# Technical Reference: Pinouts for Serial Interfaces

This Technical Reference describes the pinouts specified and used for the more common serial data-communication interfaces. Given its space limitations and the speed with which new interfaces and connectors render older ones obsolete, this document is not intended to be comprehensive or exhaustive. We do hope, however, that you will find it useful as you study, shop for, build, or troubleshoot devices and cables.

Notes: For all of the interfaces described here, when any signal's function / direction is listed as "Data, to DCE," DCEs *receive* data and DTEs *transmit* data on that lead; when the function / direction is listed as "Data, from DCE," DCEs *transmit* data and DTEs *receive* data on that lead. All connectors are shown in front view (wires exit from the rear). The "pins" on male connectors are typically metal prongs, while those on female connectors are typically metal-lined sockets.

To compare interface pinouts, match their V.24 circuit-reference numbers, or see the side-by-side chart on page 7.

## 1. EIA-232-D (RS-232-D), ITU-TSS (CCITT) V.24/V.28, ISO 2110

A. **Original standard** pinout on **DB25** connectors:


| Pin | Signal/Circuit Name | Abbreviation* | RS-232 Circuit Ref. | V.24 Circ. Ref. | Signal Function/ Direction |
|---|---|---|---|---|---|
| 1 | Shield—"Protective Ground," "Frame Ground," "Chassis Ground" | SHD ("PGND," etc.) | AA | 101 | Ground |
| 2 | Transmitted Data | TD ("TXD") | BA | 103 | Data, to DCE |
| 3 | Received Data | RD ("RXD") | BB | 104 | Data, from DCE |
| 4 | Request to Send | RTS | CA | 105 | Control, to DCE |
| 5 | Clear to Send | CTS | CB | 106 | Control, from DCE |
| 6 | DCE Ready—"Data Set Ready" | DCR ("DSR") | CC | 107 | Control, from DCE |
| 7 | Signal Ground—"Common Return" | SGND | AB | 102 | Ground |
| 8 | Received Line Signal Detector—"Carrier Detect," "Data Carrier Detect" | RLSD ("CD," "DCD") | CF | 109 | Control, from DCE |
| (9 = +12 VDC reserved for testing, 10 = –12 VDC reserved for testing, 11 = Unassigned) | | | | | |
| 12 | *Either* Secondary Received Line Signal Detector—"Secondary Carrier Detect," "Secondary Data Carrier Detect"— | SRLSD ("SCD," "SDCD") | SCF | 122 | Control, from DCE |
| | *or* Data Signal Rate Selector (DCE Source) | DSRSC | CI | 112 | Control, from DCE |
| 13 | Secondary Clear to Send | SCTS | SCB | 121 | Control, from DCE |
| 14 | Secondary Transmit Data | STD ("STXD") | SBA | 118 | Data, to DCE |
| 15 | Transmitter Signal Element Timing (DCE Source)—"Transmit Clock" | TSETC ("TC," "TXC") | DB | 114 | Timing, from DCE |
| 16 | Secondary Receive Data | SRD ("SRXD") | SBB | 119 | Data, from DCE |
| 17 | Receiver Signal Element Timing (DCE Source)—"Receive Clock" | RSETC ("RC," "RXC") | DD | 115 | Timing, from DCE |
| 18 | Local Loopback | LL | LL | 141 | Control, to DCE |
| 19 | Secondary Request to Send | SRTS | SCA | 120 | Control, to DCE |
| 20 | DTE Ready—"Data Terminal Ready" | DTR | CD | 108.2 | Control, to DCE |

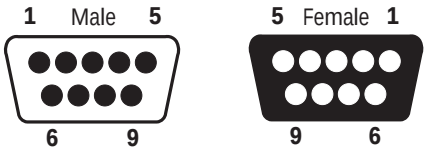
*continued on next page*

*These are de-facto standard abbreviations; the official EIA-232-D standard does not specify abbreviations for the signal names.

| Pin | Signal/Circuit Name | Abbreviation* | RS-232 Circuit Ref. | V.24 Circ. Ref. | Signal Function/ Direction |
|---|---|---|---|---|---|
| 21 | *Either* Remote Loopback<br>*or* Signal Quality Detector | RL<br>SQD | RL<br>CG | 140<br>110 | Control, to DCE<br>Control, from DCE |
| 22 | Ring Indicator | RI | CE | 125 | Control, from DCE |
| 23 | *Either* Data Signal Rate Selector (DTE Source)<br>*or* Data Signal Rate Selector (DCE Source) | DSRST<br>DSRSC | CH<br>CI | 111<br>112 | Control, to DCE<br>Control, from DCE |
| 24 | Transmitter Signal Element Timing (DTE Source)—"External Clock" | TSETT ("EXTC") | DA | 113 | Timing, to DCE |
| 25 | Test Mode—"Test Indicator" | TM ("TI") | TM | 142 | Control, from DCE |

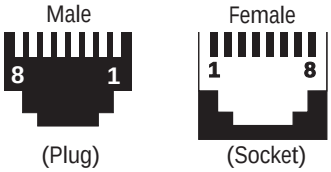
Note that many applications use only a subset of this pinout: **16 pins**—1 through 8, 15, 17, and 20 through 25—for synchronous communication with secondary control and testing; **12 pins**—1 through 8, 15, 17, 20, and 22—for ordinary sync applications; **7 pins**—2 through 4, 6 through 8, and 20—for asynchronous communication with flow control; or the **4 pins** 2, 3, 7, and 20 for bare-bones async applications that use software flow control.

B. **EIA/TIA-574** pinout (used for **IBM® AT®** and compatible computers) on **DB9 (DE9)** connectors:




| Pin | Signal/Circuit Name | Abbreviation* | RS-232 Circuit Ref. | V.24 Circ. Ref. | Signal Function/ Direction |
|---|---|---|---|---|---|
| 1 | Received Line Signal Detector—"Carrier Detect," "Data Carrier Detect" | RLSD ("CD," "DCD") | CF | 109 | Control, from DCE |
| 2 | Received Data | RD ("RXD") | BB | 104 | Data, from DCE |
| 3 | Transmitted Data | TD ("TXD") | BA | 103 | Data, to DCE |
| 4 | DTE Ready—"Data Terminal Ready" | DTR | CD | 108.2 | Control, to DCE |
| 5 | Signal Ground—"Common Return" | SGND | AB | 102 | Ground |
| 6 | DCE Ready—"Data Set Ready" | DCR ("DSR") | CC | 107 | Control, from DCE |
| 7 | Request to Send | RTS | CA | 105 | Control, to DCE |
| 8 | Clear to Send | CTS | CB | 106 | Control, from DCE |
| 9 | Ring Indicator | RI | CE | 125 | Control, from DCE |

C. **EIA/TIA-561** pinout (also referred to as ANSI/EIA-232-D) on **RJ-45** connectors (unfortunately, most manufacturers use proprietary pinouts instead):




| Pin | Signal/Circuit Name | Abbreviation* | RS-232 Circuit Ref. | V.24 Circ. Ref. | Signal Function/ Direction |
|---|---|---|---|---|---|
| 1 | *Either* DCE Ready—"Data Set Ready"—<br>*or* Ring Indicator | DCR ("DSR")<br>RI | CC<br>CE | 107<br>125 | Control, from DCE<br>Control, from DCE |
| 2 | Received Line Signal Detector—"Carrier Detect," "Data Carrier Detect" | RLSD ("CD," "DCD") | CF | 109 | Control, from DCE |
| 3 | DTE Ready—"Data Terminal Ready" | DTR | CD | 108.2 | Control, to DCE |
| 4 | Signal Ground—"Common Return" | SGND | AB | 102 | Ground |
| 5 | Received Data | RD ("RXD") | BB | 104 | Data, from DCE |
| 6 | Transmitted Data | TD ("TXD") | BA | 103 | Data, to DCE |
| 7 | Clear to Send | CTS | CB | 106 | Control, from DCE |
| 8 | Request to Send | RTS | CA | 105 | Control, to DCE |

*These are de-facto standard abbreviations; the official EIA-232-D standard does not specify abbreviations for the signal names.

## 2. EIA-422-A (RS-422-A), ITU-TSS (CCITT) V.11/X.27; also ITU-TSS G.703, EIA-485 (RS-485)

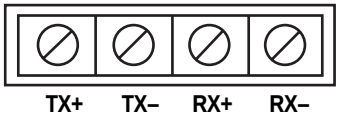
EIA-422-A and its ITU-TSS counterpart V.11/X.27 are electrical standards for balanced (matched-pair) circuits only; NO PHYSICAL CONNECTOR IS SPECIFIED. When manufacturers want to implement them on the fewest possible contacts, they use a four-position terminal block (for Transmit [TX] + and – and Receive [RX] + and –), roughly as shown below. (Sometimes a fifth terminal is added for a shield or protective ground contact.) Though a screw-down terminal block is shown, most manufacturers today use "snap"- or "crimp"-type terminals to comply with electrical safety standards. These standards are also frequently implemented on DB37 (DC37) connectors pinned as EIA-449 (see **Section 5**) or on DB25 connectors pinned as EIA-530 (see **Section 6**).

All of the above is also true of ITU-TSS G.703, but G.703 also specifies sophisticated coding schemes and other protocols. Also, some G.703 devices can autosense polarity, so "+" and "–" are sometimes not labeled on the block.

EIA-485 is very similar to EIA-422-A, except that its signal-generator and -receiver circuitry can handle three electrical states instead of two. This makes it ideal for multipoint applications, unlike the other interfaces listed here.

Aside from one being balanced and the other unbalanced, EIA-422-A and EIA-423-A are identical.

**Typical basic** pinout on a **4-position terminal block**:

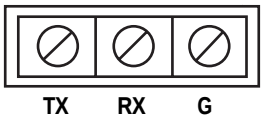



## 3. EIA-423-A (RS-423-A), ITU-TSS (CCITT) V.10/X.26

EIA-423-A and its ITU-TSS counterpart V.10/X.26 are electrical standards for unbalanced (unmatched, ground-referenced) circuits only; NO PHYSICAL CONNECTOR IS SPECIFIED. When manufacturers want to implement them on the fewest possible contacts, they use a three-position terminal block (for Transmit [TX], Receive [RX], and Ground [G]), roughly as shown below. Though a screw-down terminal block is shown, most manufacturers today use "snap"- or "crimp"-type terminals to comply with electrical safety standards. These standards are also frequently implemented on DB37 and DB9 connectors pinned as EIA-449 (see **Section 5**) or on DB25 connectors pinned as EIA-530 (see **Section 6**).

Aside from one being balanced and the other unbalanced, EIA-422-A and EIA-423-A are identical.

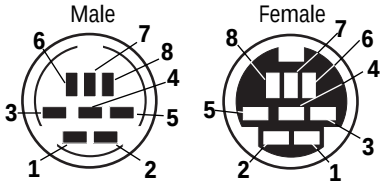
**Typical basic** pinout on a **3-position terminal block**:




## 4. Apple® Macintosh® Serial

In Apple Macintosh serial (modem and printer) ports and in the serial ports on some Apple printers and modems, the data signals are balanced EIA-422-A signals, while the handshaking signals are unbalanced EIA-423-A signals.

Pinout on **8-pin mini-DIN ("mini-DIN-8")** connectors:



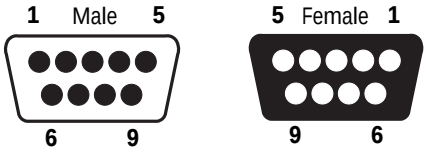

| Pin | Signal/Circuit Name | Abbrev. | Signal Function/ Direction | Pin | Signal/Circuit Name | Abbrev. | Signal Function/ Direction |
|---|---|---|---|---|---|---|---|
| 1 | Handshake Output (DTR) | HSKo, +12V | Control, to DCE | 5 | Received Data (Minus) | RXD– | Data, from DCE |
| 2 | Handshake Input (DSR) | HSKG | Control, from DCE | 6 | Transmitted Data (Plus) | TXD+ | Data, to DCE |
| 3 | Transmitted Data (Minus) | TXD– | Data, to DCE | 7 | Unassigned | | |
| 4 | Signal Ground | GND | Ground | 8 | Received Data (Plus) | RXD+ | Data, from DCE |

# 5. EIA-449 (RS-449), ISO 4902

A. **Primary channel** pinout on **DB37 (DC37)** connectors:


| Pin | Signal/Circuit Name* | Mnem. | V.24 Circ. Ref. | Signal Function/ Direction | Pin | Signal/Circuit Name* | Mnem. | V.24 Circ. Ref. | Signal Function/ Direction |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Shield | AA | 101 | Ground | | | | | |
| 2 | Signal Rate Indicator | SI | 112 | Control, from DCE | 20 | Receive Common | RC | 102b | Ground |
| 3 | Unassigned | | | | 21 | Unassigned | | | |
| 4 | Send Data A | SD A | 103 | Data, to DCE | 22 | Send Data B | SD B | 103 | Data, to DCE |
| 5 | Send Timing A | ST A | 114 | Timing, from DCE | 23 | Send Timing B | ST B | 114 | Timing, from DCE |
| 6 | Receive Data A | RD A | 104 | Data, from DCE | 24 | Receive Data B | RD B | 104 | Data, from DCE |
| 7 | Request to Send A | RS A | 105 | Control, to DCE | 25 | Request to Send B | RS B | 105 | Control, to DCE |
| 8 | Receive Timing A | RT A | 115 | Timing, from DCE | 26 | Receive Timing B | RT B | 115 | Timing, from DCE |
| 9 | Clear to Send A | CS A | 106 | Control, from DCE | 27 | Clear to Send B | CS B | 106 | Control, from DCE |
| 10 | Local Loopback | LL | 141 | Control, to DCE | 28 | Terminal In Service | IS | [N/A] | Control, to DCE |
| 11 | Data Mode A | DM A | 107 | Control, from DCE | 29 | Data Mode B | DM B | 107 | Control, from DCE |
| 12 | Terminal Ready A | TR A | 108.2 | Control, to DCE | 30 | Terminal Ready B | TR B | 108.2 | Control, to DCE |
| 13 | Receiver Ready A | RR A | 109 | Control, from DCE | 31 | Receiver Ready B | RR A | 109 | Control, from DCE |
| 14 | Remote Loopback | RL | 140 | Control, to DCE | 32 | Select Standby | SS | 116 | Control, to DCE |
| 15 | Incoming Call | IC | 125 | Control, from DCE | 33 | Signal Quality | SQ | 110 | Control, from DCE |
| 16 | Select Frequency | SF | 126 | Control, from DCE | 34 | New Signal | NS | [N/A} | Control, to DCE |
| 17 | Terminal Timing A | TT A | 113 | Timing, to DCE | 35 | Terminal Timing B | TT B | 113 | Timing, to DCE |
| 18 | Test Mode | TM | 142 | Control, from DCE | 36 | Standby Indicator | SB | 117 | Control, from DCE |
| 19 | Signal Ground | SG | 102 | Ground | 37 | Send Common | SC | 102a | Ground |

B. **Secondary (auxiliary) channel** pinout on **DB9 (DE9)** connectors:

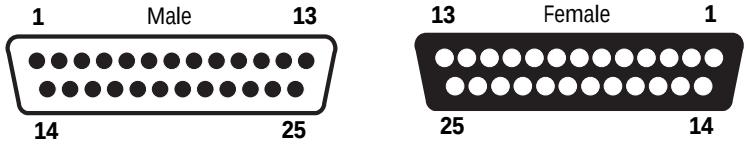



| Pin | Signal/Circuit Name* | Mnem. | V.24 Circ. Ref. | Signal Function/ Direction | Pin | Signal/Circuit Name* | Mnem. | V.24 Circ. Ref. | Signal Function/ Direction |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Shield | AA | 101 | Ground | | | | | |
| 2 | Secondary Rcvr. Ready | SRR | 122 | Control, from DCE | 6 | Receive Common | RC | 102b | Ground |
| 3 | Secondary Send Data | SSD | 118 | Data, to DCE | 7 | Secondary Rq. to Send | SRS | 120 | Control, to DCE |
| 4 | Secondary Rcv. Data | SRD | 119 | Data, from DCE | 8 | Secondary Clr. to Send | SCS | 121 | Control, from DCE |
| 5 | Signal Ground | SG | 102 | Ground | 9 | Send Common | SC | 102a | Ground |

*Signals whose names end with A and B are balanced (EIA-422-A compatible) and are classified as “Category I”; the A signals are positive with respect to the B signals during “space” (logical 0) conditions, and negative with respect to the B signals during “mark” (logical 1) conditions. All non-ground signals whose names don’t end with A or B are unbalanced (EIA-423-A compatible) and are classified as “Category II.”

## 6. EIA-530 (RS-530)

Pinout on **DB25** connectors:




| Pin | Signal/Circuit Name[1, 2] | Abbrev.[2, 3] | RS-530 Circuit Ref. | V.24 Circ. Ref. | Signal Function/ Direction |
|---|---|---|---|---|---|
| 1 | Shield | SHD | AA | 101 | Ground |
| 2 | Transmitted Data A | TD A | BA | 103 | Data, to DCE |
| 3 | Received Data A | RD A | BB | 104 | Data, from DCE |
| 4 | Request to Send A | RTS A | CA | 105 | Control, to DCE |
| 5 | Clear to Send A | CTS A | CB | 106 | Control, from DCE |
| 6 | DCE Ready A | DCR A | CC | 107 | Control, from DCE |
| 7 | Signal Ground | SGND | AB | 102 | Ground |
| 8 | Received Line Signal Detector A | RLSD A | CF | 109 | Control, from DCE |
| 9 | Receiver Signal Element Timing (DCE Source) B | RSETC B | DD | 115 | Timing, from DCE |
| 10 | Received Line Signal Detector B | RLSD B | CF | 109 | Control, from DCE |
| 11 | Transmitter Signal Element Timing (DTE Source) B | TSETT B | DA | 113 | Timing, to DCE |
| 12 | Transmitter Signal Element Timing (DCE Source) B | TSETC B | DB | 114 | Timing, from DCE |
| 13 | Clear to Send B | CTS B | CB | 106 | Control, from DCE |
| 14 | Transmitted Data B | TD B | BA | 103 | Data, to DCE |
| 15 | Transmitter Signal Element Timing (DCE Source) A | TSETC A | DB | 114 | Timing, from DCE |
| 16 | Received Data B | RD B | BB | 104 | Data, from DCE |
| 17 | Receiver Signal Element Timing (DCE Source) A | RSETC A | DD | 115 | Timing, from DCE |
| 18 | Local Loopback | LL | LL | 141 | Control, to DCE |
| 19 | Request to Send B | RTS B | CA | 105 | Control, to DCE |
| 20 | DTE Ready A | DTR A | CD | 108.2 | Control, to DCE |
| 21 | Remote Loopback | RL | RL | 140 | Control, to DCE |
| 22 | DCE Ready B | DCR B | CC | 107 | Control, from DCE |
| 23 | DTE Ready B | DTR B | CD | 108.2 | Control, to DCE |
| 24 | Transmitter Signal Element Timing (DTE Source) A | TSETT A | DA | 113 | Timing, to DCE |
| 25 | Test Mode | TM | TM | 142 | Control, from DCE |

---

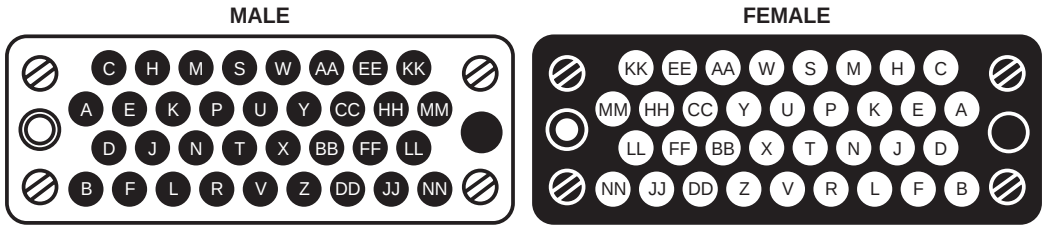
[1]Signals whose names end with A and B are balanced (EIA-422-A compatible) and are classified as “Category I”; the A signals are positive with respect to the B signals during “space” (logical 0) conditions, and negative with respect to the B signals during “mark” (logical 1) conditions. The non-ground signals whose names don’t end with A or B—namely Local Loopback, Remote Loopback, and Test Mode—are unbalanced (EIA-423-A compatible) and are classified as “Category II.”

[2]The same alternative names and abbreviations that are sometimes used to describe some of the signals in EIA-232-D are also sometimes used to describe the analogous EIA-530 signals. See **Section 1**.

[3]These are de-facto standard abbreviations; the official EIA-530 standard does not specify abbreviations for the signal names.

## 7. ITU-TSS (CCITT) V.35

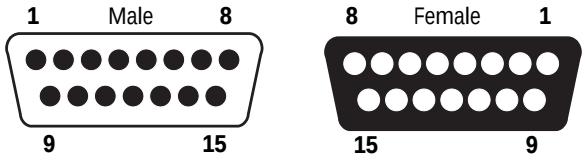
Pinout on **M/34 (“34-pin M-block”)** connectors:




| Pin[1] | Signal/Circuit Name[2,3] | Abbr.[3,4] | V.24 Circ. Ref. | Signal Function/ Direction | Pin[1] | Signal/Circuit Name[2,3] | Abbr.[3,4] | V.24 Circ. Ref. | Signal Function/ Direction |
|---|---|---|---|---|---|---|---|---|---|
| A | Shield | SHD | 101 | Ground | P | Send Data A | TD A | 103 | Data, to DCE |
| B | Signal Ground | SGND | 102 | Ground | R | Receive Data A | RD A | 104 | Data, from DCE |
| C | Request to Send | RTS | 105 | Control, to DCE | S | Send Data B | TD B | 103 | Data, to DCE |
| D | Clear to Send | CTS | 106 | Control, from DCE | T | Receive Data B | RD B | 104 | Data, from DCE |
| E | Data Set Ready | DSR | 107 | Control, from DCE | U | Serial Clk. Tmit. Extnal. A[5] | SCTE A | 113 | Timing, to DCE |
| F | Rcvd. Line Sgnl. Detector | RLSD | 109 | Control, from DCE | V | Serial Clock Receive A | SCR A | 115 | Timing, from DCE |
| H | Data Terminal Ready[5] | DTR | 108.2 | Control, to DCE | W | Serial Clk. Tmit. Extnal. B[5] | SCTE B | 113 | Timing, to DCE |
| J | Calling Indicator[6] | CI | 125 | Control, from DCE | X | Serial Clock Receive B | SCR B | 115 | Timing, from DCE |
| L | Local Loopback[6] | LL | 141 | Control, to DCE | Y | Serial Clock Transmit A | SCT A | 114 | Timing, from DCE |
| N | Remote Loopback[6] | RL | 140 | Control, to DCE | AA | Serial Clock Transmit B | SCT B | 114 | Timing, from DCE |
| (K, M, Z, BB through FF, and MM are reserved for future int’l standardization. HH through LL are reserved for country-specific standards.) | | | | | NN | Test Mode[6] | TM | 142 | Control, from DCE |

## 8. ITU-TSS (CCITT) X.21, ISO 4903

High-speed, X.27-compatible pinout on **DB15 (DA15)** connectors:




| Pin | Signal/Circuit Name[2] | X.21 Circ. Ref. | V.24 Circ. Ref. | Signal Function/ Direction | Pin | Signal/Circuit Name[2] | X.21 Circ. Ref. | V.24 Circ. Ref. | Signal Function/ Direction |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Shield | SHD | 101 | Ground | | | | | |
| 2 | Transmit A | T (A) | 103 | Data, to DCE | 9 | Transmit B | T (B) | 103 | Data, to DCE |
| 3 | Control A | C (A) | 105 | Control, to DCE | 10 | Control B | C (B) | 105 | Control, to DCE |
| 4 | Receive A | R (A) | 104 | Data, from DCE | 11 | Receive B | R (B) | 104 | Data, from DCE |
| 5 | Indication A | I (A) | 109 | Control, from DCE | 12 | Indication B | I (B) | 109 | Control, from DCE |
| 6 | Signal Element Timing A | S (A) | 114 | Timing, from DCE | 13 | Signal Element Timing B | S (B) | 114 | Timing, from DCE |
| 7 | Byte Timing A | B (A) | [N/A] | Timing, from DCE | 14 | Byte Timing B | B (B) | [N/A] | Timing, from DCE |
| 8 | Signal Ground | G | 102 | Ground | 15 | Reserved for future international use | | | |

[1]V.35 pins designated with two capital letters (“AA,” “BB,” etc.) can be designated with single lowercase letters (“a,” “b,” etc.) instead.

[2]Signals whose names end with A and B are balanced; they are positive or negative with respect to each other depending on mark or space conditions (refer to note 1 on the previous page). All non-ground signals whose names don’t end with A or B are unbalanced.

[3]The same alternative names and abbreviations that are sometimes used to describe some of the signals in EIA-232-D are also sometimes used to describe the analogous V.35 signals. See **Section 1**.

[4]These are de-facto standard abbreviations; the official V.35 standard does not specify abbreviations for the signal names.

[5]These signals are officially optional but are almost always implemented—almost always on these pins.

[6]These signals are officially optional, but most manufacturers either don’t implement them or implement them on different pins.

## *Comparative Pinout Table for Common Serial Interfaces*

| ITU-T. V.24 CIRC. | EIA-232-D INTERFACE | | | EIA-449 INTERFACE | | | | | EIA-530 INTERFACE | | | | ITU-TSS V.35 INTERFACE | | | ITU-TSS X.21 INTERFACE | | | | SIGNAL FUNCTION AND DIRECTION | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DB25 PIN | 232 CIR. | NAME | DB37 PIN | | DB9 PIN | 449 CIR. | NAME | DB25 PIN | | 530 CIR. | NAME | M/34 PIN | | NAME | DB15 PIN | | X.21 CIR. | NAME | GND | DATA | | CTRL | | TIMING | |
| | | | | A | B | | | | A | B | | | A | B | | A | B | | | | FR DCE | TO DCE | FR DCE | TO DCE | FR DCE | TO DCE |
| 101 | 1 | AA | Shield | 1 | | 1 | AA | Shield | 1 | | AA | Shield | A | | Shield | 1 | | — | Shield | X | | | | | | |
| 102 | 7 | AB | Signal Ground | 19 | | 5 | SG | Signal Ground | 7 | | AB | Signal Ground | B | | Signal Ground | 8 | | G | Signal Ground | X | | | | | | |
| 102a | | | | 37 | | 9 | SC | Send Common | | | | | | | | | | | | X | | | | | | |
| 102b | | | | 20 | | 6 | RC | Receive Common | | | | | | | | | | | | X | | | | | | |
| 103 | 2 | BA | Transmitted Data | 4 | 22 | | SD | Send Data | 2 | 14 | BA | Transmitted Data | P | S | Send Data | 2 | 9 | T | Transmit | | | X | | | | |
| 104 | 3 | BB | Received Data | 6 | 24 | | RD | Receive Data | 3 | 16 | BB | Received Data | R | T | Receive Data | 4 | 11 | R | Receive | | X | | | | | |
| 105 | 4 | CA | Request to Send | 7 | 25 | | RS | Request to Send | 4 | 19 | CA | Request to Send | C | | Request to Send | 3 | 10 | C | Control | | | | X | | | |
| 106 | 5 | CB | Clear to Send | 9 | 27 | | CS | Clear to Send | 5 | 13 | CB | Clear to Send | D | | Clear to Send | | | | | | | | X | | | |
| 107 | 6 | CC | DCE Ready | 11 | 29 | | DM | Data Mode | 6 | 22 | CC | DCE Ready | E | | Data Set Ready | | | | | | | | X | | | |
| 108.2 | 20 | CD | DTE Ready | 12 | 30 | | TR | Terminal Ready | 20 | 23 | CD | DTE Ready | H | | Data Terminal Ready | | | | | | | | | X | | |
| 109 | 8 | CF | Received Line Signal Detector | 13 | 31 | | RR | Receiver Ready | 8 | 10 | CF | Received Line Signal Detector | F | | Received Line Signal Detector | 5 | 12 | I | Indication | | | | X | | | |
| 110 | 21 | CG | Signal Quality Detector | 33 | | | SQ | Signal Quality | | | | | | | | | | | | | | | X | | | |
| 111 | 23 | CH | Data Signal Rate Selector (DTE) | 16 | | | SR | Signal Rate Selector | | | | | | | | | | | | | | | | X | | |
| 112 | 12 or 23 | CI | Data Signal Rate Selector (DCE) | 2 | | | SI | Signal Rate Indicator | | | | | | | | | | | | | | | X | | | |
| 113 | 24 | DA | Transmitter Signal Elem. Timing (DTE) | 17 | 35 | | TT | Terminal Timing | 24 | 11 | DA | Transmitter Signal Elem. Tim. (DTE) | U | W | Serial Clock Transmit External | | | | | | | | | | | X |
| 114 | 15 | DB | Transmitter Signal Elem. Timing (DCE) | 5 | 23 | | ST | Send Timing | 15 | 12 | DB | Transmitter Signal Elem. Tim. (DCE) | Y | AA | Serial Clock Transmit | 6 | 13 | S | Signal Element Timing | | | | | | X | |
| 115 | 17 | DD | Receiver Signal Elem. Timing (DCE) | 8 | 26 | | RT | Receive Timing | 17 | 9 | DD | Receiver Signal Elem. Tim. (DCE) | V | X | Serial Clock Receive | | | | | | | | | | X | |
| 116 | | | | 32 | | | SS | Select Standby | | | | | | | | | | | | | | | | X | | |
| 117 | | | | 36 | | | SB | Standby Indicator | | | | | | | | | | | | | | | X | | | |
| 118 | 14 | SBA | Secondary Transmit Data | | | 3 | SSD | Secondary Send Data | | | | | | | | | | | | | | X | | | | |
| 119 | 16 | SBB | Secondary Receive Data | | | 4 | SRD | Secondary Receive Data | | | | | | | | | | | | | X | | | | | |
| 120 | 19 | SCA | Secondary Request to Send | | | 7 | SRS | Secondary Request to Send | | | | | | | | | | | | | | | | X | | |
| 121 | 13 | SCB | Secondary Clear to Send | | | 8 | SCS | Secondary Clear to Send | | | | | | | | | | | | | | | X | | | |
| 122 | 12 | SCF | Secondary Received Line Sig. Detector | | | 2 | SRR | Secondary Receiver Ready | | | | | | | | | | | | | | | X | | | |
| 125 | 22 | CE | Ring Indicator | 15 | | | IC | Incoming Call | | | | | J | | Calling Indicator | | | | | | | | X | | | |
| 126 | | | | 16 | | | SF | Select Frequency | | | | | | | | | | | | | | | | X | | |
| 140 | 21 | RL | Remote Loopback | 14 | | | RL | Remote Loopback | 21 | | RL | Remote Loopback | N | | Remote Loopback | | | | | | | | | X | | |
| 141 | 18 | LL | Local Loopback | 10 | | | LL | Local Loopback | 18 | | LL | Local Loopback | L | | Local Loopback | | | | | | | | | X | | |
| 142 | 25 | TM | Test Mode | 18 | | | TM | Test Mode | 25 | | TM | Test Mode | NN | | Test Mode | | | | | | | | X | | | |
| | | | | 28 | | | IS | Terminal in Service | | | | | | | | | | | | | | | | X | | |
| | | | | 34 | | | NS | New Signal | | | | | | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | | | | 7 | 14 | B | Byte Timing | | | | | | X | |