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(54) Title: SIGNAL TRANSMISSION METHOD AND APPARATUS

(54) 发明名称: 信号传输方法及装置

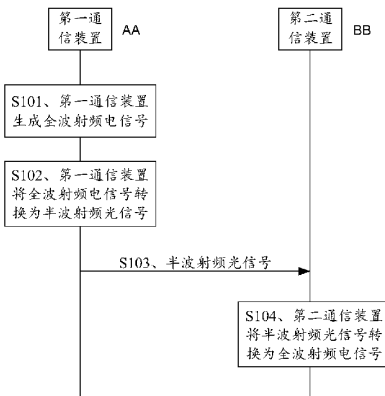


图 6

(57) Abstract: A signal transmission method and apparatus. The method comprises: a first communication apparatus generating a full-wave radio frequency electrical signal, and converting the full-wave radio-frequency electrical signal into a half-wave radio-frequency optical signal, wherein the half-wave radio-frequency optical signal is a radio-frequency optical signal that has a positive-half amplitude or a negative-half amplitude of the full-wave radio-frequency electrical signal; the first communication apparatus sending the half-wave radio-frequency optical signal; and a second communication apparatus receiving the half-wave radio-frequency optical signal, and converting the half-wave radio-frequency optical signal into the full-wave radio-frequency electrical signal. It can be seen that compared with a radio-frequency optical signal, which has the full amplitude of a full-wave radio-frequency electrical signal, a half-wave radio-frequency optical signal has lower average optical power, such that transported optical power between the second communication apparatus and the first communication apparatus is reduced, thereby facilitating the reduction in the power consumption of optical devices. When optical signals are transported between the second communication apparatus and the first communication apparatus by using optical fibers, the reduction in the transported optical power also facilitates the reduction in a nonlinear effect of optical fiber transport, thereby reducing signal distortions caused by the nonlinear effect of optical fiber transport.

- S101 The first communication apparatus generates a full-wave radio-frequency electrical signal
S102 The first communication apparatus converts the full-wave radio-frequency electrical signal into a half-wave radio-frequency optical signal
S103 Half-wave radio-frequency optical signal
S104 The second communication apparatus converts the half-wave radio-frequency optical signal into the full-wave radio-frequency electrical signal
AA First communication apparatus
BB Second communication apparatus

[见续页]

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本国际公布:
— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 一种信号传输方法及装置。该方法中, 第一通信装置生成全波射频电信号, 并将全波射频电信号转换为半波射频光信号, 该半波射频光信号是具有全波射频电信号的正半幅度或负半幅度的射频光信号; 第一通信装置发送半波射频光信号。第二通信装置接收半波射频光信号, 并将半波射频光信号转换为全波射频电信号。可见, 相较于具有全波射频电信号全部幅度的射频光信号, 半波射频光信号的平均光功率更低, 降低了第二通信装置和第一通信装置之间的传输光功率, 有利于降低光器件功耗。在第二通信装置和第一通信装置之间采用光纤传输光信号时, 传输光功率的降低还有利于降低光纤传输非线性效应, 从而减少光纤传输非线性效应引起的信号失真。