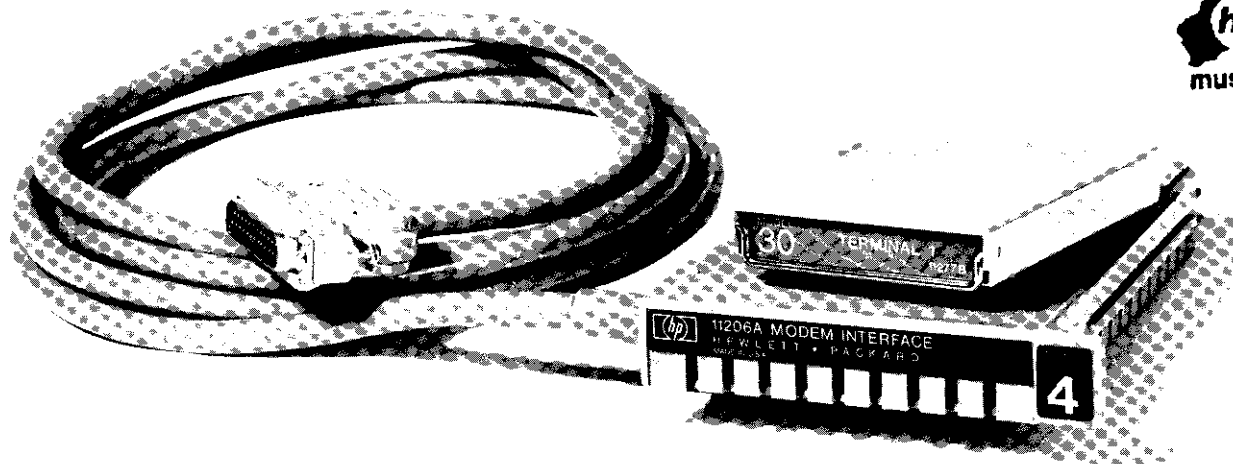


HEWLETT **hp** PACKARD

9830

# 11277B/F and 11206A TIME-SHARING COMMUNICATIONS

TECHNICAL DATA JULY 1974



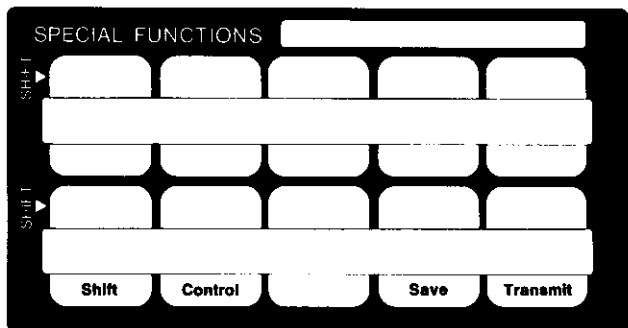
11206A Modem Interface Card And 11277 B/F Terminal 1 ROM

## DESCRIPTION

The HP 11206A Modem Interface Card and HP 11277 B/F Terminal 1 ROM allow the HP 9830A Calculator to be used in conjunction with a modem or acoustic coupler as a terminal to a remote time-share system. Basically, the Terminal 1 ROM makes the calculator work like a teleprinter when communicating with a time-share system.

The calculator may also transmit or receive BASIC language programs or "free text": this includes programs written in FORTRAN, ALGOL, or other programming languages.

In order to provide the necessary special characters and retain single keystroke execution, the Terminal 1 ROM makes use of four of the SPECIAL FUNCTIONS keys.



The Terminal 1 ROM uses 20 8-bit bytes (10 words) of read/write memory to define these keys.

Two of the keys (Shift and Control) correspond to the teleprinter Shift and Control keys, respectively. The Save key is used to retain information transmitted from the remote time-share computer to the calculator. The Transmit key is used to send program lines or instructions to the time-share system.

## HARDWARE SPECIFICATIONS

The 11206 Interface card is designed to interface to low-speed asynchronous modems which meet Electronic Industries Association Recommended Standard 232-C (EIA RS-232-C). The card is capable of sending and receiving information at 3 to 440 bits/second selectable via the 11277 Terminal 1 ROM and the 9830. An eight-foot interface cable terminated in a 25-pin male connector provides the following lines to the modem:

| Pin No. | Signal Name         | Comment  |
|---------|---------------------|--|
| 1       | Protective Ground   |  |
| 2       | Transmitted Data    | from calculator to modem                             |
| 3       | Received Data       | from modem to calculator                             |
| 4       | Request to Send     | turned "on" when calculator enters "terminal" mode   |
| 5       | Clear to Send       | "on" signal from modem allows calculator to transmit |
| 7       | Signal Ground       |  |
| 20      | Data Terminal Ready | turned "on" when calculator enters "terminal" mode   |

Note: pins 4 and 20 are connected at the 11206A Interface card.

### Codes

The 9830 calculator accepts 7-bit (with parity) or 8-bit (no parity) ASCII codes. The 11206 card places no restrictions on codes within the ASCII character set. The 11277 B/F Terminal 1 ROM ignores received characters between octal 0 and 37, except for 15 which is carriage return. It also ignores received characters from octal 174 to 177.

## Data Rates

Rates from 3 to 440 bits/second are selectable through the 9830.

- 11-bit code is employed below 130 b/s and 10-bit code at or above 130 b/s. This is determined in the 11277 Terminal 1 ROM and may not be altered.

## GENERAL

### Power

Powered from the calculator.

### Select Code

The 11206 is set at the factory for select code 4; select codes 1 through 9 are also selectable on the printed circuit card.

## TERMINAL EQUIPMENT REQUIREMENTS

In order to use the 9830 calculator as a time-sharing terminal, the following equipment is required in addition to the 9830 with the Terminal 1 ROM and the 11206 Interface:

- HP 9866A or HP 2607A printer.
- Low-speed asynchronous, full-duplex modem or acoustic coupler which meets RS-232-C specifications (Bell 103A or equivalent).

## TIME-SHARE SYSTEM REQUIREMENTS

To use the 9830 calculator as a terminal, the computer time-share must offer the following options:

- No echo-back or suppressible echo-back.
- Low-speed operation. The 9830 and 11277 Terminal 1 ROM are capable of transmitting up to 440 bits/sec.
- Transmission in ASCII code.

## ROM ORDERING INFORMATION

The 9830 calculator allows the addition of up to 8 Add-on ROM's. Five may be added as external plug-in ROM's and three as internal plug-ins.

The Terminal 1 ROM described in this data sheet is available in internal and external configurations:

EXTERNAL - 11277B  
INTERNAL - 11277F  
WITH 9830 (INTERNAL) - OPTION 277

## ADDITIONAL FEATURES

The 9830 calculator has been designed as a general purpose stand-alone calculator. This provides a number of bonus features when the 9830 is used in terminal mode.

## Savings in Connect Time

The calculator need not be connected to the time-share computer while programs are keyed in. Programs or data lines can be entered into the calculator memory, edited, and then the time-share connection made. The lines can be transmitted all at once to the time-share computer with considerable savings in connect time.

## Savings in Storage Charges

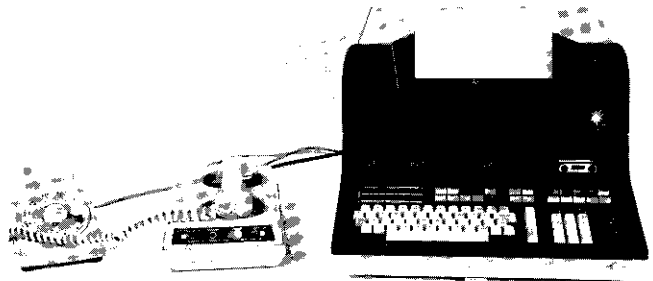
Any "free text" lines received from a time-share system can be stored in the calculator memory as long as each line has a reference number. From the calculator memory, "free text" lines can be stored on cassette files or mass memory files or on paper tape. Since most time-share services provide overnight storage to their customers at additional cost, these charges can be eliminated by using cassette or mass memory or paper tape storage, as well as increasing the security of the data.

- "Free text" lines can be printed without line numbers for text editing applications.
- The SPECIAL FUNCTIONS keys can be used as typing aids for quicker and more accurate data entry.
- Typing and program errors are easily corrected with the calculator editing keys.
- The user can store and run BASIC programs in the 9830 and perform calculations while in terminal mode.

## PURCHASE PLANS

Contact one of the Hewlett-Packard worldwide sales and service offices for specific prices and plans in your area.

## Service Contracts Available.



**THE HP 9830 AS A TIME-SHARING TERMINAL  
(Shown with Acoustic Coupler)**

HEWLETT  PACKARD

Sales and service from 172 offices in 65 countries.  
Loveland, Colorado 80537