with identical equations. These specifications were into clause 110 and clause 136 with no change. Specification for the PMD Tx/Rx are suggested in other comments (note: two posremedies).						
The fo http:// There	bllowing presentati www.ieee802.org/ is no consensus	on was reviewed by the task 3/ck/public/20_07/champior to make the proposed chang	k force: _3ck_01_0720 ge. See the res	.pdf ponse to comment #45.	Specifi differen freque	cations for the C nt, the suggested ncies.	A may be identical to those remedy includes a limit eq	of the PMD, or uation based or	different. If they are 92.10.4, with scaled		
C/ 162	SC 162.11.4	P <b>159</b>	L <b>6</b>	# 74	If the r	umbers in the e	quation are not in consensus	s they can be re	placed with TBDs.		
Haser, Ale	ex	Molex			Suggested	Remedy		-			
<i>Comment</i> Fill in	<i>Type</i> <b>T</b> TBD for differentia	Comment Status <b>D</b> al to common-mode return lo	DSS	bucket5 CA	f the specifications for the PMD (subject of other comments) can be used for the CA, use references to the PMD specs here instead of repeating the equations. In that case,						
Suggestee Prese Proposed	dRemedy ntation to follow Response	Response Status W			If the s conten	pecifications for t as follows:	the CA are different from the	ose of the PMD	s, then change 162.11.6		
The ta http://	vosed Reject. ask force review th www.ieee802.org/ ve using the respo	e following presentation at a 3/ck/public/adhoc/jun17_20/	a previous ad h /haser_3ck_adl	oc meeting: noc_02_061720.pdf	162.11.6 Cable assembly Common-mode to differential return loss Common-mode signal can be generated in the transmitter or as signal reflected from the receiver. Common-mode signal propagating into the channel can be converted back to a differential signal and result in differential noise propagating toward the receiver. To limit this effect, a minimum common-mode to common-mode return loss is required.						
	· · · · · · · · · · · · · · · · · · ·				The co Equati	mmon-mode to on (162–new).	differential mode return loss	of the cable as	sembly shall meet		
					CDRL( 22-10* 15-3*f/ Where f_N=26 f is the CDRL(	f) ≥ f/f_N, 0.01 ≤ f ≤ f_N, f_N< f < 40 6.5625 is the Nyo frequency in GH f) is the commor	f_N quist frequency in GHz Iz n-mode to differential return	loss in dB at fre	equency f		
					Proposed I PROP	Response OSED REJECT.	Response Status W				
					Resolv	e using the resp	onse to comment #71.				

C/ 162 SC 162.11.4 Page 3 of 8 7/23/2020 3:18:07 PM

C/ 162 SC 162.11.	6 <i>P</i> 159	L 14	# 76	C/ 162	SC 162.11.7	P 160	L <b>42</b>	# 77
Haser, Alex	Molex			Haser, Ale	x	Molex		
Comment Type T	Comment Status D		bucket5 CA	Comment	Type <b>TR</b>	Comment Status D		bucket5 CA
Fill in TBD for commo	on-mode to common-mode ret	urn loss		Fill in	TBD for SNR_Tx			
SuggestedRemedy				Suggestea	lRemedy			
Presentation to follow	/			Set SN	NR_Tx to 32.52 c	IB. All lanes of cables must	pass COM; need	d a higher SNR_Tx
Proposed Response	Response Status W			valule	to do so given s	nared data (see champion_3	ck_adhoc_01_0	31120)
PROPOSED ACCEP	T IN PRINCIPLE.			Proposed	Response	Response Status W		
				PROP	OSED ACCEPT	IN PRINCIPLE.		
http://www.ieee802.or Resolve using the res	rg/3/ck/public/adhoc/jun17_20, sponse to comment #73.	/haser_3ck_adh	ing: pc_02_061720.pdf	The re http://v	ferenced presen www.ieee802.org	tation is here: /3/ck/public/adhoc/mar11_2	0/champion_3ck	_adhoc_01_031120.pdf
C/ 162 SC 162.11	7 <i>P</i> 160	/ 42	# 11162	Resolv	ve using the resp	onse to comment #37.		
Palkert Tom	Molex			C/ 162	SC 162.11.7	P 160	L <b>42</b>	# 70
Comment Type <b>T</b>	Comment Status D		bucket5 CA	Champion	, Bruce	TE Connecti	vity	
[Comment resubmitte	ed from Draft 1.1. 162.11.7, P1	60, L6]		Comment SNR_	<i>Type</i> <b>T</b> Tx listed at TBD	Comment Status D		bucket5 CA
Need value for SNRt	X			Suggestea	IRemedy			
SuggestedRemedy Make SNRtx = 33dB	(See supporting presentation)			Chang	e TBD to 32.5 at ntation	s described in champion_3cl	k_adhoc_01_03	1120.pdf. See
Proposed Response	Response Status W			Proposed	Response	Response Status W		
PROPOSED ACCEP	T IN PRINCIPLE.			PROP	OSED ACCEPT	IN PRINCIPLE.		
Resolve using the response to comment #37.				The referenced ad hoc presentation is here: http://www.ieee802.org/3/ck/public/adhoc/mar11_20/champion_3ck_adhoc_01_031120.pdf				
				The fo http://v	llowing presenta www.ieee802.org	tion was reviewed by the tas /3/ck/public/20_07/champior	k force: n_3ck_02_0720.	pdf
				Resolv	ve using respons	e to comment #37.		

C/ 162 SC 162.11.7

C/ 162	SC 162.11.7	P 160	L <b>43</b>	# 152	C/ 162	SC 162.1	1.7	P 161	L 14	# 78
Ran, Adee	e	Intel			Haser, Ale	X		Molex		
Comment	Туре Т	Comment Status D		bucket5 CA	Comment	Type <b>TR</b>	Co	mment Status D		bucket5 eta0
SNR_	TX of the CR PH	reeds to be somewhat low	ver than the corre	esponding CK PHY	Currer	nt eta_0 value	e causes c	ontributed cable data s	ets to fail 3 dB	СОМ
routing	value (33 dB), to a	account for crosstalk that is cal host board model that is	used in COM do	actical host board	Suggestea	IRemedy				
crosst	alk.				Chang	e eta_0 back	to 8.37e-	9 (see champion_3ck_	adhoc_01_031	120)
Propo	sed value is 32.5	dB			Proposed	Response	Res	ponse Status W		
Suggester	Remedy				PROP	OSED ACCE	PT IN PR	INCIPLE.		
Chanc	the TBD to 32.5 dE	8.			The re	ferenced pre	sentation i	s here:		
Proposed	Response	Response Status W			http://v	ww.ieee802	.org/3/ck/p	public/adhoc/mar11_20	/champion_3ck	_adhoc_01_031120.pdf
PROP	OSED ACCEPT	IN PRINCIPLE.			Resolv	ve using the r	esponse t	o comment #69.		
Resol	ve using response	e to comment #37.			C/ 162B	SC 162B	1.1.1	P 247	L <b>39</b>	# 79
C/ 162	SC 162.11.7	P 161	L 14	# 11161	Haser, Ale	x		Molex		
Palkert. To	om	Molex			Comment	Type <b>TR</b>	Co	mment Status D		bucket5 range
Comment	Type <b>T</b>	Comment Status D		bucket5 eta0	Freque	ency range is	not practi	cal for measured data		
[Comr	nent resubmitted	from Draft 1.1. 162.11.7, P1	60, L27]		Suggestea	lRemedy				
One s	ided noise spectra	al density for passive coppe	r cables was cha	inged from 8.2x10-9 to	Chang 162B-	le to 0.05 GH 1	z ≤ f ≤ 40	GHz (see haser_3ck_a	adhoc_01b_061	020) & update Figure
1x10-8	<ol> <li>This went too fa</li> </ol>	ar causing adverse impacts	on COM results.		Proposed	Response	Res	ponse Status W		
Suggested	Remedy				PROP	OSED REJE	CT.			
Chang	ge One-sided nois ntation)	e spectral density from to 1	x10-8 to 1x10-9.	(Supporting	Resolv	ve using the r	esponse t	o comment #91.		
Proposed	Response	Response Status W			C/ 162B	SC 162B	1.2.1	P 248	L <b>40</b>	# 80
PROP	OSED ACCEPT	IN PRINCIPLE.			Haser, Ale	x		Molex		
Resol	ve using the resp	onse to comment #69.			Comment	Type TR	Co	mment Status D		bucket5 range
					Freque	ency range is	not practi	cal for measured data		-
					Suggestea	Remedy				
					Chang 162B-2	e to 0.05 GH 2	z ≤ f ≤ 40	GHz (see haser_3ck_a	adhoc_01b_061	020) & update Figure
					Proposed	Response	Res	ponse Status W		
					PROP	OSED REJE	CT.			
					Resolv	ve using the r	esponse t	o comment #91.		

C/ 162B SC 162B.1.2.1

C/ 162B	SC 162B.1.3.1	P 249	L 37	# 81	C/ 162B	SC 162B.1.3	.2 P 250	L <b>47</b>	# 87
Haser, Ale	х	Molex			Haser, Alex	ĸ	Molex		
Comment	Type <b>TR</b>	Comment Status D		bucket5 range	Comment 7	<i>Type</i> <b>TR</b>	Comment Status <b>D</b>		bucket5 range
Currented					Cuerragia		practical for measured data		
Suggested	Remeay o to 0.05 CH₂ < f	< 10 CHz (and handr 20k	dhaa 01h 061020)	undoto Figuro	Suggesteal	to 0 05 CHz C	f < 10 CHz (and hanner 20k adl	haa 01h 061020)	
162B-3	e to 0.05 GHz ≤ 1 }			x upuale rigule	Change			100_010_001020)	
Proposed I	Response	Response Status W					Response Status W		
PROP	OSED REJECT.				FROF	JSED REJECT.			
Resolv	e using the respo	unse to comment #91			Resolv	e using the resp	onse to comment #91.		
			/	" [a.	C/ 162B	SC 162B.1.3	.4 P 251	L <b>46</b>	# 89
C/ 162B	SC 162B.1.3.1	P 250	L 25	# 84	Haser, Alex	ĸ	Molex		
Haser, Ale	×	Molex			Comment 7	Type TR	Comment Status D		bucket5 range
Comment	<i>is not practical fo</i>	Comment Status D		bucket5 range	Freque	ncy range is not	practical for measured data		
г_шш		i measureu uala			Suggestedl	Remedy			
Suggested	Remedy	CHz (and hanner 20k adha	o 01b 061020)		See ha	ser_3ck_adhoc_	_01b_061020 & update Figure 1	162B-6	
Dramanad			C_01D_061020)		Proposed F	Response	Response Status W		
		Response Status W			PROPO	OSED REJECT.			
FROF	OSED REJECT.				Resolv	e using the resp	onse to comment #91.		
Resolv	e using the respo	onse to comment #91.			CI 162P	SC 162P 1 2	5 D 252	1 22	# 00
C/ 162B	SC 162B.1.3.1	P 250	L <b>33</b>	# 85	Hasor Alos	, OC 1020.1.3	Nolox	L 33	# 90
Haser, Ale	x	Molex			Comment 7		Comment Status D		bucket5 range
Comment	Type <b>TR</b>	Comment Status D		bucket5 range	Freque	ncv range is not	practical for measured data		bucketo range
Freque	ency range is not	practical for measured data			Suggested	Pemedu			
Suggested	Remedy				Suggested See ha	ser 3ck adhoc	01b 061020 & update Figure 1	162B-7	
Chang	e to 0.05 GHz ≤ f	≤ 40 GHz (see haser_3ck_a	adhoc_01b_061020)		Proposed P	Response	Pesnonse Status W		
Proposed I PROP	Response OSED REJECT.	Response Status W			PROP	DSED REJECT.			
Resolv	re using the respo	onse to comment #91.			Resolv	e using the resp	onse to comment #91.		

C/ 162B SC 162B.1.3.5 Page 6 of 8 7/23/2020 3:18:07 PM

C/ 163	SC 163.9.1	P 177	L <b>40</b>	# 5	C/ 163	SC 163.9.1.2	P 178	L <b>52</b>	# 31
Wu, Mau-l	Lin	Mediatek			Wu, Mau-l	_in	Mediatek		
Comment	Туре Т	Comment Status D		bucket5 ERL	Comment	Туре Т	Comment Status D		bucket5 TP0a
ERL v	alue is TBD in Ta	ble 163-5			The in	sertion loss of TF	POa test fixture is still keep a	s between 1.2 dl	B and 1.6 dB at 26.56
Suggested	Remedy				GHZ. I	t may be critial to	or the state-or-art PCB techn	lology to achieve	this small IL value.
Chang	e ERL value from	n TBD to 13			Suggested	iRemedy	dB and 1.6 dB at 26.56 CH	z' to '2 4 dB and	3 2 dB at 26 56 CHz'
Proposed	Response	Response Status W			Proposed	Response	Response Status W	2 10 2.4 00 and	5.2 dB at 20.50 GHz.
	OSED REJECT.				PROP	OSED REJECT.			
There	is no consensus	to make the proposed chang	e. See the resp	onse to comment #45.	A new	methodology usi	ng TP0v as adopted in the r	esponse of com	ment #33 renlaces
C/ 163	SC 163.9.1.1	P 178	L <b>41</b>	# 46	TP0a :	as a normative te	est point for TX measuremen	tts. The TP0 to T	P0a insertion loss
Mellitz, Rid	chard	Samtec			Ternai	is unchanged.			
Comment	<i>Type</i> <b>TR</b>	Comment Status D	oo 01 061020	bucket5 ERL	See th	e responses to c	omments #33 and #153.		
Assign		rendation in menitz_3ck_adn	00_01_061020		C/ 163	SC 163.9.2	P 180	L <b>46</b>	# 8
Suggested	Remedy				Wu, Mau-l	_in	Mediatek		
Set N_					Comment	Туре Т	Comment Status D		bucket5 ERL
Proposed	Response	Response Status W			ERL v	alue is TBD in Ta	ble 163-7		
PROP	USED ACCEPT	IN PRINCIPLE.			Suggested	lRemedy			
This c	omment refers to	the following presentation:	mallitz 2ak adh	00.010.061020.pdf	Chang	e ERL value fron	n TBD to 13		
nup.//	www.ieeeo02.0ig/	3/ck/public/autioc/juit10_20/	nemitz_SCK_aun	0C_01a_001020.pui	Proposed	Response	Response Status W		
Resolv	ve using the respo	onse to comment #45.			PROP	OSED REJECT.			
C/ 163	SC 163.9.1.1	P 178	L <b>42</b>	# 6	There	is no consensus	to make the proposed chang	ge. See the resp	onse to comment #45.
Wu, Mau-l	Lin	Mediatek							
Comment	Туре Т	Comment Status D		bucket5 ERL					
N_bx y The pu that, w wu_3c	value is TBD in Ta urpose of N_bx is ve shall consider l k_adhoc_01_010	able 163-6 to reflect the effect of DFE ta N_bx >= 21. Please refer to v 820.pdf for more details.	aps in reference vu_3ck_02a_11	d receiver. Based on 19.pdf &					
Suggested	Remedy								
Chang	ge TBD of "N_bx"	to 21.							
Proposed PROP	Response	Response Status W							
Resolv	ve using the respo	onse to comment #45.							

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

C/ 163 SC 163.9.2

C/ 163	SC 163.10	P 185	L <b>27</b>	# 261	C/ 163	SC 1	63.10.2	P 186	L <b>49</b>	# 47
Dawe, Pie	ers	Nvidia			Mellitz, Rich	hard		Samtec		
Comment	Type TR	Comment Status D		bucket5 dfe	Comment T	уре	TR	Comment Status D		bucket5 ERL
It isn't Therei is an a kasap Anoth heck_ strong chann We wa adopti Reme COM f smalle Suggested Add m Tap 1: Tap 2: All oth Turn tl coeffic	Therefore, the channel should not be specified as if the receiver can do is an advantage in knowing that the sign of a tap can't change. kasapi_3ck_01_1119 slide 7 shows the first DFE tap >0.42 for the critic Another analysis showed the same for 27 backplane channels. Slide 6 heck_3ck_01_0919 (107 channels) shows that the DFE taps are 2 and strongly positive, and no taps <-0.045, yet the draft would allow such un channels. We wanted to check that low loss channels would not do something su adopting sensible limits that don't burden real channels: see new Heck Remember that channels that go a little outside a tap weight pay a very COM for the excess ISI noise that they cause (see another comment), smaller taps should be set a bit tighter than the worst channel we want <i>SuggestedRemedy</i> Add minimum tap weight limits: Tap 1: min +0.3 Tap 2: min +0.05 All other taps: min -0.03 (looser than for CR). Turn the existing "Normalized DFE coefficient magnitude limit"s into "N coefficient limit"s.		strength of -0.85. can do that. Further, there e critical channels. lide 6 of 2 and 3 are always uch untypical/hypothetical ng surprising before Heck presentation. a very small increase in hent), so the limits for the want to pass.	Assign SuggestedF Set N_t Proposed R PROPC Resolve	N_bx to Remedy ox to 21 Respons OSED A	o recomm y 1 se ACCEPT I the respo	endation in mellitz_3ck_ad <i>Response Status</i> <b>W</b> N PRINCIPLE. Inse to comment #45.	hoc_01_061020		
Proposed	Response	Response Status W								
PROP	OSED ACCEPT	IN PRINCIPLE.								
An an http://v	alysis has been www.ieee802.org	presented in ad hoc: g/3/ck/public/adhoc/jun17_20/ł	neck_3ck_adl	hoc_01_061720.pdf						
Note t remed	hat comment #2 ly was accepted	47 against Clause 162 with a and closed.	similar comm	ent text and suggested						
Impler	ment the sugges	ted remedy with editorial licen	se.							

C/ 163 SC 163.10.2