Background on IEEE 802.3ct D1.2 Comments

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Background

- I provided suggestions for some of the TBD values in the current draft specification (D1.2) including abbreviated rationales for each
- This presentation seeks to further explain my rationale and provide an opportunity to discuss them in advance of the plenary
  - It does not address all of my comments; just ones that I thought might benefit from some discussion

Comment #99: Max output power

- In Table 154-8 (Transmitter), one of the TBD parameters was “Average channel output power (max)”
- What I’ve come to realize is that this parameter can be interpreted in several different ways:
  - The max permissible output power (as a safety measure)
  - The max required output power (in other words, mandating variable power and setting the top end of the required range)
  - The max power under which the other requirements are expected to hold (in other words, higher powers are permitted, but everything is undefined at that point)
- I am interpreting this as the first on that list: the max permissible, as a safety measure
  - This is what was done in CableLabs PHYv1.0 as well; hence the proposal to align with it (+7 dBm)
- If another interpretation is more appropriate, then a different value should be chosen
  - However, that definition should likely be clear somewhere in the spec

Comment #102: Damage Threshold

- In Table 154-9 (Receiver), there is a TBD for “Damage threshold”
- This is understood to be the greatest input power level a receiver is required to withstand without damage
  - As such, it should be set to the highest power level that a receiver might reasonably see, with perhaps a little extra margin
  - The scenario in which this would occur is when a transmitter and receiver are directly connected with virtually no attenuation
- If the max output is +7 dBm, then the damage threshold might reasonably be around that value
- However, there could also be an optical amplifier between the transmitter and receiver
  - This would boost the power that could hit the receiver significantly
- Based on input from a colleague, therefore propose adopting a value of +18 dBm
  - Assuming manufacturers do not indicate that this will have a negative impact on their ability to build low-cost devices

Comment #103: ORL at TP2

- In Table 154-10, there is a TBD for “Optical return loss at TP2”
- Following up on stassar_3ct_01_200213 from last month, I conducted a search through the IEEE 802.3 specification to determine if there were already definitions for “Optical return loss” (from Table 154-8) and “Optical return loss at TP2” (from Table 154-10)
- What I found was that the measurement of “Optical return loss” is explicitly defined in Table 86-10
  - It is defined as being measured at point TP2 looking downstream into the fiber
- Therefore, “Optical return loss” appears to mean exactly the same thing in 802.3 as “Optical return loss at TP2”
  - If so, then the two parameters are redundant
  - On that basis, I am once again suggesting that we remove “Optical return loss at TP2” from Table 154-10

Summary

- In my comments against D1.2, I proposed the following:
  - Setting “Average channel output power (max)” in Table 154-8 to +7 dBm
  - Setting “Damage threshold” in Table 154-9 to +18 dBm
  - Removing “Optical return loss at TP2” from Table 154-10
- This presentation explains a bit more about my rationale for these proposals, and the thinking behind them, so as to encourage discussion that leads to adopting appropriate values