

# RETURN-LOSS-RELATED TBDS AND WAYS TO ADDRESS THEM

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# Introduction

- Goals
  - Summarize TBDs and missing specs
  - Propose short term remedies for technical completeness
- Principle: Values and equations, even if not final, are better than TBDs
  - Products in design can be tested/simulated against something
  - Alternatives can be suggested
- Missing?
  - In some places we don't even TBDs but they can cause problems if not specified

# Summary table

Where	What	ERL/DERL (DD)		RLCC		RLCD (differential to common)	
		Reference	Value/equation	Reference	Value/equation	Reference	Value/Equation
162	Tx	162.9.3.5	7.3	162.9.3.6	2	92.8.3.3	TBD
	Rx	162.9.4.5	7.3			92.8.4.3	TBD
	CA	162.11.3	TBD	162.11.6	(162-11)	162.11.4	(162-9)
163	Tx	163.9.2.2	-3	162.9.3.6	2	?	?
	Rx	163.9.3.2	-3			93.8.1.4	TBD
	Channel	163.10.3	9.7	?	?	missing	
120F	Tx	120F.3.1.1	-3	162.9.3.6	2	?	?
	Rx	120F.3.2.1	-3			120F.3.2.2	(120F-1)
	Channel	120F.4.3	TBD	?	?	missing	
120G	Host output	120G.3.1.2	7.3	?	?	120G.3.1.1	(120G-1)
	Module output	120G.3.2.3	TBD	?	?	120G.3.1.2 (incorrect)	(120G-1)
	Host input	120G.3.3.1	7.3			120G.3.1.2 (incorrect)	(120G-1)
	Module input	120G.3.4.2	TBD			120G.3.1.2 (incorrect)	(120G-1)
162B	MTF	162B.1.3.2	TBD	162B.1.3.5	(162B-8)	162B.1.3.6	(162B-9)

# Possible directions for TBDs

Reasoning: same connectors used in all cases; conversion should be similar

Where	What	ERL/DERL (DD)		RLCC		RLCD (differential to common)	
		Reference	Value/equation	Reference	Value/equation	Reference	Value/Equation
162	Tx	162.9.3.5	7.3	162.9.3.6	2	92.8.3.3	TBD
	Rx	162.9.4.5	7.3			92.8.4.3	TBD
	CA	162.11.3	TBD	162.11.6	(162-11)	162.11.4	(162-9)
163	Tx	163.9.2.2	-3	162.9.3.6	2	?	?
	Rx	163.9.3.2	-3			Use OIF-CEI equation	
	Channel	163.10.3	9.7	?	?	missing	
120F	Tx	120F.3.1.1	-3	162.9.3.6	2	?	?
	Rx	120F.3.2.1	-3			120F.3.2.2	(120F-1)
	Channel	120F.4.1	Use C163 Spec TBD	?	?	missing	
120G	Host output	120G.3.1.2	7.3			120G.3.1.1	(120G-1)
	Module output	120G.3.2.3	TBD			120G.3.1.2 (incorrect)	(120G-1)
	Host input	120G.3.3.1	7.3			120G.3.1.2 (incorrect)	(120G-1)
	Module input	120G.3.4.2	TBD			120G.3.1.2 (incorrect)	(120G-1)
162B	MTF	162B.1.3.2	TBD	162B.1.3.5	(162B-8)	162B.1.3.6	(162B-9)

Use same as CA

Use OIF-CEI equation

Use C163 Spec

Handle these 4 together (slide 6)

# Possible direction for missing

Where	What	ERL/DERL (DD)		RLCC		RLCD (differential to common)	
		Reference	Value/equation	Reference	Value/equation	Reference	Value/Equation
162	Tx	162.9.3.5	7.3	162.9.3.6	2	92.8.3.3	TBD
	Rx	162.9.4.5	7.3			92.8.4.3	TBD
	CA	162.11.3	TBD	162.11.6	(162-11)	162.11.4	(162-9)
163	Tx	163.9.2.2	-3	162.9.3.6	2	?	?
	Rx	163.9.3.2	-3			93.8.1.4	TBD
	Channel	163.10.3	9.7	?	?	Use G162 spec (comment #139)	missing
120F	Tx	120F.3.1.1	-3	162.9.3.6	2	?	?
	Rx	120F.3.2.1	-3			120F.3.2.2	(120F-1)
	Channel	120F.4.3	TBD	?	?	Use G162 spec (comment #139)	missing
120G	Host output	120G.3.1.2	7.3	?	?	120G.3.1.1	(120G-1)
	Module output	120G.3.2.3	TBD	?	?	120G.3.1.2 (incorrect)	(120G-1)
	Host input	120G.3.3.1	7.3			120G.3.1.2 (incorrect)	(120G-1)
	Module input	120G.3.4.2	TBD			120G.3.1.2 (incorrect)	(120G-1)
162B	MTF	162B.1.3.2	TBD	162B.1.3.5	(162B-8)	162B.1.3.6	(162B-9)

# ERL for CA, module input, module output, MTF

- Comments 120, 125, 131 address ERL TBD values
- Rationale for MTF
  - Host ERL minimum is 7.3 dB (existing value, Table 162-10)
  - Reflections from the HCB+MDI – expected similar or worse than MTF
  - The reflections from the host internal routing and device are power-sum added
  - MTF to be allocated half the power → 3 dB above host ERL → minimum of 10.3 dB (#131)
- Rationale for CA
  - Should be allowed at least as the MTF (10.3 dB)
  - Implementation allowance below MTF ERL: 1.3 dB → minimum of 9 dB (#120)
- Rationale for module input/output
  - Should be allowed at least as the MTF (10.3 dB)
  - Implementation allowance below MTF ERL:
    - 1.3 dB for Tx → minimum of 9 dB
    - 1.8 dB for Rx → minimum of 8.5 dB
- All the above are stricter than the host ERL (7.3 dB); it is assumed that host connector is worse than a corresponding MCB

# QUESTIONS? DISCUSSION?

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Thank you