This note gives pinouts for Macintosh ports, cables, and other products.

Below are pinout descriptions for the Macintosh ports, cables, and various other products. Please refer to the Hardware chapter of *Inside Macintosh* and the *Macintosh Hardware Reference Manual* for more information, especially about power limits. Note that unconnected pins are omitted.

### Macintosh Port Pinouts

#### Macintosh Serial Connectors (DB-9)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Description/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>+5V</td>
<td>See <em>Inside Macintosh</em> for power limits</td>
</tr>
<tr>
<td>3</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>TxD+</td>
<td>Transmit Data line</td>
</tr>
<tr>
<td>5</td>
<td>TxD–</td>
<td>Transmit Data line</td>
</tr>
<tr>
<td>6</td>
<td>+12V</td>
<td>See Macintosh Hardware chapter for power limits</td>
</tr>
<tr>
<td>7</td>
<td>HSK</td>
<td>HandShaKe: CTS or TRxC, depends on Zilog 8530 mode</td>
</tr>
<tr>
<td>8</td>
<td>RxD+</td>
<td>Receive Data line; ground this line to emulate RS232</td>
</tr>
<tr>
<td>9</td>
<td>RxD–</td>
<td>Receive Data line</td>
</tr>
</tbody>
</table>

#### Macintosh Mouse Connector (DB-9)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Description/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>+5V</td>
<td>See <em>Inside Macintosh</em> for power limits</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
<td>Ground</td>
</tr>
<tr>
<td>4</td>
<td>X2</td>
<td>Horizontal movement line (connected to VIA PB4 line)</td>
</tr>
<tr>
<td>5</td>
<td>X1</td>
<td>Horizontal movement line (connected to SCC DCDA– line)</td>
</tr>
<tr>
<td>7</td>
<td>SW–</td>
<td>Mouse button line (connected to VIA PB3)</td>
</tr>
<tr>
<td>8</td>
<td>Y2</td>
<td>Vertical movement line (connected to VIA PB5 line)</td>
</tr>
<tr>
<td>9</td>
<td>Y1</td>
<td>Vertical movement line (connected to SCC DCDB– line)</td>
</tr>
</tbody>
</table>
## Macintosh Keyboard Connector (RJ-11 Telephone-style jack)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Description/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>KBD1</td>
<td>Keyboard clock</td>
</tr>
<tr>
<td>3</td>
<td>KBD2</td>
<td>Keyboard data</td>
</tr>
<tr>
<td>4</td>
<td>+5V</td>
<td>See <em>Inside Macintosh</em> for power limits</td>
</tr>
</tbody>
</table>

## Macintosh External Drive Connector (DB-19)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Description/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>–12V</td>
<td>See <em>Inside Macintosh</em> for power limits</td>
</tr>
<tr>
<td>6</td>
<td>+5V</td>
<td>See <em>Inside Macintosh</em> for power limits</td>
</tr>
<tr>
<td>7</td>
<td>+12V</td>
<td>See <em>Inside Macintosh</em> for power limits</td>
</tr>
<tr>
<td>8</td>
<td>+12V</td>
<td>See <em>Inside Macintosh</em> for power limits</td>
</tr>
<tr>
<td>10</td>
<td>PWM</td>
<td>Regulates speed of the drive</td>
</tr>
<tr>
<td>11</td>
<td>PH0</td>
<td>Control line to send commands to the drive</td>
</tr>
<tr>
<td>12</td>
<td>PH1</td>
<td>Control line to send commands to the drive</td>
</tr>
<tr>
<td>13</td>
<td>PH2</td>
<td>Control line to send commands to the drive</td>
</tr>
<tr>
<td>14</td>
<td>PH3</td>
<td>Control line to send commands to the drive</td>
</tr>
<tr>
<td>15</td>
<td>WrReq–</td>
<td>Turns on the ability to write data to the drive</td>
</tr>
<tr>
<td>16</td>
<td>HdSel</td>
<td>Control line to send commands to the drive</td>
</tr>
<tr>
<td>17</td>
<td>Enbl2–</td>
<td>Enables the Rd line (else Rd is tri-stated)</td>
</tr>
<tr>
<td>18</td>
<td>Rd</td>
<td>Data actually read from the drive</td>
</tr>
<tr>
<td>19</td>
<td>Wr</td>
<td>Data actually written to the drive</td>
</tr>
</tbody>
</table>
Other Pinouts

Macintosh XL Serial Connector A (DB-25)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Description/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TxD</td>
<td>Transmit Data line</td>
</tr>
<tr>
<td>3</td>
<td>RxD</td>
<td>Receive Data line</td>
</tr>
<tr>
<td>4</td>
<td>RTS</td>
<td>Request to Send</td>
</tr>
<tr>
<td>5</td>
<td>CTS</td>
<td>Clear To Send</td>
</tr>
<tr>
<td>6</td>
<td>DSR</td>
<td>Data Set Ready</td>
</tr>
<tr>
<td>7</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>DCD</td>
<td>Data Carrier Detect</td>
</tr>
<tr>
<td>15</td>
<td>TxC</td>
<td>Connected to TRxCA</td>
</tr>
<tr>
<td>17</td>
<td>RxC</td>
<td>Connected to RTxCA</td>
</tr>
<tr>
<td>24</td>
<td>TEXT</td>
<td>Connected to TRxCA</td>
</tr>
</tbody>
</table>

Macintosh XL Serial Connector B (DB-25)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Description/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TxD–</td>
<td>Transmit Data line</td>
</tr>
<tr>
<td>3</td>
<td>RxD–</td>
<td>Receive Data line</td>
</tr>
<tr>
<td>6</td>
<td>HSK/DSR</td>
<td>TRxCB or CTSB</td>
</tr>
<tr>
<td>7</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>RxD+</td>
<td>Receive Data line</td>
</tr>
<tr>
<td>20</td>
<td>TXD+/DTR</td>
<td>connected to DTRB</td>
</tr>
</tbody>
</table>

Apple 300/1200 Modem Serial Connector (DB-9)

<table>
<thead>
<tr>
<th>Modem</th>
<th>Name</th>
<th>Description/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>DSR</td>
<td>Output from modem</td>
</tr>
<tr>
<td>3</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>RxD</td>
<td>Output from modem</td>
</tr>
<tr>
<td>6</td>
<td>DTR</td>
<td>Input to modem</td>
</tr>
<tr>
<td>7</td>
<td>DCD</td>
<td>Output from modem</td>
</tr>
<tr>
<td>8</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>TxD</td>
<td>Input to modem</td>
</tr>
</tbody>
</table>

Apple ImageWriter Serial Connector (DB-25)

<table>
<thead>
<tr>
<th>ImageWriter</th>
<th>Name</th>
<th>Description/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SD</td>
<td>Send Data; Output from ImageWriter</td>
</tr>
<tr>
<td>3</td>
<td>RD</td>
<td>Receive Data; Input to ImageWriter</td>
</tr>
<tr>
<td>4</td>
<td>RTS</td>
<td>Output from ImageWriter</td>
</tr>
<tr>
<td>7</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>FAULT–</td>
<td>False when deselected; Output from ImageWriter</td>
</tr>
<tr>
<td>20</td>
<td>DTR</td>
<td>Output from ImageWriter</td>
</tr>
</tbody>
</table>
### Apple LaserWriter AppleTalk Connector (DB-9)

<table>
<thead>
<tr>
<th>LaserWriter</th>
<th>Name</th>
<th>Description/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>TxD+</td>
<td>Transmit Data line</td>
</tr>
<tr>
<td>5</td>
<td>TxD–</td>
<td>Transmit Data line</td>
</tr>
<tr>
<td>7</td>
<td>RXCLK</td>
<td>TRxC of Zilog 8530</td>
</tr>
<tr>
<td>8</td>
<td>RxD+</td>
<td>Receive Data line</td>
</tr>
<tr>
<td>9</td>
<td>RxD–</td>
<td>Receive Data line</td>
</tr>
</tbody>
</table>

### Apple LaserWriter Serial Connector (DB-25)

<table>
<thead>
<tr>
<th>LaserWriter</th>
<th>Name</th>
<th>Description/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TXD–</td>
<td>Transmit Data; Output from LaserWriter</td>
</tr>
<tr>
<td>3</td>
<td>RXD–</td>
<td>Receive Data; Input to LaserWriter</td>
</tr>
<tr>
<td>4</td>
<td>RTS–</td>
<td>Output from LaserWriter</td>
</tr>
<tr>
<td>5</td>
<td>CTS</td>
<td>Input to LaserWriter</td>
</tr>
<tr>
<td>6</td>
<td>DSR</td>
<td>Input to LaserWriter (connected to DCBB– of 8530)</td>
</tr>
<tr>
<td>7</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>DCD</td>
<td>Output from LaserWriter</td>
</tr>
<tr>
<td>20</td>
<td>DTR–</td>
<td>Output from LaserWriter</td>
</tr>
<tr>
<td>22</td>
<td>RING</td>
<td>Input to LaserWriter</td>
</tr>
</tbody>
</table>
# Macintosh Cable Pinouts

Note for the cable descriptions below:

The arrows (“Æ”) show which side is an input and which is an output. For example, the notation “a Æ b” means that signal “a” is an output and “b” is an input.

When pins are said to be connected on a side in the Notes column, it means the pins are connected on that side of the connector.

## Macintosh ImageWriter Cable
(part number 590-0169)

<table>
<thead>
<tr>
<th>Macintosh (DB9)</th>
<th>Name</th>
<th>ImageWriter (DB25)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ground</td>
<td>7</td>
<td>pins 3, 8 connected on Macintosh side</td>
</tr>
<tr>
<td>5</td>
<td>TxD</td>
<td>RD 3</td>
<td>RD = Receive Data</td>
</tr>
<tr>
<td>7</td>
<td>HSK</td>
<td>DTR 20</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>RxD+</td>
<td>= GND</td>
<td>Not connected on ImageWriter side</td>
</tr>
<tr>
<td>9</td>
<td>RxD–</td>
<td>“ SD 2</td>
<td>SD = Send Data</td>
</tr>
</tbody>
</table>

## Macintosh Modem Cable (Warning! Don’t use this cable to connect 2 Macintoshs!)
(part number 590-0197-A)

<table>
<thead>
<tr>
<th>Macintosh (DB9)</th>
<th>Name</th>
<th>Modem (DB9)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Ground</td>
<td>3</td>
<td>pins 3, 8 connected on EACH side</td>
</tr>
<tr>
<td>5</td>
<td>TxD–</td>
<td>Æ TxD 9</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>+12V</td>
<td>Æ DTR 6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>HSK</td>
<td>“ DCD 7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>No wire</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RxD–</td>
<td>“ RxD 5</td>
<td></td>
</tr>
</tbody>
</table>

## Macintosh to Macintosh Cable
(Macintosh Modem Cable with pin 6 clipped on both ends.)

<table>
<thead>
<tr>
<th>Macintosh (DB9)</th>
<th>Name</th>
<th>Macintosh (DB9)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Ground</td>
<td>3</td>
<td>pins 3, 8 connected on EACH side</td>
</tr>
<tr>
<td>5</td>
<td>TxD–</td>
<td>Æ RxD– 9</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>HSK</td>
<td>“ DCD 7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>No wire</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RxD–</td>
<td>“ TxD– 5</td>
<td></td>
</tr>
</tbody>
</table>
Macintosh External Drive Cable  
(part number 590-0183-B)

<table>
<thead>
<tr>
<th>Macintosh (DB9)</th>
<th>Name</th>
<th>Sony Drive (20 Pin Ribbon)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Ground</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Ground</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Ground</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>+5V</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>+12V</td>
<td>13</td>
</tr>
<tr>
<td>8</td>
<td>+12V</td>
<td>15</td>
</tr>
<tr>
<td>10</td>
<td>PWM</td>
<td>20</td>
</tr>
<tr>
<td>11</td>
<td>PH0</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>PH1</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>PH2</td>
<td>6</td>
</tr>
<tr>
<td>14</td>
<td>PH3</td>
<td>8</td>
</tr>
<tr>
<td>15</td>
<td>WrReq–</td>
<td>10</td>
</tr>
<tr>
<td>16</td>
<td>HdSel</td>
<td>12</td>
</tr>
<tr>
<td>17</td>
<td>Enbl2–</td>
<td>14</td>
</tr>
<tr>
<td>18</td>
<td>Rd</td>
<td>16</td>
</tr>
<tr>
<td>19</td>
<td>Wr</td>
<td>18</td>
</tr>
</tbody>
</table>

Macintosh XL Null Modem Cable  
(part number 590-0166-A)

<table>
<thead>
<tr>
<th>Macintosh XL (DB25)</th>
<th>Name</th>
<th>DTE</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TxD–Æ</td>
<td>RxD</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>RxDÆ</td>
<td>TxD</td>
<td>2</td>
</tr>
<tr>
<td>4, 5</td>
<td>RTS,CTSÆ</td>
<td>DCD</td>
<td>8 pins 4, 5 connected together</td>
</tr>
<tr>
<td>6</td>
<td>DSRÆ</td>
<td>DTR</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>Ground</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>DCDÆ</td>
<td>RTS,CTS</td>
<td>4, 5 pins 4, 5 connected together</td>
</tr>
<tr>
<td>20</td>
<td>DTRÆ</td>
<td>DSR</td>
<td>6</td>
</tr>
</tbody>
</table>
## Macintosh to Non-Apple Product Cable Pinouts

### Macintosh to IBM PC Serial Cable #1 (not tested)

<table>
<thead>
<tr>
<th>Macintosh (DB9)</th>
<th>Name</th>
<th>IBM PC (DB25)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Ground</td>
<td>7</td>
<td>pins 3, 8 connected on Macintosh side</td>
</tr>
<tr>
<td>5</td>
<td>TxD–Æ</td>
<td>RxD</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>HSK</td>
<td>DTR</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>RxD+ = Ground</td>
<td></td>
<td>Not connected on IBM side</td>
</tr>
<tr>
<td>9</td>
<td>CTS</td>
<td>RTS</td>
<td>4-5</td>
</tr>
<tr>
<td></td>
<td>DSR</td>
<td>DCD,DTR</td>
<td>6-8-20</td>
</tr>
</tbody>
</table>

### Macintosh to IBM PC Serial Cable #2 (not tested)

<table>
<thead>
<tr>
<th>Macintosh (DB9)</th>
<th>Name</th>
<th>IBM PC (DB25)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td>1</td>
<td>pins 3, 8 connected on Macintosh side</td>
</tr>
<tr>
<td>3</td>
<td>Ground</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>TxD–Æ</td>
<td>RxD</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>RxD–Æ</td>
<td>TxD</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CTS</td>
<td>RTS</td>
<td>4-5</td>
</tr>
<tr>
<td></td>
<td>DSR</td>
<td>DTR</td>
<td>6-8</td>
</tr>
</tbody>
</table>

### Further Reference:
- Macintosh Hardware Reference Manual
- Technical Note #65--Macintosh Plus Pinouts