Abstracts

Practical Aspects of Phase-Shifter and Driver Design for a Tactical Multifunction Phased-Array RADAR System

N.R. Landry, H.C. Goodrich, H.F. Inacker and L.J. Lavedan, Jr.. "Practical Aspects of Phase-Shifter and Driver Design for a Tactical Multifunction Phased-Array RADAR System." 1974 Transactions on Microwave Theory and Techniques 22.6 (Jun. 1974 [T-MTT] (Special Issue on Microwave Control Devices for Array Antenna Systems)): 617-625.

Three microwave garnet phase-shifter designs are used in the AEGIS weapons system. The microwave design is straight-forward except that the toroid assembly is potted with silicone rubber to increase its power-handling capability and the magnetizing wires are shielded with a spiral-wrapped wire to prevent the propagation of higher order modes. The driver circuit uses a new "flux-feedback" concept for improved accuracy and employs monolithic circuits, hybrid circuits, and discrete components. Mechanical and electrical design of the interfaces with mating components are important cost considerations and the chosen designs are described in detail. Several techniques for improving production yield are discussed and a table of production statistics is provided. Performance histograms and data averages as a function of time and operating frequency are also presented.

❑ Return to main document.