Cl **01** *SC* **1.4** *P* **66** *L* **30** # 53

Dawe, Piers IPtronics

Comment Type **ER** *Comment Status* **R**

D2.0 comment 1 pointed out that the Definitions section is 27 pages long. Although it is finely subdivided, the subheadings do not appear in the bookmarks, so it is like a single subclause, 27 pages long, when typically we have at least one bookmark per page. This makes it hard to navigate quickly to a particular definition.
The suggested remedy was:
Please introduce bookmarked subheadings e.g. 1 to 9, A to E, F to O, P to Z. The current subheadings can become fourth-level non-bookmarked subheadings.

SuggestedRemedy

Another way to get the same effect would be to set the Frame properties on just a few paragraphs (e.g. the first 1, the first A, the first F and so on) so that they show up in the pdf bookmarks list like any other third level heading.

Response *Response Status* **U**

REJECT.
This is a restatement of the comment and issues of comment #1 on the initial ballot.
The BRC was unanimous in that these changes do not improve the document.

Cl **01** *SC* **1.5** *P* **94** *L* **5** # 54

Dawe, Piers IPtronics

Comment Type **ER** *Comment Status* **R**

D2.0 comment 2 pointed out that the Abbreviations section is 5 pages long with no subdivisions (much longer than almost any other section). It is hard to navigate quickly to a particular abbreviation. Introducing bookmarked subheadings e.g. 1 to L, M to Z. would improve usability, with no downside that I can see. The response did not point out any reason not to do this.

SuggestedRemedy

Please introduce bookmarked subheadings e.g. 1 to E, F to O, P to Z to improve usability.

Response *Response Status* **U**

REJECT.
This is a restatement of the comment and issues of comment #2 on the initial ballot. The BRC was unanimous in that these changes do not improve the document.

Cl **86** *SC* **86.8.4.1** *P* **239** *L* **6** # 58

Dawe, Piers IPtronics

Comment Type **TR** *Comment Status* **R**

D2.0 comment 7: We use three references for the same thing. ANSI/EIA/TIA-455-127-1991 is very obsolete - not good practice. I believe that TIA-455-127-A:2006 and IEC 61280-1-3:1998 are also obsolete. Here are all the places they appear:
1.3
ANSI/EIA/TIA-455-127-1991, FOTP-127—Spectral Characterization of Multimode Laser Diodes.
TIA-455-127-A:2006 FOTP-127-A Basic Spectral Characterization of Laser Diodes.
IEC 61280-1-3:1998, Fibre optic communication subsystem basic test procedures—Part 1-3: Test procedures for general communication subsystems—Central wavelength and spectral width measurement.
1.4.350 RMS spectral width: A measure of the optical wavelength range as defined by TIA 455-127-A (FOTP-127-A).
Annex A
[B10] ANSI/EIA/TIA 455-127-1991 (FOTP-127), Spectral Characterization of Multimode Lasers.
38.6.1 Center wavelength and spectral width measurements
... per ANSI/EIA/TIA-455-127-1991 [B10].
38.12.4.5 Optical measurement requirements
OR2 Center wavelength and spectral width measurement conditions 38.6.1 Using optical spectrum analyzer per ANSI/EIA/TIA-455-127-1991 [B10] M Yes [ ]
52.9.2 Center wavelength and spectral width measurements
... per TIA/EIA-455-127 under modulated conditions ...
52.15.3.9 Optical measurement requirements
OM2 Center wavelength and spectral width measurement 52.9.2 Measured using an optical spectrum analyzer per TIA/EIA-455-127 under modulated conditions M Yes [ ]
58.7.2 Wavelength and spectral width measurements
... according to ANSI/EIA/TIA-455-127, ...
58.10.3.5 Optical measurement requirements
OM3 Wavelength and spectral width 58.7.2 Per TIA/EIA-455-127 under modulated conditions M Yes [ ]
And equivalents in 59 and 60.
75.7.4 Wavelength and spectral width measurement
... according to TIA-455-127-A ...
75.10.4.13 Definitions of optical parameters and measurement methods
OM2 Wavelength and spectral width 75.7.4 Per TIA–455–127–A under modulated conditions. M Yes [ ]
86.8.4.1 Wavelength and spectral width
... method given in TIA–455–127-A.
86.11.4.4 Definitions of parameters and measurement methods
SOM2 Center wavelength 86.8.4.1 Per TIA-455-127-A M Yes [ ]
87.8.3 Wavelength
per TIA/EIA–455–127–A or IEC 61280–1–3.
87.12.4.4 Optical measurement methods
87.12.4.5 Environmental specifications
XLOM2 Center wavelength 87.8.3 Per TIA–455–127–A or IEC 61280–1–3 under

modulated conditions M Yes [ ]
And equivalents in 88 and 89.

SuggestedRemedy

Replace them all with IEC 61280-1-3 (2010) Fibre optic communication subsystem test procedures - Part 1-3: General communication subsystems - Central wavelength and spectral width measurement
I don't believe we need [B10] in the bibliography any more.

Response *Response Status* **U**

REJECT.

This is a restatement of comment #7 on D2.0. There was no consensus for a change by the BRC and it was noted that the historic references were appropriate.

Cl **30** *SC* **30.2.5** *P* **363** *L* **41** # 59

Dawe, Piers IPtronics

Comment Type **TR** *Comment Status* **R**

Following up on D2.0 comment 72: text says "For LLDP management, the LLDP Basic Package is mandatory." and Table 30-7 says LLDP Basic Package (mandatory). If LLDP management had been a physically identifiable thing like "managed Midspans" we might have got away with such language, but this can be read as "For the sake of LLDP management, the LLDP Basic Package is mandatory, for any 802.3 thing." Which is far too wide.

SuggestedRemedy

Use the kind of wording in the following paragraphs: change "For LLDP management, the LLDP Basic Package is mandatory." to "The LLDP Basic Package is mandatory for managed entities that support IEEE 802.3 LLDP TLVs (see Clause 79)."

Response *Response Status* **U**

REJECT.

This is a restatement of the comment and issues of comment #72 on the initial ballot. As was noted in the original resolution, the text as is, is correct.

Cl **83A** *SC* **83A.3.3.1** *P* **340** *L* **11** # 61

Dawe, Piers IPtronics

Comment Type **TR** *Comment Status* **R**

D2.0 comment 110 points out something that previous comments on this subject did not: that according to the PCI Express Base Specification Revision 3.0,
De-emphasis = 20log10 Vb/Va, where in our terminology Vb is VMA and Va is differential peak-to-peak amplitude.
Or, from the same document,
VTX-DE-RATIO = -20log10 (VTX-DIFF-PP/VTX-DE-EMPH-PP), where in our terminology VTX-DIFF-PP is differential peak-to-peak amplitude and VTX-DE-EMPH-PP is VMA.
Example: -3.5 dB De-emphasis
So, it is clear that more negative de-emphasis is more emphasis, in line with what de- means in English.
But 83A and 83B have got this upside down.
Responses to comments say e.g. "REJECT. De-emphasis is an industry standard term."

SuggestedRemedy

If De-emphasis is an industry standard term, then we need to use it competently with the industry standard meaning. As we fixed the formula for Vertical eye-closure penalty in 38.6.11.
Change equation 83A-3 to
De-emphasis (dB) = 20log10(VMA / Differential peak-to-peak amplitude)
Change the sign of all entries for de-emphasis, paying attention to maxima and minima (about 11 changes in Section 6 including consequential changes such as PICS).

Response *Response Status* **U**

REJECT.

This is a restatement of the comment / issues addressed in comment #110 of the initial ballot.

De-emphasis is defined locally in the standard. Changing the sign of this quantity at this point would cause more confusion, rather than clarify anything.

Cl **86A** *SC* **86A.4.1** *P* **387** *L* **11** # 63

Dawe, Piers IPtronics

Comment Type **TR** *Comment Status* **R**

The common-mode return loss specifications have disappeared!
D2.0 comment 149 alleges that "This spec. was added to limit EMI." which is misleading. It was included to limit the AC common-mode voltage. The inputs can have a high common-mode impedance, so if the output is allowed to have a very bad common-mode return loss, the VSWR of the common mode is unbounded at certain frequencies, and so the common mode voltage can be multiplied up. Even a small common-mode loss will keep this under control. The former specs should be relaxed to allow higher bandwidth connectors.

SuggestedRemedy

Reinstate the two common-mode return loss specifications in 86A.4 and one in 83B.2.1, but make them easier, changing 3 dB to 2 dB and the corner frequency from 2.5 GHz to 1.6 GHz:
7-3.125f 0.01<=f<=1.6 (86A-2)
2 1.6<=f<=11.1

Response *Response Status* **U**

REJECT.

This comment seeks to reverse the removal of the common-mode return loss spec for the mated compliance boards due to comment #149 against D2.0 without establishing that there is indeed a correlation between common-mode return loss and unacceptable performance or providing evidence that the relaxed limit proposed will ensure adequate performance.

Cl **83B** *SC* **83B.2.2** *P* **362** *L* **22** # 64

Dawe, Piers IPtronics

Comment Type **TR** *Comment Status* **R**

While checking the common-mode return loss specs I noticed that while the module had such a spec, the host did not. This spec limits the AC common-mode voltage. The inputs can have a high common-mode impedance, so if the output is allowed to have a very bad common-mode return loss, the VSWR of the common mode is unbounded at certain frequencies, and so the common mode voltage can be multiplied up. Even a small common-mode loss will keep this under control. The very relaxed spec that I propose for 86A (host and module) would be better than no spec here (a relaxed spec is needed to allow higher bandwidth connectors).

SuggestedRemedy

Minimum host common-mode output return loss HCB output TP1a See Equation (86A–2) dB
(Per another comment, the relaxed 86A-2 would change 3 dB to 2 dB and the corner frequency from 2.5 GHz to 1.6 GHz:
7-3.125f 0.01<=f<=1.6 (86A-2)
2 1.6<=f<=11.1)

Response *Response Status* **U**

REJECT.

This comment is on text that was unchanged and is thus out of scope for this recirculation.

The commenter is invited to re-submit this comment for consideration at sponsor ballot (together with justification of the need and choice of limit) when the scope of the draft will be open.

Cl **85** *SC* **85.10.9.2** *P* **206** *L* **3** # 65

Dawe, Piers IPtronics

Comment Type **TR** *Comment Status* **R**

D2.0 comment 146 alleged that "85.10.9.3 specifies common mode output return loss. This spec. was added to limit EMI. It has been shown that there is no correlation between common mode return loss and EMI." I do not believe it has been shown, just postulated. In any case, this is a spec on the mated test fixtures, which should be well controlled like any test equipment. However, to allow for the new generation of higher bandwidth connectors, the common-mode return loss specification should be relaxed.

SuggestedRemedy

Reinstate the common-mode return loss spec for the mated compliiance boards, but instead of
12-2.8f 0.01<=f<=2.5
5.2-0.08f 2.5<=f<=10
use
12-5.625f 0.01<=f<=1.6
3 1.6<=f<=10

Response *Response Status* **U**

REJECT.

This comment seeks to reverse the removal of the common-mode return loss spec for the mated compliance boards due to comment #146 against D2.0 without establishing that there is indeed a correlation between common-mode return loss and unacceptable performance.

Cl **51** *SC* **51.1.1** *P* **435** *L* **46** # 77

Kolesar, Paul CommScope

Comment Type **TR** *Comment Status* **R** *interop*

It is common to find PMA interfaces from major vendors that are electrically and physically compatible with PMDs but intentionally made to not interoperate. This defeats the purpose of the standard which is to support broad interoperability. The Scope of clause 51.1.1 contains a sentence regarding implemetation and conformance considerations. As such it seems the appropriate place to add text concerning interoperability.

SuggestedRemedy

Add the following sentence after sentence two of clause 51.1.1: Electrically and physically compatible PMA and PMD interfaces shall interoperate.

Response *Response Status* **U**

REJECT.

This comment is on text that did not change or is not affected by changes made during the recirc and is thus out of scope.

An ad-hoc was chartered to discuss this issue and provide a recommendation for consideration at sponsor ballot

Cl **83** *SC* **83.1.1** *P* **137** *L* **17** # 78

Kolesar, Paul CommScope

Comment Type **TR** *Comment Status* **R** *interop*

It is common to find PMA interfaces from major vendors that are electrically and physically compatible with PMDs but intentionally made to not interoperate. This defeats the purpose of the standard which is to support broad interoperability. The Scope of clause 83.1.1 contains a discussion on implemetation and compliance considerations. As such it seems the appropriate place to add text concerning interoperability.

SuggestedRemedy

Append the following sentence to paragraph two: Electrically and physically compatible PMA and PMD interfaces shall interoperate.

Response *Response Status* **U**

REJECT.

This comment is on text that did not change or is not affected by changes made during the recirc and is thus out of scope.

An ad-hoc was chartered to discuss this issue and provide a recommendation for consideration at sponsor ballot