Required Modules

- **Internet Protocol (IP) Encoder**
  - Should be able to properly encode internet protocol packets as specified by the IPv4 specification in RFC 791.
  - This module’s functionality will be demonstrated by using a packet sniffer on a computer assuming functionality of the SLIP controller. If the SLIP controller is not functional, packets may be observed on a logic analyzer.

- **IP Decoder**
  - Should be able to properly decode internet protocol packets including combining fragmented packets.
  - This module’s functionality will be demonstrated by decoding IP packets transmitted from a computer assuming functionality of the SLIP controller. If the SLIP controller is not functional, packets generated by a computer may be stored in a ROM.

- **Serial Line Internet Protocol (SLIP) Controller**
  - Encapsulates IP packets for transmission over a serial line connection to a computer.
  - Interfaces with a computer using the RS232 port on the labkit.

- **Audio Codec**
  - Provides down-sampled audio data from AC97 to IP Encoder module and interpolates down-sampled audio data received from complimentary phone system.
  - Functionality will be demonstrated in a manner similar to that of Lab 3.

If Time Permits...

- **Advanced Audio Codec**
  - This module will compress audio data using standard voice compression techniques to increase the data flow over the limited bandwidth.

- **Phone Controls**
  - Allows for advanced phone options including source IP address specification, phone rings, ring-back tones, and other features present on standard phone systems.