

Title (en)

DEVICE AND METHOD FOR THE TRANSMISSION OF LIGHT SIGNALS IN LIGHT WAVEGUIDES

Title (de)

EINRICHTUNG UND VERFAHREN ZUR ÜBERTRAGUNG VON LICHTSIGNALEN IN LICHTWELLENLEITERN

Title (fr)

DISPOSITIF ET PROCEDE POUR TRANSMETTRE DES SIGNAUX LUMINEUX DANS DES GUIDES D'ONDES OPTIQUES

Publication

EP 1759473 A1 20070307 (DE)

Application

EP 04802937 A 20041209

Priority

- DE 2004002734 W 20041209
- DE 102004028653 A 20040615
- DE 102004030374 A 20040615

Abstract (en)

[origin: WO2005125059A1] The invention relates to a device and method for the transmission of light signals in light waveguides, comprising a laser diode as transmitter of transverse waves and a receiver, connected to the laser diode at least by means of the light waveguide, said transverse waves having an electric and magnetic field strength, a magnetic flux density, a line current density and an electric shift flux density D_{\parallel} and are run from the laser diode to the receiver in the form of plane waves. According to the invention, polarisation-dependent effects, such as variable polarisation, polarisation-dependent damping and polarisation mode dispersion are to be largely avoided. The above is achieved, whereby in the transmitter a short isotropic first light waveguide (4) is connected in a parallel plane after the laser diode (2), with a dielectric constant ϵ_1 , an absolute permeability μ_0 and a conductivity k_0 (relative to zero), said first light waveguide (4) having an inclined coupling at an adjustable angle F to a subsequent light waveguide (6, 6'), by means of a coupling point (5). On the receiver side, an analyser (7), for separation of the components of the electric shift flux density D_Z , transmitted parallel to the longitudinal axis (19) of the receiver (3), from the total field D_X, D_Y, D_Z of the transverse wave is provided, the direction of the parallel aligned components of the electric shift flux density D_{\parallel} corresponding to a particular coordinate in a fixed x,y,z- coordinate system (8).

IPC 8 full level

H04B 10/12 (2006.01); **G02B 6/12** (2006.01); **G02B 6/122** (2006.01); **G02B 6/27** (2006.01); **G02B 6/14** (2006.01)

CPC (source: EP)

B82Y 20/00 (2013.01); **G02B 6/12007** (2013.01); **G02B 6/1225** (2013.01); **G02B 6/14** (2013.01); **G02B 2006/12145** (2013.01)

Citation (search report)

See references of WO 2005125059A1

Designated contracting state (EPC)

CH LI

DOCDB simple family (publication)

WO 2005125059 A1 20051229; DE 112004002889 A5 20070524; DE 112004002889 B4 20100429; EP 1759473 A1 20070307

DOCDB simple family (application)

DE 2004002734 W 20041209; DE 112004002889 T 20041209; EP 04802937 A 20041209