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SECTION 5
CONFIGURATION AND INSTALLATION

5.1 UNPACKING PROCEDURES

CAUTION

SOME OF THE COMPONENTS ASSEMBLED ON VMIC'S PRODUCTS MAY BE SENSITIVE TO ELECTROSTATIC DISCHARGE AND DAMAGE MAY OCCUR ON BOARDS THAT ARE SUBJECTED TO A HIGH ENERGY ELECTROSTATIC FIELD. UNUSED BOARDS SHOULD BE STORED IN THE SAME PROTECTIVE BOXES AS SHIPPED. WHEN THE BOARD IS TO BE LAID ON A BENCH FOR CONFIGURING, ETC., IT IS SUGGESTED THAT CONDUCTIVE MATERIAL BE INSERTED UNDER THE BOARD TO PROVIDE A CONDUCTIVE SHUNT.

Upon receipt, any precautions found in the shipping container should be observed. All items should be carefully unpacked and thoroughly inspected for damage that might have occurred during shipment. The board(s) should be checked for broken components, damaged printed-circuit board(s), heat damage, and other visible contamination. All claims arising from shipping damage should be filed with the carrier and a complete report sent to VMIC together with a request for advice concerning disposition of the damaged item(s).

5.2 PHYSICAL INSTALLATION

CAUTION

DO NOT INSTALL OR REMOVE BOARDS WHILE POWER IS APPLIED.

De-energize the equipment and insert the board into an appropriate slot of the chassis, while ensuring that the card is properly aligned and oriented in the supporting card guides. Slide the card smoothly forward against the mating connector until firmly seated.

The VMIVME-DMA is compatible with any system chassis which accepts double eurocard form factor boards with front panels. The front panel provides handles for installation and captive screws to secure the board in the system chassis.

5.3 JUMPER INSTALLATION

The revision E board (and subsequent revisions of the board) also provides for jumper selection of the VMEbus priority level, board A/B selection ("Master/Slave"), GO bit control; and jumpers to enable the watchdog timer, user

forcing done, and stop burst mode. The reader should refer to Figure 5.3-1 for jumper locations.

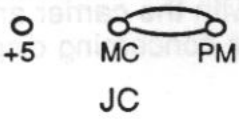
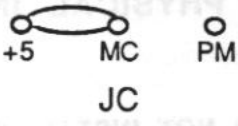
5.3.1 VMEbus Priority Jumpers

Jumpers JE and JF provide for the selection of bus request level and grant level, respectively. The reader should refer to Figure 5.3.1-1 for selection of bus priority level (3, 2, 1, or 0). The factory configuration is level 3.

5.3.2 Board A/B Selection

Board A/B selection is factory configured as board "B" and to be under program control (see Table 5.3.2-1). However, a board may be hardwired as board A (Link Master) as shown in Table 5.3.2-1.

Table 5.3.2-1. Link Master Selection Installation of Jumper JC

BOARD SELECT A/B	JUMPER INSTALLATION
POWERS UP BOARD AS B (LINK SLAVE) CAN BE SET TO A (LINK MASTER) UNDER PROGRAM CONTROL	
ALWAYS SELECTED AS BOARD A (LINK MASTER)	

MDMA/T5.3.2-1

5.3.3 Watchdog Timer Disable

The Watchdog Timer (WDT) can be enabled by removing the WDT jumper and setting the WDT enable bit in the device Control Status Register (CSR). The factory configuration has the WDT jumper installed (see Section 4.6.2). If enabled the WDT will force a DMA DONE interrupt if no request is received over the cable for 200 milliseconds (nominal).

5.3.4 "User Forcing Done" and "Stop Burst" Jumpers (JA and JB)

These two jumpers should not be installed when the user is connecting two VMIVME-DMA boards back-to-back. These two jumpers should be installed only if specially designed hardware provides drivers for the two signals *USER FORCING DONE* and *STOP BURST*.

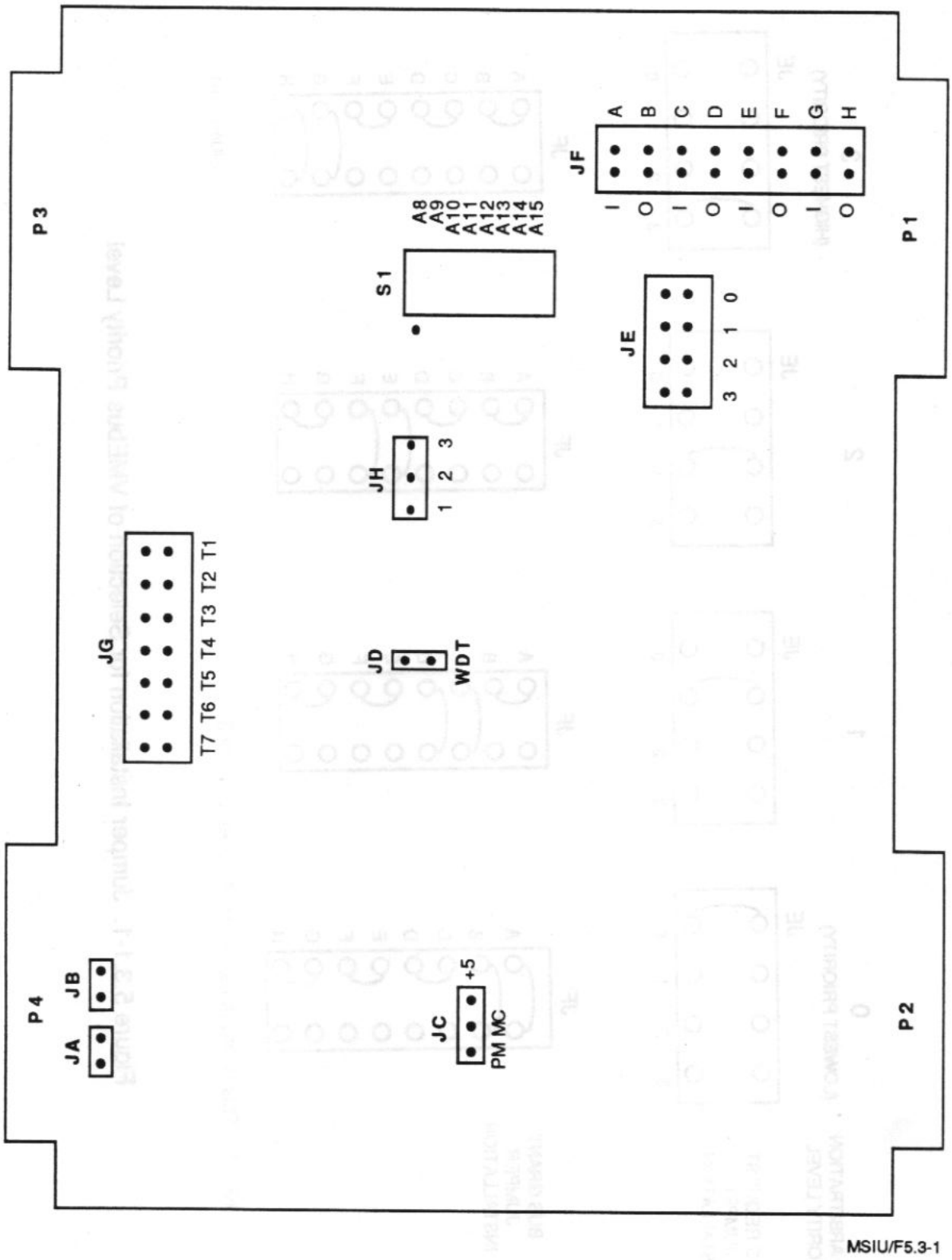


Figure 5.3-1. Switch and Jumper Locations

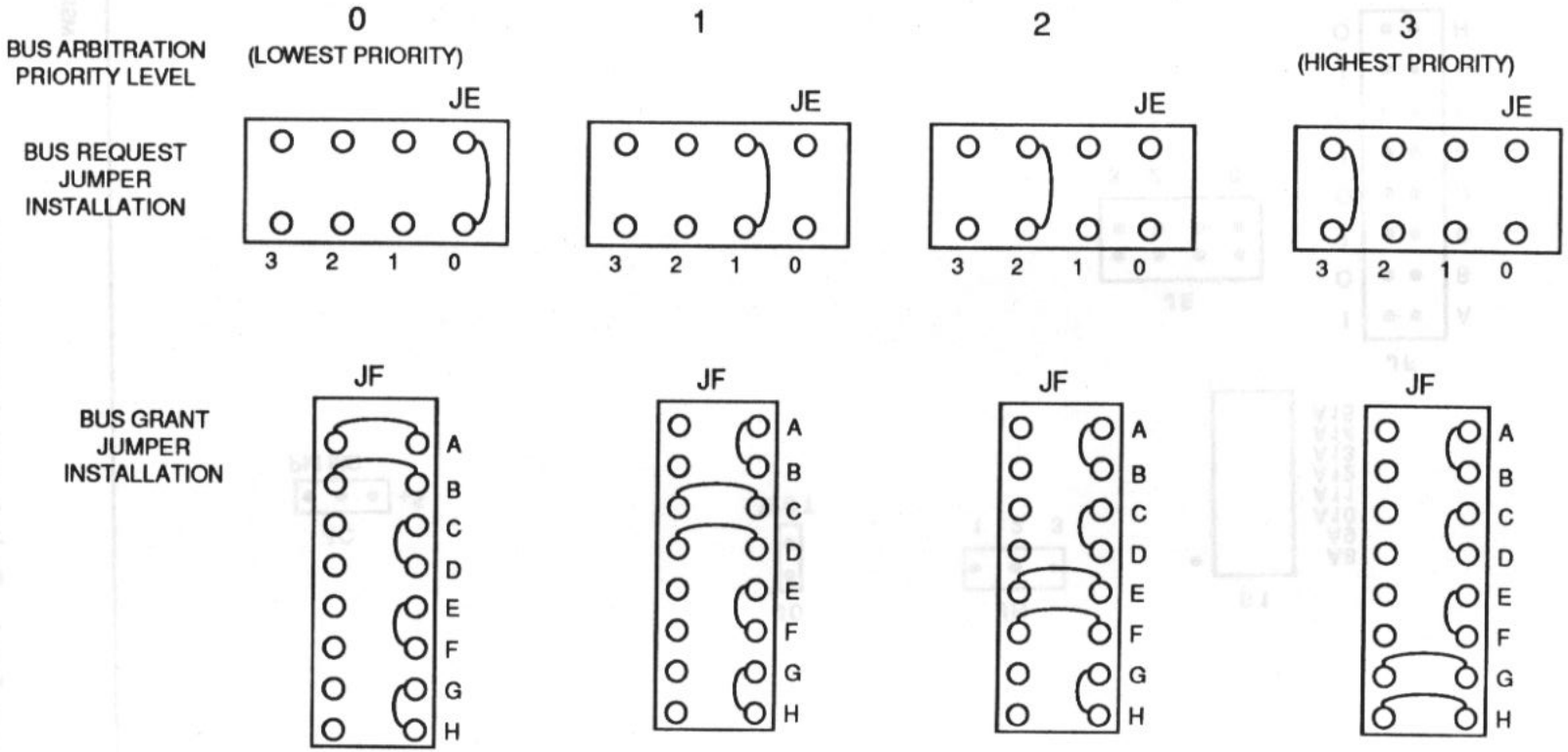


Figure 5.3.1-1. Jumper Installation for Selection of VMEbus Priority Level

5.3.5 Go Flip-Flop Jumper (JH)

This jumper is provided to select program control option for the GO bit (see Table 5.3.5-1).

Table 5.3.5-1. Go Flip-Flop Configuration (JH)

FUNCTION	JUMPER INSTALLATION JH
Go bit Flip-Flop cannot be cleared under program control.	
Go bit Flip-Flop can be cleared under propram control.	

MDMA/T5.3.5-1

5.3.6 Data Deskew Time Delay (Jumper JG)

Install one jumper to select time delay for data deskew (see Table 5.3.6-1). See Figure 5.3-1 for jumper locations.

5.4 BOARD BASE ADDRESS

The VMIVME-DMA occupies 256 bytes of the VMEbus short I/O space. The upper eight bits of the short address are Dual In-line Package (DIP) switch selectable. Figure 5.4-1 for selection of the board base address, and refer to Figure 5.3-1 for the location of the DIP Switch.

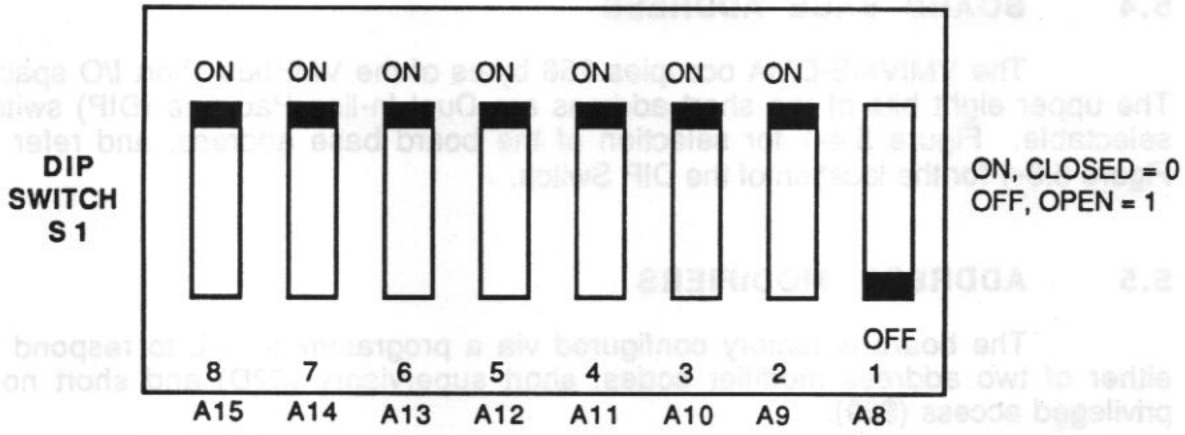
5.5 ADDRESS MODIFIERS

The board is factory configured via a programmed PAL to respond to either of two address modifier codes: short supervisory ($2D) and short non-privileged access ($29).

Table 5.3.6-1. Suggested Deskew Time Delays (Jumper Selectable at JG) vs Expected Cable Time Skew and Cable Length

JUMPER SELECTION	TIME DELAY SELECTED	CABLE LENGTH RANGES (In feet)	
		IF 10% SKEW	IF 5% SKEW
T1	62.5 ns	0 to 10 feet	0 to 20 feet
T2	125 ns	11 to 391 feet	21 to 782 feet
T3	187 ns	392 to 781 feet	783 to 1,562 feet
T4	250 ns	782 to 1,169 feet	1,563 to 2,338 feet
T5	312 ns	1,170 to 1,562 feet	2,339 to 3,124 feet
T6	375 ns	1,563 to 1,950 feet	_____
T7	437 ns	1,951 to 2,344 feet	_____

MDMA/T5.3.6-1



NOTE: The base address example is $0100.

Figure 5.4-1. VMIVME-DMA Base Address Configuration

5.6 I/O CABLES

The VMVIME-DMA generates a TTL bus that is terminated in 120 ohms via 180/390 ohms terminating resistors. The VMIVME-DMA may be connected to external devices or to another VMIVME-DMA, using up to 15.2 m (50-foot) cables.

I/O connector pin specifications and signal mnemonics are shown in Tables 5.6-1 and 5.6-2. The I/O connectors pin-out is designed with a high quality ground return for each signal (or data line) for increased noise immunity and high reliability. VMIC recommends the use of twisted pair cables so that the user may take advantage of this design. VMIC also recommends the use of high quality shielded cable for distances exceeding five feet. The cable shield ***MUST*** be grounded at both ends of the interface cable, if a shielded cable is used. The grounds should have low impedance at high frequencies.

For back-to-back mode, P3 should be connected to P3 on the other device and P4 should be connected to P4 on the other device, see Figure 5.6-1. The A/B jumper should be set to "A" on the one board and to "B" on the other board. Refer to Figure 5.3-1 for the location of this jumper. When connecting to a user device, the A/B jumper can either be in the A or B position. Tables 5.6-1 and 5.6-2 list the signal pinout based on the A/B jumper selection.

Table 5.6-1. Data Connector P3

PIN	ROW A SIGNAL	ROW C SIGNAL	PIN	ROW A SIGNAL	ROW C SIGNAL
1	ED00	GND	17	ED16	GND
2	ED01	GND	18	ED17	GND
3	ED02	GND	19	ED18	GND
4	ED03	GND	20	ED19	GND
5	ED04	GND	21	ED20	GND
6	ED05	GND	22	ED21	GND
7	ED06	GND	23	ED22	GND
8	ED07	GND	24	ED23	GND
9	ED08	GND	25	ED24	GND
10	ED09	GND	26	ED25	GND
11	ED10	GND	27	ED26	GND
12	ED11	GND	28	ED27	GND
13	ED12	GND	29	ED28	GND
14	ED13	GND	30	ED29	GND
15	ED14	GND	31	ED30	GND
16	ED15	GND	32	ED31	GND

MSIU/T5.6-1

Table 5.6-2. Control Connector P4

PIN	ROW A SIGNAL	ROW C SIGNAL	PIN	ROW A SIGNAL	ROW C SIGNAL
1	MASTER SPARE STATUS H	GND	17	NOT USED	GND
2	MASTER TRANSMIT CMD H	GND	18	NOT USED	GND
3	MASTER ATTN INTERRUPT H	GND	19	NOT USED	GND
4	MASTER REQUEST H	GND	20	NOT USED	GND
5	SLAVE SPARE STATUS H	GND	21	NOT USED	GND
6	SLAVE TRANSMIT CMD H	GND	22	NOT USED	GND
7	SLAVE ATTN INTERRUPT H	GND	23	NOT USED	GND
8	SLAVE REQUEST H	GND	24	NOT USED	GND
9	NOT USED	GND	25	NOT USED	GND
10	NOT USED	GND	26	NOT USED	GND
11	NOT USED	GND	27	NOT USED	GND
12	NOT USED	GND	28	NOT USED	GND
13	NOT USED	GND	29	NOT USED	GND
14	NOT USED	GND	30	NOT USED	GND
15	NOT USED	GND	31	NOT USED	GND
16	NOT USED	GND	32	NOT USED	GND

MSIU/T5.6-2

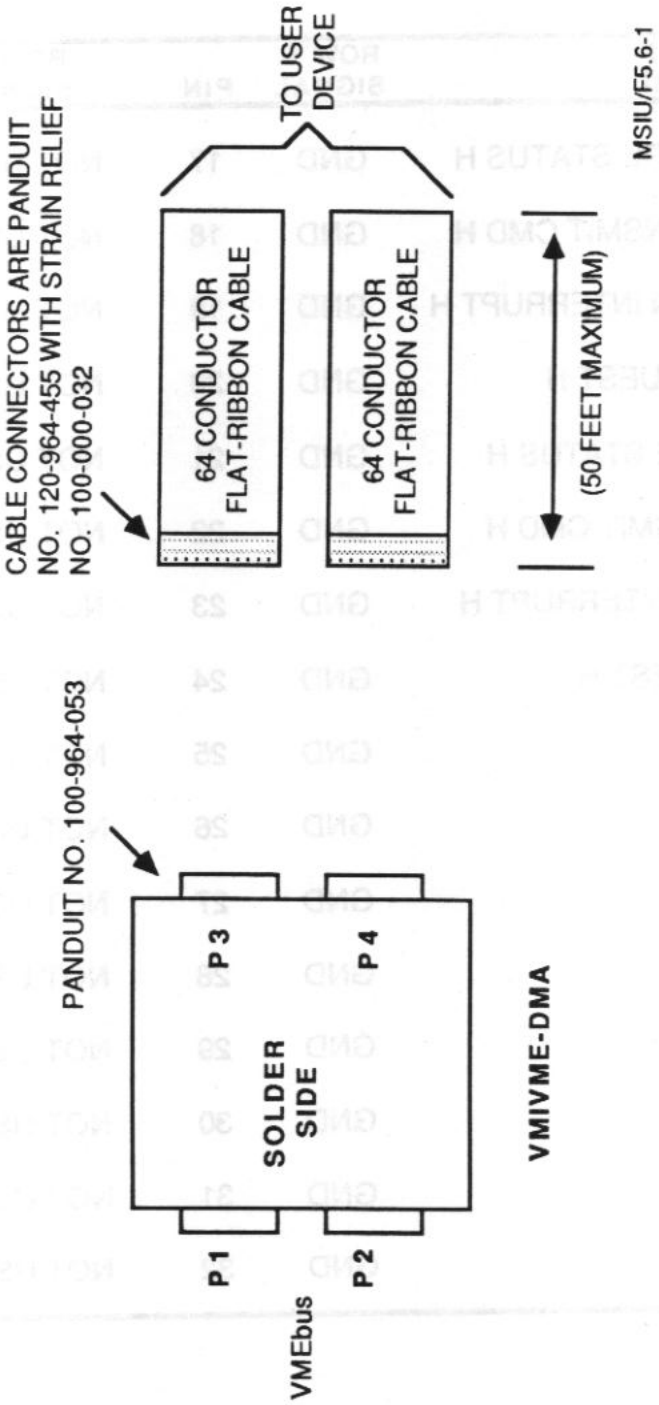


Figure 5.6-1. VMIVME-DMA Cabling Pictorial Diagram

SECTION 6
MAINTENANCE AND WARRANTY

6.1 MAINTENANCE

This section of the technical manual provides information relative to the care and maintenance of VMIC's products. Should the products malfunction, the user should verify the following:

a. Software
b. System configuration
c. Electrical connections
d. Jumper or configuration options
e. Boards fully inserted into their proper connector location
f. Connector pins are clean and free from contamination
g. No components of adjacent boards are disturbed when inserting or removing the board from the VMEbus card cage
h. Quality of cables and I/O connections

User level repairs are not recommended. Contact VMIC for a Return Authorization Number.

6.2 MAINTENANCE PRINTS

The appendix(ices) to this manual contain(s) drawings and diagrams for reference purposes.

6.3 WARRANTY

VMIC's Standard Products are warranted to be free from defects in material and workmanship for a period of two years (24 months) from the date of shipment. In discharge of this warranty, VMIC, at its option, agrees to either repair or replace, at VMIC's facility and at VMIC's discretion, any part, component, subassembly accessory, or any hardware, software, or system product, which under proper and normal use proves defective in material and workmanship.

The customer shall provide notice to VMIC of each such defect within a reasonable time after the customer's discovery of such defect.

In order to return the defective product(s) or part(s) at VMIC's expense, the customer must contact VMIC's Customer Service Department to obtain a Call Ticket Number. The defective product(s) or part(s) must also be properly boxed

and weighed. After a VMIC Call Ticket Number and Return Authorization Number has been obtained, the defective product(s) or part(s) may be returned (transportation collect for surface UPS) to VMIC. Any replaced or repaired product(s) or part(s) will be shipped back to the customer's at the expense of VMIC (also UPS surface).

The customer should be aware that the above process can sometimes take up to eight (8) days for the shipment to reach VMIC. The customer has the option to ship the defective product(s) or part(s) at the customer's own expense if the customer cannot afford this possible delay.

There shall be no warranty or liability on any VMIC product(s) or part(s) that is (are) damaged or subjected to accident(s), perils of nature, negligence, overtemperature, overvoltage, misapplication of electrical power, insertion or removal of boards from backplanes and/or I/O connectors with power applied by the customer(s), appointee(s), or any other person(s) without the expressed approval of VMIC.

Final determination of warranty eligibility shall be made by VMIC, and if a warranty claim is considered invalid for any reason, the customer will be charged for services performed and expenses incurred by VMIC in repair, handling and shipping the returned product or part. Determination as to whether the item is within warranty, coverage shall not be unreasonably withheld.

The warranty period of the replacement or repaired product(s) or part(s) shall terminate with the termination of the warranty period with respect to the original product(s) or part(s) for all replacement parts supplied or repairs made during the original warranty period.

THE FOREGOING WARRANTY AND REMEDY ARE EXCLUSIVE AND VMIC SHALL HAVE NO OTHER OR ADDITIONAL LIABILITY TO BUYER OR TO ANYONE CLAIMING UNDER BUYER (THIRD PARTY) UNDER ANY OTHER AGREEMENT OR WARRANTY, EXPRESS OR IMPLIED EITHER IN FACT OR BY OPERATION OF THE LAW, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS, STATUTORY, OR OTHERWISE. VMIC SHALL HAVE NO LIABILITY FOR SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND OR FROM ANY CAUSE ARISING OUT OF THE INSTALLATION OR USE OF ANY PRODUCT FURNISHED HEREUNDER.

6.4 OUT-OF-WARRANTY REPAIR POLICY

The following sections describe VMIC's policy on repairs and warranties on repaired products.

6.4.1 Repair Category

VMIC's repair policy of standard products is divided into two categories, depending on the item to be repaired. These categories are:

a. Product Exchange
b. Fixed Price Repair

Category 1 (product exchange) represents the fastest turn around of the two categories. In this case, the customer sends the malfunctioning product to VMIC. VMIC will return an operational product to the customer within 72 hours of receipt provided VMIC has the product in stock. Customers should contact VMIC prior to returning products for repair to determine stocking status.

Category 2 (Fixed Price Repair) applies to products returned to VMIC for repair and subsequent return to the customer.

Return authorizations are required on all product repairs, and all purchase orders should refer to VMIC's Return Authorization Number which is assigned by VMIC's Customer Service Department.

6.4.2 Repair Pricing

Product exchange is fifty percent (50%) of the current list price. Fixed price repairs are performed at twenty-five percent (25%) of the current list price. Repair prices are not discountable.

(Repair prices are subject to change without notice).

6.4.3 Payment

Payment is due upon delivery or at VMIC's option, net thirty (30) days from the date of delivery. Payment should be made to:

VME Microsystems International Corporation
12090 South Memorial Parkway
Huntsville, Alabama 35803-3308
Attention: Accounts Receivable

VMIC allows a one (1) percent discount for payment made within ten (10) days of invoice date or a two (2) percent discount on payment made prior to shipment of order. This payment discount, however, does not apply to freight.

6.4.4 Shipping Charges

Shipping charges are the customer's responsibility, with the exception of warranty repairs, whereby VMIC will pay the return to customer shipping charges.

6.4.5 Shipping Instructions

The type of packaging used to ship the product depends on whether the product is shipped singly, in a chassis, or packaged with other boards. The shipper should carefully pack the product(s), using the same precautions listed in the "unpacking procedures". The user should utilize the same (or equivalent) protective packaging container for re-shipment as provided by VMIC. Approved ESD procedures are recommended when handling VMIC's products.

6.4.6 Warranty on Repairs

Products repaired by VMIC are warranted against defects in workmanship and material for a period of ninety (90) days from date of shipment to the customer for all products that were repaired out of warranty. See Standard Conditions of Sale for products repaired within the warranty.

6.4.7 Exclusions

Repair rates may not apply to products which have received unusual physical or electrical damage. In such cases, VMIC will provide an estimated price for product repair or replacement. The customer may then choose to have the product repaired at the estimated price, returned unrepaired at no charge, or replaced at VMIC's current list price.

APPENDIX A

ASSEMBLY DRAWING, PARTS LIST, AND SCHEMATIC

APPENDIX A

ASSEMBLY DRAWING, PARTS LIST,
AND SCHEMATIC

REVISIONS

132 REV.	332 REV.	DESCRIPTION	BY	DATE	APPR.
B	B	E.C.O. 88-0029 TECHNICAL REVIEW ADD ASSEMBLY DRAWING	B. Wurtz	5/2/88	M. LEMLEY
C	C	E.C.O. 88-0137 MINOR CORRECTIONS	B. Wurtz	6/21/88	M. LEMLEY
D	D	E.C.O. 89-0055 ADD REWORK INSTRUCTIONS, ADD CORRECTIONS	D. O'TOOLE	7/12/89	T. THORNTON
E	E	E.C.O. 89-0146	D. SMITH	10/25/89	T. THORNTON
F	E	CHANGES PER ECO 89-0175	D. O'TOOLE	1/12/90	T. THORNTON
G	E	CHANGES PER ECO 90-0072	E.M.GREEN	6/1/90	T. THORNTON
H	F	CHANGES PER ECO 90-0196	E.M.GREEN	11/29/90	T.L.T.

NOTES:

1. FOR SCHEMATIC DIAGRAM SEE 141-000DMA-000
2. FOR TEST PROCEDURE SEE 510-000DMA-000

REV	H	E	G	G	F	G	G	D	REVISION STATUS OF SHEETS
SHT	1	2	3	4	5	6	7	8	

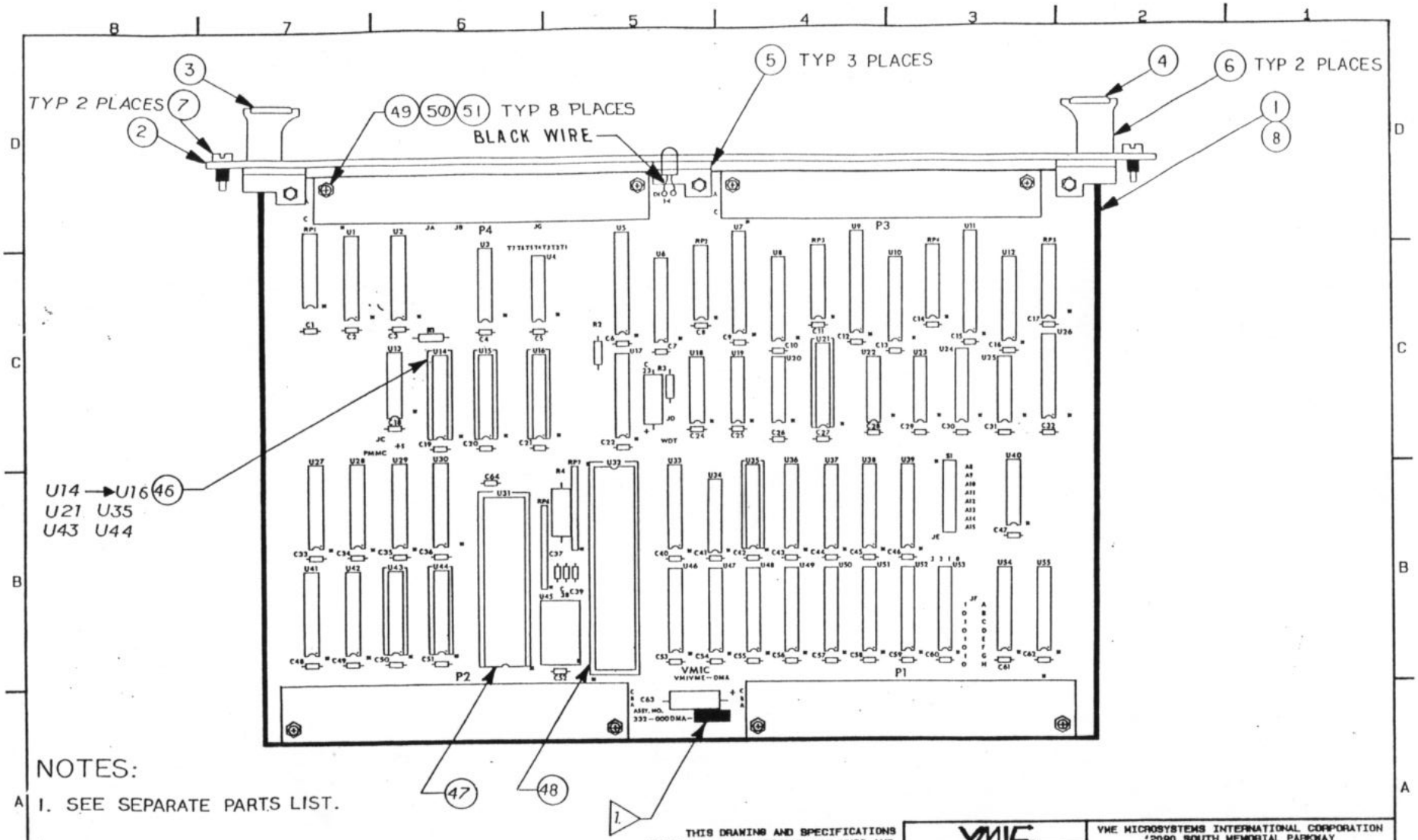
THIS DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF VMIC AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS A BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.

APPROVALS	DATE
DRAWN B. Lemley	5/4/88
PROJ. ENG. M. LEMLEY	5/4/88
ENG. MGR. P. RAINOSEK	5/4/88
PROD. D. FOWLER	5/4/88
Q.A. S. KEAGLE	5/4/88

VMIC
12090 SO. MEM. PKWY.
HUNTSVILLE, AL. 35803
VME MICROSYSTEMS INTERNATIONAL CORPORATION

ASSEMBLY DRAWING VMIVME-DMA

SIZE		DWG NO.	REV.
A	0BPH5	132-000DMA-000	H
SCALE			SHEET 1



NOTES:

1. SEE SEPARATE PARTS LIST.

THIS DRAWING AND SPECIFICATIONS HEREIN, ARE THE PROPERTY OF VMIC AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS A BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION.

VMIC	SIGNATURES	DATE
DRAWN	S.E. O'Neal	6-8-89
CHECKED	D. Freeland	10-24-89

VME MICROSYSTEMS INTERNATIONAL CORPORATION
12090 SOUTH MEMORIAL PARKWAY
HUNTSVILLE, ALABAMA 35803-3308

SIZE	DWG NO	REV.
B	0BPH5	132-0000MA-000	E

SCALE 1T01 SHEET 2

PARTS LIST

VMIC VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G
MODEL NO. VMIVME-DMA	SIGNATURE / DATE DRAWN S. Wurtz — 5/2/88 CHECKED S.E. O'Neal — 11-15-90	CONTRACT NO.	SH 3

INSTRUCTIONS:

(1) NOTES:

A. ALL ASSEMBLED BOARDS SHALL BE IDENTIFIED WITH THE ASSEMBLED BOARD PART NUMBER. THIS NUMBER INCLUDES THE CURRENT REVISION LETTER LISTED IN THE 332-COLUMN OF THE REVISION TABLE, FOUND ON SHEET ONE. THE RESULTING PART SHALL BECOME A 332-000DMA-000 (REV.)

B. THE REVISION LETTER(S) OF THE ASSEMBLY DRAWING SHALL BE STAMPED IN THE DESIGNATED AREA.

C. REMOVE THE EXISTING REVISION LETTER FROM THE 332 ASSEMBLED PART NUMBER.

D. REMOVABLE, NON-SMEARING INK SHALL BE USED TO STAMP REVISION LETTERS IN THE DESIGNATED AREA.

PARTS LIST

VMIC™ VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G

MODEL NO.	SIGNATURES	DATE	CONTRACT NO.	
VMIVME-DMA	DRAWN D. O'TOOLE	5/25/89		SH 3A
	CHECKED R. E. O'Neil	11-15-90		

INSTRUCTIONS: REWORK

NOTES:

A. REWORK INSTRUCTIONS SHALL BE ACCOMPLISHED ON THE COPPER REVISION(S) INDICATED AND WILL BECOME A PART OF THE ASSEMBLED BOARD.

B. REWORK INSTRUCTION SYMBOLS

1. ■ PIN ONE DOT
2. ● DRILL HOLE
3. ✕ DISCONNECT TRACE
4. ---- TRACE ON INTERNAL LAYER
5. —— TRACE ON EXTERNAL LAYER

PARTS LIST

VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G

MODEL NO.	SIGNATURE	DATE	CONTRACT NO.	
VMIVME-DMA	DRAWN S. Wong	5/2/88		SH 3B
	CHECKED D. E. O'Neal	11-15-90		

EFFECTIVITY: E.C.O. DMA-09
REV. D COPPER
(FC-01)

INSTRUCTIONS: REWORK

STEP 1

CUT U20 PIN 12 FROM U20 PIN 14 (+5 ON SOLDER SIDE).

STEP 2

CONNECT U20 PIN 12 TO GROUND.

STEP 3

CUT U1 PIN 1 FROM GROUND (SOLDER SIDE).

STEP 4

CUT U2 PIN 1 FROM GROUND (SOLDER SIDE).

STEP 5

CONNECT U1 PIN 1 TO +5V.

STEP 6

CONNECT U2 PIN 1 TO +5V.

STEP 7

CONNECT U32 PIN 15 TO U14 PIN 1.

PARTS LIST

VMIC™ VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G
MODEL NO. VMIVME-DMA	SIGNATURE / DATE DRAWN S. Wurgz 5/2/88 CHECKED S.E.O'Neal 11-12-90	CONTRACT NO.	SH 3C

EFFECTIVITY: E.C.O. 88-0029 E.C.O. 89-0055
REV. D, F, & G COPPER

INSTRUCTIONS: REWORK

STEP 1

CHANGE PAL 5 (U43) FROM N/R TO PAL E (U43) REV. A.
P/N: 303-000132-000
FILE/NUM: 163-000132-000
FILE NAME: DMAU43A.PS

PARTS LIST

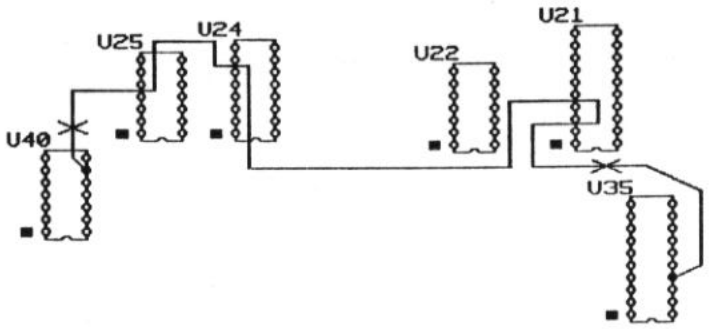
VMIC™ VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G
MODEL NO. VMIVME-DMA	SIGNATURES / DATE: DRAWN D. O'TOOLE 5/25/89; CHECKED 11-15-90	CONTRACT NO.	SH 3D

EFFECTIVITY: E.C.O. 89-0055
REV. D, F, & G COPPER

INSTRUCTIONS: REWORK

STEP 1 (SOLDER SIDE)

CUT U35/PIN 17 FROM U40/PIN 9.



STEP 2

CONNECT U35/PIN 17 TO U14/PIN 14.

PARTS LIST

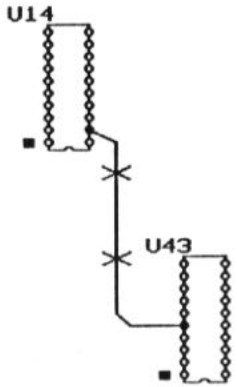
VMIC VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G
MODEL NO. VMIVME-DMA	SIGNATURES / DRAWN D. O'TOOLE / CHECKED R. E. O'Neal	DATE 5/25/89 / 11-15-90	CONTRACT NO.	SH 3E

EFFECTIVITY: E.C.O. 89-0055
REV. D, F, & G COPPER

INSTRUCTIONS: REWORK (CONTINUED)

STEP 3 (SOLDER SIDE)

CUT U14/PIN 19 FROM U43/PIN 5.



STEP 4

CONNECT U14/PIN 15 TO U43/PIN 5.

STEP 5

CONNECT U14/PIN 16 TO U40/PIN 9.

PARTS LIST

VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G
MODEL NO. VMIVME-DMA	SIGNATURES / DATE DRAWN D. O'TOOLE 5/25/89 CHECKED R.E. O'Neil 11-15-90	CONTRACT NO.	SH 3F

EFFECTIVITY: E.C.O. 89-0055
REV. D, F, & G COPPER

INSTRUCTIONS: REWORK (CONTINUED)

STEP 6

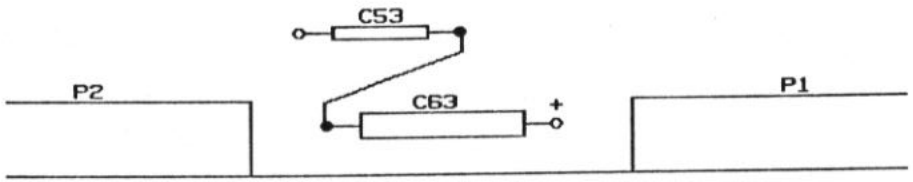
CHANGE PAL A (U35) FROM N/R TO PAL A (U35) REV. A.
P/N: 303-000128-000
FILE NUM.: 163-000128-000
FILE NAME: DMAU35A.PS

STEP 7

CHANGE PAL G (U14) FROM N/R TO PAL G (U14) REV. A.
P/N: 303-000134-000
FILE NUM.: 163-000134-000
FILE NAME: DMAU14A.PS

STEP 8

CONNECT GROUND SIDE OF C63 TO GROUND SIDE OF C53 (COMPONENT SIDE) USING 24 GAUGE WIRE.



PARTS LIST

VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G

MODEL NO. VMIVME-DMA	SIGNATURES	DATE	CONTRACT NO.	SH 3G
	DRAWN D. SMITH	10/17/89		
	CHECKED R. E. O'Neal	11-15-90		

EFFECTIVITY: E.C.O. 89-0146
REV. F & G COPPER

INSTRUCTIONS: REWORK (CONTINUED)

STEP 1 (COMPONENT SIDE):

CUT TRACE FROM U13-3 TO U17-18 AT U13-3.

STEP 2:

CONNECT U13-3 TO U17-9 (SOLDER SIDE).

STEP 3 (SOLDER SIDE):

CUT TRACE FROM U13-1 TO U14-4 AT U13-1.

STEP 4

CONNECT U13-1 TO U14-17.

STEP 5

CHANGE PAL G (U14) REV. A TO PAL G (U14) REV. A
CHANGE P/N: 303-000134-000 TO P/N: 303-000294-000
CHANGE FILE NAME: DMAU14A.PLD TO DMAU14B.PLD

PARTS LIST

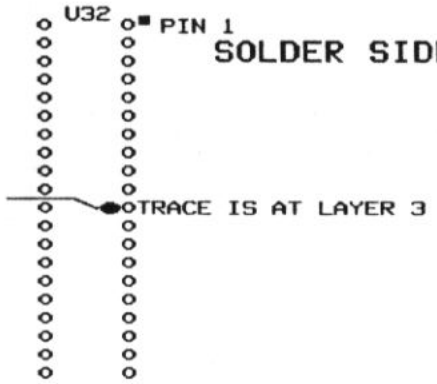
VMIC VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G
MODEL NO. VMIVME-DMA	SIGNATURES / DATE: DRAWN E.M.GREEN 11/13/90; CHECKED S.E. O'Neal 11-21-90	CONTRACT NO.	SH 3H

EFFECTIVITY: E.C.O. 90-0196
REV. F & G COPPER

INSTRUCTIONS: REWORK

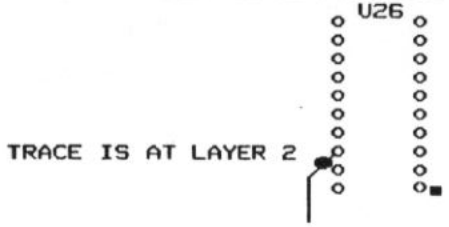
STEP 1

DRILL FROM SOLDER SIDE AT U32 PIN 11 TO DISCONNECT U32 PIN 11 FROM U48 PIN 9.



STEP 2

DRILL FROM COMPONENT SIDE AT U26 PIN 18 TO DISCONNECT U26 PIN 18 FROM U53 PIN 1.



PARTS LIST

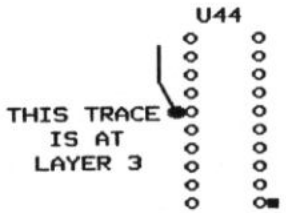
VMIC™ VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G
MODEL NO. VMIVME-DMA	SIGNATURES / DATE: DRAWN E.M.GREEN 11/13/90; CHECKED R.E.O'Neal 11-15-90	CONTRACT NO.	SH 3I

EFFECTIVITY: E.C.O. 90-0196
REV. F & G COPPER

INSTRUCTIONS: REWORK

STEP 3

DRILL FROM COMPONENT SIDE AT U44 PIN 15 TO DISCONNECT U26 PIN 18 FROM U44 PIN 15.



STEP 4

CONNECT U14 PIN 1 TO U15 PIN 7

STEP 5

CONNECT U48 PIN 9 TO U15 PIN 8

STEP 6

CONNECT U15 PIN 19 TO U32 PIN 11

STEP 7

CONNECT U15 PIN 14 TO U26 PIN 18

STEP 8

CONNECT U53 PIN 19 TO U44 PIN 15

STEP 9

REMOVE PAL FROM U15 AND INSERT PAL C FILE NAME: DMAU15B.PLD, PART# 303-000453-000.

END OF REWORK INSTRUCTIONS

PARTS LIST

QUANTITY REQ'D							SUB-ASSEMBLY	ITEM NO.	REF. DES.	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	STD. PART NO. / SPEC. DWG. NO.
							1	1		333-00DMA0-000	BOARD: PC, RAW, 6 LAYERS	
							1	2		324-000008-000	FRONT PANEL: TWO MIDDLE 64 PIN CONNECTOR, CENTER MOUNT FAIL LED	151-0000008-00
							1	3		324-000000-001	LOGO: ASSEMBLED-VMIC, SINGLE	151-000000-001
							1	4		324-999987-000	LOGO: ASSEMBLED-DMA, SINGLE	151-999987-000
							1.5	5	HARD-WARE	324-900000-001	KIT: MOUNTING, FRONT PANEL	VERO BICC 173-12525B
							2	6	HARD-WARE	324-900003-000	HANDLE: FRONT PANEL	VERO BICC 172-38201F
							1	7	HARD-WARE	328-250515-000	SCREW KIT: FRONT PANEL	VERO BICC 172-22729C
							A/R	8	HARD-WARE	SN60	SOLDER 60\40	
							6	9	U1,U2 U6,U8 U10,U12	331-304645-200	IC: DIGITAL, OCTAL BUS TRANSCEIVER, PLASTIC DIP	74AS645
							1	10	U3	331-304175-600	IC: DIGITAL, QUAD D TYPE FLIP FLOP W/CLEAR, PLASTIC DIP	74LS175
							1	11	U4	331-304164-600	IC: DIGITAL, 8 BIT SHIFT REGISTER, PLASTIC DIP	74LS164
							4	12	U5,U7 U9,U11	331-309024-100	IC: MICROPROCESSOR, OCTAL BIDIRECTIONAL BUS LATCH, PLASTIC DIP	AMD AM2952DC
							1	13	U13	331-300438-600	IC: DIGITAL, QUAD 2-INPUT NAND BUFFER, PLASTIC DIP	74LS38
							3	14	U17,U26 U47	331-304641-110	IC: DIGITAL, OCTAL BUS TRANSCEIVER, PLASTIC DIP	74ALS641-1

VMIC — VME MICROSYSTEMS INT'L CORP.

CODE IDENT. NO.

DWG. NO. 132-000DMA-000

REV. LTR. G

MODEL NO. VMIVME-DMA

SIGNATURES	DATE
DRAWN	5/2/88
CHECKED O. JESSEE	5/23/90

CONTRACT NO.

SH 1

PARTS LIST

QUANTITY REQ'D	SUB-ASSEMBLY	ITEM NO.	REF. DES.	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	STD. PART NO. / SPEC. DWG. NO.
	3	15	U18,U19 U20	331-300474-600	IC: DIGITAL, DUAL D FLIP FLOP, PLASTIC DIP	74LS74
	1	16	U22	331-304164-400	IC: DIGITAL, 8 BIT GATED SERIAL-IN, PARALLEL-OUT, FAST, PLASTIC DIP	74F164
	1	17	U23	331-300474-100	IC: DIGITAL, DUAL D FLIP FLOP, PLASTIC DIP	74ALS74
	1	18	U24	331-300431-600	IC: DIGITAL, DELAY ELEMENT, PLASTIC DIP	74LS31
	1	19	U25	331-300432-100	IC: DIGITAL, QUAD 2-INPUT OR GATE, PLASTIC DIP	74ALS32
	5	20	U27,U29 U38,U53 U48	331-304244-100	IC: DIGITAL, OCTAL BUFFER/LINE DRIVER, PLASTIC DIP	74ALS244
	2	21	U28,U30	331-304273-600	IC: DIGITAL, OCTAL D FLIP FLOP, PLASTIC DIP	74LS273
	1	22	U31	331-309034-012	IC: DIGITAL, HEX CONTACT BOUNCE ELIMINATOR, PLASTIC DIP	MOTOROLA MC68153
	1	23	U32	331-309000-122	IC: MICROPROCESSOR, 12.5 MHZ, DIRECT MEMORY ACCESS INTERFACE, PLASTIC DIP	MOTOROLA SCB68430
	2	24	U33,U46	331-304245-600	IC: DIGITAL, OCTAL BUS TRANSCEIVER, PLASTIC DIP	74LS245
	1	25	U34	331-304138-100	IC: DIGITAL, 1 TO 8 DECODER/ DEMULTIPLEXER, PLASTIC DIP	74ALS138
	2	26	U36,U37	331-304374-600	IC: DIGITAL, OCTAL D FLIP FLOP, W/TRI STATE OUTPUTS, PLASTIC DIP	74LS374
	1	27	U39	331-304520-100	IC: DIGITAL, 8 BIT IDENTITY COMPARATOR, PLASTIC DIP	74ALS520
	1	28	U40	331-300432-200	IC: DIGITAL, QUAD 2-INPUT OR GATE, PLASTIC DIP	74AS32

VMIC™

VME MICROSYSTEMS INT'L CORP.

CODE IDENT. NO.

DWG. NO. 132-000DMA-000

REV. LTR. F

MODEL NO. VMIVME-DMA

SIGNATURES	DATE
DRAWN S. Wurzer	5/2/88
CHECKED O. JESSEE	5/30/90

CONTRACT NO.

PARTS LIST

QUANTITY REQ'D · SUB-ASSEMBLY	ITEM NO.	REF. DES.	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	STD. PART NO. / SPEC. DWG. NO.
		VMIC — VME MICROSYSTEMS INT'L CORP.	CODE IDENT. NO.	DWG. NO. 132-000DMA-000	REV. LTR. G
		MODEL NO. VMIVME-DMA	SIGNATURES DRAWN S. Wurz; CHECKED R. Tolman	DATE 5/2/88; 11/26/90	CONTRACT NO. — SH 6
8	29	U41,U42 U49→U52 U54,U55	331-304645-110	IC: DIGITAL, OCTAL BUS TRANSCEIVER, PLASTIC DIP	74ALS645-1
1	30	U45	323-000000-120	CRYSTAL: 12 MHZ, 5V, 50/50 SYMETRY, ±100PPM FREQUENCY STABILITY, 0 TO 70°C	MOTOROLA RASCO-1 12.0 MHZ
61	31	C1 →C22 C24 →C36 C40 →C62	315-205002-104	CAP: .1 µF, .300 LEAD SPACE, 20%, 50V, Z5U, CERAMIC MONOLYTHIC	SPRAGUE 923CZ5U104M050B
		C37,C38 C39,C64			
2	32	C23,C63	315-902000-476	CAP: 47 µF, AXIAL, 20%, 35V, ALUMINUM ELECTROLYTIC	PANASONIC ECEB1VU470
5	33	RP1 →RP5	347-001105-001	DIP: 180/390 Ω, 16 PIN, DUAL TERMINATOR, 181/391	BOURNS 4116R-003-181/391
1	34	RP6	347-001002-472	SIP: 4.7K Ω, BUSSED, 10 PIN, LOW PROFILE	BOURNS 4610X-101-472
2	35	R1,R2	347-000000-110	RESISTOR: 110 Ω, 1/4W, 5%, CARBON FILM	
1	36	R3	347-000000-103	RESISTOR: 10K Ω, 1/4W, 5%, CARBON FILM	
1	37	R4	347-000000-160	RESISTOR: 16 Ω, 1W, 5%, CARBON FILM	
55	38	JA,JB JC,JD JE,JF JG,JH	321-000016-011	TERMINAL: PC BOARD, SINGLE ROW, .025 THICK, .310 LEAD LENGTH, ONE POST	PANDUIT 92983401-01
26	39	JA,JB JC,JD JE,JF JG,1,2,3	321-000015-001	JUMPER: PC BOARD, 2 POSITION, FEMALE, UNPLATED CONTACT, BLACK	McKENZIE MSB-2360-T-C-STP

PARTS LIST

QUANTITY REQ'D	SUB-ASSEMBLY	ITEM NO.	REF. DES.	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	STD. PART NO. / SPEC. DWG. NO.
	1	40	D1	337-000001-110	DIODE: LED, RED, 5V, 15mA, INTEGRAL RESISTOR, WIRE LEADS	DIALIGHT 558-0102-003
	1	41	U14	303-000294-000	PAL G, FILE: DMAU14B.PLD, A PROGRAMMED 16L8A	331-300100-100
	1	42	RP7	347-001002-222	SIP: 2.2K Ω, BUSSED, 10 PIN, LOW PROFILE	BOURNS 4610X-101-222
	1	43	S1	351-000000-080	SWITCH: DIP, 8 POSITION, LOW PROFILE, PC MOUNT, TAPE SEAL	AUGAT ADF-08PCT
	2	44	P1,P2	321-000011-300	CONNECTOR: DIN, 96 PIN, WAVE SOLDER, ANGLED, TYPE C, MALE	PANDUIT 100-096-053
	2	45	P3,P4	321-000013-105	CONNECTOR: FLAT CABLE, 64 PIN, .114 ANGLED, WITH EJECTOR LATCHES, TYPE C, MALE	PANDUIT 120-964-053A
	7	46	U14,U15 U16,U21	321-001320-001	SOCKET: DIP, 20 PIN, .300 ROW	SAMTEC ICA-320-SGT
			U35,U43 U44			
	1	47	U31	321-001640-001	SOCKET: DIP 40 PIN, .600 ROW	SAMTEC ICA-640-SGT
	1	48	U32	321-001648-001	SOCKET: DIP 40 PIN, .600 ROW	SAMTEC ICA-648-SGT
	8	49	P1,P2 P3,P4	328-250000-010	SCREW: METRIC, 2.5 X 10MM, SS	
	8	50	P1,P2 P3,P4	328-250001-025	NUT: METRIC, 2.5MM, HEX, SS	
	A/R	51			LOCTITE	
	1	52	U44	303-000129-000	PAL B, FILE: DMAU44A.PLD, A PROGRAMMED 16L8A	331-300100-100

VMIC

VME MICROSYSTEMS INT'L CORP.

CODE IDENT. NO.	DWG. NO.	REV. LTR.
	132-000DMA-000	G

MODEL NO. VMIVME-DMA

SIGNATURES	DATE
DRAWN S. Wurz	5/2/88
CHECKED D. JESSEE	5/30/88

CONTRACT NO.

PARTS LIST

QUANTITY REQ'D							SUB-ASSEMBLY	ITEM NO.	REF. DES.	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	STD. PART NO. / SPEC. DWG. NO.
							1	53	U15	303-000453-000	PAL C, FILE: DMAU15B.PLD, A PROGRAMMED 16L8A	331-300100-100
							1	54	U16	303-000133-000	PAL F, FILE: DMAU16A.PLD, A PROGRAMMED 16L8A	331-300100-100
							1	55	U21	303-000131-000	PAL D, FILE: DMAU21A.PLD, A PROGRAMMED 16L8A	331-300100-100
							1	56	U35	303-000128-000	PAL A, FILE: DMAU35A.PLD, A PROGRAMMED 16L8B	331-300100-200
							1	57	U43	303-000132-000	PAL E, FILE: DMAU43A.PLD, A PROGRAMMED 16L8A	331-300100-100

VMIC

VME MICROSYSTEMS INT'L CORP.

CODE IDENT. NO.

DWG. NO. 132-000DMA-000

REV. LTR. D

MODEL NO. VMIVME-DMA

SIGNATURES	DATE
DRAWN D. O'TOOLE	5/25/89
CHECKED D. E. O'Neal	11-15-90

CONTRACT NO.

SH 8 OF 8

NOTES:

PAL LOCATION CHART

PAL	'U' NUMBER	PAGE NUMBER
A	U35	4,5,14
B	U44	5
C	U15	9
D	U21	7
E	U43	10,11,15
F	U16	11
G	U14	14

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPR.
G	E.C.O. 88-0029	[illegible]	5/12/88	M. LEMLEY
H	E.C.O. 89-0055	D. O'TOOLE	7/19/89	T. THORNTON
J	E.C.O. 89-0175	D. O'TOOLE	1/12/90	T. THORNTON
K	E.C.O. 90-0196	E.M.GREEN	11/29/90	T.L.T.
L	E.C.O. 90-0219	E.M.GREEN	2/11/91	T.L.T.

L	J	J	J	J	K	K	J	J	J	J	K	J	J	J	K	J	J			REV
A1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			SHT

REVISION STATUS OF SHEETS

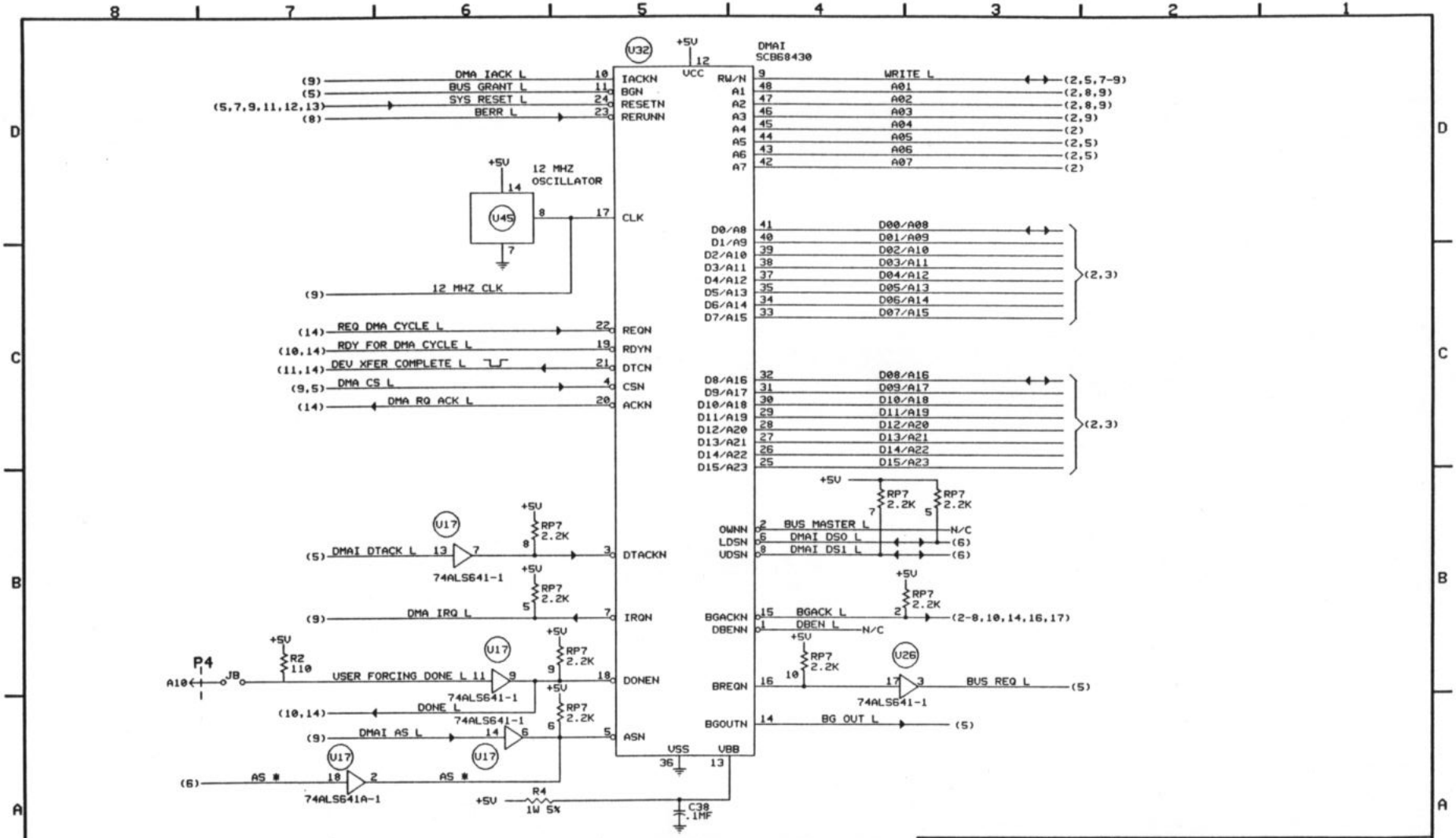
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SIGNATURES		DATE
DRAWN	C.A. BERRY	10/9/87
PROJ. ENG.	M. LEMLEY	2/15/88
ENG. MGR.	S.L. MAY	7/24/89
PROD.	D. FOWLER	7/24/89
Q.A.	C. MUZZEY	2/15/88

VMIC™
12090 SO. MEM. PKWY.
HUNTSVILLE, AL. 35803-3308
VME MICROSYSTEMS INTERNATIONAL CORPORATION

VMIVME- DMA

SIZE		DWG NO.	REV.
B	0BPH5	141-000DMA-000	L
SCALE		SHEET	A1

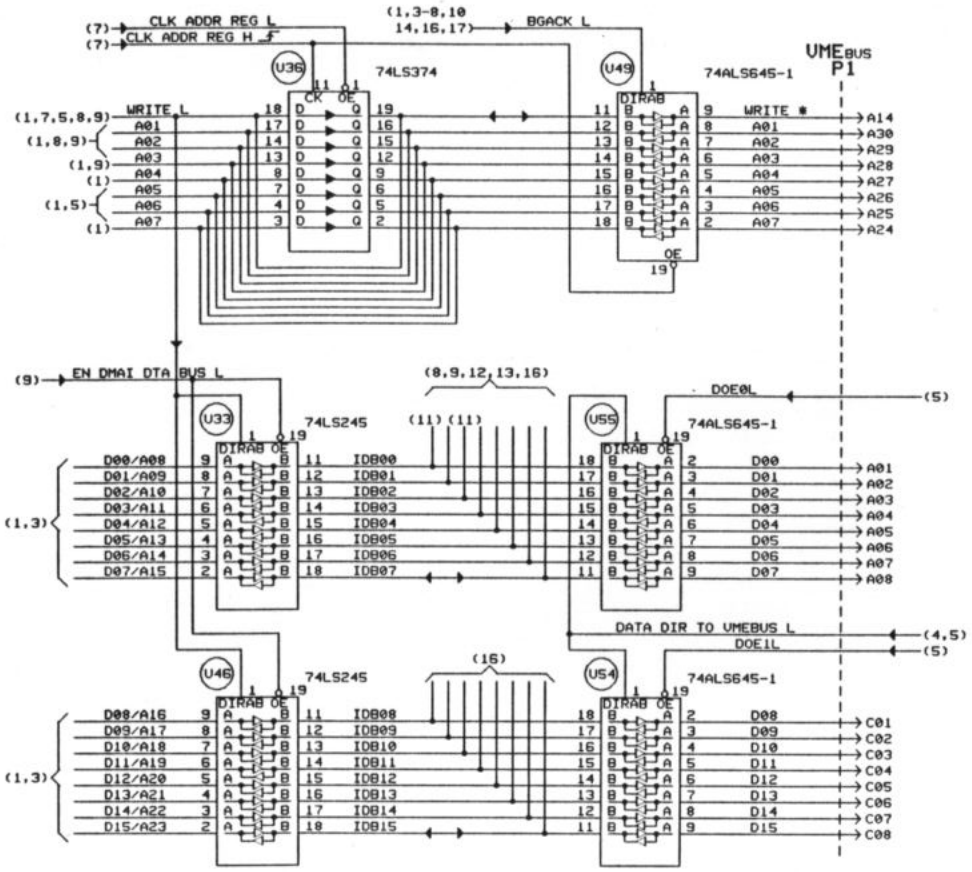


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SIGNATURES	DATE
DRAWN C.A. BERRY	9/29/87
CHECKED J. E. O.	1.2.91

VME MICROSYSTEMS INTERNATIONAL CORPORATION
12090 SOUTH MEMORIAL PARKWAY
HUNTSVILLE, ALABAMA 35803-3308

SIZE	DWG NO.	REV.
B	0BPH5 141-000DMA-000	J
SCALE		SHEET 1

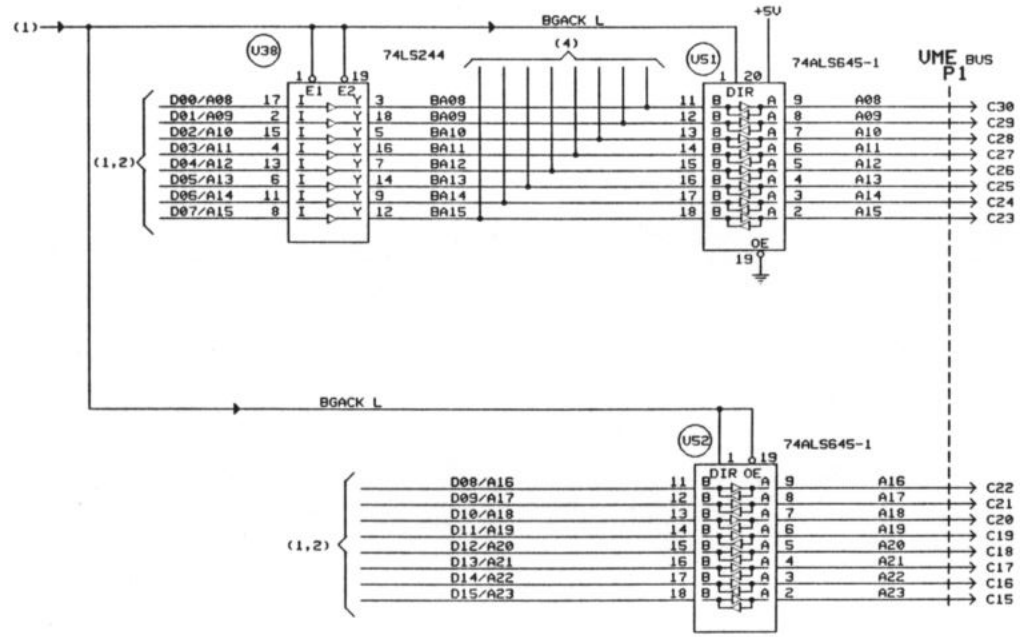


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SIGNATURES	DATE
DRAWN C.A. BERRY	9/29/87
CHECKED G.E.O.	1-2-90

VME MICROSYSTEMS INTERNATIONAL CORPORATION
12090 SOUTH MEMORIAL PARKWAY
HUNTSVILLE, ALABAMA 35803-3308

SIZE	DWG NO.	REV.
B	0BPH5 I4I-000DMA-000	J
SCALE		SHEET 2

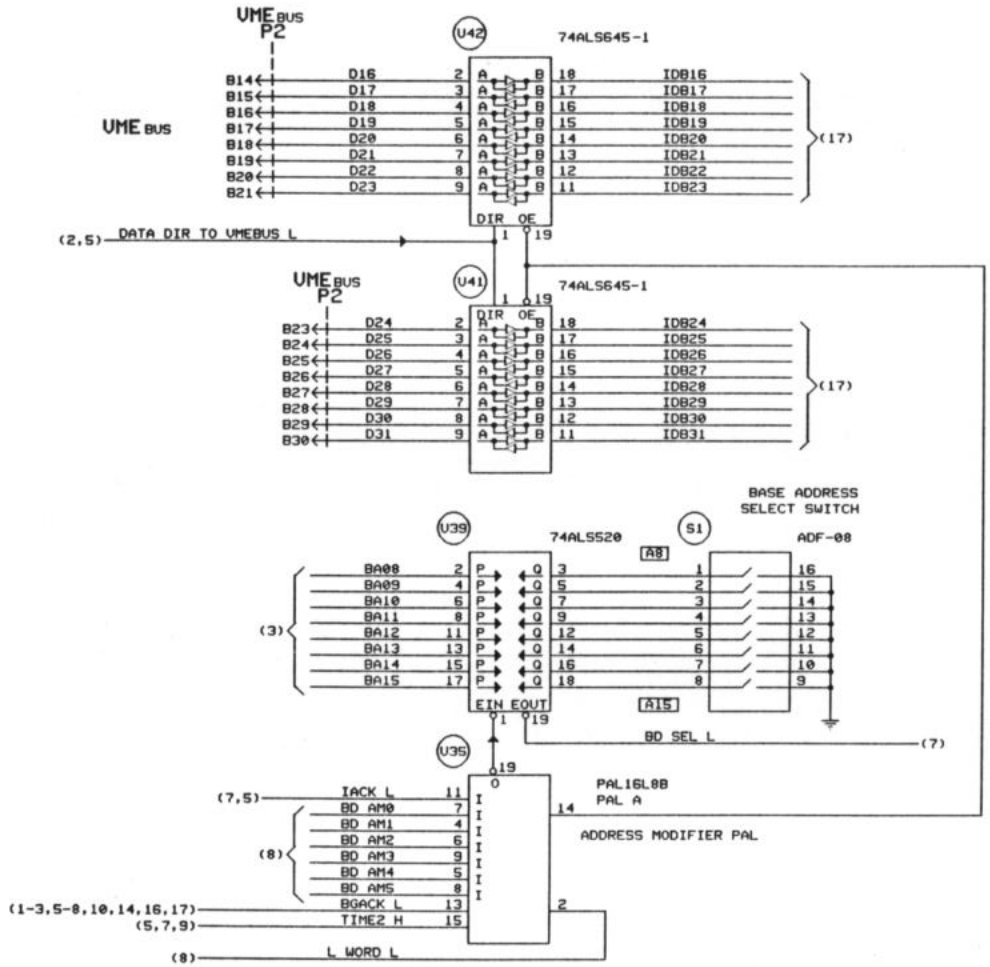


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VMIC	SIGNATURES	DATE
	DRAWN C.A. BERRY	9/29/89
	CHECKED [illegible]	1-2-91

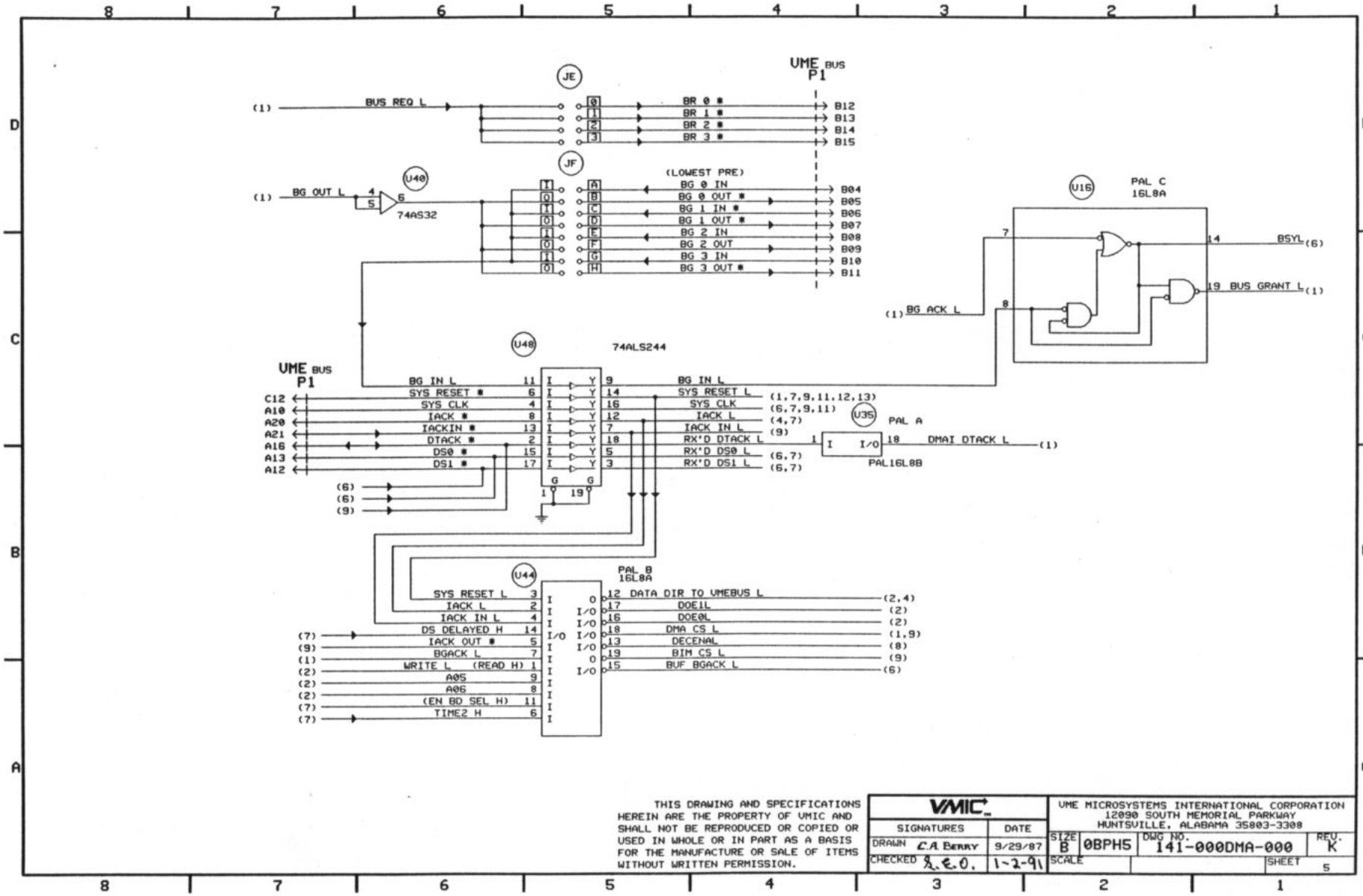
VME MICROSYSTEMS INTERNATIONAL CORPORATION
12090 SOUTH MEMORIAL PARKWAY
HUNTSVILLE, ALABAMA 35803-3308

SIZE	DWG NO.	REV.
B	0BPH5 141-000DMA-000	J
SCALE		SHEET 3



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VMIC		VME MICROSYSTEMS INTERNATIONAL CORPORATION 12090 SOUTH MEMORIAL PARKWAY HUNTSVILLE, ALABAMA 35803-3308		
SIGNATURES	DATE	SIZE B	DWG NO. 0BPH5 141-000DMA-000	REV. J
DRAWN C.A. BERRY	9/29/87	SCALE		SHEET 4
CHECKED A.E.O.	1-2-91			



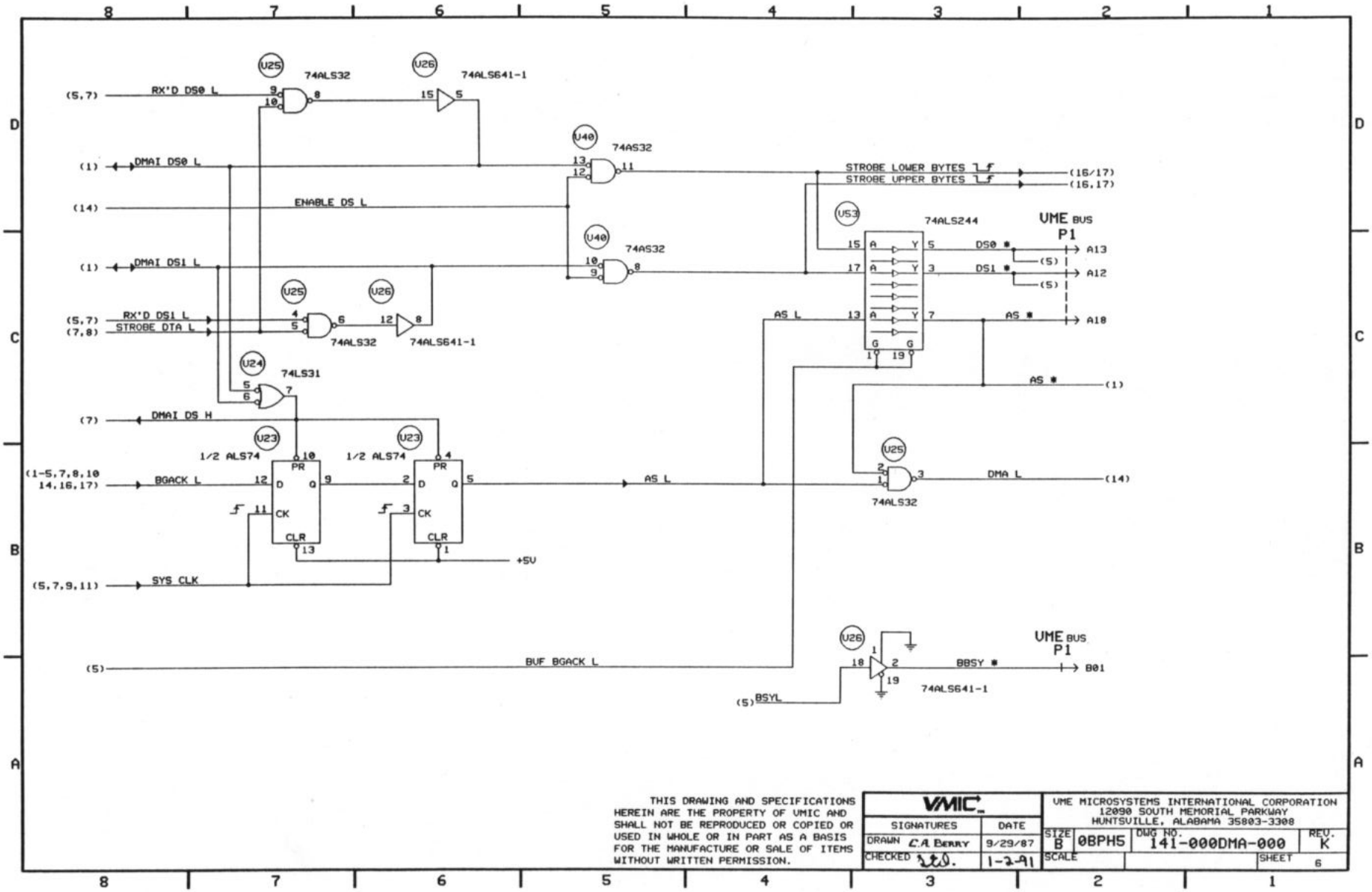
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SIGNATURES	DATE
DRAWN C.A. BERRY	9/29/87
CHECKED R.E.O.	1-2-91

VME MICROSYSTEMS INTERNATIONAL CORPORATION
12090 SOUTH MEMORIAL PARKWAY
HUNTSVILLE, ALABAMA 35803-3308

SIZE	DWG NO.	REV.
B	0BPH5	141-000DMA-000	K

SCALE | SHEET 5

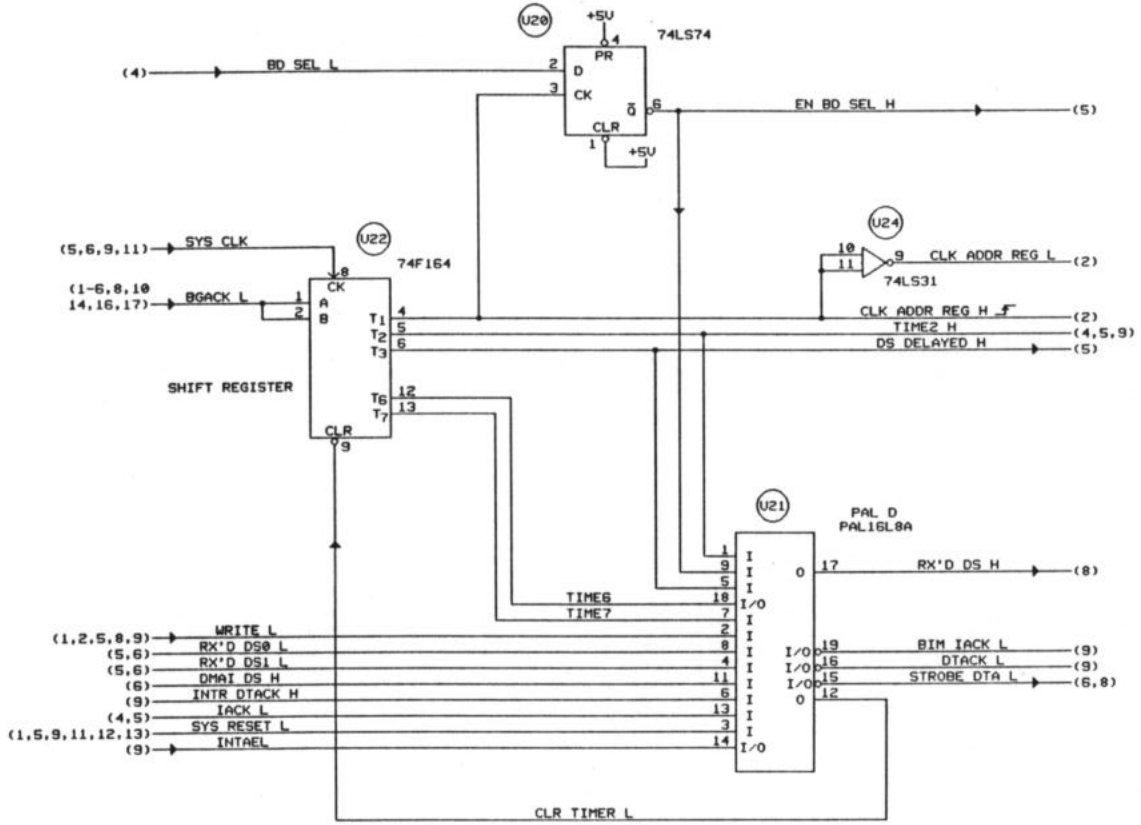


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VMIC	SIGNATURES	DATE
DRAWN	C.A. BERRY	9/29/87
CHECKED		1-2-91

VME MICROSYSTEMS INTERNATIONAL CORPORATION
12090 SOUTH MEMORIAL PARKWAY
HUNTSVILLE, ALABAMA 35803-3308

SIZE	DWG NO.	REV.
B	0BPH5 141-000DMA-000	K
SCALE		SHEET 6



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SIGNATURES	DATE
DRAWN C.A. BERRY	9/29/87
CHECKED	1-2-91

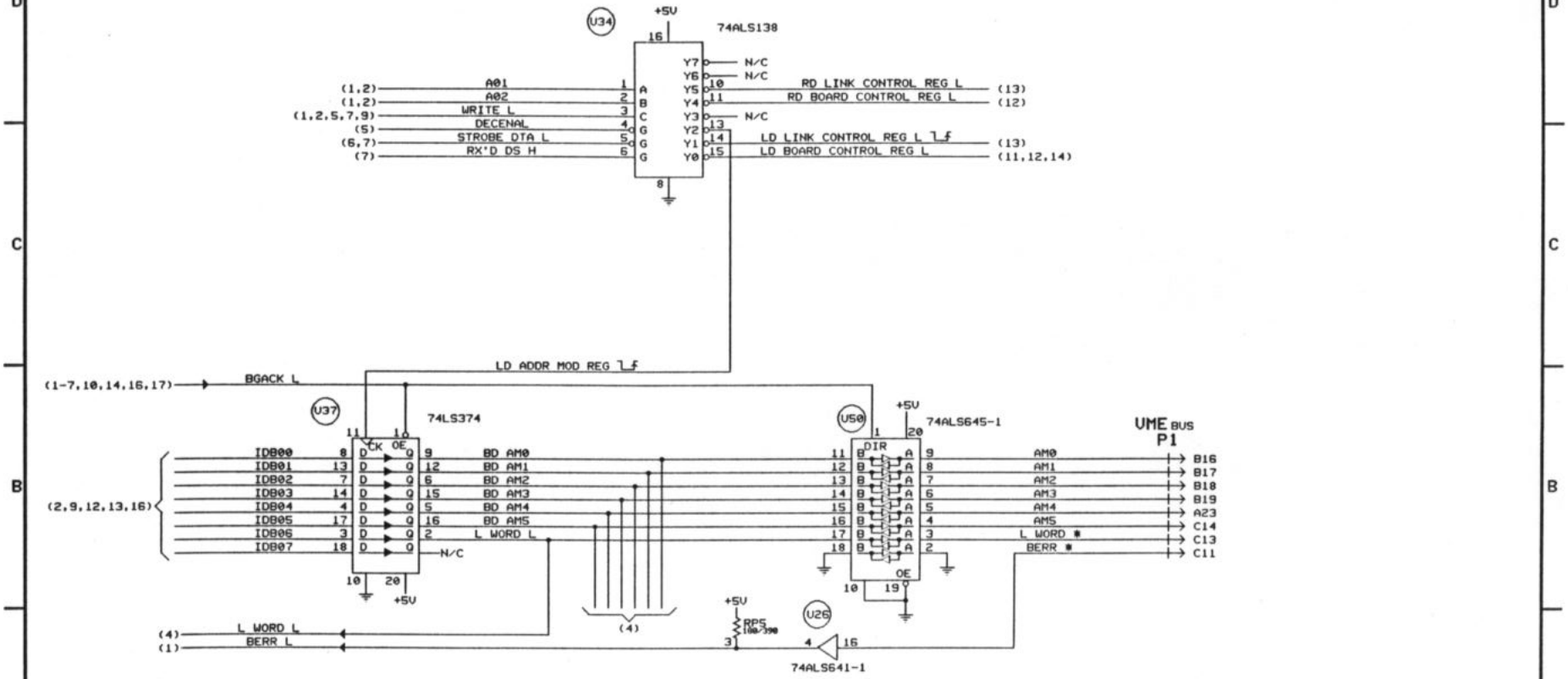
VMIC

VME MICROSYSTEMS INTERNATIONAL CORPORATION
12090 SOUTH MEMORIAL PARKWAY
HUNTSVILLE, ALABAMA 35803-3308

SIZE	DWG NO.	REV.
B	0BPH5 141-000DMA-000	J

SCALE

SHEET 7



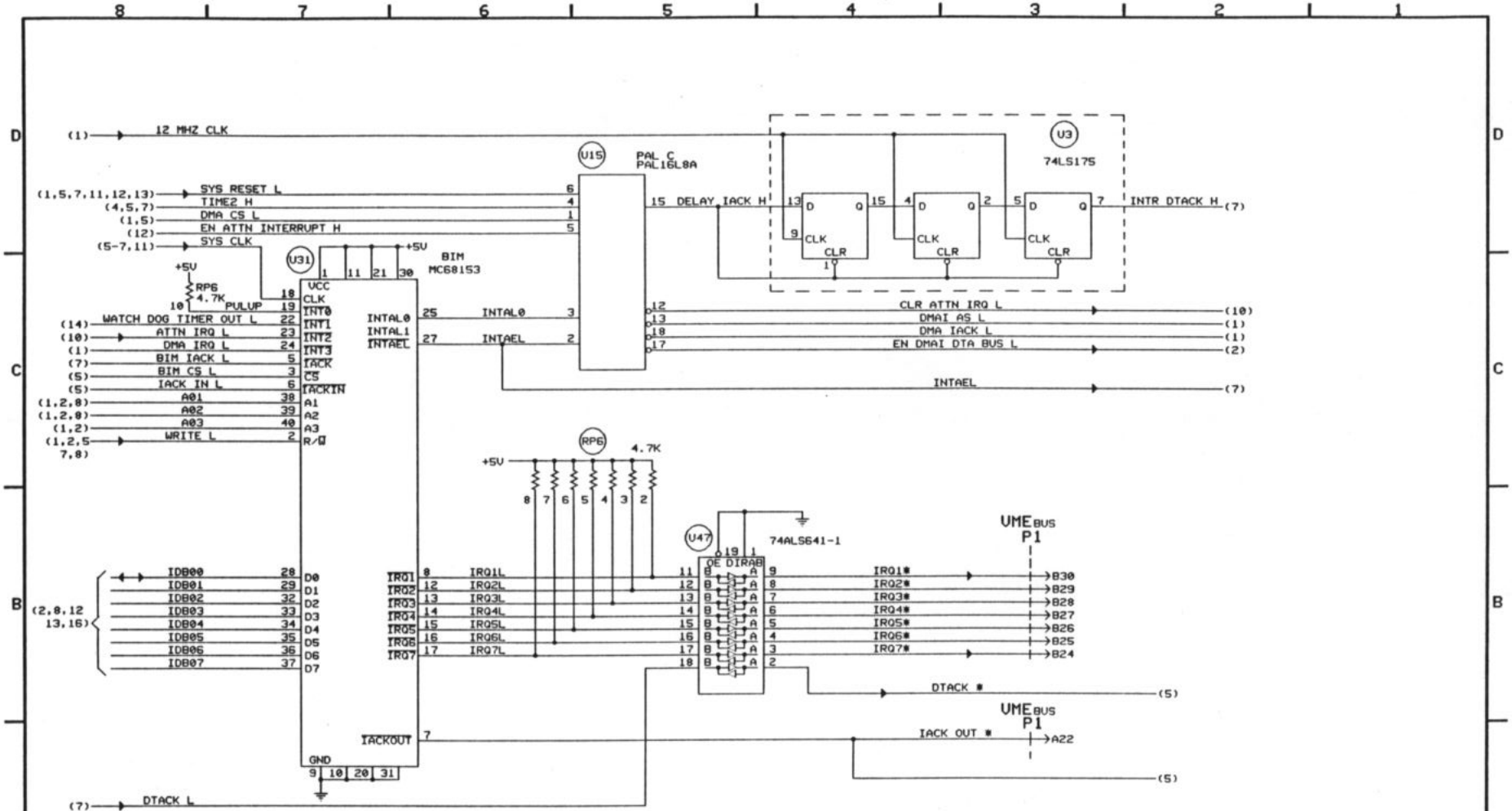
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HUNTSVILLE, ALABAMA 35803-3308

SIZE	DWG NO.	REV.
B	0BPH5 141-000DMA-000	J

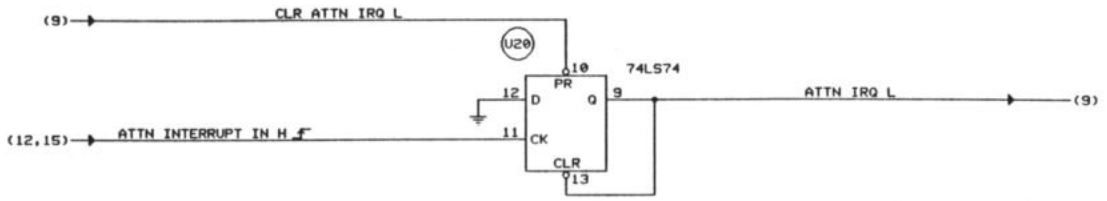
SCALE | SHEET 8

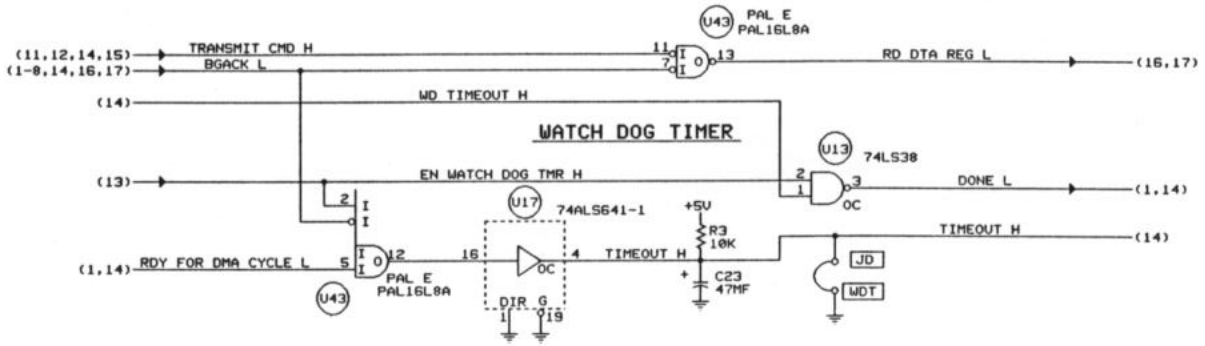


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EXT INTERRUPT FF





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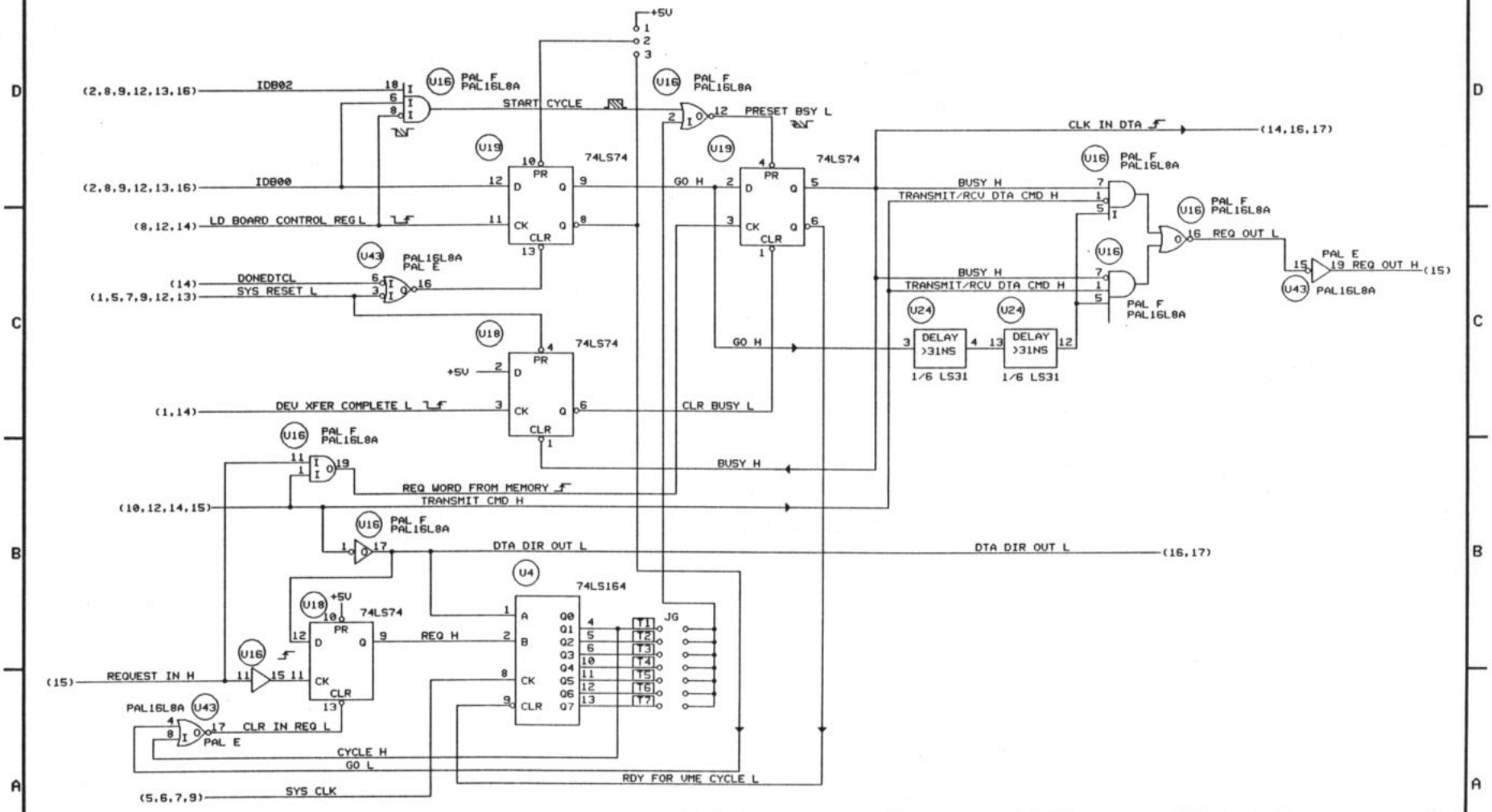
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SIZE	DWG NO.	REV.
B	0BPH5 141-000DMA-000	J

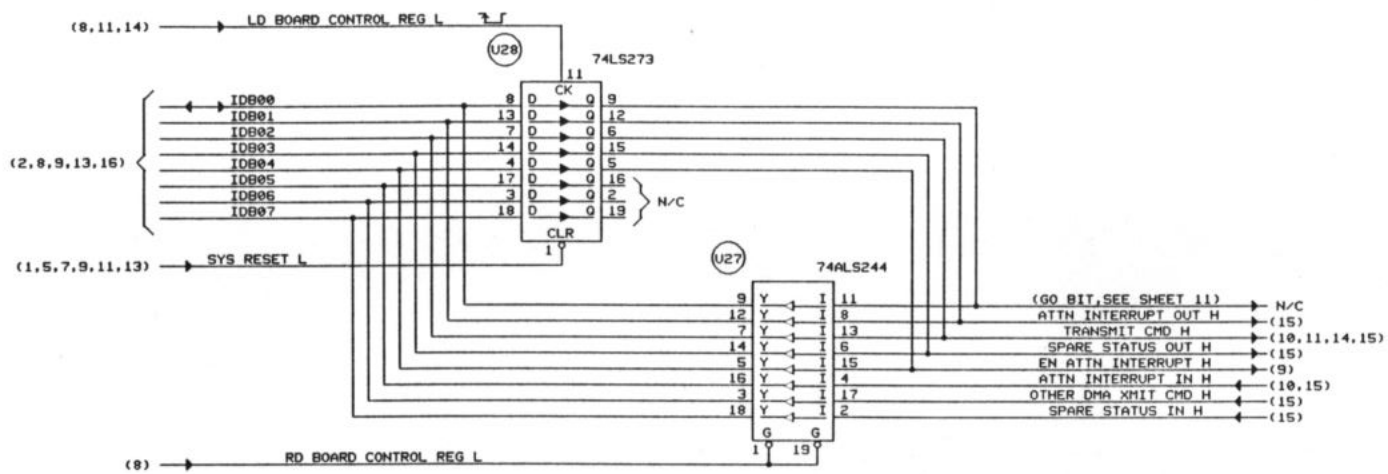
SCALE

SHEET 10



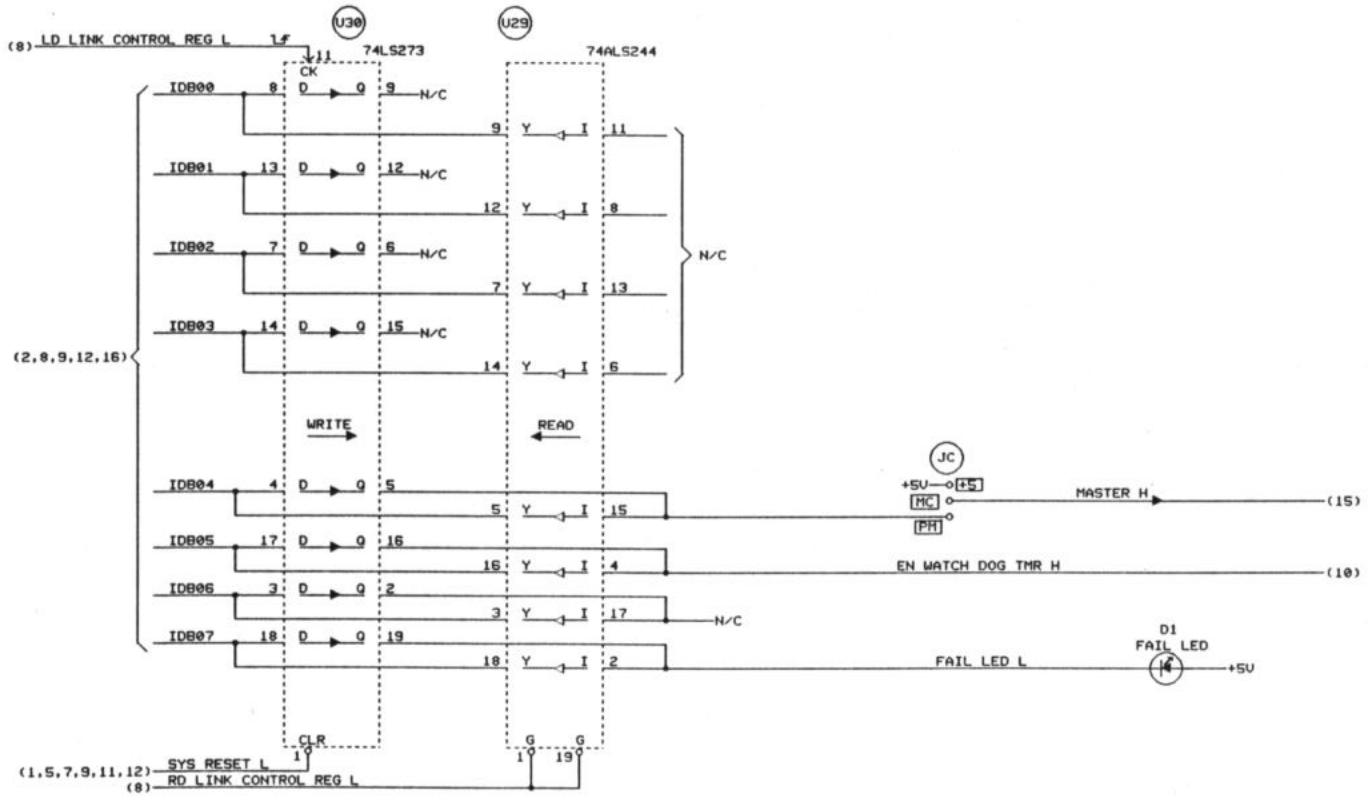
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SIGNATURES	DATE	SIZE B	DWG NO. 0BPH5 141-000DMA-000	REV. K
DRAWN C.A. BERRY	9/29/89	SCALE		SHEET 11
CHECKED J.E.O.	1-4-90			



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SIGNATURES	DATE	SIZE B	0BPH5	DWG NO. 141-000DMA-000	REV. J
DRAWN C.A. BERRY	9/29/87	SCALE		SHEET 12
CHECKED R.E.O.	1-2-91			



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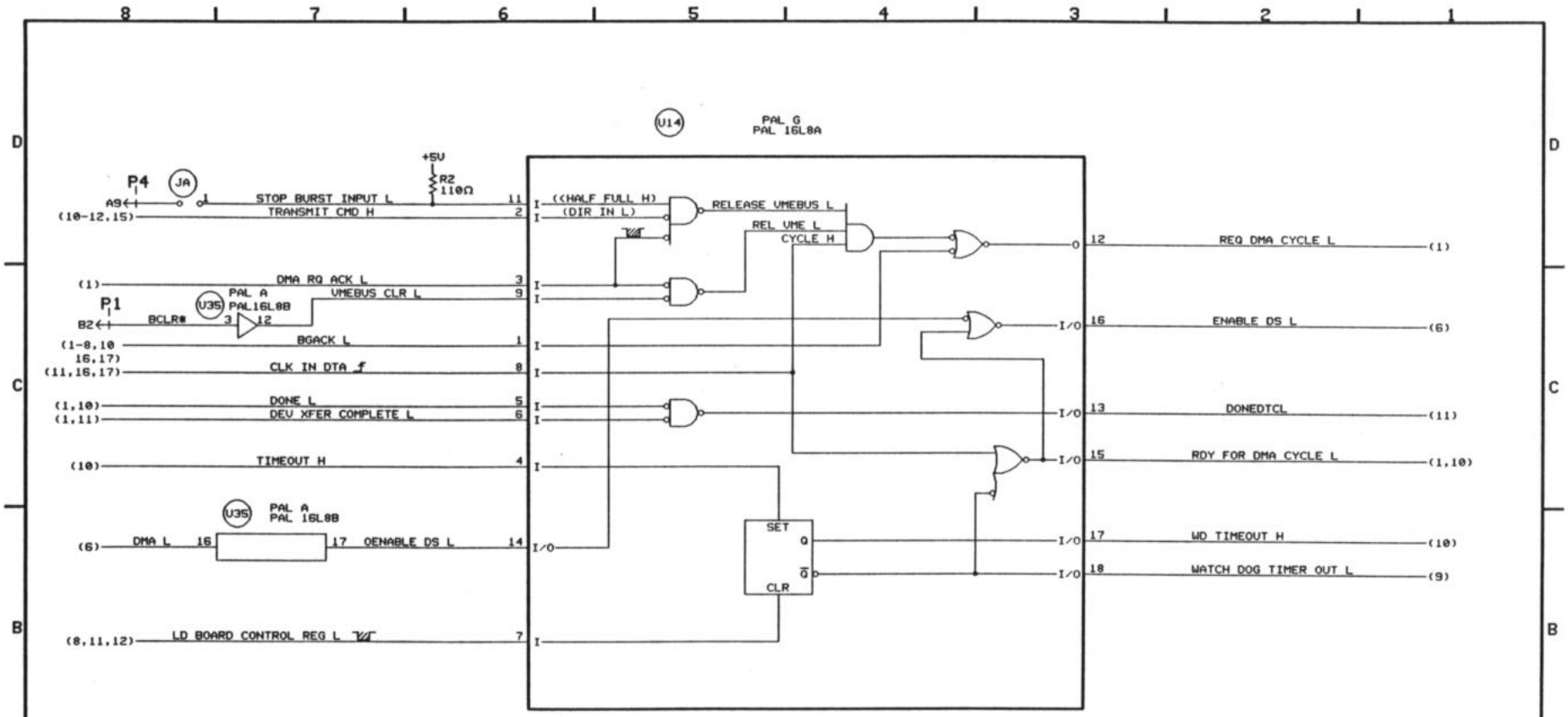
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	DRAWN C.A. BERRY	9/29/87
	CHECKED S.E.O.	1-2-91

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SIZE	DWG NO.	REV.
B	0BPH5	141-000DMA-000	J

SCALE

SHEET 13

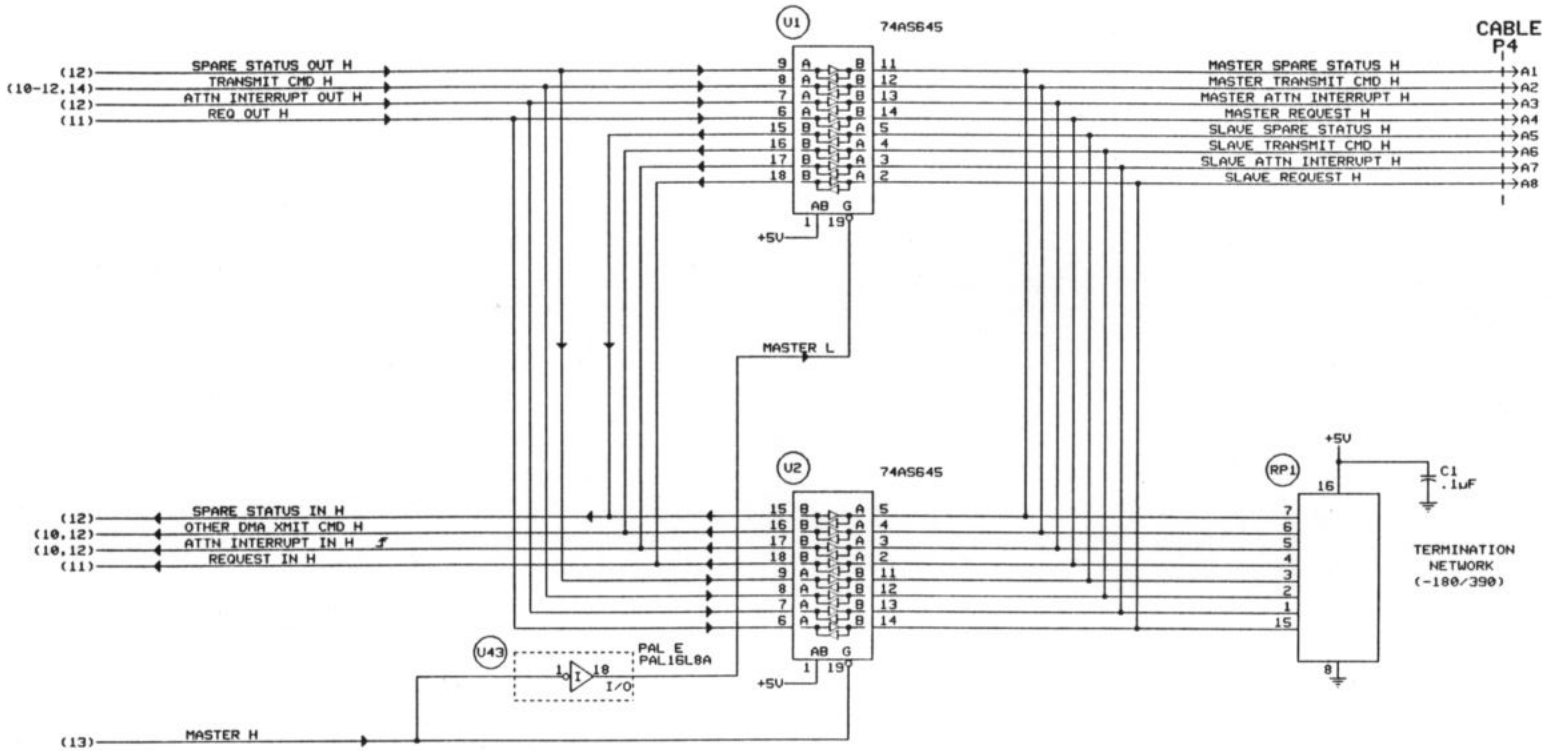


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SIZE	DWG NO.	REV.
B	0BPH5 141-000DMA-000	J
SCALE		SHEET 14



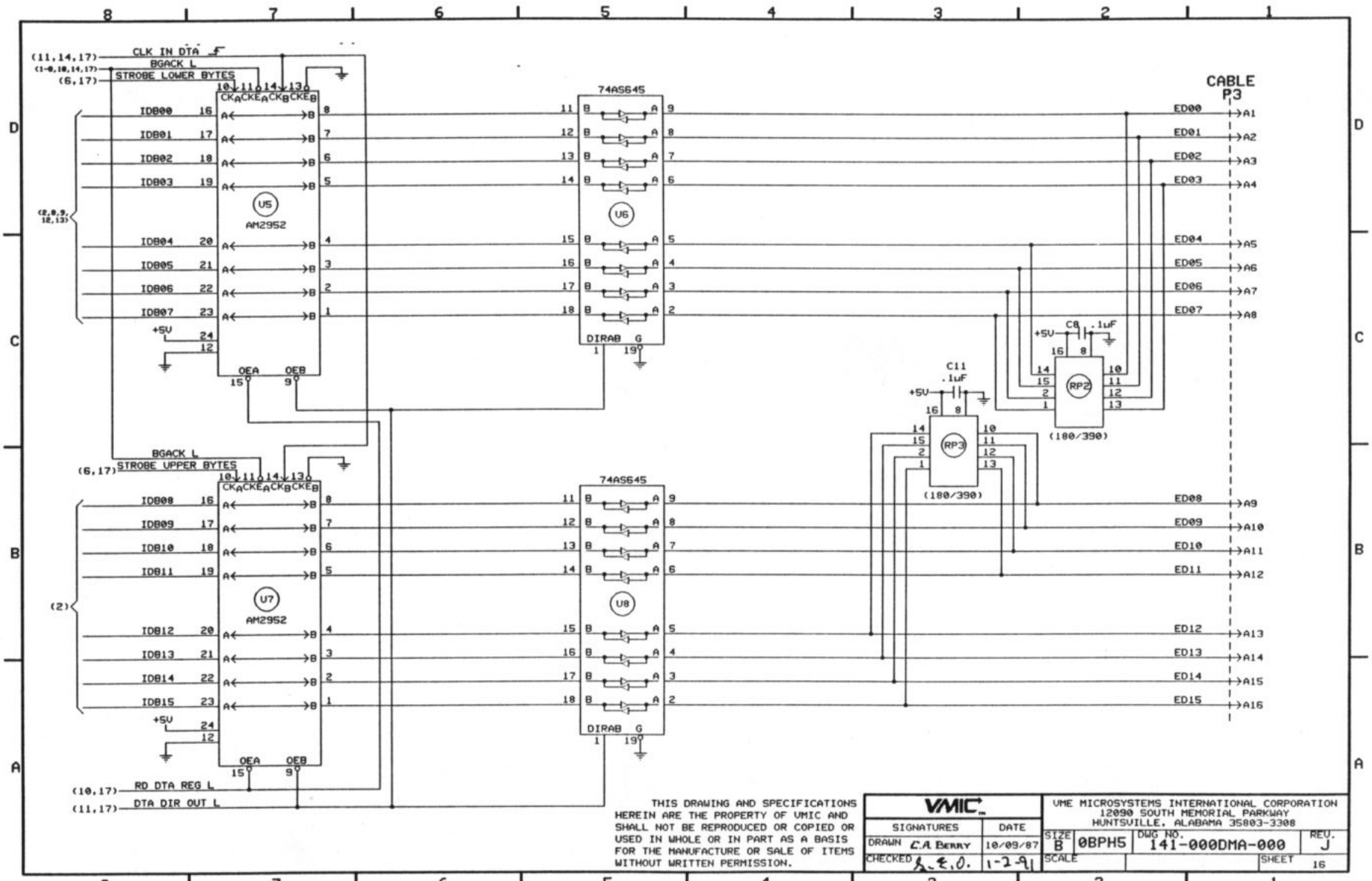
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SIZE	DWG NO.	REV.
B	0BPH5 141-000DMA-000	K

SCALE | SHEET 15



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