# RJ11, RJ12, and RJ45 Pinning and Wiring Schemes

The terms RJ11, RJ12, RJ45, keyed RJ45 and such are frequently used incorrectly to describe modular jacks and plugs, however, to be precise, modular plugs and jacks should be referred to as described below:

<table>
<thead>
<tr>
<th>Position</th>
<th>Modular Jack</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4 Position</td>
<td>(Often called an RJ11 jack or plug.)</td>
</tr>
<tr>
<td></td>
<td>Modular Jack</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6 Position</td>
<td>(Often called an RJ11 or RJ12 jack or plug.)</td>
</tr>
<tr>
<td></td>
<td>Modular Jack</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6 Position</td>
<td>Modified Modular Jack (Often called an MMJ jack or plug.)</td>
</tr>
<tr>
<td></td>
<td>Modular Jack</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8 Position</td>
<td>(Often called an RJ45 jack or plug.)</td>
</tr>
<tr>
<td></td>
<td>Modular Jack</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8 Position</td>
<td>Keyed Modular Jack (Often called an RJ45 keyed jack or plug.)</td>
</tr>
<tr>
<td></td>
<td>Modular Jack</td>
<td></td>
</tr>
</tbody>
</table>

## Common Wiring Configurations:

**USOC RJ11 or RJ11C** - One pair of wires (pair 1) in a 4, 6, or 8 position modular jack. Yes, the 4 position modular plug will plug into the 6 position and 8 position modular jack, and the 6 position modular plug will plug into the 8 position modular jack.

**USOC RJ14 or RJ14C** - Two pairs of wires in a 4, 6, or 8 position modular jack. Pair 1 would be the two center pins, pair 2 on the next two pins outward. Yes, the 4 position modular plug will plug into the 6 position and 8 position modular jack, and the 6 position modular plug will plug into the 8 position modular jack.
**RJ11, RJ12, RJ45 Connectors**

**USOC RJ25 or RJ25C** - Three pairs of wires in a 6 or 8 position modular jack. Pair 1 would be the two center pins, pair 2 on the next two pins outward, pair 3 on the next two pins outward. Yes, the 6 position modular plug will plug into the 8 position modular jack. Although Ethernet networking cannot be run through this pin configuration, UTP (Unshielded Twisted Pair cable) Token Ring can be run on the two middle pairs of wires.

**USOC RJ48 or RJ48C** - Four pairs of wires in an 8 position modular jack. Pair 1 would be the two center pins, pair 2 on the next two pins outward, pair 3 on the next two pins outward, and pair 4 on the outermost pins. Although ethernet networking cannot be run through this pin configuration, UTP token ring can be run on the two middle pairs of wires (pins 4 and 5, and pins 3 and 6 in the image).

**568A Wiring Scheme** - Often used in Ethernet (10BaseT) on pairs 3 and 2. To use in Fast Ethernet (100BaseT), category 5 jacks, plugs, patch panels, and cables must be used. This configuration can also be used in Token Ring networking on pairs 1 and 2.

- Pin 1 = T3
- Pin 2 = R3
- Pin 3 = T2
- Pin 4 = R1
- Pin 5 = T1
- Pin 6 = R2
- Pin 7 = T4
- Pin 8 = R4

**568B Wiring Scheme** (Same as the AT&T 258A Wiring Scheme) - Often used in Ethernet (10BaseT) on pairs 3 and 2. To use in Fast Ethernet (100BaseT), category 5 jacks, plugs, patch panels, and cables must be used. This configuration can also be used in Token Ring networking on pairs 1 and 3.

- Pin 1 = T2
- Pin 2 = R2
- Pin 3 = T3
- Pin 4 = R1
- Pin 5 = T1
- Pin 6 = R3
- Pin 7 = T4
- Pin 8 = R4

**Modified Modular Jack (MMJ) Wiring Scheme** by Digital Equipment Corporation (DEC®) uses a completely proprietary wiring scheme.

- Pin 1 = DTR
- Pin 2 = TXD+
- Pin 3 = RXD-
- Pin 4 = RXD+
- Pin 5 = DSR