Abstracts

A Single Chip X-Band Phase Shifter with 6 Bit Uncorrected Phase Resolution and More Than 8 Bit Corrected Phase Resolution (1992 Vol. I [MWSYM])

T.C.B. Tieman, A.P. de Hek, F.L.M. van den Bogaart and W.M.A. van Hoek. "A Single Chip X-Band Phase Shifter with 6 Bit Uncorrected Phase Resolution and More Than 8 Bit Corrected Phase Resolution (1992 Vol. I [MWSYM])." 1992 MTT-S International Microwave Symposium Digest 92.1 (1992 Vol. I [MWSYM]): 171-174.

The design, fabrication, performance and production results of a GaAs monolithic phase shifter, based on a vector modulator principle, are described. The device exhibits a typical RMS phase error of about 3 degrees and an RMS amplitude error less than 0.30 dB across the frequency band from 7.0 - 10.5 GHz and over a linear controllable gain range of 15 dB. Typical insertion gain is 0 dB, input return losses are better than 15 dB and output return losses are better than 10 dB. The device is intended for application in a wide-band active phased-array antenna. The analogue control of the device enables the correction of the systematic phase errors and amplitude errors. Tests have demonstrated that through phase correction the RMS phase error is reduced to less than 0.7 degrees while the RMS amplitude error is still less than 0.30 dB.

❑ Return to main document.