These considerations are briefly discussed below for a simple talk/listen GPIB system.

Function compatibility in the GPIB interface is a primary concern. The instruments to be placed on the GPIB may or may not require a secondary address; this decision is made by the instrument manufacturer. If the instrument of choice has a secondary address, the user must learn what it is and how to put that code into the bus. He must also confirm that his controller can send secondary addresses and must understand exactly how that is accomplished. The user should investigate the extended talk and extended listen capabilities of any GPIB instrument or controller he intends to procure. He should also compile a list of the desired GPIB functions and compare it with the list of functions provided by each instrument under consideration. No manufacturer is required to supply all of the possible GPIB-supported functions, so the user must know which are actually supported by each instrument.

A final compatibility consideration is the possibility of several controllers existing on the same bus. A system controller can transfer bus control to other controllers and then reestablish itself as the bus controller at a later time. The minimal GPIB controller function does not require one controller to allow another to function on the bus. As a result, some controllers (the HP-85, for example) can be configured as system controllers, while others (such as the Tektronix 4051) cannot.

Most manufacturers provide detailed manuals on the operation and maintenance of their equipment, but this practice does not always include the GPIB instructions for the GPIB instruments. The user should examine the GPIB information provided with an instrument before the instrument is purchased. If this material is unclear or unavailable, an alternate vendor should be considered. It is very difficult to implement a GPIB instrument if the manufacturer does not supply strong support documents.

The data collection rates accepted by the IEEE-488 standard are so wide that considerable attention must be paid to particular instrument values. The user must be familiar with each instrument's data rate in order to understand the code transfer characteristics of his GPIB system.

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