

# Analogue Leased Lines



A leased line is provided by a telecom company and provides you with direct connection between either two sites or multiple sites. Unlike a dial-up line the leased line is available at all times, but still can go through exchanges.

There are many configurations of leased lines available. Typically these will be 2-wire or 4-wire circuits.

On 2- and 4-wire leased lines, pairs of modems are used to provide point to point full duplex communications. These modems will typically use the V.22bis, V.32bis or V.34bis modulation standards to provide connections between 2 400 bit/s and 33 600 bit/s. One modem will be set to originate and one modem to answer. Once a connection is established it will remain in place until power is removed or the line is broken.

## Leased Line V.23

V.23 is an old standard that uses FSK modulation to provide communication circuits up to 1 200 baud on 2 or 4 wire circuits.

One advantage is that V.23 can be used in multidrop configurations, either on dedicated wires or on specially provided multipoint circuits. V.23 modems are normally terminated with a 600 Ohm impedance. This restricts the number of multidropped units on a dedicated circuit to about 6 unless these terminators are removed or line equalisers are employed.

On V.23 multipoint systems only one modem can have an active carrier at one time so communications normally have to be controlled by an external control signal such as RTS.

## The Westermo solution for V.23

Westermo's V.23 modem allows speeds up to 1 200 baud. Both the 600  $\Omega$  impedance and complex line impedances are supported by this modem.

The carrier, transmit, and input levels are all adjustable. To avoid problems with the line being locked by a faulty unit the modem automatically disconnects from the line when there has been no activity for a period of time.

A built-in switchable termination makes it possible to connect many more modems on to one line than the V.23 standard describes.