

Abstracts

Photonic Switched True Time Delay Beam Forming Network Integrated on Silica Waveguide Circuits

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This paper proposes an integrated variable true time delay (TTD) beam forming network (BFN) on the Silica-based optical waveguide circuits. This BFN has thermooptic switches and variable time delay lines. The variable TTD unit test was carried out under the 2.5GHz microwave frequency range. The experimental results show that the phase error, that is the difference from the designed value, is less than or equal to 0.6 degrees and the amplitude error is less than or equal to 0.5 dB. These results also show adequate performance for a variable delay line. This Silica-based beam former will be one of the excellent alternatives for the phased array antennas.

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