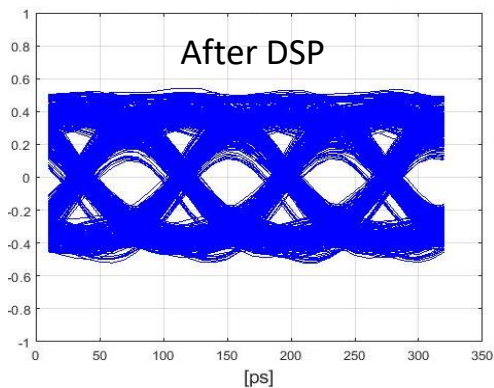
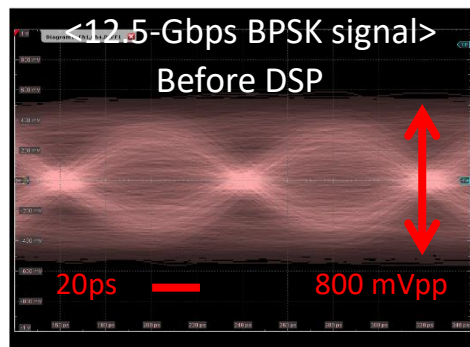


# Previous and Future

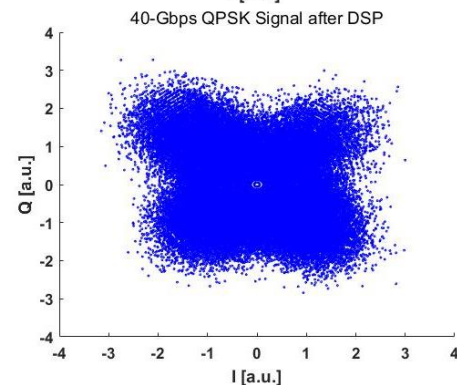
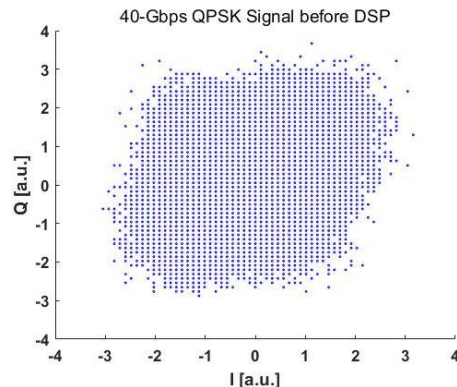
2019-2

## Si ring BPSK modulator



2020-1

## Si ring QPSK modulator

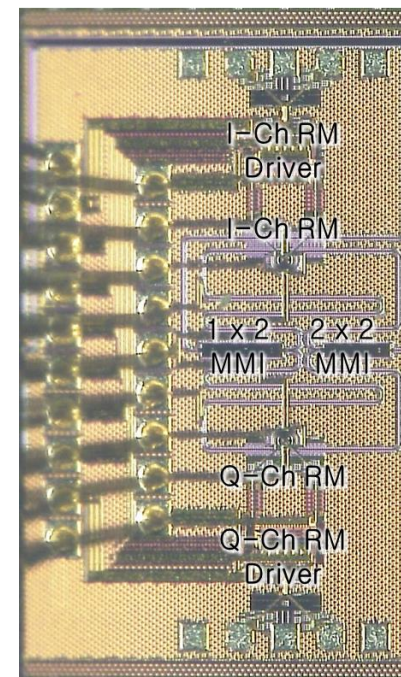


Low SNR, broad linewidth limit  
→ Narrow linewidth TLS, OBPF

2020-2

## Monolithic Si Ring QPSK Transmitter

<Chip Micro-Photograph>



To be measured

# Previous and Future

## ● 2020-1

- 연구재단 중견연구 시작 (초고속 저전력 실리콘 광 QPSK 변조기)
- Fab: IHP Cu-BEOL EPIC process
- Measurement: Gwangju ETRI (PAM4 Tx), QPSK (photonic only & EPIC Tx)
- Research: digital signal processing, dual-ring QPSK modulators, imec process setup
- Etc: RTO, narrow linewidth TLS, optical tunable BPF

## ● 2020-2

- Fab: imec iSiPP50G for dual-ring QPSK modulators
- Measurement: QPSK (with *new equipment*)
- Research: optimization of dual-ring PSK modulators

## ● Fabrication plans

- IHP: 1 EPIC process for modified design of monolithic Si ring QPSK Tx
- imec: 3 PIC process for Si dual-ring QPSK modulators