Post Office Telecommunications DLZ 904

Datel 600 Service

A medium speed data transmission service particularly suited to both on-line and off-line data collection applications.

Description

Datel 600 offers the advantages of medium speed data transfer without the expense and increased technical complexity of higher speed or synchronous transmission. There are two speed ranges, up to 600 bits per second (bit/s) and up to 1200 bit/s. A simultaneous backward or auxiliary channel of up to 75 bit/s is also available as an option. The service is well suited to data collection applications and is used for both multipoint and point-to-point operation, often in conjunction with visual display terminals or fast character printers. Variations of Datel 600 use different telephone circuit configurations ; private circuits (PCs) can be leased for the customer's exclusive use and the Public Switched Telephone Network (PSTN) can be used either as the main transmission path or as standby in the event of private circuit failure.

Using the asynchronous transmission technique, 600 bit/s is the fastest speed achievable with high reliability over a normal speech circuit such as a PSTN connexion. The alternative range of up to 1200 bit/s is included in Datel 600 as this higher speed is achievable on many telephone connexions. Whilst a single connexion can handle 600/1200 bit/s only in one direction at a time (either transmit or receive) a variation to Datel 600 offers a simultaneous 75 bit/s capability in the reverse direction. This is normally used either for control purposes or for input from the keyboard of a visual display terminal, in which case the 600/1200 bit/s rate is used for high speed screen filling. For data collection applications Datel 600 presents an economical method of calling around a number of automatically answered data terminals to extract data which is held in storage.

As an alternative to using the PSTN to contact a terminal, it is often more economical to use a privately leased circuit. Where a number of terminals are concerned, an additional economy can often be achieved by the use of a privately leased multipoint circuit. In this arrangement a computer site is connected by a private circuit to a distant branching point to which a number of data terminals are connected by private circuits.

Information from and to the data terminal is translated by a modulator/demodulator (modem) into signals suitable for transmission over a telephone circuit. For Datel Services, the Post Office provides and instals the modem in customer premises. The terminal equipment must receive prior clearance from the PO for connexion to the modem. To cater for the speed options available in Datel 600, there are three models of modem.

- transmits at up to 600/1200 bit/s, receives at up to 75 bit/s simultaneously.
- transmits at up to 75 bit/s, receives at up to 600/1200 bit/s simultaneously.
- transmits and receives at up to 600/1200 bit/s

By combining various circuit arrangements with the different models of modem, a range of performance options is open to the user. The table illustrates these alternatives.

Speed of data transfer		Quantity of modems at each end of circuit	Type of private circuit	If available on PSTN	
				As main path	As standby to PC
Transmit 600/1200 bit/s and Receive 600/1200 bit/s alternately	With 75 bit/s backward channel	2	2-wire	Yes	Yes
	Without 75 bit/s backward channel	1	2-wire	Yes	Yes
Transmit 600/1200 bit/s and Receive 600/1200 bit/s simultaneously	With 75 bit/s backward channel	2	4-wire	No	Reverts to alternate working only
	Without 75 bit/s backward channel	1	4-wire	No	Reverts to alternate working only
Transmit 600/1200 bit/s with 75 bit/s backward channel		1	2-wire	Yes	Yes
Receive 600/1200 bit/s with 75 bit/s backward channel		1	2-wire	Yes	Yes

How it operates

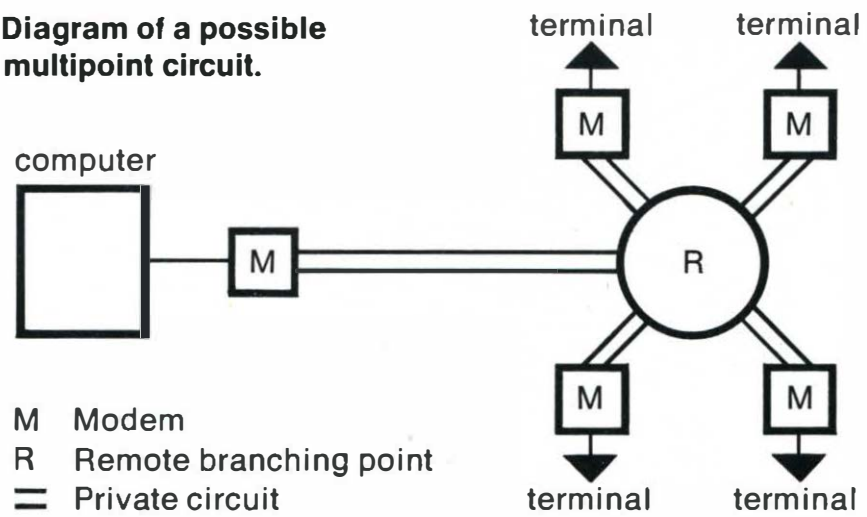
In some applications the modem is permanently connected by a privately leased circuit to a remote location. Where this is not the case, a telephone associated with the modem is used to call the distant end. When the connexion has been established the modem at each end is switched to the line. This is performed either manually by a switch on the telephone and/or terminal equipment or automatically from the terminal equipment in response to a signal from the modem. Buttons on the telephone instrument are used to perform additional functions, typically to switch the modem between a private circuit and a standby exchange line or to bring into operation the automatic answering option. A switch on the terminal equipment selects between the 600 bit/sand 1200 bit/s data rates.

Facilities

In addition to the range of operating speeds and circuit arrangements a number of additional options are available. Among the facilities offered, some of which attract an additional charge, are :

- international working
- automatic answering of incoming calls
- automatic origination of calls
- speech and signalling on private circuits (other than multipoints)
- remote testing of modems
- control facilities for computer centres
- rack mounting of modems for multiple installations.

Diagram of a possible multipoint circuit.



M Modem
R Remote branching point
= Private circuit

Technical information

The modem can be either free standing or rack mounted to achieve higher density packing. The free standing version is provided in a grey case with a stainless steel front. Access to the modem is not required for normal operation but a test switch is located on the face plate.

Dimensions and weight

– cased modem
Height 155mm (6.1")
Width 250mm (9.8")
Depth 460mm (18.1") including connecting plug to terminal equipment.
Weight 9.5kg (20.9lb)

Environment

The top of any unit should be not higher than 1540mm (5') above floor level.
Maximum ambient room temperature 30°C with free circulation of air around the case.

Power

Power supply 200–250 volts AC 50Hz ± 10%.
Maximum power consumption 9 watts
A 3-core 2.4 metre (8') power lead is provided.

Modulation

Frequency shift keying conforming to CCITT V23 recommendation for asynchronous transmission of serial, binary, digital data. Code transparent.

Data Rates

High rate : Two ranges
– up to 600 bit/s
– up to 1200 bit/s (assured only over a 4-wire private circuit)
Low rate : (Optional)
– up to 75 bit/s in duplex with high rate.

Line

2-wire PSTN : 2-wire or 4-wire private circuit or 4-wire multipoint

Interface to Terminal Equipment

Conforms generally to CCITT V24 and V28 recommendations. Modem is terminated on 25-pin D-type connector socket (Specification available on request).

General

Maintenance charges are included in the tariff and apply nationally.

Datel Sales Enquiry Points: Telephone Numbers

Aberdeen
Aberdeen (0224) 24009

Bedford
Bedford (0234) 52241

Belfast
Belfast (0232) 33576

Birmingham
021-262 2757

Blackburn
Blackburn (0254) 666387

Bournemouth
Bournemouth (0202) 24990

Bradford
Bradford (0274) 20974

Brighton
Brighton (0273) 202090

Bristol
Bristol (0272) 296507

Cambridge
Cambridge (0223) 61816

Canterbury
Canterbury (0227) 60034

Cardiff
Cardiff (0222) 24749

Chester
Chester (0244) 20192

Colchester
Colchester (0206) 41331

Coventry
Coventry (0203) 22905

Dundee
Dundee (0382) 302201

Edinburgh
031-345 4480

Exeter
Exeter (0392) 75030

Glasgow
041-220 2899

Gloucester
Gloucester (0452) 25451

Guildford
Aldershot (0252) 27546

International
01-432 5407

Lancaster
Lancaster (0524) 88207

Leeds
Leeds (0532) 37893

Leicester
Leicester (0533) 534111

Lincoln
Lincoln (0522) 26651

Liverpool
051-229 3961

LONDON
Centre
01-437 8060 Ext 352

City
01-921 8754

East
01-553 7228

North
01-340 8060 Ext 7143

North Central
01-829 4405

North West
01-864 4347

South
01-760 7400

South Central
01-261 4622

South East
01-290 2494

South West
01-879 2444

West
01-579 8771

MANCHESTER
Central
061-863 6438

North
061-863 8261

South
061-863 5478

Middlesbrough
Middlesbrough (0642) 248636

Newcastle upon Tyne
Newcastle (0632) 613364

Norwich
Norwich (0603) 25282

Northampton
Northampton (0604) 39171

Nottingham
Nottingham (0602) 56869

Oxford
Oxford (0865) 812312

Peterborough
Peterborough (0733) 69664

Plymouth
Truro (0872) 4224 Ext 230

Portsmouth
Portsmouth (0705) 813411

Preston
Preston (0772) 55989

Reading
Reading (0734) 52598

Scotland West
041-242 2068

Sheffield
Sheffield (0742) 732377

Shrewsbury
Shrewsbury (0743) 3388

Southampton
Southampton (0703) 33270

Southend
Southend (0702) 47099

Stoke-on-Trent
Stoke (0782) 28296

Swansea
Swansea (0792) 52870

Taunton
Taunton (0823) 87172

Tunbridge Wells
Tunbridge Wells (0892) 24511

West Midland
021-262 2609

York
York (0904) 57220

Your local Sales Office will be pleased to give you the Postal address of any of our area offices.

Please note
We do our best to supply our customers with the apparatus they ask for but we may have to provide apparatus which does not accord exactly with the descriptions and illustrations in this leaflet.

For further or up-to-date information please contact the special services representative of your Local Telephone Sales Office. The telephone number is shown above.

If you have difficulty obtaining information from the numbers listed please call Freefone 2170 or 01-432 1813.