Clarification on Comment #93 Optical Parameter Definitions

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Background

- In my comments on 802.3ct D1.1, my comment #93 stated the following:
  - "Clause 154.8 contains definitions of optical parameters and measurement methods. However, in comparing the list of optical parameters in Tables 154-8, -9, and -10 with this list, it appears that a number of parameters have no definition"
- It's clear that this comment was too broad and therefore wasn't well understood
- This contribution seeks to clarify that comment by identifying which of the parameters in those tables have definitions, and which do not

Table 154-8 Tx Characteristics Parameters and Definitions

Parameter	Definition in SC 154.8
Signaling Rate (Range)	No
Modulation Format	No
Minimum Channel Spacing	No
Average channel output power (max)	Yes
Average channel output power (min)	Yes
Nominal center frequency	Yes (combined with SMSR)
Spectral excursion (max)	Yes
Side-mode suppression ration (SMSR), (min)	Yes (combined with center frequency)
Laser linewidth (max)	Yes
Offset between the carrier and the nominal center frequency (max)	Yes
Power difference between polarizations (max)	Yes
Skew between the two polarizations (max)	Yes
Error vector magnitude (max)	Yes
I-Q offset (max)	Yes
Transmitter OSNR(193.6) (min)	Yes
Average launch power of OFF transmitter, each lane (max)	No
Optical return loss tolerance (max)	No
Transmitter reflectance (max)	No

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Average channel output power (min)	Yes
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Side-mode suppression ration (SMSR), (min)	Yes (combined with center frequency)
Laser linewidth (max)	Yes
Offset between the carrier and the nominal center frequency (max)	Yes
Power difference between polarizations (max)	Yes
Skew between the two polarizations (max)	Yes
Error vector magnitude (max)	Yes
I-Q offset (max)	Yes
Transmitter OSNR(193.6) (min)	Yes
Average launch power of OFF transmitter, each lane (max)	No
Optical return loss tolerance (max)	No
Transmitter reflectance (max)	No

- Those with a "No" are not found in the list of definitions in SC 154.8
- Modulation Format and Channel Spacing are arguably covered elsewhere already, but might benefit from being explicitly called out if included here; similar for Signaling Rate
- Other parameters should be added to definitions list in SC154.8

Table 154-9 Rx Characteristics Parameters and Definitions

Parameter	Definition in SC 154.8
Signaling Rate (range)	No
Modulation format	No
Nominal center frequency	Yes
Damage threshold	No
Maximum average input power	No
Minimum average input power [amplified]	Yes
Minimum average input power [unamplified]	Yes
Minimum OSNR(193.6) [amplified]	Yes
Minimum OSNR(193.6) [unamplified]	Yes
Receiver OSNR tolerance(193.6)	Yes
Receiver reflectance (max)	No

Table 154-9 Rx Characteristics Parameters and Definitions

Parameter	Definition in SC 154.8
Signaling Rate (range)	No
Modulation format	No
Nominal center frequency	Yes
Damage threshold	No
Maximum average input power	No
Minimum average input power [amplified]	Yes
Minimum average input power [unamplified]	Yes
Minimum OSNR(193.6) [amplified]	Yes
Minimum OSNR(193.6) [unamplified]	Yes
Receiver OSNR tolerance(193.6)	Yes
Receiver reflectance (max)	No

- Similar situation for Signaling Rate and Modulation format as with Table 154-8

- Other parameters without definition should be added to definitions list in SC154.8

Table 154-10 Black Link Characteristics Parameters and Definitions

Parameter	Definition in SC 154.8
Maximum Ripple	Yes
Maximum optical path OSNR penalty	Yes
Maximum (residual) chromatic dispersion	No
Minimum (residual) chromatic dispersion	No
Fiber zero dispersion wavelength	No
Fiber dispersion slope (max)	No
Minimum optical return loss at TP2	No
Maximum discrete reflectance between TP2 and TP3	No
Maximum differential group delay	No
Maximum polarization dependent loss	No
Maximum polarization rotation speed	Yes
Maximum inter-channel crosstalk at TP3	Yes
Maximum interferometric crosstalk at TP3	Yes

Table 154-10 Black Link Characteristics Parameters and Definitions

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Maximum Ripple	Yes
Maximum optical path OSNR penalty	Yes
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Minimum (residual) chromatic dispersion	No
Fiber zero dispersion wavelength	No
Fiber dispersion slope (max)	No
Minimum optical return loss at TP2	No
Maximum discrete reflectance between TP2 and TP3	No
Maximum differential group delay	No
Maximum polarization dependent loss	No
Maximum polarization rotation speed	Yes
Maximum inter-channel crosstalk at TP3	Yes
Maximum interferometric crosstalk at TP3	Yes

- Several additional parameters also do not appear in SC 154.8
- Even if they are defined elsewhere, may be cleaner to include them in SC 154.8 as well, with a pointer to where that definition can be found

Clarified Comment #93 Proposal

- Add definitions to SC 154.8 for the following parameters (assuming they all remain in the document):
  - Average launch power of OFF transmitter; Optical return loss tolerance (max); Transmitter reflectance (max); Damage threshold; Maximum average input power; Receiver reflectance (max); Maximum (residual) chromatic dispersion; Minimum (residual) chromatic dispersion; Fiber zero dispersion wavelength; Fiber dispersion slope; Minimum optical return loss at TP2; Maximum discrete reflectance between TP2 and TP3; Maximum differential group delay; Maximum polarization dependent loss
- Consider adding definitions and/or pointers for the following parameters:
  - Signaling Rate (Range); Modulation format; Minimum channel spacing
- This is what was intended by Comment #93 (but was not clearly communicated)