

Dynamic range and BR-40

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July 2023

The impact of low dynamic range

- It seems that 100G APD receivers have a relatively small dynamic range, leading to a link loss range of 10 dB
- When a link is commissioned, the correct optics need to be selected
- If a link is built and measured, then the choice of optics is simple
 - But, measuring the loss is not so easy, takes time
 - Even worse, many links are assembled in a different order (feeder and OLT optics first, and then distribution and ONU optics last)
- The link loss can be estimated based upon its design parameters
 - Length of fiber cables and connectors
 - Typically, this kind of estimation gives a 5 dB range of losses

Current situation

- BR10 is 0 to 10 dB
- BR20 is 5 to 15 dB
- BR40 might be 13 to 23 dB
- The overlap between BR20 and BR40 is only 2 dB
 - This may lead to operational difficulties
- Two solutions
 - If BR40 is 10 to 23 dB dynamic range, then the overlap is sufficient again
 - Can it be done?
 - If BR40 is 13 to 23, then we could define a BR30 that is 10 to 20 dB
 - This loss range kind of makes sense since 10 km fiber = 5 dB

An additional objective

- The group is encouraged to think about the feasible dynamic range
- If we can make 10 to 23 dB loss range possible, then problem solved
- If not, then a new objective may need to be added

- On the one hand, we will have four flavors of modules
- On the other hand, it may be possible to make modules that can be configured to support adjacent budgets (e.g., combo BR10 & BR20)

Thank you

Any questions?