Point-to-Point Optical Transceiver
Low Power Point-to-Point Optical Transceiver Design

CHALLENGE AND BREAKTHROUGHS

• Transceiver responsible for 25% of total power in point-to-point links in a point-to-point access network

• Conventional optical transceiver is designed with limited consideration for energy-efficiency

• Operating continuously with high optical power

Energy Efficient Redesign of Optical Transceiver for Access and In-Home Applications
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KEY ACCOMPLISHMENT AND RESULTS

• Innovative circuit design
• Increase power conversion efficiency for up to 1Gb/s
• Implement “turn-on-as-you-go” feature of functional blocks based on link condition
• Tight hardware integration
• Adaptive power control algorithm
• Enable “power-on-demand” feature
• Dynamic optical power according to link loss

38x Power Efficiency Improvement Compared to Commercial Optical Transceiver
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DEMO DESCRIPTION

End to End System Demo with Custom-Built ASIC & Adaptive Power Control Algorithm