TECH TIPS

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WIRING FOR ADSL

ADSL (Asymmetrical Digital Subscriber Line) is one of the technologies being used to deliver broadband services. A broadband service is one that provides a high speed link from your premises to your Internet Service Provider (ISP). The most common method of connecting to the Internet at present is the use of a modem connected on a telephone line. The modem provides speeds of up to 56Kbps via the phone line. The connection required for a modem is the same as that used by the phone, either a 605 plug or an RJ45 plug. If you have only one phone line, whilst you are connected to the internet you cannot use any of the phones in the house as the modem is connected in parallel.

On the other hand when an ADSL line is installed the internet speed available is up to 2,000Kbps and the phone line can still be used when you are connected to the internet. The carrier uses the same physical line to deliver the phone service and the ADSL service. Unlike the modem that plugs straight in to the phone line, the ADSL service requires the installation of a filter. To understand this it is best looking at the way ADSL is delivered.

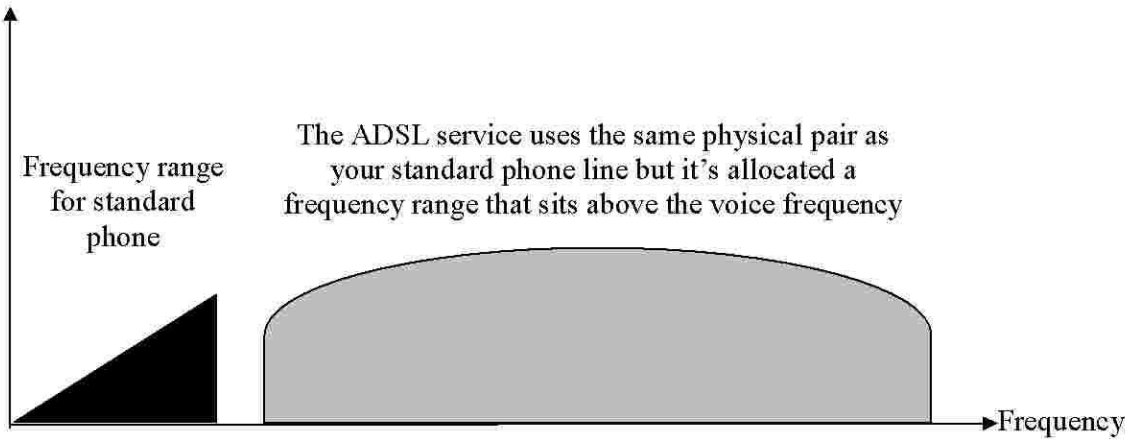

Figure 1 How ADSL is delivered using the same physical pair as you phone line

Since the carrier uses the same pair from the exchange to the customer's premises it is necessary to install an electronic device to separate the ADSL signal from the telephone signal, (Figure 1 shows how ADSL is transmitted above the telephony service) this device is known as a filter. There are two type of filters used in the ADSL installation:

In – Line filter
Central filter

Let's look firstly at a standard telephone installation, see Figure 2. In a typical cabling installation the carrier's cable terminates on a socket and then all additional sockets

WIRING FOR ADSL

are connected in parallel. If you've been asked to install the facilities to support a Broadband ADSL service all you need to do is to install an additional socket in parallel and install in line filters in the existing sockets.

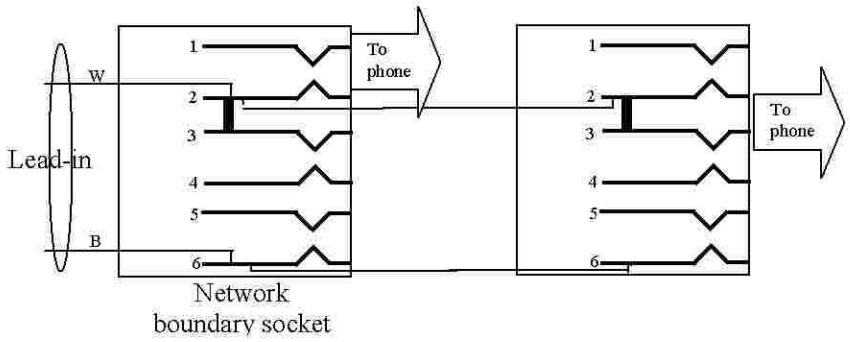

Figure 2 typical telephone installation

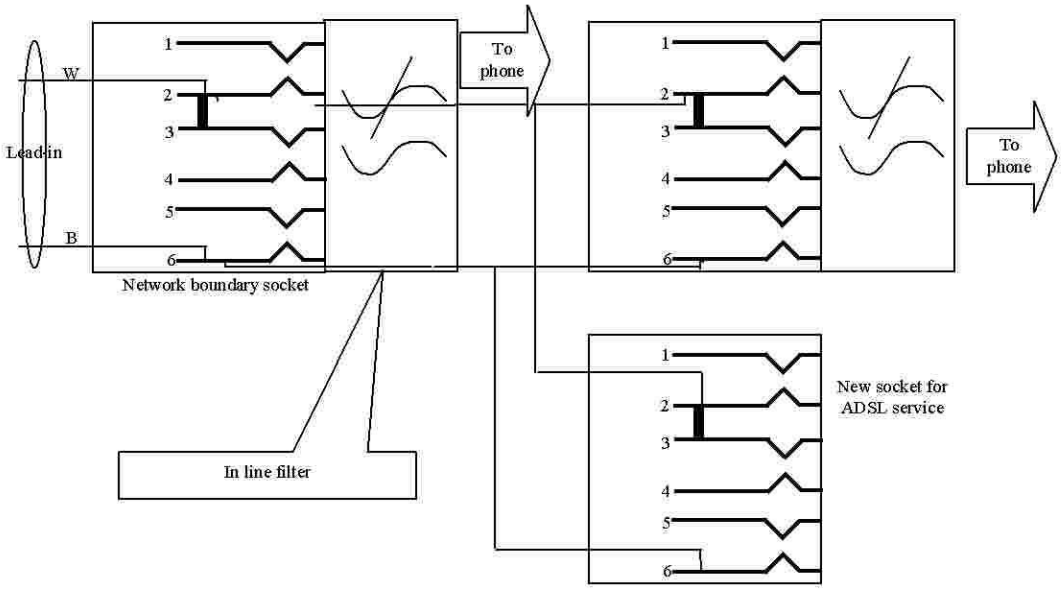

Figure 3 typical telephone installation with ADSL

With reference to Figure 3, all you need to do, is install is the additional socket. The carrier will supply the in-line filters.

The other type of installation you come across is a star wired configuration.

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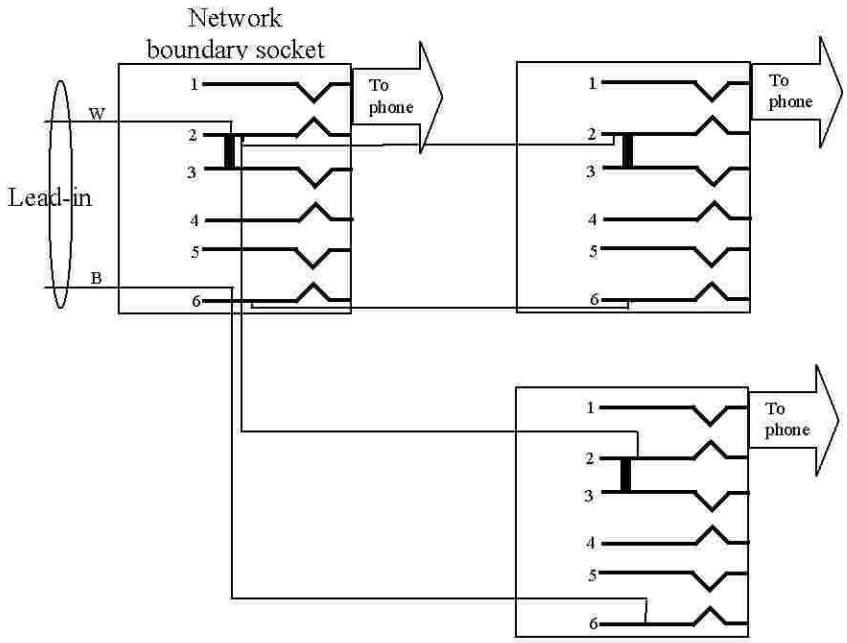

Figure 4 Star wired telephone installation

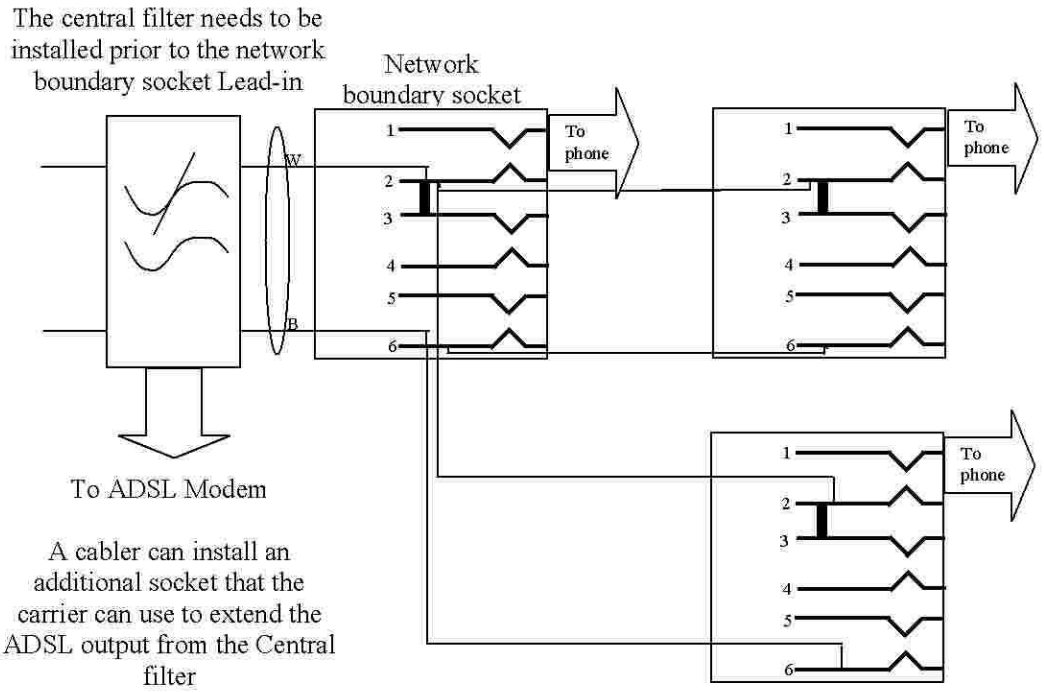

Figure 5 using a central filter

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With reference to Figure 5, you as a cabler can install an additional socket where the customer requires the ADSL modem to be located and wire it back to where the first telephone socket is as the Carrier will need to supply and install the central filter. Note, the carrier must supply and install the central filter as this is installed on the carrier side of the network boundary.

All of the above diagram show a traditional 610 socket, if you are using the new RJ45 8P4C (8 position, 4 contact, grey or black, not blue) then the connection of the telephone cable is to pins 4 and 5. The B leg is connected to pin 4 and the A leg goes to pin 5, typically A is the white conductor and B is the Blue conductor of a two pair cable.