Abstracts

Quasi-optical transmit/receive front ends

Z. Popovic and A. Mortazawi. "Quasi-optical transmit/receive front ends." 1998 Transactions on Microwave Theory and Techniques 46.11 (Nov. 1998, Part II [T-MTT] (Special Issue on Innovative Integration Techniques for Microwave and Millimeter-Wave Circuits)): 1964-1975.

Quasi-optical (QO) active circuits have originally received interest for power generation by large-scale power combining of solid-state devices at microwave and millimeter-wave frequencies. Here, we present an overview of QO components developed with functionality in mind, with an emphasis on bidirectional amplifier arrays for transmit/receive (T/R) front ends. We discuss possible advantages of the QO architecture for communications and radar. The following three QO bidirectional arrays are presented: 1) a nine-element X-band patch antenna array with different polarizations in T/R modes; 2) a 24-element X-band slot lens array with switches for the T/R paths; and 3) a 22-element K/spl alpha/-band patch lens array using monolithic microwave integrated circuits (MMICs).

❑ Return to main document.