

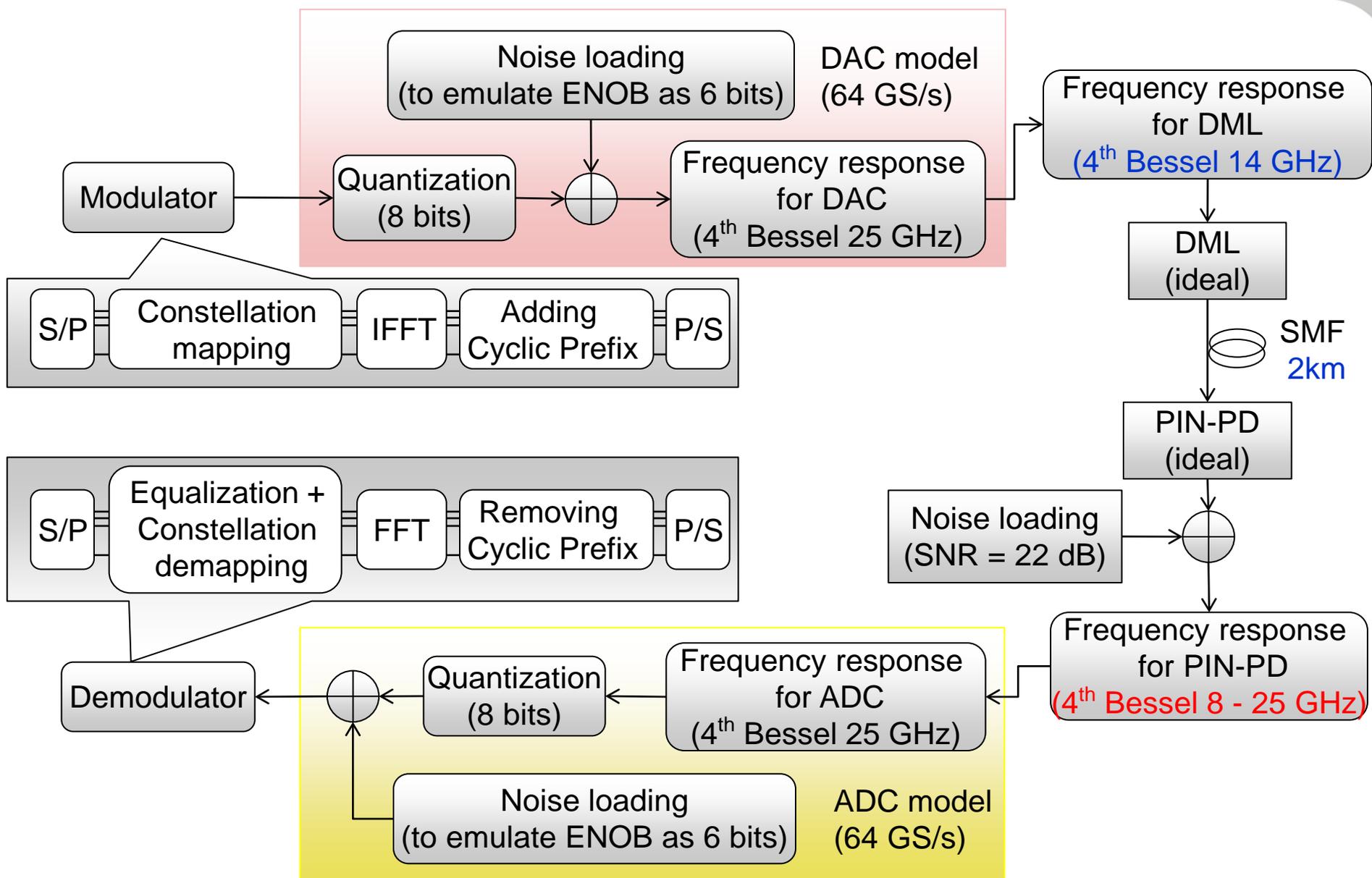
Basic Study on Receiver Bandwidth Requirement for Discrete Multi-tone Modulation

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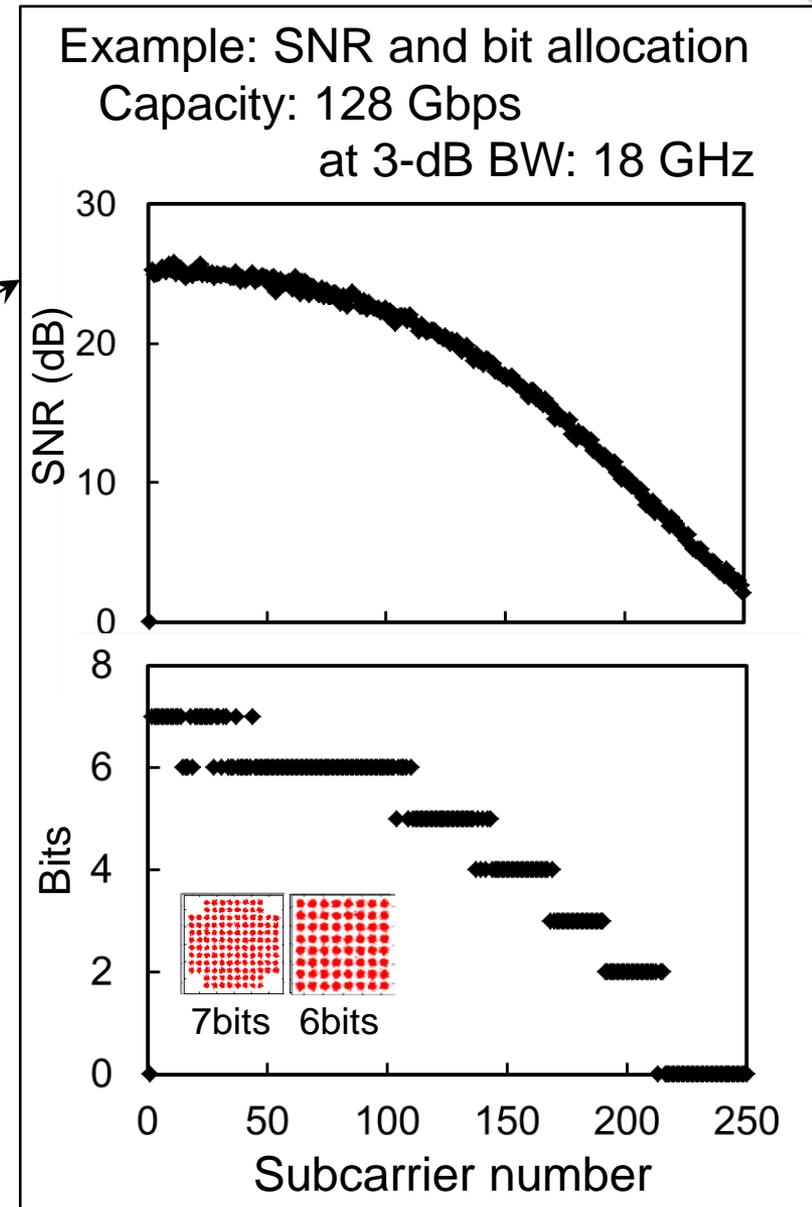
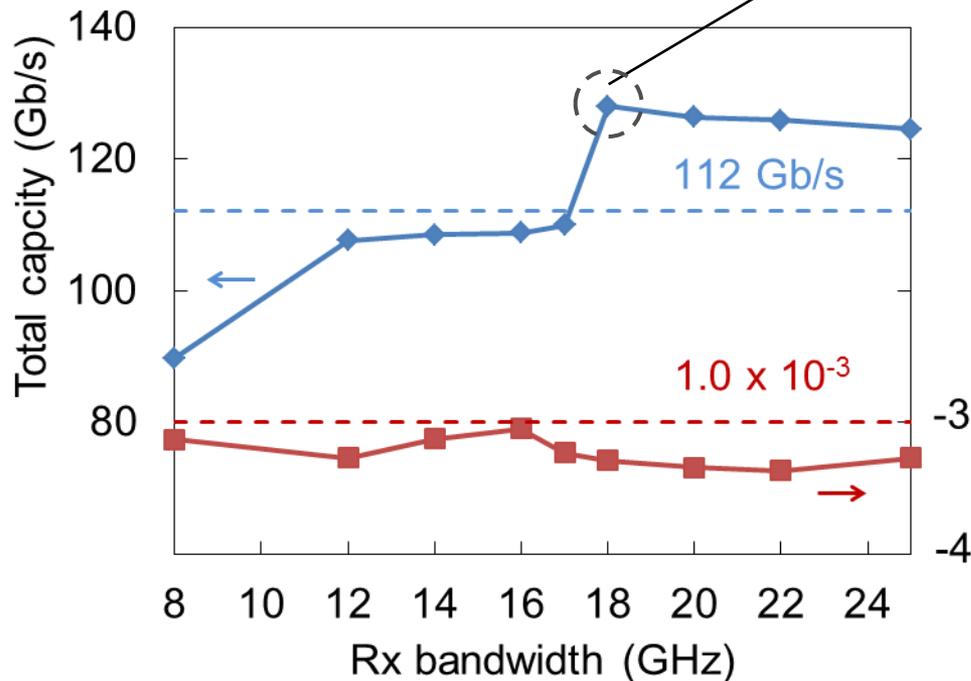
Simulation Platform



Bandwidth Requirement for Receiver Devices

■ Simulation condition for DMT

- ✓ Subcarrier(SC) number: 256
- ✓ Baud rate per SC: about 125 MHz
- ✓ Cyclic prefix: 16
- ✓ Target BER: 1×10^{-3}



Discussion for Device Candidates

- Receiver (ROSA) bandwidth requirement
 - Tx bandwidth is assumed as 14 GHz
 - Bandwidth requirement of receiver devices is around 18 GHz
 - Devices used in modules for 100GbE-LR4 might be suitable
 - 25-Gbps class ROSA: 25-Gbps class PD
 - Limiting amplifier has to be changed to linear amplifier

Summary

- Basic simulation for optical 100GbE DMT
 - Rx bandwidth requirement: around 18 GHz
- Discussion for device candidates
 - Receiver: 25-Gbps class PD
 - Amplifiers in Tx and Rx are needed to have linear operation.

Thank you