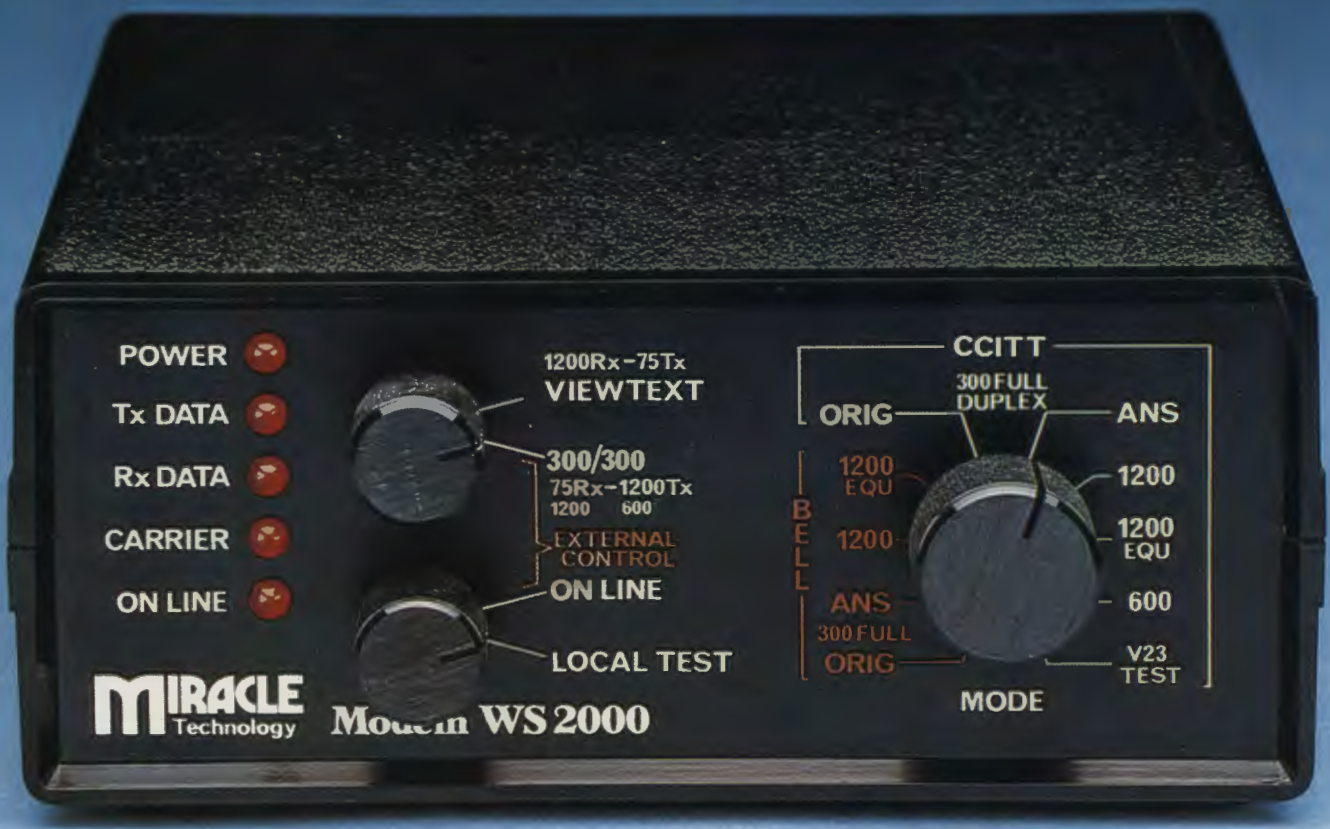
Outstanding Modem WS 2000

its applications, performance, accessories & specification



Access the world's Information Technology

Modem WS2000 is a single-unit multi-standard, multi-speed data communications device, offering a very wide choice of operational facilities.

This modem can transfer data between any two computers anywhere in the world: it incorporates the latest Large Scale Integration circuits to generate signals compatible with both CCITT and BELL Standards. These two standards cover virtually all countries in the world.

WS2000 can be totally controlled from within a computer's software program; it can feature autodialing, autoanswer; or it can be purchased as a simple-to-use manual selection modem at a highly competitive price.

This is the Modem chosen by the British Broadcasting Corporation for demonstration of a totally reliable USA-UK data link live on television. WS2000 performed faultlessly in front of an audience of millions.
It can perform faultlessly for you in nearly any communications use you choose.

Restrictions
Modem WS2000 has not been approved for the use of BELL standards in the UK. All WS2000 modems sold for use in the UK are therefore fitted with a stop pin on the mode selection switch to prevent use of these BELL standards. The Autodialer unit AD-2 and the Autoanswer unit AA-2 are not yet approved for use on the PSTN in the UK.

MIRACLE TECHNOLOGY

Instant access

Telex—through Cable and Wireless/Western Union ***Easylink** Telex, WS2000 can link to the world-wide Telex network, with the ability to both send and receive telexes using your present computer, at a fraction of the cost of the normal British Telecom telex terminal system.

***Prestel/*Micronet**—WS2000 takes you into one of the world's biggest databases, with facilities for business, education and the home user.

***Telecom Gold**—this advanced business mailboxing system, part of British Telecom's world-wide data communications network, can be instantly accessed with WS2000.

Bulletin Boards—throughout the world, bulletin boards provide simple, often totally free, mailboxing and 'chat' facilities for computer users, including those with the simplest home computers.

User to user—WS2000 can link virtually any computer or data terminal with any other, of the same or completely different type and make, over public or private telephone lines, over any distance. Data files and programs can be sent both ways at high speed through WS2000. All that's needed is for both ends to use the international RS232/CCITT V24 data transfer protocol. WS2000 uses this protocol. So do nearly all major computers and terminals.

Modem WS2000 is recommended for all these data communications services.

**Prestel, Micronet, British Telecom Gold and Easylink are all registered trade marks of the companies concerned.*

Modem Technology that gives you control

A modem is a device that translates data signals from a computer or terminal into modulated sound waves suitable for transmission over the telephone network. It can also receive these sound signals and demodulate them back into electronic computer data. MOdulate and DEModulate—that's where the word **MODEM** comes from.

Modem WS2000 can transmit and receive at a number of speeds—300 baud (baud means data bits/second) full duplex, 600 baud half duplex, 1200 baud half duplex, 1200 plus 75 baud back channel—that's **Prestel/Telecom Gold** standard—and 'Host' **Prestel** at 75 plus 1200 baud.

And WS2000 can switch between CCITT standards for countries adopting the European communications standards, and BELL standards for those other countries adopting the USA standards. That covers virtually every country in the world.

Simplicity plus sophistication of design gives Modem WS2000 unique expandability to meet all your present and future needs.

The standard WS2000 comes with all you need to set up a data link using any RS232/V24 compatible computer or terminal, except for the actual computer connecting lead and software, if required. We don't include these because WS2000 is fitted with the standard industrial 25-way female D-type RS232 port, so you may well have the right connecting lead already, and your computer may quite likely already have communications software with it.

If you don't have these things, then we can supply them off the shelf for nearly all major computers.

WS2000 Modem Technical Details

Dimensions and weight

Width	155mm	(6.00")
Depth	160mm	(6.75") overall
Height	70mm	(2.60") overall
Footprint	155×160mm	
Weight	1.0Kg	approx.

Case type
High impact ABS wipe-clean casing with textured finish

Power requirements
Nominal 240 V~ 50/60Hz
single phase +10% −8%,
<15 watts. 110 V~ conversion available.
OR + 12 VDC + 5% at 250mA and −12 VCDC + 5% at 75mA via inbuilt 6-pin DIN socket on rear panel.
Positive and negative power rails internally fused.

Environmental requirements
Operational ambient temperature range +5C to + 30C.

Modulation method
Voiceband Serial Asynchronous Frequency Shift Keying.

Transmission Path
2 or 3-wire Public Switched Telephone Network, or 2-wire Private Wire.

Line Termination Characteristics
Terminating impedance 600 ohms.

Line Termination Type
British Telecom Series 600 modular plug (plug type 431A) on lead 405/2 supplied.

Transmit Level
−9 dBm, maximum level (ref. 600 ohms)

Data Signalling Rates
300/300 bit/s, 600 bit/s, 1200 bit/s, 1200/75 bit/s, 75/1200 bit/s.

Standards available
CCITT V21, CCITT V23, BELL 103, BELL 108, BELL 113, BELL 202
(available where PSTN regulations allow).

Word length/Parity
WS2000 is transparent to data word length and parity; no modem settings required

Mode selection
By front panel switching or by full computer control through rear-panel User Port (note 003)

Modem Interfaces
EIA RS232c and CCITT V24 compatible DTE port. TTL level User Port.

Modem (DTE) Interface Connector
25-pin male D-type plug required, female socket fitted at modem.

Control Signals Available at Modem RS232c Port:

Pin no.	Input to Modem/ Output from Modem	Function
1	–	Protective Ground (chassis)
2	I	Transmitted Data
3	O	Received Data
4	I	Request to Send
5	O	Clear to Send
6	O	Data Set Ready
7	–	Signal Ground
8	O	Data Carrier Detect
20	I	Data Terminal Ready
22	O	Ring Indicator

Internal pull-up resistors enable DTR and RTS if these control signals are not available from the terminal equipment in use.

Control Signal Interaction Timings
Request to Send ON to Clear to Send ON timings (nominal):

CCITT V21	400msec
CCITT V23	209msec
BELL 202	184msec
BELL 103	209msec

Request to Send OFF to Clear to Send OFF timings (nominal):

All ranges	0.50msec

Line noise control
Selectable fixed line-amplitude equalisation in CCITT V23 and BELL 202 modes, switch or software selectable.

Diagnostic Test Facilities
Inbuilt full analogue loop-back self-testing in panel-switched Off Line mode.

Control Signal Indicators
Front-panel separate LED indicators for:

POWER ON
TX DATA
RX DATA
CARRIER DETECT
ON LINE

Safety
Modem WS2000 is designed and has been constructed to comply with the relevant requirements of the following standards:

BS 415, BS 6301, BS 6305, BS 6320

and has been tested for compliance with these standards by the British Approvals Board for Telecommunications and by test laboratories of British Telecommunications.

Power interface components are manufactured to meet IEC 65 Class 2 and VDE 0550 Class 2.

Approvals
Modem WS2000 has been designed to meet a wide range of PTT requirements. Application for approval is planned for most European and Scandinavian countries, and for the USA.

The above data may be subject to change, and Miracle Technology (UK) Limited reserves the right to change the design, specification and price of its products without prior notice, in the interests of continuing product development. Availability of products will be as stated in the Company's current issue stock and price lists, and subject to the Company's Terms and Conditions of Sale.

APPROVED for use with telecommunication systems run by British Telecommunications in accordance with the conditions in the instructions for use.

MIRACLE TECHNOLOGY (UK) LTD ST PETERS STREET IPSWICH IP1 1XB ENGLAND
✆ (0473) 50304 5 LINES TX 946240 CWEASY G 19002985

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