NEW PRODUCT STATUS

2275MUX & 2275MUXE

Current Status: 2275MUX PEP # H0146A
2275MUXE PEP # H0146B

First Customer Ship: Q3 FY87

Logistics:

There will be three FRU's associated with this product:

210-8824 Multiplexer (MUX)	MTBF:104,436 hrs
210-8825 Multiplexer Extender (MUXE)	MTBF:163,577 hrs
220-3588 Interconnection Cable	MTBF:TBD

Technical Documentation:

Documentation class code is TBD.
This product will be used in the MicroVP, LVP and MVP systems.
First draft of the PUB is being reviewed.

TEE/FSC:

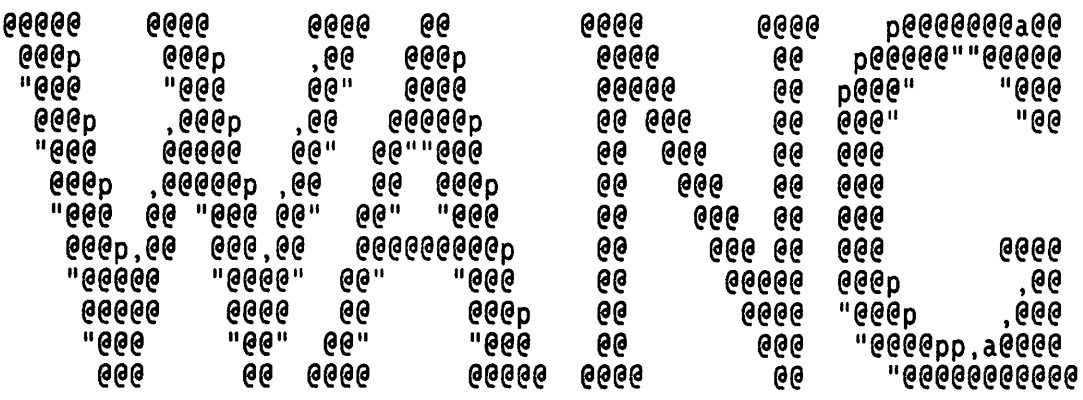
Repair Plan will be required for the MUX and MUXE. Hardware Specifications and Schematics have been provided.

Diagnostic Support:

Existing 2200 Disk Diagnostics will support this product. The 2275MUX/MUXE has been tested using the 2200 Multiple Disk Exerciser (Rev. 6547). The diagnostic was obtained from Wang Direct by ordering diagnostic package number 195-2956-0.

Technical Training Center:

This product should to be included in the 2200 System Class. The Product Maintenance Manual and TSB will provide necessary information for Customer Engineers previously trained on the 2200 system.



CUSTOMER ENGINEERING

(Preliminary)

MAINTENANCE PLAN

2275MUX/MUXE DISK MULTIPLEXER

4/3/86

Periph # 023

Product line Engineer	New Products Manager
Product Line Manager	Maintenance Planning Manager

Product Line Director

-Wang Laboratories, Inc.- -Company Proprietary-

TABLE OF CONTENTS

-Wang Laboratories, Inc.- -Company Proprietary-

V. OPERATING ENVIRONMENT

VI. DOCUMENTATION LIST

APPENDICES

I. PRODUCT DESCRIPTION

A. OVERVIEW OF THE PRODUCT

The 2275MUX is a board that resides in a 2200 CPU. It provides a link to any Wang disk product with a 22C03 interface and up to four 2200 CPU's. The 2275MUX provides the disk interface to for the CPU it resides in and replaces the 22C80 board. Three additional 2200CPU's can be connected to the 2275MUX via the existing 22C80 Disk Controller and cable. The 2275MUXE will allow an additional four 2200 CPU's to access the disk drive. Up to three 2275MUXE multipexer expanders can be connected to one 2275MUX multiplexer.

B. SIMILARITIES/DIFFERENCES with other WANG products.

1) Software

Standard Wang BASIC II for the 2200 systems will be the software for the 2275MUX/MUXE.

2) Hardware, including PCBs

The multiplexer will no longer have to be housed in it's own chassis as in the 2280MUX. The 22C80 Disk Controller will be used for the 2275MUX/MUXE.

C. ANNOUNCE/FIRST CUSTOMER SHIPMENT DATE

1) Domestic - July 1986.

2) International - August 1986.

D. SERVICE OFFERINGS/WARRANTY

On-site maintenance will be the only service offering. Unit will have normal Wang warranty.

E. MAJOR COMPONENTS

The 2275MUX will be a single board unit and have an internal 22C03 disk controller and interface with up to 3 more 2200 CPU's. The 2275MUXE will also be a single board unit cabled to the 2275MUX via ribbon cable.

F. CONFIGURATION REQUIREMENTS

The 2275MUX will interface with the 2270A, 2275, 2275F/R/S and 2280 disk drives. The single unit will include the 2275MUX card, the disk drive and the drive interface cable. Up to three more CPU's can be connected to the multiplexer and each additional CPU will need a 22C80 Disk Controller and interface cable.

II. MAINTENANCE PHILOSOPHY

A. Maintenance Objectives
1) C.E. Level
2) Maintenance Procedures
C.E. will replace Field Replaceable Unit found to be defective.

B. Types of contract to be offered
Only on-site maintenance contracts will be offered.

C. P.M. requirements
No preventive maintenance will need to be performed on this product.

D. Diagnostics required
1) diagnostic name(s)

III. TRAINING

A. CUSTOMER ENGINEER COURSE

1) COURSE OBJECTIVE
Will be included with 2200 course.

2) TIMETABLE and FORMAT
TBD

3) PREREQUISITES

IV. SPECIAL TOOLS/TEST EQUIPMENT

No special tools will be needed with this product.

V. OPERATING ENVIRONMENT

A. TEMPERATURE RANGE

operating 60°-80°F 15°-28°C

B. VOLTAGE RANGE for each model

DC voltage only.
+12volts DC +- 1%
-12volts DC +- 1%
+5volts DC +- 1%
-5volts DC +- 1%

C. HUMIDITY RANGE

operating 35% - 65% (non-condensing)

D. PHYSICAL SPECIFICATIONS

2275MUX
Height 8 inches (centimeters)
Width 16 inches (centimeters)

2275MUXE
Height 8 inches (centimeters)
Width 16 inches (centimeters)

E. SERVICE SPACE REQUIREMENTS

Not applicable.

F. INPUT CURRENT

Running (DC only)
amps

G. INPUT POWER

Watts

H. HEAT LOSS

BTU/hr (KgCal/hr.)

VI. DOCUMENTATION LIST

Reference appropriate documents for assemblies which are covered by existing Maintenance Plan.

A. PRINTS

B. MAINTENANCE MANUAL

C. VENDOR MANUALS

D. DIAGNOSTIC ERROR LISTINGS

E. P.M. PROCEDURES

F. REPAIR PLAN

G. BUSINESS PLAN

H. SALES LITERATURE

I. OPERATORS' GUIDE/USER INFORMATION

J. TRAINING WORKBOOK

K. RELATED MAINTENANCE/SUPPORT PLANS

APPENDICES

A1

MARKETING

FORECAST

Breakdown by quarter for first year of shipment.

Breakdown by Domestic/International

A2

PRODUCT MATURE PERFORMANCE

Model Number	Product Description	Service Parameter	Rate per Year	Time (hours)
Modelxxx	Product description	Replacements	x.xx	
		Calls	x.xx	
		MTTR		x.xx
		Call Duration		x.xx
		Installation Time		xx.xx
		PM Calls	x.xx	
		PM MTTR		x.xx
		FCO Calls	x.xx	
		FCO MTTR		x.xx
		Upgrades/Model	x.xx	
		Upgrade Install Time		x.xx

PRODUCT ANALYSIS WITH GROWTH

Product Replacements/Year and Calls/Year by Month after Installation

Model Number	Product Description		Month after Installation 1	2	3
4	5		6	7	8+
Modelxxx	Product description				
		Replacements/Year	x.xx	x.xx	x.xx
x.xx	x.xx		x.xx	x.xx	x.xx
		Calls/Year	x.xx	x.xx	x.xx
x.xx	x.xx		x.xx	x.xx	x.xx

A3

NOTE:

Every effort has been made to include the most current information available but, these part numbers are subject to change.

C.E. Logistics will provide updated, released part numbers through the normal RSL process.

FRUs, CRUs,

part ##	DESCRIPTION	FRU	CRU	Unique	stocking location B	A	H

PARTS LIST

Diagnostic Part Number
Parts required for P.M.

P1 47588

WANG 10 **ECO** **ECO NO.** 47059

SHEET 1 OF 18

ORIGINATOR	Gilles Carrier Dept 120	M/S	014-390	EXT. 74478	DATE	11/20/87
WRITTEN BY	Carol Sullivan	M/S	012-18B	EXT. 74312	DATE	11/20/87

PART NO.	210-8824	DESCRIPTION	2275 MUX MASTER
DWG NO.	8824		
MODEL NO.	2275 MUX	PEP #	PEP# HO
CLASS	I (II) III		PRELIMINARY

DOCUMENTS	REVISIONS FROM	REVISIONS TO
HISTORY SHT. 510	0	1
HISTORY SHT. 210	1	2
ARTWORK		
E-REV.	1	2
ASSY. DWG.		
DRILL DWG.		
SCHEM DWG.		
MECH. DWG.		
CBL DWG.		
S.P.I.		
SPECIFICATION		

CONFORMING AREA	C.E.	REMFG.	DIST	FINAL ASSY AREA	SUB ASSY AREA	NEXT ORDER	INFO ONLY
	X	X		X	X	X	

CONFORMANCE DATE

DESCRIPTION OF CHANGE

Change artwork, assembly drawing, fabrication drawing, schematic, parts list and sample board per attached prints and as follows:

Delete R1, R4, R7 and R32 res 1K 1/4W 5% 200PPM (330-3011)
Add R35 and R36 res network type (333-0811).

On circuit side:

Tie R36 pin 10 to J5 pin 9
Tie R36 pin 9 to J5 pin 11
Tie R36 pin 8 to J5 pin 13
Tie R36 pin 7 to J5 pin 15
Tie R36 pin 6 to J5 pin 17
Tie R36 pin 5 to J5 pin 19
Tie R36 pin 4 to J5 pin 21
Tie R36 pin 3 to J5 pin 23
Tie R36 pin 2 to J5 pin 25
Tie R36 pin 1 to L58 pin 20
Cut etch leading to L13 pin 15

COMPANY CONFIDENTIAL

ECO TO EE

DEC 30 1987

CONTINUED

REVIEWED

REASON/SYMPTOM FOR CHANGE

To eliminate I90 errors while writing to disk.

Hold Mike Bernier —

APPROVALS		DATE
ECO CHAIRPERSON		
DES. ENGRG.	Gilles Carrier	11/30/87
CUST. ENGRG.		
MFG.		
MTO		
PP&M		
F.C.C.	Michael Bertko	12/9/87
PROD. SAFETY	Dick Bernier	12/9/87
SECURE SYS.		
ORIGINATOR		
OTHER		

SYGNETICS NOT ALS IC'S

L46, LS8, LS5, LS9, L13 SH

MUST BE LS CHIPS, NOT ALS

WANG

ECO

ECO NO. 40499

SHEET 1 OF 6

ORIGINATOR	Gilles Carrier	Dept # 120 M/S 014-390	EXT 4478	DATE 03/17/88
WRITTEN BY	Arlene Elliott	M/S 012-188	EXT 4313	DATE 03/17/88

PART NO.	510/210-8824
DWG NO.	8824
MODEL NO.	2275 MUX
CLASS	I (II) III

DESCRIPTION: 2275 MUX MASTER

PEP # PEP# HU

HF

DESCRIPTION OF CHANGE

Change artwork, assembly drawing, schematic, parts list and sample board per attached prints and as follows:

Change R34 from 12K RES (330-4013), to 7.5K RES (330-3076).
Lift L31 pin 10.
Lift L33 pin 1.
Lift L33 pin 2.
Tie L33 pin 1 ro L33 pin 4.
Tie L33 pin 2 to L30 pin 13.
Tie L33 pin 5 to L31 pin 10.

PRELIMINARY

Change BOM 210-8824 as follows:

	WLI#	DESCRIPTION	UM	COMP TYPE	QTY	QTY TYPE
Delete:	330-4013	12K RES	EA	1	1	1
ADD:	330-3076	7.5K RES	EA	1	1	1

ECO TO BE

REASON/SYMPTOM FOR CHANGE

APR 06 1988

To eliminate the high rate of errors with the DS disk cabinet.

REVISED

CONFIDENTIAL

DOCUMENTS

	REVISIONS FROM	TO
HISTORY SHT. 510	1	2
HISTORY SHT. 210	3	4
ARTWORK		
E-REV.	3	4
ASSY. DWG.		
DRILL DWG.		
SCHEM DWG.		
MECH. DWG.		
CBL DWG.		
S.P.I.		
SPECIFICATION		

CONFORMING AREA	C.E.	REMFG.	DIST.	FINAL ASSY. AREA	SUB ASSY. AREA	NEXT ORDER	INFO ONLY
	X	X	X	X	X	X	

CONFORMANCE DATE

APPROVALS

	DATE
ECO CHAIRPERSON	
DES. ENGRG.	Gilles Carrier 3/28/88
CUST. ENGRG.	
MFG.	
MTO	
PP&M	
F.C.C.	Michael Bunto 3/22/88
PROD. SAFETY	3/28/88
SECURE SYS.	
ORIGINATOR	
OTHER	

17

11

8

WANG LABORATORIES, INC.

RUN DATE: 04/08/87 1

>>>>> PARTS LIST <<<<<

SHEET OF PA

(FINAL PARTS LIST)

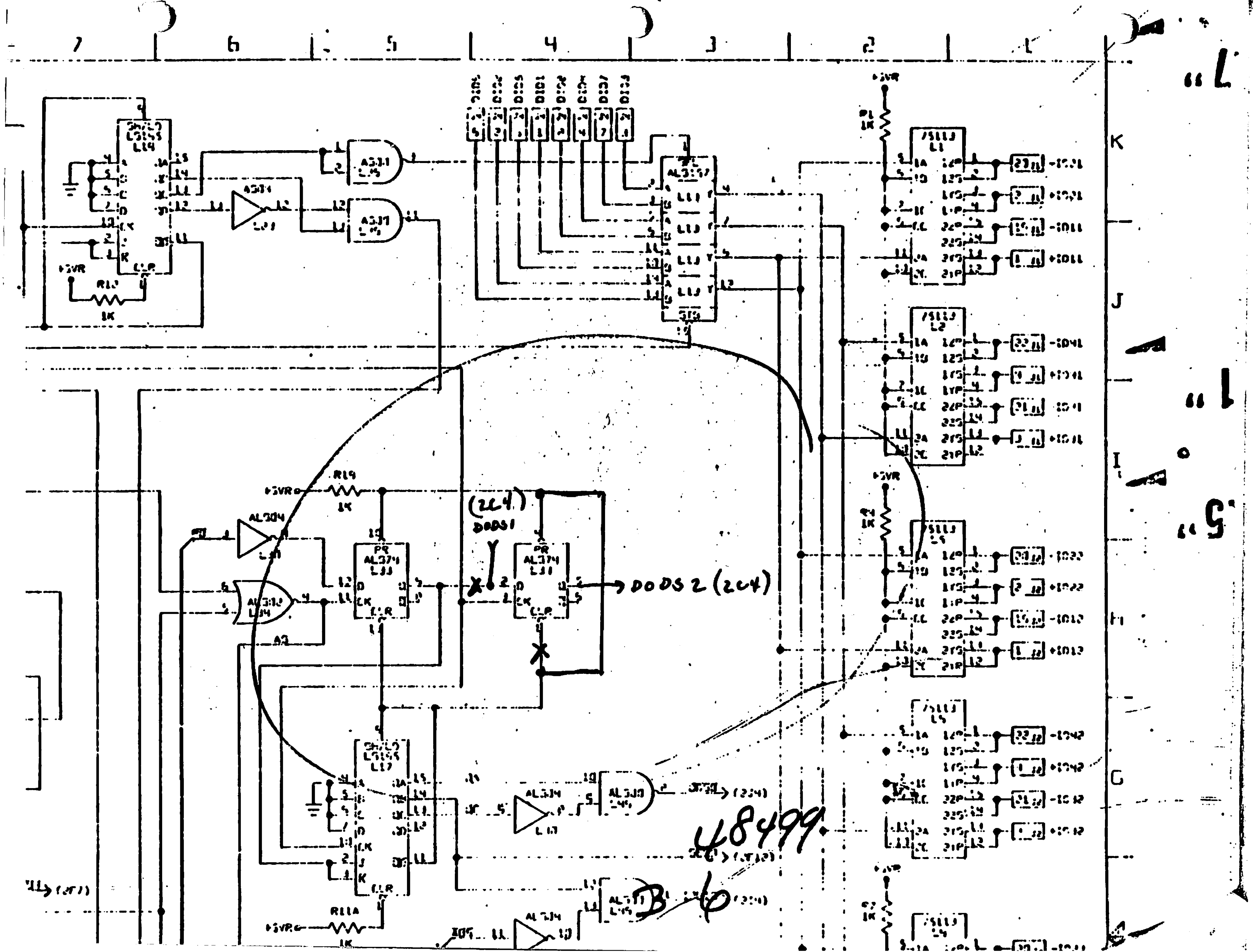
BOARD NO. & TITLE: C8824 MUX MASTER
ASSEMBLY LEVEL & TITLE: 210 8824
PARTS LIST REVISION (P): 0

CREATED: 12/06/85 12:59
LAST MODIFIED: 04/08/87 14:36 BY: F
EDITING REVISION: 16

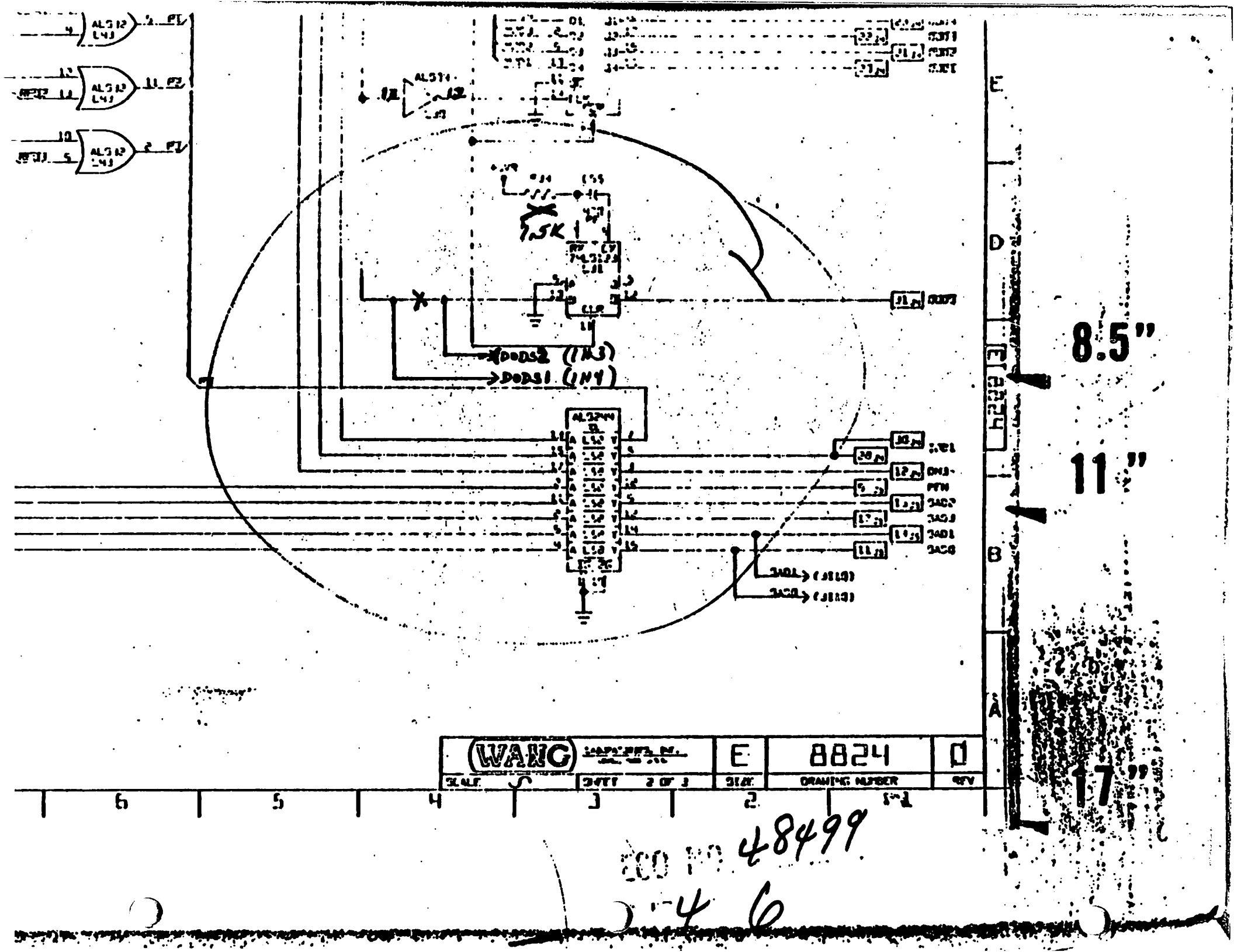
REF. DES.	WANG PART NO.	VALUE/TYPE	DESCRIPTION	DRAWING NO.	QT
C65	300-1472-	470P	CAP 470 PF 50V 5% NPO CERMONO RDL		
C1 - C15	300-1833-	.1U	CAP .1UF 50V +80-20% Z5U CER MONO AXL		
C18 - C28					
C30 - C31					
C34 - C58					
C61 - C62					
C59 - C60	300-4017-	5.6U	CAP 5.6 UF 35V 10% TANTALUM AXIAL		
C63 - C64	300-4022-	15U	CAP 15 UF 20V 10% TANTALUM AXIAL		
Y1	321-1017-	2.0480	CLOCK OSCILLATOR 2.048 MHZ .01% TTL		
SW1	325-1503-	SLIDE	SW SLIDE SPST 8 POS DIP		
R31	330-2034-	330	RES 330 OHM 1/4W 5% METAL FILM 200 PPM		
R1	330-3011-	1K	RES FIXED METAL FILM 1/4W 5% 200PPM		
R4					
R7					
R11					
R11A					
R12					
R15 - R16					
R19 - R23					
R25					
R27 - R29					
R29					
R33					
R32	330-3048-	4.7K	RES 4.7K OHM 1/4W 5% METAL FILM 200 PPM		
R34	Delete ~~330-4013-~~	~~12K~~	RES 12K OHM 1/4W 5% METAL FILM 200 PPM		
R13	333-0807-	220/330	RESISTOR NETWORK TYPE: 10/16/T/SS		
R13A					
R14					
R14A					
R2 - R3	333-0811-	220.00	RESISTOR NETWORK TYPE: 10/09/C/SS		
R5 - R6					
R8 - R9					
R26	333-0837-	1K	RESISTOR NETWORK TYPE: 10/09/C/SS		
R30	337-1010-	10	FIXED 2W 10%		

48499

2 6



DODS 2 (2C4)
(2C4)
DODS1
48499
B-6
AL374
AL304
AL3137
74LS157
74LS195
R19
R11A
R12
1K
+5VR


8.5"
11"
17"
WANG
E
8824
D
SCALE
SHEET 2 OF 3
SIZE
DRAWING NUMBER
REV
6
5
4
3
2
1
F
E
D
B
A
48499

WANG

ECO

ECO NO. 48499

SHEET 1 OF 3

ORIGINATOR	Gilles Carrier	Dept # 120	M/S 014-390	EXT. 4478	DATE 03/17/88
WRITTEN BY	Arlene Elliott		M/S 012-18B	EXT. 4313	DATE 03/17/88

PART NO.	510/210-8824
DWG NO.	8824
MODEL NO.	2275 MUX
CLASS	I (II) III

DESCRIPTION: 2275 MUX MASTER

PEP # PEP# HU

HF

DESCRIPTION OF CHANGE

Change artwork, assembly drawing, schematic, parts list and sample board per attached prints and as follows:

Change R34 from 12K RES (330-4013), to 7.5K RES (330-3076).
Lift L31 pin 10.
Lift L33 pin 1.
Lift L33 pin 2.
Tie L33 pin 1 ro L33 pin 4.
Tie L33 pin 2 to L30 pin 13.
Tie L33 pin 5 to L31 pin 10.

Change BOM 210-8824 as follows:

	WLI#	DESCRIPTION	UM	COMP TYPE	QTY	QTY TYPE
Delete:	330-4013	12K RES	EA	1	1	1
ADD:	330-3076	7.5K RES	EA	1	1	1

Note to EDD: Incorporate changes with ECO 44026D. 4/24

65

REASON/SYMPTOM FOR CHANGE

To eliminate the high rate of errors with the DS disk cabinet.

DOCUMENTS

	REVISIONS FROM	TO
HISTORY SHT. 510	1	2
HISTORY SHT. 210	3	4
ARTWORK		
E-REV.	3	4
ASSY. DWG.		
DRILL DWG.		
SCHEM DWG.		
MECH. DWG.		
CBL DWG.		
S.P.I.		
SPECIFICATION		

CONFORMING AREA	C.E.	REMFG.	DIST.	FINAL ASSY. AREA	SUB ASSY. AREA	NEXT ORDER	INFO ONLY
	X	X	X	X	X	X	

CONFORMANCE DATE 4-28-88

APPROVALS

	DATE
ECO CHAIRPERSON Paul H. David	4/13
DES. ENGRG. Gilles Carrier	4/13
CUST. ENGRG. W Davis	4/13
MFG.	
MTO	
PP&M	
F.C.C. Michael Bunta	3/22/88
PROD. SAFETY	
SECURE SYS.	
ORIGINATOR	
OTHER	

CSO MICROFICHE NOTES

FIXES

742-
CLASS.
DATE / /
FICHE #

1. ETCH FROM L31 PIN 10 TO L33 PIN 5 IS CONNECTED TO L30 PIN 13
L30 PIN 13 MUST BE ISOLATED.

2. TIE FEEDTHRU FOR TOP OF R1 OR L2 PIN 6,7,9, OR 10 TO (L30 PIN 2 L18 PIN 5)

3. TIE FEEDTHRU FOR (TOP OF R4 OR L6 PIN 10,9,7,6) TO (L23 PIN 4 OR L22 PIN 5)

4. TIE FEEDTHRU FOR TOP OF R7 OR L10 PIN 6,7,9,10) TO (L23 PIN 2 OR L26 PIN 5)

5. FIX SCHEMATIC, SHEET 3 OF 3 (3 C12), ~~L30 PIN 2 SHOULD~~
L18 PIN 7,9,10,11 & L22 PIN 7,9,10,11 SHOWN CONNECTED TO L2 PIN 6,7,9,10 & L1 PIN 6,7,9,10
~~SHOULD~~ MAKE TIE PT TO L30 PIN 2 & L18 PIN 5

6. ERROR ECO 48499 SCHEMATIC. CUT #2 IN WRONG PLACE.

741-6002

WANG

ECO

ECO NO.

SHEET OF

ORIGINATOR	Mike Bahia	M/S	014-A3A	EXT. 60256	DATE
WRITTEN BY		M/S		EXT.	DATE

PART NO. 210-8824	DESCRIPTION 2275 MUX MASTER
DWG NO. 8824	
MODEL NO. 2275 MUX	PEP #
CLASS I (II) III	

DESCRIPTION OF CHANGE

1. Rework Artwork 2 Board as follows:
   On circuit side cut etch to L30 Pin 13 on both sides of Pin 13.
   Add wire from L31 Pin 10 to L33 Pin 5.
   On circuit side add wire from L2 Pin 9 to L18 Pin 5.
   On component side add wire from L6 Pin 7 to L22 Pin 5.
   On component side add wire from L10 Pin 7 to L26 Pin 5.

2. Make following correction to schematic, sheet 3 of 3, loc C12:
   Line from L2 Pin 10 (3I2) should tie to line between
   L30 Pin 2 and L18 Pin 5 (3C12). It should not connect to
   L18 Pin 7 (3C12).

   NOTE: Do not create R3 Artwork, not cost justifiable at this time.

REASON/SYMPTOM FOR CHANGE

1. To correct Artwork error on Artwork 2 Board.

2. To correct SCHEMATIC

DOCUMENTS	REVISIONS FROM	REVISIONS TO
HISTORY SHT. 510		
HISTORY SHT 210		
ARTWORK		
E-REV.		
ASSY. DWG.		
DRILL DWG.		
SCHEM DWG.		
MECH. DWG.		
CBL DWG.		
S.P.I.		
SPECIFICATION		

CONFORMING AREA	C.E.	REMFG.	DIST.	FINAL ASSY. AREA	SUB ASSY. AREA	NEXT ORDER	INFO ONLY

CONFORMANCE DATE

APPROVALS	DATE
ECO CHAIRPERSON	
DES. ENGRG.	
CUST. ENGRG.	
MFG.	
MTO	
PP&M	
F.C.C.	
PROD. SAFETY	
SECURE SYS.	
ORIGINATOR	
OTHER	

14-19030 Printed in U.S.A. 5-85 7M

TMD 2448

52512

1. L31 PIN 10 TIES TO L33 PIN 5, L30 PIN 13, L14 PIN 23, L11 PIN 3, L7 PIN 3, L3 PIN 3, L46 PIN 9,12, & R32 BOT, L33 PIN 2

2. TOP OF R1 TIED TO L2 PIN 9,10,7,6 & L1 PIN 7,10,6,9
L18 PIN 5 TIED TO L30 PIN 2

3. TOP OF R4 TIED TO L6 PIN 10,9,7,6 & L5 PIN 6,7,9,10
L23 PIN 4 TO L22 PIN 5

4. TOP OF R7 TIED TO L9 PIN 6,7,9,10 & L10 PIN 6,7,9,10
L23 PIN 2 TO L26 PIN 5

48499

5. L33 PIN 1 TIED TO L33 PIN 4,10 & BOTTOM OF R19

6. L33 PIN 2 TO L3 PIN 3, L7 PIN 3, L11 PIN 3

47059

7. R36 PIN 10 TO J5 PIN 9 TO L58 PIN 18

8. R36 PIN 9 TO J5 PIN 11 TO L58 PIN 16 & L24 PIN 14

9. R36 PIN 8 TO J5 PIN 13 TO L58 PIN 14 & L24 PIN 2

10. R36 PIN 7 TO J5 PIN 15 TO L58 PIN 9

11. R36 PIN 6 TO J5 PIN 17 TO L58 PIN 12

12. R36 PIN 5 TO J5 PIN 19 TO L46 PIN 11

13. R36 PIN 4 TO J5 PIN 21 TO L46 PIN 13

14. R36 PIN 3 TO J5 PIN 23 TO L46 PIN 15

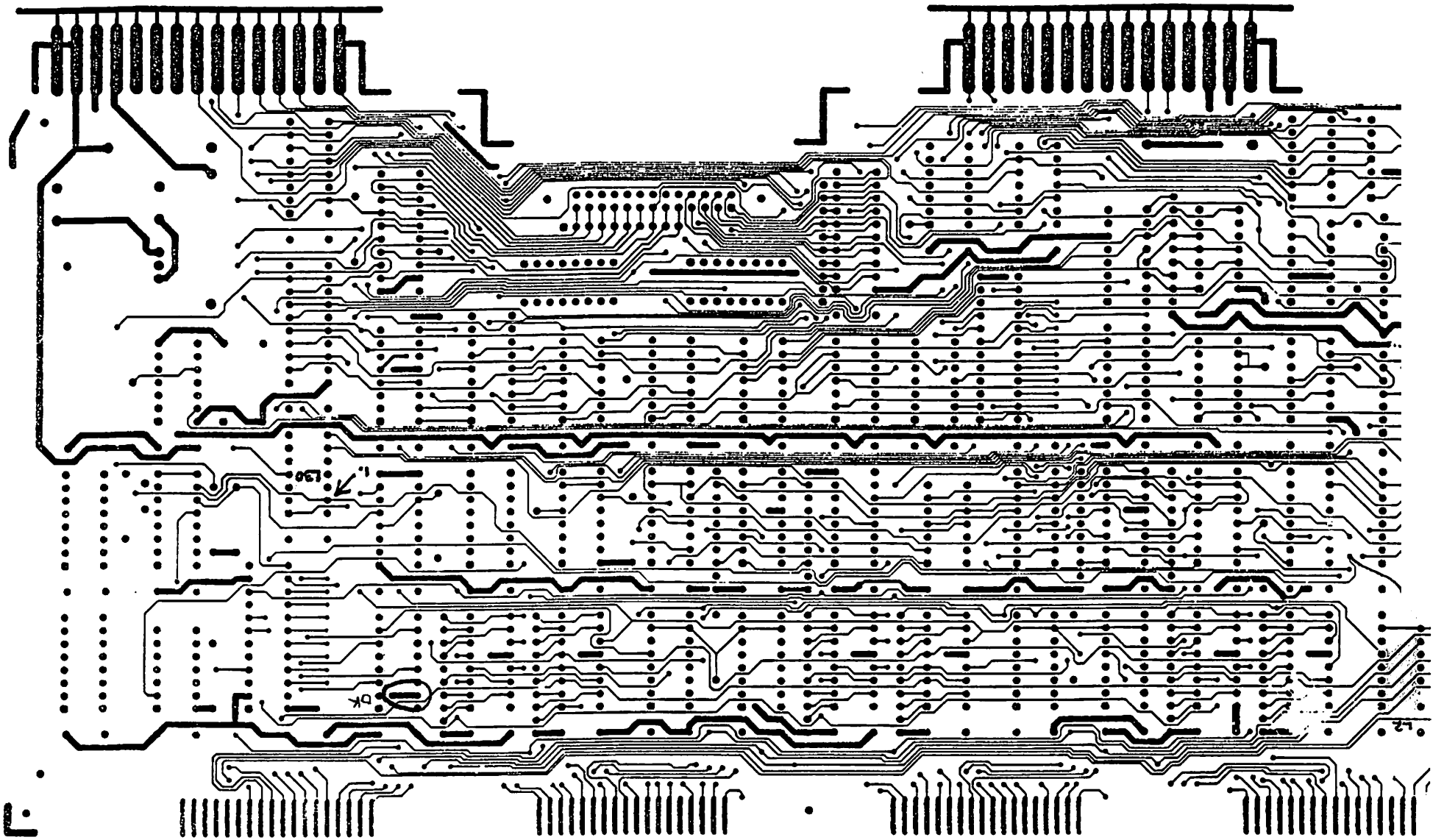
15. R36 PIN 2 TO J5 PIN 25 TO L46 PIN 17

16. R36 PIN 1 TO L58 PIN 20, TOP OF R29A, L29 PIN 16, C30 RT, L3 PIN 16, C13 RT, C46 RT 5V

2. L3 PIN 15 TIED TO GROUND ON 8824-2 ?

TIED TO L47 PIN 8

L31
L30
L2
8.5"
11"



8824-2 COMPONENT SIDE

WANG

ECO

ECO NO. 525.2

SHEET 1 OF 6

ORIGINATOR	Gilles Carrier Dept 167	M/S	014-390	EXT 4478	DATE 01/04/89
WRITTEN BY	Carol Sullivan	M/S	012-18B	EXT 4312	DATE 01/20/89

PART NO.	510/210-8824	DESCRIPTION	2275 MUXMASTER
DWG NO.	8824		
MODEL NO.	2275 MUX	PEP #	
CLASS	I (II) III		HF

DESCRIPTION OF CHANGE

Change artwork, assembly drawing, fabrication drawing, schematic, parts list and sample board per attached prints and as follows:

1. Remove etch on circuit side between L30 pin 13 and L31 pin 10.
2. Remove etch on component side leading to L33 pin 5.
3. Add etch from L31 pin 10 to L33 pin 5.
4. Tie feedthru for top of R1 to L18 pin 5.
5. Tie feedthru for top of R4 to L23 pin 4.
6. Tie feedthru for top of R7 to L23 pin 2.

Change note 3 on Fab drawing per attached.

Note to EDD: Incorporate artwork changes with 48499 and 47059.

1400/cy

40

REASON/SYMPTOM FOR CHANGE

Rev 1 artwork errors. All other documentation is correct.

FEB 23 1989

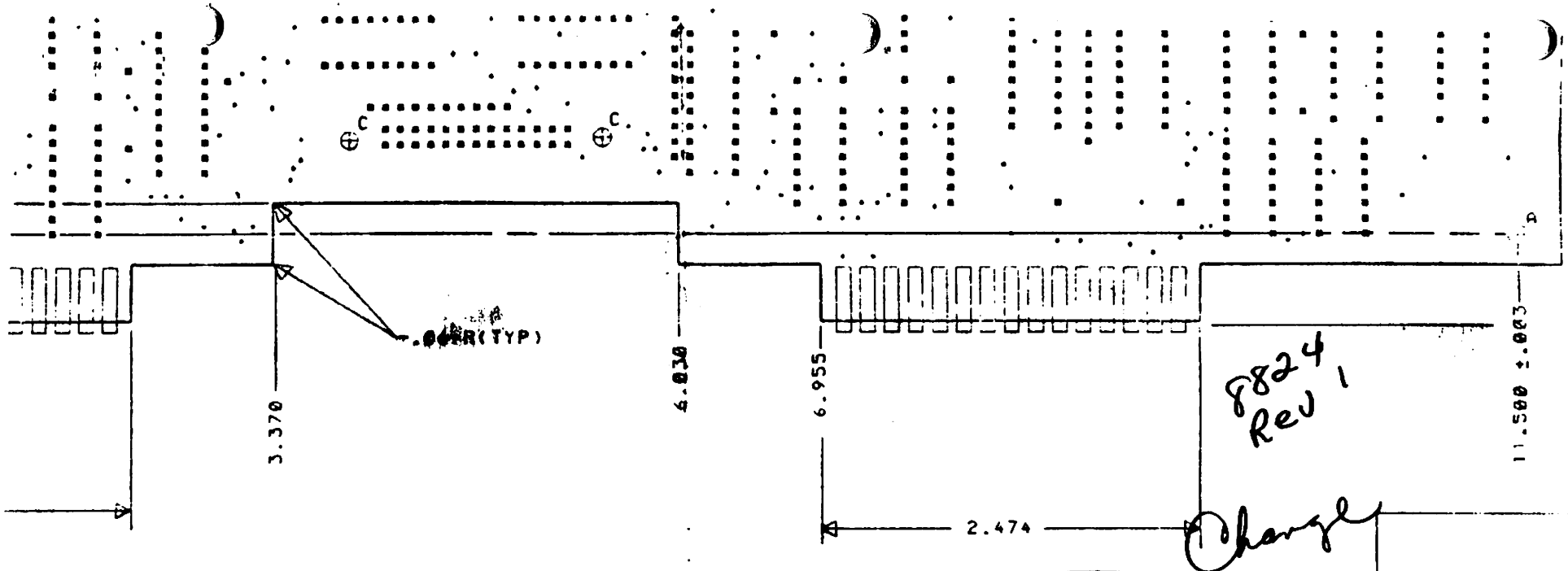
DOCUMENTS	REVISIONS FROM	REVISIONS TO
HISTORY SHT. 510	1	2
HISTORY SHT. 210	4	5
ARTWORK	1	2
E-REV.		
ASSY. DWG.		
DRILL DWG.		
SCHEM DWG.		
MECH. DWG.		
CBL DWG.		
S.P.I.		
SPECIFICATION		

CONFORMING AREA	C.E.	REMFG.	DIST.	FINAL ASSY. AREA	SUB ASSY. AREA	NEXT ORDER	INFO ONLY
	X	X		X	X		

CONFORMANCE DATE 4-24-89

APPROVALS

		DATE
ECO CHAIRPERSON	Paul A. Daniel	2/22
DES. ENGRG.	Gilles Carrier	1/26/89
CUST. ENGRG.	J. Woods	2/22/89
MFG.		
MTO	Dana Lafferty	2/22
PP&M		
F.C.C.	Michael Burton	1/31/89
PROD. SAFETY		2/2/89
SECURE SYS.		
ORIGINATOR		
OTHER		



8824 Rev 1

Change

NOTES:

1. FABRICATE PER ENGINEERING SPECIFICATION 10-203.
2. DATUM (TOOLING) HOLES MARKED "A" TO BE PRIMARY DRILLED.
3. MATERIAL FR-4 EPOXY GLASS LAMINATE .059,C 1/2/1/2 A2B. COLOR NATURAL.
4. COPPER PLATE .001" MIN. HOLE WALL THICKNESS AND SOLDER PLATE TO .0001" MIN. (ABSOLUTE) AFTER REFLOW UNLESS OTHERWISE SPECIFIED.
5. FINISHED BOARD THICKNESS (ACROSS CONDUCTORS AFTER PLATING) .062 ± .007 EXCEPT .062 ± .005 AT CONNECTOR FINGER AREA.
6. PLATING ON CONNECTOR FINGER AREA TO BE A MINIMUM OF .0001 NICKEL WITH .00003 GOLD UNLESS OTHERWISE SPECIFIED.
7. SOLDER MASK PER WANG SPI 10-210. (BOTH SIDES)
8. LETTER SCREEN BLACK WITH PERMANENT INKS PER SCREEN ARTWORK LATEST REVISION.
9. UNLESS OTHERWISE SPECIFIED, THE DIMENSIONAL TOLERANCES ARE: .XX -±.01
   .XXX -±.005
10. THIS IS A FINE LINE BOARD, ON FINAL PRODUCT, MINIMUM LINE WIDTH AND SPACING TO BE .006".

51

REVISIONS

WANG LABORATORIES
LOWELL, MASS.

DES. JAP

CHK.

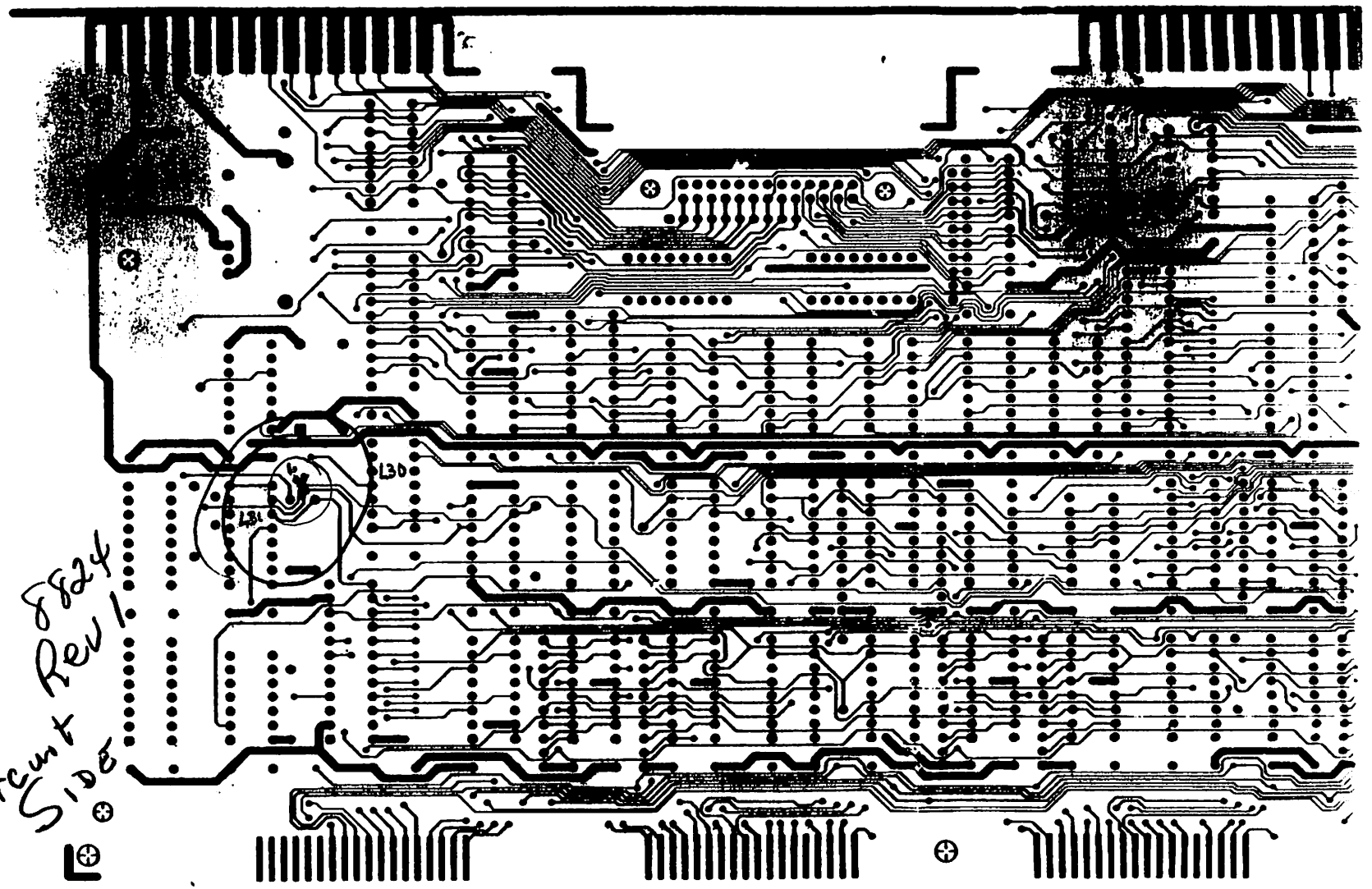
ENG. G. CARRIER

TITLE MUX M

NUMBER 882

ECO NO 52512

SHT 2 OF 6

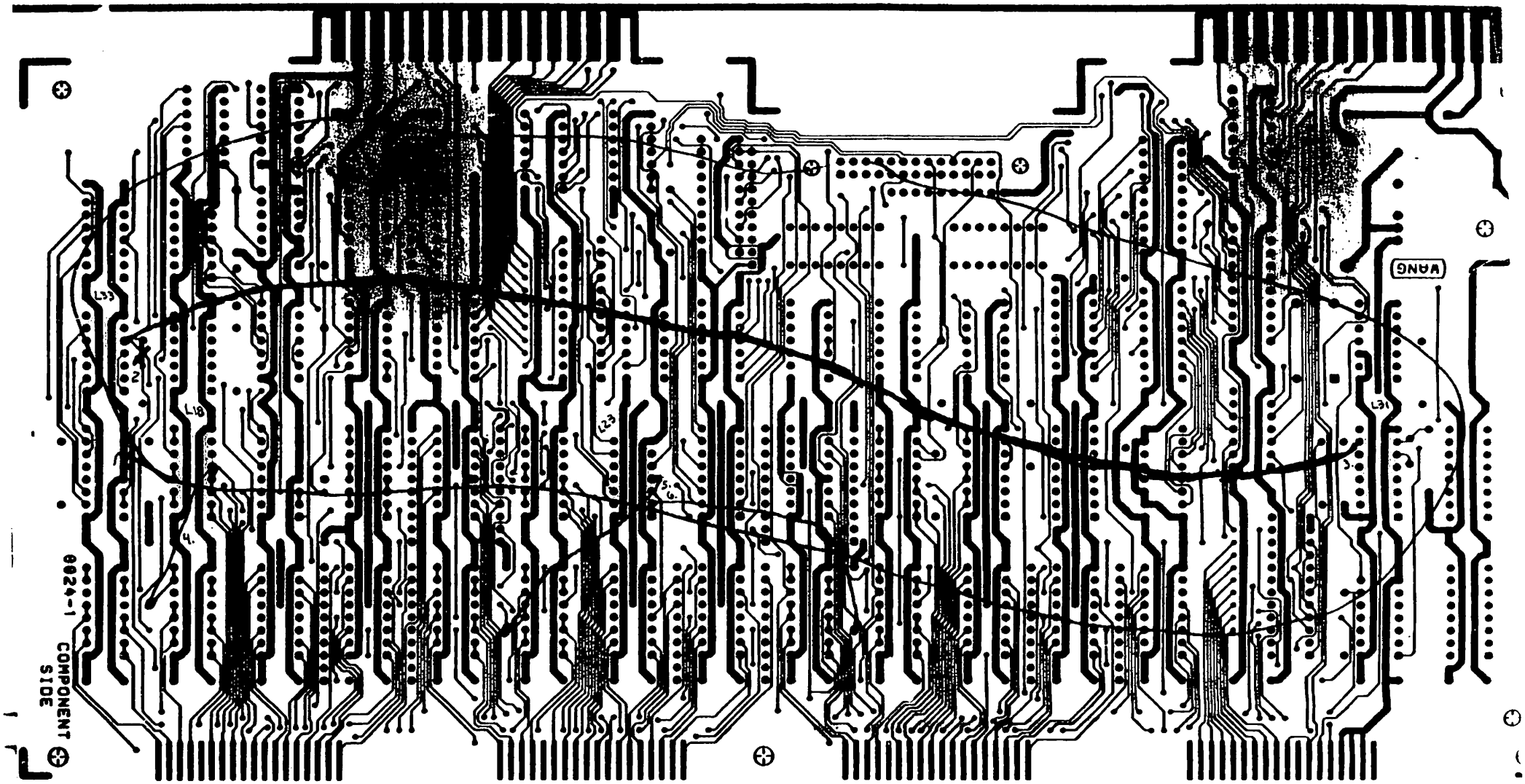


Circuit Side

8824 Rev 1

ECO NO 62512

SHEET 6 OF 6



8824
Rev1
Component
Side

ECO NO 52512

SHEET 4 OF 6

WANG

ENGINEERING CHANGE ORDER
MANUFACTURING IMPACT SHEET

ECO NO 52512
SHEET 5 OF 6

REMARKS

PKW 2/17 NA
WPR 2/21 Conf 2/21
MEX 2/17 NA
AUST 2/21 NA
METH 2/21 ENG. Cost $ 5150
Conf 4/24/89
RB 2/21 NA
Scot 2/22 NA
Ire 2/22 NA

SMS EFFECTIVITY DATE
4/17/89

AFFECTED SITES

TEWKS ☐	BOS ☐	HONG ☐
PKWD ☐	IR ☐	MEX ☐
METH ☐	PR ☐	SecSys ☐
LOW ☐	SCOT ☐	InteCom ☐
HLOK ☐	AUST ☐	____ ☐
PT BLVD ☐	TW ☐	____ ☐

APPROVALS

ECO ADMIN	D. Paffelle
MFG ENG	
QUALITY	
MATERIALS	
PROD. CONTROL	
FINANCE	
RE-MFG	
OTHER	

WANG

ENGINEERING ( )ANGE ORDER
CUSTOMER ENGINEERING IMPACT SHEET

ECO NO. 52513
SHEET 6 OF 6

ALL UNITS	☐
PROB ONLY	☐
INFO	☒
FCO REQUIRED	☐
IMMED	☐
NEXT CALL	☐
IS A MUB REQUIRED FOR FSC REWORK	☐

IMPACT COMMENTS

No impact

	DOMESTIC	INTER-NATIONAL
EST. UNIT POP		
EST. SPARE POP		
TOTAL		

EST. COST IMPACT	APPROVALS	DATE
MATERIAL	TECH OPS	
LABOR	LOGISTICS [signature]	2/14
TOTAL	FSC SUPPORT	
IMPLEMENTATION PERIOD	FINAL [signature]	2/14
ANNUAL COST	OTHER	

GENERAL COMMENTS

Field units + spares OK

WAN 1452

ECO

ECO NO. 58244

SHEET 1 OF 7

ORIGINATOR	Mike Bahia	M/S 014-A3A	EXT. 60256	DATE
WRITTEN BY		M/S	EXT.	DATE

PART NO. 210-8824	DESCRIPTION 2275 MUX MASTER
DWG NO. 8824	
MODEL NO. 2275 MUX	PEP #
CLASS I (II) III	

DESCRIPTION OF CHANGE

1. Rework Artwork 2 Board as follows:
   On circuit side cut etch to L30 Pin 13 on both sides of Pin 13.
   Add wire from L31 Pin 10 to L33 Pin 5.
   add wire from L2 Pin 9 to L18 Pin 5.
   add wire from L6 Pin 7 to L22 Pin 5.
   add wire from L10 Pin 7 to L26 Pin 5.

2. Make following correction to schematic, sheet 3 of 3, loc C12:
   Line from L2 Pin 10 (3I2) should tie to line between
   L30 Pin 2 and L18 Pin 5 (3C12). It should not connect to
   L18 Pin 7 (3C12).

   NOTE: Do not create R3 Artwork, not cost justifiable at this time.

   Note: Remove history information from 110/210 assembly drawing and EREV from schematics to support PCA configuration document.

REASON/SYMPTOM FOR CHANGE

1. To correct Artwork error on Artwork 2 Board.

2. To correct SCHEMATIC.

MAR 25 1991

DOCUMENTS	REVISIONS FROM	REVISIONS TO
HISTORY SHT. 510		
HISTORY SHT 210		
ARTWORK		
E-REV.		
ASSY. DWG.		
DRILL DWG.		
SCHEM DWG.		
MECH. DWG.		
CBL DWG.		
S.P.I.		
SPECIFICATION		

CONFORMING AREA	C.E.	REMFG.	DIST.	FINAL ASSY. AREA	SUB ASSY. AREA	NEXT ORDER	INFO ONLY
					X		

CONFORMANCE DATE 3/29/91

APPROVALS	DATE
ECO CHAIRPERSON	Paul O'Daniel 3/21
DES. ENGRG.	Keller Carrier 1/29/91
CUST. ENGRG.	
MFG.	
MTO	
PP&M	2/21/91
F.C.C.	2/27/91
PROD. SAFETY	
SECURE SYS.	
ORIGINATOR	Michael Bahia
OTHER	

ECO NO 58244

SHT 2 OF 7

CHANGE DOCUMENT	ECO 57196	ECO 58244								
ITEM STATUS	2	2								
ITEMS										
CONFIGURATION REVISION	0	1								
E-REV	4	4								
SCHEMATIC	5	6								
210 ASSEMBLY DRAWING	6	7								
110 ASSEMBLY DRAWING	NA	NA								
510 FAB DRAWING	2	2								
ARTWORK LAYERS	2	2								
DRILL/ROUTING DATA	2	2								
MECHANICAL OUTLINE	0	0								
REWORK INSTRUCTION	NO	YES								
CORP. BOM EFFECT. DATE										

WANG

LABORATORIES, INC.

PCA CONFIGURATION DOCUMENT

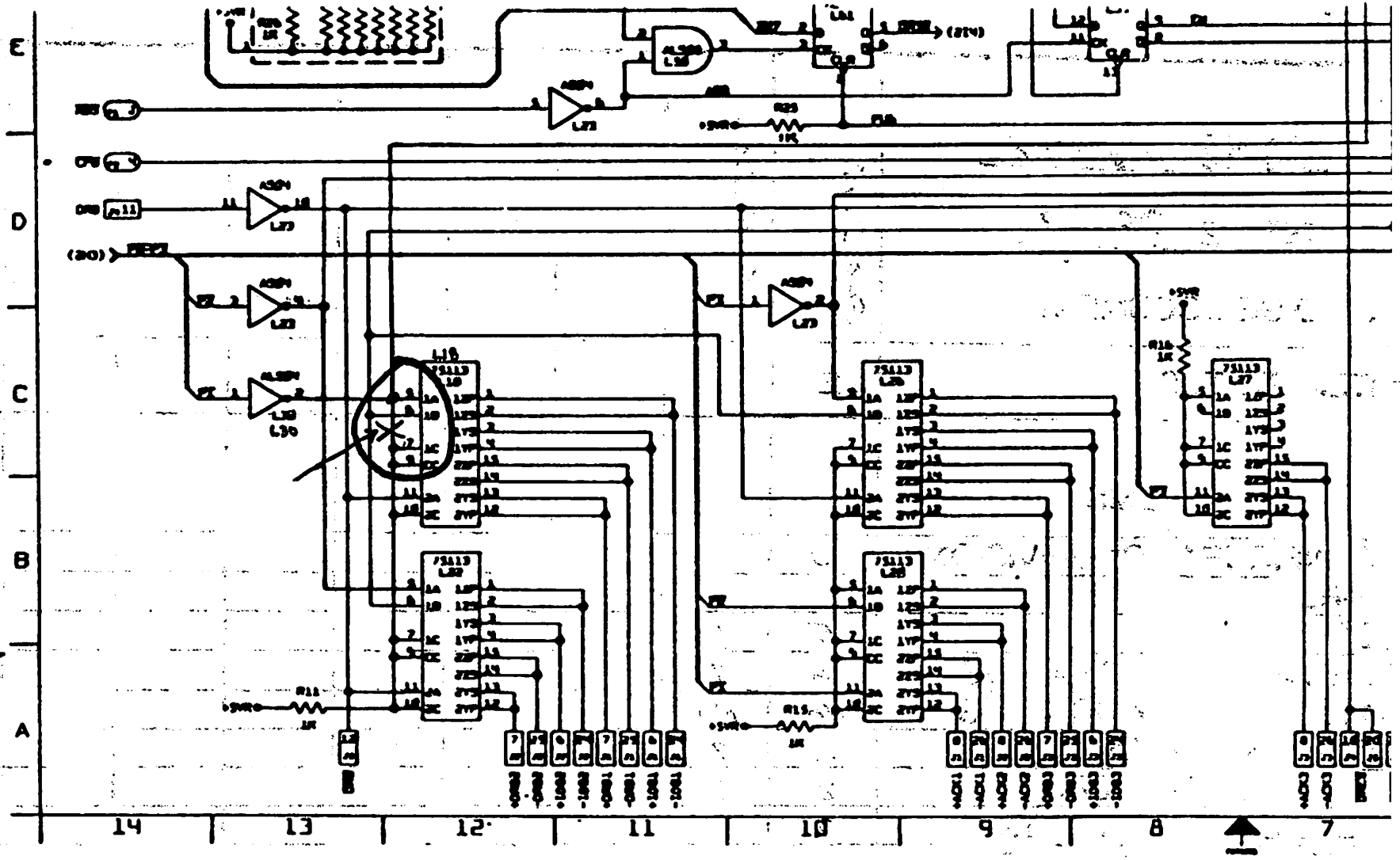
PCA PART NUMBER

210-8824

ITEM MASTER DESCRIPTION PCA 2225 MX MASTER

PAGE 1 OF ___

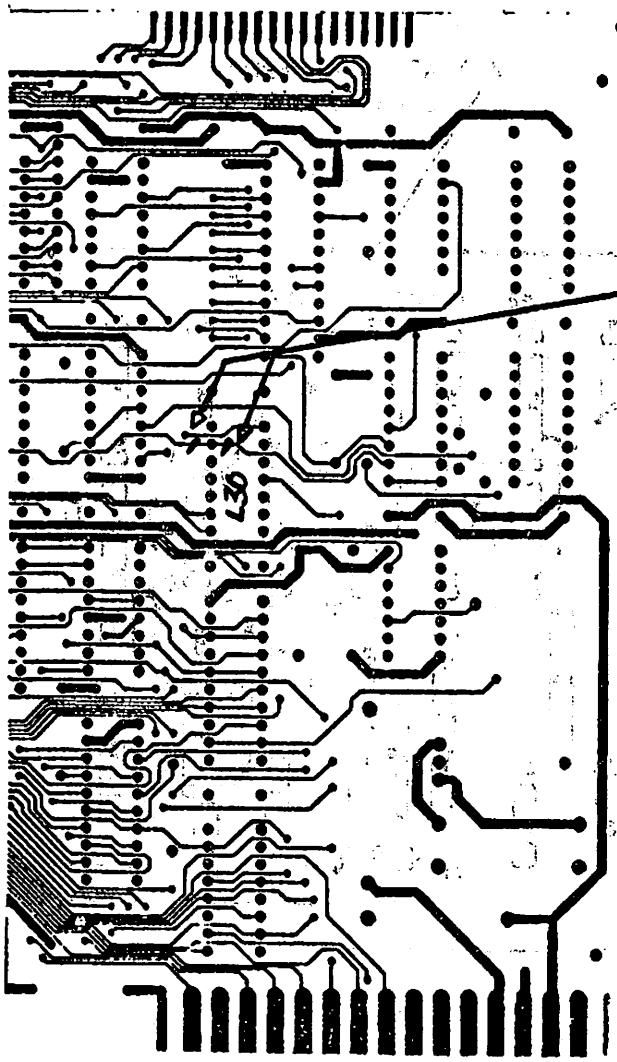
14-26562



210-8824 - SHEET 3.

LCO NO 58244

SHT 3 OF 7

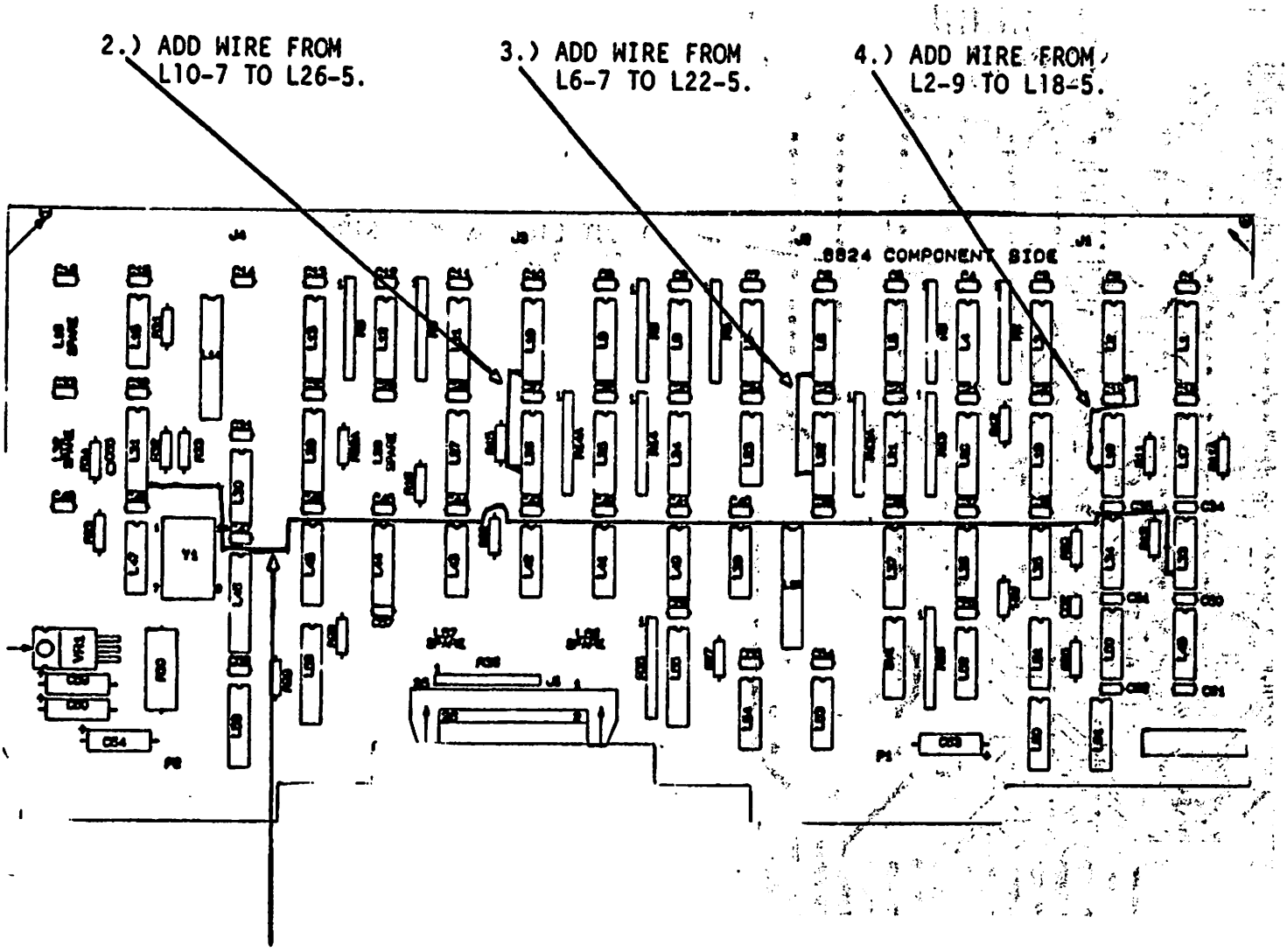


1.) CUT ETCH ON BOTH SIDES OF L30-13.

PAGE 2
CIRCUIT SIDE
ECO 58244
210-8824 R2

ECO NO 58244

SHT 4 OF 7



1.) ADD WIRE FROM L31-10 TO L33-5.

PAGE 3
ECO 58244
210-8824 R2

ECO NO 58244

SHT 5 OF 7

MANUFACTURING ECO IMPACT
TOTAL MANUFACTURING SUMMARY

ECO No 58244
CLASS. I II
SHEET 6 OF 7

PART No. 210-8824 DESCRIPTION 2275 Mud Master

REQUESTED EFFECTIVITY DATE

REQUESTED CONFORMANCE DATE

APPROVED EFFECTIVITY DATE

APPROVED CONFORMANCE DATE 3-29-91

DOLLAR SUMMARY:

	SITE: 01	SITE:	SITE:	SITE:	SITE:	TOTAL
SAVINGS:						
B.O.M. CHANGE SAVINGS (EXPENSE)						
ENG IMPLEMENT SAVINGS (EXPENSE)						
TOTAL SAVINGS (EXPENSE)						
EXPENSE:						
REWORK/SALVAGE - IN HOUSE						
REWORK AT OUTSIDE VENDORS						
SCRAP/OBSO COSTS						
CANCELLATION CHARGES - VENDORS						
TOTAL (EXPENSE)						
NET SAVINGS (EXPENSE)						

MATERIAL CONFORMANCE:

	DIST	FINAL ASSY	SUB ASSY	SITE MNFG
RAW MATERIAL				
WIP				
FINISHED GOODS				
IN-TRANSIT				
OUTSIDE VENDOR				

ACTION CODES:

1 - USE AS IS
2 - REWK/SALVAGE
3 - SCRAP
4 - NEXT ORDER
5 - OBSOLETE
6 - REDISTRIBUTE (See Remarks)
7 - OTHER (See Remarks)

REMARKS:

PREPARED BY.

Name (Print) _____ Tel# _____

Signature _____ Date _____

CORPORATE ECO CONFIRM:

Name (Print) _____ Tel# _____

Signature _____ Date _____

! ! ADDITIONAL COMMENTS ATTACHED. SEE PAGE(S) # _____

WANG

ENGINEERING CHANGE ORDER
CUSTOMER ENGINEERING IMPACT SHEET

ECO NO. 58244
SHEET 1 OF 1

ALL UNITS	☐
PROB ONLY	☐
INFO	☒
FCO REQUIRED	☐
IMMED ☐ — NEXT CALL ☐	
IS A MUB REQUIRED FOR FSC REWORK	☒

IMPACT COMMENTS

No field impact - Mfg. has been reworking R2 PCBs

	DOMESTIC	INTER-NATIONAL
EST. UNIT POP		
EST. SPARE POP		
TOTAL		

EST. COST IMPACT	APPROVALS	DATE
MATERIAL	TECH OPS	
LABOR	LOGISTICS Bill Monsees	3/12
TOTAL	FSC SUPPORT	
IMPLEMENTATION PERIOD	FINAL	3/21
ANNUAL COST	OTHER	

GENERAL COMMENTS

Document in MUB

14-19031 Printed in U.S.A. 5 85 7M

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TECHNICAL SERVICE BULLETIN

SECTION: HardWare Technical

NUMBER: HWT 7093 REPLACES: _____ DATE: 05/05/87 PAGE 1 OF 2

MATRIX ID. 4202 PRODUCT/RELEASE# 2275MUX AND 2275MUXE

TITLE: 2275MUX/MUXE NEW PRODUCT INFORMATION

PURPOSE:

To inform the field of the 2275MUX and 2275MUXE.

EXPLANATION:

The 2275 Multiplexer (2275MUX) is a 2200 option board that will allow up to four 2200 MVP-type, MicroVP, or CS CPUs to share a single disk system. The 2275MUX provides the disk interface for the CPU in which it resides. Three additional CPUs may be connected to ports on the 2275MUX through a 22C80 board in each satellite CPU.

The 2275 Multiplexer Extender (2275MUXE) may be used with the 2275MUX to allow four more CPU's to share a disk system. Up to three 2275MUXEs may be used with a 2275MUX creating a maximum configuration of sixteen CPUs sharing a disk system. The 2275MUXE is placed in the CPU with the 2275MUX and is connected to the 2275MUX by a ribbon cable.

SOFTWARE:

The 2275MUX/MUXE is supported by the current release of the Operating System (Rev. 2.7).

DIAGNOSTICS:

The 2275MUX/MUXE is supported by Revision 64A5 of the Mult Disk Exerciser. This diagnostic is part of Diagnostics Package 195-2956-0

PART NUMBER INFORMATION:

2275MUX	210-8824
2275MUXE	210-8825
Interconnect Cable (MUX to MUXE(s)	220-3588

GROUP: VS New Products Hardware MAIL STOP: 001-220

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TECHNICAL SERVICE BULLETIN

SECTION: HardWare Technical

NUMBER: HWT 7093 REPLACES: _____ DATE: 05/05/87 PAGE 2 OF 2

MATRIX ID. 4202 PRODUCT/RELEASE# 2275MUX AND 2275MUXE

TITLE: 2275MUX/MUXE NEW PRODUCT INFORMATION

EXPLANATION (cont'):

SWITCH SETTINGS:

2275MUX SW1:

ADDRESS 310	ADDRESS 320	ADDRESS 330
SW. #1 = OFF	SW. #1 = OFF	SW. #1 = OFF
#2 = OFF	#2 = OFF	#2 = OFF
#3 = OFF	#3 = OFF	#3 = OFF
#4 = OFF	#4 = OFF	#4 = OFF
#5 = ON	#5 = OFF	#5 = ON
#6 = OFF	#6 = ON	#6 = ON
#7 = OFF	#7 = OFF	#7 = OFF
#8 = OFF	#8 = OFF	#8 = OFF

2275MUXE SW1:

EXTENDER #1	EXTENDER #2	EXTENDER #3
SW #1 = ON	SW #1 = OFF	SW #1 = OFF
#2 = OFF	#2 = OFF	SW #2 = OFF
#3 = OFF	#3 = OFF	#3 = OFF
#4 = OFF	#4 = ON	#4 = OFF

DOCUMENTATION:

PUB 741-1668-1

GROUP: VS New Products Hardware MAIL STOP: 001-220

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TECHNICAL SERVICE BULLETIN

WANG

SECTION: HardWare Technical

NUMBER: HWT 7179 REPLACES: DATE: 09/08/87 PAGE 1 OF 1

MATRIX ID. 4202 PRODUCT/RELEASE: 2275MUX and 2275MUXE

TITLE: CABLING RESTRICTIONS

PURPOSE:

To inform the field of the maximum supported distances between the disk unit and CPUs multiplexed to it; and to alert the field of previously released documentation incorrectly listing cable lengths that exceed supportable distances.

EXPLANATION:

The sales brochure titled 'Model 2275MUX Multiplexer and Model 2275MUXE Extender', part number 715-0910, dated 11/86 is in error. It incorrectly lists under 'SPECIFICATIONS' extension cables of 200, 500, 750, and 1000 feet (76, 153, 228, and 305 meters). The maximum supported distance between the master CPU (directly connects to the disk) and up to 15 other CPUs multiplexing to the disk via the 2275MUX or the 2275MUXE is 100 feet (30.5 meters). Maximum supported distance between the 2275MUX (in master CPU) and the disk unit is 12 feet.

ADDITIONAL INFORMATION:

	Part Number
2275MUX Board (in master CPU supporting master & 3 additional CPU's)	210-8824
2275MUXE Board (in master CPU; up to 3 brds /2275MUX, 4 CPUs /brd which combined with the 2275MUX allows for a maximum of 16 CPUs to multiplex with 1 disk unit)	210-8825
22C80 Board (in each CPU but the master, to connect the CPU to the 2275MUX or 2275MUXE)	210-7715
Ribbon Cable to connect from 1-3 2275MUXE/s to the 2275MUX	220-3588
8 Foot cable from 2275MUX to disk unit	220-0365
8 Foot cable from 2275MUX or 2275MUXE to 22C80	220-0365
12 Foot cable from 2275MUX to disk unit	220-0364
12 Foot cable from 2275MUX or 2275MUXE to 22C80	220-0364
*25 Foot Extension cable from 2275MUX or 2275MUXE to 22C80	120-2281-01
*50 Foot Extension cable from 2275MUX or 2275MUXE to 22C80	120-2281-02
*100 Foot Extension cable from 2275MUX or 2275MUXE to 22C80	120-2281-03

* These parts can only be ordered through supplies.

GROUP: VS/2200 On-Line Support MAIL STOP: 001-260

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TECHNICAL SERVICE BULLETIN
SECTION: HardWare Technical

NUMBER: HWT 7262 REPLACES: _____ DATE: 12/08/87 PAGE 1 OF 1

MATRIX ID. 4202 PRODUCT/RELEASE# 2200/CS

TITLE: Problem with the 2275MUX Board

PURPOSE:
To make the field aware of a problem with the 2275MUX Board (210-8824).

EXPLANATION:
There is a hardware design problem with the 2275MUX. Under heavy usage such as a large Sort program, intermittent I90 errors can occur. The problem seems most prevalent with the DS Cabinet. Those sites experiencing problems have reported from 1 error a week to 2 or 3 a day.

R&D has a fix that is currently being beta tested and an ECO is in the process of being documented. ECO 47059 is expected to be released sometime in December.

CORRECTIVE ACTION:
Should a site exhibit these symptoms with a 2275MUX, please call the TAC Center at 1-800-822-1122 and open a call. A program will be given to test the 2275MUX for the problem. Once the 2275MUX is verified as the problem, you will be asked to send it in, and a beta board will be made available.

Should the problem occur with a Phoenix drive with a 2280MDPU, it is suggested the 2275MUX be replaced with the 210-7717 and a 210-7715 as a temporary solution. The 7717 is installed in the MDPU in the first slot to the left of the 210-7422 board, and the 7715 is installed in the master CPU. There should already be a 210-7715 in the secondary CPU. Both 7715's would be cabled to the top 2 ports of the 7717 in the MDPU using the existing cables. A small cable, 220-0257, is then used to connect the bottom port of the 7717 to the 7421 board in the DPU completing the configuration. The 7717 is a known good mux set-up and can get the customer running error-free until the ECO is released and an updated 2275MUX can be installed.

GROUP: VS On-Line Support MAIL STOP: 001-260

— SPECIAL 2275MUX MASTER WITH LED's

How to Read L E D's = E A S I

LED's 1 = 4 CPU Identification

The DS 320 Attached

LED 1	LED 2	LED 3	LED 4	CPU #	Port # BOARD
off	off	off	off	CPU 3	The 75 MUX is installed in
on	off	off	off	CPU 6	The 1st port on the 75 mux board.
off	on	off	off	CPU 4	The 2nd port on the 75 mux board.
on	on	off	off	CPU 5	The 3rd port on the 75 mux board.
off	off	on	off	CPU 2	The @ 1st port on the slave board.
on	off	on	off	CPU	The @ 2nd port on the slave board.
off	on	on	off	CPU 1	The @ 3rd port on the slave board.
on	on	on	onf	CPU	The @ 4th port on the slave board.

LED's 1 = 4 CPU Identification

The DS 310 Attached

LED 1	LED 2	LED 3	LED 4	CPU #	Port # BOARD
off	off	off	off	CPU 2	The 75 MUX is installed in
on	off	off	off	CPU 1	The 1st port on the 75 mux board.
off	on	off	off	CPU 5	The 2nd port on the 75 mux board.
on	on	off	off	CPU 6	The 3rd port on the 75 mux board.
off	off	on	off	CPU	The @ 1st port on the slave board.
on	off	on	off	CPU 4	The @ 2nd port on the slave board.
off	on	on	off	CPU	The @ 3rd port on the slave board.
on	on	on	onf	CPU 3	The @ 4th port on the slave board.

L E D # 5 () ON disk is waiting for activity.

OFF drive is working.

L E D # 6 () ON instructions complete on (75 mux bd.)

OFF instructions never completed on (75 mux bd)

L E D # 7 () ON instructions complete on (slave mux bd.)

OFF instructions never completed on (slave mux)

TAC

Escalation Call

Control Number 28267902

Contact Name RAJ MAHARAJ Position
Rdb # 3224 Tdx # TDX Phone # 201 225 8698 Ext #

System Type 2200 Device Type LVP
Utility Name DIAUTO Software Level

Method of Call X T = Telex, P = Phone, M = Memo, E = Ems
Has the Area or District been contacted
Y A = Area, D = District, B = Both, N = None
Is this inquiry pertaining to a National Account ?
U Y = Yes, N = No, U = Unknown

Use the following area to describe the site that created this request
Cust/Office Name FRASER BROS Phone # 201 738 7402
Address 1400 940 AMBOY AVE City EDISON State NJ
On Site Contact Name D FITZGERALD

Problem (*) Solution (+)

*09/23/88:CALL CREATED AT REGION FROM REMOTE CALL -S8267004>
09/20/88 CE TRIED TO INSTALL 2 LVP TO BE MUXED TOGETHER AND IS HAVING PROBLEMS WITH THE INSTALL. CE IS AT THIS TIME REQUESTING DTS HELP. FRED DIAUTO IS PRESENTLY WORKING PROBLEM WITH TAC. (RM)
09/20/88 HAVE TRIED ANOTHER SET OF MUX'S BDS. AND CP/DISK CONTROLLERS WITH SAME RESULTS. CHECKED OVER CONFIGURATION WITH TAC IT SHOULD WORK. PROB. IS EITHER CPU WILL IPL AND RUN WITH 2275MUX INSTALLED BUT WILL HANG WHEN ANOTHER CPU IS CONNECTED TO THE 2275MUX. TAC HAS NO NEW SUGGESTIONS AND RECOMMEND PRODUCT SUPPORT. TAC CALL #0864045.(FRD)
&09/23/88: SENDING TO H.O. FOR ADVISEMENT. <BOB B>
$09/27/88: PLEASE RESPOND TO ESCALATION. <BOB B>
&9/28/88: BOB, HAVE BEEN IN PROCESS OF MOVING IN OUR BLDG
& OVER THE LAST FEW DAYS. SORRY FOR DELAY. THERE IS
& NO REASON WHY THIS SHOULDN'T WORK AS WE HAVE MANY
& LVP'S MUX'G ERROR FREE. I BELIEVE THESE 2 LVP'S
& ARE BEING MUX'D TO A DS CABINET. SEEMS THERE MUST
& BE EITHER A BRD PROBLEM, GROUNDING IN 1 OF THE 3
& UNITS, OR CABLING. WOULD LIKE THE FOLLOWING PLAN
& USED TO TROUBLESHOOT.
& 1. REMOVE ALL I/O CONTROLLERS FROM BOTH LVPS EX-
& CEPT FOR 1 MXE OR MXD TERM CONTROLLER IN EA & THE
& 2275MUX (8824) IN 1 & THE 7715 MUX INTERFACE IN
& THE OTHER. INSURE I/O BRDS W/IN 1ST 3 SLOTS ON RT.
& 2. REMOVE ANY NON-WANG W/S'S, CABLES, CPU BRDS
& REMAINING IF ANY.
& 3. REMOVE ALL DRIVES FROM THE DS CABINET EXCEPT
& THE FLOPPY & INSURE SW SETTINGS REFLECT NO TAPE OR
& WINC'S. VERIFY FLOPPY JUMPERS IF IT IS A 1.2 MEG
& (YELLOW ACTIVITY LITE). USE TSB HWT 8006; MATRIX
& 3110, FROM 1/26/88 IF FLOPPY IS A JU475-2. USE
& VS5/6 MNL IF DRIVE IS JU475-1.

```
&          4. USE 220-0364 OR 220-0365 CABLES FROM 7715 TO
&          1ST CPU PORT ON 2275MUX & 2275 DISK PORT TO DS.
&          INSPECT ALL CONNECTORS FOR POSSIBLE DAMAGE.
&          5. USE ONLY A WANG VIRGIN O/S, 2.4 OR HIGHER.
&          6. IF STILL FAILING X CHECK GROUNDING.
&          WALL OUTLETS TEST OK & ALL UNITS ARE PROPERLY
&          GROUNDED (LOGIC GROUND & CHASSIS GROUND SAME) &
&          CABLES PROVIDING GROUND.
&          7. NOW MUST ELIMINATE REMAINING H/W. KEEP IN MIND
&          POSSIBILITY OF 1 BRD BLOWING OUT ANOTHER. WOULD
&          SUGGEST BRINGING AT LEAST 1 CPU, 2 IF POSSIBLE W/
&          BRDS. DOES NOT NEED TO BE LVP. MICROVP WOULD BE
&          SIMPLEST. IF HAVE 2 CPU CONNECT TO DS USING NEW
&          2275MUX, 7715, & DS BRD THAT HAVE NOT BEEN IN CUST
&          SYS YET & TEST. IF H/W GOOD SHOULD WORK NO PROB.
&          IF ONLY 1 CPU TEST ALONE W/ DS W/ 2275MUX & DS BRD
&          THAT HAVE NOT BEEN IN CUST SYS. IF OK CONNECT 1
&          LVP W/ NEW 7715 & TEST. IF THIS WORKS DISCONNECT
&          LVP & TRY 2ND LVP W/ IT'S OWN NEW 7715. IF BOTH
&          WORK TRY 1 LVP W/ NEW MUX, & CPU BROUGHT TO SITE
&          CONNECTED VIA THE 7715. SWAP THE LVP'S. IF STILL
&          NO PROB CONNECT 2ND LVP AS 3RD CPU, THEN AS 2ND.
&          IF ALL WORKS OLD BRDS SHOULD BE TRIED 1 AT A TIME
&          TO FIND PROB. IF FAILS AGAIN INSURE WORKING BRD
&          TRIED IMMEDIATELY. IF STILL FAILS THEN WE HAVE
&          PROB OF 1 BRD DAMAGING ANOTHER.    MIKEB
&! UPDATE QUEUED TO FIELD OFFICE
&!CALL SUCCESSFULLY SENT TO FIELD SYSTEM
$09/28/88: THANKS MIKE WILL KEEP YOU UPDATED. <BOB B>
$10/04/88  DURING THE TIME BETWEEN 9/20/88 AND 10/04/88
$          THE CUSTOMER'S SOFTWARE VENDOR (REDSHAW) HAD
$          UPDATED THE SOFTWARE. AS IT STANDS NOW BOTH LVP'S
$          ARE RUNNING USEING A 2275MUX. (FRD)
&10/5/88:  WAS MUX'ING TESTED WITHOUT USING REDSHAW S/W
&          DURING TROUBLESHOOTING. SHOULD NOT USE CUST S/W
&          FOR TROUBLESHOOTING UNLESS WANG S/W HAS BEEN
&          TESTED SUCCESSFULLY. IF WAS TESTED W/ WANG S/W &
&          FAILED, THERE HAD TO BE A H/W PROB WHICH HAD TO BE
&          FIXED FOR REDSHAW S/W TO WORK. IF ONLY TESTED W/
&          REDSHAW S/W & SYMPTOM WAS A HANG COULD OF BEEN S/W
&          PROB.  CUST S/W SHOULD OF BEEN ELIMINATED. PLEASE
&          CLARIFY IF TESTED USING JUST WANG S/W & IF SO WHAT
&          WAS DONE THAT MAY HAVE CORRECTED PROB.  MIKEB
$10/06/88: CLOSE CALL. THANKS MIKE. <BOB B
&10/6/88:  PLEASE GIVE RESPONSE TO UPDATE OF 10/5 BEFORE
&          CLOSING. THANKS,  MIKEB
&10/24/88:STILL WAITING FOR ACTUAL RESOLUTION. CALLED RAJ &
&          HE BELIEVED THERE WERE SOME CABLING PROBLEMS.
&          SUGGESTED TO CALL FRED FOR SPECIFIC RESOLUTION.
&          LEFT MESSAGE AT OFFICE FOR DTS TO CALL.    MIKEB
&10/25/88:FRED DIAUTO CALLED IN. WHEN WENT BACK TO SITE,
&          TOOK EVERYTHING APART THEN PUT BACK TOGETHER 1 X 1
&          & NEVER FAILED. THE CUST HAD ALSO UPGRADED THE O/S
&          THE DAY BEFORE. PROB WAS 2ND SYS WOULD NEVER COME
&          UP & IF CABLED WOULD CAUSE THE PRIMARY SYS TO
&          HANG. SYS WAS NEVER TESTED ON VIRGIN WANG O/S.
&          MOST LIKELY CORRECTED PROBLEM BY RESEATING EVERY-
&          THING BUT COULD OF BEEN O/S RELATED. SHOULD TEST
&          ON A WANG O/S WHEN TROUBLESHOOTING. CLOSING CALL.
&                                        MIKEB
+CALL CLOSED. RESEATING & RECONNECTING EVERYTHING SEEMED TO
+CORRECT PROBLEM. REDSHAW O/S WAS ALSO UPDATED.
                                        10/26/88  MIKEB
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