Abstracts

Experimental Investigation of Fiber Optic Microwave Link with Monolithic Integrated Optoelectronic Mixing Receiver

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A fiber optic microwave link with a monolithic integrated optoelectronic mixing receiver (OEM) is demonstrated experimentally. The OEM consists of a GaAs metal semiconductor metal photodetector (MSM-PD) mixer and a MESFET transimpedance preamplifier. By modulating the bias of the MSM-PD with an electrical local oscillator, the information signals on an optical carrier are detected and converted to a desired electrical frequency simultaneously. Experimental results of a fiber optic microwave link with the OEM as a frequency upconverter are shown and the potential application of the OEM in fiber optic millimeter wave links is discussed.

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