

Abstract

An optical system of a transmission device for quantum cryptograph includes a Faraday mirror and a phase modulator. The phase modulator has multiple refractivity, and it is inevitable to lose an extreme amount of input due to the configuration of the optical path. As a result, the S/N ratio is reduced, which makes an adjustment at start time difficult. A light pulse incident to the transmission device includes two light pulses of the TE polarization wave and the TM polarization wave for a phase modulator 8. The light pulse of the TE polarization wave is changed to the TM polarization wave by a Faraday mirror 7, and the TM polarization wave is changed to the TE polarization wave by rotating the polarization plate and reflecting by the Faraday mirror 7, and output from the transmission device. Two polarization beam splitters 5 and 6 are used so that the light pulse of the TM polarization wave should bypass the phase modulator 8. Only light pulse of the TE polarization wave is carried to the phase modulator 8.



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