TBD Specs in the 100G BiDi Clause

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999.5.4 PMD global signal detect function

Table 999–4—SIGNAL_DETECT value definition

Receive conditions	SIGNAL_DETECT value
Average optical power at TP3 ≤ TBD dBm	FAIL
[(Optical power at TP3 average receive power (min) Table 999–7) AND (compliant 100GBASE-BRx signal input)]	OK
All other conditions	Unspecified

Editor's note: subclause 999.5.4 is an exact copy of subclause 160.5.4 except the "average optical power at TP3" is TBD here. In subclause 160.5.4, average optical power at TP3 ≤ –20 dBm; while in subclause 140.5.4, average optical power at TP3 ≤ –15 dBm.

Definitions in other IEEE 802.3 clauses:

	Value (dBm)	Average receive power (min)
Clause 140	-15	-5.9(100G DR) -7.1(100G FR1) -8.2(100G LR1)
Clause 160	-20	-10.8(50G BR10) -17.6(50G BR20/40)
Clause 159	-20(25G BR10) -26(25G BR20/40)	-13.3 -22.5/-21
Clause 158	-30(10G BR10/40) -33(10G BR20)	-14.4/-21.2 -27.2

This value is related to the average receive power (min) of 100GBASE-BRx, since that for BR20 has not been determined yet, we may define it after we have the full baseline tables.

999.6 PMD to MDI optical specifications for 100GBASE-BRx

100GBASE-BR20/BR40 related parameters in:

- Table 999-6 100GBASE-BRx transmit characteristics
- Table 999-7 100GBASE-BRx receive characteristics
- Table 999-8 100GBASE-BRx illustrative link power budgets

999.7.5.2 Channel requirements

Table 999–11—Transmitter compliance channel specifications

PMD type	Dispersion[a] (ps/nm)		Insertion loss[b]	Optical return loss[c]	Max mean DGD
	Minimum	Maximum			
100GBASE-BR10	$0.23 \times \lambda \times [1-(1324/\lambda)^4]$	$0.23 \times \lambda \times [1-(1300/\lambda)^4]$	Minimum	15.6	~~5~~ 0.8 ps
100GBASE-BR20	$0.46 \times \lambda \times [1-(1324/\lambda)^4$	$0.46 \times \lambda \times [1-(1300/\lambda)^4]$	Minimum	TBD	~~TBD~~ 0.8 ps
100GBASE-BR40	$0.92 \times \lambda \times [1-(1324/\lambda)^4$	$0.92 \times \lambda \times [1-(1300/\lambda)^4]$	Minimum	~~TBD~~ 15.6	~~TBD~~ 0.8 ps

15.6 from 3dk_takahara_2403_1b

Definitions in other IEEE 802.3 clauses:

Clause No.	PMD type	Optical return loss	Max mean DGD
140	100GBASE-LR1	15.6 dB	0.8 ps
160	50GBASE-BR10 50GBASE-BR20 50GBASE-BR40	15.6 dB 15 dB 15 dB	0.8 ps 0.8 ps 0.8 ps

999.7.12 Receiver sensitivity

Figure 999-6——Illustration of receiver sensitivity (TBD)

Equations:

100G Bidi BR10: RS = max (-6.1, SECQ-7.5) (999.1)

100G Bidi BR20: TBD (999.2)

100G Bidi BR40: TBD (999.3)

999.9 Fiber optic cabling model

100GBASE-BR20/BR40 related parameters in:

- Table 999-12 Fiber optic cabling (channel) characteristics

Description	100GBASE-BR10	100GBASE-BR20	100GBASE-BR40	Unit
Operating distance (max)	10	20	40	km
Channel insertion loss[a, b] (max)	6.3	10	18	dB
Channel insertion loss (min)	0	0	10	dB
Positive dispersion[b] (max)	TBD/3.3		37	ps/nm
Negative dispersion[b] (min)	TBD/-12.1		-77	ps/nm
DGD_max[c]	5		TBD	ps
Optical return loss (min)	22		22	dB

999.10.2.2 Maximum discrete reflectance

- Table 999-13 Maximum value of each discrete reflectance

Number of discrete reflectances above –55 dB	Maximum value for each discrete reflectance			Unit
	100GBASE-BR10	100GBASE-BR20	100GBASE-BR40	
1	–22	TBD	TBD	dB
2	–29	TBD	TBD	dB
4	–33	TBD	TBD	dB
6	–35	TBD	TBD	dB
8	–37	TBD	TBD	dB
10	–39	TBD	TBD	dB

Definitions in other Clause 160 and 400G-ER4-30 MSA:

Number of discrete reflectances above –55 dB	Maximum value for each discrete reflectance			Unit
	50GBASE-BR20	50GBASE-BR40	400G-ER4-30 MSA	
1	-22	-19	-19	dB
2	-29	-27	-27	dB
4	-34	-32	-32	dB
6	-37	-35	-35	dB
8	-39	-37	-37	dB
10	-40	-39	-39	dB

999.11 Requirements for interoperation between 100GBASE-BRx PMDs

- Clause 160 defines the interoperation requirements between 50GBASE-BR20 and 50GBASE-BR40 PMDs.

Table 160–14—Channel insertion loss requirements for interoperation between 50GBASE-BR20 and 50GBASE-BR40

Direction	Min loss	Max loss	Unit
50GBASE-BR20 transmitter to 50GBASE-BR40 receiver	7	15	dB
50GBASE-BR40 transmitter to 50GBASE-BR20 receiver	3	18	dB

If the same applies to 100GBASE-BRx, considering the interoperation between 100GBASE-BR20 and 100GBASE-BR40:

Table 999-14—— Channel insertion loss requirements for interoperation between 100GBASE-BR20 and 100GBASE-BR40

Direction	Min loss	Max loss	Unit
100GBASE-BR20 transmitter to 100GBASE-BR40 receiver	TBD	10	dB
100GBASE-BR40 transmitter to 100GBASE-BR20 receiver	TBD	18	dB

Min loss may depends on the average launch power max and average receive power min of BR20/BR40