

Abstracts

Close-In Carrier Phase Noise of Laser with Coherent Feedback

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The residual phase noise at close-in carrier offset frequency is studied for optical links using a laser diode with an external optical feedback. The external cavity is designed to enhance the fourth harmonic of a reference signal while maintaining a high dynamic range for data signals. FM noise degradation of the modulating signal was measured to be insignificantly higher than intuitively expected $20\log(N)$. Therefore, the residual phase noise is measured to quantify the noise floor level of the laser diodes.

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