Optical Sub-Task Force Competing Proposals

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Optical Tx proposals for 40GBASE-LR4

	D 1.1	92, 94	484, 485	Resolution
Table 87-7				
Total ave power max dBm	8.3	8.3	8.3	
Ave power per lane max dBm	2.3	2.3	2.3	
Ave power per lane min dBm	-7	-7	-7	
Peak power per lane max dBm			5.3	
Power difference between lanes (Ave & OMA) max dB		6.5		
OMA –TDP per lane min dBm	-4.8	-4.8	-4.8	
OMA per lane max dBm		3.5	3.5	
OMA per lane min dBm	-4	-4	-4	
TDP per lane max dB	2.3	2.3	2.8	

Optical Rx proposals for 40GBASE-LR4

	D 1.1	93, 95	484, 485	219	Resolution
Table 87-8					
Ave power per lane max dBm	2.3	2.3	2.3	2.3	
Damage threshold min dBm	3.3	3.3	3.3	3.3	
Ave power per lane min dBm	-13.7	-13.7	-13.7	-13.7	
Peak power per lane max dBm			5.3		
OMA per lane max dBm		3.5	3.5		
Power difference between lanes (Ave & OMA) max dB		7.5			
Sens OMA per lane max dBm	-11.5	-11.5	-11.5	-11.5	
Stressed sens OMA max dBm	-9.9	-9.9	-9.4	-9.9	
Vertical eye closure pen dB	1.6	1.6	2.1	1.6	
Stressed eye jitter UI	TBD	TBD	TBD	0.3	

Optical Tx proposals for 100GBASE-LR4

Parameter	D 1.1	489 488	96 (116)	232	Resolution
Table 88-7					
Total ave power max dBm	10.5	10.5	10.5	10.5	
Ave power per lane max dBm	4.5	4.5	4.5	4.5	
Ave power per lane min dBm	-4.3	-4.3	-4.3	-4.3	
Peak power per lane max dBm		6.8			
Power difference between lanes (Ave & OMA) max dB			5 (3)		
OMA per lane max dBm	4.5	4.5	4.5	4.5	
OMA – TDP per lane (min)	-2.3	-2.3	-2.3	-2.3	
OMA per lane min dBm	-1.3	-1.3	-1.3	-1.3	
TDP max dB	(2.2)	2.8	(2.2)	2.2	
$RIN_{20}OMA$ max dB/Hz	-132	-130	-132	-132	

Optical Rx proposals for 100GBASE-LR4

Parameter	D 1.1	488 489	97 (118)	232 234	Resolution
Table 88-8					
OMA per lane max dBm	4.5	4.5	4.5	4.5	
Ave power per lane max dBm	4.5	4.5	4.5	4.5	
Peak power per lane max dBm		6.8			
Damage threshold dBm	5.5	5.5	5.5	5.5	
Ave power per lane min dBm	-10.6	-10.6	-10.6	-10.6	
Power difference between lanes (Ave & OMA) max dB			5.5 (4)		
Sens OMA per lane max dBm	-8.6	-8.6	-8.6	-8.6	
Stressed sens OMA max dBm	-6.8	-6.2	-6.8	-6.8	
Vertical eye closure pen dB	1.8	2.4	1.8	1.8	
Stressed eye jitter UI	TBD	TBD	TBD	0.3	
Table 88-9					
Power budget dB	8.5	9.1	8.5	8.5	
Channel insertion loss dB	6.3	6.3	6.3	6.3	
Allocation for penalties dB	(2.2)	2.8	(2.2)	2.2	

Optical Tx proposals for 100GBASE-ER4

Parameter	D 1.1	98	490 491	121	Propose	Resolution
Table 88-11						
Total ave power max dBm	8.4	8.4	8.9	8.4	8.4	
Power difference between lanes max dB	3.0	3.6	3.0	3.0	3.6	
Ave power per lane max dBm	2.4	2.4	2.9	2.4	2.4	
Ave power per lane min dBm	-2.9	-2.9	-5.4	-2.9	-2.9	
OMA per lane max dBm	4	4	4.5	4	4	
OMA per lane min dBm	0.1	0.1	-2.4	0.1	0.1	
OMA – TDP per lane (min)			-3.4			
TDP max dB			3.5	2.2	2.2	
RIN_{20}OMA max dB/Hz	-132	-132	-130	-132	-130	

Optical Rx proposals for 100GBASE-ER4

Parameter	D 1.1	99	491?	234	Resolution
Table 88-12					
OMA per lane max dBm	4.5	4.5	4.5	4.5	
Power difference between lanes max dB	4.0	4.5	4.0	4.0	
Ave power per lane max dBm	4.5	4.5	4.5	4.5	
Damage threshold dBm	5.5	5.5	5.5	5.5	
Ave power per lane min dBm	-20.9	-20.9	-23.4?	-20.9	
Sens OMA per lane max dBm	-21.4	-21.4	-23.9?	-21.4	
Stressed sens OMA max dBm	-17.9	-17.9	-17.9	-17.9	
Vertical eye closure pen dB	3.5	3.5	3.5	3.5	
Stressed eye jitter UI	TBD	TBD	TBD	0.3	
Table 88-13					
Power budget dB	21.5	21.5	21.5	21.5	
Channel insertion loss dB	18	18	18	18	
Allocation for penalties dB	3.5	3.5	3.5	3.5	

Tables 87-11, 88-15 test patterns for clauses 87 & 88

	D 1.1	223, 237	475	438	Resolution
Wavelength	, V	3, 5, V	3, 5, V		
Side mode suppression ratio		3, 5, V	3, 5, V		
Average optical power		3, 5, V	3, 5, V		
OMA	Square	Square	Square	Squ, 4	
TDP		3, 5, V	3, 5, V		
Extinction ratio	, V	3, 5, V	3, 5, V		
RINxOMA	Square	Square	Square		
Transmitter waveform		3, 5, V	3, 5, V		
Stressed receiver sensitivity		3, 5, V	3, 5, V		
Calibration of OMA for receiver tests		Square	Square		
Vertical eye closure penalty calibration		3, 5, V	3, 5, V		
Receiver upper cutoff frequency		3, 5, V	3, 5, V		

V – valid 40/100GBASE-R signal

“Stressed Rx” proposals 40/100GBASE-SR

	D 1.1	331	416	611	Resolution
Table 86-10					
Stressed sens OMA max dBm	TBD	-5.5	-5.4	TBD	
Vertical eye closure pen dB	TBD	TBD	2.0	TBD	
Stressed eye jitter UI	TBD	TBD			
Stressed eye J2 jitter UI			0.35	?	
Stressed eye J9 jitter UI				?	
Conditions of receiver jitter tolerance test					
Jitter frequency kHz pk to pk amplitude UI				75 5	
Jitter frequency kHz pk to pk amplitude UI				375 1	

Table 86-15 test patterns for clause 86

No	Pattern	D 1.1	505 205	562 563 564 565	473 463 460 462	634	Resolution
1	Cl 52		No	Yes			
2	Cl 52		No	Yes	?		
3	PRBS31	Yes	Yes	Yes	Yes		
4	Short	TBD	PRBS9	PRBS9	PRBS9		PRBS9
5	Scrambled idle	Yes	Yes	Yes	?		Yes
-	Square Cl 52		No	No	No	No	
-	Square 8, 8	Yes	Yes	Yes	Yes	No	

Comment 505 proposes same format as table 87-10

Table 86-16 test patterns for clause 86

	D 1.1	566, 419, 420	206	437	635	Resoltn
Wavelength, spectral width		1, 2, 3, 5, R	3, 5, V			
Average optical power		1, 2, 3, 5, R	3, 5, V			
Transmitter OMA	Square	Squ, 4	Square	Squ, 4	Squ	
Extinction ratio		1, 2, 3, 5, R	3, 5, V			
Transmitted waveform (eye mask)		1, 3, 5, R	3, 5, V			
TDP (assuming anslow_04_0109)		2, 3, 5, R	3, 5, V			
RIN12OMA		Remove	Square			
Stressed receiver sensitivity		2, 3, 5, R	3, 5, V			
Calibration of OMA for receiver tests		Squ, 4	Square	Squ, 4		
Vertical eye closure penalty calibration			3, 5, V			
J2 (assuming anslow_04_0109)		1, 2, 3, 5, R	3, 5, V			
J9 (assuming anslow_04_0109)		3, 5, R	3, 5, V			
DDPWS		4	4			
AC common mode voltage		1, 2, 3, 5, R	3, 5, V			
Transition time		Squ, 4	Square	Squ, 4	4	

V – valid 40/100GBASE-SR signal, R – valid 40/100GBASE-SR signal or 10GBASE-R signal

Table 86-16 test patterns for clause 86, 87, 88

	D 1.1	Dawe_01	Resolution
Wavelength, spectral width		5, 6, 3 (1, 2, R)	
Average optical power		5, 6, 3 (1, 2, R)	
Transmitter OMA	Square	4, Square	
Extinction ratio		5, 6, 3 (1, 2, R)	
Transmitted waveform (eye mask)		5, 6, 3 (1, R)	
TDP (assuming anslow_04_0109)		5, 6, 3 (R)	
RIN12OMA		Remove	
Stressed receiver sensitivity		5, 6, 3 (2, R)	
Calibration of OMA for receiver tests		4, Square	
Vertical eye closure penalty calibration		5, 6, 3 (R)	
J2 (assuming anslow_04_0109)		5, 6, 3 (1, 2, R)	
J9 (assuming anslow_04_0109)		5, 6 (R)	
DDPWS		4	
AC common mode voltage		5, 6, 3 (1, R)	
Transition time		4, Square	
Receiver upper cutoff frequency		5, 6, 3 (1, R)	

6 – Scrambled Remote Fault, R – Portion of valid n0GBASERn signal or a 10GBASE-R signal
Patterns in brackets expected to give similar results