Cl **00**   *SC*   *P*   *L*   # 290
Lo, William   Marvell Semiconducto

Comment Type   **TR**   *Comment Status*   **X**
    Auto-Neg register reference
    - Split off BASE-T1 registers into its own register space
    - Rename some registers to be more speific to BASE-T1

SuggestedRemedy
    See Lo_McClellan_3bp_01a_0315.pdf page 18 for editing instructions

Proposed Response   *Response Status*   **O**

Cl **00**   *SC* **0**   *P* **1**   *L* **1**   # 261
Regev, Alon   Ixia

Comment Type   **ER**   *Comment Status*   **X**
    links do not work (they seem to have the command "Go to a page in another document",
    with the document name "Frame\Frame\P8023bp_C97", rather than going to a section
    within the draft document itself).

SuggestedRemedy
    fix links

Proposed Response   *Response Status*   **O**

Cl **00**   *SC* **0**   *P* **10**   *L* **1**   # 262
Regev, Alon   Ixia

Comment Type   **ER**   *Comment Status*   **X**
    The page numbers in the table of contents are mostly wrong. For example, the page
    number listed for section 97.6 is 74, but section 97.6 is actually on page 89.

    The sections listed int he table of contents do not match the actual sections in the draft (for
    example, the table of contents has a whole section for 97.3.8, but there is no section
    97.3.8 in the main text).

SuggestedRemedy
    Regenerate the table of contents.

Proposed Response   *Response Status*   **O**

Cl **45**   *SC* **45**   *P* **25**   *L* **1**   # 286
Lo, William   Marvell Semiconducto

Comment Type   **TR**   *Comment Status*   **X**
    Clause 45 needs text

SuggestedRemedy
    See Lo_McClellan_3bp_01a_0315.pdf pages 1, 2, 3, 4, 5, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17
    for text and editing instructions.

    This also takes care of tu_3bp_01a_0215.pdf page 8 that was inadverently left out of D1.30

Proposed Response   *Response Status*   **O**

Cl **78**   *SC* **78.1.3.3.1**   *P* **26**   *L* **7**   # 259
Regev, Alon   Ixia

Comment Type   **E**   *Comment Status*   **X**
    "1000BASE-T1 PHY" should be just "1000BASE-T1" (as the who list is a list of PHYs).

SuggestedRemedy
    change "1000BASE-T1 PHY" to "1000BASE-T1"

Proposed Response   *Response Status*   **O**

Cl **78**   *SC* **Table 78-2**   *P* **27**   *L* **21**   # 204
Jim, Graba   Broadcom Corporation

Comment Type   **TR**   *Comment Status*   **X**
    The entries for Ts, Tq, and Tr maximums are TBD.

SuggestedRemedy
    Replace Ts max TBD with 3.6.
    Replace Tq max TBD with 84.96.
    Replace Tr max with 1.44.

Proposed Response   *Response Status*   **O**

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

Cl **78**
SC **Table 78-2**

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Cl **79**   *SC* **97.3.2.2.8**   *P* **44**   *L* **11**   # 274

Regev, Alon   Ixia

Comment Type **E**   *Comment Status* **X**

"Interframe" is hyphenated in all other locations in the draft.

SuggestedRemedy

Change "Interframe" to "Inter-frame"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.1**   *P* **29**   *L* **10**   # 212

Tu, Mike   Broadcom

Comment Type **ER**   *Comment Status* **X**

There is no "PLD" sublayer. It should be "PMD" sublayer.

SuggestedRemedy

Change line 10 from

"... the PCS, PMA, and PLD sublayers ..."

to

"... the PCS, PMA, and PMD sublayers ..."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.1.1**   *P* **29**   *L* **27**   # 298

McClellan, Brett   Marvell

Comment Type **T**   *Comment Status* **X**

Sections 97.1.1 to 97.1.6, excluding 97.1.3.4 have no text.

SuggestedRemedy

I will submit a text proposal.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.1.1**   *P* **29**   *L* **27**   # 260

Regev, Alon   Ixia

Comment Type **E**   *Comment Status* **X**

per David Law, it is preferred not to include Objectives in the clauses as this complicates the maintenance (if in the long term a clause needs to be modified in a way that is not consistent with the original objectives).

Key information from the objectives should be included in the subclauses that describe the operation of 1000BASE-T1, without specifying them as "objectives".

SuggestedRemedy

Remove section 97.1.1.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.1.2**   *P* **29**   *L* **33**   # 256

Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**

Brett & I are providing baseline text for the missing front matter. I'm not sure if a comment (or just a presentation) is needed, but I'm filing the comment to make sure.

SuggestedRemedy

Provided in separate document.

Proposed Response   *Response Status* **O**

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

Cl **97**
SC **97.1.2**

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Cl **97**   *SC* **97.1.3.4**   *P* **30**   *L* **19**   # 273

Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**

The word "normal" has multiple meanings in the draft including:
1. PHY control is in SEND_DATA state (tx_mode = SEND_N).
2. PHY is not is LPI mode.
3. link_status=OK
4. not in a test mode

There is no definition of "normal" in the draft.

While sometimes the meaning is clear, in some instances the meaning of "normal" is left up to interpretation.

SuggestedRemedy

Use "non-test mode" to refer to non-test modes. Use the term "Normal power mode" to refer to the non-LPI mode. Use "tx_mode is set to SEND_N" to refer to the PHY control state. Use "link_status is OK" when refereing to link state. Use a more specific description for other uses. Here are the detailed changes:

Page 30, line 19:
Replace "normal" with "normal power mode"

Page 32, line 40:
Replace "in normal mode." with "where frames can be exchanged with the link partner (i.e not in auto-negotiation, synchronization, or training modes)."

Page 39, line 16:
Replace "When the transmit channel is in normal mode," with "In normal transmit mode, when PMA_TXMODE.indication message has the value SEND_N,"

Page 39, line 31:
Replace "the PMA_TXMODE.indication message has the value SEND_N, and" with "when PMA_TXMODE.indication message has the value SEND_N,"

Page 39, line 41:
Replace "After reaching the normal mode of operation," with "Once PMA_TXMODE.indication has the value of SEND_N,"

Page 46, line 45:
Replace "When the transmit channel is operating in normal mode," with "When PMA_TXMODE.indication has the value of SEND_N,"

Page 47, line 32:
Replace "When the PHY is not in the normal state," with "When PMA_TXMODE.indication does not have the value of SEND_N,"

Page 47, line 44:

Replace "normal operational" with "normal power"

Page 48, line 46:
Replace "normal" with "normal power mode"

Page 48, line 50: addressed via separate comment as this section needs additional editing.

Page 52, line 34:
Replace "normal" with "normal power"

Page 52, line 37:
Replace "normal" with "normal power"

Page 54, line 47:
Replace "normal" with "normal power"

Page 67, line 8:
Replace "normal data transmission" with "frame transmission to the link partner by"

Page 67, line 37:
Replace "Failure of the underlying receive channel typically causes the PMA's clients to suspend normal operation." with "Failure of the underlying receive channel causes the PMA to set link_status to FAIL, which in turn causes the PMA's clients to stop exchanging frames and restart auto-negotiation (if enabled) or synchronization (if auto-negoatiation is not enabled)."

Page 73, line 16:
Replace "Normal operation" with "Normal (non-test mode) operation"

Page 73, line 17:
Replace "normal mode" with "linked mode"

Page 74, line 2:
Replace "normal mode" with "Normal (non-test) mode"

Page 74, line 52:
Replace "normal" with "non-test"

Page 75, line 7:
Replace "normal" with "normal (non-test)"

Page 78, line 48:
Replace "are in the normal mode of operation" with "have established link (link_status is set to OK)"

Page 79, line 1:
Replace "are in the normal mode of operation" with "have established link (link_status is set to OK)"

TYPE: TR/technical required   ER/editorial required   GR/general required   T/technical   E/editorial   G/general   *Cl* **97**   Page 3 of 31
COMMENT STATUS: D/dispatched   A/accepted   R/rejected   RESPONSE STATUS: O/open   W/written   C/closed   Z/withdrawn   *SC* **97.1.3.4**   3/4/2015 7:35:27 AM
SORT ORDER: Clause, Subclause, page, line

Page 79, line 11:
Replace "normal" with "normal power mode"

Page 79, line 12:
Replace "normal" with "normal power"

Page 92, line 42:
Replace "normal operation." with "normal operation(when PMA_TXMODE.indication message has the value SEND_N and not in low power mode)."

Page 103, line 30:
Replace "normal operation" with "normal operation (when PMA_TXMODE.indication message has the value SEND_N and not in low power mode)"

Page 104, line 14:
Replace "normal operation" with "normal operation (when PMA_TXMODE.indication message has the value SEND_N and not in low power mode)"

Page 104, line 33:
Replace "normal operation" with "normal operation (when PMA_TXMODE.indication message has the value SEND_N and not in low power mode)"

Page 104, line 40:
Replace "normal operation" with "normal operation (when PMA_TXMODE.indication message has the value SEND_N and not in low power mode)"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.1.3.4**   *P* **30**   *L* **21**   # 263
Regev, Alon   Ixia

Comment Type   **TR**   *Comment Status* **X**
In section 97.1.3.4, it states that "Support for EEE capability is advertised during Auto-Negotiation.".

The EEE capability is now exchanged in during training in Oct9<7> (containing the bit EEEen). In section 97.4.2.5.9, it states that the optional EEE capability shall only be enabled if both PHYs set the capability bit EEEen=1.

SuggestedRemedy
Change "Support for EEE capability is advertised during Auto-Negotiation." to "Support for EEE capability is advertised during Training."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.1.3.4**   *P* **30**   *L* **21**   # 220
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**
The 1000BASE-T1 EEE capability is now advertised via training mode InfoField, instead of autoneg messages.

SuggestedRemedy
Change line 21 from

"Support for EEE capability is advertised during Auto-Negotiation."

to

"Support for EEE capability is advertised via InfoField during the startup sequence. See 97.4.2.5.5 for details."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.11**   *P* **109**   *L* **18**   # 281
Lo, William   Marvell Semiconducto

Comment Type   **T**   *Comment Status* **X**
Need to specify a latency bit time

SuggestedRemedy
Change TBD to 7200.

I don't know if group needs further discussion. I'm throwing a number of two RS frames out here to see if anyone objects - either too short or too long.

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 4 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.11**   3/4/2015 7:35:27 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.2**   *P* **30**   *L* **50**   # 221
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status*   **X**

The Technology Dependent Interface is specified in either Clause 97.6 or Clause 98.

SuggestedRemedy

Change line 50 from

"...the Technology Dependent Interface is specified in Clause 98."

to

"...the Technology Dependent Interface is specified in Clause 98 or 97.6."

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.2**   *P* **33**   *L* **1**   # 300
McClellan, Brett   Marvell

Comment Type   **T**   *Comment Status*   **X**

figure 97-1: the dotted line primitives don't match the text primitives.

SuggestedRemedy

replace in figure 97-1
PMA_LPIMODE.indication replace with PMA_PCS_RX_LPI_STATUS.request
PMA_LPIREQ.request replace with PMA_PCS_TX_LPI_STATUS.request

remove from figure 97-1:
PMA_REMLPIREQ.request
PMA_UPDATE.indication
PMA_REMUPDATE.request

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.2**   *P* **33**   *L* **2**   # 230
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status*   **X**

In Figure 97-1 the Technology Dependent Interface should include the forced mode case. Refer to Figure 97-14 that has been discussed and agreed upon by the task force.

SuggestedRemedy

In Figure 97-1, on top of the figure, change

"Technology Dependent Interface (Clause 98)"

to

"Technology Dependent Interface (Clause 98 or 97.6)"

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.2**   *P* **33**   *L* **2**   # 251
Regev, Alon   Ixia

Comment Type   **E**   *Comment Status*   **X**

As autonegotiation is optional, in Figure 97-1, PMA_LINK.request and PMA_LINK.indication should have dashed lines instead of solid lines in the signals.

SuggestedRemedy

In figure 97-1, use dashed lines for the signals PMA_LINK.request and PMA_LINK.indication.

Proposed Response   *Response Status*   **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 5 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.2**   3/4/2015 7:35:27 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.2.1**   *P* **31**   *L* **4**   # 222
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**
In forced mode the Technology Dependent Interface is specified in Clause 97.6.

SuggestedRemedy
Change line 4 from

"across the Technology Dependent Interface as specified in Clause 98:"

to

"across the Technology Dependent Interface as specified in Clause 98 or 97.6:"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.1.1**   *P* **31**   *L* **12**   # 224
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**
In forced mode the PMA_LINK.request primitive is specified by 97.6 PHY Link Synchronization.

SuggestedRemedy
Change line 12 and 13 from

"This primitive allows the Auto-Negotiation algorithm to enable and disable operation of the PMA as specified in 98.4.2"

to

"This primitive allows the Auto-Negotiation or the PHY Link Synchronization algorithm to enable and disable operation of the PMA as specified in 98.4.2 or 97.6."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.1.1**   *P* **31**   *L* **13**   # 223
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**
Clause 98.4.2 does not exist.

SuggestedRemedy
Define 98.4.2. See McClellan_3bp_nn_0315.pdf.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.1.1**   *P* **31**   *L* **21**   # 265
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**
Description of DISABLE & ENABLE states of link_control are not clear and not consistent with the way they are defined in other clauses.

SuggestedRemedy
Replace
"DISABLE   PHY processes are disabled. This allows the Auto-Negotiation algorithm to determine how to configure the link"

with
"DISABLE   Used by the Auto-Negotiation algorithm to disable PHY processing while Auto-Negotiation is sending or receiving DME pages. This allows the Auto-Negotiation algorithm to determine how to configure the link"

Replace
"EANBLE   Used by Auto-Negotiation to turn control over to the PHY for data processing functions."

With

"ENABLE   Used by Auto-Negotiation to enable the PHY for data processing functions.

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 6 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.2.1.1**   3/4/2015 7:35:27 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.2.1.1.1**   *P* **31**   *L* **21**   # 225
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**
　　Need to include forced mode case.

SuggestedRemedy
　　Change line 21 from

　　"... PHY processes are disabled. This allows the Auto-Negotiation"

　　to

　　"... PHY processes are disabled. This allows the Auto-Negotiation or PHY Link
　　Synchronization"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.1.1.1**   *P* **31**   *L* **23**   # 226
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**
　　Need to include forced mode case

SuggestedRemedy
　　Change line 23 from

　　"...Used by Auto-Negotiation to turn control..."

　　to

　　"...Used by Auto-Negotiation or PHY Link Synchronization to turn control..."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.1.1.2**   *P* **31**   *L* **28**   # 227
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**
　　Need to include forced mode case.

SuggestedRemedy
　　Change line 28 from

　　"Auto-Negotiation generates this primitive to indicate a change in link_control as described
　　in Clause 98."

　　to

　　"Auto-Negotiation or PHY Link Synchronization generates this primitive to indicate a
　　change in link_control as described in Clause 98 or 97.6."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.1.1.3**   *P* **31**   *L* **32**   # 266
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**
　　The description of the effect of receipt of the PMA_LINK.request(link_control) primitive is
　　incomplete. While this primitive affects the PMA Link Monitor function, it also affects the
　　PMA PHY Control function.

SuggestedRemedy
　　Replace
　　"This primitive affects operation of the PMA Link Monitor function as defined in 97.4.2.6."

　　With
　　"This primitive affects operation of the PMA Link Monitor function as defined in 97.4.2.6
　　and the PMA PHY Control function as defined in 97.4.2.5."

Proposed Response   *Response Status* **O**

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

Cl **97**
SC **97.2.1.1.3**

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Cl **97**   *SC* **97.2.1.2**   *P* **31**   *L* **37**   # 228
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status*   **X**

PMA_LINK.indication is specified in 98.4.1, instead of 28.2.6.1. Also need to include forced mode case.

SuggestedRemedy

Change line 37 from

"...28.2.6.1. This primitive informs the PCS, PMA PHY Control function, and the Auto-Negotiation algorithm..."

to

"...98.4.1. This primitive informs the PCS, PMA PHY Control function, and the Auto-Negotiation or PHY Link Synchronization algorithm..."

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.2.1.2**   *P* **31**   *L* **37**   # 299
McClellan, Brett   Marvell

Comment Type   **T**   *Comment Status*   **X**

incorrect reference to 28.2.6.1.

SuggestedRemedy

change 28.2.6.1 to 98.4.1

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.2.1.2.2**   *P* **31**   *L* **54**   # 238
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status*   **X**

"When Generated" for PMA_LINK.indication (link_status) states "The PMA generates this primitive to indicate a change in link_status in compliance with the state diagram given in Figure 97.5". This should be Figure 97-21.

SuggestedRemedy

Change "Figure 97.5" to "Figure 97-21"

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.2.1.2.2**   *P* **31**   *L* **54**   # 229
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status*   **X**

The state diagram is shown in Figure 97-21, instead of Figure 97-5.

SuggestedRemedy

Change line 54 from

"...given in Figure 97.5."

to

"...given in Figure 97.21."

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.2.1.2.3**   *P* **32**   *L* **3**   # 240
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status*   **X**

The effect of receipt of PMA_LINK.indication (link_status) is specified as "The effect of receipt of this primitive is specified in 97.4.1.", but there is no text in 97.4.1 that specifies the effect of receipt of link_status.

SuggestedRemedy

Replace
"The effect of receipt of this primitive is specified in 97.4.1."

With
"The effect of receipt of this primitive is specified in 98.4.1"

Proposed Response   *Response Status*   **O**

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

Cl **97**
SC **97.2.1.2.3**

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Cl **97**   *SC* **97.2.2**   *P* **33**   *L* **1**   # 241
Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**

The PMA service interface signals is Table 97-1 do not match the text in 97.2.2. The text is correct, and the figure is wrong.

Figure 97-1 also references the two connections to the balanced pair cabling as "MDI-" and "MDI+" whereas in the PMA subclause thye are labeled "BI_DA-" and "BI_DA+". The MDI subclause does not refer to these by name.

SuggestedRemedy

In Figure 97-1, make the following changes:

Delete the arrows with the labels PMA_RESET.indication, PMA_LPIMODE.indication, PMA_LPIREQ.request, PMA_REMLPIREQ.request, PMA_UPDATE.indication, and PMA_REMUPDATE.request.

Add a line from PCS to PMA, with an arrowhead on the PMA side with the line labeled "PMA_PCSSTATUS.request(pcs_status)". This line should be where PMA_RESET.indication is in the exisiting drawing.

Add a dashed line from PCS to PMA, with an arrowhead on the PMA side with the line labeled "PMA_PCS_RX_LPI_STATUS.request". This dashed line should be where PMA_LPIMODE.indication is in the current drawing.

Add a dashed line from PCS to PMA, with an arrowhead on the PMA side with the line labeled "PMA_PCS_TX_LPI_STATUS.request". This dashed line should be where PMA_LPIREQ.request is in the current drawing.

Change the text "MDI-" to "BI_DA-".

Change the text "MDI+" to "BI_DA+".

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.2**   *P* **37**   *L* **5**   # 301
McClellan, Brett   Marvell

Comment Type **T**   *Comment Status* **X**

primitive PMA_RESET.indication in figure 97-1 is not defined

SuggestedRemedy

insert primitive definition for PMA_RESET.indication before 97.2.2.9

97.2.2.9 PMA_RESET.indication
This primitive is used to pass the PMA Reset function to the PCS (pcs_reset=ON) when reset is enabled.
The PMA_RESET.indication primitive can take on one of two values:
TRUE Reset is enabled.
FALSE Reset is not enabled.
97.2.2.9.1 When generated
The PMA Reset function is executed as described in 97.4.2.1.
97.2.2.9.2 Effect of receipt
The effect of receipt of this primitive is specified in 97.4.2.1.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.2.1.1**   *P* **32**   *L* **41**   # 213
Tu, Mike   Broadcom

Comment Type **ER**   *Comment Status* **X**

SEND_I is not defined in 1000BASE-T1.

SuggestedRemedy

Remove "SEND_I" and the corresponding descriptions in line 41 and 42.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.2.1.1**   *P* **32**   *L* **42**   # 294
McClellan, Brett   Marvell

Comment Type **E**   *Comment Status* **X**

incomplete sentence.

SuggestedRemedy

add "is to take place."

Proposed Response   *Response Status* **O**

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

Cl **97**
SC **97.2.2.1.1**

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3/4/2015 7:35:27 AM

Cl **97**   *SC* **97.2.2.10**   *P* **37**   *L* **30**   # 275

Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**

tx_lpi_active is not actually used by the PMA (at least not in the draft).   It is not whown in Figure 97-14 and is not referenced anywhere in the PMA.

Theoretically the PMA could use this to power down the transmitter, but there is no mention of this in the PMA text.

SuggestedRemedy

Page 32, line 24:
Remove the line "PMA_PCS_TX_LPI_STATUS.request (tx_lpi_active)"

Page 33:
Remove (or do not add) PMA_PCS_TX_LPI_STATUS.request from Figure 97-1 (yes I'm aware that this is contradicotry to another comment where I requested to add this signal to this figure).

Delete subclause 97.2.2.10 and all its subclauses

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.2.10**   *P* **37**   *L* **32**   # 250

Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**

PMA_PCS_TX_LPI_STATUS.request (tx_lpi_active) is generated by the PCS transmit function, not the PCS receive function

SuggestedRemedy

Change
"When the PHY supports the EEE capability this primitive is generated by the PCS receive function to indicate the status of the transmit link at the local PHY."

To:
"When the PHY supports the EEE capability this primitive is generated by the PCS transmit function to indicate the status of the transmit link at the local PHY."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.2.10**   *P* **37**   *L* **35**   # 249

Regev, Alon   Ixia

Comment Type **E**   *Comment Status* **X**

The draft states that PMA_PCS_TX_LPI_STATUS.request (tx_lpi_active) is generated by the PCS Transmit state diagram in Figure 97–12, but this is not true. Figure 97-12 uses tx_lpi_active as an input.

The generation of tx_lpi_active is actually described in 97.3.5 and 97.3.6.2.2.

SuggestedRemedy

On page 37, line 35:
Delete "The parameter is generated by the PCS Transmit state diagram in Figure 97–12."

On Page 37, line 49,
Change
"The PCS generates PMA_PCS_TX_LPI_STATUS.request messages to indicate a change in the tx_lpi_active variable as determined by the transmit state diagram in Figure 97–12."

To
"The PCS generates PMA_PCS_TX_LPI_STATUS.request messages to indicate a change in the tx_lpi_active variable as described in 97.3.5 and 97.3.6.2.2."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.2.2**   *P* **33**   *L* **45**   # 242

Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**

The PMA_CONFIG.indication states that "MASTER-SLAVE configuration is determined during Auto-Negotiation", but this is not true when Auto-Negotiation is not used.

SuggestedRemedy

Replace "MASTER-SLAVE configuration is determined during Auto-Negotiation (Clause 98). The result of this negotiation is provided to the PMA."

With
"If Auto-Negotiation is enabled, PMA_CONFIG MASTER-SLAVE configuration is determined during Auto-Negotiation (Clause 98) and the result of this negotiation is provided to the PMA. If Auto-Negotiation is not enabled, PMA_CONFIG MASTER-SLAVE configuration is pre-determined to be Master or Slave via management control during initialization or via default hardware set-up"

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 10 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.2.2.2**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.2.2.2**   *P* **33**   *L* **46**   *#* 231

Tu, Mike   Broadcom

Comment Type **TR**   *Comment Status* **X**

In forced mode the MASTER-SLAVE configuration is pre-determined.

SuggestedRemedy

Change line 45-47 from

"... MASTER-SLAVE configuration is determined during Auto-Negotiation (Clause 98). The result of this negotiation is provided to the PMA."

to

"... MASTER-SLAVE configuration is either preconfigured or determined during Auto-Negotiation (Clause 98), in which case the result of this negotiation is provided to the PMA."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.2.4.1**   *P* **34**   *L* **48**   *#* 243

Regev, Alon   Ixia

Comment Type **E**   *Comment Status* **X**

In clause 40, there were 4 pairs and 4 symbols were received on each clock cycle. In cluase 97, we only have 1 pair, but we still have wording left over from clause 40 that seems to indicate simultaneous receive of symbols. As this is not the case, we need to edit the phrasing

SuggestedRemedy

Replace
"During reception the PMA_UNITDATA.indication simultaneously conveys to the PCS via the parameter rx_symb the values of the symbols detected on the MDI."

With
"During reception the PMA_UNITDATA.indication conveys to the PCS via the parameter rx_symb the value of the symbols detected on the MDI during each cycle of the recovered clock. Each symbol can have the value of -1, 0, of +1."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.2.7.3**   *P* **36**   *L* **31**   *#* 244

Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**

Not all effects of receipt of PMA_RXSTATUS.indication (loc_rcvr_status) are specified

SuggestedRemedy

Replace
"The effect of receipt of this primitive is specified in Figure 97–20 and in 97.3.2.3 and 97.4.5.2."

With "The effect of receipt of this primitive is specified in Figure 97–20 and in 97.3.2.3, 97.4.2.5, and 97.4.5"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.2.8**   *P* **36**   *L* **38**   *#* 245

Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**

Section 97.2.2.8 states that "The criterion for setting the parameter rem_rcvr_status is left to the implementor. It can be based, for example, on asserting rem_rcvr_status is NOT_OK until loc_rcvr_status is OK and then asserting the detected value of rem_rcvr_status after proper PCS Receive decoding is achieved."

This is contradictory to other parts of the clause that indicate that "This variable is received in the loc_rcvr_status bit in the InfoField from the remote PHY".

SuggestedRemedy

Replace
"The criterion for setting the parameter rem_rcvr_status is left to the implementor. It can be based, for example, on asserting rem_rcvr_status is NOT_OK until loc_rcvr_status is OK and then asserting the detected value of rem_rcvr_status after proper PCS Receive decoding is achieved."

with
"rem_rcvr_status is set to the value received in the loc_rcvr_status bit in the InfoField from the remote PHY. rem_rcvr_status is set to NOT_OK if the PCS has not decoded a valid InfoField from the remote PHY."

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 11 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.2.2.8**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.2.2.8.2**   *P* **36**   *L* **53**   # 247
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**

The PCS generates PMA_REMRXSTATUS.request messages to indicate a change in rem_rcvr_status based on dedcoding InfoField messages received from the remote PHY during training; not directly on the basis of signals received at the MDI.

SuggestedRemedy

Replace
"The PCS generates PMA_REMRXSTATUS.request messages to indicate a change in rem_rcvr_status on the basis of signals received at the MDI."

With
"The PCS generates PMA_REMRXSTATUS.request messages to indicate a change in rem_rcvr_status based on the PCS decoding the loc_rcvs_status bit in InfoField messages received from the remote PHY during training."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.2.2.9**   *P* **37**   *L* **10**   # 248
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**

The draft states that PMA_PCS_RX_LPI_STATUS.request (rx_lpi_active) is generated by the PCS Receive state diagram in Figure 97–13, but this is not true. Figure 97-13 uses rx_lpi_active as an input.

The generation of rx_lpi_active is actually described in 97.3.2.3 and in 97.3.6.2.2.

SuggestedRemedy

On page 37, line 10:
Delete "The parameter is generated by the PCS Receive state diagram in Figure 97–13."

On Page 37, line 23,
Change
"The PCS generates PMA_PCS_RX_LPI_STATUS.request messages to indicate a change in the rx_lpi_active variable as determined by the receive state diagram in Figure 97–13."

To
"The PCS generates PMA_PCS_RX_LPI_STATUS.request messages to indicate a change in the rx_lpi_active variable as described in 97.3.2.3 and 97.3.6.2.2."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3**   *P* **38**   *L* **27**   # 253
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**

"PMA_UNITDATA.indication(rx_symb_vector)" (used in the PCS subclause) is not consistent with "PMA_UNITDATA.indication(rx_symb)" (used elsewhere in Clause 97). As this only contains one symbol, it should not be called "_vector".

"PMA_UNITDATA.request(tx_symb_vector)" (used in the PCS subclause) is not consistent with "PMA_UNITDATA.request(tx_symb)" (used elsewhere in Clause 97). As this only contains one symbol, it should not be called "_vector".

SuggestedRemedy

change all instances of "rx_symb_vector" to "rx_symb".

change all instances of "tx_symb_vector" to "tx_symb".

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2**   *P* **38**   *L* **40**   # 214
Tu, Mike   Broadcom

Comment Type   **ER**   *Comment Status* **X**

In Figure 97-2, "tx_symb_vector" and "rx_symb_vector" should be replaced by "tx_symb" and "rx_symb" respectively. See Clause 97.2.2.3.1 and 97.2.2.4.1.

SuggestedRemedy

In Figure 97-2,

Change "PMA_UNITDATA.request(tx_symb_vector)" to "PMA_UNITDATA.request(tx_symb)".

Change "PMA_UNITDATA.indication(rx_symb_vector)" to "PMA_UNITDATA.indication(rx_symb)".

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 12 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.3.2**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.3.2.2**   *P* **39**   *L* **18**   # 186
Remein, Duane   Huawei

Comment Type   **TR**   *Comment Status* **X**

An OAM9 symbol is not defined or described anywhere that I could find (based on whole reader search for OAM9).
Note: This may be contained in 97.7 but that section does not use the term OAM9.

SuggestedRemedy

Add editors note that a description of OAM9 is needed.

If the description in 97.7 applies than replace "OAM symbol" with "OAM9 symbol" as appropriate (note there is a stray OAM symbol pg 52 lin 32).

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2**   *P* **39**   *L* **33**   # 232
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**

The 81B bits after 80/81 encoding goes to the RS FEC first, then scrambled by PCS scrambler.

SuggestedRemedy

Change line 33 to 35 from

"During transmission, the 81B bits are scrambled by the PCS using a PCS scrambler. During data encoding PCS Transmit utilizes a RS frame encoder, then frames are encoded into a sequence of PAM3 symbols and transferred to the PMA."

to

"During transmission, 45 blocks of the 81B bits shall be aggregated, encoded by a RS frame encoder, and then scrambled by a PCS scrambler. During data encoding PCS Transmit frames shall be encoded into a sequence of PAM3 symbols and transferred to the PMA."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.10**   *P* **36**   *L* **30**   # 322
Thomas Lindner   BMW

Comment Type   **T**   *Comment Status* **X**

Page 36; 97.3.2.2.10 Transmit process line 30

SuggestedRemedy

tx-coded<80:0> is not passed to the scrambler, at first it is Aggregate to 45 81B blocks, plus OAM9, then
passed to the Reed Solomon FEC Encoder and then passed to the scrambler.

Change to 0x01   (is already in the comment list)

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.10**   *P* **44**   *L* **27**   # 270
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**

Error control codes are only sent when both TX_EN & TX_ER are asserted

SuggestedRemedy

Replace "The Error is sent when TX_ER is asserted."

With "The Error control code is sent when TX_ER and TX_EN are both asserted."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.10**   *P* **44**   *L* **28**   # 271
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**

References to undefined function defintions R_BLOCK_TYPE and T_BLOCK_TYPE.

SuggestedRemedy

Remove the sentence "See R_BLOCK_TYPE and T_BLOCK_TYPE function definitions in 97.3.6.2.4 for further information."

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 13 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.3.2.2.10**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.3.2.2.11**   *P* **37**   *L* **38**   # 323

Thomas Lindner   BMW

Comment Type **T**   *Comment Status* **X**

    Page 37 97.3.2.2.11 RS encoder line 38

SuggestedRemedy

    Change to 3654

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.12**   *P* **38**   *L* **1/7**   # 324

Thomas Lindner   BMW

Comment Type **ER**   *Comment Status* **X**

    Page 38 97.3.2.2.12 PCS scrambler line 1 and line 7

    Same function-name for Slave and Master GS-Polynome.

SuggestedRemedy

    Change to GM(x) = 1 + x4 + x15
    Change to GS(x) = 1+ x11 + x1

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.12**   *P* **38**   *L* **13-2**   # 325

Thomas Lindner   BMW

Comment Type **ER**   *Comment Status* **X**

    Page 38 97.3.2.2.12 PCS scrambler Figure 97-7—MASTER and SLAVE PCS
    scramblers line 13..24

SuggestedRemedy

    Add missing arrows around the "+" sign and into S0 block

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.12**   *P* **44**   *L* **48**   # 207

Shen, BZ   Broadcom

Comment Type **TR**   *Comment Status* **X**

    The (450,406) FEC code is not a cyclic code, since it is a shortened code from a length
    511 RS code.

SuggestedRemedy

    Change line 48 and 49 from

    "The FEC code used for 1000BASE-T1 links is a linear cyclic block code—the Reed-
    Solomon code (450,406) over the Galois Field of GF(2^9)—a code operating on 9 bit
    symbols,..."

    to

    "The FEC code used for 1000BASE-T1 links is a shortened Reed-Solomon (450,406) code
    over the Galois Field GF(2^9)—a code operating on 9 bit symbols,..."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.12**   *P* **45**   *L* **12**   # 206

Shen, BZ   Broadcom

Comment Type **ER**   *Comment Status* **X**

    The entire paragraph from line 12 to 14 and Figure 97-6 are redundant, since the parity
    calculation is already defined in Equation 97-2.

SuggestedRemedy

    Remove entire paragraph from line 12 to 14, and remove Figure 97-6.

Proposed Response   *Response Status* **O**

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

Cl **97**
SC **97.3.2.2.12**

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3/4/2015 7:35:28 AM

Cl **97**   *SC* **97.3.2.2.12**   *P* **45**   *L* **23**   # 208
Shen, BZ   Broadcom

Comment Type   **TR**   *Comment Status* **X**
In Figure 97-6, indices of the input to the divider is wrong.

SuggestedRemedy
Change Figure 97-6 input to the divider from

"D449, D448, ..., D46, D45"

to

"D405, D404, ..., D1, D0"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.13**   *P* **46**   *L* **18**   # 233
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**
The scrambler runs continuously on both payload bits and RS parity check bits.

SuggestedRemedy
Change line 18 and 19 from

"...The scrambler is run continuously on all payload bits."

to

"...The scrambler is run continuously on all RS frame output bits."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.13**   *P* **46**   *L* **18**   # 211
Tu, Mike   Broadcom

Comment Type   **E**   *Comment Status* **X**
The statement needs clarifications. Add a note that the seeds are exchanged via InfoField during startup sequence.

SuggestedRemedy
Change the first sentence from

"The initial seed values for the MASTER and SLAVE are left to the implementor."

to

"The initial seed values for the MASTER and SLAVE scramblers are left to the implementor. The seed values shall be non-zero and shall be transmitted during the InfoField exchange. See Clause 97.4.2.5.5."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.16**   *P* **47**   *L* **40**   # 279
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**
The sentence "When the lpi_tx_mode variable takes the value REFRESH the PMA maps the scrambler output into PAM3" is not clear.

SuggestedRemedy
Change
"When the lpi_tx_mode variable takes the value REFRESH the PMA maps the scrambler output into PAM3"

To:
"When the lpi_tx_mode variable takes the value REFRESH, the PCS passes zero data encoded through PCS data path (through the RS encoder, scrambler, and 3B2T mapper) to the PMA via the PMA_UNITDATA.request primitive."

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 15 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.3.2.2.16**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.3.2.2.2**   *P* **40**   *L* **27**   # 236
Steven, Chen   Broadcom

Comment Type **ER**   *Comment Status* **X**
The added "LSB" notation in OAM9 symbol is confusing with previous 81B block.

SuggestedRemedy
Remove the newly added "LSB" within the OAM9 block. Change it to a text with arrow at the bottom of the OAM9 block, similar to the "TXB<80>" notation at line 23.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.4**   *P* **42**   *L* **4**   # 272
Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**
When representing the 81B blocks, figures 97-5 and 97-7 use a bit ordering of H (header), 0, 1, ... 79, whereas the block definition in 97.3.2.2.2 and 97.3.2.2.5 define this as TXB<0:80>.

SuggestedRemedy
In Figure 97-5, Replace H,0..79 with 0..80 in each of the 3 instances in the top row of blocks.

In Figure 97-7, Replace "H" with "0", "0" with "1", "1" with "2", "7" with "8", "8:16" with "9:17", and "71:79" with "72:80"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.6**   *P* **43**   *L* **28**   # 268
Regev, Alon   Ixia

Comment Type **E**   *Comment Status* **X**
Control Codes should not be labeled as "(recommended)" as their use is not optional.

SuggestedRemedy
remove the "(recommended)"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.6**   *P* **43**   *L* **30**   # 267
Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**
The text does not correctly map the GMII to control code mapping for cases where TX_ER is asserted but TX_EN is not asserted.

SuggestedRemedy
Change
"When TX_ER is asserted, the 1000BASE-T1 PCS will convey an Error symbol in the 80B81B block code."

To
"When TX_ER and TX_EN are both asserted, the 1000BASE-T1 PCS will convey an Error symbol in the 80B81B block code."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.6**   *P* **43**   *L* **47**   # 269
Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**
Use the values for the control codes for "Assert Low Power Idle" currently in the draft (contorl code value 101) as baseline text.

SuggestedRemedy
Accept as baseline the control code value of 101 for Assert Low Power Idle.

Remove italics on "101", "Assert Low Power Idle", and "Assert Low Power Idle"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.6**   *P* **43**   *L* **47**   # 283
Lo, William   Marvell Semiconducto

Comment Type **E**   *Comment Status* **X**
Remove italitics font in 101 row

SuggestedRemedy
See above

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 16 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.3.2.2.6**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.3.2.2.8**   *P* **44**   *L* **13**   # 182
Remein, Duane   Huawei

Comment Type **E**   *Comment Status* **X**

This statement is not clear: "They shall not be added while data is being received" received from where; GMII or PMA? My assumption is GMII as this section discusses PCS TX.

SuggestedRemedy

Add "from the GMII" so the statement reads:
"They shall not be added while data is being received from the GMII"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.2.9**   *P* **44**   *L* **23**   # 205
Jim, Graba   Broadcom Corporation

Comment Type **TR**   *Comment Status* **X**

"If EEE is not supported, then LP_IDLE isn't a valid control character." should be removed. Allowing LP_IDLE to be a valid control character makes for a simpler PHY implementation without compromising performance.

The ramification is if the PHYs don't advertise EEE and the GMII asserts the low power idle condition the PHY shall transmit normal data across the MDI encoded with LPI_IDLEs to the link partner PHY. There will be no quiet or refreshes during this condition.

SuggestedRemedy

Remove the paragraph, "If EEE is not supported, then LP_IDLE isn't a valid control character."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.3**   *P* **48**   *L* **35**   # 280
Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**

The signal indicating transitions to/from LPI rx mode is PMA_PCS_RX_LPI_STATUS.request(rx_lpi_active) which is defined in 97.2.2.9.

SuggestedRemedy

Change "97.3.9" to "97.2.2.9"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.3**   *P* **48**   *L* **35**   # 302
McClellan, Brett   Marvell

Comment Type **T**   *Comment Status* **X**

wrong cross reference

SuggestedRemedy

change 97.3.9 to 97.3.6

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.3**   *P* **48**   *L* **35**   # 201
Jim, Graba   Broadcom Corporation

Comment Type **ER**   *Comment Status* **X**

Reference to non-existent subclause. The transition indication is described in the following paragraph so there is no need to reference a subclause.

SuggestedRemedy

Strike "using signals defined in 97.3.9"

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 17 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.3.2.3**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.3.2.3.1**   *P* **48**   *L* **50**   # 254
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**
The paragraph describing Rx PCS Frame and block synchronization is unclear. It is
unclear what "normal" mode is, when it is entered, and when synchronization occurs.

SuggestedRemedy
Replace
"When the receive channel is operating in normal mode, the frame and block
synchronization function receives data via PAM3 PMA_UNITDATA.request primitive. It
shall form a PAM3 stream from the primitive by concatenating requests in order from
rx_data<0> to rx_data<2699> (see Figure 97–4). It obtains block_lock to the RS frames
during the PAM2 training pattern using synchronization bits provided in the training
sequence. The 81-bit blocks are extracted based on their location in the RS frame."

With
"Block and frame lock begins when the PMA PHY control is in the TRAINING state and the
PMA has set loc_rcvr_status to OK, signaling reliable operation of the receive link for the
local PHY and reliable aquisition of the descrambler state. Block lock is obtained by
locking to inverted bit pattern thatoccru in the first bit of partial RS FEC frames (180 bits)
and signaling the lock by asserting block_lock. Frame lock uses the location of the
InfoField which is found in the first 96 bits of the last (15th) partial RS FEC frame in each
block as well as the partial frame count (PFC24) found in each InfoFrame to lock to the RS
FEC frames. See 97.4.2.5 for details about this process.

Once block and frame locking has occured and the link partner has transitioned from
transmitting PAM2 to PAM3, the PCS Frame and block synchronization receives data via
the PMA PMA_UNITDATA.request primitive and forms a stream from the primitive by
concatenating requests in order from rx_data<0> to rx_data<2699> (see Figure 97–4)
using the frame & block locks previously obtained. The 81-bit blocks are extracted based
on their location in the RS frame."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.2.3.1**   *P* **48**   *L* **51**   # 277
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**
as this is the Rx path, "PMA_UNITDATA.request" is wrong. It should be
"PMA_UNITDATA.indication"

SuggestedRemedy
Change "PMA_UNITDATA.request" to "PMA_UNITDATA.indication"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.3**   *P* **49**   *L* **16**   # 215
Tu, Mike   Broadcom

Comment Type   **ER**   *Comment Status* **X**
Test mode 7 is defined in sub-clause 97.5.2, instead of 97.5.4.

SuggestedRemedy
Change end of line 16 from

"This mode is further described as test mode 7 in 97.5.4."

to

"This mode is further described as test mode 7 in 97.5.2."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.3**   *P* **49**   *L* **16**   # 255
Regev, Alon   Ixia

Comment Type   **T**   *Comment Status* **X**
Test mode 7 is described in subcluase 97.5.2 (not 97.5.4)

SuggestedRemedy
change "97.5.4" to "97.5.2"

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 18 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.3.3**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.3.4**   *P* **50**   *L* **6**   # 184

Remein, Duane   Huawei

Comment Type   **ER**   *Comment Status* **X**

Figure 97–9 difficult to read due to small size, there is no need for this small font size.
IEEE Style Manual requires a font size of 8 pt min (Table 1), 6 pt. is allowed in figures but
text should then be all caps (see Figure 1).
This also applies to the following figures:
Figure 97–20, Figure 97–36, Figure 97–38, Figure 97–39, Figure 97–40, Figure 98–3,
Figure 98–7, Figure 98–11, Figure 98–12, Figure 98–13, Figure 98–14, Figure 97A–1,
Figure 97A–2, Figure 97B–1 and possibly others.
Editor may also want to check equations (free standing Eq shoul use FrameMaker Med
sized eq.)

SuggestedRemedy

Enlarge the figures so the min. font size is maintained.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.4**   *P* **50**   *L* **6**   # 183

Remein, Duane   Huawei

Comment Type   **E**   *Comment Status* **X**

There appears to be some stray text in the Figure 97–9 title (Scrn)

SuggestedRemedy

Remove stray text

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.4.3**   *P* **50**   *L* **43**   # 209

Tu, Mike   Broadcom

Comment Type   **E**   *Comment Status* **X**

The polynomials have been defined in 97.3.4. Perhaps it is better to refer to Equation 97-5
and 97-6.

SuggestedRemedy

Change line 43 and 44 from

"the MASTER PHY shall employ the receiver descrambler generator polynomial
g'M(x)=1+x^20+x^33 and the SLAVE PHY shall employ the receiver descrambler
generator polynomial g'S(x)=1+x^13+x^33 ."

to

"the MASTER PHY shall employ the receiver descrambler generator polynomial same as
Equation 97-6 and the SLAVE PHY shall employ the receiver descrambler
generator polynomial same as Equation 97-5."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.5.2**   *P* **52**   *L* **22**   # 203

Jim, Graba   Broadcom Corporation

Comment Type   **T**   *Comment Status* **X**

This line refers to "transmitters". This clause requires only one transmitter.

SuggestedRemedy

Change transmitters to transmitter.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.3.5.3**   *P* **52**   *L* **33**   # 202

Jim, Graba   Broadcom Corporation

Comment Type   **ER**   *Comment Status* **X**

The OAM position is described twice.

SuggestedRemedy

Delete the paragraph that begins on line 33.

Proposed Response   *Response Status* **O**

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

Cl **97**
SC **97.3.5.3**

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3/4/2015 7:35:28 AM

Cl **97**   *SC* **97.3.5.3**   *P* **52**   *L* **33**   # 278

Regev, Alon   Ixia

Comment Type   **E**   *Comment Status*   **X**

The paragraph "The OAM symbol is XOR'ed with the scrambler stream at the same relative position to the RS boundaries as it occupies during normal mode." seems to repeat a subset of the information contained in the following paragraph and can be deleted.

SuggestedRemedy

Delete the paragraph "The OAM symbol is XOR'ed with the scrambler stream at the same relative position to the RS boundaries as it occupies during normal mode."

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.3.6.2.4**   *P* **55**   *L* **7**   # 252

Regev, Alon   Ixia

Comment Type   **T**   *Comment Status*   **X**

"DECODE(rx_symb_vector<81:0>)" shhoud be "DECODE(rx_coded<81:0>)"

SuggestedRemedy

change "DECODE(rx_symb_vector<81:0>)" to "DECODE(rx_coded<81:0>)"

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.4.1**   *P* **60**   *L* **5**   # 295

McClellan, Brett   Marvell

Comment Type   **E**   *Comment Status*   **X**

Cross references are correct

SuggestedRemedy

delete "TBD" on line 5, "to be confirmed" on line 6, and "TBD" on line 9

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.4.1**   *P* **60**   *L* **5**   # 239

Regev, Alon   Ixia

Comment Type   **E**   *Comment Status*   **X**

The PMA functional specifications still contains "(TBD)" and "(to be confirmed)" text, but these are not needed (as the referenced text is provided and correct).

SuggestedRemedy

Replace
"The PMA couples messages from a PMA service interface specified in 97.2.2 (TBD) to the 1000BASE-T1 baseband medium, specified in 97.5 (to be confirmed).

The interface between PMA and the baseband medium is the Medium Dependent Interface (MDI), which is specified in 97.8 (TBD)."

With
"The PMA couples messages from a PMA service interface specified in 97.2.2 to the 1000BASE-T1 baseband medium, specified in 97.5.

The interface between PMA and the baseband medium is the Medium Dependent Interface (MDI), which is specified in 97.8."

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.4.2**   *P* **67**   *L* **51**   # 305

McClellan, Brett   Marvell

Comment Type   **T**   *Comment Status*   **X**

In November, the task force adopted a EEE refresh monitor.
"The receiver shall force a retrain if Refresh is unreliably detected within a moving window of 50 Q/R cycles (4.32ms)."
But there is no text for this item.

SuggestedRemedy

Add a new section prior to 97.4.2.7 Clock Recovery function.
"97.4.2.7 Refresh Monitor function
The Refresh monitor is required for PHYs that support the EEE capability. The Refresh monitor operates when the PHY is in the LPI receive mode. The receiver shall force a retrain if Refresh is unreliably detected within a moving window of 50 Q/R cycles (4.32ms)."

Proposed Response   *Response Status*   **O**

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

Cl **97**
SC **97.4.2**

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3/4/2015 7:35:28 AM

Cl **97**   *SC* **97.4.2.1**   *P* **61**   *L* **9**   # 303
McClellan, Brett   Marvell

Comment Type   **T**   *Comment Status*   **X**
wrong cross reference

SuggestedRemedy
change 97.3.6.2.2 to to 98.5.1

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.4.2.2**   *P* **61**   *L* **24**   # 296
McClellan, Brett   Marvell

Comment Type   **E**   *Comment Status*   **X**
cross reference to 97.5.3.3 is correct

SuggestedRemedy
delete TBD on line 24 and 27.

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.4.2.2**   *P* **61**   *L* **25**   # 276
Regev, Alon   Ixia

Comment Type   **E**   *Comment Status*   **X**
"MASTER/SLAVE" should be "MASTER-SLAVE"

SuggestedRemedy
change "MASTER/SLAVE" to "MASTER-SLAVE"

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.4.2.5**   *P* **62**   *L* **51**   # 304
McClellan, Brett   Marvell

Comment Type   **T**   *Comment Status*   **X**
wrong cross reference

SuggestedRemedy
Page 62 line 51:change "Figure 97-18" to "Figure 97-20"
Page 63 line 1: change "Figure 97-18" to "Figure 97-20"

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.4.2.5**   *P* **63**   *L* **9**   # 210
Tu, Mike   Broadcom

Comment Type   **E**   *Comment Status*   **X**
Remove informative comments (<1msec) on line 9.

SuggestedRemedy
Remove informative comments "(<1msec)" on line 9.

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.4.2.5.10**   *P* **67**   *L* **20**   # 288
Lo, William   Marvell Semiconducto

Comment Type   **TR**   *Comment Status*   **X**
Section needs new table after register movement

SuggestedRemedy
Remove table 97-9 as that is moved per Lo_McClellan_3bp_01a_0315.pdf page 4.
Insert new table as 97-9 as sentence as shown in Lo_McClellan_3bp_01a_0315.pdf page 6

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.4.2.5.10**   *P* **67**   *L* **20**   # 218
Tu, Mike   Broadcom

Comment Type   **ER**   *Comment Status*   **X**
Name of the table is incorrect. It should be "Link Partner Training Registers" as shown in
page 9 of "tu_3bp_01a_0215.pdf".

Also there is a missing table for "Training Registers". See page 8 of
"tu_3bp_01a_0215.pdf".

SuggestedRemedy
1. Change line 20 to "Table 97-xx -- Link Partner Training Registers".

2. Add a new table based on page 8 of "tu_3bp_01a_0215.pdf".

Proposed Response   *Response Status*   **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 21 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.4.2.5.10**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.4.2.5.5**   *P* **65**   *L* **12**   # 216
Tu, Mike   Broadcom

Comment Type   **ER**   *Comment Status* **X**
There is a typo. "SO (sent last)" should be "S0 (sent last)". Change capital character "O" to number "0".

SuggestedRemedy
Change line 12 from

"...contains bits S14 (sent first) to SO (sent last) to..."

to

"...contains bits S14 (sent first) to S0 (sent last) to..."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.4.2.5.5**   *P* **65**   *L* **14**   # 234
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**
The scrambler is shown in Figure 97-8, instead of Figure 97-7.

SuggestedRemedy
Change line 14 from

"state of the scrambler in Figure 97–7 shall be S14:S0..."

to

"state of the scrambler in Figure 97–8 shall be S14:S0..."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.4.2.5.5**   *P* **65**   *L* **15**   # 235
Tu, Mike   Broadcom

Comment Type   **TR**   *Comment Status* **X**
The data mode scrambler starts when the partial frame counter equals to the received DataSwPFC24. The original text saying it starts when DataSwPFC24=0 is incorrect.

SuggestedRemedy
Change line 15 from

"...DataSwPFC24 = 0, see 97.4.2.5.6."

to

"...the partial frame counter equals to the DataSwPFC24 value, see 97.4.2.5.6".

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.4.2.5.5**   *P* **65**   *L* **18**   # 217
Tu, Mike   Broadcom

Comment Type   **ER**   *Comment Status* **X**
There is a typo. "0ct" should be "Oct". Change number "0" to capital character "O".

SuggestedRemedy
Change line 18 from

"The remaining 7-bit 0ct10<7:1> shall be user configurable register."

to

"The remaining 7-bit Oct10<7:1> shall be user configurable register."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.4.2.5.5**   *P* **65**   *L* **18**   # 292
Lo, William   Marvell Semiconducto

Comment Type   **T**   *Comment Status* **X**
Red highlight to 97.4.2.5.10 is correct.

SuggestedRemedy
Remove highlight
New text in Lo_McClellan_3bp_01a_0315.pdf in particular page 6 make this ok.

Proposed Response   *Response Status* **O**

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

Cl **97**
SC **97.4.2.5.5**

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Cl **97**   *SC* **97.4.2.5.8**   *P* **65**   *L* **48**   # 237
Steven, Chen   Broadcom

Comment Type **TR**   *Comment Status* **X**
In Figure 97-16, the Auto-Negotiation Page Data does not apply here.

SuggestedRemedy
In Figure 97-16, replace "Auto-Negotiation Page Data" with "Oct4 through Oct10".

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.4.4.1**   *P* **69**   *L* **44**   # 246
Regev, Alon   Ixia

Comment Type **E**   *Comment Status* **X**
Make it clear that rem_rcvr_status shall be set to NOT_OK if the PCS has not decoded a valid InfoField from the remote PHY.

SuggestedRemedy
Replace
"This variable is received in the loc_rcvr_status bit in the InfoField from the remote PHY."

With
"This variable is received in the loc_rcvr_status bit in the InfoField from the remote PHY. This variable is set to NOT_OK if the PCS has not decoded a valid InfoField from the remote PHY."

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.4.4.1**   *P* **69**   *L* **54**   # 219
Tu, Mike   Broadcom

Comment Type **ER**   *Comment Status* **X**
SEND_I is no longer defined in 1000BASE-T1.

SuggestedRemedy
Remove line 54 "SEND_I" and the descriptions on line 54 of page 69, and line 1 on page 70.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.5.2**   *P* **73**   *L* **6**   # 307
McClellan, Brett   Marvell

Comment Type **T**   *Comment Status* **X**
doesn't specify which register controls the test modes

SuggestedRemedy
change "setting a 3-bit control register"
to "setting 1.2308.15:13" per the proposal in Lo_McClellan_3bp_01a_0315.pdf

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.5.2**   *P* **73**   *L* **6**   # 293
Lo, William   Marvell Semiconducto

Comment Type **T**   *Comment Status* **X**
Need to specify register location

SuggestedRemedy
Change
3-bit control register
to
3-bit control in register 1.2308.15:13

The detailed text is already incorporated in Lo_McClellan_3bp_01a_0315.pdf page 5

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 23 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.5.2**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.5.2**   *P* **74**   *L* **53**   # 257
Regev, Alon   Ixia

Comment Type **T**   *Comment Status* **X**

There is a disagreement between the description of test mode 5 in table 79-10 where it states "normal operation in Idle mode" and the description on page 74, line 53, where it states "with data set to zero".

"Idle mode" implies that you are transmitting an idle or sequence (a sequence of "normal Inter-Frame" control codes).

"data set to zero" implies that the the input to the PCS is valid zero data (so the encoded 81B data would be all zeroes)

SuggestedRemedy

change "with data set to zero" to "with data set to normal Inter-Frame idle signals"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.5.3.1**   *P* **77**   *L* **24**   # 197
Chini, Ahmad   Broadcom

Comment Type **TR**   *Comment Status* **X**

The droop requirement does not match MDI RL requirement.

SuggestedRemedy

Change the requirement to "less than 10%"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.5.3.3**   *P* **79**   *L* **24**   # 195
Chini, Ahmad   Broadcom

Comment Type **ER**   *Comment Status* **X**

There are two closed paranthesis used.

SuggestedRemedy

Remove the extra paranthesis (also in line 29)

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.5.3.3**   *P* **79**   *L* **29**   # 196
Chini, Ahmad   Broadcom

Comment Type **TR**   *Comment Status* **X**

Lower PSD limit defined for frequencies above 40MHz does not match MDI RL requirement

SuggestedRemedy

Modify Equation (97-13) to start from 10MHz. Also modify Figure 97-28 to reflect the same.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.5.6.2**   *P* **83**   *L* **45**   # 312
DiMinico, Christopher   MC Communications

Comment Type **T**   *Comment Status* **X**

incorrect equation reference. Remove equation TBD. TBD was provided to ensure comment review of equation. No changes requested in ballot cycles.

SuggestedRemedy

(1)Correct equation reference (97-17). (2)Remove TBD. TBD was provided to ensure comment review of equation. No changes requested in ballot cycle.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.5.6.2.2**   *P* **84**   *L* **40**   # 313
DiMinico, Christopher   MC Communications

Comment Type **T**   *Comment Status* **X**

Remove TBD. TBD was provided to ensure comment review of equation. No changes requested in ballot cycles.

SuggestedRemedy

Remove TBD. TBD was provided to ensure comment review of equation. No changes requested in ballot cycles.

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 24 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.5.6.2.2**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.5.6.2.4**   *P* **85**   *L* **25**   # 194
Mitsuru, Iwaoka   Yokogawa Electric Cor

Comment Type   **T**   *Comment Status*   **X**
Test method for coupling attenuation is not specified.

SuggestedRemedy
1) Add the following two documents to the 1.3 Normative references.

IEC 62153-4-14:2012, Metallic communication cable test methods - Part 4-14:
Electromagnetic compatibility (EMC) - Coupling attenuation of cable assemblies (Field
conditions) absorbing clamp method

2) Insert the following text at the end of 97.5.6.2.4
The coupling attenuation is tested as specified in IEC 62153-4-14.

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.5.6.2.4**   *P* **85**   *L* **34**   # 314
DiMinico, Christopher   MC Communications

Comment Type   **T**   *Comment Status*   **X**
Currently no automotive applications characterized for E4.

SuggestedRemedy
Remove column E4 in Table 97–12—Coupling attenuation Type B link segment and in
Table 97–13—Electromagnetic classifications Type B link segment

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.5.6.3.1**   *P* **86**   *L* **12**   # 315
DiMinico, Christopher   MC Communications

Comment Type   **T**   *Comment Status*   **X**
Stated 802.3bp objective includes "Maintain a bit error ratio (BER) of less than or equal to
10^-10 at the MAC/PLS service interface"

SuggestedRemedy
Remove "specified in TBD".

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.5.6.3.3**   *P* **87**   *L* **26**   # 316
DiMinico, Christopher   MC Communications

Comment Type   **T**   *Comment Status*   **X**
Stated 802.3bp objective includes "Maintain a bit error ratio (BER) of less than or equal to
10^-10 at the MAC/PLS service interface"

SuggestedRemedy
Remove "specified in TBD"

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.5.6.4.1**   *P* **88**   *L* **38**   # 310
DiMinico, Christopher   MC Communications

Comment Type   **T**   *Comment Status*   **X**
Stated 802.3bp objective includes "Maintain a bit error ratio (BER) of less than or equal to
10^-10 at the MAC/PLS service interface"

SuggestedRemedy
Remove "specified in TBD"

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.5.6.4.3**   *P* **89**   *L* **14**   # 311
DiMinico, Christopher   MC Communications

Comment Type   **T**   *Comment Status*   **X**
Stated 802.3bp objective includes "Maintain a bit error ratio (BER) of less than or equal to
10^-10 at the MAC/PLS service interface"

SuggestedRemedy
Remove "specified in TBD"

Proposed Response   *Response Status*   **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 25 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.5.6.4.3**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.5.6.4.3**   *P* **89**   *L* **32**   # 317

DiMinico, Christopher   MC Communications

Comment Type **T**   *Comment Status* **X**

Remove TBD's. TBDs were provided to ensure comment review of equation. No changes requested in ballot cycles.

SuggestedRemedy

Remove the three TBDs

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.6.1.1**   *P* **90**   *L* **25**   # 285

Lo, William   Marvell Semiconducto

Comment Type **T**   *Comment Status* **X**

Tighten up send_s_sigdet

SuggestedRemedy

Add the following sentence.
This variable shall be set FALSE no later than 400ns after the signal goes quiet on the MDI.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.6.1.1**   *P* **90**   *L* **31**   # 306

McClellan, Brett   Marvell

Comment Type **T**   *Comment Status* **X**

SEND_S is used within the PHY Link Synchronization state machines, but the SEND_S signal is supposedly generated by the PCS.
Nowhere in the PCS text is there any definition for the SEND_S signal. Further, the PMA_TXMODE.indication (tx_mode) primitive definition in 97.2.2.1.1 does not include SEND_S as a defined value.

SuggestedRemedy

In 97.2.2.1.1 add this definition
SEND_S: This value is continuously asserted for transmission of 255 PN sequences generated by: $x^8+x^4+x^3+x^2+1$ for Master and $x^8+x^6+x^5+x^4+1$ for Slave.

We need a text contribution to define SEND_S signaling within the PCS.

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.6.1.1**   *P* **90**   *L* **33**   # 297

McClellan, Brett   Marvell

Comment Type **E**   *Comment Status* **X**

grammar

SuggestedRemedy

change "This value is continuously asserted when transmission"
to "This value is continuously asserted for transmission"

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.6.1.1**   *P* **90**   *L* **6**   # 287

Lo, William   Marvell Semiconducto

Comment Type **TR**   *Comment Status* **X**

config referenced to wrong section

SuggestedRemedy

change 98.5.1 to 97.4.4.1

Proposed Response   *Response Status* **O**

Cl **97**   *SC* **97.7**   *P* **91**   *L* **34**   # 289

Lo, William   Marvell Semiconducto

Comment Type **TR**   *Comment Status* **X**

OAM register reference changes
- Replace all TBDs with actual register addresses
- Move registers to clause 45
- Update all OAM register refrences to clause 45

SuggestedRemedy

See Lo_McClellan_3bp_01a_0315.pdf page 10 for editing instructions

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97**   Page 26 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.7**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97**   *SC* **97.7.1**   *P* **92**   *L* **1**   # 193
Mitsuru, Iwaoka   Yokogawa Electric Cor

Comment Type   **T**   *Comment Status*   **X**
In 97.1.1 (Definitions), a term "OAM symbol" is defined. However, other terms "OAM9 symbol" and "OAM frame symbol" are used to specify same thing. They should be unified.

SuggestedRemedy
Replace "OAM9 symbol" and "OAM frame symbol" with "OAM symbol" throughout the draft.
Replace "OAM9" with "OAM" in Figure 97-3, 97-4, and 97-5.
Replace "OAM9" with "OAM symbol" in 97.3.5.3.

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **97.7.3.1.2**   *P* **98**   *L* **48**   # 264
Regev, Alon   Ixia

Comment Type   **E**   *Comment Status*   **X**
"byte" should be "octet"

SuggestedRemedy
change all occurances of "byte" to "octet" in the draft

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **Figure 97-2**   *P* **38**   *L* **42**   # 198
Jim, Graba   Broadcom Corporation

Comment Type   **E**   *Comment Status*   **X**
The optional quality of rx_lpi_active isn't explained.

SuggestedRemedy
Place a note in this figure saying:
rx_lpi_active is only required for the EEE capability.

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **Table 97-1**   *P* **43**   *L* **47**   # 199
Jim, Graba   Broadcom Corporation

Comment Type   **E**   *Comment Status*   **X**
The row starting with 101 is italicized.

SuggestedRemedy
Change the row's font to be the same style as the other entries in the table.

Proposed Response   *Response Status*   **O**

Cl **97**   *SC* **Table 97-4**   *P* **52**   *L* **14**   # 200
Jim, Graba   Broadcom Corporation

Comment Type   **E**   *Comment Status*   **X**
Constant is on the left side of the equation while the other entries in this table and Table 97-3 have them on the right side of the equation.

SuggestedRemedy
Change
lpi_quiet_time <= mod(v, lpi_qr_time)
to
mod(v, lpi_qr_time) => lpi_quiet_time

Proposed Response   *Response Status*   **O**

Cl **97.10**   *SC* **97.10.1**   *P* **108**   *L* **50**   # 192
Matola, Larry   Delphi

Comment Type   **TR**   *Comment Status*   **X**
Proposed baseline text for section 97.10.1 General Saftey

SuggestedRemedy
97.10.1General Safety
Motor vehicle equipment implementations in this clause shall conform to all applicable local or national motor vehicle standards or as agreed to between the customer and supplier All equipment subject to this clause that is not used in automotive applications shall conform to IEC 60950-1 for IT applications, or for-non IT applications, the relevant local or national codes.

Proposed Response   *Response Status*   **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **97.10**   Page 27 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **97.10.1**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **97.10**	*SC* **97.10.2**	*P* **109**	*L* **1**	# 187
Matola, Larry		Delphi		

Comment Type **TR**   *Comment Status* **X**

Baseline text for section 97.10.2 Network Safety

SuggestedRemedy

97.10.2Network Safety
All cabling and equipment shall be installed in a workman like manor, mechanically and electrically secure. The designer is urged to consult the relevant local, national, and international safety regulations to ensure compliance with appropriate requirements. In automotive applications all cabling shall be routed to provide maximum protection by the vehicle sheet metal and structural components. As an example SAE J1292, Automobile, Truck-Tractor, Trailer, and Motor Coach Wiring, can be referred to for general recommendations and guidelines. Several other documents may also be considered as providing motor vehicle guidance, e.g. ISO 14229 Road Vehicles-Unified Diagnostic Services and ISO 15764 Road Vehicles-Extended data Link Security.

Proposed Response   *Response Status* **O**

Cl **97.10**	*SC* **97.10.3**	*P* **109**	*L* **5**	# 188
Matola, Larry		Delphi		

Comment Type **TR**   *Comment Status* **X**

Proposed baseline text for subclause 97.10.3.1

SuggestedRemedy

97.10.3.1 Environmental Stresses
The 1000BASE T-1 PHY was originally designed to operate in the automotive environment. All equipment in this clause shall conform to the potential environmental stresses described in ISO 16750 with respect to their mounting location or as agreed to between the customer and supplier. ISO 16750 is a 5-part specification with the Environmental loads defined as follows:
? Part 1: General
? Part 2: Electrical loads
? Part 3: Mechanical loads
? Part 4: Climatic loads
? Part 5: Chemical loads
Automotive environmental conditions are generally more severe than those found in many commercial environments. The targeted application environment(s) require careful analysis prior to implementation.

Proposed Response   *Response Status* **O**

Cl **97.10**	*SC* **97.10.3**	*P* **109**	*L* **5**	# 189
Matola, Larry		Delphi		

Comment Type **TR**   *Comment Status* **X**

Proposed baseline text for section 97.10.3.2

SuggestedRemedy

97.10.3.2 Electromagnetic Compatibility
A system integrating the 1000BASE T-1 PHY shall comply with all applicable local and national codes, or as agreed to between the customer and supplier, for the limitation of electromagnetic interference. CISPR 25 test methods have been defined to measure the EMC cperformance of the PHY in terms of RF immunity and RF emission. Generally, motor vehicle EMC requirements are defined by CISPER 25 (radiated Emissions) and ISO 11452 (Radiated Immunity); however, exact test setup and test limit values may be adapted by each customer.

Proposed Response   *Response Status* **O**

Cl **97.8.**	*SC* **97.8.2.3**	*P* **108**	*L* **17**	# 190
Matola, Larry		Delphi		

Comment Type **TR**   *Comment Status* **X**

Short circuits of any wire to any wire...
Vehicles can be subjected to the connection of a reversed battery when an auxiliary starting device is used.   It is routine in some areas to use + 24 volts in these devices. With the advent of 42 volt electrical systems in the near future +/=50 volts is not an unlikly scenario.

SuggestedRemedy

Revise up to 50 V to +/-50 V

Proposed Response   *Response Status* **O**

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

Cl **97.8.**
SC **97.8.2.3**

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Cl **97A**   *SC* **97A.2**   *P* **141**   *L* **19**   # 318

DiMinico, Christopher   MC Communications

Comment Type   **T**   *Comment Status*   **X**

    Remove and replace TBDs in subclause 97A.2.

SuggestedRemedy

    Delete: (TBD length) in "The 1000BASE-T1 link segment (TBD length)" two instances.
    Change: (1, 5, TBD) to 10 mm
    Change: (3, 15, TBD) at least 30 mm

    Delete sentence: The test fixtures used in the measurement conform to the test fixture specifications
    in clause TBD.
    Align figures with text revisions;
    Figure 97A–1—4-port test setup
    Figure 97A–2—3-port common mode conversion loss measurement
    Change distance to the edge of the GND plane from 200mm to >/= 30mm.
    Note 3 in both drawings should also change accordingly.
    Change distances between meanders to >/= 30mm.

Proposed Response   *Response Status*   **O**

Cl **97B**   *SC* **97B.1.1**   *P* **143**   *L* **19**   # 321

DiMinico, Christopher   MC Communications

Comment Type   **T**   *Comment Status*   **X**

    In 97B.1.1 Alien crosstalk test configurations remove 3 TBDs

SuggestedRemedy

    In 97B.1.1 Alien crosstalk test configurations remove 3 TBDs.

Proposed Response   *Response Status*   **O**

Cl **97B**   *SC* **97B.1.1**   *P* **143**   *L* **25**   # 319

DiMinico, Christopher   MC Communications

Comment Type   **T**   *Comment Status*   **X**

    Remove TBD's. TBDs were provided to ensure comment review of equation. No changes requested in ballot cycles.

SuggestedRemedy

    Remove three TBDs in 97B.1.1

Proposed Response   *Response Status*   **O**

Cl **97B**   *SC* **97B.3**   *P* **144**   *L* **35**   # 320

DiMinico, Christopher   MC Communications

Comment Type   **T**   *Comment Status*   **X**

    Remove TBD's. TBDs were provided to ensure comment review of equation. No changes requested in ballot cycles.

SuggestedRemedy

    Remove 3 TBDs and in 97B.3 and Figure 97B–4—Cable bundle in 4-around-1 configuration

Proposed Response   *Response Status*   **O**

Cl **97B.1**   *SC* **97B.1.1**   *P* **143**   *L* **25**   # 191

Matola, Larry   Delphi

Comment Type   **TR**   *Comment Status*   **X**

    Currently temperature and humidity have (TBD) next to the values in line 25. The values inline 25 are referenced in section 1 of ISO 16750 part 1 as general test conditions and can be found in section 7.2 of that document. Since that document is referenced in section 97.10 Environmental Conditions I propose removing TBDs.

SuggestedRemedy

    Remove TBD and fix values.

Proposed Response   *Response Status*   **O**

Cl **98**   *SC* **98.1.2**   *P* **115**   *L* **10**   # 258

Regev, Alon   Ixia

Comment Type   **T**   *Comment Status*   **X**

    The draft states "PMD is not specified for 1000BASE-T1". This is not true. The PMD is defined in terms of electrical characteristics, EMC tests, etc.

SuggestedRemedy

    Delete the line "PMD is not specified for 1000BASE-T1"

Proposed Response   *Response Status*   **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **98**   Page 29 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **98.1.2**   3/4/2015 7:35:28 AM
SORT ORDER: Clause, Subclause, page, line

Cl **98**　　*SC* **98.2.1.1.3**　　*P* **118**　　*L* **36**　　# 291
Lo, William　　　　　　　Marvell Semiconducto

Comment Type　**TR**　　*Comment Status*　**X**
The DME scheme has evolved and the text is no longer accurate.

SuggestedRemedy
1) Change heading from "Sync Header and Manchester violation delimiter"
to "DME page Delimiters"

2) Remove yellow highlighting - text is correct.

3) Change "The page end is followed by a DME violation delimiter."
to "The page end is followed by a dummy zero."

4) Change "A violation is signaled as shown in Figure 98–7."
to "An example of the delimiters as shown in Figure 98–7".

5) Change figure 98-7 title to "DME Page"

Proposed Response　　　*Response Status*　**O**

Cl **98**　　*SC* **98.2.1.2**　　*P* **119**　　*L* **36**　　# 284
Lo, William　　　　　　　Marvell Semiconducto

Comment Type　**T**　　*Comment Status*　**X**
Fix reference 28.2.1.2

SuggestedRemedy
Change
These bits shall function as specified in 28.2.1.2
to
These bits shall function as specified in 28.2.1.2.4, 28.2.1.2.5, and 28.2.1.2.6 respectively.

Proposed Response　　　*Response Status*　**O**

Cl **98**　　*SC* **98.2.4.3.1**　　*P* **124**　　*L* **22**　　# 282
Lo, William　　　　　　　Marvell Semiconducto

Comment Type　**E**　　*Comment Status*　**X**
Highlighted reference is correct

SuggestedRemedy
Remove highlight

Proposed Response　　　*Response Status*　**O**

Cl **98**　　*SC* **98.4**　　*P* **126**　　*L* **42**　　# 309
McClellan, Brett　　　　　Marvell

Comment Type　**T**　　*Comment Status*　**X**
add new section 98.4.2, referred to in 97.2.1.1 for primitive for PMA_LINK.request
(link_control)

SuggestedRemedy
98.4.2 PMA_LINK.request
This primitive is generated by Auto-Negotiation to allow it to enable and disable operation
of the PMA.
98.4.2.1 Semantics of the service primitive
PMA_LINK.request(link_control)
The link_control parameter shall assume one of two values: DISABLE or ENABLE.
The link_control=DISABLE mode shall be used by the Auto-Negotiation function to disable
PMA processing.
The link_control=ENABLE mode shall be used by Auto-Negotiation to turn control over to a
single PMA for all normal processing functions.
98.4.2.2 When generated
The Auto-Negotiation function shall generate this primitive to indicate to the PHY how to
respond, in accordance with the state diagram of Figure 98–14.
Upon power-on or reset, if the Auto-Negotiation function is enabled
(mr_autoneg_enable=true) the PMA_LINK.request(DISABLE) message shall be issued to
all technology-dependent PMAs.
98.4.2.3 Effect of receipt
This primitive affects operation of the underlying PMA.

Proposed Response　　　*Response Status*　**O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
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Cl **98**
SC **98.4**

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3/4/2015 7:35:28 AM

Cl **98**   *SC* **98.4.1**   *P* **125**   *L* **46**   # 308

McClellan, Brett   Marvell

Comment Type   **T**   *Comment Status* **X**

    update this primitive to match 97.2.1.2 PMA_LINK.indication

SuggestedRemedy

    Change AN_LINK.indication to PMA_LINK.indication on line 46 & 54
    change PCS to PMA on lines 41, 48 & page 126 line 36

Proposed Response   *Response Status* **O**

Cl **99**   *SC* **n/a**   *P* **10**   *L* **3**   # 185

Remein, Duane   Huawei

Comment Type   **ER**   *Comment Status* **X**

    TOC does not appear to have been updated nor are the links funcitons

SuggestedRemedy

    Update TOC for each edition and ensure links are functional.

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **99**   Page 31 of 31
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *SC* **n/a**   3/4/2015 7:35:28 AM
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