

802.3dj D3.2

Comment Resolution

Logic Topics

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Introduction

- This slide package was assembled by the 802.3dj editorial team to provide background and detailed resolutions to aid in comment resolution.
- Specifically, these slides are for the various logic-topic comments.

PCS stateless decoder

Comments R1-152, R1-140

PCS stateless decoder

Comment #R2-152, #R2-140

CI 119 SC 119.2.5.8.2 P197 L32 # R2-152

Opsasnick, Eugene

Broadcom Inc.

Comment Type **TR** Comment Status **D** stateless decoder (L)

The definition of the stateless decoder only sets RXD/RXC to LBLOCK_R (local fault) during PCS reset, but the local fault code should be sent to the RS sublayer whenever the PCS has not established AM lock and deskewed all PCS lanes (align_status is false). When the PCS first comes out of reset or restarts the AM lock process due to too many errors on the link, the RS needs to receive the local fault code to correctly transmit "remote fault" in the opposite direction to the link partner.

SuggestedRemedy

In 119.2.5.8.2, change the second sentence from:

"When PCS reset is asserted, RXD<63:0> and RXC<7:0> are set to the constant LBLOCK_R (see 119.2.6.2.1)."

to:

"When PCS reset is asserted or align_status is false (see 119.2.6.2.2), RXD<63:0> and RXC<7:0> are set to the constant LBLOCK_R (see 119.2.6.2.1)."

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error that needs to be corrected.

Change the text in 119.2.5.8.2

from:

"The stateless decoder generates 200GMII/400GMII transfers based only on the current 66-bit block and PCS reset. When PCS reset is asserted, RXD<63:0> and RXC<7:0> are set to the constant LBLOCK_R (see 119.2.6.2.1). When PCS reset is not asserted, RXD<63:0> and RXC<7:0> are decoded from rx_coded<65:0> as defined in 119.2.3."

to:

"The stateless decoder generates 200GMII/400GMII transfers based only on the current 66-bit block and the PCS variables align_status and reset (see 119.2.6.2.2). When reset is true or align_status is false, RXD<63:0> and RXC<7:0> are set to the constant LBLOCK_R (see 119.2.6.2.1); otherwise, RXD<63:0> and RXC<7:0> are decoded from rx_coded<65:0> as defined in 119.2.3."

CI 119 SC 119.2.5.8.2 P197 L31 # R2-140

Ran, Adele

Cisco Systems, Inc.

Comment Type **TR** Comment Status **D** stateless decoder (L)

"The stateless decoder generates 200GMII/400GMII transfers based only on the current 66-bit block and PCS reset"

By this statement the definition of the stateless decoder prevents it from generating Local Fault ordered sets any time except in reset.

This means loss of signal will not be reported to the link partner as remote fault, and the link partner transmission will not be paused.

This breaks the existing behavior of fault signaling, which was not the intent.

It makes sense that if the PCS has lost alignment marker lock it will generate local faults, as in the case of the state-diagram decoder (see align_status in Figure 119-15).

SuggestedRemedy

Change the quoted statement to

"The stateless decoder generates 200GMII/400GMII transfers based only on the current 66-bit block, the variable align_status, and PCS reset".

Change the next sentence from

"When PCS reset is asserted, RXD<63:0> and RXC<7:0> are set to the constant LBLOCK_R"

to

"When align_status is false or PCS reset is asserted, RXD<63:0> and RXC<7:0> are set to the constant LBLOCK_R".

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3dj D3.1 and D3.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot. However, the comment correctly points out an error that needs to be corrected.

Resolved using the response to comment R2-152.

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

PCS stateless decoder

Comment #R2-152, #R2-140

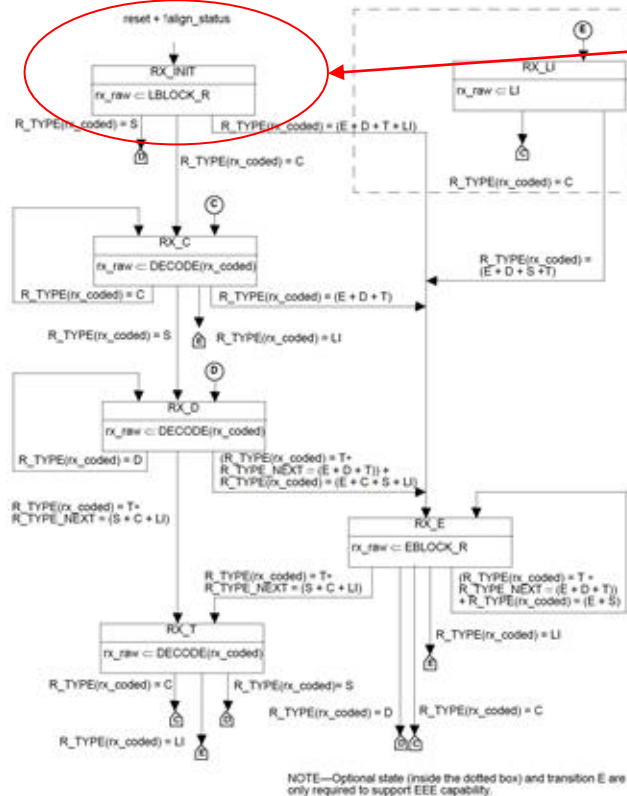


Figure 119-15—Receive state diagram

State diagram decoder:

LBLOCK_R (Local Fault) is used when: (reset or !align_status).

Other states use “DECODE” function or substitute EBLOCK_R for an invalid sequence.

From 119.2.5.8.2:

“The stateless decoder generates 200GMII/400GMII transfers based only on the current 66-bit block and PCS reset. When PCS reset is asserted, $RXD<63:0>$ and $RXC<7:0>$ are set to the constant **LBLOCK_R**”

→ Need to add the !align_status condition to also generate Local Fault (LBLOCK_R) to match the state diagram. This is the standard behavior when the PCS cannot decode the incoming signal. (Note: stateless decoder does not check for invalid sequences).

PCS stateless decoder

Comment #R2-152, #R2-140

- Suggested fix

Change the text in 119.2.5.8.2

from:

"The stateless decoder generates 200GMII/400GMII transfers based only on the current 66-bit block and PCS reset. When PCS reset is asserted, RXD<63:0> and RXC<7:0> are set to the constant LBLOCK_R (see 119.2.6.2.1). When PCS reset is not asserted, RXD<63:0> and RXC<7:0> are decoded from rx_coded<65:0> as defined in 119.2.3." to:

"The stateless decoder generates 200GMII/400GMII transfers based only on the current 66-bit block and the PCS variables align_status and reset (see 119.2.6.2.2). When reset is true or align_status is false, RXD<63:0> and RXC<7:0> are set to the constant LBLOCK_R (see 119.2.6.2.1); otherwise, RXD<63:0> and RXC<7:0> are decoded from rx_coded<65:0> as defined in 119.2.3."