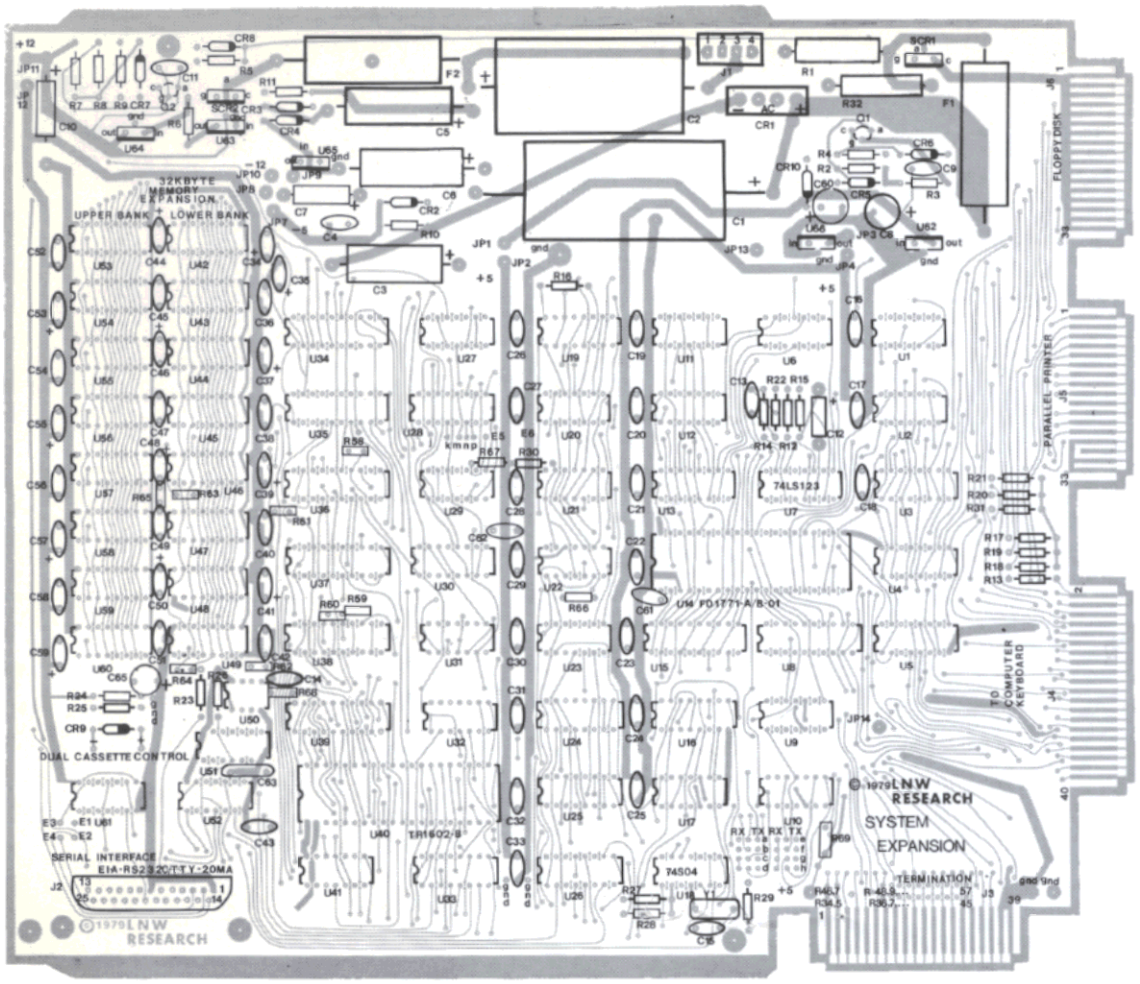

SYSTEM EXPANSION

FOR THE

TRS-80™

AT

$69.95 [PC BOARD & USER MANUAL]

- SERIAL RS232C/20mA I/O
- FLOPPY CONTROLLER
- 32K BYTES MEMORY
- PARALLEL PRINTER PORT
- DUAL CASSETTE PORT
- REAL-TIME CLOCK
- SCREEN PRINTER BUS
- ONBOARD POWER SUPPLY
- SOFTWARE COMPATIBLE
- SOLDER MASK, SILK SCREEN

LNW RESEARCH

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DOES PERFORMANCE + FEATURES = LOW COST ?

YES! With the 'LNW Research System Expansion', powerful features and high performance do add up to low cost. For '$69.95' the System Expansion Board features 32k BYTE MEMORY EXPANSION, FLOPPY DISK INTERFACE, PARALLEL PRINTER INTERFACE; SERIAL INTERFACE (RS-232-C, 20 mA), DUAL CASSETTE INTERFACE, SCREEN PRINTER BUS AND POWER SUPPLY ON BOARD. And all based on 'no-compromise' engineering and high quality PC design to provide the highest performance possible. Plus, by building the System Expansion yourself you can combine the performance and features of this remarkable board for a fraction of the price of a Radio Shack Expansion Interface.

SERIAL INTERFACE--STANDARD

In order to interface to modems, teletypes, serial printers, and other TRS-80's**, you need a bidirectional Serial Interface. That's why it's standard on the System Expansion. The Interface is implemented with RS-232-C, as well as, 20 mA (TTY) at the standard baud rates. Software compatibility has been maintained and listings of driver programs are supplied.

QUIET MEMORY DESIGN

The 16k dynamic RAM's susceptibility to noise can cause erratic and mystifying behavior. There is no substitue for GOOD PC LAYOUT TECHNIQUES, ADEQUATE SUPPLY BYPASSING AND GROUNDING, and SERIES TERMINATION OF THE ADDRESS AND CONTROL LINES. By adhering to these standards, we created a memory array that requires NO HAND SELECTED MEMORY PARTS, EXHIBITS NO MYSTERIOUS BEHAVIOR, AND CAN BE RELIED ON FOR ACCURATE DATA STORAGE.

ACTIVE TERMINATION

ACTIVE TERMINATION and SCHMITT TRIGGER RECEIVERS are used to provide the utmost in data integrity. Even in an electrically noisy environment and without special buffered cables, the System Expansion Board will operate with "rock-solid" performance.

**TRS-80 is a product of Tandy Corporation.

BUILD WHAT YOU NEED

We know that everyone may not need all the features of our System Expansion Board, and why pay for something you don't need? By offering the bare PC Board and providing PARTS LISTS BY SECTION you can build the board according to your current needs and expand later. This MODULARITY serves to further reduce the cost of your interface.

SUPERB DOCUMENTATION

With every circuit board comes a COMPREHENSIVE USERS MANUAL. This detailed manual features Parts Lists, Assembly Instructions, Testing Sections, Circuit Descriptions, Troubleshooting Information and Schematics.

SOFTWARE COMPATIBLE

Since the System Expansion Board is fully SOFTWARE COMPATIBLE with the TRS-80**, no patches or special software is required.

If you've been searching for the ultimate interface that combined the powerful features and high performance that you need, at a price you can afford, your search is over. The LNW Research System Expansion Board is available today.

Contact your local computer retailer or 'LNW Research'.

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SYSTEM EXPANSION

— SPECIFICATIONS —

I. ELECTRICAL

A. SERIAL INTERFACE

1. EIA RS-232-C or 20mA (TTY)
2. Jumper Selectible Baud rates:
   a. 110, 150, 300, 600, 1200, 2400, 4800, 9600 Baud.
3. Parity:
   a. Even, Odd, or Disable.
4. Word Length:
   a. 5, 6, 7 or 8 bits.
5. Jumper Selectible as Data Terminal Equipment or Data Communication Equipment.

B. MINI FLOPPY CONTROLLER

1. Controls up to four (4) drives.
2. FD1771B-01 Floppy Disk Formatter/Controller.

C. MEMORY EXPANSION

1. Support 0k, 16k or 32k bytes of expansion.
2. Utilize 16k x 1 dynamic RAM.

D. PARALLEL LINE PRINTER INTERFACE

1. Compatible with the Radio Shack/Centronic printers.

E. DUAL CASSETTE PORT

1. Relay Controlled.

F. REAL-TIME CLOCK

1. "Heartbeat" interrupt type.

G. POWER SUPPLY

1. Overvoltage protection.
2. Short circuit protection.
3. Thermal shutdown.
4. Four (4) supplies:
   a. +12v @ 300 mA
   b. + 5v @ 1.1 A
   c. - 5v @ 1 mA
   d. -12v @ 20 mA
5. Utilize Radio Shack's UL approved TRS-80** Computer Power Pack.

H. SCREEN PRINTER BUS

1. Extension of the TRS-80** 40-pin Bus

II. MECHANICAL

A. CONSTRUCTED BOARD SIZE

1. 9.6" x 11.5" x 2"

B. PRINTED CIRCUIT MATERIAL

1. Epoxy with solder mask and silk screened reference.

— ORDERING INFORMATION —

- SYSTEM EXPANSION including printed circuit board and user manual $69.95
- USER MANUAL. . . . . .$ 6.95

On all orders, please add $3.00 for postage and handling. California residents add 6% sales tax.

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