

低功率雷射二極體驅動電路之設計

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摘要

本論文提出兩個低功率消耗之雷射二極體驅動電路（電路一與電路二），並使用DC coupling與AC coupling兩種介面電路來連接驅動電路與雷射二極體。使用TSMC 0.35 m 1P4M之製程參數來模擬電路，模擬的Data rate是在1.25Gbps的環境下執行。對於電路一，不論使用DC coupling或AC coupling介面，皆能工作在1.25Gbps；對於電路二，使用DC coupling介面時，會因為Headroom不足的問題而導致無法工作在1.25Gbps的要求。唯有使用AC coupling介面時，才能工作在1.25Gbps並正確地將訊號輸出，而且消耗功率也比較小。

關鍵詞：雷射二極體驅動電路；低功率；光纖通訊

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