

Variable gain-flattened L-band Erbium-doped fiber amplifier.

ABSTRACT

This is a study on the design of variable gain-flattened erbium-doped fiber amplifier operating in L-band transmission window. Four amplifiers divided into five stages became the basis of the design with distributed pumping configuration. A dispersion compensating module was incorporated into the architecture as a way to combat dispersion. The amplifier was able to generate variable gain from 15 up to 30 dB under different input signal powers with a maximum output power of 23 dBm. Excellent gain flatness averaging around 0.8 dB was accomplished while four-wave mixing effect was significantly reduced.

Keyword: Gain flatness; Input signal; Maximum output power; Pumping configurations; Transmission window; Variable gain.