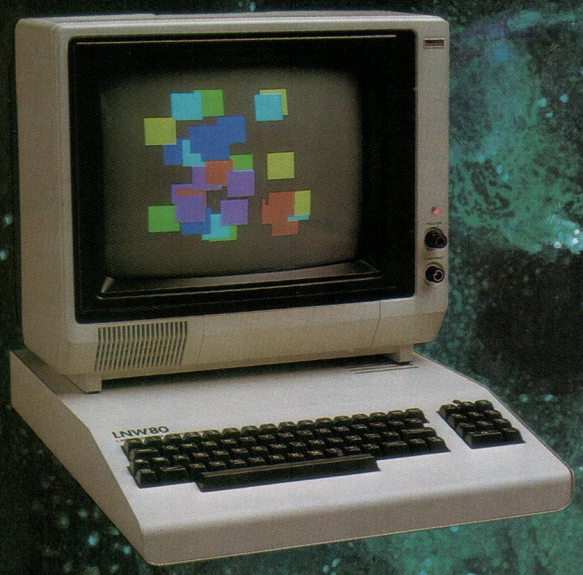
galaxy of features

A GALAXY of features makes the **LNW80** a remarkable computer. As you explore the **LNW80**, you will find the most complete, powerful, ready to run, feature-packed personal and business computer ever made into one compact solid unit.



MODEL I COMPATIBILITY – The **LNW80** is fully hardware and software compatible with the Model I. Select from a universe of hardware accessories and software – from VisiCalc® to space games, your **LNW80** will launch you into a new world of computing.

FULLY LOADED – A full payload includes an on-board single and double density disk controller for 5 ¼" and 8" single or double sided disk drives. RS232C communications port, cassette and parallel printer interfaces are standard features and ready to go. All memory is fully installed – 48K RAM, 16K graphics RAM and 12K ROM complete with Microsoft **BASIC.**

QUALITY CONSTRUCTION – Instrumentation quality construction sets **LNW80** computers apart from all the rest. Integrated into the sleek solid steel case of the **LNW80** is a professional 74-key expanded keyboard that includes a twelve key numeric keypad.

HIGH RESOLUTION GRAPHICS & COLOR – The stunning 480 X 192 resolution gives you total display control – in color or black and white. The choice of display formats is yours; 80, 64, 40 and 32 columns by 24 or 16 lines in any combination of eight colors.

PERFORMANCE – Lift-off with a 4MHz Z80A CPU for twice the performance. The **LNW80** outperforms all computers in its class.

Our down to earth price won't send you into orbit

LNW Research Corp.
2620 WALNUT Tustin, CA. 92680
(714) 641-8850 (714) 544-5744

Monitor and Disk drives not included
TM Personal Software, Inc.

GENERAL

The LNW80 computer measures 16.5"W x 3.5"H x 22"D and weighs 26 lbs. It contains the CPU, Memory, Keyboard, Video controllers, peripheral controllers, power supply, and cooling fan. All peripherals and accessories connect to the LNW80 via connectors on the rear panel. The optional color or monochrome monitor easily fits on the large surface of the LNW80. The LNW80 is available in two models:

MODEL NO.	DESCRIPTION
5000	LNW80 120 VAC 60Hz NTSC Video (525 Lines USA/Japan)
5001	As listed above with optional RGB interface installed.

CENTRAL PROCESSING UNIT (CPU)

PROCESSOR: Z80A
CLOCK SPEED: 4MHZ
ROM WAIT STATES: 1 (250NS)
RAM WAIT STATES: None

MEMORY

USER RAM: 48K Bytes
GRAPHICS RAM: 16K X 6 Bits
VIDEO RAM: 1K Bytes
ROM: 12K Bytes Microsoft BASIC-80 (Level 2 compatible)

KEYBOARD

74 key expanded professional typewriter style keyboard with the following features:

* 12 key numeric pad (includes ENTER key)
* Control key
* Shift lock and caps lock keys
* Localized cursor control keys (arrows)
* CPU/Cassette speed switch (500/1000 baud)
* Underline key

The keyboard also includes two RESET keys which when pressed together cause a system master reset.

FLOPPY DISK DRIVE INTERFACE

DRIVE TYPES: 5.25" AND/OR 8" Shugart compatible
NUMBER OF DRIVES: 4-Single sided or 3-dual sided drives
INTERFACE: 34 Pin. Optional 34 to 50 pin conductor cable adaptor required for 8" disk drives.
DRIVE DENSITY: Single or double
DATA SEPARATION: Analog phase locked loop
MAXIMUM STORAGE: 3,550,000 Bytes (3 dual sided 8" drives)
OTHER FEATURES:

* 5.25" and 8" drives in any mix
* Single and double density in any mix
* 35, 40, 77, 80 track drive support
* 5.25" or 8" system disk (drive 0)
* Precision write precompensation
* Maximum double density capacity

FIVE INCH DRIVES (Formatted storage per drive)

40 track: 368,640 bytes (dual sided)
80 track: 737,280 bytes (dual sided)

EIGHT INCH DRIVES (Formatted storage per drive)

77 track: 1,182,720 bytes (dual sided)

RS232-C ASYNCHORNOUS INTERFACE (Serial)

TYPE: Full Duplex
HANDSHAKING: Fully supported under software control
BAUD RATES: Switch selectable at the following rates: 110, 150, 300, 600, 1200, 2400, 4800, 9600
PARITY: Even, odd, or disabled (software selectable)
WORD LENGTH: 5,6,7,8 BITS (software selectable)
STOP BITS: 1, 1.5, 2 (software selectable)
CONNECTOR: Female DB25, mounted on the rear panel
CONFIG.: To connect to data communication equipment

PRINTER INTERFACE (Parallel)

Industry Standard Centronics 8 bit parallel - 100% TRS-80 Compatible.

TERMINAL EMULATION

A number of "dumb" and "intelligent" terminal software packages are available for the LNW80. A listing of a "dumb" terminal program is supplied in the LNW80 documentation.

REAL TIME CLOCK

TYPE: Interrupt "heartbeat" type
FREQUENCY: 40 HZ

CASSETTE INTERFACE

FORMAT: Amplitude modulated
TRS-80 MODEL I and III (500 BAUD ONLY)
DATA RATE: 500 baud at 1.77Mhz
1000 baud at 4.00MHz

EXPANSION PORT

This 40 pin CPU bus has all the ADDRESS, DATA, and CONTROL lines to expand the capabilities of the LNW80. This bus is electrically equivalent to the "SCREEN PRINTER" bus on the TRS-80 model I.

VIDEO DISPLAY SPECIFICATIONS

TEXT MODES:

1. 64 Characters per line, 16 lines.
2. 32 Characters per line, 16 lines.
3. 80 or 40 Characters per line, 16 lines.
4. 80 or 40 Characters per line, 24 lines.

Each character is a 5x8 matrix in a 6x8 rectangle (24 lines) or 6x12 rectangle (16 lines). Upper case and lower case with descenders. Modes 3 and 4 require optional software and utilizes the graphics memory for character generation and is not necessarily compatible with existing software.

GRAPHICS DISPLAY MODES:

GRAPHICS MODES MODE & RESOLUTION	GRAPHICS RESOLUTION TEXT MODE 1	TEXT MODE 2	COMMENTS
0 LOW RES	128X48	64X48	+TEXT
1 HIGH RES B&W	128X48+	64X48	+TEXT
	480X192	240X192	+TEXT
2 LOW RES COLOR	128X192 (8)	64X192(8)	+TEXT*
3 HI RES COLOR	480X192 pixels	240X192 pixels	
color defined by:	128X16 (8)	64X16 (8)	

*The display will exceed the bandwidth of NTSC video if text is displayed in text mode 1 and graphics mode 2. However, an RGB monitor will display this mode accurately.

VIDEO DISPLAY OUTPUTS

Signal: TTL Levels

OUTPUT	IMPEDANCE
B&W VIDEO 1.8V p-p	75 OHM
LOW RES COLOR OUTPUT	75 OHM
HIGH RES COLOR (RGB)	330 OHM

The following chart defines the display content of the three display outputs under the four display modes.

GRAPHICS MODE	B/W VIDEO	LOW RES COLOR	HIGH RES COLOR
MODE 0	X	X	X
MODE 1	X	X	X
MODE 2		X	X
MODE 3			X

Warranty: 6 months parts and labor