Discussion of Comment 10247

Slides reused from 3/4 ad hoc.

Note that the comment capture is from Draft 1.0 (old)

CI 162 SC 162.8.11 P138 L32 # 247

Ran, Adee Intel

Draft 1.1: Pg 135, Ln 34
Comment #10247

Comment Type T *Comment Status* D

The PMD control function as currently specified is only effective during start up.

Operation across a wide range of temperatures in some environments may cause slow changes in channel and device characteristics that may require occasional changes of the Tx equalization, preferably without link flaps. It would be good to enable doing it while the link is up.

In Data mode, the startup (training) protocol is inactive. We can specify that when mr_training_en set to 0, instead of exchanging the control and status fields through the protocol, these fields will be written to and read from management registers if MDIO is implemented. Management can relay the control and status fields to/from the link partner through higher level messaging (such as LLDP).

A detailed proposal is planned, but the requested addition in the PMD clauses is a subclause for behavior of the PMD control function when training is false (data mode).

SuggestedRemedy

Add the following paragraphs:

When the training variable is set to false (see 136.8.11.7.1), the PMD control function may optiionally continue using Equalization control as defined 136.8.11.4 in the SEND_DATA state, using MDIO registers or alternative methods to exchange control and status fields with the link partner instead of the training frame specified in 136.8.11.1.

NOTE--When training is false, any update to variables corresponding to a change of the Modulation and precoding request bits or the Initial condition request bits, or to setting the Coefficient request bits to "No equalization", can be disruptive to a network.

Proposed Response *Response Status* W

PROPOSED REJECT.

Comment alludes to a future proposal. Propose deferring discussion of this topic until the proposal is presented. Request that commenter use the ad hoc for this purpose.

162.8.10 PMD receive fault function (optional)

The PMD receive fault function is optional. The faults detected by this function are implementation specific. A fault is indicated by setting the variable PMD_receive_fault to one.

If the MDIO interface is implemented, then PMD_receive_fault shall be mapped to the Receive fault bit as specified in 45.2.1.7.5.

162.8.11 PMD control function

The PMD control function performs the PMD start-up protocol. This protocol facilitates timing recovery and equalization while providing a mechanism through which the receiver can configure the transmitter to optimize performance. The protocol supports these functions through the continuous exchange of fixed-length training frames.

The PMD shall implement one instance of the PMD control function described in 136.8.11 for each lane with the following exceptions:

a) The terminal count of max_wait_timer as specified in 136.8.11.7.3 is TBD.

b) For k_list as specified in 136.8.11.4.4, the set of valid transmitter equalizer coefficient indices is {–3, –2, –1, 0, +1}.

c) For the initial condition request as described in 136.8.11.2.1 the predefined transmitter equalizer settings are specified in 162.9.3.1.3.

d) The coefficient select bits in the control field (Table 136-9) and the coefficient select echo bits in the status field (Table 136-10) have an additional combination, 1 0 1, for selecting *c*(-3).

e) The "No equalization" value (see 136.8.11.2.4) of *c*(-3) is 0.

The PMD control functions operate independently on each lane.

162.9 PMD electrical characteristics

Discussion

- Proposed response from Draft 1.0: Reject

Begin with Adee Ran as commenter, then proceed to queue

162.8.11 PMD control function

The PMD control function performs the PMD start-up protocol. This protocol facilitates timing recovery and equalization while providing a mechanism through which the receiver can configure the transmitter to optimize performance. The protocol supports these functions through the continuous exchange of fixed-length training frames.

The PMD shall implement one instance of the PMD control function described in 136.8.11 for each lane with the following exceptions:

a) The terminal count of max_wait_timer as specified in 136.8.11.7.3 is TBD.

b) For k_list as specified in 136.8.11.4.4, the set of valid transmitter equalizer coefficient indices is {–3, –2, –1, 0, +1}.

c) For the initial condition request as described in 136.8.11.2.1 the predefined transmitter equalizer settings are specified in 162.9.3.1.3.

d) The coefficient select bits in the control field (Table 136-9) and the coefficient select echo bits in the status field (Table 136-10) have an additional combination, 1 0 1, for selecting *c*(-3).

e) The "No equalization" value (see 136.8.11.2.4) of *c*(-3) is 0.

The PMD control functions operate independently on each lane.

SuggestedRemedy

Add the following paragraphs:

When the training variable is set to false (see 136.8.11.7.1), the PMD control function may optiionally continue using Equalization control as defined 136.8.11.4 in the SEND_DATA state, using MDIO registers or alternative methods to exchange control and status fields with the link partner instead of the training frame specified in 136.8.11.1.

NOTE--When training is false, any update to variables corresponding to a change of the Modulation and precoding request bits or the Initial condition request bits, or to setting the Coefficient request bits to "No equalization", can be disruptive to a network.