

Design configuration of encoder and decoder modules for modified double weight (MDW) code spectral amplitude coding (SAC) optical code division multiple access (OCDMA) based on fiber Bragg gratings

ABSTRACT

In this work, we are proposing the serial and parallel configurations of encoder and decoder modules to encode and decode a new developed spectral amplitude coding (SAC) known as modified double weight (MDW) code for optical code division multiple access (OCDMA) system. This coding scheme is designed in a way to decrease the number of FBGs used in the encoder and decoder modules and to maintain the cross-correlation parameter to 1.

Keyword: Fiber Bragg grating; AND-subtraction scheme; Modified double weight code; Optical code division multiple access; Spectral amplitude coding