The Interactive Video Data Service (IVDS) system allows consumers to browse the Internet, request information on products or services, make purchases, indicate preferences, and perform other interactive applications. To provide this service, the IVDS system has three subsystems: Consumer Control (CC), Cell Repeater (CR), and Host subsystem.

In the CC subsystem, an IVDS transceiver box is placed near a television set. Once the consumer sends a command to the transceiver box using a standard television/VCR/Cable remote control, the transceiver box receives information embedded in the television audio, and then transmits the information to the CR subsystem as a radio frequency (RF) spread spectrum message.

The CR subsystem decodes the spread spectrum message and forwards it to the Host subsystem for processing. Located in the CR subsystem, a custom designed circuit board, called the decoder board, uses surface mounted components to decode and packetize the spread spectrum message for transfer to the CR main processor.

This paper provides a functional description of the hardware components on the decoder board, and describes the hardware/software developed for interfacing the decoder board to the radio receiver and to the CR main processor. Hardware modifications were needed to correct timing problems between components. Software was developed to initialize the components for downconverting, despreading, and demodulating spread spectrum messages, and to packetize them for transfer to the CR main processor. This paper also discusses the tests used to verify both the performance of the decoder board software and the operation of the hardware components.