

Performance analysis in multi-channels ellipsoid structure wireless optical communications

ABSTRACT

Wireless optical is categorized as a last mile solution for the sake of complementing the Gigabits network solution. Recently, multi-channels wireless optical (WO) has been introduced to increase the coverage and the link range up to kilometers and reduce other possible losses. This paper proposed a multi-channels ellipsoid structure by analyzing a transmission distance by incorporating the number of aligned transceiver. The performance of conventional single channel and multi-channels WO are also compared and the analysis showed that the WO system with increment of number of transceiver pairs (number of channels) is performing better, having low geometrical path loss, higher received power and link margin.

Keyword: Wireless optical; Multi-channels; Ellipsoid structure; Last mile; Line-of-sight