HIGH-SPEED MODEM RANGE

High-Speed Modems 144 DP, 96 DP and 96 FT

Three fully featured high-speed modems, spanning data rates from 4800bps to 14400bps, catering for network applications and configurations with point-to-point and multipoint over 4-wire (full duplex) and 2-wire (half duplex) leased lines. Optional dial back-up facilities allow for restoration to the public switch telephone network (PSTN).

This high-speed range offers powerful and cost effective communications' solutions:

144 DP MODEM: operating synchronously at 14400bps, 12000bps and 9600bps on 4-wire leased circuits for point-to-point applications, compatible with CCITT V33. With fallback to 9600bps the 144 DP is compatible with CCITT V29. Further trellis encoded 9600bps facilities give superb dial-up performance over the PSTN.

96 DP MODEM: specifically designed for point-to-point applications on 4-wire leased lines, the integral dial back-up unit option uses PSTN lines when leased lines fail. Compatible with CCITT V29 it operates synchronously at 9600bps, 7200bps and 4800bps. Fallback to 4800bps gives compatibility with CCITT V27 and V29. The 96 DP can be upgraded to full 144 DP at a later date.

96 FT MODEM: an impressive implementation of CCITT V29 and V27bis standards for 2/4-wire leased lines, this modem also operates at fallback of 4800bps conforming to CCITT V27. Configured from the front panel keypad, it also offers 9600bps, 7200bps and 4800bps. The fast synchronisation time of 23ms and full array network management diagnostics make it ideal for point-to-point and multi-point applications. Options include sophisticated auto-dial and auto-call facilities.

Diagnostics

Miracle's new DP MODEMS have comprehensive diagnostics to solve problems fast – with LED status displays and local and remote loopback tests conforming to CCITT V54. With todays most extensive diagnostic features, the 96 FT tests are conducted via a password protected front panel keypad – results shown on the LCD. It can also test up to 64 remote modems in a multi-drop environment with error rates displayed on the LCD.

Fast train

The 96 FT has a viarety of fast train features including fast training at 23ms to minimise synchronisation time. 'Speed Shift' gives compatibility with BT4960 modems and allows data to be released after just 9ms at the reduced rate of 2400bps.

Automatic calling

The DP modems have the option of dial back-up units to reinstate the service over PSTN if leased lines fail. The automatic calling options on the 96 FT MODEM make it particularly versatile for PSTN lines with calls controlled by terminal equipment using V25bis handling procedures. It also stores up to 20 telephone numbers and the 'Automatic Link' restoration allows the modem to automatically establish a dial back-up link should the master link fail.

MIRACLE TECHNOLOGY

TECHNICAL DATA

Modem Type

96 FT Modem: Synchronous Point-to-Point or Multipoint compliant with CCITT recommendations V.29 and V.27bis. Operating speeds are 9600, 7200, 4800 and 2400bps on 2 or 4-wire leased circuits. Optional integral auto-answer and auto call facilities, for 2 or 4-wire dial up applications.

Modulation

9600bps: Eight-phase, four amplitude quadrature modulation (QAM): 2400 baud

4800bps: Eight-phase modulation: 1600 baud – V.27bis

4800bps: Four-phase modulation: 2400 baud – V.29

2400bps: Four-phase modulation: 1200 baud – V.27

Clear to Send Delay

Constant Carrier: 0 and 15ms

Controlled Carrier: 253ms V.29
50 ms V.27bis

Fast Train: 23ms

Speed Shift: 9ms (then 2400bps for 26ms then 4800bps)

Interfaces

Leased line interface consists of a 4 way terminal block or alternatively a BT 631A lead for UK applications. The line interface is transformer coupled and transient protected. Optional PSTN interface consists of additional BT leads or alternatively terminal blocks.

Terminal interface is CCITT V.24/V.28 (RS232C) serial synchronous female 25 pin connector.

Equalisation

Automatic Adaptive.

Diagnostics

Local digital loopback
Local analogue loopback
Remote digital loopback
Remote analogue loopback
Up to 64 remote modems can be addressed
Loopback facilities conform to CCITT V.54 recommendations
Test pattern generator and error detector – a selection of test patterns including 511bits is available together with error injection and bit error counting.

Indicators

A custom LCD provides 12 character message and the following indicators

Carrier Detect
Signal Quality
Receive Data
Request to Send
Clear to Send
Transmit Data
Data Set Ready
Data Terminal Ready
Transmit Clock
Receive Clock
External Clock
Test
Error
Fall Back
Dial Back-up
Leased Line
Constant Carrier

Automatic Answer:

Integral 2-wire/4-wire auto answer complies to CCITT V.25. This option can be activated manually or automatically on loss of carrier or bad signal quality.

Automatic Calling:

Integral 2-wire/4-wire auto call complies with CCITT V.25bis synchronous modes (bit or byte protocols). This option can be activated manually or automatically on loss of carrier or bad signal quality.

Up to 20 telephone numbers (19 digits) can be stored in the unit and recalled from the front panel or the data interface.

Physical Dimensions

Width	203mm (8″)
Depth	279mm (11″)
Height	51mm (2″)
Weight	1.4kg(3 lbs)

Power

230V or 115V ac ±10%, 48-62Hz
10 watts.

Operating Environment

0 to 45°C (32-114°F)
Relative Humidity 95% non-condensing

MIRACLE TECHNOLOGY

Miracle Technology (UK) Ltd.
Hadleigh Road Industrial Estate,
Ipswich, Suffolk, England IP2 0HB
Tel: (0473) 216141
Telex; 946240 CWEASY G 1900 2985
Telecom Gold 79: Key 001 Fax: (0473) 50080

Modem Type

144 DP Modem: Synchronous Point-to-Point compliant with CCITT recommendation V.33. Operating speeds are 14400, 12000, 9600bps on 4-wire leased circuits. Optional integral dial back-up with manual connect.

96 DP Modem: Synchronous Point-to-Point compliant with CCITT recommendations V.29 and V.27bis. Operating speeds are 9600, 7200 and 4800bps on 4-wire leased circuits. Optional integral dial back-up with manual connect.

Modulation

144 DP Modem:

14400bps: Sixty four point constellation, trellis encoded, V.33

12000bps: Thirty two point constellation, trellis encoded, V.33

9600bps: Thirty two point constellation, trellis encoded, V.33

9600bps: Sixteen point constellation, Q.A.M., V.29

96 DP Modem:

9600bps: Eight-phase, four-amplitude quadrature modulation (QAM); 2400 baud.

4800bps: Eight-phase modulation; 1600 baud – V27bis

4800: Four-phase modulation; 2400 baud – V.29

Interfaces

Leased Line interface consists of a 4-way terminal block or alternatively a BT631A lead for UK applications. The line interface is transformer coupled and transient protected.

Optional PSTN interface consists of terminal blocks or alternatively additional BT leads.

Terminal interface is CCITT V.24/V.28 (RS232C) serial synchronous. Female 25 pin connector.

Diagnostics

Local digital loopback
Local analogue loopback
Remote digital loopback
Test pattern generator and detector
Test loops can be initiated from the front panel or from the V.24 interface as per CCITT V.54 recommendations.

Indicators

LED's display status of:

Data Rate
Carrier Detect
Signal Quality
Receive Data
Request to Send
Clear to Send
Transmit Data

Physical Dimensions

Width	203mm (8″)
Depth	279mm (11″)
Height	51mm (2″)
Weight	1.4kg(3 lbs)

Power

230V or 115V ac, ±10% 48-62Hz
10 watts.

Operating Environment

0 to 45°C (32-114°F)
Relative Humidity 95% non-condensing

APPROVED FOR USE
with telecommunications systems run by British Telecommunications in accordance with the conditions in the instructions for use.

Miracle Technology (UK) Limited reserves the right to alter the above specification in part or all at any time, in the interest of continuing product development. Availability of products is subject to the company's Terms and Conditions of sale.