

# Abstracts

## Quasi-Optical Phase Modulators

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*M. Markovic, S. Hollung and Z.B. Popovic. "Quasi-Optical Phase Modulators." 1996 MTT-S International Microwave Symposium Digest 96.3 (1996 Vol. III [MWSYM]): 1247-1250.*

Three X-band quasi-optical transmission-type phase modulators are presented: a varactor loaded grid with 25° continuous phase shift; a p-i-n diode loaded grid with digital phase shifts of 0° and 90°; and a transistor antenna array with 0° and 180° phase states. All of the modulators operate in transmission mode and are suitable for cascading with other quasi-optical components. Relative amplitude and phase change of the transmission coefficient as a function of frequency is presented for the two digital modulators. Antenna patterns for the BPSK active antenna array modulator are also presented.

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