

Bus Interface Circuitry

The bus interface circuitry monitors the PCI or PXI bus. If the bus address matches the NI 6703/6704 device's address, the board is enabled and the corresponding register on the NI 6703/6704 is accessed.

Nonvolatile RAM/DAC Control

The NI 6703/6704 devices have one 16-bit DAC that is time-division multiplexed to create all the output channels. Each channel has a track-and-hold circuit to maintain the channel value between DAC updates. On the NI 6703, the DAC is multiplexed to create 16 voltage outputs and two calibration channels. On the NI 6704, the DAC is multiplexed to create 16 voltage outputs, 16 current outputs, and four calibration channels.

Data is stored in a nonvolatile RAM (nvRAM). The nvRAM/DAC control reads the DAC channel data stored in the nvRAM and updates the DAC periodically. The nvRAM/DAC control also controls the analog demultiplexing circuits to route the DAC output to the correct analog output channel. You can choose to save nvRAM data so that the current output values will become the power-on states. For information about how to set the power-on states, refer to the *Setting the Power-On States for Software-Timed Digital I/O Devices* topic in the *NI-DAQmx Help*.

Digital I/O Control

The NI 6703/6704 devices have eight digital I/O lines configured as one 8-bit port. You can configure each line independently as an input or output. The DIO lines have 16 mA of sink capability and 16 mA of source capability. All digital lines are TTL-compatible. At power on, all digital lines are configured as inputs.

Temperature Sensor

The onboard temperature sensor measures the air temperature flowing over the board. This sensor is positioned near the onboard precision voltage reference, which can be affected by extreme temperatures. This sensor has a serial digital interface.