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Find the *National Instruments PCI-6704* at our website: *Click HERE*

Software-Timed Analog Output – 16-Bit, 16 or 32 Channels

NI 670x

- 16 voltage and 16 current outputs
- 16-bit resolution
- 8 (5 V TTL/CMOS) lines
- User-defined power-up states
- Measurement services that simplify configuration and measurements

Operating Systems
- Windows 2000/NT/XP

Recommended Software
- LabVIEW
- LabWindows/CVI
- Measurement Studio

Other Compatible Software
- Visual Studio .NET
- Visual Basic, C/C++, and C#

Measurement Services Software (included)
- NI-DAQmx driver
- Measurement & Automation Explorer configuration utility

Calibration Certificate Available



Product	Bus	Analog Outputs	Resolution	Output Rate	Output Range	Digital I/O	Counter/Timers	Current Sinks	Triggers
NI 6703	PCI	16 voltage	16 bits	Static	± 10 V	8	–	–	–
NI 6704	PCI	16 voltage	16 bits	Static	±10 V,	8	–	3	–
	PXI	16 current			0 to 20 mA[1]				

[1]The current output varies when set between 0 and 100 µA.

Table 1. Channel, Speed, and Resolution Specifications

Overview

NI 670x devices are software-timed voltage and current output devices for PCI and PXI. With NI 6704 devices, you get 16 voltage outputs and 16 current outputs that you can use at the same time independently, as well as eight digital I/O (DIO) lines. You can independently set each output from ±10 V or 0 to 20 mA. The NI 6703 delivers 16 voltage outputs in addition to eight DIO lines.

Hardware

Voltage Output Channels

All 16 voltage outputs on the NI 6703 and NI 6704 are identical. You can set each channel for a bipolar voltage output of ±10 V. Each output is accurate to ±1 mV.

Current Output Channels (NI 6704 only)

All 16 current outputs are identical. You can set each channel to source current from 0 to 20 mA – it does not sink current. The channels source current without requiring an external excitation source. Each output is accurate to ±2 µA.

I/O Connector

The analog outputs are available at a 68-pin SCSI II shielded connector. VCH<0..15> are the voltage output channels. ICH<16..31> are the current output channels. Each channel is referenced to a ground line, AO GND<0...31>, which is shared between a voltage and current channel. A fused 5 VDC power signal from the PCI or PXI bus is available at the I/O connector as well.

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Software-Timed Analog Output – 16-Bit, 16 or 32 Channels

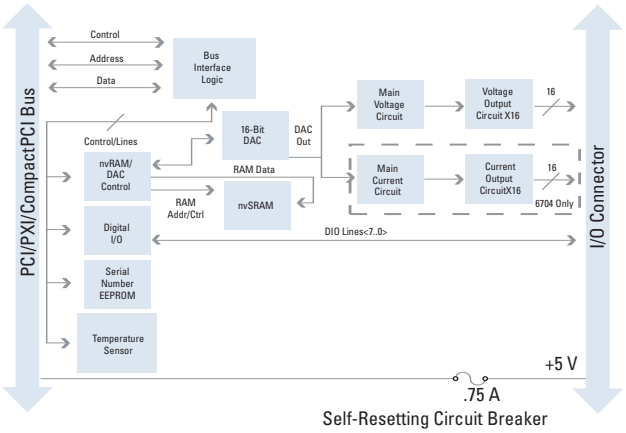


Figure 1. NI 670x Hardware Block Diagram

Ordering Information

PCI

NI PCI-6704 777306-01
NI PCI-6703 778316-01

PXI

NI PXI-6704 777796-01
Includes data acquisition driver software.

BUY NOW!

For complete product specifications, pricing, and accessory information, call (800) 813 3693 (U.S. only) or go to **ni.com/dataacquisition**.

Specifications

Analog Output

Output Characteristics

		Channels	
Device	**Voltage**	**Current**	**Total**
NI 6703	16	0	16
NI 6704	16	16	32

Resolution..... 16 bits, 1 in 65,536
Type of DAC..... Enhanced R-2R
Data transfers ..... Programmed I/O

Voltage Output

Ranges..... ±10.1 V
Output coupling..... DC
Power-on state ..... Independent, user-defined

Current Output (NI 6704 Only)

Range..... 0.0; 0.1 to 20.2 mA
Type ..... Source, does not require external excitation source
Output compliance ..... 0 to 10 V
Power-on state ..... Independent, user-defined

Digital I/O

Digital logic levels

Level	**Minimum**	**Maximum**
Input low voltage	0 V	0.8 V
Input high voltage	2 V	5 V
Output low voltage (I_{out} = 16 mA)	–	0.45 V
Output high voltage (I_{out} = 16 mA)	2.4 V	–

Number of channels..... 8 input/output
Compatibility ..... 5 V TTL/CMOS
Power-on state ..... Input (high impedance)

Bus Interface

PCI, PXI ..... Slave

Physical

Dimensions (not including connectors)
PCI..... 17.5 by 10.7 cm (6.9 by 4.2 in.)
PXI..... 16.0 by 10.0 cm (6.3 by 3.9 in.)
I/O connector..... 68-pin male SCSI II type

For more detailed specifications, please refer to the product manual.

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Software-Timed Analog Output Cables and Accessories

Analog Output Accessory Selection Guide

Model	Shielding	Connect to…	Cable	Accessory
NI 6703, NI 6704	Shielded	Screw terminals	SH68-68-D1	SCB-68
		Custom	SH68-68-D1	CA-1000
	Unshielded	Screw terminals	R6868	CB-68LP

Table 2. Recommended Accessories

I/O Connector Blocks

SCB-68 – Shielded I/O connector blocks giving you rugged, very low-noise signal termination. The SCB-68 also houses silk-screened component locations for easy addition of simple signal conditioning circuitry for your AO channels.

SCB-68 776844-01

Dimensions – 19.5 by 15.2 by 4.5 cm (7.7 by 6.0 by 1.8 in.)

CB-68LP, CB-68LPR – 68 screw terminals for easy connection of field signals to AO devices. They include one 68-pin male connector for direct connection to 68-pin cables. The connector blocks include standoffs for use on a desktop or for mounting in a custom panel. The CB-68LP has a vertical mounted 68-pin connector. The CB-68LPR has a right-angle mounted connector and can also be used with the CA-1000.

CB-68LP 777145-01

Dimensions – 14.35 by 10.74 cm (5.65 by 4.23 in.)

CB-68LPR.....777145-02

Dimensions – 7.62 by 16.19 cm (3.00 by 6.36 in.)

Shielded I/O Cables

SH68-68-D1 – Similar to the SH68-68-EP cable, but dedicated for use with NI 670x devices.

1 m 183432-01

2 m 183432-02

Ribbon I/O Cables

R6868 – 68-conductor flat ribbon cable terminated with two 68-pin connectors. Use this cable to connect the NI 670x, NI PCI-671x, NI PXI-671x, and NI 673x devices to low-cost 68-pin accessories.

1 m 182482-01



SCB-68



CA-1000



CB-68LP I/O and CB-68LPR

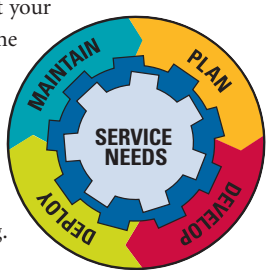


R6868 Ribbon Cable

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Hardware Services

NI Factory Installation Services

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