SCELBI-8H

ASSEMBLY AND INSTALLATION INSTRUCTIONS

AND

SYSTEM DOCUMENTATION

SCELBI SYSTEM NUMBER:

SCELBI COMPUTER CONSULTING, INC.
125 EDGEFIELD AVENUE
MILFORD, CT. 06460

INTRODUCTION

THIS DOCUMENTATION PACKAGE PROVIDES ASSEMBLY AND INSTALLATION INSTRUCTIONS FOR THE SCELBI-8H MINI-COMPUTER. IT CONSIST OF THREE MAJOR SECTIONS.

1. SCELBI-8H CARD INTER-CONNECTION WIRING INFORMATION.
2. I/O WIRING INSTRUCTIONS.
3. SCELBI-8H INITIAL INSTALLATION AND CHECK OUT PROCEDURES.

CUSTOMERS WHO PURCHASED COMPLETELY ASSEMBLED AND TESTED SCELBI-8H MINI-COMPUTERS MAY PROCEED DIRECTLY TO THE THIRD SECTION. SECTIONS 1 AND 2 ARE INCLUDED AS REFERENCES BUT THE PROCEDURES DISCUSSED IN THOSE SECTION WERE PERFORMED AT THE FACTORY.

CUSTOMERS WHO PURCHASED SCELBI-8H CHASSIS KITS ALONG WITH THEIR MINI-COMPUTER CARD SETS SHOULD START AT SECTION 2. THE WIRING DISCUSSED IN SECTION 1 IS CONTAINED ON THE SCELBI-8H BACKPLANE HARNESS BOARD.

CUSTOMERS WHO PURCHASED JUST A SCELBI-8H CARD SET AND WHO ARE PROVIDING THEIR OWN CHASSIS AND CARD MOUNTING HARDWARE SHOULD START WITH SECTION 1.

SCELBI-8H CARD SET - CHASSIS ASSEMBLY/WIRING

CUSTOMERS WHO PURCHASE JUST THE BASIC CARD SET FOR THE SCELBI-8H MINI-COMPUTER HAVE TO PROVIDE THEIR OWN CHASSIS, CARD CONNECTORS, I/O CONNECTORS, AND CHASSIS CONSOLE SWITCHES; AND MUST THEN INTER-CONNECT THESE COMPONENTS TO PROVIDE THEIR OPERATING COMPUTER. INFORMATION FOR WIRING THE CARD CONNECTORS, I/O CONNECTORS, AND SWITCHES ARE PROVIDED IN THIS DOCUMENT ALONG WITH SUGGESTIONS FOR THE MECHANICAL ASSEMBLY OF THESE COMPONENTS ON A SUITABLE CHASSIS.

SUGGESTIONS FOR CHASSIS CONSTRUCTION

CUSTOMERS MAY DESIRE TO INSTALL THEIR CARD SET IN A CHASSIS OR CARD NEST OF THEIR OWN CHOOSING. FOR THOSE THAT DESIRE TO CONSTRUCT UNITS SIMILAR TO SCELBI PROVIDED SYSTEMS DRAWINGS 3100A AND 3100B WILL BE USEFUL. THESE DRAWINGS DEPICT THE LAY-OUT OF A STANDARD SCELBI PROVIDED CHASSIS WHICH IS BASED ON A READILY AVAILABLE 10 X 12 X 3 INCH ALUMINUM CHASSIS SUCH AS THE BUD #413 CHASSIS. PAIRS OF 44 PIN CARD CONNECTORS (SUCH AS AMPHENOL #22221-404) ARE LAID OUT ALONG THE TOP OF THE CHASSIS TOWARDS THE FRONT OF THE UNIT. THE CENTER-TO-CENTER PIN SPACING ON THE SOCKETS USED FOR THE COMPUTER CARDS IS 0.156 INCHES. THE DISTANCE BETWEEN CARD SOCKETS (FRONT TO BACK) SHOULD NOMINALLY BE 3/4 OF AN INCH TO PROVIDE SUFFICIENT ROOM FOR PROPER AIR FLOW AND HEAT DISSIPATION BETWEEN CARDS.

FOR WIRING PURPOSES CARD SOCKETS HAVE BEEN GIVEN THE FOLLOWING REFERENCE DESIGNATIONS. FIRST, CARD SLOTS FROM FRONT TO BACK, ARE REFERED TO BY "XA" NUMBER. THE FRONT MOST SLOT IS XA01, AND IN A STANDARD SYSTEM THE LAST SLOT IS DESIGNATED XA08. SINCE EACH SLOT CONTAINS TWO CARD SOCKETS THE LEFT MOST SOCKET (WHEN VIEW FROM THE FRONT OF THE UNIT) IS TERMED THE "A" SOCKET AND THE LEFT ONE DESIGNATED THE "B" SOCKET. FINALLY, THE PINS ON EACH SOCKET ARE DESIGNATED AS FOLLOWS. THE ROW OF 22 PINS THAT ARE TOWARDS THE FRONT OF THE UNIT ARE DESIGNATED FROM LEFT TO RIGHT (AGAIN, AS VIEWED FROM THE FRONT) AS PINS NUMBERS 1 THROUGH 22. THE OTHER ROW OF 22 PINS ARE REFERRED TO BY ALPHABETICAL DESIGNATION USING THE LETTERS A THROUGH Z WITH THE LETTERS G, I, O AND Q OMITTED. IT IS IMPORTANT TO ENSURE THAT THE UNIT BEING CONSTRUCTED FOLLOWS THESE REFERENCE DESIGNATIONS SO THAT THE UNIT IS WIRED PROPERLY AS ALL WIRING REFERENCES IN THIS DOCUMENT RELATE TO THE ABOVE LABELING CONVENTION.

I/O SOCKETS, AND THE POWER PLUG MAY BE MOUNTED ALONG THE REAR OF THE CHASSIS UNIT. THE STANDARD SCELBI-8H I/O CONNECTOR USED ON THE CHASSIS IS AN 11 PIN AMPHENOL TYPE 78S11 SOCKET MOUNTED WITH THE "KEY" POINTING TOWARDS THE BOTTOM OF THE CHASSIS. STANDARD SCELBI PERIPHERAL CABLES MATE WITH THIS TYPE OF SOCKET. IF YOU DESIRE TO USE ANOTHER TYPE OF SOCKET YOU WILL HAVE TO PREPARE YOUR OWN I/O CABLES SHOULD YOU PURCHASE ADDITIONAL SCELBI I/O DEVICES, AND YOU WILL HAVE TO ARRANGE YOUR OWN PIN ASSIGNMENTS (AND APPROPRIATELY ALTER THE I/O WIRING INSTRUCTIONS PROVIDED IN THIS DOCUMENT.)

THE POWER PLUG RECOMMENDED BY SCELBI IS AN AMPHENOL TYPE 86CP4 OR EQUIVELANT. THIS IS A FOUR PIN "KEYED" MALE PLUG USED FOR BRINGING IN STANDARD OPERATING POWER FOR THE COMPUTER.

DRAWINGS 3100A AND 3100B SHOW THE POSITIONS OF THE I/O SOCKETS AND POWER PLUG ALONG THE REAR OF THE CHASSIS. DRAWING 3100B ILLUSTRATES THE REFERENCE DESIGNATIONS ASSIGNED TO THE SOCKETS AND PINS ON THE SOCKETS (WHEN VIEWED FROM THE BOTTOM OF THE CHASSIS UNIT!)

THERE ARE ELEVEN SWITCHES NECESSARY FOR OPERATING THE SCELBI-8H MINI-COMPUTER. EIGHT OF THESE ARE SPST TOGGLE SWITCHES USED FOR INPUTTING DATA AND INSTRUCTIONS TO THE COMPUTER. IF THE SCELBI-8H FORMAT IS BEING FOLLOWED, USE MINIATURE OR SUBMINIATURE SWITCHES FOR THE TOGGLE SWITCHES. DRAWINGS 3100A AND 3100B SHOW THE RECOMMENDED LAY-OUT ALONG WITH THE REFERENCE DESIGNATIONS ASSIGNED TO THE CONTROL SWITCHES. THREE OTHER SWITCHES FOR THE "INTERRUPT," "STEP," AND "RUN" FUNCTIONS ARE NEEDED. THESE SWITCHES ARE ORDINARY "NORMALLY OPEN" PUSH BUTTON TYPE DEVICES.

CARD INTERCONNECT WIRING

ONCE THE CARD SOCKETS HAVE BEEN MOUNTED IN THE CHASSIS OR OTHER FIXTURE ONE MAY PROCEED TO DO THE INTERCONNECT WIRING BETWEEN THE COMPUTER CARD SOCKETS. THE WIRING INFORMATION THAT FOLLOWS WAS GENERATED BY COMPUTER AND CONTAINS WIRING INFORMATION FOR A SYSTEM THAT MAY CONTAIN UP TO 4,096 WORDS OF MEMORY (ON 4 SCELBI 1103- CARDS.) BEFORE STARTING THE WIRING THE ASSEMBLER SHOULD MAKE SURE THAT THE REFERENCE DESIGNATIONS DISCUSSED EARLIER ARE UNDERSTOOD.

SCELBI RECOMMENDS THE USE OF 24 TO 30 GAUGE SOLID WIRE FOR INTERCONNECTING THE CARD SOCKETS, THE ACTUAL GAUGE MAY BE VARIED ACCORDING TO THE TYPE OF CONNECTORS USED AND THE WIRE AVAILABLE TO THE ASSEMBLER. CARE SHOULD BE TAKEN TO PREVENT SHORTS TO ADJACENT PINS AS WIRES ARE INSTALLED.

THE WIRE LIST THAT FOLLOWS FOR THE CARD SOCKET INTER-CONNECT WIRING IS QUITE EASY TO UNDERSTAND. EACH CONNECTION POINT FOR A "WIRE RUN" IS LISTED. "WIRE RUNS" ARE GROUPED BY SIGNAL NOMENCLATURE AND SEPARATED BY A SOLID LINE. SINCE CONNECTION POINTS ARE LISTED - THE ACTUAL NUMBERS OF WIRES IN A WIRE RUN IS N - 1 WHERE N IS THE NUMBER OF CONNECTION POINTS. FOR EXAMPLE, A WIRE RUN SHOWN AS:

XA01 B01 D0H
XA03 B-A D0H

INDICATES THAT A SINGLE WIRE IS TO BE RUN FROM SLOT XA01 (FRONT MOST CARD SLOT) PIN B01 (RIGHT SOCKET WHEN VIEWED FROM THE FRONT & FIRST PIN ON THE FRONT MOST PART OF THE SOCKET) OVER TO THE THIRD SLOT (XA03) ON THE RIGHT SOCKET PIN "A," (B-1.) THE LAST REFERENCE IN A LINE FOR A CONNECTION POINT IS THE SIGNAL NOMENCLATURE FOR THAT WIRE RUN. SIGNAL NOMENCLATURES ARE DERIVED FROM THE SCHEMATICS SUPPLIED WITH THE CARD SET. MULTI-WIRE RUNS MAY NOT SHOW THE CONNECTION POINTS IN THE BEST ROUTING SEQUENCE SO THE ASSEMBLER SHOULD REVIEW EACH WIRE RUN AND PICK THE BEST ROUTING SEQUENCE TO USE THE LEAST AMOUNT OF WIRE. MAKE A CHECK MARK AS YOU COMPLETE EACH CONNECTION BESIDE THE APPROPRIATE CONNECTION POINT ON THE WIRE LIST AS AN AID TO MAINTIANING YOUR PLACE AS YOU WORK. THE MAJORITY OF WIRE RUNS GO ALONG A "STRAIGHT LINE" AND QUITE A FEW ARE AMENABLE TO BUSSING TECHNIQUES - PARTICULARLY ALONG THE MEMORY SECTIONS (SLOTS XA05 THROUGH XA08.) WHILE THE LIST APPEARS LONG AT FIRST GLANCE THE ACTUAL WIRING TIME FOR THIS SECTION IS GENERALLY IN THE VICINITY OF ONLY ABOUT 10 HOURS.

SCELBI-8H P.C. CARD NEST WIRING

XA01	B01	D0H
XA03	B-A	D0H
XA01	B09	D0L
XA03	B-K	D0L
XA02	A07	D0N
XA03	A-H	D0N
XA01	B02	D1H
XA03	B-B	D1H
XA04	B-V	D1H
XA01	B10	D1L
XA03	B-L	D1L
XA02	A08	D1N
XA03	A-J	D1N
XA01	B03	D2H
XA03	B-C	D2H
XA04	B-W	D2H
XA01	B11	D2L
XA03	B-M	D2L
XA02	A09	D2N
XA03	A-K	D2N
XA01	B04	D3H
XA03	B-D	D3H
XA04	B-X	D3H
XA01	B12	D3L
XA03	B-N	D3L
XA02	A10	D3N
XA03	A-L	D3N
XA01	B05	D4H
XA02	B05	D4H
XA03	B-E	D4H
XA01	B13	D4L
XA03	B-P	D4L
XA02	A11	D4N
XA03	A-M	D4N
XA01	B06	D5H
XA02	B06	D5H
XA03	B-F	D5H
XA01	B14	D5L
XA03	B-R	D5L
XA02	A12	D5N
XA03	A-N	D5N
XA01	B07	D6H
XA02	B07	D6H
XA03	B-H	D6H
XA04	B-Y	D6H
XA01	B15	D6L
XA03	B-S	D6L
XA02	A13	D6N
XA03	A-P	D6N
XA01	B08	D7H
XA02	B08	D7H
XA03	B-J	D7H
XA04	B-Z	D7H

SCELBI-8H P.C. CARD NEST WIRING

XA01	B16	D7L
XA03	B-T	D7L
XA02	A14	D7N
XA03	A-R	D7N
XA02	B19	HAS
XA03	B-W	HAS
XA01	A13	INT
XA02	A-T	INT
XA02	B17	LAS
XA03	B-V	LAS
XA02	A15	MD0N
XA04	A-S	MD0N
XA02	A16	MD1N
XA04	A-T	MD1N
XA02	A17	MD2N
XA04	A-U	MD2N
XA02	A18	MD3N
XA04	A-V	MD3N
XA02	A19	MD4N
XA04	A-W	MD4N
XA02	A20	MD5N
XA04	A-X	MD5N
XA02	A21	MD6N
XA04	A-Y	MD6N
XA02	A22	MD7N
XA04	A-Z	MD7N
XA01	A15	MIN0
XA04	A15	MIN0
XA01	A16	MIN1
XA04	A16	MIN1
XA01	A17	MIN2
XA04	A17	MIN2
XA01	A18	MIN3
XA04	A18	MIN3
XA01	A19	MIN4
XA04	A19	MIN4
XA01	A20	MIN5
XA04	A20	MIN5
XA01	A21	MIN6
XA04	A21	MIN6
XA01	A22	MIN7
XA04	A22	MIN7
XA02	B15	OPSN
XA03	B-U	OPSN
XA02	B12	PCN
XA03	B17	PCN
XA01	B-L	STOPN
XA02	B-L	STOPN
XA02	A-U	S0
XA04	B-U	S0
XA01	B-J	T1N
XA02	B-J	T1N
XA01	B-F	T3N
XA02	B-F	T3N

SCELBI-8H P.C. CARD NEST WIRING

XA03	A07	D0B
XA05	A-H	D0B
XA06	A-H	D0B
XA07	A-H	D0B
XA08	A-H	D0B
XA03	B-K	D0L
XA05	B-K	D0L
XA06	B-K	D0L
XA07	B-K	D0L
XA08	B-K	D0L
XA03	A08	D1B
XA05	A-J	D1B
XA06	A-J	D1B
XA07	A-J	D1B
XA08	A-J	D1B
XA03	B-L	D1L
XA05	B-L	D1L
XA06	B-L	D1L
XA07	B-L	D1L
XA08	B-L	D1L
XA03	A09	D2B
XA05	A-K	D2B
XA06	A-K	D2B
XA07	A-K	D2B
XA08	A-K	D2B
XA03	B-M	D2L
XA05	B-M	D2L
XA06	B-M	D2L
XA07	B-M	D2L
XA08	B-M	D2L
XA03	A10	D3B
XA05	A-L	D3B
XA06	A-L	D3B
XA07	A-L	D3B
XA08	A-L	D3B
XA03	B-N	D3L
XA05	B-N	D3L
XA06	B-N	D3L
XA07	B-N	D3L
XA08	B-N	D3L
XA03	A11	D4B
XA05	A-M	D4B
XA06	A-M	D4B
XA07	A-M	D4B
XA08	A-M	D4B
XA03	B-P	D4L
XA05	B-P	D4L
XA06	B-P	D4L
XA07	B-P	D4L
XA08	B-P	D4L
XA03	A12	D5B
XA05	A-N	D5B
XA06	A-N	D5B
XA07	A-N	D5B
XA08	A-N	D5B

SCELBI-8H P.C. CARD NEST WIRING

XA03	B-R	D5L
XA05	B-R	D5L
XA06	B-R	D5L
XA07	B-R	D5L
XA08	B-R	D5L
XA03	A13	D6B
XA05	A-P	D6B
XA06	A-P	D6B
XA07	A-P	D6B
XA08	A-P	D6B
XA03	B-S	D6L
XA05	B-S	D6L
XA06	B-S	D6L
XA07	B-S	D6L
XA08	B-S	D6L
XA03	A14	D7B
XA05	A-R	D7B
XA06	A-R	D7B
XA07	A-R	D7B
XA08	A-R	D7B
XA03	B-T	D7L
XA05	B-T	D7L
XA06	B-T	D7L
XA07	B-T	D7L
XA08	B-T	D7L
XA04	A15	MIN0
XA05	A-S	MIN0
XA06	A-S	MIN0
XA07	A-S	MIN0
XA08	A-S	MIN0
XA04	A16	MIN1
XA05	A-T	MIN1
XA06	A-T	MIN1
XA07	A-T	MIN1
XA08	A-T	MIN1
XA04	A17	MIN2
XA05	A-U	MIN2
XA06	A-U	MIN2
XA07	A-U	MIN2
XA08	A-U	MIN2
XA04	A18	MIN3
XA05	A-V	MIN3
XA06	A-V	MIN3
XA07	A-V	MIN3
XA08	A-V	MIN3
XA04	A19	MIN4
XA05	A-W	MIN4
XA06	A-W	MIN4
XA07	A-W	MIN4
XA08	A-W	MIN4
XA04	A20	MIN5
XA05	A-X	MIN5
XA06	A-X	MIN5
XA07	A-X	MIN5
XA08	A-X	MIN5

SCELBI-8H P.C. CARD NEST WIRING

XA04	A21	MIN6
XA05	A-Y	MIN6
XA06	A-Y	MIN6
XA07	A-Y	MIN6
XA08	A-Y	MIN6
XA04	A22	MIN7
XA05	A-Z	MIN7
XA06	A-Z	MIN7
XA07	A-Z	MIN7
XA08	A-Z	MIN7
XA03	B01	M0N
XA05	B01	M0N
XA03	B02	M1N
XA05	B02	M1N
XA03	B09	M10N
XA07	B09	M10N
XA03	B10	M11N
XA07	B10	M11N
XA03	B11	M12N
XA07	B11	M12N
XA03	B12	M13N
XA07	B12	M13N
XA03	B13	M14N
XA08	B13	M14N
XA03	B14	M15N
XA08	B14	M15N
XA03	B15	M16N
XA08	B15	M16N
XA03	B16	M17N
XA08	B16	M17N
XA03	B03	M2N
XA05	B03	M2N
XA03	B04	M3N
XA05	B04	M3N
XA03	B05	M4N
XA06	B05	M4N
XA03	B06	M5N
XA06	B06	M5N
XA03	B07	M6N
XA06	B07	M6N
XA03	B08	M7N
XA06	B08	M7N
XA02	B-Z	WRITE
XA05	B-Z	WRITE
XA06	B-Z	WRITE
XA07	B-Z	WRITE
XA08	B-Z	WRITE

SECTION II

ASSEMBLY OF SCELBI-8H CHASSIS/FRONT PANEL UNIT

CUSTOMERS WHO PURCHASED THE SCELBI-8H CHASSIS KIT WILL RECEIVE A PRE-PUNCHED CHASSIS WITH THE SCELBI #1105 BACKPLANE HARNESS BOARD AND CARD SOCKETS INSTALLED. TO COMPLETE THE UNIT PROCEED AS FOLLOWS. (PERSONS PROVIDING THEIR OWN CHASSIS SHOULD PROCEED TO THE NEXT PAGE TO CONTINUE COMPLETING THE CHASSIS WIRING).

1.) MOUNT THE 14 (11 PIN) I/O CONNECTORS AT THE REAR OF THE CHASSIS IN THE HOLES PROVIDED FOR THE "INP" AND "OUT" CONNECTORS. USE THE RETAINER CLIP RINGS PROVIDED TO FASTEN THE CONNECTORS TO THE UNIT. POSITION THE SOCKETS SO THAT THE SLOT (KEY) IS POINTING TOWARDS THE BOTTOM OF THE CHASSIS. (REFER TO DRAWINGS 3100A AND 3100B).

2.) INSTALL THE MALE (4 PIN) POWER CONNECTOR AT THE REAR OF THE CHASSIS USING A RETAINER CLIP RING. THE TWO LARGER PINS ON THE PLUG SHOULD BE TOWARDS THE TOP OF THE CHASSIS.

3.) INSTALL THE CARD GUIES ON THE CARD SOCKETS AS PER THE ILLUSTRATION INCLUDED WITH THE GUIDES. MOUNT ONE GUIDE ON THE OUTER END OF EACH "PAIR" OF CARD SOCKETS.

4.) MOUNT THE FRONT PANEL UNIT TO THE CHASSIS USING THE 8 CHASSI TOGGLE SWITCHES. INSTALL SEVERAL SWITCHES TO HOLD THE PANEL IN PLACE AND MAKE SURE ALL THE HOLES LINE UP BEFORE TIGHTENING THE SWITCH NUTS.

I M P O R T A N T

MAKE SURE THE TOGGLE SWITCHES ARE MOUNTED SO THAT THE SLOT IN THE SWITCH SHAFT IS POINTED UPWARDS! IN ADDITION BE EXTREMELY CAREFUL WHEN TIGHTENING PANEL NUTS NOT TO MAR OR SCRATCH THE FINISH ON THE FRONT PANEL.

WHEN THE TOGGLE SWITCHES HAVE BEEN INSTALLED YOU MAY SLIDE A COLOR CODING SLEEVE ON EACH SWITCH LEVER - GREEN ON SWITCHES B7 & B6, YELLOW ON B5 THROUGH B3, AND RED ON B2 TO B0.

5.) INSTALL THE 3 PUSH BUTTON SWITCHES ON THE LEFT HAND SIDE OF THE UNIT. BE CAREFUL WHEN TIGHTENING THE NUTS SO AS TO NOT DAMAGE THE FRONT PANEL FINISH.

YOU HAVE NOW COMPLETED THE MECHANICAL ASSEMBLY OF THE SCELBI-8H CHASSIS KIT. YOU MAY PROCEED TO PERFORM THE CHASSIS WIRING BY CONTINUEING TO THE NEXT PAGE.

SCELBI-8H CHASSIS POWER BUSS WIRING

WHEN YOU HAVE COMPLETED THE P.C. CARD SOCKET WIRING FOR SIGNAL LINES YOU SHOULD PROCEED TO INSTALL THE POWER BUSS WIRING TO THE P.C. CARD SOCKETS FROM THE POWER CONNECTOR USING HEAVY GAUGE WIRE. IF YOU ARE FOLLOWING THE STANDARD SCELBI-8H LAY-OUT YOU MAY REFER TO DRAWINGS NUMBER 3100A AND 3100B FOR THE POSITION AND PIN NUMBERS OF THE POWER PLUG. THE STANDARD SCELBI-8H CHASSIS USES AN AMPHENOL TYPE 86CP4 (OR EQUIVELANT) PLUG FOR THE POWER CONNECTOR, MOUNTED AT THE REAR OF THE CHASSIS. IF YOU HAVE PURCHASED A CHASSIS KIT, THEN JUST WIRE THE RUNS DENOTED BY THE DOUBLE ASTERISK (**) AS THE REMAINDER OF THE POWER BUSS RUNS ARE ON THE BACKPLANE HARNESS CARD.

XA01	A-A	+5V BUSS	
XA01	A01	+5V BUSS	
XA02	A-A	+5V BUSS	
XA02	A01	+5V BUSS	
XA03	A-A	+5V BUSS	
XA03	A01	+5V BUSS	
XA04	A-A	+5V BUSS	
XA04	A01	+5V BUSS	
XA05	A-A	+5V BUSS	
XA05	A01	+5V BUSS	
XA06	A-A	+5V BUSS	
XA06	A01	+5V BUSS	
XA07	A-A	+5V BUSS	
XA07	A01	+5V BUSS	
XA08	A-A	+5V BUSS	**
XA08	A01	+5V BUSS	**
P001	001	+5V BUSS	**
XA01	A-C	SIG GND	
XA01	A03	SIG GND	
XA02	A-C	SIG GND	
XA02	A03	SIG GND	
XA03	A-C	SIG GND	
XA03	A03	SIG GND	
XA04	A-C	SIG GND	
XA04	A03	SIG GND	
XA05	A-C	SIG GND	
XA05	A03	SIG GND	
XA06	A-C	SIG GND	
XA06	A03	SIG GND	
XA07	A-C	SIG GND	
XA07	A03	SIG GND	
XA08	A-C	SIG GND	**
XA08	A03	SIG GND	**
P001	002	SIG GND	**
P001	003	SIG GND	**
SK06	11	SIG GND	** (FOR I/O GND BUSS)
XA01	A-E	-9V BUSS	
XA01	A05	-9V BUSS	
XA02	A-E	-9V BUSS	
XA02	A05	-9V BUSS	
XA05	A-E	-9V BUSS	
XA05	A05	-9V BUSS	
XA06	A-E	-9V BUSS	
XA06	A05	-9V BUSS	
XA07	A-E	-9V BUSS	
XA07	A05	-9V BUSS	
XA08	A-E	-9V BUSS	**
XA08	A05	-9V BUSS	**
P001	004	-9V BUSS	**

WIRING TO CONTROL SWITCHES

REFER TO DRAWINGS 3100A AND 3100B FOR THE RECOMMENDED POSITIONS OF CHASSIS SWITCHES AND THE TERMINAL DESIGNATIONS ON THE SWITCHES. INSTALL THE WIRES LISTED BELOW FROM THE DESIGNATED P.C. CARD SOCKETS TO THE CONTROL SWITCHES.

THE LIST BELOW ALSO INCLUDES SEVERAL JUMPER WIRES THAT SHOULD BE INSTALLED ON THE P.C. CARD SOCKET FOR THE CPU CARD (SLOT XA02) FOR STANDARD OPERATION OF THE SCELBI-8H MINI-COMPUTER. THESE WIRES SHOULD ALSO BE CONNECTED AT THIS TIME.

XAØ2	A-J	INT N.C. (GND)	
XAØ2	A-C	INT N.C. (GND)	
XA02	A-H	INT N.O.	
S1	TP2	INT N.O.	PUSHBUTTON 1
XA04	A-F	INTØ	
S11	TP2	INTØ	SW 11
XA04	A06	INT1	
S10	TP2	INT1	SW 10
XA04	B17	INT2	
S9	TP2	INT2	SW 9
XA04	B18	INT3	
S8	TP2	INT3	SW 8
XA04	B19	INT4	
S7	TP2	INT4	SW 7
XA04	B20	INT5	
S6	TP2	INT5	SW 6
XA04	B21	INT6	
S5	TP2	INT6	SW 5
XA04	B22	INT7	
S4	TP2	INT7	SW 4
XA02	A-X	RDYN	
XA02	A-Y	RDYN	Connected Together
XA02	A-Z	RDYN	
XA02	A-L	RUN	
S3	TP2	RUN	S3
XA02	A-N	STEP	
S2	TP2	STEP	SW 2
XA02	B-A	SYNC	
XA02	B-B	SYNC	JUMPER
XA02	A-R	INT OPTION	
XA02	A-C	INT OPTION	JUMP
XA02	B-T	T1IN	
XA02	B-U	T1IN	JUMP
S1	TP1	SIG GND	
S2	TP1	SIG GND	
S3	TP1	SIG GND	
S4	TP1	SIG GND	
S5	TP1	SIG GND	
S6	TP1	SIG GND	
S7	TP1	SIG GND	
S8	TP1	SIG GND	
S9	TP1	SIG GND	
S10	TP1	SIG GND	
S11	TP1	SIG GND	
XAØ1	A-C	SIG GND	

SCELBI-8H INPUT/OUTPUT WIRING

BEFORE INSTALLING THE WIRES FROM THE P.C. CARD SOCKETS TO THE I/O (INPUT/OUTPUT) CONNECTORS YOU SHOULD HAVE COMPLETED THE BASIC P.C. CARD SOCKET WIRING. NOW, THE ONLY WIRING REQUIRED TO COMPLETE YOUR UNIT IS WIRING TO THE I/O CONNECTORS. THE WIRING OF THESE CONNECTORS IS DETAILED BELOW.

IT SHOULD BE NOTED THAT IF YOU HAVE THE SCELBI-8H BASIC CARD SET, CONSISTING OF OUR #1100- CPU CARD, #1101 DBB & OUTPUT CARD, #1102 INPUT CARD, #1104 FRONT PANEL CARD, AND AT LEAST ONE #1103 RAM MEMORY CARD, THAT YOU CAN NOW PLUG THOSE CARDS INTO THE P.C. CARD SOCKETS THAT YOU HAVE COMPLETED THE WIRING ON, PROVIDE POWER, AND HAVE AN OPERATIONAL SCELBI-8H MINI-COMPUTER (WITHOUT ANY I/O CAPABILITY.) IF YOU DESIRE TO CHECK OUT YOUR SCELBI-8H CARD SET PRIOR TO INSTALLING THE I/O WIRING REFER TO THE SECTION ON "INITIAL INSTALLATION AND CHECK OUT."

IF YOU DESIRE TO BE COMPATIBLE WITH STANDARD SCELBI I/O CONNECTORS YOU SHOULD INSTALL AMPHENOL TYPE 78S11 OR EQUIVELANT 11 PIN SOCKETS FOR THE I/O CONNECTORS ON THE COMPUTER CHASSIS. DRAWINGS #3100A AND 3100B SHOW THE RECOMMENDED POSITIONS OF THE CONNECTORS AT THE REAR OF THE CHASSIS UNIT, THE REFERENCE DESIGNATIONS OF THE SOCKETS, AND THE PIN NUMBERING SYSTEM ASSIGNED TO THE I/O CONNECTORS. THE WIRING LIST THAT FOLLOWS WILL TELL YOU WHERE TO CONNECT WIRES BETWEEN I/O CONNECTORS, OR BETWEEN I/O CONNECTORS AND PINS ON THE P.C. CARD SOCKETS.

AS WIRES ARE RUN FROM THE I/O CONNECTORS TO THE PRINTED CIRCUIT CONNECTORS YOU SHOULD FORM A BUNDLE UP THE MIDDLE OF THE CHASSIS THAT CAN EVENTUALLY BE TIED WITH CABLE TIES. IT IS OFTEN HELPFUL TO USE PIECES OF MASKING TAPE TO KEEP THE WIRES IN ORDER UNTIL THE WIRING HAS BEEN COMPLETED. THE WIRES SHOULD BE BRANCHED OFF TO THE PRINTED CIRCUIT CONNECTORS AS ILLUSTRATED IN THE DRAWING.

INTER-I/O CONNECTOR WIRING

USE 2 1/2 INCH PIECES OF WIRE STRIPPED 1/4 INCH AT EACH END AND INSTALL THE FOLLOWING WIRES TO FORM A "BUSS" SYSTEM ON THE I/O CONNECTORS AT THE BACK OF THE CHASSIS.

	FROM	TO	REF DESIG
( )	SK6 PIN 11	SK12 PIN 11	SIG GND
( )	SK6 PIN 11 (3S)	SK5 PIN 11	SIG GND
( )	SK5 PIN 11 (2S)	SK4 PIN 11	SIG GND
( )	SK4 PIN 11 (2S)	SK3 PIN 11	SIG GND
( )	SK3 PIN 11 (2S)	SK2 PIN 11	SIG GND
( )	SK2 PIN 11 (2S)	SK1 PIN 11 (1S)	SIG GND
( )	SK12 PIN 11	SK13 PIN 11	SIG GND
( )	SK13 PIN 11 (2S)	SK14 PIN 11 (1S)	SIG GND
( )	SK12 PIN 11 (3S)	SK11 PIN 11	SIG GND

INTER-I/O CONNECTOR WIRING

	FROM	TO	REF DESIG
( )	SK11 PIN 11 (2S)	SK10 PIN 11	SIG GND
( )	SK10 PIN 11 (2S)	SK9 PIN 11	SIG GND
( )	SK9 PIN 11 (2S)	SK8 PIN 11	SIG GND
( )	SK8 PIN 11 (2S)	SK7 PIN 11 (1S)	SIG GND
( )	SK7 PIN 1 (1S)	SK8 PIN 1	D0L
( )	SK8 PIN 1 (2S)	SK9 PIN 1	D0L
( )	SK9 PIN 1 (2S)	SK10 PIN 1	D0L
( )	SK10 PIN 1	SK11 PIN 1	D0L
( )	SK11 PIN 1 (2S)	SK12 PIN 1	D0L
( )	SK12 PIN 1 (2S)	SK13 PIN 1	D0L
( )	SK13 PIN 1 (2S)	SK14 PIN 1 (1S)	D0L
( )	SK7 PIN 2 (1S)	SK8 PIN 2	D1L
( )	SK8 PIN 2 (2S)	SK9 PIN 2	D1L
( )	SK9 PIN 2 (2S)	SK10 PIN 2	D1L
( )	SK10 PIN 2	SK11 PIN 2	D1L
( )	SK11 PIN 2 (2S)	SK12 PIN 2	D1L
( )	SK12 PIN 2 (2S)	SK13 PIN 2	D1L
( )	SK13 PIN 2 (2S)	SK14 PIN 2 (1S)	D1L
( )	SK7 PIN 3 (1S)	SK8 PIN 3	D2L
( )	SK8 PIN 3 (2S)	SK9 PIN 3	D2L
( )	SK9 PIN 3 (2S)	SK10 PIN 3	D2L
( )	SK10 PIN 3	SK11 PIN 3	D2L
( )	SK11 PIN 3 (2S)	SK12 PIN 3	D2L
( )	SK12 PIN 3 (2S)	SK13 PIN 3	D2L
( )	SK13 PIN 3 (2S)	SK14 PIN 3 (1S)	D2L
( )	SK7 PIN 4 (1S)	SK8 PIN 4	D3L
( )	SK8 PIN 4 (2S)	SK9 PIN 4	D3L
( )	SK9 PIN 4 (2S)	SK10 PIN 4	D3L

INTER-I/O CONNECTOR WIRING

	FROM	TO	REF DESIG
( )	SK10 PIN 4	SK11 PIN 4	D3L
( )	SK11 PIN 4 (2S)	SK12 PIN 4	D3L
( )	SK12 PIN 4 (2S)	SK13 PIN 4	D3L
( )	SK13 PIN 4 (2S)	SK14 PIN 4 (1S)	D3L
( )	SK7 PIN 5 (1S)	SK8 PIN 5	D4L
( )	SK8 PIN 5 (2S)	SK9 PIN 5	D4L
( )	SK9 PIN 5 (2S)	SK10 PIN 5	D4L
( )	SK10 PIN 5 (2S)	SK11 PIN 5	D4L
( )	SK11 PIN 5	SK12 PIN 5	D4L
( )	SK12 PIN 5 (2S)	SK13 PIN 5	D4L
( )	SK13 PIN 5 (2S)	SK14 PIN 5 (1S)	D4L
( )	SK7 PIN 6 (1S)	SK8 PIN 6	D5L
( )	SK8 PIN 6 (2S)	SK9 PIN 6	D5L
( )	SK9 PIN 6 (2S)	SK10 PIN 6	D5L
( )	SK10 PIN 6 (2S)	SK11 PIN 6	D5L
( )	SK11 PIN 6	SK12 PIN 6	D5L
( )	SK12 PIN 6 (2S)	SK13 PIN 6	D5L
( )	SK13 PIN 6 (2S)	SK14 PIN 6 (1S)	D5L
( )	SK7 PIN 7 (1S)	SK8 PIN 7	D6L
( )	SK8 PIN 7 (2S)	SK9 PIN 7	D6L
( )	SK9 PIN 7 (2S)	SK10 PIN 7	D6L
( )	SK10 PIN 7 (2S)	SK11 PIN 7	D6L
( )	SK11 PIN 7	SK12 PIN 7	D6L
( )	SK12 PIN 7 (2S)	SK13 PIN 7	D6L
( )	SK13 PIN 7 (2S)	SK14 PIN 7 (1S)	D6L
( )	SK7 PIN 8 (1S)	SK8 PIN 8	D7L
( )	SK8 PIN 8 (2S)	SK9 PIN 8	D7L
( )	SK9 PIN 8 (2S)	SK10 PIN 8	D7L

INTER-I/O CONNECTOR WIRING

	FROM	TO	REF DESIG
( )	SK10 PIN 8 (2S)	SK11 PIN 8	D7L
( )	SK11 PIN 8	SK12 PIN 8	D7L
( )	SK12 PIN 8 (2S)	SK13 PIN 8	D7L
( )	SK13 PIN 8 (2S)	SK14 PIN 8 (1S)	D7L

OUTPUT DATA BUSS WIRING

THE FOLLOWING WIRES CONNECT THE DATA BUSS FOR THE OUTPUT PORTS (INSTALLED ON THE I/O CONNECTORS BY THE WIRING JUST COMPLETED) TO THE SCELBI-8H MINI-COMPUTER. TO INSTALL THESE WIRES STRIP ONE END OF A PIECE OF WIRE 1/4 OF AN INCH AND CONNECT THE STRIPPED END TO THE DESIGNATED PIN ON THE I/O CONNECTOR, THEN ROUTE THE WIRE UP THE CENTER OF THE CHASSIS UNTIL IT ALMOST REACHES THE PRINTED CIRCUIT CONNECTOR IN SLOT XA8, THEN BEND THE WIRE AT A RIGHT ANGLE AND RUN IT PARALLEL WITH THE PRINTED CIRCUIT CARD SOCKET UNTIL IT REACHES THE DESIGNATED PIN. NOW, LEAVE ABOUT 3/4 INCH ADDITIONAL WIRE, CUT AND STRIP THE WIRE 1/4 OF AN INCH AND MAKE THE CONNECTION AT THE PRINTED CIRCUIT CARD SOCKET. AS THE WIRES ARE INSTALLED KEEP THEM NEATLY DRESSED IN A BUNDLE, USING PIECES OF MASKING TAPE IF NECESSARY. ALL THE WIRES GOING TO THE CARD SOCKETS WILL FORM A CABLE THAT WILL BE SECURED WITH TIE-WRAPS WHEN THE WIRING HAS BEEN COMPLETED.

	FROM	TO	REF DESIG
( )	SK10 PIN 1 (3S)	XA8 PIN B-K (1S)	D0L
( )	SK10 PIN 2 (3S)	XA8 PIN B-L (1S)	D1L
( )	SK10 PIN 3 (3S)	XA8 PIN B-M (1S)	D2L
( )	SK10 PIN 4 (3S)	XA8 PIN B-N (1S)	D3L
( )	SK11 PIN 5 (3S)	XA8 PIN B-P (1S)	D4L
( )	SK11 PIN 6 (3S)	XA8 PIN B-R (1S)	D5L
( )	SK11 PIN 7 (3S)	XA8 PIN B-S (1S)	D6L
( )	SK11 PIN 8 (3S)	XA8 PIN B-T (1S)	D7L

OUTPUT STROBE WIRING

THE FOLLOWING WIRES CONNECT THE OUTPUT STROBE LINES FOR THE OUTPUT PORTS FROM THE DBB & OUTPUT CARD THAT RESIDES IN SLOT XA3. RUN THE WIRES FROM THE DESIGNATED OUTPUT SOCKET UP THE MIDDLE OF THE CHASSIS AND THEN OVER TO THE APPROPRIATE PIN ON THE CARD SOCKET - REFER TO THE DRAWING #3100B AS A GUIDE.

OUTPUT STROBE WIRING

	FROM	TO	REF DESIG
( )	SK7 PIN 9 (1S)	XA3 PIN A15 (1S)	OS0
( )	SK8 PIN 9 (1S)	XA3 PIN A16 (1S)	OS1
( )	SK9 PIN 9 (1S)	XA3 PIN A17 (1S)	OS2
( )	SK10 PIN 9 (1S)	XA3 PIN A18 (1S)	OS3
( )	SK11 PIN 9 (1S)	XA3 PIN A19 (1S)	OS4
( )	SK12 PIN 9 (1S)	XA3 PIN A20 (1S)	OS5
( )	SK13 PIN 9 (1S)	XA3 PIN A21 (1S)	OS6
( )	SK14 PIN 9 (1S)	XA3 PIN A22 (1S)	OS7

INPUT PORT WIRING

THE FOLLOWING WIRES CONNECT THE INPUT PORT CONNECTORS TO THE INPUT CARD THAT RESIDES IN SLOT XA4. RUN THE WIRES FROM THE DESIGNATED INPUT SOCKET UP THE MIDDLE OF THE CHASSIS AND THEN OVER TO THE APPROPRIATE PIN ON THE CARD SOCKET - REFER TO DRAWING #3100B AS A GUIDE.

	FROM	TO	REF DESIG
( )	SK1 PIN 1 (1S)	XA4 PIN A-H (1S)	INP00
( )	SK1 PIN 2 (1S)	XA4 PIN A-J (1S)	INP01
( )	SK1 PIN 3 (1S)	XA4 PIN A-K (1S)	INP02
( )	SK1 PIN 4 (1S)	XA4 PIN A-L (1S)	INP03
( )	SK1 PIN 5 (1S)	XA4 PIN A-M (1S)	INP04
( )	SK1 PIN 6 (1S)	XA4 PIN A-N (1S)	INP05
( )	SK1 PIN 7 (1S)	XA4 PIN A-P (1S)	INP06
( )	SK1 PIN 8 (1S)	XA4 PIN A-R (1S)	INP07
( )	SK2 PIN 1 (1S)	XA4 PIN A7 (1S)	INP10
( )	SK2 PIN 2 (1S)	XA4 PIN A8 (1S)	INP11
( )	SK2 PIN 3 (1S)	XA4 PIN A9 (1S)	INP12
( )	SK2 PIN 4 (1S)	XA4 PIN A10 (1S)	INP13
( )	SK2 PIN 5 (1S)	XA4 PIN A11 (1S)	INP14
( )	SK2 PIN 6 (1S)	XA4 PIN A12 (1S)	INP15

INPUT PORT WIRING

	FROM	TO	REF DESIG
∞)	SK2 PIN 7 (1S)	XA4 PIN A13 (1S)	INP16
( )	SK2 PIN 8 (1S)	XA4 PIN A14 (1S)	INP17
( )	SK3 PIN 1 (1S)	XA4 PIN B-A (1S)	INP20
( )	SK3 PIN 2 (1S)	XA4 PIN B-B (1S)	INP21
( )	SK3 PIN 3 (1S)	XA4 PIN B-C (1S)	INP22
( )	SK3 PIN 4 (1S)	XA4 PIN B-D (1S)	INP23
( )	SK3 PIN 5 (1S)	XA4 PIN B-E (1S)	INP24
( )	SK3 PIN 6 (1S)	XA4 PIN B-F (1S)	INP25
( )	SK3 PIN 7 (1S)	XA4 PIN B-H (1S)	INP26
( )	SK3 PIN 8 (1S)	XA4 PIN B-J (1S)	INP27
( )	SK4 PIN 1 (1S)	XA4 PIN B1 (1S)	INP30
( )	SK4 PIN 2 (1S)	XA4 PIN B2 (1S)	INP31
( )	SK4 PIN 3 (1S)	XA4 PIN B3 (1S)	INP32
( )	SK4 PIN 4 (1S)	XA4 PIN B4 (1S)	INP33
( )	SK4 PIN 5 (1S)	XA4 PIN B5 (1S)	INP34
( )	SK4 PIN 6 (1S)	XA4 PIN B6 (1S)	INP35
( )	SK4 PIN 7 (1S)	XA4 PIN B7 (1S)	INP36
( )	SK4 PIN 8 (1S)	XA4 PIN B8 (1S)	INP37
( )	SK5 PIN 1 (1S)	XA4 PIN B-K (1S)	INP40
( )	SK5 PIN 2 (1S)	XA4 PIN B-L (1S)	INP41
( )	SK5 PIN 3 (1S)	XA4 PIN B-M (1S)	INP42
( )	SK5 PIN 4 (1S)	XA4 PIN B-N (1S)	INP43
( )	SK5 PIN 5 (1S)	XA4 PIN B-P (1S)	INP44
( )	SK5 PIN 6 (1S)	XA4 PIN B-R (1S)	INP45
( )	SK5 PIN 7 (1S)	XA4 PIN B-S (1S)	INP46
( )	SK5 PIN 8 (1S)	XA4 PIN B-T (1S)	INP47
( )	SK6 PIN 1 (1S)	XA4 PIN B9 (1S)	INP50
( )	SK6 PIN 2 (1S)	XA4 PIN B10 (1S)	INP51

INPUT PORT WIRING

	FROM	TO	REF DESIG
( )	SK6 PIN 3 (1S)	XA4 PIN B11 (1S)	INP52
( )	SK6 PIN 4 (1S)	XA4 PIN B12 (1S)	INP53
( )	SK6 PIN 5 (1S)	XA4 PIN B13 (1S)	INP54
( )	SK6 PIN 6 (1S)	XA4 PIN B14 (1S)	INP55
( )	SK6 PIN 7 (1S)	XA4 PIN B15 (1S)	INP56
( )	SK6 PIN 8 (1S)	XA4 PIN B16 (1S)	INP57

YOU HAVE NOW COMPLETED THE WIRING FOR THE SCELBI-8H CHASSIS. AT THIS TIME IT IS GENERALLY A GOOD IDEA TO TAKE A FEW MINUTES TO PERFORM A CHECK OF THE WIRING YOU HAVE INSTALLED. USE AN OHM-METER OR CIRCUIT CONTINUITY TESTER AND GO BACK OVER THE WIRING LIST TO MAKE SURE THAT EACH WIRE HAS BEEN CONNECTED TO THE PROPER POINT. WHEN YOU HAVE RE-CHECKED YOUR WORK YOU MAY USE THE PLASTIC TIE-WRAPS AT SEVERAL PLACES ALONG THE WIRES YOU HAVE INSTALLED TO FORM A NEAT AND STURDY CABLE.

YOUR CHASSIS IS READY TO ACCEPT THE SCELBI-8H MINI-COMPUTER CARD SET. PROCEED TO THE SECTION ON INITIAL INSTALLATION AND CHECK OUT OF YOUR SCELBI-8H MINI-COMPUTER!

SCELBI-8H INITIAL INSTALLATION AND CHECK OUT PROCEDURES

INITIAL INSTALLATION AND CHECK OUT OF THE SCELBI-8H MINI-COMPUTER IS STRAIGHT FORWARD. THE PROCEDURE CONSIST ESSENTIALLY OF CONNECTING A POWER SUPPLY, PLUGGING THE CARDS INTO THE APPROPRIATE CARD SOCKETS, AND VERIFYING PROPER OPERATION BY LOADING AND EXECUTING SEVERAL SIMPLE PROGRAMS.

CONNECTION OF THE POWER SUPPLY

THE SCELBI-8H MINI-COMPUTER REQUIRES A POWER SUPPLY CAPABLE OF DELIVERING +5 VOLTS AND -9 VOLTS (PLUS OR MINUS 2%.) THE CURRENT REQUIREMENTS OF THE SUPPLY DEPEND ON THE AMOUNT OF MEMORY IN THE SYSTEM (AND ANY ADDITIONAL PERIPHERAL UNITS WHICH MAY BE CONNECTED TO THE SUPPLY.) THE AMOUNT OF CURRENT THAT THE POWER SUPPLY MUST BE CAPABLE OF DELIVERING, WHILE MAINTAINING ADEQUATE VOLTAGE REGULATION CAN BE DETERMINED FROM THE FOLLOWING DATA.

THE BASIC SCELBI CARD SET CONSISTING OF ONE EACH OF: SCELBI #1100 CPU CARD, SCELBI #1101 DBB & OUTPUT CARD, SCELBI #1102 INPUT CARD, AND SCELBI #1104 FRONT PANEL CARD; REQUIRES A MAXIMUM OF 1.5 AMPS AT +5 VOLTS AND 100 MILLIAMPERES OF -9 VOLTS.

EACH "PAGE" OF MEMORY IN THE SYSTEM (256 WORDS) REQUIRES 200 MILLIAMPERES OF +5 VOLTS AND -9 VOLTS.

THE CURRENT REQUIREMENTS FOR ANY ADDITIONAL PERIPHERAL UNITS UTILIZING THE POWER SUPPLY MUST BE ADDED TO OBTAIN THE TOTAL CURRENT THAT THE POWER SUPPLY MUST PROVIDE.

FOR EXAMPLE, A BASIC SCELBI-8H EQUIPPED WITH 1,024 WORDS OF MEMORY (4 PAGES,) REQUIRES: 1.5 A + (4 X .2 AMPS) = 2.3 AMPS OF +5 VOLTS AND .1 A + (4 X .2 AMPS) = .9 AMPS OF -9 VOLTS.

IF YOU PURCHASED A SCELBI POWER SUPPLY WITH YOUR SYSTEM, YOU NEED ONLY TO CONNECT THE POWER SUPPLY TO THE COMPUTER V.I.A. THE POWER CABLE PROVIDED. IF YOU ARE PROVIDING YOUR OWN SUPPLY, YOU MAY WANT TO INSTALL THE 4 PIN FEMALE POWER CONNECTOR PROVIDED WITH THE SCELBI-8H CHASSIS UNIT ON YOUR POWER SUPPLY. THIS CONNECTOR MATES WITH THE POWER CABLE TO PROVIDE A QUICK AND EASY CONNECTION METHOD. THE PIN ASSIGNMENTS FOR THE POWER CABLE ARE SHOWN BELOW.

POWER CONNECTOR PIN #1:	+5 VOLTS
POWER CONNECTOR PIN #2:	D.C. COMMON/SIGNAL GROUND
POWER CONNECTOR PIN #3:	D.C. COMMON/SIGNAL GROUND
POWER CONNECTOR PIN #4:	- 9 VOLTS

IMPORTANT NOTICE

IF YOU ARE PROVIDING YOUR OWN POWER SUPPLY FOR YOUR SCELBI-8H MINI-COMPUTER WE URGE YOU TO PROVIDE A GOOD ONE. TO SPEND A GOOD AMOUNT OF MONEY ON A WELL DESIGNED QUALITY PRODUCT AND THEN NOT PROVIDE A DECENT POWER SUPPLY IS PLAIN FOOLISHNESS. THE POWER SUPPLY SHOULD BE ABLE TO PROVIDE THE NECESSARY CURRENT WHILE MAINTAINING GOOD VOLTAGE REGULATION. IT SHOULD HAVE GOOD TRANSIENT RESPONSE. IT SHOULD BE ADEQUATELY BY-PASSED TO PREVENT SPURIOUS OSCILLATIONS. FAILURE TO PROVIDE A GOOD POWER SUPPLY CAN RESULT IN ERRATIC OPERATION OF THE SCELBI-8H MINI-COMPUTER.

REFER TO SCELBI DRAWING #3100A AND CONNECT THE POWER SUPPLY TO THE SCELBI-8H CHASSIS. IF YOU HAVE PROVIDED YOUR OWN SUPPLY IT IS RECOMMENDED THAT YOU PERFORM A TEST TO ENSURE THAT YOUR POWER SUPPLY CONNECTIONS ARE CORRECT BEFORE PLUGGING IN THE SCELBI-8H COMPUTER CARD SET. TO DO THIS, SIMPLY TURN ON YOUR POWER SUPPLY AND VERIFY THAT +5 VOLTS IS PRESENT BETWEEN PINS A1 (+5) AND A3 (COMMON) AS WELL AS BETWEEN AA (+5) AND AC (COMMON) ON THE "A" CARD SOCKETS; AND THEN ASCERTAIN THAT -9 VOLTS IS PRESENT BETWEEN PINS A5 (-9) AND A3 (COMMON) AS WELL AS PINS AE (-9) AND AC (COMMON.) BE SURE THAT THE VOLTAGE POLARITY IS CORRECT.

NOTICE

IT IS EXTREMELY IMPORTANT THAT CORRECT VOLTAGE POLARITY EXISTS TO THE SCELBI-8H COMPUTER CARDS. WHILE EACH SCELBI CARD IS FUSED AND DIODE PROTECTED AS A PRECAUTION AGAINST INCORRECT POWER CONNECTIONS (AS WELL AS OVER-VOLTAGE) THESE PROTECTION CIRCUITS ARE INTENDED ONLY TO SERVE AS MOMENTARY PROTECTIVE DEVICES. SCELBI CARDS THAT HAVE BEEN DAMAGED BECAUSE OF THE APPLICATION OF INCORRECT VOLTAGES ARE NOT COVERED BY THE SCELBI WARRANTY.

INSTALLATION OF CARDS

BEFORE PLUGGING IN THE SCELBI-8H CARD SET MAKE CERTAIN THAT THE POWER SUPPLY TO THE UNIT IS TURNED OFF. NEVER PLUG, OR UNPLUG, CARDS INTO THE CHASSIS UNIT WHEN POWER IS CONNECTED.

REFER TO SCELBI DRAWING #3100A AND INSTALL CARDS INTO THE CHASSIS UNIT AS FOLLOWS. MAKE SURE THE COMPONENT SIDE OF THE CARDS IS FACING TOWARDS THE FRONT OF THE CHASSIS UNIT.

PLUG THE #1104 FRONT PANEL CARD INTO SLOT #1 (FRONT-MOST SLOT.)

PLUG THE #1100 CPU CARD INTO SLOT #2.

PLUG THE #1101 DBB & OUTPUT CARD INTO SLOT #3.

PLUG THE #1102 INPUT CARD INTO SLOT #4.

PLUG A #1103 RAM MEMORY CARD INTO SLOT #5.

PLUG ANY ADDITIONAL #1103 RAM MEMORY CARDS INTO SLOT(S) 6, 7 & 8.

INITIAL OPERATION

WHEN THE CARDS HAVE BEEN INSTALLED IN THEIR APPROPRIATE SLOTS YOUR SCELBI-8H MINI-COMPUTER IS READY TO OPERATE.

APPLY POWER TO THE UNIT AND IMMEDIATELY OBSERVE THE POWER INDICATIONS ON THE FRONT PANEL CARD TO VERIFY THAT THE +5 AND -9 VOLTAGES ARE PRESENT. NEVER ATTEMPT TO OPERATE THE SCELBI-8H IF EITHER VOLTAGE IS ABSENT.

WITH PROPER POWER APPLIED TO THE UNIT YOU MAY NOW PROCEED TO START OPERATING YOUR SCELBI-8H. YOU SHOULD FAMILIARIZE YOURSELF WITH THE SCELBI-8H USER'S MANUAL. SECTION THREE (PINK SECTION) IN THE MANUAL PRESENTS DETAILED OPERATING INSTRUCTIONS.

TO START OPERATIONS YOU SHOULD TURN TO PAGE 5 OF SECTION 3 IN THE SCELBI-8H USER'S MANUAL AND FOLLOW THE INSTRUCTIONS FOR INITIALIZING THE SCELBI-8H FOLLOWING POWER TURN-ON. IT IS THEN SUGGESTED THAT YOU PROCEED TO LOAD AND HAVE THE COMPUTER PERFORM THE SMALL "JUMP TO ITSELF" PROGRAM THAT IS ILLUSTRATED STARTING ON PAGE 7 OF SECTION 3.

IF YOUR SCELBI-8H WAS SUPPLIED WITH MORE THAN 256 WORDS OF MEMORY YOU SHOULD LOAD AND EXECUTE THE SIMPLE MEMORY DIAGNOSTIC PROGRAM DESCRIBED STARTING ON PAGE 21 OF SECTION 3 IN THE MANUAL. (IF YOUR UNIT ONLY HAS 256 WORDS YOU WILL NOT BE ABLE TO RUN THE MEMORY DIAGNOSTIC DESCRIBED IN THE MANUAL.)

YOU MAY THEN GO ON TO LOAD AND EXECUTE THE LIGHT FLASHER PROGRAM DESCRIBED ON PAGE 27 IN SECTION THREE.

OR, YOU MAY START TO DEVELOP AND EXECUTE YOUR OWN PROGRAMS, OR LOAD AND EXECUTE SCELBI PROGRAMS.

IF YOU HAVE PURCHASED PERIPHERAL UNITS, THE CONNECTION AND OPERATION OF THOSE UNITS WILL BE COVERED BY DOCUMENTATION PROVIDED WITH THOSE DEVICES.

IN CASE OF DIFFICULTY

SHOULD IMPROPER OPERATION OCCUR DURING THE CHECK OUT PROCEDURES WE SUGGEST THAT YOU FIRST CHECK THAT THE P.C. CARDS ARE PROPERLY SEATED IN THEIR SOCKETS. THE NEXT STEP IF THE DIFFICULTY PERSISTS WOULD TO TO RECHECK ANY WIRING THAT YOU INSTALLED, TO VERIFY THAT THE POWER SUPPLY VOLTAGES ARE CORRECT AND ARE PROPERLY CONNECTED TO THE SCELBI-8H, AND THAT YOU MAKE CERTAIN YOU ARE OPERATING THE UNIT CORRECTLY. CUSTOMERS WHO ASSEMBLED CARD SETS MAY WANT TO REFER TO THE APPENDIX AT THE END OF THIS SECTION WHICH PROVIDES SOME ADVICE ON THE INITIAL CHECKING OF INDIVIDUAL CARDS SHOULD DIFFICULTIES ARISE WHEN THE CARDS ARE FIRST INSTALLED.

NOTE

IF YOU ARE NOT FAMILIAR WITH THE OPERATION OF A COMPUTER YOU SHOULD BE ADVISED THAT THE MOST COMMON SOURCE OF PROBLEMS WITH THE MACHINE ARE THE RESULT OF "OPERATOR ERRORS." SINCE THE MACHINE IF FULLY PROGRAMMABLE - IT WILL (INDEED IS ONLY ABLE TO) FOLLOW PRECISELY THE INSTRUCTIONS GIVEN TO IT BY THE OPERATOR OR PROGRAM RESIDING IN MEMORY. IF YOU THINK THE COMPUTER IS NOT OPERATING CORRECTLY WE ADVISE YOU TO CAREFULLY RECHECK THE PROGRAM OR

INSTRUCTIONS YOU ARE ASKING IT TO PERFORM BEFORE JUMPING TO ANY CONCLUSION THAT THE MACHINE IS MALFUNCTIONING. FROM YEARS OF EXPERIENCE WE AT SCELBI CAN ADVISE YOU THAT THE NEWCOMER TO MINI-COMPUTER PROGRAMMING AND OPERATION WILL MAKE MANY MISTAKES BEFORE BECOMING AN ADEPT PROGRAMMER, AND THEIR SEEMS TO BE A NATURAL TREND FOR THE NEW PROGRAMMER TO IMMEDIATELY ASSUME THAT THE MACHINE IS NOT OPERATING CORRECTLY WHEN A PROGRAM DOES NOT PERFORM AS THE NOVICE PROGRAMMER INTENDED. AS A GENERAL RULE OF THUMB, WHEN A PROGRAM DOES NOT PEFORM PROPERLY, THE LAST THING TO CONSIDER IS A HARDWARE MALFUNCTION.

DOCUMENTATION

YOUR SCELBI-8H MINI-COMPUTER IS SUPPLIED WITH FULL DOCUMENTATION INCLUDING SCHEMATICS, ASSEMBLY DRAWINGS AND WIRE LIST(S), AND PARTS LISTS FOR THE CARDS. YOU MAY REFER TO THOSE DRAWINGS TO GAIN INSIGHT INTO THE MACHINES OPERATION, OR AS REFERENCES SHOULD TROUBLE EVER OCCUR WITH YOUR SYSTEM.

MAINTENANCE PROCEDURES

THE ONLY NORMAL MAINTENANCE REQUIRED BY THE SCELBI-8H IS THAT THE UNIT BE PERIODICALLY DUSTED TO PREVENT EXCESSIVE HEAT FROM BUILDING UP ON COMPONENTS. A SMALL, SOFT, CLEAN PAINT BRUSH IS AN IDEAL INSTRUMENT TO USE TO CLEAN THE PRINTED CIRCUIT CARDS.

WARRANTY AND SERVICE INFORMATION

SCELBI PRODUCTS ARE WARRANTED FOR PERIOD OF 90 DAYS FROM DATE OF SHIPMENT. IN THE CASE OF ASSEMBLED UNITS THIS WARRANTEE APPLIES TO ALL PARTS, MATERIALS AND WORKMANSHIP. IN THE CASE OF KITS, THE WARRANTEE APPLIES ONLY TO COMPONENTS AND MATERIALS WHEN SUCH PARTS AND MATERIALS ARE ASSEMBLED IN THE PROPER MANNER.

THE WARRANTEE IS VOIDED IN ITS ENTIRETY IF THE PURCHASER FAILS TO FOLLOW SCELBI PROVIDED ASSEMBLY, APERATING, OR MAINTENANCE INSTRUCTIONS; PHYSICALLY ABUSES THE EQUIPMENT THROUGH NEGLECT OR MISHANDLING; MAKES UNAUTHORIZED MODIFICATIONS TO ANY PART OF THE EQUIPMENT; OR USES PARTS THAT HAVE NOT BEEN SUPPLIED BY SCELBI COMPUTER CONSULTING, INC.. IN THE EVENT A JUDGEMENT IS NECESSARY AS TO THE VALIDITY OF A WARRANTEE BECAUSE OF EVIDENCE OF IMPROPER OPERATION, NEGLECT OR ABUSE, PARTS SUBSTITUTION ETC., THE JUDGEMENT OF SCELBI PERSONNEL WILL BE FINAL.

UNITS COVERED BY WARRANTEE WILL BE REPAIRED OR REPLACED AT THE OPTION OF SCELBI COMPUTER CONSULTING, INC., FREE OF CHARGE WHEN THE CUSTOMER RETURNS DEFECTIVE UNITS.

UNITS NOT COVERED BY WARRANTEE (INCLUDING KITS THAT HAVE BEEN IMPROPERLY ASSEMBLED) WILL BE REPAIRED BY SCELBI WITH CHARGES FOR PARTS AND LABOR WHEN DEFECTIVE UNITS ARE RETURNED.

CUSTOMERS DESIRING TO RETURN UNITS FOR SERVICING MUST OBTAIN A SERVICE AUTHORIZATION NUMBER FROM THE FACTORY. RETURNED GOODS THAT DO NOT HAVE AN AUTHORIZATION NUMBER WILL NOT BE ACCEPTED.

APPENDIX - INITIAL P.C. CARD TESTING

EXPERIENCE HAS INDICATED THAT THE MAJORITY OF PROBLEMS FOUND WITH P.C. CARDS THAT HAVE BEEN ASSEMBLED BY THE PURCHASER FALL INTO SEVERAL MAJOR CATEGORIES.

1. SOLDER SHORTS BETWEEN P.C. FOIL LANDS.

2. COMPONENTS INSTALLED INCORRECTLY OR IN THE WRONG LOCATION.

3. OCCASIONALLY A MINOR DEFECT IN A P.C. CARD - SUCH AS AN OPEN OR SHORTED P.C. FOIL LAND WILL OCCUR. SCELBI CAREFULLY INSPECTS P.C. CARDS BUT THE FINAL TEST OF A P.C. CARDS FOIL INTEGRITY CAN ONLY BE MADE WHEN THE CARD IS PUT INTO OPERATION.

4. VERY RARELY A "FEED-THROUGH" HOLE ON A P.C. CARD WILL BE FOUND TO BE "OPEN" IN THAT THE HOLE DOES NOT CONDUCT FROM ONE SIDE OF THE BOARD TO THE OTHER.

5. BY FAR THE MOST COMMON FAULT FOUND ON CARDS WHERE PEOPLE HAVE SUPPLIED THEIR OWN PARTS IS SIMPLY DEFECTIVE COMPONENTS.

PROBLEMS FALLING INTO CATEGORIES 1, 2 AND 3 CAN OFTEN BE DETECTED AND ELIMINATED BY VERY CAREFUL VISUAL INSPECTION OF THE P.C. BOARD, BOTH DURING THE ASSEMBLY PROCESS, AND WHEN THE ASSEMBLY HAS BEEN COMPLETED. SOLDER SHORTS ARE EASILY REMOVED WITH A HOT SOLDERING IRON. SHORTED P.C. FOIL LANDS CAN BE SEPARATED BY A SHARP KNIFE. AN OPEN P.C. FOIL LAND CAN BE READILY JUMPERED WITH A PIECE OF WIRE AND A BIT OF SOLDER.

IMPROPERLY INSTALLED COMPONENTS SHOULD HAVE THEIR LEADS CUT OFF AND THEN THE REMAINING PIECE OF EACH LEAD SUCKED OUT OF THE HOLE WITH A "SOLDER SUCKER" INSTRUMENT. DO NOT TRY TO REMOVE WHOLE COMPONENTS IN ORDER TO "SAVE" THE COMPONENT AS TO ATTEMPT TO DO SO WILL OFTEN RESULT IN PERMANENT DESTRUCTION TO THE P.C. FOIL ON THE CARD. THE P.C. CARDS HAVE "PLATED-THROUGH" HOLES FOR COMPONENT LEADS - THESE HOLES BECOME FILLED WITH SOLDER WHEN THE COMPONENT IS INITIALLY SOLDERED TO THE BOARD AND IT IS EXTREMELY DIFFICULT TO TRY TO REMOVE A GROUP OF LEADS, SUCH AS THOSE ON AN INTEGRATED CIRCUIT, AT ONE TIME, WITHOUT ALSO CAUSING DAMAGE TO THE P.C. CARD.

THE 4TH CATEGORY LISTED ABOVE IS NOT READILY DETECTED BY VISUAL INSPECTION. THIS PROBLEM IS RARE IN SCELBI P.C. CARDS BUT IT CAN OCCUR. THE DETECTION IS GENERALLY EASY ONCE A PROBLEM HAS BEEN LOCALIZED TO A PARTICULAR CIRCUIT IN THAT A DRIVING SIGNAL PRESENT AT AN OUTPUT DEVICE WILL NOT BE PRESENT AT THE INPUT DEVICE(S) IT IS SUPPOSED TO DRIVE. AN OHM METER CHECK WILL VERIFY AN OPEN FEED THROUGH. AN OPEN FEED THROUGH HOLE CAN BE FIXED BY INSERTING A PIECE OF WIRE THROUGH THE HOLE AND SOLDERING IT IN PLACE.

LOCATING FAULTY COMPONENTS GENERALLY REQUIRES SOME TECHNICAL SKILL AND THE ABILITY TO FOLLOW THE LOGIC DETAILED IN THE SCHEMATICS INCLUDED WITH THE SYSTEM. PERSONS PURCHASING UNASSEMBLED CARD SETS WERE ADVISED TO HAVE SUCH SKILLS AND NO ATTEMPT AT DISCUSSING THE TECHNIQUES WILL BE MADE HERE. SUFFICE TO SAY AS A REMINDER, THAT THE TTL DEVICES USED IN THE SCELBI-8H WHEN OPERATING PROPERLY WILL HAVE LESS THAN 0.4 VOLTS WHEN AT A LOGIC LOW (0) AND AT LEAST 2.0 VOLTS WHEN AT A LOGIC ONE (1.) ANY LOGIC SIGNAL FOUND IN THE RANGE OF 0.4 TO 2.0 VOLTS IS GENERALLY A SIGN OF A FAULTY COMPONENT OF DEFECTIVE CIRCUIT (SUCH AS A SHORT BETWEEN DIFFERENT SIGNAL LINES.) ALSO, IF AN INPUT TO A TTL DEVICE IS "FLOATING," THE DEVICE WILL ASSUME A LOGIC HIGH (1) LEVEL AT THE INPUT. SHOULD A DEVICE BE FOUND FAULTY, IT SHOULD BE REMOVED IN THE MANNER PRESCRIBED ABOVE UNDER THE DISCUSSION OF IMPROPERLY INSTALLED COMPONENTS TO AVOID POSSIBLE DAMAGE TO THE P.C. FOIL LANDS.