Abstracts

An optical link for W-band transmit/receive applications

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This paper describes the design, fabrication, and evaluation of a low noise optical link for W-band transmit/receive applications. The optical link is at Ku-band with an input power of 5 mW, compatible with the direct frequency coherent synthesizer, followed with low-cost MMIC /spl times/6 for W-band output of 70 mW and /spl times/3 for the W-band /spl times/2 subharmonic mixer with an output power of 32 mW. A diode pumped YAG laser at 1319 nm is modulated with a Mach-Zehnder modulator at Ku band and detected with PIN diode photodetector. The measured Ku band phase noise floor of -145 dBc/Hz was obtained with a projected W-band phase noise of -129.4 dBc/Hz.

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