Title (en)

OPTICAL CDMA USING A CASCADED MASK STRUCTURE

Title (de)

OPTISCHES CDMA MIT KASKADIERTER MASKENSTRUKTUR

Title (fr)

AMCR OPTIQUE RECOURANT A UNE STRUCTURE DE MASQUAGE EN CASCADE

Publication

EP 1097536 A1 20010509 (EN)

Application

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Priority

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Abstract (en)

[origin: WO0076102A1] Optical CDMA transmitters and receivers include a spatial modulator using a fiber grating filter device encoded with CDMA code defined by the presence or absence of gratings at defined frequency positions. The presence of a fiber grating filter spanning a range near a particular chip frequency defines a "bit 0" chip and the absence of a fiber grating filter at another chip frequency designates the "bit 1" chip. The combination of gratings selectively provided over the sequence of chip positions along the fiber defines the CDMA code. This fiber grating filter device can be viewed as a cascade of many band-stop grating filters each corresponding to the CDMA code bit in the spectral domain. Consequently, a CDMA transmitter includes two components, a data modulator that modulates a broadband optical source, e.g., an erbidium doped fiber source (EDFS) or a super luminescent diode (SLD), and a fiber grating filter device to selectively pass and block portions of the spectrum of the broadband optical source. The optical CDMA-encoded output of this transmitter is then output to an optical network.

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