

November 29, 2007

Dear Hamano-san and Hajduczenia,

From the research that I have found so far, three values that have an influence on the TDP value are the laser spectral width, RIN and link distance. A narrower laser spectral width or lower RIN value will trend toward lowering the TDP value, while a longer link will increase the TDP. The TDP values (as pointed out already) have not been entered into the draft that is currently posted; but the extinction ratio has been entered into the draft (9dB, min for the DS and 6dB, min for the US), but I am not sure of these values. I would like to see an extinction ratio formula in the spreadsheet, such as the one I found in the optical fiber telecommunications IIIB on page 75 (see attached PDF for the formula). The formula takes into account the laser slope efficiency and can allow the user to calculate different values of non-zero values. I feel that the use of this formula will not omit the OMA value, but enhance the integrity of the OMA. Just as a point of clarification, the laser spectral width, RIN, and link distance will ultimately have an effect on the *IEEE_Rx_Sen_OMA*. I will be happy to send you links to OMA and extinction ratio application notes I found so far. I'm not sure if I can post links on this thread.

At this point, I think that a discussion of what should be included in the TDP and the dispersion penalty value is in order. I found a word document that started this task (doc00008, also attached), but did not seem to be completed. I also think that if the 802.3av taskforce uses ITU, Fiber Channel, other standards, etc, then these values and standards should be documented within the draft. Let me be clear, I am not opposed to using other standards as a reference, but it would be a help to the reader of the 802.3av standard in the future to understand where values have come from; I believe that the references can be placed in the draft as informative notes.

Hajduczenia - can you please clarify how TDP field includes conditional formatting to check the TDP value against ITU Optical Path Penalty under the **Version 2.2** section in the **Revision notes Tab** on the excel spreadsheet **3av_0711_hajduczenia_5** is calculated and where? I tried to use the link next to the revision note, but it points me to cell B36 in the Version 2.2 Tab, Dispersion_D_Max. Also (FYI), some of the other link values in the **Version 2.1** section are not valid.

Best regards,

Ken Maricondo

$$r = \frac{P_{thr} + \eta_e(I_{bias} - I_{thr})}{\eta_e(I_{mod} + I_{bias} - I_{thr})}$$

η_e is the laser slope efficiency

I_{bias} is the current that corresponds to the OFF State

I_{mod} is the current that corresponds to the ON State

I_{thr} is the laser threshold

P_{thr} is the spontaneous emission when the laser is biased at threshold