

MILLIMETER WAVE AND LASER SATELLITE COMMUNICATION SYSTEM COMPARISON

F. E. Goodwin, R. T. Luke
Hughes Aircraft Company, Space and Communications Group
El Segundo, California U. S. A.



ABSTRACT

Satellite communications using laser technology has received support primarily due to its high data rate potentials. However, as laser technology progresses, the system advantages of reduced size and weight relative to millimeter wave systems are becoming more apparent and realizable. A detailed comparative study was undertaken to define the merits of both millimeter wave and laser technology for a satellite communication system operating at the relatively modest data rate of 100 megabits per second. The following paper defines the communication system parameters used in the study and summarizes the results obtained for the 100 Mbps system comparison.