

Title (en)  
COMMUNICATION SYSTEM AND SPLIT-BAND AMPLIFYING APPARATUS USING A DEPRESSED-PROFILE FIBER AMPLIFIER

Title (de)  
KOMMUNIKATIONSSYSTEM UND BANDAUFGETEILTE VERSTÄRKUNGSVORRICHTUNG MIT EINEM FASERVERSTÄRKER MIT GEDRÜCKTEM PROFIL

Title (fr)  
SYSTEME DE COMMUNICATION ET APPAREIL D'AMPLIFICATION A BANDE DIVISEE METTANT EN OEUVRE UN AMPLIFICATEUR A FIBRE A PROFIL DEPRIME

Publication  
**EP 1488548 A4 20091111 (EN)**

Application  
**EP 03713955 A 20030307**

Priority

- US 0306967 W 20030307
- US 9530302 A 20020308
- US 18656102 A 20020628
- US 34696003 A 20030117

Abstract (en)  
[origin: WO03076979A2] An optical communication system (200) and a split-band amplifying apparatus (212) that amplifies optical signals whose short wavelength band includes at least a portion of the S-band and whose long wavelength band includes at least a portion of the C- and/or L-band. The amplifying apparatus (212) has a first (212A) and second section (212B) for respectively amplifying the long and short wavelength bands. The second section (212B) comprises a short-pass fiber (10) with a core (12) doped with an active material (18) such as Erbium. A pump source pumps the Erbium to a level of high relative inversion D such that the Erbium exhibits positive gains in the S-band and high gains in a long wavelength band longer than the S-band, i.e., in the C- and L-Bands. The core (12) is surrounded by a depressed cladding (14), which is surrounded by a secondary cladding (16). The core (12) has a core cross-section and a refractive index  $n_0$ , the depressed cladding (14) has a depressed cladding cross-section and a refractive index  $n_1$ , and the secondary cladding (16) has a secondary cladding cross-section and a refractive index  $n_2$ . The core cross-section, the depressed cladding cross-section and the refractive indices  $n_0$ ,  $n_1$ , and  $n_2$  are selected to obtain losses at least comparable to the high gains in the long wavelength band and losses substantially smaller than the positive gains in the S-band. The fiber amplifier functions as a pre-amplifier, a power-boosting amplifier or an in-line amplifier in the optical communication system.

IPC 8 full level  
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Citation (search report)

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- [PA] EP 1246320 A2 20021002 - NIPPON TELEGRAPH & TELEPHONE [JP]
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