

PAKISTAN AERONAUTICAL COMPLEX, KAMRA
AVIONICS PRODUCTION FACTORY

TENDER NOTICE NO: APF/1920/42/LP/PC-31 DATED NOVEMBER, 17

1. SEALED TENDERS FROM PAC BOARD REGISTERED FIRMS FOR PURCHASE OF UNDERMENTIONED ITEM IS INVITED.

PART NO	NOUN	QTY	UI	SPECIFICATION
PCI-DIO-96	DIGITAL I/P O/P CARD	01	EA	ATTACHED

2.

TECHNICAL AND COMMERCIAL OFFERS OF ABOVE MENTIONED ITEM MAY BE SUBMITTED **IN SEPARATE SEALED ENVELOPES** TO **MD APF PAC KAMRA** ON “FOR” BASIS AND MAY BE DROPE IN **TENDER BOX NO. 01** PLACED ON MAIN GUARD ROOM APF BEFORE **1100 HRS ON 05 DECEMBER, 2017. VALIDITY PERIOD OF QUOTATION MUST BE 120 DAYS MINIMUM** AND WILL BE OPENED ON THE SAME DAY AT 1130 HRS IN THE OFFICE OF DIRECTOR LOGISTICS (S&A), APF, PAC KAMRA. GST MAY BE MENTIONED SEPARATELY AND EDD (EXPECTED DELIVERY DATE) MUST BE MARKED ON EACH QUOTATION. THIS FACTORY RESERVES THE RIGHT TO REJECT ANY QUOTATION ON TECHNICAL GROUNDS. THE ENVELOPE MUST CLEARLY MENTION “**TENDER INQUIRY REF NO**” TO **DIRECTOR LOGISTICS APF**. FURTHER SPECIFICATION / DETAILS IF REQUIRED MAY BE OBTAINED FROM CONTACT NO 051-9099-6277 OR ON FAX NO. 051-9225514 OR VISIT PAC WEBSITE **{www.pac.org.pk}**.

(TILAL MAZHAR)
FLIGHT LIEUTENANT
FOR MANAGING DIRECTOR
APF PAC KAMRA

Directorate of Logistic, APF, PAC Kamra



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SPECIFICATIONS

A

Specifications

This appendix lists the specifications for the PCI-DIO-96, PXI-6508, and PCI-6503. These specifications are typical at 25 °C unless otherwise noted.

Digital I/O

Number of channels

PCI-DIO-96 and PXI-6508..... 96 I/O

PCI-6503..... 24 I/O

Compatibility TTL

Power on state

PCI-DIO-96 Inputs (high-Z), pulled up through 100 k Ω

PXI-6508, PCI-6503 Inputs (high-Z), pulled up or down through 100 k Ω (jumper selectable)

Handshaking..... Input, output, or bidirectional

Data transfers Interrupts, programmed I/O

Digital Logic Levels

Input Signals

The maximum input logic high and output logic high voltages assume a V_{cc} supply voltage of 5.0 V. Given a V_{cc} supply voltage of 5.0 V, the absolute maximum voltage rating for each I/O line is -0.5 V to 5.5 V with respect to GND.

Appendix A Specifications

PCI-DIO-96/PXI-6508/PCI-6503 User Manual A-2 ni.com

Output Signals

Pin 49 (at +5 V)1.0 A max

Output current.....2.5 mA typ

Caution Drawing more than the typical 2.5 mA current (<2 k Ω \square load at 5 V output) can cause serious damage to the device 82C55 PPI. The 82C55 PPI is intended for use as a logic device, and should not be used as current driver for LEDs, SSRs, mechanical relays, and so on, which can have low impedance loads and/or require high current drive. If you require higher current drive, consider using the NI PCI/PXI-6509 5V/TTL 96-line Industrial DIO board with 24 mA current driver, using an NI PCI/PXI-651x high-current drive Industrial DIO board, or using external circuitry such as Darlington Arrays to increase the current drive of digital output lines. For more information about the breakdown levels of your device and for a link to the 82C55 data sheets, refer to ni.com/info and enter the info code 82c55.

Level Min Max

Input logic high voltage 2.2 V 5.3 V

Input logic low voltage -0.3 V 0.8 V



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Input high current
($V_{in} = 5\text{ V}$, resistors set to pull-up†)

— 10 □ A‡

Input high current
($V_{in} = 5\text{ V}$, resistors set to pull-down†)

— 75 □ A

Input logic low current
($V_{in} = 0\text{ V}$, resistors set to pull-up†)

— -75 □ A

Input logic low current
($V_{in} = 0\text{ V}$, resistors set to pull-down†)

— -10 □ A‡

† The PCI-DIO-96 bias resistors are always set to pull-up. On the PXI-6508 and PCI-6503, use jumper W1 to select pull-up or pull-down.

‡ Exception: Lines PC3 and PC0 are 20 □ A.

Level Min Max

Output logic high voltage ($I_{oh} = -2.5\text{ mA}$) 3.0 V 5.0 V

Output logic high voltage ($I_{oh} = -4\text{ mA}$) 2.7 V 5.0 V

Output logic low voltage ($I_{ol} = 2.5\text{ mA}$) 0 V 0.4 V

Output logic low voltage ($I_{ol} = 4\text{ mA}$) 0 V 0.5 V

Appendix A Specifications

© National Instruments Corporation A-3 PCI-DIO-96/PXI-6508/PCI-6503 User Manual

Transfer Rates

Max with NI-DAQ software 50 kbytes/s

Constant sustainable rate (typ) 1 to 10 kbytes/s

Transfer rates are a function of the speed with which your program reads data from or writes data to the board, and therefore vary with your system, software, and application. The following primary factors control your DIO board transfer rates:

- Computer system performance
- Programming environment (register-level programming or NI-DAQ)
- Programming language and code efficiency
- Execution mode (foreground or background, with background execution typically using interrupts)
- Other operations in progress
- Application

For example, you can obtain higher transfer rates in a handshaking or data-transfer application, requiring an average rate, than in a pattern generation, data acquisition, or waveform generation application, requiring a constant sustainable rate.

The maximum rate shown was obtained using a 233 MHz Pentium computer running Traditional NI-DAQ (Legacy) and LabWindows/CVI software, with interrupt-based execution, and with no other high-speed operations in progress.

Bus Interface

Type Slave

Power Requirement

Power consumption..... 400 mA at +5 VDC (□ □ 5%)

Power available at I/O connector +4.65 to +5.25 V fused at 1 A

Appendix A Specifications

PCI-DIO-96/PXI-6508/PCI-6503 User Manual A-4 ni.com

Physical

Dimensions

PCI-DIO-96 13.7 □ □ 10.7 cm (5.4 □ □ 4.2 in.)

PXI-6508 17.5 □ □ 10.7 cm (6.9 □ □ 4.2 in.)



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PCI-6503.....12.2 □ □ 9.5 cm (4.8 □ □ 3.7 in.)
 Weight
 PCI-DIO-96101 g (3.6 oz)
 PXI-6508148 g (5.2 oz)
 PCI-6503.....55 g (1.9 oz)
 I/O connector
 PCI-DIO-96 and PXI-6508.....100-pin female 0.050 series
 D-type
 PCI-6503.....50-pin male ribbon-cable
 connector

Environment

If you need to clean the module, use a soft, non-metallic brush.
 Operating temperature0 to 55 □ C
 Storage temperature-20 to 70 □ C
 Relative humidity5% to 90%, noncondensing
 Maximum altitude.....2,000 meters
 Pollution Degree2
 Indoor use only.



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