Cl **22** *SC* **22.2.2.11** *P* **28** *L* **34** # 48

Beruto, Piergiorgio Canova Tech

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

Short form RS should be used

SuggestedRemedy

Replace "Reconcialiation Sublayer" with "RS"

Proposed Response *Response Status* **O**

Cl **22** *SC* **22.2.2.11** *P* **28** *L* **42** # 49

Beruto, Piergiorgio Canova Tech

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

Short form RS should be used

SuggestedRemedy

Replace "Reconcialiation Sublayer" with "RS"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.9.2** *P* **34** *L* **10** # 24

Beruto, Piergiorgio Canova Tech

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

Addendum to master comment [PLCA_TO_TIMER]

SuggestedRemedy

Add subclause:
"30.3.9.2.5 aPLCATransmitOpportunityTimer
ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:
The value of aPLCATransmitOpportunityTimer is assigned to define the time between PLCA transmit opportunities.; "

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.9.2** *P* **34** *L* **10** # 23

Beruto, Piergiorgio Canova Tech

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

Addendum to master comment [PLCA_LOCAL_NODE_ID]

SuggestedRemedy

Add subclause:
"30.3.9.2.4 aPLCALocalNodeID
ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:
The value of aPLCALocalNodeID is assigned to define the ID of the local node on the PLCA network.; "

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.3.9.2** *P* **34** *L* **10** # 22

Beruto, Piergiorgio Canova Tech

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

Addendum to master comment [PLCA_MAX_ID]

SuggestedRemedy

Add subclause:
"30.3.9.2.3 aPLCAMaxID
ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:
The value of aPLCAMaxID is assigned to define the maximum number of nodes that can be handled on the PLCA network.; "

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.2** *P* **34** *L* **21** # 107
Baggett, Tim Microchip

Comment Type **E** *Comment Status* **X**
Section contains references to "twisted-pair" cable.

SuggestedRemedy
Change (two instances):
"Single twisted-pair copper cable"
to:
"Single balanced-pair copper cable"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.4** *P* **34** *L* **28** # 50
Beruto, Piergiorgio Canova Tech

Comment Type **T** *Comment Status* **X**
10BASE-T1S has no link_status defined

SuggestedRemedy
Remove "10BASE-T1S,"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1** *P* **35** *L* **26** # 1
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **X**
10BASE-T1S training

SuggestedRemedy
Change to Reserved and remove Subclause reference (there is no 10BASE-T1S training mode available)

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1** *P* **35** *L* **28** # 2
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **X**
10BASE-T1S link partner training

SuggestedRemedy
Change to Reserved and remove Subclause reference (there is no 10BASE-T1S training mode available)

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e** *P* **42** *L* **12** # 92
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
Table 45–142e—10BASE-T1S PMA status register defines OAM Ability bit 1.2300.11 needs removal.

See Baggett_T1S_OAM_072018.pdf

[MASTER COMMENT: OAM_REMOVAL]

SuggestedRemedy
Lines 12-16: Table 45-142e, Change bit 1.2300.11 to Reserved, Value always 0, RO.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e** *P* **42** *L* **14** # 120
Brandt, David Rockwell Automation

Comment Type **T** *Comment Status* **X**
OAM adds complexity without sufficient value

SuggestedRemedy
Change bit 1.2300.11 to: "Reserved", "Value always 0", "RO"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e** *P* **42** *L* **17** # 79
Baggett, Tim Microchip

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

As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

There is no need for an EEE availability register bit since T1S has no special EEE mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy

Lines 17-18: Table 45-142e, Change bit 1.2300.10 (EEE Availability) to Reserved, Value always 0, RO.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e** *P* **42** *L* **17** # 3
Graber, Steffen Pepperl+Fuchs GmbH

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

EEE Ability

SuggestedRemedy

Set bit 1.2300.10 to Reserved, Value always 0, RO (10BASE-T1S has inherent EEE Ability as there is no continuous datastream transmitted).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e** *P* **42** *L* **27** # 51
Beruto, Piergiorgio Canova Tech

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

10BASE-T1S is polarity insensitive

SuggestedRemedy

Replace row 1.2300.2 with "Reserved"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e** *P* **42** *L* **31** # 52
Beruto, Piergiorgio Canova Tech

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

10BASE-T1S has no link_status defined

SuggestedRemedy

Replace row 1.2300.0 with "Reserved"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e.1** *P* **42** *L* **36** # 117
Brandt, David Rockwell Automation

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

Sub-clause misnamed

SuggestedRemedy

Change "OAM" to "Loopback" in sub-clause heading

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e.1** *P* **42** *L* **36** # 91
Baggett, Tim Microchip

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

Section heading incorrectly references OAM, but text describes PMA Loopback ability and references the PMA Loopback Ability bit 1.2300.13 in Table 45-142e above.

SuggestedRemedy

Replace "10BASE-T1S OAM ability" with "10BASE-T1S Loopback ability"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e.2** *P* **42** *L* **41** # 118
Brandt, David Rockwell Automation

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

OAM adds complexity without sufficient value

SuggestedRemedy

Delete sub-clause

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e.2** *P* **42** *L* **41** # 93
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM Ability bit 1.2300.11 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 41-49: Delete section 45.2.1.174e.2 10BASE-T1S OAM ability (1.2300.11).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e.2** *P* **42** *L* **43** # 119
Brandt, David Rockwell Automation

Comment Type **E** *Comment Status* **X**
OAM adds complexity without sufficient value

SuggestedRemedy
Delete editors note

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e.3** *P* **42** *L* **51** # 80
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

There is no need for an EEE availability register bit since T1S has no special EEE mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy
Lines 51-53: Delete section 45.2.1.174e.3 EEE ability (1.2300.10) and associated text.
Note: section extends onto page 43 Line 1.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e.3** *P* **42** *L* **51** # 4
Graber, Steffen Pepperl+Fuchs GmbH

Comment Type **T** *Comment Status* **X**
EEE Ability

SuggestedRemedy
Remove Chapter 45.2.1.174e.3 (see previous comment)

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e.6** *P* **43** *L* **16** # 53
Beruto, Piergiorgio Canova Tech

Comment Type **T** *Comment Status* **X**
10BASE-T1S is polarity insensitive

SuggestedRemedy
Remove subclause 45.2.1.174e.6 as a whole

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174e.8** *P* **43** *L* **29** # 54
Beruto, Piergiorgio Canova Tech

Comment Type **T** *Comment Status* **X**
10BASE-T1S has no link_status defined

SuggestedRemedy
Remove subclause 45.2.1.174e.8 as a whole

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174f** *P* **43** *L* **36** # 55
Beruto, Piergiorgio Canova Tech

Comment Type **T** *Comment Status* **X**
10BASE-T1S has no training

SuggestedRemedy
Remove subclause 45.2.1.174f as a whole

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174f** *P* **43** *L* **36** # 5

Graber, Steffen — Pepperl+Fuchs GmbH

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

10BASE-T1S training register

SuggestedRemedy

Remove complete chapter, tables and sub chapters, as there is no training mode available for 10BASE-T1S.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174f** *P* **43** *L* **49** # 94

Baggett, Tim — Microchip

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

Table 45–142f—10BASE-T1S training register defines OAM Advertisement bit 1.2301.1 needs removal.

[OAM_REMOVAL]

SuggestedRemedy

Lines 49-50 : Table 45-142f, Change bit 1.2301.1 to Reserved, Value always 0, RO.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174f** *P* **43** *L* **49** # 121

Brandt, David — Rockwell Automation

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

OAM adds complexity without sufficient value

SuggestedRemedy

Change bit 1.2301.1 to: "Reserved", "Value always 0", "RO"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174f** *P* **43** *L* **52** # 81

Baggett, Tim — Microchip

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

As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

There is no need for an EEE availability advertised register bit since T1S has no special EEE mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy

Lines 52-53: Table 45-142f, Change bit 1.2301.0 (EEE Advertisement) to Reserved, Value always 0, RO.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174f.2** *P* **44** *L* **8** # 95

Baggett, Tim — Microchip

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

OAM advertisement bit 1.2301.1 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy

Lines 8-14: Delete section 45.2.1.174f.2 10BASE-T1S OAM advertisement (1.2301.1).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174f.2** *P* **44** *L* **8** # 122

Brandt, David — Rockwell Automation

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

OAM adds complexity without sufficient value

SuggestedRemedy

Delete sub-clause

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174f.3** *P* **44** *L* **16** # 82
Baggett, Tim Microchip

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

As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

There is no need for an EEE Advertisement register bit since T1S has no special EEE mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy

Lines 16-21: Delete section 45.2.1.174f.3 EEE advertisement (1.2301.0) and associated text.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174g** *P* **44** *L* **22** # 6
Graber, Steffen Pepperl+Fuchs GmbH

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

10BASE-T1S link partner training register

SuggestedRemedy

Remove complete chapter, tables and sub chapters, as there is no training mode available for 10BASE-T1S.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174g** *P* **44** *L* **31** # 56
Beruto, Piergiorgio Canova Tech

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

10BASE-T1S has no link partner training

SuggestedRemedy

Remove subclause 45.2.1.174g as a whole

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174g** *P* **44** *L* **39** # 96
Baggett, Tim Microchip

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

Table 45–142g—10BASE-T1S link partner training register OAM Link Partner Advertisement bit 1.2301.1 needs removal.

[OAM_REMOVAL]

SuggestedRemedy

Lines 39-42: Table 45-142g, Change bit 1.2302.1 to Reserved, Value always 0, RO.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174g** *P* **44** *L* **39** # 123
Brandt, David Rockwell Automation

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

OAM adds complexity without sufficient value

SuggestedRemedy

Change bit 1.2302.1 to: "Reserved", "Value always 0", "RO"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174g** *P* **44** *L* **43** # 83
Baggett, Tim Microchip

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

As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

There is no need for an Link Partner EEE advertisement register bit since T1S has no special EEE mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy

Lines 43-44: Table 45-142g, Change bit 1.2302.0 (Link Partner EEE Advertisement) to Reserved, Value always 0, RO.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174g.2** *P* **44** *L* **52** # 124
Brandt, David Rockwell Automation

Comment Type **T** *Comment Status* **X**
OAM adds complexity without sufficient value

SuggestedRemedy
Delete sub-clause

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174g.2** *P* **44** *L* **53** # 97
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM Link Partner Advertisement bit 1.2301.1 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Line 53: Delete section 45.2.1.174g.2 Link partner 10BASE-T1S OAM advertisement (1.2302.1).
Note: Section extends to Page 45 Lines 1-4.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.174g.3** *P* **45** *L* **6** # 84
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

There is no need for a Link Partner EEE Advertisement register bit since T1S has no special EEE mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy
Lines 6-11: Delete section 45.2.1.174g.3 Link Partner EEE advertisement (1.2302.0) and associated text.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3** *P* **46** *L* **12** # 25
Beruto, Piergiorgio Canova Tech

Comment Type **T** *Comment Status* **X**
Addendum to master comments [PLCA_MAX_ID], [PLCA_LOCAL_NODE_ID], [PLCA_TO_TIMER]

SuggestedRemedy
In table 45-168

Change:
"3.2280 through 3.2290 | Reserved"
To:
"3.2280 through 3.2288 | Reserved"

Insert:
"3.2289 | 10BASE-T1S PLCA control | 45.2.3.58c"

Insert:
"3.2290 | 10BASE-T1S PLCA control 2 | 45.2.3.58d"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3** *P* **46** *L* **24** # 7
Graber, Steffen PepperI+Fuchs GmbH

Comment Type **T** *Comment Status* **X**
10BASE-T1S PCS status 2

SuggestedRemedy
Change to Reserved and remove Subclause reference.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3** *P* **46** *L* **25** # 125
Brandt, David Rockwell Automation

Comment Type **T** *Comment Status* **X**
OAM adds complexity without sufficient value

SuggestedRemedy
Consolidate Register addresses 3.2294 through 3.2303 from 4 lines, into a single line as: Register name = "Reserved", Subclause = "".

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3** *P* **46** *L* **26** # 108
Baggett, Tim Microchip

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

Table 45–168—PCS registers table contains OAM registers 3.2294 through 3.2303 that need removal.

[OAM_REMOVAL]

SuggestedRemedy

Lines 26-29: Delete rows for registers 3.2294 (10BASE-T1S OAM transmit), 2.2295 through 3.2298 (10BASE-T1S OAM message), 3.2299 (10BASE-T1S OAM receive), and 3.2300 through 3.2303 (Link partner 10BASE-T1S OAM message).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58c** *P* **48** *L* **44** # 26
Beruto, Piergiorgio Canova Tech

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

Addendum to master comments [PLCA_MAX_ID], [PLCA_LOCAL_NODE_ID]

SuggestedRemedy

Add
"45.2.3.58c 10BASET1S-PLCA control 1 (Register 3.2289)

The assignment of bits in the 10BASE-T1S PLCA control 1 register is shown in Table XXX."

Add table XXX (with editorial license to use the same style of already defined registers):
Bits(s) | Name | Description | RWa
3.2289.15:8 | MAX_ID | 8 bit field indicating the max number of nodes on the PLCA network | R/W
3.2290.7:0 | local_nodeID | 8 bit field indicating the local ID of the node on the PLCA network | RW

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58c** *P* **48** *L* **44** # 29
Beruto, Piergiorgio Canova Tech

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

Addendum to master comment [PLCA_TO_TIMER]

SuggestedRemedy

Add
"45.2.3.58d 10BASET1S-PLCA control 2 (Register 3.2290)

The assignment of bits in the 10BASE-T1S PLCA control 2 register is shown in Table YYY."

Add table YYY (with editorial license to use the same style of already defined registers):
Bits(s) | Name | Description | RWa
3.2290.15:0 | TO_TIMER | 16 bit field indicating the the time between PLCA transmit opportunities expressed in bit times | R/W

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58c** *P* **49** *L* **10** # 90
Baggett, Tim Microchip

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

Bit PLCA reset (3.2291.12) as described in 45.2.3.58c.4 is not included in Table 45-220c.

SuggestedRemedy

Insert the following bit row into Table 45-220c:
3.2291.12 PLCA reset 1=PLCA reset 0=Normal operation R/W, SC

Update reserved bits:
3.2291.11:0

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58c** *P* **49** *L* **11** # 8
Graber, Steffen Pepperl+Fuchs GmbH

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

Description for Bit 3.2291.12 (PLCA Reset) is missing.

SuggestedRemedy

Add bit 3.2291.12 to table 45-220c: Name: PLCA reset, Description: 1 = PLCA reset 0 = Normal operation, R/W: R/W, SC

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58c.1** *P* **48** *L* **44** # 27

Beruto, Piergiorgio Canova Tech

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

Addendum to master comment [PLCA_MAX_ID]

SuggestedRemedy

Add subclause:
"45.2.3.58c.1 MAX_ID (3.2289.15:8)
When 10BASE-T1S PCS is in PLCA mode and local_nodeID is set to value 0, bits 3.2289.15:8 define the number of maximum nodes that can be handled on the PLCA network.
The default value of bits 3.2289.15:8 is 8."

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58c.2** *P* **48** *L* **44** # 28

Beruto, Piergiorgio Canova Tech

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

Addendum to master comment [PLCA_LOCAL_NODE_ID]

SuggestedRemedy

Add subclause:
"45.2.3.58c.2 local_nodeID (3.2289.7:0)
When 10BASE-T1S PCS is in PLCA mode, bits 3.2289.7:0 define the ID of the node in the network.
The default value of bits 3.2289.7:0 is 255."

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58d** *P* **50** *L* **16** # 85

Baggett, Tim Microchip

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

As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting.

There is no need for PCS Tx LPI Received, Rx LPI Received, Tx LPI Indication, and Rx LPI Indication register bits since T1S has no special low-power-idle mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy

Lines 16-17: Table 45-220d, Change bit 1.2292.11 (Tx LPI Received) to Reserved, Value always 0, RO.
Lines 18-19: Table 45-220d, Change bit 1.2292.10 (Rx LPI Received) to Reserved, Value always 0, RO.
Lines 20-21: Table 45-220d, Change bit 1.2292.9 (Tx LPI Indication) to Reserved, Value always 0, RO.
Lines 22-23: Table 45-220d, Change bit 1.2292.8 (Rx LPI Indication) to Reserved, Value always 0, RO.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58d** *P* **50** *L* **28** # 57

Beruto, Piergiorgio Canova Tech

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

10BASE-T1S has no concept of PCS receive link

SuggestedRemedy

Replace row "3.2292.2" with "Reserved"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58d.1** *P* **48** *L* **44** # 30

Beruto, Piergiorgio — Canova Tech

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

Addendum to master comment [PLCA_TO_TIMER]

SuggestedRemedy

Add subclause:
"45.2.3.58d.1 TO_TIMER (3.2290.15:0)
When 10BASE-T1S PCS is in PLCA mode, bits 3.2290.15:0 define the time between PLCA transmit opportunities expressed in bit times.
The default value of bits 3.2290.15:0 is 20."

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58d.2** *P* **50** *L* **39** # 86

Baggett, Tim — Microchip

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

As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

There is no need for a PCS Tx LPI Received register bit since T1S has no special low-power-idle mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy

Lines 39-45: Delete section 45.2.3.58d.2 Tx LPI Received (1.2292.11) and associated text.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58d.3** *P* **50** *L* **46** # 87

Baggett, Tim — Microchip

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

As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

There is no need for a PCS Rx LPI Received register bit since T1S has no special low-power-idle mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy

Lines 46-52: Delete section 45.2.3.58d.3 Rx LPI Received (1.2292.10) and associated text.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58d.4** *P* **51** *L* **1** # 88

Baggett, Tim — Microchip

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

As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

There is no need for a PCS Tx LPI Indication register bit since T1S has no special low-power-idle mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy

Lines 1-6: Delete section 45.2.3.58d.4 Tx LPI Indication (1.2292.9) and associated text.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58d.5** *P* **51** *L* **7** # 89
Baggett, Tim Microchip

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

As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

There is no need for a PCS Rx LPI Indication register bit since T1S has no special low-power-idle mode.

[T1S_LPI_REMOVAL]

SuggestedRemedy

Lines 1-6: Delete section 45.2.3.58d.5 Rx LPI Indication (1.2292.8) and associated text.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58d.7** *P* **51** *L* **19** # 58
Beruto, Piergiorgio Canova Tech

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

10BASE-T1S has no concept of PCS receive link

SuggestedRemedy

Remove subclause 45.2.3.58d.7 as a whole

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58d.7** *P* **51** *L* **23** # 9
Graber, Steffen Pepperl+Fuchs GmbH

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

This bit is a latching low version of bit 3.2293.10.

SuggestedRemedy

Remove this reference as PCS status 2 register is being removed from the draft.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58e** *P* **51** *L* **26** # 45
Beruto, Piergiorgio Canova Tech

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

None of the functions in PCS status register 2 are defined and appropriate for T1S.

SuggestedRemedy

Remove subclause 45.2.3.58e as a whole.
Remove 10BASE-T1S PCS status 2 entry from table 45-168

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58e** *P* **51** *L* **26** # 10
Graber, Steffen Pepperl+Fuchs GmbH

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

10BASE-T1S PCS status 2 register

SuggestedRemedy

Remove complete chapter, tables and sub chapters.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f** *P* **52** *L* **38** # 109
Baggett, Tim Microchip

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

10BASE-T1S OAM Transmit register 3.2294 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy

Lines 38-41: Delete section 45.2.3.58f 10BASE-T1S OAM transmit register (Register 3.2294).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f** *P* **52** *L* **38** # 126
Brandt, David Rockwell Automation

Comment Type **T** *Comment Status* **X**
OAM adds complexity without sufficient value

SuggestedRemedy
Delete sub-clause and all subordinate sub-clauses (45.2.3.58f.1 through 45.2.3.58f.8), including Table 45-220f and Editor's Notes in .6 and .7.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f** *P* **53** *L* **1** # 112
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
Table 45–220f—10BASE-T1S OAM transmit register needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 1-35: Delete Table 45-220f - 10BASE-T1S OAM transmit register bit definitions.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f.1** *P* **52** *L* **42** # 110
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM message valid bit 3.2294.15 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 42-48 : Delete section 45.2.3.58f.1 10BASE-T1S OAM message valid (3.2294.15).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f.2** *P* **52** *L* **49** # 111
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM Toggle value bit 3.2294.14 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 49-54 : Delete section 45.2.3.58f.2 Toggle value (3.2294.14).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f.3** *P* **53** *L* **36** # 113
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM message received bit 3.2294.13 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 36-41: Delete section 45.2.3.58f.3 10BASE-T1S OAM message received (3.2294.13).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f.4** *P* **53** *L* **42** # 114
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM Received message toggle value bit 3.2294.12 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 42-46: Delete section 45.2.3.58f.4 Received message toggle value (3.2294.12).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f.5** *P* **53** *L* **47** # 64
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM Message number bitfield 3.2294.11:8 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 47-52: Delete section 45.2.3.58f.5 Message number (3.2294.11:8)
Note: Section extends to Page 54 Lines 1-3.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f.6** *P* **54** *L* **4** # 65
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM Ping received bit 3.2294.3 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 4-12: Delete section 45.2.3.58f.6 Ping received (3.2294.3).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f.7** *P* **54** *L* **13** # 66
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM Ping transmit bit 3.2294.2 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 13-21: Delete section 45.2.3.58f.7 Ping transmit (3.2294.2).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58f.8** *P* **54** *L* **22** # 67
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM Local SNR bitfield 3.2294.1:0 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 22-26: Delete section 45.2.3.58f.8 Local SNR (3.2294.1:0).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58g** *P* **54** *L* **27** # 127
Brandt, David Rockwell Automation

Comment Type **T** *Comment Status* **X**
OAM adds complexity without sufficient value

SuggestedRemedy
Delete sub-clause and Table 45-220g.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58g** *P* **54** *L* **27** # 68
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
10BASE-T1S OAM message registers (3.2295 to 3.2298) description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 27-32: Delete section 45.2.3.58g 10BASE-T1S OAM message register (Registers 3.2295 to 3.2298).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58g** *P* **54** *L* **33** # 69
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
Table 45-220g - 10BASE-T1S OAM message register needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 33-49: Delete Table 45-220g - 10BASE-T1S OAM message register bit definitions.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58h** *P* **54** *L* **50** # 128
Brandt, David Rockwell Automation

Comment Type **T** *Comment Status* **X**
OAM adds complexity without sufficient value

SuggestedRemedy
Delete sub-clause and all subordinate sub-clauses (45.2.3.58h.1 through 45.2.3.58h.4), including Table 45-220h.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58h** *P* **54** *L* **50** # 70
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
10BASE-T1S OAM receive register 3.2299 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 50-53: Delete section 45.2.3.58h 10BASE-T1S OAM receive register (Register 3.2299).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58h** *P* **55** *L* **1** # 71
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
Table 45-220h - Link partner 10BASE-T1S OAM message register needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 1-23: Delete Table 45-220h - Link partner 10BASE-T1S OAM message register bit definitions.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58h.1** *P* **55** *L* **22** # 72
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM Link Partner Message valid bit 3.2299.15 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 22-29: Delete section 45.2.3.58h.1 Link partner 10BASE-T1S OAM message valid (3.2299.15).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58h.2** *P* **55** *L* **30** # 73
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
OAM Link Partner toggle value bit 3.2299.14 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy
Lines 30-34: Delete section 45.2.3.58h.2 Link partner toggle value (3.2299.14).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58h.3** *P* **55** *L* **35** # 74
Baggett, Tim Microchip

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

OAM Link Partner message number bitfield 3.2299.11:8 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy

Lines 35-38: Delete section 45.2.3.58h.3 Link partner message number (3.2299.11:8).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58h.3** *P* **55** *L* **39** # 75
Baggett, Tim Microchip

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

OAM Link Partner SNR bitfield 3.2299.1:0 description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy

Lines 39-43: Delete section 45.2.3.58h.4 Link partner SNR (3.2299.1:0).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58i** *P* **55** *L* **44** # 115
Brandt, David Rockwell Automation

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

OAM adds complexity without sufficient value

SuggestedRemedy

Delete sub-clause and Table 45-220i.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58i** *P* **55** *L* **44** # 76
Baggett, Tim Microchip

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

10BASE-T1S OAM link partner message registers (3.2300 to 3.2303) description text needs removal.

[OAM_REMOVAL]

SuggestedRemedy

Lines 44-50: Delete section 45.2.3.58i Link partner 10BASE-T1S OAM message register (Registers 3.2300 to 3.2303).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.58i** *P* **56** *L* **1** # 77
Baggett, Tim Microchip

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

Table 45–220i—10BASE-T1L OAM receive register needs removal.

[OAM_REMOVAL]

SuggestedRemedy

Lines 1-25: Delete Table 45-220i - 10BASE-T1L OAM receive register bit definitions.

NOTE: The table title incorrectly refers to T1L rather than T1S.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.5.3.3** *P* **58** *L* **54** # 63
Franchuk, Brian Emerson Automation

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

Operating mode voltage is wrong.

SuggestedRemedy

Change "2.4 Vpp" to "1.0 Vpp"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.5.3.7** *P* **63** *L* **9** # 78
Baggett, Tim Microchip

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

The table includes PICS items for T1S OAM which need removal.

SuggestedRemedy

Lines 9-38: Delete rows from table referring to items RM194, RM195, RM196, RM197, RM198, RM199, and RM200.

At the top of the table (page 61, line3) change:
"Insert PICS items RM158 through RM200 into the table as follows:"
to:
"Insert PICS items RM158 through RM193 into the table as follows:"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.5.3.7** *P* **63** *L* **16** # 116
Brandt, David Rockwell Automation

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

OAM adds complexity without sufficient value

SuggestedRemedy

Delete Item RM194 through RM199 and renumber

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.1.3.3.1** *P* **65** *L* **22** # 98
Baggett, Tim Microchip

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

As stated in the T1S Clause 147, DME requires no low-power-idle (LPI) as it is silent when not transmitting. Therefore, T1S is inherently energy efficient.

As such, recommend removing 10BASE-T1S from the EEE table in clause 78, and all Clause 45 registers relating to advertising EEE and LPI.

[MASTER COMMENT: T1S_LPI_REMOVAL]

SuggestedRemedy

Delete row for "10BASE-T1S | 147" from Table 78-1 as there is no separate EEE mode.

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.3.4** *P* **165** *L* **2** # 145
CORDARO, Jay Broadcom, Inc.

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

[UD] Replace figure 147-9 with figure_147_9_UD_field

SuggestedRemedy

redraw Figure 147-9 with following picture

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.5.7** *P* **134** *L* **1** # 42
Beruto, Piergiorgio Canova Tech

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

Since this is a suggestion, as for other comments in the past we decided that the appropriate form is "can" instead of "may"

SuggestedRemedy

Replace "may" with "can"

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.7.1** *P* **135** *L* **50** # 14
HESS, DAVE CORD DATA

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

Add text:

Additionally:
a) Refer to ISO/IEC TR 11801-9906 and ANSI/TIA-568.5 for support of 10BASE-T1L over generic balanced 1-pair cabling channels.
b) ISO/IEC TR 11801-9906 and ANSI/TIA-568.5 cover reference implementation specifications and installation guidance for generic balanced 1-pair cabling channels, which support the transmission parameters specified in this clause.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.7.1.4** *P* **138** *L* **40** # 11

Schicketanz, Dieter — Reutlingen University

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

Editors note at line 40 and 48 are not needed any more. The rational is that the electromagnetic table was set in Pittsburg, and as no change to the mice table values were stated no alignment necesary. The values in table 146-5 are the same as ISO and TIA values for E1 and E2. Only the frquency range was extended to 0.1 MHz The measurements presented just confirmed the values.

SuggestedRemedy

delete both editors notes

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.7.1.4** *P* **139** *L* **2** # 12

Schicketanz, Dieter — Reutlingen University

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

Table 146-5-and table 146-7 does not state max or min like in other link tables.

SuggestedRemedy

Change table 146-5 header: Minimum differential to common mode conversion…and to table 146-7 : Minimum coupling attenuation or leave the table headers and add corresponding ">" to the values in the table

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.7.1.5** *P* **139** *L* **17** # 13

Schicketanz, Dieter — Reutlingen University

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

The reference -4-14 is for a frequency range of 30 to 2000 MHz. The frequency range we are looking at will be given given by IEC as NP 61156-13. This was discussed in Schicketanz_050918_10SPE_01_adhoc.pdf
and the inclusion of this reference was proposed by G.Zimmerman

SuggestedRemedy

Replace actual reference 62153-4-14 with NP61156 and delete TBD

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.1** *P* **153** *L* **19** # 59

Beruto, Piergiorgio — Canova Tech

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

Typo - uppercase

SuggestedRemedy

Replace "Idle" with "idle"

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.1** *P* **153** *L* **22** # 60

Beruto, Piergiorgio — Canova Tech

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

Subject is "optional support", not "functions"

SuggestedRemedy

Replace "are" with "is"

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.1.2** *P* **153** *L* **49** # 102

Baggett, Tim — Microchip

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

A symbol is the shortest pulse possible in transmission (1.4.393). The Baud rate is the unit of signalling speed (1.4.110), or symbols/second. Differential Manchester encoding requires two pulses to encode each bit. Therefore the Baud rate should be 2x the bit rate.

After the 4B/5B encoding, we have 12.2 Mbit/s. After DME, we have 25 M pulses/sec or 25 MBaud.

SuggestedRemedy

Change 12.5 MBd to 25 MBd.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.1** *P* **157** *L* **13** # 129
CORDARO, Jay Broadcom, Inc.

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

[MASTER COMMENT][JJHH] Update PCS transmit to incorporate JJHH Preamble + minor text correction.

SuggestedRemedy

Upon assertion of TX_EN, the PCS Transmit function passes a group of two SYNC symbols to the PMA, followed by two SSD symbols which replaces the first 16 bits of the packet preamble. Following the second SSD, TXD<3:0> is encoded into 5B symbols using the encoding rulles specified in Table 147-1, until TX_EN is deasserted.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.1** *P* **157** *L* **16** # 143
CORDARO, Jay Broadcom, Inc.

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

[UD] add text for user-defined data in PCS Transmit Overview

SuggestedRemedy

If optional user-defined data channel is supported (UD_EN = ON), the 15 bit Ouser defined data (ud_txdata) replaces part of
the packet preamble starting at the 34th bit (included) from TX_EN asserted, overriding the TXD<3:0>
content as shown in figure 147-4.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.1** *P* **157** *L* **20** # 61
Beruto, Piergiorgio Canova Tech

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

Typo: double dot at end of line

SuggestedRemedy

Remove one dot

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.2** *P* **158** *L* **22** # 130
CORDARO, Jay Broadcom, Inc.

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

[JJHH] Insert txcnt counter

SuggestedRemedy

txcnt General purpose counter for PCS transmit function.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.2** *P* **158** *L* **27** # 131
CORDARO, Jay Broadcom, Inc.

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

[JJHH] replace SSD with 'H'

SuggestedRemedy

5B symbol defined as 'H' in 4B/5B encoding (see also table 147-1)

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.2** *P* **158** *L* **32** # 132
CORDARO, Jay Broadcom, Inc.

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

[JJHH] Replace ESDERR with 'K'

SuggestedRemedy

5B symbol defined as 'K' in 4B/5B encoding (see also table 147-1)

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.3** *P* **158** *L* **42** # 133
CORDARO, Jay Broadcom, Inc.

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

[JJHH] Repace nibble with 'four bits'

SuggestedRemedy

In the PCS transmit process, this function takes as its argument four bits of input data…

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.3** *P* **159** *L* **1** # 46
Beruto, Piergiorgio Canova Tech

Comment Type **E** *Comment Status* **X**
Table 147-1 might look incomplete

SuggestedRemedy
Rework table 147-1 in order to have
only four columns "Name, 4B, 5B and Special function". Leave elements from '0' to 'F' with an empty "special function" field. Move elements whose name ranges from 'I' to 'N' at the bottom of the table.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.3** *P* **159** *L* **8** # 134
CORDARO, Jay Broadcom, Inc.

Comment Type **TR** *Comment Status* **X**
[JJHH]Change Name 'K' to ESDERR See table_147_1.png

SuggestedRemedy
see comment

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.3** *P* **159** *L* **12** # 135
CORDARO, Jay Broadcom, Inc.

Comment Type **TR** *Comment Status* **X**
[JJHH] Change Name 'H' to SSD. See table_147_1.png

SuggestedRemedy
see comment

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.3** *P* **160** *L* **3** # 140
CORDARO, Jay Broadcom, Inc.

Comment Type **TR** *Comment Status* **X**
[UD] Replace figure 147-4 with figure_147_4_UD_field

SuggestedRemedy
redraw Figure 147-4 with following picture

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.2.3** *P* **160** *L* **17** # 136
CORDARO, Jay Broadcom, Inc.

Comment Type **TR** *Comment Status* **X**
[JJHH] Update Figure 147-4 see figure_147_4.png

SuggestedRemedy
Edit Figure 147-4 Remove SYNC3, Replace w/SSD1. Change SSD to SSD2

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.3** *P* **162** *L* **14** # 47
Beruto, Piergiorgio Canova Tech

Comment Type **E** *Comment Status* **X**
PCS Receive Overview chapter structure is not in line with the one of the PCS Transmit chapter. Clause numbering looks weird.

SuggestedRemedy
Replace "147.3.3 PCS Receive Oveview" with "147.3.3 PCS Receive

147.3.3.1 PCS Receive overview"

Have subsequent subclauses renumbered accordingly

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.3** *P* **162** *L* **24** # 137

CORDARO, Jay Broadcom, Inc.

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

[JJHH] Update PCS Receive text for JJHH preamble

SuggestedRemedy

The finite state machine defined in Figure 147–8 is triggered by the reception of a SYNC symbol from the PMA Receive function and waits for two SSD symbols to start regenerating the packet preamble whose start has been replaced with the SYNC, SYNC, SSD, SSD sequence by the PCS Transmit functions as described in Figure 147–4.

After the second SSD is received, the PCS Receive function discards the next nine symbols which shall instead be used to achieve lock of the self-synchronizing descrambler.

During the descrambler locking time, the special value 5 is conveyed to the MII via the pcs_rxd variable in order to rebuild the original preamble transmitted by the MAC.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.3** *P* **162** *L* **27** # 44

Beruto, Piergiorgio Canova Tech

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

After scrambler has been added, the descriptive text is no more in line with the state diagrams.

SuggestedRemedy

Replace "Following the SSD marker there are four states before the DATA state to accomplish
this task." with
"After the last SSD is received, the PCS Receive function discards the next eight symbols which shall
instead be used to achieve lock of the self-synchronizing scrambler. During the time the PCS Receive function is decoding data for locking the scrambler, the special value 5 is conveyed to the MII via the pcs_rxd variable, thus rebuilding
the original preamble transmitted by the MAC.
Eventually the PCS Receive function switches to the DATA state where 5B symbols are being decoded and
conveyed to the MII interface as appropriate."

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.3** *P* **162** *L* **27** # 146

CORDARO, Jay Broadcom, Inc.

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

[ud] delete sentence and add 3 paragraphs

SuggestedRemedy

delete sentence starting "Following the SSD marker there are four states before the DATA state to accomplish this task"
add
After the last SSD is received, the PCS Receive function discards the next eight symbols which shall
instead be used to achieve lock of the self-synchronizing scrambler. Afterward, PCS Receive function decodes one more symbolcontaining the last bit needed for scrambler locking and the first three least significant bits of the optionaluser-defined field. If user-defined data is supported, the least significant user-defined bit UD_EN will be 1. The remaining bits of the optional user-defined fields are then decoded from the next three 5B symbols. If user-defined data is not supported, UD_EN=0 and the PCS receive function ignores the user-defined data bits.
During the time the PCS Receive function is decoding data for the scrambler locking and whether or not user-defined data field is supported, the special value 5 is conveyed to the MII via the pcs_rxd variable, thus rebuilding the original preamble transmitted by the MAC.
Eventually the PCS Receive function switches to the DATA state where 5B symbols are being decoded and
conveyed to the MAC via MII interface as appropriate.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.3.1** *P* **163** *L* **12** # 139

CORDARO, Jay Broadcom, Inc.

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

[MASTER COMMENT] [UD] Add variable for ud_rxdata

SuggestedRemedy

ud_rxdata<9:0> 15 bits user-defined data consisting of 10 bits of information and a 5-bit CRC retrieved from packet preamble if bit 0 of the user-defined data field is set to '1'. If user-defined data bit 0 is set to '0' the content of this variable is undefined. This variable is inteded to be available for reading via MDIO or similar interface.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.3.2** *P* **158** *L* **23** # 141
CORDARO, Jay Broadcom, Inc.

Comment Type **TR** *Comment Status* **X**
[UD] ADD Variable for UD_EN

SuggestedRemedy
Defines whether user-defined data is enabled. If user-defined data is enabled for a packet, this variable shall be set to ON. If user-defined data is not supported for this packet, this variable shall be set to OFF. Values: ON or OFF. This variable can be set on a per-packet basis or hard-wired.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.3.2** *P* **158** *L* **23** # 142
CORDARO, Jay Broadcom, Inc.

Comment Type **TR** *Comment Status* **X**
[UD] ADD Variable for UD_txdata

SuggestedRemedy
15 bits user-defined data to be sent over the packet preamble. This variable is set by MDIO or other equivalent functionality. If user-defined data is not supported or not enabled, the content of this variable is undefined

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.4** *P* **164** *L* **2** # 138
CORDARO, Jay Broadcom, Inc.

Comment Type **TR** *Comment Status* **X**
[JJHH] update PCS Receive state diagram figure 147-8 see figure_147_8.png

SuggestedRemedy
Redraw Figure 147-8 following picture

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.4** *P* **164** *L* **2** # 144
CORDARO, Jay Broadcom, Inc.

Comment Type **TR** *Comment Status* **X**
[UD] Replace figure 147-8 with figure_147_8_UD_field

SuggestedRemedy
redraw Figure 147-8 with following picture

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.3.5** *P* **166** *L* **21** # 33
Beruto, Piergiorgio Canova Tech

Comment Type **T** *Comment Status* **X**
Collision detection mechanism is left to the implementer. Above sentence suggests a possible implementation, but there's no need for specifying shalls

SuggestedRemedy
Remove Editor's note

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.4** *P* **167** *L* **32** # 39
Beruto, Piergiorgio Canova Tech

Comment Type **E** *Comment Status* **X**
Add text below proposed figure

SuggestedRemedy
Add text "The reference diagrams do not explicitly show the PMA Reset function."

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.4** *P* **167** *L* **33** # 31
Beruto, Piergiorgio Canova Tech

Comment Type **E** *Comment Status* **X**
Add figure

SuggestedRemedy
Add figure as in pma_block_dia.png

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.4.2** *P* **168** *L* **3** # 16

Beruto, Piergiorgio Canova Tech

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

Figure referenced in editor note would be descriptive, and it's not needed.

SuggestedRemedy

Remove Editor's note.
Delete text "TBD illustrates the signal flow of the 10BASE-T1S PMA Transmit Function." from line 7

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.4.2** *P* **168** *L* **38** # 15

Beruto, Piergiorgio Canova Tech

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

resolve TBDs in Table 147-2

SuggestedRemedy

Delete TBD in Min and Max column of row T2 (clock frequency tolerance is already specified in 147.5.4.5).
Change name of column "Typ" to "Nom".
Replace TBD in Min column of T3 row with "38".
Replace TBD in Max column of T3 row with "42".
Delete "40" from column Typ of row T3.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.4.3** *P* **169** *L* **9** # 17

Beruto, Piergiorgio Canova Tech

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

Figure referenced in editor note would be descriptive, and it's not needed.

SuggestedRemedy

Remove Editor's note.
Delete text "TBD illustrates the signal flow of the 10BASE-T1S PMA Receive function." from line 13

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5** *P* **169** *L* **34** # 32

Beruto, Piergiorgio Canova Tech

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

Editor's note served its purpose

SuggestedRemedy

Remove Editor's note

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5.2** *P* **170** *L* **29** # 104

Baggett, Tim Microchip

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

As briefly discussed on the email list, we recommend utilizing the PCS data scrambler in the generation of the pseudo-random sequence in Test Mode 3. The input to the scrambler constant. This will simplify the design a bit by not multiple LFSR structures.

(See emails titled "Test modes in clause 147.5.1" to the mailing list in early May.)

The 4B/4B mapping is also inserted between the scrambler and DM encoder. This results in a test mode that is very close to the normal transmit function, except that it is not packetized, yielding the same transmit PSD that will be obtained in normal operation.

SuggestedRemedy

Replace:

When test mode 3 is enabled, the PHY shall transmit continually a pseudo-random sequence of +1 and -1 symbols generated by PRBS7 with the generating polynomial of x^7 + x^6 + 1 encoded using Differential Manchester Encoding (DME) as in 147.4.2.

With:

When test mode 3 is enabled, the PHY shall transmit continually a pseudo-random sequence of +1 and -1 symbols generated by a PRBS generated by the scrambler defined in 147.3.2.5, then encoded from 4B to 5B symbols at in 147.3.2.3 before being finally encoded using Differential Manchester Encoding (DME) as in 147.4.2. The input to the scrambler shall be a constant stream of 0's.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5.4.1** *P* **171** *L* **3** # 18
Beruto, Piergiorgio Canova Tech

Comment Type **T** *Comment Status* **X**
resolve TBD and editor's note

SuggestedRemedy
Remove Editor's Note
replace "TBD* +- TBD%" with "1 +- 20%" at line 8

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5.4.1** *P* **171** *L* **12** # 35
Beruto, Piergiorgio Canova Tech

Comment Type **E** *Comment Status* **X**
[aestethic] Resistor in Fig. 147-11 appears to be detached.

SuggestedRemedy
Fix figure 147-11 to have the resistor connected to the circuit

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5.4.1** *P* **171** *L* **12** # 101
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
Figure 147-11 illustrates the test fixure which appears to be copied from the subclause 146 for T1L. A T1S multi-drop network requires two 100 Ohm edge termination resistors at each end of the bus. Each transmitter will then "see" an equivalent 50 Ohm bus impedance.

To accurately model the bus in the test fixure, a 50 Ohm equivalent resistor should be used instead of the 100 Ohm resistor.

SuggestedRemedy
Figure 147-11: Change the 100 Ohm +- 0.1% termination resistor to 50 Ohm +- 0.1%.

See Slide 2 of Baggett_Comments_072018.pdf

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5.4.1** *P* **171** *L* **29** # 34
Beruto, Piergiorgio Canova Tech

Comment Type **T** *Comment Status* **X**
10BASE-T1S have no configurable TX voltage levels

SuggestedRemedy
Remove text "Fixed transmitter driving levels can be selected by setting bits 1.xxxx.xx:xx (10BASE-T1S PMA/PMD Control
Register) of the PHY Management register set as described in 45.2.1.xxx. If MDIO is not implemented
a similar functionality shall be provided by another interface."

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5.4.1** *P* **171** *L* **34** # 36
Beruto, Piergiorgio Canova Tech

Comment Type **E** *Comment Status* **X**
Editor's note served its purpose

SuggestedRemedy
Remove Editor's note

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5.4.3** *P* **172** *L* **25** # 99
Baggett, Tim Microchip

Comment Type **T** *Comment Status* **X**
The transmitter output jitter should be more controlled to allow for more margin at the receiver where the signal may be degraded by interference and channel impairment. Recommend reducing the maximum allowable transmitted jitter from the current +-7.5 ns to +-5.0 ns.

SuggestedRemedy
Change:
+-7.5 ns symbol-to-symbol jitter
To:
+-5.0 ns symbol-to-symbol jitter

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5.4.3** *P* **172** *L* **29** # 100

Baggett, Tim Microchip

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

Figure 147-13 illustrates the transmitter test fixure which appears to be copied from the subclause 146 for T1L. A T1S multi-drop network requires two 100 Ohm edge termination resistors at each end of the bus. Each transmitter will then "see" an equivalent 50 Ohm bus impedance.

Since the balun presents an end termination of 100 Ohms. For the test fixture to accurately model the equivalent 50 Ohm termination of a T1S bus, a 100 Ohm termination resistor must be added in parallel at the Transmitter.

SuggestedRemedy

Figure 147-13: Add a 100 Ohm +-0.1% resistor in parallel to the pair at the Transmitter Under Test.

See Slide 3 of Baggett_Comments_072018.pdf

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5.4.5** *P* **173** *L* **31** # 103

Baggett, Tim Microchip

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

A symbol is the shortest pulse possible in transmission (1.4.393). The Baud rate is the unit of signalling speed (1.4.110), or symbols/second. Differential Manchester encoding requires two pulses to encode each bit. Therefore the Baud rate should be 2x the bit rate.

After the 4B/5B encoding, we have 12.2 Mbit/s. After DME, we have 25 M pulses/sec or 25 MBaud.

SuggestedRemedy

Change 12.5 MBd +-100 ppm to 25 MBd +-100 ppm.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.5.4.5** *P* **173** *L* **33** # 41

Beruto, Piergiorgio Canova Tech

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

Resolve Editor's note

SuggestedRemedy

Replace editor's note with the following text:
"147.5.4.6 Alien crosstalk noise rejection
This specification is provided to verify the receiver's tolerance to alien crosstalk noise. The test is performed
with a noise source consisting of a signal generator with Gaussian distribution, bandwidth of 20 MHz and
magnitude of –106 dBm/Hz. The receive DUT is connected to these noise sources through a resistive network,
as shown in Figure 147–XXX, with link segments as defined in 147.7 and 147.8. The noise is added at the MDI of
the DUT. The BER is expected to be less than 10^–10, and to satisfy this specification the frame loss ratio is
less than 10^-7 for 125 octet packets measured at MAC/PLS service interface."

Copy figure 146-20

Add the following text: "The PMA local loopback function is optional. If supported, the PMA shall be placed in local loopback mode
when the PMA local loopback bit in MDIO register 1.0.0, defined in 45.2.1.1, or the PMA loopback bit in
MDIO register 1.2294.13, defined in 45.2.1.174a.3, is set to a one (or PMA loopback mode is enabled by a
similar functionality if MDIO is not implemented).

When the PHY is in the PMA local loopback mode, if the PHY supports full-duplex mode of operation, the PMA Receive function
utilizes the echo signals from the unterminated MDI and decodes these signals to
pass the data back to the MII Receive interface.
If the PHY supports half-duplex mode of operation, the PMA and PCS Receive functions shall pass to the MII RX the data decoded from the signal which is normally received during a transmission for the purpose of detecting collisions.

A MAC client can compare the packets sent through the MII Transmit function to the packets received from
the MII Receive function to validate the 10BASE-T1L PCS and PMA functions."

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.8** *P* **175** *L* **4** # 37
Beruto, Piergiorgio Canova Tech

Comment Type **E** *Comment Status* **X**
Editor's note served its purpose

SuggestedRemedy
Remove Editor's note

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.8** *P* **175** *L* **10** # 105
Baggett, Tim Microchip

Comment Type **E** *Comment Status* **X**
The section on "Mixing segment characteristics" contains a reference to twisted-pair cabling.

SuggestedRemedy
Replace:
"single balanced twisted-pair cabling"

With:
"single balanced pair cabling"

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.9.2** *P* **176** *L* **29** # 62
Beruto, Piergiorgio Canova Tech

Comment Type **T** *Comment Status* **X**
No need to specify "exclusive" in table 147-3 header

SuggestedRemedy
Remove "(exclusive)" from headers

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.11** *P* **178** *L* **3** # 38
Beruto, Piergiorgio Canova Tech

Comment Type **T** *Comment Status* **X**
Resolve Editor's Note

SuggestedRemedy
Replace editor's note with the following text:
"The total PHY latency in the transmit path, measured from TX_EN asserted to the first DME clock transition appearing at the MDI, shall be less than 1.6 us

The total PHY latency in the receive path, measured from the first DME clock transition of a valid packet appearing at the MDI to RX_DV asserted, shall be less than 4 us

Note that these limits don't include any latency added by the optional PLCA RS"

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.2** *P* **181** *L* **41** # 106
Baggett, Tim Microchip

Comment Type **E** *Comment Status* **X**
Missing space

SuggestedRemedy
Insert space between "Figure 148-1" and "connects".

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.3** *P* **181** *L* **35** # 40
Beruto, Piergiorgio Canova Tech

Comment Type **E** *Comment Status* **X**
Editor's note served its purpose

SuggestedRemedy
Remove Editor's note

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.5.1** *P* **191** *L* **10** # 43

Beruto, Piergiorgio Canova Tech

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

Since ERI is optional we need to explicitly go from WAIT_TO state to EARLY_RECEIVE when a BEACON indication is received.

SuggestedRemedy

In figure 148-5 change the condition to switch from WAIT_TO to EARLY_RECEIVE state as follows: "plca_eri = TRUE + rx_cmd = BEACON"

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.5.2** *P* **192** *L* **50** # 19

Beruto, Piergiorgio Canova Tech

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

[MASTER COMMENT: PLCA_LOCAL_NODE_ID] Editor's note has served its purpose

SuggestedRemedy

Remove Editor's note.
At line 44 replace "ID representing the PLCA transmit opportunity assigned to the PHY. Generated by the management interface (or equivalent functionality if MDIO is not implemented)" with "ID representing the PLCA transmit opportunity number assigned to the PHY. This signal maps to aPLCALocalNodeID. When MDIO is present, the local_nodeID is configured to the content of bits 3.2289.7:0. When MDIO is not present, the functionality of bits 3.2289.7:0 can be provided by equivalent means"

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.5.2** *P* **193** *L* **8** # 20

Beruto, Piergiorgio Canova Tech

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

[MASTER COMMENT: PLCA_MAX_ID] Editor's note has served its purpose

SuggestedRemedy

Remove Editor's note.
At line 2 replace "Generated by the management interface (register TBD - TO BE ALLOCATED), indicates the
maximum number of PHYs that can join the multidrop network" with "Indicates the maximum number of PHYs that can join the multidrop network, reflecting the value of aPLCAMaxID. When MDIO is present, the MAX_ID is configured to the content of bits 3.2289.15:8. When MDIO is not present, the functionality of bits 3.2289.15:8 can be provided by equivalent means"

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.5.4** *P* **193** *L* **40** # 21

Beruto, Piergiorgio Canova Tech

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

[MASTER COMMENT: PLCA_TO_TIMER] Resolve TBD

SuggestedRemedy

Replace "Transmit opportunity timer, configured via management interface (register TBD - TO BE
ALLOCATED)." with "The transmit opportunity timer maps to aPLCATransmitOpportunityTimer. When the MDIO is present, the timer is configured to the content of bits 3.2290.15:0. When MDIO is not present, the functionality of bits 3.2290.15:0 can be provided by equivalent means"

Proposed Response *Response Status* **O**