A method where transmission can take place in both directions at the same time. An example of full-duplex transmission is a telephone conversation, as both participants can talk and listen without waiting for the other to finish. Signals go in both directions.

Fibre Optic Cable Construction

Multimode Fibre has light travelling in the core in many rays, called modes. It has a bigger core (62.5µm / 50µm) and is used with LED sources at wavelengths of 850nm and 1300nm and lasers at 850nm and 1310nm. "Multimode fibre" multiple paths through the fibre.

Single Mode Fibre has a smaller core, only about 9 microns so that the light travels in only one ray or mode. It is used with laser sources at 1310 and 1550nm. "Single mode fibre" single path through the fibre.

Half Duplex

A signalling system whereby transmission can occur in both directions, but only one direction at a time. A good example of this is a walkie talkie conversation between two people. One has to "tell" the other they are finished speaking, or "over" to you. Signal goes in one direction only. (half duplex) Example: Walkie Talkie, push button to talk, one speaker at a time.

Full Duplex

A method where transmission can take place in both directions at the same time. An example of full-duplex transmission is a telephone conversation, as both participants can talk and listen without waiting for the other to finish. Signals go in both directions. (full-duplex) Example: Telephone; both parties can speak and hear at the same time.

Mode Conditioning Leads

When using multimode 62.5/125µm optical fibre for transmitting Gigabit data over distances greater than 300 metres, a Mode Conditioning Patch cord must be used at each transmitter/receiver. This is because when a laser is launched into the centre of a multimode fibre it may cause differentialmode delay (DMD) effects that generate multiple signals. The mode Conditioning Patch cord overcomes this problem by launching the laser light from the transmitter into a single mode fibre which is aligned with a precise offset from the centre of the cord of a 62.5/125µm fibre in the "mode conditioning" part of the patch cord. The output from the patch cord is then compliant with the standard for 1000Base-LX.

Mode Conditioning Patch Cords are not recommended for short transmissions distances - a few tens of metres - as bit errors may occur/increase.