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Changes to Table 120E-1

Table 120E–1—200GAUI-4 and 400GAUI-8 C2M host output characteristics (at TP1a)

Parameter	Reference	Value	Units
Signaling rate per lane (range)	120E.3.1.1	26.5625 ± 100 ppm	GBd
DC common-mode output voltage (max)	120E.3.1.2	2.8	V
DC common-mode output voltage (min)	120E.3.1.2	–0.3	V
Single-ended output voltage (max)	120E.3.1.2	3.3	V
Single-ended output voltage (min)	120E.3.1.2	–0.4	V
AC common-mode output voltage (max, RMS)	120E.3.1.2	17.5	mV
Differential peak-to-peak output voltage (max) Transmitter disabled Transmitter enabled	120E.3.1.2	 35 880	mV
ESMW (Eye symmetry mask width)	120E.4.2	0.22	UI
Eye height, differential (min)	120E.4.2	32	mV
Vertical eye closure (max)	120E.4.3	12	dB
Differential output return loss (min)	83E.3.1.3	Equation (83E–2)	dB
Common to differential mode conversion return loss (min)	83E.3.1.3	Equation (83E–3)	dB
Differential termination mismatch (max)	120E.3.1.4	10	%
Transition time (min, 20% to 80%)	120E.3.1.5	10	ps

Changes to 120E.3.4.1.1

Two levels of frequency-dependent attenuation are used for the module stressed input test: high loss and low loss. For the high loss case, frequency-dependent attenuation is added such that the loss at 13.28 GHz from the output of the pattern generator to TP1a is 12.2 dB. The 12.2 dB loss represents 10.5 dB channel loss with an additional allowance for host transmitter package loss. Eye height and eye width are then measured at TP1a based on the eye measurement methodology given in 120E.4.2 and vertical eye closure is measured according to 120E.4.3. Random jitter and the pattern generator output levels are adjusted (without exceeding the differential pk-pk input voltage tolerance specification as shown in Table 120E–7) to result in the eye height for all three eyes and eye width for the smallest eye given in Table 120E–8 using the reference receiver with the setting of the CTLE that maximizes the product of eye height and eye width. This CTLE setting has to be greater than or equal to 7 dB. For the low loss case, discrete frequency-dependent attenuation is removed such that from the output of the pattern generator to TP1a comprises the mated HCB/MCB pair as described in 120E.4.1. Eye height and eye width at TP1a are then adjusted in the same way as described for the high loss case except that the restriction that the CTLE setting has to be greater than or equal to 7 dB does not apply. In both cases, the input vertical eye closure is less than 12 dB.

The pattern is then changed to Pattern 5, Pattern 3, or a valid 200GBASE-R/400GBASE-R signal for the input test, which is conducted by inserting the module into the MCB. Patterns 3 and 5 are described in Table 124–9.

Insert 120E.4.3

120E.4.3 Vertical eye closure

Vertical eye closure is defined by Equation (120E–4) for a PRBS13Q differential equalized signal captured and processed according to 120E.4.2.

$$VEC = 20\log_{10}\left(\max\left(\frac{AV_{upp}}{V_{upp}}, \frac{AV_{mid}}{V_{mid}}, \frac{AV_{low}}{V_{low}}\right)\right) \text{ (dB)} \qquad \text{(120E–4)}$$

where

VEC	is the vertical eye closure, in dB
V_{upp}	is the 10^{-5} upper eye height per 120E.4.2
V_{mid}	is the 10^{-5} middle eye height per 120E.4.2
V_{low}	is the 10^{-5} lower eye height per 120E.4.2
AV_{upp}	is the amplitude of the upper eye (AVupp), equal to VM3–VM2
AV_{mid}	is the amplitude of the middle eye (AVmid), equal to VM2–VM1
AV_{low}	is the amplitude of the lower eye (AVlow), equal to VM1–VM0
VM3	is the mean of the differential equalized signal above VCupp within 0.025 UI of TCmid
VM2	is the mean of the differential equalized signal between VCupp and VCmid within 0.025 UI of TCmid
VM1	is the mean of the differential equalized signal between VCmid and VClow within 0.025 UI of TCmid
VM0	is the mean of the differential equalized signal below VClow within 0.025 UI of TCmid
VCupp	is the voltage center of the upper eye per 120E.4.2
VCmid	is the voltage center of the middle eye per 1120E.4.2
VClow	is the voltage center of the lower eye per 120E.4.2
TCmid	is the time center of the middle eye width per 120E.4.2

Changes to 120E.5.4.1

TH7	Eye height, all 3 eyes	120E.3.1	32 mV	M	Yes [ ]
TH8	Vertical eye closure	120E.3.1	12 dB	M	Yes [ ]
TH9~~8~~	Differential output return loss	120E.3.1.3	Meets Equation (83E–2) constraints	M	Yes [ ]
TH10 ~~9~~	Common to differential mode conversion	120E.3.1.3	Meets Equation (83E–3) constraints	M	Yes [ ]
TH11~~1 0~~	Differential termination mismatch	120E.3.1	Less than 10%	M	Yes [ ]

Item	Feature	Subclause	Value/Comment	Status	Support
TH12 ~~11~~	Transition time	120E.3.1.5	Greater than or equal to 10 ps	M	Yes [ ]
TH13 ~~12~~	Reference impedance for output return loss	120E.3.1.3	100 Ω.	M	Yes [ ]
TH14 ~~13~~	Crosstalk source	120E.3.1.6	Asynchronous crosstalk source using PRBS13Q or PRBS31Q pattern, or valid 200GBASE-R/400GBASE-R signal	M	Yes [ ]