

Narrative statement describing the research

- A) Program of research and experimentation -- Atheros Communications is developing wireless LANs in the 2.4GHz ISM band, and the newly allocated UNII bands at 5 GHz. These wireless LANs will be turned into products that will be sold for use in businesses and homes. The equipment will support a broad range of services including voice, video, and data. A similarly broad range of data rates from less than 1 Mb/s to over 100Mb/s will be used. The equipment will be constructed by Atheros from a mixture of standard components and custom integrated circuits designed by Atheros. A number of different communication techniques will be tested, including OFDM, CDMA, and direct sequence spread spectrum modulation formats.
- B) The objective of this experimentation is to develop and commercialize very high performance digital radio systems that can be built inexpensively for mass markets. This high performance must be maintained in a variety of environments including homes and large and small offices. In order to insure good performance in these environments, experimentation will be required in a large number of homes and offices in and about the city of Sunnyvale California.
- C) This work will result in very inexpensive radio implementations, appropriate for use by consumers, that provide very high performance in a wide variety of indoor physical environments. Current implementations of wireless LANs are too slow (limited to 11Mb/s) and too expensive (price to the consumer greater than \$100). This work will extend data rates to greater than 100Mb/s and reduce prices by at least a factor of two.