

1975 MICROWAVE APPLICATION AWARD

TO

Joseph F. White

For an outstanding application of microwave theory and techniques in the development of practical high-power PIN diode phase shifters utilized in various phased array radars.

Joseph F. White is the Technical Director of the Device Group at Microwave Associates, Burlington, Massachusetts. He is best known for inventing the high power periodically loaded line phase shifter, a low loss technique that enabled semiconductor diodes to steer phased array antennas with tens of kilowatts of power per element. He directed the refinement of this method and it was chosen for the steering element control in the U.S. Safeguard System, Missile Site Radar (MSR) and later for the Perimeter Acquisition Radar (PAR). He has also performed advanced developments with numerous other microwave semiconductor duplexers, the highest power (100 KW) switch and a temperature stabilized Gunn source for communication systems.

His doctoral thesis, completed in January, 1968, at Rensselaer Polytechnic Institute, described the first application of bulk semiconductor properties for phase shifting. In addition to numerous IEEE papers for Conferences, Proceedings and Transactions he has presented many lectures and talks both in the United States and Europe. These include the Chalmers University Phased Array Seminar, Gothenberg, Sweden and the Microwave Semiconductor Intensive Course given annually at the University of Michigan. He is a member of Eta Kappa Nu, Sigma Xi, and the IEEE and a Technical reviewer for the Microwave Journal and the MTT Transactions. Currently he is completing a book entitled "Introduction to Microwave Semiconductor Control".

