# 200 Gb/s 30m over OM4 Objective

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# Supporters

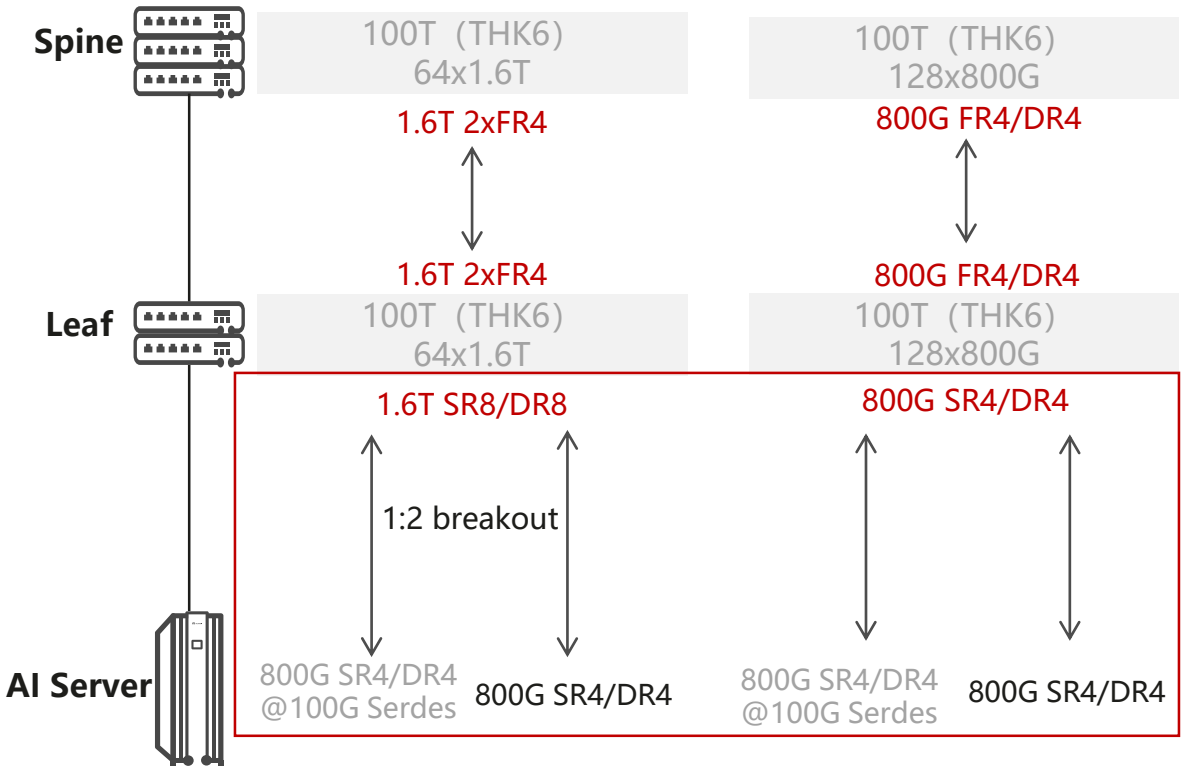
# Overview

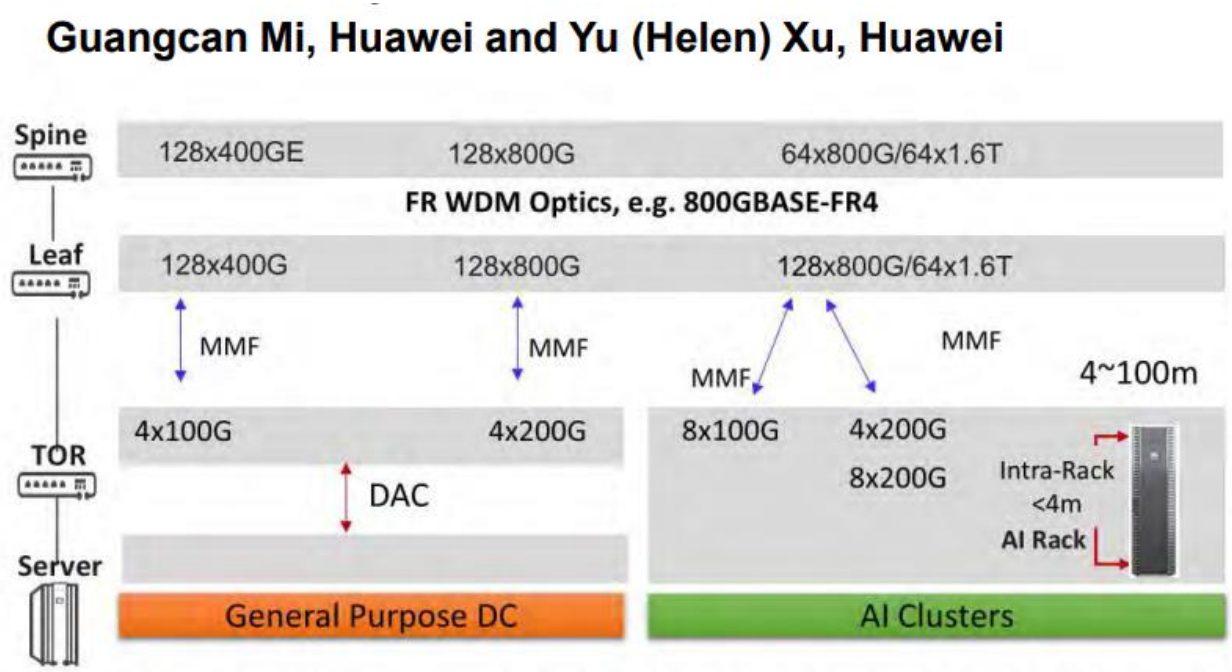
- Contribution in support of:
  - Objective(s) for 200 Gb/s operation over 30 m OM4
  - CSD:
    - Broad Market Potential
    - Technical Feasibility
    - Economic Feasibility

# 200 Gb/s/Lane application scenarios

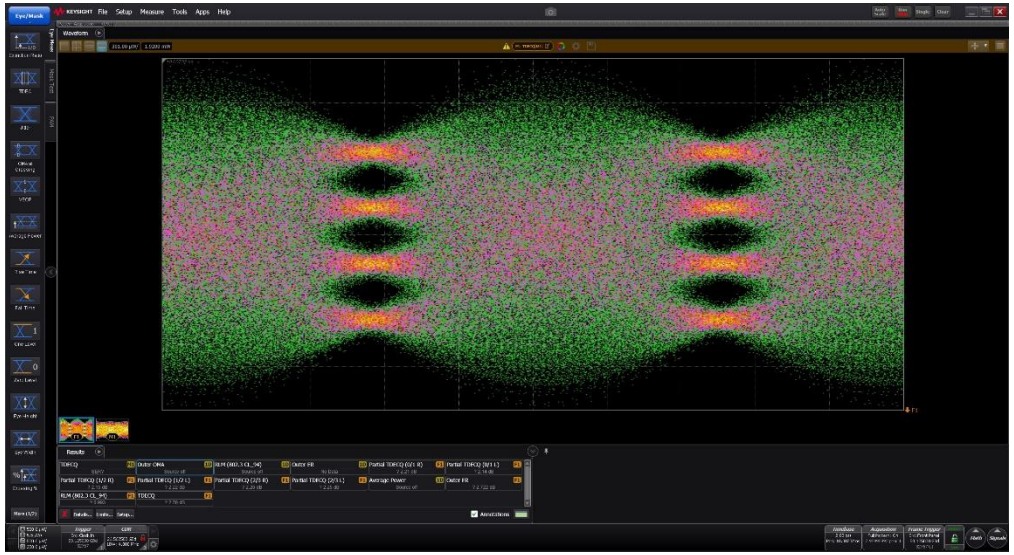
The network architecture of general-purpose DC and AI clusters will gradually upgrade to 1.6 Tb/s.

VCSEL are an excellent choice for SR due to low cost and low power consumption characteristics.

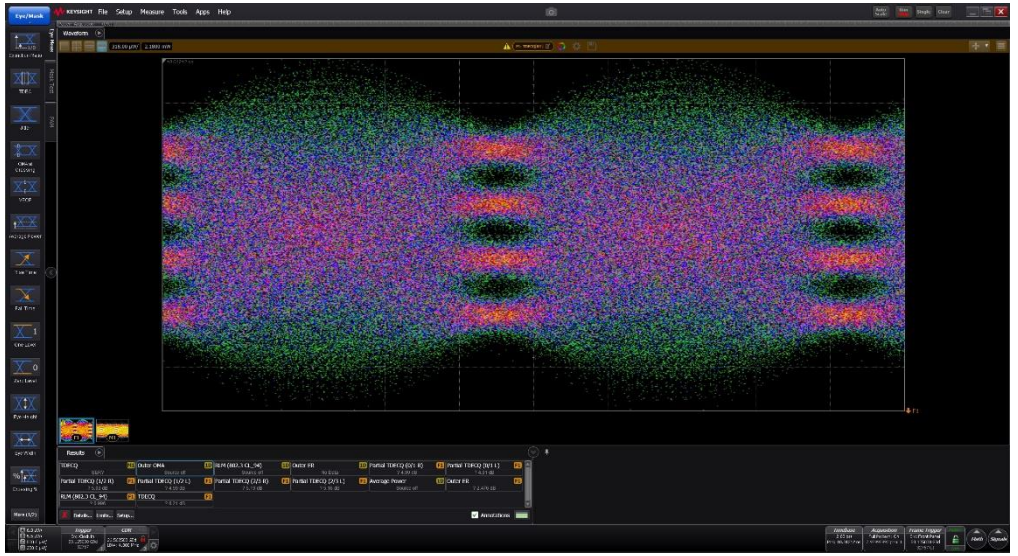


# VCSEL Transmission @200 Gb/s over 30m



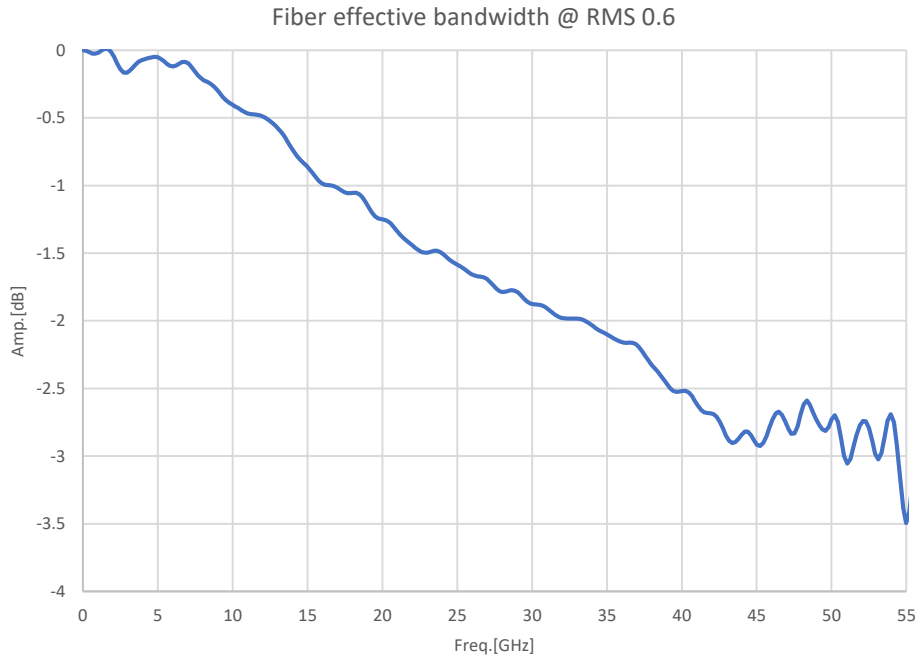
Back-to-Back (~TP2)



Optical eye diagram after 30m fiber transmission

- After 30m of OM4 fiber transmission, we obtained a relatively clear eye diagram.
- There are several ways to further improve the system performance
  - ✓ Optimize TX, tighten the RMS of VCSEL... Those are early results.

# OM4 Fiber effective bandwidth




- We tested one 30m OM4 fiber, the effective bandwidth is 55 GHz, which is 0.53x of Nyquist frequency.
- By tightening RMS of VCSEL, the EMB of the MMF can be further increased.

# Summary

1- Broad application for MMF links in AI clusters and in datacenters
2- OM4 Fiber has adequate bandwidth to support 30m of transmission at 200 Gb/s
3- VCSEL technology at 200 Gb/s is mature and make the links possible

Recommendation is for Objectives:

- Define a physical layer specification that supports 200 Gb/s operation over 1 pair of MMF with lengths up to at least 30 m
- Define a physical layer specification that supports 400 Gb/s operation over 2 pairs of MMF with lengths up to at least 30 m
- Define a physical layer specification that supports 800 Gb/s operation over 4 pairs of MMF with lengths up to at least 30 m
- Define a physical layer specification that supports 1.6 Tb/s operation over 8 pairs of MMF with lengths up to at least 30 m