Abstracts

Locking Range of a Hybrid Mode-Locked Monolithic DBR Semiconductor Laser at Millimeter-Wave Frequencies

D. Novak, D.Y. Kim, H.-F. Liu, Z. Ahmed and Y. Ogawa. "Locking Range of a Hybrid Mode-Locked Monolithic DBR Semiconductor Laser at Millimeter-Wave Frequencies." 1996 Microwave and Guided Wave Letters 6.9 (Sep. 1996 [MGWL]): 320-322.

We present the first investigation of the detuning characteristics at 33 GHz of a hybrid mode-locked monolithic distributed Bragg reflector semiconductor laser. Hybrid mode-locking is achieved by applying a radio-frequency (rf) signal, at a frequency corresponding to the fundamental laser repetition frequency, to the saturable absorber of the passively mode-locked laser. Measurements show a 3-dB locking range greater than 40 MHz with an applied external rf signal power of 0 dBm. At this power level, the laser beat signal exhibited phase-noise less than -78 dBc/Hz and -93 dBc/Hz at 10 kHz and 5 MHz offsets, respectively.

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