



# 25GBASE-T Cable objectives

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- **There is support in the cabling industry to restrict the cable length for 25G to the same length as the maximal reach of the 40G standard: 30m.**
- **Cable types that are specified over the full bandwidth of the 25G signal**
  - 10G symbol rate is 800MBd: half the symbol rate: 400MHz
  - 25G symbol rate is 2000MBd, half the symbol rate is: 1GHz
  - CAT7A is specified up to 1GHz
  - CAT8 is specified up to 2GHz
- **Cable type that may be “grand fathered” in by additional field testing**
  - CAT6A is specified up to 500MHz
    - Need to extrapolate all cable characteristics between 500MHz and 1GHz.
      - Insertion loss
      - Return loss
      - NEXT loss
      - ACRF
      - PSANEXT
      - PSAACRF

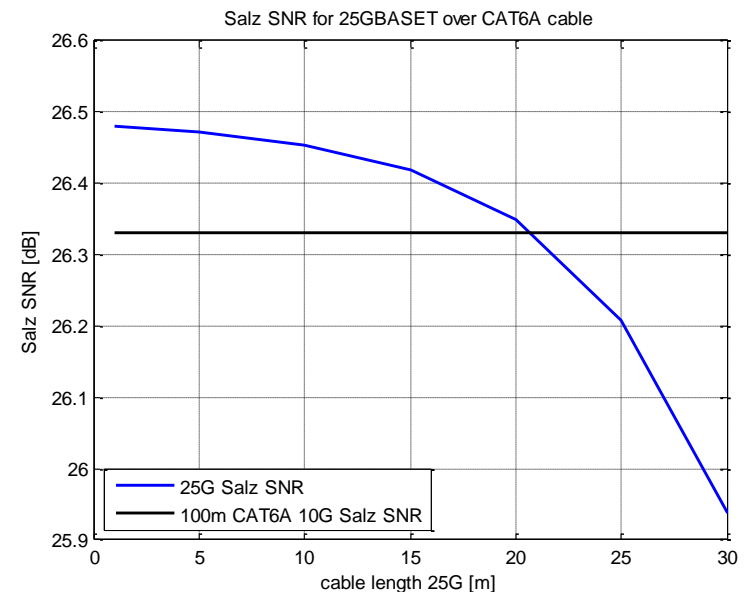
# Salz SNR for 25G over 30m

- **Limit line consideration**

- CAT8 has more than 48dB Salz SNR
- CAT7A has more than 44dB Salz SNR
- CAT6A
  - All limit lines between 500MHz and 1GHz are extrapolated.
  - Salz SNR of extrapolated limit lines exceeds 25.9dB.
  - 10G Salz SNR for a 100m CAT6A cable from the limit line is 26.3dB.
  - Limit lines indicate 25G over 30m CAT6A is a slightly harder problem than 10G over 100m CAT6A.

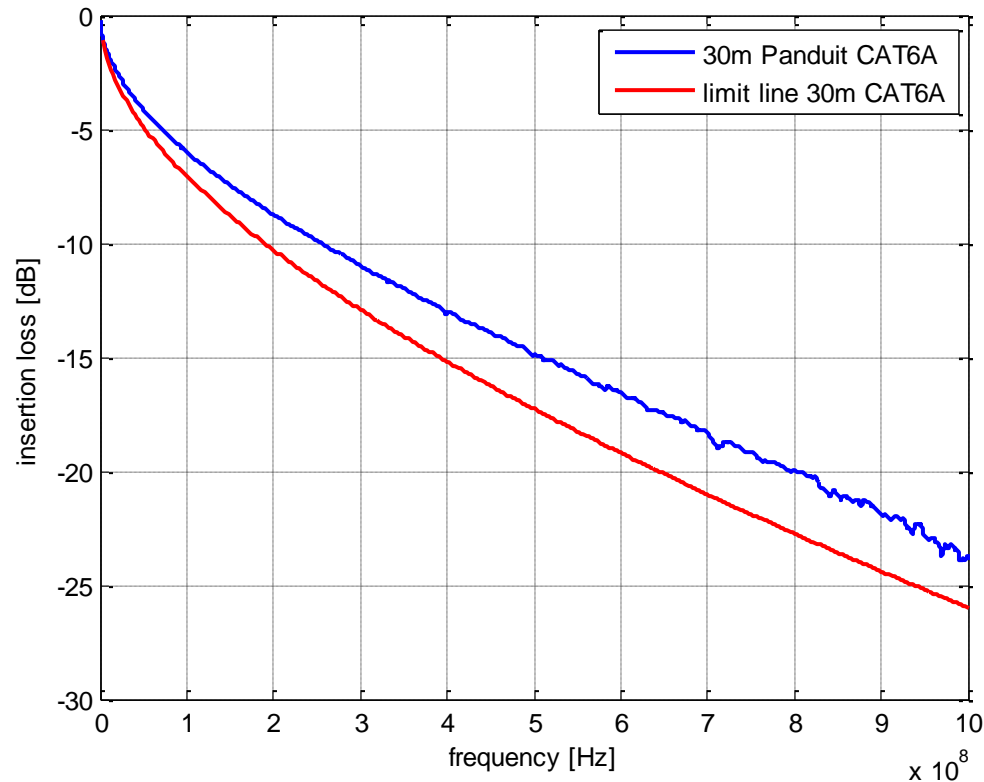
- **30m CAT6A support**

- AFE and digital precisions similar to 10GBASET



# Comparison of cable measurement to limit line

- Straight cable is about 2dB better than the limit line
- No notch observed above 500MHz.



## Proposed objectives for 25G

- Cat6A: up to 30m
- Cat7A: up to at least 30m
- Cat8: up to at least 30m