Receiver sensitivity proposed changes

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Proposal for 140

- Leave SRS as defined in Draft 3.0, using the high SECQ test source etc.,
- Amend the receiver sensitivity spec and definition in Table 140-7 and in 140.7.5, which is currently defined as informative “for a transmitter with SECQ = 0.9 dB”, to be an informative value for transmitters with values of SECQ up to 3.4 dB
- So section 140.7.5 becomes:

140.7.5 Receiver sensitivity

Receiver sensitivity is informative and is defined for a transmitter with a value of SECQ up to 3.4 dB. Receiver sensitivity should meet Equation 140-1, and is illustrated in Figure 140-4.

$$Receiver\ sensitivity = \max(-3.9, SECQ - 5.3) \qquad \text{Equation 140-1}$$

where SECQ is for the transmitter used to test the receiver

Changes to Table 140-7

Table 140–7—100GBASE-DR receive characteristics

Description	Value	Unit
Signaling rate (range)	53.125 ± 100 ppm	GBd
Modulation format	PAM4	—
Wavelengths (range)	1304.5 to 1317.5	nm
Damage threshold[a]	5	dBm
Average receive power (max)	4	dBm
Average receive power[b] (min)	–5.4	dBm
Receive power (OMA_{outer}) (max)	4.2	dBm
Receiver reflectance (max)	–26	dB
Receiver sensitivity (OMA_{outer})[c] (max)	Equation 140-1	dBm
Stressed receiver sensitivity (OMA_{outer})[d] (max)	–1.9	dBm
Conditions of stressed receiver sensitivity test:[e]		
Stressed eye closure for PAM4 (SECQ)	3.4	dB

[a]The receiver shall be able to tolerate, without damage, continuous exposure to an optical input signal having this average power level. The receiver does not have to operate correctly at this input power.

[b]Average receive power (min) is informative and not the principal indicator of signal strength. A received power below this value cannot be compliant; however, a value above this does not ensure compliance.

[c]Receiver sensitivity (OMA_{outer}) (max) is informative and is defined for a transmitter with a value of SECQ up to 3.4 dB.

[d]Measured with conformance test signal at TP3 (see 140.7.9) for the BER specified in 140.1.1.

[e]These test conditions are for measuring stressed receiver sensitivity. They are not characteristics of the receiver.

Full changes to 140.7.8

140.7.8 Receiver sensitivity

Receiver sensitivity is informative and is defined for a transmitter with a value of SECQ up to 3.4 dB. Receiver sensitivity should meet Equation 140-1, and is illustrated in Figure 140–4.

$$RS = \max(-3.9, SECQ - 5.3) \quad \text{(dB)} \qquad (140\text{–}1)$$

where

RS	is the receiver sensitivity
SECQ	is the SECQ of the transmitter used to measure the receiver sensitivity

The normative requirement for receivers is stressed receiver sensitivity.

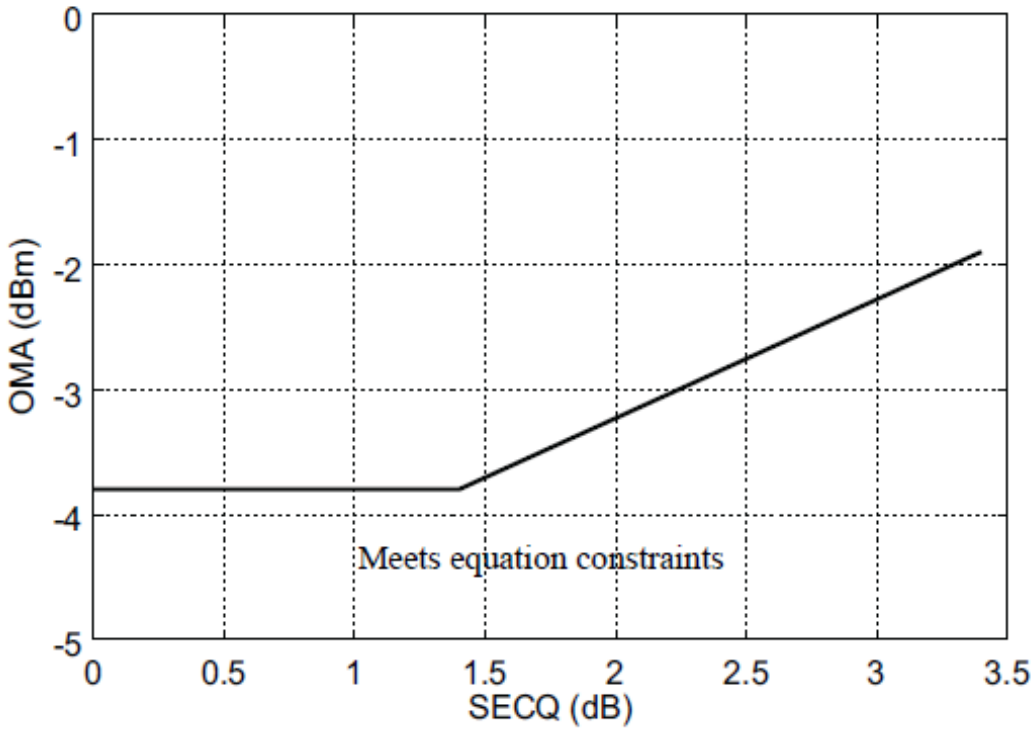

Figure 140–4—Illustration of receiver sensitivity

Clauses 138 and 139

- Use an equivalent approach for 138 and 139