Abstracts

Development of a Pulse Compression Distance Measuring Equipment System Using Surface Acoustic Wave Devices (Short Papers)

D.W. Mellon and W.D. Daniels. "Development of a Pulse Compression Distance Measuring Equipment System Using Surface Acoustic Wave Devices (Short Papers)." 1974 Transactions on Microwave Theory and Techniques 22.12 (Dec. 1974, Part II [T-MTT] (1974 Symposium Issue)): 1308-1312.

Proposed C-band distance measuring equipment (DME) requires the use of triodes to generate high-power C-band transmitted pulses. The inherent short life of these triodes necessitates placing this equipment in physically accessible areas of the aircraft, often long distances from the antenna. Losses incurred in transmitting the C-band pulse to the antenna can increase the power requirements of the system. A pulse compression system has been designed to solve the cost of maintenance problems by using reliable low-power solid-state transmitters and also allowing the equipment to be installed close to the antenna. The use of a pulse compression system allows a reduction in peak transmit power by a factor equal to the time bandwidth (BW) product of the transmit pulse. Size, weight, and reliability are also improved by implementing surface wave devices (SWD's) in the pulse compression airborne interrogator.

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