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(54) **OPTICAL COMMUNICATION DEVICE THAT TRANSMITS WDM SIGNAL AND TRANSMISSION CONTROL METHOD**

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(57) **ABSTRACT**

An optical communication device processes a WDM signal in a WDM transmission system that uses a first wavelength band and a second wavelength band. A wavelength filter extracts a first WDM signal allocated in the first wavelength band and a second WDM signal allocated in the second wavelength band from a WDM signal received from first node. An optical signal branched from the first WDM signal is guided to an access network and a remaining optical signal that is not branched from the first WDM signal is guided to second node. An optical signal branched from the second WDM signal is guided to the access network via a wavelength converter and a remaining optical signal that is not branched from the second WDM signal is guided to the second node. The wavelength converter converts wavelengths from the second wavelength band to a third wave length band.