ABSTRACT

OPTICAL FIBRE COMMUNICATIONS SYSTEM

An optical fibre communications system comprises a head end connected to n customers by an optical fibre network. The head end comprises a transmitter unit (1, 5) and a receiver unit (2), and each of the customers has an optical network unit (9) comprising an optical receiver (10) and a transmitter unit (11). The head end transmitter and receiver units (1 and 2) are connected respectively to the receivers (10) and the transmitter units (11) of the customer optical network units (9) by at least one passive optical network (3, 4 or 3′). The head end transmitter unit is constituted by an optical transmitter (1) driven by a sub-carrier multiplexer (5), the sub-carrier multiplexer having a plurality of input sub-carriers at different frequencies. One of the sub-carriers carries interactive signals provided by a further transmitter unit (6). The remaining sub-carriers carry broadband service signals. Each customer transmitter unit (11) includes an optical transmitter and means for multiplexing interactive signals and control signals to drive said optical transmitter. The head end includes a system control unit (8) for controlling the transmission of broadband services by the head end transmitter unit (1, 5) in dependence upon the control signals received by the head end receiver unit (2) from the customer transmitter units (11).

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