



Figure 1-1

ALTAIR 8800b COMPUTER

altair 8800b

DOCUMENTATION

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ALTAIR 8800b
TABLE OF CONTENTS

Section	Page
LIST OF TABLES	ii
LIST OF ILLUSTRATIONS	iii
I. INTRODUCTION	
1-1. Scope	1-1
1-2. Arrangement	1-1
1-3. Description	1-1
II. OPERATORS GUIDE	
2-1. General	2-1
2-2. Front Panel Switches and Indicators	2-1
2-12. Loading A Sample Program	2-11
2-14. Intel 8080 Microcomputer System User's Information	2-15
III. THEORY OF OPERATION	
3-1. General	3-3
3-2. Logic Circuits	3-3
3-3. Intel 8080 Microcomputer System User's Information	3-8
3-5. 8080b Block Diagram Description	3-39
3-11. 8800b Data Processing Operation	3-44
3-12. Instruction Fetch Cycle	3-44
3-15. Memory Read Cycle	3-49
3-18. External Device to CPU Data Transfer	3-54
3-21. CPU to Memory Data Transfer	3-59
3-23. Memory Write Cycle Detailed Operation	3-61
3-24. Memory to CPU Data Transfer	3-63
3-25. CPU To External Device Data Transfer	3-64
3-28. Front Panel Operation	3-68
3-39. 8800b Options	3-88
3-42. 8800b Power Supplies	3-89
IV. TROUBLESHOOTING	
4-1. Introduction to Troubleshooting	4-5
4-2. Visual Inspection	4-14
4-3. Preliminary Check	4-15
4-4. Non-PROM Related Switch Problems	4-31
4-5. PROM Related Switch Problems	4-54
V. ASSEMBLY	
5-1. General	5-3
5-2. Assembly Hints	5-3
5-3. Component Installation Instructions	5-5
5-9. Interface Card Assembly	5-13
5-19. Display/Control Board Assembly	5-19
5-32. CPU Board Assembly	5-37
5-44. Power Supply Board Assembly	5-47
5-53. Back Panel Assembly	5-54
5-69. 18-Slot Motherboard Assembly	5-69

APPENDIX

LIST OF TABLES

Number		Page
2-1	Altair 8800b Switches and Indicators	2-2
2-2	Power On Sequence	2-6
2-3	Run Operation	2-6
2-4	Stop Operation	2-7
2-5	Examine Memory Operation	2-7
2-6	Altering Memory Contents	2-8
2-7	Examine Next Memory Location	2-8
2-8	Altering Next Memory Contents	2-9
2-9	Loading and Displaying Accumulator Data	2-10
2-10	Machine Language Bit Patterns	2-12
2-11	Addition Program	2-13
2-12	Addition Program Loading	2-14
3-1	Symbol Definitions	3-5
3-2	PROM Programs	3-76
4-1	Static Levels of the Most Common Problem Areas	4-9
4-2	Mother Board Static Levels	4-11
4-3	Voltage and Waveform Check	4-18
4-4	Reset Check	4-32
4-5	Stop Check	4-34
4-6	Run Check	4-43
4-7	Single Step/Slow Check	4-44
4-8	Protect/Unprotect Check	4-48
4-9	Sense Switch Check	4-50
4-10	Status Check	4-53
4-11	PROM Related Switch Problems	4-55

LIST OF ILLUSTRATIONS

Number	Title	Page
1-1	Altair 8800b Computer	1-0
1-2	Power Supply Board	1-2
1-3	Interface Board	1-2
1-4	CPU Board	1-4
1-5	Display/Control Board	1-4
2-1	Altair 8800b Front Panel	2-1
3-1	8800b Block Diagram	3-40
3-2	Instruction Fetch Cycle Block Diagram	3-46
3-3	Instruction Fetch Cycle Timing	3-47
3-4	Memory Read Cycle Block Diagram	3-50
3-5	Memory Read Cycle Timing	3-53
3-6	Input Read Cycle Block Diagram	3-56
3-7	Input Read Cycle Timing	3-57
3-8	Memory Write Cycle Block Diagram	3-60
3-9	Memory Write Cycle Timing	3-62
3-10	Output Write Cycle Block Diagram	3-65
3-11	Output Write Cycle Timing	3-67
3-12	Front Panel Block Diagram	3-69
3-13	PROM Block Diagram	3-75
3-14	CPU Schematic	3-91
3-15	Interface Schematic (sheet 1 of 3)	3-93
3-15	Interface Schematic (sheet 2 of 3)	3-95
3-15	Interface Schematic (sheet 3 of 3)	3-97
3-16	Display/Control Schematic (sheet 1 of 3)	3-99
3-16	Display/Control Schematic (sheet 2 of 3)	3-101
3-16	Display/Control Schematic (sheet 3 of 3)	3-103
3-17	Power Supply Board Schematic	3-105
3-18	CPU Voltage Regulator Schematic	3-107
3-19	Interface Voltage Regulator Schematic	3-109
3-20	Display/Control Voltage Regulator Schematic	3-111
5-1	Typical Silkscreen	5-4
5-2	Interface IC Installation	5-2
5-3	Interface Resistor Installation	5-14
5-4	Interface Suppressor Capacitor and Capacitor Installation	5-15
5-5	Interface Jumper Connections	5-16
5-6	Interface Ferrite Bead Installation	5-16
5-7	Interface Voltage Regulator Installation	5-17
5-8	Interface Male Connector Installation	5-18
5-9	Interface Ribbon Cable Plug Installation	5-19
5-10	Display/Control IC Socket and IC Installation	5-21
5-11	Display/Control IC Installation	5-22
5-12	Display/Control Resistor Installation	5-23
5-13	Display/Control Resistor Pack Installation	5-24
5-14	Display/Control Substitute Resistor Assembly	5-25
5-15	Display/Control Jumper Connections	5-26
5-16	Display/Control Suppressor Capacitor Installation	5-27
5-17	Display/Control Capacitor Installation	5-28
5-18	Display/Control Diode and Ferrite Bead Installation	5-29

LIST OF ILLUSTRATIONS - Continued

Number	Title	Page
5-19	Display/Control Voltage Regulator Installation.	5-30
5-20A	Display/Control Switch Installation	5-31
5-20B	Display/Control Switch Installation	5-32
5-21	Display/Control Switch Nut Placement.	5-33
5-22	Covering LED Holes on Sub Panel	5-33
5-23	Display/Control LED Orientation and Installation.	5-34
5-24	Securing Sub Panel Over Display/Control Board	5-34
5-25	Display/Control LED Adjustment.	5-35
5-26	CPU IC Installation	5-37
5-27	CPU Resistor Installation	5-38
5-28	CPU Suppressor Capacitor Installation	5-39
5-29	CPU Capacitor Installation.	5-40
5-30	CPU Diode Installation.	5-41
5-31	CPU Ferrite Bead Installation	5-42
5-32	CPU Voltage Regulator Installation.	5-43
5-33	CPU Transistor and Male Connector Installation.	5-44
5-34	CPU Crystal Installation.	5-45
5-35	CPU IC Socket and IC Installation	5-46
5-36	Power Supply Capacitor and Resistor Installation.	5-47
5-37	Power Supply Diode Installation	5-48
5-38	Power Supply Transistor Installation.	5-49
5-39	Power Supply Bridge Rectifier	5-50
5-40	Power Supply Terminal Block Screw Removal	5-51
5-41	Power Supply Terminal Block Screw Insertion	5-51
5-42	Power Supply Terminal Block Shorting Link Insertion	5-51
5-43	Power Supply Board Mounting to Cross Member	5-52
5-44	Power Supply Capacitor and Clamp Installation (For One Capacitor)	5-53
5-45	Power Supply Capacitor and Clamp Installation (For Two Capacitors)	5-53
5-46	Completed Back Panel Assembly	5-54
5-47	Terminal End Sizes	5-55
5-48	Terminal End Attachment	5-56
5-49A	Connector Pin and Connector Socket Wire Insertion	5-57
5-49B	Pin and Socket Housing Assembly	5-57
5-50	Wiring Diagram	5-58
5-51	Bridge Rectifier Installation	5-60
5-52	Fan Mounting	5-61
5-53	Fuse Holder Installation	5-62
5-54	AC Power Cord Installation	5-62
5-55	"L" Bracket Mounting	5-63
5-56	Terminal End Attachment	5-63
5-57	Terminal Block Mounting	5-63
5-58	Pin Housing Insertion	5-65
5-59	Transformer Mounting	5-66
5-60	Back Panel Mounting	5-67
5-61	Motherboard Wire Connections	5-68
5-62	Card Guide Mounting	5-70
5-63	Chassis Ground Connection	5-71
5-64	On/Off Switch Wiring	5-73
5-65	Female Connector Wiring for P3	5-75

ALTAIR 8800b
SECTION I
INTRODUCTION

SECTION I

INTRODUCTION

1-1. SCOPE

This ALTAIR™ 8800b Documentation provides a general description of the various printed circuit cards contained in the ALTAIR 8800b and detailed theory of their operation. Included in the documentation is an operator's guide which familiarizes the operator with the various switches and indicators on the ALTAIR 8800b front panel. Detailed assembly instructions are also provided.

1-2. ARRANGEMENT

This manual contains five sections as follows:

1. Section I contains a general description of the ALTAIR 8800b computer and associated printed circuit cards.
2. Section II contains information on the controls and indicators which are located on the ALTAIR 8800b front panel.
3. Section III contains a detailed theory explanation of the ALTAIR 8800b circuit operation.
4. Section IV contains troubleshooting information for the ALTAIR 8800b.
5. Section V contains the detailed assembly instructions for the ALTAIR 8800b.

1-3. DESCRIPTION

The ALTAIR 8800b computer (Figure 1-1) is a general purpose, byte-oriented machine (8-bit word). It uses a common 100-pin bus structure that allows for expansion of either standard or custom plug-in modules. It supports up to 64K of directly addressable memory and can address 256 separate input and output devices. The ALTAIR 8800b computer has 78 basic machine language instructions and consists of a power supply board, an interface board, a central processing unit (CPU) board, and a display/control board.

1-4. POWER SUPPLY BOARD (Figure 1-2)

The Power Supply Board provides two of the three output voltages to the ALTAIR 8800b computer bus, a positive and negative 18 volts. It includes a bridge rectifier circuit and associated filter capacitors, a 10-pin terminal block connector, and the regulating transistors for the positive and negative 18 volt supplies.

1-5. INTERFACE BOARD (Figure 1-3)

The Interface Board buffers all signals between the display/control board and the ALTAIR 8800b bus. It also contains eight parallel data lines which transfer data to the CPU from the Display/Control board.

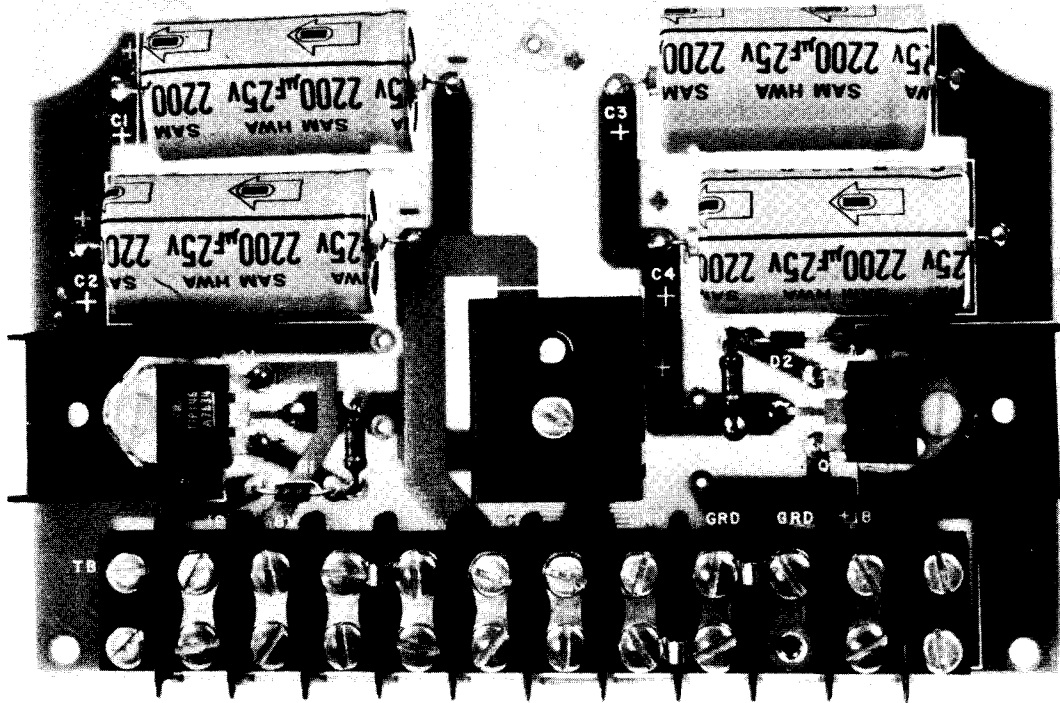


Figure 2. Power Supply Board

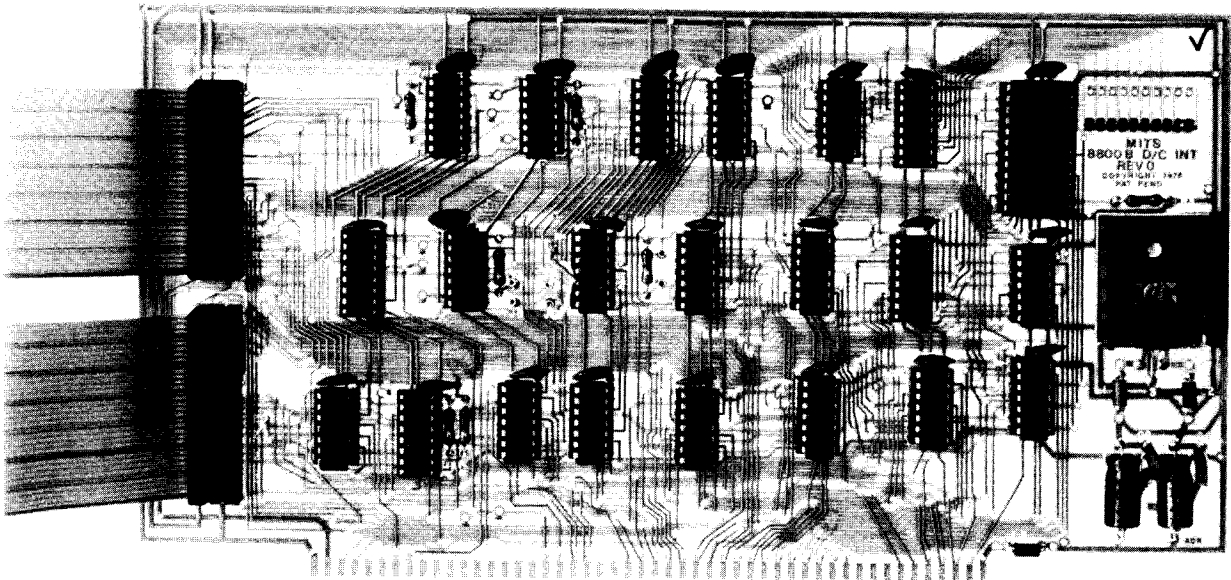


Figure 3. Interface Board

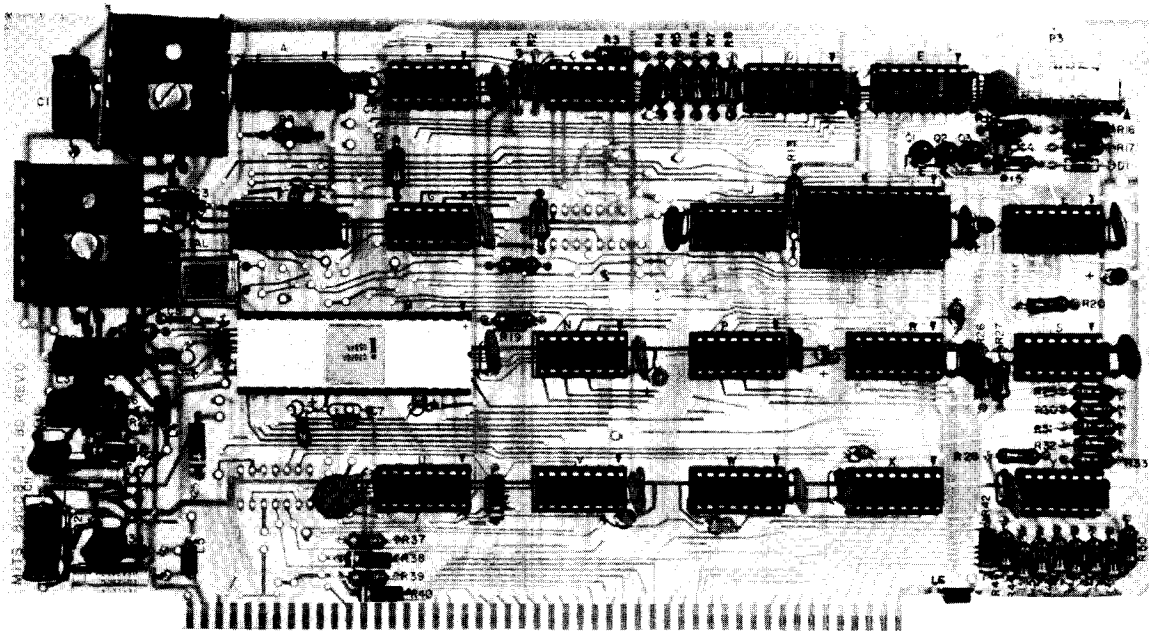


Figure 4. CPU Board

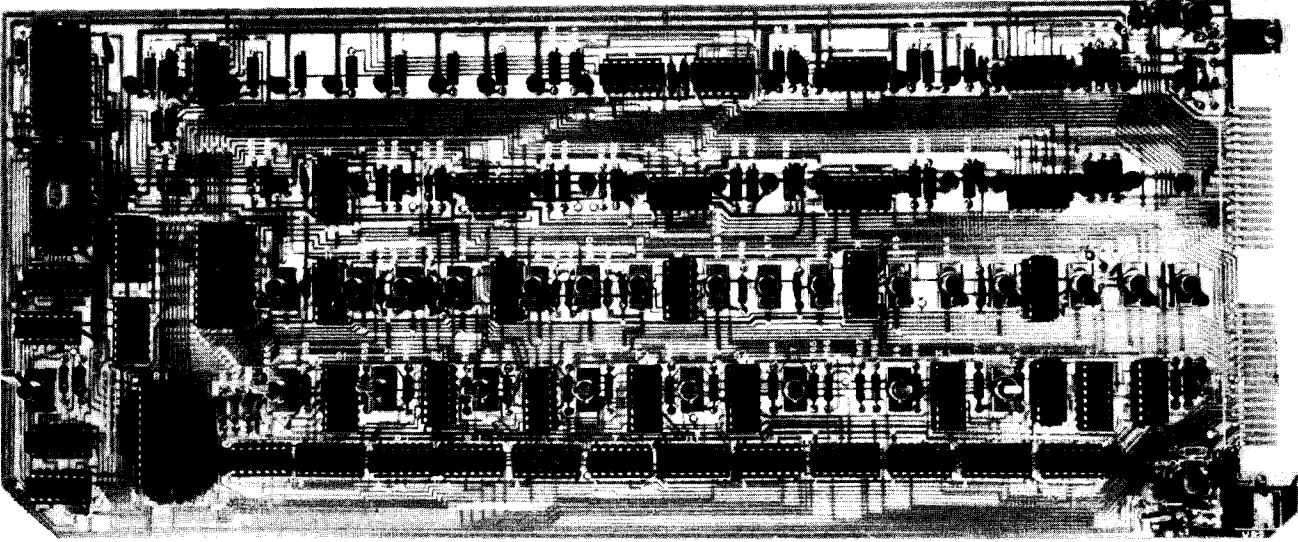


Figure 5. Display/Control Board

1-6. CPU BOARD (Figure 1-4)

The CPU board controls and processes all instructions and data within the ALTAIR 8800b computer. It contains the Intel Corporation model 8080A microprocessor circuit, the master timing circuit, eight input and eight output data lines to the ALTAIR bus control circuits.

1-7. DISPLAY/CONTROL BOARD (Figure 1-5)

The Display/Control Board conditions all ALTAIR 8800b front panel switches and receives information to be displayed on the front panel. It contains a programmable read only memory (PROM), switch and display control circuits, and control circuits to condition the CPU.