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NI Serial Legacy Hardware Specifications and Features Guide

This document lists safety and compliance information for NI Serial legacy hardware, as well as physical specifications, software features, and recommended operating conditions.

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NATIONAL INSTRUMENTS

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Supported Interfaces and Operating Systems

Table 1. Supported Interfaces and Operating Systems

Hardware Interface	Windows 7 32-Bit	Windows 7 64-Bit	Windows Vista 32-Bit	Windows Vista 64-Bit	Windows XP 32-Bit/ 2000	Windows 2003 Server R2 32-Bit	Windows 2008 Server R2 64-Bit	LabVIEW Real-Time
PCI	✓	✓	✓	✓	✓	✓	✓	✓
PXI	✓	✓	✓	✓	✓	✓	✓	✓

NI-Serial for Windows and LabVIEW Real-Time Supported Interfaces

Table 2. PCI Interfaces

PCI Interfaces	Standard	# Ports	Isolated	Max Baud (kbits/s)	Connector Type[1]	FIFO Size (Bytes)
PCI-232/2	RS-232	2	No	115.2	DB-9 male	64
PCI-232/4	RS-232	4	No	115.2	10P10C	64
PCI-232/8	RS-232	8	No	115.2	68-pin SCSI	64
PCI-232/16	RS-232	16	No	115.2	100-pin SCSI	64
PCI-485/2	RS-485/RS-422	2	No	460.8	DB-9 male	64
PCI-485/4	RS-485/RS-422	4	No	460.8	10P10C	64
PCI-485/8	RS-485/RS-422	8	No	460.8	68-pin SCSI	64
PCI-232i/2	RS-232	2	Yes	115.2	DB-9 male	64
PCI-232i/4	RS-232	4	Yes	115.2	10P10C	64
PCI-485i/2	RS-485/RS-422	2	Yes	460.8	DB-9 male	64
PCI-485i/4	RS-485/RS-422	4	Yes	460.8	10P10C	64

[1] Serial connector cables end in DB-9 male serial connectors.

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Table 3. PXI Interfaces

PXI Interfaces	Standard	# Ports	Isolated	Max Baud (kbits/s)	Connector Type[1]	FIFO Size (Bytes)
PXI-8420/2	RS-232	2	No	115.2	DB-9 male	64
PXI-8420/4	RS-232	4	No	115.2	10P10C	64
PXI-8420/8	RS-232	8	No	115.2	68-pin SCSI	64
PXI-8420/16	RS-232	16	No	115.2	100-pin SCSI	64
PXI-8421/2	RS-485/RS-422	2	No	460.8	DB-9 male	64
PXI-8421/4	RS-485/RS-422	4	No	460.8	10P10C	64
PXI-8421/8	RS-485/RS-422	8	No	460.8	68-pin SCSI	64
PXI-8422/2	RS-232	2	Yes	115.2	DB-9 male	64
PXI-8422/4	RS-232	4	Yes	115.2	10P10C	64
PXI-8423/2	RS-485/RS-422	2	Yes	460.8	DB-9 male	64
PXI-8423/4	RS-485/RS-422	4	Yes	460.8	10P10C	64

[1] Serial connector cables end in DB-9 male serial connectors.

National Instruments considers the following baud rates to be standard. NI serial hardware supports these rates up to the maximum rate specified.

300 19200

600 38400

1200 57600

2400 115200

4800 230400

9600 460800

14400

To set the baud rate, set the VISA Baud attribute or use the Windows SetCommState function and pass the actual value of the baud rate in the **BaudRate** field of the **DCB** structure.

Refer to *Hardware Specifications* for supported baud rates on each board.

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NI-Serial Hardware Operating System Support

Refer to the following table for operating system support for NI serial hardware.

Table 4. NI-Serial Hardware Operating System Support

Bus	Windows 7 32-Bit	Windows 7 64-Bit	Windows Vista 32-Bit	Windows Vista 64-Bit	Windows XP/2000	Windows 2003 Server R2 32-Bit	Windows 2008 Server R2 64-Bit	Linux x86	LabVIEW Real-Time	Mac OS X
PCI-232/485	●◆	●◆	●◆	●◆	●◆	●◆	●◆	●◆	●◆	
PXI-842*x*	●◆	●◆	●◆	●◆	●◆	●◆	●◆		●◆	

● NI-VISA support

◆ Native OS support (COM port with NI-Serial driver)

Serial Hardware Features

To determine which features your product supports, refer to the following table.

Table 5. Serial Hardware Features

Hardware	Adjustable FIFO Settings	Get Interface Type	RS-485 Transceiver Control	RS-485 Socketed Bias Resistors	RS-485 Programmatically Controlled Bias Resistors	RS-232 Transceiver State	RS-232 DTE/DCE Transceiver Control	Hardware Implemented Flow Control[2]		
								RTS/CTS	DTR/DSR	Xon/Xoff
PCI-232, PXI-8420, PXI-8422	✓	✓						✓		✓[1]
PCI-485 eight port, PXI-8421 eight port	✓	✓	✓					✓		✓[1]
All other PCI-485, PXI-8421, and PXI-8423	✓	✓	✓	✓				✓		✓[1]

[1] Not supported in LabVIEW RT.

[2] Requires NI-Serial 3.5 or higher, for both Windows or LabVIEW RT.

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Connectors and Pinouts

DB-9 Male

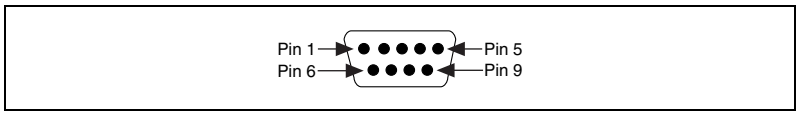


Figure 1. DB-9 Connector Pin Locations

Table 6. DB-9 Male Pin Descriptions

Pin	232 DTE	232 DCE	422/485
1	DCD[1]	DCD	GND
2	RXD	TXD	CTS+ (HSI+)
3	TXD	RXD	RTS+ (HSO+)
4	DTR[1]	DSR	RXD+
5	GND	GND	RXD–
6	DSR[1]	DTR	CTS– (HSI–)
7	RTS	CTS	RTS– (HSO–)
8	CTS	RTS	TXD+
9	RI[1]	RI	TXD–

[1] These signals are “No Connect” on the PCI-232I and PXI-8422 ports and ports 9–16 on legacy 16-port boards.

Note DCE mode supported on USB-232/2 and USB-232/4 only.

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DB-25 Male

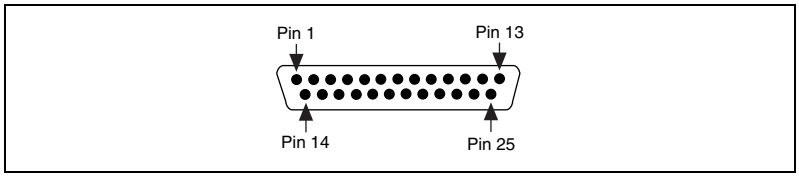


Figure 2. DB-25 Connector Pin Locations

Table 7. DB-25 Pin Descriptions

Pin	232	422/485
2	TXD	RTS+ (HSO+)
3	RXD	CTS+ (HSI+)
4	RTS	RTS– (HSO–)
5	CTS	TXD+
6	DSR[1]	CTS– (HSI–)
7	GND	RXD–
8	DCD[1]	GND
20	DTR[1]	RXD+
22	RI[1]	TXD–
[1] These signals are “No Connect” on the PCI-232I and PXI-8422 ports.		

Note Pins not listed in this table are “No Connect.”

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10-Position Modular Jack (10P10C)

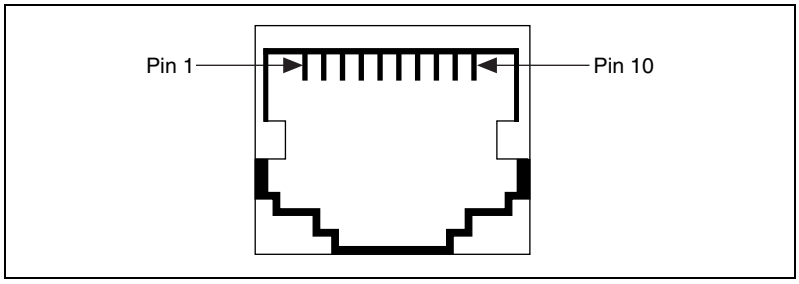


Figure 3. 10-Position Modular Jack Pin Locations

Table 8. 10-Position Modular Jack Pin Descriptions

Pin	232	422/485
1	No Connect	No Connect
2	RI[1]	TXD–
3	CTS	TXD+
4	RTS	RTS– (HSO–)
5	DSR[1]	CTS– (HSI–)
6	GND	RXD–
7	DTR[1]	RXD+
8	TXD	RTS+ (HSO+)
9	RXD	CTS+ (HSI+)
10	DCD[1]	GND

[1] These signals are “No Connect” on the PCI-232I and PXI-8422 ports.

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68-Pin Connector

The following figures and table give the 68-pin connector pin locations and descriptions. The SCSI 68-pin connector and VHDCI 68-pin connector have the same pinout.

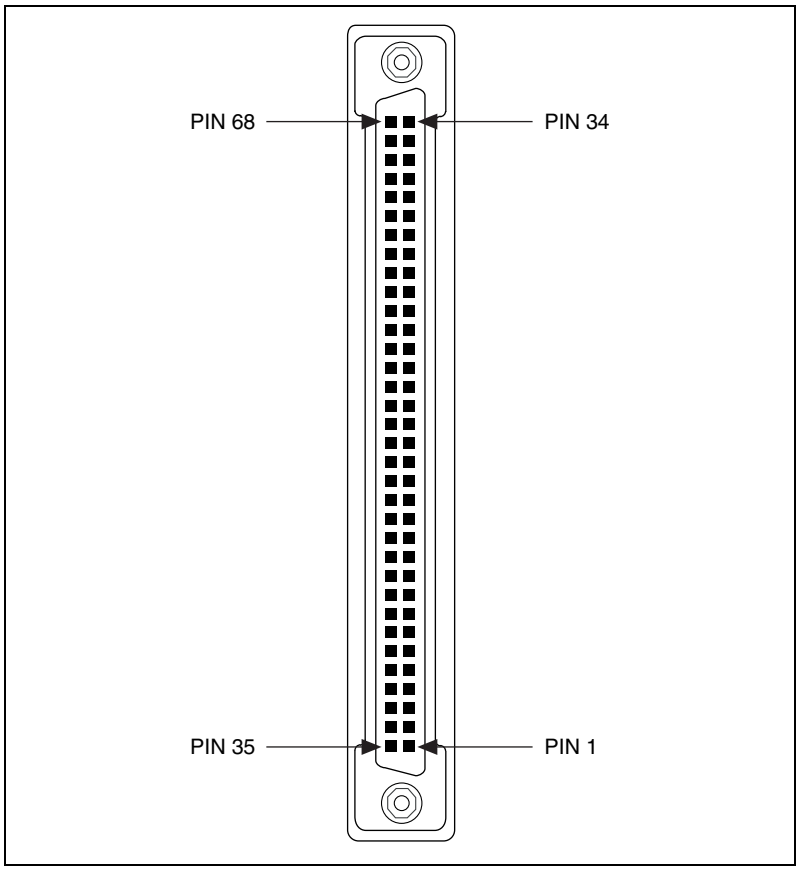


Figure 4. 68-Pin SCSI Connector Pin Locations

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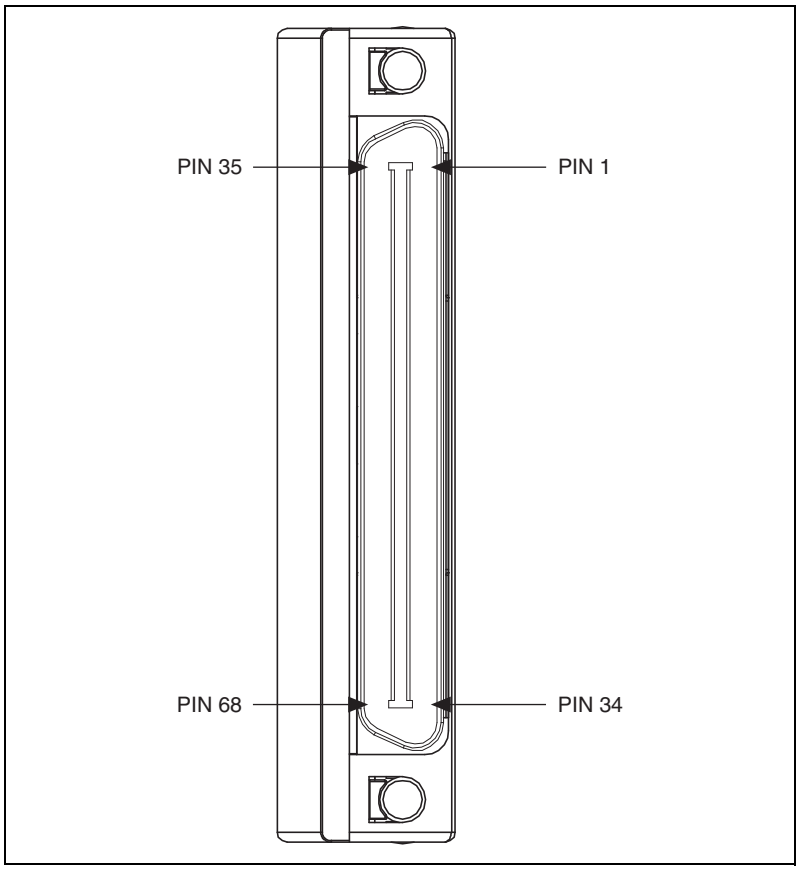


Figure 5. 68-Pin VHDCI Connector Pin Locations

Table 9. 68-Pin Connector Pin Descriptions

68-Pin Connector Port								485 Signal	485 D-Sub 9 Connector	232 Signal	232 D-Sub 9 Connector
1	2	3	4	5	6	7	8				
66	57	49	40	32	23	15	6	RXD–	5	DCD	1
68	59	51	42	34	25	17	8	CTS+	2	RXD	2
65	56	48	39	31	22	14	5	RTS+	3	TXD	3
64	55	47	38	30	21	13	4	RXD+	4	DTR	4
60	60	43	43	26	26	9	9	GND	1	GND	5
63	54	46	37	29	20	12	3	CTS–	6	DSR	6
62	53	45	36	28	19	11	2	RTS–	7	RTS	7
61	52	44	35	27	18	10	1	TXD+	8	CTS	8
67	58	50	41	33	24	16	7	TXD–	9	RI	9

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100-Pin Connector

The following figure and table give the pin locations and descriptions of the 100-pin connector.

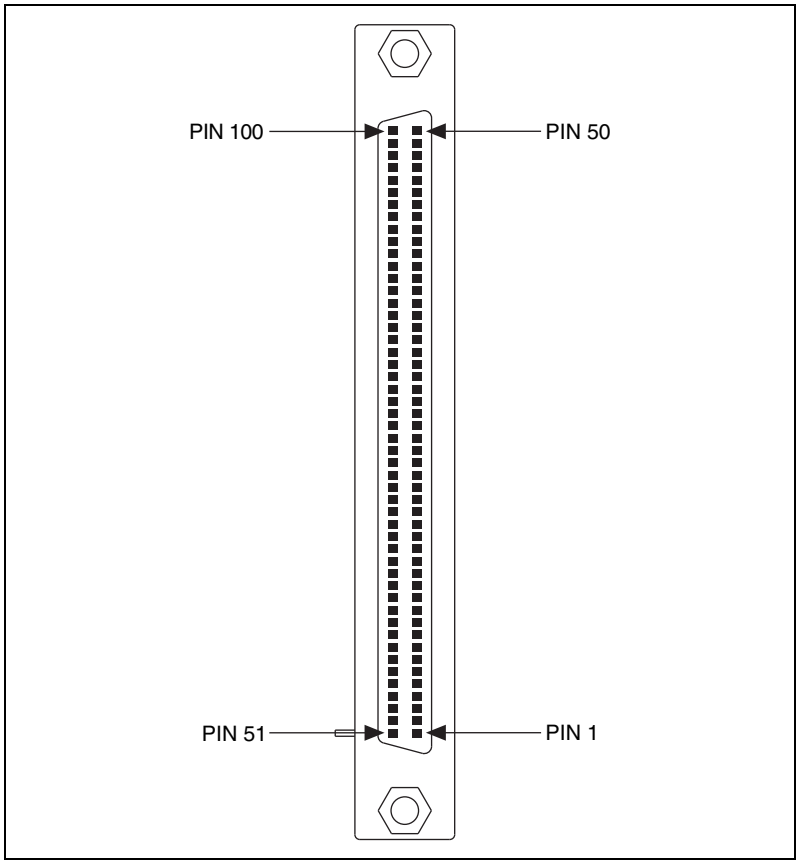


Figure 6. 100-Pin Connector Pin Locations

Table 10. 100-Pin Connector Pin Descriptions

100-Pin Connector Port																232 Signal	232 D-Sub 9 Connector
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
2	46	6	42	10	38	14	34	—	—	—	—	—	—	—	—	DCD[1]	1
3	47	7	43	11	39	15	35	18	32	20	30	22	28	24	26	RXD	2
4	48	8	44	12	40	16	36	19	33	21	31	23	29	25	27	TXD	3
5	49	9	45	13	41	17	37	—	—	—	—	—	—	—	—	DTR[1]	4
1	1	1	1	50	50	50	50	51	51	51	51	100	100	100	100	GND	5
52	96	56	92	60	88	64	84	—	—	—	—	—	—	—	—	DSR[1]	6

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Table 10. 100-Pin Connector Pin Descriptions (Continued)

100-Pin Connector Port																232 Signal	232 D-Sub 9 Connector
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
53	97	57	93	61	89	65	85	68	82	70	80	72	78	74	76	RTS	7
54	98	58	94	62	90	66	86	69	83	71	81	73	79	75	77	CTS	8
55	99	59	95	63	91	67	87	—	—	—	—	—	—	—	—	RI[1]	9

[1] These signals are not supported on ports 9–16 of the PCI-232/16 and PXI-8420/16 serial boards.

Cables and Accessories

The following serial cables and accessories are available from National Instruments. Refer to `ni.com` for more information.

Table 11. Serial Cables and Accessories

Part Number	Description
Adapter Cables (DB-9 and DB-25 connectors have jacksockets unless otherwise specified.)	
182844-01	DB-9 RS485 terminating pass-through connector 120 Ω
182845-01	Serial cable, 10P10C modular plug to DB-9 male, 1 m
182845-02	Serial cable, 10P10C modular plug to DB-9 male, 2 m
182845-03	Serial cable, 10P10C modular plug to DB-9 male, 3 m
182846-01	Serial cable, 10P10C modular plug to DB-25 male, 1 m
184428-01	Serial cable, 10P10C modular plug to DB-9 male, 1 m, isolated
199022-02	Serial cable, 10P10C to DB-9 male, jackscrews, 2 m
183905-01	Serial cable, PCMCIA-232/485 to DB-9 male, 1 m
183905-0R3	Serial cable, PCMCIA-232/485 to DB-9 male, 0.3 m
197545-01	Serial cable, 68-pin VHDCI to eight DB-9 male, RS-232, 1 m
197546-01	Serial cable, 68-pin VHDCI to eight DB-9 male, RS-485, 1 m
Extension and Null-Modem Cables (All cables have jackscrews.)	
182238-01	Serial cable, RS232 null modem, DB-9 female to DB-9 female, 1 m
182238-02	Serial cable, RS232 null modem, DB-9 female to DB-9 female, 2 m
182238-04	Serial cable, RS232 null modem, DB-9 female to DB-9 female, 4 m
183045-01	Serial cable, RS232 straight through, DB-9 female to DB-9 female, 1 m

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Table 11. Serial Cables and Accessories (Continued)

Part Number	Description
183045-02	Serial cable, RS232 straight through, DB-9 female to DB-9 female, 2 m
183045-04	Serial cable, RS232 straight through, DB-9 female to DB-9 female, 4 m
183283-01	Serial cable, RS485/RS422 null modem, DB-9 female to DB-9 female, 1 m
183283-02	Serial cable, RS485/RS422 null modem, DB-9 female to DB-9 female, 2 m
183283-04	Serial cable, RS485/RS422 null modem, DB-9 female to DB-9 female, 4 m

RS-232, RS-422, and RS-485

RS-232, RS-422, and RS-485 Features

Table 12. RS-232, RS-422, and RS-485 Features

Feature	RS-232	RS-422	RS-485
Type of transmission lines	Single ended	Differential	Differential
Maximum number of drivers	1	1	32
Maximum number of receivers	1	10	32
Maximum cable length	50 ft	4,000 ft	4,000 ft
Maximum CMV	± 25 V	±7 V	+12 to –7 V
Driver output[1]	5 to 25 V	2 to 6 V	1.5 to 6 V
Driver load	<3 kΩ	100 Ω	60 Ω

[1] Actual driver output varies depending on cable length and load.

RS-232 Loopback

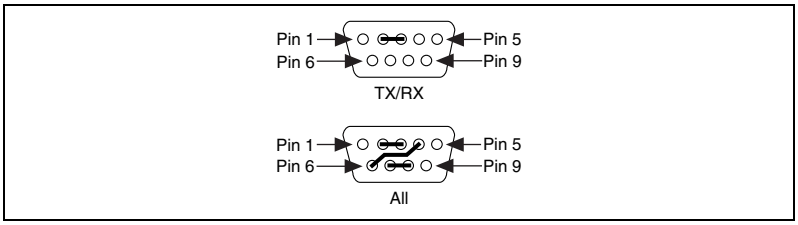


Figure 7. RS-232 Loopback

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RS-232 Signals

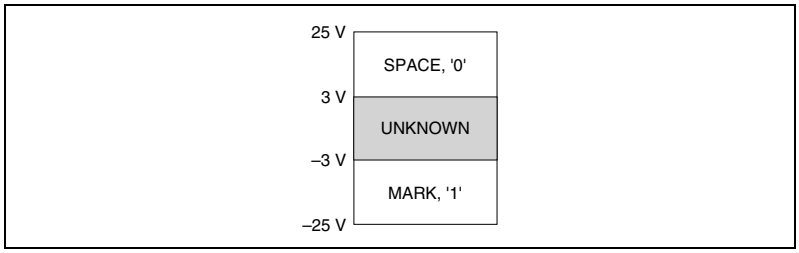


Figure 8. RS-232 Signals

RS-485/422 Loopback

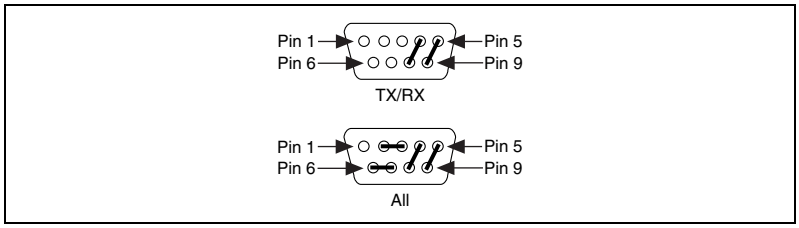


Figure 9. RS-485/422 Loopback

RS-485/422 Signals

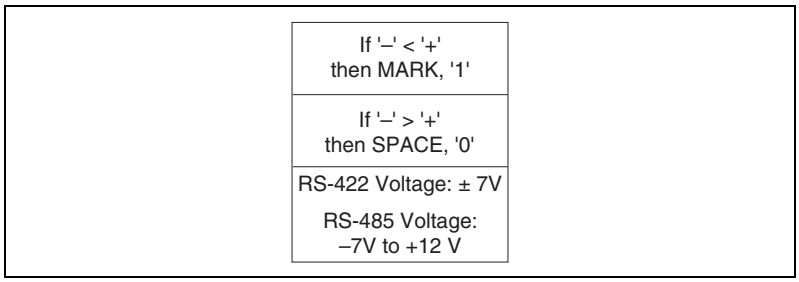


Figure 10. RS-485/422 Signals

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RS-485 Topologies

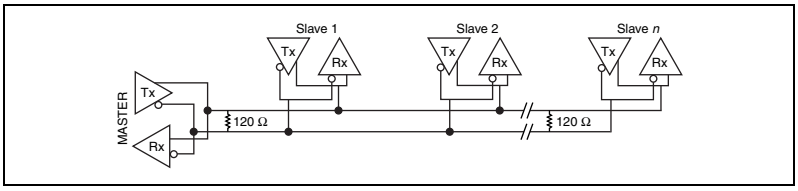


Figure 11. 2-Wire Multidrop Network Using Terminating Resistors

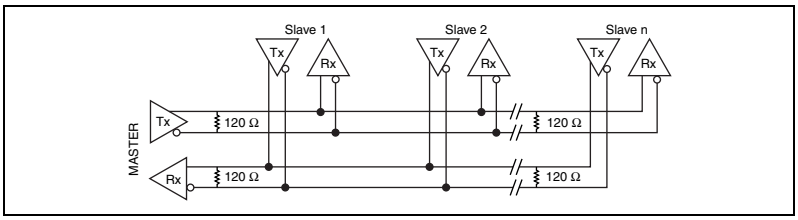


Figure 12. 4-Wire Full-Duplex Multidrop Network Using Terminating Resistors

RS-485 terminators are available at `ni.com/serial`.

RS-485 Transceiver Control

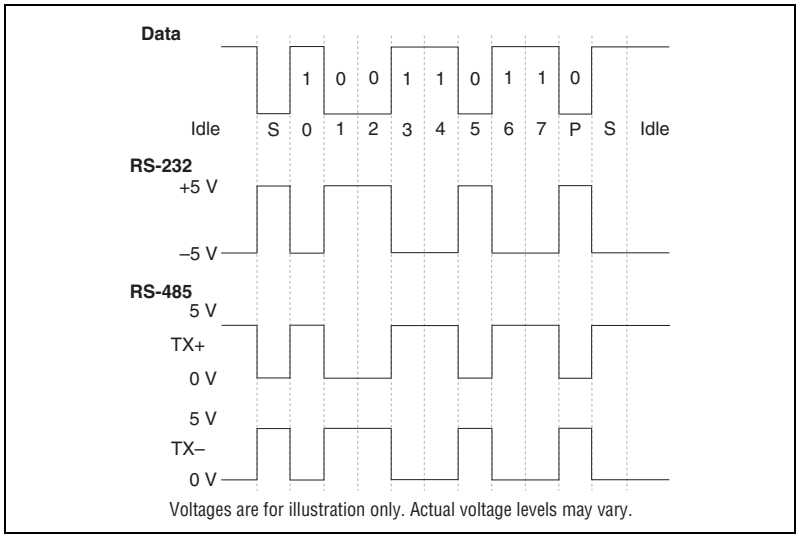
Enable	4-Wire	2-Wire		
		DTR/Echo	DTR/No Echo	Auto
TX	ON	DTR	DTR	TX
RX	ON	ON	$\overline{\text{DTR}}$	$\overline{\text{TX}}$

Transceiver control is available on all NI Serial RS-485 interface products.

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UART Data Frame Example

0xD9—8 Data Bits, Odd Parity, 1 Stop Bit



Voltages are for illustration only. Actual voltage levels may vary.

Hardware Specifications

Legacy PCI Serial Hardware

This section describes the characteristics of the legacy PCI serial hardware and the recommended operating conditions.

PCI-232/2 (RS-232) and PCI-485/2 (RS-485/422)

Dimensions..... 10.67 × 14.22 cm
(4.2 × 5.6 in.)

I/O connector..... DB-9 male connector

Power requirement (from PCI channel)

PCI-485/2

+5 VDC..... 350 mA typical
750 mA maximum

PCI-232/2

+5 VDC..... 50 mA typical
100 mA maximum

±12 VDC..... 20 mA typical
200 mA maximum

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Maximum baud rate

PCI-232/2 .....115.2 kbps

PCI-485/2 .....430.8 kbps

Boards support standard baud rates below the maximum.

PCI-232/4 (RS-232) and PCI-485/4 (RS-485/422)

Dimensions .....10.67 × 14.22 cm (4.2 × 5.6 in.)

I/O connector[1] .....10-position modular jack (10P10C)

Power requirement (from PCI channel)

PCI-485/4

+5 VDC .....700 mA typical
1.3 A maximum

PCI-232/4

+5 VDC .....70 mA typical
150 mA maximum

±12 VDC .....40 mA typical
400 mA maximum

Maximum baud rate

PCI-232/4 .....115.2 kbps

PCI-485/4 .....430.8 kbps

Boards support standard baud rates below the maximum.

PCI-232/8 (RS-232) and PCI-485/8 (RS-485/422)

Dimensions .....10.67 × 14.48 cm (4.2 × 5.7 in.)

I/O connector[2] .....68-pin, SCSI type connector

Power requirement (from PCI channel)

PCI-485/8

+5 VDC .....1.1 A typical
2.0 A maximum

---

[1] The four-port legacy PCI serial boards require a cable to convert the 10-position modular jack (10P10C) to either DB-9 or DB-25 male connectors.

[2] The eight-port legacy PCI serial boards require a cable, included in your kit, to convert the 68-pin connector to eight DB-9 male connectors.

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PCI-232/8

+5 VDC..... 100 mA typical
180 mA maximum

±12 VDC..... 80 mA typical
800 mA maximum

Maximum baud rate

PCI-232/8..... 115.2 kbps

PCI-485/8..... 430.8 kbps

Boards support standard baud rates below the maximum.

PCI-232/16 (RS-232)

Dimensions..... 10.67 × 17.52 cm
(4.2 × 6.9 in.)

I/O connector[1] ..... 100-pin, SCSI type connector

Power requirement (from PCI channel)

PCI-232/16

+5 VDC..... 250 mA typical
500 mA maximum

Maximum baud rate ..... 115.2 kbps

Board supports standard baud rates below the maximum.

PCI-232i/2 (RS-232) and PCI-485i/2 (RS-485/422)

Dimensions..... 10.67 × 17.52 cm
(4.2 × 6.9 in.)

I/O connector..... DB-9 male connector

Operating rated voltage (continuous)

RS-232 ..... –25 V to +25 V

RS-485 ..... –7 V to + 12 V

[1] The 16-port legacy PCI serial boards require a breakout box, included in your kit, to separate the 100-pin SCSI connector to 16 DB-9 male connectors.

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Isolation voltages

Port-to-port

Continuous .....60 VDC (CAT I)

Withstand .....2000 V_{rms}, verified by a 5 s dielectric withstand test

Port-to-host

Continuous .....60 VDC (CAT I)

Withstand .....2000 V_{rms}, verified by a 5 s dielectric withstand test

Power requirement (from PCI channel)

PCI-485i/2

+5 VDC .....800 mA typical
1.3 A maximum

PCI-232i/2

+5 VDC .....400 mA typical
650 mA maximum

Maximum baud rate

PCI-232i/2 .....115.2 kbps

PCI-485i/2 .....430.8 kbps

Boards support standard baud rates below the maximum.

PCI-232i/4 (RS-232) and PCI-485i/4 (RS-485/422)

Dimensions .....10.67 × 17.44 cm (4.2 × 6.9 in.)

I/O connector[1] .....10-position modular jack (10P10C)

Operating rated voltage (continuous)

RS-232 .....–25 V to +25 V

RS-485 .....–7 V to + 12 V

[1] The four-port legacy PCI serial boards require a cable to convert the 10-position (10P10C) modular jack to either DB-9 or DB-25 male connectors.

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Isolation voltages

Port-to-port

Continuous ..... 60 VDC (CAT I)

Withstand ..... 2000 V_{rms}, verified by a 5 s dielectric withstand test

Port-to-host

Continuous ..... 60 VDC (CAT I)

Withstand ..... 2000 V_{rms}, verified by a 5 s dielectric withstand test

Power requirement (from PCI channel)

PCI-485i/4

+5 VDC ..... 1.0 A typical
1.5 A maximum

PCI-232i/4

+5 VDC ..... 500 mA typical
750 mA maximum

Maximum baud rate

PCI-232i/4 ..... 115.2 kbps

PCI-485i/4 ..... 430.8 kbps

Boards support standard baud rates below the maximum.

Environmental Characteristics (for All PCI Interfaces)

Operating Environment

Ambient temperature ..... 0 to 55 °C
(Tested in accordance with IEC-60068-2-1 and IEC-60068-2-2.)

Relative humidity ..... 10 to 90%, noncondensing
(Tested in accordance with IEC-60068-2-56.)

Altitude (maximum) ..... 2,000 m

Pollution Degree 2

Indoor use only.

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Storage Environment

Ambient temperature .....–20 to 70 °C
(Tested in accordance with IEC-60068-2-1 and IEC-60068-2-2.)

Relative humidity .....5 to 95%, noncondensing
(Tested in accordance with IEC-60068-2-56.)

Other Specifications

Maximum cable length

RS-485[1] .....30 m (limited by EMC/surge)

RS-232.....2,500 pF equivalent
(TIA-EIA-232-F 2.1.4)

Data line ESD protection (human body model)

RS-485.....±15 kV

RS-232.....±15 kV

Note This equipment is intended for indoor use only.

Safety

This product meets the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1, CSA 61010-1

Note For UL and other safety certifications, refer to the product label or the *Online Product Certification* section.

Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

- EN 61326 (IEC 61326): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- AS/NZS CISPR 11: Group 1, Class A emissions

[1] RS-485 is capable of 1.2 km (4,000 ft) without surge limitation.

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- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions

Note For the standards applied to assess the EMC of this product, refer to the *Online Product Certification* section.

Note For EMC compliance, operate this device with shielded cabling.

CE Compliance CE

This product meets the essential requirements of applicable European Directives as follows:

- 2006/95/EC; Low-Voltage Directive (safety)
- 2004/108/EC; Electromagnetic Compatibility Directive (EMC)

Online Product Certification

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for this product, visit `ni.com/certification`, search by model number or product line, and click the appropriate link in the Certification column.

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Waste Electrical and Electronic Equipment (WEEE)

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Legacy PXI Serial Hardware

This section describes the characteristics of the legacy PXI serial hardware and the recommended operating conditions.

PXI-8420/2 (RS-232) and PXI-8421/2 (RS-485/422)

Dimensions .....100 × 160 mm
(3.94 × 6.37 in.)

I/O connector .....DB-9 male connector

Power requirement (from PXI channel)

PXI-8420/2

+5 VDC .....100 mA typical
150 mA maximum

±12 VDC .....20 mA typical
200 mA maximum

PXI-8421/2

+5 VDC .....350 mA typical
750 mA maximum

Maximum baud rate

PXI-8420/2 .....115.2 kbps

PXI-8421/2 .....430.8 kbps

Boards support standard baud rates below the maximum.

PXI-8420/4 (RS-232) and PXI-8421/4 (RS-485/422)

Dimensions .....100 × 160 mm
(3.94 × 6.37 in.)

I/O connector[1] .....10-position modular jack
(10P10C)

Power requirement (from PXI channel)

PXI-8420/4

+5 VDC .....125 mA typical
200 mA maximum

±12 VDC .....40 mA typical
400 mA maximum

[1] The four-port legacy PXI serial boards require a cable to convert the 10-position modular jack (10P10C) to either DB-9 or DB-25 male connectors.

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PXI-8421/4

+5 VDC..... 350 mA typical
750 mA maximum

Maximum baud rate

PXI-8420/4..... 115.2 kbps

PXI-8421/4..... 430.8 kbps

Boards support standard baud rates below the maximum.

PXI-8420/8 (RS-232) and PXI-8421/8 (RS-485/422)

Dimensions..... 100 × 160 mm
(3.94 × 6.37 in.)

I/O connector[1] ..... 68-pin, SCSI type connector

Power requirement (from PXI channel)

PXI-8420/8

+5 VDC..... 150 mA typical
250 mA maximum

±12 VDC..... 80 mA typical
800 mA maximum

PXI-8421/8

+5 VDC..... 1.1 A typical
2.0 A maximum

Maximum baud rate

PXI-8420/8..... 115.2 kbps

PXI-8421/8..... 430.8 kbps

Boards support standard baud rates below the maximum.

PXI-8420/16 (RS-232)

Dimensions..... 100 × 160 mm
(3.94 × 6.37 in.)

I/O connector[2] ..... 100-pin, SCSI type connector

[1] The eight-port legacy PXI serial boards require a cable, included in your kit, to convert the 68-pin connector to eight DB-9 male connectors.

[2] The 16-port legacy PXI serial boards require a breakout box, included in your kit, to separate the 100-pin connector to 16 DB-9 male connectors.

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Power requirement (from PXI channel)

PXI-8420/16

+5 VDC .....500 mA typical
750 mA maximum

Maximum baud rate .....115.2 kbps

Board supports standard baud rates below the maximum.

PXI-8422/2 (RS-232) and PXI-8423/2 (RS-485/422)

Dimensions .....100 × 160 mm
(3.94 × 6.37 in.)

I/O connector .....DB-9 male connector

Operating rated voltage (continuous)

RS-232 .....–25 V to +25 V

RS-485 .....–7 V to + 12 V

Isolation voltages

Port-to-port

Continuous .....60 VDC (CAT I)

Withstand .....2000 V_{rms}, verified by a 5 s dielectric withstand test

Port-to-host

Continuous .....60 VDC (CAT I)

Withstand .....2000 V_{rms}, verified by a 5 s dielectric withstand test

Power requirement (from PXI channel)

PXI-8422/2

+5 VDC .....400 mA typical
650 mA maximum

PXI-8423/2

+5 VDC .....800 mA typical, 1.3 A maximum

Maximum baud rate

PXI-8422/2 .....115.2 kbps

PXI-8423/2 .....430.8 kbps

Boards support standard baud rates below the maximum.

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PXI-8422/4 (RS-232) and PXI-8423/4 (RS-485/422)

Dimensions..... 100 × 160 mm
(3.94 × 6.37 in.)

I/O connector[1] ..... 10-position modular jack
(10P10C)

Operating rated voltage (continuous)

- RS-232 ..... –25 V to +25 V
- RS-485 ..... –7 V to + 12 V

Isolation voltages

- Port-to-port
  - Continuous..... 60 VDC (CAT I)
  - Withstand..... 2000 V_{rms}, verified by a 5 s dielectric withstand test
- Port-to-host
  - Continuous..... 60 VDC (CAT I)
  - Withstand..... 2000 V_{rms}, verified by a 5 s dielectric withstand test

Power requirement (from PXI channel)

- PXI-8422/4
  - +5 VDC..... 500 mA typical
    750 mA maximum
- PXI-8423/4
  - +5 VDC..... 1.0 A typical
    1.5 A maximum

Maximum baud rate

- PXI-8422/4..... 115.2 kbps
- PXI-8423/4..... 430.8 kbps

Boards support standard baud rates below the maximum.

[1] The four-port legacy PXI serial boards require a cable to convert the 10-position modular jack (10P10C) to either DB-9 or DB-25 male connectors.

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Environmental Characteristics (for All Legacy PXI Interfaces)

Operating Environment

Ambient temperature .....0 to 55 °C
(Tested in accordance with IEC-60068-2-1 and IEC-60068-2-2.)

Relative humidity .....10 to 90%, noncondensing
(Tested in accordance with IEC-60068-2-56.)

Altitude (maximum) .....2,000 m

Pollution Degree 2

Indoor use only.

Storage Environment

Ambient temperature .....–20 to 70 °C
(Tested in accordance with IEC-60068-2-1 and IEC-60068-2-2.)

Relative humidity .....5 to 95%, noncondensing
(Tested in accordance with IEC-60068-2-56.)

Other Specifications

Maximum cable length

- RS-485[1] .....30 m (limited by EMC/surge)
- RS-232.....2,500 pF equivalent (TIA-EIA-232-F 2.1.4)

Data line ESD protection (human body model)

- RS-485.....±15 kV
- RS-232.....±15 kV

Note This equipment is intended for indoor use only.

[1] RS-485 is capable of 1.2 km (4,000 ft) without surge limitation.

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Note For the standards applied to assess the EMC of this product, refer to the *Online Product Certification* section.

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