

REV. NO.		REVISIONS				
A		SYM.	SHEET	DESCRIPTION	APPROV.	DATE
DWG. NO.	02193	A		Released to Production	RK	20 July 81
SHEET	1 OF 9					

DRAWN MAS	DATE 7-20-81	<b>PRODUCT SPECIFICATION</b> <b>BI-508 UNIVERSAL LOGIC CARD</b> <b>WITH REAR INTERCONNECT</b>	 <b>DATARAM CORPORATION</b> <b>CRANBURY</b> <b>NEW JERSEY</b>	DWG. NO.	02193	REV.	A
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ENGR. RK	DATE 20 July 81						
APPROVED (Signature)	DATE 7/21/81						

## 1.0 GENERAL

The BI-508 Universal Logic Card has been designed to provide the user with ample area for any interface logic that may be required between the CPU and the memory system.

## 2.0 MECHANICAL

The card measures 13.64" x 16.4" and is designed to fit in the BULK CORE or BULK SEMI standard chassis. (See Figure 1) The card contains two 120-pin .100" center terminal strips designated MEM P9 and I/O P10 which mate with the CDC type connectors designated J9 and J10 respectively. The pin assignments for J9 and J10 are given in Tables I and II.

The rear of the card contains facilities for up to four 60-pin (or less) and two 50-pin (or less) ribbon cable connectors. The connector pin mounting holes are arranged such that either all even pins are grounded or all odd pins are grounded, thus providing isolation between signal lines in the ribbon cable.

## 3.0 BULK CHASSIS AND UNIVERSAL LOGIC CARD

The BULK CORE and BULK SEMI chassis contain two connectors, J9 and J10, which are used for the Bulk Universal Logic Card.

Connector J9 has been dedicated to interface to the memory modules via printed circuit etch on the backplanes. Connector J10 is used to interface with the input/output connectors. The input/output connectors are four 40-pin ribbon cable connectors for BULK CORE or two 40 and two 50 pin ribbon cable connectors for BULK SEMI located at the rear of the chassis. They are designated as Connectors A, B, C, and D. The even-numbered pins on Connectors A-D may be used to carry data, address or control signals and the odd-numbered pins are dedicated to signal returns. Therefore, signals in the ribbon cable are arranged such that alternate conductors about an interface signal are at signal ground potential.

The BULK CORE chassis and the BULK SEMI 7 inch chassis have one slot which can be used for a Universal Logic Card. The BULK SEMI 15-3/4 inch chassis has three slots available that can be used for multiple Universal Logic cards.



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#### 4.0 CARD LAYOUT

IC socket holes are provided in a universal pattern allowing mounting of dual-in-line devices of various pin counts and center to center widths of .3, .4 and .6 inches. Table III lists the approximate number of various size devices which will fit on the card.

16 Pin Dip .3 ctrs.	200 chips
20 Pin Dip .3 ctrs.	150 chips
22 Pin Dip .4 ctrs.	76 chips
28 Pin Dip .6 ctrs.	60 chips
40 Pin Dip .6 ctrs.	38 chips

TABLE III - CHIP CAPACITY

#### 5.0 TYPICAL INTERFACE APPLICATION

A typical interface example using the Universal Logic Card is shown in Figure 2. Address data from the CPU enters connector P10 on the I/O logic card. Bus receivers at P10 are wirewrapped on the card and route the data to memory drivers at P9 which provides the interface to the memory. In those instances where it is desirable to store data coming from the CPU, latches may be employed between the P10 bus receivers and the P9 drivers.

#### 6.0 WEIGHT

1.5 pounds (.68 kg)

#### 7.0 PART NUMBER

The following Dataram part number has been assigned to the BI-508 Universal Logic Card:

62945      BI-508 Universal Logic Card



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TABLE I  
UNIVERSAL LOGIC CARD  
CONNECTOR J9 MEMORY INTERFACE

Odd Pins - Component Side

Even Pins - Solder (Wirewrap) Side

<u>Pin</u>	<u>Signal</u>	<u>Pin</u>	<u>Signal</u>
1	GND	2	GND
3	+5V	4	+5V
5	DTA15N	6	DTA06N
7	ADRO5N	8	ADRO7N
9	DTA07N	10	
11	ADR14N	12	PWRINTL
13	DTA14N	14	DTA32N
15	ADRO6N	16	DTA24N
17	DTA16N	18	DTA34N
19	ADR13N	20	DTA25N
21	DTA05N	22	DTA23N
23	ADRO3N	24	DTA33N
25	DTA17N	26	DTA35N
27	ADR15N	28	ADR24N
29	DTA13N	30	DTA31N
31	ADR16N	32	STATN*
33	DTA04N	34	DTA22N
35	ADR10N	36	STAVN*
37	IDACN	38	UCERN*
39	ADROON	40	CRERN*
41	ODAVN	42	CLRBYN*
43	ADRO4N	44	MEMSIZ3
45	ADRACN	46	MEMSIZ4
47	ADR12N	48	MEMSIZ5
49	ADRO8N	50	MEMSIZ6
51	ADRO1N	52	
53	ADRO9N	54	ADR20N
55	ADRO2N	56	ADR21N
57	ADR11N	58	ADR22N
59	GND	60	GND
61	ADRAVN	62	ADR23N
63	GND	64	GND
65	MWRUBN (Upper Byte Lower Word)	66	MWRUBAN (Upper Byte Upper Word)
67	PWRINTN	68	
69	MRDRN	70	
71	NORMN	72	
73	MWRLBN (Lower Byte Lower Word)	74	MWRLBAN (Lower Byte Upper Word)
75	RADVLDN	76	
77	GND	78	GND
79	ADR17N	80	
81	ADR18N	82	
83	ADR19N	84	
85	RADR1N †	86	
87	RADR2N †	88	
89	RADRON †	90	

\* Used by BULK SEMI only  
† Used by BULK CORE only



<u>Pin</u>	<u>Signal</u>	<u>Pin</u>	<u>Signal</u>
91	DTA08N	92	DTA26N
93	DTA03N	94	DTA21N
95	DTA12N	96	DTA30N
97	DTA00N	98	DTA18N
99	DTA11N	100	DTA29N
101	MEMSIZ2	102	
103	DTA09N	104	DTA27N
105	MEMSIZ1	106	
107	DTA02N	108	DTA20N
109	DTA10N	110	DTA28N
111	DTA01N	112	DTA19N
113	MEMSIZ0	114	MBYN*
115	+5V	116	+5V
117	GND	118	GND
119		120	

Data Bits 0-7, 17	Upper Byte, Lower Word
Data Bits 8-16	Lower Byte, Lower Word
Data Bits 18-25, 35	Upper Byte, Upper Word
Data Bits 26-34	Lower Byte, Upper Word

\* Used by BULK SEMI only

TABLE II  
 UNIVERSAL LOGIC CARD  
 INPUT/OUTPUT CONNECTOR J10

Odd Pins - Component Side

Even Pins - Solder (Wirewrap) Side

<u>Pin</u>	<u>Signal</u>		<u>Pin</u>	<u>Signal</u>
1	GND		2	GND
3	+5 VOLTS		4	+5 VOLTS
5	SIG RTN CONN A		6	SIG RTN CONN B
7	SIG RTN CONN A		8	SIG RTN CONN B
9	CONN A PIN 40		10	CONN B PIN 2
11	CONN A PIN 38		12	CONN B PIN 4
13	CONN A PIN 36		14	CONN B PIN 6
15	CONN A PIN 34		16	CONN B PIN 8
17	CONN A PIN 32		18	CONN B PIN 10
19	CONN A PIN 30		20	CONN B PIN 12
21	CONN A PIN 28		22	CONN B PIN 14
23	CONN A PIN 26		24	CONN B PIN 16
25	CONN A PIN 24		26	CONN B PIN 18
27	CONN A PIN 22		28	CONN B PIN 20
29	CONN A PIN 20		30	CONN B PIN 22
31	CONN A PIN 18		32	CONN B PIN 24
33	CONN A PIN 16		34	CONN B PIN 26
35	CONN A PIN 14		36	CONN B PIN 28
37	CONN A PIN 12		38	CONN B PIN 30
39	CONN A PIN 10		40	CONN B PIN 32
41	CONN A PIN 8		42	CONN B PIN 34
43	CONN A PIN 6		44	CONN B PIN 36
45	CONN A PIN 4		46	CONN B PIN 38
47	CONN A PIN 2		48	CONN B PIN 40
49	SIG RTN CONN A		50	SIG RTN CONN B
51	SIG RTN CONN A		52	SIG RTN CONN B
53	SIG RTN CONN A		54	SIG RTN CONN B
55	SIG RTN CONN C		56	SIG RTN CONN D
57	SIG RTN CONN C		58	SIG RTN CONN D
59	SIG RTN CONN C		60	SIG RTN CONN D
61	CONN C PIN 50)	Not Used on BULK CORE	62	CONN D PIN 2
63	CONN C PIN 48)		64	CONN D PIN 4
65	CONN C PIN 46)		66	CONN D PIN 6
67	CONN C PIN 44)		68	CONN D PIN 8
69	CONN C PIN 42)		70	CONN D PIN 10
71	CONN C PIN 40		72	CONN D PIN 12
73	CONN C PIN 38		74	CONN D PIN 14
75	CONN C PIN 36		76	CONN D PIN 16
77	CONN C PIN 34		78	CONN D PIN 18
79	CONN C PIN 32		80	CONN D PIN 20
81	CONN C PIN 30		82	CONN D PIN 22
83	CONN C PIN 28		84	CONN D PIN 24
85	CONN C PIN 26		86	CONN D PIN 26
87	CONN C PIN 24	88	CONN D PIN 28	
89	CONN C PIN 22	90	CONN D PIN 30	



<u>Pin</u>	<u>Signal</u>	<u>Pin</u>	<u>Signal</u>
91	CONN C PIN 20	92	CONN D PIN 32
93	CONN C PIN 18	94	CONN D PIN 34
95	CONN C PIN 16	96	CONN D PIN 36
97	CONN C PIN 14	98	CONN D PIN 38
99	CONN C PIN 12	100	CONN D PIN 40
101	CONN C PIN 10	102	CONN D PIN 42) Not
103	CONN C PIN 8	104	CONN D PIN 44) Used
105	CONN C PIN 6	106	CONN D PIN 46) on
107	CONN C PIN 4	108	CONN D PIN 48) BULK
109	CONN D PIN 2	110	CONN D PIN 50) CORE
111	SIG RTN CONN C	112	SIG RTN CONN D
113	SIG RTN CONN C	114	SIG RTN CONN D
115	SIG RTN CONN C	116	SIG RTN CONN D
117	+5 VOLTS	118	+5 VOLTS
119	GND	120	GND

Odd Pins on Input/Output Connector A-D are used for Signal Return.



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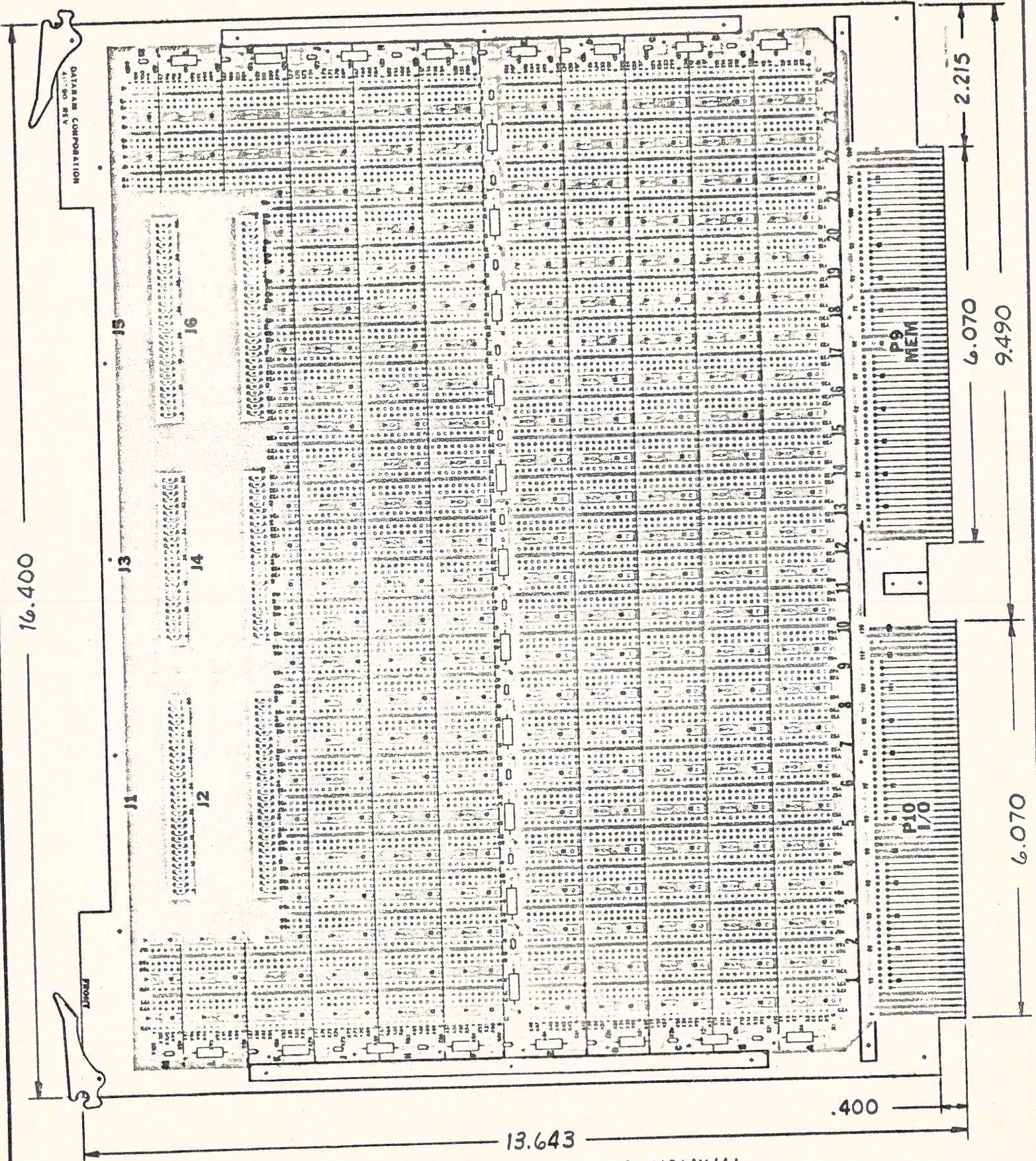
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FIGURE 1



BOARD THICKNESS IS .062 NOMINAL



