

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局



(10) 国际公布号
WO 2023/279644 A1

(43) 国际公布日
2023 年 1 月 12 日 (12.01.2023)

- (51) 国际专利分类号:
H04B 10/40 (2013.01) *G02B 5/20* (2006.01)
G02B 6/42 (2006.01)
- (21) 国际申请号: PCT/CN2021/135605
- (22) 国际申请日: 2021 年 12 月 6 日 (06.12.2021)
- (25) 申请语言: 中文
- (26) 公布语言: 中文
- (30) 优先权:
202110756850.4 2021 年 7 月 5 日 (05.07.2021) CN
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(54) Title: SINGLE-FIBER BIDIRECTIONAL OPTICAL ASSEMBLY

(54) 发明名称: 单纤双向光组件

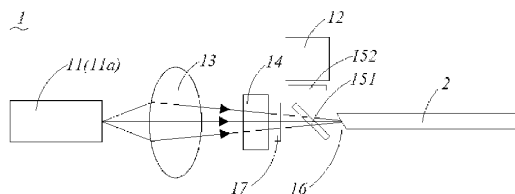


图 1

(57) Abstract: A single-fiber bidirectional optical assembly (1), comprising: an optical emitter (11), an optical receiver (12), a lens assembly (13), a first filter (151), a second filter (152), an optical power attenuator (17) and an optical fiber interface end (16). The optical fiber interface end (16) is used for being connected to an optical fiber (2), a downlink optical signal emitted by the optical emitter (11) is focused by the lens assembly (13) and is then emitted to the optical fiber (2) sequentially through the first filter (151) and the optical fiber interface end (16) and is transmitted by the optical fiber, and an uplink optical signal transmitted by the optical fiber (2) passes through the second filter (152) and is then received by the optical receiver (12). The optical power attenuator (17) is arranged between the optical emitter (11) and the optical fiber interface end (16), and the transmittance of the optical power attenuator (17) varies with the wavelength of the optical signal. Under a synergistic action of the optical power attenuator (17) and the optical emitter (11), the output optical power difference of the single-fiber bidirectional optical assembly (1) in high-temperature and low-temperature working environments is reduced, and in a passive external modulation manner, the optical power adjustment range is extended to the maximum under the condition that high-frequency bandwidth and other properties of the optical emitter (11) are not affected.

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RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG)。

根据细则4.17的声明:

- 关于发明人身份(细则4.17(i))
- 关于申请人有权申请并被授予专利(细则4.17(ii))
- 发明人资格(细则4.17(iv))

本国际公布:

- 包括国际检索报告(条约第21条(3))。

(57) 摘要: 一种单纤双向光组件(1)包括: 光发射器(11)、光接收器(12)、透镜组件(13)、第一滤波片(151)、第二滤波片(152)、光功率衰减器(17)和光纤接口端(16)。光纤接口端(16)用以连接光纤(2), 光发射器(11)发出的下行光信号经由透镜组件(13)聚焦后, 依次通过第一滤波片(151)和光纤接口端(16)射入光纤(2), 由光纤传输; 经由光纤(2)传输而至的上行光信号通过第二滤波片(152)后被光接收器(12)接收。光功率衰减器(17)设置于光发射器(11)和光纤接口端(16)之间, 光功率衰减器(17)的透过率随光信号波长变化而变化。通过光功率衰减器(17)与光发射器(11)产生协同作用, 减小了单纤双向光组件(1)在高温和低温工作环境下的出光功率差异, 通过无源外调制的方式, 在保证光发射器(11)高频带宽等性能不受影响的情况下, 最大限度地扩大光功率调整范围。