

25GAUI C2M module adaptive receiver

Addressing comment #183

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Comment #183

Cl 109B	SC 109B.1	P 211	L 4	#	183
Maki, Jeffery		Juniper Networks			
Comment Type	T	Comment Status	X		
No mention is made in the text that an adaptive receiver can be used. Note that Clause 109A.1 does include the use of adaptive: "The adaptive or adjustable receiver performs the remainder of the equalization."					
<i>Suggested Remedy</i>					
Add text: "The adaptive or adjustable receiver performs the equalization."					
Proposed Response		Response Status	O		

Current specs (1)

The subclauses in Annex 109B in question are here ...

109B.3.4.1 Module stressed input test using measurement method A

The module stressed input tolerance is measured using the procedure defined in 83E.3.4.1.

109B.3.4.2 Module stressed input test using measurement method B

The module stressed input tolerance is measured using the procedure defined in 83E.3.4.1.1 with the following exceptions. The input eye height and eye width are measured according to the method in 109B.4.1. The stressed input signal shall satisfy the input tolerance defined in Table 109B-1. The module receiver shall operate with a BER of better than 10^{-6} in the presence of a compliant stressed input signal.

From P802.3bx Draft 3.0 Annex 83E.3.4.1.1 “Module stressed input test procedure” ...

The module CAUI-4 receiver under test shall meet the BER requirement as described in 83E.1.1 using three *Recommended_CTLE_value* values for both the high loss test and low loss test. These are: a) the CTLE setting used to meet eye width and eye height requirements, b) the value 1 dB higher if present in Table 83E-2, c) the value 1 dB lower if present in Table 83E-2. Modules may optionally elect not to use the *Recommended_CTLE_value*.

Current specs (2)

From P802.3by Draft 2.0 Annex 109B.5.3 “Major capabilities/options” [PICS] ...

Item	Feature	Subclause	Value/Comment	Status	Support
ADR	Adaptive receiver	83E.3.4.1.1	Module 25GAUI receiver does not use <i>Recommended_CTLE_value</i>	O	Yes [] No []
*RSFEC	PHY with 25G RS-FEC	109B.1.1		O	Yes [] No []

From P802.3by Draft 2.0 109B.5.4.4 “Module input” [PICS] ...

RM6	Meet BER requirement with three values of <i>Recommended_CTLE_value</i>	83E.3.4.1.1		M	Yes []
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Current specs (3)

From P802.3bx Draft 3.0 Annex 83E.3.4.1.1 ""

The module CAUI-4 receiver under test shall meet the BER requirement as described in 83E.1.1 using three *Recommended_CTLE_value* values for both the high loss test and low loss test. These are: a) the CTLE setting used to meet eye width and eye height requirements, b) the value 1 dB higher if present in Table 83E-2, c) the value 1 dB lower if present in Table 83E-2. **Modules may optionally elect not to use the *Recommended_CTLE_value*.**

From P802.3bx Draft 3.0 Annex 83E.5.3 "Major capabilities/options" [PICS] ...

Item	Feature	Subclause	Value/Comment	Status	Support
NOL	Number of differential AC coupled lanes	83E.1	Four independent data paths in each direction	M	Yes []
BER	Meets CAUI-4 BER requirement	83E.1.1	See 83E.1.1	M	Yes []
ADR	Adaptive receiver	83E.3.4.1.1	Module CAUI-4 receiver does not use <i>Recommended_CTLE_value</i>	O	Yes [] No []

Current specs (4)

From P802.3bx Draft 3.0 Annex 83E.5.4.4 “Module input” [PICS] ...

Item	Feature	Subclause	Value/Comment	Status	Support
RM1	CAUI-4 module input characteristics	83E.3.4	Table 83E-7	M	Yes []
RM2	BER requirement	83E.3.4.1.1	As 83E.1.1 with settings associated with <i>Recommended_CTLE_value</i>	M	Yes []

Current specs (5)

- Example from 109A.1...

The 25GAUI C2C bidirectional link is described in terms of a 25GAUI C2C transmitter, a 25GAUI C2C channel, and a 25GAUI C2C receiver. Figure 109A–2 depicts a typical 25GAUI C2C application, and Equation (83D–1) (illustrated in Figure 83D–3) summarizes the informative differential insertion loss budget associated with the chip-to-chip application. The 25GAUI C2C interface comprises independent, differential data paths in each direction, which are AC-coupled. The nominal signaling rate is 25.78125 GBd. The 25GAUI C2C transmitter on each end of the link is adjusted to an appropriate setting based on channel knowledge. If implemented, the transmitter equalization feedback mechanism described in 83D.3.3.2 may be used to identify an appropriate setting. The adaptive or adjustable receiver performs the remainder of the equalization.

Requested change, option 1

- Requested change in 109B.1...

The 25GAUI C2M link is described in terms of a host 25GAUI C2M component, a 25GAUI C2M channel with associated insertion loss, and a module 25GAUI C2M component.

For module form factors with more than one 25GAUI C2M lane, each lane comprises a separate 25GAUI C2M interface with independent management.

Figure 109B–2 depicts a typical 25GAUI C2M application with loss budget per section. The supported insertion loss budget is characterized by Equation (83E–1) and illustrated in Figure 83E–3.

The 25GAUI C2M interface comprises independent data paths in each direction. Each data path contains a differential pair which is AC-coupled within the module. The nominal signaling rate is 25.78125 GBd. The 25GAUI C2M interface is defined using a specification and test methodology that is similar to that used for CEI-28G-VSR defined in OIF-CEI-03.1 [B56]. The adaptive or adjustable receiver performs the equalization.

Alternate suggested text:

An adaptive or adjustable receiver performs the required channel equalization.

Requested change, option 2

- Requested change in 109B.3.4...

109B.3.4 25GAUI C2M module input characteristics

The 25GAUI C2M module input shall meet all specifications in 83E.3.3, with the exception of the module stressed input test. The adaptive or adjustable receiver performs the equalization.

For a PHY that includes an RS-FEC sublayer, the 25GAUI C2M module input shall meet the module stressed input test requirements in either 109B.3.4.1 or 109B.3.4.2.

For a PHY that does not include an RS-FEC sublayer (Clause 108), the 25GAUI C2M module input shall meet the module stressed input test requirements in 109B.3.4.1.

Alternate suggested text:

The adaptive or adjustable receiver performs the required channel equalization.