

## ABSTRACT

The active circular sector microstrip antenna is introduced and characterized. The antenna integrates active devices and passive antenna elements on the same substrate. Semiconductor devices and printed circuit antennas are usually used as the active devices and passive antenna elements, respectively. They have the advantages of low cost, low profile, and lightweight. A class F GaAs FET power amplifier integrated with a circular sector antenna was presented in this thesis. To obtain the class F operation, the second and third harmonics are shaped through the input impedance of the antenna. In this case, higher resonances of the antenna are determined and eliminated by circular harmonics.

