

N-2

A SURVEY OF ADVANCED DEVELOPMENTS IN MILLIMETER WAVE SEEKER FRONT ENDS

T. T. FONG

TRW, REDONDO BEACH, CALIFORNIA

ABSTRACT

The maturity of millimeter wave solid state components, particularly in the developments based on integrated circuits, has significantly enhanced the implementations of small lightweight radars in missile guidance and helicopter and tank fire control applications. These systems have been developed over the past ten years based on inherent advantages of adverse weather and improved resolution of millimeter waves which provide a solution to the smoke and dust battlefield environments. In this paper, the recent advances in millimeter wave missile seeker front ends will be reviewed; developments in the 94 GHz region will be emphasized. Recent developments in millimeter wave components and their applications in form factored integrated front ends are discussed. Comparison of systems using several different waveforms are made in the context of performance, size, weight and cost.