Abstracts

Receive mode of optical signal processing multibeam array antennas

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A receive mode of the optical processing array antennas is presented. In this receive mode, the transmitting radio frequency (RF) signals generated by optical processor will be shifted as local oscillator (LO) signals, and the received RF beams will be discriminated in the downconverted intermediate frequency (IF) frequency domain by a mixer array between the optical processor and antenna elements. A proof-of-concept experiment for a two-beam and four-element array antenna is demonstrated, and the received IF power distributions for each beam have very good agreement with the calculated antenna patterns.

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