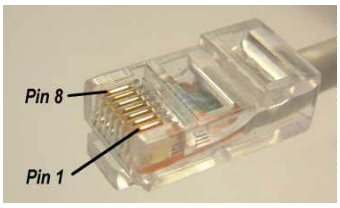
Solwise

CAT5 Network Wiring information

Pin	Colour	Function
1	Orange on White	Transmit +ve
2	White on Orange	Transmit –ve
3	Green on White	Receive +ve
4	White on Blue	N/A
5	Blue on White	N/A
6	White on Green	Receive –ve
7	Brown on White	N/A
8	White on Brown	N/A



CAT5 wiring is based on FCC modular 8 pin connectors usually called RJ45 or 8P8C plugs.

For data rates up to 100Mbps only two pairs are used. One pair for transmit and one pair for receive. For correct operation each pair is twisted upon itself and around the whole bunch in the cable at pre-determined rates. It is essential therefore to keep the pairing of the connections correct within the cable.

Each pair is marked with a pair of colours in the cable, for instance

'Blue with a white trace' and 'White with a blue trace ' called: 'The Blue Pair'.

In some cables you will find the 'White with a trace' wire is actually just white so you have to identify it by the wire it is twisted with. On cables with lots of pairs the secondary colour will vary from white, so for instance you will get a bunch based on red, grey etc.

In a normal CAT5 connection from a HUB to a COMPUTER each pin is just wired to its counterpart at the other end. However, sometimes it is necessary to swap the transmit and receive pair over, for instance to connect a COMPUTER to a COMPUTER, or a HUB to a HUB. This type of connection is called a 'crossover'. Some HUBs can detect the need for a crossover automatically. Alternatively you can use a 'crossover adapter' or make up a special cable. However, it would be unwise to do the crossover in a wall socket as this would deviate from the standard.

Un-used pins can be used for other applications such as your telephone or ISDN connections. However if you do use pairs for such things be sure they are not also connected into your CAT5 devices as it cannot be assumed they are not internally grounded or similar. Be aware also that these connections may be used for power-over-ethernet applications