

The background of the slide is a detailed, high-resolution image of a printed circuit board (PCB) layout. The board is primarily light blue with a fine grid pattern. Various components, traces, and vias are visible, with several areas highlighted in a bright yellow color. The layout is complex, showing multiple layers and intricate routing.

**JITTER BUDGET FOR UNRETIMED
MMF PMD
PIERS DAWE
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TP1a (electrical)	XLPP1 (nPPI)				CEI-28G-VSR		CAUI-4 baseline		FDR		CPPI-4 (this proposal)		Comments
Parameter description	Min	Max	Unit	Conditions	Min	Max	Min	Max	Min	Max	Min	Max	
Signalling rate	10.3125		GBd		Up to 28.1		25.78125		14.0625		25.78125		
J2 Jitter output	—	0.17	UI							0.19	—	0.19	
J4 Jitter output			UI									0.23	J5 would be 0.25
J9 Jitter output	—	0.29	UI							0.34			Not needed with FEC
Data Dependent Pulse Width Shrinkage (DDPWS)	—	0.07	UI							0.11	—	0.1	
Equalized J2 Jitter output			UI								—	0.1	After reference CTLE
Equalized J4 Jitter output			UI								—	0.14	These three items estimate the
Equalized DDPWS			UI								—	0.05	"unequalizable jitter"
Eye width at 10-15 probability (EW15)1			UI		0.46	at 10 ⁻¹⁵							see J4
Eye height at 10-15 probability (EH15)1			mV		95	at 10 ⁻¹⁵							J5 would be 0.16
Qsq	45	—	V/V							45	45	—	
	specification value				Target value						specification value		
Eye mask coordinates: X1, X2 Y1, Y2	0.11, 0.31 95, 350		UI mV	Hit ratio = 5 × 10 ⁻⁵	Effectively, -, -, -, 450		Effectively, -, -, -, 450		0.11, 0.31 95, 350		0.13, 0.33 95, 350		

1. Open eye is generated through the use of a reference Continuous Time Linear Equalizer (CTLE)

TP2 (optical)	40GBASE-SR4 or 100GBASE-SR10				100GBASE-SR4 baseline				100GBASE-UR4 (name TBD: this proposal)			
Description	Max		Unit		Max				Max			
RMS spectral width	0.65		nm		0.6				0.65			
Transmitter and dispersion penalty (TDP), each lane	3.5		dB		5 TBC				TBD			
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3} Hit ratio 5×10 ⁻⁵ hits per sample	Spec values 0.23, 0.34, 0.43, 0.27, 0.35, 0.4				For further study			n/a	Around 0.25, 0.36, 0.45, 0.27, 0.35, 0.4			
TP3 (optical)	Spec values								Spec values			
Conditions of stressed receiver sensitivity test:					FFS							
Vertical eye closure penalty (VECP)c, each lane	1.9		dB						n/a		2.7?	
Stressed eye J2 Jitterc, each lane	0.3		UI								0.34?	
Stressed eye J4 Jitterc, each lane			UI								0.44?	
Stressed eye J9 Jitterc, each lane	0.47		UI								J5 would be 0.48	
Conditions of receiver jitter tolerance test:												
Jitter frequency and peak-to-peak amplitude	(75, 5)		(kHz, UI)								(187.5, 5)	
Jitter frequency and peak-to-peak amplitude	(375, 1)		(kHz, UI)								(937.5, 1)	

c Vertical eye closure penalty and stressed eye jitter are test conditions for measuring stressed receiver sensitivity. They are not characteristics of the receiver. The apparent discrepancy between VECP and TDP is because VECP is defined at eye center while TDP is defined with ±0.15 UI offsets of the sampling instant.

TP4 (electrical)	XLPP1 (nPPI)				CEI-28G-VSR		CAUI-4		FDR		CPPI-4 (this proposal)		Comments
Parameter description	Min	Max	Unit	Conditions	Min	Max	Min	Max	Min	Max	Min	Max	
BER		1E-12				1E-15		TBD				5E-5	
J2 Jitter output	—	0.42	UI							0.44	—	0.6	
J9 Jitter output	—	0.65	UI							0.69	(n/a)		
Equalized J2 Jitter output			UI								—	0.5	After reference CTLE
Equalized J4 Jitter output			UI								—	0.64	Ditto. J5 would be 0.70
	specification value				Target value						specification value		
Eye mask coordinates: X1, X2 Y1, Y2	0.29, 0.5 150, 425		UI mV	Hit ratio = 5 × 10 ⁻⁵	-, -, -, 450		-, -, -, 450		0.3, 0.5, 50, 255		~ 0.45, 0.5 40, 250		
Eye width at 10-x probability (EWx)			UI		0.57	at 1e-15	TBD	at TBD					
Eye height at 10-x probability (EHx)			mV		228	at 1e-15	TBD	at TBD					
Vertical Eye Closure			dB			6.5		TBD					