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ERL Measured Results for 50G-KR Device (comment #r01-89)

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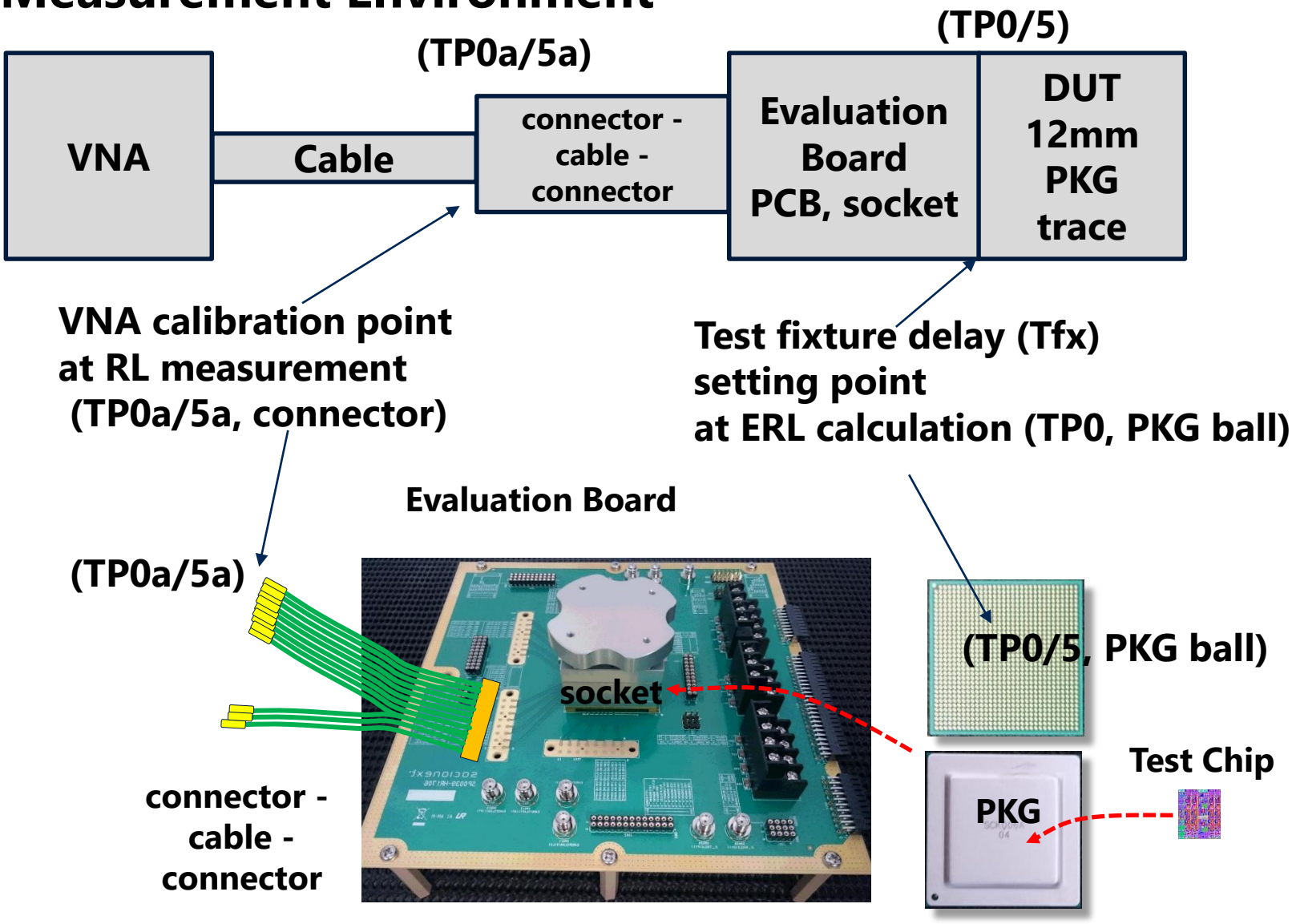
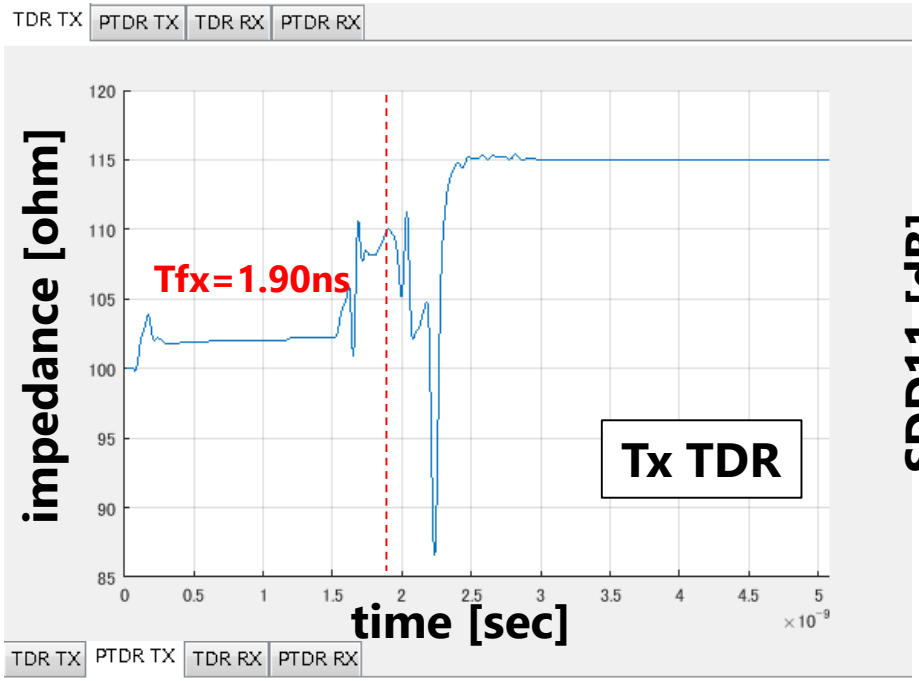
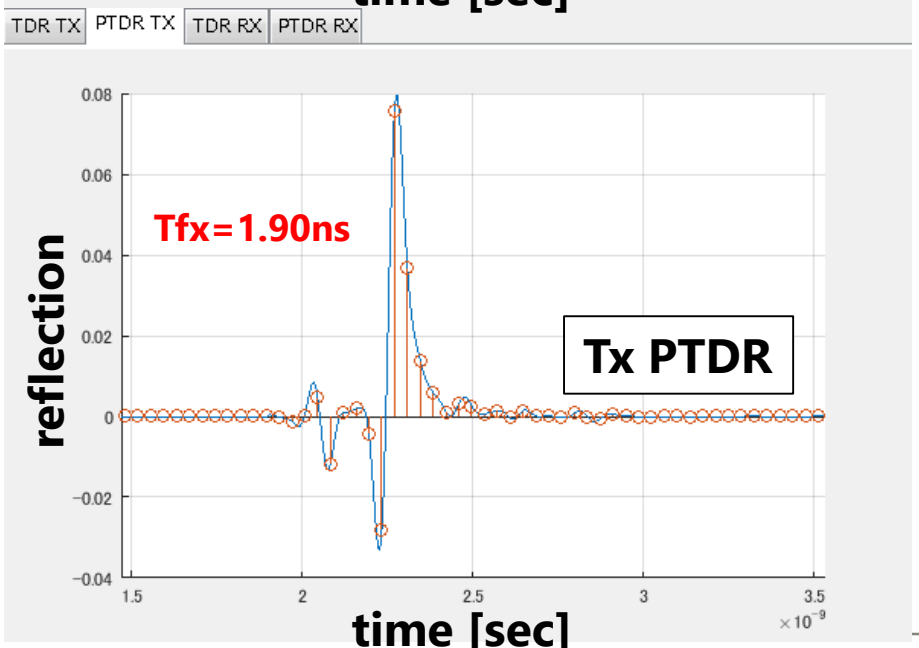
1. 50G-KR Device ERL measurement

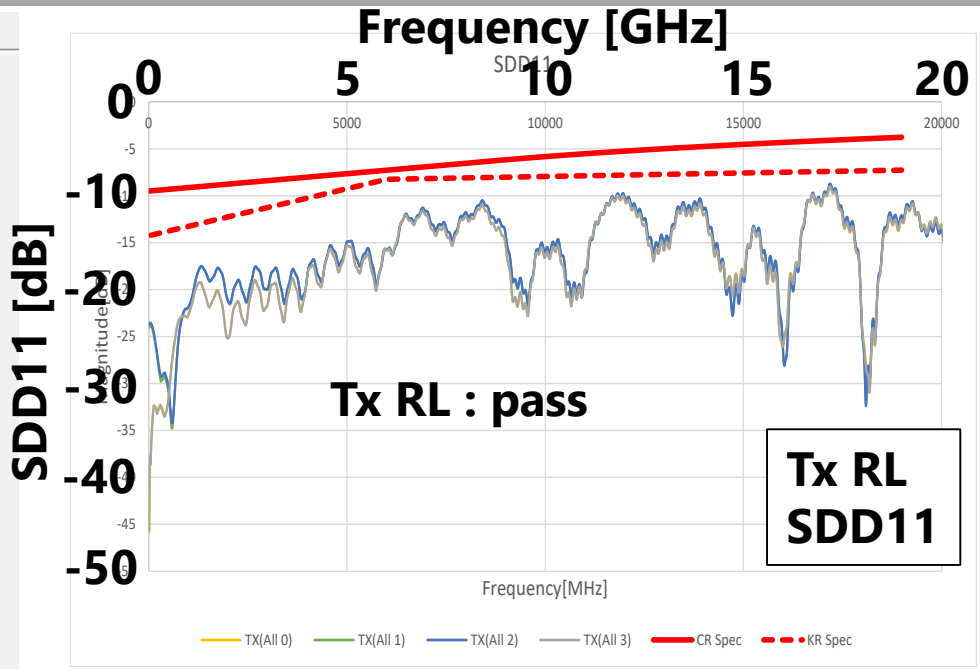
Measurement Environment



2. 50G-KR Device Tx ERL (COM2.2.4)



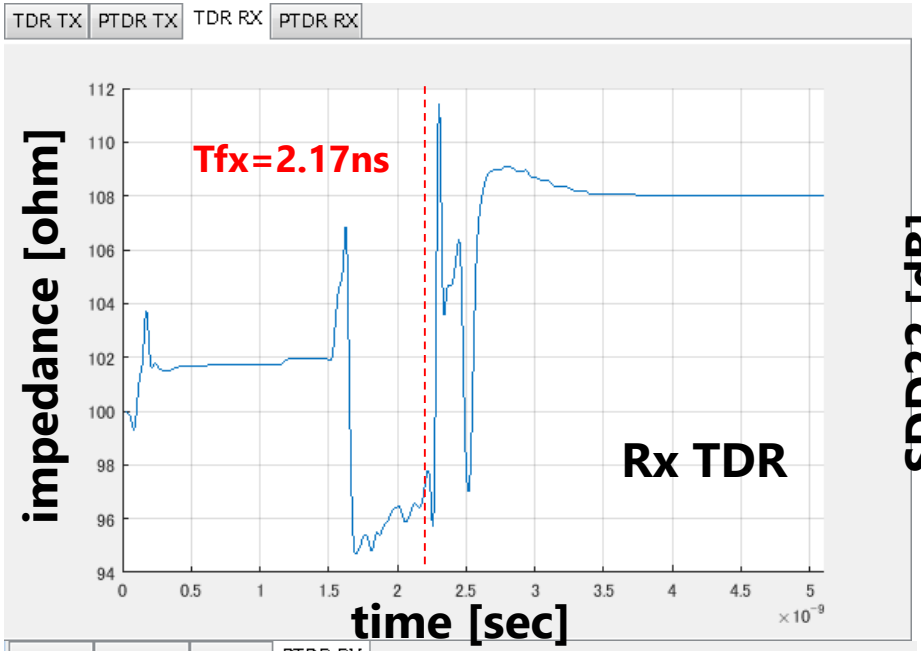


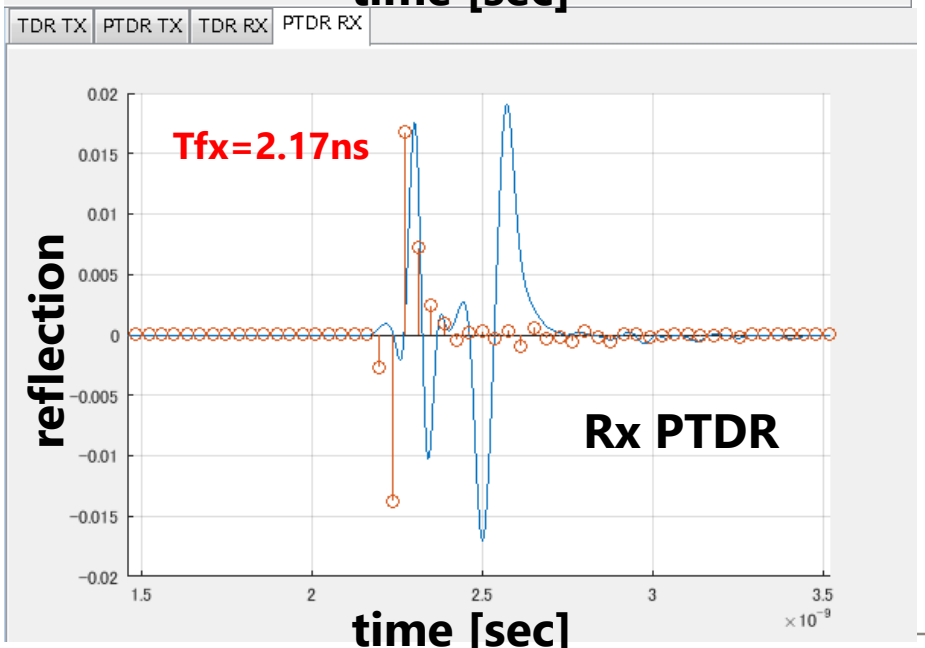


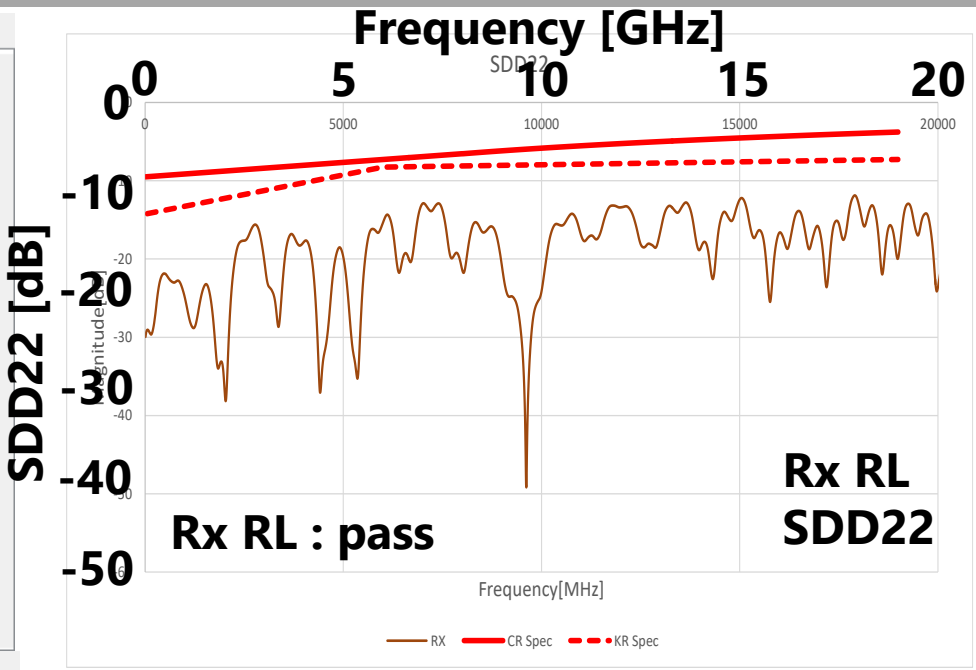
Device (Tx) ERL11=17.72dB
(level = "2", worst)

D3.1 : 19.5dB
ad hoc (02/21) : 16.1dB

2. 50G-KR Device Rx ERL (COM2.2.4)







Device (Rx) ERL22=22.37dB

D3.1 : 19.5dB
ad hoc (02/21) : 16.1dB

4. Conclusion

1. “802.3cd D3.1” 50G-KR, CL 137.9.2.1 Tx ERL
   - Tx ERL at TP0a > 19.5dB

   # Is this TP0 or TP0a? Since the test fixture portion
   # (Tfx) is subtracted in ERL calculation.

2. Tx ERLmin >19.5dB is too tight, even with satisfying RL.
   - This ERLmin was updated to 16.1dB at 02/21 ad hoc.
   - Measured values (TP0/TP5, Tfx excluded) :
     - Tx ERL11 : 17.72dB
       - Tx RL : pass
       - No transmission issues with this Tx.
     - Rx ERL22 : 22.37dB
       - Rx RL : pass

3. Changing Tx ERLmin limit from 19.5dB to 16.1dB is appropriate, considering margin.

Thank you

backup slides

A-1 ERL test points (TP)

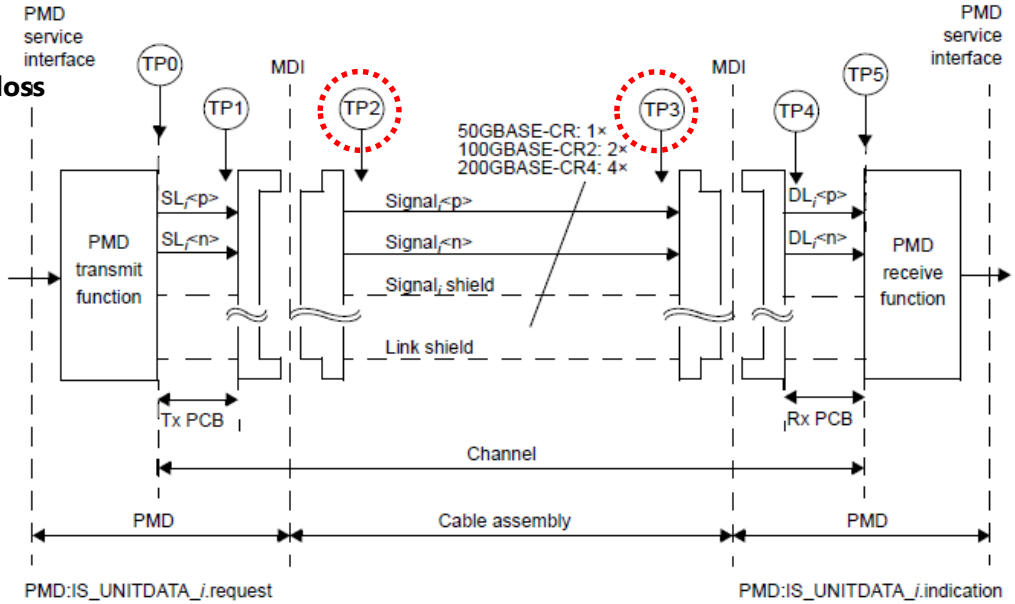
Test Points

• 50GBASE-CR/100GBASE-CR2/200GBASE-CR4

136.9.3.4
Transmitter effective return loss

Transmitter ERL at TP2 is recommended to be greater than 9 dB.

[updated 02/21 ad hoc]
14.5dB



136.9.4.5
Receiver effective return loss

~~Transmitter~~ Receiver ERL at ~~TP2~~ TP3 is recommended to be greater than 9 dB.

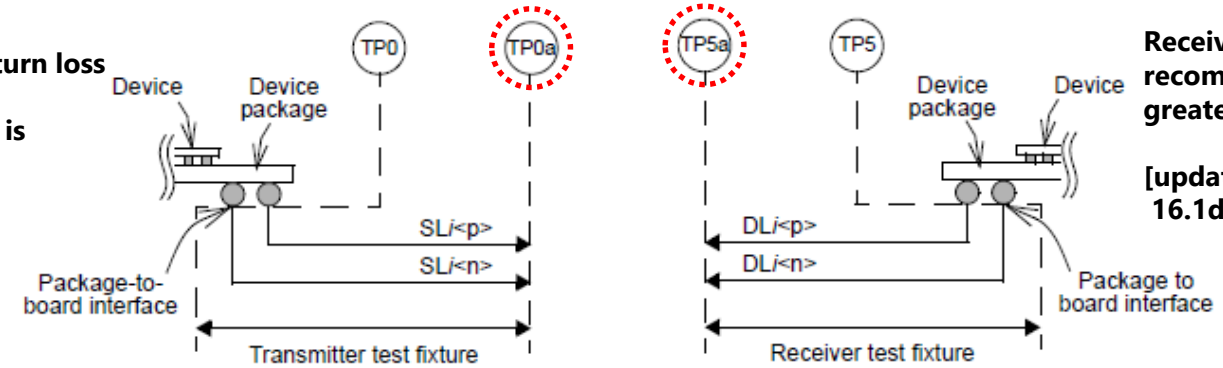
[updated 02/21 ad hoc]
14.5dB

• 50GBASE-KR/100GBASE-KR2/200GBASE-KR4

137.9.2.1
Transmitter effective return loss

Transmitter ERL at TP0a is recommended to be greater than 19.5 dB.

[updated 02/21 ad hoc]
16.1dB

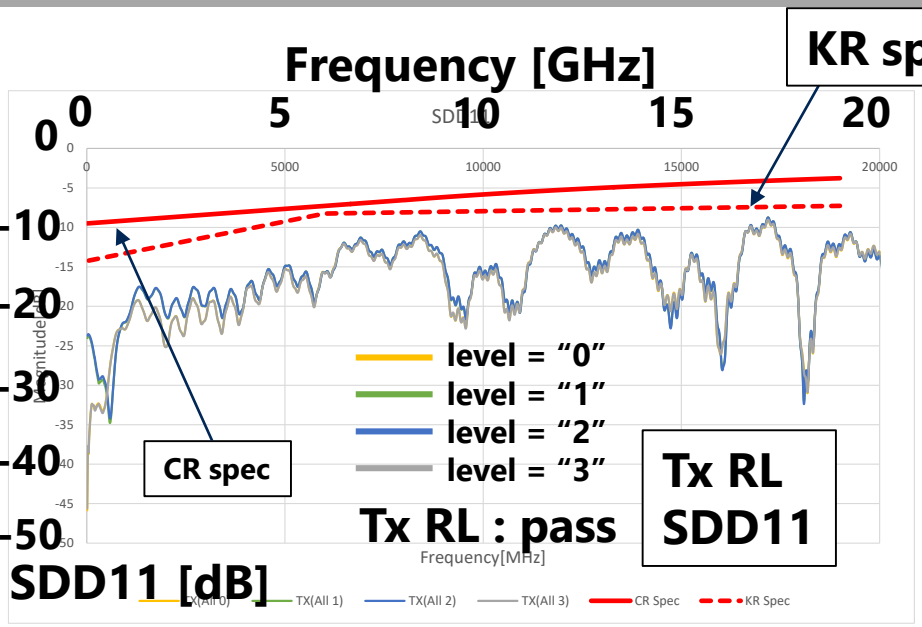


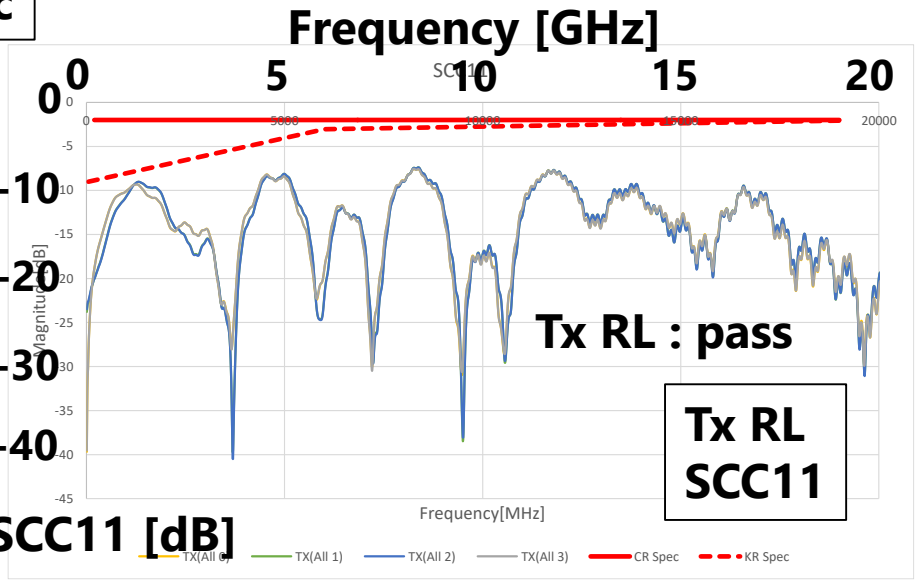
137.9.3.1
Receiver effective return loss

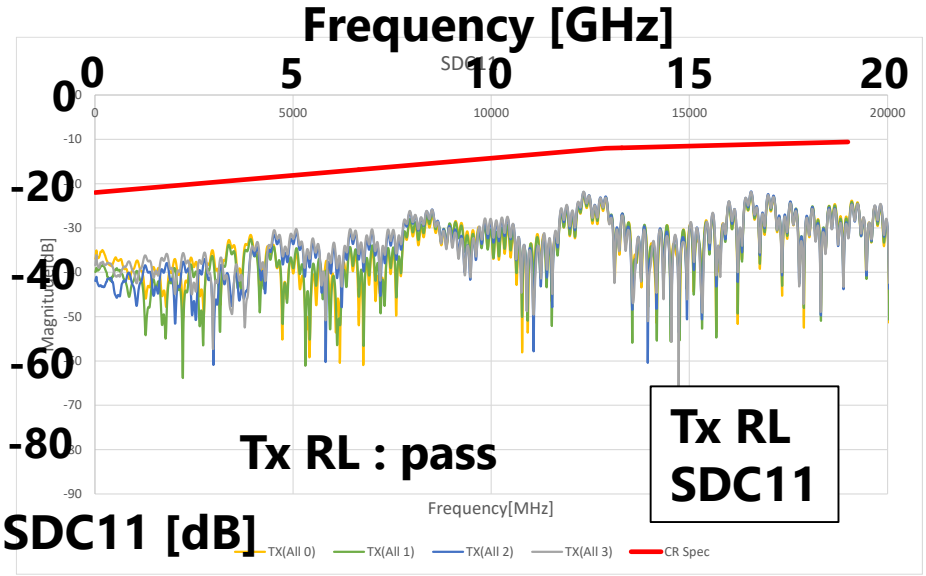
Receiver ERL at TP5a is recommended to be greater than 19.5 dB.

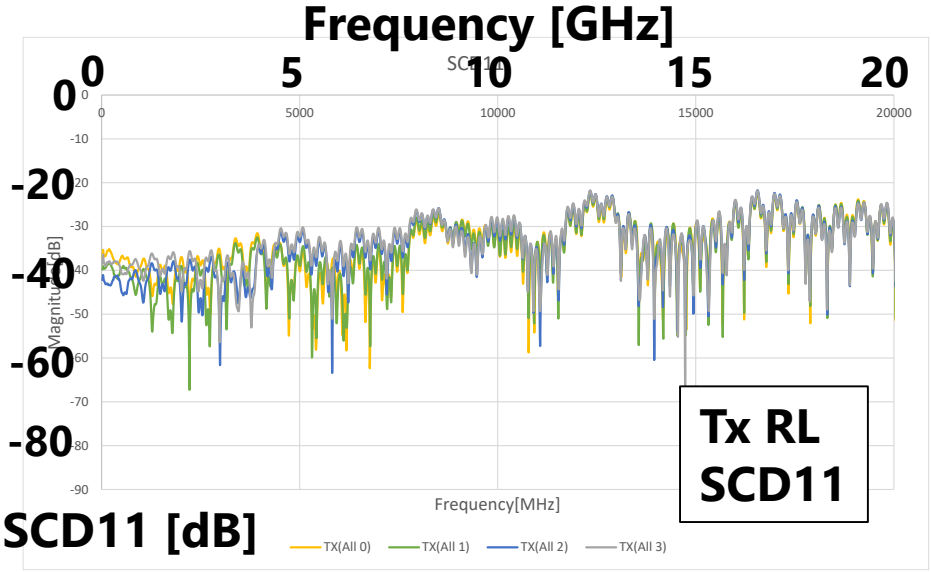
[updated 02/21 ad hoc]
16.1dB

A-2-1 : Measured Tx RL (return loss)

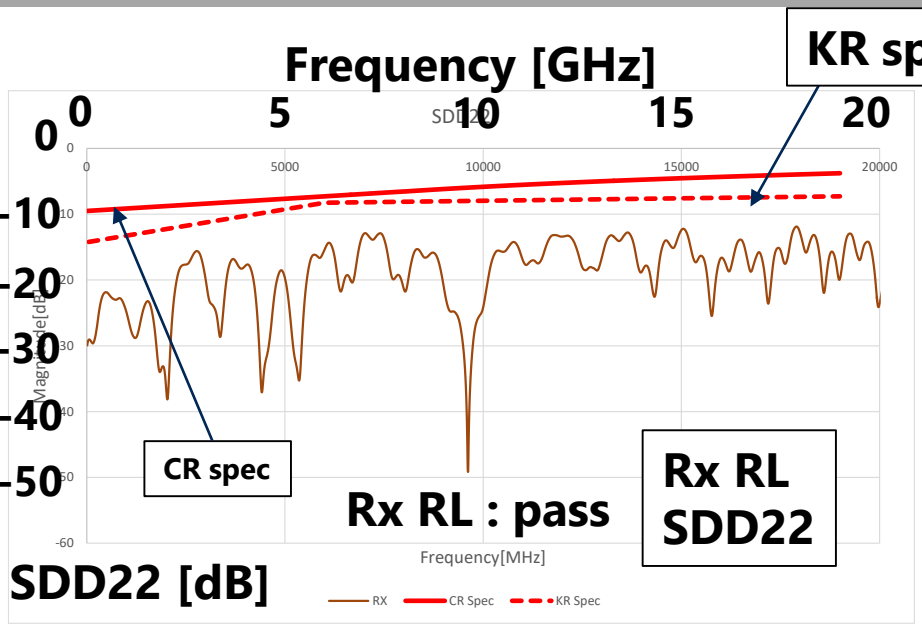


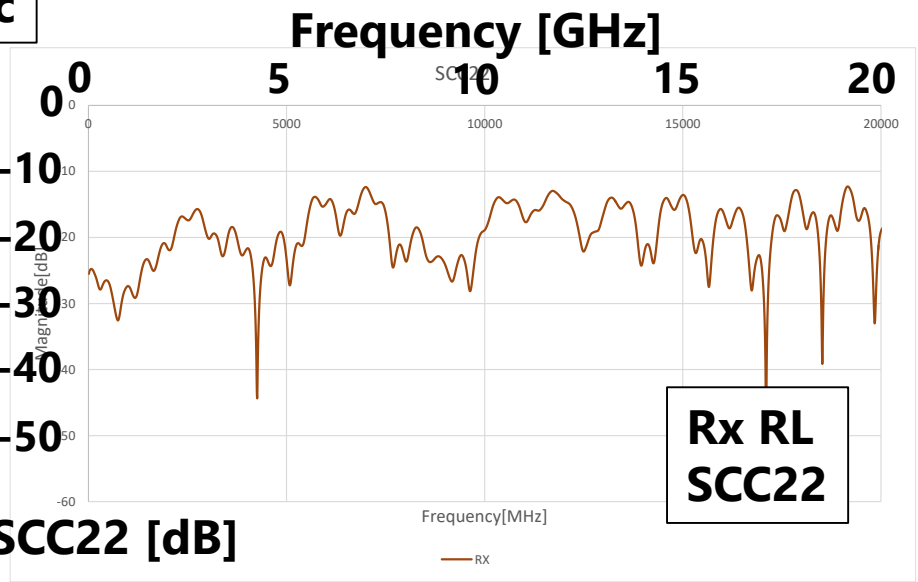


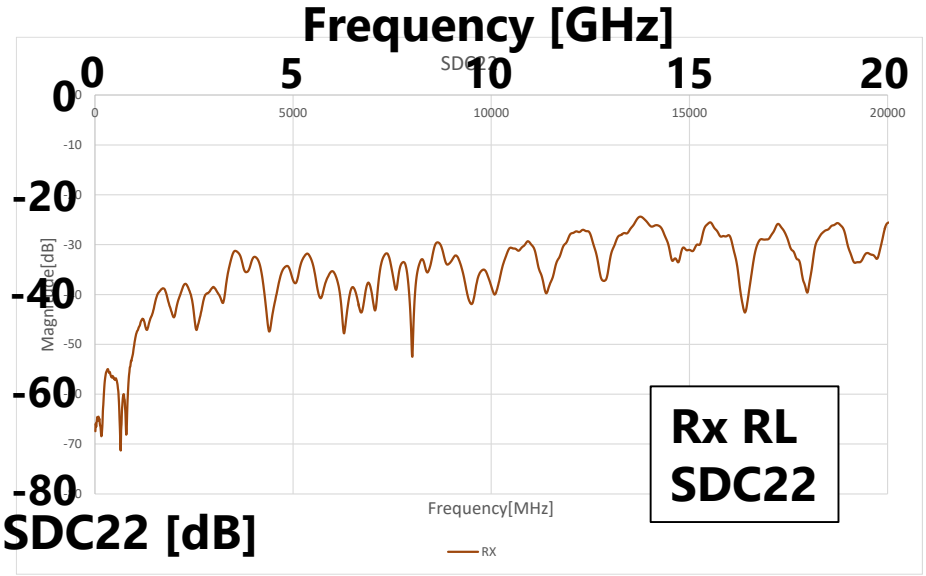


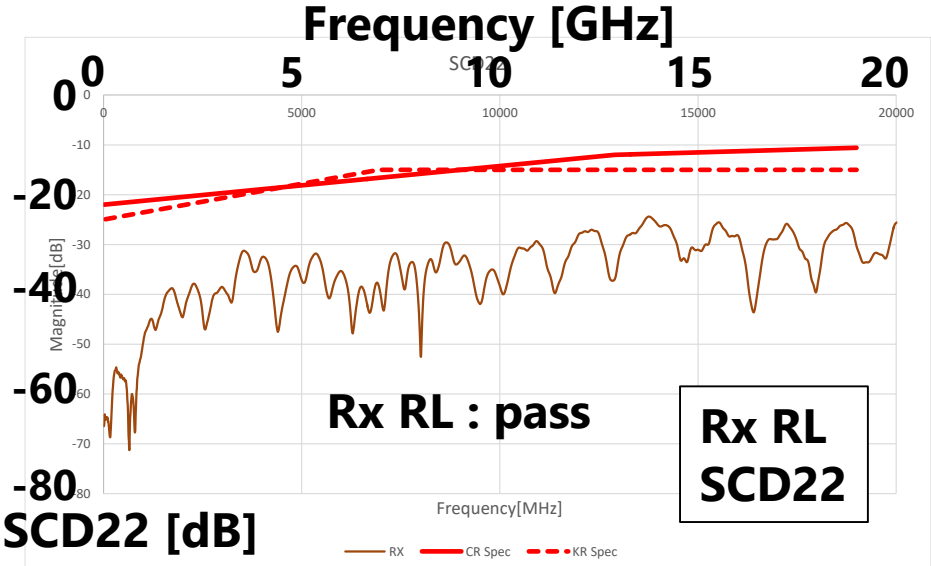


A-2-2 : Measured Rx RL (return loss)

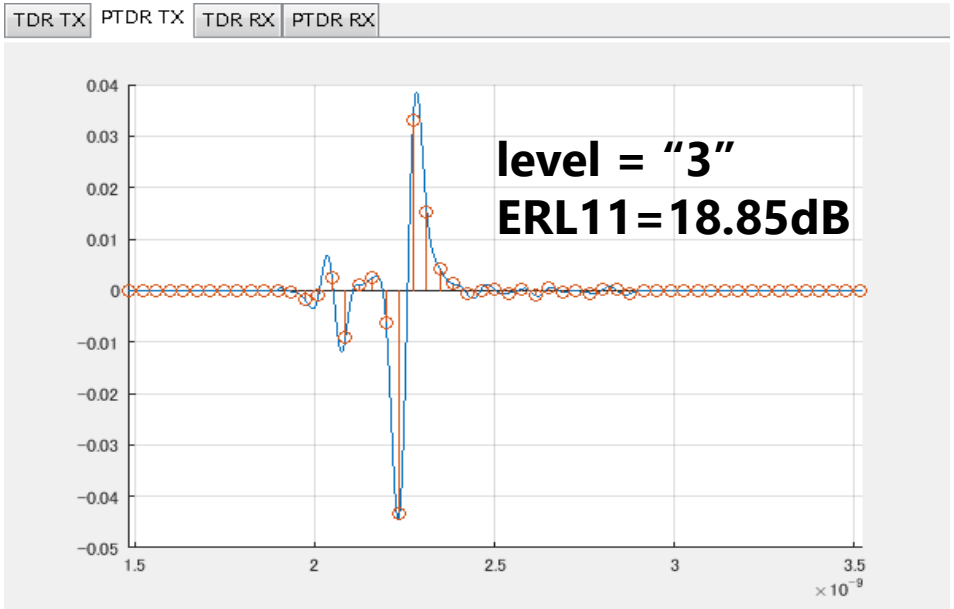


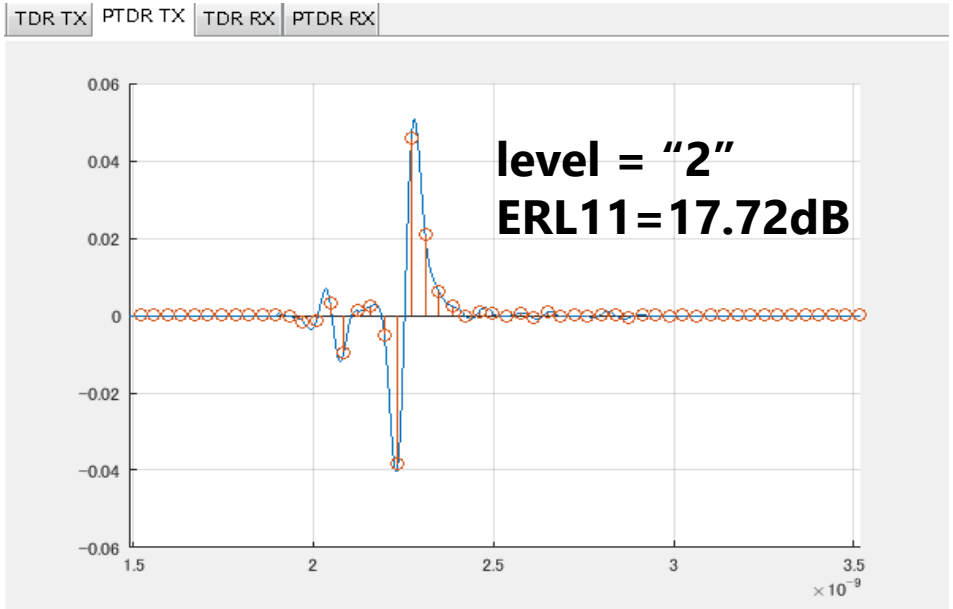


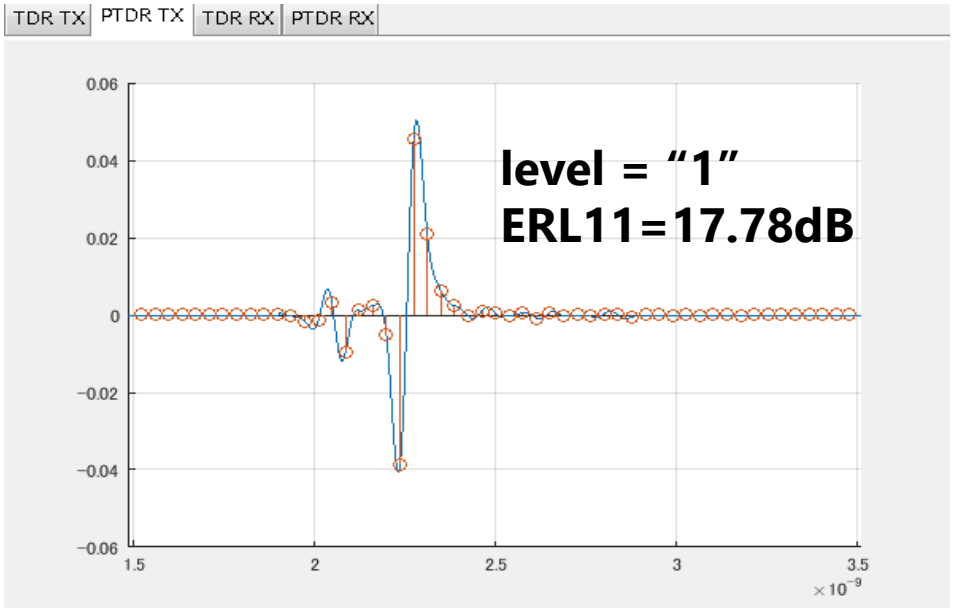


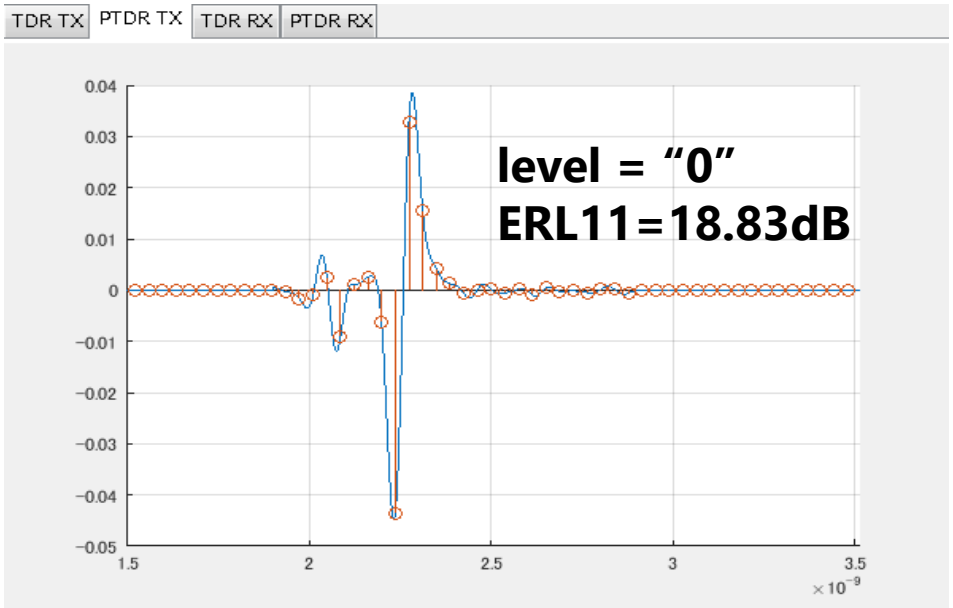


A-3 : Tx PTDR/ERL (COM 2.2.4)









Thank you!

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